Charles Multi-Purpose Housing (CMPH™) Interconnect (IT) Series of Pedestal Enclosures

1. GENERAL

1.1 Document Purpose

This document provides installation instructions for the Charles Multi-Purpose Housing (CMPH™) Interconnect (IT) Series of Pedestal Enclosures. These enclosures come factory-equipped with one Charles CFDP206–EL08 pedestal fiber organizer mounted inside the enclosure. Additional fiber organizers can be ordered separately (the CMPH can house up to three fiber organizers). Included herein are instructions to:

- install a new enclosure in the ground (Table 1)
- install a new enclosure base using stakes (Table 2)
- install a rehabilitation enclosure in the ground (Table 3)
- install (open, route, terminate) a feed cable at the interior fiber organizer (Table 4)
- install twelve 2mm FC or SC-type pigtails at the fiber organizer (Table 5)
- install a 12-fiber 900 micron fanout assembly at the fiber organizer (Table 6)
- install/turn–up additional fiber organizers within the CMPH enclosure (Table 7)
- install preconnectorized drop cables at the fiber organizer (Table 8)
- prepare fibers, tubes and splice tray for splicing (Table 9)
- close up the CMPH enclosure (Table 10)

This product is used in fiber applications where preconnectorized SC or FC connections are desired, such as at cell sites to service multiple wireless operators. See Table 12 for ordering information on products and options in this product series. Call Charles Industries (see Part 3) to request more information.

- NOTE -
Hereafter the Charles Multi-Purpose Housing will be commonly referred to as the "CMPH" or "enclosure." Specific model numbers are referenced where key differences apply.

1.2 Document Status

Whenever this document is updated, the reason will be stated in this paragraph. Print 2 removed the optional hasp, and the CMPH-IT2 and CMPH-IT3 models. Print 3 adds Steps 6-7 of Table 4, updates Steps 9, 18, 19, and 13 of Table 4, updates the look of the cable attachment unit in all applicable figures, and changes the page size of this document to 8.5" x 11". Print 4 includes a description of both housing lock types (front-side self-locking latch or right-side flap-latch), reflects the addition of a 4-adapter storage panel in the CMPH's fiber organizer, adds more installation steps and separates the instructions for each set of installation tasks into individual tables.

1.3 Product Purpose and Description

1.3.1 CMPH Exterior. The exterior of the CMPH consists of a non-metallic, two-piece, rectangular, above-grade OSP enclosure that offers easy installation, superior structural strength, 360° technician access, generous cable storage capacity, and protection against corrosion, floods, fire, weather, soil, insects, intrusion, dents and impact for fiber-optic cable splices and customer service drops in FTTP and FTTC (Fiber to the Cell Site) deployments. The two exterior pieces of the CMPH are the base and the dome. The enclosure base has ribbed walls, internal, dual-purpose, molded-in, channel grooves (which accept most metallic stakes as well as the vertical channels of the internal framework, see Figure 2), an open top, and an open bottom. Easy replacement installations and easy underground cable access is provided via the open base bottom. The top piece of the CMPH is the locking dome, designed to overlap the base for a flood-protective bell-jar effect.

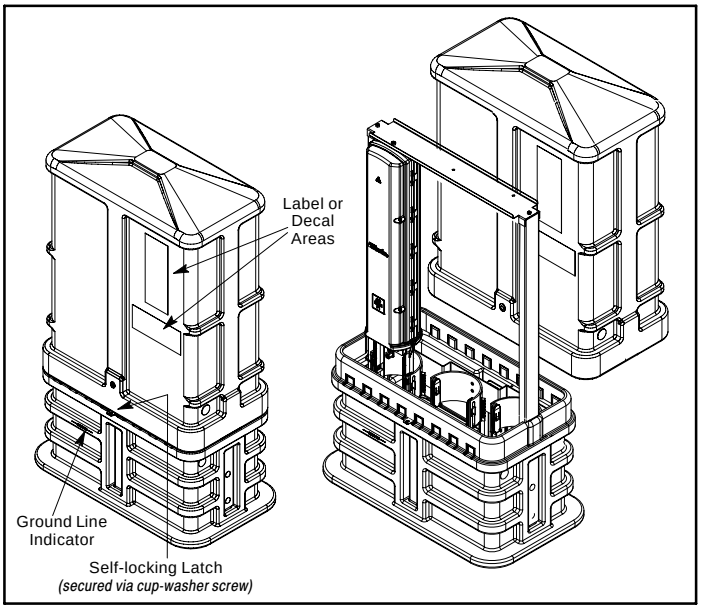


Figure 1. Typical CMPH-IT1 Enclosure, Closed and Open Views

1.3.2 CMPH Interior. The interior of the CMPH consists of an internal framework which supports either one, two, or three CFDP206-EL08 pedestal fiber organizers mounted in the frame (hereafter referred to as the "backboard" or "CFDP"). Each fiber organizer is enclosed and secured with two large locking doors, one on the CO side and the other on the customer side, that separate the drop connections from the CO feed connections. Up to 24 connections can be made with SC or FC-type pre-terminated cables at the fiber organizer's interconnect bulkhead adapters (8 per fiber organizer). Feed side cables may be either a pre-terminated type connected directly to the CO side of the bulkhead, or a loop-through or stub-end cable requiring sheath removal, attachment, and splicing in the provided splice tray. Connectorized fan-outs or pigtails are spliced to the CO fibers and terminated at the bulkhead. Three-meter long SC or FC-type pigtails are available from Charles Industries. Customer side cables are typically a pre-terminated type with an SC or FC connector at the fiber organizer , and these connectors are routed and inserted into the corresponding-numbered adapters for each Customer line placed in service. Provided with any additional fiber organizer ordered is a 3/4" diameter split tube to facilitate feed fiber transport from the first fiber organizer to the second and third fiber organizers *(Note: a minimum fan-out or pigtail length of 60" is required)*. Labels are provided on the inside at each door and near the bulkheads for connector-to-adapter matching. The fiber organizer also enables technicians to route, bond, and attach various cables, tubes, splice trays, fiber management D-clips, splitters or other equipment, if needed. The bonding plate enables grounding and bonding connections either inside the fiber organizer's locked compartment or outside the fiber organizer for line maintenance and testing.

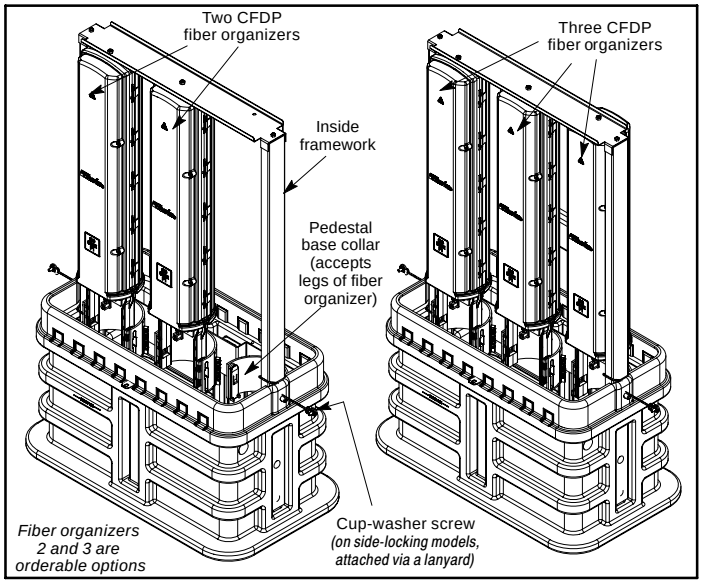


Figure 2. Dome Off Views of CMPH Interconnect Enclosures

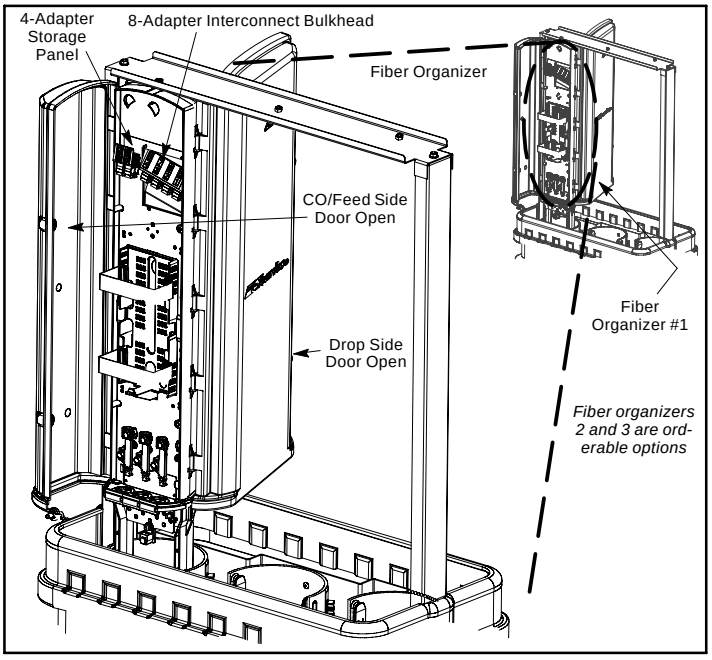


Figure 3. Fiber Organizer Doors Open on CMPH-IT1

1.4 Product Mounting Type and Location

The CMPH is an above-grade enclosure, the base of which is typically installed at the cell site or FTTP distribution point in the ground up to the ground line indicator on the base. The ribbed or corrugated base walls provide excellent stability in most soil types. The dome mounts on the base and protects all equipment installed or mounted inside the CMPH. The internal CFDP fiber organizer, where all cable preparations are performed, mounts to sturdy framework secured to the base. After cable installation is complete, the fiber organizer doors are secured to protect all cabling and connections, then the outer dome is installed on the base for further protection. Base stake mounting is accomplished via molded channel grooves, which are located at the center of each interior base side wall. These grooves accept most new and existing enclosures' mounting stakes.

- CAUTION -

Perform all bonding and grounding prior to making any communications connections.

2. INSTALLATION

The tables that follow group the installation steps per the task or procedure type to enable the installer or technician to quickly locate the desired instruction set (Paragraph 1.1 lists the table types). Note :the entire document instruction set assumes the following applications and cable configurations.

Application presumptions

- **Site Cable Configuration or Deployment** - The fiber cable deployment is a CO or feed cable in a stub-in configuration (though not described in these instructions, these pedestals support loop-through applications and preconnectorized feed cables, as well).
- **Trench Setup** - A cable trench is already present and open, or backfilled with the feed cable readily available.
- **Feed Cable Type or Design** - The CO/feed cable is a loose buffer tube-type, typically a 24-fiber cable (two tubes of 12 fibers each). *Note: the CMPH accommodates most cable types.*
- **Drop Cable Type** - Drop cables are typically SC or FC-type preconnectorized cables. *Note: the CMPH accommodates most cable types.*
- **Transportation Tubing** - Protective, flexible, transportation tubing is provided for internal transport of 900-micron fan-out feed fibers, if fan-outs are used (one tube provided).
- **Cable Management clips** - Cable management D-clips (rings) are provided for internal fiber routing and management when 2mm jacketed pigtails are used.

For information regarding other installation types or applications, or cable deployment types, contact Charles Industries (see Part 3).

- CABLE DAMAGE WARNINGS -

Be careful not to damage any buried cables or service wires while digging either to expose cables or to prepare a hole or trench, or while driving stakes.

Buffer tubes and fibers are sensitive to excessive bending, pulling, and crushing forces. To avoid kinking of buffer tubes and fiber damage or breakage, exercise great care when working with fiber, and do not exceed or violate minimum bend radius requirements for fibers, buffer tubes, and cables.

- GROUNDING WARNINGS -

Always follow local codes and company practices for performing proper cable and site bonding and grounding, and perform all bonding and grounding prior to other electrical, fiber, and communications connections.

- BODILY HARM WARNINGS -

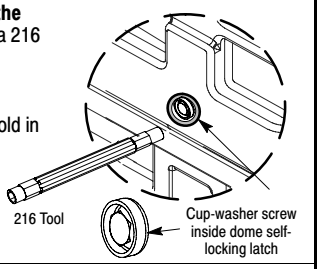
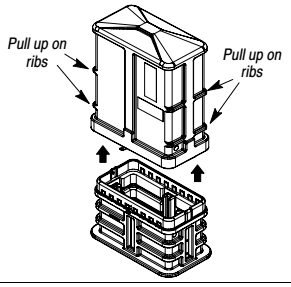
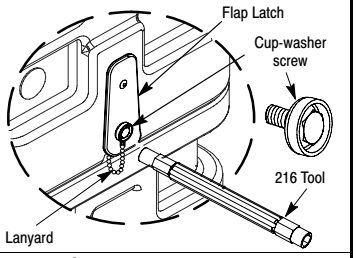
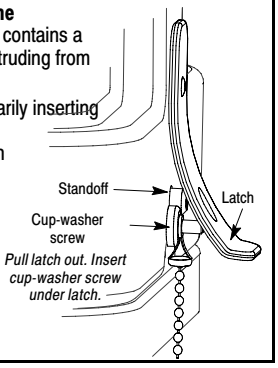
Risk of serious eye damage! Never look into the end of a fiber optic line or circuit nor use a magnifier in the presence of laser light or radiation. Always exercise caution when installing, testing, or performing maintenance on live circuits. If eye exposure to laser light or radiation has occurred or is suspected, immediately seek medical treatment by a professional eye care physician.

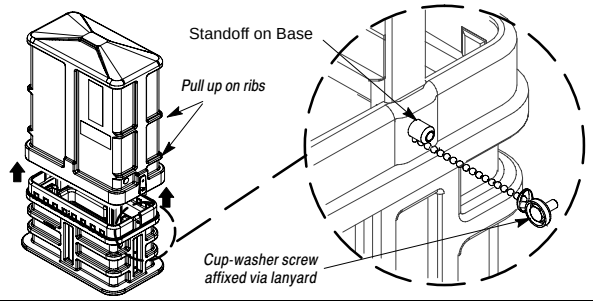
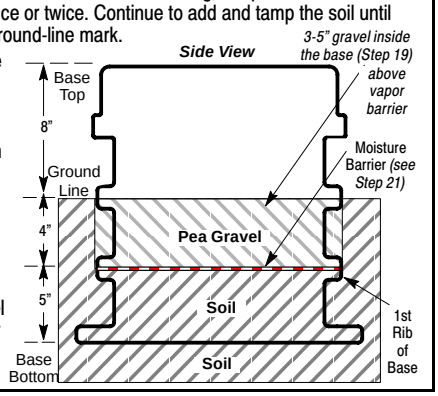
Shards and cleaved glass fibers are very sharp and can easily pierce the skin. Do not let cut pieces of fiber stick to your clothing or drop in the work area where they can later cause injury. Use tweezers to pick up cut or broken pieces of glass fibers and place them in a container specifically meant for this purpose.

The corrugated metal or armor that may be present in the feed cable is very sharp at the cut or exposed edges. Extreme caution should be taken to prevent personal injury. Protective work gloves are recommended when handling armored cable.

Cable and fiber cleaning solvents may contain hazardous materials or harmful ingredients. Always read and follow the MSDS when working with cleaning solvents or products.

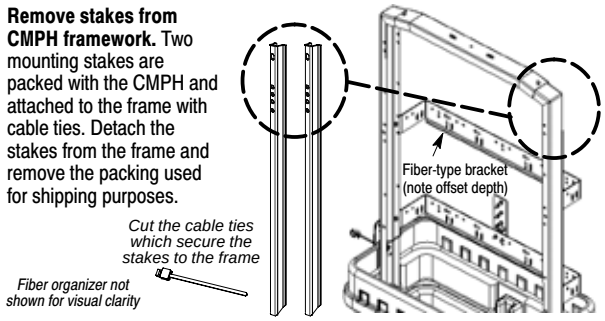
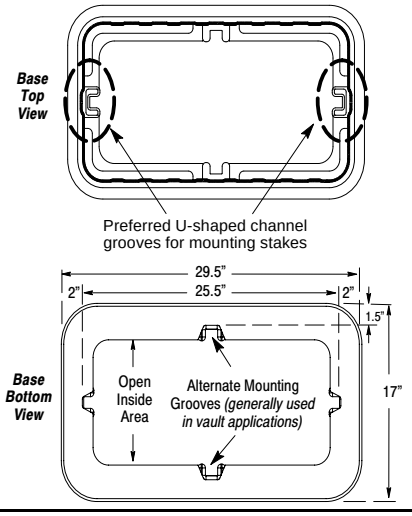
Table 1. Installing a New CMPH Enclosure

Step #	Instruction
1. □	**Obtain tools, materials, and equipment.** Gather the following equipment to perform the CMPH exterior enclosure installation. □ 216 tool or can wrench □ Charles CMPH model □ Scissors, knife or snips □ Level □ Measuring tape □ Soil tamping tool(s) □ Soil for backfill □ Trenching and digging equipment and tools □ Cable grounding materials and tools □ Cable opening and management equipment □ Clean, dry, pea gravel *(3/8"-5/8" diameter)* □ Conduit and conduit caps *(optional)* □ Wrenches or socket set □ Site cleanup tools
2. □	**Prepare trench.** ***Do not damage any buried cables while digging.*** Dig and prepare the cable trench, per company practice.
3. □	**Place cables (or conduit or innerduct) in trench.** Follow company practice to lay, place, and cut any cables and innerduct or conduit.
4. □	**Unpack and inspect equipment.** Remove the CMPH from its packaging. Inspect the unit upon delivery; if damaged in transit, report the damage to the shipping company.
5. □	**Unlocking the CMPH via one of two methods.** Use one of the following two methods to unlock the CMPH, depending upon the CMPH's lock option. For units with a front-wall latch, follow steps 6–7 below. For units with side wall flap latches, follow steps 8-10 below.
6. □	**Front-wall latch model: Disengage the CMPH lock.** Unlock the CMPH using a 216 tool or can wrench at the front hex nut-in-cup washer screw; turn the cup-washer screw counterclockwise approximately 1/4 turn until it stops. Hold in this position, then lift the dome up approximately 1" (enough to disengage the self–locking latch) by grasping and lifting the molded side rail. 
7. □	**Front-wall latch model: Remove the dome.** Set aside the can wrench after slightly lifting the dome. Use both hands to grasp the side rails (ribs) and completely lift off the dome from the base. Set aside the dome for later use. 
8. □	**Short side-wall latch model: Unlock the CMPH.** Unlock the CMPH using a 216 tool or can wrench at the cup-washer screw (one at each side of the CMPH); turn the cup-washer screw counterclockwise until it hangs from its lanyard. When locked, the cup-washer screw prevents movement of the flap-latch. 
9. □	***Short side-wall latch model:*** **Disengage the flap-latches.** The limited-flexibility flap-latch contains a hole in it that accepts the round standoff protruding from the side of the base collar. Maintain the flexed or pulled-out latch position by temporarily inserting the cup-washer screw or an item of similar diameter or thickness under one latch (between the latch and the side wall). Do not pry or flex the latch too far, only enough to clear the standoff. ***Never grasp or use the flap-latch as a handle to lift the dome off the base; latch breakage and possible enclosure intrusion could result.*** 

10. □	***Short side-wall latch model:*** **Remove the dome.** With the flap latch disengaged from the base stand-off, grasp the ribs at each side of the dome and lift to remove the dome The cup-washer screw remains attached to the base via the lanyard (or chain). Set aside the dome for later use. 
11. □	**Locate and remove red plastic bag.** Remove the red bag labeled "moisture barrier" included with the CMPH. Set it aside for later use.
12. □	**Optional - Replacement or rehabilitation mountings only.** For applications to replace old enclosures, continue with the steps in Table 3.
13. □	**Determine and mark base installation location.** To determine exactly where to place the base in the trench, use the base itself as a positioning template by placing it up over the top of the conduit, innerduct, or cables *(route the cables through the base)* and lowering the base to the ground. Analyze the site and position the base at its proposed final orientation and horizontal positioning in the trench or hole and adjust accordingly. Mark this proposed final spot by removing a shallow layer of top soil from around the outside perimeter of the base about 2-4 inches wider than the base. Set the base aside.
14. □	**Dig a hole for the base.** ***Caution: Avoid damaging buried cables, wires, innerduct, conduit or ground equipment whenever digging.*** At and within the marked perimeter boundary, dig *straight* down to a depth of 9 inches. Do not dig too deep.
15. □	**Optional - Stake mountings only.** For stake mounting applications, continue with the steps in Table 2.
16. □	**Put base in hole or trench and route cable(s) through base.** Route the cables and conduit or innerduct up through the bottom of the base, then put the base in the prepared hole or trench. *Note: Ensure the base location allows technician access to the lock and any equipment installed or to be installed in the CMPH.*
17. □	**Verify proper base depth.** Before backfilling, verify the base is at the proper depth (approx. 9" deep). Rest the base on solid or well-tamped soil when measuring this distance. Verify the base ground line indicator is at the final-grade ground line level. Remove, add, or tamp more soil as necessary.
18. □	**Level the base.** Verify that the base is level. Check the level in both dimensions; front to back, and side to side. Make any needed base-bottom soil adjustments to bring the base to a level position.
19. □	**Prepare earth ground.** ***Always follow local codes and company practice when preparing earth ground and when grounding cables or equipment.*** If an earth ground is not present at the CMPH site and local code or practice requires an earth ground, prepare one now. Attach the earth ground to the CMPH's ground lug on the ground plate using a ground wire of proper gauge, per company practice.
20. □	**Backfill and tamp outside the base.** With the base in place, backfill the trench or hole outside of the base. While backfilling, tamp the soil or fill and check the base level once or twice. Continue to add and tamp the soil until the soil is at the base ground-line mark. **Backfill soil inside the base and tamp.** First plug, cap, or cover all channel, conduit, or in-nerduct openings. Then per company practice, backfill soil *inside* the base, tamping soil peri-odically, up to *(approximately)* the first rib. This adds stability and prevents any gravel (Step 22) from falling or slipping under the base sides as it is added. 

21. □	**Place the red-plastic vapor barrier.** Locate the provided, red-plastic, vapor-barrier bag previously set aside, cut it open on all but one long edge to make one large plastic sheet, verify it does not have any large holes in it (if it does, seal them with duct tape), and place it into the base on top of the soil fill. Completely cover the soil. Fit the bag around the cables, conduit, or inner-duct, spread it outward from the center, and press all sheet edges downward where they make contact with the base walls. Alternately, cut a hole or "X" in the center of the sheet, drop the sheet down over the centered cables or conduit group, bring it all the way down to the tamped soil or fill, fit the sheet's inner hole edges around the cables or conduit, and spread it out as underlined above. When installed properly, this sheet acts as a vapor barrier and aids moisture run-off into the soil. ***Failure to use the plastic moisture-barrier bag on top of the soil significantly increases the risk of condensation inside the enclosure.***
22. □	**Add gravel inside the base.** Pour 3-5 vertical inches of company-approved gravel (gravel minimizes condensation and drains well) into the base (to the top base rib, or 2" below any innerduct or conduit opening) on top of the soil. Use 5/8" (or less) diameter pea gravel, or clean, dry, non-porous, gravel rock only (cut stone retains more moisture). Five 18-pound bags work well. Spread out and level the gravel.
23. □	**End of base installation - determine next procedure.** If cable work will now be performed, go to Table 4 and consult local practices and equipment manufacturer instructions for the proper procedures. If further cable work will NOT be performed at this time, go to Step 5 below to close the CMPH.

Table 2. Installing the CMPH with New Charles Stakes

Step #	*Instructions*
	Charles offers some CMPH models that include 2 mounting stakes (either 30", 36", or 42" long). All stakes have identical hole patterns. This table describes how to install these models.
1. □	**Prepare the CMPH, trench, and cable.** Perform Steps 1-14 of Table 1 to open the enclosure and prepare the hole or trench and the cables or conduit. Verify the base installation site is ready and suitable for metallic stakes.
2. □	**Remove stakes from CMPH framework.** Two mounting stakes are packed with the CMPH and attached to the frame with cable ties. Detach the stakes from the frame and remove the packing used for shipping purposes. 
3. □	**Determine which grooves to use for stakes.** The base contains a molded-in dual-purpose groove at the center of each wall to accept the U-shaped mounting stakes (as well as the U-shaped vertical channels of the frame). Per local company practice and site conditions, select two wall grooves that are appropriate for stake attachment purposes (the grooves on the shorter side walls are typically used). 

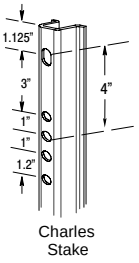
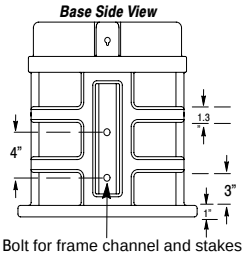
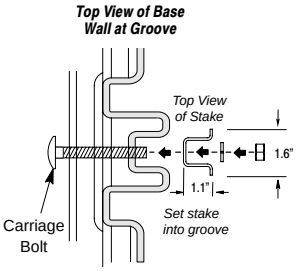
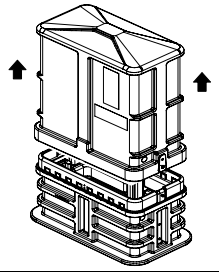
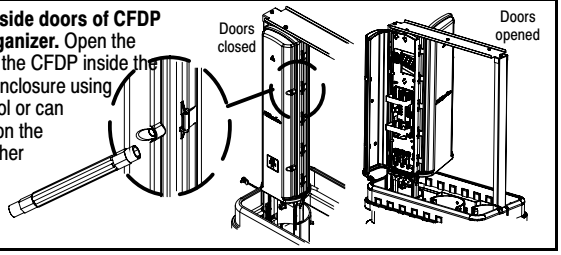
4. □	**Attach stakes to grooves in base.** Set the base on the ground or a raised surface to access the grooves through the base bottom. On the inside of the base, remove the nuts and washers from the bolts (which are 4" apart) that secure the frame channels in place. On the mounting stake, the distance between the first and third hole down from the top of the stake is 4". Insert the top of the stake into the base, rotate the stake so it will fit properly into the base groove (so the perimeters match), align the stake holes with the bolts in the base, and set the stake in place in the groove. Re-install the lock washers and nuts that were removed to secure both the mounting stake and frame channel in place. Repeat for the other stake.   
5. □	**Verify hole or trench accommodates stake length.** Lift the base and attempt to place it back in place in the trench or hole. If the trench is deep enough to accommodate the length of stake protruding from the bottom of the base, disregard the remainder of this step. If the hole or trench is not deep enough to accept the stakes, and the weight of the base is not enough to drive the stakes the length needed to allow the base to rest at its proper depth, then once again use the base as a template to mark the exact stake locations in the ground where more soil must be removed. Remove the base from the hole, and at the stake-hole indentations, dig down just enough to accommodate the length of the stake.
6. □	**Set base in place, bring cables into base.** When the hole is deep enough for the stakes, again lift the base by its walls or ribs and set it back into the hole, being sure to enclose or encompass within the base all cables, innerduct, conduit or equipment present at the site and intended for storage inside the enclosure.
7. □	**Finish the installation.** Perform Steps 17-11 in Table 1 to finish the installation. Backfill and firmly tamp soil *into the stake holes* when backfilling.

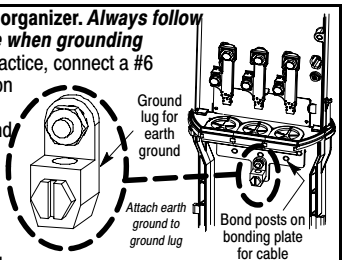
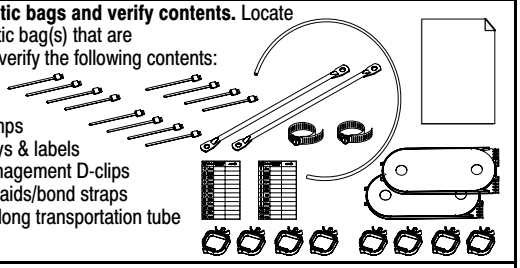
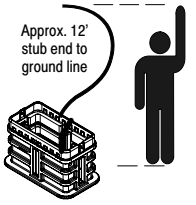
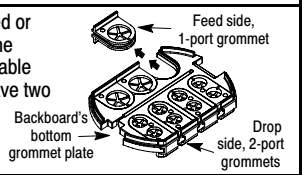
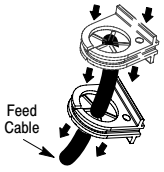
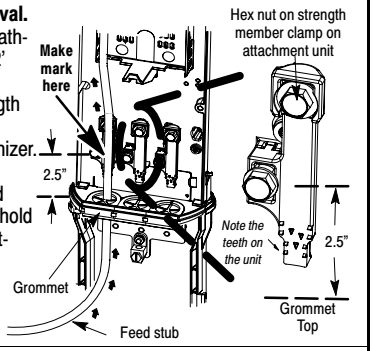
Table 3. Replacing or Rehabilitating Enclosures

Step #	*Instructions*
	The Charles CMPH has the same footprint as the UPC 1200 series. These instructions describe how to replace a UPC 1200 with a Charles CMPH. To replace enclosures with smaller footprints, remove the smaller enclosure and dig a wider hole, as described in Step 13 of Table 1.
1. □	**Prepare the base, trench, and cables.** Locate the old or existing enclosure (such as the UPC 1200 series) to be replaced. Perform Steps 1-11 of Table 1 to prepare the new Charles CMPH enclosure, the hole or trench, and the cables or conduit (skip Steps 2-3 if trenching and new cable placement is not required).
2. □	**Dig around existing enclosure.** Remove the soil from around the existing enclosure. Dig deep enough so the enclosure can be lifted and removed.
3. □	**Prepare existing enclosure for removal.** Remove the bottom panels of the UPC 1200. Locate the mounting stakes and remove the nuts and bolts from them. Remove all attachments to the enclosure, including cable supports and tie wraps, bonding connections, and grounding connections.
4. □	**Remove the old enclosure.** Completely remove the existing enclosure.
5. □	**Protect cables and connections.** Per company practice, wrap the existing splice as tightly as possible without damaging the wire (fiber) connections.
6. □	**Analyze condition of existing mounting stakes.** Inspect the existing mounting stakes for possible re-use. *If* they are deteriorated, bent, out of alignment, or have a hole pattern that will not work with the Charles CMPH base, carefully remove the stakes and install new ones per company practice (consult Table 2 if desired).
7. □	**Optional - remove the CMPH's horizontal splice bars and/or ground bracket.** Determine if it will be necessary to temporarily remove any of the CMPH's internal, horizontal, supportive splice bars or brackets in order to fit the existing cabling, connections, splices, and equipment into the CMPH during the base installation. After base installation, re-attach the bars and brackets (Step 10).

8. □	**Set base in place.** Lift the base over the existing cabling and equipment, and route the wrapped splice and all equipment up through the base bottom while lowering the base to the bottom of the hole. If the existing stakes were used, verify they are *inside* the base. If new stakes were attached to the base, insure the hole accommodates them. Perform Steps 17-18 of Table 1 for the proper base depth and level.
9. □	**Attach base to re-used stakes.** Remove the nuts and washers from the 4 bolts located inside the CMPH base that secure the frame channels in place (2 bolts on each side, 4" apart). Manipulate the base and/or stake tops so the re-used stakes fit into the preformed stake grooves in the base walls. Align the base bolts with the stake holes, and re-attach the washers and nuts onto the bolts. Firmly tighten nuts.
10. □	**Attach cables to bars and brackets.** If the splice bars or brackets were removed, re-install them now in the best positions to support (and ground) the equipment. Per company practice, attach or mount all cables and equipment to the internal framework (bars, brackets) of the CMPH. Re-attach any grounding, bonding, and cable connections previously unattached to remove the old enclosure.
11. □	**Close the CMPH and clean the site.** Perform Steps 1 to 11 of Table 1 to close the CMPH and restore the site to its previous condition.

Table 4. CO Feed Cable Installation & Connections

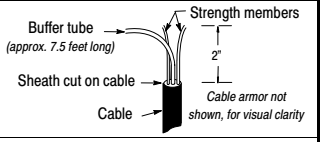
Step #	*Instruction*
1. □	**Obtain tools, materials and equipment.** Gather the equipment listed below to install the feed/drop fiber cables inside the enclosure's fiber organizer: □ 216 tool/can wrench □ Tape measure □ Cable marking tool □ Labels for cables *(optional)* □ Hose clamps *(2 provided)* □ Cable bond clamps *(optional)* □ Proper length drop cables □ Drop trenching equipment □ Wrenches or socket set □ Straight slot screwdriver □ Gel removal compound *(to clean stripped cables)* □ Isopropyl alcohol & clean wipes *(to clean fibers)* □ Site clean-up tools □ Properly installed base of CMPH model □ Dome & fiber organizer *(1 provided)* □ Bag of parts *(provided with fiber organizer)* □ Assorted cable ties □ Splice tray and labels for splice tray □ Knife, snips, or puncture tool *(to cut grommets)* □ Cable-entry tool or utility knife with hook blade □ Buffer tube stripper tool *(to score/cut tubes)* □ Fiber optic stripper tool *(for 900 micron pigtails)* □ Fiber splicing tools and equipment □ Approved cleaved fiber container □ Safety glasses & work gloves *(optional)* □ Shovel *(as needed)* □ Grounding equipment & tools
2. □	**Remove outer dome from base.** Repeat Steps 5-10 of Table 1 to remove the CMPH exterior dome from the CMPH base. 
3. □	**Open inside doors of CFDP fiber organizer.** Open the doors of the CFDP inside the CMPH enclosure using a 216 tool or can wrench on the cup-washer screws. 

4. □	**Connect earth ground to the fiber organizer.** ***Always follow local codes and company practice when grounding cables/equipment.*** Per company practice, connect a #6 earth ground wire to the ground lug on the bonding plate at the bottom of the fiber organizer. Loosen the ground lug screw, insert the ground wire into the hole at the lug base, hold the wire in place, then firmly tighten the screw. After earth ground is connected to the ground lug, the bond posts can be used to bond cables. 
5. □	**Remove plastic bags and verify contents.** Locate the clear plastic bag(s) that are provided and verify the following contents: □ Document □ Cable ties □ 2 hose clamps □ 2 splice trays & labels □ 8 Fiber management D-clips □ 2 ground braids/bond straps □ One 3-foot long transportation tube 
6. □	**Verify sufficient feed cable length.** Verify approximately 12 feet of cable, from the ground line to blunt-cut stub-end of the cable, is available at the CMPH base, and raise it up and out of the base. Position the cable so it will be at the CO or feed side of the pedestal's fiber organizer (the side with fewer but larger rubber grommet ports), when it is installed. 
7. □	**Remove single-port feed grommet.** Feed or CO cable grommets (on the rear side of the back- board) have one port for one feed cable (unlike the drop cable grommets which have two smaller ports each). Remove one of the single-port feed grommets from the bottom grommet plate. 
8. □	**Push cable through grommet.** Push the stub end of the cable through the thin center area of the grommet (at the center of the star shape). Slide the grommet down the cable, stopping near the grommet plate. Rotate the grommet so it is aligned with its slot on the plate, then re-insert the grommet in the plate. Pull up on the cable to reduce excess cable slack. 
9. □	**Mark cable for sheathing removal.** Approximately 10.5' of cable sheathing must be removed from the 12' cable stub to expose the fiber to be spliced, but enough cable length with sheathing must remain to attach the cable to the fiber organizer. Locate the cable attachment unit that is directly above the selected feed grommet, pull the cable up, hold it against the unit, and mark a cut-line on the cable 2.5" above the grommet, or about midway up the attachment unit. 
10. □	**Remove the grommet from the plate, for sheathing removal (optional).** If desired, remove the grommet (with the marked cable) from the grommet plate to create room to work and to facilitate the cable sheathing removal and bond clamp installation procedures.

11. □ **Remove cable sheathing.** Score the cable at the mark made in Step 9, score the perimeter of the cable sheathing or make a ring cut at the marked location, then find the rip cord(s) at the stub end and pull to split the cable sheathing 1" beyond the score mark. Peel apart the sheathing to the cut line, snap it off, discard the removed sheathing, and trim the cord(s).

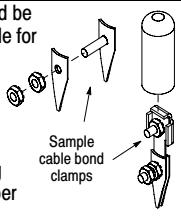
12. □ **Prepare and cut cable armor.** If the cable contains protective metallic shielding or armor, remove it per company practice to expose the fiber buffer tube. **The corrugated metal or armor that may be present in the feed cable is very sharp at the cut or exposed edges. Extreme caution should be taken to prevent personal injury. Protective work gloves are recommended when handling armored cable.**

13. □ **Cut strength members to length.** Per company practice, trim the strength members at a point approximately 2" longer than the cable sheathing cut (so only 2" remains).

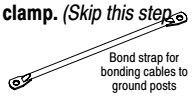


14. □ **Clean buffer tube.** Per company practice and cable type, prepare the buffer tubes, as needed.

15. □ **Attach bond clamp to feed cable.** Feed cables should be bonded to the pedestal bonding plate. Prepare the cable for bonding by attaching a cable bond clamp (not provided) to the cable shield at the sheath cut. Always follow clamp manufacturer instructions or company practice to select and attach cable bond clamps (procedures/clamps used to bond cables may vary per location, application, and cable type and size). If taping the cable-clamp junction, leave enough strength member length for termination *(see Step 18)*.

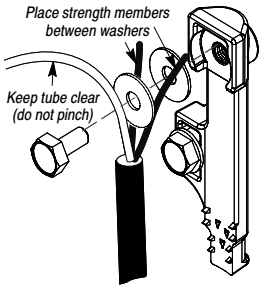


16. □ **Attach one end of a bond strap to the cable bond clamp.** *(Skip this step if the provided bond strap is not used, per company practice.)* Attach one end of the provided bond strap to the cable bond clamp installed in Step 15.

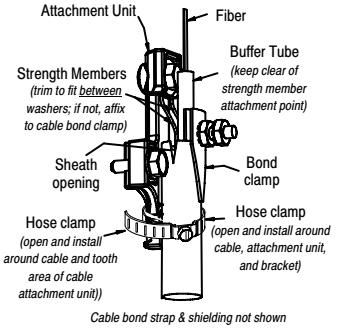


17. □ **Re-insert rubber grommet into plate.** *If still removed*, re-insert the grommet (with the cable running through it) into its slot in the grommet plate. Be sure the grommet is fully seated in the slot, to augment the weather-tight seal. When performing the next step, slide the cable up or down the grommet, as needed.

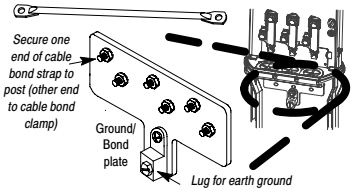
18. □ **Terminate strength members.** *Perform this step in conjunction with Step 19 for the best vertical cable alignment on the cable attachment unit.* Terminate any strength members per company practice, or as stated herein. First loosen the hex bolt in the strength member clamp. Next, slide the strength members between the washers until they abut the attachment unit's top flange. If necessary, trim strength members to attain the best vertical position against the bar. Hold the cable in place and firmly tighten the strength member clamp.



19. □ **Secure cable to fiber organizer's cable attachment unit.** Secure the cable to the cable attachment unit by affixing the provided hose clamp around both the cable and the cable attachment unit at the bottom "tooth" area of the unit *(see teeth in Step 9)*. Verify the cable sheath cut line is approximately halfway up the unit. Adjust strength member length if needed, and tighten the hose clamp.



20. □ **Bond cable to bonding plate.** Regardless of the type of bond strap used, finish bonding the cable by attaching the free end of the bond strap to a bond post on the bonding plate. Route the strap to fit, then secure it to a bond post.



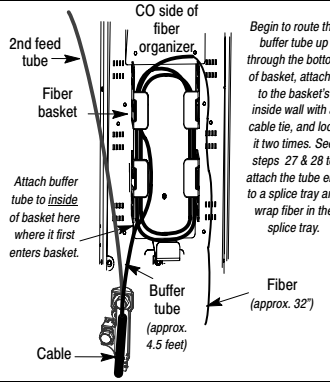
21. □ **Route fiber to the basket.** Route the buffer tube(s) up through the bottom opening of the fiber storage basket, at the front side of the fiber organizer.

22. □ **Cut to length then remove buffer tube.** Buffer tube slack is typically coiled inside the fiber basket, and a length of buffer tube is typically removed from the tube's stub end to expose the fiber that will be placed in the splice tray. These buffer tube and exposed fiber slack or storage lengths are determined per company practice and equipment manufacturer instructions. Determine the desired length of buffer tube to store in the fiber basket (and also the desired length of exposed fiber). Using local company procedures and tools, make a mark at the desired tube cut-line, score the tube perimeter at the mark, and remove the length of surplus tube and discard it.

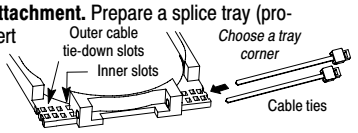
23. □ **Secure and protect non-working buffer tube(s).** If the cable contains more than one feed buffer tube (see Step 25), with fibers which are to remain unlit for this installation, loop the non-working tube(s) within the fiber basket, and secure it to the basket walls with cable ties, per company practice.

24. □ **Clean fibers.** Per company practice, clean the fibers in the working tube.

25. □ **Wrap and loop the working tube in the basket.** Loop the buffer tube slack around the inside perimeter of the basket. Secure the tube to the basket's inside walls with cable ties as it first enters the basket. Do not attach the last 2-3 feet of tube. After the tube is attached to the splice tray in Step 28, this slack length allows the splicer sufficient tube slack when accessing the splice tray.

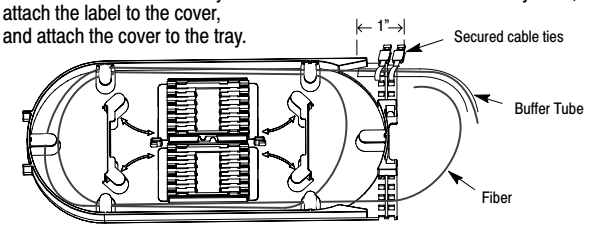


26. □ **Prepare a splice tray for tube attachment.** Prepare a splice tray (provided): remove the cover and insert 2 cable ties at the top left tray corner *(when secured to the basket)* using the cable tie-down slots.



27. □ **Attach buffer tube to tray.** Overlap the end of the buffer tube onto the splice tray corner (see Step 28), and secure the tube to the tray with the two positioned cable ties. The overlap distance is determined per company practice and tray manufacturer instructions.

28. □ **Store fibers in splice tray, and label tray cover.** Per company practice, wrap and store the fiber in the tray for later use. Locate and fill out the tray label, and attach the label to the cover, and attach the cover to the tray.



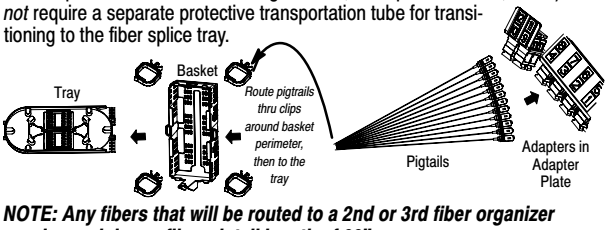
If more than 12 pigtails will be spliced, additional tray(s) can be used. Always follow company practice.

29. □ **Label tube.** Label the tube near the tray and the cable sheathing cut, per company practice.

Table 5. Installing 2mm Individual Jacketed Pigtails

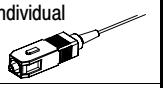
(Go to Table 6 for 900 Micron Jacketed Pigtails)

1. □ **Overview.** If 2mm jacketed pigtails are used to terminate the feed fibers, their larger diameter necessitates special fiber routing and slack management procedures. The larger diameter 2mm jacketed pigtail fibers: 1) call for the use of fiber management D-clips (rings) to route and contain the pigtails around the outside perimeter of the fiber storage basket, as explained below, and 2) do *not* require a separate protective transportation tube for transitioning to the fiber splice tray.



NOTE: Any fibers that will be routed to a 2nd or 3rd fiber organizer require a minimum fiber pigtail length of 60".

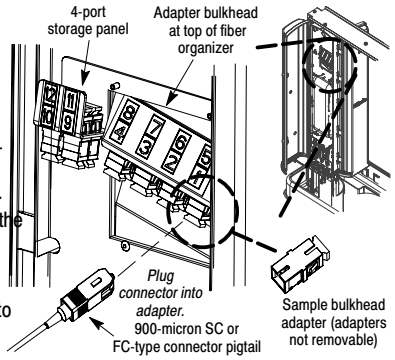
2. □ **Locate the 2mm pigtails.** Locate the correct type of 2mm individual jacketed pigtails to be used to terminate the feed fibers. Pigtail kits can be ordered from Charles Industries.



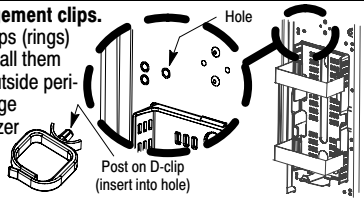
3. □ **Insert connector of pigtail into adapter bulkhead.** Remove the caps from the bulkhead adapters prior to inserting the pigtails' connectors. Insert 8 of the pigtail connectors into the adapters in the 8-port bulkhead at the top of the fiber organizer.

The remaining 4 fibers from the 12-fiber buffer tube can be terminated with pigtails and parked *(stored)* in the 4-port storage panel adjacent to the main adapter bulkhead. These pigtails can be re-routed, in the future, to other fiber organizers, as explained in Table 7.

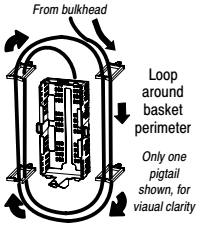
Follow company practice for correct cable color-coding, and consult the label on the front side of the bulkhead to locate the assiged line numbers.



4. □ **Locate and install fiber management clips.** Find the fiber management D-clips (rings) provided with the enclosure. Install them onto the fiber organizer at the outside perimenter corners of the fiber storage basket. Holes in the fiber organizer accommodate the peg or post in the clips.



5. □ **Route/loop pigtail fibers through D-clips around the outside of the basket.** Gather all the ends of the pigtails, and as a group, route the ends clockwise around the outside perimeter of the fiber storage basket through all the fiber management clips, starting with the top right clip. Make several loops, depending on the pigtail length, and end the last loop after exiting the top left D-clip at the top left corner of the fiber basket.



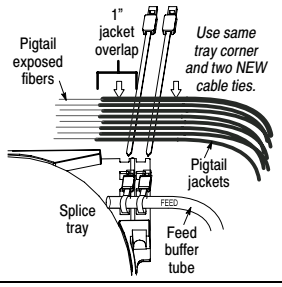
6. □ **Route last loop inside the basket.** After looping the pigtails around the outside perimeter of the basket, route the pigtail fibers to the inside of the basket. Make one and a half clockwise loops within the basket. End the loop with the pigtail ends exiting the bottom of the basket. This "feed loop" inside the basket is for the working slack needed for splicing procedures.

7. □ **Bundle and secure the looped pigtails together.** Per company practice, use Velcro strips or other company-approved materials and methods to bundle the pigtail jackets (in the basket) together at approximately 6" intervals, for efficient cable managment.

8. □ **Measure, mark and trim pigtail jackets.** Determine where to mark and cut the pigtails' jackets to expose the length of fiber needed for placement in the splice tray for splicing purposes. When determining this distance, allow sufficient length of pigtail jacket material to remain from the fiber basket to the splice tray for technician and equipment work space during splicing procedures. After marking the proper place per company practice, without damaging the fiber inside, score the pigtail jackets at the mark then remove the surplus jackets from the fibers using company-approved methods.

9. □ **Clean fibers.** Clean the exposed fibers, per company practice.

10. □ **Attach pigtails to the splice tray.** Prepare the splice tray for the jacketed pigtail bundle attachment, starting two new cable ties at the same tray corner as before, but using the *outer* tie-down slots. Overlap the bundled pigtail jackets onto the tray corner about 1" *(alongside the feed tube),* then secure the pigtail bundle to the tray with the two, new, positioned cable ties.



11. □ **Place fiber in the tray.** Wrap the pigtail fibers in the tray per company practices and tray manufacturer instructions.

12. □ **Prepare the second feed buffer tube (if a 24-fiber feed cable was used) and 12 additional pigtails (optional).**

If fibers 13-24 in the second feed tube will remain unlit (out of service), route the second buffer tube up into the storage fiber basket (if not performed in Step 23 of Table 4), loop it around the interior of the basket a few times, and secure it to the basket walls with cable ties or velcro, for future access.

If the fibers/lines from the second feed tube will be placed in service (lit) during this installation, first mount the additional fiber organizers (see Table 7), then prepare the second tube's feed fibers identically to the first tube's fibers, using Steps 21-29 of Table 4, and Steps 2-11 above as a guide. Use the bulkheads in fiber organizer #2 or #3 when (re)performing Step 3 above, and use the second provided splice tray when (re)performing Step 10 above. Each bulkhead services 8 fibers/lines, and each splice tray accommodates 12 fibers.

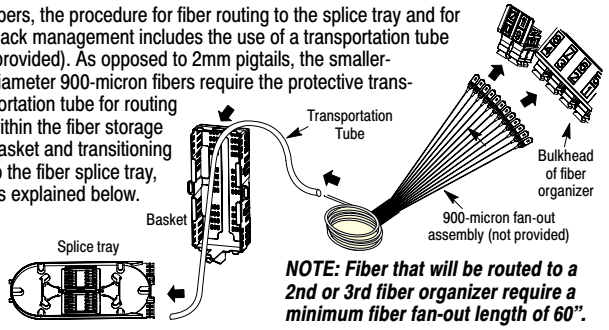
13. □ **Perform tube management.** Always keep buffer tubes neat and free of kinks. To manage the tube slack, loop and store the tubes inside the fiber basket. If desired, starting at the splice tray, attach the length of transportation tube to the feed buffer tube (join them together) with cable ties at short intervals, for proper tube management. Allow the splice tray to rotate freely when looping the tubes for storage, to avoid stressing and kinking the tubes, which could cause fiber damage.

14. □ **Determine next step or close the pedestal.** If one or two additional pedestal fiber organizers are to be mounted in the CMPH (more than 8 lines to be placed in service), proceed to Table 7. Go to Table 8 to install drop cables. Go to Table 9 to perform splicing. If splicing or drop cable installation will be performed at a later time, go to Table 10 to close the pedestal.

Table 6. Installing a 900 Micron Fan-out

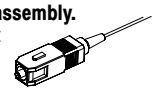
(Go to Table 5 for 2mm Jacketed Pigtails)

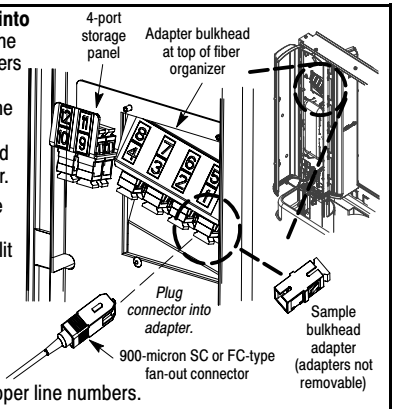
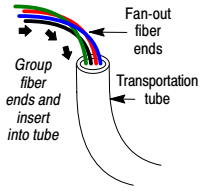
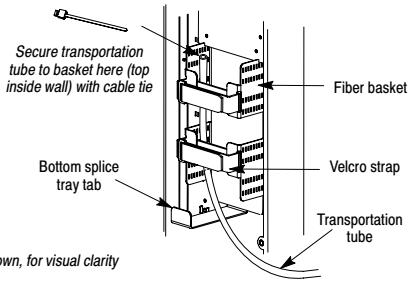
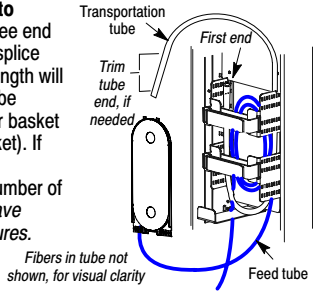
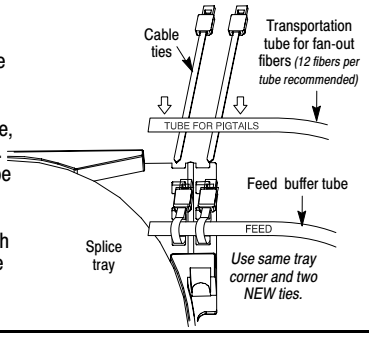
1. □ **Overview.** If 900 micron fan-out assemblies are used to terminate the feed fibers, the procedure for fiber routing to the splice tray and for slack management includes the use of a transportation tube (provided). As opposed to 2mm pigtails, the smaller-diameter 900-micron fibers require the protective transportation tube for routing within the fiber storage basket and transitioning to the fiber splice tray, as explained below.



NOTE: Fiber that will be routed to a 2nd or 3rd fiber organizer require a minimum fiber fan-out length of 60".

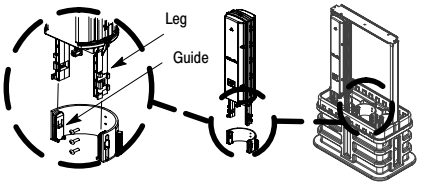
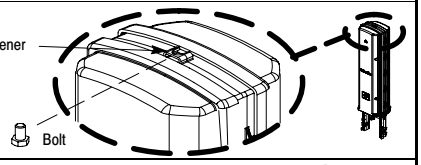
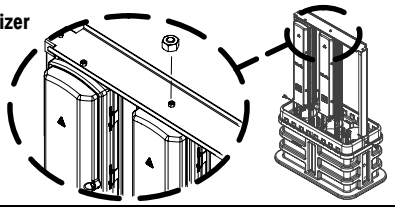
2. □ **Locate or obtain an SC or FC-type 900-micron fan-out assembly.** Locate a separately-ordered SC or FC-type 12-fiber fan-out assembly. Contact Charles Industries at the phone number shown in Part 3 for information on available kits.



3. □	**Insert fan-outs' connectors into adapter bulkhead.** Remove the caps from the bulkhead adapters prior to inserting the fan-outs' connectors. Insert up to 8 of the fan- outs' connectors into the adapters in the 8-port bulkhead at the top of the fiber organizer. The 4-port connector storage panel to the left of the main bulkhead can be used for un-lit fan-out connector storage. Follow company practice for correct fiber color-coding, and consult the label on the front side of the bulkhead to locate the proper line numbers. 
4. □	**Route end of fan-out through transportation tube.** Provided is one 3-foot length of plastic 1/4" tubing to protect the 900-micron fibers as they transition from the adapter panel through the fiber basket and to the splice tray. Locate and grasp the free fiber-ends of the fiber fan-out and guide the ends, as a group, into the provided transportation tube. Slide the fibers through the tube until the free ends exit the opposite tube end. 
5. □	**Secure one end of the transportation tube to the basket.** Using a cable tie, attach one end of the transportation tube to the top, left, inside wall of the fiber basket. 
6. □	**(Optional – trim transportation tube to proper length.)** Before attaching the free end of the tube to the bottom corner of the splice tray (in the next step), verify the tube length will allow the (then attached) splice tray to be easily positioned at the front of the fiber basket (after the tube is looped within the basket). If needed, the tranportation tube can be trimmed/cut to length, if the size and number of loops in the fiber basket requires it. *Leave enough tube length for splicing procedures.* 
7. □	**Prepare splice tray, attach other end of transportation tube.** Again prepare the splice tray for tube attachment, starting two new cable ties at the same tray corner as before, using the *outer* tie-down slots. Overlap the transportation tube onto the tray corner about 1" *(alongside the feed tube),* then secure the tube to the tray with the two, new, positioned cable ties. 

8. □	**Place fiber in the tray.** Wrap the fibers in the tray per company practices and tray manufacturer instructions.
9. □	**Prepare the second feed buffer tube (if a 24-fiber feed cable was used) and a second fan-out (optional).** If fibers 13-24 in the second feed tube will remain unlit (out of service), route the second buffer tube up into the fiber storage basket (if not performed in Step 23 of Table 4), loop it around the interior of the basket a few times, and secure it to the basket walls with cable ties or velcro, for future access. If the fibers/lines from the second feed tube will be placed in service (lit) during this installation, first mount the additional fiber organizers (see Table 7), then prepare the second tube's feed fibers identically to the first tube's fibers, using Steps 21-29 of Table 4, and Steps 2-8 above as a guide. Use the bulkheads in fiber organizer #2 or #3 when (re)performing Step 3 above, and use the second provided splice tray when (re)performing Step 7 above. Each bulkhead services 8 fibers/lines, and each splice tray accommodates 12 fibers.
10. □	**Perform tube management.** Always keep buffer tubes neat and free of kinks. To manage the tube slack, loop and store the tubes inside the fiber basket. If desired, starting at the splice tray, attach the length of transportation tube to the feed buffer tube (join them together) with cable ties at short intervals, for proper tube management. Allow the splice tray to rotate freely when looping the tubes for storage, to avoid stressing and kinking the tubes, which could cause fiber damage.
11. □	**Determine next step or close the pedestal.** If one or two additional pedestal fiber organizers are to be mounted in the CMPH (more than 8 lines to be placed in service), proceed to Table 7. Go to Table 8 to install drop cables. Go to Table 9 to perform splicing. If splicing or drop cable installation will be performed at a later time, go to Table 10 to close the pedestal.

Table 7. Installing Additional CFDP fiber organizers

1. □	**Order and inspect additional CFDP fiber organizers.** Up to 3 CFDP206-EL08 fiber organizers can be be mounted in the CMPH enclosure, on secure but removable collars located on the bottom bracket of the internal framework. A second or third fiber organizer can be mounted at this time, or at a later date for future growth or expansion. If mounting another fiber organizer at this time, inspect the unit for shipping damages and report any damage to the shipping company.
2. □	**Attach additional fiber organizer's legs to collar.** Align the fiber organizer's legs with the leg guides in the collar, and slide the legs down into the guides until they snap or click into place. 
3. □	**Install bolt in top fastener of fiber organizer.** Slide the provided top bolt into the fastener at the top of the fiber organizer. 
4. □	**Secure top of fiber organizer to top rail of framework.** Thread a nut onto the bolt installed in Step 3 that is now protruding through the hole in the top rail of the framework. Firmly tighten the nut. 
5. □	**Route pigtails through split duct.** Route the pigtails through the split duct from fiber organizer 2 (or 3) to fiber organizer 1.

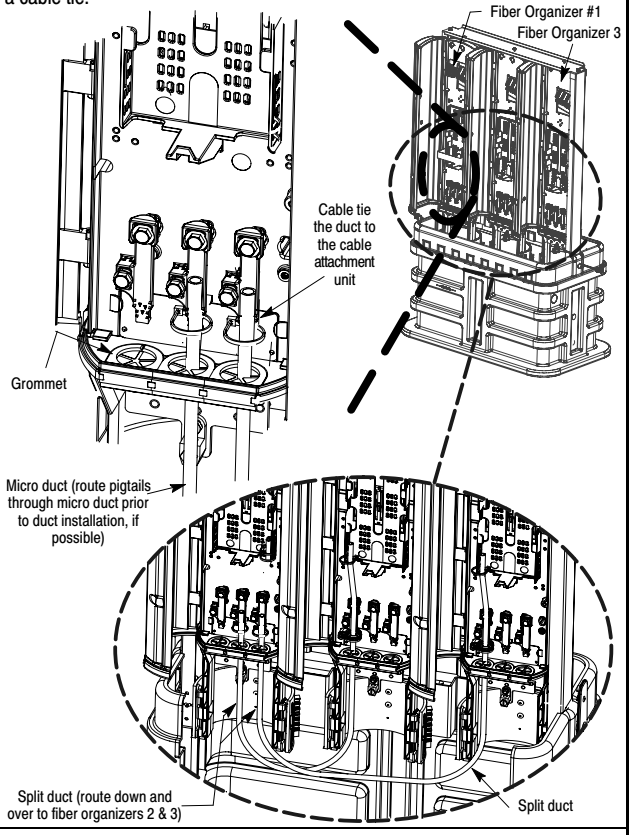
6. □	**Install split duct.** A 3/4" diameter split duct, provided with each separately-ordered add-on fiber organizer, is used to transport the 2mm pigtails or 900 micron fan-out fibers from the splice tray in fiber organizer #1 to the bulkhead(s) in fiber organizer #2 and #3. A split duct should be installed between fiber organizer 1 and fiber organizer 2, and if needed, another between fiber organizer 1 and fiber organizer 3. *If the fibers are not yet spliced, route the pigtails through the split duct prior to attaching the duct to the fiber organizers, for easiest pigtail installation.* Route the ducts through the cable grommets of both fiber organizers (remove and slit the grommet if necessary to fit the 3/4" duct). Fasten both duct ends to a cable attachment unit in each fiber organizer using cable ties around both the ducts and the cable attachment units. Always follow appropriate fiber bend radius requirements when routing ducts. In fiber organizer #2 and 3, extend the micro duct up past the cable attachment unit and fasten it to the inside wall of the fiber storage basket using a cable tie. 
7. □	**Prepare feed buffer tube, route to splice tray in next fiber organizer.** After mounting the additional fiber organizer (see Table 7) and securing the micro-duct from fiber organizer #1 to organizer #2, prepare the feed fibers in the feed cable's second tube identically to the first tube's fibers by using Steps 21-29 of Table 4 as a guide.
8. □	**Prepare feed fan-out or pigtails.** Prepare pigtails or fan-outs for feed lines 9-16, using Steps 2-11 in Table 5 or Steps 2-8 in Table 6 as a guide. Also use the bulkhead in fiber organizer #2 when terminating the fan-out or pigtail connectors in the bulkhead adapters, and use the second provided splice tray when placing the fiber for lines 9-16 in a splice tray. Note that each bulkhead services 8 fibers/lines, and each splice tray accommodates 12 fibers.
9. □	**Install third fiber organizer if > 16 lines are needed.** If more than 16 lines are needed, repeat all the steps in this table (Table 7) but using the third fiber organizer, to activate lines 17-24 of the 24-fiber feed cable.

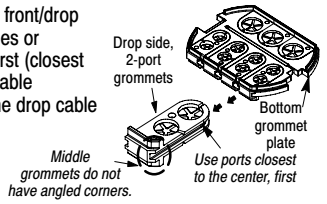
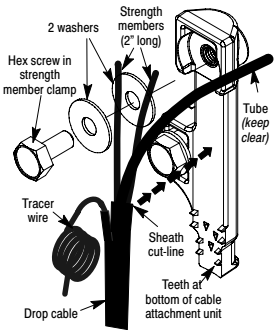
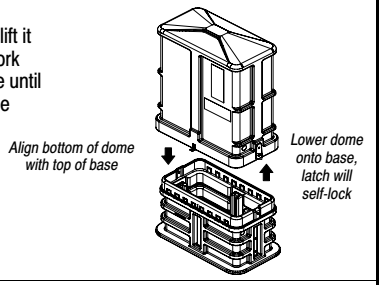
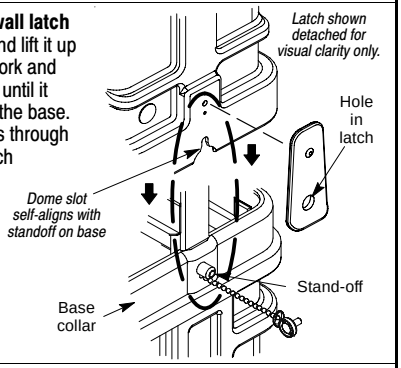
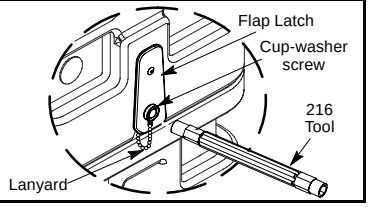
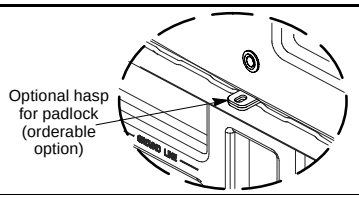
Table 8. Installing Preconnectorized Fiber Drop Cables	
1. □	**Dig trench from premises to pedestal.** Per company practice, prepare a trench to run the drop cable from the customer premises to the pedestal. Clear the soil from the bottom of the base, where the cable will enter at the drop cable access port.
2. □	**Run the drop cable.** Route the preconnectorized drop cable through the trench and into the CMPH base.
3. □	**Open the enclosure and fiber organizer(s).** If the enclosure and fiber organizer doors are closed and locked, perform Steps 2-3 of Table 4 to open the enclosure and the *drop side* door(s) of the fiber organizers.
4. □	**Allow proper length of drop cable.** Per company practice, verify 12' *(min.)* of drop cable extends up past the base's ground line mark. Mark and cut the cable at the desired length.
5. □	**Route cable through grommet.** The front/drop side rubber grommets contain two holes or ports each. Use the innermost ports first (closest to the pedestal center) for best drop cable management. Push the stub-end of the drop cable through the bottom center of the selected grommet port. Pull the cable all the way up through the grommet. 
6. □	**Route all drops to pedestal.** Repeat Steps 1 through 5 above for all drops ready to be routed or placed in service at this time.
7. □	**Backfill the trench and replace the sod.** Per local practice, restore the area around the base.
8. □	**Mark drop cable for sheathing removal**. Locate the cable attachment unit directly above the drop cable's grommet, hold the drop cable in it's proposed final position up against the cable attachment unit,, and mark the cable midway up the unit (approximately 2.5" above the grommet).
9. □	**Separate tracer wire.** If a tracer wire is attached to the drop cable, separate it and pull it down the cable to the marked location, per company practice. Remove all but 4 inches for later use. Optionally coil and point the 4" wire toward the pedestal center, away from the working area. *Note: Flat drop cable tracer wire is intended for locating, not grounding, purposes.*
10. □	**Remove cable sheathing and open the cable.** Cut and remove the drop cable sheathing from the end of the cable to the cut mark, per company practice. Trim any cable strength members per company practice or Step 13.
11. □	**Label drop cable**. Label the/all drop cable(s) with a marker or label. This facilitates later cable identification for future troubleshooting, splicing, maintenance, or rework.
12. □	**Trim strength members.** If the cable contains strength members, trim them but retain enough length to attach them to the fiber organizer, per company practice.
13. □	**Secure strength members.** Per company practice, terminate any strength members in the strength member clamp at the top of the cable attachment unit. *Loosen* the bolt on the clamp, position the strength members between the clamp's two washers, and move the cable up or down so that the strength members abut the inside of the top flange (or return) of the cable attachment unit. Trim the strength members, if needed. Hold the strength members in position and tighten the bolt. Avoid pinching buffer tubes in the clamp. 
14. □	**Secure cable to attachment unit**. Verify the cable sheath cut-line is positioned at the middle of the cable attachment unit. Place a cable tie at the 'teeth' position of the cable attachment unit. Double the cable tie over the cable, crisscross it (in a "Figure 8"), and tighten the tie.
15. □	**Repeat for all drops.** Repeat Steps 8-14 above for all available drops.
16. □	**Route, secure, and connect drop pigtail.** Route and loop each drop cable pigtail around the inside perimeter of the drop side fiber organizer. Size the loops so that the connector will easily (without tension) reach the assigned bulkhead adapter. Secure the pigtail to the fiber organizer tie-down slots with cable ties, velcro, or other company-approved fasteners at regular intervals. Plug the first pigtail connector into the adapter labeled #1, the second pigtail connector into adapter #2, etc.
17. □	**Re-check cable management & lock the CMPH.** Verify all tubing is not kinked, and that no cables, ties, wires or tubes protrude beyond the fiber organizer walls. Press all grommets into place. Perform the steps in Table 10 to close and lock the CMPH.

Table 9. Splicing Fibers at the CFDP Pedestal	
1. □	**Obtain tools.** Prepare the area for splicing, and prepare any equipment and tools needed to splice fibers. Review all the cautions and warnings herein.
2. □	**Open pedestal.** Remove the dome and open the CO side door.

3. □	**Remove the splice tray(s) from the fiber organizer.** Loosen the VELCRO® straps that secure the splice tray(s) and remove the tray(s) and the tubes attached to it. Detach the clear plastic cover from the splice tray(s).
4. □	**Perform splicing.** Unwrap the working fibers to be spliced, perform all fiber splicing at this time, and when complete, place the spliced fibers back into the splice tray(s), per company practice and product manufacturer's instructions.
5. □	**Label and identify splices/tray.** Per company practice, label/identify the splices.
6. □	**Cover splice tray(s).** Re-attach the cover(s) to the splice tray(s).
7. □	**Secure tray.** Secure the splice tray(s) to the fiber organizer. Wind or rotate the tubes and the tray(s) as needed to loop and store the tubing in the fiber basket, tthen position the tray(s) on the front of the fiber storage basket with the provided VELCRO® straps.
8. □	**Re-check cable management, and close CO side door** Verify all tubing is not kinked, and that no cables, ties, wires or tubes protrude beyond the fiber organizer walls. Close and lock the CO side inner door and tighten the cup-washer screws.

Table 10. Closing the CMPH Enclosure

1. □	**Check inner cable management.** Before closing the enclosure, always verify all tubing is not kinked, that the splice trays are firmly attached with the Velcro straps, and that no equipment, cables, tubes or straps protrude beyond the fiber organizer walls. Verify all grommets are fully inserted.
2. □	**Close and lock fiber organizer doors.** Close and lock all fiber organizer doors.
3. □	**Check dome clearance.** Verify all equipment and cabling is organized and will not contact the interior walls of the dome when installed (keep items at least 1" inside the perimeter of the base collar). This assures safe dome placement.
4. □	**Locking the CMPH via one of two methods.** Use one of two methods to close and lock the CMPH, depending upon the CMPH's locking mechanism. For units with a front-wall latch, follow steps 5-6 below. For units with a right-side wall flap latch, follow steps 8-10 below.
5. □	**Install dome – front-wall latch models).** Locate the dome and lift it up and over the interior framework and equipment. Lower the dome until it overlaps and self-latches to the base.  *Align bottom of dome with top of base* *Lower dome onto base, latch will self-lock*
6. □	**Verify the CMPH is locked.** The dome design allows the dome to self-lock on the base. An audible click indicates that the enclosure is locked; also verify the dome is locked by attempting to lift the dome.
7. □	**Install dome – short side wall latch models.** Locate the dome and lift it up and over the interior framework and equipment. Lower the dome until it overlaps and self-latches to the base. Verify the stand-off protrudes through the hole in the latch (self-latch feature).  *Latch shown detached for visual clarity only.* Hole in latch *Dome slot self-aligns with standoff on base* Stand-off Base collar
8. □	**Lock the CMPH.** Lock the CMPH by re-inserting and turning the cup-washer screw clockwise into the threaded holes provided for it in the standoff. Tighten the cup-washer screw with a 216 tool or can wrench.  Flap Latch Cup-washer screw 216 Tool Lanyard

9. □	**(Optional) Padlock the CMPH.** For models equipped with an optional hasp, the CMPH also can be locked by inserting a padlock through the holes in the hasp provided at the front of the enclosure.  Optional hasp for padlock (orderable option)
10. □	**Label outer dome.** Place all ID/warning labels on the dome, per company practice.
11. □	**End of CMPH installation. Clean up site.** Clean up the work site, properly dispose of all debris, pick up and put away all equipment, tools, and work materials, restore the landscape to its original condition, and leave this document inside the CMPH for future reference.

3. CUSTOMER TECHNICAL SERVICE

If technical assistance or customer service is required, contact Charles Industries by calling or using one of the following options:

847-806-8500 (Tech. Serv. local) 847-806-6300 (Customer Service)
800-607-8500 (Tech. Serv. toll-free) 847-806-6653 (Customer Serv. FAX)
847-806-8556 (Tech. Serv. FAX) mktserv@charlesindustries.com
techserv@charlesindustries.com www.charlesindustries.com

Table 11. Physical Specifications

Feature	*U.S.*	*Metric*
Height, overall	47 in.	119.4 cm
Height, base only, incl. collar	17 in.	43.2 cm
Height, dome only	33 in.	83.8 cm
Height, internal framework	30 in.	76.2 cm
Height, base bottom to ground line	9 in.	22.9
Depth, base (at wider footprint)	17 in.	43.2 cm
Depth, dome	14.5 in.	36.8 cm
Width, base (at wider footprint)	29.5 in.	75 cm
Width, dome	27 in.	68.6 cm
Weight, dome	22 lbs.	10 Kg
Weight, base, fiber-bracketry models	29 lbs.	13.1 Kg
Weight, base, copper-bracketry models	27 lbs.	12.3 Kg
Weight, two 30" stakes	5 lbs.	2.2 Kg
Weight, two 36" stakes	6 lbs.	2.7 Kg
Weight, two 42" stakes	7 lbs.	3.2 Kg

NOTE: All dimensions and weights are approximate.

Table 12. Model # Ordering Information and Options

Model #	*Description*
CMPH-IT1	Charles Multi-Purpose Housing (CMPH) Interconnect with one CFDP206-EL08 fiber organizer with an SC to SC adapter bulkhead. All sturdy self-locking CMPH models come with a polyethylene base, an overlapping polyethylene dome, two 42" stakes, and internal metallic framework for mounting the CFDP fiber organizer(s) and additional equipment and cabling, a ground plate with a ground lug and bond posts, instructions, and a plastic moisture-barrier sheet.
CMPH-IT1QR	Same as CMPH-IT1 but with an FC to FC adapter bulkhead
Optional Equipment for Use with CMPHs	
97-001753-A	Kit, CFDP2, drop side inner double grommet, package of 50
97-001910-A	Kit, CFDP2, drop side outer double grommet, package of 50
97-001911-A	Kit, CFDP2, central office side single grommet, package of 50
97-FIBR24TRAY	Kit, Splice Tray, 12/24F, Qty=1
BKPL206-ESL2T	ASM, fiber organizer, CFDP206-EL08/GEN, SC to SC adapter
BKPL206-ESL2TQR	ASM, fiber organizer, CFDP206-EL08/GEN, FC to FC adapter

Various replacement and optional parts are available, including bracket kits for vault-mounting. Contact Charles Industries for more information.