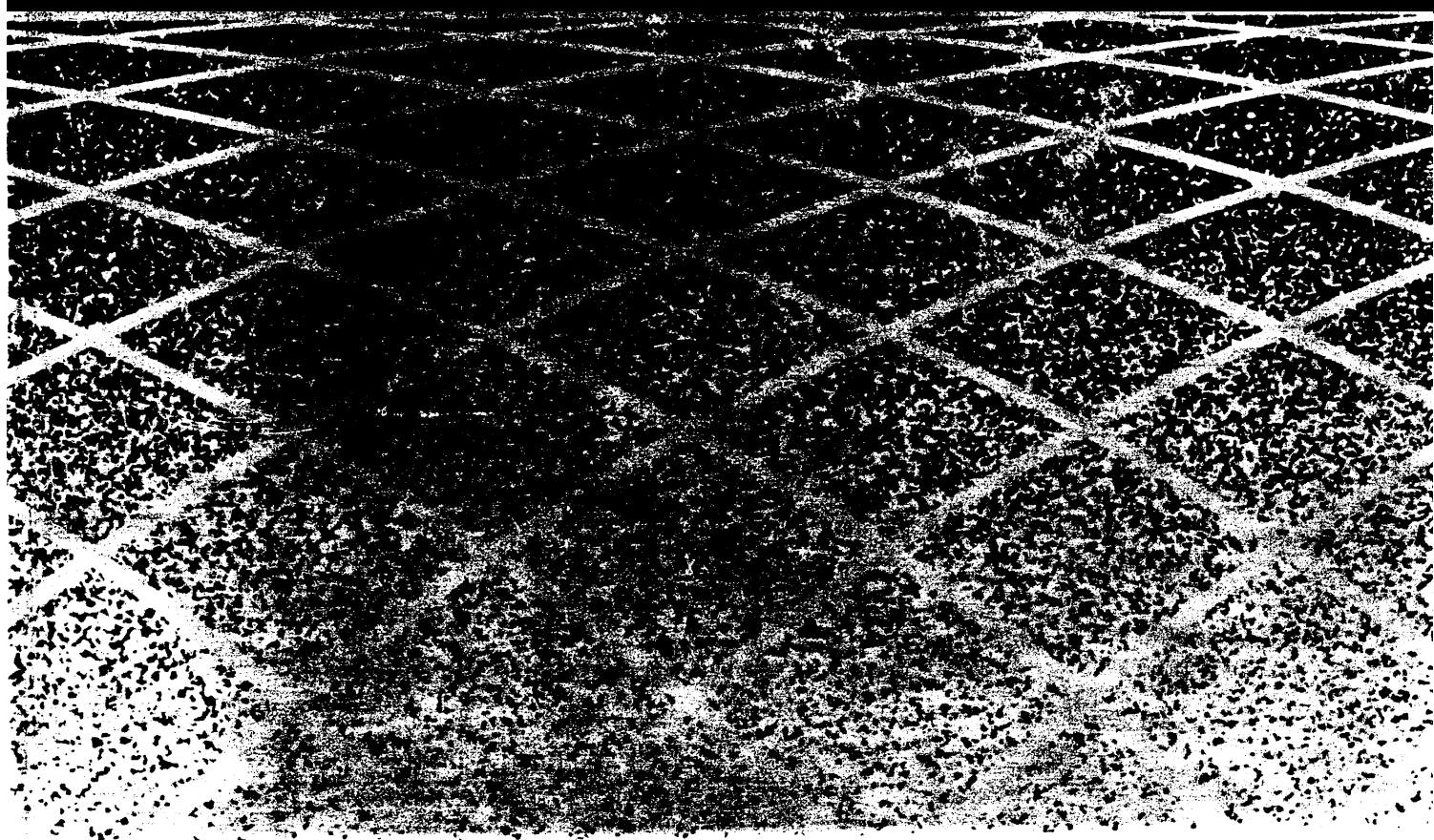




AT&T System 75 and System 75 XE

Wiring





AT&T System 75
and System 75 XE
Wiring

555-200-111
Issue 2, August 1989

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CHAPTER 1. INTRODUCTION

General

This guide is one of the three documents (Figure 1-1) required to install a System 75 or 75 XE switch. This guide describes 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
- The main equipment room cross-connect field and the associated cabling from this cross-connect field to the switch cabinet and/or 8-pin modular wall jacks (information outlets).

All information in this guide is compatible with both System 75 or 75 XE, except when a statement is made that a topic is strictly for a specific switch.

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

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

Contains the information required to install and test a System 75 switch and attendant console. For continuity purposes, the attendant console wiring is covered in this guide.

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

Contains the information required to install and test a System 75 XE switch and attendant console. For continuity purposes, the attendant console wiring is covered in this guide.

DEFINITY™ Communications System and System 75, and System 85—Terminals and Adjuncts, Installation and Tests (555-015-104)

Contains the information required to install and test telephones/voice terminals and their associated adjuncts.

CHAPTER 1. INTRODUCTION

This issue replaces all previous issues of this document. The reason for reissue is:

- Remove information pertaining to Z100-type hardware.
- Combine information for 66- and 110-type hardware.
- Add processor/EIA interface connections.
- Add digital out-of-building voice terminal connections.
- Add connections for System Access Terminal (SAT).

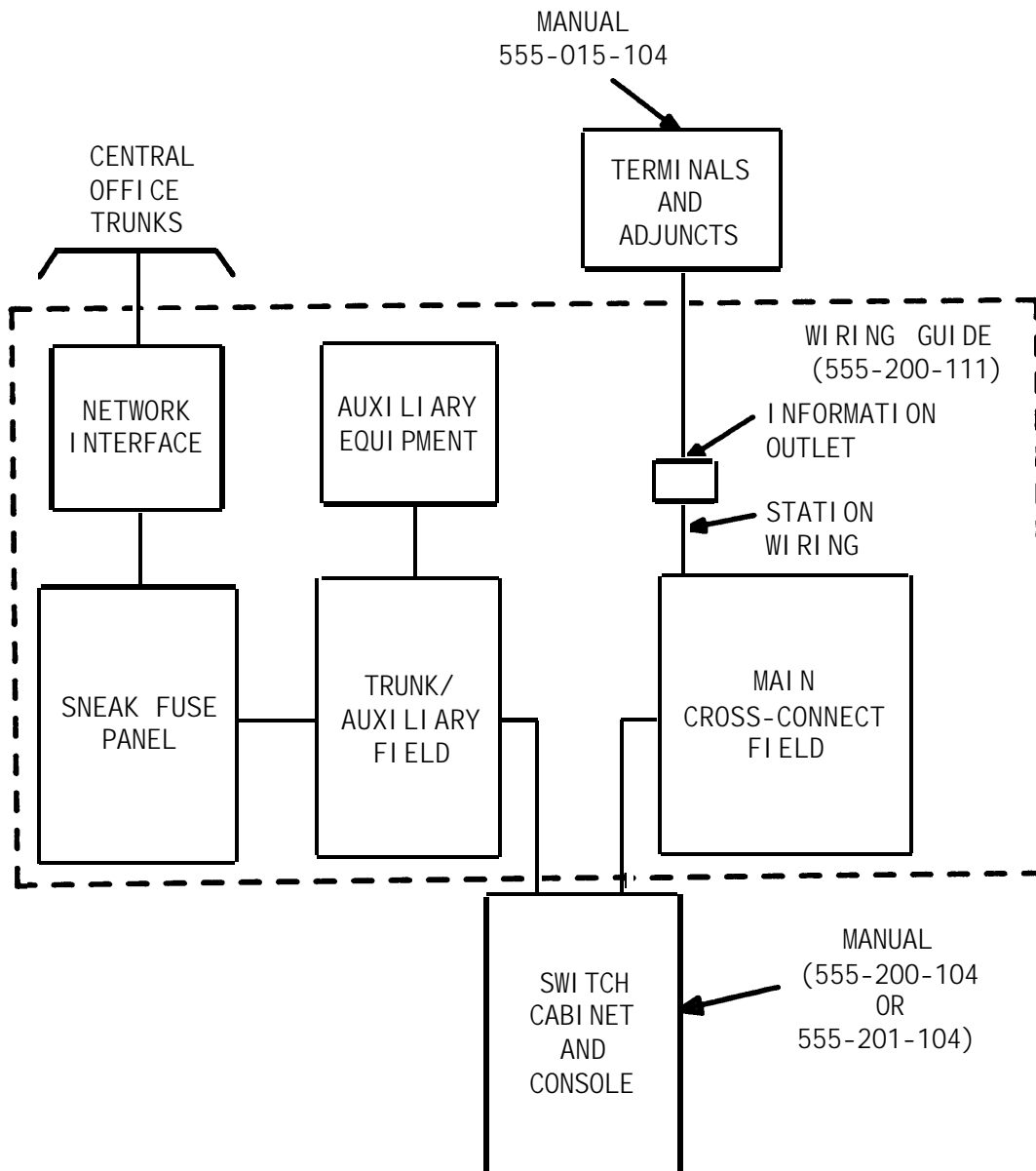


Figure 1-1. Documentation Block Diagram

Organization

This guide is organized into seven chapters:

- CHAPTER 1—INTRODUCTION

Presents an overview of the system Uniform Wiring Plan, general guidelines on hardware selection, and organization of the guide.

- CHAPTER 2—HARDWARE (66- and 110-Type)

Describes the 66- and 110-type connecting blocks and associated hardware, job planning, equipment ordering codes, and how to install the hardware.

- CHAPTER 3—EQUIPMENT ROOM DESIGN

Describes hardware application in the equipment room, labeling procedures, and grounding techniques.

- CHAPTER 4—STATION WIRING

Describes station and miscellaneous wiring, adjunct powering, and administration and installation of patch cords and jumper wires.

- CHAPTER 5—AUXILIARY EQUIPMENT

Provides connection information for the various types of auxiliary equipment that can be used with the switch.

- CHAPTER 6—GLOSSARY

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

- CHAPTER 7—INDEX

Contains a permuted index.

Use of Guide

This guide provides information for 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, 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 the local AT&T Marketing Branch Office (MBO). However, some common use hardware items may have to be obtained from other sources.

System Wiring

System wiring plays a significant role in customers' information systems. Technological innovations enable both voice and data transmission to be provided through the system wiring. Also, the system wiring has been simplified by reducing the number of cable pairs required by voice terminals equipped 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 110-type or 66-type hardware.

CHAPTER 1. INTRODUCTION

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 voice terminal to be located at any information outlet.

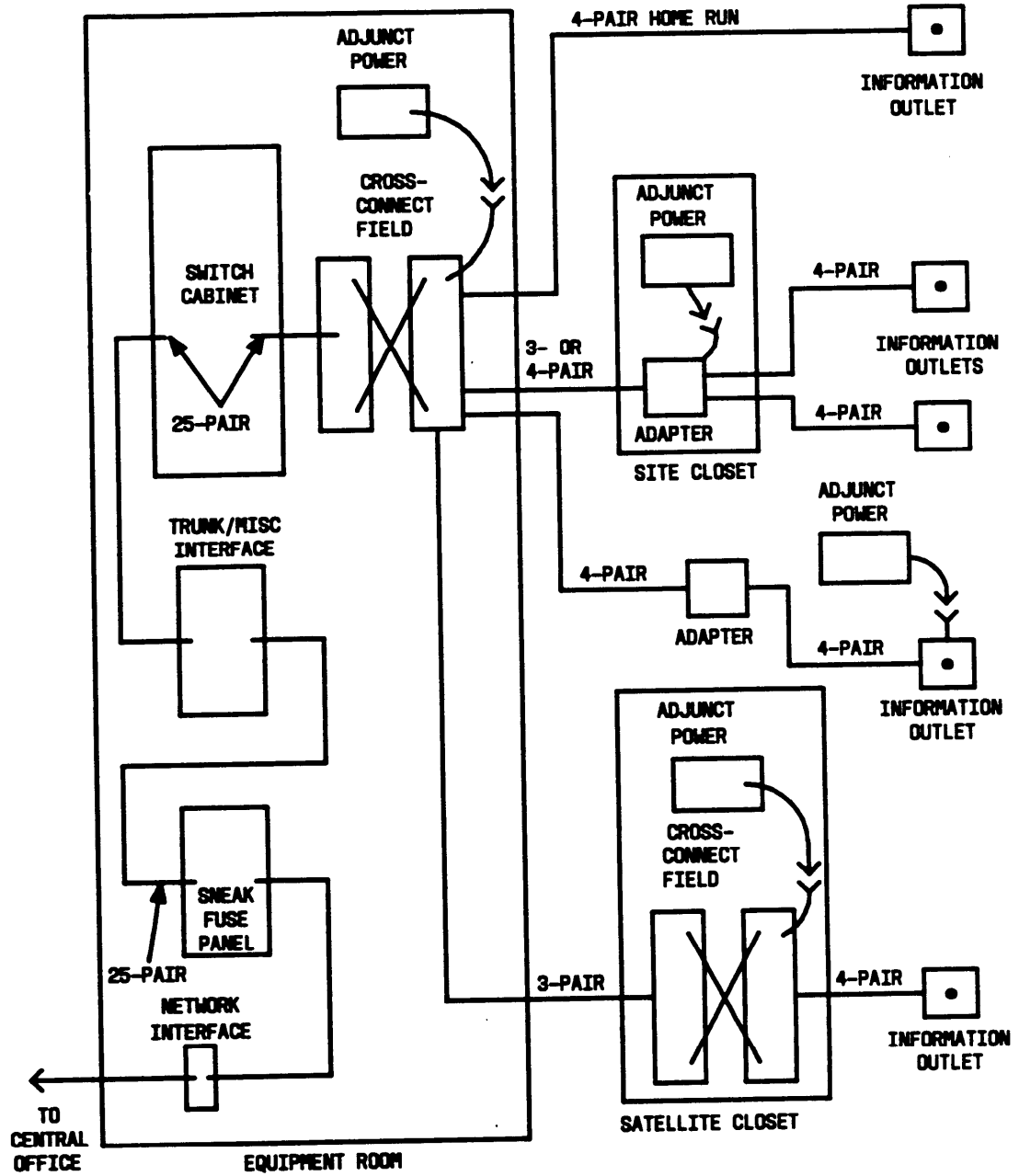


Figure 1-2. System Uniform Wiring Plan

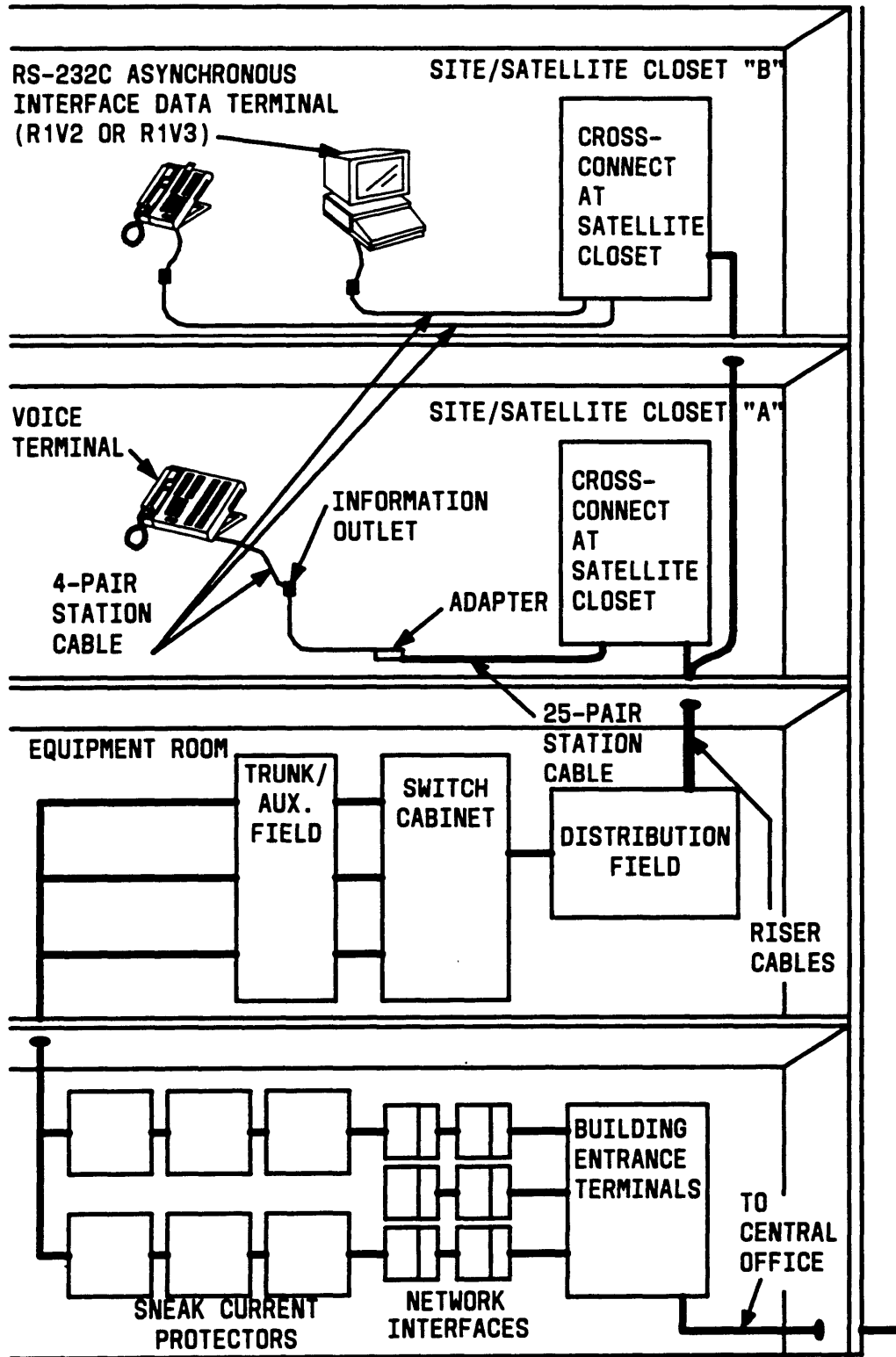


Figure 1-3. Sample Uniform Wiring Installation

Cross-Connect Hardware Selection

For new wiring installations, the following cross-connect hardware is available for use in the system. Each item lists certain considerations that should help to select the appropriate hardware.

1. 110P Hardware
 - Patch cord design allows customer to administer cross-connections
 - Requires some technical skill to administer cross-connections
2. 110A Hardware
 - Design does not permit customer participation in cross-connect administration—requires technically skilled personnel to administer cross-connections
 - Hardware is less expensive than the patch cord systems, but installation and administrative costs are greater
3. 66-type Hardware
 - Design does not permit customer participation in cross-connect administration—requires technically skilled personnel to administer cross-connections
 - Hardware is less expensive than the patch cord systems, but installation and administrative costs are greater

Obviously, the customer's interest and preference for administering cross-connections (because of likely lower *total annual costs*, as well as the capability to administer the cross-connections at the most convenient time) should be given primary consideration in recommending cross-connect hardware.

Figure 1-4 shows a block diagram of the equipment required to install a System 75 or 75 XE switch. The sites shown in Figure 1-4 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.

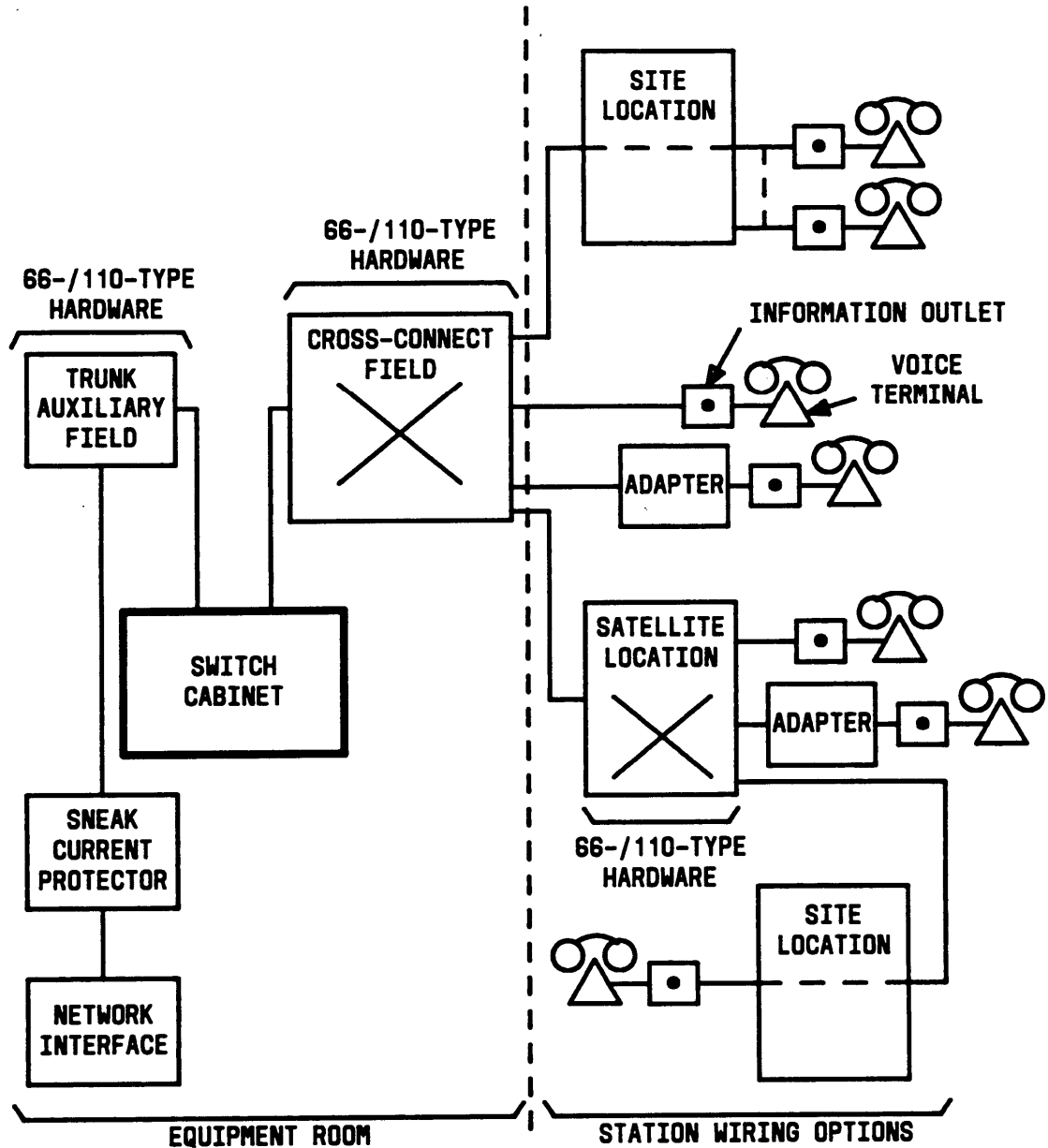


Figure 1-4. Block Diagram of System 75 or 75 XE Installation

Wiring Hardware Changes

All jobs engineered by PSCs based on customer requirements and preferences **should not** be redesigned by the Field Services Organization (FSO) without approval by the PSC/MBO. If changes are required, a change order must be issued to ensure correct billing.

Planning

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

Job Aids

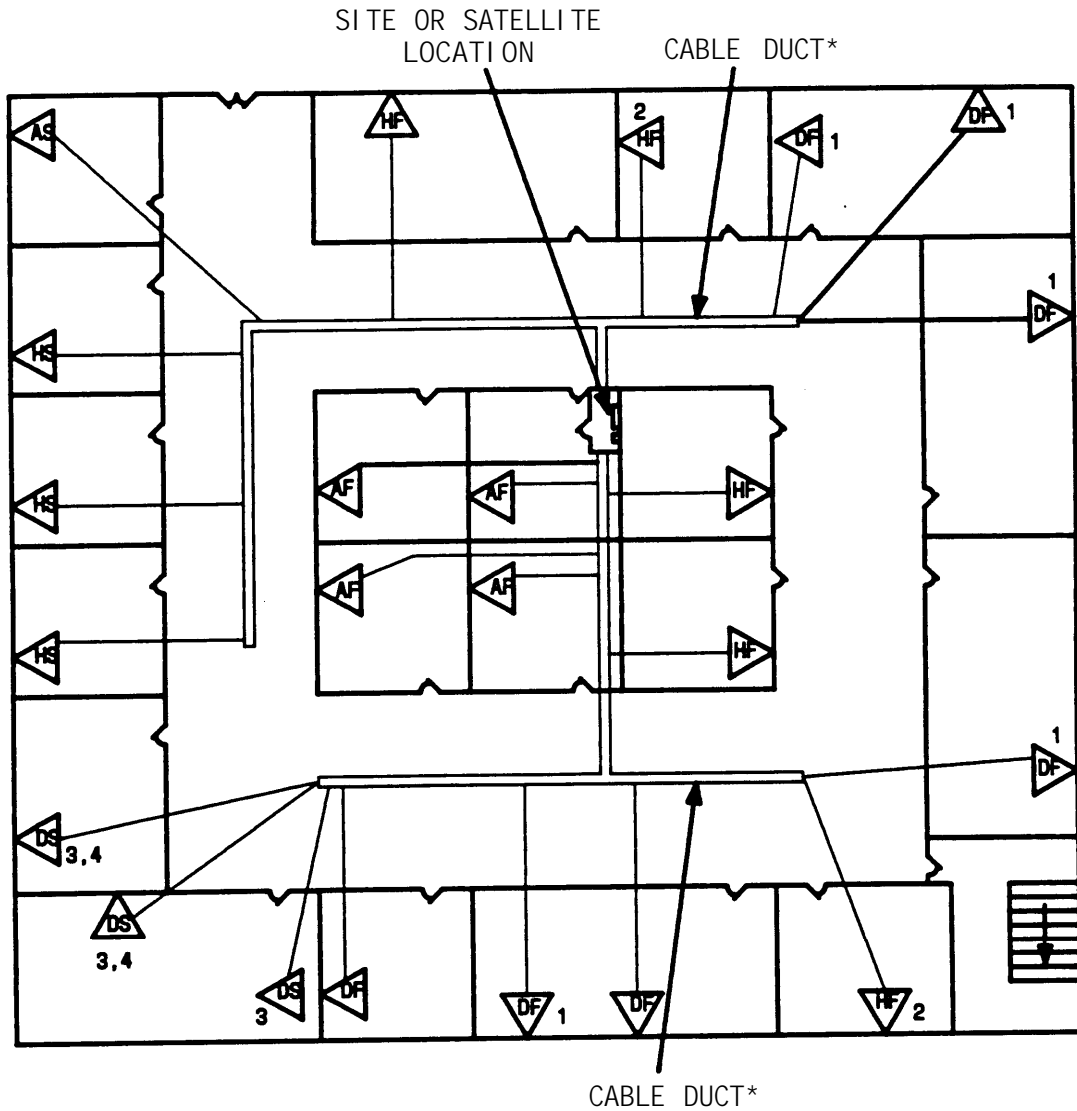
Blueprints (floor plans) are important when planning, designing, and installing station wiring. The floor plans (Figure 1-5) provide a complete view of all conduit and other cabling facilities in the building. These facilities should be considered when planning site or satellite locations and cabling.

Voice Terminals

The number of information outlets to be installed per voice terminal location is determined by customer requirements. It may be advantageous to install any additional information outlets required for future growth or voice terminal rearrangements during the initial installation.

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

- Location of each information outlet and associated voice terminal type if known (analog, hybrid, or digital)
- Any associated voice 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 VOICE TERMINAL | 1 - SPEAKERPHONE |
| H - HYBRID VOICE TERMINAL | 2 - AMPLIFIED HEADSET |
| D - DIGITAL VOICE TERMINAL | 3 - CALL COVERAGE MODULE |
| S - SURFACE MOUNTED INFORMATION OUTLET | 4 - FUNCTION KEY MODULE |
| F - FLUSH MOUNTED INFORMATION OUTLET | 5 - DISPLAY MODULE |

Figure 1-5. Sample Floor Plan With Voice Terminal Locations Marked

Site or Satellite Closets

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

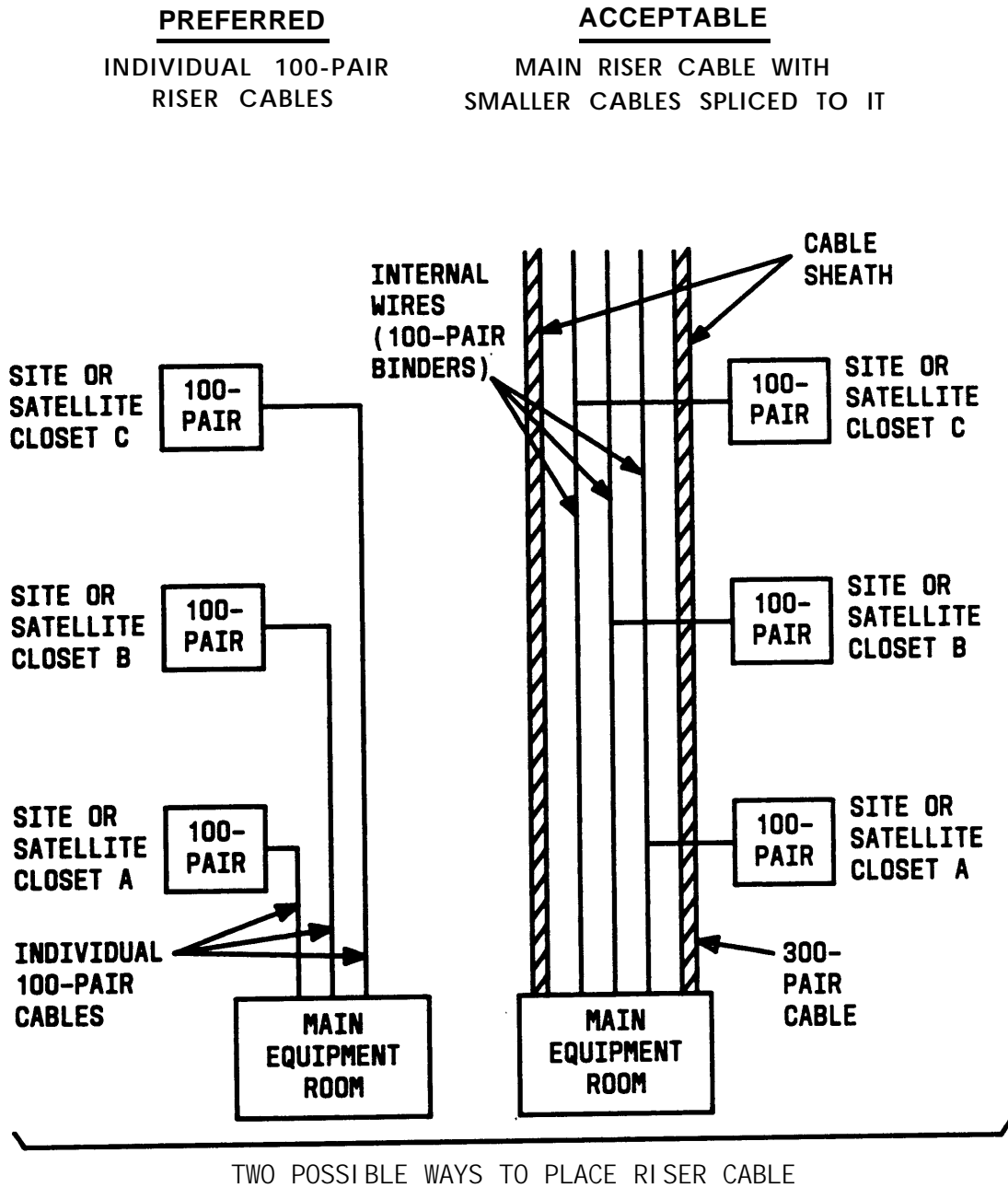
- a. Keep the number of locations to a minimum.
- b. Centrally locate the site or satellite closets among the information outlets to minimize station wiring distances.
- c. Site or satellite closets must be easily accessible and contain enough ac power receptacles to serve the equipment that will be located there. Voice terminals equipped with adjuncts that require power can be remotely powered from:
 - a site or satellite location
 - from the main equipment room
 - information outlets.
- d. The distance between the power supply and the voice terminal cannot exceed 250 feet of 24-gauge wire.
- e. Locks should be provided for the site or satellite closet doors to prevent tampering with the equipment.

Cabling Facilities

The method of riser cable distribution between the main equipment room and site or satellite closets is usually determined by the type of cabling facilities (riser closets, conduit size, cabling shafts, etc.) in the building (Figure 1-6).

- 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 requires that smaller cables be installed between the main riser cable and the site or satellite closet. These smaller cables are then spliced into the main cable.

Determine the type of cabling required and mark the type and routing on the floor plan. Also, show 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 1-6. Riser Cable Placement

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CHAPTER 2. HARDWARE (66/110-Type)

General

Figure 2-1 shows the equipment required to install a System 75 or 75 XE switch. This chapter describes the hardware (66- and 110-Type) used in the installation process. Ordering information is provided for the required hardware.

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

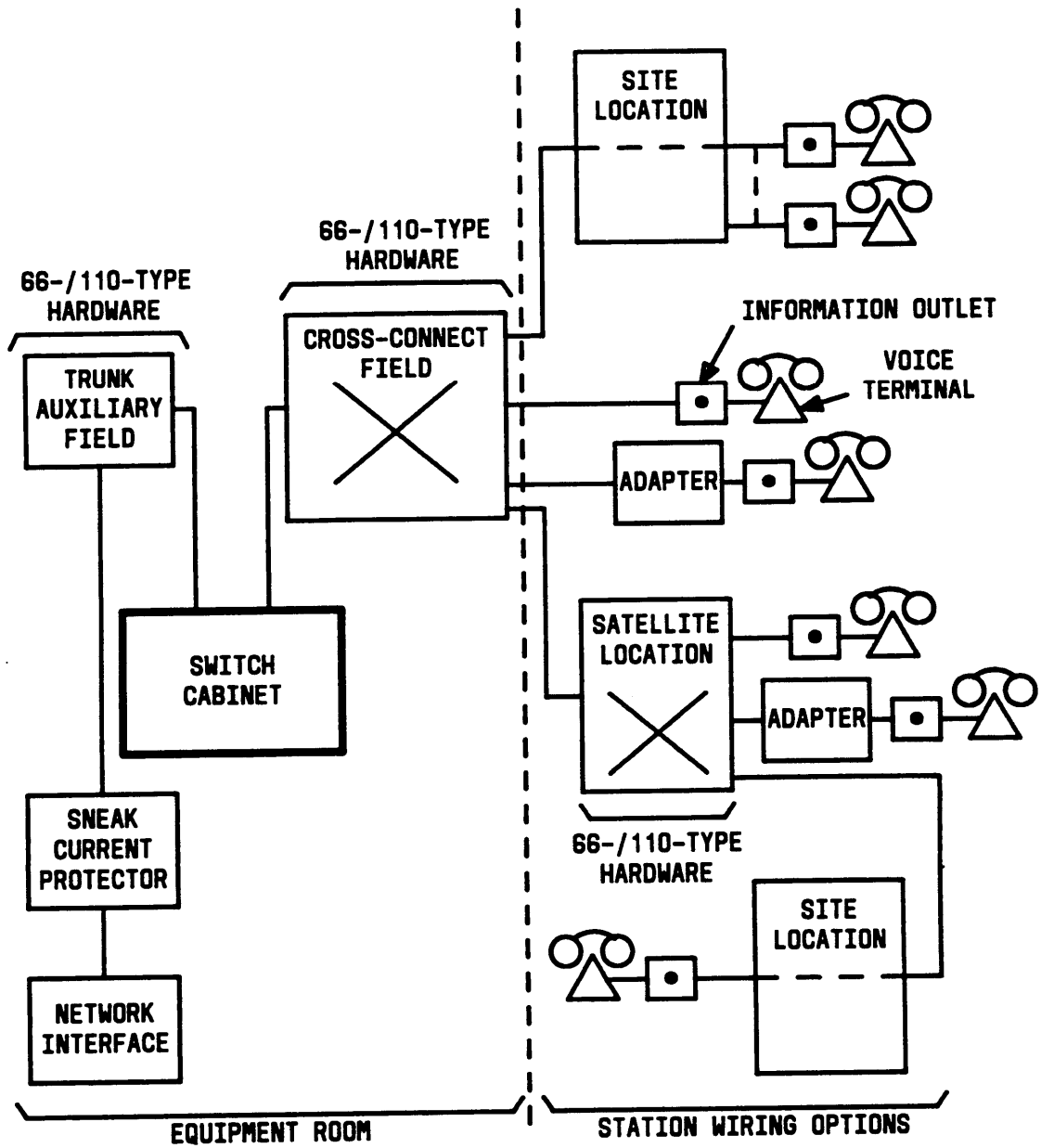


Figure 2-1. Block Diagram of System 75 or 75 XE Installation

110-Type Hardware Description

The 110-type hardware consists of connectorized or field-terminated terminal blocks 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 (Figure 2-2) is a plastic wiring block equipped with permanently attached index strips.

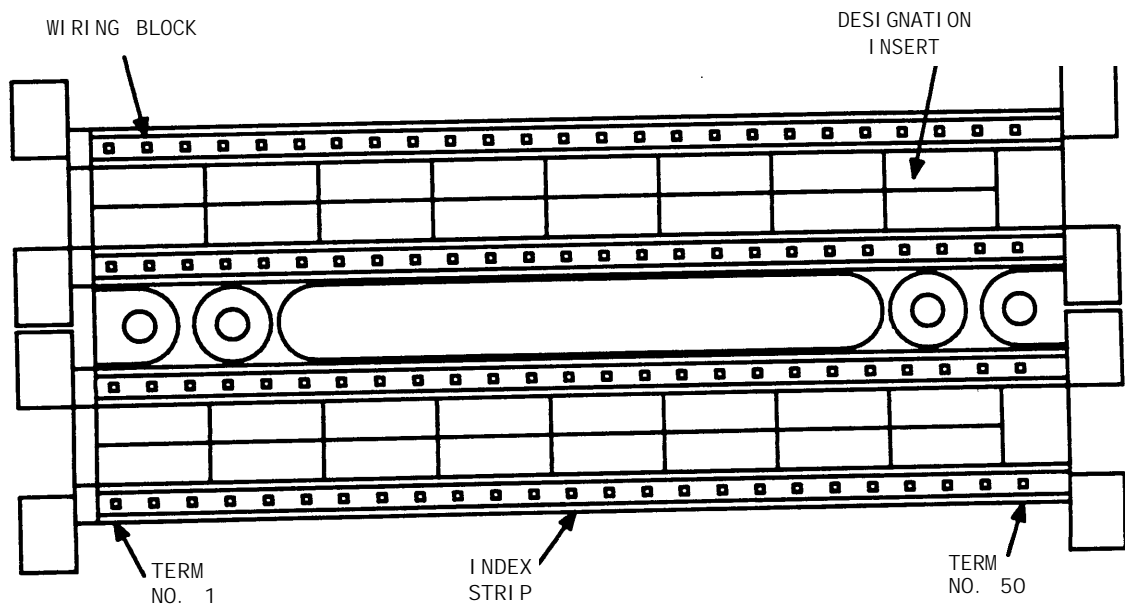


Figure 2-2. 110-Type Wiring Block

Index Strips and Connecting Blocks

The index strips (Figure 2-3) are slotted rows that provide space to terminate 25-pair cables. The wires are placed in the slots in the index strip. The standard termination for a 25-pair cable is shown in Table 2-A.

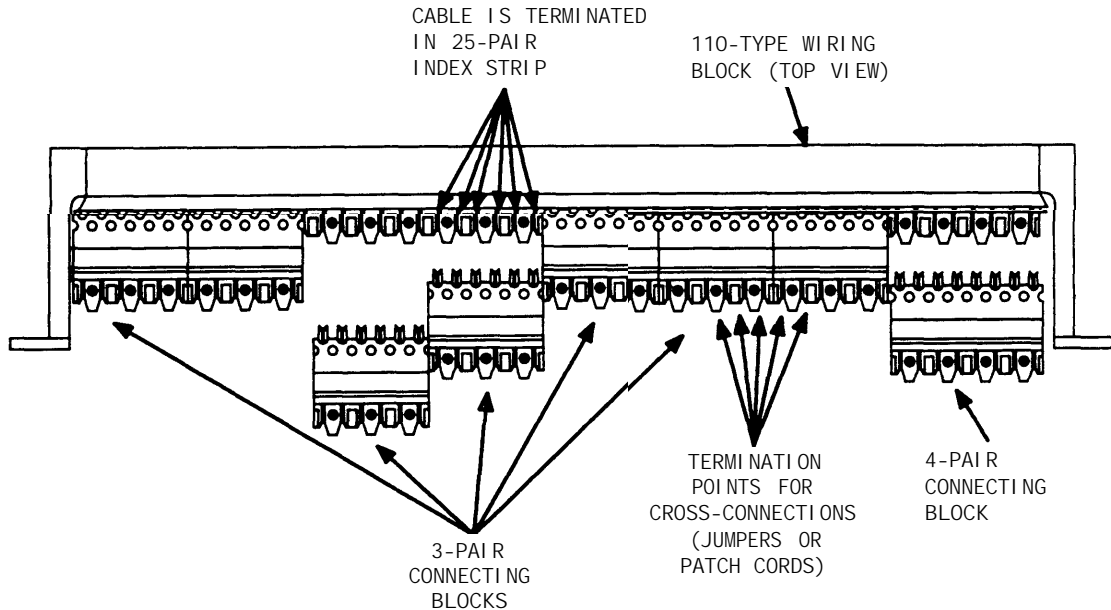


Figure 2-3. 110-Type Index Strip With Connecting Blocks

The connecting blocks (Figure 2-3) 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 a connection, through the connecting block, to 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 wiring blocks allow for individual 3- and 4-pair connecting blocks to be disconnected for testing without disturbing adjacent circuits.

Table 2-A. 25-Pair Cable Termination on a 110-Type Wiring Block/66-Type Connecting Block

25-Pair Cable			110-Type 66-Type Wiring/Conn 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

Table 2-A. 25-Pair Cable Termination on a 110-Type Wiring Block/66-Type Connecting Block (Contd)

25-Pair Cable			110-Type 66-Type Wiring/Conn Block Terminals
Connector Pin Numbers	Pair	Color	
36	11	BK-BL	21
11		BL-BK	22
37	12	BK-O	23
12		O-BK	24
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-BL	31
16		BL-Y	32
42	17	Y-O	33
17		O-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

Table 2-A. 25-Pair Cable Termination on a 110-Type Wiring Block/66-Type Connecting Block (Contd)

25-Pair Cable			110-Type 66-Type Wiring/Conn Block Terminals
Connector Pin Numbers	Pair	Color	
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

The 110-type hardware consists of 110A- and 110P-type hardware. The 110P-type hardware uses patch cords to make cross-connections. This allows the customer to make cross-connections. The 110A-type hardware uses individual jumper wires for cross-connections. For this reason, the 110A-type hardware is not intended for customer usage because it requires technically skilled personnel to make cross-connections. The 110A- and 110P-type hardware should not be mixed together in the same room.

110A-Type Hardware

The 110A-type hardware consists of a 100- or 300-pair wiring block and the associated connecting blocks. The 100-pair wiring blocks (Figure 2-4) are arranged for field termination. The 300-pair wiring blocks (Figure 2-5) come in both field-terminated and connectorized (with 6-foot cable stubs) types.

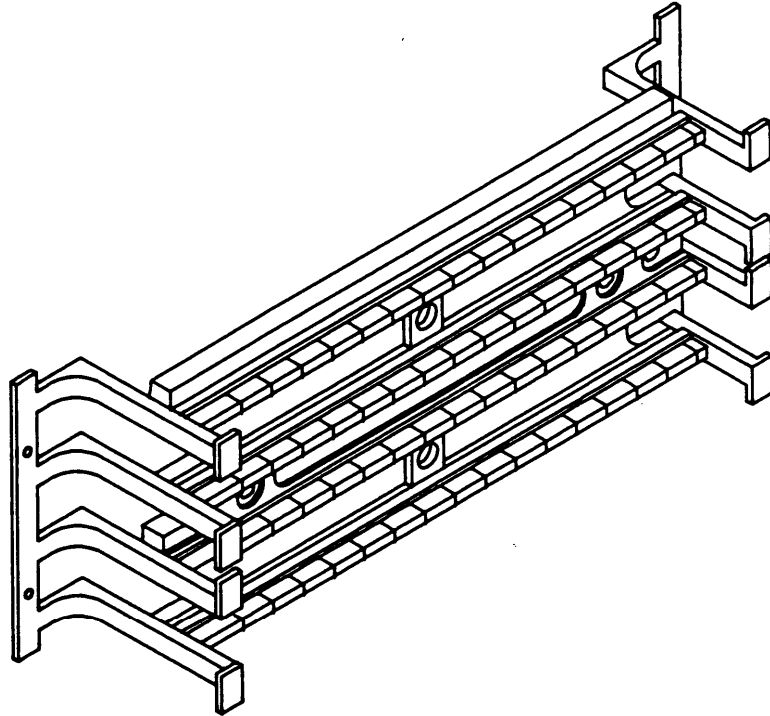


Figure 2-4. 110A-Type 100-Pair Terminal Block

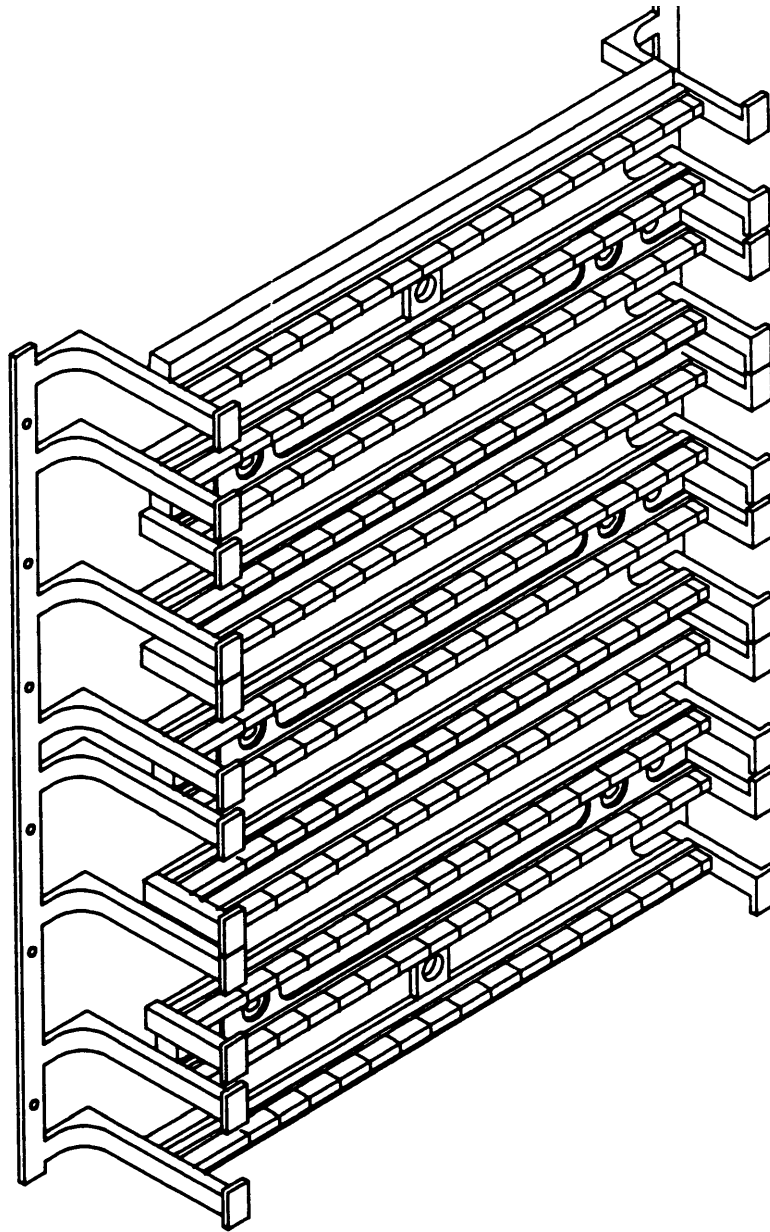


Figure 2-5. 110A-Type 300-Pair Terminal Block

The 110A-type hardware can be used for the trunk/auxiliary field and all distribution fields (port, auxiliary, and station). The following 110A-type hardware is available.

- 110AE1-75FT terminal block—A kit of parts for field termination of cables on a 100-pair wiring block (110AW1-100). It provides space to terminate 8 three-pair and 12 four-pair circuits.
- 110AB1-100FT terminal block—A kit of parts for field termination of cables on a 100-pair wiring block (110AW1-100). It provides space to terminate 24 four-pair circuits.
- 110AC1-100FT terminal block—A kit of parts for field termination of cables on a 100-pair wiring block (110AW1-100). It provides space to terminate 32 three-pair circuits.
- 110AB1-300FT terminal block—A kit of parts for field termination of cables on a 300-pair wiring block (110AW1-300). It provides space to terminate 72 four-pair circuits.
- 110AC1-300FT terminal block—A kit of parts for field termination of cables on a 300-pair wiring block (110AW1-300). It provides space to terminate 96 three-pair circuits.
- 110AC1-300STF/6 terminal block—A factory-assembled 300-pair connectorized terminal block that provides space to terminate 96 three-pair circuits. Twelve, 25-pair (6-foot long), cables equipped with female connectors exit from 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 space to terminate 96 three-pair circuits. Twelve, 25-pair (6-foot long), cables equipped with male connectors exit from the top of the block. The 25-pair cables are factory-terminated on the wiring block in continuous numerical order.

The 110AW1-100 or 110AW1-300 wiring blocks can be ordered separately. Also, the 3- or 4-pair connecting blocks (110C-3 or 110C-4, respectively) must 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
110AC1-300STF/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 blocks, separated by horizontal patch cord troughs, mounted on a panel. The P-type comes in both 300- and 900- pair configurations which can either be connectorized or field terminated. 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. A 300-pair connectorized terminal block is shown in Figure 2-6.

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 (Figures 2-7 and 2-8).

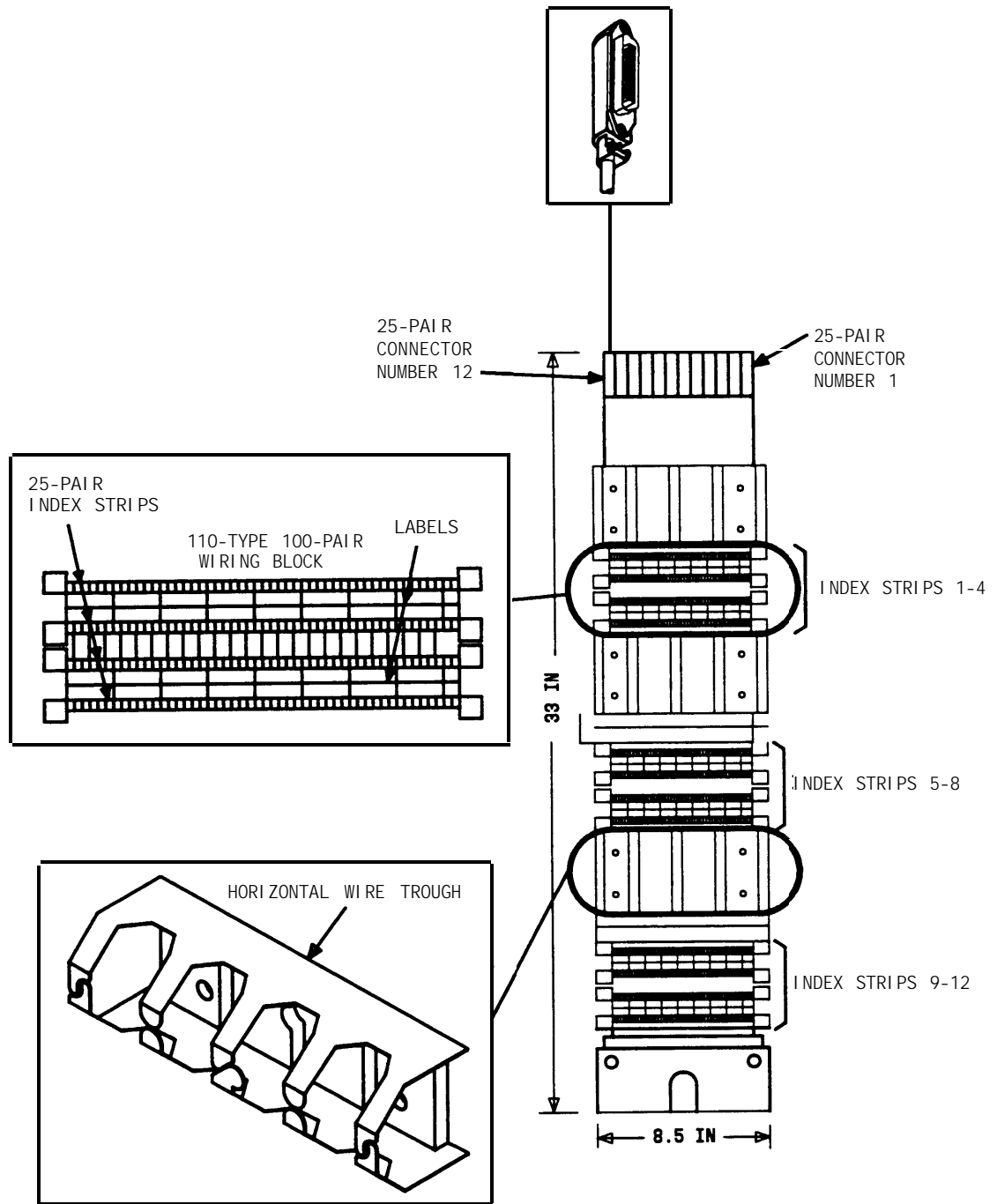


Figure 2-6. 110P-Type Terminal Block—300-Pair Connectorized

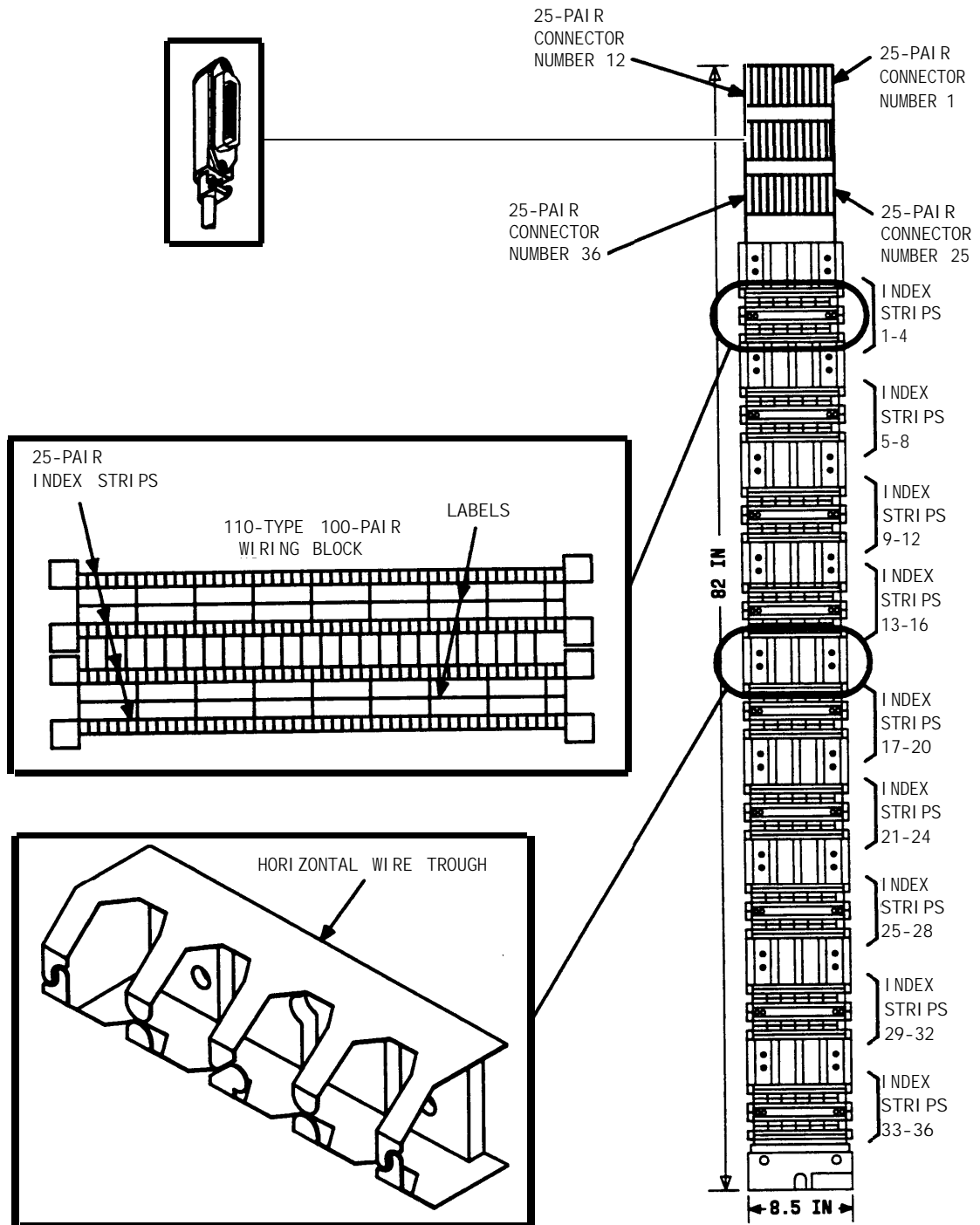


Figure 2-7. 110P-Type Terminal Block—900-Pair Connectorized (Top)

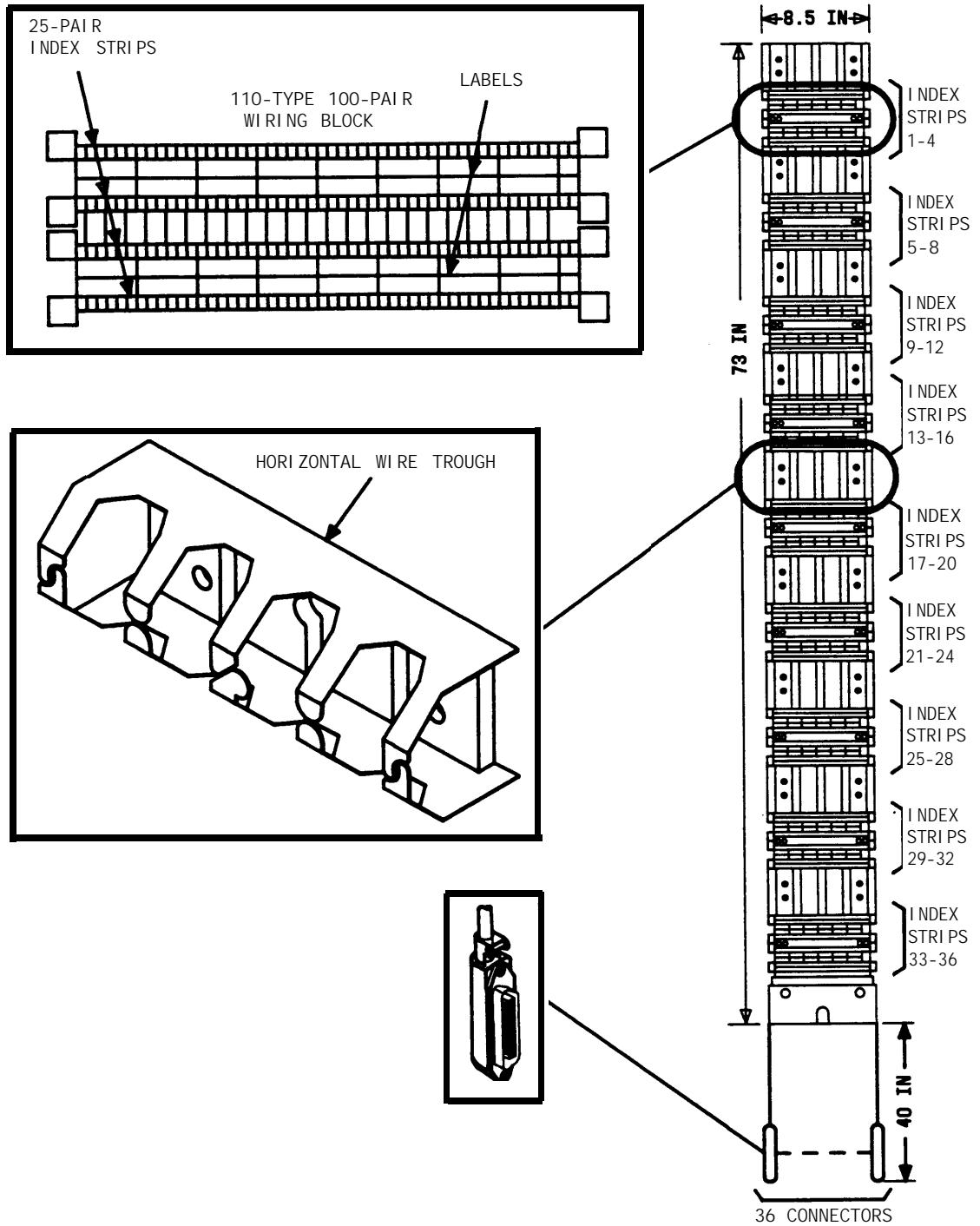


Figure 2-8. 110P-Type Terminal Block—900-Pair Connectorized (Bottom)

The 110P-type hardware can be used for the trunk/auxiliary field and all distribution fields (port, auxiliary, and station). The following 110P-type hardware is available.

- 110PB1-300CT terminal block—A factory-assembled 300-pair connectorized terminal block that provides space to terminate 72 four-pair circuits. Twelve, 25-pair, female, miniature ribbon connectors are mounted 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 space to terminate 96 three-pair circuits. Twelve, 25-pair, female, miniature ribbon connectors are mounted 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 kit of parts for field termination of cables on a 300-pair wiring block. It provides space to terminate 72 four-pair circuits.
- 110PC1-300FT terminal block—A kit of parts for field termination of cables on a 300-pair wiring block. It provides space to terminate 96 three-pair circuits.
- 110PE1-300CT terminal block—A factory-assembled, 300-pair, connectorized, terminal block that provides space to terminate 32 three-pair and 48 four-pair circuits. Twelve, 25-pair, female, miniature ribbon connectors are mounted 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 space to terminate 32 three-pair and 48 four-pair circuits. Four, 25-pair, female, miniature, ribbon connectors are mounted at the top of the terminal block. The connectors are terminated on the 3-pair wiring block in continuous numerical order. The 4-pair wiring blocks are available as a kit of parts to allow field termination of the 4-pair circuits.

- 110PE1-300FT terminal block—A kit of parts for field termination of cables on a 300-pair terminal block. It provides space to terminate 32 three-pair and 48 four-pair circuits.
- 110PB1-900CB terminal block—A factory-assembled, 900-pair, connectorized, terminal block that provides space to terminate 216 4-pair circuits. Thirty-six, 25-pair cables (40-inches long), equipped with female miniature ribbon connectors, are mounted at the bottom of the terminal block. The cables are factory-terminated on the wiring blocks in continuous numerical order.
- 110PC1-900CB terminal block—A factory-assembled 900-pair connectorized terminal block that provides space to terminate 288 three-pair circuits. Thirty-six, 25-pair cables (40-inches long), equipped with female miniature ribbon connectors, are mounted at the bottom of the terminal block. The cables are factory-terminated on the wiring blocks in continuous numerical order.
- 110PB1-900CT terminal block—A factory-assembled 900-pair connectorized terminal block that provides space to terminate 216 four-pair circuits. Thirty-six, 25-pair, female, miniature ribbon connectors are mounted at the top of the terminal block. The connectors are factory-terminated on the wiring blocks in continuous numerical order.
- The 110PC1-900CT terminal block—a factory-assembled 900-pair connectorized terminal block that provides space to terminate 288 three-pair circuits. Thirty-six, 25-pair, female, miniature ribbon connectors are mounted 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 kit of parts for field termination of cables on a 900-pair terminal block. It provides space to terminate 216 four-pair circuits.
- 110PC1-900FT terminal block—A kit of parts for field termination of cables on a 900-pair terminal block. It provides space to terminate 288 three-pair circuits.

- 110PE1-900CT/FT terminal block—A partially factory-assembled 900-pair terminal block that provides termination space for 96 three-pair and 144 four-pair circuits. Twelve, 25-pair, female, miniature, ribbon connectors are mounted at the top of the terminal block. The connectors are terminated on the 3-pair wiring blocks in a continuous numerical order. The 4-pair wiring blocks are available as a kit of parts to allow field termination of the 4-pair circuits.
- 110PE1-900FT terminal block—A kit of parts for field termination of cables on a 900-pair terminal block. It provides space to terminate 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 that channel the patch cords or cross-connecting wire between the wiring blocks. The backboards consist of a metal frame equipped with retaining rings. They are available in four types:

- The 188B1 backboard is a horizontal wire trough that is used with 110A-type terminal blocks.
- The 188C2 backboard is a vertical wire trough that is used with 900-pair 110P-type terminal blocks.
- The 188D2 backboard is a vertical wire trough that is 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	102 689 569
188C2 Backboard	104 031 794
188D2 Backboard	104 032 404
188E2 Backboard	104 031 802

Cords

110-Type Patch Cords

The 1-pair and 3-pair patch cords (Figure 2-9) are used to cross-connect terminals to switch ports at the cross-connect field. The patch cords are available in several lengths. The patch cords are equipped with a plastic plug on each end. The plastic plugs are compatible with the 110-type connecting blocks used on the wiring blocks. The patch cords are keyed so that they cannot be inserted upside down or on a split pair.

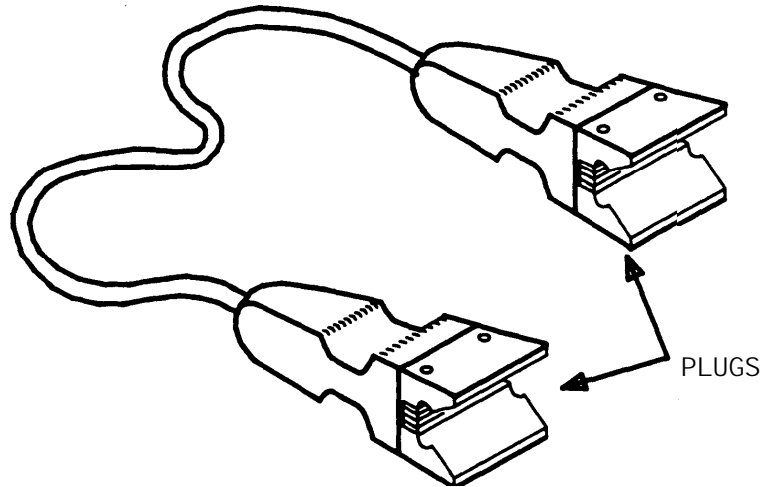


Figure 2-9. 3-Pair Patch Cord Used With 110-Type Hardware

110-TYPE PATCH CORD ORDERING INFORMATION

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

F-61789 Power Adapter Cords

The F-61789 power adapter cord (Figure 2-10) is used at the equipment room or satellite closet cross-connect field to connect an adjunct power supply to a 4-pair connecting block that is mounted on a 110-type wiring block. The power adapter cord is a 1-pair cable equipped with a 6-conductor modular plug on one end, and a 1-pair, 110-type patch cord plug on the other end. The modular plug connects to an adjunct power supply, and the patch cord plug connects to a connecting block mounted on a 110-type wiring block.

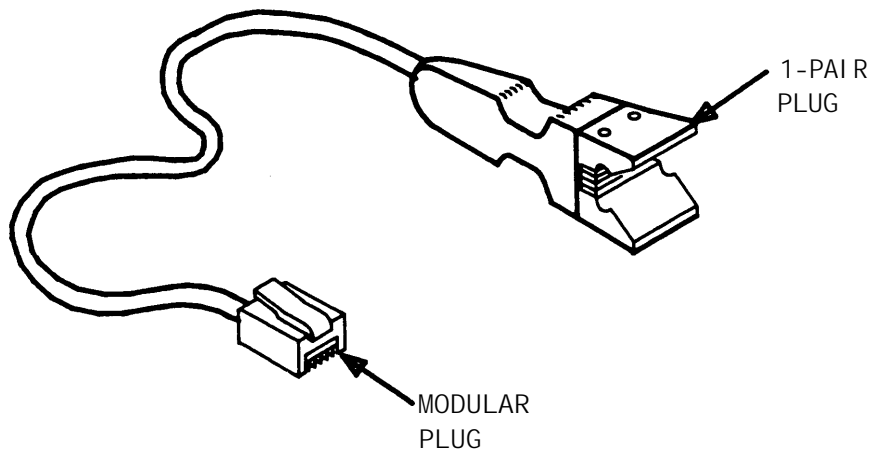


Figure 2-10. F-61789 Power Adapter Cord

POWER ADAPTER CORD ORDERING INFORMATION

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

Test Cords

The D test cord 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	402 023 949
D Test Cord	8 ft	402 023 956

Jumpers

Solid wire jumpers can be used to make cross-connections instead of the 1- and 3-pair patch cords. The jumpers are terminated on the connecting blocks with 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 terminate the wires/jumpers on field-terminated wiring blocks:

- The D impact tool (AT-8762) is a single-wire termination tool
- The 788J1 impact tool will terminate five pairs of wire at a time
- The 788K1 conductor retention tool is used to secure cable pairs in the wiring blocks when connecting blocks are being removed from the wiring blocks.

110-TYPE TOOLS ORDERING INFORMATION

Description	Comcode
D Impact Tool	402 024 723
788J1 Impact Tool	102 648 839
788K1 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

Designation strips (Figure 2-11) are made of clear plastic and snap into alternate rows of the 110-type wiring block. Each designation strip can identify 50-pairs of wire. The designation strips accept the standard 110-labels that are ordered separately. The designation strips are furnished with the 110-type terminal blocks, but they can also be ordered separately.

DESIGNATION STRIP ORDERING INFORMATION

Description	Qty. Per Code	Comcode
188&T1-50 Designation Strip	6	103 895 504

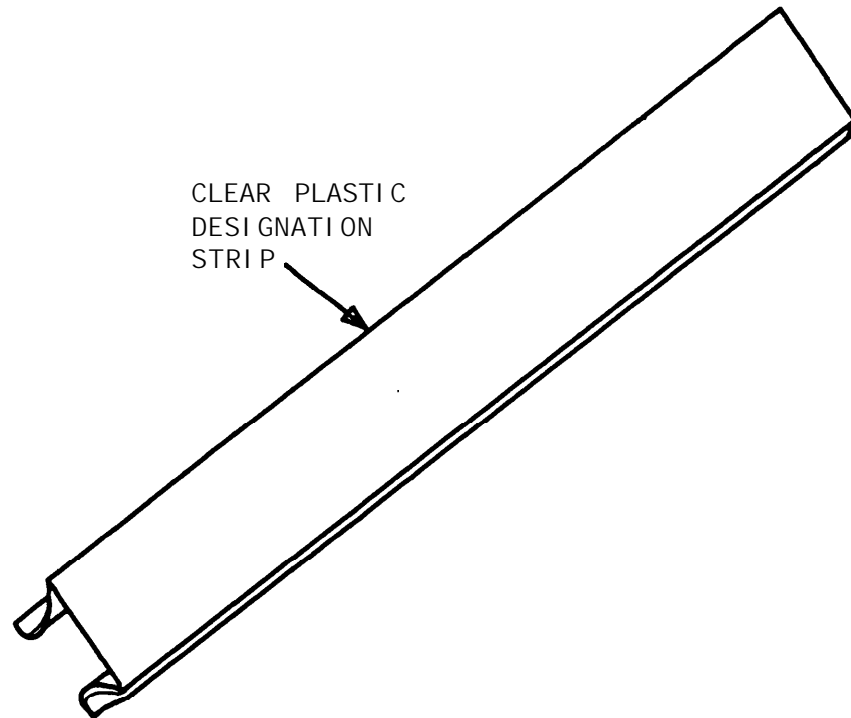


Figure 2-11. Designation Strip

66-Type Hardware Description

The 66-type hardware consists of non-connectorized or connectorized connecting blocks. The connecting blocks can be mounted individually or in multiple arrangements. All 66-type hardware uses the same basic connecting block, a 66M1-50.

66M1-50 Connecting Block

The 66M1-50 (Figure 2-12) connecting block is a plastic connecting block containing quick connect terminals sized to terminate 20 to 24 gauge wire. It 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 2-12). These terminals provide space to terminate one 25-pair cable and the associated jumpers. The terminals slice the insulation of the wires when the wires are punched onto the terminals. The standard termination for a 25-pair cable on a 66M1-50 connecting block is shown in Table 2-A. The 66M1-50 connecting block can be mounted directly on

the wall or on a backboard. These connecting blocks are used in the equipment room for the distribution field.

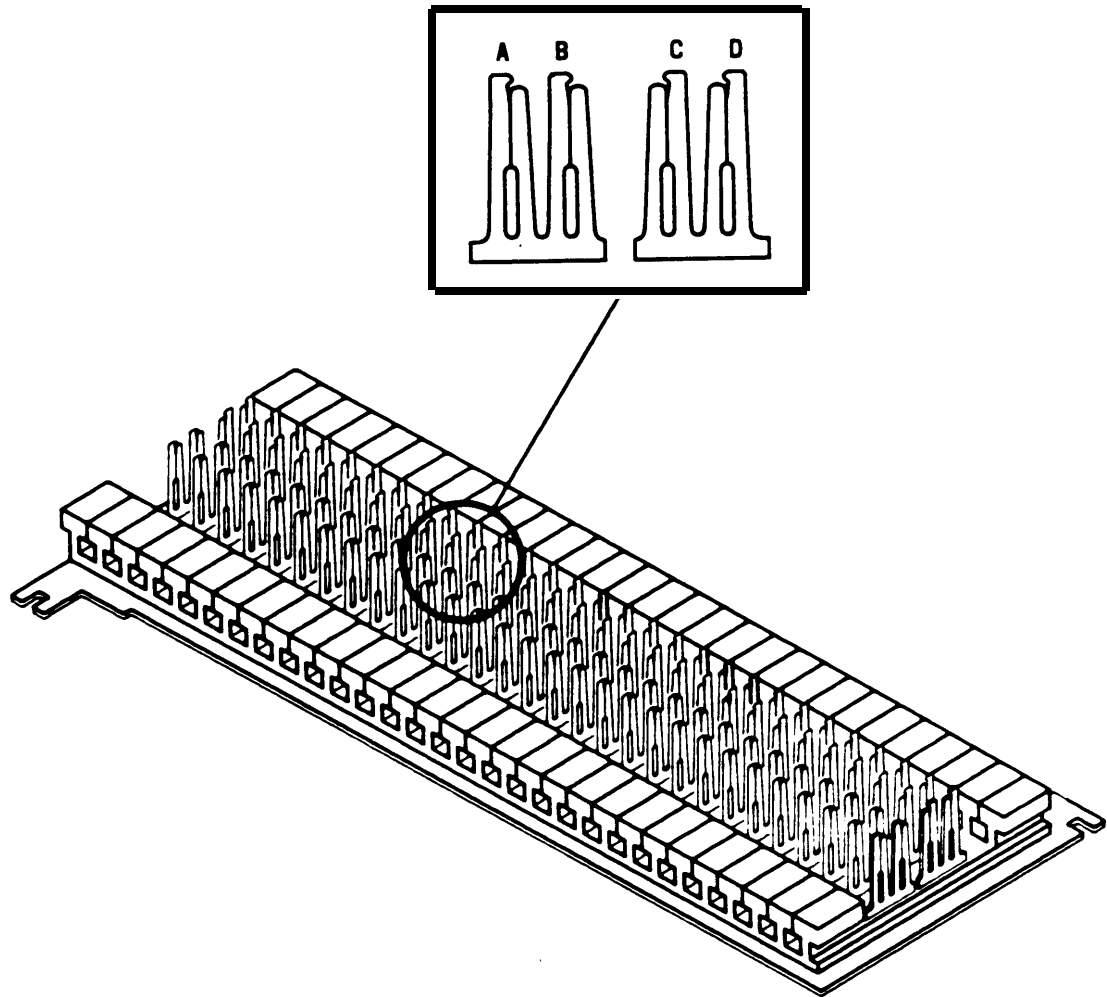


Figure 2-12. 66M1-50 Connecting Block

Connectorized 66-Type Connecting Blocks

The connectorized version of the 66-type connecting block is the 157B (Figure 2-13) connecting block. It consists of a 66M1-50 connecting block prewired to a 50-pin connector mounted on each side of the

connecting block. Each 157B connecting block can terminate two 25-pair cables. It can be mounted directly on the wall or on a backboard. These connecting blocks are used in the equipment room for the trunk/auxiliary and distribution fields.

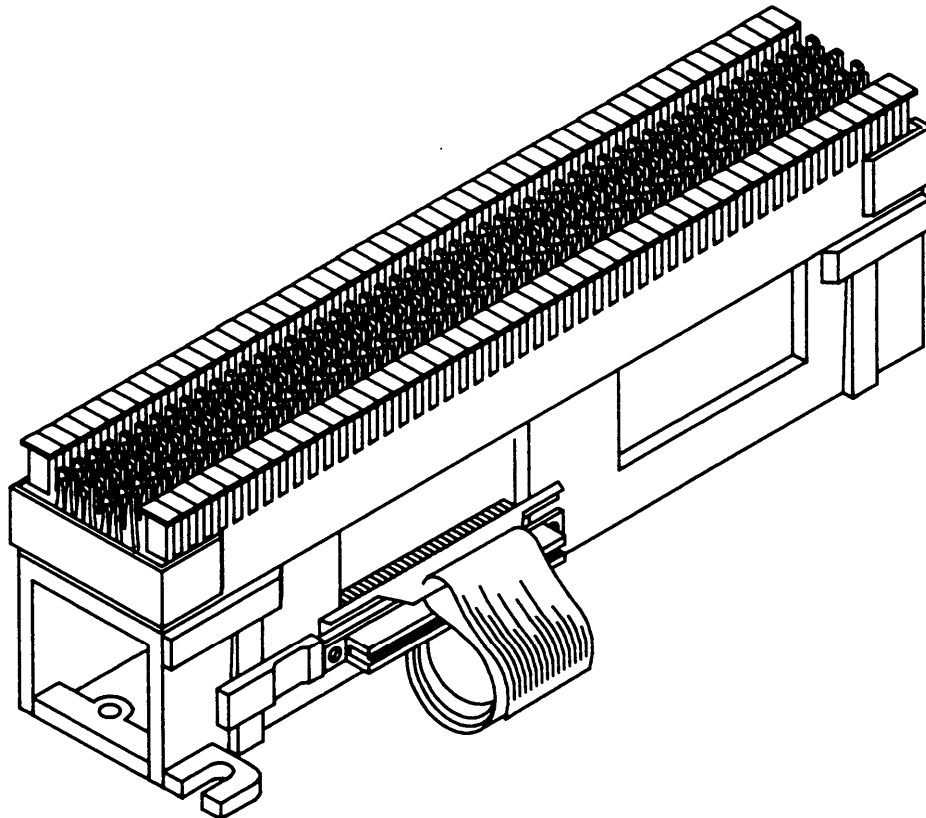


Figure 2-13. 157B Connecting Block

Multiple-Mounted 66-Type Connecting Blocks

Connectorized 66-type connecting blocks are available in two multiple mounting arrangements. The 166-type backboard consists of eight 157B connecting blocks factory-mounted on a purple backboard. This multiple arrangement provides space to terminate sixteen 25-pair cables. The 166-type backboard is used in the equipment room for the trunk/auxiliary field and distribution field.

The 154A-type backboard consists of four 157B connecting blocks factory-mounted on a blue backboard. This multiple arrangement provides space to terminate eight 25-pair cables. The 154A-type mounting is used in the equipment room in the distribution field.

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 backboard (Figure 2-14) provides mounting space for 66M1-50 connecting blocks. It is available in the four colors (blue, green, purple, and yellow) that are used to identify the functional areas in the cross-connect field. The 183A-type backboard mounts four 66M1-50 connecting blocks. The 183B-type backboard mounts eight 66M1-50 connecting blocks. The 183C-type backboard mounts two 66M1-50 connecting blocks. White backboards that are used for connections between the main distribution field and satellite closets can be obtained from outside vendors.

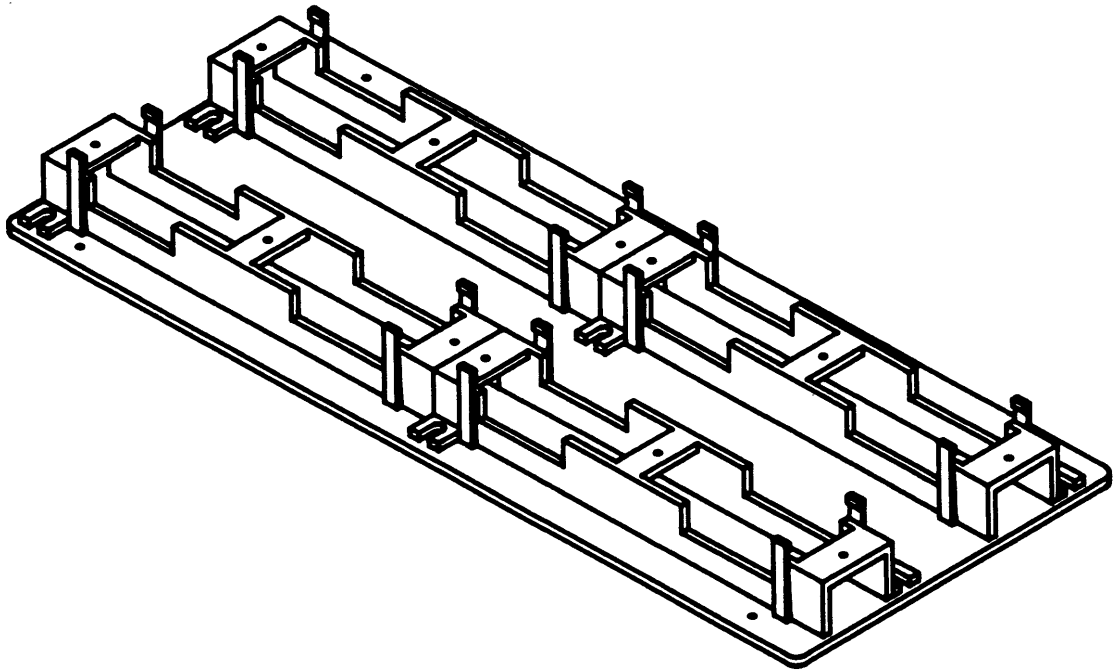


Figure 2-14. 183A-Type Backboard

183-TYPE BACKBOARD ORDERING INFORMATION

Code	Color	Mounts	Comcode
183A1	Blue	(4) 66M1-50 Conn Blocks	101 412 963
183A2	Green	(4) 66M1-50 Conn Blocks	101 412 971
183A4	Purple	(4) 66M1-50 Conn Blocks	101 937 902
183A5	Yellow	(4) 66M1-50 Conn Blocks	101 986 446
183B1	Blue	(8) 66M1-50 Conn Blocks	101 412 989
183B2	Green	(8) 66M1-50 Conn Blocks	101 564 631
183B4	Purple	(8) 66M1-50 Conn Blocks	101 937 928
183B5	Yellow	(8) 66M1-50 Conn Blocks	101 986 453
183C1	Blue	(2) 66M1-50 Conn Blocks	103 222 790

187B1 Backboard

The 187B1 backboard (Figure 2-15) provides 16 pegs that are used to dress the cross-connecting wire between connecting blocks. The 187B1 backboards can be used with any arrangement of 66-type connecting blocks.

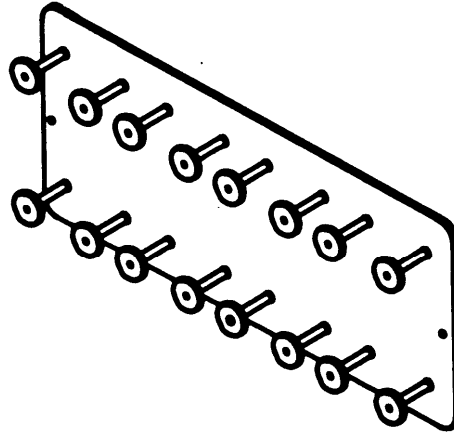


Figure 2-15. 187B1 Backboard

187B1 BACKBOARD ORDERING INFORMATION

Description	Comcode
187B1 Backboard	101 937 944

Power Adapter Cords

The power adapter cord (Figure 2-16) connects an adjunct power supply to a 4-pair station circuit terminated on a 66-type connecting block. The cord consists of a 2-pair cable equipped with a 6-conductor modular plug. The plug end connects to the power supply and the other end terminates on the 66-type connecting block.

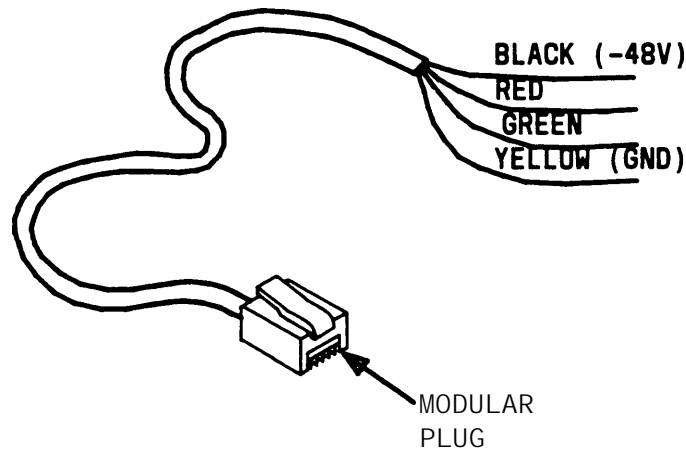


Figure 2-16. Power Adapter Cord

POWER ADAPTER CORD ORDERING INFORMATION

Length	Comcode
10 ft	103 935 623
25 ft	103 895 660

Jumpers

Solid wire jumpers are used for cross-connections between terminals on the connecting blocks. The jumpers are punched down on the connecting blocks with 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 used 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 impact 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-8762	402 024 681
D Impact Tool	402 024 723
724A Tool	100 755 636

Bridging Clips

Bridging clips are spring clips that connect two adjacent terminals in the same terminal row on a connecting block. Bridging clips provide the fastest, 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 2-17) are raised floor units that are used for cable distribution and cable slack storage between the switch cabinets and the cross-connect field. They can also accommodate a limited amount of slack in station cables. Power cables from the switch 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 switch 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 two types are available.

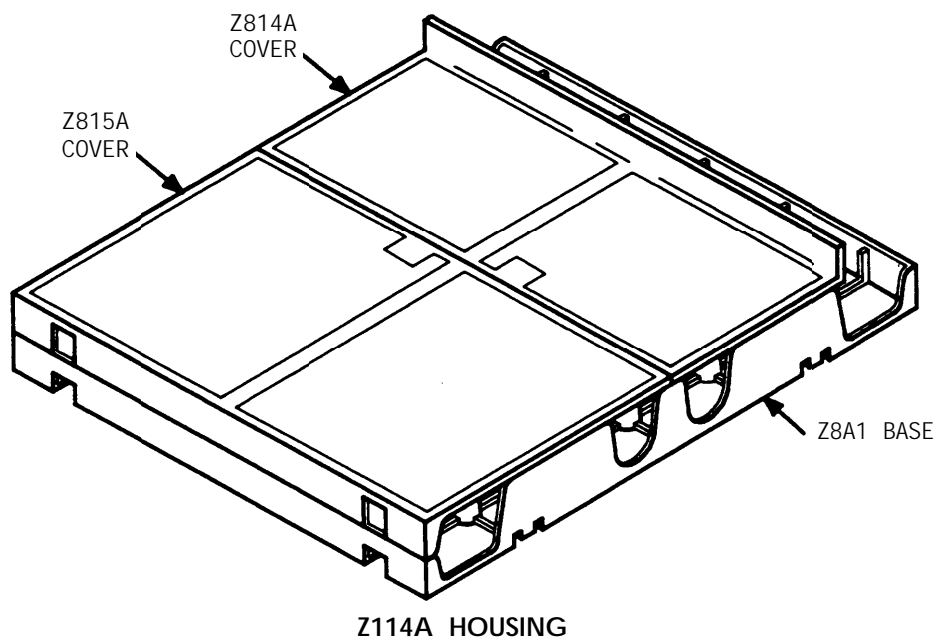
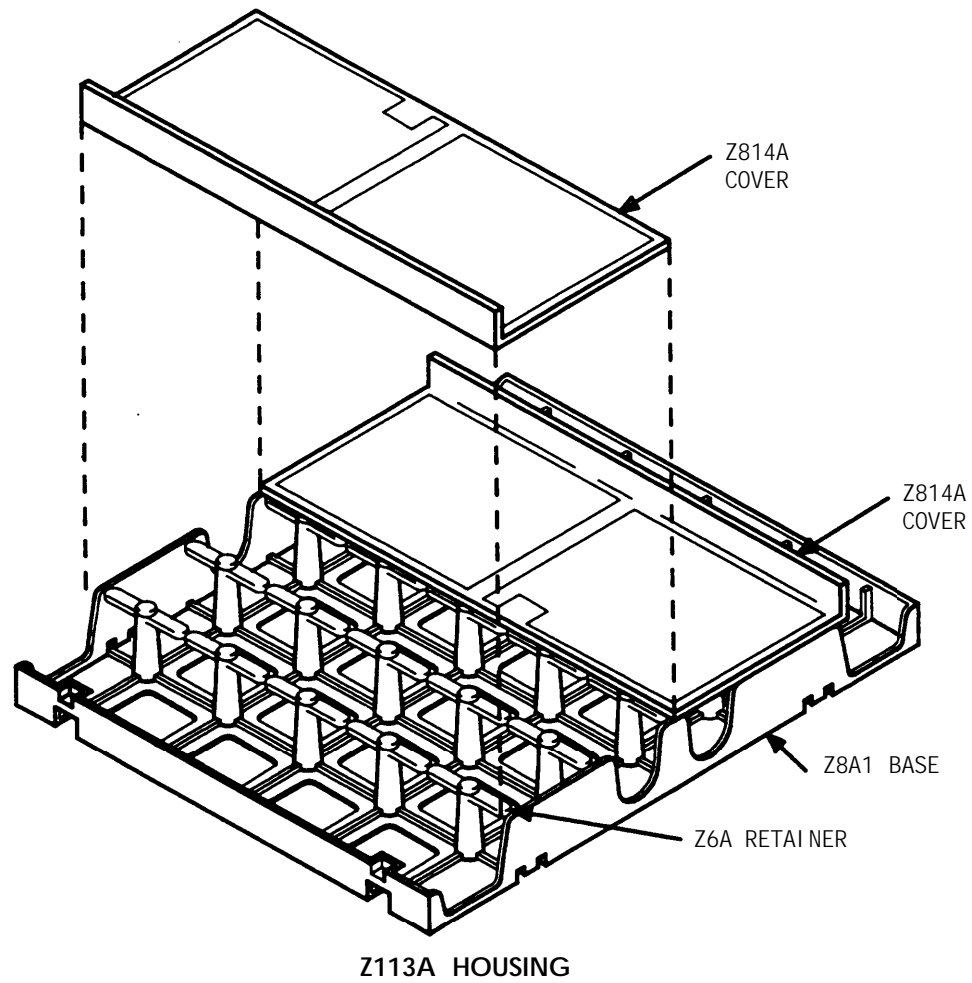


Figure 2-17. Cable Slack Managers

Z113A Housing

The Z113A housing is used between the wall and equipment cabinets (switch, AP, auxiliary, etc.). It consists of:

- (1) Z8A1 base
- (2) Z814A covers
- (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:

- (1) Z8A1 base
- (1) Z814A cover
- (1) Z815A cover
- (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

Network Interfaces

RJ21X Network Interface

The RJ21X network interface is the connection point between the local telephone company lines (1-pair trunks) and the switch. The interface is supplied and installed by the local telephone company. See Table 3-G for network interface pin assignments on CO and DID trunk circuit packs.

RJ2GX Network Interface

The RJ2GX network interface is the connection point between the local telephone company tie-trunks and the switch three-pair tie-trunks. The interface is supplied and installed by the local telephone company. See Table 3-G for network interface pin assignments on tie trunk circuit packs.

1.544 Mbps Digital Service Interface

The 1.544 Mbps (megabits per second) digital service interface is the connection point between the local telephone company T1 carrier lines and the switch DS1 trunks. The interface is supplied and installed by the local telephone company.

Sneak Fuse Panels

575-4 Sneak Current Fuse Panel

Sneak current protection is required between the RJ21X or RJ2GX network interface and the switch for both trunk and off-premises circuit packs. See *Installing Off-Premises Voice Terminal Wiring* in Chapter 4. The Model 575-4 sneak current fuse panel (Figure 2-18), or equivalent, is recommended for sneak current protection. The panel is connectorized with incoming and outgoing connectors and equipped with 25 two-pair fuse modules. Connector cables (B25A) connect the network interface to the sneak fuse panel. Also, 157B connecting blocks equipped with SCP-1 protectors can be used for sneak current protection.

Note: Sneak current protectors with a rating of 350 ma at 600V must be UL rated for domestic installation and CSA certified for Canadian installation.

SNEAK FUSE PANEL ORDERING INFORMATION

Description	Comcode
157B Connecting Block	403 613 003
SCP-1 Protector*	403 617 632
575-4 Sneak Current Fuse Panel	402 989 016

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

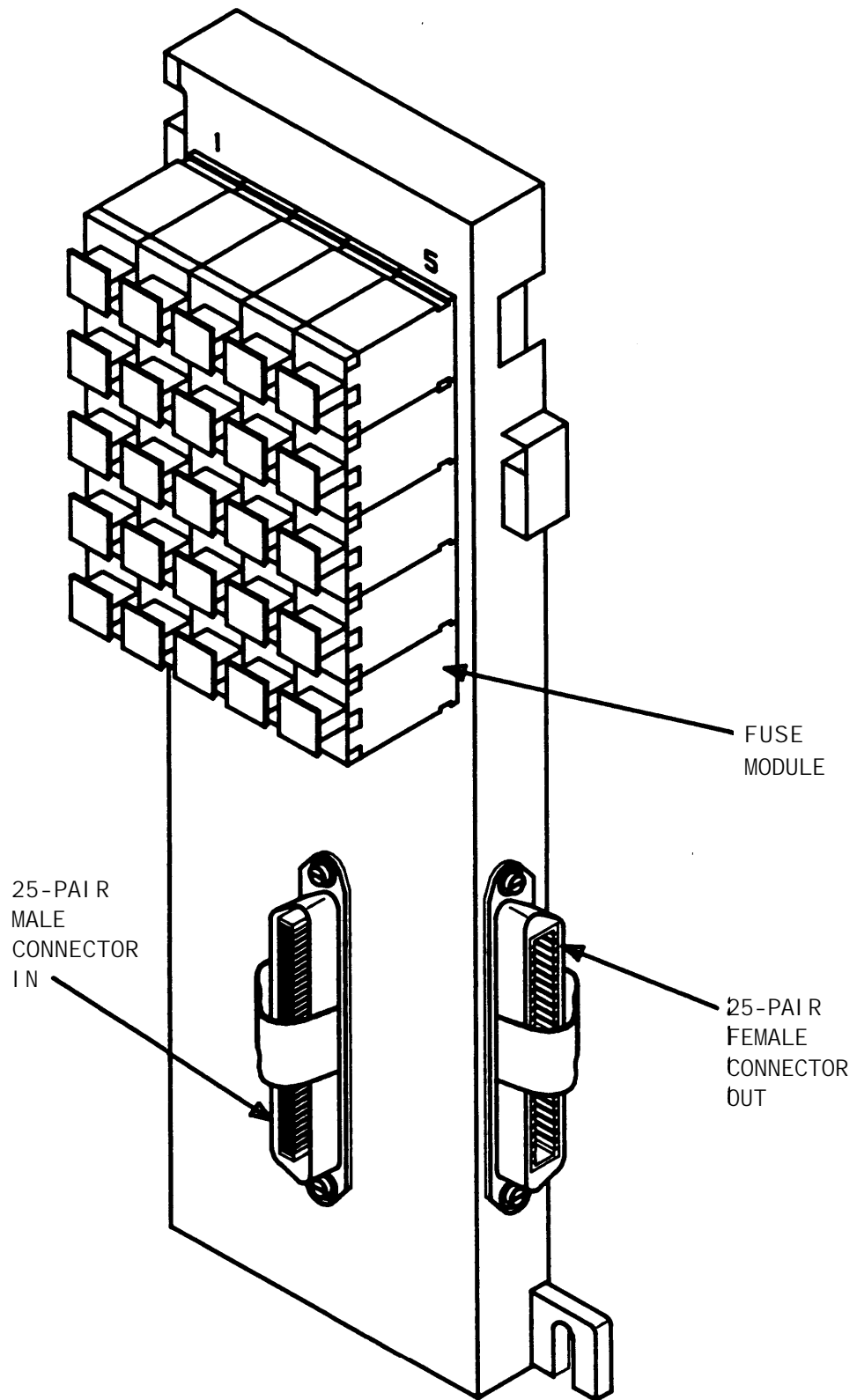


Figure 2-18. Model 575-4 Sneak Fuse Panel

Emergency Transfer Units

General

The emergency transfer units used with the 66-type/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 emergency transfer unit provides emergency transfer connections for six telephones. If the central office (CO) trunks require ground start, a ground start key must be installed on each emergency transfer telephone.

574-5 Power Transfer Unit

The 574-5 power transfer unit (Figure 2-19) provides power transfer connections for five telephones. This unit provides automatic ground start.

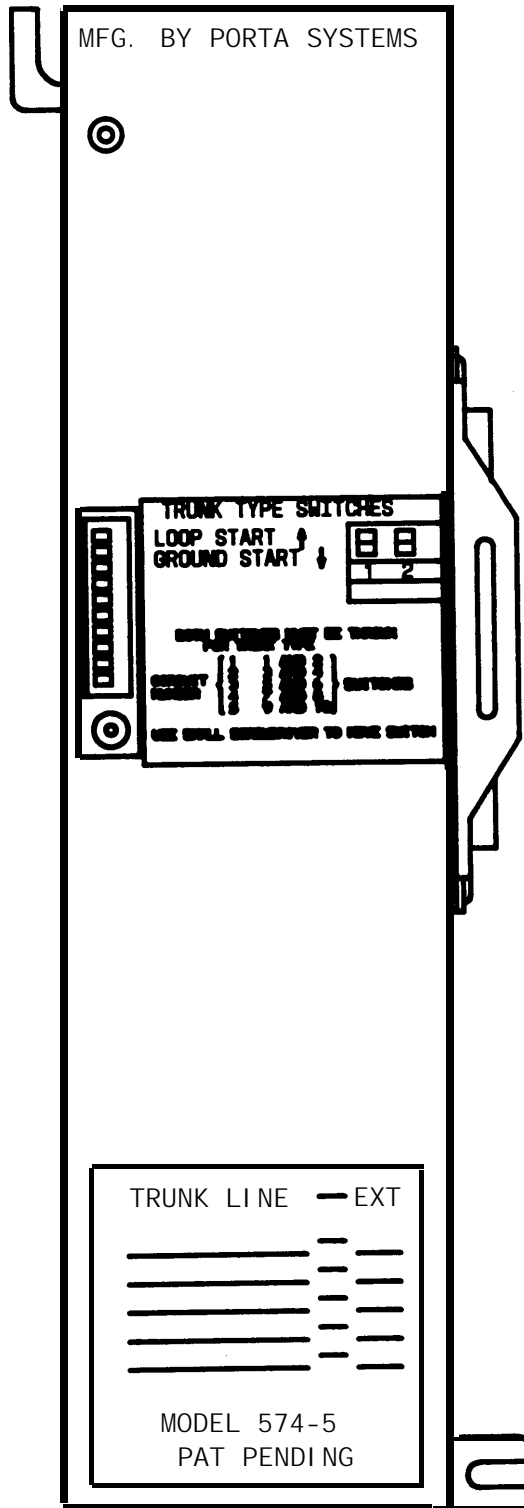


Figure 2-19. Model 574-5 Power Transfer Unit

Trunk Concentrator Cables

Trunk concentrator cables are used for the following purposes:

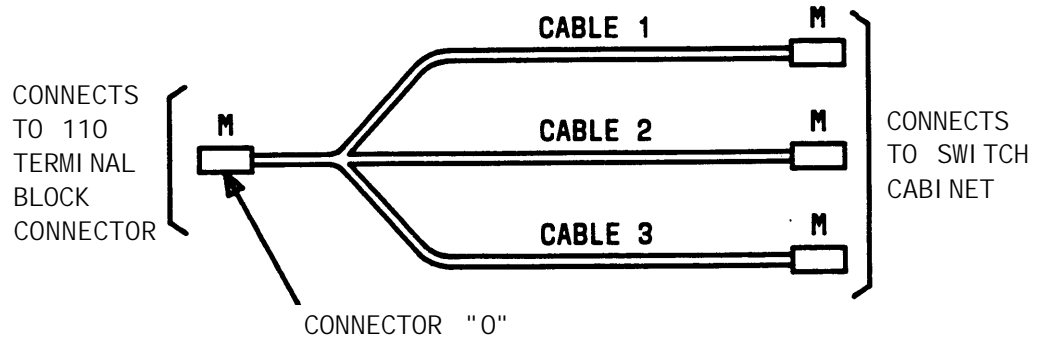
- To match 1-pair local telephone company trunks to 3-pair switch circuits at the cross-connect field.
- To match 1-pair local telephone company trunks provided for off-premises lines to 3-pair switch circuits at the cross-connect field.
- To split eight 3-pair analog tie trunks into two groups of four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

The trunk concentrator cables are 25 feet long. They are coded as cable assemblies and described in the following sections.

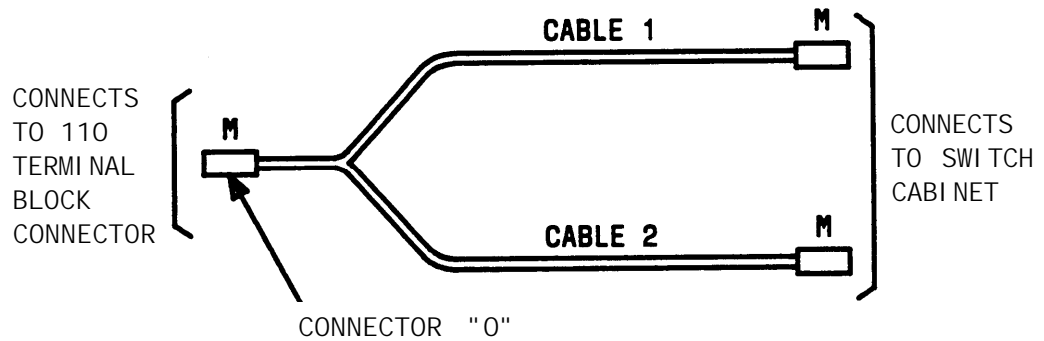
Note: The WP-90929, List 1 and List 3 cable assemblies are used with 110-type hardware, while List 2 and 4 cable assemblies are used with 66-type hardware.

WP-90929, List 1, Cable Assembly (For 110-type Hardware Only)

The WP-90929, List 1, cable assembly (Figure 2-20 and Table 2-B) provides a way to connect local telephone company trunks to the switch. It can also be used to connect off-premises analog trunks between the port field and trunk field at the equipment room cross-connect field. All the ribbon connectors on the cable assembly are male-type connectors. Each cable assembly can match twenty-four 1-pair trunk circuits with twenty-four 3-pair trunk circuits.



LIST 1 CABLE



LIST 3 CABLE

LEGEND:

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

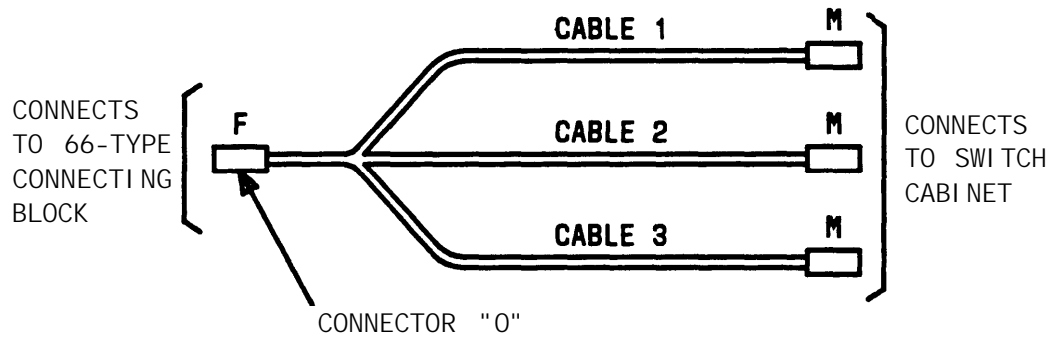
Figure 2-20. Trunk Concentrator Cables (WP-90929, L1 & L3) (For 110-type Hardware Only)

Table 2-B. WP-90929, List 1 and List 2, Cable Assembly Wiring

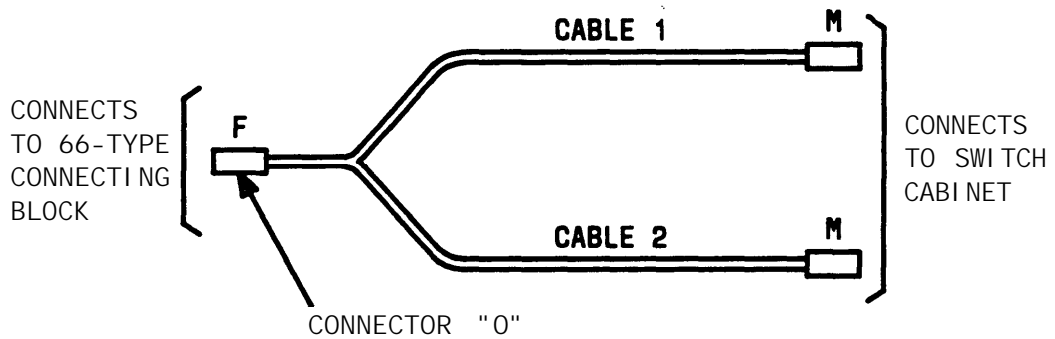
Conn. 0 Pin No.	Cable No. 1	Cable No. 2	Cable No. 3	Conn. 0 Pin Numbers	Cable No. 1	Cable No. 2	Cable No. 3
26	W-BL	-	-	1	BL-W	-	-
27	W-BR	-	-	2	BR-W	-	-
28	R-O	-	-	3	O-R	-	-
29	R-S	-	-	4	S-R	-	-
30	BK-G	-	-	5	G-BK	-	-
31	Y-BL	-	-	6	BL-Y	-	-
32	Y-BR	-	-	7	BR-Y	-	-
33	V-O	-	-	8	O-V	-	-
34	-	W-BL	-	9	-	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	-	-

WP-90929, List 2, Cable Assembly (For 66-type Hardware Only)

The WP-90929, List 2, cable assembly (Figure 2-21 and Table 2-B) provides a way to connect local telephone company trunks to the switch. It can also be used to connect off-premises analog trunks between the port field and trunk field at the equipment room cross-connect field. The 3-fingered end of the cable assembly is equipped with male-type ribbon connectors. The other end of the cable assembly is equipped with a female-type ribbon connector. Each cable assembly can match twenty-four 1-pair trunk circuits with twenty-four 3-pair trunk circuits.



LIST 2 CABLE



LIST 4 CABLE

LEGEND:

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

Figure 2-21. Trunk Concentrator Cables (WP-90929, L2 & L4) (For 66-type Hardware Only)

WP-90929, List 3, Cable Assembly (For 110-type Hardware Only)

The WP-90929, List 3, cable assembly (Figure 2-20 and Table 2-C) provides a way to connect tie-trunk circuits to the switch. All ribbon connectors on the cable assembly are male-type connectors. Each cable assembly can match eight 3-pair tie-trunk circuits with two groups of four 3-pair tie-trunk circuits.

Table 2-C. WP-90929, List 3 and List 4, Cable Assembly Wiring

Conn. 0 Pin No.	Cable No. 1	Cable No. 2	Conn. 0 Pin Numbers	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	-

WP-90929, List 4, Cable Assembly (For 66-type Hardware Only)

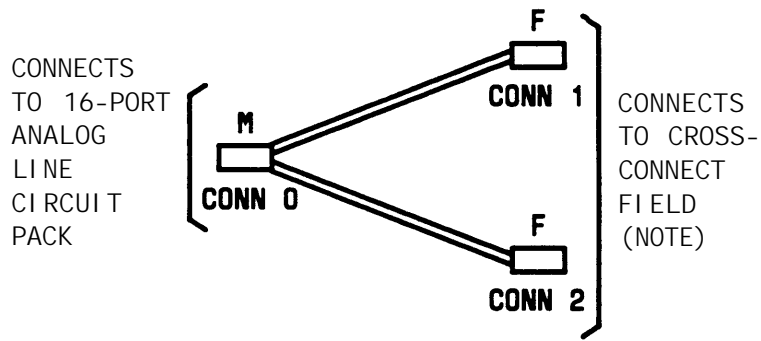
The WP-90929, List 4, cable assembly (Figure 2-21 and Table 2-C) provides a way to connect tie-trunk circuits to the switch. The 2-fingered end of the cable assembly is equipped with male-type ribbon connectors. The other end of the cable assembly is equipped with a female-type ribbon connector. Each cable assembly can match eight 3-pair tie-trunk circuits with 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 2, Cable Assembly	405 065 012
WP-90929, List 3, Cable Assembly	405 075 482
WP-90929, List 4, Cable Assembly	405 075 540

16-Port Analog Line Circuit Pack Adapter Cable (For 110-Type Hardware Only)

The 16-port analog line circuit pack (TN746) contains sixteen 1-pair circuits that appear on a 25-pair connector at the switch. The 16-port analog line adapter cable (Figure 2-21) separates the 1-pair circuits (from the switch) into 3-pair circuits that appear on two 25-pair connectors at the other end of the cable.



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 2-22. 16-Port Analog Line Circuit Pack Adapter Cable (853B Adapter)

The adapter cable is 8 feet long and can be ordered with the TN746 circuit pack. The adapter cable is coded as a 853B adapter and can be ordered as follows.

16-PORT ANALOG LINE

ADAPTER CABLE ORDERING INFORMATION

Description	Comcode
853B Adapter	104 305 834

4-Port Met Line Circuit Pack Concentrator Cable

The MET line circuit pack (TN735) contains four 3-pair circuits that appear on a 25-pair connector at the switch. The WP-90929, List 3 and List 4 cable assemblies shown in Figures 2-19 and 2-20, respectively combine the MET line circuits appearing on two 25-pair connectors (at the switch) into one 25-pair connector at the opposite end of the cable.

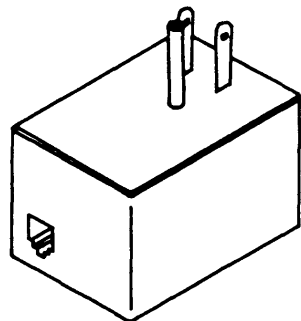
Adjunct Power Units

General

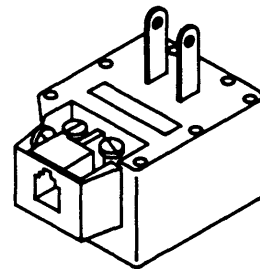
There are two types of power supplies used for adjunct powering, individual and bulk. The power supplies are specified by the Field Services Organization (FSO) for firm quote price lists. For all other quotes, the power supplies are specified by the PSC.

Individual Power Supplies

Individual power supplies (Figure 2-23) 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-D contains the individual power supply limitations for distance, wire gauge, and adjuncts.



329A
(NOTE 1)



2012D TRANSFORMER
WITH 248B ADAPTER
(NOTE 2)

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 2-23. Individual Power Supplies

Table 2-D. Individual Power Supply Adjunct and Distance Limitations

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

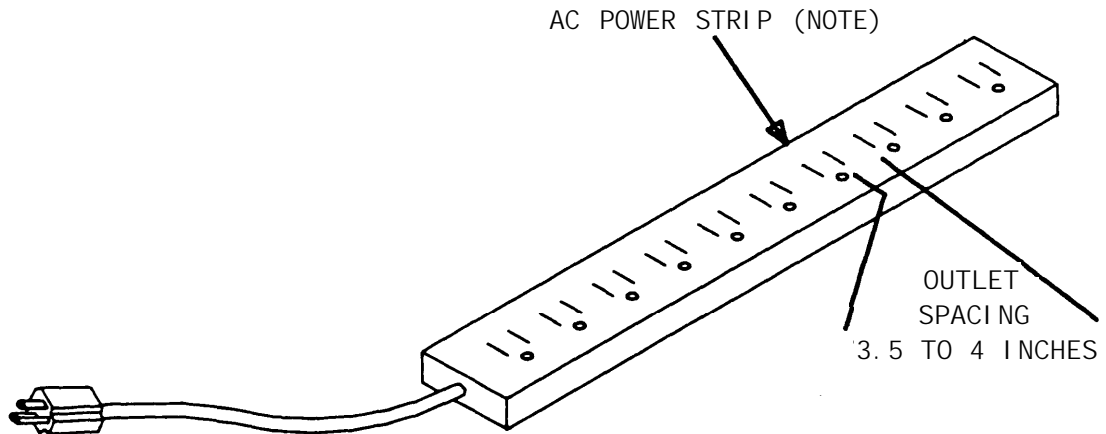
* The 329A should not be used to power attendant consoles.

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

When more than one individual power supply is at the equipment room or at a site or satellite location, an ac power strip (Figure 2-24) must be installed to accommodate the various sizes of power supplies.

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.



NOTE: THIS AC POWER STRIP MUST BE
LOCALLY PROVIDED.

Figure 2-24. AC Power Strip

Bulk Power Supply

The 346 modular bulk power supply consists of a 346A1 power panel and up to three 346A power units (Figure 2-25). The panel has three 2-ampere circuit breakers, one for each 346A power unit (Figure 2-26). Power panels may be used with one, two, or three power units connected.

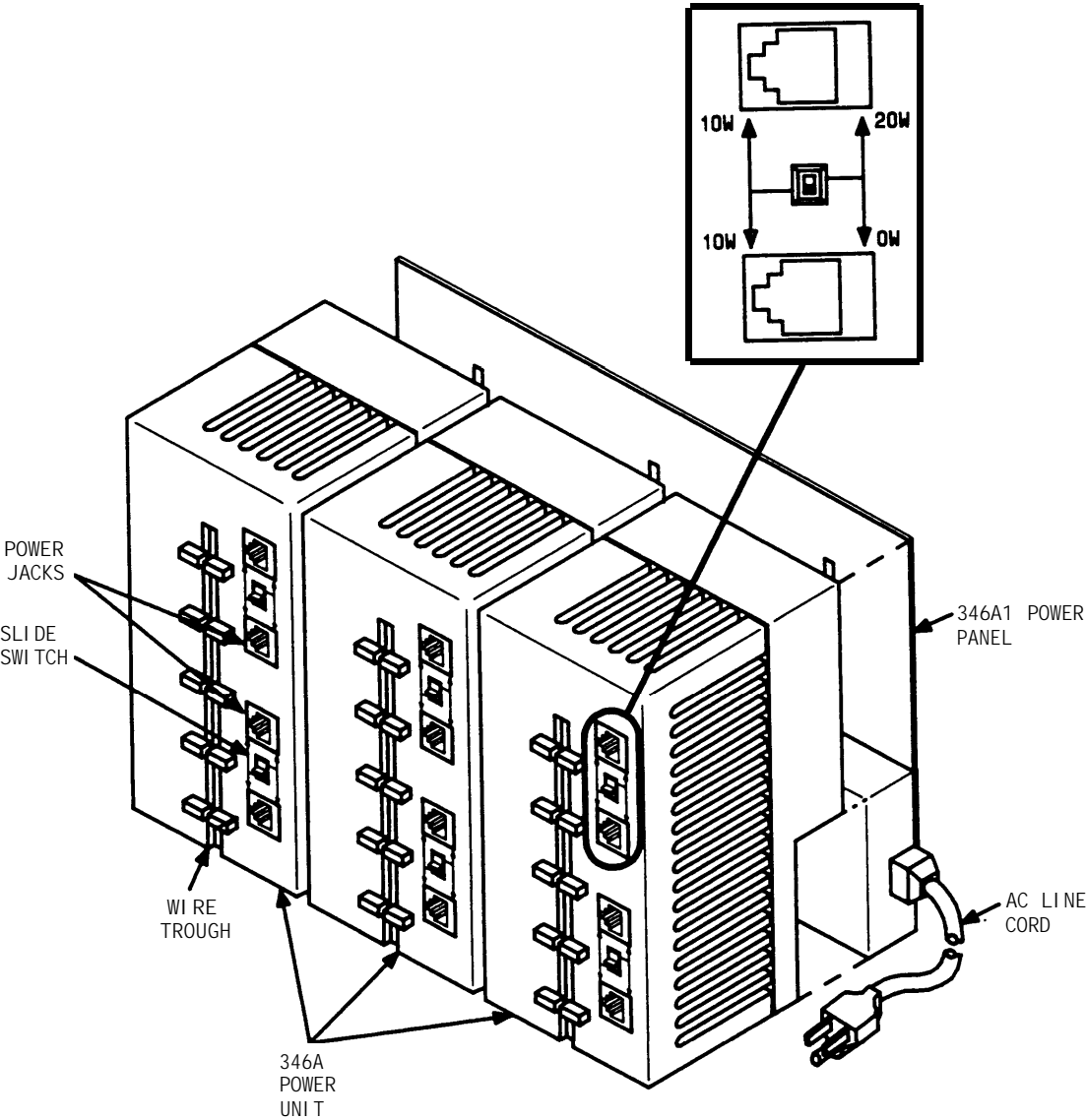


Figure 2-25. 346 Modular Bulk Power Supply

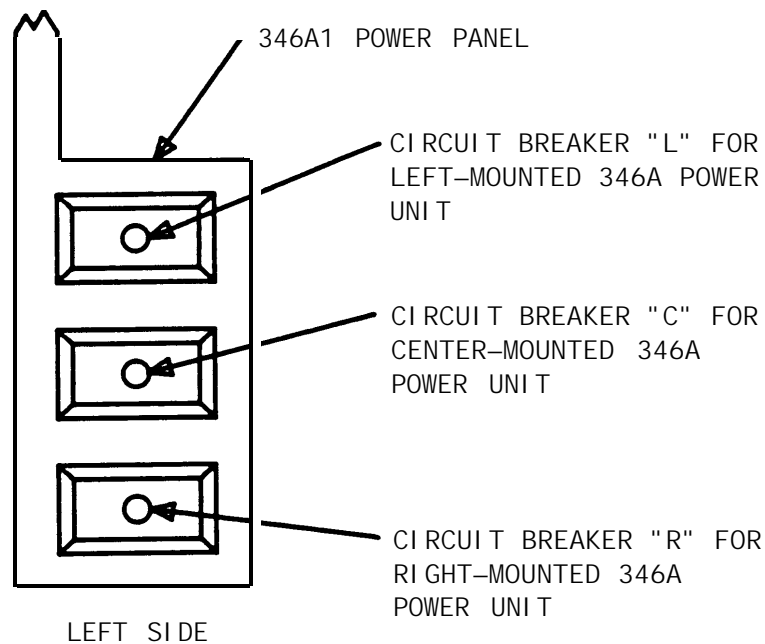


Figure 2-26. 346A1 Power Panel Circuit Breaker Locations

A 5-foot line cord provides ac power to the 346A1 power panel. Service to the ac receptacle must be provided by a dedicated (nonswitched) 20-ampere circuit. A maximum of four power panels can be connected to a 20-ampere circuit.

Note: Electrical codes of Chicago and Cook County, Illinois require the use of a metallic 346B1 power panel equipped with a fused ac power cord (POP-6/217 by JDS Product).

Each 346A power unit contains four power jacks. A slide switch is located between the top and bottom jacks. When the slide switch is in the down position, 10 watts of power is available at both jacks. When the slide switch is in the up position, 20 watts of power is available at the jack above the switch. The jack below the switch has no power.

Note: If two consoles are connected to a power supply, and an addition is made that requires a 20 watt source, remove the second console and move the power supply switch to the 20 watt position. Connect the second console to another power supply.

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

Table 2-E. 346A Power Unit Adjunct and Distance Limitations

Slide Switch Position	Adjuncts Powered (Maximum per Unit)	Wire Gauge	Distance Feet
Down (10 w)	Any four voice terminals equipped with one speakerphone or one headset	24	260
	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

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CHAPTER 3. EQUIPMENT ROOM DESIGN

General

The *System 75—System Description* (555-200-200) or *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 switch and the associated peripheral equipment that is to be installed in the equipment room. For completeness, some of the information contained in these documents is repeated in this guide.

Hardware Equipment Room Applications

In the equipment room, the 66-type/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 terminates the network interface leads (from the CO) and provides the terminals to cross-connect the CO leads to the purple or yellow fields as required. A single row of the 66-type connecting block/110-type terminal block can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks.
- The purple field terminates the trunk circuits from the switch with WP-90929, List 1 or 3 (110-type terminal block) or WP-90929, List 2 or 4 (66-type connecting block) concentrator cables. Also, 25-pair cables can be used to terminate trunk circuits from the switch with each trunk circuit pack connecting to one 25-pair row of the 66-type connecting block/110-type terminal block. Each 66-type connecting block/110-type terminal block row can terminate twenty-four 1-pair, eight 3-pair, or twelve 2-pair trunks.
- The yellow field provides cross-connection terminals for all miscellaneous leads from the switch, such as alarm monitors, emergency transfer relay power, attendant console power, and

CHAPTER 3. EQUIPMENT ROOM DESIGN

Initialization and Administration System (INADS) trunk. This field is also used for emergency transfer wiring, applications processor (AP) alarms, paging equipment, music sources, etc.

Trunk/Auxiliary Field (110-Type Hardware Only)

Figure 3-1 shows two typical 300-pair terminal block configurations of 110-type hardware arranged for use in the trunk/auxiliary field. One 300-pair terminal block will terminate 96 three-pair circuits and two 300-pair terminal blocks will terminate 192 three-pair circuits.

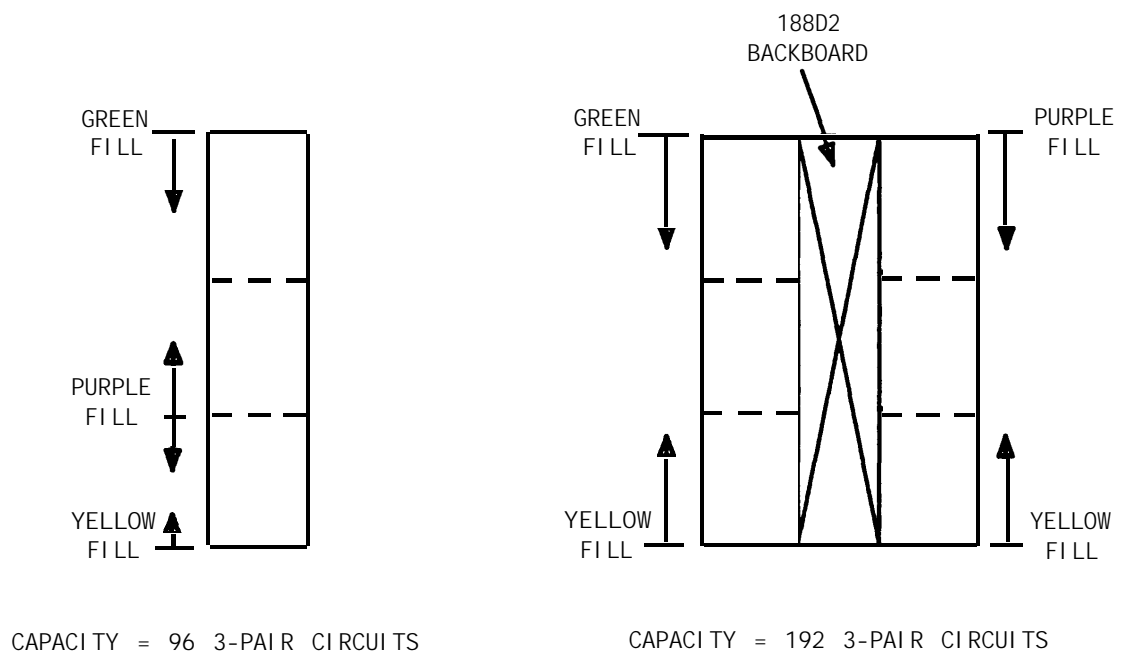


Figure 3-1. 300-Pair Trunk/Auxiliary Field Arrangements

The 110-type terminal blocks that can be used in the trunk/auxiliary field are the:

- 110AC1-300STM/6 which has six stub cables that exit from the top of the terminal block. Each cable stub is 6-feet long and equipped with a 50-pin male connector.

- 110AC1-300STF/6 which has six stub cables that exit from the top of the terminal block. Each cable stub is 6-feet long and equipped with a 50-pin female connector.
- 110PC1-300CT which has six stub cables that exit from the top of the terminal block. Each cable stub is 6-feet long and equipped with a 50-pin female connector.

Figure 3-2 shows two typical 900-pair terminal block configurations of 110-type hardware arranged for use in the trunk/auxiliary field. One 900-pair terminal block will terminate 288 three-pair circuits and two 900-pair terminal blocks will terminate 576 three-pair circuits.

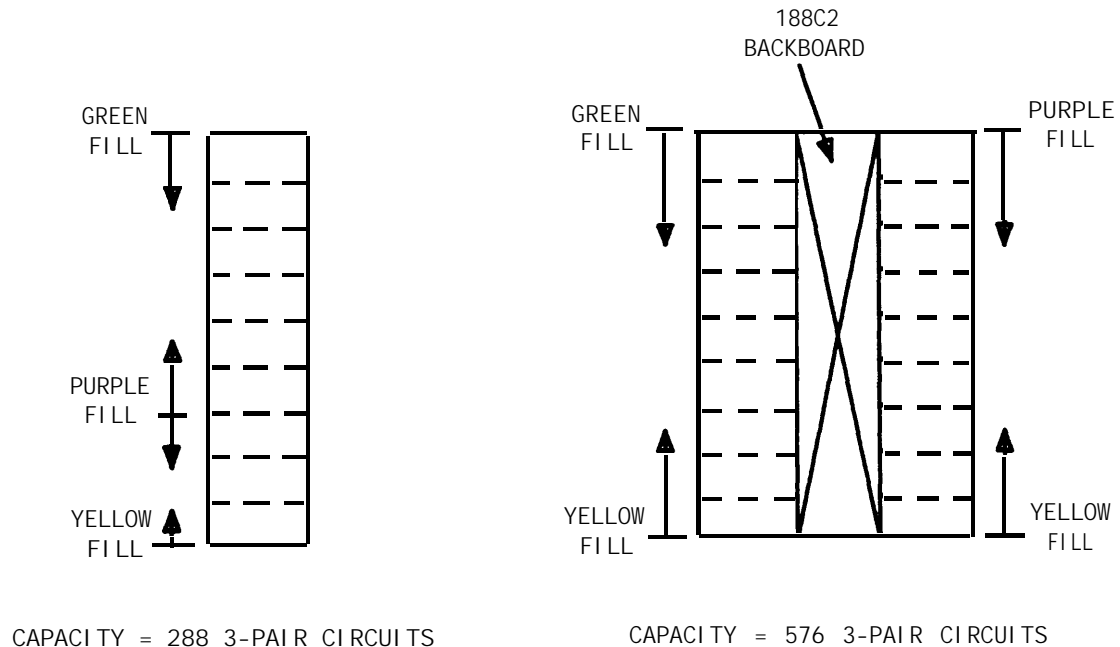


Figure 3-2. 900-Pair Trunk/Auxiliary Field Arrangements

The 900-pair 110P-type terminal block recommended for the trunk/auxiliary field is the:

- 110PC1-900CB which is equipped with 36 female 50-pin connectors. The connectors are mounted at the bottom of the terminal block. This allows for easy cable routing to the floor and/or the cable slack manager as required.

- 110PC1-900CT which is equipped with 36 female 50-pin connectors. The connectors are mounted at the top of the terminal block. This can be used if cable routing from the top is desirable.

Distribution Field

The distribution field contains four distinct cross-connect areas:

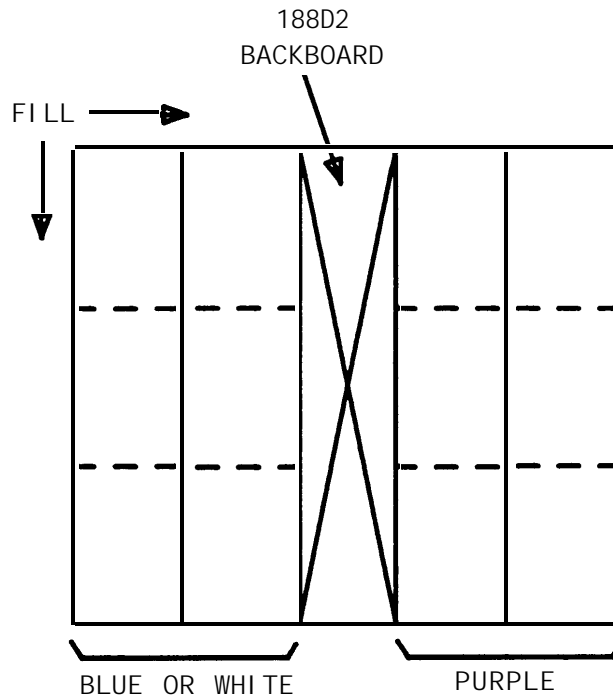
- The purple field (port field) terminates 25-pair cables from the switch. Each line circuit pack connects to one 66-type connecting block or to one 25-pair row of the 110-type terminal block. One 25-pair cable is required for each line circuit pack.

Note: This is the case except for the 16 port analog line circuit pack and the MET line circuit pack. The 16-port analog line circuit pack requires an adapter cable to connect from one connector on the switch to two 25-pair connectors on a 66-type connecting block/110-type terminal block. Two MET line circuit packs require a concentrator cable to connect from two connectors on the switch to one 25-pair connector on a 66-type connecting block/110-type terminal block.

- The yellow field (auxiliary field) terminates all 25-pair cables from the auxiliary cabinet and the AP. The yellow field is located in the lower right-hand corner of the distribution field.
- The white field (station field) terminates the station wiring. The white field indicates 3-pair station circuits (eight circuits per 25-pair cable) that are routed through a satellite closet.
- The blue field (station field) also terminates station wiring. The blue 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 provides adjunct power from the cross-connect field on an as-needed basis to terminals within 250 feet (wire length) of the cross-connect field.

Distribution Field (110-Type Hardware Only)

Figure 3-3 shows a typical 300-pair terminal block configuration of 110-type hardware arranged for use in the distribution field. One 300-pair terminal block will terminate 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).



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 3-3. Distribution Field Arrangement of 110-Type Hardware—Four 300-Pair Terminal Blocks

Figure 3-4 shows a typical 300-pair terminal block configuration of 110-type hardware arranged for use in the distribution field. This configuration will terminate 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).

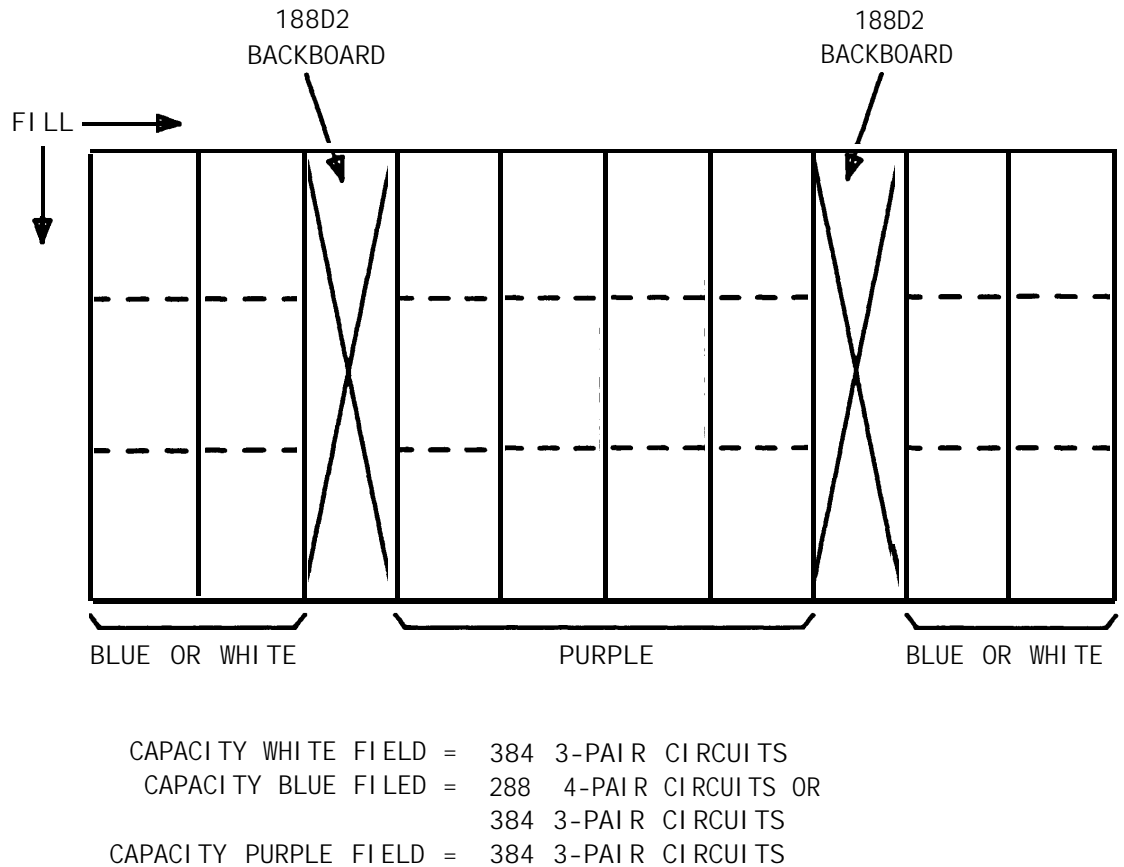
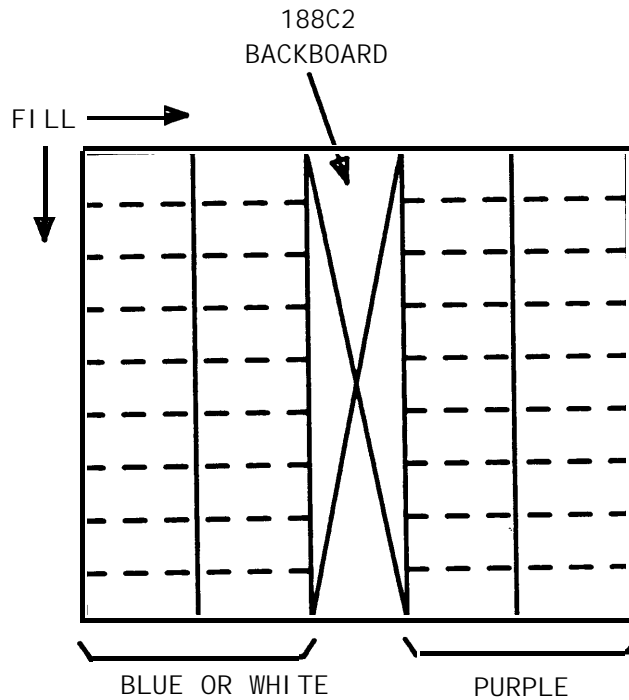


Figure 3-4. Distribution Field Arrangement of 110-Type Hardware—Eight 300-Pair Terminal Blocks

Figure 3-5 shows a typical 900-pair terminal block configuration of 110-type hardware arranged for use in the distribution field. This configuration will terminate 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).



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 3-5. Distribution Field Arrangement of 110-Type Hardware—Four 900-Pair Terminal Blocks

Figure 3-6 shows a typical 900-pair terminal block configuration of 110-type hardware arranged for use in the distribution field. This configuration will terminate 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).

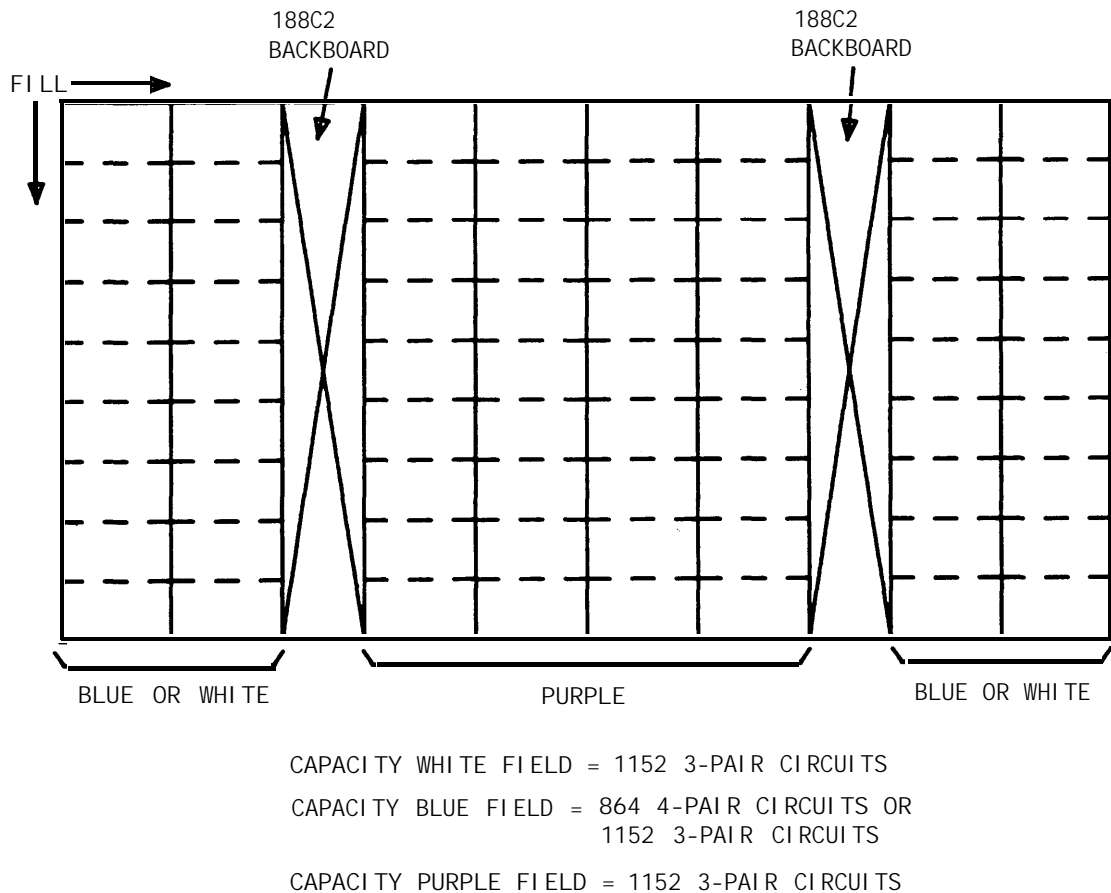


Figure 3-6. Distribution Field Arrangement of 110-Type Hardware—Eight 900-Pair Terminal Blocks

The following 110-type terminal blocks (Table 3-A) can be used in the distribution field.

- a. The 110AC1-300STM/6 is a factory assembled 300-pair terminal block. It is equipped with twelve, 6-foot long, 25-pair cable stubs. Each cable stub exits from the top of the block, and is equipped with a 50-pin male miniature ribbon connector.
- b. The 110AC1-300STF/6 is a factory assembled 300-pair terminal block. It is equipped with twelve, 6-foot long, 25-pair cable stubs. Each cable stub exits from the top of the block, and is equipped with a 50-pin female miniature ribbon connector.

- c. The 110AB1-100FT is a 100-pair terminal block (110AW1-100) for use when the wiring is to be field terminated. It provides termination space for twenty-four 4-pair circuits.
- d. The 110AB1-300FT is a 300-pair terminal block (110AW1-100) for use when the wiring is to be field terminated. It provides termination space for seventy-two 4-pair circuits.
- e. The 110AC1-100FT is a 100-pair terminal block (110AW1-100) for use when the wiring is to be field terminated. It provides termination space for thirty-two 3-pair circuits.
- f. The 110AC1-300FT is a 300-pair terminal block (110AW1-100) for use when the wiring is to be field terminated. It provides termination space for ninety-six 3-pair circuits.

Table 3-A. 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 110AC1-300STF/6	110AB1-100FT 110AB1-300FT	110AC1-100FT 110AC1-300FT 110AC1-300STM/6 110AC1-300STF/6

The following 300-pair 110-type terminal blocks (Table 3-B) can be used in the distribution field.

- a. The 110PC1-300CT is a factory assembled 300-pair terminal block. It is equipped with twelve female 50-pin miniature ribbon connectors that are mounted at the top of the block. The terminal block provides termination space for ninety-six 3-pair circuits.
- b. The 110PB1-300CT is a factory assembled 300-pair terminal block. It is equipped with twelve female 50-pin miniature ribbon connectors that are mounted at the top of the block. The terminal block provides termination space for seventy-two 4-pair circuits.
- c. The 110PB1-300FT is a 300-pair terminal block (110DW1-100) for use when the wiring is to be field terminated. It provides termination space for seventy-two 4-pair circuits.

- d. The 110PC1-300FT is a 300-pair terminal block (110DW1-100) for use when the wiring is to be field terminated. It provides termination space for ninety-six 3-pair circuits.

Table 3-B. 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 110PB1-300FT	110PC1-300CT 110PC1-300FT

The following 900-pair 110-type terminal blocks (Table 3-C) can be used in the distribution field.

- a. The 110PC1-900CT is a factory assembled 900-pair terminal block. It is equipped with thirty-six female 50-pin miniature ribbon connectors that are mounted at the top of the block. The terminal block provides termination space for 576 3-pair circuits.
- b. The 110PC1-900CB is a factory assembled 900-pair terminal block. It is equipped with thirty-six female 50-pin miniature ribbon connectors that are mounted at the bottom of the block. The terminal block provides termination space for 576 3-pair circuits.
- c. The 110PB1-900CT is a factory assembled 900-pair terminal block. It is equipped with thirty-six female 50-pin miniature ribbon connectors that are mounted at the top of the block. The terminal block provides termination space for 432 4-pair circuits.
- d. The 110PB1-900CB is a factory assembled 900-pair terminal block. It is equipped with thirty-six female 50-pin miniature ribbon connectors that are mounted at the bottom of the block. The terminal block provides termination space for 432 4-pair circuits.
- e. The 110PB1-900FT is a 900-pair terminal block for use when the wiring is to be field terminated. It provides termination space for 432 4-pair circuits.
- f. The 110PC1-900FT is a 900-pair terminal block for use when the wiring is to be field terminated. It provides termination space for 576 3-pair circuits.

Table 3-C. 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 110PC1-900CT	110PB1-900CB 110PB1-900CT 110PB1-900FT	110PC1-900CB 110PC1-900CT 110PC1-900FT

Distribution Field (66-Type Hardware Only)

Figure 3-7 shows a typical cross-connect field 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 157B connecting blocks mounted on a purple 183-type or 166-type backboard 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 white backboards are required for cross-connections with a satellite closet, they must be ordered from an outside vendor. If a blue backboard is used for these cross-connections, then the part of the blue field that is functionally used as the white field, should be clearly identified.

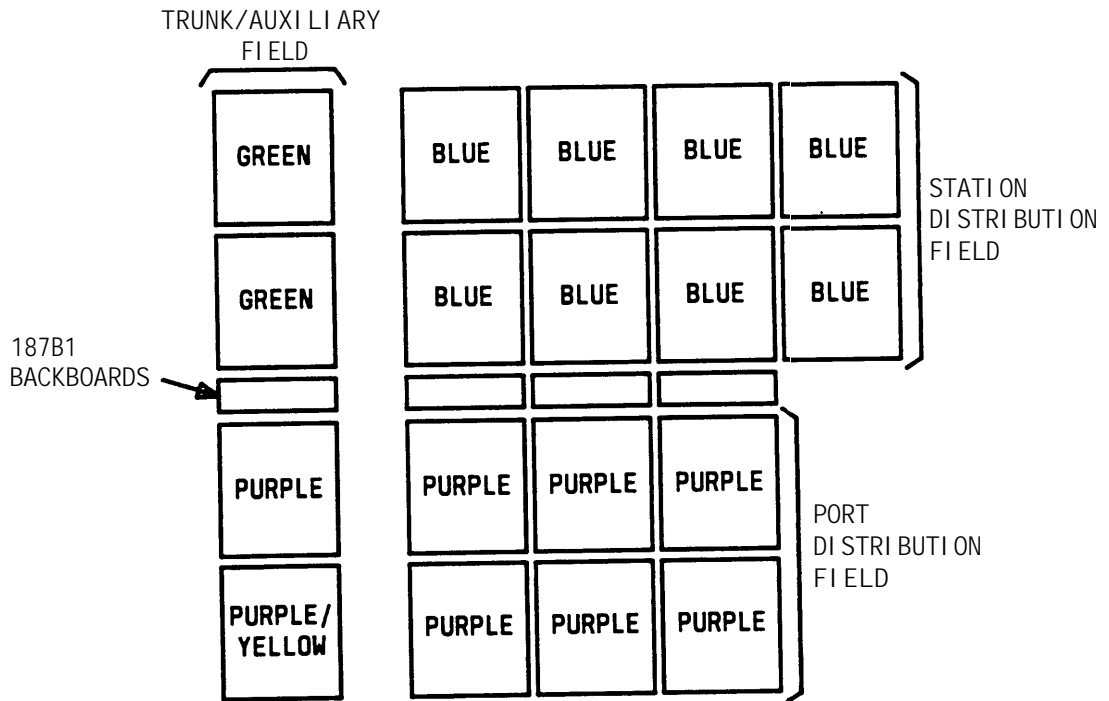


Figure 3-7. Typical Cross-Connect Field Arrangement Using 66-Type Hardware

The 66-type connecting blocks can be mounted directly onto the wall without using colored backboards. If this is the case, all of the cross-connect field functional colors should be identified on the wall.

Typical System Equipment Room Floor Plans

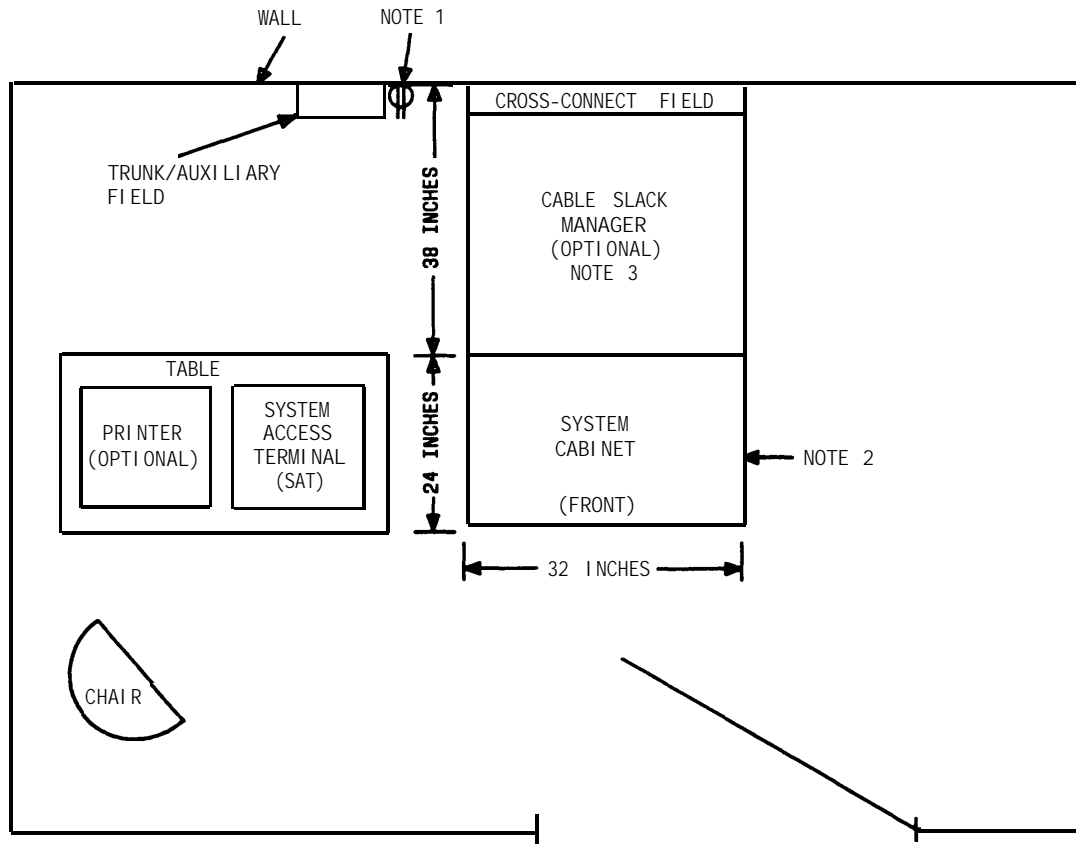
General

The equipment room floor plan must be provided by the FSO for firm quote price lists. For all other quotes, the equipment room floor plans must be provided by the PSC. Factors that influence the design are:

- Size and layout of the equipment room
- Number of equipment cabinets
- Location of AC receptacles
- Size of the switch.

Typical Floor Plans

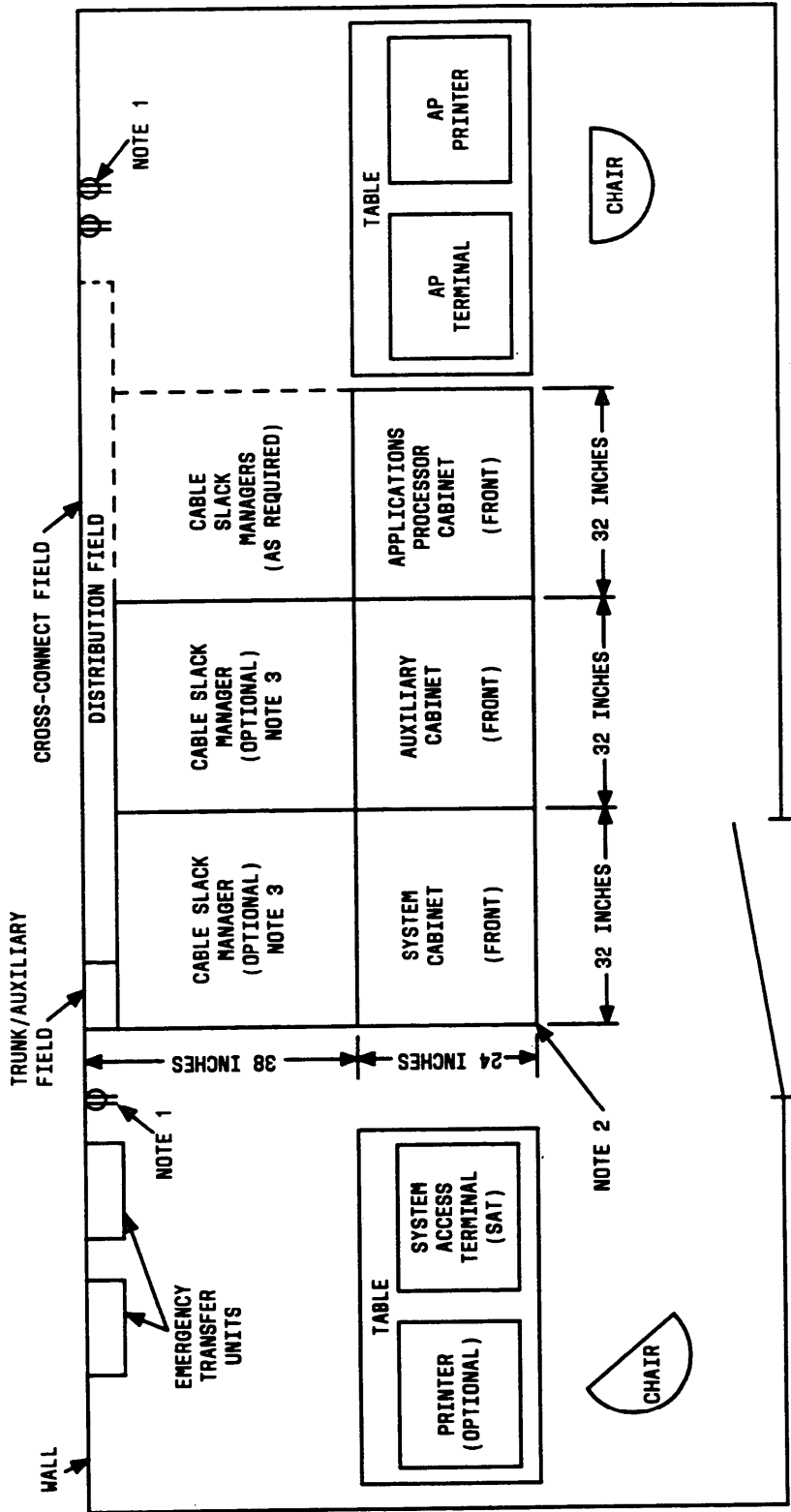
Figure 3-8 is a typical floor plan for a 2-carrier System 75 or a 2-cabinet System 75 XE. Figure 3-9 is a typical floor plan for a 5-carrier System 75 or a 3- or 4-cabinet System 75 XE. The maximum capacity for a 2-carrier cabinet is 200 stations and the maximum capacity for a 5-carrier cabinet is 800 stations.



NOTES:

1. THE AC POWER RECEPTACLE MUST NOT BE UNDER SWITCH CONTROL AND MUST NOT BE SHARED WITH OTHER EQUIPMENT. THE AC POWER RECEPTACLE 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 OF SPACE IN FRONT AND 6 INCHES 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 3-8. Typical 2-Carrier Cabinet System 75 or 2-Cabinet System 75 XE Floor Plan



- NOTES:
1. THE AC POWER RECEPTACLES MUST NOT BE UNDER SWITCH CONTROL AND MUST NOT BE SHARED WITH OTHER EQUIPMENT. THE AC POWER RECEPTACLES SHOULD BE LOCATED OUTSIDE THE CROSS-CONNECT FIELD AREA. ALSO, ANY CONDUIT SERVING THE RECEPTACLES CANNOT RUN THROUGH OR BELOW THE AREA WHERE THE CONNECTOR MODULES ARE TO BE MOUNTED.
 2. ALLOW AT LEAST 36 INCHES OF SPACE IN FRONT AND 6 INCHES 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 3-9. Typical 5-Carrier Cabinet System 75 or 3- or 4-Cabinet System 75 XE Floor Plan

Typical Cross-Connect Field Using 110-Type Hardware

The cross-connect field is located directly behind the switch cabinet. Figure 3-10 shows a typical cross-connect field installation using 110A-type terminal blocks. Figure 3-11 shows a typical cross-connect field installation using 300-pair 110P-type terminal blocks, and Figure 3-12 shows a typical cross-connect field using 900-pair 110P-type terminal blocks.

Typical System Equipment Room Floor Plans

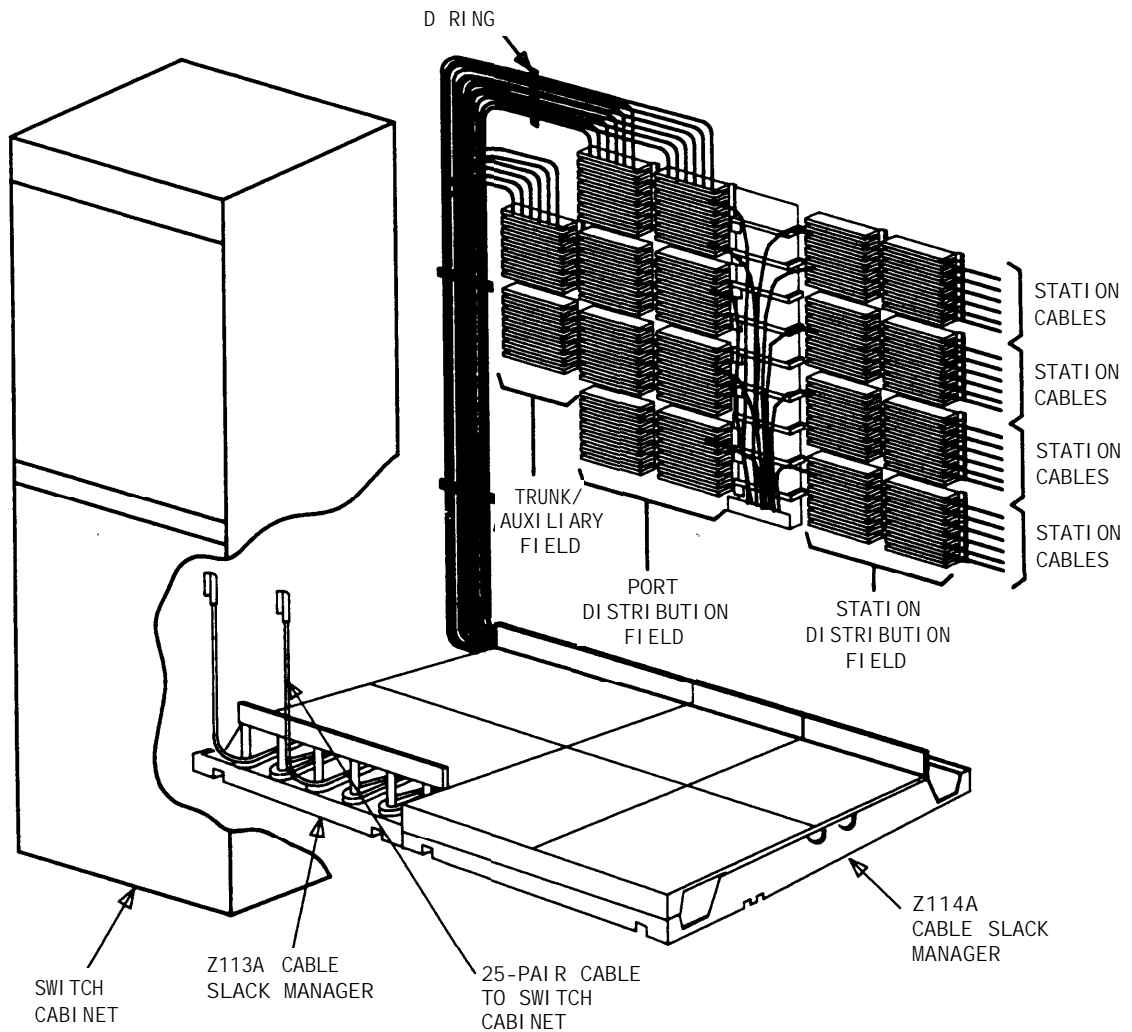


Figure 3-10. Typical Cross-Connect Field Installation—110A-Type Terminal Blocks (Approximately 576 4-Pair or 768 3-Pair Station Capacity Illustrated)

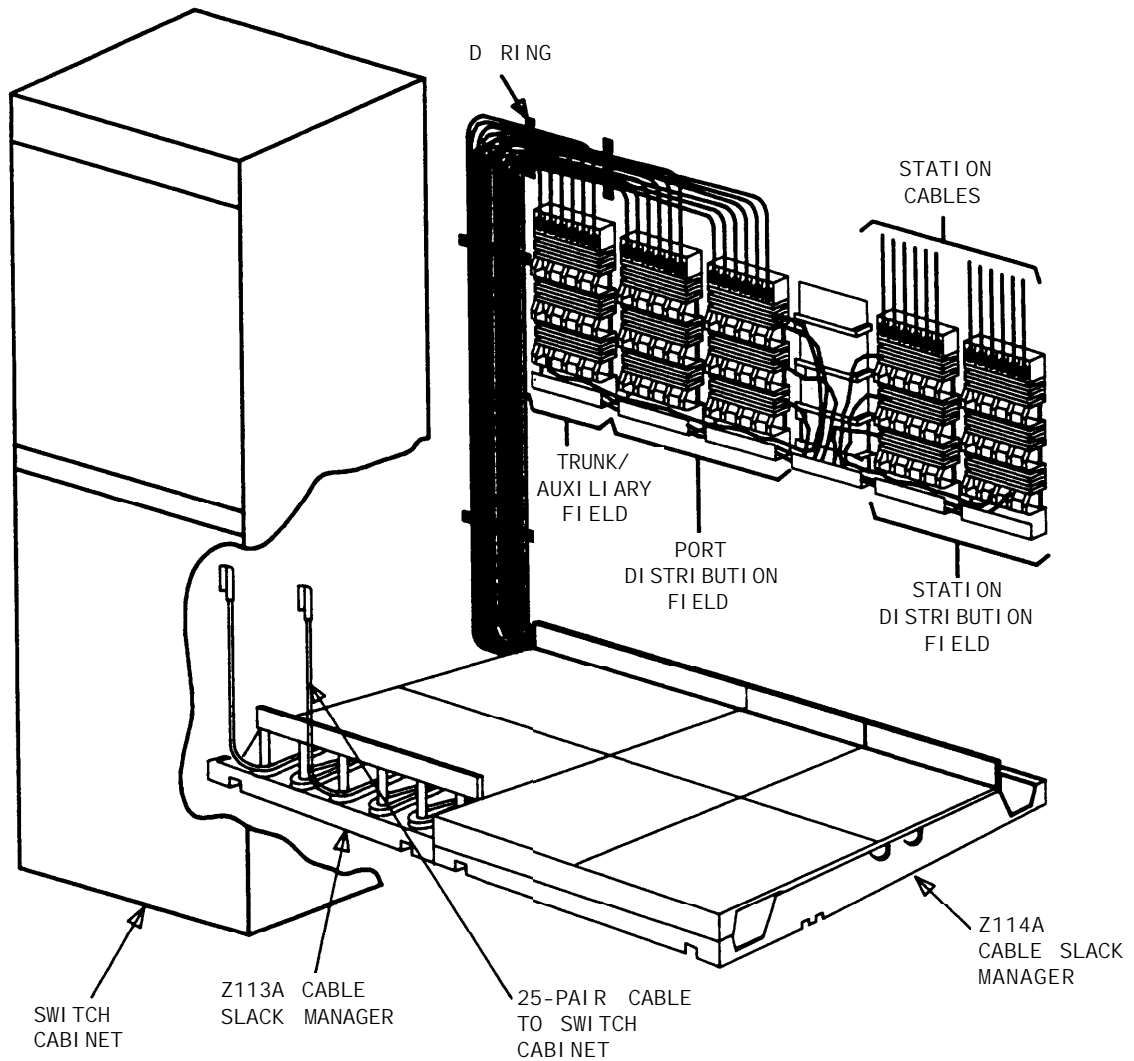


Figure 3-11. Typical Cross-Connect Field Installation—300-Pair 110P-Type Terminal Blocks (Approximately 288 4-Pair or 384 3-Pair Station Capacity Illustrated)

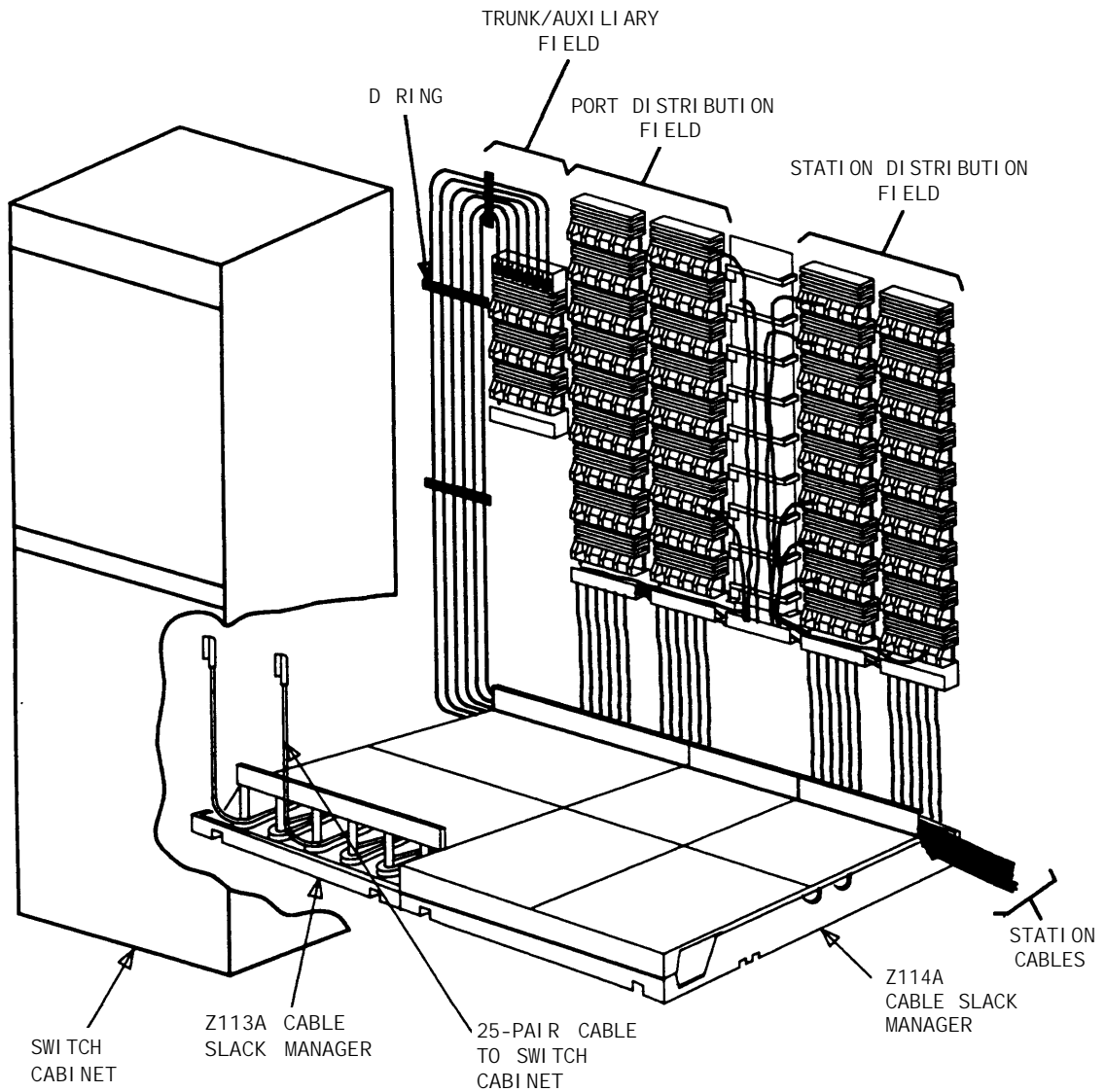


Figure 3-12. Typical Cross-Connect Field Installation—900-Pair 110P-Type Terminal Blocks (Approximately 432 4-Pair or 576 3-Pair Station Capacity Illustrated)

Typical Cross-Connect Field Using 66-Type Hardware

Figure 3-13 shows a typical cross-connect field installation using 66-type connecting blocks.

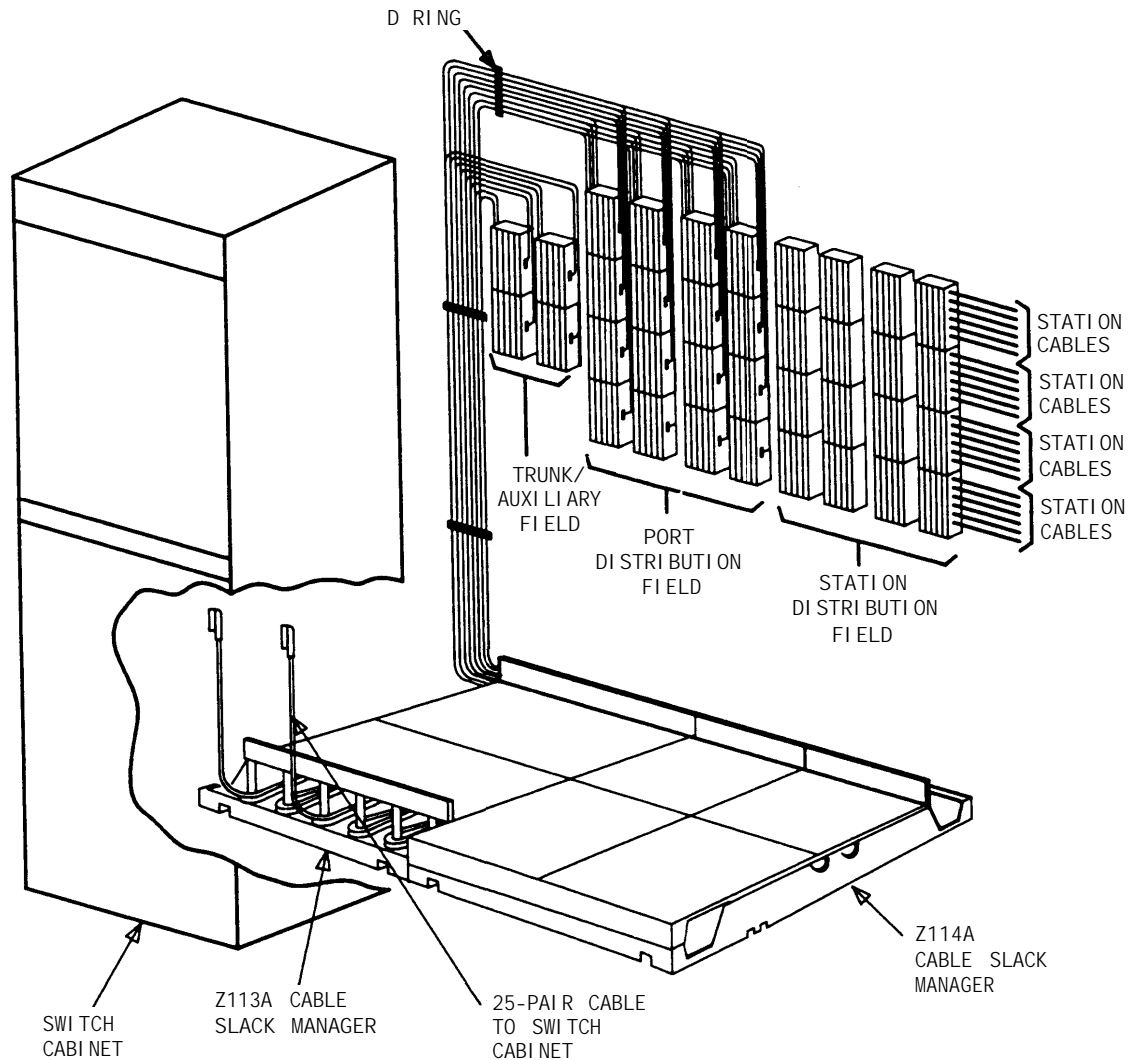


Figure 3-13. Typical Cross-Connect Field Installation using 66-Type Connecting Blocks

Wall Space Requirements

Approximately 8 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.

Wall Space Requirements for 110-Type Hardware

The trunk/auxiliary field and the distribution field are mounted on the same wall. Each 110P-type terminal block is 8-1/2 inches wide. Vertical patch cord troughs are 5-5/16 inches wide and horizontal patch cord troughs are 23 inches wide.

Each 110A-type terminal block is 10-13/16 inches wide; however, no horizontal patch cord troughs are used and the blocks are shorter than 110P-type terminal blocks. This allows the 110A-type terminal blocks to be stacked. Therefore, the 110A-type hardware requires less space than the 110P-type hardware on a per-station basis.

Wall Space Requirements for 66-Type Hardware

The trunk/auxiliary field and the distribution field are mounted on the same wall.

If the 66-type connecting blocks are being mounted directly on a wall, the space requirements of a 183-type backboard should be used to figure the amount of wall space required for the connecting blocks. This method allows enough space between the connecting blocks for jumper wires and cable connections. The 183A-type backboard mounts four 66-type connecting blocks and is 8-1/2 inches wide and 20 inches tall. The 183B-type backboard mounts eight 66-type connecting blocks, and is 17 inches wide and 20 inches tall.

When multiple mountings are required, each 166-type mounting is 17 inches wide and 20 inches tall, and each 154A-type mounting is 8-1/2 inches wide and 20 inches tall.

The 187B1 backboard, equipped with pegs, is 17 inches wide and 6-1/2 inches tall.

Equipment Requirements

Cable Slack Manager Requirements

A cable slack manager is 32 inches wide. The quantity of cable slack managers required is determined by dividing the total length of the cross-connect field (in inches) by 32. A partial number of .4 or less should be rounded down, and a partial number of .5 or more should be

rounded up (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-D lists the amount of 110-type hardware required to provide 1-, 2-, 3-, or 4-pair distribution for the station wiring. The 110-type terminal blocks are available in various sizes and the number of stations connected to each block depends on the number of pairs that are run per station.

Table 3-D. 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 telephones that are cross-connected using 110A-type hardware.

Typical System Equipment Room Floor Plans

Table 3-E shows an algorithm for patch cord requirements based on the line capacity of the switch.

Table 3-E. 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%
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%
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%	

66-Type Hardware Requirements

Table 3-F lists the amount of 66-type hardware required to provide 1-, 2-, 3-, or 4-pair distribution for station wiring. Each 66-type connecting block can terminate 25-pairs. The quantity of blocks required per switch depends on the number of pairs required per station.

Table 3-F. 66-Type Hardware Requirements

66M 150 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 used only for analog telephones.

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
- Cable slack managers
- Labels for cross-connect field
- Sneak fuse panels.

Installing the Cross-Connect Field

The preferred cross-connect field location is directly behind the switch cabinet.

Wall Mounting 110A-Type Terminal Blocks

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 3-10. The distance between the mounting screw holes on the terminal blocks is 10-13/16 inches. If a vertical patch cord trough is to be used, the distance between the mounting screw holes is 5-5/16 inches.

Wall Mounting 110P-Type Terminal Blocks

The first terminal block of the trunk/auxiliary field is aligned with the left side of the switch cabinet (Figures 3-11 or 3-12). 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 wall 47-1/2 inches above the floor (Figure 3-14). If 900-pair terminal blocks are to be mounted, draw a level horizontal line on the wall 23 inches above the floor (Figure 3-15).

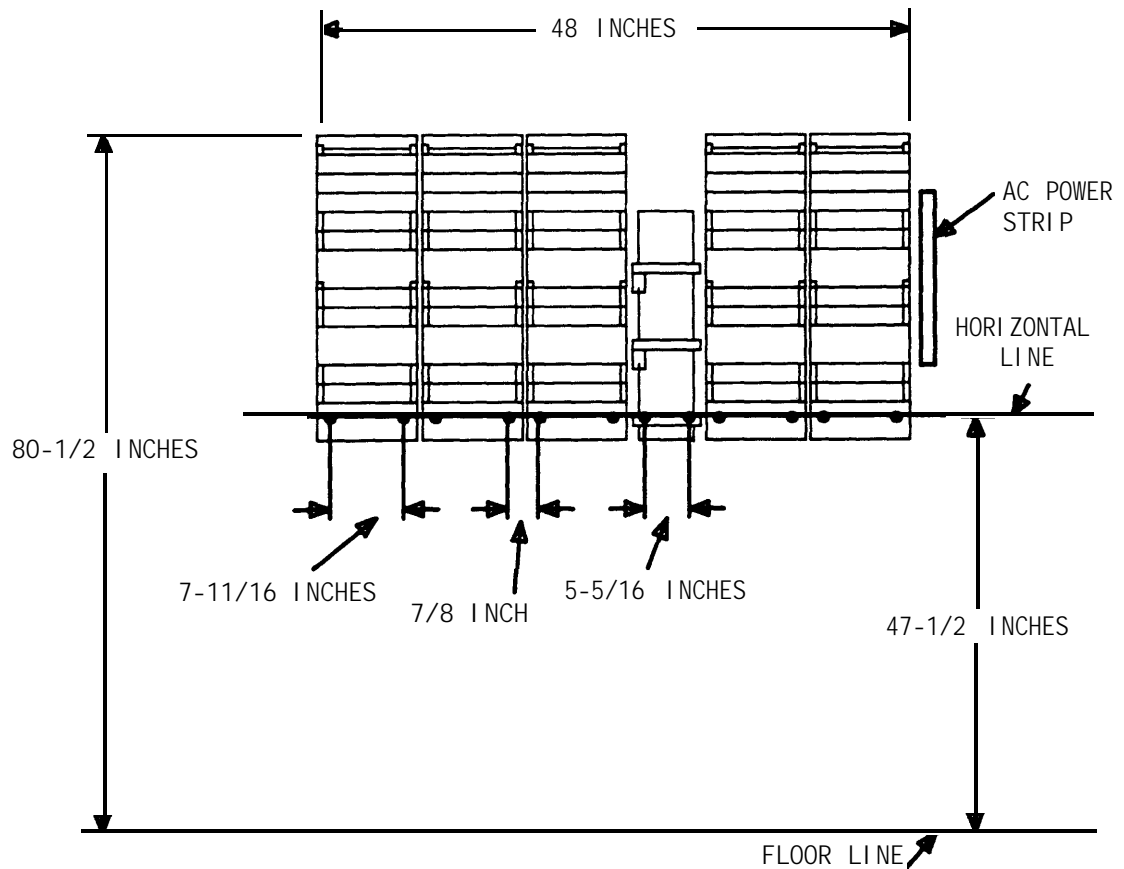


Figure 3-14. Mounting 300-Pair 110P-Type Terminal Blocks (Approximately 288 4-Pair or 384 3-Pair Station Capacity Illustrated)

2. To mount the first trunk/auxiliary field terminal block, partially install two 3/4-inch No. 12 wood screws, 7-11/16 inches apart on the left side of the horizontal line on the wall
3. Slide the bottom terminal block feet onto the mounting screws and mark the upper mounting screw locations.
4. Remove the terminal block and partially install the upper mounting screws.
5. Place the terminal block on the mounting screws and tighten the screws.
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 to the right

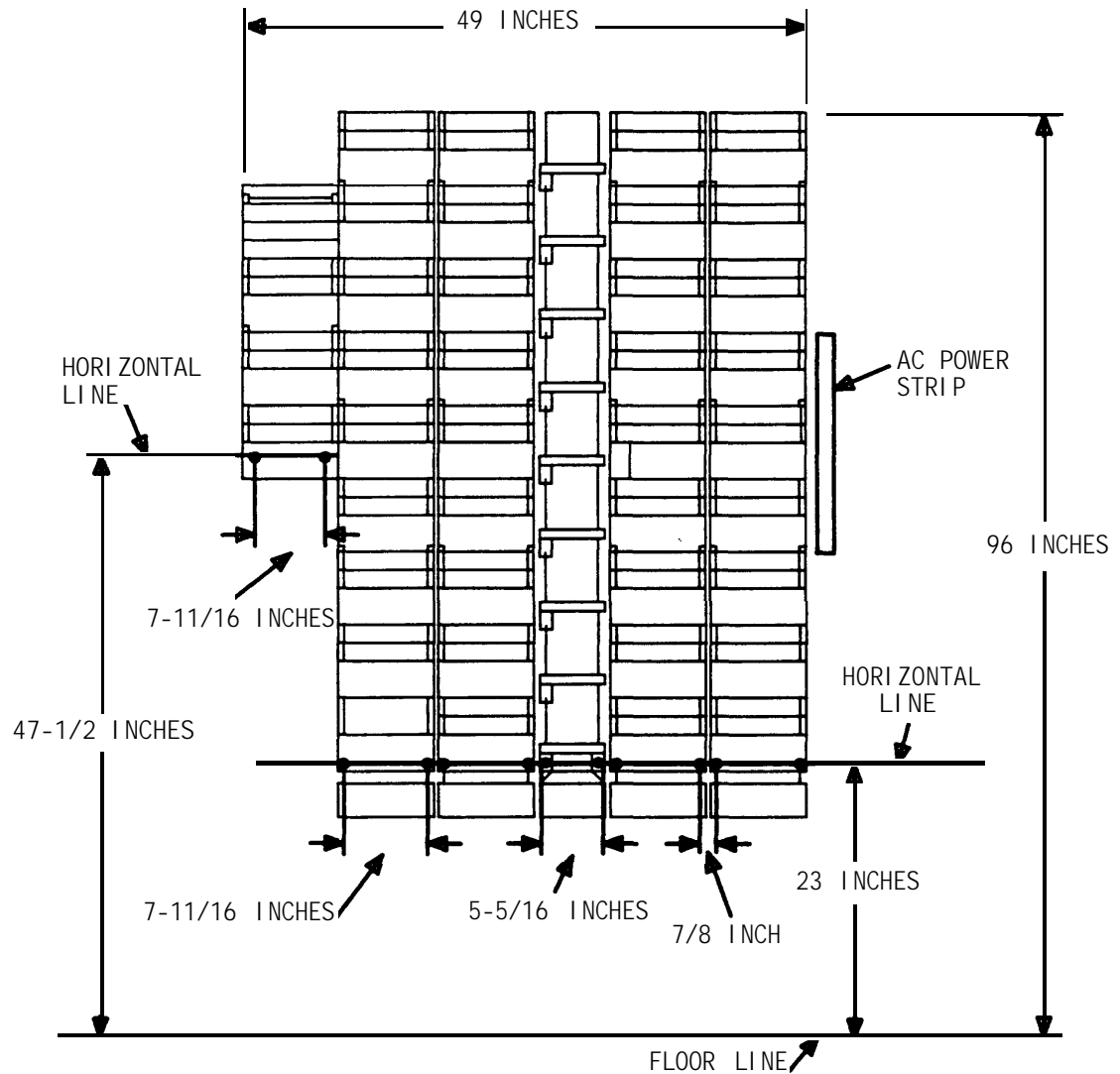


Figure 3-15. Mounting 900-Pair 110P-Type Terminal Blocks (Approximately 432 4-Pair or 576 3-Pair Station Capacity Illustrated)

of the previous screw. Partially install the second mounting screw 5-5/16 inches to the right of the screw just installed. Repeat Steps 3, 4, and 5.

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 to the right of the previous screw. Partially install the second

mounting screw 7-11/16 inches to the right of the screw just installed. Repeat Steps 3, 4, and 5.

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. To install the first distribution field terminal block, partially install two 3/4-inch, No. 12 wood screws, 7-11/16 inches apart on the line, to the right of the vertical patch cord trough. Repeat Steps 3, 4, and 5.
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 to the right of the previous screw. Partially install the second mounting screw 7-11/16 inches to right of the screw just installed. Repeat steps 3, 4, and 5.
11. If a vertical patch cord trough is to be installed in the distribution field, go to Step 6.
12. Repeat Steps 10 and 11 until all the terminal blocks and vertical patch cord troughs in the distribution field have been installed.

Frame Mounting 110P-Type Terminal Blocks

The 900-pair 110P-type terminal blocks and the associated patch cord troughs can also be mounted on a free-standing, floor-mounted 1110A2 apparatus mounting frame (Figure 3-16). Each 1110A2 apparatus mounting frame provides the space to mount five terminal blocks/patch cord troughs on each side of the frame. A cable support structure, apparatus mounting 1110C1, mounts directly on top of the 1110A2 apparatus mounting frame and provides support for all cables routed to and from the frame.

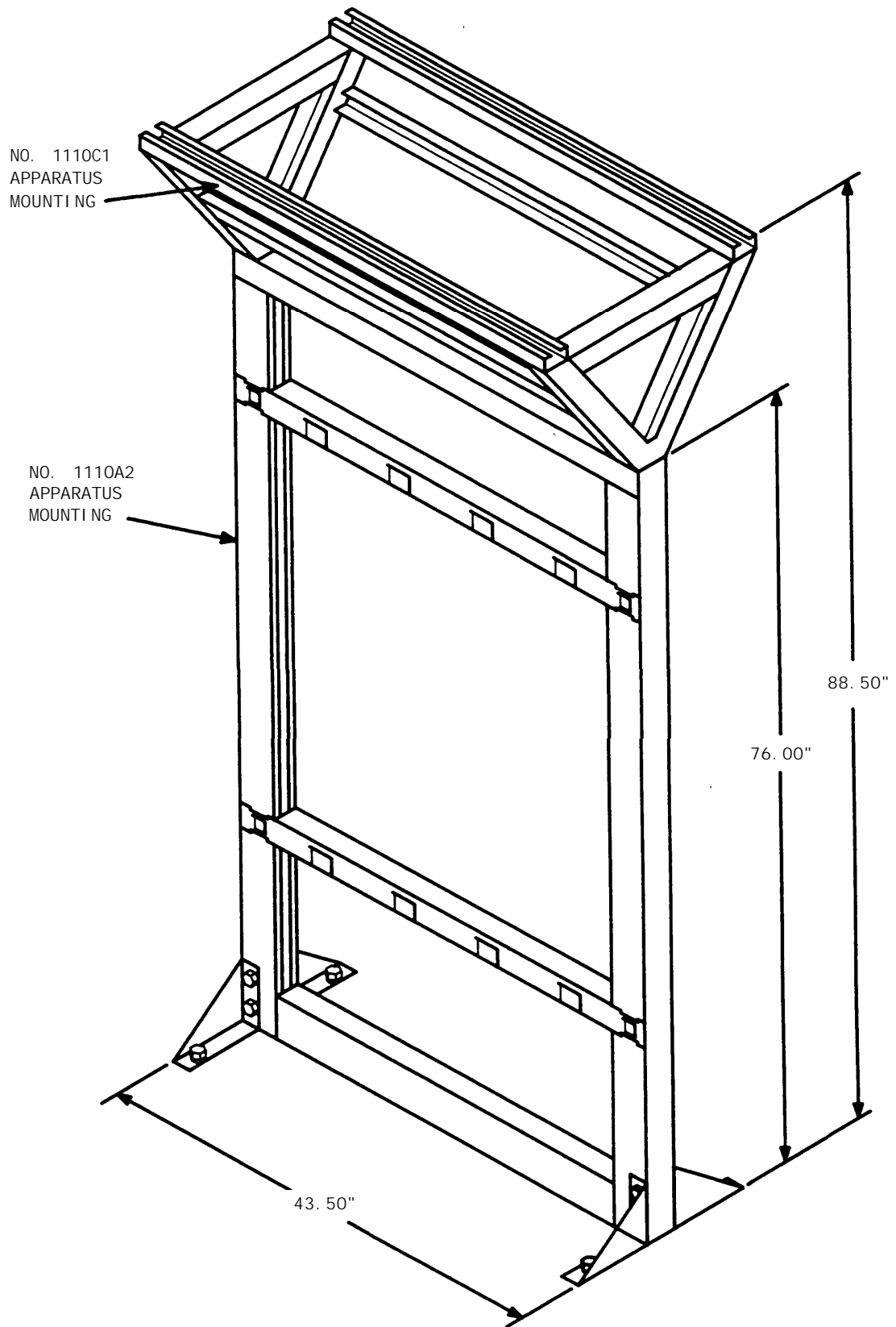


Figure 3-16. 1110A2 and 1110C1 Apparatus Mountings

APPARATUS MOUNTING FRAME ORDERING INFORMATION

Code Number	Description	Comcode
1110A2	Apparatus Mounting Frame	104 032 495
1110C1	Cable Support Assembly	104 175 120
1110A1	End Dress Panel	104 176 268
2110A1	Top Dress Panel	104 176 276
2110B1	Bottom Dress Panel	104 176 284

Wall Mounting 66-Type Connecting Blocks

The first column of 66-type connecting blocks should be aligned with the left side of the switch cabinet (Figure 3-7). This arrangement allows for orderly growth toward 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 connector on the connecting block. If cable routing from the bottom is desired, then the connector on the connecting block must be removed and rotated 180 degrees. Then, the connector must be relocated in the previously unoccupied hole because the connecting block leads are not long enough to reach the hole where the connector was previously mounted. The VELCRO® cable retainer must also be relocated.

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

1. Draw a level horizontal line on the wall 12 inches above the floor (Figure 3-17).

* Registered trademark of VELCRO U.S.A. Inc..

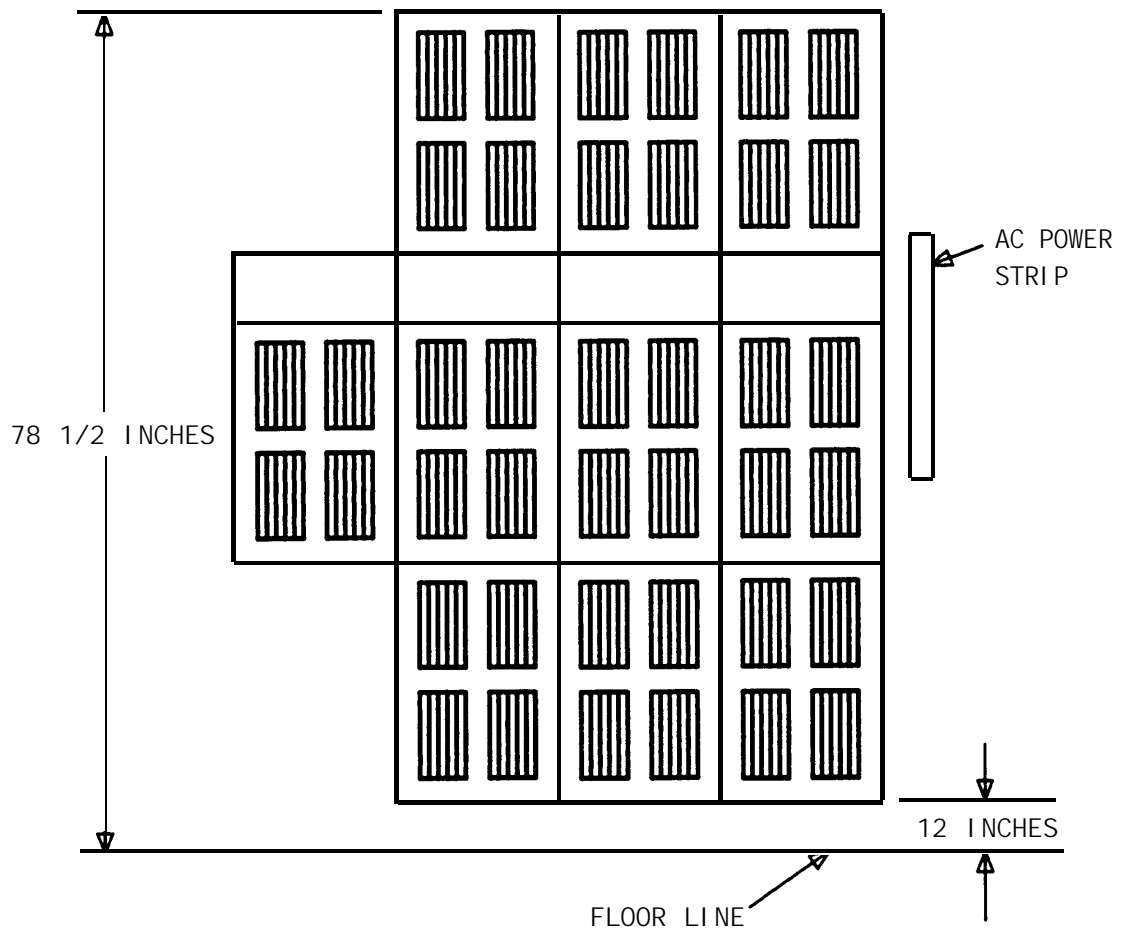


Figure 3-17. Cross-Connect Field Installation, 66-Type Connecting Blocks

2. Place bottom of the first backboard/connecting block on the line and align it vertically with the left side of the switch cabinet. Mark the mounting holes.
3. Remove the backboard/connecting block and drill holes in the wall for 3/4-inch No. 12 wood screws.
4. Move the backboard/connecting block into place and fasten it to the wall with 3/4-inch No. 12 wood screws.
5. The next backboard/connecting block can be mounted to the right 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 more than 78-1/2 inches above the floor.

Installing Cable Slack Managers

To install the cable slack managers (Figure 2-17), proceed as follows:

1. Place the Z113A cable slack manager against the wall under the cross-connect field (Figure 3-9), aligning the left side of the cable slack manager with the first terminal block of the trunk/auxiliary field.
2. Place the next cable slack manager beside the previously installed cable slack manager. Align the tabs and interlocks, and snap the cable slack managers together.
3. Repeat Step 2 until all cable slack managers are installed.

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

Labeling the Cross-Connect Field

Labeling 110-Type Terminal Blocks

Figure 3-18 shows the graphic symbols used (instead of words) on labels for the switch, cross-connections, information outlets, and cables for the system. The labels are color-coded to identify system wiring as follows:

- Green—Leads to CO
- 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).









	<u>Designations</u>
 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 3-18. System Label Graphic Symbols and Designation Nomenclature

Each 110-type label is used to identify 2 rows on the 110-type 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 are inserted into the clear plastic designation strips (Figure 3-19) that are furnished with the 110-type terminal blocks. After the label has been inserted into the designation strip, the designation strip is snapped into place

between the 110-type terminal block rows. Label code number 220A (comcode 103 970 000) contains all of the 110-type labels.

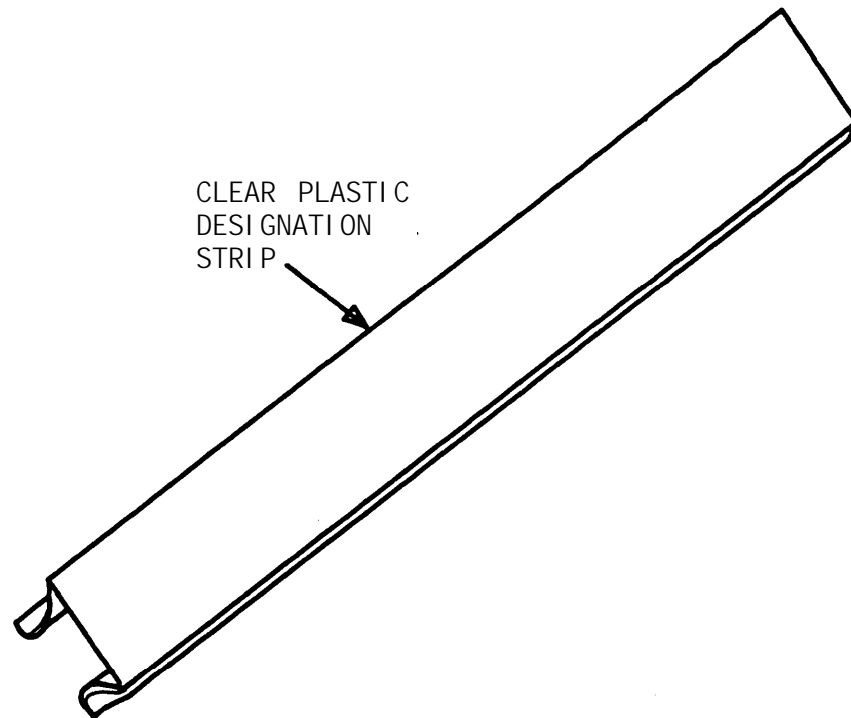


Figure 3-19. Clear Plastic Designation Strip

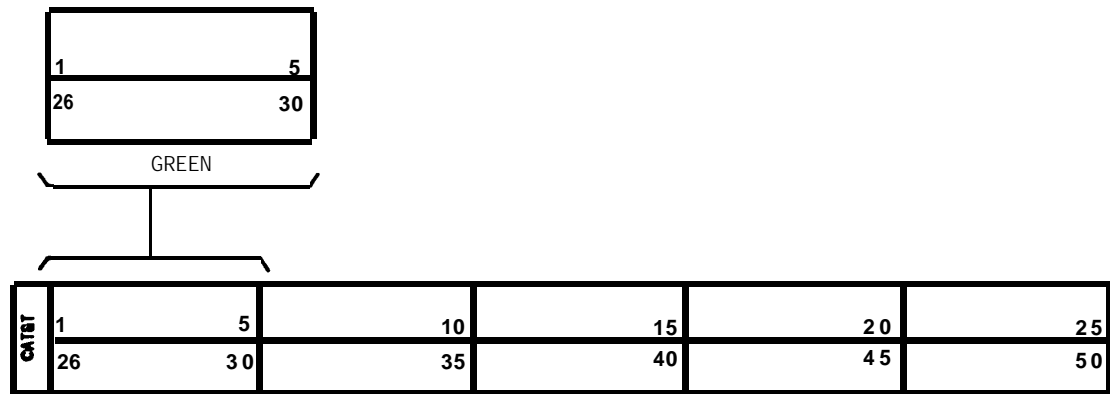
CO Trunk Labels (Green)

The labels shown in Figure 3-20 identify the network interface leads for trunk circuits. On the top label, cable pairs are numbered consecutively from 1 to 300 (in groups of five). The bottom label is blank and must be filled in manually as required.

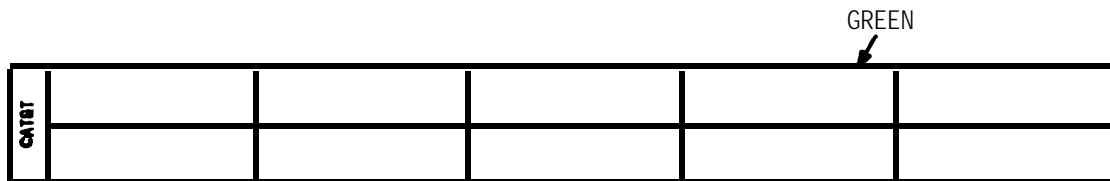
Label Code 221A—Green Labels (comcode 103 970 018)

Label code number 221A contains the following CO trunk labels:

- (6) green trunk labels (Figure 3-20). The labels are numbered from 1 to 300. Each label identifies 50 trunk pairs.
- (4) unnumbered green labels (Figure 3-20). Each label identifies 50 trunk pairs.



- USAGE:
IDENTIFIES NETWORK INTERFACE TRUNK PAIRS.
- CODE NO:
221A



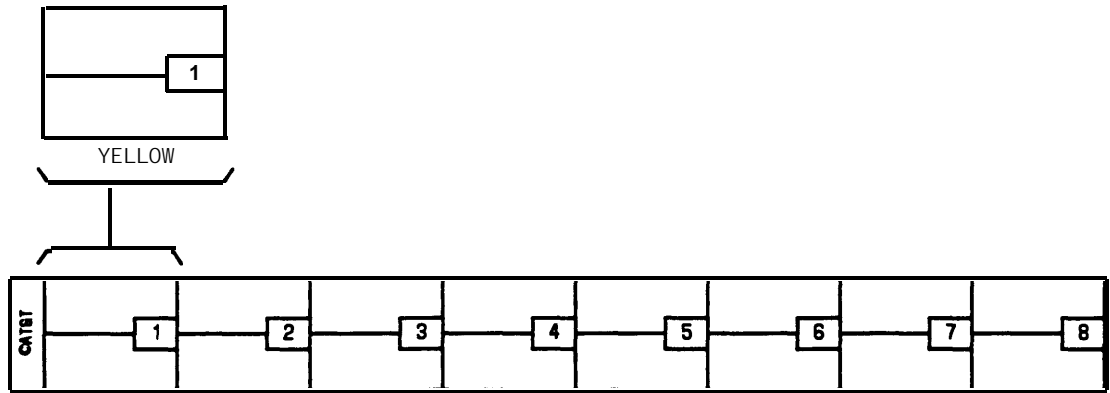
- USAGE:
CUSTOMER IDENTIFICATION OF NETWORK
INTERFACE TRUNK PAIRS.
- CODE NO:
221A

Figure 3-20. CO Trunk Labels for 110-Type Terminal Blocks

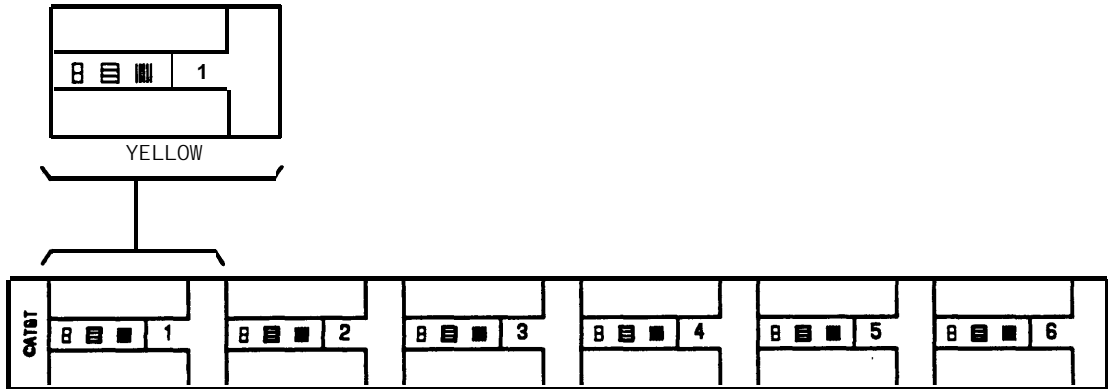
Auxiliary Labels (Yellow)

AUXILIARY PORT AND CIRCUIT LABELS

The labels shown in Figure 3-21 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



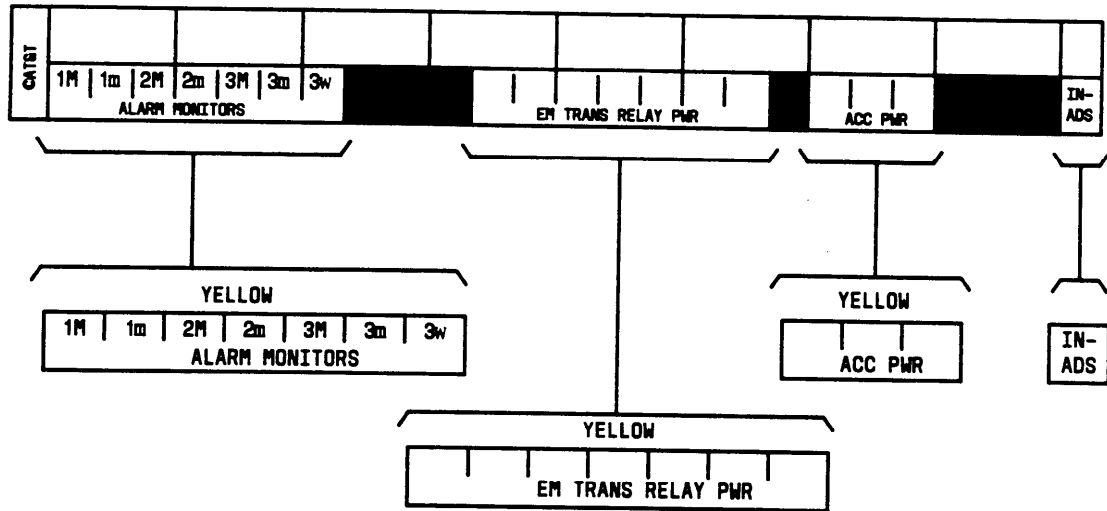
- USAGE:
IDENTIFIES SSI PORTS 1 THROUGH 6
FORM AN AP.
- CODE NO:
222A

Figure 3-21. Auxiliary Port and Circuit Appearance Labels for 110-Type Terminal Blocks

AUXILIARY CIRCUIT AND CONTROL CARRIER OUTPUTS (AUXILIARY) LABELS

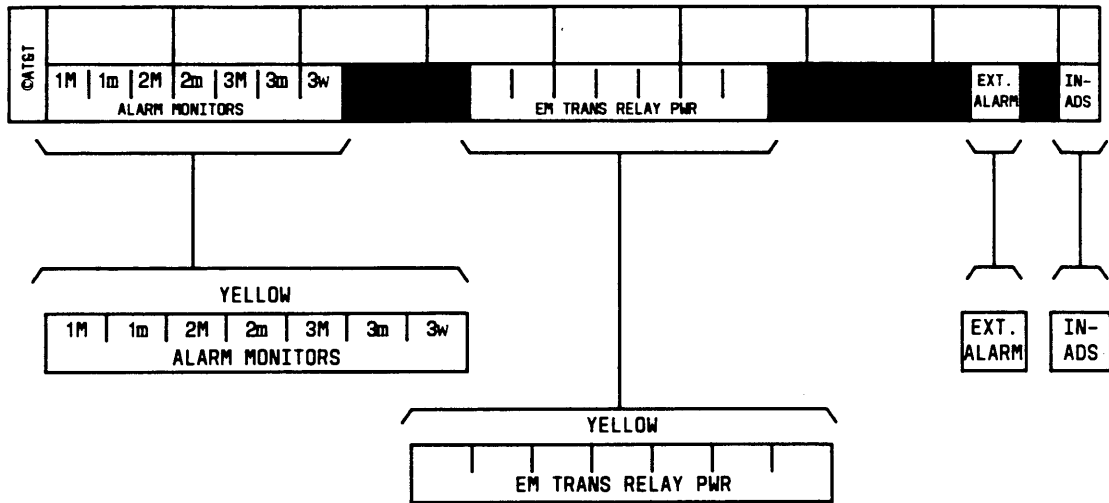
The labels shown in Figures 3-22 and 3-23 identify auxiliary circuit appearances and the control carrier **AUXILIARY** connector outputs for System 75 and 75 XE, respectively. The top half of the labels identify

auxiliary circuit appearances and must be filled in manually. The bottom half of the labels identify the control carrier **AUXILIARY** connector outputs.



- USAGE:
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY) AND AUXILIARY CIRCUITS
- CODE NO:
222A

Figure 3-22. Auxiliary Circuit and Control Carrier Outputs (AUXILIARY) Labels for 110-Type Terminal Blocks—System 75



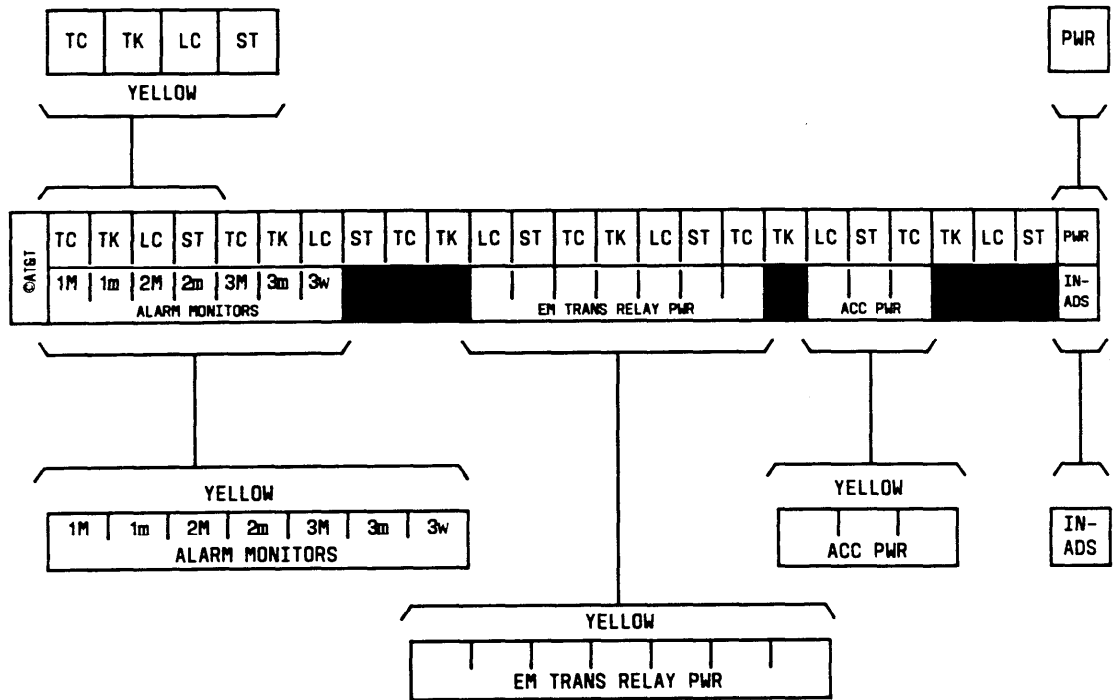
- **USAGE:**
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY) AND AUXILIARY CIRCUITS
- **CODE NO:**
222A

Figure 3-23. Auxiliary Circuit and Control Carrier Outputs (AUXILIARY) Labels for 110-Type Terminal Blocks—System 75 XE

Z1A EMERGENCY TRANSFER UNIT AND CONTROL CARRIER OUTPUTS (AUXILIARY) LABELS

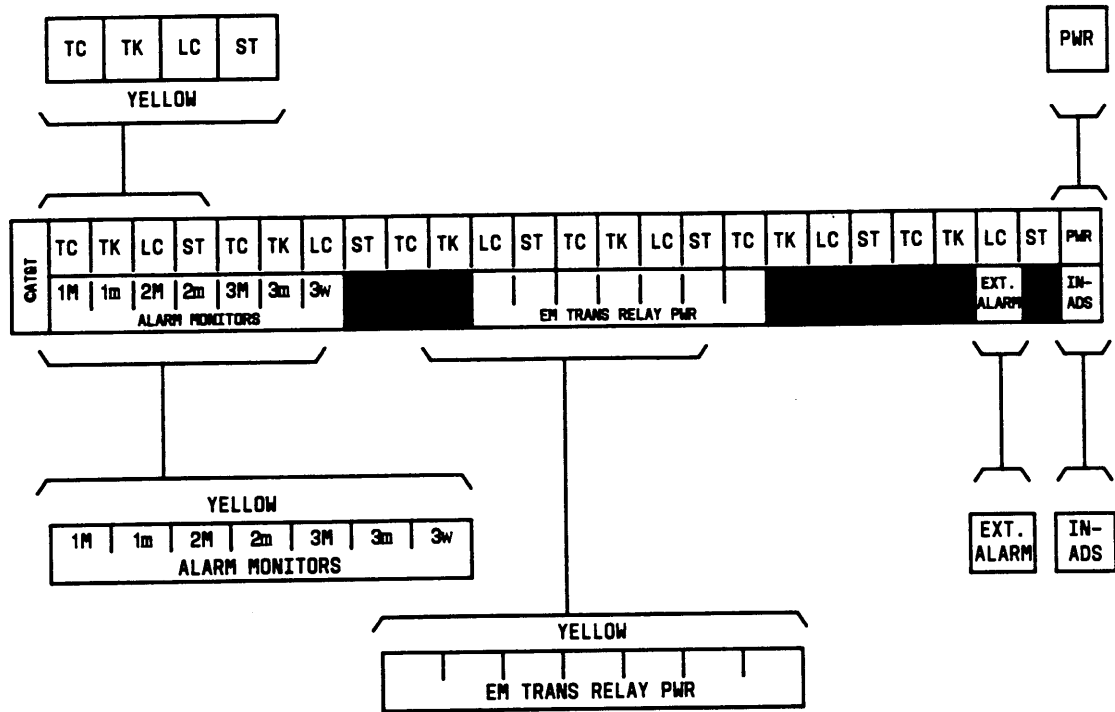
The labels shown in Figures 3-24 and 3-25 identify the leads and connection point for -48 volt dc power to the Z1A emergency transfer unit and the control carrier **AUXILIARY** connector outputs for System 75 and 75 XE, respectively. The top half of the labels identify the Z1A emergency transfer unit and the bottom half of the labels identify the control carrier **AUXILIARY** connector outputs. The control carrier **AUXILIARY** connector outputs are the same as described for the auxiliary circuit and control carrier outputs labels.

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- USAGE:
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY) AND
Z1A EMERGENCY TRANSFER UNIT CIRCUITS
- CODE NO:
222A

Figure 3-24. Z1A Emergency Transfer Unit and Control Carrier Outputs (AUXILIARY) Label for 110-Type Terminal Blocks—System 75

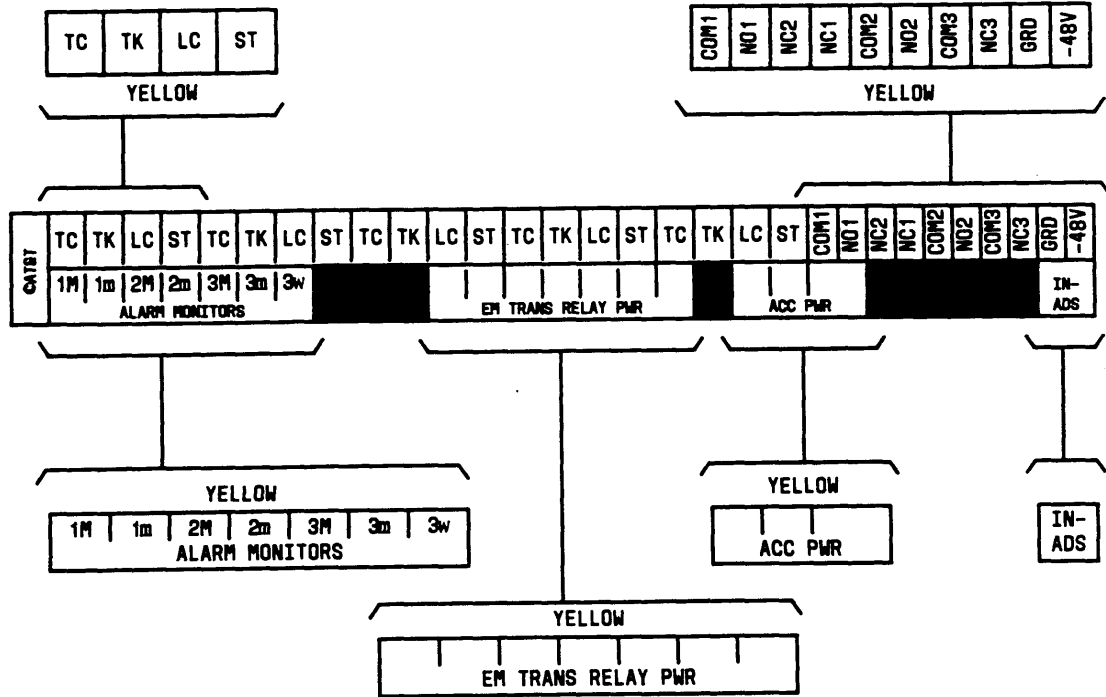


- USAGE:
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY) AND Z1A EMERGENCY TRANSFER UNIT CIRCUITS
- CODE NO:
222A

Figure 3-25. Z1A Emergency Transfer Unit and Control Carrier Outputs (AUXILIARY) Label for 110-Type Terminal Blocks—System 75 XE

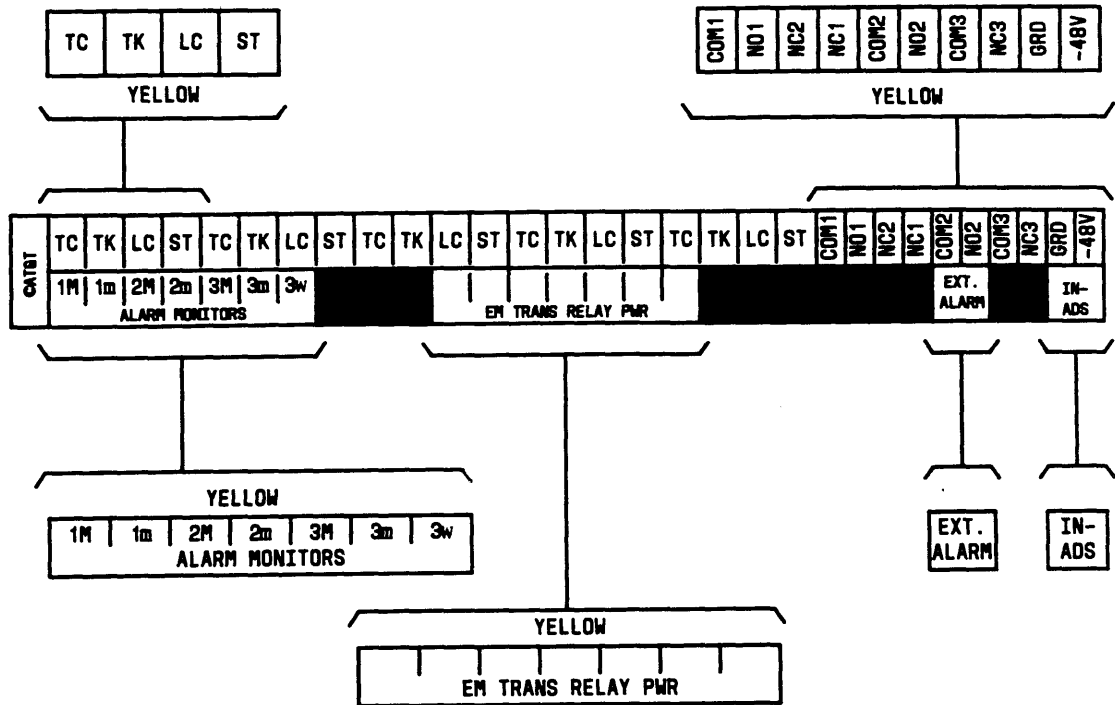
574-5 POWER TRANSFER UNIT AND CONTROL CARRIER OUTPUTS (AUXILIARY) LABELS

The labels shown in Figures 3-26 and 3-27 identify the leads to the 574-5 power transfer unit and the control carrier **AUXILIARY** connector outputs for System 75 and 75 XE, respectively. The top half of the labels identify the 574-5 power transfer unit and the bottom half of the labels identify the control carrier **AUXILIARY** connector outputs. The control carrier **AUXILIARY** connector outputs are the same as described for the auxiliary circuit and control carrier outputs labels.



- USAGE:
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY)
AND 574-5 EMERGENCY TRANSFER UNIT CIRCUITS
- CODE NO:
222A

Figure 3-26. 574-5 Power Transfer Unit and Control Carrier Outputs (AUXILIARY) Labels for 110-Type Terminal Block—System 75



- USAGE:
IDENTIFIES CONTROL CARRIER OUTPUTS (AUXILIARY)
AND 574-5 EMERGENCY TRANSFER UNIT CIRCUITS
- CODE NO:
222A

Figure 3-27. 574-5 Power Transfer Unit and Control Carrier Outputs (AUXILIARY) Labels for 110-Type Terminal Block—System 75 XE

Z1A EMERGENCY TRANSFER UNIT LABELS

The label shown in Figure 3-28 identifies the emergency transfer leads and the -48 volt dc power connection for the Z1A emergency transfer unit.

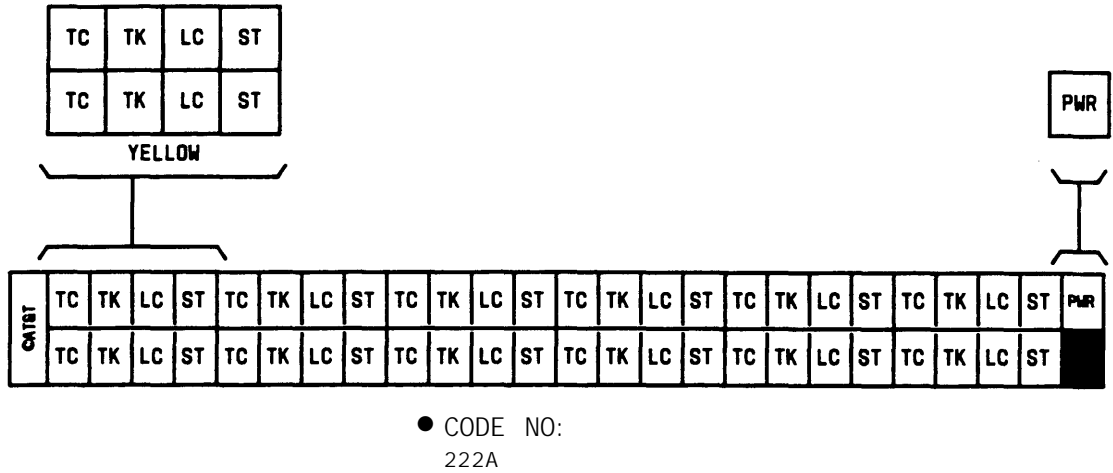


Figure 3-28. Z1A Emergency Transfer Unit Label

574-5 POWER TRANSFER UNIT LABEL

Both sections of the label shown in Figure 3-29 identify leads to the 574-5 power transfer unit.

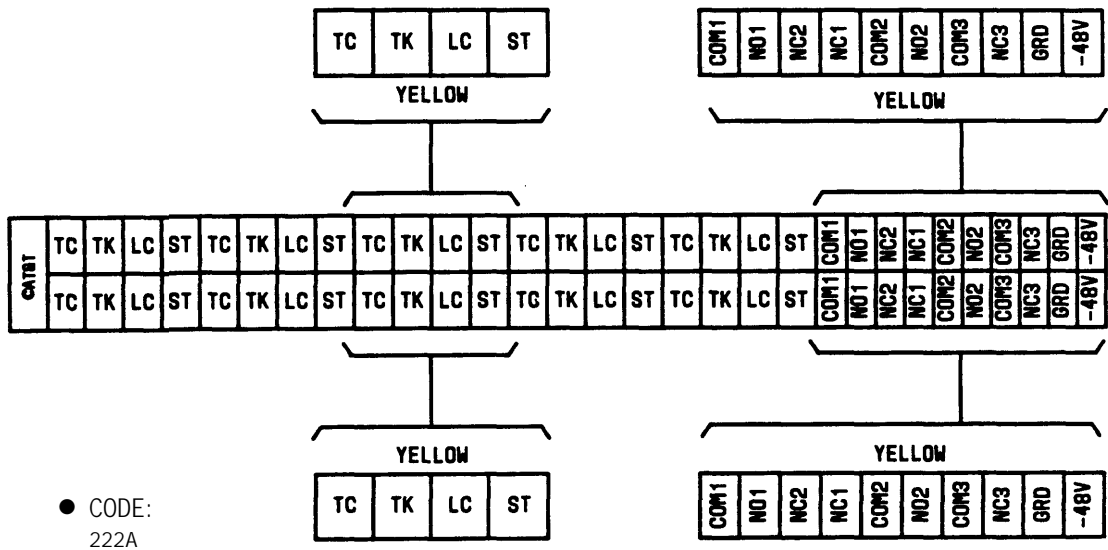
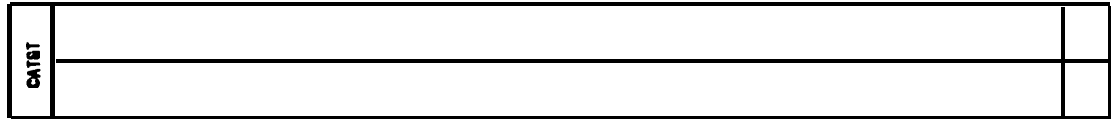


Figure 3-29. 574-5 Power Transfer Unit Label

BLANK AUXILIARY LABEL

The blank label shown in Figure 3-30 identifies auxiliary equipment and must be filled in manually.



- USAGE:
CUSTOM IDENTIFICATION OF AUXILIARY EQUIPMENT
- CODE NO:
222A

Figure 3-30. Blank Auxiliary Labels

Label Code 222A—Yellow Labels (comcode 103 970 026)

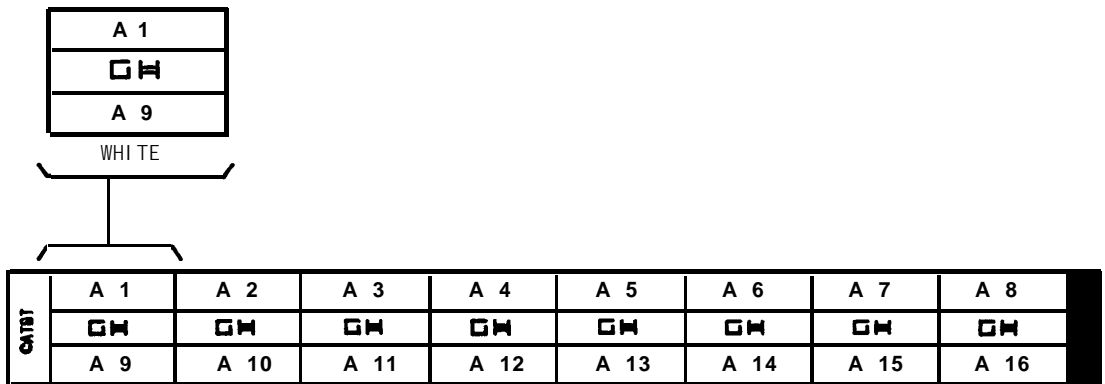
Label code 222A contains the following labels:

- (4) AP SSI port labels (Figure 3-20)
- (4) 3-pair auxiliary circuit labels (Figure 3-21)
- (2) unnumbered auxiliary circuit and control carrier **AUXILIARY** connector labels (Figures 3-22 or 3-23)
- (2) Z1A emergency transfer unit and control carrier **AUXILIARY** connector labels (Figures 3-24 or 3-25)
- (2) 574-5 power transfer unit and control carrier **AUXILIARY** connector labels (Figures 3-26 or 3-27)
- (2) Z1A emergency transfer unit labels (Figure 3-28)
- (2) 574-5 power transfer unit labels (Figure 3-29)
- (6) blank labels (Figure 3-30).

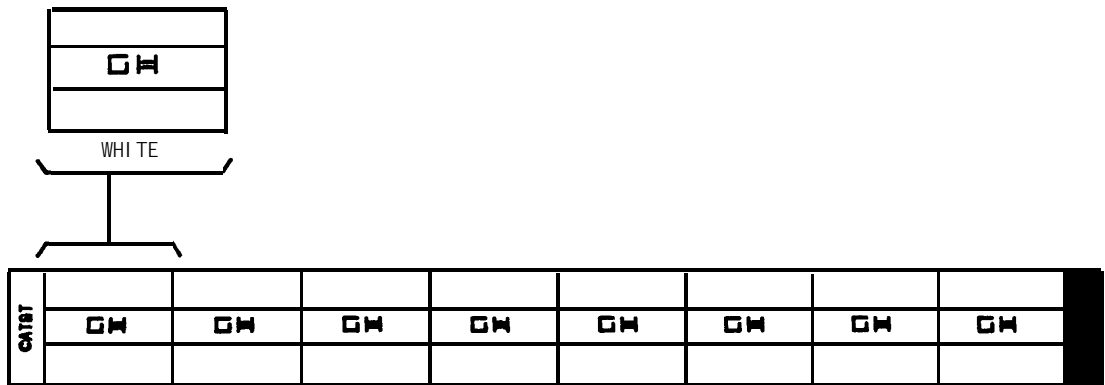
Station Labels (White and Blue)

3-PAIR WHITE STATION LABELS

The white labels shown in Figure 3-31 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 are 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 3-31. 3-Pair White Station Wiring (Equipment Room) Labels

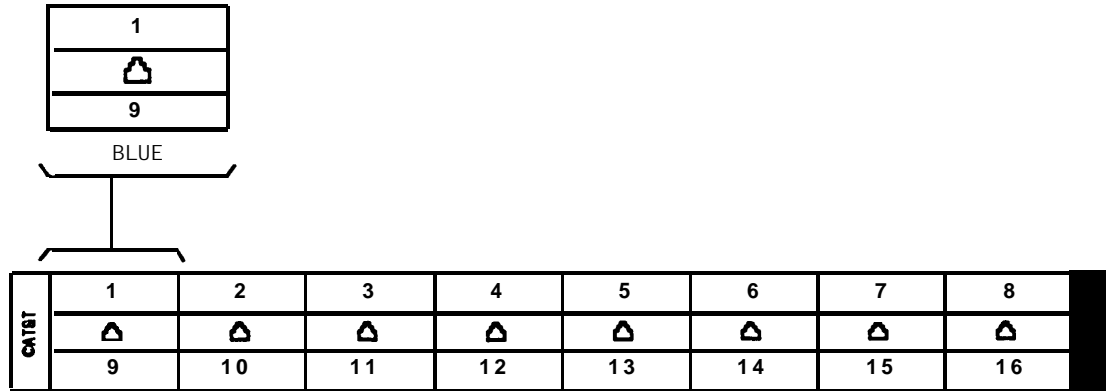
Label Code 223A—White Labels (comcode 103 970 034)

Label code 223A contains the following labels:

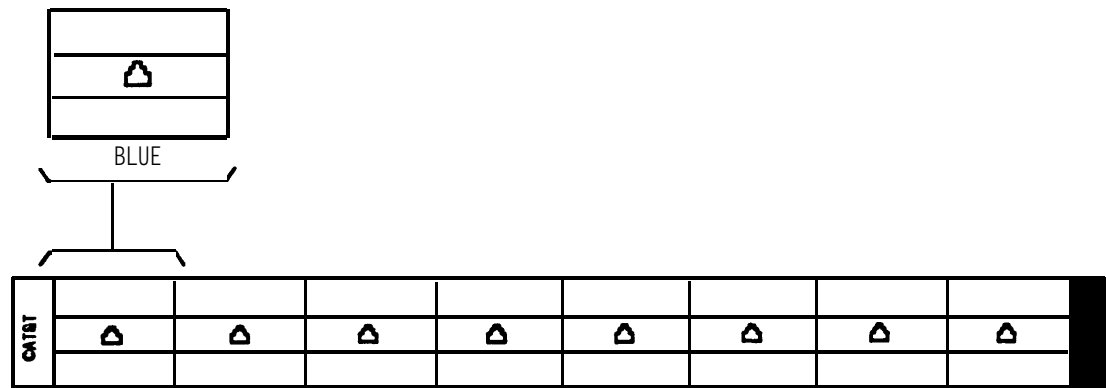
- (60) white labels that identify 3-pair circuits from the equipment room to the satellite closet (Figure 3-31). Each label identifies 16 three-pair station circuits. There are labels for satellite closets numbered A through F, and each satellite closet has station circuits numbered 1 through 160.
- (20) unnumbered white labels (Figure 3-31) 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 3-32 identify 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 3-32. 3-Pair Blue Station Wiring (Equipment Room) Labels

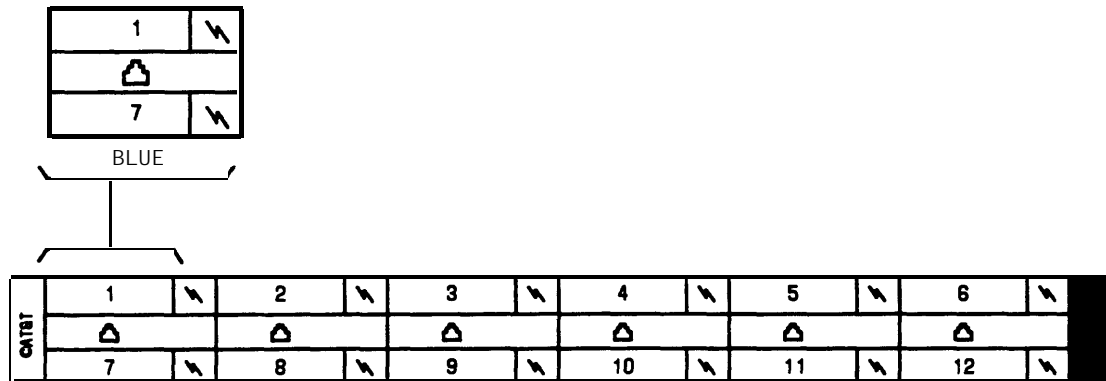
Label Code 224A—Blue Labels (comcode 103 970 042)

Label code 224A contains the following labels:

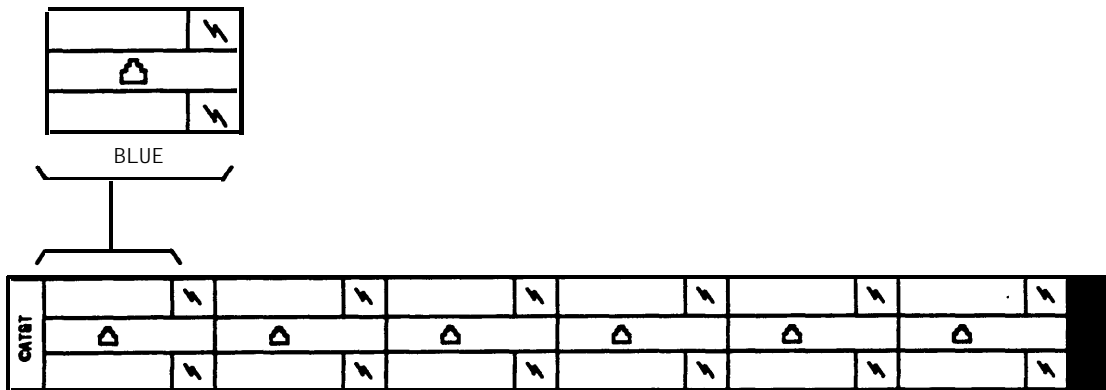
- (35) blue labels (Figure 3-32) that identify 3-pair station circuits from the equipment room. Each label identifies sixteen 3-pair station circuits. The labels are numbered sequentially from 1 to 560.
- (40) blue labels (Figure 3-33) that identify 4-pair station circuits from the equipment room. Each label identifies twelve 4-pair station circuits. The labels are numbered sequentially from 1 to 480.
- (102) blue labels (Figure 3-33) 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 (Figure 3-32) that identify 3-Pair station circuits from the equipment room. Each label identifies sixteen 3-pair station circuits.
- Unnumbered blue labels (Figure 3-33) that identify 4-pair station circuits from the equipment room. Each label identifies twelve 4-pair station circuits.
- (28) unnumbered blue labels (Figure 3-34) that identify 4-pair station circuits from the satellite closet. Each label identifies twelve 4-pair station circuits.

4-PAIR BLUE STATION LABELS

The labels shown in Figure 3-33 identify 4-pair station appearances at the cross-connect field. The top labels are numbered and 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 3-34 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.



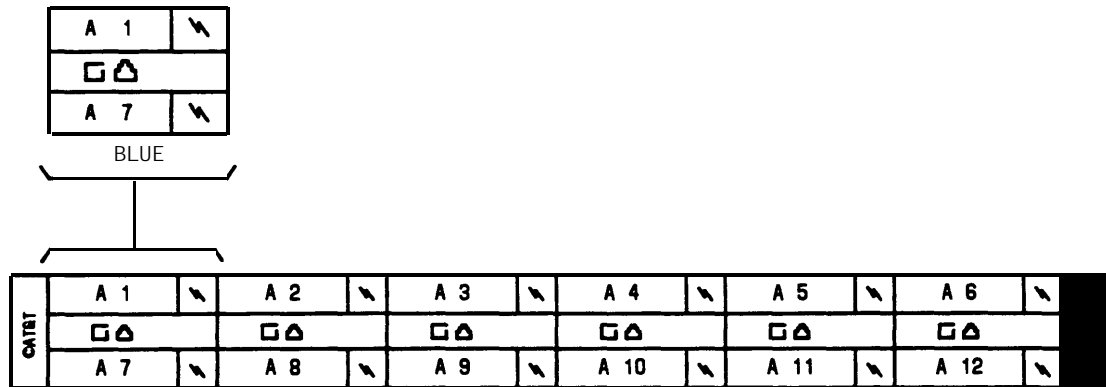
- USAGE:
IDENTIFIES 4-PAIR STATION APPEARANCES.
LABELS ARE NUMBERED IN SEQUENCE FROM
1 TO 480.
- CODE NO:
224A



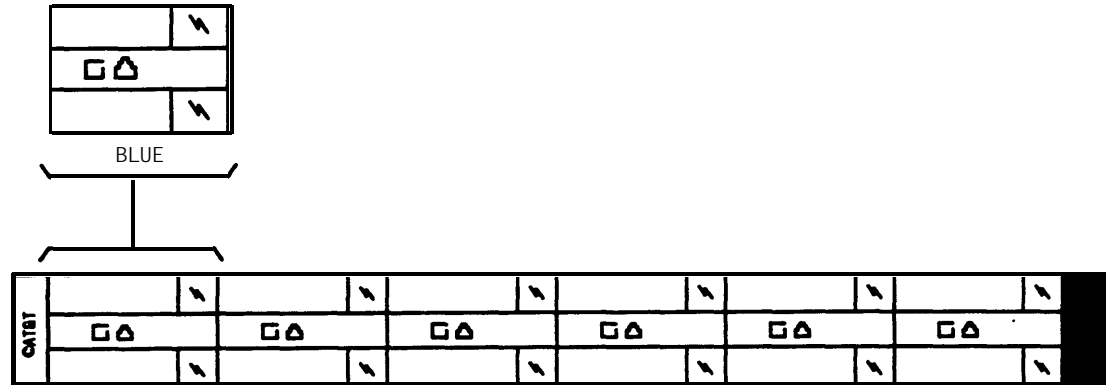
- USAGE:
CUSTOMER IDENTIFICATION OF 4-PAIR STATION
APPEARANCES.
- CODE NO:
224A

Figure 3-33. 4-Pair Blue Station Wiring (Equipment Room) Labels

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- 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 3-34. 4-Pair Blue Station Wiring (Satellite Closet) Labels

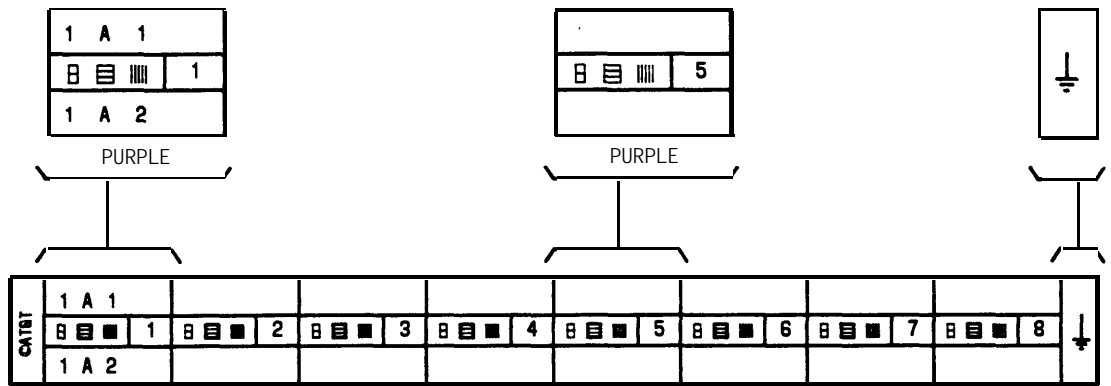
Port Labels (Purple)

PORT LABELS

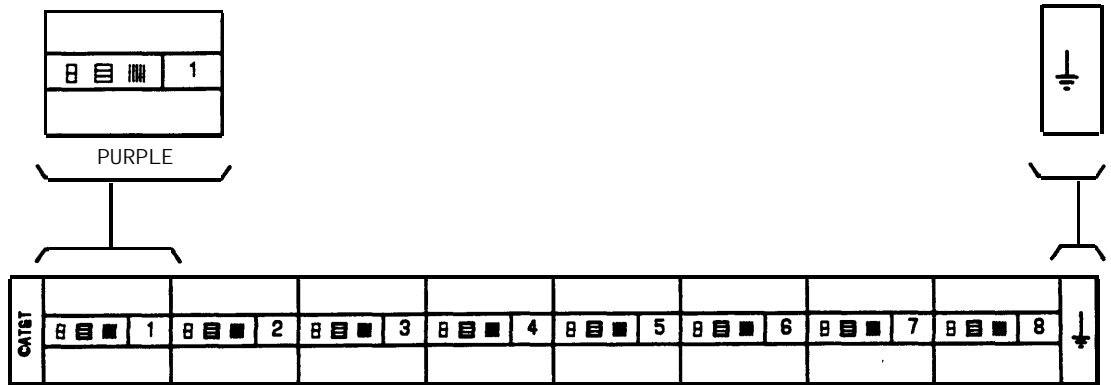
The labels shown in Figure 3-35 identify the equipped carrier slots (see Note) in the switch cabinet. These labels are grouped together (by carriers) starting with Carrier A. These labels are used for the trunk/auxiliary field, and the distribution field. They are installed starting with the first terminal 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 circuit pack. The bottom label must be filled in manually. It is used to label the MET line circuit pack and the 16-port analog line circuit pack. An example of how to fill out the label for the MET line circuit pack is shown in Figure 3-36. An example of how to fill out the label for the 16-port analog line circuit pack is shown in Figure 3-37. If WP-90929, List 1 or 3 concentrator cables are used to connect trunk or tie trunk circuits to the switch, then use the labels shown in Figure 3-38 and 3-39 for these circuits. Figure 3-40 shows an example of how to fill out a dual-purpose emergency transfer station label.

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

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- 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 3-35. Port Labels

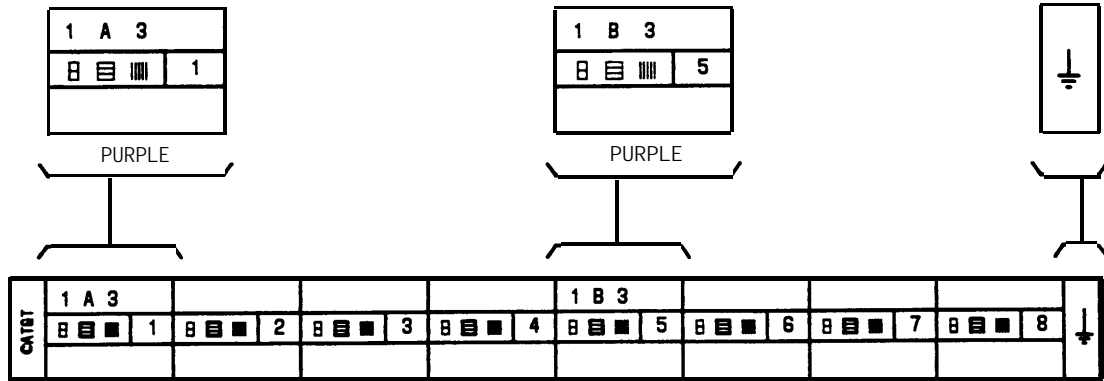


Figure 3-36. Example of Port Label for MET Line Circuit Pack

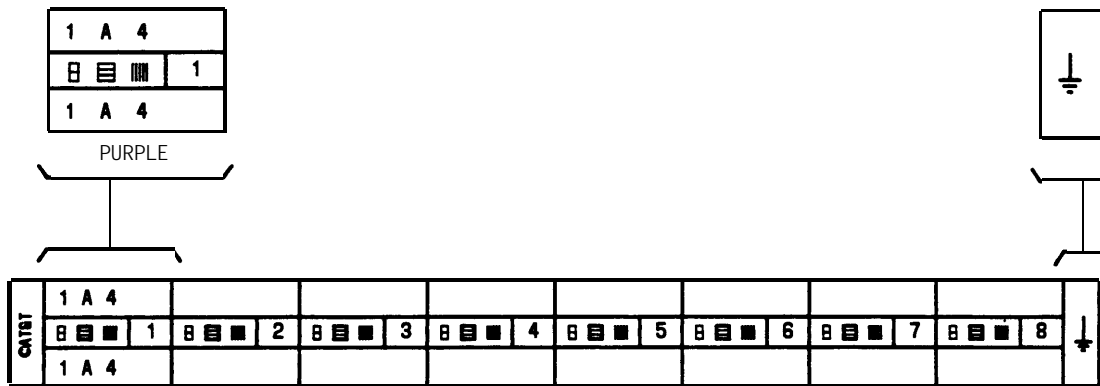
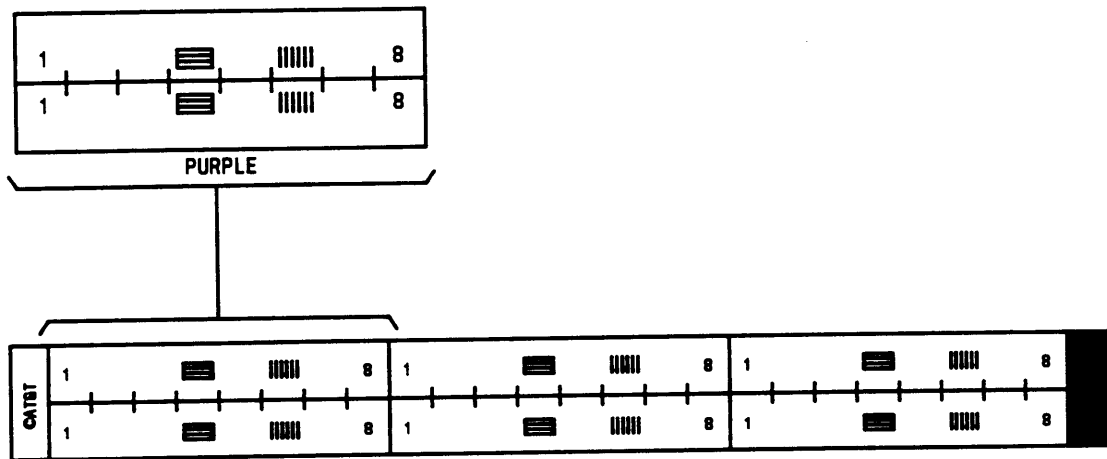


Figure 3-37. Example of Port Label for 16-Port Analog Line Circuit Pack

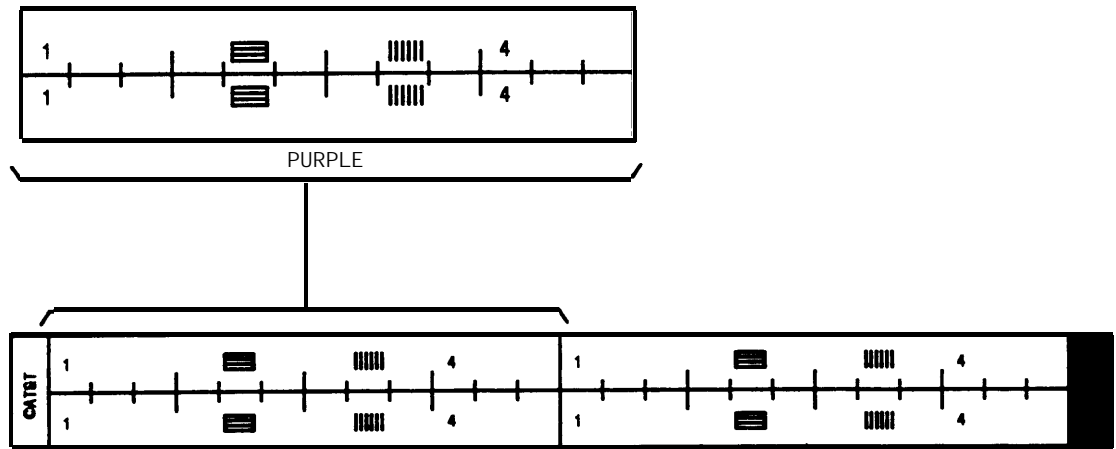
SYSTEM TRUNK AND TIE TRUNK PORT LABELS

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 3-38 identifies 3-pair trunk circuits from the switch cabinet. The label shown in Figure 3-39 identifies 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 3-38. Switch Trunk Port Circuit Labels

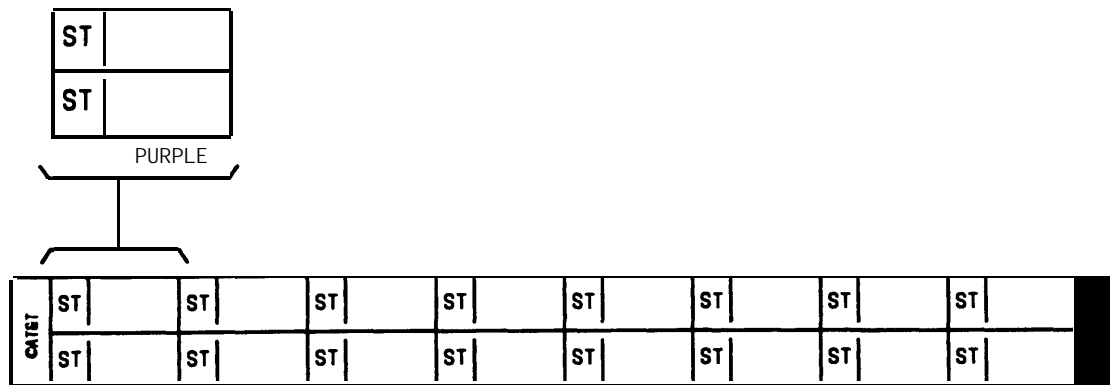


- USAGE:
IDENTIFIES TIE TRUNK CIRCUIT PORTS WHEN
WP-90929, LIST 3 CONCENTRATOR CABLE IS USED
- CODE NO:
225A

Figure 3-39. Switch Tie Trunk Port Circuit Labels

DUAL-PURPOSE EMERGENCY TRANSFER STATION LABELS

The label shown in Figure 3-40 identifies the telephone connections at the cross-connect field for both normal use and emergency transfer stations.



- CODE NO:
225A

Figure 3-40. Dual-Purpose Emergency Transfer Station Labels

Label Code 225A—Purple Labels (comcode 103 970 059)

Label code number 225A contains the following port labels:

- (45) purple labels (Figure 3-35) 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 (Figure 3-35) 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 (Figure 3-40) concentrator cables are used.
- (3) purple labels that identify 3-pair system tie trunk port circuits from the switch when WP-90929, List 3 (Figure 3-39) concentrator cables are used.

- (5) purple labels to identify connections to dual-purpose emergency transfer stations (Figure 3-40).

Labeling 66-Type Connecting Blocks

The cross-connect field is color-coded to identify system wiring as follows:

- Green—Leads to CO
- 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 3-41). Table 3-G shows the lead designations for the switch port appearances at the cross-connect field, and Table 3-H shows the lead designations for the auxiliary circuits. Any time these leads are cross-connected to another connecting block they should also be labeled at that block.

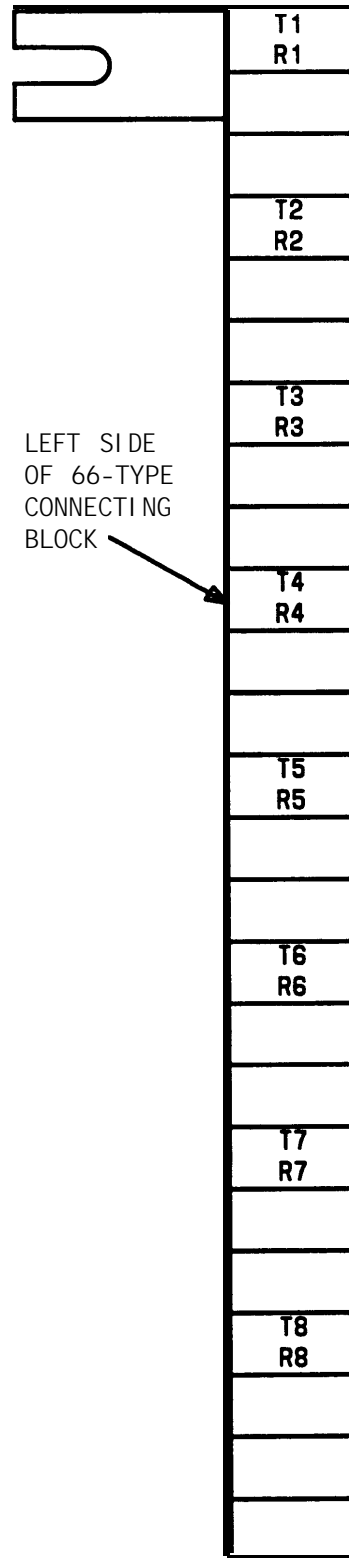


Figure 3-41. Labeling 66-Type Connecting Blocks

Table 3-G. Lead Designations at Cross-Connect Field

Conn. Bk Term or Numbers	Anal. Line (8) TN742 Line (16) TN769	Anal. Line Line TN746	Data Line Line TN726	Dig. TN762 TN754	Hyb. Line Line TN762B	MET TN763 TN735	AUX. Trk. TN747 TN763B	CO Trk. Trk TN747B	DID TN760 TN753	Tie Trk. TN722 TN760B	DS1 Tie Trk. 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-G. Lead Designations at Cross-Connect Field (Contd)

Conn. Pin Numbers	Anal. Line (8) TN742 or TN769	Anal. Line (16) TN746	Data Line	Dig. Line	Hyb. Line	MET Line	AUX. Trk. TN763	CO Trk. TN747	DID Trk. TN753	Tie Trk. TN760	DS1 Tie Trk. TN722
25	T5	T9	TN726	TN754	TN762B	TN735	TN763B	TN747B	TN753	TN760B	TN722B
26	R5	R9			V1T5			T5	T5		
27		T10	TXR5	TXR5	V1R5			R5	R5		
28		R10	PXR5	PXR5	CT5						
29		T11	TXR5	TXR5	CR5						
30		R11	PXR5	PXR5	P-5						
31	T6	T12			P+5						
32	R6	R12	TXR6	TXR6	V1T6			T6	T6		
33			TXR6	TXR6	V1R6			R6	R6		
34			PXR6	PXR6	CT6						
35			TXR6	TXR6	CR6						
36			PXR6	PXR6	P-6						
37	T7				P+6						
38	R7		TXR7	TXR7	V1T7			T7	T7		
39			TXR7	TXR7	V1R7			R7	R7		
40			PXR7	PXR7	CT7						
41		T13	TXR7	TXR7	CR7						
42		R13	PXR7	PXR7	P-7						
43	T8	T14			P+7						L1*
44	R8	R14	TXR8	TXR8	V1T8			T8	T8		L1
45		T15	TXR8	TXR8	V1R8			R8	R8		L0
46		R15	PXR8	PXR8	CT8						L0*
47		T16	TXR8	TXR8	CR8						LBACK2
48		R16	PXR8	PXR8	P-8						LBACK1
49					P+8						
50											

* Denotes ring side or high side of pair.

CHAPTER 3. EQUIPMENT ROOM DESIGN

Table 3-H. Auxiliary Lead Appearances at 66-Type Cross-Connect Field

66-Type Conn Block Term	System 75 Auxiliary Connector Outputs		System 75 XE Auxiliary Connector Outputs		Z1A Emerg Xfr Unit Outputs	574-5 Power Xfr 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					LC	LC
23 24	GND -48	Emergency Transfer Relay Power	GND -48	Emergency Transfer Relay Power	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 3-H. Auxiliary Lead Appearances at 66-Type Cross-Connect Field (Contd)

66-Type Conn Block Term	System 75 Auxiliary Connector Outputs		System 75 XE Auxiliary Connector Outputs	Z1A Emerg Xfr Unit Outputs	574-5 Power Xfr 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	COM1 N01	
43 44	Not Connected			TK	NC2 NC1	
45 46	Not Connected			Ext Alarm A	LC	COM2
				Ext Alarm B		N02
47 48	Not Connected			Not Connected	ST	COM3 NC3
49 50	INADS			INADS	PWR	GRD -48V

Installing Sneak Fuse Panels

The sneak fuse panel (Figure 2-18) must be installed as near as possible to the network interface. To install the sneak fuse panel, proceed as follows:

1. Hold the panel against the mounting surface and mark the upper right and lower left mounting screw locations.
2. Drill pilot holes at the marked locations, and partially install the 3/4 inch No. 12 screws.
3. Slide the sneak fuse panel onto the mounting screws and tighten the screws.
4. Repeat the procedure for each sneak fuse panel.

Cable Installation

Labels

The purple port label shown in Figure 3-42 installed on both ends of the 25-pair cables that connect to the trunk/auxiliary field and/or the distribution field. The blue/yellow building and floor labels are for cables that connect from the equipment room to a site/satellite location on another floor or in another building. The yellow label is for auxiliary circuits that connect to the trunk/auxiliary field or for SSI circuits that connect to an AP.

The blue/yellow label is for 25-pair cables that connect to site/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 3-42. Equipment Room Cabling Labels

CABLE/CONNECTOR/BUILDING LABEL ORDERING INFORMATION

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

Figure 3-43 shows the proper way to install a label on a 25-pair cable connector (see Note).

Note: The label should be installed near the rear of the connector as shown in Figure 3-43 so it will not be obscured by the switch cabinet connector retainers. Also, it can be installed on the skin of the cable near the connector.

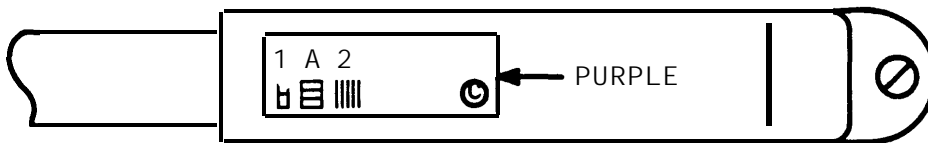


Figure 3-43. Installing Self-Stick Label on 25-Pair Cable Connector

Routing Cable Guidelines

General

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

Figures 3-44 and 3-45 show typical cable routing from the switch cabinet to the top and bottom of the cross-connect field, respectively.

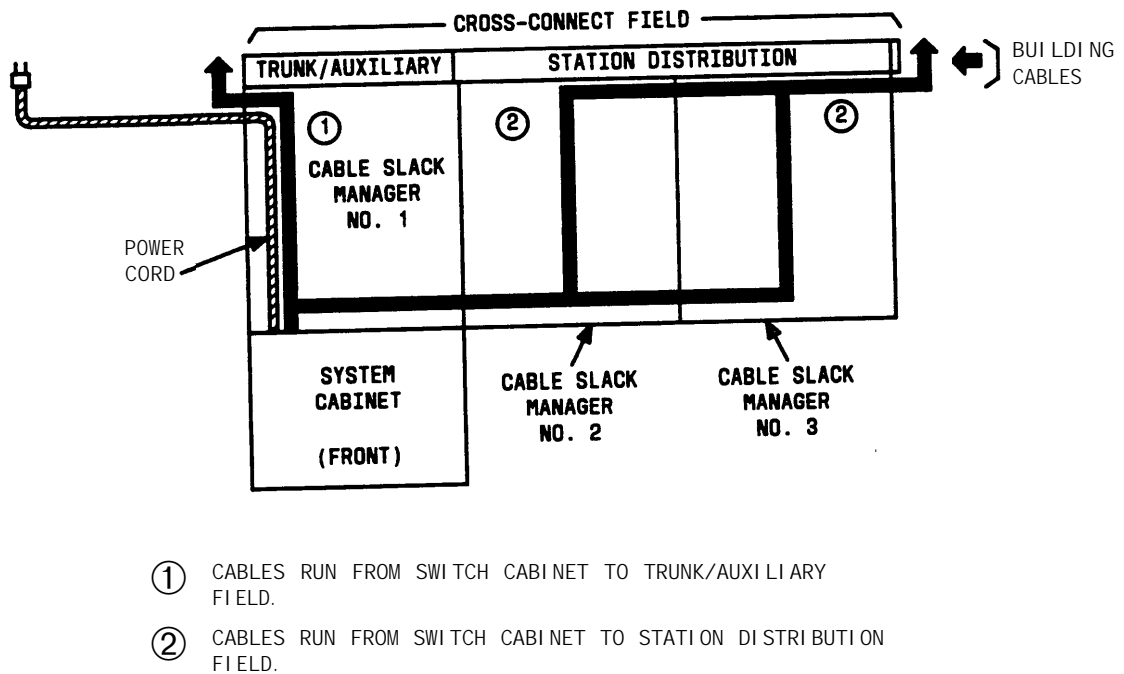
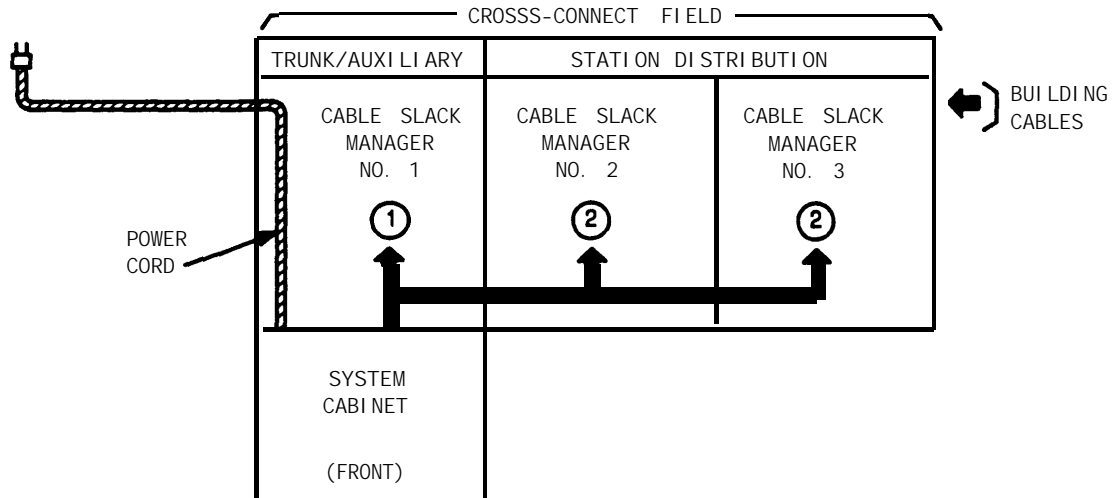


Figure 3-44. Cable Routing From Switch Cabinet to Cross-Connect Field (Using Top Terminal Blocks)



- ① CABLES RUN FROM SWITCH CABINET TO TRUNK/AUXILIARY FIELD.
- ② CABLES RUN FROM SWITCH CABINET TO STATION DISTRIBUTION FIELD.

Figure 3-45. Cable Routing From Switch Cabinet to Cross-Connect Field (Using Bottom Terminal Blocks)

Routing Cables Using 110-Type Terminal Blocks

Figures 3-46 and 3-47 show the cable routing pattern through the cable slack manager for a single cabinet installation using connectorized 110-type terminal blocks with the connectors located at the top and bottom of the terminal blocks, respectively. Cables are routed through the cable slack manager in either the cabinet or wall troughs. When needed, the two center troughs can be used.

Port cables are routed through the cabinet trough for parallel runs. Station cables should use the wall trough. After the cabinet and wall troughs are filled, use the center trough.

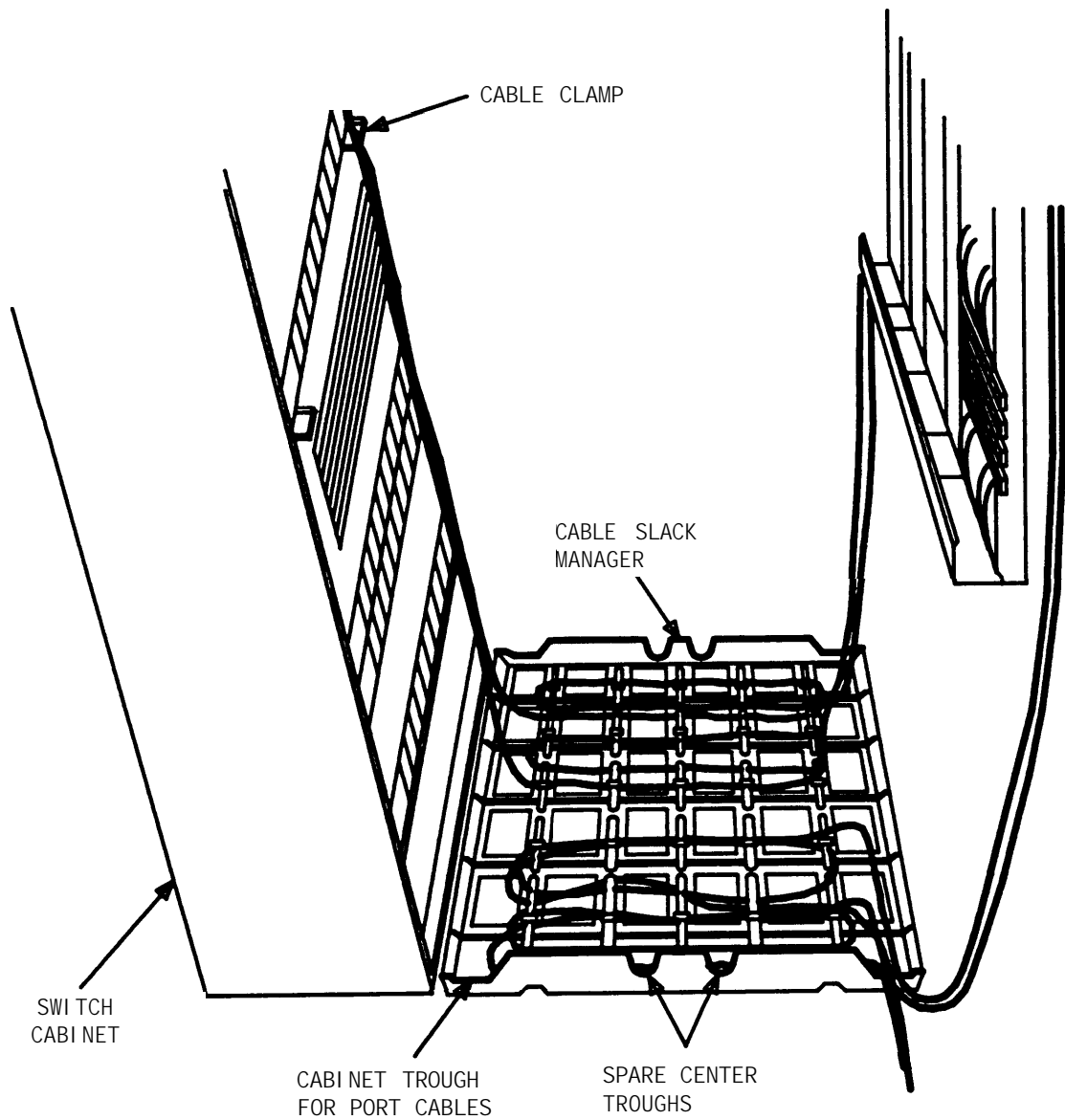


Figure 3-46. Cable Routing Through Cable Slack Manager—Single-Cabinet Installation (Using Connectorized Top Terminal Blocks)

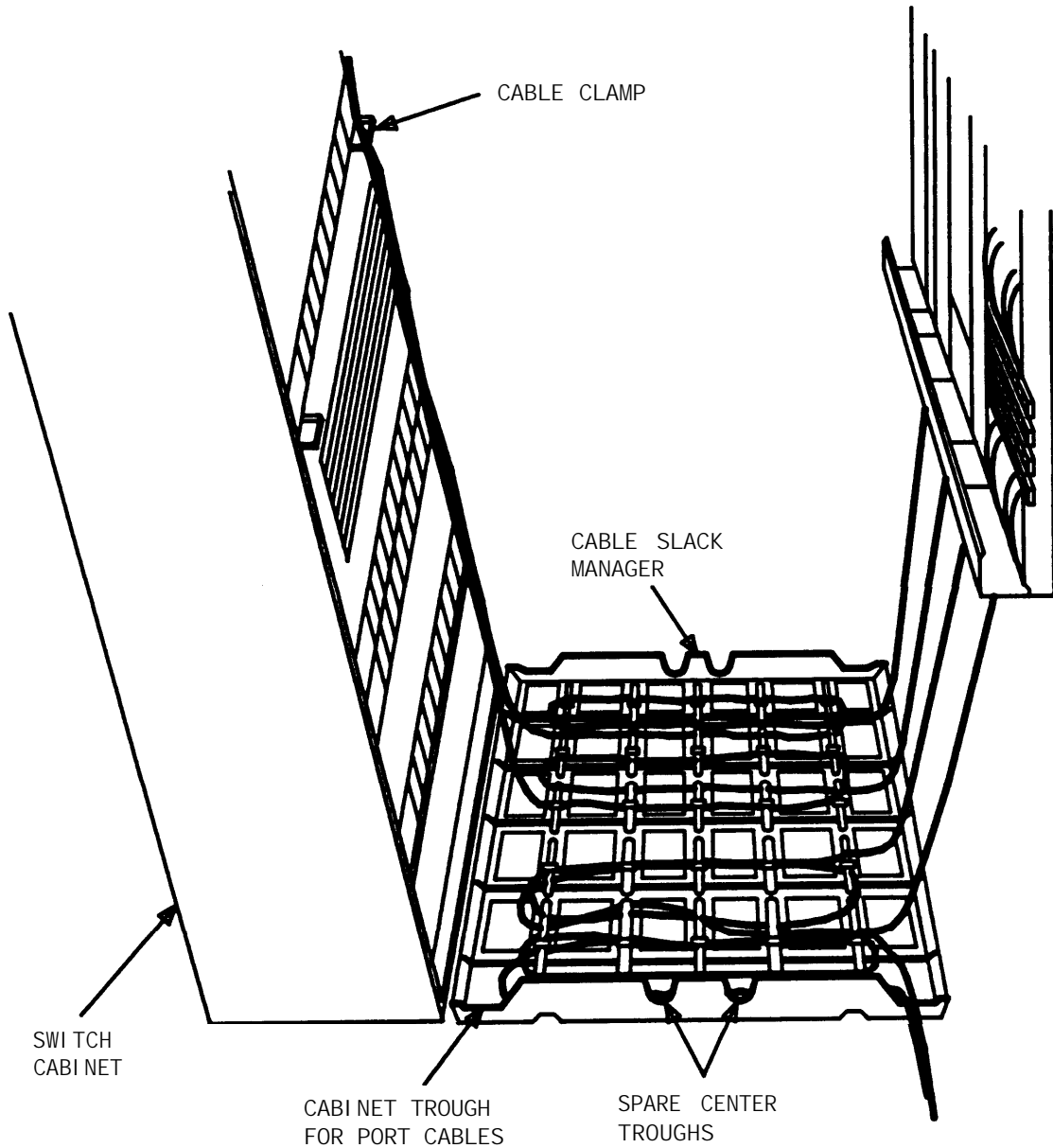


Figure 3-47. Cable Routing Through Cable Slack Manager—Single-Cabinet Installation (Using Connectorized Bottom Terminal Blocks)

Routing Cables Using 66-Type Connecting Blocks

Figures 3-48 and 3-49 show the cable routing pattern through the cable slack manager for a single cabinet installation with the cables routed from the top and bottom of the 66-type connecting blocks, respectively. Cables are routed through the cable slack manager in either the cabinet or wall troughs. When needed, the two center troughs can be used.

Port cables are routed through the cabinet trough for parallel runs. Station cables should use the wall trough. After the cabinet and wall troughs are filled, use the center trough.

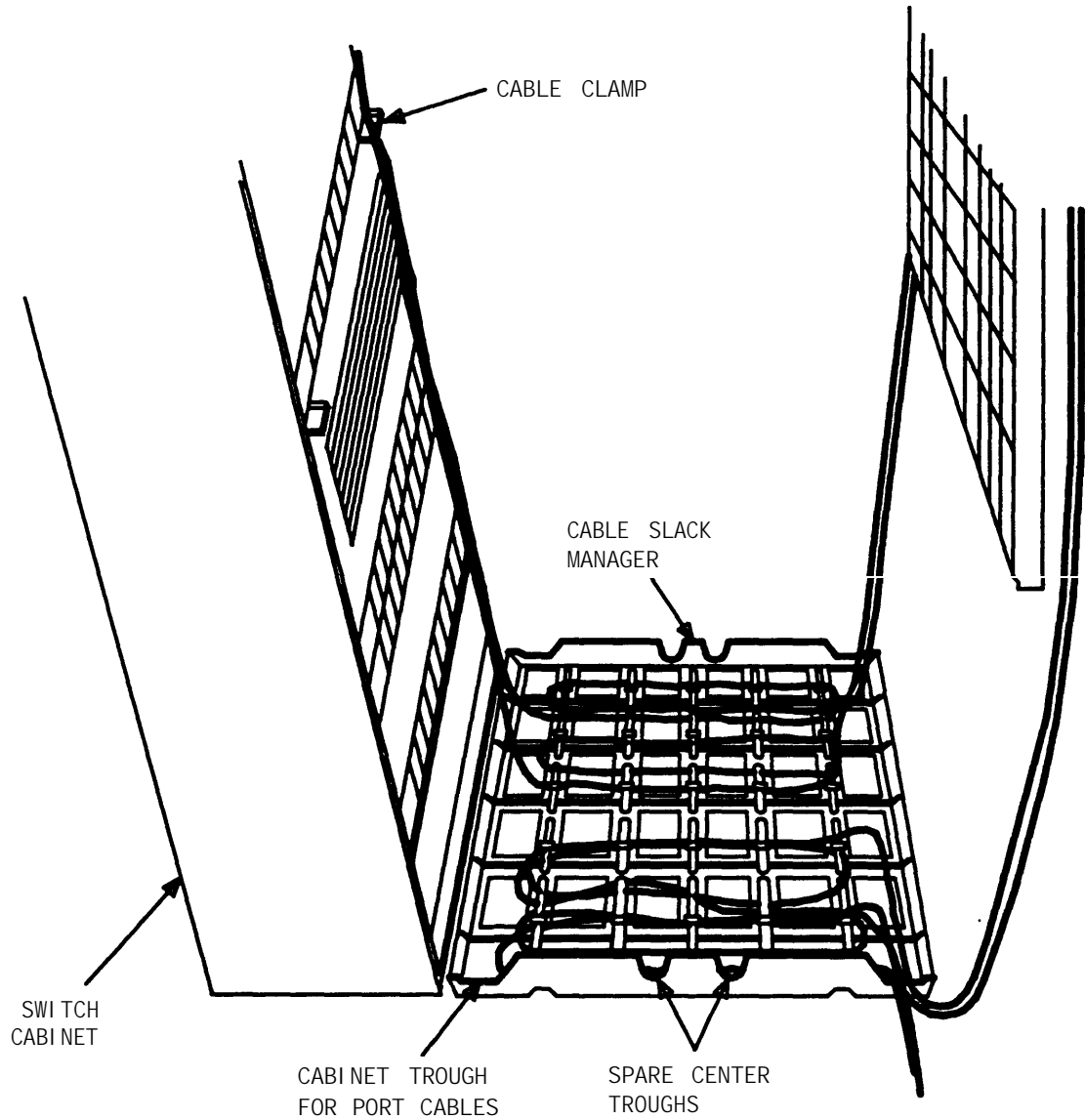


Figure 3-48. Cable Routing Through Cable Slack Manager—Single-Cabinet Installation (Using 66-Type Connecting Blocks With Cables Routed From Top of Cross-Connect Field)

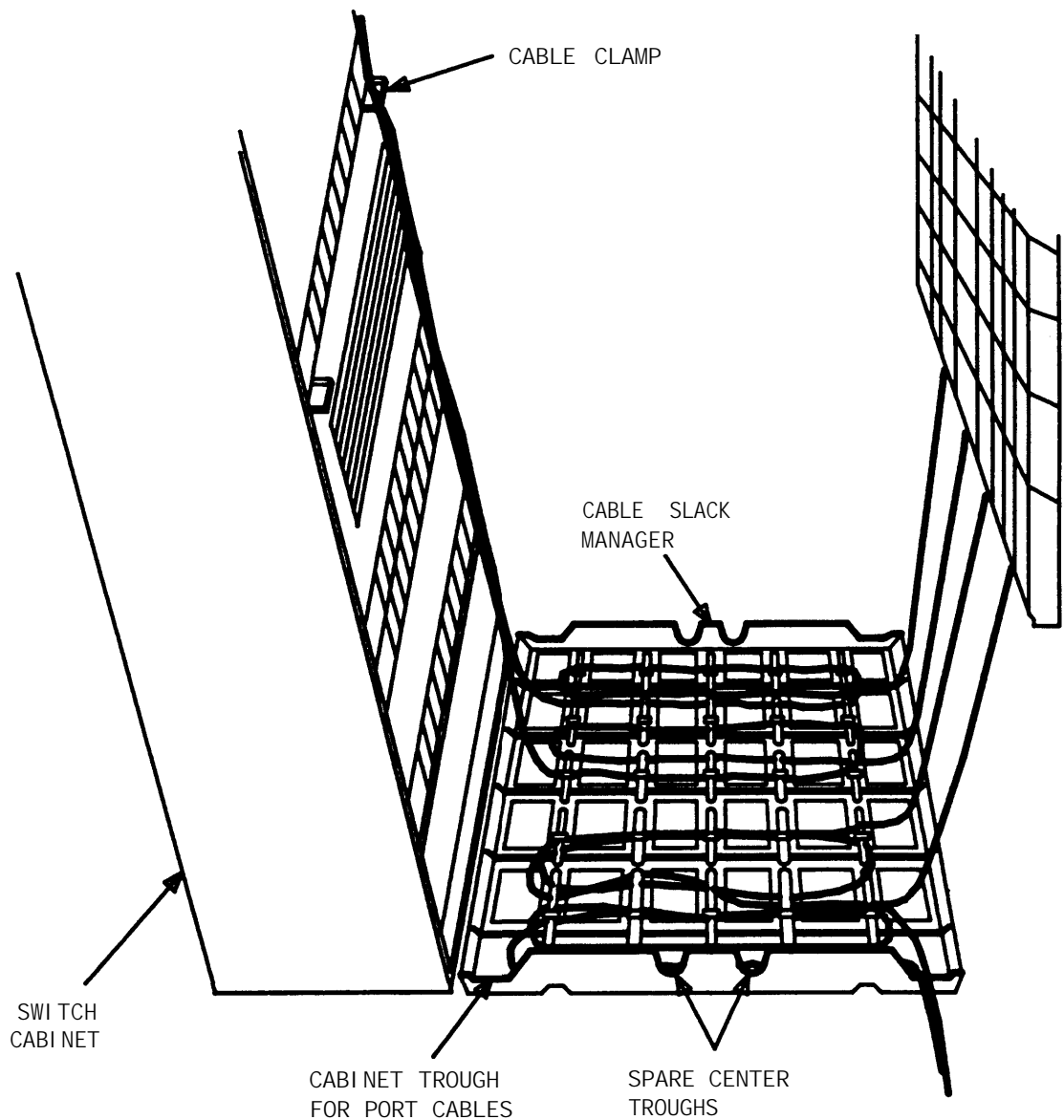


Figure 3-49. Cable Routing Through Cable Slack Manager—Single-Cabinet Installation (Using 66-Type Connecting Blocks With Cables Routed From Bottom of Cross-Connect Field)

Routing Cables From Cabinet to Cross-Connect Field

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

- When cable routing is to the top/bottom of the cross-connect field, each port cable is connected at the cabinet and then routed along the front trough of the cable slack manager to the connecting/terminal block where the cable is to be terminated.
- Enough slack must be left at the cabinet end of the cable to allow for proper dressing of the cables (Figure 3-50).
- Route the cable from the cabinet to the wall. Place the cable beside one of the rows of 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.

- Determine the length of the cable required to reach from the cable slack manager to the assigned connecting/terminal block.
- The cable must be supported on the wall using D rings.
- Cable slack is stored by coiling the cable around the columns in the cable slack manager. The first run should always go across the full length of the five columns in the cable slack manager.
- Connect the cable to the assigned connecting/terminal block.

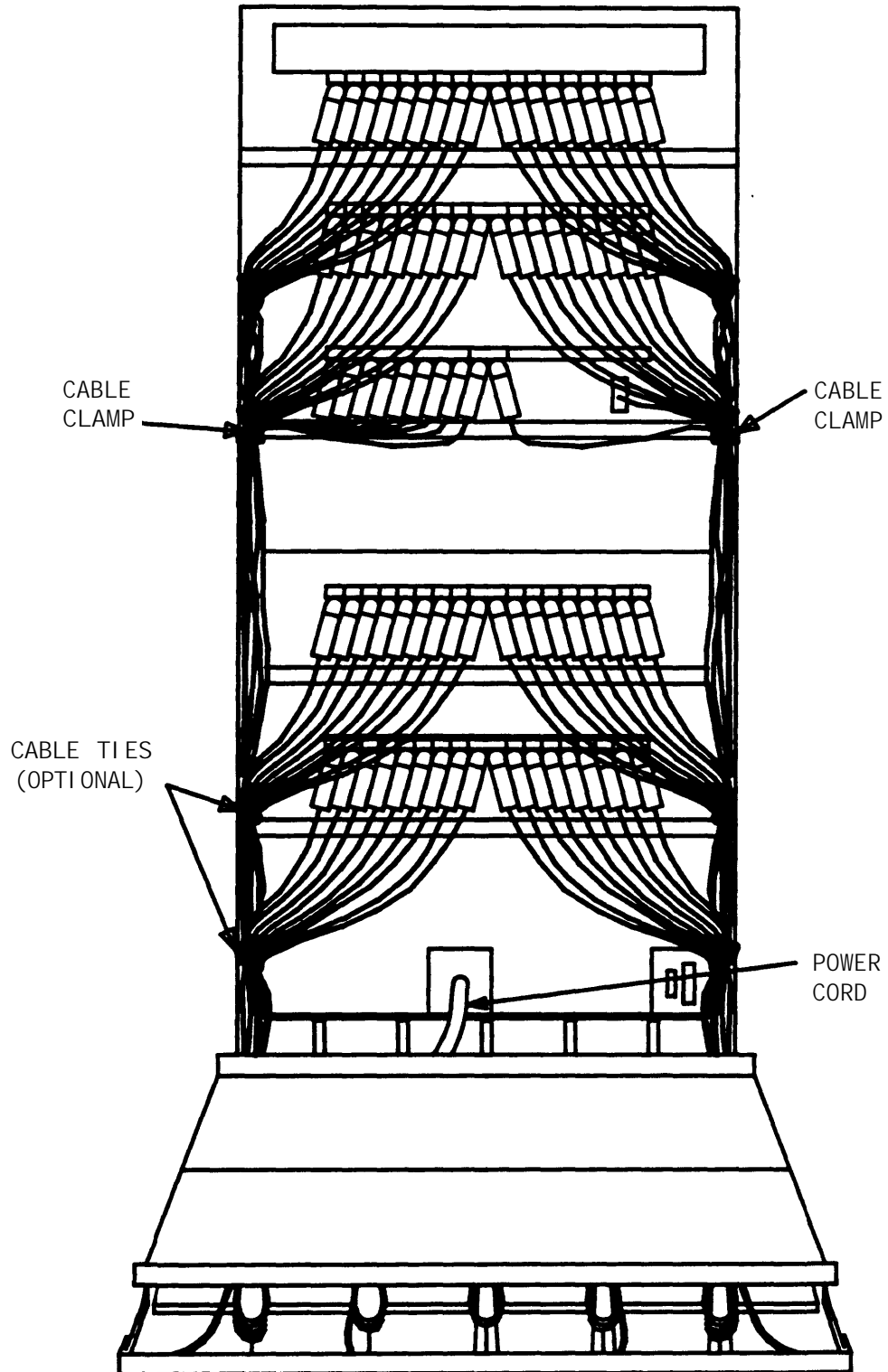


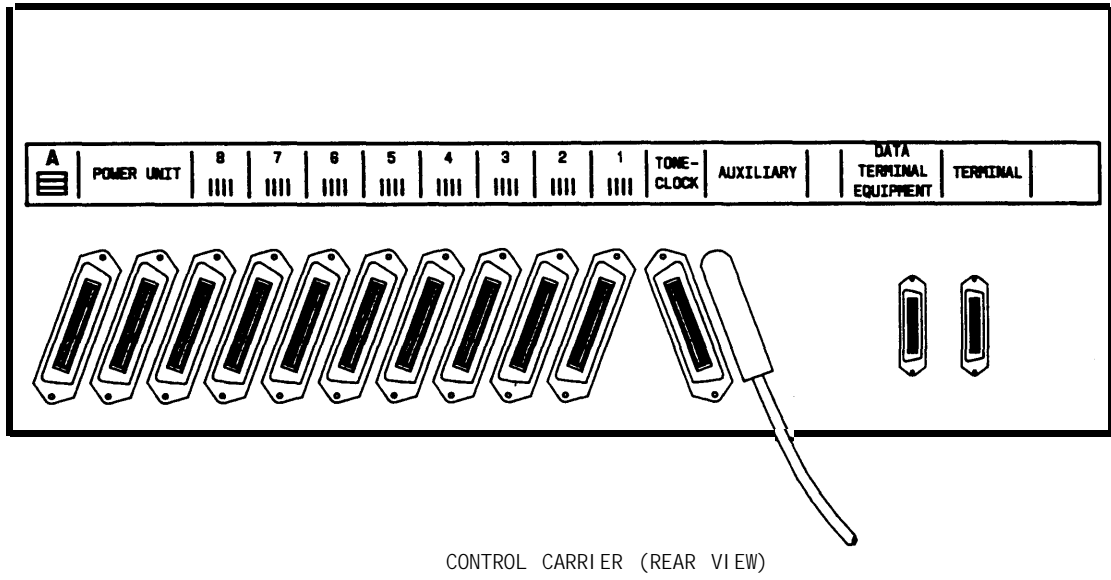
Figure 3-50. Typical Port Cable Installation at Switch Cabinet

Installing Control Carrier Outputs Cable

The control carrier **AUXILIARY** connector outputs include the following:

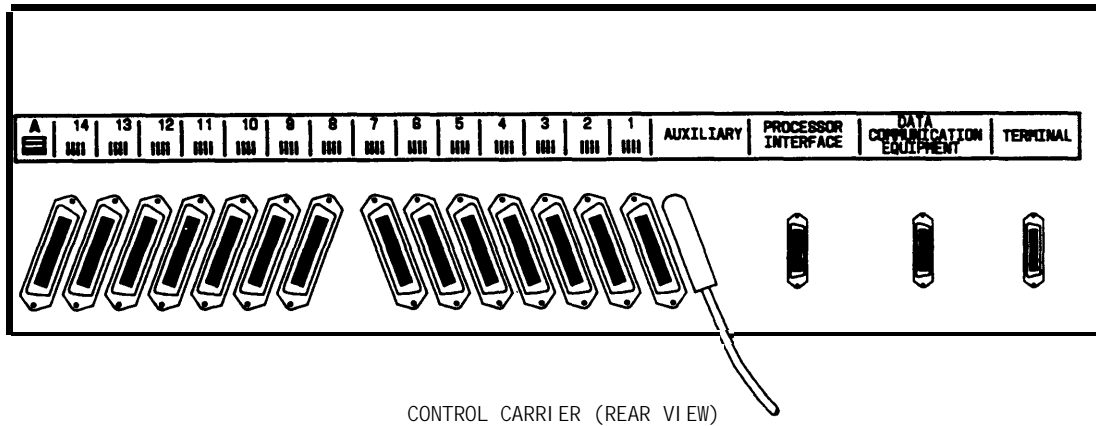
- Alarm monitoring for the AP and auxiliary cabinet
- (7) dc power (-48 volts) sources for emergency transfer units
- (3) dc power (-48 volts) sources for remotely powering two attendant consoles and one executive voice terminal adjunct (not provided on System 75 XE)
- The INADS trunk connection location.
- For the System 75 XE, access to a relay contact is available to actuate a light, bell, or similar type customer-provided alarm device. The relay can be administered to make contact when a major, minor or warning alarm condition occurs in the switch. 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 $\frac{3}{4}$ amps.

A 25-pair cable connects the control carrier **AUXILIARY** connector (Figures 3-51 and 3-52) to a 66-type connecting block/110-type terminal block in the yellow field of the trunk/auxiliary field.



CONTROL CARRIER (REAR VIEW)

Figure 3-51. Control Carrier Outputs (AUXILIARY Connector)—System 75



CONTROL CARRIER (REAR VIEW)

Figure 3-52. Control Carrier Outputs (AUXILIARY Connector)—System 75 XE

Labeling Control Carrier Cable (Used With 110-Type Hardware)

Place the appropriate **AUXILIARY** connector label (Figure 3-30) on the assigned 110-type terminal block row. On the control carrier cable, place a yellow auxiliary label (Figures 3-42 and 3-43) on the connectors at each end of the cable. Write the letters **AUX** on each label.

Labeling Control Carrier Cable (Used With 66-Type Hardware)

Write the lead designations for the **AUXILIARY** connector (Table 3-G) on the 66-type connecting block. If cable labels are to be used, place a yellow auxiliary label (Figures 3-42 and 3-43) on the connectors at each end of the cable. Write the **AUX** on each label. If cable labels are not available, use a magic marker to write **AUX** on the connectors at each end of the cable.

Connecting Control Carrier Outputs Cable

Plug the connector cable in the **AUXILIARY** connector on the rear of the control carrier. Route the connector cable through the cable slack manager to the assigned 66-type connecting block/110-type terminal 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 Chapter 4 of this guide under the heading **Miscellaneous Wiring Installation**.

Installing Trunk Cables Between Network Interface, Sneak Fuse Panel, and Switch Cabinet

The 1-pair CO trunks are installed by the local telephone company in the green field. Up to 24 pairs may be terminated on each 66-type connecting block or on each row of the 110-type terminal block. Tie trunks also appear in the green field with up to eight 3-pair trunks terminated on each 66-type connecting block or on each row of the 110-type terminal block.

Selecting Concentrator Cables For Use With 110-Type Hardware

WP-90929, List 1 and 3 concentrator cables can be used to connect the switch cabinet to the 110-type terminal blocks in the purple field. The

1-pair patch cords/jumper wires are then run from the purple terminal block rows to the green terminal block rows in order to establish the correct 3-pair modularity. Table 3-H shows switch port appearances at the cross-connect field. Figures 3-53, 3-54, and 3-55 show the carrier connectors on the rear of the switch that connect to the purple field.

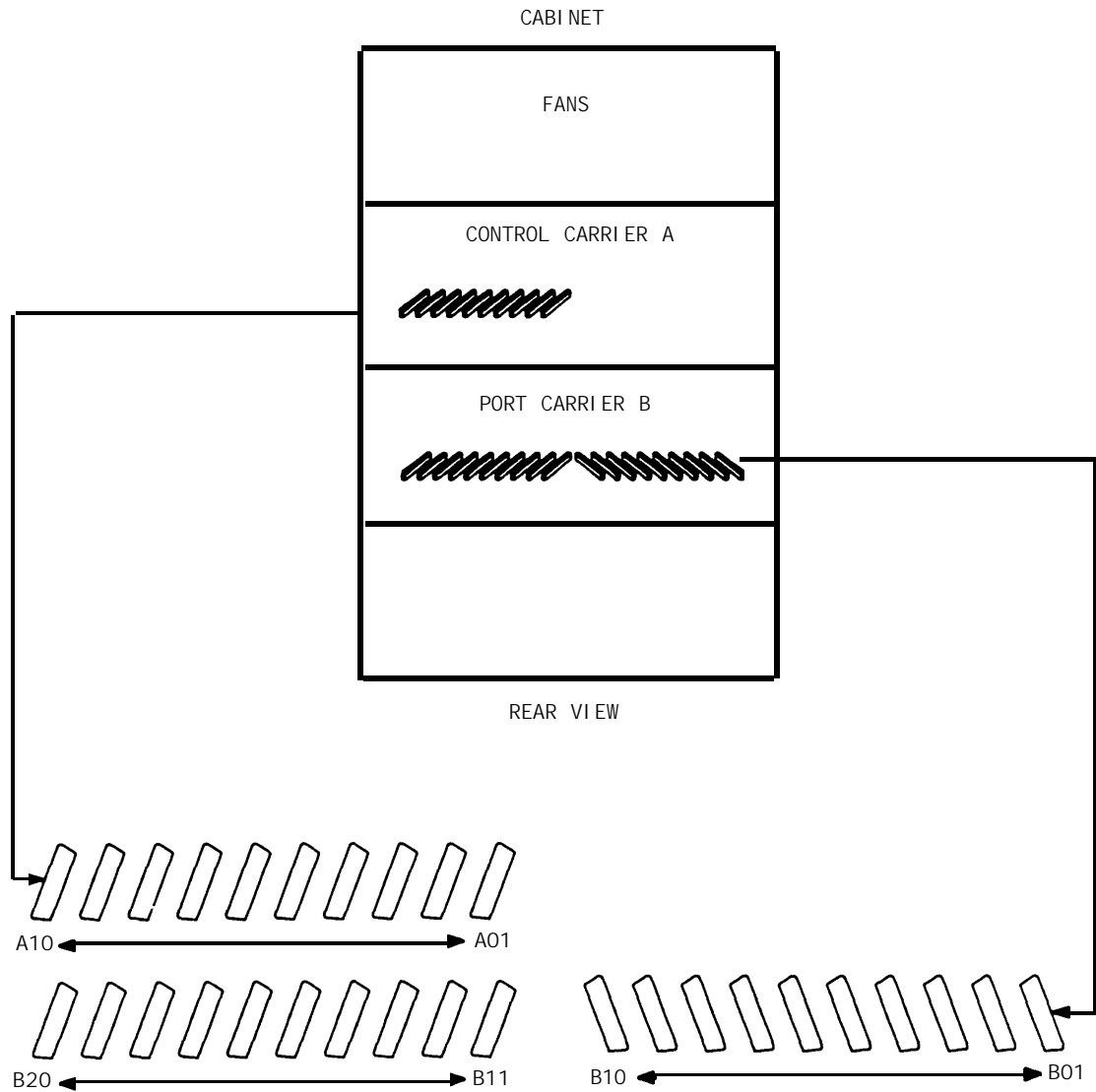


Figure 3-53. System 75, Slot Addresses for 2-Carrier Cabinet

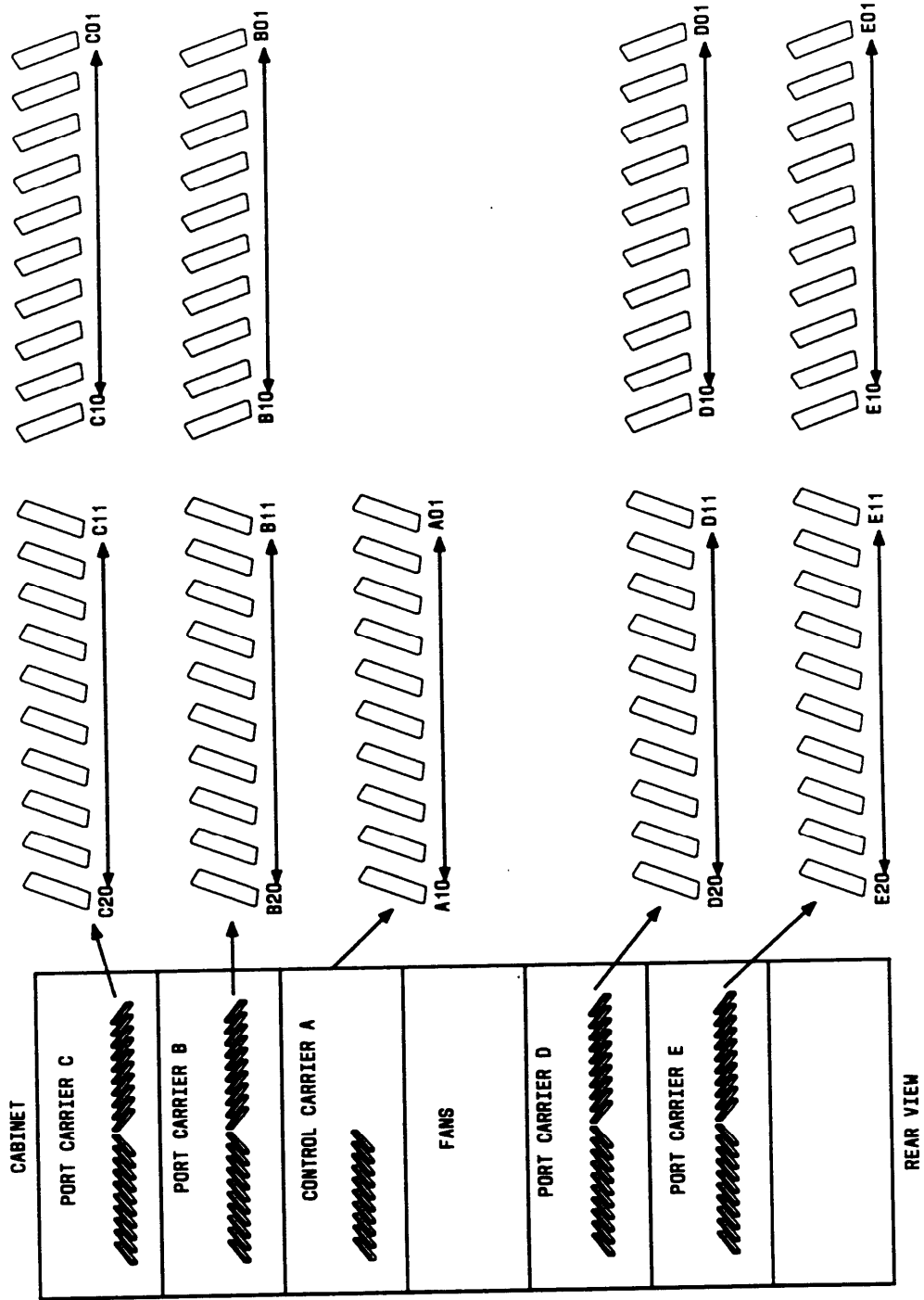


Figure 3-54. System 75, Slot Addresses for 5-Carrier Cabinet

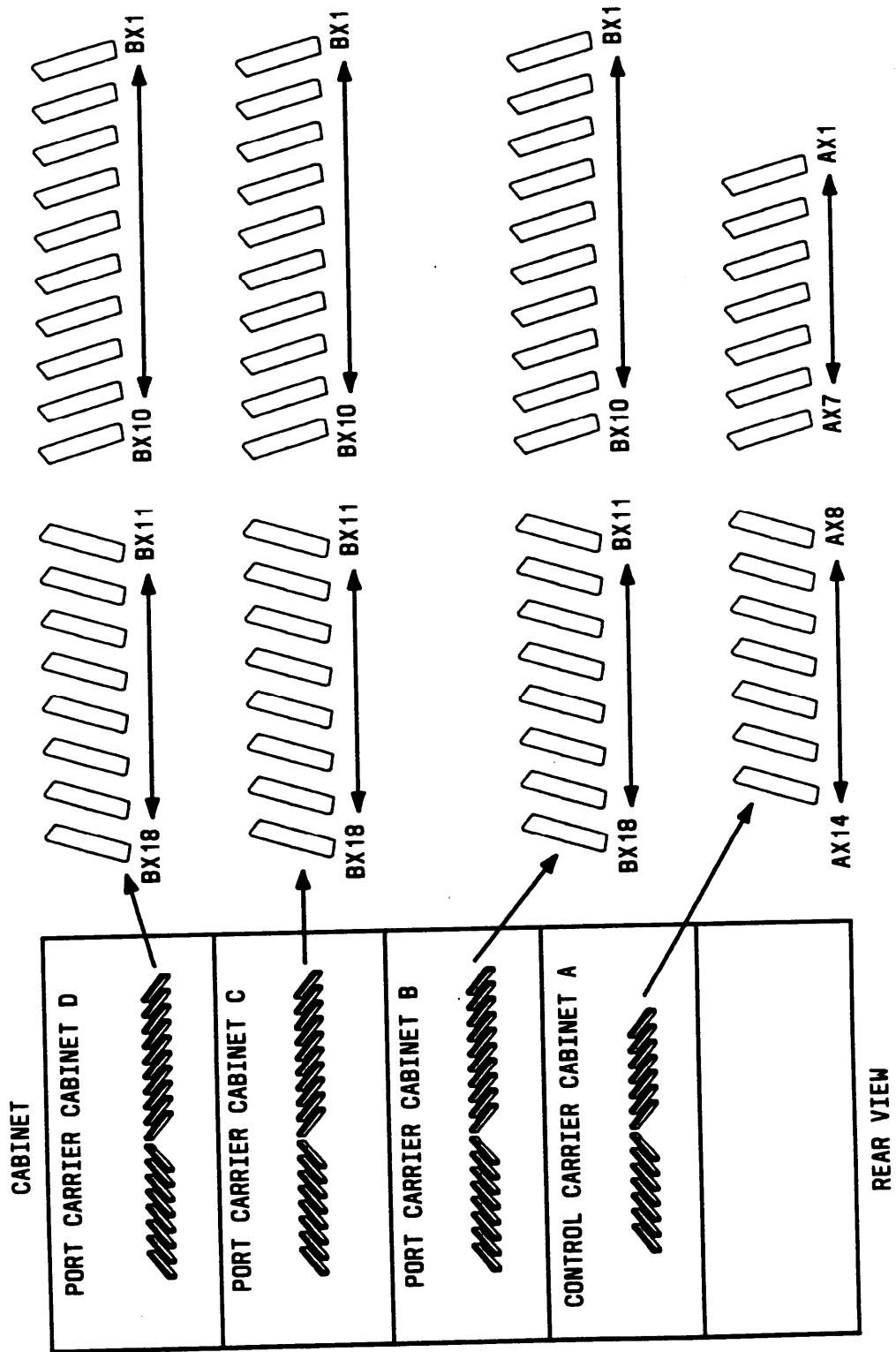


Figure 3-55. System 75 XE Carrier Slot Addresses

Selecting Concentrator Cables For Use With 66-Type Hardware

WP-90929, List 2 and 4 concentrator cables can be used to connect the switch cabinet to the 66-type connecting blocks in the purple field. Jumper wires are then run from the connecting blocks in the purple field to the connecting blocks in the green field to establish the correct 3-pair modularity for the 1- and 3-pair trunks. Table 3-H shows switch port appearances at the cross-connect field. Figures 3-53, 3-54, and 3-55 show the carrier connectors on the rear of the switch that connect to the purple field.

Connecting Trunk Pairs to the Switch Cabinet Using Concentrator Cables

Figure 3-56 shows trunk pairs connected to the switch cabinet with concentrator cables. To install the cables, proceed as follows:

1. Connect B25A connector cables between the network interface and sneak fuse panels.
2. Connect A25D connector cables from the sneak fuse panels to the 110-type terminal block/157B connecting block connectors in the green field.
3. **For 110-type hardware only**, connect patch cords/jumper wires from the terminal block in the green field to the associated terminal block in the purple field.
4. **For 66-type Hardware only**, install bridging clips on the 66-type connecting blocks, as required (see Note).

Note: The left half of the 66-type connecting block is designated as part of the green field and the right half is designated as part of the purple field.

5. Connect the single-fingered end of the concentrator cables to the 110-type terminal block/157B connecting block connectors associated with the purple row in Step 3/4.
6. At the rear of the switch cabinet, connect the other end (2/3-fingered end) of the concentrator cables to the appropriate carrier slots (Figures 3-53, 3-54, or 3-55). Equipped carrier slots are identified on the CSO. Mark the nomenclature strips above the carriers to identify the equipped slots.

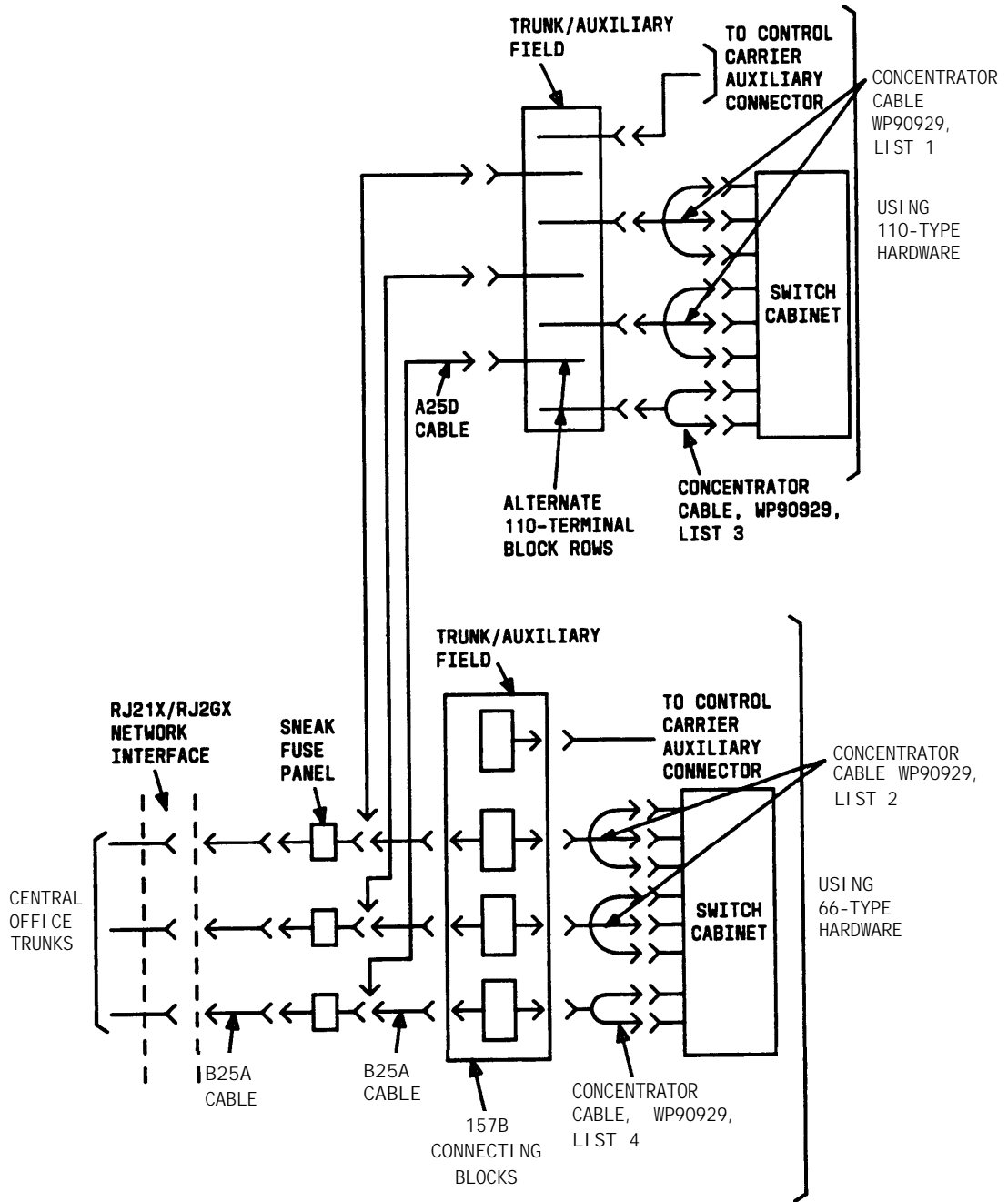


Figure 3-56. Connecting Trunk Pairs Used for 1-Pair Trunk Circuits; DID, Loop Start, Ground Start Using Concentrator Cables

7. Label connectors on each end of the cables that connect to the switch cabinet.
8. Dress cables down the sides of the switch cabinet and store the excess cable slack in the cable slack manager as described previously.

Connecting Trunk Pairs to the Switch Cabinet Using Jumper Wires To Establish 3-Pair Modularity

Figures 3-57 and 3-58 show trunk pairs connected to the switch cabinet with jumper wires to establish 3-pair modularity. To connect the trunk pairs to the purple field, proceed as follows:

1. Connect B25A connector cables between the network interface and the sneak fuse panels (Figure 3-56).
2. Connect A25D/B25A connector cables from the sneak fuse panels to the 110-type terminal block/66-type connecting block connectors in the green field (Figure 3-56).
3. Connect 1-pair patch cords/jumper wires from each 110-type terminal block row/66-type connecting block in the green field to the 110-type terminal block rows/66-type connecting blocks in the purple field as shown in Figure 3-57 for 1-pair CO trunks or in Figure 3-58 for 3-pair tie trunks.

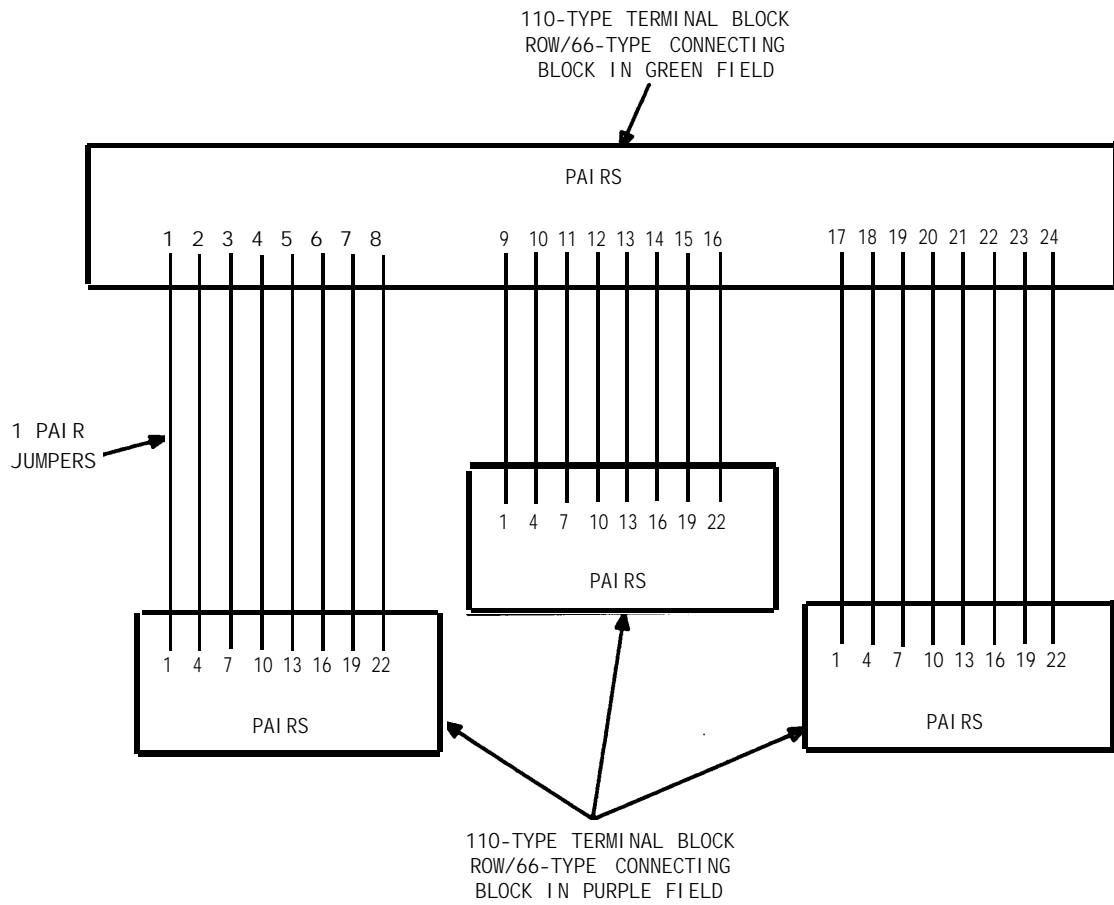


Figure 3-57. Example of Establishing 3-Pair Modularity for Trunk Pairs Used for 1-Pair Trunk Circuits; DID, Loop Start, Ground Start

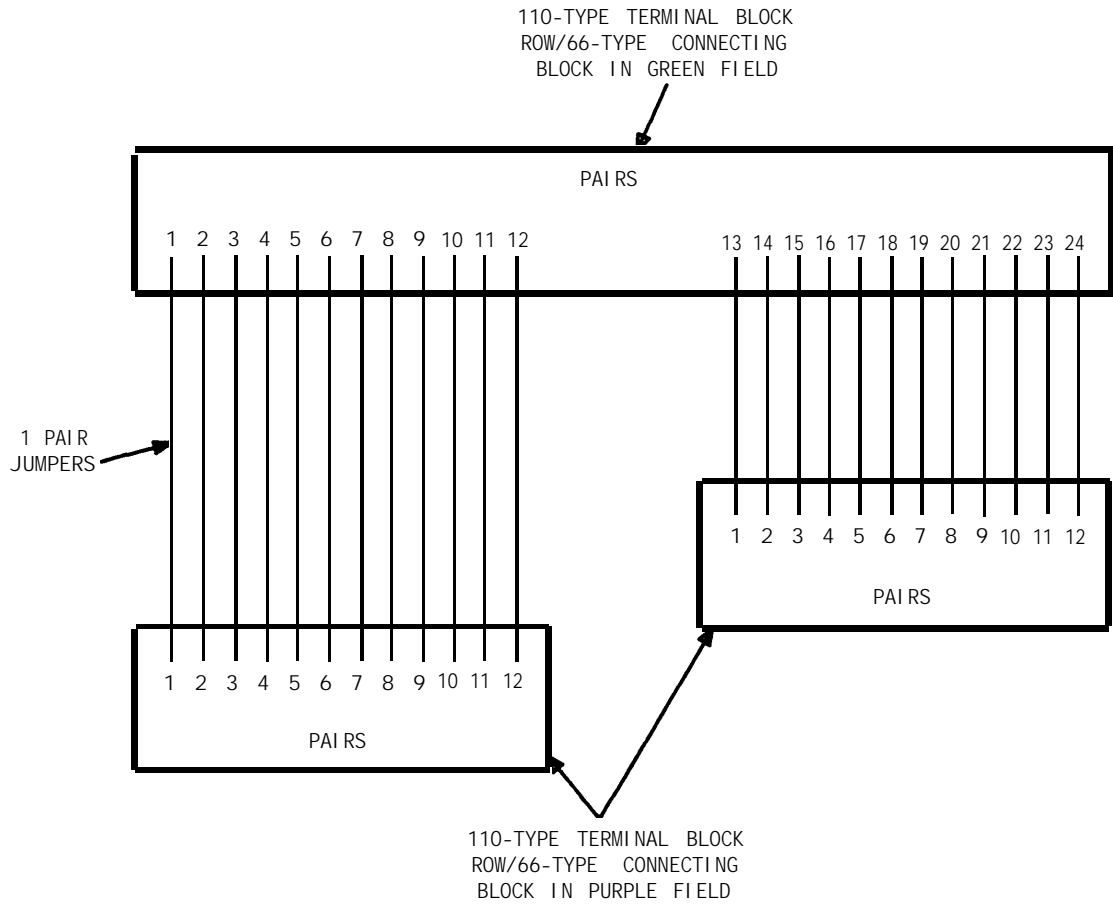


Figure 3-58. Example of Establishing 3-Pair Modularity for Trunk Pairs Used for 3-Pair Tie Trunks

Installing Coupled Bonding Conductor (CBC) Grounding

A CBC must be tie-wrapped to all trunk cables. The CBC connects the cabinet single-point ground block to the approved ground located nearest the telephone company owned protector block at the building entrance facility (Figure 3-59).

Note: The CBC is a conductor that is connected to ground and run adjacent to the pairs in an inside wiring cable. The mutual coupling between the bonding conductor and the cable pairs reduces potential differences in terminating equipment. The conductor consists of a No. 10 AWG wire that is tie-wrapped to the inside wiring cable.

APPROVED GROUNDS

An approved ground is an acceptable medium for grounding the building entrance protector, entrance cable shield, or single-point ground of electronic PBX equipment. If more than one type of approved ground is available on the premises, the grounds must be bonded together as required in Section 250-81 of the National Electrical Code.

Metal Frame of the Building — the metal frame of the building where it is effectively grounded by one of the following grounds: acceptable metallic water pipe, concrete encased ground, or a ground ring.

Acceptable Water Pipe — a metal underground water pipe, at least 1/2 inch in diameter, in direct contact with the earth for at least 10 feet. The pipe must be electrically continuous (or made electrically continuous by bonding around insulated joints, plastic pipe, or plastic water meters) to the point where the protector ground wire is connected. A metallic underground water pipe must be supplemented by the metal frame of the building, a concrete encased ground, or a ground ring. If these grounds are not available, the water pipe ground can be supplemented by one of the following types of grounds:

- Metal underground gas piping system—an electrically continuous metal underground gas piping system that is uninterrupted with insulating sections or joints and without an outer nonconductive coating
- Other local metal underground systems or structures—local underground structures such as tanks and piping systems

Equipment Room Hardware And Cabling Installation

- Rod and pipe electrodes—a 5/8 inch (solid rod) or 3/4 inch (conduit or pipe) electrode driven to a minimum depth of 8 feet
- Plate electrodes—expose a minimum of 2 square feet of metallic surface to the exterior soil.

Concrete Encased Ground — an electrode encased by at least 2 inches of concrete and located within and near the bottom of a concrete foundation or footing in direct contact with the earth. The electrode must be at least 20 feet of one or more steel reinforcing bars or rods 1/2 inch in diameter, or at least 20 feet of bare, solid copper, No. 4 AWG wire.

Ground Ring — a buried ground that encircles a building or structure at a depth of at least 2-1/2 feet below the earth's surface. The ground ring must be at least 20 feet of No. 2 AWG, bare, copper wire.

APPROVED FLOOR GROUNDS

Approved floor grounds are those grounds on the floor of a high-rise building suitable for connection to the ground terminal in the riser closet and to the PBX equipment single-point ground terminal. Such grounds may be one of the following:

- Building steel
- The grounding conductor for the secondary side of the power transformer feeding the floor
- Metallic water pipes
- Power feed metallic conduit supplying panel boards on the floor
- A grounding point specifically provided in the building for the purpose.

DANGER

If the approved ground or approved floor ground can only be accessed inside a dedicated power equipment room, then connections to this ground should be made by a licensed electrician

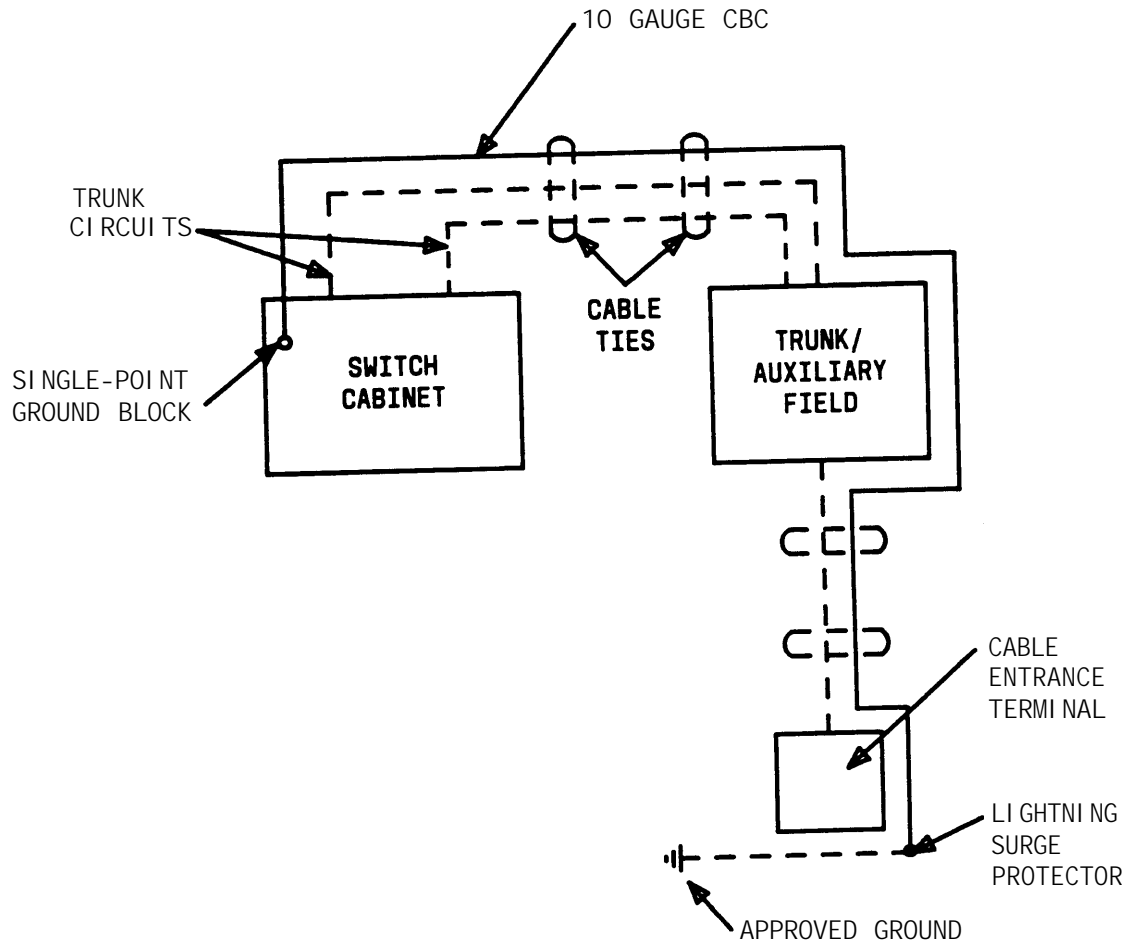


Figure 3-59. Installing the Coupled Bonding Conductor

Installing Connector Cables Between Switch Cabinet and the Cross-Connect Field

Before starting the following procedure, refer to the heading ***Routing Cables From Cabinet to Cross-Connect Field*** in this chapter. Also, all purple labels should have been previously installed as described in this chapter under the heading ***Labeling the Cross-Connect Field***.

1. Install "D" rings on the wall between the cable slack manager and the terminal/connecting blocks mounted on the cross-connect field.
2. Install a self-sticking port label on the back of each connector on the connector cable (Figure 3-43).

Note: Labels should be positioned so they will not be obscured by the cabinet connector retainers.

3. At the rear of the cabinet, connect one end of the connector cable to the assigned connector.
4. Dress the cable down the back of the cabinet, and through the cable slack manager to the cross-connect field.
5. At the cross-connect field, connect the other end of the cable to the assigned terminal/connecting block connector.
6. Store the cable slack in the cable slack manager.
7. Repeat previous Steps 2 through 6 until all cables are installed.

Installing Connector Cables Between Auxiliary Cabinet and Cross-Connect Field

Auxiliary equipment that connects to the cross-connect field can be mounted inside the auxiliary cabinet. The equipment connects to an ED-1E1443-10 (Group 1) intraconnection panel mounted in the auxiliary cabinet. This intraconnection panel consists of a 110-type 100-pair wiring block mounted inside the cabinet. Auxiliary equipment is connected to the 110-type wiring block. The wiring block is prewired to four 25-pair female connectors mounted on the outside rear skin of the cabinet.

Install connector cables between the auxiliary cabinet and cross-connect field as follows;

1. Install "D" rings on the wall between the cable slack manager and the terminal/connecting blocks mounted on the cross-connect field.
2. Install a self-sticking port label on the back of each connector on the B25A connector cable (Figure 3-43).

Note: Labels should be positioned so they will not be obscured by the cabinet connector retainers.

3. At the rear of the auxiliary cabinet, connect one end of the connector cable to the assigned connector.
4. Dress the cable down the back of the cabinet, and through the cable slack manager to the cross-connect field.
5. At the cross-connect field, connect the other end of the cable to the assigned terminal/connecting block connector.
6. Store the cable slack in the cable slack manager.
7. Repeat previous Steps 2 through 6 until all cables are installed.

Details for installing the equipment and making the connections to the cross-connect field are included in Chapter.

Station Wiring Design

General

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 in Chapter 4. Ordering information is not provided for station cables and information outlets. The ordering information for this equipment is available in the *Premises Distribution System Equipment and Supplies Catalog*.

Information Outlets

Information Outlets are 8-pin modular wall jacks. Most of the outlets are wired with push-on connections. Information outlets are also available that connect to a double modular plug-ended 4-pair station cable run from the cross-connect field, a site/satellite location, or an adapter.

Station Cables

For clarity in describing the wiring in this guide, 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/satellite location, or an adapter to the information outlets. The following types of station cable are available.

- Connectorized 25-pair station cable—This cable is used between the equipment room and the site/satellite locations or adapters. **For 110-type hardware**, use an A25D cable (male to male) between the equipment room and a satellite closet, and use a B25A cable (male to female) between the equipment room and a site closet or adapter. **For 66-type hardware**, use an A25B cable (female to female) between the equipment room and a satellite/site closet or adapter. The A25B cable is available with connectors on each end (double-ended), and also with a connector on only one end (single-ended). Use the single-ended cable when the leads are punched down on the connecting blocks.
- Connectorized multiple 25-pair station cable—This cable can be used between the equipment room and the site/satellite locations or adapters. This cable consists of individually sheathed 25-pair cables with a factory-installed 25-pair connector on each end. **For 110-type hardware**, use a male to female cable to connect between the equipment room and a site location or adapter, and use a male to male cable to connect between the equipment room and a satellite location. **For 66-type hardware**, use a female to female cable to connect between the equipment room and a

site/satellite location or adapter. Staggered-finger cables are recommended for all multiple 25-pair station cables. Staggered-finger cables are available in both double-ended and single-ended types.

- Bulk Cable—This cable is the same as the connectorized 25-pair cable or multiple 25-pair cable; however, the bulk cable is not equipped with connectors. Use this cable between the equipment room and satellite closets when both are equipped with punch-down type terminal/connecting blocks.
- Nonconnectorized 4-pair station cable—Use this cable when 4-pair station cables are to be field-terminated on the 110-type terminal blocks/66-type connecting blocks in the equipment room or satellite closet and the information outlets require push-on connections.
- Single modular plug-ended 4-pair station cable(Figure 3-60)—Use this cable 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-type terminal blocks/66-type connecting blocks in the equipment room or satellite closet and modularly connected to information outlets. The station cables are available in the following lengths:
 - 10 feet
 - 25 feet
 - 50 feet
 - 75 feet
 - 100 feet
 - 150 feet
 - 200 feet.
- Double modular plug-ended 4-pair station cable—Use this cable 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).

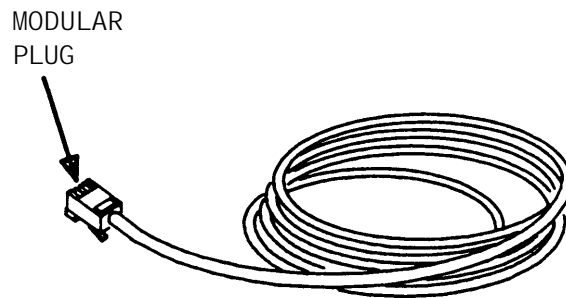


Figure 3-60. 4-Pair Single Modular Plug-Ended Station Cable

Note: If more than 200 feet of 4-pair station cable is required, a 451A in-line adapter (double-ended modular female connector) is attached to the cable and a second 4-pair cable of the required length is plugged into the adapter (Figure 3-61).

451A ADAPTER ORDERING INFORMATION

Color	Comcode
Gray	103 942 272
Ivory	103 786 240

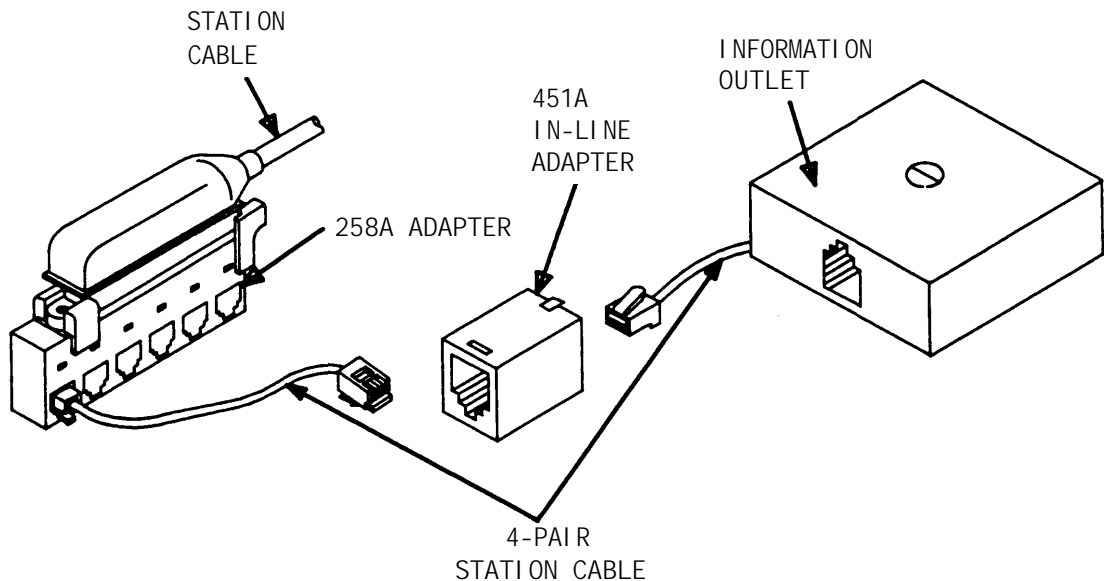


Figure 3-61. Example of Extending 4-Pair Station Cables

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 power adapters and 4-pair station cables.

258A AND BR2580A Adapters

The 258A and BR2580A adapters (Figure 3-62) plug into a 25-pair female cable connector. These adapters divide the 25-pair cable into six 4-pair (modular jack) circuits. See **Adjunct Powering** in Chapter 4 for details.)

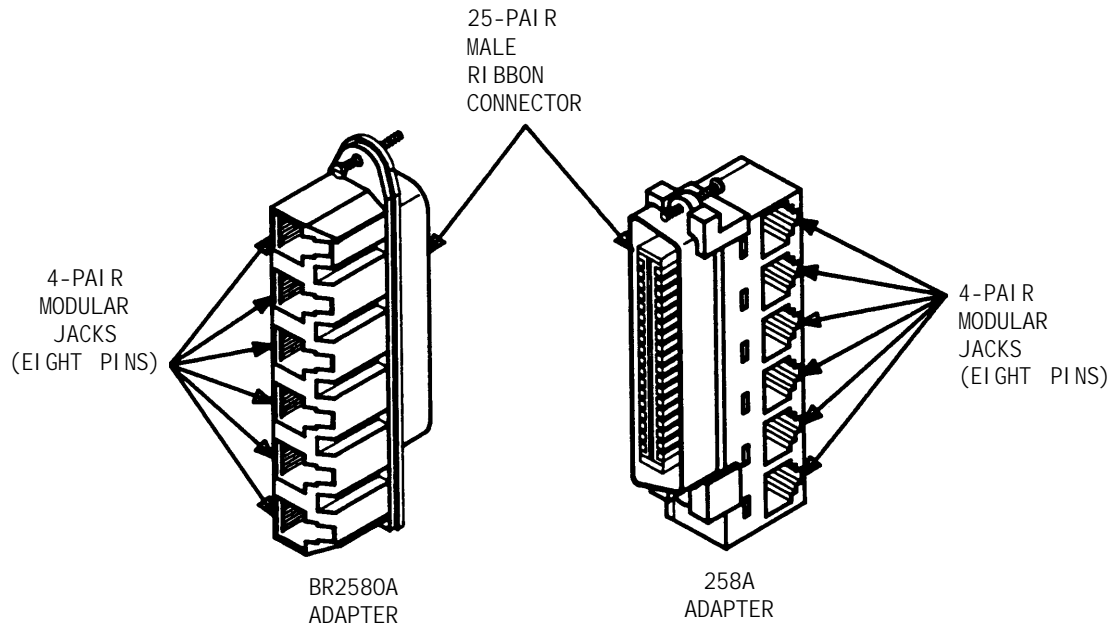


Figure 3-62. 258A and BR2580A Adapters

356A ADAPTER

The 356A adapter (Figure 3-63) plugs into a 25-pair female cable connector. The 356A adapter divides the 25-pair cable into eight 3-pair circuits. Although the circuits are 3-pair, the adapters modular jacks will accept the 8-pin modular plug used on the 4-pair station cable. See **Adjunct Powering** in Chapter 4 for details.)

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

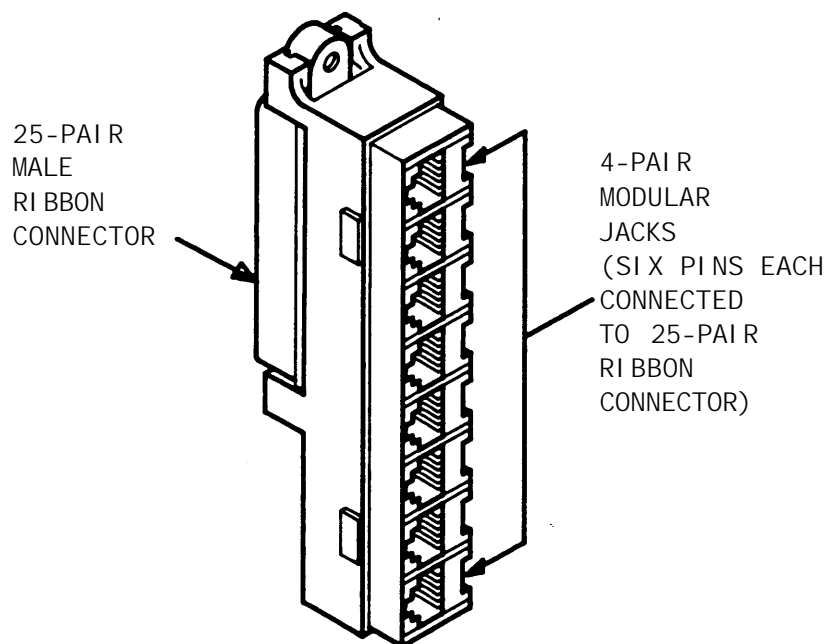


Figure 3-63. 356A Adapter

ZD8AJ ADAPTER

Use the ZD8AJ adapter to connect a MET line cord to an information outlet. The adapter interchanges pairs 3 and 4 to correspond with the pair assignments for the MET. The MET line cord plugs into the adapter, and then the adapter is plugged into an 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/66-type connecting blocks.

Satellite Locations Using 110-Type Hardware

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:

LI 110PE1-300CT—connectorized on both the white and blue fields

- 110PE1-300CT/FT—connectorized on the white field and field-terminated on the blue field
- 110PE1-300FT—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—connectorized on the white field and field-terminated on the blue field
- 110PE1-900FT—field-terminated on both the white and blue fields.

Satellite Locations Using 66-Type Hardware

The 3-pair station circuits from the equipment room are terminated on a 66-type connecting block in the satellite closet white field, and then cross-connected to a 66-type connecting block in the blue field. The 4-pair station circuits from the information outlets are terminated on the satellite closet blue field. The following 66-type connecting blocks can be used in a satellite closet;

- 66M1-50 connecting block
- 157B connecting block
- 154A-type backboard
- 166A-type backboard

Station Circuit Distribution From Equipment Room

The following information explains the station circuit distribution from the equipment room to the information outlets for new wiring installations. Connection diagrams are provided to show the options for running and connecting the station cables.

If most of the telephones/voice terminals that require remote powering are within 250 feet 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 from the equipment room to satellite locations. Then, the 4-pair station circuits are run from the satellite locations 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 3-64. The 4-pair station cables connect the adapter to the information outlets.

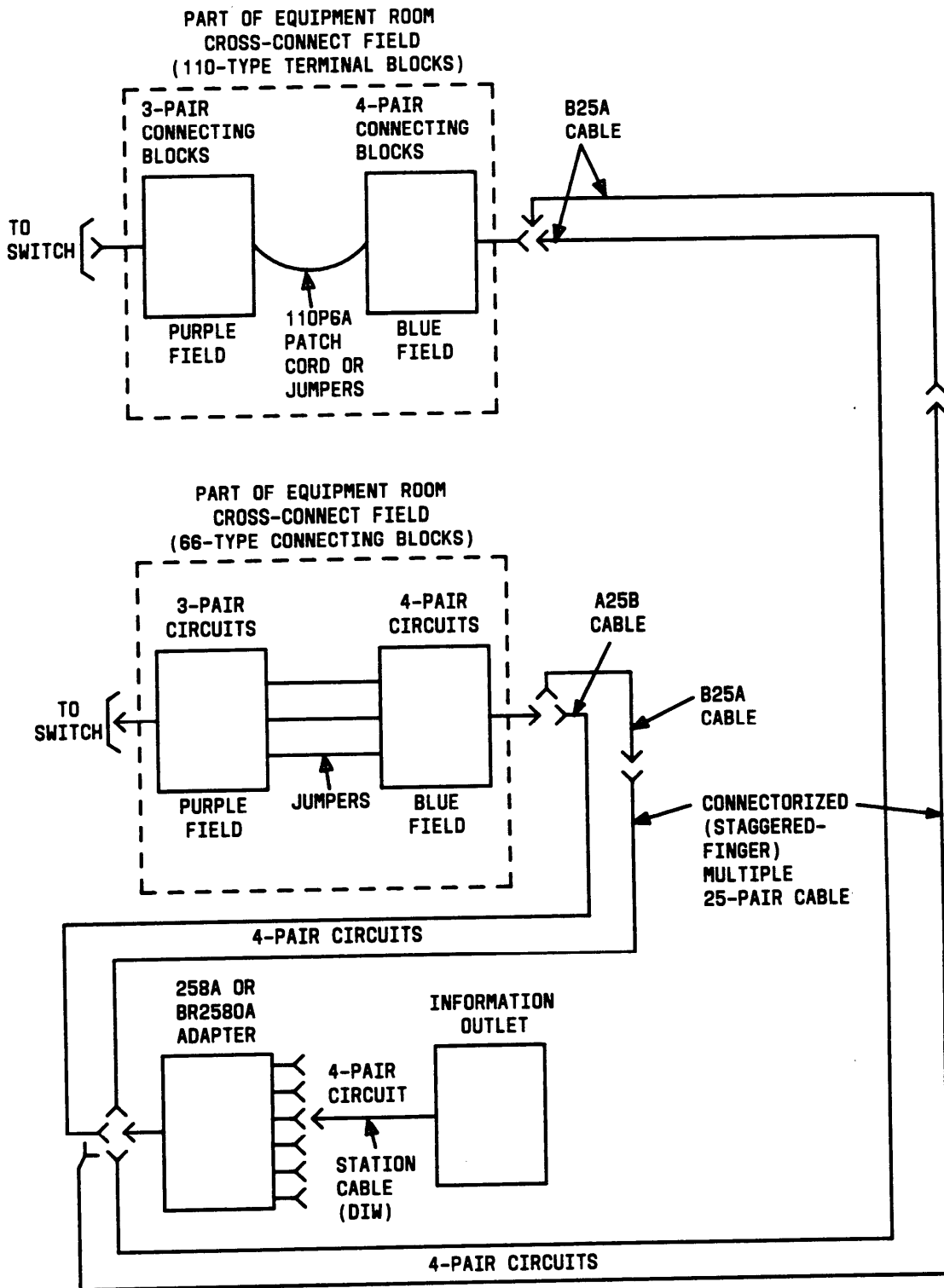


Figure 3-64. 4-Pair Circuit Distribution and Connectivity From Equipment Room Cross-Connect Field

The 4-pair 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 (Figure 3-65). The station cables must be field-terminated on the 110-type terminal blocks/66-type connecting blocks. If **110-type terminal blocks** are used with a modular plug-ended station cable, an adapter can be connected directly to the 110-type terminal block connectors (Figure 3-66).

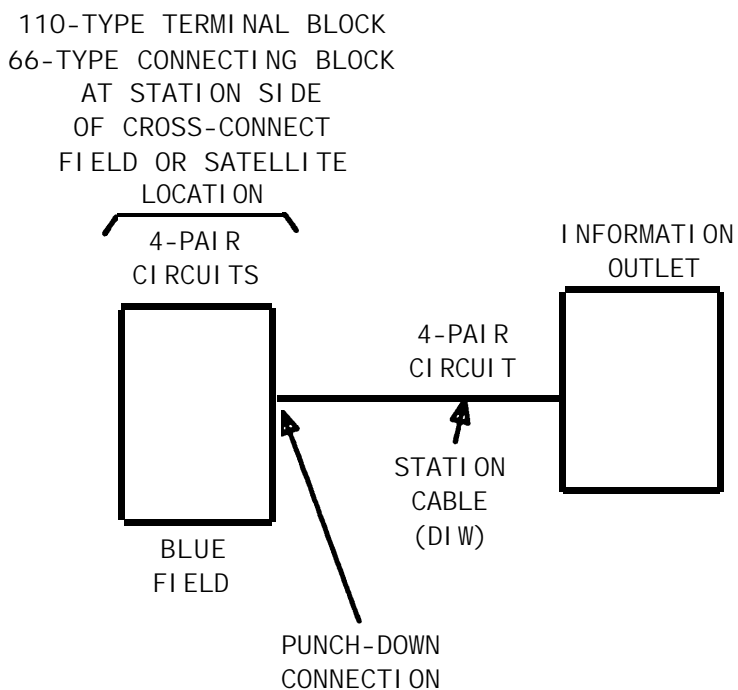


Figure 3-65. 4-Pair Home Run to Equipment Room or Satellite Location

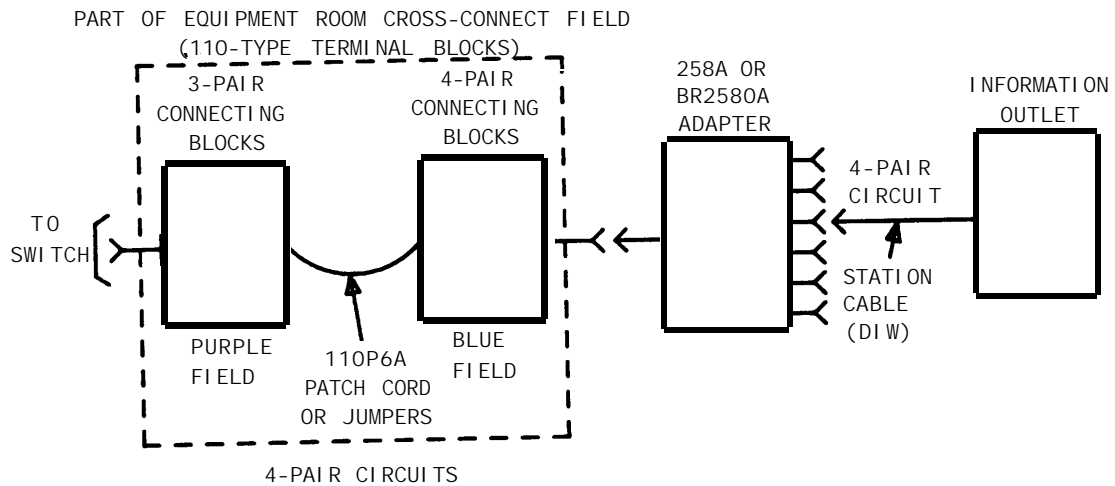
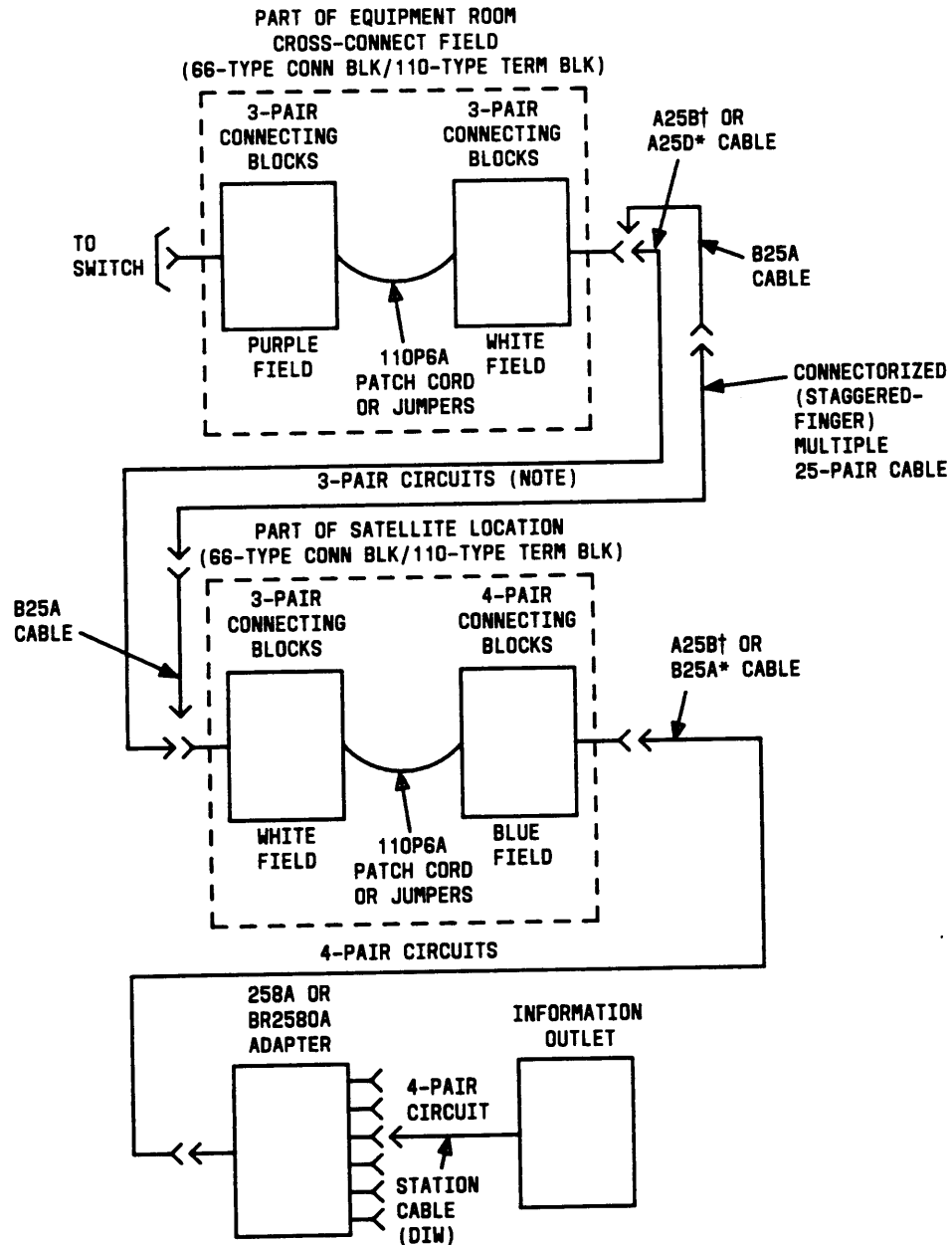


Figure 3-66. Example of 4-Pair Home Run to Equipment Room or Satellite Location Using Modular Plug-Ended Station Cable

3-Pair to 4-Pair Station Circuit Distribution

Figures 3-67 and 3-68 show the 3-pair circuit distribution from an equipment room cross-connect field to a satellite location using 110- and 66-type hardware, respectively. Four-pair circuits are distributed from the satellite location to the information outlets.

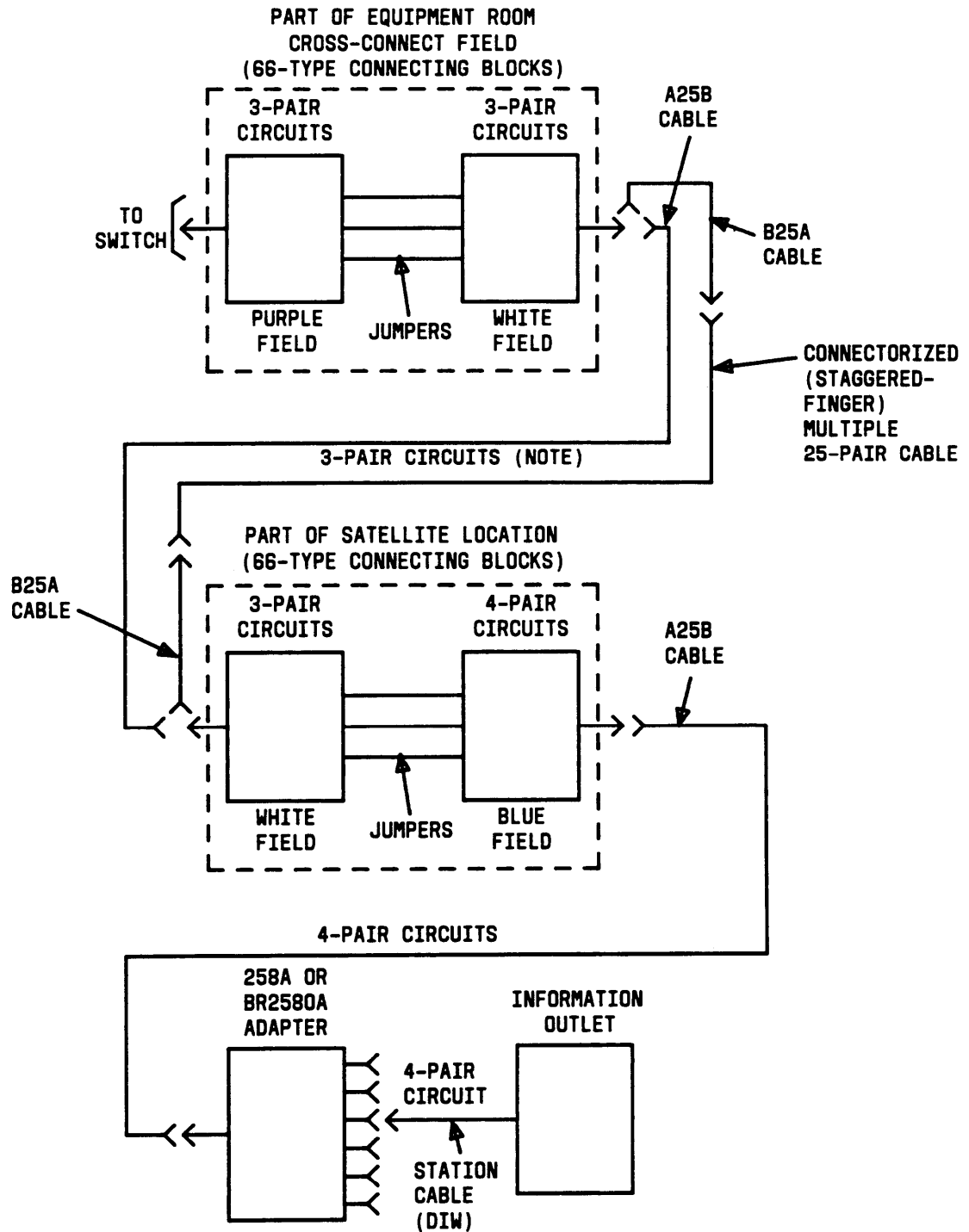


* USED WITH 110-TYPE TERMINAL BLOCKS
 † USED WITH 66-TYPE CONNECTING BLOCKS

NOTE:

1. IF FIELD TERMINATED 66-TYPE CONNECTING BLOCKS OR 110-TYPE TERMINAL BLOCKS ARE USED AT THE EQUIPMENT ROOM AND SATELLITE LOCATION, BULK CABLE MAY BE USED TO RUN THE 3-PAIR CIRCUITS.

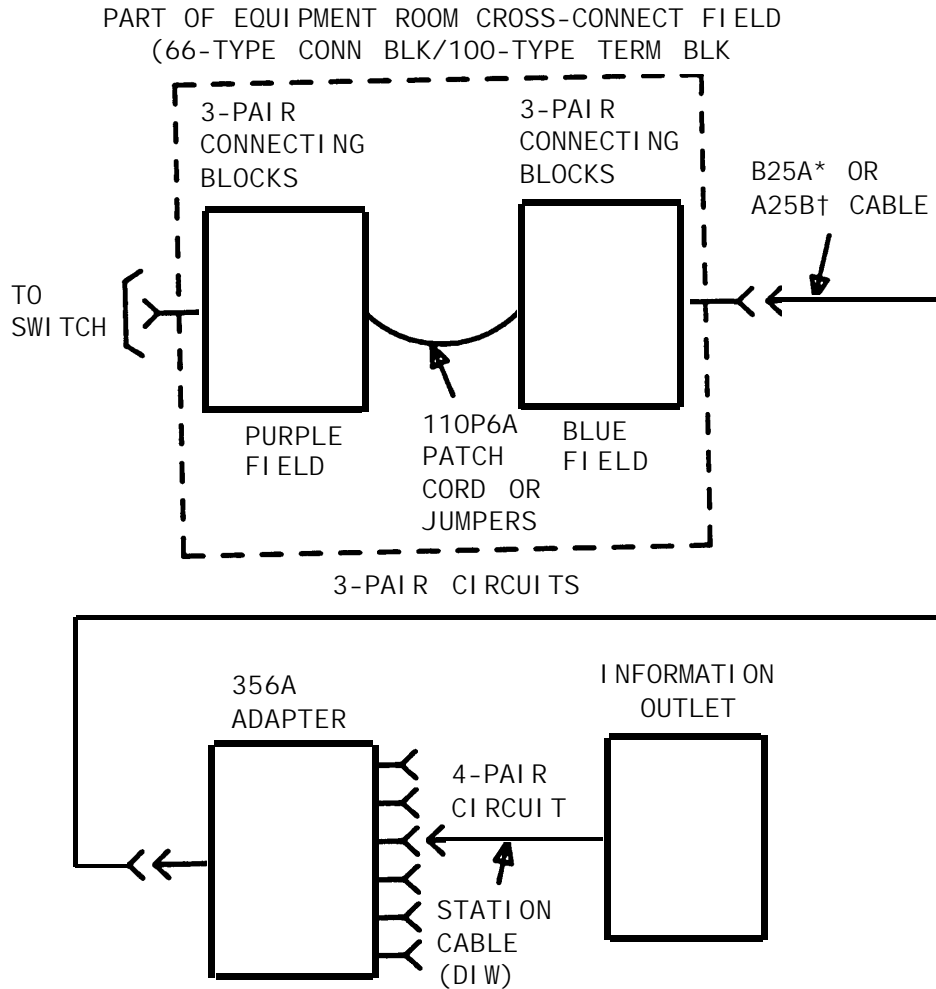
Figure 3-67. 3-Pair to 4-Pair Circuit Distribution and Connectivity From Equipment Room Using 110-Type Hardware



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 3-68. 3-Pair to 4-Pair Circuit Distribution and Connectivity From Equipment Room Using 66-Type Hardware

Three-pair circuits can also be run directly from the equipment room cross-connect field to a 356A adapter as shown in Figure 3-69. Four-pair station cables connect the adapter to the information outlets. Four-pair station cables can be run directly from a satellite location to the information outlets as previously described (Figure 3-65 and 3-66).



* USED WITH 110-TYPE TERMINAL BLOCK
 † USED WITH 66-TYPE CONNECTING BLOCK

Figure 3-69. 3-Pair to 4-Pair Circuit Distribution and Connectivity From Equipment Room Using a 356A adapter

Table 3-I provides detailed wiring information for the 25-pair cables, the adapters, and the information outlets.

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

Table 3-I. System Wiring

Term. No.	25-Pair Cable					4-Pair Cable		
	Voice 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	V1T			W-BL	26	W-BL	1
	R	V1 R			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/V3 Only

CHAPTER 3. EQUIPMENT ROOM DESIGN

Table 3-I. System Wiring (Contd)

Term. No.	25-Pair Cable					4-Pair Cable		
	Voice 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	V1T			BK-G	38	W-BL	1
	R	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-	Y-BL	41	W-BR	7
		P+		P+	BL-Y	16	BR-W	8
5	T	V1T			Y-O	42	W-BL	1
	R	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-	Y-S	45	W-BR	7
		P+		P+	S-Y	20	BR-W	8
6	T	V1T			V-BL	46	W-BL	1
	R	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-	V-BR	49	W-BR	7
		P+		P+	BR-V	24	BR-W	8
Spare						50		
						25		

* R1V2/V3 Only

Layout

Locating Information Outlets

The customer or marketing representative must provide floor plans showing the information outlet locations and types (flush- or surface-mounted) required. The floor plans must also show a complete overview 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/satellite locations must be easily accessible and contain ac power receptacles.

Adapter Requirements

One 258A/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.

Hardware Requirements

Hardware requirements are the same as for the equipment room.

Sizing 4-Pair Station Cables

Use the scale of the floor plan to determine the approximate length of the station cables required per the standard *Premises Distribution Systems* wiring concepts.

Sizing 25-Pair and Multiple 25-Pair Station Cables

Use the scale of the floor plan to determine the approximate length of each 25-pair station cable. The 25-pair station cables must be selected and properly sized to make maximum use of the hardware at the equipment room or satellite location.

When using 110-type hardware, use 25-pair B25A cables 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 use when multiple 25-pair cables are to be used between the equipment room or satellite location and the adapters. B25A cables are required at the equipment room or satellite location to connect the staggered-finger cables to the 110-type terminal blocks.

When using 66-type hardware, use 25-pair A25B cables to connect adapters directly to the equipment room cross-connect field or satellite location. Staggered-finger 25-pair cables (double- or single-ended), are recommended for use when multiple 25-pair cables are to be used between the equipment room or satellite location and the adapters. 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. Then, using the minimum size cable requirement, round up the cable size requirement to the next highest available cable bundle size. This will provide additional pairs for growth and compensate for the fact that every twenty-fifth pair in a cable is not used.

4-Pair Station Cable Circuits

To determine the size of station cables containing 4-pair circuits, find out how many information outlets are served by the equipment room cross-connect field or satellite location cross-connect field. Multiply the number of information outlets by 4 (see Note). Then, using the minimum size cable requirement, round up the cable size requirement to the next highest available cable bundle size.

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

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CHAPTER 4. STATION WIRING

Installation of Station Wiring And Associated Hardware

Installing Station Cables

The station labels shown in Figure 4-1 must be installed on each end of a 25-pair station cable. The labels are provided with the 201A cable/jack station labels (Figure 3-42). The labels must match the labels that were previously installed at the cross-connect field. For example, if the cable plugs into a 110-type terminal block/66-type connecting block connector with jacks labeled 1 through 6, the cable label must be numbered 1 through 6 (see Note).

Note: If cable/jack station labels are not available, the information can be written on the cable connector with a felt-tipped pen.

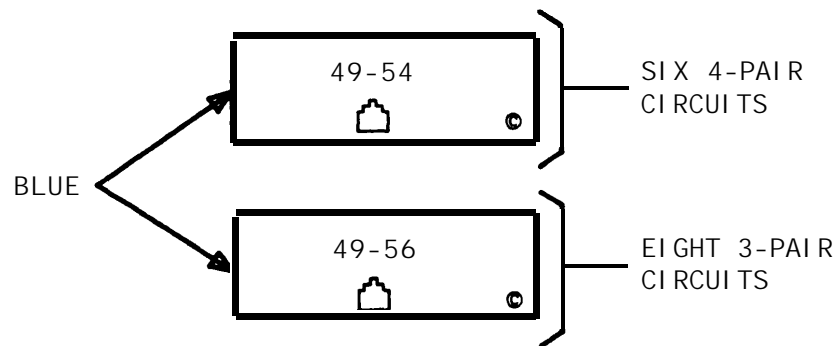


Figure 4-1. 25-Pair Station Cable Labels

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 (**for 66-type connecting blocks**) or A25D (**for 110-type terminal blocks**) 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-type terminal block/66-type connecting block connectors. Bulk cables can also be used to run from the equipment room to the satellite locations if field-terminated 110-type terminal blocks/66-type connecting blocks are used.

If cables are to be connected to site locations or adapters, A25B (**for 66-type connecting blocks**) or B25A (**for 110-type terminal blocks**) cables connect to the terminal blocks at the equipment room. The B25A/A25B cables are run to the site locations or adapters or connect to the multiple staggered-finger station cables (Figure 4-2). The staggered-finger station cables are run to the site locations or adapters.

Installation of Station Wiring And Associated Hardware

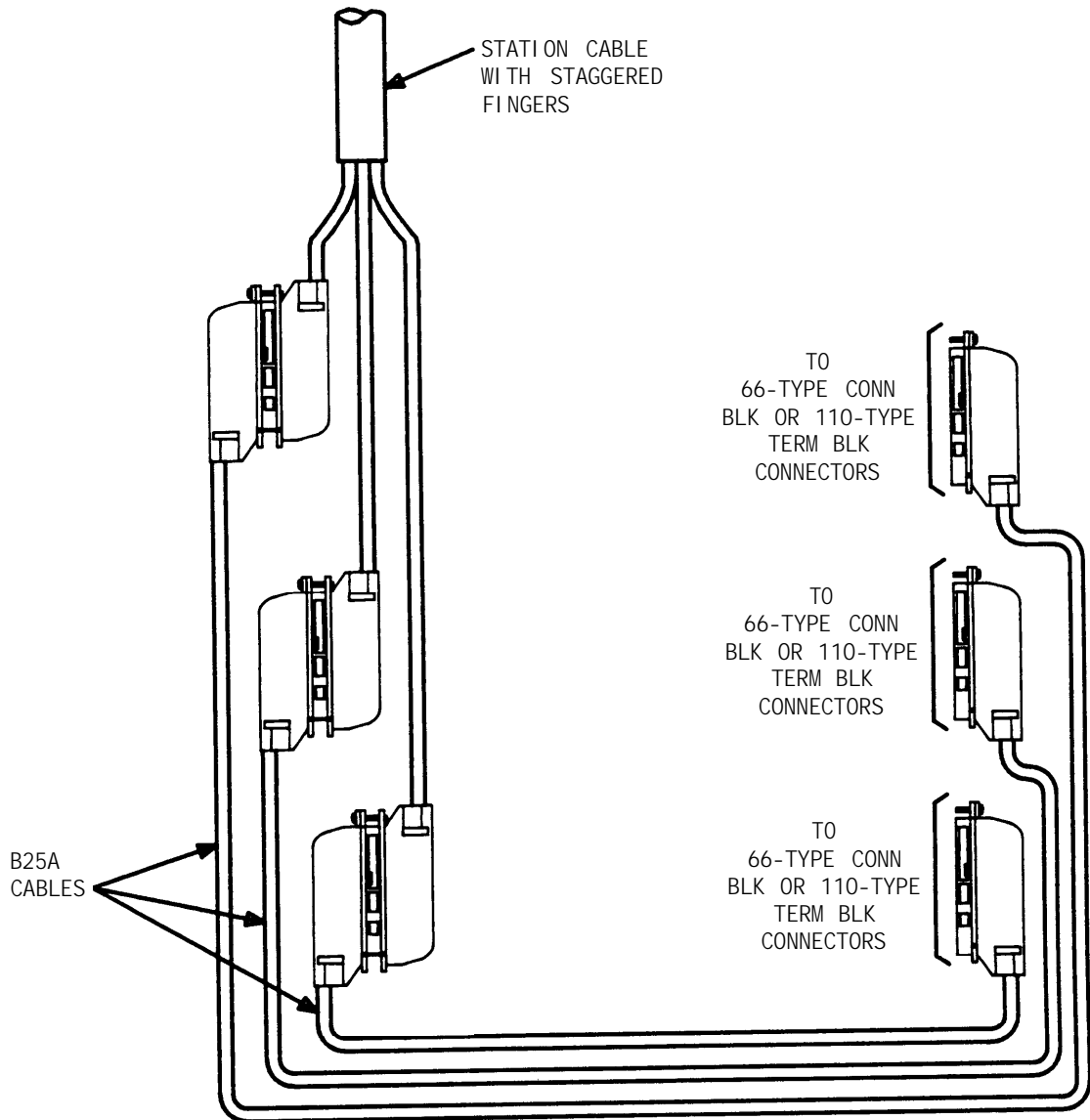


Figure 4-2. Multiple 25-Pair Station Cable With Factory-Installed Staggered Fingers Connected to a 110-Type Terminal Block/66-Type Connecting Block

Installing 110-Type Hardware at Satellite Locations

To install 110-type terminal blocks at a satellite location, use the same installation procedure described in Chapter 3 in the section **Installing the Cross-Connect Field**. Figure 4-3 shows typical satellite location layouts.

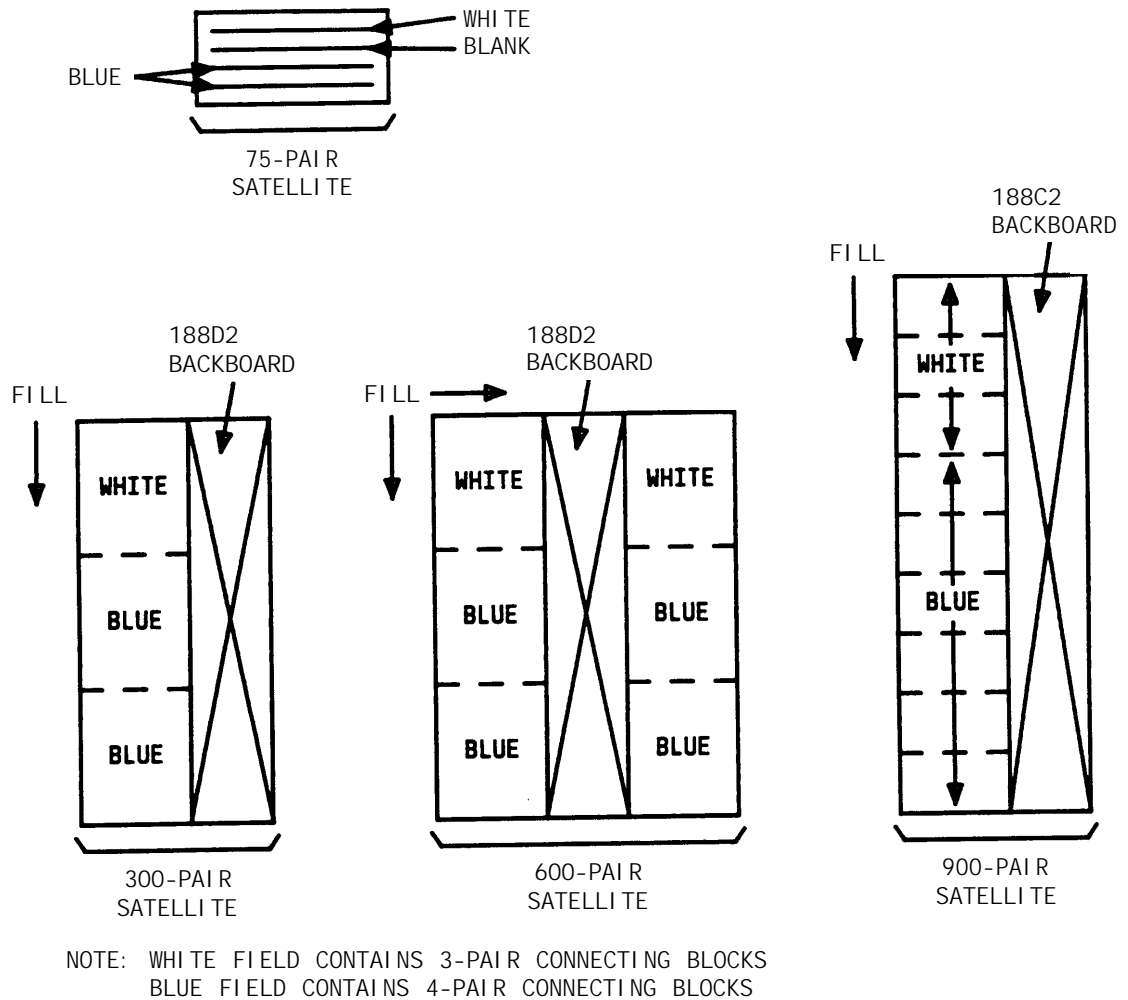


Figure 4-3. Typical Satellite Location Layouts

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 4-3 shows the fill directions for the blue and white fields at a satellite location. Use the labels described in Chapter 3 in the section ***Labeling the Cross-Connect Field*** (with the satellite symbols) at a satellite location.

Figure 4-4 shows the 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** section in this chapter for details.

CHAPTER 4. STATION WIRING

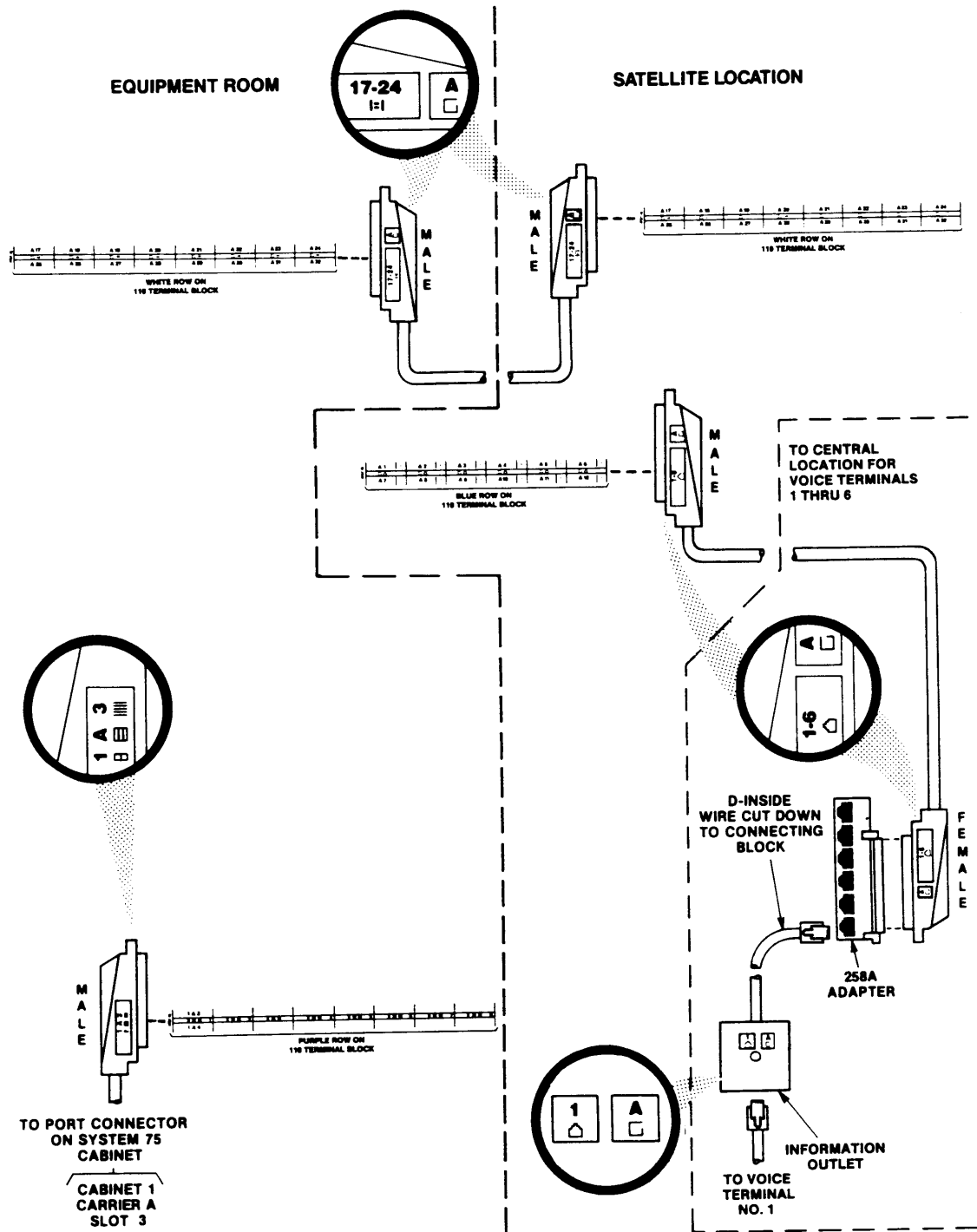


Figure 4-4. 3-Pair to 4-Pair Wiring Labeling From Equipment Room to Information Outlet

———— Installation of Station Wiring And Associated Hardware

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 4-5 shows the labeling scheme for 4-pair circuits from the equipment room to the information outlets. The labeling scheme for 3-pair circuits from the cross-connect field to a satellite location is discussed in **Installing 110-Type Hardware at Satellite Locations** section in this chapter.

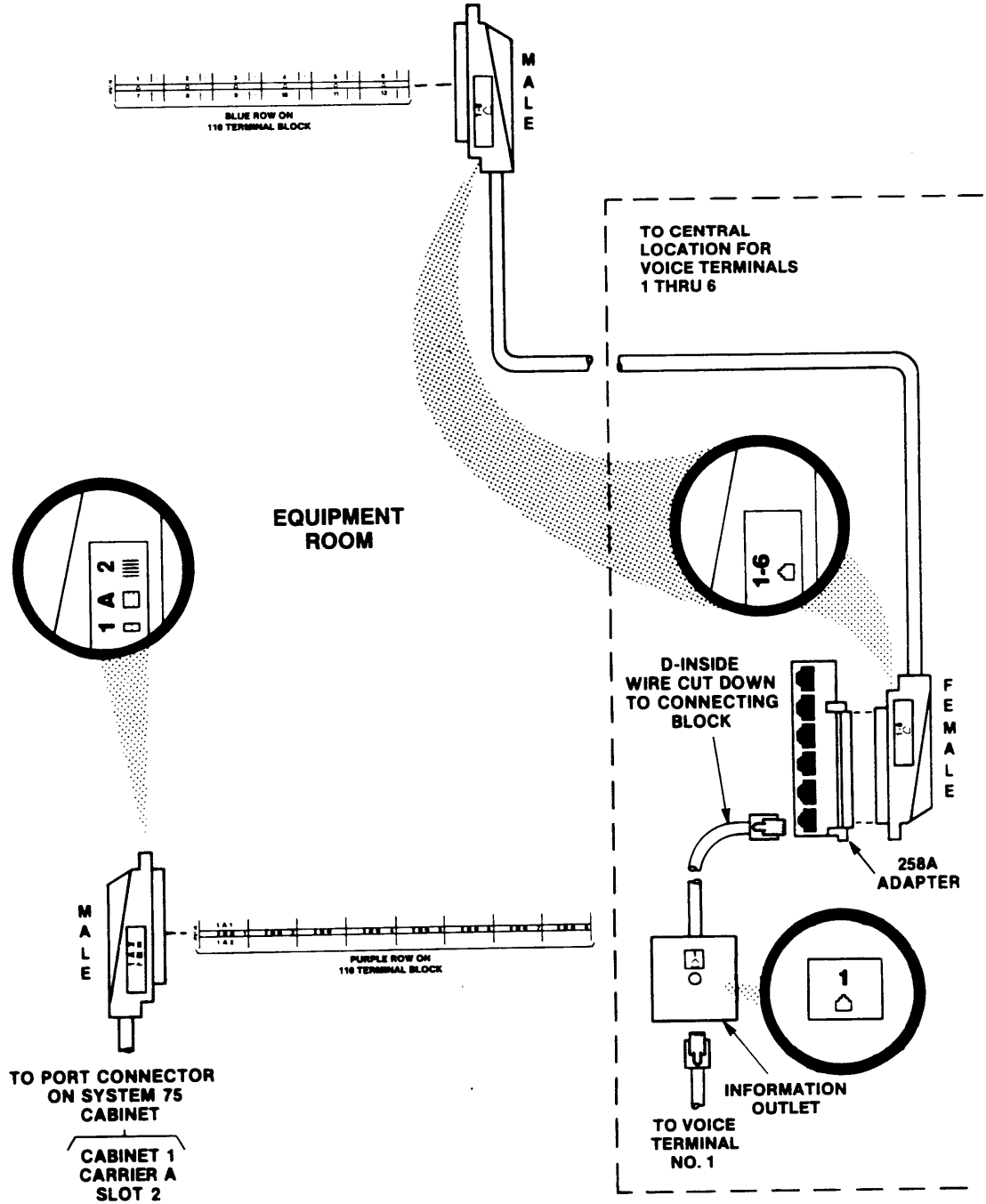


Figure 4-5. 4-Pair Station Wiring Labeling From Equipment Room to Information Outlet

Installing 66-Type Hardware at Satellite Locations

To install 66-type connecting blocks at a satellite location, use the installation procedure described in Chapter 3 in the section **Installing the Cross-Connect Field**. Figure 4-6 shows a typical satellite location layout.

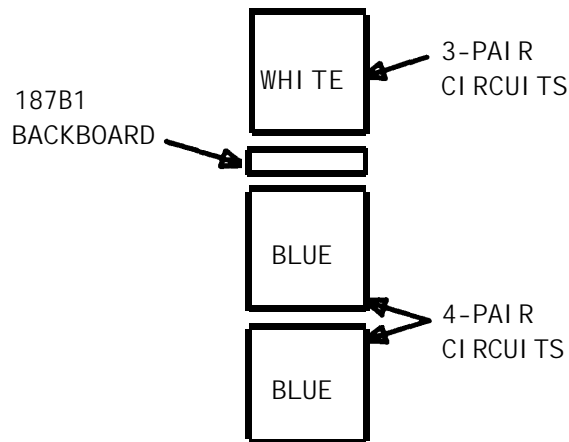


Figure 4-6. Typical Satellite Location Layout Equipped With 66-Type Connecting Blocks

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 4-6 shows the fill direction for the blue and white fields at a satellite location. Lead designations are written on the connecting blocks using a permanent felt-tipped pen as described in Chapter 3 in the section **Labeling the Cross-Connect Field**.

Installing 4-Pair Station Cables

The 4-pair station cables can either be plugged into adapters or field-terminated at the cross-connect field and then run to the information outlets.

Installing Information Outlets

Install the information outlets (Figure 4-7) at the designated telephone/voice terminal locations. See Table 3-1 for connection information.

Installation of Station Wiring And Associated Hardware

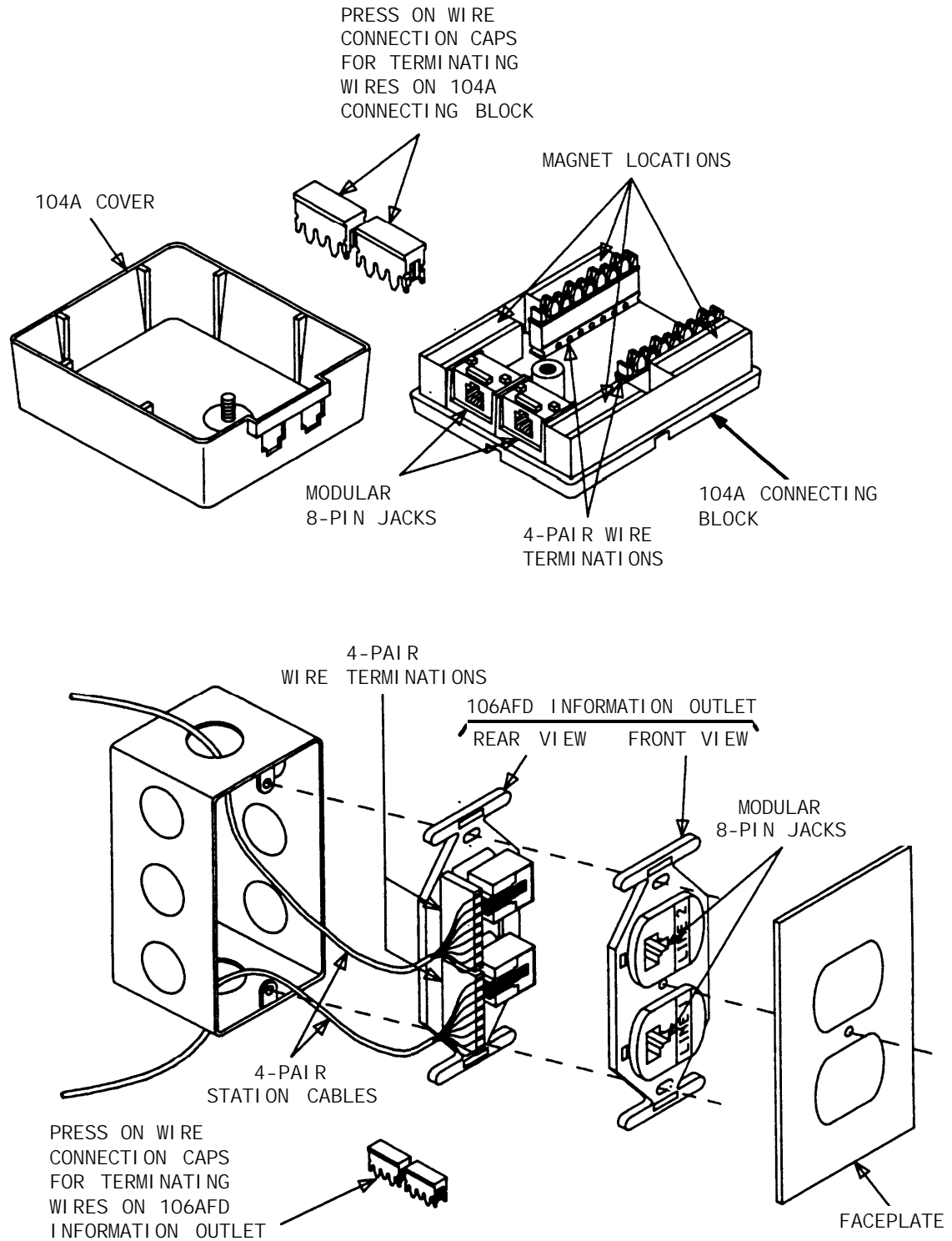


Figure 4-7. Typical 8-Pin Modular Information Outlets

Adjunct Powering

Adjunct Powering From the Equipment Room and Satellite Locations

Adjunct power is provided at cross-connect fields or satellite locations when 4-pair circuits are required for station wiring. Figure 4-8 shows the connection arrangement at the cross-connect field. The power adapter cord is routed from the connecting block the power supply.

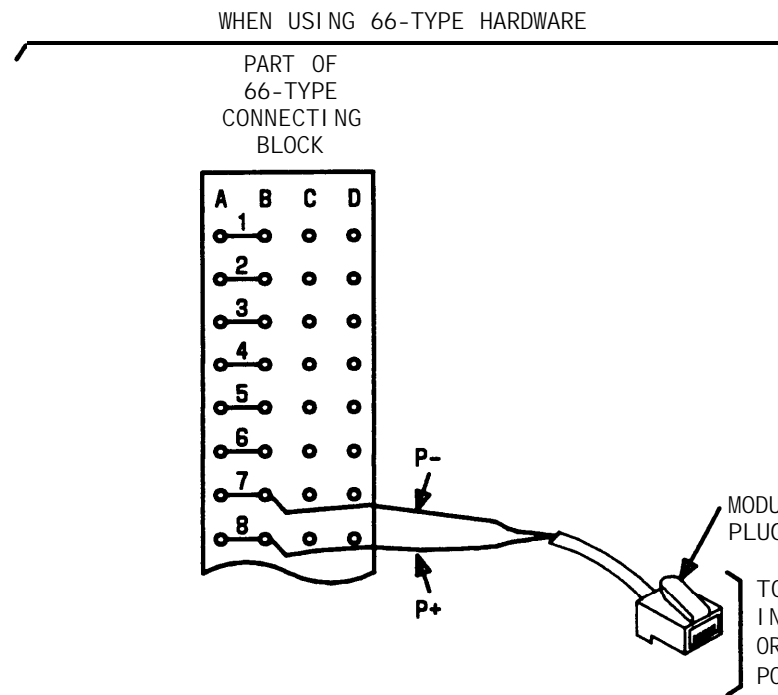
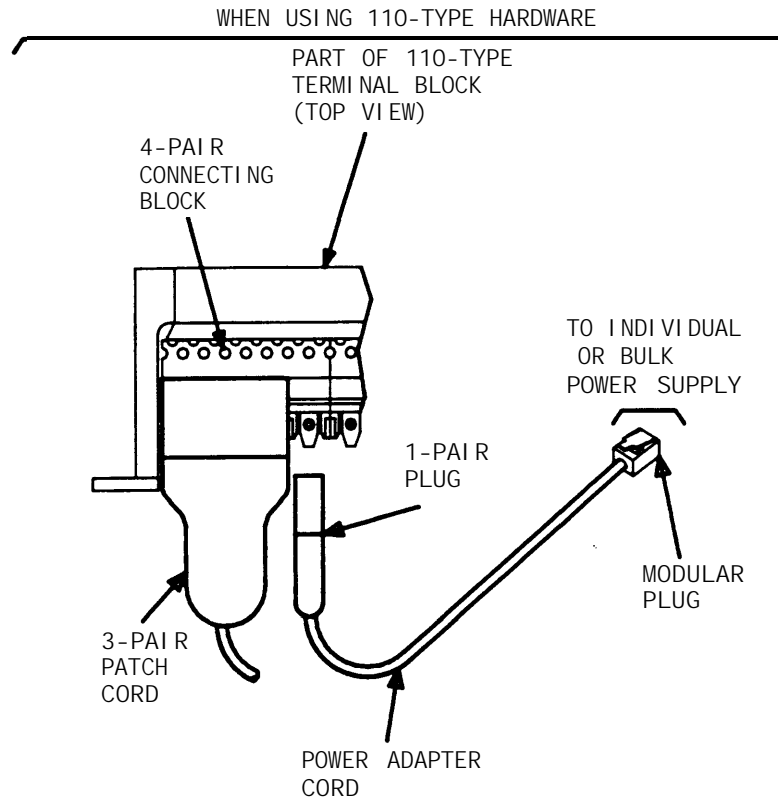


Figure 4-8. Remote Powering From the Equipment Room or Satellite Location

Adjunct Powering From Site Locations

Adjunct power can be provided through an adapter located in a site closet. Adjunct power is required when the length of the 4-pair station wiring from the equipment room or satellite location is more than 250 feet or when the 3-pair station wiring is run from the cross-connect field to a 356A adapter.

Figure 4-9 shows connections for the 258A and 356A adapters. The 400B2 adapter and D6AP power cord provide power on the fourth pair of the 4-pair station cable. The D6AP power cord connects to an individual or a bulk power supply. The D6AP power cord is available in 7-, 14-, and 25-foot lengths.

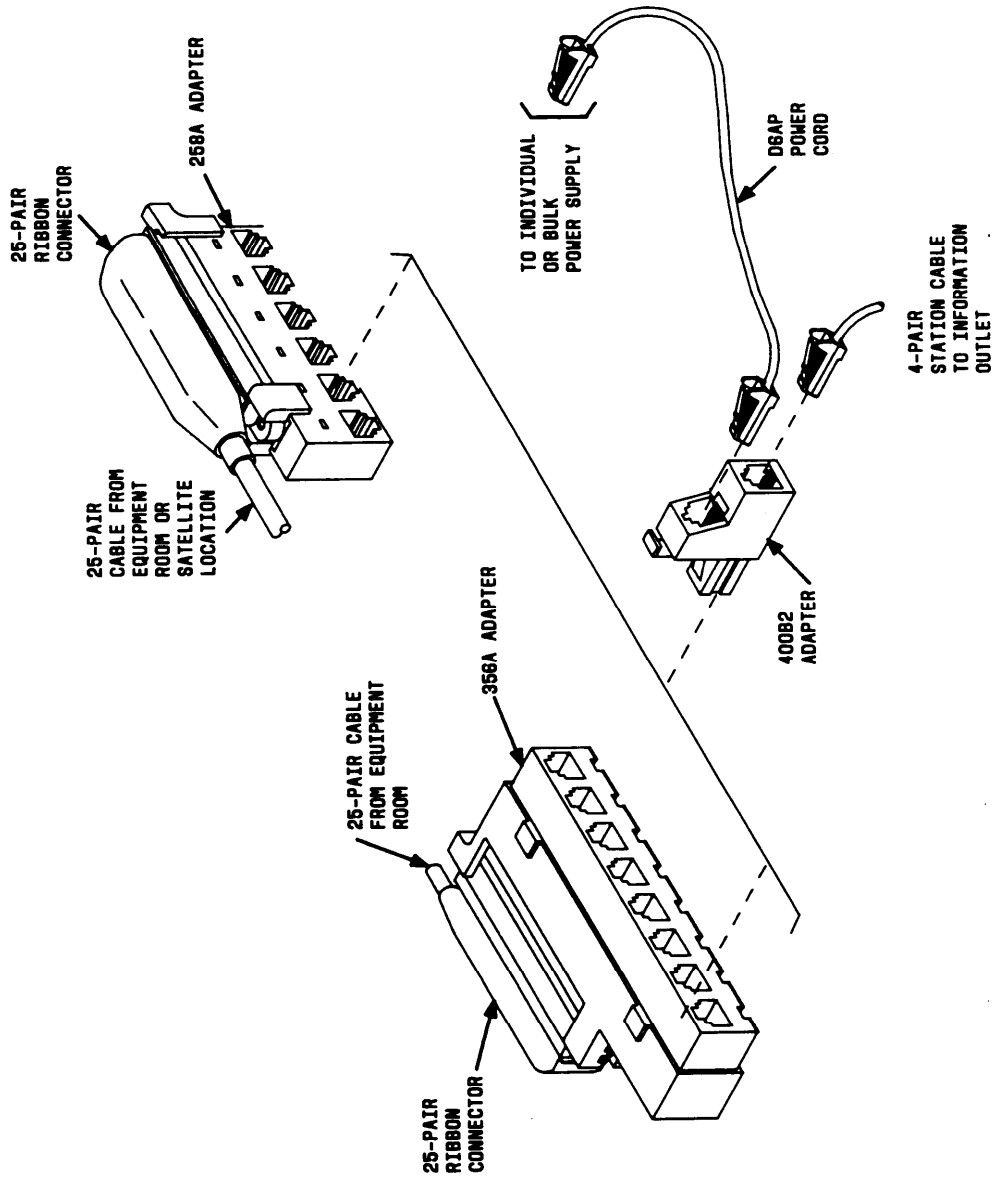


Figure 4-9. Remote Powering From a 258A/356A Adapter in a Site Closet

Adjunct Powering From Information Outlets

Adjunct powering from the information outlet is described in the *DEFINITY™ Communications System and System 75, and System 85, Terminals and Adjuncts, Installation and Tests* (555-015-104). An individual power supply is the only source of local power at an information outlet. Figure 4-10 shows typical connections at an information outlet using the 400B2 adapter and a D6AP power cord.

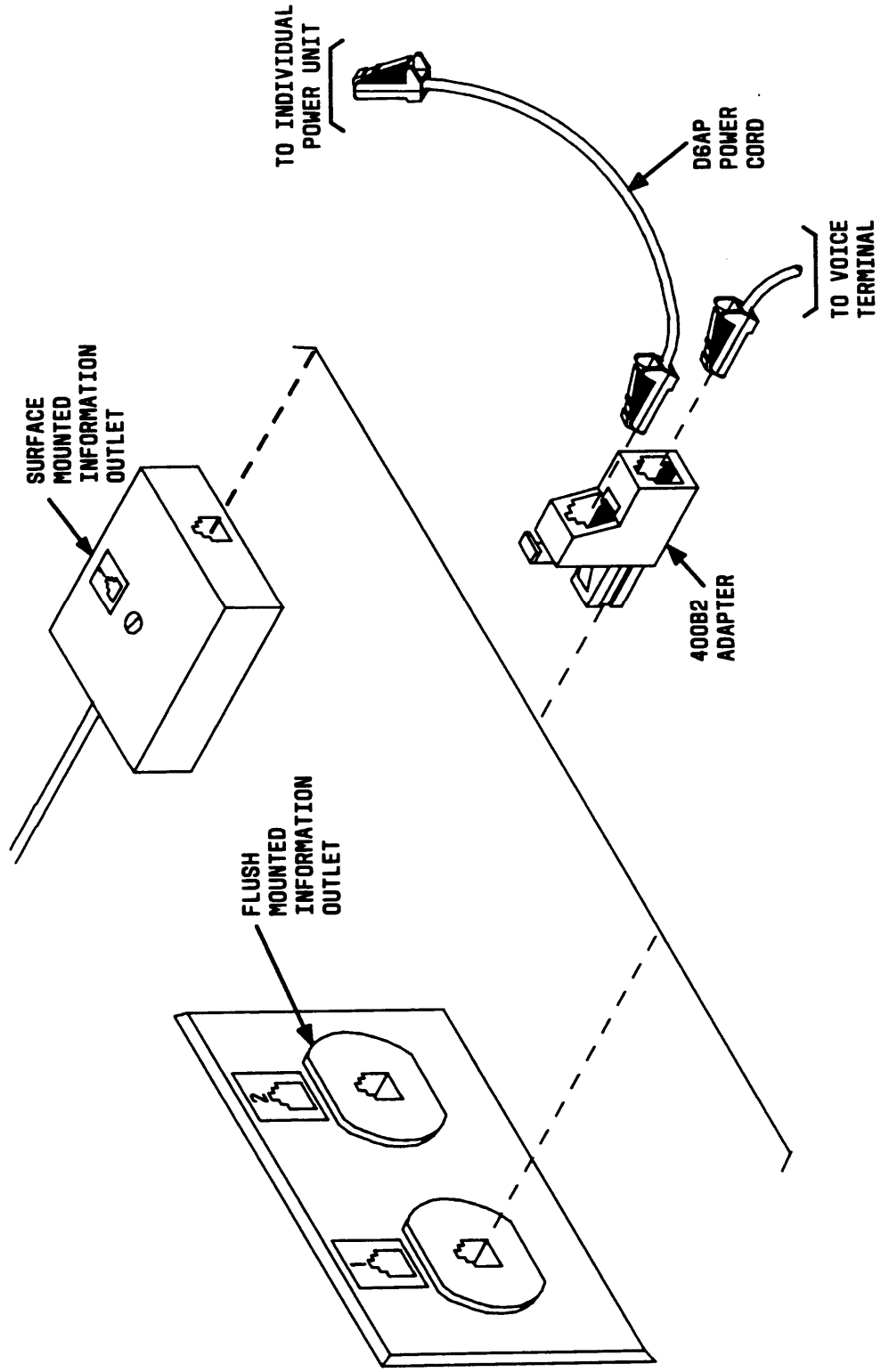


Figure 4-10. Typical Local Powering From a 400B2 Adapter—Flush/Surface-Mounted Information Outlet

Patch Cord/Jumper Installation And Administration

Before starting the patch cord installation, obtain a copy of the Port Assignment Record forms (Figure 4-11) from the customer or marketing representative. These forms contain the port assignments and identify the extension numbers (**Terminal No.**) of the telephones/voice terminals. Enter the jack assignments at the equipment room and indicate if adjunct power is required and where it is provided (cross-connect field, site/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 (Figure 4-12), 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 (Figure 4-13), 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.

Page _____

PORT ASSIGNMENT RECORD

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

* To be completed by installation technician

Figure 4-11. Port Assignment Record Form

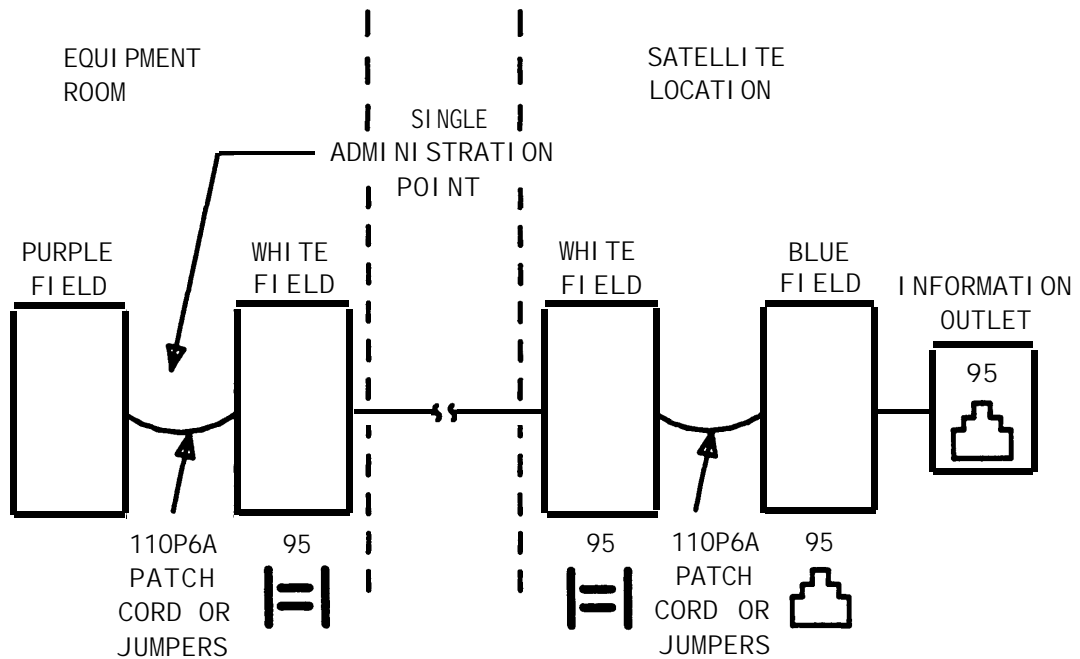


Figure 4-12. 1-Point Administration

Equipment Room Cross-Connect Field

The following guidelines and procedures are provided for installing and removing patch cords/jumper wires, and power adapter cords. Administration details for changing system translations using the System Access Terminal (SAT) are included in the *System 75 And System 75 XE—Administration (555-200-500)*.

Installing Patch Cords/Jumper Wires

The *DEFINITY™ Communications System and System 75, and System 85, Terminals and Adjuncts, Installation and Tests (555-015-104)* contains installation procedures for telephones/voice terminals and adjuncts. The telephones/voice terminals and adjuncts are installed before the patch cords/jumper wires, and power adapter cords are connected.

The shortest patch cord/jumper wire should always be used to make a cross-connection.

Patch Cord/Jumper Installation And Administration

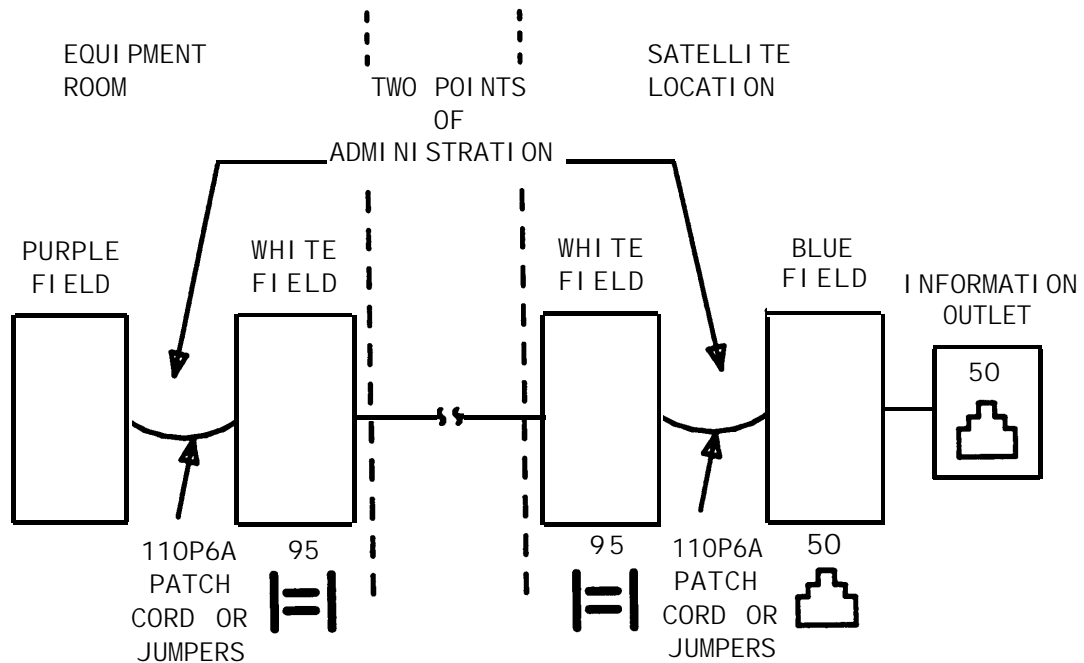


Figure 4-13. 2-Point Administration

To install a patch cord/jumper wire, proceed as follows:

1. At the blue or white field, locate the jack number associated with the voice terminal location.
2. Connect one end of the patch cord/jumper wire to the terminal/connecting block associated with this jack (see Note).

Note: An impact tool or 714B tool (**for 66-type hardware only**) is required when installing jumper wires.

3. At the purple field, locate the port jack number identified on the Port Assignment Record.
4. Route the previously connected patch cord/jumper wire to the terminal/connecting block associated with the port jack.
5. Connect patch cord/jumper wire to the appropriate terminal on the terminal/connecting block.
6. Update the Port Assignment Record (Figure 4-11).

7. Repeat the procedure until all patch cords/jumper wires are installed.
8. Update system translations.

Removing Patch Cords/Jumper Wires

When it is necessary to remove a patch cord/jumper wire because a telephone/voice terminal is being removed, disconnect the telephone/voice terminal at the information outlet. Then, remove the patch cord/jumper wire from the cross-connect field. This gives a visual indication of the available terminal/connecting block terminals associated with port and station jacks. Do not leave a partially or totally disconnected patch cord/jumper wire intermingled with the remaining patch cords/jumper wires.

When it is necessary to rearrange patch cords/jumper wires because of telephone/voice terminal moves, remove the patch cord/jumper wire and reinstall it even if only one end of the cross-connection is affected. This reduces entanglement and helps to assure a neat appearance.

To remove a patch cord/jumper wire, proceed as follows:

1. On the Port Assignment Record (Figure 4-11), locate the terminal/connecting block associated with the jack assignments at the purple and white or blue fields.
2. At the purple field, disconnect the patch cord/jumper wire (see Note).

Note: An impact tool or 724A tool (**for 66-type hardware only**) is required when removing jumper wires.

3. Lift the patch cord/jumper wire upward, taking up slack, until the patch cord/jumper wire can be located by its movement in the patch cord trough/187B1 backboard.
4. Trace the other end to its connection point at the blue or white field and disconnect the patch cord/jumper wire.
5. Remove the patch cord/jumper wire from the patch cord trough/187B1 backboard.
6. Update the Port Assignment Record (Figure 4-11).

7. Update system translations.

Installing and Removing Power Adapter Cords

The power adapter cords are installed as described previously in the **Adjunct Powering** section of this chapter (Figure 4-8). The power adapter cords can be used only with the 4-pair station circuit terminal/connecting blocks. The telephone/voice terminal and adjunct must be installed before installing the power adapter cord and patch cord/jumper wire.

To remove a power adapter cord, proceed as follows:

1. On the Port Assignment Record (Figure 4-11), locate the station jack number for the telephone/voice terminal receiving remote power.
2. Unplug the power adapter cord at the power supply.
3. Locate the power adapter cord plug/leads on the 110-type terminal block/66-type connecting block (blue field).
4. Disconnect the power adapter cord/leads from the terminal/connecting block.
5. Remove the power adapter cord from the patch cord troughs/187B1 backboards.
6. 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 a satellite location cross-connect field. The cross-connects should be made between the white field (equipment room side) and the blue field (station side).

1-Point Administration

For 1-point administration (Figure 4-12), the patch cords/jumper wires are connected between purple field terminal/connecting blocks and white field terminal/connecting blocks at the equipment room. The patch cords/jumper wires are connected between identically numbered

white field terminal/connecting blocks (equipment room side) and blue field terminal/connecting blocks (station side).

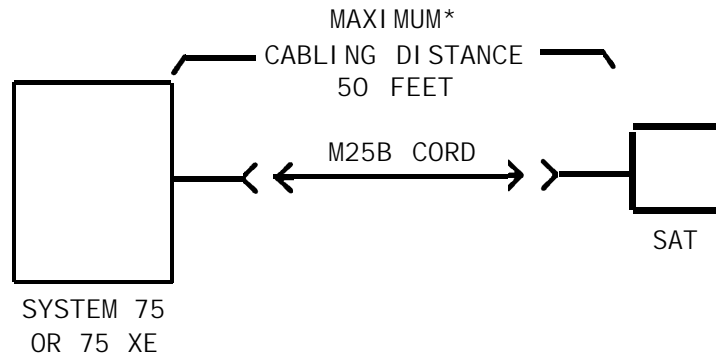
2-Point Administration

For 2-point administration (Figure 4-13), the patch cords/jumper wires are connected between purple field terminal/connecting blocks and white field terminal/connecting blocks at the equipment room. At the satellite location, patch cords/jumper wires are connected between the white field terminal/connecting blocks (equipment room side) and blue field terminal/connecting blocks (station side) as specified on the Port Assignment Record. Update the Port Assignment Record for all administrative changes at a satellite location.

Miscellaneous Wiring Installation

Installing System Access Terminal (SAT)

The SAT is connected to the **TERM** connector that is located on the rear of the control carrier. A M25B cord is used to make the connection. See Figure 4-14 for the connections.



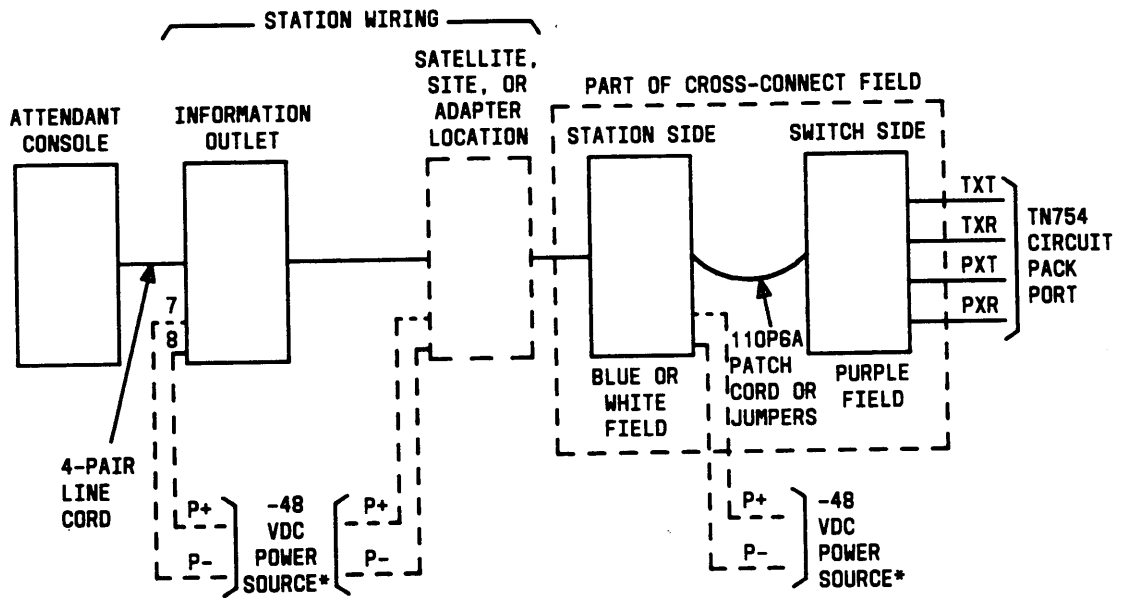
- * THE MAXIMUM DISTANCE BETWEEN SYSTEM 75/75 XE IS 50 FEET WHEN USING 24 AWG WIRE. THE DISTANCE MAY BE REDUCED IF HIGHER GAUGE WIRE IS USED OR IF THE CAPACITIVE LOAD ON THE LINE IS INCREASED. IN GENERAL, THE SAT AND THE SYSTEM 75/75 XE SHOULD BE DIRECTLY CONNECTED BY THE SHORTEST POSSIBLE CABLE.

Figure 4-14. Connections for SAT

Installing Attendant Console

Requirements

The attendant console is connected to an information outlet the same as any telephone/voice terminal. Figure 4-15 shows the connections for the attendant console.



* 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 4-15. Connections for Attendant Console

Power for two consoles 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 can be remotely powered by the 346 bulk power supply or individual power units. Refer to **Adjunct Powering** section in this chapter 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 as a source of remote power for the attendant console. A KS-22911, L1 or 346A power unit should be used.

The maximum cabling distance for an attendant console powered from the switch cabinet is 350 feet when using 24-gauge wire.

Installation

Install attendant console as follows:

1. Unpack 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: It is recommended that the primary attendant console be connected to the control carrier. This allows for battery holdover on System 75 and a better chance of uninterrupted service on System 75 XE if a port carrier fails.

3. If power is to be supplied from the switch cabinet (not available on System 75 XE), do step 4 and omit step 5; otherwise, go to step 5.
4. Connect jumpers (-48V and GND) from terminal/connecting block in yellow trunk/auxiliary Field to attendant console appearance on the station side of the distribution field (Figure 4-16).
5. If power is to be supplied at cross-connect field, connect power adapter cord 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 in **Adjunct Powering** section in this chapter.
6. Install patch cord/jumper wires at cross-connect field.
7. Connect console line jack on bottom of console to information outlet (Figure 4-15).
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.

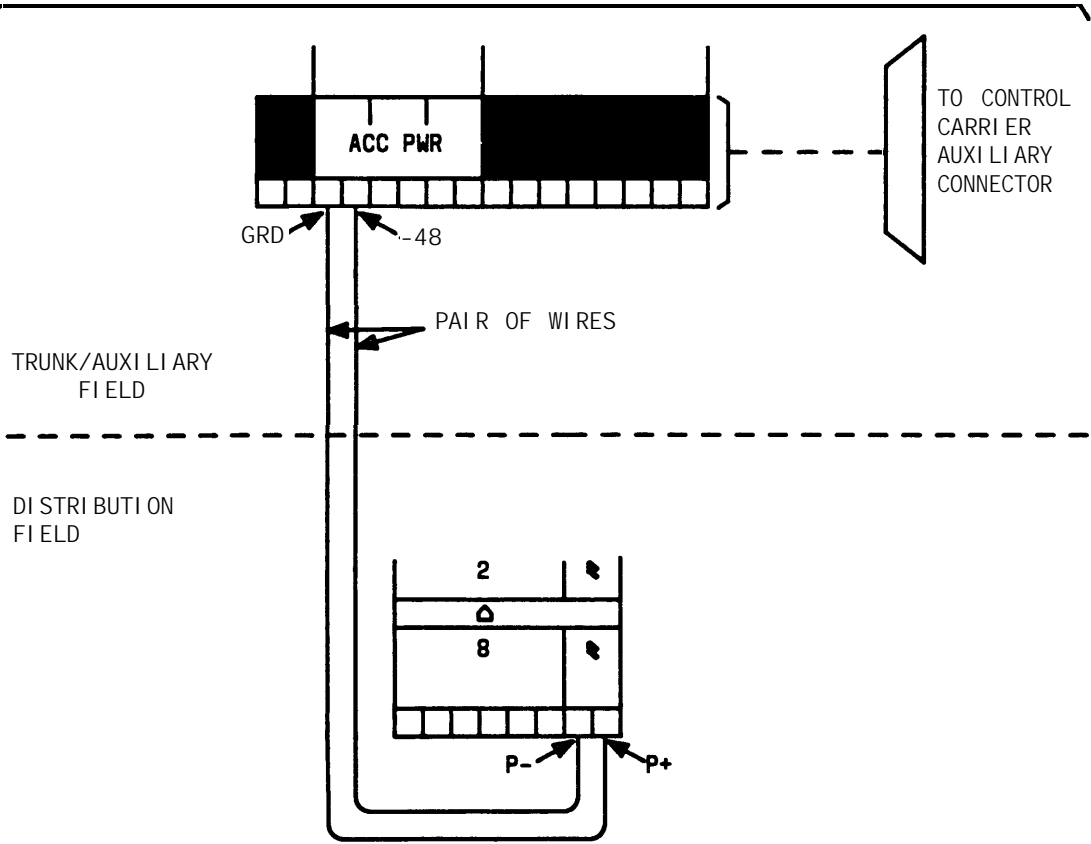
Note: The handset adapter is available in two models: 854A-03 (black) or 854A-143 (burgundy). A bracket is not required for a headset.

11. Connect handset cord to jack on same side of console as handset bracket.

12. Administer console per AT&T 2System 75 and System 75 XE—Implementation (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

Miscellaneous Wiring Installation

WHEN USING 110-TYPE HARDWARE



WHEN USING 66-TYPE HARDWARE

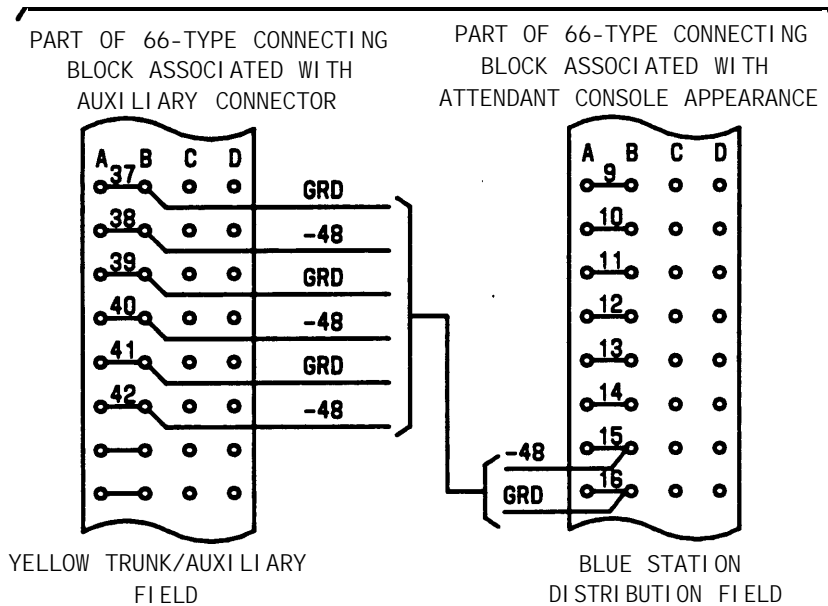


Figure 4-16. Wiring Required at Cross-Connect Field for Attendant Console Remotely Powered From Switch Cabinet—System 75 Only

Installing Selector Console

Requirements

The selector console is connected to the attendant console by a 3-foot D8AC cord that is furnished with the selector console (Figure 4-17).

Note: When a basic attendant console, equipped with a selector console, is powered by a 346A power unit, the slide switch on the power unit must be set to the up position. This provides 20 watts of power to the jack located above the slide switch. The console must be connected to this jack.

Installation

1. Connect the D8AC cord between DXS/BLF jack on bottom of attendant console and modular jack on bottom of selector console.
2. Install labels per Attendant Console Form.
3. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

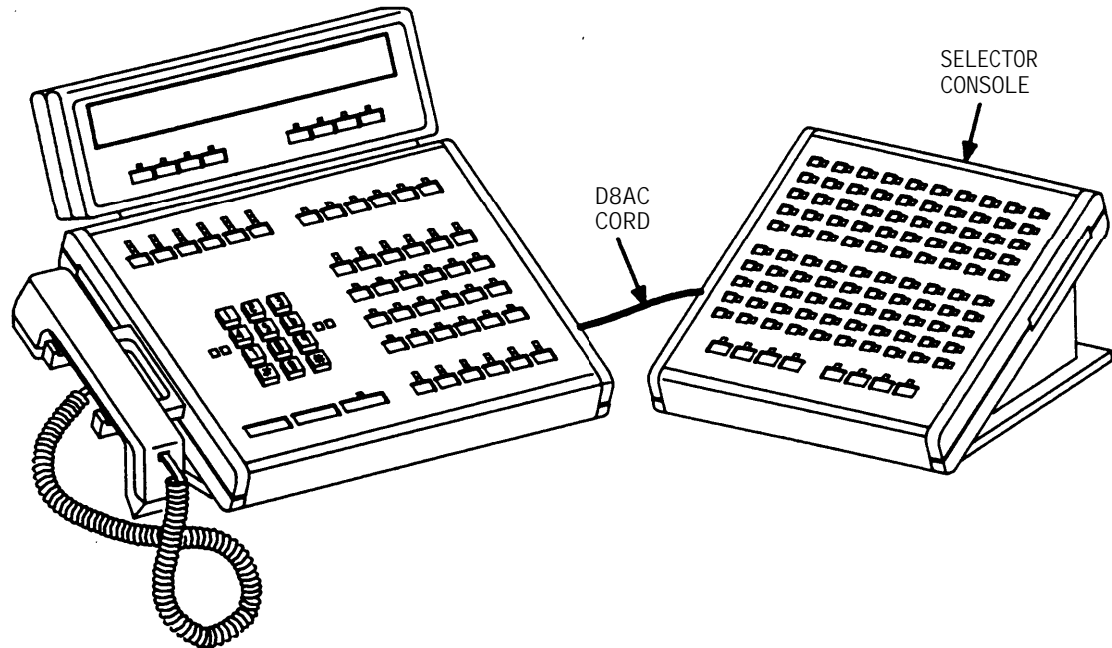


Figure 4-17. Selector Console Installation

Installing INADS Interface

Requirements

The INADS trunk should appear on the twenty-fifth pair of a RJ21X network interface jack. The INADS trunk is a two-way, rotary dial, loop start trunk that connects to the TN731 maintenance circuit pack through the INADS terminals at the trunk/auxiliary cross-connect field. Figure 4-18 shows a typical INADS trunk installation.

INADS Interface Installation

Install the INADS interface as follows:

1. Determine INADS trunk appearance at the green trunk/auxiliary cross-connect field.
2. Label terminals for INADS trunk appearance (IN).
3. Install jumpers between INADS trunk appearance (IN) and INADS terminals.

CHAPTER 4. STATION WIRING

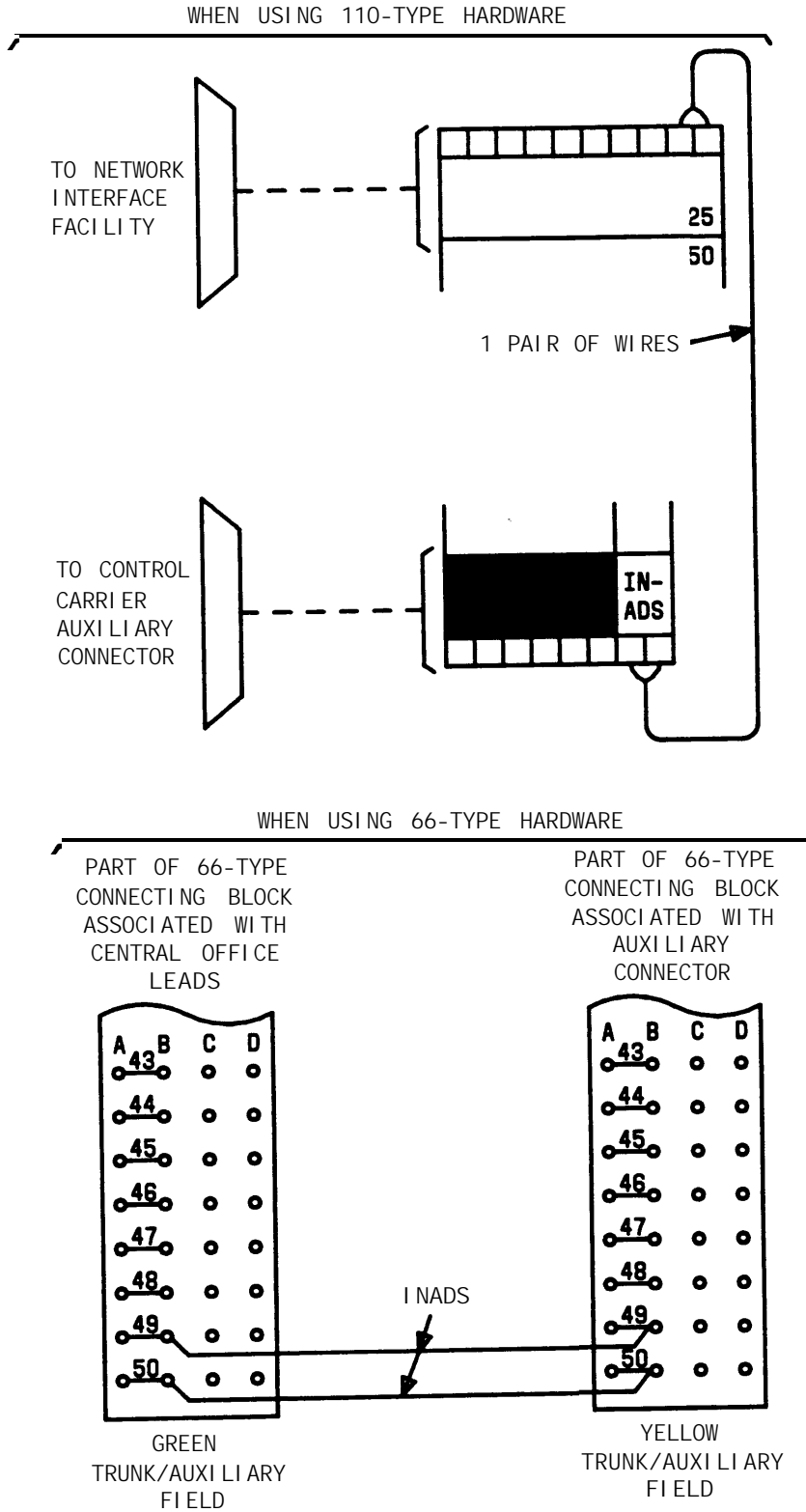


Figure 4-18. Connections at Trunk/Auxiliary Field for INADS Trunk

Installing DS1 Tie Trunks

DS1 tie trunks provide a 1.544 Mbps digital data service between two colocated System 75 or 75 XEs or between the system and a data network using T1 carrier facilities. The TN722 DS1 tie trunk circuit pack (R1V2/V3) provides connection capability to the DS1 facility for 24 independent trunks. Table 3-H 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 long shielded cable equipped with a 50-pin male connector on one end and a 15-pin male connector on the other end. Use this cable 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 long shielded cable equipped with 50-pin male connectors on each end. Use this cable to connect DS1 tie trunks in colocated System 75 or 75 XEs.
- C6E connector cable (comcode 104 307 434)—100-foot long shielded cable equipped with a 50-pin male connector on one end and a 50-pin female connector on the other end. Use this cable 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 long shielded cable equipped with a 50-pin male connector on one end and a three inch stub on the other end. This cable is used to connect the DS1 tie trunk circuit pack to channel multiplexers requiring hardwired connections.

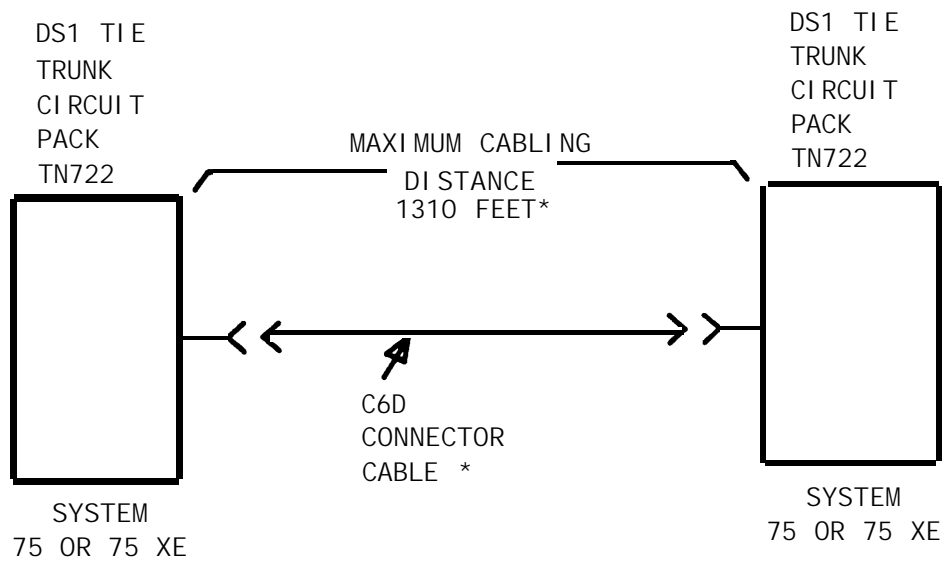
C6F CONNECTOR CABLE LEAD IDENTIFICATION

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

* Denotes ring or high side of pair.

Colocated DS1 Tie Trunks

Figure 4-19 shows the connections for two DS1 tie trunk circuit packs in colocated System 75s or 75 XEs.



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

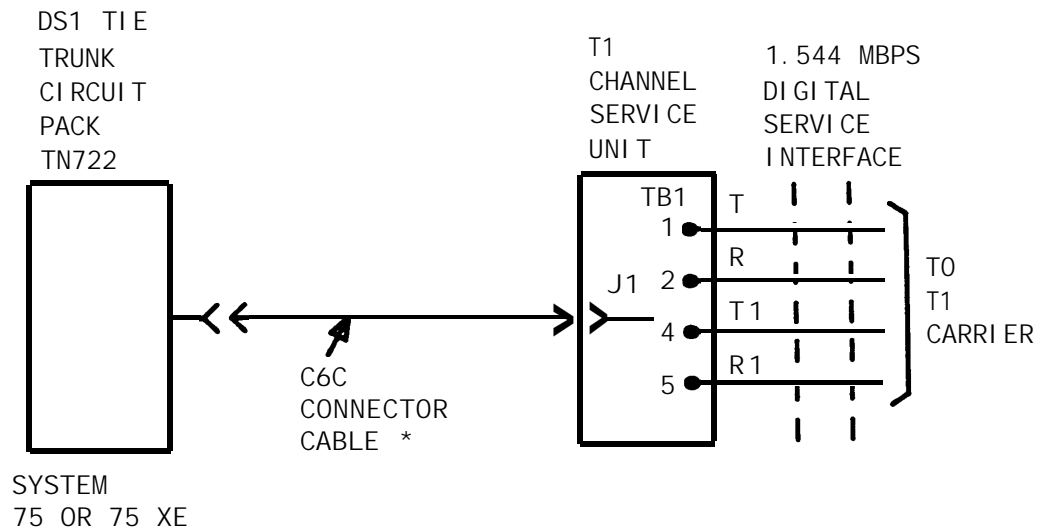
Figure 4-19. Connections for DS1 Tie Trunks Between Two System 75 or 75 XEs

DS1 Tie Trunks Using 551-Type CSU

Figure 4-20 shows the connections required to connect a DS1 tie trunk to a T1 CSU. The CSU is required to interface the DS1 tie trunks with the 1.544 Mbps digital facility. For information on installing the CSU, refer to the information provided with the unit. The most frequently used CSUs are the 551A, 551V, 551V EFS/R, and ESF T1. The 551V EFS/R (R means retrofit) can be used to upgrade the 551V to the new Extended Superframe (ESF) status.

The maximum allowable cabling distance between the DS1 tie trunk and the CSU is:

CSU	Max. Cabling Distance (feet)
551A	85
551V	85
551V EFS/R	655
ESF T1	655



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

Figure 4-20. Connections Between DS1 Tie Trunk and T1 CSU

Installing Customer-Provided Alarm—System 75 XE Only

Requirements

The switch provides access to a relay contact that can be used to operate a customer-provided alarm, such as a light, bell, or similar type device. The relay contact can be administered so that it makes contact when a major, minor, or warning alarm condition exists in the switch. 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 amp. The contact leads appear at the cross-connect field on the AUXILIARY connector. Refer to Table 3-H for the AUXILIARY connector lead assignments.

Installing Off-Premises Station Wiring

Requirements

The cabling outside the building for off-premises stations is provided by the local telephone company. The off-premises stations can appear on any of the RJ21X network interfaces provided for CO trunks. Only a FCC approved analog type telephone, for example, a 2500-type, can be used as an off-premises station. Figure 4-21 shows the connections for

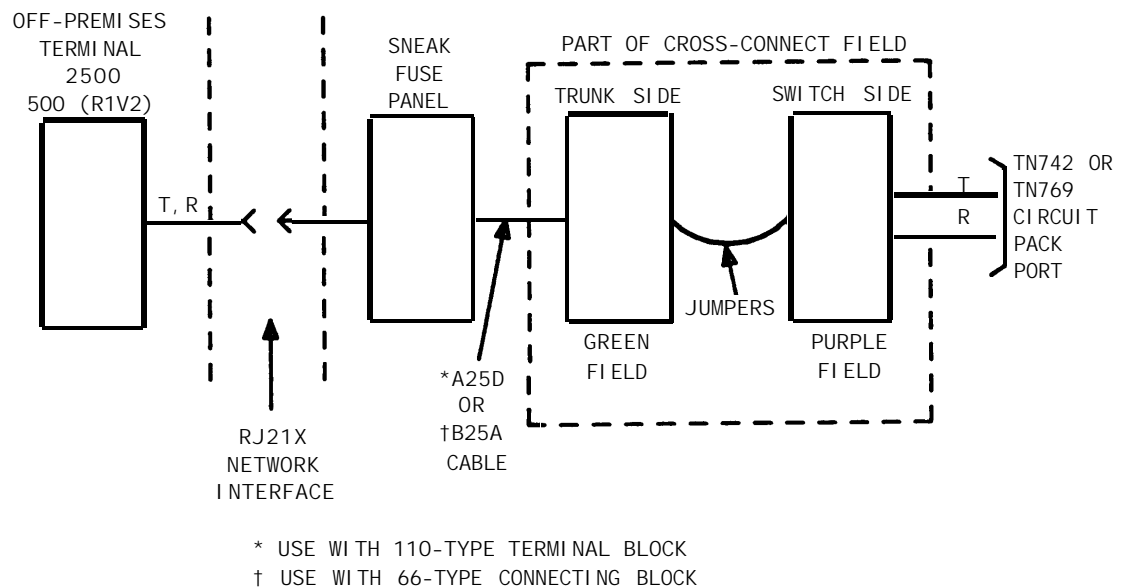


Figure 4-21. Connections For Off-Premises Stations

off-premises stations. The TN746 analog line circuit pack cannot be used for off-premises stations.



Installation

To install an off-premises station:

1. Install a B25A cable between the RJ21X network interface and a sneak fuse panel.
2. At the cross-connect field, connect jumper wires between one row/connecting block in the green field and up to three rows/connecting blocks in the purple field to concentrate the analog line pairs as shown in Figure 3-56.
3. **When 110-type hardware is used**, connect an A25D cable between the sneak fuse panel and the 110 terminal block connector associated with the green row in step 3.
4. **For 110-type hardware**, install a green label on the 110-type terminal block to identify the remote location. **For 66-type hardware**, write the remote location lead designations on the connecting block with a permanent felt-tipped pen.
5. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

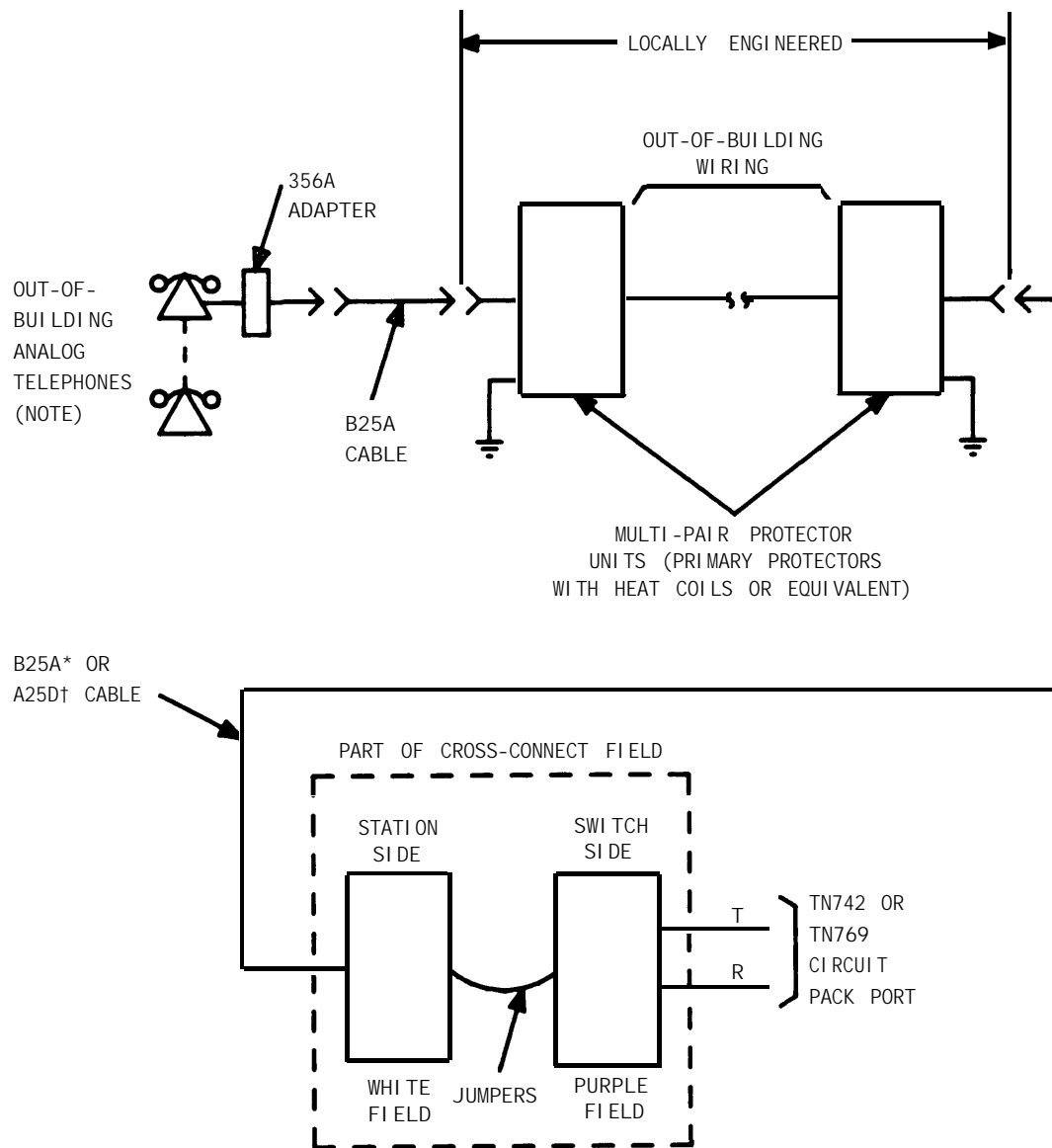
Installing Out-of-Building Campus Stations

Out-of-building campus stations are those telephones/voice terminals that are not physically located in the same building as the PBX equipment room but are located on the same property.

Both analog telephones and digital voice terminals can be used as out-of-building stations.

Analog Out-of-Building Stations

Figure 4-22 shows the connections for one to eight off-premises analog telephones. The TN746 analog line circuit pack cannot be used with off-premise or out-of-building stations. Only analog telephones connected to TN742 or TN769 analog line circuit packs can be installed out-of-building.



NOTE:
 THE MAXIMUM CABLING DISTANCE FROM THE SWITCH CABINET TO OUT-OF-BUILDING VOICE TERMINALS IS 6000 FEET OF 24 AWG WIRE.

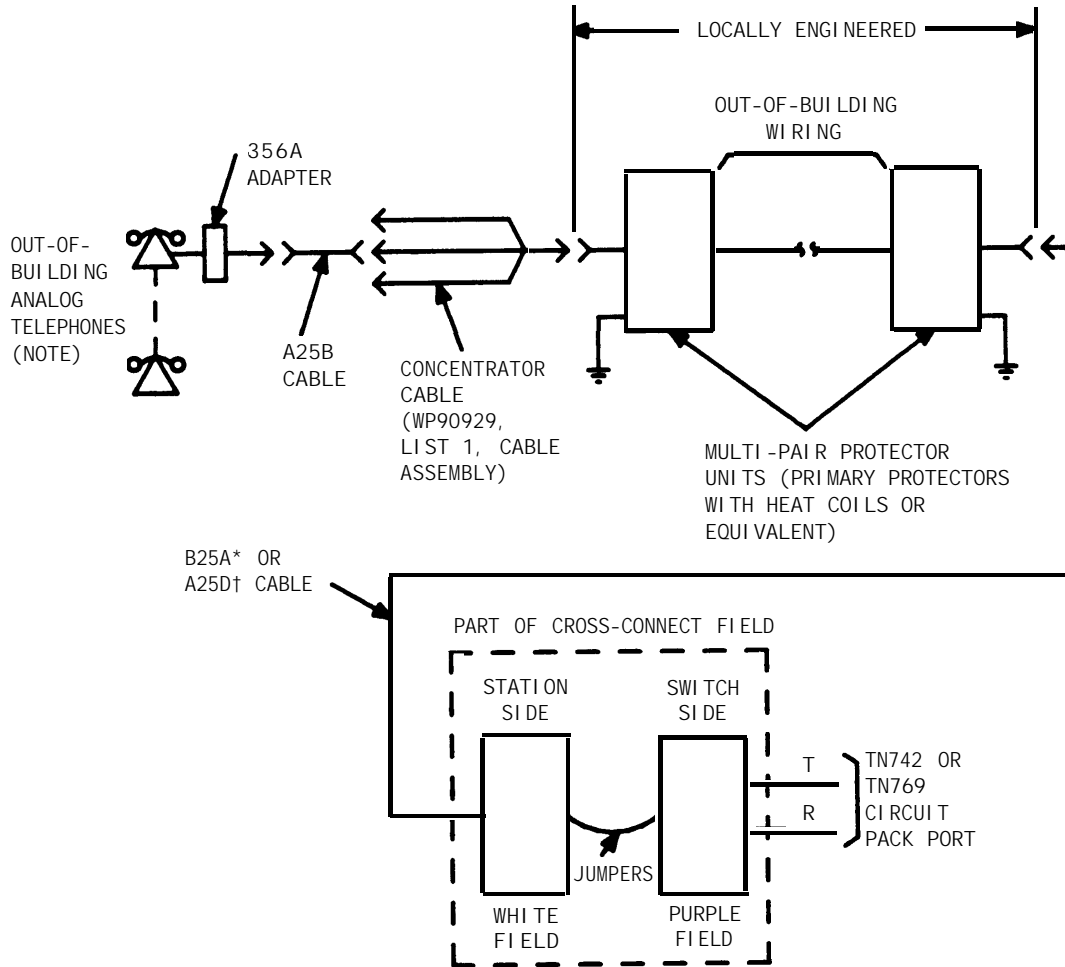
* USED WITH 66-TYPE CONNECTING BLOCK

† USED WITH 110-TYPE TERMINAL BLOCK

Figure 4-22. Connections for One to Eight Out-of-Building Analog Telephones

Figure 4-23 shows the connections for up to 24 off-premises analog telephones. Concentration of analog line pairs is used at both buildings to minimize the off-premises wiring required. At the cross-connect field,

jumpers must be connected between one row/connecting block in the white field and up to three rows/connecting blocks in the purple field as shown in Figure 3-56. At the station location, a WP-90929, List 1 concentrator cable is used. There are eight station appearances on each of the three fingers of the concentrator cable.



NOTE:

THE MAXIMUM CABLING DISTANCE FROM THE SWITCH CABINET TO OUT-OF-BUILDING VOICE TERMINALS IS 6000 FEET OF 24 AWG WIRE.

* USED WITH 66-TYPE-CONNECTING BLOCK

† USED WITH 110-TYPE TERMINAL BLOCK

Figure 4-23. Connections for Each Group of Eight Out-of-Building Analog telephones

Carbon block, or equivalent protection is required at both building entrances. Also sneak current protection is required. Protection can be provided by a 4-type protector or a 3-type protector plus a separate sneak current protector. The 4-type protector is equipped with a heat coil for sneak current protection. The 4-type protector is the preferred device because it eliminates the need to evaluate the interbuilding cable runs and its vulnerability to power cross faults. When the 3-type protector is used, a separate sneak current protector is required. The multi-pair protector units and the off-premises cabling 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*.

Table 4-A shows the recommended protectors.

Table 4-A. Recommended Protectors

PROTECTORS		
Primary *	Primary (w/heat coil)	Sneak Current Protectors *
3B1A (carbon)	4B1C (carbon)	79A Fuse
3B1E-W (wide gap gas tube)	4B1E-W (wide gap gas tube)	SCP-1
3C1S (solid state)	4C1S (solid state)	

* A sneak current protector is always required when a 3-type primary protector is used.

Requirement: If protectors other than those listed in Table 4-A are to be used in domestic installations, they must be UL listed/approved. Also any protectors to be used in Canadian installations must be CSA certified.

The maximum range for protection of out-of-building analog telephones (500-, 2500-, or 7100- types) connected to a TN742 or TN769 analog line circuit pack through a primary protector is 6000 feet when using 24 awg wire and 3600 feet when using 26 awg wire.

The following voice terminals/telephones **cannot** be installed in an exposed environment:

- 7300-type voice terminals connected to TN762 hybrid line circuit packs
- MET sets connected to TN735 MET line circuit packs
- analog telephones connected TN746 analog line circuit packs.

PROTECTOR ORDERING INFORMATION

Description	Comcode
361A (Carbon Block)	102 381 779
361E-W (Wide Gap Gas Tube)	104 410 147
3C1S (Solid State)	105 514 756
4B1C (Carbon Block with Heat Coil)	102 904 893
4B1E-W (Wide Gap Gas Tube with Heat Coil)	104 401 856
4C1S (Solid State with Heat Coil)	104 386 545
SCP-1 Sneak Current Protector	403 617 632
79A Fuse (sneak current protector)	103 351 610

Digital Out-of-Building Voice Terminals

Protection is required at both building entrances for digital out-of-building voice terminals. There are 6 different *primary* protectors that can be used with the required *secondary* (data link) protector to protect digital voice terminals in an out-of-building environment.

Primary protectors have a surge breakdown voltage range of 200 to 800 volts at 100 volts per microsecond depending on the type of device. Sneak current protection is also required. It can be provided by a 4-type protector or a 3-type protector plus a separate sneak current protector. The 4-type primary protector is equipped with a heat coil for sneak current protection. The 4-type primary protector is the preferred device because it eliminates the need to evaluate the interbuilding cable runs and its vulnerability to power cross faults. When the 3-type primary protector is used, a separate sneak current protector is required.

The secondary (data link) protector is required *in addition to* the primary protector and is installed on the equipment side of the primary protector.

Table 4-B shows the recommended protectors.

Table 4-B. Recommended Protectors

PROTECTORS			
Primary *	Primary (w/heat coil)	Secondary	Sneak Current Protectors *
3B1A (carbon)	4B1C (carbon)	Data Link Protector (one or eight ckts)	79A Fuse
3B1E-W (wide gap gas tube)	4B1E-W (wide gap gas tube)		SCP-1
3C1S (solid state)	4C1S (solid state)		

* A sneak current protector is always required when a 3-type primary protector is used.

Requirement: If protectors other than those listed in Table 4-B are to be used in domestic installations, they must be UL listed/approved. Also any protectors to be used in Canadian installations must be CSA certified.

The maximum range for protection of out-of-building digital voice terminals using a primary and a secondary (data link) protector is 5000 feet when using 24 awg wire and 4000 feet when using 26 awg wire. The secondary (data link) protector used with the 7400-type digital voice terminal is an isolation transformer and requires that the voice terminal be locally powered by an external power supply or through the ac power cord provided with some of the 7400-type voice terminals.

Except for the secondary (data link) protector, all the recommended protectors are plug-in 5-pin units. There is a variety of 25-, 50-, and 100-pair protector panels that are equipped with 66-, or 110-type connecting blocks and/or RJ21X connectors. The secondary (data link) protector is equipped with 110-type connecting blocks and **must be** used with a primary protector.

PROTECTOR ORDERING INFORMATION

Description	Comcode
3B1A (Carbon Block)	102 381 779
3B1E-W (Wide Gap Gas Tube)	104 410 147
3C1S (Solid State)	105 514 756
4B1C (Carbon Block with Heat Coil)	102 904 893
4B1E-W (Wide Gap Gas Tube with Heat Coil)	104 401 856
4C1S (Solid State with Heat Coil)	104 386 545
Data Link Protector (one ckt)	103 972 758
Data Link Protector (8 ckts)	103 972 733
SCP-1 Sneak Current Protector	403 617 632
79A Fuse (sneak current protector)	103 351 610

Figure 4-24 shows the connections for digital out-of-building voice terminals.

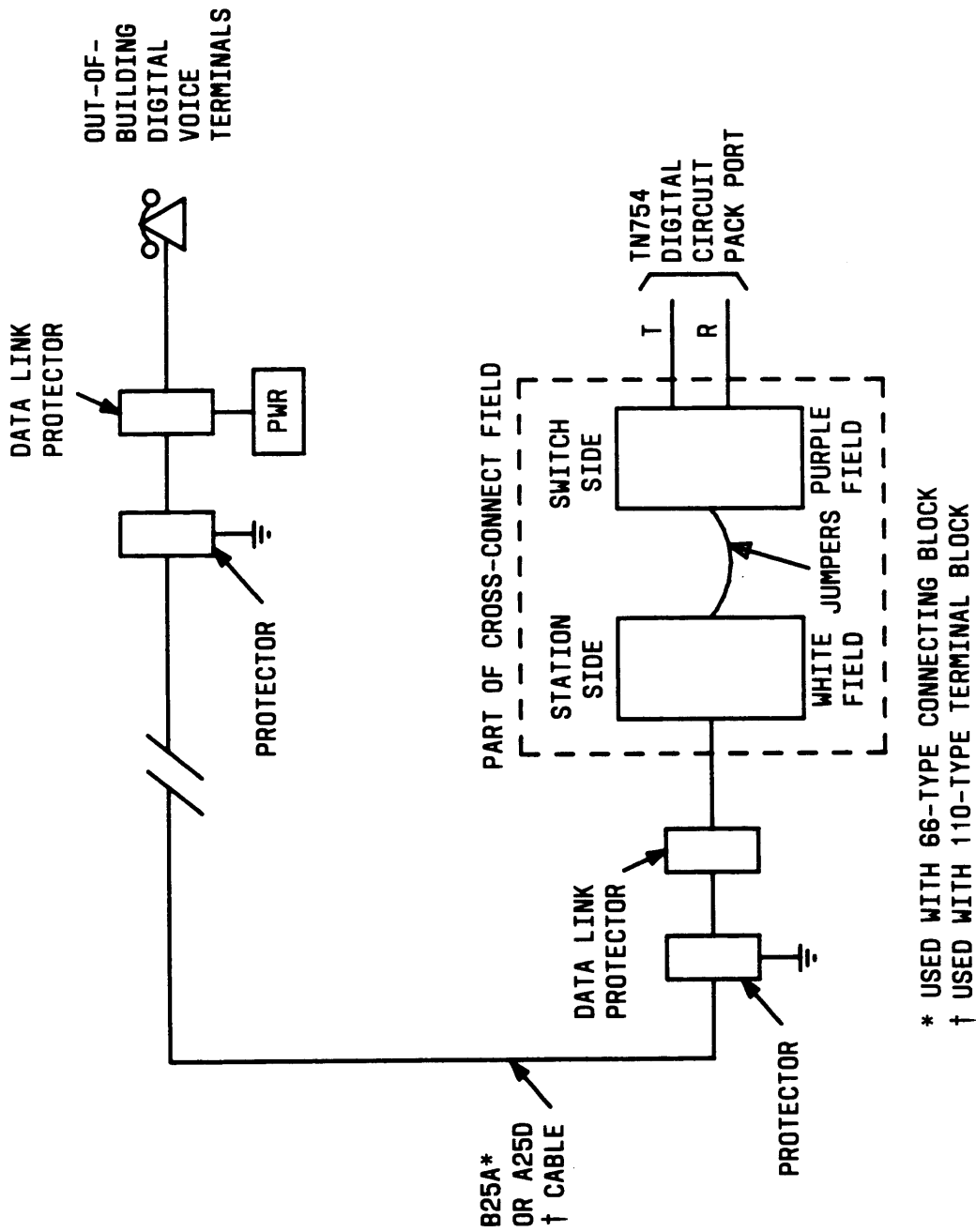


Figure 4-24. Connections for Digital Out-of-Building Voice Terminals

Installing Emergency Transfer Units and Associated Telephones

Requirements

Emergency transfer capability is provided by a transfer unit mounted on the wall next to the trunk/auxiliary cross-connect field.

Only 500- or 2500-type telephones can be used for emergency transfer. For R1V2/V3 switches, 500-and 2500-type telephones can also be used as normal extensions. For R1V1 systems, 500-type telephones are used when the CO has only rotary dialing service and they cannot be used as normal extensions. Emergency transfer capability may be provided on CO and Wide Area Telecommunications Service (WATS) trunks.

The following transfer units are available:

- 574-5 power transfer unit—Each unit serves up to five power failure transfer telephones. The unit provides automatic ground start.
- Z1A emergency transfer unit—Each unit serves up to six power failure transfer telephones. A ground-start switch is required at each preselected telephone when ground start trunks are used.

At the cross-connect field, the transfer units are connected to a yellow terminal row/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 which allows powering of up to seven transfer units.

Installing the 574-5 Power Transfer Unit

The 574-5 power transfer unit has connection for five emergency transfer telephones and is compatible with both loop start and ground start trunks. Ten slide switches in the center of the unit (Figure 4-25) are set for the trunk type (two per trunk). The switches are set at the factory for ground start trunks.

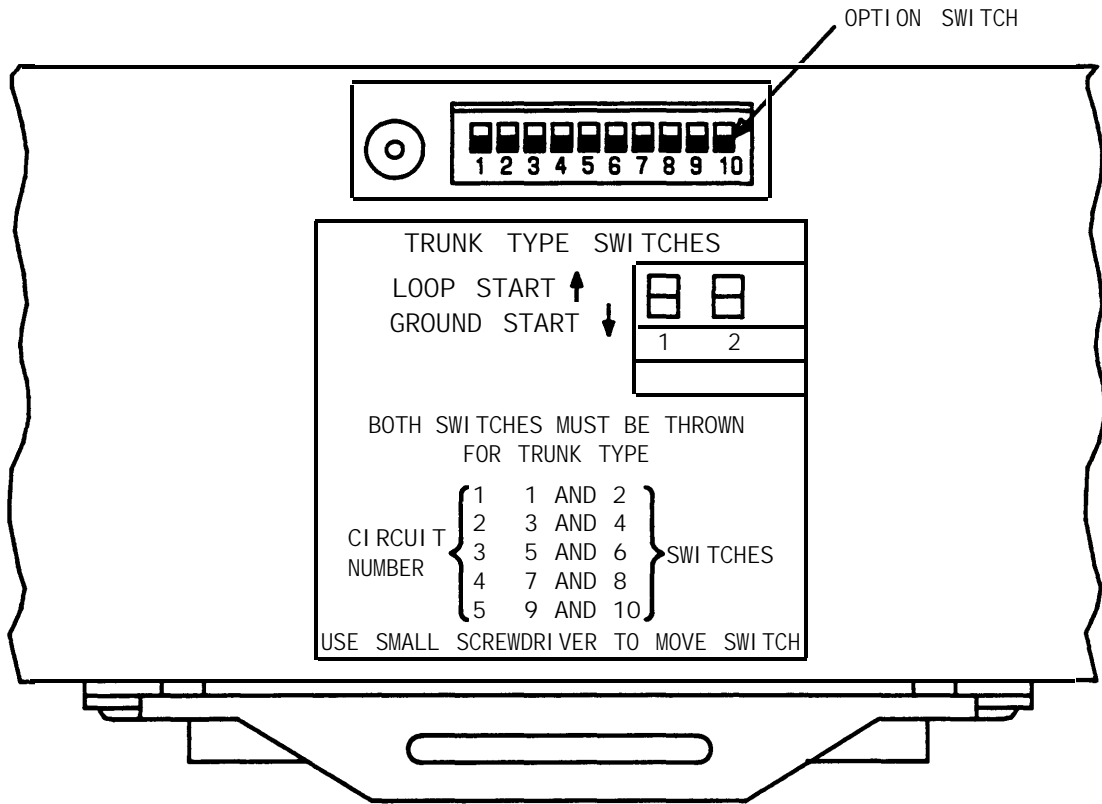


Figure 4-25. 574-5 Power Transfer Unit Option Switches

When ground start trunks are used, the transfer unit automatically provides ground start for each trunk without requiring any special wiring at the telephone used for emergency transfer service.

Figures 4-26 and 4-27 shows the connections on 110-type terminal blocks and 66-type connecting blocks, respectively, at the trunk/auxiliary cross-connect field for a telephone used only for emergency transfer. Figures 4-28 and 4-29 show the connections on 110-type terminal blocks and 66-type connecting blocks, respectively, at the trunk/auxiliary cross-connect field for a telephone used for emergency transfer as well as a normal extension.

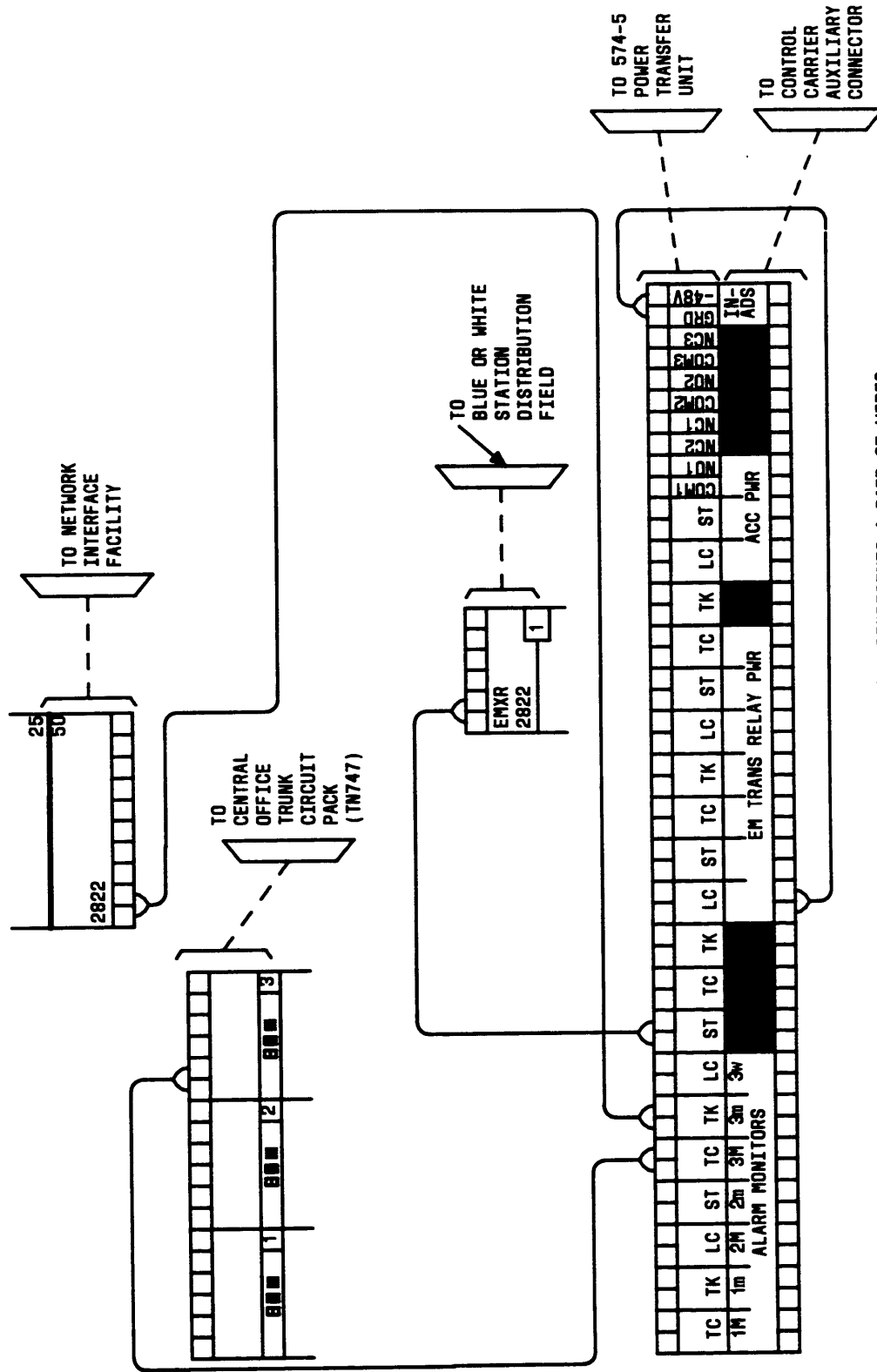


Figure 4-26. Connections at Trunk/Auxiliary Field Equipped with 110-Type Hardware for Telephone Used Only for Emergency Transfer

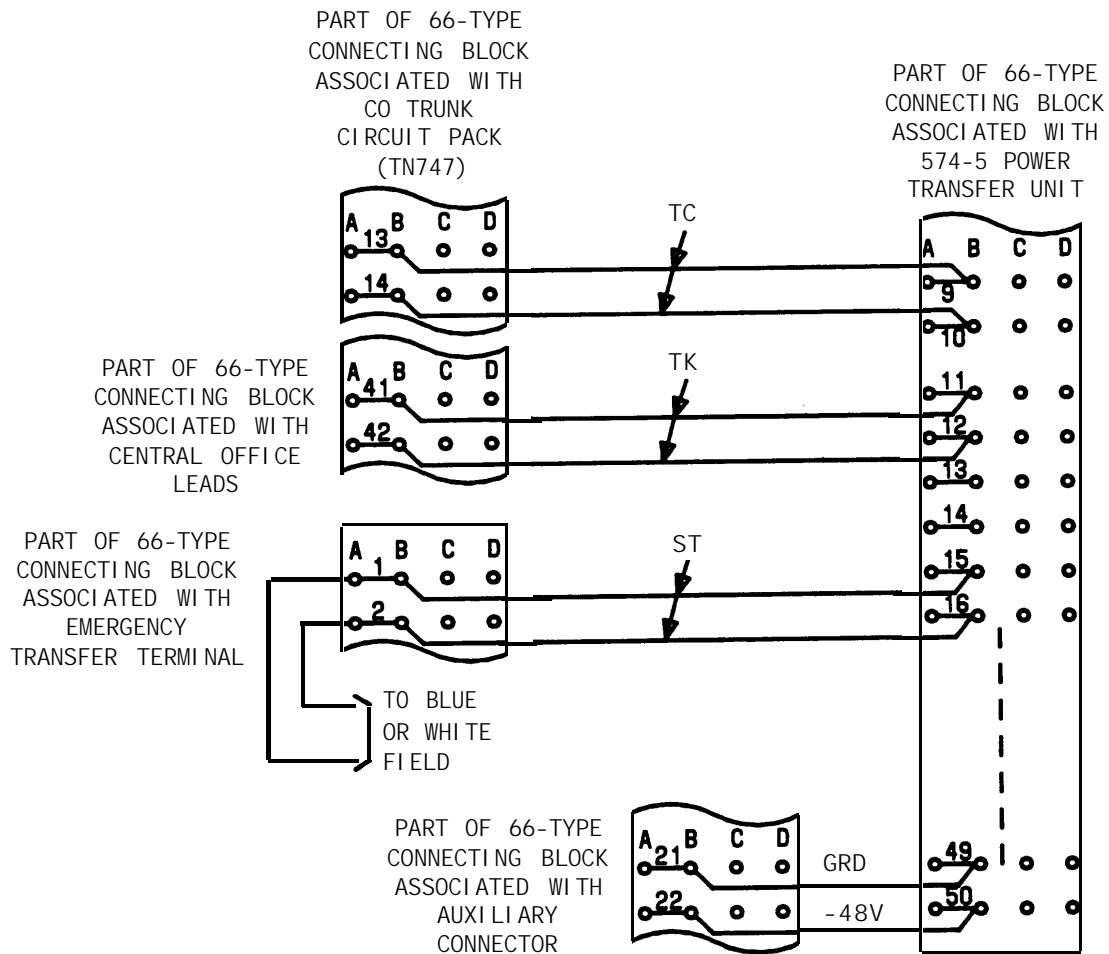


Figure 4-27. Connections at Trunk/Auxiliary Field Equipped with 66-Type Hardware for Telephone Used Only for Emergency Transfer

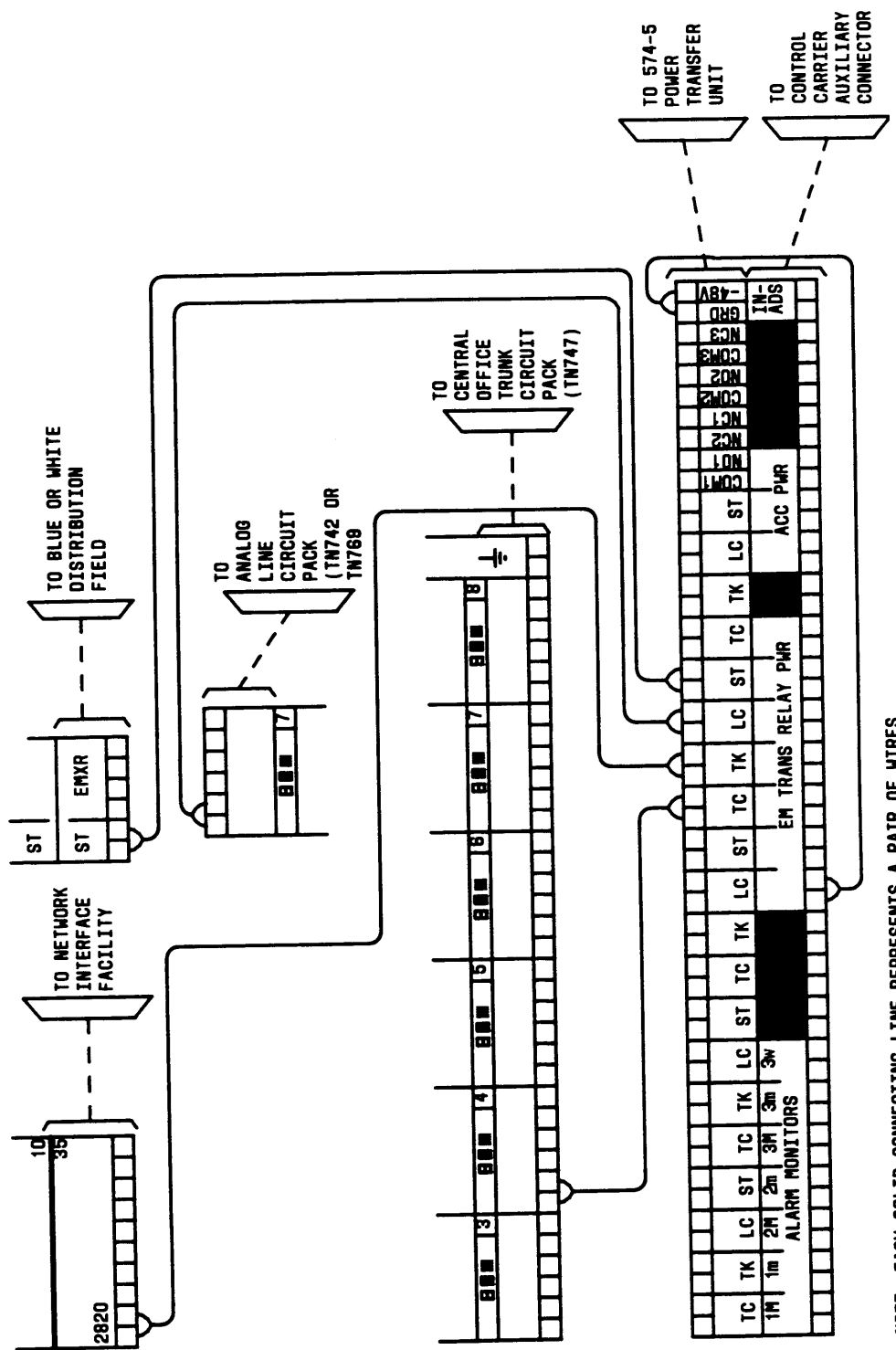


Figure 4-28. Connections at Trunk/Auxiliary Field Equipped with 110-Type Hardware for Telephone Used for Emergency Transfer and as Normal Extension

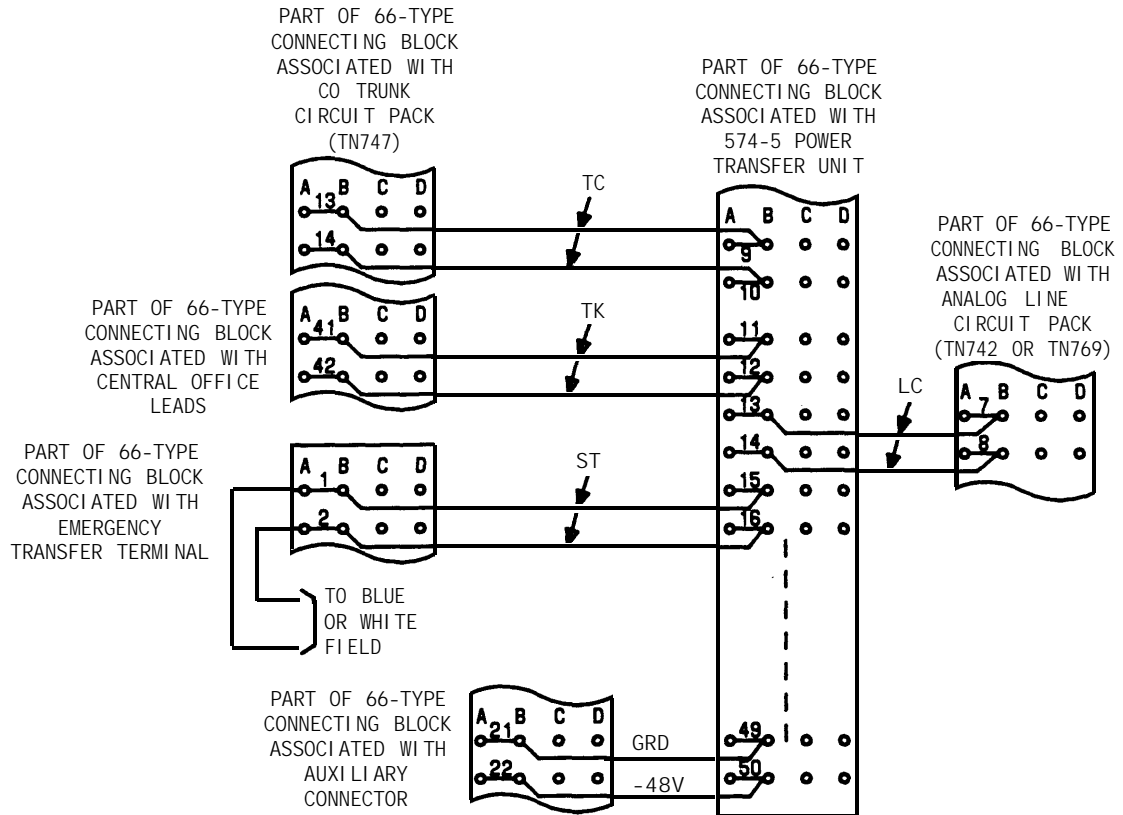


Figure 4-29. Connections at Trunk/Auxiliary Field Equipped with 66-Type Hardware for Telephone Used for Emergency Transfer and as Normal Extension

Installing Optional DID Make-Busy Trunk for Use with 574-5 Power Transfer Unit

Requirements

Figure 4-30 shows the connections at the trunk/auxiliary cross-connect field for a direct inward dialing (DID) make-busy trunk. This option prevents DID trunks from being taken out of service by the serving CO during emergency transfer. This trunk is used for this function only and should be assigned to the twenty-fifth pair of a network interface jack.

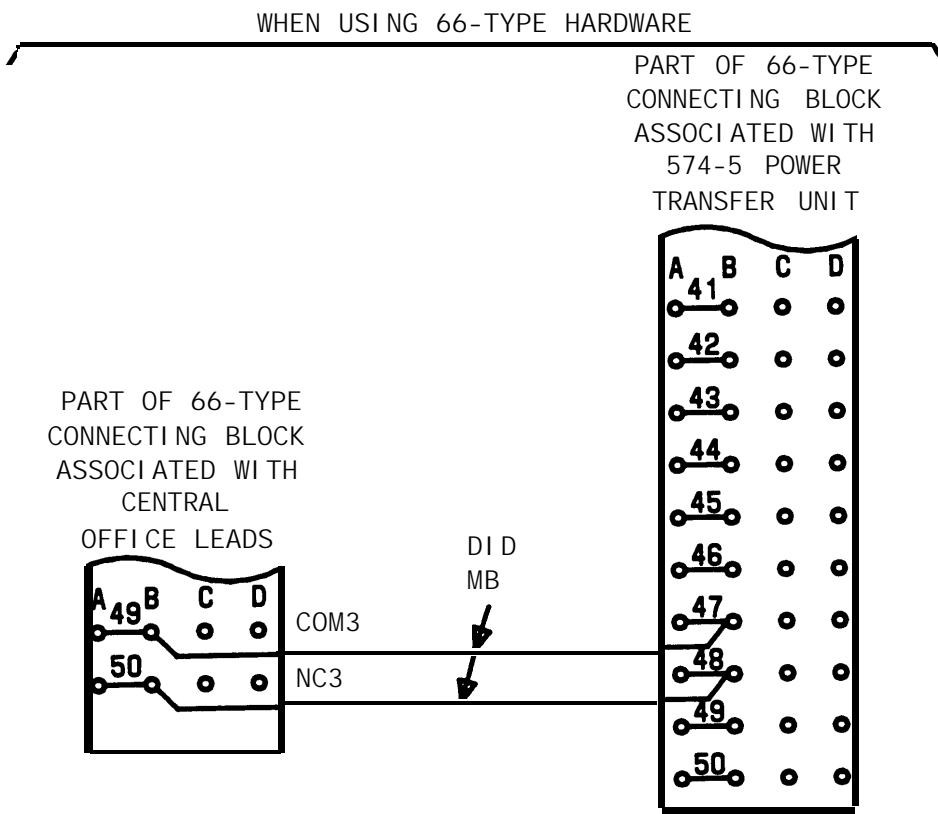
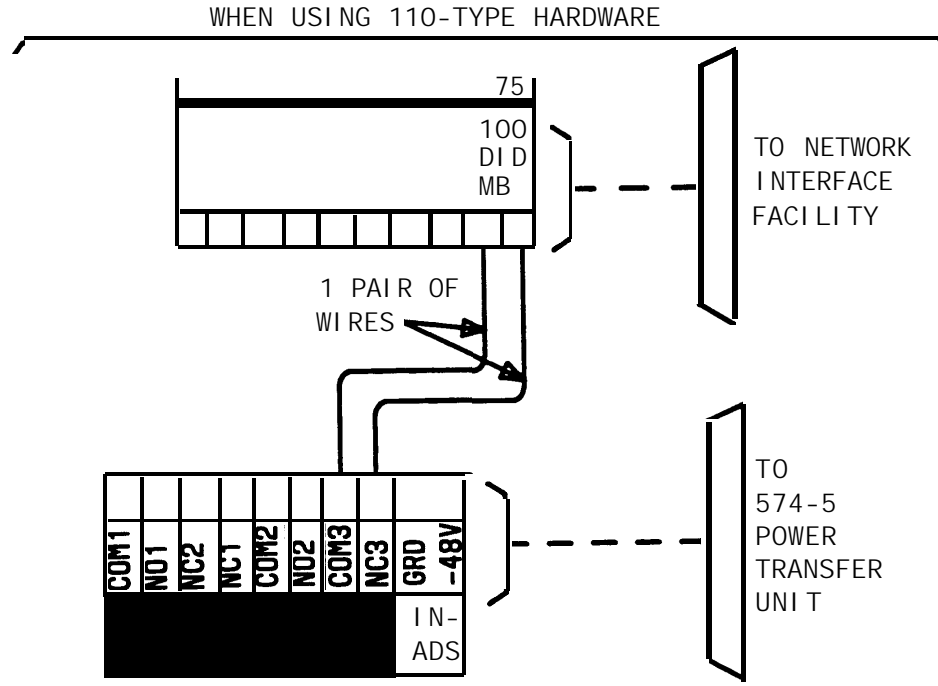


Figure 4-30. Connections at Trunk/Auxiliary Field for DID Make-Busy Trunk—574-5 Power Transfer Unit

Installation

Connect the DID make-busy trunk as follows:

1. At the trunk/auxiliary cross-connect field, connect a jumper from one DID make-busy lead to terminal **COM3** on the yellow emergency transfer row/connecting block (Figure 4-30).
2. Connect a jumper from the other DID make-busy lead to terminal **NC3** on the yellow emergency transfer row/connecting block.

Installing the Power Transfer Unit

Install the 574-5 power transfer unit as follows:

1. Mount the power transfer unit on the wall to the left of the trunk/auxiliary cross-connect field. Mount additional units on the wall below the first one in a vertical column.
2. Connect a B25A (**for 110-type hardware**) or A25B (**for 66-type hardware**) cable from the power transfer unit to the connector associated with the yellow emergency transfer row/connecting block in the trunk/auxiliary cross-connect field.

Installing Telephone Associated with 574-5 Power Transfer Unit

Trunk/Auxiliary Field Connections—Telephone Used Only for Emergency Transfer

Install telephone as follows:

1. At trunk/auxiliary cross-connect field, connect a pair of wires between the **-48V** and **GRD** terminals on the yellow emergency transfer row/connecting block and the **EM TRANS RELAY PWR** terminal (Figures 4-28 and 4-29, respectively for 110-type and 66-type hardware).
2. Connect CO trunk leads from the purple field to **TC** terminals on the yellow emergency transfer row/connecting block for each trunk.
3. Connect CO trunk leads from the green field to **TK** terminals on the yellow emergency transfer row/connecting block for each trunk.
4. Connect **ST** leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the **ST** 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 **ST** leads from the terminal selected in Step 4 to the assigned terminal in the blue or white station distribution field.

Trunk/Auxiliary Field Connections—Telephone Used for Emergency Transfer and as a Normal Extension

Connect telephone as follows:

At trunk/auxiliary field, connect a pair of wires between the **-48V** and **GRD** terminals on the yellow emergency transfer row/connecting block to the **EM TRANS RELAY PWR** terminal (Figures 4-26 and 4-27, respectively for 110-type and 66-type hardware).

1. Connect CO trunk leads from the purple field to **TC** terminals on the yellow emergency transfer row/connecting block for each trunk.
2. Connect CO trunk leads from the green field to **TK** terminals on the yellow emergency transfer row/connecting block for each trunk.
3. Connect telephone leads from the purple analog line board row/connecting block to the **LC** terminals on the yellow emergency transfer row/connecting block for each telephone.
4. Connect **ST** leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the **ST** terminal appearance in the purple trunk/auxiliary field.
5. Connect the **ST** leads from the terminal selected in Step 4 to the assigned terminal in the blue or white station distribution field.

Telephone Installation

Install telephone assigned to emergency transfer as follows:

1. Connect telephone to the information outlet.
2. Install patch cords/jumper wires between the switch side and the station side of the station distribution cross-connect field.

Installing the Z1A Emergency Transfer Unit

If a Z1A emergency transfer unit is used with CO trunks that require ground start, a ground start switch must be installed on each telephone to be used for emergency transfer. Ground is provided on the twenty-fifth pair of leads on each purple row/connecting block associated with a switch cable. Ground is connected to the third pair of a 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 telephone and wired to the ground and ring leads inside the terminal.

Figures 4-31 and 4-32 show the connections on 110-type terminal blocks and 66-type connecting blocks, respectively, at the trunk/auxiliary field for a telephone used only for emergency transfer. Figures 4-33 and 4-34 show the connections on 110-type terminal blocks and 66-type connecting blocks, respectively, at the trunk/auxiliary field for a telephone used for emergency transfer as well as a normal extension.

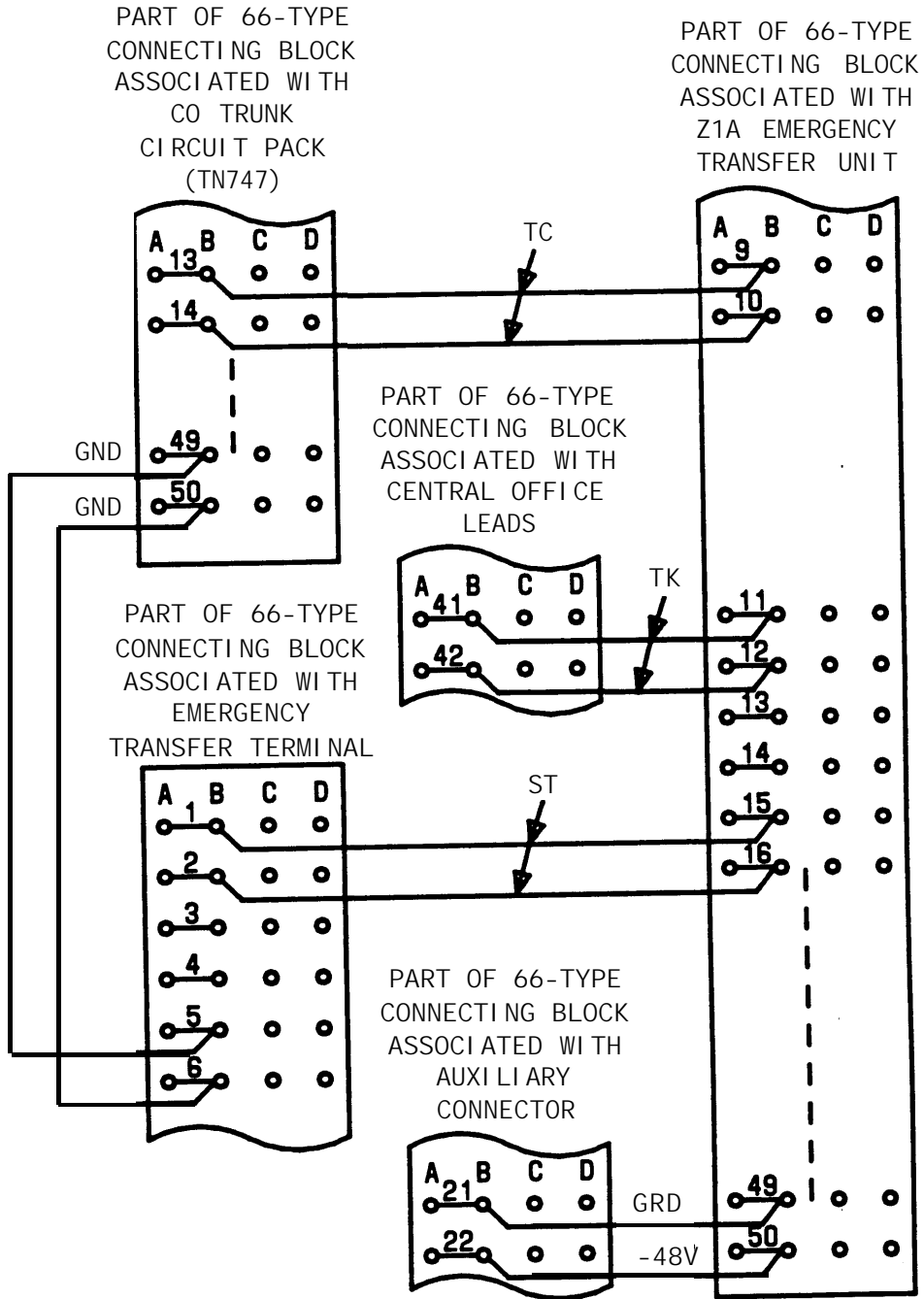
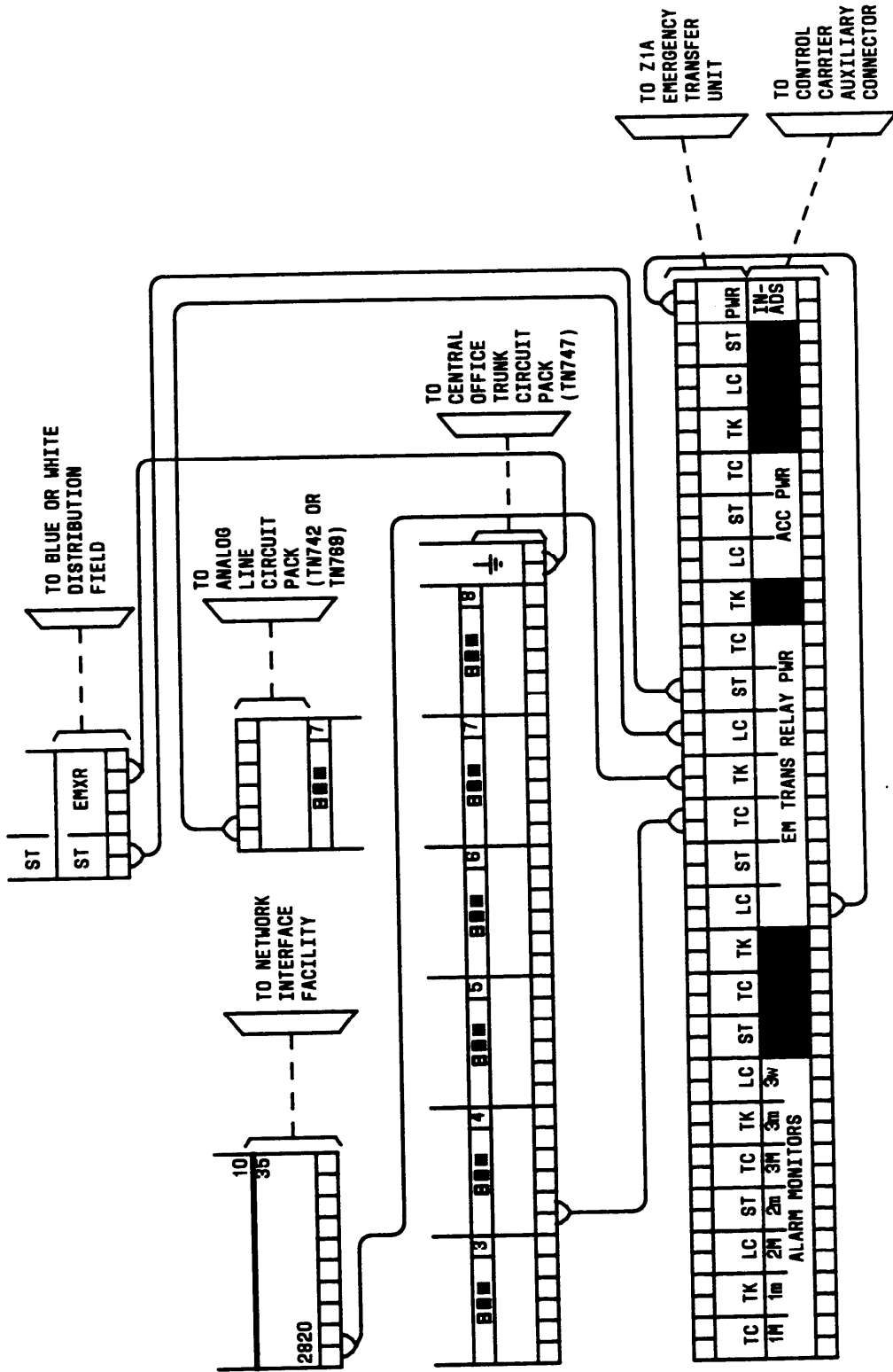


Figure 4-32. Connections at Trunk/Auxiliary Field Equipped with 66-Type Hardware for Telephone Used Only for Emergency Transfer (Ground Start Trunks)



NOTE: EACH SOLID CONNECTING LINE REPRESENTS A PAIR OF WIRES

Figure 4-33. Connections at Trunk/Auxiliary Field Equipped with 110-Type Hardware for Telephone Used Only for Emergency Transfer (Ground Start Trunk)

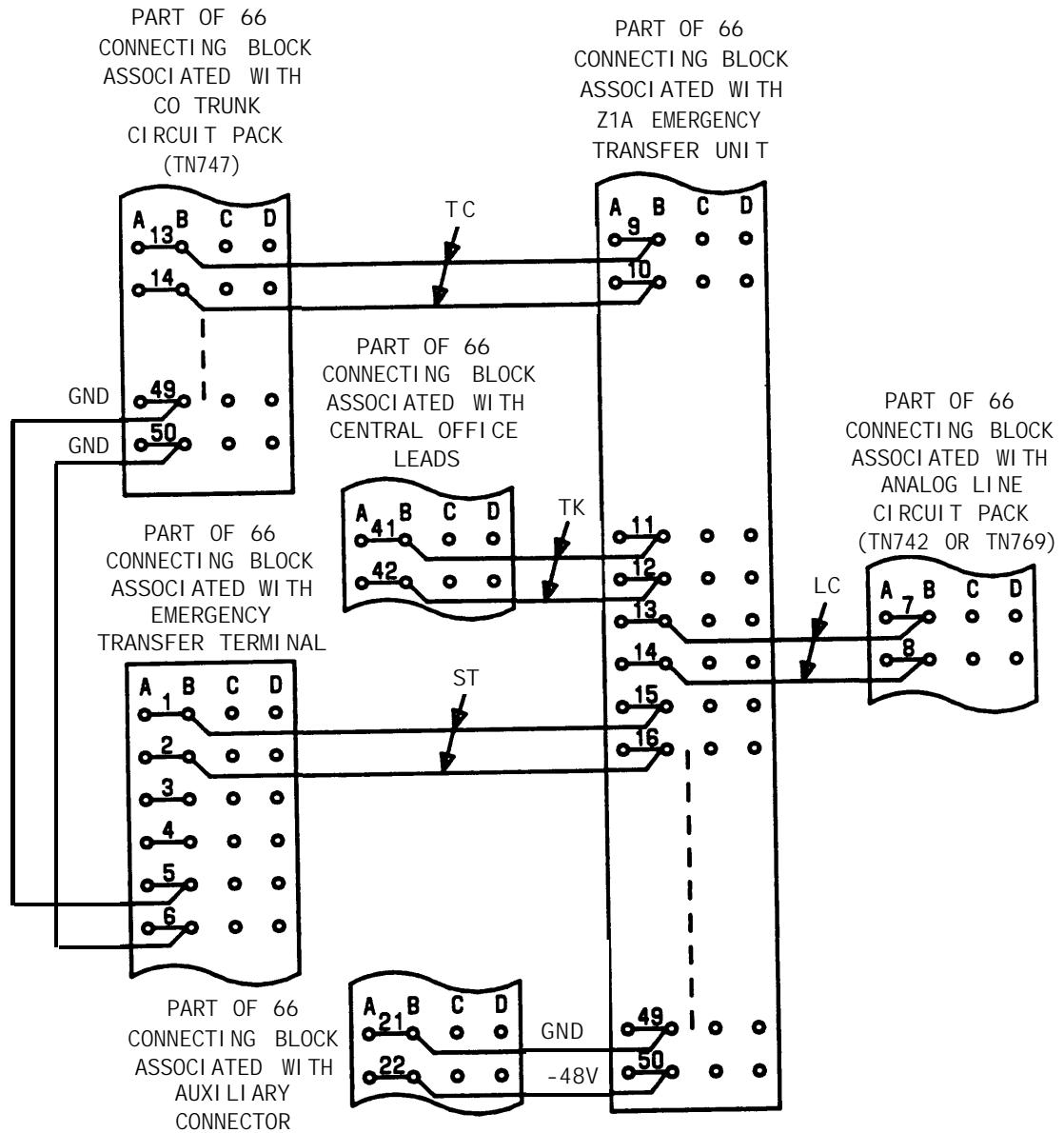


Figure 4-34. Connections at Trunk/Auxiliary Field Equipped with 66-Type Hardware for Telephone Used for Emergency Transfer and as Normal Extension (Ground Start Trunks)

Installing Optional DID Make-Busy Trunk for Use with Z1A Emergency Transfer Unit

Requirements

Figure 4-35 shows the connections at the trunk/auxiliary cross-connect field for an optional DID make-busy trunk. This option prevents DID trunks from being taken out of service by the serving CO during emergency transfer. This trunk is dedicated to this purpose and appears on the twenty-fifth pair of a network interface jack.

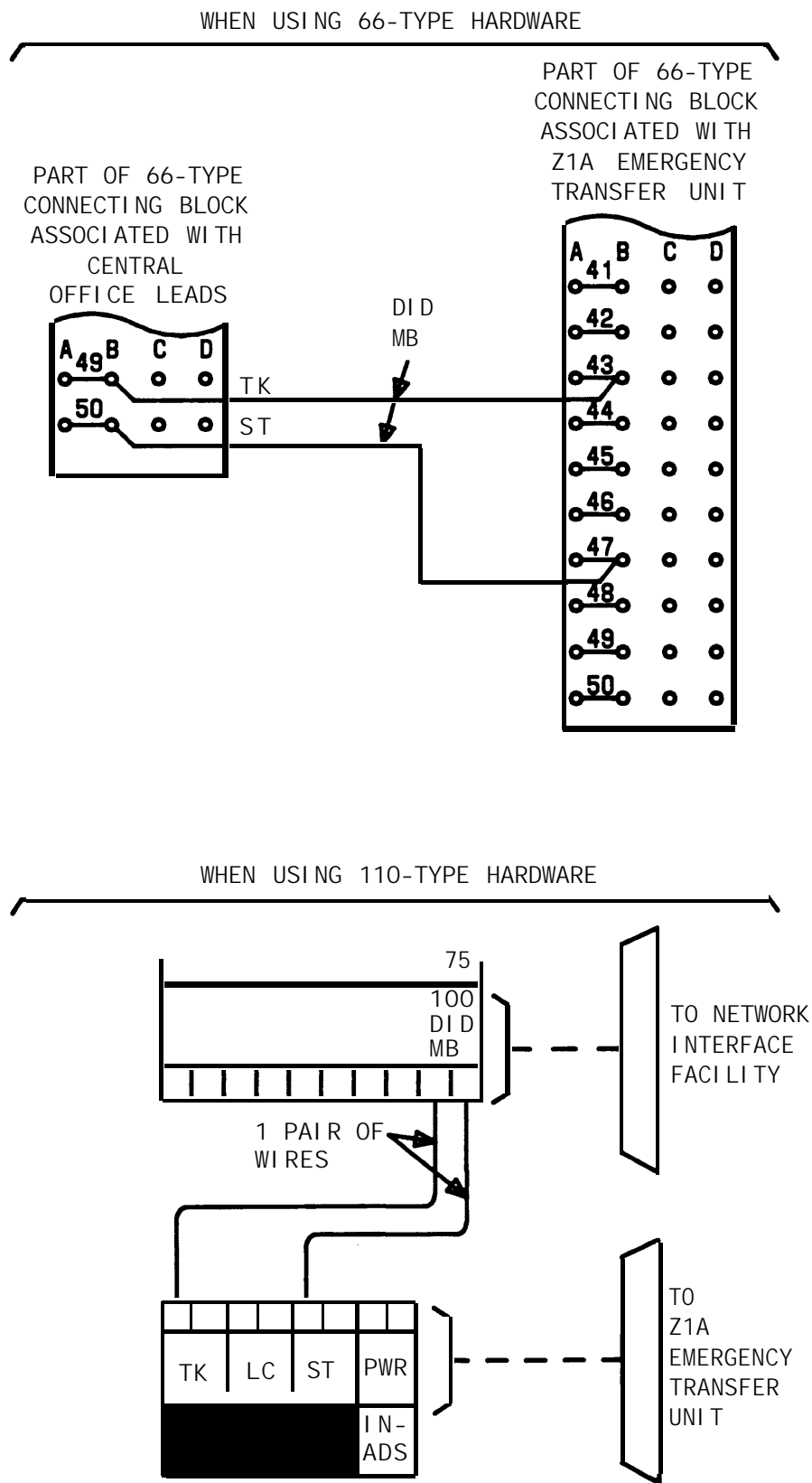


Figure 4-35. Connections at Trunk/Auxiliary Field for Optional DID Make-Busy Trunk—Z1A Emergency Transfer Unit

Installation

Make connections as follows:

1. At cross-connect field, connect a jumper from one DID make-busy lead to the **TK** terminal (first appearance) on the yellow emergency transfer row/connecting block (Figure 4-35).
2. Connect a jumper from the other DID make-busy lead to the **ST** terminal (first appearance) on the yellow emergency transfer row/connecting block.

Installing the Z1A Emergency Transfer Unit

Install the Z1A emergency transfer unit as follows:

1. Mount emergency transfer unit on the wall to the left of the trunk/auxiliary cross-connect field. Mount additional units on the wall below the first one in a vertical column.
2. Connect a B25A (**for 110-type hardware**) or A25B (**for 66-type hardware**) cable from the emergency transfer unit to the connector associated with the yellow emergency transfer row/connecting block in the trunk/auxiliary cross-connect field.

Installing Telephone Associated with Z1A Emergency Transfer Unit

Trunk/Auxiliary Field Connections—Telephone Used Only for Emergency Transfer

Install telephone as follows:

1. At trunk/auxiliary cross-connect field, connect a pair of wires between the **-48V** and **GRD** terminals on the yellow emergency transfer row/connecting block to the **EM TRANS RELAY PWR** terminal (Figures 4-31 and 4-32, respectively for 110-type and 66-type hardware).
2. Connect CO trunk leads from the purple field to **TC** terminals on the yellow emergency transfer row/connecting block for each trunk.
3. Connect CO trunk leads from the green field to **TK** terminals on the yellow emergency transfer row/connecting block for each trunk.

4. Connect **ST** leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the **ST** terminal appearance in the yellow trunk/auxiliary cross-connect 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 **ST** leads from the terminal selected in Step 4 to the assigned terminal in the blue or white station distribution field.
6. If ground start is required, connect two wires from the ground terminals to the third pair of each emergency telephone appearance on the yellow trunk/auxiliary row created in Step 4. Loop the wires from the first appearance through to the last appearance if enough ground terminals are not (Figure 4-36).

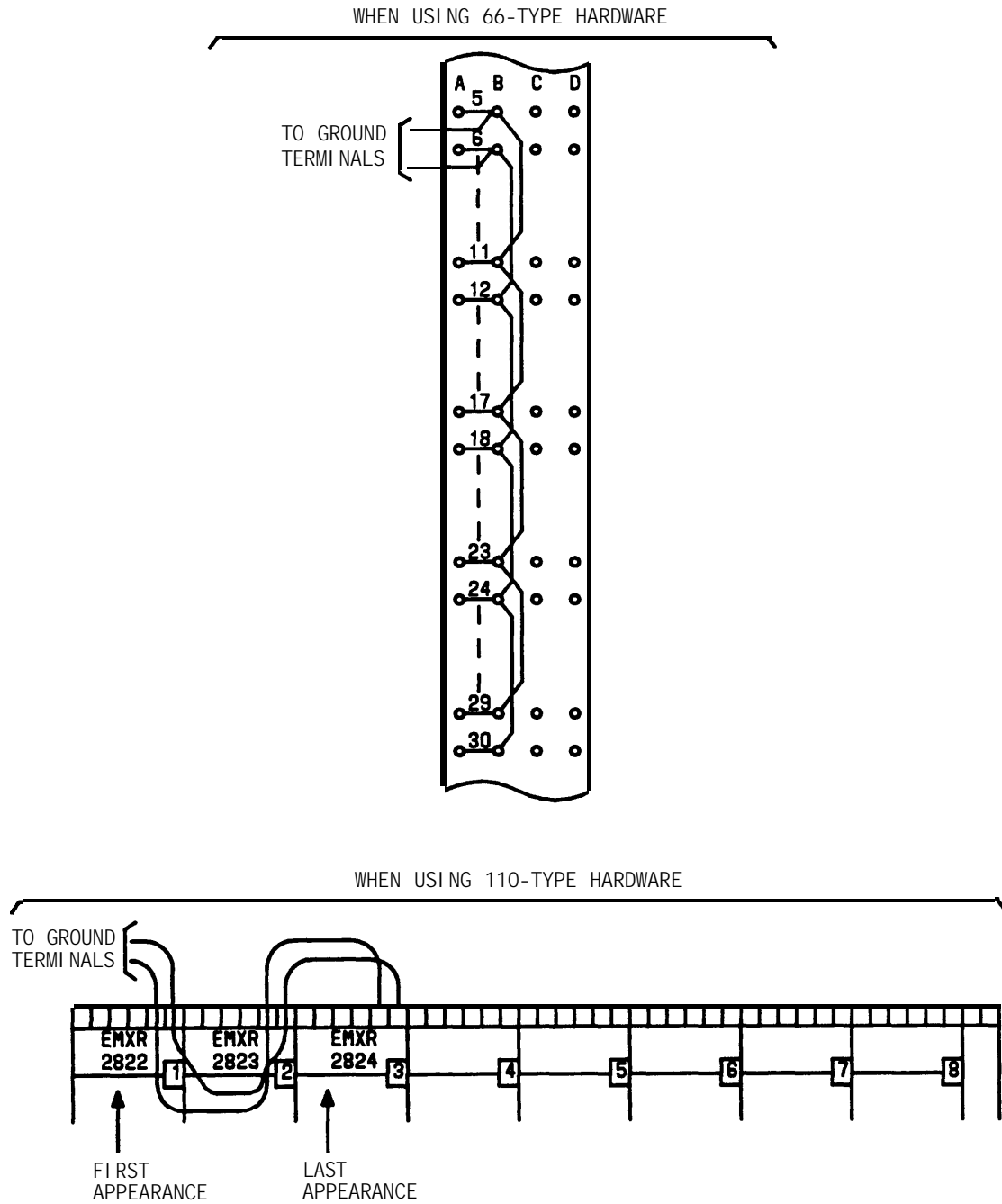


Figure 4-36. Ground Wiring Example (Three Telephones Used Only for Emergency Transfer)

Trunk/Auxiliary Field Connections—Telephone Used for Emergency Transfer and as a Normal Extension

Connect telephone as follows:

At trunk/auxiliary cross-connect field, connect a pair of wires between the **-48V** and **GRD** terminals on the yellow emergency transfer row/connecting block and the **EM TRANS RELAY PWR** terminal (Figures 4-33 and 4-34, respectively for 110-type and 66-type hardware).

1. Connect CO trunk leads from the purple field to **TC** terminals on the yellow emergency transfer row/connecting block for each trunk.
2. Connect CO trunk leads from the green field to **TK** terminals on the yellow emergency transfer row/connecting block for each trunk.
3. Connect telephone leads from the purple analog line board row/connecting block to the **LC** terminals on the yellow emergency transfer row/connecting block for each telephone.
4. Connect **ST** leads on the yellow emergency transfer row/connecting block for each emergency transfer telephone to the **ST** terminal appearance in the purple trunk/auxiliary cross-connect field.
5. Connect the **ST** leads from the terminal selected in Step 4 to the assigned terminal in the blue or white station distribution field.
6. If ground start is required, connect two wires from the ground terminals to the third pair of each emergency telephone appearance on the yellow trunk/auxiliary row created in Step 5. Loop the wires from the first appearance through to the last appearance if enough ground terminals are not (Figure 4-37).

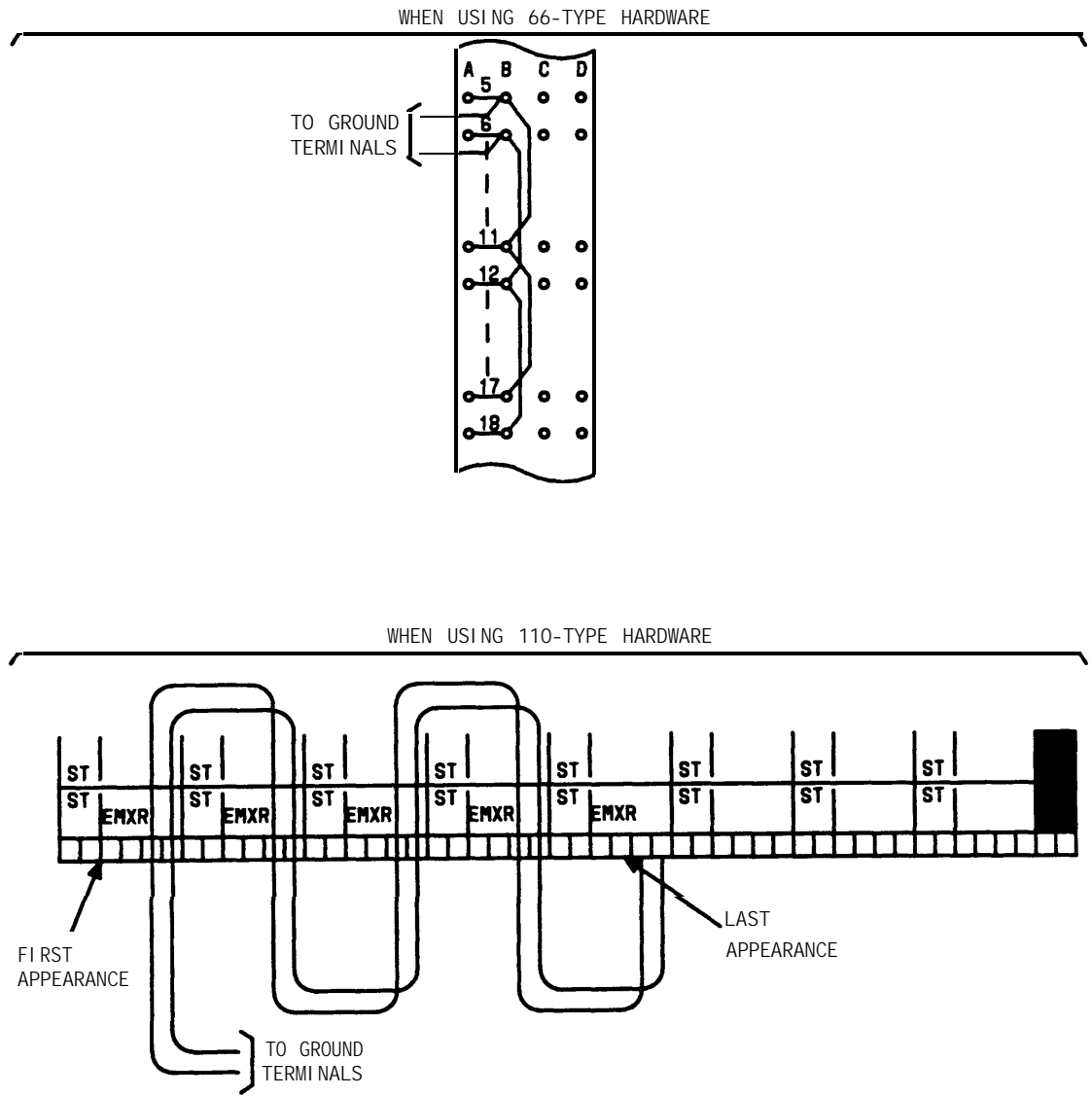


Figure 4-37. Ground Wiring Example (Five Telephones Used for Emergency Transfer and as Normal Extensions)

Telephone Installation

Install telephones assigned to emergency transfer as follows:

1. If ground start is required, do Steps 2 through 9 to install the ground start switch; otherwise, go to Step 10.
2. Remove cover from 551A key.

3. Mount base of 551A key to 77A bracket using screws provided with bracket.
4. Remove housing from 500- or 2500-type telephone.
5. Connect wire from red lead (R) on telephone through 551A key to yellow and/or black lead on telephone.
6. Replace cover on 551A key.
7. Place groove in bracket over lip of telephone base (Figure 4-38).
8. Replace telephone housing.
9. Repeat Steps 2 through 8, as required.
10. Connect telephones to the information outlets.
11. Install patch cords/jumper wires between the switch side and the terminal side of the station distribution field.

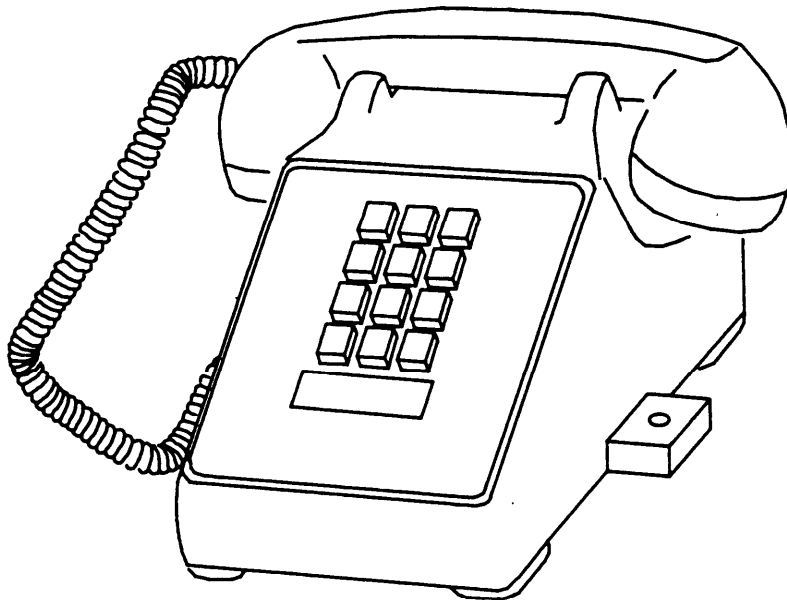


Figure 4-38. Ground Start Key Installation

Installing External Ringing

Requirements

Figure 4-39 shows the connections for external ringing, which 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 eight ports.

A maximum of 3 devices can be connected to one TN742 or TN769 circuit pack port.

Installation

Install ringing device as follows:

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

EXAMPLE: Port Number	B	02	01
	Carrier	Slot	Circuit

2. Install patch cord/jumper wires at cross-connect field.
3. Mount the ringing device at location specified on the External Ringing Device Worksheet.
4. Connect a 2-pair line cord (modular plug at one end) from the information outlet to the ringing device (Figure 4-39).
5. Connect red (R) and green (T) leads to the ringing device.
6. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

3. Mount indicator at specified location.
4. Connect a 2-pair line cord (modular plug at one end) from the information outlet to the indicator (Figure 4-39).
5. Connect red (R) and green (T) leads to the indicator.
6. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

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Auxiliary Equipment Description

The following optional equipment is available for use with the system.

- 278A adapter—provides an interface to customer-provided equipment for the Loudspeaker Paging feature. The 278A adapter requires -24 volt dc power, however it can be modified for -48 volt dc power by adding a D-181321 kit of parts (Comcode 103 031 181).
- 89A control unit—provides an interface to customer-provided equipment for the Loudspeaker Paging feature. A 2012D transformer is required to provide -48 volt dc power to the control unit.
- PagePac paging system—provides an amplifier system for the Loudspeaker Paging feature. Three models are available:
 - PagePac 20—Provides a single zone of paging with an input source for music. The unit can 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. Also, it is possible to use a customer-supplied music source.

All PagePac models require 117-volt ac power.

- 36A voice coupler—provides an interface and also protects the customer-provided equipment required for Intercept Treatment—Recorded Announcement, Music-on-Hold, and Recorded Telephone Dictation Access features. The 36A voice coupler is powered by a 2012D transformer. The 36A voice coupler is arranged for wall-mounting.

- 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 to provide a 117-volt ac power source.
- Audichron® H9040 Wake-Up Announcement System—provides automatic wake-up announcements for use with the hospitality features. This unit requires a power supply (to be provided 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 an AP, AUDIX, Call Management System (CMS), Distributed Communications System (DCS), Property Management System (PMS), 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 PMS or SMDR equipment.
- Information system network (ISN) interface—provides an interface to the ISN that interconnects computers and terminals on a customer's premises.
- Star-based local area network (STARLAN) interface—provides an interface to the STARLAN network that interconnects personal computers, data terminals, resource units, and printers.
- (Premises lightwave system (PLS) interface—provides an interface to the PLS that allows 3270-type terminals to be connected 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 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 to a customer-provided music source. All calls 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 for the Music-on-Hold feature can also be connected through a paging amplifier to provide background music over the loudspeakers.

Figure 5-1 is a block diagram that shows how the Loudspeaker Paging and Music-on-Hold features interact. Detailed installation procedures for these features are included in this guide.

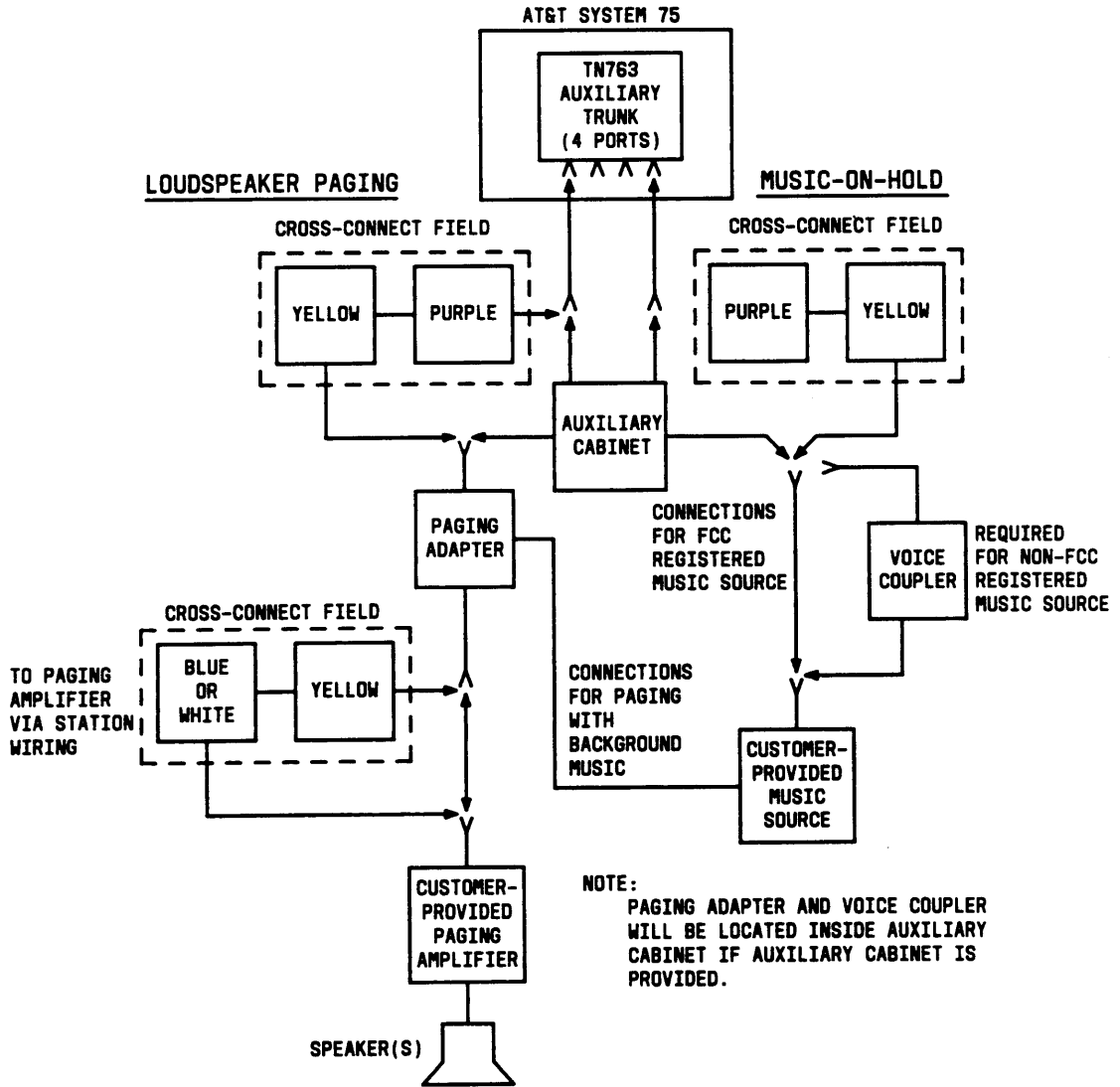


Figure 5-1. Connections for Loudspeaker Paging and Music-on-Hold

Installing Loudspeaker Paging Access—278A Paging Adapter

Requirements

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 27A adapter is designed to operate on -24V dc. If it is to be operated on -48V dc, it must be modified with a D-181321 kit of parts. The adapter is mounted in the auxiliary cabinet, if one is available. If an auxiliary cabinet is not available, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet ED-1E443-10 intra-connection panel. Six leads (T, R, SZ, SZ1, S, and S1) connect the adapter to a TN763 auxiliary trunk circuit pack located in a port carrier. A TN763 circuit pack contains four ports.

Figure 5-2 shows the connections for the Loudspeaker Paging feature. The connections are for one zone. Repeat the connections for each paging zone.

The connections shown in Figure 5-2 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.

CHAPTER 5. AUXILIARY EQUIPMENT INSTALLATION

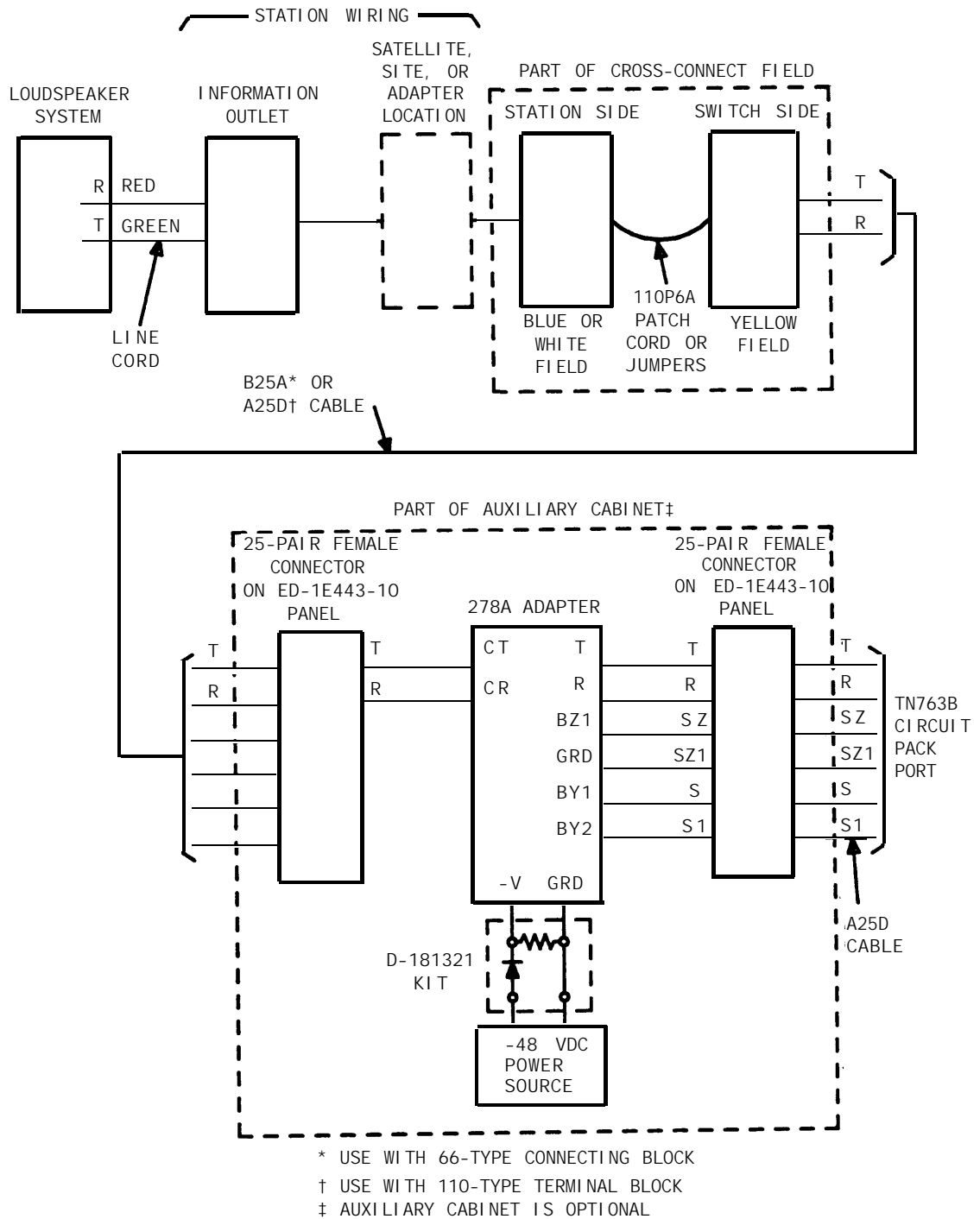


Figure 5-2. Connections for Loudspeaker Paging—278A Adapter

Installation

Install loudspeaker paging access as follows:

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. Connect the A25D cable from the assigned port carrier slot to the 25-pair connector on the auxiliary cabinet's ED-1E443-10 intra-connection panel (Figure 5-2).
4. Connect an A25D (**for 110-type hardware**) or B25A **for 66-type hardware**) cable from the 25-pair connector on the ED-1E443-10 intra-connection panel to the switch side of the cross-connect field (Figure 5-2).
5. **For 110-type hardware**, install a yellow (auxiliary) label on the 110-type terminal block. **For 66-type hardware**, write the lead designations on the 66-type connecting block with a felt-tipped pen.
6. Remove the cover from the 278A adapter, and install the adapter on a vertical surface.
7. Make connections from the 278A adapter to the 110-type wiring blocks on the ED-1E443-10 intra-connection panel (Figure 5-2).
8. On the 278A adapter:
 - Install a strap between terminal **BZ2** and terminal **-V**.
 - Connect a -24V dc, 40-ma power source to the **-V** and **GRD** terminals. If the auxiliary cabinet is providing the power, install a D-181321 kit of parts to reduce the -48V dc to -24V dc.
 - Install straps between terminals **E** and **F** and terminals **G** and **H** for the first 278A adapter.
 - Install option straps between terminals **C** and **D** on each 278A adapter.

9. Install the cover on the 278A adapter.
10. Install patch cord/jumper wires at cross-connect field.
11. Connect a 2-pair line cord (modular plug at one end) from the information outlet to the loudspeaker system (Figure 5-2).
12. Install loudspeaker equipment per the manufacturer's instructions.
13. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

Installing Loudspeaker Paging Access—89A Control Unit

Requirements

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 one is available. If an auxiliary cabinet is not available, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet's ED-1E443-10 intra-connection panel. 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 four ports.

Figure 5-3 shows the connections for the Loudspeaker Paging feature. The connections are for one zone. Repeat the connections for each paging zone.

The connections shown in Figure 5-3 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.

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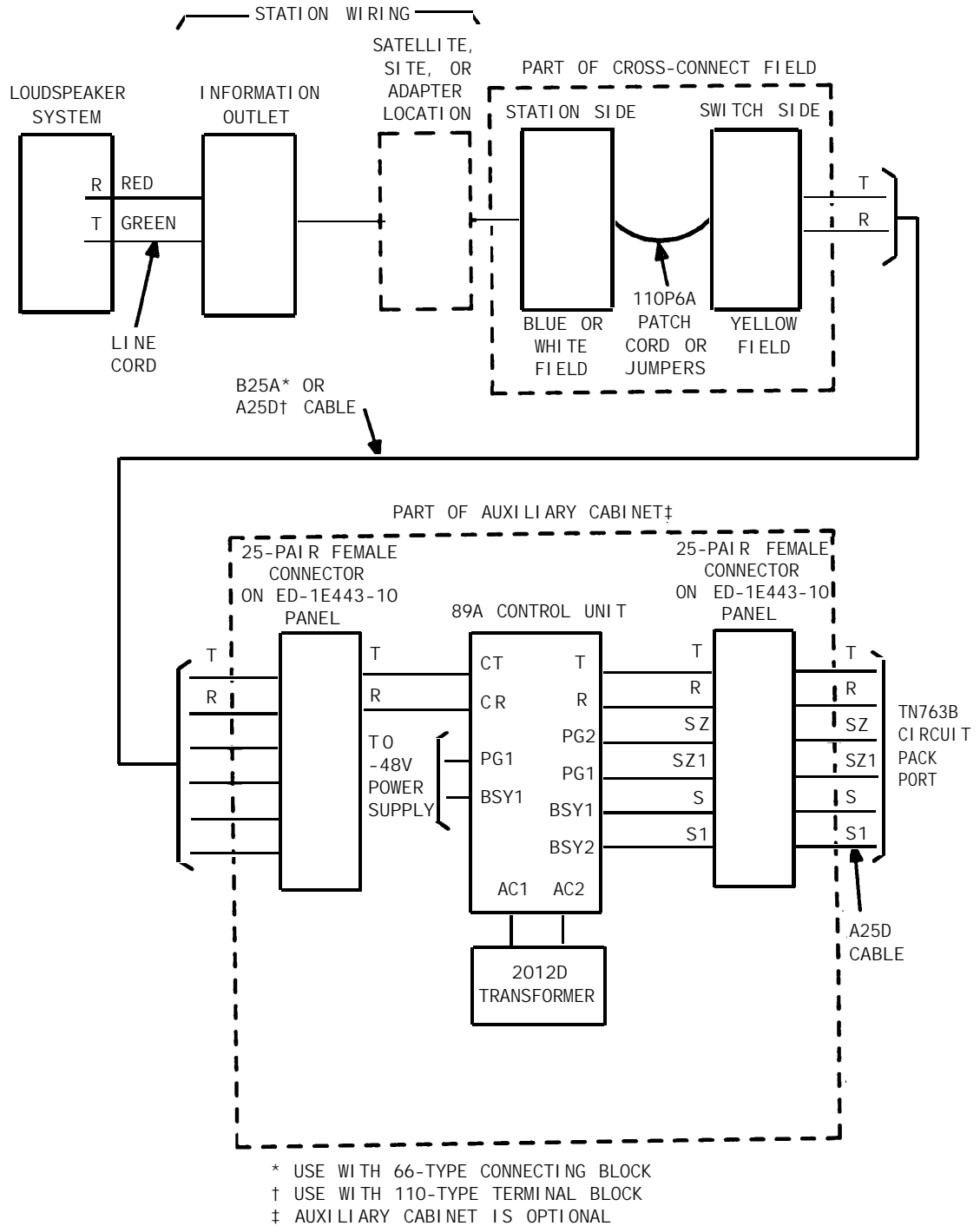


Figure 5-3. Connections for Loudspeaker Paging—89A Control Unit

Installation

Install loudspeaker paging access as follows:

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. Connect the A25D cable from the assigned port carrier slot to the 25-pair connector on the auxiliary cabinet's ED-1E443-10 intra-connection panel (Figure 5-3).
4. Connect an A25D (**for 110-type hardware**) or B25A **for 66-type hardware**) cable from the 25-pair connector on the ED-1E443-10 intra-connection panel to the switch side of the cross-connect field (Figure 5-3).
5. **For 110-type hardware**, install a yellow (auxiliary) label on the 110-type terminal block. **For 66-type hardware**, write the lead designations on the 66-type connecting block with a felt-tipped pen.
6. Remove the cover from the 89A control unit, and install the control unit.
7. Make connections from the 89A control unit to the 110-type wiring blocks on the ED-1E443-10 intra-connection panel (Figure 5-3).
8. On the 89A control unit:
 - Connect terminals **PG1** and **BSY1** to a -48V dc power supply.
 - Connect a 2012D transformer to terminals **AC1** and **AC2**.
9. Install the cover on the 89A control unit.
10. At the cross-connect field, install patch cord/jumper wires as required.
11. Install loudspeaker equipment per the manufacturer's instructions.
12. At the information outlet, connect a 2-pair line cord (modular plug at one end) and route it to the loudspeaker equipment (Figure 5-3).

13. Plug the 2012D transformer into a 117-volt ac receptacle not under control of a wall switch.
14. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

Installing PagePac® Paging System

General

The PagePac paging systems use a single port 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.

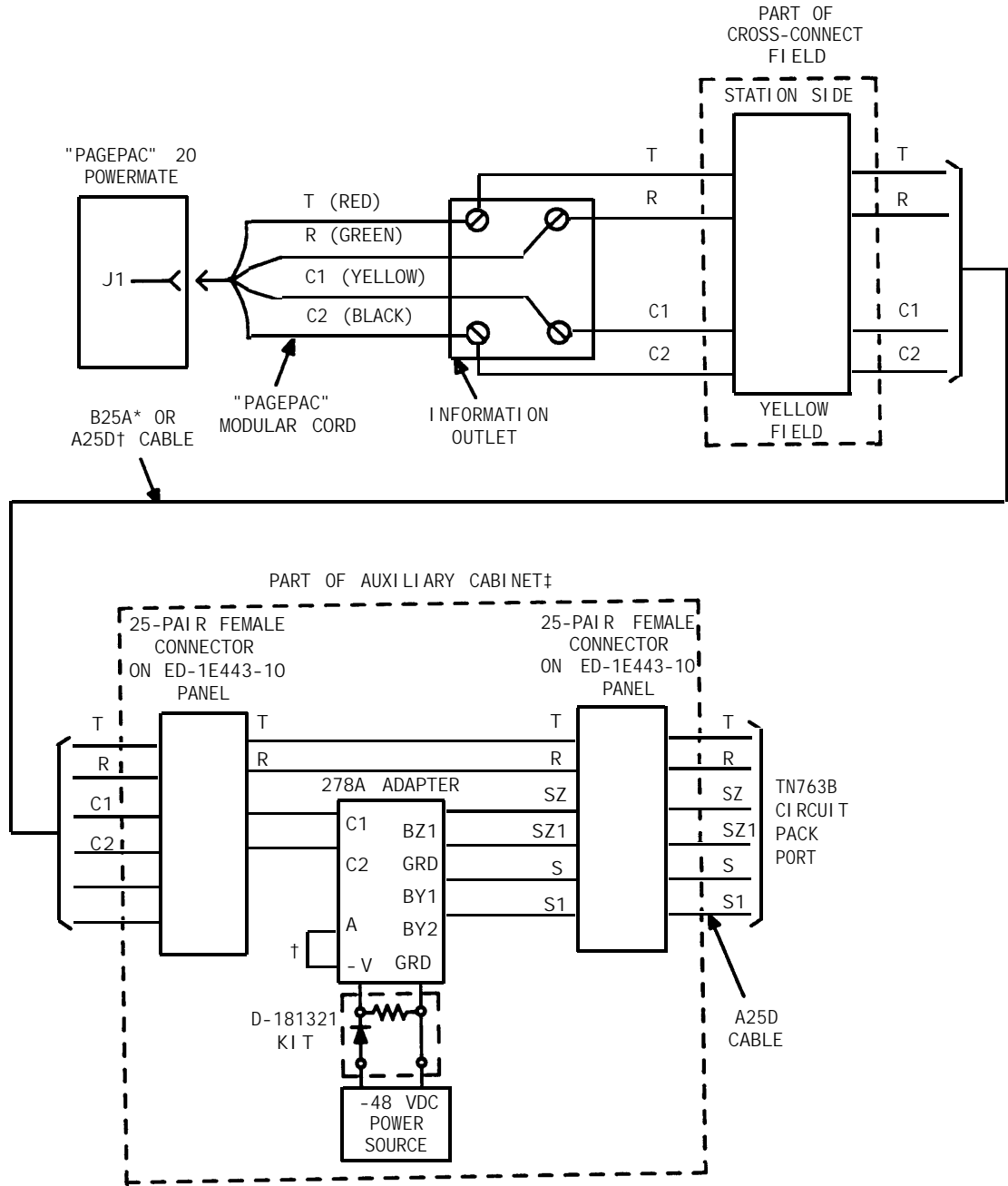
Three models are available:

- 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 5-4) or it can be equipped with a Zone-Mate 9 or 39 to provide multiple paging zones (Figure 5-5). If the PagePac 20 is used alone, a 278A adapter is required.

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* USE WITH 66-TYPE CONNECTING BLOCK
 † USE WITH 110-TYPE CONNECTING BLOCK
 ‡ AUXILIARY CABINET IS OPTIONAL
 § ON 278A ADAPTER, STRAP TERMINALS -V AND A

Figure 5-4. Connections for PagePac 20 Without Zone-Mate 9 or 39

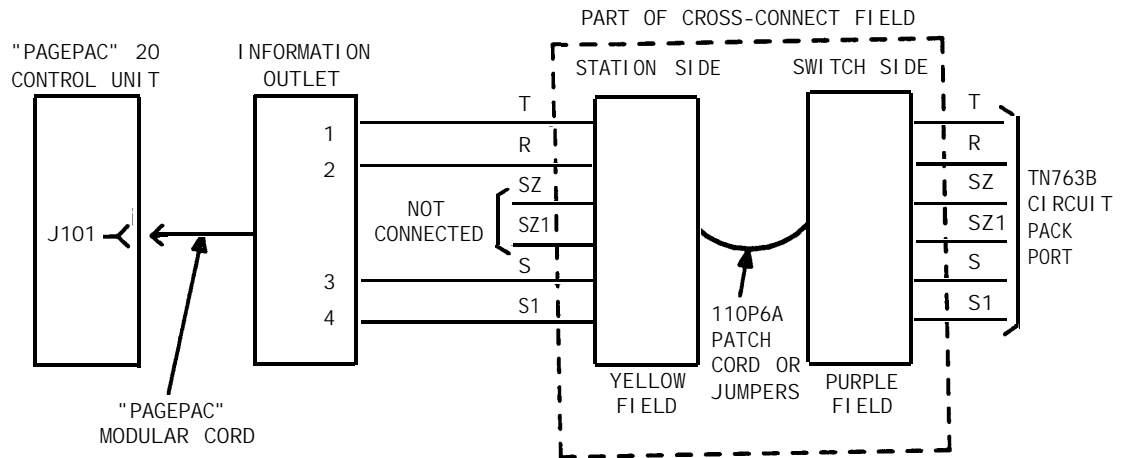
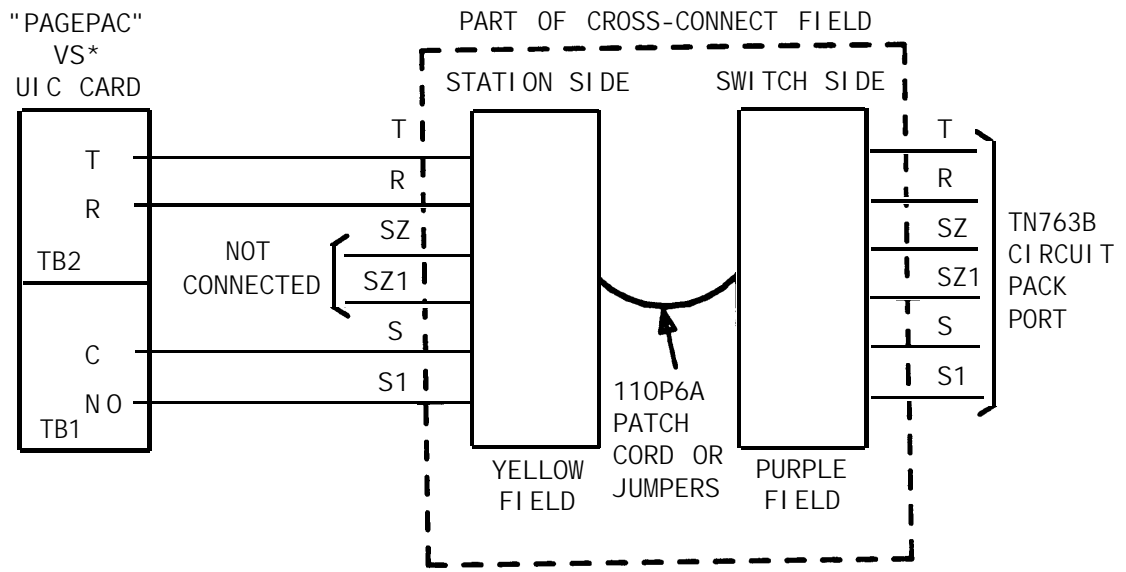


Figure 5-5. Connections for PagePac 20 With Zone-Mate 9 or 39

Installing 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. Connection the PagePac VS as shown in Figure 5-6.



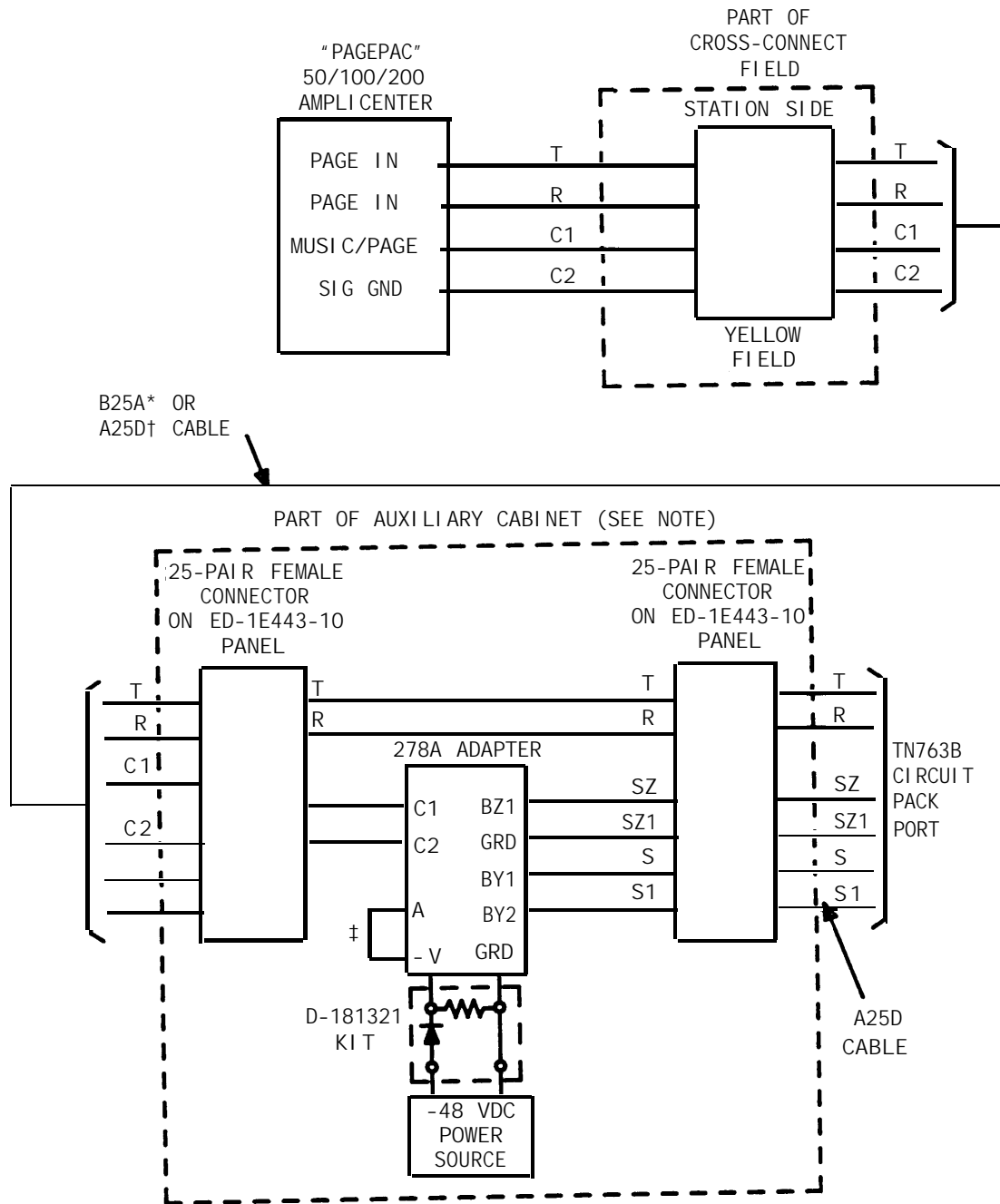
* IF UIC CARD IS NOT PROVIDED, ALL CONNECTIONS ARE MADE TO TB2 ON THE "PAGEPAC" VS

Figure 5-6. Connections for PagePac VS

Installing PagePac 50/100/200

The 50/100/200 PagePac paging system mounts directly on a wall or on a 23-inch relay rack using the appropriate adapters. The unit provides 3 output wattages: 50, 100 and 200. The PagePac amplicenter can be used alone to provide a single zone of paging (Figure 5-7) or add-on units can be provided to create a paging system with up to 24 paging zones (Figure 5-8). If the PagePac 50/100/200 amplicenter is used alone, a 278A adapter is required.

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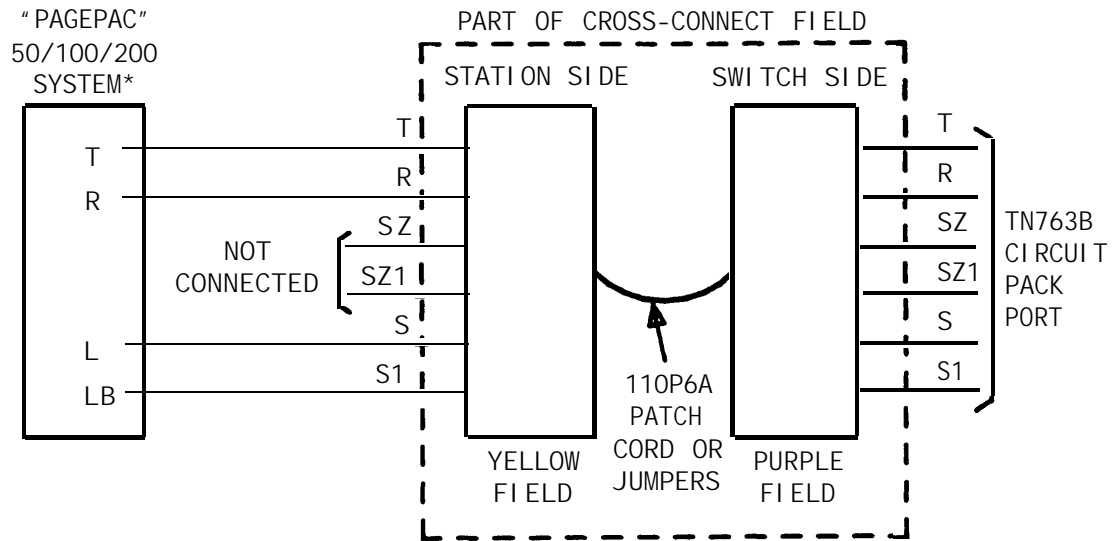
NOTE: AUXILIARY CABINET IS OPTIONAL

* USE WITH 66-TYPE CONNECTING BLOCK

† USE WITH 110-TYPE TERMINAL BLOCK

‡ STRAP TERMINALS -V AND A

Figure 5-7. Connections for PagePac 50/100/200 Amplicenter Only



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

Figure 5-8. Connections for PagePac 50/100/200 System

Installing Music-on-Hold Access

Requirements

An information outlet provides access to the music source. 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 36A voice coupler is mounted in an auxiliary cabinet, if one is available. If an auxiliary cabinet is not available, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet ED-1E443-10 intra-connection panel.

The switch side of the cross-connect field is connected by the T and R leads to a TN763 auxiliary trunk circuit pack located in a port carrier. A TN763 circuit pack contains four ports.

Figure 5-9 shows the connections for the Music-on-Hold feature when the loudspeaker equipment is FCC registered. Figure 5-10 shows the

connections for the Music-on-Hold feature when the loudspeaker equipment is not FCC registered.

The connections shown in Figures 5-9 and 5-10 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.

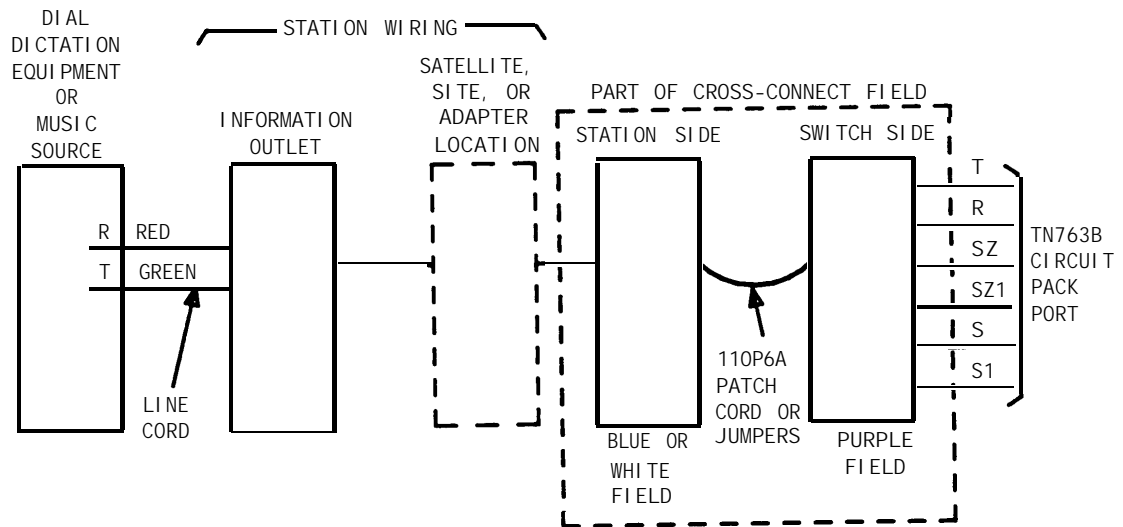


Figure 5-9. Connections for FCC Registered Equipment Provided for Music-on-Hold/Dial Dictation Equipment (Auxiliary Access)

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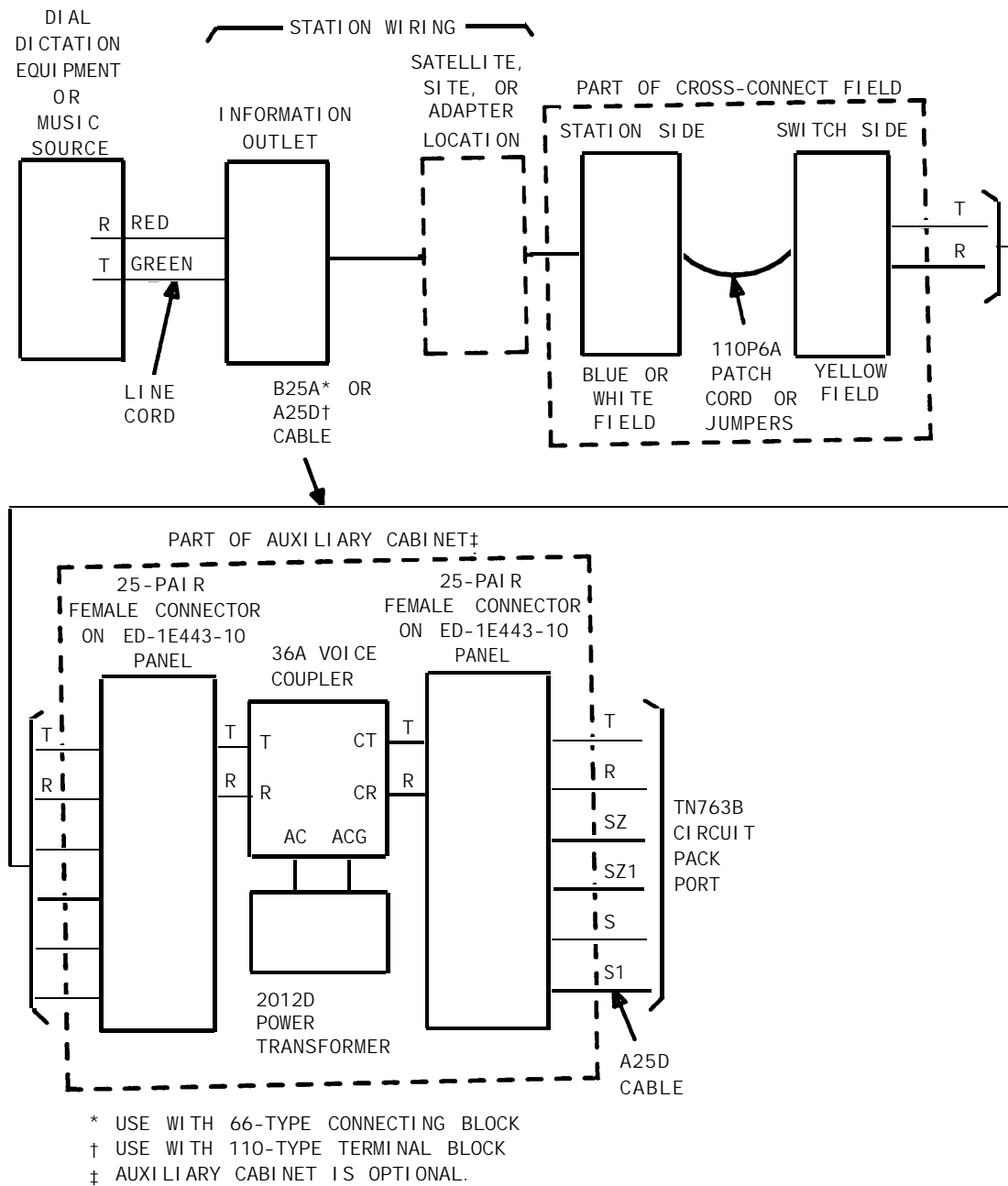


Figure 5-10. Connections for Non-FCC Registered Equipment Provided for Music-on-Hold/Dial Dictation Equipment (Auxiliary Access)

Installation—FCC Registered Music Source

Install a FCC registered music source as follows:

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

EXAMPLE: Port Number B 02 01
 Carrier Slot Circuit

2. Install music source per the manufacturer's instructions.
3. Connect a line cord (modular plug at one end) from the information outlet to the music source (Figure 5-9).
4. Install patch cord/jumper wires at the cross-connect field.
5. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

Installation—Non-FCC Registered Music Source

Install a nonregistered FCC music source as follows:

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

EXAMPLE: Port Number B 02 01
 Carrier Slot Circuit

2. Identify carrier slot and place a label on both ends of an A25D cable.
3. Connect the A25D cable from the assigned port carrier slot to the 25-pair connector on the auxiliary cabinet ED-1E443-10 intra-connection panel (Figure 5-10).
4. Connect an A25D (**for 110-type hardware**) or B25A **for 66-type hardware**) cable from the 25-pair connector on the ED-1E443-10 intra-connection panel to the switch side of the cross-connect field (Figure 5-10).

5. **For 110-type hardware**, install a yellow (auxiliary) label on the 110-type terminal block. **For 66-type hardware**, write the lead designations on the 66-type connecting block with a felt-tipped pen.
6. Remove the cover from the 36A voice coupler, and install the voice coupler.
7. At the 36A voice coupler;
 - Make connections to the 110-type wiring blocks on the ED-1E443-10 intra-connection panel (Figure 5-10).
 - Connect a 2012D transformer to terminals **AC** and **ACG**.
 - Install the cover.
8. Install music source per the manufacturer's instructions.
9. Connect a 2-pair line cord (modular plug at one end) from the information outlet to the music source (Figure 5-10).
10. Install patch cord/jumper wires at the cross-connect field.
11. Plug the 2012D transformer into a 117-volt ac receptacle not under control of a wall switch.
12. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

Installing Loudspeaker Paging With Background Music

Requirements

Figures 5-11 and 5-12 show the additional connections required when loudspeaker paging is installed with background music. Refer to the installation procedures for installing loudspeaker paging (278A adapter or 89A control unit) and music-on-hold.

Installation Using 278A Adapter

Connect the 278A adapter as follows:

1. On the 278A adapter (Figure 5-11), connect the music source to terminals **M1** and **M2**.

2. Adjust music source level.

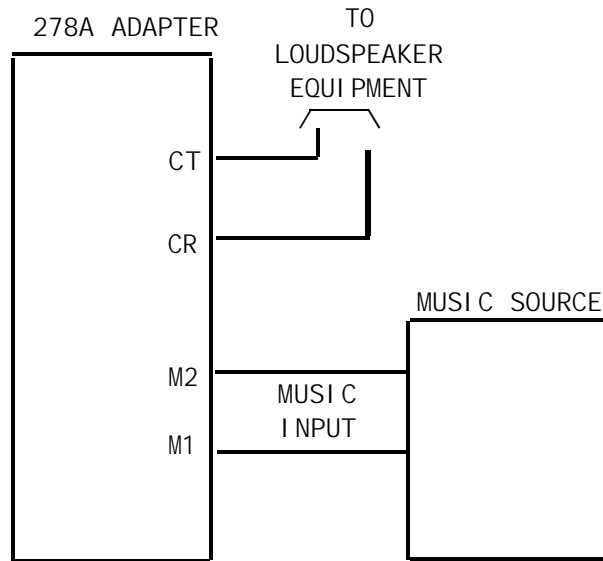


Figure 5-11. Loudspeaker Paging With Background Music Connections—278A Adapter

Installation Using 89A Control Unit

Connect the 89A control unit as follows:

1. On the 89A control unit (Figure 5-12), connect the music source to terminals **CMS1** and **CMS2**.
2. Adjust music source level.

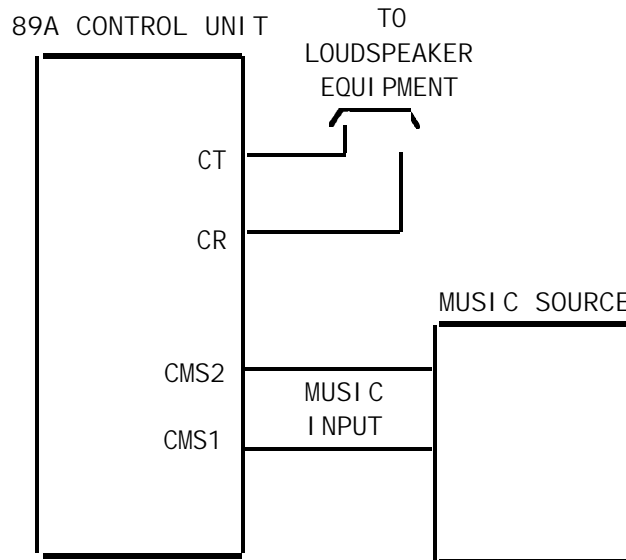


Figure 5-12. Loudspeaker Paging With Background Music Connections—89A Control Unit

Installing Recorded Announcement Equipment

Requirements

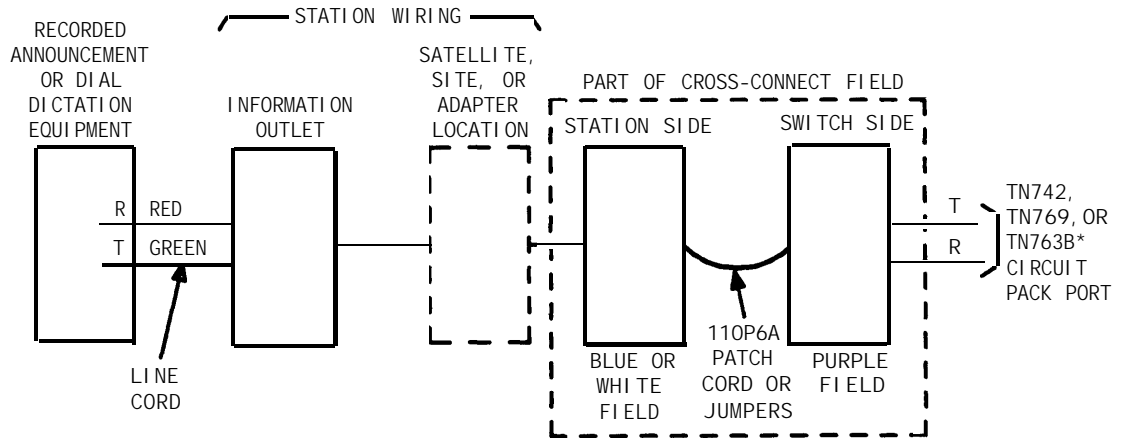
Access to recorded announcement equipment is provided by an information outlet. If the recorded announcement equipment is FCC registered, the switch side of the cross-connect field is connected directly to the switch cabinet. If the recorded announcement equipment is not FCC registered, the switch side of the cross-connect field is connected to a 36A voice coupler. The 36A coupler is mounted in an auxiliary cabinet, if one is available. If an auxiliary cabinet is not available, a connectorized wiring block must be locally engineered to replace the auxiliary cabinet ED-1E443-10 intra-connection panel.

The switch side of the cross-connect field is connected by the T and R leads to a TN742 or TN769 analog line circuit pack located in a port carrier. The TN742 or TN769 circuit pack contains eight ports.

Figure 5-13 shows the connections for the Recorded Announcement feature when the recorded announcement equipment is FCC registered. Figure 5-14 shows the connections for the Recorded Announcement

feature when the recorded announcement equipment is not FCC registered.

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



* TN763B CAN BE USED ONLY FOR RECORDED TELEPHONE DICTATION.

Figure 5-13. Connections for FCC Registered Equipment Provided for Recorded Announcement/Dial Dictation Equipment (Analog Access)

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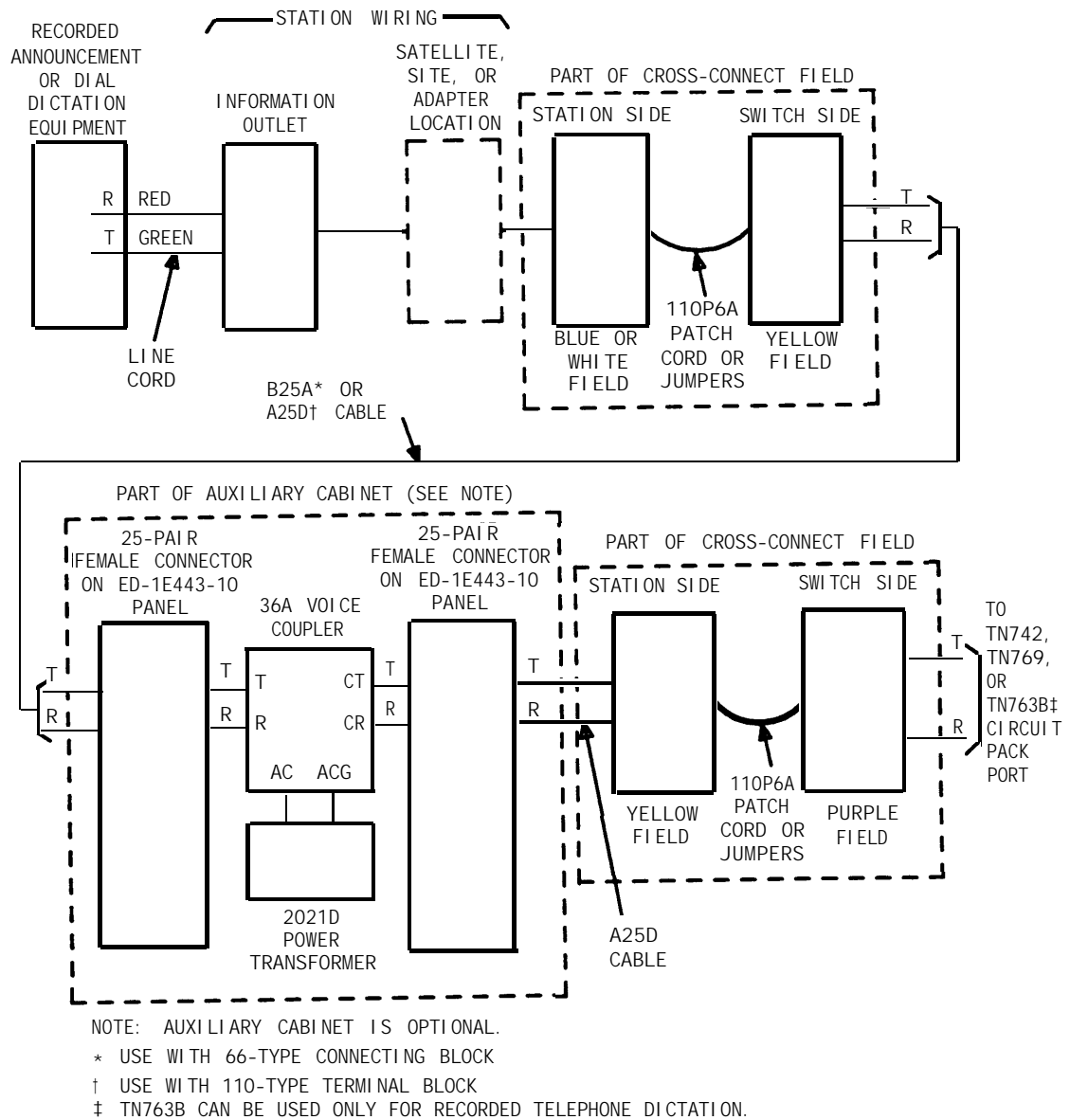


Figure 5-14. Connections for Non-FCC Registered Recorded Announcement/Dial Dictation Equipment (Analog Access)

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Installation—FCC Registered Recorded Announcement Equipment

Install FCC registered recorded announcement equipment as follows:

1. Determine feature port assignment from Announcement Form:

EXAMPLE: Port Number B 02 01
 Carrier Slot Circuit

2. Install recorded announcement equipment per the manufacturer's instructions.
3. Connect a 2-pair line cord (modular plug at one end) from the information outlet to the music source (Figure 5-14).
4. Install patch cord/jumper wires at cross-connect field.
5. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

Installation—Non-FCC Registered Recorded Announcement Equipment

Install the Non-FCC registered recorded announcement equipment as follows:

1. Determine feature port assignment from Announcement Form:

EXAMPLE: Port Number B 02 01
 Carrier Slot Circuit

2. Identify carrier slot and place a label on both ends of an A25D cable.
3. Connect the A25D cable from the station side of the cross-connect field to a 25-pair connector on the auxiliary cabinet ED-1E443-10 intra-connection panel (Figure 5-14).
4. Connect an A25D (**for 110-type hardware**) or B25A (**for 66-type hardware**) cable from the 25-pair connector on the ED-1E443-10 intra-connection panel to the switch side of the cross-connect field (Figure 5-14).

5. **For 110-type hardware**, install a yellow (auxiliary) label on the 110-type terminal block. **For 66-type hardware**, write the lead designations on the 66-type connecting block with a felt-tipped pen.
6. Remove the cover from the 36A voice coupler, and install the voice coupler.
7. At the 36A voice coupler:
 - Make connections to the 110-type wiring block on the ED-1E443-10 intra-connection panel (Figure 5-14).
 - Connect a 2012D transformer to terminals **AC** and **ACG**.
 - Install the cover.
8. Install recorded announcement equipment per manufacturer's instructions.
9. Plug the 2012D transformer into a 117-volt ac receptacle not under control of a wall switch.
10. Install patch cord/jumper wires at the cross-connect field.
11. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

Digital Announcer

Requirements

The Cook Electric digital announcer can be mounted in the auxiliary cabinet on a 23-inch relay rack. The relay rack includes the side bracket kit that consists of two side brackets and four mounting screws. The vertical height is 1.75 inches. If the digital announcer is located outside the auxiliary cabinet, it is powered by a 117-volt ac adapter furnished by Cook Electric. If the digital announcer is mounted inside the auxiliary cabinet, -48V dc power is provided by a rectifier mounted at the base of the cabinet. The alarm panel is mounted at the top of the cabinet.

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

Installation

Install the digital announcer as follows:

1. Connect an A25D (**for 110-type hardware**) or B25A (**for 66-type hardware**) cable from the 25-pair connector on the ED-1E443-10 intra-connection panel to the switch side of the cross-connect field (Figure 5-15).
2. **For 110-type hardware**, install a yellow (auxiliary) label on the 110-type terminal block. **For 66-type hardware**, write the lead designations on the 66-type connecting block with a felt-tipped pen.
3. Connect a pair of wires from the alarm panel to the digital announcer connector **J2**, pins 1 and 8.
4. Remove the cover from the 36A voice coupler, and install the voice coupler.
5. At the 36A voice coupler:
 - Connect a pair of wires from terminals **T** and **R** to the digital announcer connector **J1**, pins J and K (Figure 5-15).
 - Make connections from terminals **CT** and **CR** to the 110-type wiring block on the ED-1E443-10 intra-connection panel (Figure 5-15).
 - Connect a 2012D transformer to terminals **AC** and **ACG**.
 - Install the cover.
6. Install patch cord/jumper wires at the cross-connect field.
7. Plug the 2012D transformer into a 117-volt ac receptacle not under control of a wall switch.
8. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

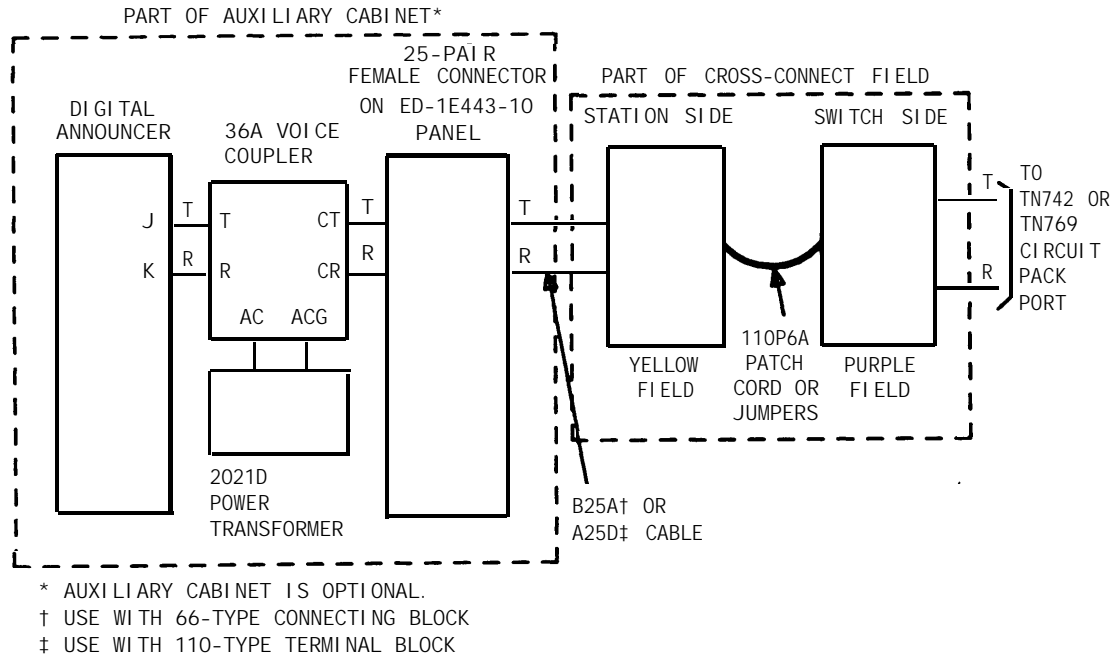


Figure 5-15. Connections for Digital Announcer Mounted in Auxiliary Cabinet

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 allow the basic unit to be mounted in the auxiliary cabinet.

Access to the TN742 or TN769 analog line circuit pack is provided by an information outlet. The TN742 and TN769 circuit packs contain eight ports. Access to the TN763B auxiliary trunk circuit pack is by the T and R leads through the cross-connect field. All four ports of the circuit pack are connected to the announcement unit.

Figures 5-16 and 5-17 show the connections for the Audichron wake-up announcement system. Figure 5-18 shows the power and ground connections. One analog line port and an auxiliary trunk circuit pack are required to connect the wake-up announcement unit.

Installation

Install wakeup announcement system as follows:

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

EXAMPLE: Port	Number	B	02	01
		Carrier	Slot	Circuit

2. Connect a 2-pair line cord (modular plug on one end) from the information outlet (Figure 5-16) to the announcement unit.
3. Install patch cord at cross-connect field (Figure 5-16).
4. Identify the carrier slot for the auxiliary trunk circuit pack and place a label on both ends of a connector cable.
5. Connect the cable to the appropriate port carrier slot and dress it down the sides of the cabinet.
6. Connect the cable from the bottom of the switch cabinet through the cable slack manager, if provided, to the connector associated with the 110-type terminal block/66-type connecting block row in the purple cross-connect field.
7. Connect an A25D (**for 110-type hardware**) or B25A **for 66-type hardware**) cable from the 25-pair connector associated with the second 110-type terminal block row/66-type connecting block in the yellow cross-connect field to connector **J1** on the announcement unit (Figure 5-17).

8. **For 110-type hardware**, install a yellow (auxiliary) label on the 110-type terminal block. **For 66-type hardware**, write the lead designations on the 66-type connecting block with a felt-tipped pen.
9. Install jumpers between the 110-type terminal block rows/66-type connecting blocks as shown in Figure 5-17.
10. Connect a -48V dc power source to the announcement unit (Figure 5-18). The power source 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 (555-200-651)* and *AT&T System 75 and System 75 XE—Administration (555-200-500)*.

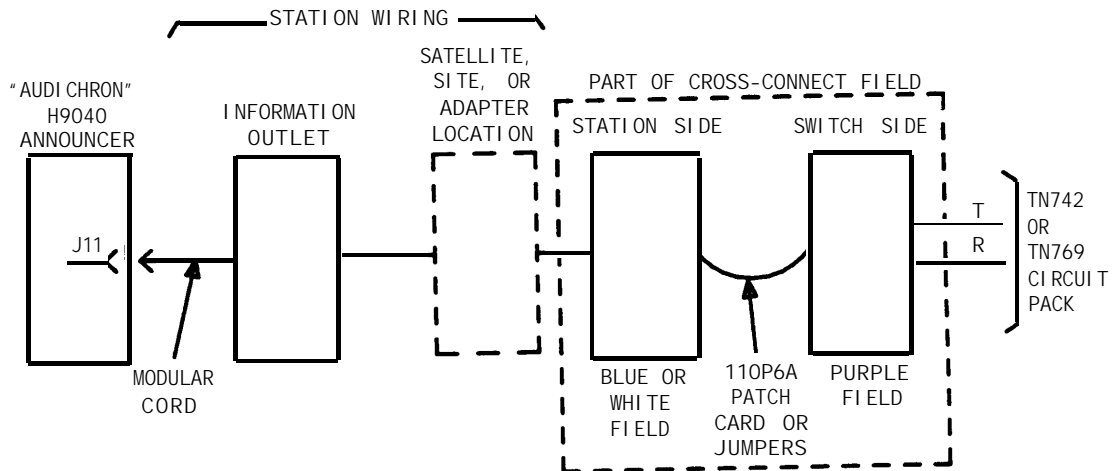
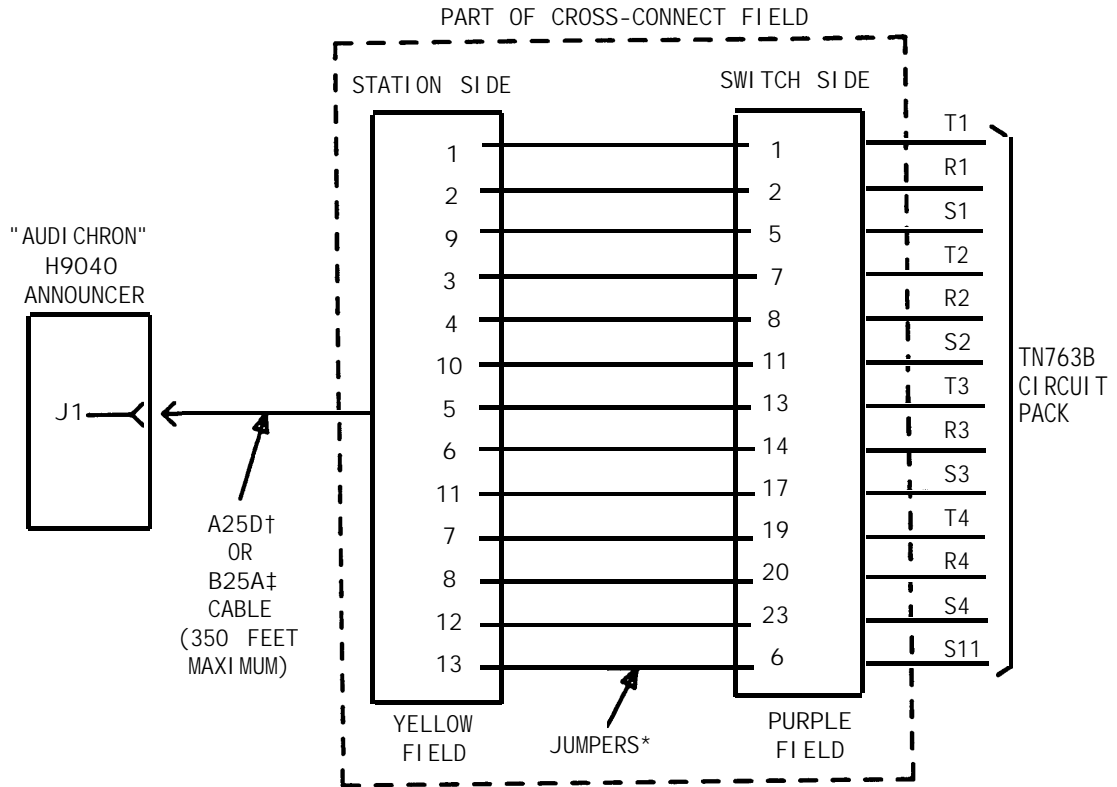


Figure 5-16. Connections for Analog Line Port to Wake-Up Announcement Unit



* TERMINAL NUMBERS SHOWN ARE CONNECTING BLOCK/TERMINAL BLOCK NUMBERS

† USE WITH 110-TYPE TERMINAL BLOCKS

‡ USE WITH 66-TYPE CONNECTING BLOCKS

Figure 5-17. Connections for Auxiliary Trunk Circuit Pack to Wake-Up Announcement Unit

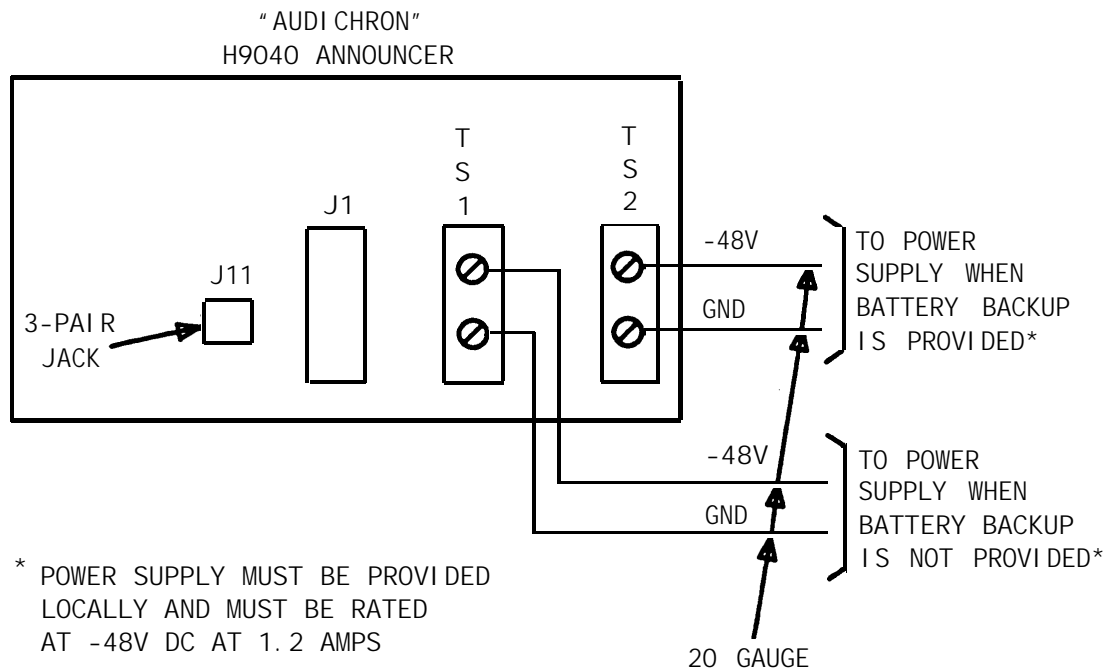


Figure 5-18. Connections for Power Unit to Wake-Up Announcement Unit

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 (Figures 5-13 and 5-14) and the same as Music-on-Hold for auxiliary trunk access (Figures 5-9 and 5-10).

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 (CPE) when a TN763 auxiliary trunk circuit pack is used.

Installing 3270 Data Modules

Requirements

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

- 3270A—asynchronous
- 3270C—controller
- 3270T—terminal.

The 3270 data modules are connected directly to TN754 digital line circuit packs. This manual contains only the information required to connect the data modules to the switch. Installation and testing information for the 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 5-19)

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

EXAMPLE: Port Number B 02 01
 Carrier Slot Circuit

2. Connect a 4-pair line cord (modular plug on both ends) from the information outlet to the data module (Figure 5-19).
3. Install patch cord/jumper wires at cross-connect field.
4. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).

CHAPTER 5. AUXILIARY EQUIPMENT INSTALLATION _____

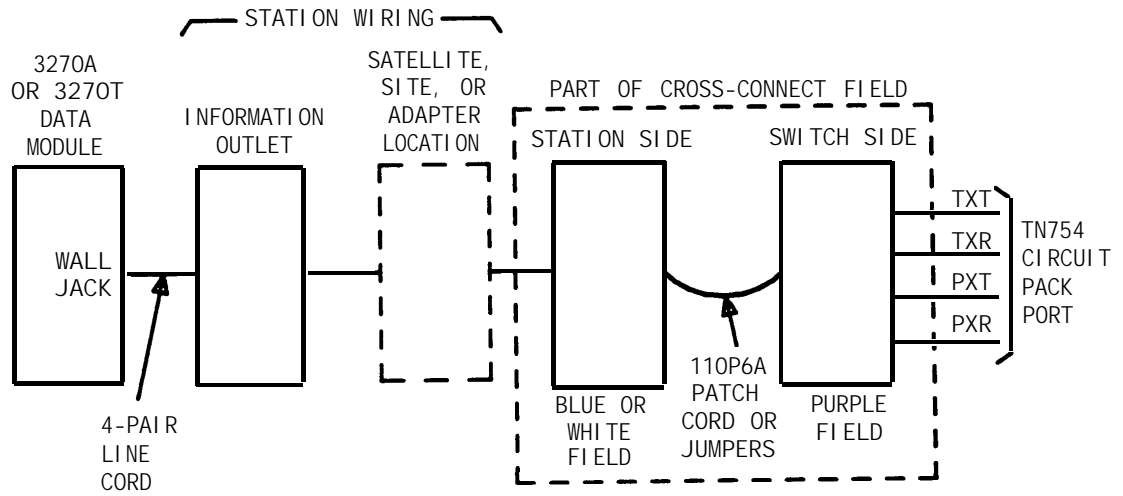


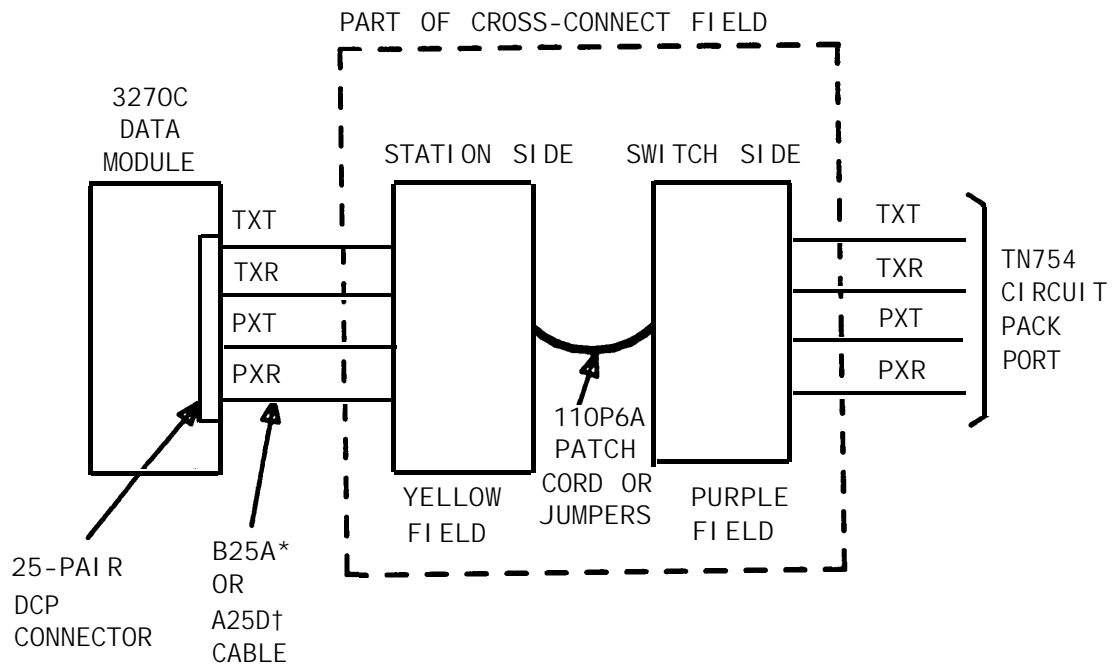
Figure 5-19. Connections for 3270A or 3270T Data Module

Connection to 3270C Data Module (Figure 5-20)

1. Identify the carrier slot for the data module and place a label on each end of a connector cable.
2. Connect the cable to the appropriate port carrier slot and dress it down the side of the cabinet.
3. Connect an A25D (**for 110-type hardware**) or B25A for **66-type hardware**) cable from the bottom of the switch cabinet through the cable slack manager, if provided, to the connector associated with a purple row/connecting block in the trunk/auxiliary field.
4. **For 110-type hardware**, install a yellow (auxiliary) label on the 110-type terminal block. **For 66-type hardware**, write the lead designations on the 66-type connecting block with a felt-tipped pen.
5. Connect an A25D (**for 110-type hardware**) or B25A (**for 66-type hardware**) cable from the connector associated with a yellow row/connecting block in the trunk/auxiliary field to location of 3270C data module (see Note).

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

6. Connect an A25D (**for 110-type hardware**) or B25A for **66-type hardware**) cable to the DCP connector the on rear of the data module.
7. Install patch cord/jumper wires at cross-connect field.
8. Administer per *AT&T System 75 and System 75 XE—Implementation* (555-200-651) and *AT&T System 75 and System 75 XE—Administration* (555-200-500).



* USE WITH 66-TYPE CONNECTING BLOCK
 † USE WITH 110-TYPE TERMINAL BLOCK

Figure 5-20. 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:

- AP/Adjunct—System 75 Only
- AP/Terminal—System 75 Only
- AUDIX/Adjunct—R1V3 Only
- AUDIX/Terminal—R1V3 Only
- CMS—R1V3 Only
- DSC—R1V2 and R1V3
- PMS—R1V3 Only

- Journal Printer—R1V3 Only
- Customer-provided terminals and host computers
- SMDR

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 guide contains only the information required to connect the PDMs to the 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/B25A cable through the cross-connect field to a TN754 digital line circuit pack. The PDMs can also be mounted and connected individually through the cross-connect field.

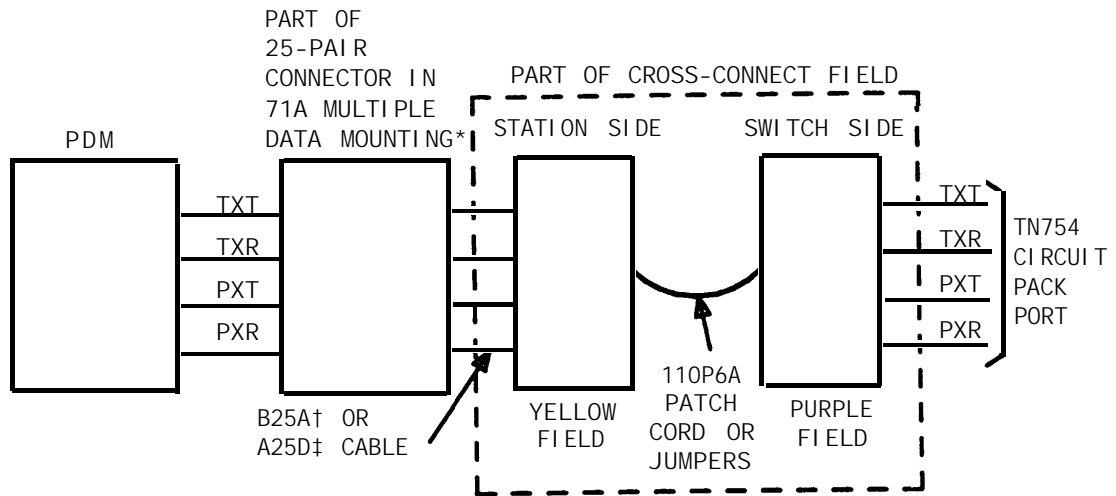
Installation

Connection to Data Mounting (Figure 5-21)

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

EXAMPLE: Port Number	B	02	01
	Carrier	Slot	Circuit

2. Connect an A25D (**for 110-type hardware**) or B25A **for 66-type hardware**) cable to the **DCP-LINE** connector on the rear of the data mounting.
3. Route the cable from the data mounting to the station side of the cross-connect field.
4. **For 110-type hardware**, install a yellow (auxiliary) label on the 110-type terminal block. For **66-type hardware**, write the lead designations on the 66-type connecting block with a felt-tipped pen.
5. Connect patch cords/jumper wires at cross-connect field (Figure 5-21).
6. Administer per *AT&T System 75 and System 75 XE—Implementation (555-200-651)* and *AT&T System 75 and System 75 XE—Administration (555-200-500)*.



* DATA MOUNTING IS LOCATED IN AUXILIARY CABINET, IF PROVIDED.
 † USE WITH 66-TYPE CONNECTING BLOCK
 ‡ USE WITH 110-TYPE TERMINAL BLOCK

Figure 5-21. Connections for PDMs in Data Mounting

Connection to Individual PDMs (Figure 5-22)

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 *AT&T System 75 User's Guide—Processor Data Module, 999-700-028*.
3. Install patch cord/jumper wires at cross-connect field.
4. Administer per *AT&T System 75 and System 75 XE—Implementation (555-200-651)* and *AT&T System 75 and System 75 XE—Administration (555-200-500)*.

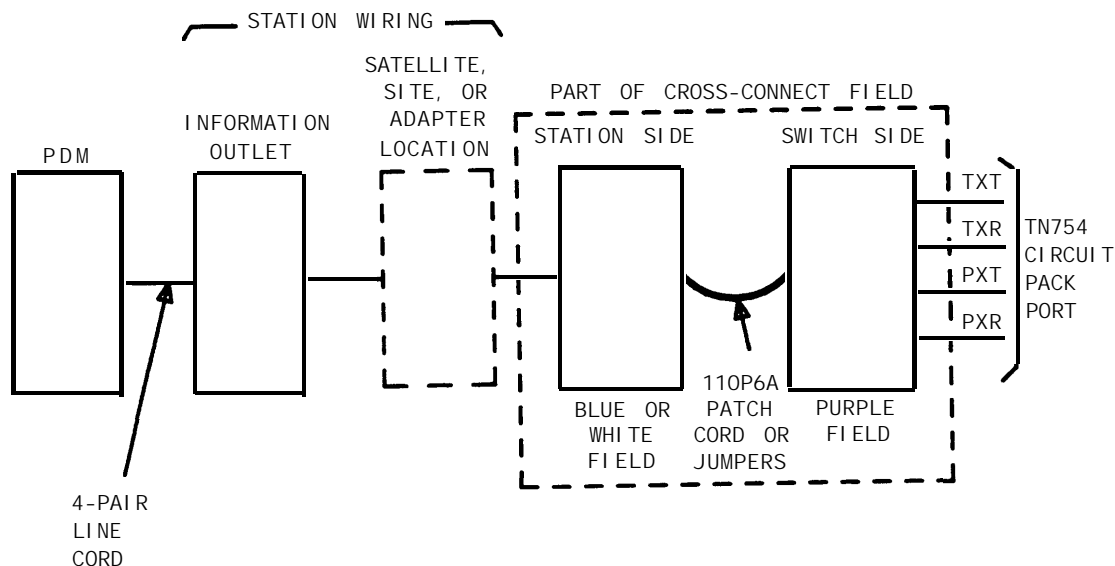


Figure 5-22. Connections for Individual PDMs

Installing AP Interface—System 75 Only

Requirements

The interface between System 75 and the AP/adjunct or AP/terminal is through PDMs. The AP alarms are connected through the trunk/auxiliary field to the System 75. The AP terminals can also be connected through the cross-connect field to the AP.

- System 75, Version 1 uses 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.

Installation of the AP interface is covered in the section for installing PDMs (Figures 5-21 and 5-22).

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

Connections for the AP alarms are shown in Figure 5-23.

Installation of AP Alarms

1. At the rear of the AP, connect a B25A (**for 110-type hardware**) or A25B (**for 66-type hardware**) cable to the **REMOTE ALARM** connector, then route the cable to a connector associated with a yellow row/connecting block in the trunk/auxiliary field to be used for the AP alarms (Figure 5-23).
2. At the trunk/auxiliary field, connect jumpers from the seventh pair on the yellow AP row to **ALARM MONITORS** terminal **1M** (Figure 5-23). Designate the seventh pair as **MAJ 1**.
3. Connect jumpers from the ninth pair on the yellow AP row to **ALARM MONITOR terminals 1M** (Figure 5-23). Designate the ninth pair as **MIN 1**.

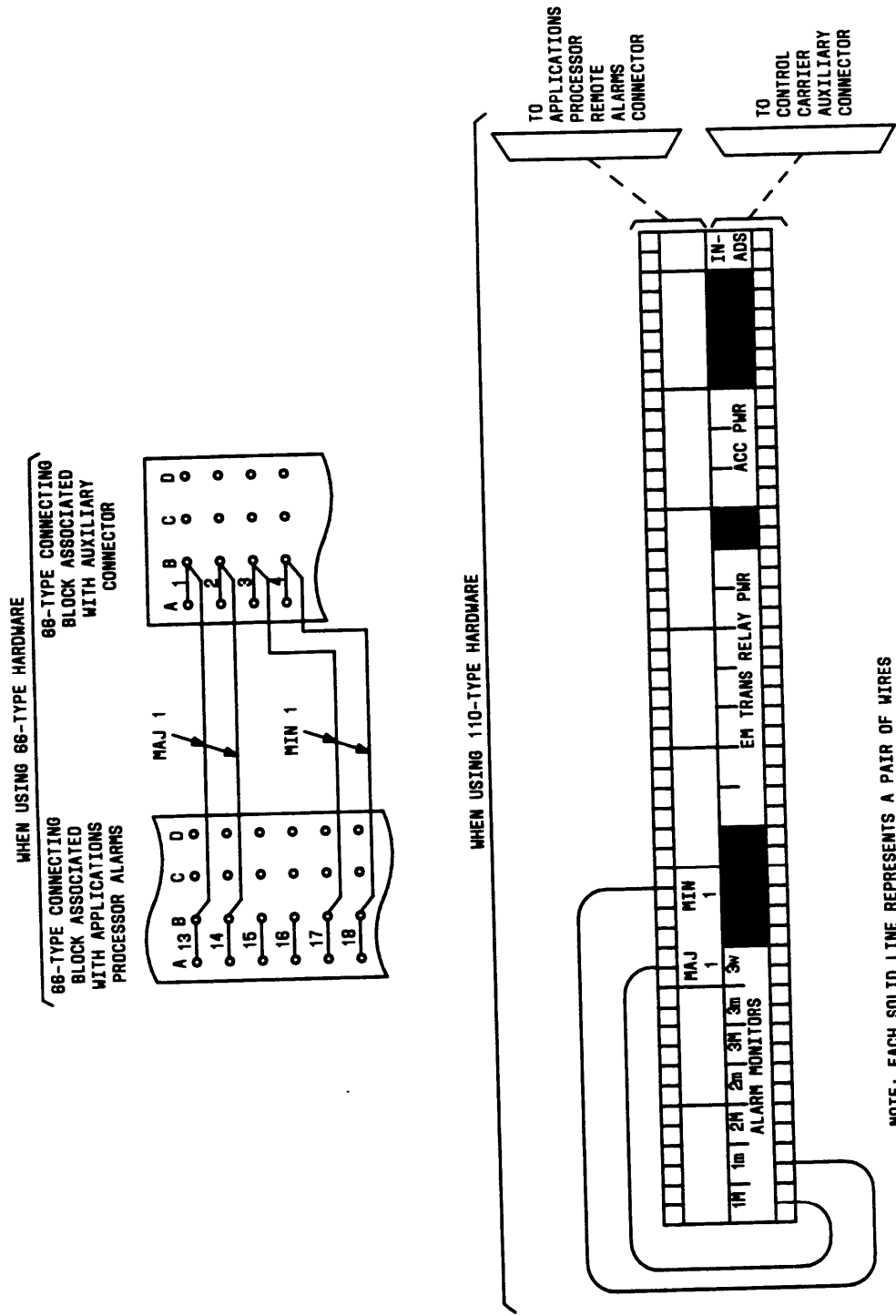


Figure 5-23. Connections at Trunk/Auxiliary Field for Applications Processor Alarms

Installing AUDIX Interface—R1V3 Only

Requirements

The interface between the switch and the AUDIX/Adjunct or AUDIX terminal is through PDMs. AUDIX terminals can also be connected through the cross-connect field to the AUDIX. The large AUDIX is not supported by System 75 or 75 XE.

- System 75, Version 3 uses 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.

Connections between the AUDIX interface and the switch are covered in the section for installing PDMs (Figures 5-21 and 5-22). The AUDIX requires up to 16 analog circuit pack ports from the switch to be connected through the cross-connect field to the AUDIX. Refer to Table 3-H for port circuit pin numbers.

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

Installing CMS Interface—R1V3 Only

Requirements

The interface between the switch and the CMS is through PDMs.

- System 75, Version 3 uses 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.

Connections between the CMS interface and the switch is covered in the section for installing PDMs (Figures 5-21 and 5-22).

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

Installing DCS—R1V2 and R1V3

Requirements

The DCS link to the switch can be provided by either PDMs or a DS1 tie trunk.

- System 75, Version 2 or 3 uses 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.

Connections for the DCS link using PDMs is covered in the section for installing PDMs (Figures 5-21 and 5-22). Set the PDM switches as follows:

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. If the DCS link is to be provided by a DS1 tie trunk, refer to **Installing DS1 Tie Trunks**.

Installing PMS Interface—R1V3 Only

Requirements

The interface between the switch and the customer's PMS is through PDMs. Connections between the PMS interface and the switch is covered in the section for installing PDMs (Figures 5-21 and 5-22).

Refer to the appropriate vendor's documentation for connecting the PDM to the PMS. The option switches on the PDM should be set in accordance with the requirements for the customer's PMS.

A journal printer can be used with the PMS. The connections for the printer are the same as for the PMS. Refer to the appropriate vendor's documentation for connecting the PDMs to the printer. The option switches on the PDM are to be set according to the requirements for the printer.

The PMS 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 (Figure 5-24).

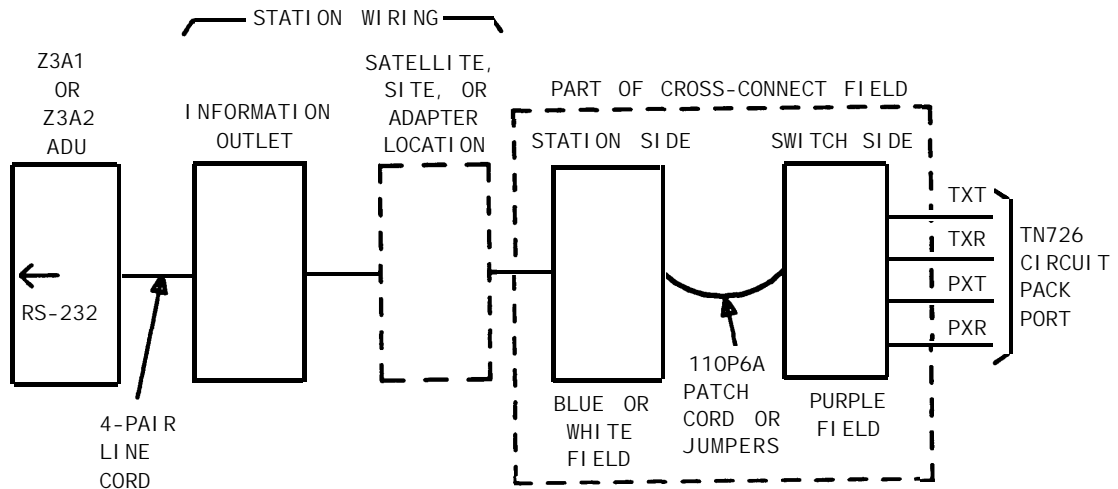


Figure 5-24. Connections to ADU for Data Terminal Equipment (R1V2 or R1V3)

Installing Customer-Provided Terminal Using ADUs

Requirements

The interface between the switch and the customer's data terminals and host computer is through PDMs. Refer to section on installing PDMs for details (Figures 5-21 and 5-22).

For V2 or V3 systems only, the customer's asynchronous data terminals can be connected through a Z3A ADU to a TN726 data line circuit pack (Figure 5-24). 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 ADU port assignment from Data Module Form:

EXAMPLE: Port Number	B	02	01
	Carrier	Slot	Circuit

2. Connect the RS-232 plug on the ADU to the data terminal.
3. Connect a 4-pair line cord (modular plug on both ends) from the information outlet to the ADU (Figure 5-24).
4. Install patch cord/jumper wires at cross-connect field.
5. Administer per *AT&T System 75 and System 75 XE—Implementation (555-200-651)* and *AT&T System 75 and System 75 XE—Administration (555-200-500)*.

Installing SMDR Interface

The interface between the switch and SMDR is through a PDM, trunk data module (TDM), or 212-type modem. For connections between the switch and the PDM or TDM, refer to the section on installing PDMs (Figures 5-21 and 5-22). Administer per *AT&T System 75 and System 75*

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XE—Implementation (555-200-651) and AT&T System 75 and System 75 XE—Administration (555-200-500).

The connection between the switch and the 212-type modem is the same as for external ringing (Figure 4-39). When a 212-type modem is used, a TN758 pooled modem circuit pack must be provided. One of the pooled modem's conversion resources is dedicated to the SMDR output device. Administer per *AT&T System 75 and System 75 XE—Implementation (555-200-651) and AT&T System 75 and System 75 XE—Administration (555-200-500).*

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 the DTE. Connections between the switch and the SMDR output receiving device is the same as a customer-provided data terminal (Figure 5-24).

Interface Cabling to SMDR Output Device

Figure 5-25 shows the cabling required to connect the TELESEER* unit, printer, or customer-provided DTE. The M25B cable connects to the **P1** connector on the TELESEER unit.

* Trademark of AT&T

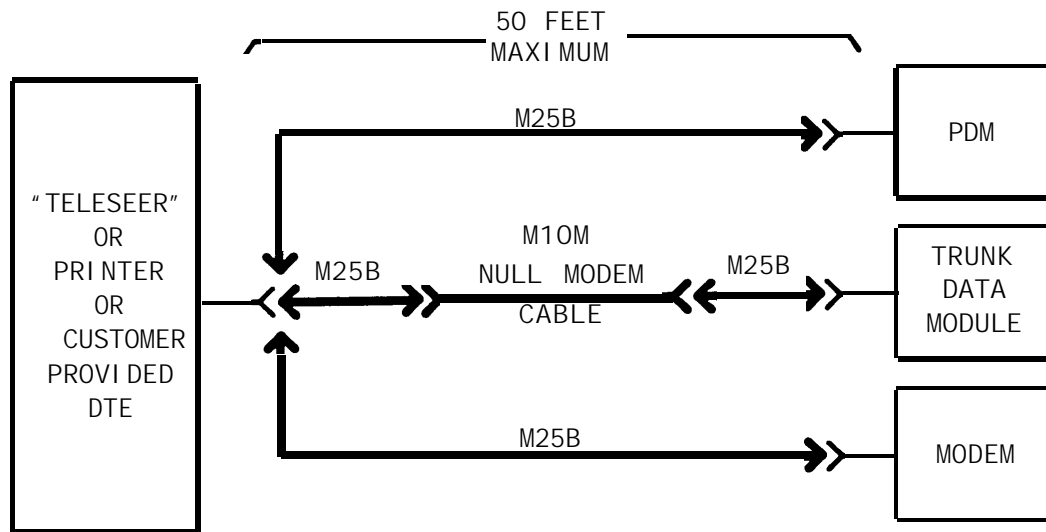


Figure 5-25. SMDR Cabling for Data Terminal Equipment

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Figure 5-26 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.

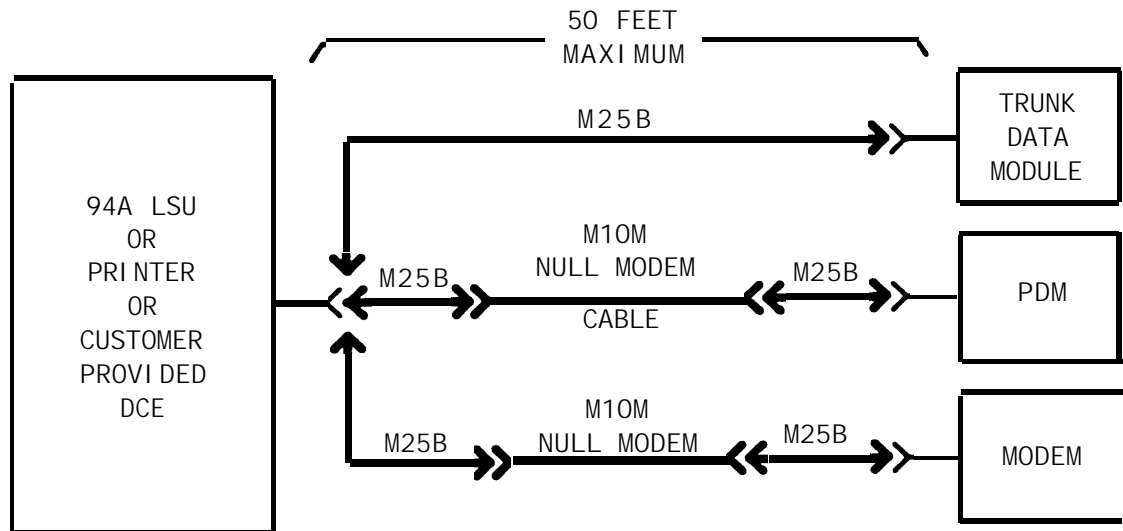


Figure 5-26. SMDR Cabling for On-Premises Data Communications Equipment

Figure 5-27 shows the connections for a remote host connected by a private line.

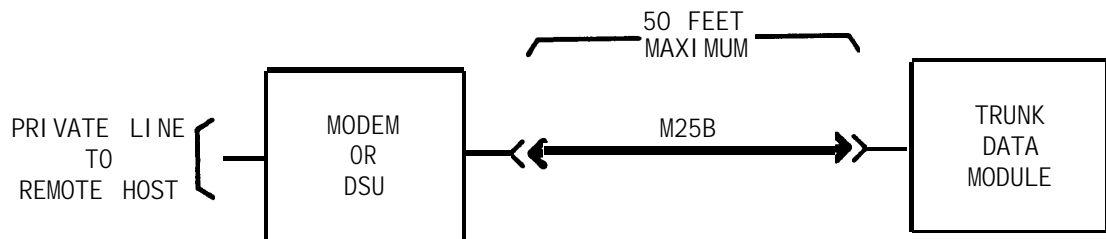


Figure 5-27. SMDR Cabling for a Remote Host

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

Set the option switches as follows:

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 Switch Setting

Set the option switches as follows:

Switch	Setting
AL	OFF
ST	OFF
RDL	OFF
DL	OFF
HS	ON

Installing ISN Interface

The ISN interconnects computers and terminals on a customer's premises. When an ISN and a System 75 or 75 XE are colocated, voice and data can be shared at the same information outlet as shown in Figure 5-28.

The voice pair that connects to a TN742 or TN769 analog line circuit pack port occupies the first pair of the information outlet. The ISN data pairs occupy the second and third pairs of the information outlet. The voice and data pairs can be separated as shown in Figure 5-18. The data pairs either connect to an Asynchronous Interface Module (AIM) located in an ISN concentrator or the ISN packet controller.

The Z3A1 ADU is equipped with two 8-pin modular jacks to terminate the line cords from the information outlet and an analog telephone. 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)*.

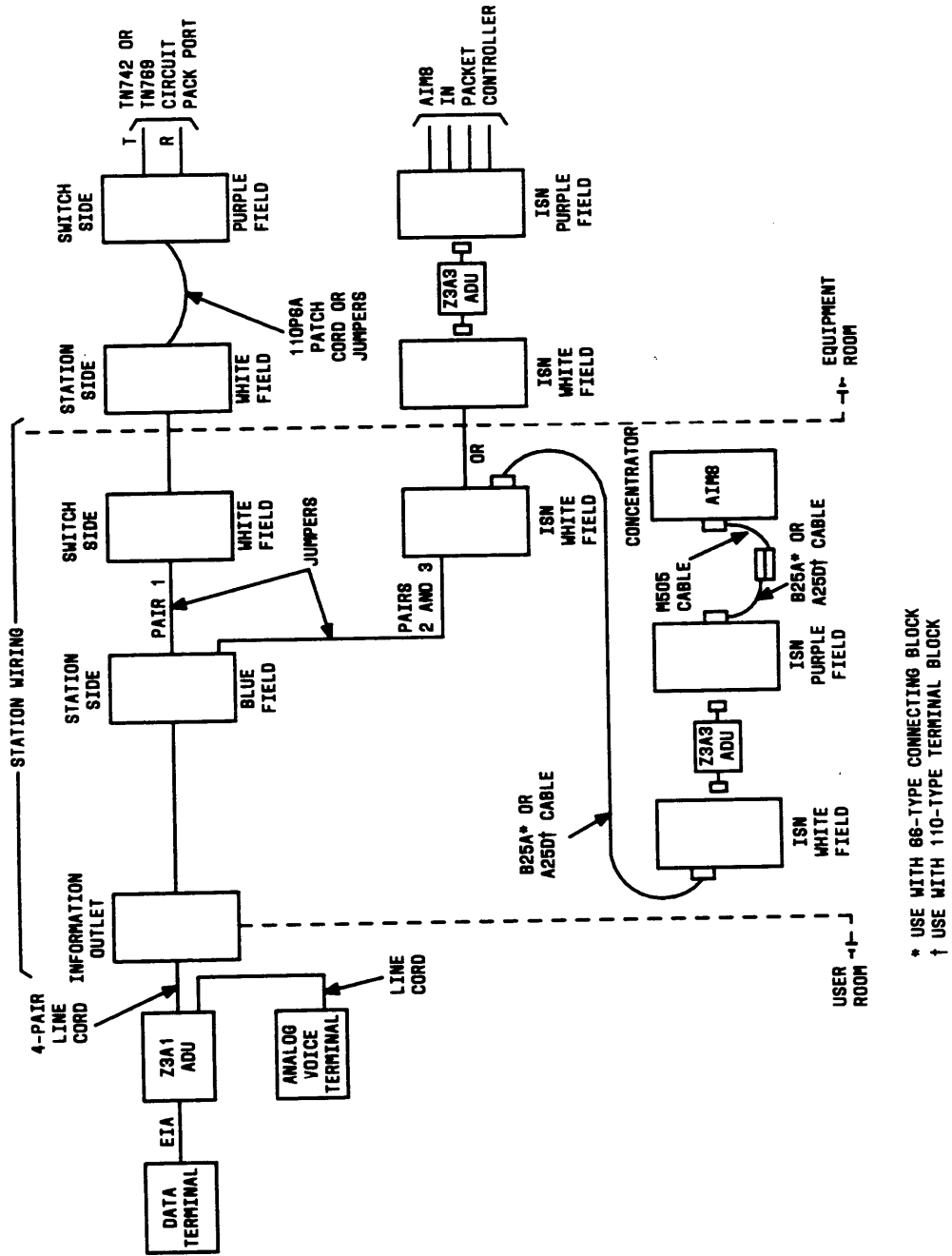


Figure 5-28. System Voice Circuits and ISN Data Circuits Sharing an Information Outlet

Installing STARLAN NETWORK Interface

The STARLAN NETWORK interconnects small quantities of personal computers, data terminals, resource units, and printers. When a STARLAN NETWORK and a System 75 or 75 XE are colocated, voice and data can be shared on the same information outlet as shown in Figure 5-29.

The voice pair that connects to a TN742 or TN769 analog line circuit pack port occupies the first pair of the information outlet. The STARLAN NETWORK data pairs occupy the second and third pairs of the information outlet. The voice and data pairs must be separated at the blue or white cross-connect field in the equipment room or at the blue cross-connect field in a satellite location.

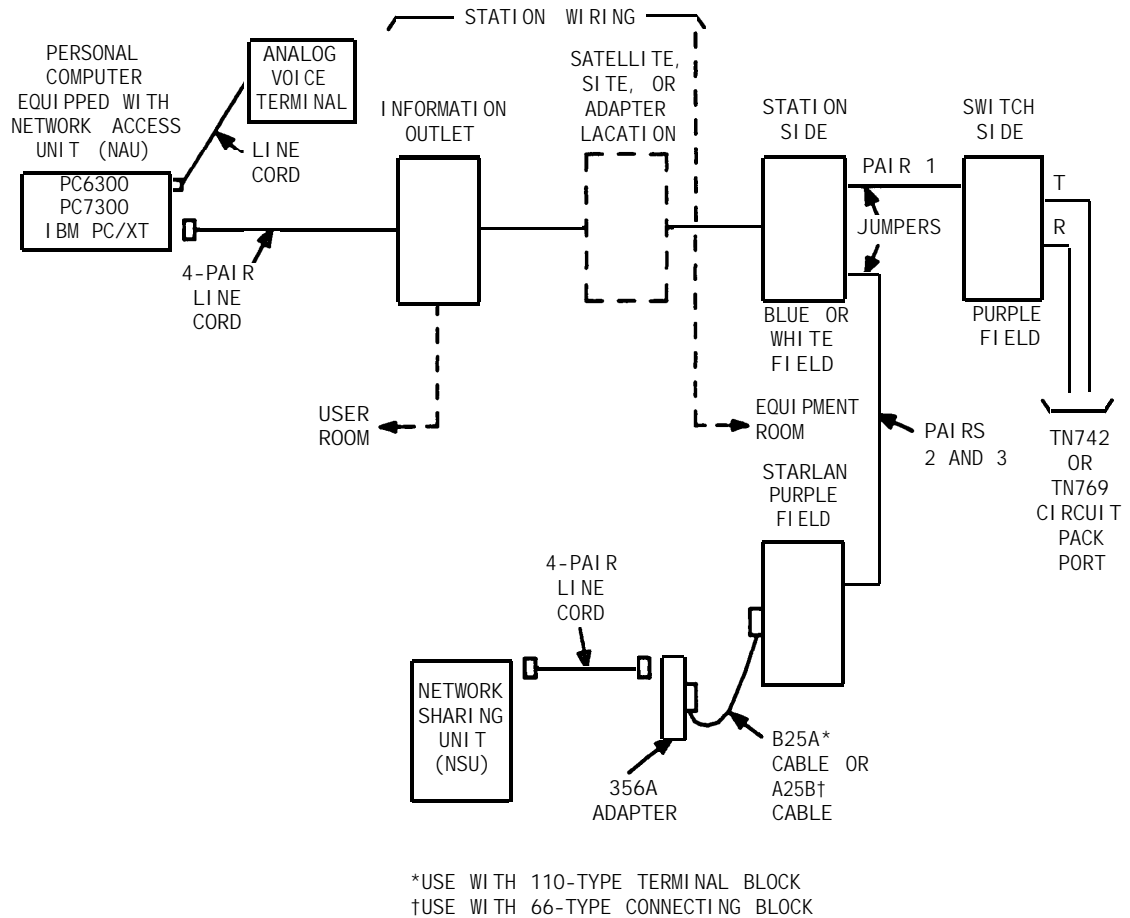


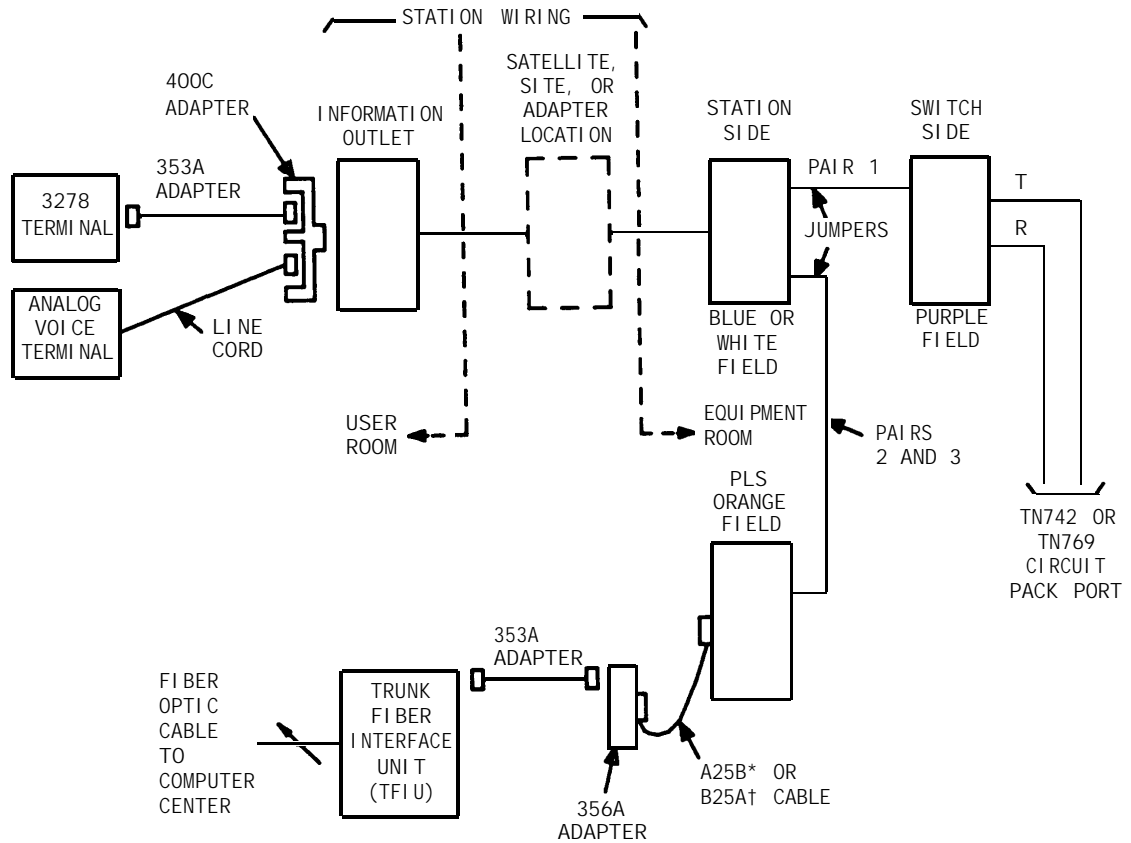
Figure 5-29. System Voice Circuits and STARLAN NETWORK Data Circuits Sharing an Information Outlet

Installing Premises Lightwave System (PLS) Interface

The PLS is used to connect IBM* 3270 Type A terminals to an IBM 3274 cluster controller. An optical fiber backbone and station cables are used instead of coaxial cables. When a PLS and a System 75 or 75 XE are colocated, voice and data can be shared on the same information outlet as shown in Figure 5-30.

* Trademark of International Business Machines Corporation.

The voice pair that connects to a TN742 or TN769 Analog Line circuit pack port occupies the first pair of the information outlet. The PLS data pairs occupy the second and third pairs of the information outlet. The voice and data pairs must be separated at the blue or white cross-connect field in the equipment room or the blue cross-connect field in a satellite location.

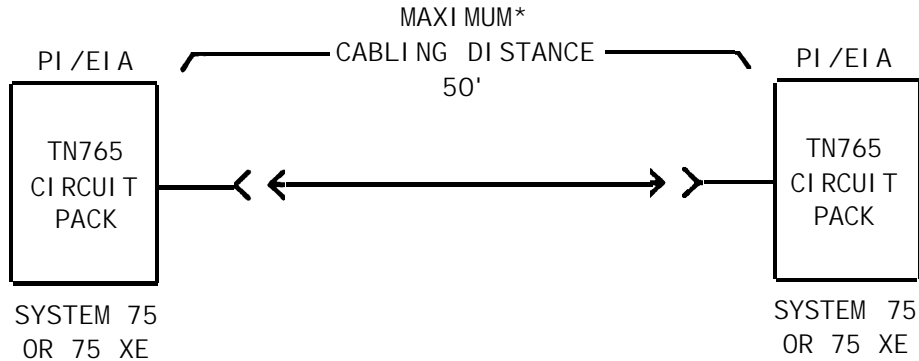


* USE WITH 66-TYPE CONNECTING BLOCK
 † USE WITH 110-TYPE TERMINAL BLOCK

Figure 5-30. System Voice Circuits and PLS Data Circuits Sharing an Information Outlet

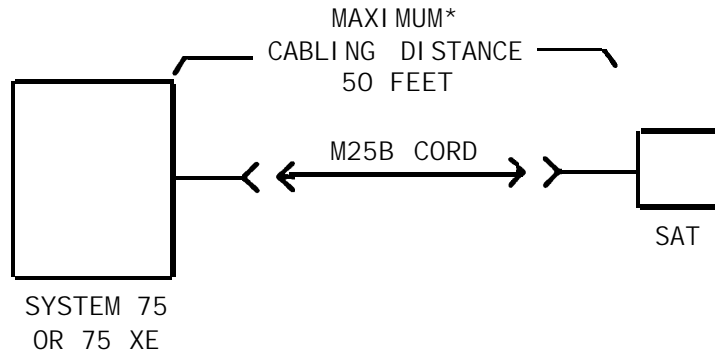
Installing Processor Interface/EIA Port

The processor interface circuit pack (TN765) provides a single EIA port that allows access to one data link. Figures 5-31 and 5-32 show direct connections and modem connections, respectively.



* THE MAXIMUM DISTANCE LIMITATION FOR TWO SYSTEM 75/75 XE IS 50 FEET WHEN DIRECTLY CONNECTED WITH 24 AWG WIRE. REDUCING THE MAXIMUM DISTANCE MAY BE NECESSARY IF HIGHER GAUGE WIRE IS USED OR IF THE CAPACITIVE LOAD ON THE LINE IS INCREASED. IN GENERAL, THE SYSTEM 75/75 XE SHOULD BE DIRECTLY CONNECTED BY THE SHORTEST POSSIBLE CABLE.

Figure 5-31. Direct Connections for Processor Interface/EIA Ports Between Two System 75s or 75 XEs



* THE MAXIMUM DISTANCE BETWEEN SYSTEM 75/75 XE IS 50 FEET WHEN USING 24 AWG WIRE. THE DISTANCE MAY BE REDUCED IF HIGHER GAUGE WIRE IS USED OR IF THE CAPACITIVE LOAD ON THE LINE IS INCREASED. IN GENERAL, THE SAT AND THE SYSTEM 75/75 XE SHOULD BE DIRECTLY CONNECTED BY THE SHORTEST POSSIBLE CABLE.

Figure 5-32. Modem Connections for Processor Interface/EIA Ports Between Two System 75s or 75 XEs

CHAPTER 6. GLOSSARY

Note: A complete glossary for System 75 is contained in the *AT&T System 75 Reference Manual—System Description*, (555-200-200).

Asynchronous Data Transmission

A scheme for transmitting data where each character is preceded by a start bit and followed by a stop bit, thus permitting data elements to occur at irregular intervals. This type transmission is advantageous when transmission is not regular (characters typed at a keyboard).

Asynchronous Data Unit (ADU)

A data communications equipment (DCE) type device that allows direct connection between RS-232C equipment and the digital switch.

Applications Processor (AP)

A minicomputer used to support several user-controlled applications such as traffic analysis and electronic documentation.

Attendant Console

An electronic call-handling position with pushbutton control. Used by attendants to answer and place calls and to manage and monitor some of the system operations.

Audio Information Exchange (AUDIX)

A unit that provides voice mail service to users.

Bridging

The sharing of the same extension by two or more voice terminals.

Central Office (CO)

The location housing telephone switching equipment that provides local telephone service and access to toll facilities for long-distance calling.

Central Office Trunk

A telecommunications channel that provides access from the switch to the public network through the local central office.

Channel

A communications path for transmitting voice and data.

Common Control Switching Arrangement (CCSA)

A private telecommunications network using dedicated trunks and a shared switching center for interconnecting company locations.

Console

See Attendant Console.

Data Channel

A communications path between two points used to transmit digital signals.

Data Communications Equipment (DCE)

The equipment on the network side of a communication link that provides all the functions required to make the binary serial data from the source or transmitter compatible with the communications channel.

Data Terminal Equipment (DTE)

Equipment comprising the source or sink of data, or both, that also provides communication control functions (protocol). The DTE is any piece of equipment at which a communications path begins or ends.

Digital Communications Protocol (DCP)

Defines the capability for providing simultaneous voice and data transmission over the same channel.

Digital Multiplexed Interface (DMI)

Specifies the remote interface requirements for multiplexed data communications between a host computer and a private switching system.

Digital Trunk

A circuit in a telecommunications channel designed to handle digital voice and data.

Distributed Communications System (DCS)

A network of two or more switches, each with its terminals and trunks, configured to function as a single large system.

Electronic Tandem Network (ETN)

A special tandem tie trunk network that has automatic call routing capabilities based on the number dialed and most preferred route available at the time the call is placed. Each switch in the network is assigned a unique private network office code (RNX), and each voice terminal is assigned a unique extension number.

Enhanced Private Switched Communications Service (EPSCS)

A private telecommunications network that provides advanced voice and data telecommunications services to companies with many locations.

External Call

A connection between a system user and a party on the public telephone network or on a tie trunk.

Facility

A general term used for the telecommunications transmission pathway and associated equipment.

Feature

A specifically defined function or service provided by the switch.

Foreign Exchange (FX)

A CO other than the one providing local access to the public telephone network.

Foreign Exchange Trunk

A telecommunications channel that directly connects the switch to a central office other than its local central office.

Ground-Start Trunk

On outgoing calls, the switch transmits a request for services to the distant switching system by grounding the trunk ring lead. When the distant system is ready to receive the digits of the called number, that system grounds the trunk tip lead. When the switch detects this ground, the digits are sent. (Tip and ring are common nomenclature to differentiate between ground-start trunk leads.) On incoming calls, detection of ground on the ring lead is sufficient to cause the call to route to a predetermined destination, normally the system attendant group. No digits are received.

Information Outlet

An 8-pin modular wall jack.

Interface

A common boundary between two systems or pieces of equipment.

Internal Call

A connection between two users within the switch.

Link

A transmitter-receiver channel or system that connects two locations.

Loop-Start Trunk

After establishing a connection with the distant switching system for an outgoing call, the switch waits for a signal on the loop formed by the trunk leads before sending the digits of the called number. On incoming calls, the received request for service is sufficient to cause the call to route to a predetermined destination, normally the system attendant group. No digits are received.

Main/Satellite/Tributary

A Main switch provides the following: interconnection, by tie trunks, with one or more subtending switches, called satellites; all attendant positions for the main/satellite configuration; and, access to and from the public network. To a user outside the complex, a main/satellite configuration appears as a single switch, with a single listed directory number. A tributary is a switch, connected to the main by tie trunks, which has its own attendant position(s) and its own listed directory number.

Modular Processor Data Module

See Processor Data Module.

Modular Trunk Data Module

See Trunk Data Module.

Modem Pooling

Provides shared-use conversion resources to eliminate the need for a dedicated modem when a data module accesses, or is accessed by, an analog line or trunk.

Multiplexer

A device for simultaneous transmission of two or more signals over a common transmission medium.

Network

An arrangement of inter- and/or intra-location circuits designed to perform a specific function.

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.

Paging Trunk

A telecommunications channel used to access an amplifier for loudspeaker paging.

Port

A designation of the location of a circuit that provides an interface between the system and lines and/or trunks.

Private Network

A network used exclusively for handling the telecommunications needs of a particular customer.

Processor Data Module (PDM)

Provides the required interface between the system and an EIA computer or data terminal.

Property Management System (PMS)

A stand-alone computer that lodging and health service organizations use for services such as reservations, housekeeping, billing, etc.

Public Network

The network that can be openly accessed by all customers for local or long-distance calling.

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.

Single-Line Voice Terminals

Voice terminals served by a single-line tip and ring circuit.

Site

A physical location (closet) for pass-through connections where adjunct power may be applied.

Software

A set of computer programs that accomplish one or more tasks.

Standard Serial Interface (SSI)

A communications protocol developed by AT&T Teletype Corporation for use with the 500 Business Communications Terminal and the 400-series printers.

Station Cable

Any cable run from the equipment room, a site or satellite location, or adapter to the information outlets.

Tandem Switch

A switch within an ETN that provides the logic to determine the best route for a network call, possibly modifies the digits outputted, and allows or denies certain calls to certain users.

Tandem Tie Trunk Network (TTN)

A private network that interconnects several customer switching systems by dial repeating tie trunks. Access to the various systems is dictated by codes that must be individually dialed for each system.

Telephone

An analog 500-, 2500-, or 7102-type voice instrument.

Tie Trunk

A telecommunications channel that directly connects two private switching systems.

Trunk

A telecommunications channel between two switching systems.

Trunk Data Module (TDM)

Provides the required interface between the switch and a data set (modem) or data service unit connected to a private or switched data line.

Trunk Group

Telecommunications channels assigned as a group for certain functions.

Voice Terminal

A single-line or multi-appearance digital or hybrid voice instrument.

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