



## Charles Fiber Distribution Points CFDP8- ECS/BST

### 1.0 Description of the Charles Fiber Distribution Points (CFDP) Pedestal

The CFDP8-ECS/BST is a two-stage pedestal that provides environmental protection of fiber optic loop distribution cable and customer service drops in FTTH and FTTC deployments. This two-stage protection is accomplished by having a weather-tight interior enclosure within the confines of a non-metallic buried distribution pedestal.

The CFDP8-ECS/BST pedestal provides enhanced security for the fiber optic cables, as well as the standard capabilities to store copper cable splices and drops. Fiber optic and copper cable splicing operations can be accomplished independently of one another.

#### 1.01 Purpose of Document

This document is intended to provide instructions to the fiber optic technician for the proper installation of the CFDP family of products. By utilizing this instruction set, the technician can efficiently assemble and install the CFDP and related hardware for loop-through applications.

#### 1.02 General Precautions

##### 1.02.1 Buffer Tube Handling Precautions

### ⚠ CAUTION ⚠

Buffer tubes are sensitive to excessive pulling, bending, and crushing forces. Exercise great care when handling buffer tubes. Excessive bending will cause kinking which may damage the fibers inside.

##### 1.02.2 Fiber Precautions

### ⚠ WARNING ⚠

Glass fibers are very sharp and can pierce the skin easily. Do not let cut pieces of fiber stick to your clothing or drop in the work area where they can later cause injury. Use tweezers to pick up cut or broken pieces of glass fibers and place them on a loop of tape or in a container intended for this purpose. Good housekeeping is important.



## 2.0 Preparation of CFDP Hardware and Material

### 2.01 Step 1: Unpack and Inspect

Remove the pedestal housing from the shipping container; inspect all components for damage. If damage has occurred, contact the local salesperson or Charles Industries Technical Services at phone numbers listed at the end of this document.

### 2.02 Step 2: Remove Dome and Backboard

Unlock the security nut by turning it  $\frac{1}{4}$  turn counterclockwise with a 216 tool or can wrench, then separate/lift off the pedestal dome from the pedestal base. Gently remove the fiber organizer assembly (backboard) and place it aside during installation of the pedestal base.



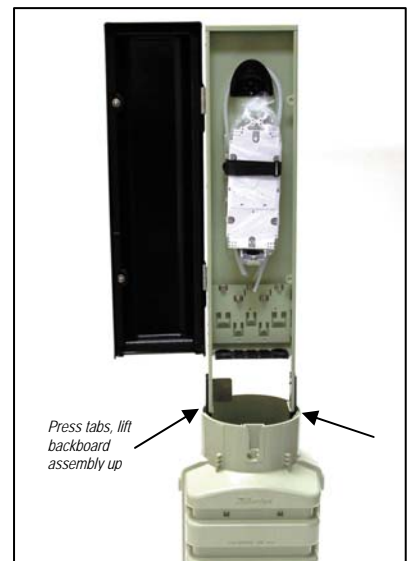
### 2.03 Step 3: Remove and Store Red Plastic Bag

Find the folded, red plastic bag included in the bagged kit of parts inside the drop cable channel and set it aside for later use.

**Note: Do not discard** the red plastic bag, since it is utilized later in the base installation process.

### 2.04 Step 4: Mount Drop Cable Channel

If not already installed, seat the drop cable channel into the stays inside the front half of the base. For orientation purposes, the **Charles Industries** logo is situated on the front base half. The top of the drop cable channel is designed to rest under the standoff clips molded into the front half of the expanded base. These standoffs are located below the square-to-round transition on the base. If conduit is utilized for service drops, the drop cable channel is not required and can be omitted.



**Note:** Separation of the base halves is accomplished by loosening the cup screws 2 to 3 turns on each side and lifting the front half away from the rear half of the base. Assembly of the halves is accomplished in the reverse order.

### 2.05 Step 5: Insert Foam Plug In Channel

If the drop cable channel has been installed, insert the provided foam plug into the top of the channel, and allow  $\frac{1}{3}$  to  $\frac{1}{2}$  of the foam plug to protrude from the top of the channel. The foam plug serves as a moisture barrier and helps prevent rodent intrusion.



## 3.0 Installation of the Base

**Note:** If a pedestal stake is used, refer to Section 8.0.

### 3.01 Step 1: Position Pedestal Base

Using the assembled base as a guide, place it over the top of the conduit or cable. For cable ends, 8½ feet of cable should extend above the Ground Line. For loop-through or express fiber applications, a 16 foot loop should extend above the Ground Line. Position the base so that the fiber cable enters at the rear of the pedestal. The rear is the pedestal half into which the fiber organizer is placed. Trench around the perimeter of the base approximately 2-4 inches wider than the base to a depth of approximately 8½ inches. If conduit is being used, temporarily place a plug or cap over the conduit to prevent any of the backfill or pea gravel from falling into the conduit.

**Note:** Due to the size and location of the conduit or cables, disassembly of the base may be required. This can be accomplished as previously described.

### 3.02 Step 2: Backfill Around Outside of Pedestal

Back fill the trench around the pedestal and firmly tamp the soil.

### 3.03 Step 3: Backfill Inside of Base

Back fill soil into the base, approximately 5 inches in depth, and firmly tamp the soil.

**Note:** This will add stability and prevent the pea gravel from falling under the sides of the base after it is in position.

### 3.04 Step 4: Slit Open and Install Red Bag

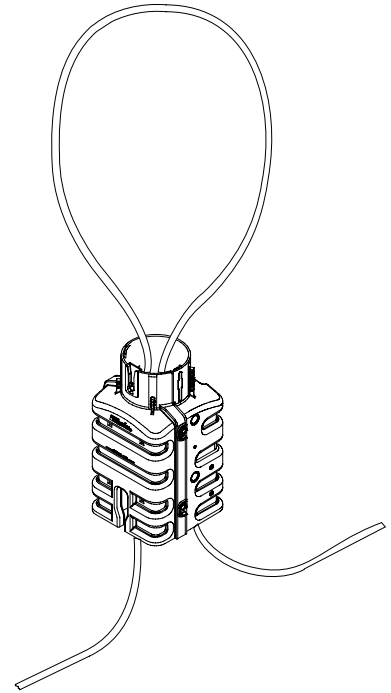
Locate the red plastic bag previously set aside and cut it so it becomes one large plastic sheet. The bag should already be open at one end, so slit the bag on the other end and along one side, to form a rectangular-shaped sheet. Insert the red plastic sheet into the base and place it on top of the fill soil, fitting it around the conduit or cables. Fold the bag downward so that the edges make contact with the inner walls of the base. This will aid moisture runoff into the soil.

### 3.05 Step 5: Add Pea Gravel

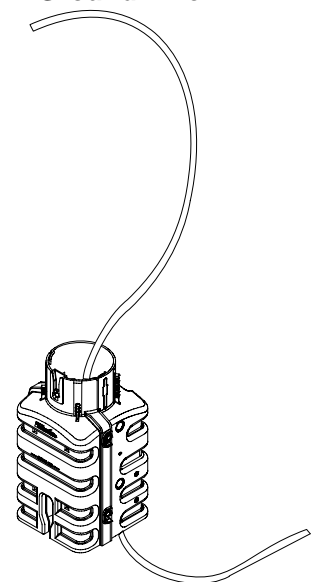
Add pea gravel to a level of 1½ inch below the conduit or drop channel opening.

**Note:** The pea gravel should be no larger than 5/8 inch in size and non-porous. This gravel may be supplied with the pedestal.

16' Cable Loop  
From Ground Line  
to Ground Line



One 8.5'  
Stub Cable End  
From Ground Line



**– End of Pedestal Placement –**  
**Next Page Begins Splicing Operation**

## 4.0 Feed Cable Preparation

**Note:** The following procedure describes the preparation of cable in a 'loop through' or 'ring cut' application. The composite cable being used in this procedure is composed of both copper and fiber optic components. **The copper component should be prepared in accordance with BST or local practices.**

**Note:** In a loop-through configuration, the composite cable oversheathing should be removed from *Ground Line to Ground Line* before cable preparation has been started. This will ensure that the copper and fiber cables can be more easily accessed.

**Note:** The fiber splice tray can be removed to facilitate installer connections, then re-installed when the transportation tube is attached.

### 4.01 Step 1: Align Backboard to Base

Position the fiber organizer assembly (backboard) so that the splice tray holder and fiber basket face towards the **Charles Industries** logo on the front of the base.

### 4.02 Step 2: Install Backboard

If not already in place, install the fiber organizer assembly into the base by sliding the side rails over the mounting features into the base collar until it stops. Audible 'clicks' will be heard as the side rail fits into place.

**Note:** External bonding is accomplished by attaching earth ground to the bond plate that is attached to one mounting leg of the fiber organizer, in accordance with BST practices.

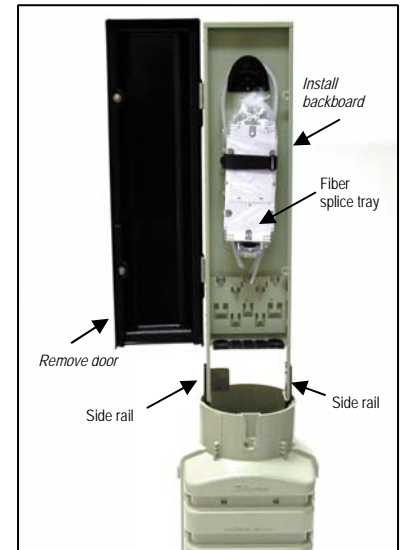
### 4.03 Step 3: Remove Door

Loosen the bolts that secure the door with a 216 tool or can wrench, then lift up and remove the door. Set it aside for later re-installation.

### 4.04 Step 4: Prepare Grommets

Remove the two larger grommets located at the outside edges of the grommet plate. Using scissors or snips, cut into each grommet at the rounded side and proceed to cut the center of each grommet along the radial lines. This will allow for the installation of the grommets on each leg of the looped-through cable.

**Note:** This step is required so that the cable can be slipped through the grommet - simply piercing the grommet will not allow access of the un-cut feed cable. Installation of the grommets also can be completed after the cable has been secured to the pedestal base.



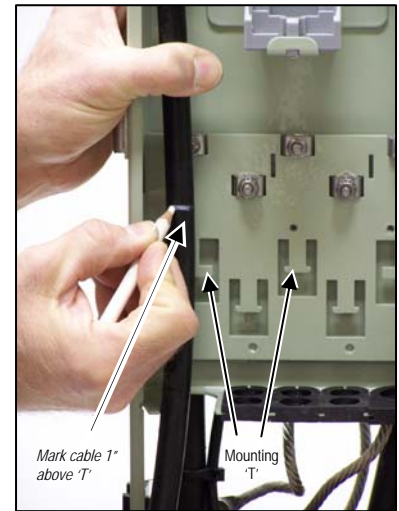


#### 4.05 Step 5: Mark Cable for Sheathing Removal

Align each side of the cable with its appropriate mounting 'T', located at the backboard base, and mark the cable for sheathing removal 1 inch above the base of the 'T'. The marks should measure 18 inches above the ground line or 4 inches from the grommet plate. The marks indicate the sheathing removal length.

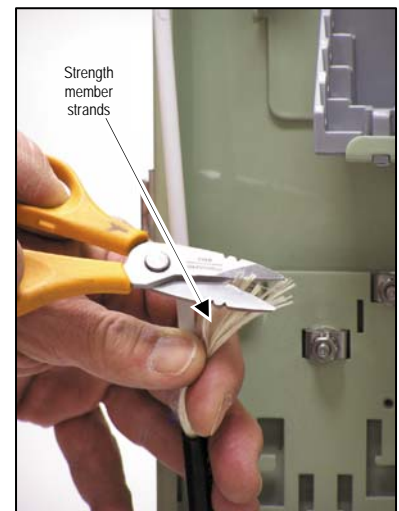
**Note:** In order to facilitate cable sheathing removal, the backboard may be removed from the base. This can be accomplished by depressing the release buttons/tabs located near the bottom of the backboard rails and lifting the assembly up and away from the base.

**Note:** If installing loose buffer tube cable, refer to the assembly instructions for the CFDP 206 pedestal for required details.



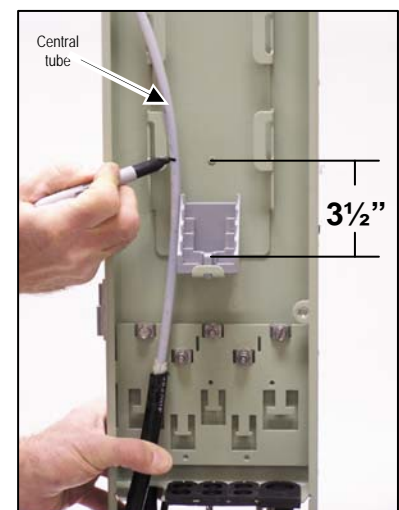
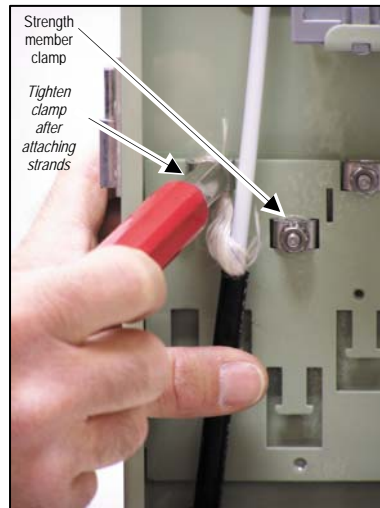
#### 4.06 Step 6: Score/Remove Sheathing to Expose Central Tube

Score the sheathing at each mark made in **Step 4**. In accordance with BST practices, remove the sheathing to expose the central tube and strength member strands. Retain 4 inches of the strand for attachment to the strength member clamps on the backboard base. Reinstall the bracket assembly into the pedestal base if it had been removed prior to this step.



#### 4.07 Step 7: Mark Central Tube for Removal

Align one end of the central tube with the fiber basket and mark the tube 3½ inches from the bottom of the basket. Repeat this step on the other end of the central tube by aligning the tube with the opposite side of the basket. These marks indicate the portion of the tube that will be removed to expose the fiber bundles.



#### 4.08 Step 8: Remove Central Tube, Expose/Clean Fibers

In accordance with BST practices, score and remove the marked length of central tube, to expose the fibers. Clean the fiber binders and separate the fibers that are to be spliced and routed to the splice tray.

#### 4.09 Step 9: Secure and Clamp Feed Cable

Secure the feed cable ends to each appropriate mounting 'T' with the supplied aero or hose clamp. Install the clamp at the T, positioning the cable sheathing cut about 1" above the clamp.

**Note:** Do not over tighten the clamps.

#### 4.10 Step 10: Secure Central Tube Ends

Secure both central tube ends to the inside of the fiber storage basket, using two plastic cable ties per tube.

**Note:** The designated fibers that are to be spliced to drops must be separated from the fiber binder and routed to the splice tray, while the remaining expressed fibers will be stored in the fiber basket.

#### 4.11 Step 11: Cut Desired Fibers

Cut the fibers to be spliced mid-point between the central tube ends.

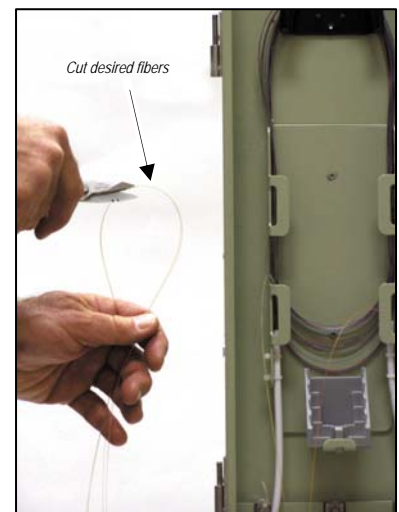
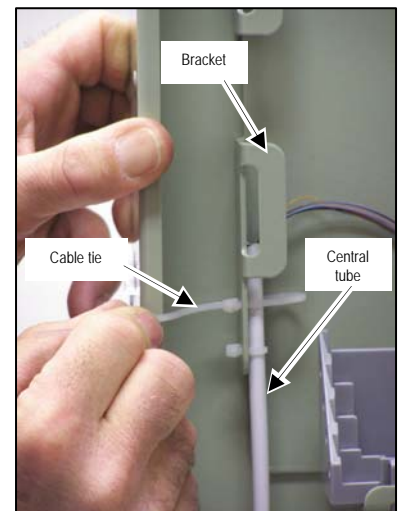
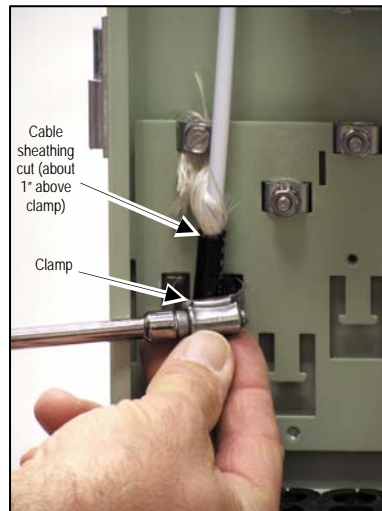
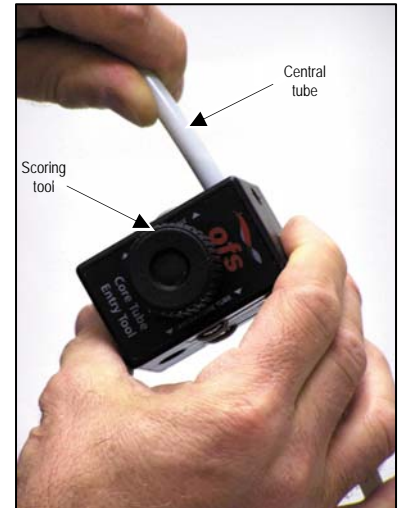
#### 4.12 Step 12: Loop/Wrap Remaining Exposed Fibers

Loop all exposed expressed fibers as well as the unused fiber ends over the bend control at the top of the slack basket, then wrap and store the fibers inside the fiber basket.

#### 4.13 Step 13: Cut a Piece of Transportation Tube

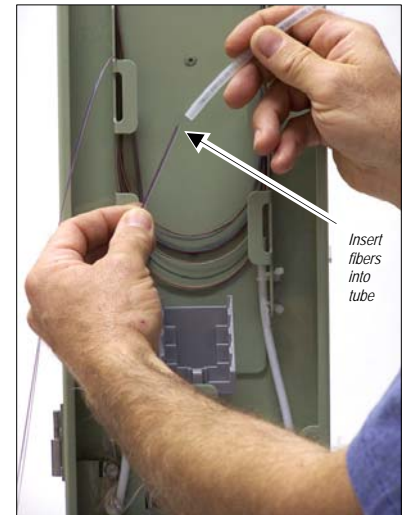
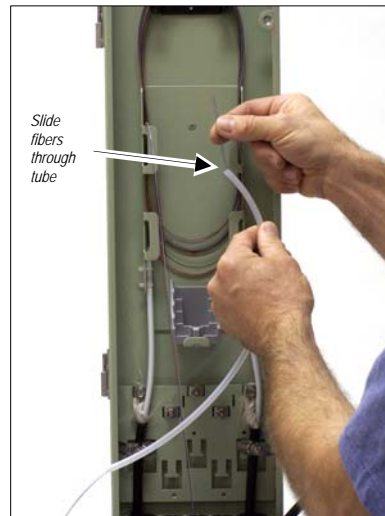
A transportation tube is used to route fibers to the splice tray and must be cut to length. Cut 12-14" off the provided transportation tube.

**Note:** The 14" length of transportation tube has two purposes. First, it helps connect the exposed working fibers to an entry point on the splice tray. Secondly, it protects those exposed working fibers from kinking just before they enter the splice tray, where fibers can potentially break or kink from excessive or repetitive bending or from getting caught in the splice tray hinges.



#### 4.14 Step 14: Route Working Fibers Through Tube

Carefully insert/route the exposed working fibers into and through the 14" length of transportation tube. Slide the fiber through the tube, but before all the slack is removed, loop/route the fiber up and around the black, bend-radius control near the top of the backboard.



#### 4.15 Step 15: Attach One Tube End to Storage Basket Bracket

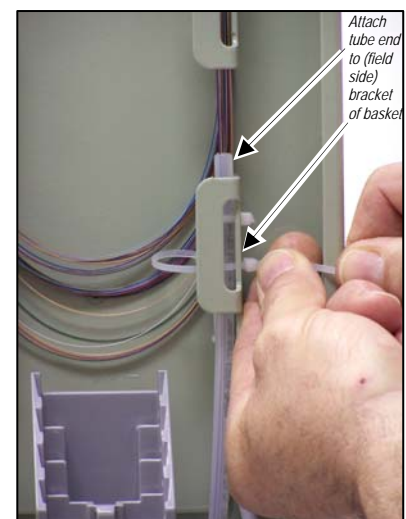
There are four L-shaped brackets on the basket, two on the CO side (one above the other), and two on the field side (one above the other). Attach one end of the cut transportation tube (the end farthest away from the fiber cut-end) to the inside corner of one of the two brackets that are on the side opposite of where the fiber cable entered the pedestal. (Do NOT use a bracket on the same side as the feed cable entry point.) When positioning the tube, allow *approximately 1/4"* of the tube to extend up past the bracket (so you can see it), hold it in place, and secure it there with two cable ties, routing the cable ties through the cable tie-down slots in the bracket.



#### 4.16 Step 16: Route Tube Around Bottom of Splice Tray

Take the other end of the transportation tube and gently loop and route it down and around the bottom of the hinged splice tray(s).

**Note:** Routing the transportation tube this way will prevent any kinking of the tube as it transitions from the storage basket to the splice tray.



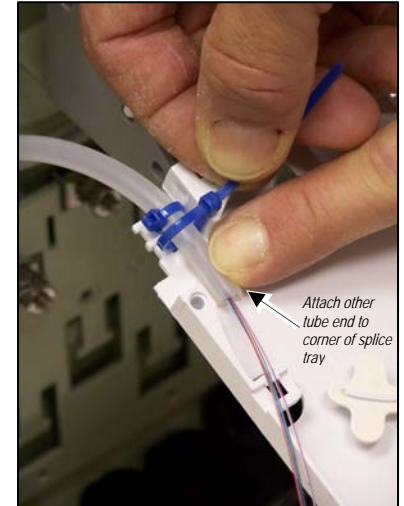


#### 4.17 Step 17: Attach Other Tube End to Splice Tray

Swing down the designated splice tray and remove the clear plastic cover. Secure the other end of the transportation tube to the tray corner near the hinge, on the feed cable side. Position and hold the tube so it overlaps or protrudes into the tray approximately 1", then secure the tube to the tray using two plastic cable ties supplied with the splice tray.

#### 4.18 Step 18: Wrap Fiber into Splice Tray

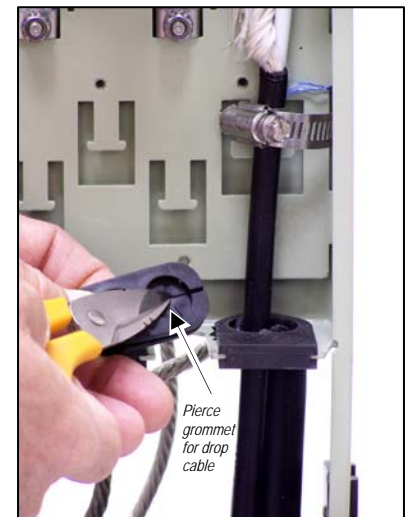
Wrap the remaining length of working fiber into the tray in accordance with BST practices.



### 5.0 Drop Cable Preparation

#### 5.01 Step 1: Prepare Grommet

Remove the drop cable grommet from the position where the drop cable is to be placed. Using a cable sheath knife or snips, puncture the appropriate drop grommet. Slide the grommet over the end of the drop cable and return the grommet to its original position at the base of the basket assembly.



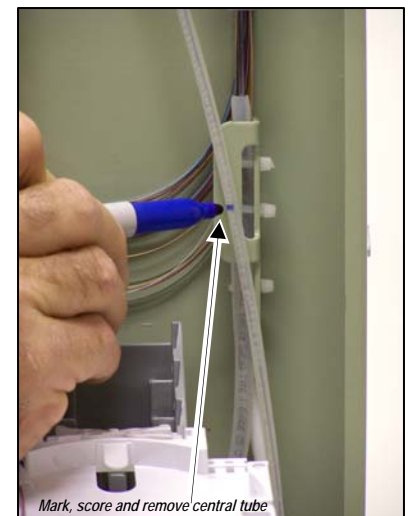
#### 5.02 Step 2: Mark Drop Cable and Remove Sheathing

Align the drop cable with its appropriate mounting 'T' located at the fiber organizer assembly (backboard) base and mark the cable for sheathing removal 1 inch above the base of the 'T'. Score and remove the sheathing in accordance with BST practices to expose the central tube and strength member strands. Retain 4 inches of the strand for attachment to the strength member clamp on the backboard base. A minimum of 7½ feet of central tube should be available for stripping and splicing.

**Note:** The drop cable transportation tube must be routed in the opposite direction than the feed cable transportation tube so that it will terminate on the opposite side of the splice tray.

#### 5.03 Step 3: Mark/Remove Central Tube to Expose Fibers

After the sheathing has been removed, the central tube must be marked and then removed to expose the drop cable fibers. Position the central tube of the cable next to the fiber basket and mark it for central tube removal at a point 1½ inches from the bottom of the fiber storage basket. Score and remove the central fiber tube, in accordance with BST practices.

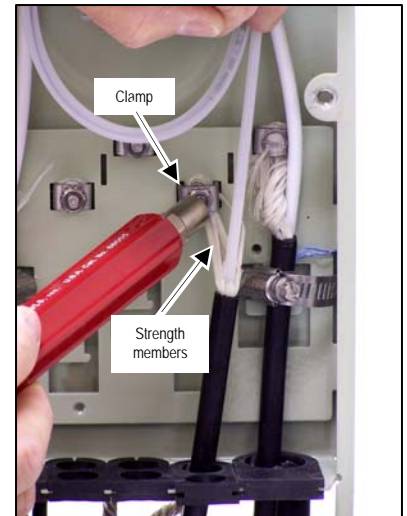


**5.04 Step 4: Group, Secure and Clamp Strength Members**

Gather the 4" length of strength members and route them through and around the strength member clamp provided. It may help to twist and tape the ends while doing this step, to keep the individual members together as a unit.

**5.05 Step 5: Secure and Clamp Drop Cable**

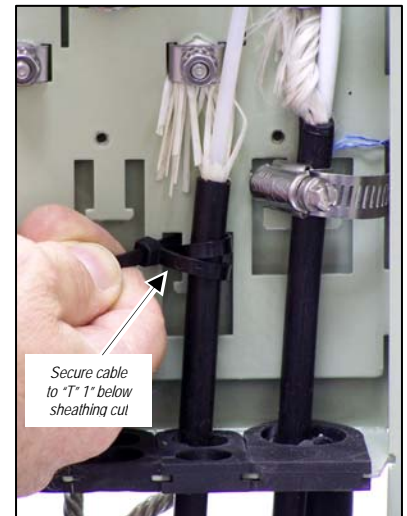
Secure the drop cable to its mounting 'T' with one plastic cable tie 1 inch below the sheathing opening. It is recommended that the plastic cable tie be doubled over the cable and crisscrossed to better secure the cable to the bracket assembly. Secure the strength member strands to the strength member clamp.



**5.06 Step 6: Cut a Piece of Transportation Tube**

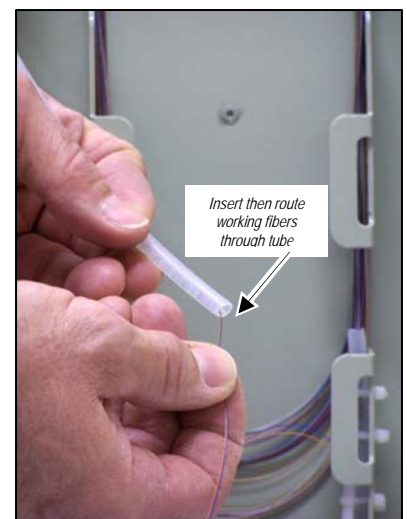
A transportation tube is used to route fibers to the splice tray and must be cut to length. Cut 12-14" off the provided transportation tube.

**Note:** The 14" length of transportation tube has two purposes. First, it helps connect the exposed working fibers to an entry point on the splice tray. Secondly, it protects those exposed working fibers from kinking just before they enter the splice tray, where fibers can potentially break or kink from excessive or repetitive bending or from getting caught in the splice tray hinges.



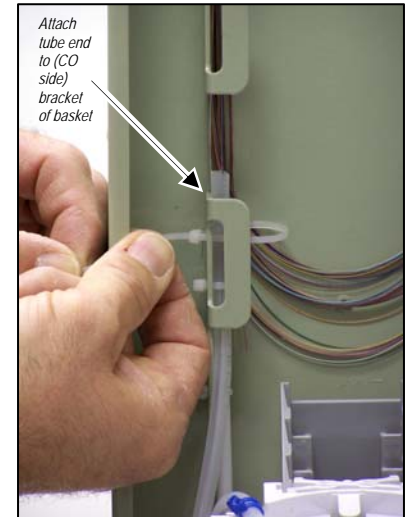
**5.07 Step 7: Route Drop Fibers Through Tube**

Taking care not to kink the drop fibers, insert/route the exposed working fibers into and through the 14" length of transportation tube. Slide the fiber through the tube, but before all the slack is removed, loop/route the fiber up and around the black, bend-radius control near the top of the backboard.



**5.08 Step 8: Attach One Tube End to Storage Basket Bracket**

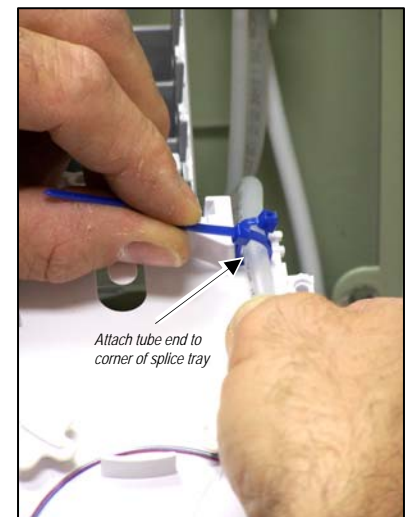
There are four L-shaped brackets on the basket, two on the CO side (one above the other), and two on the field side (one above the other). Attach one end of the cut transportation tube (the end farthest away from the cut fibers) to the inside corner of one of the two brackets that are on the side opposite of where the drop fiber cable entered the pedestal. (Do NOT use a bracket on the same side as the drop cable entry point.) When positioning the tube, allow *approximately 1/4"* of the tube to extend up past the bracket (so you can see it), hold it in place, and secure it there with two cable ties, routing the cable tie through the cable tie-down slots in the bracket.



**5.09 Step 9: Route Tube Around Bottom of Splice Tray**

Grasp the other end of the transportation tube and gently loop and bring or route it down and around the bottom of the hinged splice tray(s).

**Note:** Routing the transportation tube in this manner will prevent any kinking of the tube as it transitions from the storage basket to the splice tray.

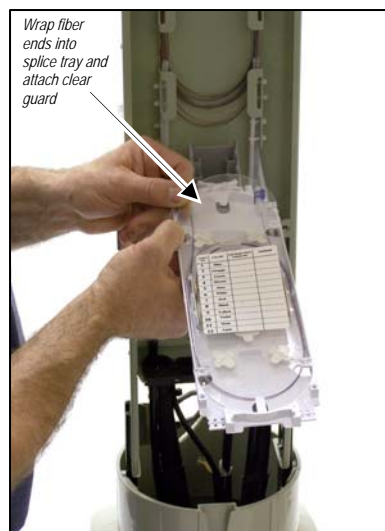


**5.10 Step 10: Attach Other Tube End to Splice Tray**

Swing down the designated splice tray and remove the clear plastic cover, if not already removed. Secure the other/remaining end of the transportation tube to the tray's corner near the hinge, on the drop cable side (opposite the feed cable side). Position and hold the tube so it overlaps or protrudes into the tray approximately 1", then secure the tube to the tray using two plastic cable ties supplied with the splice tray.

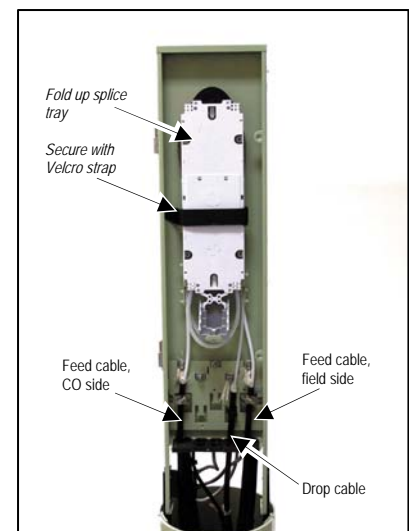
**5.11 Step 11: Wrap Fiber into Splice Tray**

Wrap the remaining length of working fiber into the tray in accordance with BST practices.



**5.12 Step 12: Attach Clear Fiber Guard to Tray**

Attach the clear plastic fiber guard to the front of the splice tray. Insert the Velcro tray straps into the slots at the outer edges of the fiber basket and secure the tray to the front of the basket as shown in the accompanying photo.





## 6.0 Closing the Pedestal

**Note:** Prior to closing the pedestal, ensure that no fiber is protruding from the storage basket or grommet shelf and that all grommets are in place.

### 6.01 Step 1: Install and Secure Door

After the buffer tube(s) and fiber splice tray(s) have been routed and secured in the organizer basket, install the fiber side door onto the fiber organizer assembly (backboard). Secure the door with a 216 tool, or can wrench, and tighten the security bolts.

### 6.02 Step 2: Install Dome

Slide the pedestal dome over the backboard assembly, making sure that the dome lock is facing forward towards the **Charles Industries** logo. Gently press down on the dome; the lock is properly engaged when an audible “click” is heard.



## 7.0 Splicing

### 7.01 Step 1: Remove Dome and Open Door

Remove the dome with a 216 tool or can wrench by turning the nut  $\frac{1}{4}$  turn counterclockwise. Open the interior fiber side door with a 216 tool, or can wrench.

### 7.02 Step 2: Access the Splice Tray

Loosen and unwrap the splice tray strap and lower the splice tray.

### 7.03 Step 3: Splice the Fibers

Splice the fibers and secure them in the splice tray in accordance with BST practices.

### 7.04 Step 4: Secure Tray

Raise the tray, then secure the tray with the strap.

### 7.05 Step 5: Close and Secure Door

Close the fiber side door and secure the door by tightening the security bolts with a 216 tool, or can wrench. Follow **Step 6.02** to position and secure the outer dome assembly.



## 8.0 UMS Stake Installation

### 8.01 Step 1: Determine Stake Placement

Prior to attaching the stake to the pedestal base, use the base as a locating guide for placement of the stake. With base in position around the cables or conduit, place the stake to the side or rear of the base.

### 8.02 Step 2: Drive Stake

Using a mallet, tap the stake into the ground. Remove the base from around the cables or conduit and finish driving the stake into the ground until approximately 1½ inch of the stake is above ground level.

#### CAUTION

The mounting stake is made of steel. It will conduct electrical currents and may cause damage to hidden objects. Use extreme caution when placing this metal stake. When placement of stake is complete, test with voltage detector before continuing. Reference local safety practices before installing.

### 8.03 Step 3: Attach Base to Stake

Attach the base to the stake utilizing the hardware provided. In case of missing or lost hardware, the following hardware is required:

- 3/8"-16x2 in. hex bolts; qty. 2
- 3/8"- split lock washers; qty. 2
- 3/8"- flat washers; qty. 2
- 3/8"-16 hex nuts; qty. 2



## 9.0 Pole Mount Installation

### 9.01 Step 1: Attach Base to Pole-Mount Bracket

After preparing the pit or trench, attach the base to the pole mounting bracket utilizing the provided hardware. In case of missing or lost hardware, the following hardware is required:

3/8"- 16x2 in. carriage bolts; qty. 2

3/8"- split lock washers; qty. 4

3/8"- flat washers; qty. 4

3/8"- hex nuts; qty. 4

3/8"x 2½ inch lag bolts; qty. 2

**Note:** All hardware is either 300 series SS or galvanized steel.

### 9.02 Step 2: Attach Base and Bracket to Pole

Place the base, with the bracket attached, against the pole in the desired position. Using a lag bolt and mallet, tap the bolt into the pole deep enough for the threads to catch. Once the screws are started with the mallet, complete the installation of the carriage bolts utilizing either a socket, or an open end, wrench.

## Technical Assistance

If technical assistance is required, please contact the **Charles Industries Ltd.** Technical Services Center at one of the following numbers or by using the Internet.

**847-806-8500 (local)**

**800-607-8500 (toll free)**

**847-806-8556 (fax)**

**techserv@charlesindustries.com**



NETWORK EDGE INNOVATIONS™

**U.S. PATENT PENDING**

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