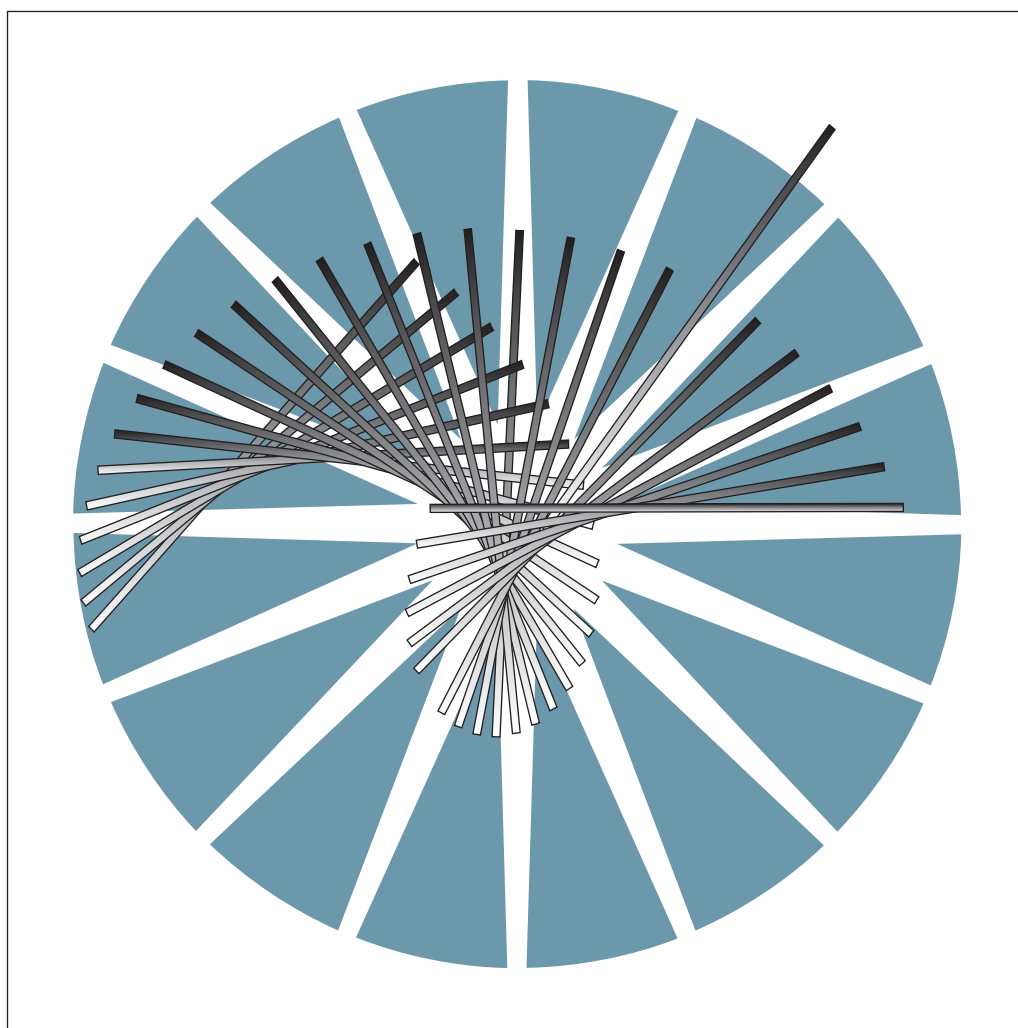3746 Nways Multiprotocol Controller
Model 950

IBM

Installation Guide

3746 Nways Multiprotocol Controller
Model 950

IBM

Installation Guide

┌─── **Note!** ───┐

Before using this information and the product it supports, be sure to read the general information under "Notices"
on page xi.

└───┘

Fifth Edition (October 1998)

The information contained in this manual is subject to change from time to time. Any such changes will be reported in subsequent
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Read the instructions for correct handling.

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Product Safety Information

General Safety

This product meets IBM safety standards.

Safety Notices

For *Safety Notices* refer to *IBM 3745 Communication Controller All Models*, *IBM 3746 Expansion Unit Model 900*, *IBM 3746 Nways Multiprotocol Controller Model 950*, *Safety Information*, GA33-0400.

Safety Notices for United Kingdom

1. The IBM 3746 Nways Multiprotocol Controller Model 950 is manufactured according to the International Safety Standard EN 60950 and as such is approved in the UK under the General Approval Number NS/G/1234/J/100003 for indirect connection to the public telecommunication network.

2. The network adapter interfaces housed within the IBM 3746 Nways Multipro-tocol Controller Model 950 are approved separately, each one having its own independent approval number. These interface adapters, supplied by IBM, do not use or contain excessive voltages. An excessive voltage is one that exceeds 42.4 V peak ac or 60 V dc. They interface with the IBM 3746 Nways Multiprotocol Controller Model 950 using Safety Extra Low Voltages (SELV) only. In order to maintain the separate (independent) approval of the IBM adapters, it is essential that other optional cards, not supplied by IBM, do not use mains voltages or any other excessive voltages. Seek advice from a com-petent engineer before installing other adapters not supplied by IBM.

Service Inspection Procedures

The Service Inspection Procedures help service personnel check whether the 3746-950 conforms to IBM safety criteria. They have to be used each time the 3746-950 safety is suspected. The *Service Inspection Procedures* section is located at the beginning of the *3746-950 Service Guide*, SY33-2108. The 3746-950 areas and functions checked through service inspection procedures are:

1. External covers

2. Safety labels

3. Safety covers and shields

4. Grounding

5. Circuit breaker and protector rating

6. Input power voltage

7. Test of control power switch

8. Power-ON indicator.

About This Book

Who Should Use This Book

The IBM personnel using this manual should be:

- Trained to service the 3746 Nways Multiprotocol Controller Model 950
- Familiar with the 3746-950 service documentation.

How To Use This Book

This manual provides step-by-step procedures for installing a 3746-950. **Many steps depend on previously completed instructions** before continuing the procedure. To ensure the most efficient installation:

- Read the instructions carefully before attempting to do them,
- Complete each step before going to the next one,
- Go through the chapters sequentially.

How This Book is Organized

Chapter 1 Introduces the 3746-950 configuration and gives a list of what the CE must do before beginning to install. Read this chapter before any installation.

Chapter 2 Presents the procedures to connect the 3746-950 to the customer's power sources and to connect the service console or the local console to the 3746-950 and 8228.

Chapter 3 Presents the 3746-950 power ON and test procedures that the CE must perform on the 3746-950 before installing the external cables.

Chapter 4 Presents the external cable setup procedures.

Chapter 5 Presents the procedures to install the ground plates on the 3746-950.

Chapter 6 Presents the procedures to make the machine ready for the customer.

Chapter 7 Presents relocating/removing procedures for the 3746-950.

Appendix A Gives an example of the Ethernet parameters worksheet

Appendix B Shows the 3746-950 component locations.

Appendix C Shows the controller expansion component locations.

A **service and customer documentation bibliography**, a **list of abbreviations**, and an **index** are provided at the end of this manual.

Where to Find More Information

For a complete list of the 3746-950 customer and service information manuals, see at the end of this manual. In this *Installation Guide*, references are made to the following publications:

3746-950 Service Guide, SY33-2108

Service Processor Installation and Maintenance (Based on 7585, 3172, and 9585), SY33-2120 or SY33-2115

3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide, GA33-0457

Multiaccess Enclosure Installation and Maintenance Guide, SY33-2118

World Wide Web

You can access the latest news and information about IBM network products, customer service and support, and microcode upgrades via the Internet at the URL: http://www.networking.ibm.com/

Online Documentation from CD-ROM

With the service processor is now shipped a CD which contains the LIC and a copy of the 3746 web site. You will find from this web page, marketing, PE, and all information about CCP products.

To access this page:

1. Insert the CD into the CD disk drive of the SP.

2. From the MOSS-E primary menu, click on **Information**

3. Double click on **CD-ROM documentation**

4. Then if you want to display the CCP documentation, click on **Documentation**

5. Click on **La Gaude Information Development: Communication Controllers Information**

Note: To have the very last version of the web site, connect to Internet at: http://w3.lagaude.ibm.com/ccp/3746.htm

Service Personnel Definitions

See the *3746-950 Service Guide*, SY33-2108.

Summary of Changes

This edition gives information about:

1. New procedures to configure NPM.

2. Connection of the 3746-950 to the new SP type 6275-560

Chapter 1. Preparing for Installation

Overview

The 3746-950 is an APPN Network Node based on the 3746-900 structure
A service processor provides the operator and service console support for the
3746-950. A network node processor houses the control point to support APPN and
or IP.
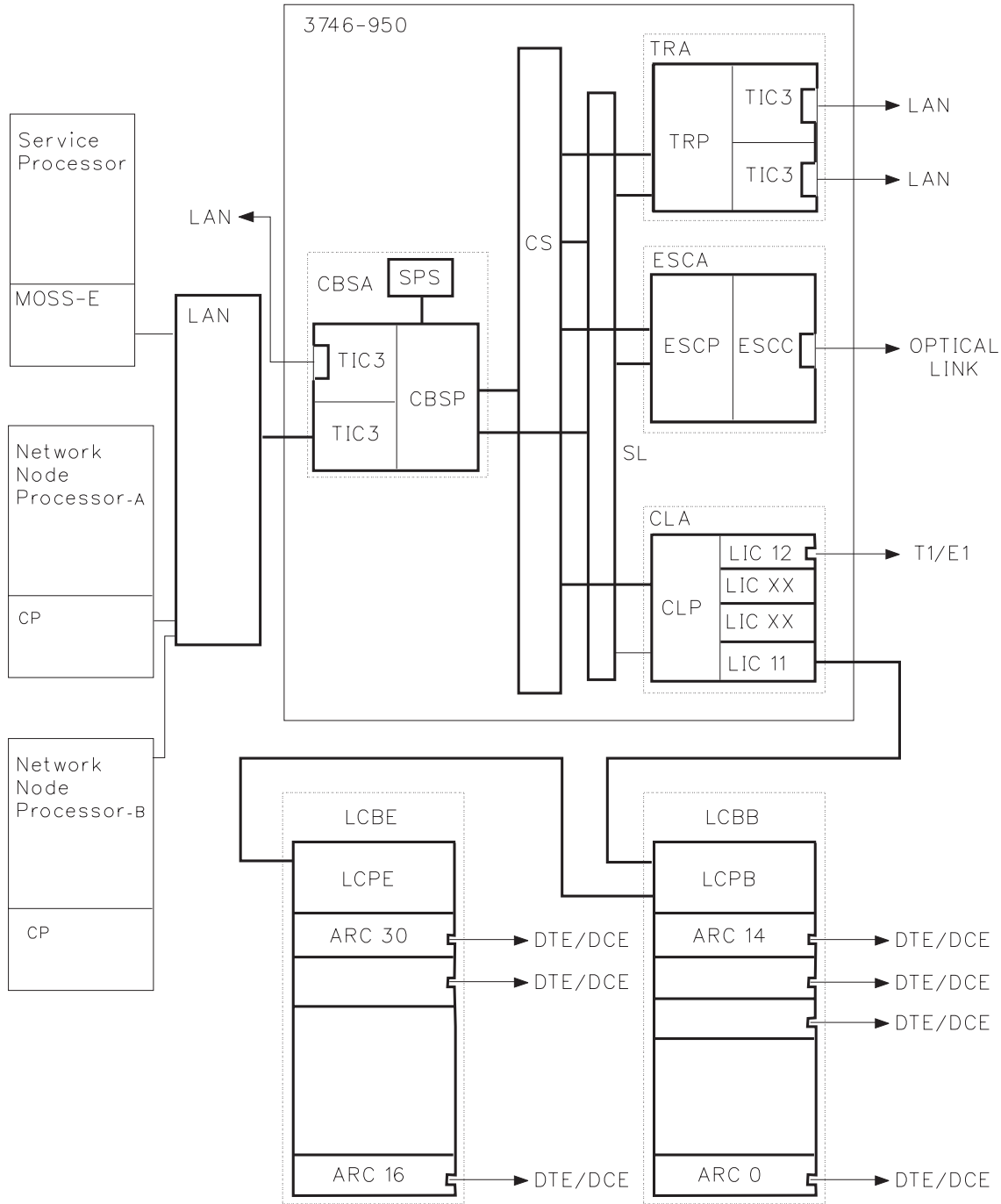
Figure 1-1. 3746-950 Data Flow

Documentation

Note: The following list gives the reference to all the documents that can be used during the installation.

- 3746-950 IG: *3746-950 Installation Guide*, SY33-2107
- SPIM: *Service Processor Installation and Maintenance (Based on 7585, 3172, and 9585)*, SY33-2120
- NNPIM: *Network Node Processor Installation and Maintenance (Based on 7585 or 3172)*, SY33-2112
- MES: 3746-900 MES and Field BMs for model conversion to 3746-950
- *IBM 7857 Guide to Operation*, GA13-1839
- Parameter worksheets from the *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457
- *3746-950 Service Guide*, SY33-2108

3746-950

Doors on the front and rear of a 3746-950 give access to the inside of the unit. A clear path must be provided around the configuration to access covers. Never install the machine with its right or left side against a wall or fixed material. Keep a servicing area 0,75 m (2.5 ft) wide at front and back, and at least 0.85 m (2.80 ft) at the right and left sides to install/remove the end covers.

Note: The controller expansion can be attached to the 3746-950 (see Figure 1-2) or detached but no more than 6 meters (with the standard token ring cable shipped with the machine) from the 3746-950 (see Figure 1-4 on page 1-4 and Figure 1-5 on page 1-4). If two controller expansion are installed refer to Figure 1-8 on page 1-5 and Figure 1-9 on page 1-5.
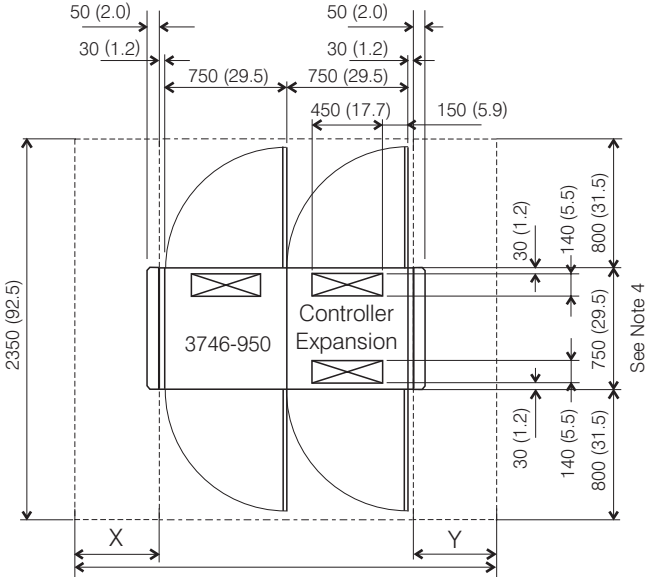
Figure 1-2. Plan View of a 3746-950 Configuration
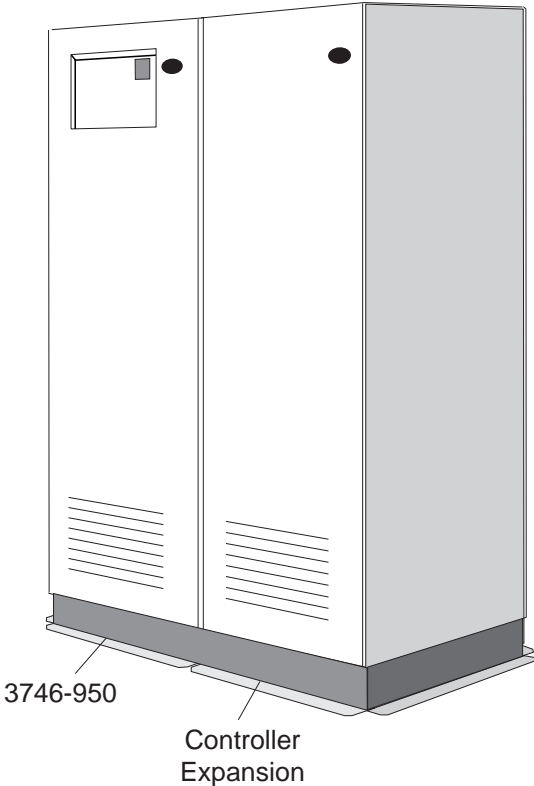
Figure 1-3. Plan View of a 3746-950 Configuration

3746-950 preparing for installation
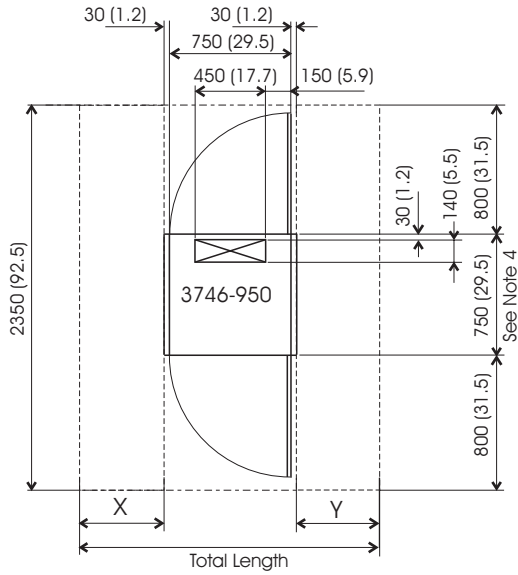
Figure   1-4. Plan View of a 3746-950 Alone

Figure   1-6. Plan View of a Controller Expansion

3746-950

Figure   1-5. The 3746-950
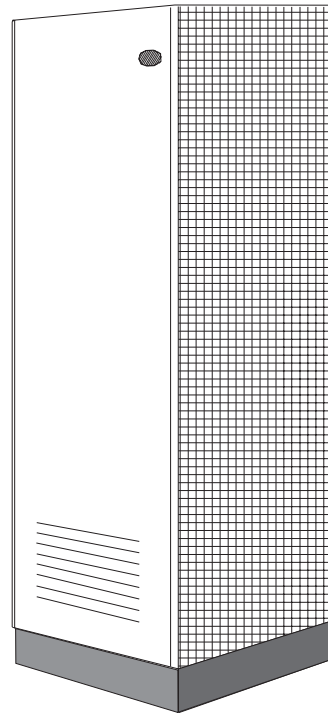
Controller
Expansion

Figure   1-7. The Controller Expansion
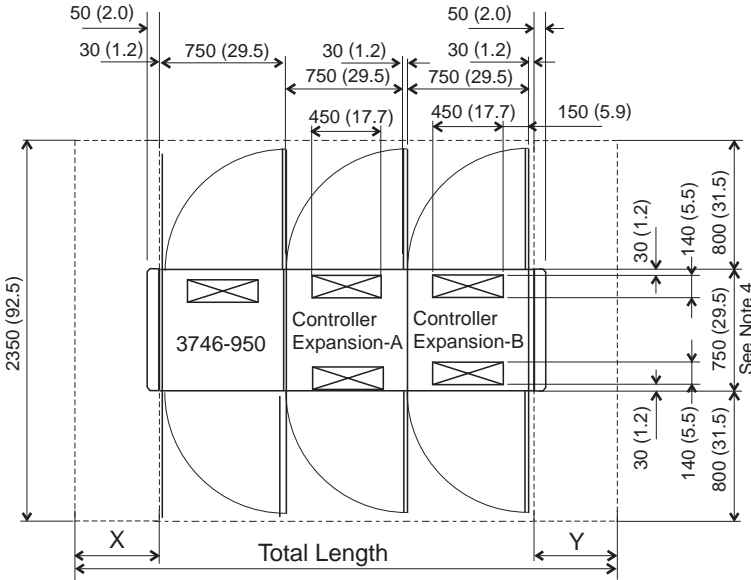
Figure   1-8. Plan View of a 3746-950 and two Controller Expansion Installed
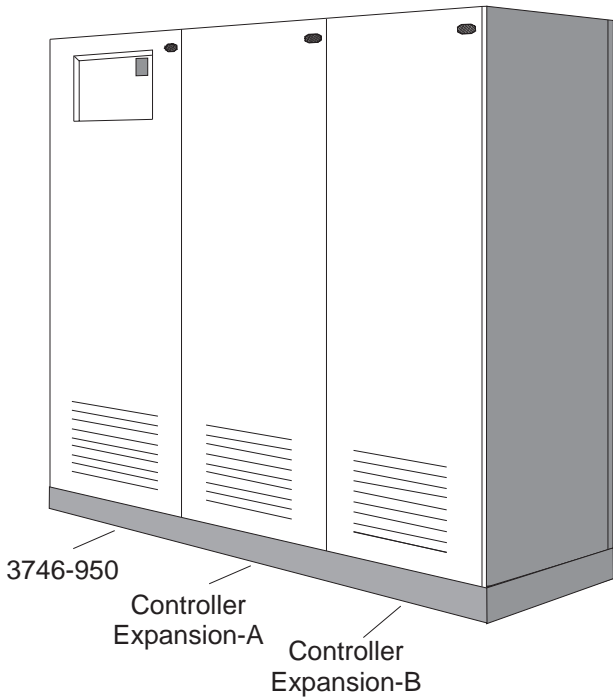
Figure   1-9. The 3746-950 and two Controller Expansion Installed

Special Tools/Test Equipment

- A cover lock key P/N 1643894 shipped with the 3746-950.

Note: Not required but preferred for unpacking if available from branch office:

- A power screwdriver
- A 3/8" socket set

Installation Time

- The estimated installation time for the service processor is 2.45 hours.
- The estimated hardware installation time for the 3746-950 is 4.0 hours.
- The average time for installing the external cables is 1.0 hour.
- The average time for installing the network node processor is 2.0 hours.
- The average time for installing the controller expansion is 1.0 hour.
- The estimated installation time for the ethernet bridge is 1.0 hour.
- The estimated installation time for the multiaccess enclosure is 2.45 hours.

Note

Under the installation service code, only report the time spent on the proce-
dures described in this manual. Other activities must be reported on another
service code according to your general reporting instruction guide.

Making Ready to Install

(Place a check mark next to each completed step.)

Step 1. ____ Connect to the following web site:
http://www.lagaude.ibm.com/3746pe, and download all mandatory fixes
according to the level of the code that you are going to install.

Step 2. ____ Ensure that the RSF link is installed and working.

Note: If the customer has not provided an RSF link, review or have mar-
keting review the maintenance exposure with the customer.

Step 3. ____ Ensure that the machine type and model are registered in RETAIN
(CCPF).
For **U.S.A.** machines, please call the Raleigh Multiplexor Support Center
and verify your machine's registration in CCPF for:

a. The seven digit **serial number** of the 3746-950 is **correct**.

b. The three digit **model** designation for the 3746-950 is **correct**.

Step 4. ____ Check all items listed on the shipping group bill of material (B/M).
Verify that all parts have been received.

Step 5. ____ Make sure that all the cables specified on the cable order form have
been received. Report any difference to the IBM sales representative and
to the CE branch office.

Step 6. ____ Verify that the service processor access unit (8228) is available to
connect the 3746-950.

Step 7. ____ Refer to the 3746-950 bibliography at the end of this manual.
Ensure that all the customer and service manuals supplied with the
3746-950 have been received and updated with TNLs (if any) before
beginning installation.

Step 8. ____ Familiarize yourself with the installation procedures in this manual.
You must also be familiar with the *3746-950 Service Guide*, SY33-2108
used for troubleshooting.

Step 9. ____ Make sure that the installation area is in accordance with Figure 1-2
on page 1-3. If not, inform the customer.

> **Note:** Verify that the floor cutout size and location correspond to the plan otherwise the ESCA cable guide can't be installed.

Step 10. ____ From the IBM system engineer or from the customer, obtain :

a. The **HONE configuration sheet**.

b. The **Parameter worksheet "Service Processor Integration"** (This worksheet is in the Appendix of the *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457).

c. The **configuration file** if this file has been produced using a stand-alone Controller Configuration and Management

3746-950 preparing for installation

Chapter 2. Connecting the 3746-950 to the Power and Devices

Checking the 3746-950 Frame

Step   1. ____ Compare the machine serial number on the packing material with that listed on the shipping documents. Report any difference to the IBM branch office, and confirm whether the installation can continue.

Step   2. ____ Unpack the 3746-950 and ensure that all shipping material is removed. Refer to the unpacking instructions attached to the external packing.

Step   3. ____ Open the rear door. Locate the power rating plate (see Figure 2-1). **Check that the 3746-950 Basic AC power and the Optional AC power rating plate data are consistent with the customer's available voltage AC and the frequency.**
Record the power information. It will be used later in chapter "Connection to Main Power" on page 2-24

Basic Power: _____   Optional Power: _____

Step   4. ____ Inspect the 3746-950 carefully for shipping damage. Report any damage in accordance with local procedures.

Step   5. ____ Check that the serial number stamped on the frame is the same as on the serial number plate (see Figure 2-1 for location).
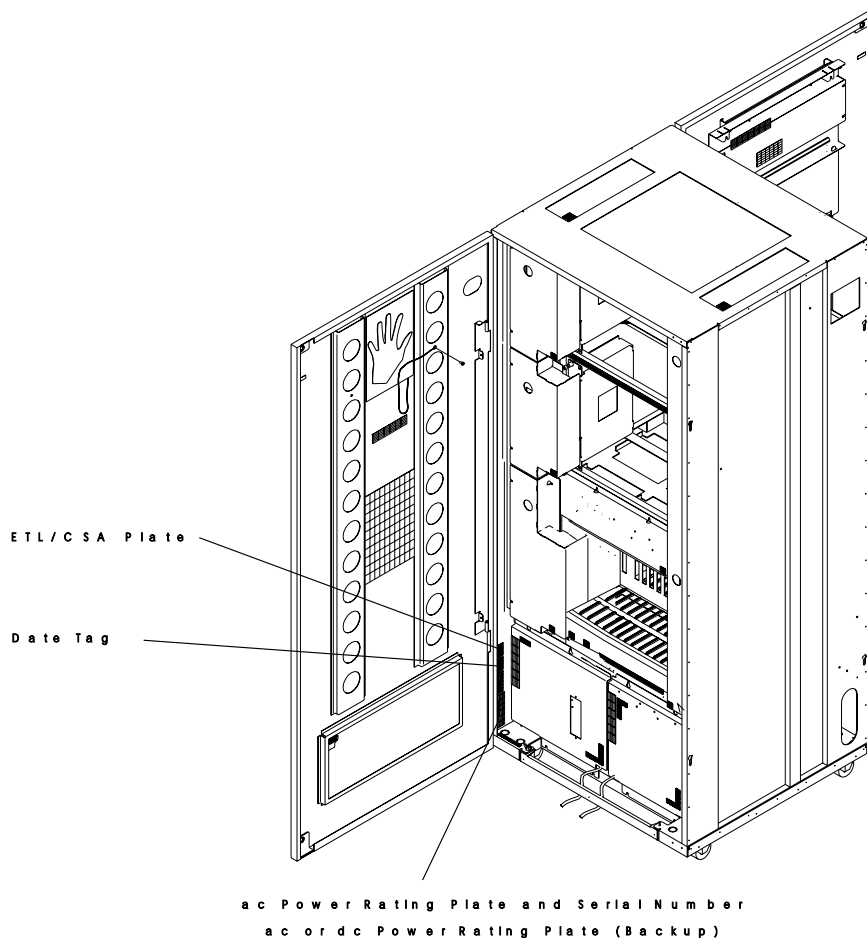
Figure   2-1. 3746-950 Power Rating Plate (Rear View)

Removing the Shipping Bars

1. ____Open the front and rear covers.

2. ____Remove the CBC covers (see Figure 2-1 on page 2-2).

3. ____Remove the screws maintaining the red shipping bars **1**

4. ____Store these bars in a safe place for further use.

Note: These red shipping bars keep the cards in the boards during the transportation and are located on the upper and lower sides of the board (front and rear sides of the 3746-950) see Figure 2-2.
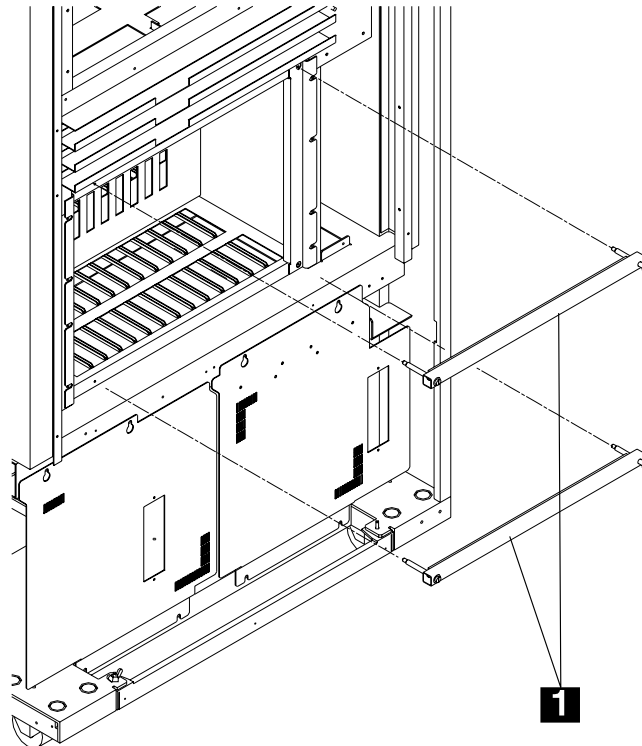
Figure 2-2. Shipping Bars

Installing the Controller Expansion

The controller expansion can be installed:

- **Attached** to the 3746-950, go to "Installing the Controller Expansion Attached to the 3746-950" on page 2-4

- **Detached** from the 3746-950 frame and installed:

  – **Less than 6 meters (19.7 ft)** from the 3746-950, go to "Installing the Controller Expansion Detached from the 3746-950" on page 2-5

  – **More than 6 meters (19.7 ft)** from the 3746-950, go to "Installing the Controller Expansion Detached from the 3746-950" on page 2-6

Installing the Controller Expansion Attached to the 3746-950

1. ____Remove the right and left covers from the 3746-950 frame. The right cover will be reinstalled on the right side of the controller expansion when the ground brackets will be installed (refer to "Installing the 3746-950 and Controller Expansion Ground Brackets" on page 5-2).

2. ____ Using four screws (PN 1621534) and four spacers (PN 72F0659) attach the controller expansion to the 3746-950.

3. ____ Route and connect one ground wire (PN 58G5691) **A** between the two frames using:

   a. One screw (PN 61F4511) **B** and one washer (PN 1622347) on the 3746-950 frame.

   b. One screw (PN 61F4513) **C** and one washer (PN 1622347) on the controller expansion frame.

4. ____ Connect the other ground wire (PN 58G5691) **A** between the controller expansion frame and the building ground, then go to "Locking the frames" on page 2-7.
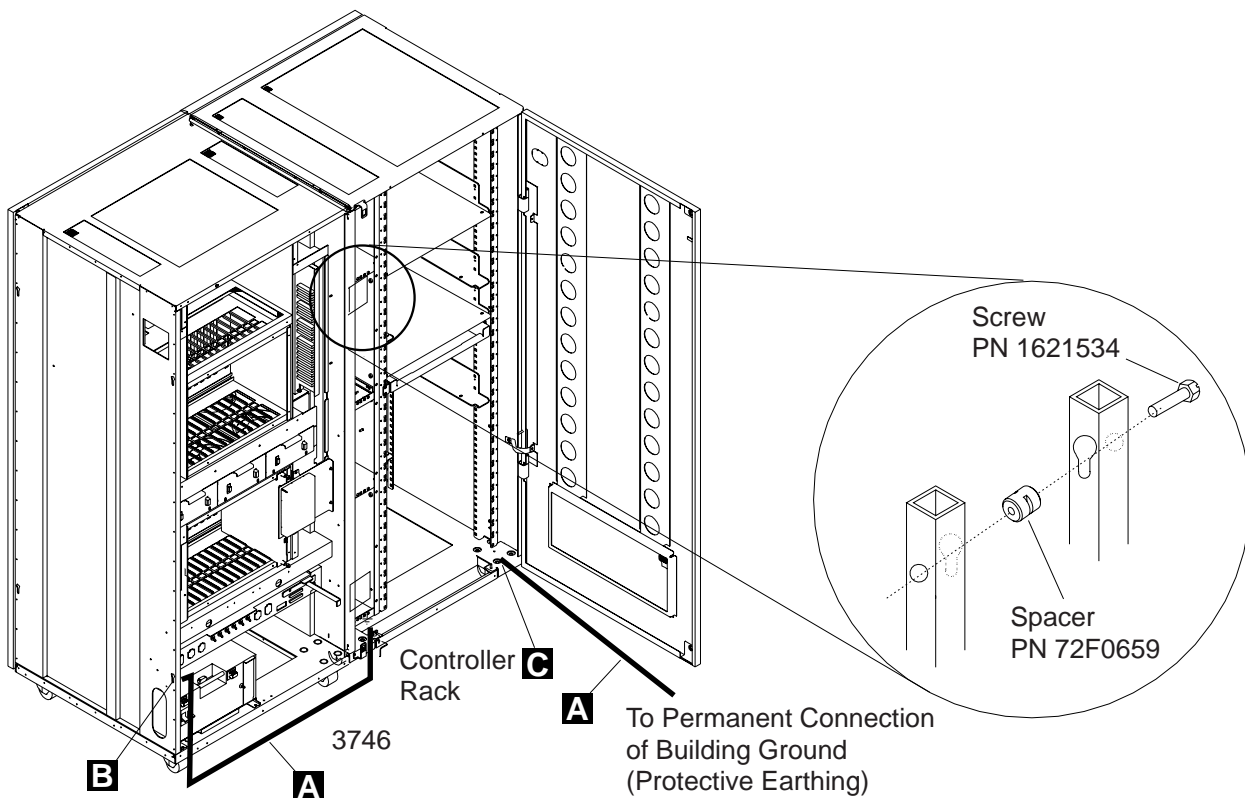
Figure 2-3. Installling the Controller Expansion Attached to the 3746-950

Installing the Controller Expansion Detached from the 3746-950

Note: In this installation the controller expansion is less than 6 meters (19.7 ft) from the 3746-950 frame.

1. ____Install the controller expansion to a maximun of 6 meters from the 3746-950 (with the standard cable shipped with the machine).

2. ____ Route and connect one ground wire (PN 58G5691) **A** betwwen the two frames using:

   a. One screw (PN 61F4511) **B** and one washer (PN 1622347) on the 3746-950 frame

   b. One screw (PN 61F4513) **C** and one washer (PN 1622347) on the controller expansion frame.

3. ____ Connect the other ground wire (PN 58G5691) **A** between the controller expansion frame and the building ground, then go to "Locking the frames" on page 2-7.
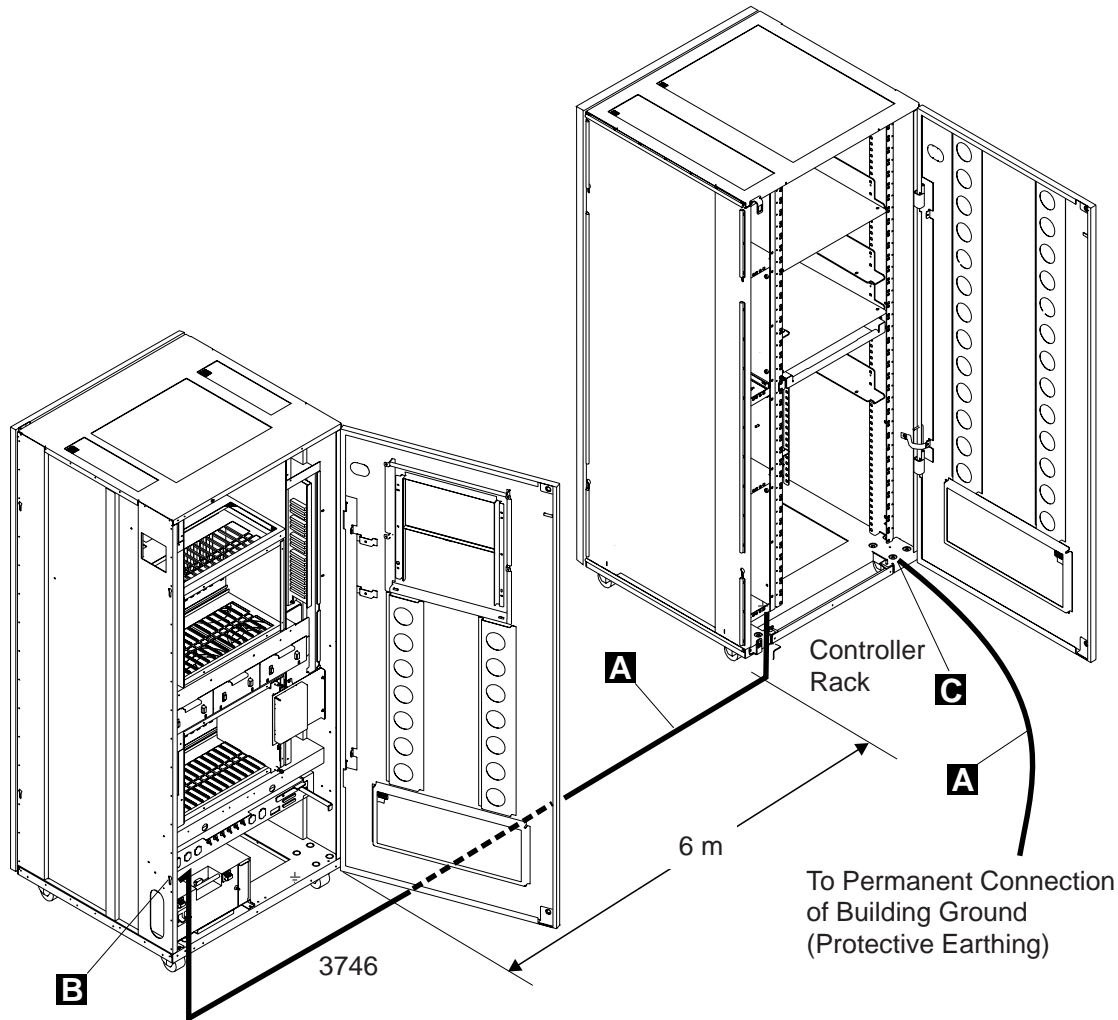
Figure 2-4. Installing the Controller Expansion Alone

Installing the Controller Expansion Detached from the 3746-950

Note: In this installation the controller expansion is more than 6 meters (19.7 ft) from the 3746-950 frame.

1. ____Install the controller expansion in its final position

2. ____ Connect one ground wire (PN 58G5691) **A** between the 3746-950 frame and the building ground using one screw (PN 61F4511) **B** and one washer (PN 1622347) on the 3746-950 frame.

3. ____ Connect the other ground wire (PN 58G5691) **A** between the controller expansion frame and the building ground using one screw (PN 61F4513) **C** and one washer (PN 1622347) on the controller expansion frame, then go to "Locking the frames" on page 2-7.

Controller
Rack **C**

More than
6 m

A

To Permanent Connection
of Building Ground
(Protective Earthing)

3746

B

A To Permanent Connection
of Building Ground
(Protective Earthing)
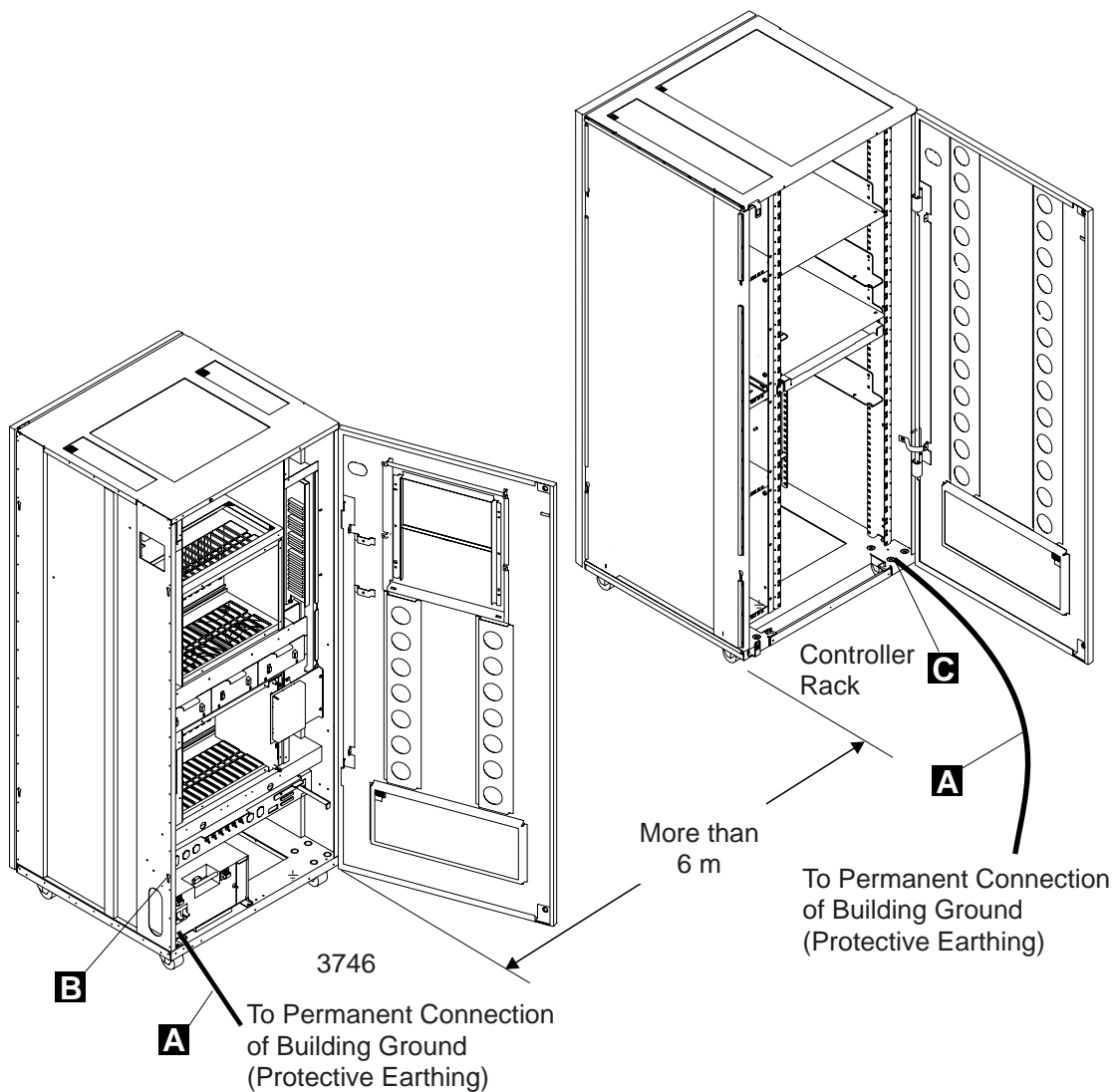
Figure 2-5. Installing the Controller Expansion Alone (more than 6 m)

Locking the frames

When the 3746-950 and controller expansion frames are on their final positions, tighten the caster lock screws (see Figure 2-6).
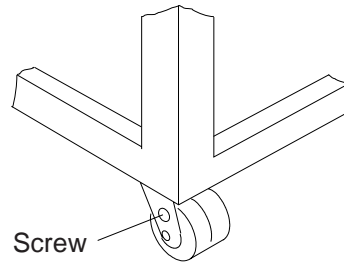
Screw

Figure 2-6. Caster lock Screw

Do you have to install Ethernet Bridge?

- **Yes**, go to "Installing an Ethernet Bridge" on page 2-8
- **No**, go to "Connection to Main Power" on page 2-24.

Installing an Ethernet Bridge

For any error or unexpected message, go to the START page of the *3746-950 Service Guide*, SY33-2108.

Notes:

1. For details refer to *8229 Bridge Manual*, GA27-4025.

2. **Two ethernet bridges** can be connected to the **same 8228** and the maximum of ethernet bridge connected to a 3746-9x0 is **four**.

3. The ethernet bridge is based on the 8229

Step   1. **Unpacking the Ethernet Bridge**

a. ____ Remove the power cord, diskette, and mounting accessories. (The mounting brackets, small package of screws, cable mounting handle, cable management bracket, and rubber feet are in the plastic bag.)

b. ____ Remove the ethernet bridge from its packaging.

c. ____ Make sure that you have everything (see Figure 2-7), then go to step 2 on page 2-9.

Power Cord

3.5-inch Diskette
Containing the 8229 Files   Manual   Mounting Accessories

Token-Ring
Wrap Plug   Ethernet
Wrap Plug
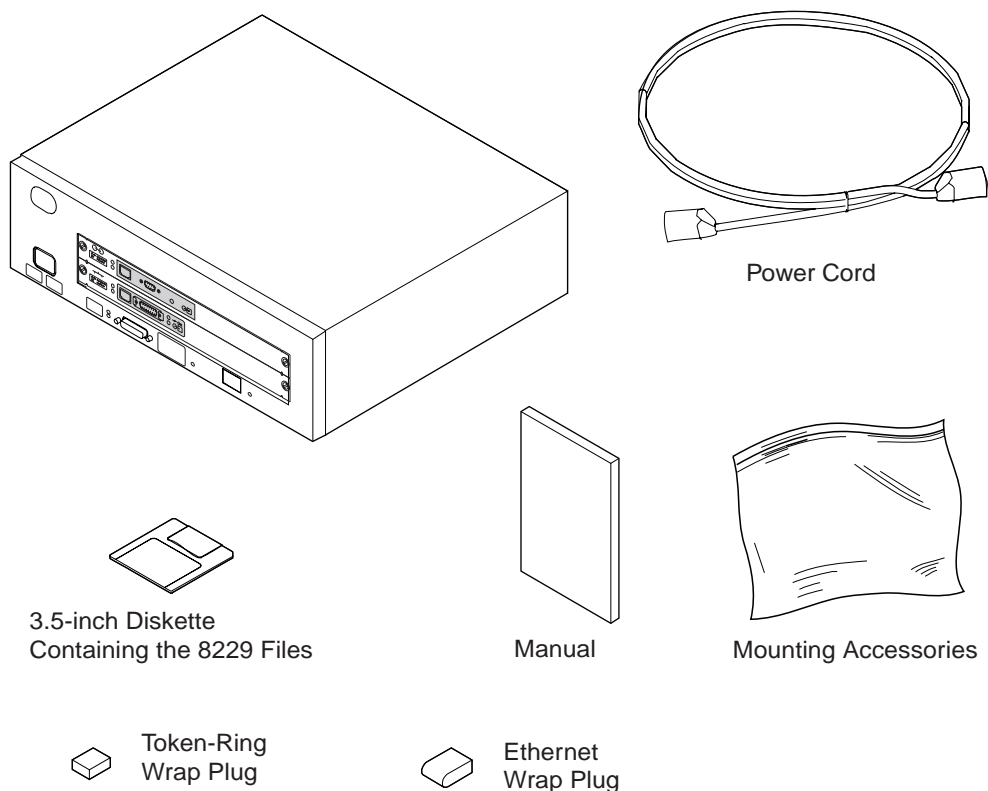
Figure   2-7. Contents of the Shipping Carton for the Ethernet Bridge.

Go to step 2 on page 2-9 .

Step   2. **Verifying the Ethernet Bridge and the Attachment Modules**

Notice the icon in the upper left-hand corner on the front. (See the matching symbol in the figures below.) Verify that the **token-ring module** is installed in the **upper slot** and the **Ethernet** in the **lower slot** of the ethernet bridge, refer to Figure 2-10 on page 2-10.

Verify the switch setting of the modules:

- For the **token-ring module**, switches **1** and **2** must be **ON** and **3** to **8 OFF**.

- For the **Ethernet module**, switch **1** must be **ON** and **2** to **8 OFF**.

  Note: Switch **7** can be set to **ON** if the customer will use a 10 Base T Ethernet cable (refer to the worksheet "Parameter worksheet for Ethernet Bridge" on page A-1).
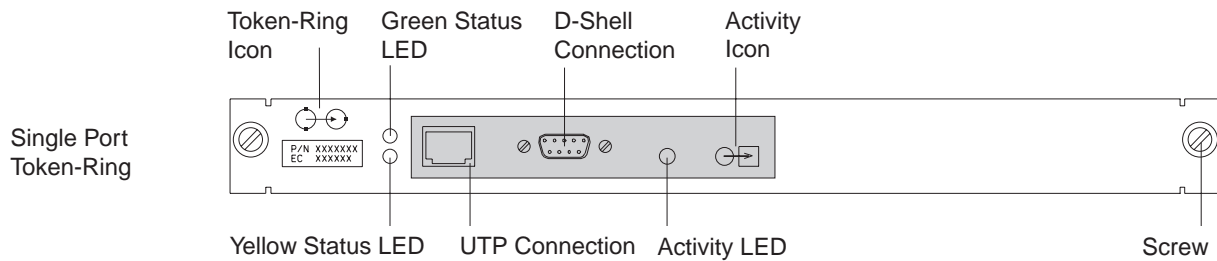
Figure   2-8. Single-Port Token-Ring Attachment Module
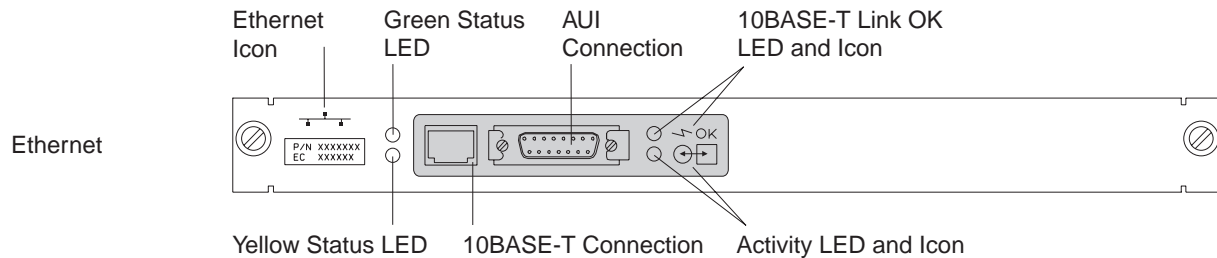
Figure   2-9. Ethernet Attachment Module

Meaning of the attachement module indicators.

Port Status Indicators Each attachment module has a pair of status LEDs for each port. The green status LED, when lit, indicates that the internal tests for the port have been successfully completed; the yellow status LED, when lit, indicates a detected internal fault.

LAN Activity Indicators Each attachment module indicates outbound activity for each port. The green activity LED indicates that the ethernet bridge is successfully connected to the respective LAN and that traffic is being forwarded by the ethernet bridge from that network.

3746-950 and service processor installation

Step 3. **Identifying the Ethernet Bridge front panel**

>The **EIA 232** data terminal element (DTE) port is for loading operating
>software to the FLASH memory contained on the main logic board.

>**Power Light-Emitting Diode (LED)** When green, indicates that power is
>available to the ethernet bridge.

>**Green Status LED** Indicates that the ethernet bridge has successfully
>completed its basic tests and is ready for operation.

>**Yellow Status LED** Indicates that the ethernet bridge has detected an
>internal fault as part of the basic tests and is inoperative. The
>fault code appears as a numeric display.

>**Numeric Display** A 2-digit numeric display indicates the current status of
>the diagnostics in progress, or the fault code in the case of a
>detected fault.

>**Hardware Reset** A recessed reset button is accessible on the front panel
>of the ethernet bridge. To have details about this reset button,
>refer to *8229 Bridge Manual*, GA27-4025, chapter 'Restarting
>and Resetting the 8229'.
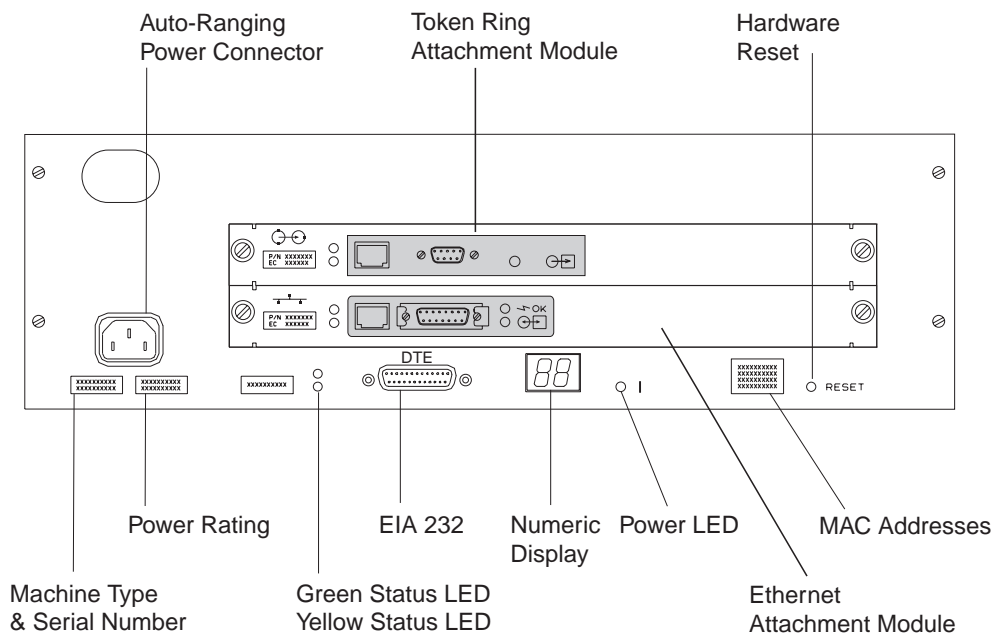
Figure   2-10. The Ethernet Bridge Front Panel

Go to step 4 on page 2-11.

Step 4. **Connecting the Ethernet Bridge to the Service Processor**

> **Note:** The purpose of these procedures is to connect temporarily the Ethernet Bridge to the service processor in order to configure the Ethernet Bridge using the MOSS-E functions.
>
> a. ____ Refer to Figure 2-11 and install the Ethernet Bridge on a table close to the controller expansion
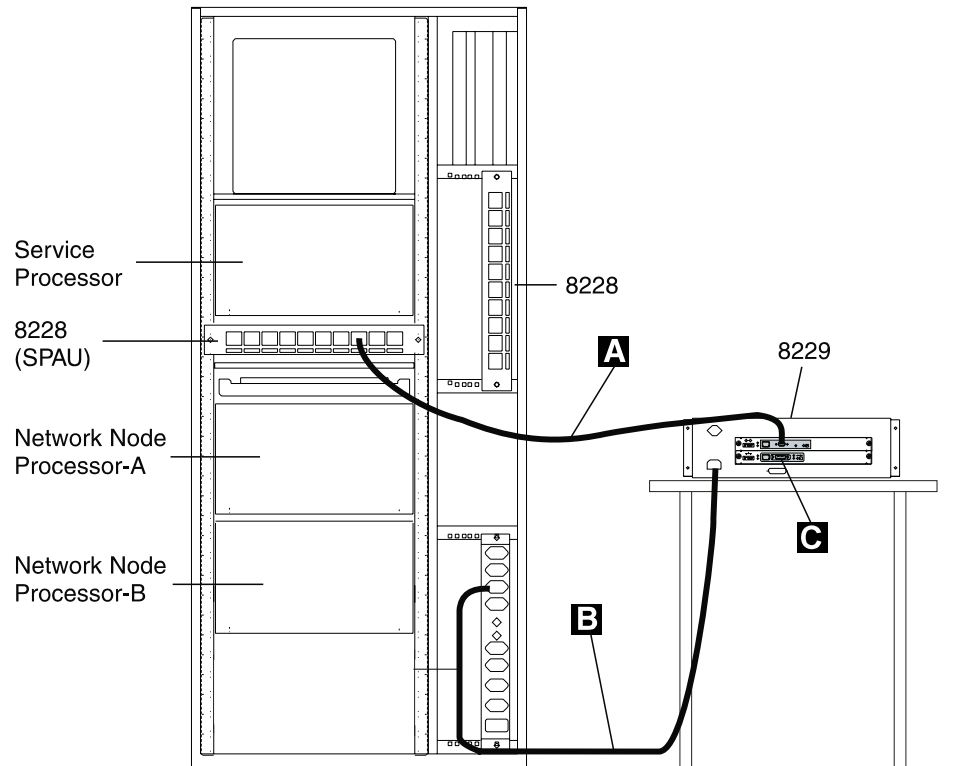
Figure 2-11. Connecting the Ethernet Bridge to the Service Processor

> b. ____ Connect cable **A** (PN 6339098) from the D-Shell connector of the token ring module (refer to Figure 2-8 on page 2-9) to the SPAU (8228).
>
> c. ____ Plug wrap plug **C** (PN 70X8670) in the AUI connector of the Ethernet module (refer to Figure 2-9 on page 2-9).
>
> d. ____ Connect power cord **B** (PN 58G5783) first to the ac outlet distribution box and then to the Ethernet Bridge.
>
> **Note:** There is no power switch. The power supply is auto-ranging (100/240 V ac 50/60 Hz). Connection of the power cord from a primary power source supplies power to the ethernet bridge.
>
> e. ____ Observe the following bring-up sequence:
>
> When you connect power to the ethernet bridge, it will go through a basic assurance test (BAT) that lasts about 90 seconds. All of the LEDs should light momentarily and the numeric display should show ascending values. At the conclusion of the test, the numeric display should go blank, the power and green status LEDs on the ethernet

bridge should be lit, the green status on each attachment module. should be lit, and the green status LED should be lit.

f. ____ If any number is still displayed, or if any yellow LED is lit, refer to *8229 Bridge Manual*, GA27-4025, chapter 'Problem Determination and Servicing'.

Go to step 5.

Step   5. **Setting up the Ethernet Bridge**

a. ____ On the service processor, double click on the **"Service Processor object icon"**.

b. ____ Click on **"Manage Ethernet Bridge"**.
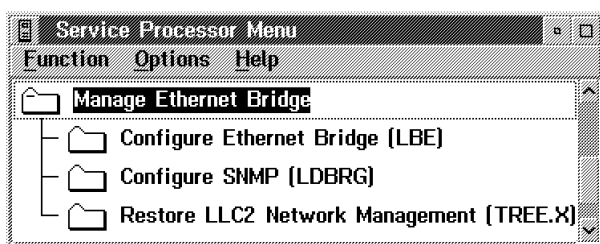
Figure   2-12. Managing the Ethernet Bridge

Note: If the Ethernet Bridge has been already configured, go to **step 5c** , otherwise go to **step 5d on page 2-13** .

c. ____ Double click on **Restore LLC2 Network Management (TREE.X)**
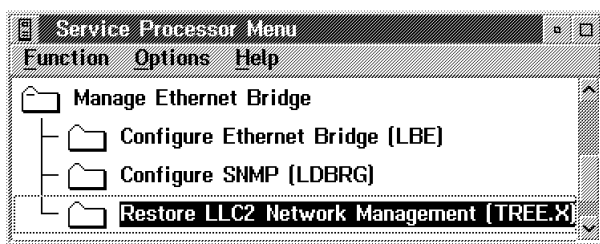
Figure   2-13. Restoring LLC2 Code

1) ____ Locate the first MAC address on top of the label on the front of the ethernet bridge (to the left of the reset button). See Figure 2-10 on page 2-10 for a view of the ethernet bridge front panel.

2) ____ Enter the MAC address recorded in step 5c1 on page 2-12, then click on **OK**. The Ethernet Bridge is reinitialized twice and it last about 3 minutes to complete.
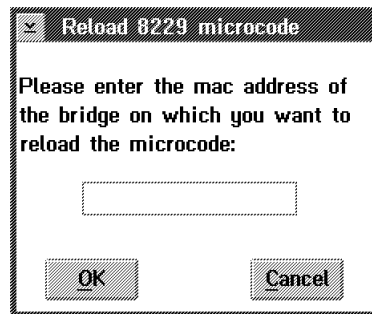
Figure 2-14. Reload 8229 microcode

d. ____ Double click on **"Configure Ethernet Bridge"**
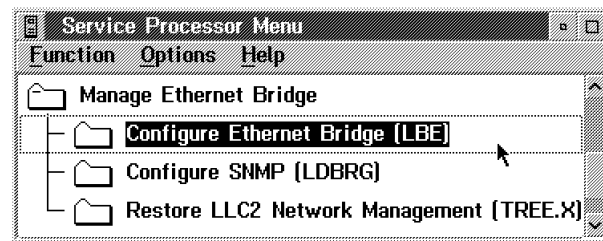
Figure 2-15. Configure Ethernet Bridge

1) ____ Refer to Figure 2-16, select option **5. Bridge definition**, then press **enter**.

```
 DFIPBD10                    IBM 8229 UTILITY PROGRAM
                                 Bridge Functions

 Select one of the following and press Enter.

    1. Bridge profile        Display bridge status and parameters

    2. Link bridge           Establish reporting link with bridge

    3. Unlink bridge         Terminate reporting link with bridge

    4. Configure bridge      Configure bridge parameters

    5. Bridge definition     Add/Delete/View/Change bridge definitions

    6. System definition     Define bridge password

    S  Shutdown              Shut down the 8229 Utility

 Enter  Esc=Cancel  F1=Help  F3=Exit
```

Figure 2-16. IBM 8229 Utility Program Main Menu

2) ____ Select option **1. New bridge definition**, then press **enter**.

a) ____ Enter the **bridge name**

b) ____ Click on the check mark to **enable the link during bring up**

    c) ____ Locate the MAC addresses on the label on the front of the ethernet bridge (to the left of the reset button). See Figure 2-10 on page 2-10 for a view of the ethernet bridge front panel. **Enter the top two** MAC addresses recorded on the label. , then press **enter**.

3) ____ Press **Escape** twice.

4) ____ Press escape, select S to shutdown, enter Yes, then press enter.

5) ____ Obtain from your customer the **SNMP parameter worksheet** (refer to "Parameter worksheet for Ethernet Bridge" on page A-1).

6) ____ Double click on **"Configure SNMP"**, and modify the parameters according to the customer specifications.
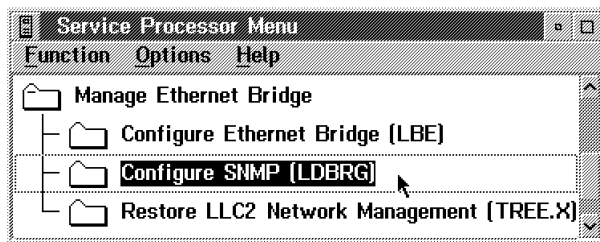
Figure 2-17. Configuring SNMP

7) ____ Select the **configuration** file from the Existing Configurations list.
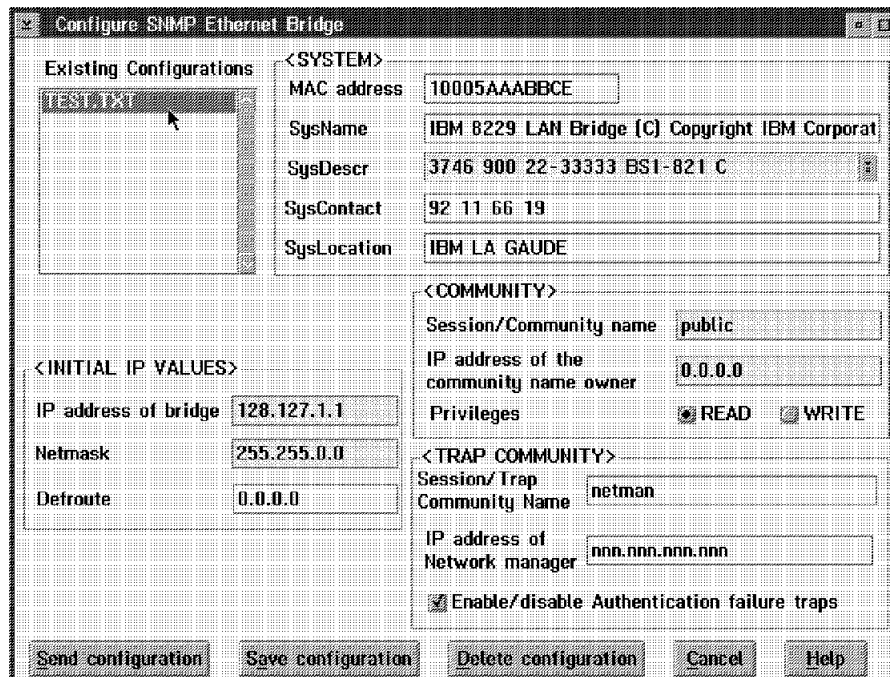
Figure 2-18. Configuring SNMP Ethernet Bridge

      8) ____ In <**SYSTEM**> square box enter:

         a) ____ Click on the **SysDescr** right button

         b) ____ Select the 3746-9x0.

      9) ____ In <**Community**> square box enter:

         a) Session/Community name

         b) IP address of community name owner

         c) Select privileges (read or write)

    10) ____ In <**Trap Community**> square box enter:

         a) Session/Trap Community name

         b) IP address of network manager

    11) ____ Click on **Save configuration** then click on **Send configuration**

    12) ____ Click on OK

    13) ____ Click on Cancel

Go to step 6

Step   6. **Disconnect the Ethernet Bridge**

    a. ____ Refer to Figure 2-11 on page 2-11, and disconnect the power cord **B** first from the Ethernet Bridge and then from the ac outlet distribution box.

    b. ____ Remove cable **A** from the SPAU (8228) plug.

Do you have to install a 8228 ?

- **Yes**, go to **step 7 on page 2-16**.
- **No**, go to **step 8 on page 2-19** .

Step   7. **Installing the 8228**

a. ____ Unpack the 8228, and then reset the 8228 ports as explained in the following steps:

Note: Use the IBM 8228 Setup Aid after you have installed the 8228 and before you connect any cables to it. Save one Setup Aid to be used later if you relocate an 8228.

b. ____ Before you begin, make sure no cables are connected to the 8228. If a cable bracket has been installed on the 8228, remove it.

c. ____ Insert the aid into receptacle 1 of the 8228. The yellow stripe should be aligned with the edge of the receptacle to ensure that the aid is firmly seated.

Yellow

Indicator
Lamp
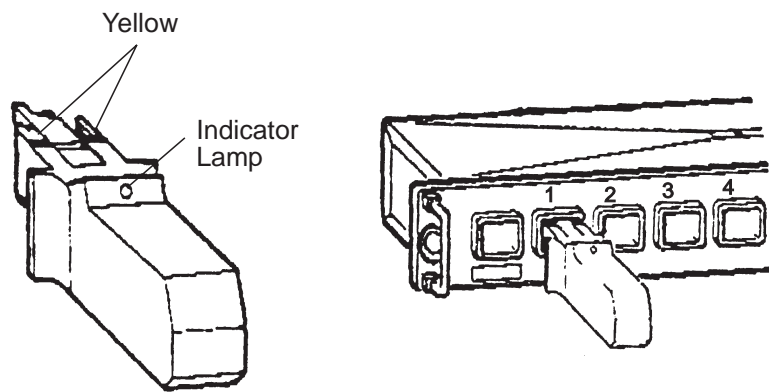
Figure   2-19. Use of the 8228 Setup Aid

The light will glow brightly when the aid is initially inserted and will gradually dim when the aid is firmly seated in the receptacle.

If the light does not glow brightly when you insert the Setup Aid, remove the screw from the aid and replace the battery. If the light still does not glow brightly after you have replaced the battery, try another Setup Aid.

d. ____ Leave the aid in the receptacle for four seconds after the light has gone out. Remove the aid from the receptacle and insert it into the next receptacle. The yellow stripe should be aligned with the edge of the receptacle to ensure that the aid is firmly seated.

Go to the next receptacle and repeat this step until you have set each receptacle, 1 through 8.

e. ____ When you have set receptacle 8, insert the aid into the RI receptacle for four seconds.

The light should glow brightly while the aid is in the receptacle. If the light does not come on or goes out while the aid is connected to the receptacle, the 8228 must be replaced. Notify your network planner or supervisor.

Note: The 8228 Setup Aid is to be used only in setting up the 8228 either initially or after relocating the 8228. It should never be used when the network is operating.

f. ____ Where are you installing the 8228?

- In the **controller expansion-A**, go to **step 7g**

- In the **controller expansion-B**, go to **step 7h on page 2-18**

g. ____ Refer to Figure 2-20, and install vertically the 8228 **A** on the rear side of the controller expansion-A using two screws (PN 1621232) and two captive nuts (PN 58G5766). Using label **B** (PN 782964), identify the 8228 as Ethernet Bridge Access Unit-A
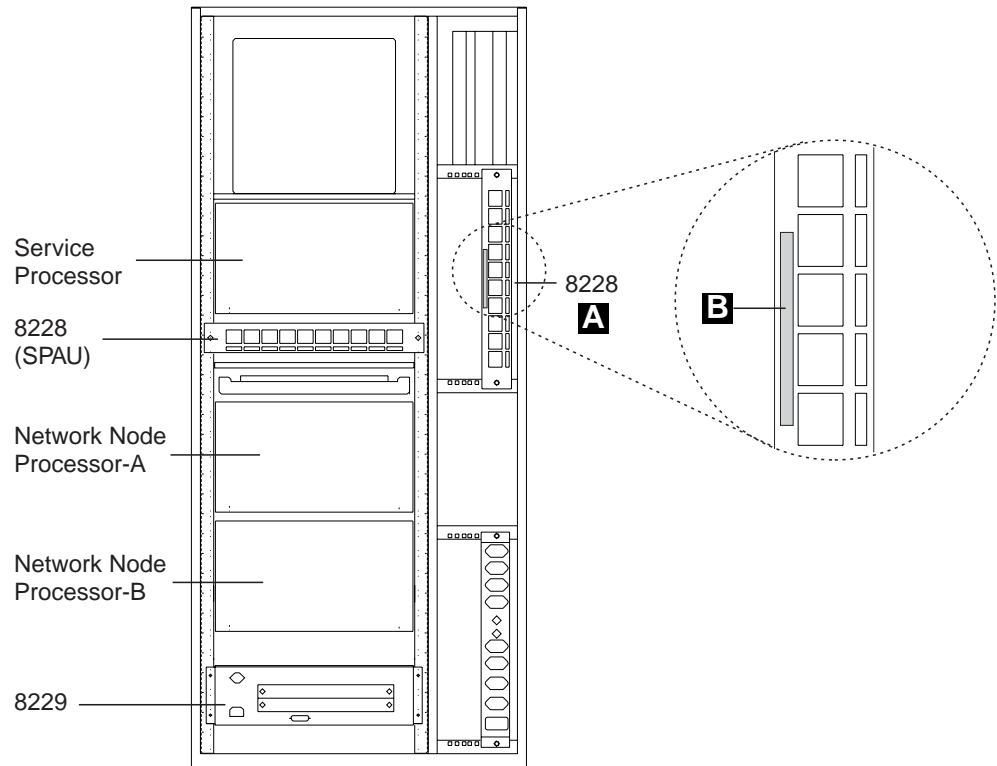
Figure 2-20. Installing One Ethernet Bridge in the Controller Expansion-A (Rear View)

Go to step 8 on page 2-19

h. ____ Refer to Figure 2-21, in this example two 8228s and four Ethernet bridges are installed (maximum configuration). Install vertically a 8228 **A** on the rear side of the controller expansion-B using two screws (PN 1621232) and two captive nuts (PN 58G5766). Using label **B** (PN 782964), identify the 8228s as Ethernet Bridge Access Unit-A and Ethernet Bridge Access Unit-B.
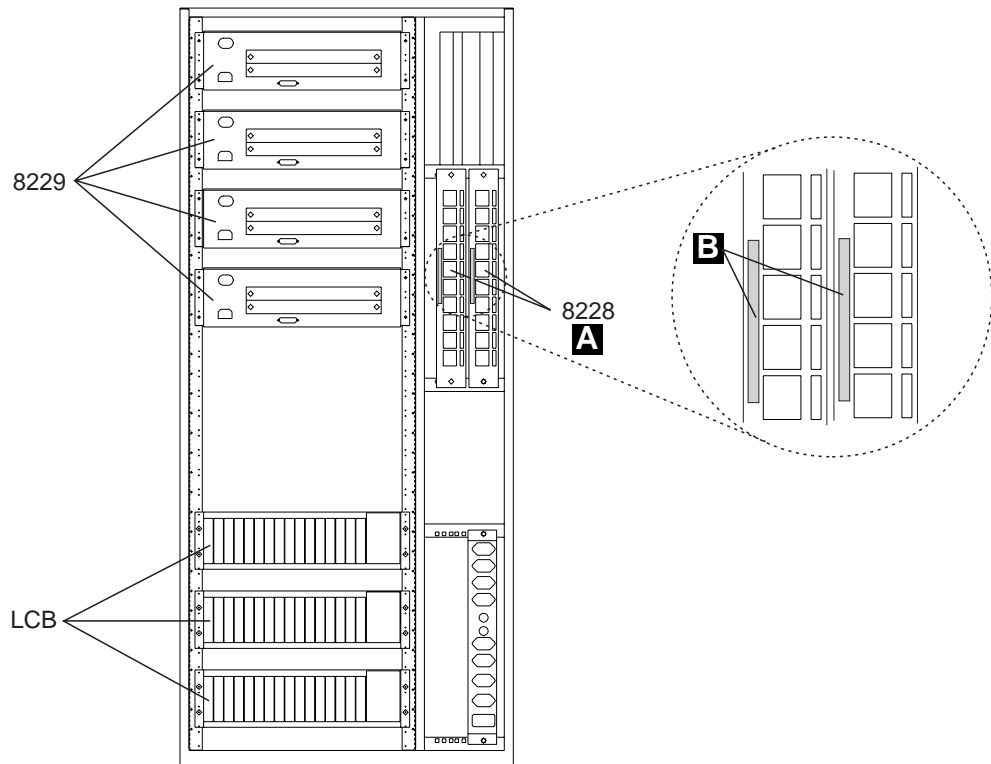
Figure 2-21. Installing Four Ethernet Bridge in the Controller Expansion-B (Rear View)

Go to step 8 on page 2-19

Step   8. **Installing the Ethernet Bridge in a Controller Expansion**

      a. ____ Locate the mounting brackets **B** and small package of screws **C** which are shipped in the plastic bag.
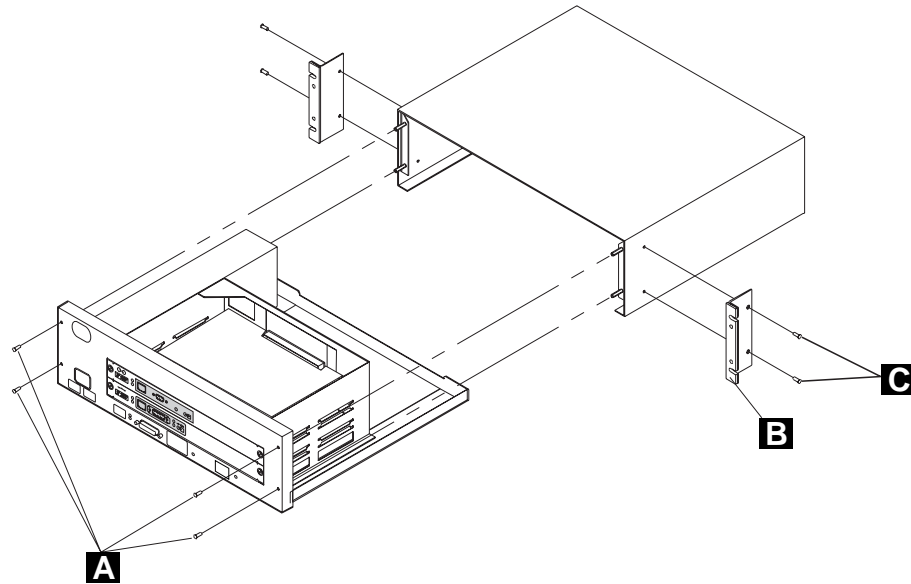
Figure   2-22. Placing the Ethernet Bridge in a Controller Expansion

      b. ____ Attach the rack-mounting brackets using the four short screws. See Figure 2-22.

      c. ____ If you prefer to reduce the weight of the box temporarily to facilitate installation, you can separate the cover from the inner power supply and planar board combination:

          1) ____ Put the ethernet bridge on a flat surface.

          2) ____ Remove the four retaining screws **A** on the front of the ethernet bridge. See Figure 2-22.

          3) ____ Slide the cover off backwards.

      d. ____ Examine the controller expansion inventory chart provided by the network administrator to determine where in the controller expansion the ethernet bridge should be mounted.

      e. ____ Install four captive nuts **3** (PN 58G5766) in the proper locations **Z**, refer to Figure 2-23 on page 2-20.
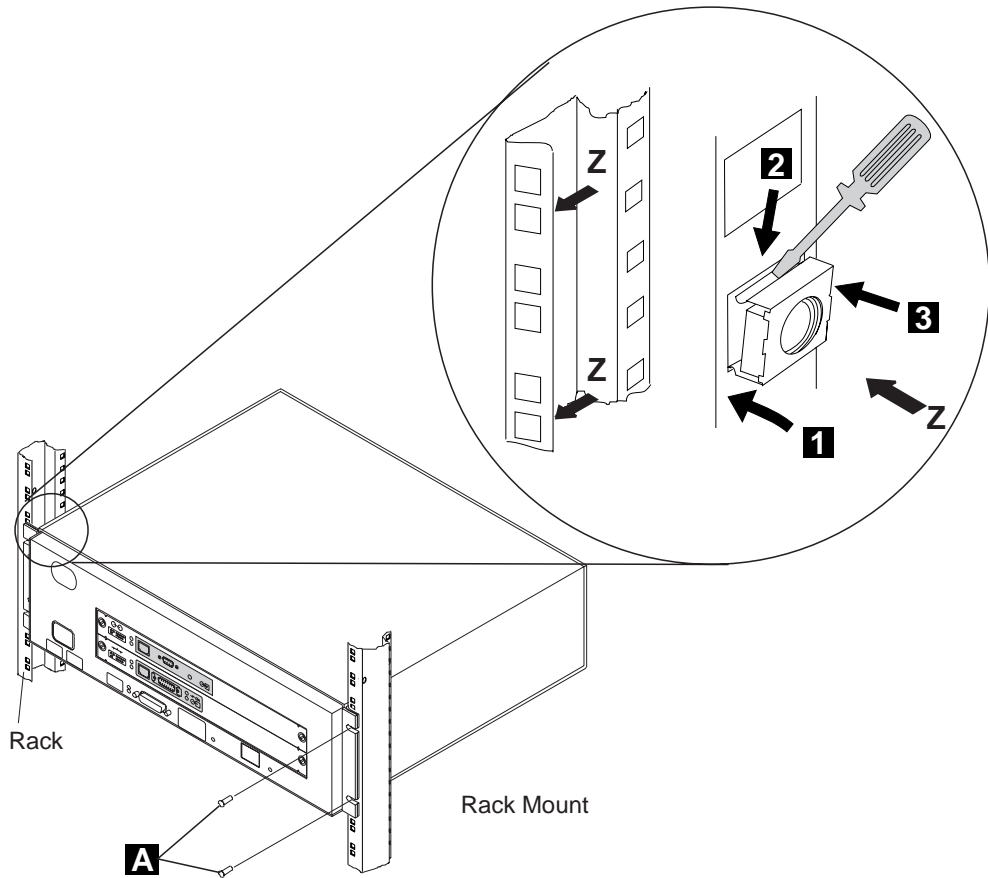
Figure   2-23. Captive Nuts and Ethernet Bridge Installation

f. ____ Mount the cover (or the entire ethernet bridge) in the controller expansion, using four screws **A** (PN 1621232).

g. ____ If you have removed the chassis (the inner power supply and planar board combination), slide it back into the cover and replace the four retaining screws, which you removed earlier. See Figure 2-22 on page 2-19.

h. ____ Record the addresses in the spaces provided on the cabling chart.

i. ____ Locate the numeric display in the center of the lower portion of the front of the ethernet bridge display.

j. ____ Remove the protective film from the numeric display.

Do not connect the power cord yet, go to step 9 on page 2-21

Step   9. **Connecting the cables**

Make certain that the ethernet bridge is powered off before you start this procedure.

a. ____ Locate the TIC3 and the 8228 where you are connecting the ethernet bridge.

b. ____ Route and connect the **8228** to the TIC3 using the token ring attachment cable PN 76F9441 (9 m, 27 ft). To route the cable, refer to Figure 2-25 on page 2-22 or Figure 2-26 on page 2-22.

c. ____ Using a sticker, identify the cable as the "8228-XX cable".

d. ____ Plug connector **1** to the TIC3

e. ____ Plug connector **2** to one of the 8228 LAN adapter plugs 1 to 8 (Refer to Figure 2-24 below).
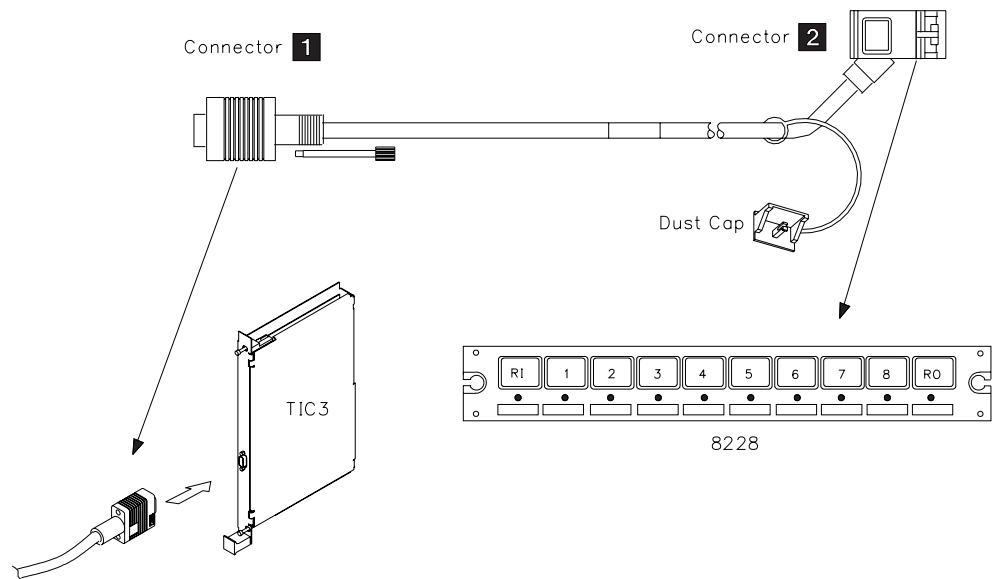
Figure   2-24. Connection of the 8228 to a TIC3

3746-950 and service processor installation
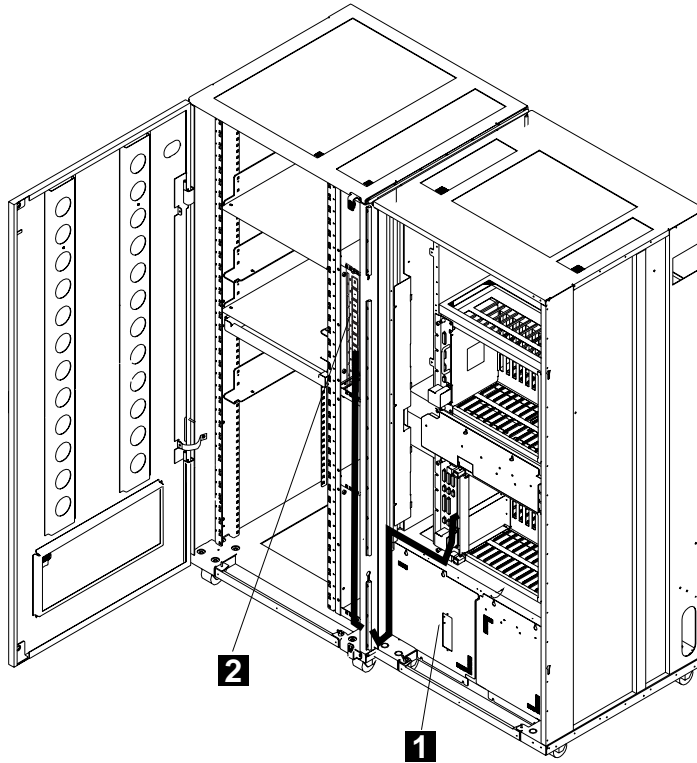
Figure 2-25. Routing the Cable from a TIC3 to a 8228 (Controller Expansion Attached)

Note: The controller expansion can be detached from the 3746-9x0 frame.
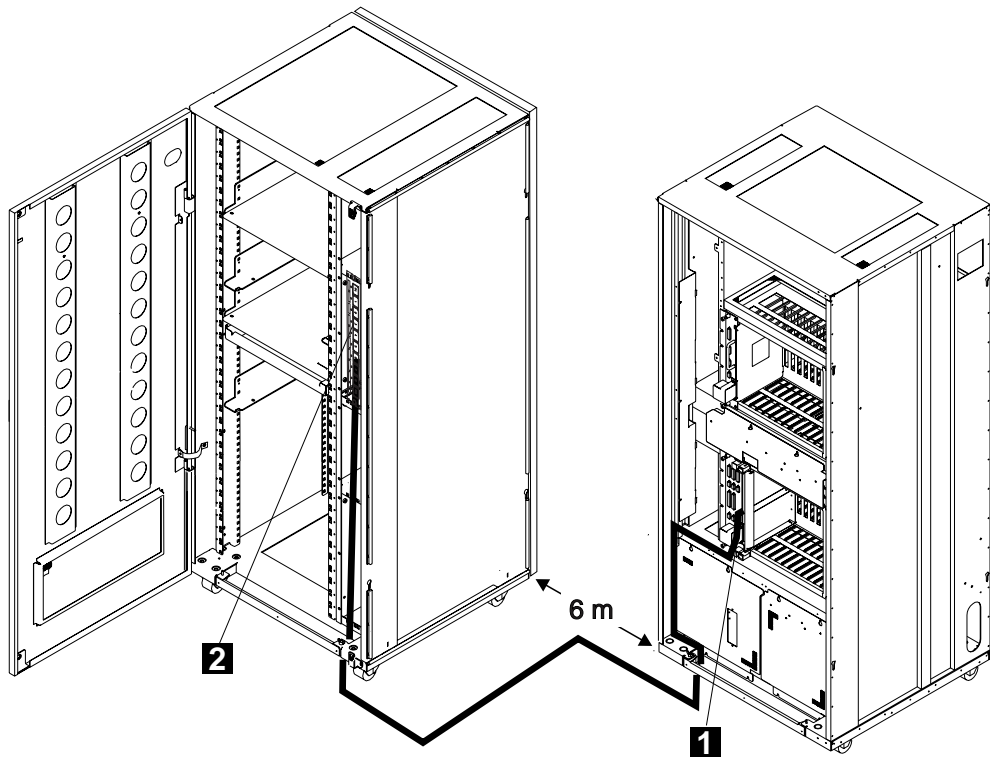
Figure 2-26. Routing the Cable from a TIC3 to a 8228 (Controller Expansion Detached)

     f. ____ Connect the **ethernet bridge** to the **8228** using cable **A** PN 6339098 (2.4 m, 8ft).

     g. ____ Connect the **ethernet bridge** to the ac outlet distribution box using power cable **B** PN 58G5783, and observe the bring-up sequence.

     Note: At the conclusion of the test, the numeric display should go blank, the power and green status LEDs on the ethernet bridge should be lit, the green status on each attachment module. should be lit, and the green status LED should be lit.
If any number is still displayed, or if any yellow LED is lit, refer to *8229 Bridge Manual*, GA27-4025, chapter 'Problem Determination and Servicing'.
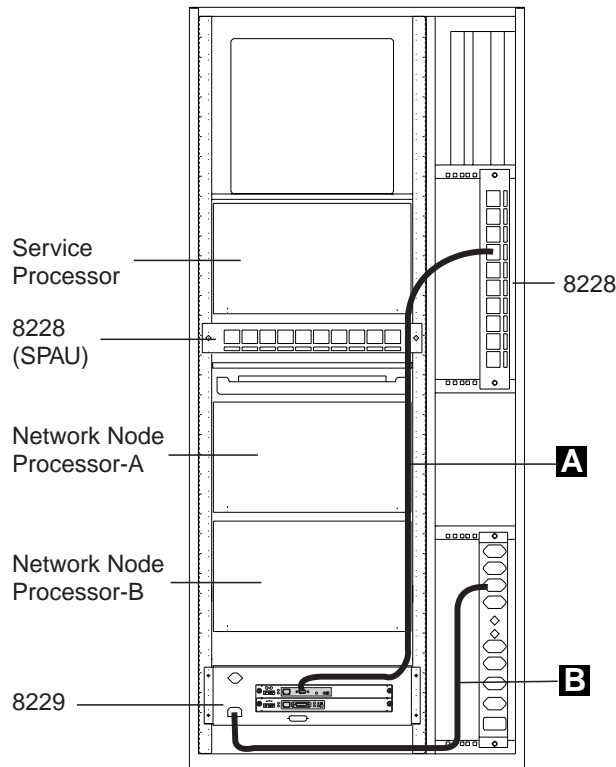
Figure 2-27. Connection of the Ethernet Bridge to the 8228 and Power

Step 10. If you have to **install another Ethernet Bridge**, return to **step1 on page 2-8** and go trough all the installation steps.

Connection to Main Power

Power Description and Load Requirements

Note: The following procedures apply to both **basic** and **optional** power attachments and must be performed twice if an AC optional power attachment is installed on the machine.

Power Attachment Configuration

Basic Attachment: Single Power Supply: The **basic** attachment is **ac** connected to input **AC-1** (see Figure B-13 on page B-9).

Optional Attachment: Dual Power Supply Feature: The **optional ac** attachment is connected to the input **AC-2**
There is no internal relation (or connection) between AC-1 and AC-2.
Therefore, AC-2 voltage and frequency can be different from those of AC-1 (see Figure B-11 on page B-8 or Figure B-12 on page B-8).

AC power input for the controller expansion
An ac outlet distribution box is installed in the lower rear side of the controller expansion to power all the equipment installed in the controller expansion. It is connected to a separate 220V AC power input using a power cord which is country sensitive.

3746-950 Power Requirements
1. Basic AC-1 power input:
   The standard voltage input to the 3746-950 is single-phase, 200 to 240 volts 60 Hz, or 200 to 240 volts 50 Hz. The maximum power requirement is 2.5 kVA.

2. Optional AC-2 power input:
   Voltage and frequency limits are the same as for AC-1.

Note for World Trade: This product allows connection to an impedance grounded (impedance "terre" or IT) power system.
(An IT power system is a power distribution having no direct connection to earth, the exposed conductive parts of the electrical installation being grounded.)

Controller Expansion Power Requirements
The power input to the ac outlet distribution box must be between 200 to 240V with a total of 15 Amp. Maximum output per outlet is 6 Amp. A fuse of 7 Amp protect this equipment.

Measuring and Adjusting the 3746-950 Power to the Customer Supply

Measuring the Customer's Primary Power

CEs are not allowed access to the customer's **main power receptacle**. *The customer or a customer-appointed electrician may have to do some of the work involved in the following procedures, and the CE must ensure that all the steps have been completed.*

Step 1. ____ Switch or ask the customer to switch the 3746-950 branch circuit breaker to the **ON** position. Perform the following voltage measurements. *(It is recommended to use high-voltage probes to make these measurements. All voltage values should be less than 1.0 Vac.)*

    a. ____ Measure the voltage between the ground pin of the customer's receptacle and the building ground.

    b. ____ Measure the voltage between the exterior shell of the customer's receptacle and the building ground.

    c. ____ (World Trade only) Measure the voltage between the neutral of the customer's receptacle (if present) and the building ground.

For any of the previous measurement, if the voltage is greater than 1.0 Vac, notify the customer and do not proceed until the problem is corrected.

Step 2. ____ Measure the customer's phase-to-neutral or phase-to-phase voltage. Continue only if the measured value is in accordance with the following

    • For AC input (basic or optional power attachment) the input voltage must be within 180V to 260V.

Step 3. ____ Switch or ask the customer to switch the branch circuit breaker that feeds the 3746-950 **to the OFF position.**

Step 4. ____ Repeat the same procedures (from step 1 to step 3) to check the power receptacle used to connect the controller expansion.

Adjusting the 3746-950 Power to the Customer's Primary Power

AC Input Voltage

1. Remove the transformer cover located on the rear bottom of the 3746-950 frame (see Figure B-2 on page B-2).

2. According to the voltage recorded previously in step 2 on page 2-25, move the cable lead **2** from 01Q-A1 TB1-2 to TB1-3 or to TB1-4 (see Figure 2-28).

   Note: If necessary refer to page YZ246 (AC BOX schematic).

Voltage Mesured	Wire Position	Nominal Voltage
From 180 to 210 Volts	TB1-2	200/208 Volts
From 210 to 230 Volts	TB1-3	220 Volts
From 230 to 260 Volts	TB1-4	240 Volts

   Note: *This adjustment help reduce alarms caused by external voltage variations, and regulates the blower rotation speed (noise reduction).*
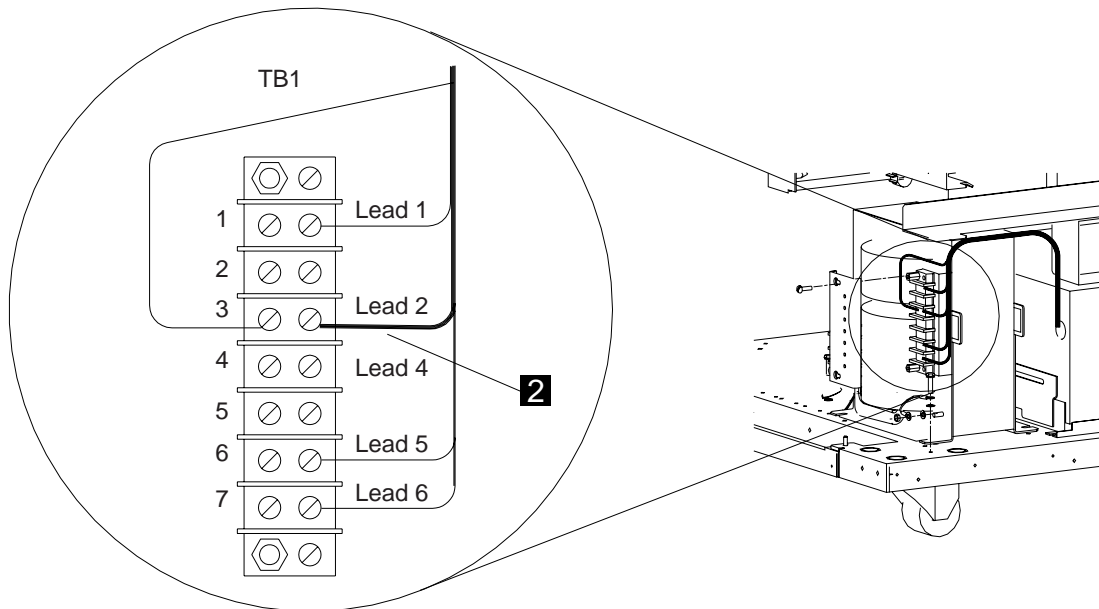
Figure 2-28. AC Power Transformer Connection

Connecting the 3746-950 to the Customer's AC Power

Notes:

1. If you have the optionnal power supply installed, before routing the power cables identify these cables using the labels PN 811825 to be able to locate the primary and secondary power supply cables.

2. Perform the following steps for the basic AC-1 input and, if present, for the optional AC-2 input.

Step 1. ____ Ensure that the customer's branch circuit breaker which feeds the 3746-950 primary power supply is in the **OFF position**, and that CB1(s) is switched to **OFF** in front of the 3746-950 ac power box(es) (see Figure B-13 on page B-9, and refer to Figure B-11 on page B-8).

Step 2. ____ Remove the cover in front of the AC power supply.

Step 3. ____ Unroll the power cable stored at the back of the power supply.

Step 4. ____ Route the power cable to the customer's power socket, and insert the power plug into the customer's main socket.

Connecting the ac Outlet Distribution Box

Note: The power input for the ac outlet distribution box must be within the range 200V to 240V.

Remove cable retainer from connector 'IN' of the ac outlet distribution box, plug cable **A** in this location reinstall the cable retainer and plug the other end of the cable to the customer's power receptacle (see Figure 2-29).
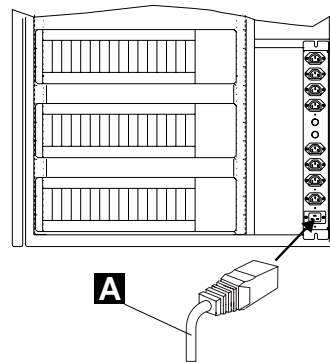
Figure 2-29. Connecting the ac Outlet Distribution Box

Connecting the 3746-950 to the LAN.

Connect the **3746-950** to the LAN using the token ring attachment cable PN 76F9441 (9 m, 27 ft).

Notes

1. If the controller expansion is installed at **more than 6 meters** (19.7 ft) from the 3746-950, a **specific LAN cable** must be ordered by the customer (refer to *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457 for details of token-ring attachment cables).

2. The 8228 is provided by the customer or, ordered and shipped with the service processor.

Step 1. ____Using a sticker, identify the cable as the "3746-950 cable".

Connector **1**   Connector **2**

Dust Cap
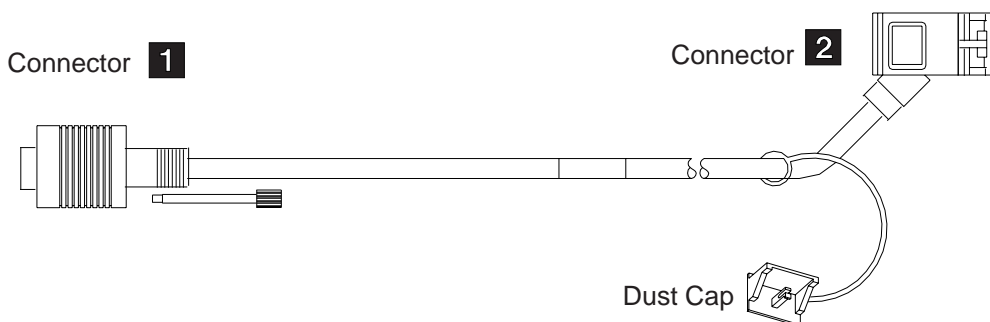
Figure 2-30. Token Ring Cable

Step 2. ____Locate the TIC3 plugged in 07N-A1 F1 (refer to Figure B-9 on page B-7 detail **1**)
If your 3746-950 is :

- **Attached** to the controller expansion frame, refer to Figure 2-31 on page 2-29

- **Detached** from the controller expansion frame, refer to Figure 2-32 on page 2-29

Step 3. ____Plug **connector 1** to the TIC3 07N-A1 F1

Step 4. ____Plug **connector 2** to one of the 8228 LAN adapter plugs 1 to 8
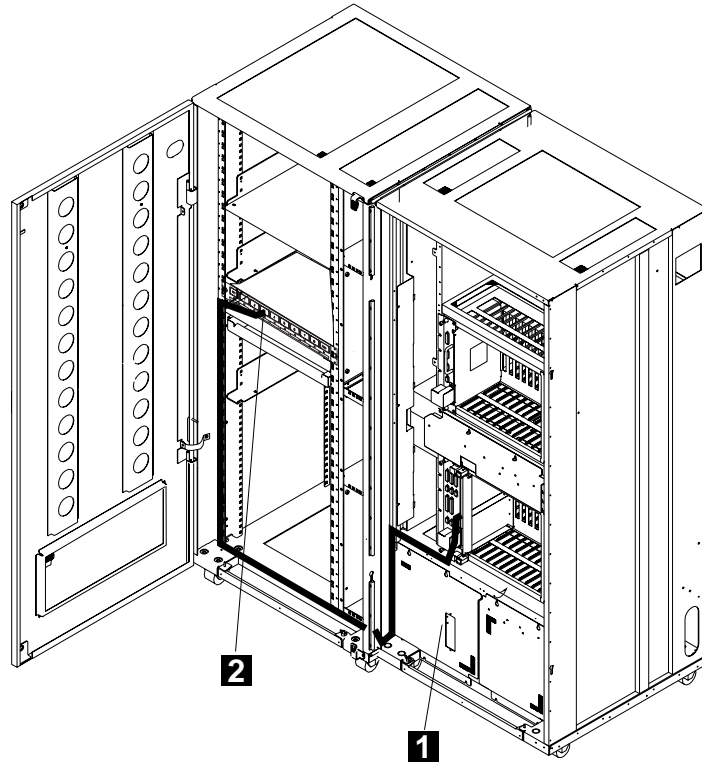
Figure 2-31. Connection of the 3746-950 to the 8228 (Controller Expansion Attached)
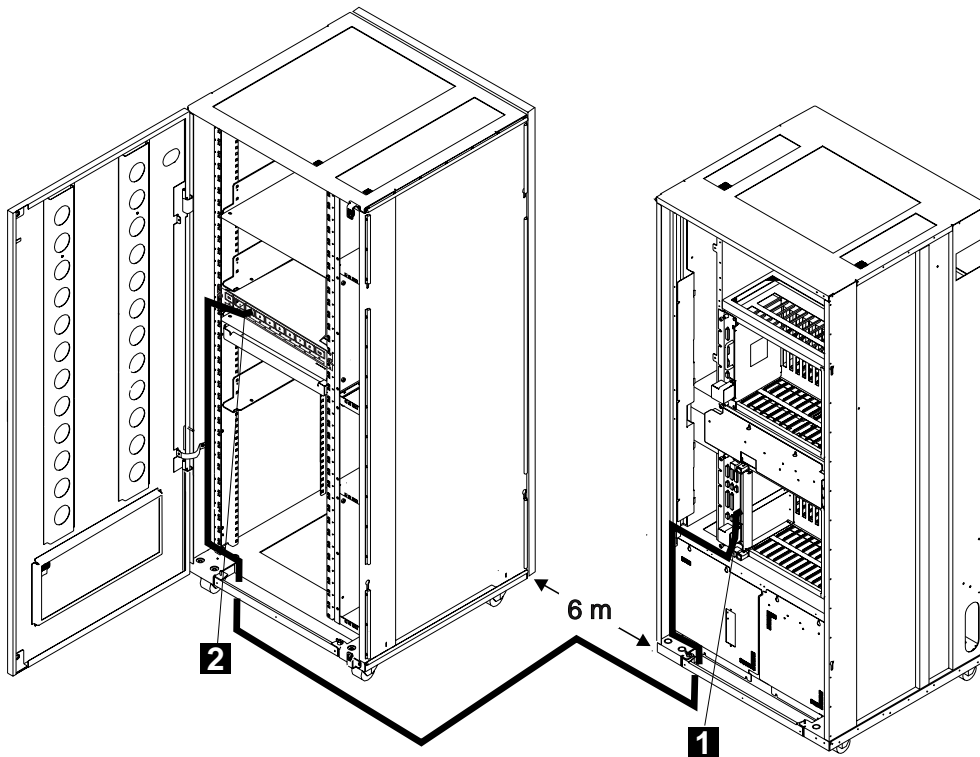
Figure 2-32. Connection of the 3746-950 to the 8228 (Controller Expansion Detached)

Installing the Service Processor

The service processor can be:

* **Not installed**, using the *Service Processor Installation and Maintenance (Based on 6275)*, SY33-2125, or *Service Processor Installation and Maintenance (Based on 7585, 3172, and 9585)*, SY33-2120 install the service processor shipped with the 3746-950 then go to "Updating the 3746-950 Code Level" on page 2-36.

* **Installed** but not setup in a controller expansion (controlling other 3745 XXA or 3746) and the model is a:

    – **6275**, go to "Installing a 6275 in the Controller Expansion" on page 2-31

    – **7585**, go to "Installing a 7585 in the Controller Expansion" on page 2-32

    – **3172**, go to "Installing a 3172 in the Controller Expansion" on page 2-33

    – **9585**, go to "Installing a 9585 in the Controller Expansion" on page 2-34

    – **9577**, go to "Installing a 9577 in the Controller Expansion" on page 2-35

Note: If the Customer has ordered the small keyboard PN 61G2900, all the units can be installed in the controller expansion. Use cable PN 1398014 (shipped with the keyboard) to connect the keyboard to the system unit. But to install the display and keyboard outside of controller expansion, the Customer must have ordered one extension cable for the display PN 59G1270 and the long cable PN 59G1271 for the keyboard.

Installing a 6275 in the Controller Expansion

Note: Use cables PN 58G5783 (shipped with the controller expansion) to connect the display and system unit to the ac outlet distribution box (see Figure C-15 on page C-13).

Install in the controller expansion:

- The display

- The service processor unit

- The 8228

- The modem

For details refer to the SPIM shipped with the 6275, and see Figure 2-33, then go to "Updating the 3746-950 Code Level" on page 2-36.

Display

Service
Processor

Modem

Optical Disk Drive

Network Node
Processor-A

Network Node
Processor-B

LCBB/LCBE
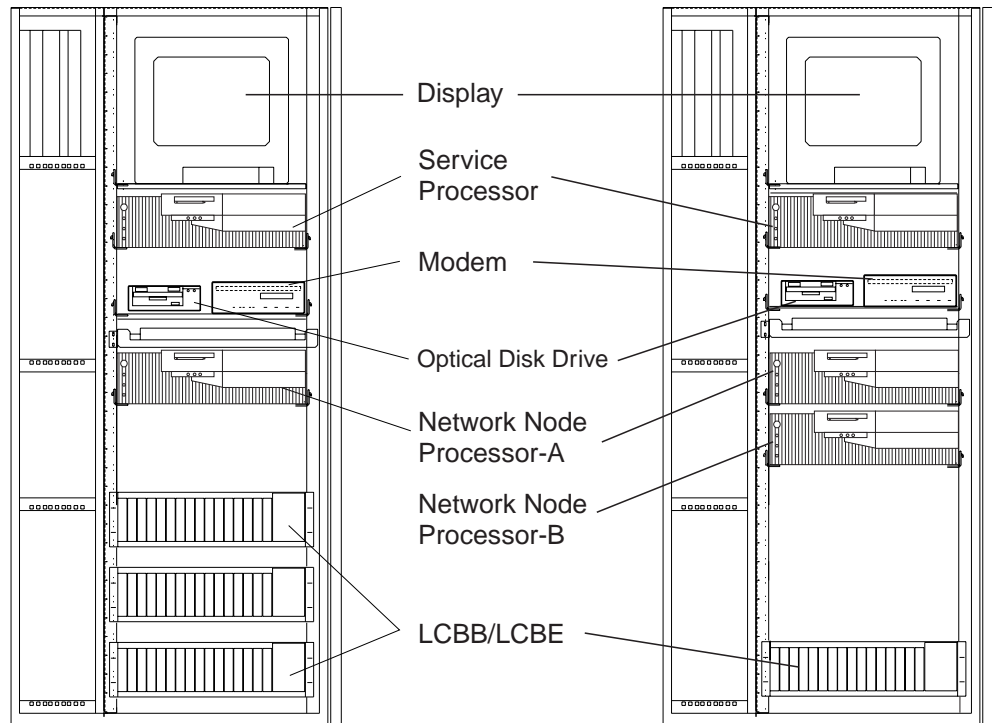
Note: On the left side of the drawing the NNP-B is not installed.

Figure 2-33. Service Processor type 6275

Installing a 7585 in the Controller Expansion

All the units can be installed in the controller expansion or the display and keyboard can be installed outside.

Note: Use cables PN 58G5783 (shipped with the controller expansion) to connect the display, optical disk drive, and system unit to the ac outlet distribution box (see Figure C-15 on page C-13). If not installed in a controller expansion, install the following units in the controller expansion

- The display

- The optical disk drive

- The service processor unit

- The 8228

- The modem

For details refer to: the SPIM shipped with the 7585 and see Figure 2-34, then go to "Updating the 3746-950 Code Level" on page 2-36.
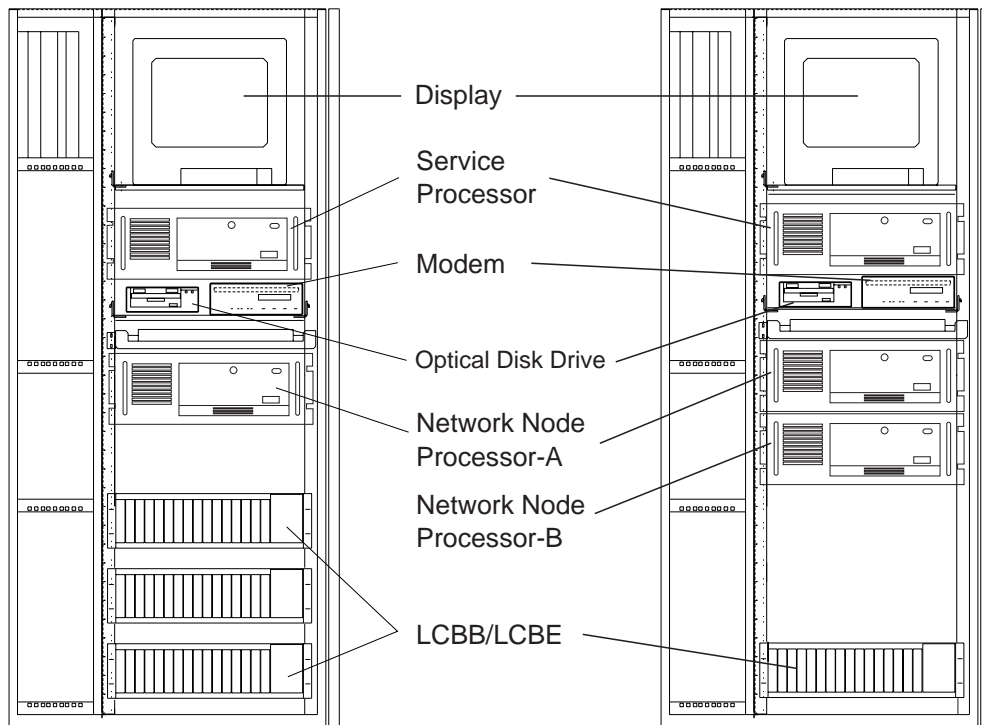
Figure 2-34. Service Processor type 7585

Note: On the left drawing the NNP-B is not installed

Installing a 3172 in the Controller Expansion

All the units can be installed in the controller expansion or the display and keyboard can be installed outside.

Note: Use cables PN 58G5783 (shipped with the controller expansion) to connect the display, optical disk or CD-ROM drive, and system unit to the ac outlet distribution box (see Figure C-15 on page C-13). If not installed in a controller expansion, install the following units in the controller expansion

- The display

- The optical disk drive

- The service processor unit

- The 8228

- The modem

For details refer to: the SPIM shipped with the 3172 and see Figure 2-35, then go to "Updating the 3746-950 Code Level" on page 2-36.
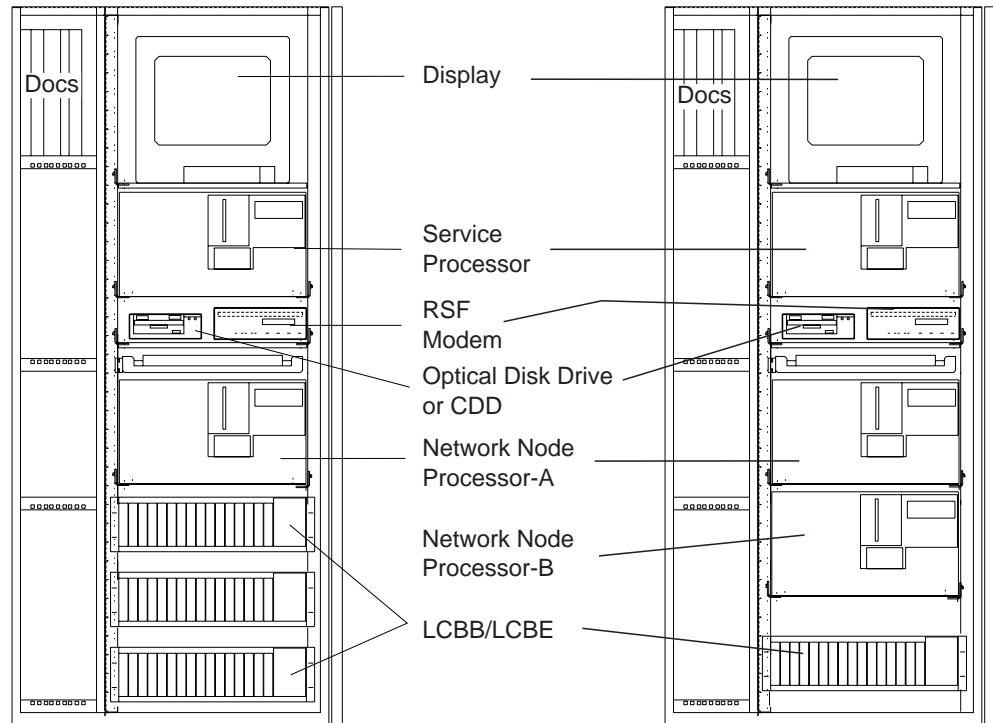
Figure   2-35. Service Processor type 3172

Note: On the left drawing the NNP-B is not installed

Installing a 9585 in the Controller Expansion

Note: Use cables PN 58G5783 (shipped with the controller expansion) to connect the display, the CD-ROM drive, and system unit to the ac outlet distribution box (see Figure C-15 on page C-13).

If not installed in a controller expansion, install the following units in the controller expansion

- The display

- The service processor unit

- The 8228

- The modem

- The CD-ROM drive

For details refer to: the SPIM shipped with the 9585 and see Figure 2-36 , then go to "Updating the 3746-950 Code Level" on page 2-36.
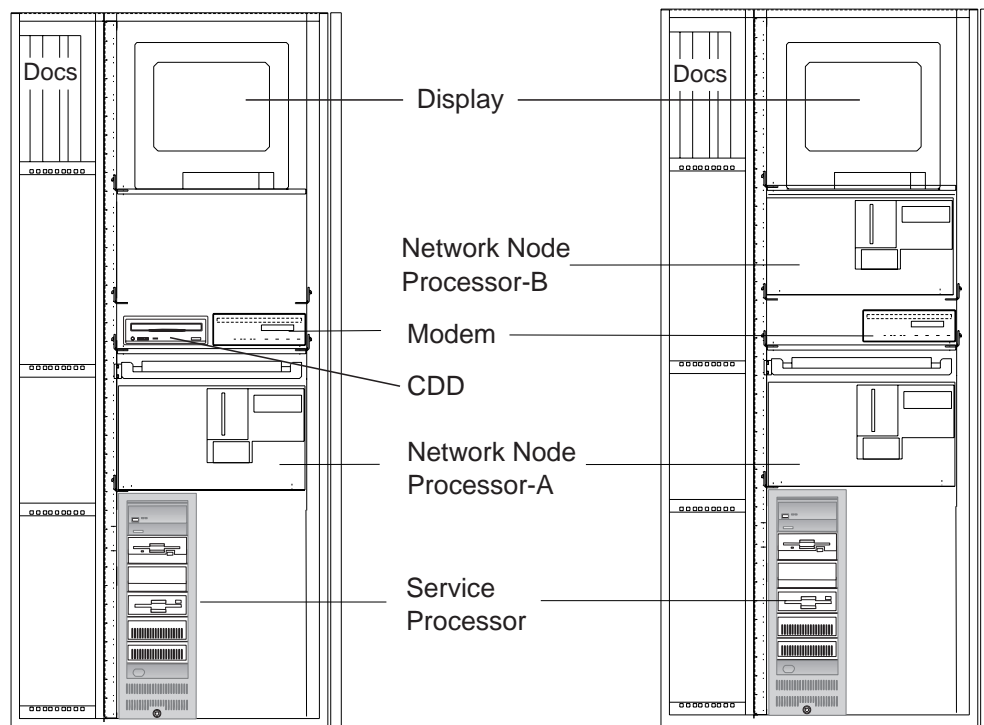
Figure 2-36. Service Processor type 9585

Note: On the left drawing the NNP-B is not installed

Installing a 9577 in the Controller Expansion

Note: Use cables PN 58G5783 (shipped with the controller expansion) to connect the display and system unit to the ac outlet distribution box (see Figure C-15 on page C-13).

If necessary, install the new hard drive in the service processor shipped with the 9577 MES, then install in the controller expansion:

- The display

- The service processor unit

- The 8228

- The modem

For details refer to: the SPIM shipped with the 9577 and see Figure 2-37, then go to "Updating the 3746-950 Code Level" on page 2-36.
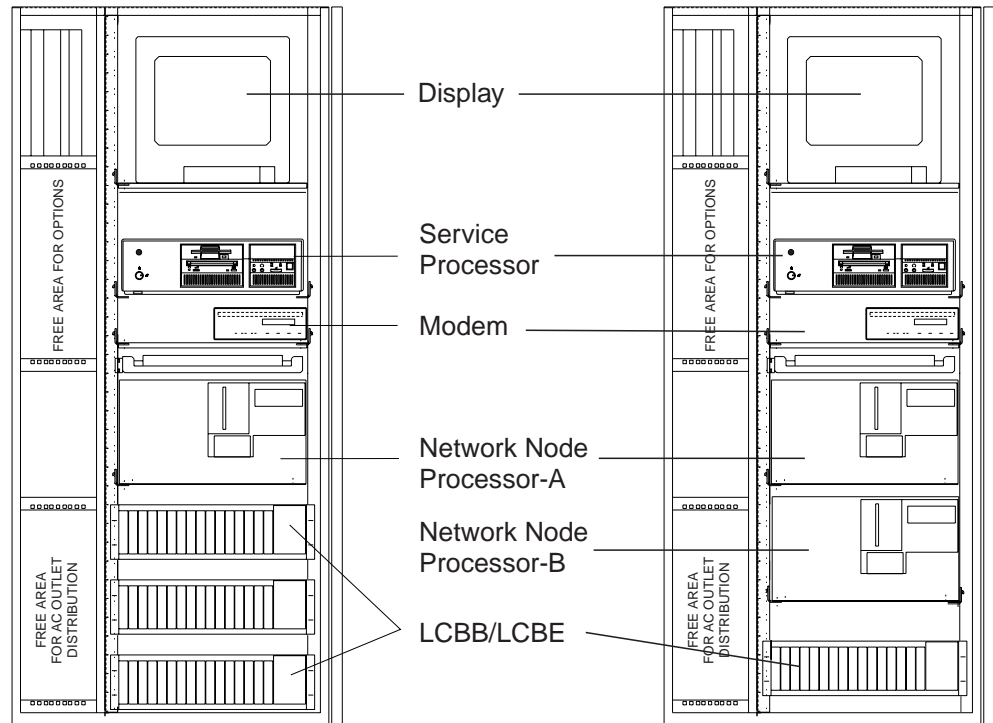
Figure 2-37. Service Processor type 9577

Note: On the left drawing the NNP-B is not installed

Updating the 3746-950 Code Level

Is the LIC available on a **CD-ROM** (EC F12380 and above)?:

- **YES**, go to "Updating the 3746-950 Code Level from a CD-ROM."

- **NO**, go to "Updating the 3746-950 Code Level from an Optical Disk" on page 2-37.

The LIC is shipped on a **CD-ROM** starting at **EC F12380** and above. All LIC levels up to **EC D46130** are shipped on an **optical disk**.

Note: During the following procedures:

1. keep the 3746-950 powered **OFF**, otherwise ALARM panels can be generated.

2. Follow the screen prompts in conjunction with the Installation Guide.

Updating the 3746-950 Code Level from a CD-ROM

1. ____ Power on the service processor and its display screen.

2. ____ Enter the service processor maintenance password (*default is IBM3745*).

3. ____ Install the CD-ROM shipped with the machine in the CD disk drive

4. ____ Double click on the **"Service Processor object icon"**.

5. ____ Click on **"Configuration Management"**.

6. ____ Double click on **Install 3746 and NNP LIC on SP hard disk**
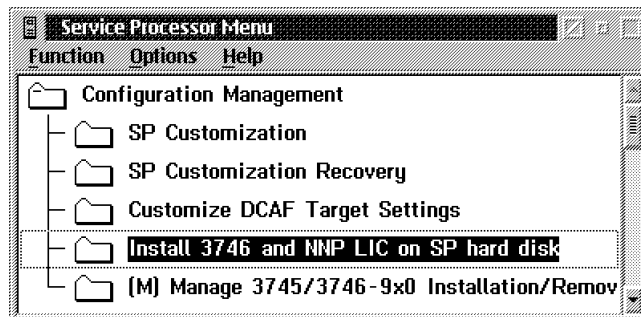
Figure 2-38. Service Processor Menu

7. ____ Select the 3746 (1 or 2) to be installed and select the 3746 where the NNP will be installed and enter its serial number, then click on **Start LIC instal-lation...**
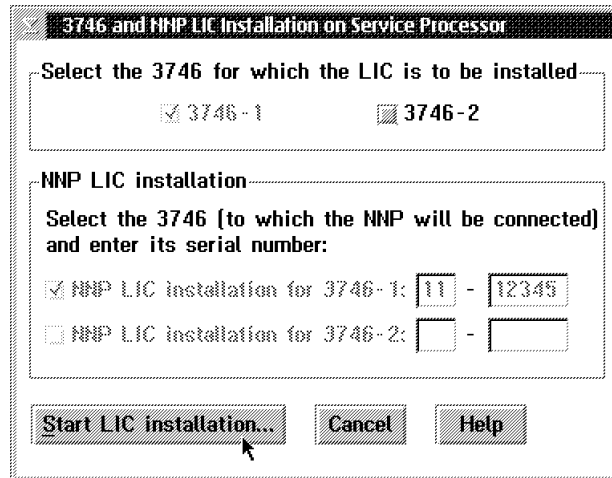
Figure 2-39. LIC Installation Menu

8. ____ when completed, click on **OK**.

Go to "Configuring the Service Processor" on page 2-38.

Updating the 3746-950 Code Level from an Optical Disk

1. ____ Install the **Service Processor installation diskette 1** in the diskette drive, and the optical disk received with the 3746-950 in the optical drive.

2. ____ **Power** the Service Processor **ON** and its display screen or press **Ctrl + Alt + Del**.

3. ____ On the 'Service Processor Installation Diskette' window, press **Enter**

4. ____ From the primary window select option **1** **Update Licensed Internal Code (LIC) when installing a 3746-9x0**

```
            Service Processor Installation Main Menu
   ─────────────────────────────────────────────────────────

   Select one of the following options using ↑ and ↓ or tab keys,
   then press Enter:
    1.  Update Licensed Internal Code (LIC) when installing a 3746-9XX
   2. Update Licensed Internal Code
   3. Restore hard disk
   4. Save hard disk
   5. Update Licensed Internal Code when installing a Network Node Processor
    6 . Exit

   Enter
```
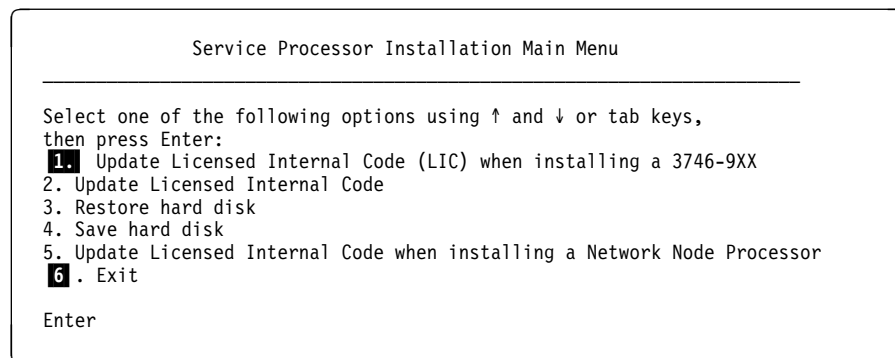
Figure 2-40. LIC Installation Main Menu

5. ____ Press **Enter** and follow the prompts, when requested select the option to **Install the Network Node Processor**

   Note: The process length will depend on the quantity of code to be upgraded.

6. ____ At the end the main menu is prompted, select option **6** **Exit** and follow the prompts.

Configuring the Service Processor

Note: If any unexpected panel code is displayed at the 3746-950 control panel, go to the START page of the *3746-950 Service Guide*, SY33-2108.

Step   1. ____**Power the 3746-950 On**

a. ____ Verify that all the 3746-950 CPs are set to the ON position (refer to Figure B-13 on page B-9).

b. ____ Turn or ask the customer to turn the branch circuit breaker which feeds the 3746-950 to the **ON** position.

c. ____ Switch CB1 to **ON** in front of the 3746-950 primary power box.

Note: If the optional power supply is installed, switch its CB1 to **ON**, the power is now present in the primary power box.

d. ____ Press the Power control key repeatedly until 3 is displayed in the *Power control* window, and press the validate key. You are now in **Local Power Control mode**.

e. ____ Wait for the code **05-28-2805** at the 3746-950 control panel.

Then on the Service Processor select the following options:

Step   2. ____**Add the 3746-950**

a. ____ From the service processor configuration menu, double click on **"Manage 3745/3746-9x0 installation/Removal"**

b. ____ On the Controller Installation menu, select the 3746 to be installed by clicking on any **<3746 not installed>** field.

c. ____ Verify that the code **05-28-2805** is still displayed on the 3746-950 panel, then click on **"ADD"**.

d. ____ Specify the model by clicking on **"950"**, then enter the 3746-950 **serial number** (format XX-XXXXX), then click on **"OK"**.

e. ____ When requested, install the 3746-950 installation parameters **diskette PN 17G5878** in the Service Processor diskette drive.

f. ____ Click on **"OK"**. The reference CDF-E is being restored.

g. ____ Enter the **Token-Ring Local address (MAC address)** according to the value recorded by the customer on the parameter worksheet: **3746-950 Integration - Definition of 3746-950 LAN Address**, and click on **"OK"**.

Note: If the LAN address cannot be obtained from the customer, enter a value in the range 400000000000 to 7FFFFFFFFFFF.

h. ____ Perform action according to the "Controller Installation Message", then follow the prompts.

i. ____ At the end of the process, a general IML is started and stops with a completion code **00-00-0000** displayed at the 3746-950 control panel.

j. ____ Enter the controller name, then click on **"OK"**.

k. ____ Click on **"Cancel"** to exit from the function.

Installing the Network Node Processor (A or B)

Using the *Network Node Processor Installation and Maintenance (Based on 7585 or 3172)*, SY33-2112, install the network node processor following the instructions given in chapter 1: 'Installing Your Network Node Processor'. Then, return here when done.

Is your customer going to use Netview performance monitor (NPM)?

- **Yes**, go to "Configuring NetView Performance Monitor (NPM)" on page 2-40.
- **No**, go to step 8 on page 2-42.

Configuring NetView Performance Monitor (NPM)

1. ____ Double click on the 3746-9x0 icon where you installed APPN feature.

2. ____ From the 3746-9x0 menu, click on **Network Node Processor (NNP) Management**.
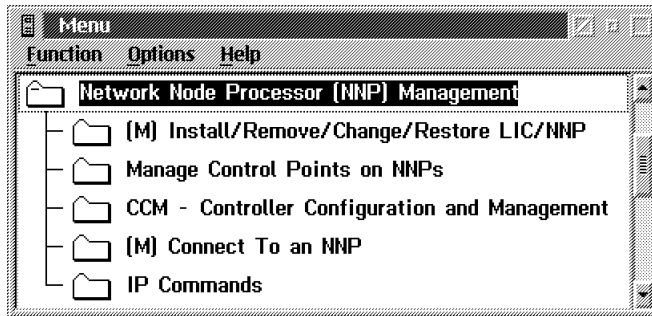
Figure   2-41. 3746-9x0 Menu

3. ____ Double click on **Manage Control Points on NNPs**.
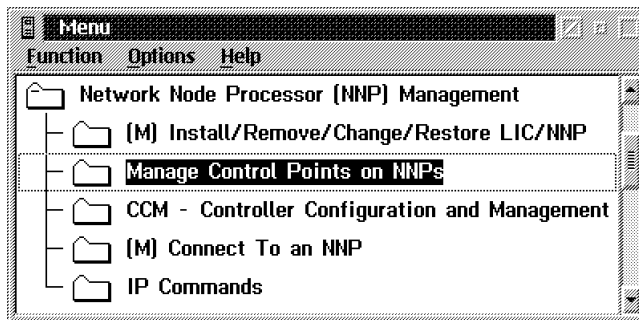
Figure   2-42. Network Node Processor Menu

4. ____ Select the network node processor A (or B) , then click on **Manage NPM**.
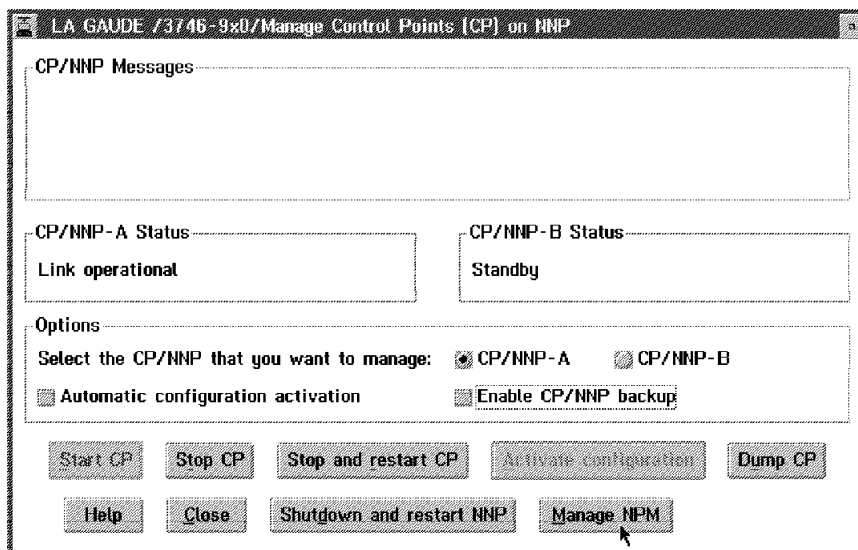
Figure   2-43. Manage Control Points on NNP

5. ____ Check **Enable NPM**, and check **Activate immediately** (according to the customer choice). Then enter the **Network ID**, **Local node name** which is the name of the local PU for NPM = PU name in switched major node (refer to Figure 2-46 on page 2-42). Modify the **LU name** (LU name for NPM defined in VTAM), then click on **OK**.
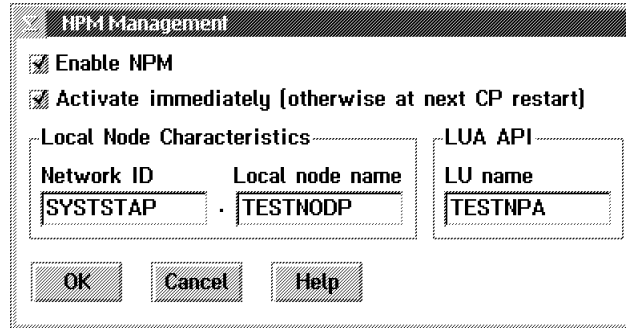
Figure 2-44. NPM Management Menu

Note: To support NPM, the customer has to define a:

a. **Switched major node**, refer to the example given in Figure 2-46 on page 2-42.
b. **Resource resolution table**, refer to the example given in Figure 2-45.

In these tables the CP and LU names must be equal to the names given in NPM management (define in Figure 2-44.):

- CPNAME (TESTNODP) = Local node name
- LUNAME (TESTNA) = LU name

```
************************************************************************
*  DESCRIPTIVE NAME : 3746 MODEL 900 VTAMLST DEFINITION            *
************************************************************************
*     BUILD STATEMENT - CONTROLLER INFO                           *
************************************************************************
*
TESTNOD BUILD MODEL=3746-900,                                     X
              NETID=SYSTSTAP,                                     X
              NEWNAME=TESTNOD,                                    X
              NPA=(YES,DR),                                       X
              VERSION=N/A
*
************************************************************************
*    NPM VIRTUAL RESOURCES                                        *
************************************************************************
M900NPA  GROUP LNCTL=SDLC,                                        X
              NPARSC=YES,                                         X
              VIRTUAL=YES,                                        X
              NPACOLL=YES,                                        X
              ISTATUS=ACTIVE
TESTNODL LINE
TESTNODP     PU
TESTNPA      LU
*
************************************************************************
*    END OF GEN SOURCE                                            *
************************************************************************
*
GENEND   GENEND
         END
```

Figure 2-45. Example of Resource Resolution Table

```
ERS4NPM  VBUILD TYPE=SWNET,MAXGRP=1,MAXNO=1
*-----------------------------------------------------------------------*
* ERS4 : PU NNP                                                         *
*-----------------------------------------------------------------------*
TESTNODP PU    ADDR=04,PUTYPE=2,CPNAME= TESTNODP
 TESTNPA  LU    LOCADDR=1
```

Figure   2-46. Example of Switched Major Node

6. ____ Click on **Yes**.
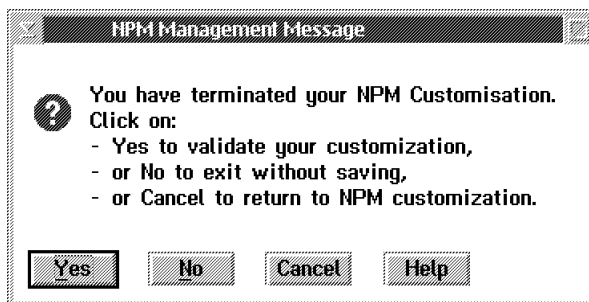
Figure   2-47. NPM Management Message

7. ____ Click on **OK**.
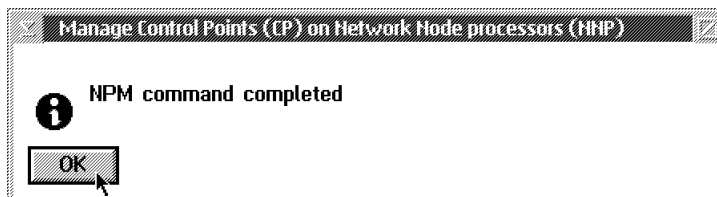
Figure   2-48. Manage Control Points on NNP

8. ____ Go to one of the following chapters:

Are you installing a **multiaccess enclosure**?

- **Yes**, go to "Installing the Multiaccess Enclosure"

- **No**, do you have to install **specific software**?

    – **Yes**, go to "Installing Software Feature on the 3746-950" on page 2-43

    – **No**, go to "Calling RETAIN" on page 2-45.

Installing the Multiaccess Enclosure

Using the *Multiaccess Enclosure Installation and Maintenance Guide*, SY33-2118, install the multiaccess enclosure following the instructions given in chapter 1, then, return here when done.

Do you have to install **specific software**?

- **Yes**, go to "Installing Software Feature on the 3746-950" on page 2-43

- **No**, go to "Calling RETAIN" on page 2-45.

Installing Software Feature on the 3746-950

1. ____ On the Controller Installation menu, select the 3746 just installed by
   clicking on the **<3746-950>** line, then click on **"Select Feature"**.
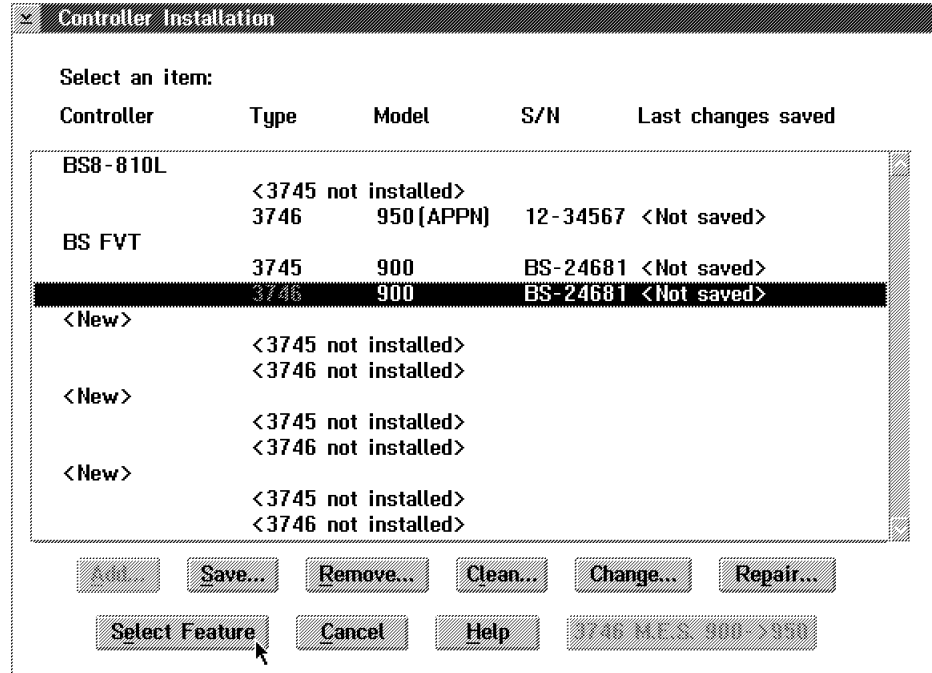
Figure 2-49. Controller Installation

2. ____ Click on the **"Features"** to be installed, enter the corresponding pass-
   word, then click on **OK**.

   Notes:

   a. The following screen can be different if you are working with a microcode
      level up to D46130.

   b. The password for each feature is recorded on the installation instructions
      part of the shipping group.
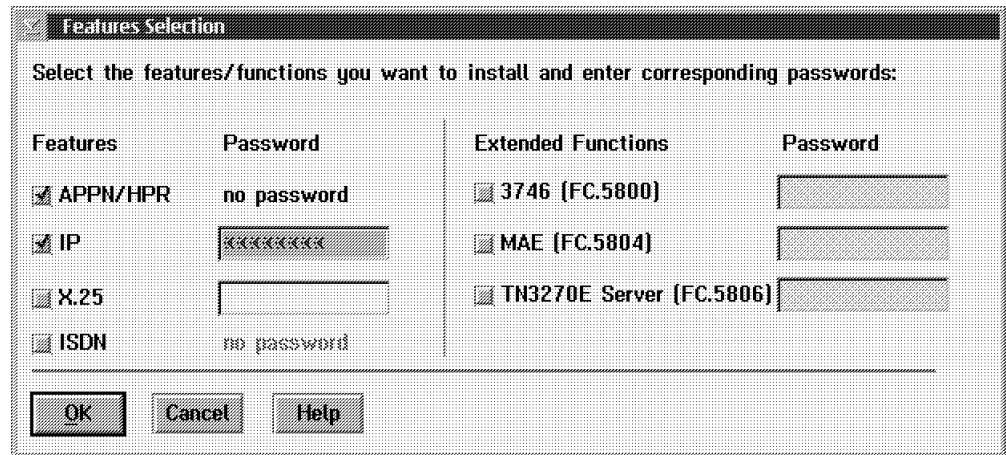
Figure 2-50. Features Selection

3. ____ According to the customer's requirement, select the protocol loaded per processor type, then click on **OK**. For details, refer to "Parameter worksheet for Processor Loading" on page A-1.
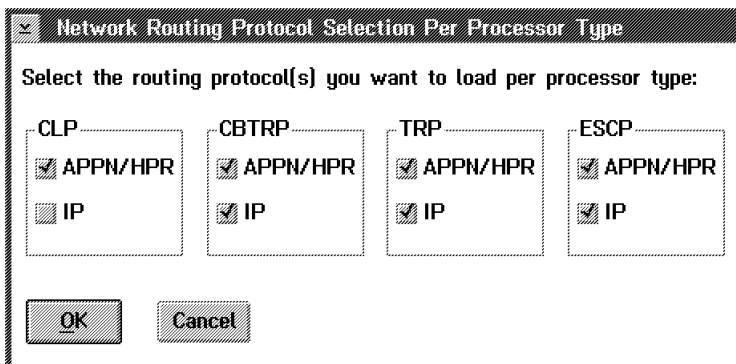
Figure 2-51. Network Routing Selection

4. ____ This information message remind you to set the NPM parameters required in communications manager if the customer is going to use NPM (for details refer to "Configuring NetView Performance Monitor (NPM)" on page 2-40), click on **"OK"**.
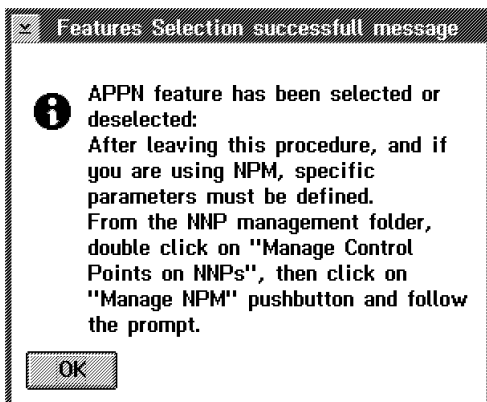
Figure 2-52. Features Selection Successfull Message

5. ____ When completed, click on **"OK"** and perform a general IML to activate the feature installed.

Calling RETAIN

Note: This procedure is used to test the link to RETAIN and to verify if the machine is correctly recorded in the RETAIN database.

1. ____ Double click on the **"3746-950 object icon"**.

2. ____ Click on **"Problem management"**.

3. ____ Double click on **"Report Problem using Remote Support Facility"**.

4. ____ See Figure 2-53, enter a **short description** "Installing the 3746-950 and testing the RSF link", then click on **"OK"**.
   Wait for the message "Call to RETAIN successful" indicating the normal end of the transmission.
   If you get the message "Call to RETAIN unsuccessful", record the Customer Problem Number (CPN) and go to the START page of the *3746-950 Service Guide*, SY33-2108.
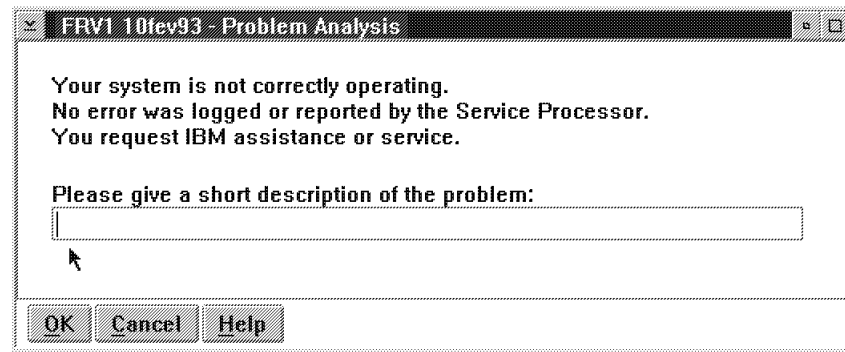
Figure   2-53. Link to RETAIN

Go to Chapter 3, "3746-950 and Service Processor Power On and Test Procedure" on page 3-1.

3746-950 and service processor installation

Chapter 3. 3746-950 and Service Processor Power On and Test Procedure

3746-950 Control Panel General Information

- The **function**, **service mode**, and the **power control** keys allow to scroll through options at their corresponding display window.

  Note:

  – When you are in **normal (0)** service mode, pressing the function key will scroll through the 3, 4, 6, and 8 functions.

  – When you are in **maintenance (1)** service mode, pressing the function key will scroll through the 3, 4, 5, 6, 7 and 8 functions.

  – To select functions 0, 1, and 2 press the following keys:

    1. **General IML** will select **function 0** (General IML).
    2. **CBSA IML** will select **function 1** (CBSA IML).
    3. **CBSA dump** will select **function 2** (CBSA dump).

  – When you are in **display error code (7)** pressing the **service mode** key will **scroll the System Reference Code (SRC) forward** and pressing the **power control** key will **scroll the SRC backward**.

- The **validate** key enables options selected with the preceding keys (digits stop blinking).

- The **exit** key cancels a scrolled option.
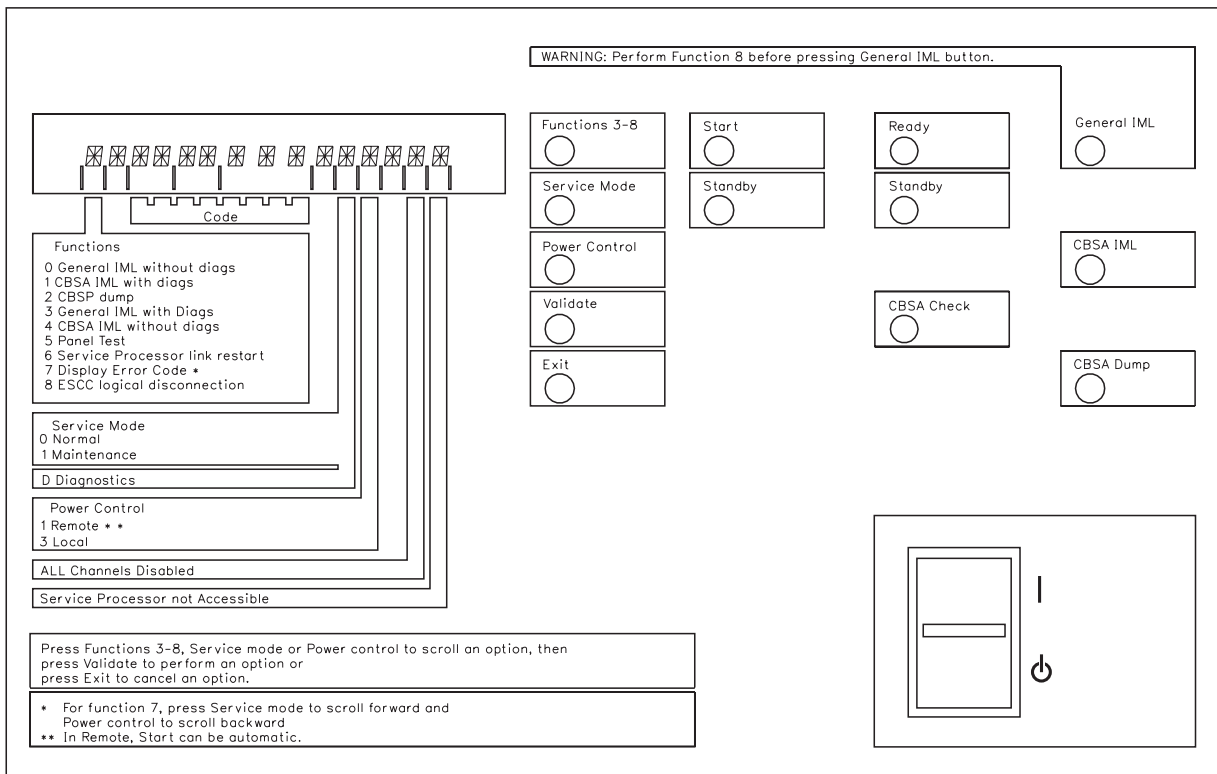
Figure 3-1. 3746-950 Control Panel Layout

For a description of the panel display values, refer to the *3746-950 Service Guide*, SY33-2108.

3746-950 Checkout Procedure

- **Ensure that you complete each step in sequence.**

- If the expected panel code is not displayed, go to the START page of the *3746-950 Service Guide*, SY33-2108.

Step 1. ____**Power the 3746-950 Off**

Press the **Standby** key to power the 3746-950 off, in that state only the CBSP is power ON all the others processors are power OFF.

Step 2. ___ **Verifying the 3746-950 Standby State**

At the 3746-950 control panel, check for the following indications:

- Service Mode = **0**,

- Power control = **3**,

- Progression code = **05 28 2806**

- The standby led blinks first for a few seconds and then stays **ON**
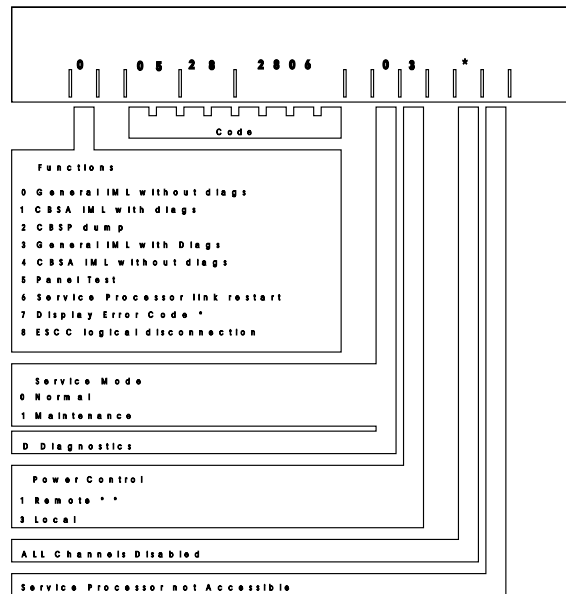
Figure 3-2. Display Part of the 3746-950 Control Panel Layout

If the conditions of the normal end of standby IML are not met, use the *3746-950 Service Guide*, SY33-2108, at the START page.

3746-950 Test Procedure

Step   3. ___ **3746-950 Control Panel Test**

For details on this test, refer to *"How to Run the Panel Test"* in the *3746-950 Service Guide*, SY33-2108

It is not a sequential test and can be cancelled at any time, by pressing the 'Exit' key.

Notes:

a. Any inactivity lasting about 30 seconds during the panel test, will result in the test being automatically cancelled and the panel will return to operational mode.

b. During this test the control panel's audible alarm will sound for each action.

'special character': Can be described as when every possible segment of the window is lit.

```
 - -
|\|/|
 - -
|/|\|
 - -
```

a. ____ Press the '**Power Control**' key repeatedly until '3' is displayed in the power control window.

b. ____ Press the '**Validate**' key.

c. Press the '**Service mode**' key repeatedly until '**1**' is displayed in the 'service mode' window.

d. ____ Press the '**Validate**' key.

e. ____ Press the '**Function**' key repeatedly until '**5**' is displayed in the function window.

f. ____ Press the '**Validate**' key.

Observe the display: All 13 'special characters' will be displayed.

Note: If panel test code detects an error, the SRC is stacked but not displayed on the panel.

g. ____ Press the '**Function**' key repeatedly.

Observe the display: In the 'Function' window a 'special character' will be displayed and you will scroll through the 'Function' and 'Code' windows sequentially, and wrap around.

h. ____ Press the '**Service mode**' key repeatedly.

Observe the display: In the 'Service' window a 'special character' will be displayed and you will scroll through the 'Service' and 'Power Control' windows, and wrap around.

i. ____ Press the '**Power Control**' key repeatedly.

Observe the display: In the 'Console not accessible' window a 'special character' will be displayed and you will scroll through the 'All channels disabled' and 'Console not accessible' windows sequentially, and wrap around.

j. ____ Press the '**Start**' key.

Observe the display: '8' will be displayed in the 'Function' window, and the standby LED will be ON.

k. ____ Press the '**Standby**' key.

Observe the display: The display will be completely blank.

l. ____ Press the '**Exit**' key.

Observe the display: The display will present the 'Service Mode' (**1**) and 'Power Control' (**3**) indicating that the test is complete, and the panel has returned to operational mode.

Step   4. ___ **Perform the 3746-950 General IML and Build the CDF-E**

> **Notes**
>
> 1. If any unexpected SRCs or leds are ON, go to the START page of the *3746-950 Service Guide*, SY33-2108
>
> 2. SRC **06 00 00 D1** indicates that the link between the 3746-950 and the Service Processor has been lost and this is a normal condition during the re-IML of the machine.

a. ____ Press the **Power control Key** to select local mode **3**

b. ____ Press the **Service Mode Key** to select Maintenance Mode **1**.

c. ____ Press the **Function Key** to select General IML with Diags **3**.

d. ____ Press the **Validate Key** to execute General IML with Diags.

The progression codes are now dynamically displayed on the control panel up to the **normal end of the Standby state** which is indicated as follow:

- Ready led **OFF**.

- Standby led **ON**.

- SRC **05-28-2806** is displayed on the control panel.

e. ____ Press the **Start Key** to execute the General IML with Diags from Standby state to the normal end of Power ON IML which is indicated as follow:

- Ready led **ON**.

- Standby led **OFF**.

- SRC **00-00-0000** is displayed on the control panel.

- The 3746-950 object Icon is **green**.

Step   5. ___ **Compare the Active CDF-E To the Reference CDF-E**

From the Service Processor, select the following screen options:

a. ____ Enter the Service Processor Maintenance password (default is IBM3745).

b. ____ Double click on the "**3746-950 object icon**".

c. _____ Click on **"Configuration Management"**.

d. _____ Double click on **"Compare reference CDF-E with active CDF-E"**. The active CDF-E is now being compared with the reference CDF-E

Note: If there is no difference, an information message is displayed. Click on the **"OK"** pushbutton to leave the function.
If there is difference, double click on the resource in error to get more details about that resource then:

1) Check that the cards are properly plugged.

2) Compare the configuration recorded in the CDF-E to the HONE installation sheets.

Step   6. ___ **Select Diagnostics to Test All the Resources**

Note: For any unexpected message go to the START page of the *3746-950 Service Guide*.

a. _____ On the 3746-9x0 menu, click on **"Problem Management"**

b. _____ Double click on **"Set 3746-9x0 Online/Offline Option"**, then click on **"Yes"**.

c. _____ Click on **"OK"** when the offline request has been successfully processed.

d. _____ Press **General IML** on the 3746-950 control panel to set the 3746-950 offline.

Note: The 3746-950 object icon will become **white**, **yellow**, and finally **red** and will stay **red** as long as the 3746-950 is offline.

e. _____ From the list of Problem management functions, double click on **"Perform offline Diagnostics"**.

f. _____ Using the radio buttons define how to run a general diagnostic. Select **Whole 3746-9x0** and **No wrap** (normally the default options), enter the **number of cycles** that you want the test to run (one cycle can take up to 15 minutes).

g. _____ Click on the **"Start"** pushbutton (a 'stop' pushbutton is now visible). The normal end will be indicated by **"Hardware error: 0"**, **00-00-0000** displayed on the 3746-950 control panel, and the 'Start' pushbutton will be visible again.

h. _____ Click on **"Cancel"** to exit from the function.

Note: If the hardware error counter is incremented:

1) _____ Click on **"Manage Alarms/Errors/Events (SRC's)"**, the "System Reference Code Options Selection" is displayed.

2) _____ Select **"Alarms"** and click on **"OK"**.

3) _____ An **Alarms** panel is displayed, select the last alarm (at the top of the screen).

> 4) _____ Click on **"View"** (on the action bar), click on **Problem inter-pretation...**, a panel is displayed and gives the list of suspected FRUs and their defective probability.
>
> 5) _____ Click on **"Cancel(s)"** to exit from the function.

> i. _____ Click on **"OK"** on the warning message which remind you to put back the 3746-950 online.
>
> j. _____ **Resume** step 6b on page 3-6 to **put the 3746-950 ON LINE**.
>
> k. _____ Press **General IML** on the 3746-950 control panel to set the 3746-950 online (indicated by a **green** object icon).

Step   7. _____ **Import ESCON Configuration Using CCM**

> a. _____ Double click on the **3746-9x0 object icon** .
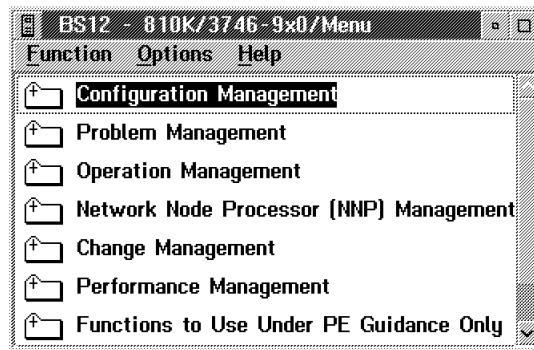
Figure   3-3. Network Node Processor Maintenance Functions

> b. _____ Click on **Network Node Processor (NNP) Management**.
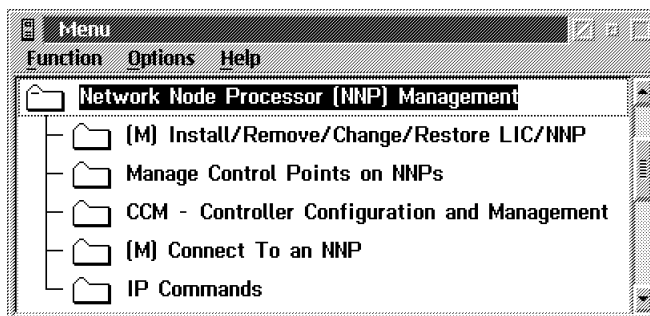
Figure   3-4. Network Node Processor Management Functions

> c. _____ Double click on **CCM -Controller Configuration and Management**
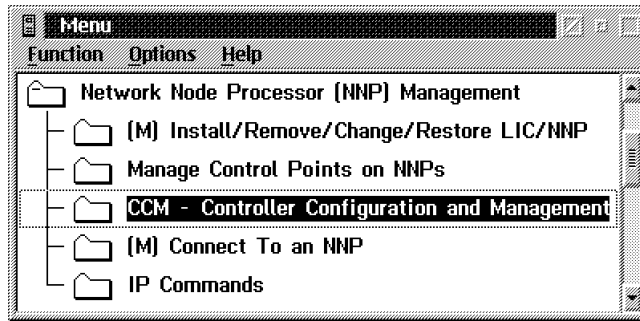
Figure 3-5. CCM

> d. ____ Click on file then click on **Import a configuration** .
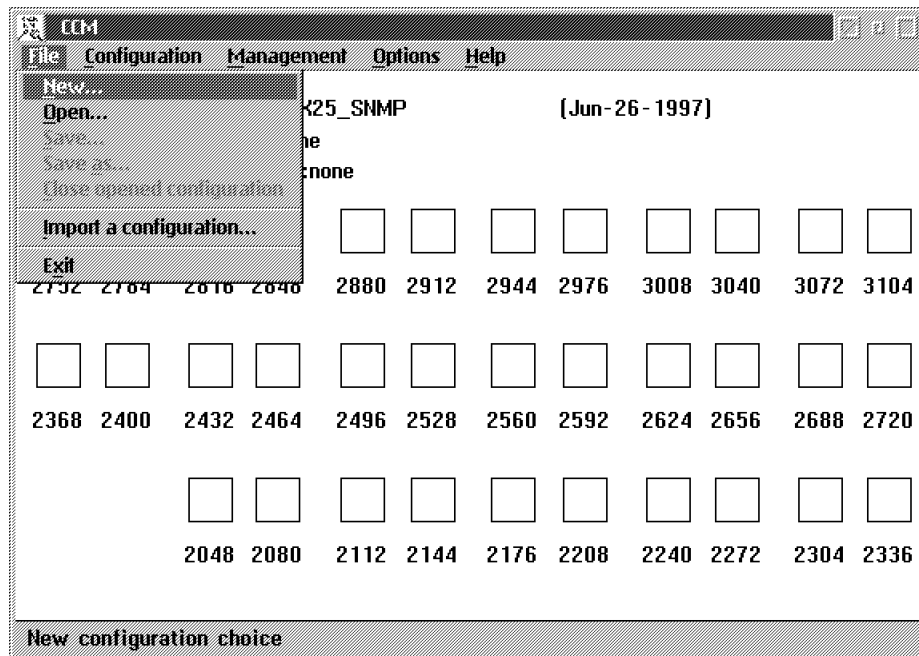
Figure 3-6. Importing a Configuration

> e. ____ Insert the diskette which contains the CCM config file, then click on **OK**.

> f. ____ Select the configuration to be imported , then click on **Import selected configuration** .
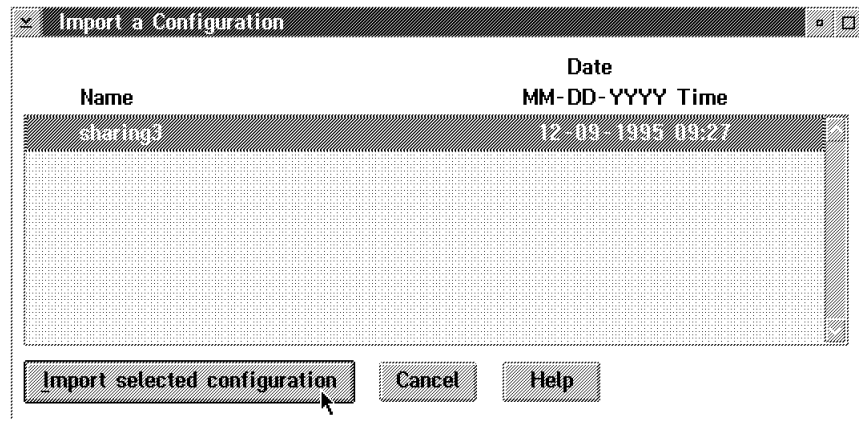
Figure 3-7. Importing a Configuration

g. ____ When completed, click on **OK** , then click on **Cancel**

h. ____ Click on **File**, click on **Open**

i. ____ Select the config file that you just imported , then click on **Activate** and verify that a "A" is displayed on the left side of the configuration activated.
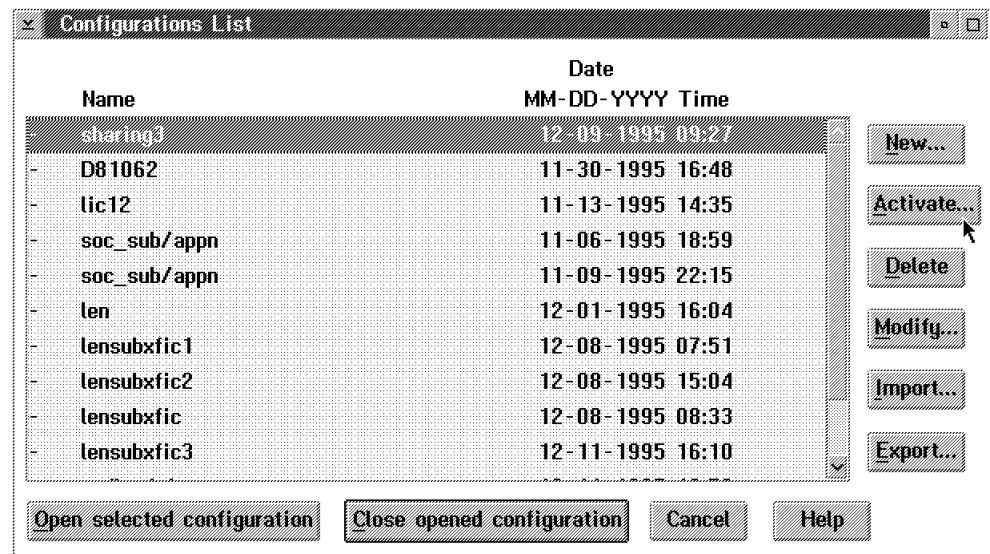
Figure 3-8. Activate a Configuration

Step   8. ___ **Test the ESCON network**

Step   a. ____ Route and temporarily plug the ESCON cables of the links to be tested into the ESCC connectors. Install the cables according to the plugging sheets obtained from the customer (refer to Figure 4-5 on page 4-6 and Figure B-8 on page B-6 to locate the connectors).
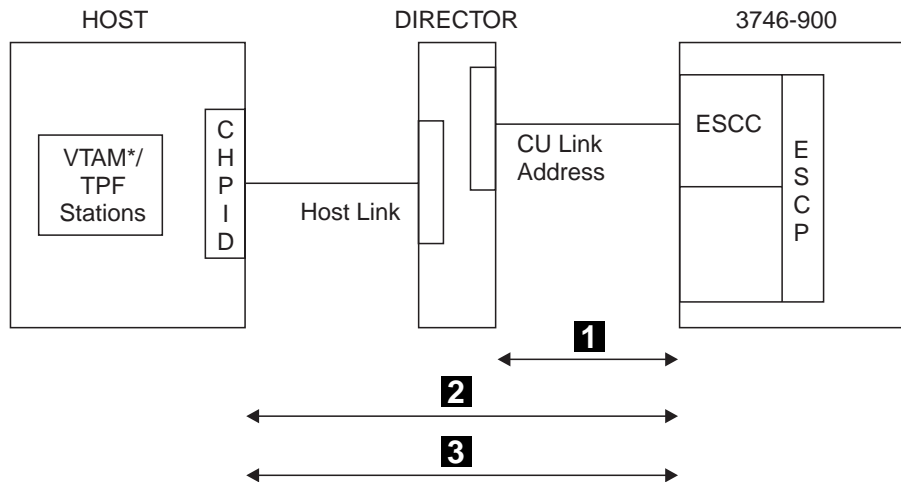
Figure 3-9. Typical ESCON Link between a 3746-9x0 and a Host

Step   b. ___ To validate the link between the ESCC and the host:

From the **service processor console**, establish the path   **2** from the ESCC to the Channel Path ID (CHPID) of the host, and verify that the **Path Status** of the host link is **Path**. Display the host link status as follow:

1) ____ Click on the **"3746-9x0 object icon"**.

2) ____ Click on **"Configuration Management"**.

3) ____ Double click on **"Manage ESCON processor"**.

4) ____ Double click on the **"ESCP"** to be selected.

5) ____ Click on **"Options"**, click on **Manage ESCC status**.

6) ____ Click on **"Enable"**.

7) ____ Click on **"Options"**, click on **"Send request and save"**.

8) ____ Click on **"OK"** twice.

9) ____ Click on **"Options"**, click on**"Return"**.

10) ____ Click on **"Refresh"**, click on**"One shot"**.

11) ____ Verify on the 'ESCON Configuration - Lines' screen that the **host link status** is **Path** (this means that the path is available). Then if you have an **ESCON director**, go to **step 8b12** , otherwise go to **step 8b14 on page 3-11** .

12) ____ Verify the **Control unit link address**. To validate the Link **1** from the ESCC to the ESCON Director or to the Channel Path ID (CHPID), verify that the **Control Unit Link Address** received dynamically from the director is the same as the value entered by the customer when he defined the ESCA configuration.

13) ____ Record the **CU Link addr** (hex) value (CNTLUNIT LINK) and **Compare** this address to the output provided by the Customer.

14) ____ To leave the function, click on **"Options"** and from the pulldown menu select **Return**.

From the **MVS console**, activate the path **3** between the ESCC and the Channel Path ID (CHPID) of the host, ask the customer to **vary-ON vary-OFF** the specific device address and verify the status of the link (see example below of the MVS commands to vary on the line).

```
Enter the command:      V Path (XXX,YY), online
You will get the status: IEE3021 PATH (XXX,YY) ONLINE
```

Note: Before the 'Vary on', the path status was: **"Not physically available"**.

Step c. ___ Unplug the cables installed in step 8a on page 3-9.

Go to Chapter 4, "Cable Setup" on page 4-1 .

3746-950 Test Procedure

Chapter 4. Cable Setup

Which cables are to be installed?

- If **TRA** cables, go to **"Installing the TRA Cables" on page 4-2** .
- If **ESCA** cables, go to **"Installing the ESCA Cables" on page 4-4** .
- If **RVX** cables, go to **"Installing the RVX Cables" on page 4-7** .

4-1

Installing the TRA Cables

> **Note:** If you are going to install **unshielded twisted-pair (UTP)** cables, go to "Unshielded Twisted-Pair Cables" on page 4-3

Shielded Cables

Cable ID 1   09
Cable ID 0   08
              07
              06

05 RCV Data
04 RCV Data
03 GND
02 TX Data
01 TX Data
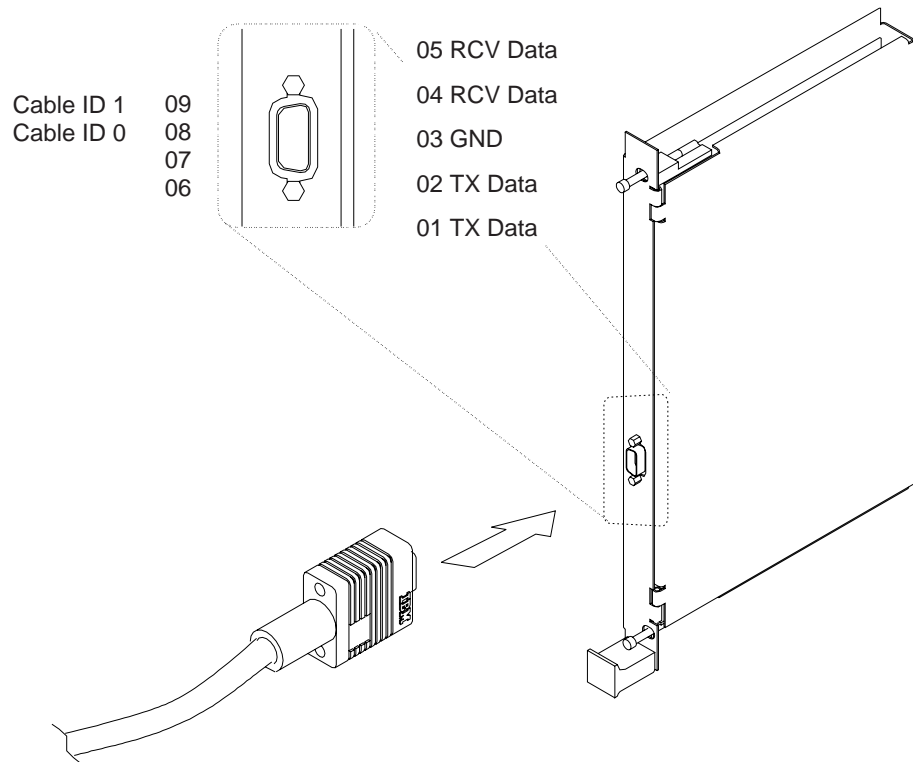
Figure   4-1. TIC3 (Token-Ring 16Mbps)

Step   1. ___ Obtain the plugging sheets from the customer (prepared using the *3745 Communication Controller Models A and 3746 Expansion Unit Model 900: Migration and Planning Guide*).

Step   2. ___ Plug the TRA cables into the TIC3 couplers accordingly.

For the coupler location, refer to Figure B-8 on page B-6.

Unshielded Twisted-Pair Cables

The token-ring Multistation Access Unit (MAU) may be attached to a TIC3 using unshielded twisted-pair cables with 100-ohm impedance. In that case, a token-ring UTP Media Filter (PN 43G3875) is installed between the TIC3 connector and the cable (see Figure 4-2).

Step   1. ___ Obtain from the shipping group the Token-Ring UTP media filters and plug these filters into the appropriate location according to the plugging sheet (prepared using the *3745 Communication Controller Models A and 3746 Expansion Unit Model 900: Migration and Planning Guide*).

Step   2. ___ Plug the UTP cables into the filters.
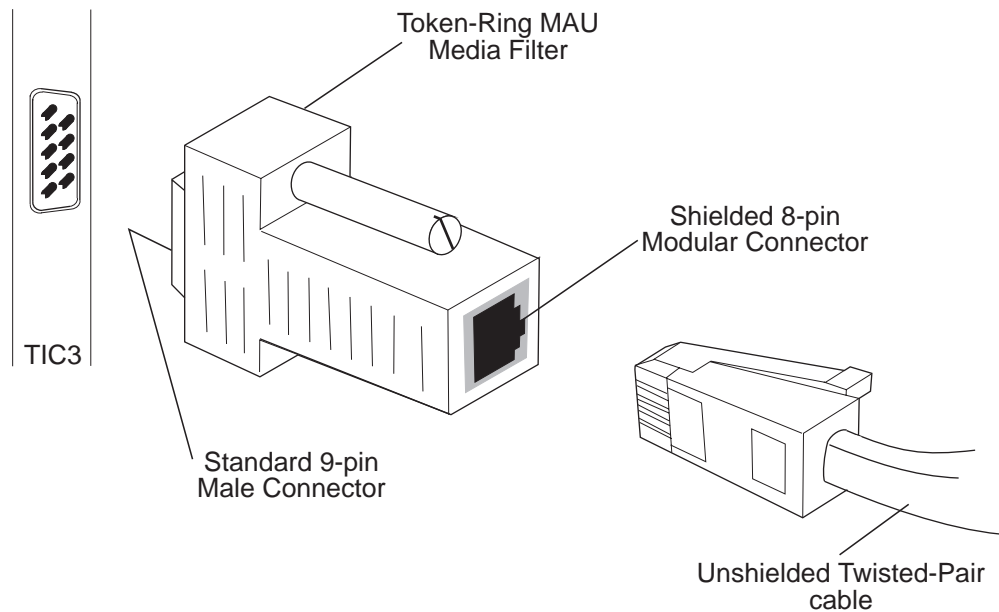
Figure   4-2. Connecting The UTP Cables

Which other cables do you have to install?

- If **ESCA** cables, go to **"Installing the ESCA Cables" on page 4-4** .

- If **RVX** cables, go to **"Installing the RVX Cables" on page 4-7** .

- If there are **No more** cables to be installed. Go to **Chapter 5, "Installing the 3746-950 Ground Brackets" on page 5-1** .

Installing the ESCA Cables

> **Note:** With the new machines, brackets PN 76F9407 and 58G5503 are no more shipped, if you did not received any of these brackets, go to step 2 on page 4-6.

1. **If there is a raised floor and:**

   - **If you have a bracket** **2** **with PN 76F9407 and the guide** **3** **with PN 69F2204 (see Figure 4-3) install as follows**:

     Step a. ___ **loosen** the 2 screws **1** maintaining the cover of the AC 1 power supply

     Step b. ___ **Install** the bracket **2** (PN 76F9407), tighten the 2 screws **1** . See Figure 4-3

     Step c. ___ **Slide** the optical fiber guide **3** (PN 69F2204) in the bracket **2** , tighten the screw **4** .
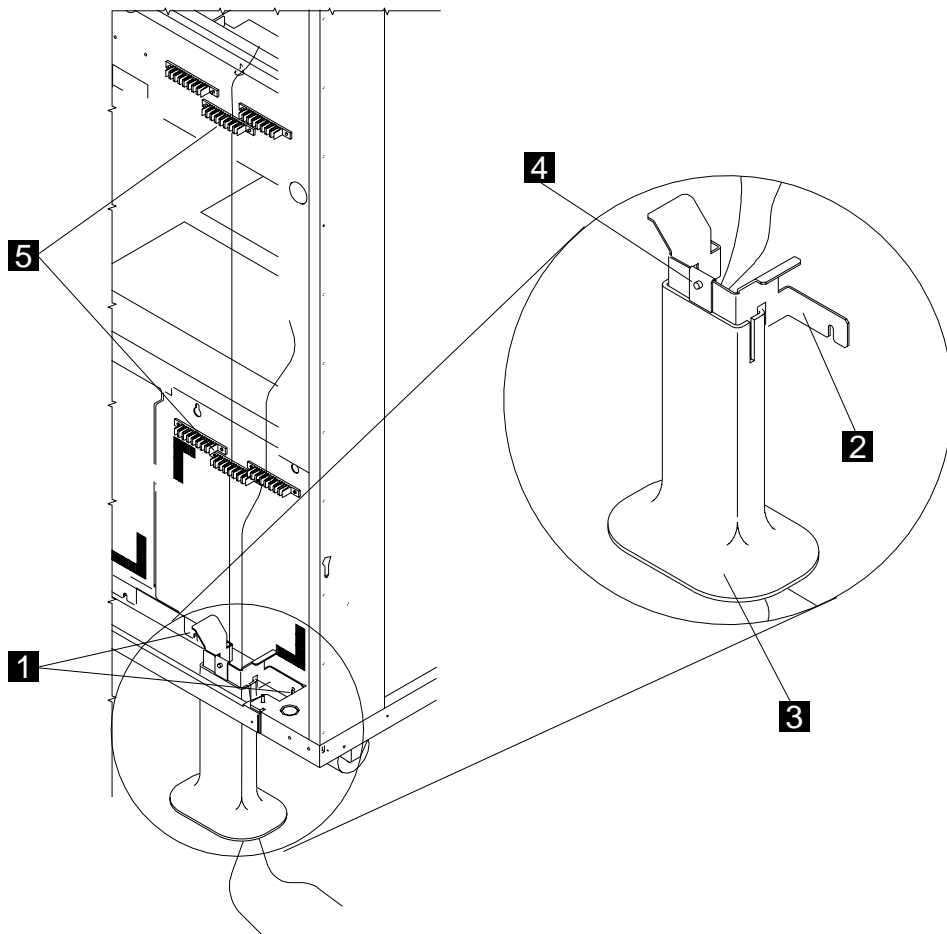
Figure 4-3. Routing the Optical Fibers

• **If you have a bracket** 2 **with PN 58G5503 and the guide** 3 **with PN 58G5504 (see Figure 4-4) install as follows**:

Step   a. ___ **Remove** the 2 screws 6 maintaining the cover of the AC 1 power supply

Step   b. ___ **Install** the two spacers 4 (PN 58G5711) and the bracket 2 (PN 58G5503) using two screws 1 (PN 1621214) See Figure 4-4

Step   c. ___ **Install** the optical fiber guide 3 (PN 58G5504) and tighten the 2 screws 1 .
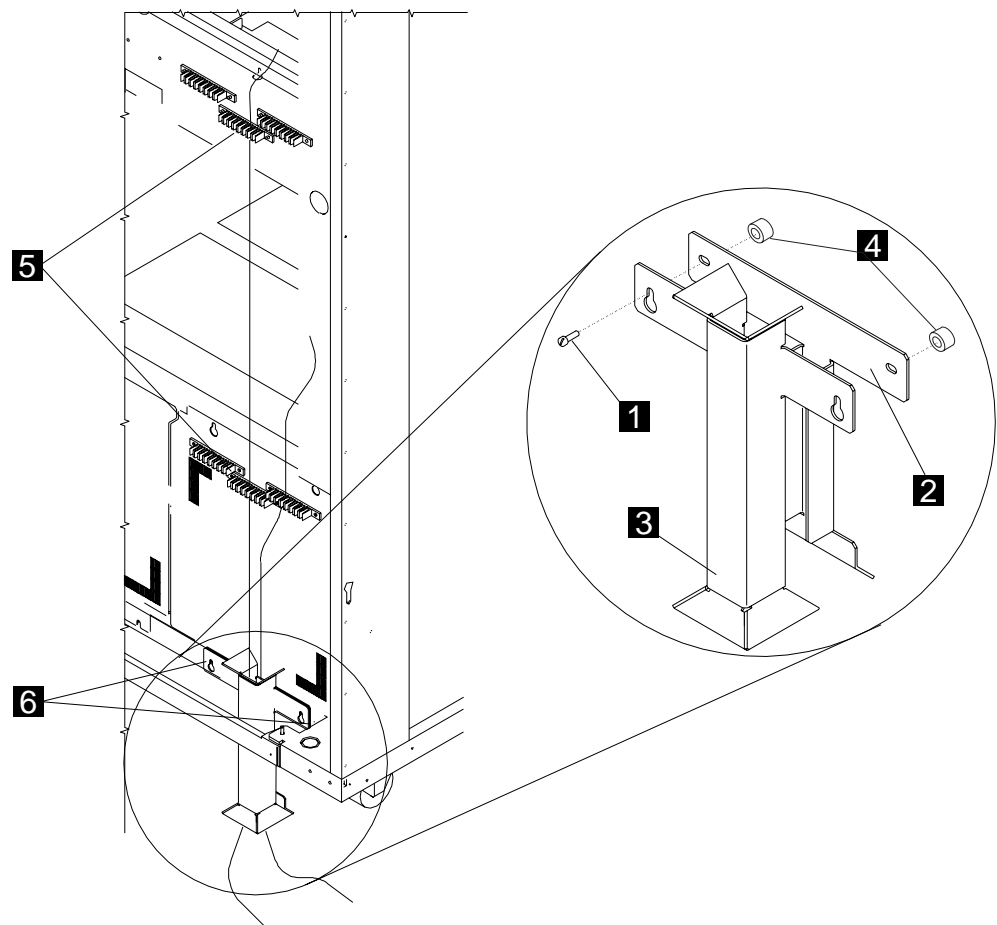
Figure   4-4. Routing the Optical Fibers

2. **Obtain the plugging sheets from the customer (prepared using the** 3745 Communication Controller Models A and 3746 Expansion Unit Model 900: Migration and Planning Guide**) and plug the ESCA cables as follows: (see Figure 4-5)**

Step   a. ___ **Route** the cables through the optical fiber guide if installed and insert the cables into the retaining strips **5** . (see Figure 4-3 on page 4-4 or Figure 4-3 on page 4-4)

Step   b. ___ **Loosen** the screws **1** .

Step   c. ___ **Slide** the bracket **2** upwards, plug the ESCA cable into the cassette.

> **Note:** To properly plug the ESCA connectors, apply pressure simultaneously to both grooved angled shoulders on the connectors.

Step   d. ___ **Slide** the bracket **2** downwards, then tighten the screws **1**

For the coupler location refer to Figure B-8 on page B-6.
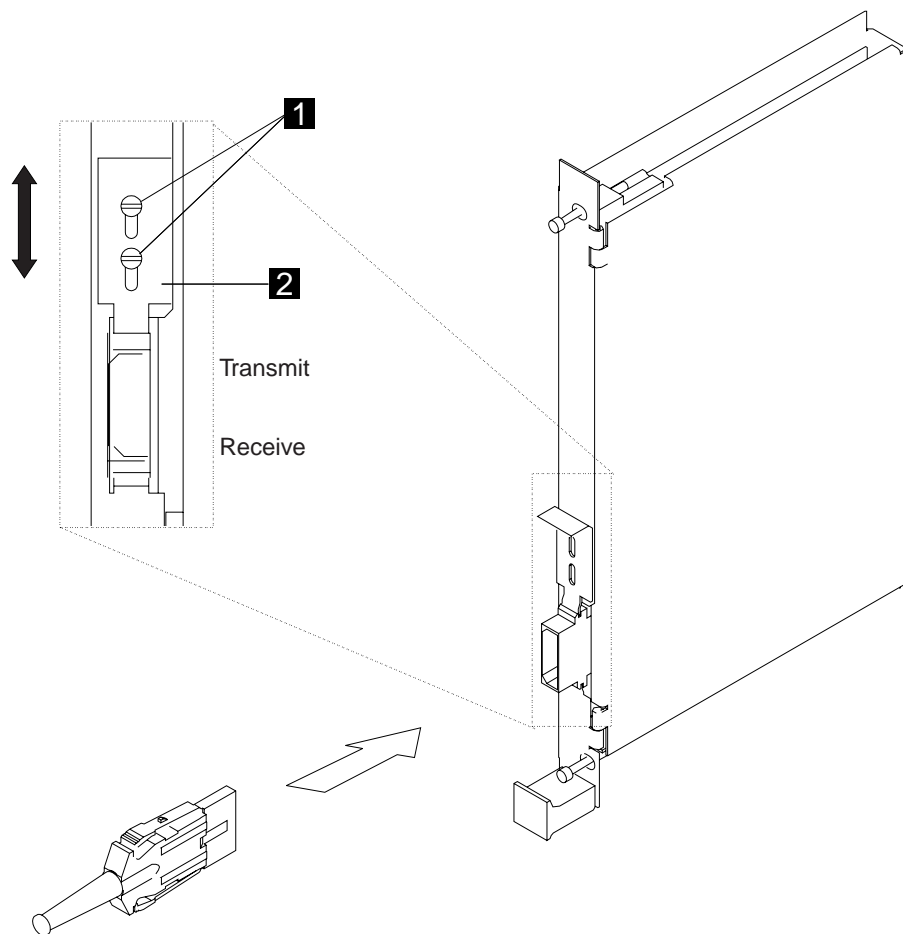
Figure   4-5. ESCA Cable Plugging

Do you have to install RVX cables?

- If **Yes**, go to **"Installing the RVX Cables" on page 4-7** .

- If **No**, go to **Chapter 5, "Installing the 3746-950 Ground Brackets" on page 5-1** .

Installing the RVX Cables

Obtain (from the customer) the plugging sheets described in the appendix of the *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457, where all the information required to install the LCBs and cables is recorded.
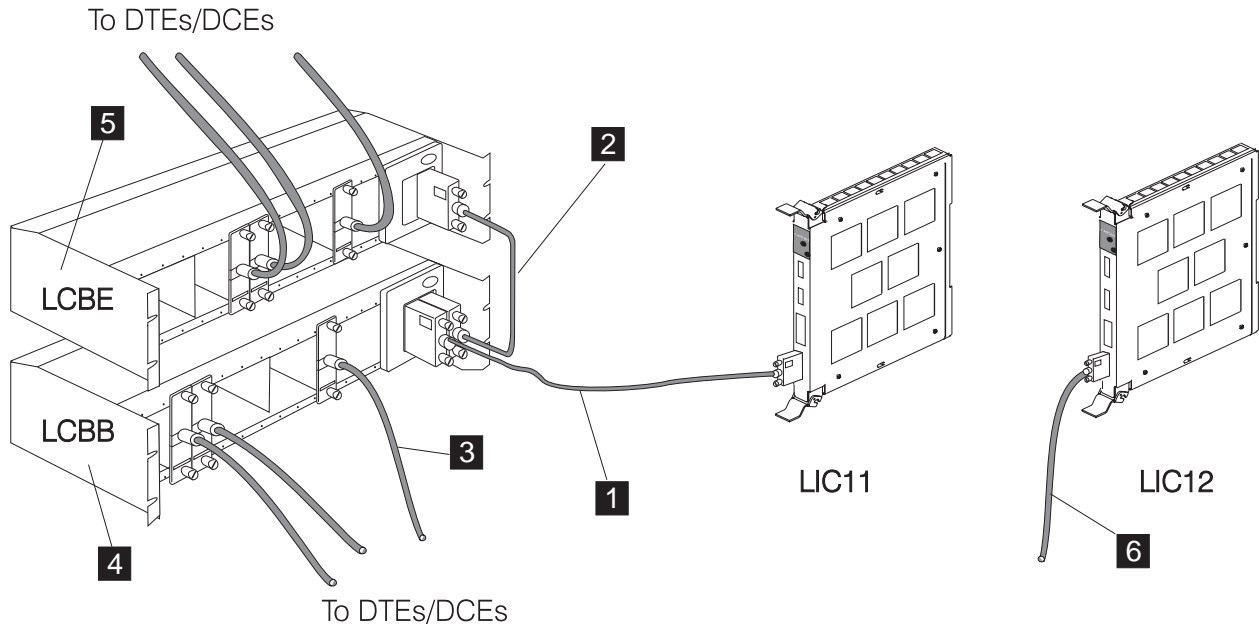
Figure   4-6. RVX Cables

There are **two** different **Line Interface Couplers** (LIC11 and LIC12):

1. The **LIC11** is connected to the DTE/DCE using the following cables:

   a. Cable **1** is used to connect the LIC11s to the LCBB (see "Installing the Cables From LIC11-to-LCBB" on page 4-9 for details of the installation).

   b. Cable **2** is used to connect the LCBBs to the LCBEs (see "Installing the LCBs and Cable from the LCBB to LCBE" on page 4-8 for details of the installation).

   c. Cable **3** is used to connect the LCBB/LCBE ARC location to the DTE/DCE (see "Installing the ARCs and Cables" on page 4-10 for details of the installation).

      Note: This cable is connected to the ARC plugged in the LCB or, if the ARC is part of the cable, it is directly connected into the LCB.

2. The **LIC12** is connected to the DTE/DCE using the following cable:

   • Cable **6** is used to directly connect the LIC12 to the DTE/DCE (see "LIC12 Cable Installation" on page 4-19 for details of the installation).

There are **two** types of **Line Connection Boxes** (LCB):

1. The **Line Connection Box Base** **4** (LCBB)

2. The **Line Connection Box Expansion** **5** (LCBE)

Note: Two LCBs (two LCBBs or one LCBB+ one LCBE) can be installed in the 3746-900 frame in locations 07D-A1 and 07D-B1 (see Figure B-1 on page B-1). These LCBs are installed by manufacturing.

Installing the LCBs and Cable from the LCBB to LCBE
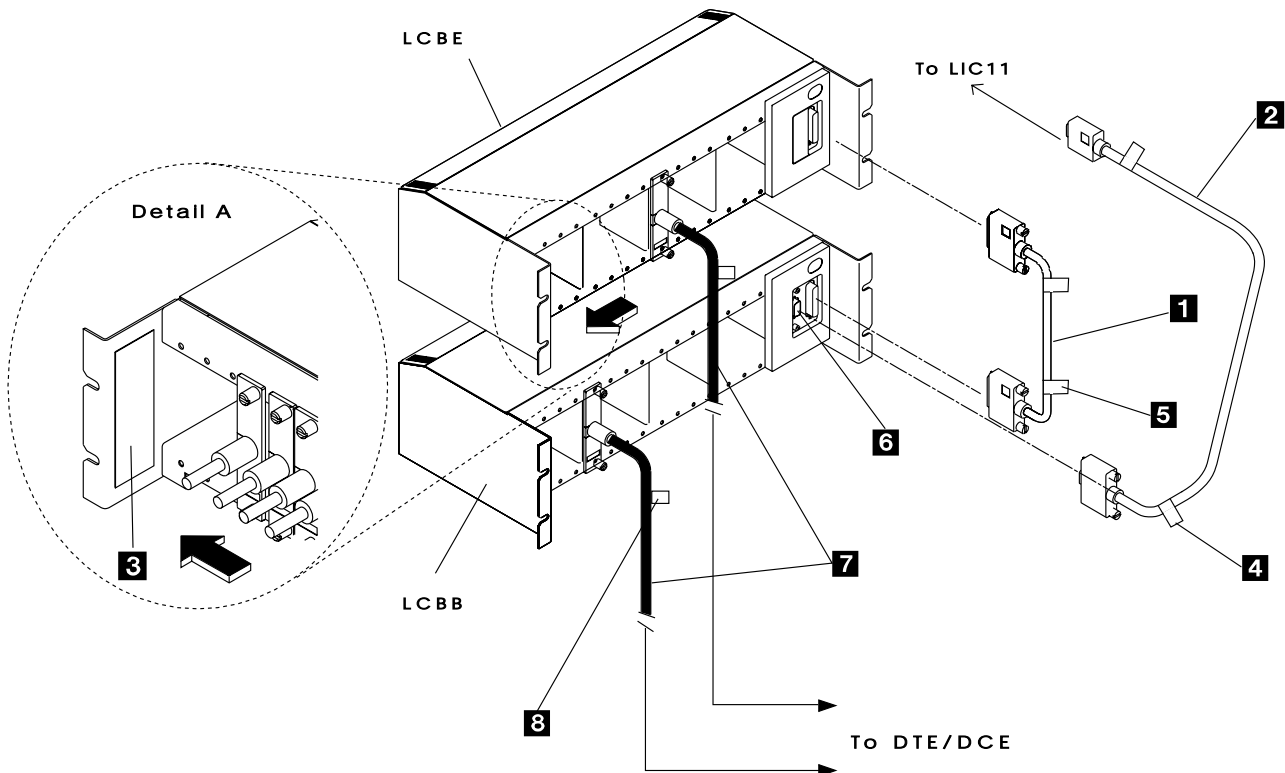
Figure 4-7. LCBB and LCBE Connection

1. ____ **Unpack** the LCB and obtain (from the shipping group) the different labels which will be used to identify the LCB and cables (at the end of the installation, save the unused labels for further needs).

2. ____ Start **installing** the LCBs **from the bottom** of the rack. The LCBE is always installed on top of its associated LCBB (see Figure 4-7).

3. ____ Refer to Figure C-5 on page C-6, and **install** and **fasten** the LCB in the 19 in. rack-mount using four captive nuts (PN 58G5766) and four screws (PN 1621230).

4. ____ Using the label **3** (PN 63F2503), **identify** this LCB by recording the following information:

   a. The **3746-900 name**.
   b. The **LCB number/location** (up to 25 characters).
   c. The **NCP range address** (see following note)

   Note: Record the same address on the other labels used to identify the (LIC11 to LCB) cable and the ARC/cable of the same link.

5. ____ **Stick** the label on the LCB (see detail A **3** in Figure 4-7).

6. ____ If you have installed one LCBB and one LCBE, **install** cable **1** (PN 58G5700) between the LCBB and the LCBE. This cable is part of the LCBE shipping group (see cable **1** in Figure 4-7 on page 4-8).

Note: When installing an empty LCBE, it will not be detected in the CDF-E before an ARC is plugged or a CLP IML is performed.

Installing the Cables From LIC11-to-LCBB

Obtain (from the shipping group) the low/medium speed line attachment cables ordered by the customer (see Table 4-1 for cable characteristics).

Table 4-1. Low/Medium-Speed Line Attachment Cables			
Cable Part Number		**Feature Code**	**Length Meters (Feet)**
World Wide	**World Wide Except Canada**		
58G5601 (1)	58G5705 (1)	9913 (1)	1.3 (4)
17G5915 (2)	58G5717 (2)	9715 (3)	7 (23)
58G5602	58G5706	9714 (3)	7 (23)
17G5916 (2)	58G5718 (2)	9717 (3)	15 (50)
58G5603	58G5707	9716 (3)	15 (50)
17G5917 (2)	58G5719 (2)	5219	35 (115)
58G5604	58G5708	5218	35 (115)
17G5918 (2)	58G5720 (2)	5221	70 (230)
58G5605	58G5709	5220	70 (230)
17G5919 (2)	58G5721 (2)	5223	105 (345)
58G5606	58G5710	5222	105 (345)

Note:

1. This cable is connected from a LIC11 to the LCBB installed in the 3746-900 frame and it is identified by a specify code.
2. Plenum cable for U.S.A. and Canada only.
3. This code is a specify code.

For each LCBB installed in the 3746-900 frame, the cable (PN 17G5826) is already connected in the LCBB. Connect the LIC side of the cable to the appropriate LIC11 according to the worksheet information.

Install the LIC11-to-LCBB cables (see cable **2** in Figure 4-7 on page 4-8) as follows:

1. ____ Using two labels **4** (PN 63F2504), **identify** the cables by recording the following information:

   a. The **3746-900 name**.

   b. The **LCB number/location** (up to 25 characters).

   c. The **NCP range address**.

2. ____ **Stick** the labels **4** on the two leads of the cable at about 220 mm (9 in.) from the edges.

3. ____ **Connect** the cable **2** from the LCBB connector **6** to the LIC11 connector according to the plugging sheet information.

   Note: For the LIC11 location, refer to Figure B-8 on page B-6.

Installing the ARCs and Cables

Obtain (from the 3746-900 shipping group) the ARC and cables ordered by the customer (see tables on the following pages).

Notes:

1. The ARC can be part of the cable (assembly A) or separate from the cable (assembly B). See Figure 4-8.

2. When the ARC and cables will be plugged, using tie wraps to route properly the cables along the frame and allow easy access for further repair actions.

ARC Assembly A
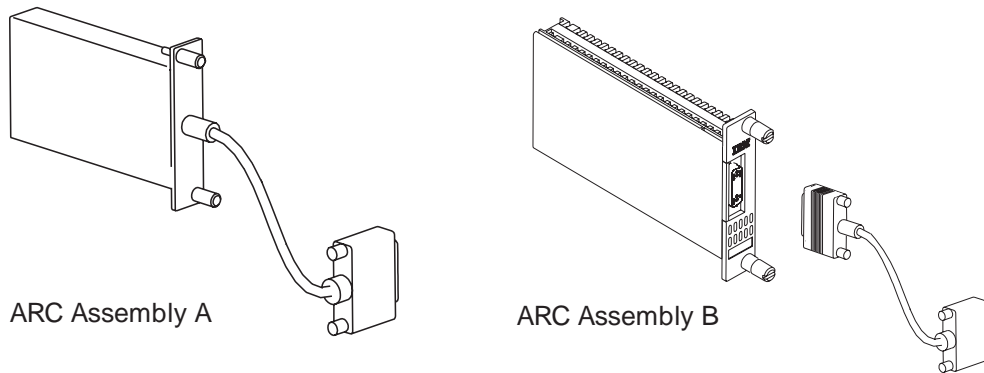
ARC Assembly B

Figure   4-8. ARC Assembly A and B
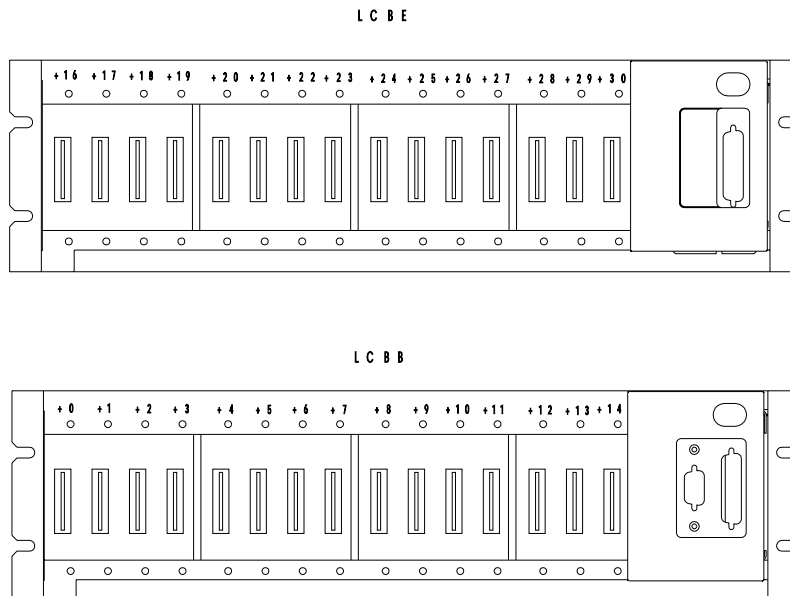
LCBE

LCBB

Figure   4-9. ARC Location in the LCBB and LCBE

Active Remote Connector (ARC) Assembly A

Table 4-2. Active Remote Connector (ARC) Assembly A				
ARC Type	**ARC Name**	**Feature Code**	**Length m (ft)**	**Wrap Plug**
ARC V.24 DTE	ARC1B	6400	15 (50)	61F4523
ARC V.24 DCE	ARC1A1 ARC1A2	6405 6415	5 (16) 12 (40)	61F4522 61F4522
ARC V.35 DTE (see Note 1)	ARC3B	6500	15 (50)	61F4527
ARC V.35 DCE (see Note 2)	ARC3A1 ARC3A2	6505 6515	5 (16) 15 (50)	61F4526 61F4526
ARC X.21 DTE	ARC4B	6600	15 (50)	61F4530
ARC X.21 DCE	ARC4A1 ARC4A2	6605 6615	5 (16) 15 (50)	61F4529 61F4529
ARC X.21 DCE Transfix	ARC4A3 ARC4A4	6630 6635	5 (16) 15 (50)	61F4529 61F4529
ARC/3745 V.24 DTE (see Note 3)	ARC1D	**(NLP)**	5 (16)	61F4525
ARC/3745 V.24 DCE (see Note 3)	ARC1C	6485	5 (16)	61F4525
ARC/3745 V.35 DTE (see Note 3)	ARC3D	**(NLP)**	5 (16)	61F4578
ARC/3745 V.35 DCE (see Note 3)	ARC3C	6585	5 (16)	61F4528
ARC/3745 X.21 DTE (see Note 3)	ARC4D	**(NLP)**	5 (16)	65X8927
ARC/3745 X.21 DCE (see Note 3)	ARC4C	6625	5 (16)	65X8927

Note:

1. When connected to a **French DTE**, connect the adapter (PN 65X9899) between the cable and the DTE.

2. When connected to a **French DCE**, connect the adapter (PN 1749352) between the cable and the DCE.

3. Connect these cables to the 3745 cables according to the ARC type. If 3745 RPQ plenum cables must be connected, see: *Migration and Planning Guide*, GA33-0183

Note: **(NLP)** No longer provided.

Active Remote Connector (ARC) Assembly B with Cables

Table   4-3. ARC V.24 and Standard Cables

ARC Type	To	ARC Name	Length m (ft)	Feature Code
V.24	DCE	ARC1A0	1.2 (4)	6406
V.24	DCE		2.4 (8)	6404
V.24	DCE		5 (17)	6405
V.24	DCE		12 (40)	6415
V.24	DTE	ARC1B0	15 (50)	6400
V.24 (3745)	DCE		5 (17)	6485

Table   4-4. ARC V.35 and Standard Cables

ARC Type	To	ARC Name	Length m (ft)	Feature Code
V.35 (see Note 1)	DCE	ARC3A0	1.2 (4)	6506
V.35 (see Note 1)	DCE		2.4 (8)	6504
V.35 (see Note 1)	DCE		5 (17)	6505
V.35 (see Note 1)	DCE		15 (50)	6515
V.35 (see Note 2)	DTE	ARC3B0	15 (50)	6500
V.35 (3745)	DCE		5 (17)	6585

Note:

1. When connected to a **French DTE**, connect the adapter (PN 65X9899) between the cable and the DTE.

2. When connected to a **French DCE**, connect the adapter (PN 1749352) between the cable and the DCE.

Table   4-5. ARC X.21 and Standard Cables

ARC Type	To	ARC Name	Length m (ft)	Feature Code
X.21	DCE	ARC4A0	1.2 (4)	6606
X.21	DCE		2.4 (8)	6604
X.21	DCE		5 (17)	6605
X.21	DCE		15 (50)	6615
X.21	DTE	ARC4B0	15 (50)	6600
X.21 (Transfix)	DCE	ARC4E0	15 (50)	6635
X.21 (3745)	DCE		5 (17)	6625

Cables for ARC Assembly B

Table 4-6. Standard Cables for ARC				
Cable Type	**To**	**Length m (ft)**	**Current Part Number**	**Old Part Number (See Note 1)**
V.24	DCE	.6 (2)	(NLP)	58G5610
V.24	DCE	1.2 (4)	02L3280	58G5611
V.24	DCE	2.4 (8)	02L3281	58G5612
V.24	DCE	5 (17)	02L3281	58G5613
V.24	DCE	10 (33)	(NLP)	58G5614
V.24	DCE	12 (40)	02L3283	58G5615
V.24	DTE	15 (50)	02L3284	58G5616
V.24 (3745)	DCE	.6 (2)	(NLP)	58G5640
V.24 (3745)	DCE	1.2 (4)	(NLP)	58G5641
V.24 (3745)	DCE	2.4 (8)	(NLP)	58G5642
V.24 (3745)	DCE	5 (17)	58G5643	58G5643
V.24 (3745)	DTE	5 (17)	(NLP)	58G5644
V.35	DCE	.6 (2)	(NLP)	58G5620
V.35	DCE	1.2 (4)	02L3285	58G5621
V.35	DCE	2.4 (8)	02L3286	58G5622
V.35	DCE	5 (17)	02L3287	58G5623
V.35	DCE	10 (33)	(NLP)	58G5624
V.35	DCE	15 (50)	02L3288	58G5625
V.35	DTE	15 (50)	02L3289	58G5626
V.35 (3745)	DCE	.6 (2)	(NLP)	58G5645
V.35 (3745)	DCE	1.2 (4)	(NLP)	58G5646
V.35 (3745)	DCE	2.4 (8)	(NLP)	58G5647
V.35 (3745)	DCE	5 (17)	58G5648	58G5648
V.35 (3745)	DTE	5 (17)	(NLP)	58G5649
X.21	DCE	.6 (2)	(NLP)	58G5630
X.21	DCE	1.2 (4)	02L3290	58G5631
X.21	DCE	2.4 (8)	02L3291	58G5632
X.21	DCE	5 (17)	02L3292	58G5633
X.21	DCE	10 (33)	(NLP)	58G5634
X.21	DCE	15 (50)	02L3293	58G5635
X.21	DTE	15 (50)	02L3294	58G5636
X.21 (Transfix)	DCE	5 (17)	(NLP)	58G5637
X.21 (Transfix)	DCE	15 (50)	02L3295	58G5638
X.21 (3745)	DTE	5 (17)	(NLP)	58G5654
X.21 (3745)	DCE	.6 (2)	(NLP)	58G5650
X.21 (3745)	DCE	1.2 (4)	(NLP)	58G5651
X.21 (3745)	DCE	2.4 (8)	(NLP)	58G5652
X.21 (3745)	DCE	5 (17)	56G5653	58G5653

Cable Setup Procedures

Notes:

1. Old cables can be used but not ordered for 3746-9x0.

2. NLP: This cable is no longer provided.

Depending on the ARC assembly received, go to the corresponding pages:

- **ARC assembly A**: "Connecting the ARC Assembly A to the LCBB/LCBE" on page 4-15.

- **ARC assembly B**: "Connecting the ARC Assembly B to the LCBB/LCBE" on page 4-16.

Connecting the ARC Assembly A to the LCBB/LCBE

According to the plugging sheet information, install the ARC/cables as follows (see Figure 4-7 on page 4-8):

1. ____ Using two labels **8** (PN 63F2505), **identify** the cables by recording the following information:

   a. The **3746-900 name**.
   b. The **LCB number/location** (up to 25 characters).
   c. The **NCP range address**.
   d. The **connector position** (+0 to +14 or +16 to +30).
   e. The **symbolic line name** (up to eight characters).

2. ____ **Stick** the labels **8** on the two leads of the cable at about 220 mm (9 in.) from the edges.

3. ____ **Plug** the cable into the LCBB/LCBE ARC position (+0 to +14 for the LCBB, or +16 to +30 for the LCBE). See Figure 4-9 on page 4-10.
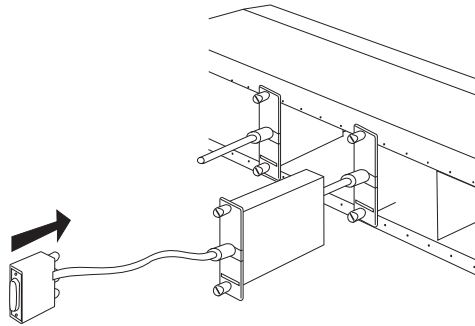
Figure   4-10. ARC/Cable Installation

4. ____Determine the ARC connection type: 3746-900 or 3745.
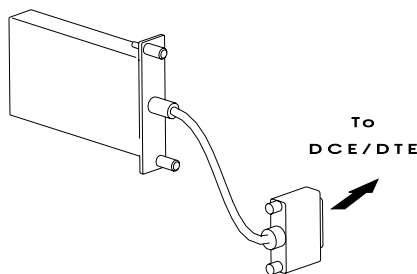
Figure   4-11. ARC Connection Type 3746-900
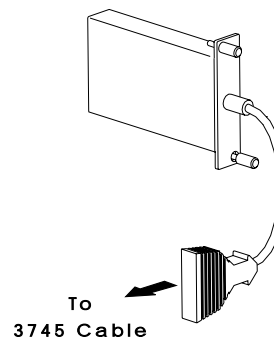
Figure   4-12. ARC Connection Type 3745

To connect an ARC connection type:

- **3746-900**: go to "Connecting the Cable Connector Type 3746-900 to the DCE/DTE" on page 4-18.
- **3745**: go to "Connecting the Cable Connector Type 3745 to the DCE/DTE" on page 4-19.

Connecting the ARC Assembly B to the LCBB/LCBE

1. ____ According to the plugging sheet information, identify the ARC type (see Figure 4-13, note that ARC V.35 DTE is no more provided) and plug the ARC in the LCBB/LCBE locations (see Figure 4-9 on page 4-10).

| V.24 | V.35
NON 3745 | V.35
3745 DCE | V.35
3745 DTE | X.21 |
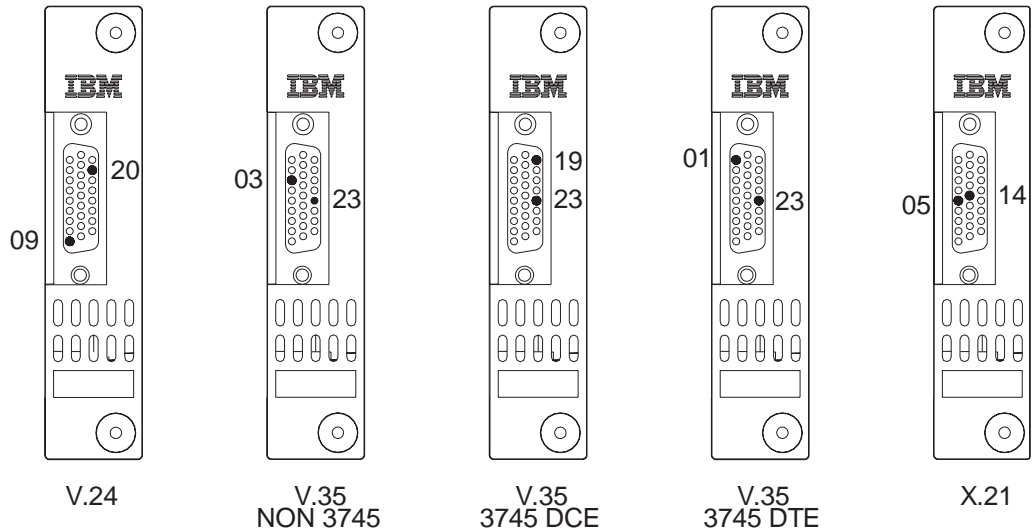
Figure 4-13. ARC Type

Note: The different ARCs are identified by labels and key pins which avoid plugging a wrong cable in a specific ARC type.

2. ____ Tighten screws **A** to secure the ARC cassette.
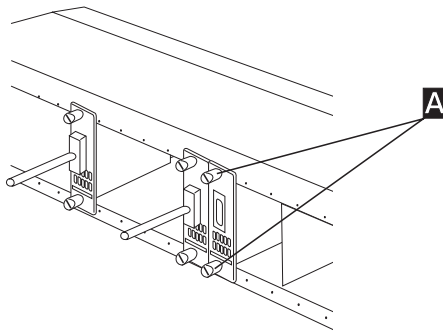
Figure 4-14. ARC Installation

3. ____ Obtain the corresponding cables to the ARCs installed in Step 1. Using two labels (PN 63F2505), **identify** these cables by recording the following information:

   a. The **3746-900 name**.

   b. The **LCB number/location** (up to 25 characters).

   c. The **NCP range address**.

   d. The **connector position** (+0 to +14 or +16 to +30)

   e. The **symbolic line name** (up to eight characters).

4. ____ **Stick** the labels on the two leads of the cable at about 220 mm (9 in.) from the edges.

5. ____ **Connect** the cable into the ARC plugged in positions (+0 to +14 for the LCBB, or +16 to +30 for the LCBE). See Figure 4-9 on page 4-10. Tighten these cables with two screws **G** .
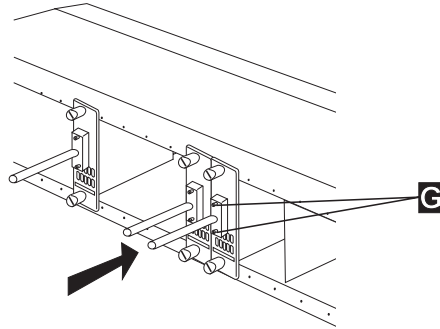
Figure 4-15. Cable Installation

6. ____ Determine the cable connector type plugged on the ARCs (see Figure 4-16 and Figure 4-17).
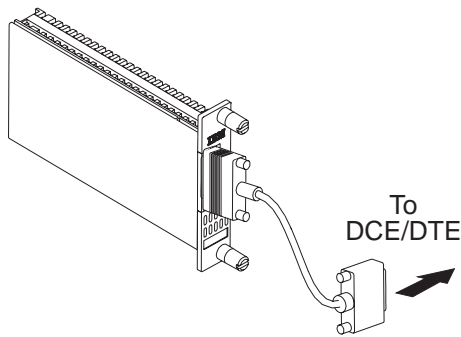
Figure 4-16. Cable Connector Type 3746-900
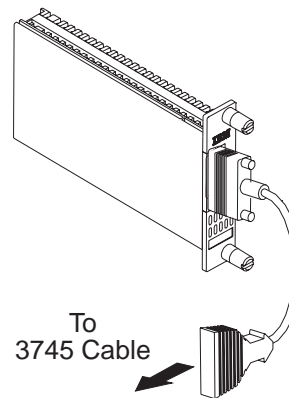
Figure 4-17. Cable Connector Type 3745

To connect a cable type:

- **3746-900**: go to "Connecting the Cable Connector Type 3746-900 to the DCE/DTE" on page 4-18.

- **3745**: go to "Connecting the Cable Connector Type 3745 to the DCE/DTE" on page 4-19

Connecting the Cable Connector Type 3746-900 to the DCE/DTE

Plug cable connectors **type 3746-900** (ARC 1A1, 1A2, 3A1, and 3A2) to the DCEs.
Plug cables ARC 1B and 3B to the DTEs.
The **adapters** (PN 1749352 and PN 65X9899) plugged between the cable and the
DTE/DCE are optional. They are country dependant (see the following notes):

1. If you are connecting a **V.35 DCE (ARC 3A1 or 3A2)** to a **French modem**,
   connect one adapter (PN 1749352) between the modem and the cable (see
   Figure 4-18). Connect **connector 1** to the **cable** and **connector 2** to the
   modem.

Figure 4-18. Adapter for ARC 3A1 or 3A2 (PN 1749352)

2. If you are connecting a **V.35 DTE (ARC 3B)** to a **French terminal**, connect
   one adapter (PN 65X9899) between the terminal and the cable (see
   Figure 4-19). Connect **connector 1** to the **cable** and **connector 2** to the **ter-
   minal**.

   Note: This ARC 3B is no more provided.
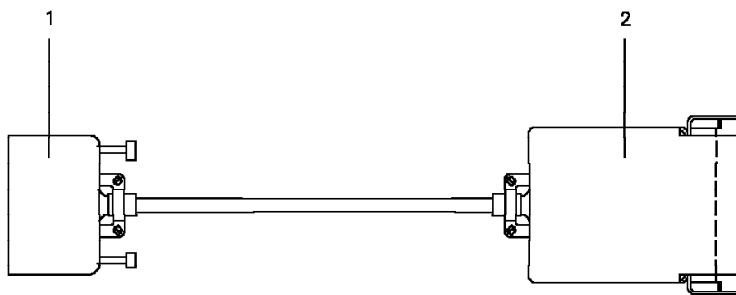
Figure 4-19. Adapter for ARC 3B (PN 65X9899)

Connecting the Cable Connector Type 3745 to the DCE/DTE

Plug cable connectors **type 3745** (ARC 1C, 1D, 3C, and 3D) directly to the 3745 cables as follows (see Figure 4-20):

1. ____Remove the seal **1** from the ARC/cable.
2. ____Place the seal on the end of connector **3** .
3. ____Plug the connector **2** into connector **3** firmly until you hear a click.
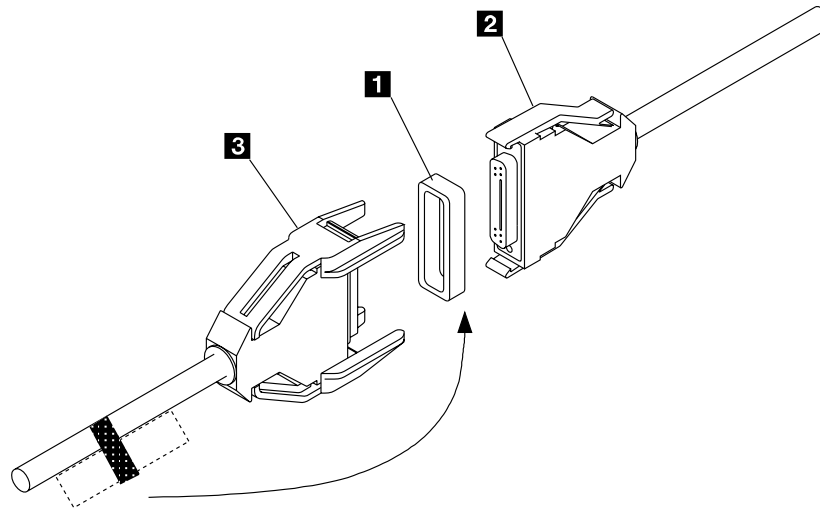
Figure 4-20. Connection of the Cable Type 3745

LIC12 Cable Installation

Obtain (from the 3746-900 shipping group) the LIC cables ordered by the customer (see Table 4-7).

Table 4-7. High-Speed Line Attachment Cables

Part Number	Cable Type	Cable Group	Fixed Length m (ft)	Variable Length m (ft)	
				Short Cable	Long Cable
58X9344	V.35 DCE	5831	10 (33)	Up to 10 (33)	Up to 35 (115)
76F8633 (1)	V.35 DCE	7007	10 (33)	Up to 10 (33)	Up to 35 (115)
58X9345	X.21 DCE	5833	10 (33)	Up to 10 (33)	Up to 100 (328)
76F8634 (1)	X.21 DCE	7009	10 (33)	Up to 10 (33)	Up to 100 (328)
58X9347	V.35 DTE	5837	10 (33)	Up to 10 (33)	
76F8635 (1)	V.35 DTE	7011	10 (33)	Up to 10 (33)	Up to 35 (115)
58X9348	X.21 DTE	5839	10 (33)	Up to 10 (33)	Up to 35 (115)
76F8636 (1)	X.21 DTE	7013	10 (33)	Up to 10 (33)	Up to 100 (328)
58X9346 (2)	X.21 Transfix	5835	10 (33)	Up to 10 (33)	Up to 100 (328)
11F4837	X.21 EIA-547 DCE	5844	10 (33)	Up to 10 (33)	
76F8637 (1)	X.21 EIA-547 DCE	7015	10 (33)	Up to 10 (33)	
11F4838	X.21 EIA-547 DTE	5845	10 (33)	Up to 10 (33)	
76F8638 (1)	X.21 EIA-547 DTE	7017	10 (33)	Up to 10 (33)	

Note: (1) Plenum cable for U.S.A and Canada only - (2) X.21 Transfix is available in France only.

According to the plugging sheet information:

1. ____**Connect** the cables to the LIC12 (for location, refer to Figure B-8 on page B-6).
2. ____**Connect** the other end of the cable to the DCE or DTE, depending on the cable type (refer to Table 4-7).

Updating and Saving the CDF-E

These procedures are **required** only when **RVX cables** (LCB and ARC) are **installed**. During these procedures you must record and test the new resources, display and update the created CDF-E, and save this new CDF-E on diskette.

1. **To IML the 3746-900 to record the LCB and ARC information:**

   a. ____Obtain (from the customer) the **"Plugging Sheet for 3746-900 LIC11"** (this sheet is available in the *3745 Communication Controller Models A and 3746 Expansion Unit Model 900: Migration and Planning Guide*).

   b. ____Double click on the **"3746-900 object icon"**.

   c. ____Click on the **"Operation Management"**.

   d. ____Double click on **"Perform General IML"**.

   e. ____Click on **"Yes"** two times, to execute a **General IML with Diagnostics**.

   f. ____Click on **"OK"**, and wait for the end of IML indicated by a **green** '3746-900 object icon'.

2. **To display and update the active CDF-E:**

   a. ____Click on **"Configuration Management"**.

   b. ____Double click on **"Display/Update Active Configuration (CDF-E)"**.

   c. ____Verify (on the display screen) the presence of the LCBs and ARCs installed in previous steps (when an LCB and ARC is detected installed, the CDF-E displays **"LCB/ARC"** on the right side of the associated LIC11. If there is **no ARC** installed, only **"LCB"** is displayed).


```
BS2/3746-900/Active CDF-E Display - Resource Selector          ▪ [

Select a resource:

3746-900    unav.
CS          active
SPS         avail.
CBSP  2048 avail.    CBC   2048 avail.        TIC3  2080 avail.
TRP   2112 avail.                             TIC3  2144 avail.
      2176
TRP   2240 avail.
TRP   2304 avail.    TIC3  2304 avail.        TIC3  2336 avail.
TRP   2368 avail.    TIC3  2368 avail.        TIC3  2400 avail.
ESCP  2432 avail.                             ESCC  2464 avail.
      2496
      2560
CLP   2624 avail.                             LIC11 2656 avail. LCB/ARC
CLP   2688 avail.

  OK  |  Specific Selections ...  |  CLP, LCB and ARC information  |  Cancel  |  Help
```

Figure 4-21. CLP Display

   d. ____Click on **"CLP, LCB and ARC information"**.

   e. ____Click on the **"LIC11-LCB"** line, then enter the **"LCB number / location"** of the LCB (or LCBE) according to the plugging sheet.
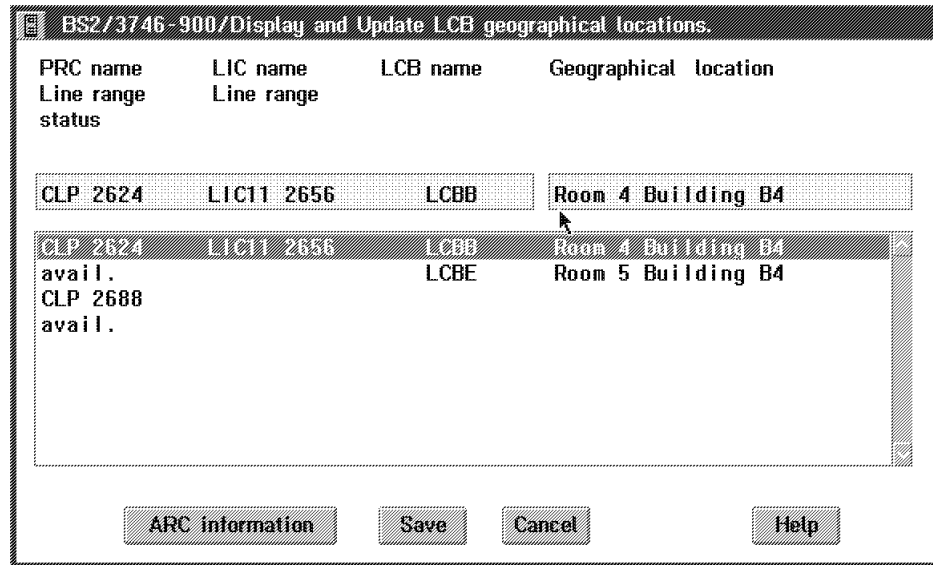
Figure 4-22. LCB Display

    f. ____If you have to enter the information for only one LCB, click on **"Save"**, then click on **"OK"**. If you have to define more than one LCB, press **"Enter"**, then return to Step 2e on page 4-20. Then click on **"ARC infor-mation"**.

    g. ____Click on the first **"ARC"** line and enter the **"Symbolic Line Name"** according to the customer information. Press **"Enter"**, then click on the other ARC lines and enter their symbolic line names.
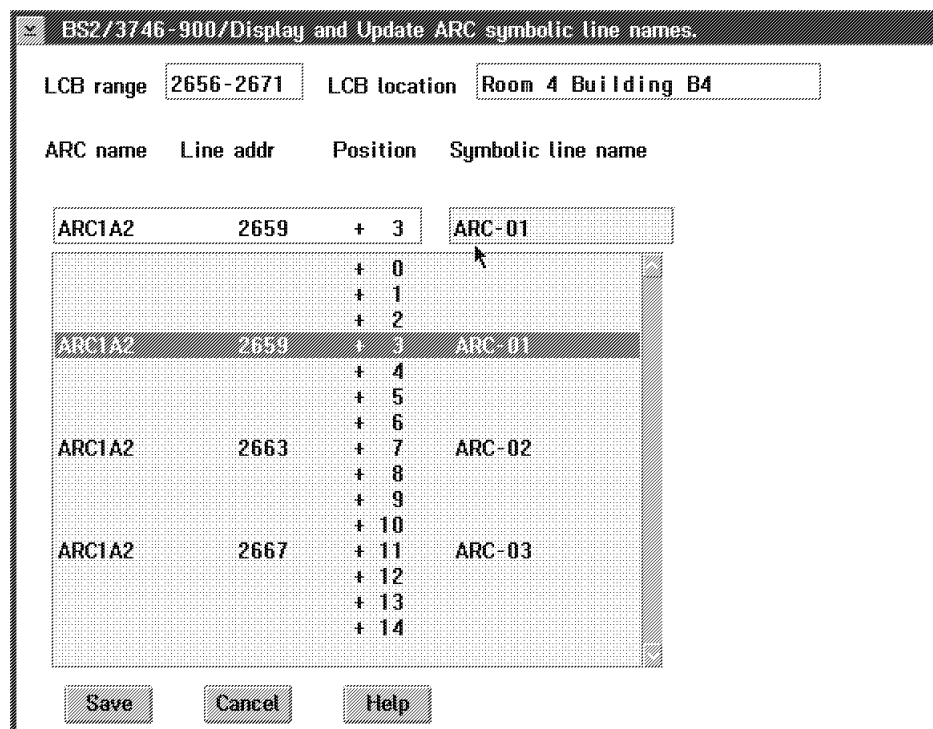
Figure 4-23. ARC Display

    h. ____When all the ARCs are identified, click on **"Save"**, then click on **"OK"**.

       i. _____Click on **"Cancel"** (3 times) to exit from the function.

3. **To save the reference CDF-E on diskette:**

    a. _____Double click on **"Save Active CDF-E as Reference"**.

    b. _____Click on **"OK"**.

    c. _____When the save is completed, double click on **"Copy Reference on diskette"**.

    d. _____Click on **"OK"**, insert the 3746-900 installation parameter diskette, then follow the prompts.

Go to Chapter 5, "Installing the 3746-950 Ground Brackets" on page 5-1 .

Chapter 5. Installing the 3746-950 Ground Brackets

If the controller expansion is:

- **Attached** to the 3746-950 frame go to "Installing the 3746-950 and Controller Expansion Ground Brackets"

- **Detached** rom the 3746-950 frame, go to "Installing the 3746-950 Ground Brackets" on page 5-4 and then go to "Installing the Controller Expansion Ground Brackets" on page 5-5.

Note: The ground brackets reduce the possibility of radio frequency interference that might be produced by the operating machine. A proper installation of the ground brackets is necessary to meet FCC requirements, and to conduct electrostatic discharges to ground.

Installing the 3746-950 and Controller Expansion Ground Brackets

If installed, remove the two covers **1** by loosing their mounting screws.

Step 1. On the **3746-950 frame**:

    a. ____ Install the front ground plate **4** (PN 58G5677) and left ground plate **3** (PN 58G5676) using screws (PN 2665527) (refer to Figure 5-1 on page 5-3).

    Note: Before securing the ground plate screws, push down on the plate to give it maximum contact with the floor.

    b. ____ Install the rear bracket **6** (PN 58G5675) using screws (PN 2665527).

Step 2. On the **controller expansion frame**:

    a. ____ Install the front ground plate **5** (PN 58G5675) and the right ground plate **3** (PN 58G5676) using screws (PN 2665527) (refer to Figure 5-1 on page 5-3).

    b. ____ Install the rear bracket **6** (PN 58G5675) using screws (PN 2665527), then re-installed covers **1**.

Figure 5-1. 3746-950 and Controller Expansion Ground Brackets (Front View)

Installing the 3746-950 Ground Brackets

Step   1. ____ If installed, remove the two covers **4** by loosing their mounting screws (refer to Figure 5-2).

Step   2. ____ Install the right and left brackets **1** (PN 58G5676) using screws (PN 2665527).

Note: Before securing the ground plate screws, push down on the plate to give it maximum contact with the floor.

Step   3. ____ Install the front ground plate **2** (PN 58G5677) and rear ground plate **3** (PN 58G5675) using screws (PN 2665527) then re-installed covers **4** .

Figure   5-2.   3746-950 Ground Brackets (Front View)

Installing the Controller Expansion Ground Brackets

Step 1. ____ If installed, remove the two covers **4** by loosing their mounting screws.

Step 2. ____ Install the right and left brackets **1** (PN 58G5676) using screws (PN 2665527).
Before securing the ground plate screws, push down on the plate to give it maximum contact with the floor.

Step 3. ____ Install the front ground plate **2** (PN 58G5675) and rear ground plate **3** (PN 58G5675) using screws (PN 2665527) then re-installed covers **4** .
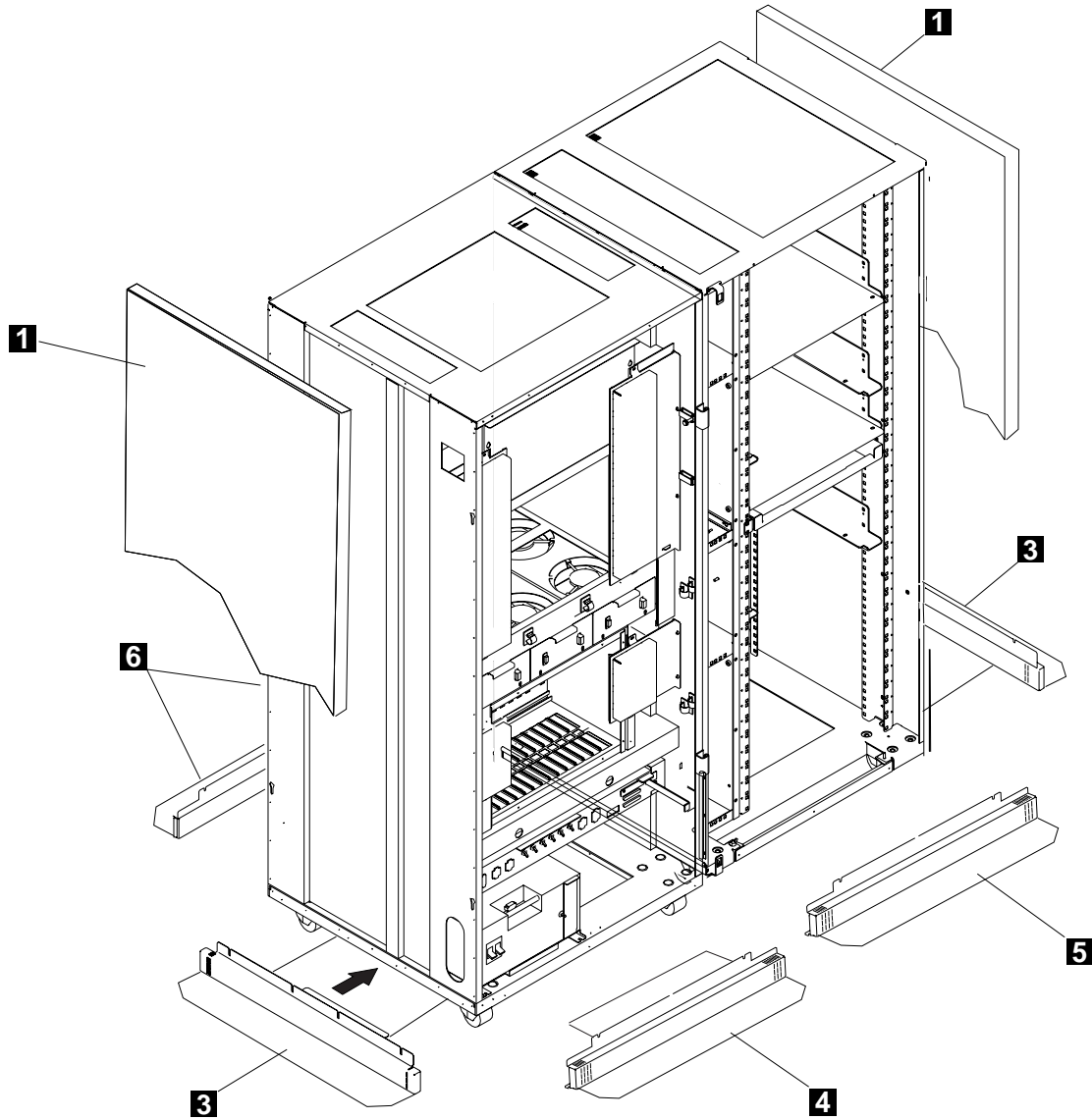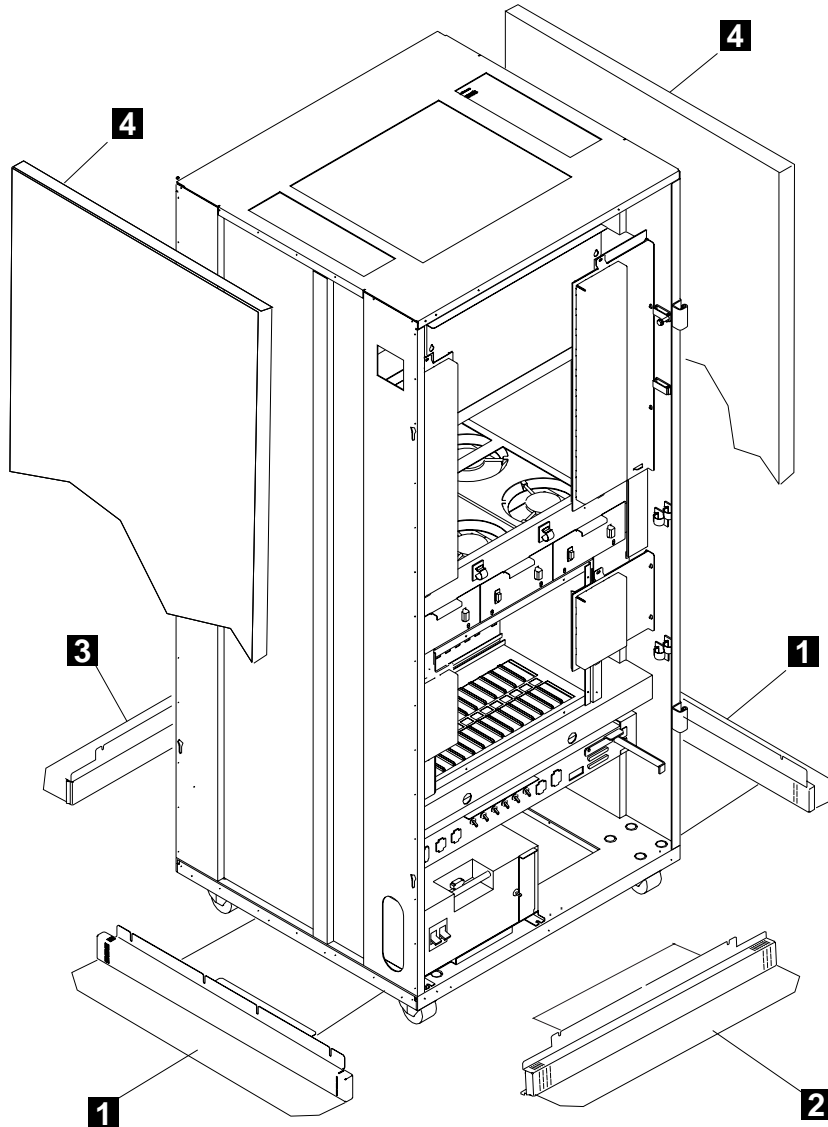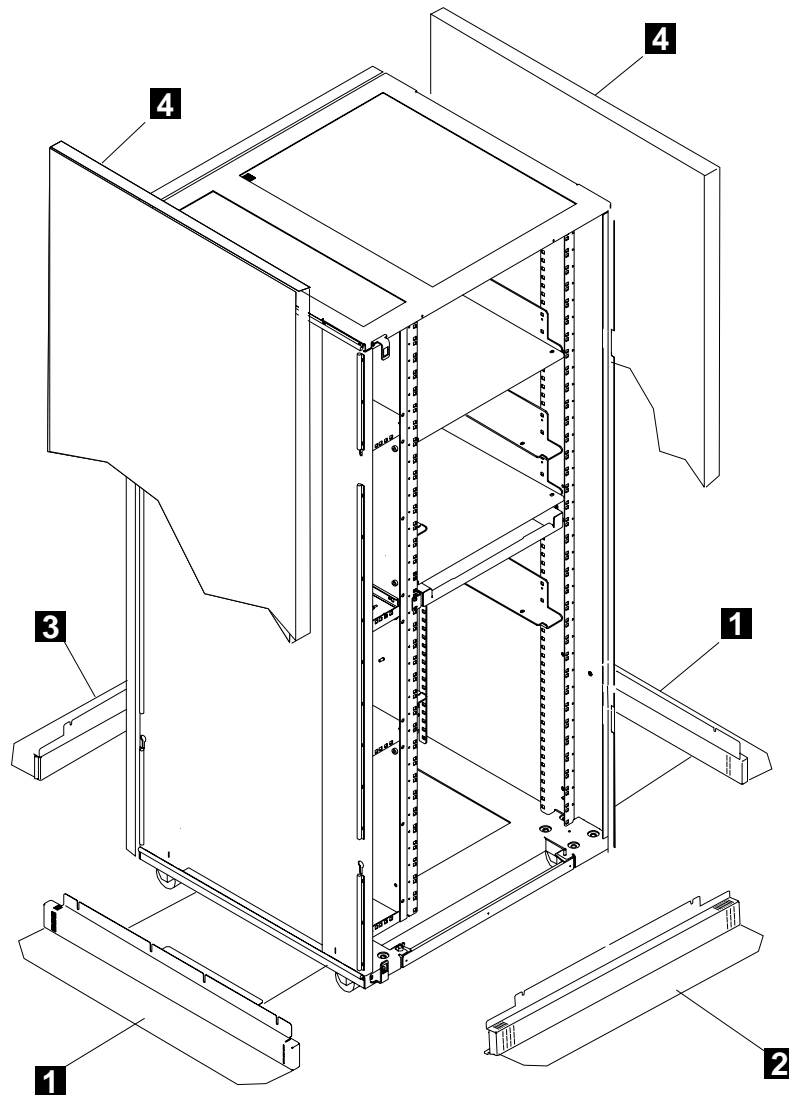

Figure 5-3. Controller Expansion Ground Brackets (Front View)

Go to Chapter 6, "Making the Machine Ready for the Customer" on page 6-1 .

3746-950 Ground Bracket Installation

Chapter 6. Making the Machine Ready for the Customer

Making Machine Ready for Customer

Is the LIC available on a **CD-ROM** (EC F12380 and above):

- **Yes**, go to step 1

- **No**, go to step 4

1. **Save the configuration parameters on diskette**

   a. ____Double click on the **"service processor object icon"**.

   b. ____Click on **"Operation Management"**.

   c. ____Double click on **"Manage Disks and Databases"**.

   d. ____Click on **"Save databases on diskette"**, and click on **"OK"**.

   e. ____Insert the **configuration parameters diskette** (1.44 diskette, PN 02L3427) and follow the prompts.

   f. ____When the save is completed, click on **"Cancel"** to exit from the function.

2. ____ Do you have a **"Backup"** Service Processor?

   - **Yes**, go to step 3.

   - **No**, go to step 7 on page 6-3

3. ____ **Update the "Backup" Service Processor**

   To have the same image of the information recorded on the "active" and "backup" service processors:

   a. Install the same level of code (LIC) on the backup and active SP:

      1) Insert the CD-ROM in the CD drive

      2) Double click on the **service processor object icon.**

      3) Click on **change management**

      4) Double click on **update SP (& NNP) LIC on non-active version**, the code is being copied from the CD to the SP hard drive

   b. Restore the configuration data:

      1) ____From the SP menu, click on **"Operation Management"**.

      2) ____Double click on **"Manage Disks and Databases"**.

      3) ____Click on **"Restore databases from diskette"**, and click on **"OK"**.

      4) ____Insert the **configuration parameters diskette** and follow the prompts.

      5) ____When the restore is completed, click on **"Cancel"** to exit from the function.

   Go to **step 7 on page 6-3**

4. **Save the service processor hard disk on the optical disk drive**

   Use the procedure **Saving the service processor hard disk on the optical disk** described in chapter 3 of the *Service Processor Installation and Maintenance (Based on 7585, 3172, 9585, and 9577)*, SY33-2115.

5. ____ Do you have a **"Backup"** Service Processor?

   - **Yes**, go to step 6.

   - **No**, go to step 7

6. ____ **Update the "Backup" Service Processor**

   To have the same image of the information recorded on the "active" and "backup" service processors, copy the backup optical disk on the backup service processor hard disk.
   Use the procedure **Restoring the service processor hard disk from the optical disk** described in chapter 3 of the *Service Processor Installation and Maintenance (Based on 7585, 3172, 9585, and 9577)*, SY33-2115.

7. ____**Clean up the SRC database for the 3746-950 installed**

   a. ____ Double click on the **"3746-950 object icon"**.
   b. ____ Click on **"Problem Management"**.
   c. ____ Double click on the **"Manage Alarms/Errors/Events (SRCs)"** function.
   d. ____ Select **"all alarms, errors, events"**, and click on **"OK"**.
   e. ____ Click on **"Options"** on the action bar.
   f. ____ From the pulldown menu, click on **"Delete SRCs from database"**.
   g. ____ Confirm your selection by clicking on the **YES** pushbutton.
   h. ____ Click on **"Cancel"** to leave the function.

8. ____ **Shutdown your service processor**

   a. ____ On the MOSS-E view, click on **"Program"**, then select **Shutdown**.
   b. ____ **Enter** the administrator password to exit from MOSS-E view.

9. ____ **Reinitialize the Service Processor**

   a. ____ Press **Ctrl**, **Alt**, and **Del** simultaneously, to reinitialize the Service Processor.

      Note: While the initialization is in progress, start the 3746-950 initialization (go to Step 10).
   b. ____ Open the MOSS-E session.
      1) Enter the **administrator password** (default is IBM3745).
      2) Click on '**OK**' or press **ENTER**.

10. ____ **IML the 3746-950,** at the 3746-950 control panel

    a. Set **Service Mode = 0** and validate.
    b. Set **Power Control = 1**.
    c. Press the **General IML** push button to select **Function 0**. A general IML is started.

11. ____ **Verify** that the IML/IPL are completed

    Wait for the **green** 3746-950 **object icon** indicating that IML has completed successfully. Panel code displayed **00-00-0000**

12. ____ **Ensure** that the control panel gates are closed and secured.

13. ____ **Ensure** that all internal covers, shields, and parts previously removed are re-installed.

14. ____ **Store** the CD-ROM and diskettes in the service drawer.

15. ____ **Close** the external doors. Using the cover lock key, **push and turn** the camlocks to fasten the doors.

16. ____ **Clean up** the installation area.

17. ____ If necessary, ask the customer to:

    a. **Change the passwords** using the function **Manage Passwords** (for details refer to *Service Processor Installation and Maintenance (Based on 7585, 3172, 9585, and 9577)*, SY33-2115, chapter 'Maintaining the Service Processor').

    b. **Set or reset the automatic configuration activation**, refer to Figure 6-1.

    c. **Enable the CP/NNP backup** if the nnp-b is installed, refer to Figure 6-1.

Note: These options referenced in steps 17b and 17c are accessible from 'Network Node Processor (NNP) Management' using the function **Manage Control Points on NNPs**. For details refer to *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457, chapter 'Working with the NNP Functions'.
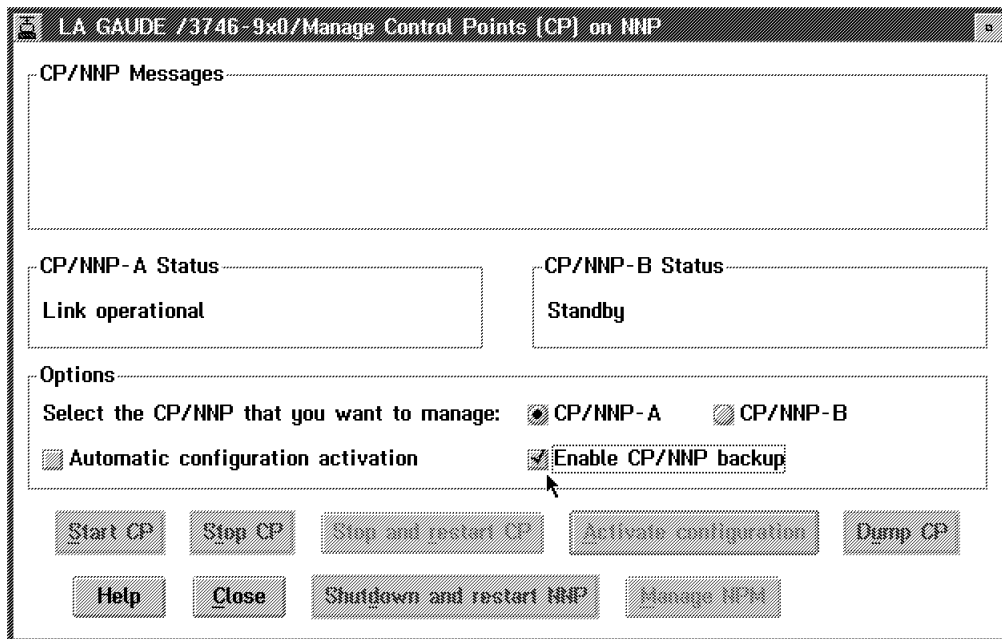

Figure 6-1. Manage the Control Points

Chapter 7. Removal or Relocation of the 3746-950

Before Removing the 3746-950

The sales branch office must determine if packaging materials and instructions are required and must obtain applicable bill(s) of material. This should normally be ordered 90 days before the anticipated removal date.

Note: In the U.S.A the CE orders this package.

It may be necessary for the customer, or a customer-appointed electrician to do all or some of the work involved in the following steps. The CE must ensure that all of the following steps have been completed.

Go through the following procedures sequentially.

Updating the Service Processor Network Configuration

Step 1. ____ If not logged, enter the Service Processor maintenance password. (default password IBM3745).

Step 2. ____ Double click on the **"Service Processor Object Icon"**.

Step 3. ____ Click on **"Configuration Management"**.

Step 4. ____ Double click on **"Manage 3745/3746-9x0 installation/removal"**.

Step 5. ____ Select **the 3746-950** to be removed.

Step 6. ____ Click on **"Save"** and insert the 3746-950 installation parameters diskette to save the data.

 Note: This diskette must be shipped with the machine.

Step 7. ____ Re-select the 3746-950 to be removed and click on **"Remove"**.

Step 8. ____ Check and confirm the delete option. At the end, the Service Processor is reinitialized.

Disconnecting the Mainline Power

Step 1. ____ At the control panel, ensure that the Power Control window displays '3' (Local), and then push the Standby key.

Step 2. ____ **Switch** the main circuit breaker CB1 **OFF** at the 3746-950 primary power box. (See Figure B-11 on page B-8, or Figure B-12 on page B-8 if the optional power feature is installed).

Step 3. ____ Ensure that the customer's branch-circuit breakers feeding the 3746-950 receptacle are **turned OFF.**

Step 4. ____ Unplug the 3746-950 and controller expansion main power cables, or ask the customer to disconnect these power cables from its ac power receptacles (or dc power if any).

Step 5. ____ Coil the disconnected power cables inside the 3746-950 and con- troller expansion.

Disconnecting the Interface Cables

Step 1. ____ If the machines are being relocated, label and remove all data set cables from the TRA and ESCA adapters.

Note: It is advisable to disconnect the cables, starting at the top of the gate (expansion board 07M-A1), and working down.

Step 2. ____ Remove the cable (PN 76F9440 or 76F9441) from the 8228 LAN adapter (plugs 1 to 8) to the 3746-950 01N-A1 E1.

Preparing Machines for Shipment

Step 1. ____ Remove from the controller expansion, the display, the service processor, the optical disk, the network node processor, and keyboard.

Step 2. ____ If the controller expansion is attached to the 3746-950 frame, remove the end cover from the right side of the controller expansion. Loosen the four retaining screws using a 5/16" socket from inside the machine. Then lift the cover from the slotted holes on the frame and pull it towards you.

Step 3. ____ Re-install the end cover to the right side of the 3746-950 frame.

Step 4. ____ Re-install all parts removed from frames, covers, and doors.

Step 5. ____ Re-install the shipment bars on the upper and lower ends of the basic board (and expansion board if any, see Figure 2-2 on page 2-3)

Step 6. ____ Pack the machine using the pack/unpack instructions.

Step 7. ____ Pack the customer's parts and documentation in one package and label it: "Customer Package".

Step 8. ____ Pack other parts and all maintenance documentation in another package and label it: "Maintenance Package". Hold for use by IBM Service Representative.

Step 9. ____ Coil all removed cables and store them alongside the machine.

Step 10. ____ Complete the removal records according to existing procedures. Inform the IBM Branch Office that the machines are ready for shipment.

Removal the 3746-950

Appendix A. Parameter Worksheets

Parameter worksheet for Processor Loading

For details about these parameters, refer to chapter 'Network Routing Protocol for each Processor Type' in *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457.

Select a routing protocol for each type of processor that you have.

CLP	CBTRP2	TRP2	ESCP2
☐ APPN/HPR	☐ APPN/HPR	☐ APPN/HPR	☐ APPN/HPR
☐ IP	☐ IP	☐ IP	☐ IP

Parameter worksheet for Ethernet Bridge

Location and Cable Type

Ethernet bridge name	
Ethernet attachment type	☐ 10 Base T ☐ *AUI*
TIC3 location	
8229 location	☐ controller expansion A ☐ controller expansion B

SNMP Community Name

Community name	
IP address (in dotted notation) of the community name owner	
Privilege	☐ Read ☐ Write

SNMP Trap Community Name

Trap community name	
IP address (in dotted notation) of the network manager	
Authentication of failure traps	☐ Enable ☐ Disable

Appendix B. 3746-950 Component Locations

LCBB or
LCBE
07D-A1

LCBB
07D-B1

Expansion 1
Board
07E-A1

Cooling
07F-C1/B1/A1

Basic Board

Filter
07G

Primary
Power Box
07K-A1

Operator
Panel
071-A1

Connectivity
Switch
07B-A1

Power
Distribution
07H-A1

Secondary
Power Box
07J-A1
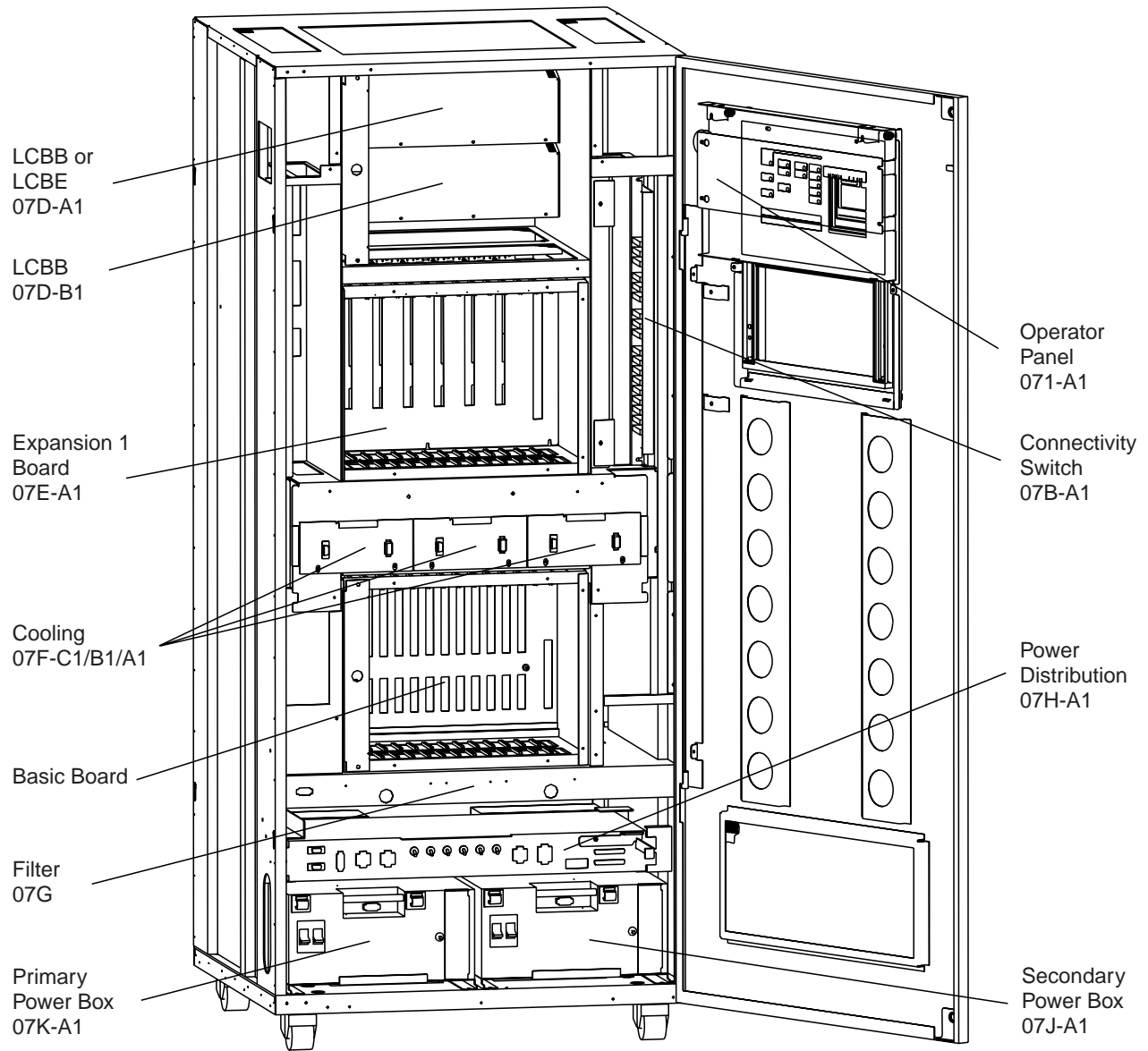
Figure   B-1. 3746-950 Locations (Front)

B-1

LCBB or LCBE
07L-A1

LCBB
07L-B1

Expansion 1
Board
07M-A1

Basic Board
07N-A1

Transformer
07Q-A1

Transformer
07P-A1

Figure   B-2. 3746-950 Locations (Rear)

Expansion 2
Board
07D-A1

Expansion 1
Board
07E-A1

Cooling
07F-C1/B1/A1

Basic Board

Filter
07G

Primary
Power Box
07K-A1

Operator
Panel
071-A1

Connectivity
Switch
07B-A1

Power
Distribution
07H-A1

Secondary
Power Box
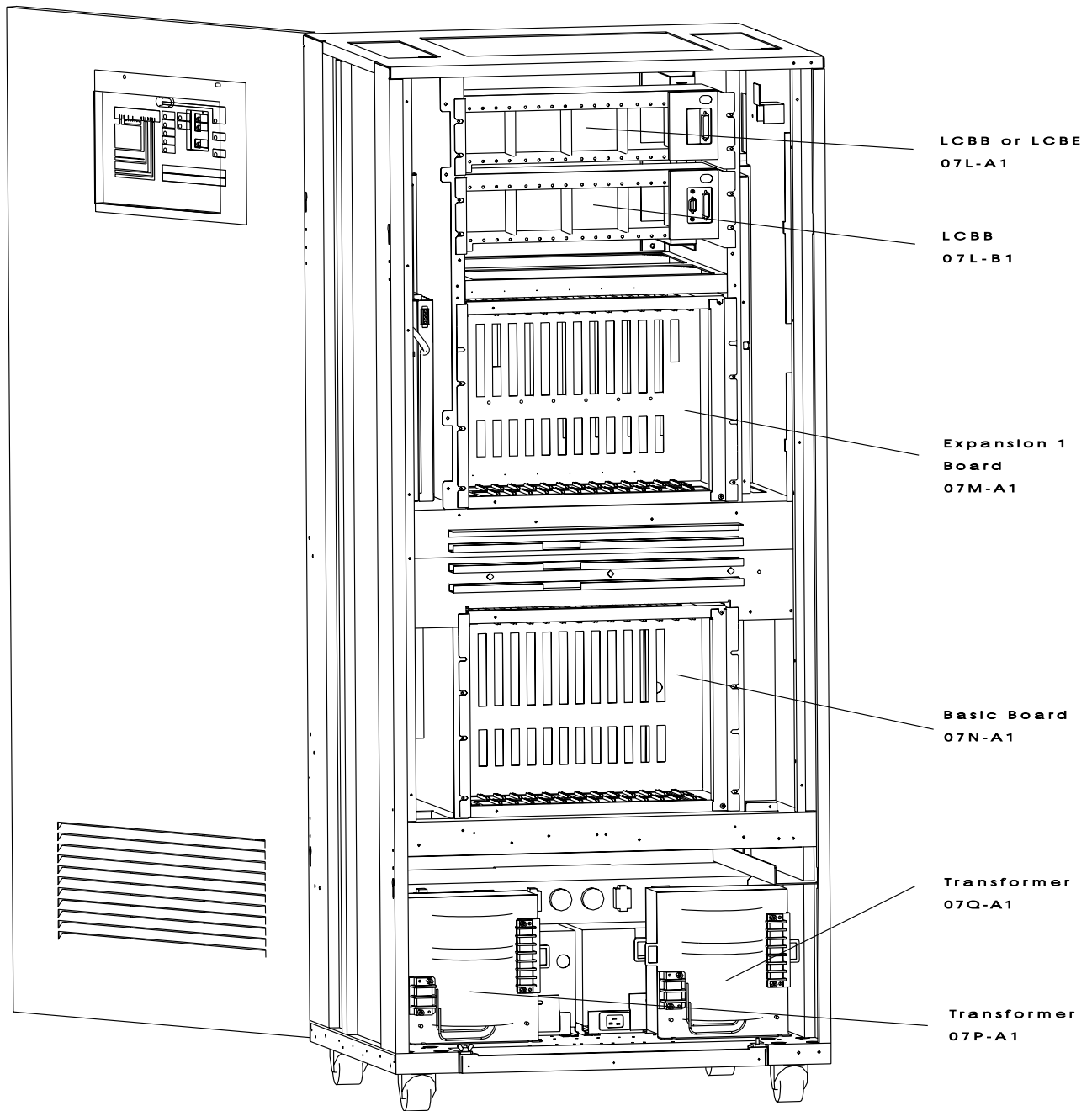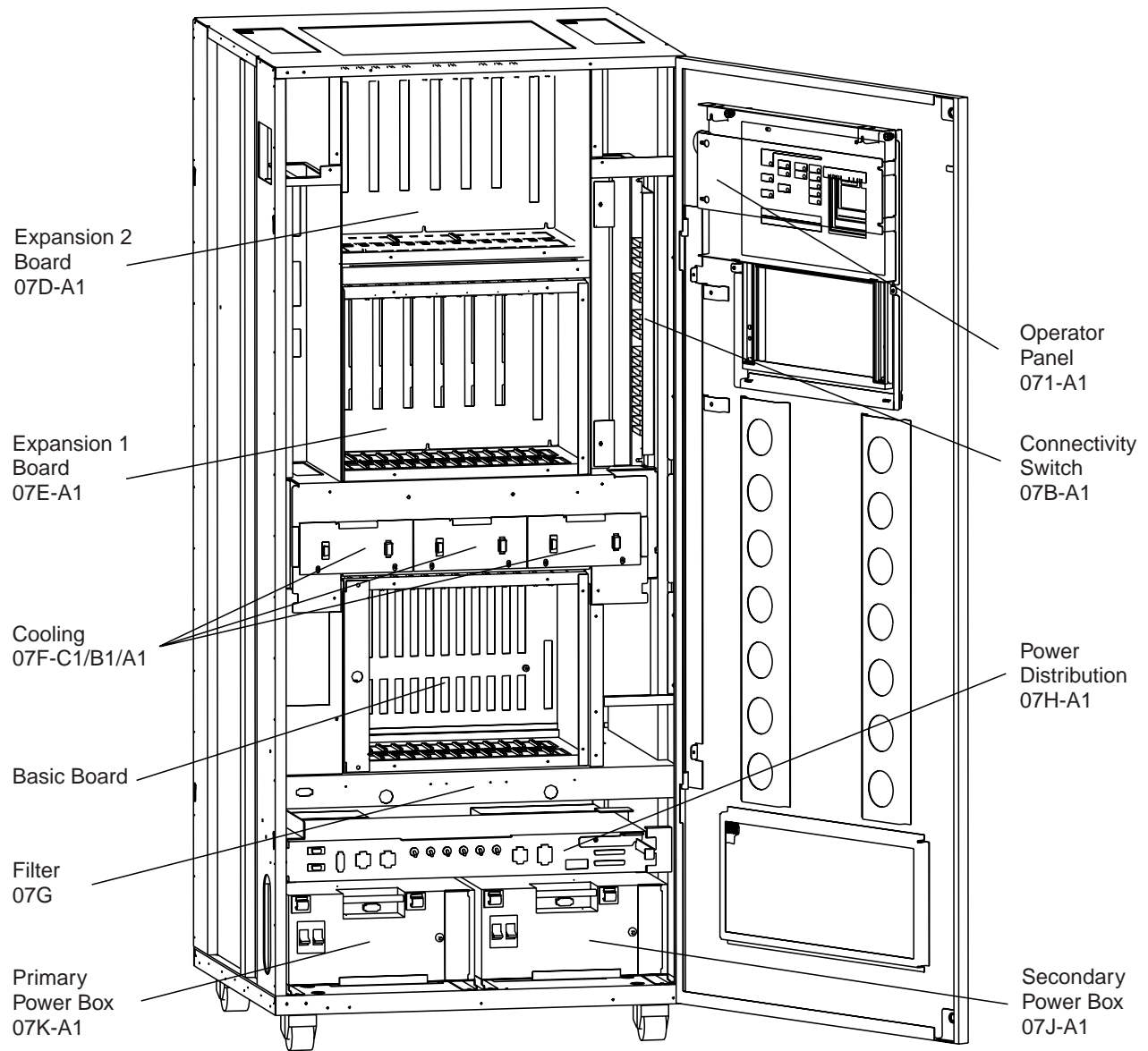07J-A1

Figure   B-3. 3746-950 Locations with Enclosure Expansion 2 Installed (Front)
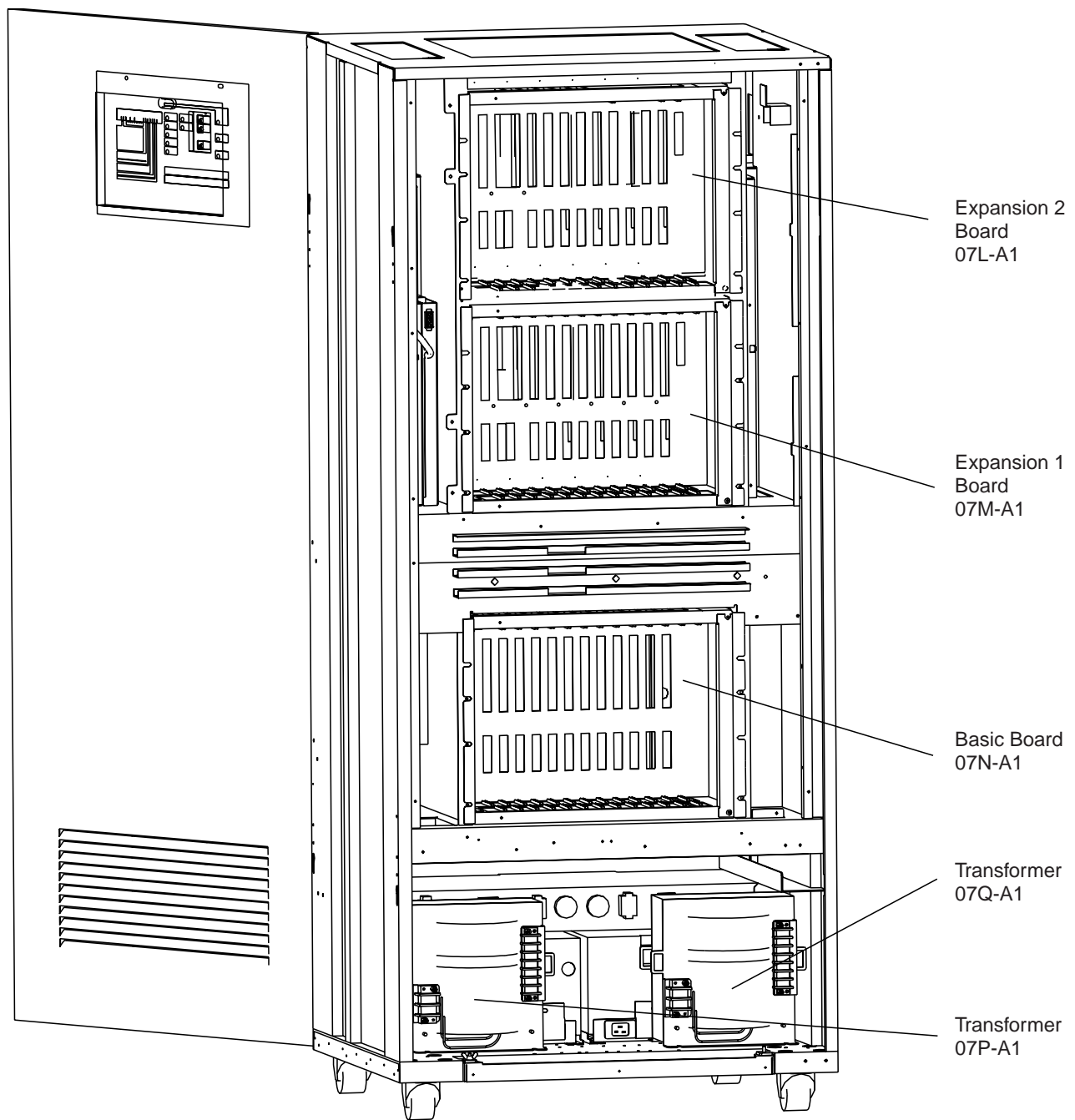
Figure   B-4. 3746-950 Locations with Enclosure Expansion 2 Installed (Rear)

Expansion 2
Board
07L-A1

Expansion 1
Board
07M-A1

Basic Board
07N-A1

Transformer
07Q-A1

Transformer
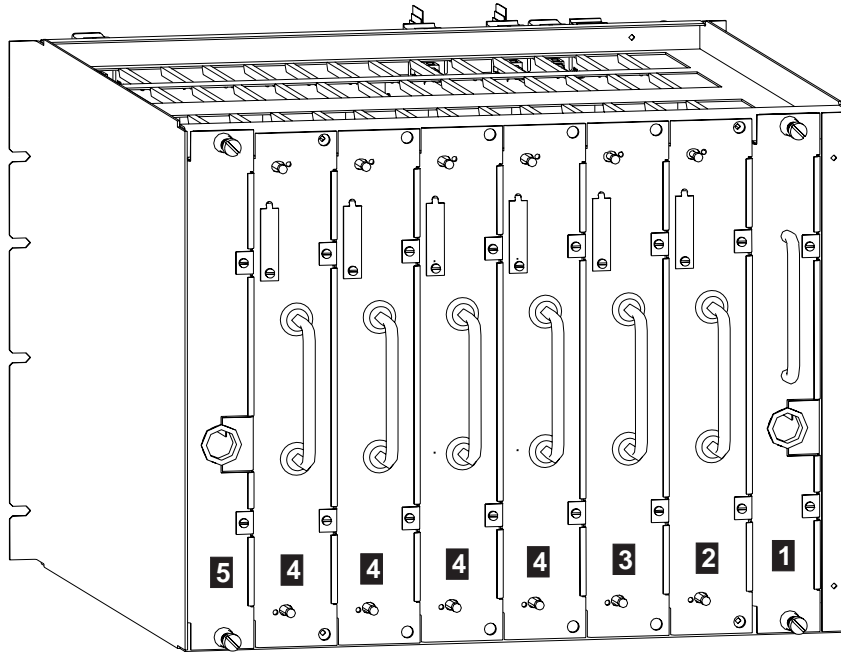07P-A1

Board Locations

Figure B-5. Basic Board 07G-A1 Locations (Processor Side, 3746-950 Front View)

- **1** 07G-A1 B3, CSCE
- **2** 07G-A1 D3, SPS card
- **3** 07G-A1 F3, CBSP

- **4** from 07G-A1 H3 to P3 any processor type
- **5** not used

	Q	P	N	M	L	K	J	H	G	F	E	D	C	B	A
		3135	3072	3071	3008	3007	2944	2943	2880	2879	2816	2815	2752		

	Q	P	N	M	L	K	J	H	G	F	E	D	C	B	A
		2751	2688	2687	2624	2623	2560	2559	2496	2495	2432	2431	2368		

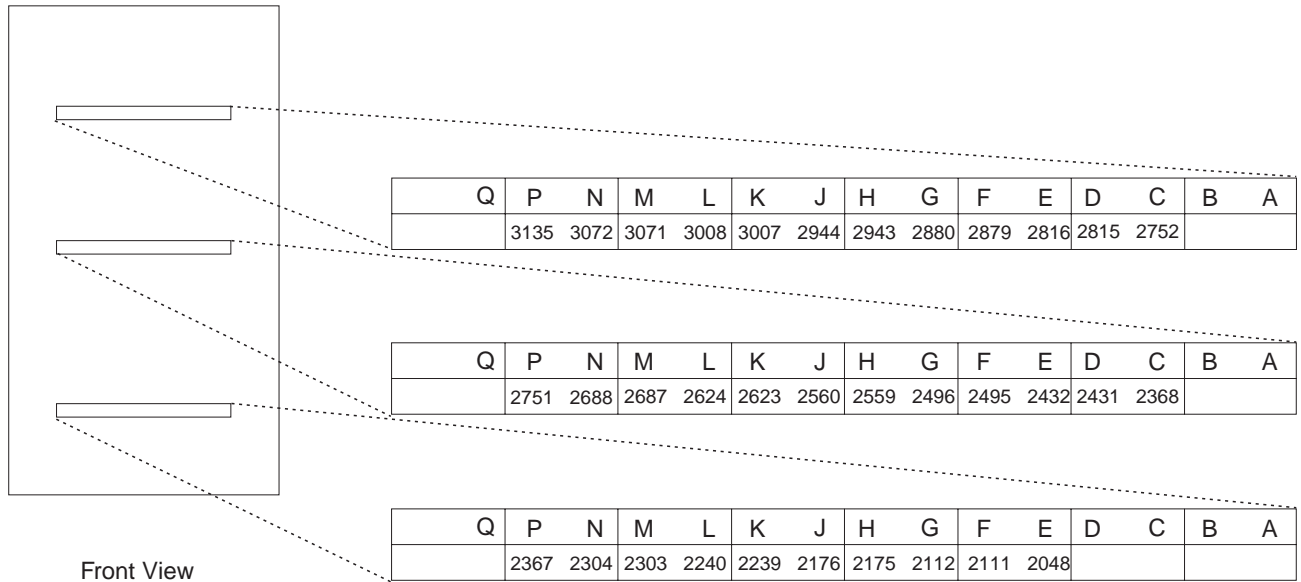|	Q	P	N	M	L	K	J	H	G	F	E	D	C	B	A
		2367	2304	2303	2240	2239	2176	2175	2112	2111	2048				

Front View

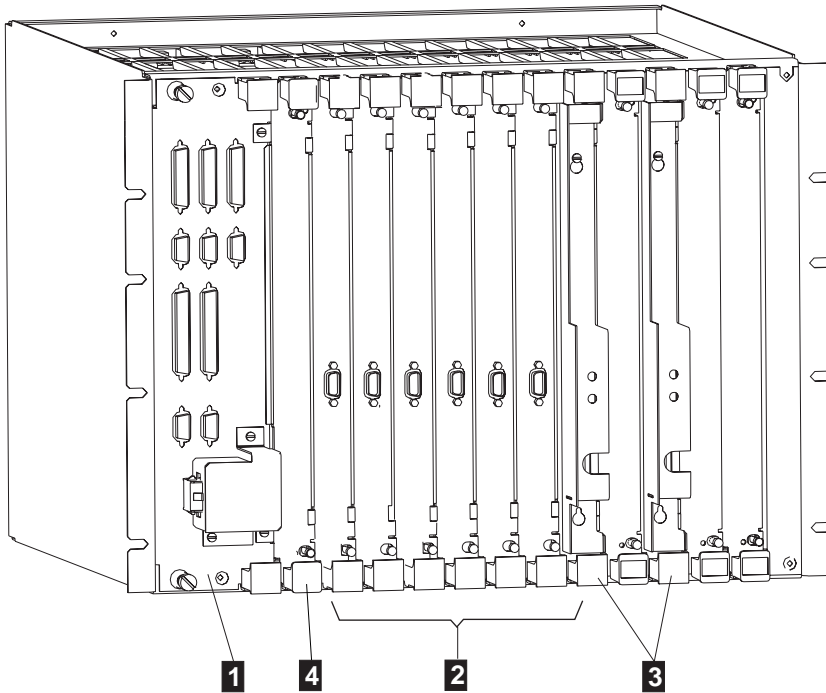*Figure B-6. 3746-950 Labels (Front Side)*

Figure   B-7. Basic Board 07N-A1 Locations (Coupler Side, 3746-950 Rear View)

- **1** 07N-A1 A1, SPD1
- **2** 07N-A1 E1, TIC3
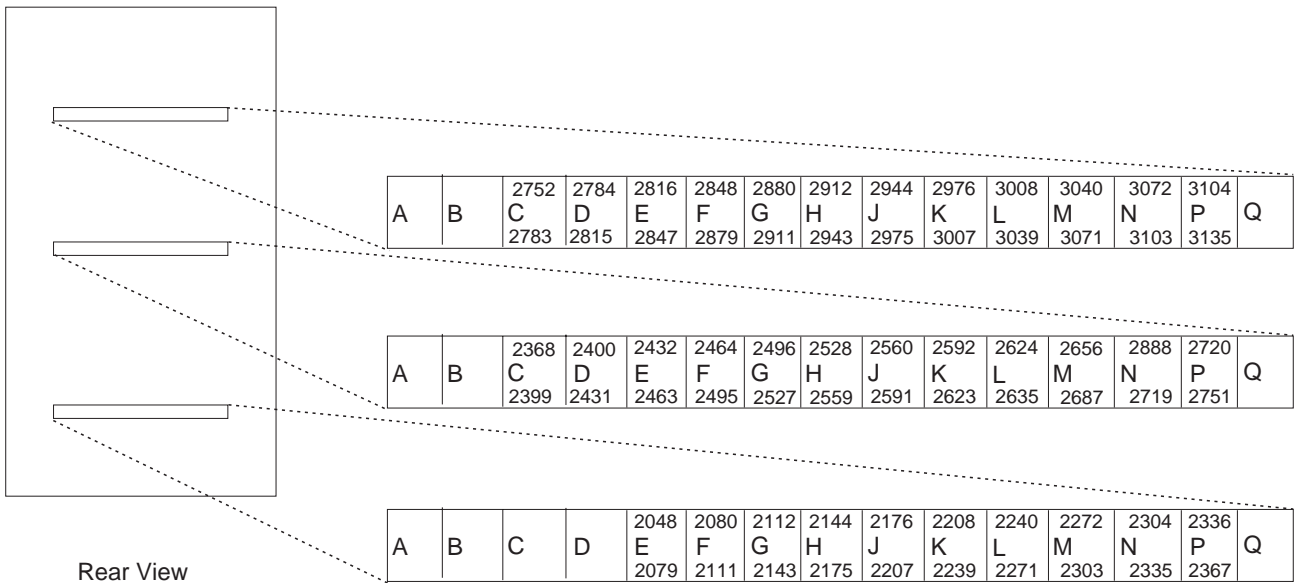- **3** 07N-A1 L1, ESCC

- **4** Dummy coupler

A	B	2752 C 2783	2784 D 2815	2816 E 2847	2848 F 2879	2880 G 2911	2912 H 2943	2944 J 2975	2976 K 3007	3008 L 3039	3040 M 3071	3072 N 3103	3104 P 3135	Q

A	B	2368 C 2399	2400 D 2431	2432 E 2463	2464 F 2495	2496 G 2527	2528 H 2559	2560 J 2591	2592 K 2623	2624 L 2635	2656 M 2687	2888 N 2719	2720 P 2751	Q

A	B	C	D	2048 E 2079	2080 F 2111	2112 G 2143	2144 H 2175	2176 J 2207	2208 K 2239	2240 L 2271	2272 M 2303	2304 N 2335	2336 P 2367	Q

Rear View

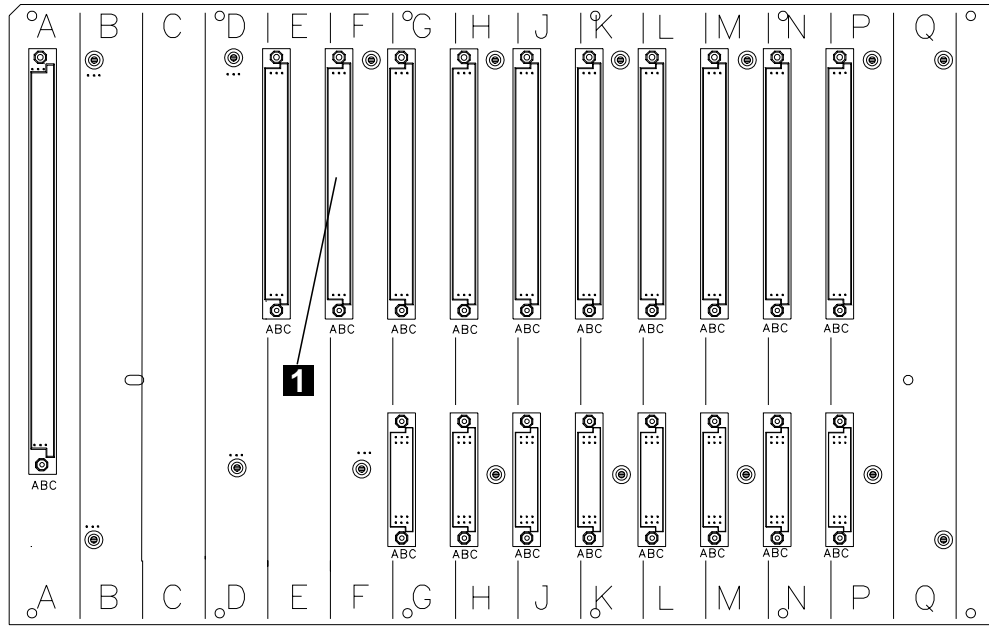*Figure   B-8. Range Addresses for Couplers, Labels Rear Side*

Figure B-9. Basic Board 07N-A1 Locations (Coupler Side)

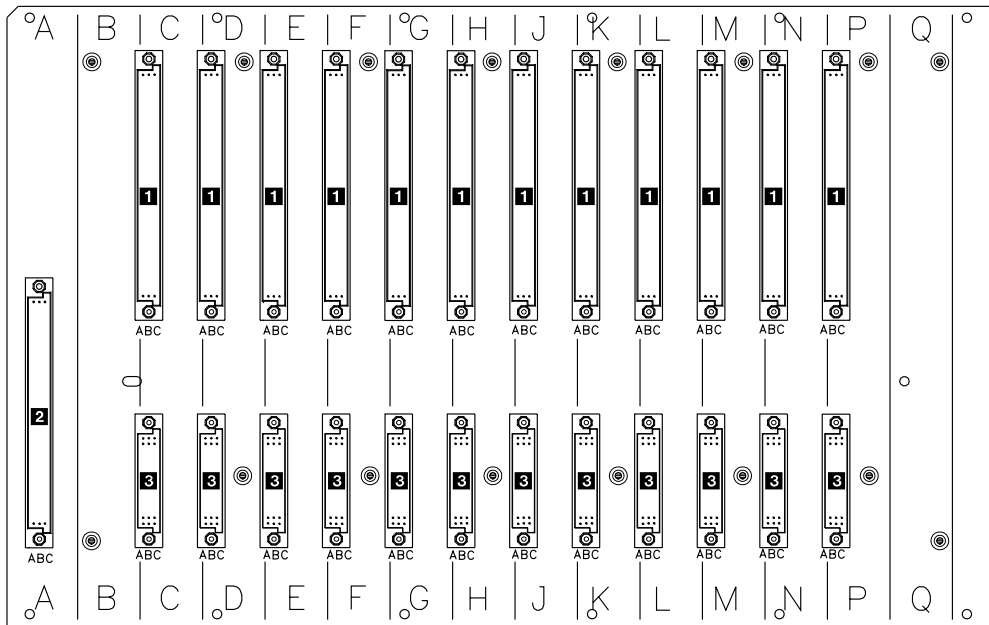- **1** TIC3 used to connect the service processor.

Figure B-10. Expansion Board 07M-A1/07L-A1 Locations (Coupler Side)

- **1** TIC3, ESCC, LIC11, or LIC12 sockets
- **2** SPD2 location
- **3** Not Used
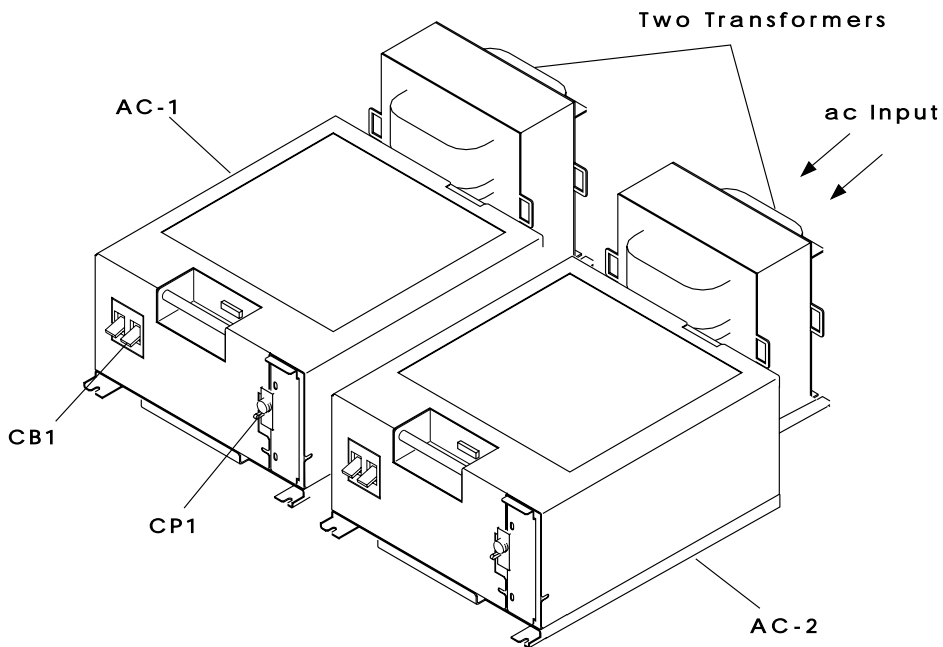
AC and DC Power Box Locations

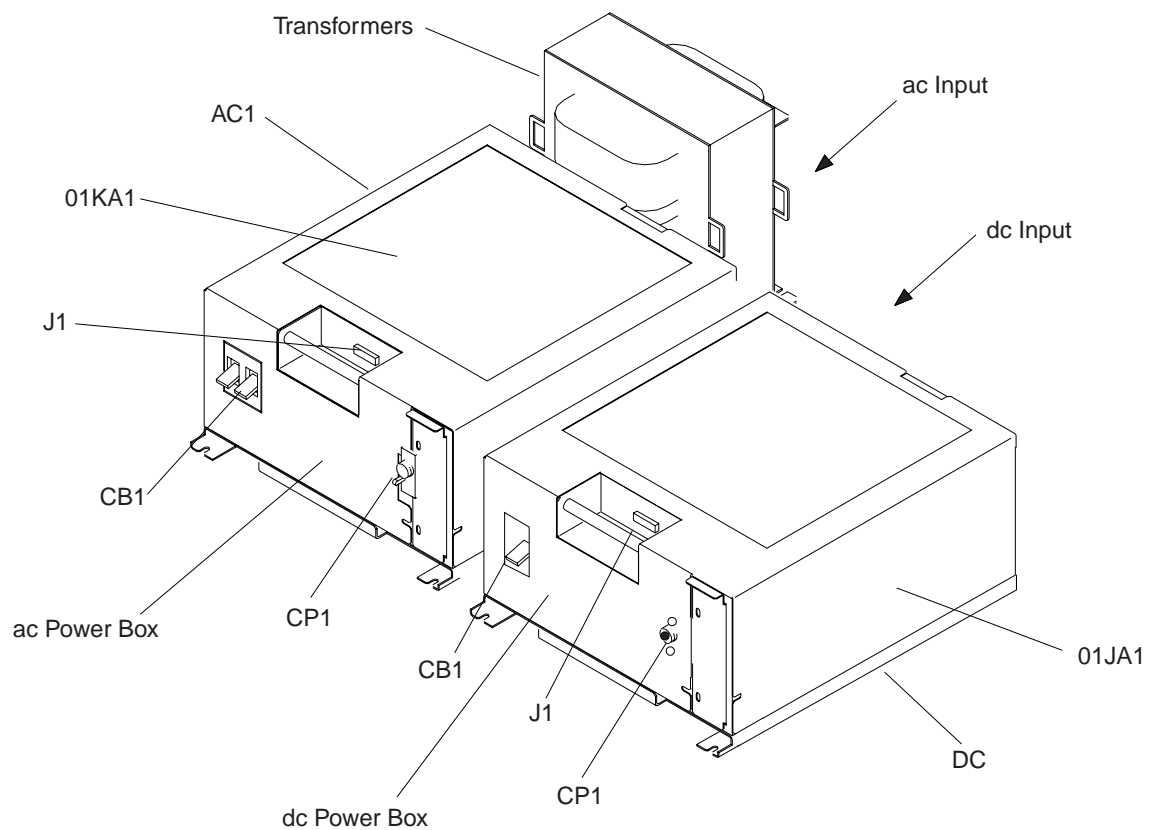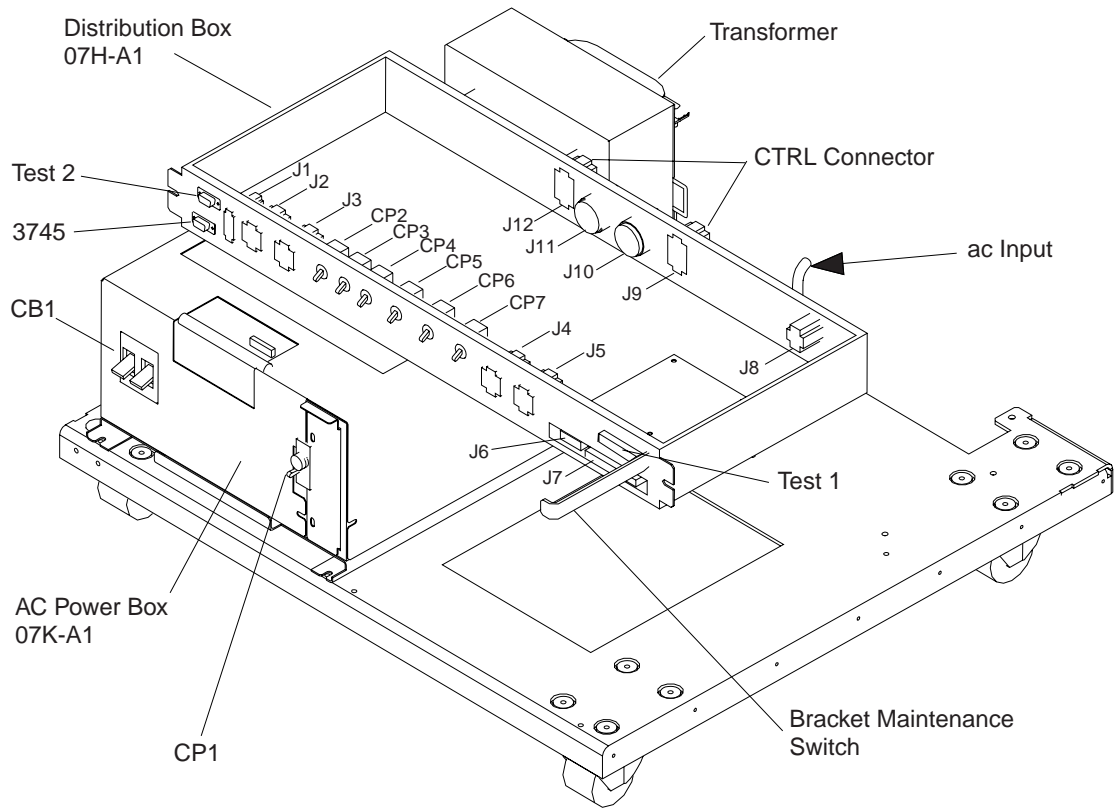Figure B-11. 3746-950 Power Area with 2 AC (AC-2 is Optional)

Figure B-12. 3746-950 Power Area with 1 AC + 1 DC (DC Power is Optional)

Distribution Box and AC-1 Power Box Locations

Distribution Box
07H-A1

Transformer

Test 2

3745

CTRL Connector

J1
J2
J3
CP2
CP3
CP4
CP5
CP6
CP7

J12
J11
J10
J9
J8

J4
J5

ac Input

CB1

J6
J7

Test 1

AC Power Box
07K-A1

CP1

Bracket Maintenance
Switch

Note: The bracket maintenance switch is used to keep the 3746-950 power ON when the SPS card is removed.

Figure   B-13. Power Area

Appendix C. Controller Expansion Component Locations

If you want more information about:	Refer to
• Positioning the units in the front side of the controller expansion	• Figure C-1 on page C-2
• Positioning the units in the rear side of the controller expansion	• Figure C-2 on page C-3
• Installing captive nuts and brackets (for 7585)	• Figure C-3 on page C-4
• Installing captive nuts and brackets (for 3172, 9585, or 9577)	• Figure C-4 on page C-5
• Installing captive nuts for LCBs	• Figure C-5 on page C-6
• Installing captive nuts for 8229s	• Figure C-6 on page C-7
• Installing captive nuts and brackets for MAE	• Figure C-7 on page C-8
• Installing brackets for processor type 7585	• Figure C-8 on page C-9
• Installing brackets for processor type 3172	• Figure C-9 on page C-10
• Example of units installation (processor type 7585)	• Figure C-10 on page C-11
• Example of units installation (processor type 7585 + MAE)	• Figure C-11 on page C-11
• Example of units installation (processor type 3172)	• Figure C-12 on page C-12
• Example of units installation (processor type 9585)	• Figure C-13 on page C-12
• Example of units installation (processor type 9577)	• Figure C-14 on page C-13
• Connecting the units to the ac Outlet Distribution Box.	• Figure C-15 on page C-13

C-1

Use this drawing to setup the **units** on the **front side** of the controller expansion, for the units that can be installed on the rear, refer to Figure C-2 on page C-3.
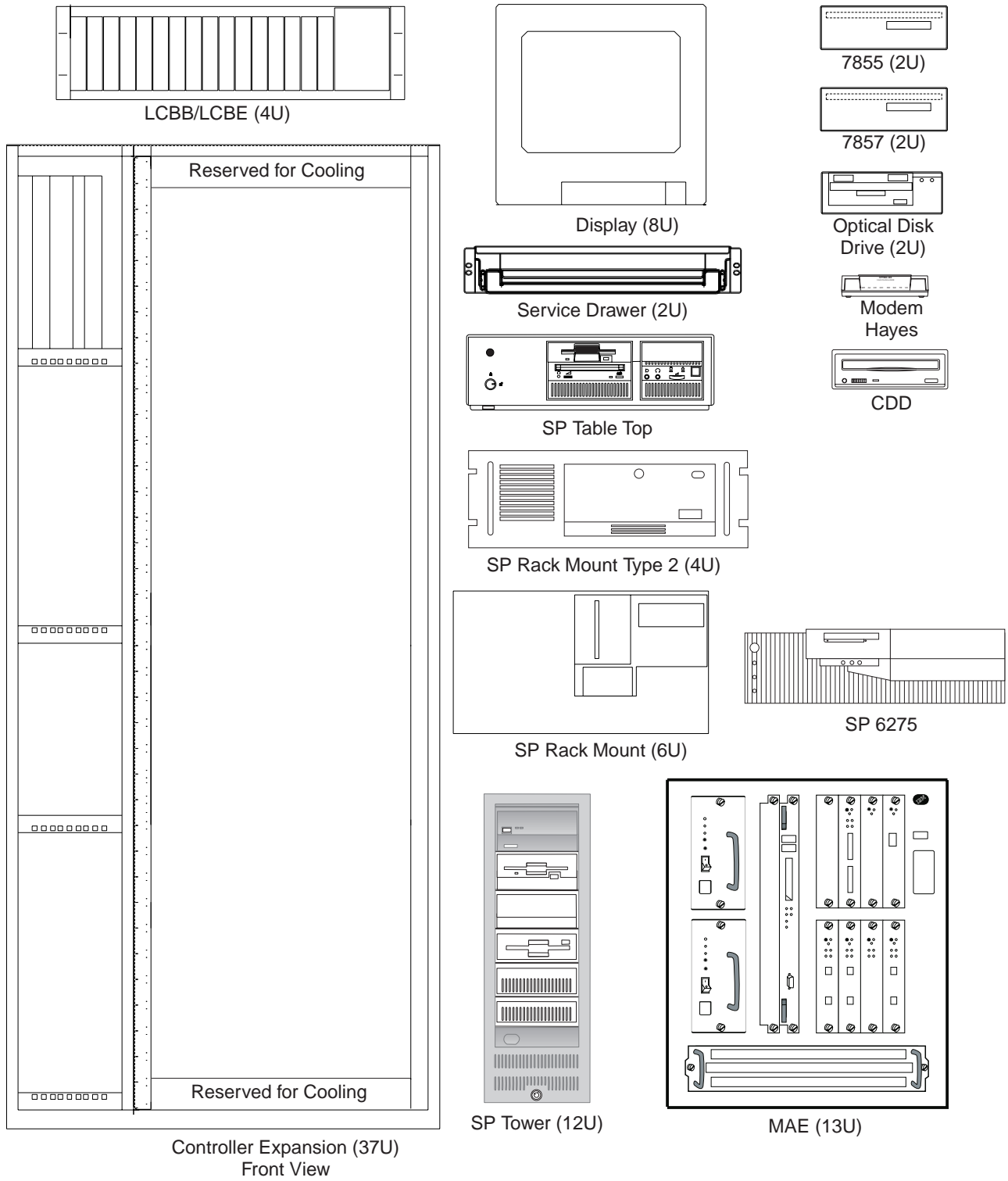

LCBB/LCBE (4U)

Reserved for Cooling

Reserved for Cooling

Controller Expansion (37U)
Front View

Display (8U)

Service Drawer (2U)

SP Table Top

SP Rack Mount Type 2 (4U)

SP Rack Mount (6U)

SP Tower (12U)

7855 (2U)

7857 (2U)

Optical Disk
Drive (2U)

Modem
Hayes

CDD

SP 6275

MAE (13U)

Figure   C-1. Controller Expansion Inventory Chart (Front View).

8228 (1.5U)

LCBB/LCBE (4U)

Ethernet Bridge (3U)

Power Strip (1.5U)

Reserved for Cooling

Reserved for Cooling
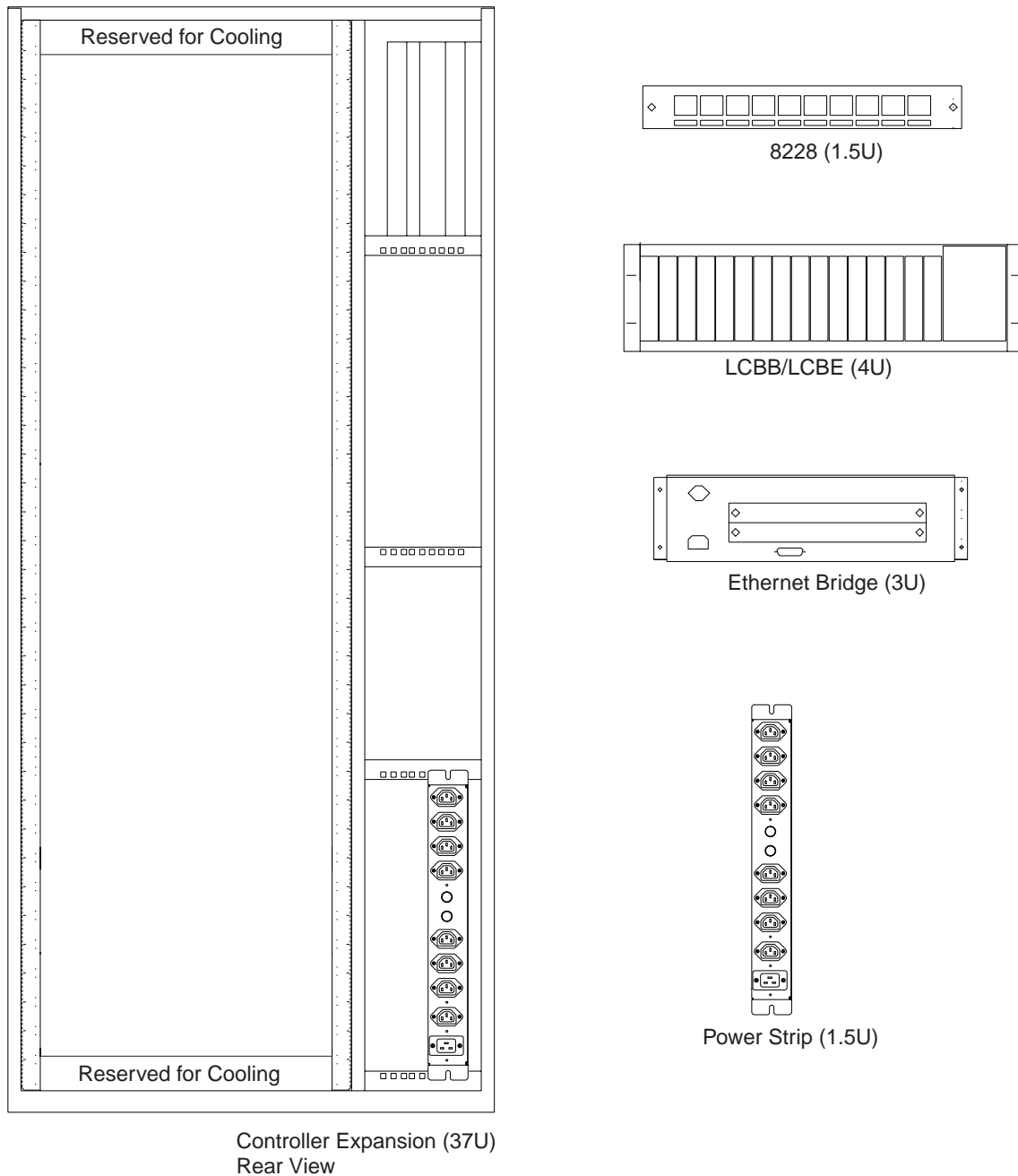
Controller Expansion (37U)
Rear View

Figure   C-2. Controller Expansion Inventory Chart (Rear View).

Notes:

1. The units dimensions are scaled to the size of the controller expansion diagram. The values represent the size used to setup the units in the controller expansion, it is not the size of the units themself.
2. The attachment holes along each side of the controller expansion are divided into units of measure called EIA units. Each EIA unit (U) equals 44.5 millimeters (1.75 inches).
3. The controller expansion is 37 U high but only 35 are usable, one U must be reserved at the top and at the bottom for proper cooling.
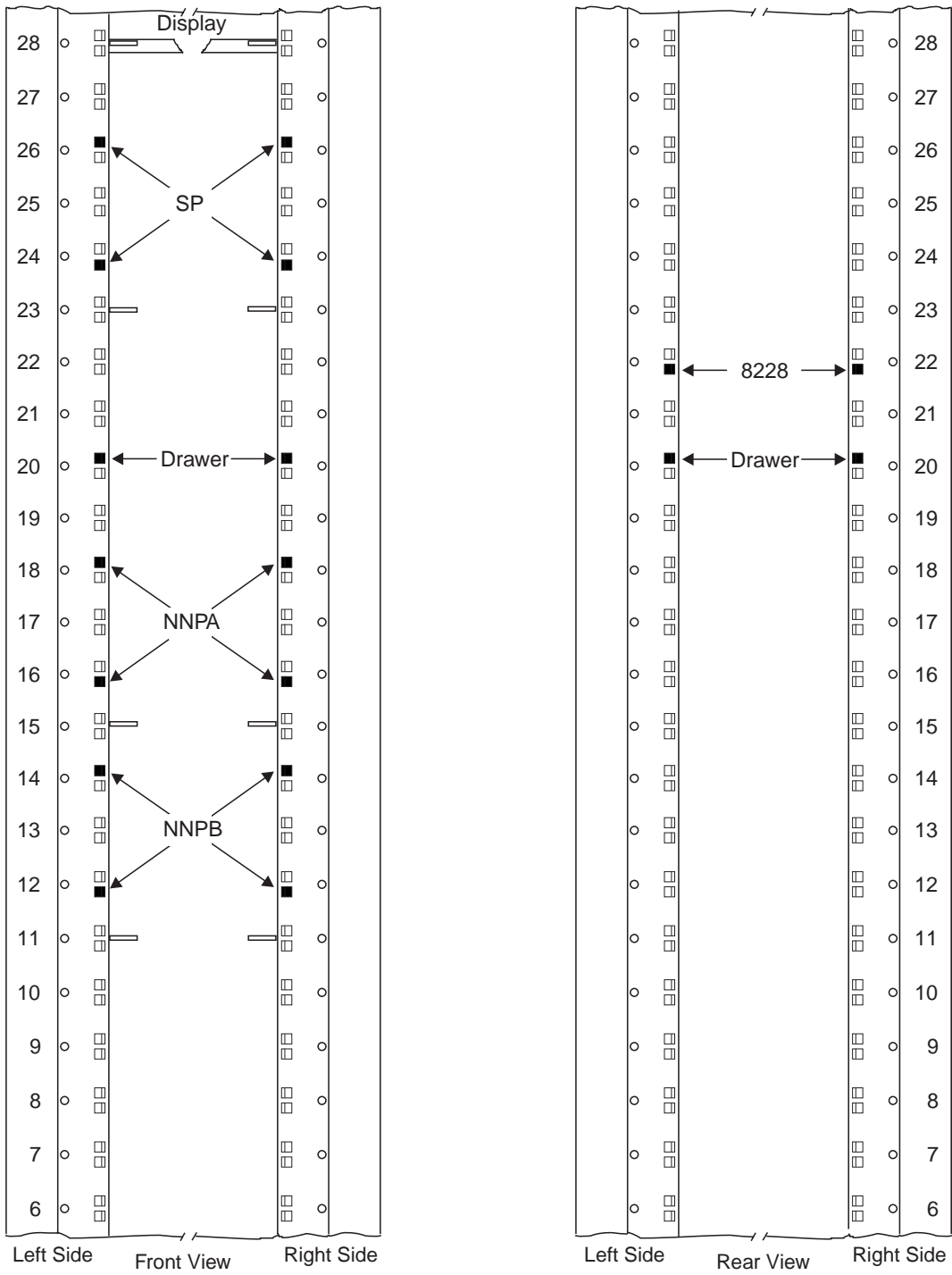
Figure   C-3.   Installing Captive Nuts and Brackets for the Display, Drawer, SP and NNP Type 7585

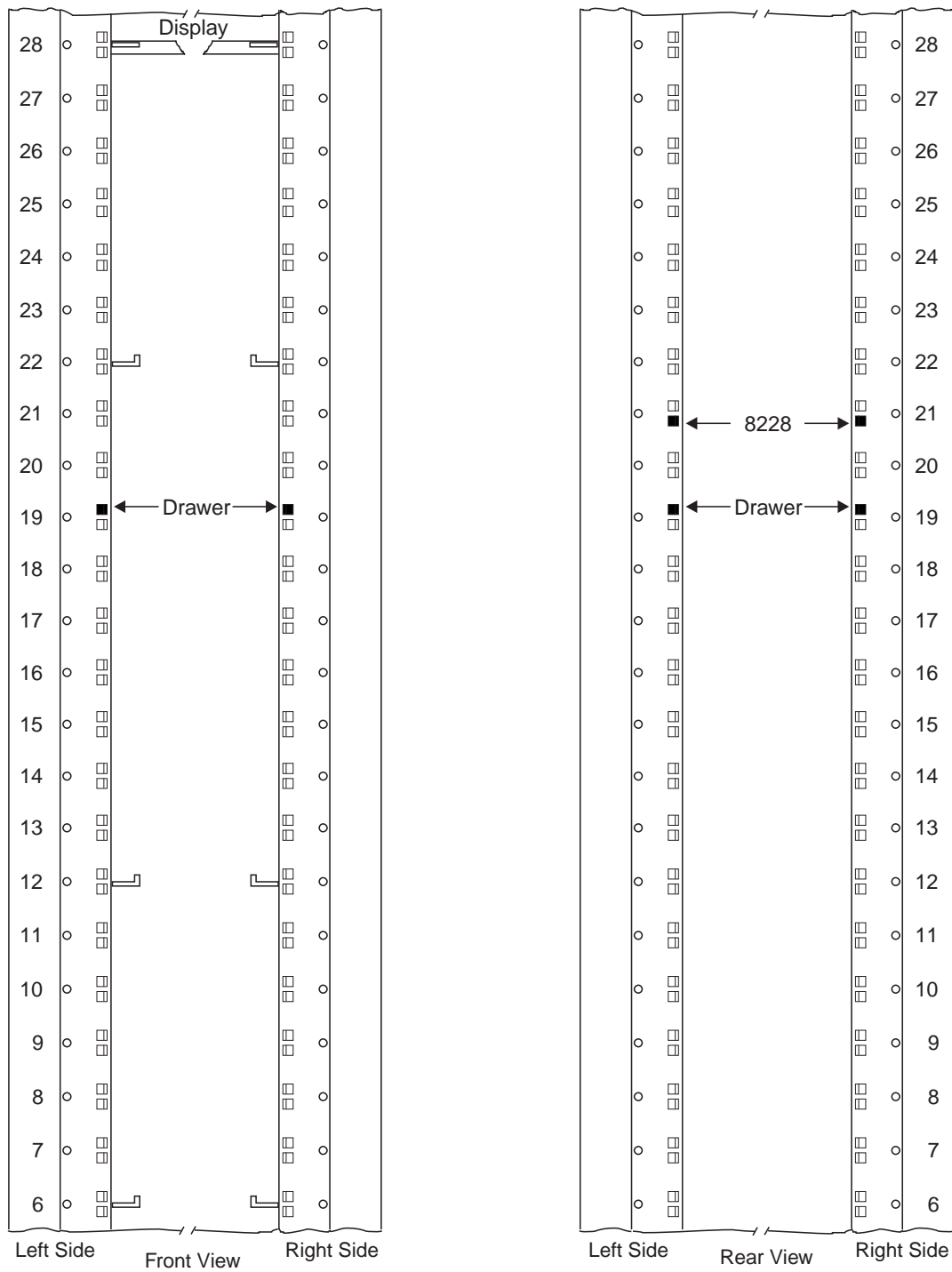**Note:**   This symbol '■' identify the locations to install the captive nuts.

Figure   C-4. Installing Captive Nuts and Brackets for the Display, Drawer, SP and NNP Type 3172

Notes:

1. This drawing can be used to setup the SP type **9585** or **9577**

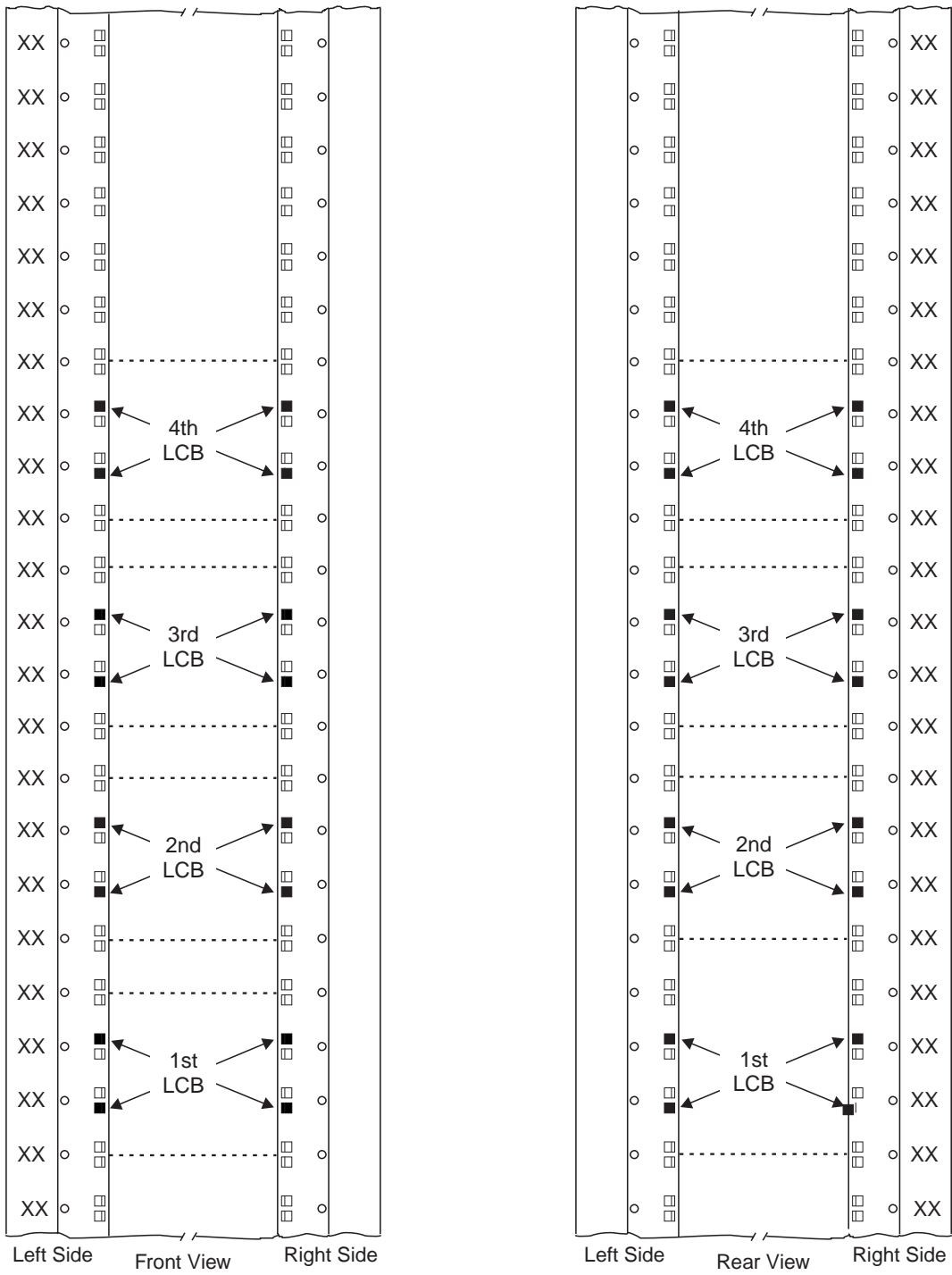2. This symbol '▪' identify the locations to install the captive nuts.

Figure   C-5. Installing Captive Nuts for LCBs

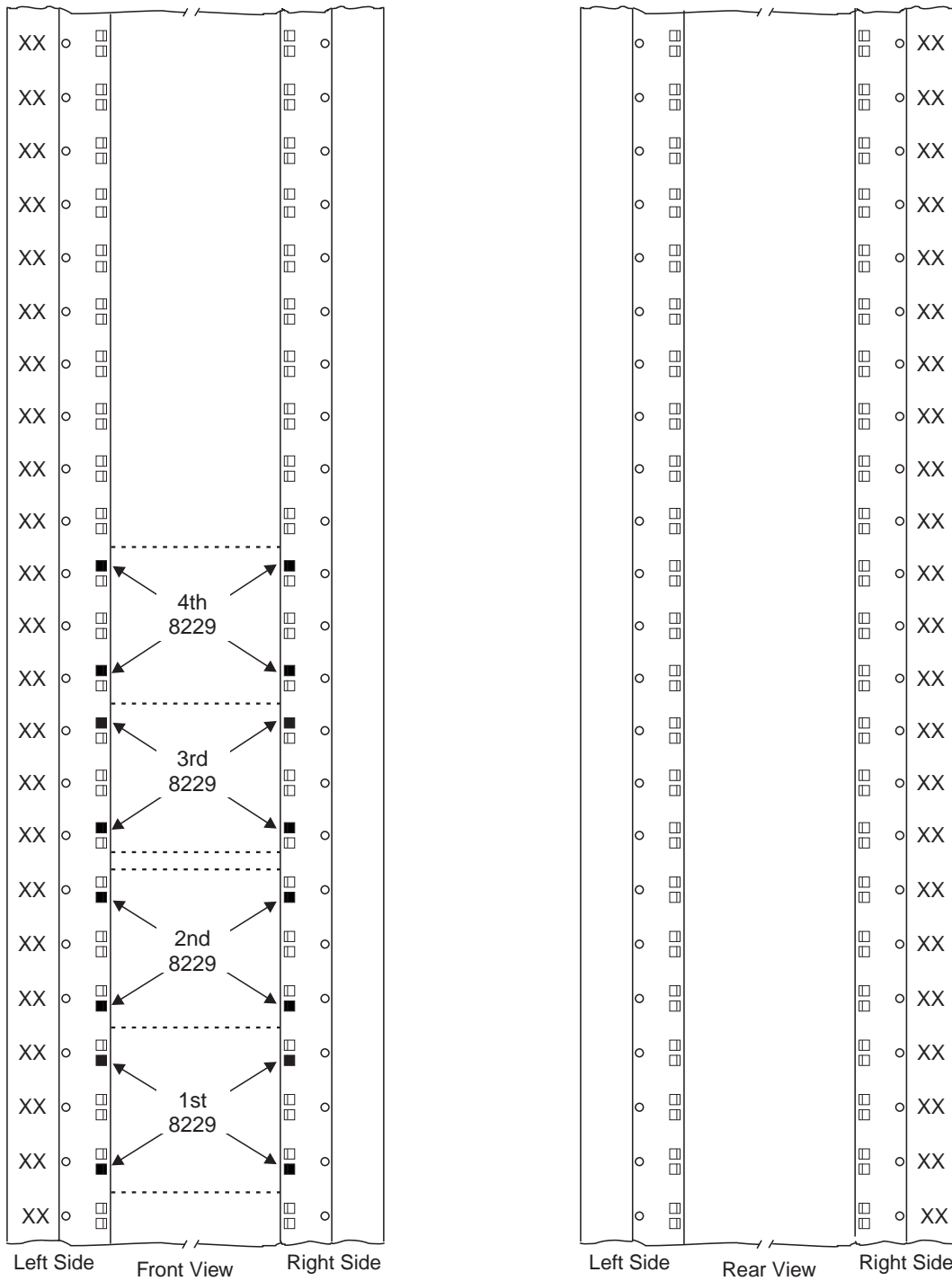**Note:**   This symbol '■' identify the locations to install the captive nuts.

Figure   C-6. Installing Captive Nuts for 8229s

Note: This symbol '■' identify the locations to install the captive nuts.

Left Side   Front View   Right Side   Left Side   Rear View   Right Side
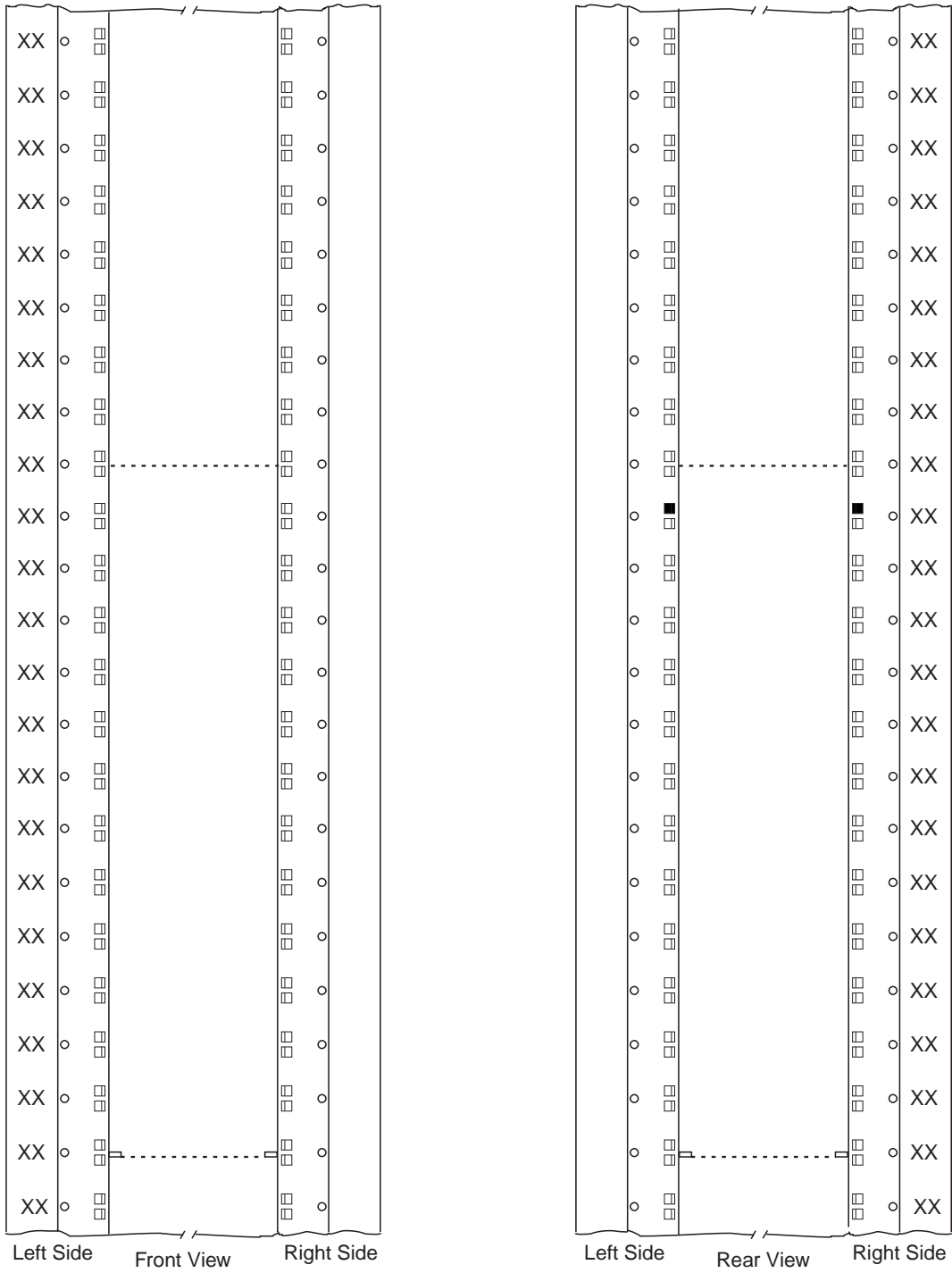
Figure   C-7. Installing Captive Nuts and Brackets for MAE

Note: This symbol '■' identify the locations to install the captive nuts.

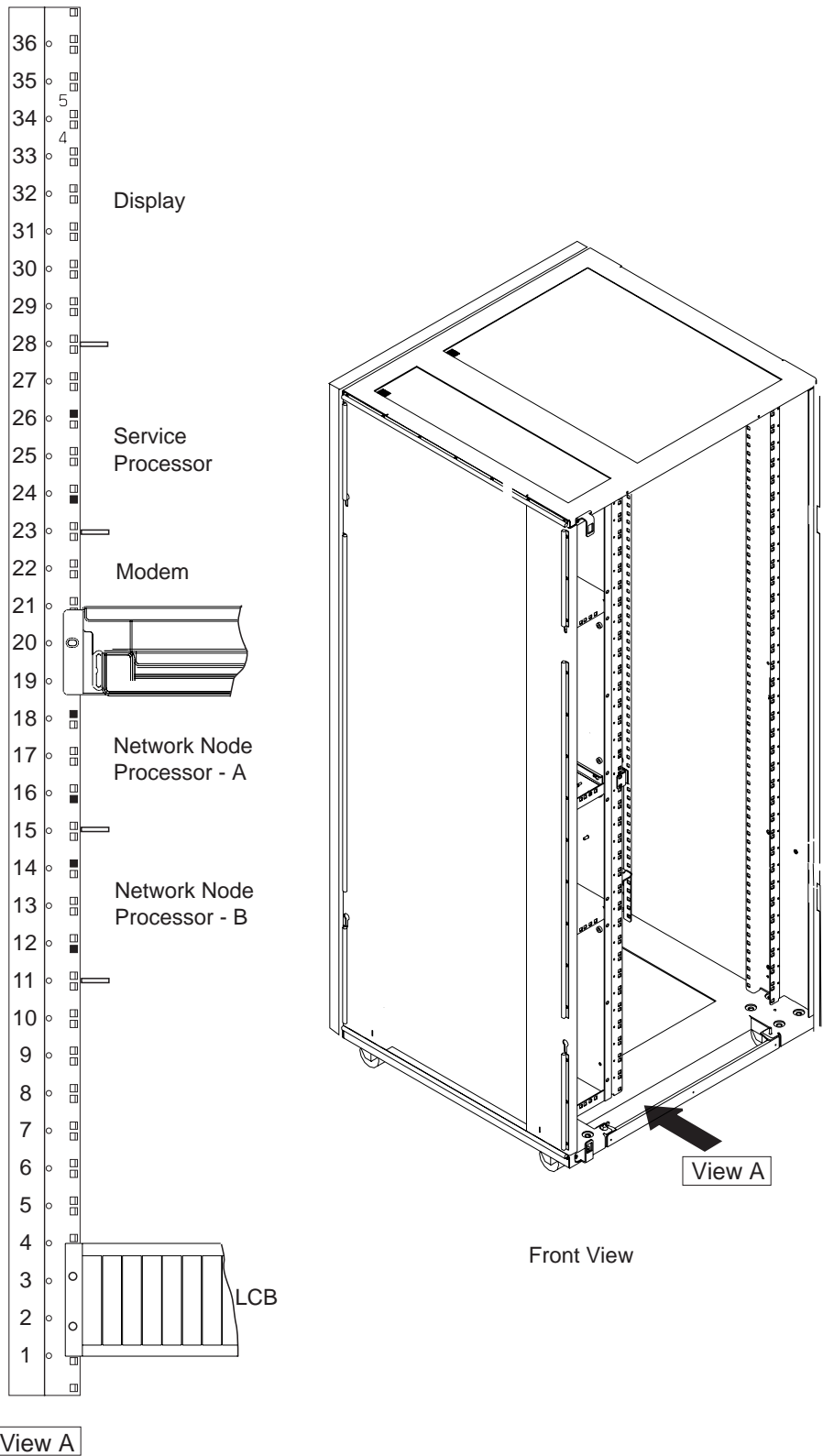Figure C-8. Installing Brackets (PN 58G5752) for Processor Type 7585

36
35
34
33
32   Display
31
30
29   **1**
28
27
26   Service
25   Processor
24
23   **1** **2**
22
21   Modem
20
19
18
17
16   Network Node
15   Processor - A
14
13   **1** **2**
12
11
10
9   Network Node
8   Processor - B
7   **1** **2**
6
5
4
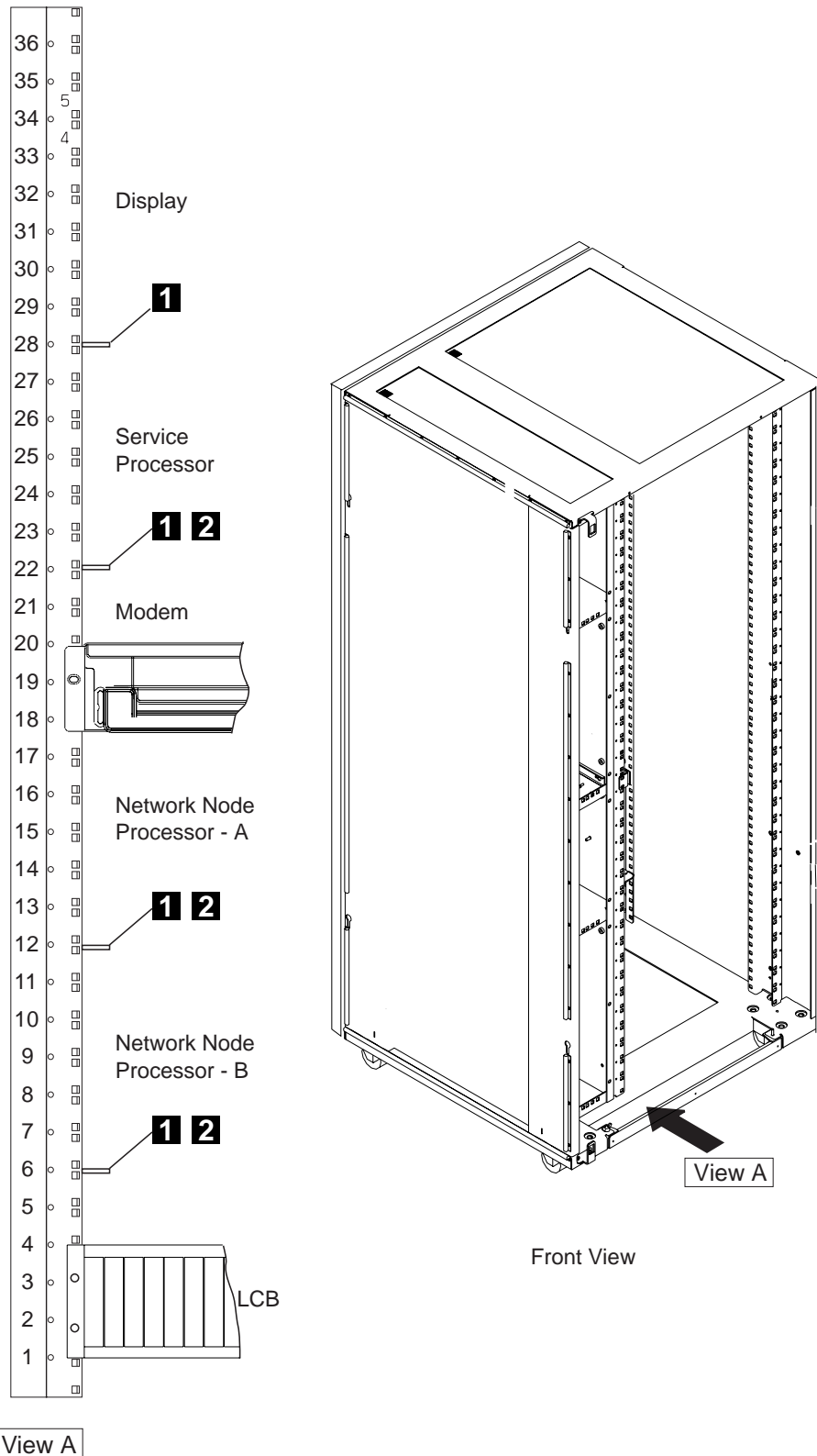3   LCB
2
1

View A

View A
Front View

Figure   C-9. Installing Brackets for Processor Type 3172

- **1** bracket used to install the display (PN 58G5752)
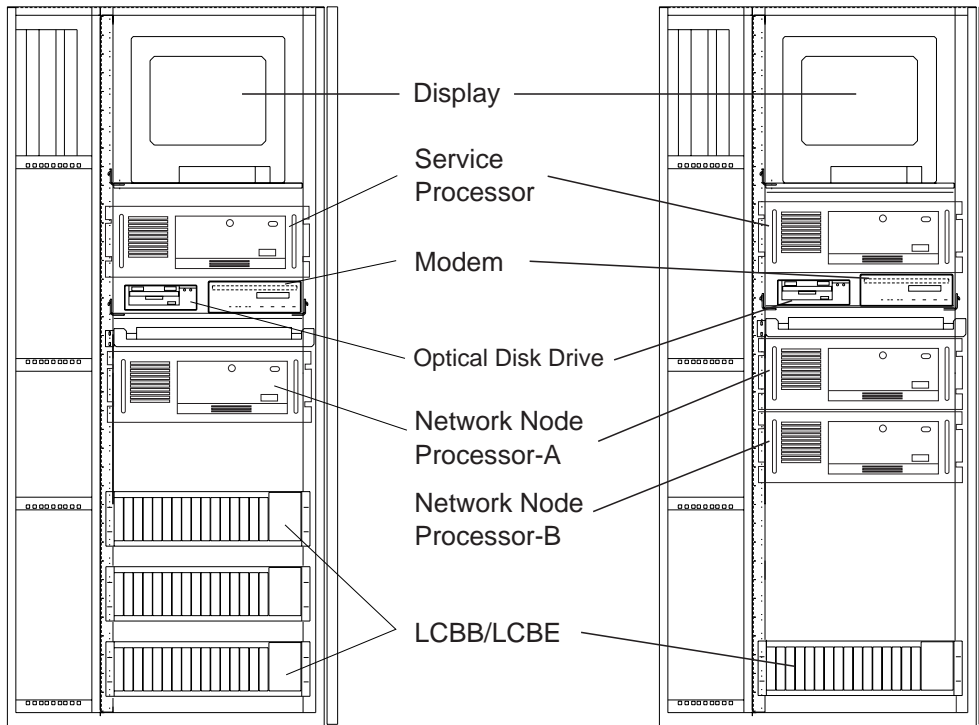- **2** screws used to install the SP and NNP (PN 0782986)

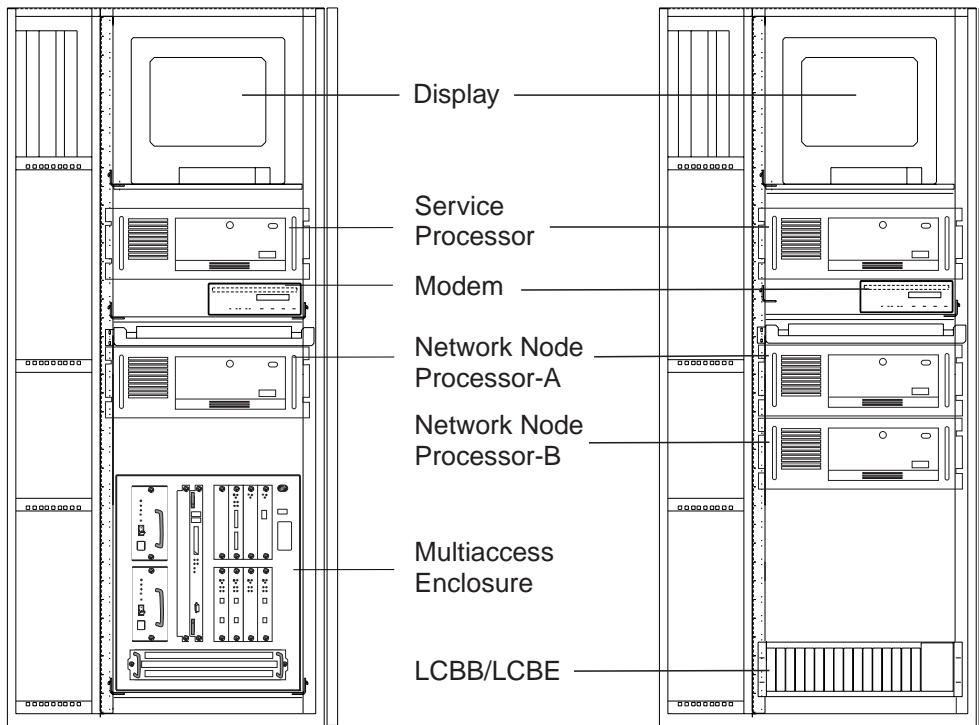*Figure   C-10. Units Installation in the Controller Expansion (SP Type 7585)*

Figure   C-11. Units Installation in the Controller Expansion (SP Type 7585 + MAE)
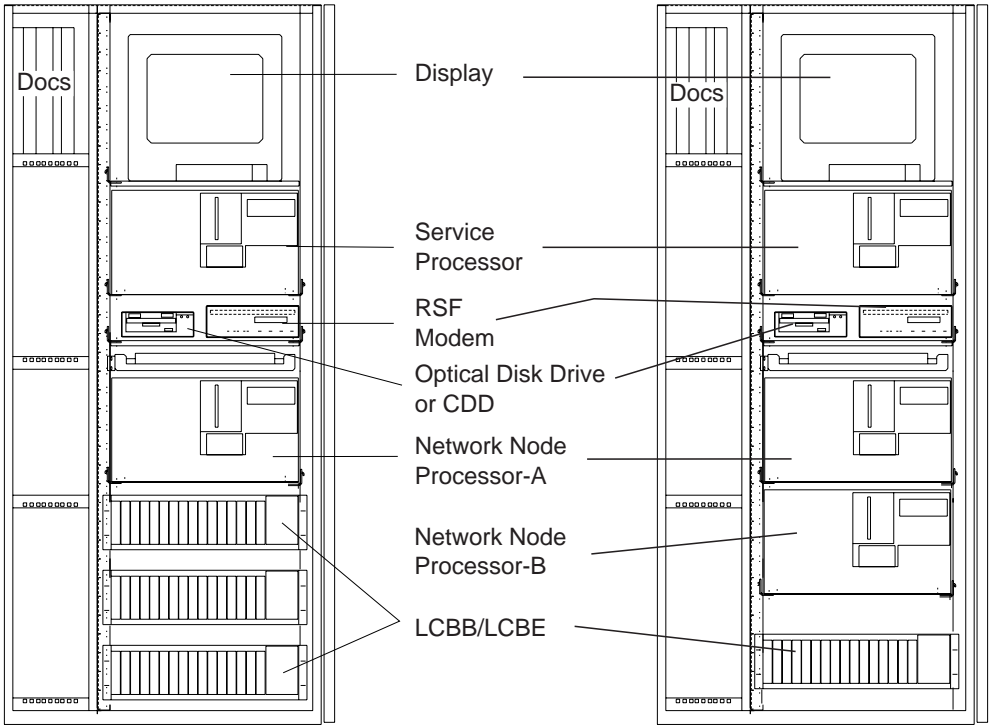
Figure   C-12. Units Installation in the Controller Expansion (SP Type 3172)
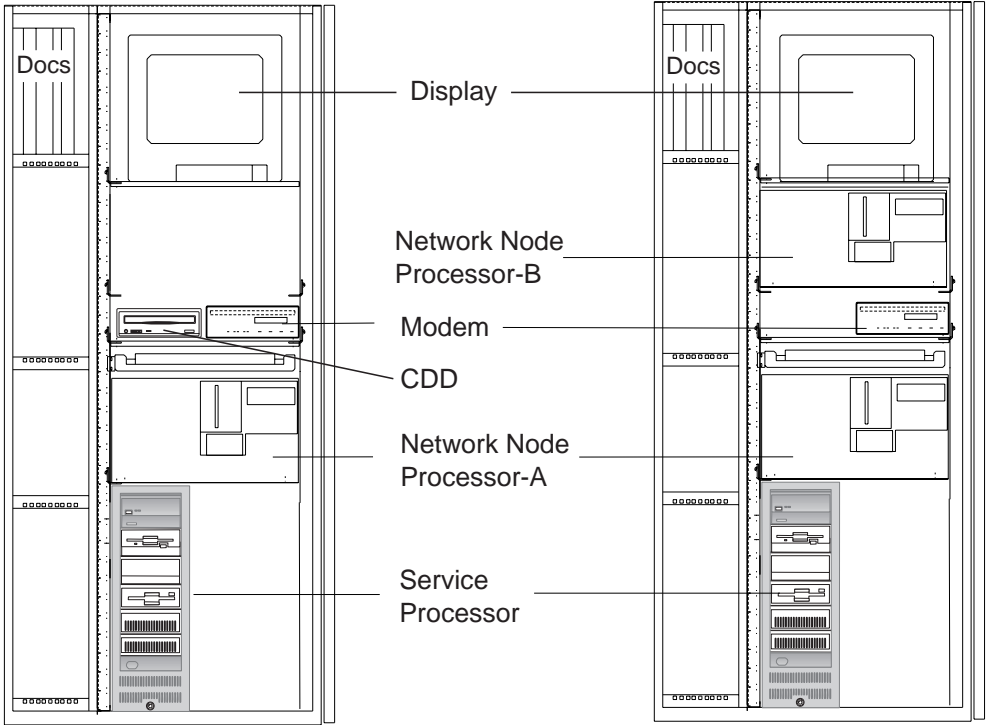

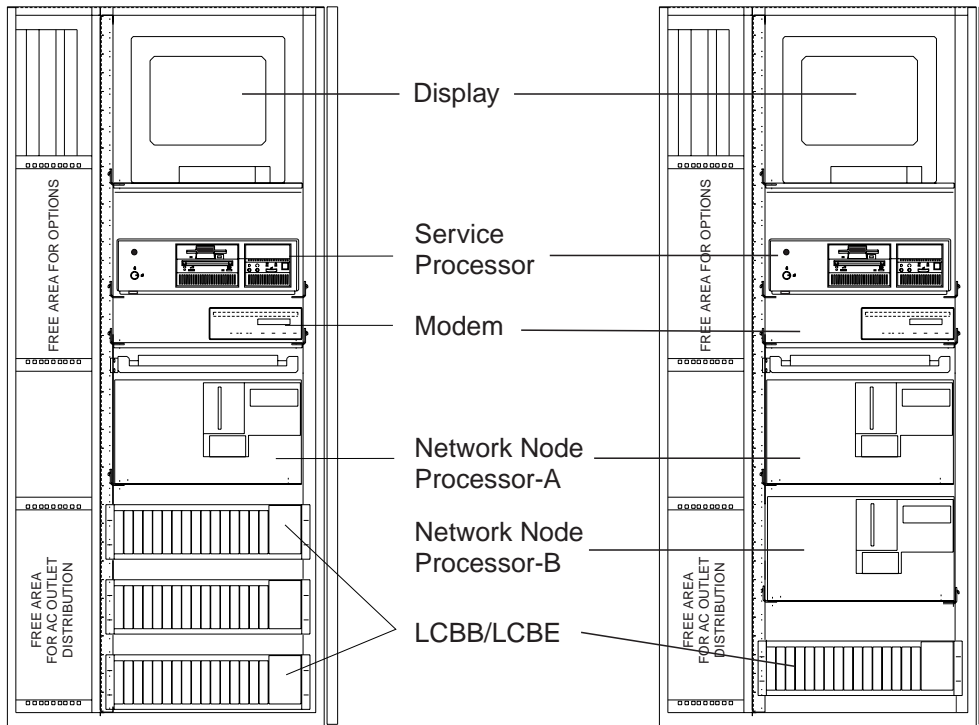*Figure   C-13. Units Installation in the Controller Expansion (SP Type 9585)*

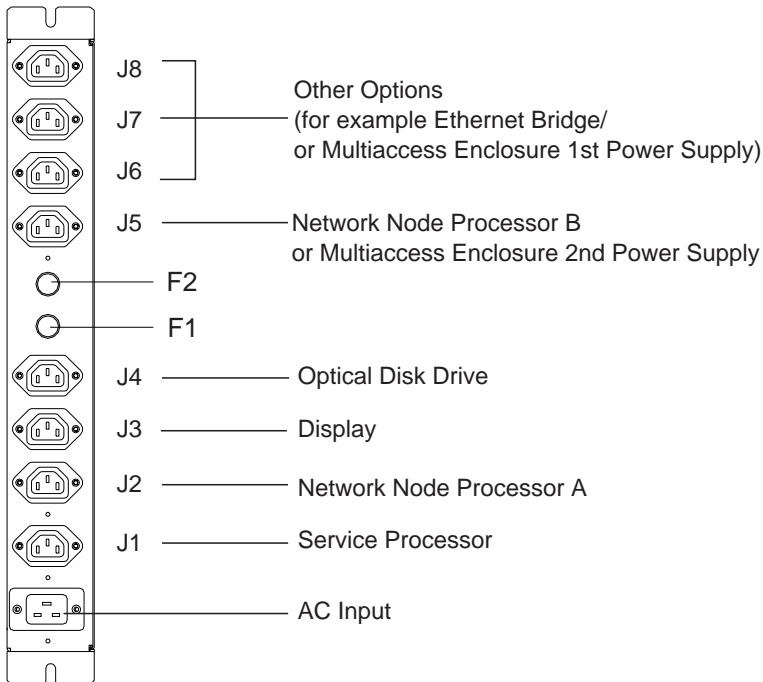*Figure   C-14. Units Installation in the Controller Expansion (SP Type 9577)*

Figure   C-15. Connecting the Units to the ac Outlet Distribution Box.

Glossary

ac. alternating current

ACPW. AC power (box)

AFD. airflow detector

alarm. A message sent to the MOSS console. In case of an error a reference code identifies the nature of the error.

alert. A message sent to the host console. In case of an error a reference code identifies the nature of the error.

AMD. air moving device

APPN. advanced peer-to-peer networking

ARC. active remote connector

ARC1A1. ARC V.24 DCE attachment with 5 meter tethered cable

ARC1A2. ARC V.24 DCE attachment with 15 meter tethered cable

ARC1B. ARC V.24 DTE attachment with 15 meter tethered cable

ARC1C. ARC V.24 DCE 3745 interface with 5 meter tethered cable

ARC1D. ARC V.24 DTE 3745 interface with 5 meter tethered cable

ARC1E. ARC V.24 3174 AEA interface (1)

ARC1F. ARC V.24 3174 PCA EIA interface (1)

ARC2A. ARC V.25 autocall interface with 5 meter tethered cable

ARC2C. ARC V.25 autocall interface 3745 with 5 meter tethered cable

ARC3A1. ARC V.35 DCE attachment with 5 meter tethered cable

ARC3A2. ARC V.35 DCE attachment with 15 meter tethered cable

ARC3B. ARC V.35 DTE attachment with 15 meter tethered cable

ARC3C. ARC V.35 DCE 3745 interface with 5 meter tethered cable

ARC3D. ARC V.35 DTE 3745 interface with 5 meter tethered cable

ARC4A1. ARC X.21 DCE attachment with 5 meter tethered cable

ARC4A2. ARC X.21 DCE attachment with 15 meter tethered cable

ARC4B. ARC X.21 DTE attachment with 15 meter tethered cable

ARC4C. ARC V.21 DCE 3745 interface with 5 meter tethered cable

ARC4D. ARC V.21 DTE 3745 interface with 5 meter tethered cable

ARC5A. Reserved

ARC5B. Reserved

ARC5C. ARC RS-422 3708 interface (or RJ-11 connection) (1)

ARC5D. ARC RS-422 IBM Cabling System interface (1)

ARC6A. ARC V.25 autocall interface with 15 meter tethered cable

ARC6C. ARC V.25 autocall 3745 interface with 15 meter tethered cable

BA. basic access

BAS. basic board

BATS. basic assurance tests

BER. box event record

BLPU. basic level packaging unit

BMI. bit multiplex interface

box event record (BER). Information about an event detected by the controller. It is recorded on the disk/diskette and can be displayed on the operator console for event analysis.

bps. bits per second

BSC. binary synchronous communication

BSI. bus synchronism interface

C. Celsius

C&SM. customer and service information

CA. channel adapter

cache. A high-speed buffer storage that contains frequently accessed instructions and data; it is used to reduce access time.

CB. circuit breaker

CBA. controller bus adapter

CBC. controller bus coupler

CBR. circuit burst request

CBSA. controller bus and service adapter (CBSP+CBC+TIC3)

CBSP. controller bus and service processor

CBTRA. controller bus and token-ring adapter (TRP+CBC+TIC3)

CBTRM. cable terminator (IOC and DMA buses)

CCITT. Comite Consultatif International Telephonique et telegraphique

CCU. central control unit

CDF. configuration data file (3745)

CDF-E. configuration data file extended (37CS)

CE. customer engineer

CEPT. Comite Europeen des Postes et Telecommunications

CLA. communication line adapter (CLP+LICnn)

CLDP. controller load/dump program

clear channel. Mode of data transmission where the data passes through the DCE and network, and arrives at the receiving communication controller (for example, the IBM 3745) unchanged from the data transmitted. The DCE or network can modify the data during transmission because of certain network restrictions, but must ensure the received data stream is the same as the transmitted data stream.

CLP. communication line processor

CMIP. common management interface protocol

CNM. communication network management

CP. 1.communication processor 2.control program 3.circuit protector 4.control point

CPLR. coupler

CPN. customer problem number

CPx. FRU name of circuit protector

CRC. cyclic redundancy check character

CS. connectivity switch

CSA. common subassembly

CSB. connectivity switch bus

CSC. connectivity switch cable

CSCE. connectivity switch cable extension

CSM. centralized support module

CSP. central service point

CSS. control subsystem (3745)

CTDA. configuration target device (processor) address

dc. direct current

DCAF. Distributed Console Access Facility (licensed program)

DCCS. DC to connectivity subsystem

DCE. data circuit-terminating equipment

DCDP. DC distribution and protection (box)

DCM. diagnostic control monitor

DCPW. DC power box

DICO. DMA IOC connection card

DM. distribution manager

DMA. direct memory access

DS. data storage

DSB. data storage bus

DSI. data storage interface

DSM. data storage manager

DSS. data storage interface for SBA

DSU. data service unit (DCE-like for high-speed communication lines)

DTE. data terminal equipment

EC. engineering change

EE. extended edition

EIA. Electronic Industries Association

EPO. emergency power-off

EPROM. eraseable PROM

ESCA. ESCON adapter

ESCC. ESCON coupler

ESCON*. Enterprise Systems Connection

ESCP. ESCON processor

ESD. electrostatic discharge

EXP. expansion enclosure

EXP1. first expansion enclosure

EXP2. second expansion enclosure

FCS. frame check sequence

FRU. field-replaceable unit

HCS. Hardware Central Service

HDLC. high-level data link control

hex. hexadecimal

host processor. (1) A processor that controls all or part of a user application network. (2) In a network, the processing unit in which the access method for the network resides. (3) In an SNA network, the processing unit that contains a system services control point (SSCP). (4) A processing unit that executes the access method for attached communication controllers. Also called *host.*

HPPB. high-performance parallel bus

HSC. hardware support center

HSF. hardware service facility

Hz. Hertz

IBM service representative. An individual in IBM who performs maintenance services for IBM products or systems.

IEEE. Institute of Electrical and Electronics Engineers

IML. initial microcode load

initial microcode load (IML). The process of loading the microcode into a scanner or into MOSS.

initial program load (IPL). The initialization procedure that causes the 3745 control program to commence operation.

IO. input/output

IOC. input/output control

IOCB. input/output control bus

IPL. initial program load

IRAM. instruction random access memory

ISO. International Organization for Standardization

kbps. kilobits per second

LA. line adapter

LAN. local area network

LCB. line connection box

LED. light-emitting diode

LIC. line interface coupler

LICx. FRU name of line interface coupler type x (3745)

LLC. logical link control

LS. local storage

LSA. link service architecture

LSCT. LIM software configuration table

LSM. local storage manager

LSSD. level-sensitive scan design (total hardware latches chain collection)

LU. logical unit

MAC. medium access control

MAE. Multiaccess enclosure

MAP. maintenance analysis-procedure

MAU. multistation access unit

MB. megabyte; 1 048 576 bytes

MCF. microcode fix

MCL. microcode change level

MES. miscellaneous equipment specification

MG. motor generator

MI. maskable interrupt

microcode. A program, that is loaded in a processor (for example, the MOSS processor)

MLA. MOSS LAN adapter

MMIO. memory mapped input/output

maintenance and operator subsystem (MOSS). The part of the controller that provides operating and servicing facilities to the customer's operator and the IBM service representative.

MOSS. maintenance and operator subsystem (3745)

MOSS-E. maintenance and operator subsystem extended (37CS)

NA. network addressable

NCP. Network Control Program

NDM. netview distribution manager

NetView. An IBM licensed program used to monitor a network, manage it, and diagnose its problems.

Network Control Program (NCP). An IBM licensed program that provides communication controller support for single-domain, multiple-domain, and interconnected network capability.

NMI. non-maskable interrupt

NMVT. network management vector transport

NNP. network node processor

NODA. next origin device (processor) address

NPM. NetView performance monitor

NTDA. next target device (processor) address

OEMI. original equipment manufacturer's interface

OLT. online test

online tests. Testing of a remote data station concurrently with the execution of the user's programs (that is, with only minimal effect on the user's normal operation).

OSI. open system interconnect

PA. primary access

PBC. packet burst control

PBG. packet burst grant

PCR. 1.pico-processor command register 2.power check reset

PICA. process and intertask communication architecture

PMH. problem management hardware

PN. part number

PNL. control panel

POR. power-ON reset

PP. pico-processor

PPB. primary power box

PPC. PowerPC (system card of MAE)

PRC. processor

PRDA. packet request device (processor) address

PROM. programable read-only memory

PS. power supply

PSI. packet switch interface

PSN. public switched network

PTCE. product-trained CE

PTF. program temporary fix

PTT. Post, Telephone and Telegraph (agency)

PU. physical unit

RETAIN. Remote Technical Assistance Information Network

RNR. receiver not ready

RPL. remote program load

RPO. remote power-off

RSC. remote service center

RSF. remote support facility

RVX. stands for RS232, RS422, V.24-35, X.21-2x connections

SAC. switch adapter card

SATS. specific assurance tests

SBA. switch bus adapter

SBI. switch bus interface

SC. switch control

SDLC. synchronous data link control

SIE. switch interface extender

SL. service logic

SNA. Systems Network Architecture

SNMP. Simple network management protocol

SPD1. signal and power distribution type 1

SPD2. signal and power distribution type 2

SPDL. signal and power distribution card in LCB

SPS. service and power support

SQL. structured query language

SRC. system reference code

SSA. system service architecture

SSCP. system services control point

STCn. signal transfer card n

SSS. subsystem support service

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information through a user application network. The structure of SNA allows the users to be independent of specific tele-communication facilities.

TB. terminator block

TDM. time division multiplexing

TDR. technical data record

TERC. terminator card

TIC1. token-ring interface coupler type 1 (3745) running at speed of 4 Mbits

TIC2. token-ring interface coupler type 2 (3745) running at speed of 4 or 16 Mbits

TIC3. token-ring interface coupler type 3 (37CS) running at speed of 4 or 16 Mbits

time out. The time interval allotted for certain oper-ations to occur.

TPS. two-processor switch

TR. token-ring

TRA. token-ring adapter (TRP+TIC3)

TRFM. transformer

TRP. token-ring processor

TRS. transmitter/receiver subassembly

UEPO. unit emergency power-off

URSF. universal remote support facility

UTP. Unshielded twisted pair cable

V. volt

V.24. CCITT V.24 recommendation

V.25. CCITT V.25 recommendation

V.28. CCITT V.28 recommendation

V.35. CCITT V.35 recommendation

VPD. vital product data

VTAM*. Virtual Telecommunications Access Method

VTL. vendor technology logic

W. watt

X.21. CCITT X.21 recommendation

X.25. CCITT X.25 recommendation

YZxxx. wiring diagram

Bibliography

Service Documentation for the IBM 3746 Model 950

| Table X-1 (Page 1 of 3). Service Documentation for the 3746 Model 950 |
|---|
| This service documentation has the following formats: |
| Books   Books and CD-ROM |

	SY33-2107	**IBM 3746 Nways Multiprotocol Controller Model 950** **Installation Guide**[1] Provides instructions for installing or relocating the Nways Controller.
	SY33-2108	**IBM 3746 Nways Multiprotocol Controller Model 950** **Service Guide**[1] Provides procedures for isolating and fixing the IBM 3746-950 problems.
	SY33-2115	**IBM 3745 Communication Controller Models A**[2] **IBM 3746 Expansion Unit Model 900** **IBM 3746 Nways Multiprotocol Controller Model 950** **Service Processor Installation and Maintenance**[3] **(Based on the 7585, 3172, 9585, or 9577)** Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, 9585, or 9577. Can be for systems with microcode that has up to and including EC D46130 (any level) installed.
	SY33-2120	**IBM 3745 Communication Controller Models A**[3] **IBM 3746 Expansion Unit Model 900** **IBM 3746 Nways Multiprotocol Controller Model 950** **Service Processor Installation and Maintenance**[4] **(Based on the 7585, 3172, or 9585)** Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, or 9585. Can be for systems with microcode EC F12380 or higher installed.

Table X-1 (Page 2 of 3). Service Documentation for the 3746 Model 950

	SY33-2125	**IBM 3745 Communication Controller Models A[3]** **IBM 3746 Expansion Unit Model 900** **IBM 3746 Nways Multiprotocol Controller Model 950** **Service Processor Installation and Maintenance[4]** **(Based on 6275)** Provides information on installing and maintaining the service processor based on PS/2 Type 6275. Can be for systems with microcode EC F12380 or higher installed.
	SY33-2118	**IBM 3746 Nways Multiprotocol Controller Models 900 and 950** **Multiaccess Enclosure Installation and Maintenance[4]** Provides information on installing and maintaining the Multiaccess Enclosure (MAE).
	SY33-2124	**IBM 3746 Nways Multiprotocol Controller Models 900 and 950** **Multiaccess Enclosure Installation and Maintenance[4]** (Starting from EC F12430 and Above) Provides information on installing and maintaining the Multiaccess Enclosure (MAE). For systems with microcode EC F12430 or higher installed.
	SY33-2112	**IBM 3746 Nways Multiprotocol Controller** **Models 900 and 950** **Network Node Processor Installation and Maintenance[3]** **(Based on the 7585 or 3172)** Provides information on installing and maintaining the network node processor based on the PS/2 Type 7585 or 3172.
	SY33-2126	**IBM 3746 Nways Multiprotocol Controller** **Models 900 and 950** **Network Node Processor Installation and Maintenance[3]** **(Based on 6275)** Provides information on installing and maintaining the network node processor based on the PS/2 Type 6275.
	SY33-2127	**IBM 3745 Communication Controller Models A[3]** **IBM 3746 Expansion Unit Model 900** **IBM 3746 Nways Multiprotocol Controller Model 950** **Service Processor and Network Node Processor[4]** **Service User's Guide** Provides information on installing and maintaining the operational code on service processor, or network node processor. Can be for systems with microcode EC F12380 or higher installed.
	SY33-2117	**IBM 3746 Nways Multiprotocol Controller** **Models 900 and 950** **External Cable Reference[4]** Provides references to console and line cables used for connecting the IBM 3746 Models 900 and 950.

Table X-1 (Page 3 of 3). Service Documentation for the 3746 Model 950		
	S135-2015	**IBM 3746 Nways Multiprotocol Controller Models 900 and 950** **Parts Catalog[4]** Provides reference information for ordering parts for the IBM 3746 Models 900 and 950.
	S135-2014	**IBM Controller Expansion** **Parts Catalog** Provides reference information for ordering parts for the controller expansion attached to the IBM 3745 Models A[2], and 3746 Models 900 and 950.
CD-ROM Bibliography		
	ZK2T-8214	**IBM Networking Softcopy Collection Kit** Allows service manuals consulting via CD-ROM viewer. EMEA version.
	ZK2T-8187	**IBM Networking Softcopy Collection Kit** Allows service manuals consulting via CD-ROM viewer. US version.

[1] Documentation shipped with the 3746 Model 950
[2] 3745 Models 17A to 61A
[3] Documentation shipped with the processor
[4] Documentation shipped with the 3746 Models 900 and 950

Customer Documentation for the 3746 Model 950

Table X-2 (Page 1 of 2). Customer Documentation for the 3746 Model 950
This customer documentation has the following formats:
Books   Online   Books and Diskettes
Finding Information

	3745 Models A and 3746 Books
	Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.

Preparing for Operation

GA33-0400	**IBM 3745 Communication Controller All Models**[1] **IBM 3746 Expansion Unit Model 900** **IBM 3746 Nways Multiprotocol Controller Model 950**
	Safety Information[2]
	Provides general safety guidelines

Evaluating and Configuring

GA33-0180	**IBM 3745 Communication Controller Models A**[3] **IBM 3746 Nways Multiprotocol Controller** **Models 900 and 950**
	Overview
	Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.
GA33-0457	**IBM 3745 Communication Controller Models A**[2] **IBM 3746 Expansion Unit Model 900** **Models 900 and 950**
	Planning Guide
	Planning for:
	• Field upgrades • Service processor and alert management configuration • Network integration (NCP, APPN, and IP control) • Physical installation.
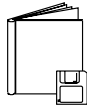
Table X-2 (Page 2 of 2). Customer Documentation for the 3746 Model 950	
Operating and Testing	

SA33-0356	**IBM 3746 Nways Multiprotocol Controller Model 950**
	
	User's Guide[2]
	
	Explains how to:
	
	• Carry out daily routine operations on Nways controller
	• Install, test, and customize the Nways controller after installation
	• Configure user's workstations to remotely control the service processor using:
	  – DCAF program
	  – Telnet client program.

On-line information	**Controller Configuration and Management Application** Provides a graphical user interface for configuring and managing a 3746 APPN/HPR network node and IP Router, and its resources. Is also available as a stand-alone application, using an OS/2 workstation. Defines and explains all the 3746 Network Node and IP Router configuration parameters through its on-line help.
SH11-3081	**IBM 3746 Nways Multiprotocol Controller Models 900 and 950** **Controller Configuration and Management: User's Guide**[2] Explains how to use CCM and gives examples of the configuration process.
Managing Problems	
On-line information	**Problem Analysis Guide** An on-line guide to analyze alarms, events, and control panel codes on: • IBM 3745 Communication Controller Models A[3] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.
SA33-0175	**IBM 3745 Communication Controller Models A**[3] **IBM 3746 Expansion Unit Model 900** **IBM 3746 Nways Multiprotocol Controller Model 950** **Alert Reference Guide** Provides information about events or errors reported by alerts for: • IBM 3745 Communication Controller Models A[3] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.
[1] Models 130 to 61A. [2] Documentation shipped with the 3746-950 [3] 3745 Models 17A to 61A.	

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Readers' Comments — We'd Like to Hear from You

3746 Nways Multiprotocol Controller
Model 950
Installation Guide

Publication No. SY33-2107-04

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