CORNING
Discovering Beyond Imagination

Pad- and Pole-Mounting Instructions — OptiTect™ Cabinet

Contents

Revision History

Issue	Date	Reason for Change
2	08/2004	Added cushion between skirt and concrete when pad-mounting
1	05/2004	Initial Release

Related Literature

000-227	Instruction, Fiber Distribution Hub Ground Kit
000-228	Instruction, Hardware Mounting Kits — OptiTect Cabinets
000-229	Instruction, Pole-mounting Kits — OptiTect Cabinets
000-231	Instruction, Shim Leveler Kit — OptiTect Cabinets

Admonishments

The precautionary terms used by Corning Cable Systems in its standard recommended procedures conform to the guidelines expressed in the American National Standards Institute document (ANSI Z235) for hazard alert messages. Alerts are included in this instruction based on the following:

⚠ **DANGER** indicates an imminently hazardous situation which, if not avoided, <u>will</u> result in death or serious injury.

⚠ **WARNING** indicates a potentially hazardous situation which, if not avoided, <u>could</u> result in death or serious injury.

⚠ **CAUTION** indicates a hazardous situation which, if not avoided, <u>may</u> result in minor or moderate injury.

1.   GENERAL

The OptiTect Premiere Cabinet functions as an interface between the telecommunication provider's network and individual customer connections. The cabinet provides mechanical and environmental protection for the splices and connector interfaces while providing easy access for the service provider. The cabinet provides a management system for optical fiber, connectors, and coupler modules and a test access point to verify the integrity of the network.

The cabinet is capable of storing 432 distribution fibers, 26 feeder fibers, and 12 or 13 1x32 or 24 or 26 1x16 coupler modules and associated pigtail outputs. A maximum of 30 fusion splices can be stored in the organizer in the splice drawer. Organizers for mechanical splices or specific organizers to accommodate customer preferences can be requested when ordering the cabinet.

1.1   Use and Application

The OptiTect Cabinet may be used in an outdoor environment, either mounted on a pad or a pole. The cabinet design allows front access to the fibers, connectors, and coupler modules for management, testing, and maintenance by the craft persons. Safety rings are installed at the top of the pole-mountable cabinets to enable installers to attach safety straps during work operations.

The interior is accessible through two hinged front doors that are secured with a three-point latch. The cabinet doors can be locked with a 216B tool. From one to three connectorized distribution cables are preinstalled and attached to the internal housings. Feeder cable is also preinstalled, strain-relieved, and prepared for splicing to the coupler input fiber. Feeder cable can also be ordered prespliced to the input fiber from the initial factory-installed coupler module.

- Feeder cable is routed into the cabinet and into the splice drawer. After splicing the feeder cable to the coupler module input fiber, the splices are stored in a splice organizer inside the splice drawer.
- Pre-connectorized distribution cable(s) are routed into the cabinet and mated in the connector adapter fields. Each adapter field is ready to receive the connectorized output fibers from the coupler modules.
- Coupler modules (purchased separately) are installed into the coupler storage area. Coupler modules are available in two versions—a 1x16 model, which contains one input fiber and 16 output fibers, or a 1x32 model, which contains one input fiber and 32 output fibers. The coupler storage area can hold up to or 26 1x16 modules, 13 1x32 modules, or a combination of the two sizes of modules. Preconnectorized output fibers from the coupler modules can be connected at the time of installation in the connector adapters or routed to and stored in a connector storage field for connection later.

1.2   Planning

Refer to the product specification sheet listed in the Related Literature for a complete list of product part numbers and options available. Contact a Corning Cable Systems customer service representative to place an order for this product in the configuration required by your network installation plan.

- The cabinet installed on the skirt is 32-inches wide, 19-inches deep, and 60-inches high. Ensure that sufficient space is available at the installation site to accommodate the cabinet. Allow 16 inches in front and 10 inches on each side of the cabinet to enable the doors to open fully. No clearance is necessary behind the cabinet since there is no rear access to the interior of the cabinet.

- The installing company should obtain rights-of-way from property owners and permits or other approvals from public authorities prior to installation of the cabinet.

- Select an appropriate site per your design plan and follow standard local practices to construct or purchase a concrete pad suitable for installation of the cabinet. The pad should be able to withstand the weight of a fully loaded cabinet (approximately 350 pounds). A template provides cabinet dimensions and recommended location of conduit, mounting hardware, and grounding rod to assist with on-site or precast pad construction.

2.   MATERIALS AND TOOLS REQUIRED

2.1   Materials

The following materials are required to install the OptiTect cabinet onto a pad:

- Paper mounting template (provided)
- Shim kit (provided)
- Grounding kit (provided)
- Standard mounting hardware kit (p/n FDH-MTNG-KIT-TDIN, provided), includes bolts and washers for mounting on a pad with threaded inserts

NOTE: *Pad-mounting hardware for pads without threaded inserts may be purchased separately:*

For mounting on a pad with threaded studs (p/n FDH-MTNG-KIT-TDST)
For mounting on a pad by inserting wedge anchor threaded studs (p/n FDH-MTNG-KIT-DRLAN)

For wooden pole-mount installations, it is recommended to use the Corning Cable Systems' pole-mounting hardware kit (p/n FDH-POLE-MNT-KIT, purchased separately), which supports poles ranging in diameter from 10 to 14 inches, or the following galvanized hardware:

- (2) $3/4$-10 x 16-inch carriage bolts
- (2) $3/4$-inch split lock washers
- (2) $3/4$-10 square nuts
- (2) $3/4$-ID x 2-inch square washers
- (2) $1/2$ x 4-inch lag screws

The following materials are required for all installations of OptiTect cabinets:

- Ground kit for cabinet (provided)
- Heatshrink splice protectors for fusion splicing (purchased separately) (p/n 2806032-01, package of 50; 40 mm long)

- Lint-free wiping material
- Isopropyl alcohol

2.2 Tools

To install the cabinet, the following tools may be required:

- Hoist or crane
- Forklift or handtruck
- 216B tool or a $^7/_{16}$-inch nutdriver or wrench (for entry into the interior of the cabinet)
- Fusion splicer
- Fiber cleaver
- Crescent wrench
- Drill with $^7/_8$- to 1-inch auger bit
- $^9/_{16}$-inch nut driver or socket
- $^3/_4$-inch nut driver or socket

Additional tools may be required for maintenance or to expand the capacity of the cabinet:

- Phillips-head screwdriver
- Heat gun

2.3 Auxiliary Equipment

There is no auxiliary equipment required to install the cabinet. If the cabinet is not full to capacity, additional products may be installed to expand the customer connections. Refer to the section, *Growth*, for details on expanding the capacity. Contact a Corning Cable Systems customer service representative to order additional products in the configuration required by your network installation plan.

3. COMPONENTS AND SHIPPING CONTAINER CONTENTS

Figure 1 provides a pictorial description of the cabinet and its components.

Packing List of Shipping Container Contents
(1) OptiTect Premiere Cabinet, prestubbed with distribution and feeder cables in lengths and quantities specified by the customer, with a factory-installed coupler module, either 1x16 or 1x32, as specified by the customer
(1) Grounding kit (p/n FDH-GRND-KIT)
(1) Paper mounting template

Additional Container Contents for Pad-mounted Cabinets
(1) Standard pad-mounting hardware kit
(1) Shim kit
(1) Rubber mounting cushion

Additional Container Contents for Pole-mounted Cabinets
(1) Pole-mount Bracket Assembly
(2) Angled mounting brackets
(2) Lock washers
(2) Flat washers
(2) Carriage bolts
(2) Hex-head nuts

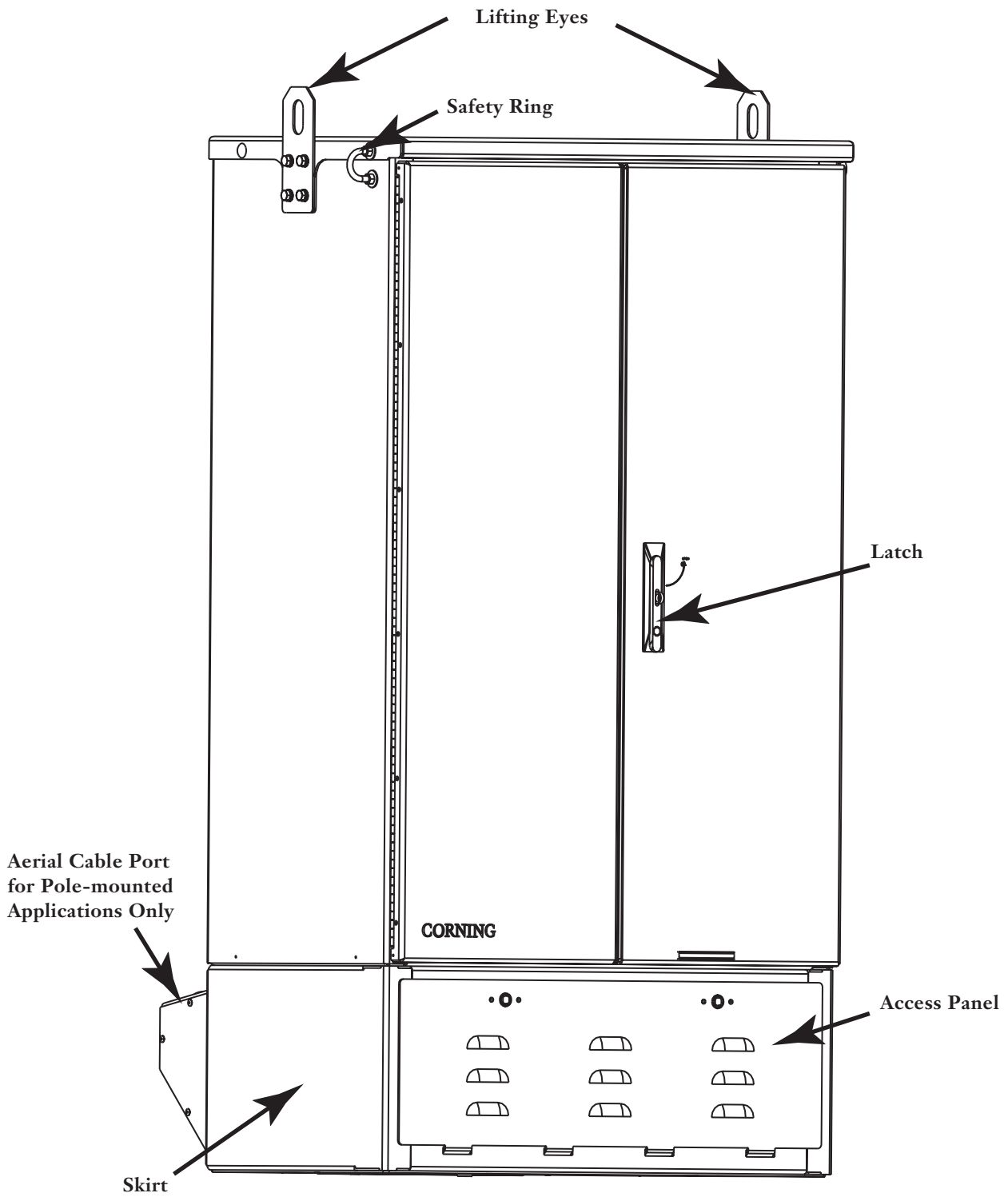| DIMENSIONS (in inches)		
Wide	Deep	High
32.00	19.00	60.00

Figure 1 — Cabinet Components

4.   STORAGE AND TRANSPORTATION

The shipping container and its contents can be stored indoors in any typical warehouse or central office environment, controlled or uncontrolled. A forklift or handtruck capable of lifting approximately 450 pounds is required to unload or transport the product prior to unpackaging. Observe all local safety precautions when moving the container. Do not double-stack shipping containers.

5.   UNPACKAGING THE CABINET AND COMPONENTS

Step 1   Place the container near the site prepared for installation of the cabinet.

Step 2   Loosen the 1- by 2-inch wooden framing from the exterior of the packaging. Lift the cardboard cover off to access the cabinet and components (Figure 2).

NOTE: Illustration depicts pad-mount packaging. Pole-mount packaging may be configured differently.

Remove installation instruction and paper mounting template from packaging.
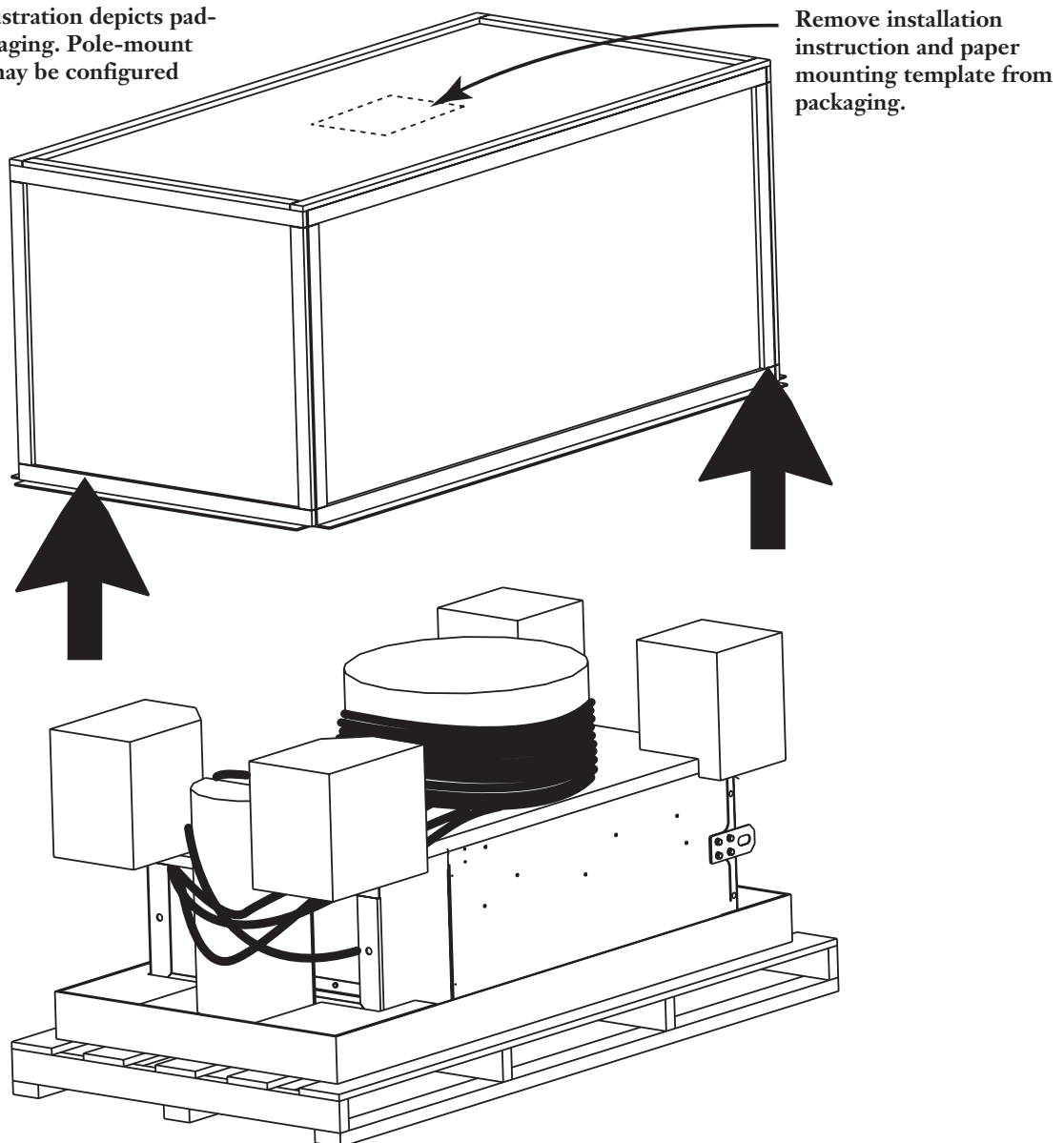
Figure 2 — Remove Exterior Packaging

Step 3   With one person on each side of the cabinet, carefully lift each bundled coil of cable from around the round foam piece and place the cable on the ground near the prepared site location. There may be from one to three distribution cables and one or two feeder cables attached.

Step 4   Lift the cardboard lid and foam pieces off the cabinet. Locate and set aside the rubber mounting cushion (for pad-mounted cabinets). Remove and appropriately dispose of the shipping materials.

Step 5   While the cabinet is still on its back (as packaged), clip the ties from the cables. Ensure that each cable is uncoiled and twists are removed prior to installation.
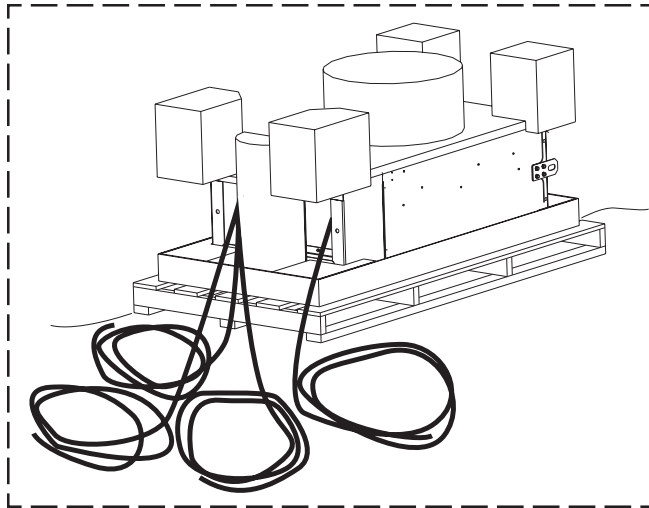
NOTICE: *Fiber optic cable is sensitive to excessive pulling, bending and crushing forces. Do not exceed 600 pounds of pulling force on the cable. Do not bend the cable more sharply than the minimum recommended bend radius. Do not crush the cable or allow it to kink. Doing so may cause damage that can alter the transmission characteristics of the cable—the cable may have to be replaced.*
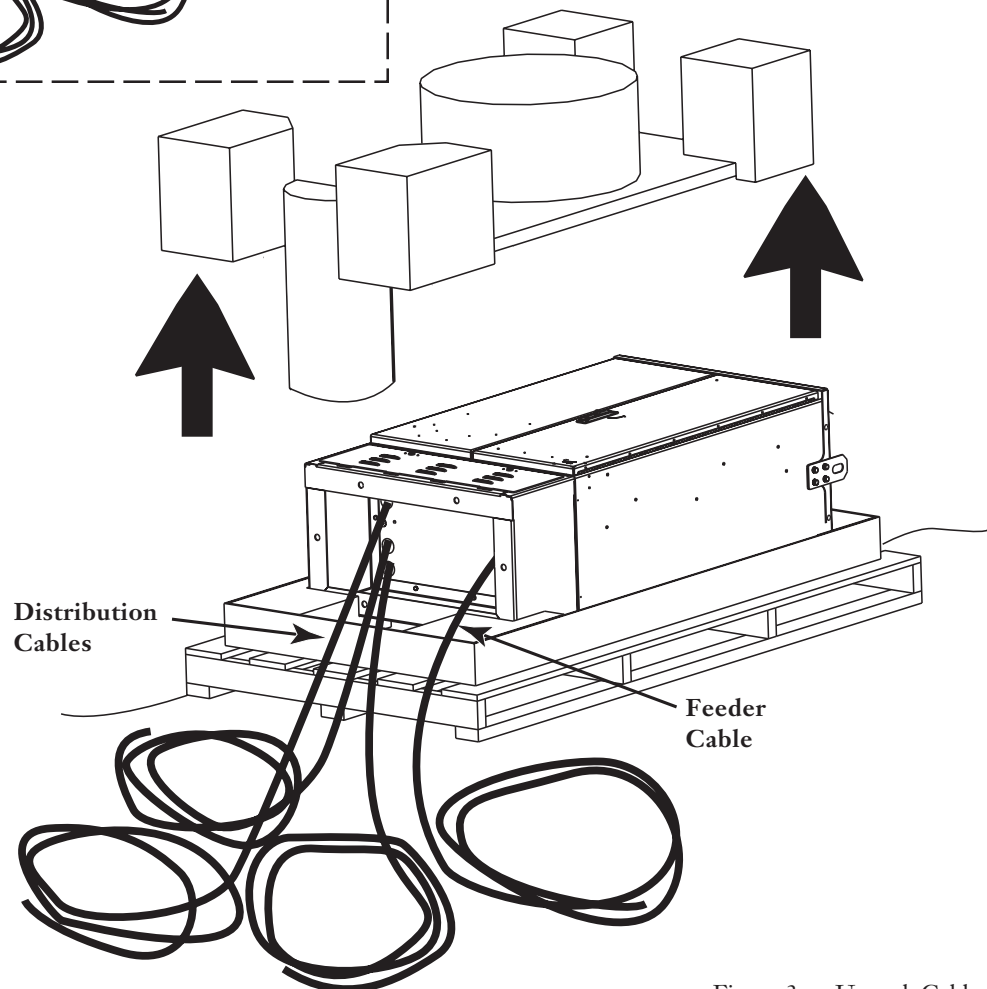
Distribution Cables

Feeder Cable

Figure 3 — Unpack Cables

6.   INSTALLING THE CABINET

6.1   Installation on a Pad

Ensure that a lifting device, such as a hoist or crane, capable of lifting approximately 350 pounds is available to lift the cabinet into position.

⚠ **DANGER:** *Only certified operators should operate the crane. Ensure that stabilizers are extended and firmly positioned before lifting the cabinet. Avoid overhead obstructions or power lines when lifting the cabinet.*

Step 1 If not using a precast pad with mounting hardware installed, use the template provided to mark the location for the mounting bolts (Figure 4). Drill a hole in the poured pad and insert the mounting bolts (maximum 0.5-inch diameter).

Step 2 Unfold the rubber mounting cushion and lay it in position, lining up the mounting holes in the cushion with the mounting holes or bolts in the concrete.
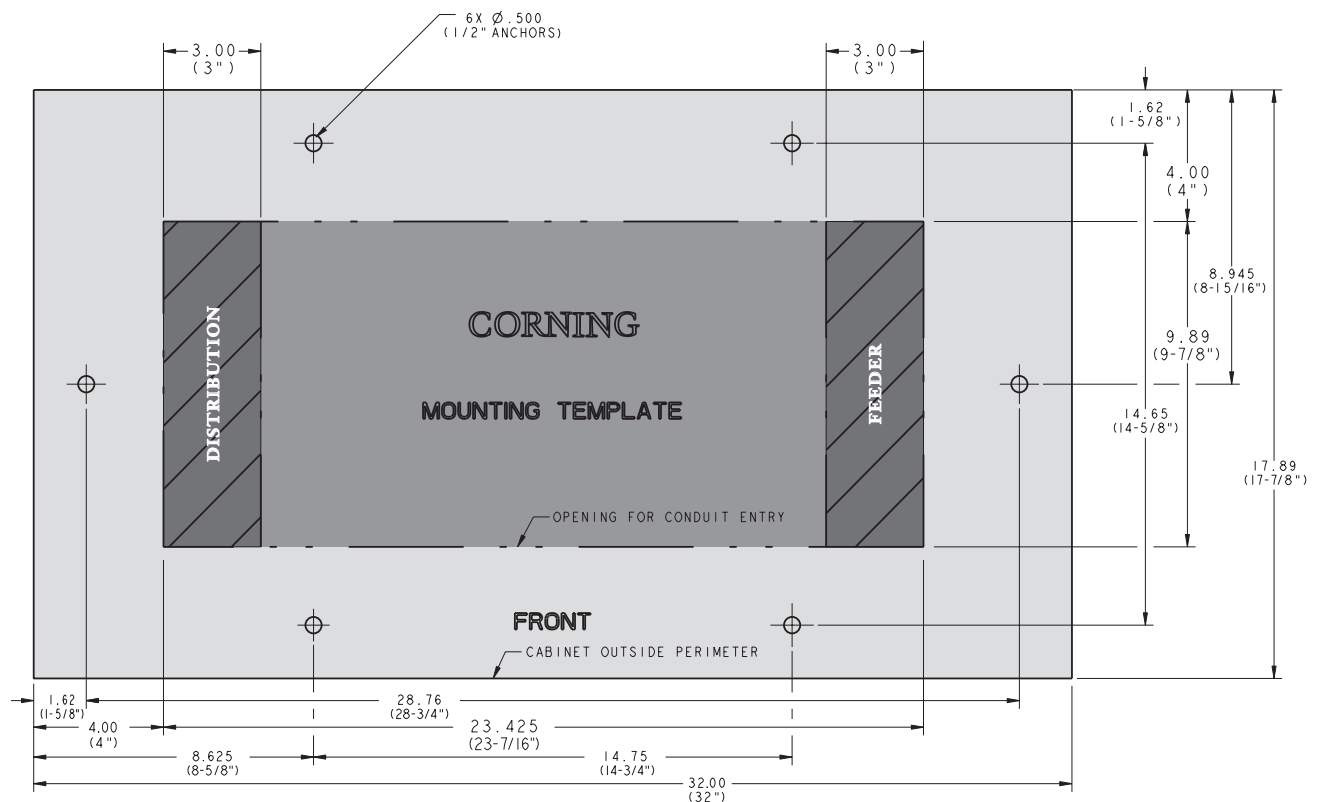

Figure 4 — Template for Pad-mounting Hardware Location

Step 3 Remove the access panel from the skirt of the cabinet using a 216B tool or a $^7/_{16}$-inch nutdriver.

Step 4 Attach a cable hoist to the cabinet lifting eyes (Figure 5).

Step 5 Carefully lift the cabinet and move it into position over the cabinet location on the pad. Be sure that cable slack is not pinched or kinked during the lifting operation.

⚠ **CAUTION:** *The cabinet is heavy and requires two people to manuever it. Observe all safety precautions while using the cable hoist. Make sure the doors are locked in the closed position. Failure to do so may result in personal injury or damage to the cabinet or cables.*

Step 6   Insert cable into the appropriate ducts. Slowly lower the cabinet onto the pad while simultaneously pulling cable slack through the ducts. Do not exceed 600 pounds of pulling force on the cable or violate the minimum recommended bend radius.

IMPORTANT: *Ensure that grommets remain firmly sealed around the cables to prevent intrusion of moisture or insects into the interior of the cabinet after installation.*

Step 7   Lower the unit onto the pad so that the mounting bolts in the pad are aligned with the holes in the cabinet's skirt. Lower the cable hoist until the full weight of the cabinet rests on the pad.

Step 8   Attach the cabinet to the pad. Use shims from the mounting hardware kit as needed between the pad and the cabinet to keep the cabinet squared.

Step 9   Remove the cable hoist. You may remove the lifting eyes and hardware and store them in a plastic bag in the pocket on the inside of the front door.
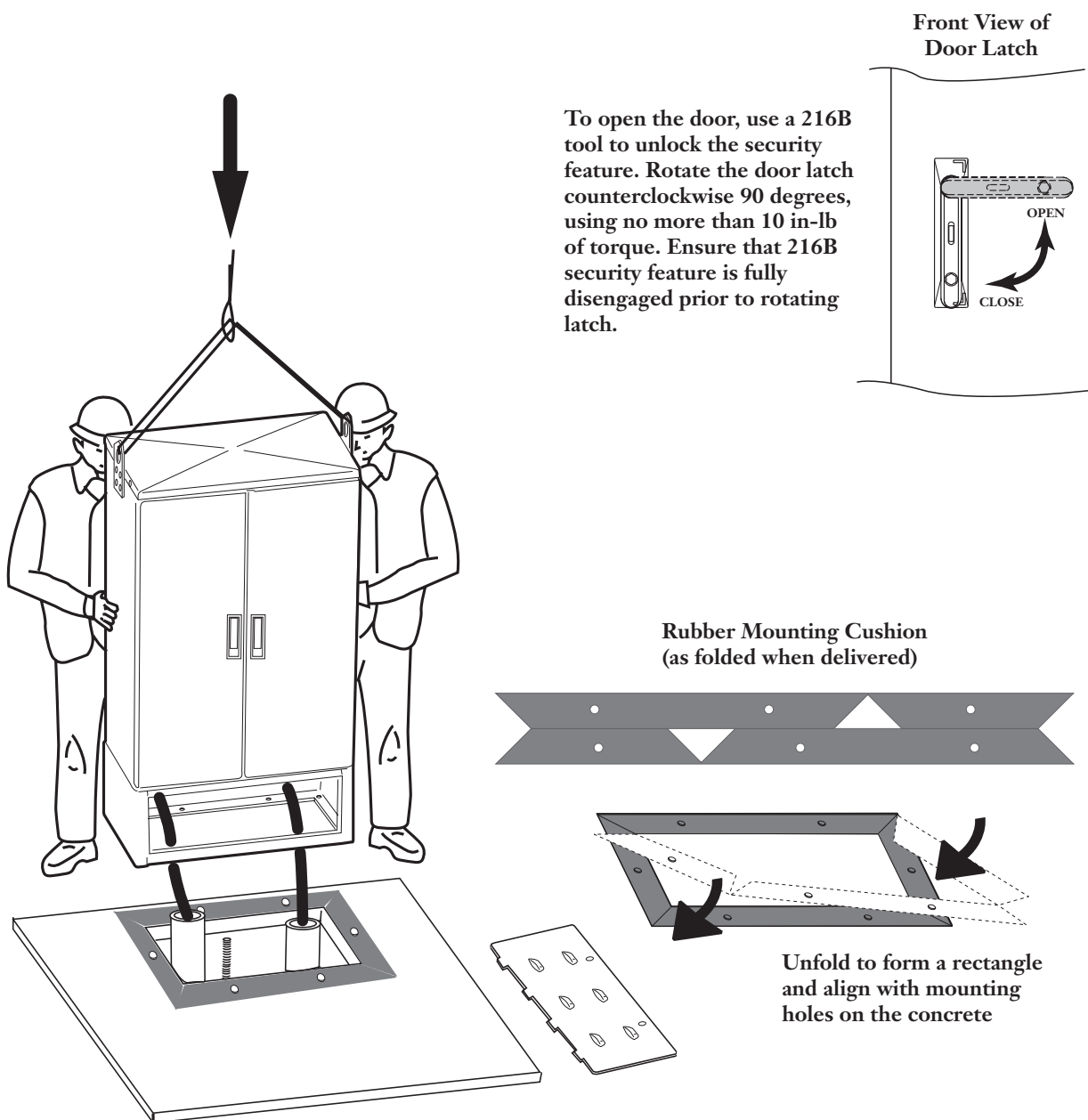
Front View of Door Latch

To open the door, use a 216B tool to unlock the security feature. Rotate the door latch counterclockwise 90 degrees, using no more than 10 in-lb of torque. Ensure that 216B security feature is fully disengaged prior to rotating latch.

OPEN

**CLOSE**

Rubber Mounting Cushion (as folded when delivered)

Unfold to form a rectangle and align with mounting holes on the concrete

Figure 5 — Install Cabinet on Pad

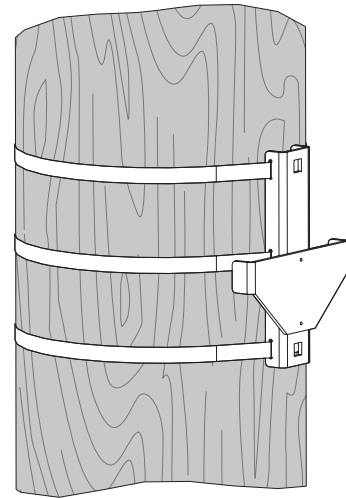**OptiTect™ Premiere Cabinet**

6.2   Installation on a Pole

The cabinet can be mounted onto a pole using a mounting hardware kit (purchased separately) appropriate for the type of pole.

Step 1   Attach the mounting hardware kit to the pole (Figure 6), ensuring that the horizontal surface of the hardware is level with the ground.
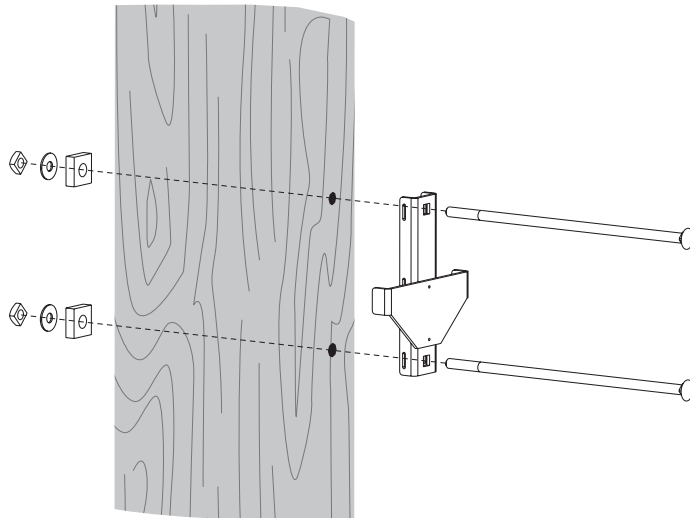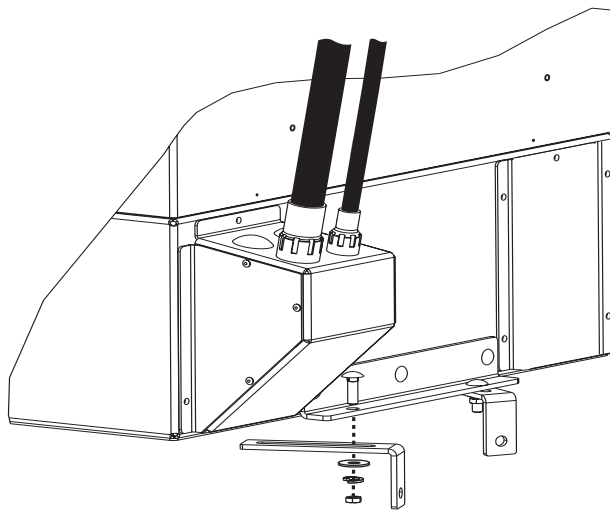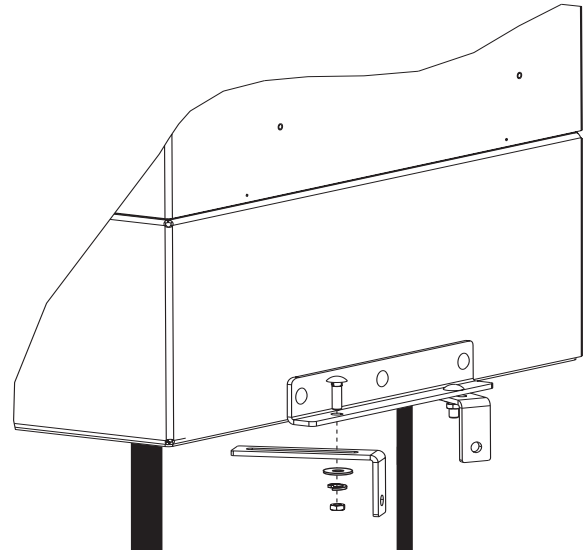
Mounting Hardware using Lag Bolts   **Mounting Hardware using Banding Straps**

Figure 6 — Attach Pole-mounting Hardware to Pole

Step 2   Attach the angled brackets to the mounting bracket at the bottom of the cabinet as shown (Figure 7).

Cable Exits from Rear of Cabinet   **Cable Exits from Bottom of Cabinet**

Figure 7 — Attach Angled Brackets to Cabinet

Step 3 Use a crane or hoist to lift the cabinet into position next to the pole. Hang the cabinet on the pole (Figure 8). Observe all standard safety practices to avoid personal injury or damage to the cabinet.
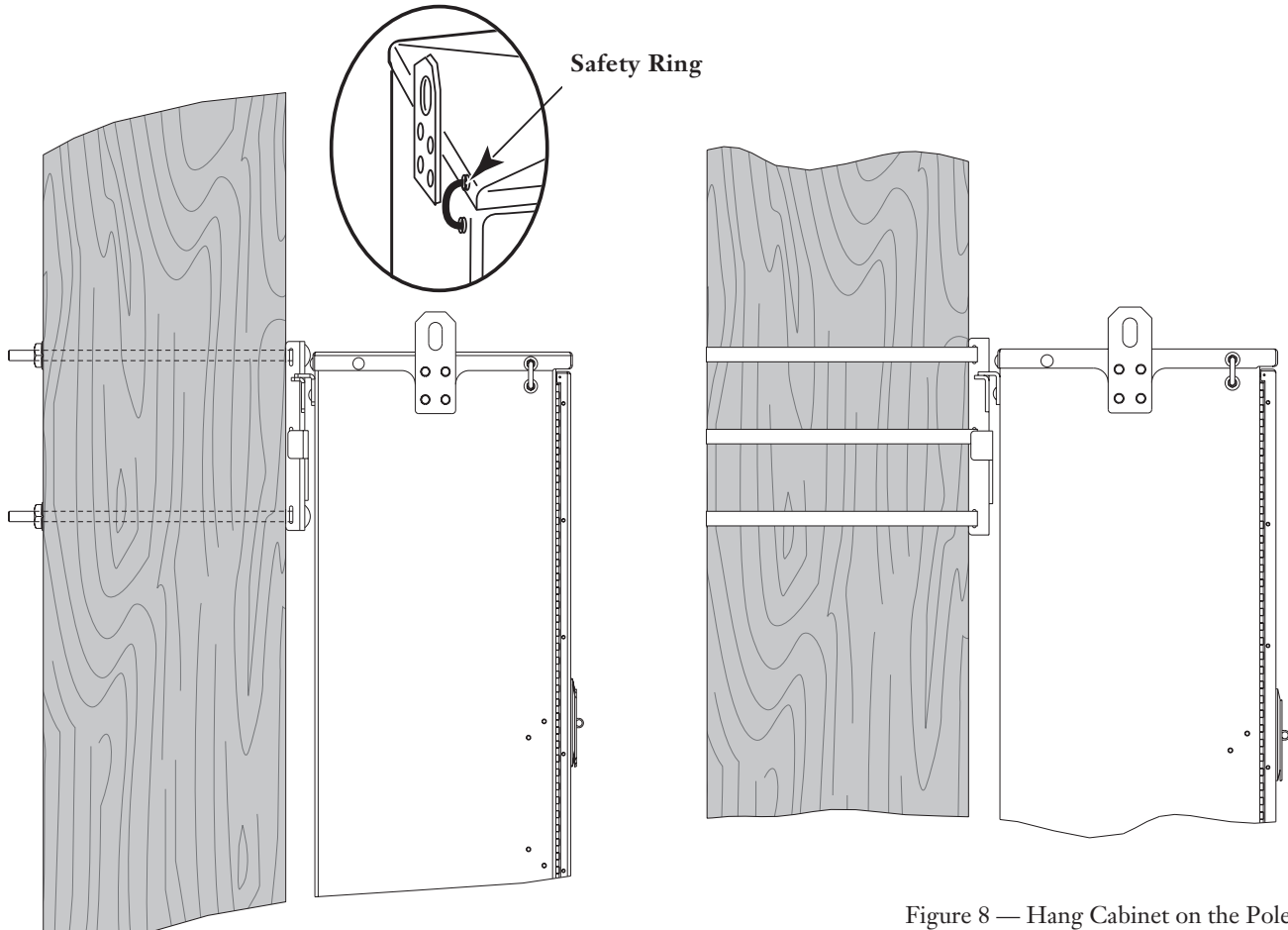
Safety Ring

Figure 8 — Hang Cabinet on the Pole

Step 4 Secure the bottom of the cabinet to the pole using the angled brackets at the bottom of the cabinet (Figure 9).
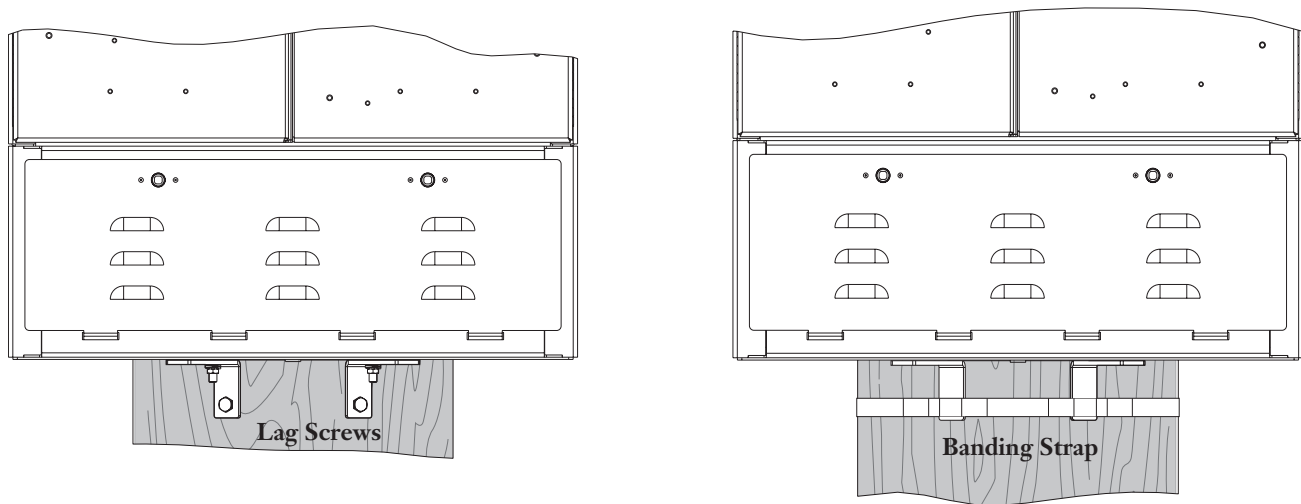
Lag Screws

Banding Strap

Figure 9 — Secure Angled Brackets to the Pole

Step 5   Route cable as prescribed in your installation plan in preparation for splicing. The cable may route out the back of the cabinet and transition up the pole for aerial applications or may route from the bottom of the cabinet for buried applications (Figure 10).
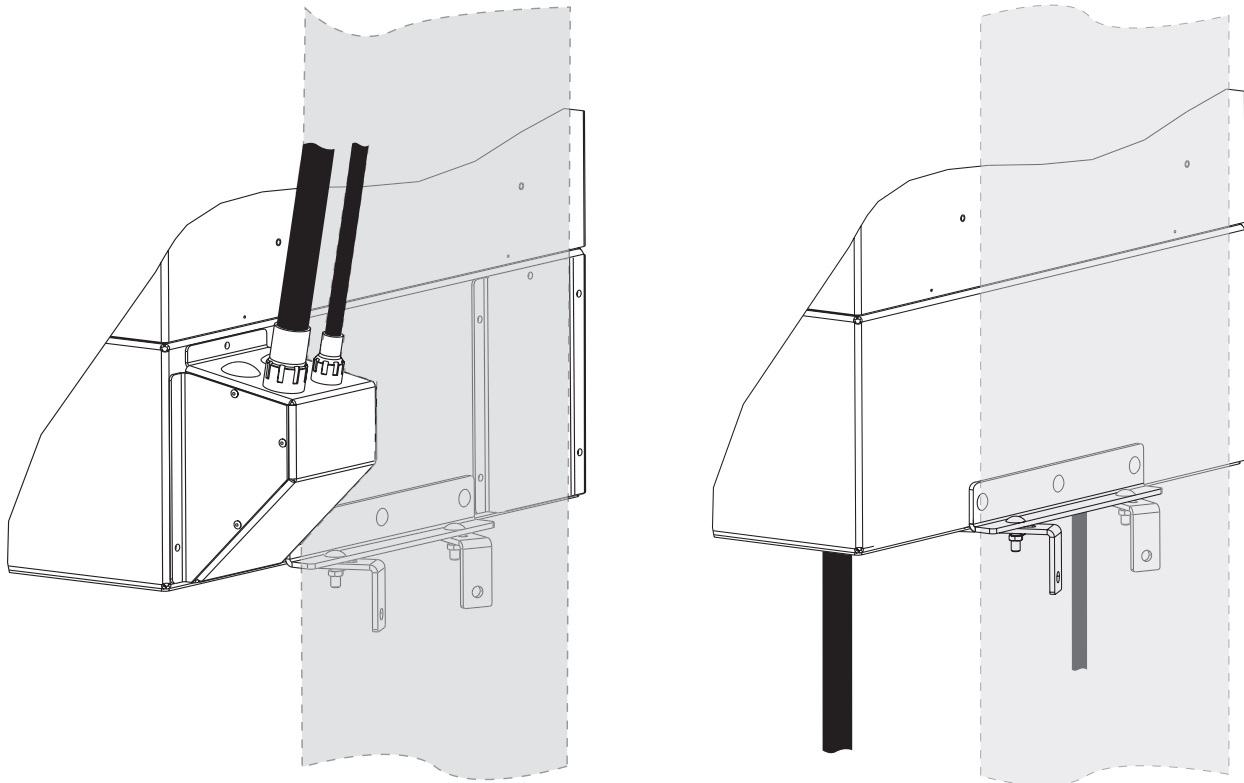
Figure 10 — Route Cable from Pole-mounted Cabinet

7.   GROUNDING THE CABINET

The cabinet should be grounded to establish electrical continuity of all metallic elements to an effective electrical ground using at least a No. 6 AWG copper grounding conductor. Once established, the continuity is not affected by further reentries into the cabinet.

Step 1   Open the cabinet doors until the door restraint automatically engages to hold the door in the open position as shown in Figure 11.

Step 2   Using the provided grounding kit, attach the No. 6 AWG ground wire to the ground bar inside the cabinet (Figure 11).

Step 3   Pierce the small grommet in the base of the cabinet (and the second grommet in the base of the skirt, if the cabinet is pole-mounted) with a pencil point or needle-nosed pliers and route the ground wire through the grommet(s) to the ground rod.

NOTICE: *Do not use a knife or side-cutters to create an opening. Doing so may create too large an opening allowing moisture or insects into the cabinet. Do not break through the edge of the grommet. Doing so may compromise the grommet's holding ability.*

Step 4   Attach the other end of the ground wire to the ground rod per standard local practices and codes.
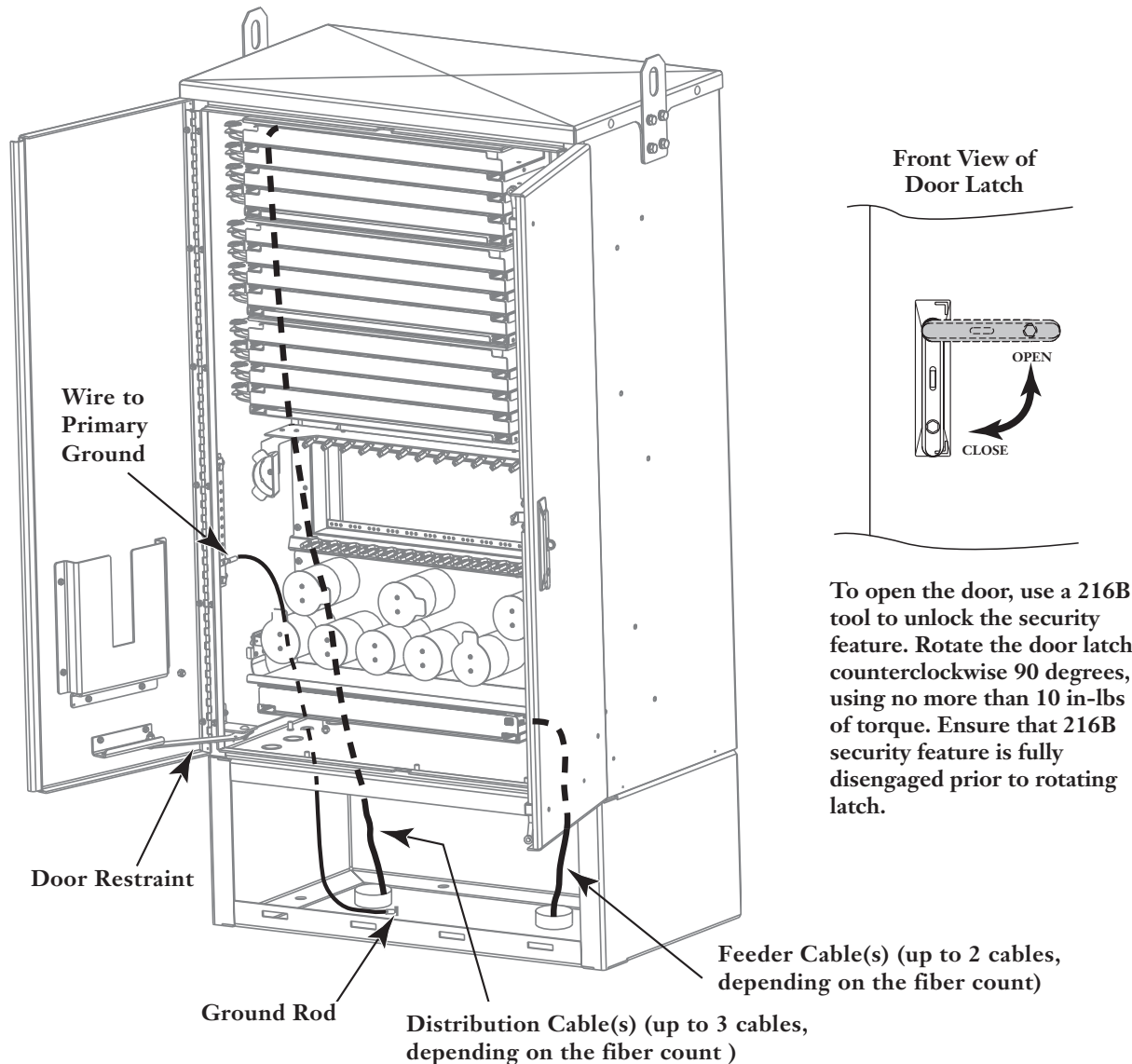
**Front View of
Door Latch**

**To open the door, use a 216B
tool to unlock the security
feature. Rotate the door latch
counterclockwise 90 degrees,
using no more than 10 in-lbs
of torque. Ensure that 216B
security feature is fully
disengaged prior to rotating
latch.**

Figure 11 — Ground Cabinet and Cables

Step 5   Reattach the access panel to the skirt of the cabinet using a 216B tool or a $^7/_{16}$-inch nutdriver to secure the fasteners.

8.   SECURING CABINET

If no other work operations will take place inside the cabinet at this time, secure the cabinet doors.

Step 1   Disengage each door restraint by lifting it to release the door (Figure 11).

Step 2   Close the doors and rotate the door latch 90 degrees in a clockwise direction to latch the doors.

Step 3   Lock the doors with a 216B tool.

GLOSSARY

Acronyms

AWG   American Wire Gauge
FDH   Fiber Distribution Hub
HDF   High-density Fiber

TERMINOLOGY

Cable

An assembly of optical fibers and other material providing mechanical and environmental protection.

Connector

A mechanical device used to align and join two fibers together to provide a means for attaching to and decoupling from a transmitter, receiver, or another fiber (patch panel).

Coupler Module

A passive fiber optic device that combines or splits optical signal power.

Customer Service and Information
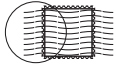
Telephone: ————————————————————————————————————
Customer Service—US or Canada: 1-800-743-2671
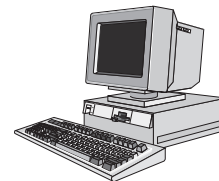International: +1-828-901-5000
Fax: +1-828-325-5060

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