Field Bill of Material (FBM)

PN 80G2813

Convert a 3746 Model 900 APPN attached to a 3745 17A to IBM 3746 Model 950

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Before Installation (Steps 1-8)

1.0 Machines Affected

3746 Model 900 APPN attached to 3745 Model 17A

2.0 Related BMs and ECs

2.1 Prerequisites

(Must be installed prior to this installation)

- Network Control Point FC 5022 (FFBM 29H4170)

2.2 Concurrent

(Must be installed together)

- FFBM - Language Group (See table below).

FFBM	Language Group
29H4762	English
29H4763	French
29H4764	German
29H4765	Italian
29H4766	Spanish
29H4767	Japanese
Note: Only one of the above BM will be received, depending on the base machine language code.	

2.3 Companion

(May be installed together)
None.

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3.0 BMs to be Used

- FFBM 80G2813 - Convert 3746-900APPN to 3746-950

4.0 Preparation

1. Check that all TRP and/or ESCP are type 2. If not inform the customer to order the MES(s) to exchange or remove the TRP and/or ESCP type 1:

   - Exchange ESCP FC 5500 by ESCP2 FC 5522 (FFBM 80G2809) and/or Remove ESCP FC 5500 (FFBM 09G2973)

   - Exchange TRP FC 5600 by TRP2 FC 5622 (FFBM 80G2807) and/or Remove TRP FC 5600 (FFBM 09G2973)

2. Check all items listed on the bill of material. Verify that all parts have been received.

3. Make sure that the re-installation areas, the floor cutout size and location areas are in accordance with Figure 1 or Figure 2. If not inform the customer.

> **Servicing Area.**
>
> - Front and back 0.75m (2.5ft)
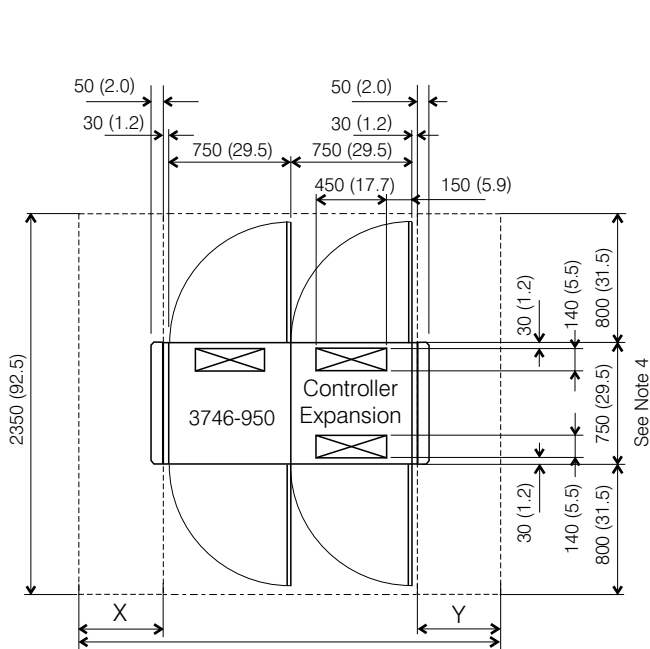> - Right and Left at least 0.85m (2.8ft)

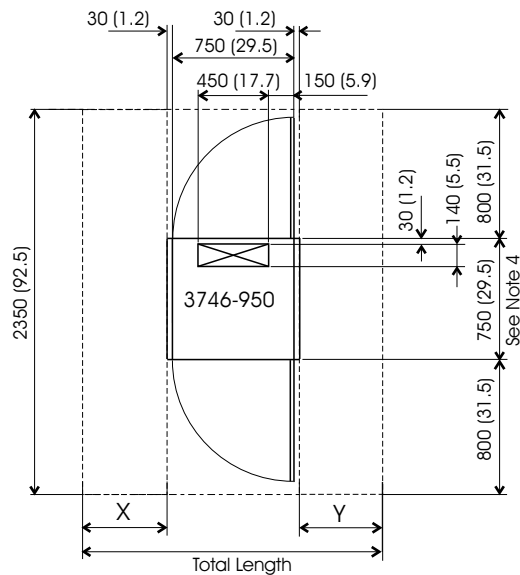Figure 1. Plan View of a 3746-950 with Controller Expansion.

Figure 2. Plan View of a 3746-950 Alone

4. Familiarize yourself with the purpose and details of the installation instruction before negotiating machine time with the customer.

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5.0 Programming

None

6.0 Purpose and Description

6.1 Purpose

Convert 3746-900 attached to 3745-17A, into 3746-950

6.2 Description

This Migration is divided into three main parts:

Electical/physical split

Software split

3746-900 and 3745-17A relocation.

7.0 Installation Time

FFBM	Machine Hours	System Hours	Nbr of CE
80G2813	6.0	0.0	1

8.0 Tools/Materials Required

- ESD kit (PN 6428316).

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Installation (Steps 9-12)

9.0 Safety

Review the **Safety Notices** and the **Safety Inspection Procedures** located at the beginning of the *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, SY33-2070

10.0 Details of Installation.

10.1 Powering Off the 3746-900

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

__ 2. **Switch** the main circuit breaker CB1 and CP1 **OFF** at the 3746-900 primary power box.

10.2 Powering Off the 3745

__ 1. Press the **Power Off** key on the 3745 control panel.

__ 2. **Switch CB1 to Off** at the primary power box

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10.3 Removing the Ground Brackets from 3746-900 and 3745-17A.

All the following procedures can be used to remove the ground plates when the 3746-900 is installed on the either side of the 3745.

__ 1. Remove plates **7** (PN 58G5308) on the edges of the ground plates installed.

__ 2. Remove covers **5** (PN 58G5336) and **6** (PN 58G5340) on top of the ground plates **2** and **4** .

__ 3. Extract the inter-machine cables from the slots and along the path provided by the ground plates installed.

__ 4. Remove the ground plate **4** (PN 58G5306) on the bottom rear frame of the 3745.

__ 5. Remove the ground plate **2** and the spacer **3** on the bottom rear frame of the 3746-900.

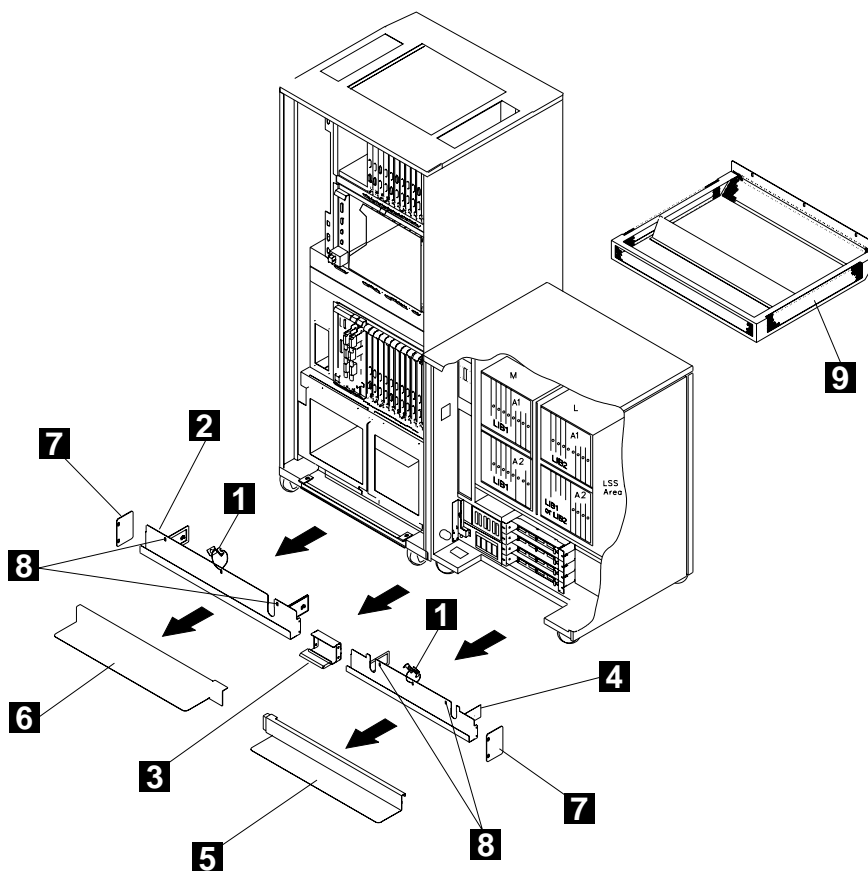__ 6. Remove plate PN 58G5335 on the front bottom of the 3746-900

Figure 3. 3746-900 and 3745-17A Ground Brackets (Rear View).

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10.4 Removing the power control and UEPO Cables

From the 3746-900:

__ 1. Disconnect the UEPO cable (PN 76F9341):

    __ a. Unplug the connector **1** from the distribution box (Position 07H-A1-J6), then

    __ b. Disconnect the ground lead from the frame **2** , (leave screw and lockwasher in place).

__ 2. Disconnect the Power Control cable (PN 17G5924):

    __ a. Unplug the connector **3** from 07J-A1-J1 of the optional power supply, or from the dummy connector **4** located on the filter box (if the optional power is installed).

    __ b. Disconnect the connector **5** from 07K-A1-J1 of the basic power supply.

    __ c. Disconnect the connector **6** from 07H-A1-3745 link of distribution box,

    __ d. Un-clamp the cable from the power supply, then route back the two cables to the rear side of the 3745 base frame.
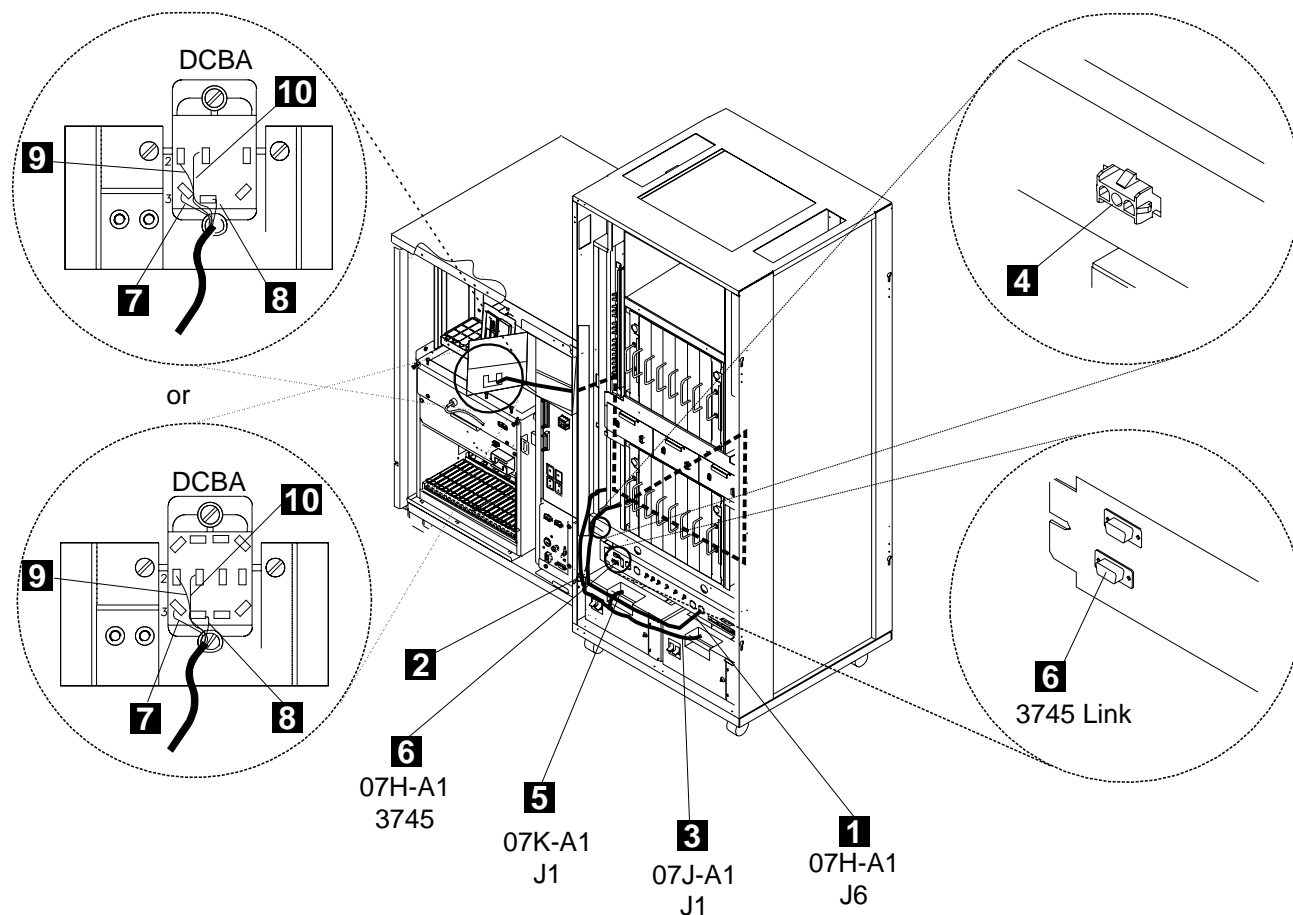

Figure 4. 3746-900 Power Control and UEPO cabling.

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From the 3745 Base Frame:

___ 3. Open the 3745 control panel. Locate the unit emergency power OFF (UEPO) switch at the rear of the control panel, then   . disconnect the UEPO cable leads **7** to **10** from the UEPO switch (See Figure 4 on page 8).

___ 4. On the 3745 rear side, disconnect the EPO connector **1** from the 3745 EPO tailgate in 01S-A0.

___ 5. Disconnect the ground lead **2** from the plug under the EPO plug.

___ 6. Disconnect connector **3** from J2.

___ 7. Detach the plate **4** from the 3745 frame (Re-install nuts, washers and screw).

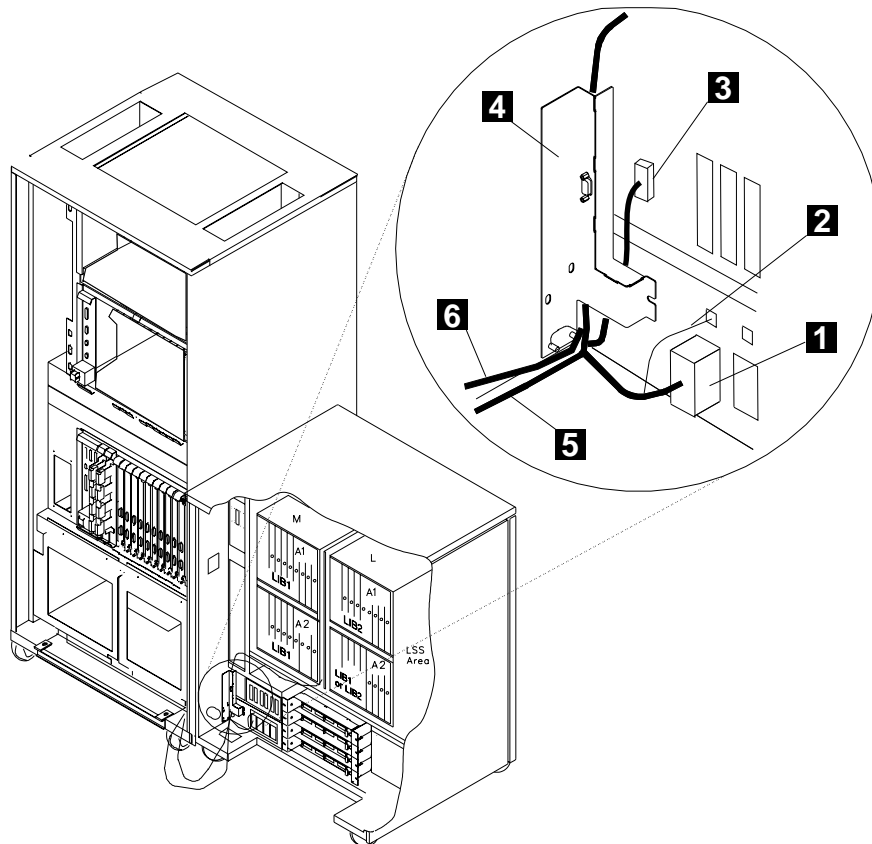___ 8. Remove the power control **5** and UEPO **6** cables from the 3745.

Figure 5. 3745-17A Power Control and UEPO cabling.

10.5 Removing the IOC and DMA Bus.

10.5.1 Removing the IOC and DMA Bus Cables.
From the 3745 Base Frame (Rear side):

___ 1. Remove 01G-A1 board cover **1** .

___ 2. Locate the buses connector positions 01G-A1 ZB, ZA, YK, and YJ:

Loosen and remove the retainers which maintain the connector cards. Disconnect the buses connectors from their respective sockets 01G-A1 ZB and ZA for the IOC **2** and YK and YJ for the DMA **1** .

___ 3. Plug the terminator cards (PN 11F6054) in sockets 01G-A1 ZB and ZA and YK and YJ.

___ 4. Install the retainers (PN 03F5256) on top of the terminator cards using the screws used to maintain the IOC/DMA connector cards.

___ 5. Remove the IOC/DMA buses flat cables from the raceway, then route them into the bottom rear side of the and 3746-900 frame.

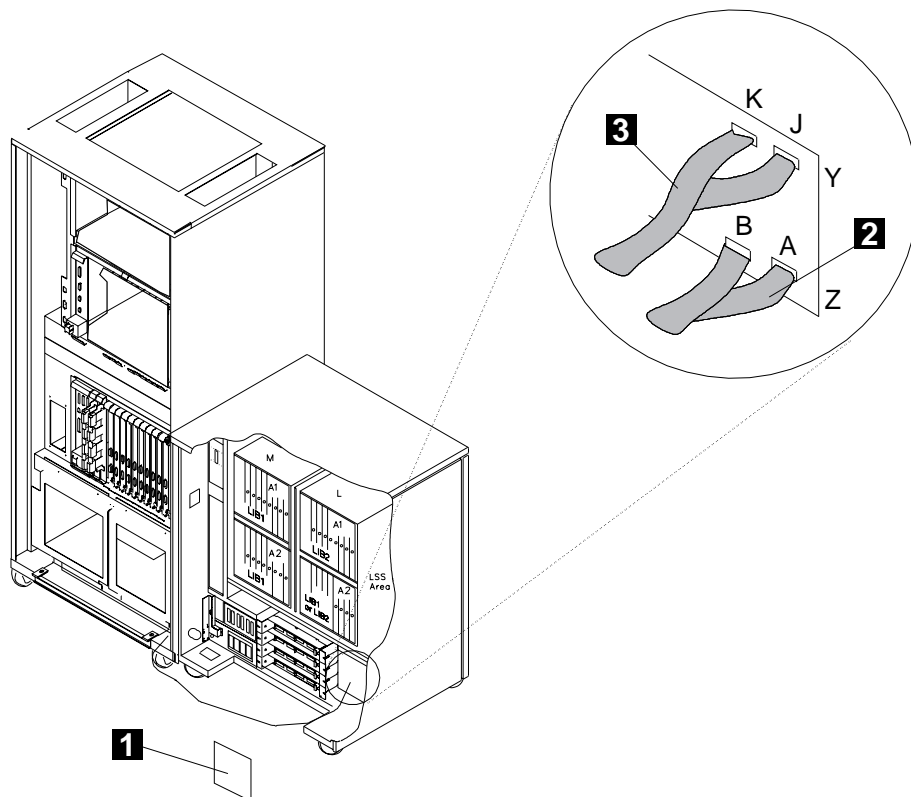___ 6. re-install the board cover **1** .

Figure 6. Routing of the IOC and DMA Cables.

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From the 3746-900 (Rear side):

__ 7. Remove the covers **1** to **4**

__ 8. Loosen the four nuts **5** on the CBC Cassette.

__ 9. Unplug the cables **6** marked E1 and E2 from the CBC1 cassette and remove the two cable sets from the frame.

__ 10. Remove CBC **7** :

Press the two unlocking buttons and pull out the cassette, then place the Cassette in an ESD protective bag.

__ 11. Install the dummy cassette (PN 03F7522), in position where the CBC card has been removed.

__ 12. Reinstall the **1** , **3** and **4** .

Note: Do not replace cover **4** , store them in the customer ship group.
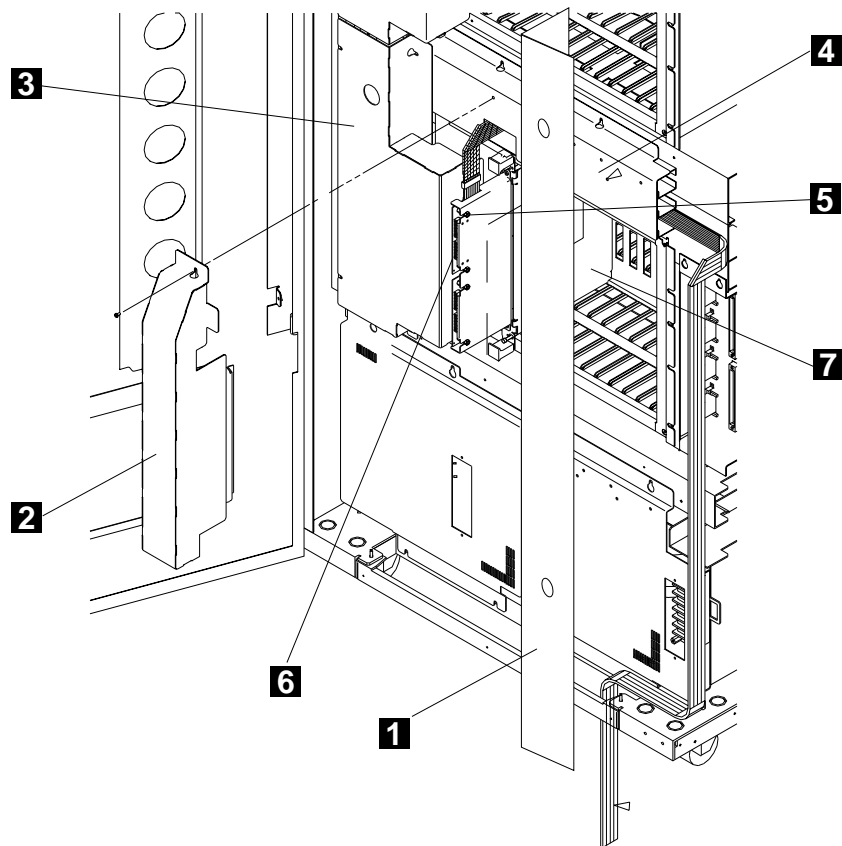

Figure 7. IOC/DMA Cable Termination on 3746-900.

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10.5.2 Removing the Bypass Cards

__ 1. Remove the basic board cover.

__ 2. Remove the Bypass cards

> **Notes**
>
> A **BPC1** is installed in the positions normally occupied by a **CSC**, **CSP**, or **FESH** card (See table below).

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X
								TIC	TIC	TRM	BPC1 or CSC	BPC1 or CSC	BPC1 or CSC	BPC1 or CSC	BPC1 or CSP	BPC1 or FESH	BPC1 or CSP	BPC1 or FESH			

Figure 8. 3745-17A Basic Board (01G-A1).

__ a. Remove the intermix brackets **1** .
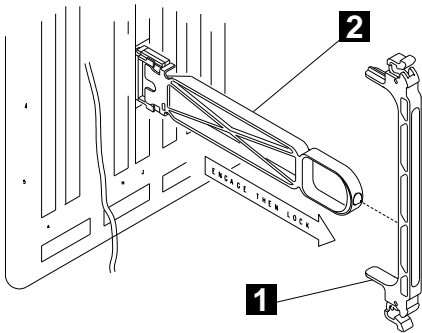
__ b. Unplug all the **BPC1** cards **2**

Figure 9. Removing a BPC1.

__ 3. Obtain the dummy cards (PN 2733278), then plug in positions where the bypass cards have been removed.

__ 4. Re-install the basic board cover.

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10.6 Exchanging the Control Panel in the 3746

10.6.1 Removing the 3746-900 Control Panel

___ 1. Remove the cover and the 4 screws **1**
___ 2. Remove the clamp and the 2 screws **2**
___ 3. Disconnect the connector **3** from the control panel.
___ 4. Disconnect the connector **4** on the Operator panel card.
___ 5. Remove the Operator panel card **5** and the 4 screws.
___ 6. Remove the Keyboard/display card **6** and the 4 screws.
___ 7. Remove the 3746-900 control panel **7** .
___ 8. Remove the cover **8** and the 2 screws
___ 9. Remove the shutter assembly **9** and the 4 screws
   ___ a. Remove the spacer **10** and the 2 screws
   ___ b. Remove the shutter **11**
   ___ c. Reinstall the spacer **10**
___ 10. Reinstall the shutter assembly **9** and the 4 screws
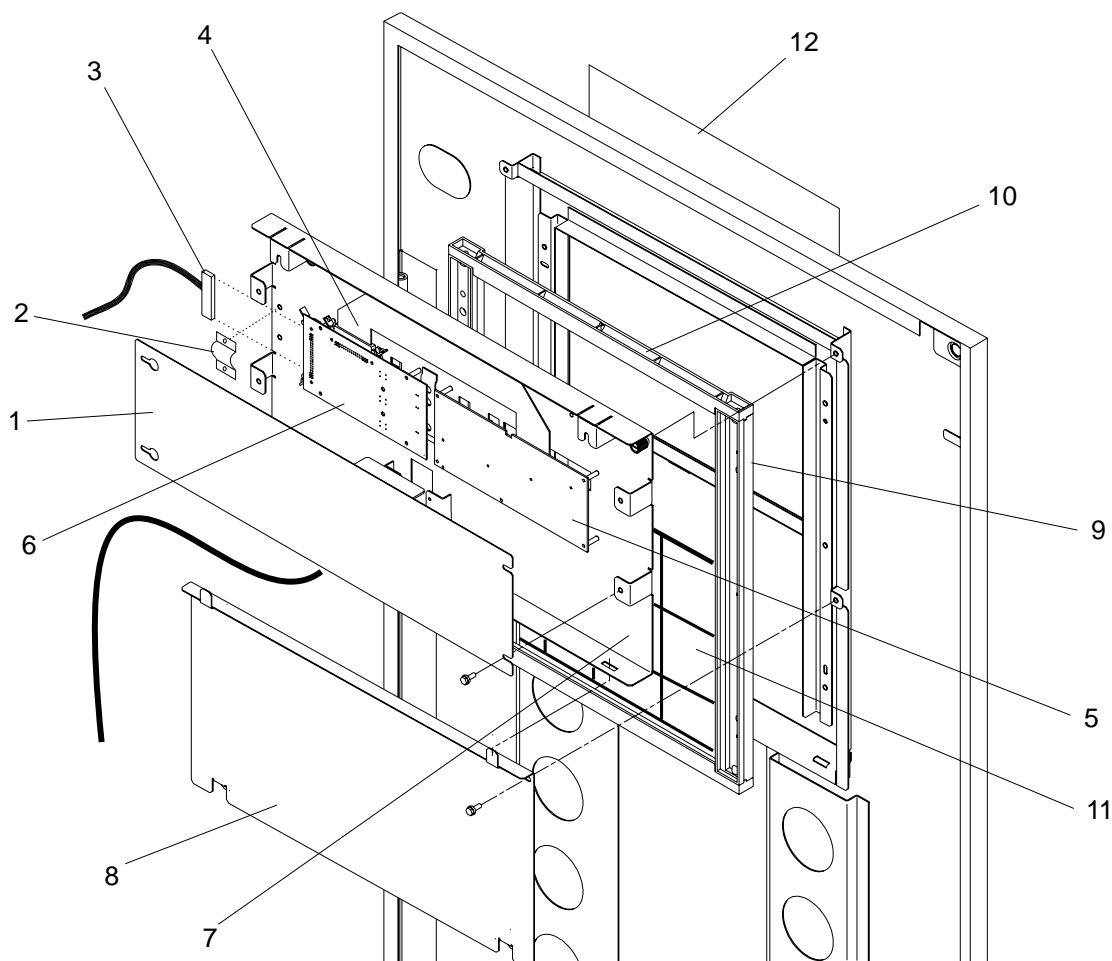___ 11. Reinstall the cover **8** and the 2 screws.

Figure 10. Control Panel Conversion to 3746-950.

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10.6.2 Installing the 3746-950 Control Panel.

Refer to Figure 10 on page 13

___ 1. Obtain the overlay **12** from the language group, then stick it on the new control panel (58G5699).

___ 2. Install the new control panel assembly **7**

___ 3. Reinstall the Operator panel card **6** and the 4 screws

___ 4. Reinstall the Keyboard/display card **5** and the 4 screws

___ 5. Reconnect the connector **4** on the Operator panel card.

___ 6. Reconnect cable **3** and fasten it with the clamp **2** .

___ 7. Reinstall cover **1** .

___ 8. Route the UEPO cable **13** thru the clamp along the frame to the bottom of the machine, then connect it to the distribution box (Position 07H-A1-J6) See Figure 11.
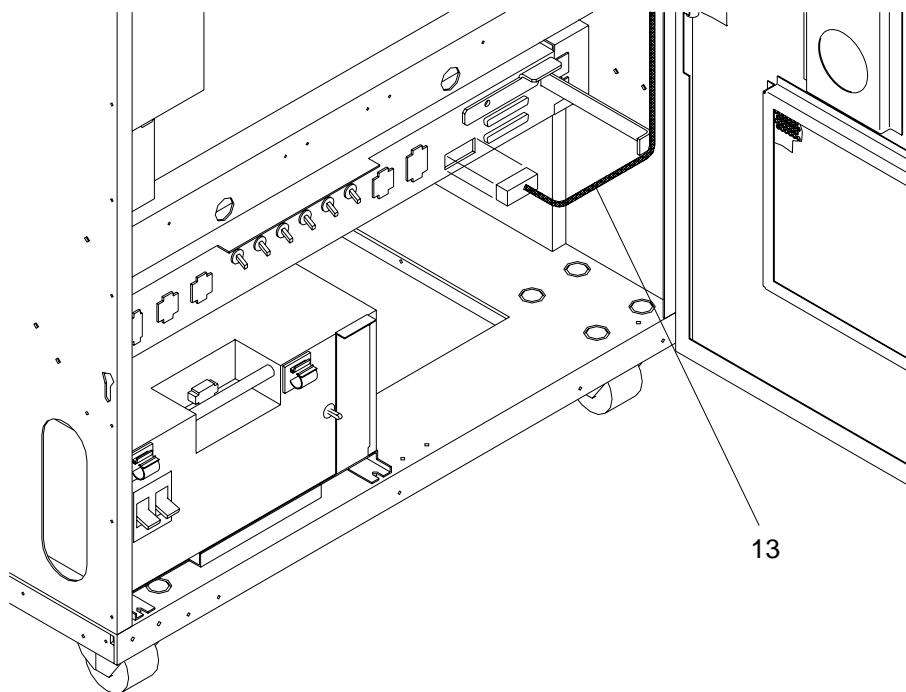

Figure 11. 3746-950 UEPO Cable connection.

10.6.3 Installing the 3746-950 Nameplates and Component Location Label.

___ 1. On the front and rear doors, replace **IBM 3746 Model 900** nameplates with the **IBM 3746 Model 950** ones (PN 58G5573).

___ 2. On the rear doors, stick the 3746-950 component location label (PN 58G5574) on the 3746-900 label.

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10.7 Setting the Service Processor.

10.7.1 Powering ON the 3746-950

___ 1. **Switch** the main circuit breaker CB1 and CP1 to **ON**, at the 3746-900 primary power box.

___ 2. Turn to **ON** the control panel switch.

___ 3. At the control panel, ensure that the Power Control window displays '3' (Local).

10.7.2 Powering ON the 3745

___ 1. Switch CB1 to **ON** at the primary power box

___ 2. Press the **Power ON** key on the 3745 control panel.

10.7.3 Splitting the 3746-900 and 3745.

___ 1. Enter the Service Processor Maintenance Password (*default is: IBM3745*)

___ 2. Double click on the **"Service Processor object icon"**.

___ 3. Click on **"Configuration Management"**.

___ 4. Double click on **"Manage 3745/3746-9x0 installation/Removal"**

___ 5. On the Controller Installation menu, click on the 3745/3746-9x0 to be split.

___ 6. Click on **3746 M.E.S 900 => 950** button.

___ 7. When general IML message appears, click on **OK**

___ 8. Follow the instructions.

___ 9. When successfully ended message appears, click on **OK**

___ 10. The Service processor reboot, follow the instructions.

10.7.4 Saving Configuration Parameters on diskette.

___ 1. Enter the Service Processor Maintenance Password

___ 2. Double click on the **Service Processor** object icon.

___ 3. Click on **"Configuration Management"**.

___ 4. Double click on the new **3746NN** object icon, then click on **Save**.

___ 5. When prompted, insert **3746-9x0 Installation Parameters** diskette (PN 17G5878).

> **Important**
>
> Repeat the procedure on all **3746-9x0 Installation Parameters** diskette copies.

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10.8 Relocating the 3746-950 or 3745-17A.

__ 1. Power **OFF** the 3745-17A (See 10.2, "Powering Off the 3745" on page 6), 3746-950 (See 10.1, "Powering Off the 3746-900" on page 6).

__ 2. If the Controller Expansion is connected to the 3746-950, Power **OFF** the equipment installed in the Controller Expansion

__ 3. Switch or ask the customer to switch the branch circuit breaker that feeds the 3746-950, 3745-17A and Controller Expansion to the **OFF** position.

__ 4. Disconnect the External Cables and Main Power Cord

   Note: It is advisable to disconnect the cables, starting at the top of the machine and working down.

__ 5. Undo the caster locking screws.

__ 6. Ensuring all cables have been disconnected, move the 3746-950 or the 3745-17A away.

__ 7. Move the 3746-950 or 3745-17A frame to it's planned location, then tighten the casters lock screws.

__ 8. Re-install the external cables and main power cord.

10.8.1 Installing the Ground Brackets on 3746-950.

If the Controller Expansion is:

- **Attached** to the 3746-950 frame go to 10.8.1.1, "Installing the 3746-950 and Controller Expansion Ground Brackets."

- **Detached** from the 3746-950 frame, go to 10.8.1.2, "Installing the 3746-950 Ground Brackets" on page 18.

10.8.1.1 Installing the 3746-950 and Controller Expansion Ground Brackets

__ 1. Remove the end covers **1**

__ 2. Remove the ground plate **2**

__ 3. Install the end ground plates **3** (PN 58G5676) using screws (PN 2665527).

__ 4. Install the front ground plate **4** (PN 58G5677) and the rear bracket **5** (PN 58G5675) using screws (PN 2665527).

__ 5. Install the rear brackets **6** (PN 58G5675) using screws (PN 2665527).

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

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Figure 12. 3746-950 and Controller Expansion Ground Brackets (Front View).

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10.8.1.2 Installing the 3746-950 Ground Brackets

___ 1. Remove the end covers **1** , then

___ 2. Remove the ground plates **2** on both side.

___ 3. Install the right and left brackets **3** (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.
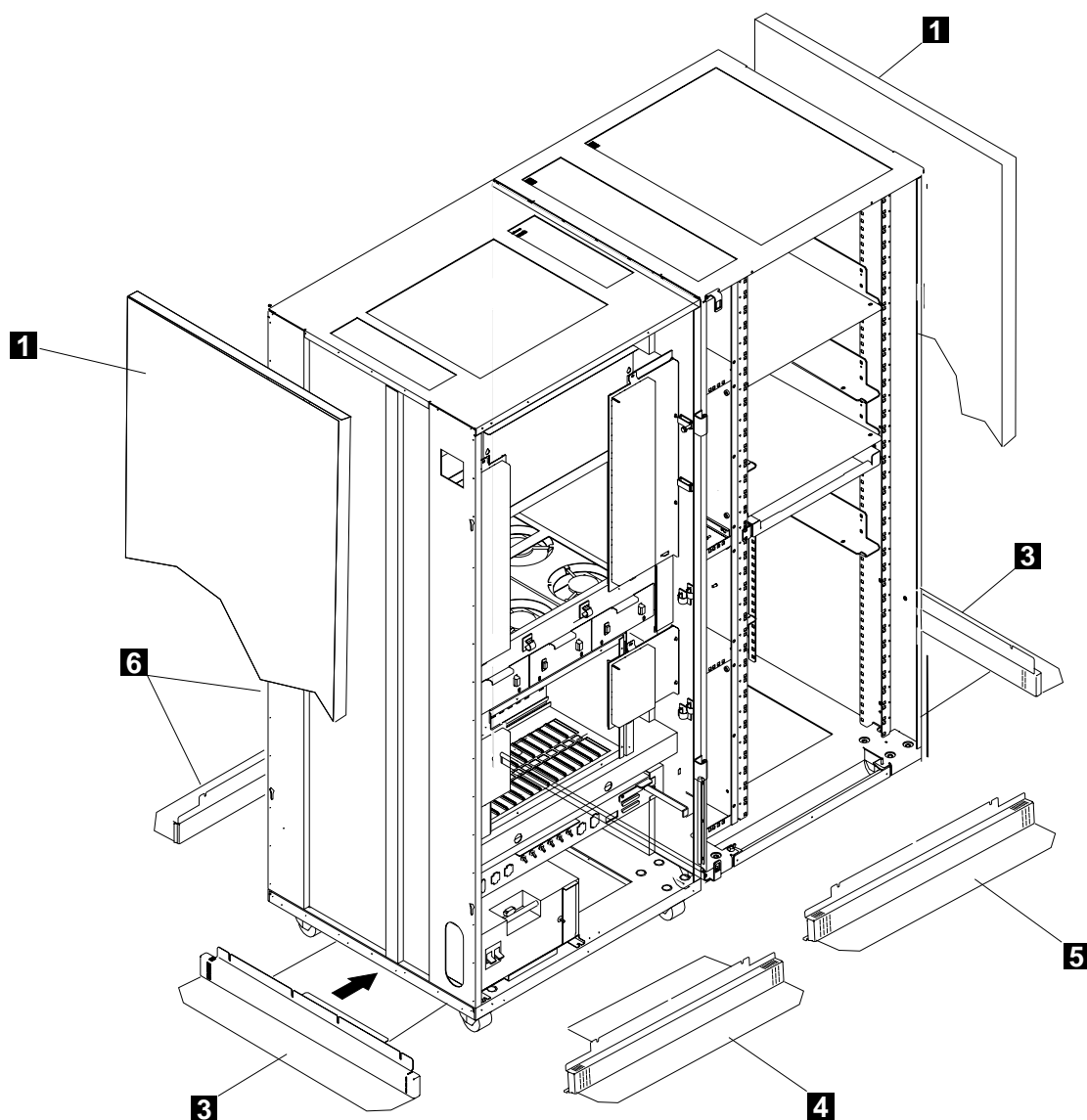
___ 4. Install the front ground plate **4** (PN 58G5677) and rear ground plate **5** (PN 58G5675) using screws (PN 2665527) then re-installed covers **1** .
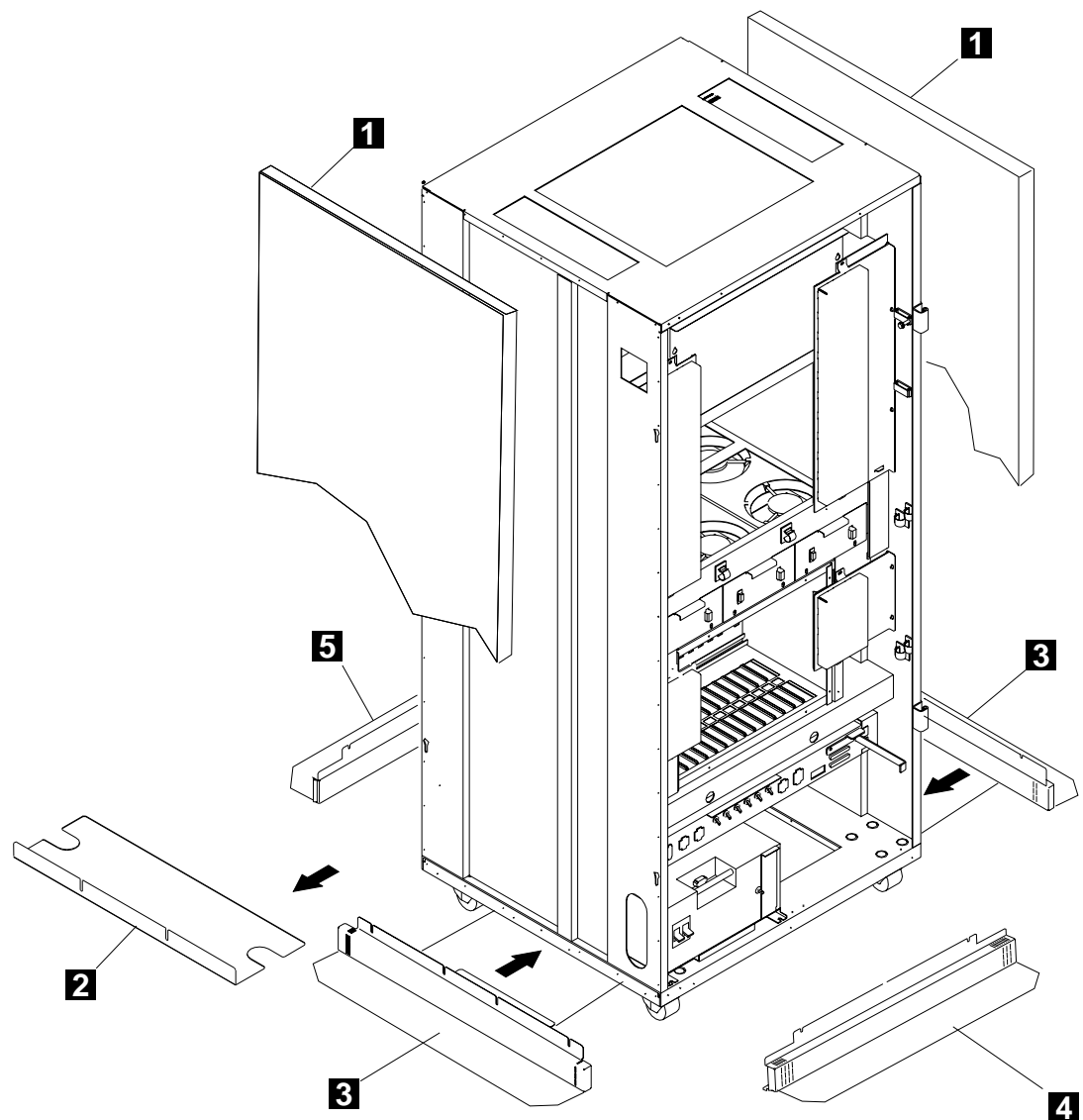

Figure 13. 3746-950 Ground Brackets (Front View).

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10.8.2 Installing the Ground Wire

If the Controller Expansion is:

- **Attached or at 6m or less** to the 3746-950 go to 10.8.2.1, "Controller Expansion Attached or at 6m or less."

- **At more than 6m** to the 3746-950 go to 10.8.2.2, "Controller Expansion at More than 6m." on page 20

10.8.2.1 Controller Expansion Attached or at 6m or less.

__ 1. Connect a ground wire (PN 58G5691) to the Controller Expansion and the other end to the building ground.

__ 2. Connect a ground wire (PN 58G5691) to the Controller Expansion and the other end to 3746-950

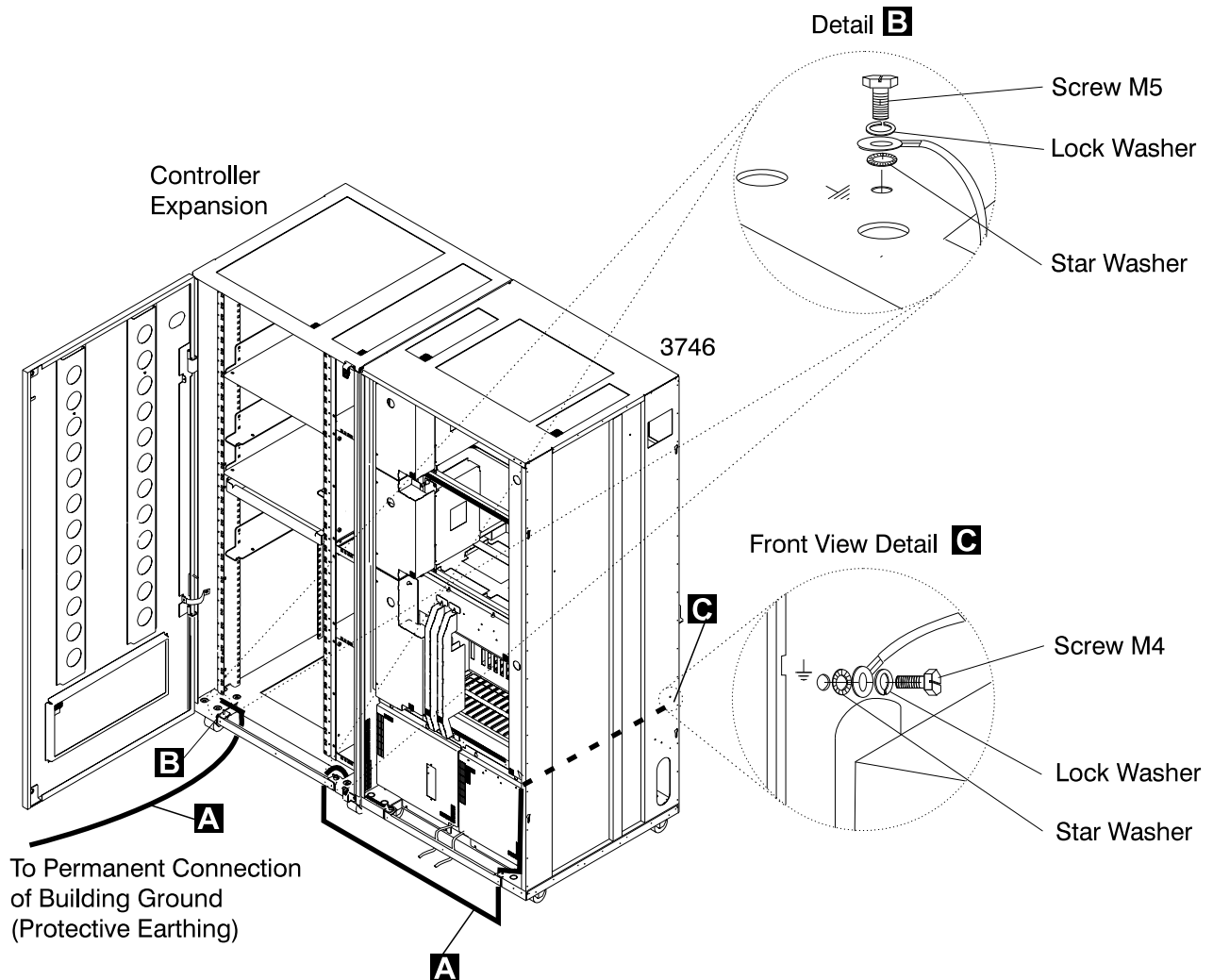Figure 14. Controller Expansion attached or at less than 6m to 3746-950

Go to 11.0, "Test Procedures" on page 23.

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10.8.2.2 Controller Expansion at More than 6m.

___ 1. Connect a ground wire (PN 58G5691) to the Controller Expansion and the other end to the building ground.

___ 2. Connect a ground wire (PN 58G5691) to the 3746-950 and the other end to the building ground.

Front View Detail **C**

Screw M4

Lock Washer

Star Washer

More than 6 m

Controller Expansion

B

To Permanent Connection of Building Ground (Protective Earthing)

Detail **B**

Screw M5

Lock Washer

Star Washer

C

3746 Rear

A

To Permanent Connection of Building Ground (Protective Earthing)

Figure 15. Controller Expansion at more than 6m to 3746-950

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10.8.3 Powering ON the Controller Expansion and 3746-950

__ 1. Switch or ask the customer to switch the branch circuit breaker that feeds the 3746-950 and Controller Expansion to the **ON** position.

__ 2. Power **ON** all the equipment in the Controller Expansion attached to the 3746-950.

__ 3. Powering ON the 3746-950

__ a. **Switch** the main circuit breaker CB1 and CP1 **ON** at the 3746-900 primary power box.

__ b. At the control panel, ensure that the Power Control window displays '3' (Local),

10.8.4 Removing the Bracket-Spacer on the 3745-17A

__ 1. Remove the 4 screws **1** and the 3745-17A top cover **2**

__ 2. Remove the bracket-spacer (PN 58G5428) **3** on either the left or right top side of the 3745-17A.

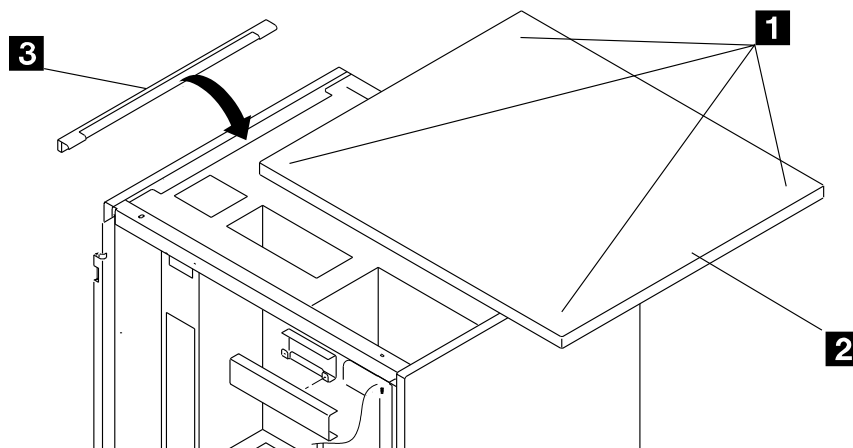__ 3. Reinstall the top cover **2** and the 4 screws **1** .

Figure 16. Bracket-Spacer Installation

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10.8.5 Installing the Ground Brackets on 3745-17A.

___ 1. Install the ground plate **1** (PN 58G5306) on the bottom rear frame of the 3745 using three screws (PN 1621210). Do not tighten the screws now.

___ 2. Install covers **2** (PN 58G5336) on top of the ground plate **1** .

___ 3. Secure the cover **2** by sliding brackets **3** in the screws **4** . When the brackets are in place, tighten all the screws which maintain the ground plate **1** .

___ 4. Install plates **5** (PN 58G5308) on the edges of the ground plates installed using four screws (PN 1621191).
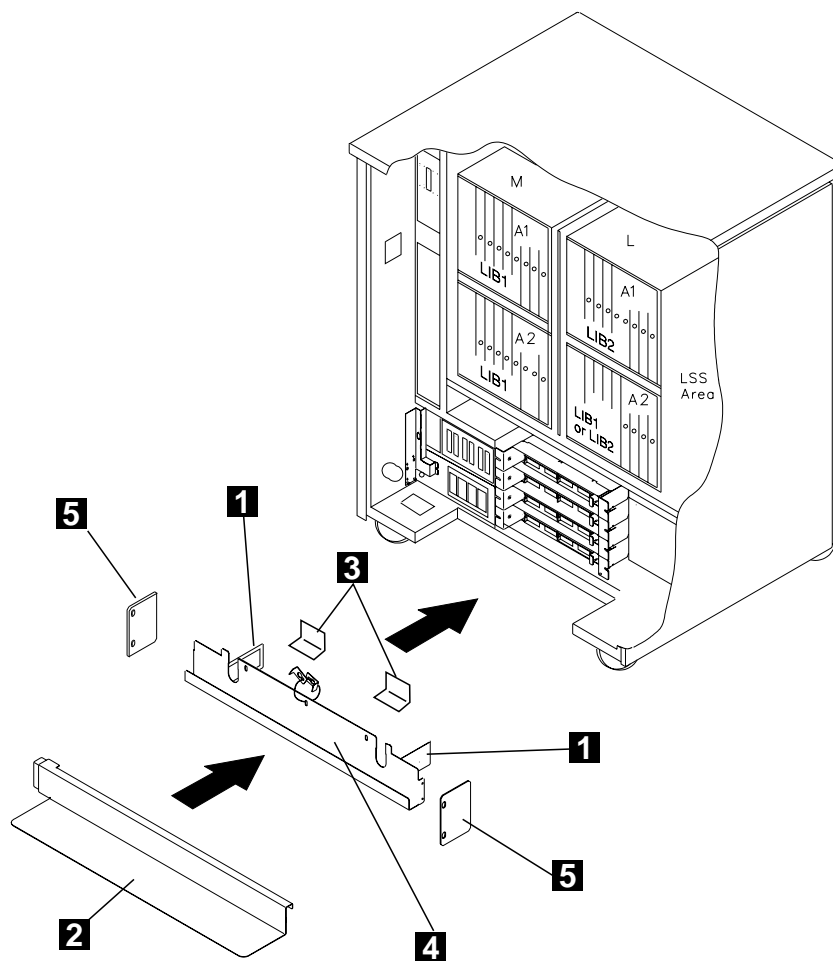
Figure 17. 3745-17A Ground Brackets (Rear View).

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10.8.6 Powering ON the 3745

___ 1. Switch or ask the customer to switch the branch circuit breaker that feeds the 3745-17A to the **ON** position.

___ 2. Switch CB1 to **ON** at the primary power box

___ 3. Press the **Power ON** key on the 3745 control panel.

10.8.7 Testing the 3745

___ 1. Run **CDF verify** (refer to chapter " CDF Verify" *3745/210-61A Service Functions*, SY33-2055, or *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054 in case of a problem.

___ 2. Run the IOC and DMA diagnostics

___ 3. Ask the customer to re-start and check the network on the 3745.

10.9 Returning the Machine to the Customer

___ 1. Inform the Customer that the 3746-950 and 3745-17A are now ready for operation.

11.0 Test Procedures

Not applicable

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After Installation (steps 12-15)

12.0 Field Updating

Ensure that both the 3745 and 3746-9x0, types and models, 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:

- The seven digit serial number of the 3745 and 3746-9x0 are correct.
- The three digit model designation for the 3745 and 3746-9x0 are correct.

13.0 Publications Update

Install the 3746-950 documentation delivered according to the Pubication Reference Drawing (PRD).

14.0 Parts Disposition

15.0 Machine Records

- Record in the **MACHINE HISTORY** the new EC D55806 installed.

- Report installation and quality to existing procedures.

End of instructions.

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