

**AT&T System 75
and System 75 XE
Wiring**

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1. INTRODUCTION

This is one of three documents (Figure 1-1) required for the installation of the System 75 or the System 75 XE. This guide explains the hardware, job planning, equipment ordering, and installation information from:

- The telephone company network interface up to and including the 25-pair cables that connect directly to the switch and
- The main equipment room cross-connect field and cabling from this field to the switch cabinet and to the 8-pin modular wall jacks (information outlets).

Unless a statement is made that a topic is strictly for the System 75 or the System 75 XE, all information in this document refers to both systems.

The other two documents required for the installation of the System 75 or System 75 XE are as follows:

AT&T System 75—Installation and Test (555-200-104):

Contains information for installing and testing the System 75 switch and the attendant console. (For continuity purposes, wiring of the attendant console is also covered in this guide.)

AT&T System 75 XE—Installation and Test (555-201-104):

Contains information for installing and testing the System 75 XE switch and the attendant console. (For continuity purposes, wiring of the attendant console is also covered in this guide.)

AT&T System 75 and System 85—Terminal Installation and Test (999-700-214IS):

Contains information for the installing and testing of the voice terminals and their associated adjuncts.

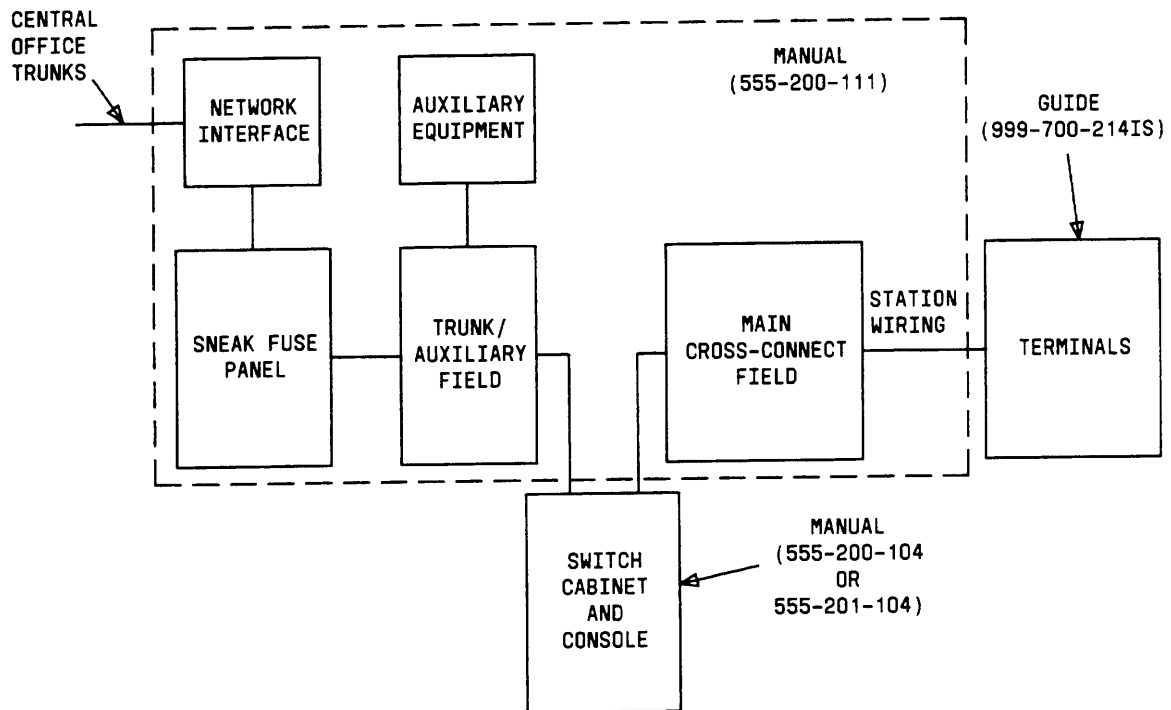


Figure 1-1. Documentation Block Diagram

ORGANIZATION

This guide is organized into five sections:

- SECTION 1—INTRODUCTION

Contains an overview of the system Uniform Wiring Plan and presents general guidelines on hardware selection and manual organization.

- SECTION 2—Z100-TYPE MODULAR HARDWARE

Contains an explanation of Z100-type and associated hardware, job planning, equipment ordering codes, and how to install the hardware.

- SECTION 3—110-TYPE HARDWARE

Contains an explanation of 110-type and associated hardware, job planning, equipment ordering codes, and how to install the hardware.

- SECTION 4—66-TYPE HARDWARE

Contains an explanation of 66-type and associated hardware, job planning, equipment ordering codes, and how to install the hardware.

- SECTION 5—GLOSSARY

Contains a brief description of some of the terms used in this guide.

- SECTION 6—INDEX

Contains a permuted index.

Use of Guide

This guide will be helpful in planning, designing, and installing a cost-effective wiring installation that allows moves, changes, and additions to be made quickly and easily. To make the best use of this guide, take the time to read it thoroughly and become familiar with its contents and organization. For quick access to information needed to answer most questions, simply refer to the table of contents and locate the specific item in question.

To answer questions requiring more information than this guide contains, consult the documents listed previously in this introduction section. If you need additional help, contact the Premises Services Consultant (PSC).

For further technical assistance, the recommended channel for AT&T System Technicians is as follows:

1. Contact your Field Assistance and Support Team (FAST).
2. If a satisfactory answer is not obtained from the FAST center, contact your supervisor.
3. Your supervisor should contact the regional staff, if necessary.

Equipment

Most of the items specified in this guide are available through your local AT&T Information Systems Marketing Branch Office (MBO). However, some common use hardware items may have to be obtained from other sources.

GENERAL

Station wiring has a significant role in today's customers' information systems. Technological innovations have enabled both voice and data transmission to be provided through communications system wiring and have simplified wiring by significantly reducing the number of cable pairs required by terminals with enhanced feature options.

This guide provides planning, ordering, and installation guidelines for a system Uniform Wiring Plan (Figures 1-2 and 1-3) using Z100-, 110-type, or 66-type hardware.

The system switch ports for data and voice terminals require three pairs of wire per circuit. Voice terminal adjuncts require an additional pair for remote powering. To provide maximum flexibility for voice terminal changes, rearrangements, and powering, all data and voice terminal information outlets are wired with 4-pair cable. With proper administration, this will allow any terminal to be located at any information outlet.

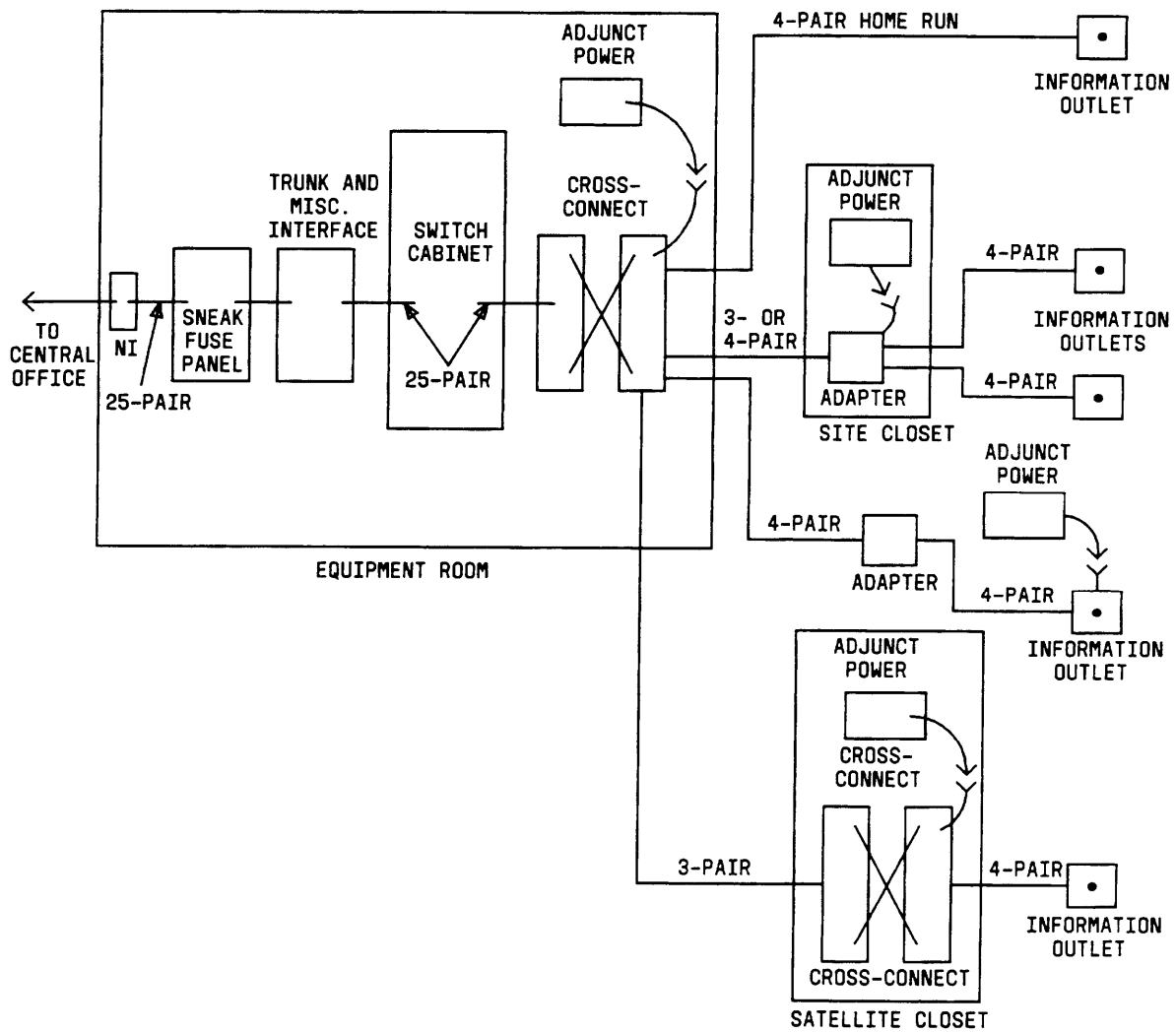


Figure 1-2. System Uniform Wiring Plan

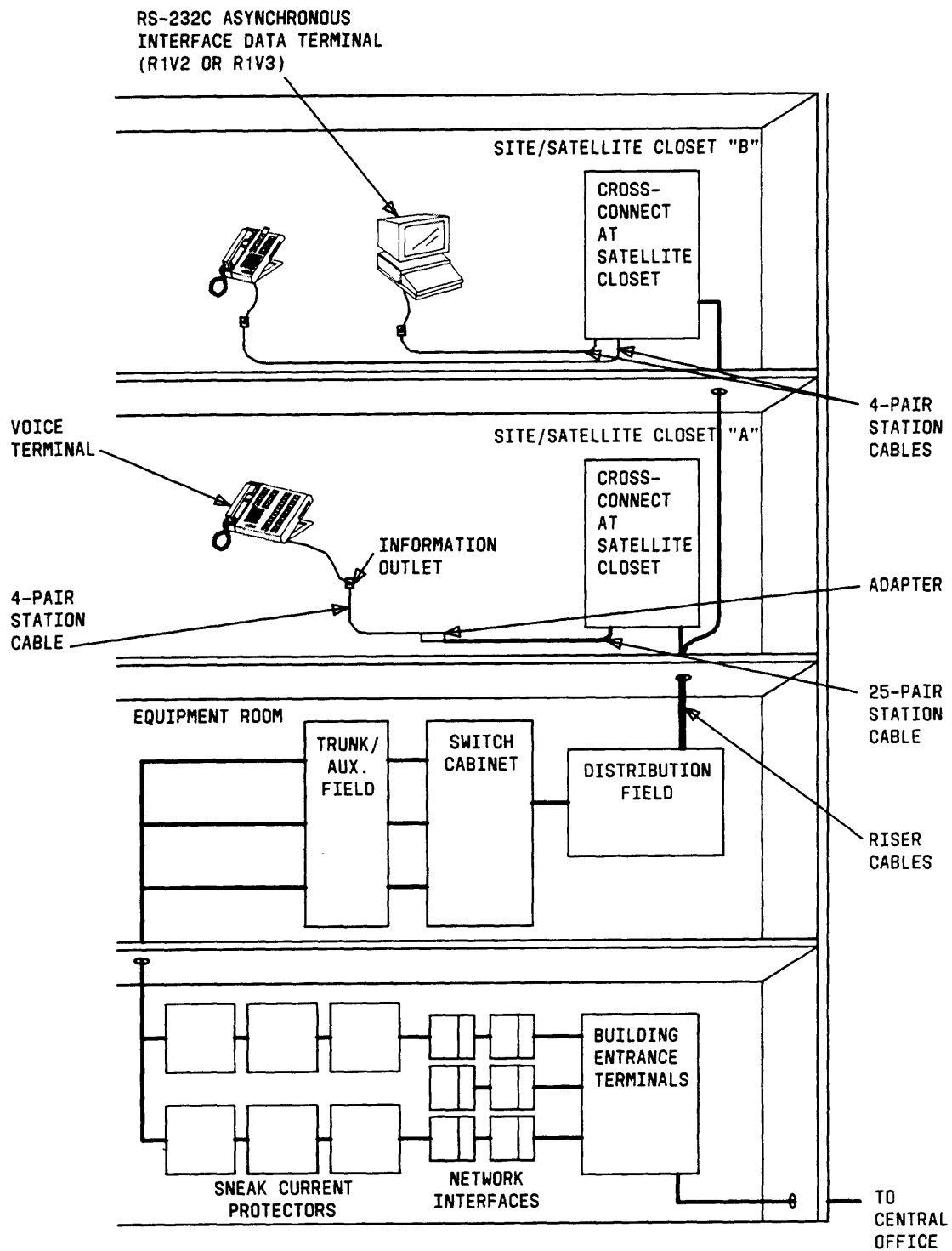


Figure 1-3. Sample Uniform Wiring Installation

CROSS-CONNECT HARDWARE SELECTION

The following cross-connect hardware for new wiring installations is listed for the system. Following each list item are considerations that should help to determine the appropriate selection.

1. Z100-Type Hardware

- Designed particularly for customer participation in cross-connect administration due to patch cord design
- Does not require technical skills for cross-connect administration
- Firm quote price list for all installations up to 150 stations

2. 110P Hardware

- Customer participation in cross-connect administration due to patch cord design
- Requires some amount of technical skill for cross-connect administration

3. 110A Hardware

- Not designed for customer participation in cross-connect administration—requires technically skilled personnel due to use of jumper wires
- Less expensive material cost than the patch cord systems, but more expensive installation and administrative labor cost

4. 66-Type Hardware

- Not designed for customer participation in cross-connect administration—requires technically skilled personnel due to use of jumper wires
- Less expensive material cost than the patch cord systems, but more expensive installation and administrative labor cost

Obviously, the customer's degree of interest and preference for administering his or her own cross-connections (because of likely lower *total annual costs*, as well as preference for administering his or her cross-connect field at his or her convenience) should be given primary consideration in recommending cross-connect hardware.

WIRING HARDWARE CHANGES

All jobs engineered by Premises Services Consultants (PSCs) based on customer requirements and preferences **should not** be redesigned by the Field Services Organization (FSO) without approval by the PSC/Marketing Branch Office (MBO). A change order must be issued to affect billing.

PLANNING

The following brief introductory information will help you design a uniform wiring plan with sufficient growth potential. The plan is flexible, simple, easy to administer, and reasonable in cost.

Job Aids

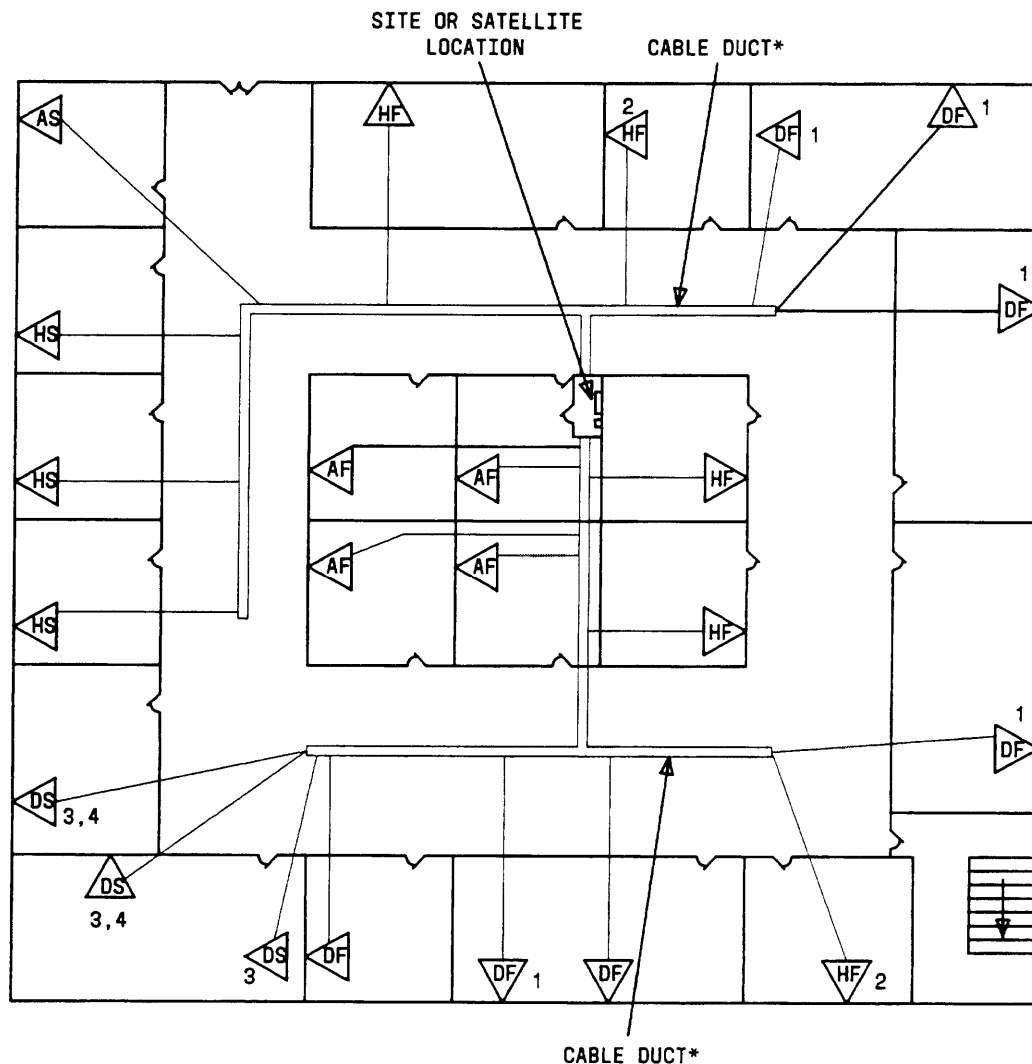
Blueprints (floor plans) are an important tool when planning, designing, and installing station wiring. The floor plans (Figure 1-4) provide a complete view of all conduit and other cabling facilities placed during construction of the building. These facilities should be considered when planning site or satellite locations and cabling.

Terminals

The number of information outlets to be installed per terminal location should be determined by your requirements. It may also be advantageous to initially install any additional information outlets that may be required for future growth or terminal rearrangements.

To begin designing the station wiring, indicate the following information on the floor plan(s):

- Location of each information outlet and associated terminal type if known (analog, hybrid, or digital)
- Any associated terminal adjuncts or modules and the required powering arrangements.



* AN OPTION TO THE CABLE DUCT SHOWN IS TO RUN CABLES (PLENUM-APPROVED, IF APPROPRIATE OR REQUIRED) ABOVE A DROP/FALSE CEILING.

△ - INFORMATION OUTLET LOCATION

A - ANALOG TERMINAL DEVICE	1 - SPEAKERPHONE
H - HYBRID TERMINAL DEVICE	2 - AMPLIFIED HEADSET
D - DIGITAL TERMINAL DEVICE	3 - CALL COVERAGE MODULE
S - SURFACE MOUNTED INFORMATION OUTLET	4 - FUNCTION KEY MODULE
F - FLUSH MOUNTED INFORMATION OUTLET	5 - DISPLAY MODULE

Figure 1-4. Sample Floor Plan With Terminal Locations Marked

Site or Satellite Closets

When determining the site or satellite closets, use the following information as a guide. Indicate the locations on the floor plan.

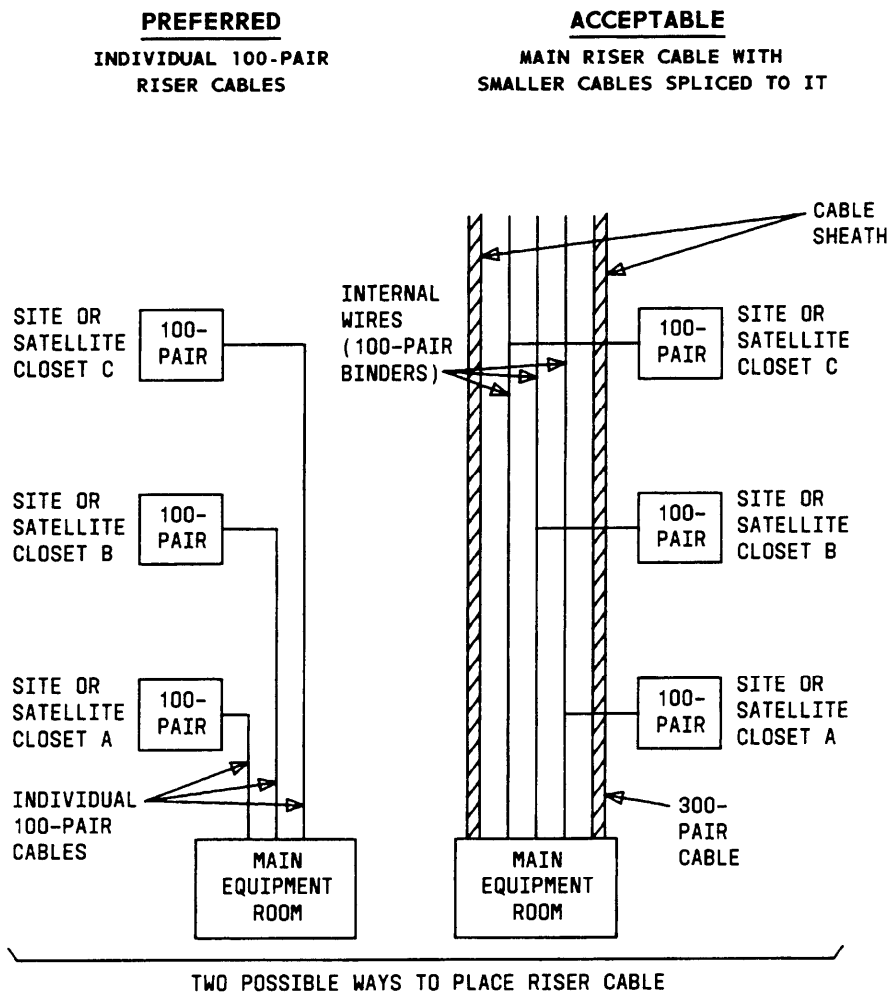
- a. Keep the number of locations to a minimum.
- b. To minimize the station wiring distances, centrally locate the site or satellite closets among the information outlets.
- c. Site or satellite closets should be easily accessible and contain sufficient ac power outlets. Terminals equipped with adjuncts that require power can be remotely powered from a site or satellite location as well as from the main equipment room or at information outlets. The distance between the power supply and the terminal cannot exceed 250 feet (76.2 m) using 24-gauge wire.
- d. Locks should be provided for the site or satellite closet to prevent tampering.

Cabling Facilities

The method of riser cable distribution between the main equipment room and the site or satellite closets is usually determined by the type of cabling facilities (riser closets, conduit size, cabling shafts, etc.) placed during construction of the building (Figure 1-5).

- a. The preferred arrangement is to have individual cables supply each site or satellite closet.
- b. A second method is to have one or two large cables supply all the site or satellite closets. This method requires smaller cables to be installed between the main riser cable and the site or satellite closet. These smaller cables are spliced into the main cable.

Determine the type of cabling required and mark the type and routing on the blueprint or floor plan. Also indicate any additional cabling facilities required for riser and terminal cabling.



CAUTION: THE UNIFORM WIRING PLAN SHOULD NOT CONTAIN ANY BRIDGE TAPS (AN UNUSED CABLE PAIR CONNECTED TO A WORKING CABLE OR THE CONTINUATION OF A WORKING PAIR PAST THE POINT AT WHICH A TERMINAL HAS BEEN CONNECTED).

Figure 1-5. Riser Cable Placement

2. Z100-TYPE HARDWARE—SYSTEM 75 AND SYSTEM 75 XE INSTALLATIONS

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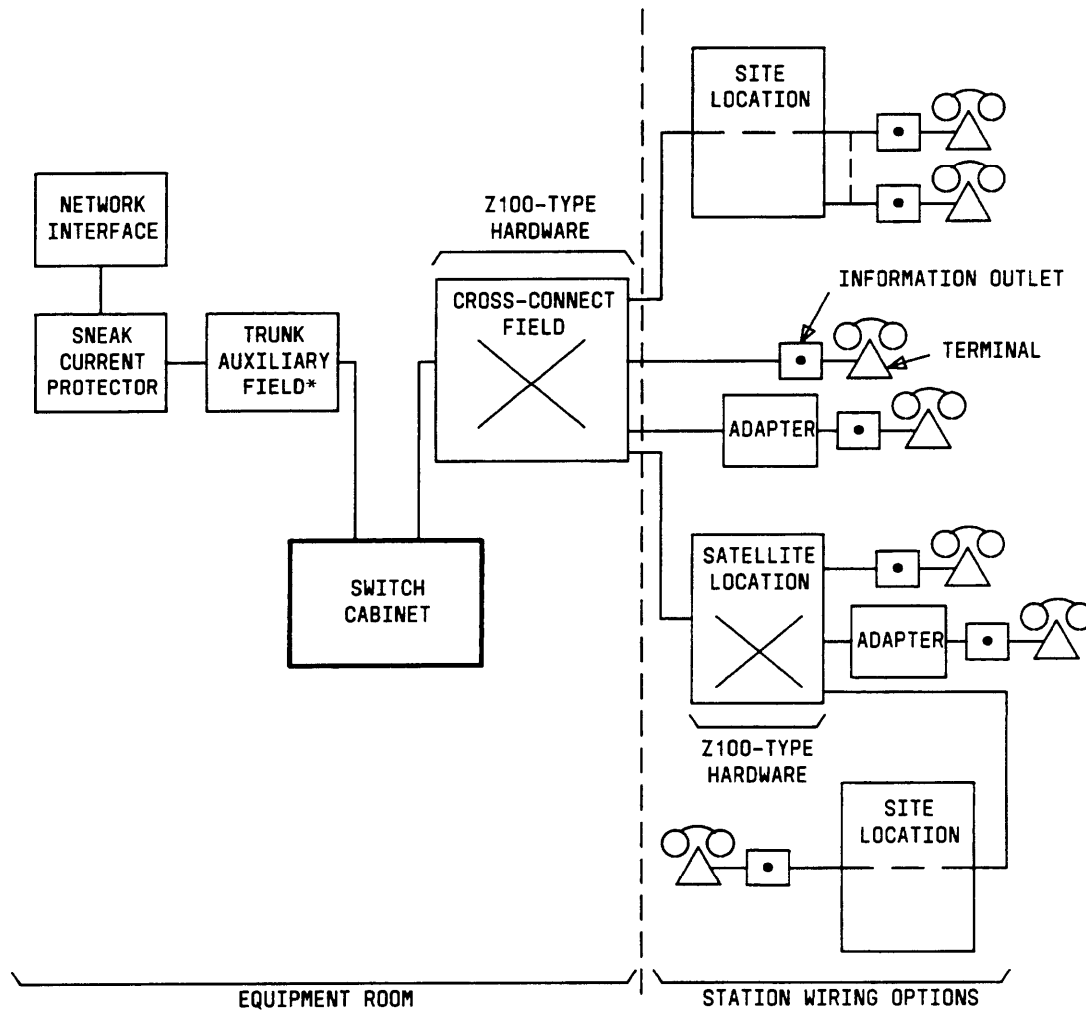
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2. Z100-TYPE HARDWARE—SYSTEM 75 OR SYSTEM 75 XE INSTALLATIONS

GENERAL

Figure 2-1 shows the equipment required to install a System 75 or System 75 XE. A description and explanation of each piece of equipment follows. Ordering information is provided at the end of each description.

The sites shown in Figure 2-1 are physical locations (closets) for pass-through connections where adjunct power may be applied. The satellite is a physical location (closet) where cross-connect administration can take place and adjunct power may be applied.



* PROVIDED BY THE CABLE ACCESS PANEL (CAP), 110-TYPE HARDWARE OR 66-TYPE HARDWARE

Figure 2-1. Block Diagram of System 75 or System 75 XE Installation

Z100-TYPE HARDWARE

As shown in Figure 2-1, Z100-type hardware is used for the cross-connect field and for optional satellite locations. The Z100 hardware consists of the following:

- Connector Modules
- Connecting Units
- Cords (Anti-Snag Modular Plug-Ended Patch Cords and Power Adapter Cords).

Hard-wired (punch-down) connections are not used with the Z100 hardware unless field-applied 25-pair connectors, modular plugs, or external "junction boxes" (punch-down to 50-pin miniature ribbon connector) are used (see Figure 2-2).

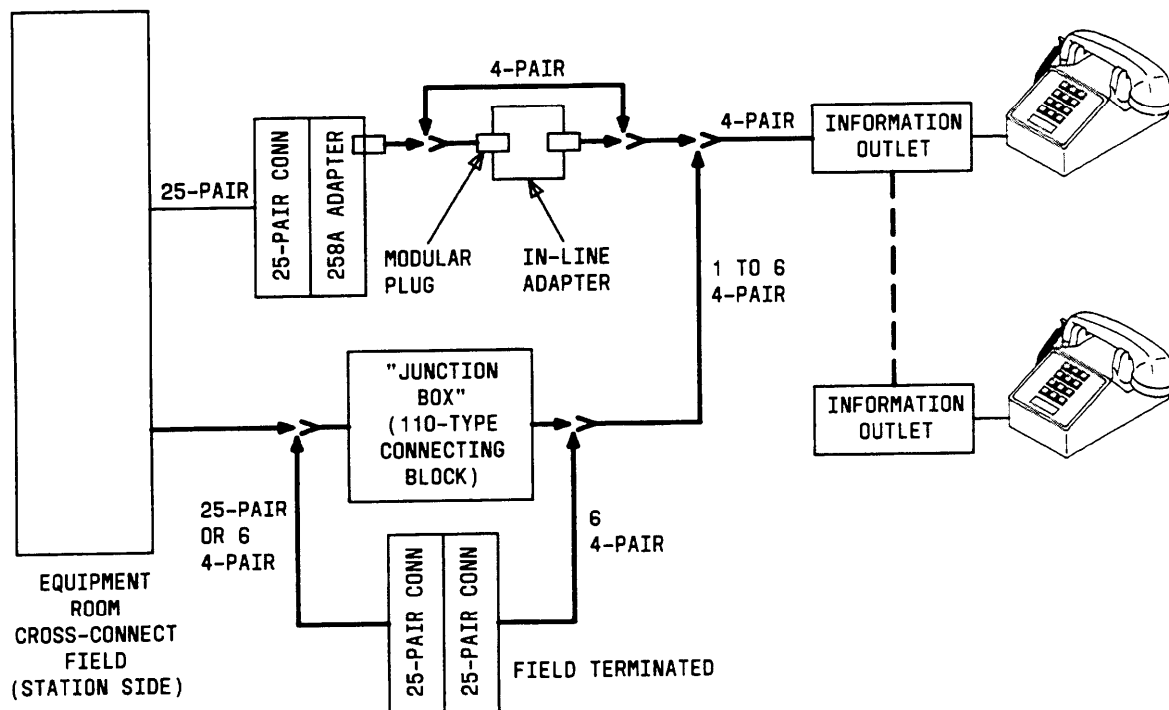


Figure 2-2. Station Wiring Alternatives

Connector Modules

Connectorized 25-pair cables terminate on the connector modules. Anti-snag modular plug-ended patch cords are used to cross-connect the circuits.

The connector modules are preassembled. Each connector module is 5 inches (12.7 cm) wide and approximately 44 inches (111.8 cm) high. The hardware making up the assembly consists of one Z9A support, one Z2A jack panel, seven connecting units, seven Z5A retainers, and one MET/RJ25C connector adapter (test jack).

Figure 2-3 shows the connector module support and jack panel. The support has tabs that allow adjacent connector modules to snap and interlock together to form cross-connect fields. An additional support is required for each cross-connect field to provide a patch cord guide for the last connector module in the field.

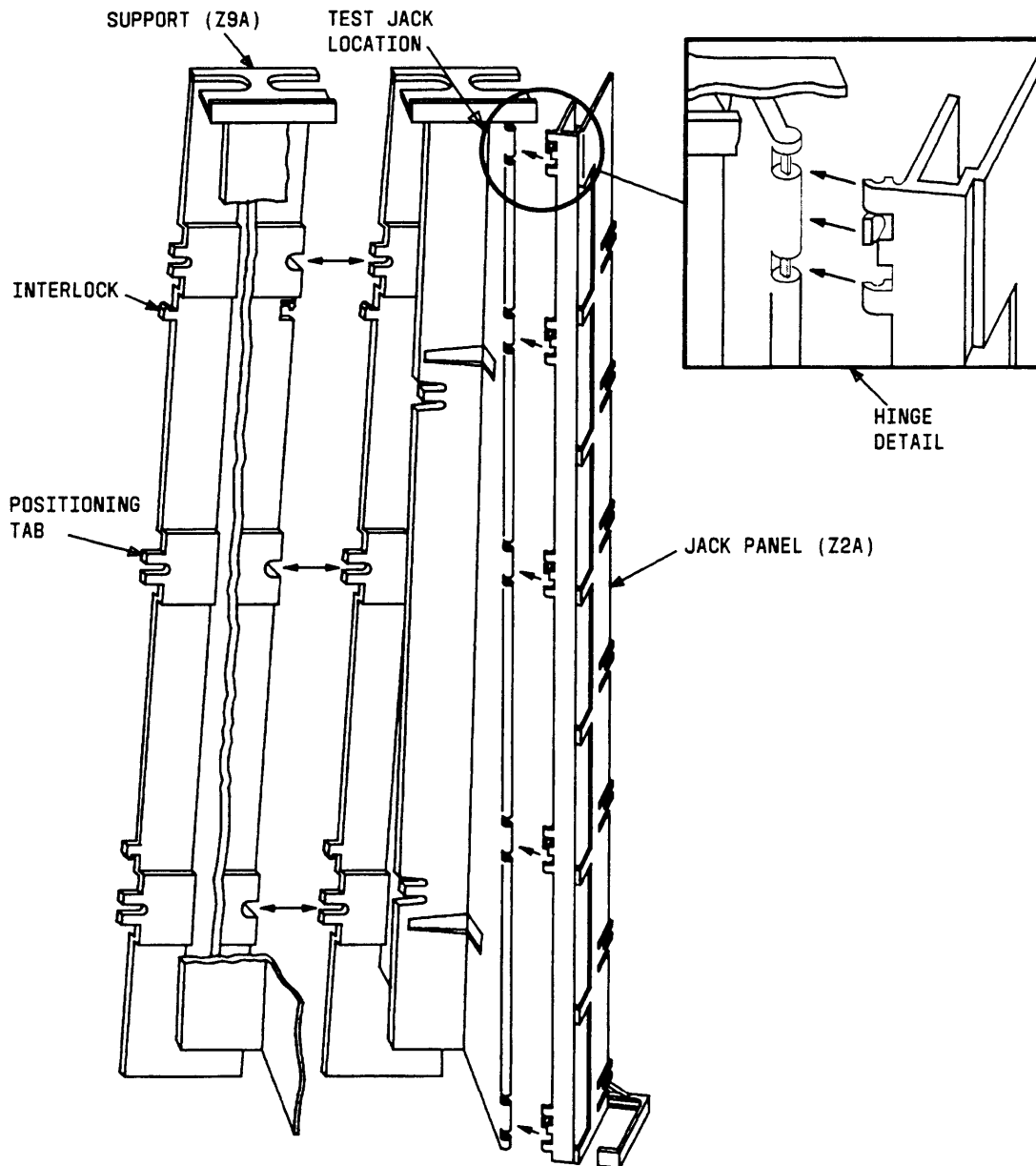


Figure 2-3. Z100-Type Support and Panel

The connecting units and Z5A retainers are located inside the jack panel. The Z5A retainers located at the back of the jack panel snap closed to lock the mating connectors of the 25-pair cables in place.

Z100-TYPE HARDWARE

The MET/RJ25C connector adapter (test jack) is located at the top of the Z9A support. An anti-snag modular plug-ended patch cord can be plugged from it into the port jack and a terminal connected to the station jack to test either a circuit coming from the switch or the terminal.

There are two preassembled Z100-type connector modules available with connecting units. The connector modules are identical except for the connecting units provided.

Z100A1 Connector Module

The Z100A1 connector module (see Figure 2-4) contains four Z200A1 connecting units and three Z201A1 connecting units. The Z100A1 connector module is used at either the cross-connect field or at satellite locations when 4-pair station circuits are provided from the equipment room or satellite closet to the station wiring. Each Z100A1 connector module has a capacity of twenty-four 4-pair station circuits and twenty-four 3-pair port or station circuits.

Z100B1 Connector Module

The Z100B1 connector module (see Figure 2-5) contains four Z203A1 connecting units and three Z201A1 connecting units. The Z100B1 connector module is used at the cross-connect field when 3-pair station circuits are provided from the equipment room to the station wiring. Each Z100B1 connector module has a capacity of thirty-two 3-pair station circuits and twenty-four 3-pair port circuits. This connector module may also be used if connections are required for off-premises stations in an otherwise 4-pair station cross-connect field arrangement.

The following is a listing of ordering information for the connector modules. Ordering information for the individual connecting units is provided under the heading **Connecting Units** in this manual.

CONNECTOR MODULE ORDERING INFORMATION

Description	Comcode
Z100A1 Connector Module	103 961 157
Z100B1 Connector Module	103 961 165
Z2A Jack Panel	103 961 231
Z5A Retainer	103 961 215
Z9A Support	103 961 249
MET/RJ25C Connector Adapter	403 826 928

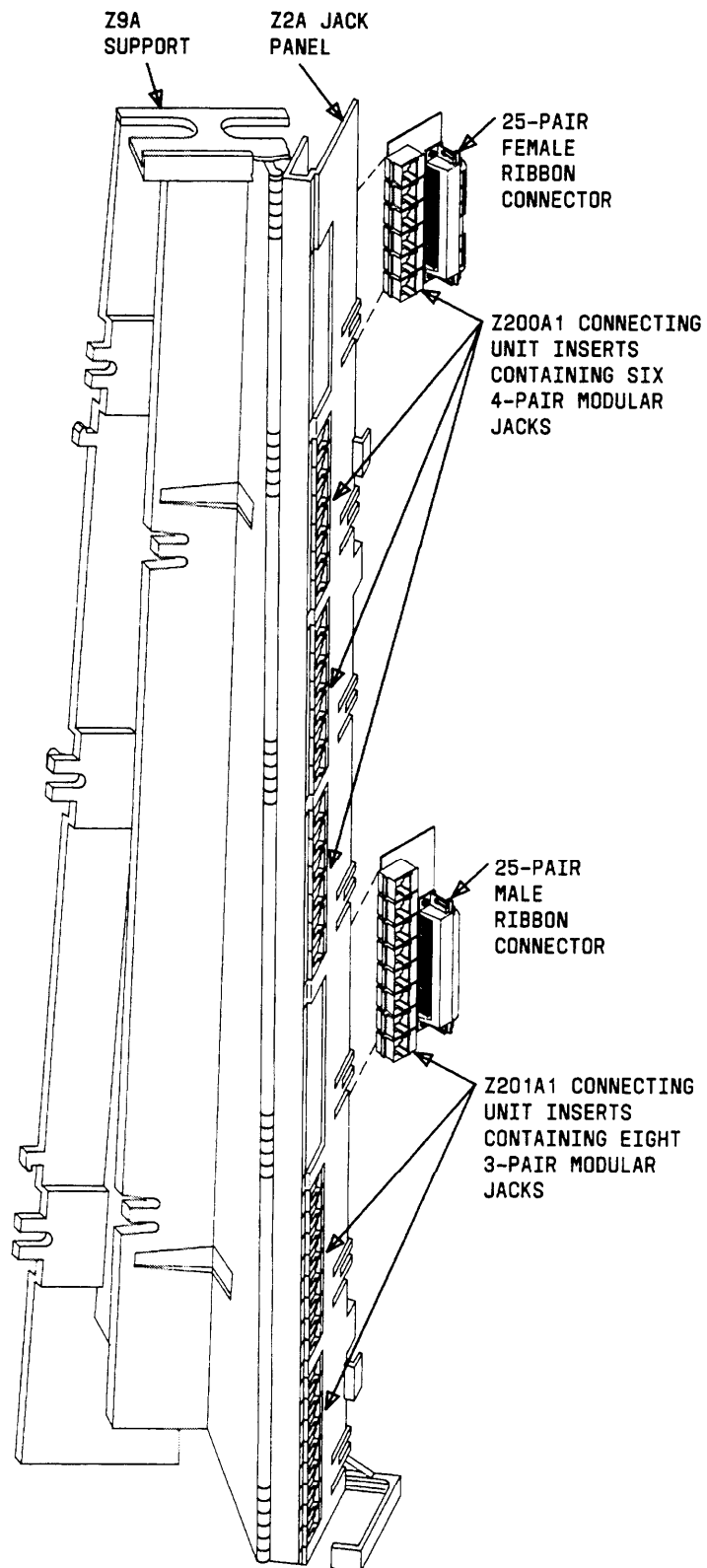


Figure 2-4. Z100A1 Connector Module

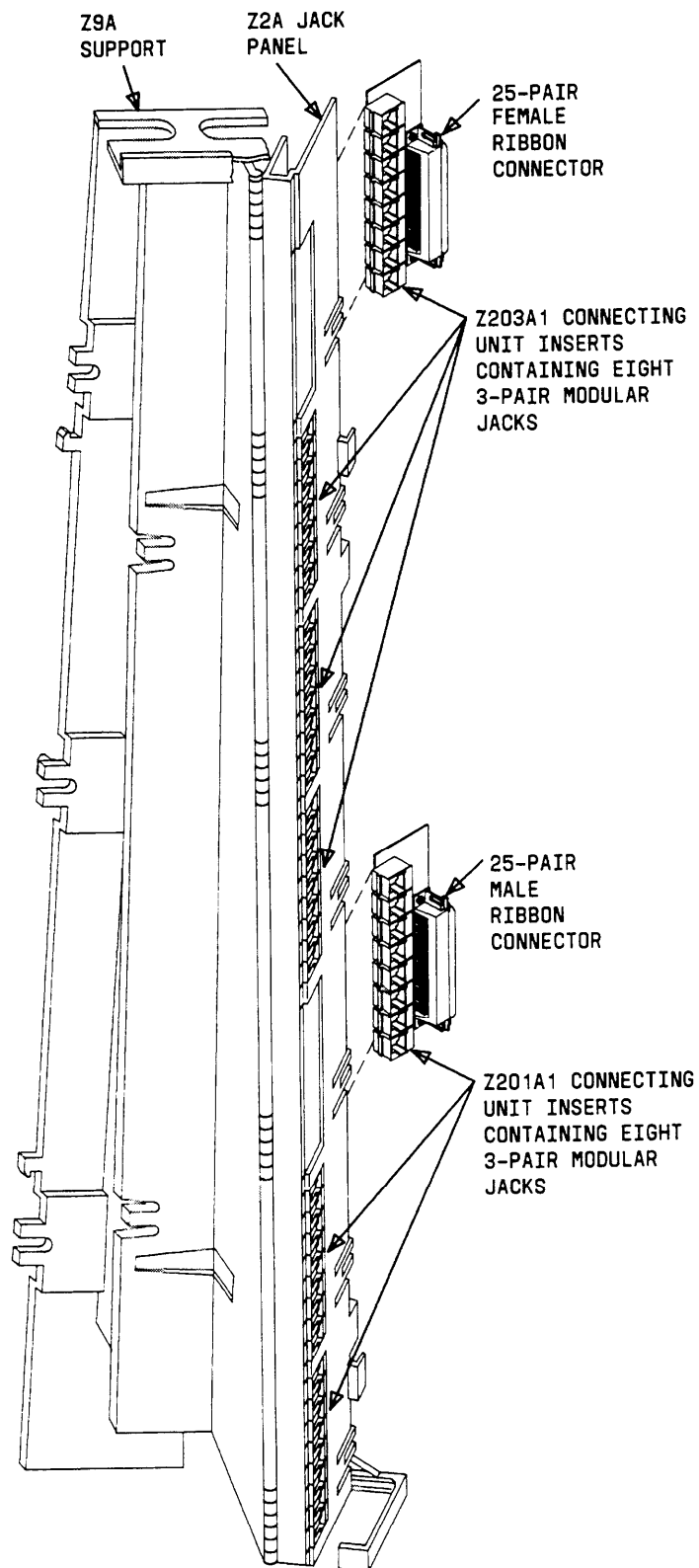


Figure 2-5. Z100B1 Connector Module

Connecting Units

The four connecting units (Figure 2-6) that can be used in the connector modules are as follows:

- Z200A1—Used for connectorized station cables (4-pair station circuits from equipment room or satellite locations).
- Z201A1—Used in the cross-connect field for the connectorized switch cables and in satellite locations for connectorized station cables (3-pair station circuits from the equipment room).
- Z202A1—Used for Standard Serial Interface (SSI) port circuits from an Applications Processor (AP) to data terminals only.
- Z203A1—Used for connectorized station cables (3-pair station circuits from the equipment room).

The Z202A1 connecting unit is not available in the preassembled connector modules. It can be used as a replacement in the Z100A1 or Z100B1 connector modules. Figures 2-7 and 2-8 show how the connecting units are installed and removed.

CONNECTING UNIT ORDERING INFORMATION

Description	Comcode
Z200A1 Connecting Unit	103 961 256
Z201A1 Connecting Unit	103 961 264
Z202A1 Connecting Unit	103 961 272
Z203A1 Connecting Unit	103 961 280

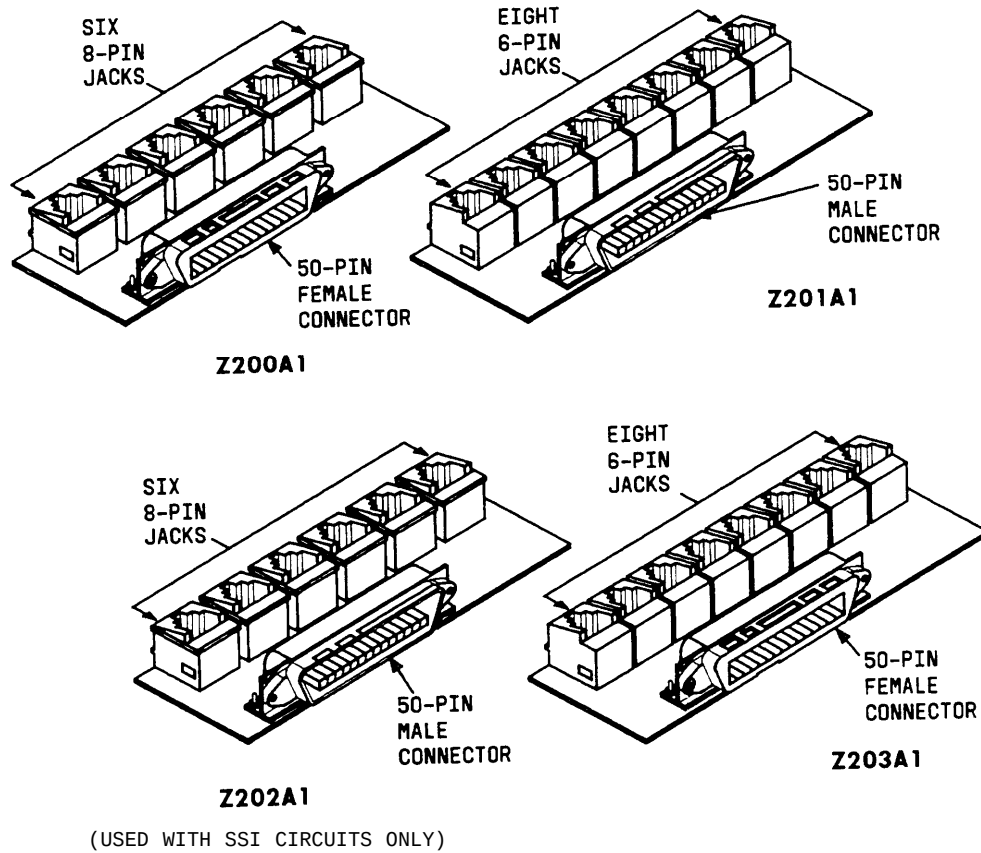


Figure 2-6. Z100-Type Connecting Units

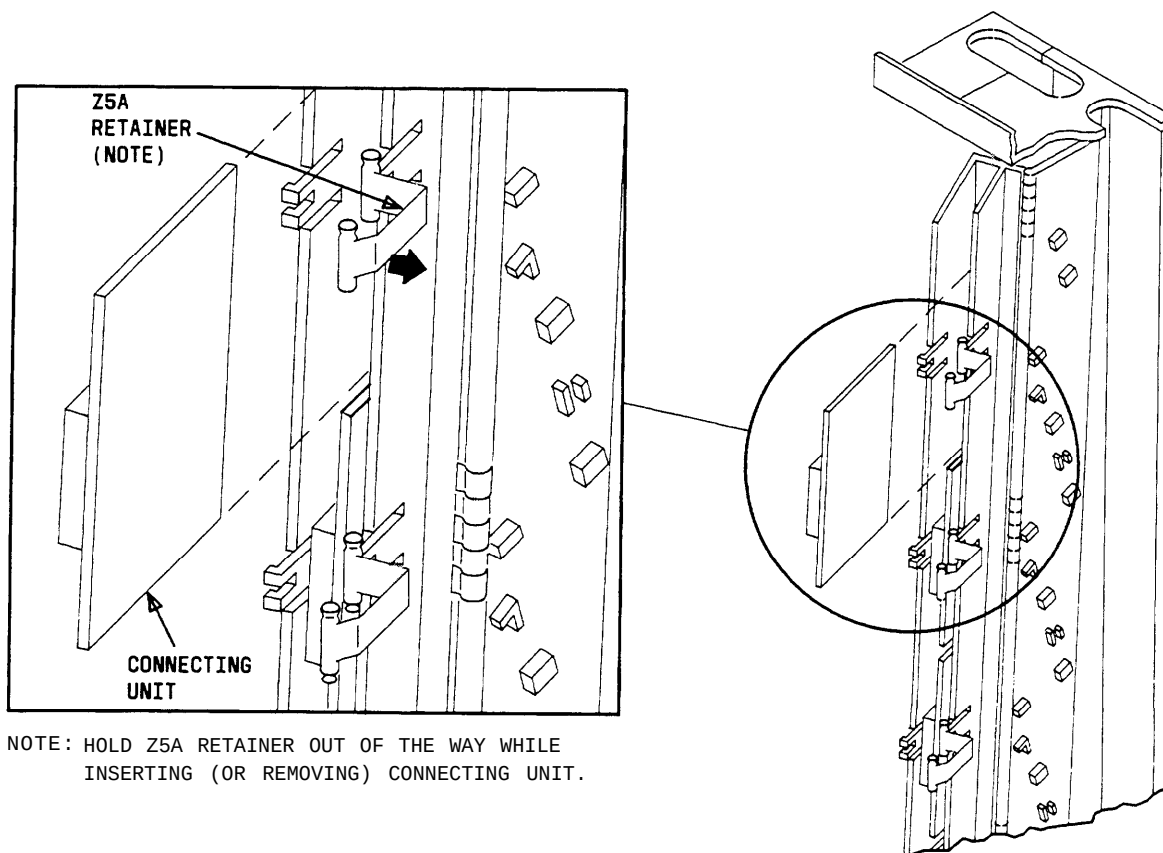


Figure 2-7. Connecting Unit Installation

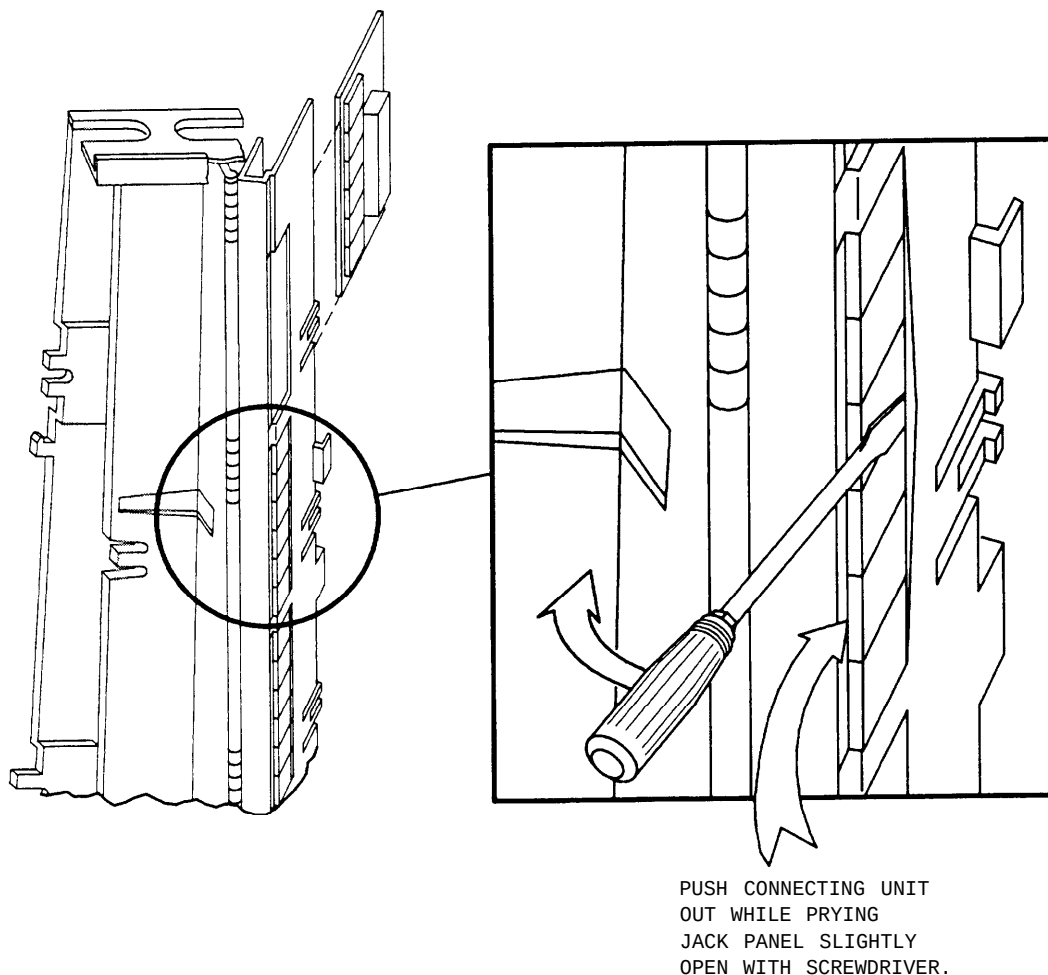


Figure 2-8. Connecting Unit Removal

Cords

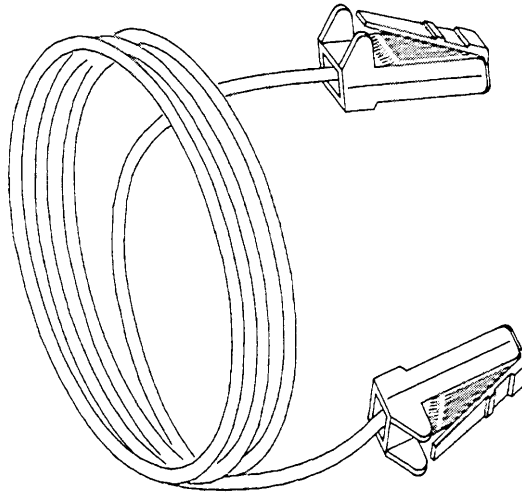
ZD6A-87 Patch Cords

The ZD6A-87 patch cords (Figure 2-9) equipped with 3-pair anti-snag modular plugs are used with the connector modules to provide cross-connections. This 3-pair patch cord can be connected to both the 3- and 4-pair jacks on connecting units. Four patch cord lengths are available. The lengths are identified by the color of the molded plastic modular plugs on each end and can be ordered as follows (see Note):

Note: See **Equipment Requirements** for additional patch cord ordering quantities.

PATCH CORD ORDERING INFORMATION

Cord	Modular Plug Color	Length	Comcode (1 per package)
ZD6A-87	Clear	7 ft (2.1 m)	103 944 872
ZD6A-87	Yellow	10 ft (3.0 m)	103 944 898
ZD6A-87	Blue	12 ft (3.7 m)	103 944 914
ZD6A-87	Black	14 ft (4.3 m)	103 944 948

**Figure 2-9. ZD6A-87 Patch Cord****ZD2A-87-10 Power Adapter Cords**

The ZD2A-87-10 power adapter cord (Figure 2-10) connects an adjunct power supply to a 4-pair jack on a Z100A1 connector module located at the equipment room or at a satellite location. One end of the power adapter cord consists of a 1-pair 10-foot (3.0-m) cable equipped with a 6-conductor modular anti-snag plug that connects to the power supply. The other end is a combined 8-conductor anti-snag plug/6-conductor jack adapter that connects to the 4-pair jack.

POWER ADAPTER CORD ORDERING INFORMATION

Cord	Comcode (1 per package)
ZD2A-87-10	103 944 856

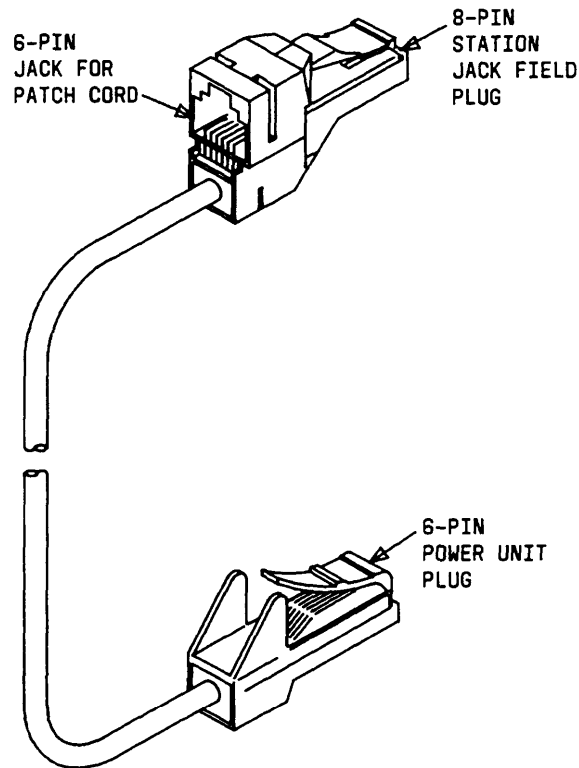


Figure 2-10. ZD2A-87-10 Power Adapter Cord

Associated Hardware

Cable Slack Managers

General

The cable slack managers (Figure 2-11) are raised floor units 32 inches (81.3 cm) wide, 38 inches (96.5 cm) deep, and 4.5 inches (11.4 cm) high. The cable slack managers are used for cable distribution and cable slack storage between the system cabinets and the cross-connect field. They can also accommodate a limited amount of slack in station cables. Power cables from the system cabinets are also run through/from the cable slack managers.

Note: Cable slack managers are not required when the switch cabinet is installed on a raised computer floor. The station cables and the cables from the system cabinets are routed under the computer flooring to the cross-connect field.

The cable slack managers have tabs and interlocks that allow adjacent cable slack managers to interlock together. Retainers mounted on columns inside the cable slack managers keep the cables from protruding above the top of the base. The cable slack managers are coded as housings and are available as follows.

Z113A Housing

The Z113A housing is used between the wall and equipment cabinets (Switch, Applications Processor, Auxiliary, etc.). It consists of a Z8A1 base, two Z814A covers, and 25 Z6A retainers.

Z114A Housing

The Z114A housing is designed to be used adjacent to the Z113A housing if no equipment cabinet exists at the position or if the cabinet(s) is positioned against the wall with the cross-connect field beside the cabinets(s). It consists of a Z8A1 base, one Z814A cover, one Z815A cover, and 25 Z6A retainers.

CABLE SLACK MANAGER ORDERING INFORMATION

Description	Comcode
Z113A Housing	103 961 322
Z114A Housing	103 961 330
Z8A1 Base	103 965 133
Z814A Cover	103 965 141
Z815A Cover	103 965 158
Z6A Retainer	103 965 166

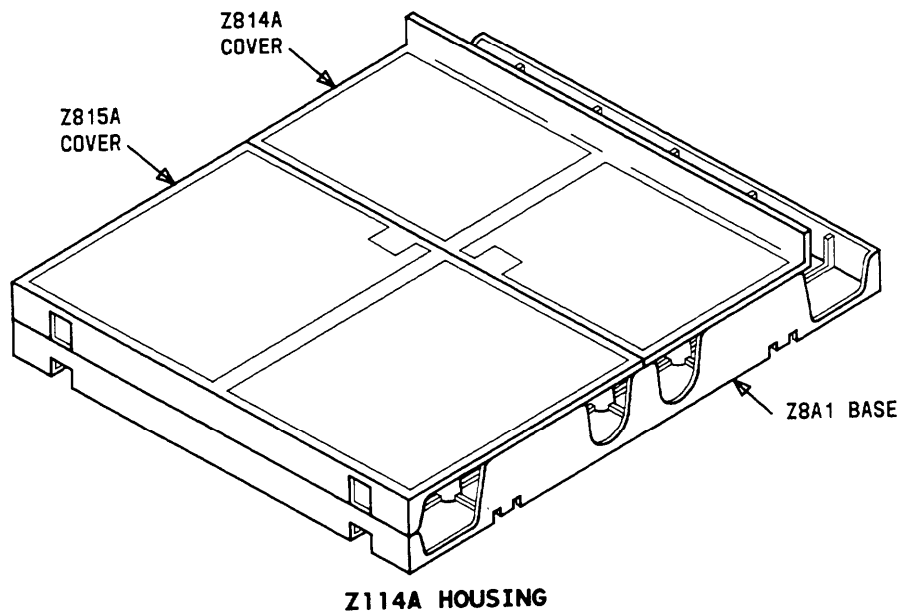
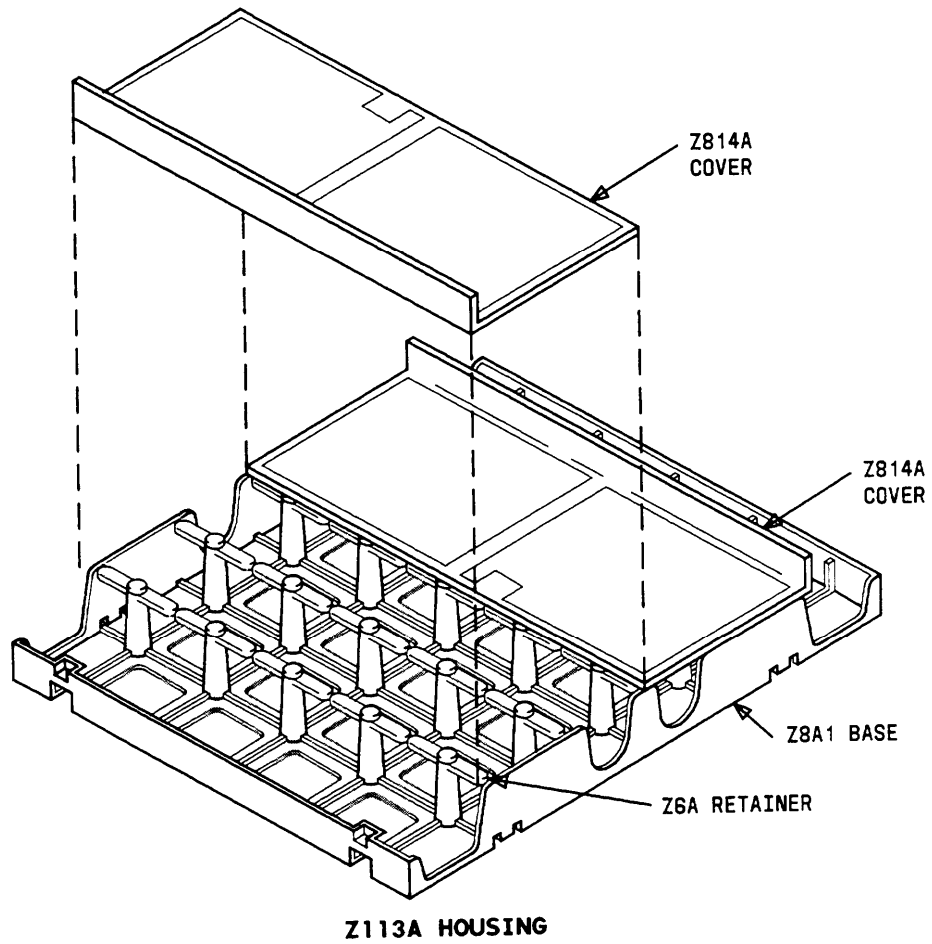


Figure 2-11. Cable Slack Managers

NETWORK INTERFACES

RJ21X Network Interfaces

The RJ21X network interfaces are the connection points between the local telephone company lines (1-pair trunks) and the system. The interfaces are supplied and installed by the local telephone company.

RJ2GX Network Interfaces

The RJ2GX network interfaces are the connection points between the local telephone company tie-trunks and the system three-pair tie-trunks. The interfaces are supplied and installed by the local telephone company.

1.544 Mbps Digital Service Interfaces

The 1.544 Mbps (Megabits per second) digital service interfaces are the connection points between the local telephone company T1 carrier lines and the system DS1 tie trunks. The interfaces are supplied and installed by the local telephone company.

SNEAK FUSE PANELS

575-4 Sneak Current Fuse Assembly

Sneak current protection is required between the RJ21X or RJ2GX network interface and the switch. The Model 575-4 Sneak Current Fuse Assembly (Figure 2-12), or equivalent, is recommended for sneak current protection. The panel is connectorized in and out and equipped with 25 two-pair fuse modules. Connectorized (B25A) cables connect the network interface to the sneak fuse panel. 157B Connecting Blocks equipped with SCP-1 protectors may also be used for sneak current protection.

SNEAK FUSE PANEL ORDERING INFORMATION

Description	Comcode
157B Connecting Block	403 613 003
Protector, SCP-1*	403 617 632
575-4 Sneak Current Fuse Assembly	xxxxxx
Fuse Module—25A	xxxxxx

* The SCP-1 Protectors must be ordered separately and installed on the 157B Connecting Block. Twenty-four protectors are required per block.

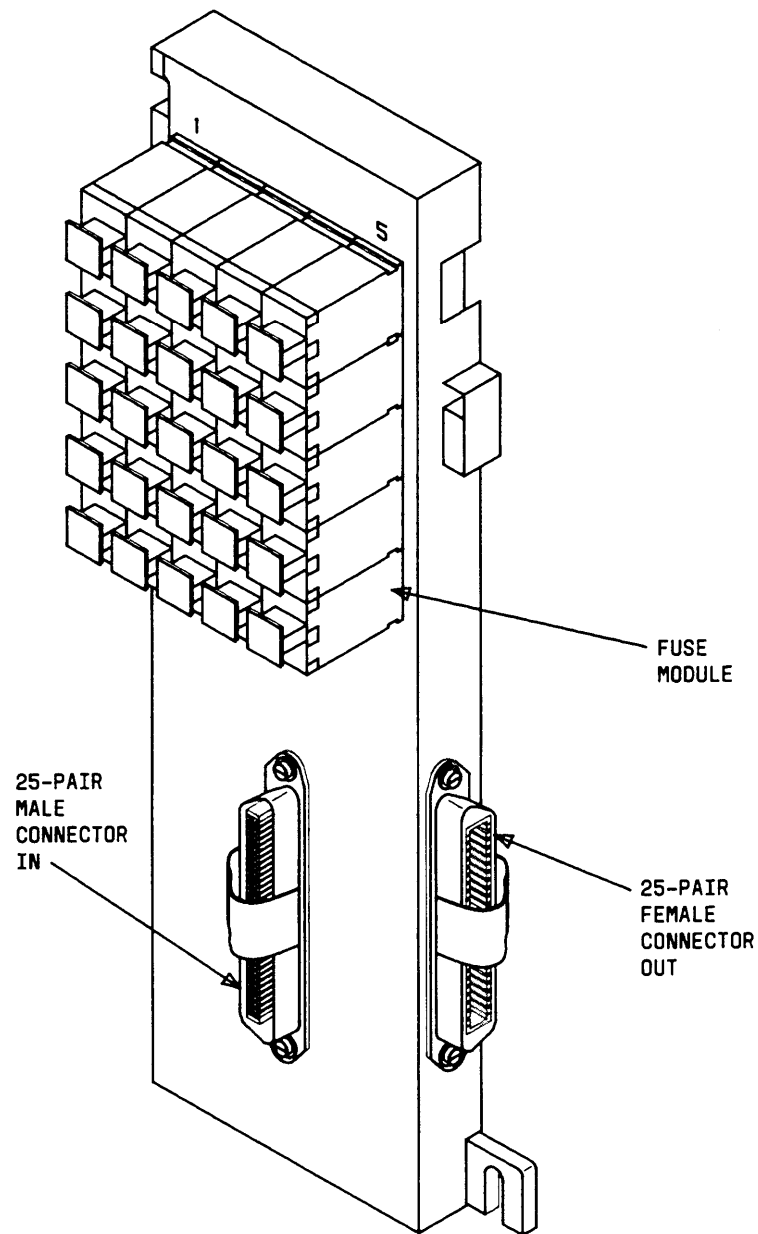


Figure 2-12. Model 575-4 Sneak Fuse Panel

TRUNK/AUXILIARY FIELD

The trunk/auxiliary field, located between the sneak current protectors and the switch, primarily provides access to the trunk circuits for testing. The Z100 hardware can use cable access panels (CAPs), 110-type hardware, or 66-type hardware for the trunk/auxiliary field.

This section of the document only covers using the cable access panels (CAPs) for the trunk/auxiliary field (Figure 2-13). If 110-type or 66-type hardware is used as the trunk/auxiliary field, refer to Section 3 or 4 of this manual.

Cable Access Panels and Emergency Transfer Units

Figure 2-14 is a functional diagram of the cable access panel (CAP). As shown in Figure 2-14, 25-pair connectors on each side of the CAP are wired to 110-type terminals located in the center of the panel. Five connectors on each side of the CAP provide a pass-through connection for five 25-pair cables. An additional connector is provided on the left side for the Emergency Transfer feature.

The connectors on the left side of the panel are labeled DISTRIBUTION CABLES: the cables on the right side are labeled CABINET CABLES. Factory-installed straps on the 110-type terminals connect the distribution side connectors to the cabinet side connectors.

CAPs are available with or without a power failure transfer unit mounted inside at the top of the panel. They are coded as apparatus mountings and are available as described below.

400A Apparatus Mounting

The 400A apparatus mounting is not equipped with an emergency transfer unit. It is used when the customer does not require the Emergency Transfer feature. It can also be used when more than one CAP is required and/or the emergency transfer units are mounted outside the CAP.

400B Apparatus Mounting

The 400B apparatus mountings equipped with a Z1A Emergency Transfer Unit. The Z1A unit provides emergency transfer connections for six analog (only) voice terminals to six trunks. If the central office trunks require ground start, a ground start switch must be installed on each voice terminal used for emergency transfer service.

400C Apparatus Mounting

The 400C apparatus mounting is equipped with a 574-5 Power Transfer Unit. The 574-5 unit provides emergency transfer connections for five analog (only) voice terminals to five trunks. This unit provides automatic ground start.

CABLE ACCESS PANEL ORDERING INFORMATION

Description	Comcode
400A Apparatus Mounting	103 969 663
400B Apparatus Mounting	103 969 671
400C Apparatus Mounting	103 969 689
Z1A Emergency Transfer Unit	103 961 363
574-5 Power Transfer Unit	
(With Automatic Ground Start)	403 890 940
Apparatus Mounting Door	844 176 164

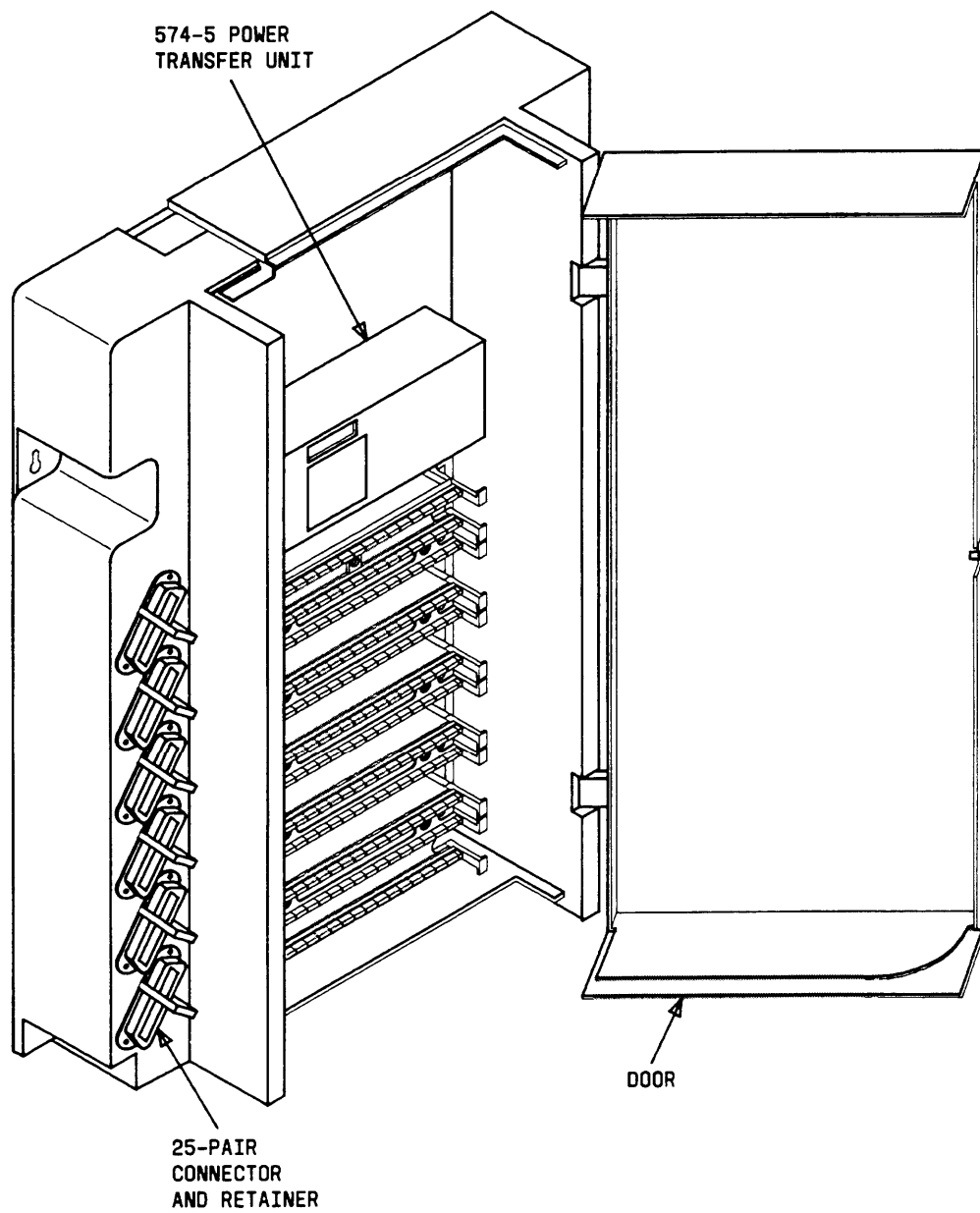


Figure 2-13. Cable Access Panel (400C Apparatus Mounting)

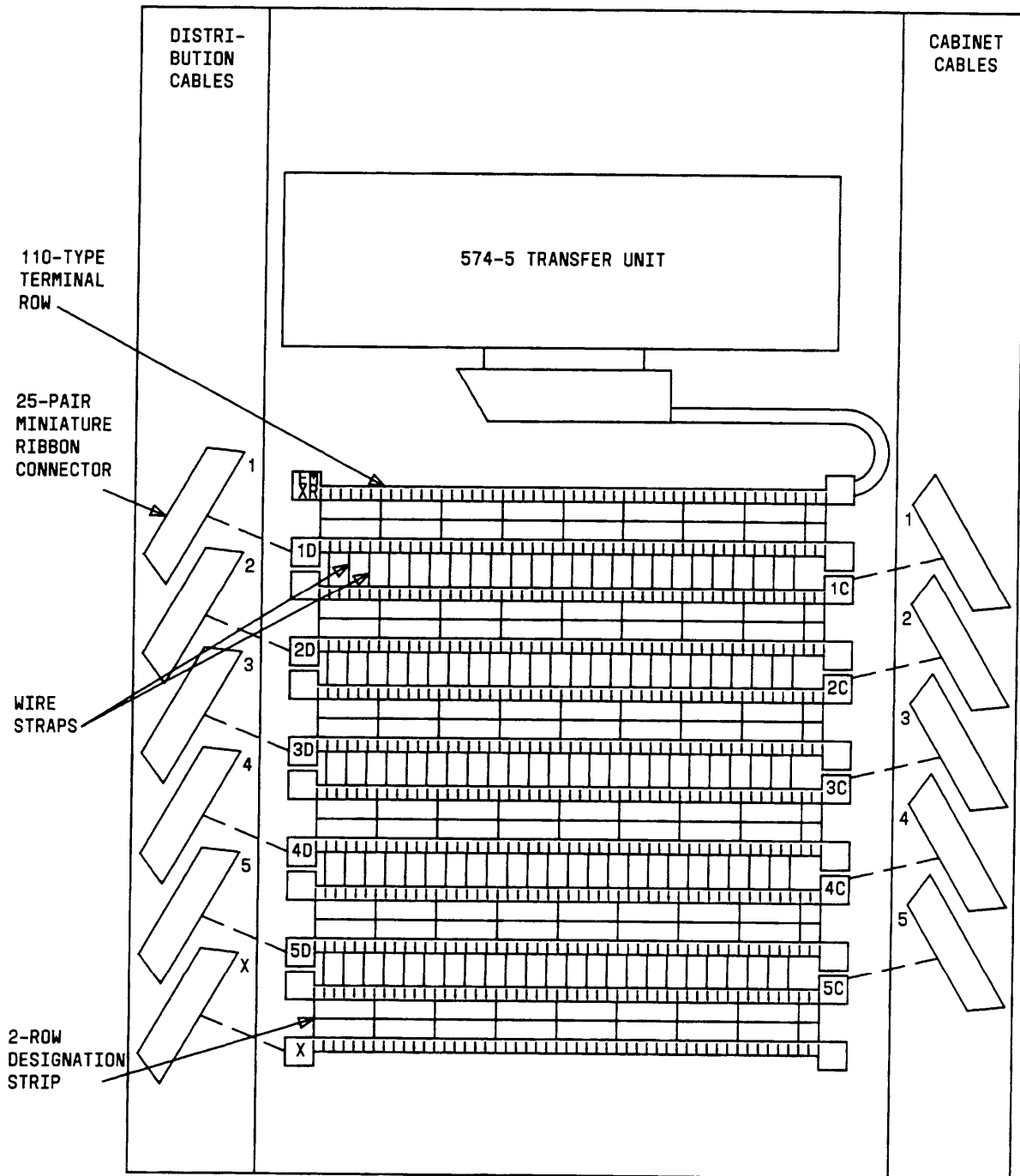


Figure 2-14. Cable Access Panel (Functional Diagram)

TRUNK CONCENTRATOR CABLES

Trunk concentrator cables are used for the following purposes:

- Match 1-pair local telephone company trunks to 3-pair circuits that connect to the switch.
- Match 1-pair local telephone company trunks provided for off-premises lines to 3-pair circuits that connect to the cross-connect field.
- Split eight 3-pair analog tie trunks into two groups of four 3-pair tie trunks that connect to the switch

The trunk concentrator cables are 25 feet (7.6 m) in length. They are coded as cable assemblies and are available as described below.

WP-90929, List 2, Cable Assembly

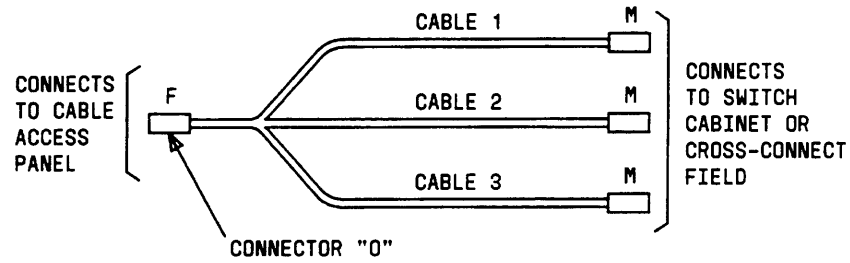
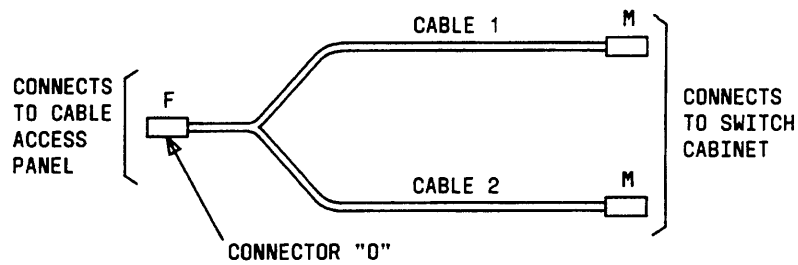
The WP-90929, List 2, Cable Assembly (Figure 2-15 and Table 2-A) is used to connect local telephone company trunks to the system switch. It is also used to connect off-premises analog circuits to a Z100B1 connector module in the equipment room cross-connect field. The 3-fingered end of the cable assembly contains male ribbon connectors; the other end contains a female ribbon connector. Each cable assembly can match 24 one-pair trunk circuits to 24 three-pair trunk circuits.

WP-90929, List 4, Cable Assembly

The WP-90929, List 4, Cable Assembly (Figure 2-15 and Table 2-B) is used to connect tie-trunk circuits to the system switch. The 2-fingered end of the cable assembly contains male ribbon connectors; the other end contains a female ribbon connector. Each cable assembly can match eight 3-pair tie-trunk circuits to two groups of four 3-pair tie-trunk circuits.

TRUNK CONCENTRATOR CABLE ORDERING INFORMATION

Description	Comcode
WP-90929, List 2, Cable Assembly	405 065 012
WP-90929, List 4, Cable Assembly	405 075 540

**LIST 2 CABLE****LIST 4 CABLE****LEGEND:**

M = 25-PAIR MALE CONNECTOR

F = 25-PAIR FEMALE CONNECTOR

Figure 2-15. Trunk Concentrator Cables (WP-90929, Lists 2 and 4, Cable Assemblies)

TABLE 2-A. WP-90929, List 2, Cable Assembly Wiring

Conn. 0 Pin No.	Cable No. 1	Cable No. 2	Cable No. 3	Conn. 0 Pin Numbers	Cable No. 1	Cable No. 2	Cable No. 3
26	W-BL	-	-	1	BL-W	-	-
27	W-BR	-	-	2	BR-W	-	-
28	R-O	-	-	3	O-R	-	-
29	R-S	-	-	4	S-R	-	-
30	BK-G	-	-	5	G-BK	-	-
31	Y-BL	-	-	6	BL-Y	-	-
32	Y-BR	-	-	7	BR-Y	-	-
33	V-O	-	-	8	O-V	-	-
34	-	W-BL	-	9	-	BL-W	-
35	-	W-BR	-	10	-	BR-W	-
36	-	R-O	-	11	-	O-R	-
37	-	R-S	-	12	-	S-R	-
38	-	BK-G	-	13	-	G-BK	-
39	-	Y-BL	-	14	-	BL-Y	-
40	-	Y-BR	-	15	-	BR-Y	-
41	-	V-O	-	16	-	O-V	-
42	-	-	W-BL	17	-	-	BL-W
43	-	-	W-BR	18	-	-	BR-W
44	-	-	R-O	19	-	-	O-R
45	-	-	R-S	20	-	-	S-R
46	-	-	BK-G	21	-	-	G-BK
47	-	-	Y-BL	22	-	-	BL-Y
48	-	-	Y-BR	23	-	-	BR-Y
49	-	-	V-O	24	-	-	O-V
50	V-S	-	-	25	S-V	-	-

TABLE 2-B. WP-90929, List 4, Cable Assembly Wiring

Conn. 0 Pin No.	Cable No. 1	Cable No. 2	Conn. 0 Pin No.	Cable No. 1	Cable No. 2
26	W-BL	-	1	BL-W	-
27	W-O	-	2	O-W	-
28	W-G	-	3	G-W	-
29	W-BR	-	4	BR-W	-
30	W-S	-	5	S-W	-
31	R-BL	-	6	BL-R	-
32	R-O	-	7	O-R	-
33	R-G	-	8	G-R	-
34	R-BR	-	9	BR-R	-
35	R-S	-	10	S-R	-
36	BK-BL	-	11	BL-BK	-
37	BK-O	-	12	O-BK	-
38	-	W-BL	13	-	BL-W
39	-	W-O	14	-	O-W
40	-	W-G	15	-	G-W
41	-	W-BR	16	-	BR-W
42	-	W-S	17	-	S-W
43	-	R-BL	18	-	BL-R
44	-	R-O	19	-	O-R
45	-	R-G	20	-	G-R
46	-	R-BR	21	-	BR-R
47	-	R-S	22	-	S-R
48	-	BK-BL	23	-	BL-BK
49	-	BK-O	24	-	O-BK
50	V - S	-	25	S - V	-

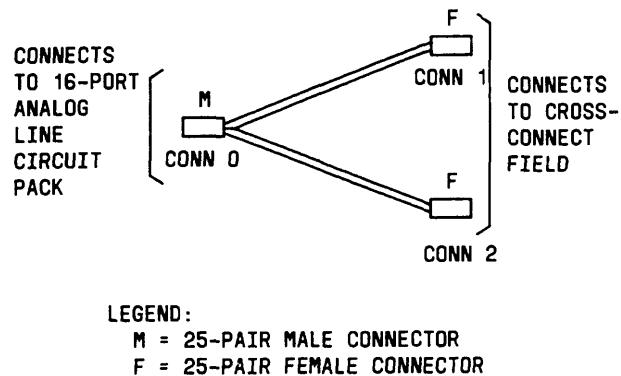
16-PORT ANALOG LINE BOARD ADAPTER CABLE

The 16-port Analog Line circuit pack (TN746) has an output of sixteen 1-pair circuits that appear on a 25-pair connector at the switch. The 16-port analog line adapter cable (Figure 2-16) separates the 1-pair circuits into 3-pair circuits that appear on two 25-pair connectors at one end of the cable.

The adapter cable is 8 feet (2.4 m) long and can be ordered with the TN746 circuit pack. The adapter cable is coded as an adapter and can also be ordered as described below.

**16-PORT ANALOG LINE
ADAPTER CABLE ORDERING INFORMATION**

Description	Comcode
853B Adapter	104 305 834



NOTE: A B25A MUST BE USED BETWEEN THE ADAPTER CABLE AND THE CONNECTOR MODULE.

Figure 2-16. 16-Port Analog Line Board Adapter Cable (853B Adapter)

4-PORT MET LINE BOARD CONCENTRATOR CABLE

The MET Line circuit pack (TN735) has an output of four 3-pair circuits that appear on a 25-pair connector at the switch. The WP-90929, List 4, Cable Assembly (Comcode 405 075 540) described previously and shown in Figure 2-15 combines the MET line circuits that appear on two 25-pair connectors onto one 25-pair connector that connects to the cross-connect field.

ADJUNCT POWER UNITS

There are two types of power supplies used for adjunct powering—individual and bulk. The power supplies are specified by the Field Services Organization (FSO) for firm quote price lists. For all other quotes, the power supplies are specified by the Premises Services Consultant (PSC).

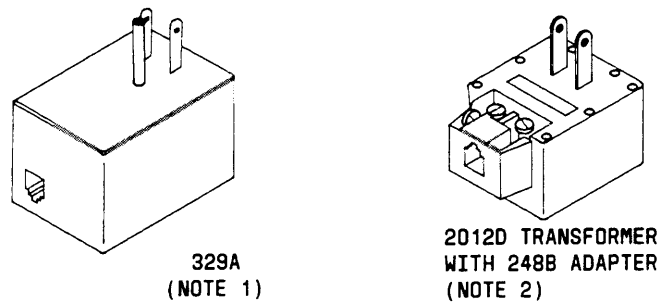
Individual Power Supplies

Individual power supplies (Figure 2-17) can be used for powering from the equipment room, site or satellite locations, or information outlets. An individual power supply can power only one voice terminal. Table 2-C contains the individual power supply limitations for distance, wire gauge, and adjuncts.

When a number of individual power supplies are used at the equipment room or at a site or satellite location, an ac power strip (Figure 2-18) is installed to accommodate the various

sized power supplies. The outlets on the ac power strip must be spaced 3.5 inches (8.89 cm) to 4 inches (10.16 cm) apart with the plug inserts perpendicular to the strip.

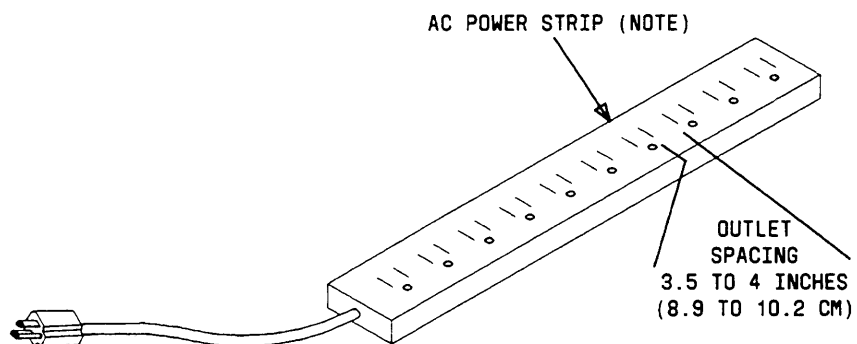
Note: A 543A power unit (Comcode 104 034 541) may be required for inrush protection for a 20 amp 120-volt ac line serving multiple 329A Power Units. Contact your PSC for details. Most multiple powering requirements should be served by the 346 modular bulk power supply.



NOTES:

1. THE 329A AND THE KS-22911, L1 ARE SIMILAR IN APPEARANCE.
2. THE 2012D TRANSFORMER AND 248B TRANSFORMER MUST BE ORDERED SEPARATELY AND FIELD ASSEMBLED AS SHOWN.

Figure 2-17. Individual Power Supplies



NOTE: THIS AC POWER STRIP MUST BE LOCALLY PROVIDED.

Figure 2-18. AC Power Strip

TABLE 2-C. Individual Power Supply Adjunct and Distance Limitations

Power Unit	Adjunct Limits	Wire Gauge	Distance Feet (Meters)
2012D Transformer (18-volt ac) With 248B Adapter	One speakerphone or headset only	24	150 (45.7)
KS-22911, L1 Power Supply (48-volt dc)	One digital module plus speakerphone or headset	24	300 (91.4)
329A Power Supply (-48 volt dc)	One digital module plus speakerphone or headset	24	500 (152.4)
	Two digital modules plus speakerphone or headset	24	350 (106.7)
	Three digital modules plus speakerphone or headset	24	250 (76.2)

INDIVIDUAL POWER SUPPLY ORDERING INFORMATION

Description	Comcode
2012D Transformer	102 600 517
248B Adapter	102 802 103
KS-22911, L1 Power Unit	403 242 639
329A Power Unit	103 873 998

Bulk Power Supply**346 Modular Bulk Power Supply**

The 346 modular bulk power supply consists of a 346A1 power panel and up to three 346A power units (see Figure 2-19). The panel has three 2-ampere resettable circuit breakers, one for each 346A power unit (see Figure 2-20). Power panels are used with one, two, or three power units connected.

A standard 5-foot (1.52-m) double-ended (male, female) power cord connects the 346A1 power panel to an ac outlet. Service to the ac outlet must be a dedicated (nonswitched) 20-ampere line. A maximum of four power panels can be connected to the 20-ampere line.

Note: The city of Chicago and Cook County Illinois electrical codes require the use of a fused ac power cord POP-6/217 by JDS Products and a metallic 346B1 power panel.

Each 346A power unit provides four power jacks. A slide switch is located between the top two and bottom two jacks. When the slide switch is in the down position, 10 watts of power are provided at the jacks above and below the switch.

When the slide switch is in the up position, the power from the jack above the switch and below the switch are combined. This provides 20 watts of power at the jack above the switch. The jack below the switch will have no power.

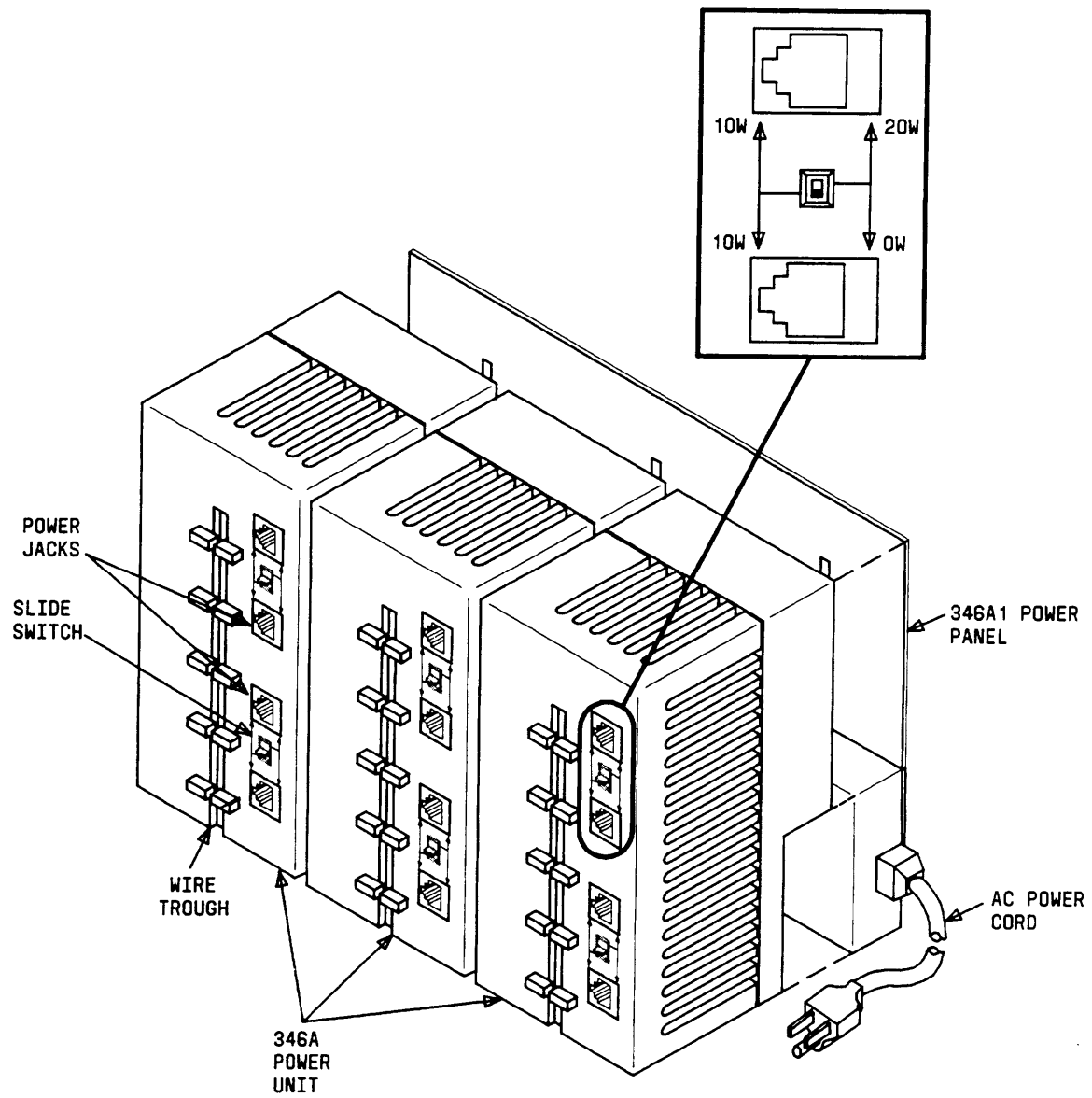


Figure 2-19. 346 Modular Bulk Power Supply

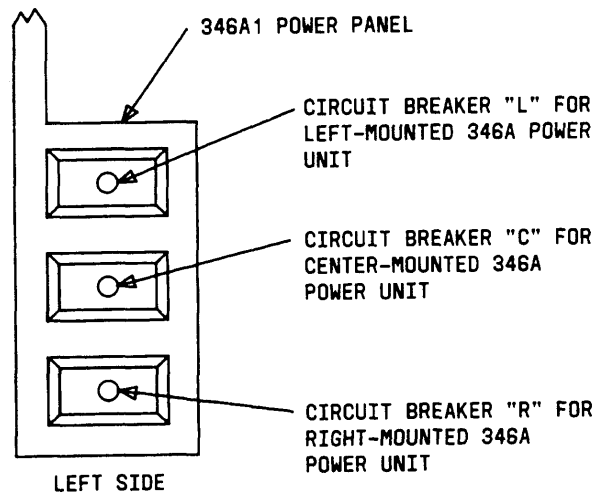


Figure 2-20. 346A1 Power Panel Circuit Breaker Locations

Table 2-D lists adjunct powering limitations for each individual 346A power unit.

TABLE 2-D. 346A Power Unit Adjunct and Distance Limitations

Slide Switch Position	Adjuncts Powered (Maximum per Unit)	Wire Gauge	Distance Feet (Meters)
Down (10 w)	Any four terminals equipped with one speakerphone or one headset	24	260 (79.2)
	Any four digital voice terminals equipped with one digital module and a speakerphone or headset each		
Up (20 w)	Any two digital voice terminals equipped with up to three digital modules and a speakerphone or headset each		

BULK POWER SUPPLY ORDERING INFORMATION

Description	Comcode
346A Power Unit	104 174 768
346A1 Power Panel	104 174 750
346Bl Power Panel	104 174 768

EQUIPMENT ROOM DESIGN

The AT&T System 75—System Description (555-200-200) or AT&T System 7.5 XE—System Description (555-201-200) provide equipment room specifications for temperature, humidity, air purity, lighting levels, and grounding. They also provide information on the floor and wall space required for the system equipment and associated peripheral equipment installed in the equipment room. For completeness, some of the information contained in these documents is repeated in this manual.

Typical System Equipment Room Floor Plans

General

The equipment room floor plan must be provided by the Field Services Organization (FSO) for firm quote price lists. For all other quotes, the equipment room floor plans must be provided by the Premises Services Consultant (PSC). Factors that influence the design are as follows:

- Size and layout of the equipment room
- Number of equipment cabinets
- AC outlet locations
- Size of the system.

Typical Floor Plans

Single-Section Cross-Connect Field

Figure 2-21 shows a typical single-section cross-connect field installation. The cross-connect field is located directly behind the switch cabinet. This is the preferred cabinet and cross-connect field location.

Figure 2-22 is a typical floor plan for a 2-carrier System 75 cabinet or a 2-cabinet System 75 XE. Figure 2-23 is a typical floor plan for a 5-carrier System 75 cabinet or a 3- or 4-cabinet System 75 XE. The maximum capacity for a 2-carrier cabinet is approximately 200 stations. All cross-connect fields for the 2-carrier cabinet should be handled by a single section as shown in Figure 2-22.

The maximum capacity for a 5-carrier cabinet is 800 stations. For large systems using the 5-carrier cabinet, the size and layout of the equipment room may require that the cross-connect field be separated into two or more sections. Also, all large systems requiring more than 20 connector modules (480 stations) require multi-section cross-connect fields. (See **Multi-Section Cross-Connect Field** for details.)

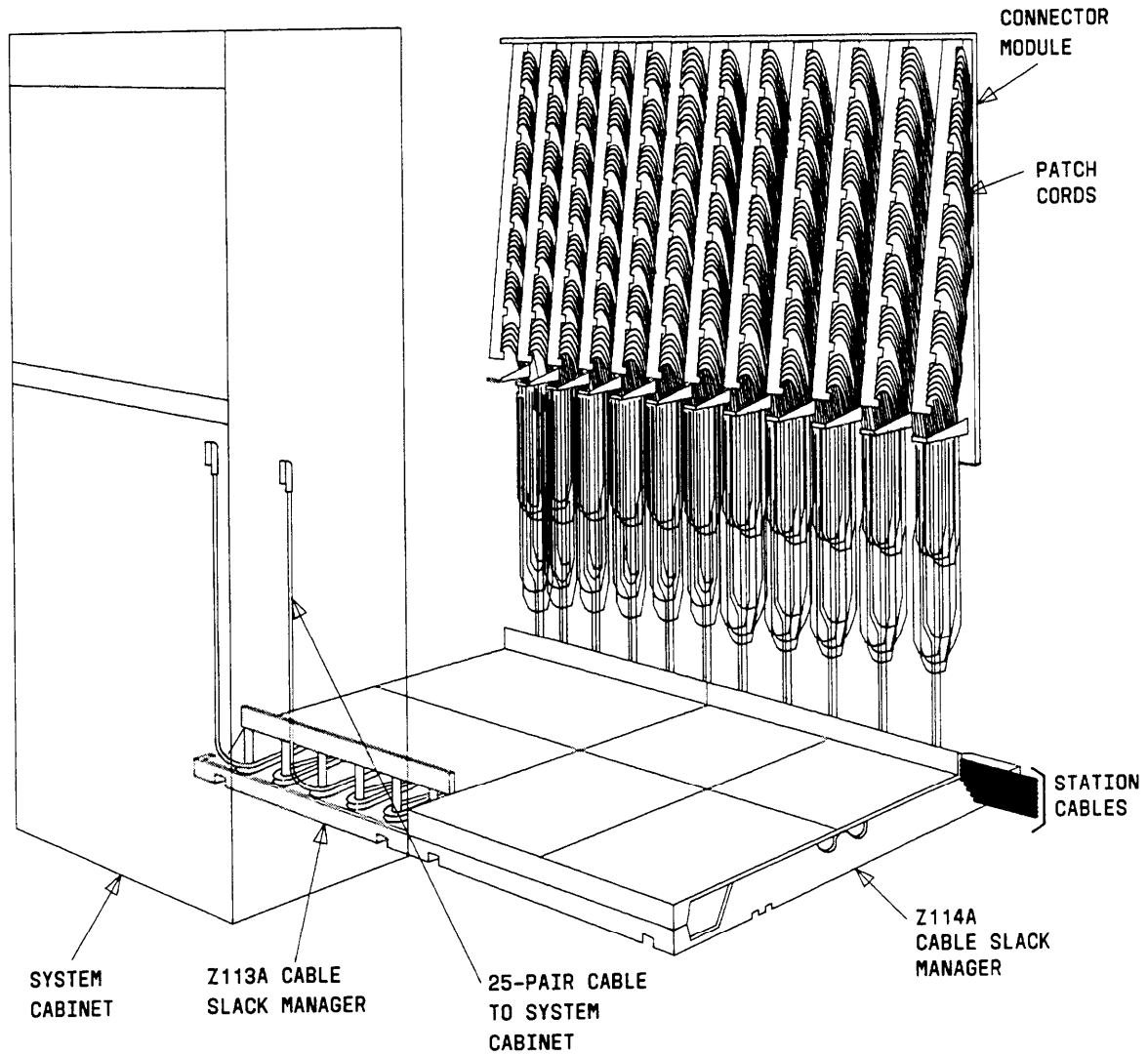
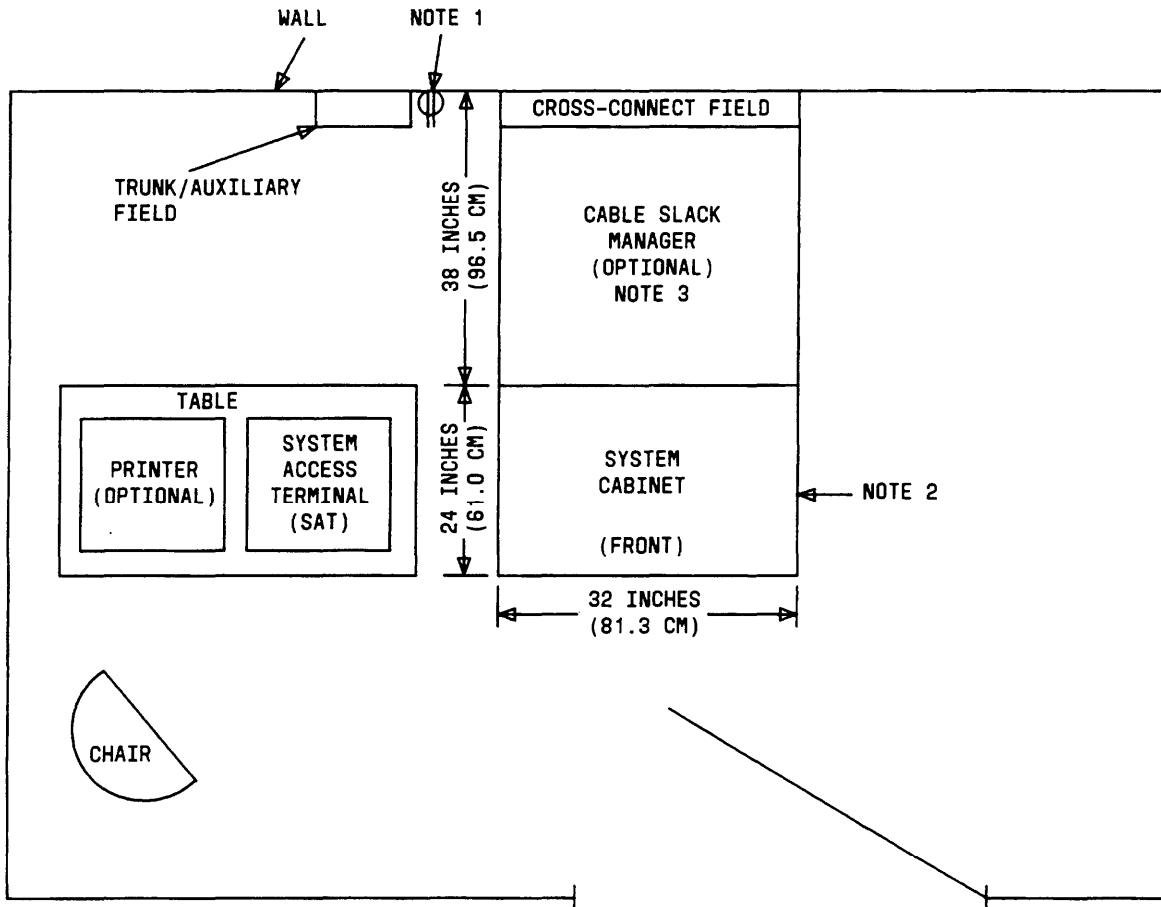


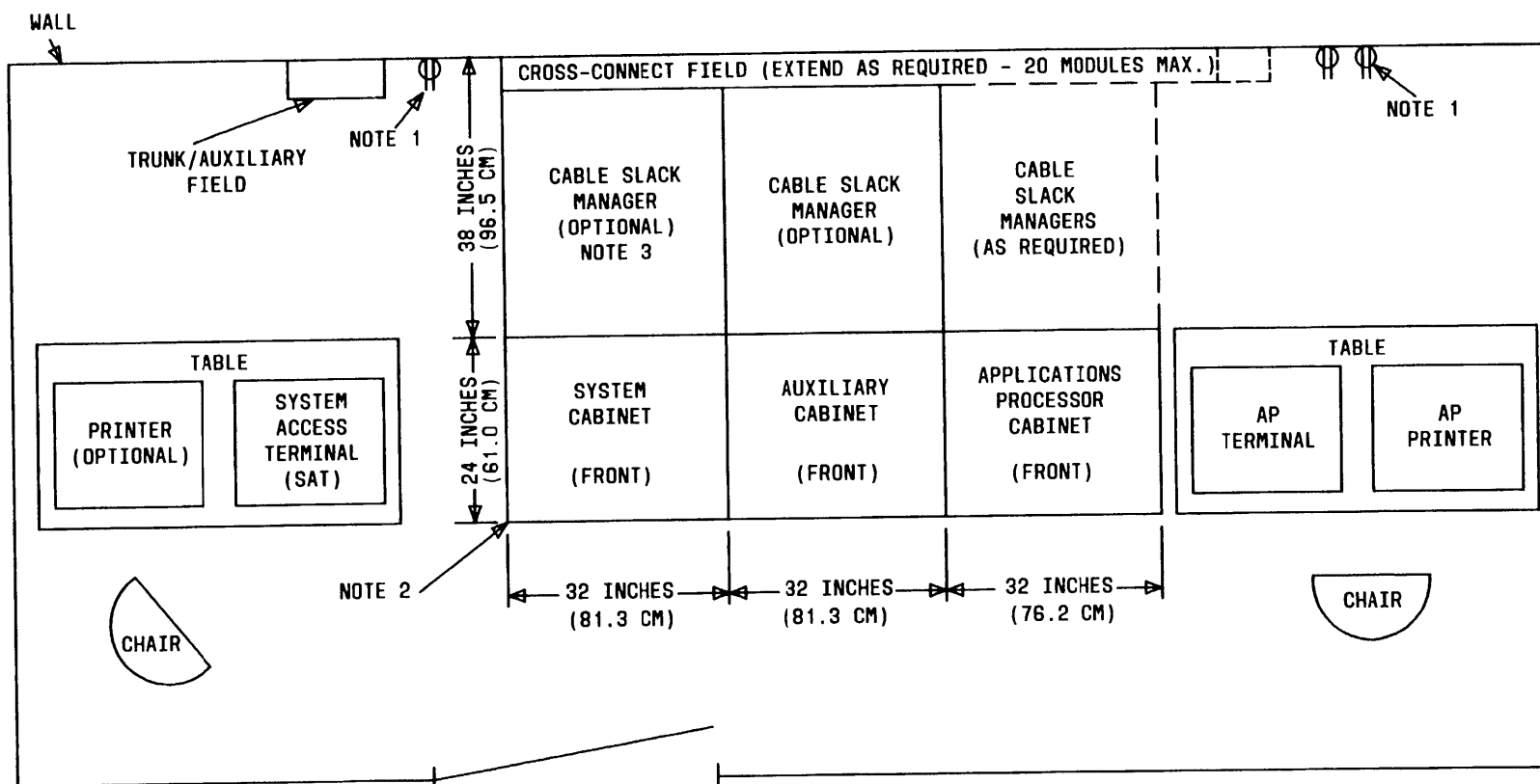
**Figure 2-21. Typical Single-Section Cross-Connect Field Installation
(Approximately 288 Station Capacity Illustrated)**



NOTES:

1. THE POWER OUTLET MUST NOT BE UNDER SWITCH CONTROL AND MUST NOT BE SHARED WITH OTHER EQUIPMENT. THE POWER OUTLET SHOULD BE LOCATED OUTSIDE THE CROSS-CONNECT FIELD AREA. ALSO, ANY CONDUIT SERVING THE OUTLET CANNOT RUN THROUGH OR BELOW THE AREA WHERE THE CONNECTOR MODULES ARE TO BE MOUNTED.
2. ALLOW AT LEAST 36 INCHES (91.4 cm) OF SPACE IN FRONT AND 6 INCHES (15.4 cm) ON THE RIGHT OF THE CABINET TO PERMIT THE DOOR TO SWING OPEN.
3. CABINET IS LOCATED ALONGSIDE THE CROSS-CONNECT FIELD WHEN CABLE SLACK MANAGER IS NOT USED.

Figure 2-22. Typical 2-Carrier System 75 Cabinet or 2-Cabinet System 75 XE Floor Plan



1. THE POWER OUTLET MUST NOT BE UNDER SWITCH CONTROL AND MUST NOT BE SHARED WITH OTHER EQUIPMENT. THE POWER OUTLETS SHOULD BE LOCATED OUTSIDE THE CROSS-CONNECT FIELD AREA. ALSO, ANY CONDUIT SERVING THE OUTLETS CANNOT RUN THROUGH OR BELOW THE AREA WHERE THE CONNECTOR MODULES ARE TO BE MOUNTED.
2. ALLOW AT LEAST 36 INCHES (91.4 cm) OF SPACE IN FRONT AND 6 INCHES (15.4 cm) ON THE RIGHT OF THE CABINET TO PERMIT THE DOOR TO SWING OPEN.
3. CABINETS ARE LOCATED ALONGSIDE THE CROSS-CONNECT FIELD WHEN CABLE SLACK MANAGER IS NOT USED.

Figure 2-23. Typical 5-Carrier System 75 Cabinet or 3- or 4-cabinet System 75 XE Floor Plan

Multi-Section Cross-Connect Field

A multi-section cross-connect field consists of two or more sections of connector modules physically separated. The sections should be equal if possible (eight to ten connector modules each). A multi-section cross-connect field is always required when the cross-connect field consists of more than 20 connector modules due to patch cord length limits.

A multi-section cross-connect field can also be required due to the size and shape of the equipment room (see Figure 2-24). Figure 2-25 shows a typical equipment room floor plan using a multi-section cross-connect field.

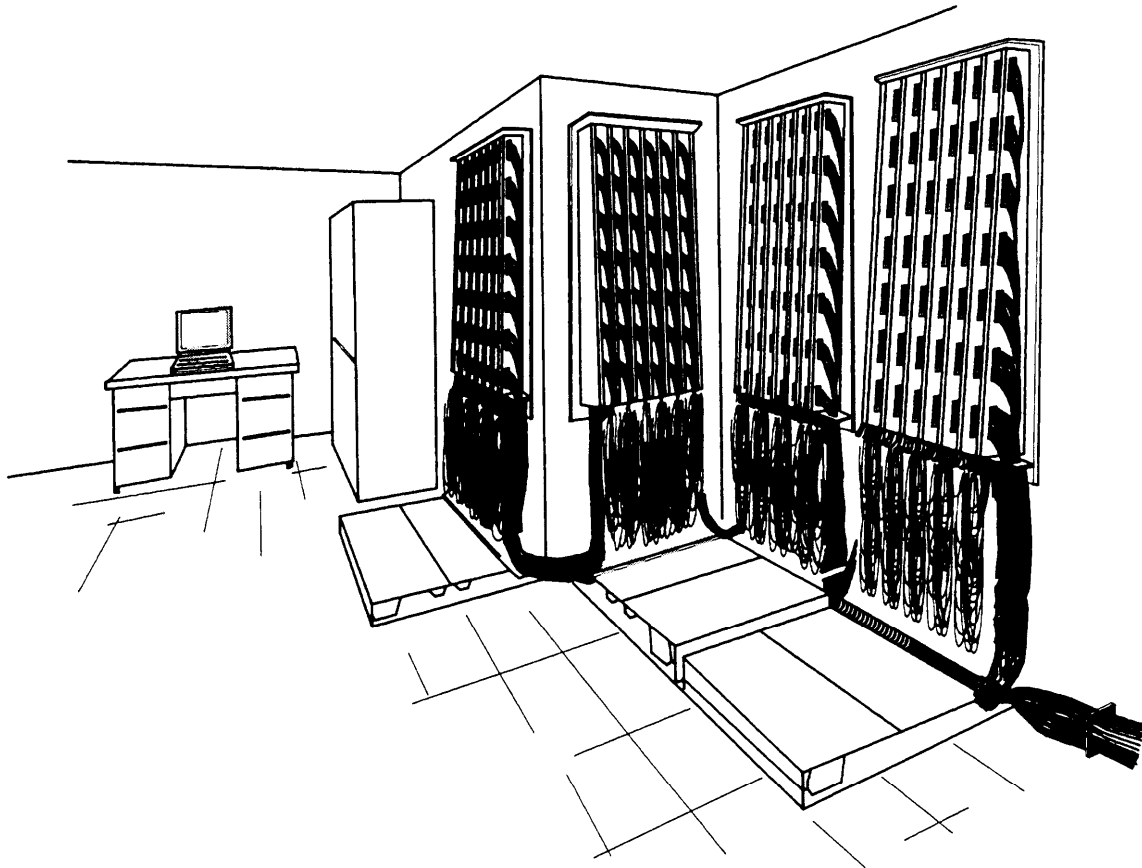


**Figure 2-24. Typical Multi-Section Cross-Connect Field Installation
(Approximately 576 Station Capacity Illustrated)**

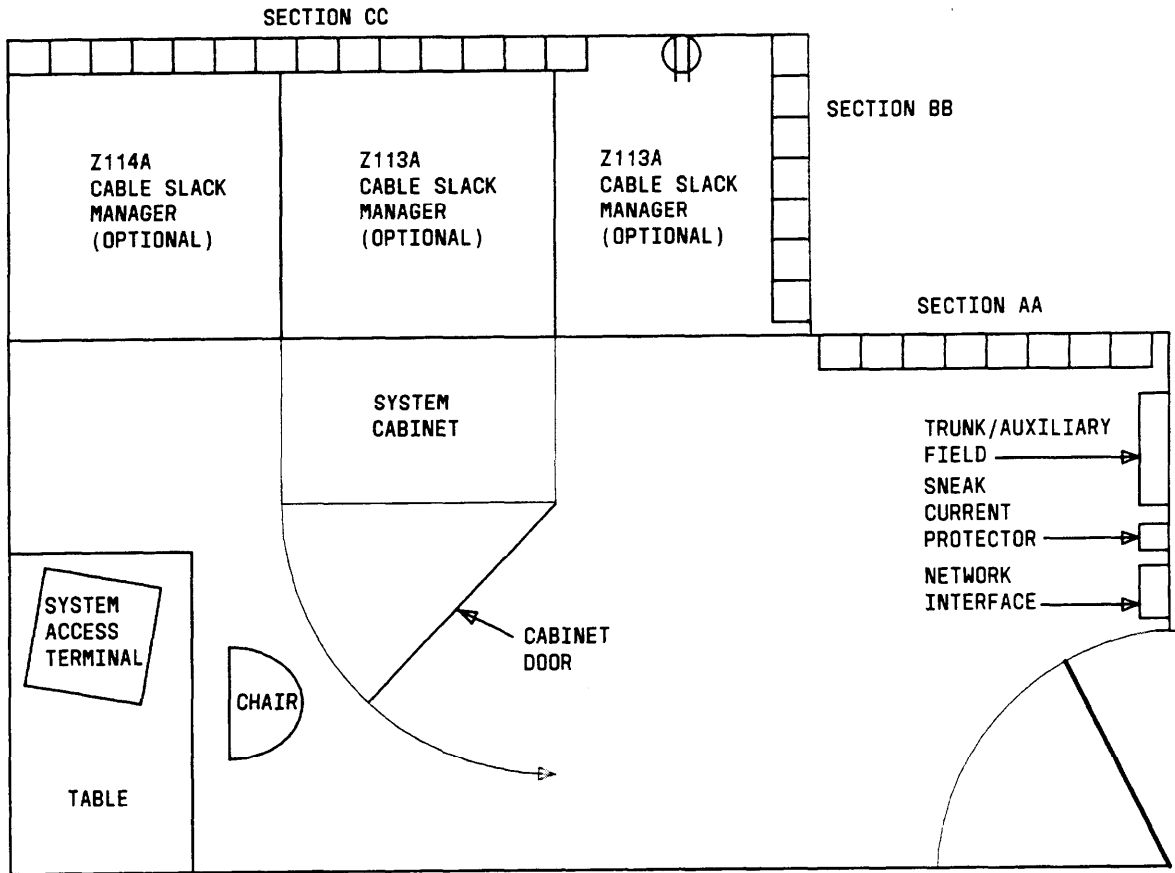


Figure 2-25. Typical 5-Carrier Cabinet Floor Plan Using a Multi-Section Cross-Connect Field

Wall Space Requirements

Single-Section Cross-Connect Field

As shown in Figures 2-22 and 2-23, the cross-connect field and trunk/auxiliary field are mounted on a common wall. A maximum of 20 connector modules, plus a Z9A Support to complete the field, can be mounted continuously on the wall. Each connector module and the Z9A Support are approximately 5 inches (12.7 cm) wide.

If CAPs are used for the trunk/auxiliary field, each column of CAPs mounted to the left or right of the cross-connect field requires approximately 26 inches (66.0 cm) of horizontal wall space. Approximately 8 inches (20.3 cm) of horizontal wall space is required for each column of sneak fuse panels. Wall space must also be provided for emergency transfer units when they are mounted outside the CAPs. If 110-type or 66-type hardware is used as the trunk/auxiliary field, refer to Section 3 or 4 of this manual.

Multi-Section Cross-Connect Field

As shown in Figure 2-25, the multi-section cross-connect field allows you to tailor your cross-connect field to fit in an equipment room with limited horizontal wall space on one continuous wall (no corners) for the size system being installed. The size of each cross-

connect field section is strictly dictated by the horizontal wall space required. The sections may be located on several walls in the room.

Equipment Requirements

Connector Module, Patch Cord, and Cable Slack Manager Requirements

Table 2-E lists the Z100 cross-connect hardware requirements based on station capacity for one cross-connect field section providing 4-pair (Z100A1) or 3-pair (Z100B1) distribution from the equipment room to the station wiring (see Note).

Note: An additional Z9A support must be ordered to complete the field. Also, Z100B1 Connector Modules or Z203A1 Connecting Units are required for connecting off-premises stations.

TABLE 2-E. Z100 Cross-Connect Hardware Requirements

Station Range	Number of Z100A1 or Z100B1† Connector Modules	Number of ZD6A-87 Patch Cords*				Number of Cable Slack Managers
		7 Ft. (2.1m)	10 Ft. (3.0m)	12 Ft. (3.7m)	14 Ft. (4.3m)	
1-24	1	29	-	-	-	1
25-48	2	58	-	-	-	1
49-72	3	87	-	-	-	1
73-96	4	116	-	-	-	1
97-120	5	144	-	-	-	1
121-144	6	173	-	-	-	1
145-168	7	202	-	-	-	2
169-192	8	230	2	-	-	2
193-216	9	257	3	-	-	2
217-240	10	280	9	-	-	2
241-264	11	302	16	-	-	2
265-288	12	320	27	-	-	2
289-321	13	333	40	-	-	3
313-336	14	348	56	-	-	3
337-360	25	359	72	2	-	3
361-384	16	369	90	3	-	3
385-408	17	378	107	5	-	3
409-432	18	386	124	10	-	3
433-456	19	393	138	17	-	4
457-480	20	399	152	26	2	4

* Includes 20% spares rounded up.

† Includes eight spare station jacks per module.

Based on 24 port jacks per Z100B1 connector module.

Cable Access Panel Requirements

The number of cable access panels (CAPs) required is based on the number of through connections required at the CAP. Each CAP provides five 25-pair through connections, in and out. The primary circuits that pass through the CAP are 1-pair central office trunk circuits and 3-pair tie trunk circuits.

The trunk cables connect from the network interface through the sneak fuse panel and CAP to the system cabinet. Concentrator cables are used between the CAP and the system cabinet. The connections are described under the heading **Installing Trunk Cables Between Network Interface and System Cabinet** in this manual.

Trunk Circuit Capacities

Because concentrator cables are installed between the CAP and the system cabinet, the capacity for each pass-through connection is 24 one-pair trunks or 8 three-pair trunks.

Procedure:

1. Divide total number of 1-pair circuits by 24.
2. If there is a remainder, round up to the next highest number. Let this number equal **PR1**.
3. Divide total number of 3-pair circuits by 8.
4. If there is a remainder, round up to the next highest number. Let this number equal **PR3**.
5. Add **PR1** and **PR3**. Let this number equal **CR** (total number of pass-through connections for trunk circuits).
6. Determine the total number of pass-through connections (**X**) required for the following auxiliary and miscellaneous circuits:
 - Analog voice terminals used for emergency transfer service and as normal extensions. Divide total number provided by eight. If there is a remainder, round up to the next highest number.
 - Digital out-of-building voice terminals. Divide total number provided by eight. If there is a remainder, round up to the next highest number.
 - Analog out-of-building voice terminals. Divide total number provided by 24. If there is a remainder, round up to the next highest number.
 - Each 71A data mounting or 3270C data module that connects directly through the CAP to a system circuit pack.
7. Add **CR**, **X**, and 1*. Divide this number by 5. If there is a remainder, round up to the next highest number. This is the total number of CAPs required.

Selecting the Cable Access Panel

Once the number of CAPs required is known, a choice has to be made as to what combination of the three available codes to order. This selection is based solely on the emergency transfer requirements.

If ground start trunks are used for the emergency transfer stations, the 400C apparatus mounting equipped with the 574-5 Power Transfer Unit is recommended. The 574-5 unit

* Auxiliary connection always required on initial CAP for control carrier outputs.

provides automatic ground start (no ground start switches are needed). Each 574-5 unit can accommodate up to five voice terminals used for emergency transfer service.

If loop start trunks are used for the emergency transfer stations, the 400B apparatus mounting equipped with the Z1A Emergency Transfer Unit is recommended. Each Z1A unit can accommodate up to six voice terminals used for emergency transfer service (see Note).

Note: One of the emergency transfer positions is occupied by the optional DID make-busy trunk, if provided.

If there are no emergency transfer stations, the 400A apparatus mounting is recommended. It is also recommended when more than one CAP is required and the emergency transfer units are located in another CAP or outside the CAP.

If the number of analog stations required for emergency transfer service exceeds the capacity of the CAPs, additional emergency transfer units should be ordered separately and mounted on the wall near the CAP. Each wall-mounted emergency transfer unit requires an additional CAP pass-through connection.

EQUIPMENT ROOM HARDWARE AND CABLING INSTALLATION

Hardware Installation

The procedures provided in this manual for installing hardware are written so that one System Technician can do the installation. Procedures are provided for installing the following:

- Cross-Connect Field
- Cable Slack Managers
- Labels for Cross-Connect Field
- Cable Access Panels
- Labels for Cable Access Panels
- Sneak Fuse Panels.

Installing the Cross-Connect Field

The preferred cross-connect field location is directly behind the switch cabinet. The first connector module is aligned with the left side of the switch cabinet (see Figure 2-21). This arrangement allows for growth on the right side of the cross-connect field.

When off-premises stations are required and you are installing a cross-connect field using Z100A1 connector modules, Z100B1 connector modules provided for off-premises stations are installed last in the field.

To install the cross-connect field, proceed as follows:

1. Locate the position of the first connector module on the floor plan.
2. Position the bottom of the first connector module 35 inches (88.9 cm) above the floor as shown in Figure 2-26 (see Note).

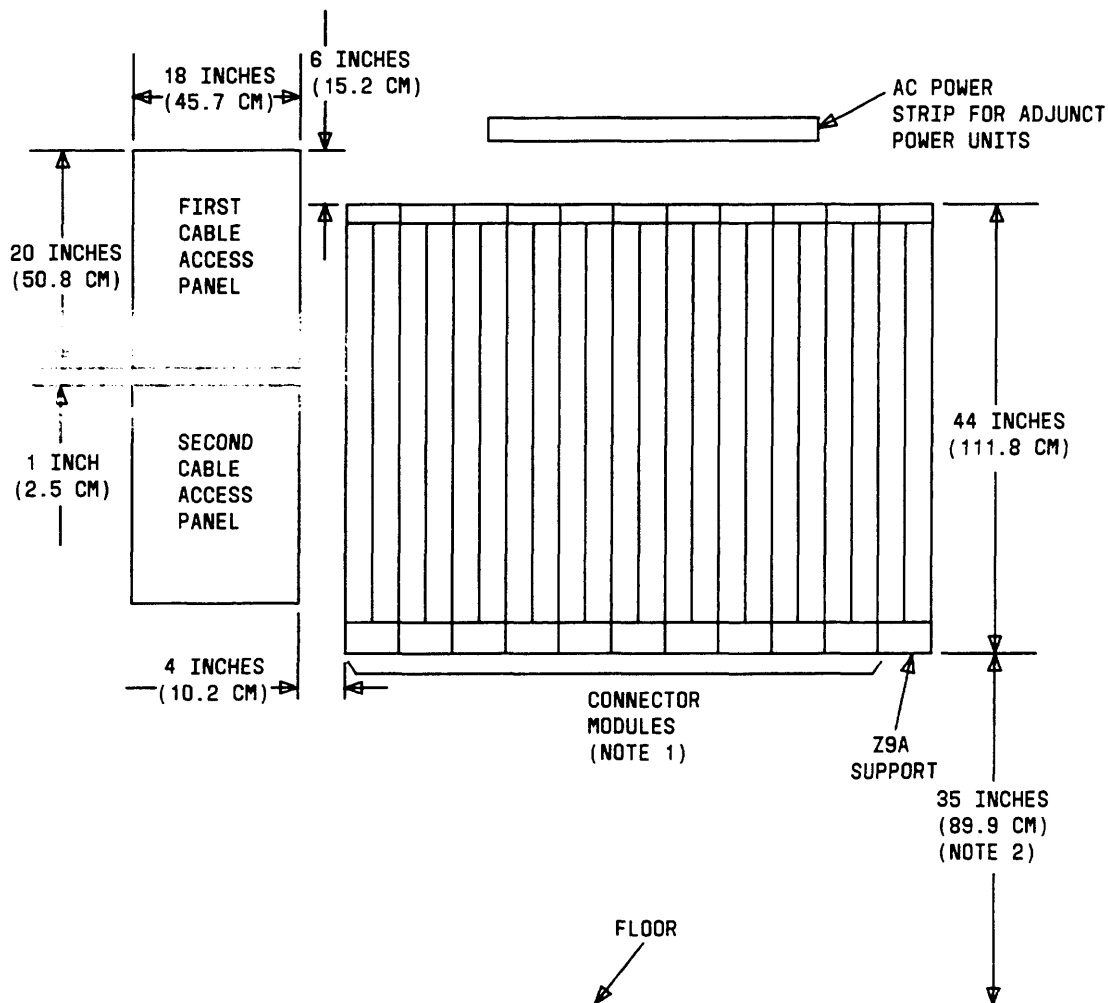
Note: The first module must be mounted accurately in a vertical position (plumb) because all other modules are positioned from this one.

3. Mark the upper-left slotted mounting screw opening in the support.
4. Remove the module, drill a hole in the backboard for No. 10 wood screw, and start the 1-1/4 inch (32-mm) screw.
5. Move the module back in place and carefully align with a level.
6. Mark the remaining five slotted openings located in the support and remove the module.
7. Drill holes in the backboard for No. 10 wood screws and move connector module back into place.
8. Using 1-1/4 inch (32-mm) No. 10 wood screws, fasten the cross-connect module into place. Do not tighten the screws on the right side until the next connector module is in place.
9. Using the positioning tabs, align the next connector module to the right of the previously installed module.
10. Push the supports together until the top and bottom interlocks snap together.
11. Tighten the screws on the left side for the previously installed connector module.

12. Drill the pilot holes for the upper- and lower-slotted openings on the right side of new support and start the screws.
13. Repeat steps 9, 10, 11, and 12 until all connector modules (20 maximum) and the Z9A support (see Note) are installed.

Note: The Z9A support provides a patch cord channel for the last connector module installed.

14. If you are installing a multi-section cross-connect field, locate the position of the first connector module on the floor plans and repeat the procedure from step 2 for each section.



NOTES:

1. EACH CONNECTOR MODULE AND THE Z9A SUPPORT IS 5 INCHES (12.7 CM) WIDE.
2. THIS DISTANCE IS FROM THE FLOOR TO THE BOTTOM OF THE Z9A SUPPORT

Figure 2-26. Cross-Connect Field and Cable Access Panel Installation

Installing Cable Slack Managers

To install the cable slack managers, proceed as follows:

1. Position the first cable slack manager against the wall under the cross-connect field aligning the side of the manager with the first module installed.
2. Position the next cable slack manager under the cross-connect field and alongside the previously installed manager insuring that tabs and interlocks align and fit together.
3. Repeat step 2 until all the cable slack managers are installed.

Note: Nine 1/4-inch (6.4-mm) diameter holes are provided in the cable slack manager bases for earthquake mounting if required. Also, if the cable slack managers are mounted on an uneven floor, shims may be required to keep the cable slack managers level and insure proper fit of the covers. Holes are also provided in the sides of the base for bolting the cable slack managers together. Bolts and shims must be locally provided.

Labeling the Cross-Connect Field

Figure 2-27 shows graphic symbols used (instead of words) on labels for switch, cross-connect, information outlets, and cables for the system. The labels are color-coded to identify the system wiring as follows:

- Green—Leads to central office
- Purple—Leads to switch ports
- Yellow—Leads to auxiliary equipment and miscellaneous switch leads
- Blue—Leads to information outlets
- White—Leads from the cross-connect field to satellite locations (3-pair)
- Grey—Leads between cross-connect field sections and between satellite locations.

		Designations
	Cabinet	<u>1, 2, 3 . . . n</u>
	Carrier	A, B, C, D, E
	Slot	1, 2, 3 . . . 20
	Information Outlet	1, 2, 3 . . . 560
	Tie Circuit	1, 2, 3 n
	Site/Satellite Closet	A, B, C, D, E, F
	Floor	} Write Floor or Building Identification on Label as Required for Easy Identification.
	Building	

Figure 2-27. System Label Graphic Symbols and Designation Nomenclature

Main Cross-Connect Field

Figures 2-28 illustrates a typical cross-connect field layout and fill directions.

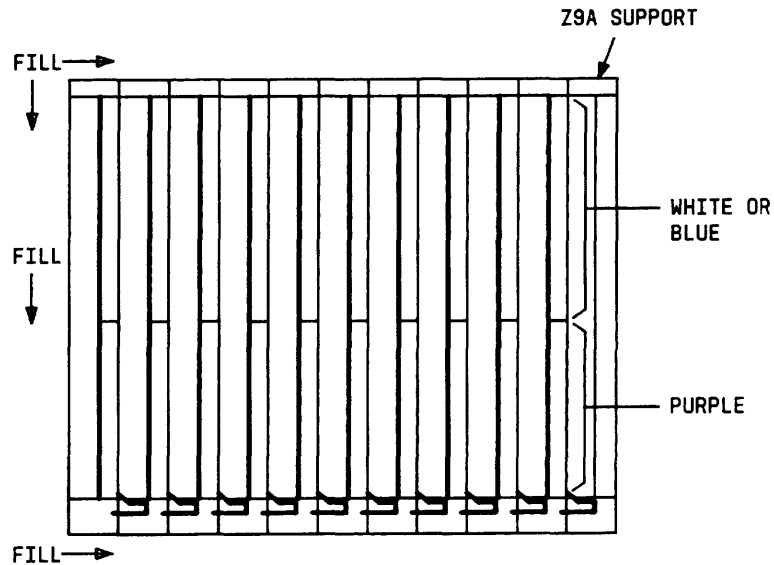


Figure 2-28. Cross-Connect Field Layout

PORT LABELS—PURPLE

The labels shown in Figure 2-29 identify equipped carrier slots (see Note) in the switch cabinet. These labels should be grouped together (by carriers) starting with cables from Carrier A on the first connector module installed.

Note: Equipped carrier slots are identified on the Customer Service Order.

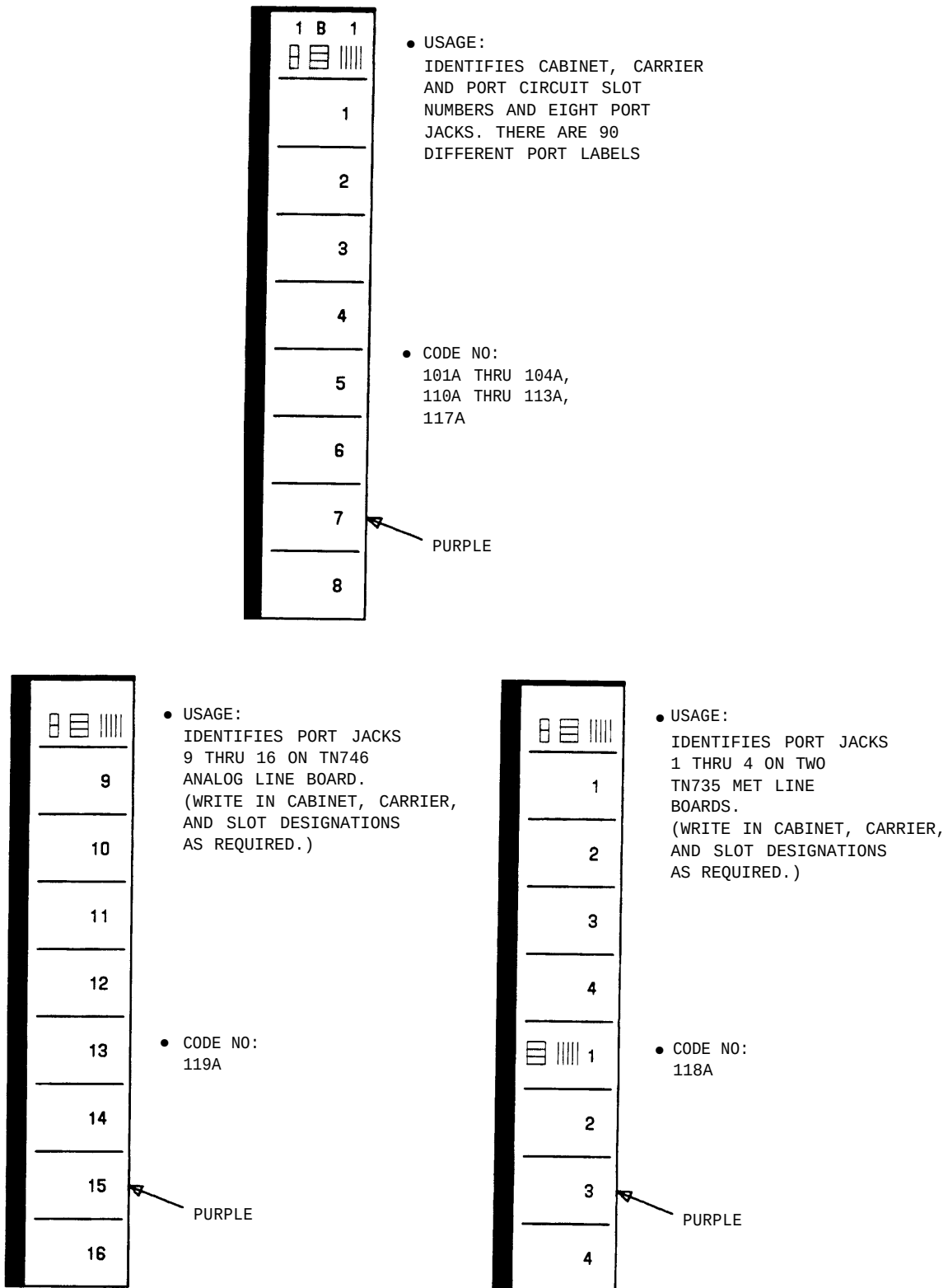


Figure 2-29. Port Labels

4-PAIR STATION LABELS—BLUE

The labels shown in Figure 2-30 identify 4-pair station appearances at the cross-connect field. These labels should be installed in sequence (1 to 480) starting with the first connector module installed. These numbers are used throughout the station wiring and at the information outlets.

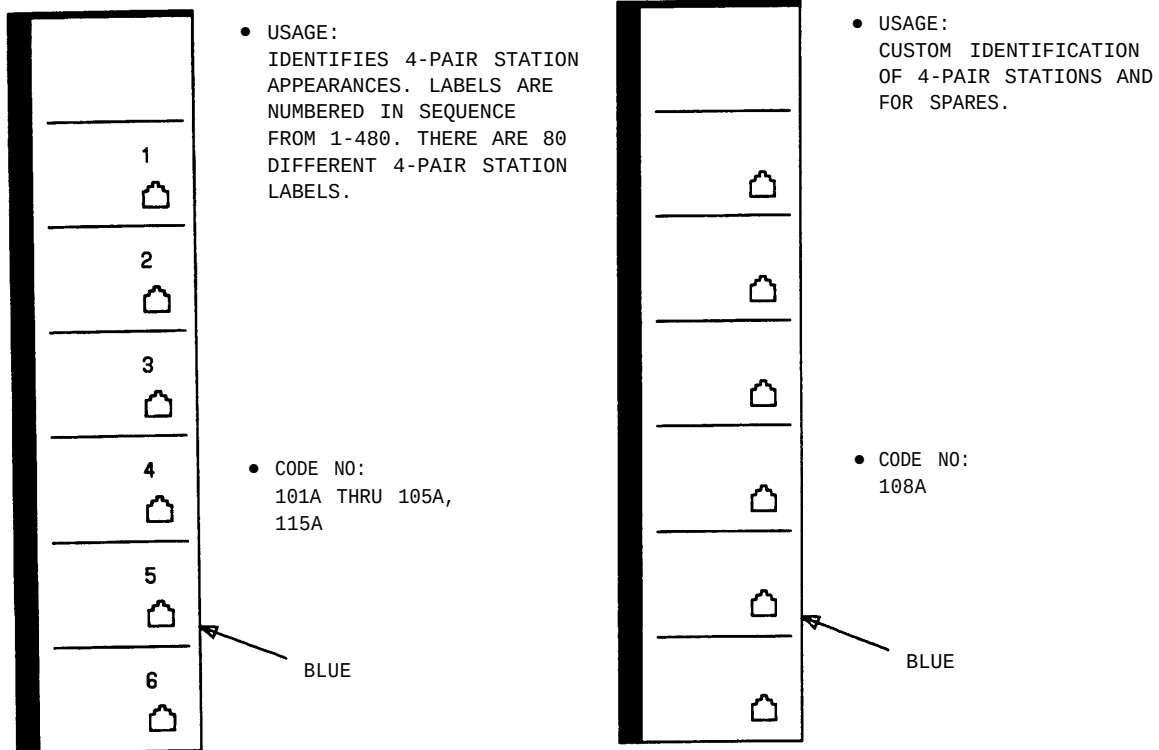


Figure 2-30. 4-Pair Station Appearance Labels

3-PAIR STATION LABELS—BLUE AND WHITE

The blue label shown in Figure 2-31 identifies 3-pair station appearances (on-premises and off-premises) at the cross-connect field. The on-premises labels are installed in sequence (1 to 560) starting with the first connector module installed. The off-premises labels must be grouped together and installed in sequence (1 to 80) on Z100B1 connector modules (see Note).

Note: Z100B1 connector modules are located at the end of the cross-connect field when Z100A1 connector modules are used at the cross-connect field to provide 4-pair circuits from the equipment room to the station wiring.

The white label shown in Figure 2-31 identifies 3-pair station appearances at the cross-connect field that connect to a satellite location. The white labels must be grouped and numbered in sequence (1 to N) to correspond to the satellite location labeling.

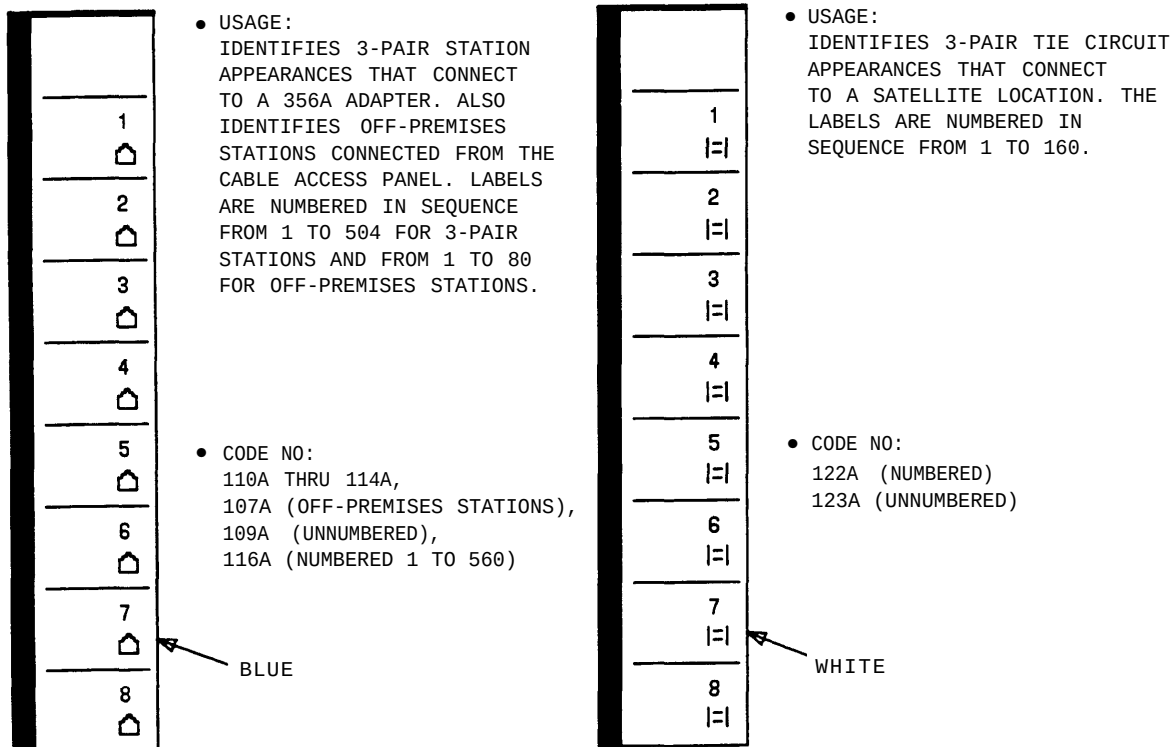


Figure 2-31. 3-Pair Station Appearance Labels

AUXILIARY LABELS—YELLOW

The labels shown in Figure 2-32 identify auxiliary port and circuit appearances at the cross-connect field. They are placed at the end of the purple field.

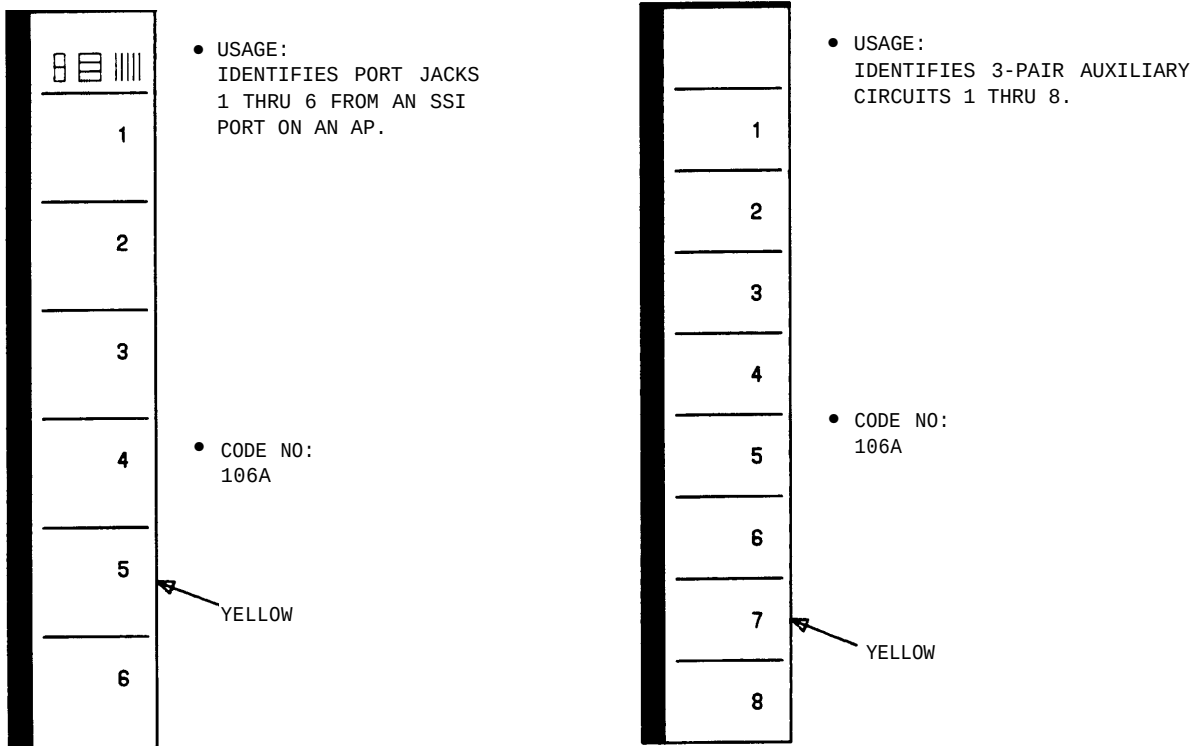


Figure 2-32. Auxiliary Labels

Multi-Section Cross-Connect Field

SECTION TIE LABELS—GREY

The labels shown in Figure 2-33 are used at the end of a section of a multi-section cross-connect field section to identify 25-pair tie cables that connect between sections. The label on the left is installed at the end of the purple or white field. The label on the right is installed at the end of the blue field.

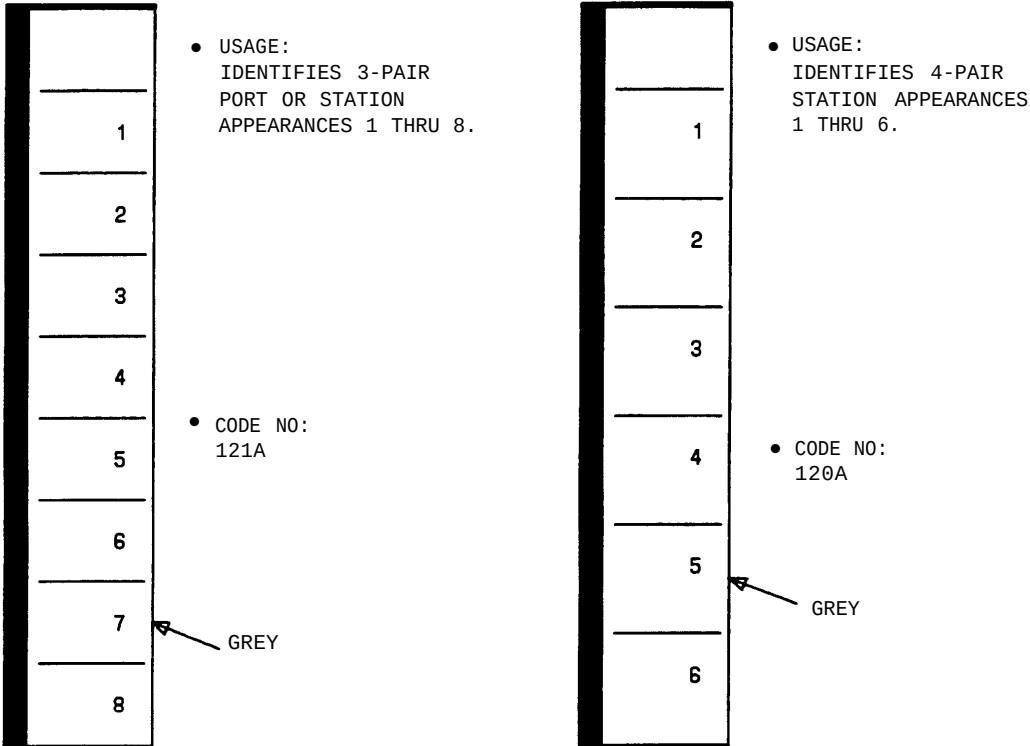


Figure 2-33. Section TIE Labels

CONNECTOR MODULE LABEL CODE NUMBER DEFINITIONS

Label Codes 101A through 105A

Label Code	4-Pair Station* (Blue)		Port (Purple)		Total
Number	Range (Sta. No.)	Qty (Spares)	Range	Quantity	Total
101A	001—102	17 (3)	1A 1—20 1B 1—20	40	60
102A	103—204	17 (3)	1C 1—20	20	40
103A	205—306	17 (3)	1D 1—20	20	40
104A	307—408	17 (3)	1E 1—20	20	37
105A	409—480	12 (8)	-	0	20

* Increments of six stations per label.

Label Code 106A—Auxiliary Labels

Consists of ten yellow labels (see Figure 2-32). Five of the labels are sectioned to identify eight 3-pair auxiliary circuits. Three labels are sectioned to identify port jacks one through six from an SSI port on an Applications Processor. Two spare labels are provided.

Label Code 107A—3-Pair Station Labels

Consists of ten blue labels (see Figure 2-31). Each label identifies eight off-premises stations. The labels are numbered sequentially from 1 to 80.

Label Code 108A—4-Pair Station Labels

Consists of ten unnumbered blue labels (see Figure 2-30).

Label Code 109A—3-Pair Station Labels

Same as Code 107A except the ten labels are unnumbered.

Label Codes 110A through 114A

Label Code	3-Pair Station* (Blue)		Port (Purple)		Total
Number	Range (Sta. No.)	Quantity	Range	Quantity	Total
110A	001—104	13	1A 1—10 1B 1—20	30	43
111A	105—200	12	1C 1—20	20	32
112A	201—304	13	1D 1—20	20	33
113A	305—400	12	1E 1—20	20	32
114A	401—504	13	-	0	13

* Increments of eight stations per label.

Label Code 115A—4-Pair Station Labels

This label code provides only the 4-pair station labels (blue) numbered 1-480. These labels are the same as the 4-pair station labels in label codes 101A through 105A. Consists of 100 labels (see Figure 2-30).

Label Code 116A—3-Pair Station Labels

This label code provides only the 3-pair station labels (blue) numbered 1-560. These labels are the same as the 3-pair station labels in label codes 110A through 114A except some extra labels are provided. Consists of 100 labels (see Figure 2-31).

Label Code 117A—Port Labels

This label code provides only the port labels (purple) for carriers A-E and are numbered 1-20 for each carrier. These labels are the same as the port labels in label codes 101A through 114A. Consists of 100 labels (see Figure 29).

Label Code 118A—MET Circuit Labels

Consists of ten purple labels (see Figure 2-29) to identify port jacks on two MET line boards.

Label Code 119A—16-Port Analog Line Labels

Consists of ten purple labels (see Figure 2-29) to identify port jacks 9 through 16 on a 16-port analog line board.

Label Code 120A—4-Pair Section TIE Labels

Consists of ten grey labels (see Figure 2-33). The labels are sectioned to identify six 4-pair station appearances.

Label Code 121A—3-Pair Section TIE Labels

Consists of ten grey labels (see Figure 2-33). The labels are sectioned to identify eight 3-pair station appearances.

Label Code 122A—Satellite Closet Labels

Consists of 40 white labels (see Figure 2-31). The labels are sectioned to identify eight 3-pair station appearances and are numbered from 1-160.

Label Code 123A—Satellite Closet Labels

Consists of ten unnumbered white labels. The labels are sectioned to identify eight 3-pair station appearances.

CONNECTOR MODULE LABEL ORDERING INFORMATION

Description	Qty. Per Code	Comcode
101A Labels	60	103 969 754
102A Labels	40	103 969 762
103A Labels	40	103 969 770
104A Labels	40	103 969 788
105A Labels	20	103 969 796
106A Labels	10	103 969 804
107A Labels	10	103 969 812
108A Labels	30	103 969 820
109A Labels	10	103 969 838
110A Labels	60	103 969 846
111A Labels	40	103 969 853
112A Labels	40	103 969 861
113A Labels	40	103 969 879
114A Labels	20	103 969 887
115A Labels	100	103 985 131
116A Labels	100	103 985 149
117A Labels	100	103 985 156
118A Labels	10	103 985 164
119A Labels	10	103 985 172
120A Labels	10	103 985 180
121A Labels	10	103 985 198
122A Labels	40	103 985 206
123A Labels	10	103 985 214

Installing the Cable Access Panels (CAPs)

The cable access panels are wall-mounted. A maximum of three panels can be mounted in a vertical column. To install the cable access panels, proceed as follows:

1. Align the first cable access panel 4 inches (10.2 cm) to the left side and 6 inches (15.2 cm) above the cross-connect field location (see Figure 2-26).
2. Mark the keyhole mounting screw location in the upper-right corner of the cable access panel.
3. Remove the cable access panel, drill a hole in the backboard, and start a 3/4-inch (19 mm) No. 12 wood screw.
4. Move the cable access panel back into place and align.
5. Mark the remaining three keyhole mounting screw locations in the cable access panel.
6. Remove panel and drill pilot holes in the backboard.
7. Move the cable access panel back into place and fasten to the backboard with the 3/4-inch (19 mm) No. 12 wood screws.
8. Align next cable access panel 1 inch (2.5 cm) below the previously positioned cable access panel and repeat steps 2 through 7.
9. If you are installing two columns of cable access panels, position top cable access panel 4 inches (10.2 cm) to the left of the first column of cable access panels and repeat procedure from step 2.

Labeling the Cable Access Panel

The CAP labels are ordered along with other labels. The labels slide into a clear plastic holder (Figure 2-34) that snaps into place between the 110-type terminal rows. The holder is apparatus coded as a strip designation.

CABLE ACCESS PANEL LABEL ORDERING INFORMATION

Description	Qty. Per Code	Comcode
230A Labels	20	103 970 109
188UT1-50 Strip Designation	6	103 895 504

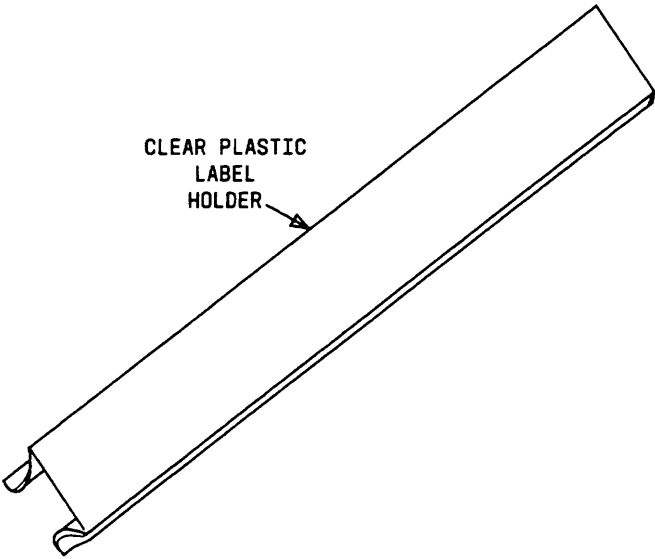


Figure 2-34. Clear Plastic Label Holder (188UT1-50 Strip Designation)

Control Carrier Outputs (AUXILIARY) Label

The label shown in Figure 2-35 is used for the System 75. For labeling required for the System 75 XE, refer to the AUXILIARY connector labeling in section 3 (110-type hardware) of this document. The AUXILIARY connector label is always installed between terminal rows 1C and 2D on the first (top) CAP. The top half of this label identifies the outputs from the control carrier AUXILIARY connector on the 1C terminal row. These outputs are distributed to other points in the CAP and do not pass directly through the CAP. These outputs include the following:

- Alarm monitoring for the Applications Processor and the Auxiliary Cabinet
- Seven -48 volts dc power sources for emergency transfer units
- Three -48 volts dc power sources for remotely powering two attendant consoles and one executive's voice terminal adjunct (not available on the System 75 XE)
- The Initialization and Administration System (INADS) trunk connection location.
- For the System 75 XE, access to a relay contact is available for a customer-provided alarm that can be used to connect a light, bell, or similar type device. The relay can be administered so that it will make contact when a major, minor or warning alarm condition exists on the system. The circuitry required for this feature must be provided by the customer. The device connected to the alarm leads must not exceed a rating of more than 100 volts at 3/4 amps.

The bottom half of the label is used to identify trunk circuits (1-pair or 3-pair) on the 2D terminal row that connect through the sneak fuse panel to the network interface.

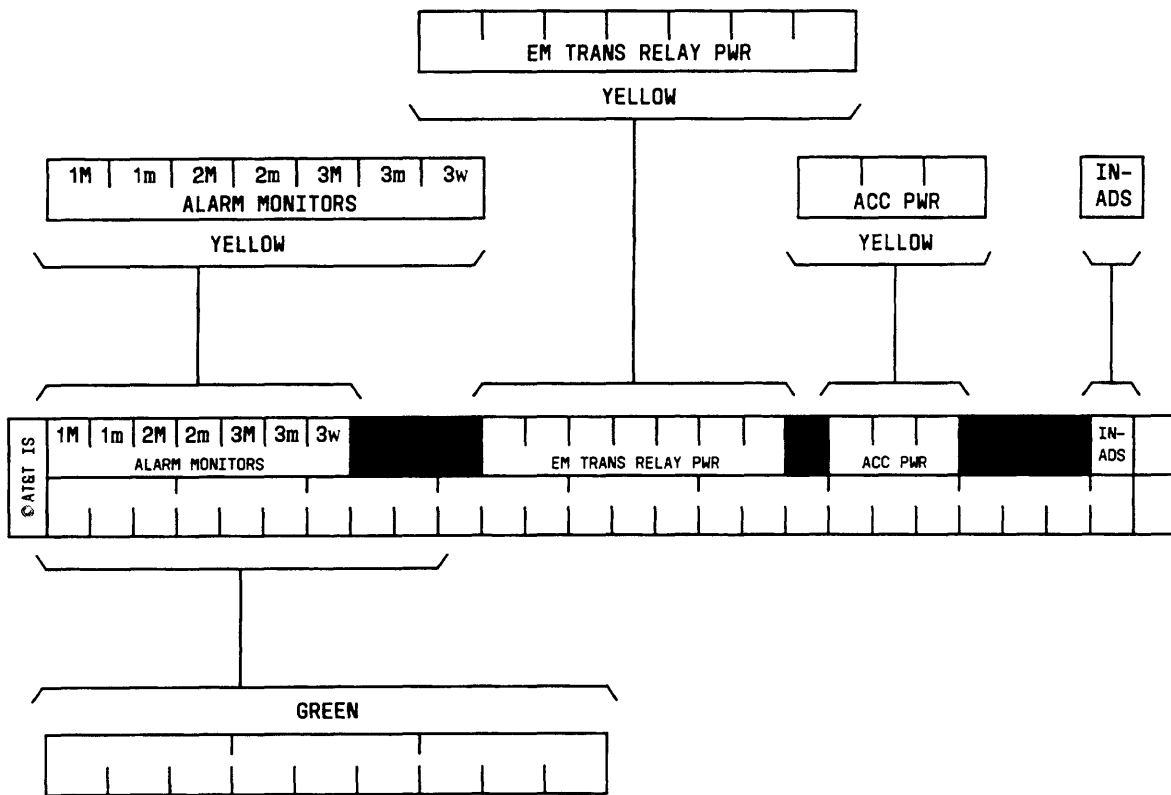


Figure 2-35. Control Carrier Outputs (AUXILIARY Label)

System Port Circuit Appearance and Trunk Labels

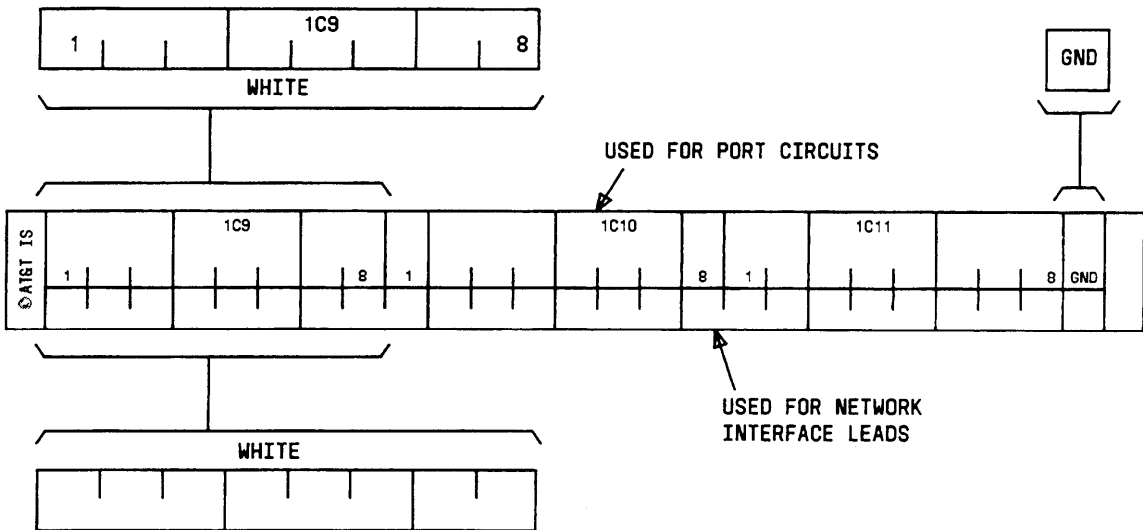
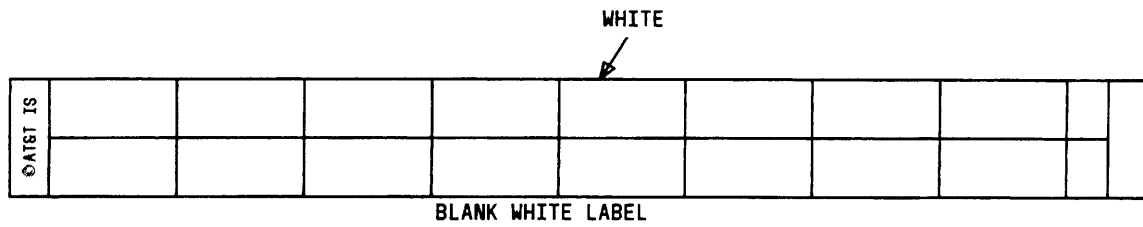
The labels shown in Figure 2-36 are used to identify system port circuit appearances and network interface leads for trunk circuits. The top label shown in Figure 2-36 is a blank white label. The bottom label shown in Figure 2-36 shows an example of how to fill out a blank white label to be used when concentrator cables are located between the CAP and the switch cabinet.

The top half of the label identifies system port circuit appearances. The bottom half of the label identifies 1-pair or 3-pair trunk circuits that connect through the sneak fuse panel to the network interface.

System Port Circuit Appearance and Auxiliary Circuit Labels

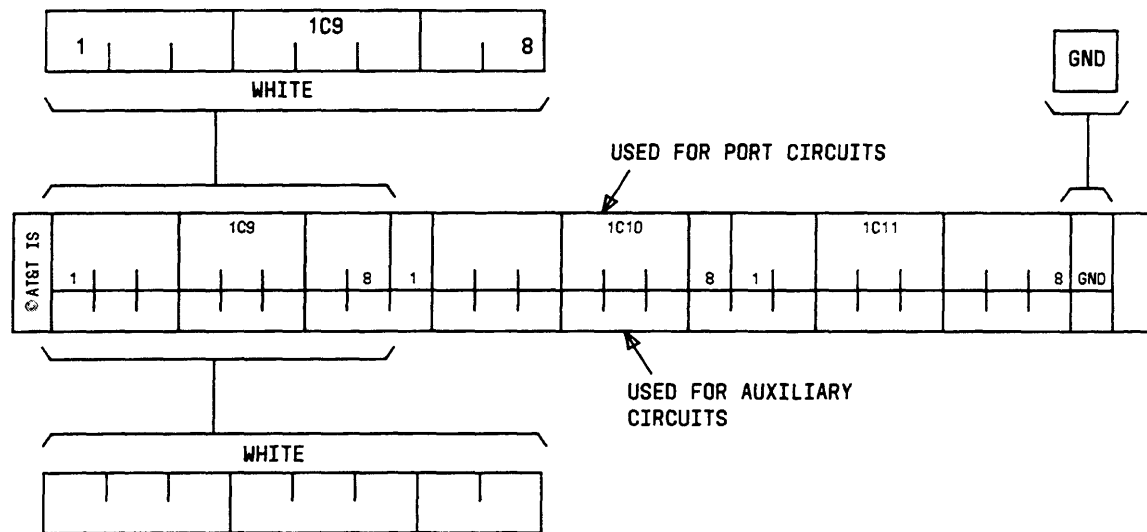
The label shown in Figure 2-37 is used to identify system port circuit appearances and auxiliary leads. The label shown in Figure 2-37 shows an example of how to fill out a blank white label (Figure 2-36) to be used when concentrator cables are located between the CAP and the switch cabinet.

The top half of the label identifies system port circuit appearances. The bottom half of the label identifies 3-pair auxiliary circuits that connect directly through the CAP to the switch cabinet. These circuits are not cross-connected. This would include connections such as those from a 71A data mounting to a Digital Line circuit pack.



EXAMPLE OF FILLING OUT WHITE LABEL TO BE USED FOR SYSTEM PORT CIRCUITS
AND NETWORK INTERFACE LEADS

Figure 2-36. System Port Circuit Appearances and Trunk Labels



EXAMPLE OF FILLING OUT WHITE LABEL TO BE USED FOR SYSTEM PORT CIRCUITS
AND AUXILIARY CIRCUITS

Figure 2-37. System Port Circuit Appearances and Auxiliary Circuit Labels

Emergency Transfer Label—Z1A Unit

There are two labels (see Figure 2-38) that can be used for the Z1A Emergency Transfer Unit. The top label shown in Figure 2-38 is used on the EM XR row for 400B cable access panels equipped with the Z1A unit. It can also be used for externally mounted Z1A units. The top half of the label identifies leads to the Z1A unit and the connection point for -48 volts dc power. When used with the preinstalled Z1A unit, the bottom half of the label is used to identify connections for alarm outputs from an Applications Processor or Auxiliary Cabinet on the 1D terminal row. When used with an externally mounted Z1A unit, the bottom half of the label identifies 3-pair auxiliary circuits that connect directly through the CAP to the switch. This would include connections such as those from a 71A data mounting to a Digital Line circuit pack.

The bottom label shown in Figure 2-38 is used when the Z1A unit is used and located outside the CAP. The top half of the label is identical to the label used for the preinstalled Z1A unit. The bottom half of the label is used to identify 1-pair or 3-pair trunk circuits that connect to the network interface.

Emergency Transfer Labels—574-5 Unit

The two labels shown in Figure 2-39 show an example of how to modify the Z1A Emergency Transfer Unit labels (Figure 2-38) to be used for the 574-5 power transfer unit. The right hand portion of the label must be changed as shown in the exploded view in Figure 2-39. The 574-5 unit is preinstalled in the 400C cable access panel.

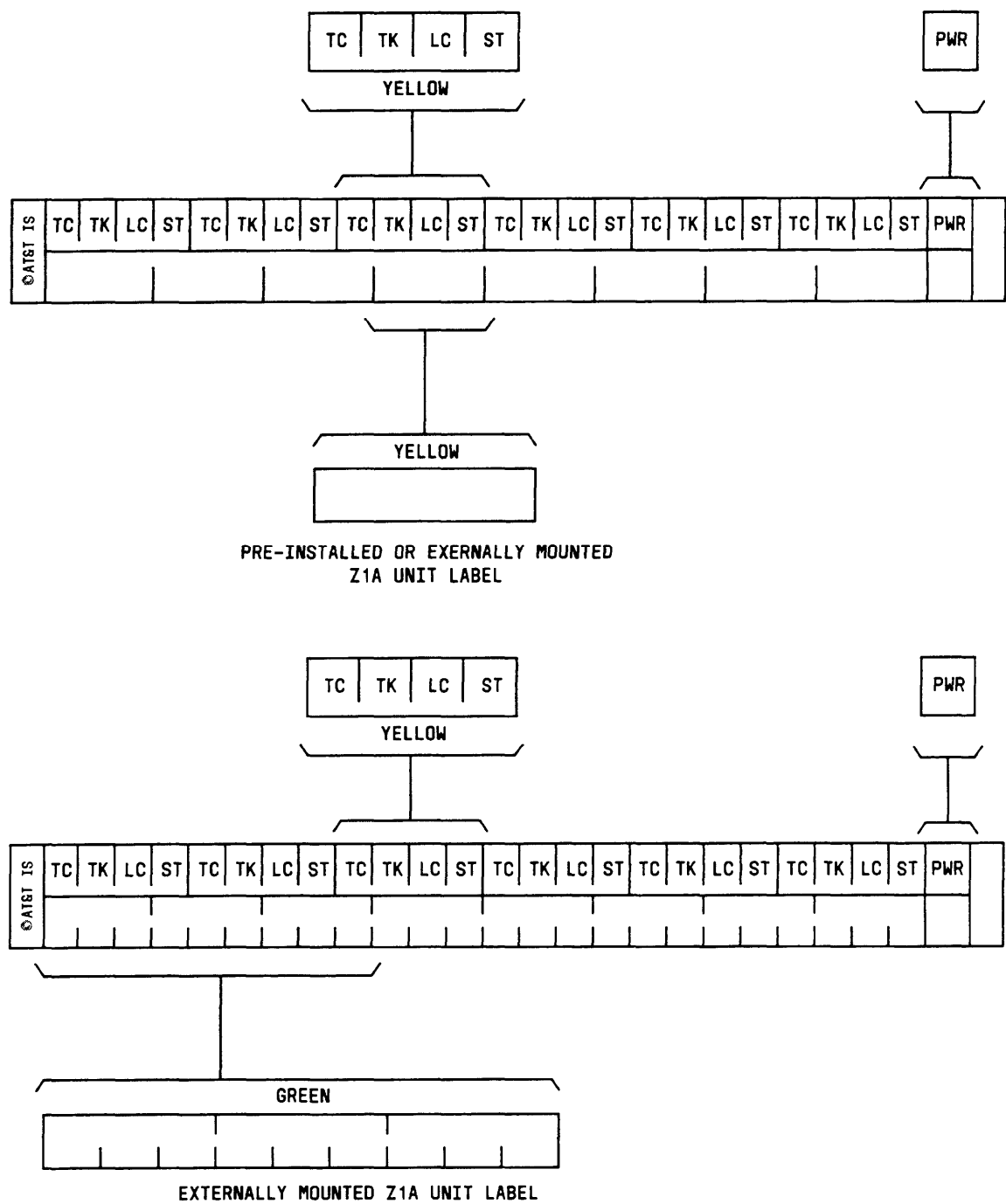


Figure 2-38. Z1A Emergency Transfer Unit Labels

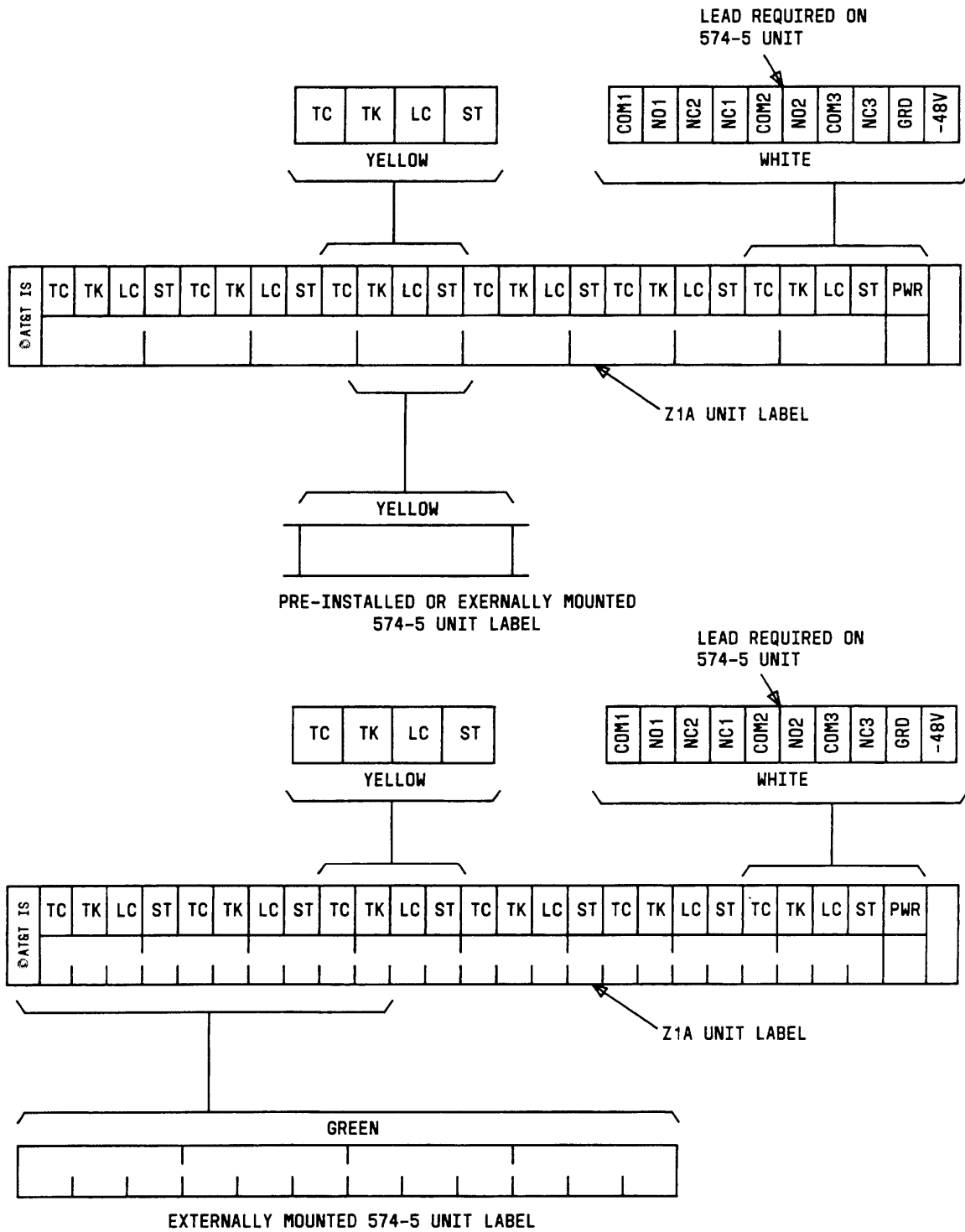


Figure 2-39. 574-5 Power Transfer Unit Labels

"X" Connector Label

The label shown in Figure 2-40 is installed between terminal rows 5C and "X" on the CAP. The top half of the label identifies system port circuit appearances on the 5C connector that are used for voice terminals used for both emergency transfer stations and normal extensions. The bottom half of the label identifies the connection to the cross-connect field for voice terminals used only for emergency transfer.

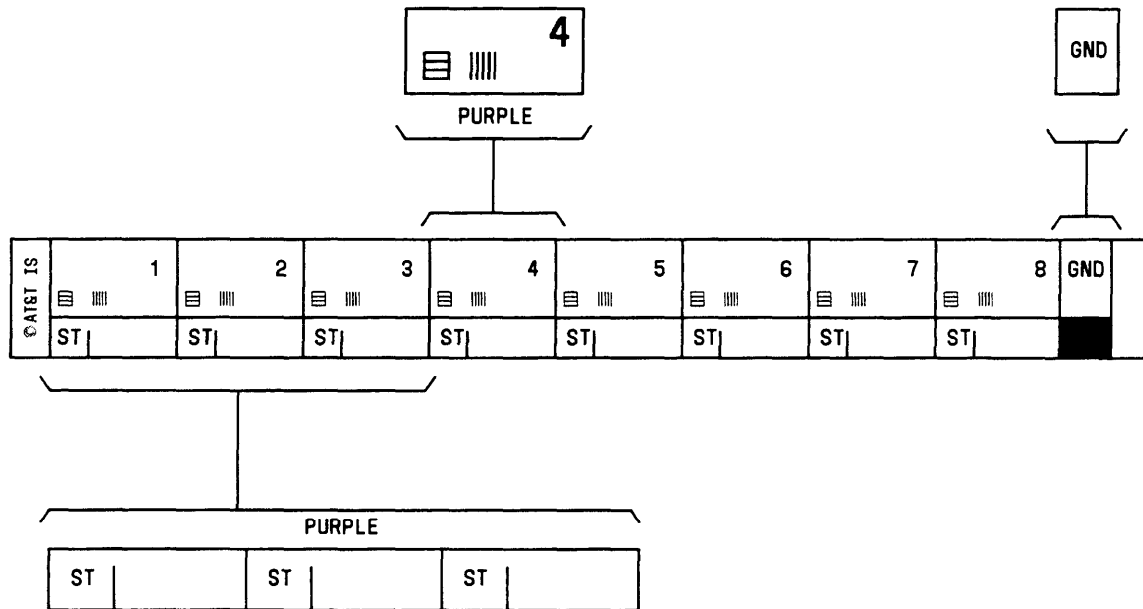


Figure 2-40. "X" Connector Label

Installing the Sneak Fuse Panels

Install the sneak fuse panels as near as possible to the network interface. The fuse panel has two mounting screw slots. To install the panel, proceed as follows:

1. Hold the panel against the mounting surface and mark the upper right and lower left mounting screw locations and remove panel.
2. Drill pilot holes at the marked locations and partially install the screws.
3. Slide the panel onto the mounting screws and tighten.
4. Repeat the procedure for each additional sneak fuse panel.

Cable Installation*Labels*

The port label shown in Figure 2-41 is installed on both ends of the 25-pair main cross-connect field and the cable access panel. The blue/yellow building and floor labels are optionally used for cables that connect from the equipment room to a site or satellite location located on another floor or in another building. An additional yellow port label is shown. This yellow label is used for auxiliary circuits that connect to the cable access panel or SSI circuits that connect to an Applications Processor.

The yellow/blue label is used on 25-pair station cables that connect to site or satellite closets.

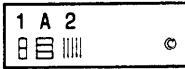
LABEL NAME	RANGE	SAMPLE LABEL
PORT CABLE	1A1-1A10, 1B1-1B20, 1C1-1C20, 1D1-1D20, 1E1-1E20	
BUILDING	FIELD IDENTIFIED	
FLOOR	FIELD IDENTIFIED	
AUXILIARY CABLE	FIELD IDENTIFIED	
SITE OR SATELLITE	A-F AND/OR FIELD IDENTIFIED	

Figure 2-41. Equipment Room Cabling Labels

CABLE/JACK/BUILDING LABEL ORDERING INFORMATION

Description	Qty. Per Code	Comcode
201A Labels	34 sheets	103 969 994

Figure 2-42 shows the proper label installation on a 25-pair cable connector (see Note).

Note: The label should be installed near the rear of the connector as shown so that it will not be obscured by any of the switch cabinet, cable access panel, or connector module connector retainers. It can also be installed on the skin of the cable near the connector.

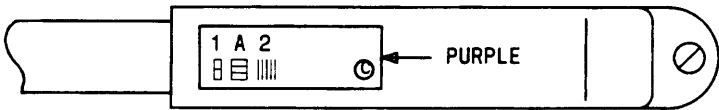


Figure 2-42. Self-Stick Label Installation on 25-Pair Cable Connector

Routing Cable Guidelines

The following guidelines should be followed when installing the equipment room cabling. Following these guidelines will make optimum use of the cable slack managers and make future cabling additions and changes easier.

General

Figure 2-43 shows cable routing through the cable slack manager for a 1-cabinet installation. Cables pass through the cable slack manager in either the cabinet or wall troughs or when needed through the two center troughs.

Port cables should use the cabinet trough for the parallel runs. The station cables should use the wall trough. The center troughs are used after the cabinet and wall troughs are filled.

Figure 2-44 shows typical cable routing from the switch cabinet to the cross-connect field and cable access panel.

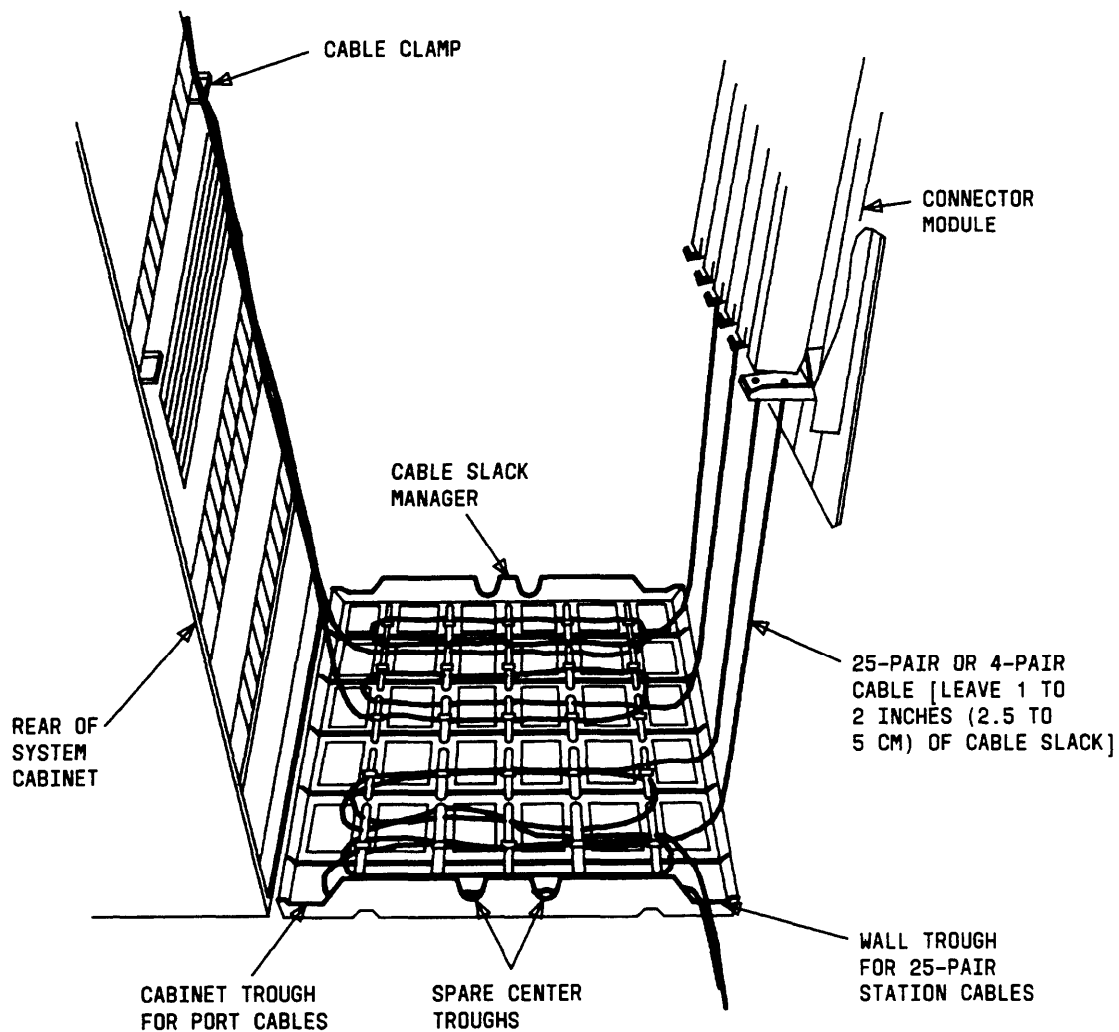
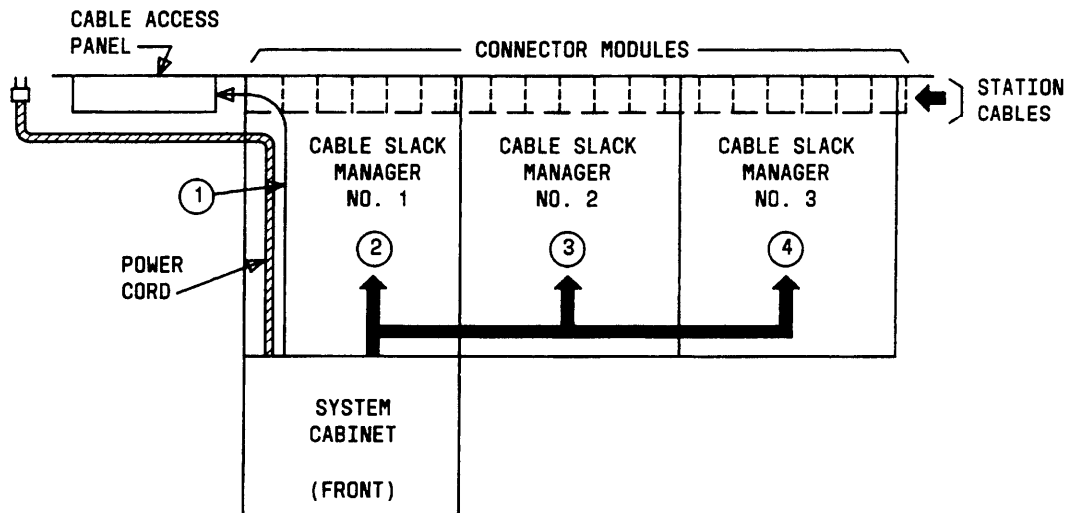


Figure 2-43. Cable Routing Through Cable Slack Manager—1-Cabinet Installation



- ① CABLES RUN FROM SWITCH CABINET TO CABLE ACCESS PANEL.
- ② CABLES RUN FROM SWITCH CABINET TO FIRST SIX CONNECTOR MODULES.
- ③ CABLES RUN FROM SWITCH CABINET TO SECOND SIX CONNECTOR MODULES.
- ④ CABLES RUN FROM SWITCH CABINET TO THIRD SIX CONNECTOR MODULES.

Figure 2-44. Cable Routing From Switch Cabinet to Cross-Connect Field and Cable Access Panel

Routing Cables From Switch Cabinet to Cross-Connect Field

The following guidelines should be followed when routing cables from the switch cabinet to the cross-connect field.

- Each individual port cable should be first connected to the switch cabinet and then routed from the switch cabinet along the front trough of the cable slack manager to the front of the connector module where the port cable is to be installed.
- Enough slack should be left at the cabinet to allow dressing of the cables (Figure 2-45).
- The cable is then routed perpendicularly from the front trough to the wall along side a row of five columns in the cable slack manager (see Note).

Note: Retainers mounted on the columns keep the cable from protruding above the top of the base of the cable slack manager.

- The length of cable required to reach from the floor to the port connecting unit in the connector module is then determined.
- *One to two inches (2.5 to 5 cm) of slack should be left between the connector module and the floor to allow the jack panel to open.*

- Cable slack is then stored perpendicular to the wall and cabinet by coiling the cable around the columns in the cable slack manager. The first run should always go back and forth the full length of five columns in the cable slack manager.
- The cable is then connected to the port connecting unit in the connector module.

Routing Cables From Cable Access Panel to Switch Cabinet

Trunk cables connecting the CAP to the switch cabinet should be routed and the cable slack stored individually in the cable slack manager located directly behind the switch cabinet (see Figure 2-44). Detailed procedures are provided for installing the cables under the heading **Installing Trunk Cables Between Network Interface and System Cabinet.**

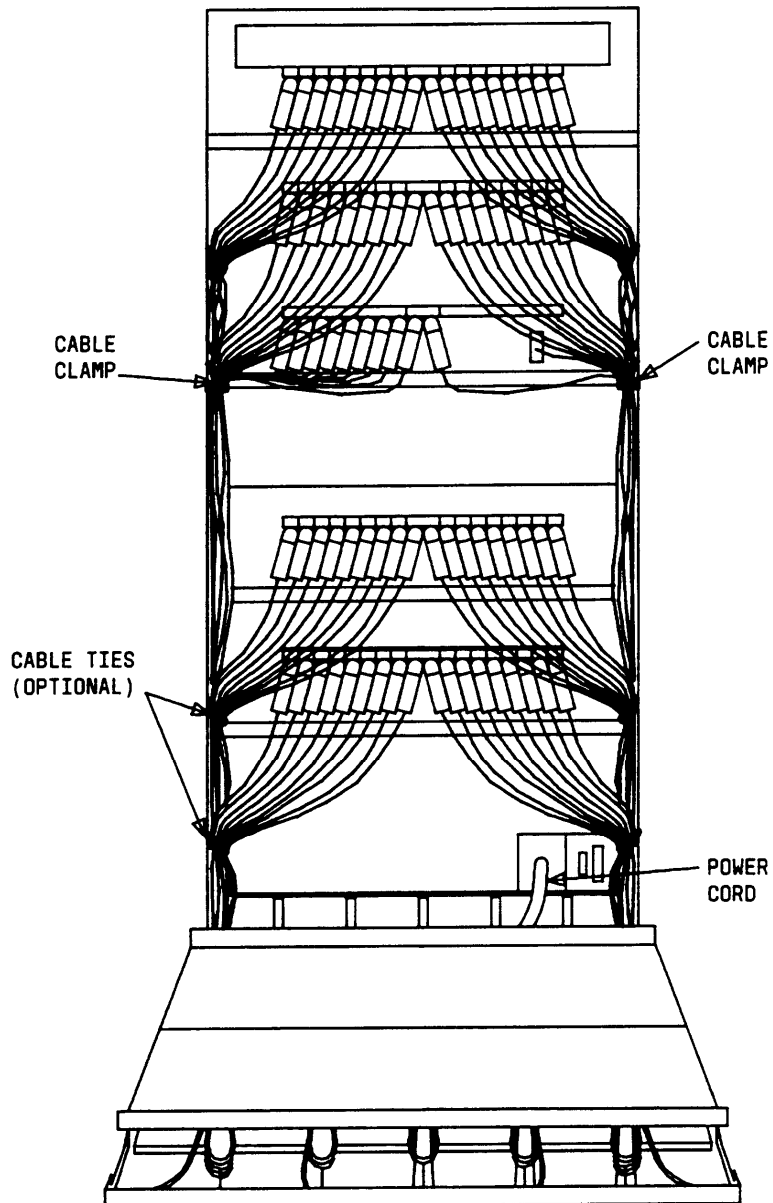


Figure 2-45. Typical Port Cable Installation at Switch Cabinet

Installing Control Carrier Outputs Cable

Control carrier outputs are used for power failure transfer power, accessory power (not provided on System 75 XE), alarm monitoring, customer provided alarm (System 75 XE only), and the Initialization and Administration System (INADS) interface. A 25-pair switch cable connects the control carrier AUXILIARY connector (see Figure 2-46 or 2-47) to the 1C connector on the first (top) cable access panel.

Figure 2-35 shows the 1C terminal row designation label required at the cable access panel. These outputs must be distributed to other points and do not pass directly through the cable access panel. To connect the cable, do the following:

1. Remove all straps between the 1C and 1D terminal strips on the initial (top) cable access panel only.
2. Install a YELLOW auxiliary label on both connector ends of a switch cable. The letters "AUX" should be written on each label.
3. Run and connect switch cable from AUXILIARY connector on rear of control carrier through cable slack manager to 1C connector on cable access panel.

The output wiring connections for alarm monitoring, emergency power failure, accessory power, and the INADS trunk interface is contained in this manual under the heading **MISCELLANEOUS WIRING INSTALLATION**.

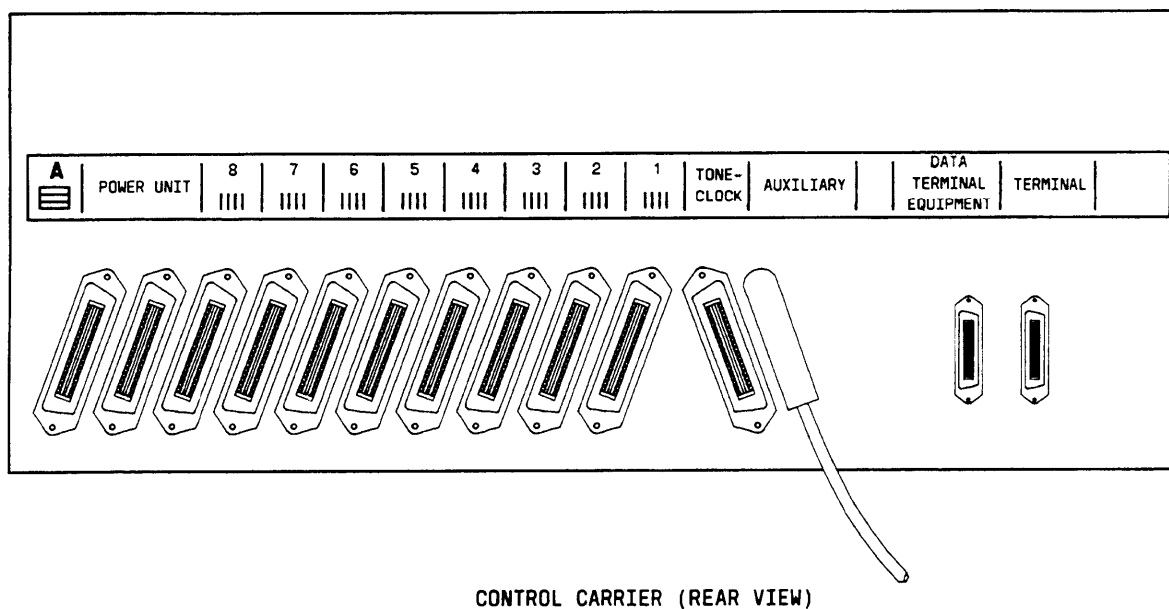


Figure 2-46. Control Carrier Outputs (AUXILIARY Connector)—System 75

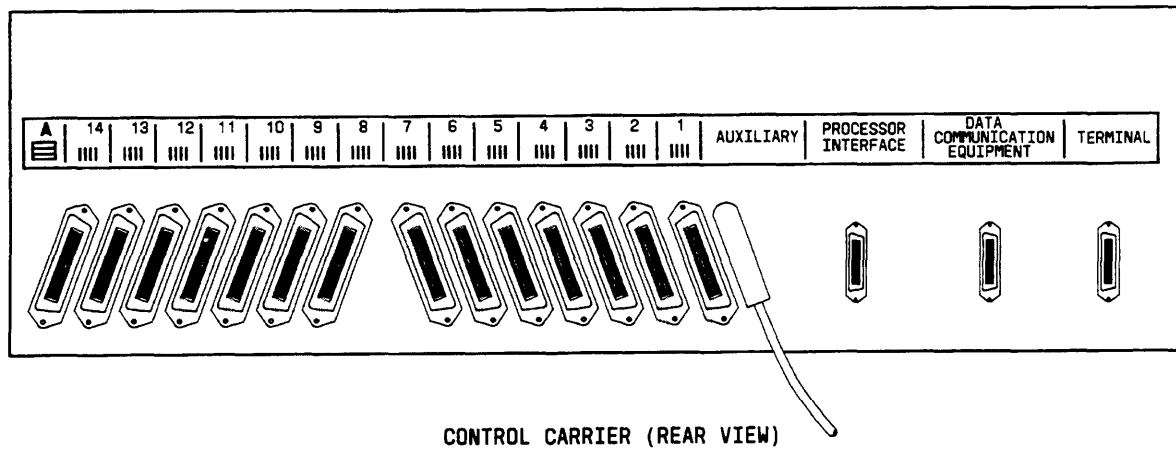


Figure 2-47. Control Carrier Outputs (AUXILIARY Connector)—System 75 XE

Installing Trunk Cables Between Network Interface and System Cabinet

The trunk pairs installed by the local telephone company must be located on specific pin assignments at the network interface so that they match the pin designations on the carrier connectors located on the rear of the switch cabinet (see Table 2-F and Figures 2-48, 2-49, and 2-50).

Cross-connecting the trunk leads is not recommended in the cable access panel except on a very limited basis and when necessary for temporary maintenance (for example, one used port bad on a trunk circuit pack and a good spare port available on another trunk circuit pack).

TABLE 2-F. Carrier Lead Appearance on Connector

(Contd on Next Page)

Conn. Pin Numbers	Anal. Line (8) TN742 or TN769	Anal. Line (16) TN746	Data Line TN726	Dig. Line TN754	Hyb. Line TN762 TN762B	MET Line TN735	AUX. Trk. TN763 TN763B	CO Trk. TN747 TN747B	DID Trk. TN753	Tie Trk. TN760 TN760B	DS1 Tie Trk. TN722 TN722B
26	T1	T1			V1T1	T1	T1	T1	T1	T1	
1	R1	R1			V1R1	R1	R1	R1	R1	R1	
27		T2	TXT1	TXT1	CT1	TXT1	SZ1			T11	
2		R2	TXR1	TXR1	CR1	TXR1	SZ11			R11	
28		T3	PXT1	PXT1	P-1	PXT1	S1			E1	
3		R3	PXR1	PXR1	P+1	PXR1	S11			M1	
29	T2	T4			V1T2	T2	T2	T2	T2	T2	
4	R2	R4			V1R2	R2	R2	R2	R2	R2	
30			TXT2	TXT2	CT2	TXT2	SZ2			T12	
5			TXR2	TXR2	CR2	TXR2	SZ12			R12	
31			PXT2	PXT2	P-2	PXT2	S2			E2	
6			PXR2	PXR2	P+2	PXR2	S12			M2	
32	T3				V1T3	T3	T3	T3	T3	T3	
7	R3				V1R3	R3	R3	R3	R3	R3	
33			TXT3	TXT3	CT3	TXT3	SZ3			T13	
8			TXR3	TXR3	CR3	TXR3	SZ13			R13	
34		T5	PXT3	PXT3	P-3	PXT3	S3			E3	
9		R5	PXR3	PXR3	P+3	PXR3	S13			M3	
35	T4	T6			V1T4	T4	T4	T4	T4	T4	
10	R4	R6			V1R4	R4	R4	R4	R4	R4	
36		T7	TXT4	TXT4	CT4	TXT4	SZ4			T14	
11		R7	TXR4	TXR4	CR4	TXR4	SZ14			R14	
37		T8	PXT4	PXT4	P-4	PXT4	S4			E4	
12		R8	PXR4	PXR4	P+4	PXR4	S14			M4	

TABLE 2-F. Carrier Lead Appearance on Connector (Contd)

Conn. Pin Numbers	Anal. Line (8) TN742 or TN769	Anal. Line (16) TN746	Data Line TN726	Dig. Line TN754	Hyb. Line TN762 TN762B	MET Line TN735	AUX. Trk. TN763 TN763B	CO Trk. TN747 TN747B	DID Trk. TN753	Tie Trk. TN760 TN760B	DS1 Tie Trk. TN722 TN722B
38	T5	T9			V1T5			T5	T5		
13	R5	R9			V1R5			R5	R5		
39		T10	TXT5	TXT5	CT5						
14		R10	TXR5	TXR5	CR5						
40		T11	PXT5	PXT5	P-5						
15		R11	PXR5	PXR5	P+5						
41	T6	T12			V1T6			T6	T6		
16	R6	R12			V1R6			R6	R6		
42			TXT6	TXT6	CT6						
17			TXR6	TXR6	CR6						
43			PXT6	PXT6	P-6						
18			PXR6	PXR6	P+6						
44	T7				V1T7			T7	T7		
19	R7				V1R7			R7	R7		
45			TXT7	TXT7	CT7						
20			TXR7	TXR7	CR7						
46		T13	PXT7	PXT7	P-7						
21		R13	PXR7	PXR7	P+7						
47	T8	T14			V1T8			T8	T8		L1*
22	R8	R14			V1R8			R8	R8		L1
48		T15	TXT8	TXT8	CT8						L0
23		R15	TXR8	TXR8	CR8						L0*
49		T16	PXT8	PXT8	P-8						LBACK2
24		R16	PXR8	PXR8	P+8						LBACK1
50											
25											

* Denotes ring side or high side of pair.

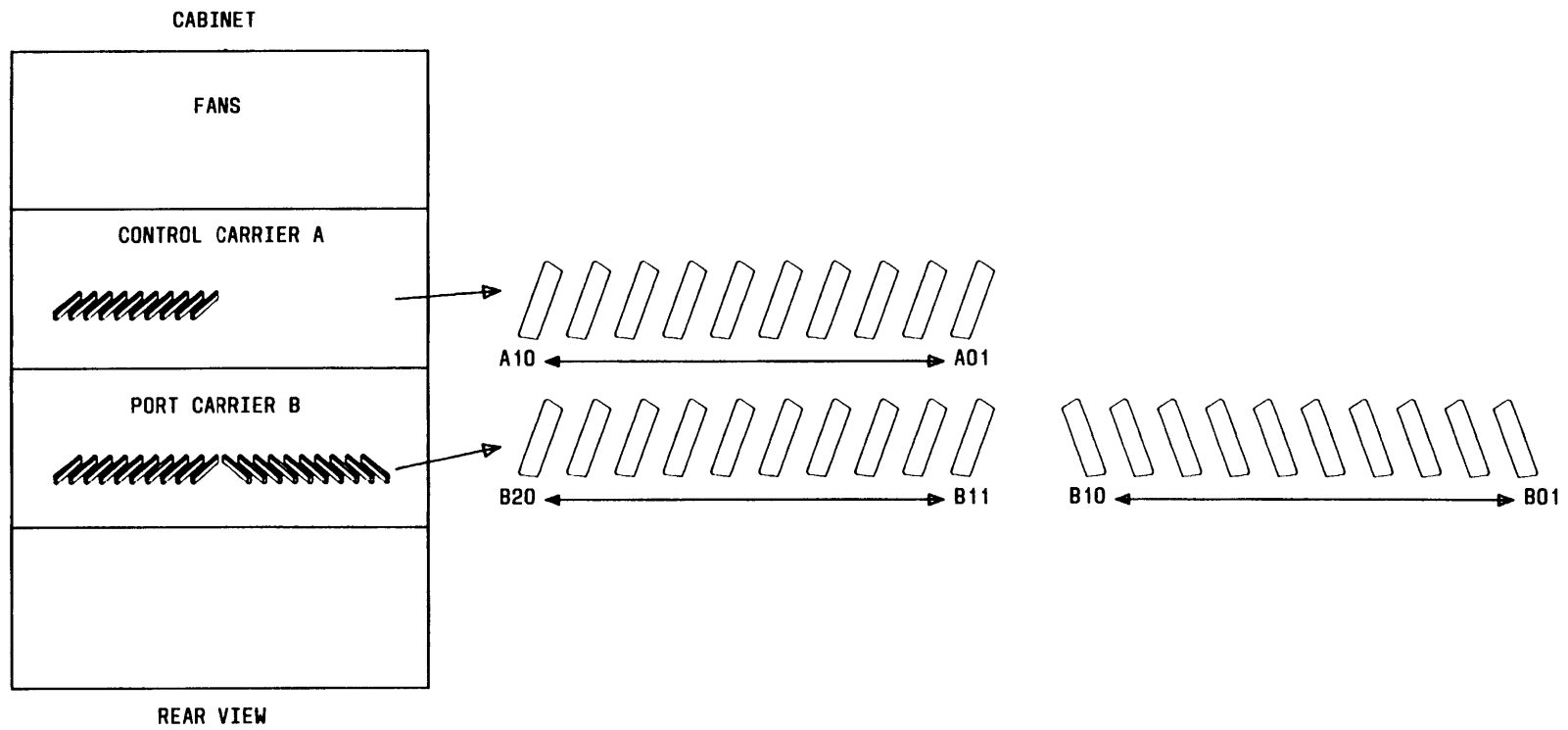


Figure 2-48. System 75 2-Carrier Slot Addresses

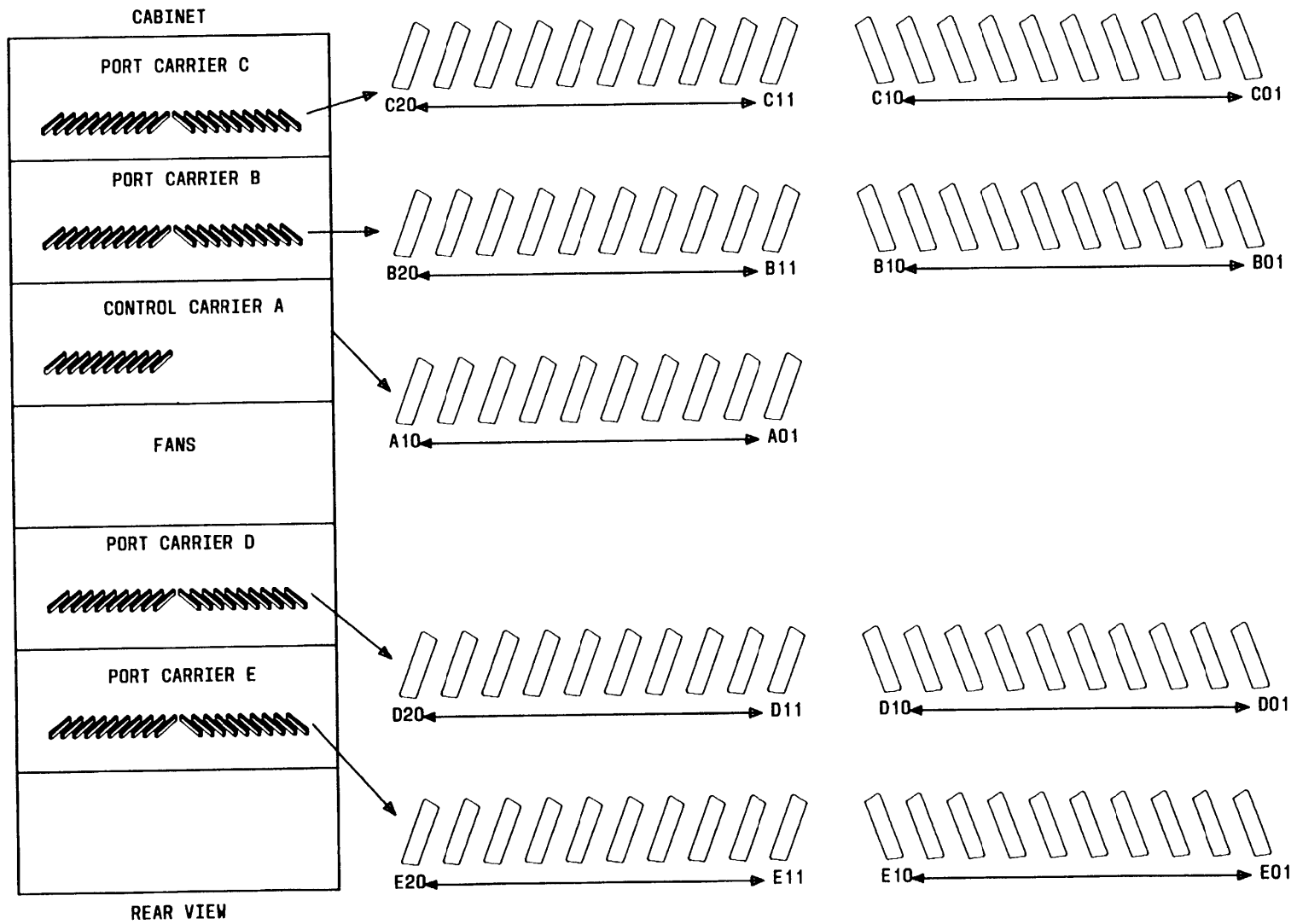


Figure 2-49. System 75 5-Carrier Slot Addresses

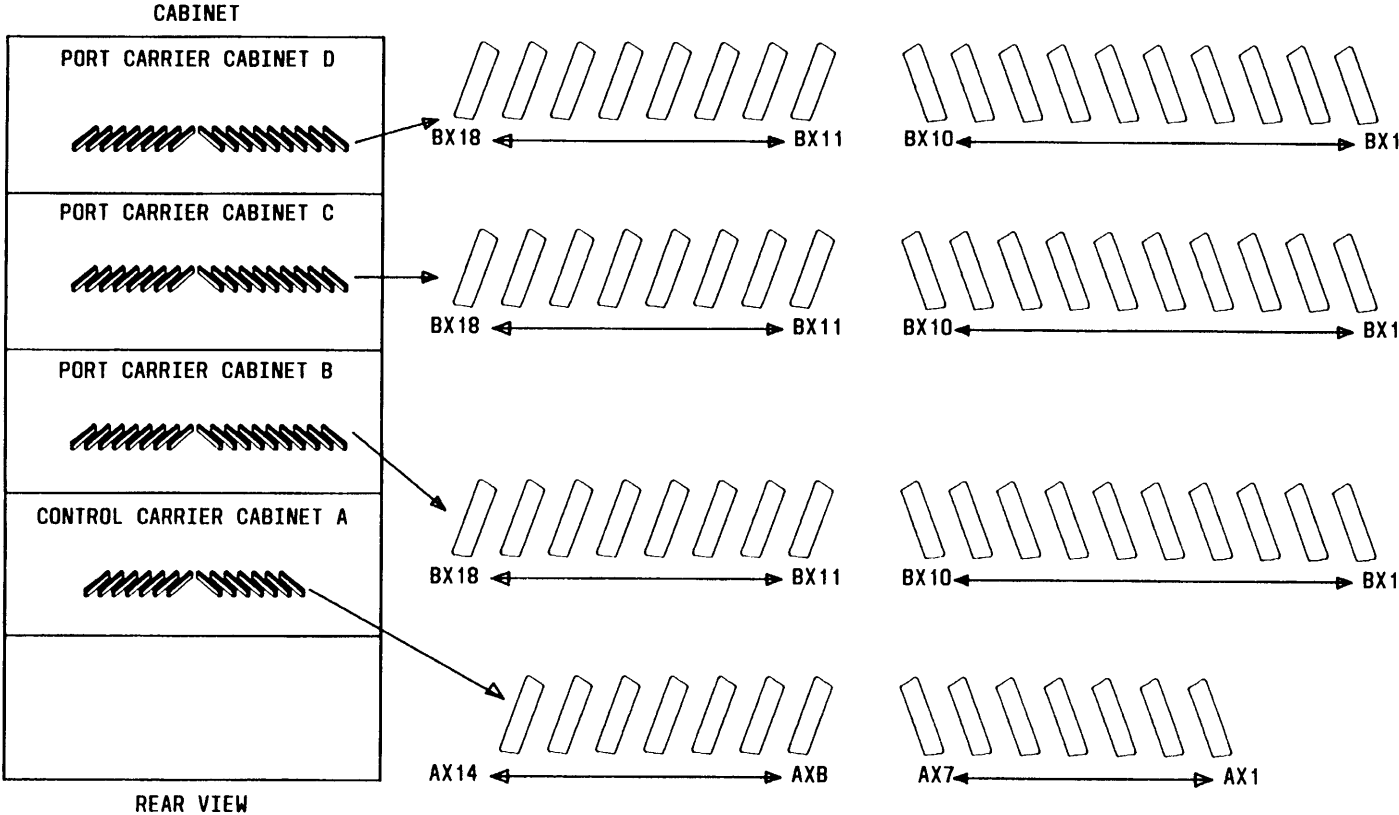


Figure 2-50. System 75 XE Carrier Slot Addresses

Concentrator cables are used between the cable access panel and the switch cabinet. This provides 3-pair modularity after the cable access panel. WP-90929, Lists 2 and 4, cable assemblies are required for the connections (Figure 2-51).

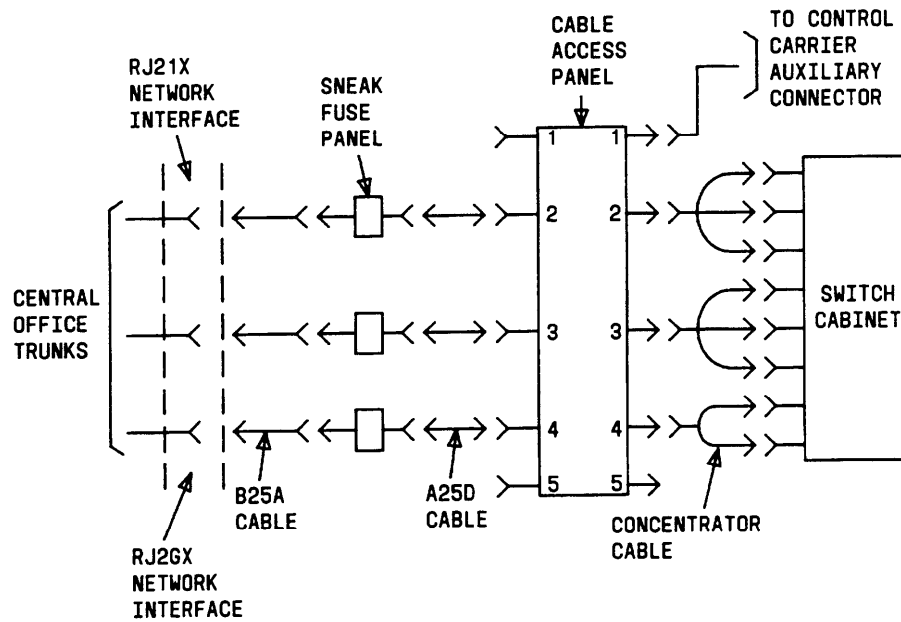


Figure 2-51. Installing Concentrator Cables Between the CAP and the Switch Cabinet

The following procedure covers only the cables that connect from the switch cabinet through the cable access panel and sneak fuse panel to the network interface (RJ21X or RJ2GX). It does not cover the connections for trunk circuits provided for off-premises lines. The WP-90929, List 2, cable assembly connects these trunk circuits from the CABINET CABLES connectors on the right side of the cable access panel to the cross-connect field.

Connections for off-premises lines to the cross-connect field and other optional auxiliary connections using connectors on the cable access panel are covered under **MISCELLANEOUS WIRING INSTALLATION** (see Note).

Note: Connector is used to connect power failure transfer terminals and to provide external power to two attendant consoles. Connector 1 on the initial cable access panel is always used to connect the control carrier leads as previously described.

To install the cables, proceed as follows:

1. Connect B25A cables between the network interfaces and the sneak fuse panels.
2. Connect A25D cables between the sneak fuse panels and the DISTRIBUTION CABLES connectors on the left side of the cable access panels(s).
3. Connect the single-fingered end of the concentrator cables to the CABINET CABLES connectors of the right side of the cable access panels.
4. Connect the 3-fingered and 2-fingered ends of the concentrator cables to the appropriate carrier slots. Equipped carrier slots are identified on the Customer Service Order. It is helpful to mark the nomenclature strips above the carriers at rear of cabinet to identify the equipped slots.
5. Label connectors on both ends of the cables that connect to the switch cabinet.
6. Dress cables down sides of cabinet and store excess cable slack in the cable slack manager as described previously.
7. Install labels on cable access panel (see **Labeling the Cable Access Panel**).

Installing Coupled Bonded Conductor Grounding

A coupled bonding conductor must be tie-wrapped to all trunk cables. The coupled bonding conductor connects to the cabinet single-point ground block and runs all the way to the approved ground located nearest the telephone company owned protector block at the building entrance facility (see Figure 2-52).

Note: Approved ground is defined in the *AT&T System 75—System Description* (555-200-200) or *AT&T System 75 XE—System Description* (555-200-200).

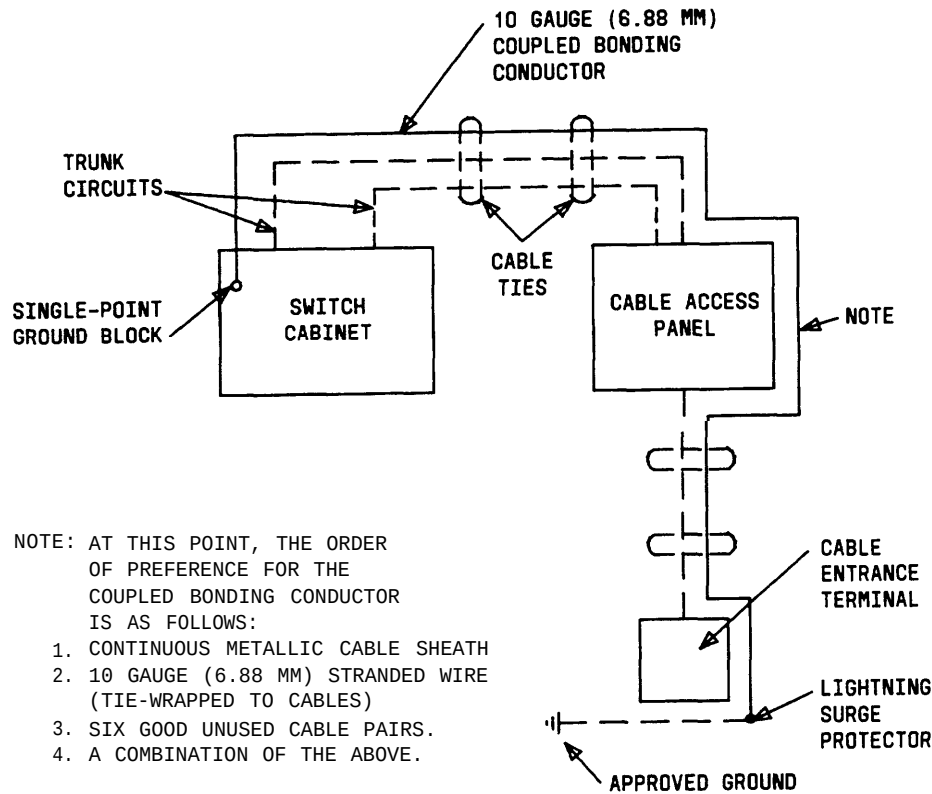


Figure 2-52. Coupled Bonded Conductor Grounding Installation

Installing Cables Between Switch Cabinet and the Cross-Connect Field

Before starting the following procedure, refer to **Routing Cables From Switch Cabinet To Cross-Connect Field** guidelines. Also, all purple labels should have been previously installed on the connector modules as described under the heading **Labeling the Cross-Connect Field**.

1. At the first connector module in the cross-connect field, open jack panel by pressing the two flex tab latches on the support and by pulling on the patch cord guide located at bottom of the jack panel (Figure 2-53).
2. Install self-stick port labels on the back of the cable connectors (see Note) for the first switch cable.

Note: Labels should not be obscured by the connector module or switch cabinet 25-pair connector retainers.

3. Connect male end of switch cable to appropriate carrier slot and dress down side of cabinet.
4. Route the cable from the switch cabinet through the cable slack manager and store slack.
5. Rotate Z5A Retainer located at the connecting unit insert to the open position.

6. Plug the 25-pair switch cable into the connecting unit insert.
7. Rotate Z5A Retainer to the closed position while pushing on the jack panel flex tab (see Note).

Note: When closed, the retainer is held by the flex tab. The retainer is positioned against the 25-pair connector to keep it from working loose.

8. Route the cable straight up from the connecting unit and through the cable guides on the jack panel and support (see Figure 2-54). Make sure that the cable is completely and properly inserted in each guide (particularly the top guide) or jack panel may not close (or subsequently open) properly.
9. Repeat steps 2 through 8 for all cables that are to be installed in the first connector module.
10. Rotate jack panel to closed position until an audible snap is heard (see Note).

Note: The first time new cables are installed in a connector module, efforts to close the jack panel may be greater than expected. This is a normal condition as all 25-pair cables are being rotated and are bending for the first time. Efforts required to close the jack panel after the initial closing will be noticeably less.

11. Repeat steps 1 through 10 for each connector module until all cables are installed.
12. "D" rings can be installed approximately halfway between the top of the cable slack manager and the bottom of each connector module to hold the cables against the wall.

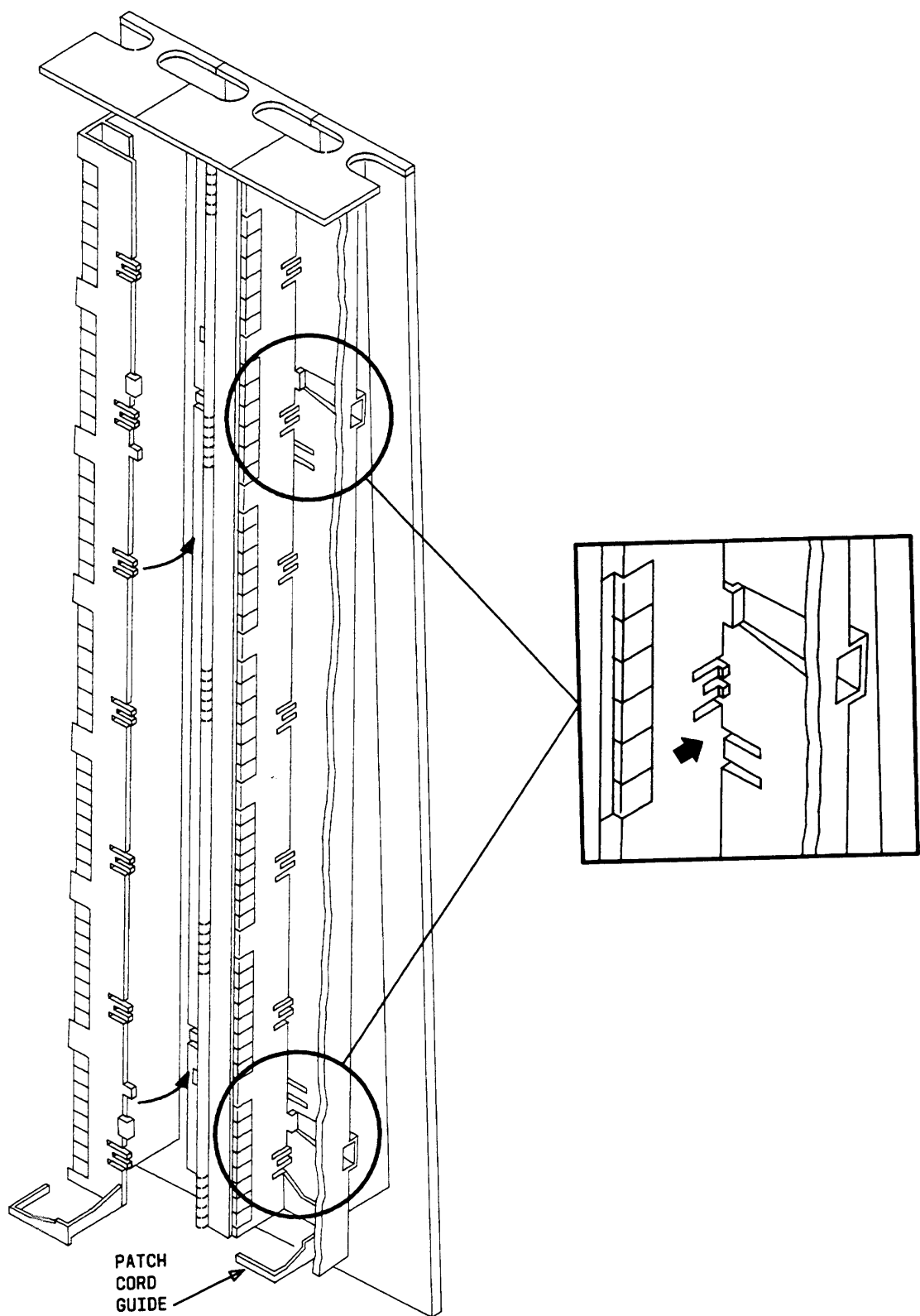


Figure 2-53. Connector Module Flex Tab Latch Locations

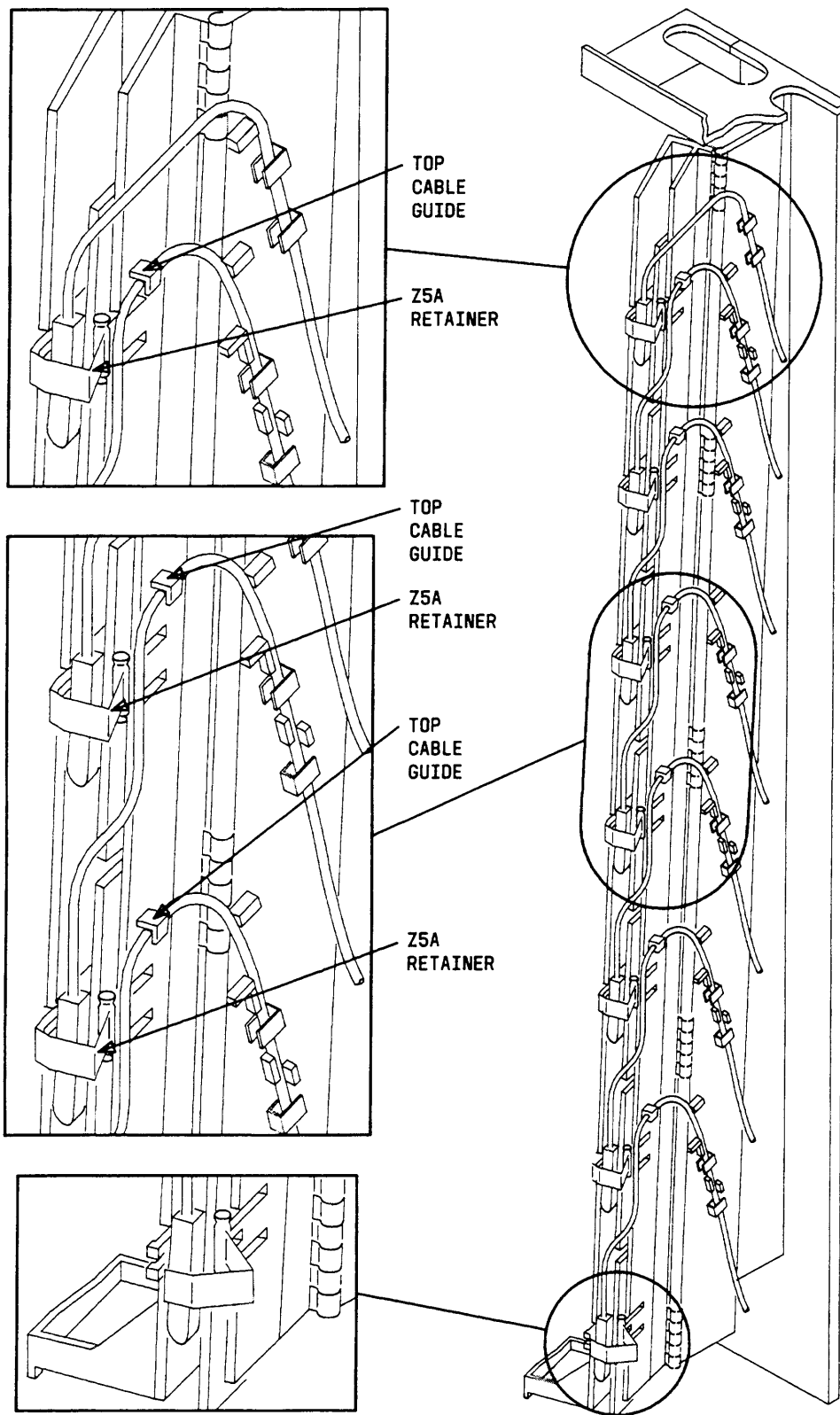


Figure 2-54. 25-Pair Cable Routing Through Connector Module

Installing Cables Between Cross-Connect Field and Auxiliary Cabinet

Auxiliary equipment that connects to the cross-connect field or switch cabinet can be optionally mounted inside the auxiliary cabinet. The equipment connects to an ED-1E1443-10 Intraconnection Panel (Group 1) provided with the auxiliary cabinet. The intraconnection panel consists of a 110-type 100-pair wiring block located inside the cabinet. The wiring block is prewired to four 25-pair female connectors on a mounting plate that is attached to the outside rear skin of the cabinet.

Auxiliary equipment is punched down on the 110-type wiring block. B25A cables connect the female 25-pair connectors to the cross-connect field. A25D cables connect the female 25-pair connectors to the switch cabinet. Details for installing the equipment and making the connections to the cross-connect field are included under the heading **AUXILIARY EQUIPMENT INSTALLATION** in this manual.

STATION WIRING DESIGN**Description**

The following hardware and cabling is used in the station wiring design:

- Information outlets
- Station cables
- Closets
 - Site locations
 - Satellite locations
- Adapters
- Labels

A brief explanation of each of the above listed items follows. The station wiring labels and their use are described under the heading **STATION WIRING AND ASSOCIATED HARDWARE INSTALLATION**. Ordering information is not provided for station cables and information outlets. The ordering information for this equipment should be obtained from the *Premises Distribution System Equipment and Supplies Catalog*.

Information Outlets

Information outlets are 8-pin modular wall jacks. Most of the outlets require wiring using push-on connections. Outlets are also available that connect to a double modular plug-ended 4-pair station cable run from the equipment room, a site or satellite location, or an adapter.

Station Cables

For clarity in describing the wiring in this manual, station cable is either 25-pair cable, multiple 25-pair cable, or 4-pair D-inside wire (DIW) run from the equipment room, a site or satellite location, or adapter to the information outlets. The following types of station cable (Figure 2-55) are available.

- Connectorized (male to female) 25-pair station cable—This cable (B25A) is used between the equipment room and the site or satellite locations or adapters.
- Connectorized (male to female) multiple 25-pair station cable—This cable can be optionally used between the equipment room and the site or satellite locations or adapters. This cable consists of individually sheathed 25-pair cables with factory-

installed 25-pair connectors on both ends. Staggered-finger cables are recommended for all multiple 25-pair station cables.

- Nonconnectorized 4-pair station cable—This cable cannot be used with any of the Z100 hardware unless a MOD-4 (modular 4-pin plug—Comcode 403 617 699) is installed on one end or "junction boxes" are provided.
- Single modular plug-ended 4-pair station cable—This cable is used between adapters or connector modules equipped with Z204A1 connecting units and information outlets with push-on connections. The station cables are available in the following lengths:

10 feet (3.0 m)
 25 feet (7.6 m)
 50 feet (15.2 m)
 75 feet (22.9 m)
 100 feet (30.5 m)
 150 feet (45.7 m)
 200 feet (61.0 m).

- Double modular plug-ended 4-pair station cable—This cable is typically cut and used to provide nonstandard length runs between adapters or connector modules equipped with Z204A1 connecting units and information outlets with push-on connections. It can also be used between adapters or connector modules equipped with Z204A1 Connecting Units and modularly connected information outlets. It is available in the same lengths as the single modular plug-ended cable (see Note).

Note: If a 4-pair station cable length longer than 200 feet (61.0 m) is required, a 451A in-line adapter (double-ended modular female connector) is attached to the cable and a second 4-pair cable is plugged into the adapter for the additional distance (see Figure 2-56). The 451A in-line adapter is available in grey (Comcode 103 942 272) or ivory (Comcode 103 786 240).

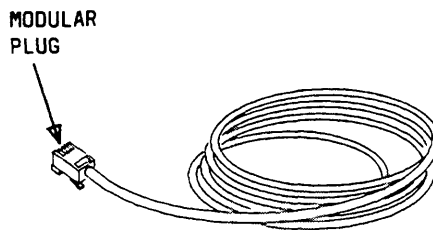


Figure 2-55. 4-Pair Single Modular Plug-Ended Station Cable

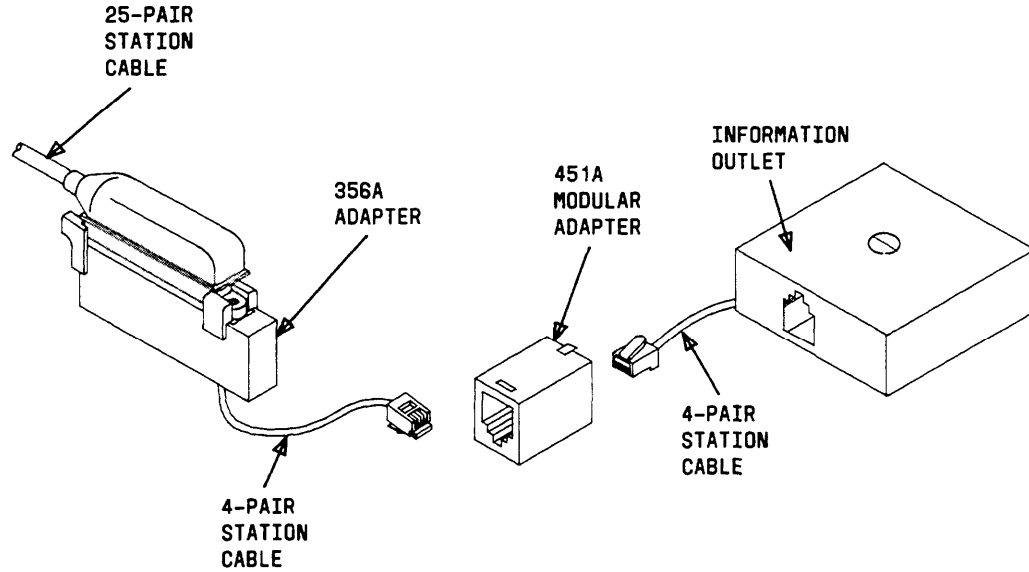


Figure 2-56. Example of Extending 4-Pair Station Cables

Closets

Site Locations

Site locations are closets that provide a point in the station wiring for the administration of remote powering. Adapters are used at site locations to terminate the 25-pair station cables and provide connection points (modular jacks) for the power adapters and 4-pair station cables.

258A AND BR2580A ADAPTERS

The 258A and BR2580A adapters (Figure 2-57) plug into a 25-pair female cable connector. These adapters divide the 25-pairs of leads on the cable into six individual 4-pair (modular jack) circuits. Remote powering is accomplished using a 400B2 adapter. (See **ADJUNCT POWERING** section for details.)

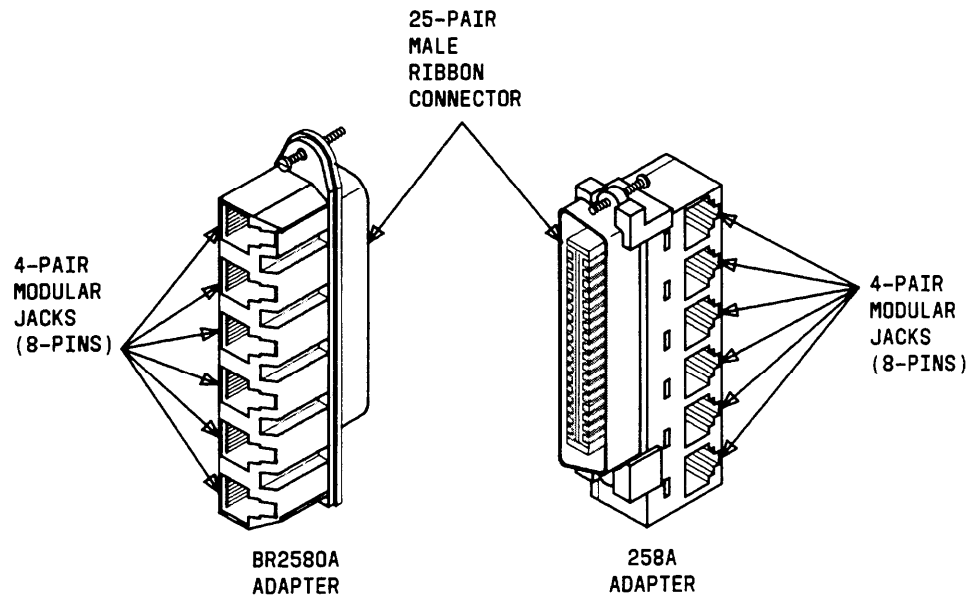


Figure 2-57. 258A and BR2580A Adapters

356A ADAPTER

The 356A adapter (Figure 2-58) plugs into a 25-pair female cable connector. The other end of the cable must be connected to a Z203A1 connecting unit provided in the Z100B1 connector modules. The 356A adapter divides the 25-pairs of leads on the cable into eight individual 3-pair circuits. Although the circuits are 3-pair, the 356A adapter's modular jacks will accept an 8-pin modular plug used on the 4-pair station cable. Remote powering is accomplished using a 400B2 adapter. (See **ADJUNCT POWERING** section for details.)

Caution: *Adapters wired similarly to the 356A should not be used. Their jacks will not accept 4-pair plugs.*

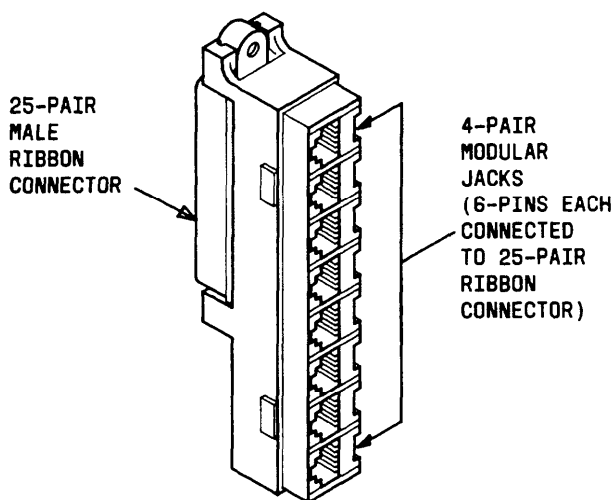


Figure 2-58. 356A Adapter

ZD8AJ ADAPTER

The ZD8AJ adapter is used to connect the line cord from a MET set to an information outlet. The adapter interchanges pairs 3 and 4 to correspond with the pair assignments for the MET set. The MET set line cord plugs into the adapter and then the adapter plugs into the information outlet.

ADAPTER ORDERING INFORMATION

Description	Comcode
258A Adapter	102 605 136
BR2580A Adapter	403 384 720
356A Adapter	104 158 829
400B Adapter	103 848 859
400B2 Adapter	104 152 558
ZD8AJ Adapter	103 881 421

Satellite Locations

Satellite locations are closets that provide an administration point (using cross-connect equipment) for station cables and a point where adjunct power may be applied. The station cable circuits from the equipment room cross-connect field are 3-pair. The hardware used at the equipment room is the Z100B1 connector modules. At the satellite location, 4-pair circuits run to the information outlets. The hardware used at the satellite location is the Z100A1 connector modules.

For one-point administration, the ZD6A-87 patch cords used at the satellite location for cross-connections must be modified to provide the equivalent of punch-down jumpers. (See **PATCH CORD INSTALLATION AND ADMINISTRATION** for details.)

Station Circuit Distribution From Equipment Room

The following information should be helpful in explaining the station circuit distribution from the equipment room to the information outlets for new wiring installations. Diagrams are provided to show the options for running and connecting the station cables.

If most of the voice terminals that require remote powering are within 250 feet (76.2 m) of the equipment room, 4-pair station circuits are run from the equipment room to the information outlets. If this is not the case or if the customer requires 2-point administration, 3-pair station circuits are run to satellite locations. From the satellite locations, 4-pair station circuits are run to the information outlets.

4-Pair Station Circuits

Four-pair circuits can be run directly from an equipment room cross-connect field using Z100A1 connector modules to a 258A or BR2580A adapter as shown in Figure 2-59. Four-pair station cables (DIW) connect the adapter to the information outlets.

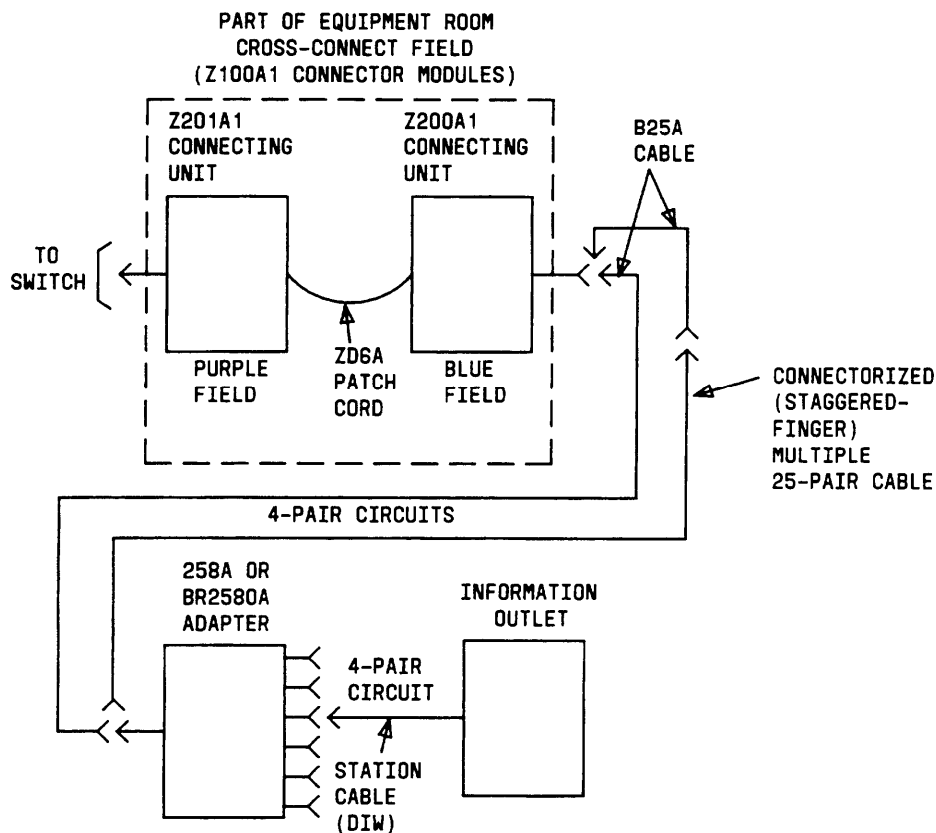


Figure 2-59. 4-Pair Circuit Distribution and Connectivity from Equipment Room Cross-Connect Field Using Z100A1 Connector Modules

3-Pair to 4-Pair Station Circuits

Figure 2-60 shows the 3-pair circuit distribution from an equipment room cross-connect field using Z100B1 connector modules to a satellite location using Z100A1 connector modules. Four-pair circuits are distributed from the satellite location to the information outlets.

Z100-TYPE HARDWARE

Three-pair circuits can also be run directly from an equipment room cross-connect field using Z100B1 connector modules To a 356A adapter as shown in Figure 2-61. Four-pair station cables (DIW) connect the adapter to the information outlets.

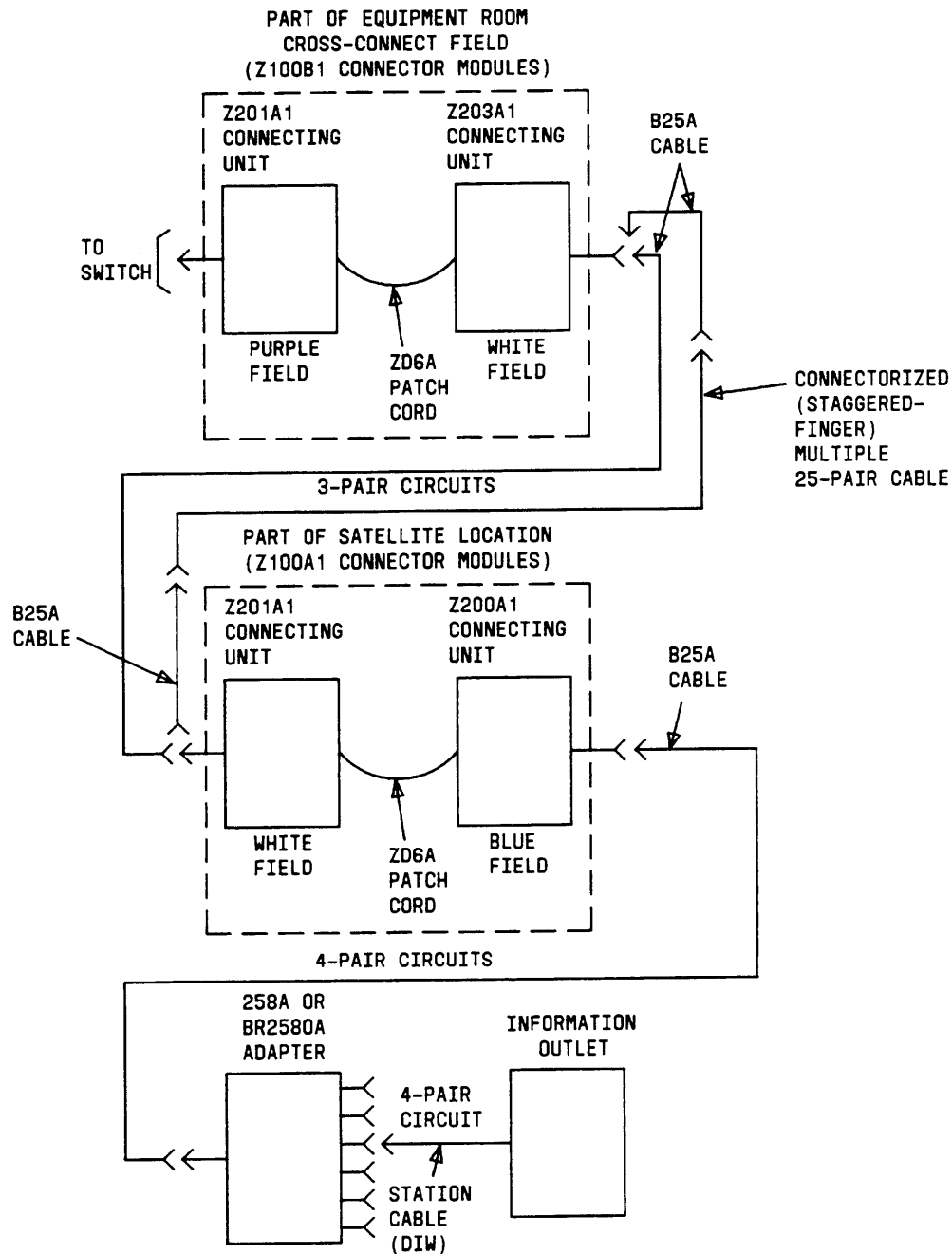


Figure 2-60. 3-Pair to 4-Pair Circuit Distribution and Connectivity From Equipment Room (Z100B1 Connector Modules Used at Cross-Connect Field and Z100A1 Connector Modules Used at Satellite Location)

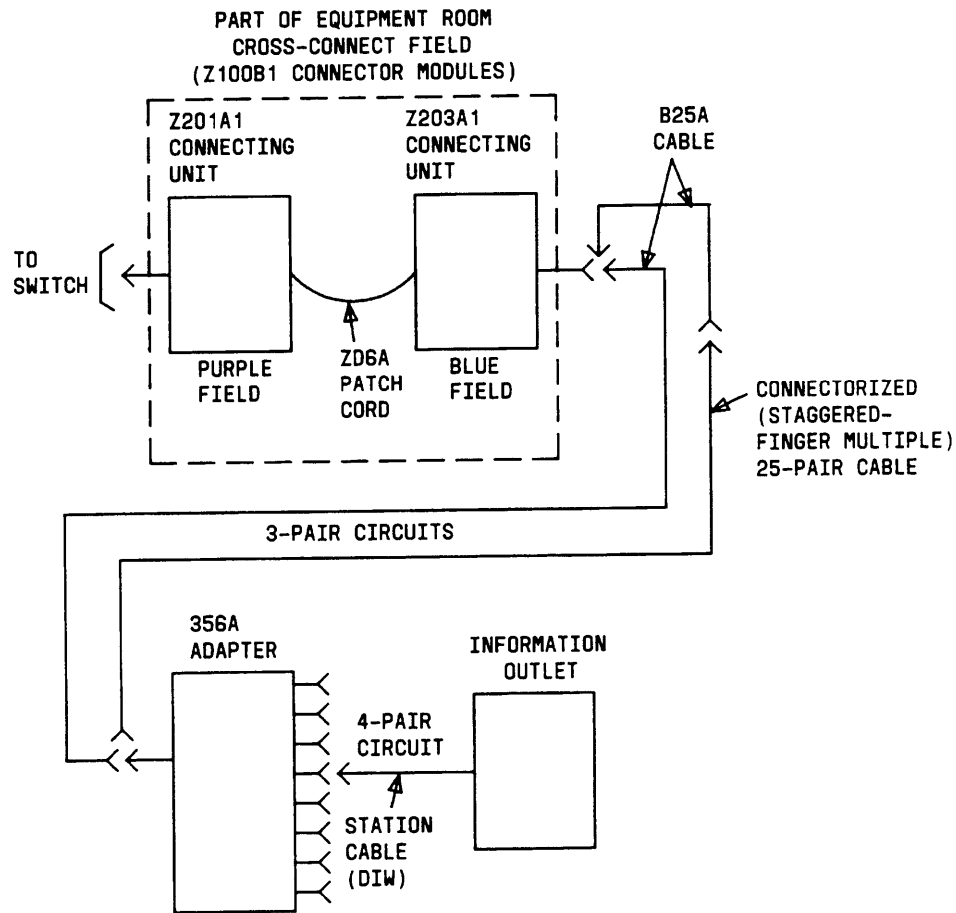


Figure 2-61. 3-Pair to 4-Pair Circuit Distribution and Connectivity From Equipment Room (Z100B1 Connector Modules Used at Cross-Connect Field and 356A adapter Used at Site Location)

Table 2-G provides detailed wiring information for the 25-pair cables, the adapters, and the information outlets.

Note: Bridged taps must not be used on any part of the station wiring.

TABLE 2-G. System Wiring

(Contd on Next Page)

25-Pair Cable							4-Pair Cable	
Term. No.	Term Lead Functions				D-Inside Cable Color Code	BR2580A or 258A Adapter Pin Num.	D-Inside Cable Color Code	Info. Outlet Term.
	500* 2500 7100 Series	7300 Series	7400 Series Att. Cons.	EIA Term* PDM TDM				
1	T R	V1T			W-BL	26	W-BL	1
		V1R			BL-W	1	BL-W	2
		CT	TXT	TXT	W-O	27	W-O	3
		CR	TXR	TXR	O-W	2	O-W	4
	P- P+	P-	PXT	PXT	W-G	28	W-G	5
		P+	PXR	PXR	G-W	3	G-W	6
			P-		W-BR	29	W-BR	7
			P+		BR-W	4	BR-W	8
2	T R	V1T			W-S	30	W-BL	1
		V1R			S-W	5	BL-W	2
		CT	TXT	TXT	R-BL	31	W-O	3
		CR	TXR	TXR	BL-R	6	O-W	4
	P- P+	P-	PXT	PXT	R-O	32	W-G	5
		P+	PXR	PXR	O-R	7	G-W	6
			P-		R-G	33	W-BR	7
			P+		G-R	8	BR-W	8
3	T R	V1T			R-BR	34	W-BL	1
		V1R			BR-R	9	BL-W	2
		CT	TXT	TXT	R-S	35	W-O	3
		CR	TXR	TXR	S-R	10	O-W	4
	P- P+	P-	PXT	PXT	BK-BL	36	W-G	5
		P+	PXR	PXR	BL-BK	11	G-W	6
			P-		BK-O	37	W-BR	7
			P+		O-BK	12	BR-W	8

* R1V2 or R1V3 Only

TABLE 2-G. System Wiring (Contd)

25-Pair Cable							4-Pair Cable	
Term. No.	Term Lead Functions				D-Inside Cable Color Code	BR2580A or 258A Adapter Pin Num.	D-Inside Cable Color Code	Info. Outlet Term.
	500* 2500	7100 Series	7300 Series	7400 Series Att. Cons.	EIA Term* PDM TDM			
4	T R	V1T			BK-G	38	W-BL	1
		V1R			G-BK	13	BL-W	2
		CT	TXT	TXT	BK-BR	39	W-O	3
		CR	TXR	TXR	BR-BK	14	O-W	4
	P- P+	P-	PXT	PXT	BK-S	40	W-G	5
		P+	PXR	PXR	S-BK	15	G-W	6
			P-		Y-BL	41	W-BR	7
			P+		BL-Y	16	BR-W	8
5	T R	V1T			Y-O	42	W-BL	1
		V1R			O-Y	17	BL-W	2
		CT	TXT	TXT	Y-G	43	W-O	3
		CR	TXR	TXR	G-Y	18	O-W	4
	P- P+	P-	PXT	PXT	Y-BR	44	W-G	5
		P+	PXR	PXR	BR-Y	19	G-W	6
			P-		Y-S	45	W-BR	7
			P+		S-Y	20	BR-W	8
6	T R	V1T			V-BL	46	W-BL	1
		V1R			BL-V	21	BL-W	2
		CT	TXT	TXT	V-O	47	W-O	3
		CR	TXR	TXR	O-V	22	O-W	4
	P- P+	P-	PXT	PXT	V-G	48	W-G	5
		P+	PXR	PXR	G-V	23	G-W	6
			P-		V-BR	49	W-BR	7
			P+		BR-V	24	BR-W	8
Spare						50 25		

* R1V2 or R1V3 Only

Layout

Locating Information Outlets

It is the responsibility of the customer or marketing representative to provide floor plans showing the information outlet locations and types (flush- or surface-mounted). The floor plans must also provide a complete view of all conduit and cabling facilities in the building.

Locating Satellites and Sites

Use the following information when determining site, satellite, or adapter locations.

- a. Keep the number of locations to a minimum.
- b. To minimize the station wiring distances, centrally locate the sites, satellites, or adapters among the information outlets.
- c. Site and satellite locations must be easily accessible and contain ac power outlets.

Adapter Requirements

One 258A or BR2580A adapter is required for each 25-pair station cable containing 4-pair station circuits. One 356A adapter is required for each 25-pair station cable containing 3-pair station circuits.

Z100A1 Connector Module Requirements

Each Z100A1 connector module used in a satellite location provides connections for twenty-four 3-pair station circuits and twenty-four 4-pair station circuits. Hardware and patch cord requirements are the same as those listed for the equipment room cross-connect field in Table 2-E.

Sizing 4-Pair Station Cables (DIW)

Use the floor plan scale to determine the station cables (DIW) required per standard Premises Distribution Systems wiring concepts.

Sizing 25-Pair and Multiple 25-Pair Station Cables

The floor plan scale is used to determine the approximate length of each station cable. The station cables **must be** sized and selected properly to make maximum use of the Z100 hardware at the equipment room or satellite location.

Twenty-five pair B25A cables are used to connect adapters directly to the equipment room cross-connect field or satellite location. Staggered-finger cables equipped with factory-installed 25-pair connectors at both ends (male to female) are recommended for multiple 25-pair cables run from the equipment room or satellite location to the adapters. B25A cables are required at the equipment room or satellite location to connect the staggered-finger cables to the connector modules.

Use the following information to determine the cable size (cable pairs) required for either 3-pair or 4-pair circuits. Note the length and size on the floor plan to aid in the ordering and installation of the station cables.

3-Pair Station Cable Circuits

To determine the size of station cables containing 3-pair circuits, multiply the number of 3-pair circuits required at the satellite location by 3.5. This will provide additional pairs for growth and compensate for the fact that every 25th pair in a cable is not used.

Using the minimum size cable requirement, select a cable size that is rounded up to the next highest available cable bundle size.

4-Pair Station Cable Circuits

To determine the size of station cables containing 4-pair circuits, determine the number of information outlets served by the equipment room cross-connect field or satellite location. Multiply this number by 4 (see Note).

Note: This formula may not compensate for the unused 25th pair in all cases. If not, you must allow for it.

Using the minimum size cable requirement, select a cable size that is rounded up to the next highest available cable bundle size.

STATION WIRING AND ASSOCIATED HARDWARE INSTALLATION

Installing the Station Cables

Station labels shown in Figure 2-62 must be installed on both ends of the 25-pair station cables. These labels are provided with the 201A cable/jack station labels (Comcode 103 969 994). These labels must match the previously installed connector module labels at the equipment room cross-connect field. For example, if the cable plugs into a connecting unit with jacks-labeled 1 through 6, the cable label must be numbered 1 through 6.

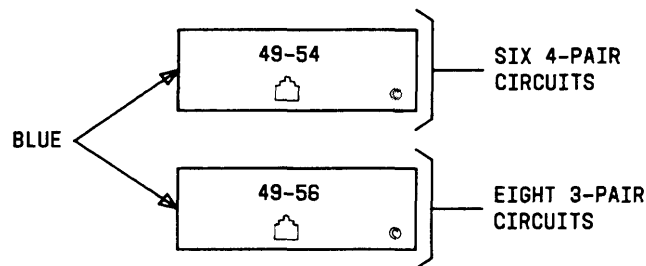


Figure 2-62. 25-Pair Station Cable Labels

Install the station cables between the equipment room cross-connect field and the site, satellite, or adapter locations. B25A cables (male ends) are installed in the connector modules at the equipment room (Figure 2-54). The B25A cables are run to the adapter locations or connect to the multiple 25-pair staggered-finger station cables (see Figure 2-63). The staggered-finger station cables are run to the site, satellite, or adapter locations.

Figure 2-64 shows the labeling scheme for 4-pair circuits run from the equipment room to the information outlets. The labeling scheme for 3-pair circuits run from the cross-connect field to satellite locations is discussed under **Installing Z100-Type Hardware at Satellite Locations**.

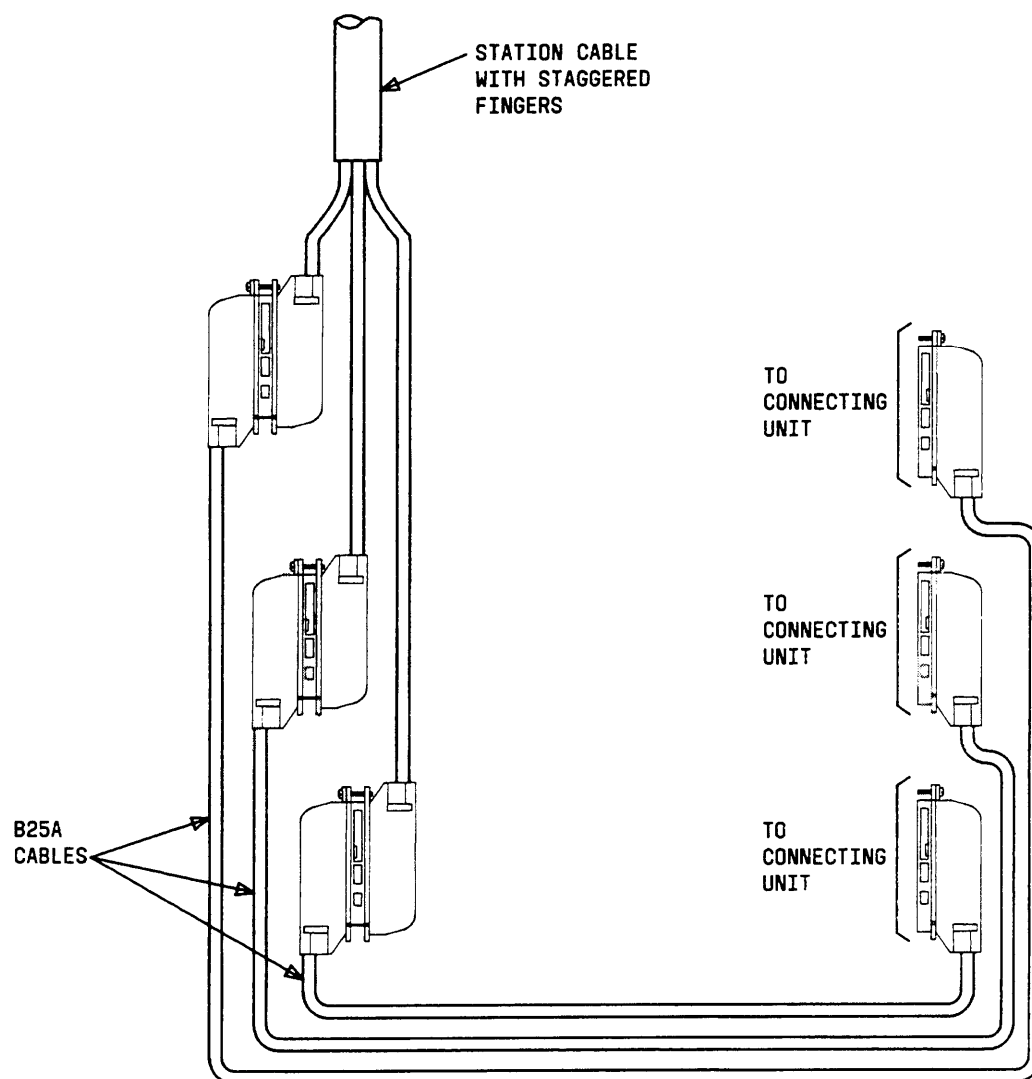


Figure 2-63. Multiple 25-Pair Station Cable With Factory-Installed Staggered Fingers Connected to a Connector Module

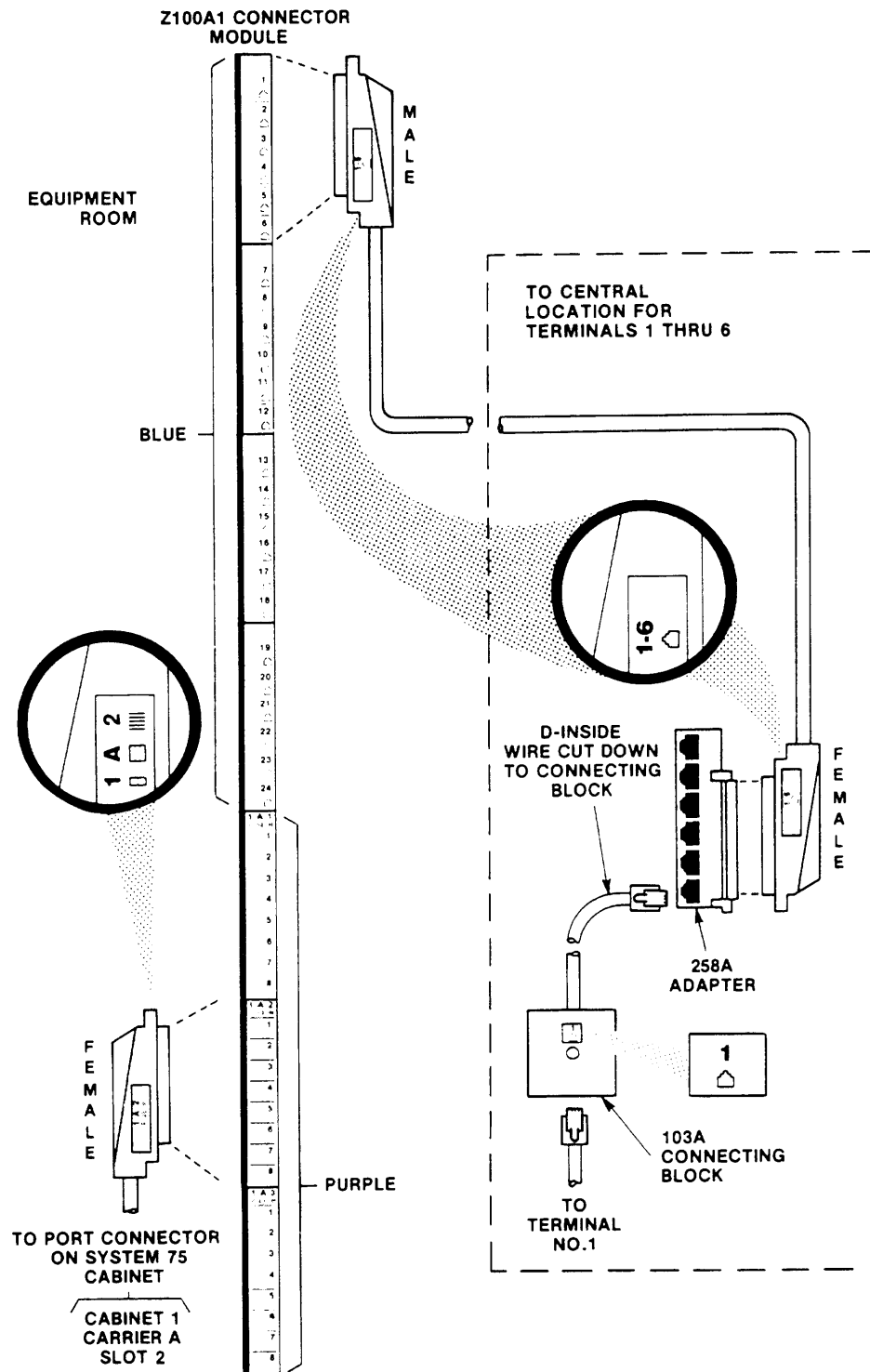
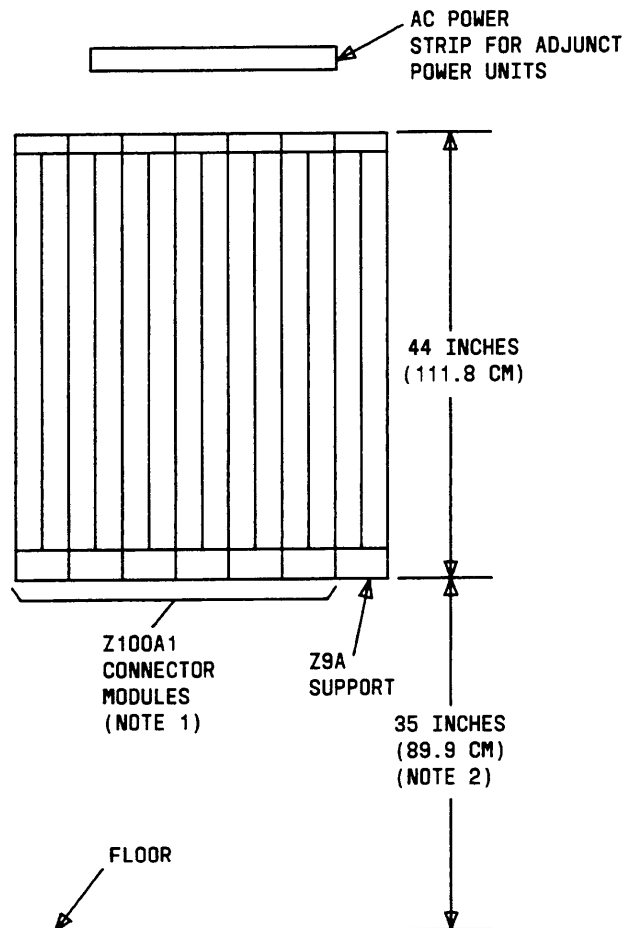


Figure 2-64. 4-Pair Station Wiring Labeling From Equipment Room to Information Outlet

Installing Z100-Type Hardware at Satellite Locations

To install the Z100A1 connector modules at the satellite location, use the same installation procedure described under the heading **Installing the Cross-Connect Field**. Figure 2-65 shows a typical satellite location installation.



NOTES:

1. EACH CONNECTOR MODULE AND THE Z9A SUPPORT IS 5 INCHES (12.7 CM) WIDE.
2. THIS DISTANCE IS FROM THE FLOOR TO THE BOTTOM OF THE Z9A SUPPORT

Figure 2-65. Typical Satellite Installation

As shown in Figure 2-66, 3-pair station circuits connect to the bottom three connecting units (white field). Four-pair station circuits connect to the top four connecting units (blue field).

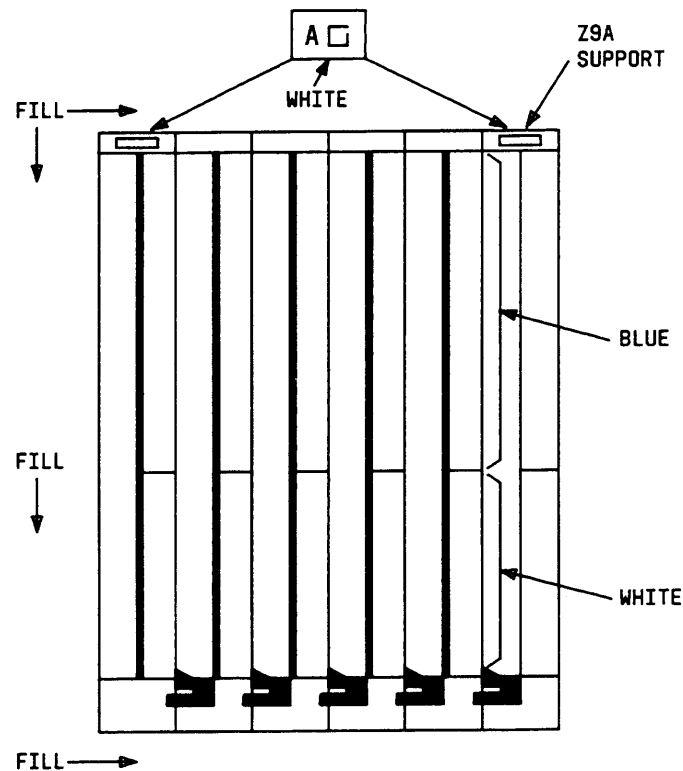


Figure 2-66. Satellite Location Layout

Labeling

Figure 2-66 shows the fill direction for the blue and white fields at the satellite location. The labels are numbered sequentially starting at number 1. A satellite symbol label is placed at the top of the first connector module and the Z9A support at the end of the field to identify the satellite location.

Figure 2-67 shows the station wiring labeling scheme from the white field at the equipment room to the information outlet. In the example shown, the white label identifying connecting unit jack positions 17 through 24 is connected to an identically labeled connecting unit at the satellite location. This is always the case for either 1-point or 2-point administration. See **PATCH CORD INSTALLATION AND ADMINISTRATION** for details.

The satellite symbol label must be installed at the connector module and at all connection points between the blue field and the information outlet. It must also be installed at the information outlet itself.

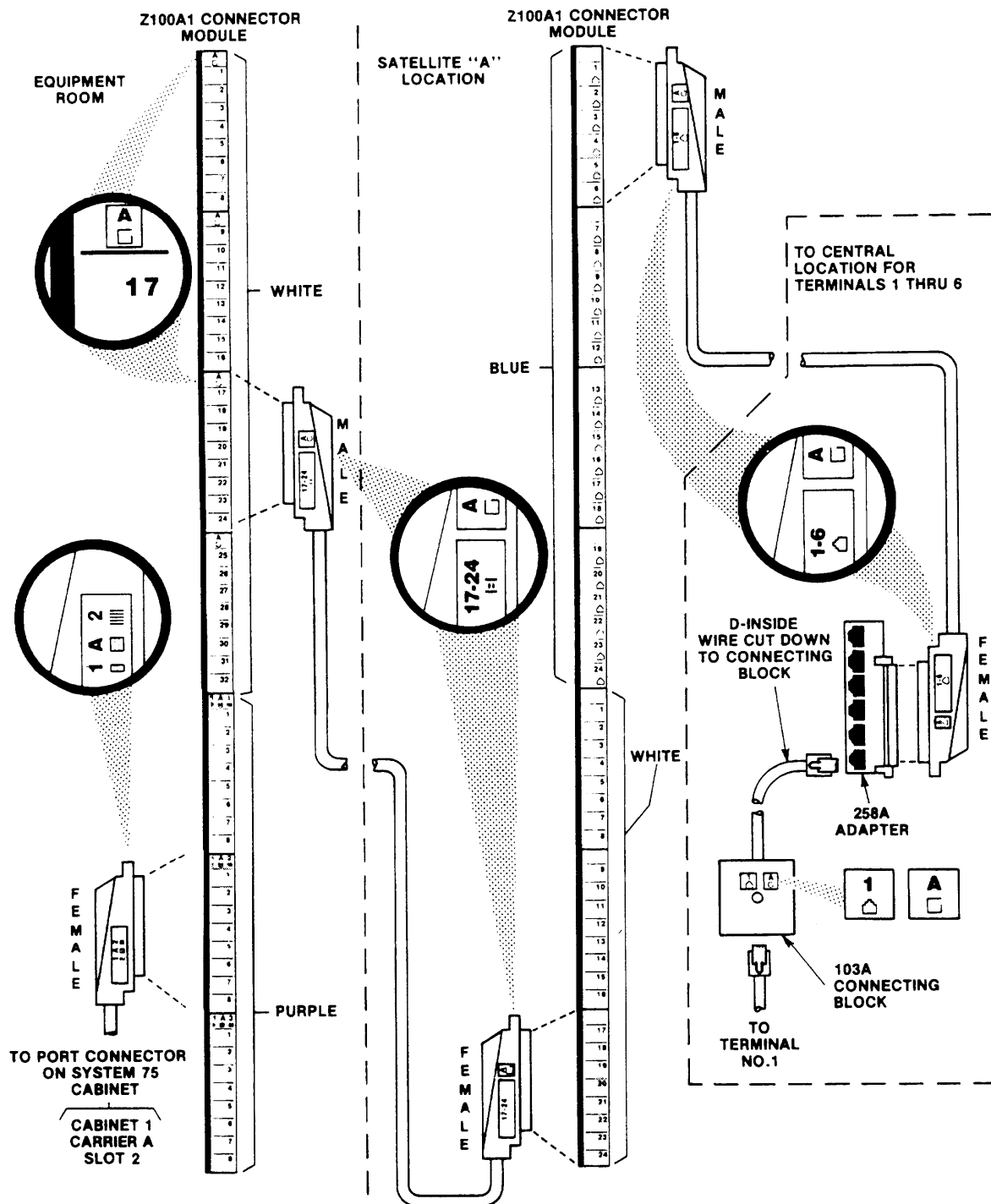


Figure 2-67. 3-Pair to 4-Pair Station Wiring Labeling From Equipment Room to Information Outlet

Installing the Information Outlets

Install the information outlets (Figure 2-68) at the terminal locations. See Table 2-G for wiring information.

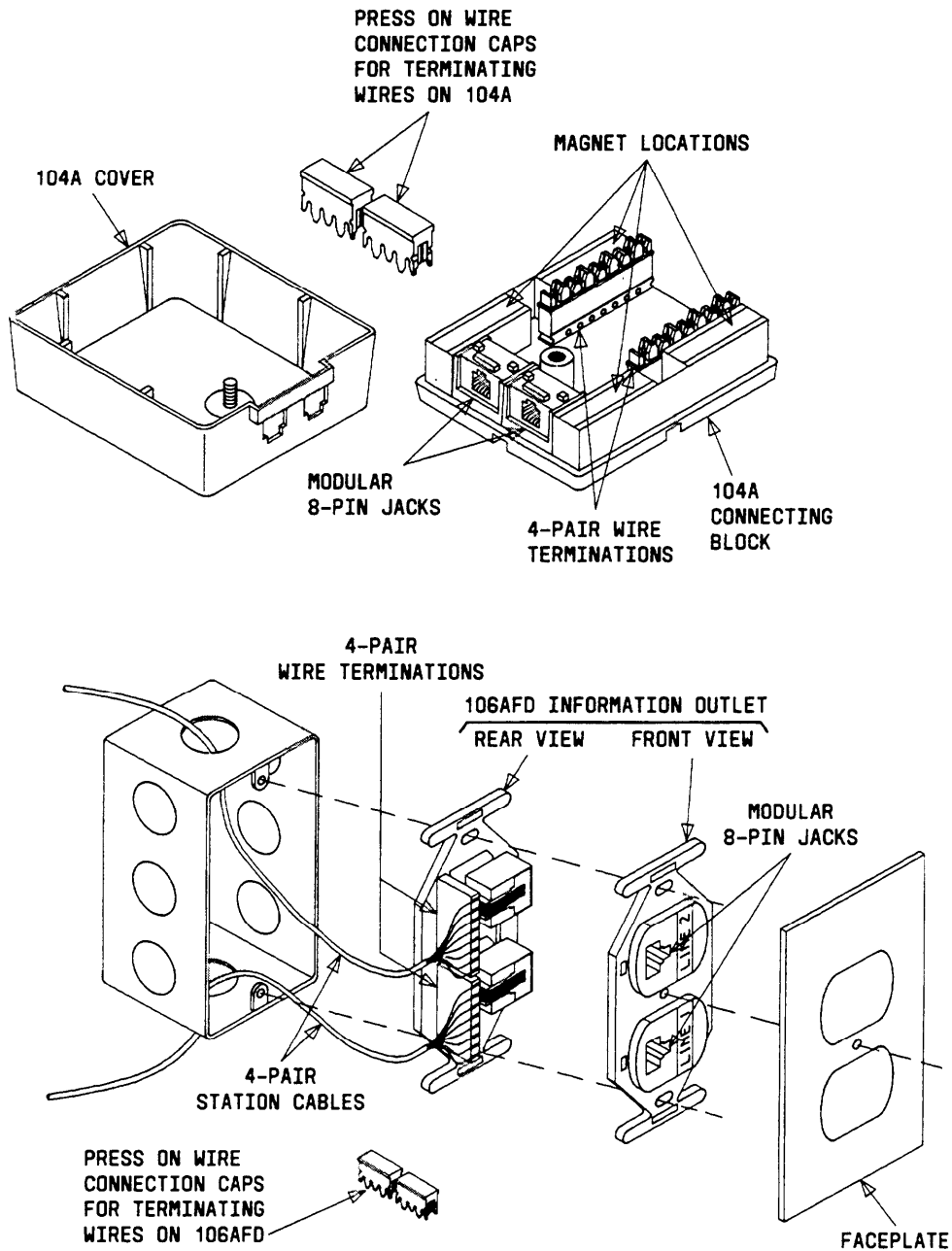


Figure 2-68. Typical 8-Pin Modular Information Outlets

ADJUNCT POWERING

Adjunct Powering From the Equipment Room

Adjunct power can be provided at any cross-connect field where 4-pair circuits (Z100A1) are provided to the station wiring. Figure 2-69 shows the powering arrangement used at the equipment room. As shown in Figure 2-69, the power adapter cord is routed behind the jack panel in the slot formed by the adjacent supports and connected to the individual or bulk power supply located above the cross-connect field.

Adjunct Powering From Satellite Locations

Adjunct powering from a satellite location is identical to the adjunct powering from the equipment room (see Figure 2-69).

Adjunct Powering From Site Locations

Adjunct power can be provided from any of the adapters located in site closets. Adjunct power is provided at the site locations when the 4-pair building wiring from the equipment room or satellite location exceeds 250 feet (76.2 m) or when 3-pair station wiring is run from the equipment room to a 356A adapter.

Figures 2-70 and 2-71 show the connections required for an 258A and 356A adapters, respectively. The 400B2 adapter and D6AP power cord are used to provide power on the fourth pair of the 4-pair station cable. The D6AP power cord is connected to an individual power supply or a bulk power supply. The D6AP power cord is available in 7 foot (2.1 m), 14 foot (4.3 m), and 25 foot (7.6 m) lengths.

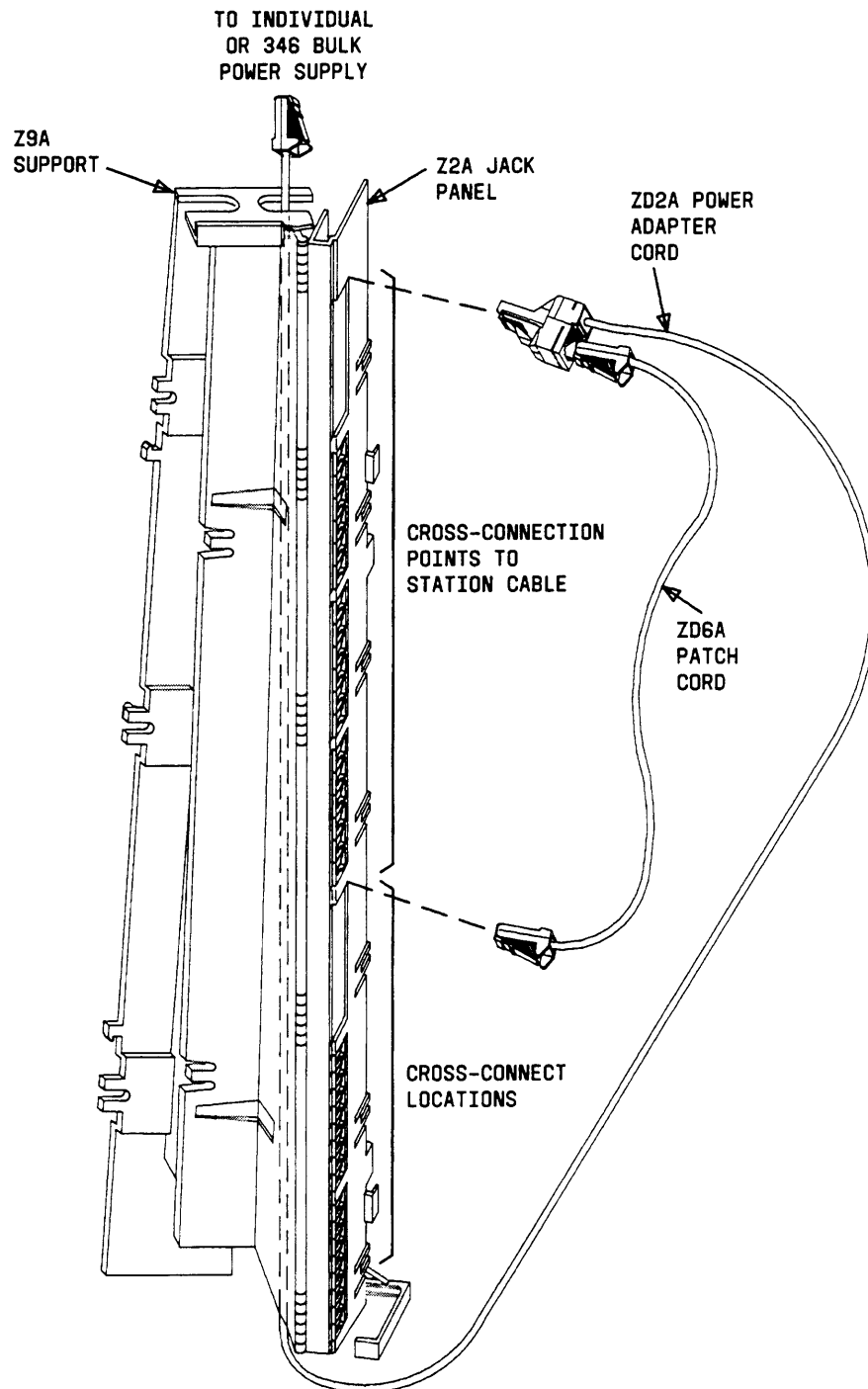


Figure 2-69. Remote Powering From a Z100A1 Connector Module Located at the Equipment Room or Satellite Location

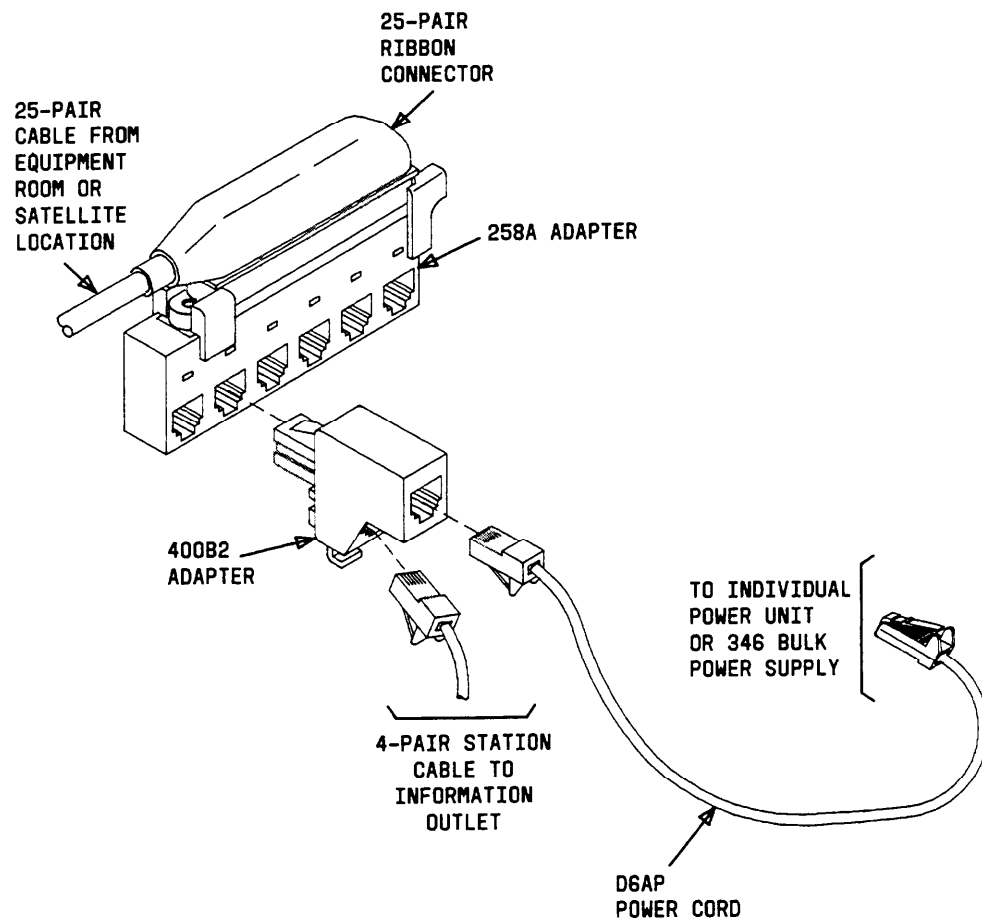


Figure 2-70. Remote Powering From a 258A Adapter in a Site Closet

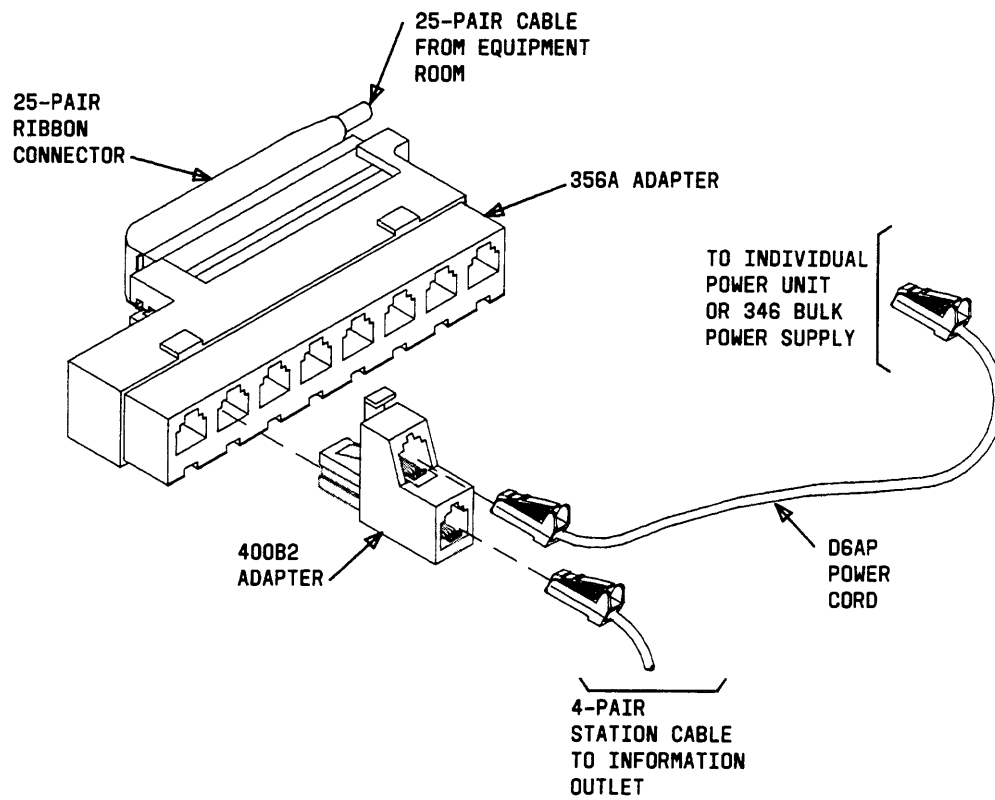


Figure 2-71. Remote Powering From a 356A Adapter in a Site Closet

Adjunct Powering From Information Outlets

Adjunct powering from the information outlet is described in the *AT&T System 75 and System 85 User's Guide—Terminal Installation and Test* (999-700-214IS). Only individual power supplies are used for the local powering at the information outlet. Figures 2-72 and 2-73 show typical connections required at the information outlets using the 400B2 adapter and a D6AP power cord.

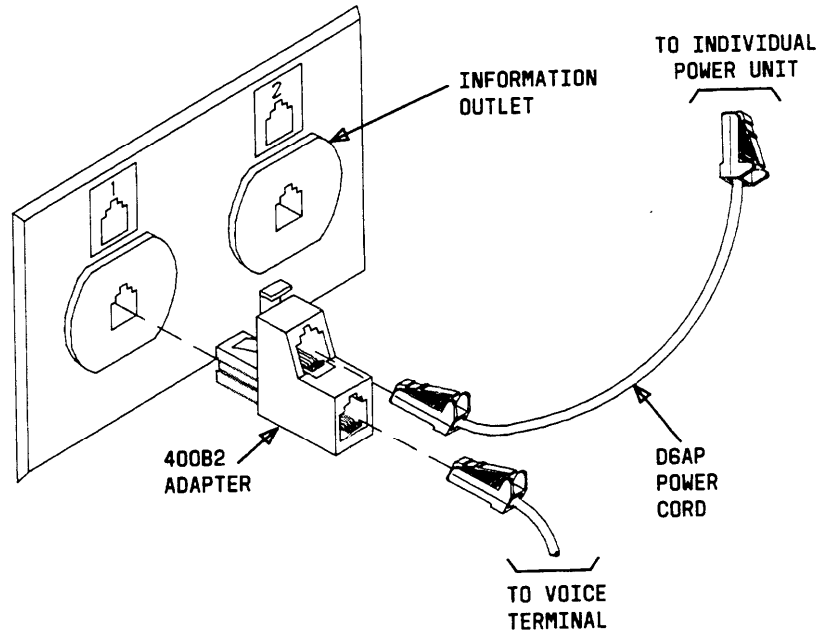


Figure 2-72. Typical Local Powering From a 400B2 Adapter—Flush Mounted Information Outlet

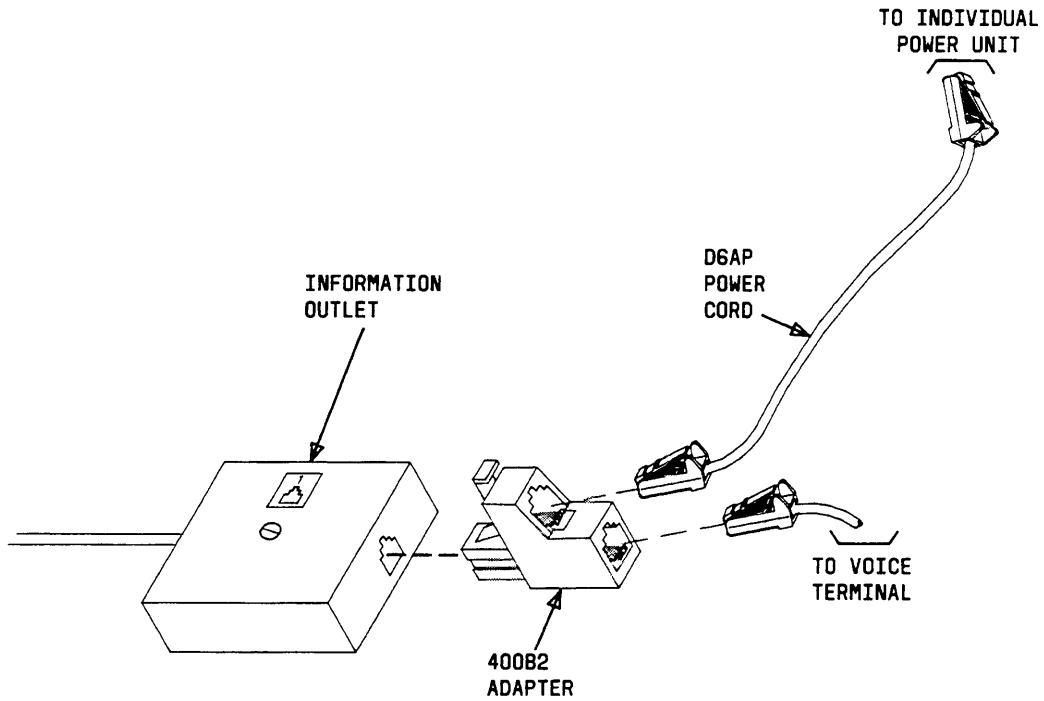


Figure 2-73. Typical Local Powering From a 400B2 Adapter—Surface-Mounted Information Outlet

PATCH CORD INSTALLATION AND ADMINISTRATION

Before starting the patch cord installation, obtain a copy of the Port Assignment Record forms (Figure 2-74) from the customer or marketing representative. The forms contain the port assignments and identify the extension numbers (**Terminal No.**) for the voice terminals. You must enter the jack assignments at the equipment room and indicate if adjunct power is required and where provided (equipment room, site closet, satellite closet, or information outlet).

When satellite locations are provided, enter the satellite letter designation (A through F) and the jack appearance number in the equipment room on the form. Also, enter the floor designation and/or building designation if appropriate. For 1-point administration (see Figure 2-75), this entry is all that is required. The white field number always corresponds to the station jack number at the satellite location blue field.

For 2-point administration (see Figure 2-76), the station jack numbers (blue field) at the satellite locations must also be entered on the form. For example, the entry **A1-10** indicates satellite location A, white field position 1 at the equipment room and the satellite location, and station jack number 10 at the satellite location.

CARRIER _____

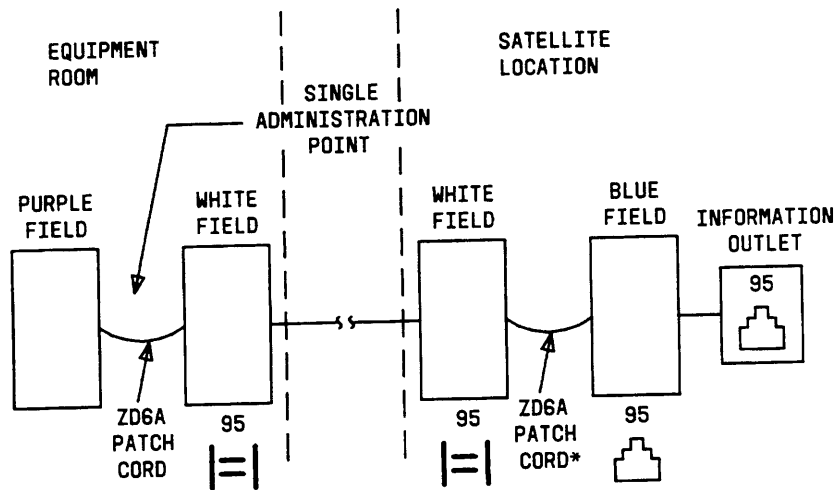
PORT ASSIGNMENT RECORD

Page _____

Slot	Port	Jack*	Extension Number		Bldg Flr Rm	Voice Terminal		Voice Terminal Adjunct	Module	Power*		User Name/Use
			Old	New		Type	Color					
Slot CKT PK Type	01											
	02											
	03											
	04											
	05											
	06											
	07											
	08											
	09											
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
	18											
	19											
	20											
	21											
	22											
	23											
	24											

* To be completed by installation technician

Figure 2-74. Port Assignment Record Form



* THIS PATCH CORD MUST BE MODIFIED TO CREATE THE EQUIVALENT OF A PUNCH-DOWN JUMPER.

Figure 2-75. 1-Point Administration

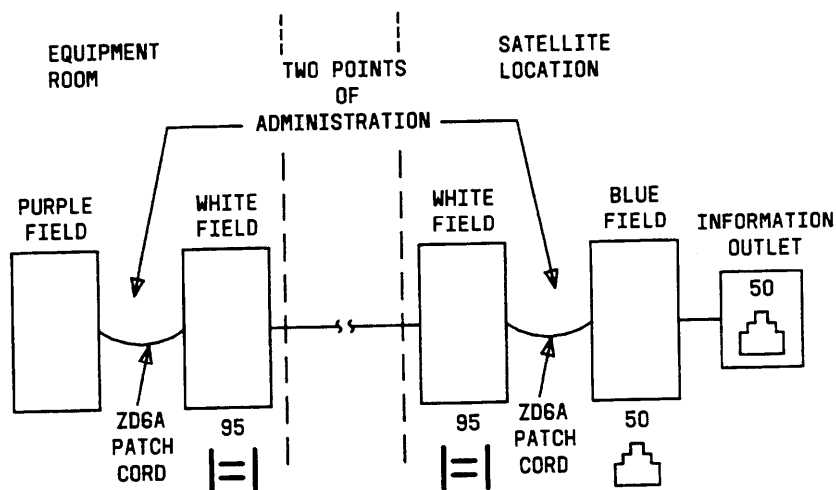


Figure 2-76. 2-Point Administration

Equipment Room Cross-Connect Field

The following guidelines and procedures are provided for installing and removing patch cords and power adapter cords. Administration details for changing system translations using the System Access Terminal are included in *AT&T System 75 and System 75 XE Administration* (555-200-500).

Installing Patch Cords

The *AT&T System 75 and System 85 User's Guide—Terminal Installation and Test* (999-700-214IS) contains installation procedures for the voice terminals and their adjuncts. The voice terminals and their adjuncts must be installed before the patch cords and power adapter cords are connected.

Use only the ZD6A-87 patch cord (Figure 2-9) to connect the port (purple field) to the station appearance at the white or blue field. The ZD6A-87 patch cord has two molded ears near the tip of the plug release tab. These ears are unique to the patch cord and prevent other cords from catching between the plug body and release tab during patch cord installation and removal. **Equipment damage may occur if any other type cord is used.**

In all cases, the shortest patch cord should be used to make the cross-connection. The patch cord should be removed and replaced with a shorter cord if it touches the floor or the cable slack manager. Also, the patch cord must have enough slack so that it will not inhibit the opening of the jack panel. Allow a minimum of 8 inches (20.3 cm) of vertical space (drape) between patch cord and bottom of connector module.

To install a patch cord, proceed as follows:

1. At the blue or white field, locate the jack number associated with the terminal location.
2. Plug one end of the patch cord into this jack.
3. At the purple field, locate the port jack number identified on the Port Assignment Record and plug the other end of the patch cord into the port jack.
4. Arrange both ends of the patch cord so they lay in their respective connector module vertical troughs and patch cord guides at the bottom of the connector modules.
5. If the patch cord is too short, select the next longer patch cord.
6. Update the Port Assignment Record.
7. Repeat the procedure until all patch cords are installed.
8. Update system translations.

Removing Patch Cords

When it is necessary to remove patch cords due to voice terminal removal, the voice terminal must be first disconnected at the information outlet. The patch cord must then be completely removed from the cross-connect field. This will provide an accurate visual indication of available port and station jacks. Do not leave a partially or totally disconnected patch cord intermingled with other patch cords.

When it is necessary to rearrange patch cords due to voice terminal moves, it is strongly recommended that the entire patch cord be removed and reinstalled even if only one end of the cross-connection is affected. This will reduce cord entanglement and help to assure a continued neat patch cord appearance.

To remove a patch cord, proceed as follows:

1. On the Port Assignment Record, locate the jack assignments at the purple and white or blue fields.
2. At the purple field, unplug the patch cord.
3. Remove the plug end of the patch cord from the patch cord guide at the bottom of the connector module.
4. Gently lift the patch cord straight up, taking up the slack, until the cord can be located by its movement beneath the connector modules.
5. Trace the other end to its connection point at the blue or white field and unplug the patch cord.
6. Remove the plug end of the patch cord from the patch cord guide at the bottom of the corrector module.
7. Remove the patch cord by pulling either end vertically and to the left or right side. The direction of pull should be parallel to the wall on which the cross-connect field is mounted.
8. Update the Port Assignment Form.
9. Update system translations.

Installing and Removing Power Adapter Cords

ZD2A-87 power adapter cords are installed as described previously under **ADJUNCT POWERING** (see Figure 2-69). The power adapter cords can be used only with the 4-pair station jacks on the Z100A1 connector modules. The voice terminal and adjunct should be installed prior to installing the power adapter cord and patch cord.

To remove a power adapter cord, proceed as follows:

1. On the Port Assignment Record, locate the station jack number for the voice terminal receiving remote power.
2. Locate the red plug/jack end of the power adapter cord at the connector module (blue field).
3. Open the jack panel and trace the power adapter cord to the remote power supply.
4. Unplug the power adapter cord at the power supply.
5. Unplug the patch cord from the red jack of the power adapter cord.
6. If you are removing a voice terminal, remove the patch cord as described previously. If you are only removing the remote power, plug the patch cord back into the blue field station jack.
7. Remove and store the power adapter cord.
8. Update the Port Assignment Record.

Satellite Locations

The guidelines provided for installing and removing patch cords and power adapter cords at the equipment room cross-connect field should be followed at the satellite locations. The cross-connections are made between the white field (equipment room side) and the blue field (station side).

1-Point Administration

For 1-point administration (see Figure 2-75), the patch cords are connected between purple field jacks and white field jacks at the equipment room. At the satellite location, the patch cords are connected between identically numbered white field jacks (equipment room side) and blue field jacks (station side). At the satellite location, use small diagonal pliers to cut the exposed patch cord release tabs off flush with the front of the jack panel (Figure 2-77). Remove the tabs at both the blue and white fields. This will make future removal of the patch cords difficult and provide a single administration point at the equipment room.

To unplug a patch cord "jumper", grasp the patch cord as near as possible to the plug. While gently pulling the patch cord, use a small screwdriver or paper clip to depress the release tab against the plug. The plug will easily release from the jack.

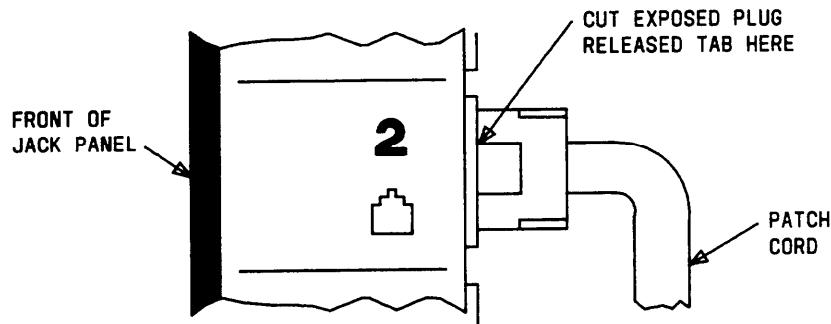


Figure 2-77. Patch Cord Plug Release Tab Removal Location

2-Point Administration

For 2-point administration (see Figure 2-76), the patch cords are connected between purple field jacks and white field jacks at the equipment room. At the satellite location, the patch cords are connected between the white field jacks (equipment room side) and blue field jacks (station side) as specified on the Port Assignment Record. The Port Assignment Record must be updated for all administrative changes at the satellite location.

MISCELLANEOUS WIRING INSTALLATION

Installing Attendant Console

Requirements

The attendant console is connected to an information outlet the same as any other voice terminal. Figure 2-78 shows the connections required for the attendant console.

Power for two consoles **only** can be provided by the switch cabinet through an auxiliary cable connected to the cable access panel. Whenever possible, power for the primary attendant console should be provided by the switch cabinet. This makes the primary console fully operational during short (less than 10 seconds) power outages.

Note: The attendant console cannot be powered from the switch cabinet on the System 75 XE.

Additional attendant consoles are remotely powered by the 346 bulk power supply or individual power units. Refer to **ADJUNCT POWERING** for details on remote powering from adjunct power units located at satellite locations, site locations, or information outlets.

Note: The 329A Power Unit should not be used to remotely power the attendant console.

The maximum cabling distance for an attendant console powered from the switch cabinet is 350 feet (107 m). Maximum cabling distances for additional attendant consoles is 2400 feet (732 m) for 24-gauge wire and 1500 feet (457 m) for 26-gauge wire.

Installation

1. Unpack attendant console and inspect for damage.
2. Determine port assignment of console from Attendant Console Form (see Note).

EXAMPLE: Port Number A 02 01
 Carrier Slot Circuit

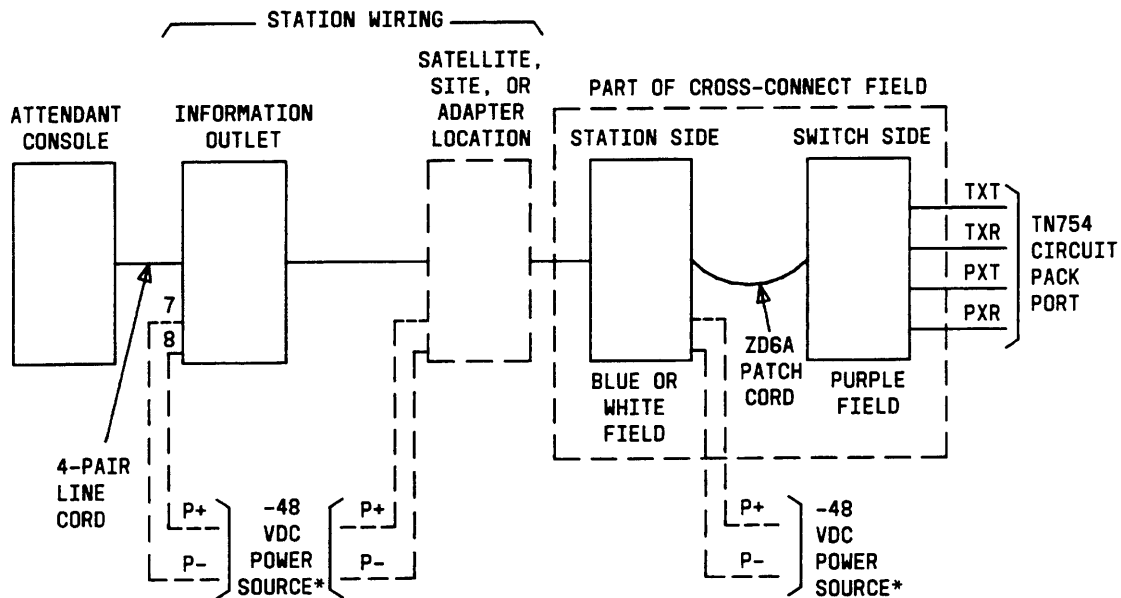
Note: The primary attendant console is always connected to control carrier slot 02.

3. If power is to be supplied from the switch cabinet (not available on the System 75 XE), do steps 4, 5, and 6; otherwise, go to step 7.
4. Run and connect B25A cable from connector X on first cable access panel to switch side of cross-connect field (see Figure 2-79).
5. Install yellow (8-section auxiliary) label on connector module and label one jack as AD PWR.
6. Connect jumpers from ACC PWR terminals to the second pair of the appearance on the X terminal row that corresponds to jack labeled in step 5 (see Figure 2-79). Label appearance as AD PWR.
7. If power is to be supplied at cross-connect field, connect power adapter cord (Figure 2-10) to attendant console appearance on the station side and AD PWR jack in the yellow field or a power unit located above the cross-connect field. If power is not supplied at cross-connect field, provide power as described under **ADJUNCT POWERING**.
8. Install patch cord at cross-connect field.
9. Connect console line jack on bottom of console to information outlet (Figure 2-78).
10. Install labels per Attendant Console Form and Display Module Form Assignments.
11. Install handset bracket on left or right side of console, as desired.
12. Insert handset adapter on same side of handset bracket.

Note: The handset adapter is available in two models: 854A-03 (black) or 854A-143 (burgundy).

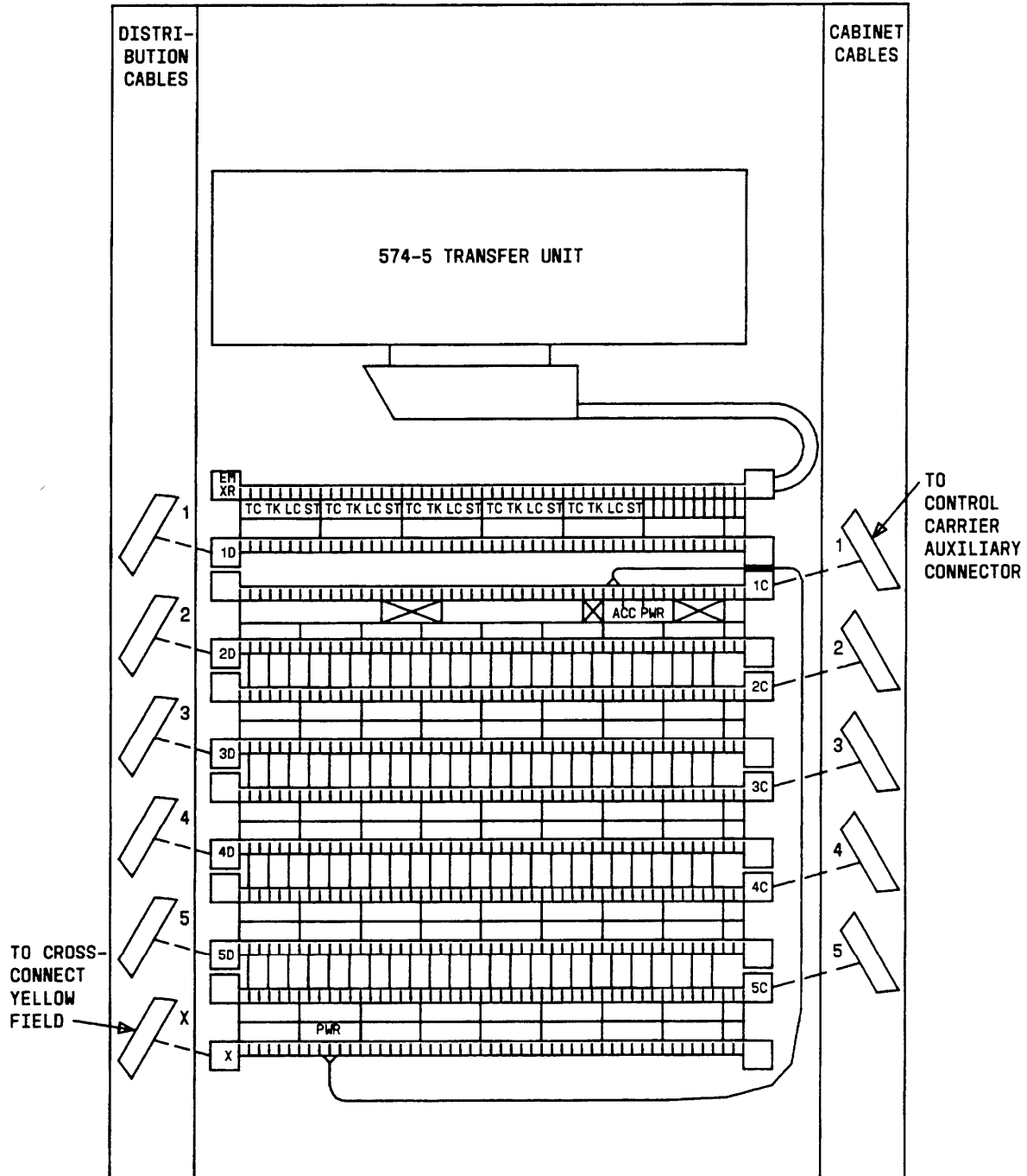
A bracket is not required for a headset.

13. Connect handset cord to jack on same side of console as handset bracket.
14. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.



* AD PWR JACK AT YELLOW FIELD, 346 BULK POWER SUPPLY, OR 329A POWER SUPPLY. KS-22911, L1 POWER SUPPLY CAN BE USED IF ATTENDANT CONSOLE IS NOT EQUIPPED WITH OPTIONAL SELECTOR CONSOLE.

Figure 2-78. Connections for Attendant Console



NOTE: EACH SOLID CONNECTING LINE REPRESENTS A PAIR OF WIRES

Figure 2-79. Wiring Required at Cable Access Panel for Attendant Console Remote Powering From Switch Cabinet—System 75 Only

Installing Selector Console

Requirements

The selector console is connected to the attendant console by a 3-foot (91-cm) D8AC cord provided with the selector console (see Figure 2-80).

Installation

1. Run and connect 3-foot (91-cm) D8AC cord between DXS/BLF jack on bottom of attendant console and modular jack on bottom of selector console.

Note: These jacks are located on the bottom of the consoles.

2. Install labels per Attendant Console Form.
3. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

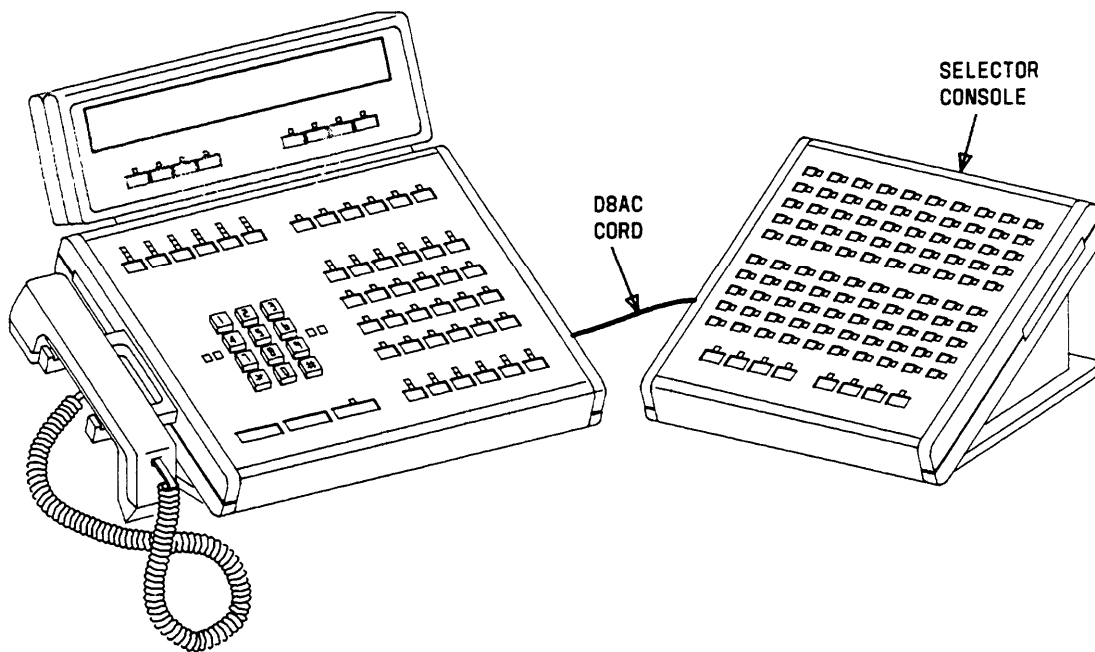


Figure 2-80. Selector Console Installation

Installing INADS (Initialization and Administration System) Interface

Requirements

The Initialization and Administration System (INADS) trunk should be specified to appear on the twenty-fifth pair of an RJ21X network interface jack. The INADS trunk must be a two-way, rotary dial, loop start trunk. The INADS trunk is connected to the TN731 Maintenance circuit pack through the cable access panel. This connection is made at the INADS terminals. Figure 2-81 shows a typical INADS trunk installation.

Installation

1. Determine INADS trunk appearance at cable access panel.
2. Install jumpers between INADS trunk appearance (IN) and INADS terminals.
3. Label terminals for INADS trunk appearance (IN).

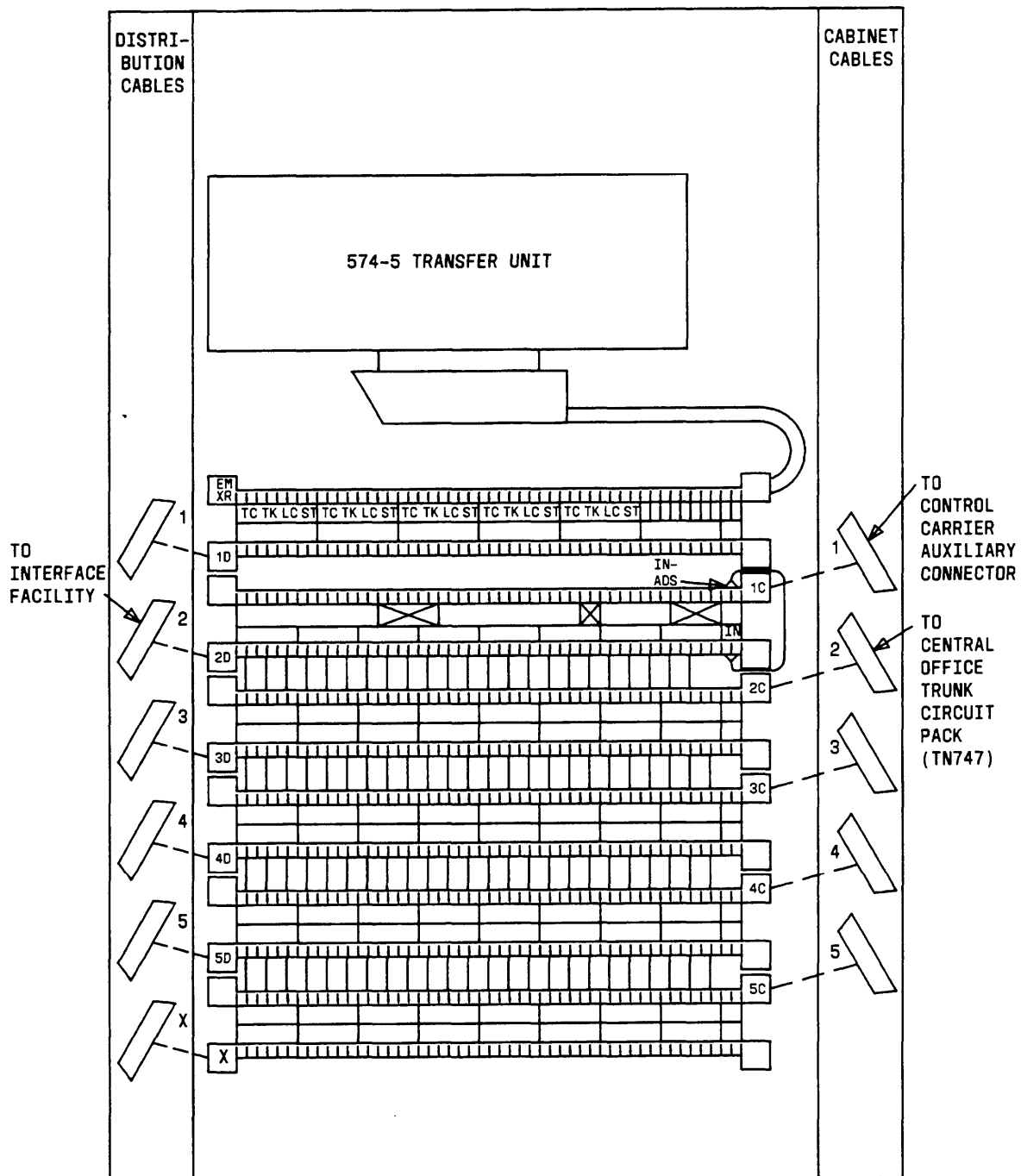


Figure 2-81. Connections at Cable Access Panel for INADS Trunk

Installing DS1 Tie Trunks

DS1 tie trunks provide a 1.544 Mbps digital data service between two collocated System 75s or System 75 XEs or between the system and a data network using T1 carrier facilities. The TN722 DS1 Tie Trunk circuit pack (R1V2 or V3) provides connection capability to the DS1 facility as 24 independent trunks. Table 2-F shows the lead designations for the DS1 circuit pack.

The following connector cables are available to connect the DS1 Tie Trunk circuit pack to DS1 digital facilities:

- C6C Connector Cable (Comcode 104 307 327)—50-foot (15.2-m) long shielded cable equipped with a 50-pin male connector on one end and a 15-pin male connector on the other end. This cable is used to connect a DS1 Tie Trunk circuit pack to a 551-type Channel Service Unit (CSU).
- C6D Connector Cable (Comcode 104 307 376)—50-foot (15.2-m) long shielded cable equipped with 50-pin male connectors on each end. This cable is used to connect DS1 Tie Trunks in collocated System 75s or System 75 XEs.
- C6E Connector Cable (Comcode 104 307 434)—100-foot (30.4-m) long shielded cable equipped with a 50-pin male connector on one end and a 50-pin female connector on the other end. This cable is used as an "extension" cable between the DS1 Tie Trunk circuit pack and the other connector cables.
- C6F Connector Cable (Comcode 104 307 475)—50-foot (15.2-m) long shielded cable equipped with a 50-pin male connector on one end and a 3-inch (7.6 cm) stub on the other end. This cable is used to connect the DS1 Tie Trunk circuit pack to channel multiplexer requiring hardwired connections.

C6F CONNECTOR CABLE LEAD IDENTIFICATION

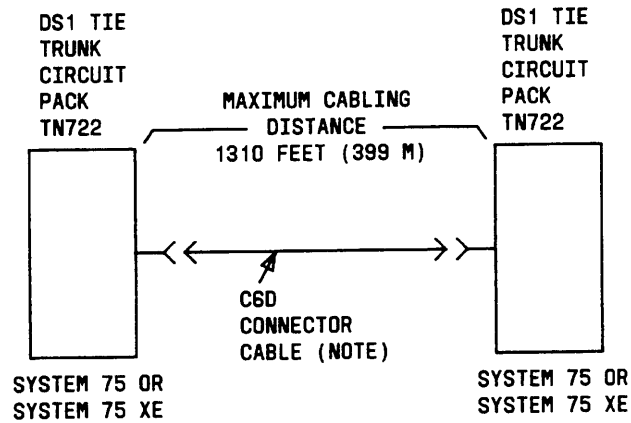
Wire Color	Lead Designation	Connector Pin Number
W-G	LI*	47
G	LI	22
W-BR	LO	48
BR	LO*	23
W-S	LBACK2	49
S	LBACK1	24

Collocated DS1 Tie Trunks

Figure 2-82 shows the connections required to connect two DS1 Tie Trunk circuit packs in collocated System 75s or System 75 XEs.

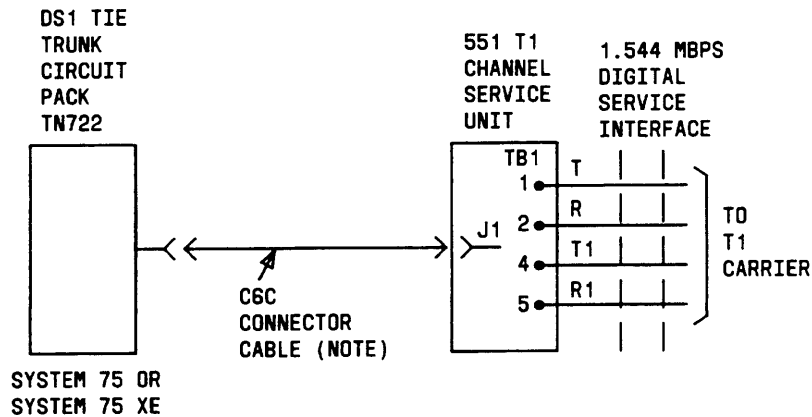
DS1 Tie Trunks Using 551-Type CSU

Figure 2-83 shows the connections required to connect a DS1 Tie Trunk to a 551-T1 CSU. The CSU is required to interface the DS1 tie trunks to the 1.544 Mbps digital facility. For information on installing the CSU, refer to the *551 T1 Channel Service Unit—User's Manual*, 999-100-189IS. For other CSUs, refer to the information provided with the unit.



NOTE: FOR DISTANCES OVER 50 FEET (15.2 M)
USE C6E CONNECTOR CABLE(S) BETWEEN
C6D CONNECTOR CABLE AND DS1 TIE TRUNK
CIRCUIT PACK.

Figure 2-82. Connections for DS1 Tie Trunks Between 2 System 75s or System 75 XEs



NOTE: FOR DISTANCES OVER 50 FEET (15.2 M)
USE C6E CONNECTOR CABLE(S) BETWEEN
C6C CONNECTOR CABLE AND DS1 TIE TRUNK
CIRCUIT PACK.

Figure 2-83. Connections for DS1 Tie Trunks Using 551 T1 CSU

Installing Customer-Provided Alarm—System 75 XE Only

Requirements

For the System 75 XE, access to a relay contact is available for a customer provided alarm that can be used to connect to a light, bell, or similar type device. The relay contact can be administered so that it will make contact when a major, minor, or warning alarm condition exists on the system. The circuitry required for this feature must be provided by the customer. The device connected to the alarm leads must not exceed a rating of more than 100 volts at 3/4 amps. The contact leads appear at the cross-connect field on the AUXILIARY connector, refer to the AUXILIARY connector labeling for lead assignments.

Installing Off-Premises Terminal Wiring

Requirements

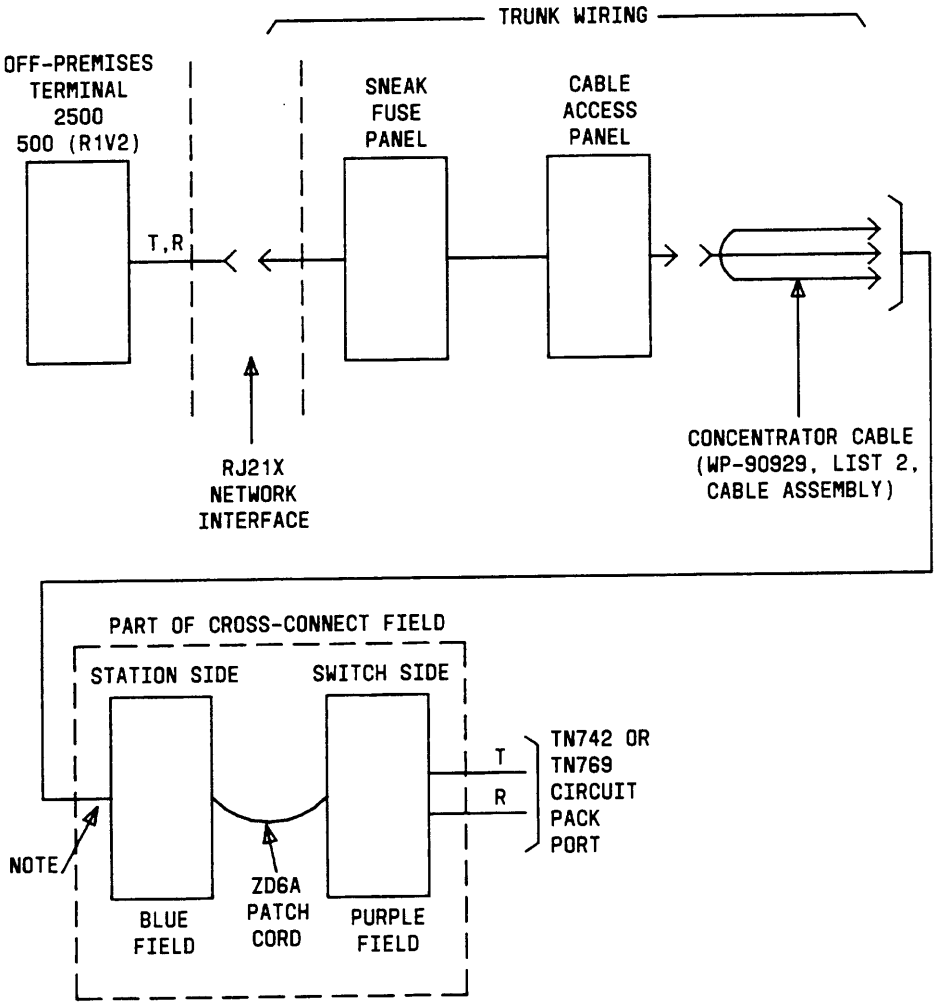
The cabling outside the building for off-premises terminals is provided by the local telephone company. The off-premises terminal appearance is on any of the RJ21X network interfaces provided for central office trunks. The off-premises terminals can only be an FCC approved analog type, for example, a 2500. The TN746 Analog Line circuit pack cannot be used for off-premises terminals.

Installation

Concentrator cables are used between the cable access panel and the switch cabinet. Concentrator cables (WP-90929, List 2 Cable Assemblies) connect the CABINET CABLES connectors on the right side of the CAP to a Z100B1 Connector Module (see Note) at the cross-connect field (Figure 2-84). There are eight terminal appearances on each of the 3-fingers of the concentrator cable.

Note: Z100B1 Connector Modules are installed at the end of the cross-connect field when 4-pair circuits are distributed to the station wiring from the cross-connect field (Z100A1 Connector Modules). If a Z100B1 Connector Module is not provided, a connecting unit located on the station side in the Z100A1 Connector Modules must be replaced with a Z203A1 Connecting Unit.

1. If you are doing the initial installation, go to step 5; otherwise, do steps 2, 3, and 4.
2. Install a B25A cable between the RJ21X network interface and a sneak fuse panel.
3. Install a A25D cable between sneak fuse panel and cable access panel.
4. Connect single-fingered end of the concentrator cable to a connector on the right side of the CAP.
5. Connect one of the 3-fingered ends of the concentrator cable to a Z203A1 Connecting Unit located in a Z100B1 Connector Module.
6. Install a blue 3-pair label on the connector module and identify the remote location on the label header.
7. Install patch cords at cross-connect field.
8. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.



NOTE: THE CONNECTION AT THE STATION SIDE IS TO A Z203A1 CONNECTING UNIT PROVIDED IN A Z100B1 CONNECTOR MODULE.

Figure 2-84. Connections for Off-Premises Terminals

Installing Out-of-Building Terminal Wiring

Out-of-building terminals are those extensions not physically located in the same building as the equipment room but are located on the same property.

Analog and digital terminals can be used for out-of-building terminals.

Analog Out-of-Building Terminals

Figure 2-85 shows the connections required for one to eight out-of-building analog voice terminals. A B25A cable connects the CABINET CABLES connector on the right side of the CAP to a Z100B1 Connector Module (see Note) at the cross-connect field (Figure 2-83). There are eight station appearances on the B25A cable. The TN746 Analog Line circuit pack cannot be used for out-of-building terminals.

Note: Z100B1 Connector Modules are installed at the end of the cross-connect field when 4-pair circuits are distributed to the station wiring from the cross-connect field (Z100A1 Connector Modules). If a Z100B1 Connector Module is not provided, a connecting unit located on the station side in the Z100A1 Connector Modules must be replaced with a Z203A1 Connecting Unit.

Carbon block, or equivalent, protection must be provided at both building entrances. The multi-pair protector units and the out-of-building cabling required must be locally engineered. Connectorized multi-pair protector units (female 25-pair connector out) are recommended. The protector units can be ordered from the *Premises Distribution Systems Equipment and Supplies Catalog*.

Figures 2-86 shows the connections required for up to 24 out-of-building analog voice terminals. Concentrator cables are used at both buildings to minimize the out-of-building wiring required. The concentrator cable (WP-90929, List 2 Cable Assembly) used at the equipment room connects the CABINET CABLES connector on the right side of the CAP to a Z100B1 Connector Module (see Note) at the cross-connect field (Figure 2-86). There are eight terminal appearances on each of the 3-fingers of the concentrator cable. The TN746 Analog Line circuit pack cannot be used for out-of-building terminals.

Note: Z100B1 Connector Modules are installed at the end of the cross-connect field when 4-pair circuits are distributed to the station wiring from the cross-connect field (Z100A1 Connector Modules). If a Z100B1 Connector Module is not provided, a connecting unit located on the station side in the Z100A1 Connector Modules must be replaced with a Z203A1 Connecting Unit.

Carbon block, or equivalent, protection must be provided at both building entrances. The multi-pair protector units and the out-of-building cabling required must be locally engineered. Connectorized multi-pair protector units (female 25-pair connector out) are recommended. The protector units can be ordered from the *Premises Distribution Systems Equipment and Supplies Catalog*.

PROTECTOR UNIT ORDERING INFORMATION*

Description	Comcode
3B1A (Carbon Block)	102 381 779
3B1E (Gas Tube)	103 090 395
4B1C (Carbon Block and Sneak Current)	102 904 893
4B1E (Gas Tube and Sneak Current)	103 090 437

Digital Out-of-Building Terminals

Design for out digital out-of-building terminals is in development.

* The protector units are plug-in type units that can be installed on a 188, 189, or 190-type multi-station protector unit.

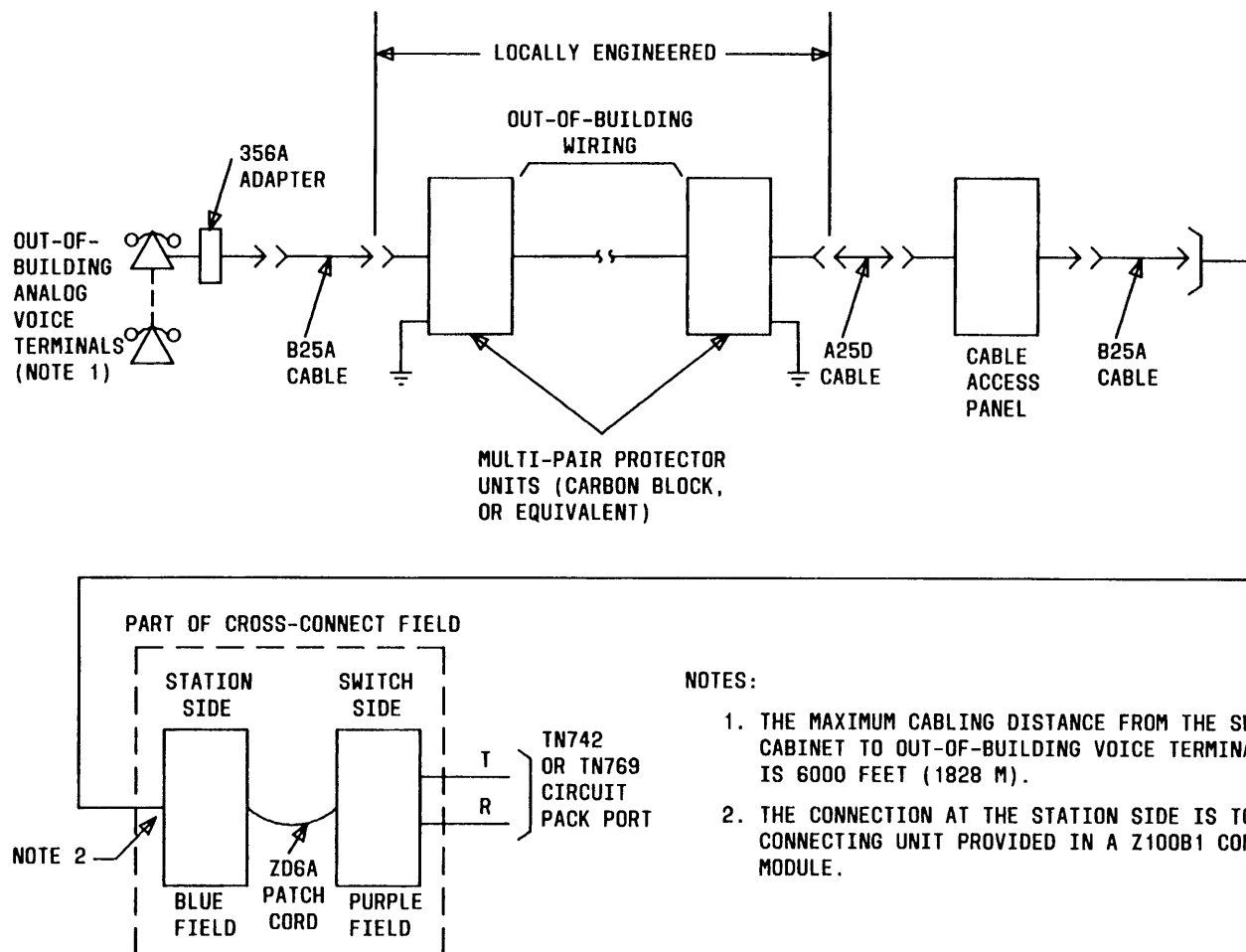


Figure 2-85. Connections for One to Eight Out-of-Building Analog Voice Terminals Only

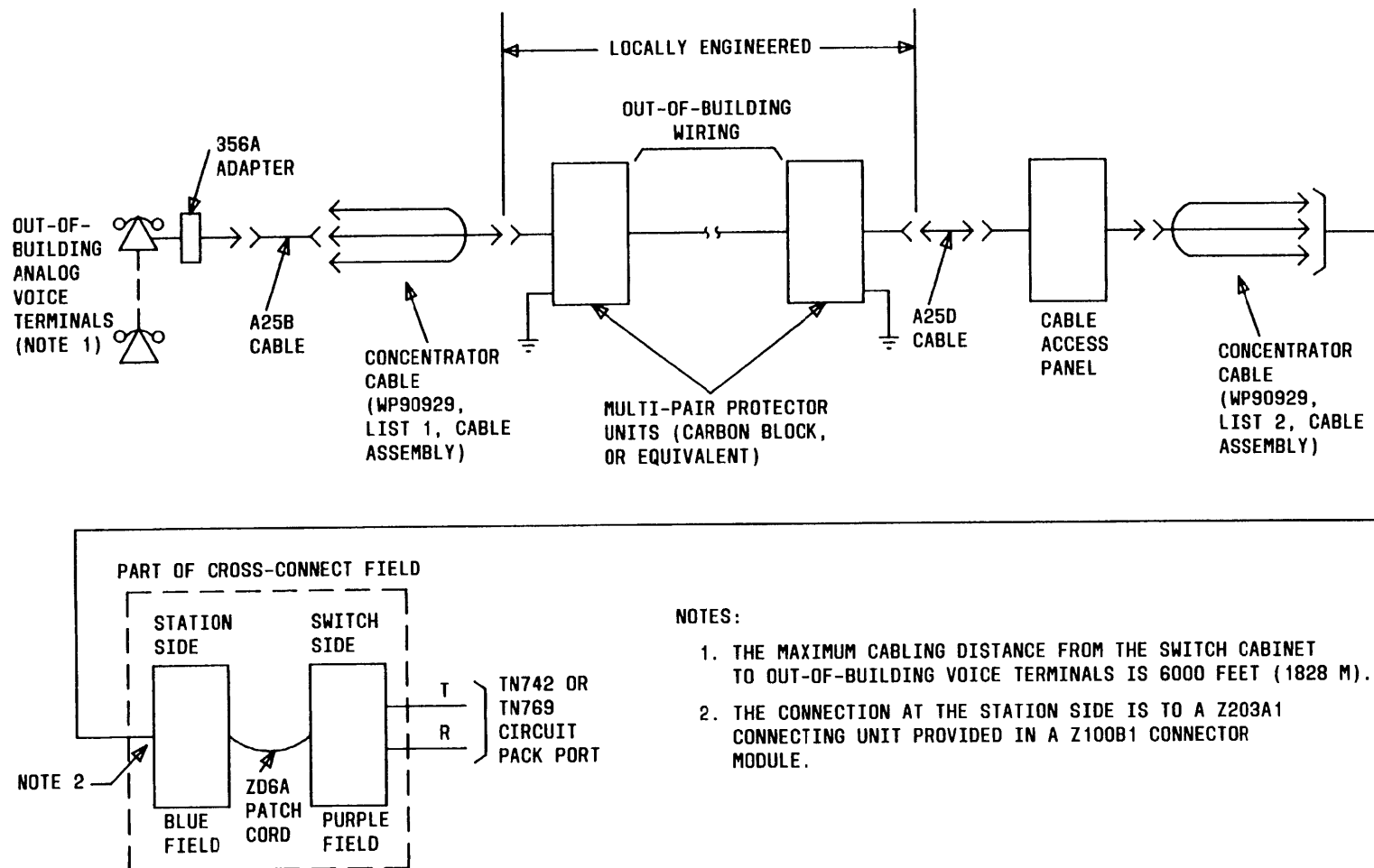


Figure 2-86. Connections for Each Group of Eight Out-of-Building Analog Voice Terminals

Installing Emergency Transfer Units and Terminals**Requirements—Terminals**

Emergency transfer capability is provided by the transfer unit located in the cable access panel. Additional transfer units can be mounted alongside or above a CAP when the number of transfer units required exceed the number of CAPS.

Only 500- or 2500-type voice terminals can be used for emergency transfer. For R1V2 or R1V3 systems, the 500-type and 2500-type terminals can also be used as normal extensions. For R1V1 systems, the 500-type terminals are used when the central office has rotary dialing service only and cannot be used as normal extensions. Emergency transfer capability may be provided on Central Office (CO) and Wide Area Telecommunications Service (WATS) trunks.

The following two types of transfer units are available:

- **Z1A Emergency Transfer Unit**—Each unit serves up to six Power Failure Transfer terminals. A ground-start switch is required at each preselected voice terminal when ground start trunks are used.
- **574-5 Power Transfer Unit**—Each unit serves up to five Power Failure Transfer terminals. The unit provides automatic ground start.

The preinstalled units are connected to the EM XR terminal row in the cable access panel. The units are powered (-48 V dc) from the EM TRANS POWER terminals located on the 1C connector of the first (top) cable access panel. There are seven EM TRANS POWER terminal pairs. This simplifies powering of up to seven emergency transfer units.

574-5 Power Transfer Unit

The 574-5 Power Transfer Unit has connection for five emergency transfer terminals and is compatible with both loop start and ground start trunks. Ten slide switches in the center of the unit (Figure 2-87) are set for the trunk type (two per trunk). The switches are set at the factory for ground start trunks as shown in Figure 2-87.

When ground start trunks are used, the transfer unit will automatically provide ground start for each trunk without the need for special wiring at the terminal used for emergency transfer service.

Figure 2-88 shows wiring required at first (top) cable access panel for a voice terminal used only for emergency transfer. These terminals are always connected from the port side of the cross-connect field to connector X at the cable access panel. Figure 2-89 shows wiring required at first cable access panel for a voice terminal used for emergency transfer as well as a normal extension. Wiring at other cable access panels is the same for both type installations except the power (PWR) leads must be connected to EM TRANS POWER terminals on the first cable access panel.

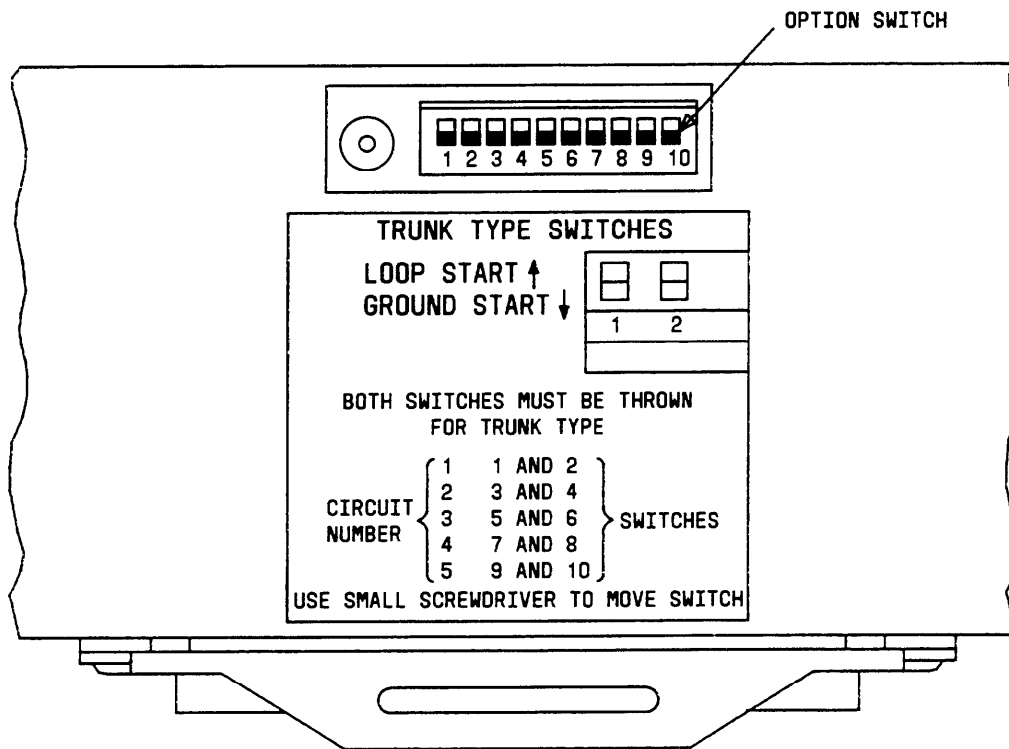


Figure 2-87. 574-5 Power Transfer Unit Option Switches

Requirements—Optional DID Make-Busy Trunk

Figure 2-90 shows the connections at the cable access panel for an optional Direct Inward Dialing (DID) make-busy trunk. This option prevents DID trunks from being taken out of service by the serving central office during emergency transfer. This trunk is used for this function only and should be specified to appear on the twenty-fifth pair of a network interface jack.

Installation—Terminals

Cable Access Panel Connections— Terminals Used Only for Emergency Failure Transfer

1. At first cable access panel, run and connect pair of wires between PWR terminals on EM XR terminal row to EM TRANS POWER terminal (see Figure 2-88).
2. Remove T and R straps for each central office (CO) trunk to be used for emergency transfer.
3. Run and connect CO trunk circuit leads on CABINET CABLES side to TC terminals on EM XR terminal row for each trunk.
4. Run and connect CO trunk circuit leads on DISTRIBUTION CABLES side to TK terminals on EM XR terminal row for each trunk.
5. Connect terminal leads on X connector (see **Note**) to ST terminals on EM XR terminal row for each emergency transfer terminal.

Note: Terminal leads appear on pairs 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).

6. If more emergency transfer only terminals are to be installed, run and connect two wires from PWR terminals on next cable access panel to EM TRANS POWER terminals on first cable access panel and repeat from step 2.

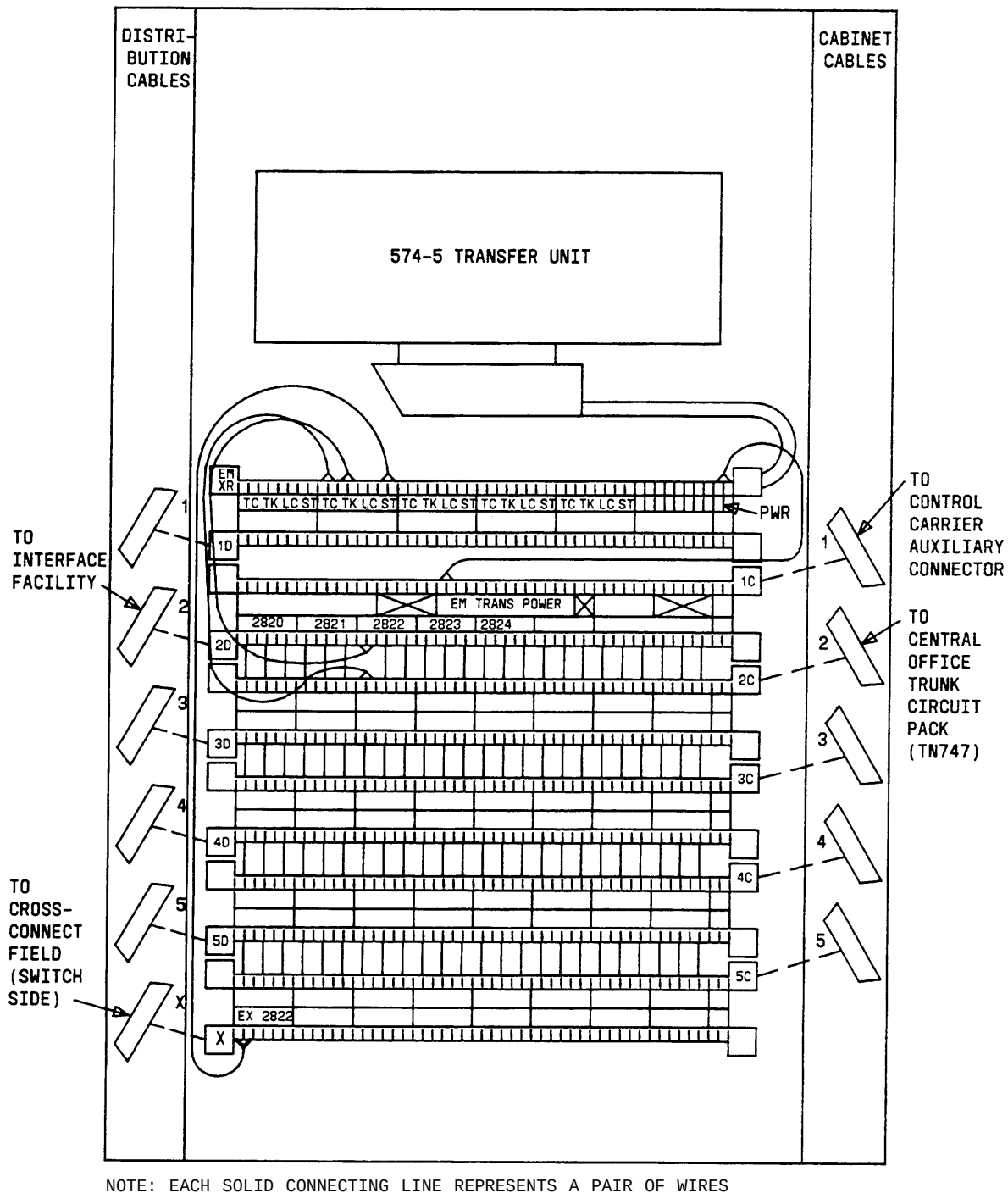


Figure 2-88. Connections at Cable Access Panel for Voice Terminal Used Only for Emergency Transfer—574-5 Power Transfer Unit

Cable Access Panel Connections—Terminals Used for Emergency Failure Transfer and as Normal Extensions

7. At first cable access panel, run and connect pair of wires between PWR terminals on EM XR terminal row to EM TRANS POWER terminal (see Figure 2-89).
8. Remove T and R straps for each CO trunk to be used for emergency transfer.
9. Run and connect CO trunk leads on CABINET CABLES side to TC terminals on EM XR terminal row for each trunk.
10. Run and connect CO trunk circuit leads on DISTRIBUTION CABLES side to TK terminals on EM XR terminal row for each trunk.
11. At each emergency transfer voice terminal appearance (see Figure 2-89), remove T and R straps.
12. Run and connect voice terminal leads on DISTRIBUTION CABLES side to ST terminals on EM XR terminal row for each terminal.
13. Run and connect voice terminal leads on CABINET CABLES side to LC terminals on EM XR terminal row for each terminal.
14. Remove third pair straps for each emergency appearance (see Note).

Note: The third pair leads appear on pairs 3, 6, 9, 12, 15, 18, 21, or 24.

15. If more emergency transfer terminals are to be installed, run and connect two wires from PWR terminals on next cable access panel to EM TRANS POWER terminals on first cable access panel and repeat from step 8.
16. Identify carrier slots for TN742 or TN769 analog line circuit packs used for emergency transfer terminals.
17. Run and connect the switch cables from each emergency transfer terminal connector appearance on CABINET CABLES side of cable access panel to appropriate carrier slots.
18. Run and connect B25A cables from each emergency transfer terminal connector appearance on DISTRIBUTION SIDE of cable access panel to the switch side of the cross-connect field.

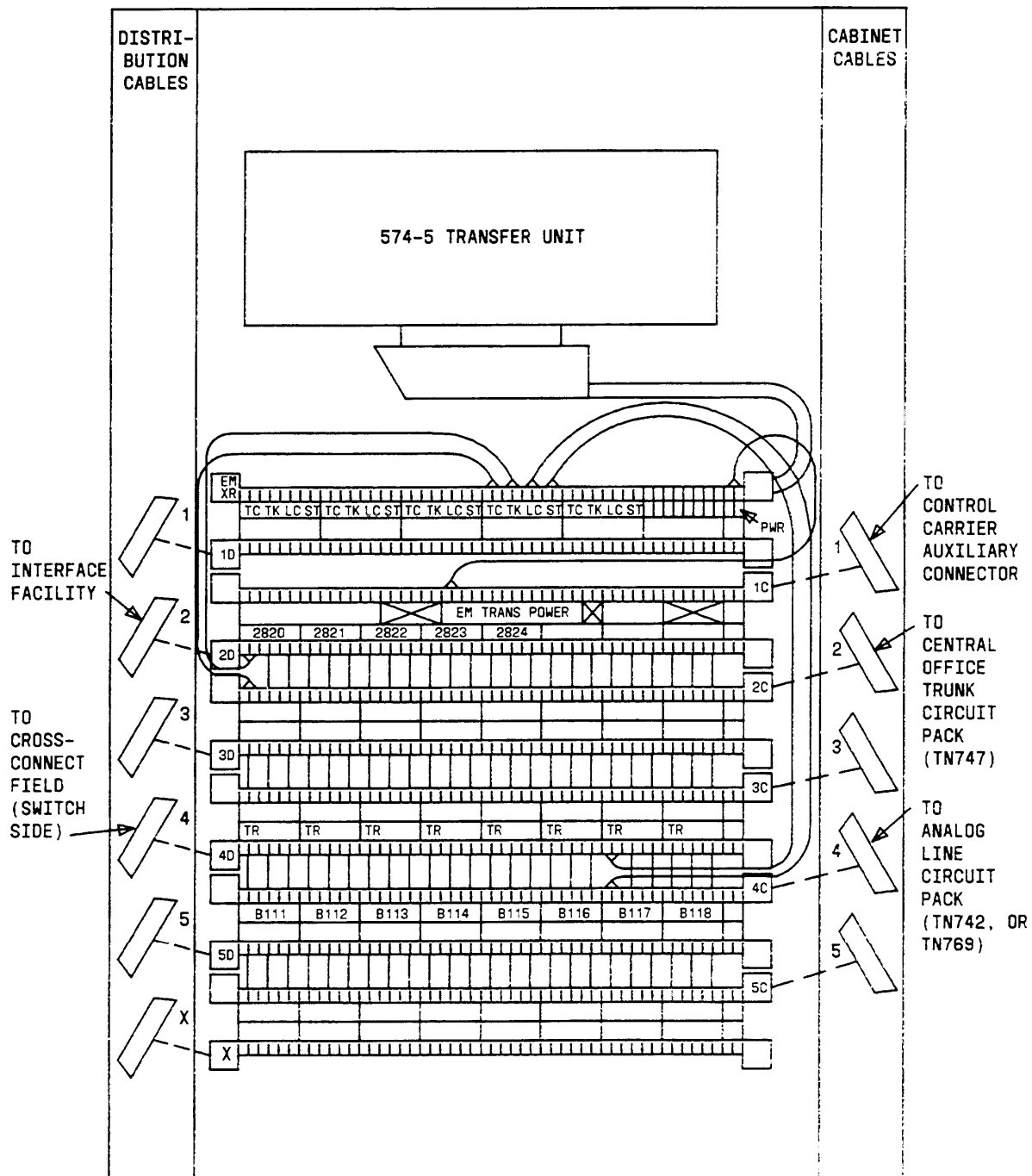


Figure 2-89. Connections at Cable Access Panel for Voice Terminal Used for Emergency Transfer and as Normal Extension—574-5 Power Transfer Unit

Voice Terminal Installation

19. Connect voice terminals to the information outlets.
20. Install patch cords at cross-connect field.
21. Install self-stick labels on connector modules.

Installation—Optional DID Make-Busy Trunk

1. Run and connect jumper from one DID make-busy lead to COM3 terminal on EM XR terminal row (see Figure 2-90).
2. Run and connect jumper the other DID make-busy circuit lead to NC3 terminal (first appearance) on EM XR terminal row.

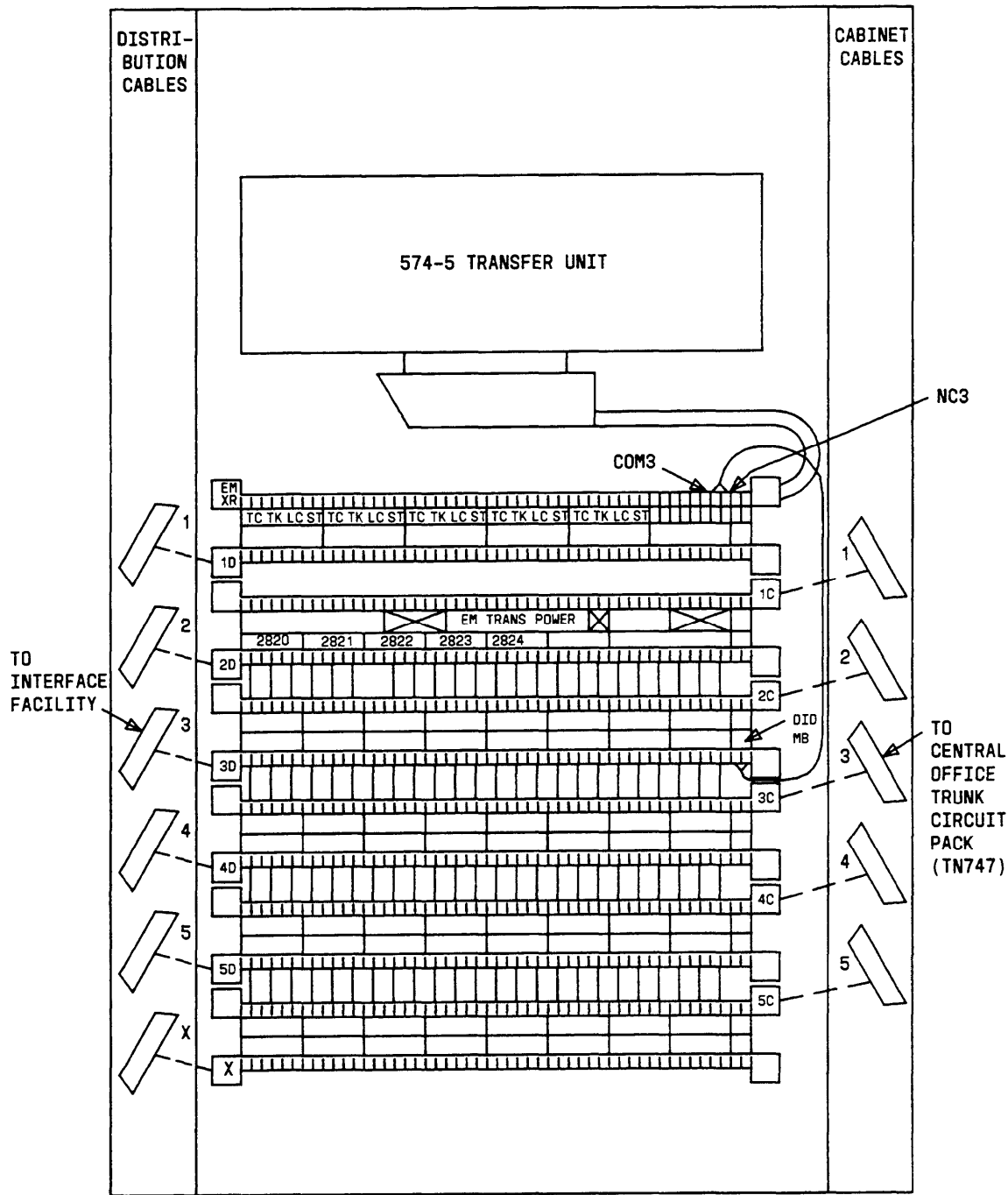


Figure 2-90. Connections at Cable Access Panel for Optional DID Make-Busy Trunk—574-5 Power Transfer Unit

Z1A Emergency Transfer Unit

Figure 2-91 shows wiring required at first (top) cable access panel for a voice terminal used only for emergency transfer. These terminals are always connected from the port side of the cross-connect field to connector X at the cable access panel. Figure 2-92 shows wiring required at first cable access panel for a voice terminal used for emergency transfer as well as a normal extension. Wiring at other cable access panels is the same for both type installations except the power (PWR) leads must be connected to EM TRANS POWER terminals on the first cable access panel.

If a Z1A Emergency Transfer Unit is used with central office trunks that require ground start, a ground start switch must be installed on each emergency transfer terminal. System ground is provided on the twenty-fifth pair of leads on each cable access panel connector on the CABINET CABLES side when a cable is installed. System ground is connected to the third pair of the 3-pair terminal appearance. This pair becomes the second pair at the information outlet. A ground start switch is mounted on the side of the terminals and is wired to ground and to the ring lead inside the terminal.

Requirements—Optional DID Make-Busy Trunk

Figure 2-93 shows the connections at the cable access panel for an optional Direct Inward Dialing (DID) make-busy trunk. This option prevents DID trunks from being taken out of service by the serving central office during emergency transfer. This trunk is used for this function only and should be specified to appear on the twenty-fifth pair of a network interface jack.

Installation—Terminals***Cable Access Panel Connections— Terminals Used Only for Emergency Failure Transfer***

1. At first cable access panel, run and connect pair of wires between PWR terminals on EM XR terminal row to EM TRANS POWER terminal (see Figure 2-91).
2. Remove T and R straps for each central office (CO) trunk to be used for emergency transfer.
3. Run and connect CO trunk circuit leads on CABINET CABLES side to TC terminals on EM XR terminal row for each trunk.
4. Run and connect CO trunk circuit leads on DISTRIBUTION CABLES side to TK terminals on EM XR terminal row for each trunk.
5. Connect terminal leads on X connector (see **Note**) to ST terminals on EM XR terminal row for each emergency transfer terminal.

Note: Terminal leads appear on pairs 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).

6. If ground start must be provided, run and connect two wires from G terminals to third pair for each emergency terminal appearance on X connector. Loop the wires from the first appearance to the last if enough ground (G) terminals are not available (see Figure 2-94).
7. If more emergency transfer only terminals are to be installed, run and connect two wires from PWR terminals on next cable access panel to EM TRANS POWER terminals on first cable access panel and repeat from step 2.

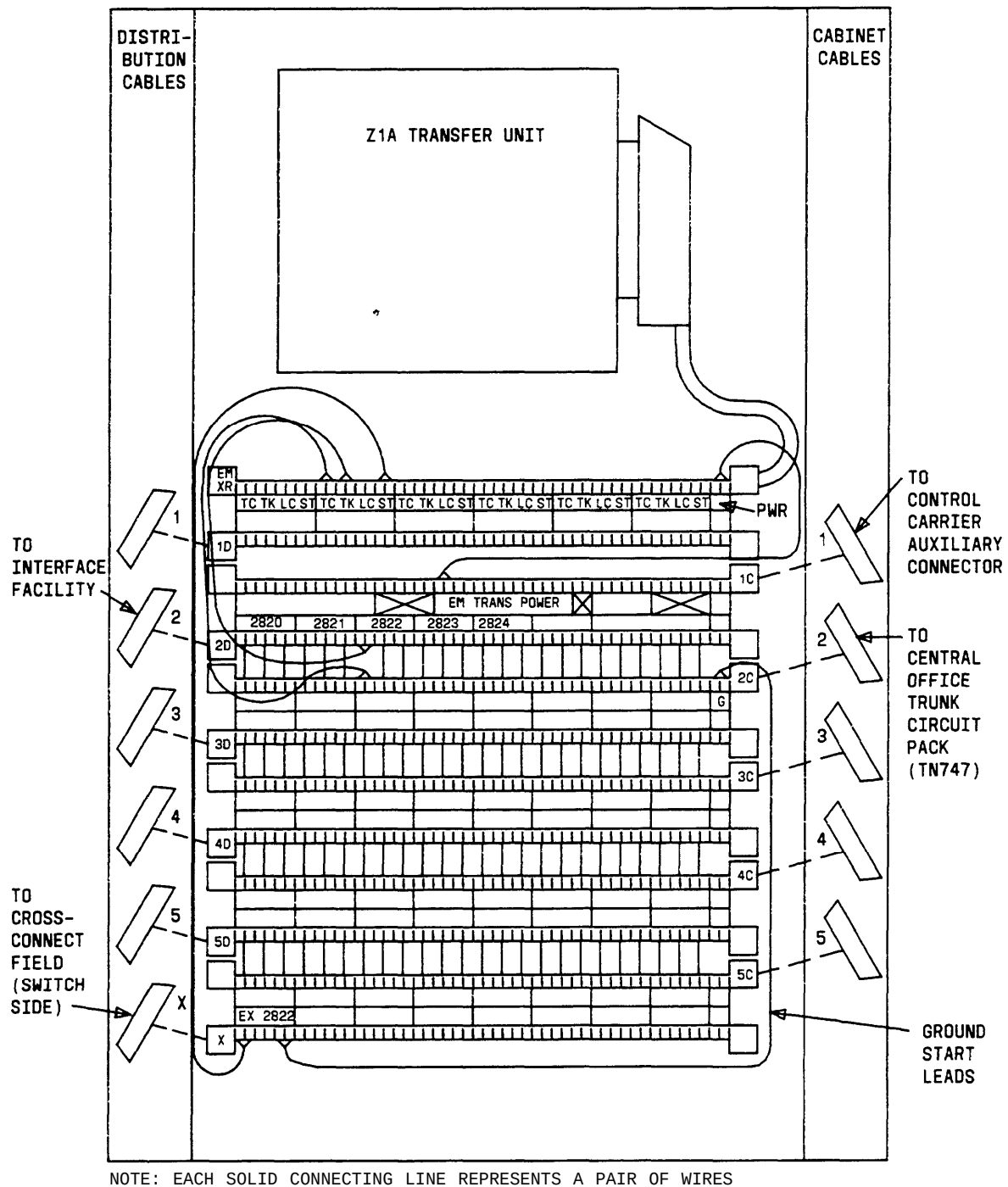


Figure 2-91. Connections at Cable Access Panel for Voice Terminal Used Only for Emergency Transfer (Ground Start Trunks)—Z1A Emergency Transfer Unit

Z100-TYPE HARDWARE

Cable Access Panel Connections—Terminals Used for Emergency Failure Transfer and as Normal Extensions

8. At first cable access panel, run and connect pair of wires between PWR terminals on EM XR terminal row to EM TRANS POWER terminal (see Figure 2-92).
9. Remove T and R straps for each CO trunk to be used for emergency transfer.
10. Run and connect CO trunk leads on CABINET CABLES side to TC terminals on EM XR terminal row for each trunk.
11. Run and connect CO trunk circuit leads on DISTRIBUTION CABLES side to TK terminals on EM XR terminal row for each trunk.
12. At each emergency transfer voice terminal appearance (see Figure 2-92), remove T and R straps.
13. Run and connect voice terminal leads on DISTRIBUTION CABLES side to ST terminals on EM XR terminal row for each terminal.
14. Run and connect voice terminal leads on CABINET CABLES side to LC terminals on EM XR terminal row for each terminal.
15. If ground start must be provided, do steps 16 and 17; otherwise, go to step 18.
16. Remove third pair straps for each emergency appearance (see Note).

Note: The third pair leads appear on pairs 3, 6, 9, 12, 15, 18, 21, or 24.

17. Run and connect two wires from G terminals to the third pair for each emergency terminal appearance on DISTRIBUTION CABLES side. Loop the wires from the first appearance to the last if enough ground (G) terminals are not available (see Figure 2-95).
18. If more emergency transfer terminals are to be installed, run and connect two wires from PWR terminals on next cable access panel to EM TRANS POWER terminals on first cable access panel and repeat from step 9.
19. Identify carrier slots for TN742 or TN769 analog line circuit packs used for emergency transfer terminals.
20. Run and connect the switch cables from each emergency transfer terminal connector appearance on CABINET CALBES side of cable access panel to appropriate carrier slots.
21. Run and connect B25A cables from each emergency transfer terminal connector appearance on DISTRIBUTION SIDE of cable access panel to the switch side of the cross-connect field.

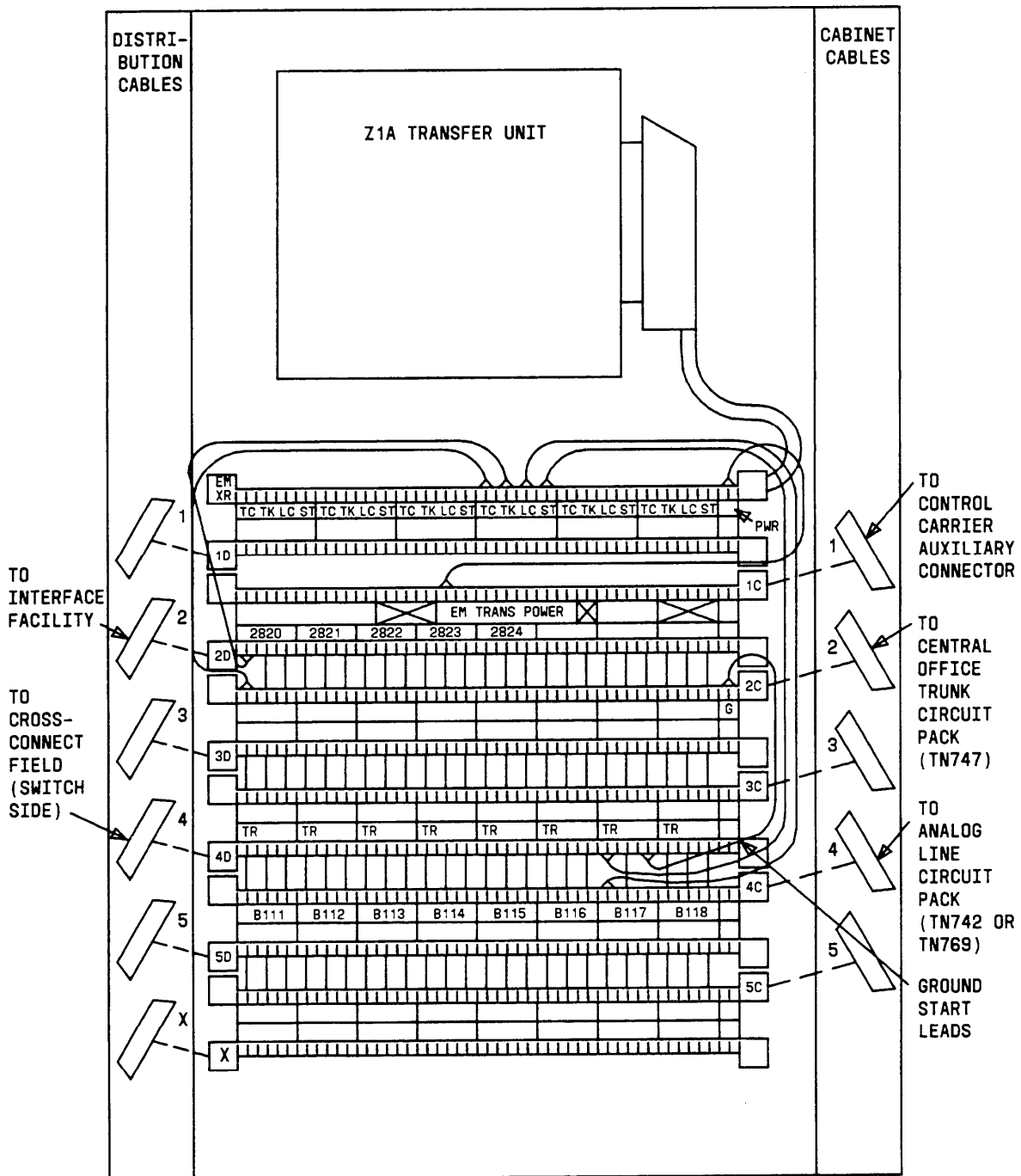


Figure 2-92. Connections at Cable Access Panel for Voice Terminal Used for Emergency Transfer and as Normal Extension (Ground Start Trunks—Z1A Emergency Transfer Unit)

Z100-TYPE HARDWARE

Voice Terminal Installation

22. If ground start must be provided, do steps 23 through 30 to install ground start switch; otherwise, go to step 31.
23. Remove cover from 551A key.
24. Remove housing from 500- or 2500-type voice terminal.
25. Run and connect wire from red lead (R) on voice terminal through 551A key to yellow and/or black lead on voice terminal.
26. Mount base of 551A key to 77A bracket using screws provided with bracket.
27. Replace cover on 551A key.
28. Place groove in bracket over lip of voice terminal set base (see Figure 2-96).
29. Replace voice terminal housing.
30. Repeat steps 23 through 29, as required.
31. Connect voice terminals to the information outlets.
32. Install patch cords at cross-connect field.
33. Install self-stick labels on cross-connect modules.

Installation—Optional DID Make-Busy Trunk

- 1 . Run and connect jumper from one DID make-busy lead to TK terminal (first appearance) on EM XR terminal row (see Figure 2-93).
- 2 . Run and connect jumper from the other DID make-busy circuit lead to ST terminal (first appearance) on EM XR terminal row.

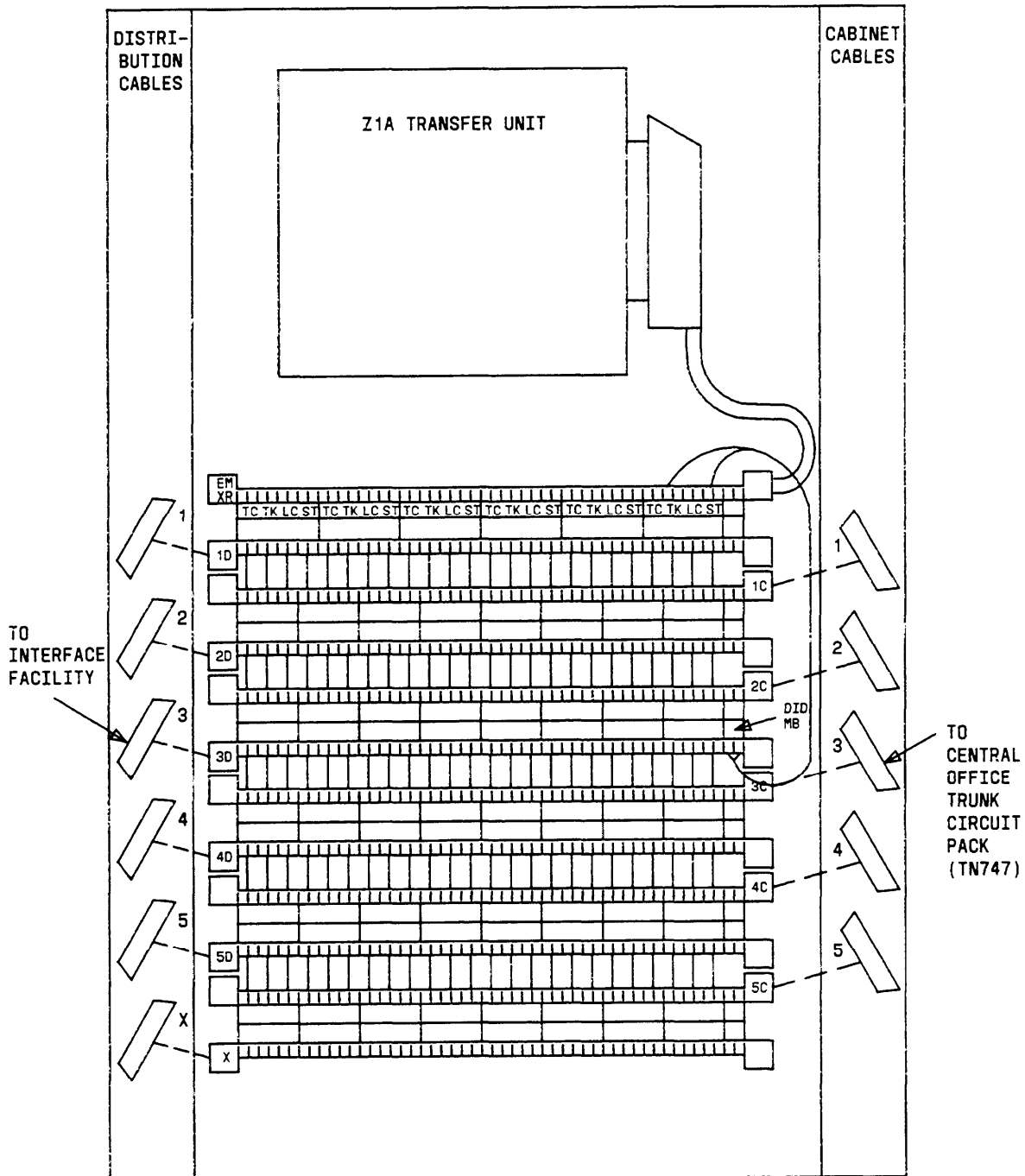


Figure 2-93. Connections at Cable Access Panel for Optional DID Make-Busy Trunk—Z1A Emergency Transfer Unit

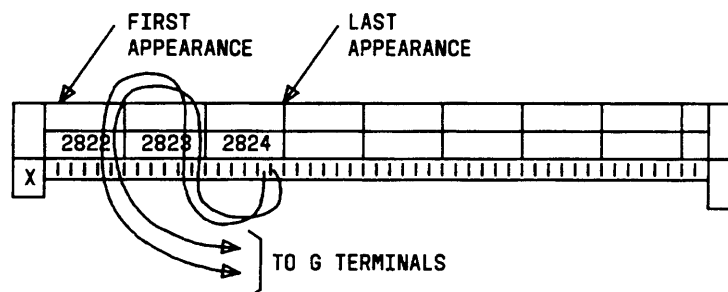


Figure 2-94. Ground Wiring Example (Three Voice Terminals Used Only for Emergency Transfer)

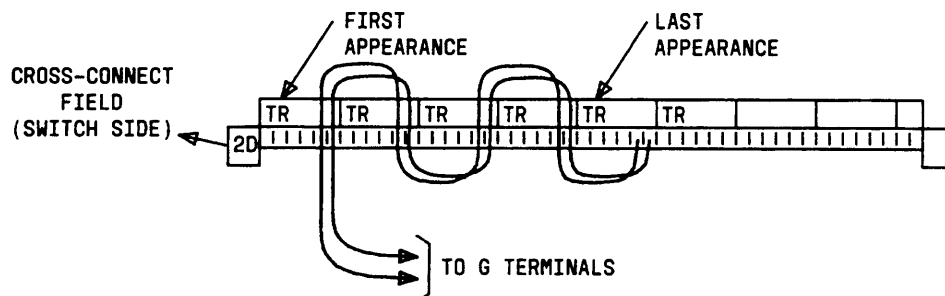


Figure 2-95. Ground Wiring Example (Five Voice Terminals Used for Emergency Transfer and as Normal Extensions)

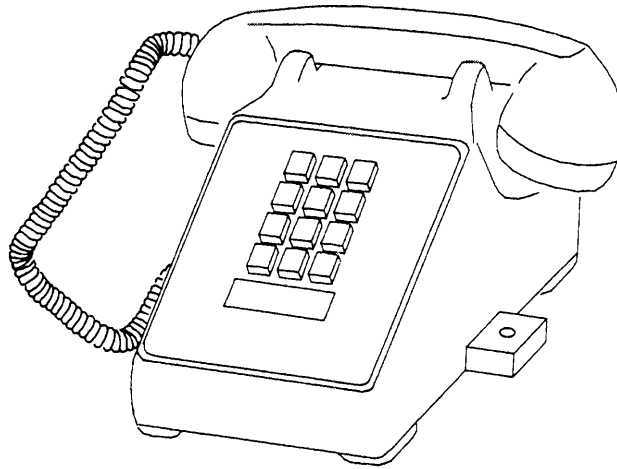


Figure 2-96. Ground Start Key Installation

Installing External Ringing

Requirements

Figure 2-97 shows the connections for external ringing. External ringing is provided by a device, such as a gong, chime, or bell, connected to an information outlet. The switch side of the cross-connect field is connected to a TN742 or TN769 Analog Line circuit pack located in a port carrier. The TN742 or TN769 circuit pack contains a maximum of eight ports.

The maximum number of devices that can be connected to one TN742 or TN769 circuit pack port can not exceed 3 ringer equivalences.

Installation

1. Determine port assignment of Trunk Answer From Any Station (Call Answer From Any Voice Terminal) feature from Console Parameters Form:

EXAMPLE:	Port Number	B	02	01
	Carrier	Slot	Circuit	

2. Install patch cord at cross-connect field.
3. Mount ringing device at location specified on External Ringing Device Worksheet.
4. Run 2-pair line cord (modular plug at one end) from information outlet to ringing device (see Figure 2-97).
5. Connect red (R) and green (T) leads to ringing device.
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

Installing Queue Warning Indicator

Requirements

Figure 2-97 shows the connections for the queue warning indicator. An ac indicator (lamp) such as a 21C49 is optional for use as a queue warning indication in a Uniform Call Distribution/Direct Departmental Calling queue. The lamp is connected to an information outlet. The switch side of the cross-connect field is connected to a TN742 or TN769 Analog Line circuit pack located in a port carrier. The TN742 or TN769 circuit pack contains a maximum of eight ports.

Installation

1. Determine port assignment for queue warning lamp from Hunt Group Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Install patch cord at cross-connect field.
3. Mount lamp at specified location.
4. Connect 2-pair line cord (modular plug at one end) from information outlet to lamp (see Figure 2-97).
5. Connect red (R) and green (T) leads to lamp.
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

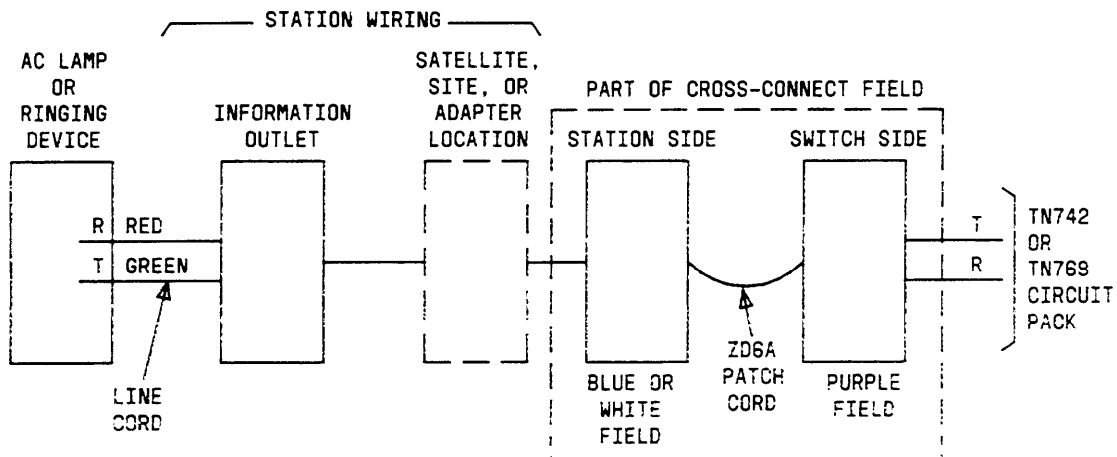


Figure 2-97. Connections for External Ringing or Queue Warning Indicator

AUXILIARY EQUIPMENT INSTALLATION

Auxiliary Equipment Description

The following equipment can be optionally provided with the system.

- 278A Adapters—Provides an interface, when required, to customer-provided equipment for Loudspeaker Paging feature. The 278A adapter requires -24 volt dc power. It can be modified for -48 volt dc power with a D-181321 kit of parts (Comcode 103 031 181).
- 89A Control Unit—Can also be used to provide an interface, when required, to customer-provided equipment for Loudspeaker Paging feature. A 2012D transformer provides -48 volt dc power to the 89A.
- PagePac* Paging System—Provides an amplifier system for Loudspeaker Paging feature. Three models are available:
 - PagePac 20—Provides a single zone of paging with an input source for music. The unit can also be modified to provide 9 or 39 paging zones.
 - PagePac VS—Provides one to three paging zones. It also permits all zone paging. Two optional feature cards are available to provide music or talk-back over paging.
 - PagePac 50/100/200—Provides 1 to 24 paging zones. Optional add-ons are available to provide music or talk-back over paging. It is also possible to use a customer-supplied music source.

All PagePac models require 115-volt ac power.

- 36A Voice Couplers—Provides an interface and system protection for customer-provided equipment for Intercept Treatment—Recorded Announcement, Music-on-Hold, and Recorded Telephone Dictation Access features. The 36A voice coupler is powered by a 2012D power transformer (set at -15 dBm). The 36A voice coupler can also be wall-mounted.
- Cook Electric Model NT7M00AA† or NT7M25AA† Digital Announcer—Provides recorded announcements for Recorded Announcement feature. Model NT7M00AA provides one channel of voice. Model NT7M25AA provides four channels of voice. Both models require an ac adapter for 115-volt ac power.
- Audichron* H9040 Wake-Up Announcement System—Provides automatic wake-up announcements for use with the hospitality features. This unit requires a power unit to be supplied locally that is rated at -48v dc at 1.2 amps.
- 3270 Data Modules—Provide a family of protocol converters that allow 3270-type terminals to communicate with a host computer through the system.

* Registered trademark of Harris Corporation, Dracon Division

† Refer to the Cook Electric Digital Announcers product description and ordering information for complete ordering codes.

* Registered trademark of Audichron Company

- Processor Data Modules (PDMs)—Provide an interface to an Applications Processor (AP), AUDIX, Call Management System (CMS), Distributed Communications System (DCS), Property Management System, customer-provided terminals and computers, and Station Message Detailed Recording (SMDR).
- Asynchronous Data Units—Provide an interface between the system data line circuit pack and the customer's asynchronous data terminals and host computers. They also can be used to provide an interface to a Property Management System or SMDR equipment.

Installing Loudspeaker Paging and Music-on-Hold

Requirements

The Loudspeaker Paging feature provides a connection from the TN763 Auxiliary Trunk in the system to a customer-provided paging amplifier. All attendants and voice terminal users have access to the voice paging equipment.

The Music-on-Hold feature provides a connection from the TN763 Auxiliary trunk in the system to a customer-provided music source. All calls on the system that are on hold, waiting in a queue, or parked will receive music to let the waiting party know that the connection is still in effect.

The music source that is used for the Music-on-Hold feature can also be connected through a paging amplifier to provide background music over the loudspeakers.

Figure 2-98 is a block diagram that shows how the Loudspeaker Paging and Music-on-Hold features interact. Detailed descriptions for installing these features are included in this manual.

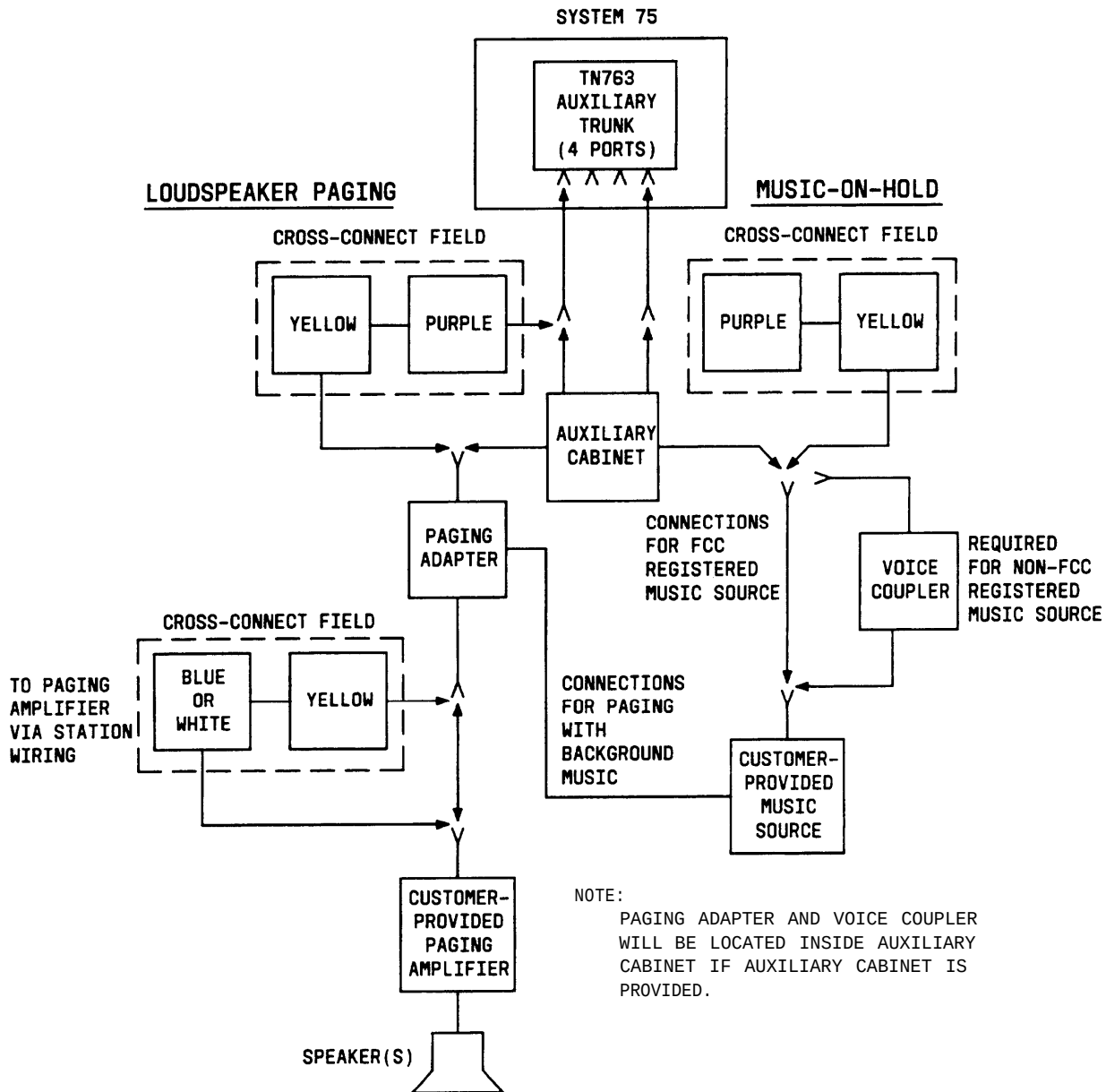


Figure 2-98. Connections for Loudspeaker Paging and Music-on-Hold

Installing Loudspeaker Paging Access—278A Paging Adapter

Requirements

Figure 2-99 shows the connections for the Loudspeaker Paging feature. The connections are for one zone. These connections are required for each paging zone.

The connections shown in Figure 2-99 and the procedures provided in this section are used when the loudspeaker interface equipment is not located in the equipment room. If the loudspeaker amplifier is located in the equipment room, the connections do not have to be routed through the cross-connect field.

Access to loudspeaker paging is provided by an information outlet. The switch side of the cross-connect field is connected to a 278A adapter. The adapter must be modified with a D-181321 kit of parts for -48V powering. The adapter is mounted in the auxiliary cabinet, if provided. Six leads (T, R, SZ, SZ1, S, and S1) connect the 278A adapter to a TN763 Auxiliary Trunk circuit pack located in a port carrier. A TN763 circuit pack contains a maximum of four ports.

Installation

Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

1. Determine port assignment of paging zone(s) from Loudspeaker Paging Form:

EXAMPLE:	Port Number	B	02	01
	Carrier	Slot	Circuit	

2. Identify carrier slot and label both ends of an A25D cable.
3. Run and connect A25D cable from assigned port carrier slot to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 2-99).
4. Run and connect B25A cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 2-99).
5. Install yellow (auxiliary) label on connector module.
6. Mount 278A adapter.
7. Remove cover from 278A adapter and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 2-99).
8. On 278A adapter, connect BZ2 terminal to -V terminal, if required.
9. Connect -24V and GRD terminals on 278A adapter with at least a -24V 40-ma power supply. If the auxiliary cabinet is providing the power, then a D-181321 kit is required to reduce the -48V to -24V.
10. Install straps between E and F terminals and G and H terminals for the first 278A adapter. Install option straps between C and D terminals for each 278A adapter.
11. Install cover on 278A adapter.
12. Install patch cord at cross-connect field.
13. Connect 2-pair line cord (modular plug at one end) from information outlet to loudspeaker system (see Figure 2-99).

14. Install loudspeaker equipment per manufacturer's instructions.
15. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

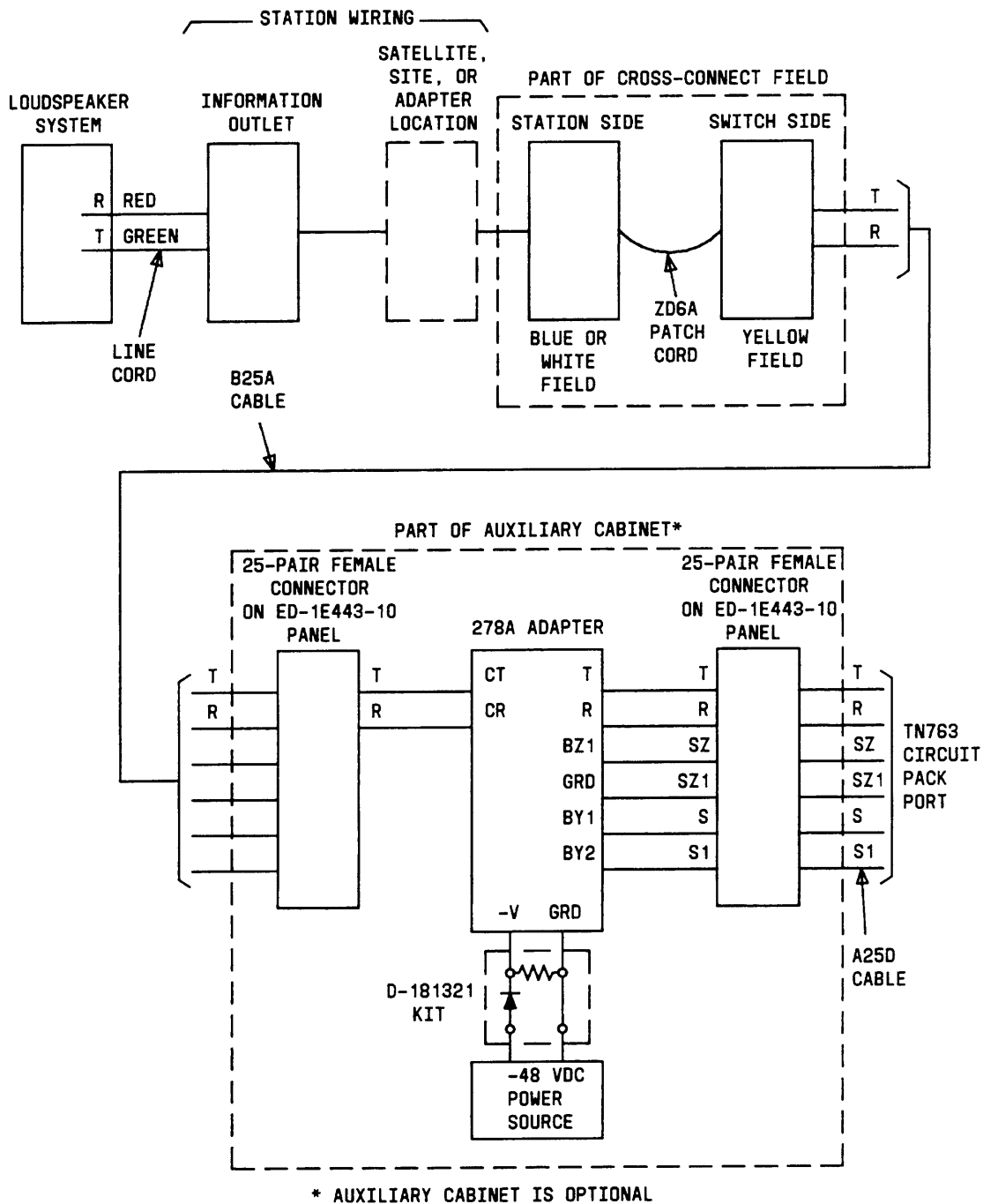


Figure 2-99. Connections for Loudspeaker Paging Zone—278A Paging Adapter

Installing Loudspeaker Paging Access—89A Control Unit

Requirements

Figure 2-100 shows the connections for the Loudspeaker Paging feature. The connections are for one zone. These connections are required for each paging zone.

The connections shown in Figure 2-100 and the procedures provided in this section are used when the loudspeaker interface equipment is not located in the equipment room. If the loudspeaker amplifier is located in the equipment room, the connections do not have to be routed through the cross-connect field.

Access to loudspeaker paging is provided by an information outlet. The switch side of the cross-connect field is connected to an 89A control unit. The control unit is mounted in the auxiliary cabinet, if provided. Six leads (T, R, SZ, SZ1, S, and S1) connect the 89A control unit to a TN763 Auxiliary Trunk circuit pack located in a port carrier. A TN763 circuit pack contains a maximum of four ports.

Installation

Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

1. Determine port assignment of paging zone(s) from Loudspeaker Paging Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Identify carrier slot and label both ends of an A25D cable.
3. Run and connect A25D cable from assigned port carrier slot to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 2-100).
4. Run and connect B25A cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 2-100).
5. Install yellow (auxiliary) label on connector module.
6. Mount 89A control unit.
7. Remove cover from 89A control unit and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 2-100).
8. Connect PG1 and BSY1 terminals on 89A control unit to a -48 volt power supply.
9. Connect output of 2012D transformer to AC1 and AC2 terminals on the 89A control unit.
10. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
11. Install cover on 89A control unit.
12. Install patch cord at cross-connect field.
13. Connect 2-pair line cord (modular plug at one end) from information outlet to loudspeaker system (see Figure 2-100).
14. Install loudspeaker equipment per manufacturer's instructions.

15. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

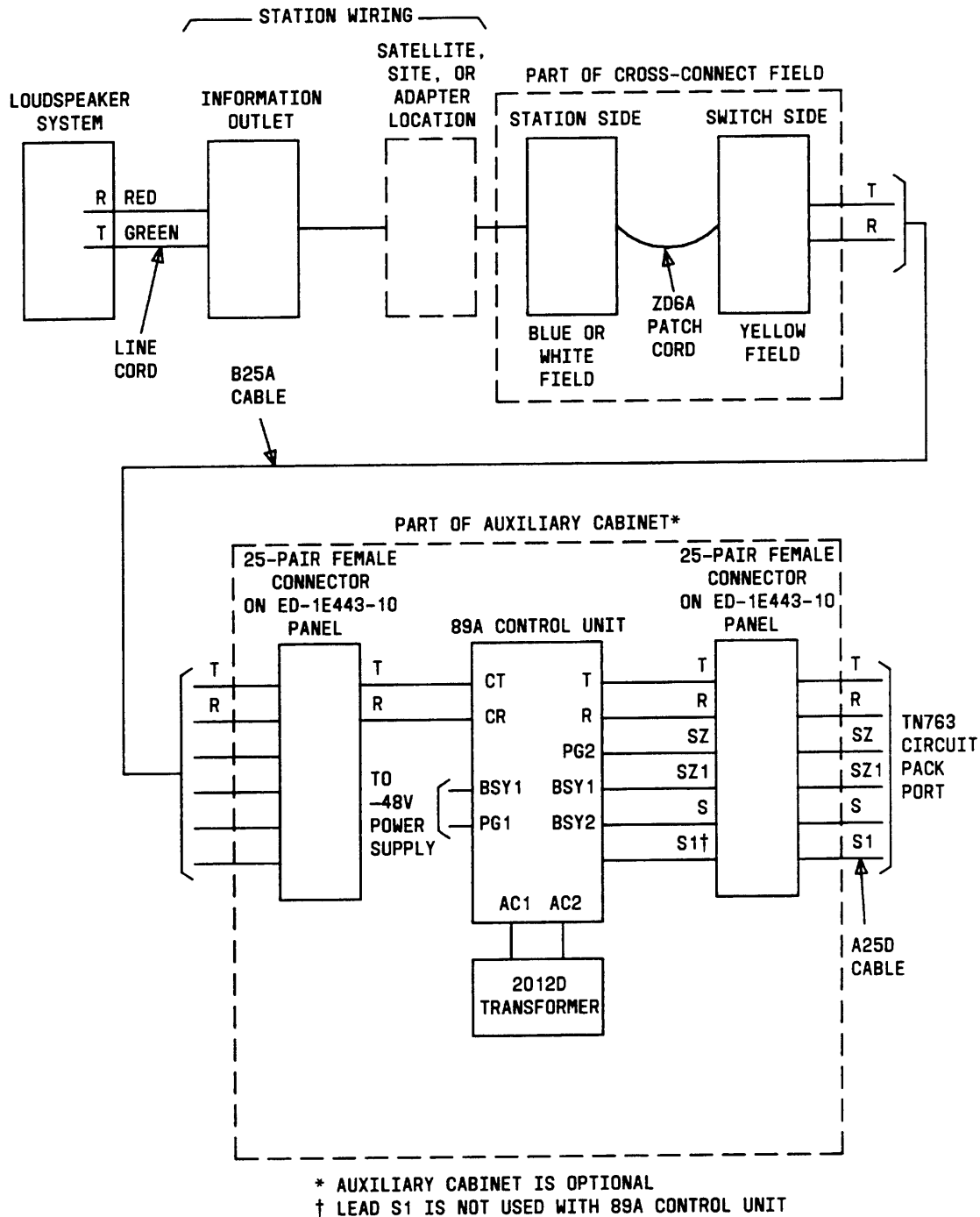


Figure 2-100. Connections for Loudspeaker Paging Zone—89A Control Unit

PagePac PAGING SYSTEM

The PagePac paging systems use a single port of a system circuit pack to provide single or multi-zone loudspeaker paging. A PagePac system may be used in addition to the standard Loudspeaker paging and code-calling capabilities of the system.

Three models are available:

- PagePac 20
- PagePac VS
- PagePac 50/100/200

PagePac 20

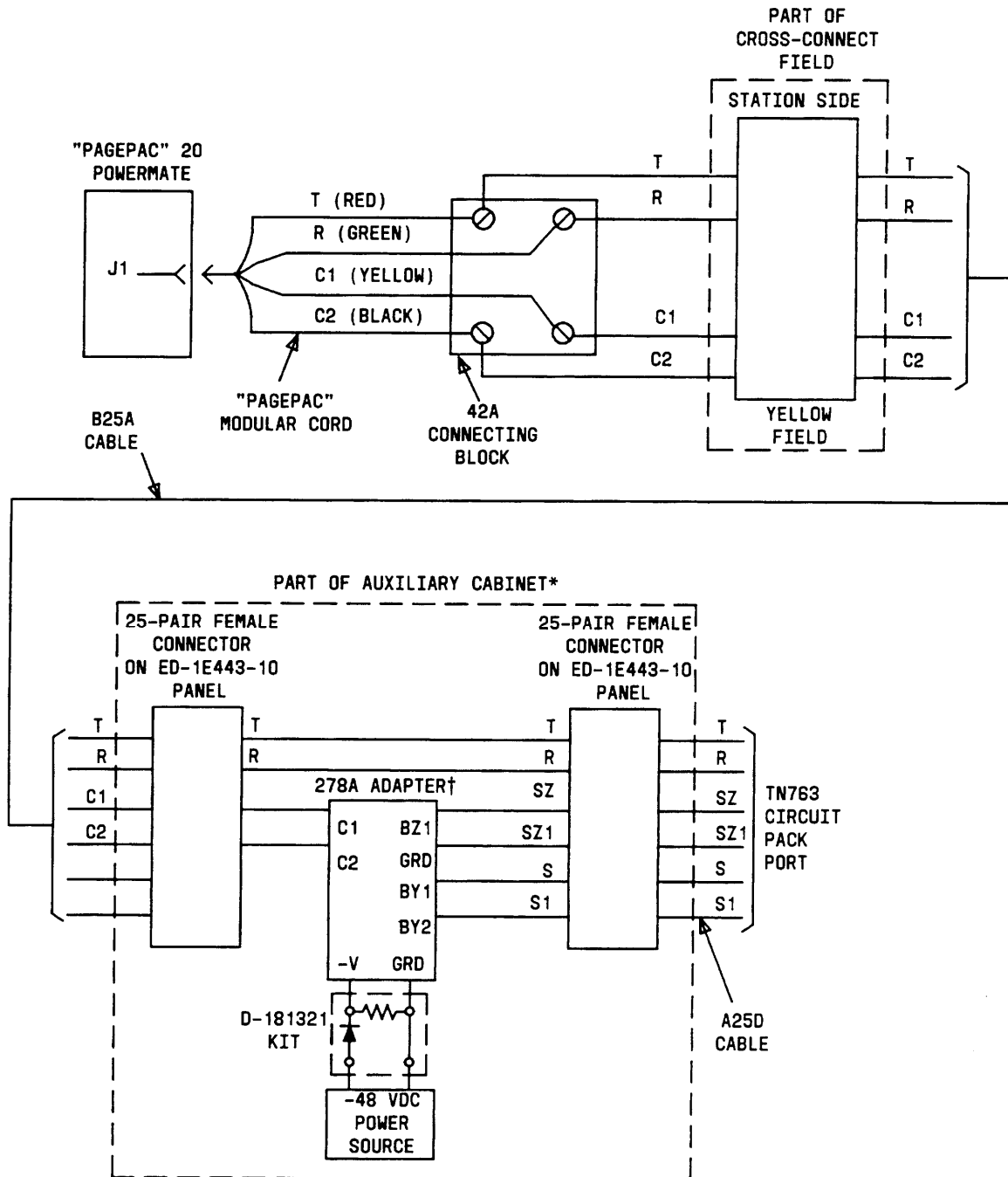
The PagePac 20 is a 20 watt amplifier that can be used alone to provide a single zone of paging (Figure 2-101) or it can be equipped with a Zone-Mate 9 or 39 to provide multiple paging zones (Figure 2-102). If the PagePac 20 is used alone a 278A adapter must be used.

PagePac VS

The PagePac VS is a 35 watt amplifier that provides up to 3 paging zones. The PagePac VS does not require a 278A adapter. The connections for the PagePac VS are shown in Figure 2-103.

PagePac 50/100/200

The 50/100/200 PagePac Paging system will mount directly on the wall or on a 23-inch (58.4-cm) relay rack using the appropriate adapters. The unit provides 3 wattages 50, 100 and 200. The PagePac amplicenter can be used alone to provide a single zone of paging (Figure 2-104) or add-on units can be provided to create a paging system with up to 24 paging zones (Figure 2-105). If the PagePac 50/100/200 amplicenter is used alone, a 278A adapter must be used.



* AUXILIARY CABINET IS OPTIONAL

† ON 278A ADAPTER, STRAP TERMINALS -V AND A

Figure 2-101. Connections for PagePac 20 Without Zone-Mate 9 or 39

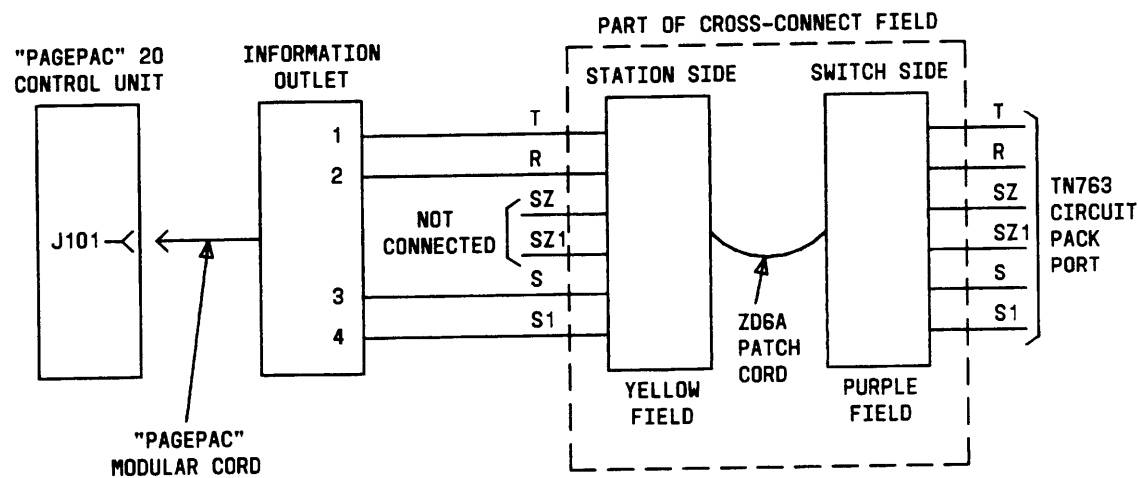
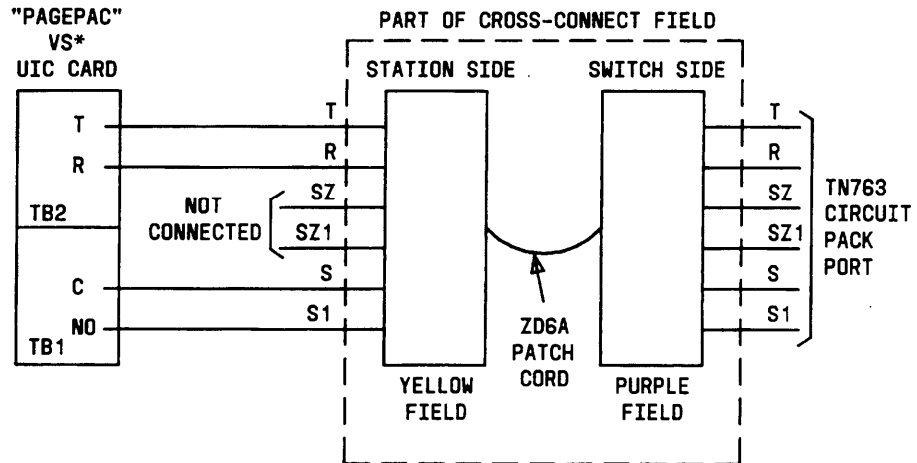


Figure 2-102. Connections for PagePac 20 With Zone-Mate 9 or 39



* IF UIC CARD IS NOT PROVIDED, ALL CONNECTIONS ARE MADE TO TB2 ON THE "PAGEPAC" VS

Figure 2-103. Connections for PagePac VS

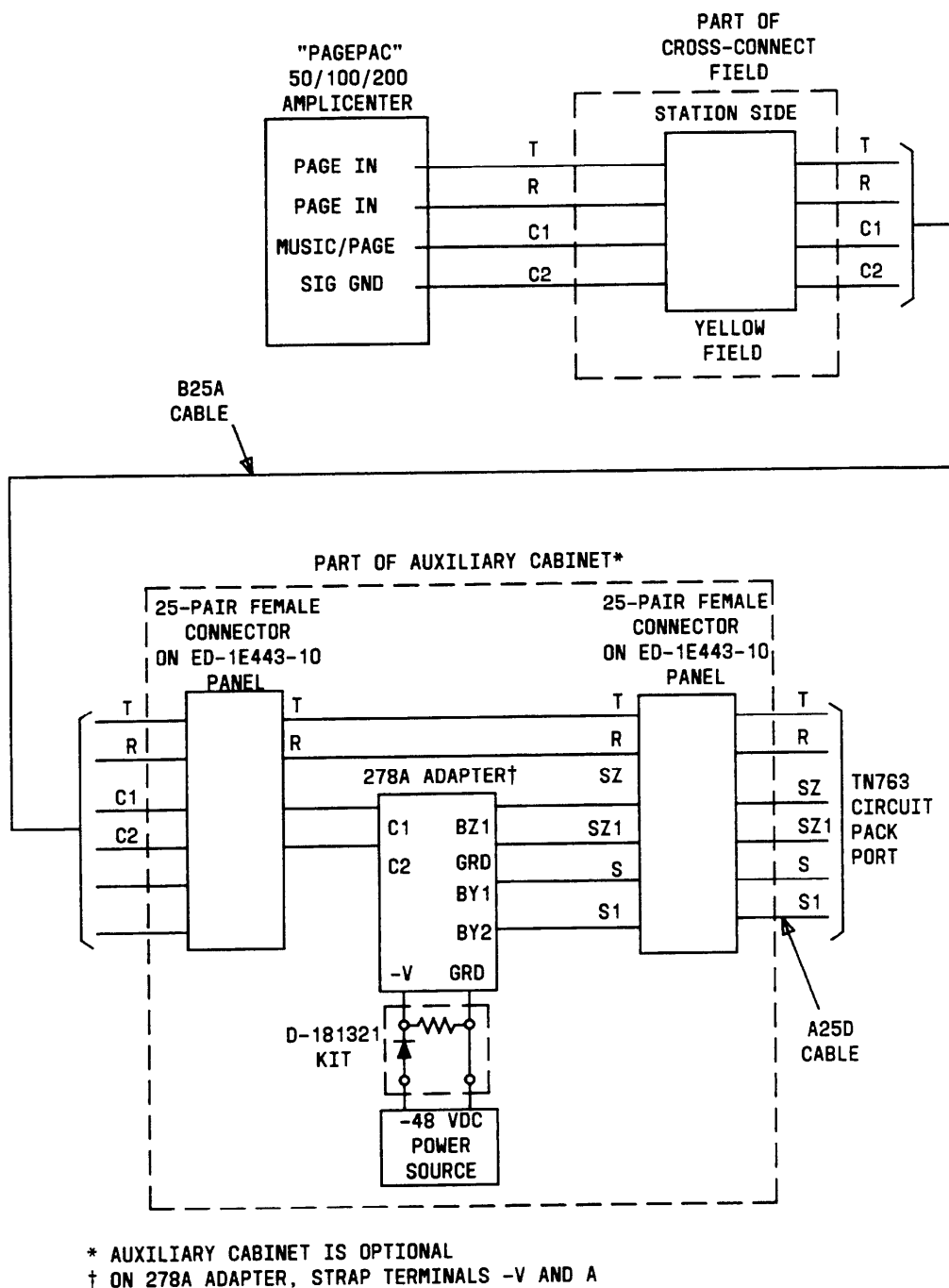
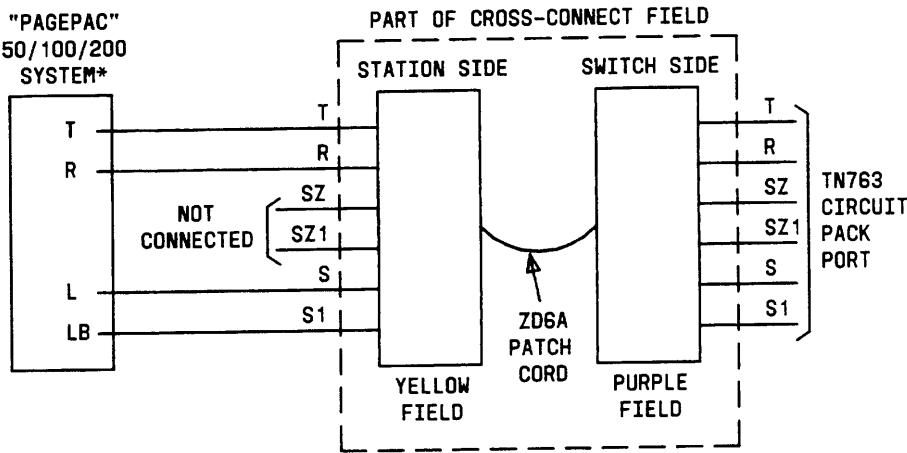


Figure 2-104. Connections for PagePac 50/100/200 Amplicenter Only



* OPTION C APPLIQUE FOR LOOP START WITH 24V BATTERY
MUST BE PROVIDED

Figure 2-105. Connections for PagePac 50/100/200 System

Installing Music-on-Hold Access

Requirements

Figure 2-106 shows the connections for the Music-on-Hold feature when loudspeaker equipment is FCC registered. Figure 2-107 shows the connections for the Music-on-Hold feature when loudspeaker equipment is not FCC registered.

The connections shown in Figures 2-106 and 2-107 and the procedures provided are used when the music source is not located in the equipment room. If the music source is located in the equipment room, the connections do not have to be routed through the cross-connect field.

Access to the music source is provided by an information outlet. Two leads (T and R) connect the information outlet to the cross-connect field. If the music source is FCC registered, the switch side of the cross-connect field is connected directly to the switch cabinet. If the music source is not FCC registered, the switch side of the cross-connect field is connected to a 36A voice coupler. The coupler is mounted in the auxiliary cabinet, if provided.

Two leads (T, R) connect the coupler or switch side of the cross-connect field to a TN763 Auxiliary Trunk circuit pack located in a port carrier. A TN763 circuit pack contains a maximum of four ports.

Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

Installation—FCC Registered Music Source

- 1 . Determine port assignment of feature from Feature-Related System Parameters Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

- 2 . Install patch cord at cross-connect field.
- 3 . Install music source per manufacturer's instructions.
- 4 . Connect line cord (modular plug at one end) from information outlet to music source (see Figure 2-106).
- 5 . Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

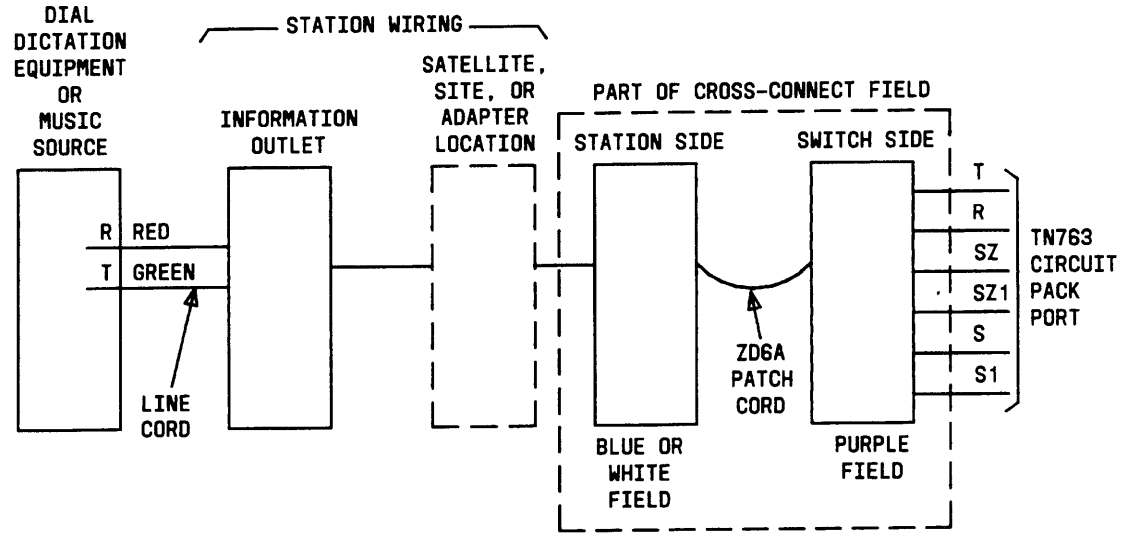


Figure 2-106. Connections for FCC Registered Equipment Provided for Music-on-Hold/Dial Dictation Equipment (Auxiliary Access)

Installation—Non-FCC Registered Music Source

1. Determine port assignment of feature from Feature-Related System Parameters Form:

EXAMPLE: Port Number B 02 01

 Carrier Slot Circuit

2. Identify carrier slot and label both ends of an A25D cable.
3. Run and connect A25D cable from assigned port carrier slot to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 2-107).
4. Run and connect B25A cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 2-107).
5. Install yellow (auxiliary) label on connector module.
6. Mount 36A voice coupler.
7. Remove cover from 36A voice coupler and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 2-107).
8. Connect output of 2012D transformer to AC and ACG terminals on 36A voice coupler.
9. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
10. Install cover on 36A voice coupler.
11. Install patch cord at cross-connect field.
12. Install music source per manufacturer's instructions.
13. Connect 2-pair line cord (modular plug at one end) from information outlet to music source (see Figure 2-107).
14. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

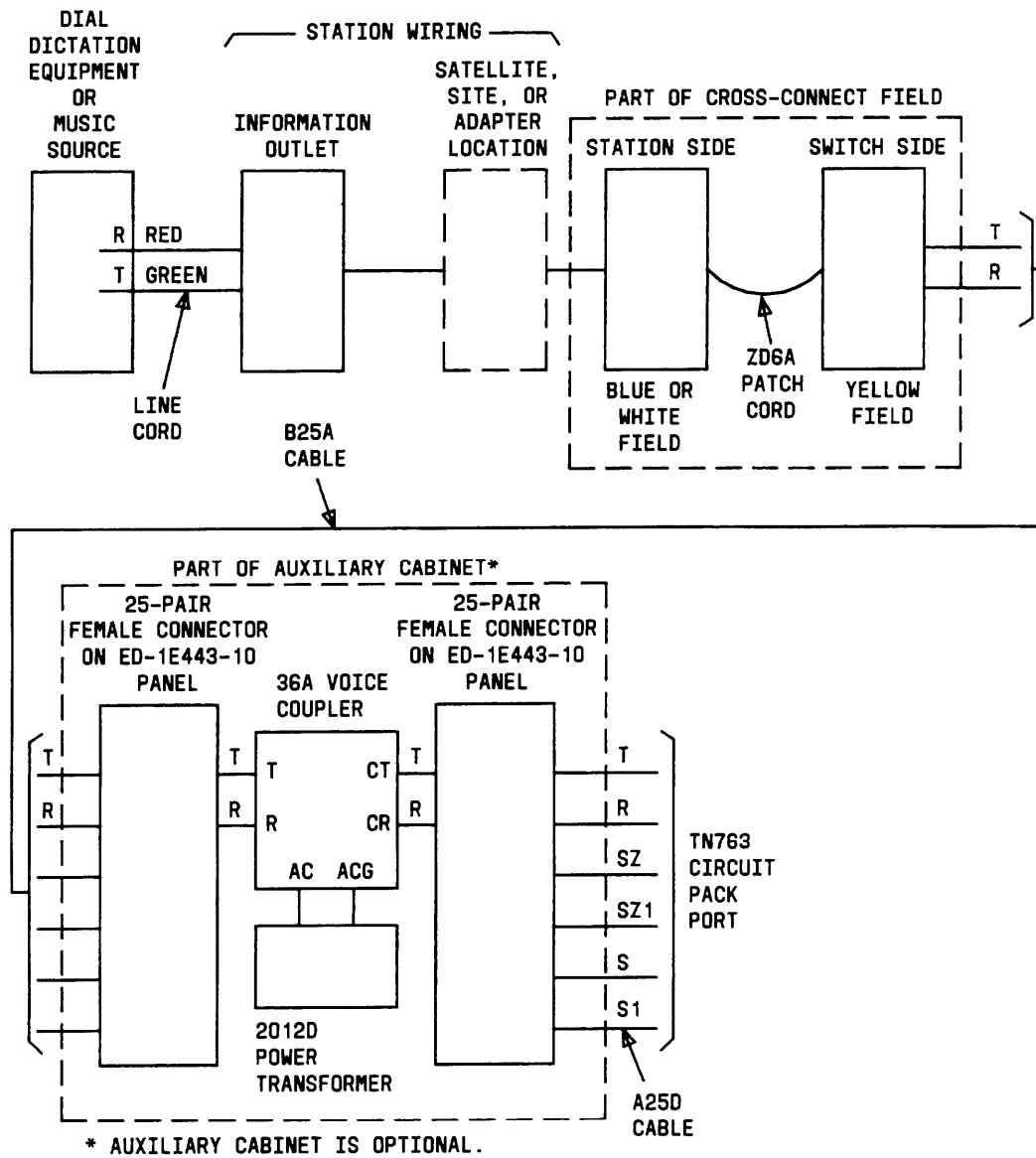


Figure 2-107. Connections for Non-FCC Registered Equipment Provided for Music-on-Hold/Dial Dictation Equipment (Auxiliary Access)

Installing Loudspeaker Paging With Background Music

Requirements

Figures 2-108 and 2-109 show the additional connections required when loudspeaker paging is installed with background music. Refer to the installation procedures for installing loudspeaker paging (278A adapter and 89A control unit) and music-on-hold.

Installation Using 278A Adapter

1. Connect music source to M1 and M2 terminals on 278A adapter (see Figure 2-108).
2. Adjust music source level.

Installation Using 89A Control Unit

1. Connect music source to CMS1 and CMS2 terminals on 89A control unit (see Figure 2-109).
2. Adjust music source level.

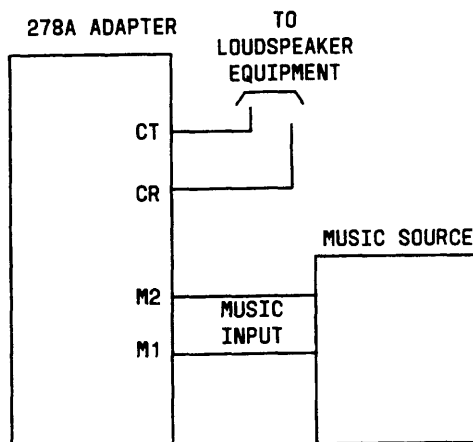


Figure 2-108. Loudspeaker Paging With Background Music Connections—278A Adapter

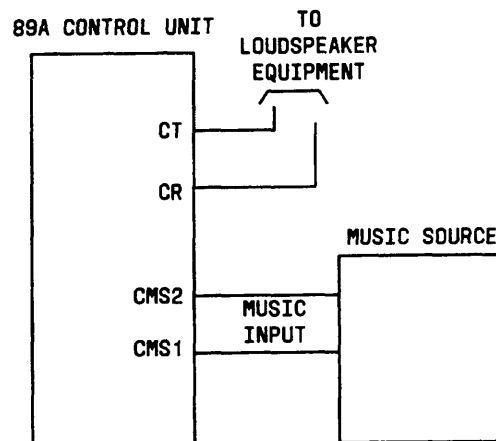


Figure 2-109. Loudspeaker Paging With Background Music Connections—89A Control Unit

Installing Recorded Announcement Equipment

Requirements

Figure 2-110 shows the connections for Recorded Announcement when recorded announcement equipment is FCC registered. Figure 2-111 shows the connections for Recorded Announcement when recorded announcement equipment is not FCC registered.

Note: For R1V3, if the TN750 Announcement circuit pack is provided, this circuit pack replaces all external announcement devices except for the wake-up announcement unit.

Access for recorded announcement equipment is provided by an information outlet. Two leads (T, R) connect the information outlet to the cross-connect field.

If the recorded announcement equipment is FCC registered, the switch side of the cross-connect field is connected directly to switch cabinet. If the recorded announcement equipment is not FCC registered, the switch side of the cross-connect field is connected to a 36A voice coupler. The 36A coupler is mounted in an auxiliary cabinet, if provided.

The switch side of the cross-connect field is connected to a TN742 or TN769 Analog Line circuit pack located in a port carrier. The TN742 or TN769 circuit pack contains a maximum of eight ports.

Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

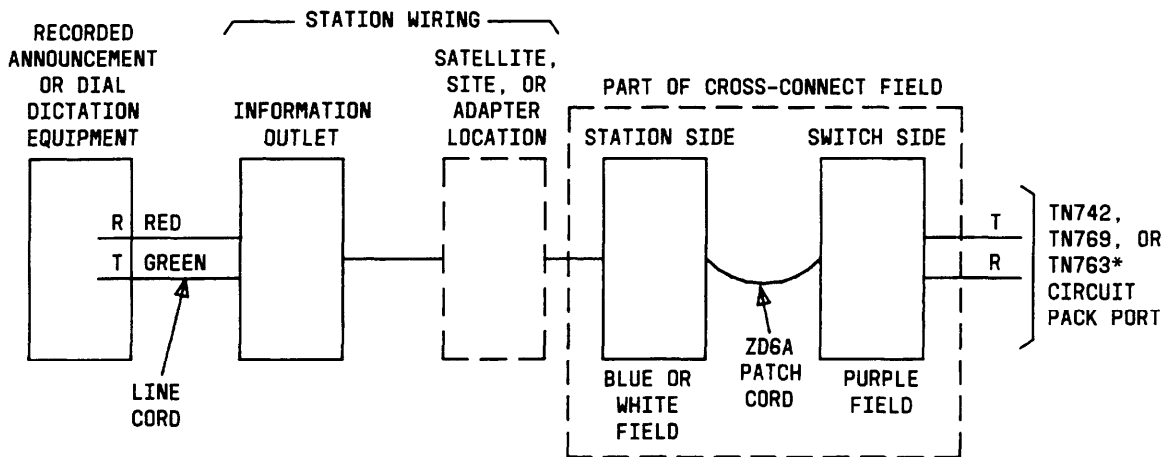
Installation—FCC Registered Recorded Announcement Equipment

1. Determine port assignment of feature from Announcement Form:

EXAMPLE: Port Number B 02 01

Carrier Slot Circuit

2. Install patch cord at cross-connect field.
3. Install recorded announcement equipment per manufacturer's instructions.
4. Connect 2-pair line cord (modular plug at one end) from information outlet to recorded announcement equipment (see Figure 2-110).
5. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.



* TN763 CAN BE USED ONLY FOR RECORDED TELEPHONE DICTATION.

Figure 2-110. Connections for FCC Registered Equipment Provided for Recorded Announcement/Dial Dictation Equipment (Analog Access)

Installation—Non-FCC Registered Recorded Announcement Equipment

1. Determine port assignment of feature from Announcement Form:

EXAMPLE: Port Number B 02 01

Carrier Slot Circuit

2. Run and connect A25D cable from station side (see Note) of cross-connect field to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 2-111).

Note: This connection is to a Z203A1 connecting unit provided in a Z100B1 Connector Module. If Z100A1 Connector Modules are used at the cross-connect field, a connecting unit on the station side must be replaced with a Z203A1 connecting unit.

3. Run and connect B25A cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 2-111).
4. Install yellow (auxiliary) labels on connector modules.
5. Mount 36A voice coupler.
6. Remove cover from 36A voice coupler and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 2-111).
7. Connect output of 2012D transformer to AC and ACG terminals on 36A voice coupler.
8. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
9. Install cover on 36A voice coupler.
10. Install patch cord at cross-connect field.
11. Install recorded announcement equipment per manufacturer's instructions.
12. Connect 2-pair line cord (modular plug at one end) from information outlet to recorded announcement equipment (see Figure 2-111).
13. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

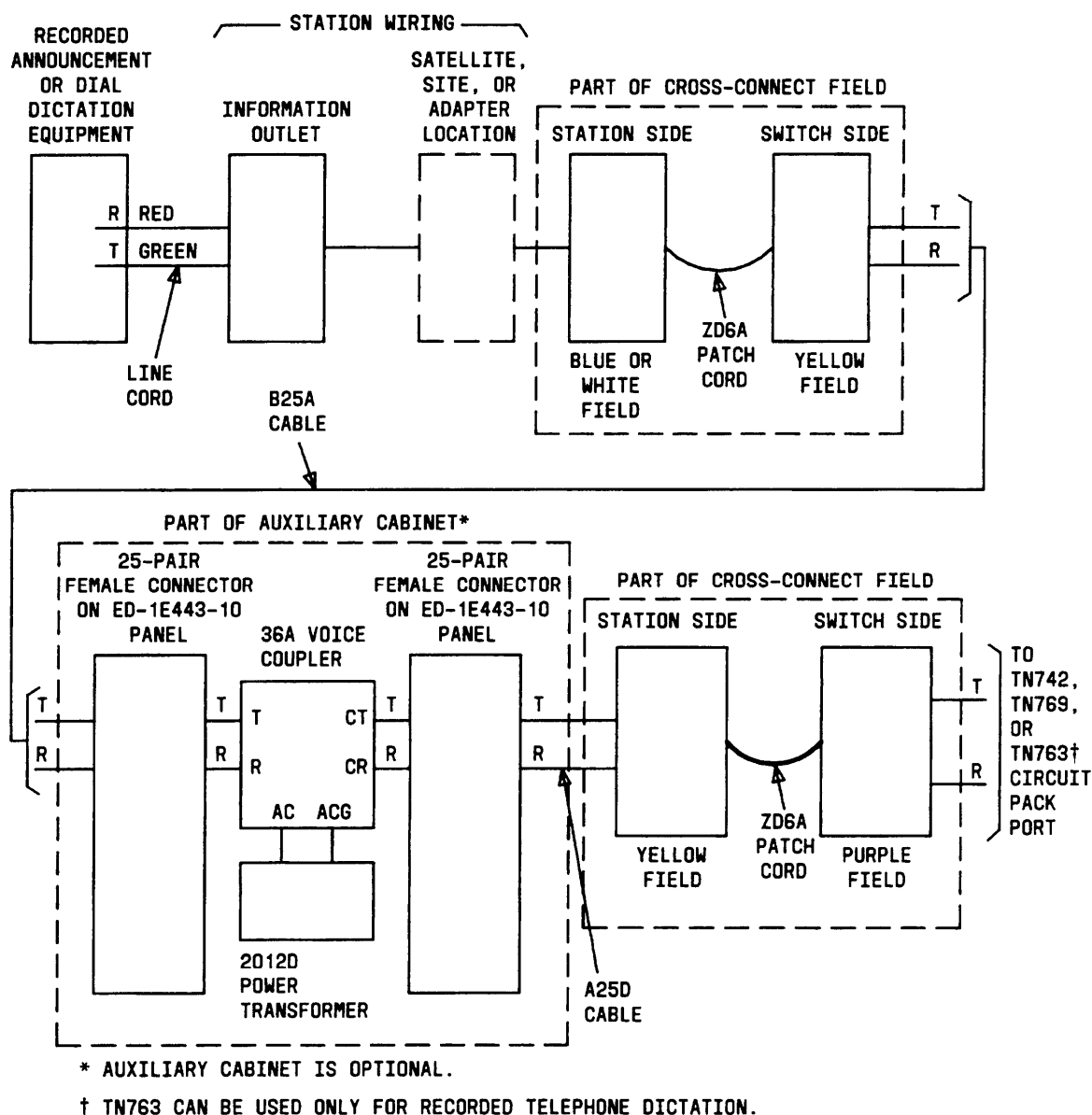


Figure 2-111. Connections for Non-FCC Registered Recorded Announcement/Dial Dictation Equipment (Analog Access)

Digital Announcer

The Cook Electric Digital Announcer can be mounted in the Auxiliary cabinet's 23-inch (58.4-cm) relay rack. It includes the side bracket kit which consists of two side brackets and four mounting screws. The vertical height is 1.75 (4.4 cm) inches. If the Digital Announcer is not located in the auxiliary cabinet, it is powered by a 117-volt ac adapter furnished by Cook Electric. If the Digital announcer is located in the auxiliary cabinet, DC power (-48V) is provided from a rectifier mounted at the base, with an Alarm Panel at the top.

Note: For R1V3, if the TN750 Announcement circuit pack is provided, this circuit pack replaces all external announcement devices except for the wake-up announcement unit.

Installation

1. Connect a pair of wires from the Alarm Panel to (J2) connector pins (1) and (8) of the Digital Announcer.
2. Mount 36A voice coupler.
3. Remove cover from 36A voice coupler.
4. Connect a pair of wires from (J1) connector pins (J) and (K) or to the modular jack of the digital announcer, to the T and R terminals on the 36A voice coupler (see Figure 2-112).
5. Connect a pair of wires from the CT and CR terminals on the 36A voice coupler to the 110-type wiring block on the ED-1E443-10 Intra-Connection Panel.
6. Connect output of 2012D transformer to AC and ACG terminals on 36A voice coupler.
7. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
8. Install cover on 36A voice coupler.
9. Connect an A25D 25-pair cable from the 25-pair connector on the ED-1E443-10 Intra-Connection Panel to the station side (see Note) of the cross-connect field.

Note: This connection is to a Z203A1 connecting unit provided in a Z100B1 connector module. If Z100A1 connector modules are used at the cross-connect field, a connecting unit on the station side must be replaced with a Z203A1 connecting unit.

10. Install yellow (auxiliary) label on connector module.
11. Install patch cord at cross-connect field.
12. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

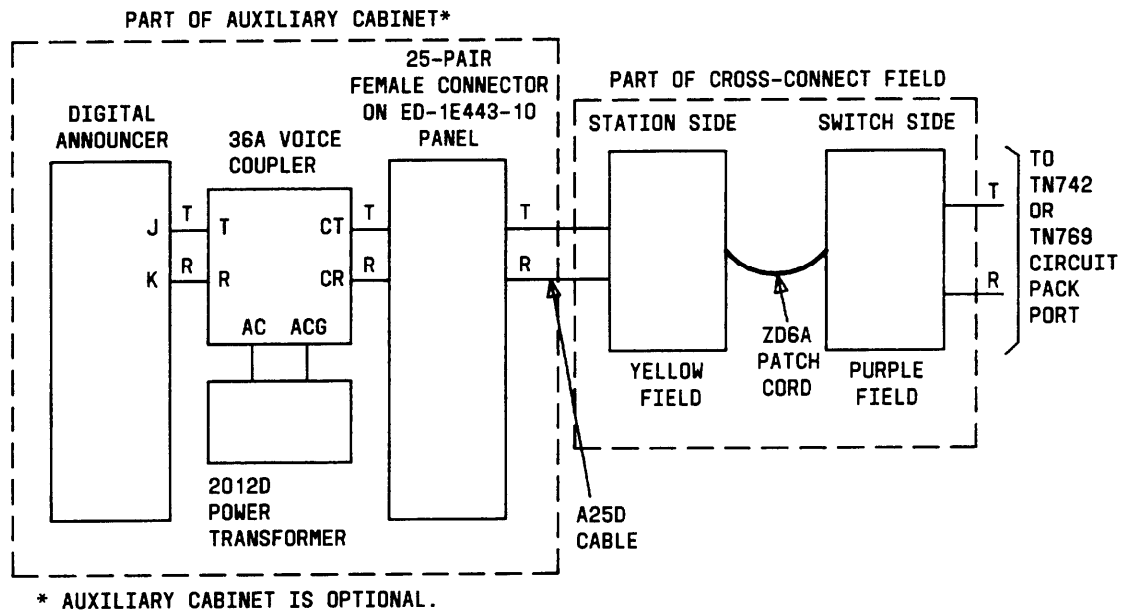


Figure 2-112. Connections to Digital Announcer Located in Auxiliary Cabinet

Installing Audichron Wake-Up Announcement System—R1V3 Only

Requirements

The wake-up announcement system is available as a basic unit or with mounting ears for use in the auxiliary cabinet. A battery backup arrangements also available. The following is a list of available equipment:

- Basic Unit—H9040 Group 8: provides the carrier and six plug-in circuit packs required for unit operation.
- Battery Pack Circuit—H9040 Group 10: provides battery backup to memory circuits during brief power outages.
- Mounting Ears—H9040 Group 13: provides mounting ears that allows the basic unit to be mounted in the auxiliary cabinet.

Figures 2-113 and 2-114 show the connections for the Audichron wake-up announcement system. Figure 2-115 shows the power and ground connections. One Analog Line port and an Auxiliary Trunk circuit pack are required for connection to the wake-up announcement unit.

Access for the TN742 or TN769 Analog Line circuit pack is provided by an information outlet. Two leads (T, R) connect the information outlet to the cross-connect field. The TN742 or TN769 circuit pack contains a maximum of eight ports.

The TN763B circuit pack must be used for the wake-up announcement unit. Access for the TN763B is through the CAP panel. All four ports of the circuit pack are connected to the announcement unit.

Installation

1. Determine port assignment of feature from Hospitality-Related System Parameters Form:

EXAMPLE: Port Number B 02 0 1

Carrier Slot Circuit

2. Connect the analog line port to the announcement unit with 2-pair line cord (modular plug on one end) from information outlet (see Figure 2-113).
3. Install patch cord at cross-connect field.
4. Identify carrier slot for the auxiliary trunk circuit pack and label both ends of a switch cable.
5. Connect cable to appropriate port carrier slot and dress down sides of cabinet.
6. Run and connect cable from bottom of the switch cabinet through cable slack manager, if provided, to unused CABINET CABLES connector on cable access panel.
7. Run and connect A25D cable from DISTRIBUTION CABLES connector to location of announcement unit.
8. Connect A25D cable to J1 connector on the rear of the announcement unit.
9. Remove all factory installed jumpers between the 110 terminal block rows associated with the CABINET CABLES connector and the DISTRIBUTION CABLES connector.
10. Install jumpers between the 110 terminal block rows as shown in Figure 2-114.
11. Connect -48v dc power unit to the announcement unit (see Figure 2-115). The power unit must be supplied locally and be rated at -48v dc at 1.2 amps.
12. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

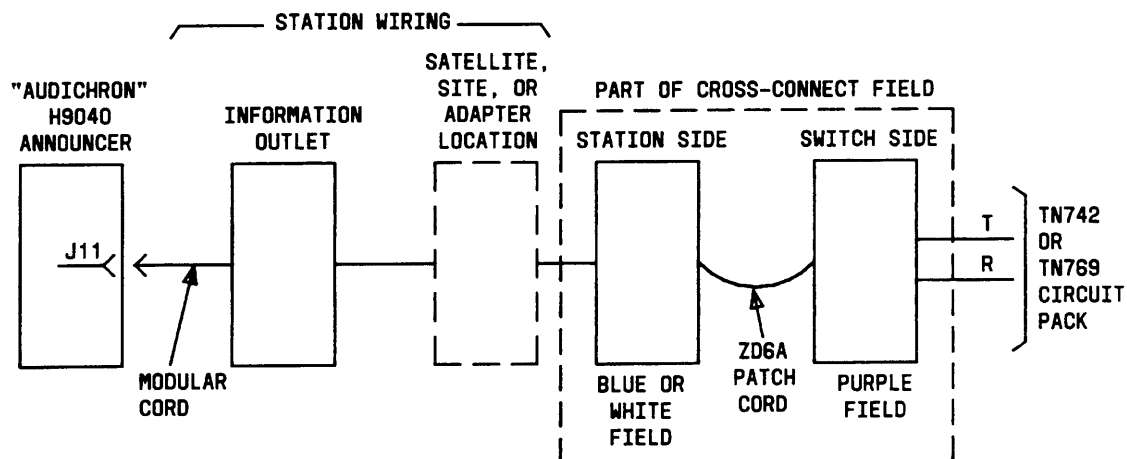
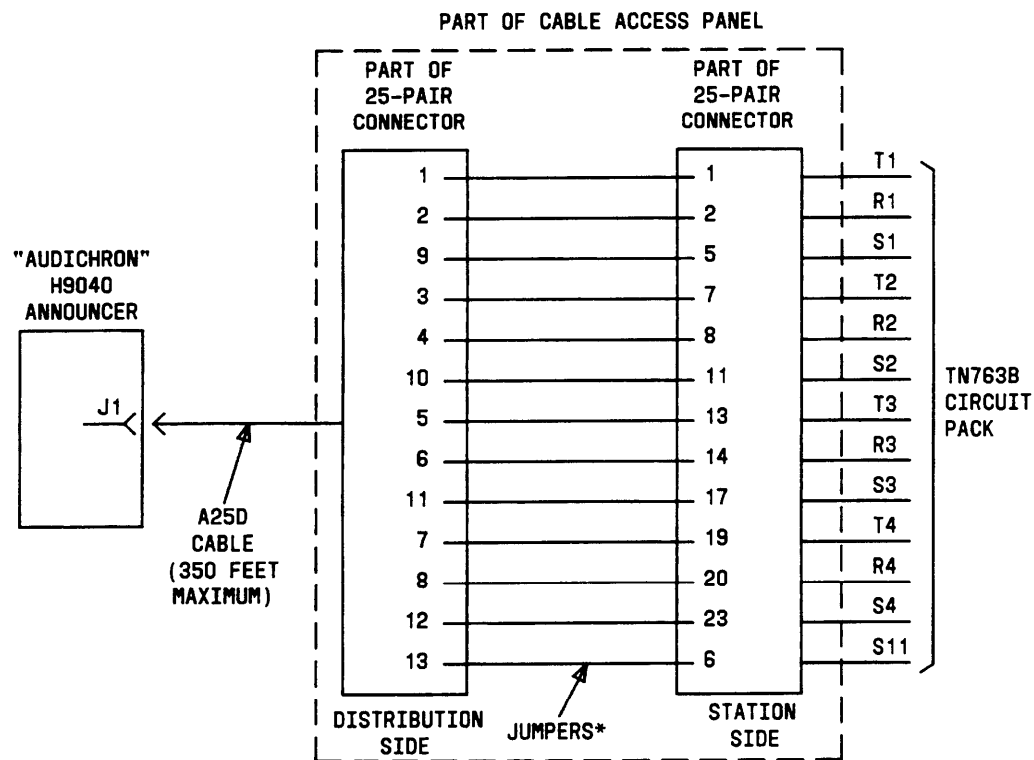


Figure 2-113. Connections for Analog Line Port to Wake-Up Announcement Unit



* JUMPERS MUST BE PLACED ON THE 110 TERMINAL BLOCK ROWS INSIDE CAP. TERMINAL NUMBERS SHOWN ARE 110 TERMINAL BLOCK NUMBERS, REFER TO TABLE 3-A IN THE 110 SECTION FOR CONVERSION FROM CONNECTOR PIN NUMBERS.

Figure 2-114. Connections for Auxiliary Trunk Circuit Pack to Wake-Up Announcement Unit

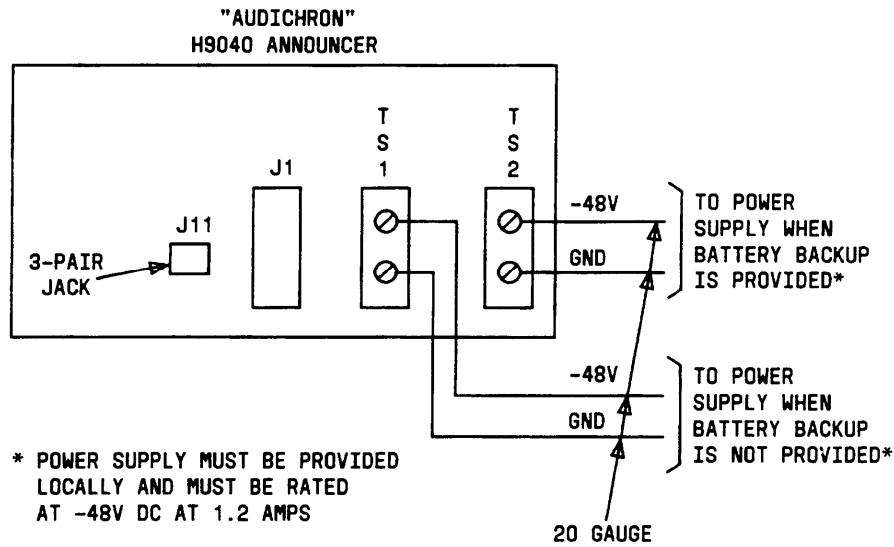


Figure 2-115. Connections for Power Unit to Wake-Up Announcement Unit

Installing Dial Dictation Equipment

The procedures and requirements for installing the Recorded Telephone Dictation feature is the same as for the Recorded Announcement feature for analog access (see Figures 2-110 and 2-111) and the same as Music-on-Hold for auxiliary trunk access (see Figures 2-106 and 2-107).

The port assignment for the feature is on the Station Record Form when a TN742 or TN769 circuit pack is used. The port assignment for the feature is on the Trunk Group Form For Customer-Provided Equipment when a TN763 circuit pack is used.

Installing 3270 Data Modules

Requirements

The 3270 data module consists of a family of protocol converters that allow 3270-type terminals to communicate with a host computer through the system. The three types of 3270 data modules are the following:

- 3270A (Asynchronous)
- 3270C (Controller)
- 3270T (Terminal)

3270 data modules are connected directly to TN754 Digital Line circuit packs. This manual contains only information for connection to the data modules from the system switch. Installation and testing information for the 3270 data modules is contained in the *3270 DATA MODULE—Coaxial-to-DCP Protocol Converter—Product Guide*, 999-700-520.

Installation

Connection to 3270A or 3270T Data Module (Figure 2-116)

1. Determine port assignment of 3270A or 3270T Data Module from Data Module Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Install patch cord at cross-connect field.
3. Run and connect 4-pair line cord (modular plug on both ends) from information outlet to data module (see Figure 2-116).
4. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 7.5 and System 75 XE Administration*.

Connection to 3270C Data Module Through Cable Access Panel (Figure 2-117)

1. Identify carrier slot and label both ends of switch cable.
2. Connect cable to appropriate port carrier slot and dress cable down sides of cabinet.
3. Run and connect cable from bottom of the switch cabinet through cable slack manager, if provided, to unused CABINET CABLES connector on cable access panel.
4. Run and connect A25D cable from DISTRIBUTION CABLES connector to location of 3270C data module (see **Note**).

Note: The data module is located in the auxiliary cabinet, if provided.

5. Connect A25D cable to DCP connector on rear of data module.
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

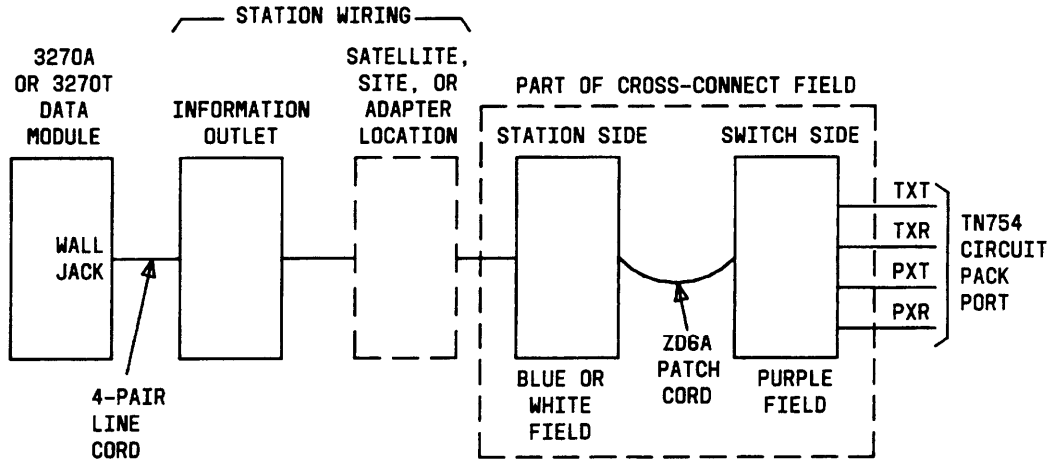


Figure 2-116. Connections for 3270A or 3270T Data Module

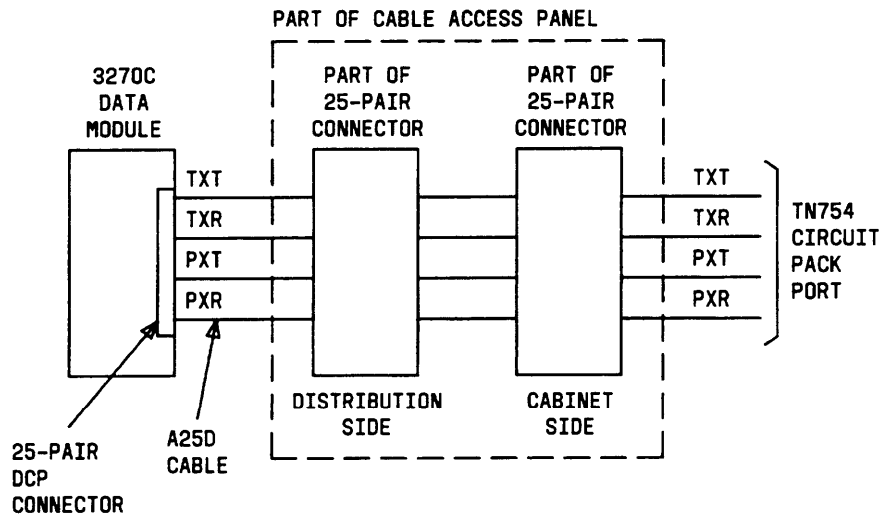


Figure 2-117. Connections for 3270C Data Module

Installing Processor Data Modules (PDMs)**Requirements**

The interface between the system and many types of data equipment is provided by a TN754 Digital Line circuit pack connected to a PDM. The following types of data equipment can be connected by a PDM:

- Applications Processor/Adjunct—System 75 Only
- Applications Processor/Terminal—System 75 Only
- Audio Information Exchange/Adjunct—V3 Only
- Audio Information Exchange/Terminal—V3 Only
- Call Management System—V3 Only
- Distributed Communications System (DCS)—V2 and V3
- Property Management System—V3 Only
- Journal Printer—V3 Only
- Customer Provided Terminals and Host Computers
- Station Message Detailed Recording

PDMs are connected to TN754 Digital Line circuit packs and are mounted individually or in a 71A data mounting. Each 71A data mounting can contain eight PDMs. This manual contains only information for connection to the PDMs from the system switch. PDM installation and testing information is contained in *AT&T System 75 User's Guide—Processor Data Module*, 999-700-028.

For each fully occupied or near fully occupied data mounting, an A25D cable and a B25A cable are used to connect the data mounting directly through the cable access panel to a Digital Line circuit pack. If the data mounting contains only four or five PDMs at the time of initial installation, the data mounting is connected by an A25D cable through the cross-connect field to a Digital Line circuit pack. This arrangement allows for future growth, cuts down on future wiring requirements to the data mounting, and does not require that idle Digital Line circuits be dedicated to the data mounting. The PDMs can also be mounted and connected individually through the cross-connect field.

Installation**Connection to Data Mounting Through Cable Access Panel (Figure 2-118)**

1. Identify carrier slot and label both ends of switch cable.
2. Connect cable to appropriate port carrier slot and dress cable down sides of cabinet.
3. Run and connect cable from bottom of the switch cabinet through cable slack manager, if provided, to unused CABINET CABLES connector on cable access panel.
4. Run and connect the A25D cable from DISTRIBUTION CABLES connector to location of data mounting (see *Note*).

Note: The data mounting is located in the auxiliary cabinet, if provided.

5. Connect A25D cable to DCP-LINE connector on rear of data mounting.

6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

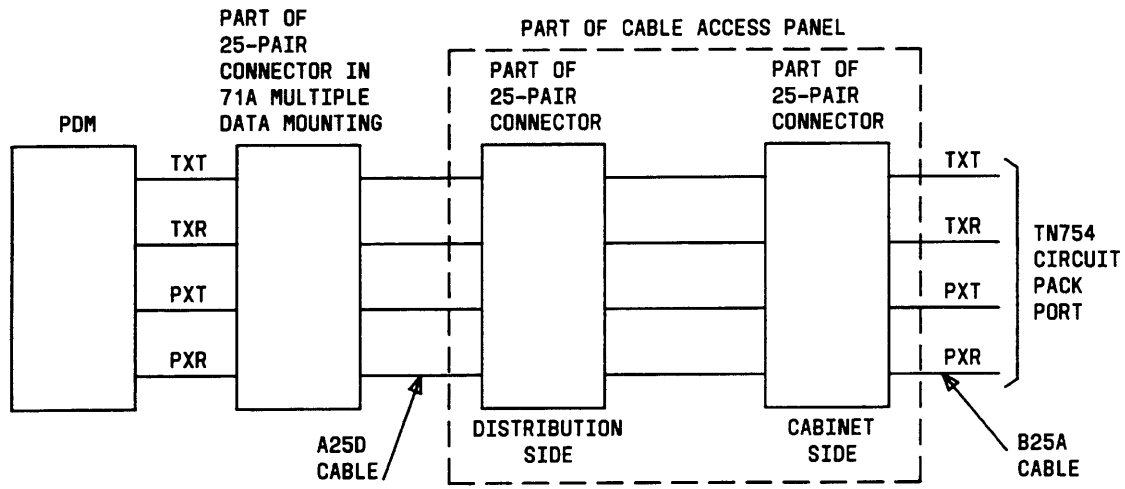


Figure 2-118. Connections for PDMs in Data Mounting—Through Cable Access Panel

Connection to Data Mounting Through Cross-Connect Field (Figure 2-119)

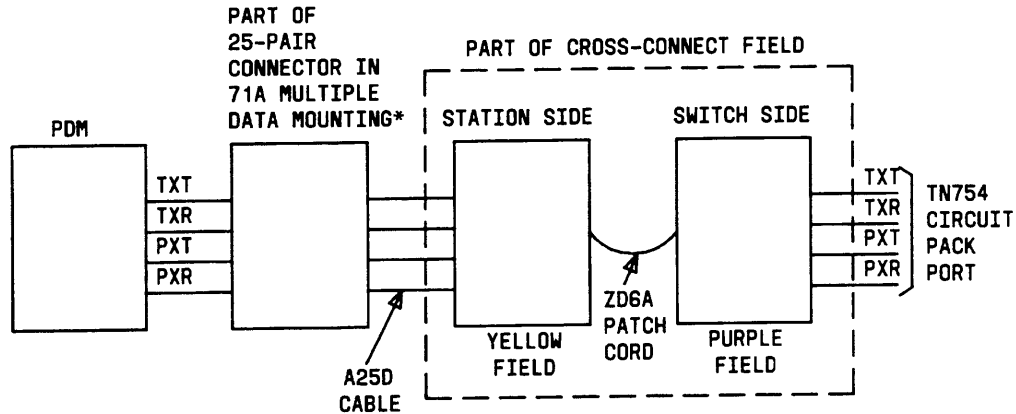
1. From Data Module Form, determine port assignment of PDMs:

EXAMPLE: Port Number B 02 01
 Carrier Slot Circuit

2. Connect A25D cable to DCP-LINE connector on rear of data mounting.
3. Run and connect cable from data mounting to station side (see Note) of cross-connect field.

Note: This connection is to a Z203A1 connecting unit provided in a Z100B1 connector module. If Z100A1 connector modules are used at the cross-connect field, a connecting unit on the station side must be replaced with a Z203A1 connecting unit.

4. Install yellow auxiliary label on connector module.
5. Connect patch cords at cross-connect field (see Figure 2-119).
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.



*DATA MOUNTING IS LOCATED IN AUXILIARY CABINET, IF PROVIDED.

Figure 2-119. Connections for PDMs in Data Mounting—Through Cross-Connect Field

Connection to Individual PDMs Through Cross-Connect Field (Figure 2-120)

1. Determine port assignment of PDM from Data Module Form:

EXAMPLE: Port Number B 02 01
 Carrier Slot Circuit

2. Install PDM per instructions in *PDM User's Guide* (999-700-028IS).
3. Install patch cord at cross-connect field.
4. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

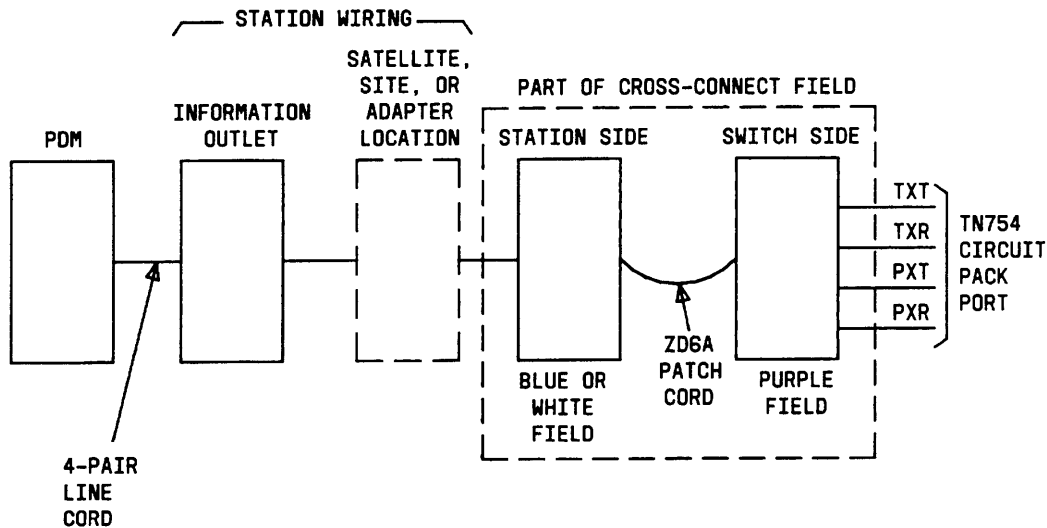


Figure 2-120. Connections for Individual PDMs

Installing Applications Processor Interface—System 75 Only

Requirements

The interface between System 75 and the Applications Processor/Adjunct or Applications Processor/Terminal is through processor data modules (PDMs). Applications Processor alarms are connected through the cable access panel to the System 75. Applications Processor Terminals can also be connected through the System 75 cross-connect field to the Applications Processor.

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.

The installation for the Applications Processor Interface from the System 75 switch is covered under the section for installing PDMs (see Figures 2-118, 2-119, and 2-120).

Information for connecting the PDMs to the Applications Processor and setting the PDM option switches is contained in *Applications Processor 16—Installation, Administration, and Acceptance Test—Service Manual*, 585-201-102.

The connections for the Applications Processor Alarms are shown in Figure 2-121.

Installation of Applications Processor Alarms

1. Run and connect B25A cable from REMOTE ALARM connector on rear of Applications Processor to 1D connector on first cable access panel.
2. On cable access panel, connect jumpers from seventh pair on 1D terminal row to ALARM MONITOR 1M terminals (see Figure 2-121.). Designate seventh pair as MAJ 1.
3. Connect jumpers from ninth pair on 1D terminal row to ALARM MONITOR 1m terminals (see Figure 2-121.). Designate ninth pair as MIN 1.

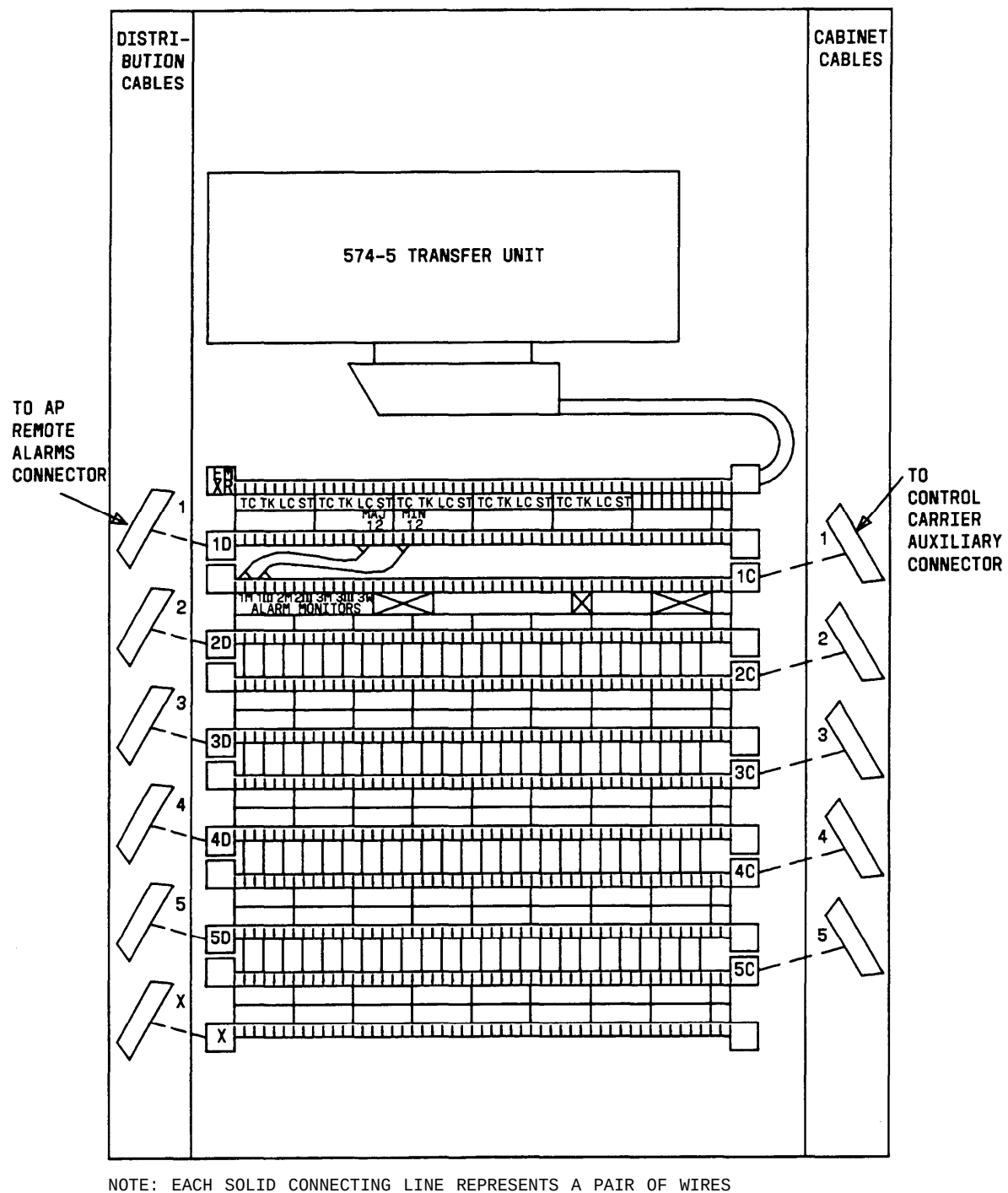


Figure 2-121. Connections at Cable Access Panel for Applications Processor Alarms

Installing Audio Information Exchange (AUDIX) Interface—V3 Only

Requirements

The interface between the system and the Audio Information Exchange/Adjunct or Audio Information Exchange/Terminal is through processor data modules (PDMs). AUDIX Terminals can also be connected through the system cross-connect field to the AUDIX. The large AUDIX is not supported on the System 75 or System 75 XE.

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.
- System 75 XE uses the Processor Interface (TN765) as the required control circuit pack.

The installation for the AUDIX Interface from the system switch is covered under the section for installing PDMs (see Figures 2-118, 2-119, and 2-120).

Information for connecting the PDMs to the AUDIX and setting the PDM option switches is contained in *AUDIX-M—Installation Service Manual*, 585-300-103.

The AUDIX also requires up to 16 analog circuit pack ports from the system to be reconnected through the cross-connect field to the AUDIX. Refer to Table 2-F for port circuit pin numbers.

Installing Call Management System (CMS) Interface—V3 Only

Requirements

The interface between the system and the Call Management System is through processor data modules (PDMs).

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.
- System 75 XE uses the Processor Interface (TN765) as the required control circuit pack.

The installation for the Call Management System Interface from the system switch is covered under the section for installing PDMs (see Figures 2-118, 2-119, and 2-120).

Information for connecting the PDMs to the Call Management System and setting the PDM option switches is contained in *3B2 Messaging Server Installation and Maintenance Service Manual*, 585-205-110.

Installing Distributed Communications System (DCS)—V2 and V3

Requirements

The DCS link to the system can be provided by processor data modules (PDMs) or over a DS1 Tie Trunk..

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.

- System 75 XE uses the Processor Interface (TN765) as the required control circuit pack.

The installation for the installing the DCS link using PDMs is covered under the section for installing PDMs (see Figures 2-118, 2-119, and 2-120). The following switch settings for the PDM are recommended:

Switch	Setting
9600 BAUD	ON
SYNC	ON
INT	ON
KYBD	ON
AANS	ON
All others	OFF

The baud rate between switches may vary depending on the installation.

Refer to the installation for installing DS1 Tie Trunks if the DCS link is to be installed using DS1 Tie Trunks.

Property Management System Interface—V3 Only

Requirements

The interface between the system and the customers property management system is through processor data modules. The installation for the property management interface from the system switch is covered under the section for installing PDMs (see Figures 2-118, 2-119, and 2-120).

Refer to the appropriate vendor's documentation for connecting the PDM to the property management system. The option switches on the PDM should be set in accordance with the requirements for the customers property management system.

A journal printer can be used in conjunction with the property management system. A serial printer must be used. The connections for the printer are the same as for the property management interface. Refer to the appropriate vendor's documentation for connecting the PDMs to the printer. The option switches on the PDM should be set according to the requirements for the printer.

The property management system interface and the journal printers can also be installed using Asynchronous Data Unit (ADUs). The connections are the same as for a customer-provided data terminal (see Figure 2-122).

Installing Customer-Provided Terminal Using Asynchronous Data Units (ADUs)

The interface between the system and the customer's data terminals and host computer for R1V1, R1V2, and R1V3 systems is through PDMs. Refer to installing PDMs for details (see Figures 2-118, 2-119, and 2-120).

For R1V2 or R1V3 systems only, the customer's asynchronous data terminals can be connected through a Z3A Asynchronous Data Unit (ADU) to a TN726 Data Line circuit pack (see Figure 2-122). Normally, the ADU is powered from the connected data terminal. The ADU can also be remotely or locally powered using a 2012D transformer equipped with a 248B adapter. ADUs connected to receive-only printers always require external power. The need for external power must be determined experimentally for ADUs connected to other devices. For details on ADU installation, refer to the *Z3A Asynchronous Data Unit User's Manual*, (555-401-701).

Installation

1. Determine port assignment of ADU from Data Module Form:

EXAMPLE: Port Number B 02 01

Carrier Slot Circuit

2. Install patch cord at cross-connect field.
3. Connect RS-232 plug on ADU to data terminal.
4. Run and connect 4-pair line cord (modular plug on both ends) from information outlet to ADU (see Figure 2-122).
5. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

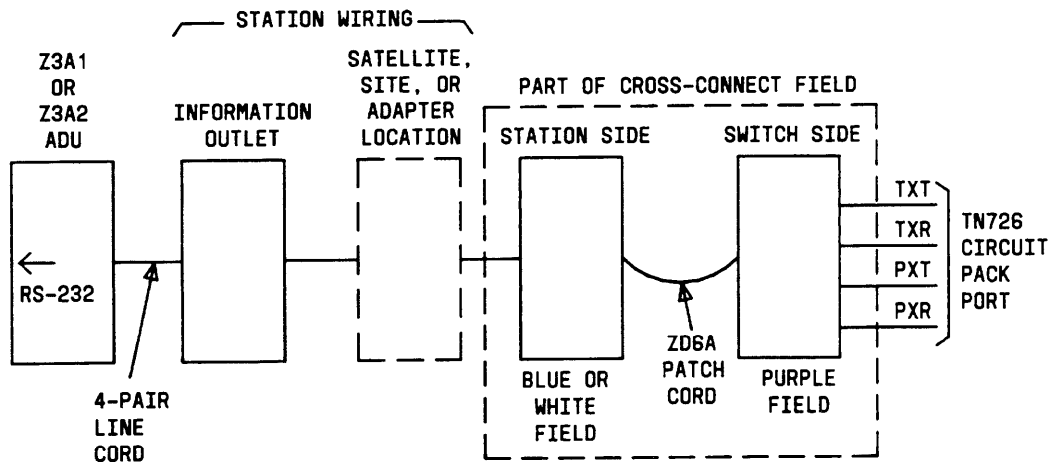


Figure 2-122. Connections to ADU for Data Terminal Equipment (R1V2 or R1V3)

Installing Station Message Detail Recording Interface

The interface between the system and Station Message Detail Recording Equipment (SMDR) is through a processor data module (PDM), trunk data module, or 212-type modem. Refer to the section on installing PDMs for connections from the switch to the PDM or trunk data module (Figures 2-118, 2-119, and 2-120). Administer using the *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

The connection from the switch to the 212-type modem is the same as for External Ringing (Figure 2-97). When a 212-type modem is used, a TN758 Pooled Modem must be provided. One of the Pooled Modem's conversion resources is dedicated to the SMDR output device. Administer using the *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

For R1V2 or R1V3 systems only, a TN726 Data Line circuit pack may be used and PDMs, TDMs, or 212-type modems are not required for data terminal equipment. The connection from the switch to the SMDR Output Receiving Device is the same as a customer-provided data terminal (see Figure 2-122).

Interface Cabling to SMDR Output Device

Figure 2-123 shows the cabling required to connect the TELESEER* unit, printer, or customer-provided data terminal equipment (DTE). The M25B cable connects to the P1 connector on the TELESEER unit.

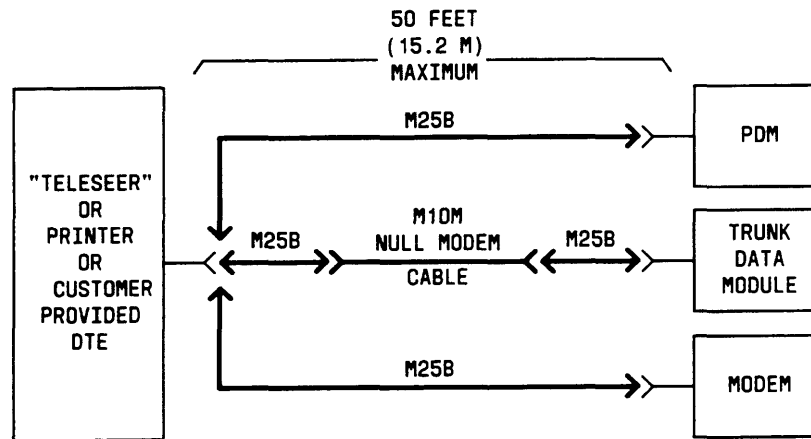


Figure 2-123. SMDR Cabling for Data Terminal Equipment

* Trademark of AT&T

Figure 2-124 shows the cabling required to connect the 94A LSU, a printer, or customer-provided data communications equipment (DCE). The M25B cable connects to the C1 connector on the 94A LSU.

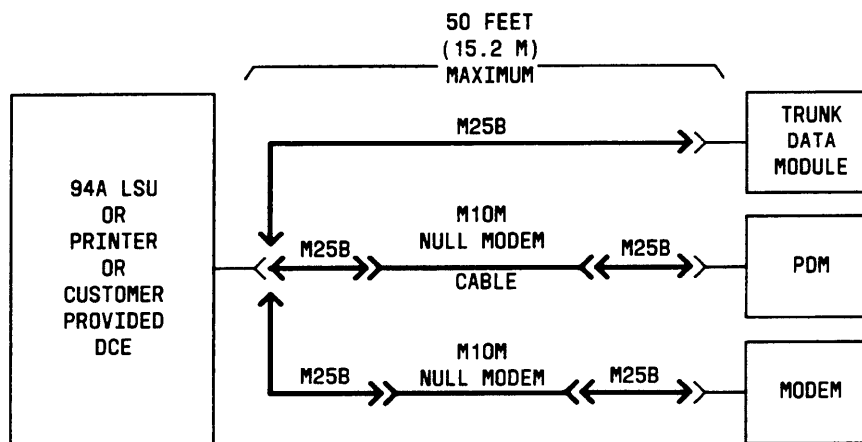


Figure 2-124. SMDR Cabling for On-Premises Data Communications Equipment

Figure 2-125 shows the cabling required to connect a remote host connected by a private line.

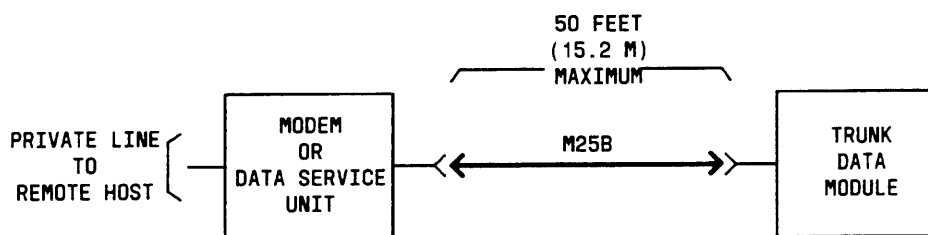


Figure 2-125. SMDR Cabling for a Remote Host

PDM, Trunk Data Module, or 212-Type Modem Switch Settings

PDM or Trunk Data Module

The following switch settings are recommended:

Switch	Setting
SELF TEST	OFF
LOC LOOP/REM LOOP	OFF
1200	ON
AANS (PDM Only)	ON
SIGLS	ON
PRTY	ON
1/0D	ON
All Others	OFF

212-Type Modem

The following switch settings are recommended:

Switch	Setting
A L	OFF
ST	OFF
RDL	OFF
DL	OFF
H S	ON

3. 110-TYPE HARDWARE—SYSTEM 75 AND SYSTEM 75 XE INSTALLATIONS

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3. 110-TYPE HARDWARE—SYSTEM 75 OR SYSTEM 75 XE INSTALLATIONS

GENERAL

Figure 3-1 shows the equipment required to install a System 75 or System 75 XE. A description and explanation of each piece of equipment follows. Ordering information is provided at the end of each description.

The sites shown in Figure 3-1 are physical locations (closets) for pass-through connections where adjunct power may be applied. The satellite is a physical location (closet) where cross-connect administration can take place and adjunct power may be applied.

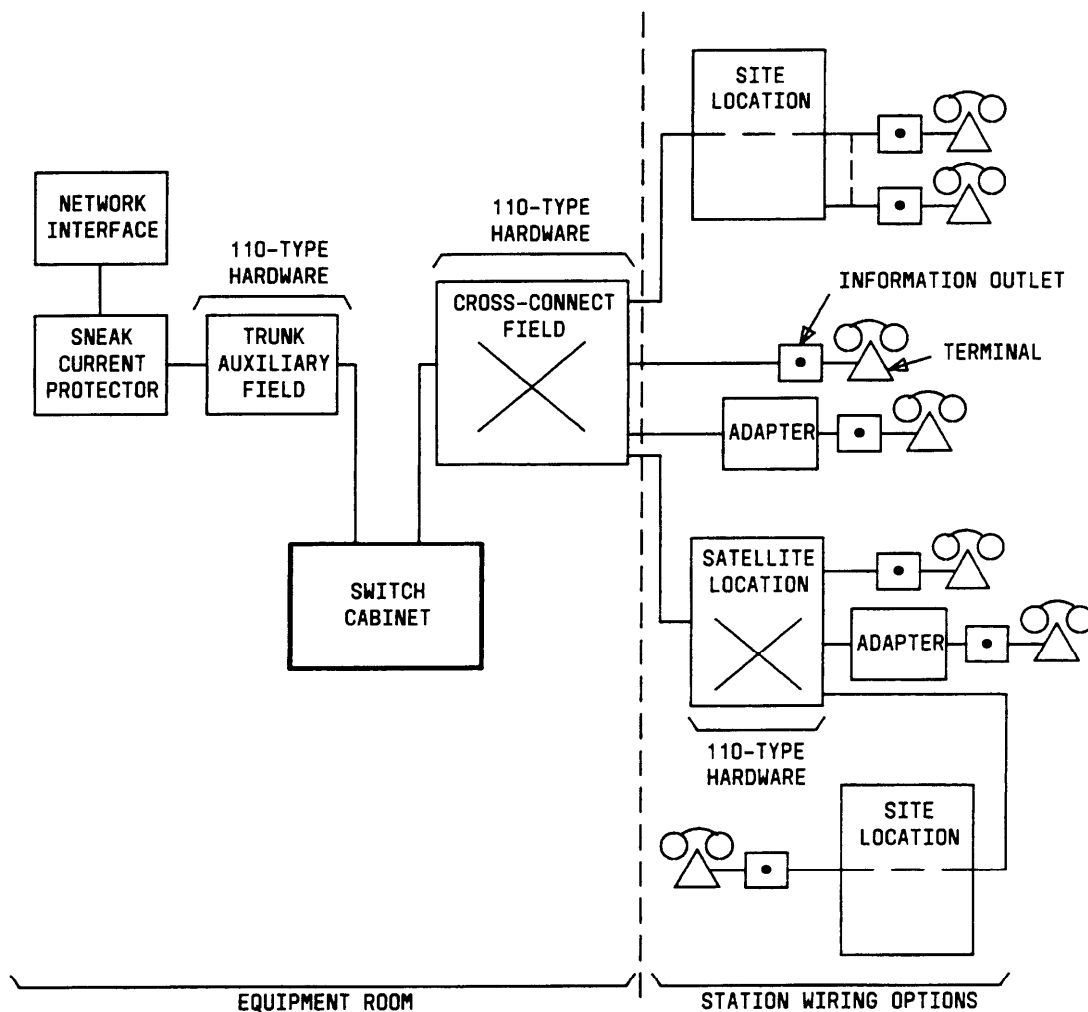


Figure 3-1. Block Diagram of System 75 or System 75 XE Installation

110-TYPE HARDWARE DESCRIPTION

The 110-type hardware consists of connectorized or field-terminated terminal blocks available in 100-, 300-, and 900-pair sizes. The 110-type terminal blocks consist of the following parts:

- 110-Type Wiring Blocks
- Index Strips
- 3-, 4-, and 5-Pair Connecting Blocks.

110-Type Wiring Blocks

The 110-type wiring block is a plastic wiring block equipped with permanently attached index strips. A 110-type wiring block is shown in Figure 3-2.

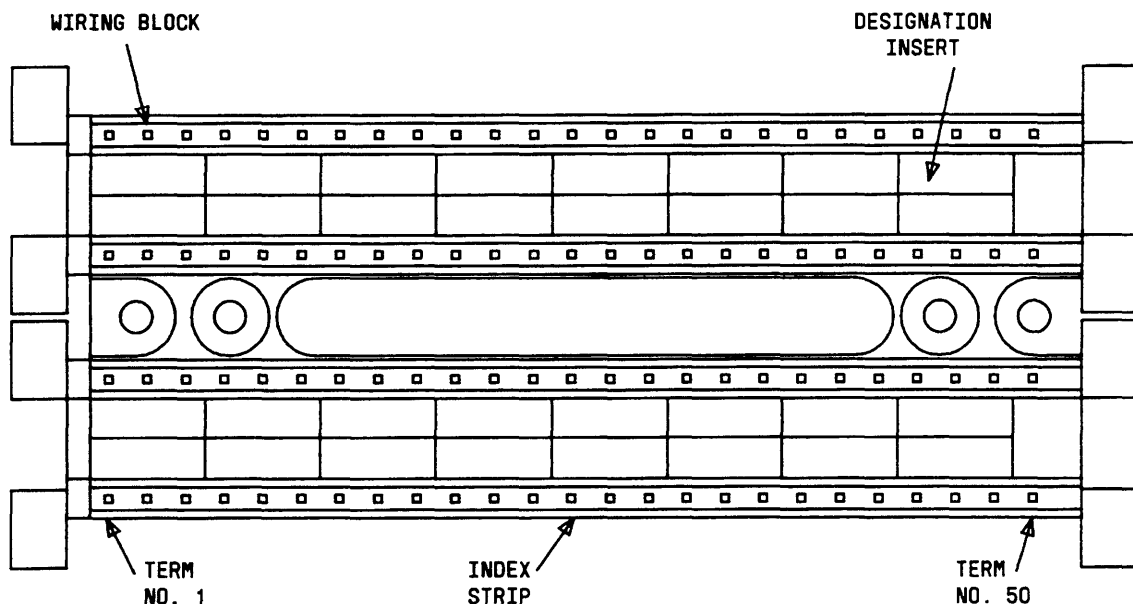


Figure 3-2. 110-Type Wiring Block

Index Strips and Connecting Blocks

The index strips (Figure 3-3) are slotted rows for 25-pair cable termination. The wires are placed in the slots to allow the connecting blocks to make connection with the wires. The standard termination for a 25-pair cable is shown in Table 3-A.

The connecting blocks (Figure 3-3) are equipped with clips that slice the insulation of the wires when the connecting block is pushed onto the index strip. The top of the connecting blocks are used for cross-connections. When a wire is punched onto the top of the connecting block, it makes connection, through the connecting block, with the wire in the index strip.

The connecting blocks come in 3-, 4-, and 5-pair blocks. When 3- or 4-pair connecting blocks are used, the last connecting block on each index strip must be one pair larger to complete the 25-pairs. The ordering codes determine the type of connecting blocks received with a terminal block. The 110-type terminal blocks allow for individual 3- and 4-pair circuits to be disconnected for testing without disturbing adjacent circuits.

The 110-type hardware consists of 110A-type and 110P-type hardware. The 110P-type hardware is designed to be used with patch cords. This allows for customer participation in the cross-connect administration. The 110A-type hardware is designed to be used with jumper wires. For this reason, the 110A-type hardware is not intended for customer participation in the cross-connect administration because it requires technically skilled personnel to do the cross-connection. The 110A- and 110P-type hardware should not be mixed in the same room.

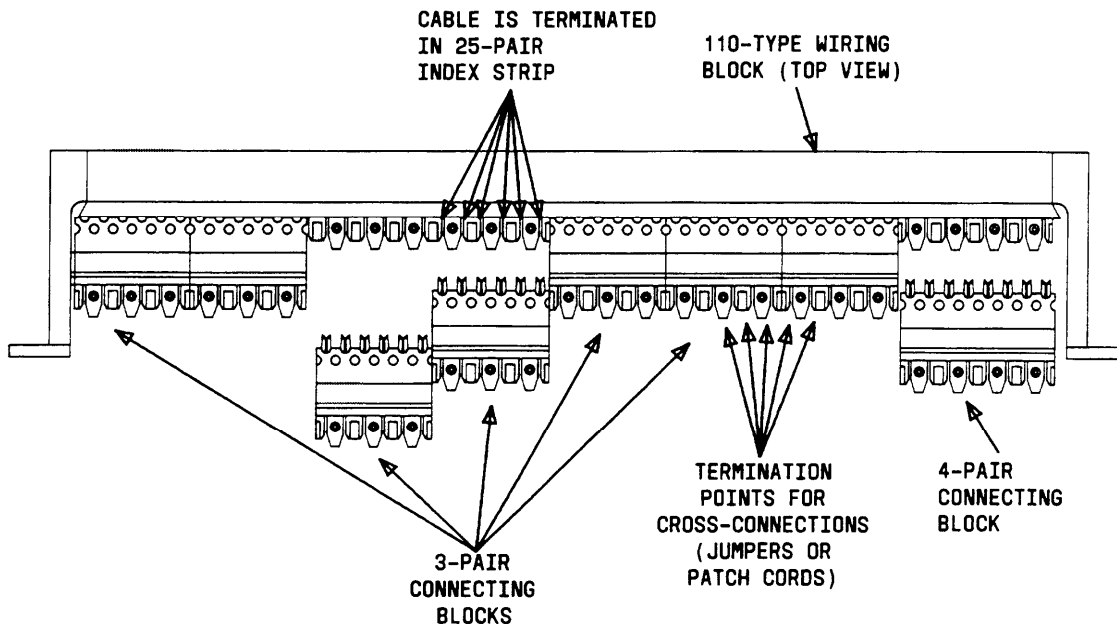


Figure 3-3. 110-Type Index Strip With Connecting Blocks

TABLE 3-A. 25-Pair Cable Termination on a 110-Type Wiring Block

(Contd on Next Page)

25-Pair Cable			110-Type Wiring Block Terminals
Connector Pin Numbers	Pair	Color	
26	1	W-BL	1
1		BL-W	2
27	2	W-O	3
2		O-W	4
28	3	W-G	5
3		G-W	6
29	4	W-BR	7
4		BR-W	8
30	5	W-S	9
5		S-W	10
31	6	R-BL	11
6		BL-R	12
32	7	R-O	13
7		O-R	14
33	8	R-G	15
8		G-R	16
34	9	R-BR	17
9		BR-R	18
35	10	R-S	19
10		S-R	20
36	11	BK-BL	21
11		BL-BK	22
37	12	BK-O	23
12		O-BK	24

TABLE 3-A. 25-Pair Cable Termination on a 110-Type Wiring Block (Contd)

25-Pair Cable			110-Type Wiring Block Terminals
Connector Pin Numbers	Pair	Color	
38	13	BK-G	25
13		G-BK	26
39	14	BK-BR	27
14		BR-BK	28
40	15	BK-S	29
15		S-BK	30
41	16	Y-O	31
16		O-Y	32
42	17	Y-BL	33
17		BL-Y	34
43	18	Y-G	35
18		G-Y	36
44	19	Y-BR	37
19		BR-Y	38
45	20	Y-S	39
20		S-Y	40
46	21	V-BL	41
21		BL-V	42
47	22	V-O	43
22		O-V	44
48	23	V-G	45
23		G-V	46
49	24	V-BR	47
24		BR-V	48
50	25	V-S	49
25		S-V	50

110A-Type Hardware

The 110A-type hardware consists of a 100- or 300-pair wiring block with mounting legs and connecting blocks. The 100-pair wiring blocks require field termination (see Figure 3-4). The 300-pair wiring blocks come in field-terminated and connectorized (6-foot connectorized male or female cables attached) types (see Figure 3-5).

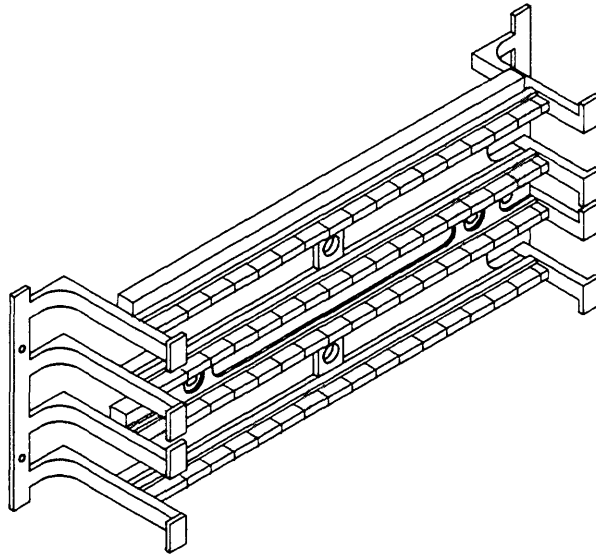


Figure 3-4. 110A-Type 100-Pair Terminal Block

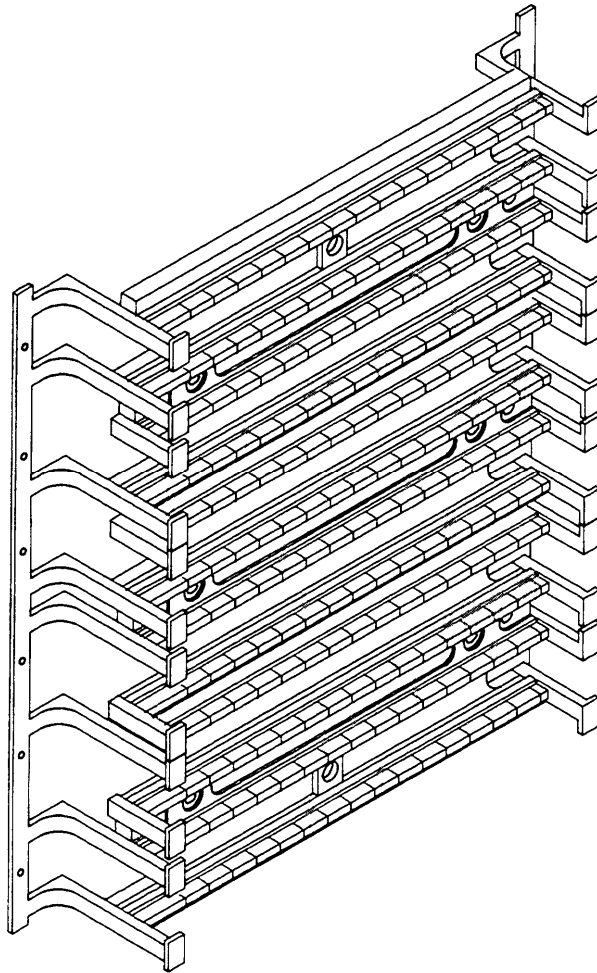


Figure 3-5. 110A-Type 300-Pair Terminal Block

The 110A-type hardware can be used for the Trunk/Auxiliary Field and all Distribution Fields (port, auxiliary, and station). The 110A-type hardware used with the system is described below. The use for each type of terminal will be described later.

- 110AE1-75FT Terminal Block—A set of parts to permit field termination of cables on a 100-pair wiring block (110AW1-100) that provides termination for 8 three-pair and 12 four-pair circuits.
- 110AB1-100FT Terminal Block—A set of parts to permit field termination of cables on a 100-pair wiring block (110AW1-100) that provides termination for 24 four-pair circuits.
- 110AC1-100FT Terminal Block—A set of parts to permit field termination of cables on a 100-pair wiring block (110AW1-100) that provides termination for 32 three-pair circuits.
- 110AB1-300FT Terminal Block—A set of parts to permit field termination of cables on a 300-pair wiring block (110AW1-300) that provides termination for 72 four-pair circuits.

110-TYPE HARDWARE

- 110AC1-300FT Terminal Block—A set of parts to permit field termination of cables on a 300-pair wiring block (110AW1-300) that provides termination for 96 three-pair circuits.
- 110AC1-300STF/6 Terminal Block—A factory-assembled 300-pair connectorized terminal block that provides termination for 96 three-pair circuits. Twelve 6-foot long 25-pair female connectorized cables exit the top of the block. The 25-pair cables are factory-terminated on the wiring block in continuous numerical order.
- 110AC1-300STM/6 Terminal Block—A factory-assembled 300-pair connectorized terminal block that provides termination for 96 three-pair circuits. Twelve 6-foot long 25-pair male connectorized cables exit the top of the block. The 25-pair cables are factory-terminated on the wiring block in a continuous numerical order.

The 110AW1-100 or 110AW1-300 wiring block that is used for the terminal blocks listed above can be ordered separately. The 3- or 4-pair connecting blocks (110C-3 or 110C-4) that are used on the wiring block must also be ordered separately.

110A-TYPE HARDWARE ORDERING INFORMATION

Description	Comcode
110AE1-75FT Terminal Block	104 049 093
110AB1-100FT Terminal Block	103 823 845
110AC1-100FT Terminal Block	103 826 780
110AB1-300FT Terminal Block	104 049 051
110AC1-300FT Terminal Block	104 049 069
110C1-300STF/6 Terminal Block	104 049 077
110AC1-300STM/6 Terminal Block	104 049 085
110AW1-100 Wiring Block	103 804 894
110AW1-300 Wiring Block	103 804 902
110C-3 3-Pair Connecting Block	103 801 239
110C-4 4-Pair Connecting Block	103 801 247

110P-Type Hardware

The 110P-type hardware consists of 100-pair wiring terminals separated by horizontal patch cord troughs mounted on a back panel. The P-type hardware is available in 300- and 900-pair field-terminated and connectorized terminal blocks. The 110P-type terminal blocks are made up of alternate rows of 110-type wiring blocks and horizontal jumper troughs arranged in a vertical column with the troughs located above the wiring blocks. At the bottom of the terminal block is a partially closed duct. The field-terminated hardware must be assembled (troughs and wiring blocks must be fastened to the back panel); the connectorized terminals come fully assembled and ready for mounting. The 300-pair connectorized terminal block is shown in Figure 3-6.

There are two types of 900-pair connectorized terminal blocks: one has a connector field at the top; the other is connectorized with a 40-inch length of cable terminated with a female 25-pair cable at the bottom (see Figures 3-7 and 3-8).

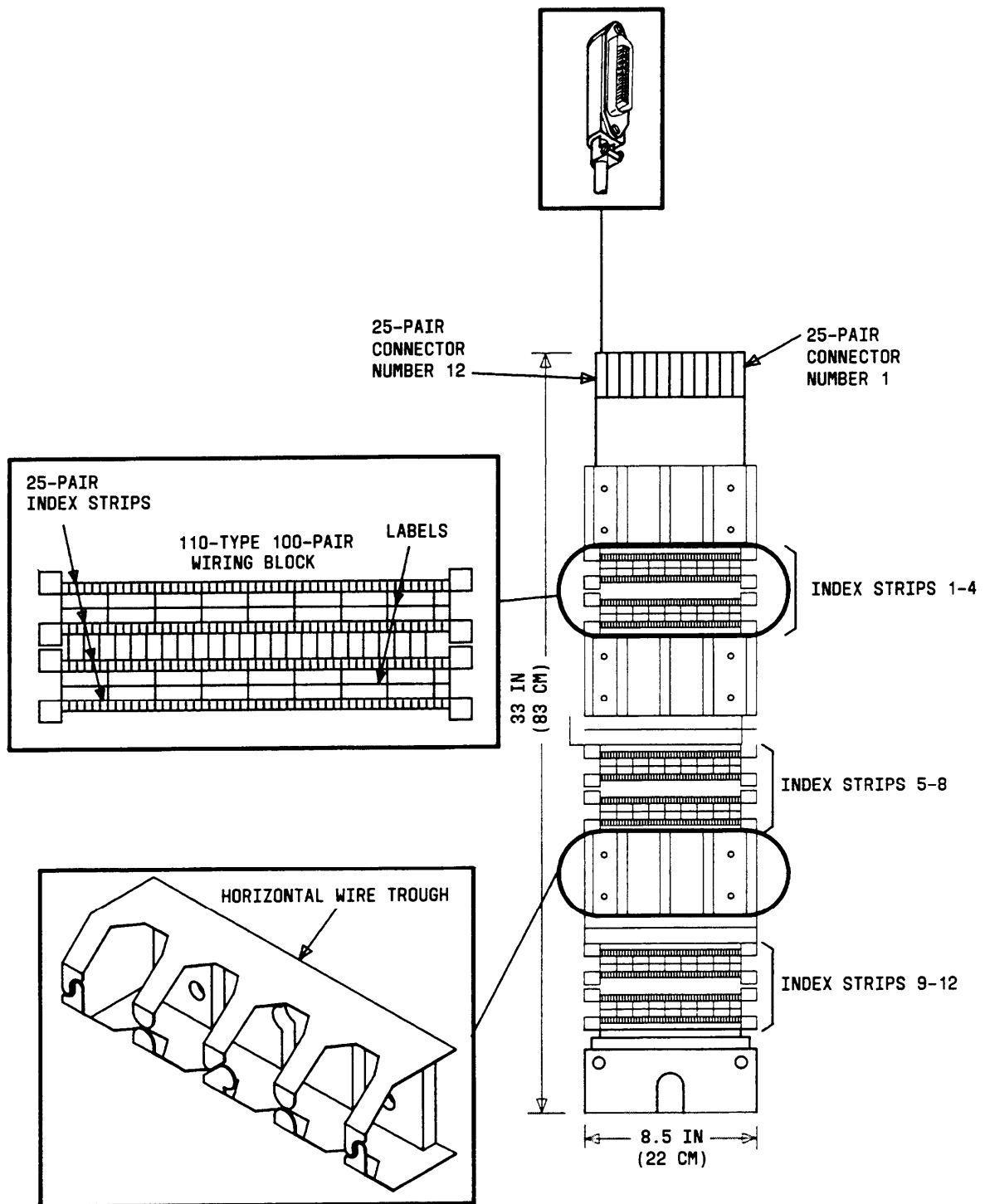


Figure 3-6. 110P-Type Terminal Block—300-Pair Connectorized Top

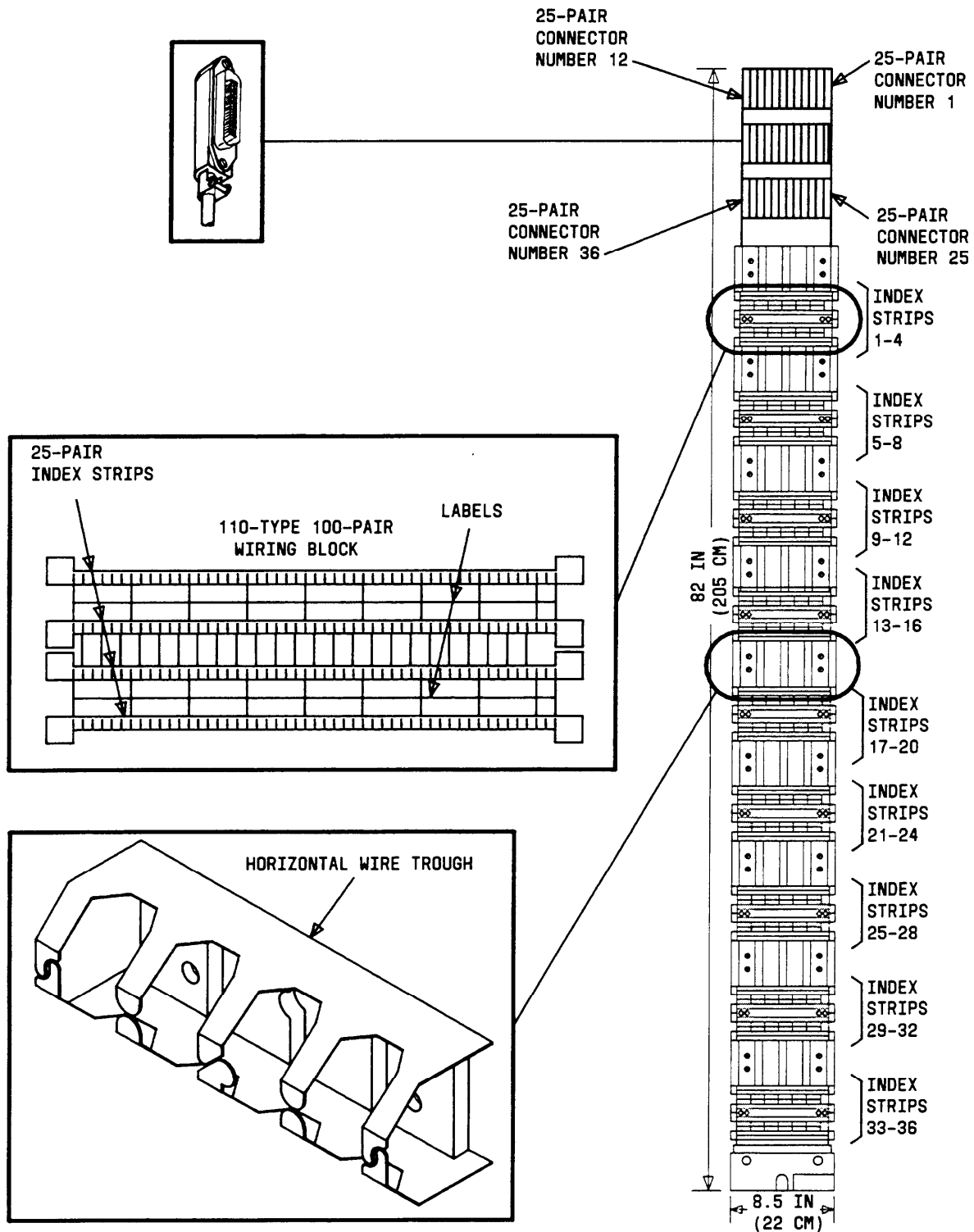


Figure 3-7. 110P-Type Terminal Block—900-Pair Connectorized Top

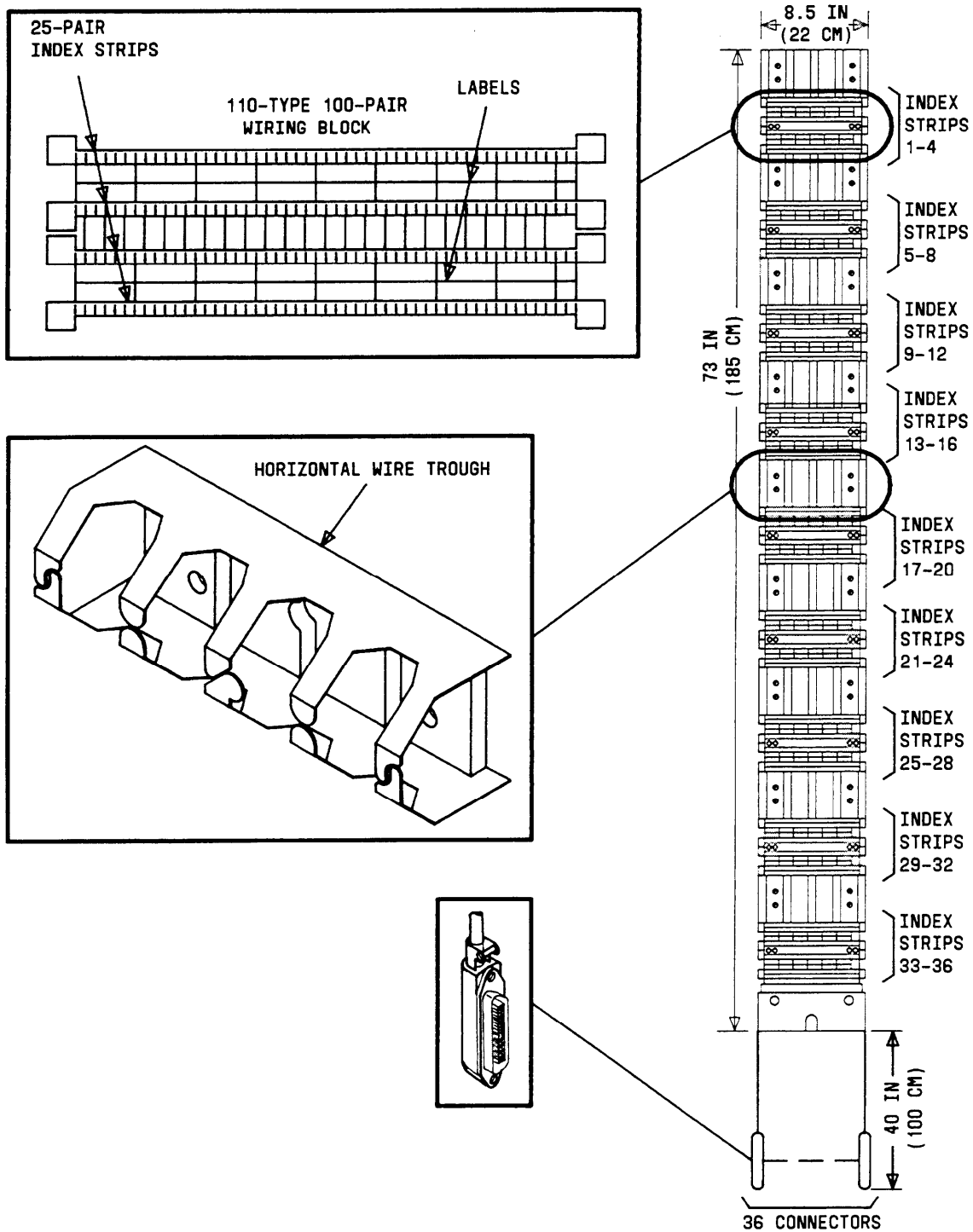


Figure 3-8. 110P-Type Terminal Block—900-Pair Connectorized Bottom

The 110P-type hardware can be used in the equipment room for the Trunk/Auxiliary and all Distribution Fields (port, auxiliary, and station). The 110P-type hardware used with the system is described below. The use for each type of terminal block will be described later.

- 110PB1-300CT Terminal Block—A factory-assembled 300-pair connectorized terminal block that provides termination for 72 four-pair circuits. Twelve 25-pair female miniature ribbon connectors are located at the top of the terminal block. The connectors are factory-terminated on the wiring block in continuous numerical order.
- 110PC1-300CT Terminal Block—A factory-assembled 300-pair connectorized terminal block that provides termination for 96 three-pair circuits. Twelve 25-pair female miniature ribbon connectors are located at the top of the terminal block. The connectors are factory-terminated on the wiring block in continuous numerical order.
- 110PB1-300FT Terminal Block—A set of parts to permit field termination of cables on a 300-pair terminal block that provides termination for 72 four-pair circuits.
- 110PC1-300FT Terminal Block—A set of parts to permit field termination of cables on a 300-pair terminal block that provides termination for 96 three-pair circuits.
- 110PE1-300CT Terminal Block—A factory-assembled 300-pair connectorized terminal block that provides termination for 32 three-pair and 48 four-pair circuits. Twelve 25-pair female miniature ribbon connectors are located at the top of the terminal block. The connectors are terminated on the wiring blocks in continuous numerical order.
- 110PE1-300CT/FT Terminal Block—A partially factory-assembled 300-pair terminal block that provides termination for 32 three-pair and 48 four-pair circuits. Four 25-pair female miniature ribbon connectors are located at the top of the terminal block to provide connectorized termination to the 3-pair circuits. The connectors are terminated on the 3-pair wiring block in continuous numerical order. The 4-pair wiring blocks are provided as a set of parts to permit field termination of the 4-pair circuits.
- 110PE1-300FT Terminal Block—A set of parts to permit field termination of cables on a 300-pair terminal block that provides termination for 32 three-pair and 48 four-pair circuits.
- 110PB1-900CB Terminal Block—A factory-assembled 900-pair connectorized terminal block that provides termination for 216 4-pair circuits. Thirty-six 25-pair female miniature ribbon cables are located at the bottom of the terminal block. The cables are factory-terminated on the wiring blocks in continuous numerical order and extend 40 inches from the bottom.
- 110PC1-900CB Terminal Block—A factory-assembled 900-pair connectorized terminal block that provides termination for 288 three-pair circuits. Thirty-six 25-pair female miniature ribbon cables are located at the bottom of the terminal block. The cables are factory-terminated on the wiring blocks in continuous numerical order and extend 40 inches from the bottom.
- 110PB1-900CT Terminal Block—A factory-assembled 900-pair connectorized terminal block that provides termination for 216 four-pair circuits. Thirty-six 25-pair female miniature ribbon connectors are located at the top of the terminal block. The connectors are factory-terminated on the wiring blocks in continuous numerical order.

110-TYPE HARDWARE

- The 110PC1-900CT Terminal Block—a factory-assembled 900-pair connectorized terminal block that provides termination for 288 three-pair circuits. Thirty-six 25-pair female miniature ribbon connectors are located at the top of the terminal block. The connectors are factory-terminated on the wiring blocks in continuous numerical order.
- 110PB1-900FT Terminal Block—A set of parts to permit field termination of cables on a 900-pair terminal block that provides termination for 216 four-pair circuits.
- 110PC1-900FT Terminal Block—A set of parts to permit field termination of cables on a 900-pair terminal block that provides termination for 288 three-pair circuits.
- 110PE1-900CT/FT Terminal Block—A partially factory-assembled 900-pair terminal block that provides termination for 96 three-pair and 144 four-pair circuits. Twelve 25-pair female miniature ribbon connectors are located at the top of the terminal block to provide connectorized termination to the 3-pair circuits. The connectors are terminated on the 3-pair wiring blocks in a continuous numerical order. The 4-pair wiring blocks are provided as a set of parts to permit field termination of the 4-pair circuits.
- 110PE1-900FT Terminal Block—A set of parts to permit field termination of cables on a 900-pair terminal block that provides termination for 96 three-pair and 144 four-pair circuits.

110P-TYPE HARDWARE ORDERING INFORMATION

Description	Comcode
110PB1-300CT Terminal Block	103 823 886
110PC1-300CT Terminal Block	103 804 852
110PB1-300FT Terminal Block	103 804 829
110PC1-300FT Terminal Block	103 804 860
110PE1-300CT Terminal Block	104 017 066
110PE1-300CT/FT Terminal Block	104 173 166
110PE1-300FT Terminal Block	103 823 902
110PB1-900CB Terminal Block	104 173 158
110PC1-900CB Terminal Block	104 166 590
110PB1-900CT Terminal Block	103 804 837
110PC1-900CT Terminal Block	103 048 878
110PB1-900FT Terminal Block	103 804 845
110PC1-900FT Terminal Block	103 804 886
110PE1-900CT/FT Terminal Block	104 173 174
110PE1-900FT Terminal Block	103 823 910

188-Type Backboards

The 188-type backboards are wire troughs used to channel the patch cords or cross-connecting wire between the wiring blocks. The backboards consist of a metal frame equipped with retaining rings. The 188-type backboards are available in four types:

- The 188B1 backboard is a horizontal wire trough used with 110A-type terminal blocks.
- The 188C2 backboard is a vertical wire trough used with 900-pair 110P-type terminal blocks.
- The 188D2 backboard is a vertical wire trough used with 300-pair 110P-type terminal blocks.
- The 188E2 backboard is a horizontal wire trough that is used between the Trunk/Auxiliary Field and the Distribution Field for either 300- or 900-pair 110P-type terminal blocks.

188-TYPE BACKBOARD ORDERING INFORMATION

Description	Comcode
188B1 Backboard	102 895 569
188C2 Backboard	104 031 794
188D2 Backboard	104 032 404
188E2 Backboard	104 031 802

Cords

110-Type Patch Cords

The 3-pair patch cords (Figure 3-9) are used to cross-connect terminals to switch ports at the Distribution Field. The patch cords are available in several lengths. One-pair patch cords are also available. The patch cords are equipped with plastic plugs on both ends. The plastic plugs are compatible with the 110-type connecting blocks used on the index strips. The patch cords are keyed so that they cannot be inserted upside down or on a split pair.

110-TYPE PATCH CORD ORDERING INFORMATION

Cord	Description	Length	Comcode (1 per package)	Comcode (10 per package)
F-61679-2	1-Pair	2 ft (0.6 m)	103 991 873	Not Available
F-61679-3	1-Pair	3 ft (0.9 m)	103 991 881	Not Available
F-61679-4	1-Pair	4 ft (1.2 m)	103 991 899	Not Available
F-61679-5	1-Pair	5 ft (1.5 m)	103 991 907	104 073 606
F-61679-6	1-Pair	6 ft (1.8 m)	103 991 915	Not Available
F-61679-7	1-Pair	7 ft (2.1 m)	103 991 923	Not Available
F-61679-8	1-Pair	8 ft (2.4 m)	103 991 931	Not Available
F-61679-9	1-Pair	9 ft (2.7 m)	103 991 949	104 073 614
F-61679-19	1-Pair	19 ft (5.8 m)	103 991 956	104 073 622
110P6A2B	3-Pair	2 ft (0.6 m)	Not Available	103 882 965
110P6A3B	3-Pair	3 ft (0.9 m)	Not Available	103 882 957
110P6A4B	3-Pair	4 ft (1.2 m)	Not Available	103 882 940
110P6A5B	3-Pair	5 ft (1.5 m)	Not Available	103 882 973
110P6A6B	3-Pair	6 ft (1.8 m)	Not Available	103 882 932
110P6A7B	3-Pair	7 ft (2.1 m)	Not Available	103 882 924
110P6A8B	3-Pair	8 ft (2.4 m)	Not Available	103 882 916
110P6A9B	3-Pair	9 ft (2.7 m)	Not Available	103 882 908
110P6A19B	3-Pair	19 ft (5.8 m)	Not Available	103 882 890

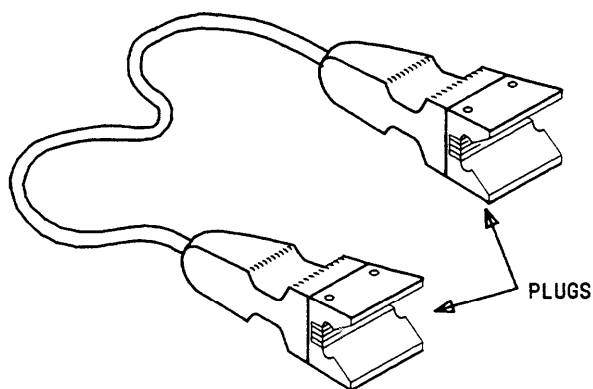


Figure 3-9. 3-Pair Patch Cord Used With 110-Type Hardware

F-61789 Power Adapter Cords

The F-61789 power adapter cord (Figure 3-10) connects an adjunct power supply to a 4-pair connecting block on a 110-type terminal block located at the cross-connect field or at a satellite closet. The power adapter cord consists of a 1-pair cable equipped with a 6-conductor modular plug that connects to the power supply. The other end is a 1-pair 110-patch cord plug that connects to the connecting block on the 110-type terminal block.

POWER ADAPTER CORD ORDERING INFORMATION

Cord	Length	Comcode (1 per package)	Comcode (10 per package)
F-61789-5	5 ft (1.5 m)	103 907 184	103 891 800
F-61789-9	9 ft (2.7 m)	103 907 192	103 891 792
F-61789-19	19 ft (5.8 m)	103 907 200	103 891 784

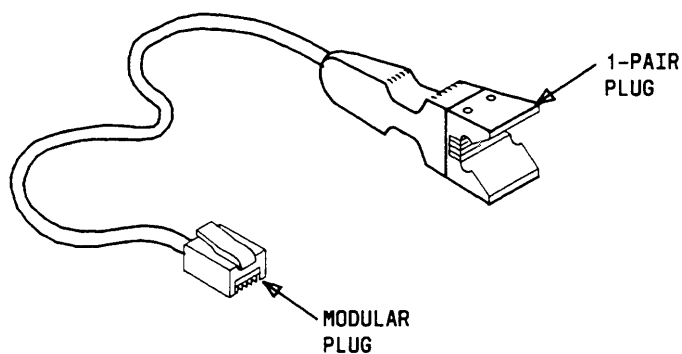


Figure 3-10. F-61789 Power Adapter Cord

Test Cords

The D Test Cord (4- or 8-foot) provides test access to one pair of wires without removing any jumpers.

D TEST CORD ORDERING INFORMATION

Cord	Length	Comcode
D Test Cord	4 ft (1.2 m)	402 023 949
D Test Cord	8 ft (2.3 m)	402 023 956

Jumpers

Jumpers of solid wire can be used for cross-connections instead of the 1- and 3-pair patch cords. The jumpers can be terminated on the connecting blocks using an impact tool.

JUMPER WIRE ORDERING INFORMATION

Jumper Wire	Description	Comcode (Order by Footage)
DT 24M-Y/BL/R/G	2-Pair	103 252 557
DT 24P-W/BRN	1-Pair	102 484 045
DT 24P-Y/BL	1-Pair	102 379 195
DT 24P-Y/G	1-Pair	103 252 565
DT 24P-Y/O	1-Pair	103 252 573
DT 24P-Y/R	1-Pair	103 252 581

Tools

The following tools are required to terminate the wire on the connecting blocks if field-terminated connecting blocks or jumpers are used:

- The D Impact Tool (AT-8762) is a single-wire termination tool
- The 788J1 Impact Tool is used to terminate five pairs of wire
- The 788 K1 Conductor Retention Tool is used to hold down cable pairs during removal of the connecting blocks.

110-TYPE TOOLS ORDERING INFORMATION

Description	Comcode
D Impact Tool	402 024 723
788J1 Impact Tool	102 648 839
788 K1 Conductor Retention Tool	102 655 495

F Clip Terminal Insulator

The F Clip Terminal Insulator (AT-8660F) is used to identify special circuits. Each insulator identifies one pair and may be located in adjacent pair positions without interference.

F CLIP TERMINAL INSULATOR ORDERING INFORMATION

Description	Comcode
F Clip Terminal Insulator	401 149 802

Designation Strips

The designation strips are made of clear plastic and snap into alternate rows of the 110-type wiring block to identify cable pairs and to conceal the cable conductors. Each designation strip can be used to identify 50-pairs of wire. The designation strips accept the standard 110-labels ordered separately. The designation strips are shipped with the no-type terminal blocks.

ASSOCIATED HARDWARE

Cable Slack Managers

General

The cable slack managers (Figure 3-11) are raised floor units 32 inches (81.3 cm) wide, 38 inches (96.5 cm) deep, and 4.5 inches (11.4 cm) high. The cable slack managers are used for cable distribution and cable slack storage between the system cabinets and the cross-connect field. They can also accommodate a limited amount of slack in station cables. Power cables from the switch and auxiliary cabinet are also run through the managers. They are recommended for use with the system (instead of overhead cable racks).

Note: Cable slack managers are not required when the switch cabinet is installed on a raised computer floor. The station cabling and the cabling from the system cabinets is routed under the computer flooring to the cross-connect field.

The managers have tabs and interlocks that allow adjacent cable slack managers to interlock together. Retainers mounted on columns inside the cable slack manager keep the cables from protruding above the top of the base. The cable slack managers are coded as housings and are available as follows.

Z113A Housing

The Z113A housing is used between the wall and equipment cabinets (Switch, Applications Processor, Auxiliary, etc.). It consists of a Z8A1 base, 2 Z814A covers, and 25 Z6A retainers.

Z114A Housing

The Z114A housing is designed to be used adjacent to the Z113A housing if no equipment cabinet exists at the position or if the cabinet(s) is positioned against the wall with the cross-connect field beside the cabinet(s). It consists of a Z8A1 base, 1 Z814A cover, 1 Z815A cover, and 25 Z6A retainers.

CABLE SLACK MANAGER ORDERING INFORMATION

Description	Comcode
Z113A Housing	103 961 322
Z114A Housing	103 961 330
Z8A1 Base	103 965 133
Z814A Cover	103 965 141
Z815A Cover	103 965 158
Z6A Retainer	103 965 166

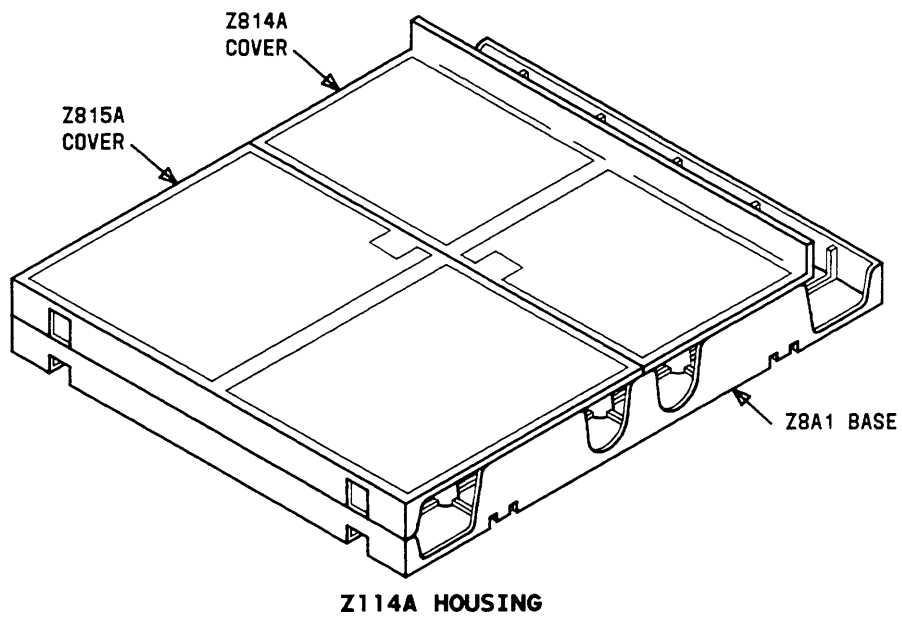
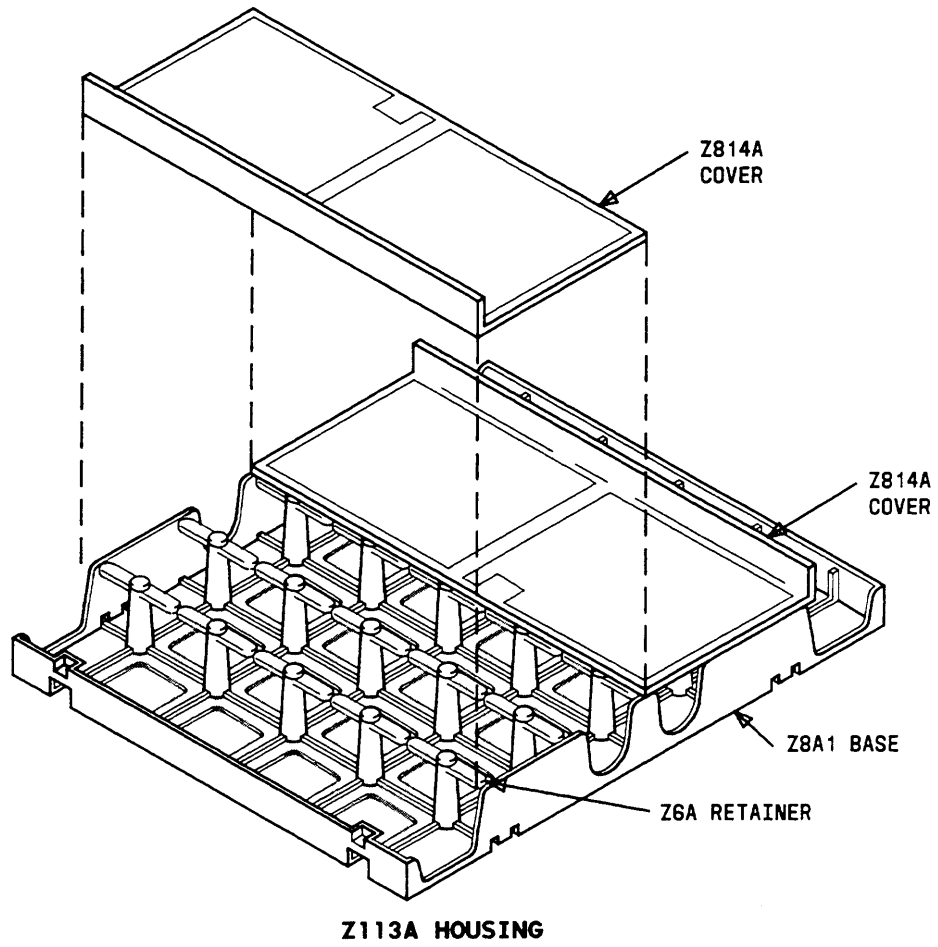


Figure 3-11. Cable Slack Managers

NETWORK INTERFACES

RJ21X Network Interface

The RJ21X network interface is the connection point between the local telephone company lines (1-pair trunks) and the system. The interface is supplied and installed by the local telephone company.

RJ2GX Network Interface

The RJ2GX network interface is the connection point between the local telephone company tie-trunk and the system three-pair tie-trunks. The interface is supplied and installed by the local telephone company.

1.544 Mbps Digital Service Interfaces

The 1.544 Mbps (Megabits per second) digital service interfaces are the connection points between the local telephone company T1 carrier lines and the system DS1 tie trunks. The interfaces are supplied and installed by the local telephone company.

SNEAK FUSE PANELS

575-4 Sneak Current Fuse Assembly

Sneak current protection is required between the RJ21X or RJ2GX network interface and the switch. The Model 575-4 Sneak Current Fuse Assembly (Figure 3-12), or equivalent, is recommended for sneak current protection. The panel is connectorized in and out and equipped with 25 two-pair fuses modules. Connectorized (B25A) cables connect the network interface to the sneak fuse panel. 157B Connecting Blocks equipped with SCP-1 Protectors may also be used for sneak current protection.

SNEAK FUSE PANEL ORDERING INFORMATION

Description	Comcode
157B Connecting Block	403 613 003
Protector, SCP-1*	403 617 632
575-4 Sneak Fuse Current Assembly	xxxxxx
Fuse Module—25A	xxxxxx

* The SCP-1 Protectors must be ordered separately and installed on the 157B Connecting Block. Twenty-four protectors are required per block.

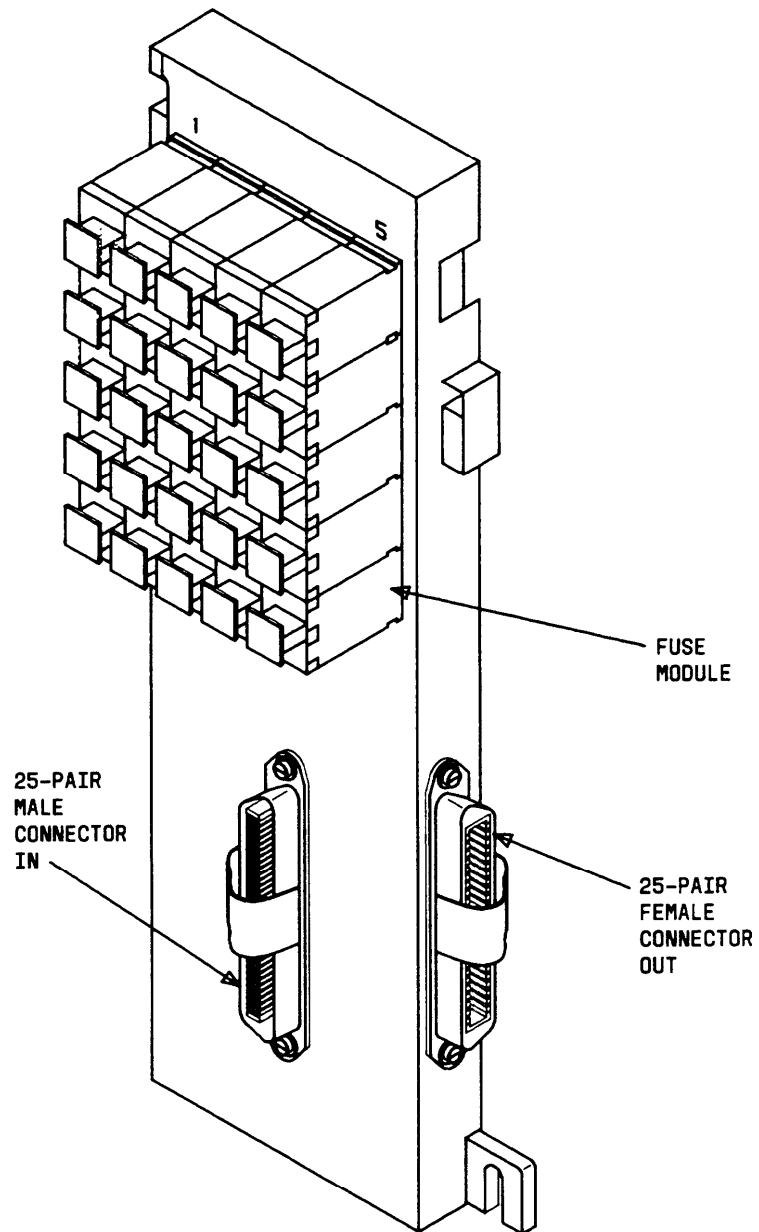


Figure 3-12. Model 575-4 Sneak Fuse Panel

EMERGENCY TRANSFER UNITS

The emergency transfer units used with the 110-type hardware are the Z1A emergency transfer unit and the 574-5 power transfer unit. The units mount on the plywood backboard to the left of the Trunk/Auxiliary Field.

Z1A Emergency Transfer Unit

The Z1A unit provides emergency transfer connections for six analog voice terminals to six trunks. If the central office trunks require ground start, a ground start key must be installed on each emergency transfer voice terminal.

574-5 Power Transfer Unit

The 574-5 unit provides emergency transfer connections for five analog voice terminals to five trunks. This unit provides automatic ground start.

TRUNK CONCENTRATOR CABLES

Trunk concentrator cables are used for the following purposes:

- Match 1-pair local telephone company trunks to 3-pair circuits that connect to the switch.
- Match 1-pair local telephone company trunks provided for off-premises lines to 3-pair circuits that connect to the cross-connect field.
- Split eight 3-pair analog tie trunks into two groups of four 3-pair tie trunks that connect to the switch

The trunk concentrator cables are 25 feet (7.6 m) in length. They are coded as cable assemblies and are available as described below.

WP-90929, List 1, Cable Assembly

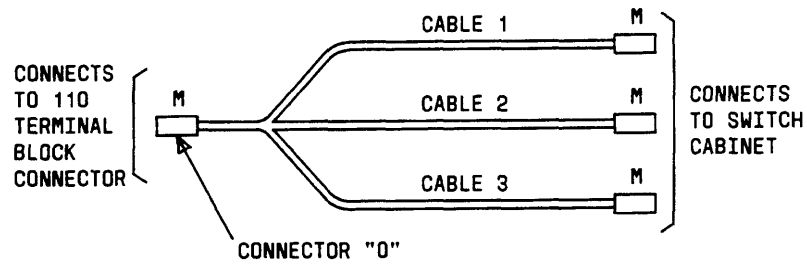
The WP-90929, List 1, Cable Assembly (Figure 3-13 and Table 3-B) is used to connect local telephone company trunks to the system switch. It is also used to connect off-premises analog trunks from the port field to the trunk field in the equipment room cross-connect field. All ribbon connectors on the cable assembly are male connectors. Each cable assembly can match twenty-four 1-pair trunk circuits to twenty-four 3-pair trunk circuits.

WP-90929, List 3, Cable Assembly

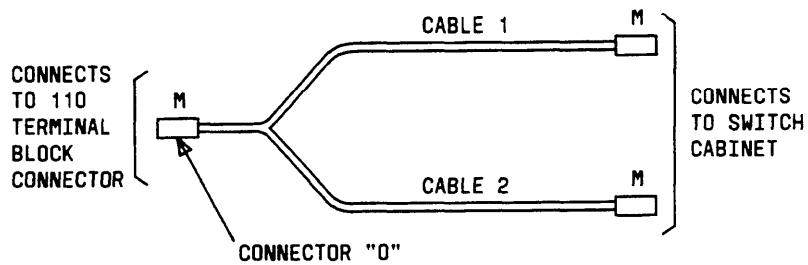
The WP-90929, List 3, Cable Assembly (Figure 3-13 and Table 3-C) is used to connect tie-trunk circuits to the system switch. All ribbon connectors on the cable assembly are male connectors. Each cable assembly can match eight 3-pair tie-trunk circuits to two groups of four 3-pair tie-trunk circuits.

TRUNK CONCENTRATOR CABLE ORDERING INFORMATION

Description	Comcode
WP-90929, List 1, Cable Assembly	405 064 999
WP-90929, List 3, Cable Assembly	405 075 482



LIST 1 CABLE



LIST 3 CABLE

LEGEND:

M = 25-PAIR MALE CONNECTOR
 F = 25-PAIR FEMALE CONNECTOR

Figure 3-13. Trunk Concentrator Cables (WP-90929, Lists 1 and 3, Cable Assemblies)

TABLE 3-B. WP-90929, List 1, Cable Assembly Wiring

Conn. 0 Pin No.	Cable No. 1	Cable No. 2	Cable No. 3	Conn. 0 Pin Numbers	Cable No. 1	Cable No. 2	Cable No. 3
26	W-BL	-	-	1	BL-W	-	-
27	W-BR	-	-	2	BR-W	-	-
28	R-O	-	-	3	O-R	-	-
29	R-S	-	-	4	S-R	-	-
30	BK-G	-	-	5	G-BK	-	-
31	Y-BL	-	-	6	BL-Y	-	-
32	Y-BR	-	-	7	BR-Y	-	-
33	V-O	-	-	8	O-V	-	-
34	-	W-BL	-	9	-	BL-W	-
35	-	W-BR	-	10	-	BR-W	-
36	-	R-O	-	11	-	O-R	-
37	-	R-S	-	12	-	S-R	-
38	-	BK-G	-	13	-	G-BK	-
39	-	Y-BL	-	14	-	BL-Y	-
40	-	Y-BR	-	15	-	BR-Y	-
41	-	V-O	-	16	-	O-V	-
42	-	-	W-BL	17	-	-	BL-W
43	-	-	W-BR	18	-	-	BR-W
44	-	-	R-O	19	-	-	O-R
45	-	-	R-S	20	-	-	S-R
46	-	-	BK-G	21	-	-	G-BK
47	-	-	Y-BL	22	-	-	BL-Y
48	-	-	Y-BR	23	-	-	BR-Y
49	-	-	V-O	24	-	-	O-V
50	V-S	-	-	25	S-V	-	-

TABLE 3-C. WP-90929, List 3, Cable Assembly Wiring

Conn. 0 Pin No.	Cable No. 1	Cable No. 2	Conn. 0 Pin No.	Cable No. 1	Cable No. 2
26	W-BL	-	1	BL-W	-
27	W-O	-	2	O-W	-
28	W-G	-	3	G-W	-
29	W-BR	-	4	BR-W	-
30	W-S	-	5	S-W	-
31	R-BL	-	6	BL-R	-
32	R-O	-	7	O-R	-
33	R-G	-	8	G-R	-
34	R-BR	-	9	BR-R	-
35	R-S	-	10	S-R	-
36	BK-BL	-	11	BL-BK	-
37	BK-O	-	12	O-BK	-
38	-	W-BL	13	-	BL-W
39	-	W-O	14	-	O-W
40	-	W-G	15	-	G-W
41	-	W-BR	16	-	BR-W
42	-	W-S	17	-	S-W
43	-	R-BL	18	-	BL-R
44	-	R-O	19	-	O-R
45	-	R-G	20	-	G-R
46	-	R-BR	21	-	BR-R
47	-	R-S	22	-	S-R
48	-	BK-BL	23	-	BL-BK
49	-	BK-O	24	-	O-BK
50	V-S	-	25	S-V	-

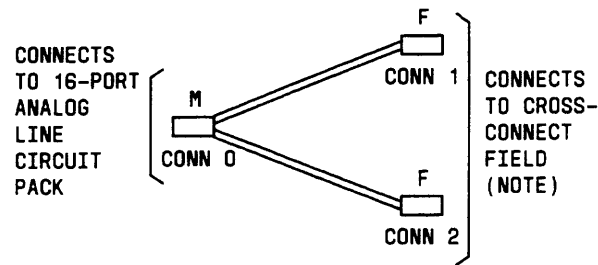
16-PORT ANALOG LINE BOARD ADAPTER CABLE

The 16-port analog line circuit pack (TN746) has an output of sixteen 1-pair circuits that appear on a 25-pair connector at the switch. The 16-port analog line adapter cable (Figure 3-14) separates the 1-pair circuits into 3-pair circuits that appear on two 25-pair connectors at one end of the cable.

The adapter cable is 8 feet (2.4 m) long and can be ordered with the TN746 circuit pack. The adapter cable is apparatus-coded as an adapter and can also be ordered below. This cable should only be used with 110P-type hardware. Punch-down cross-connections using 110A-type hardware allows direct access of the 16 ports via a single 25-pair cable. See Table 3-K for lead assignments.

**16-PORT ANALOG LINE
ADAPTER CABLE ORDERING INFORMATION**

Description	Comcode
853B Adapter	104 305 834

**LEGEND:****M = 25-PAIR MALE CONNECTOR****F = 25-PAIR FEMALE CONNECTOR**

NOTE: AN A25D CABLE MUST BE USED BETWEEN THE ADAPTER CABLE AND THE 110-TYPE TERMINAL BLOCK.

Figure 3-14. 16-Port Analog Line Board Adapter Cable (853B Adapter)

4-PORT MET LINE BOARD CONCENTRATOR CABLE

The MET line circuit pack (TN735) has an output of four 3-pair circuits that appear on a 25-pair connector at the switch. The WP-90929, List 3 Cable Assembly (Comcode 405 075 482) described previously and shown in Figure 3-13 combines the MET line circuits that appear on two 25-pair connectors onto one 25-pair connector that connects to the cross-connect field.

ADJUNCT POWER UNITS

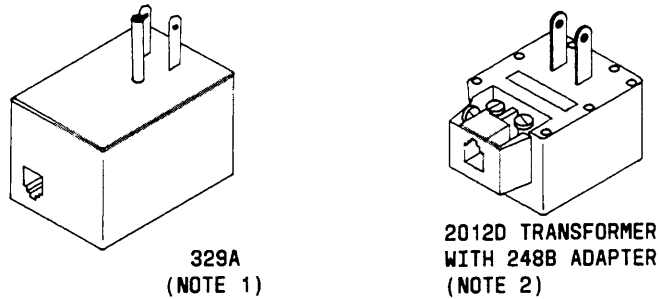
There are two types of power supplies used for adjunct powering—individual and bulk. The power supplies are specified by the Field Services Organization (FSO) for firm quote price lists. For all other quotes, the power supplies are specified by the Premises Services Consultant (PSC).

Individual Power Supplies

Individual power supplies (Figure 3-15) can be used for powering from the equipment room, site or satellite locations, or information outlets. An individual power supply can power only one voice terminal. Table 3-D contains the individual power supply limitations for distance, wire gauge, and adjuncts.

When a number of individual power supplies are used at the equipment room or at a site or satellite location, an ac power strip (Figure 3-16) is installed to accommodate the various sized power supplies. The outlets on the ac power strip must be spaced 3.5 inches (8.89 cm) to 4 inches (10.16 cm) apart with the plug inserts perpendicular to the strip.

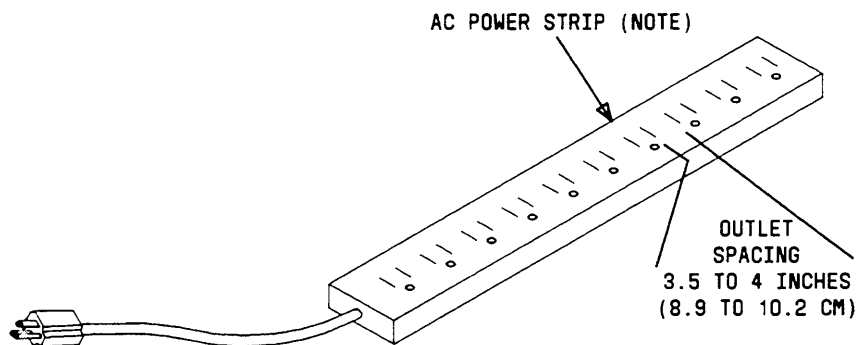
Note: A 543A power unit (Comcode 104 034 541) may be required for inrush protection for a 20-amp 120-volt ac line serving multiple 329A Power Units. Contact your PSC for details. Most multiple powering requirements should be served by the 346 modular bulk power supply.



NOTES:

1. THE 329A AND THE KS-22911, L1 ARE SIMILAR IN APPEARANCE.
2. THE 2012D TRANSFORMER AND 248B TRANSFORMER MUST BE ORDERED SEPARATELY AND FIELD ASSEMBLED AS SHOWN.

Figure 3-15. Individual Power Supplies



NOTE: THIS AC POWER STRIP MUST BE LOCALLY PROVIDED.

Figure 3-16. AC Power Strip

TABLE 3-D. Individual Power Supply Adjunct and Distance Limitations

Power Unit	Adjunct Limits	Wire Gauge	Distance Feet (Meters)
2012D Transformer (18-volt ac) With 248B Adapter	One speakerphone or headset only	24	150 (45.7)
KS-22911, L1 Power Supply (48-volt dc)	One digital module plus speakerphone or headset	24	300 (91.4)
329A Power Supply (-48 volt dc)	One digital module plus speakerphone or headset	24	500 (152.4)
	Two digital modules plus speakerphone or headset	24	350 (106.7)
	Three digital modules plus speakerphone or headset	24	250 (76.2)

INDIVIDUAL POWER SUPPLY ORDERING INFORMATION

Description	Comcode
2012D Transformer	102 600 517
248B Adapter	102 802 103
KS-22911, L1 Power Unit	403 242 639
329A Power Unit	103 873 998

Bulk Power Supply**346 Modular Bulk Power Supply**

The 346 modular bulk power supply consists of a 346A1 power panel and up to three 346A power units (see Figure 3-17). The panel has three 2-ampere resettable circuit breakers one for each 346A power unit (see Figure 3-18). Power panels are used with one, two, or three power units connected.

A standard 5-foot (1.52-m) double-ended (male, female) power cord connects the 346A1 power panel to an ac outlet. Service to the ac outlet must be a dedicated (nonswitched) 20-ampere line. A maximum of four power panels can be connected to the 20-ampere line.

Note: The city of Chicago and Cook County Illinois electrical codes require the use of a fused ac power cord POP-6/217 manufactured by JDS Products and a metallic 346B1 power panel.

Each 346A power unit provides four power jacks. A slide switch is located between the top two and bottom two jacks. When the slide switch is in the down position, 10 watts of power is provided at the jacks above and below the switch.

When the slide switch is in the up position, the power from the jack above the switch and below the switch are combined. This provides 20 watts of power at the jack above the switch. The jack below the switch will have no power.

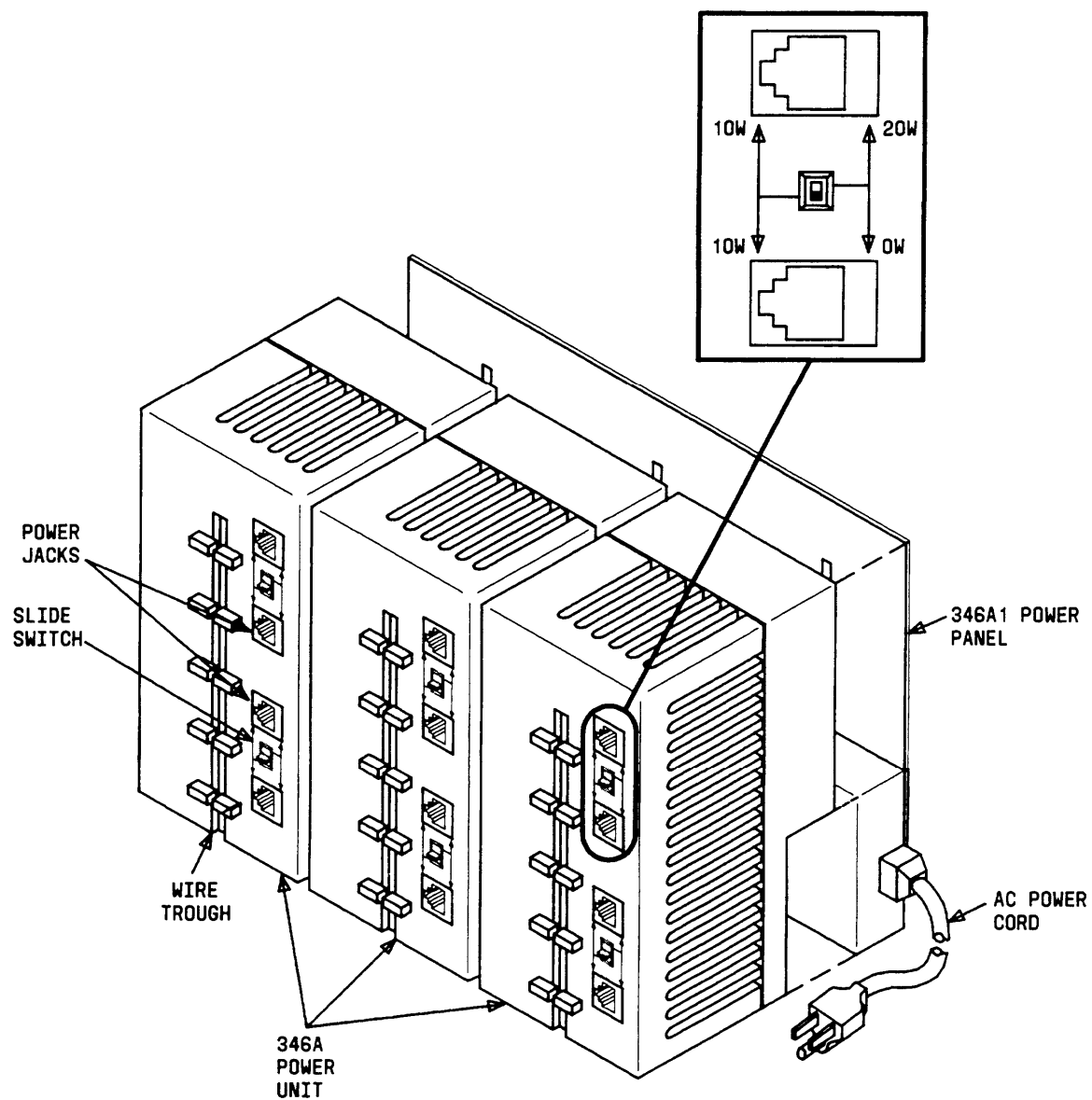


Figure 3-17. 346 Modular Bulk Power Supply

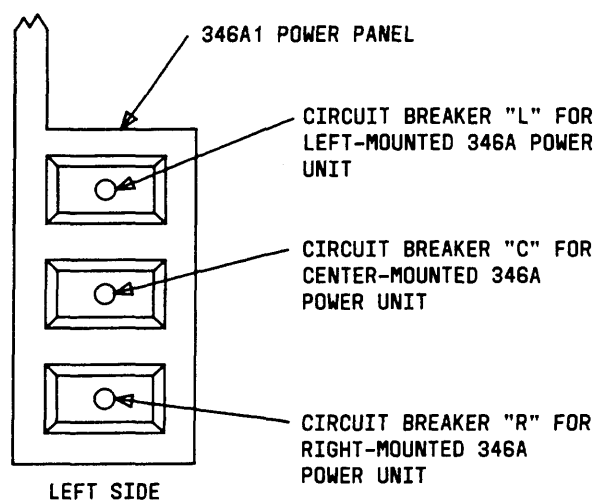


Figure 3-18. 346A1 Power Panel Circuit Breaker Locations

Table 3-E lists adjunct powering limitations for each individual 346A Power Unit.

TABLE 3-E. 346A Power Unit Adjunct and Distance Limitations

Slide Switch Position	Adjuncts Powered (Maximum Per Unit)	Wire Gauge	Distance Feet (Meters)
Down (10 w)	Any four terminals equipped with one speakerphone or one headset	24	260 (79.2)
	Any four digital voice terminals equipped with one digital adjunct and a speakerphone or headset each		
Up (20 w)	Any two digital voice terminals equipped with up to three digital modules and a speakerphone or headset each		

BULK POWER SUPPLY ORDERING INFORMATION

Description	Comcode
346A Power Unit	104 174 768
346A1 Power Panel	104 174 750
346B1 Power Panel	104 174 768

EQUIPMENT ROOM DESIGN

The *AT&T System 75—System Description* (555-200-100) or *AT&T System 75 XE—System Description* (555-201-200) provides equipment room specifications for temperature, humidity, air purity, lighting levels, and grounding. They also provide information on the floor and wall space required for the system equipment and associated peripheral equipment installed in the equipment room. For completeness, some of the information contained in these documents is repeated in this guide.

110-Type Hardware Equipment Room Applications

In the equipment room, the 110-type hardware is used for the cross-connect field which consists of a Trunk/Auxiliary Field and a Distribution Field (port, auxiliary, and station).

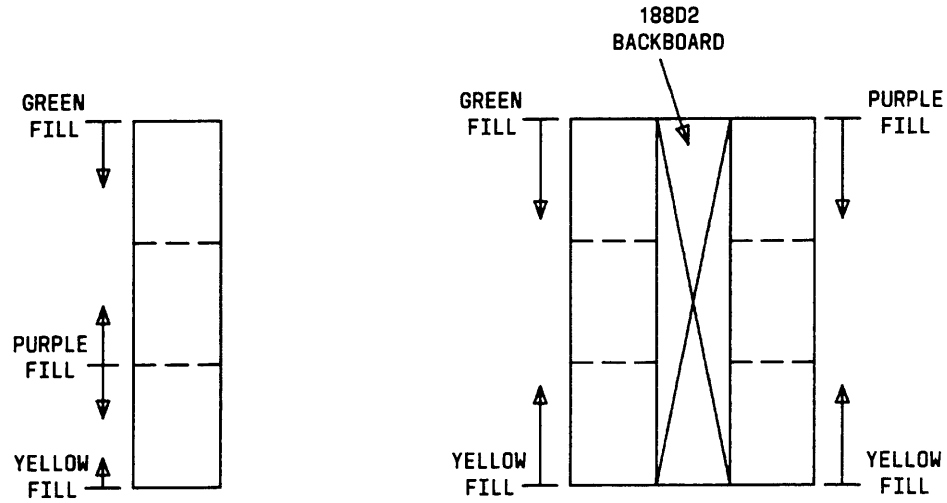
Trunk/Auxiliary Field

The Trunk/Auxiliary Field contains three distinct cross-connect areas:

- The green field receives the network interface leads through 25-pair cables and cross-connects those leads to the purple or yellow fields. A single row of the 110-type hardware can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks.
- The purple field connects to the switch via WP-90929, List 1 or 3 concentrator cables. Each 110 terminal block row can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks. The purple field can also connect to the switch via 25-pair cables with each trunk circuit pack connecting to one 25-pair row of the 110 terminal block.
- The yellow field connects all miscellaneous leads from the switch such as alarm monitors, emergency transfer relay power, attendant console power, and INADS (Initialization and Administration System) trunk. This field is also used for emergency transfer wiring, AP (Applications Processor) alarms, paging equipment, music sources, etc.

Figure 3-19 shows 300-pair terminal block arrangements for the system Trunk/Auxiliary Field. A one 300-pair terminal block arrangement provides for a capacity of 96 three-pair circuits and a two 300-pair terminal block arrangement provides for a capacity of 192 three-pair circuits.

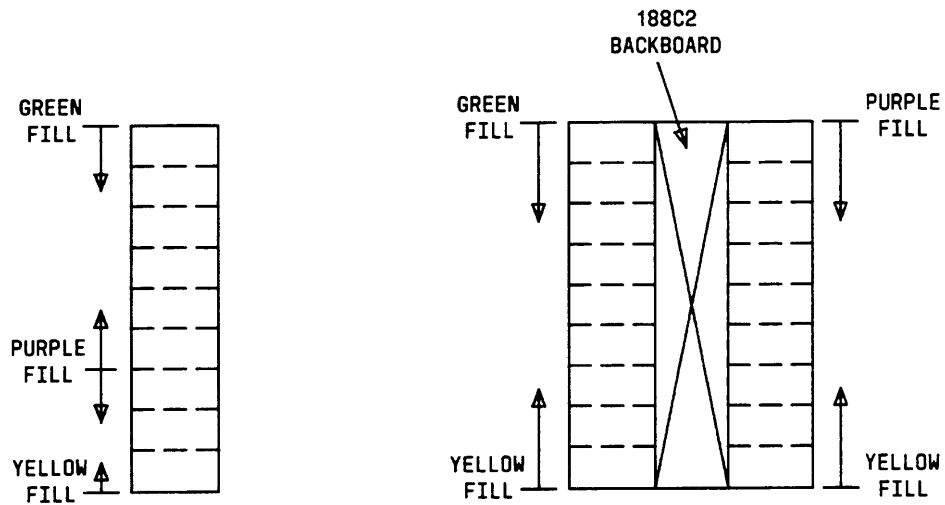
Figure 3-20 shows 900-pair terminal block arrangements for the Trunk/Auxiliary Field. A one 900-pair terminal block arrangement provides for a capacity of 288 three-pair circuits and a two 900-pair terminal block arrangement provides for a capacity of 576 three-pair circuits.



CAPACITY = 96 3-PAIR CIRCUITS

CAPACITY = 192 3-PAIR CIRCUITS

Figure 3-19. 300-Pair Trunk/Auxiliary Field Arrangements



CAPACITY = 288 3-PAIR CIRCUITS

CAPACITY = 576 3-PAIR CIRCUITS

Figure 3-20. 900-Pair Trunk/Auxiliary Field Arrangements

The 110A-type terminal blocks that can be used for the Trunk/Auxiliary Field are the 110AC1-300STM/6 which has male connectors that exit the top of the terminal block and the 110AC1-300STF/6 which has female connectors that exit the top of the terminal block.

The 300-pair 110P-type terminal block that can be used for the Trunk/Auxiliary Field is the 110PC1-300CT which has connectors that exit the top of the terminal block.

The recommended 900-pair 110P-type terminal block for the Trunk/Auxiliary Field is the 110PC1-900CB because the connectors exit the terminal block at the bottom which allows for easy cable routing to the floor and the recommended use of cable slack managers with the system. The 110PC1-900CT Terminal Block which has connectors that exit the top of the terminal block can be used for the Trunk/Auxiliary Field if cable routing from the top is desirable.

Distribution Field

The Distribution Field contains four distinct cross-connect areas:

- The purple field (port field) connects to the switch via 25-pair cables. Each line circuit pack connects to one 25-pair row of the 110-type terminal block. One 25-pair cable is required for each line circuit pack (see Note).

Note: This is the case except for the 16 port analog line board and the MET line board. The 16-port analog line board connects to two 25-pair rows of the 110-type terminal block and two MET line boards connect to one 25-pair row of the 110-type terminal block. Both boards require use of an adapter or concentrator cable.

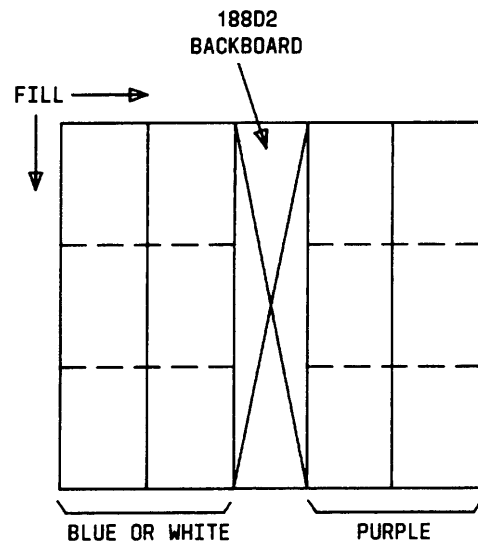
- The yellow field (auxiliary field) connects all 25-pair cables from the auxiliary cabinet and the AP, when either is used. The yellow field is usually small and is located at the lower right-hand corner of the purple field.
- The white field (station field) connects to the station wiring. The white field indicates 3-pair station circuits (eight circuits per 25-pair cable) which are routed through a satellite closet.
- The blue field (station field) indicates 3- and/or 4-pair station circuits (eight or six circuits, respectively, per 25-pair cable). The fourth pair, of the 4-pair station circuit, is used to supply adjunct power from the cross-connect field on an as-needed basis to terminals within 250 wire feet length of the cross-connect field.

Figure 3-21 shows a 300-pair terminal block arrangement for the system Distribution Field with a capacity of 192 three-pair port circuits (purple field) and either 192 three-pair station circuits (white or blue field) or 144 four-pair station circuits (blue field).

Figure 3-22 shows a 300-pair terminal block arrangement for the system Distribution Field with a capacity of 384 three-pair port circuits (purple field) and either 384 three-pair station circuits (white or blue field) or 288 four-pair station circuits (blue field).

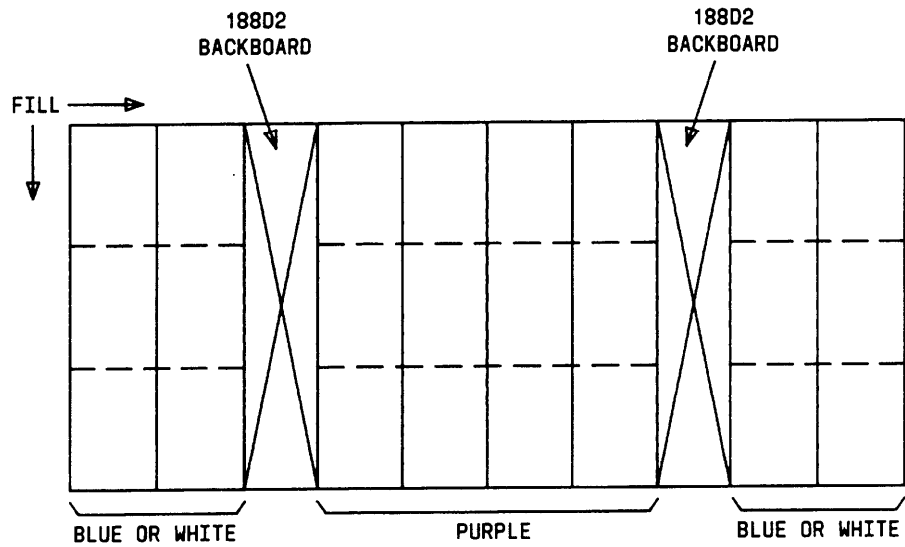
Figure 3-23 shows a 900-pair terminal block arrangement for the system Distribution Field with a capacity of 576 three-pair port circuits (purple field) and either 576 three-pair station circuits (white or blue field) or 432 four-pair station circuits (blue field).

Figure 3-24 shows a 900-pair terminal block arrangement for the system Distribution Field with a capacity of 1152 three-pair port circuits (purple field) and either 1152 three-pair station circuits (white or blue field) or 864 four-pair station circuits (blue field).



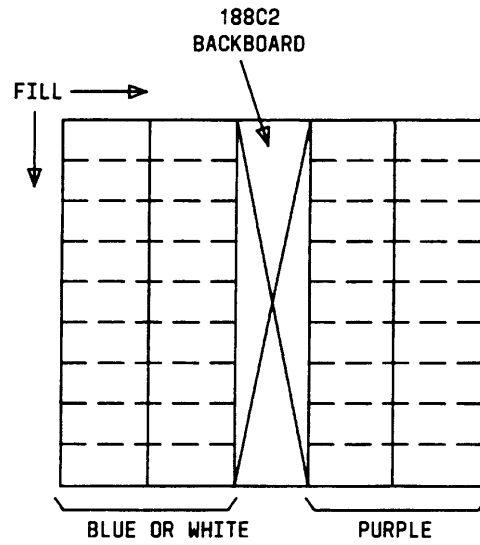
CAPACITY WHITE FIELD = 192 3-PAIR CIRCUITS
 CAPACITY BLUE FIELD = 144 4-PAIR CIRCUITS
 OR 192 3-PAIR CIRCUITS
 CAPACITY PURPLE FIELD = 192 3-PAIR CIRCUITS

Figure 3-21. Distribution Field Arrangement—Four 300-Pair Terminal Blocks



CAPACITY WHITE FIELD = 384 3-PAIR CIRCUITS
CAPACITY BLUE FIELD = 288 4-PAIR CIRCUITS OR
384 3-PAIR CIRCUITS
CAPACITY PURPLE FIELD = 384 3-PAIR CIRCUITS

Figure 3-22. Distribution Field Arrangement—Eight 300-Pair Terminal Blocks



CAPACITY WHITE FIELD = 576 3-PAIR CIRCUITS
 CAPACITY BLUE FIELD = 432 4-PAIR CIRCUITS OR
 576 3-PAIR CIRCUITS
 CAPACITY PURPLE FIELD = 576 3-PAIR CIRCUITS

Figure 3-23. Distribution Field Arrangement—Four 900-Pair Terminal Blocks

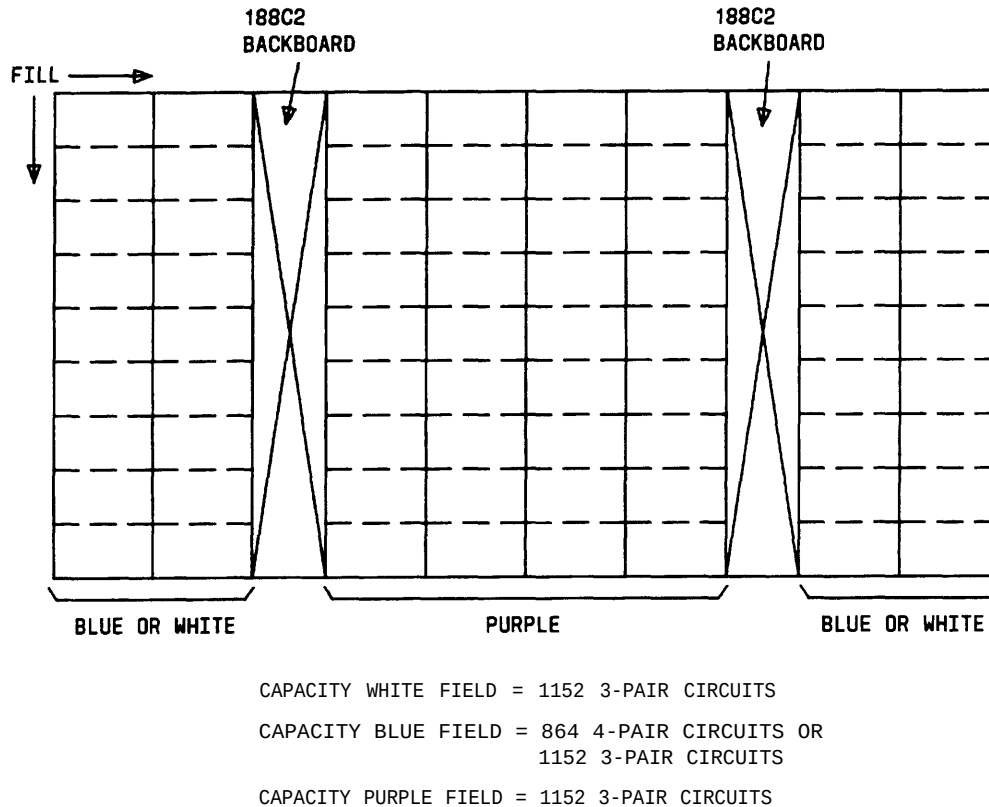


Figure 3-24. Distribution Field Arrangement—Eight 900-Pair Terminal Blocks

The 110A-type terminal blocks that can be used for the purple field are the 110AC1-300STM/6 which has male connectors that exit the top of the terminal block and the 110AC1-300STF/6 which has female connectors that exit the top of the terminal block. The types of terminal blocks that can be used for the Distribution Field are shown in Table 3-F.

TABLE 3-F. Distribution Field—110A-Type Terminal Blocks

3-Pair Port Field (Purple)	4-Pair Station Field (Blue)	3-Pair Station Field (Blue or White)
110AC1-300STM/6	110AB1-100FT	110AC1-100FT
110AC1-300STF/6	110AB1-300FT	110AC1-300FT
		110AC1-300STM/6
		110AC1-300STF/6

The 300-pair 110P-type terminal block that can be used for the purple field is the 110PC1-300CT which has connectors that exit the top of the terminal block. The types of terminal blocks that can be used for the Distribution Field are shown in Table 3-G.

TABLE 3-G. Distribution Field—300-Pair 110P-Type Terminal Blocks

3-Pair Port Field (Purple)	4-Pair Station Field (Blue)	3-Pair Station Field (Blue or White)
110PC1-300CT	110PB1-300CT	110PC1-300CT
	110PB1-300FT	110PC1-300FT

The recommended 900-pair 110P-type terminal block for the purple field is the 110PC1-900CB because the connectors exit the terminal block at the bottom which allows for easy cable routing to the floor and the recommended use of cable slack managers with system. The 110PC1-900CT Terminal Block which has connectors that exit the top of the terminal block can be used for the purple field if cable routing from the top is desirable. The types of terminal blocks that can be used for the Distribution Field are shown in Table 3-H.

TABLE 3-H. Distribution Field—900-Pair 110P-Type Terminal Blocks

3-Pair Port Field (Purple)	4-Pair Station Field (Blue)	3-Pair Station Field (Blue or White)
110PC1-900CB	110PB1-900CB	110PC1-900CB
110PC1-900CT	110PB1-900CT	110PC1-900CT
	110PB1-900FT	110PC1-900FT

Typical System Equipment Room Floor Plans

General

The equipment room floor plan must be provided by the Field Services Organization (FSO) for firm quote price lists. For all other quotes, the equipment room floor plans must be provided by the Premises Services Consultant (PSC). Factors that influence the design are as follows:

- Size and layout of the equipment room
- Number of equipment cabinets
- AC outlet locations
- Size of the system.

Typical Floor Plans

Figure 3-25 shows a typical cross-connect field installation using 110A-type terminal blocks. Figure 3-26 shows a typical cross-connect field installation using 300-pair 110P-type terminal blocks and Figure 3-27 shows a typical cross-connect field using 900-pair 110P-type terminal blocks. The cross-connect field is located directly behind the switch cabinet. This is the preferred cross-connect field location.

Figure 3-28 is a typical floor plan for a 5-carrier System 75 cabinet or a 3- or 4-cabinet System 75 XE. The maximum capacity for a 5-carrier cabinet is 800 stations.

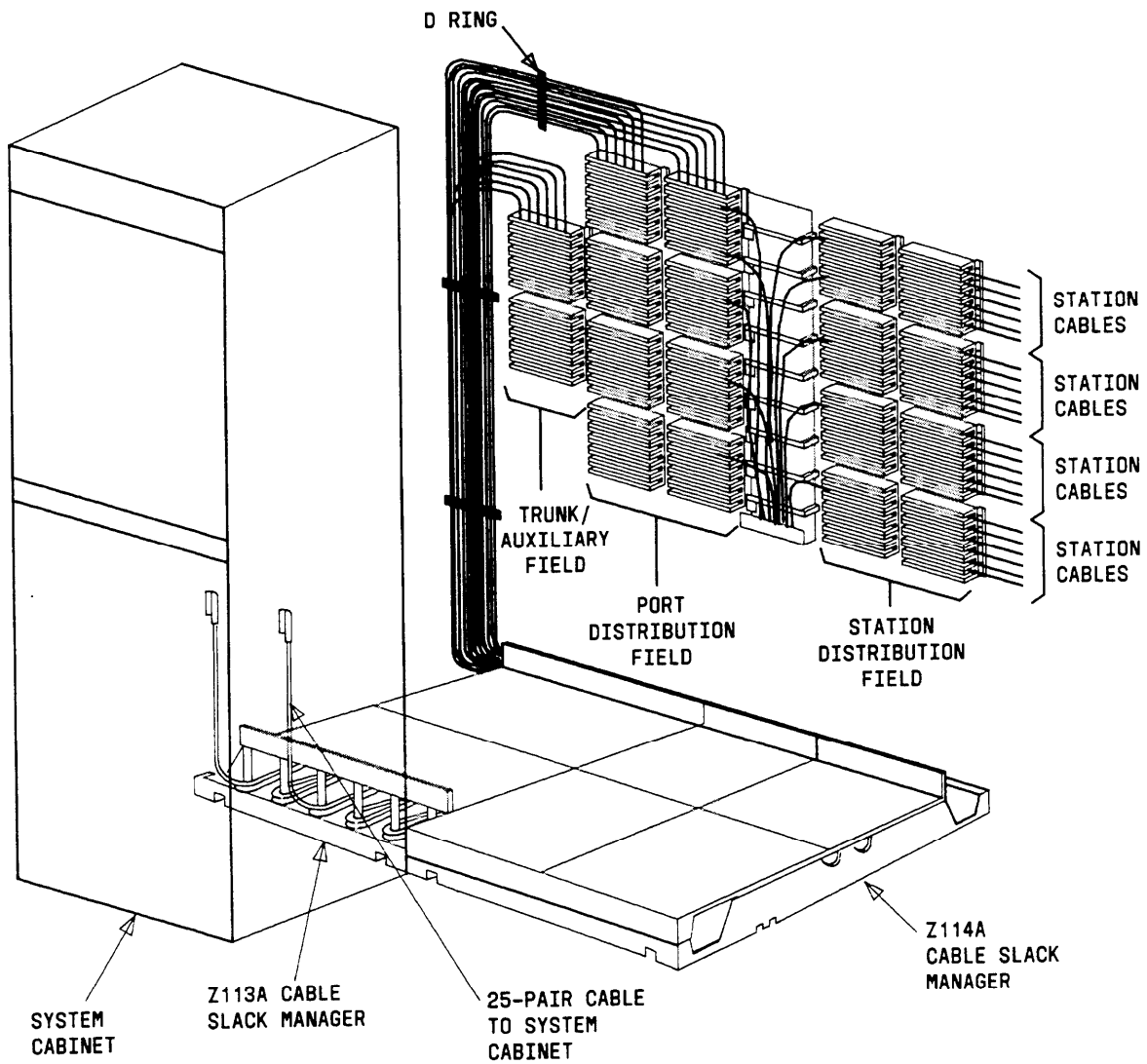


Figure 3-25. Typical Cross-Connect Field Installation—110A-Type Terminal Blocks (Approximately 576 4-Pair or 768 3-Pair Station Capacity Illustrated)

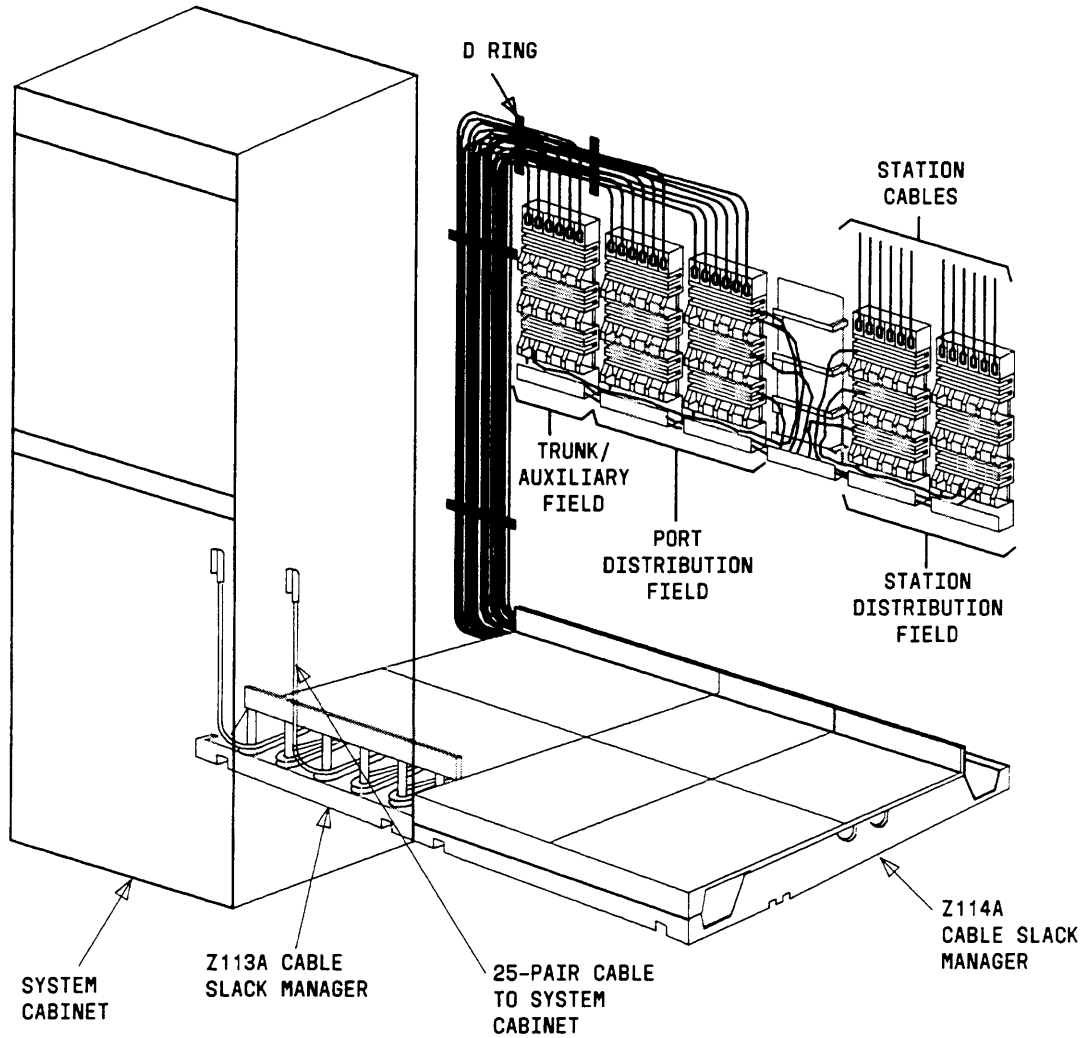


Figure 3-26. Typical Cross-Connect Field Installation—300-Pair 110P-Type Terminal Blocks (Approximately 288 4-Pair or 384 3-Pair Station Capacity Illustrated)

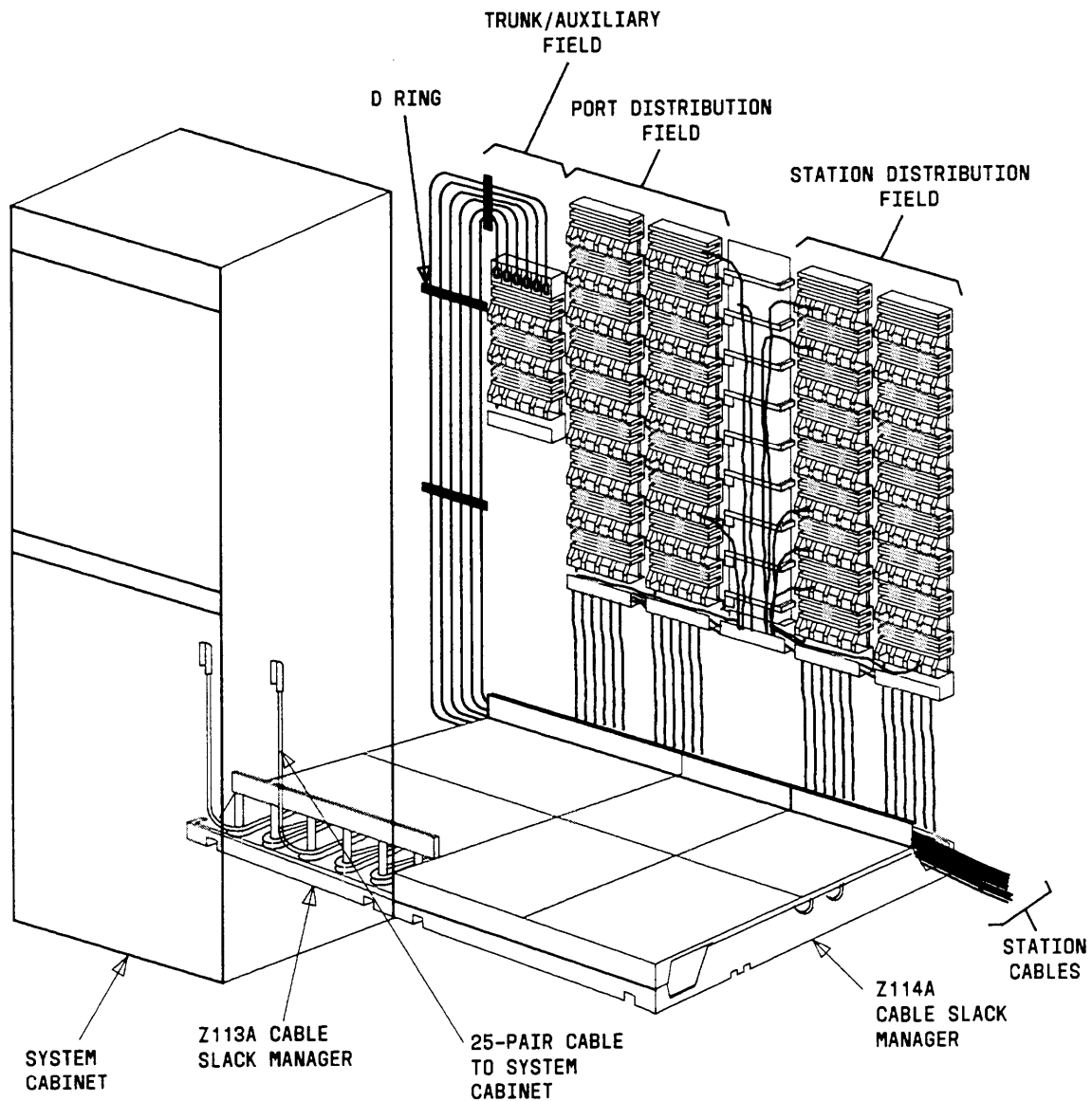
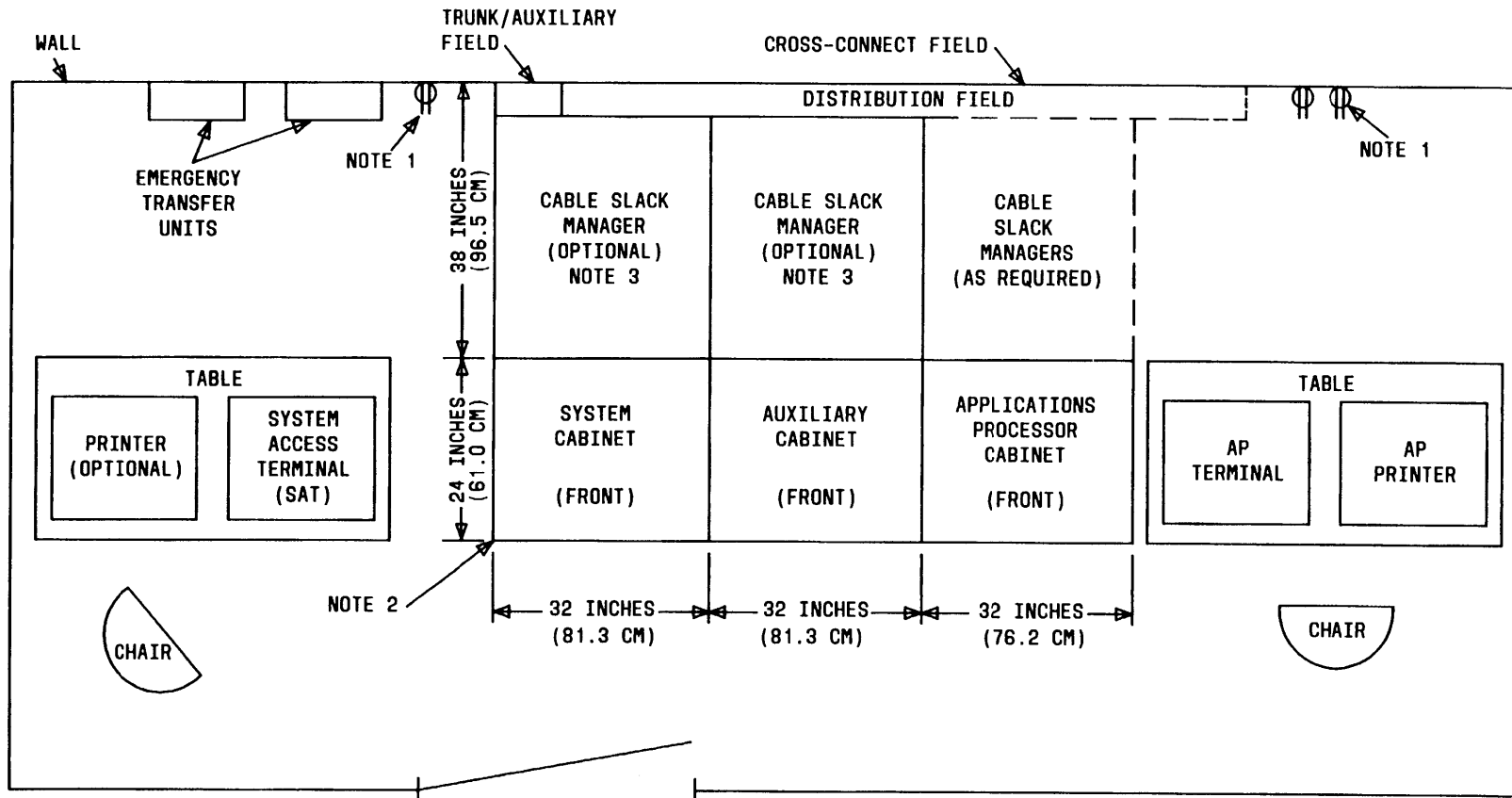


Figure 3-27. Typical Cross-Connect Field Installation—900-Pair 110P-Type Terminal Blocks (Approximately 432 4-Pair or 576 3-Pair Station Capacity Illustrated)



NOTES:

1. THE POWER OUTLETS MUST NOT BE UNDER SWITCH CONTROL AND MUST NOT BE SHARED WITH OTHER EQUIPMENT. THE POWER OUTLETS SHOULD BE LOCATED OUTSIDE THE CROSS-CONNECT FIELD AREA. ALSO, ANY CONDUIT SERVING THE OUTLETS CANNOT RUN THROUGH OR BELOW THE AREA WHERE THE CONNECTOR MODULES ARE TO BE MOUNTED.
2. ALLOW AT LEAST 36 INCHES (91.4 CM) OF SPACE IN FRONT AND 6 INCHES (15.4 CM) ON THE RIGHT OF THE CABINET TO PERMIT THE DOOR TO SWING OPEN.
3. CABINETS ARE LOCATED ALONGSIDE THE CROSS-CONNECT FIELD WHEN CABLE SLACK MANAGERS ARE NOT USED.

Figure 3-28. Typical Floor Plan

Wall Space Requirements

The Trunk/Auxiliary Field and the Distribution Field are mounted on the same wall. Each 110P-type terminal block is approximately 8-1/2 inches (21.6 cm) wide. The vertical patch cord troughs are approximately 5-5/16 inches (13.5 cm) wide each and the horizontal patch cord troughs are approximately 23 (58.4 cm) inches wide.

If 110A-type hardware is used, each terminal block is approximately 10-13/16 inches (27.4 cm) wide; however, no horizontal patch cord troughs are used and the blocks are shorter which allows them to be stacked. Therefore, the 110A-type hardware requires less space on a per-station basis.

Approximately 8 (20.3 cm) inches of horizontal wall space is required for each column of sneak fuse panels. Horizontal wall space must also be provided for emergency transfer units.

Equipment Requirements

Cable Slack Manager Requirements

Each cable slack manager is approximately 32 inches (81.3 cm) wide. The number of cable slack managers needed for the system can be found by dividing the total length of the cross-connect field in inches by 32. Any partial numbers of .4 or less should be rounded down to the whole number and any partial numbers of .5 or more should be rounded up to the next whole number (for example: 2.4 = 2 cable slack managers and 2.5 = 3 cable slack managers required).

110-Type Hardware and Patch Cord Requirements

Table 3-I lists the requirements for the 110-type hardware according to system size to provide 1-, 2-, 3-, or 4-pair distribution to the station wiring. The 110 terminal blocks are available in various sizes and the number of stations that can be connected to each block depends on the number of pairs that are run per station.

TABLE 3-I. 110-Type Hardware Requirements

Available Block Pairs	Station Wiring			
	1-Pair Wiring*	2-Pair Wiring*	3-Pair Wiring	4-Pair Wiring
75	75	36	24	18
100	100	48	32	24
300	300	144	96	72
900	900	432	288	216

* 1- and 2-pair wiring is only possible for analog type sets that are cross-connected using 110A-type hardware.

Table 3-J shows an algorithm that provides approximate patch cord requirements based on system line size.

TABLE 3-J. 110 Patch Cord Requirements

Line Size	Patch Cord Length	Percent of Line Size Required
0-216	2 Feet	10.0%
	3 Feet	16.5%
	4 Feet	29.3%
	5 Feet	26.0%
	6 Feet	18.2%
	7 Feet	0%
	8 Feet	0%
	9 Feet	0%
216-648	2 Feet	5.5%
	3 Feet	15.5%
	4 Feet	29.3%
	5 Feet	27.0%
	6 Feet	15.9%
	7 Feet	6.8%
	8 Feet	0%
	9 Feet	0%
648-800	2 Feet	3.0%
	3 Feet	10.3%
	4 Feet	22.1%
	5 Feet	25.7%
	6 Feet	22.5%
	7 Feet	8.5%
	8 Feet	5.7%
	9 Feet	2.2%

EQUIPMENT ROOM HARDWARE AND CABLING INSTALLATION

Hardware Installation

The procedures provided in this guide for installing hardware are written so that one system technician can do the installation. Procedures are provided for installing the following:

- Cross-Connect Field
 - Wall Mounting 110A-Type Terminal Blocks
 - Wall Mounting 110P-Type Terminal Blocks
 - Frame Mounting 110P-Type Terminal Blocks
- Cable Slack Managers

- Labels for Cross-Connect Field.
- Sneak Fuse Panels

Installing the Cross-Connect Field

Wall Mounting 110A-Type Terminal Blocks

The preferred cross-connect field location is directly behind the switch cabinet. However, the 110A-type hardware can be stacked in almost any arrangement at any height or location on the wall. One arrangement is shown in Figure 3-25. The mounting screw distance between the holes on the terminal blocks is 10-13/16 inches (27.5 cm). If a vertical patch cord trough is used in the installation, the mounting screw distance for it is 5-5/16 inches (27.5 cm).

Wall Mounting 110P-Type Terminal Blocks

The preferred cross-connect field location is directly behind the switch cabinet. The first terminal block of the Trunk/Auxiliary Field is aligned with the left side of the switch cabinet (see Figures 3-26 or 3-27). This arrangement allows for growth on the right side of the cross-connect field.

To install the cross-connect field, proceed as follows:

1. If 300-pair terminal blocks are to be installed, draw a level horizontal line on the mounting wall 47-1/2 inches (120.7 cm) above the floor (Figure 3-29). If 900-pair terminal blocks are to be mounted, draw a level horizontal line on the mounting wall 23 inches (58.4 cm) above the floor (Figure 3-30).
2. Partially install two 3/4-inch (1.9-cm) No. 12 wood screws 7-11/16 inches (19.5 cm) apart on the line on the left side of the wall for mounting the first Trunk/Auxiliary Field terminal block.
3. Slide the bottom terminal block feet onto the mounting screws and mark the remaining mounting screw locations.
4. Remove the terminal block and partially install the remaining mounting screws.
5. Replace the terminal block on the mounting screws and tighten the screws to secure.
6. If a vertical patch cord trough is to be installed, partially install the first screw for the patch cord trough, on the line, 7/8 inch (2.2 cm) from the previous screw. Partially install the second mounting screw 5-5/16 inches (13.5 cm) from the screw just installed. Repeat steps 3, 4, and 5 above.
7. If another Trunk/Auxiliary Field terminal block is to be installed, partially install the first screw for the terminal block, on the line, 7/8 inch (2.2 cm) from the previous screw. Partially install the second mounting screw 7-11/16 inches (19.5 cm) from the screw just installed. Repeat steps 3, 4, and 5 above.
8. If a horizontal patch cord trough is to be installed, install it, on the line, between the Trunk/Auxiliary Field and the Distribution Field.
9. Partially install two 3/4-inch (1.9 cm) No. 12 wood screws 7-11/16 inches (19.5 cm) apart on the line, to the right of the horizontal patch cord trough, for installing the first Distribution Field terminal block. Repeat steps 3, 4, and 5 above.
10. If another Distribution Field terminal block is to be installed, partially install the first screw for the terminal block, on the line, 7/8 inch (2.2 cm) from the previous screw. Partially install the second mounting screw 7-11/16 inches (19.5 cm) from the screw just installed. Repeat steps 3, 4, and 5 above.

11. If a vertical patch cord trough is to be installed, partially install the first screw for the patch cord trough, on the line, $\frac{7}{8}$ inch (2.2 cm) from the previous screw. Partially install the second mounting screw $\frac{5-5}{16}$ inches (13.5 cm) from the screw just installed. Repeat steps 3, 4, and 5 above.
12. Repeat steps 10 and 11 until all the terminal blocks and vertical patch cord troughs in the Distribution Field have been installed.

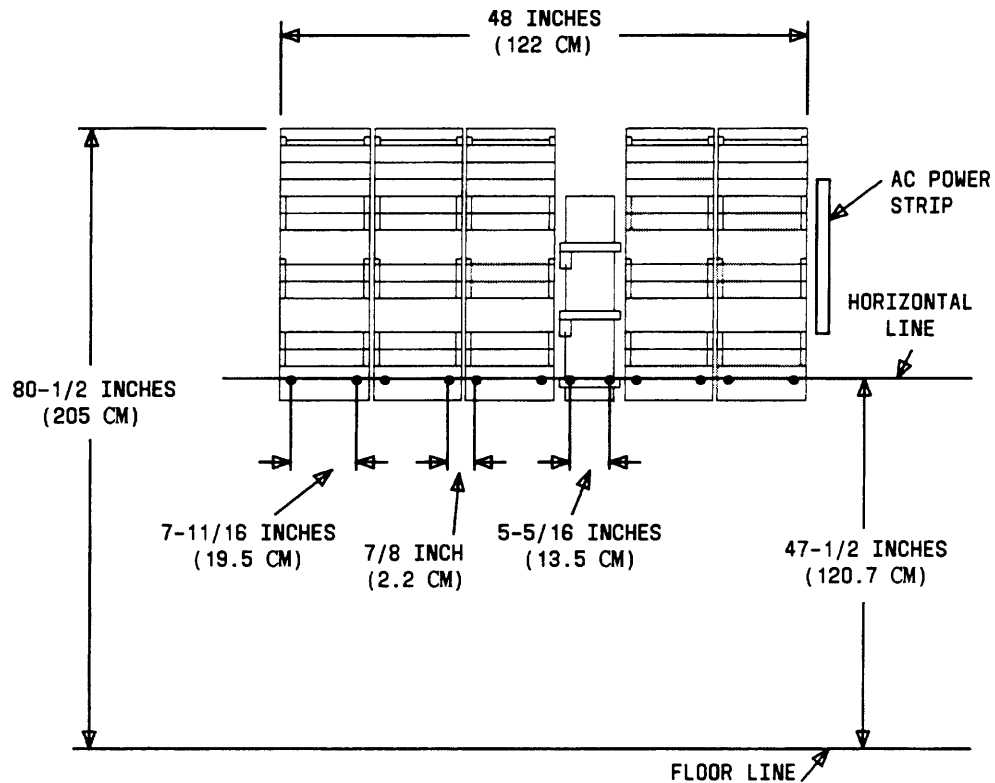


Figure 3-29. Mounting 300-Pair 110P-Type Terminal Blocks (Approximately 288 4-Pair or 384 3-Pair Station Capacity Illustrated)

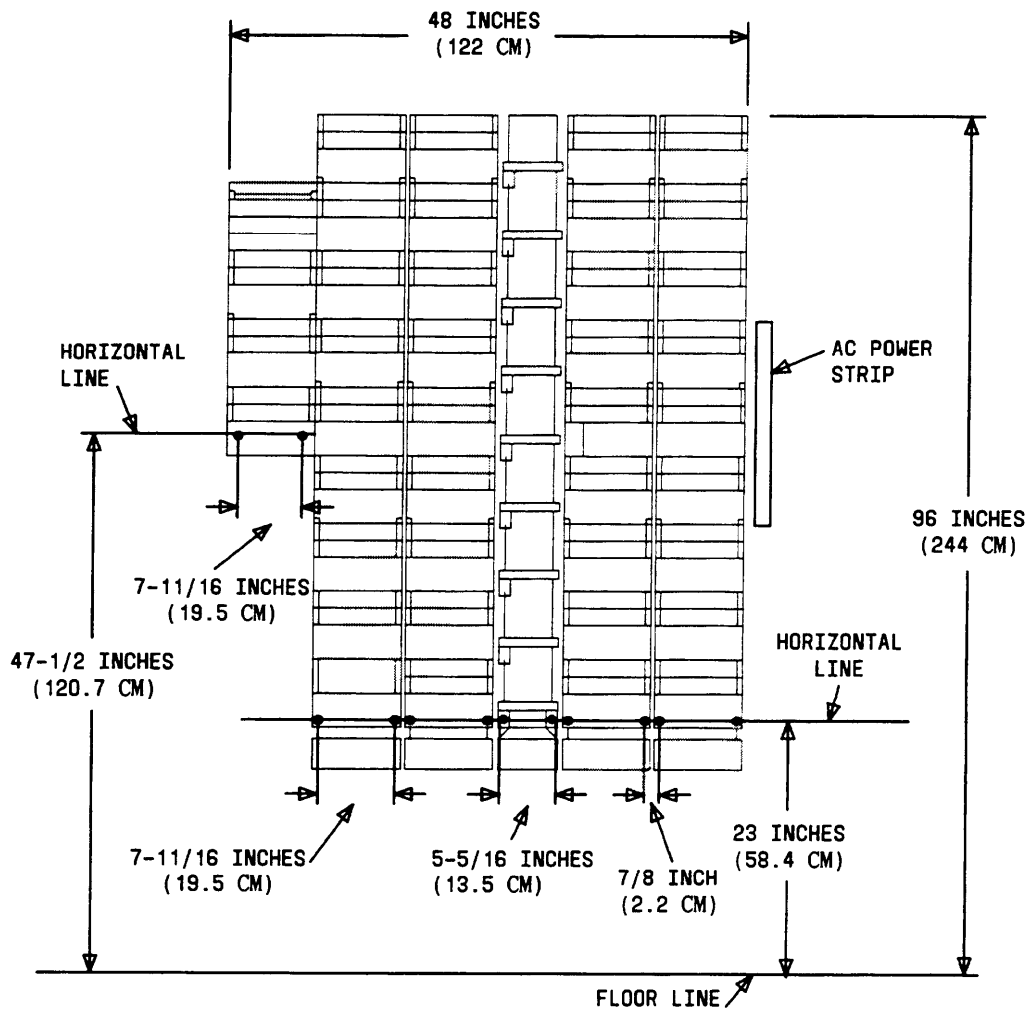


Figure 3-30. Mounting 900-Pair 110P-Type Terminal Blocks (Approximately 432 4-Pair or 576 3-Pair Station Capacity Illustrated)

Frame Mounting 110P-Type Terminal Blocks

The 900-pair 110P-type terminal blocks can also be frame mounted instead of wall mounted. The 1110A2 apparatus mounting frame is used to frame mount the 900-pair 110P-type terminal blocks and the 188C vertical patch cord troughs. Each 1110A2 frame allows for mounting of five units on each side of the frame. The units can be any mixture of 900-pair 110P-type terminal blocks and 188C vertical patch cord troughs. The 1110A2 apparatus mounting frame is 76-1/2 inches (194.3 cm) high, 43-1/2 inches (110.5 cm) wide, and 16 inches (40.64 cm) deep.

110P-TYPE HARDWARE FRAME MOUNTING ORDERING INFORMATION

Code Number	Description	Comcode
1110A2	Apparatus Mounting Frame	104 032 495
1110C1	Cable Support Assembly	104 175 120
1110A1	End Dress Panel	104 176 263
2110A1	Top Dress Panel	104 176 276
2110B1	Bottom Dress Panel	104 176 284

Installing the Cable Slack Managers

To install the cable slack managers, proceed as follows:

1. Position the Z113A cable slack manager against the wall under the cross-connect field, aligning the side of the manager with the first terminal block of the Trunk/Auxiliary Field.
2. Position the next cable slack manager under the cross-connect field and alongside the previously installed manager, insuring that tabs and interlocks align and snap together.
3. Repeat step 2 until all cable slack managers are installed.

Note: Nine 1/4-inch (6.4-mm) diameter holes are provided in the cable slack manager bases for earthquake mounting if required. Also, if the cable slack managers are mounted on an uneven floor, shims may be required to keep the cable slack managers level and insure proper fit of the covers. Holes are also provided in the sides of the base for bolting the cable slack managers together. Bolts and shims must be locally provided.

Labeling the Cross-Connect Field

Figure 3-31 shows graphic symbols used (instead of words) on labels for switch, cross-connect, information outlets, and cables for the system. The labels are color-coded to identify system wiring as follows:

- Green—Leads to central office
- Purple—Leads to switch ports
- Yellow—Leads to auxiliary equipment and miscellaneous switch leads
- Blue—Leads to information outlets
- White—Leads from the cross-connect field to the satellite locations (3-pair).

		Designations
	Cabinet	1, 2, 3 . . . n
	Carrier	A, B, C, D, E
	Slot	1, 2, 3 . . . 20
	Information Outlet	1, 2, 3 . . . 560
	Site/Satellite Closet	A, B, C, D, E, F
	Tie Circuit	1, 2, 3 . . . n
	Floor	Write Floor or Building Identification on Label as Required for Easy Identification.
	Building	

Figure 3-31. System Label Graphic Symbols and Designation Nomenclature

Figure 3-32 shows a typical cross-connect field layout using 300-pair terminal blocks for a system of about 384 three-pair stations or 288 four-pair stations. Figure 3-33 shows a typical cross-connect field layout using 900-pair blocks for a system of about 576 three-pair stations or 432 four-pair stations. The blue field is for 3- or 4-pair station wiring from the equipment room and the white field is for 3-pair station wiring from the equipment room to the satellite closet as required.

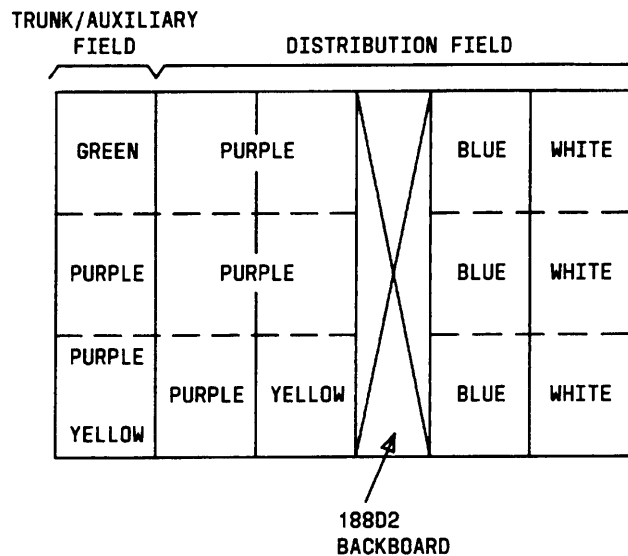


Figure 3-32. Typical Cross-Connect Field Layout—300-Pair Terminal Blocks (Approximately 288 Four-Pair or 384 Three-Pair Station Capacity Illustrated)

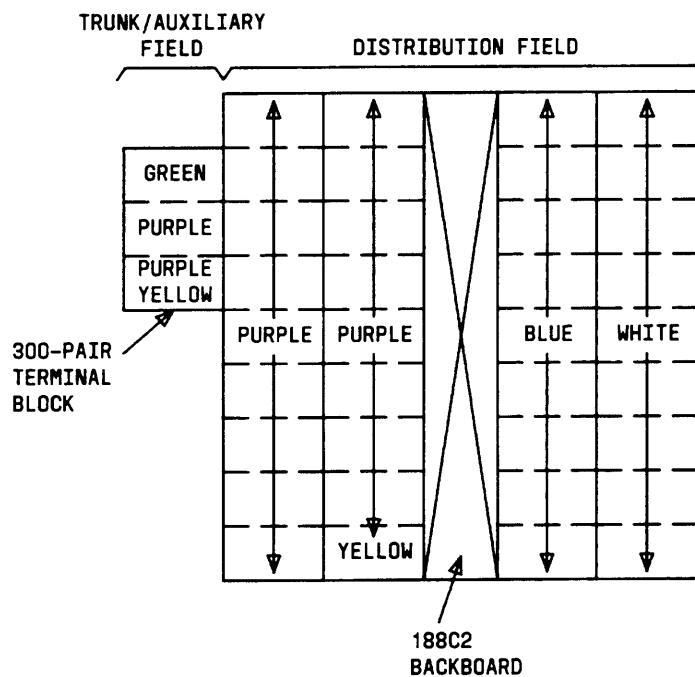


Figure 3-33. Typical Cross-Connect Field Layout—900-Pair Terminal Blocks (Approximately 432 Four-Pair or 576 Three-Pair Station Capacity Illustrated)

Each 110 label is used to identify 2 rows on the 110 terminal block. The upper half of the label identifies the row above it and the lower half of the label identifies the row below it. The labels slide into the clear plastic designation strips (Figure 3-34) that come with the 110 terminal blocks. The designation strip snaps into place between the 110 terminal block rows after the label has been inserted. Label code number 220A (comcode 103 970 000) contains all of the 110 labels.

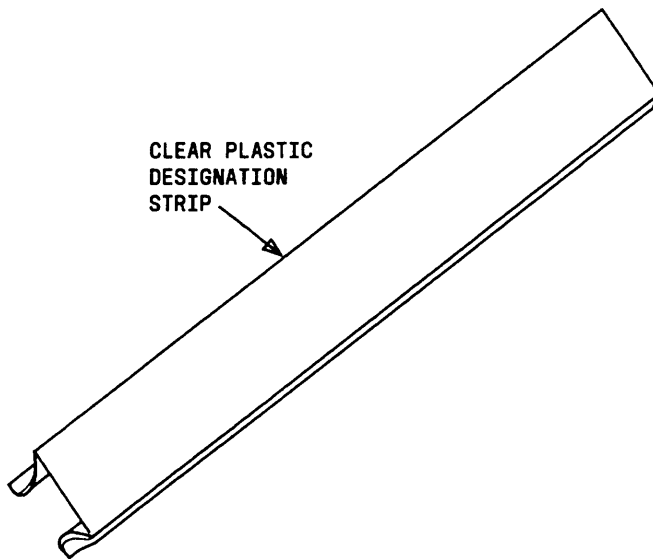


Figure 3-34. Clear Plastic Designation Strip

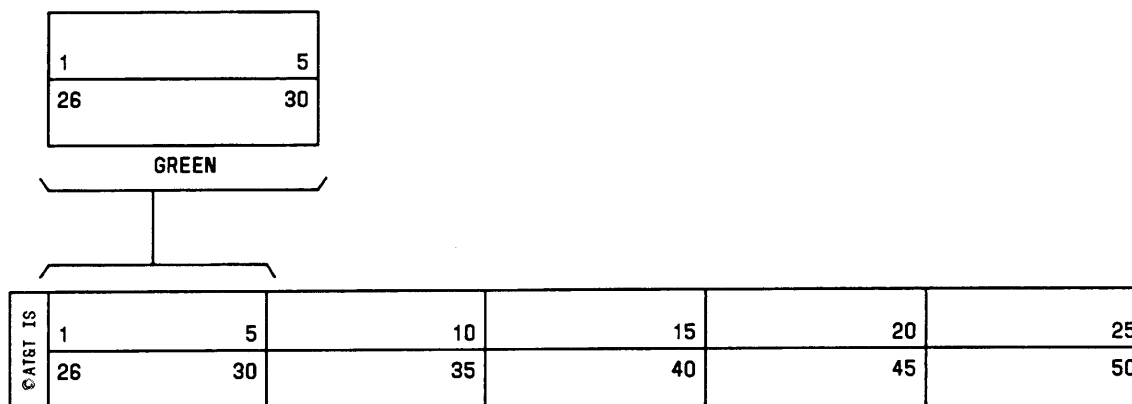
CO Trunk Labels (Green)

The labels shown in Figure 3-35 identify network interface leads for trunk circuits. On the top label, cable pairs are numbered consecutively by fives from 1 to 300 on the labels. The bottom label is a blank label which must be filled in manually as required.

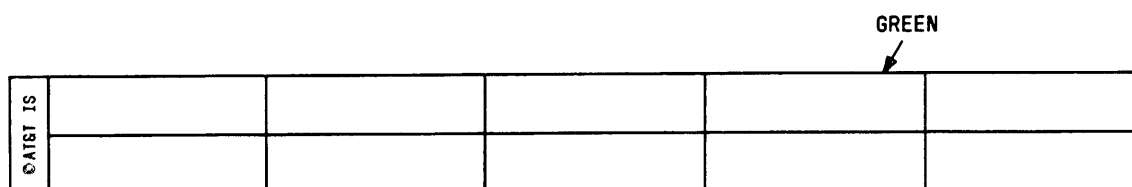
Label Code 221A—Green Labels (103 970 018)

The label code number for the CO trunk labels is 221A which contains the following:

- 6 green trunk labels (see Figure 3-35). The labels are numbered from 1 to 300. Each label identifies 50 trunk pairs.
- 4 unnumbered green labels (see Figure 3-35). Each label identifies 50 trunk pairs.



- **USAGE :**
IDENTIFIES NETWORK INTERFACE TRUNK PAIRS.
- **CODE NO:**
221A

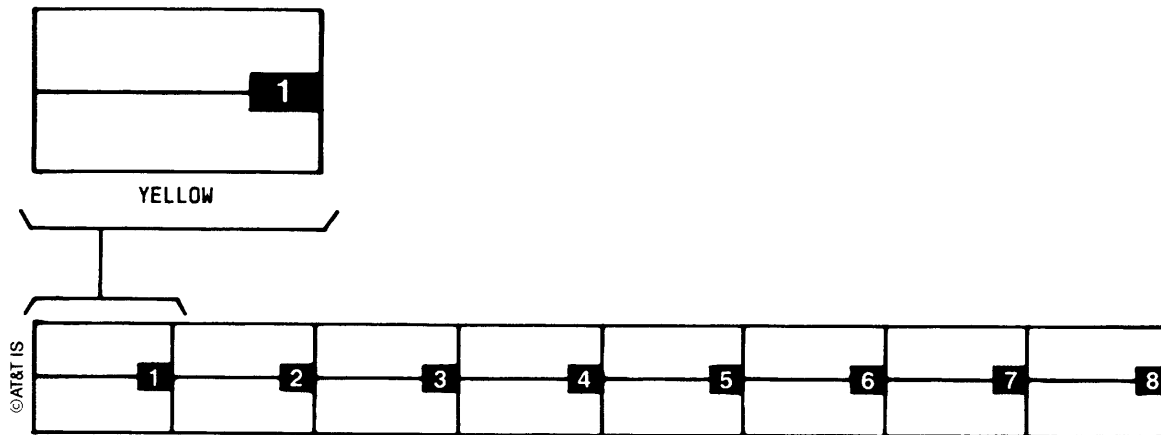


- **USAGE :**
CUSTOMER IDENTIFICATION OF NETWORK
INTERFACE TRUNK PAIRS.
- **CODE NO:**
221A

Figure 3-35. CO Trunk Labels

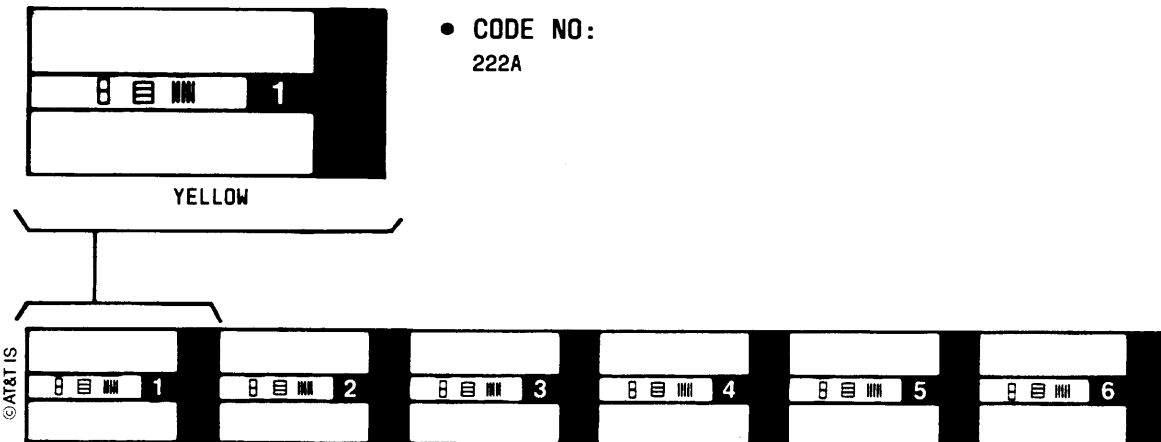
Auxiliary Labels (Yellow)*AUXILIARY PORT AND CIRCUIT LABELS*

The labels shown in Figure 3-36 identify auxiliary port and circuit appearances at the cross-connect field. The labels must be filled in manually.



- **USAGE:**
IDENTIFIES 3-PAIR AUXILIARY
CIRCUITS 1 THROUGH 8

- **CODE NO:**
222A



- **USAGE:**
IDENTIFIES SSI PORTS 1 THROUGH 6
FROM AN AP.

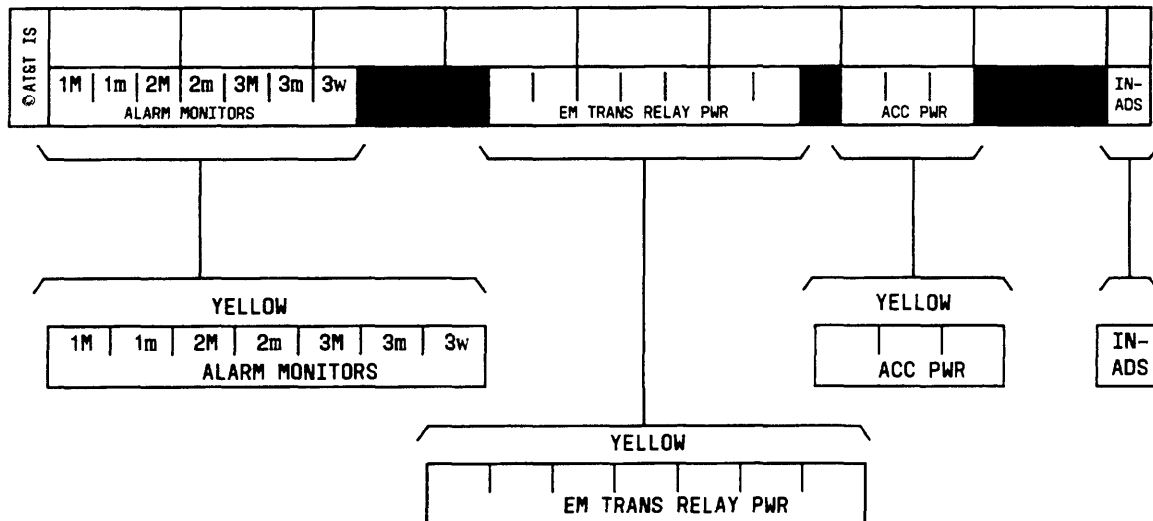
- **CODE NO:**
222A

Figure 3-36. Auxiliary Port and Circuit Appearance Labels

AUXILIARY CIRCUIT AND CONTROL CARRIER OUTPUTS (AUXILIARY) LABELS

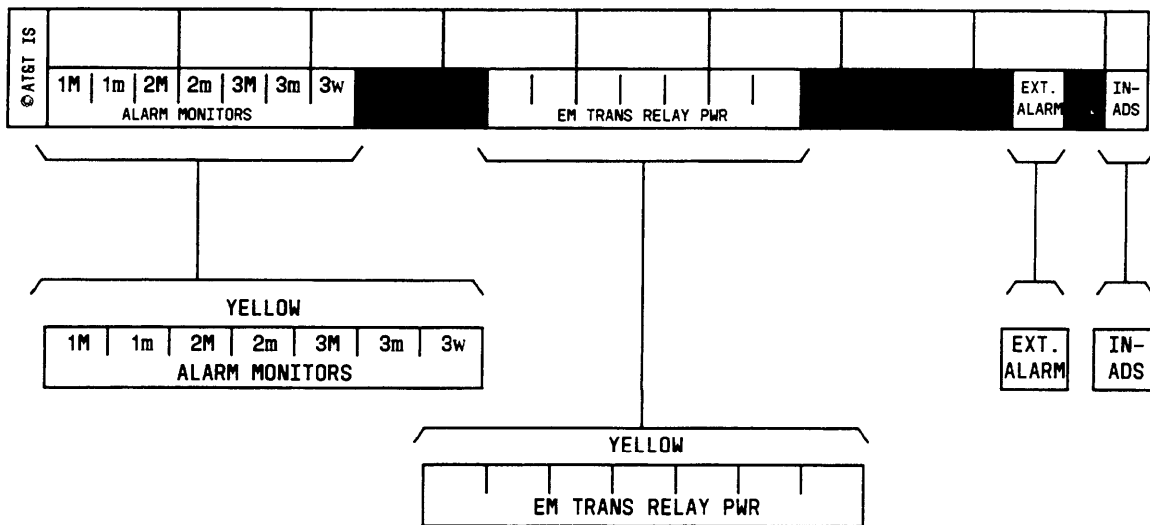
The labels shown in Figures 3-37 and 3-38 are used to identify auxiliary circuit appearances and control carrier AUXILIARY connector outputs. The top half of the labels are used for custom identification of auxiliary circuit appearances and must be filled in manually. The bottom half of the labels are used for the control carrier AUXILIARY connector outputs. The control carrier AUXILIARY connector outputs include the following:

- Alarm monitoring for the Applications Processor and the Auxiliary Cabinet
- Seven -48 volts dc power sources for emergency transfer units
- Three -48 volts dc power sources for remotely powering two attendant consoles and on executive's voice terminal adjunct (not provided on the System 75 XE)
- The Initialization and Administration System (INADS) trunk connection location.
- For the System 75 XE, access to a relay contact is available for a customer-provided alarm that can be used to connect a light, bell, or similar type device. The relay can be administered so that it will make contact when a major, minor or warning alarm condition exists on the system. The circuitry required for this feature must be provided by the customer. The device connected to the alarm leads must not exceed a rating of more than 100 volts at 3/4 amps.



- **USAGE:**
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY) AND
AUXILIARY CIRCUITS
- **CODE NO:**
222A

Figure 3-37. Auxiliary Circuit and Control Carrier Outputs (AUXILIARY) Labels—System 75

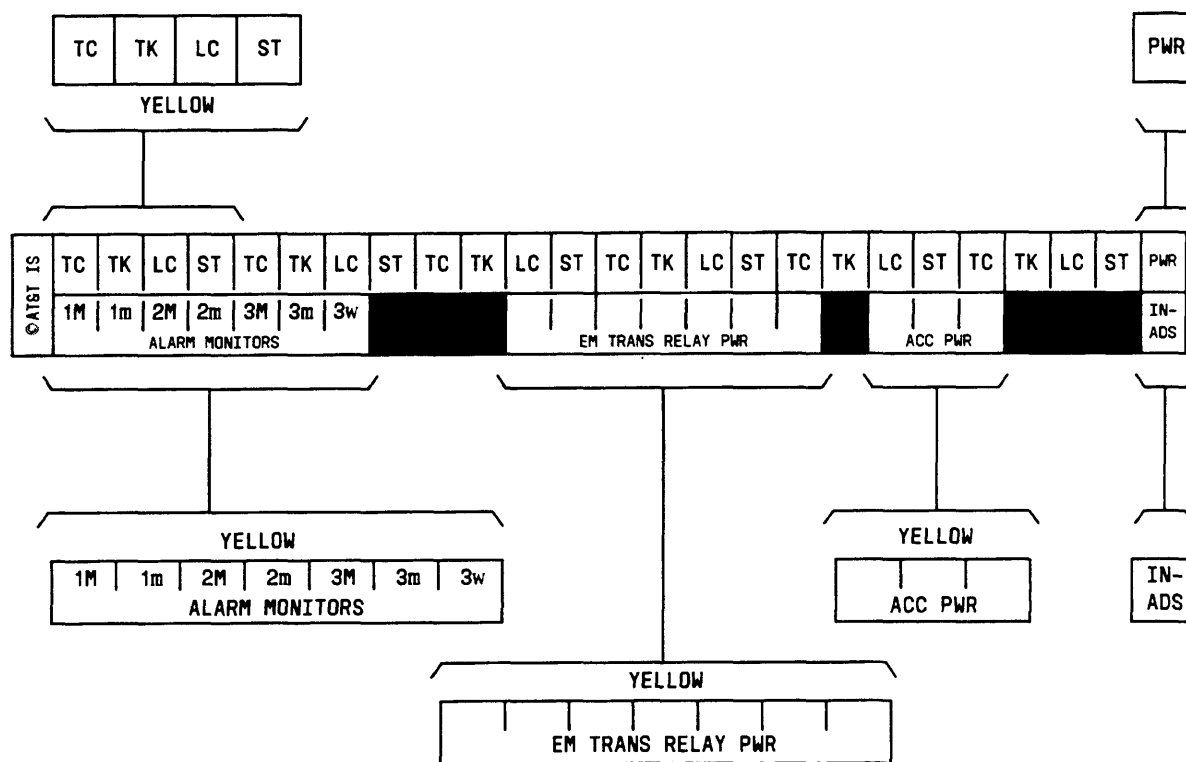


- **USAGE:**
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY) AND
AUXILIARY CIRCUITS
- **CODE NO:**
222A

**Figure 3-38. Auxiliary Circuit and Control Carrier Outputs (AUXILIARY)
Labels—System 75 XE**

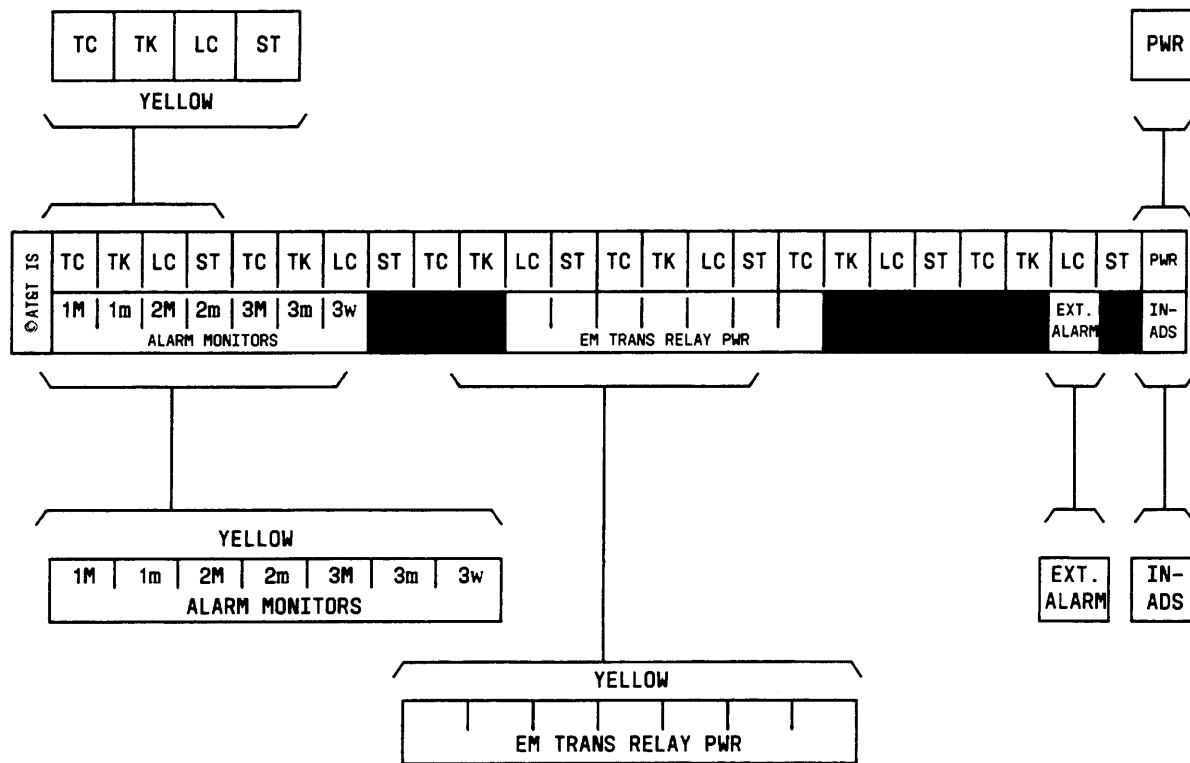
Z1A EMERGENCY TRANSFER UNIT AND CONTROL CARRIER OUTPUTS (AUXILIARY) LABELS

The labels shown in Figures 3-39 and 3-40 are used to identify the leads and connection point for -48 volt power to the Z1A Emergency Transfer Unit and the control carrier AUXILIARY connector outputs. The top half of the labels are used for the Z1A Emergency Transfer Unit and the bottom half of the labels are used for the control carrier AUXILIARY connector outputs. The control carrier AUXILIARY connector outputs are the same as described for the auxiliary circuit and control carrier AUXILIARY outputs labels.



- **USAGE:**
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY) AND
Z1A EMERGENCY TRANSFER UNIT CIRCUITS
- **CODE NO:**
222A

Figure 3-39. Z1A Emergency Transfer Unit and Control Carrier Outputs (AUXILIARY) Labels—System 75

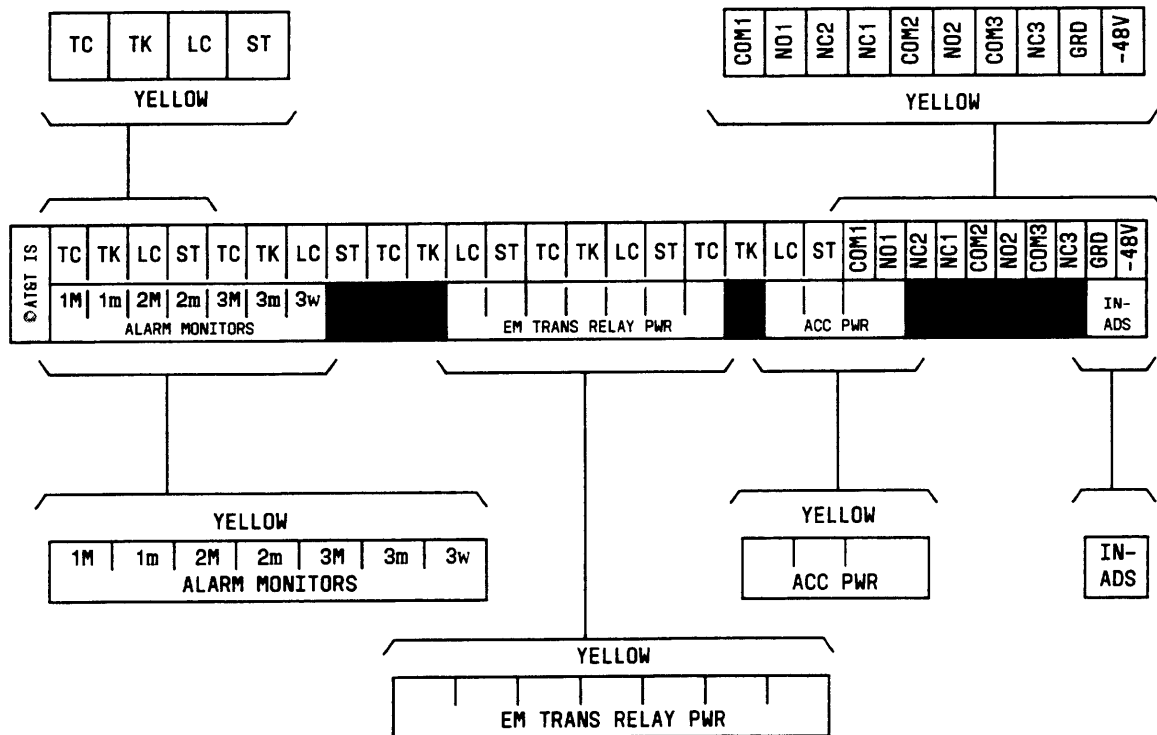


- **USAGE:**
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY) AND
Z1A EMERGENCY TRANSFER UNIT CIRCUITS
- **CODE NO:**
222A

Figure 3-40. Z1A Emergency Transfer Unit and Control Carrier Outputs (AUXILIARY) Labels—System 75 XE

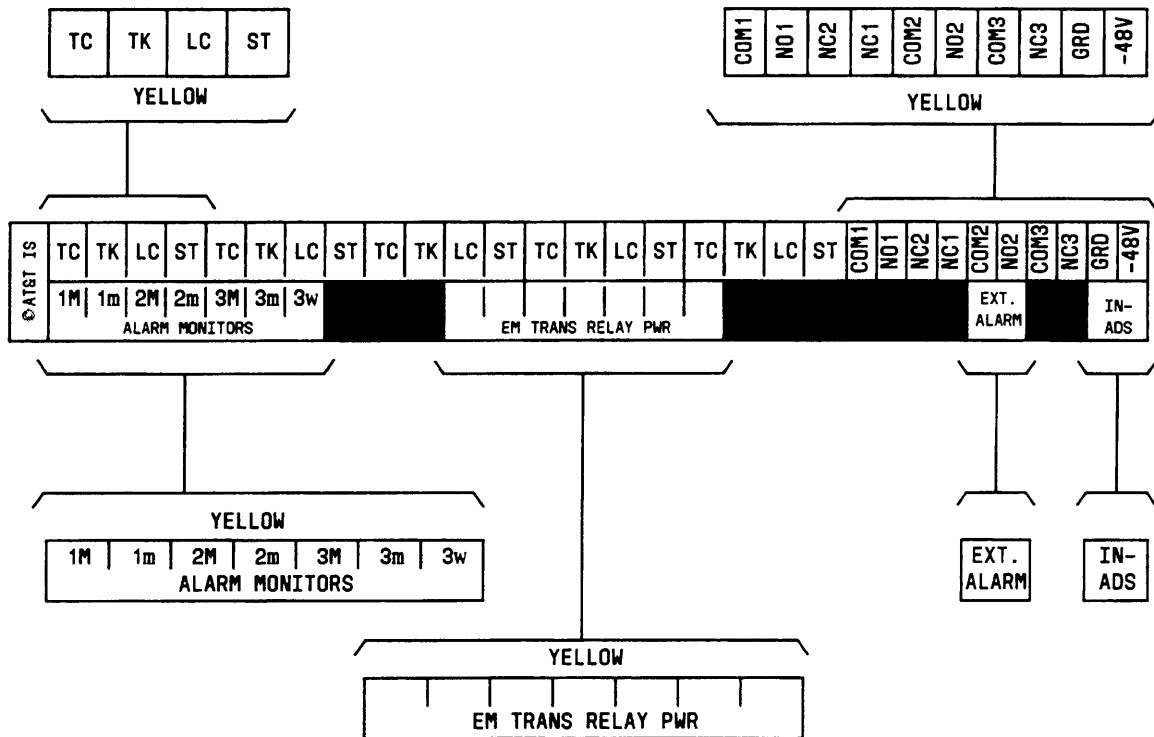
574-5 EMERGENCY TRANSFER UNIT AND CONTROL CARRIER OUTPUTS (AUXILIARY) LABELS

The labels shown in Figure 3-41 and 3-42 are used to identify the leads to the 574-5 Emergency Transfer Unit and the control carrier AUXILIARY connector outputs. The top half of the labels are used for the 574-5 Emergency Transfer Unit and the bottom half of the labels are used for the control carrier AUXILIARY connector outputs. The control carrier AUXILIARY connector outputs are the same as described for the auxiliary circuit and control carrier AUXILIARY outputs labels.



- **USAGE:**
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY)
AND 574-5 EMERGENCY TRANSFER UNIT CIRCUITS
- **CODE NO:**
222A

Figure 3-41. 574-5 Emergency Transfer Unit and Control Carrier Outputs (AUXILIARY) Labels—System 75



- **USAGE:**
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY)
AND 574-5 EMERGENCY TRANSFER UNIT CIRCUITS
- **CODE NO:**
222A

Figure 3-42. 574-5 Emergency Transfer Unit and Control Carrier Outputs (AUXILIARY) Labels—System 75 XE

Z1A EMERGENCY TRANSFER UNIT ONLY LABELS

Both sections of the label shown in Figure 3-43 is used only to identify leads and the connection point for -48 volt dc power for the Z1A unit.

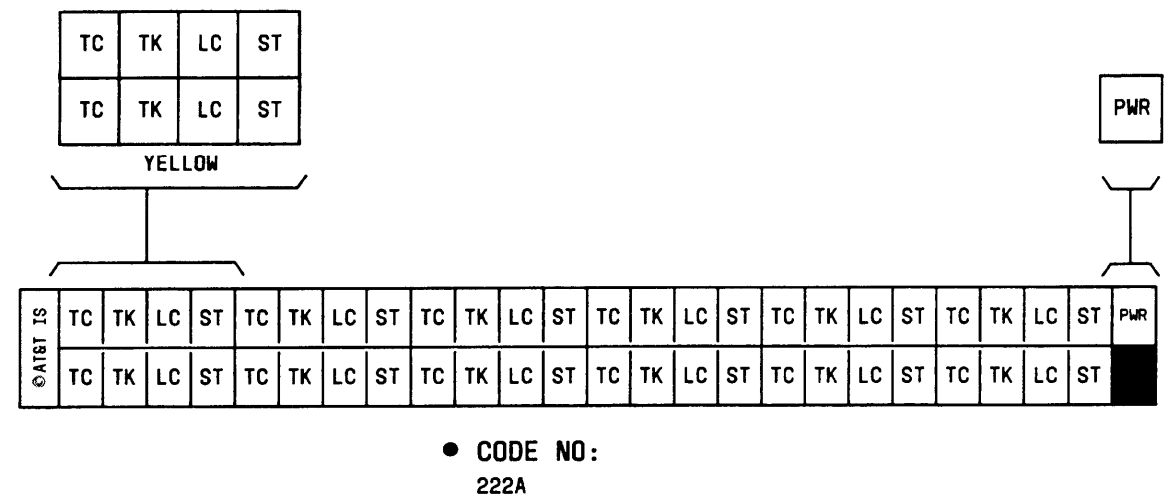


Figure 3-43. Z1A Emergency Transfer Unit Only Label

EMERGENCY TRANSFER UNIT 574-5 ONLY LABEL

Both sections of the label shown in Figure 3-44 is used to identify leads to the 574-5 Emergency Transfer Unit.

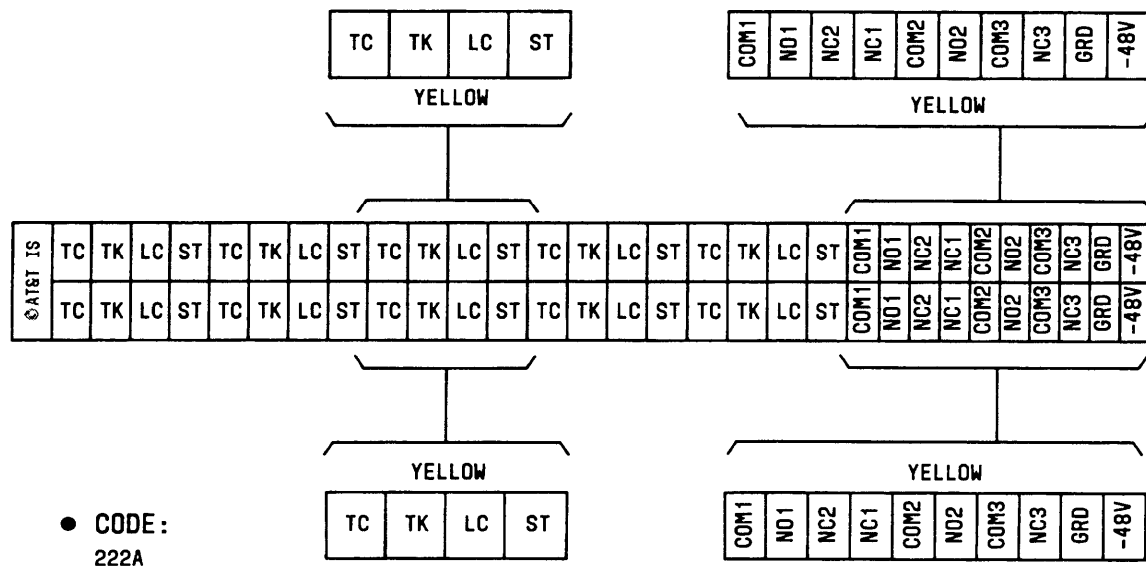


Figure 3-44. 574-5 Emergency Transfer Unit Only Label

BLANK LABELS

The blank labels shown in Figure 3-45 are used for custom identification of auxiliary equipment and must be filled in manually.

CAT 181 IS		

- **USAGE:**
CUSTOM IDENTIFICATION OF AUXILIARY EQUIPMENT
- **CODE NO:**
222A

Figure 3-45. Blank Auxiliary Labels

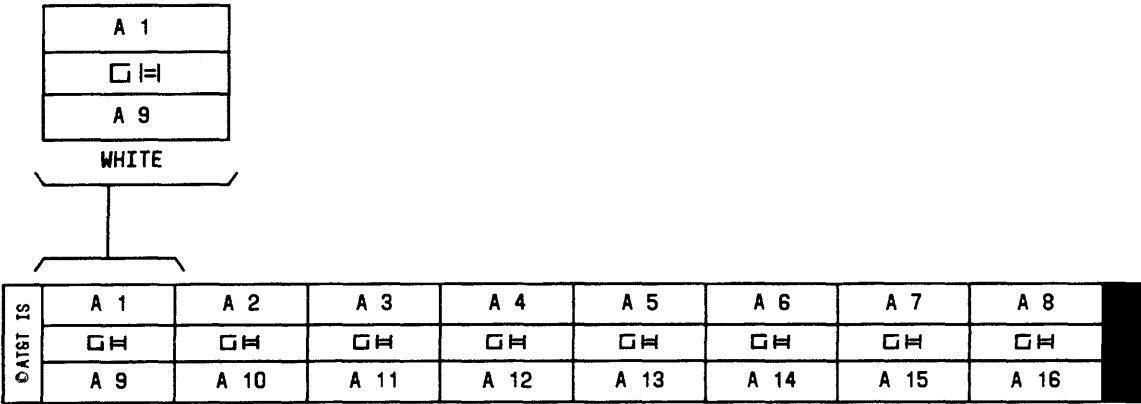
Label Code 222A—Yellow Labels (103 970 026)

The label code for the auxiliary labels is 222A which contains the following:

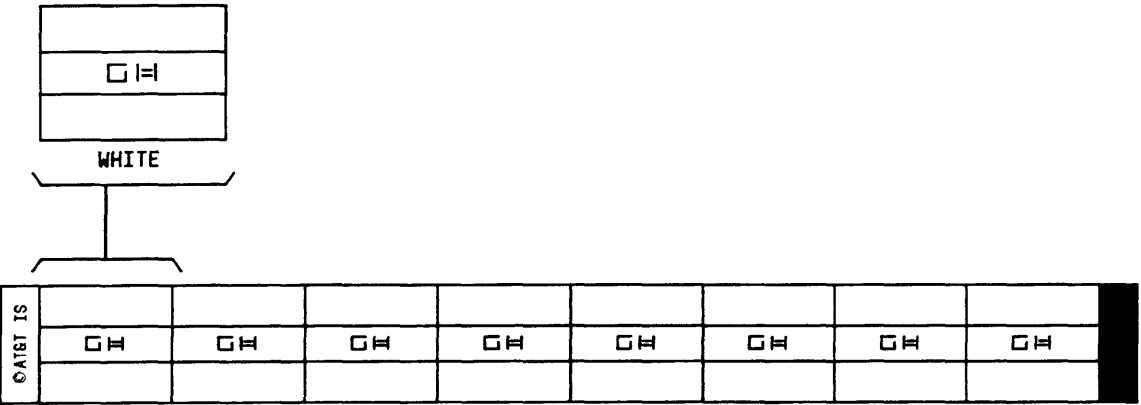
- 4 Applications Processor SSI port labels (see Figure 3-36)
- 4 3-pair auxiliary circuit labels (see Figure 3-36)
- 2 unnumbered auxiliary circuit and control carrier AUXILIARY connector labels (see Figure 3-37 or 3-38)
- 2 Z1A Emergency Transfer Unit and control carrier AUXILIARY connector labels (see Figure 3-39 or 3-40)
- 2 574-5 Emergency Transfer Unit and control carrier AUXILIARY connector labels (see Figure 3-41 or 3-42)
- 2 Z1A Emergency Transfer Unit only labels (see Figure 3-43)
- 2 574-5 Emergency Transfer Unit only labels (see Figure 3-44)
- 6 blank labels (see Figure 3-45).

Station Labels (White and Blue)*3-PAIR WHITE STATION LABELS*

The white labels shown in Figure 3-46 identify 3-pair station appearances at the cross-connect field that connect to a satellite location. The top labels are grouped and numbered in sequence (A 1 to A 160 through F 1 to F 160) to correspond to the satellite locations. The bottom labels must be filled in manually. These labels should be installed starting with the first terminal block in the white field.



- **USAGE:**
IDENTIFIES 3-PAIR CIRCUIT APPEARANCES
THAT CONNECT TO A SATELLITE LOCATION.
- **CODE NO:**
223A



- **USAGE:**
CUSTOM IDENTIFICATION OF 3-PAIR CIRCUIT
APPEARANCES THAT CONNECT TO A
SATELLITE LOCATION.
- **CODE NO:**
223A

Figure 3-46. 3-Pair White Station Appearance Labels

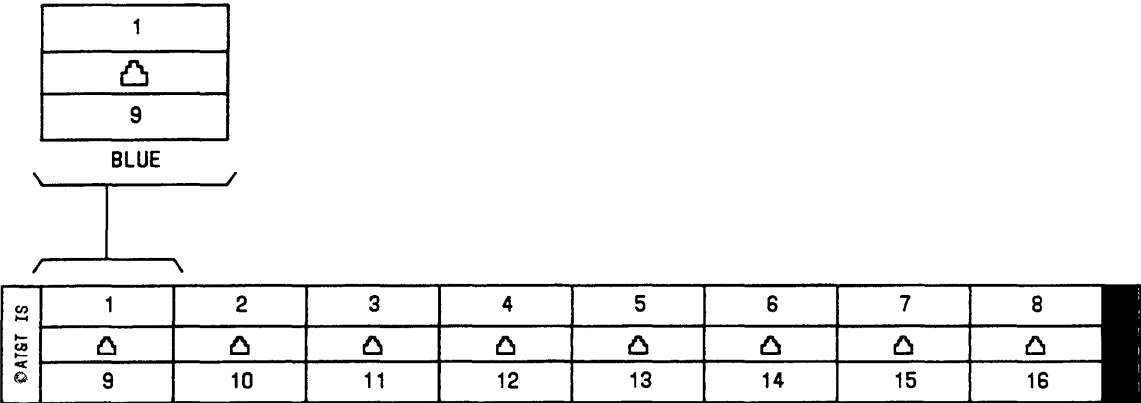
Label Code 223A—White Labels (103 970 034)

The label code for the white station labels is 223A which contains the following:

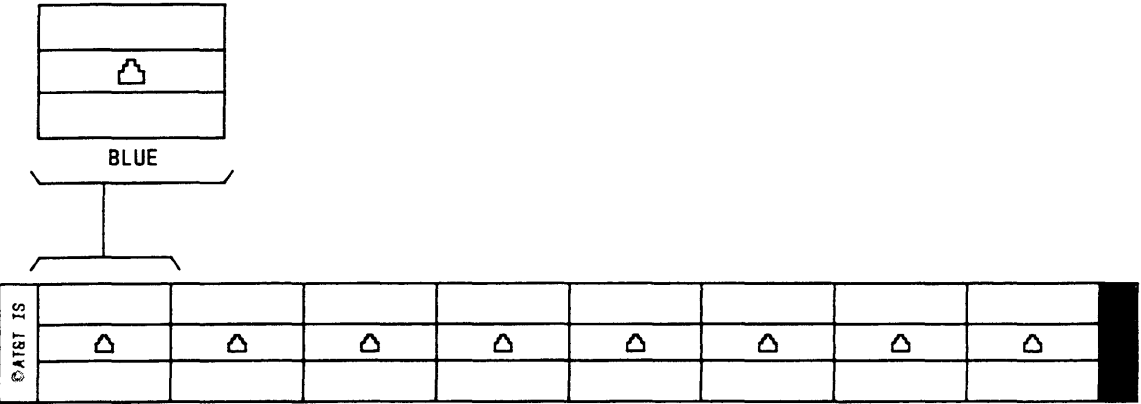
- 60 white labels that identify 3-pair circuits from the equipment room to the satellite closet (see Figure 3-46). Each label identifies 16 three-pair station circuits. There are labels for satellite closets numbered A through F, and each satellite closet has station circuits numbered 1 through 160.
- 20 unnumbered white labels (see Figure 3-46) that identify 3-pair station circuits from the satellite closet. Each label identifies twelve 3-pair station circuits.

3-PAIR BLUE STATION LABELS

The labels shown in Figure 3-47 identifies 3-pair blue station appearances at the cross-connect field. The top labels are numbered and should be installed in sequence (1 to 560) starting with the first terminal block in the blue field. The bottom label must be filled in manually.



- **USAGE:**
IDENTIFIES 3-PAIR STATION APPEARANCES THAT CONNECT TO A 356A ADAPTER. LABELS ARE NUMBERED IN SEQUENCE FROM 1 TO 560.
- **CODE NO:**
224A

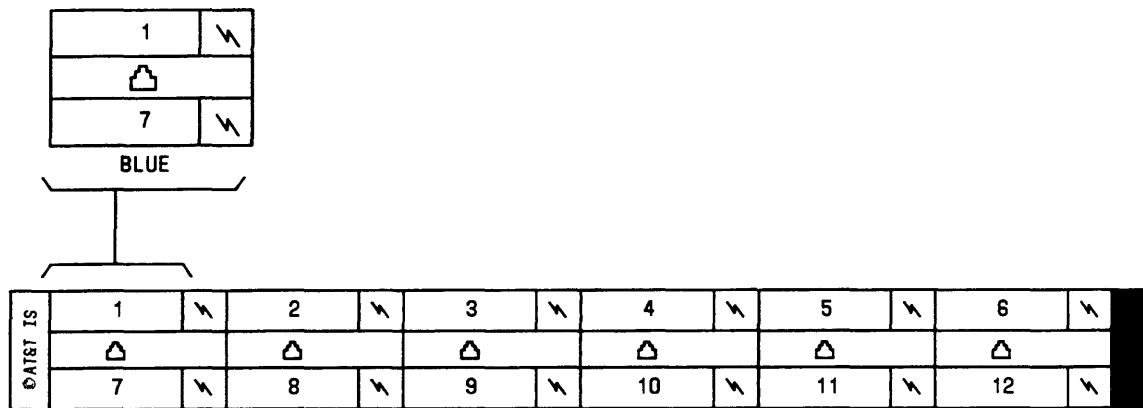


- **USAGE:**
CUSTOMER IDENTIFICATION OF 3-PAIR STATION APPEARANCES THAT CONNECT TO A 356A ADAPTER.
- **CODE NO:**
224A

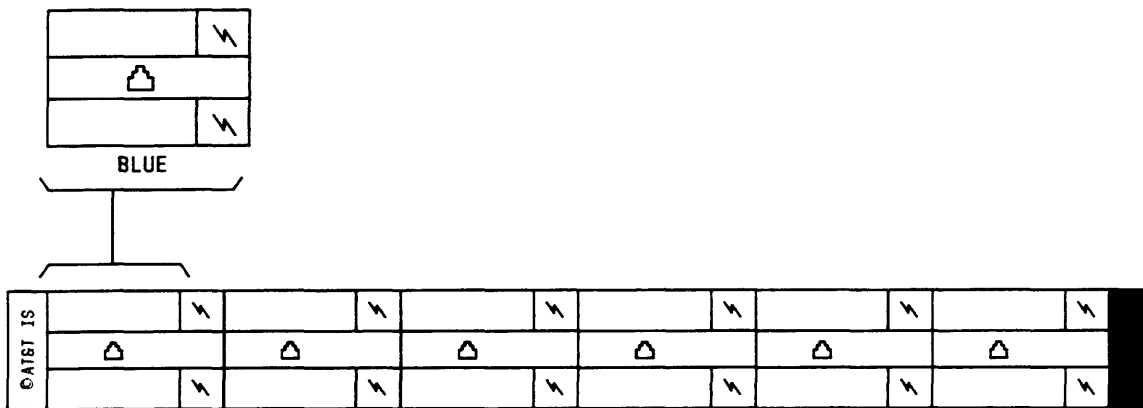
Figure 3-47. 3-Pair Blue Station Wiring From the Equipment Room Labels

4-PAIR BLUE STATION LABELS

The labels shown in Figure 3-48 identifies 4-pair station appearances at the cross-connect field. The top labels are numbered and should be installed in sequence (1 to 480) starting with the first terminal block in the blue field. The bottom label must be filled in manually. The labels shown in Figure 3-49 identify 4-pair station circuits from the satellite closet. The top labels are grouped and numbered in sequence (A 1 to A 204 through F 1 to F 204) to correspond to the satellite locations and information outlets.

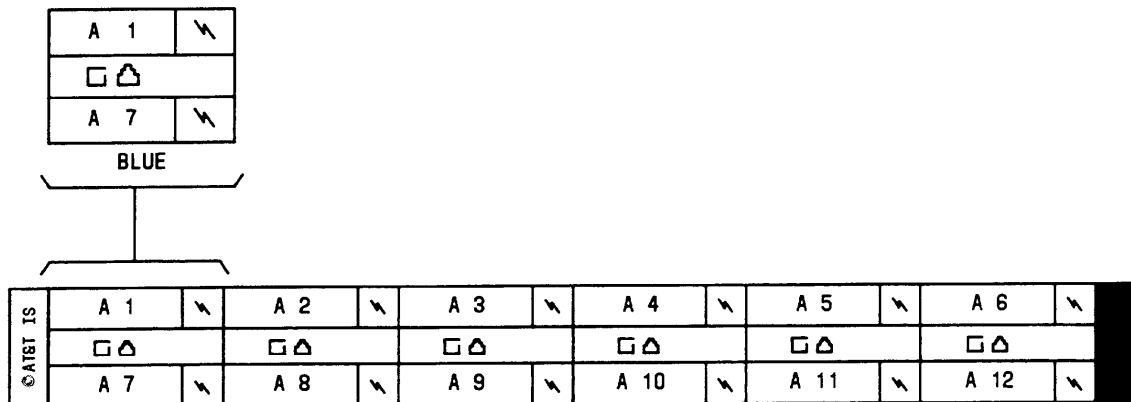


- **USAGE:**
IDENTIFIES 4-PAIR STATION APPEARANCES.
LABELS ARE NUMBERED IN SEQUENCE FROM 1 TO 480.
- **CODE NO:**
224A

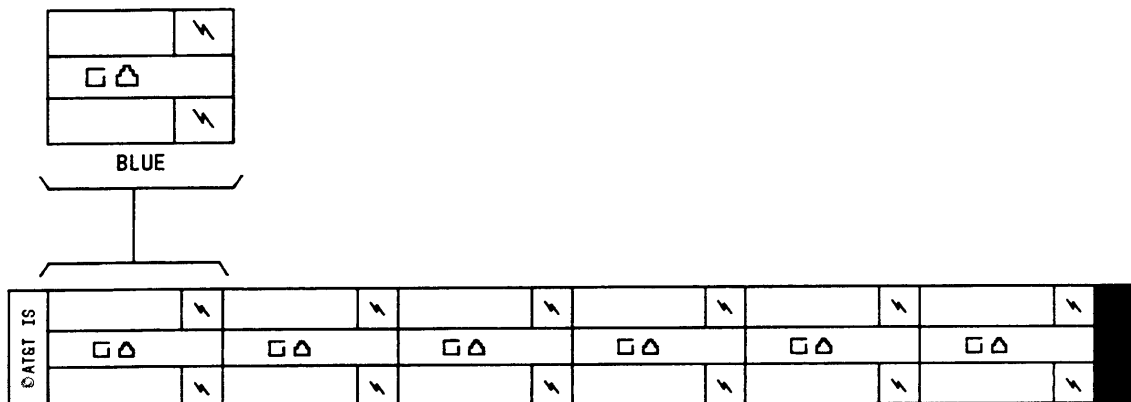


- **USAGE:**
CUSTOMER IDENTIFICATION OF 4-PAIR STATION APPEARANCES.
- **CODE NO:**
224A

Figure 3-48. 4-Pair Blue Station Wiring From the Equipment Room Labels



- **USAGE:**
IDENTIFIES 4-PAIR STATION APPEARANCES
AT THE SATELLITE LOCATION.
- **CODE NO:**
224A



- **USAGE:**
CUSTOMER IDENTIFICATION OF 4-PAIR STATION
APPEARANCES AT THE SATELLITE LOCATION.
- **CODE NO:**
224A

Figure 3-49. 4-Pair Station Wiring From the Satellite Closet Labels

Label Code 224A—Blue Labels (103 970 042)

The label code for the blue station labels is 224A which contains the following:

- 35 blue labels (see Figure 3-47) that identify 3-pair station circuits from the equipment room. Each label identifies sixteen 3-pair station circuits. The labels are numbered sequentially from 1 to 560.

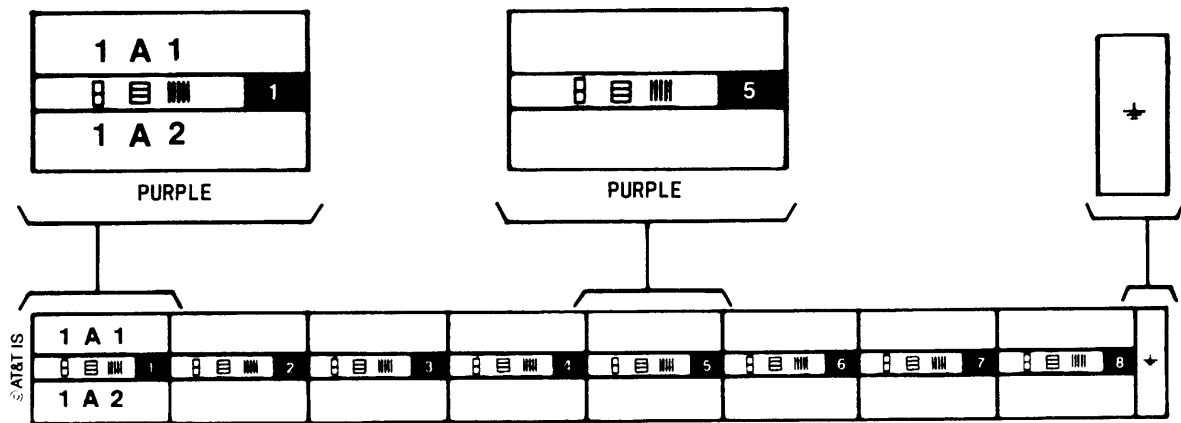
- 40 blue labels (see Figure 3-48) that identify 4-pair station circuits from the equipment room. Each label identifies twelve 4-pair station circuits. The labels are numbered sequentially from 1 to 480.
- 102 blue labels (see Figure 3-49) that identify 4-pair station circuits from the satellite closet. Each label identifies twelve 4-pair station circuits. There are labels for satellite closets numbered A through F, and each satellite closet has station circuits numbered 1 through 204.
- Unnumbered blue labels (see Figure 3-47) that identify 3-Pair station circuits from the equipment room. Each label identifies sixteen 3-pair station circuits.
- Unnumbered blue labels (see Figure 3-48) that identify 4-pair station circuits from the equipment room. Each label identifies twelve 4-pair station circuits.
- 28 unnumbered blue labels (see Figure 3-49) that identify 4-pair station circuits from the satellite closet. Each label identifies twelve 4-pair station circuits.

Port Labels (Purple)

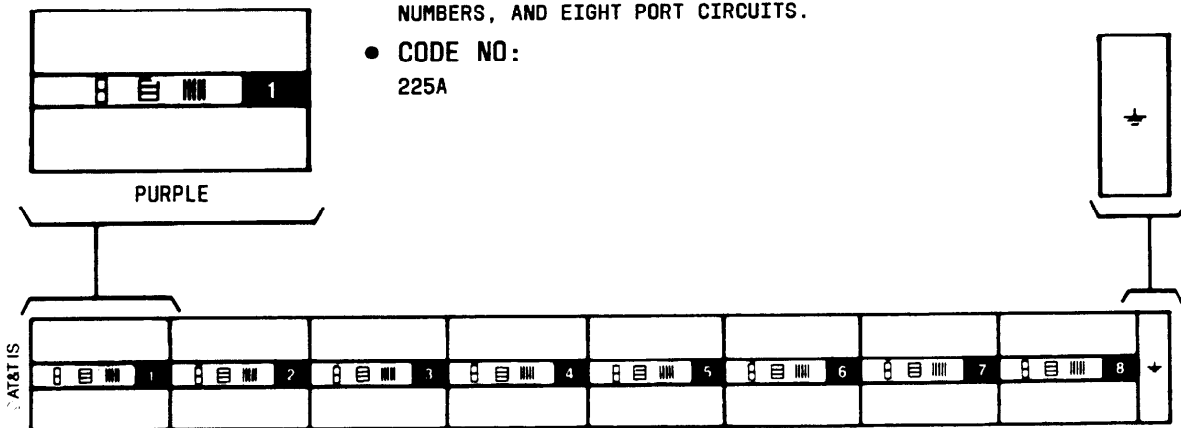
PORT LABELS

The labels shown in Figure 3-50 identify equipped carrier slots (see Note) in the switch cabinet. These labels are grouped together (by carriers) starting with Carrier A. These labels are used for the Trunk/Auxiliary Field, and the Distribution Field and should be installed starting with the first terminal block in either field. The top label is grouped and numbered in sequence (1A1 to 1A10 and 1B1 to 1B20 through 1E1 to 1E20) to correspond to the cabinet, carrier, and slot of the port board. The bottom label must be filled in manually. It is used for the MET line board and the 16-port analog line board labeling. An example of filling out the label to be used for the MET line board is shown in Figure 3-51. An example of filling out the label to be used for the 16-port analog line board is shown in Figure 3-52. If WP-90929, List 1 or 3 concentrator cables are used to connect the system trunk or tie trunk circuits to the switch, then use the labels shown in Figure 2-53 and 2-54 for these circuits.

Note: Equipped carrier slots are identified on the Customer Service Order.



- **USAGE:**
IDENTIFIES CABINET, CARRIER, PORT CIRCUIT SLOT NUMBERS, AND EIGHT PORT CIRCUITS.
- **CODE NO:**
225A



- **USAGE:**
CUSTOM IDENTIFICATION OF CABINET, CARRIER, PORT CIRCUIT SLOT NUMBERS, AND EIGHT PORT CIRCUITS.
- **CODE NO:**
225A

Figure 3-50. Port Labels

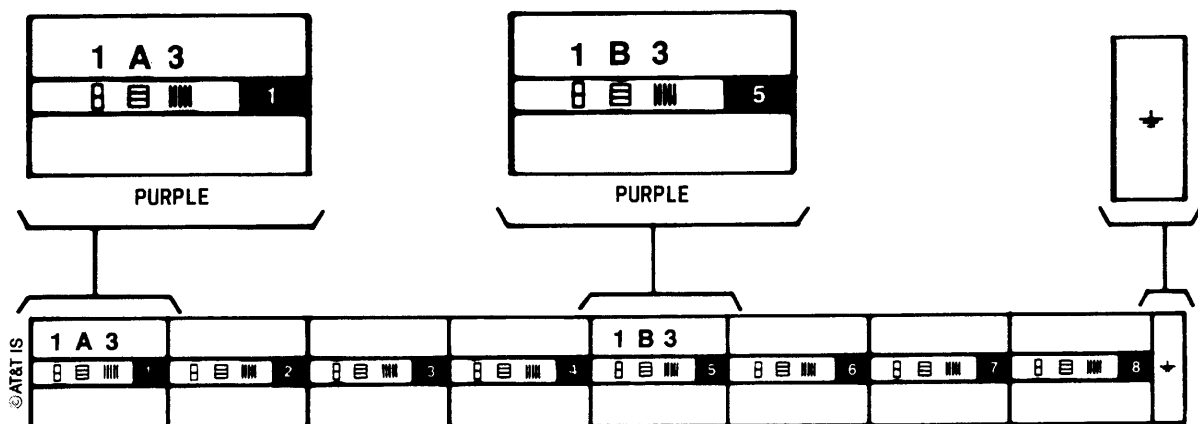


Figure 3-51. Example of Filling Out Port Label for the MET Line Board

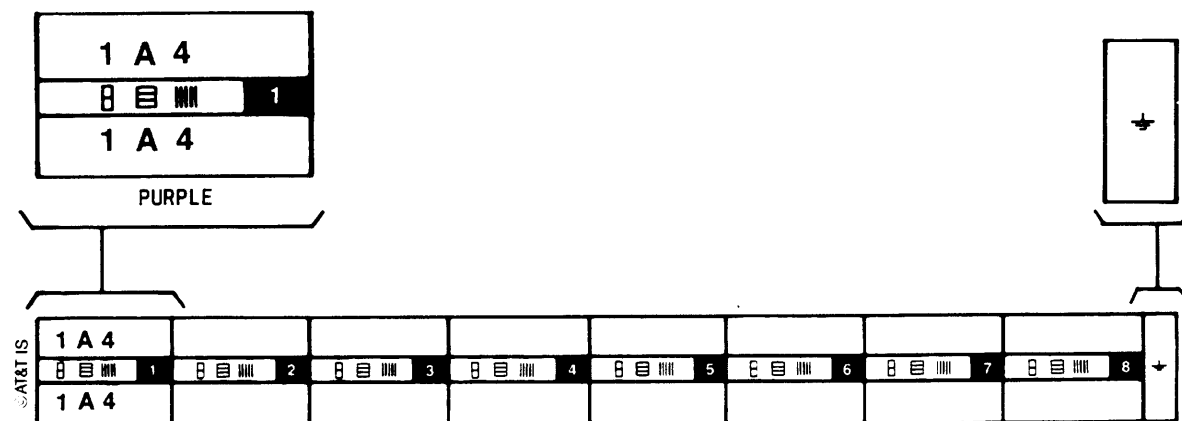
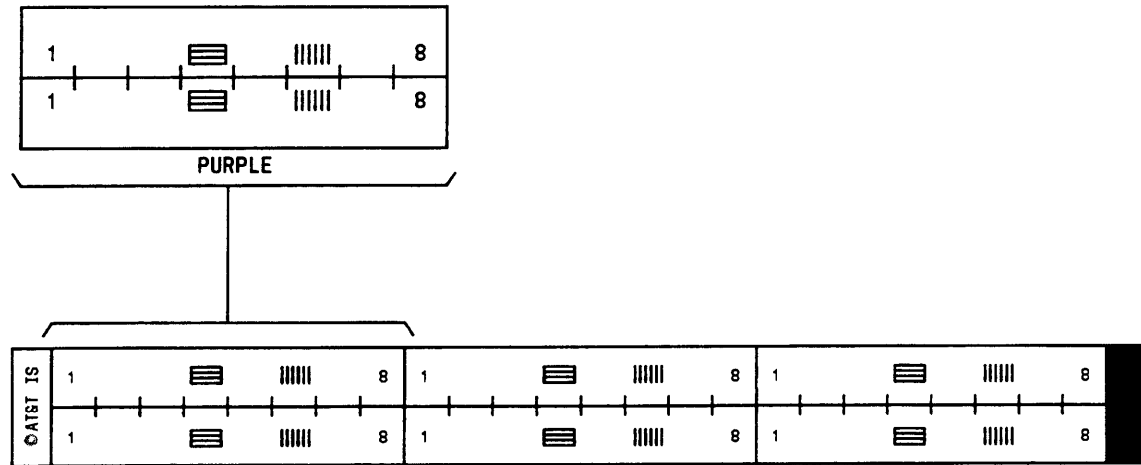


Figure 3-52. Example of Filling Out Port Label for the 16-Port Analog Line Board

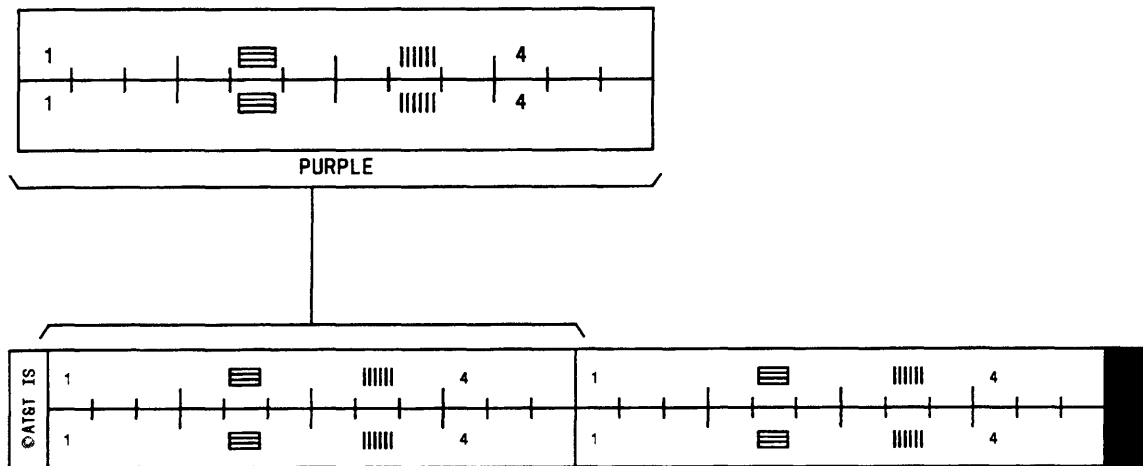
SYSTEM TRUNK AND TIE TRUNK PORT LABELS

WP-90929, List 1 or 3 concentrator cables can be used between the switch cabinet and the 110-type terminal blocks. The label shown in Figure 2-53 is used to identify 3-pair trunk circuits from the switch cabinet. The label shown in Figure 2-54 is used to identify 3-pair tie trunk circuits from the switch cabinet.



- **USAGE:**
IDENTIFIES CO TRUNK CIRCUIT PORTS WHEN
WP-90929, LIST 1 CONCENTRATOR CABLE IS USED
- **CODE NO:**
225A

Figure 3-53. System Trunk Port Circuit Labels

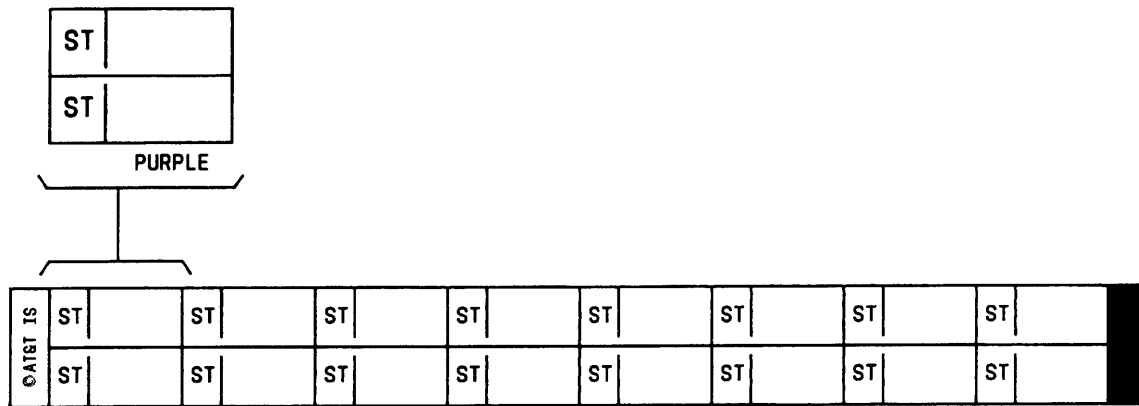


- **USAGE:**
IDENTIFIES TIE TRUNK CIRCUIT PORTS WHEN
WP-90929, LIST 3 CONCENTRATOR CABLE IS USED
- **CODE NO:**
225A

Figure 3-54. System Tie Trunk Port Circuit Labels

DUAL-PURPOSE EMERGENCY TRANSFER STATIONS LABELS

The label shown in Figure 3-55 identifies the connection to the cross-connect field for voice terminals for normal use as well as emergency transfer stations.



- **CODE NO:**
225A

Figure 3-55. Dual-Purpose Emergency Transfer Station Labels

Label Code 225A—Purple Labels (103 970 059)

The label code for the port labels is 225A which contains the following:

- 45 purple labels (see Figure 3-50) that identify 3-pair port circuits from the switch. The labels are numbered for the carriers at the switch A through E and each carrier has slots numbered 1 to 20, except carrier A which is only 1 to 10. Each label identifies 16 3-pair circuits.
- 10 unnumbered purple labels (see Figure 3-50) that identify 3-pair port circuits from the switch. Each label identifies 16 3-pair circuits.
- 3 purple labels that identify 3-pair system trunk port circuits from the switch when WP-90929, List 1 concentrator cables are used.
- 3 purple labels that identify 3-pair system tie trunk port circuits from the switch when WP-90929, List 3 concentrator cables are used.
- 5 purple labels to identify connections to dual-purpose emergency transfer stations (see Figure 3-55).

Installing the Sneak Fuse Panels

Install the sneak fuse panels as near as possible to the network interface. The sneak fuse panel has two mounting screw slots. To install the panel, proceed as follows:

1. Hold the panel against the mounting surface and mark the upper right and lower left mounting screw locations and remove panel.
2. Drill pilot holes at the marked locations, and partially install the screws.
3. Slide the panel onto the mounting screws and tighten.
4. Repeat the procedure for each additional sneak fuse panel.

Cable Installation

Labels

The port label shown in Figure 3-56 is installed on both ends of the 25-pair switch cables that connect to the Trunk/Auxiliary Field and the Distribution Field. The blue/yellow building and floor labels are optionally used for cables that connect from the equipment room to a site or satellite located on another floor or in another building. An additional yellow label is shown. This yellow label is used for auxiliary circuits that connect to the Trunk/Auxiliary Field or SSI circuits that connect to an Applications Processor.

The blue/yellow label is used on 25-pair station cables that connect to site or satellite closets.

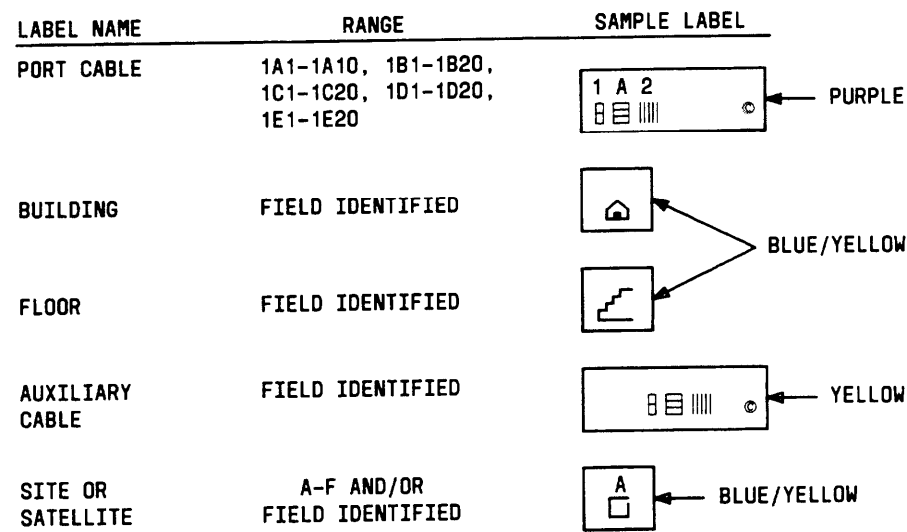


Figure 3-56. Equipment Room Cabling Labels

CABLE/JACK/BUILDING LABEL ORDERING INFORMATION

Description	Qty. Per. Code	Comcode
201A Labels	34 Sheets	103 969 994

Figure 3-57 shows the proper label installation on a 25-pair cable connector (see Note).

Note: The label should be installed near the rear of the connector as shown so that it will not be obscured by any of the switch cabinet connector retainers. It can also be installed on the skin of the cable near the connector.

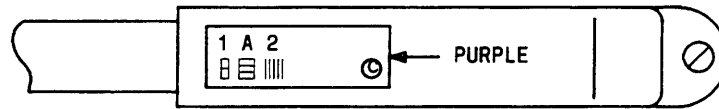


Figure 3-57. Self-Stick Label Installation on 25-Pair Cable Connector

Routing Cable Guidelines

The following guidelines should be followed when installing the equipment room cabling. Following these guidelines will make optimum use of the cable slack managers and make future cabling additions and changes easier.

General

Figure 3-58 shows cable routing through the cable slack manager for a 1-cabinet installation using connectorized bottom terminal blocks. Figure 3-59 shows cable routing through the cable slack manager using connectorized top terminal blocks. Cables route through the cable slack manager in either the cabinet or wall troughs or when needed through the two center troughs.

Port cables should use the cabinet trough for the parallel runs. The station cables should use the wall trough. The center troughs are used after the cabinet and wall troughs are filled.

Figure 3-60 shows typical cable routing from the switch cabinet to the cross-connect field using connectorized bottom terminal blocks. Figure 3-61 shows cable routing from the switch cabinet to the cross-connect field using connectorized top terminal blocks.

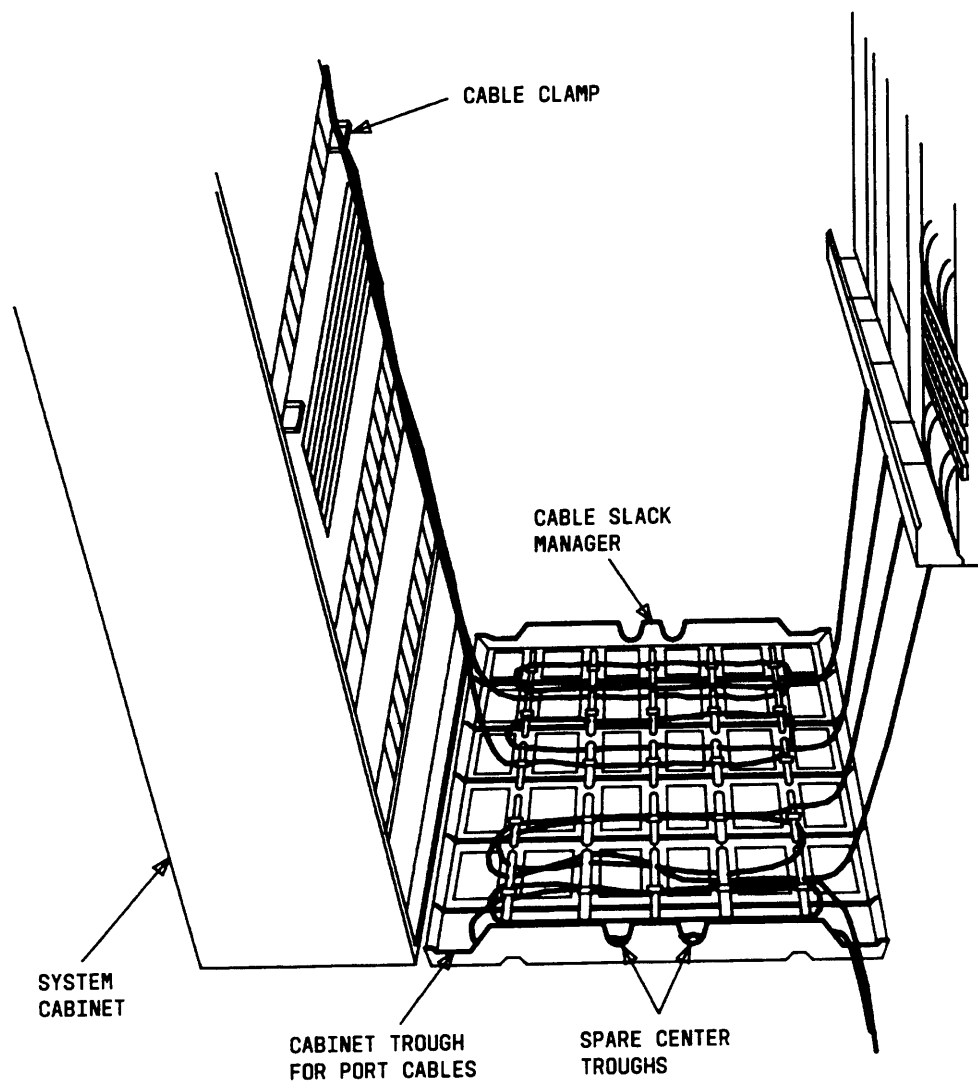


Figure 3-58. Cable Routing Through Cable Slack Manager—1-Cabinet Installation (Using Connectorized Bottom Terminal Blocks)

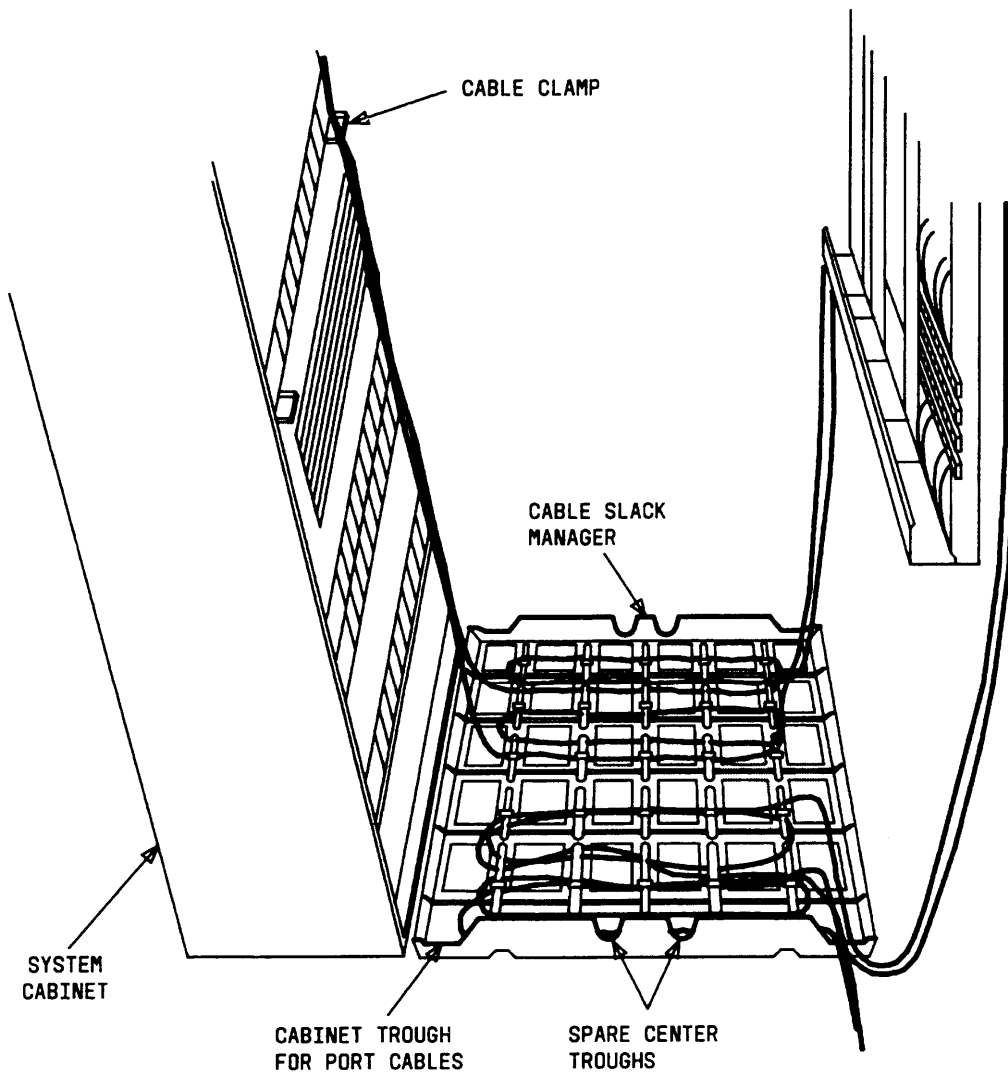
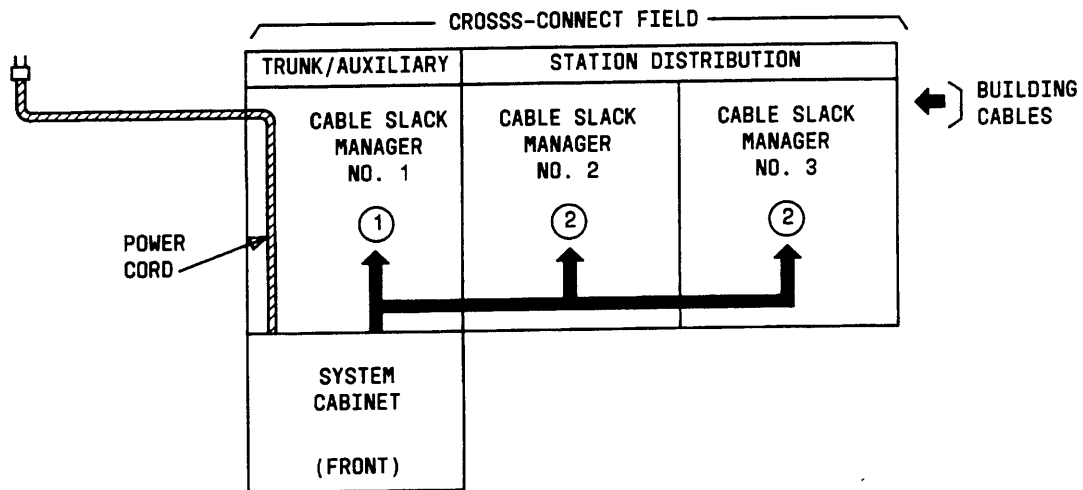


Figure 3-59. Cable Routing Through Cable Slack Manager—1-Cabinet Installation (Using Connectorized Top Terminal Blocks)



- ① CABLES RUN FROM SWITCH CABINET TO TRUNK/AUXILIARY FIELD.
- ② CABLES RUN FROM SWITCH CABINET TO STATION DISTRIBUTION FIELD.

Figure 3-60. Cable Routing From Switch Cabinet to Cross-Connect Field (Using Connectorized Bottom Terminal Blocks)

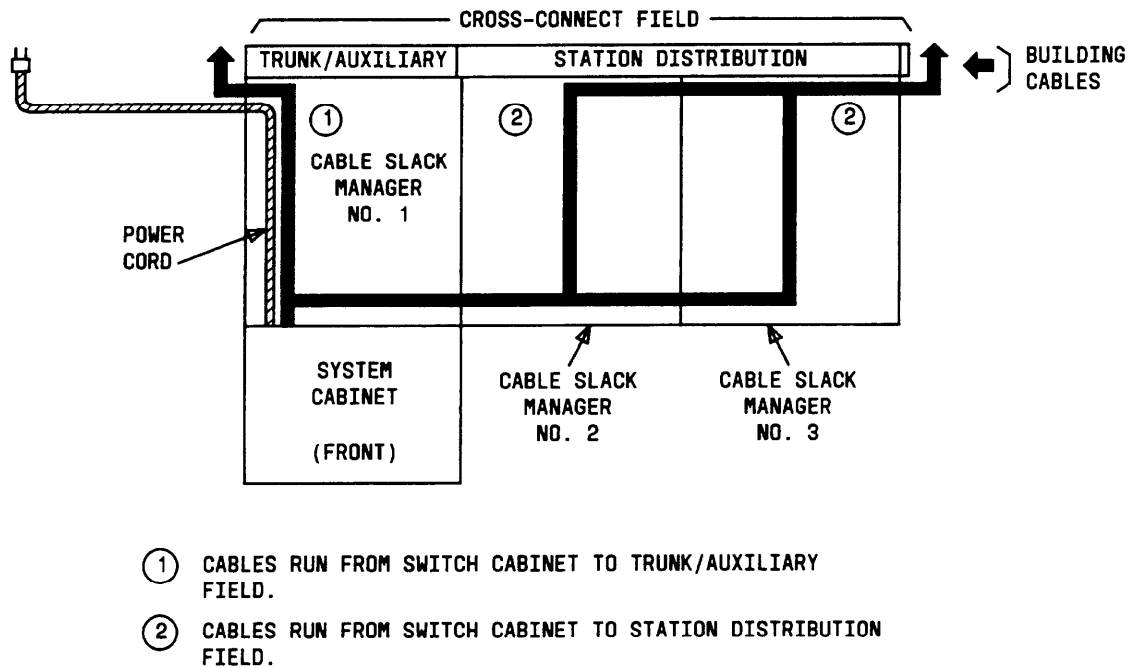


Figure 3-61. Cable Routing From Switch Cabinet to Cross-Connect Field (Using Connectorized Top Terminal Blocks)

Routing Cables From Switch Cabinet to Cross-Connect Field

The following guidelines should be followed when routing cables from the switch cabinet to the cross-connect field.

- For connectorized bottom terminal blocks, each individual port cable should be first connected to the switch cabinet and then routed from the switch cabinet along the front trough of the cable slack manager to the front of the terminal block where the port cable is to be installed.
- For connectorized top terminal blocks, each individual port cable should be first connected to the switch cabinet and then routed from the switch cabinet along the front trough of the cable slack manager and to the point where the cable will be routed to in order to exit the cable slack manager.
- Enough slack should be left at the cabinet to allow dressing of the cables (Figure 3-62).
- The cable is then routed perpendicularly from the front trough to the wall along side a row of five columns in the cable slack manager (see Note).

Note: Retainers mounted on the columns keep the cable from protruding above the top of the base of the cable slack manager.

- The length of the cable required to reach the connectorized bottom terminal block connector in the cable slack manager or to reach from the floor to the connector located on the connectorized top terminal block is then determined.

- If connectorized top terminal blocks are used, the cables must be supported on the wall using D rings.
- Cable slack is stored perpendicular to the wall and cabinet by coiling the cable around the columns in the cable slack manager. The first run should always go back and forth the full length of five columns in the cable slack manager.
- The cable is then connected to the terminal block connector.

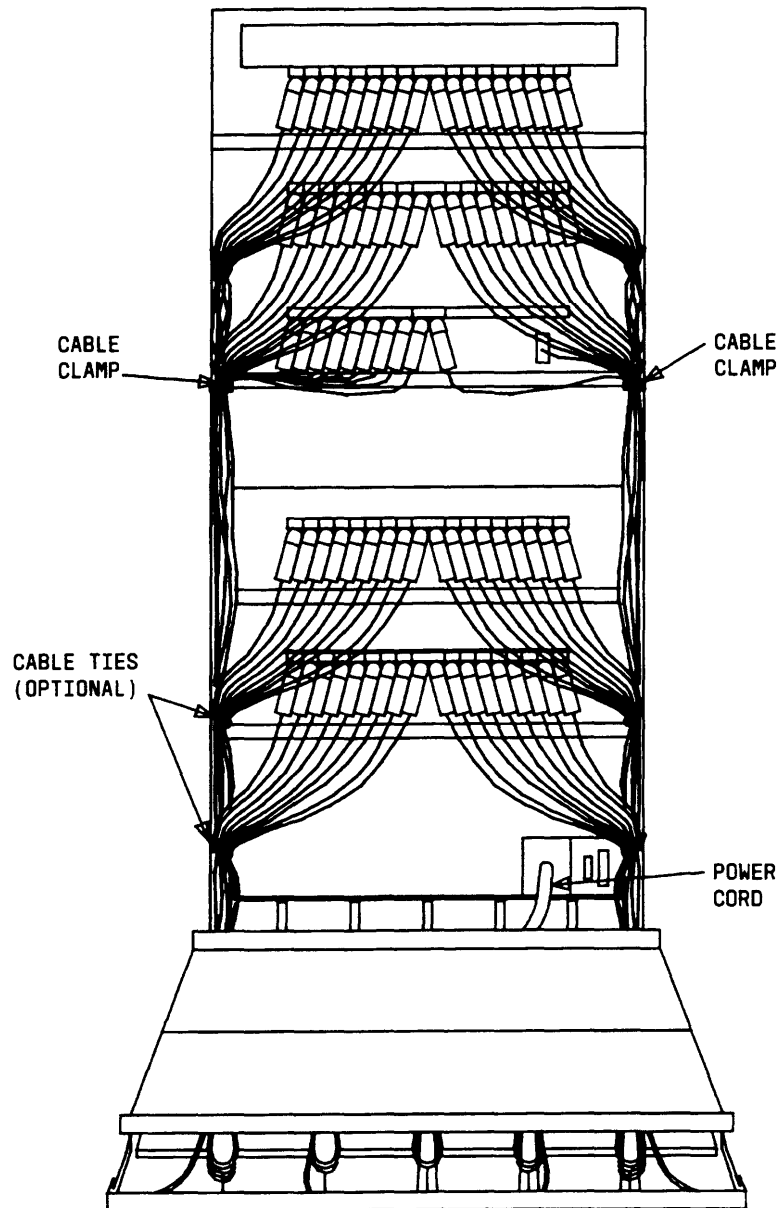


Figure 3-62. Typical Port Cable Installation at Switch Cabinet

Installing Control Carrier Outputs Cable

Control Carrier outputs are used for power failure transfer power, accessory power (not provided on System 75 XE), alarm monitoring, customer-provided alarm (System 75 XE only), and the Initialization and Administration System (INADS) interface. A 25-pair switch cable connects the control carrier AUXILIARY connector (see Figures 3-63 and 3-64) to a 110 terminal block connector associated with a 110 terminal block row in the yellow field of the Trunk/Auxiliary Field.

One of the AUXILIARY connector labels should be placed on the 110 terminal block row. To connect the cable, do the following:

1. Install a YELLOW auxiliary label on both connectors of a switch cable. The letters "AUX" should be written on each label.
2. Run and connect switch cable from AUXILIARY connector on rear of control carrier through cable slack manager to the 110 terminal block connector associated with the proper 110 terminal block row in the yellow field of the Trunk/Auxiliary Field.

The output wiring connections for alarm monitoring, emergency power failure, accessory power, and the INADS trunk interface is contained in this guide under the heading **MISCELLANEOUS WIRING INSTALLATION**.

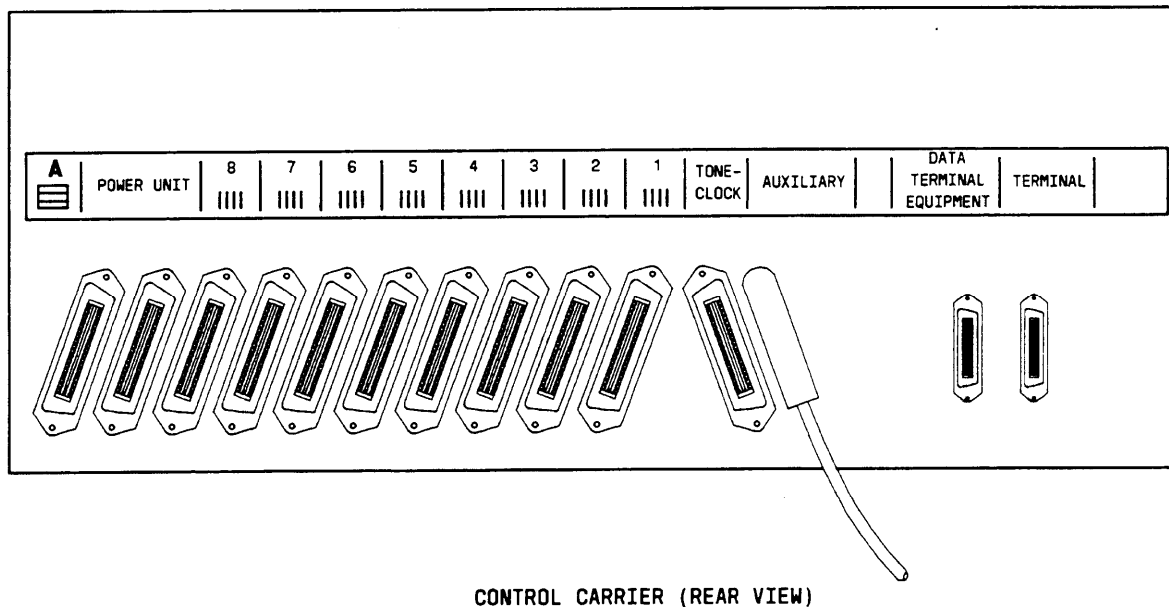


Figure 3-63. Control Carrier Outputs (AUXILIARY Connector)—System 75

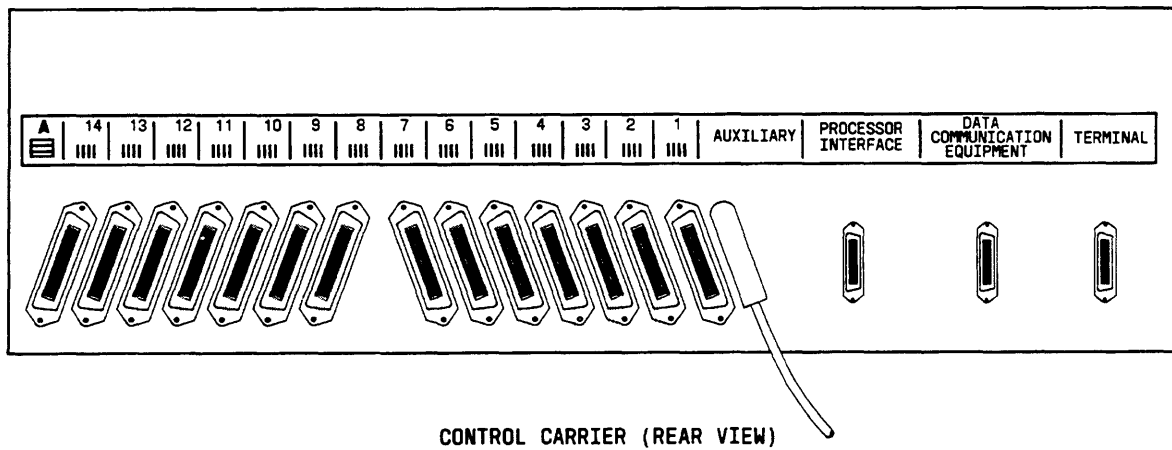


Figure 3-64. Control Carrier Outputs (AUXILIARY Connector)—System 75 XE

Installing Trunk Cables Between Network Interface, Sneak Fuse Panel, and System Cabinet

The trunk pairs installed by the local telephone company will appear in the green field with up to 24 pairs on each row of the 110 hardware for the 1-pair central office trunks. The tie trunks will appear in the green field with up to eight 3-pair trunks on each row of the 110 terminal block. WP-90929, Lists 1 and 3 concentrator cables are used between the 110 terminal block row in the purple field and the switch cabinet. The 1-pair patch cords or jumper wires can also be run from the green terminal block row to the purple terminal block rows in order to establish the correct 3-pair modularity in each case. Table 3-K shows switch port appearances at the cross-connect field, and Figures 3-65 and 3-66 shows the carrier connectors located on the rear of the switch cabinet that are connected to the purple field.

TABLE 3-K. Carrier Lead Appearances at 110 Cross-Connect Field

(Contd on Next Page)

110 Conn. Block Terminals	Anal. Line (8) TN742 or TN769	Anal. Line (16) TN746	Data Line TN726	Dig. Line TN754	Hyb. Line TN762 TN762B	MET Line TN735	AUX. Trk. TN763 TN763B	CO Trk. TN747 TN747B	DID Trk. TN753	Tie Trk. TN760 TN760B	DS1 Tie Trk. TN722 TN722B
1	T1	T1			V1T1	T1	T1	T1	T1	T1	
2	R1	R1			V1R1	R1	R1	R1	R1	R1	
3		T2	TXT1	TXT1	CT1	TXT1	SZ1			T11	
4		R2	TXR1	TXR1	CR1	TXR1	SZ11			R11	
5		T3	PXT1	PXT1	P-1	PXT1	S1			E1	
6		R3	PXR1	PXR1	P+1	PXR1	S11			M1	
7	T2	T4			V1T2	T2	T2	T2	T2	T2	
8	R2	R4			V1R2	R2	R2	R2	R2	R2	
9			TXT2	TXT2	CT2	TXT2	SZ2			T12	
10			TXR2	TXR2	CR2	TXR2	SZ12			R12	
11			PXT2	PXT2	P-2	PXT2	S2			E2	
12			PXR2	PXR2	P+2	PXR2	S12			M2	
13	T3				V1T3	T3	T3	T3	T3	T3	
14	R3				V1R3	R3	R3	R3	R3	R3	
15			TXT3	TXT3	CT3	TXT3	SZ3			T13	
16			TXR3	TXR3	CR3	TXR3	SZ13			R13	
17		T5	PXT3	PXT3	P-3	PXT3	S3			E3	
18		R5	PXR3	PXR3	P+3	PXR3	S13			M3	
19	T4	T6			V1T4	T4	T4	T4	T4	T4	
20	R4	R6			V1R4	R4	R4	R4	R4	R4	
21		T7	TXT4	TXT4	CT4	TXT4	SZ4			T14	
22		R7	TXR4	TXR4	CR4	TXR4	SZ14			R14	
23		T8	PXT4	PXT4	P-4	PXT4	S4			E4	
24		R8	PXR4	PXR4	P+4	PXR4	S14			M4	

TABLE 3-K. Carrier Lead Appearances at 110 Cross-Connect Field (Contd)

110 Conn. Block Terminals	Anal. Line (8) TN742 or TN769	Anal. Line (16) TN746	Data Line TN726	Dig. Line TN754	Hyb. Line TN762 TN762B	MET Line TN735	AUX. Trk. TN763 TN763B	CO Trk. TN747 TN747B	DID Trk. TN753	Tie Trk. TN760 TN760B	DS1 Tie Trk. TN722 TN722B
25	T5	T9			V1T5			T5	T5		
26	R5	R9			V1R5			R5	R5		
27		T10	TXT5	TXT5	CT5						
28		R10	TXR5	TXR5	CR5						
29		T11	PXT5	PXT5	P-5						
30		R11	PXR5	PXR5	P+5						
31	T6	T12			V1T6			T6	T6		
32	R6	R12			V1R6			R6	R6		
33			TXT6	TXT6	CT6						
34			TXR6	TXR6	CR6						
35			PXT6	PXT6	P-6						
36			PXR6	PXR6	P+6						
37	T7				V1T7			T7	T7		
38	R7				V1R7			R7	R7		
39			TXT7	TXT7	CT7						
40			TXR7	TXR7	CR7						
41		T13	PXT7	PXT7	P-7						
42		R13	PXR7	PXR7	P+7						
43	T8	T14			V1T8			T8	T8		L1*
44	R8	R14			V1R8			R8	R8		L1
45		T15	TXT8	TXT8	CT8						L0
46		R15	TXR8	TXR8	CR8						L0*
47		T16	PXT8	PXT8	P-8						LBACK2
48		R16	PXR8	PXR8	P+8						LBACK1
49											
50											

* Denotes ring side or high side of pair.

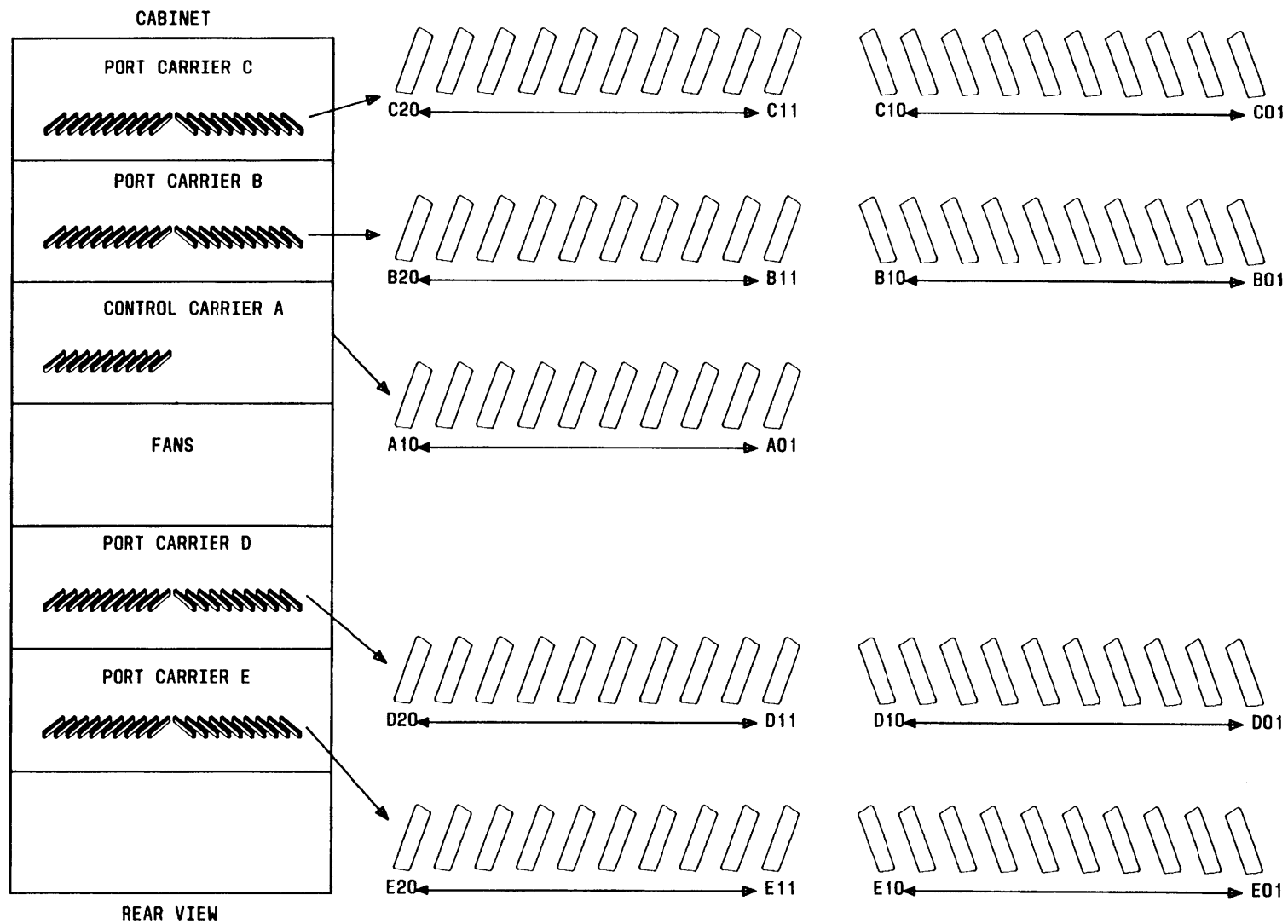


Figure 3-65. System 75 5-Carrier Slot Addresses

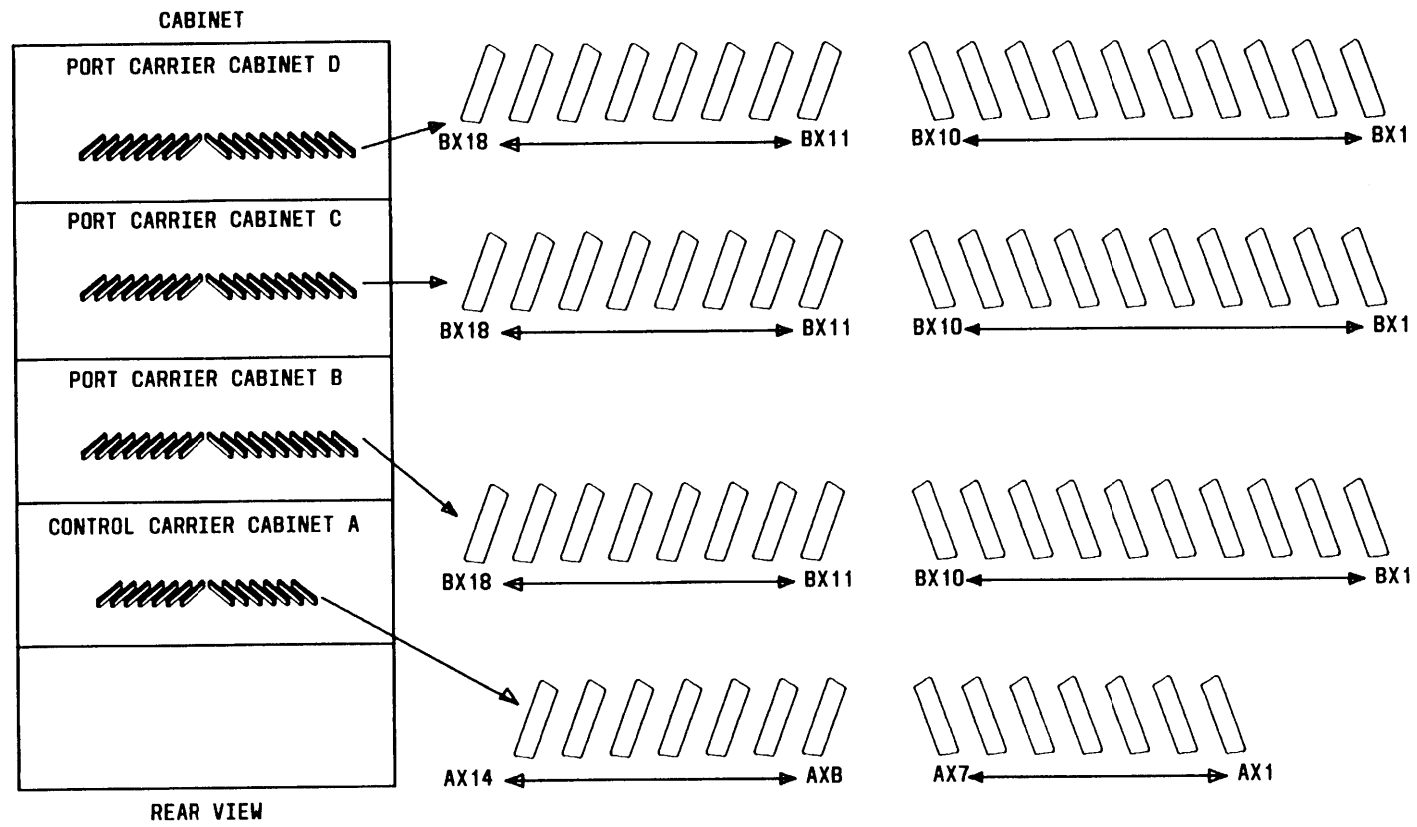


Figure 3-66. System 75 XE Carrier Slot Addresses

Connecting Trunk Pairs to the Switch Cabinet Using Concentrator Cables

Figure 3-67 shows trunk pairs connected to the switch cabinet using concentrator cables. To install the cables, proceed as follows:

1. Connect B25A cables between the network interface and the sneak fuse panels.
2. Connect A25D cables from the sneak fuse panels to the 110 terminal block connectors in the green field.
3. Connect Patch cords or jumper wires from the green terminal block row to a purple terminal block row.
4. Connect the single-fingered end of the concentrator cables to the 110 terminal block connector associated with the purple row in step 3.
5. Connect the 3-fingered end and 2-fingered ends of the concentrator cables to the appropriate carrier slots. Equipped carrier slots are identified on the Customer Service Order. It is helpful to mark the nomenclature strips above the carriers at rear of cabinet to identify the equipped slots.
6. Label connectors on both ends of the cable that connect to the switch cabinet.
7. Dress cables down sides of cabinet and store excess cable slack in the cable slack manager as described previously.

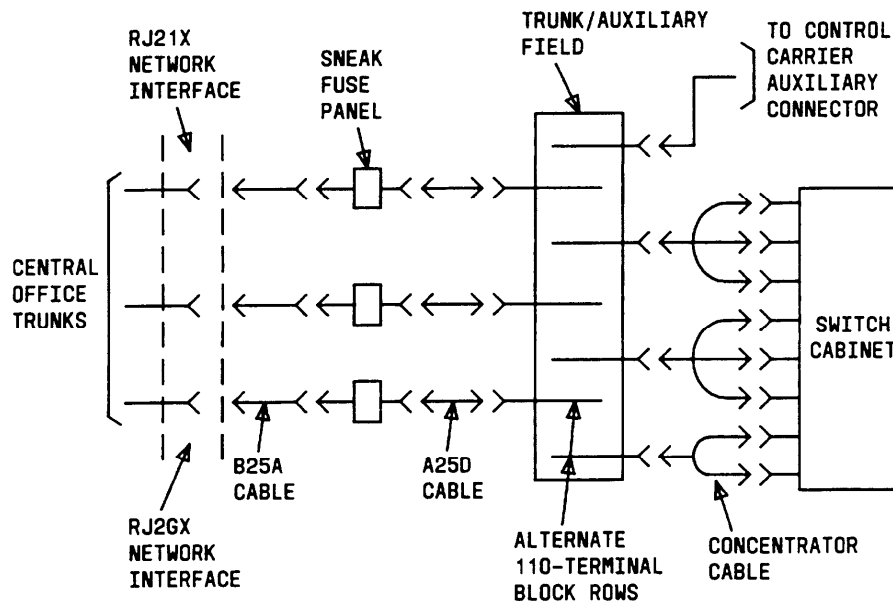


Figure 3-67. Connecting Trunk Pairs Used for 1-Pair Trunk Circuits; DID, Loop Start, Ground Start Using Concentrator Cables

Connecting Trunk Pairs to the Switch Cabinet Using Jumper Wires To Establish 3-Pair Modularity

Figure 3-68 and 3-69 show trunk pairs connected to the switch cabinet using jumper wires to establish 3-pair modularity. To connect the trunk pairs to the purple field, proceed as follows.

1. Connect B25A cables between the network interface and the sneak fuse panels.
2. Connect A25D cables from the sneak fuse panels to the 110 terminal block connectors in the green field.
3. Connect 1-pair patch cords or jumper wires from each green 110 terminal block row to the purple and yellow 110 terminal block rows as shown by the example in Figure 3-68 for 1-pair central office trunks or by the example in Figure 3-69 for 3-pair tie trunks.

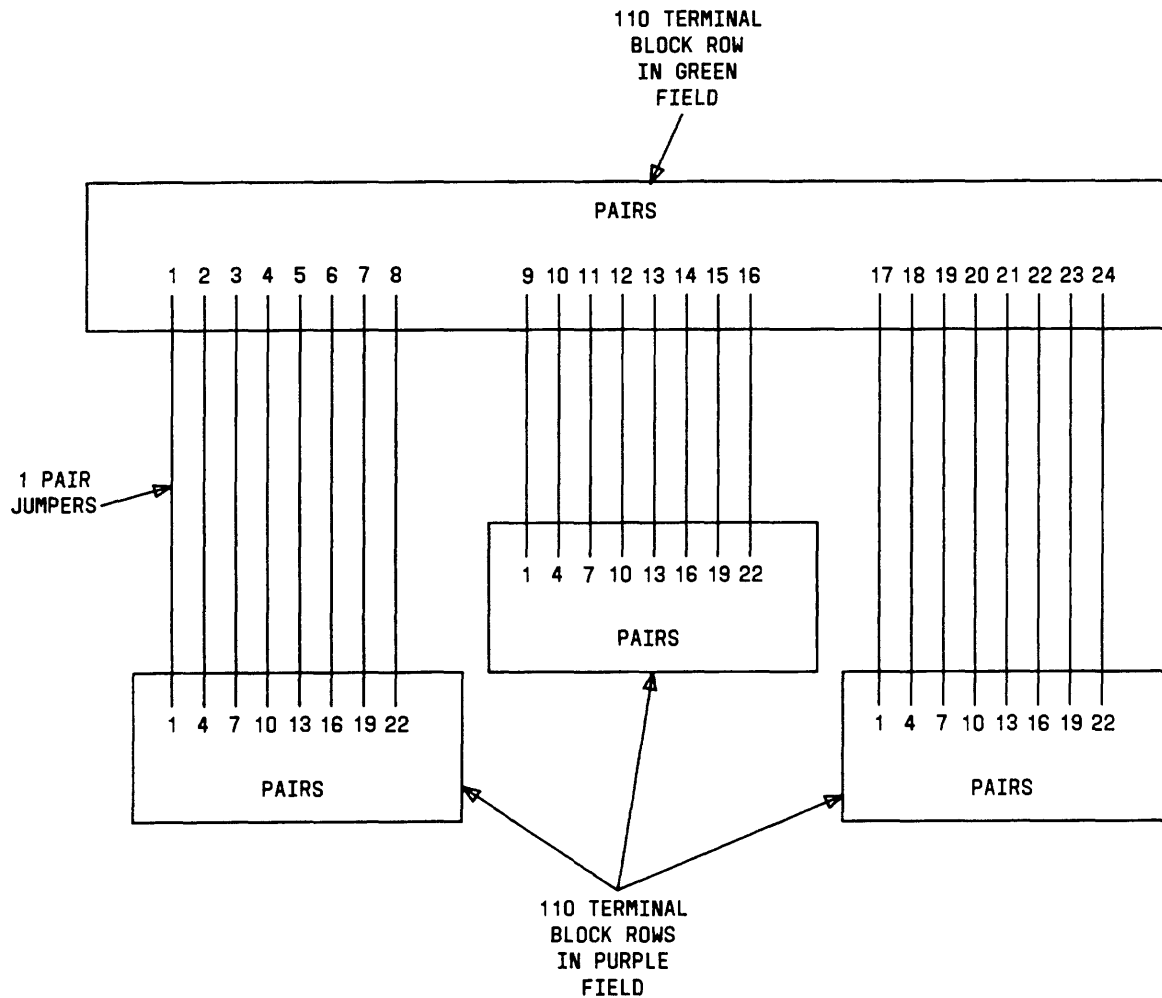


Figure 3-68. Example of Establishing 3-Pair Modularity for Trunk Pairs Used for 1-Pair Trunk Circuits; DID, Loop Start, Ground Start

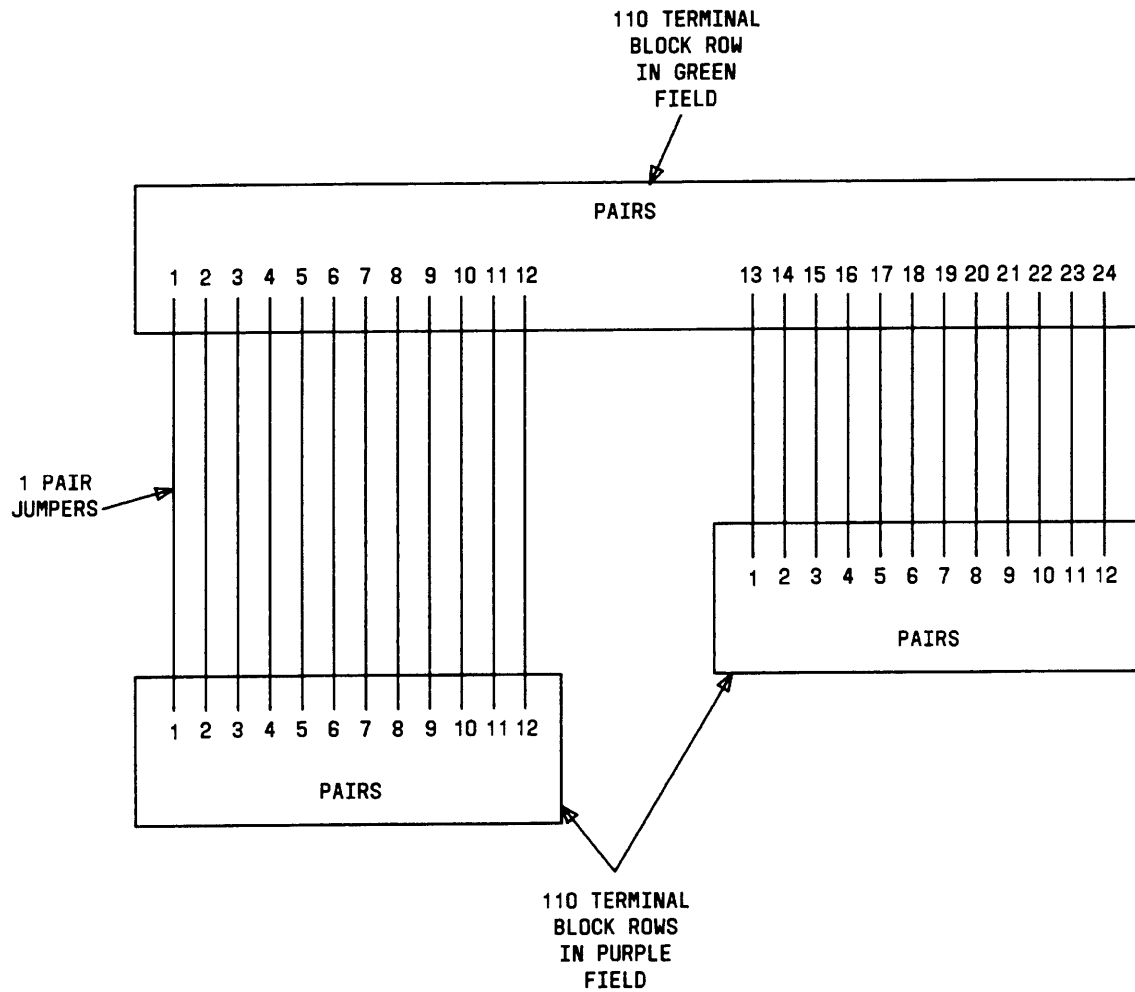


Figure 3-69. Example of Establishing 3-Pair Modularity for Trunk Pairs Used for 3-Pair Tie Trunks

Installing Coupled Bonding Conductor Grounding

A coupled bonding conductor must be tie-wrapped to all trunk cables. The coupled bonding conductor connects to the cabinet single-point ground block and runs all the way to the approved ground located nearest the telephone company-owned protector block at the building cable entrance facility (see Figure 3-70).

Note: Approved ground is defined in the *AT&T System 75—System Description* (555-200-200) or *AT&T System 75 XE—System Description* (555-201-200)..

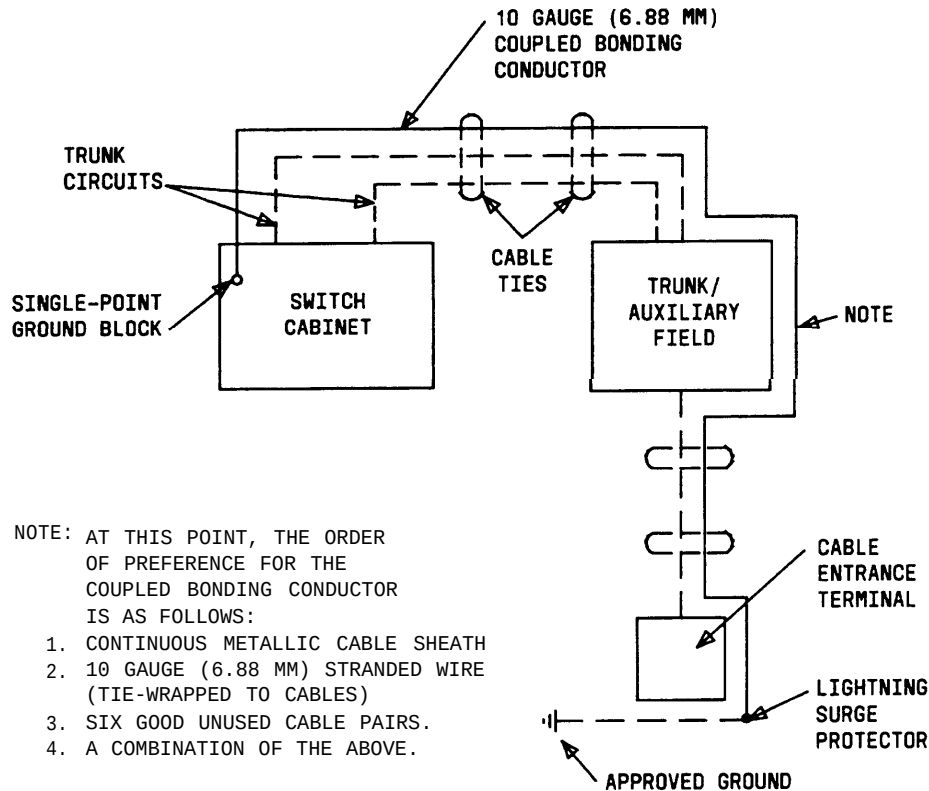


Figure 3-70. Coupled Bonding Conductor Grounding Installation

Installing Cables Between Switch Cabinet and the Cross-Connect Field

Before starting the following procedure, refer to **Routing Cables From Switch Cabinet to Cross-Connect Field** guidelines. Also, all purple labels should have been previously installed on the 110 terminal blocks as described under the heading **Labeling the Cross-Connect Field**.

1. Install self-stick port labels on the back of the cable connectors for the first switch cable.

Note: Labels should not be obscured by the switch cabinet 25-pair connector retainers.

2. Connect one end of switch cable to appropriate carrier slot and dress down back of cabinet.
3. Route the cable from the switch cabinet through the cable slack manager and store slack.
4. Connect the 25-pair cable to the 110 terminal block connector.
5. Repeat steps 1 through 4 until all cables are installed.
6. If connectorized top 110 terminal blocks are provided, "D" rings should be installed to hold the cables against the wall, so the cables can be routed up the wall to the top of the 110 terminal block.

Installing Cables Between Cross-Connect Field and Auxiliary Cabinet

Auxiliary equipment that connects to the cross-connect field can be optionally mounted inside the auxiliary cabinet. The equipment connects to an ED-1E1443-10 (Group 1) intraconnection panel provided with the auxiliary cabinet. The intraconnection panel consists of a 110-type 100-pair wiring block located inside the cabinet. The wiring block is prewired to four 25-pair female connectors on a mounting plate that is attached to the outside rear skin of the cabinet.

Auxiliary equipment is punched down on the 110-type wiring block. A25D cables connect the block to both the cross-connect field and the switch cabinet. Details for installing the equipment and making the connections to the cross-connect field are included under the heading **AUXILIARY EQUIPMENT INSTALLATION** in this manual.

STATION WIRING DESIGN

Description

The following hardware and cabling is used in the station wiring design:

- Information outlets
- Station Cables
- Closets
 - Site locations
 - Satellite locations
- Adapters.
- Labels

A brief description of each of the above listed items follows. The station wiring labels and their use are described under the heading **STATION WIRING AND ASSOCIATED HARDWARE INSTALLATION**. Ordering information is not provided for station cables and information outlets. The ordering information for this equipment should be obtained from the *Premises Distribution System Equipment and Supplies Catalog*.

Information Outlets

Information Outlets are 8-pin modular wall jacks. Most of the outlets require wiring using push-on connections. Outlets are also available that connect to a double modular plug-ended 4-pair station cable run from the cross-connect field, a site or satellite location, or an adapter.

Station Cables

For clarity in describing the wiring in this manual, station cable is either 25-pair cable, multiple 25-pair cable, or 4-pair D-inside wire (DIW) run from the equipment room, a site or satellite location, or adapter to the information outlets. The following types of station cable (Figure 3-71) are available.

- **Connectorized 25-pair station cable**—This cable is used between the equipment room and the site or satellite locations or adapters. The cable used between the equipment room and the satellite closet is an A25D (male to male). The cable used between the equipment room and the site closet or adapter is a B25A (male to female).
- **Connectorized multiple 25-pair station cable**—This cable can be optionally used between the equipment room and the site or satellite locations or adapters. This cable consists of individually sheathed 25-pair cables with factory-installed 25-pair connectors on both ends. The cable used to connect to site locations or adapters should be male to female. The cable used to connect to the satellite location should be a male to male. Staggered-finger cables are recommended for all multiple 25-pair station cables.
- **Bulk Cable**—This cable is the same as the connectorized 25-pair cable or multiple 25-pair cable; however, the bulk cable is not connectorized on either end. It can be used between the equipment room and satellite closets when both contain field-terminated connecting blocks.
- **Nonconnectorized 4-pair station cable**—This cable is used when 4-pair station cables are to be field-terminated on the 110 terminal blocks in the equipment room or satellite closet and the information outlets require push-on connection.
- **Single modular plug-ended 4-pair station cable**—This cable is used between adapters and information outlets that require push-on connections. It can also be used when 4-pair station cables are field-terminated on the 110 terminal blocks in the equipment room or satellite closet and modularly connected information outlets. The station cables are available in the following standard lengths:

10 feet (3.0 m)
 25 feet (7.6 m)
 50 feet (15.2 m)
 75 feet (22.9 m)
 100 feet (30.5 m)
 150 feet (45.7 m)
 200 feet (61.0 m).

- **Double modular plug-ended 4-pair station cable**—This cable is typically cut and used to provide nonstandard length runs between adapters and information outlets with push-on connections. It can also be used between adapters and modularly connected information outlets. It is available in the same lengths as the single modular plug-ended cable (see Note).

Note: If a 4-pair station cable length longer than 200 feet (61.0 m) is required, a 451A in-line adapter (double-ended modular female connector) is attached to the cable and a second 4-pair cable is plugged into the adapter for the additional distance (see Figure 3-72). The 451A in-line adapter is available in grey (Comcode 103 942 272) or ivory (Comcode 103 786 240).

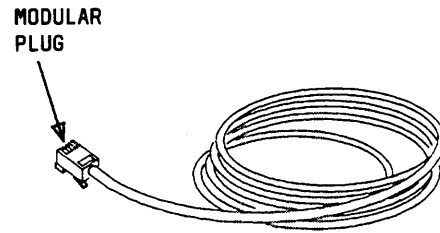


Figure 3-71. 4-Pair Single Modular Plug-Ended Station Cable

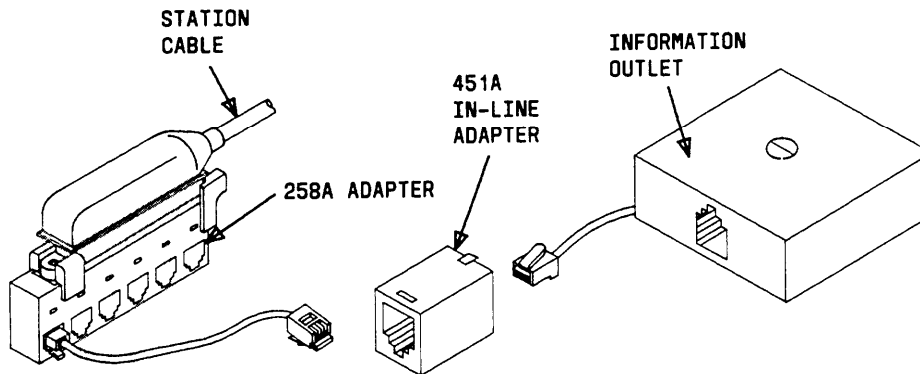


Figure 3-72. Example of Extending 4-Pair Station Cables

Closets

Site Locations

The site locations are closets that provide a point in the station wiring for the administration of remote powering. Adapters are used at site locations to terminate the 25-pair station cables and provide connection points (modular jacks) for power adapters and 4-pair station cables.

258A AND BR2580A ADAPTERS

The 258A and BR2580A adapters (Figure 3-73) plug into a 25-pair female cable connector. These adapters divide the 25-pairs of leads on the cable into six individual 4-pair (modular jack) circuits. Remote powering is accomplished using a 400B2 adapter. (See **ADJUNCT POWERING** section for details.)

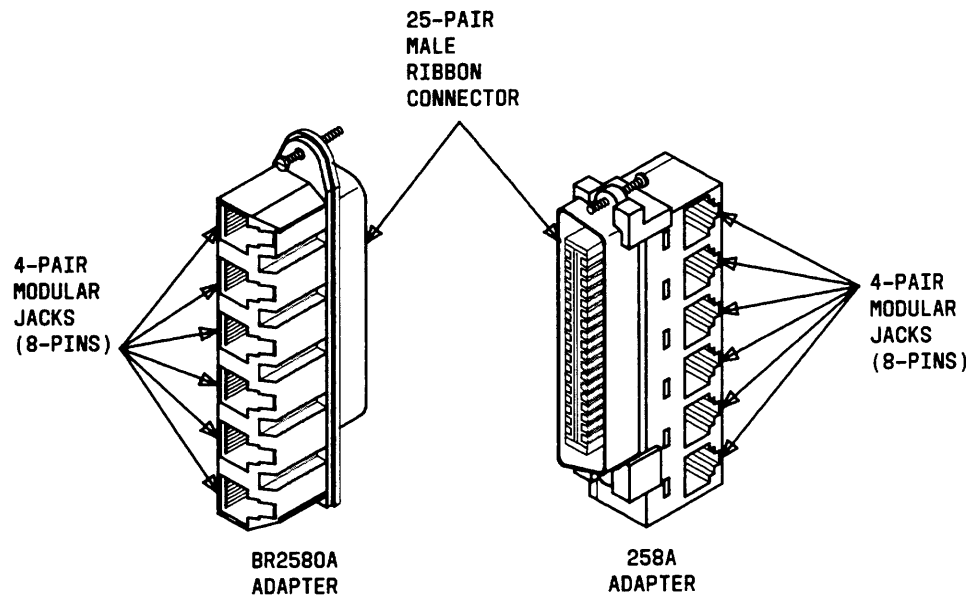


Figure 3-73. 258A and BR2580A Adapters

356A ADAPTER

The 356A adapter (Figure 3-74) plugs into a 25-pair female cable connector. The 356A adapter divides the 25-pairs of leads on the cable into eight individual 3-pair circuits. Although the circuits are 3-pair, the 356A adapter's modular jacks will accept an 8-pin modular plug used on the 4-pair station cable. Remote powering is accomplished using a 400B2 adapter. (See **ADJUNCT POWERING** section for details.)

Caution: *Adapters wired similarly to the 356A should not be used. Their jacks will not accept 4-pair plugs.*

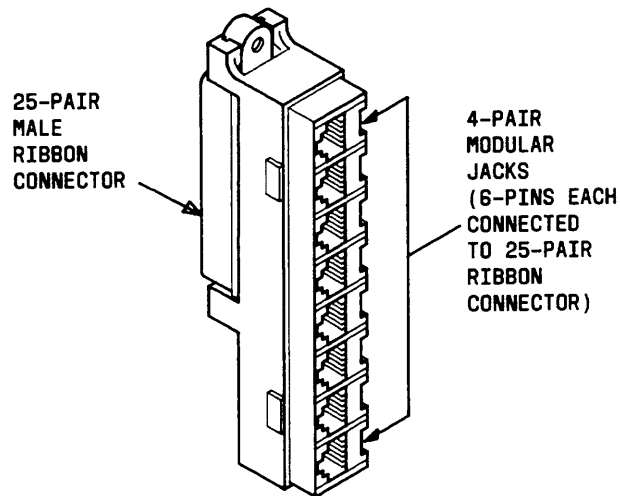


Figure 3-74. 356A Adapter

ZD8AJ ADAPTER

The ZD8AJ Adapter is used to connect the line cord from a MET set to an information outlet. The adapter interchanges pairs 3 and 4 to correspond with the pair assignments for the MET set. The MET set line cord plugs into the adapter and then the adapter plugs into the information outlet.

ADAPTER ORDERING INFORMATION

Description	Comcode
258A Adapter	102 605 136
BR2580A Adapter	403 384 720
356A Adapter	104 158 829
400B Adapter	103 848 859
400B2 Adapter	104 152 558
ZD8AJ Adapter	103 881 421

Satellite Locations

Satellite locations are closets that provide an administration point (using cross-connect equipment) for station cables and where adjunct power may be applied. The station cable circuits from the equipment room cross-connect field are 3-pair. The hardware at the equipment room has been described previously. At the satellite location, 4-pair circuits run to the information outlets. The hardware used at the satellite location is 110-type terminal blocks. Each terminal block has a 3-pair (white field) and a 4-pair (blue field) located on the same terminal block.

The 110A-type terminal block that can be used in the satellite closet is the 110AE1-75FT. It must be field-terminated to both the white and blue fields.

The 300-pair 110P-type terminal blocks that can be used in the satellite closet are the 110PE1-300CT, 110PE1-300CT/FT, and 110PE1-300FT. The 110PE1-300CT is connectorized on both the white and blue fields. The 110PE1-300CT/FT is connectorized on the white field and must be field-terminated on the blue field. The 110PE1-300FT must be field-terminated on both the white and blue fields.

The 900-pair 110P-type terminal blocks that can be used in the satellite closet are the 110PE1-900CT/FT and the 110PE1-900FT. The 110PE1-900CT/FT is connectorized on the white field and must be field-terminated on the blue field. The 110PE1-900FT must be field-terminated on both the white and blue fields.

Station Circuit Distribution From Equipment Room

The following information should be helpful in explaining the station circuit distribution from the equipment room to the information outlets for new wiring installations. Diagrams are provided to show the options for running and connecting the station cables.

If most of the voice terminals that require remote powering are within 250 feet (76.2 m) of the equipment room, 4-pair station circuits are run from the equipment room to the information outlets. If this is not the case or if the customer requires 2-point administration, 3-pair station circuits are run to satellite locations. From the satellite locations, 4-pair station circuits are run to the information outlets.

4-Pair Station Circuits

Four-pair circuits can be run directly from an equipment room cross-connect field to a 258A or BR2580A adapter as shown in Figure 3-75. Four-pair station cables (DIW) connect the adapter to the information outlets.

The 4-pair DIW station cables can be run directly from the equipment room to the information outlets if 4-pair terminal blocks are used in the Distribution Field (see Figure 3-76). The station cables must be field-terminated to the 110 terminal blocks. If modular plug-ended station cable is to be used, an adapter can be connected directly to the 110 terminal block connectors (see Figure 3-77).

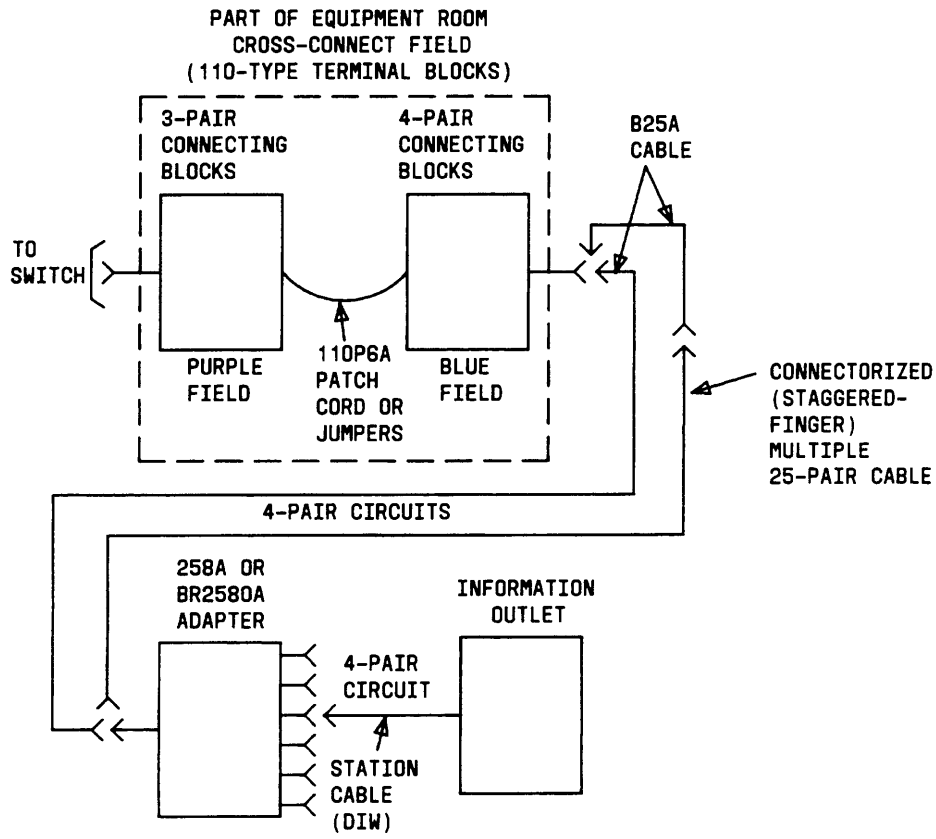


Figure 3-75. 4-Pair Circuit Distribution and Connectivity From Equipment Room Cross-Connect Field

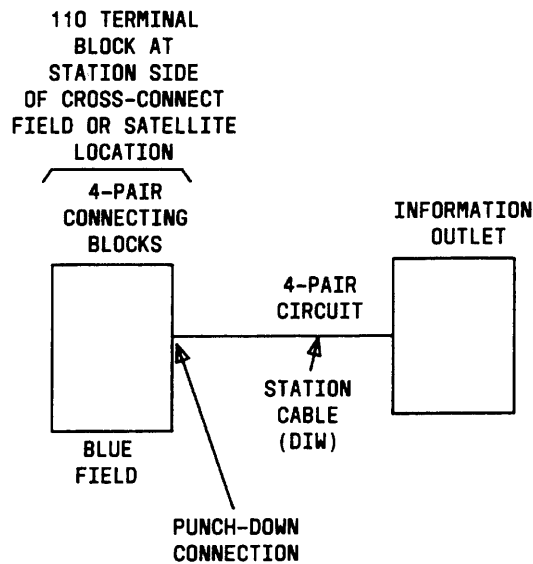


Figure 3-76. 4-Pair Home Run to Equipment Room or Satellite Location

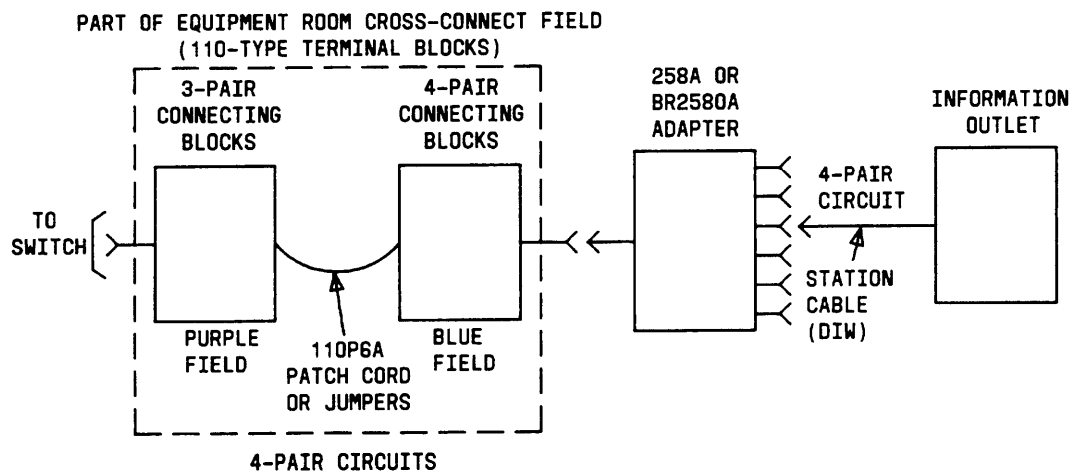
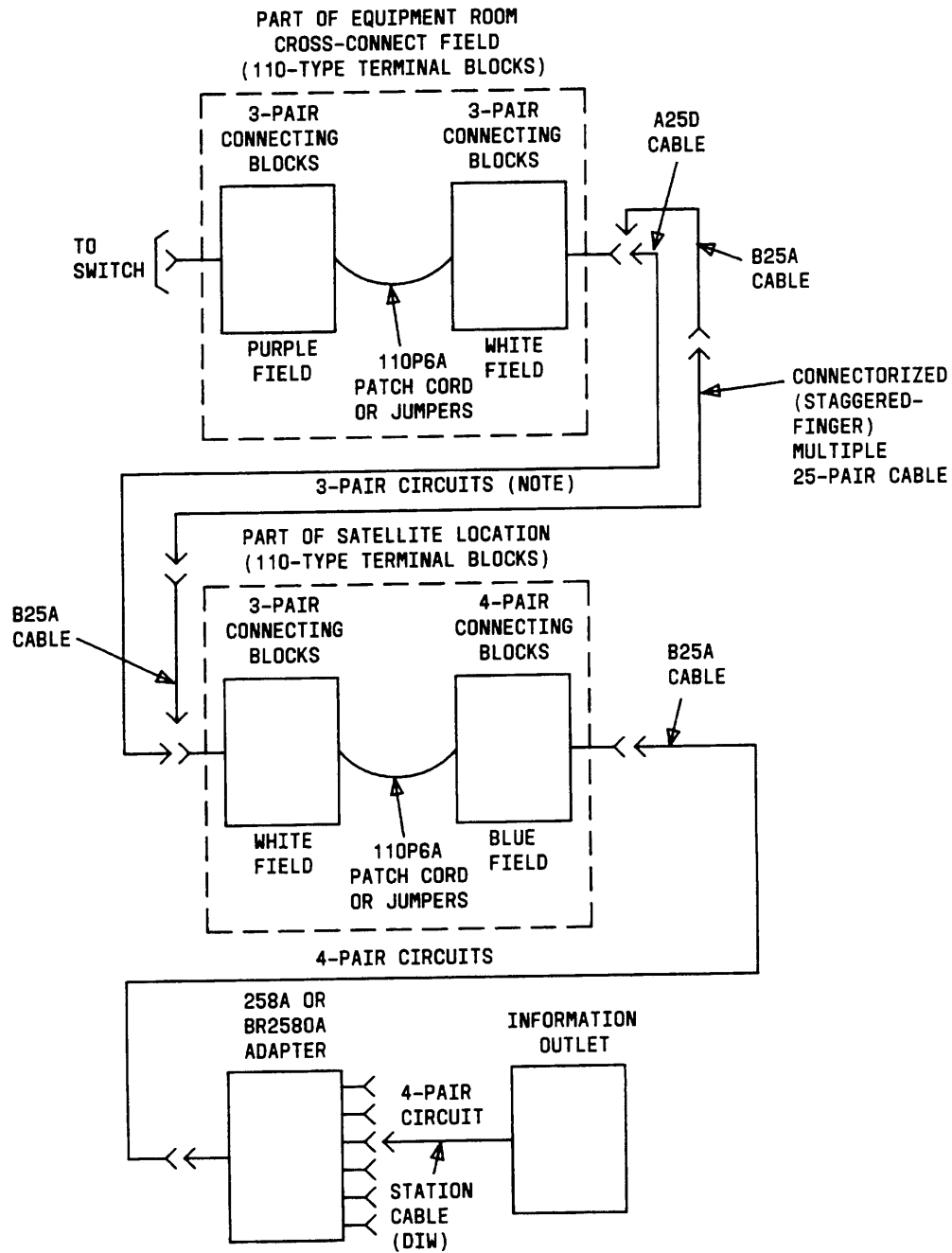


Figure 3-77. Example of 4-Pair Home Run to Equipment Room or Satellite Location Using Modular Plug-Ended Station Cable

3-Pair to 4-Pair Station Circuit Distribution

Figure 3-78 shows the 3-pair circuit distribution from an equipment room cross-connect field to a satellite location. Four-pair circuits are distributed from the satellite location to the information outlets.

Three-pair circuits can also be run directly from the equipment room cross-connect field to a 356A adapter as shown in Figure 3-79. Four-pair station cables (DIW) connect the adapter to the information outlets. Four-pair station cables (DIW) can be run directly from a satellite location to the information outlets as described previously (Figure 3-76 and 3-77).



NOTE:

1. IF FIELD TERMINATED 110-TYPE TERMINAL BLOCKS ARE USED AT THE EQUIPMENT ROOM AND SATELLITE LOCATION, BULK CABLE MAY BE USED TO RUN THE 3-PAIR CIRCUITS.

Figure 3-78. 3-Pair to 4-Pair Circuit Distribution and Connectivity From Equipment Room

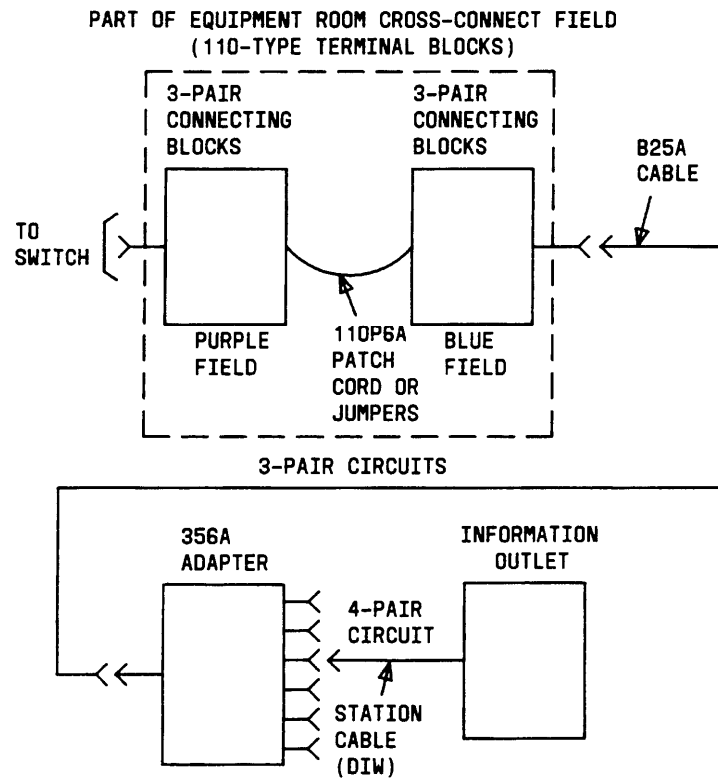


Figure 3-79. 3-Pair to 4-Pair Circuit Distribution and Connectivity From Equipment Room Using a 356A adapter

Table 3-L provides detailed wiring information for the 25-pair cables, the adapters, and the information outlets.

Note: Bridged taps must not be used on any part of the station wiring.

TABLE 3-L. System Wiring

(Contd on Next Page)

25-Pair Cable							4-Pair Cable	
Term. No.	Term Lead Functions				D-Inside Cable Color Code	BR2580A or 258A Adapter Pin Num.	D-Inside Cable Color Code	Info. Outlet Term.
	500* 2500 7100 Series	7300 Series	7400 Series Att. Cons.	EIA Term* PDM TDM				
1	T R CT CR P- P+	V1T V1R CT CR P- P+	TXT TXR PXT PXR P- P+	TXT TXR PXT PXR	W-BL	26	W-BL	1
					BL-W	1	BL-W	2
					W-O	27	W-O	3
					O-W	2	O-W	4
					W-G	28	W-G	5
					G-W	3	G-W	6
					W-BR	29	W-BR	7
					BR-W	4	BR-W	8
2	T R CT CR P- P+	V1T V1R CT CR P- P+	TXT TXR PXT PXR P- P+	TXT TXR PXT PXR	W-S	30	W-BL	1
					S-W	5	BL-W	2
					R-BL	31	W-O	3
					BL-R	6	O-W	4
					R-O	32	W-G	5
					O-R	7	G-W	6
					R-G	33	W-BR	7
					G-R	8	BR-W	8
3	T R CT CR P- P+	V1T V1R CT CR P- P+	TXT TXR PXT PXR P- P+	TXT TXR PXT PXR	R-BR	34	W-BL	1
					BR-R	9	BL-W	2
					R-S	35	W-O	3
					S-R	10	O-W	4
					BK-BL	36	W-G	5
					BL-BK	11	G-W	6
					BK-O	37	W-BR	7
					O-BK	12	BR-W	8

* R1V2 or R1V3 Only

TABLE 3-L. System Wiring (Contd)

Term. No.	25-Pair Cable						4-Pair Cable	
	Term Lead Functions				D-Inside Cable Color Code	BR2580A or 258A Adapter Pin Num.	D-Inside Cable Color Code	Info. Outlet Term.
	500* 2500 7100 Series	7300 Series	7400 Series Att. Cons.	EIA Term* PDM TDM				
4	T R P- P+	V1T V1R CT CR P- P+	TXT TXR PXT PXR P- P+	TXT TXR PXT PXR	BK-G	38	W-BL	1
					G-BK	13	BL-W	2
					BK-BR	39	W-O	3
					BR-BK	14	O-W	4
					BK-S	40	W-G	5
					S-BK	15	G-W	6
					Y-BL	41	W-BR	7
					BL-Y	16	BR-W	8
5	T R P- P+	V1T V1R CT CR P- P+	TXT TXR PXT PXR P- P+	TXT TXR PXT PXR	Y-O	42	W-BL	1
					O-Y	17	BL-W	2
					Y-G	43	W-O	3
					G-Y	18	O-W	4
					Y-BR	44	W-G	5
					BR-Y	19	G-W	6
					Y-S	45	W-BR	7
					S-Y	20	BR-W	8
6	T R P- P+	V1T V1R CT CR P- P+	TXT TXR PXT PXR P- P+	TXT TXR PXT PXR	V-BL	46	W-BL	1
					BL-V	21	BL-W	2
					V-O	47	W-O	3
					O-V	22	O-W	4
					V-G	48	W-G	5
					G-V	23	G-W	6
					V-BR	49	W-BR	7
					BR-V	24	BR-W	8
Spare						50 25		

* R1V2 or R1V3 Only

Layout

Locating Information Outlets

It is the responsibility of the customer or marketing representative to provide floor plans showing the information outlet locations and types (flush- or surface-mounted). The floor plans must also provide a complete view of all conduit and cabling facilities in the building.

Locating Satellites and Sites

Use the following information when determining site, satellite, or adapter locations.

- a. Keep the number of locations to a minimum.
- b. To minimize the station wiring distances, centrally locate the sites, satellites, or adapters among the information outlets.
- c. Site and satellite locations must be easily accessible and contain ac power outlets.

Adapter Requirements

One 258A or BR2580A is required for each 25-pair station cable containing 4-pair station circuits. One 356A adapter is required for each 25-pair station cable containing 3-pair station circuits.

110-Type Hardware Requirements

The hardware and patch cord requirements are the same as for the equipment room.

Sizing 4-Pair Station Cables (DIW)

Use the floor plan scale to determine the station cables (DIW) required per standard Premises Distribution Systems wiring concepts.

Sizing 25-Pair and Multiple 25-Pair Station Cables

The floor plan scale is used to determine the approximate length of each station cable. The station cables **must be** sized and selected properly to make maximum use of the 110-type hardware at the equipment room or satellite location.

Twenty-five pair B25A cables are used to connect adapters directly to the equipment room cross-connect field or satellite location. Staggered-finger cables equipped with factory-installed 25-pair connectors at both ends (male to female) are recommended for multiple 25-pair cables run from the equipment room or satellite location to the adapters. B25A cables are required at the equipment room or satellite location to connect the staggered-finger cables to the 110 terminal blocks.

Use the following information to determine the cable size (cable pairs) required for either 3-pair or 4-pair circuits. Note the length and size on the floor plan to aid in the ordering and installation of the station cables.

3-Pair Station Cable Circuits

To determine the size of station cables containing 3-pair circuits, multiply the number of 3-pair circuits required at the satellite location by 3.5. This will provide additional pairs for growth and compensate for the fact that every twenty-fifth pair in a cable is not used.

Using the minimum size cable requirement, select a cable size that is rounded up to the next highest available cable bundle size.

4-Pair Station Cable Circuits

To determine the size of station cables containing 4-pair circuits, determine the number of information outlets served by the equipment room cross-connect field or satellite location. Multiply this number by 4 (see Note).

Note: This formula may not compensate for the unused twenty-fifth pair in all cases. If not, you must allow for it.

Using the minimum size cable requirement, select a cable size that is rounded up to the next highest available cable bundle size.

STATION WIRING AND ASSOCIATED HARDWARE INSTALLATION

Installing the Station Cables

Station labels shown in Figure 3-80 must be installed on both ends of the 25-pair station cables. These labels are provided with the 201A cable/jack station labels (Comcode 103 969 994). These labels must match the previously installed 110 labels at the cross-connect field. For example, if the cable plugs into a 110 terminal block connector associated with jacks labeled 1 through 6, the cable label must be numbered 1 through 6.

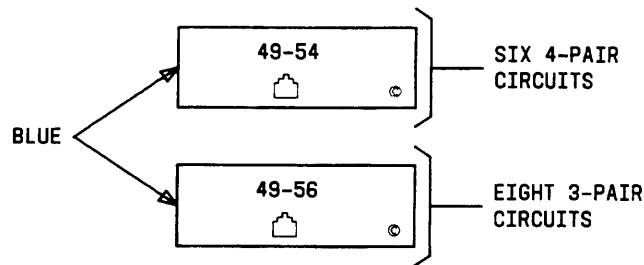


Figure 3-80. 25-Pair Station Cable Labels

Install the station cables between the equipment room cross-connect field and the site, satellite, or adapter locations. If 25-pair cables are run from the equipment room to the satellite location, A25D cables are used. If multiple 25-pair staggered finger station cables (male to male) are to be run from the equipment room to the satellite location, B25A cables must be used to connect the multiple 25-pair cables to the 110 terminal block connectors. Bulk cables can also be used to run from the equipment room to the satellite locations if field-terminated 110 terminal blocks are used.

If cables are to be connected to site locations or adapters, B25A cables connect to the terminal blocks at the equipment room. The B25A cables are run to the site locations or adapters or connect to the multiple staggered-finger (male to female) station cables (see Figure 3-81). The staggered-finger station cables are run to the site locations or adapters.

Figure 3-82 shows the labeling scheme for 4-pair circuits run from the equipment room to the information outlets. The labeling scheme for 3-pair circuits run from the cross-connect field to satellite locations is discussed under **Installing 110-Type Hardware at Satellite Locations**.

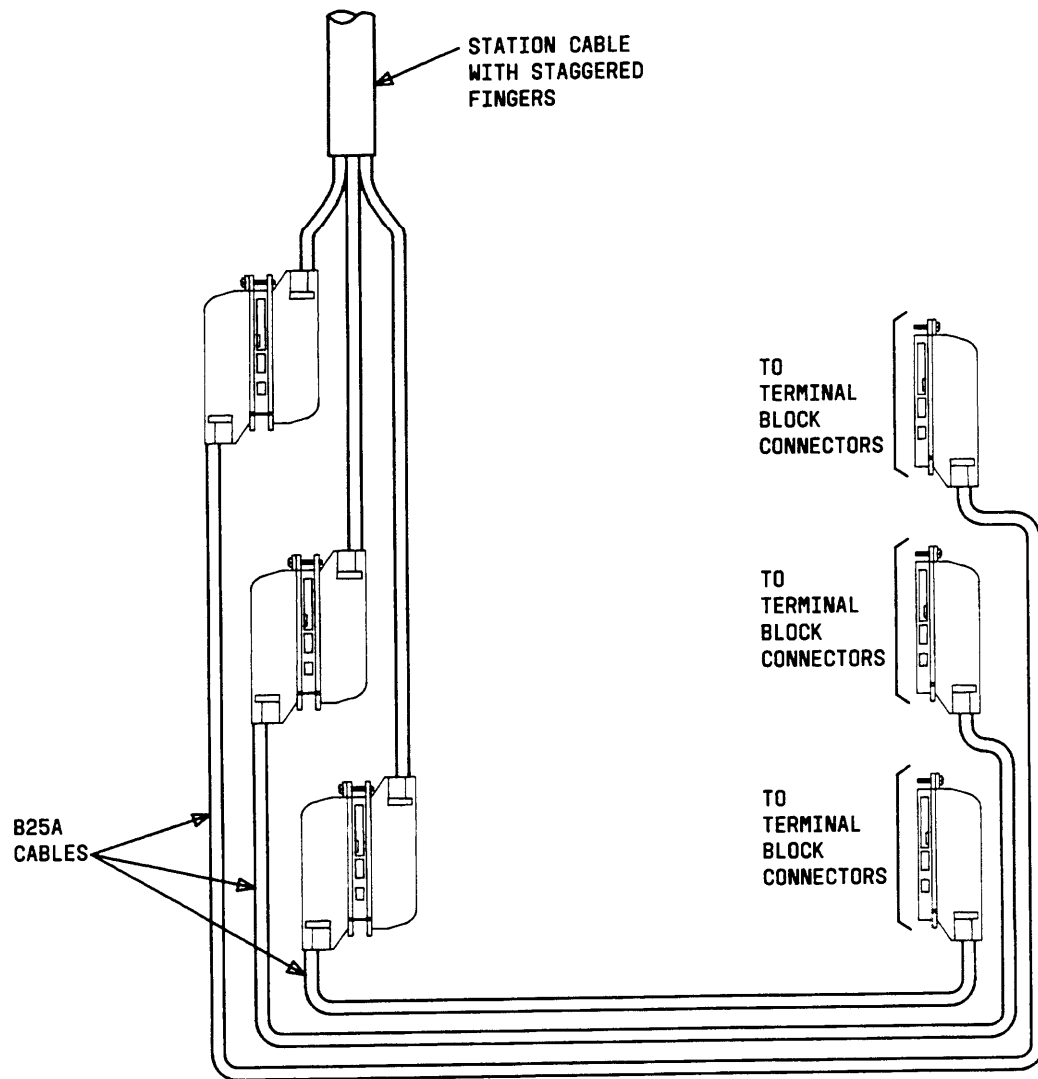


Figure 3-81. Multiple 25-Pair Station Cable With Factory-Installed Staggered Fingers Connected to a 110-Type Terminal Block

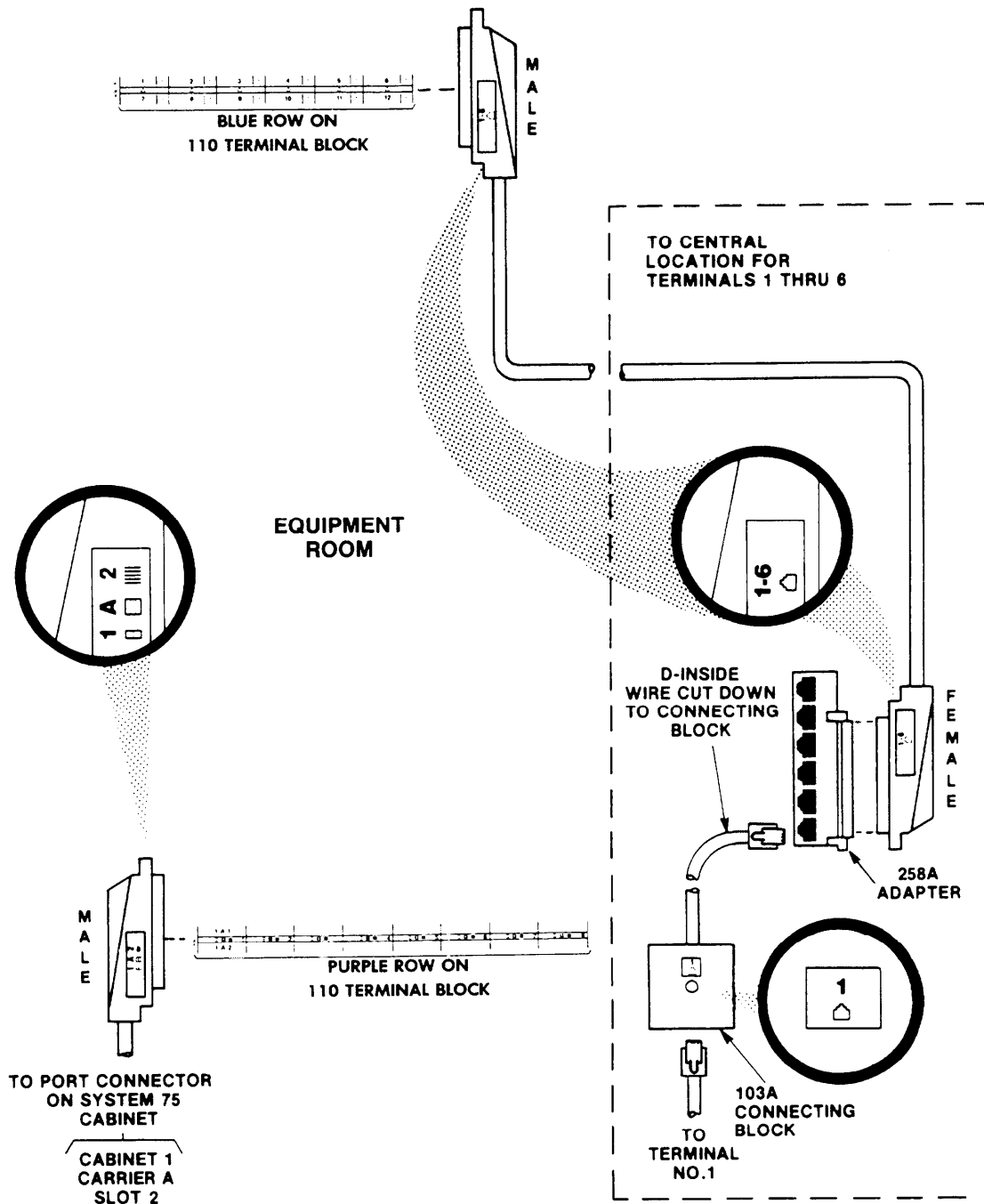


Figure 3-82. 4-Pair Station Wiring Labeling From Equipment Room to Information Outlet

Installing 110-Type Hardware at Satellite Locations

To install the 110-type terminal blocks at the satellite location, use the same installation procedure described under the heading **Installing the Cross-Connect Field**. Figure 3-83 shows typical satellite location layouts.

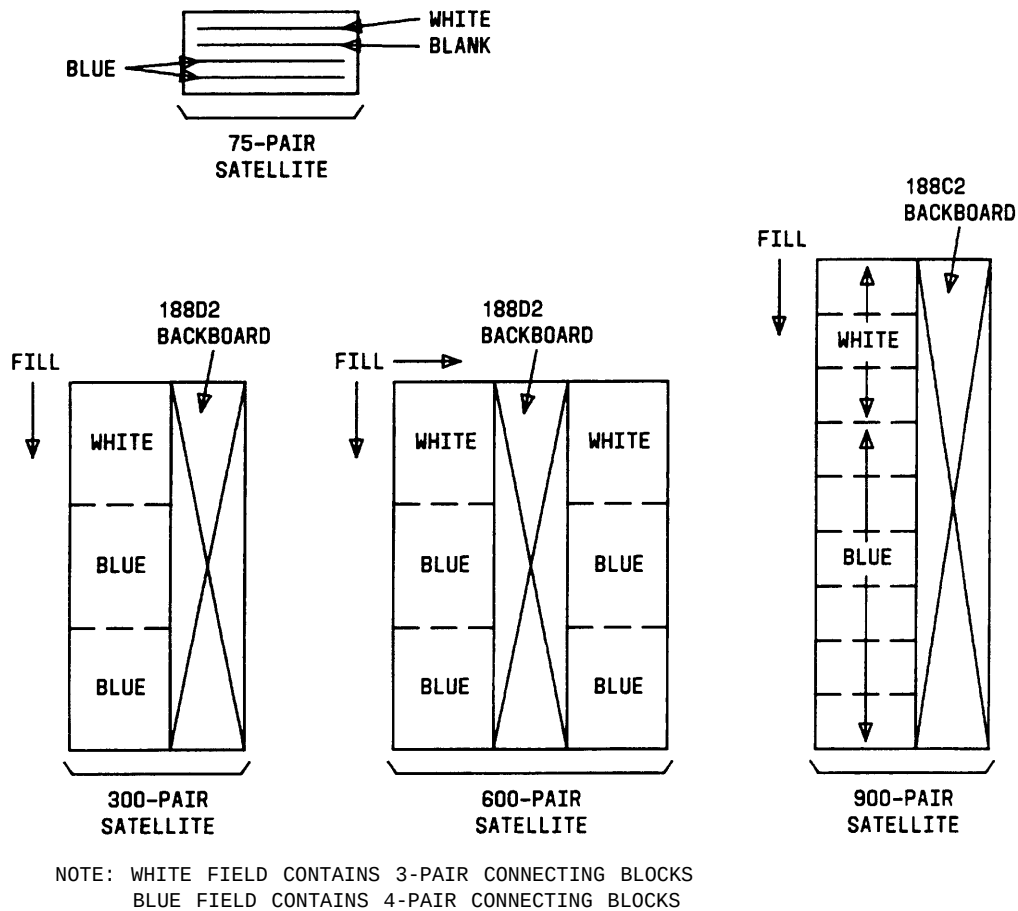


Figure 3-83. Typical Satellite Location Layouts

The 3-pair station circuits from the equipment room connect to the 3-pair terminal block rows (white field). The 4-pair station circuits to the information outlets connect to the 4-pair terminal blocks (blue field). Connections to both the 3- and 4-pair sections of the terminal blocks can be made with connectorized or field-terminated cables depending on the type of terminal blocks used.

Labeling

Figure 3-83 shows the fill directions for the blue and white fields at the satellite location. The labels described under **Labeling the Cross-Connect Field** with the satellite symbols are used at the satellite closets.

Figure 3-84 shows the station wiring labeling scheme from the white field at the equipment room to the information outlet. In the example shown, the white label identifying the terminal block row associated with circuits 17 to 24 is connected to an identically labeled

terminal block row at the satellite closet. This is always the case for either 1-point or 2-point administration. See **PATCH CORD INSTALLATION AND ADMINISTRATION** for details.

The satellite symbol must be installed at all connection points between the blue field and the information outlet. It must also be installed at the information outlet itself.

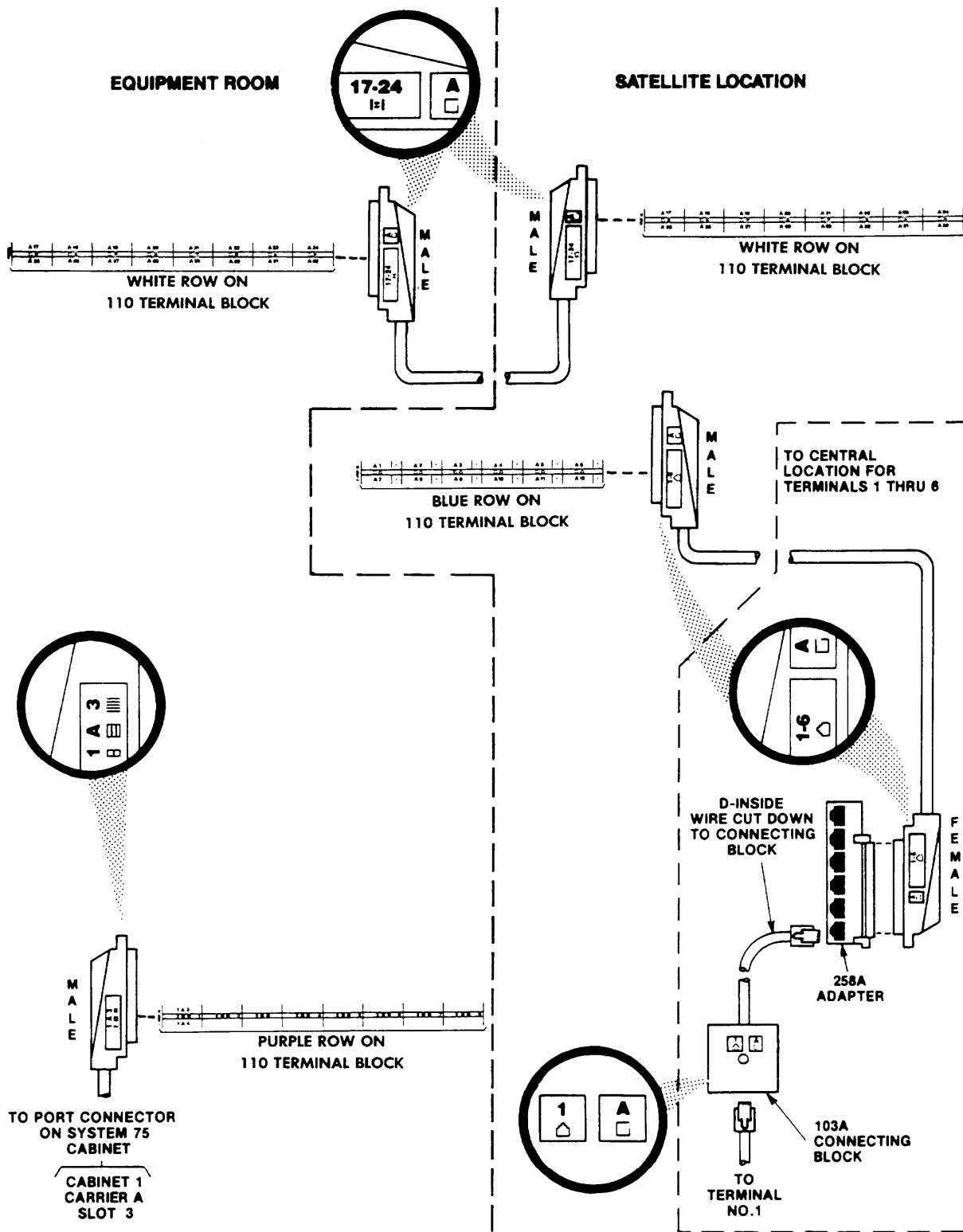


Figure 3-84. 3-Pair to 4-pair Wiring Labeling From Equipment Room to Information Outlet

Installing 4-Pair Station Cables

The 4-pair station cables can either be plugged into the adapters or field-terminated at the cross-connect field and run to the information outlet locations.

Installing the Information Outlets

Install the information outlets (Figure 3-85) at the terminal locations. See Table 3-L for wiring information.

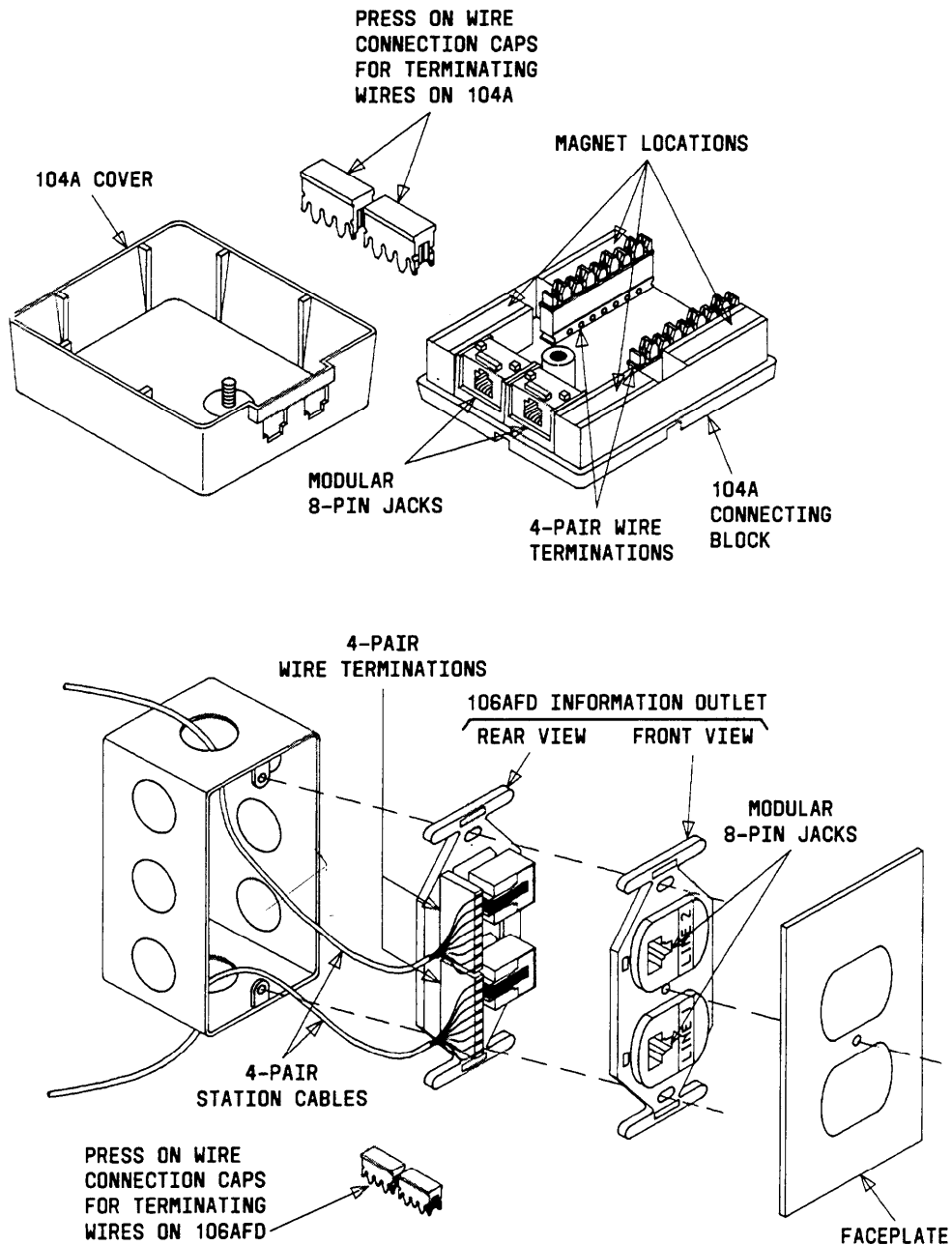


Figure 3-85. Typical 8-Pin Modular Information Outlets

ADJUNCT POWERING

Adjunct Powering From the Equipment Room

Adjunct power can be provided at any cross-connect field when 4-pair circuits are provided to the station wiring. Figure 3-86 shows the powering arrangement used at the equipment

room. The power adapter cord must be routed from the connecting block through the patch cord troughs to the power supply.

Adjunct Powering From the Satellite Locations

Adjunct powering from a satellite location is identical to the adjunct powering from the cross-connect field (see Figure 3-86).

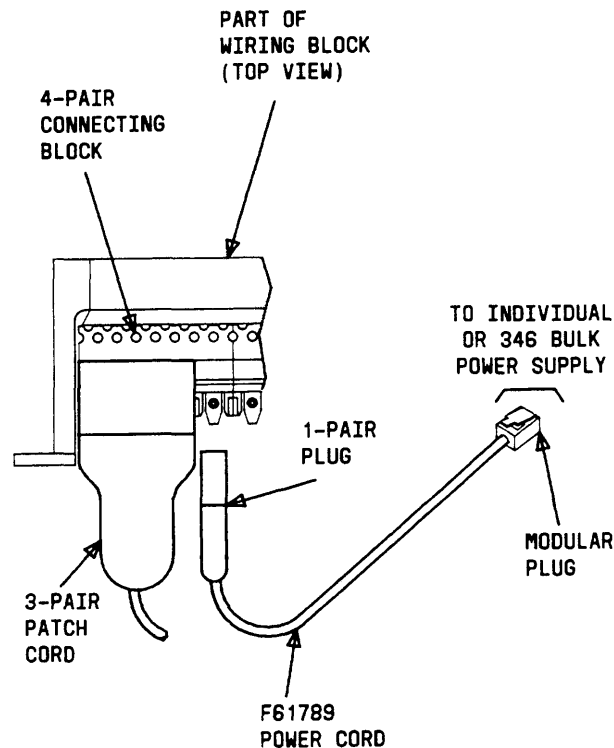


Figure 3-86. Remote Powering From the Equipment Room or Satellite Location

Adjunct Powering From Site Locations

Adjunct power can be provided from any of the adapters located in site closets. Adjunct power is provided at the site locations when the 4-pair station wiring from the equipment room or satellite location exceeds 250 feet (76.2 m) or when 3-pair station wiring is run from the cross-connect field to a 356A adapter.

Figure 3-87 and 3-88 shows the connections required for 258A and 356A adapters. The 400B2 adapter and D6AP power cord are used to provide power on the fourth pair of the 4-pair station cable. The D6AP power cord is connected to an individual power supply or a bulk power supply. The D6AP power cord is available in 7-foot (2.1-m), 14-foot (4.3-m), and 25-foot (7.6-m) lengths.

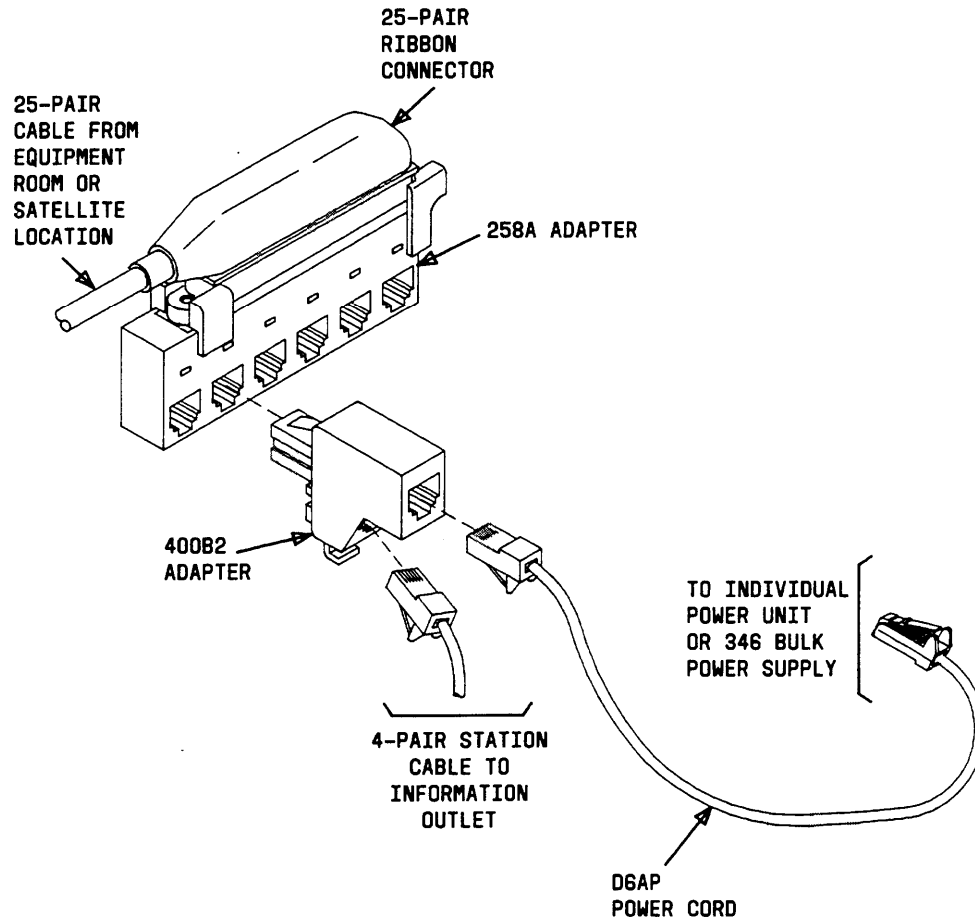


Figure 3-87. Remote Powering From a 258A Adapter in a Site Closet

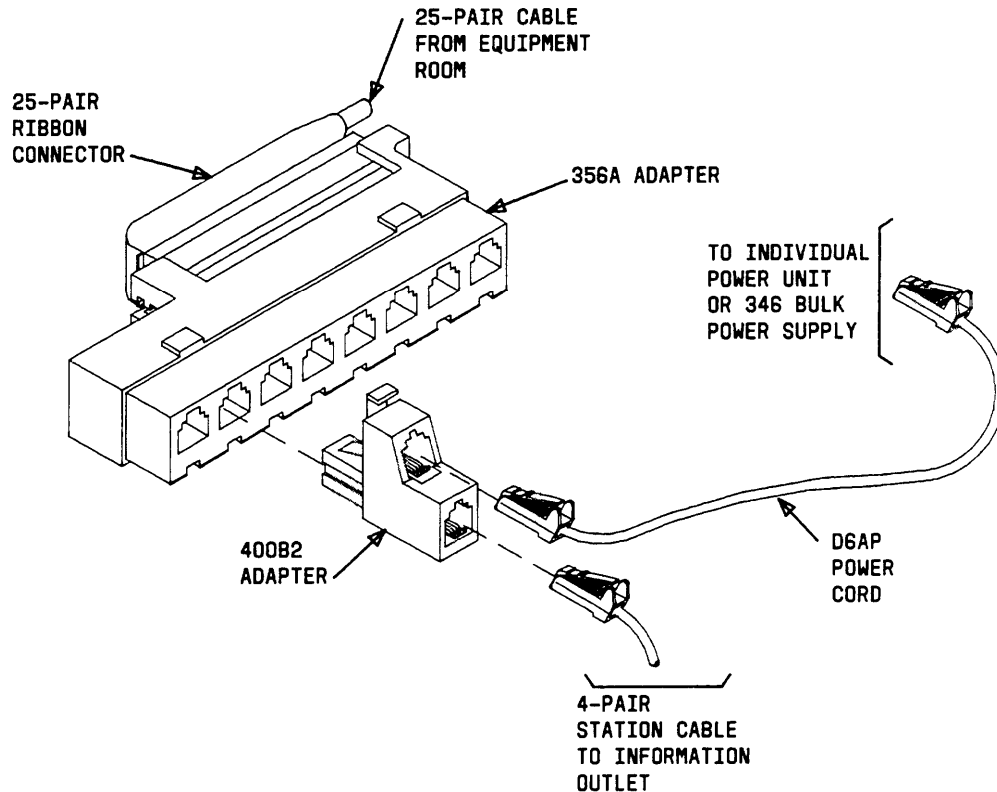


Figure 3-88. Remote Powering From a 356A Adapter in a Site Closet

Adjunct Powering From Information Outlets

Adjunct powering from the information outlet is described in the *AT&T System 75 and System 85 User's Guide—Terminal Installation and Test* (999-700-214IS). Only individual power supplies are used for the local powering at the information outlet. Figures 3-89 and 3-90 show typical connections required at the information outlets using the 400B2 adapter and a D6AP power cord.

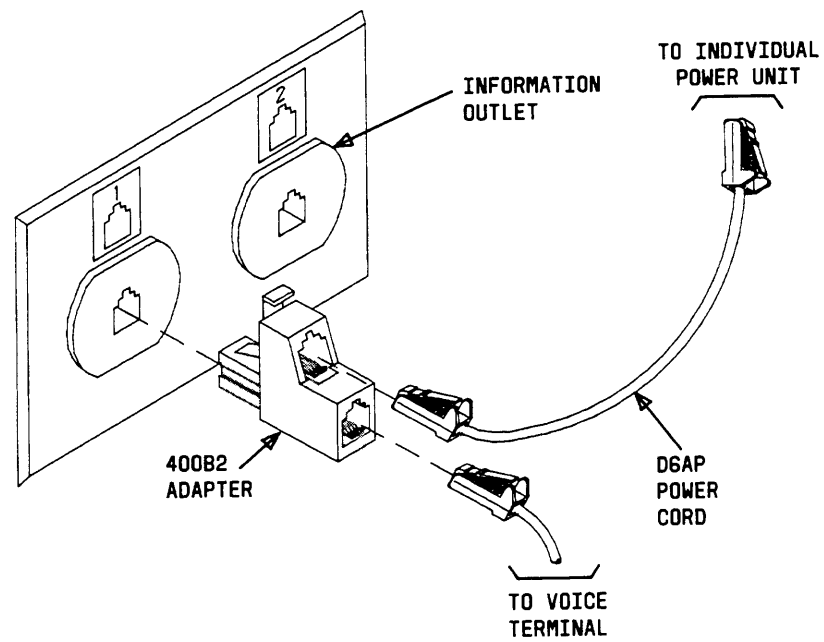


Figure 3-89. Typical Local Powering From a 400B2 Adapter—Flush-Mounted Information Outlet

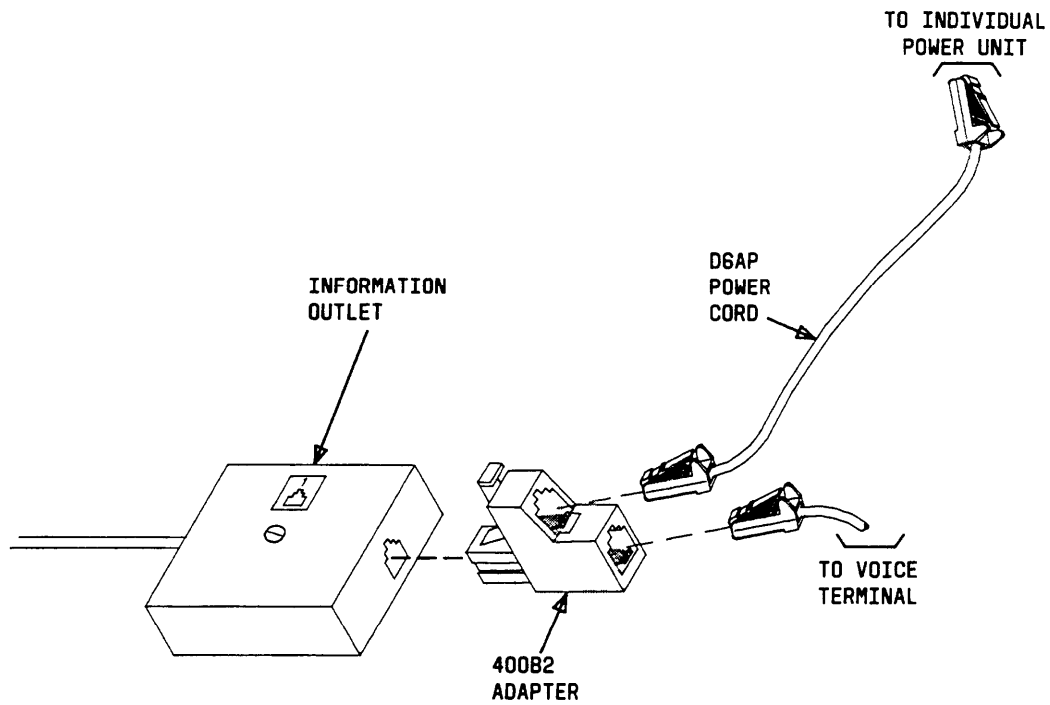


Figure 3-90. Typical Local Powering From a 400B2 Adapter—Surface-Mounted Information Outlet

PATCH CORD INSTALLATION AND ADMINISTRATION

Before starting the patch cord installation, obtain a copy of the Port Assignment Record forms (Figure 3-91) from the customer or marketing representative. These forms contain the port assignments and identify the extension numbers (**Terminal No.**) for the voice terminals. You must enter the jack assignments at the equipment room and indicate if adjunct power is required and where provided (cross-connect field, site closet, satellite closet, or information outlet).

When satellite locations are provided, enter the satellite letter designation (A through F) and the jack appearance in the equipment room on the form. Also enter the floor designation and/or building designation if appropriate. For 1-point administration (see Figure 3-92), this entry is all that is required. The white field number always corresponds to the station jack number at the satellite location blue field.

For 2-point administration (see Figure 3-93), the station jack numbers (blue field) at the satellite locations must also be entered on the form. For example, the entry **A1-10** indicates satellite location A, white field position 1 at the equipment room and the satellite location, and station jack number 10 at the satellite location.

CARRIER_____

PORT ASSIGNMENT RECORD

Page_____

Slot	Port	Jack*	Extension Number		Bldg Flr Rm	Voice Terminal		Voice Terminal Adjunct	Module	Power*		User Name/Use
			Old	New		Type	Color					
Slot CKT PK Type	01											
	02											
	03											
	04											
	05											
	06											
	07											
	08											
	09											
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
	18											
	19											
	20											
	21											
	22											
	23											
	24											

* To be completed by installation technician

Figure 3-91. Port Assignment Record Form

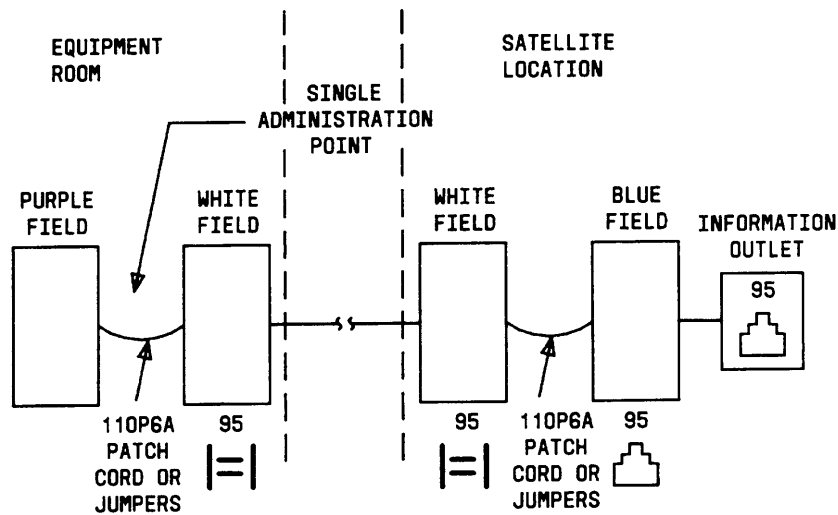


Figure 3-92. 1-Point Administration

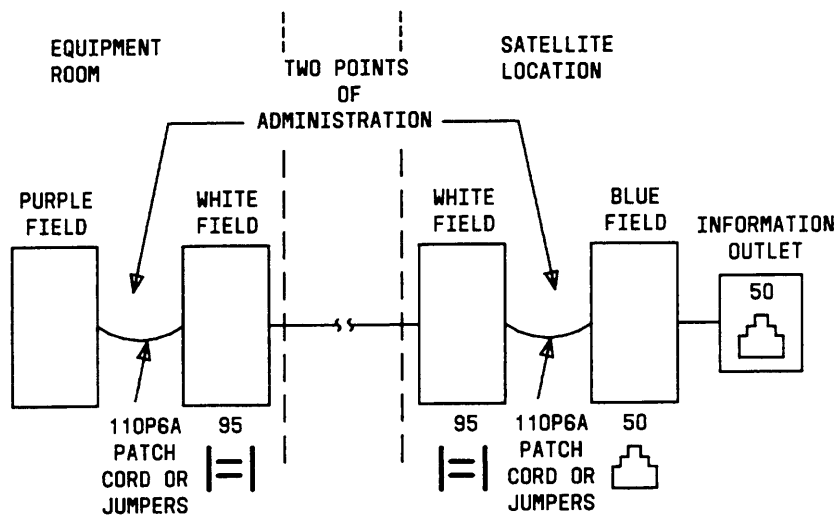


Figure 3-93. 2-Point Administration

Equipment Room Cross-Connect Field

The following guidelines and procedures are provided for installing and removing patch cords and power adapter cords. Administration details for changing system translations using the System Access Terminal are included in the *AT&T System 75 And System 75 XE Administration* (555-200-500).

Installing Patch Cords

The *AT&T System 75 and System 85 User's Guide—Terminal Installation and Test* (999-700-214IS) contains installation procedures for the voice terminals and their adjuncts. The voice terminals and their adjuncts must be installed before the patch cords and power adapter cords are connected.

In all cases, the shortest patch cord should be used to make the cross-connection.

To install the patch cords, proceed as follows:

1. At the blue or white field, locate the jack number associated with the terminal location.
2. Plug one end of the patch cord onto the connecting block associated with this jack.
3. At the purple field, locate the port jack number identified on the Port Assignment Record and plug the other end of the patch cord onto the connecting block associated with the port jack.
4. Route patch cord through the vertical and horizontal patch cord troughs.
5. If the patch cord is too short, select the next longer patch cord.
6. Update the Port Assignment Record.
7. Repeat the procedure until all patch cords are installed.
8. Update system translations.

Removing Patch Cords

When it is necessary to remove patch cords due to voice terminal removal, the voice terminal must be first disconnected at the information outlet. The patch cord must then be completely removed from the cross-connect field. This will provide an accurate visual indication of available connecting blocks associated with port and station jacks. Do not leave a partially or totally disconnected patch cord intermingled with other patch cords.

When it is necessary to rearrange patch cords due to voice terminal moves, it is strongly recommended that the entire patch cord be removed and reinstalled even if only one end of the cross-connection is affected. This will reduce cord entanglement and help to assure a neat patch cord appearance.

To remove a patch cord, proceed as follows:

1. On the Port Assignment Record, locate the connecting block associated with the jack assignments at the purple and white or blue fields.
2. At the purple field, unplug the patch cord.
3. Gently lift the patch cord straight up, taking up slack, until the cord can be located by its movement in the patch cord troughs.
4. Remove the patch cord from the patch cord troughs.
5. Trace the other end to its connection point at the blue or white field and unplug the cord.
6. Update the Port Assignment Form.
7. Update system translations.

Installing and Removing Jumper Wires

Jumper wires can be used with the 110-type hardware instead of patch cords. The same procedures for installation and removal of patch cords should be followed for the installation and removal of jumpers. When jumpers are being used instead of patch cords; however, an impact tool must be used to insert or remove the jumper wires from the connecting blocks.

Installing and Removing Power Adapter Cords

The F-61789 power adapter cords are installed as described previously under **ADJUNCT POWERING** (see Figure 3-86). The power adapter cords can only be used with the 4-pair station circuit connecting blocks. The voice terminal and adjunct should be installed prior to installing the power adapter cord and patch cord.

To remove a power adapter cord, proceed as follows:

1. On the Port Assignment Record, locate the connecting block associated with the station jack number for the voice terminal receiving remote power.
2. Locate the power adapter cord plug at the 110 terminal block (blue field).
3. Trace the power adapter cord through the patch cord troughs to the remote power supply.
4. Unplug the power adapter cord at the power supply.
5. Remove the power adapter cord from the patch cord troughs.
6. Remove the power adapter cord from the connecting block.
7. Remove and store the power adapter cord.
8. Update the Port Assignment Record.

Satellite Locations

The guidelines for installing and removing patch cords, jumper wires, and power adapter cords at the equipment room cross-connect field should be followed at the satellite locations. The cross-connects should be made between the white field (equipment room side) and the blue field (terminal side).

1-Point Administration

For 1-point administration (see Figure 3-92), the patch cords are connected between purple field connecting blocks and white field connecting blocks at the equipment room. The patch cords are connected between identically numbered white field connecting blocks (equipment room side) and blue field connecting blocks (station side).

2-Point Administration

For 2-point administration (see Figure 3-93), the patch cords are connected between purple field connecting blocks and white field connecting blocks at the equipment room. At the satellite location, patch cords are connected between the white field connecting blocks (equipment room side) and blue field connecting blocks (station side) as specified on the Port Assignment Record. The Port Assignment Record must be updated for all administrative changes at the satellite location.

MISCELLANEOUS WIRING INSTALLATION

Installing Attendant Console

Requirements

The attendant console is connected to an information outlet the same as any other voice terminal. Figure 3-94 shows the connections required for the attendant console.

Power for two consoles **only** can be provided by the switch cabinet through an auxiliary cable connected to the Trunk/Auxiliary Field. Whenever possible, power for the primary attendant console should be provided by the switch cabinet. This makes the primary console fully operational during short (less than 10 seconds) power outages.

Note: The attendant console cannot be powered from the switch cabinet on the System 75 XE.

Additional attendant consoles are remotely powered by the 346 bulk power supply or individual power units. Refer to **ADJUNCT POWERING** for details on remote powering from adjunct power units located at satellite locations, site locations, or information outlets.

Note: The 329A Power Unit should not be used to remotely power the attendant console.

The maximum cabling distance for the attendant console powered from the switch cabinet is 350 feet (107 m). Maximum cabling distances for additional attendant consoles is 2400 feet (732 m) for 24-gauge wire and 1500 feet (457 m) for 26-gauge wire.

Installation

1. Unpack attendant console and inspect for damage.
2. Determine port assignment of console from Attendant Console Form (see Note).

EXAMPLE:	Port Number	A	02	01
	Carrier	Slot	Circuit	

Note: The primary attendant console is always connected to control carrier slot 02.

3. If power is to be supplied from the switch cabinet (not available on the System 75 XE), do step 4 and omit step 5; otherwise, go to step 5.
4. Connect jumpers from ACC PWR connecting block in yellow Trunk/Auxiliary Field to attendant console appearance on the station side of the Distribution Field (Figure 3-95).
5. If power is to be supplied at cross-connect field, connect power adapter cord (Figure 3-10) to attendant console appearance on the station side and a power unit located above the cross-connect field. If power is not supplied at cross-connect field, provide power as described under **ADJUNCT POWERING**.
6. Install patch cord or jumper wires at cross-connect field.
7. Connect console line jack on bottom of console to information outlet (Figure 3-94).

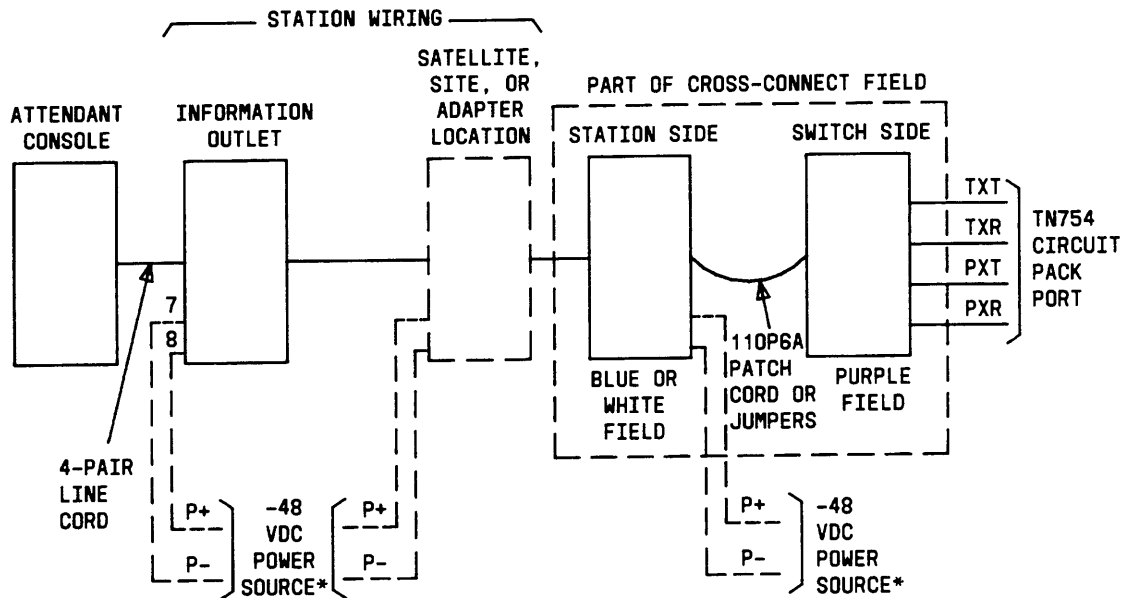
110-TYPE HARDWARE

8. Install labels per Attendant Console Form and Display Module Form Assignments.
9. Install handset bracket on left or right side of console, as desired.
10. Insert handset adapter on same side of handset bracket.

Note: The handset adapter is available in two models: 854A-03 (black) or 854A-143 (burgundy).

A bracket is not required for a headset.

11. Connect handset cord to jack on same side of console as handset bracket.
12. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.



* ACC PWR LEADS AT YELLOW FIELD, 346 BULK POWER SUPPLY, OR 329A POWER SUPPLY. KS-22911, L1 POWER SUPPLY CAN BE USED IF ATTENDANT CONSOLE IS NOT EQUIPPED WITH OPTIONAL SELECTOR CONSOLE.

Figure 3-94. Connections for Attendant Console

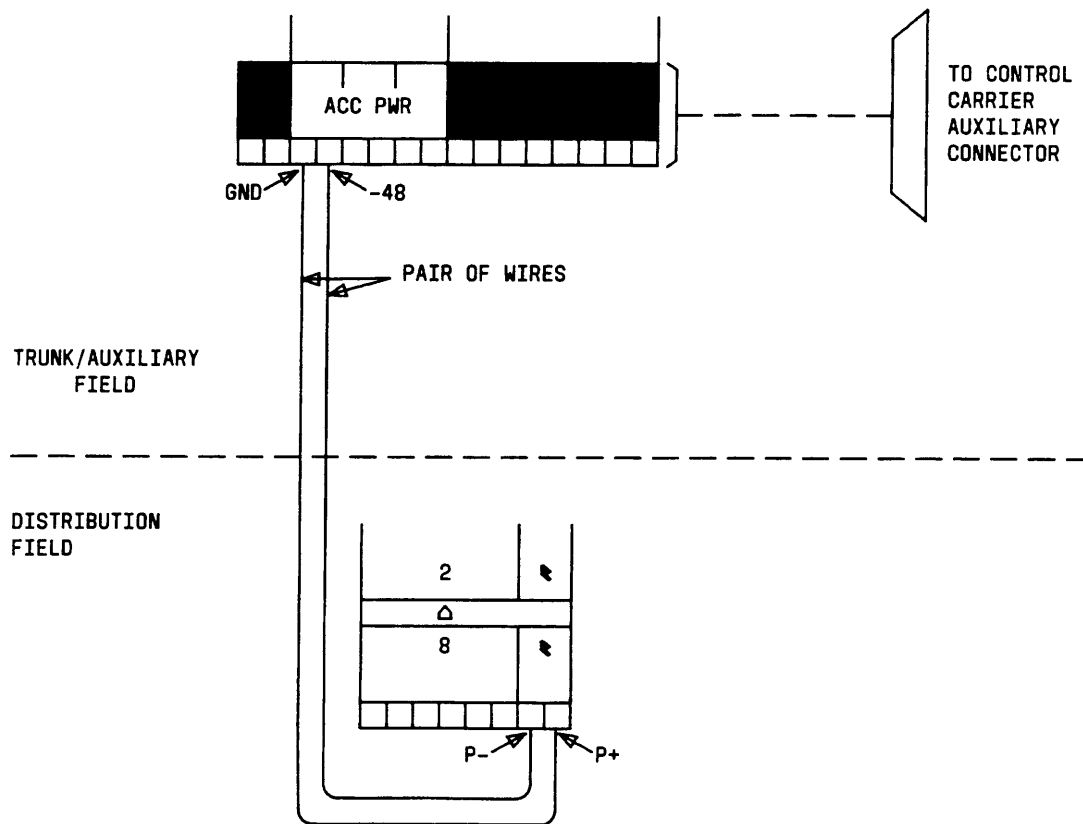


Figure 3-95. Wiring Required at Cross-Connect Field for Attendant Console Remote Powering From Switch Cabinet—System 75 Only

Installing Selector Console

Requirements

The selector console is connected to the attendant console by a 3-foot (91-cm) D8AC cord provided with the selector console (see Figure 3-96).

Installation

1. Run and connect 3-foot (91-cm) D8AC cord between DXS/BLF jack on bottom of attendant console and modular jack on bottom of selector console.

Note: These jacks are located on the bottom of the consoles.

2. Install labels per Attendant Console Form.
3. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

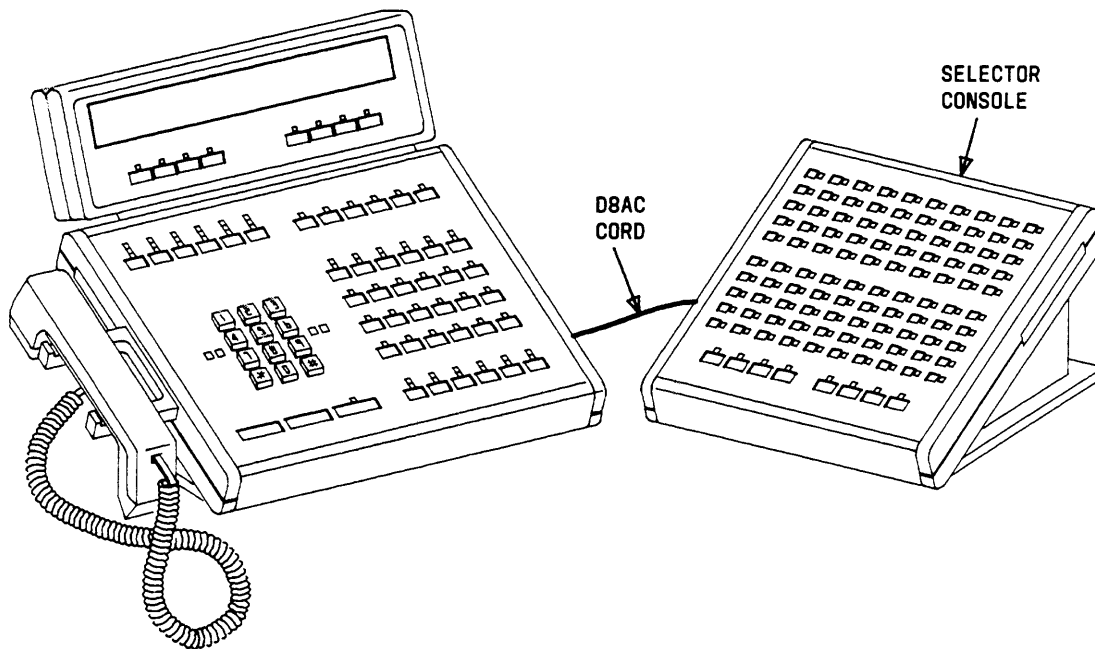


Figure 3-96. Selector Console Installation

Installing INADS (Initialization and Administration System) Interface

Requirements

The Initialization and Administration System (INADS) trunk should be specified to appear on the twenty-fifth pair of an RJ21X network interface jack. The INADS trunk must be a two-way, rotary dial, loop start trunk. The INADS trunk is connected to the TN731 Maintenance circuit pack through the Trunk/Auxiliary Field. This connection is made at the INADS terminals. Figure 3-95 shows a typical INADS trunk installation.

Installation

1. Determine INADS trunk appearance in the green Trunk/Auxiliary Field.
2. Install jumpers between INADS trunk appearance (IN) and INADS terminals.
3. Label terminals for INADS trunk appearance (IN).

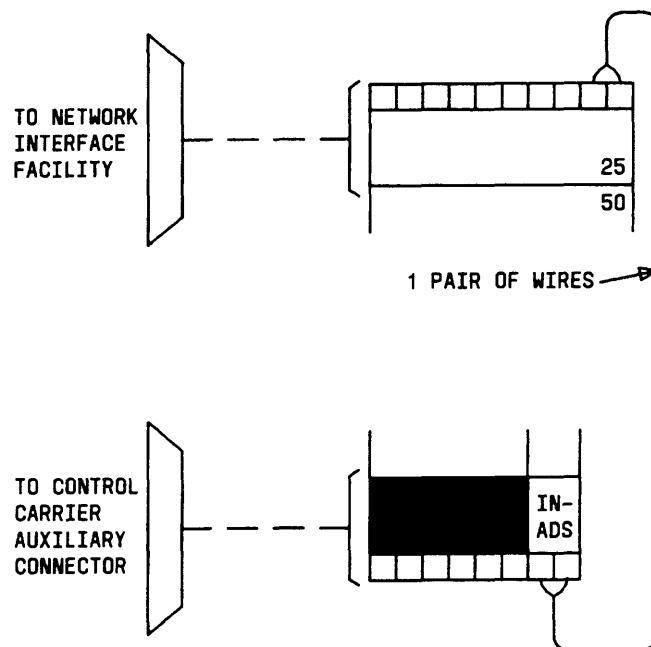


Figure 3-97. Connections at Trunk/Auxiliary Field for INADS Trunk

Installing DS1 Tie Trunks

DS1 tie trunks provide a 1.544 Mbps digital data service between two collocated System 75s or System 75 XEs or between the system and a data network using T1 carrier facilities. The TN722 DS1 Tie Trunk circuit pack (R1V2 or R1V3) provides connection capability to the DS1 facility as 24 independent trunks. Table 3-K shows the lead designations for the DS1 circuit pack.

The following connector cables are available to connect the DS1 Tie Trunk circuit pack to DS1 digital facilities:

- C6C Connector Cable (Comcode 104 307 327)—50-foot (15.2-m) long shielded cable equipped with a 50-pin male connector on one end and a 15-pin male connector on the other end. This cable is used to connect a DS1 Tie Trunk circuit pack to a 551-type Channel Service Unit (CSU).
- C6D Connector Cable (Comcode 104 307 376)—50-foot (15.2-m) long shielded cable equipped with 50-pin male connectors on each end. This cable is used to connect DS1 Tie Trunks in collocated System 75s or System 75 XEs.
- C6E Connector Cable (Comcode 104 307 434)—100-foot (30.4-m) long shielded cable equipped with a 50-pin male connector on one end and a 50-pin female connector on the other end. This cable is used as an "extension" cable between the DS1 Tie Trunk circuit pack and the other connector cables.
- C6F Connector Cable (Comcode 104 307 475)—50-foot (15.2-m) long shielded cable equipped with a 50-pin male connector on one end and a three inch (7.6 cm) stub on the other end. This cable is used to connect the DS1 Tie Trunk circuit pack to channel multiplexer requiring hardwired connections.

C6F CONNECTOR CABLE LEAD IDENTIFICATION

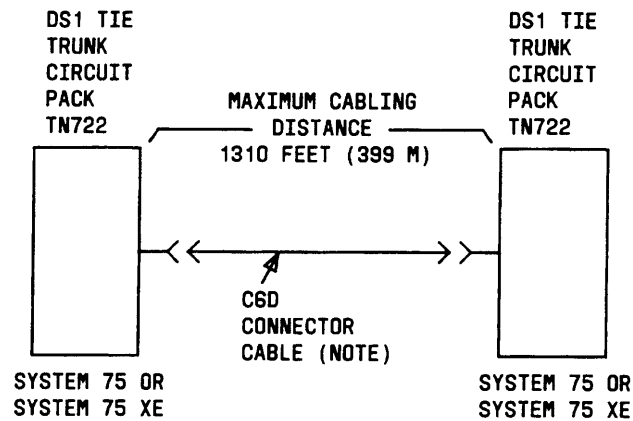
Wire Color	Lead Designation	Connector Pin Number
W-G	LI*	47
G	LI	22
W-BR	LO	48
BR	LO*	23
W-S	LBACK2	49
S	LBACK1	24

Collocated DS1 Tie Trunks

Figure 3-98 shows the connections required to connect two DS1 Tie Trunk circuit packs in collocated System 75s or System 75 XEs.

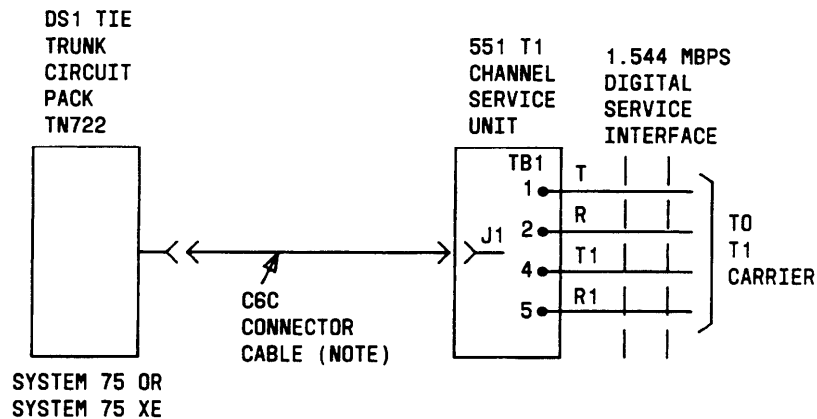
DS1 Tie Trunks Using 551-Type CSU

Figure 3-99 shows the connections required to connect a DS1 Tie Trunk to a 551 T1 CSU. The CSU is required to interface the DS1 tie trunks to the 1.544 Mbps digital facility. For information on installing the CSU, refer to the *551 T1 Channel Service Unit—User's Manual*, 999-100-189IS. For other CSUs, refer to the information provided with the unit.



NOTE: FOR DISTANCES OVER 50 FEET (15.2 M)
USE C6E CONNECTOR CABLE(S) BETWEEN
C6D CONNECTOR CABLE AND DS1 TIE TRUNK
CIRCUIT PACK.

Figure 3-98. Connections for DS1 Tie Trunks Between 2 System 75s or System 75 XEs



NOTE: FOR DISTANCES OVER 50 FEET (15.2 M)
USE C6E CONNECTOR CABLE(S) BETWEEN
C6C CONNECTOR CABLE AND DS1 TIE TRUNK
CIRCUIT PACK.

Figure 3-99. Connections for DS1 Tie Trunks Using 551 T1 CSU

Installing Customer-Provided Alarm—System 75 XE Only**Requirements**

For the System 75 XE, access to a relay contact is available for a customer-provided alarm that can be used to connect to a light, bell, or similar type device. The relay contact can be administered so that it will make contact when a major, minor, or warning alarm condition exists on the system. The circuitry required for this feature must be provided by the customer. The device connected to the alarm leads must not exceed a rating of more than 100 volts at 3/4 amps. The contact leads appear at the cross-connect field on the AUXILIARY connector, refer to the AUXILIARY connector labeling for lead assignments.

Installing Off-Premises Terminal Wiring**Requirements**

The cabling outside the building for off-premises terminals is provided by the local telephone company. The off-premises terminal appearance is on any of the RJ21X network interfaces provided for central office trunks. The off-premises terminals can only be an FCC approved analog type, for example, a 2500. Figure 3-100 shows the connections required for off-premises terminals. The TN746 Analog Line circuit pack cannot be used for off-premises terminals.

Installation

1. If you are doing the initial installation, go to step 5; otherwise, do steps 2, 3, and 4.
2. Install a B25A cable between the RJ21X network interface and a sneak fuse panel.
3. Connect jumper wires between one row in the green field and up to three rows in the purple field to obtain concentration of analog line pairs as shown in Figure 3-67.
4. Connect an A25D cable between the sneak fuse panel and the 110 terminal block connector associated with the green row in step 3.
5. Install a green label on the 110-terminal block and identify the remote location.
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

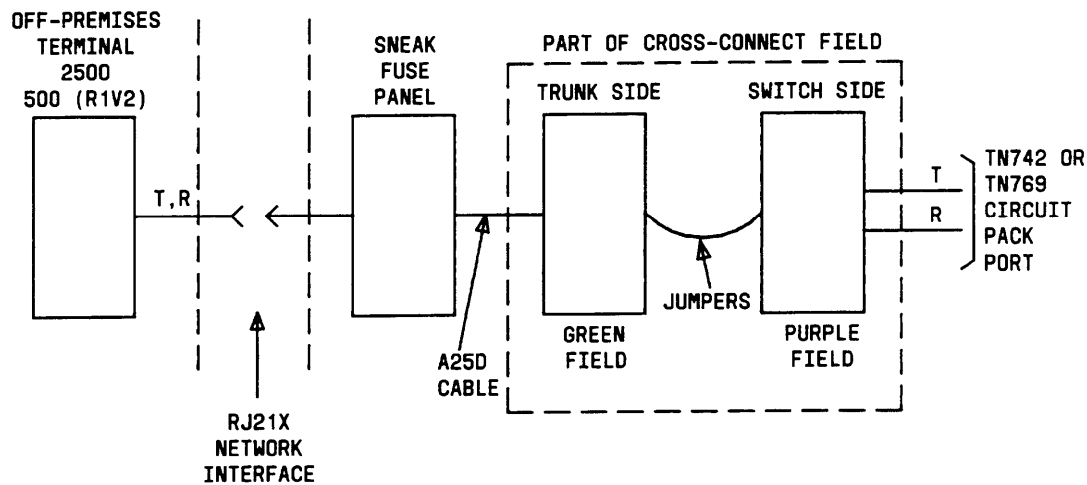


Figure 3-100. Connections For Off-Premises Terminals

Installing Out-of-Building Terminal Wiring

Out-of-building terminals are those extensions not physically located in the same building as the equipment room but are located on the same property.

Analog and digital terminals can be used for out-of-building terminals.

Analog Out-of-Building Terminals

Figure 3-101 shows the connections required for one to eight out-of-building analog voice terminals. The TN746 Analog Line circuit pack cannot be used for out-of-building terminals. Carbon block, or equivalent, protection must be provided at both building entrances. The multi-pair protector units and the out-of-building cabling required must be locally engineered. Connectorized multi-pair protector units (female 25-pair connector out) are recommended. The protector units can be ordered from the *Premises Distribution Systems Equipment and Supplies Catalog*.

Figures 3-102 shows the connections required for up to 24 out-of-building analog voice terminals. Concentration of analog line pairs is used at both buildings to minimize the out-of-building wiring required. The TN746 Analog Line circuit pack cannot be used for out-of-building terminals. In the equipment room, jumpers must be connected between one row in the green field and up to three rows in the purple field as shown in Figure 3-67. At the out-of-building terminal location, a WP-90929, List 1 Concentrator Cable is used. There are eight terminal appearances on each of the three fingers of the concentrator cable.

Carbon block, or equivalent, protection must be provided at both building entrances. The multi-pair protector units and the out-of-building cabling required must be locally engineered. Connectorized multi-pair protector units (female 25-pair connector out) are recommended. The protector units can be ordered from the *Premises Distribution Systems Equipment and Supplies Catalog*.

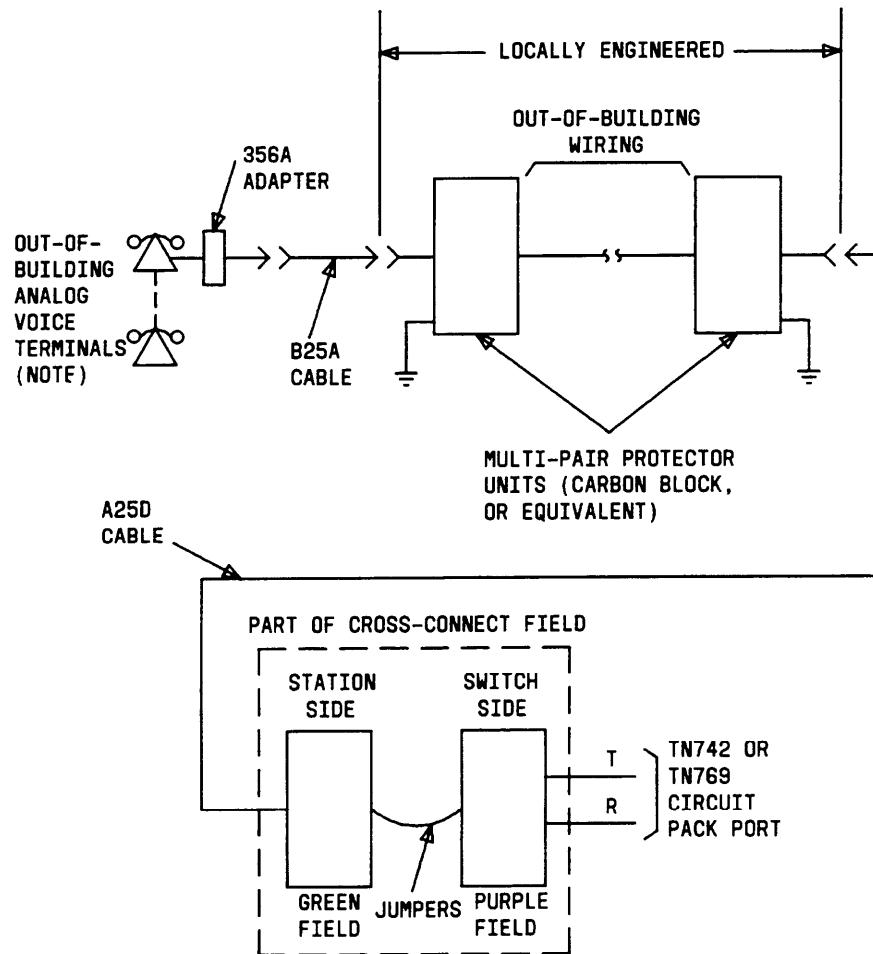
PROTECTOR UNIT ORDERING INFORMATION*

Description	Comcode
3B1A (Carbon Block)	102 381 779
3B1E (Gas Tube)	103 090 395
4B1C (Carbon Block and Sneak Current)	102 904 893
4B1E (Gas Tube and Sneak Current)	103 090 437

Digital Out-of-Building Terminals

Design for out digital out-of-building terminals is in development.

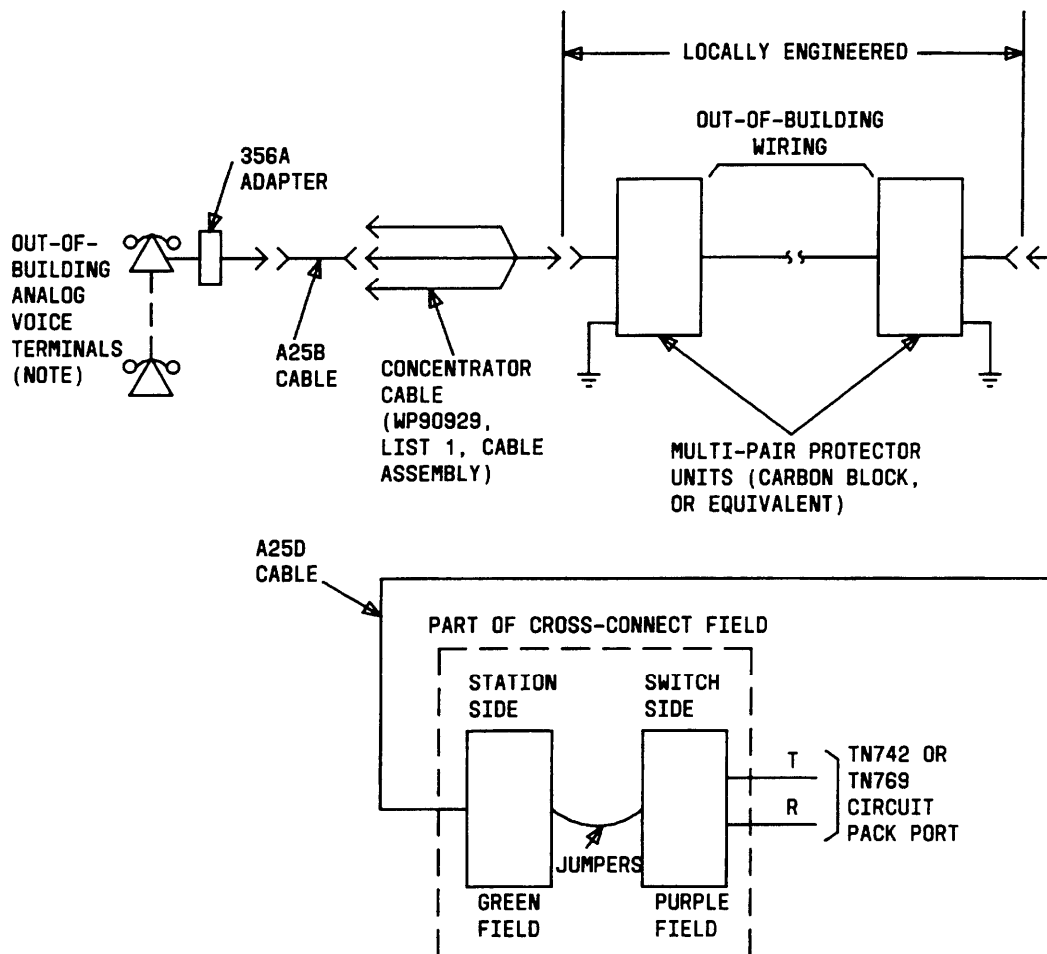
* The protector units are plug-in type units that can be installed on a 188-, 189-, or 190-type multi-station protector unit.



NOTE:

THE MAXIMUM CABLING DISTANCE FROM THE SWITCH CABINET
TO OUT-OF-BUILDING VOICE TERMINALS IS 6000 FEET (1828 M).

Figure 3-101. Connections for One to Eight Out-of-Building Analog Voice Terminals Only



NOTE:
THE MAXIMUM CABLING DISTANCE FROM THE SWITCH CABINET
TO OUT-OF-BUILDING VOICE TERMINALS IS 6000 FEET (1828 M).

Figure 3-102. Connections for Each Group of Eight Out-of-Building Analog Voice Terminals

Installing Emergency Transfer Units and Terminals

Requirements—Terminals

Emergency transfer capability is provided by a transfer unit mounted on the wall next to the Trunk/Auxiliary Field.

Only 500- or 2500-type voice terminals can be used for emergency transfer. For R1V2 or R1V3 systems, the 500-type and 2500-type terminals can also be used as normal extensions. For R1V1 systems, the 500-type terminals are used when the central office has rotary dialing service only and cannot be used as normal extensions. Emergency transfer capability may be provided on Central Office (CO) and Wide Area Telecommunications Service (WATS) trunks.

The following two types of transfer units are available:

- Z1A Emergency Transfer Unit—Each unit serves up to six Power Failure Transfer terminals. A ground-start switch is required at each preselected voice terminal when ground start trunks are used.
- 574-5 Power Transfer Unit—Each unit serves up to five Power Failure Transfer terminals. The unit provides automatic ground start.

The units are connected to a yellow terminal row in the Trunk/Auxiliary Field. The units are powered (-48 V dc) from the EM TRANS RELAY PWR terminals. There are seven EM TRANS RELAY PWR terminal pairs. This simplifies powering of up to seven emergency transfer units.

574-5 Power Transfer Unit

The 574-5 Power Transfer Unit has connection for five emergency transfer terminals and is compatible with both loop start and ground start trunks. Ten slide switches in the center of the unit (Figure 3-103) are set for the trunk type (two per trunk). The switches are set at the factory for ground start trunks as shown in Figure 3-103.

When ground start trunks are used, the transfer unit will automatically provide ground start for each trunk without the need for special wiring at the terminal used for emergency transfer service.

Figure 3-104 shows wiring required at the Trunk/Auxiliary Field for a voice terminal used only for emergency transfer. Figure 3-105 shows wiring required at the Trunk/Auxiliary Field for a voice terminal used for emergency transfer as well as a normal extension.

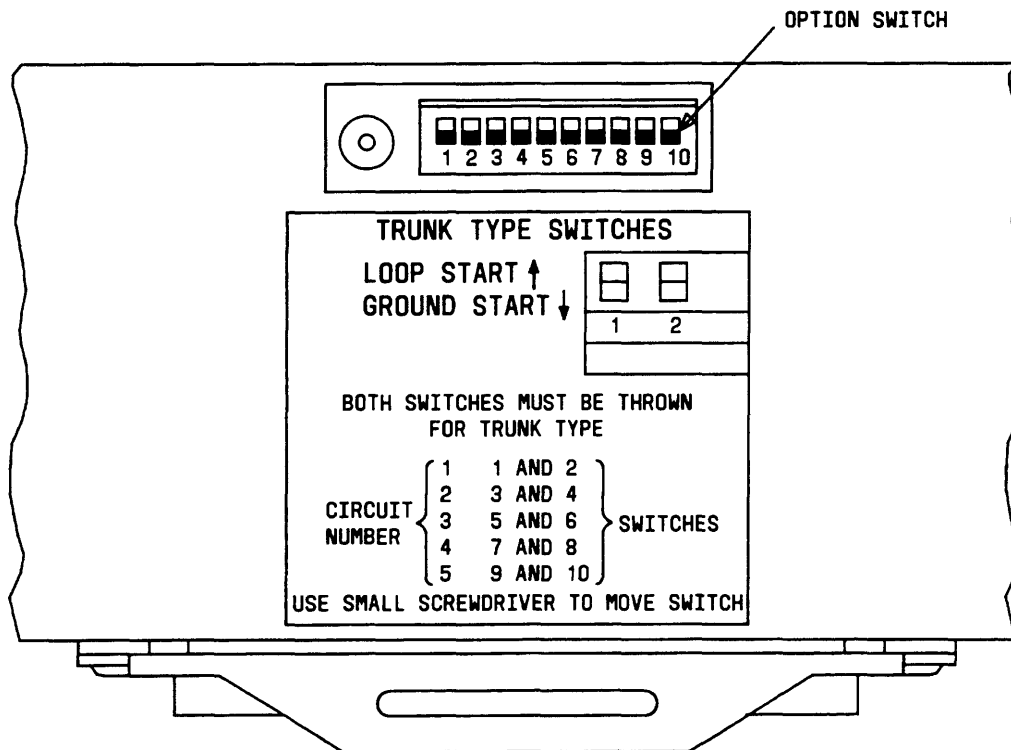


Figure 3-103. 574-5 Power Transfer Unit Option Switches

Requirements—Optional DID Make-Busy Trunk

Figure 3-106 shows the connections at the Trunk Auxiliary Field for an optional Direct Inward Dialing (DID) make-busy trunk. This option prevents DID trunks from being taken out of service by the serving central office during emergency transfer. This trunk is used for this function only and should be specified to appear on the twenty-fifth pair of a network interface jack.

Installation—Emergency Transfer Units

1. Mount emergency transfer unit on the wall to the left of the Trunk/Auxiliary Field. Additional units should be mounted below the first one in a column.
2. Connect B25A cable from the emergency transfer unit to a connector associated with the yellow emergency transfer row in the Trunk/Auxiliary Field.

Installation—Terminals

Trunk/Auxiliary Field Connections—Terminals Used Only for Emergency Failure Transfer

1. At Trunk/Auxiliary Field, run and connect pair of wires between PWR terminals on the yellow emergency transfer row to EM TRANS RELAY PWR terminal (see Figure 3-104).
2. Run and connect CO trunk circuit leads from the purple field to TC terminals on the yellow emergency transfer row for each trunk.
3. Run and connect CO trunk circuit leads from the green field to TK terminals on the yellow emergency transfer row for each trunk.
4. Connect the ST terminal leads on the yellow emergency transfer row for each emergency transfer terminal to the terminal appearance in the yellow Trunk/Auxiliary Field (see **Note**).

Note: The ST terminal leads should be terminated on the following pairs: 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).

5. Connect this row to the blue or white station distribution field.

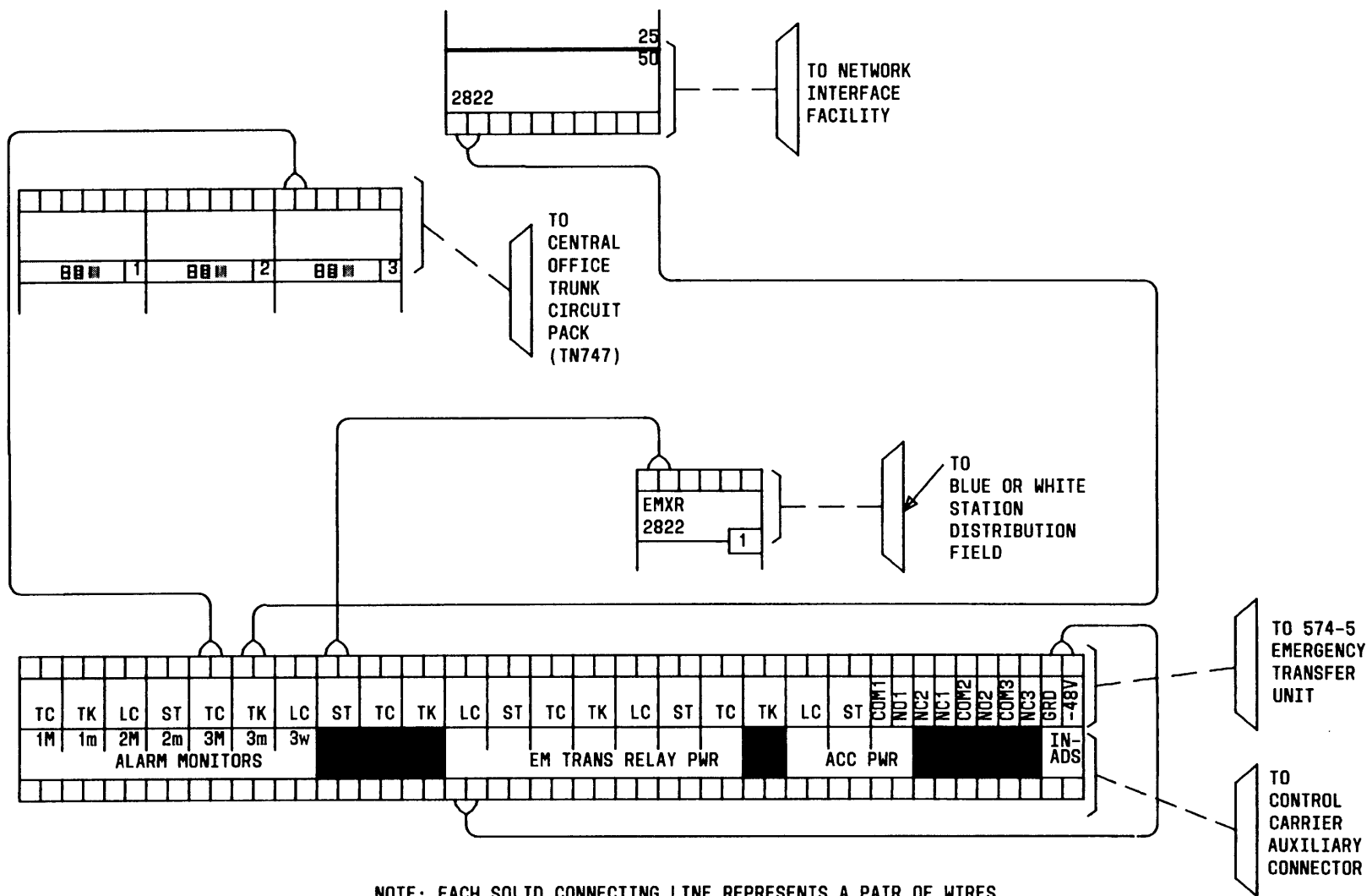


Figure 3-104. Connections at Trunk/Auxiliary Field for Voice Terminal Used Only for Emergency Transfer—574-5 Power Transfer Unit

Trunk/Auxiliary Field Connections—Terminals Used for Emergency Failure Transfer and as Normal Extensions

6. At Trunk/Auxiliary Field, run and connect pair of wires between PWR terminals on the yellow emergency transfer row to EM TRANS RELAY PWR terminal (see Figure 3-105).
7. Run and connect CO trunk leads from the green field to TC terminals on the yellow emergency transfer row for each trunk.
8. Run and connect CO trunk circuit leads from the green field to TK terminals on the yellow emergency transfer row for each trunk.
9. Run and connect voice terminal leads from the purple analog line board row to LC terminals on yellow emergency transfer row for each terminal.
10. Run and connect the ST terminal leads on the yellow emergency transfer row for each emergency transfer terminal to a separate row in the purple Trunk/Auxiliary Field.
11. Connect this purple field to the terminal appearance in the blue or white field Station Distribution Field.

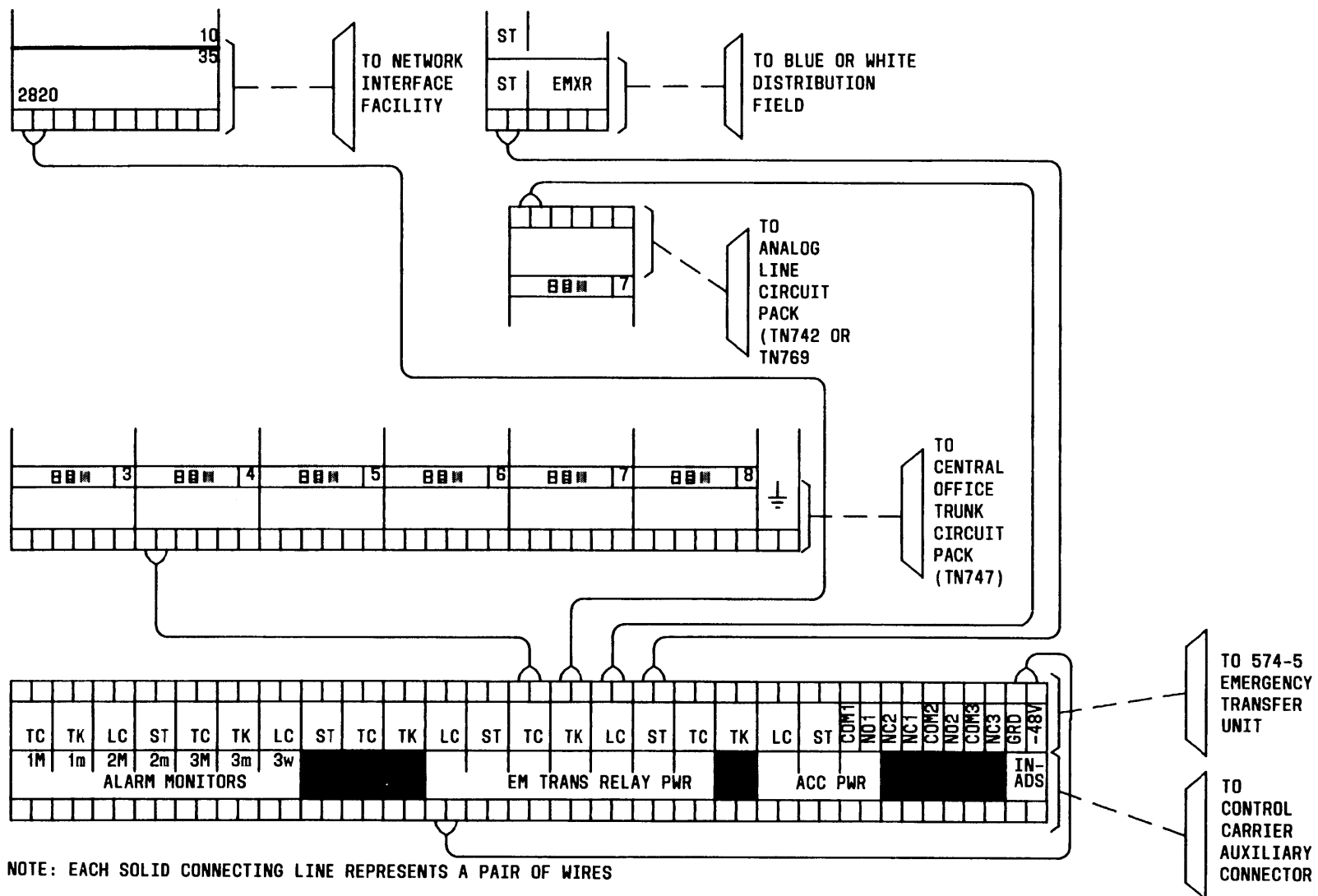


Figure 3-105. Connections at Trunk/Auxiliary Field for Voice Terminal Used for Emergency Transfer and as Normal Extension—574-5 Power Transfer Unit

Voice Terminal Installation

12. Connect voice terminals to the information outlets.
13. Install patch cords or jumper wires between the switch side and the station side of the Station Distribution Field.

Installation—Optional DID Make-Busy Trunk

1. Run and connect jumper from one DID make-busy lead to COM3 terminal on the yellow emergency transfer row (see Figure 3-106).
2. Run and connect jumper from the other DID make-busy circuit lead to NC3 terminal (first appearance) on the yellow emergency transfer row.

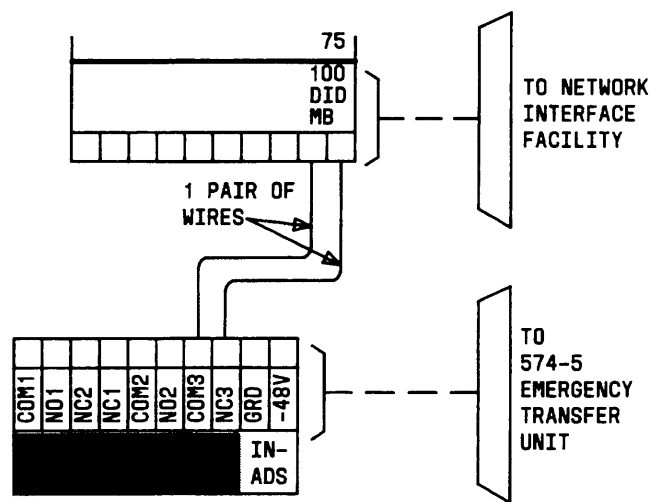


Figure 3-106. Connections at Trunk/Auxiliary Field for Optional DID Make-Busy Trunk—574-5 Power Transfer Unit

Z1A Power Failure Transfer Unit

Figure 3-107 shows wiring required at the Trunk/Auxiliary Field for a voice terminal used only for emergency transfer. Figure 3-108 shows wiring required at the Trunk/Auxiliary Field for a voice terminal used for emergency transfer as well as a normal extension.

If a Z1A Emergency Transfer Unit is used with central office trunks that require ground start, a ground start switch must be installed on each emergency transfer terminal. System ground is provided on the twenty-fifth pair of leads on each purple row associated with a switch cable when a cable is installed. System ground is connected to the third pair of the 3-pair terminal appearance. This pair becomes the second pair at the information outlet. A ground start switch is mounted on the side of the terminals and is wired to ground and to the ring lead inside the terminal.

Requirements—Optional DID Make-Busy Trunk

Figure 3-109 shows the connections at the Trunk/Auxiliary Field for an optional Direct Inward Dialing (DID) make-busy trunk. This option prevents DID trunks from being taken out of service by the serving central office during emergency transfer. This trunk is used for this function only and should be specified to appear on the twenty-fifth pair of a network interface jack.

Installation—Emergency Transfer Units

1. Mount emergency transfer unit on the wall to the left of the Trunk/Auxiliary Field. Additional units should be mounted below the first one in a column.
2. Connect B25A cable from the emergency transfer unit to a connector associated with the yellow emergency transfer row in the Trunk/Auxiliary Field.

Installation—Terminals

Trunk/Auxiliary Field Connections—Terminals Used Only for Emergency Failure Transfer

1. At Trunk/Auxiliary Field, run and connect pair of wires between PWR terminals on yellow emergency transfer row to EM TRANS RELAY PWR (see Figure 3-107).
2. Run and connect CO trunk circuit leads from the purple field to TC terminals on the yellow emergency transfer row for each trunk.
3. Run and connect CO trunk circuit leads from the green field to TK terminals on the yellow emergency transfer row for each trunk.
4. Connect the ST terminal leads on the yellow emergency transfer row for each emergency transfer terminal to the terminal appearance in the yellow Trunk/Auxiliary Field (see **Note**).

Note: The ST terminal leads should be terminated on the following pairs 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).

5. Connect this row to blue or white station distribution field.
6. If ground start must be provided, run and connect two wires from ground terminals to the third pair for each emergency terminal appearance on the yellow Trunk/Auxiliary row created in step 4. Loop the wires from the first appearance to the last if enough ground terminals are not available (see Figure 3-110).

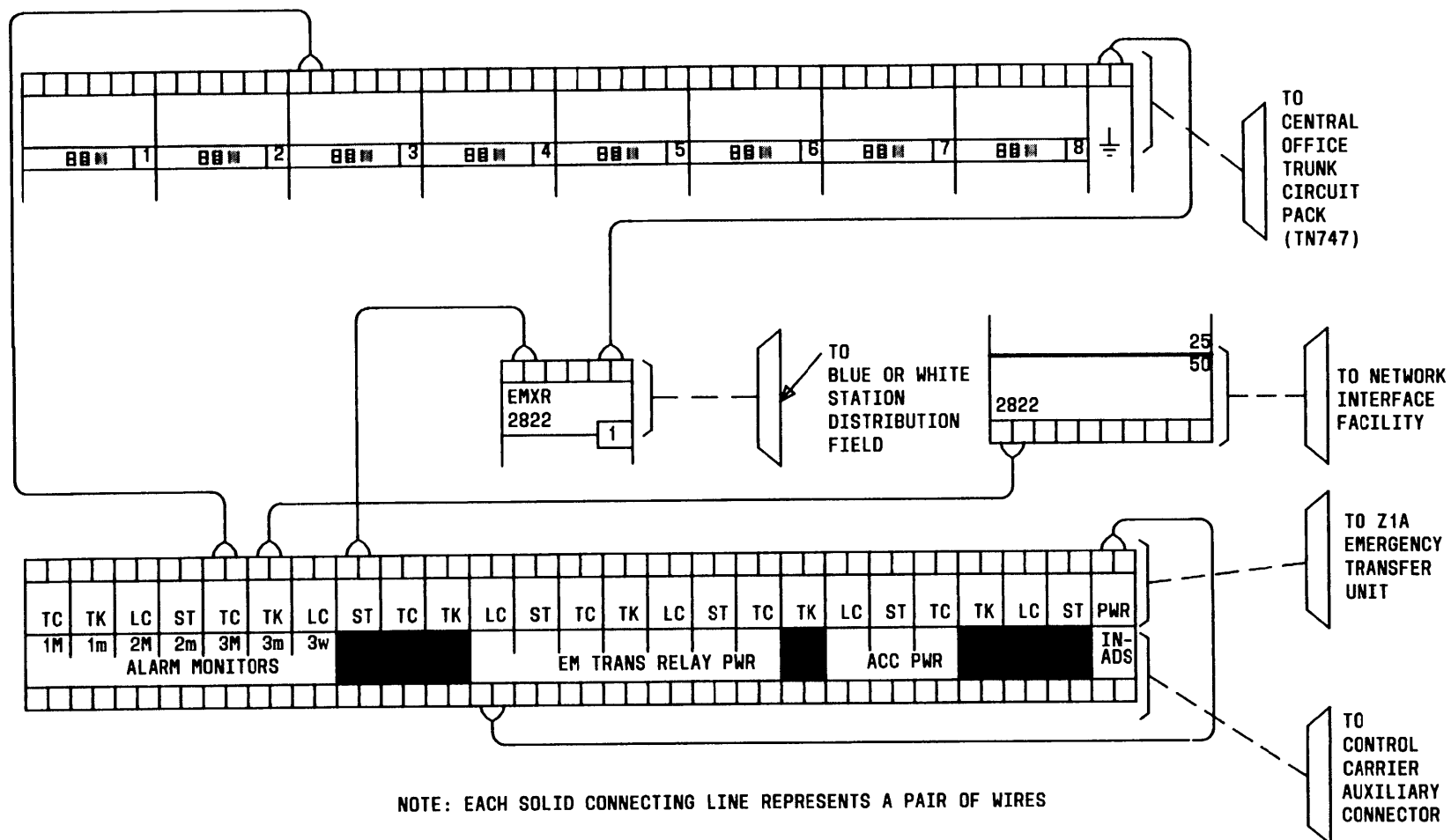


Figure 3-107. Connections at Trunk/Auxiliary Field for Voice Terminal Used Only for Emergency Transfer (Ground Start Trunks)—Z1A Emergency Transfer Unit

Trunk/Auxiliary Field Connections—Terminals Used for Emergency Failure Transfer and as Normal Extensions

7. At Trunk/Auxiliary Field, run and connect pair of wires between PWR terminals on the yellow emergency transfer row to EM TRANS RELAY PWR terminal (see Figure 3-108).
8. Run and connect CO trunk leads from the purple field TC terminals on the yellow emergency transfer row for each trunk.
9. Run and connect CO trunk circuit leads from the green field to TK terminals on the yellow emergency transfer row for each trunk.
10. Run and connect voice terminal leads from the purple analog line board row to LC terminals on the yellow emergency transfer row for each terminal.
11. Run and connect the ST terminal leads on the yellow emergency transfer row for each emergency transfer terminal to a separate row in the purple Trunk/Auxiliary Field.
12. Connect this purple field row to the terminal appearance in the blue or white field Station Distribution Field.
13. If ground start must be provided, do step 14; otherwise, go to step 15.
14. Run and connect two wires from ground terminals to the third pair for each emergency terminal appearance on the purple Trunk/Auxiliary row created in step 12. Loop the wires from the first appearance to the last if enough ground terminals are not available (see Figure 3-111).



Voice Terminal Installation

15. If ground start must be provided, do steps 16 through 23 to install ground start switch; otherwise, go to step 24.
16. Remove cover from 551A key.
17. Remove housing from 500- or 2500-type voice terminal.
18. Run and connect wire from red lead (R) on voice terminal through 551A key to yellow and/or black lead on voice terminal.
19. Mount base of 551A key to 77A bracket using screws provided with bracket.
20. Replace cover on 551A key.
21. Place groove in bracket over lip of voice terminal set base (see Figure 3-112).
22. Replace voice terminal housing.
23. Repeat steps 16 through 22, as required.
24. Connect voice terminals to the information outlets.
25. Install patch cords or jumper wires between the switch side and the station side of the Station Distribution Field.

Installation—Optional DID Make-Busy Trunk

1. Run and connect jumper from one DID make-busy lead to TK terminal (first appearance) on the yellow emergency transfer row (see Figure 3-109).
2. Run and connect jumper the other DID make-busy circuit lead to ST terminal (first appearance) on the yellow emergency transfer row.

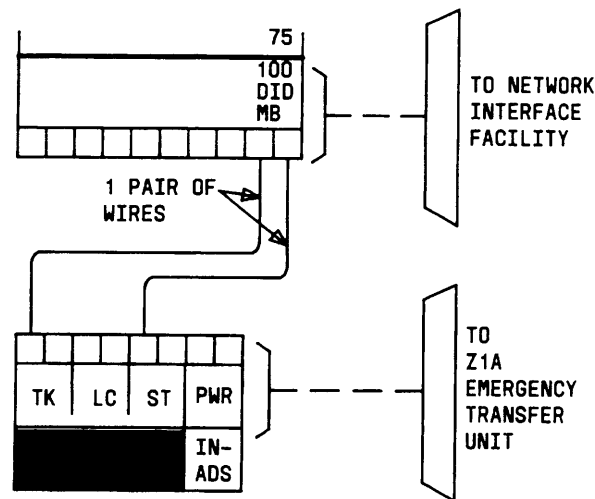


Figure 3-109. Connections at Trunk/Auxiliary Field for Optional DID Make-Busy Trunk—Z1A Emergency Transfer Unit

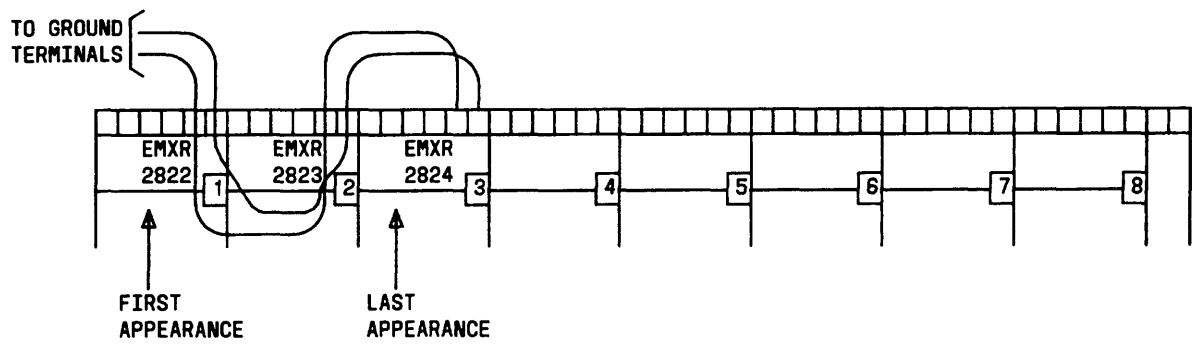


Figure 3-110. Ground Wiring Example (Three Voice Terminals Used Only for Emergency Transfer)

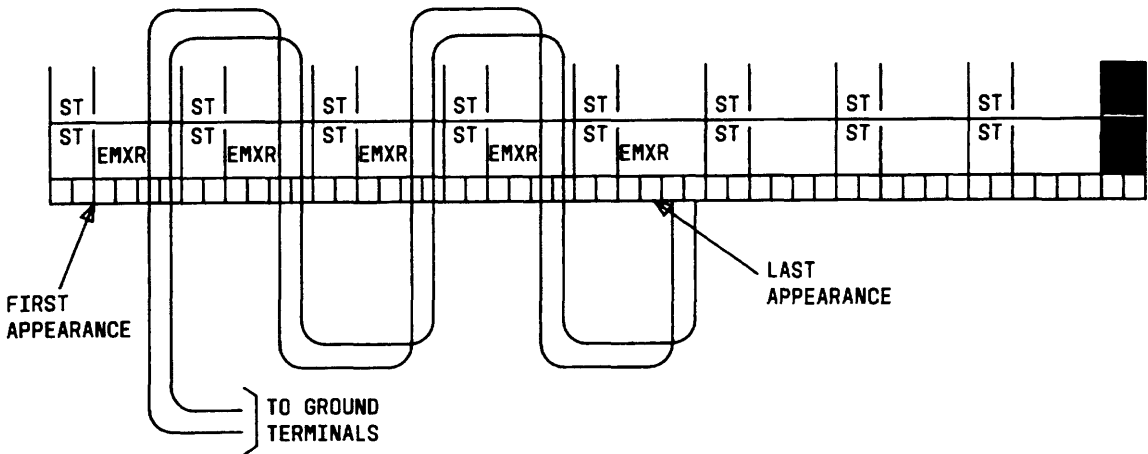


Figure 3-111. Ground Wiring Example (Five Voice Terminals Used for Emergency Transfer and as Normal Extensions)

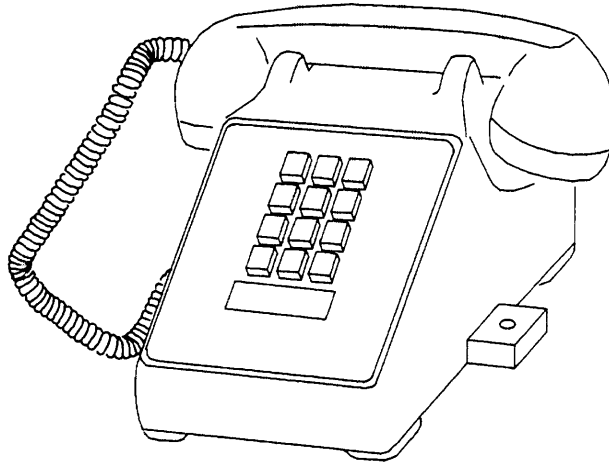


Figure 3-112. Ground Start Key Installation

Installing External Ringing

Requirements

Figure 3-113 shows the connections for external ringing. External ringing is provided by a device, such as a gong, chime, or bell, connected to an information outlet. The switch side of the cross-connect field is connected to a TN742 or TN769 Analog Line circuit pack located in a port carrier. The TN742 or TN769 circuit pack contains a maximum of eight ports.

The maximum number of devices that can be connected to one TN742 or TN769 circuit pack port cannot exceed 3 ringer equivalences.

Installation

1. Determine port assignment of Trunk Answer From Any Station (Call Answer From Any Voice Terminal) feature from Console Parameters Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Install patch cord or jumper wires at cross-connect field.
3. Mount ringing device at location specified on External Ringing Device Worksheet.
4. Run 2-pair line cord (modular plug at one end) from information outlet to ringing device (see Figure 3-113).
5. Connect red (R) and green (T) leads to ringing device.
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

Installing Queue Warning Indicator

Requirements

Figure 3-113 shows the connections for the queue warning indicator. An ac indicator (lamp) such as a 21C49 is optional for use as a queue warning indication in a Uniform Call Distribution/Direct Departmental Calling queue. The lamp is connected to an information outlet. The switch side of the cross-connect field is connected to a TN742 or TN769 Analog Line circuit pack located in a port carrier. The TN742 or TN769 circuit pack contains a maximum of eight ports.

Installation

1. Determine port assignment for queue warning lamp from Hunt Group Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Install patch cord jumper wires at cross-connect field.
3. Mount lamp at specified location.
4. Connect 2-pair line cord (modular plug at one end) from information outlet to lamp (see Figure 3-113).
5. Connect red (R) and green (T) leads to lamp.
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

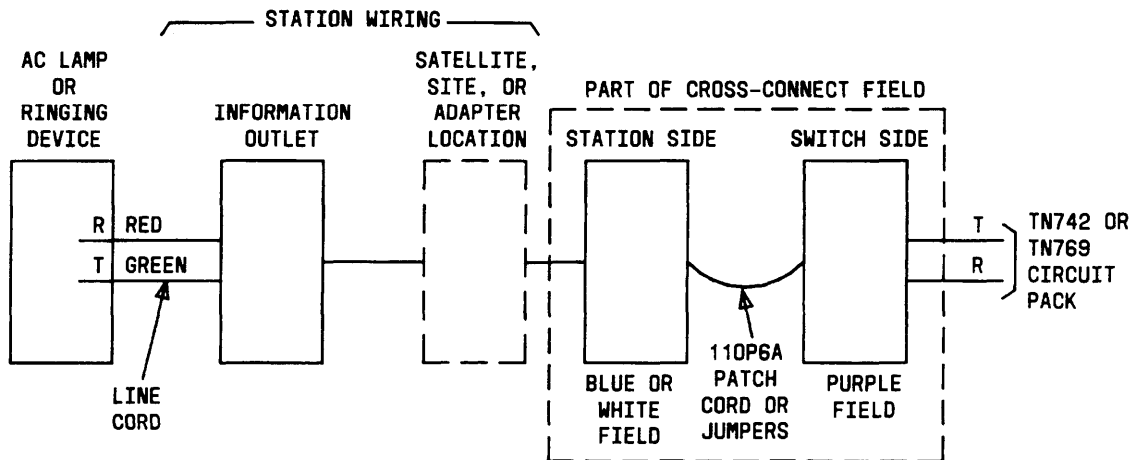


Figure 3-113. Connections for External Ringing or Queue Warning Indicator

AUXILIARY EQUIPMENT INSTALLATION

Auxiliary Equipment Description

The following equipment can be optionally provided with the system.

- 278A Adapters—Provides an interface, when required, to customer-provided equipment for Loudspeaker Paging feature. The 278A adapter requires -24 volt dc power. It can be modified for -48 volt dc power with a D-181321 kit of parts (Comcode 103 031 181).
- 89A Control Unit—Can also be used to provides an interface, when required, to customer-provided equipment for Loudspeaker Paging feature. A 2012D transformer provides -48 volt dc power to the 89A.
- PagePac Paging System—Provides an amplifier system for Loudspeaker Paging feature. Three models are available:
 - PagePac 20—Provides a single zone of paging with an input source for music. The unit can also be modified to provide 9 or 39 paging zones.
 - PagePac VS—Provides one to three paging zones. It also permits all zone paging. Two optional feature cards are available to provide music or talk-back over paging.
 - PagePac 50/100/200—Provides 1 to 24 paging zones. Optional add-ons are available to provide music or talk-back over paging. It is also possible to use a customer-supplied music source.

All PagePac models require 115-volt ac power.

- 36A Voice Couplers—Provides an interface and system protection for customer-provided equipment for Intercept Treatment—Recorded Announcement, Music-on-Hold, and Recorded Telephone Dictation Access features. The 36A voice coupler is powered by a 2012D power transformer (set at -15 dBm). The 36A voice coupler can also be wall-mounted.
- Cook Electric Model NT7M00AA* or NT7M25AA* Digital Announcer—Provides recorded announcements for Recorded Announcement feature. Model NT7M00AA provides one channel of voice. Model NT7M25AA provides four channels of voice. Both models require an ac adapter for 115-volt ac power.
- Audichron H9040 Wake-Up Announcement System—Provides automatic wake-up announcements for use with the hospitality features. This unit requires a power unit to be supplied locally that is rated at -48v dc at 1.2 amps.
- 3270 Data Modules—Provide a family of protocol converters that allow 3270-type terminals to communicate with a host computer through the system.
- Processor Data Modules (PDMs)—Provide an interface to a Applications Processor (AP), AUDIX, Call Management System (CMS), Distributed Communications System (DCS), Property Management System, customer-provided terminals and computers, and Station Message Detailed Recording (SMDR).
- Asynchronous Data Units—Provide an interface between the system data line circuit pack and the customer's asynchronous data terminals and host computers. They also can be used to provide an interface to the Property Management System or SMDR equipment.
- Information System Network (ISN) Interface—Provides an interface to the Information System Network that interconnects computers and terminals on a customer's premises.
- Star-Based Local Area Network (STARLAN NETWORK) Interface—Provides an interface to the STARLAN NETWORK that interconnects personal computers, data terminals, resource units, and printers.
- PLS Interface—Provides an interface to the Premises Lightwave System (PLS) that allows that connect 3270 type A terminals to a 3274 cluster controller.

* Refer to the Cook Electric Digital Announcer product description and ordering information for complete codes.

Installing Loudspeaker Paging and Music-on-Hold

Requirements

The Loudspeaker Paging feature provides a connection from the TN763 Auxiliary Trunk in the system to a customer-provided paging amplifier. All attendants and voice terminal users have access to the voice paging equipment.

The Music-on-Hold feature provides a connection from the TN763 Auxiliary Trunk in the system to a customer-provided music source. All calls on the system that are on hold, waiting in a queue, or parked will receive music to let the waiting party know that the connection is still in effect.

The music source that is used for the Music-on-Hold feature can also be connected through a paging amplifier to provide background music over the loudspeakers.

Figure 3-114 is a block diagram that shows how the Loudspeaker Paging and Music-on-Hold features interact. Detailed descriptions for installing these features are included in this manual.

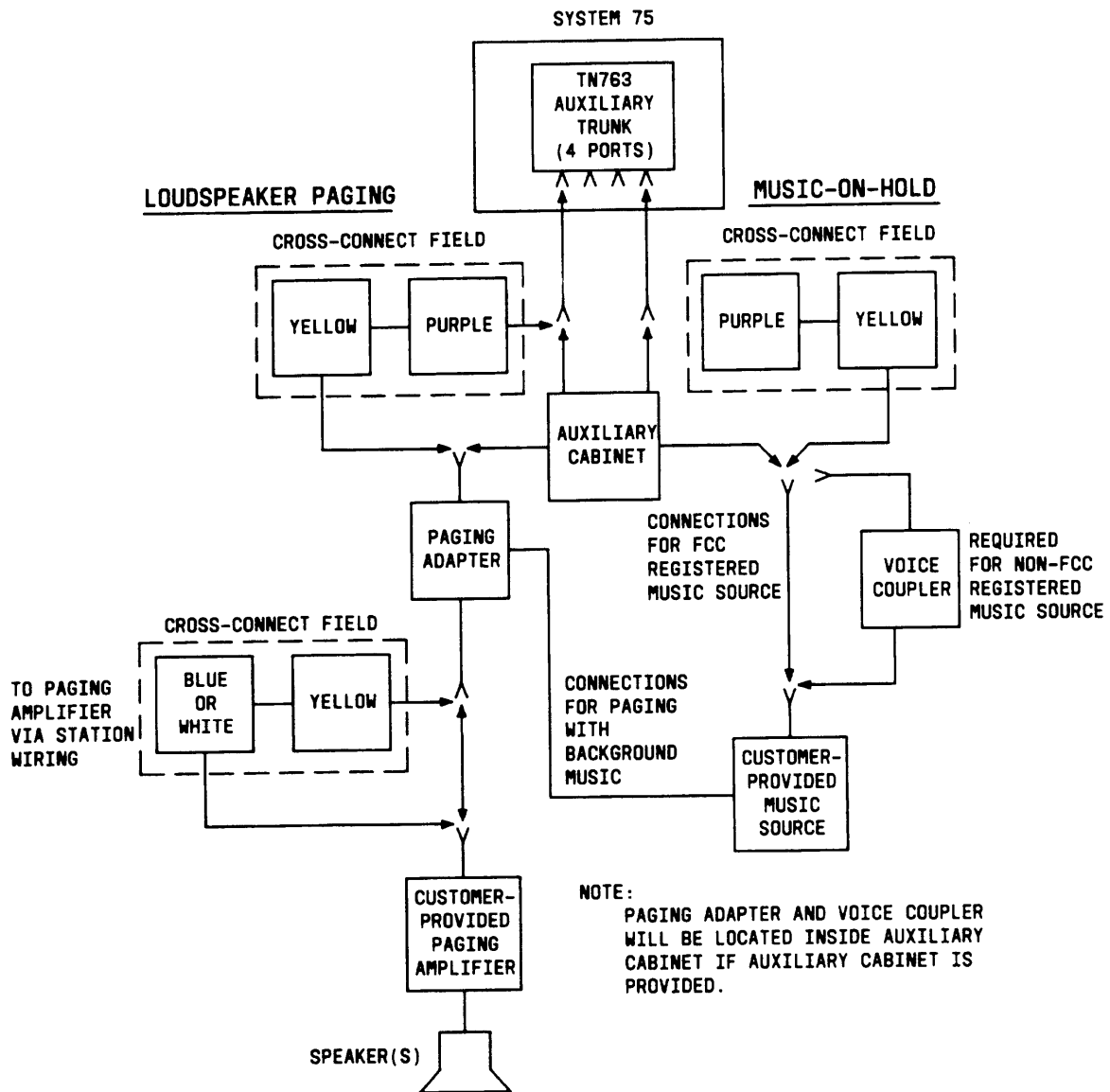


Figure 3-114. Connections for Loudspeaker Paging and Music-on-Hold

Installing Loudspeaker Paging Access—278A Paging Adapter

Requirements

Figure 3-115 shows the connections for the Loudspeaker Paging feature. The connections are for one zone. These connections are required for each paging zone.

The connections shown in Figure 3-115 and the procedures provided in this section are used when the loudspeaker interface equipment is not located in the equipment room. If the loudspeaker amplifier is located in the equipment room, the connections do not have to be routed through the cross-connect field.

Access to loudspeaker paging is provided by an information outlet. The switch side of the cross-connect field is connected to a 278A adapter. The adapter must be modified with a D-181321 kit of parts for -48V powering. The adapter is mounted in the auxiliary cabinet, if provided. Six leads (T, R, SZ, SZ1, S, and S1) connect the 278A adapter to a TN763 Auxiliary Trunk circuit pack located in a port carrier. A TN763 circuit pack contains a maximum of four ports.

Installation

Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

1. Determine port assignment of paging zone(s) from Loudspeaker Paging Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Identify carrier slot and label both ends of an A25D cable.
3. Run and connect A25D cable from assigned port carrier slot to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 3-115).
4. Run and connect A25D cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 3-115).
5. Install yellow (auxiliary) label on 110 terminal block.
6. Mount 278A adapter.
7. Remove cover from 278A adapter and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 3-115).
8. On 278A adapter, connect BZ2 terminal to -V terminal, if required.
9. Connect -24V and GRD terminals on 278A adapter with at least a -24V 40-ma power supply. If the auxiliary cabinet is providing the power, then a D-181321 kit is required to reduce the -48V to -24V.
10. Install straps between E and F terminals and G and H terminals for the first 278A adapter. Install option straps between C and D terminals for each 278A adapter.
11. Install cover on 278A adapter.
12. Install patch cord or jumper wires at cross-connect field.
13. Connect 2-pair line cord (modular plug at one end) from information outlet to loudspeaker system (see Figure 3-115).

110-TYPE HARDWARE

14. Install loudspeaker equipment per manufacturer's instructions.
15. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

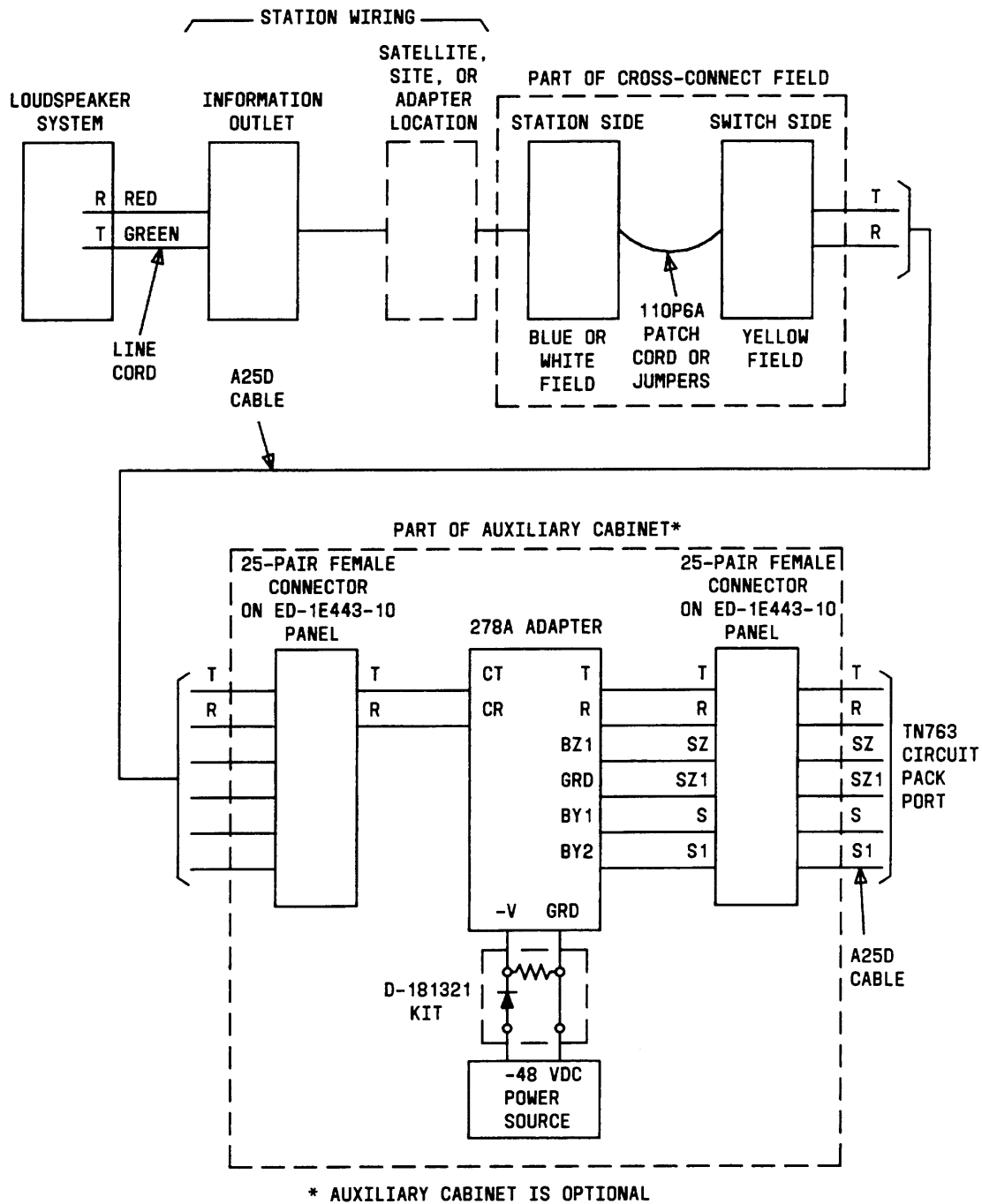


Figure 3-115. Connections for Loudspeaker Paging Zone—278A Adapter

Installing Loudspeaker Paging Access—89A Control Unit

Requirements

Figure 3-116 shows the connections for the Loudspeaker Paging feature. The connections are for one zone. These connections are required for each paging zone.

The connections shown in Figure 3-116 and the procedures provided in this section are used when the loudspeaker interface equipment is not located in the equipment room. If the loudspeaker amplifier is located in the equipment room, the connections do not have to be routed through the cross-connect field.

Access to loudspeaker paging is provided by an information outlet. The switch side of the cross-connect field is connected to a 89A control unit. The control unit is mounted in the auxiliary cabinet, if provided. Six leads (T, R, SZ, SZ1, S, and S1) connect the 89A control unit to a TN763 Auxiliary Trunk circuit pack located in a port carrier. A TN763 circuit pack contains a maximum of four ports.

Installation

Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

1. Determine port assignment of paging zone(s) from Loudspeaker Paging Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Identify carrier slot and label both ends of an A25D cable.
3. Run and connect A25D cable from assigned port carrier slot to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 3-116).
4. Run and connect A25D cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 3-116).
5. Install yellow (auxiliary) label on 110 terminal block.
6. Mount 89A control unit.
7. Remove cover from 89A control unit and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 3-116).
8. Connect PG1 and BSY1 terminals on 89A control unit to a -48 volt power supply.
9. Connect output of 2012D transformer to AC1 and AC2 terminals on 89A control unit.
10. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
11. Install cover on 89A control unit.
12. Install patch cord or jumper wires at cross-connect field.
13. Connect 2-pair line cord (modular plug at one end) from information outlet to loudspeaker system (see Figure 3-116).
14. Install loudspeaker equipment per manufacturer's instructions.

15. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

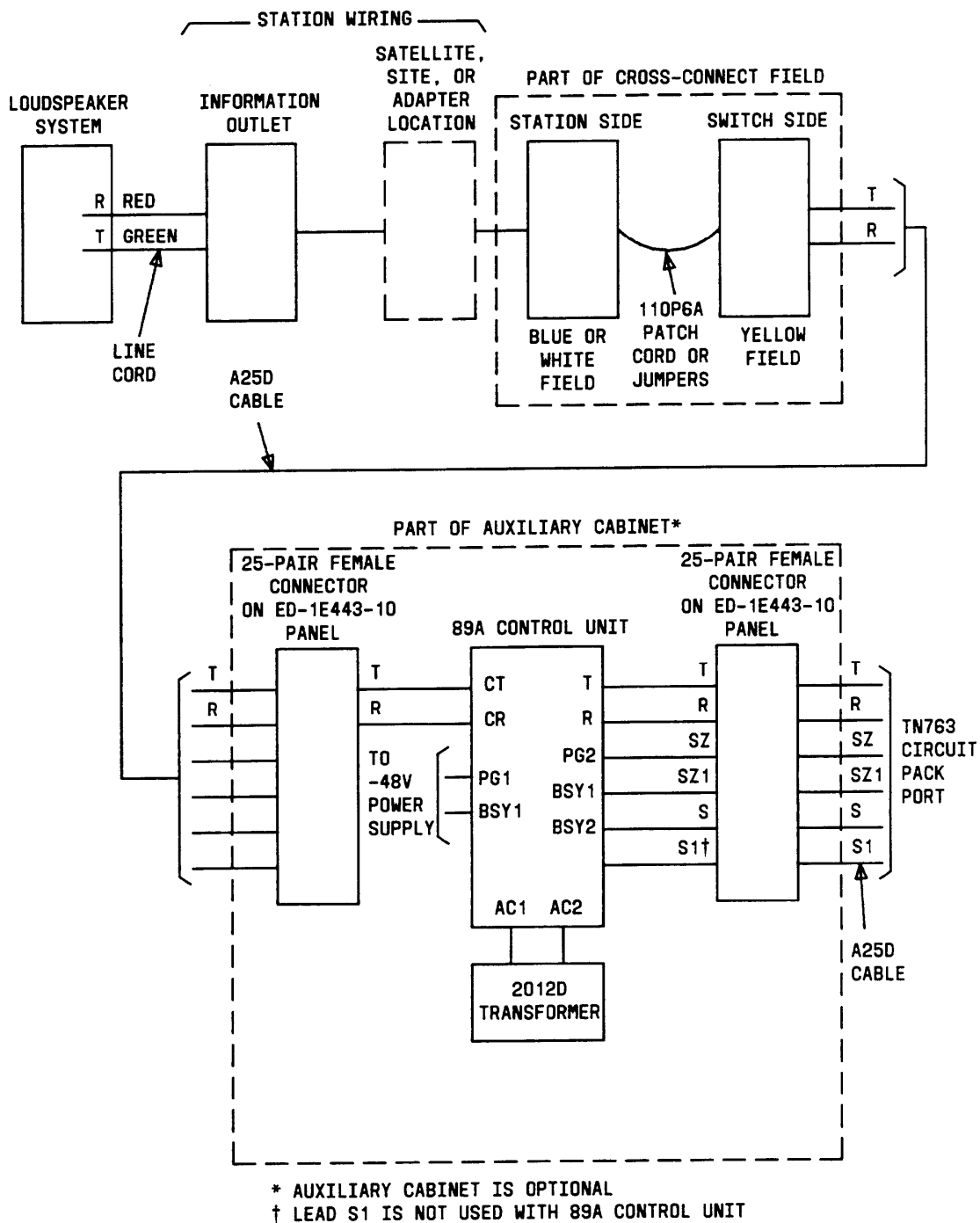


Figure 3-116. Connections for Loudspeaker Paging Zone—89A Control Unit

PagePac PAGING SYSTEM

The PagePac* paging systems use a single port of a system circuit pack to provide single or multi-zone loudspeaker paging. A PagePac system may be used in addition to the standard loudspeaker paging and code-calling capabilities of the system.

Three models are available:

- PagePac 20
- PagePac VS
- PagePac 50/100/200

PagePac 20

The PagePac 20 is a 20 watt amplifier that can be used alone to provide a single zone of paging (Figure 3-117) or it can be equipped with a Zone-Mate 9 or 39 to provide multiple paging zones (Figure 3-118). If the PagePac 20 is used alone a 278A adapter must be used.

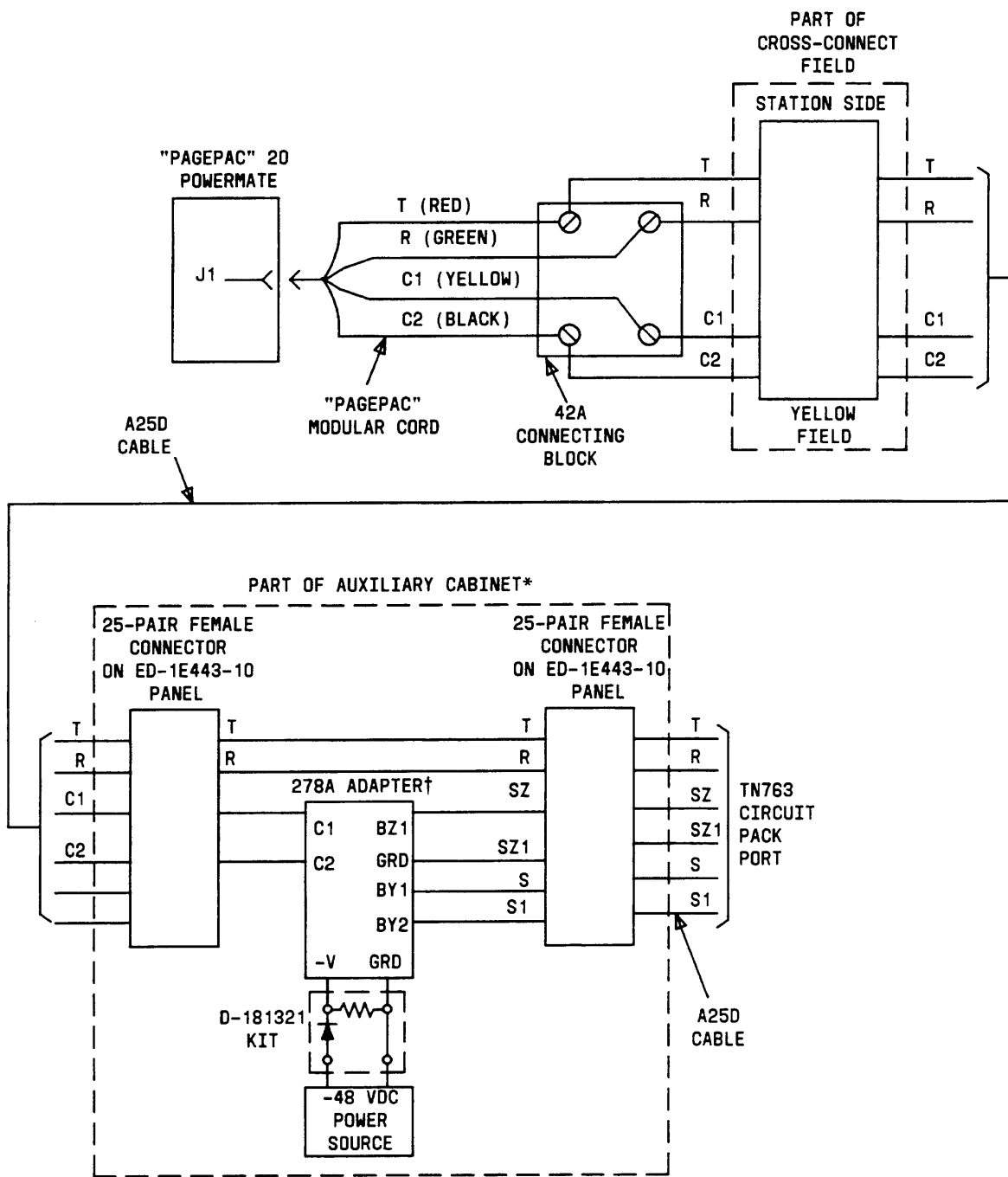
PagePac VS

The PagePac VS is a 35 watt amplifier that provides up to 3 paging zones. The PagePac VS does not require a 278A adapter. The connections for the PagePac VS are shown in Figure 3-119.

PagePac 50/100/200

The 50/100/200 PagePac Paging system will mount directly on the wall or on a 23-inch (58.4-cm) relay rack using the appropriate adapters. The unit provides 3 wattages 50, 100 and 200. The PagePac amplicenter can be used alone to provide a single zone of paging (Figure 3-120) or add-on units can be provided to create a paging system with up to 24 paging zones (Figure 3-121). If the PagePac 50/100/200 amplicenter is used alone, a 278A adapter must be used.

* Registered trademark of Harris Corporation, Dracon Division



* AUXILIARY CABINET IS OPTIONAL

† ON 278A ADAPTER, STRAP TERMINALS -V AND A

Figure 3-117. Connections for PagePac 20 Without Zone-Mate 9 or 39

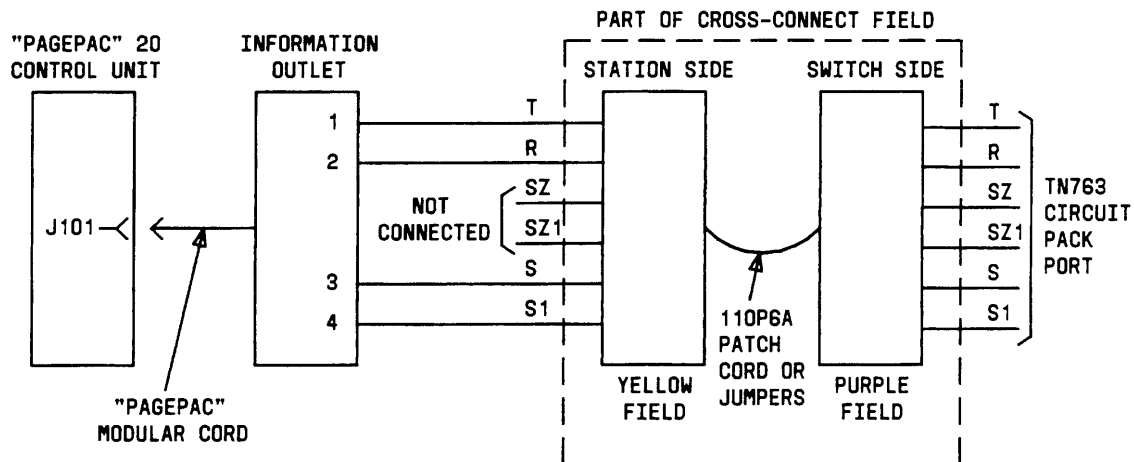
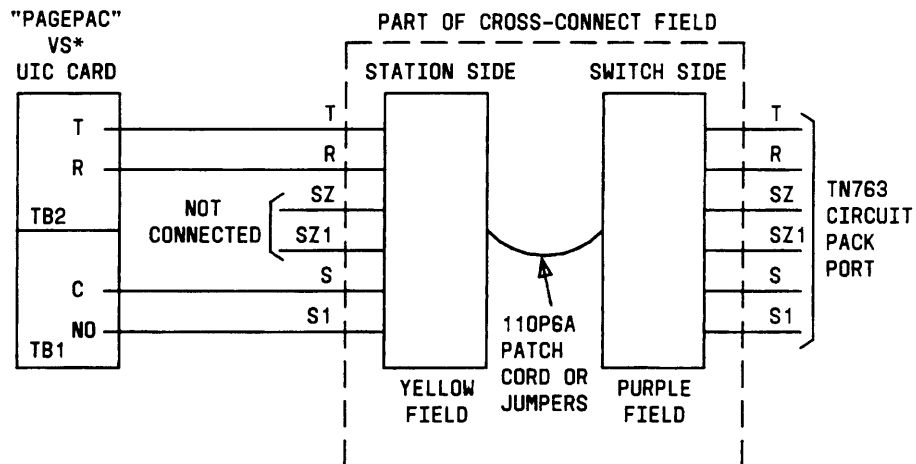
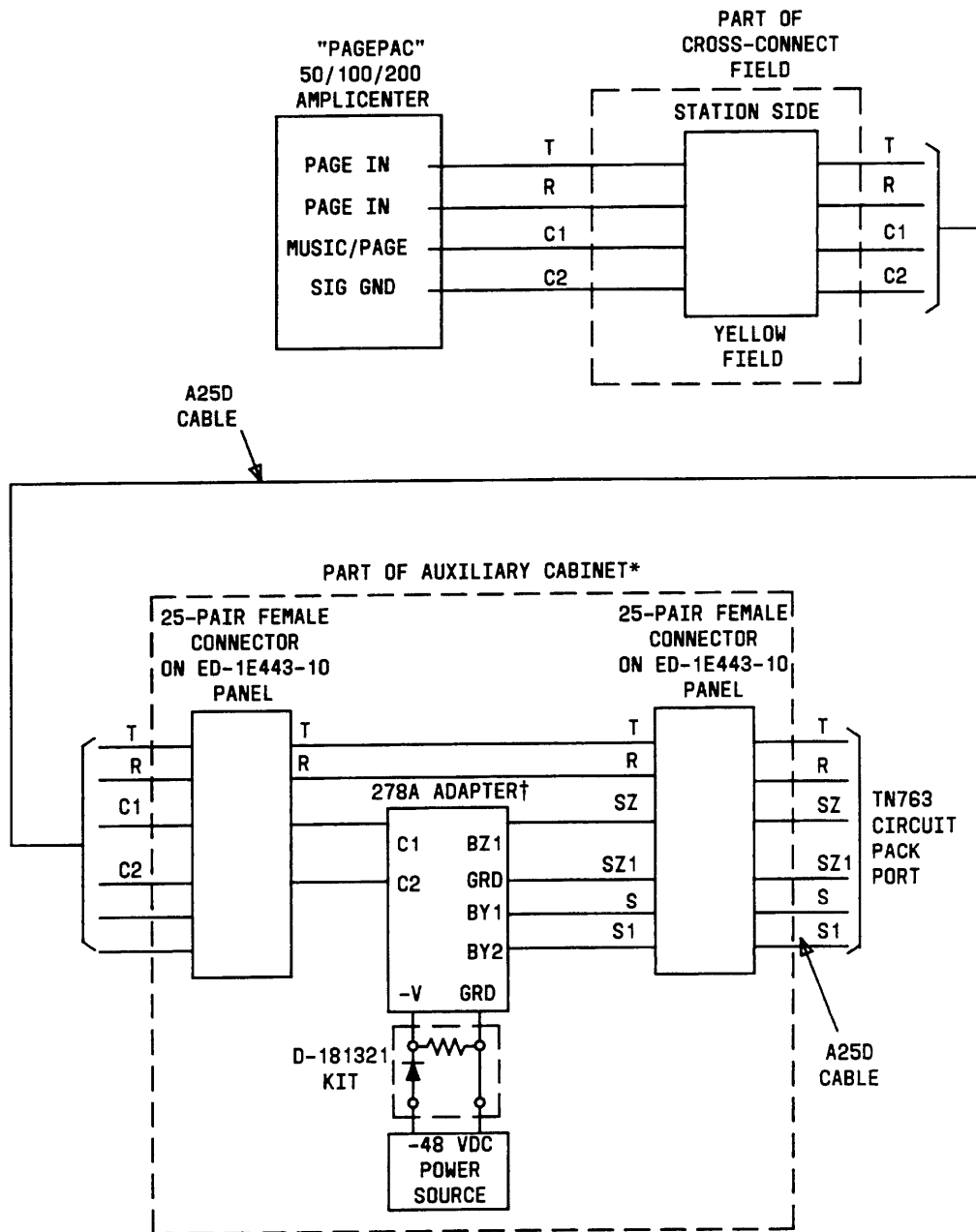


Figure 3-118. Connections for PagePac 20 With Zone-Mate 9 or 39



* IF UIC CARD IS NOT PROVIDED, ALL CONNECTIONS ARE MADE TO TB2 ON THE "PAGEPAC" VS

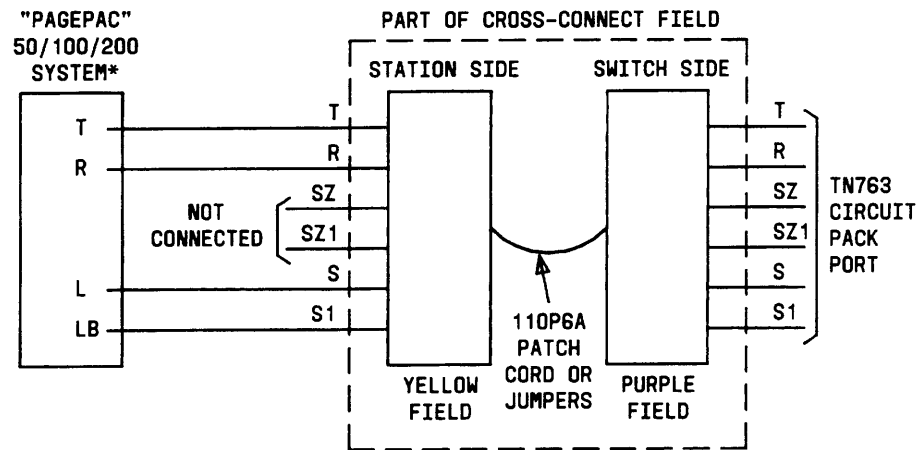
Figure 3-119. Connections for PagePac VS



* AUXILIARY CABINET IS OPTIONAL

† ON 278A ADAPTER, STRAP TERMINALS -V AND A

Figure 3-120. Connections for PagePac 50/100/200 Amplicenter Only



* OPTION C APPLIQUE FOR LOOP START WITH 24V BATTERY
MUST BE PROVIDED

Figure 3-121. Connections for PagePac 50/100/200 System

Installing Music-on-Hold Access

Requirements

Figure 3-122 shows the connections for the Music-on-Hold feature when loudspeaker equipment is FCC registered. Figure 3-123 shows the connections for the Music-on-Hold feature when loudspeaker equipment is not FCC registered.

The connections shown in Figures 3-122 and 3-123 and the procedures provided are used when the music source is not located in the equipment room. If the music source is located in the equipment room, the connections do not have to be routed through the cross-connect field.

Access to the music source is provided by an information outlet. Two leads (T and R) connect the information outlet to the cross-connect field. If the music source is FCC registered, the switch side of the cross-connect field is connected directly to the switch cabinet. If the music source is not FCC registered, the switch side of the cross-connect field is connected to a 36A voice coupler. The coupler is mounted in the auxiliary cabinet, if provided.

Two leads (T, R) connect the coupler or switch side of the cross-connect field to a TN763 Auxiliary Trunk circuit pack located in a port carrier. A TN763 circuit pack contains a maximum of four ports.

Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

Installation—FCC Registered Music Source

1. Determine port assignment of feature from Feature-Related System Parameters Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Install patch cord or jumper wires at cross-connect field.
3. Install music source per manufacturer's instructions.
4. Connect line cord (modular plug at one end) from information outlet to music source (see Figure 3-122).
5. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

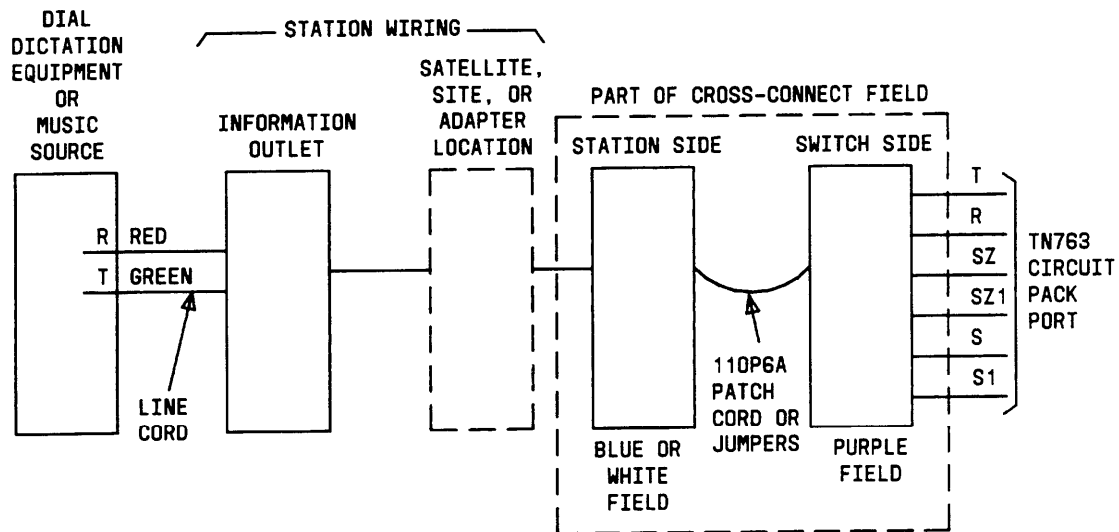


Figure 3-122. Connections for FCC Registered Equipment Provided for Music-on-Hold/Dial Dictation Equipment (Auxiliary Access)

Installation—Non-FCC Registered Music Source

1. Determine port assignment of feature from Feature-Related System Parameters Form:

EXAMPLE:	Port	Number	B	02	01
			Carrier	Slot	Circuit

2. Identify carrier slot and label both ends of an A25D cable.
3. Run and connect A25D cable from assigned port carrier slot to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 3-123).
4. Run and connect A25D cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 3-123).
5. Install yellow (auxiliary) label on 110 terminal block.
6. Mount 36A voice coupler.
7. Remove cover from 36A voice coupler and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 3-123).
8. Connect output of 2012D transformer to AC and ACG terminals on 36A voice coupler.
9. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
10. Install cover on 36A voice coupler.
11. Install patch cord or jumper wires at cross-connect field.
12. Install music source per manufacturer's instructions.
13. Connect 2-pair line cord (modular plug at one end) from information outlet to music source (see Figure 3-123).
14. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

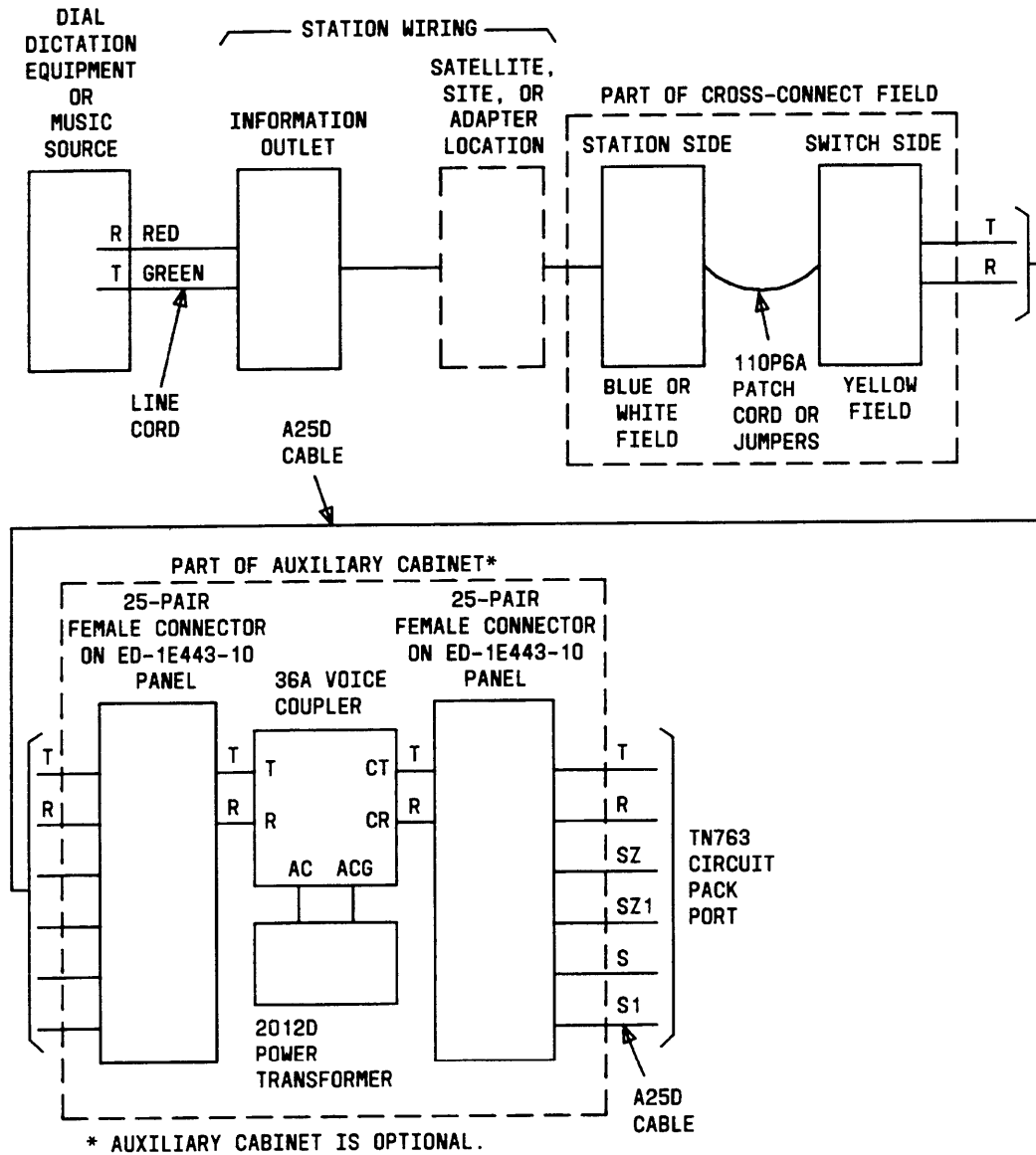


Figure 3-123. Connections for Non-FCC Registered Equipment Provided for Music-on-Hold/Dial Dictation Equipment (Auxiliary Access)

Installing Loudspeaker Paging With Background Music**Requirements**

Figures 3-124 and 3-125 show the additional connections required when loudspeaker paging is installed with background music. Refer to the installation procedures for installing loudspeaker paging (278A adapter and 89A control unit) and music-on-hold.

Installation Using 278A Adapter

1. Connect music source to M1 and M2 terminals on 278A adapter (see Figure 3-124).
2. Adjust music source level.

Installation Using 89A Control Unit

1. Connect music source to CMS1 and CMS2 terminals on 89A control unit (see Figure 3-125).
2. Adjust music source level.

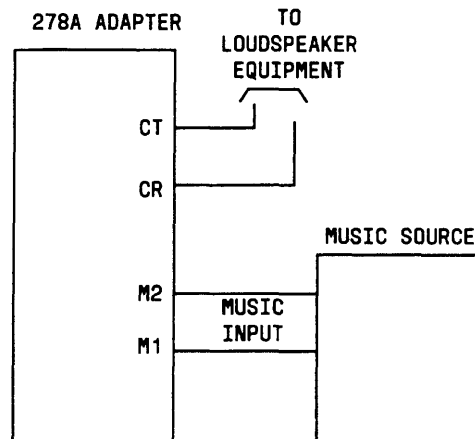


Figure 3-124. Loudspeaker Paging With Background Music Connections—278A Adapter

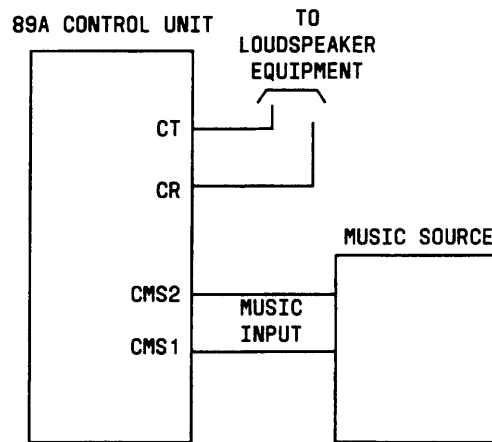


Figure 3-125. Loudspeaker Paging With Background Music Connections—89A Control Unit

Installing Recorded Announcement Equipment

Requirements

Figure 3-126 shows the connections for Recorded Announcement when recorded announcement equipment is FCC registered. Figure 3-127 shows the connections for Recorded Announcement when recorded announcement equipment is not FCC registered.

Note: For R1V3, if the TN750 Announcement circuit pack is provided, this circuit pack replaces all external announcement devices except for the wake-up announcement unit.

Access for recorded announcement equipment is provided by an information outlet. Two leads (T, R) connect the information outlet to the cross-connect field.

If the recorded announcement equipment is FCC registered, the switch side of the cross-connect field is connected directly to switch cabinet. If the recorded announcement equipment is not FCC registered, the switch side of the cross-connect field is connected to a 36A voice coupler. The 36A coupler is mounted in an auxiliary cabinet, if provided.

The switch side of the cross-connect field is connected to a TN742 or TN769 Analog Line circuit pack located in a port carrier. The TN742 or TN769 circuit pack contains a maximum of eight ports.

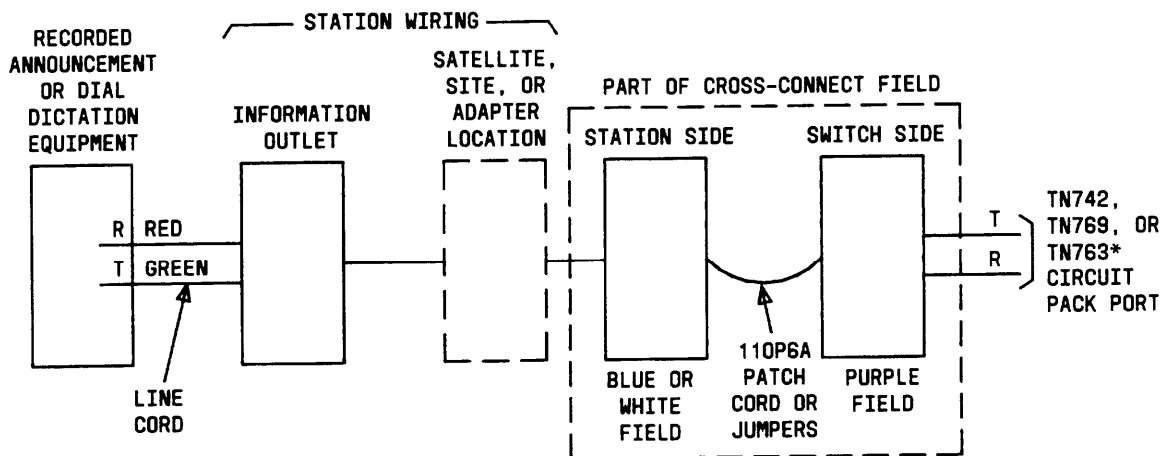
Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

Installation—FCC Registered Recorded Announcement Equipment

1. Determine port assignment of feature from Announcement Form:

EXAMPLE: Port Number B 02 01
 Carrier Slot Circuit

2. Install patch cord or jumper wires at cross-connect field.
3. Install recorded announcement equipment per manufacturer's instructions.
4. Connect 2-pair line cord (modular plug at one end) from information outlet to recorded announcement equipment (see Figure 3-126).
5. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.



* TN763 CAN BE USED ONLY FOR RECORDED TELEPHONE DICTATION.

Figure 3-126. Connections for FCC Registered Equipment Provided for Recorded Announcement/Dial Dictation Equipment (Analog Access)

Installation—Non-FCC Registered Recorded Announcement Equipment

1. Determine port assignment of feature from Announcement Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Run and connect A25D cable from station side of cross-connect field to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 3-127).
3. Run and connect A25D cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 3-127).
4. Install yellow (auxiliary) labels on 110 terminal blocks.
5. Mount 36A voice coupler.
6. Remove cover from 36A voice coupler and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 3-127).
7. Connect output of 2012D transformer to AC and ACG terminals on 36A voice coupler.
8. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
9. Install cover on 36A voice coupler.
10. Install patch cord or jumper wires at cross-connect field.
11. Install recorded announcement equipment per manufacturer's instructions.
12. Connect 2-pair line cord (modular plug at one end) from information outlet to recorded announcement equipment (see Figure 3-127).
13. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

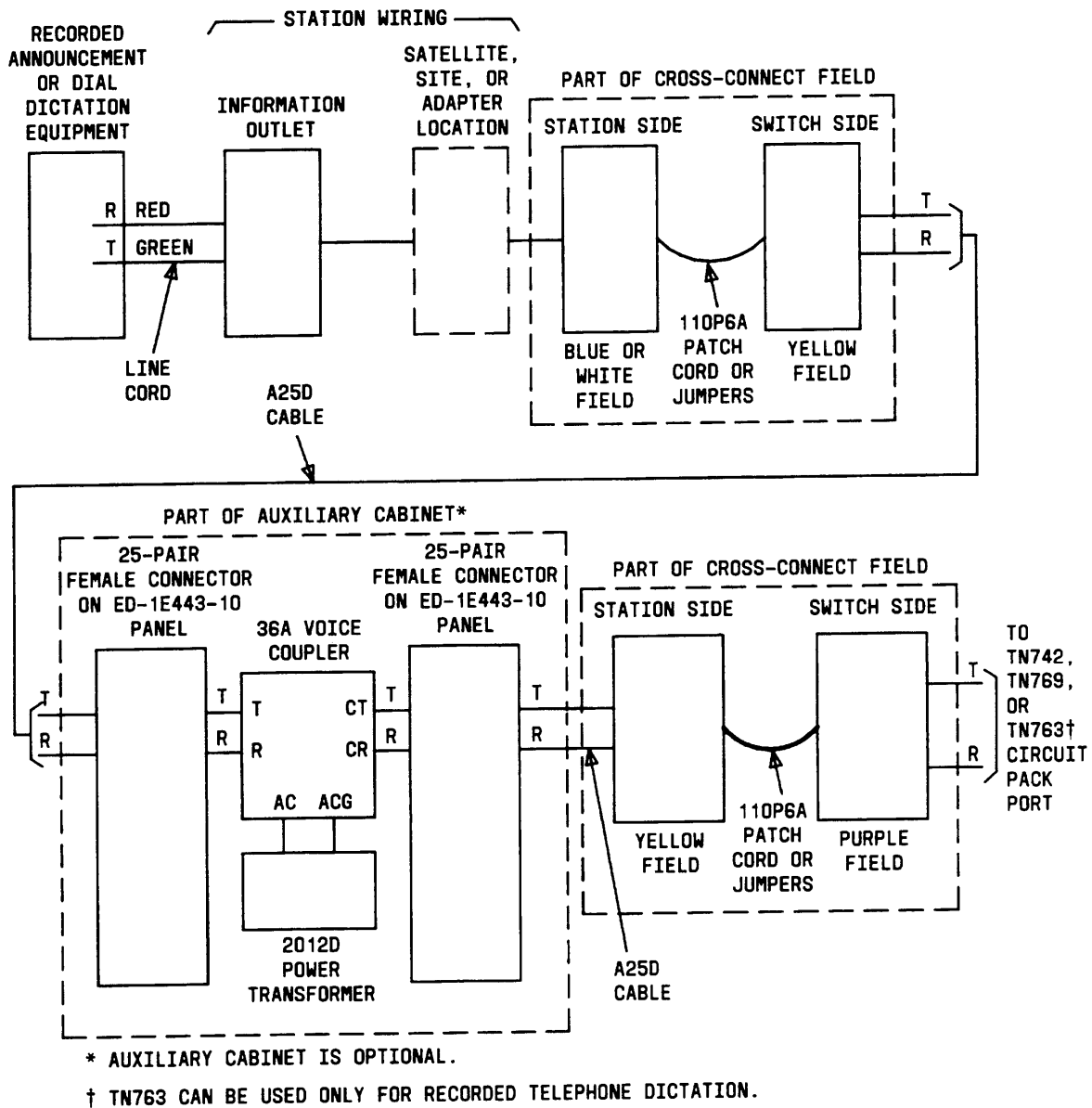


Figure 3-127. Connections for Non-FCC Registered Recorded Announcement/Dial Dictation Equipment (Analog Access)

Digital Announcer

The Cook Electric Digital Announcer can be mounted in the Auxiliary cabinet's 23-inch (58.4-cm) relay rack. It includes the side bracket kit which consists of two side brackets and four mounting screws. The vertical height is 1.75 (4.4 cm) inches.

If the Digital Announcer is not located in the auxiliary cabinet, it is powered by a 117-volt ac adapter furnished by Cook Electric. If the Digital announcer is located in the auxiliary cabinet, DC power (-48V) is provided from a rectifier mounted at the base, with an Alarm Panel at the top.

Note: For R1V3, if the TN750 Announcement circuit pack is provided, this circuit pack replaces all external announcement devices except for the wake-up announcement unit.

Installation

1. Connect a pair of wires from the Alarm Panel to (J2) connector pins (1) and (8) of the Digital Announcer.
2. Mount 36A voice coupler.
3. Remove cover from 36A voice coupler.
4. Connect a pair of wires from (J1) connector pins (J) and (K) or to the modular jack of the digital announcer, to the T and R terminals on the 36A voice coupler (see Figure 3-128).
5. Connect a pair of wires from the CT and CR terminals on the 36A voice coupler to the 110-type wiring block on the ED-1E443-10 Intra-Connection Panel.
6. Connect output of 2012D transformer to AC and ACG terminals on 36A voice coupler.
7. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
8. Install cover on 36A voice coupler.
9. Connect an A25D 25-pair cable from the 25-pair connector on the ED-1E443-10 Intra-Connection Panel to the station side of the cross-connect field.
10. Install yellow (auxiliary) label on 110 terminal block.
11. Install patch cord or jumper wires at cross-connect field.
12. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

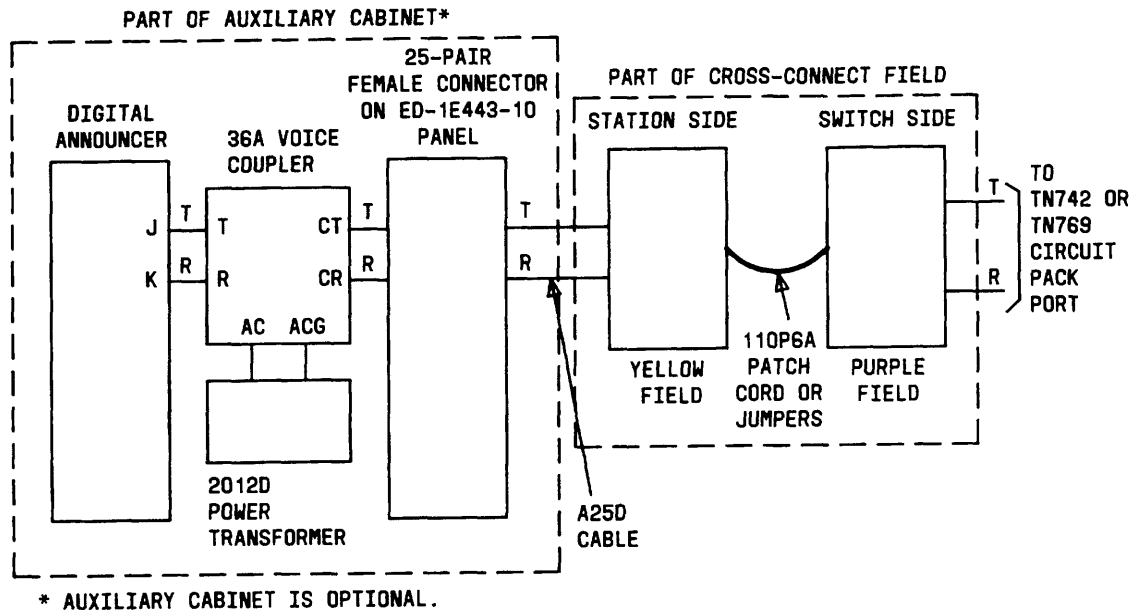


Figure 3-128. Connections to Digital Announcer Located in Auxiliary Cabinet

Installing Audichron Wake-Up Announcement System—R1V3 Only

Requirements

The wake-up announcement system is available as a basic unit or with mounting ears for use in the auxiliary cabinet. A battery backup arrangement is also available. The following is a list of available equipment:

- **Basic Unit—H9040 Group 8:** provides the carrier and six plug-in circuit packs required for unit operation.
- **Battery Pack Circuit—H9040 Group 10:** provides battery backup to memory circuits during brief power outages.
- **Mounting Ears—H9040 Group 13:** provides mounting ears that allows the basic unit to be mounted in the auxiliary cabinet.

Figures 3-129 and 3-130 show the connections for the Audichron wake-up announcement system. Figure 3-131 shows the power and ground connections. One Analog Line port and an Auxiliary Trunk circuit pack are required for connection to the wake-up announcement unit.

Access for the TN742 or TN769 Analog Line circuit pack is provided by an information outlet. Two leads (T, R) connect the information outlet to the cross-connect field. The TN742 or TN769 circuit pack contains a maximum of eight ports.

The TN763B circuit pack must be used for the wake-up announcement unit. Access for the TN763B is through the cross-connect field. All four ports of the circuit pack are connected to the announcement unit.

Installation

1. Determine port assignment of feature from Hospitality-Related System Parameters Form:

EXAMPLE:	Port	Number	B	02	01
			Carrier	Slot	Circuit

2. Connect the analog line port to the announcement unit with 2-pair line cord (modular plug on one end) from information outlet (see Figure 3-129).
3. Install patch cord at cross-connect field.
4. Identify carrier slot for the auxiliary trunk circuit pack and label both ends of a switch cable.
5. Connect cable to appropriate port carrier slot and dress down sides of cabinet.
6. Run and connect cable from bottom of the switch cabinet through cable slack manager, if provided, to connector associated with 110 terminal block row in the purple cross-connect field.
7. Run and connect A25D cable from connector associated with a second 110 terminal block row in the yellow cross-connect field to location of announcement unit.
8. Install yellow (auxiliary) labels on 110 terminal blocks.
9. Connect A25D cable to J1 connector on the rear of the announcement unit.
- 10.
11. Install jumpers between the 110 terminal block rows as shown in Figure 3-130.
12. Connect -48v dc power unit to the announcement unit (see Figure 3-131). The power unit must be supplied locally and be rated at -48v dc at 1.2 amps.
13. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

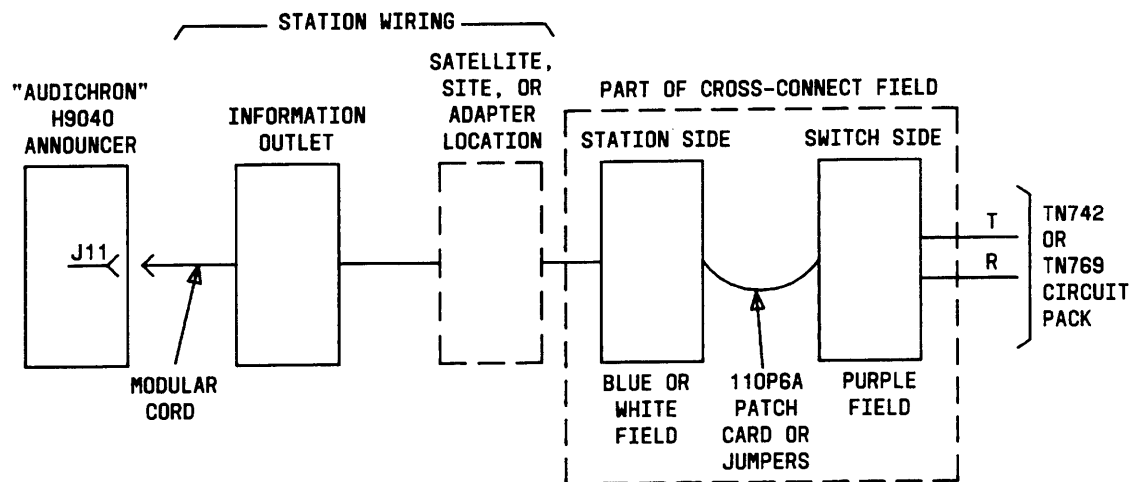
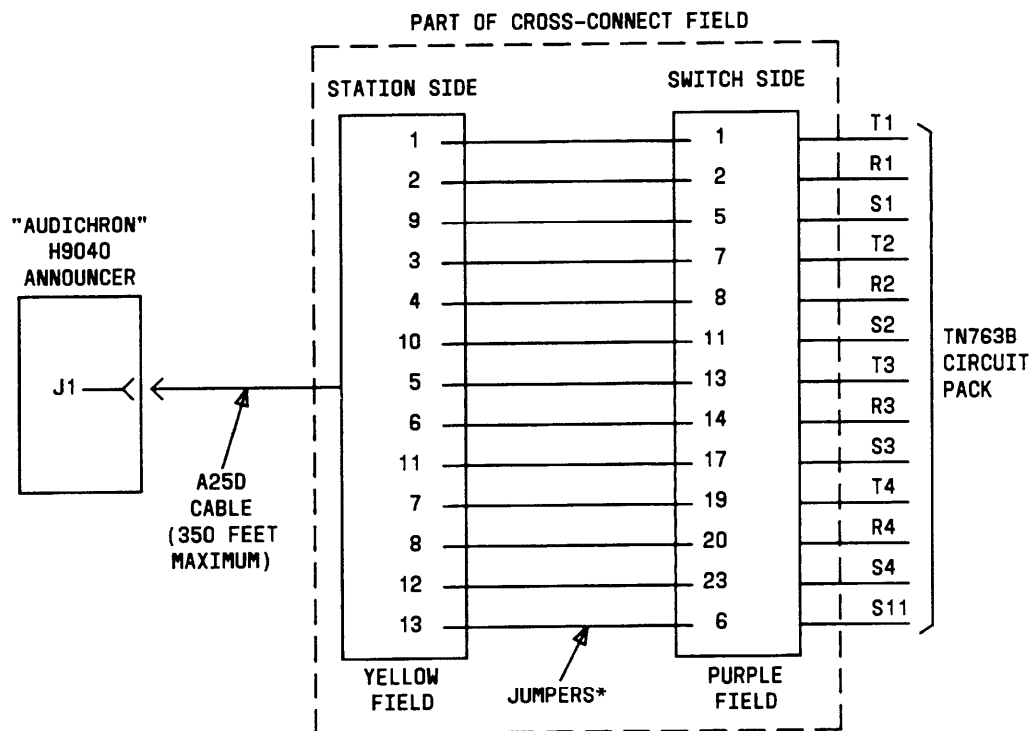


Figure 3-129. Connections for Analog Line Port to Wake-Up Announcement Unit



* TERMINAL NUMBERS SHOWN ARE 110 TERMINAL BLOCK NUMBERS

Figure 3-130. Connections for Auxiliary Trunk Circuit Pack to Wake-Up Announcement Unit

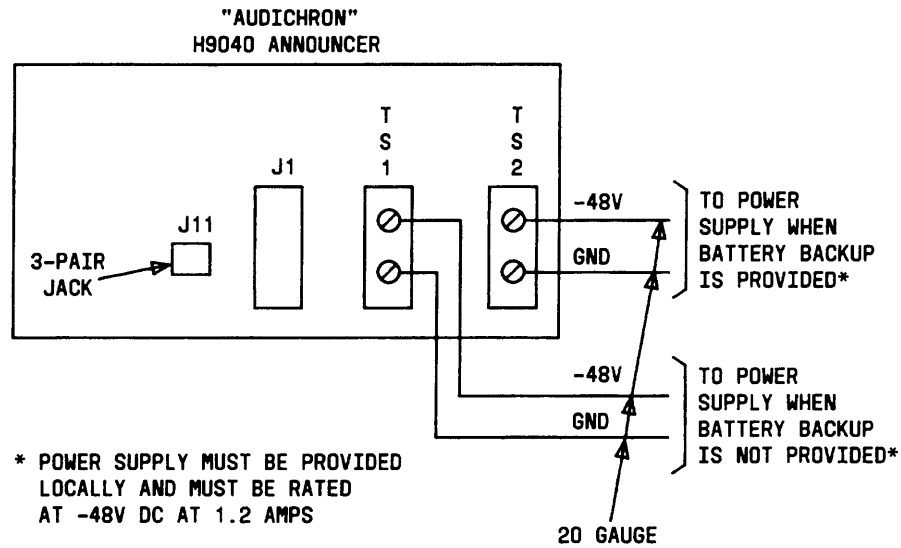


Figure 3-131. Connections for Power Unit to Wake-Up Announcement Unit

Installing Dial Dictation Equipment

The procedures and requirements for installing the Recorded Telephone Dictation feature is the same as for the Recorded Announcement feature for analog access (see Figures 3-126 and 3-127) and the same as Music-on-Hold for auxiliary trunk access (see Figures 3-122 and 3-123).

The port assignment for the feature is on the Station Record Form when a TN742 or TN769 circuit pack is used. The port assignment for the feature is on the Trunk Group Form For Customer-Provided Equipment when a TN763 circuit pack is used.

Installing 3270 Data Modules

Requirements

The 3270 data module consists of a family of protocol converters that allow 3270-type terminals to communicate with a host computer through the system. The three types of 3270 data modules are the following

- 3270A (Asynchronous)
- 3270C (Controller)
- 3270T (Terminal)

3270 data modules are connected directly to TN754 Digital Line circuit packs. This manual contains only information for connection to the data modules from the system switch. Installation and testing information for the 3270 data modules is contained in the *3270 DATA MODULE—Coaxial-to-DCP Protocol Converter—Product Guide*, 999-700-520.

Installation

Connection to 3270A or 3270T Data Module (Figure 3-132)

1. Determine port assignment of 3270A or 3270T Data Module from Data Module Form:

EXAMPLE:	Port Number	B	02	01
	Carrier	Slot	Circuit	

2. Install patch cord or jumper wires at cross-connect field.
3. Run and connect 4-pair line cord (modular plug on both ends) from information outlet to data module (see Figure 3-132).
4. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

Connection to 3270C Data Module (Figure 3-133)

1. Identify carrier slot and label both ends of switch cable.
2. Connect cable to appropriate port carrier slot and dress cable down sides of cabinet.
3. Run and connect A25D cable from bottom of the switch cabinet through cable slack manager, if provided, to connector associated with a purple row in the Trunk/Auxiliary Field.
4. Run and connect A25D cable from connector associated with a yellow row in the Trunk/Auxiliary Field to location of 3270C data module (see **Note**).

Note: The data module is located in the auxiliary cabinet, if provided.

5. Install patch cord or jumper wires at cross-connect field.
6. Connect A25D cable to DCP connector on rear of data module.
7. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

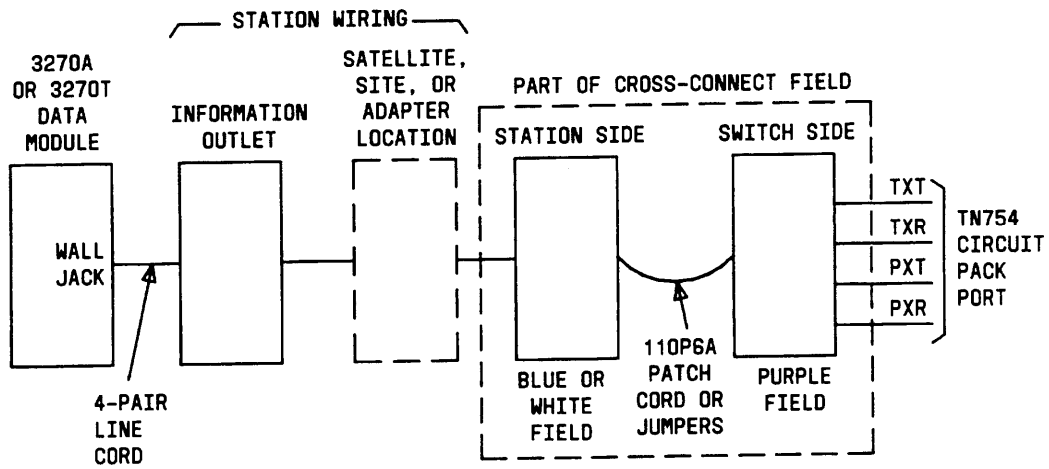


Figure 3-132. Connections for 3270A or 3270T Data Module

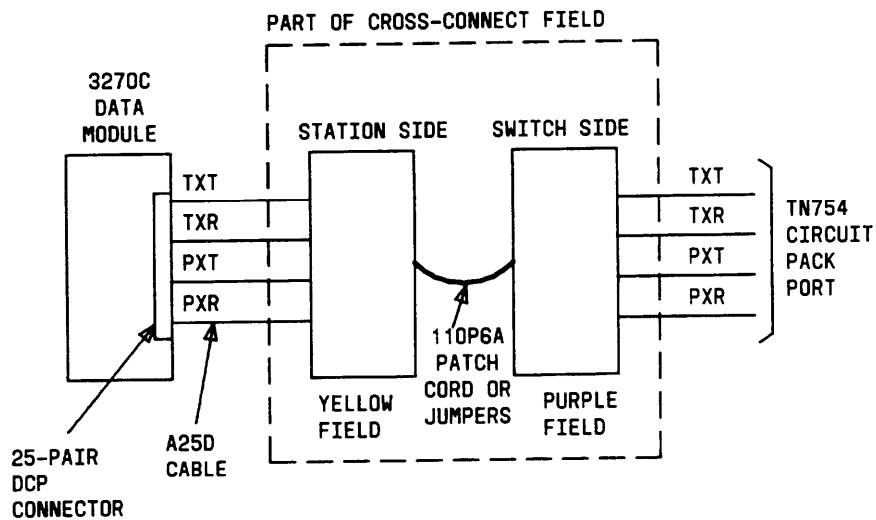


Figure 3-133. Connections for 3270C Data Module

Installing Processor Data Modules (PDMs)

Requirements

The interface between the system and many types of data equipment is provided by a TN754 Digital Line circuit pack connected to a PDM. The following types of data equipment can be connected by a PDM:

- Applications Processor/Adjunct—System 75 Only
- Applications Processor/Terminal—System 75 Only
- Audio Information Exchange/Adjunct—V3 Only
- Audio Information Exchange/Terminal—V3 Only
- Call Management System—V3 Only
- Distributed Communications System (DSC)—V2 and V3)
- Property Management System—V3 Only
- Journal Printer—V3 Only
- Customer-Provided Terminals and Host Computers
- Station Message Detailed Recording

PDMs are connected to TN754 Digital Line circuit packs and are mounted individually or in a 71A data mounting. Each 71A data mounting can contain eight PDMs. This manual contains only information for connection to the PDMs from the system switch. PDM installation and testing information is contained in *AT&T System 75 User's Guide—Processor Data Module*, 999-700-028.

The data mounting is connected by an A25D cable through the cross-connect field to a Digital Line circuit pack. The PDMs can also be mounted and connected individually through the cross-connect field.

Installation

Connection to Data Mounting (Figure 3-134)

1. From Data Module Form, determine port assignment of PDMs:

EXAMPLE:	Port Number	B	02	01
	Carrier	Slot	Circuit	

2. Connect A25D cable to DCP-LINE connector on rear of data mounting.
3. Run and connect cable from data mounting to station side of cross-connect field.
4. Install yellow auxiliary label on 110 terminal block.
5. Connect patch cords or jumper wires at cross-connect field (see Figure 3-134).
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

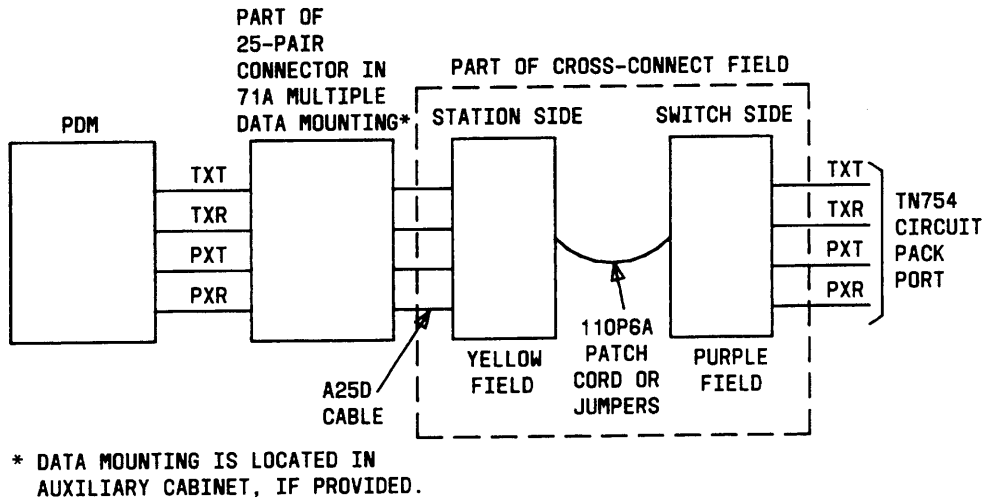


Figure 3-134. Connections for PDMs in Data Mounting

Connection to Individual PDMs (Figure 3-135)

1. Determine port assignment of PDM from Data Module Form:

EXAMPLE: Port Number B 02 01

Carrier Slot Circuit

2. Install PDM per instructions in *PDM User's Guide* (999-700-028IS).
3. Install patch cord or jumper wires at cross-connect field.
4. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

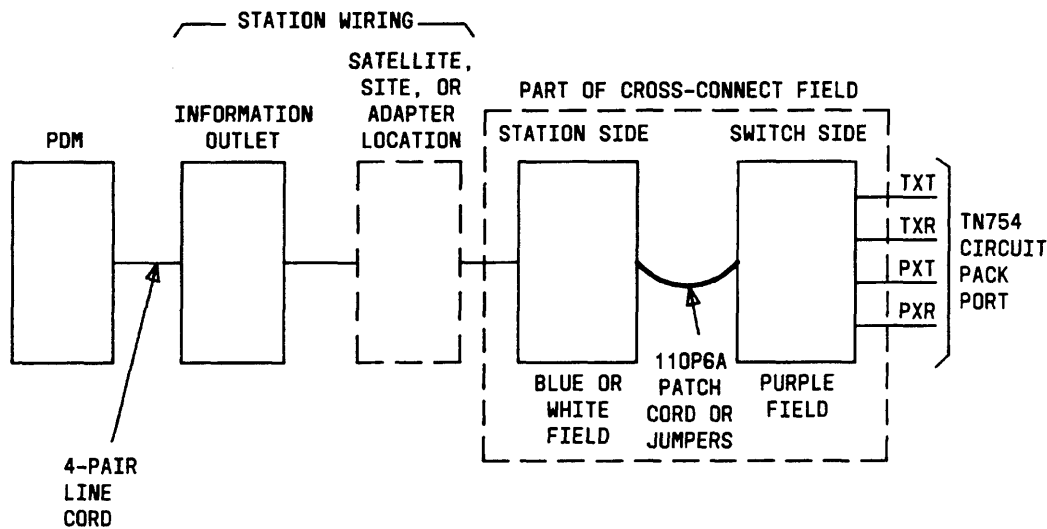


Figure 3-135. Connections for Individual PDMs

Installing Applications Processor Interface—System 75 Only

Requirements

The interface between System 75 and the Applications Processor/Adjunct or Applications Processor/Terminal is through processor data modules (PDMs). Applications Processor alarms are connected through the trunk/auxiliary field to the System 75. Applications Processor Terminals can also be connected through the System 75 cross-connect field to the Applications Processor.

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.

The installation for the Applications Processor Interface from the System 75 switch is covered under the section for installing PDMs (see Figures 3-134 and 3-135).

Information for connecting the PDMs to the Applications Processor and setting the PDM option switches is contained in *Applications Processor 16—Installation, Administration, and Acceptance Test—Service Manual*, 585-201-102.

The connections for the Applications Processor Alarms are shown in Figure 3-136.

Installation of Applications Processor Alarms Connection to Alarms

1. Run and connect B25A cable from REMOTE ALARM connector on rear of Applications Processor to connector associated with a yellow row in the Trunk/Auxiliary Field to be used for the Applications Processor alarms (see Figure 3-136).
2. At Trunk/Auxiliary Field, connect jumpers from seventh pair on yellow Applications Processor row to ALARM MONITORS 1M terminals (see Figure 3-136). Designate seventh pair as MAJ 1.

3. Connect jumpers from ninth pair on yellow Applications Processor row to ALARM MONITORS 1m terminals (see Figure 3-136). Designate ninth pair as MIN 1.

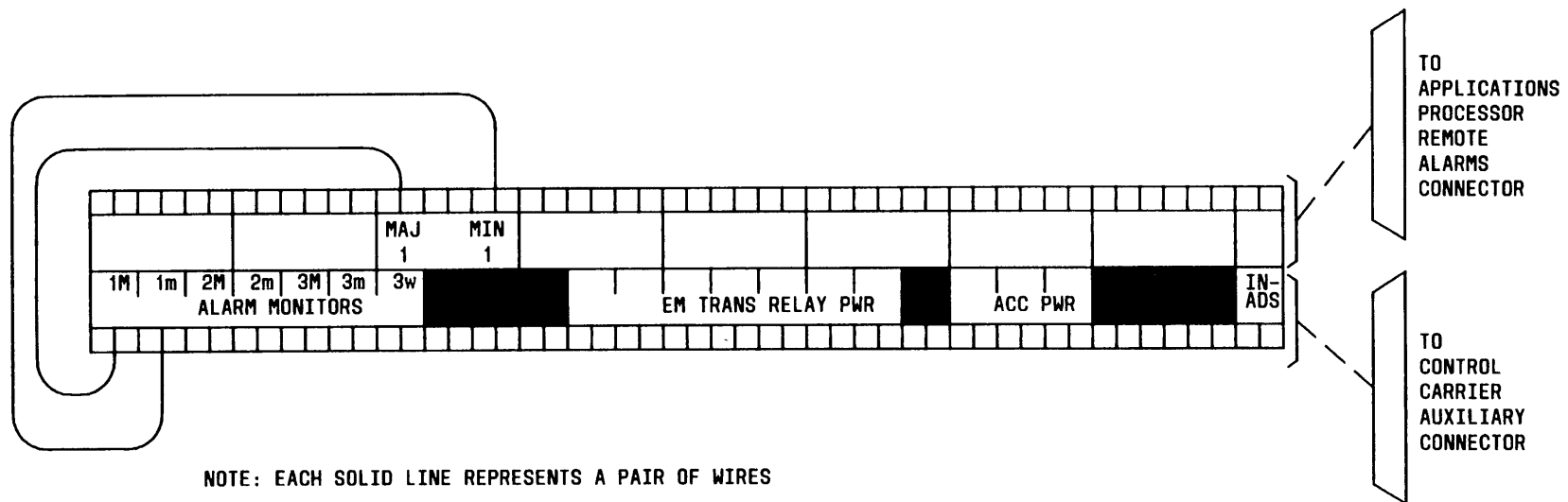


Figure 3-136. Connections at Trunk/Auxiliary Field for Applications Processor Alarms

Installing Audio Information Exchange (AUDIX) Interface—V3 Only

Requirements

The interface between the system and the Audio Information Exchange/Adjunct or Audio Information Exchange/Terminal is through processor data modules (PDMs). AUDIX Terminals can also be connected through the system cross-connect field to the AUDIX. The large AUDIX is not supported on the System 75 or System 75 XE.

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.
- System 75 XE uses the Processor Interface (TN765) as the required control circuit pack.

The installation for the AUDIX Interface from the system switch is covered under the section for installing PDMs (see Figures 3-134 and 3-135).

Information for connecting the PDMs to the AUDIX and setting the PDM option switches is contained in *AUDIX-M—Installation Service Manual*, 585-300-103.

The AUDIX also requires up to 16 analog circuit pack ports from the system to be connected through the cross-connect field to the AUDIX. Refer to Table 3-K for port circuit pin numbers.

Installing Call Management System (CMS) Interface—V3 Only

Requirements

The interface between the system and the Call Management System is through processor data modules (PDMs).

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.
- System 75 XE uses the Processor Interface (TN765) as the required control circuit pack.

The installation for the Call Management System Interface from the system switch is covered under the section for installing PDMs (see Figures 3-134 and 3-135).

Information for connecting the PDMs to the Call Management System and setting the PDM option switches is contained in *3B2 Messaging Server Installation and Maintenance Service Manual*, 585-205-110.

Installing Distributed Communications System (DCS)—V2 and V3

Requirements

The DCS link to the system can be provided by processor data modules (PDMs) or over a DS1 Tie Trunk..

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.

- System 75 XE uses the Processor Interface (TN765) as the required control circuit pack.

The installation for the installing the DCS link using PDMs is covered under the section for installing PDMs (see Figures 3-134 and 3-135). The following switch settings for the PDM are recommended:

Switch	Setting
9600 BAUD	ON
SYNC	ON
INT	ON
KYBD	ON
AANS	ON
All others	OFF

The baud rate between switches may vary depending on the installation.

Refer to the installation for installing DS1 Tie Trunks if the DCS link is to be installed using DS1 Tie Trunks.

Property Management System Interface—V3 Only

Requirements The interface between the system and the customers property management system is through processor data modules. The installation for the property management interface from the system switch is covered under the section for installing PDMs (see Figures 3-134 and 3-135).

Refer to the appropriate vendor's documentation for connecting the PDM to the property management system. The option switches on the PDM should be set in accordance with the requirements for the customers property management system.

A journal printer can be used in conjunction with the property management system. A serial printer must be used. The connections for the printer are the same as for the property management interface. Refer to the appropriate vendor's documentation for connecting the PDMs to the printer. The option switches on the PDM should be set according to the requirements for the printer.

The property management system interface and the journal printers can also be installed using Asynchronous Data Unit (ADUs). The connections are the same as for a customer-provided data terminal (see Figure 3-137).

Installing Customer-Provided Terminal Using Asynchronous Data Units (ADUs)

The interface between the system and the customer's data terminals and host computer for R1V1, R1V2, and R1V3 systems is through PDMs. Refer to installing PDMs for details. (see Figures 3-134 and 3-135).

For R1V2 or R1V3 systems only, the customer's asynchronous data terminals can be connected through a Z3A Asynchronous Data Unit (ADU) to a TN726 Data Line circuit pack (see Figure 3-137). Normally, the ADU is powered from the connected data terminal. The ADU can also be remotely or locally powered using a 2012D transformer equipped with a 248B adapter. ADUs connected to receive-only printers always require external power. The need for external power must be determined experimentally for ADUs connected to other devices. For details on ADU installation, refer to the *Z3A Asynchronous Data Unit User's Manual*, (555-401-701).

Installation

1. Determine port assignment of ADU from Data Module Form:

EXAMPLE: Port Number B 02 01

Carrier Slot Circuit

2. Install patch cord or jumper wires at cross-connect field.
3. Connect RS-232 plug on ADU to data terminal.
4. Run and connect 4-pair line cord (modular plug on both ends) from information outlet to ADU (see Figure 3-137).
5. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

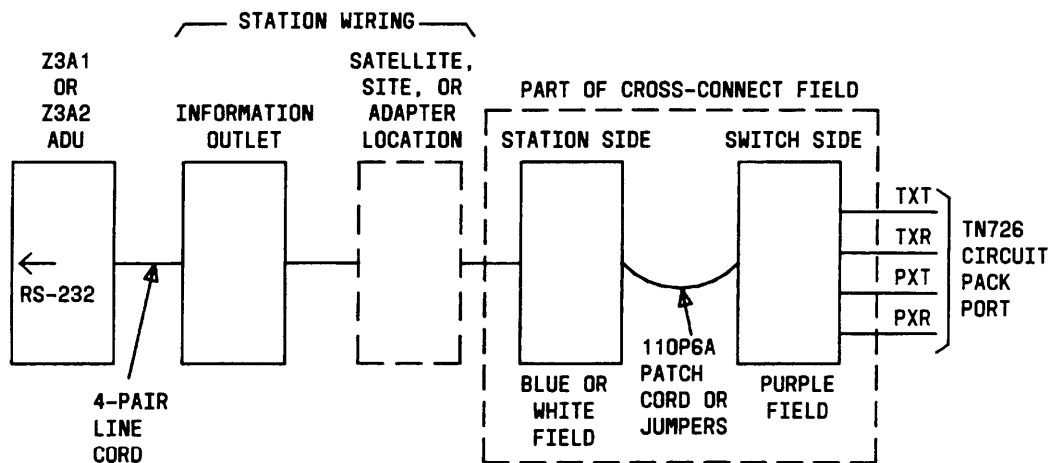


Figure 3-137. Connections to ADU for Data Terminal Equipment (R1V2 or R1V3)

Installing Station Message Detail Recording Interface

The interface between the system and Station Message Detail Recording Equipment (SMDR) is through a processor data module (PDM), trunk data module, or 212-type modem. Refer to the section on installing PDMs for connections from the switch to the PDM or trunk data module. (Figures 3-134 and 3-135). Administer using the *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

The connection from the switch to the 212-type modem is the same as for External Ringing (Figure 3-113). When a 212-type modem is used, a TN758 Pooled Modem must be provided. One of the Pooled Modem's conversion resources is dedicated to the SMDR output device. Administer using the *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

For R1V2 or R1V3 systems only, a TN726 Data Line circuit pack may be used and PDMs, TDMs, or 212-type modems are not required for data terminal equipment. The connection from the switch to the SMDR Output Receiving Device is the same as a customer-provided data terminal (see Figure 3-137).

Interface Cabling to SMDR Output Device

Figure 3-138 shows the cabling required to connect the TELESEER* unit, printer, or customer-provided data terminal equipment (DTE). The M25B cable connects to the P1 connector on the TELESEER unit.

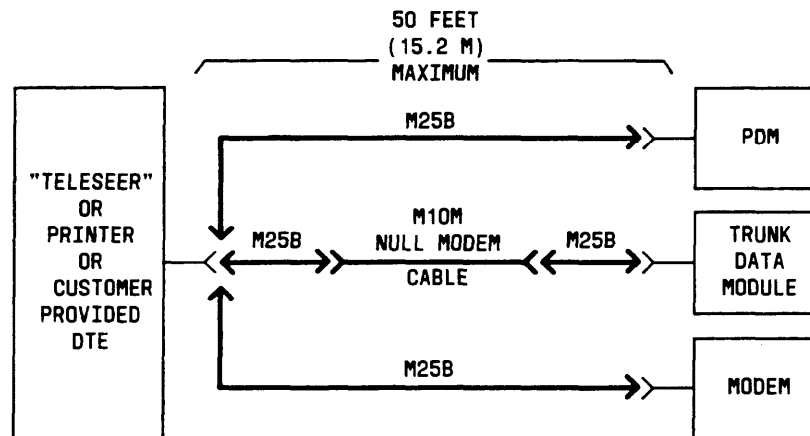


Figure 3-138. SMDR Cabling for Data Terminal Equipment

* Trademark of AT&T

Figure 3-139 shows the cabling required to connect the 94A LSU, a printer, or customer-provided data communications equipment (DCE). The M25B cable connects to the C1 connector on the 94A LSU.

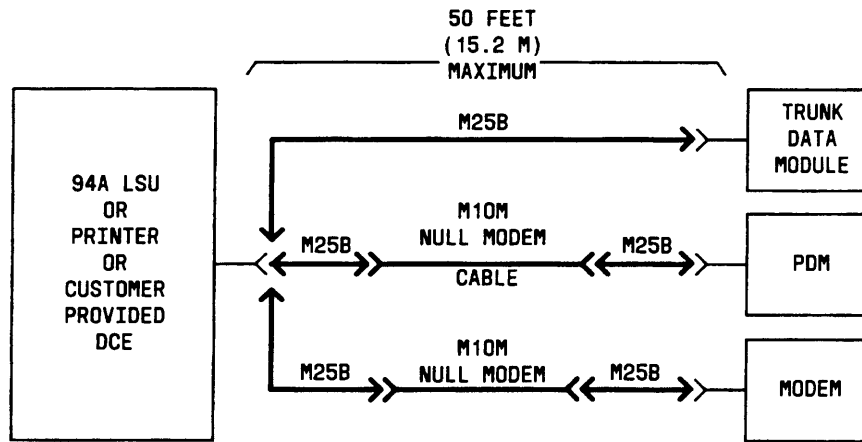


Figure 3-139. SMDR Cabling for On-Premises Data Communications Equipment

Figure 3-140 shows the cabling required to connect a remote host connected by a private line.

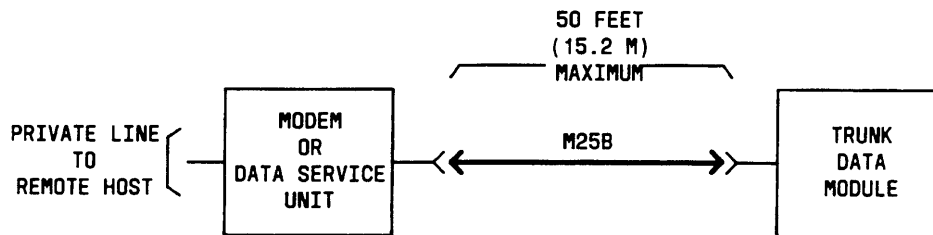


Figure 3-140. SMDR Cabling for a Remote Host

PDM, Trunk Data Module, or 212-Type Modem Switch Settings*PDM or Trunk Data Module*

The following switch settings are recommended:

Switch	Setting
SELF TEST	OFF
LOC LOOP/REM LOOP	OFF
1200	ON
AANS (PDM Only)	ON
SIGLS	ON
PRTY	ON
1/0D	ON
All Others	OFF

212-Type Modem

The following switch settings are recommended:

Switch	Setting
AL	OFF
ST	OFF
RDL	OFF
DL	OFF
HS	ON

Installing Information System Network Interface

The Information System Network (ISN) interconnects computers and terminals on a customer's premises. When an ISN and System 75 or System 75 XE are collocated, voice and data can be shared at the same information outlet as shown in Figure 3-141.

The voice pair that connects to a TN742 or TN769 Analog Line circuit pack port occupies the first pair of the information outlet. The data pairs that connect to the ISN occupy the second and third pairs of the information outlet. The voice and data pairs can be separated as shown in Figure 3-141. The data pairs either connect to an Asynchronous Interface Module (AIM) located in an ISN concentrator or the ISN packet controller.

The Z3A1 Asynchronous Data Unit (ADU) at the user room contains two 8-pin modular jacks to accept the plugs on the line cords that connect to the information outlet and an analog voice terminal. Normally, this ADU is powered from the connected data terminal. The ADU can also be remotely or locally powered using a 2012D transformer equipped with a 248B adapter. ADUs connected to receive-only printers always require external power. The need for external power must be determined experimentally for ADUs connected to other devices. For details on ADU installation, refer to the *Z3A Asynchronous Data Unit User's Manual*, (555-401-701).

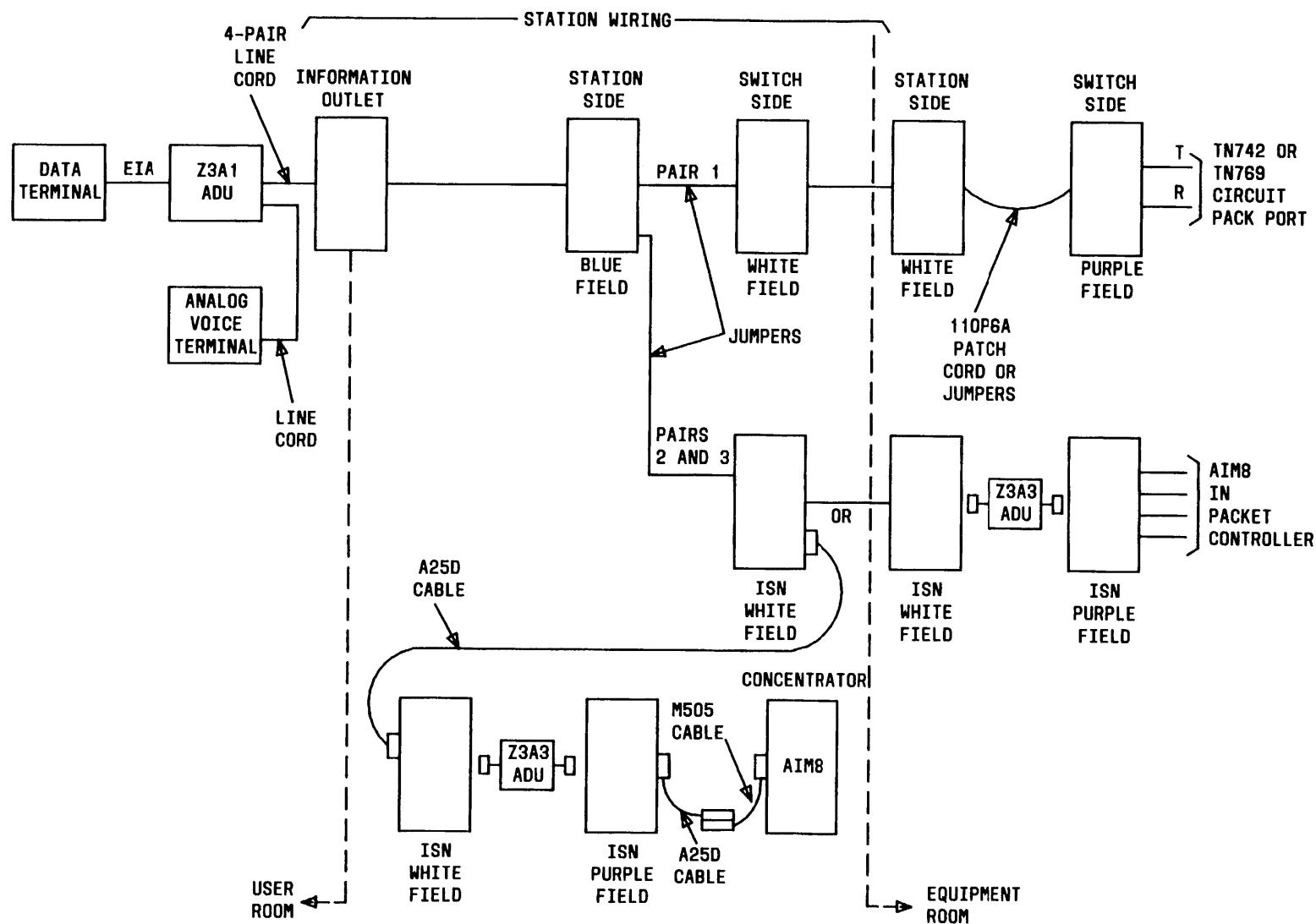


Figure 3-141. System Voice Circuits and ISN Data Circuits Sharing an Information Outlet

Installing STARLAN NETWORK Interface

The STARLAN NETWORK interconnects small numbers of personal computers, data terminals, resource units, and printers. When a STARLAN NETWORK and System 75 or System 75 XE are collocated, voice and data can be shared at the same information outlet as shown in Figure 3-142.

The voice pair that connects to a TN742 or TN769 Analog Line circuit pack port occupies the first pair of the information outlet. The data pairs that connect to the STARLAN NETWORK occupy the second and third pairs of the information outlet. The voice and data pairs must be separated at the blue or white field located in the equipment room or at the blue field located in a satellite location.

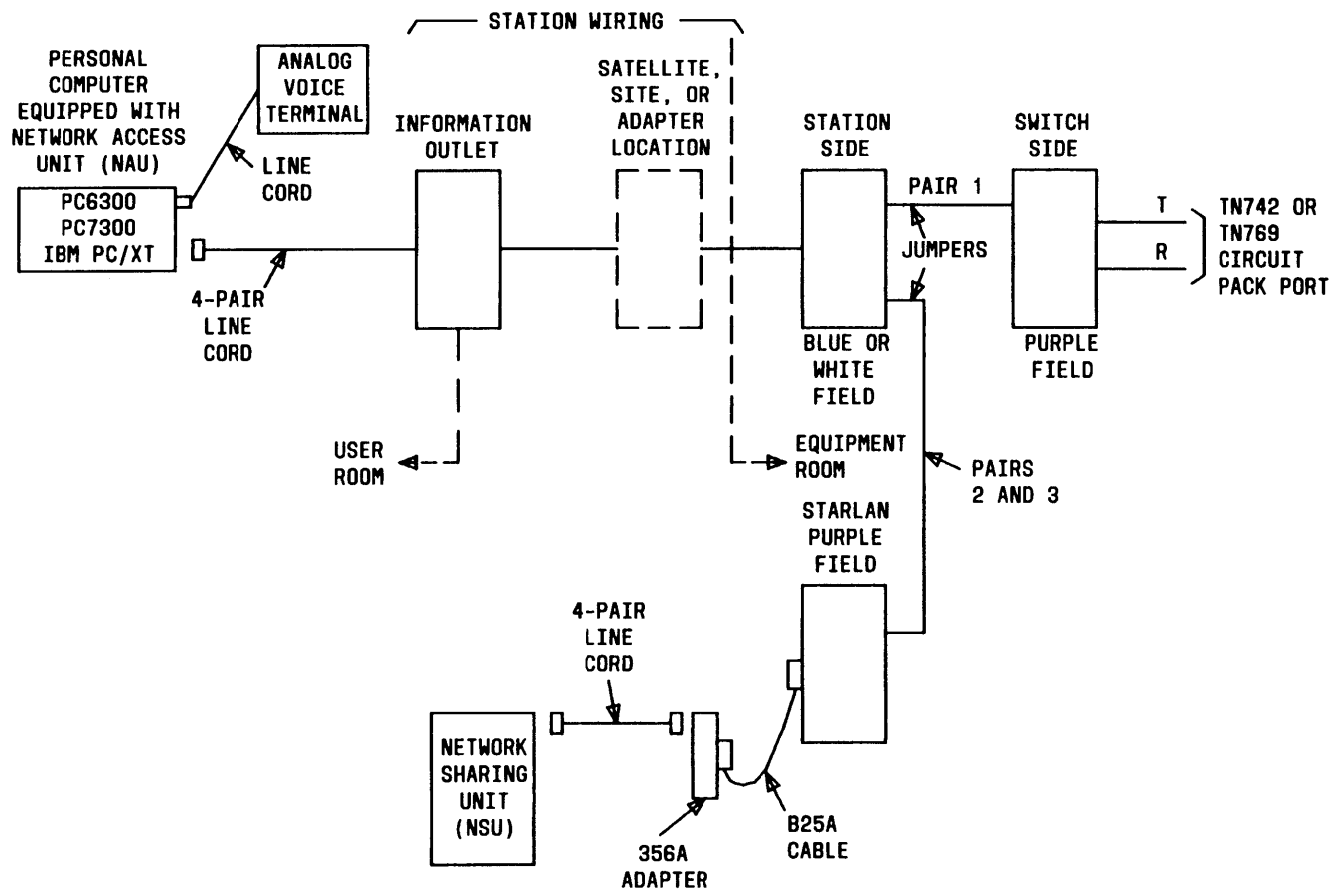


Figure 3-142. System Voice Circuits and STARLAN NETWORK Data Circuits Sharing an Information Outlet

Installing PLS Interface

The Premises Lightwave System (PLS) is used to connect IBM* 3270 Type A terminals to a IBM 3274 cluster controller. An optical fiber backbone and station cable are used instead of coaxial cables. When a PLS and System 75 or System 75 XE are collocated, voice and data can be shared on the same information outlet as shown in Figure 3-143.

The voice pair that connects to a TN742 or TN769 Analog Line circuit pack port occupies the first pair of the information outlet. The data pairs that connect to the PLS occupy the second and third pairs of the information outlet. The voice and data pairs must be separated at the blue or white field located in the equipment room or the blue field located in a satellite location.

* Trademark of International Business Machines Corporation.

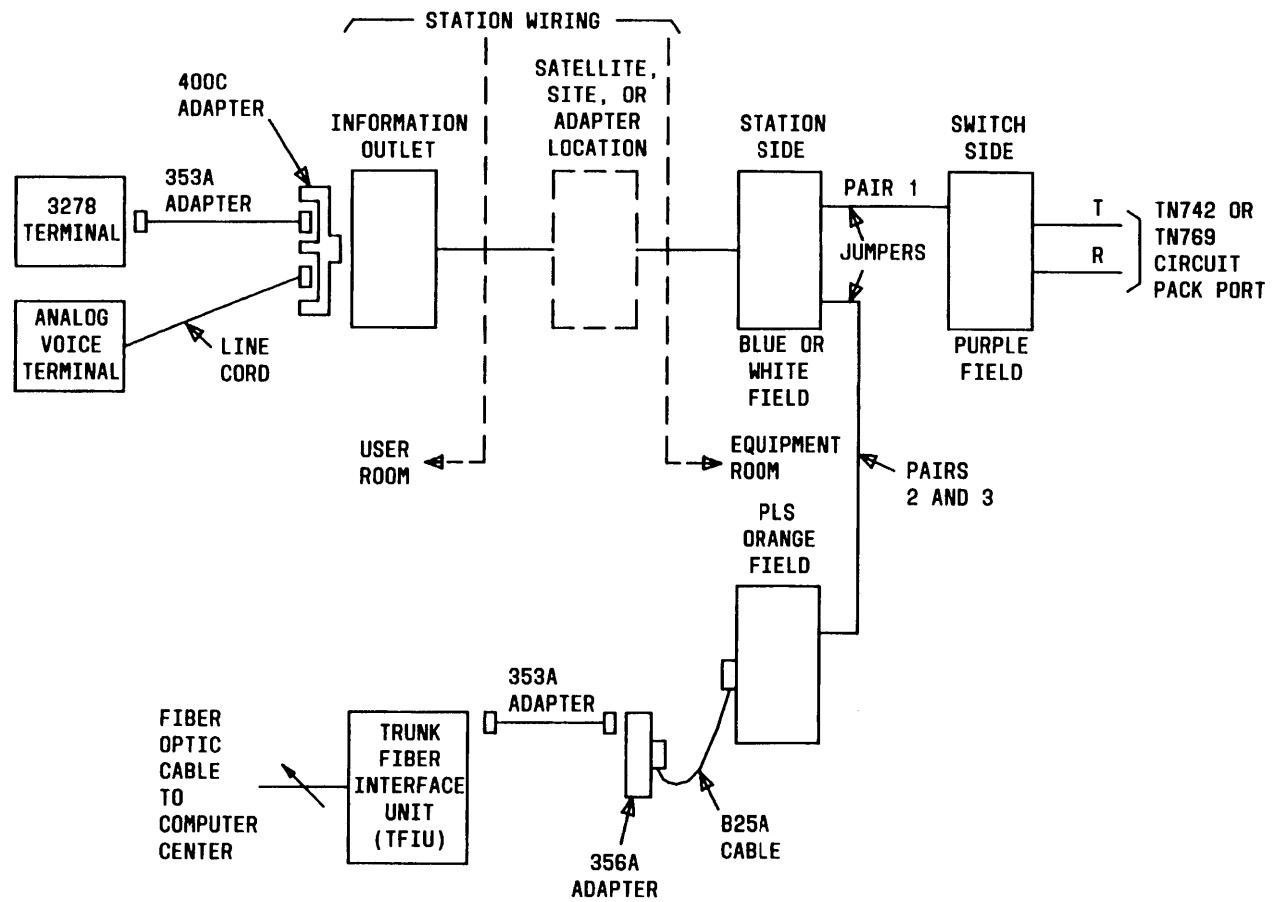


Figure 3-143. System Voice Circuits and PLS Data Circuits Sharing an Information Outlet

4. 66-TYPE HARDWARE—SYSTEM 75 AND SYSTEM 75 XE INSTALLATIONS

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4. 66-TYPE HARDWARE—SYSTEM 75 OR SYSTEM 75 XE INSTALLATIONS

GENERAL

Figure 4-1 shows the equipment required to install a System 75 or System 75 XE. A description and explanation of each piece of equipment follows. Ordering information is provided at the end of each description.

The sites shown in Figure 4-1 are physical locations (closets) for pass-through connections where adjunct power may be applied. The satellite is a physical location (closet) where cross-connect administration can take place and adjunct power may be applied.

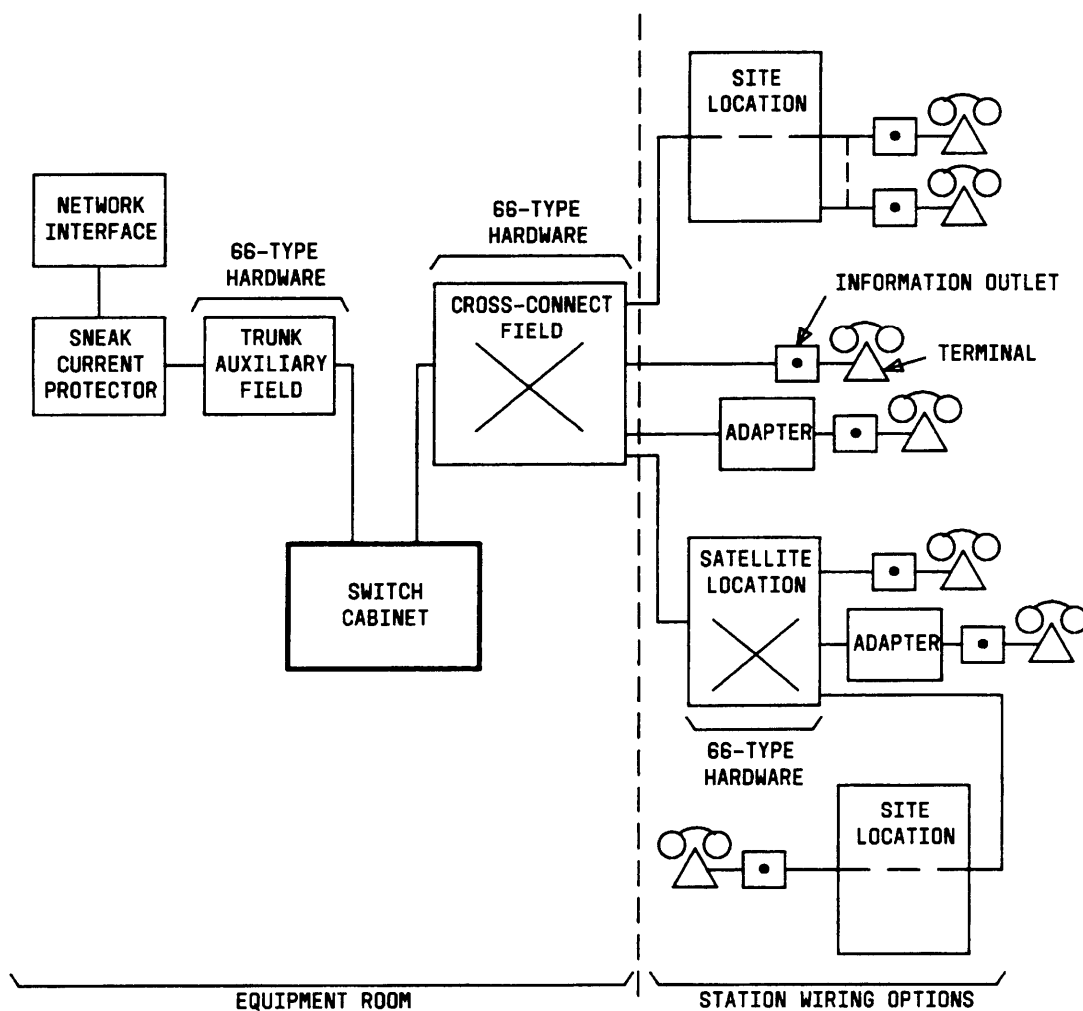


Figure 4-1. Block Diagram of System 75 or System 75 XE Installation

66-TYPE HARDWARE DESCRIPTION

The 66-type hardware consists of non-connectorized or connectorized connecting blocks. The 66-type hardware can be mounted individually or in a multiple arrangement. All of the 66-type hardware used with system uses the same basic connecting block—66M1-50.

66M1-50 Connecting Block

The 66M1-50 (Figure 4-2) connecting block is a plastic connecting block containing quick connect terminals for terminating 20 to 24 gauge wire. The block has 50 rows of terminals with four terminals in each row. The first two and last two terminals of each row are connected together and each row is split between the second and third terminals (Figure 4-2). The terminals allow for termination of 25-pair cables and jumper wires. The terminals slice the insulation of the wires when the wires are punched onto the terminals. The standard termination for a 25-pair cable onto a 66M1-50 connecting block is shown in Table 4-A.

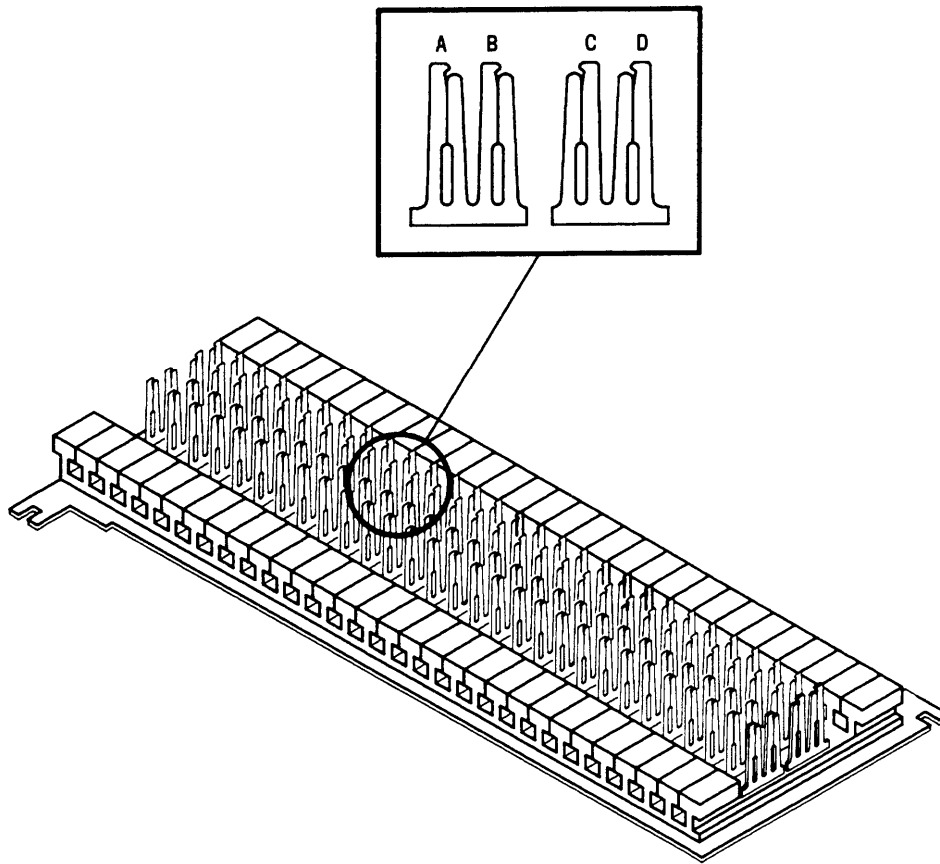


Figure 4-2. 66M1-50 Connecting Block

TABLE 4-A. 25-Pair Cable Termination on a 66-Type Connecting Block

(Contd on Next Page)

25-Pair Cable			66-Type Connecting Block Terminals
Connector Pin Numbers	Pair	Color	
26	1	W-BL	1
1		BL-W	2
27	2	W-O	3
2		O-W	4
28	3	W-G	5
3		G-W	6
29	4	W-BR	7
4		BR-W	8
30	5	W-S	9
5		S-W	10
31	6	R-BL	11
6		BL-R	12
32	7	R-O	13
7		O-R	14
33	8	R-G	15
8		G-R	16
34	9	R-BR	17
9		BR-R	18
35	10	R-S	19
10		S-R	20
36	11	BK-BL	21
11		BL-BK	22
37	12	BK-O	23
12		O-BK	24

TABLE 4-A. 25-Pair Cable Termination on a 66-Type Connecting Block (Contd)

25-Pair Cable			66-Type Connecting Block Terminals
Connector Pin Numbers	Pair	Color	
38	13	BK-G	25
13		G-BK	26
39	14	BK-BR	27
14		BR-BK	28
40	15	BK-S	29
15		S-BK	30
41	16	Y-O	31
16		O-Y	32
42	17	Y-BL	33
17		BL-Y	34
43	18	Y-G	35
18		G-Y	36
44	19	Y-BR	37
19		BR-Y	38
45	20	Y-S	39
20		S-Y	40
46	21	V-BL	41
21		BL-V	42
47	22	V-O	43
22		O-V	44
48	23	V-G	45
23		G-V	46
49	24	V-BR	47
24		BR-V	48
50	25	V-S	49
25		S-V	50

Non-Connectorized 66-Type Connecting Blocks

The non-connectorized 66-type connecting blocks used with the system are the 66M1-50 connecting blocks previously described. The non-connectorized connecting block can be mounted on the wall by itself or it can be mounted on a backboard. These connecting blocks can be used in the equipment room for the Distribution Field (station).

Connectorized 66-Type Connecting Blocks

The connectorized 66-type connecting blocks used with the system is the 157B (Figure 4-3) connecting block. The 157B consists of the 66M1-50 connecting block, previously described, prewired to a connector on each side of the connecting block. Each 157B connecting block can terminate 2 25-pair cables. The connectorized connecting block can be mounted on the wall by itself or it can be mounted on a backboard. These connecting blocks can be used in the equipment room for the Trunk/Auxiliary and all Distribution Fields (port, auxiliary, and station).

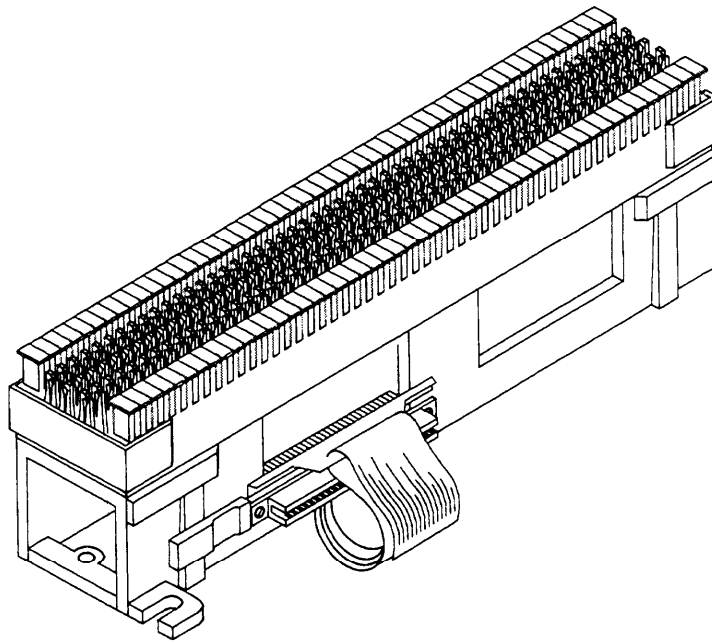


Figure 4-3. 157B Connecting Block

Multiple-Mounted 66-Type Connecting Blocks

The connectorized 66-type connecting blocks can be ordered in two multiple mounting arrangements. The 166-type backboard provides eight 157B connecting blocks factory-mounted onto a purple backboard. This multiple arrangement provides termination of 16 25-pair cables. The 166-type mounting can be used in the equipment room for the Trunk/Auxiliary Field and in the Distribution Field (port and auxiliary).

The 154A-type backboard provides four 157B connecting blocks factory-mounted onto a blue backboard. This multiple arrangement provides termination of 8 25-pair cables. The 154A-type mounting can be used in the equipment room in the Distribution Field (station).

66-TYPE CONNECTING BLOCKS ORDERING INFORMATION

Description	Comcode
66M1-50 Connecting Block	101 238 178
157B Connecting Block	403 613 003
166-Type Backboard	403 612 922
154A-Type Backboard	403 612 997

183-Type Backboards

The 183-type backboards (Figure 4-4) provide a mounting for the 66M1-50 and 157B connecting blocks. They are available in four colors for identification of the functional areas in the cross-connect field. The 183A-type backboards can mount 4 66M1-50 or 157B

connecting blocks. The 183B-type backboards can mount 8 66M1-50 or 157B connecting blocks. A blue 183C-type backboard is available that will mount only 2 66M1-50 or 157B connecting blocks. White backboards that are used for connections to satellite closets can be obtained from outside vendors.

183-TYPE BACKBOARD ORDERING INFORMATION

Code	Color	Mounts	Comcode
183A1	Blue	4-66M1-50 or 157B Connecting Blocks	101 412 963
183A2	Green	4-66M1-50 or 157B Connecting Blocks	101 412 971
183A4	Purple	4-66M1-50 or 157B Connecting Blocks	101 937 902
183A5	Yellow	4-66M1-50 or 157B Connecting Blocks	101 986 446
183B1	Blue	8-66M1-50 or 157B Connecting Blocks	101 412 989
183B2	Green	8-66M1-50 or 157B Connecting Blocks	101 564 631
183B4	Purple	8-66M1-50 or 157B Connecting Blocks	101 937 928
183C1	Blue	2-66M1-50 or 157B Connecting Blocks	103 222 790

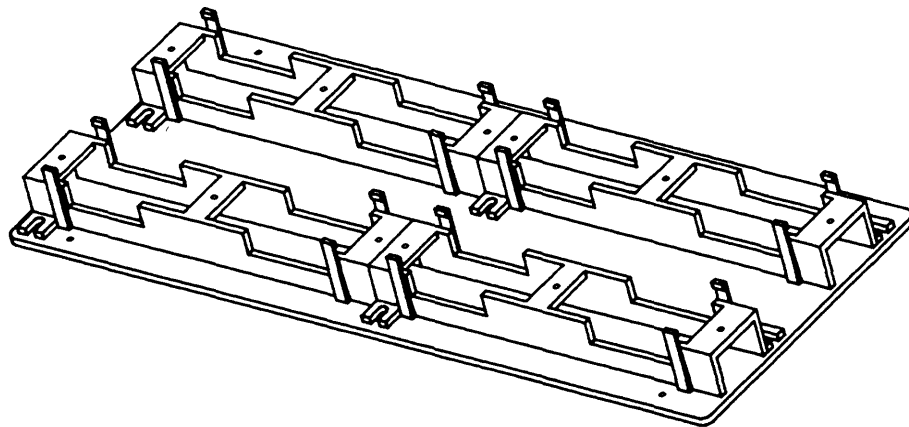


Figure 4-4. 183A-Type Backboard

187B1 Backboard

The 187B1 backboard (Figure 4-5) provides 16 pegs that are used to channel the cross-connecting wire between the connecting blocks. The 187B1 backboards can be provided with any mounting arrangement of the 66-type connecting blocks.

187B1 BACKBOARD ORDERING INFORMATION

Description	Comcode
187B1 Backboard	101 937 944

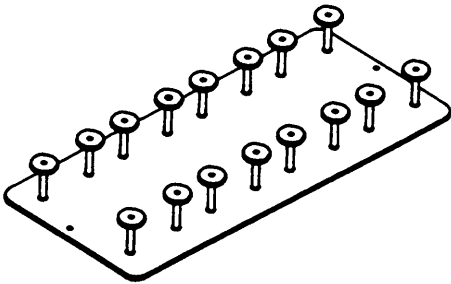


Figure 4-5. 187B1 Backboard

Power Adapter Cords

The power adapter cord (Figure 4-6) connects an adjunct power supply to a 4-pair station circuit on a 66-type connecting block located at the cross-connect field or at a satellite closet. The power adapter cord consists of a 2-pair cable equipped with a 6-conductor modular plug that connects to the power supply. The other end punches down on the 66-type connecting block terminals.

POWER ADAPTER CORD ORDERING INFORMATION

Length	Comcode
10 ft (3.1 m)	103 935 623
25 ft (7.6 m)	103 895 660

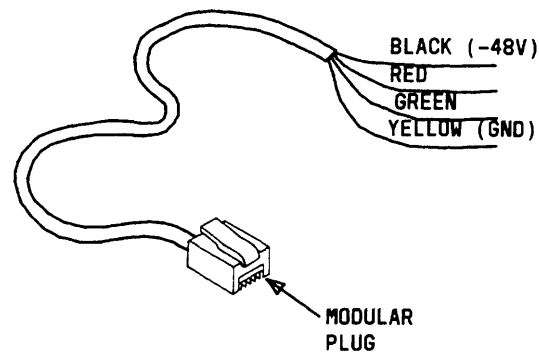


Figure 4-6. Power Adapter Cord

Jumpers

Jumpers of solid wire are used for cross-connections between terminals on the connecting blocks. The jumpers can be terminated on the connecting blocks using a termination tool.

JUMPER WIRE ORDERING INFORMATION

Jumper Wire	Description	Comcode (Order by Footage)
DT 24M-Y/BL/R/G	2-Pair	103 252 557
DT 24P-W/BRN	1-Pair	102 484 045
DT 24P-Y/BL	1-Pair	102 379 195
DT 24P-Y/G	1-Pair	103 252 565
DT 24P-Y/O	1-Pair	103 252 573
DT 24P-Y/R	1-Pair	103 252 581

Tools

The following tools are required to terminate or remove the wire on the connecting blocks:

- The 714B Tool is a nonimpact single-wire termination tool
- The D Impact Tool (AT-8762) is a single-wire termination tool
- The 724A Tool is used to remove wires from the connecting blocks.

66-TYPE TOOLS ORDERING INFORMATION

Description	Comcode
714B Tool	100 755 511
Blade AT-8762D-66	402 024 681
D Impact Tool	402 024 723
724A Tool	xxx xxx xxx

Bridging Clips

Bridging Clips are spring clips used to connect two adjacent terminals in the same row of the connecting blocks. The bridging clips provide the fastest and most reliable way to make cross-connections. No special tools are required to install or remove the clips.

BRIDGING CLIPS ORDERING INFORMATION

Description	Comcode
BCSS-2 Bridging Clip	403 596 035

ASSOCIATED HARDWARE

Cable Slack Managers

General

The cable slack managers (Figure 4-7) are raised floor units 32 inches (81.3 cm) wide, 38 inches (96.5 cm) deep, and 4.5 inches (11.4 cm) high. The cable slack managers are used for cable distribution and cable slack storage between the system cabinets and the cross-connect field. They can also accommodate a limited amount of slack in station cables. Power cables from the switch and auxiliary cabinet are also run through the cable slack managers. They are recommended for use with the system (instead of overhead cable racks).

Note: Cable slack managers are not required when the switch cabinet is installed on a raised computer floor. The station cabling and the cabling from the system cabinets is routed under the computer flooring to the cross-connect field.

The cable slack managers have tabs and interlocks that allow adjacent cable slack managers to interlock together. Retainers mounted on columns inside the cable slack manager keep

the cables from protruding above the top of the base. The cable slack managers are coded as housings and are available as follows.

Z113A Housing

The Z113A housing is used between the wall and equipment cabinets (Switch, Applications Processor, Auxiliary, etc.). It consists of a Z8A1 base, 2 Z814A covers, and 25 Z6A retainers.

Z114A Housing

The Z114A housing is designed to be used adjacent to the Z113A housing if no equipment cabinet exists at the position or if the cabinet(s) is positioned against the wall with the cross-connect field beside the cabinet(s). It consists of a Z8A1 base, 1 Z814A cover, 1 Z815A cover, and 25 Z6A retainers.

CABLE SLACK MANAGER ORDERING INFORMATION

Description	Comcode
Z113A Housing	103 961 322
Z114A Housing	103 961 330
Z8A1 Base	103 965 133
Z814A Cover	103 965 141
Z815A Cover	103 965 158
Z6A Retainer	103 965 166

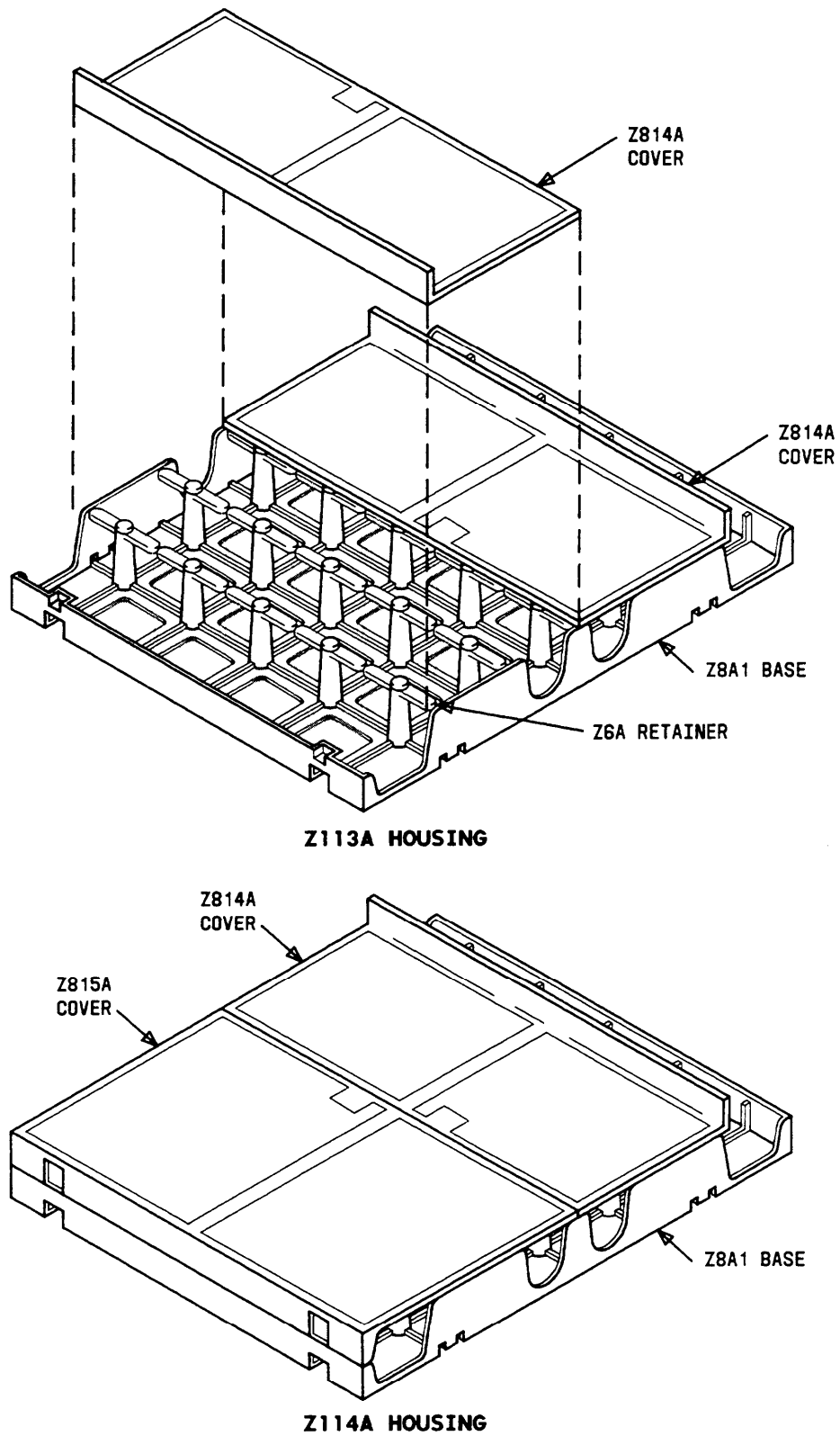


Figure 4-7. Cable Slack Managers

NETWORK INTERFACES

RJ21X Network Interface

The RJ21X network interface is the connection point between the local telephone company lines (1-pair trunks) and the system. The interface is supplied and installed by the local telephone company.

RJ2GX Network Interface

The RJ2GX network interface is the connection point between the local telephone company tie-trunks and the system 3-pair tie-trunks. The interface is supplied and installed by the local telephone company.

1.544 Mbps Digital Service Interfaces

The 1.544 Mbps (Megabits per second) digital service interfaces are the connection points between the local telephone company T1 carrier lines and the system DS1 tie trunks. The interfaces are supplied and installed by the local telephone company.

SNEAK FUSE PANELS

575-4 Sneak Current Fuse Assembly

Sneak current protection is required between the RJ21X or RJ2GX network interface and the switch. The Model 575-4 Sneak Current Fuse Assembly (Figure 4-8), or equivalent, can be used for sneak current protection. The panel is connectorized in and out and equipped with 25 2-pair fuse modules. Connectorized (B25A) cables connect the network interface to the sneak fuse panel. 157B Connecting Blocks equipped with SCP-1 Protectors may also be used for sneak current protection.

SNEAK FUSE PANEL ORDERING INFORMATION	
Description	Comcode
157B Connecting Block	403 613 003
Protector, SCP-1*	403 617 632
575-4 Sneak Fuse Current Assembly	xxxxxx
Fuse Module—25A	xxxxxxx

* The SCP-1 Protectors must be ordered separately and installed on the 157B Connecting Block. Twenty-four protectors are required per block.

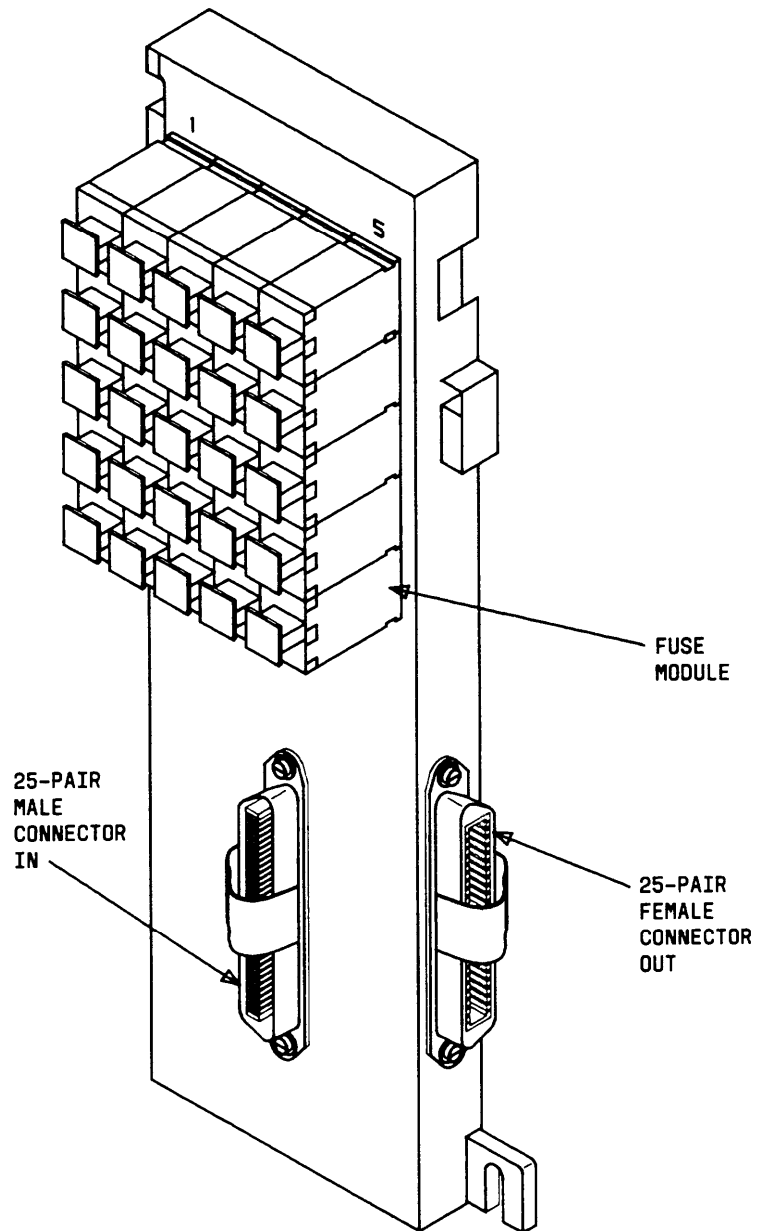


Figure 4-8. Model 575-4 Sneak Fuse Panel

EMERGENCY TRANSFER UNITS

The emergency transfer units used with the 66-type hardware are the Z1A emergency transfer unit and the 574-5 power transfer unit. The units mount on the plywood backboard to the left of the Trunk/Auxiliary Field.

Z1A Emergency Transfer Unit

The Z1A unit provides emergency transfer connections for six analog voice terminals to six trunks. If the central office trunks require ground start, a ground start key must be installed on each emergency transfer voice terminal.

574-5 Power Transfer Unit

The 574-5 unit provides emergency transfer connections for five analog voice terminals to five trunks. This unit provides automatic ground start.

TRUNK CONCENTRATOR CABLES

Trunk concentrator cables are used for the following purposes:

- Match 1-pair local telephone company trunks to 3-pair circuits that connect to the switch.
- Match 1-pair local telephone company trunks provided for off-premises lines to 3-pair circuits that connect to the cross-connect field.
- Split eight 3-pair analog tie trunks into two groups of four 3-pair tie trunks that connect to the switch

The trunk concentrator cables are 25 feet (7.6 m) in length. They are coded as cable assemblies and are available as described below.

WP-90929, List 2, Cable Assembly

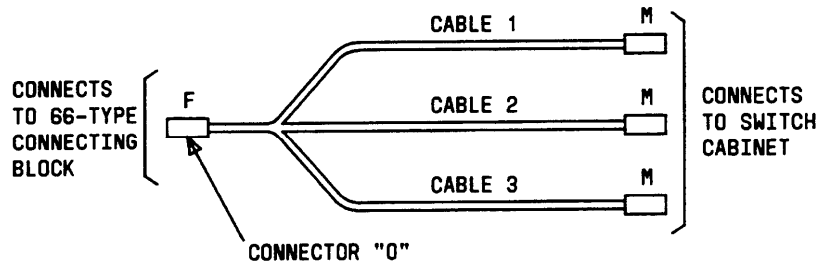
The WP-90929, List 2, Cable Assembly (Figure 4-9 and Table 4-B) is used to connect local telephone company trunks to the system switch. It is also used to connect off-premise analog circuits from the port field to the trunk field in the equipment room cross-connect field. The 3-fingered end of the cable assembly contains male ribbon connectors; the other end contains a female ribbon connector. Each cable assembly can match twenty-four 1-pair trunk circuits to twenty-four 3-pair trunk circuits.

WP-90929, List 4, Cable Assembly

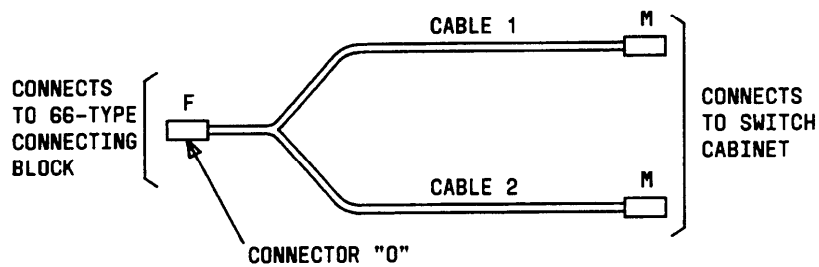
The WP-90929, List 4, Cable Assembly (Figure 4-9 and Table 4-C) is used to connect tie-trunk circuits to the system switch. The 2-fingered end of the cable assembly contains male ribbon connectors; the other end contains a female ribbon connector. Each cable assembly can match eight 3-pair tie-trunk circuits to two groups of four 3-pair tie-trunk circuits.

TRUNK CONCENTRATOR CABLE ORDERING INFORMATION

Description	Comcode
WP-90929, List 2, Cable Assembly	405 065 012
WP-90929, List 4, Cable Assembly	405 075 540



LIST 2 CABLE



LIST 4 CABLE

LEGEND:

M = 25-PAIR MALE CONNECTOR
 F = 25-PAIR FEMALE CONNECTOR

Figure 4-9. Trunk Concentrator Cables (WP-90929, Lists 2 and 4, Cable Assemblies)

TABLE 4-B. WP-90929, List 2, Cable Assembly Wiring

Conn. 0 Pin No.	Cable No. 1	Cable No. 2	Cable No. 3	Conn. 0 Pin Numbers	Cable No. 1	Cable No. 2	Cable No. 3
26	W-BL	-	-	1	BL-W	-	-
27	W-BR	-	-	2	BR-W	-	-
28	R-O	-	-	3	O-R	-	-
29	R-S	-	-	4	S-R	-	-
30	BK-G	-	-	5	G-BK	-	-
31	Y-BL	-	-	6	BL-Y	-	-
32	Y-BR	-	-	7	BR-Y	-	-
33	V-O	-	-	8	O-V	-	-
34	-	W-BL	-	9	-	BL-W	-
35	-	W-BR	-	10	-	BR-W	-
36	-	R-O	-	11	-	O-R	-
37	-	R-S	-	12	-	S-R	-
38	-	BK-G	-	13	-	G-BK	-
39	-	Y-BL	-	14	-	BL-Y	-
40	-	Y-BR	-	15	-	BR-Y	-
41	-	V-O	-	16	-	O-V	-
42	-	-	W-BL	17	-	-	BL-W
43	-	-	W-BR	18	-	-	BR-W
44	-	-	R-O	19	-	-	O-R
45	-	-	R-S	20	-	-	S-R
46	-	-	BK-G	21	-	-	G-BK
47	-	-	Y-BL	22	-	-	BL-Y
48	-	-	Y-BR	23	-	-	BR-Y
49	-	-	V-O	24	-	-	O-V
50	V-S	-	-	25	S-V	-	-

TABLE 4-C. WP-90929, List 4, Cable Assembly Wiring

Conn. 0 Pin No.	Cable No. 1	Cable No. 2	Conn. 0 Pin No.	Cable No. 1	Cable No. 2
26	W-BL	-	1	BL-W	-
27	W-O	-	2	O-W	-
28	W-G	-	3	G-W	-
29	W-BR	-	4	BR-W	-
30	W-S	-	5	S-W	-
31	R-BL	-	6	BL-R	-
32	R-O	-	7	O-R	-
33	R-G	-	8	G-R	-
34	R-BR	-	9	BR-R	-
35	R-S	-	10	S-R	-
36	BK-BL	-	11	BL-BK	-
37	BK-O	-	12	O-BK	-
38	-	W-BL	13	-	BL-W
39	-	W-O	14	-	O-W
40	-	W-G	15	-	G-W
41	-	W-BR	16	-	BR-W
42	-	W-S	17	-	S-W
43	-	R-BL	18	-	BL-R
44	-	R-O	19	-	O-R
45	-	R-G	20	-	G-R
46	-	R-BR	21	-	BR-R
47	-	R-S	22	-	S-R
48	-	BK-BL	23	-	BL-BK
49	-	BK-O	24	-	O-BK
50	V-S	-	25	S-V	-

4-PORT MET LINE BOARD CONCENTRATOR CABLE

The MET Line Circuit Pack (TN735) has an output of four 3-pair circuits that appear on a 25-pair connector at the switch. The WP-90929, List 4 Cable Assembly (Comcode 405 075 540) described previously and shown in Figure 4-9 combines the MET line circuits that appear on two 25-pair connectors onto one 25-pair connector that connects to the cross-connect field.

ADJUNCT POWER UNITS

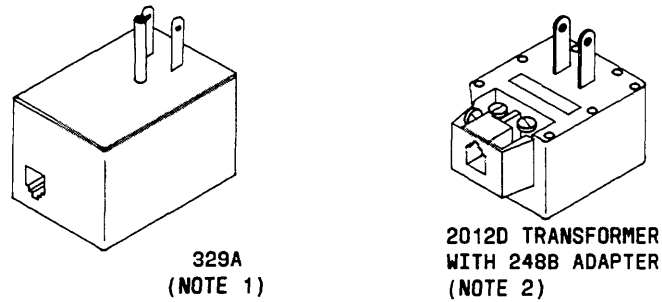
There are two types of power supplies used for adjunct powering—individual and bulk. The power supplies are specified by the Field Services Organization (FSO) for firm quote price lists. For all other quotes, the power supplies are specified by the Premises Services Consultant (PSC).

Individual Power Supplies

Individual power supplies (Figure 4-10) can be used for powering from the equipment room, site or satellite locations, or information outlets. An individual power supply can power only one voice terminal. Table 4-D contains the individual power supply limitations for distance, wire gauge, and adjuncts.

When a number of individual power supplies are used at the equipment room or at a site or satellite location, an ac power strip (Figure 4-11) is installed to accommodate the various sized power supplies. The outlets on the ac power strip must be spaced 3.5 inches (8.89 cm) to 4 inches (10.16 cm) apart with the plug inserts perpendicular to the strip.

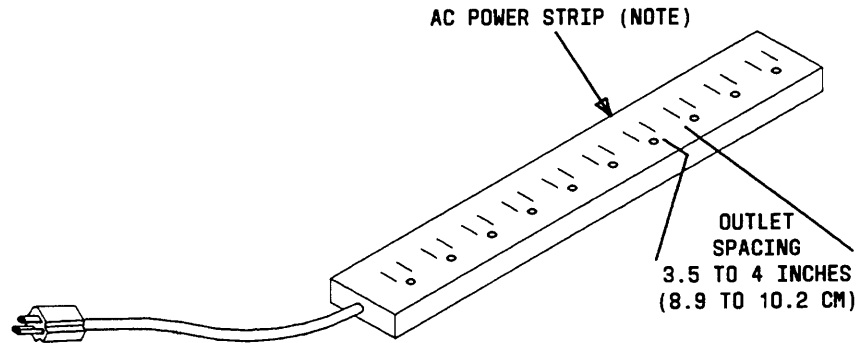
Note: A 543A power unit (Comcode 104 034 541) may be required for inrush protection for a 20-amp 120-volt ac line serving multiple 329A power units. Contact your PSC for details. Most multiple powering requirements should be served by the 346 modular bulk power supply.



NOTES:

1. THE 329A AND THE KS-22911, L1 ARE SIMILAR IN APPEARANCE.
2. THE 2012D TRANSFORMER AND 248B TRANSFORMER MUST BE ORDERED SEPARATELY AND FIELD ASSEMBLED AS SHOWN.

Figure 4-10. Individual Power Supplies



NOTE: THIS AC POWER STRIP MUST BE
LOCALLY PROVIDED.

Figure 4-11. AC Power Strip

TABLE 4-D. Individual Power Supply Adjunct and Distance Limitations

Power Unit	Adjunct Limits	Wire Gauge	Distance Feet (Meters)
2012D Transformer (18-volt ac) With 248B Adapter	One speakerphone or headset only	24	150 (45.7)
KS-22911, L1 Power Supply (48-volt dc)	One digital module plus speakerphone or headset	24	300 (91.4)
329A Power Supply (-48 volt dc)	One digital module plus speakerphone or headset	24	500 (152.4)
	Two digital modules plus speakerphone or headset	24	350 (106.7)
	Three digital modules plus speakerphone or headset	24	250 (76.2)

INDIVIDUAL POWER SUPPLY ORDERING INFORMATION

Description	Comcode
2012D Transformer	102 600 517
248B Adapter	102 802 103
KS-22911, L1 Power Unit	403 242 639
329A Power Unit	103 873 998

Bulk Power Supply

346 Modular Bulk Power Supply

The 346 modular bulk power supply consists of a 346A1 Power Panel and up to three 346A Power Units (see Figure 4-12). The panel has three 2-ampere resettable circuit breakers one for each 346A Power Unit (see Figure 4-13). Power panels are used with one, two, or three power units connected.

A standard 5-foot (1.52-m) double-ended (male, female) power cord connects the 346A1 Power Panel to an ac outlet. Service to the ac outlet must be a dedicated (nonswitched) 20-ampere line. A maximum of four power panels can be connected to the 20-ampere line.

Note: The city of Chicago and Cook County Illinois electrical codes require the use of a fused ac power cord POP-6/217 manufactured by JDS Products and a metallic 346B1 Power Panel.

Each 346A Power Unit provides four power jacks. A slide switch is located between the top two and bottom two jacks. When the slide switch is in the down position, 10 watts of power is provided at the jacks above and below the switch.

When the slide switch is in the up position, the power from the jack above the switch and below the switch are combined. This provides 20 watts of power at the jack above the switch. The jack below the switch will have no power.

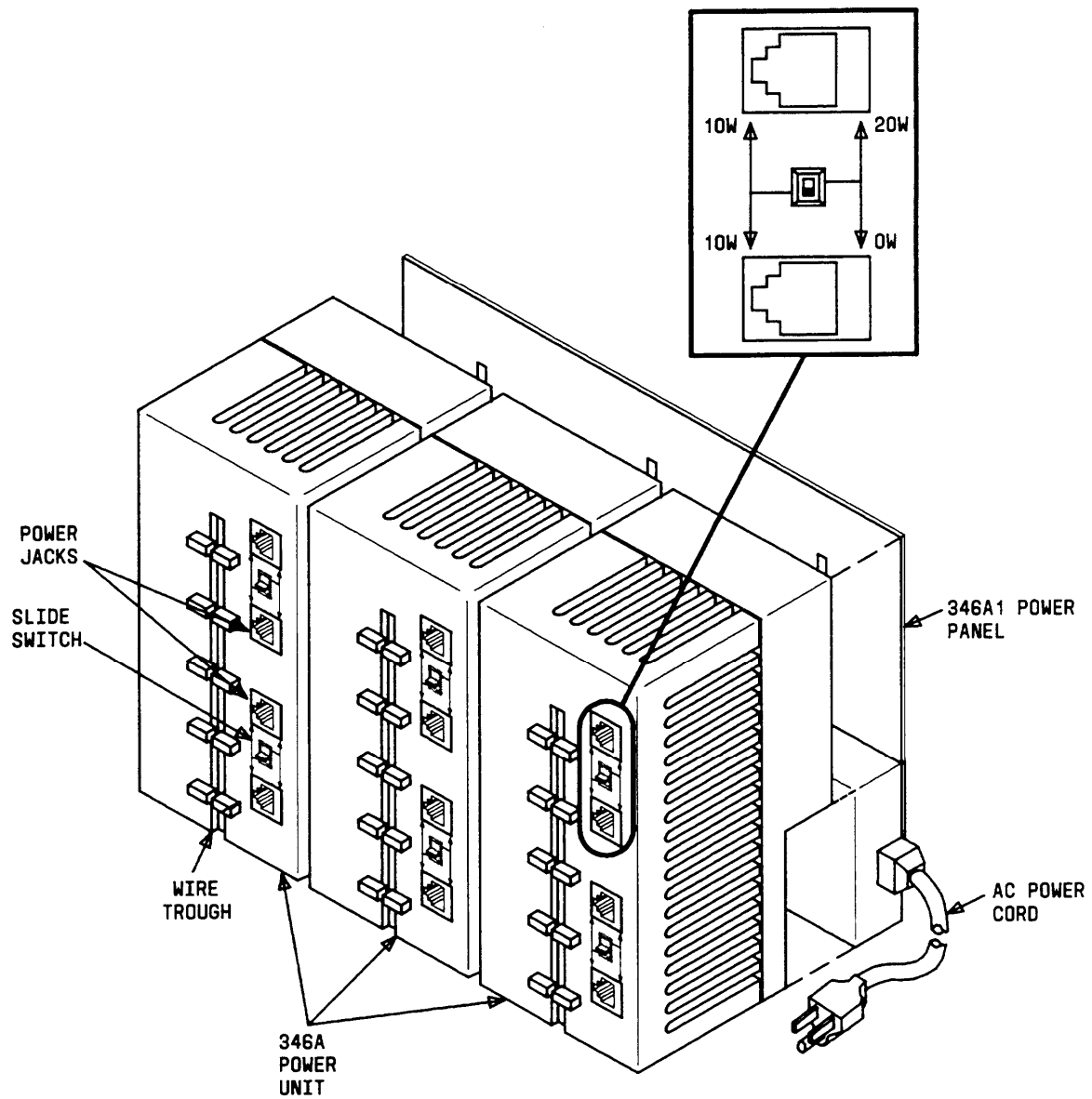


Figure 4-12. 346 Modular Bulk Power Supply

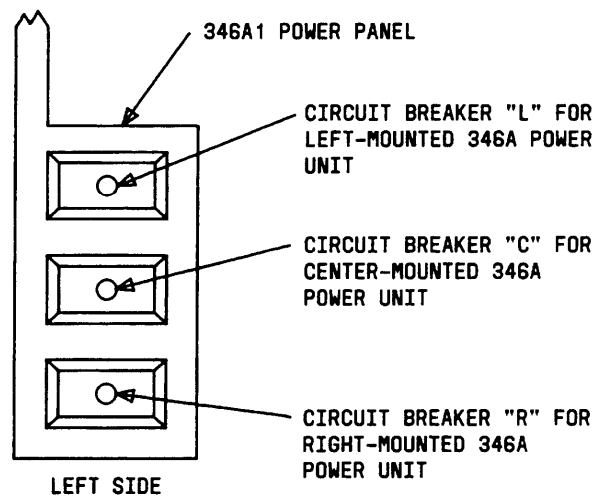


Figure 4-13. 346A1 Power Panel Circuit Breaker Locations

Table 4-E lists adjunct powering limitations for each individual 346A Power Unit.

TABLE 4-E. 346A Power Unit Adjunct and Distance Limitations

Slide Switch Position	Adjuncts Powered (Maximum Per Unit)	Wire Gauge	Distance Feet (Meters)
Down (10 w)	Any four terminals equipped with one speakerphone or one headset	24	260 (79.2)
	Any four digital voice terminals equipped with one digital adjunct and a speakerphone or headset each		
Up (20 w)	Any two digital voice terminals equipped with up to three digital modules and a speakerphone or headset each		

BULK POWER SUPPLY ORDERING INFORMATION

Description	Comcode
346A Power Unit	104 174 768
346A1 Power Panel	104 174 750
346B1 Power Panel	104 174 768

EQUIPMENT ROOM DESIGN

The *AT&T System 75—System Description* (555-200-200) or *AT&T System 75 XE—System Description* (555-201-200) provides equipment room specifications for temperature, humidity, air purity, lighting levels, and grounding. They also provide information on the floor and wall space required for the system equipment and associated peripheral equipment installed in the equipment room. For completeness, some of the information contained in the reference manual is repeated in this guide.

66-Type Hardware Equipment Room Applications

In the equipment room, the 66-type hardware is used for the cross-connect field which consists of a Trunk/Auxiliary Field and a Distribution Field (port, auxiliary, and station).

Trunk/Auxiliary Field

The Trunk/Auxiliary Field contains three distinct cross-connect areas:

- The green field receives the network interface leads through 25-pair cables and cross-connects those leads to the purple or yellow fields. Each 66-type connecting block can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks.
- The purple field connects to the switch via WP-90929, List 2 or 4 concentrator cables. Each 66-type connecting block can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks. The purple field can also connect to the switch via 25-pair cables with each trunk circuit pack connecting to one 66-type connecting block.
- The yellow field connects all miscellaneous leads from the switch such as alarm monitors, emergency transfer relay power, attendant console power, and INADS (Initialization and Administration System) trunk. This field is also used for emergency transfer wiring, AP (Applications Processor) alarms, paging equipment, music sources, etc.

Distribution Field

The Distribution Field contains four distinct cross-connect areas:

- The purple field (port field) connects to the switch via 25-pair cables. Each line circuit pack connects to one 66-type connecting block. One 25-pair cable is required for each line circuit pack (see Note).

Note: This is the case except for the MET line board. Two MET line boards connect to one 66-type connecting block. The MET line board requires use of a concentrator cable.

- The yellow field (auxiliary field) connects all 25-pair cables from the auxiliary cabinet and the AP, when either is used. The yellow field is usually small and is located at the lower right-hand corner of the purple field.
- The white field (station field) connects to the station wiring. The white field indicates 3-pair station circuits (eight circuits per 25-pair cable) which are routed through a satellite closet.
- The blue field (station field) indicates 3- and/or 4-pair station circuits (eight or six circuits, respectively, per 25-pair cable). The fourth pair, of the 4-pair station circuit, is used to supply adjunct power from the cross-connect field on an as-needed basis to terminals within 250 wire feet length of the cross-connect field.

Figure 4-14 shows a typical cross-connect field installation using 66-type hardware. It is possible that only a few 66-type connecting blocks will be required in the Trunk/Auxiliary Field for the green and yellow fields. For this reason, if the 157B connecting blocks are mounted on a purple 183-type backboard or the 166-type purple backboard equipped with connecting blocks is used as the Trunk/Auxiliary Field, then some of the extra connecting blocks in the purple field can be used as the green and yellow fields to save ordering extra backboards and connecting blocks. When this is done, the green and yellow fields should be clearly identified to avoid confusion when additional trunks and auxiliary equipment is added in the future. The white backboards for the connections to the satellite closet must be ordered from an outside vendor. If blue backboards are used for these connection then the part of the blue field that is functionally used as the white field, should be clearly identified.

It is also possible that all of the 66-type connecting blocks will be mounted directly onto the wall without using any colored backboards. If this is the case, all of the cross-connect field functional colors should be identified on the wall.

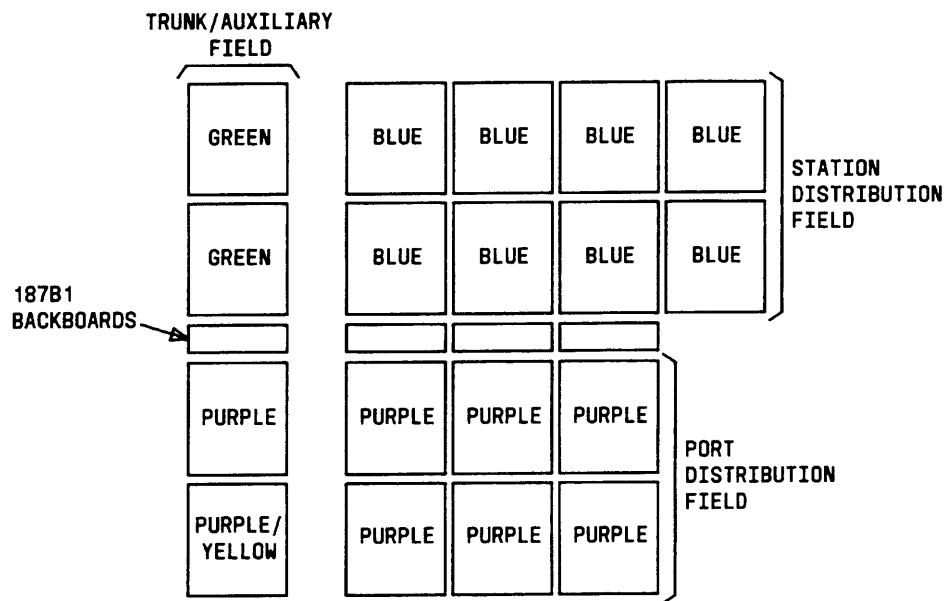


Figure 4-14. Typical Cross-Connect Field Arrangement Using 66-Type Hardware

Typical System Equipment Room Floor Plans

General

The equipment room floor plan must be provided by the Field Services Organization (FSO) for firm quote price lists. For all other quotes, the equipment room floor plans must be provided by the Premises Services Consultant (PSC). Factors that influence the design are as follows:

- Size and layout of the equipment room
- Number of equipment cabinets
- AC outlet locations
- Size of the system.

Typical Floor Plans

Figure 4-15 shows a typical cross-connect field installation using 66-type connecting blocks.

Figure 4-16 is a typical floor plan for a 2-carrier System 75 or a 2-cabinet System 75 XE. Figure 4-17 is a typical floor plan for a 5-carrier System 75 or a 3- or 4-cabinet System 75 XE. The maximum capacity for a 2-carrier cabinet is approximately 200 stations and the maximum capacity for a 5-carrier cabinet is approximately 800 stations.

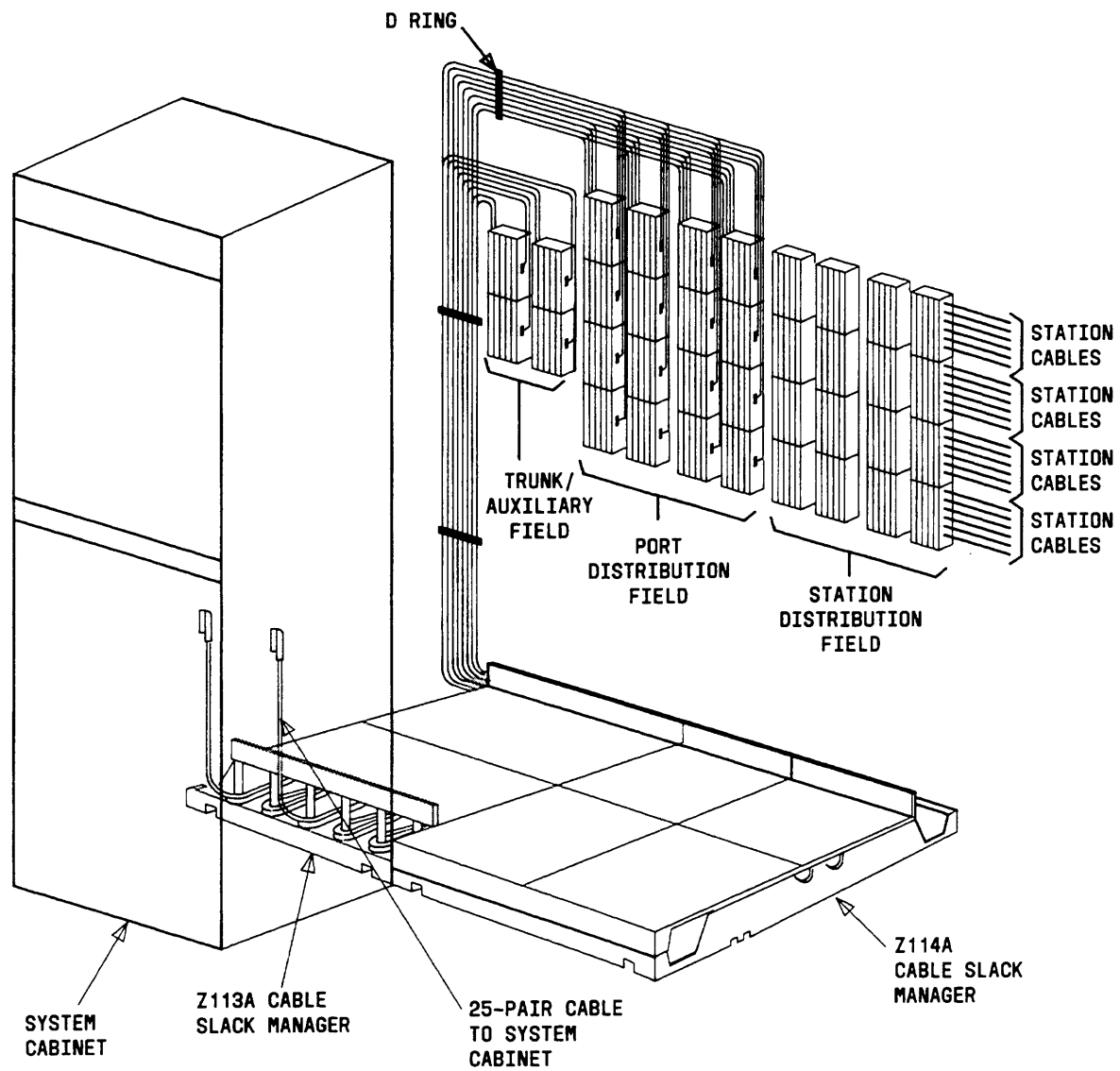
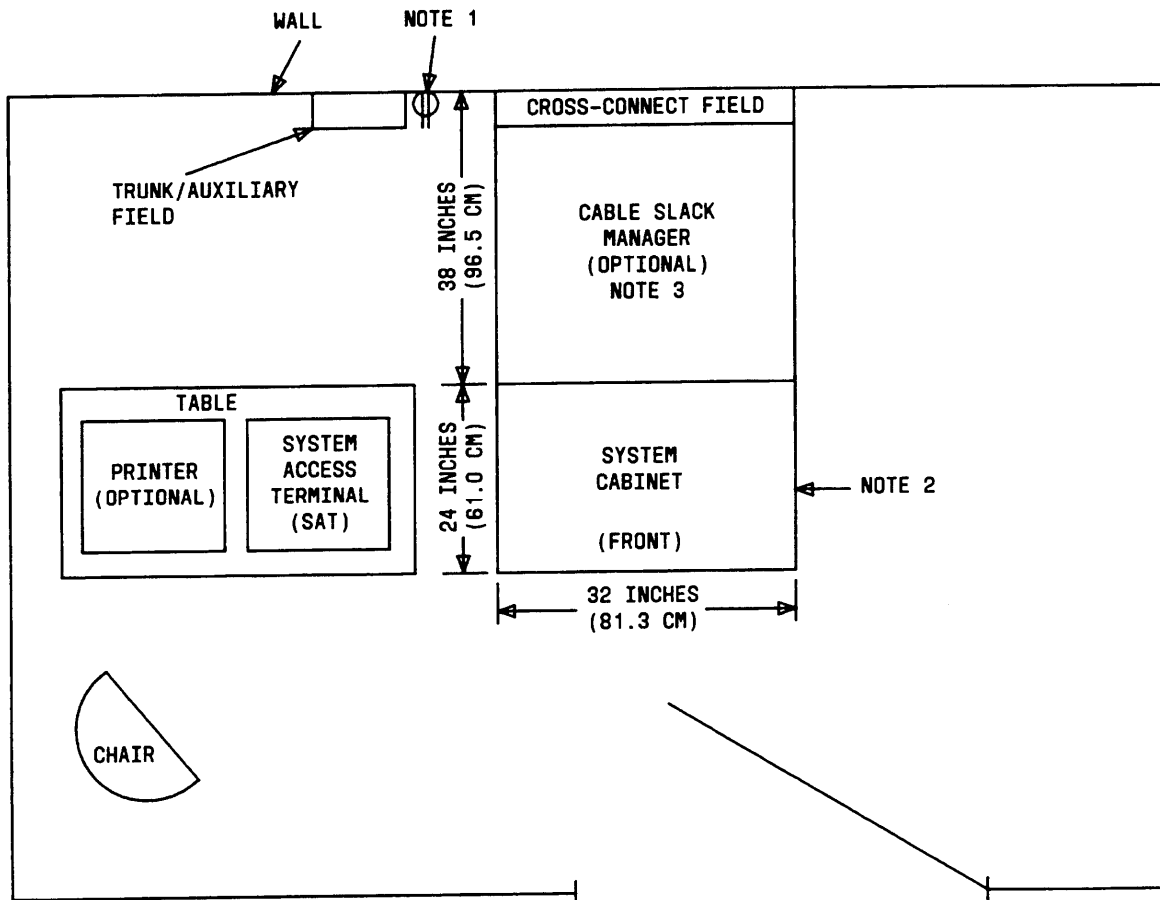


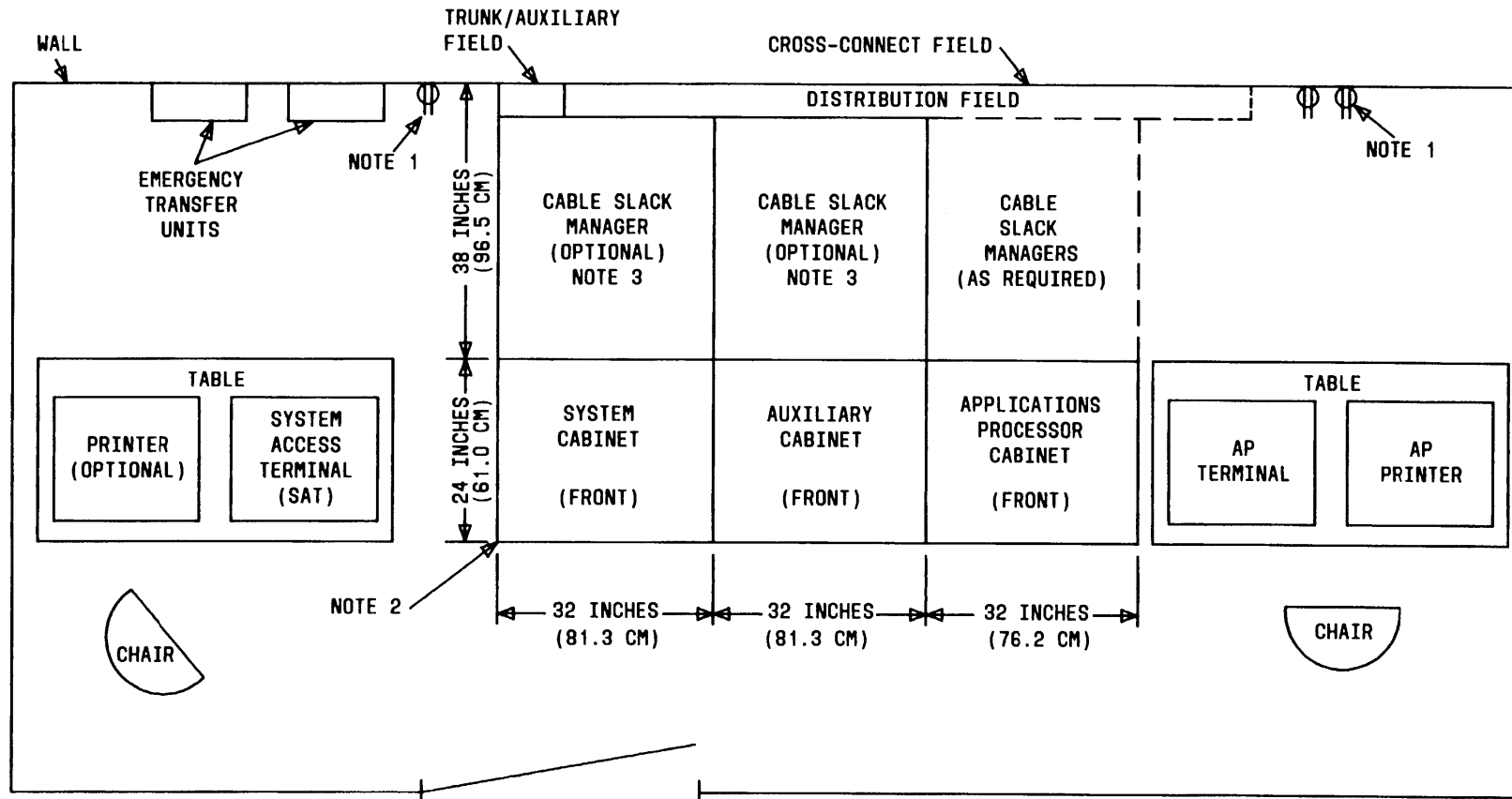
Figure 4-15. Typical Cross-Connect Field Installation using 66-Type Connecting Blocks



NOTES:

1. THE POWER OUTLET MUST NOT BE UNDER SWITCH CONTROL AND MUST NOT BE SHARED WITH OTHER EQUIPMENT. THE POWER OUTLET SHOULD BE LOCATED OUTSIDE THE CROSS-CONNECT FIELD AREA. ALSO, ANY CONDUIT SERVING THE OUTLET CANNOT RUN THROUGH OR BELOW THE AREA WHERE THE CONNECTOR MODULES ARE TO BE MOUNTED.
2. ALLOW AT LEAST 36 INCHES (91.4 cm) OF SPACE IN FRONT AND 6 INCHES (15.4 cm) ON THE RIGHT OF THE CABINET TO PERMIT THE DOOR TO SWING OPEN.
3. CABINET IS LOCATED ALONGSIDE THE CROSS-CONNECT FIELD WHEN CABLE SLACK MANAGER IS NOT USED.

Figure 4-16. Typical 2-Carrier Cabinet System 75 or 2-Cabinet System 75 XE Floor Plan



NOTES:

1. THE POWER OUTLETS MUST NOT BE UNDER SWITCH CONTROL AND MUST NOT BE SHARED WITH OTHER EQUIPMENT. THE POWER OUTLETS SHOULD BE LOCATED OUTSIDE THE CROSS-CONNECT FIELD AREA. ALSO, ANY CONDUIT SERVING THE OUTLETS CANNOT RUN THROUGH OR BELOW THE AREA WHERE THE CONNECTOR MODULES ARE TO BE MOUNTED.
2. ALLOW AT LEAST 36 INCHES (91.4 cm) OF SPACE IN FRONT AND 6 INCHES (15.4 cm) ON THE RIGHT OF THE CABINET TO PERMIT THE DOOR TO SWING OPEN.
3. CABINETS ARE LOCATED ALONGSIDE THE CROSS-CONNECT FIELD WHEN CABLE SLACK MANAGERS ARE NOT USED.

Figure 4-17. Typical 5-Carrier Cabinet System 75 or 3- or 4-Cabinet System 75 XE Floor Plan

Wall Space Requirements

The Trunk/Auxiliary Field and the Distribution Field are mounted on the same wall. If the 66-type connecting blocks are being mounted on the 183-type backboards, each 183A-type backboard is approximately 8-1/2 inches (21.6 cm) wide and 20 inches (50.8 cm) tall. Each 183B-type backboard is approximately 17 inches (43.2 cm) wide and 20 inches (50.8 cm) tall.

If the multiple mountings are being used, each 166-type mounting is approximately 17 inches (43.2 cm) wide and 20 inches (50.8 cm) tall. Each 154A-type mounting is approximately 8-1/2 inches (21.6 cm) wide and 20 inches (50.8 cm) tall.

If the 66-type connecting blocks are being mounted on the wall by themselves, the size requirements of the 183-type backboards should still be used to figure the amount of wall space required for the connecting blocks. This will allow for sufficient spacing between the connecting blocks for jumper wires and cable connections. The space requirements for each 183A-type backboard will mount 4 66-type connecting blocks and the space requirements for each 183B-type backboard will mount 8 66-type connecting blocks.

The 187B1 backboard equipped with pegs, is approximately 17 inches (43.2 cm) wide and 6-1/2 inches (16.5 cm) tall.

Equipment Requirements

Cable Slack Manager Requirements

Each cable slack manager is approximately 32 inches (81.3 cm) wide. The number of cable slack managers needed for the system can be found by dividing the total length of the cross-connect field in inches by 32. Any partial numbers of .4 or less should be rounded down to the whole number and any partial numbers of .5 or more should be rounded up to the next whole number (for example: 2.4 = 2 cable slack managers and 2.5 = 3 cable slack managers required).

66-Type Hardware Requirements

Table 4-F lists the requirements for the 66-type hardware according to system size to provide 1-, 2-, 3-, or 4-pair distribution to the station wiring. Each 66 connecting block can connect 25-pair of wire and the number of blocks that are needed per system depends on the number of pairs that are run per station.

TABLE 4-F. 66-Type Hardware Requirements

66M150 Blocks Required	Station Range			
	1-Pair Wiring*	2-Pair Wiring*	3-Pair Wiring	4-Pair Wiring
1	1-24	1-12	1-8	1-6
2	25-48	13-24	9-16	7-12
3	59-72	25-36	17-24	13-18
4	73-96	37-48	25-32	19-24
5	97-120	49-60	33-40	25-30
6	121-144	61-72	41-48	31-36
7	145-168	73-84	48-56	37-42
8	169-192	85-96	57-64	43-48
9	193-216	97-108	65-72	49-54
10	217-240	109-120	73-80	55-60
11	241-264	121-132	81-88	61-66
12	265-288	133-144	89-96	67-72
13	289-312	145-156	97-104	73-78
14	313-336	157-168	105-112	79-84
15	337-360	169-180	113-120	85-90
16	361-384	181-192	121-128	91-96
17	385-408	193-204	129-136	97-102
18	409-432	205-216	137-144	103-108
19	433-456	217-228	145-152	109-114
20	457-480	229-240	153-160	115-120

* 1- and 2-pair wiring is only possible for analog type sets

EQUIPMENT ROOM HARDWARE AND CABLING INSTALLATION

Hardware Installation

The procedures provided in this guide for installing hardware are written so that one system technician can do the installation. Procedures are provided for the following:

- Installing the Cross-Connect Field
- Installing the Cable Slack Managers
- Labeling the Cross-Connect Field.
- Installing the Sneak Fuse Panels

Installing the Cross-Connect Field

The preferred cross-connect field location is directly behind the switch cabinet. The first column of 66-type connecting blocks should be aligned with the left side of the switch cabinet (see Figure 4-15). This arrangement allows for growth on the right side of the cross-connect field.

The connectorized 66-type connecting blocks are factory wired for cable routing from the top so that the cable connector will align with the jack on the connecting block. If cable routing from the bottom is desired, then the jack on the connecting block can be removed from the connecting block by removing two screws and rotated 180 degrees. The jack must be relocated in the hole that was previously unoccupied because the wires that connect to the connecting block will be not be long enough to reach the hole that the connector was removed from. The velcro cable retainer must also be relocated along with the jack.

To install the cross-connect field, proceed as follows:

1. Draw a level horizontal line on the mounting wall 12 inches (30.5 cm) above the floor (Figure 4-18).
2. Position the first backboard or connecting block so that the bottom is located on the line and mark the mounting holes.
3. Remove the backboard or connecting block and drill holes in the wall for a 3/4-inch (1.9 cm) No. 12 wood screw.
4. Move the backboard or connecting block back into place and fasten to the wall using 3/4-inch (1.9 cm) No. 12 wood screws.
5. The next backboard or connecting block can be mounted to the left or above the one just installed, depending on space requirements. Repeat steps 2, 3 and 4 until each backboard or connecting block has been installed.

Note: The 66-type connecting blocks should not be installed so that the height above the floor exceeds 3 183-type backboards plus a 187B1 backboard, approximately 78-1/2 inches (200 cm).

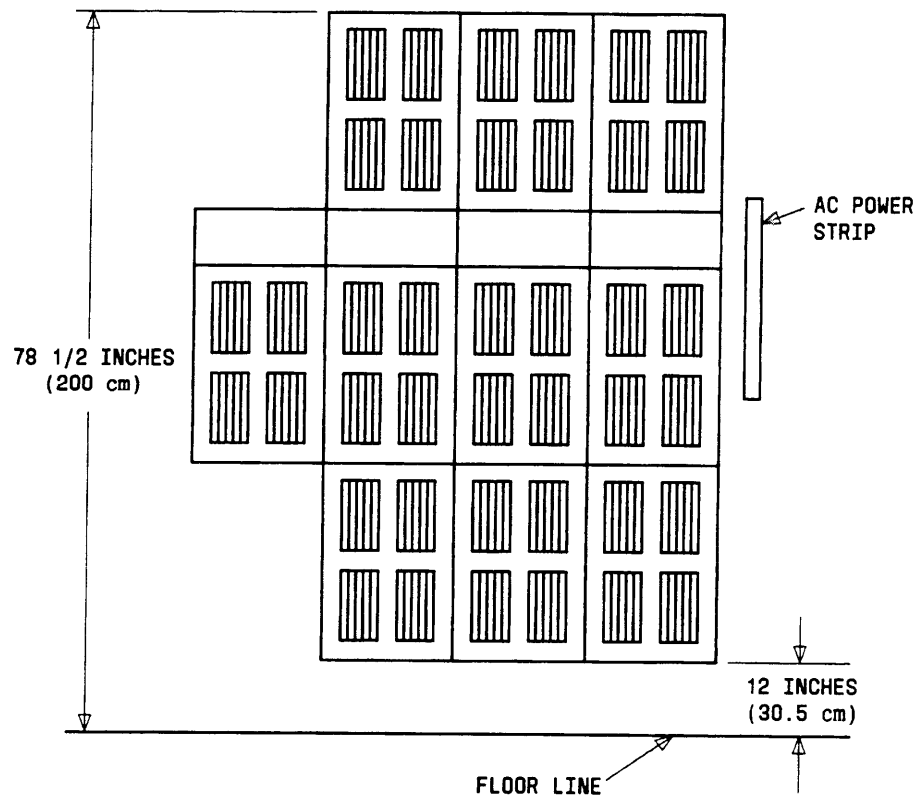


Figure 4-18. Cross-Connect Field Installation

Installing the Cable Slack Managers

To install the cable slack managers, proceed as follows:

1. Position the Z113A cable slack manager against the wall under the cross-connect field, aligning the side of the manager with the first connecting block column of the Trunk/Auxiliary Field.
2. Position the next cable slack manager under the cross-connect field and alongside the previously installed cable slack manager, insuring that tabs and interlocks align and snap together.
3. Repeat step 2 until all cable slack managers are installed.

Note: Nine 1/4-inch (6.4-mm) diameter holes are provided in the cable slack manager bases for earthquake mounting if required. Also, if the cable slack managers are mounted on an uneven floor, shims may be required to keep the cable slack managers level and insure proper fit of the covers. Holes are also provided in the sides of the base for bolting the cable slack managers together. Bolts and shims must be locally provided.

Labeling the Cross-Connect Field

The cross-connect field is color-coded to identify system wiring as follows:

- Green—Leads to central office
- Purple—Leads to switch ports
- Yellow—Leads to auxiliary equipment and miscellaneous switch leads
- Blue—Leads to information outlets
- White—Leads from the cross-connect field to the satellite locations (3-pair).

A permanent felt-tipped pen can be used to write the lead designations on the 66-type connecting blocks (Figure 4-19). Table 4-G shows the lead designations for the switch port appearances at the cross-connect field, and Table 4-H shows the auxiliary lead designations for the auxiliary circuits. Any time these leads are cross-connected to another connecting block they should be labeled at that block also.

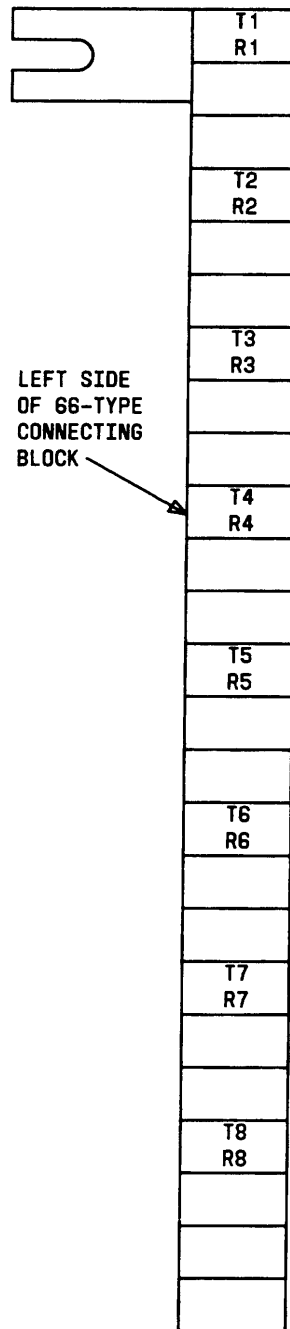


Figure 4-19. Labeling 66-Type Connecting Blocks

TABLE 4-G. Carrier Lead Appearances at 66-Type Cross-Connect Field

(Contd on Next Page)

66 Conn. Block Terminals	Anal. Line (8) TN742 or TN769	Anal. Line (16) TN746	Data Line TN726	Dig. Line TN754	Hyb. Line TN762 TN762B	MET Line TN735	AUX. Trk. TN763 TN763B	CO Trk. TN747 TN747B	DID Trk. TN753	Tie Trk. TN760 TN760B	DS1 Tie Trk. TN722 TN722B
1	T1	T1			V1T1	T1	T1	T1	T1	T1	
2	R1	R1			V1R1	R1	R1	R1	R1	R1	
3		T2	TXT1	TXT1	CT1	TXT1	SZ1			T11	
4		R2	TXR1	TXR1	CR1	TXR1	SZ11			R11	
5		T3	PXT1	PXT1	P-1	PXT1	S1			E1	
6		R3	PXR1	PXR1	P+1	PXR1	S11			M1	
7	T2	T4			V1T2	T2	T2	T2	T2	T2	
8	R2	R4			V1R2	R2	R2	R2	R2	R2	
9			TXT2	TXT2	CT2	TXT2	SZ2			T12	
10			TXR2	TXR2	CR2	TXR2	SZ12			R12	
11			PXT2	PXT2	P-2	PXT2	S2			E2	
12			PXR2	PXR2	P+2	PXR2	S12			M2	
13	T3				V1T3	T3	T3	T3	T3	T3	
14	R3				V1R3	R3	R3	R3	R3	R3	
15			TXT3	TXT3	CT3	TXT3	SZ3			T13	
16			TXR3	TXR3	CR3	TXR3	SZ13			R13	
17		T5	PXT3	PXT3	P-3	PXT3	S3			E3	
18		R5	PXR3	PXR3	P+3	PXR3	S13			M3	
19	T4	T6			V1T4	T4	T4	T4	T4	T4	
20	R4	R6			V1R4	R4	R4	R4	R4	R4	
21		T7	TXT4	TXT4	CT4	TXT4	SZ4			T14	
22		R7	TXR4	TXR4	CR4	TXR4	SZ14			R14	
23		T8	PXT4	PXT4	P-4	PXT4	S4			E4	
24		R8	PXR4	PXR4	P+4	PXR4	S14			M4	

TABLE 4-G. Carrier Lead Appearances at 66-Type Cross-Connect Field (Contd)

66 Conn. Block Terminals	Anal. Line (8) TN742 or TN769	Anal. Line (16) TN746	Data Line TN726	Dig. Line TN754	Hyb. Line TN762 TN762B	MET Line TN735	AUX. Trk. TN763 TN763B	CO Trk. TN747 TN747B	DID Trk. TN753	Tie Trk. TN760 TN760B	DS1 Tie Trk. TN722 TN722B
25	T5	T9			V1T5			T5	T5		
26	R5	R9			V1R5			R5	R5		
27		T10	TXT5	TXT5	CT5						
28		R10	TXR5	TXR5	CR5						
29		T11	PXT5	PXT5	P-5						
30		R11	PXR5	PXR5	P+5						
31	T6	T12			V1T6			T6	T6		
32	R6	R12			V1R6			R6	R6		
33			TXT6	TXT6	CT6						
34			TXR6	TXR6	CR6						
35			PXT6	PXT6	P-6						
36			PXR6	PXR6	P+6						
37	T7				V1T7			T7	T7		
38	R7				V1R7			R7	R7		
39			TXT7	TXT7	CT7						
40			TXR7	TXR7	CR7						
41		T13	PXT7	PXT7	P-7						
42		R13	PXR7	PXR7	P+7						
43	T8	T14			V1T8			T8	T8		L1*
44	R8	R14			V1R8			R8	R8		L1
45		T15	TXT8	TXT8	CT8						L0
46		R15	TXR8	TXR8	CR8						L0*
47		T16	PXT8	PXT8	P-8						LBACK2
48		R16	PXR8	PXR8	P+8						LBACK1
49											
50											

* Denotes ring side or high side of pair.

TABLE 4-H. Auxiliary Lead Appearances at 66-Type Cross-Connect Field
 (Contd on Next Page)

66 Connecting Block Terminals	System 75 Auxiliary Connector Outputs		System 75 XE Auxiliary Connector Outputs		Z1A Emergency Transfer Unit Outputs	574-5 Emergency Transfer Unit Outputs
01 02	1M		1M		TC	TC
03 04	1m		1m		TK	TK
05 06	2M		2M		LC	LC
07 08	2m		2m		LC	LC
09 10	3M		3M		TC	TC
11 12	3m		3m		TK	TK
13 14	3W		3W		LC	LC
15 16	Not Connected		Not Connected		ST	ST
17 18					TC	TC
19 20					TK	TK
21 22	GND -48	Emergency Transfer Relay Power	GND -48	Emergency Transfer Relay Power	LC	LC
23 24	GND -48		GND -48		ST	ST
25 26	GND -48		GND -48		TC	TC
27 28	GND -48		GND -48		TK	TK
29 30	GND -48		GND -48		LC	LC
31 32	GND -48		GND -48		ST	ST
33 34	GND -48		GND -48		TC	TC

TABLE 4-H. Auxiliary Lead Appearances at 66-Type Cross-Connect Field (Contd)

66 Connecting Block Terminals	System 75 Auxiliary Connector Outputs		System 75 XE Auxiliary Connector Outputs	Z1A Emergency Transfer Unit Outputs	574-5 Emergency Transfer Unit Outputs	
35 36	Not Connected		Not Connected	TK	TK	
37 38	GND -48	ACC Power		LC	LC	
39 40	GND -48			ST	ST	
41 42	GND -48			TC	C0M1 N01	
43 44	Not Connected			TK	NC2 NC1	
45 46				Ext Alarm A Ext Alarm B	LC	C0M2 N02
47 48				Not Connected	ST	C0M3 NC3
49 50			INADS		INADS	PWR

Installing the Sneak Fuse Panels

Install the sneak fuse panels as near as possible to the network interface. The sneak fuse panel has two mounting screw slots. To install the panel, proceed as follows:

1. Hold the panel against the mounting surface and mark the upper right and lower left mounting screw locations and remove panel.
2. Drill pilot holes at the marked locations, and partially install the screws.
3. Slide the panel onto the mounting screws and tighten.
4. Repeat the procedure for each additional sneak fuse panel.

Cable Installation

Labeling

The port label shown in Figure 4-20 is installed on both ends of the 25-pair switch cables that connect to the Trunk/Auxiliary Field and the Distribution Field. The blue/yellow building and floor labels are optionally used for cables that connect from the equipment room to a site or satellite located on another floor or in another building. An additional yellow label is shown. This yellow label is used for auxiliary circuits that connect to the Trunk/Auxiliary Field or SSI circuits that connect to an Applications Processor.

The blue/yellow label is used on 25-pair station cables that connect to site or satellite closets.

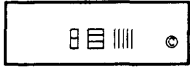
LABEL NAME	RANGE	SAMPLE LABEL
PORT CABLE	1A1-1A10, 1B1-1B20, 1C1-1C20, 1D1-1D20, 1E1-1E20	 ← PURPLE
BUILDING	FIELD IDENTIFIED	 ← BLUE/YELLOW
FLOOR	FIELD IDENTIFIED	 ← BLUE/YELLOW
AUXILIARY CABLE	FIELD IDENTIFIED	 ← YELLOW
SITE OR SATELLITE	A-F AND/OR FIELD IDENTIFIED	 ← BLUE/YELLOW

Figure 4-20. Equipment Room Cabling Labels

CABLE/JACK/BUILDING LABEL ORDERING INFORMATION

Description	Qty. Per. Code	Comcode
201A Labels	34 Sheets	103 969 994

Figure 4-21 shows the proper label installation on a 25-pair cable connector (see Note).

Note: The label should be installed near the rear of the connectors shown so that it will not be obscured by any of the switch cabinet connector retainers. It can also be installed on the skin of the cable near the connector.

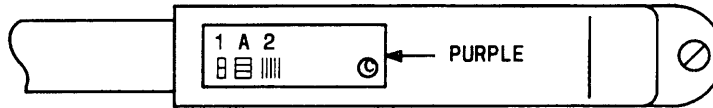


Figure 4-21. Self-Stick Label Installation on 25-Pair Cable Connector

If cable labels are not used with 66-type hardware, the proper labeling information can be written on both the cable connector and the velcro cable retainer at the 157B connecting block using a permanent felt-tipped pen.

Routing Cable Guidelines

The following guidelines should be followed when installing the equipment room cabling. Following these guidelines will make optimum use of the cable slack managers and make future cabling additions and changes easier.

General

Figure 4-22 shows cable routing through the cable slack manager for a 1-cabinet installation using cable routing from the bottom. Figure 4-23 shows cable routing through the cable slack manager using cable routing from the top. Cables route through the cable slack manager in either the cabinet or wall troughs or when needed through the two center troughs.

Port cables should use the cabinet trough for the parallel runs. The station cables should use the wall trough. The center troughs are used after the cabinet and wall troughs are filled.

Figure 4-24 shows typical cable routing from the switch cabinet to the cross-connect field using cable routing from the bottom. Figure 4-25 shows cable routing from the switch cabinet to the cross-connect field using cable routing from the top.

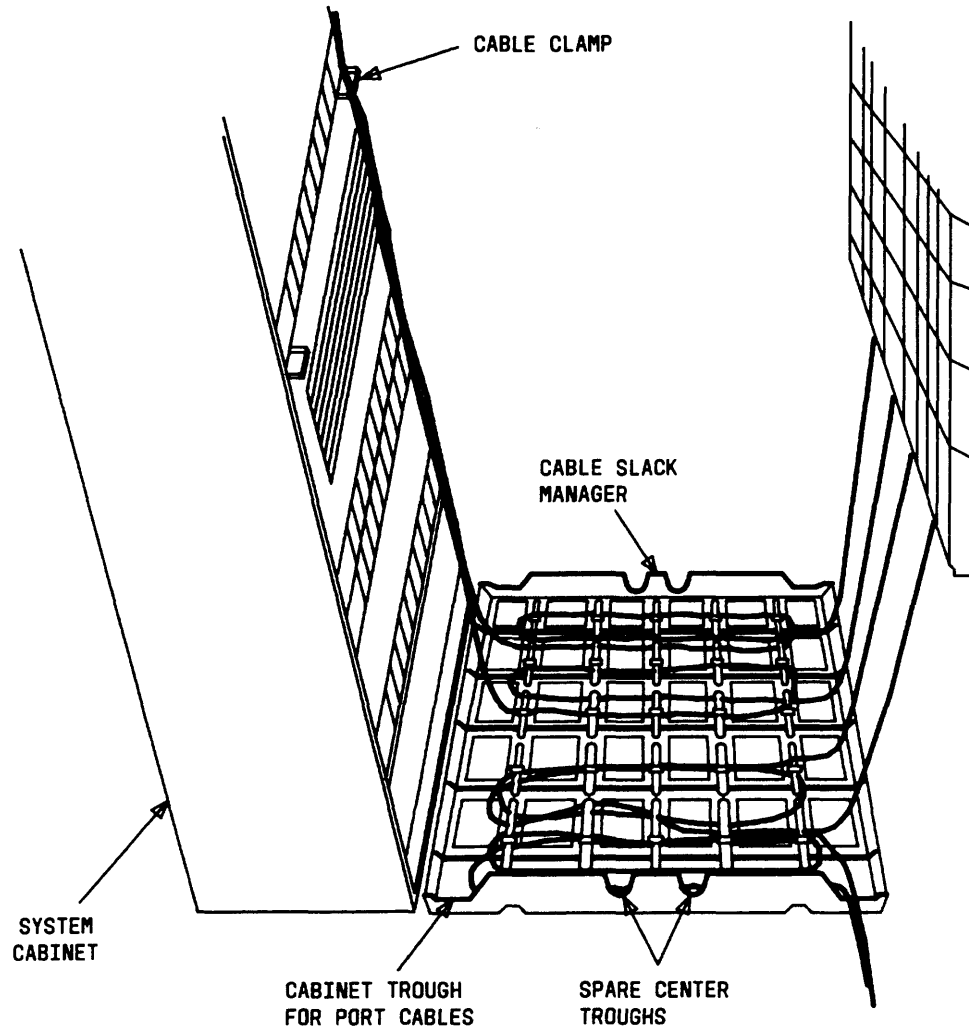


Figure 4-22. Cable Routing Through Cable Slack Manager—1-Cabinet Installation (Using Cable Routing From The Bottom)

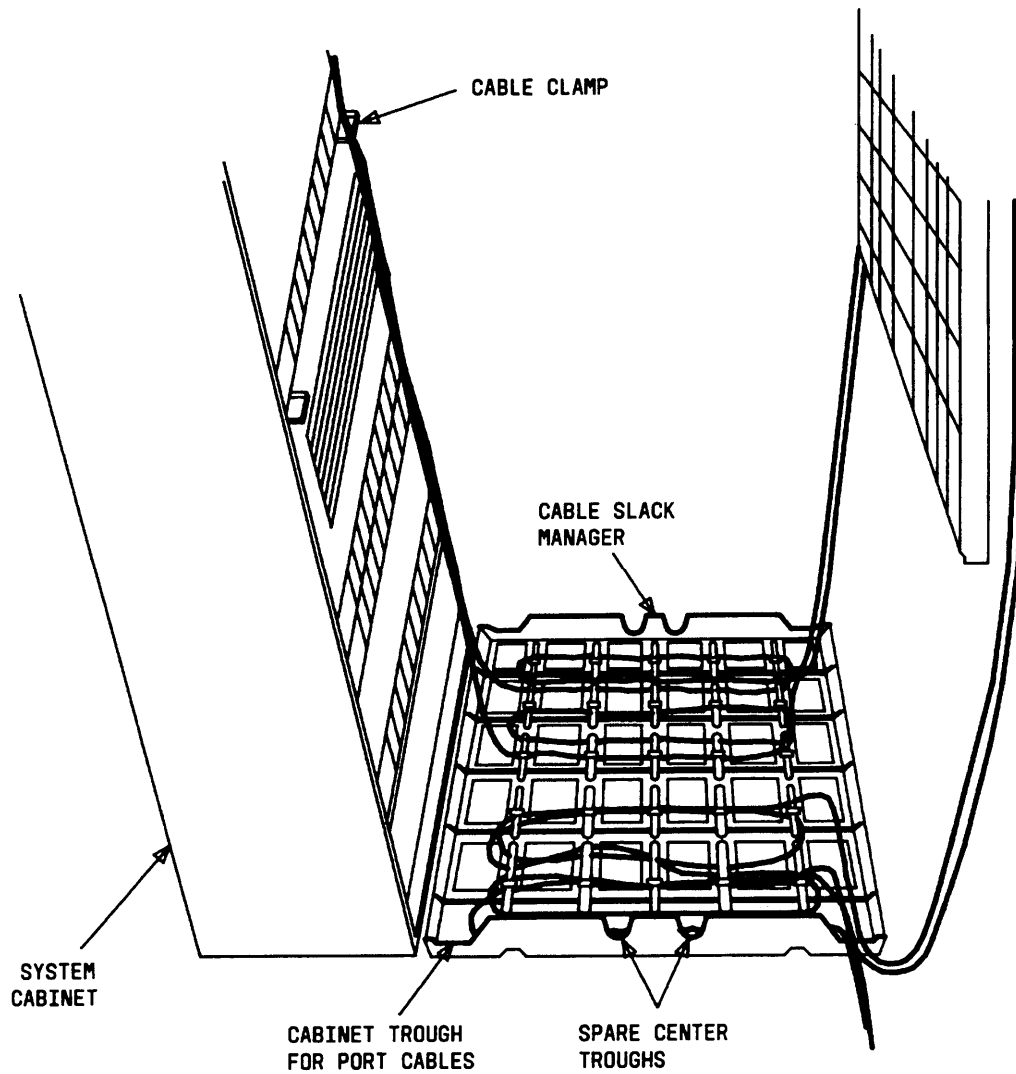
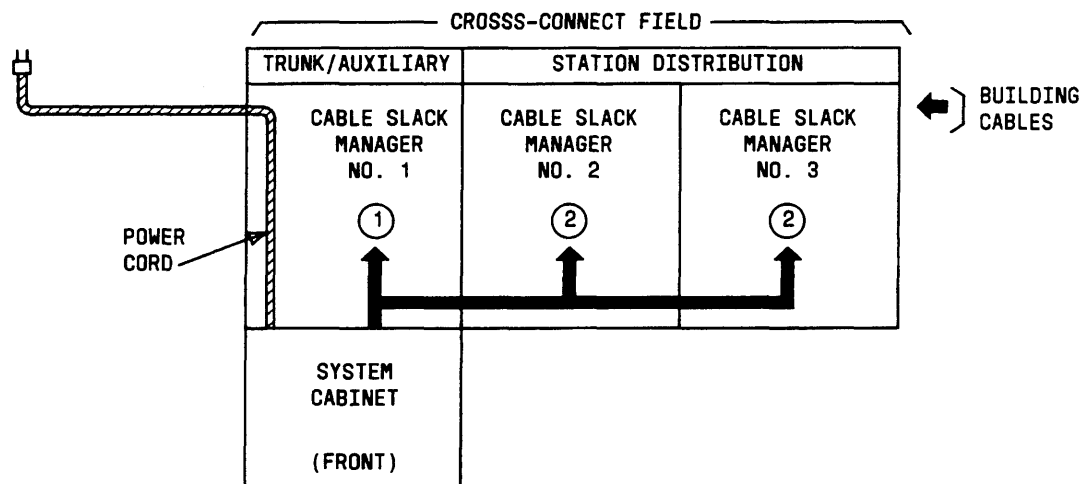


Figure 4-23. Cable Routing Through Cable Slack Manager—1-Cabinet Installation (Using Cable Routing From The Top)



- ① CABLES RUN FROM SWITCH CABINET TO TRUNK/AUXILIARY FIELD.
- ② CABLES RUN FROM SWITCH CABINET TO STATION DISTRIBUTION FIELD.

Figure 4-24. Cable Routing From Switch Cabinet to Cross-Connect Field (Using Cable Routing From The Bottom)

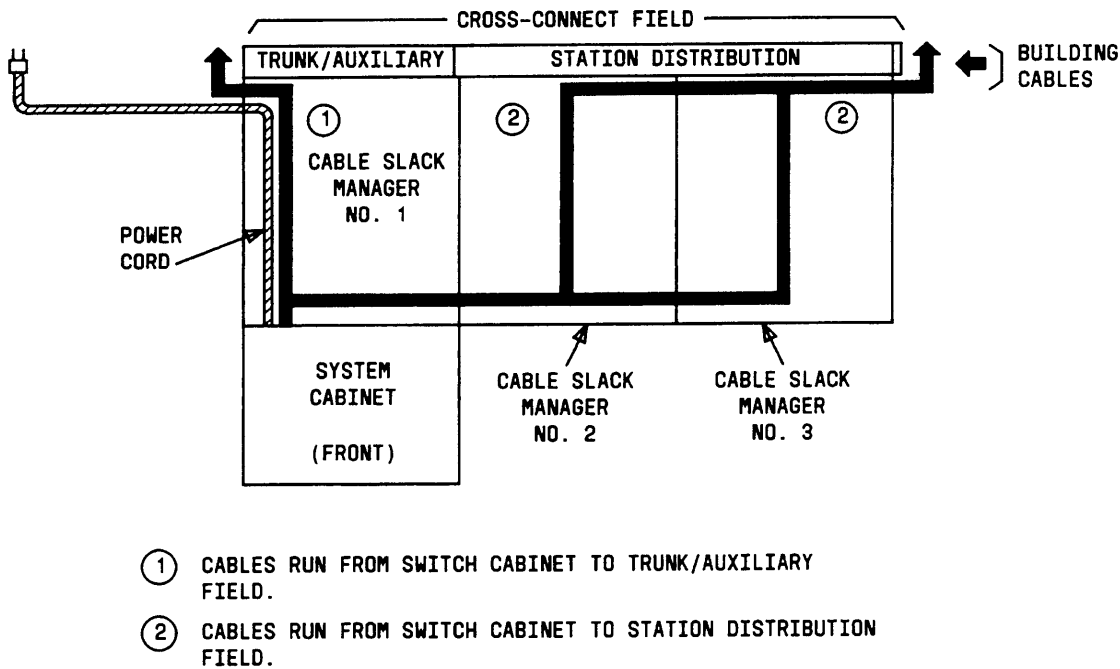


Figure 4-25. Cable Routing From Switch Cabinet to Cross-Connect Field (Using Cable Routing From The Top)

Routing Cables From Switch Cabinet to Cross-Connect Field

The following guidelines should be followed when routing cables from the switch cabinet to the cross-connect field.

- When cable routing from the bottom is used, each individual port cable should be first connected to the switch cabinet and then routed from the switch cabinet along the front trough of the cable slack manager to the front of the connecting block where the port cable is to be installed.
- When cable routing from the top is used, each individual port cable should be first connected to the switch cabinet and then routed from the switch cabinet along the front trough of the cable slack manager and to the point where the cable will be routed to in order to exit the cable slack manager.
- Enough slack should be left at the cabinet to allow dressing of the cables (Figure 4-26).
- The cable is then routed perpendicularly from the front trough to the wall along side a row of five columns in the cable slack manager (see Note).

Note: Retainers mounted on the columns keep the cable from protruding above the top of the base of the cable slack manager.

- The length of the cable required to reach from the floor to the connector located on the connectorized 66-type connecting block is then determined.

- The cables must be supported on the wall using D rings.
- Cable slack is stored perpendicular to the wall and cabinet by coiling the cable around the columns in the cable slack manager. The first run should always go back and forth the full length of five columns in the cable slack manager.
- The cable is then connected to the connecting block connector.

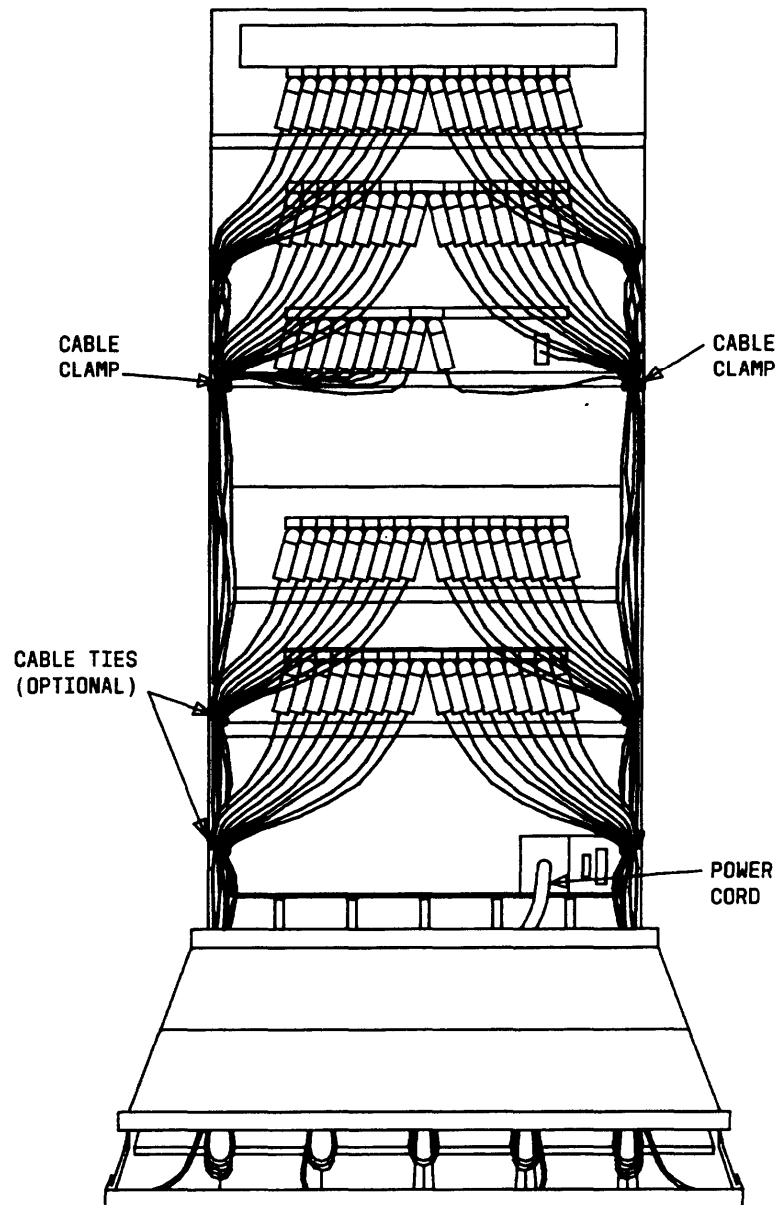


Figure 4-26. Typical Port Cable Installation at Switch Cabinet

Installing Control Carrier Outputs Cable

The control carrier AUXILIARY connector outputs include the following:

- Alarm monitoring for the Applications Processor and the Auxiliary Cabinet
- Seven -48 volts dc power sources for emergency transfer units
- Three -48 volts dc power sources for remotely powering two attendant consoles and on executive's voice terminal adjunct (not provided on the System 75 XE)
- The Initialization and Administration System (INADS) trunk connection location.
- For the System 75 XE, access to a relay contact is available for a customer provided alarm that can be used to connect a light, bell, or similar type device. The relay can be administered so that it will make contact when a major, minor or warning alarm condition exists on the system. The circuitry required for this feature must be provided by the customer. The device connected to the alarm leads must not exceed a rating of more than 100 volts at 3/4 amps.

A 25-pair switch cable connects the control carrier AUXILIARY connector (see Figures 4-27 and 4-28) to a 66-type connecting block in the yellow field of the Trunk/Auxiliary Field.

The lead designations for the AUXILIARY connector, shown in Table 4-H, should be written on the connecting block. To connect the cable, do the following:

1. If cable labels are being used, install a YELLOW auxiliary label on both connectors of a switch cable. The letters "AUX" should be written on each label. If cable labels are not being used, the letters "AUX" should be written on each cable connector.
2. Run and connect switch cable from AUXILIARY connector on rear of control carrier through cable slack manager to the 66-type connecting block in the yellow field of the Trunk/Auxiliary Field.

The output wiring connections for alarm monitoring, emergency power failure, accessory power, and the INADS trunk interface is contained in this guide under the heading **MISCELLANEOUS WIRING INSTALLATION**.

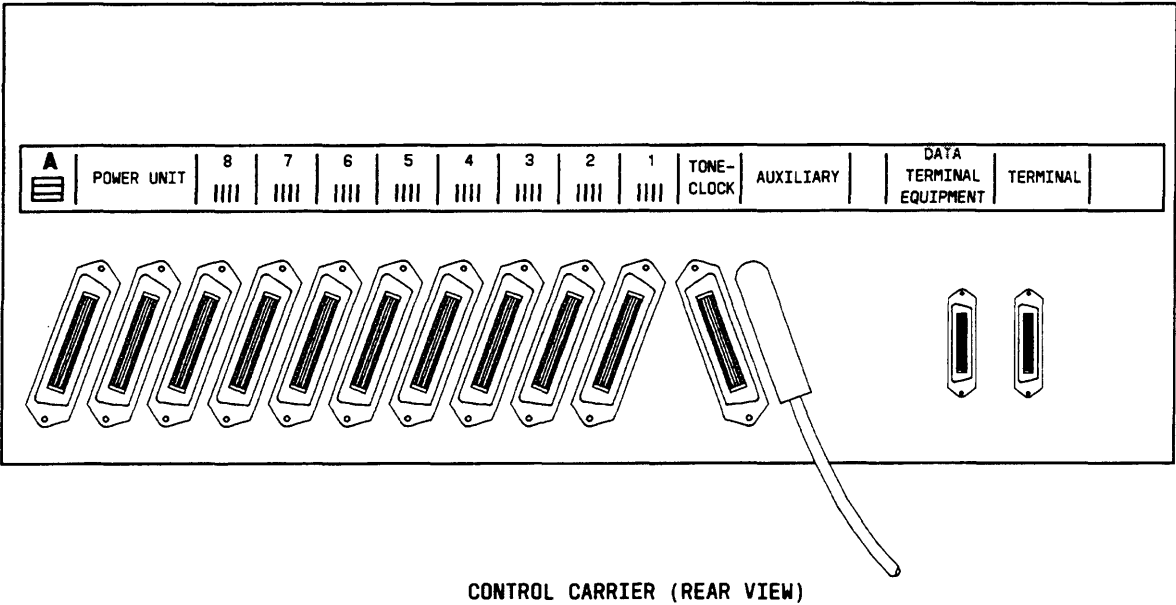


Figure 4-27. Control Carrier Outputs (AUXILIARY Connector)—System 75

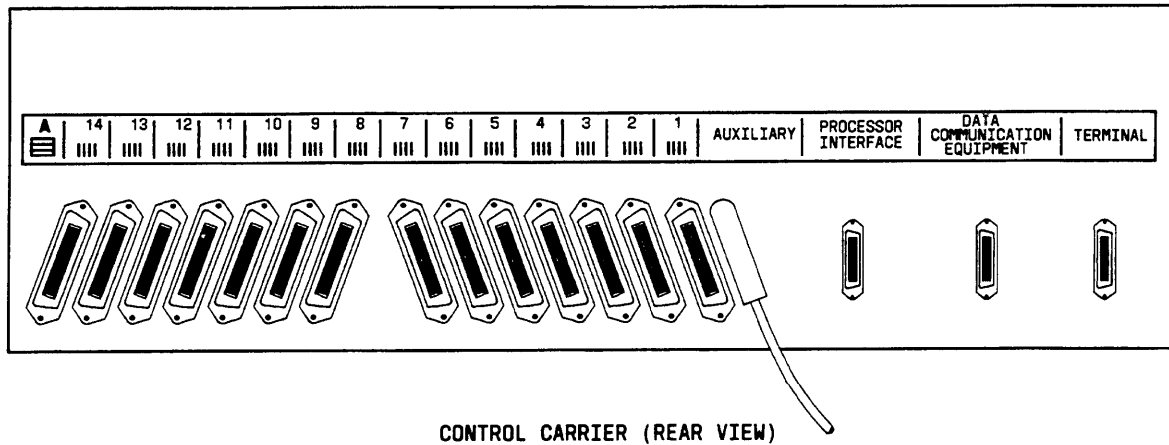


Figure 4-28. Control Carrier Outputs (AUXILIARY Connector)—System 75 XE

Installing Trunk Cables Between Network Interface, Sneak Fuse Panel, and System Cabinet

The trunk pairs installed by the local telephone company will appear in the green field with up to 24 pairs on each 66-type connecting block for the 1-pair central office trunks. The tie trunks will appear in the green field with up to eight 3-pair trunks on each 66-type connecting block. WP-90929, Lists 2 and 4 concentrator cables are used between the 66-connecting block in the purple field and the switch cabinet. jumper wires between the green and purple fields can be used in order to establish the correct 3-pair modularity for both the 1-pair and 3-pair trunks. Table 4-G shows switch port appearances at the cross-connect field, and Figures 4-29, 4-30, and 4-31 show the carrier connectors located on the rear of the switch cabinet that are connected to the purple field.

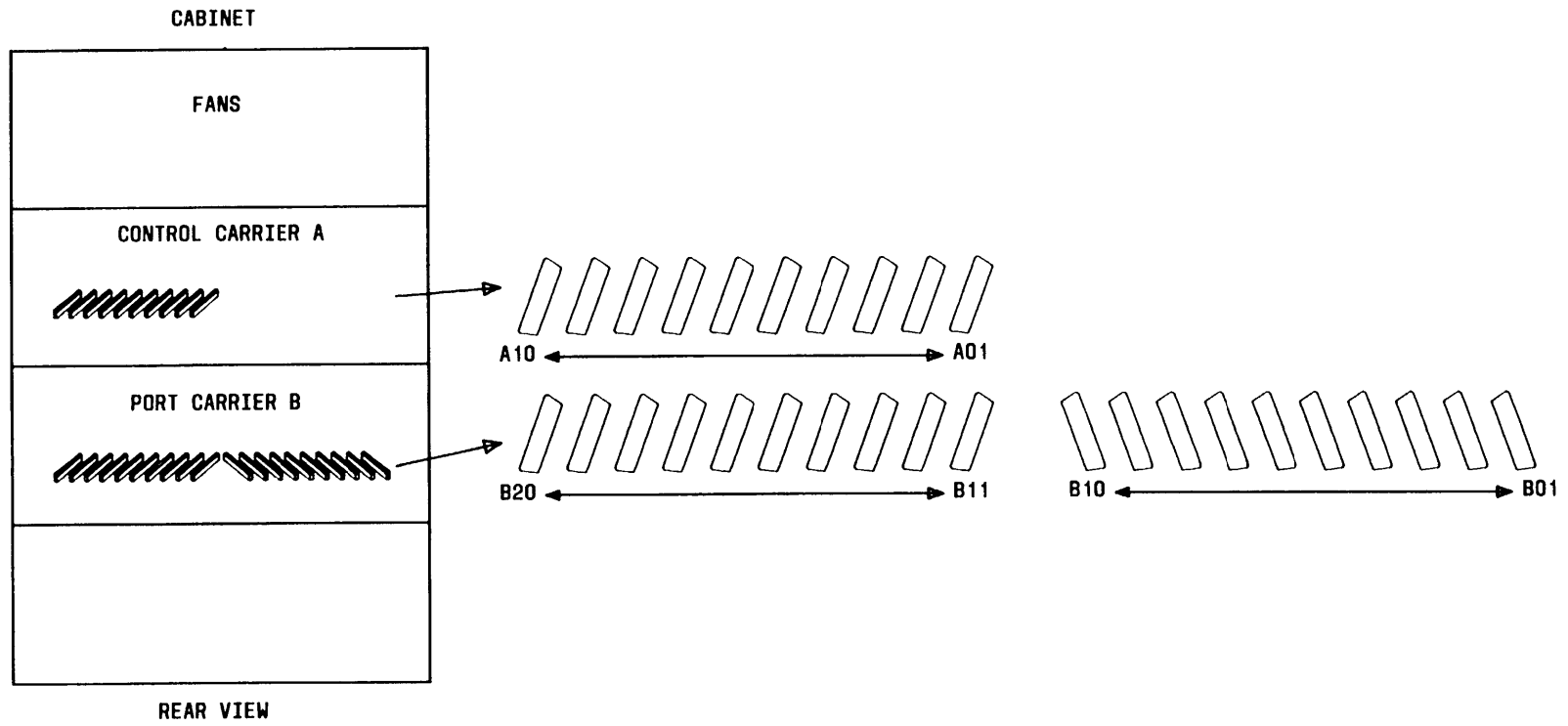


Figure 4-29. System 75 2-Carrier Slot Addresses

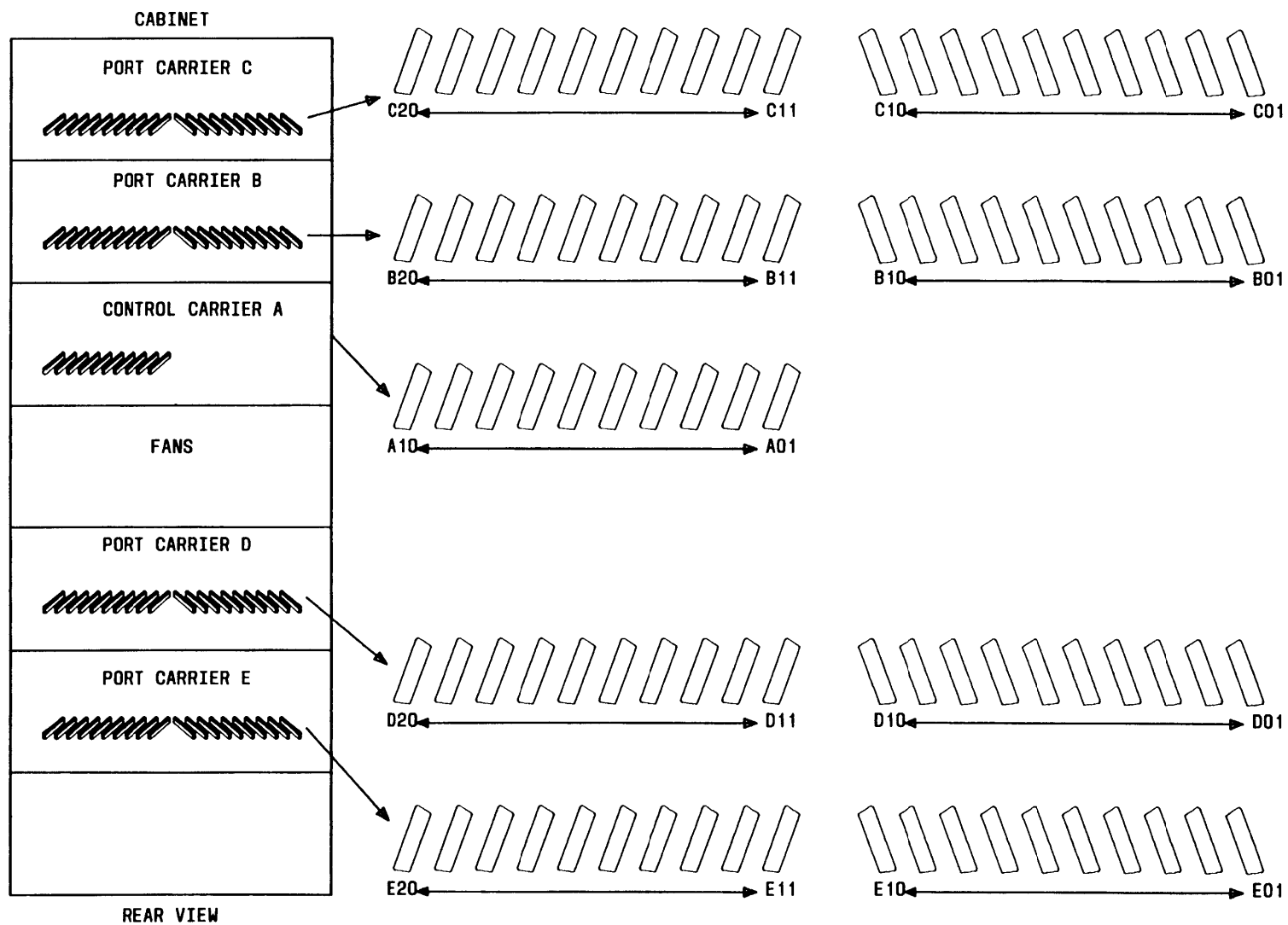


Figure 4-30. System 75 5-Carrier Slot Addresses

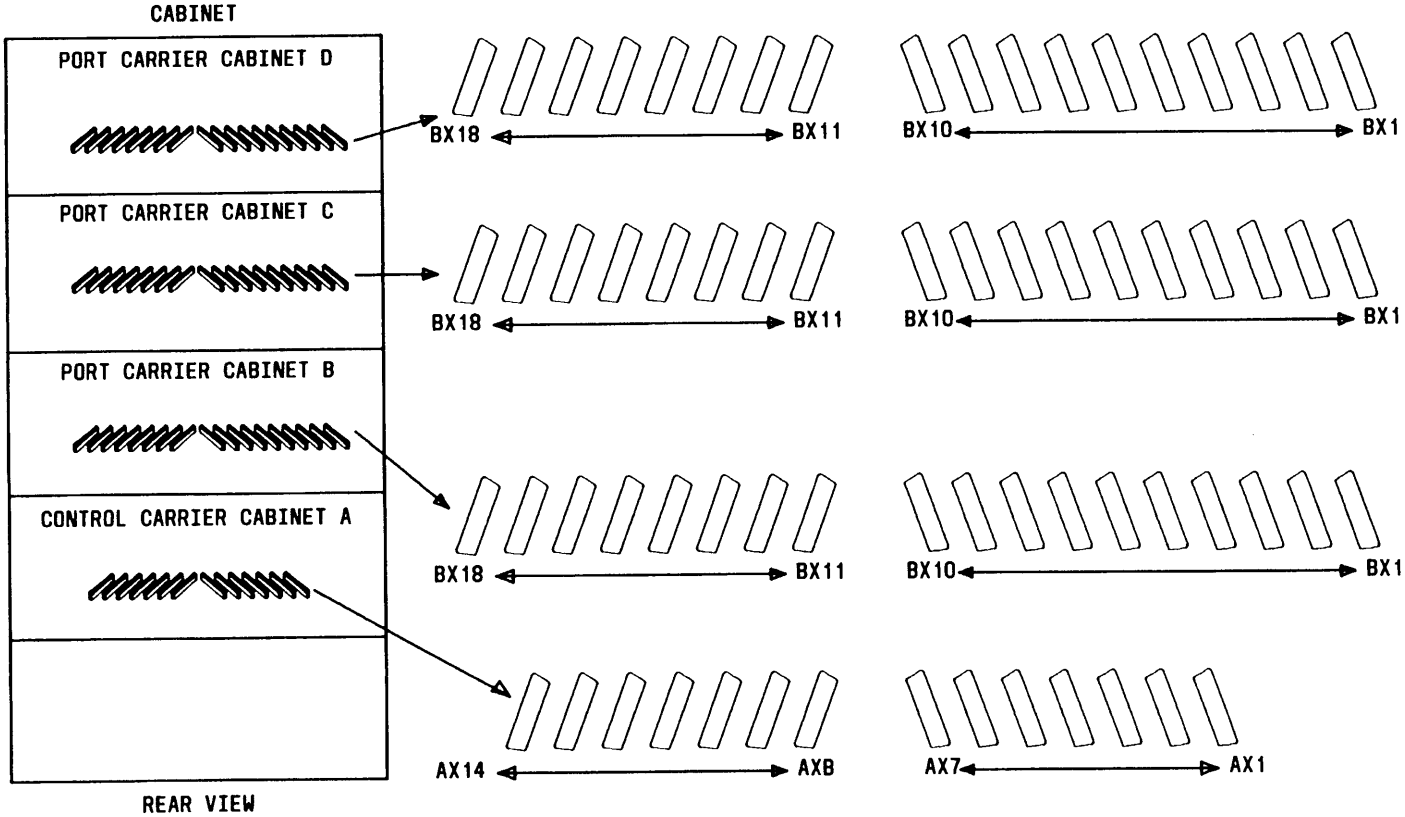


Figure 4-31. System 75 XE Carrier Slot Addresses

Connecting Trunk Pairs to the Switch Cabinet Using Concentrator Cables

Figure 3-32 shows trunk pairs connected to the switch cabinet using concentrator cables. To install the cables, proceed as follows:

1. Connect B25A cables between the network interface and the sneak fuse panels.
2. Connect B25A cables from the sneak fuse panels to the 66-type connecting blocks in the green field.
3. Install bridging clips on the 66-type connecting block (see Note).

Note: The left half of the 66-type connecting block will be labeled as part of the green cross-connect field and the right half of the connecting block will be labeled as part of the purple cross-connect field.

4. Connect the single-fingered end of the concentrator cables to the 66-type connecting block.
5. Connect the 3-fingered end and 2-fingered ends of the concentrator cables to the appropriate carrier slots. Equipped carrier slots are identified on the Customer Service Order. It is helpful to mark the nomenclature strips above the carriers at rear of cabinet to identify the equipped slots.
6. Label connectors on both ends of the cable that connect to the switch cabinet.
7. Dress cables down sides of cabinet and store excess cable slack in the cable slack manager as described previously.

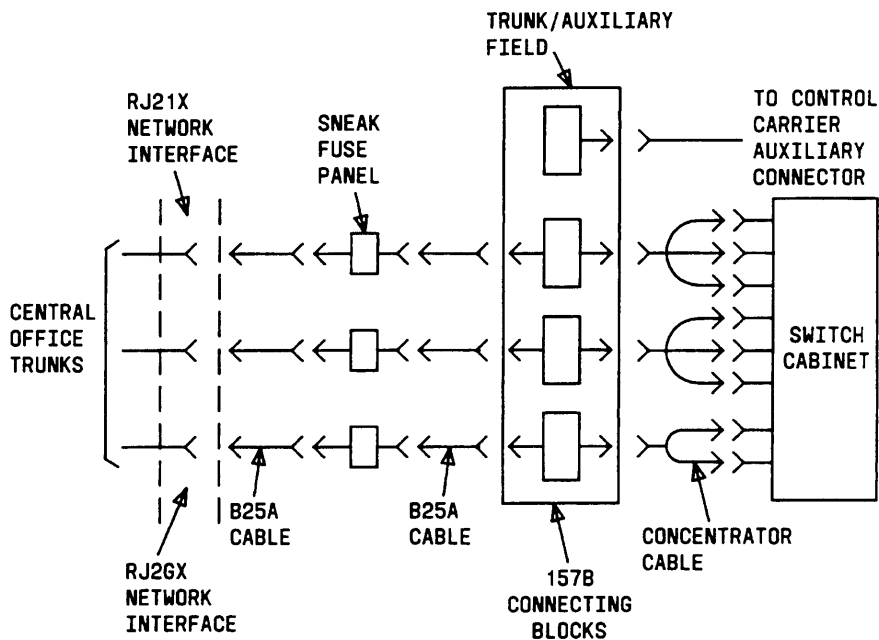


Figure 4-32. Connecting Trunk Pairs Used for 1-Pair Trunk Circuits; DID, Loop Start, Ground Start Using Concentrator Cables

Connecting Trunk Pairs to the Switch Cabinet Using Jumper Wires To Establish 3-Pair Modularity

Figure 3-33 and 3-34 show trunk pairs connected to the switch cabinet using jumper wires to establish 3-pair modularity. To connect the trunk pairs to the purple field, proceed as follows:

1. Connect B25A cables between the network interface and the sneak fuse panels.
2. Connect B25A cables from the sneak fuse panels to the 66-type connecting blocks in the green field.
3. Connect 1-pair patch cords or jumper wires from each green 66-type connecting block to the purple and yellow 66-type connecting blocks as shown by the example in Figure 3-33 for 1-pair central office trunks or by the example in Figure 3-34 for 3-pair tie trunks.

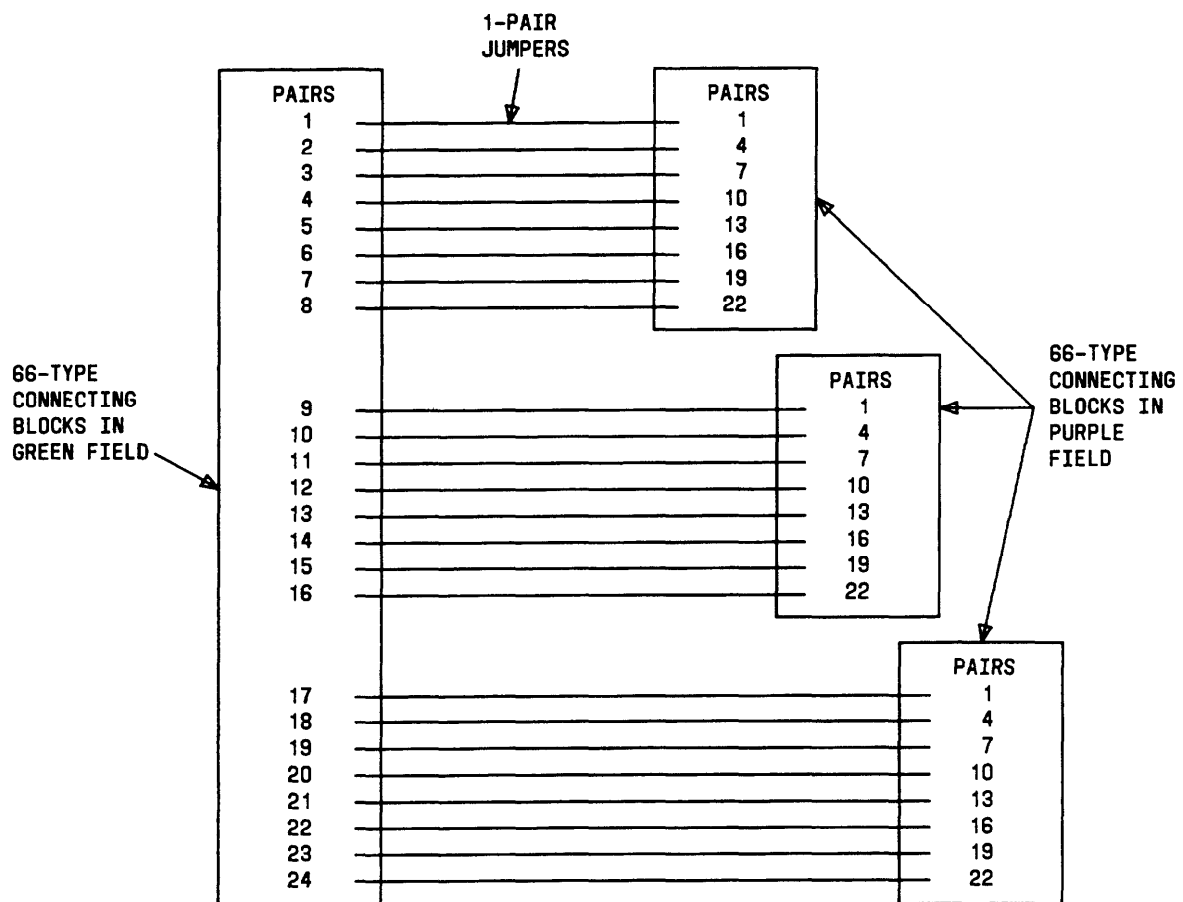


Figure 4-33. Example of Establishing 3-Pair Modularity for Trunk Pairs Used for 1-Pair Trunk Circuits; DID, Loop Start, Ground Start

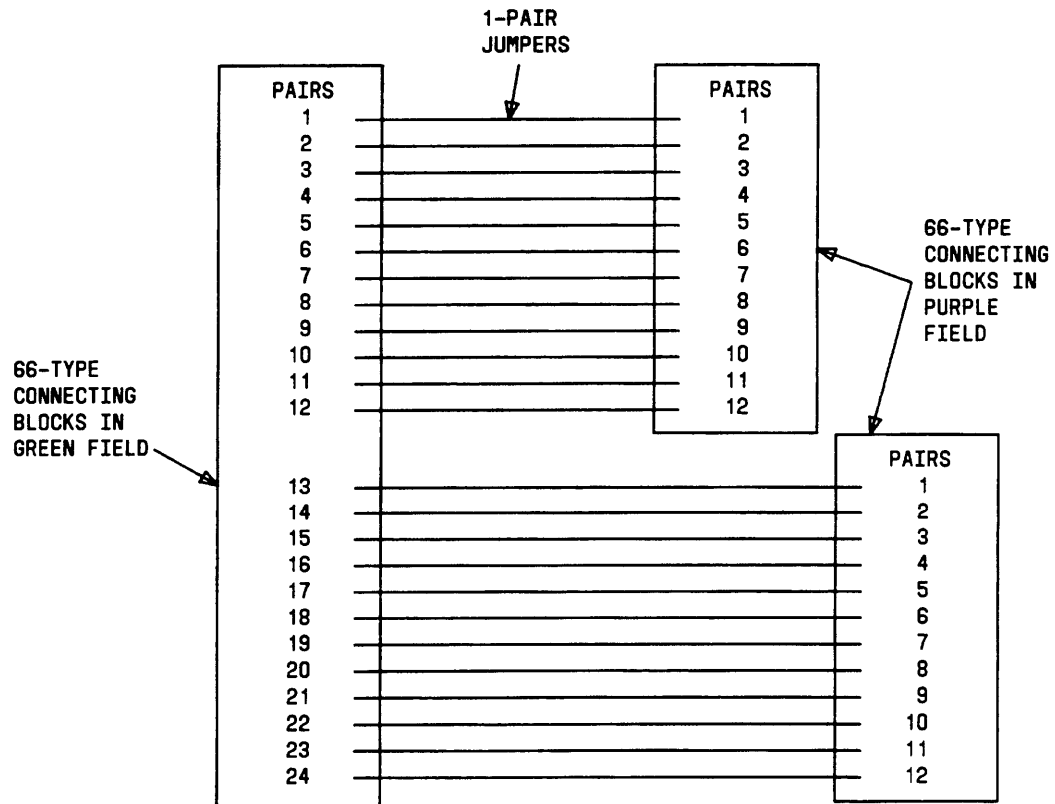


Figure 4-34. Example of Establishing 3-Pair Modularity for Trunk Pairs Used for 3-Pair Tie Trunks

Installing Coupled Bonding Conductor Grounding

A coupled bonding conductor must be tie-wrapped to all trunk cables. The coupled bonding conductor connects to the cabinet single-point ground block and runs all the way to the approved ground located nearest the telephone company-owned protector block at the building cable entrance facility (see Figure 4-35).

Note: Approved ground is defined in the *AT&T System 75—System Description* (555-200-200) or *AT&T System 75 XE—System Description* (555-201-200).

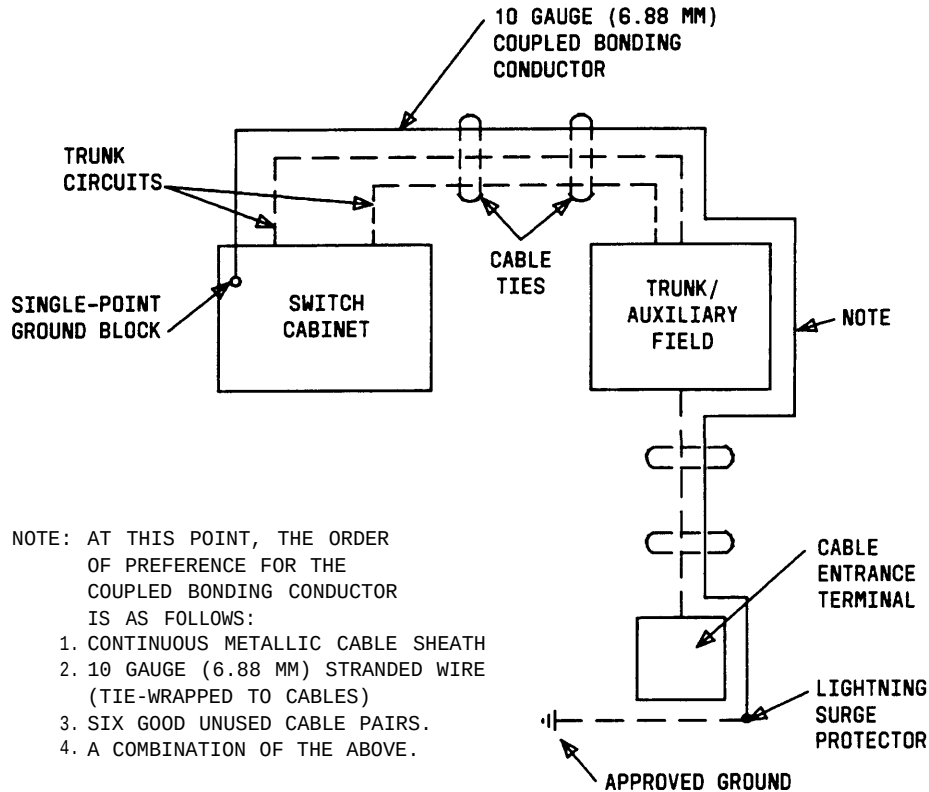


Figure 4-35. Coupled Bonding Conductor Grounding Installation

Installing Cables Between Switch Cabinet and the Cross-Connect Field

Before starting the following procedure, refer to **Routing Cables From Switch Cabinet to Cross-Connect Field** guidelines. Also, all lead designations for the purple field should have been previously labeled on the 66-type connecting blocks as described under the heading **Labeling the Cross-Connect Field**.

1. Install self-stick port labels or write the labeling information on the back of the cable connectors for the first switch cable.

Note: Labeling should not be obscured by the switch cabinet 25-pair connector retainers.

2. Connect one end of switch cable to appropriate carrier slot and dress down back of cabinet.
3. Route the cable from the switch cabinet through the cable slack manager and store slack.
4. Connect the 25-pair cable to the 66-type connecting block connector.
5. Repeat steps 1 through 4 until all cables are installed.
6. When 66-type connecting blocks are used, "D" rings should be installed to hold the cables against the wall, so the cables can be routed up the wall to the connecting blocks.

Installing Cables Between Cross-Connect Field and Auxiliary Cabinet

Auxiliary equipment that connects to the cross-connect field can be optionally mounted inside the auxiliary cabinet. The equipment connects to an ED-1E1443-10 (Group 1) intraconnection panel provided with the auxiliary cabinet. The intraconnection panel consists of a 110-type 100-pair wiring block located inside the cabinet. The wiring block is prewired to four 25-pair female connectors on a mounting plate that is attached to the outside rear skin of the cabinet.

Auxiliary equipment is punched down on the 110-type wiring block. B25A cables connect the female 25-pair connectors to the cross-connect field. A25D cables connect the female 25-pair connectors to the switch cabinet. Details for installing the equipment and making the connections to the cross-connect field are included under the heading **AUXILIARY EQUIPMENT INSTALLATION** in this manual.

STATION WIRING DESIGN

Description

The following hardware and cabling is used in the station wiring design:

- Information outlets
- Station Cables
- Closets
 - Site locations
 - Satellite locations
- Adapters.
- Labeling

A brief description of each of the above listed items follows. The station wiring labeling is described under the heading **STATION WIRING AND ASSOCIATED HARDWARE INSTALLATION**. Ordering information is not provided for station cables and information outlets. The ordering information for this equipment should be obtained from the *Premises Distribution System Equipment and Supplies Catalog*.

Information Outlets

Information Outlets are 8-pin modular wall jacks. Most of the outlets require wiring using push-on connections. Outlets are also available that connect to a double modular plug-ended 4-pair station cable run from the cross-connect field, a site or satellite location, or an adapter.

Station Cables

For clarity in describing the wiring in this manual, station cable is either 25-pair cable, multiple 25-pair cable, or 4-pair D-inside wire (DIW) run from the equipment room, a site or satellite location, or adapter to the information outlets. The following types of station cable (Figure 4-36) are available.

- **Connectorized 25-pair station cable**—This cable is used between the equipment room and the site or satellite locations or adapters. The cable used between the equipment room and the satellite closet is an A25B (female to female). The cable used between the equipment room and the site closet or adapter is also an A25B (female to female). The A25B cable is available with both ends connectorized (double-ended) and it is also available with only one end connectorized (single-ended) for use when punch-down connecting blocks are used.
- **Connectorized multiple 25-pair station cable**—This cable can be optionally used between the equipment room and the site or satellite locations or adapters. This cable consists of individually sheathed 25-pair cables with factory-installed 25-pair connectors on both ends. The cable used to connect to site locations or adapters should be female to female. The cable used to connect to the satellite location should also be a female to female. Staggered-finger cables are recommended for all multiple 25-pair station cables. The staggered-finger cables are available double-ended for use when connectorized connecting blocks are used or single-ended for use when punch-down connecting blocks are used.
- **Bulk Cable**—This cable is the same as the connectorized 25-pair cable or multiple 25-pair cable; however, the bulk cable is not connectorized on either end. It can be used between the equipment room and satellite closets when both contain field-terminated connecting blocks.
- **Nonconnectorized 4-pair station cable**—This cable is used when 4-pair station cables are to be field-terminated on the 66-type connecting blocks in the equipment room or satellite closet and the information outlets require push-on connection.
- **Single modular plug-ended 4-pair station cable**—This cable is used between adapters and information outlets that require push-on connections. It can also be used when 4-pair station cables are punched-down on the 66-type connecting blocks in the equipment room or satellite closet and modularly connected information outlets. The station cables are available in the following standard lengths:

10 feet (3.0 m)
 25 feet (7.6 m)
 50 feet (15.2 m)
 75 feet (22.9 m)
 100 feet (30.5 m)
 150 feet (45.7 m)
 200 feet (61.0 m).

- **Double modular plug-ended 4-pair station cable**—This cable is typically cut and used to provide nonstandard length runs between adapters and information outlets with push-on connections. It can also be used between adapters and modularly connected information outlets. It is available in the same lengths as the single modular plug-ended cable (see Note).

Note: If a 4-pair station cable length longer than 200 feet (61.0 m) is required, a 451A in-line adapter (double-ended modular female connector) is attached to the cable and a second 4-pair cable is plugged into the adapter for the additional distance (see Figure 4-37). The 451A in-line adapter is available in grey (Comcode 103 942 272) or ivory (Comcode 103 786 240).

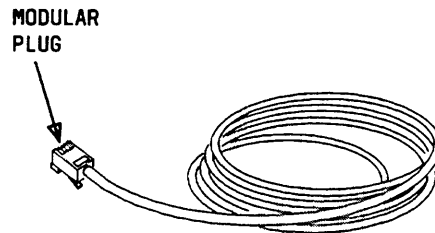


Figure 4-36. 4-Pair Single Modular Plug-Ended Station Cable

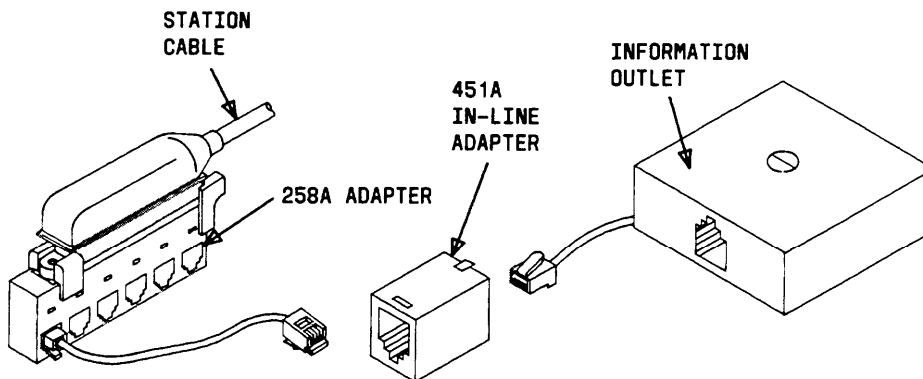


Figure 4-37. Example of Extending 4-Pair Station Cables

Closets

Site Locations

The site locations are closets that provide a point in the station wiring for the administration of remote powering. Adapters are used at site locations to terminate the 25-pair station cables and provide connection points (modular jacks) for power adapters and 4-pair station cables.

258A AND BR2580A ADAPTERS

The 258A and BR2580A adapters (Figure 4-38) plug into a 25-pair female cable connector. These adapters divide the 25-pairs of leads on the cable into six individual 4-pair (modular

jack) circuits. Remote powering is accomplished using a 400B2 adapter. (See **ADJUNCT POWERING** section for details.)

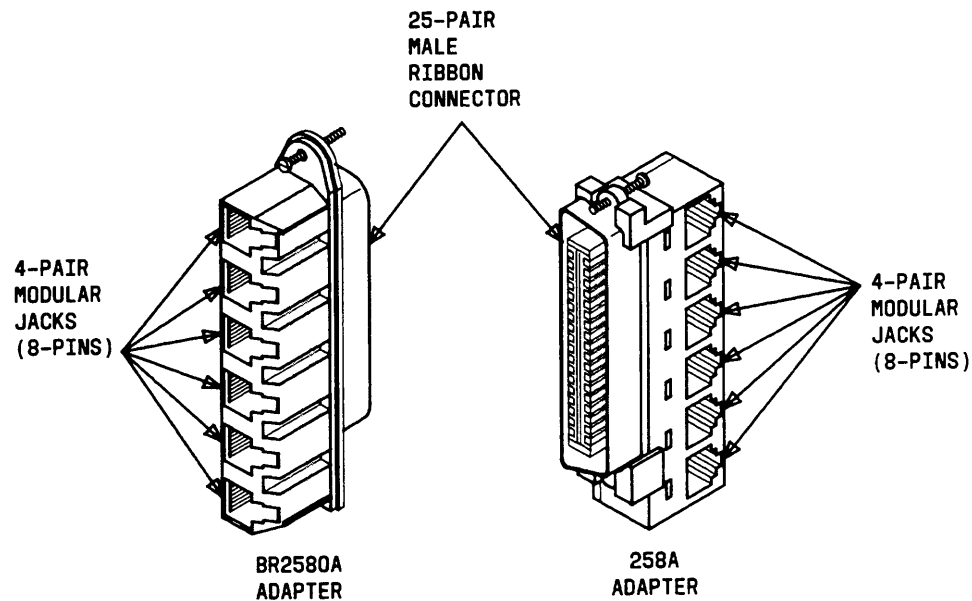


Figure 4-38. 258A and BR2580A Adapters

356A ADAPTER

The 356A adapter (Figure 4-39) plugs into a 25-pair female cable connector. The 356A adapter divides the 25-pairs of leads on the cable into eight individual 3-pair circuits. Although the circuits are 3-pair, the 356A adapter's modular jacks will accept an 8-pin modular plug used on the 4-pair station cable. Remote powering is accomplished using a 400B2 adapter. (See **ADJUNCT POWERING** section for details.)

Caution: *Adapters wired similarly to the 356A should not be used. Their jacks will not accept 4-pair plugs.*

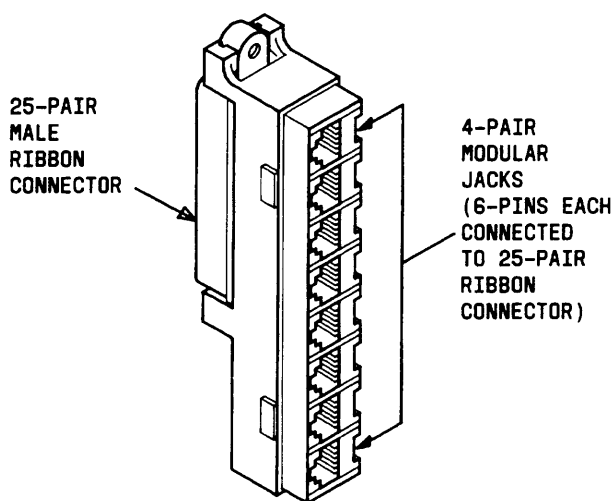


Figure 4-39. 356A Adapter

ZD8AJ ADAPTER

The ZD8AJ Adapter is used to connect the line cord from a MET set to an information outlet. The adapter interchanges pairs 3 and 4 to correspond with the pair assignments for the MET set. The MET set line cord plugs into the adapter and then the adapter plugs into the information outlet.

ADAPTER ORDERING INFORMATION

Description	Comcode
258A Adapter	102 605 136768
BR2580A Adapter	403 384 720
356A Adapter	104 158 829
400B Adapter	103 848 859
400B2 Adapter	104 152 558
ZD8AJ Adapter	103 881 421

Satellite Locations

Satellite locations are closets that provide an administration point (using cross-connect equipment) for station cables and where adjunct power may be applied. The station cable circuits from the equipment room cross-connect field are 3-pair. The hardware at the equipment room has been described previously. At the satellite location, 4-pair circuits run to the information outlets. The hardware used at the satellite location is 66-type connecting blocks. The 3-pair station circuits from the equipment room are terminated on a 66-type connecting block in the satellite closet white field and are then cross-connected to other 66-

type connecting blocks in the satellite closet blue field that terminate 4-pair station circuits to the information outlet. The 66-type connecting blocks that can be used in the satellite closet are the 66M1-50, 157B, and 154A-type mounting.

Station Circuit Distribution From Equipment Room

The following information should be helpful in explaining the station circuit distribution from the equipment room to the information outlets for new wiring installations. Diagrams are provided to show the options for running and connecting the station cables.

If most of the voice terminals that require remote powering are within 250 feet (76.2 m) of the equipment room, 4-pair station circuits are run from the equipment room to the information outlets. If this is not the case or if the customer requires 2-point administration, 3-pair station circuits are run to satellite locations. From the satellite locations, 4-pair station circuits are run to the information outlets.

4-Pair Station Circuits

Four-pair circuits can be run directly from an equipment room cross-connect field to a 258A or BR2580A adapter as shown in Figure 4-40. Four-pair station cables (DIW) connect the adapter to the information outlets.

The 4-pair DIW station cables can be run directly from the equipment room to the information outlets if 4-pair station circuits are used in the Distribution Field (see Figure 4-41). The station cables must be punched-down on the 66-type connecting blocks.

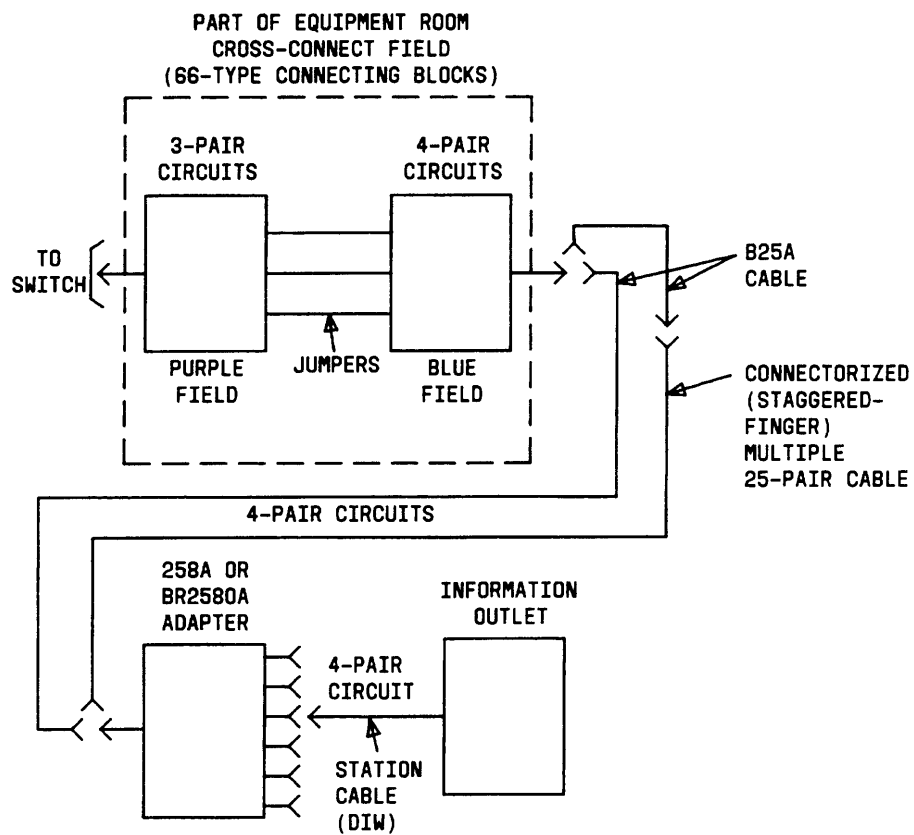


Figure 4-40. 4-Pair Circuit Distribution and Connectivity From Equipment Room Cross-Connect Field

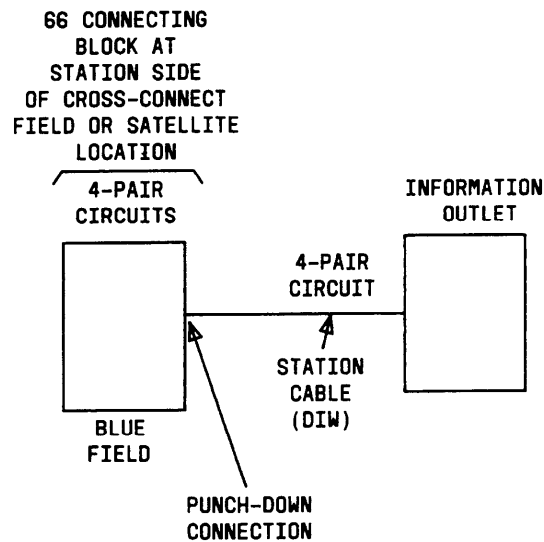
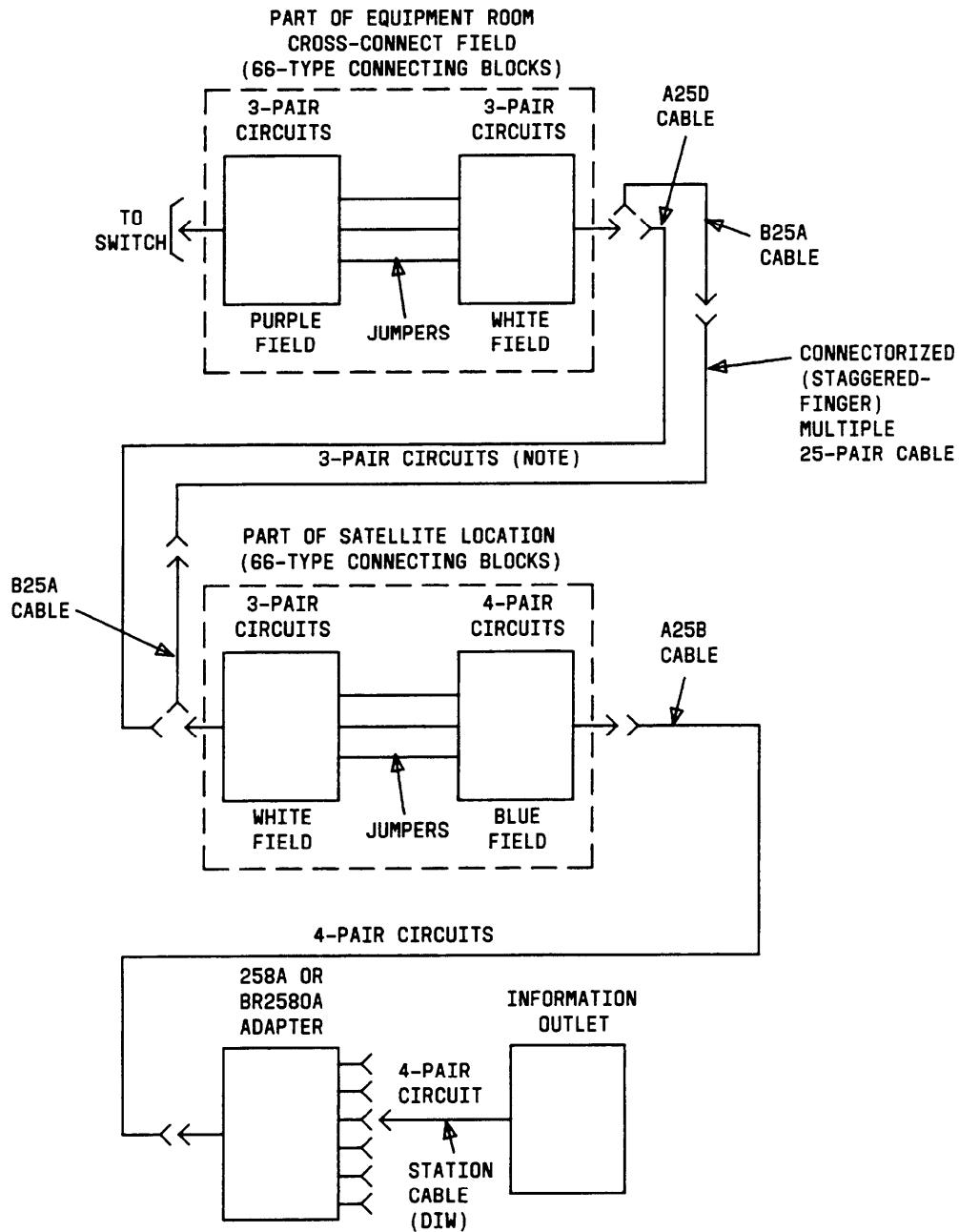


Figure 4-41. 4-Pair Home Run to Equipment Room or Satellite Location

3-Pair to 4-Pair Station Circuit Distribution

Figure 4-42 shows the 3-pair circuit distribution from an equipment room cross-connect field to a satellite location. Four-pair circuits are distributed from the satellite location to the information outlets.

Three-pair circuits can also be run directly from the equipment room cross-connect field to a 356A adapter as shown in Figure 4-43. Four-pair station cables (DIW) connect the adapter to the information outlets. Four-pair station cables (DIW) can be run directly from a satellite location to the information outlets as described previously (Figure 4-40 and 4-41).



NOTE:

1. IF FIELD TERMINATED 66-TYPE CONNECTING BLOCKS ARE USED AT THE EQUIPMENT ROOM AND SATELLITE LOCATION, BULK CABLE MAY BE USED TO RUN THE 3-PAIR CIRCUITS.

Figure 4-42. 3-Pair to 4-Pair Circuit Distribution and Connectivity From Equipment Room

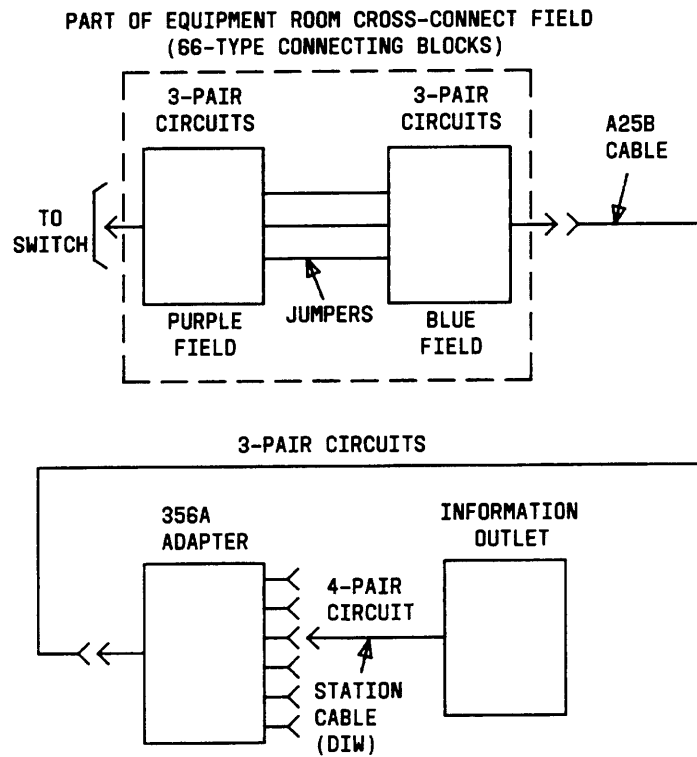


Figure 4-43. 3-Pair to 4-Pair Circuit Distribution and Connectivity From Equipment Room Using a 356A Adapter

Table 4-I provides detailed wiring information for the 25-pair cables, the adapters, and the information outlets.

Note: Bridged taps must not be used on any part of the station wiring.

TABLE 4-I. System Wiring

(Contd on Next Page)

25-Pair Cable							4-Pair Cable	
Term. No.	Term Lead Functions				D-Inside Cable Color Code	BR2580A or 258A Adapter Pin Num.	D-Inside Cable Color Code	Info. Outlet Term.
	500* 2500		7400 Series	EIA Term*				
	7100 Series	7300 Series	Att. Cons.	PDM TDM				
1	T	V1T			W-BL	26	W-BL	1
	R	V1R			BL-W	1	BL-W	2
		CT	TXT	TXT	W-O	27	W-O	3
		CR	TXR	TXR	O-W	2	O-W	4
		P-	PXT	PXT	W-G	28	W-G	5
		P+	PXR	PXR	G-W	3	G-W	6
	P-		P-		W-BR	29	W-BR	7
	P+		P+		BR-W	4	BR-W	8
2	T	V1T			W-S	30	W-BL	1
	R	V1R			S-W	5	BL-W	2
		CT	TXT	TXT	R-BL	31	W-O	3
		CR	TXR	TXR	BL-R	6	O-W	4
		P-	PXT	PXT	R-O	32	W-G	5
		P+	PXR	PXR	O-R	7	G-W	6
	P-		P-		R-G	33	W-BR	7
	P+		P+		G-R	8	BR-W	8
3	T	V1T			R-BR	34	W-BL	1
	R	V1R			BR-R	9	BL-W	2
		CT	TXT	TXT	R-S	35	W-O	3
		CR	TXR	TXR	S-R	10	O-W	4
		P-	PXT	PXT	BK-BL	36	W-G	5
		P+	PXR	PXR	BL-BK	11	G-W	6
	P-		P-		BK-O	37	W-BR	7
	P+		P+		O-BK	12	BR-W	8

* R1V2 or R1V3 Only

TABLE 4-I. System Wiring (Contd)

25-Pair Cable							4-Pair Cable	
Term. No.	Term Lead Functions				D-Inside Cable Color Code	BR2580A or 258A Adapter Pin Num.	D-Inside Cable Color Code	Info. Outlet Term.
	500* 2500 7100 Series	7300 Series	7400 Series Att. Cons.	EIA Term* PDM TDM				
4	T R	V1T			BK-G	38	W-BL	1
		V1R			G-BK	13	BL-W	2
		CT	TXT	TXT	BK-BR	39	W-O	3
		CR	TXR	TXR	BR-BK	14	O-W	4
		P-	PXT	PXT	BK-S	40	W-G	5
		P+	PXR	PXR	S-BK	15	G-W	6
	P- P+		P- P+		Y-BL	41	W-BR	7
					BL-Y	16	BR-W	8
5	T R	V1T			Y-O	42	W-BL	1
		V1R			O-Y	17	BL-W	2
		CT	TXT	TXT	Y-G	43	W-O	3
		CR	TXR	TXR	G-Y	18	O-W	4
		P-	PXT	PXT	Y-BR	44	W-G	5
		P+	PXR	PXR	BR-Y	19	G-W	6
	P- P+		P- P+		Y-S	45	W-BR	7
					S-Y	20	BR-W	8
6	T R	V1T			V-BL	46	W-BL	1
		V1R			BL-V	21	BL-W	2
		CT	TXT	TXT	V-O	47	W-O	3
		CR	TXR	TXR	O-V	22	O-W	4
		P-	PXT	PXT	V-G	48	W-G	5
		P+	PXR	PXR	G-V	23	G-W	6
	P- P+		P- P+		V-BR	49	W-BR	7
					BR-V	24	BR-W	8
Spare						50 25		

* R1V2 or R1V3 Only

Layout

Locating Information Outlets

It is the responsibility of the customer or marketing representative to provide floor plans showing the information outlet locations and types (flush- or surface-mounted). The floor plans must also provide a complete view of all conduit and cabling facilities in the building.

Locating Satellites and Sites

Use the following information when determining site, satellite, or adapter locations.

- a. Keep the number of locations to a minimum.
- b. To minimize the station wiring distances, centrally locate the sites, satellites, or adapters among the information outlets.
- c. Site and satellite locations must be easily accessible and contain ac power outlets.

Adapter Requirements

One 258A or BR2580A is required for each 25-pair station cable containing 4-pair station circuits. One 356A adapter is required for each 25-pair station cable containing 3-pair station circuits.

66-Type Hardware Requirements

The hardware requirements are the same as for the equipment room.

Sizing 4-Pair Station Cables (DIW)

Use the floor plan scale to determine the station cables (DIW) required per standard Premises Distribution Systems wiring concepts.

Sizing 25-Pair and Multiple 25-Pair Station Cables

The floor plan scale is used to determine the approximate length of each station cable. The station cables **must be** sized and selected properly to make maximum use of the 66-type hardware at the equipment room or satellite location.

Twenty-five pair A25B cables (double-ended or single-ended) are used to connect adapters directly to the equipment room cross-connect field or satellite location. Staggered-finger cables (double-ended or single-ended) are recommended for multiple 25-pair cables run from the equipment room or satellite location to the adapters. If connectorized 66-type connecting blocks are being used, B25A cables are required at the equipment room or satellite location to connect the double-ended (female to female) staggered-finger cables to the 66-type connecting blocks.

Use the following information to determine the cable size (cable pairs) required for either 3-pair or 4-pair circuits. Note the length and size on the floor plan to aid in the ordering and installation of the station cables.

3-Pair Station Cable Circuits

To determine the size of station cables containing 3-pair circuits, multiply the number of 3-pair circuits required at the satellite location by 3.5. This will provide additional pairs for growth and compensate for the fact that every 25th pair in a cable is not used.

Using the minimum size cable requirement, select a cable size that is rounded up to the next highest available cable bundle size.

4-Pair Station Cable Circuits

To determine the size of station cables containing 4-pair circuits, determine the number of information outlets served by the equipment room cross-connect field or satellite location. Multiply this number by 4 (see Note).

Note: This formula may not compensate for the unused 25th pair in all cases. If not, you must allow for it.

Using the minimum size cable requirement, select a cable size that is rounded up to the next highest available cable bundle size.

STATION WIRING AND ASSOCIATED HARDWARE INSTALLATION

Installing the Station Cables

Station labels shown in Figure 4-44 must be installed on both ends of the 25-pair station cables. These labels are provided with the 201A cable/jack station labels (Comcode 103 969 994). These labels must match the previously installed labels at the cross-connect field. For example, if the cable plugs into a 66-type connecting block connector associated with jacks labeled 1 through 6, the cable label must be numbered 1 through 6. If cable/jack labels are not being used, the label information can be written on the cable connector using a permanent felt-tipped pen.

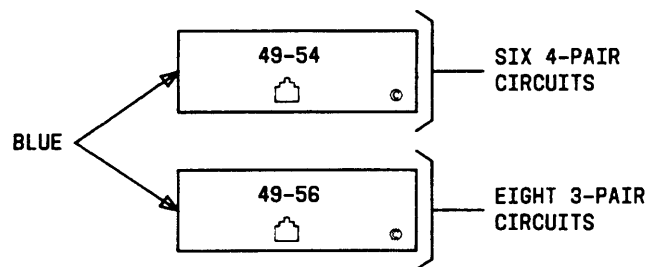


Figure 4-44. 25-Pair Station Cable Labels

Install the station cables between the equipment room cross-connect field and the site, satellite, or adapter locations. If 25-pair cables are run from the equipment room to the satellite location, A25B cables (double-ended or single-ended) are used. Multiple 25-pair staggered finger station cables (double-ended or single-ended) can be run from the equipment room to the satellite location. B25A cables must be used to connect the double-ended multiple 25-pair cables to the connectorized 66-type connecting block. Bulk cables can also be used to run from the equipment room to the satellite locations if punch-down 66-type connecting blocks are used.

If cables are to be connected to site locations or adapters, A25B cables (double-ended or single-ended) connect to the connecting blocks at the equipment room. The A25B cables are run to the site locations or adapters. If multiple 25-pair staggered fingered station cables (double-ended or single-ended) are run to the site locations or adapters, B25A cables connect to the multiple staggered-finger station cables (see Figure 4-45). The staggered-finger station cables are run to the site locations or adapters.

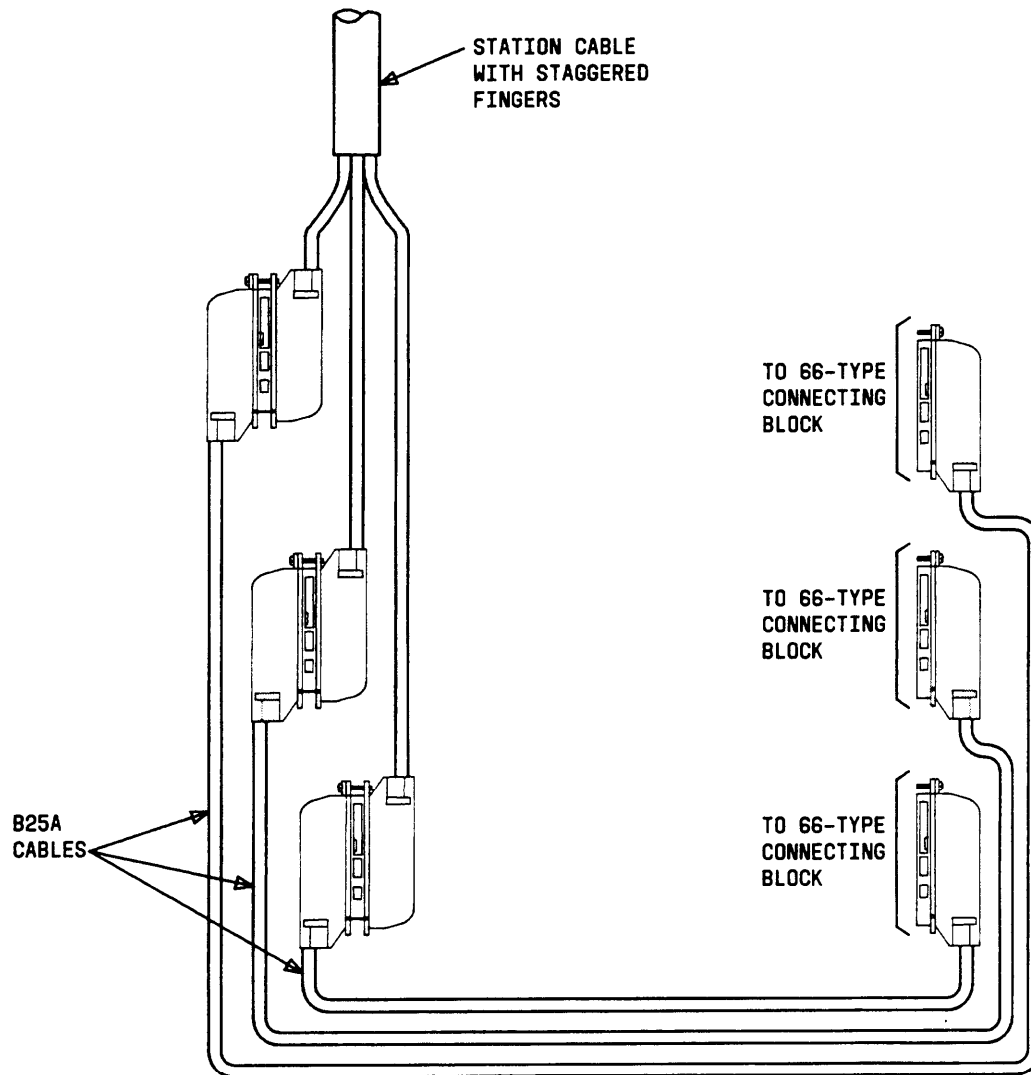


Figure 4-45. Multiple 25-Pair Station Cable With Factory-Installed Staggered Fingers Connected to a 66-Type Connecting Block

Installing 66-Type Hardware at Satellite Locations

To install the 66-type connecting blocks at the satellite location, use the same installation procedure described under the heading **Installing the Cross-Connect Field**. Figure 4-46 shows a typical satellite location layout.

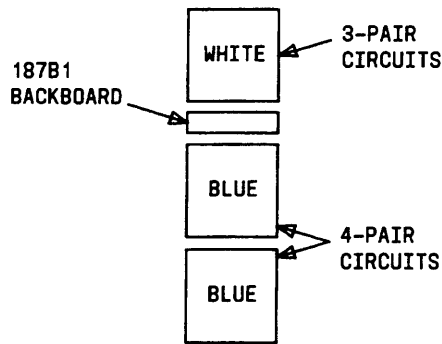


Figure 4-46. Typical Satellite Location Layout

Three-pair station circuits are run from the equipment room to the satellite closet white field and four-pair station circuits are run from the satellite closet blue field to the information outlets. Connections to both the three- and four-pair circuits can be made with connectorized or field-terminated cables depending on the type of connecting blocks used.

Labeling

Figure 4-46 shows the fill directions for the blue and white fields at the satellite location. The labeling for the lead designations is written on the connecting blocks using a permanent felt-tipped pen as described under **Labeling the Cross-Connect Field**.

Installing 4-Pair Station Cables

The 4-pair station cables can either be plugged into the adapters or field-terminated at the cross-connect field or satellite closet and run to the information outlet locations.

Installing the Information Outlets

Install the information outlets (Figure 4-47) at the terminal locations. See Table 4-I for wiring information.

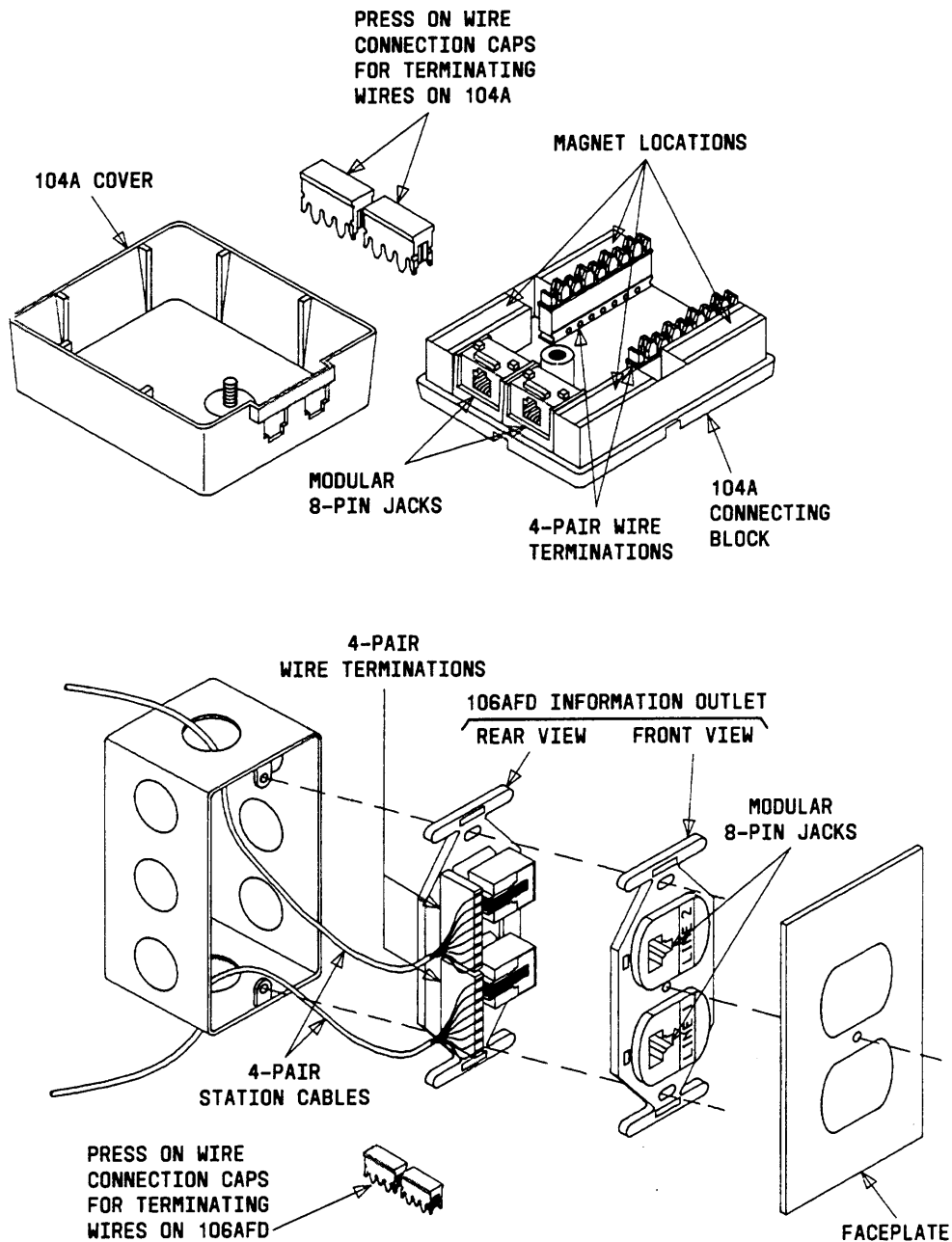


Figure 4-47. Typical 8-Pin Modular Information Outlets

ADJUNCT POWERING

Adjunct Powering From the Equipment Room

Adjunct power can be provided at any cross-connect field when 4-pair circuits are provided to the station wiring. Figure 4-48 shows the powering arrangement used at the equipment room. The power adapter cord must be routed from the connecting block to the power supply.

Adjunct Powering From the Satellite Locations

Adjunct powering from a satellite location is identical to the adjunct powering from the cross-connect field (see Figure 4-48).

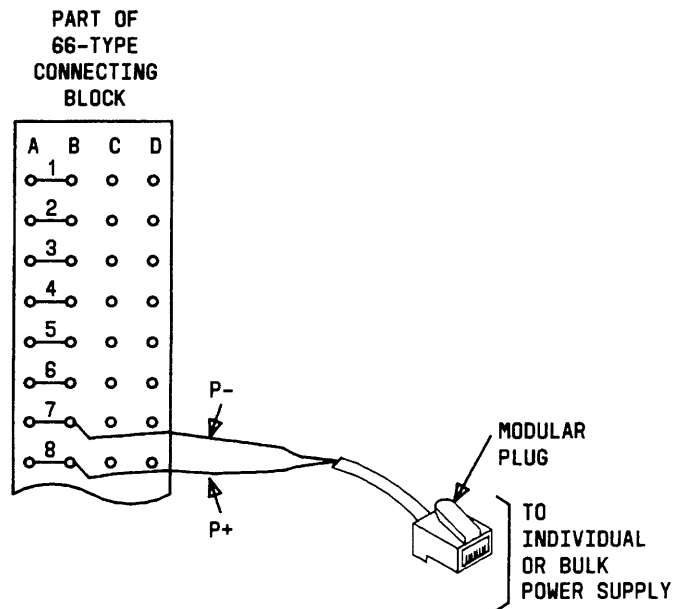


Figure 4-48. Remote Powering From the Equipment Room or Satellite Location

Adjunct Powering From Site Locations

Adjunct power can be provided from any of the adapters located in site closets. Adjunct power is provided at the site locations when the 4-pair station wiring from the equipment room or satellite location exceeds 250 feet (76.2 m) or when 3-pair station wiring is run from the cross-connect field to a 356A adapter.

Figure 4-49 and 4-50 shows the connections required for 258A and 356A adapters. The 400B2 adapter and D6AP power cord are used to provide power on the fourth pair of the 4-pair station cable. The D6AP power cord is connected to an individual power supply or a bulk power supply. The D6AP power cord is available in 7-foot (2.1-m), 14-foot (4.3-m), and 25-foot (7.6-m) lengths.

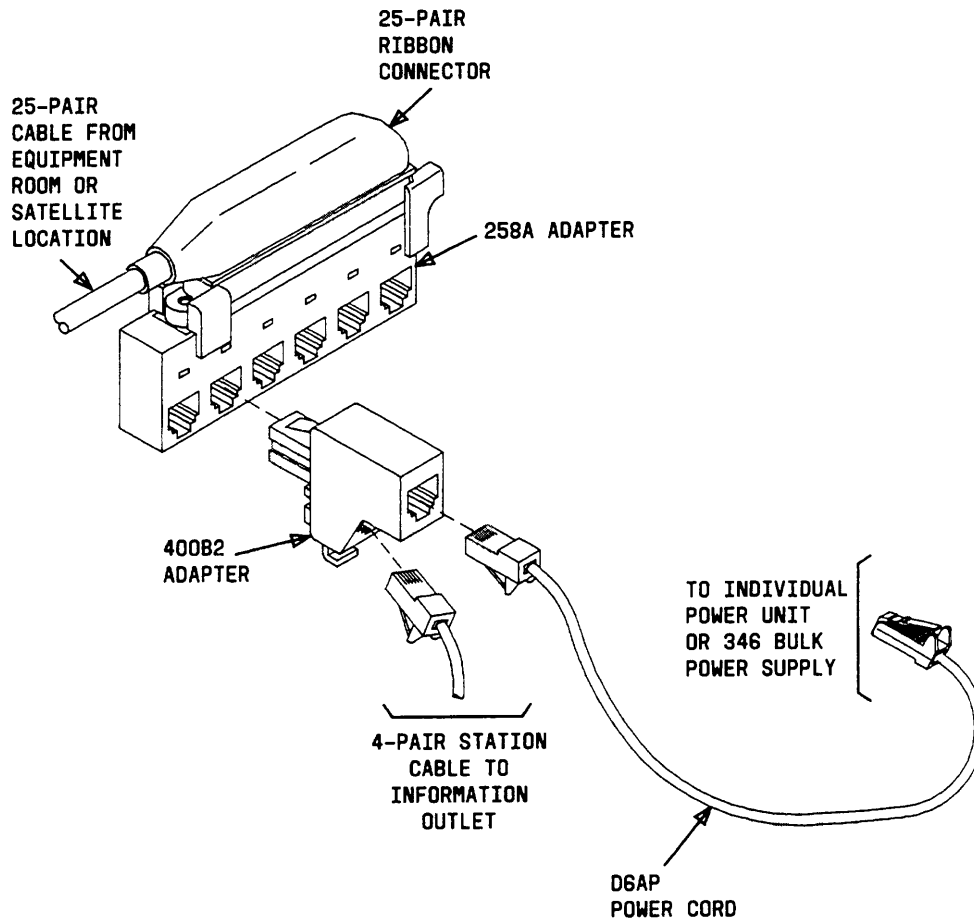


Figure 4-49. Remote Powering From a 258A Adapter in a Site Closet

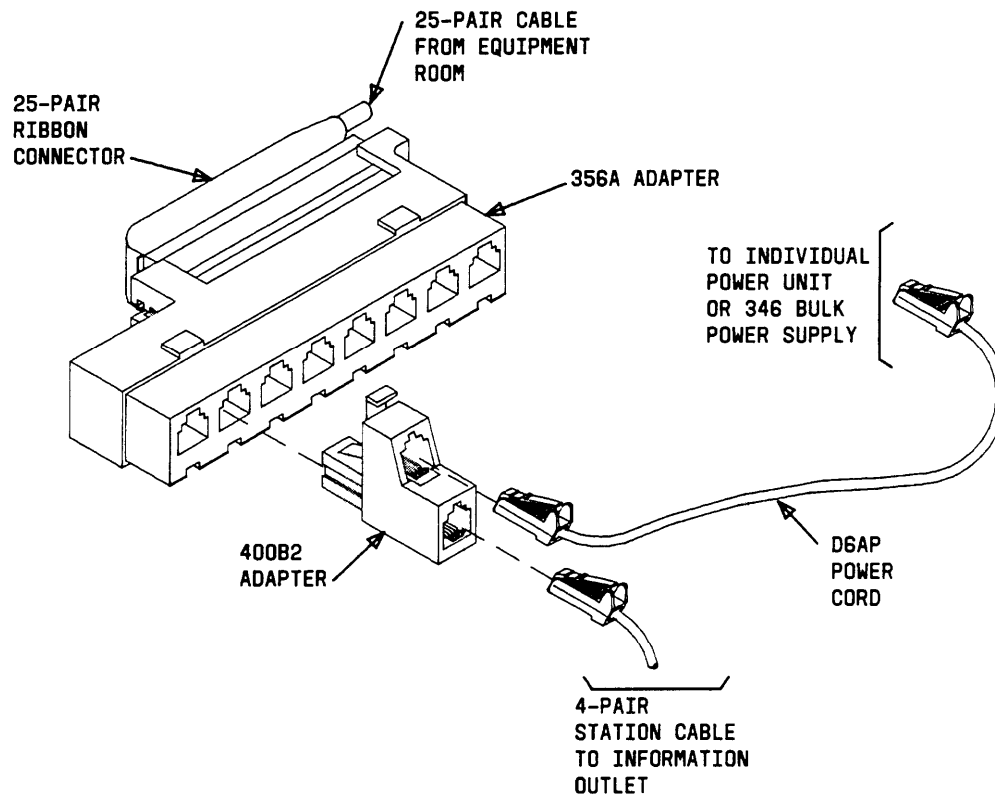


Figure 4-50. Remote Powering From a 356A Adapter in a Site Closet

Adjunct Powering From Information Outlets

Adjunct powering from the information outlet is described in the *AT&T System 75 and System 85 User's Guide—Terminal Installation and Test* (999-700-214IS). Only individual power supplies are used for the local powering at the information outlet. Figures 4-51 and 4-52 show typical connections required at the information outlets using the 400B2 adapter and a D6AP power cord.

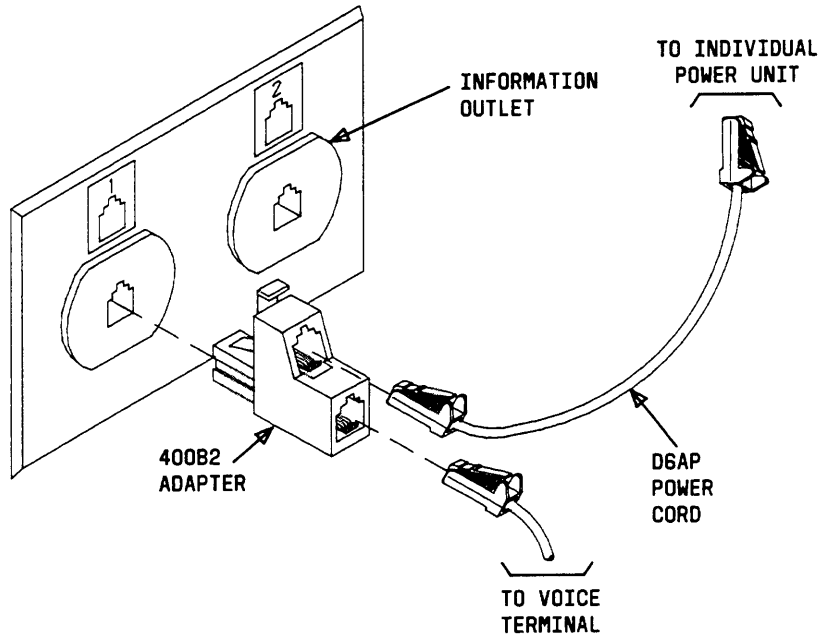


Figure 4-51. Typical Local Powering From a 400B2 Adapter—Flush-Mounted Information Outlet

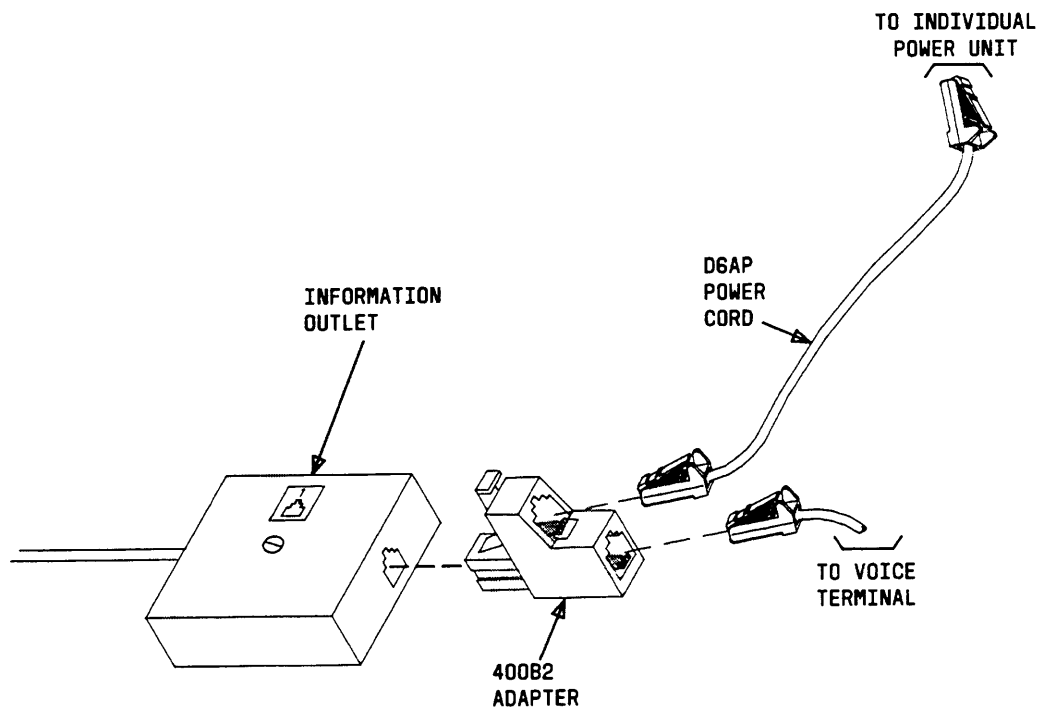


Figure 4-52. Typical Local Powering From a 400B2 Adapter—Surface-Mounted Information Outlet

JUMPER WIRE INSTALLATION AND ADMINISTRATION

Before starting the jumper wire installation, obtain a copy of the Port Assignment Record forms (Figure 4-53) from the customer or marketing representative. These forms contain the port assignments and identify the extension numbers (**Terminal No.**) for the voice terminals. You must enter the jack assignments at the equipment room and indicate if adjunct power is required and where provided (cross-connect field, site closet, satellite closet, or information outlet).

When satellite locations are provided, enter the satellite letter designation (A through F) and the jack appearance in the equipment room on the form. Also enter the floor designation and/or building designation if appropriate. For 1-point administration (see Figure 4-54), this entry is all that is required. The white field number always corresponds to the station jack number at the satellite location blue field.

For 2-point administration (see Figure 4-55), the station jack numbers (blue field) at the satellite locations must also be entered on the form. For example, the entry **A1-10** indicates satellite location A, white field position 1 at the equipment room and the satellite location, and station jack number 10 at the satellite location.

CARRIER _____

PORT ASSIGNMENT RECORD

Page _____

Slot	Port	Jack*	Extension Number		Bldg Flr Rm	Voice Terminal		Voice Terminal Adjunct	Module	Power*		User Name/Use
			Old	New		Type	Color					
Slot	01											
	02											
	03											
	04											
	05											
	06											
	07											
	08											
	09											
	10											
	11											
CKT PK Type	12											
	13											
	14											
	15											
	16											
	17											
	18											
	19											
	20											
	21											
	22											
	23											
	24											

* To be completed by installation technician

Figure 4-53. Port Assignment Record Form

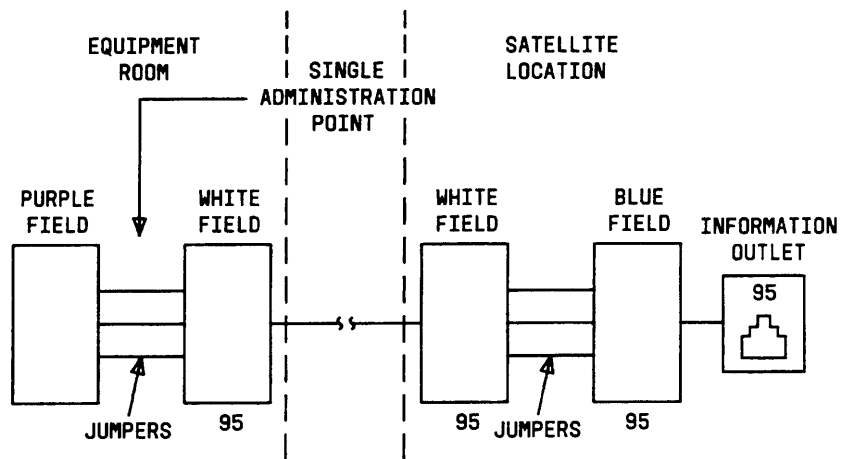


Figure 4-54. 1-Point Administration

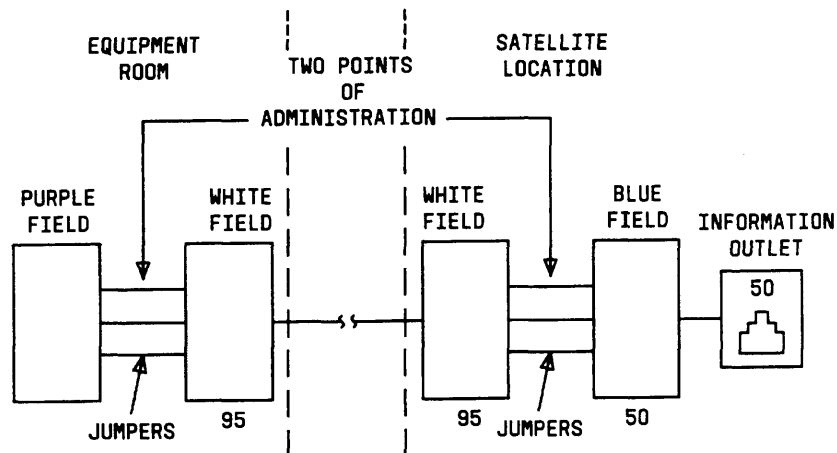


Figure 4-55. 2-Point Administration

Equipment Room Cross-Connect Field

The following guidelines and procedures are provided for installing and removing jumper wires and power adapter cords. In the following procedures, an impact tool or 714B tool must be used to insert the jumpers and a 724A tool must be used to remove the jumpers. Administration details for changing system translations using the System Access Terminal are included in the *AT&T System 75 And System 75 XE Administration* (555-200-500).

Installing Jumper Wires

The AT&T System 75 and System 85 User's Guide—The Terminal Installation and Test (999-700-214IS) contains installation procedures for the voice terminals and their adjuncts. The voice terminals and their adjuncts must be installed before the jumper wires and power adapter cords are connected.

To install the jumper wires, proceed as follows:

1. At the blue or white field, locate the jack number associated with the terminal location.
2. Punch-down one end of the jumper wires onto the connecting block terminals associated with this jack.

3. At the purple field, locate the port jack number identified on the Port Assignment Record and punch-down the other end of the jumper wires onto the connecting block terminals associated with the port jack.
4. Route jumper wires around the pegs on the 187B1 backboards to take up slack.
5. Update the Port Assignment Record.
6. Repeat the procedure until all jumper wires are installed.
7. Update system translations.

Removing Jumper Wires

When it is necessary to remove jumper wires due to voice terminal removal, the voice terminal must be first disconnected at the information outlet. The jumper wires must then be completely removed from the cross-connect field. This will provide an accurate visual indication of available connecting block terminals associated with port and station jacks. Do not leave partially or totally disconnected jumper wires intermingled with other jumper wires.

When it is necessary to rearrange jumper wires due to voice terminal moves, it is strongly recommended that the jumper wires be totally removed and reinstalled even if only one end of the cross-connection is affected. This will reduce entanglement and help to assure a neat appearance.

To remove a jumper wire, proceed as follows:

1. On the Port Assignment Record, locate the connecting block terminals associated with the jack assignments at the purple and white or blue fields.
2. At the purple field, remove the jumper wires.
3. Gently lift the jumper wires straight up, taking up slack, until the wires can be located by their movements.
4. Remove the jumper wires from the 187B1 backboards.
5. Trace the other ends to their connection points at the blue or white field and remove the wires from the connecting block terminals.
6. Update the Port Assignment Form.
7. Update system translations.

Installing and Removing Power Adapter Cords

The power adapter cords are installed as described previously under **ADJUNCT POWERING** (see Figure 4-48). The power adapter cords can only be used with the 4-pair stations. The voice terminal and adjunct should be installed prior to installing the power adapter cord and jumper wires.

To remove a power adapter cord, proceed as follows:

1. On the Port Assignment Record, locate the connecting block terminals associated with the station jack number for the voice terminal receiving remote power.
2. Locate the power adapter cord connections at the 66-type connecting block (blue field).
3. Trace the power adapter cord through the 187B1 backboards to the remote power supply.
4. Unplug the power adapter cord at the power supply.

5. Remove the power adapter cord from the 187B1 backboards.
6. Remove the power adapter cord from the connecting block terminals.
7. Remove and store the power adapter cord.
8. Update the Port Assignment Record.

Satellite Locations

The guidelines for installing and removing jumper wires and power adapter cords at the equipment room cross-connect field should be followed at the satellite locations. The cross-connects should be made between the white field (equipment room side) and the blue field (terminal side).

1-Point Administration

For 1-point administration (see Figure 4-54), the jumper wires are connected between purple field connecting block terminals and white field connecting block terminals at the equipment room. The jumper wires are connected between identically numbered white field connecting block terminals (equipment room side) and blue field connecting block terminals (station side).

2-Point Administration

For 2-point administration (see Figure 4-55), the jumper wires are connected between purple field connecting block terminals and white field connecting block terminals at the equipment room. At the satellite location, jumper wires are connected between the white field connecting block terminals (equipment room side) and blue field connecting block terminals (station side) as specified on the Port Assignment Record. The Port Assignment Record must be updated for all administrative changes at the satellite location.

MISCELLANEOUS WIRING INSTALLATION

Installing Attendant Console

Requirements

The attendant console is connected to an information outlet the same as any other voice terminal. Figure 4-56 shows the connections required for the attendant console.

Power for two consoles **only** can be provided by the switch cabinet through an auxiliary cable connected to the Trunk/Auxiliary Field. Whenever possible, power for the primary attendant console should be provided by the switch cabinet. This makes the primary console fully operational during short (less than 10 seconds) power outages.

Note: The attendant console cannot be powered from the switch cabinet on the System 75 XE.

Additional attendant consoles are remotely powered by the 346 bulk power supply or individual power units. Refer to **ADJUNCT POWERING** for details on remote powering from adjunct power units located at satellite locations, site locations, or information outlets.

Note: The 329A Power Unit should not be used to remotely power the attendant console.

The maximum cabling distance for the attendant console powered from the switch cabinet is 350 feet (107 m). Maximum cabling distances for additional attendant consoles is 2400 feet (732 m) for 24-gauge wire and 1500 feet (457 m) for 26-gauge wire.

Installation

1. Unpack attendant console and inspect for damage.
2. Determine port assignment of console from Attendant Console Form (see Note).

EXAMPLE:	Port Number	A	02	01
		Carrier	Slot	Circuit

Note: The primary attendant console is always connected to control carrier slot 02.

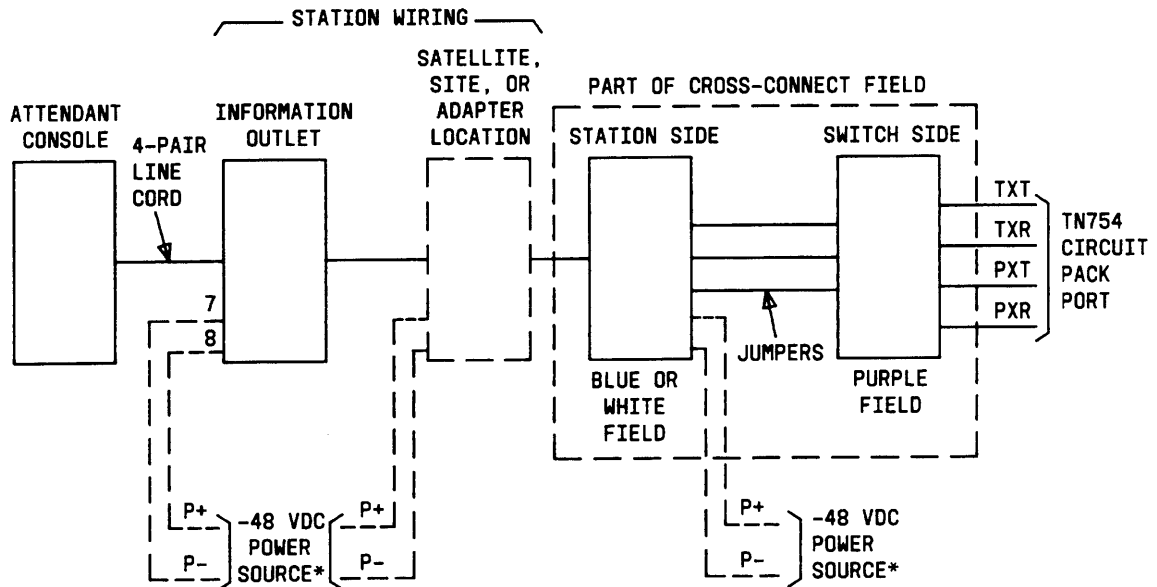
3. If power is to be supplied from the switch cabinet (not available on the System 75 XE), do steps 4 and omit step 5; otherwise, go to step 5.
4. Connect jumpers from the AUXILIARY connector ACC PWR terminals to the attendant console appearance on the station side (see Figure 4-57).
5. If power is to be supplied at cross-connect field, connect power adapter cord (Figure 4-6) to attendant console appearance on the station side and a power unit located above the cross-connect field. If power is not supplied at cross-connect field, provide power as described under **ADJUNCT POWERING**.
6. Install jumper wires at cross-connect field.
7. Connect console line jack on bottom of console to information outlet (Figure 4-56).
8. Install labels per Attendant Console Form and Display Module Form Assignments.

9. Install handset bracket on left or right side of console, as desired.
10. Insert handset adapter on same side of handset bracket.

Note: The handset adapter is available in two models: 854A-03 (black) or 854A-143 (burgundy).

A bracket is not required for a headset.

11. Connect handset cord to jack on same side of console as handset bracket.
12. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.



* ACC PWR LEADS AT YELLOW FIELD, 346 BULK POWER SUPPLY, OR 329A POWER SUPPLY. KS-22911, L1 POWER SUPPLY CAN BE USED IF ATTENDANT CONSOLE IS NOT EQUIPPED WITH OPTIONAL SELECTOR CONSOLE.

Figure 4-56. Connections for Attendant Console

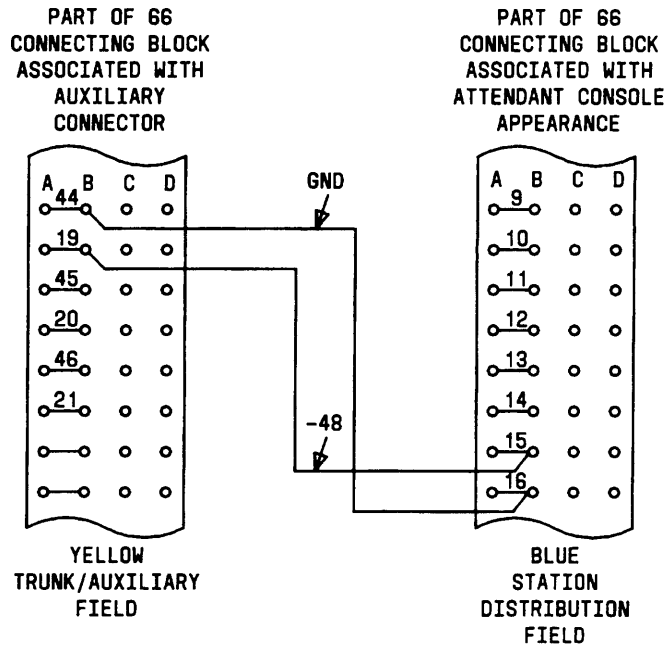


Figure 4-57. Wiring Required at Cross-Connect Field for Attendant Console Remote Powering From Switch Cabinet—System 75 Only

Installing Selector Console

Requirements

The selector console is connected to the attendant console by a 3-foot (91-cm) D8AC cord provided with the selector console (see Figure 4-58).

Installation

1. Run and connect 3-foot (91-cm) D8AC cord between DXS/BLF jack on bottom of attendant console and modular jack on bottom of selector console.

Note: These jacks are located on the bottom of the consoles.

2. Install labels per Attendant Console Form.
3. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

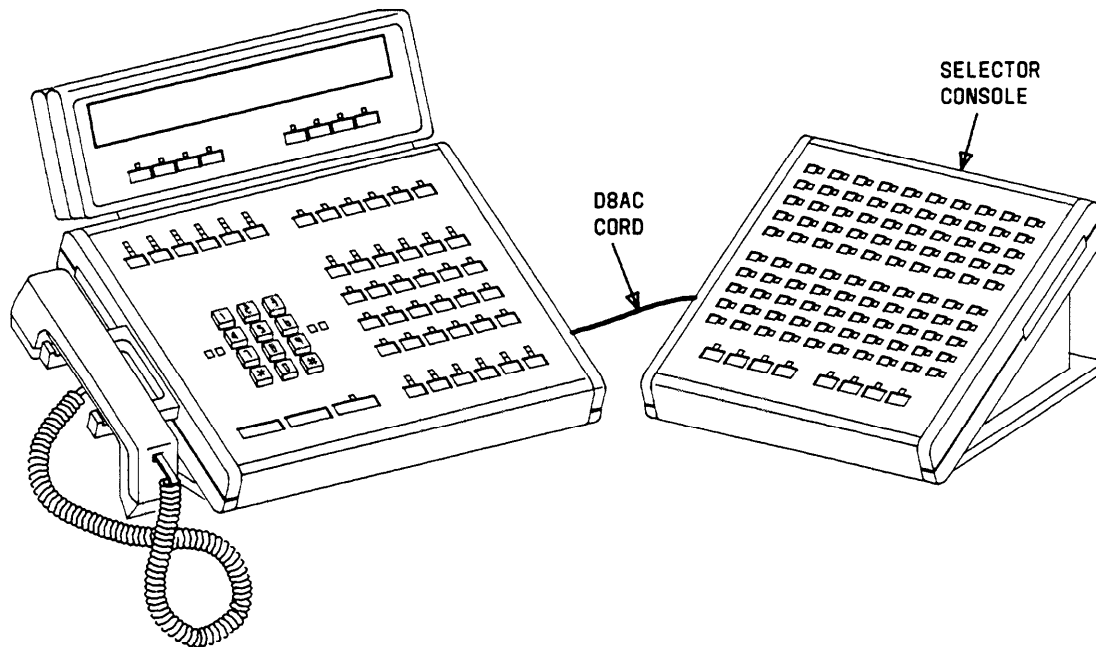


Figure 4-58. Selector Console Installation

Installing INADS (Initialization and Administration System) Interface

Requirements

The Initialization and Administration System (INADS) trunk should be specified to appear on the twenty-fifth pair of an RJ21X network interface jack. The INADS trunk must be a two-way, rotary dial, loop start trunk. The INADS trunk is connected to the TN731 Maintenance circuit pack through the Trunk/Auxiliary Field. This connection is made at the INADS terminals. Figure 4-59 shows a typical INADS trunk installation.

Installation

1. Determine INADS trunk appearance in the green Trunk/Auxiliary Field.
2. Install jumpers between INADS trunk appearance (IN) and INADS terminals.
3. Label terminals for INADS trunk appearance (IN).

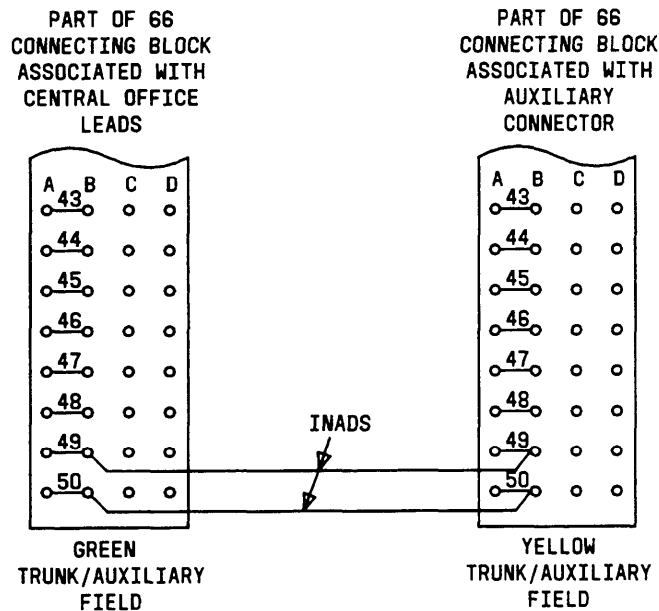


Figure 4-59. Connections at Trunk/Auxiliary Field for INADS Trunk

Installing DS1 Tie Trunks

DS1 tie trunks provide a 1.544 Mbps digital data service between two collocated System 75s or System 75 XEs or between the system and a data network using T1 carrier facilities. The TN722 DS1 Tie Trunk circuit pack (R1V2 or R1V2) provides connection capability to the DS1 facility as 24 independent trunks. Table 4-J shows the lead designations for the DS1 circuit pack.

The following connector cables are available to connect the DS1 Tie Trunk circuit pack to DS1 digital facilities:

- C6C Connector Cable (Comcode 104 307 327)—50-foot (15.2-m) long shielded cable equipped with a 50-pin male connector on one end and a 15-pin male connector on the other end. This cable is used to connect a DS1 Tie Trunk circuit pack to a 551-type Channel Service Unit (CSU).
- C6D Connector Cable (Comcode 104 307 376)—50-foot (15.2-m) long shielded cable equipped with 50-pin male connectors on each end. This cable is used to connect DS1 Tie Trunks in collocated System 75s or System 75 XEs.
- C6E Connector Cable (Comcode 104 307 434)—100-foot (30.4-m) long shielded cable equipped with a 50-pin male connector on one end and a 50-pin female connector on the other end. This cable is used as an "extension" cable between the DS1 Tie Trunk circuit pack and the other connector cables.
- C6F Connector Cable (Comcode 104 307 475)—50-foot (15.2-m) long shielded cable equipped with a 50-pin male connector on one end and a three inch (7.6 cm) stub on the other end. This cable is used to connect the DS1 Tie Trunk circuit pack to channel multiplexers requiring hardwired connections.

C6F CONNECTOR CABLE LEAD IDENTIFICATION

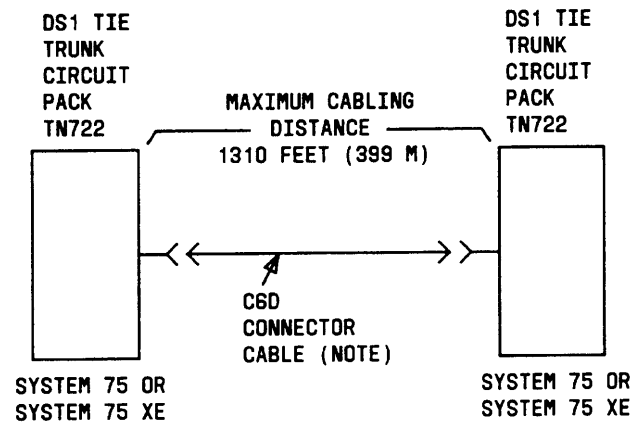
Wire Color	Lead Designation	Connector Pin Number
W-G	LI*	47
G	LI	22
W-BR	LO	48
BR	LO*	23
W-S	LBACK2	49
S	LBACK1	24

Collocated DS1 Tie Trunks

Figure 4-60 shows the connections required to connect two DS1 Tie Trunk circuit packs in collocated System 75s or System 75 XEs.

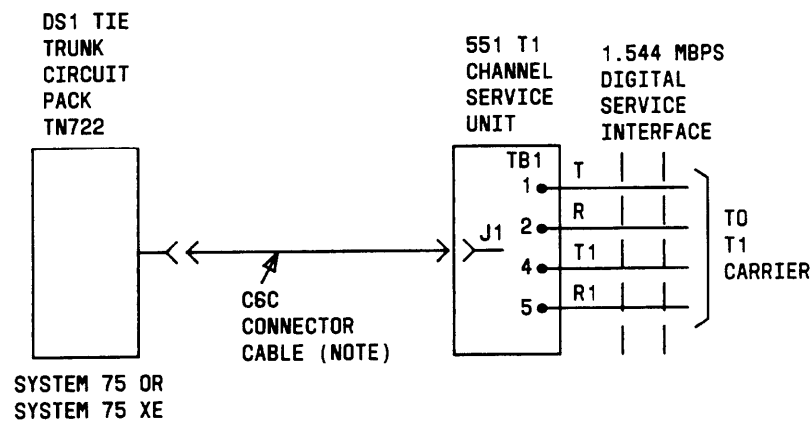
DS1 Tie Trunks Using 551-Type CSU

Figure 4-61 shows the connections required to connect a DS1 Tie Trunk to a 551 T1 CSU. The CSU is required to interface the DS1 tie trunks to the 1.544 Mbps digital facility. For information on installing the CSU, refer to the *551 T1 Channel Service Unit—User's Manual*, 999-100-189IS. For other CSUs, refer to the information provided with the unit.



NOTE: FOR DISTANCES OVER 50 FEET (15.2 M)
USE C6E CONNECTOR CABLE(S) BETWEEN
C6D CONNECTOR CABLE AND DS1 TIE TRUNK
CIRCUIT PACK.

Figure 4-60. Connections for DS1 Tie Trunks Between 2 System 75s or System 75 XEs



NOTE: FOR DISTANCES OVER 50 FEET (15.2 M)
USE C6E CONNECTOR CABLE(S) BETWEEN
C6C CONNECTOR CABLE AND DS1 TIE TRUNK
CIRCUIT PACK.

Figure 4-61. Connections for DS1 Tie Trunks Using 551 T1 CSU

Installing Customer-Provided Alarm—System 75 XE Only

Requirements

For the System 75 XE, access to a relay contact is available for a customer-provided alarm that can be used to connect to a light, bell, or similar type device. The relay contact can be administered so that it will make contact when a major, minor, or warning alarm condition exists on the system. The circuitry required for this feature must be provided by the customer. The device connected to the alarm leads must not exceed a rating of more than 100 volts at 3/4 amps. The contact leads appear at the cross-connect field on the AUXILIARY connector, refer to Table 4-H for AUXILIARY connector lead assignments.

Installing Off-Premises Terminal Wiring

Requirements

The cabling outside the building for off-premises terminals is provided by the local telephone company. The off-premises terminal appearance is on any of the RJ21X network interfaces provided for central office trunks. The off-premises terminals can only be an FCC approved analog type, for example, a 2500. Figure 4-62 shows the connections required for off-premises terminals. The TN746 Analog Line circuit pack cannot be used for off-premises terminals.

Installation

1. If you are doing the initial installation, go to step 5; otherwise, do steps 2, 3, and 4.
2. Install a B25A cable between the RJ21X network interface and a sneak fuse panel.
3. Connect jumper wires between a connecting block in the green field and up to three connecting blocks in the purple field to obtain concentration of analog line pairs as shown in Figure 4-33.
4. Connect a B25A cable between the sneak fuse panel and the 66-type connecting block in the green field.
5. Write the leads on the 66-type connecting blocks using a permanent felt-tipped pen and identify the remote location.
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

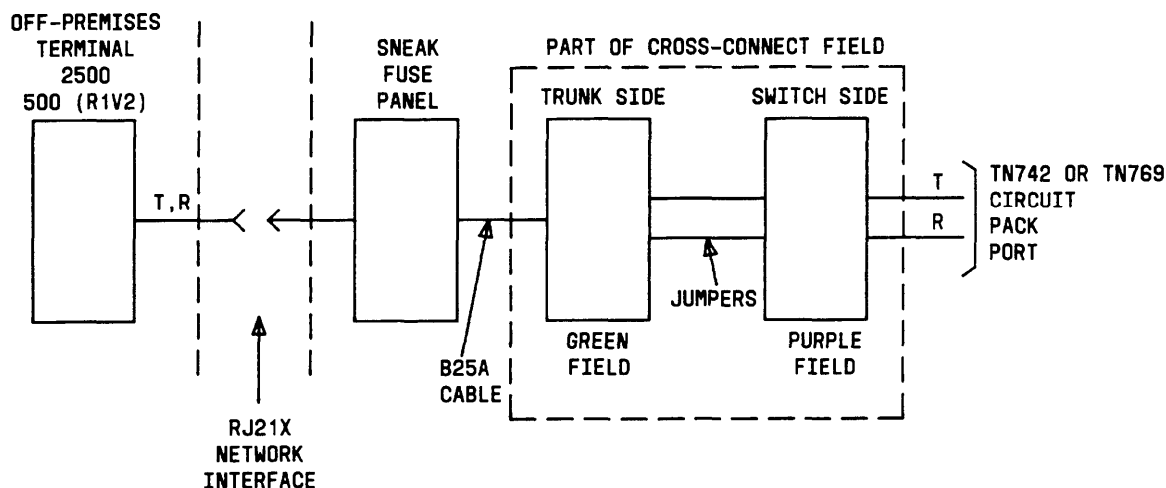


Figure 4-62. Connections for Off-Premises Terminals

Installing Out-of-Building Terminal Wiring

Out-of-building terminals are those extensions not physically located in the same building as the equipment room but are located on the same property.

Analog and digital terminals can be used for out-of-building terminals.

Analog Out-of-Building Terminals

Figure 4-63 shows the connections required for one to eight out-of-building analog voice terminals. The TN746 Analog Line circuit pack cannot be used for out-of-building terminals. Carbon block, or equivalent, protection must be provided at both building entrances. The multi-pair protector units and the out-of-building cabling required must be locally engineered. Connectorized multi-pair protector units (female 25-pair connector out) are recommended. The protector units can be ordered from the *Premises Distribution Systems Equipment and Supplies Catalog*.

Figures 4-64 shows the connections required for up to 24 out-of-building analog voice terminals. Concentration of analog line pairs is used at both buildings to minimize the out-of-building wiring required. The TN746 Analog Line circuit pack cannot be used for out-of-building terminals. In the equipment room, jumpers must be connected between one row in the green field and up to three rows in the purple field as shown in Figure 4-33. At the out-of-building terminal location a WP-90929, List 1 Concentrator Cable is used. There are eight terminal appearances on each of the 3-fingers of the concentrator cable.

Carbon block, or equivalent, protection must be provided at both building entrances. The multi-pair protector units and the out-of-building cabling required must be locally engineered. Connectorized multi-pair protector units (female 25-pair connector out) are recommended. The protector units can be ordered from the *Premises Distribution Systems Equipment and Supplies Catalog*.

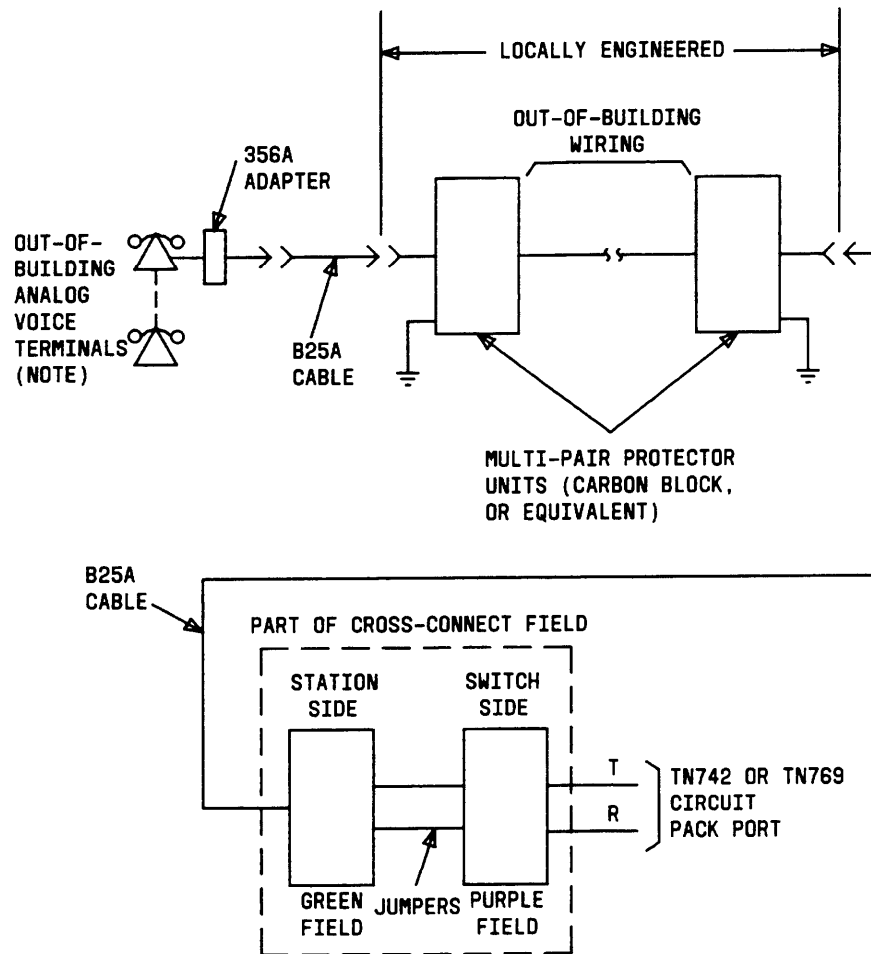
PROTECTOR UNIT ORDERING INFORMATION*

Description	Comcode
3B1A (Carbon Block)	102 381 779
3B1E (Gas Tube)	103 090 395
4B1C (Carbon Block and Sneak Current)	102 904 893
4B1E (Gas Tube and Sneak Current)	103 090 437

Digital Out-of-Building Terminals

Design for digital out-of-building terminals is in development.

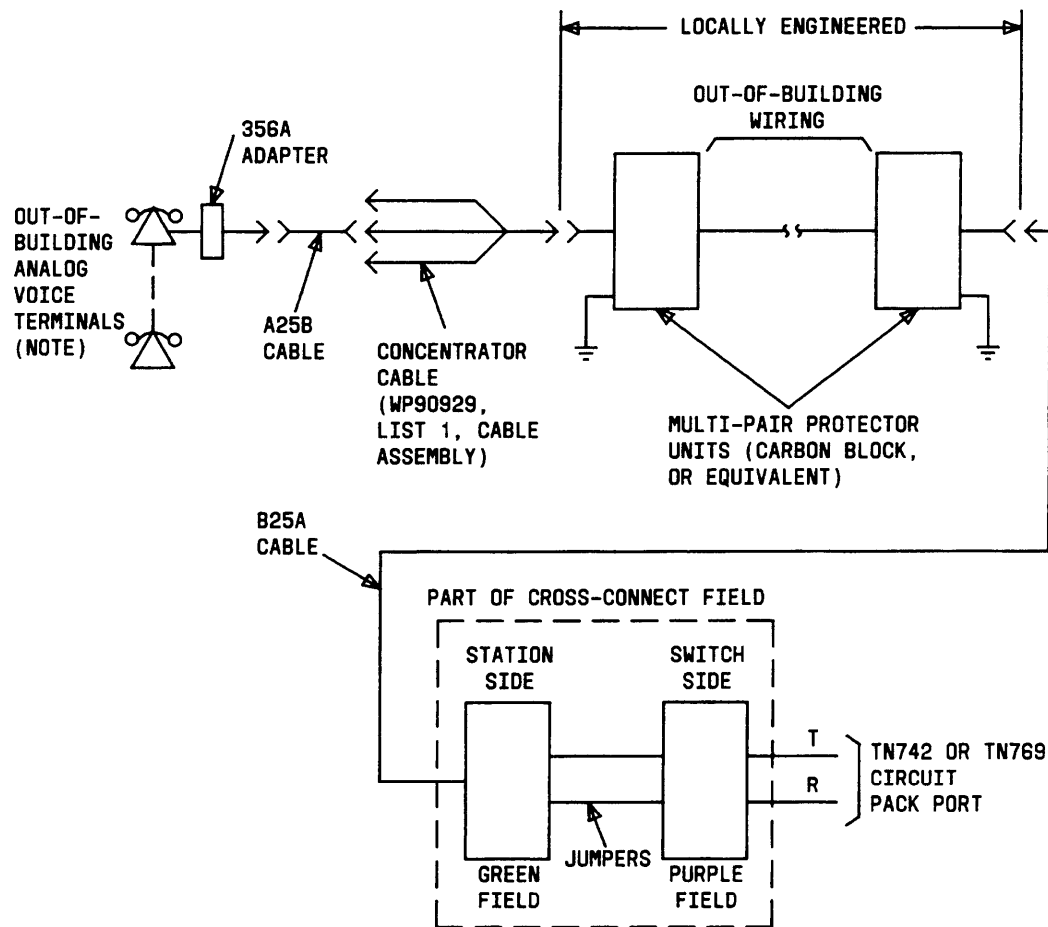
* The protector units are plug-in type units that can be installed on a 188-, 189-, or 190-type multi-station protector unit.



NOTE:

THE MAXIMUM CABLING DISTANCE FROM THE SWITCH CABINET
TO OUT-OF-BUILDING VOICE TERMINALS IS 6000 FEET (1828 M).

Figure 4-63. Connections for One to Eight Out-of-Building Analog Voice Terminals Only

**NOTE:**

THE MAXIMUM CABLING DISTANCE FROM THE SWITCH CABINET TO OUT-OF-BUILDING VOICE TERMINALS IS 6000 FEET (1828 M).

Figure 4-64. Connections for Each Group of Eight Out-of-Building Analog Voice Terminals

Installing Emergency Transfer Units and Terminals

Requirements—Terminals

Emergency transfer capability is provided by a transfer unit mounted on the wall next to the Trunk/Auxiliary Field.

Only 500- or 2500-type voice terminals can be used for emergency transfer. For R1V2 or R1V3 systems, the 500-type and 2500-type terminals can also be used as normal extensions. For R1V1 systems, the 500-type terminals are used when the central office has rotary dialing service only and cannot be used as normal extensions. Emergency transfer capability may be provided on Central Office (CO) and Wide Area Telecommunications Service (WATS) trunks.

The following two types of transfer units are available:

- **Z1A Emergency Transfer Unit**—Each unit serves up to six Power Failure Transfer terminals. A ground-start switch is required at each preselected voice terminal when ground start trunks are used.
- **574-5 Power Transfer Unit**—Each unit serves up to five Power Failure Transfer terminals. The unit provides automatic ground start.

The units are connected to a yellow connecting block in the Trunk/Auxiliary Field. The units are powered (-48 V dc) from the EM TRANS RELAY PWR terminals. There are seven EM TRANS RELAY PWR terminal pairs. This simplifies powering of up to seven emergency transfer units.

574-5 Power Transfer Unit

The 574-5 Power Transfer Unit has connection for 5 emergency transfer terminals and is compatible with both loop start and ground start trunks. Ten slide switches in the center of the unit (Figure 4-65) are set for the trunk type (two per trunk). The switches are set at the factory for ground start trunks as shown in Figure 4-65.

When ground start trunks are used, the transfer unit will automatically provide ground start for each trunk without the need for special wiring at the terminal used for emergency transfer service.

Figure 4-66 shows wiring required at the Trunk/Auxiliary Field for a voice terminal used only for emergency transfer. Figure 4-67 shows wiring required at the Trunk/Auxiliary Field for a voice terminal used for emergency transfer as well as a normal extension.

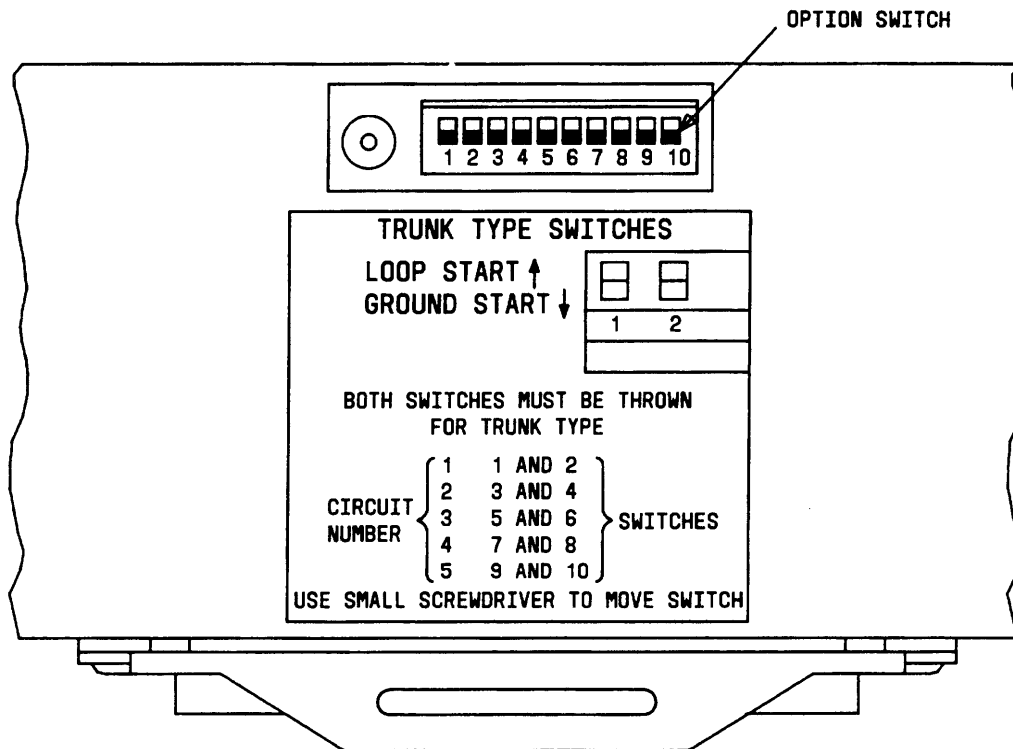


Figure 4-65. 574-5 Power Transfer Unit Option Switches

Requirements—Optional DID Make-Busy Trunk

Figure 4-68 shows the connections at the Trunk Auxiliary Field for an optional Direct Inward Dialing (DID) make-busy trunk. This option prevents DID trunks from being taken out of service by the serving central office during emergency transfer. This trunk is used for this function only and should be specified to appear on the twenty-fifth pair of a network interface jack.

Installation—Emergency Transfer Units

1. Mount emergency transfer unit on the wall to the left of the Trunk/Auxiliary Field. Additional units should be mounted below the first one in a column.
2. Connect A25B cable from the emergency transfer unit to a 66-type connecting block in the yellow Trunk/Auxiliary Field associated with emergency transfer.

Installation—Terminals

Trunk/Auxiliary Field Connections—Terminals Used Only for Emergency Failure Transfer

1. At Trunk/Auxiliary Field, run and connect pair of wires between PWR terminals on the yellow emergency transfer connecting block to EM TRANS RELAY PWR terminal (see Figure 4-66).

2. Run and connect CO trunk circuit leads from the purple field to TC terminals on the yellow emergency transfer connecting block for each trunk.
3. Run and connect CO trunk circuit leads from the green field to TK terminals on the yellow emergency transfer connecting block for each trunk.
4. Connect the ST terminal leads on the yellow emergency transfer connecting block for each emergency transfer terminal to the terminal appearance in the yellow Trunk/Auxiliary Field (see **Note**).

Note: The ST terminal leads should be terminated on the following pairs: 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).

5. Connect the terminal appearance in the yellow field to the blue or white station distribution field.

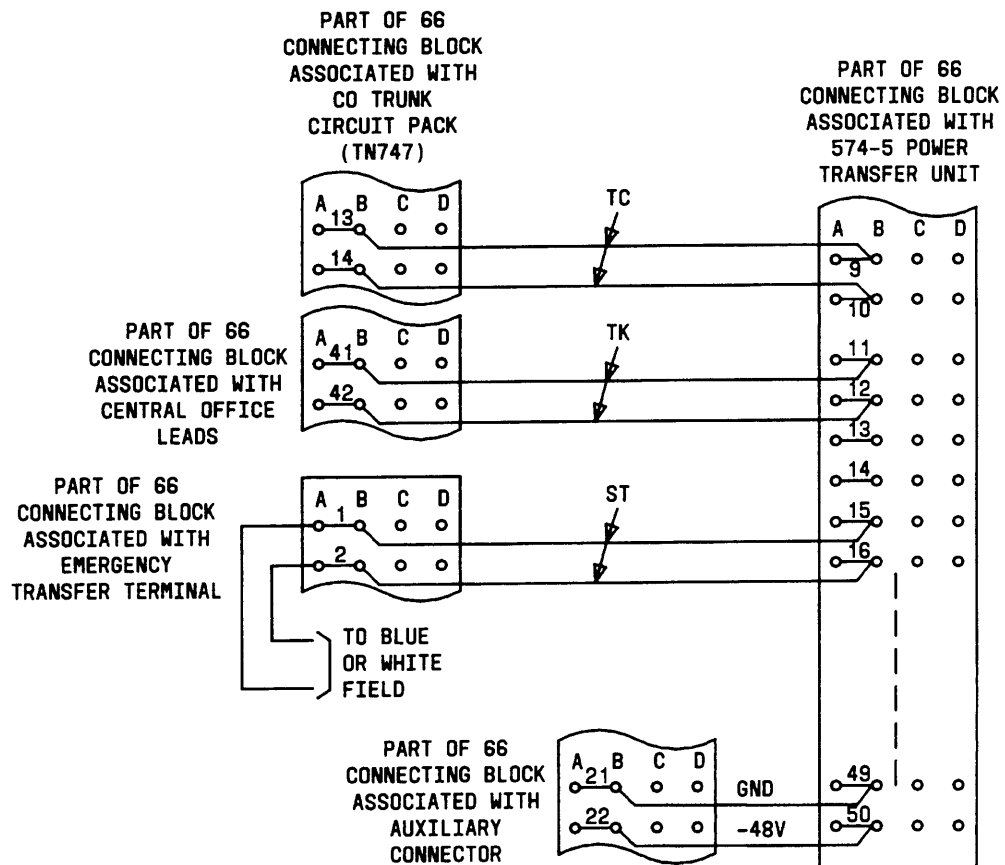


Figure 4-66. Connections at Trunk/Auxiliary Field for Voice Terminal Used Only for Emergency Transfer—574-5 Power Transfer Unit

Trunk/Auxiliary Field Connections—Terminals Used for Emergency Failure Transfer and as Normal Extensions

6. At Trunk/Auxiliary Field, run and connect pair of wires between PWR terminals on the yellow emergency transfer connecting block to EM TRANS RELAY PWR terminal (see Figure 4-67).
7. Run and connect CO trunk leads from the green field to TC terminals on the yellow emergency transfer connecting block for each trunk.
8. Run and connect CO trunk circuit leads from the green field to TK terminals on the yellow emergency transfer connecting block for each trunk.
9. Run and connect voice terminal leads from the purple analog line board row to LC terminals on yellow emergency transfer connecting block for each terminal.
10. Run and connect the ST terminal leads on the yellow emergency transfer connecting block for each emergency transfer terminal to the terminal appearance in the purple Trunk/Auxiliary Field.
11. Connect the terminal appearance in the purple field to the blue or white Station Distribution Field.

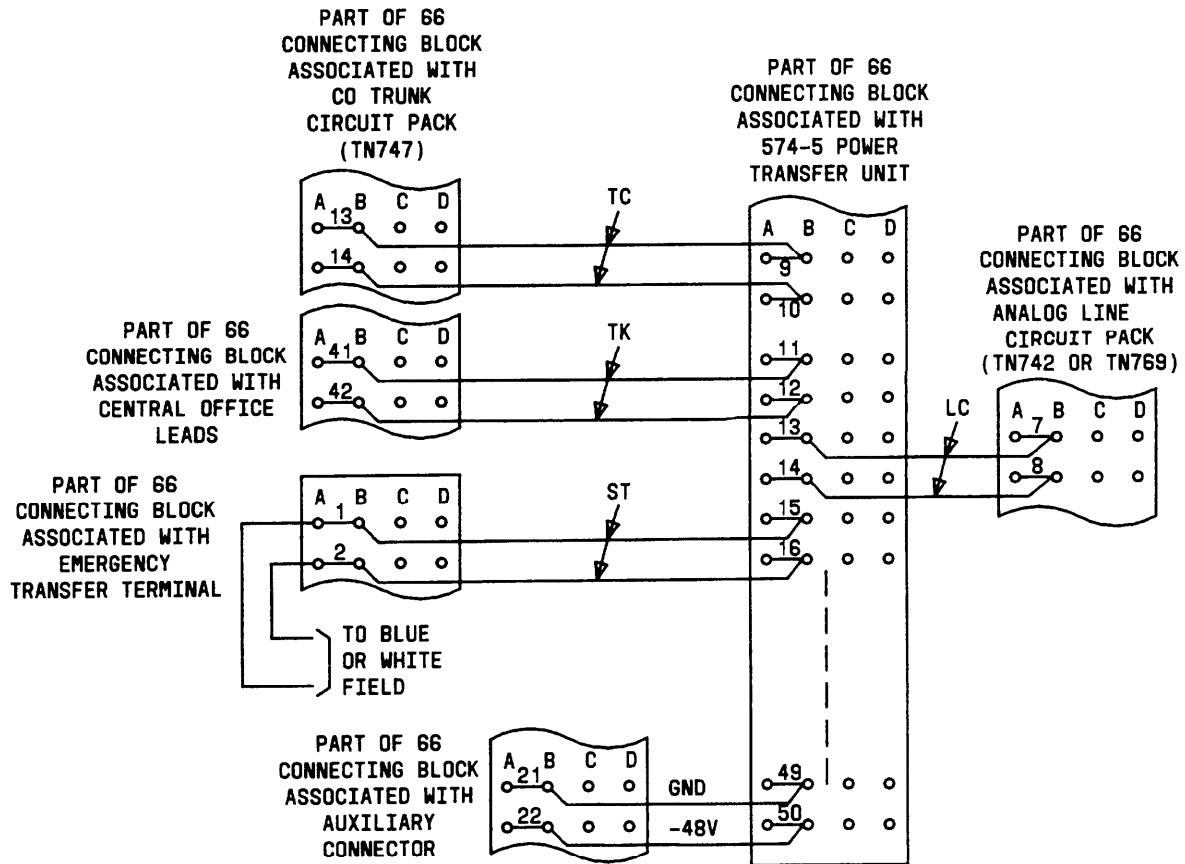


Figure 4-67. Connections at Trunk/Auxiliary Field for Voice Terminal Used for Emergency Transfer and as Normal Extension—574-5 Power Transfer Unit

Voice Terminal Installation

12. Connect voice terminals to the information outlets.

Installation—Optional DID Make-Busy Trunk

1. Run and connect jumper from one DID make-busy lead to COM3 terminal on the yellow emergency transfer connecting block (see Figure 4-68).
2. Run and connect jumper from the other DID make-busy circuit lead to NC3 terminal (first appearance) on the yellow emergency transfer connecting block.

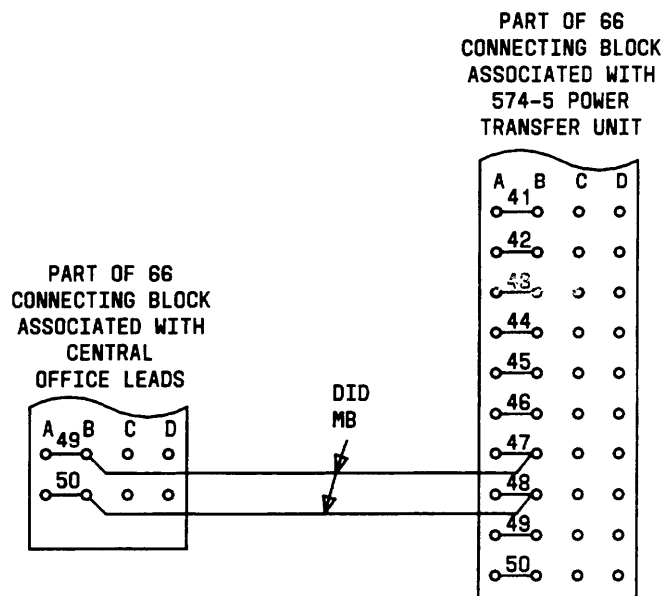


Figure 4-68. Connections at Trunk/Auxiliary Field for Optional DID Make-Busy Trunk—574-5 Power Transfer Unit

Z1A Power Failure Transfer Unit

Figure 4-69 shows wiring required at the Trunk/Auxiliary Field for a voice terminal used only for emergency transfer. Figure 4-70 shows wiring required at the Trunk/Auxiliary Field for a voice terminal used for emergency transfer as well as a normal extension.

If a Z1A Emergency Transfer Unit is used with central office trunks that require ground start, a ground start switch must be installed on each emergency transfer terminal. System ground is provided on the twenty-fifth pair of leads on each purple connecting block associated with a switch cable when a cable is installed. System ground is connected to the third pair of the 3-pair terminal appearance. This pair becomes the second pair at the information outlet. A ground start switch is mounted on the side of the terminals and is wired to ground and to the ring lead inside the terminal.

Requirements—Optional DID Make-Busy Trunk

Figure 4-71 shows the connections at the Trunk/Auxiliary Field for an optional Direct Inward Dialing (DID) make-busy trunk. This option prevents DID trunks from being taken out of service by the serving central office during emergency transfer. This trunk is used for this function only and should be specified to appear on the twenty-fifth pair of a network interface jack.

Installation—Emergency Transfer Units

1. Mount emergency transfer unit on the wall to the left of the Trunk/Auxiliary Field. Additional units should be mounted below the first one in a column.
2. Connect A25B cable from the emergency transfer unit to a connecting block in the yellow Trunk/Auxiliary Field associated emergency transfer.

Installation—Terminals*Trunk/Auxiliary Field Connections—Terminals Used Only for Emergency Failure Transfer*

1. At Trunk/Auxiliary Field, run and connect pair of wires between PWR terminals on yellow emergency transfer connecting block to EM TRANS RELAY PWR (see Figure 4-69).
2. Run and connect CO trunk circuit leads from the purple field to TC terminals on the yellow emergency transfer connecting block for each trunk.
3. Run and connect CO trunk circuit leads from the green field to TK terminals on the yellow emergency transfer connecting block for each trunk.
4. Connect the ST terminal leads on the yellow emergency transfer row for each emergency transfer terminal to the terminal appearance in the yellow Trunk/Auxiliary Field (see **Note**).

Note: The ST terminal leads should be terminated on the following pairs 1, 4, 7, 10, 13, 16, 19, or 22 (the first pair of any 3-pair group).

5. Connect the terminal appearance in the yellow field to the blue or white station distribution field.
6. If ground start must be provided, run and connect two wires from ground terminals to the third pair for each emergency terminal appearance on the yellow Trunk/Auxiliary connecting block. Loop the wires from the first appearance to the last if enough ground terminals are not available (see Figure 4-72).

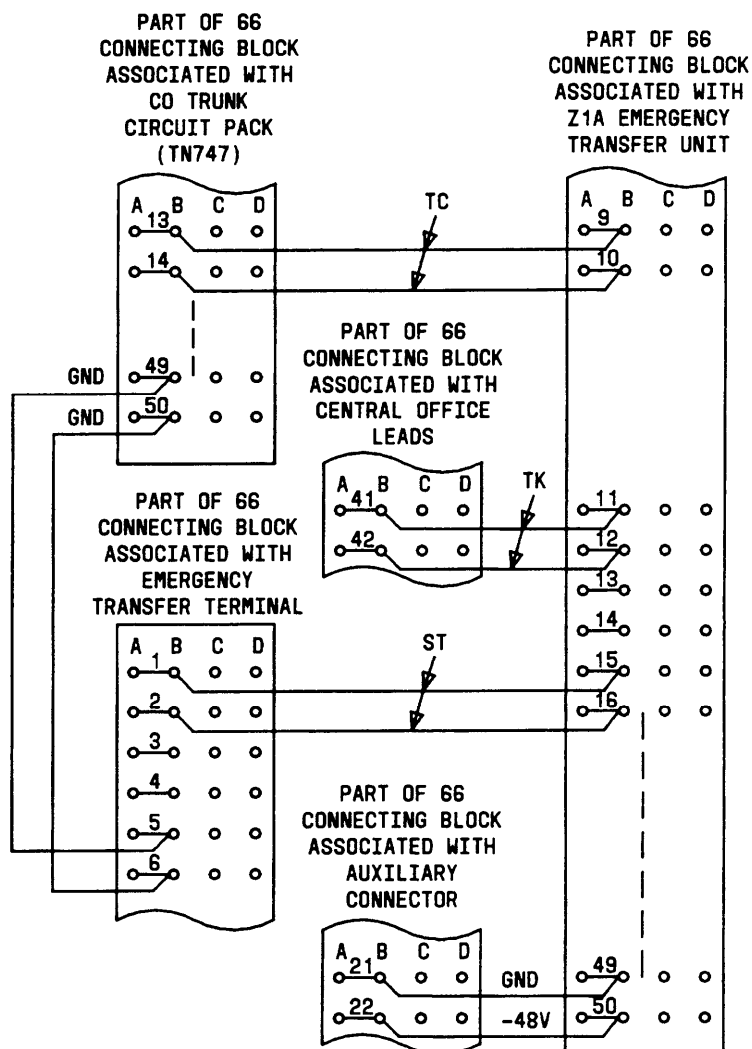


Figure 4-69. Connections at Trunk/Auxiliary Field for Voice Terminal Used Only for Emergency Transfer (Ground Start Trunks)—Z1A Emergency Transfer Unit

Trunk/Auxiliary Field Connections—Terminals Used for Emergency Failure Transfer and as Normal Extensions

7. At Trunk/Auxiliary Field, run and connect pair of wires between PWR terminals on the yellow emergency transfer connecting block to EM TRANS RELAY PWR terminal (see Figure 4-70).
8. Run and connect CO trunk leads from the purple field TC terminals on the yellow emergency transfer connecting block for each trunk.
9. Run and connect CO trunk circuit leads from the green field to TK terminals on the yellow emergency transfer connecting block for each trunk.
10. Run and connect voice terminal leads from the purple analog line board row to LC terminals on the yellow emergency transfer connecting block for each terminal.
11. Run and connect the ST terminal leads on the yellow emergency transfer connecting block for each emergency transfer terminal to the terminal appearance in the purple Trunk/Auxiliary Field.
12. Connect the terminal appearance in the purple field row to the blue or white Station Distribution Field.
13. If ground start must be provided, do step 14; otherwise, go to step 15.
14. Run and connect two wires from ground terminals to the third pair for each emergency terminal appearance on the purple Trunk/Auxiliary connecting block. Loop the wires from the first appearance to the last if enough ground terminals are not available (see Figure 4-73).

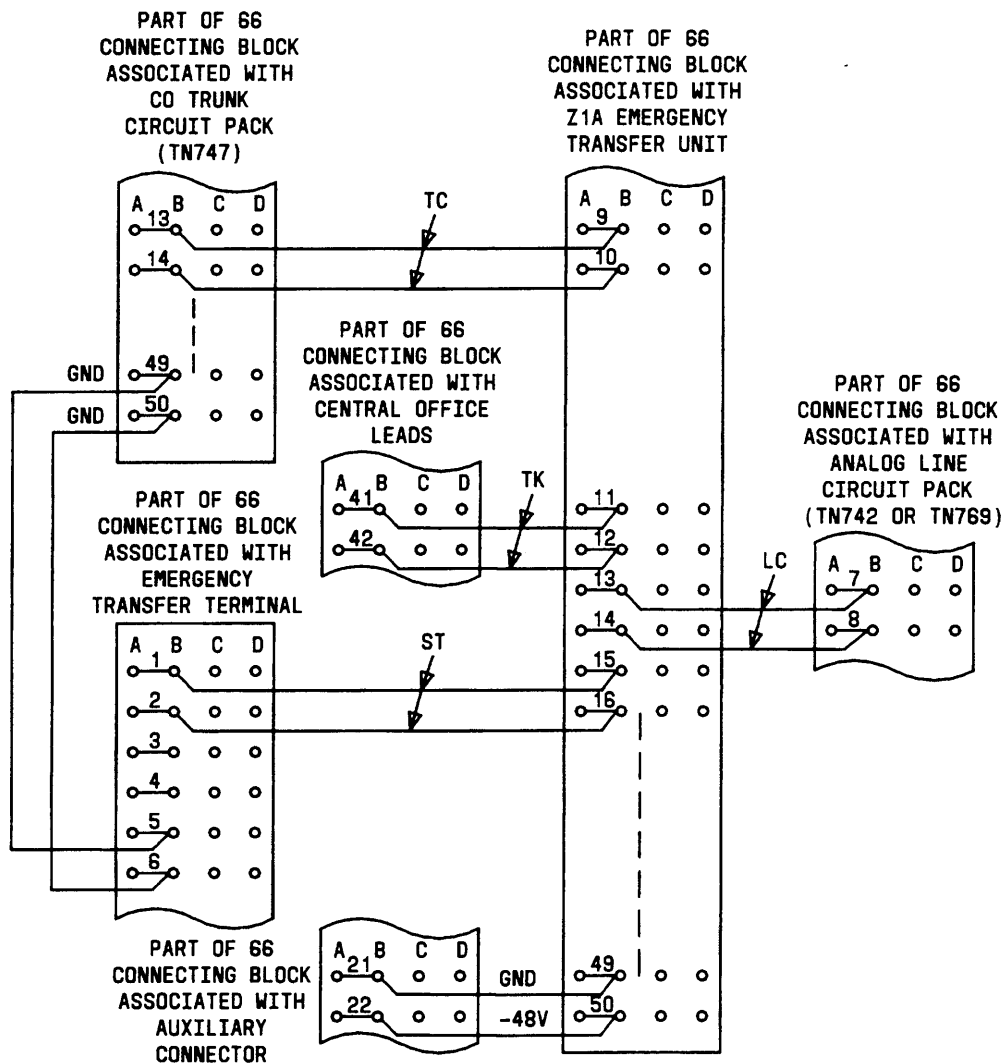


Figure 4-70. Connections at Trunk/Auxiliary Field for Voice Terminal Used for Emergency Transfer and as Normal Extension (Ground Start Trunks—Z1A Emergency Transfer Unit)

Voice Terminal Installation

15. If ground start must be provided, do steps 16 through 23 to install ground start switch; otherwise, go to step 24.
16. Remove cover from 551A key.
17. Remove housing from 500- or 2500-type voice terminal.
18. Run and connect wire from red lead (R) on voice terminal through 551A key to yellow and/or black lead on voice terminal.
19. Mount base of 551A key to 77A bracket using screws provided with bracket.
20. Replace cover on 551A key.
21. Place groove in bracket over lip of voice terminal set base (see Figure 4-74).
22. Replace voice terminal housing.
23. Repeat steps 16 through 22, as required.
24. Connect voice terminals to the information outlets.

Installation—Optional DID Make-Busy Trunk

1. Run and connect jumper from one DID make-busy lead to TK terminal (first appearance) on the yellow emergency transfer connecting block (see Figure 4-71).
2. Run and connect jumper the other DID make-busy circuit lead to ST terminal (first appearance) on the yellow emergency transfer connecting block.

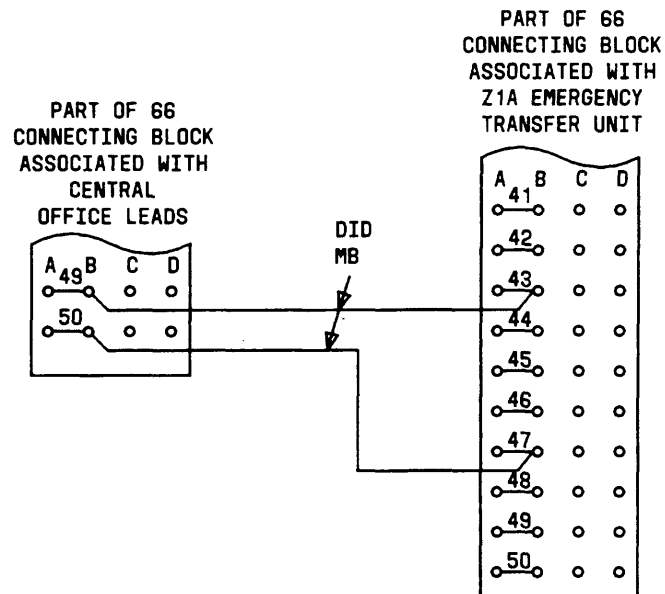


Figure 4-71. Connections at Trunk/Auxiliary Field for Optional DID Make-Busy Trunk—Z1A Emergency Transfer Unit

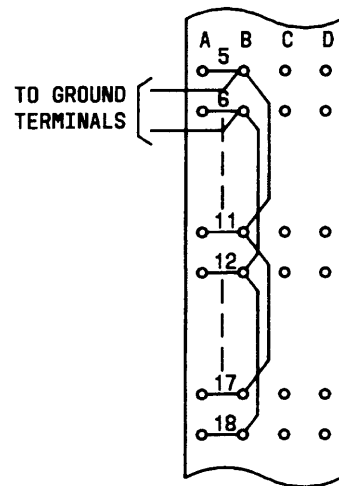


Figure 4-72. Ground Wiring Example (Three Voice Terminals Used Only for Emergency Transfer)

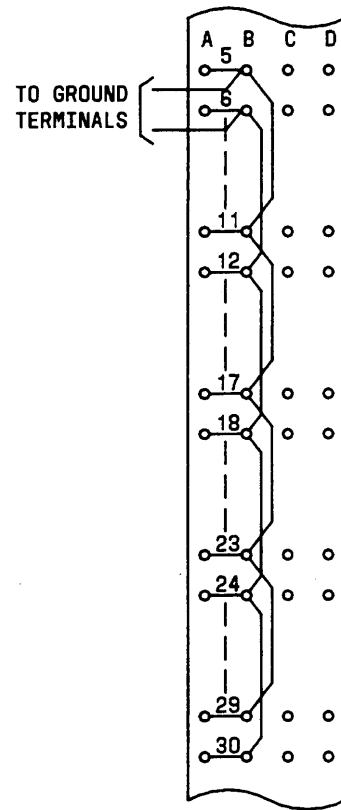


Figure 4-73. Ground Wiring Example (Five Voice Terminals Used for Emergency Transfer and as Normal Extensions)



Figure 4-74. Ground Start Key Installation

Installing External Ringing

Requirements

Figure 4-75 shows the connections for external ringing. External ringing is provided by a device, such as a gong, chime, or bell, connected to an information outlet. The switch side of the cross-connect field is connected to a TN742 or TN769 Analog Line circuit pack located in a port carrier. The TN742 or TN769 circuit pack contains a maximum of eight ports.

The maximum number of devices that can be connected to one TN742 or TN769 circuit pack port cannot exceed three ringer equivalences.

Installation

1. Determine port assignment of Trunk Answer From Any Station (Call Answer From Any Voice Terminal) feature from Console Parameters Form:

EXAMPLE:	Port Number	B	02	01
	Carrier	Slot	Circuit	

2. Install jumper wires at cross-connect field.
3. Mount ringing device at location specified on External Ringing Device Worksheet.
4. Run 2-pair line cord (modular plug at one end) from information outlet to ringing device (see Figure 4-75).
5. Connect red (R) and green (T) leads to ringing device.
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

Installing Queue Warning Indicator

Requirements

Figure 4-75 shows the connections for the queue warning indicator. An ac indicator (lamp) such as a 21C49 is optional for use as a queue warning indication in a Uniform Call Distribution/Direct Departmental Calling queue. The lamp is connected to an information outlet. The switch side of the cross-connect field is connected to a TN742 or TN769 Analog Line circuit pack located in a port carrier. The TN742 or TN769 circuit pack contains a maximum of eight ports.

Installation

1. Determine port assignment for queue warning lamp from Hunt Group Form:

EXAMPLE:	Port Number	B	02	01
	Carrier	Slot	Circuit	

2. Install jumper wires at cross-connect field.
3. Mount lamp at specified location.
4. Connect 2-pair line cord (modular plug at one end) from information outlet to lamp (see Figure 4-75).
5. Connect red (R) and green (T) leads to lamp.
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

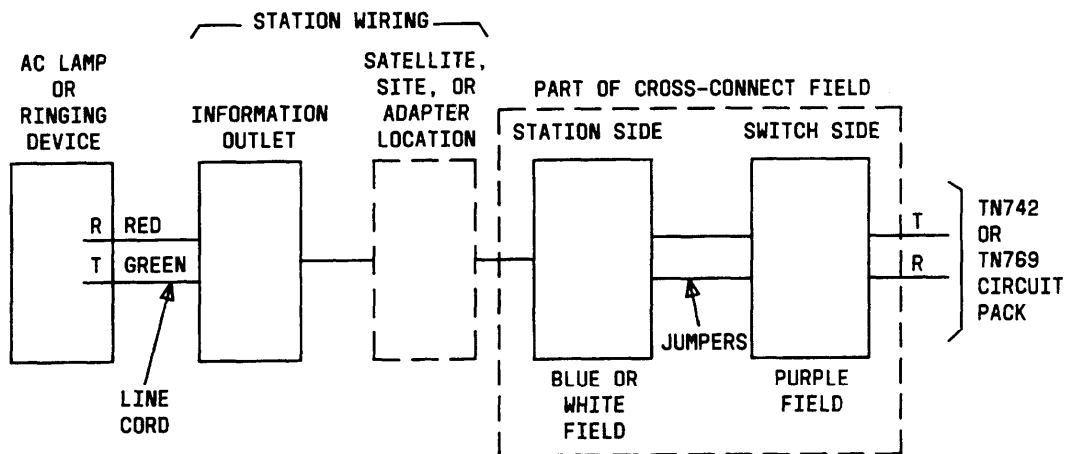


Figure 4-75. Connections for External Ringing or Queue Warning Indicator

AUXILIARY EQUIPMENT INSTALLATION

Auxiliary Equipment Description

The following equipment can be optionally provided with the system.

- **278A Adapters**—Provides an interface, when required, to customer-provided equipment for Loudspeaker Paging feature. The 278A adapter requires -24 volt dc power. It can be modified for -48 volt dc power with a D-181321 kit of parts (Comcode 103 031 181).
- **89A Control Unit**—Can also be used to provide an interface, when required, to customer-provided equipment for Loudspeaker paging feature. A 2012D transformer provides -48 volt dc power to the 89A.
- **PagePac Paging System**—Provides an amplifier system for Loudspeaker Paging feature. Three models are available:
 - **PagePac 20**—Provides a single zone of paging with an input source for music. The unit can also be modified to provide 9 or 39 paging zones.
 - **PagePac VS**—Provides one to three paging zones. It also permits all zone paging. Two optional feature cards are available to provide music or talk-back over paging.
 - **PagePac 50/100/200**—Provides 1 to 24 paging zones. Optional add-ons are available to provide music or talk-back over paging. It is also possible to use a customer-supplied music source.

All PagePac models require 115-volt ac power.

- 36A Voice Couplers—Provides an interface and system protection for customer-provided equipment for Intercept Treatment—Recorded Announcement, Music-on-Hold, and Recorded Telephone Dictation Access features. The 36A voice coupler is powered by a 2012D power transformer (set at -15 dBm). The 36A voice coupler can also be wall-mounted.
- Cook Electric Model NT7M00AA* or NT7M25AA* Digital Announcer—Provides recorded announcements for Recorded Announcement feature. Model NT7M00AA provides one channel of voice. Model NT7M25AA provides four channels of voice. Both models require an ac adapter for 115-volt ac power.
- Audichron H9040 Wake-Up Announcement System—Provides automatic wake-up announcements for use with the hospitality features. This unit requires a power unit to be supplied locally that is rated at -48v dc at 1.2 amps.
- 3270 Data Modules—Provide a family of protocol converters that allow 3270-type terminals to communicate with a host computer through the system.
- Processor Data Modules (PDMs)—Provide an interface to a Applications Processor (AP), AUDIX, Call Management System (CMS), Distributed Communications System (DCS), Property Management System, customer-provided terminals and computers, and Station Message Detailed Recording (SMDR).
- Asynchronous Data Units—Provide an interface between the system data line circuit pack and the customer's asynchronous data terminals and host computers. They also can be used to provided an interface to a Property Management System or SMDR equipment.
- Information System Network (ISN) Interface—Provides an interface to the Information System Network that interconnects computers and terminals on a customer's premises.
- STARLAN NETWORK Interface—Provides an interface to the STARLAN NETWORK that interconnects personal computers, data terminals, resource units, and printers.
- PLS Interface—Provides an interface to the Premises Lightwave System (PLS) that allows that connect 3270 type A terminals to a 3274 cluster controller.

* Refer to the Cook Electric Digital Announcers product description and ordering information for complete ordering codes.

Installing Loudspeaker Paging and Music-on-Hold

Requirements

The loudspeaker paging feature provides a connection from the TN763 Auxiliary Trunk in the system to a customer-provided paging amplifier. All attendants and voice terminal users have access to the voice paging equipment.

The Music-on-Hold feature provides a connection from the TN763 Auxiliary trunk in the system to a customer-provided music source. All calls on the system that are on hold, waiting in a queue, or parked will receive music to let the waiting party know that the connection is still in effect.

The music source that is used for the Music-on-Hold feature can also be connected through a paging amplifier to provide background music over the loudspeakers.

Figure 4-76 is a block diagram that shows how the Loudspeaker Paging and Music-on-Hold features interact. Detailed descriptions for installing these features are included in this manual.

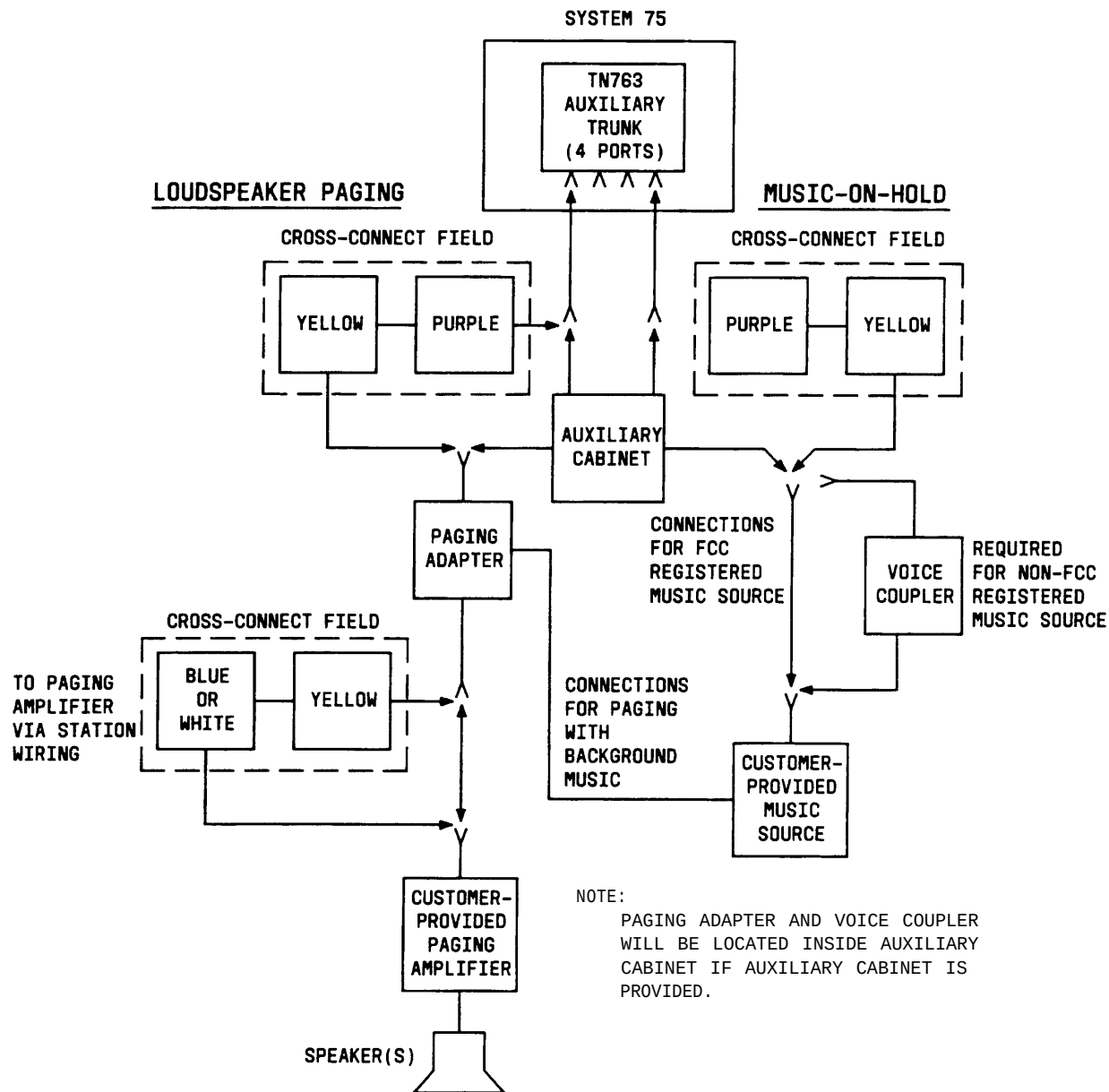


Figure 4-76. Connections for Loudspeaker Paging and Music-on-Hold

Installing Loudspeaker Paging Access—278A Paging Adapter

Requirements

Figure 4-77 shows the connections for the Loudspeaker Paging feature. The connections are for one zone. These connections are required for each paging zone.

The connections shown in Figure 4-77 and the procedures provided in this section are used when the loudspeaker interface equipment is not located in the equipment room. If the loudspeaker amplifier is located in the equipment room, the connections do not have to be routed through the cross-connect field.

Access to loudspeaker paging is provided by an information outlet. The switch side of the cross-connect field is connected to a 278A adapter. The adapter must be modified with a D-181321 kit of parts for -48V powering. The adapter is mounted in the auxiliary cabinet, if provided. Six leads (T, R, SZ, SZ1, S, and S1) connect the 278A adapter to a TN763 Auxiliary Trunk circuit pack located in a port carrier. A TN763 circuit pack contains a maximum of four ports.

Installation

Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

1. Determine port assignment of paging zone(s) from Loudspeaker Paging Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Identify carrier slot and label both ends of an B25A cable.
3. Run and connect A25D cable from assigned port carrier slot to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 4-77).
4. Run and connect B25A cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 4-77).
5. Write lead designations on 66-type connecting block in the yellow (auxiliary) field with a permanent felt-tipped pen.
6. Mount 278A adapter.
7. Remove cover from 278A adapter and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 4-77).
8. On 278A adapter, connect BZ2 terminal to -V terminal, if required.
9. Connect -24V and GRD terminals on 278A adapter with at least a -24V 40-ma power supply. If the auxiliary cabinet is providing the power, then a D-181321 kit is required to reduce the -48V to -24V.
10. Install straps between E and F terminals and G and H terminals for the first 278A adapter. Install option straps between C and D terminals for each 278A adapter.
11. Install cover on 278A adapter.
12. Install jumper wires at cross-connect field.

13. Connect 2-pair line cord (modular plug at one end) from information outlet to loudspeaker system (see Figure 4-77).
14. Install loudspeaker equipment per manufacturer's instructions.
15. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

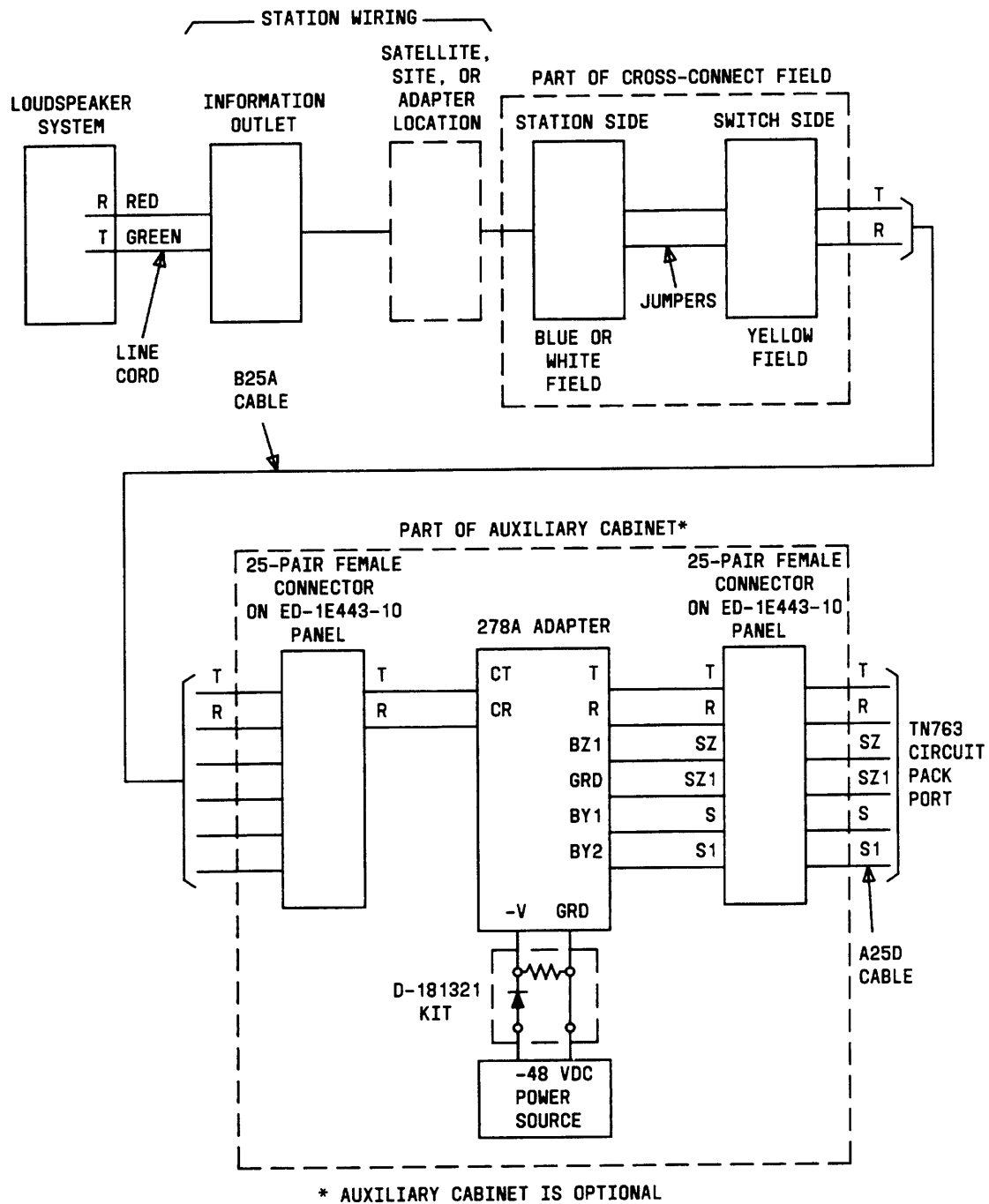


Figure 4-77. Connections for Loudspeaker Paging Zone—278A Adapter

Installing Loudspeaker Paging Access—89A Control Unit

Requirements

Figure 4-78 shows the connections for the Loudspeaker Paging feature. The connections are for one zone. These connections are required for each paging zone.

The connections shown in Figure 4-78 and the procedures provided in this section are used when the loudspeaker interface equipment is not located in the equipment room. If the loudspeaker amplifier is located in the equipment room, the connections do not have to be routed through the cross-connect field.

Access to loudspeaker paging is provided by an information outlet. The switch side of the cross-connect field is connected to a 89A Control Unit. The control unit is mounted in the auxiliary cabinet, if provided. Six leads (T, R, SZ, SZ1, S, and S1) connect the 89A Control Unit to a TN763 Auxiliary Trunk circuit pack located in a port carrier. A TN763 circuit pack contains a maximum of four ports.

Installation

Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

1. Determine port assignment of paging zone(s) from Loudspeaker Paging Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Identify carrier slot and label both ends of a B25A cable.
3. Run and connect A25D cable from assigned port carrier slot to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 4-78).
4. Run and connect B25A cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 4-78).
5. Write lead designations on 66-type connecting block in the yellow (auxiliary) field with a permanent felt-tipped pen.
6. Mount 89A control unit.
7. Remove cover from 89A control unit and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 4-78).
8. Connect PG1 and BSY1 terminals on 89A control unit to a -48 volt power supply.
9. Connect output of 2012D transformer to AC1 and AC2 terminals on 89A control unit.
10. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
11. Install cover on 89A control unit.
12. Install jumper wires at cross-connect field.
13. Connect 2-pair line cord (modular plug at one end) from information outlet to loudspeaker system (see Figure 4-78).

14. Install loudspeaker equipment per manufacturer's instructions.
15. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

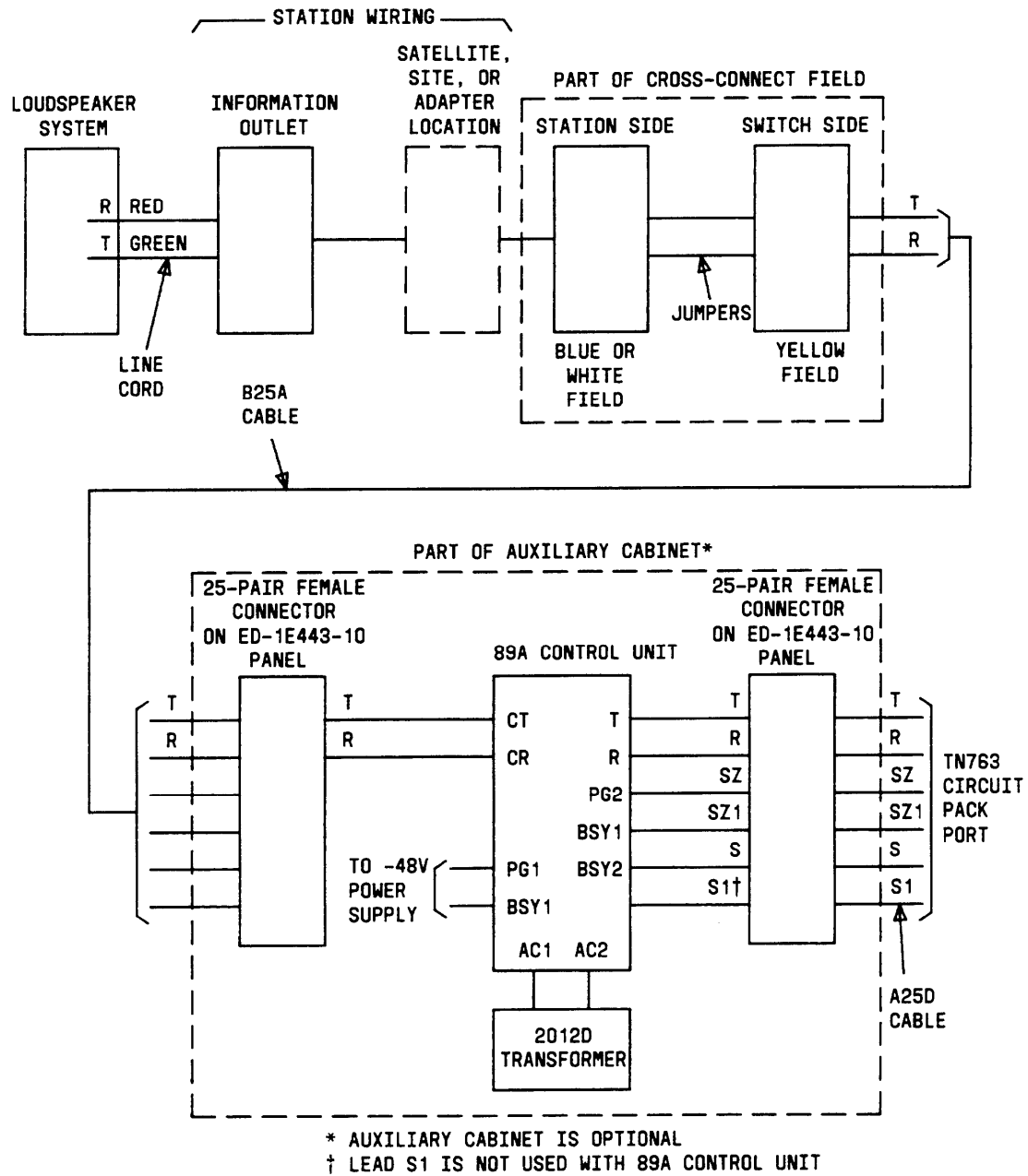


Figure 4-78. Connections for Loudspeaker Paging Zone—89A Control Unit

PagePac PAGING SYSTEM

The PagePac* paging systems use a single port of a system circuit pack to provide single or multi-zone loudspeaker paging. A PagePac system may be used in addition to the standard loudspeaker paging and code-calling capabilities of the system.

Three models are available:

- PagePac 20
- PagePac VS
- PagePac 50/100/200

PagePac 20

The PagePac 20 is a 20 watt amplifier that can be used alone to provide a single zone of paging (Figure 4-79) or it can be equipped with a Zone-Mate 9 or 39 to provide multiple paging zones (Figure 4-80). If the PagePac 20 is used alone a 278A adapter must be used.

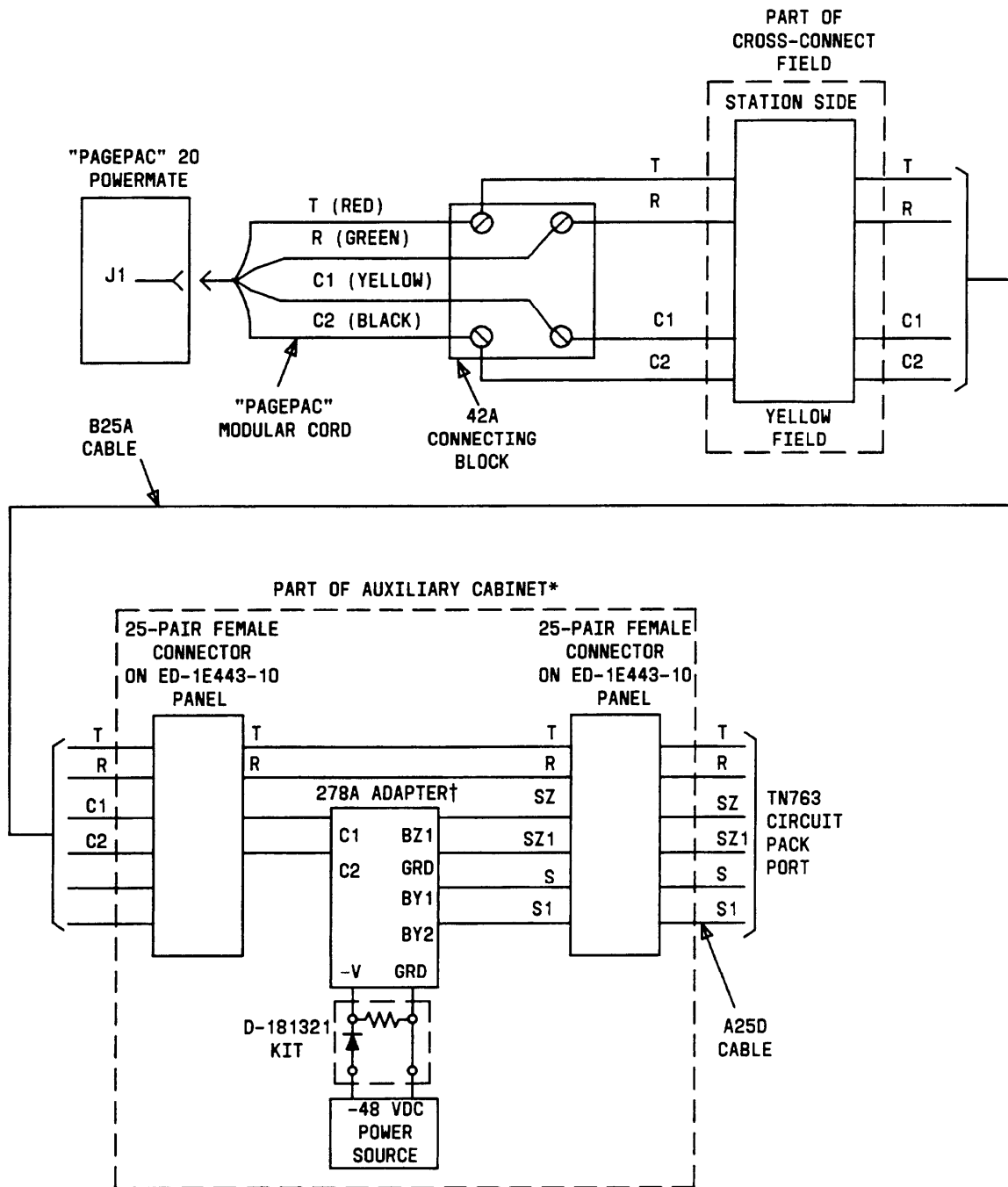
PagePac VS

The PagePac VS is a 35 watt amplifier that provides up to 3 paging zones. The PagePac VS does not require a 278A adapter. The connections for the PagePac VS are shown in Figure 4-81.

PagePac 50/100/200

The 50/100/200 PagePac Paging system will mount directly on the wall or on a 23-inch (58.4-cm) relay rack using the appropriate adapters. The unit provides 3 wattages 50, 100 and 200. The PagePac amplicenter can be used alone to provide a single zone of paging (Figure 4-82) or add-on units can be provided to create a paging system with up to 24 paging zones (Figure 4-83). If the PagePac 50/100/200 amplicenter is used alone, a 278A adapter must be used.

* Registered trademark of Harris Corporation, Dracon Division



* AUXILIARY CABINET IS OPTIONAL

† ON 278A ADAPTER, STRAP TERMINALS -V AND A

Figure 4-79. Connections for PagePac 20 Without Zone-Mate 9 or 39

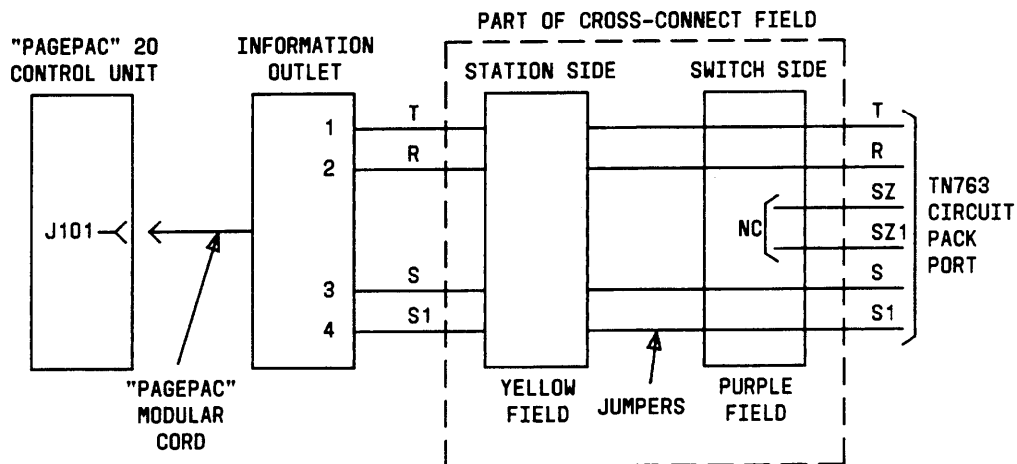
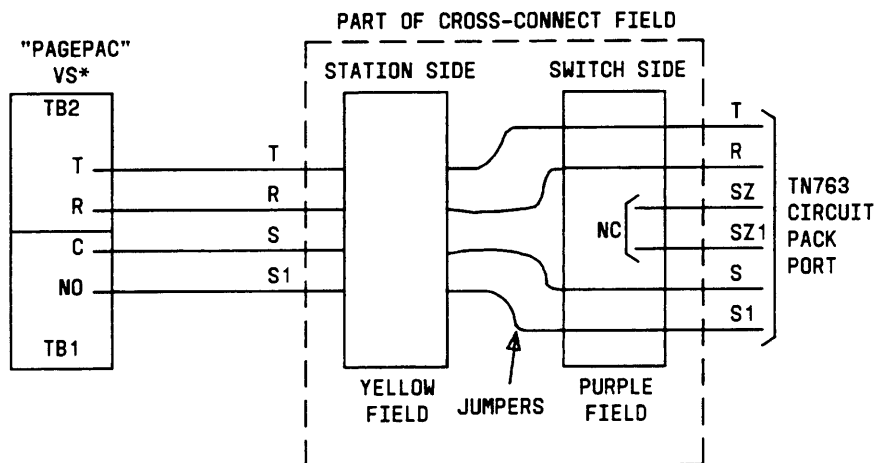


Figure 4-80. Connections for PagePac 20 With Zone-Mate 9 or 39



* IF UIC CARD IS NOT PROVIDED, ALL CONNECTIONS ARE MADE TO TB2 ON THE "PAGEPAC" VS

Figure 4-81. Connections for PagePac VS

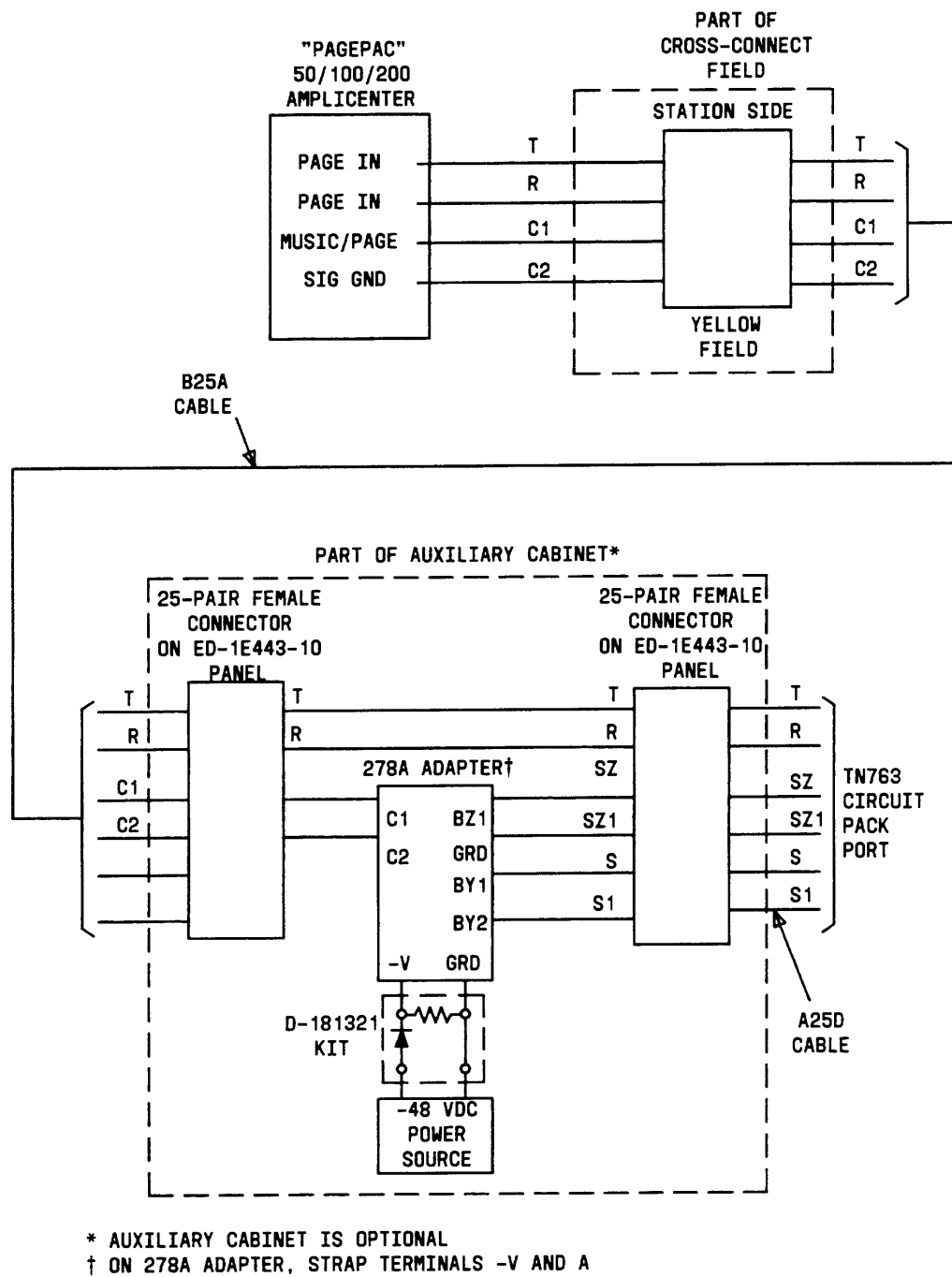
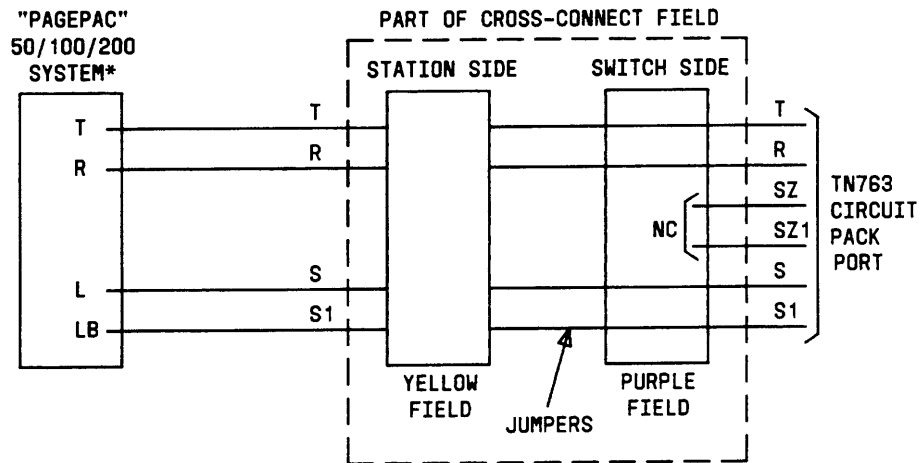


Figure 4-82. Connections for PagePac 50/100/200 Amplicenter Only



* OPTION C APPLIQUE FOR LOOP START WITH 24V BATTERY
MUST BE PROVIDED

Figure 4-83. Connections for PagePac 50/100/200 System

Installing Music-on-Hold Access

Requirements

Figure 4-84 shows the connections for the Music-on-Hold feature when loudspeaker equipment is FCC registered. Figure 4-85 shows the connections for the Music-on-Hold feature when loudspeaker equipment is not FCC registered.

The connections shown in Figures 4-84 and 4-85 and the procedures provided are used when the music source is not located in the equipment room. If the music source is located in the equipment room, the connections do not have to be routed through the cross-connect field.

Access to the music source is provided by an information outlet. Two leads (T and R) connect the information outlet to the cross-connect field. If the music source is FCC registered, the switch side of the cross-connect field is connected directly to the switch cabinet. If the music source is not FCC registered, the switch side of the cross-connect field is connected to a 36A voice coupler. The coupler is mounted in the auxiliary cabinet, if provided.

Two leads (T, R) connect the coupler or switch side of the cross-connect field to a TN763 Auxiliary Trunk circuit pack located in a port carrier. A TN763 circuit pack contains a maximum of four ports.

Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

Installation—FCC Registered Music Source

1. Determine port assignment of feature from Feature-Related System Parameters Form:

EXAMPLE:	Port Number	B	02	01
		Carrier	Slot	Circuit

2. Install jumper wires at cross-connect field.
3. Install music source per manufacturer's instructions.
4. Connect line cord (modular plug at one end) from information outlet to music source (see Figure 4-84).
5. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

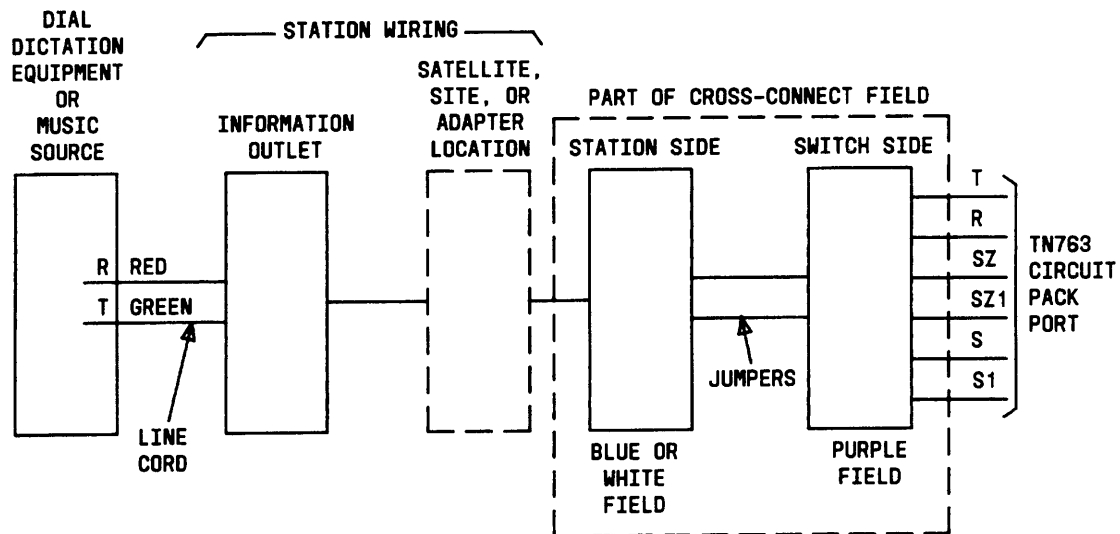


Figure 4-84. Connections for FCC Registered Equipment Provided for Music-on-Hold/Dial Dictation Equipment (Auxiliary Access)

Installation—Non-FCC Registered Music Source

1. Determine port assignment of feature from Feature-Related System Parameters Form:

EXAMPLE:	Port	Number	B	02	01
			Carrier	Slot	Circuit

2. Identify carrier slot and label both ends of an A25D cable.
3. Run and connect A25D cable from assigned port carrier slot to 25-pair connector on auxiliary cabinet's ED-1E443-10 Intra-Connection Panel (see Figure 4-85).
4. Run and connect B25A cable from 25-pair connector on ED-1E443-10 Intra-Connection Panel to switch side of cross-connect field (see Figure 4-85).
5. Write lead designations on 66-type connecting block in the yellow field using a permanent felt-tipped pen.
6. Mount 36A voice coupler.
7. Remove cover from 36A voice coupler and make connections to 110-type wiring blocks on ED-1E443-10 Intra-Connection Panel (see Figure 4-85).
8. Connect output of 2012D transformer to AC and ACG terminals on 36A voice coupler.
9. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
10. Install cover on 36A voice coupler.
11. Install jumper wires at cross-connect field.
12. Install music source per manufacturer's instructions.
13. Connect 2-pair line cord (modular plug at one end) from information outlet to music source (see Figure 4-85).
14. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

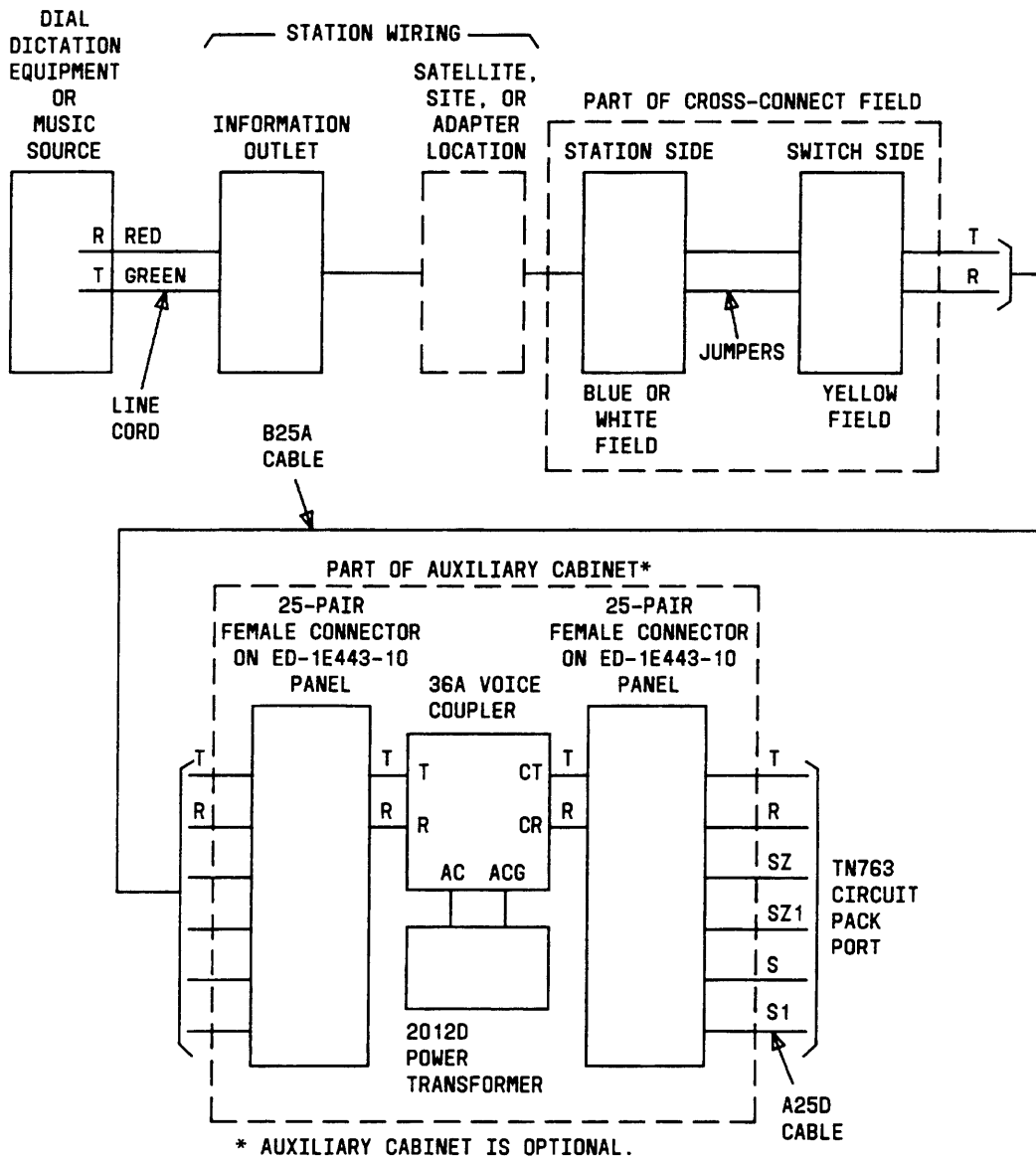


Figure 4-85. Connections for Non-FCC Registered Equipment Provided for Music-on-Hold/Dial Dictation Equipment (Auxiliary Access)

Installing Loudspeaker Paging With Background Music

Requirements

Figures 4-86 and 4-87 show the additional connections required when loudspeaker paging is installed with background music. Refer to the installation procedures for installing loudspeaker paging (278A adapter and 89A control unit) and music-on-hold.

Installation Using 278A Adapter

1. Connect music source to M1 and M2 terminals on 278A adapter (see Figure 4-86).
2. Adjust music source level.

Installation Using 89A Control Unit

1. Connect music source to CMS1 and CMS2 terminals on 89A Control Unit (see Figure 4-87).
2. Adjust music source level.

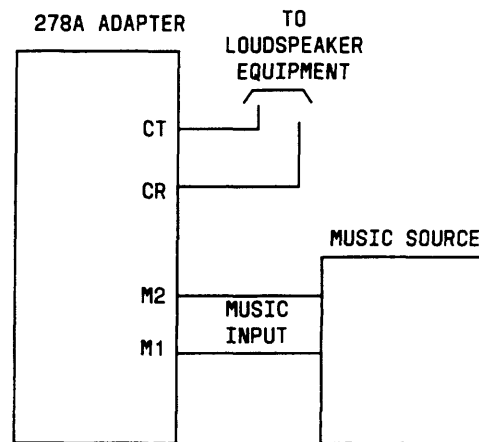


Figure 4-86. Loudspeaker Paging With Background Music Connections—278A Adapter

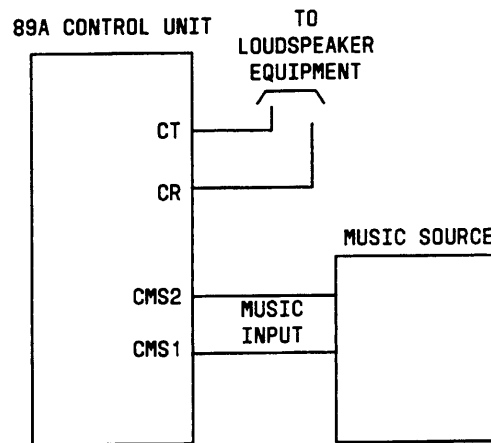


Figure 4-87. Loudspeaker Paging With Background Music Connections—89A Control Unit

Installing Recorded Announcement Equipment

Requirements

Figure 4-88 shows the connections for Recorded Announcement when recorded announcement equipment is FCC registered. Figure 4-89 shows the connections for Recorded Announcement when recorded announcement equipment is not FCC registered.

Note: For R1V3, if the TN750 Announcement circuit pack is provided, this circuit pack replaces all external announcement devices except for the wake-up announcement unit.

Access for recorded announcement equipment is provided by an information outlet. Two leads (T, R) connect the information outlet to the cross-connect field.

If the recorded announcement equipment is FCC registered, the switch side of the cross-connect field is connected directly to switch cabinet. If the recorded announcement equipment is not FCC registered, the switch side of the cross-connect field is connected to a 36A voice coupler. The 36A coupler is mounted in an auxiliary cabinet, if provided.

The switch side of the cross-connect field is connected to a TN742 or TN769 Analog Line circuit pack located in a port carrier. The TN742 or TN769 circuit pack contains a maximum of eight ports.

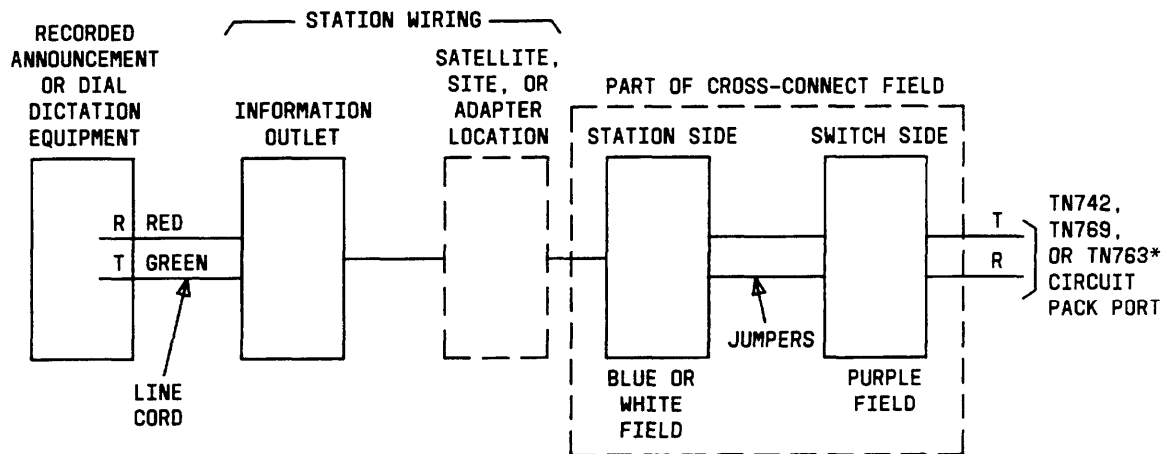
Note: If auxiliary cabinet is not provided, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 Intra-Connection Panel.

Installation—FCC Registered Recorded Announcement Equipment

1. Determine port assignment of feature from Announcement Form:

EXAMPLE: Port Number B 02 01
 Carrier Slot Circuit

2. Install jumper wires at cross-connect field.
3. Install recorded announcement equipment per manufacturer's instructions.
4. Connect 2-pair line cord (modular plug at one end) from information outlet to recorded announcement equipment (see Figure 4-88).
5. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.



* TN763 CAN BE USED ONLY FOR RECORDED TELEPHONE DICTATION.

Figure 4-88. Connections for FCC Registered Equipment Provided for Recorded Announcement/Dial Dictation Equipment (Analog Access)

EXAMPLE:	Port	Number	B	02	01
			Carrier	Slot	Circuit

- 4-137**

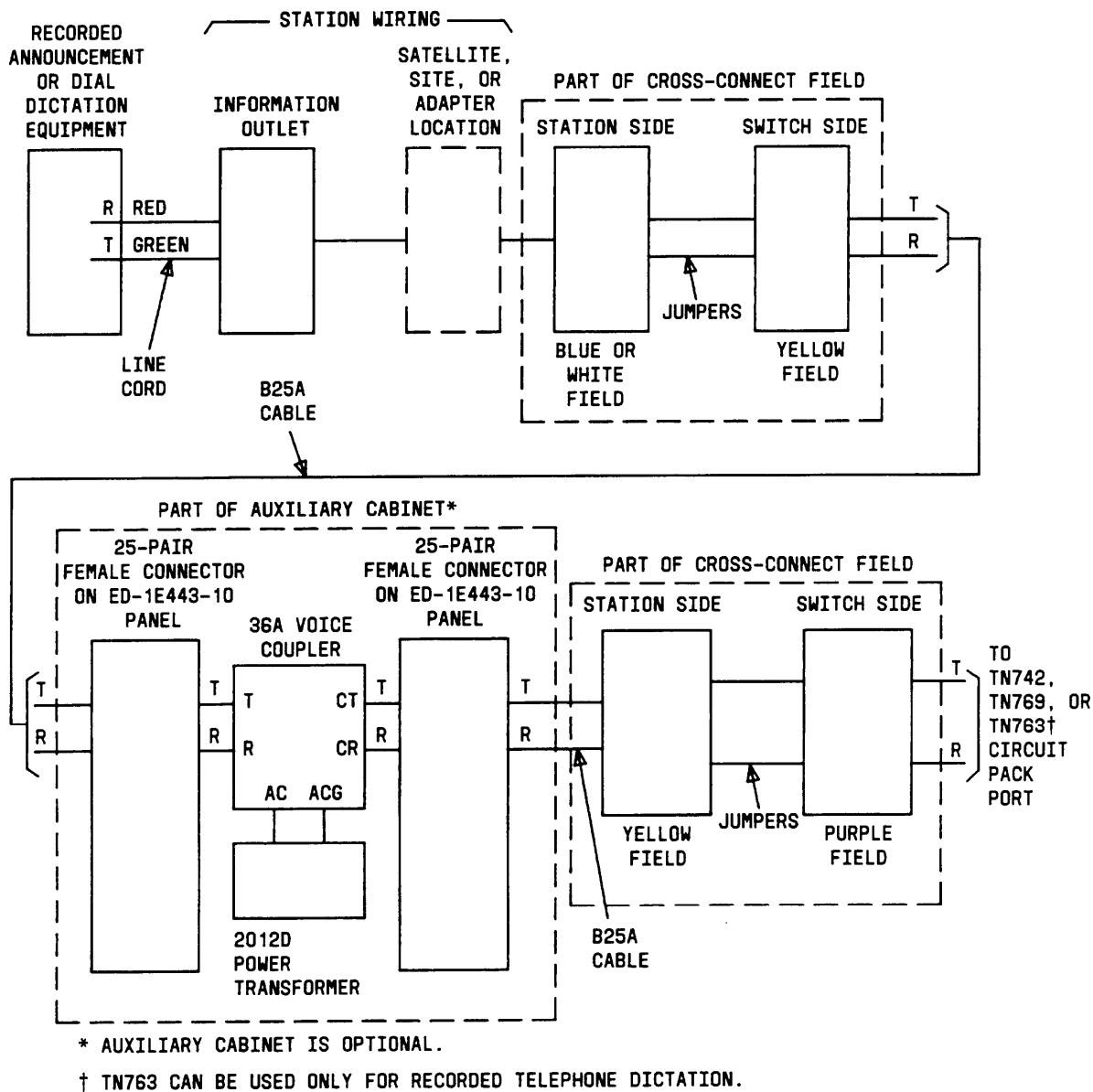


Figure 4-89. Connections for Non-FCC Registered Recorded Announcement/Dial Dictation Equipment (Analog Access)

Digital Announcer

The Cook Electric Digital Announcer can be mounted in the Auxiliary cabinet's 23-inch (58.4-cm) relay rack. It includes the side bracket kit which consists of two side brackets and four mounting screws. The vertical height is 1.75 (4.4 cm) inches.

If the Digital Announcer is not located in the auxiliary cabinet, it is powered by a 117-volt ac adapter furnished by Cook Electric. If the Digital announcer is located in the auxiliary cabinet, DC power (-48V) is provided from a rectifier mounted at the base, with an Alarm Panel at the top.

Note: For R1V3, if the TN750 Announcement circuit pack is provided, this circuit pack replaces all external announcement devices except for the wake-up announcement unit.

Installation

1. Connect a pair of wires from the Alarm Panel to (J2) connector pins (1) and (8) of the Digital Announcer.
2. Mount 36A voice coupler.
3. Remove cover from 36A voice coupler.
4. Connect a pair of wires from (J1) connector pins (J) and (K) or to the modular jack of the digital announcer, to the T and R terminals on the 36A Voice Coupler (see Figure 4-90).
5. Connect a pair of wires from the CT and CR terminals on the 36A Voice Coupler to the 110-type wiring block on the ED-1E443-10 Intra-Connection Panel.
6. Connect output of 2012D transformer to AC and ACG terminals on 36A voice coupler.
7. Plug 2012D transformer into 117-volt power outlet not under control of a wall switch.
8. Install cover on 36A voice coupler.
9. Connect an B25A 25-pair cable from the 25-pair connector on the ED-1E443-10 Intra-Connection Panel to the station side of the cross-connect field.
10. Write lead designations on the 66-type connecting block in the yellow field using a permanent felt-tipped pen.
11. Install jumper wires at cross-connect field.
12. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

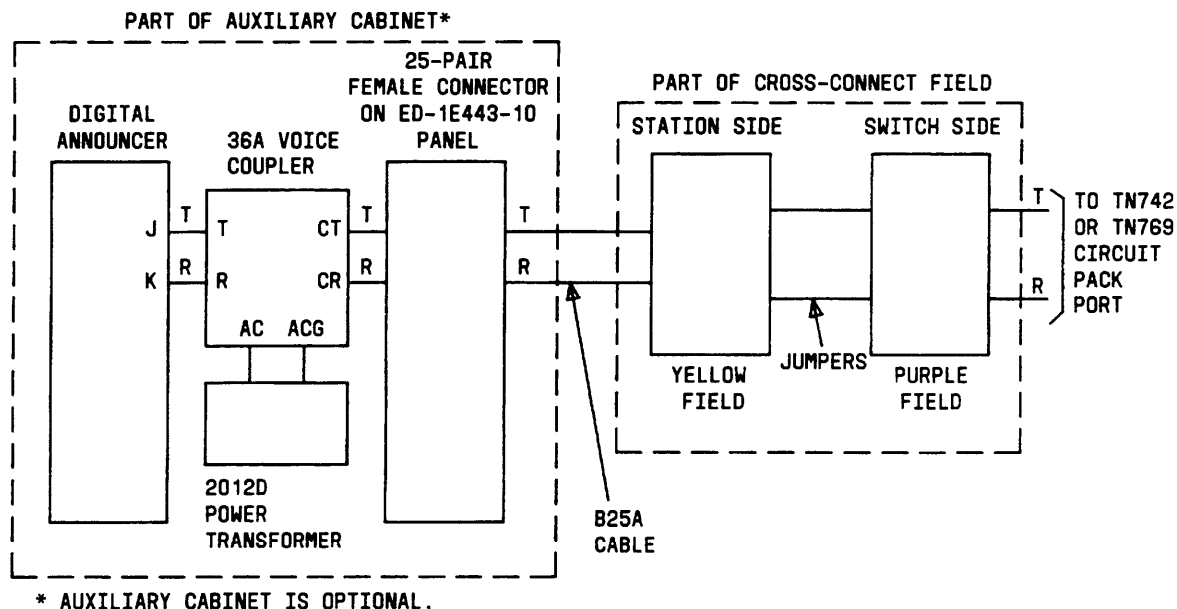


Figure 4-90. Connections to Digital Announcer Located in Auxiliary Cabinet

Installing Audichron Wake-Up Announcement System—R1V3 Only

Requirements

The wake-up announcement system is available as a basic unit or with mounting ears for use in the auxiliary cabinet. A battery backup arrangement is also available. The following is a list of available equipment:

- Basic Unit—H9040 Group 8: provides the carrier and six plug-in circuit packs required for unit operation.
- Battery Pack Circuit—H9040 Group 10: provides battery backup to memory circuits during brief power outages.
- Mounting Ears—H9040 Group 13: provides mounting ears that allows the basic unit to be mounted in the auxiliary cabinet.

Figures 4-91 and 4-92 show the connections for the Audichron wake-up announcement system. Figure 4-93 shows the power and ground connections. One Analog Line port and an Auxiliary Trunk circuit pack are required for connection to the wake-up announcement unit.

Access for the TN742 or TN769 Analog Line circuit pack is provided by an information outlet. Two leads (T, R) connect the information outlet to the cross-connect field. The TN742 or TN769 circuit pack contains a maximum of eight ports.

The TN763B circuit pack must be used for the wake-up announcement unit. Access for the TN763B is through the cross-connect field. All four ports of the circuit pack are connected to the announcement unit.

Installation

1. Determine port assignment of feature from Hospitality-Related System Parameters Form:

EXAMPLE: Port Number B 02 01

Carrier Slot Circuit

2. Connect the analog line port to the announcement unit with 2-pair line cord (modular plug on one end) from information outlet (see Figure 4-91).
3. Install jumper wires at cross-connect field.
4. Identify carrier slot for the auxiliary trunk circuit pack and label both ends of a switch cable.
5. Connect cable to appropriate port carrier slot and dress down sides of cabinet.
6. Run and connect cable from bottom of the switch cabinet through cable slack manager, if provided, to 66 connecting block in the purple cross-connect field.
7. Run and connect B25A cable from second 66-type connecting block in the yellow cross-connect field to location of announcement unit.
8. Connect A25D cable to J1 connector on the rear of the announcement unit.
9. Install jumpers between the 66-type connecting blocks as shown in Figure 4-92.
10. Connect -48v dc power unit to the announcement unit (see Figure 4-93). The power unit must be supplied locally and be rated at -48v dc at 1.2 amps.
11. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

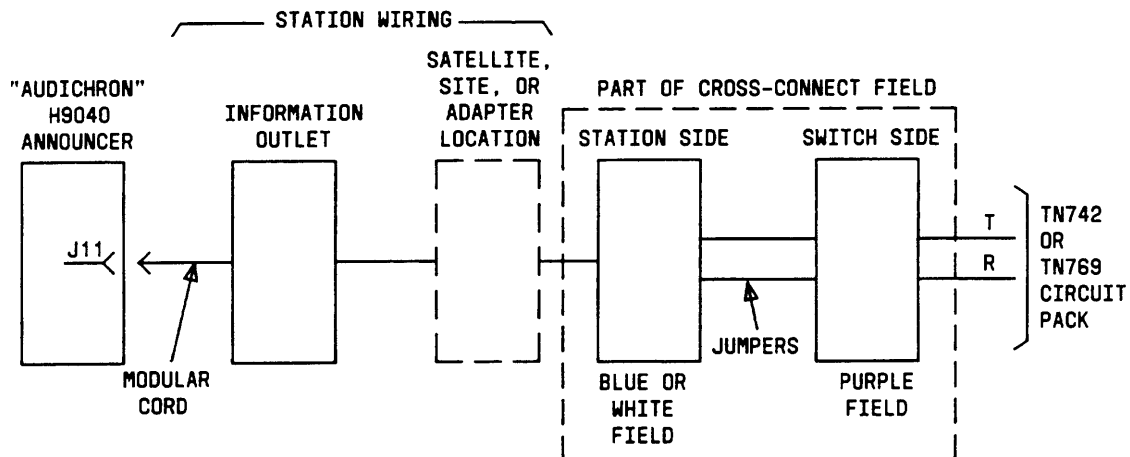


Figure 4-91. Connections for Analog Line Port to Wake-Up Announcement Unit

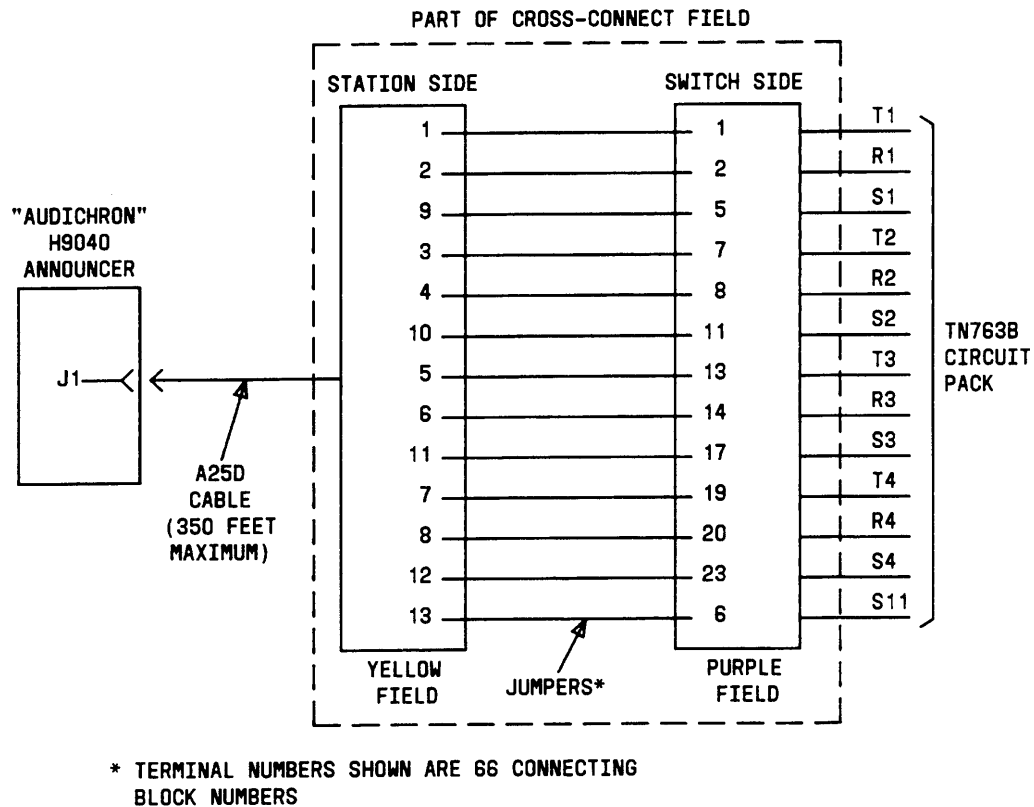


Figure 4-92. Connections for Auxiliary Trunk Circuit Pack to Wake-Up Announcement Unit

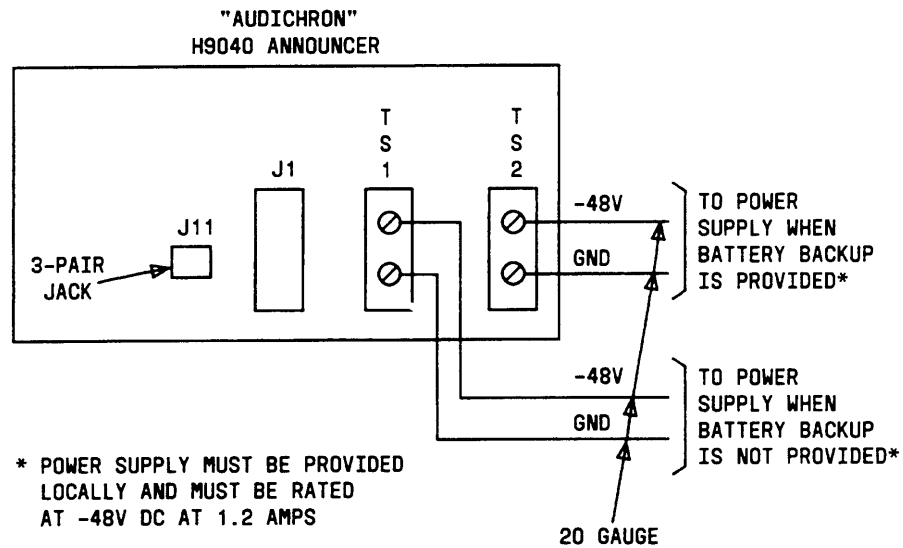


Figure 4-93. Connections for Power Unit to Wake-Up Announcement Unit

Installing Dial Dictation Equipment

The procedures and requirements for installing the Recorded Telephone Dictation feature is the same as for the Recorded Announcement feature for analog access (see Figures 4-88 and 4-89) and the same as Music-on-Hold for auxiliary trunk access (see Figures 4-84 and 4-85).

The port assignment for the feature is on the Station Record Form when a TN742 or TN769 circuit pack is used. The port assignment for the feature is on the Trunk Group Form For Customer Provided Equipment when a TN763 circuit pack is used.

Installing 3270 Data Modules

Requirements

The 3270 data module consists of a family of protocol converters that allow 3270-type terminals to communicate with a host computer through the system. The three types of 3270 data modules are the following:

- 3270A (Asynchronous)
- 3270C (Controller)
- 3270T (Terminal)

3270 data modules are connected directly to TN754 Digital Line circuit packs. This manual contains only information for connection to the data modules from the system switch. Installation and testing information for the 3270 data modules is contained in the *3270 DATA MODULE—Coaxial-to-DCP Protocol Converter—Product Guide*, 999-700-520.

Installation

Connection to 3270A or 3270T Data Module (Figure 4-94)

1. Determine port assignment of 3270A or 3270T Data Module from Data Module Form:

EXAMPLE:	Port Number	B	02	01
	Carrier	Slot	Circuit	

2. Install jumper wires at cross-connect field.
3. Run and connect 4-pair line cord (modular plug on both ends) from information outlet to data module (see Figure 4-94).
4. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

Connection to 3270C Data Module (Figure 4-95)

1. Identify carrier slot and label both ends of switch cable.
2. Connect cable to appropriate port carrier slot and dress cable down sides of cabinet.
3. Run and connect B25A cable from bottom of the switch cabinet through cable slack manager, if provided, to a connecting block in the purple trunk/auxiliary field.
4. Run and connect B25A cable from connecting block in the yellow Trunk/Auxiliary Field to location of 3270C data module (see **Note**).

Note: The data module is located in the auxiliary cabinet, if provided.

5. Install jumper wires at cross-connect field.
6. Connect B25A cable to DCP connector on rear of data module.
7. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

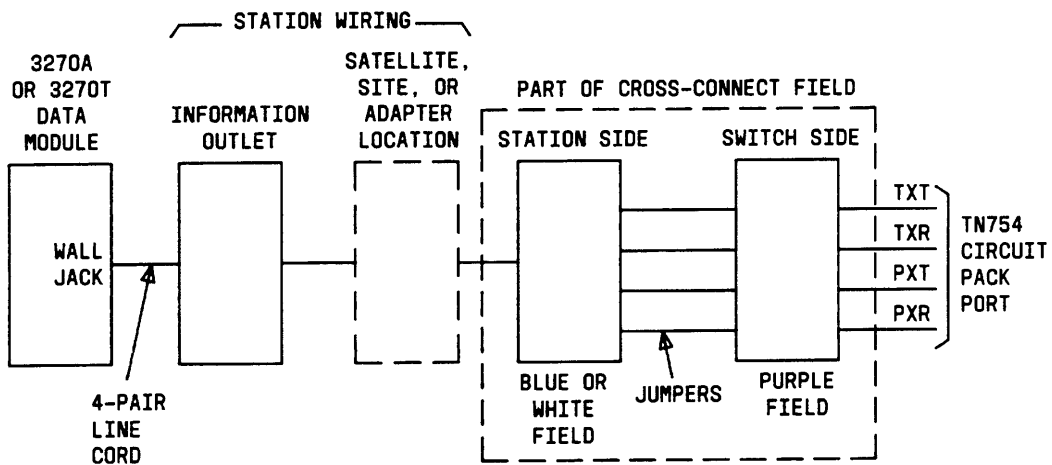


Figure 4-94. Connections for 3270A or 3270T Data Module

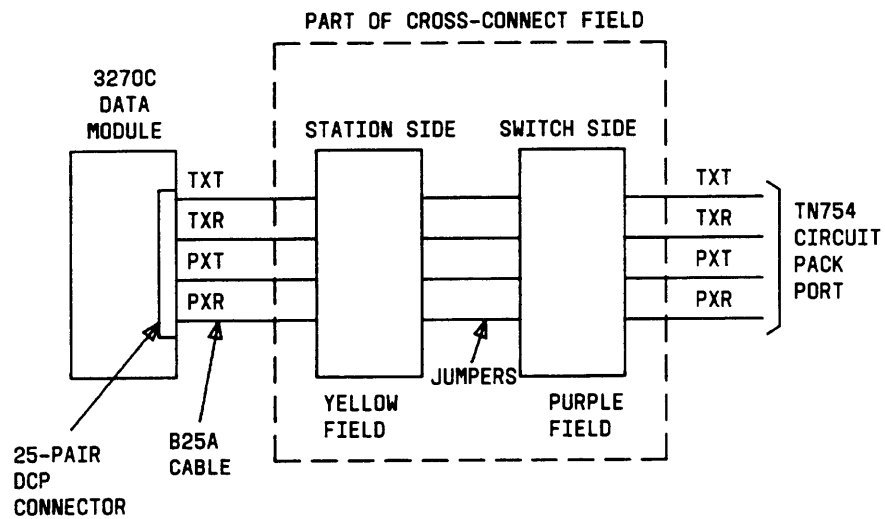


Figure 4-95. Connections for 3270C Data Module

Installing Processor Data Modules (PDMs)

Requirements

The interface between the system and many types of data equipment is provided by a TN754 Digital Line circuit pack connected to a PDM. The following types of data equipment can be connected by a PDM:

- Applications Processor/Adjunct—System 75 Only
- Applications Processor/Terminal—System 75 Only
- Audio Information Exchange/Adjunct—V3 Only
- Audio Information Exchange/Terminal—V3 Only
- Call Management System—V3 Only
- Distributed Communications System (DSC)—V2 and V3)
- Property Management System—V3 Only
- Journal Printer—V3 Only
- Customer Provided Terminals and Host Computers
- Station Message Detailed Recording

PDMs are connected to TN754 Digital Line circuit packs and are mounted individually or in a 71A data mounting. Each 71A data mounting can contain eight PDMs. This manual contains only information for connection to the PDMs from the system switch. PDM installation and testing information is contained in *AT&T System 75 User's Guide—Processor Data Module*, 999-700-028.

The data mounting is connected by a B25A cable through the cross-connect field to a Digital Line circuit pack. The PDMs can also be mounted and connected individually through the cross-connect field.

Installation

Connection to Data Mounting (Figure 4-96)

1. From Data Module Form, determine port assignment of PDMs:

EXAMPLE:	Port Number	B	02	01
	Carrier	Slot	Circuit	

2. Connect B25A cable to DCP-LINE connector on rear of data mounting.
3. Run and connect cable from data mounting to station side of cross-connect field.
4. write lead designations on the 66-type connecting blocks in the yellow field using a felt-tipped pen.
5. Connect jumper wires at cross-connect field (see Figure 4-96).
6. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

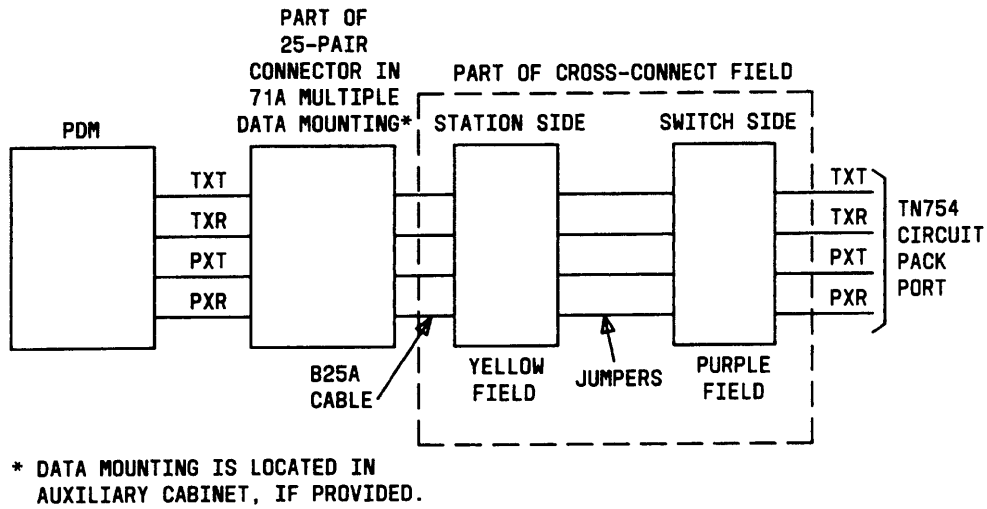


Figure 4-96. Connections for PDMs in Data Mounting

Connection to Individual PDMs (Figure 4-97)

1. Determine port assignment of PDM from Data Module Form:

EXAMPLE: Port Number B 02 01

Carrier Slot Circuit

2. Install PDM per instructions in *PDM User's Guide* (999-700-028IS).
3. Install jumper wires at cross-connect field.
4. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

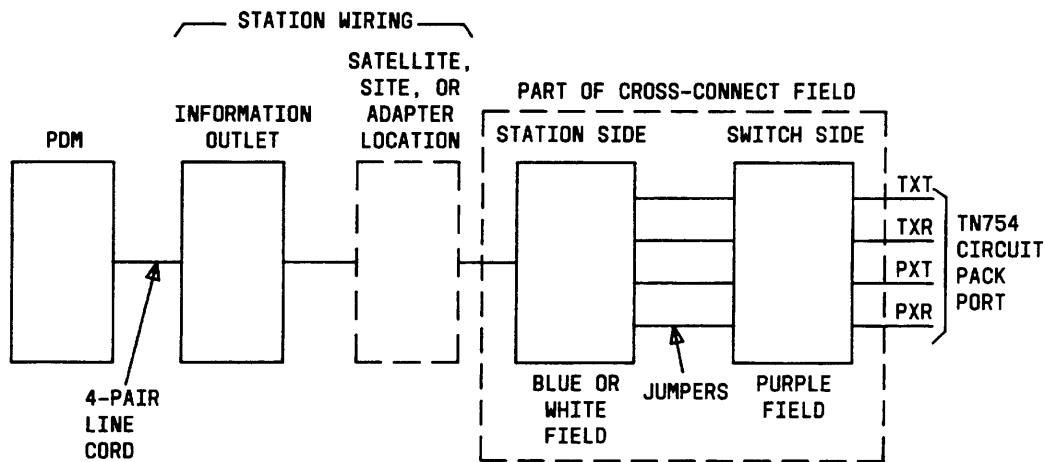


Figure 4-97. Connections for Individual PDMs

Installing Applications Processor Interface—System 75

Requirements

The interface between System 75 and the Applications Processor/Adjunct or Applications Processor/Terminal is through processor data modules (PDMs). Applications Processor alarms are connected through the trunk/auxiliary field to the System 75. Applications Processor Terminals can also be reconnected through the System 75 cross-connect field to the Applications Processor.

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.

The installation for the Applications Processor Interface from the System 75 switch is covered under the section for installing PDMs (see Figures 4-96 and 4-97).

Information for connecting the PDMs to the Applications Processor and setting the PDM option switches is contained in *Applications Processor 16—Installation, Administration, and Acceptance Test—Service Manual*, 585-201-102.

The connections for the Applications Processor Alarms are shown in Figure 4-98.

Installation of Applications Processor Alarms Connection to Alarms

1. Run and connect A25B cable from REMOTE ALARM connector on rear of Applications Processor to connecting block in the Trunk/Auxiliary Field to be used for the Applications Processor alarms (see Figure 4-98).
2. At Trunk/Auxiliary Field, connect jumpers from seventh pair on the connecting block in the yellow field for the Applications Processor to ALARM MONITORS 1M terminals (see Figure 4-98). Designate seventh pair as MAJ 1.
3. Connect jumpers from ninth pair on the connecting block in the yellow field for the Applications Processor to ALARM MONITORS 1m terminals (see Figure 4-98). Designate ninth pair as MIN 1.

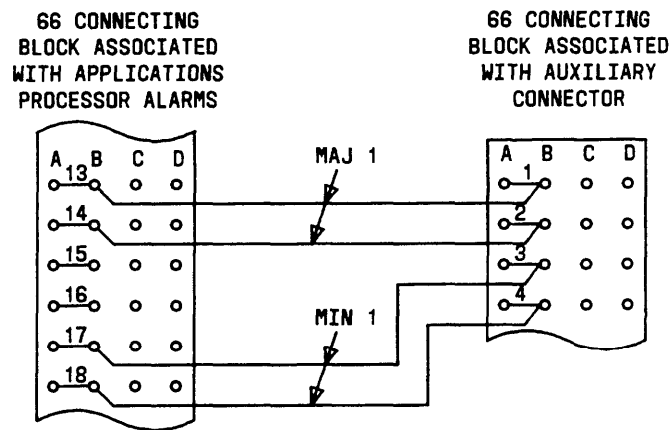


Figure 4-98. Connections at Trunk/Auxiliary Field for Applications Processor Alarms

Installing Audio Information Exchange (AUDIX) Interface—V3 Only

Requirements

The interface between the system and the Audio Information Exchange/Adjunct or Audio Information Exchange/Terminal is through processor data modules (PDMs). AUDIX Terminals can also be connected through the system cross-connect field to the AUDIX. The large AUDIX is not supported on the System 75 or System 75 XE.

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.
- System 75 XE uses the Processor Interface (TN765) as the required control circuit pack.

The installation for the AUDIX Interface from the system switch is covered under the section for installing PDMs (see Figures 4-96 and 4-97).

Information for connecting the PDMs to the AUDIX and setting the PDM option switches is contained in *AUDIX-M—Installation Service Manual*, 585-300-103.

The AUDIX also requires up to 16 analog circuit pack ports from the system to be connected through the cross-connect field to the AUDIX. Refer to Table 3-K for port circuit pin numbers.

Installing Call Management System (CMS) Interface—V3 Only

Requirements

The interface between the system and the Call Management System is through processor data modules (PDMs).

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.

- System 75 XE uses the Processor Interface (TN765) as the required control circuit pack.

The installation for the Call Management System Interface from the system switch is covered under the section for installing PDMs (see Figures 4-96 and 4-97).

Information for connecting the PDMs to the Call Management System and setting the PDM option switches is contained in *3B2 Messaging Server Installation and Maintenance Service Manual*, 585-205-110.

Installing Distributed Communications System (DCS)—V2 and V3

Requirements

The DCS link to the system can be provided by processor data modules (PDMs) or over a DS1 Tie Trunk..

- System 75 Version 1 includes Interface 1 (TN716), Interface 2 (TN720), and Interface 3 (TN719) as the required control circuit packs.
- System 75 Version 2 or 3 includes Interface 1 (TN716), Interface 2 (TN738), and Interface 3 (TN719) as the required control circuit packs.
- System 75 XE uses the Processor Interface (TN765) as the required control circuit pack.

The installation for the installing the DCS link using PDMs is covered under the section for installing PDMs (see Figures 4-96 and 4-97). The following switch settings for the PDM are recommended:

Switch	Setting
9600 BAUD	ON
SYNC	ON
INT	ON
KYBD	ON
AANS	ON
All others	OFF

The baud rate between switches may vary depending on the installation.

Refer to the installation for installing DS1 Tie Trunks if the DCS link is to be installed using DS1 Tie Trunks.

Property Management System Interface—V3 Only

Requirements The interface between the system and the customers property management system is through processor data modules. The installation for the property management interface from the system switch is covered under the section for installing PDMs (see Figures 4-96 and 4-97).

Refer to the appropriate vendor's documentation for connecting the PDM to the property management system. The option switches on the PDM should be set in accordance with the requirements for the customers property management system.

A journal printer can be used in conjunction with the property management system. A serial printer must be used. The connections for the printer are the same as for the property management interface. Refer to the appropriate vendor's documentation for connecting the PDMs to the printer. The option switches on the PDM should be set according to the requirements for the printer.

The property management system interface and the journal printers can also be installed using Asynchronous Data Unit (ADUs). The connections are the same as for a customer-provided data terminal (see Figure 4-99).

Installing Customer-Provided Terminal Using Asynchronous Data Units (ADUs)

The interface between the system and the customer's data terminals and host computer for R1V1, R1V2, and R1V3 systems is through PDMs. Refer to installing PDMs for details (see Figures 4-96 and 4-97).

For R1V2 or R1V3 systems only, the customer's asynchronous data terminals can be connected through a Z3A Asynchronous Data Unit (ADU) to a TN726 Data Line circuit pack (see Figure 4-99). Normally, the ADU is powered from the connected data terminal. The ADU can also be remotely or locally powered using a 2012D transformer equipped with a 248B adapter. ADUs connected to receive-only printers always require external power. The need for external power must be determined experimentally for ADUs connected to other devices. For details on ADU installation, refer to the *Z3A Asynchronous Data Unit User's Manual*, (555-401-701).

Installation

1. Determine port assignment of ADU from Data Module Form:

EXAMPLE:	Port Number	B	02	01
	Carrier	Slot	Circuit	

2. Install jumper wires at cross-connect field.
3. Connect RS-232 plug on ADU to data terminal.
4. Run and connect 4-pair line cord (modular plug on both ends) from information outlet to ADU (see Figure 4-99).
5. Administer per *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

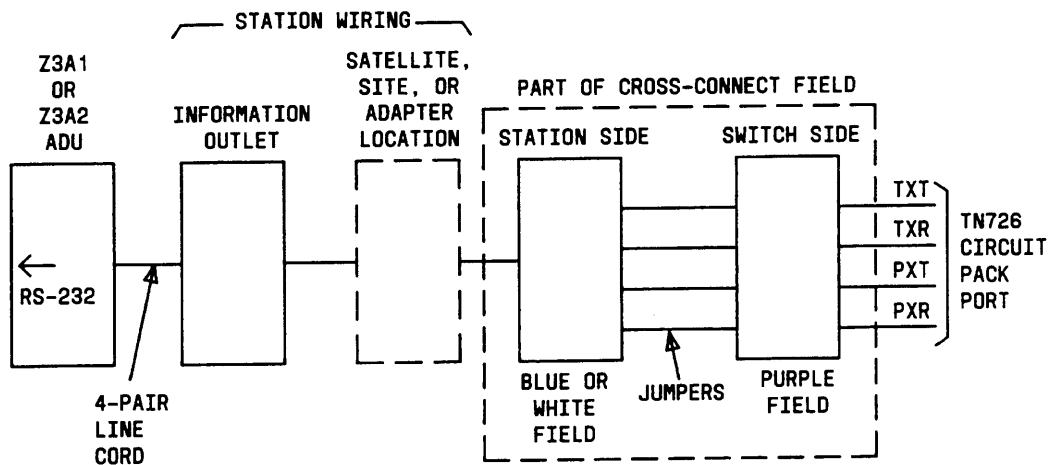


Figure 4-99. Connections to ADU for Data Terminal Equipment (R1V2 or R1V3)

Installing Station Message Detail Recording Interface

The interface between the system and Station Message Detail Recording Equipment (SMDR) is through a processor data module (PDM), trunk data module, or 212-type modem. Refer to the section on installing PDMs for connections from the switch to the PDM or trunk data module (Figures 4-96 and 4-97). Administer using the *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

The connection from the switch to the 212-type modem is the same as for External Ringing (Figure 4-75). When a 212-type modem is used, a TN758 Pooled Modem must be provided. One of the Pooled Modem's conversion resources is dedicated to the SMDR output device. Administer using the *AT&T System 75 and System 75 XE Implementation* and *AT&T System 75 and System 75 XE Administration*.

For R1V2 or R1V3 systems only, a TN726 Data Line circuit pack may be used and PDMs, TDMs, or 212-type modems are not required for data terminal equipment. The connection from the switch to the SMDR Output Receiving Device is the same as a customer-provided data terminal (see Figure 4-99).

Interface Cabling to SMDR Output Device

Figure 4-100 shows the cabling required to connect the TELESEER* unit, printer, or customer-provided data terminal equipment (DTE). The M25B cable connects to the P1 connector on the TELESEER unit.

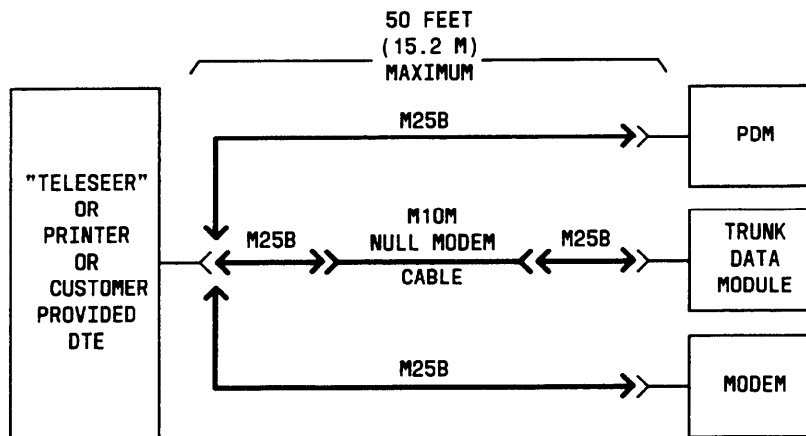


Figure 4-100. SMDR Cabling for Data Terminal Equipment

* Trademark of AT&T

Figure 4-101 shows the cabling required to connect the 94A LSU, a printer, or customer-provided data communications equipment (DCE). The M25B cable connects to the C1 connector on the 94A LSU.

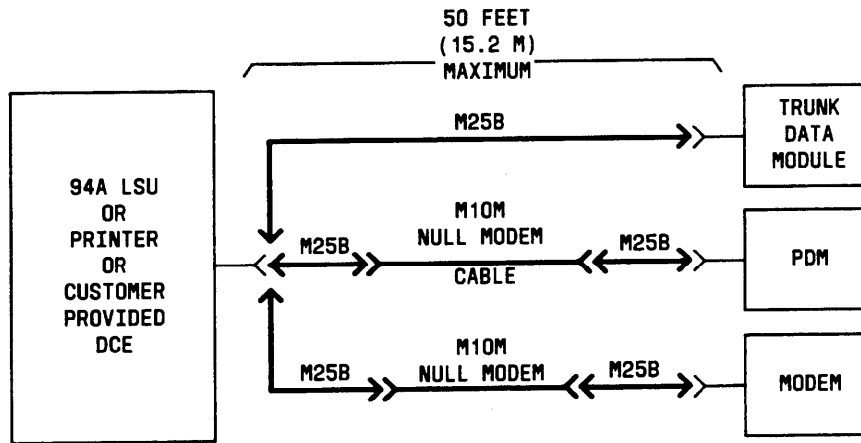


Figure 4-101. SMDR Cabling for On-Premises Data Communications Equipment

Figure 4-102 shows the cabling required to connect a remote host connected by a private line.

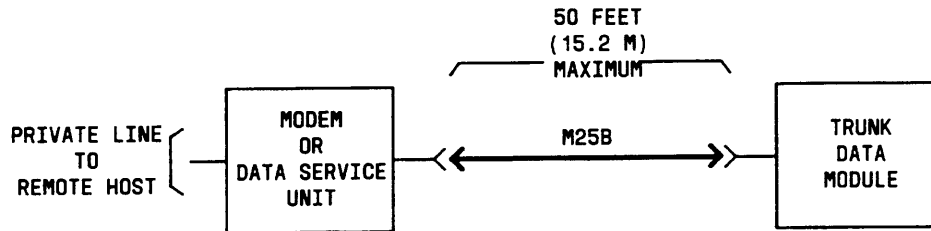


Figure 4-102. SMDR Cabling for a Remote Host

PDM, Trunk Data Module, or 212-Type Modem Switch Settings

PDM or Trunk Data Module

The following switch settings are recommended:

Switch	Setting
SELF TEST	OFF
LOC LOOP/REM LOOP	OFF
1200	ON
AANS (PDM Only)	ON
SIGLS	ON
PRTY	ON
1/0D	ON
All Others	OFF

212-Type Modem

The following switch settings are recommended:

Switch	Setting
AL	OFF
ST	OFF
RDL	OFF
DL	OFF
HS	ON

Installing Information System Network Interface

The Information System Network (ISN) interconnects computers and terminals on a customer's premises. When an ISN and System 75 or System 75 XE are collocated, voice and data can be shared at the same information outlet as shown in Figure 4-103.

The voice pair that connects to a TN742 or TN769 Analog Line circuit pack port occupies the first pair of the information outlet. The data pairs that connect to the ISN occupy the second and third pairs of the information outlet. The voice and data pairs can be separated as shown in Figure 4-103. The data pairs either connect to an Asynchronous Interface Module (AIM) located in an ISN concentrator or the ISN packet controller.

The Z3A1 Asynchronous Data Unit (ADU) at the user room contains two 8-pin modular jacks to accept the plugs on the line cords that connect to the information outlet and an analog voice terminal. Normally, this ADU is powered from the connected data terminal. The ADU can also be remotely or locally powered using a 2012D transformer equipped with a 248B adapter. ADUs connected to receive-only printers always require external power. The need for external power must be determined experimentally for ADUs connected to other devices. For details on ADU installation, refer to the *Z3A Asynchronous Data Unit User's Manual*, (555-401-701).

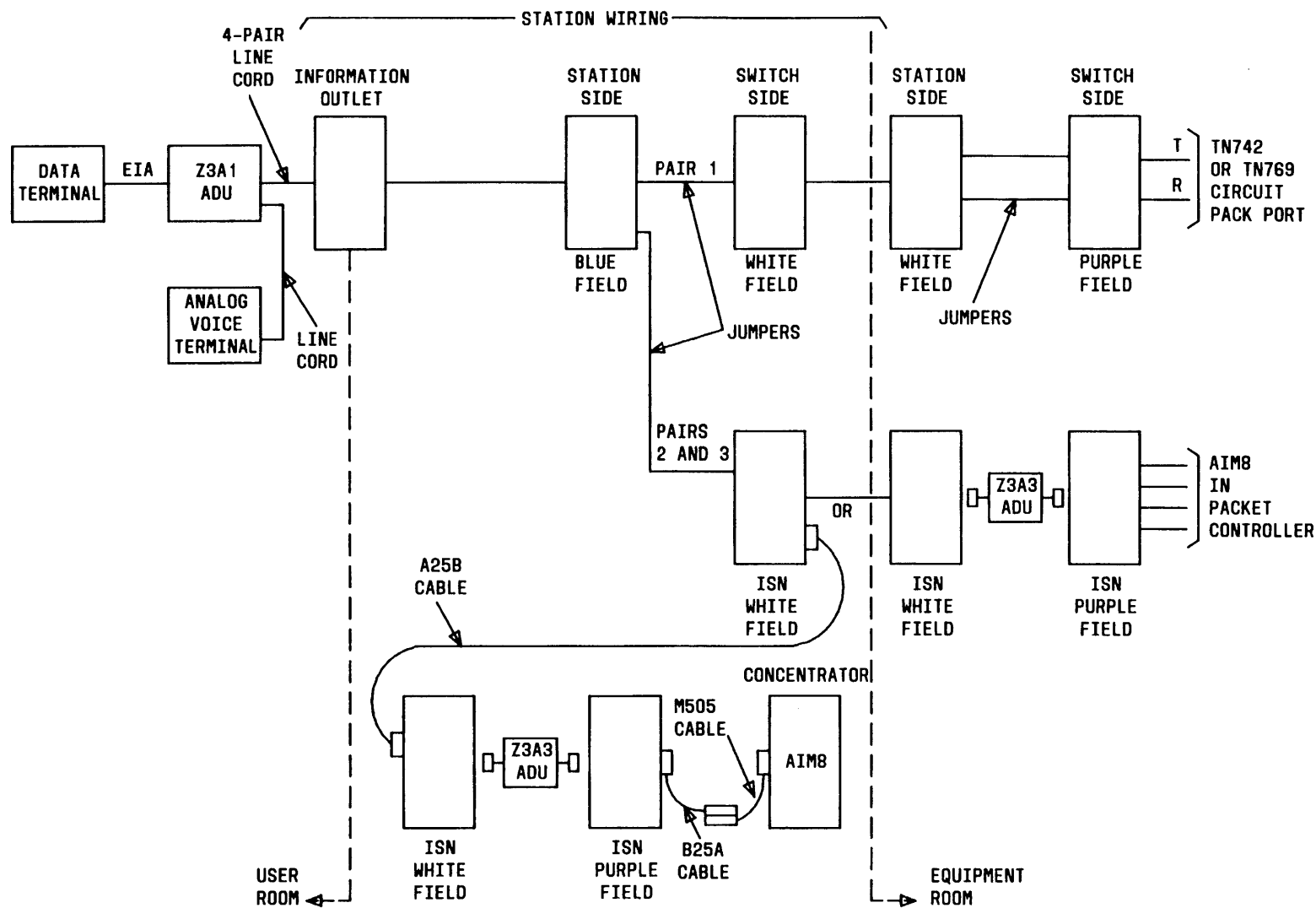


Figure 4-103. System Voice Circuits and ISN Data Circuits Sharing an Information Outlet

Installing STARLAN NETWORK Interface

The Star-Based Local Area Network (STARLAN NETWORK) interconnects small numbers of personal computers, data terminals, resource units, and printers. When a STARLAN NETWORK and System 75 or System 75 XE are collocated, voice and data can be shared at the same information outlet as shown in Figure 4-104.

The voice pair that connects to a TN742 or TN769 Analog Line circuit pack port occupies the first pair of the information outlet. The data pairs that connect to the STARLAN NETWORK occupy the second and third pairs of the information outlet. The voice and data pairs must be separated at the blue or white field located in the equipment room or at the blue field located in a satellite location.

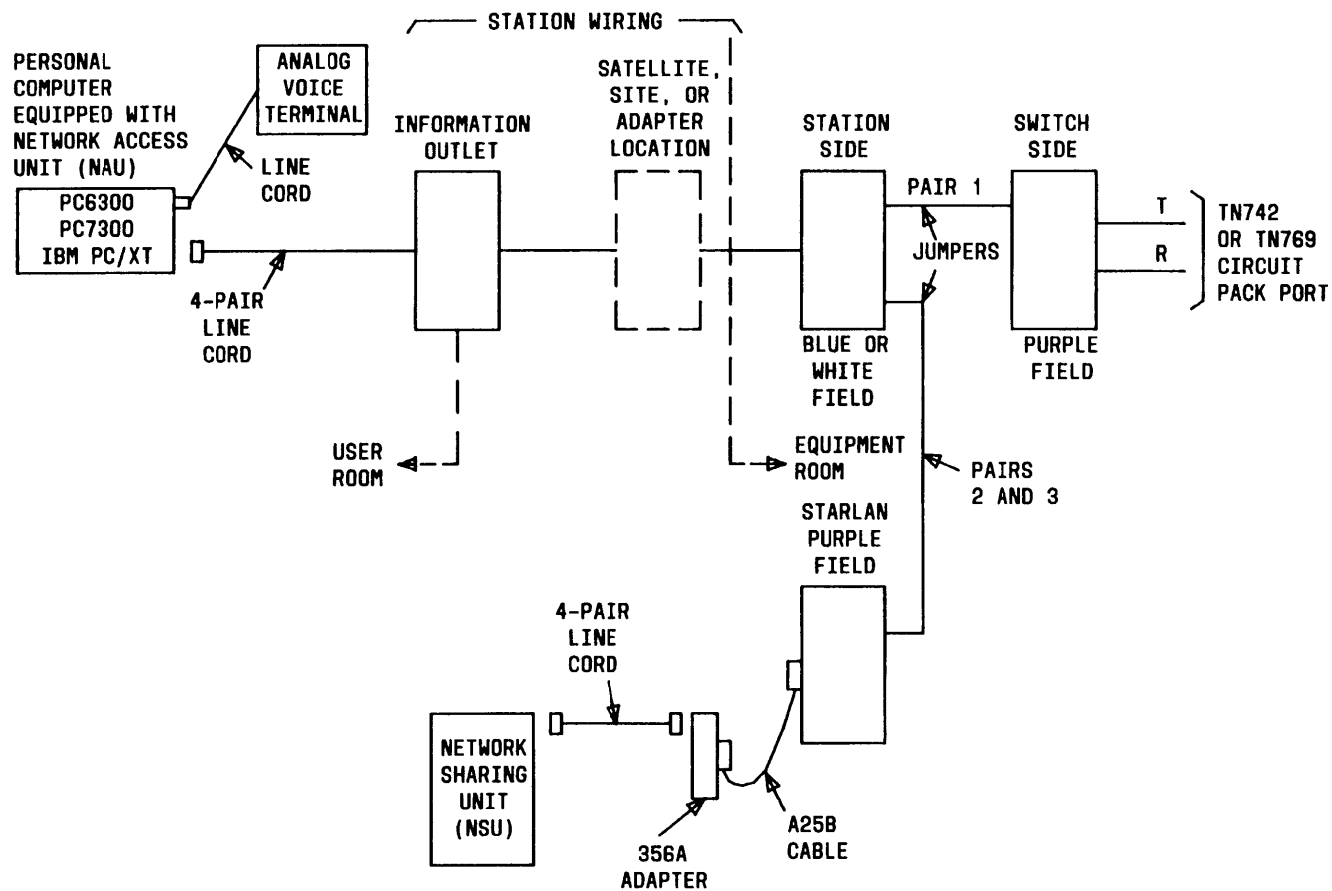


Figure 4-104. System Voice Circuits and STARLAN NETWORK Data Circuits Sharing an Information Outlet

Installing PLS Interface

The Premises Lightwave System (PLS) is used to connect IBM* 3270 Type A terminals to an IBM 3274 cluster controller. An optical fiber backbone and station cable are used instead of coaxial cables. When a PLS and System 75 or System 75 XE are collocated, voice and data can be shared on the same information outlet as shown in Figure 4-105.

The voice pair that connects to a TN742 or TN769 Analog Line circuit pack port occupies the first pair of the information outlet. The data pairs that connect to the PLS occupy the second and third pairs of the information outlet. The voice and data pairs must be separated at the blue or white field located in the equipment room or the blue field located in a satellite location.

* Trademark of International Business Machines Corporation.

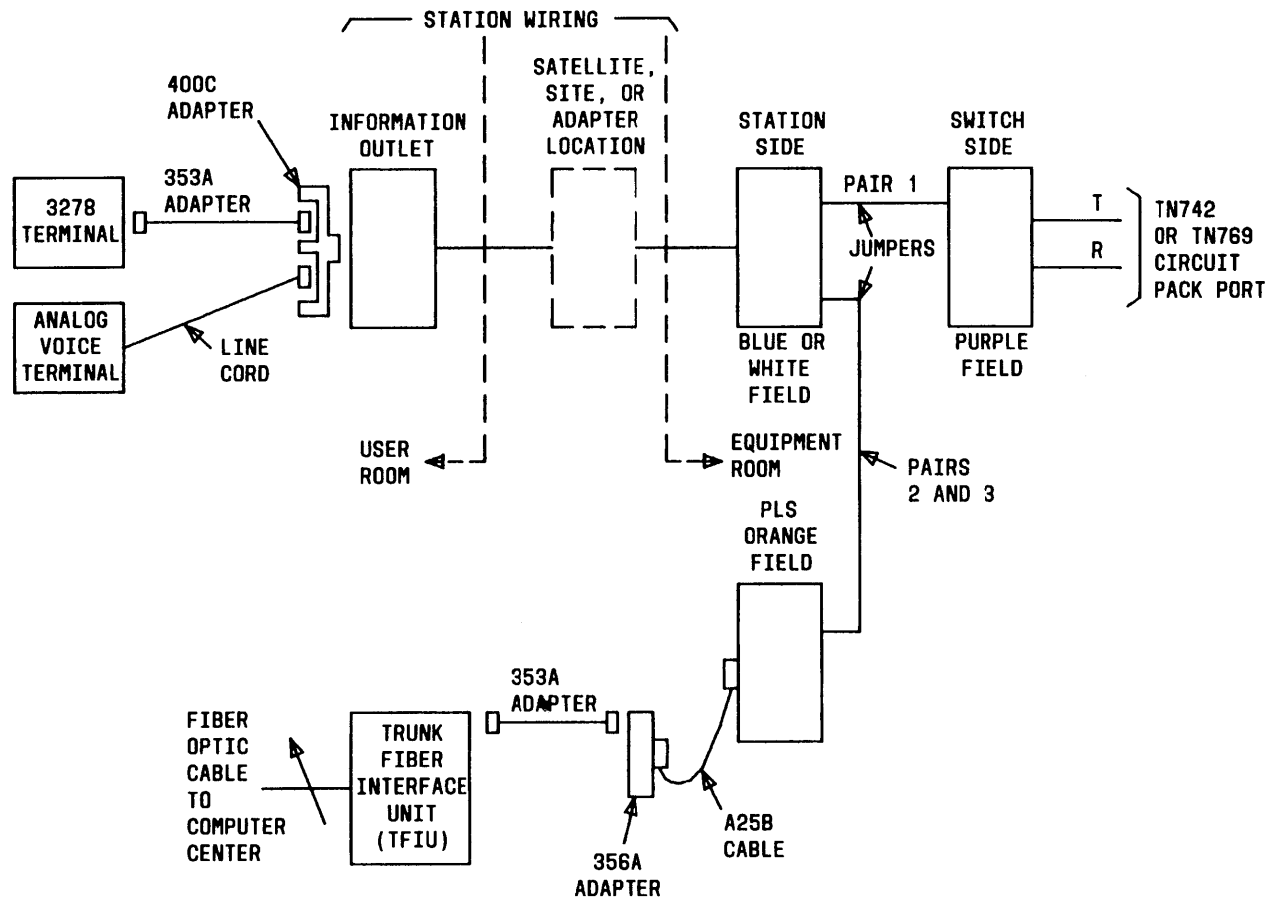


Figure 4-105. System Voice Circuits and PLS Data Circuits Sharing an Information Outlet

GLOSSARY

Note: A complete glossary for System 75 is contained in the *AT&T System 75 Reference Manual—System Description*, (555-200-200).

Bridge (Bridging)

The sharing of the same extension by two or more voice terminals.

Information Outlet

An 8-pin modular wall jack.

Off-Premises Terminal

An extension (analog only) connected from another location that appears as a trunk circuit on any of the RJ21X network interfaces provided by the local telephone company.

Out-of-Building Terminal

An extension not physically located in the same building as the equipment room but is located on the same property.

Riser Cable

A cable run vertically from the equipment room to the various floors of a building.

Satellite

A physical location (closet) where cross-connect administration can take place and adjunct power may be applied.

Site

A physical location (closet) for pass-through connections where adjunct power may be applied.

Station Cable

Any cable run from the equipment room, a site or satellite location, or adapter to the information outlets.

Standard Serial Interface (SSI)

A communications protocol developed by AT&T Teletype Corporation for use with the 500 Business Communications Terminals and the 400-series printers.

Voice Terminal

A single-line or multi-appearance voice instrument that replaces the telephone.

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