# 108 Connectors, 76-Type Binding Posts and 99-Type Connecting Blocks Wiring 40-Type Cabinets

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# 1. Overview

**1.01** This section covers the procedures for running cross-connecting wire between the feeder and distribution cable terminations in 40-type cabinets equipped with 108 connectors, 76-type binding posts and 99-type connecting blocks.

**1.02** This section is reissued to convert all mathematical expressions and measurements to the metric equivalent and to include information on the 99-type connecting blocks.

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# 2. Method of Pair Identification

**2.01** Before proceeding, it is important that craft personnel become familiar with the following methods of pair identification (Figures 1, 2, 3, 4, 5, and 6):

(a) The count is top-to-bottom on each terminal and connecting block and proceeds left to right on the block.

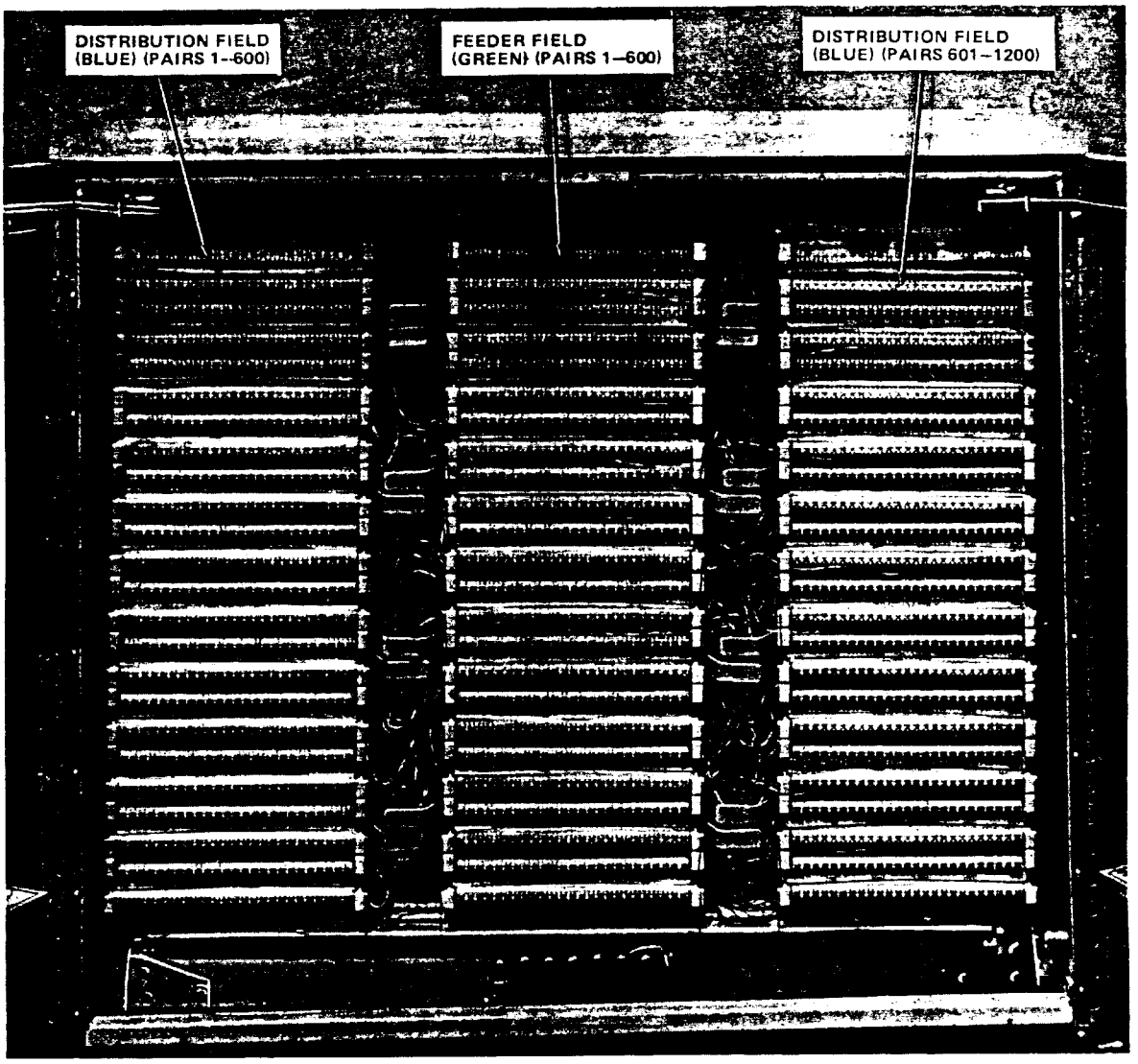


Figure 1. Method of Pair Identification—40-Type Cabinet Equipped with Three Panels of 108 Connecting Blocks

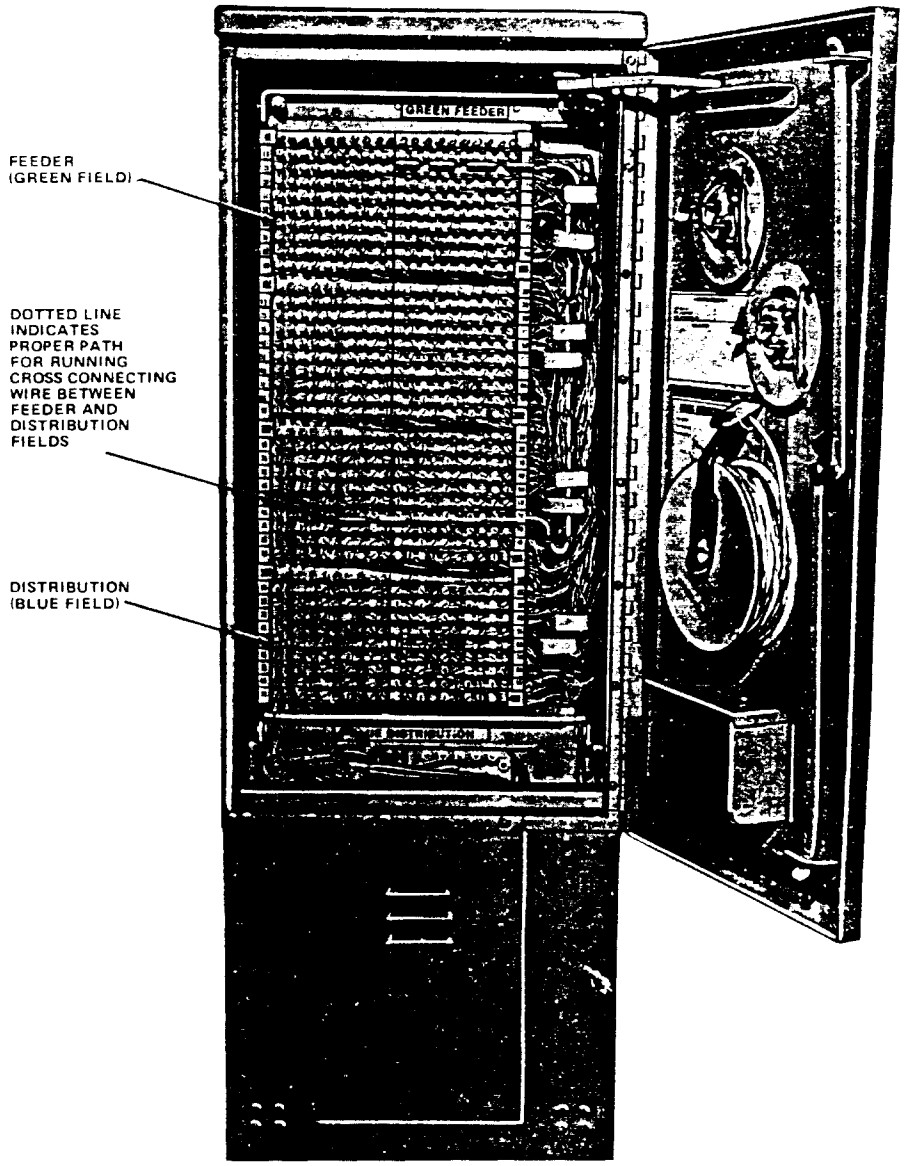


**Figure 2. Method of Pair Identification—40-Type Cabinet Equipped with One Panel of 76-Type Binding Post**

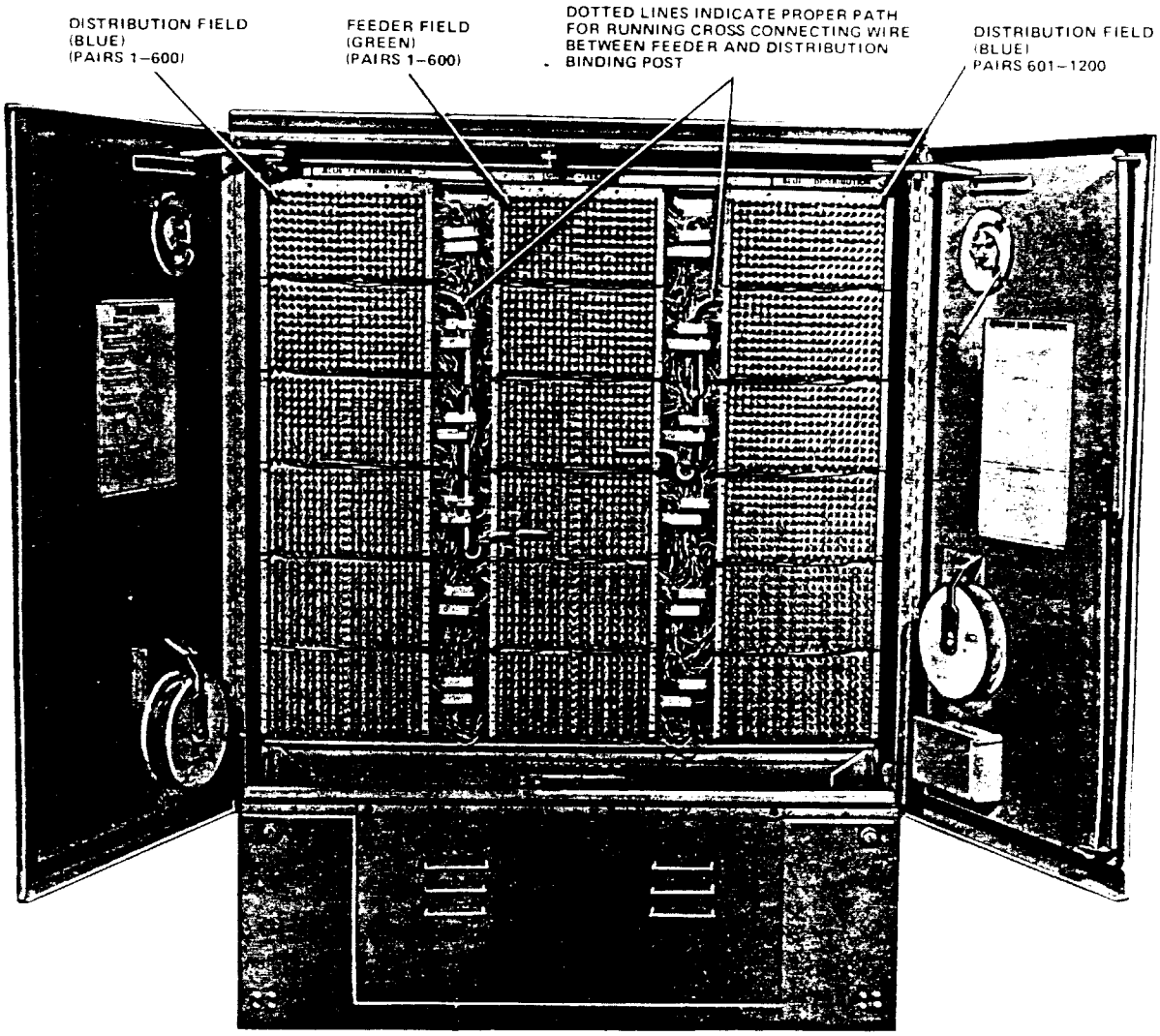


**Figure 3. Method of Pair Identification—40-Type Cabinet Equipped with Three Panels of 76-Type Binding Post**

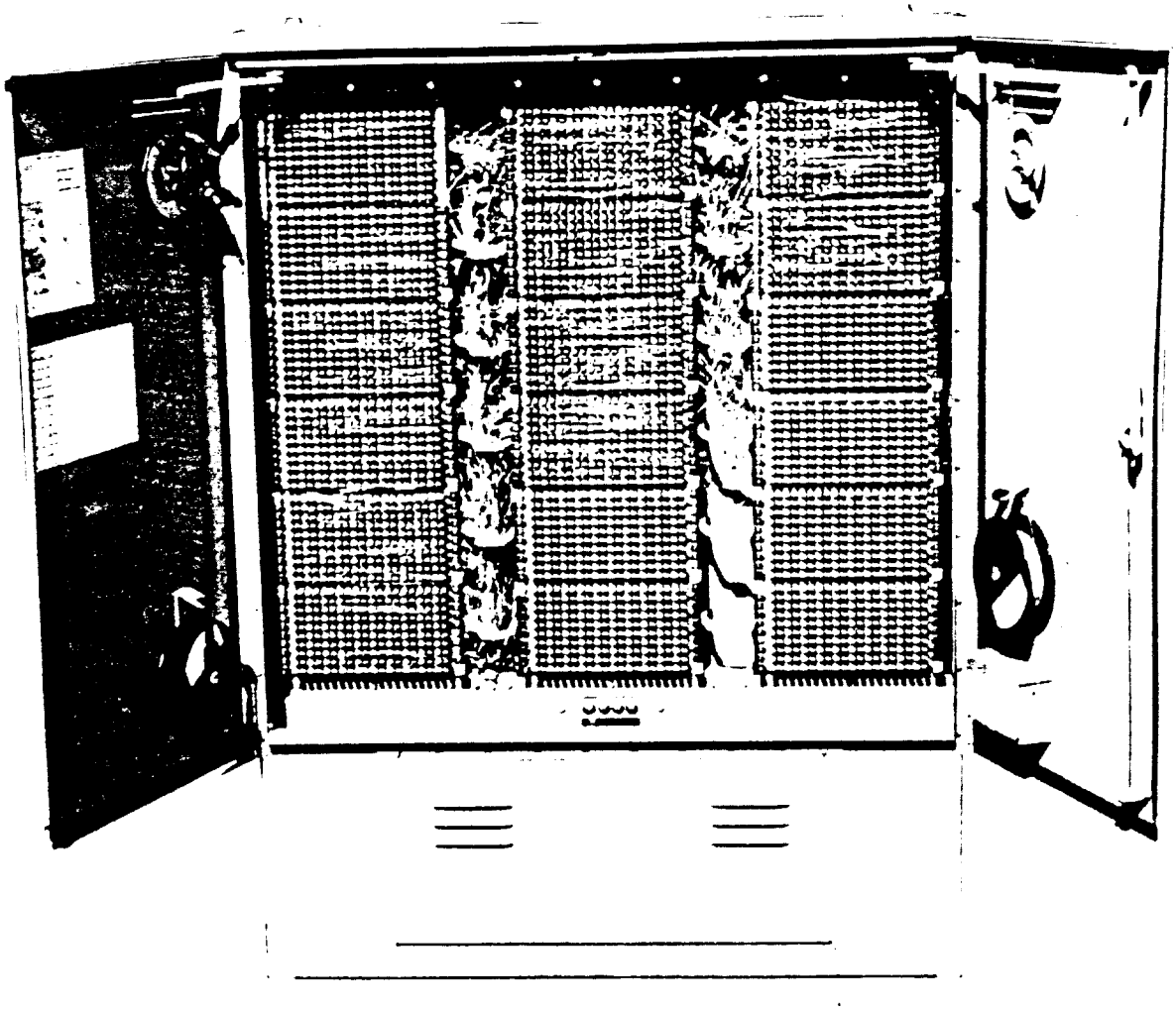

Figure 4. Method of Pair Identification—40-Type Cabinet Equipped with Three Panels of 99-Type Connecting Blocks

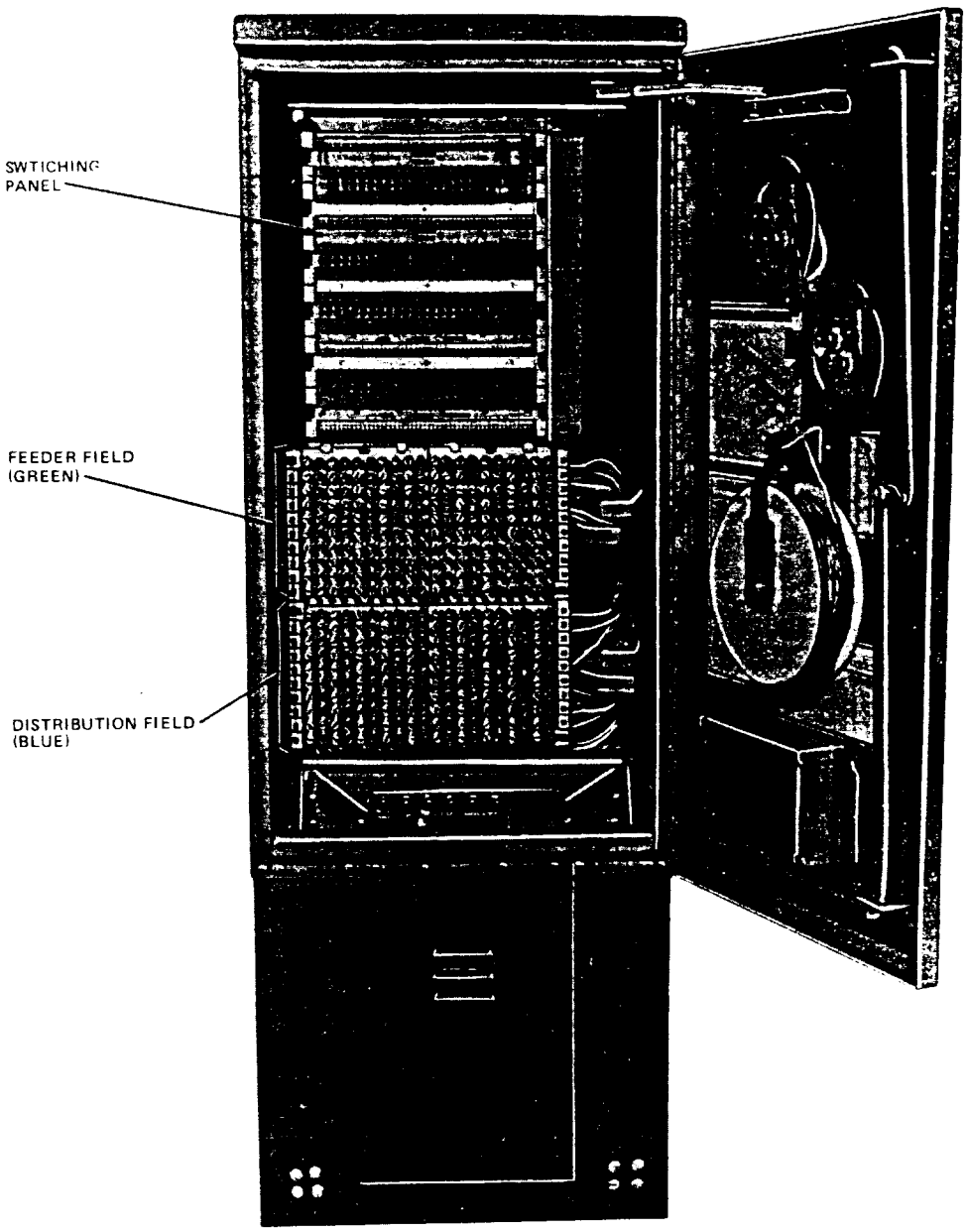


**Figure 5. Method of Pair Identification—RAI-A—One Panel**

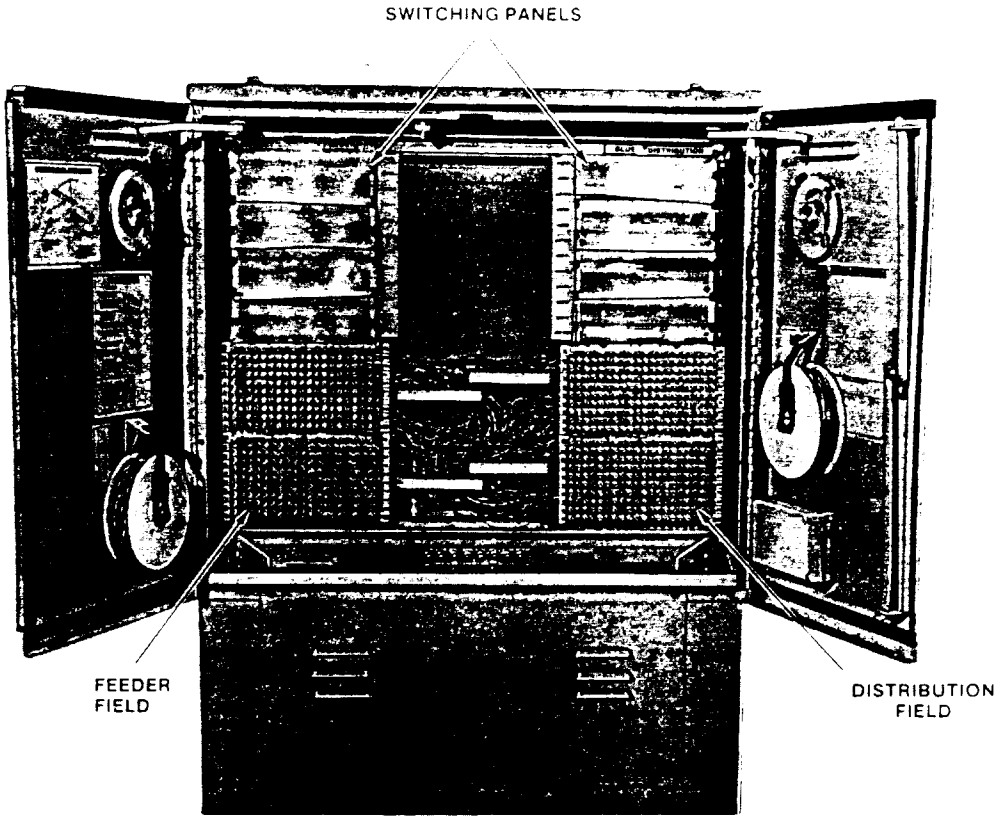


**Figure 6. Method of Pair Identification—RAI-A—Two Panels**

## 3. Terminating Cross-Connecting Wire in 40-Type Cabinets Equipped with 108 Connectors

**CAUTION:**
*Use only F cross-connecting wire when placing cross connections on 108 connectors. G cross-connecting wire may damage slotted beams due to its larger diameter.*

**3.01** Verify the feeder-in pair as follows (Figure 7):

(1) Locate the feeder-in pair specified on the service order.

(2) Remove test cord from door, raise the environmental shield, squeeze the spring clips on test cord and place it on the specified feeder-in pair.

(3) Attach the clips from the handset to the binding posts on the door and verify feeder-in pair.

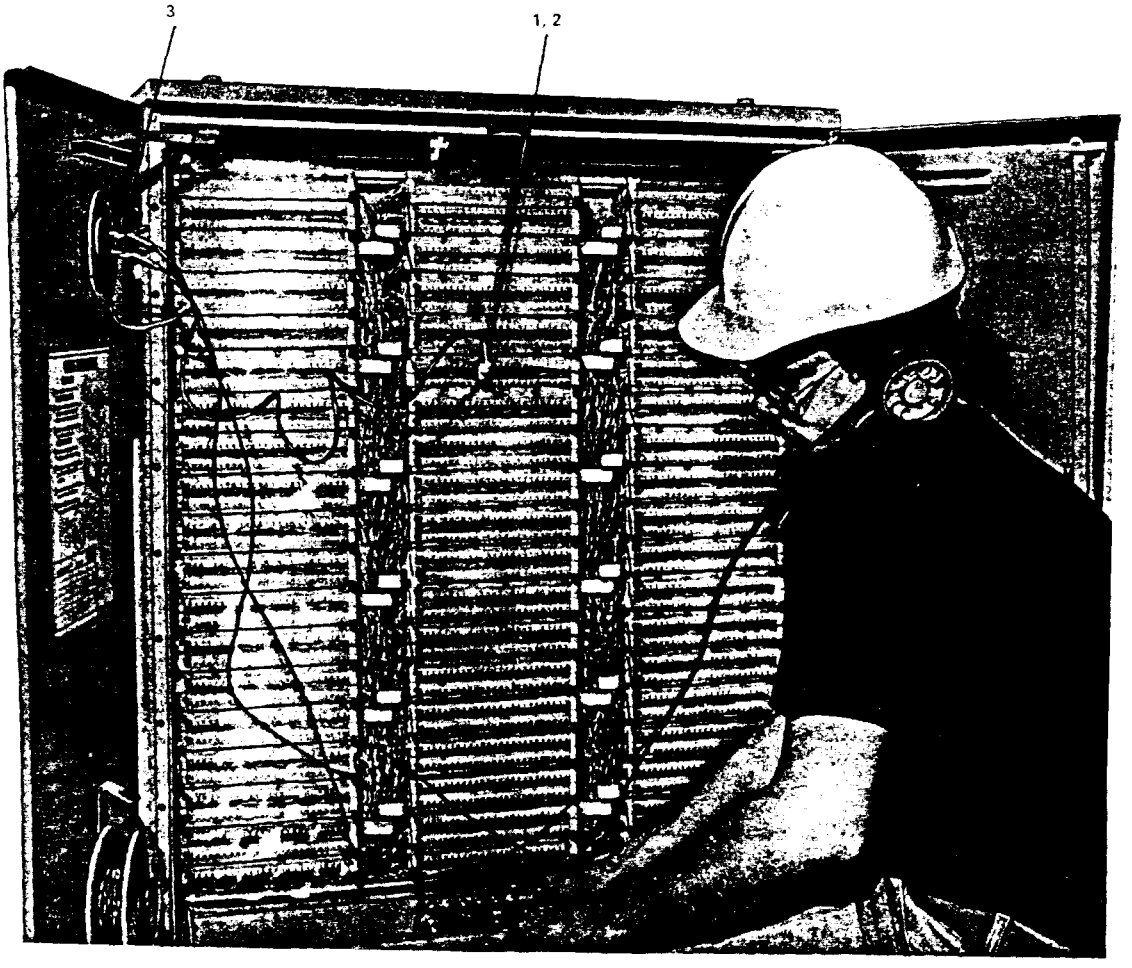


Figure 7. Verify Feeder-In Pair

**3.02** Terminate the 24-gauge (0.5 mm) F-cross connecting wire on the distribution field as follows (Figure 8):

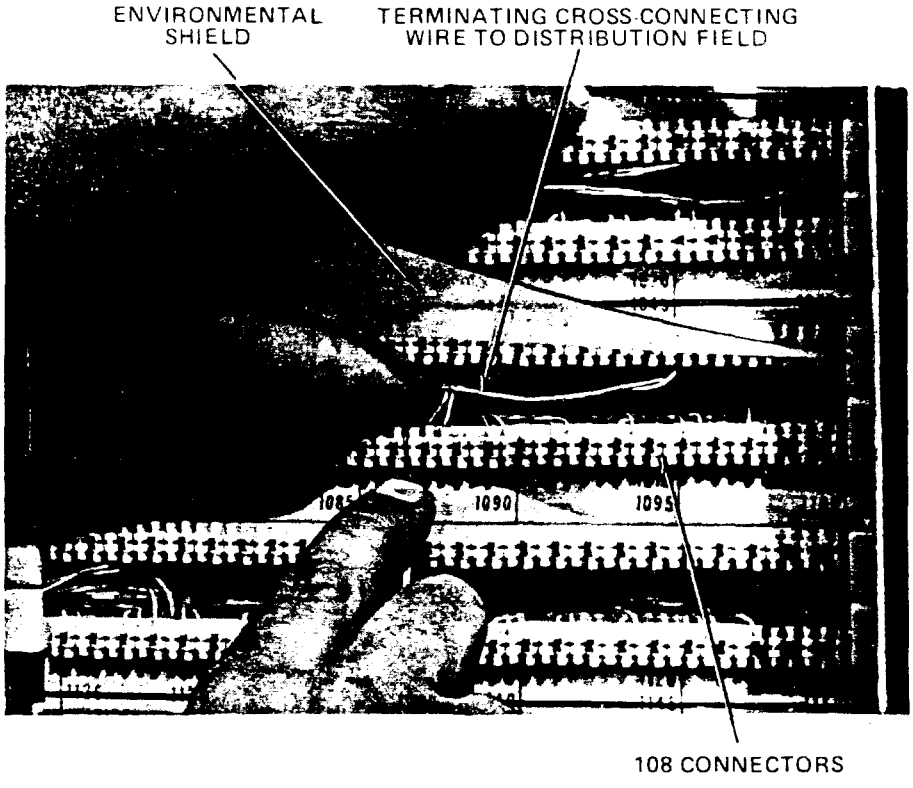


**Figure 8. Terminating Cross-Connecting Wire on Distribution Field**

⇒ **NOTE:**
It is recommended that the distribution side be terminated first. Leave the test cord on the feeder pair to provide easier feeder pair identifications.

(1) Locate the assigned distribution pair. Pull enough cross-connecting wire from the spool to reach the assigned distribution pair, then raise the environmental shield, and insert the F cross-connecting wire into the block splitting the tip and ring conductors over the high tooth which is colored black. The tip conductor is on the left and the ring conductor is on the right.

**3.03** Seat and cut the cross-connecting wire as follows (Figure 9):

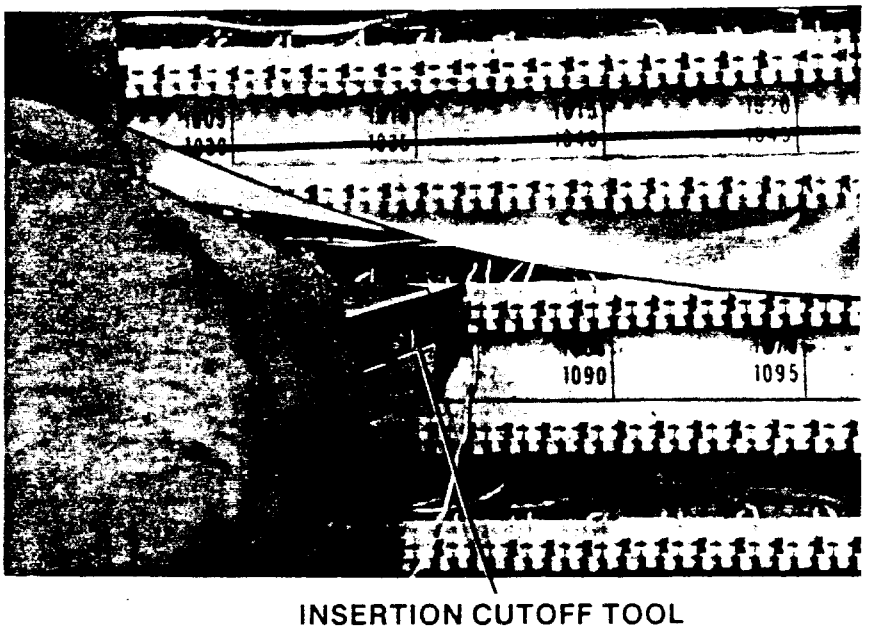


**Figure 9. Seating and Cutting Cross-Connecting Wire**

⚠ CAUTION:
*Use only approved tools for terminating cross-connecting wire.* ***Do not use screwdrivers.***

(1) Using the 788N1 insertion cutoff tool furnished with the cabinet, seat and cut cross-connecting wire.

NOTE:
The cutting blades of the 788N1 insertion cutoff tool should always be placed on the same side as the designation strip to cut the cross-connecting wire.

**3.04** Form a finger loop for slack as follows (Figure 10):

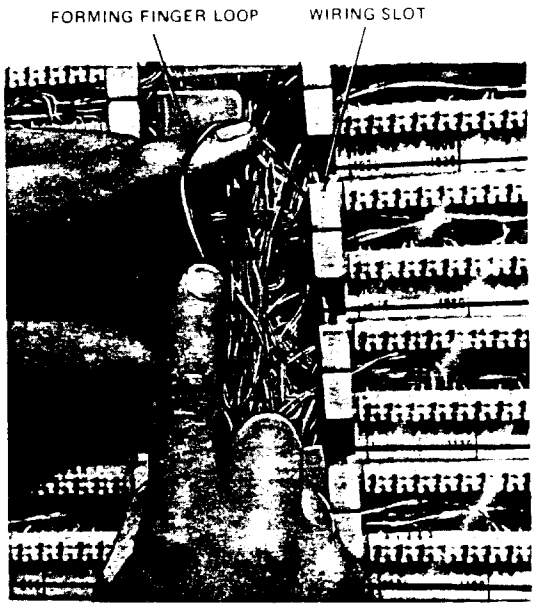


**Figure 10. Forming Finger Loop**

(1) Push the terminated wires to the back of the wiring channel between the connecting blocks. Position the wires along the channel through the wiring slots into the wiring trough.

(2) Form a finger loop to provide 2 inches (5.08 cm) of slack. ***These finger loops allow a sufficient amount of slack for movement of the cross-connecting wire for tracing.***

**3.05** Route the cross-connecting wire to the assigned feeder pair and terminate as follows (Figure 11):

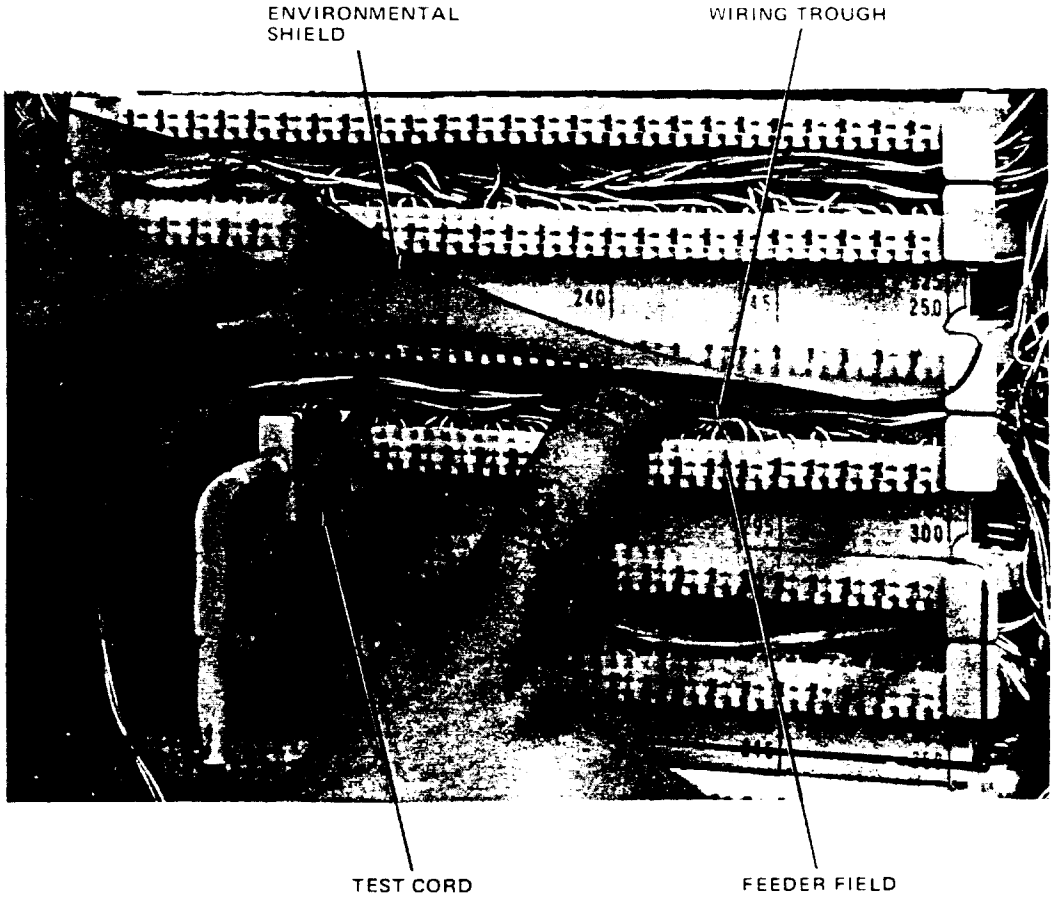


**Figure 11. Routing Cross-Connecting Wire to Assigned Feeder Pair**

(1) Route the cross-connecting wire within the wiring trough to the feeder field; form a finger loop of slack, and route the wire through the fanning strip.

(2) Raise the environmental shield and continue routing the cross-connecting wire to the feeder pair.

(3) Remove the test cord from the feeder pair and terminate cross-connecting wire as outlined in paragraphs 3.02 and 3.03.

(4) Dress the cross-connecting wire by pushing it to the back of the channel.

# 4. Terminating Cross-Connecting Wire in 40-Type Cabinets Equipped with 76-Type Binding Post

**CAUTION:**
*Use only G cross-connecting wire when placing cross connections on 76-type binding post. The smaller diameter F cross-connecting wire breaks when tightening binding post screws.*

**4.01** Verify the feeder-in pair as follows (Figure 12):

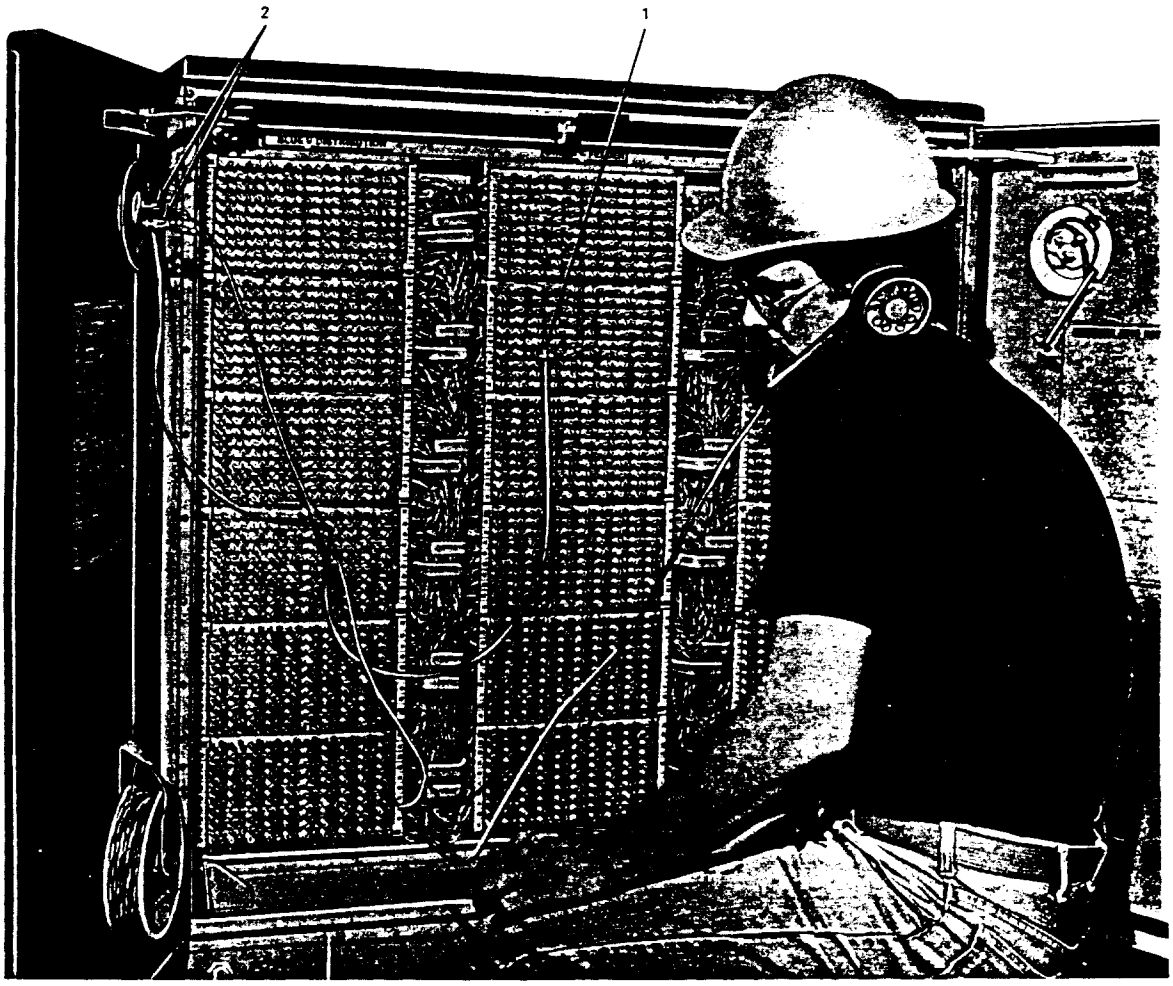


Figure 12. Verify Feeder-In Pair

(1) Locate the feeder-in pair specified on the service order.

(2) Remove test cord from door and place it on the specified feeder pair.

(3) Attach the clips from the handset to the binding posts on the door and verify feeder-in pair.

⇒ NOTE:
Leave the test cord on the feeder pair to provide easier feeder pair identification.

**4.02** Terminate the cross-connecting wire on the distribution field as follows (Figure 13):

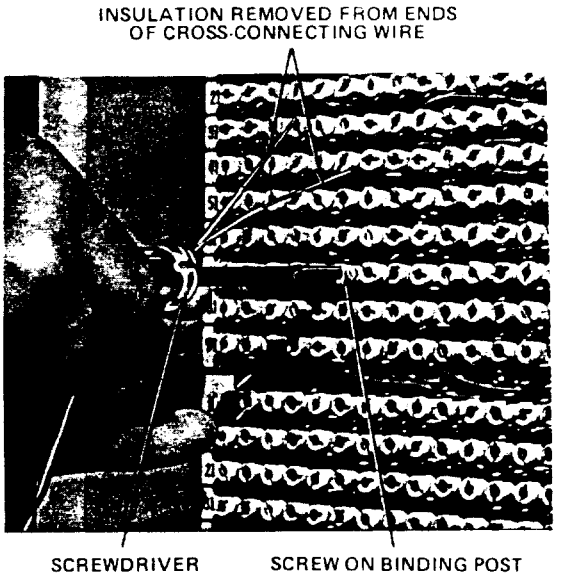


**Figure 13. Terminating Cross-Connecting Wire on Distribution Field**

(1) Locate the assigned distribution pair, then pull enough cross-connecting wire from spool to reach the assigned distribution pair binding post. Strip approximately 1 inch (2.54 cm) of insulation from ends of cross-connecting wire. ***Do not nick conductor.***

(2) Using a screwdriver, loosen the screw on the binding post. ***Do not use scissors.***

(3) Place one of the wires ***between*** the washers on the appropriate binding post (tip or ring). Tighten screw finger tight, plus 1/4 turn with screwdriver. ***Do not overtighten.***

(4) Cut excess length of wire at the binding post and remove wire clippings.

(5) Repeat steps 3 and 4 for the other cross-connecting wire conductor.

**4.03** Route the cross-connecting wire as follows (Figure 14):

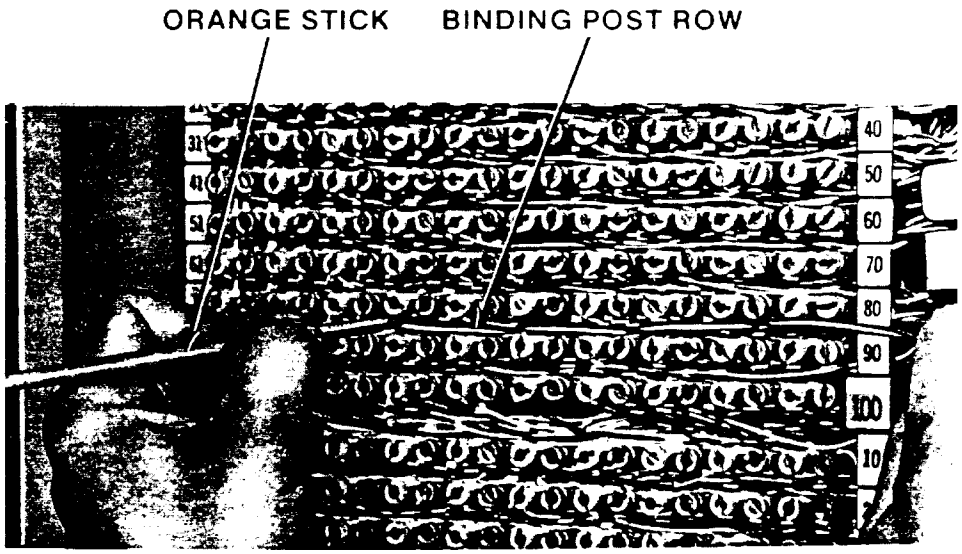


**Figure 14. Routing Cross-Connecting Wire**

(1) Using an orange stick, dress the cross-connecting wire horizontally along row of binding post. Under no circumstances are screwdriver or scissors to be used to dress the wires.

**4.04** Form a finger loop for slack as follows (Figure 15):

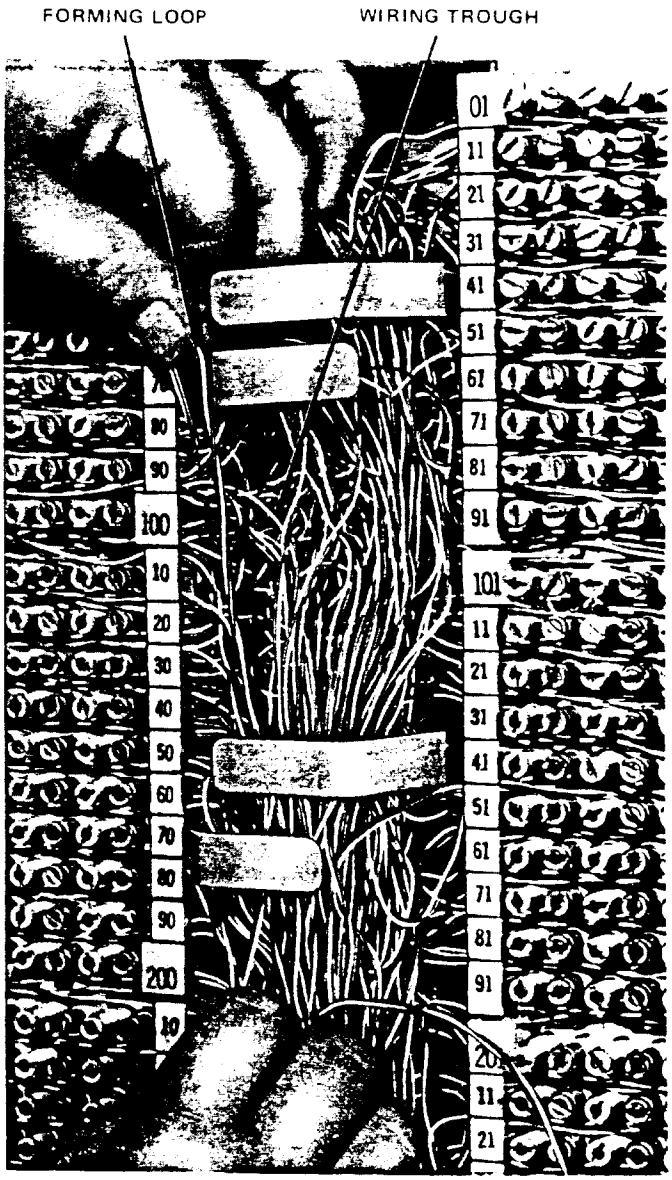


Figure 15. Forming Finger Loop and Placing Wire in Wiring Trough

(1) Place wire through the wiring slot, form a finger loop, and dress wires to the rear of trough. ***These finger loops allow a sufficient amount of slack for movement of the cross-connecting wire for tracing.***

**4.05** Cut and terminate cross-connecting wire as follows (Figure 16):

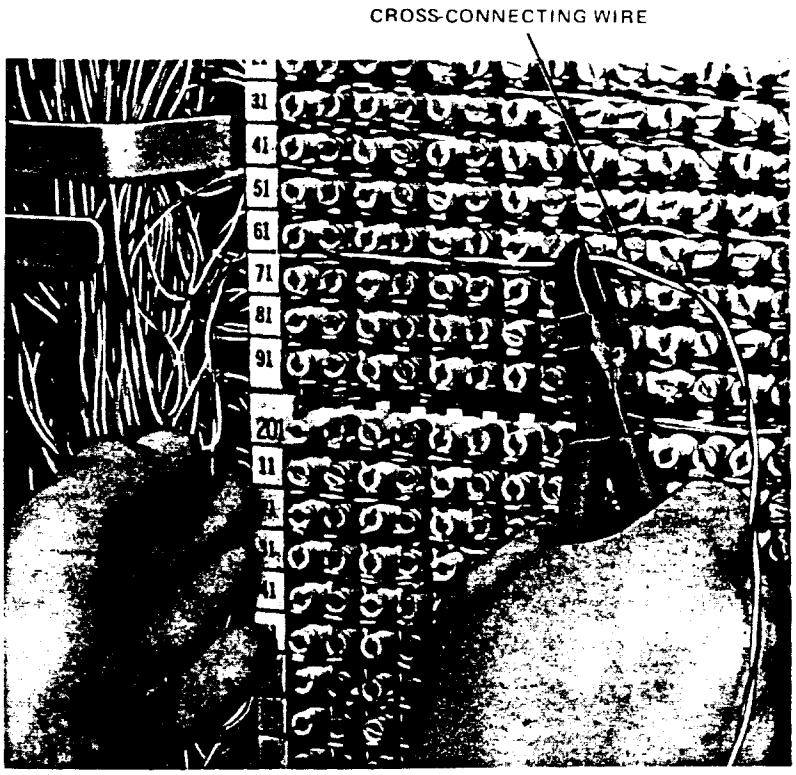


**Figure 16. Cutting Cross-Connecting Wire**

(1) Route the cross-connecting wire to the assigned feeder binding post and cut to required length.

(2) Remove the test cord from the feeder pair and terminate cross-connecting wire as outlined in paragraph 4.02.

# 5. Terminating Cross-Connecting Wire in 40-Type Cabinets Equipped with 99-Type Connecting Blocks

⇒ NOTE:
Either F or G cross-connecting wire can be used with the 99-Type Connecting Block.

**5.01** Verify the feeder-in pair as shown in Figure 12.

(1) Locate the feeder-in pair specified on the service order.

(2) If the clips on the handset match the clips on the cabinet door, they may be attached directly to the 99-Type Terminal Block

(3) If not, remove test cord from door and place it on the specified feeder pair.

(4) Attach the clips from the handset to the binding posts on the door and verify feeder-in pair.

**5.02** Terminate the cross-connecting wire on the distribution field as follows (Figure 17):

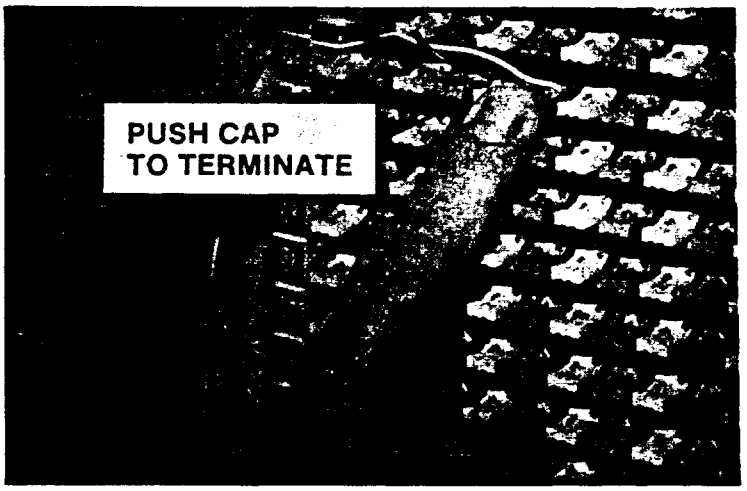


**Figure 17. Terminating Cross-Connecting Wire on Distribution Field**

(1) Locate the assigned distribution pair, then pull enough cross-connecting wire from spool to reach the assigned distribution pair.

(2) Using your fingers, pull the tip and ring caps out about 1/8-inch to the open

position (no tools required).

⇒ **NOTE:**
If the insertion hole in the top of the cap is above eye level, use a pair of pliers to pull the cap off. Rotate the cap 180 degrees and reinstall for better visibility.

(3) Insert one of the wires into the appropriate cap (tip or ring) until the end protrudes slightly through the hole on the opposite side. Pull the wire back until it is flush with the hole, and push the cap all the way in to fully seat and terminate the conductor. A snap will be heard when the cap is fully seated and the wire is terminated. Terminate both the tip and ring conductors in this manner.

⇒ **NOTE:**
A gauge hole is provided in the "90 count" on the Fanning Strip. The insertion length may be predetermined by inserting the wire full depth into the gauge hole and bending it to a 90 degree angle. The wire can then be inserted into the cap up to the bend and the cap pushed in to seat and terminate the conductor.

**5.03** Dress the cross-connecting wire as follows (Figure 18):

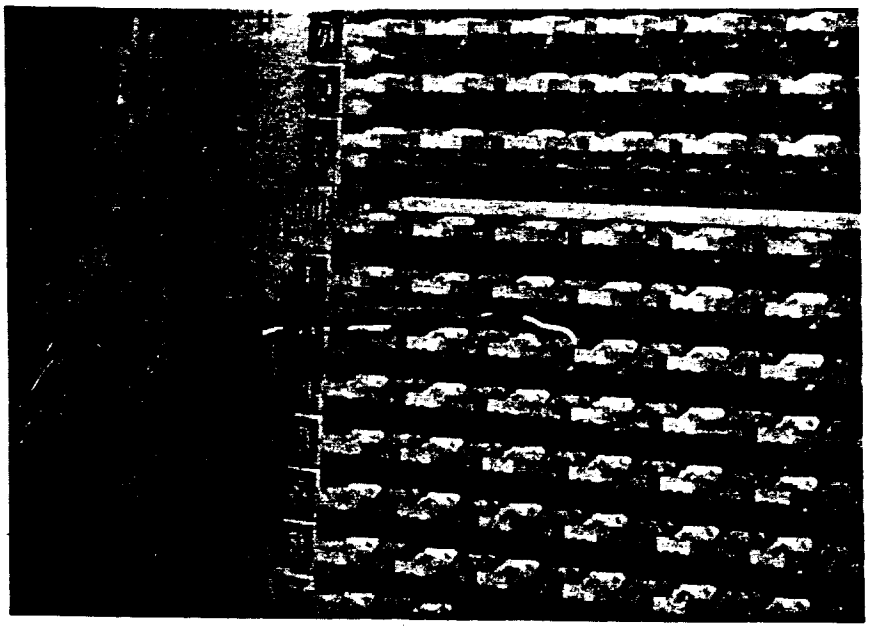

**Figure 18. Dressing Cross-Connecting Wire**

(1) Using an orange stick, dress the cross-connecting wire horizontally along the row of connectors. Do not use a screwdriver or scissors to dress the wires.

**5.04** Form a finger loop for slack as follows (Figure 19):

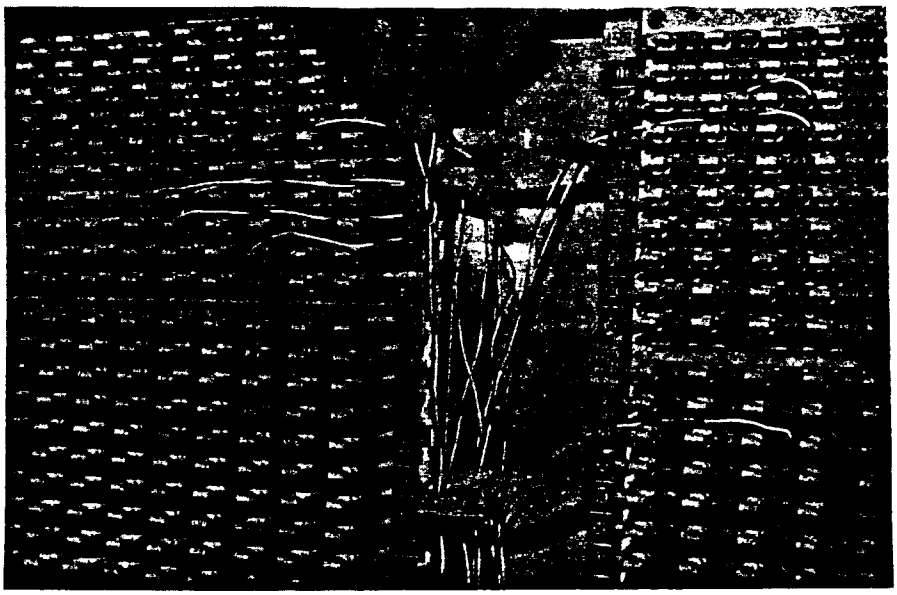

**Figure 19. Forming Finger Loop and Placing Wire in Wiring Trough**

(1) Place cross-connecting wire through the wiring slot, form a finger loop, and dress the wire to the rear of the trough. ***Finger loops allow a sufficient amount of slack for movement of the cross-connecting wire for tracing.***

**5.05** Cut and terminate cross-connecting wire as follows (Figure 20):

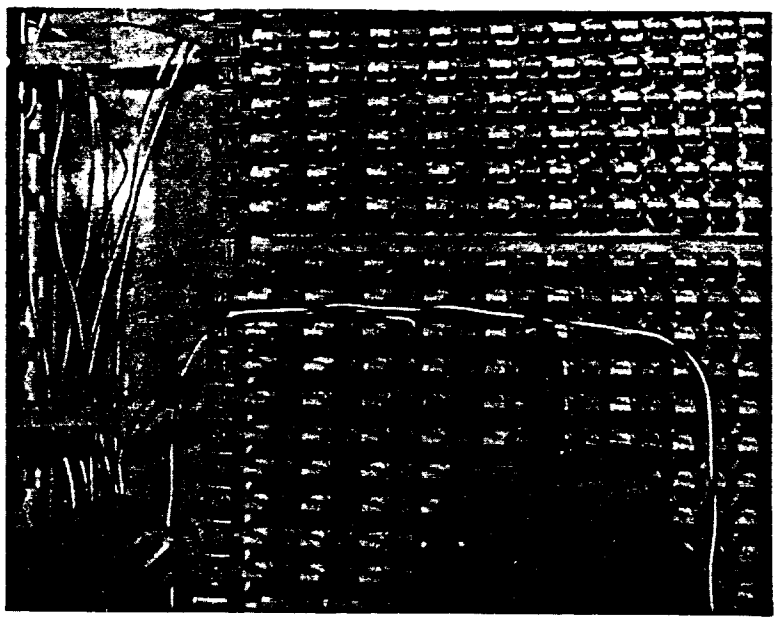

**Figure 20. Cutting Cross-Connecting Wire**

(1) Route the cross-connecting wire to the assigned feeder pair and cut to required length.

(2) Remove the test cord from the feeder pair and terminate cross-connecting wire as outlined in paragraph 5.02.

# 6. Terminating Cross-Connecting Wire in RAI Cabinet Equipped with 108 Connecting Block.

**6.01** Before proceeding with the work operation described in this part, it is important that craft personnel become familiar with feeder pair terminations in RAI-A and RAI-B as follows:

(a) Feeder pairs from the central office are connected through to RAI-B by means of patch plugs installed in the RAI-A so that feeder-in pairs are connected or switched to the feeder-out pairs. When a cable pair is connected through to RAI-B, that cable pair can be used only in RAI-B (Figure 21).

(b) When using feeder-in pairs for cross-connection to local distribution at the RAI-A, 108 exclusion blocks prevent cross-connections from being made to feeder-out pairs in error. Without patch plugs, the cable pair is available at RAI-A only.

(c) The 108 feeder and distribution fields are cross-connected as previously described in Part 3.

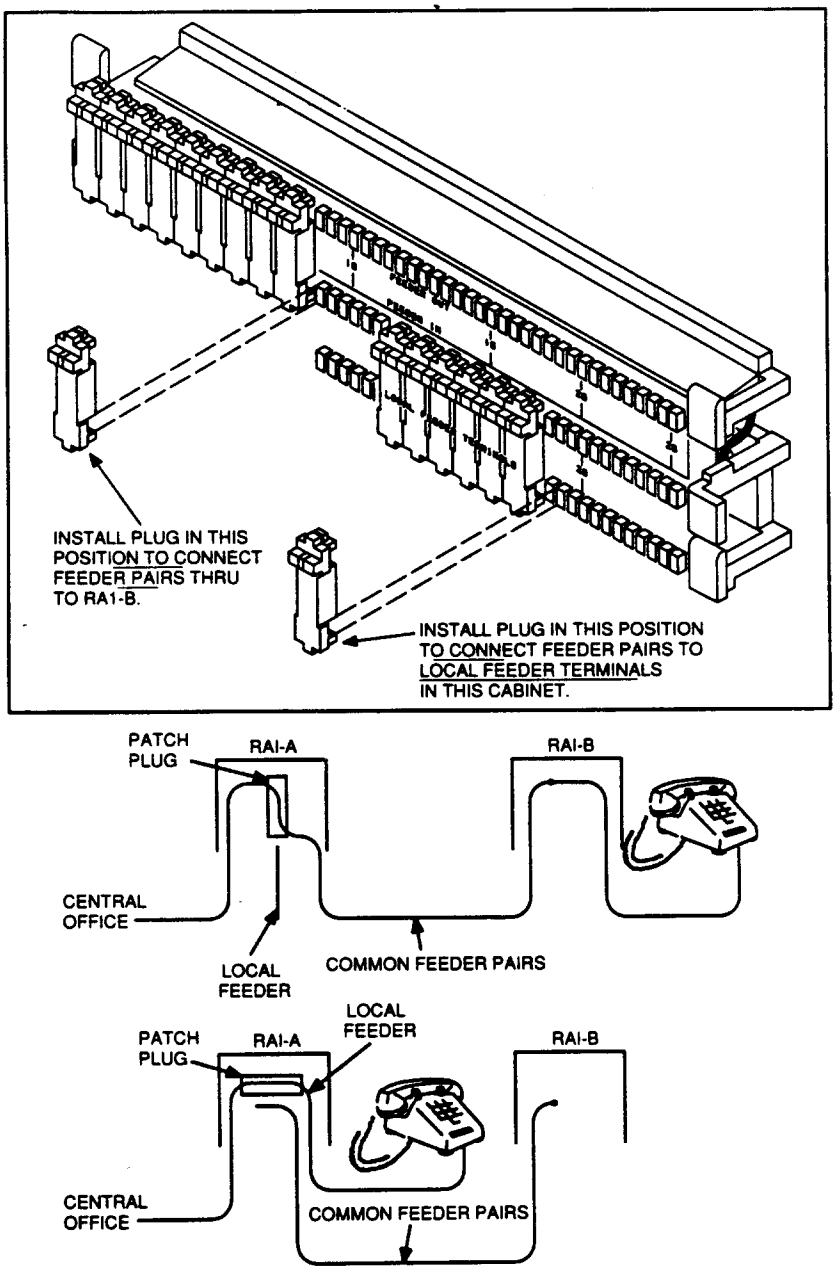


**Figure 21. Method of Connecting Feeder Pairs in RAI-A**

# 7. Terminating Cross-Connecting Wire in RAI Cabinets Equipped with 76-Type Binding Post

**7.01** Before proceeding with the work operation described in this part, it is important that craft personnel become familiar with feeder pair terminations in RAI-A and RAI-B as follows:

(a) Feeder pairs from the central office are connected through to RAI-B by means of patch plugs installed in the top position in RAI-A so that ***feeder-in*** pairs are connected or switched to the ***feeder-out*** pairs as shown in Figure 21. When a cable pair is connected through to RAI-B, that cable pair can be used only in the RAI-B.

(b) When the patch plug connects ***feeder-in*** pairs to ***local feeder***, that cable pair is available only at RAI-A on the binding post field (Figure 21).

(c) The 76-type binding post terminal fields (feeder and distribution) are used for connecting cross-connecting wire as outlined in Part 4 and as shown in Figure 22.

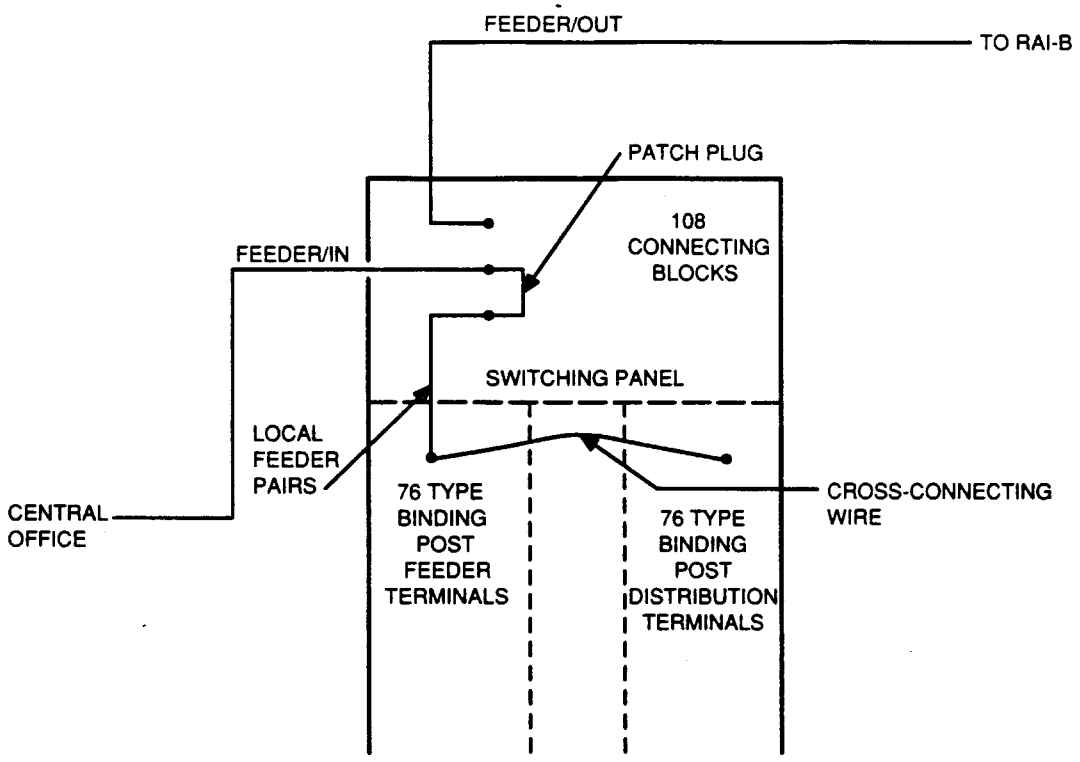


**Figure 22. Feeder-In Pairs Connected to Local Feeder Pairs by Means of Patch Plug (RAI-A)**

# 8. Removing and Reterminating Cross-Connecting Wire

## 108 Connecting Block

**8.01** Remove the cross-connecting wire from the connecting block as follows (Figure 23):

NOTE:
***If the cross-connecting wire is not to be reterminated, remove it from the cabinet. This prevents excessive buildup of cross-connecting wire and helps maintain good housekeeping.***

REMOVING CROSS-CONNECTING WIRES
USING LONG-NOSE PLIERS

**Figure 23. Removing Cross-Connecting Wire**

(1) Using long-nose pliers, remove cross-connecting wire by pulling forward in a direction perpendicular to the face of the wiring block. Feeder side should be removed first.

**8.02** After removing the cross-connecting wire, make sure there is no insulation left in the block. If insulation is left in the blocks, remove it as follows (Figure 24):


**Figure 24. Removing Insulation from Block**

(1) Using a spudger (KS-22035) or other insulated tool, remove any insulation that may have been left in the block.

**8.03** To reterminate the cross-connecting wire, cut off the old contact part of the wire and reterminate as outlined in Figures 8 and 9. If the wire is not long enough to leave the proper amount of slack, replace the wire. ***Do not piece out.***

## 76-Type Binding Post

**8.04** Loosen binding post screws and remove cross-connecting wire from feeder side first. ***If cross-connecting wire is not to be reterminated, remove from the cabinet. This prevents excessive buildup of wire and helps maintain good housekeeping.***

**8.05** To reterminate the cross-connecting wire, cut off the contact portion of the wire and reterminate as outlined in Figure 12. If wire is not long enough to leave proper amount of slack, replace wire. ***Do not piece out.***

## 99-Type Connecting Block

**8.06** If retermination of cross-connecting wire is required, pull the cap out to the open position and pull the wire out of the connecting block. Cut the end of each wire back about 3/8- to 1/2-inch, or as required, and reterminate using procedures in paragraph 5.02.

# 9. Identifying Special Circuits

## 108 Connecting Block

**9.01** When cable pairs terminated in a 108-type connecting block are used for special service, it will be necessary to identify the circuits by placing an H clip terminal insulator AT-8660-H over the pair at the feeder and distribution termination as shown in Figure 25.

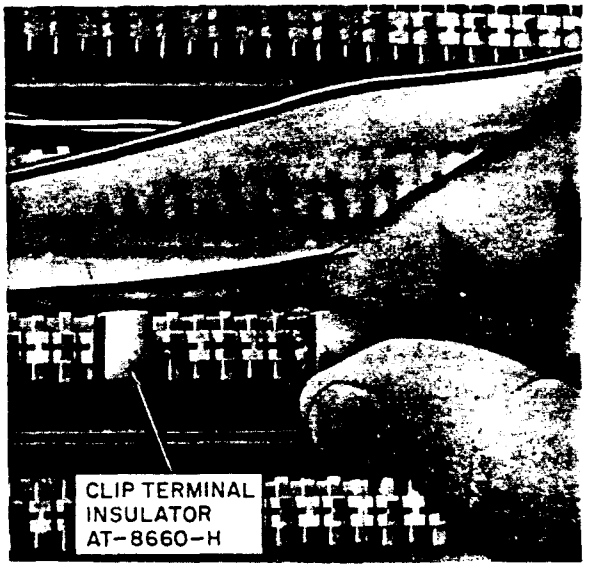


**Figure 25. Placing Clip Terminal Insulator for Special Circuit Identification**

## 76-Type Binding Post

**9.02** When cable pairs terminated on 76-type binding posts are used for special services, it will be necessary to identify the circuits by placing a special circuit marker over the pair at the feeder and distribution termination as shown in Figure 26.

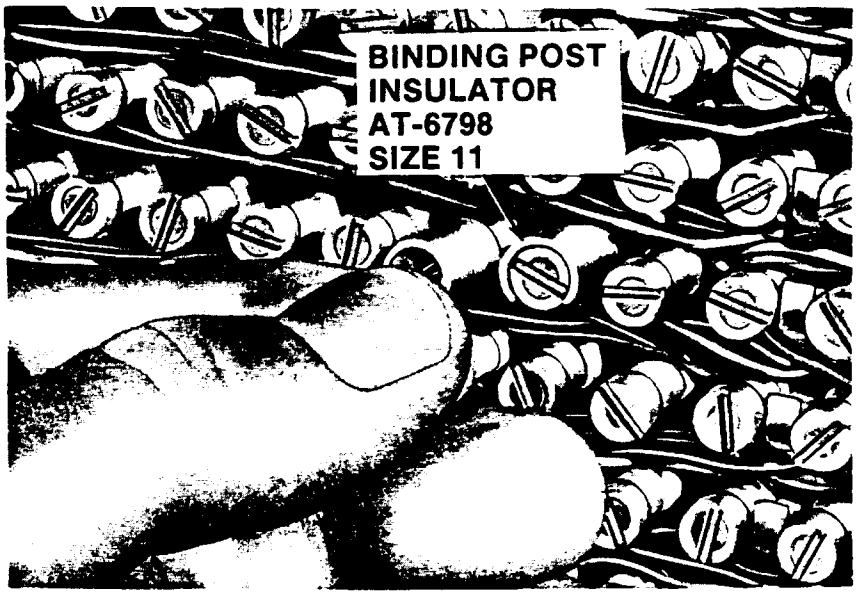


**Figure 26. Placing Binding Post Insulator AT-6798 Size 10 for Special Circuit Identification**

### 99-Type Connecting Blocks

**9.03** When cable pairs terminated in 99-type connecting blocks are used for special services, special service markers are available to replace the existing caps. Using a pair of pliers, pull the standard cap off before terminating the cross-connecting wire. Replace the cap with one of the **red** special service marker caps. Terminate the wire using procedures in paragraph 5.02.

## 10. Reference Documents

**10.01** The following practices cover additional information on 40-type cabinets:

| Practice | Title |
|---|---|
| 626-500-125 | *40- and 42-Type Cabinets—Coding* |
| 631-600-228 | *40-Type Cabinets—Description and Placing* |
| 631-600-229 | *40-Type Cabinets Equipped With 76-Type Terminal Blocks—Splicing* |
| 631-600-231 | *40-Type Cabinets Equipped With 108-Type Connectors—Field Termination and Wiring* |
| 631-600-236 | *42-Type Cabinets—Description and Installation* |
| 631-600-237 | *42-Type Cabinets—Splicing and Wiring* |
| 631-600-305 | *Pedestal Closures—Moisture Plugs at Cable Ends* |
| 644-203-151 | *40- and 42-Type Cabinets—Reconfiguration* |

**10.02** Additional copies of this practice and associated documentation may be ordered from the AT&T Customer Information Center as follows:

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