

146R (48-CIRCUIT) MOUNTING CABINET
DESCRIPTION AND INSTALLATION
"OMNIPOINT*" NETWORK CHANNEL TERMINATING EQUIPMENT

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B. Power Cord	2	1.01 This practice provides description, application, and installation information for the OMNIPOINT NCTE (Network Channel Terminating Equipment) 146R 48-circuit mounting cabinet. Specifications for this cabinet are provided in Table A. A general description of OMNIPOINT NCTE is listed in AT&T Practice 332-620-100.	
C. Backplane Connections	3	1.02 When this practice is reissued, the reason(s) for reissue will be listed in this paragraph.	
Cable Routing	3	1.03 The 146R mounting cabinet is part of the OMNIPOINT NCTE family of customer premises equipment (both mounting and circuit packs) for voice-frequency special services, maintenance, analog data, and digital services.	
Restraining Straps	3	2. APPLICATION	
Customer Connections	3	2.01 The 146R mounting cabinet is a universal 400-type mounting for voice-frequency special services, maintenance, analog data, and digital services.	
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3. DESCRIPTION

A. Mounting

3.01 The 146R 48-circuit mounting cabinet shown in Fig. 1 contains four 12-circuit mounting shelves, a -48 volt 6-ampere dc power supply with fuse panel, and a 5-outlet ac power strip. The cabinet is equipped with lockable doors on the front and rear for equipment security while also providing easy access to the mounting shelves. The doors can be removed, if desired, by lifting the door to free the hinge from the hinge-pin.

3.02 The 146R cabinet is 49.5 inches high, 26 inches wide, and 21.5 inches deep, and weighs approximately 200 pounds without circuit packs. The cabinet is equipped with locking casters and screw-down levelers for positioning.

3.03 Customer and network connections are made using four 50-position miniature ribbon plugs on the backplane of each shelf. A decal showing the backplane lead plan is provided on the inside of both cabinet doors. A copy of the decal is shown in Fig. 2. A rear view of a shelf backplane is shown in Fig. 3. Wire-wrap pins are available on the backplane of each shelf to allow connections to circuit packs that do not match the OMNIPORT NCTE lead plan. The wire wrap pins can also be used to customize the mounting for a particular application.

B. Power Supply

3.04 A -48 volt, 6-ampere dc power supply and fuse panel is mounted at the bottom of the cabinet. Factory installed wiring connects the power supply and fuse panel to groups of six circuit pack mounting slots. A power distribution schematic (see Fig. 4) on the inside of the front door shows the fuse assigned to each group of six mounting slots. The DS1 lamp on the fuse panel will light when a fuse is blown.

3.05 If a circuit application requires a power supply other than -48 volts dc, a receptacle-mounted power supply can be mounted on the power strip on the right-hand side of the cabinet (viewed from the rear of cabinet). Connections must be made from the receptacle-mounted power supply to the appropriate power and ground terminals on the affected shelf backplane. For example, a ±12 volt dc power supply will require connections to the +12V, -12V, the two GRD, and the FGRD terminals on the

backplane of the shelf to be powered. A listing of OMNIPORT NCTE receptacle-mounted power supply kits can be found in AT&T Practice 332-620-100.

C. Ringing

3.06 If required, ringing can be supplied to a shelf by inserting a BPT1 circuit pack ringing generator, or equivalent, in any slot of the shelf. Ringing generator connections are bused between the appropriate pins of each card-edge connector so one circuit pack ringing generator will supply ringing to the remaining 11 slots of the shelf. A separate circuit pack ringing generator will be needed for each shelf requiring ringing.

3.07 An external ringing generator can also be used by connecting the ringing generator leads to the RS, MS, and RR terminals on the backplane of each shelf (see paragraph 4.07).

4. INSTALLATION

A. Location Selection

4.01 The cabinet location must be selected to provide access to a 3-pronged, 60-Hz, 117-volt ac receptacle. The cabinet is equipped with a 15-foot power cord. If the cabinet location is such that access to the rear door and shelf backplanes will require moving the cabinet, cabling should be provided and arranged so the cabinet can be moved as necessary.

B. Power Cord

4.02 The power cord is routed out of the cabinet as follows:

- Place power cord plug through cable restrainer at center of panel below cabinet rear door.
- Pull enough cord through restrainer to reach power receptacle.

Note: Do *not* plug power cord into ac receptacle at this time.

- Tighten cable restrainer until snug against power cord.

- Coil excess power cord inside cabinet and restrain to prevent damage when moving cabinet.

C. Backplane Connections

Cable Routing

4.03 Cabling for backplane connections enters through the bottom of the cabinet or through the opening below the rear door and is routed up the left side to the appropriate 50-pin miniature ribbon plugs. Tie cables to vertical mounting supports as shown in Fig. 5.

Restraining Straps

4.04 Customer and network 50-position plugs are held in place by loop-and-hook type restraining straps. To use these restraining straps:

- Thread strap loosely through slot in bracket.
- Slip 50-position connector through threaded strap and fasten connectors together.
- Tighten strap and place loop and hook sections of strap together to secure connectors.

Customer Connections

4.05 Customer equipment connections are made using plugs P3 and P4 on each of the shelf backplanes. Connect customer equipment leads for circuits 1 through 6 to connector P3. Connect customer equipment leads for circuits 7 through 12 to connector P4. Figure 5 shows the connector locations and Fig. 2 shows the connector lead plans. Table B provides an explanation of lead functions.

Network Connections

4.06 Network connections are made using plugs P1 and P2 on each of the shelf backplanes. Con-

nect network transmission leads to connector P1. Connect look-ahead sensing leads, if used, to connector P2. (Look-ahead sensing leads are used in some BPT10 maintenance terminating unit applications.) Figure 5 shows the connector locations and Fig. 2 shows the connector lead plans. Table C provides an explanation of the lead functions.

External Ringing Generator Connections

4.07 If an external ringing generator is used, the generator leads must be connected to each shelf backplane as follows:

- Connect -48 volt superimposed ringing source lead to RS terminal.
- Connect ringing source return lead to RR terminal.
- If required, connect ringing machine start lead to MS terminal.

D. Final Steps

- 4.08** Restrain cables with cable ties as shown in Fig. 5.
- 4.09** Close rear door and, if necessary, move cabinet to desired position.
- 4.10** Lock casters or adjust levelers on bottom of cabinet.
- 4.11** Plug power cord into a 3-pronged, 60-Hz, 117-volt ac receptacle.
- 4.12** Provision circuit packs per local instructions and insert circuit packs in mounting slots.
- 4.13** Mark type of service on label below each circuit pack slot.
- 4.14** Close front door.

TABLE A

146R 48-CIRCUIT MOUNTING SPECIFICATIONS

<u>GENERAL</u>	
CLEI CODE	NCMA070A
DIMENSIONS (H, W, D in Inches)	49½ × 26 × 21½
WEIGHT	200 Pounds
TEMPERATURE	
Operating	0° C to 50° C
Storage	-40° C to 66° C
HUMIDITY	5 Percent to 95 Percent Relative
POWER SUPPLY	-48 V dc, 6A (Factory Installed)
	Receptacle-Mounted Power Supplies Can Be Mounted on Power Strip to Provide Voltages Other Than -48 V dc. Connections to the Power Buses Are Provided on Screw Terminals on Each Shelf Backplane
<u>PROVISIONS FOR RINGING</u>	
CIRCUIT PACK RINGING GENERATOR	BPT1 or Equivalent (one per shelf)
EXTERNAL RINGING SOURCE	Connections to Ringing Buses Are Made Using RS, RR, and MS Terminals on Shelf Backplanes
<u>INPUT/OUTPUT CONNECTIONS (PER SHELF)</u>	
Customer	Two 50-Position Ribbon Connectors
Network	Two 50-Position Ribbon Connectors

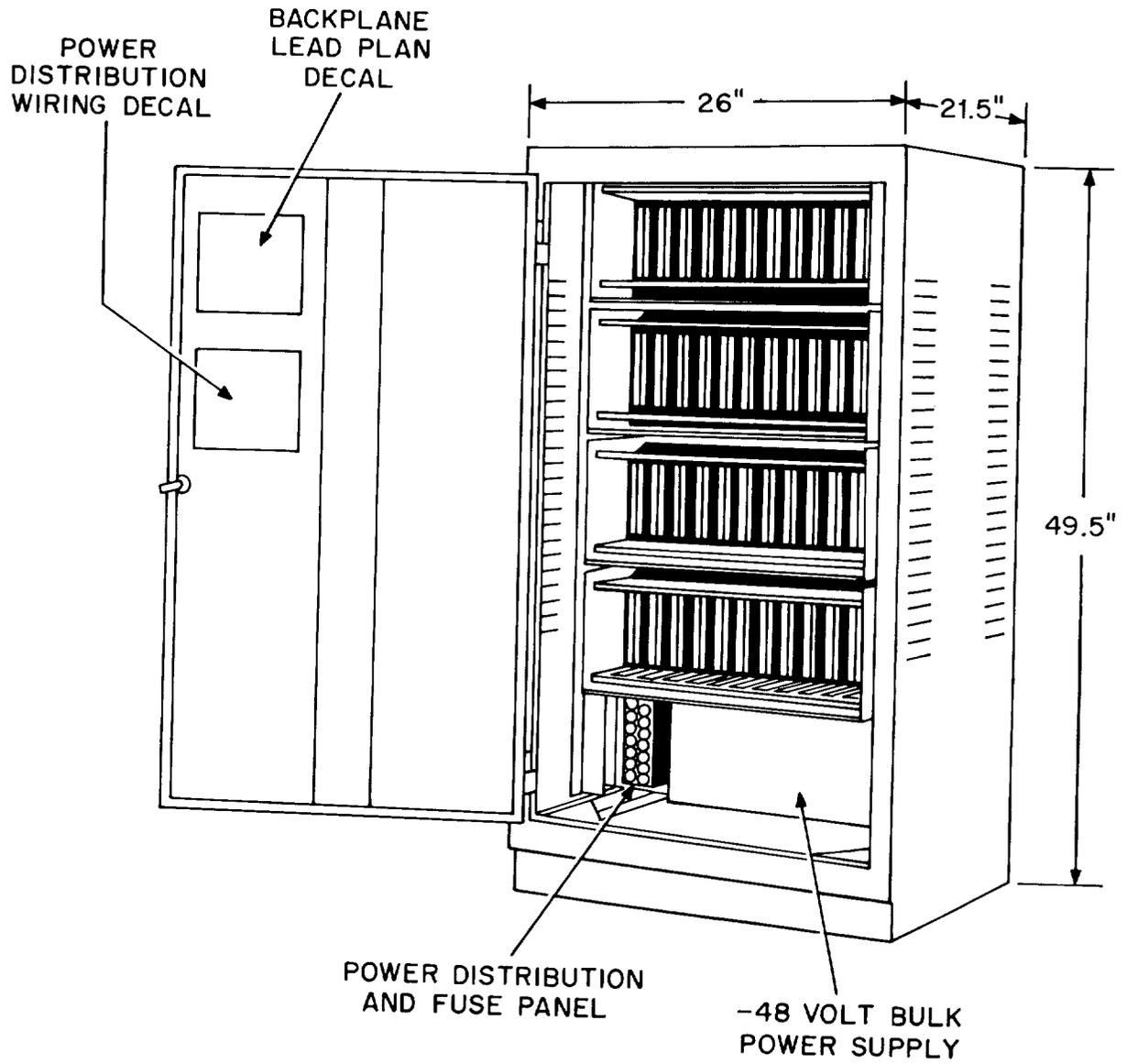


Fig. 1—146R 48-Circuit Mounting Cabinet

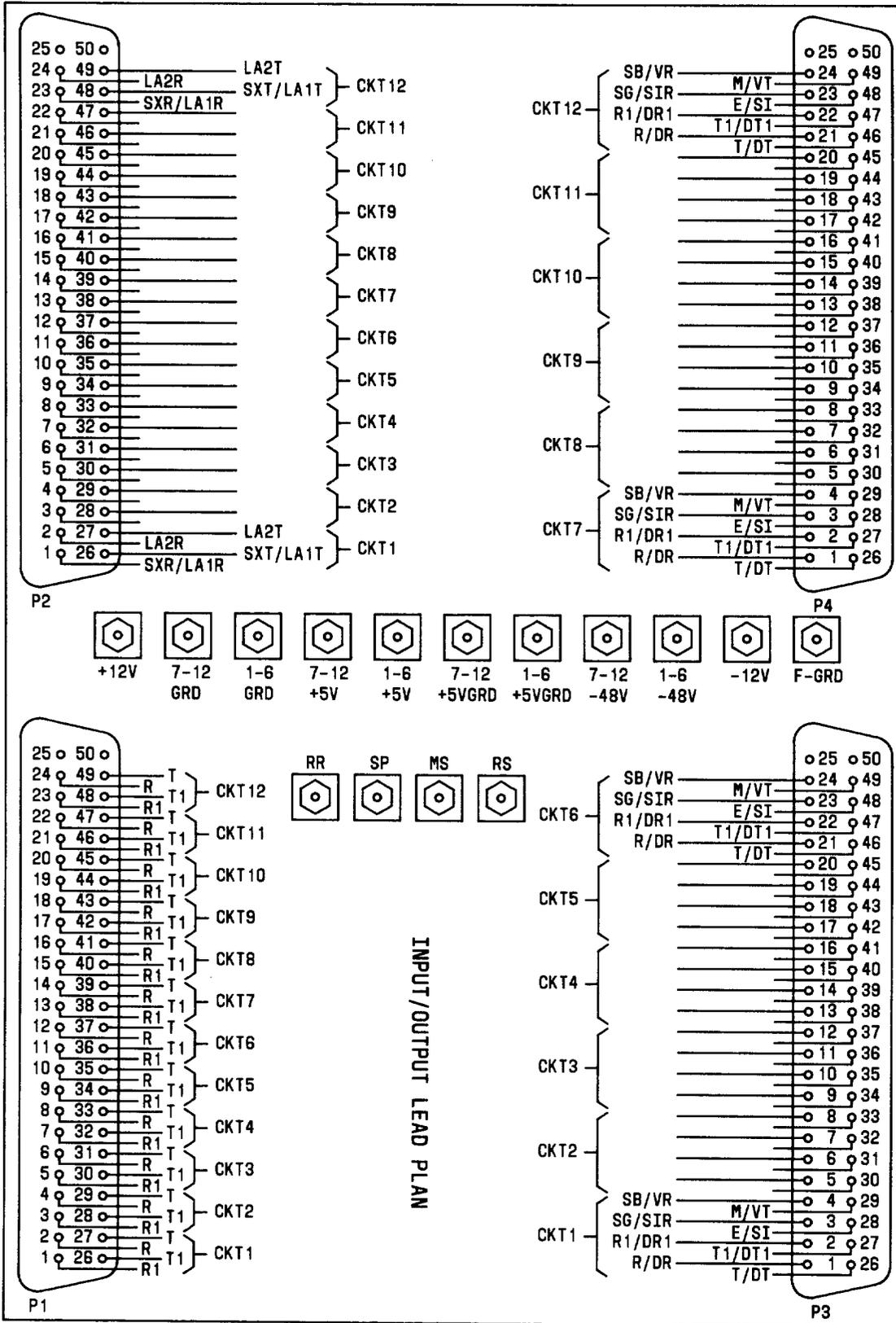


Fig. 2— Shelf Backplane Lead Plan

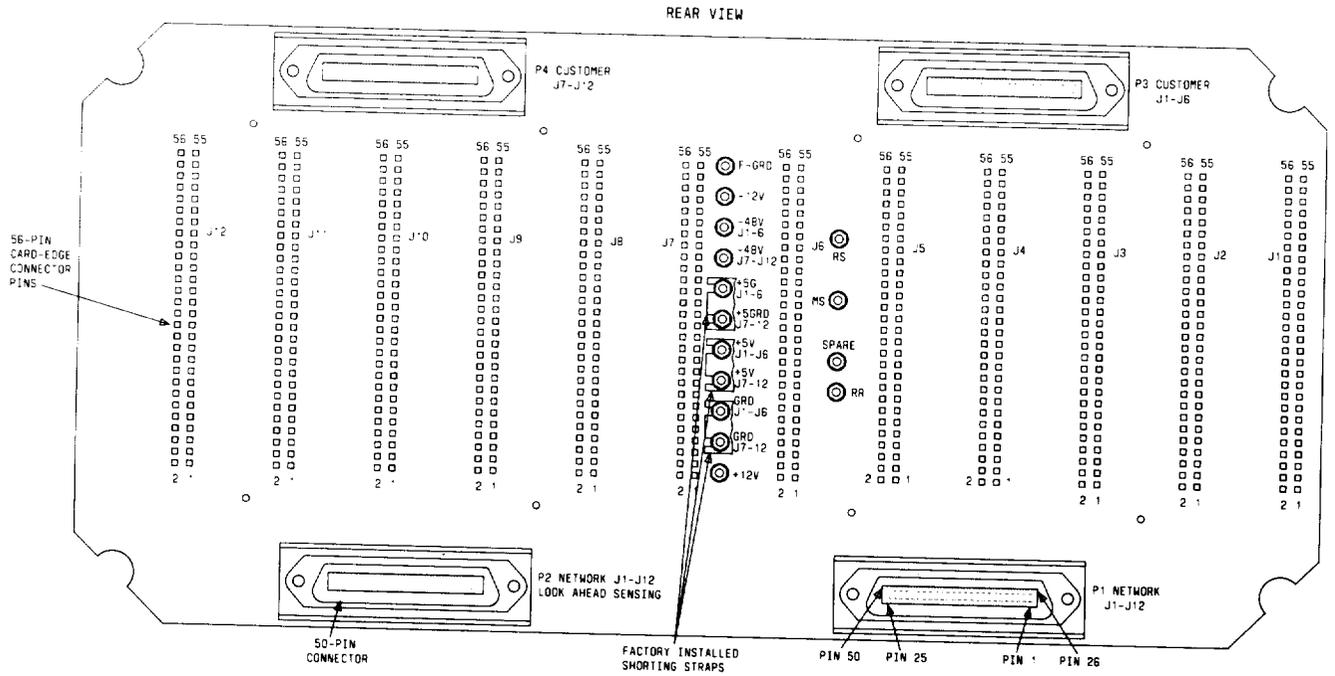


Fig. 3—Rear View of Shelf Backplane

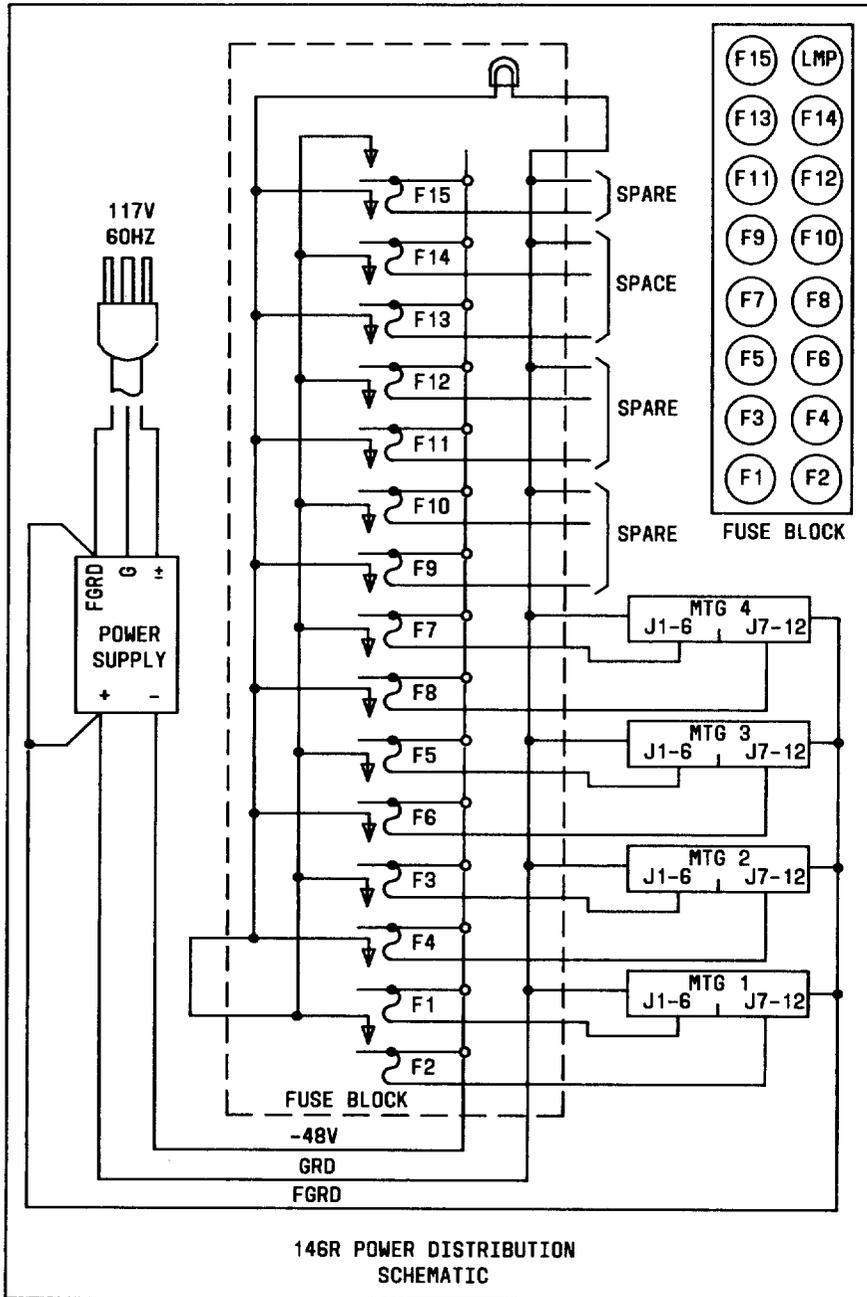


Fig. 4—Power Distribution Schematic

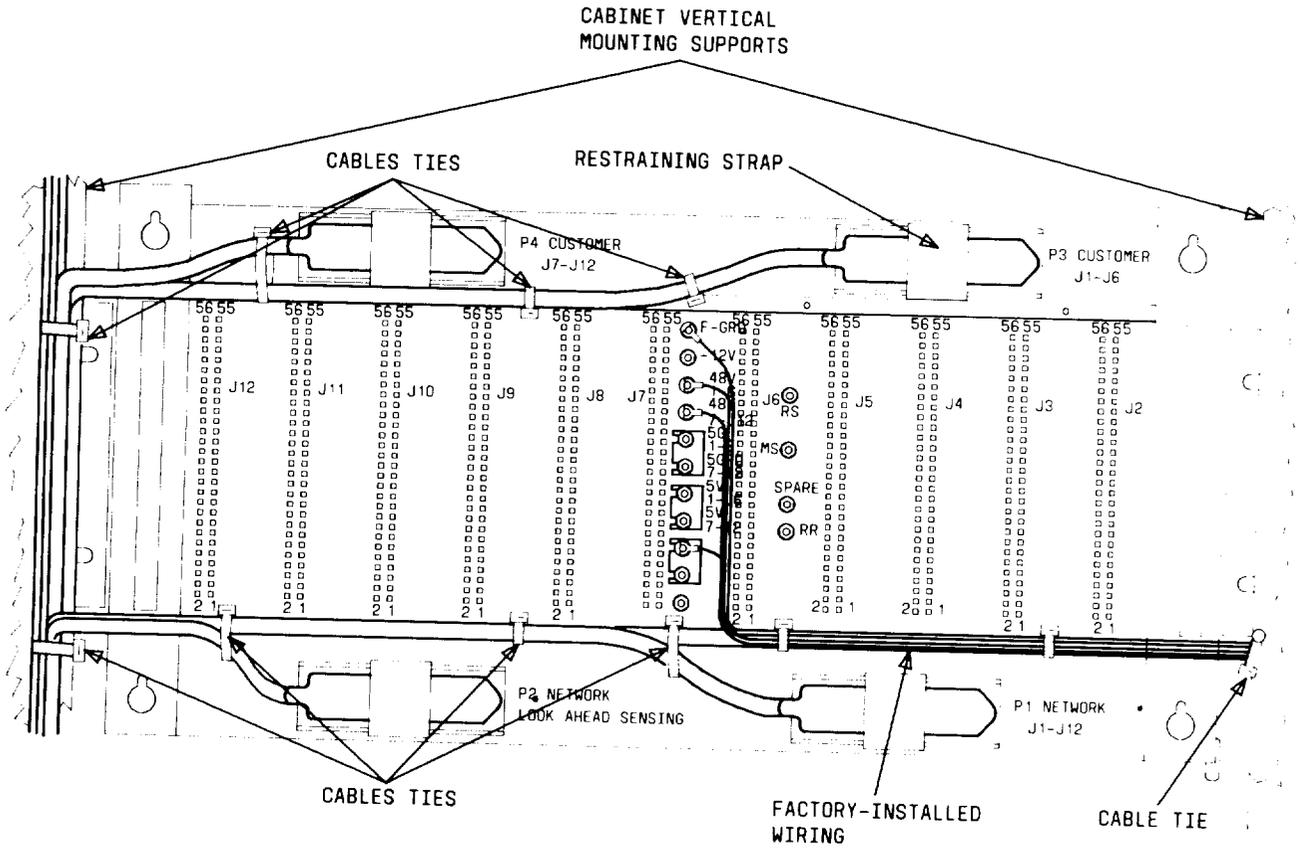


Fig. 5—Backplane Connections (1 of 4 Shelves)

TABLE B		
CUSTOMER INTERFACE LEAD FUNCTIONS		
DESIG	CARD-EDGE CONNECTOR PIN (NOTE)	LEAD FUNCTIONS
T/DT	55	Tip Toward Customer or Data Tip Toward Customer
R/DR	49	Ring Toward Customer or Data Ring Toward Customer (T/DT and R/DR Leads Are Transmit and Receive Pair for 2-Wire Services, or Transmit Input Pair for 4-Wire Services)
T1/DT1	5	Tip 1 Toward Customer or Data Tip 1 Toward Customer
R1/DR1	15	Ring 1 Toward Customer or Data Ring 1 Toward Customer (T1/DT1 and R1/DR1 Leads Are Receive Output Pair for 4-Wire Services)
E/SI	23	E Signaling Lead Toward Customer or Status Indicator Toward Customer
SG/SIR	19	Signal Ground Lead Toward Customer or Status Indicator Return Toward Customer
M/VT	21	M Signaling Lead Toward Customer or Voice Tip Toward Customer
SB/VR	1	Signal Battery Lead Toward Customer or Voice Ring Toward Customer (VT and VR Leads Are Voice Pair for Alternate Voice Data Services)
Note: The 50-position ribbon connector pin numbers are shown in Fig. 2.		

TABLE C		
NETWORK INTERFACE LEAD AND TERMINAL FUNCTIONS		
DESIG	CARD-EDGE CONNECTOR PIN (NOTE)	LEAD FUNCTIONS
T1	41	Tip 1 Toward Network
R1	47	Ring 1 Toward Network (T1 and R1 Leads Are Transmit and Receive Pair for 2-Wire Services, or Transmit Output Pair for 4-Wire Services)
T	7	Tip Toward Network
R	13	Ring Toward Network (T and R Leads Are Receive Input Pair for 4-Wire Services)
SXT/LA1T*	43	Transmit Simplex Lead Toward Network or Look-Ahead Sensing Option Tip Lead (Circuit 1)
SXR/LA1R*	9	Receive Simplex Lead Toward Network or Look-Ahead Sensing Option Ring Lead (Circuit 1)
LA2T*	45	Look-Ahead Sensing Option Tip Lead (Circuit 2)
LA2R*	11	Look-Ahead Sensing Option Ring Lead (Circuit 2)
-48V	35	-48 Volt Battery Supply
GRD	17	-48 Volt and ± 12 Volt Battery Supply Ground (COM)
+12V	10	+12 Volt Battery Supply
-12V	48	-12 Volt Battery Supply
+5V	26	+5 Volt Battery Supply
5GRD	28	+5 Volt Battery Supply Ground
FGRD	52	Frame Ground (ACGND)
RS	46	Ringing Source
RR	12	Ringing Source Return
MS	30	Ringing Machine Start
SPARE	18	Spare Bus

Note: The 50-position ribbon connector pin numbers are shown in Fig. 2. Location of power, ground, and ringing terminals are shown in Fig. 3.

* Look-ahead sensing option leads are used only with BPT10 dual 2-wire maintenance terminating unit.