

BUILDING TERMINALS—BUILDING ENTRANCE TERMINALS USING 88-TYPE QUICK-CONNECT HARDWARE

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4. INSTALLATION OF 88-TYPE HARDWARE— MECHANICAL PROTECTION NOT REQUIRED	15	1.03 The 88-type wiring and connecting blocks are used for building termination.
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6. WIRING	20	• <i>H-type cable terminal sections</i> may be used to enclose terminals where mechanical protection is required. (See Section 631-400-101.)
1. GENERAL		• <i>Bond clamps</i> for bonding and grounding connections. (See Section 081-852-118.)
1.01 This section covers the installation of 88-type quick connect hardware for construction of building entrance terminals.		• <i>134A1A-type protector</i> (Fig. 1) is required for constructing building entrance terminals served by <i>exposed</i> cable. (See Section 631-460-111.)
1.02 This section is reissued to:		• <i>82-type backboards</i> are 3/4-inch plywood panels for use in H-type cable terminal sections to permit mounting of apparatus. (See Section 631-400-101.)
• Indicate that the 88BBW1-type connecting blocks are superseded by the 88BSW1-type connecting blocks		
• Include information on white wiring blocks and show colored wiring blocks rated MD		
• Include information on colored designation strips		1.05 Bonding and grounding requirements in subscriber buildings are outlined in Section 631-400-102.

**Reprinted to comply with modified final judgment.

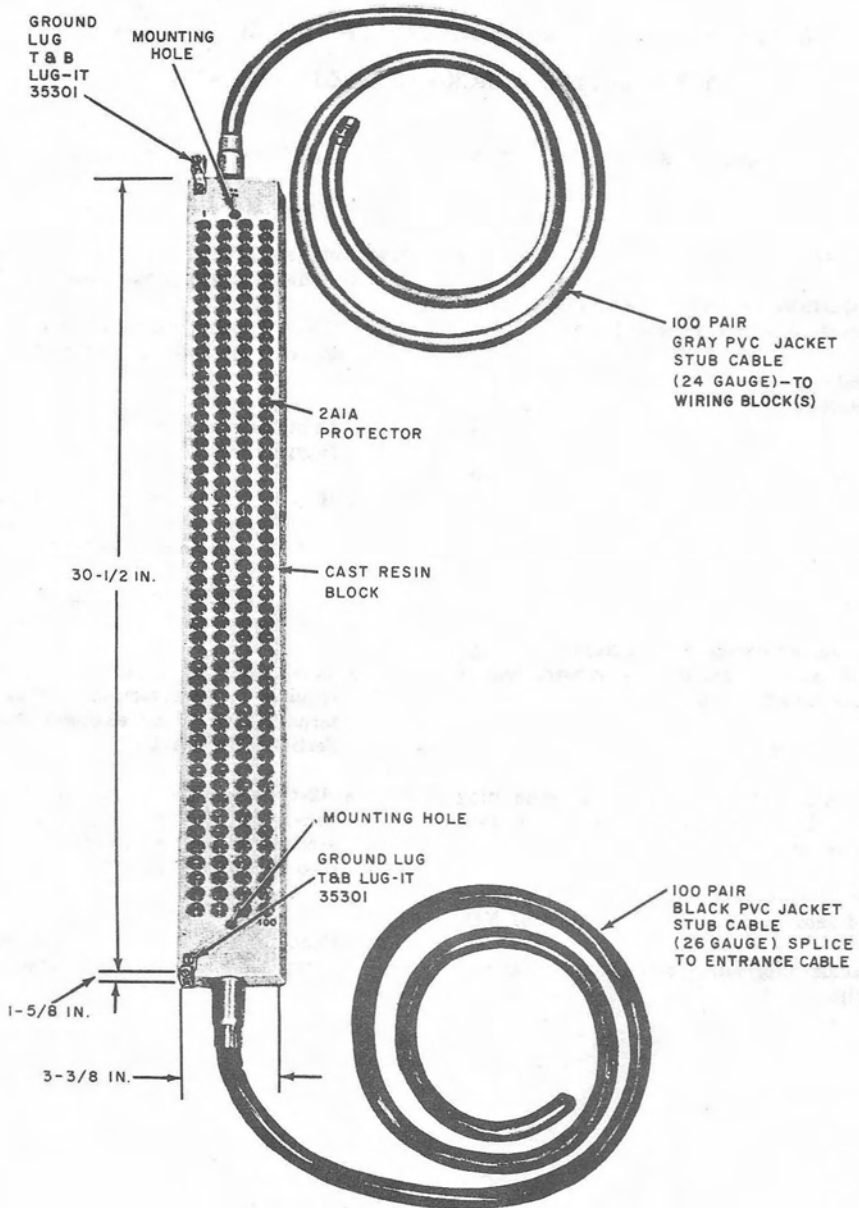


Fig. 1—134A1A-Type Protector

2. EQUIPMENT

2.01 The following describes 88-type hardware used in the construction of building entrance terminals:

(a) **88-type wiring block** (Fig. 2) is a fire retardant molded plastic block. These blocks for use in building entrance terminals are available in 100- and 300-pair sizes given in Table A. All current wiring blocks are **white** for use with color coded designation strips. Earlier blocks were coded; **green** for identifying **feeder** pairs and **blue** for **distribution** pairs. The 100-pair wiring block consists of 4 horizontal color coded index strips and the 300-pair wiring block consists of 12 index strips. Each index strip will terminate 25 pairs and each is marked with the five tip colors to establish pair location. If key or PBX equipment is terminated in this terminal, other wiring blocks and wiring arrangements are required as covered in Section 631-470-202.

(b) **88-type connecting block** (Fig. 3) is a molded flame retardant plastic housing, containing quick clips with insulation slicing features. These clips are double-ended, one

end to accept the cross-connecting wire and the other end to terminate the cable conductor. The connecting blocks are white on one side and slate on the other. They are installed with alternate colors facing upward to aid in pair identification. For building entrance terminal application, the connecting blocks are available in a 5-pair configuration.

(c) **Designation strips** (Fig. 4) are "snapped in" on alternate rows to identify cable count and to conceal the cable conductors. They are color coded for use with **white** wiring blocks.

(d) **188B1 backboard** (Fig. 5) is constructed of a metal panel and two closed form, slotted plastic distribution rings. The backboard is butted between the wiring blocks and is used to channel cross-connecting wire.

(e) **88A retainer** (Fig. 6) is a small molded plastic part that attaches to the leg of the 88-type wiring block to complete its fanning strip. It is used to retain the cross-connecting wires at the top or bottom of a column of 88-type wiring blocks.

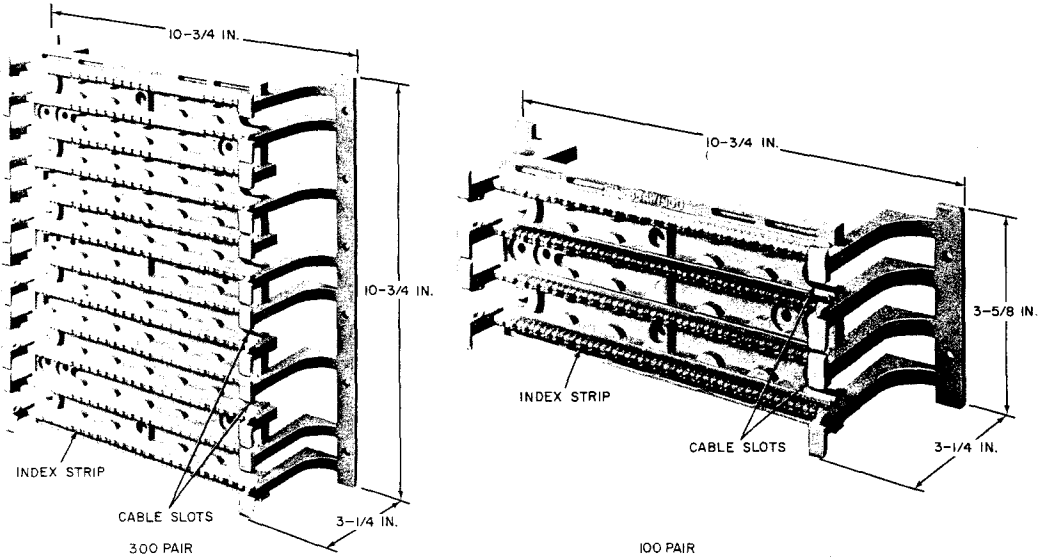


Fig. 2—88-Type Wiring Block

TABLE A

88-TYPE WIRING BLOCKS FOR BUILDING ENTRANCE TERMINALS

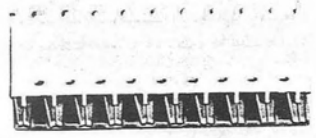
CODE NO.	RATING	COLOR	NO. OF PAIRS	USE	SIZE (INCHES)		
					HEIGHT	WIDTH	DEPTH
88AW1-100	STD	White	100	Feeder and Distribution Cables	3-5/8	10-3/4	3-1/4
88AW1-300	STD	White	300		10-3/4	10-3/4	3-1/4
88AG1-100	MD	Green	100	Feeder Cables	3-5/8	10-3/4	3-1/4
88AG1-300	MD	Green	300		10-3/4	10-3/4	3-1/4
88AB1-100	MD	Blue	100	Distribution (Building) Cables	3-5/8	10-3/4	3-1/4
88AB1-300	MD	Blue	300		10-3/4	10-3/4	3-1/4



SIDE FOR
CROSS-CONNECTING WIRE



MINIATURE
CLIP



MINIATURE CLIPS MOLDED
IN PLASTIC—SIDE FOR
TERMINATING CABLE PAIR

Fig. 3—88-Type Connecting Block

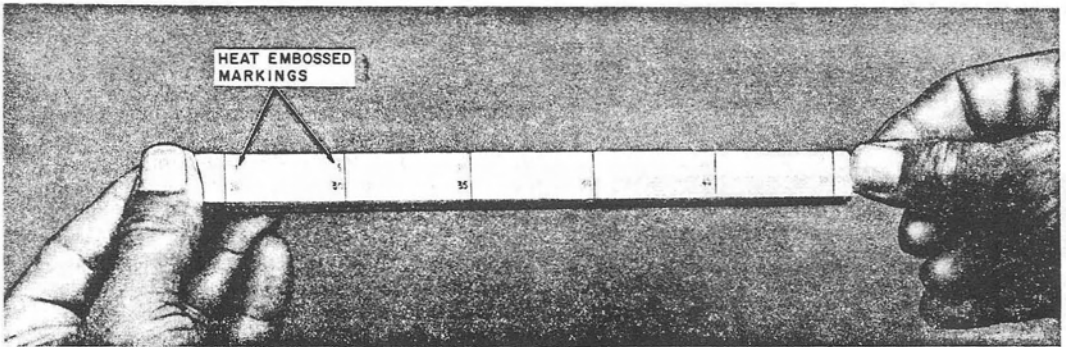
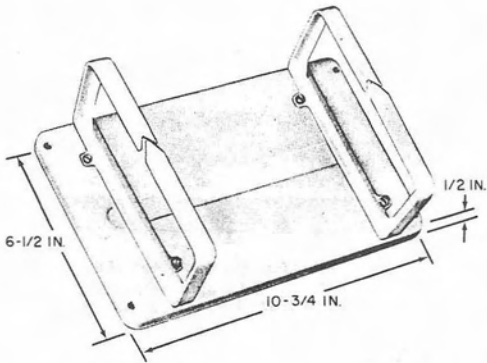


Fig. 4—Designation Strip



• USED WITH 88-TYPE MODULAR CONNECTING BLOCKS TO RETAIN CROSS-CONNECTING WIRES.

Fig. 5—188B1 Backboard

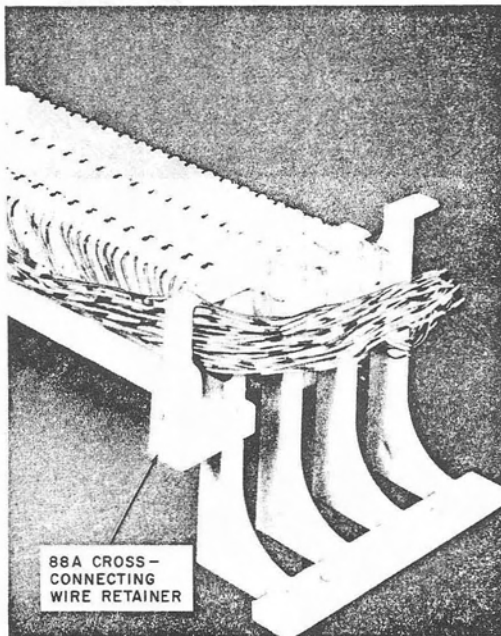


Fig. 6—88A Retainer

3. INSTALLATION OF 88-TYPE HARDWARE—MECHANICAL PROTECTION REQUIRED

Mounting 134-Type Protector and 88-Type Hardware

3.01 Install the required number of H-type cable terminal sections at the terminal location as outlined in Section 631-400-101.

Note: Adequate space must be provided below and above the cable terminal section location for setting up cables and splices.

3.02 Install 82-type backboards as required in H-type cable terminal sections. (See Section 631-400-101.)

3.03 Install the 134-type protectors and 88-type wiring blocks as shown in Fig. 7, 8, 9, and 10. Wiring blocks should be mounted initially with the top slanted outward to facilitate routing of stub cable(s). Each column of wiring blocks shall be spaced 2 inches apart when **more than one** feeder wiring block is required in each column. Place the 188B1 backboard between the feeder and distribution wiring blocks if the configuration requires **more than two** vertical columns (see Fig. 11).

3.04 Remove the gray PVC jacket and the metallic shield from the 24-gauge stub cables of the 134-type protectors. Feed the cable binder groups behind the feeder wiring block(s) and in color code sequence through the cable slots on each side of the wiring block. Place the blue-white binder group (pairs 1-25) in the top left cable slot, orange-white binder group (pairs 26-50) in the top right cable slot, etc. Binder groups entering on the left side of the wiring block shall be terminated on the **top** index strip; binder groups entering on the right side shall be terminated on the **bottom** index strip. Place the cable conductors in the index strip following the even-count color code starting with white-blue, white-orange, etc (Fig. 12). The high tooth on the index strip separates the pair. Light finger pressure is sufficient to hold the conductors in the index strip.

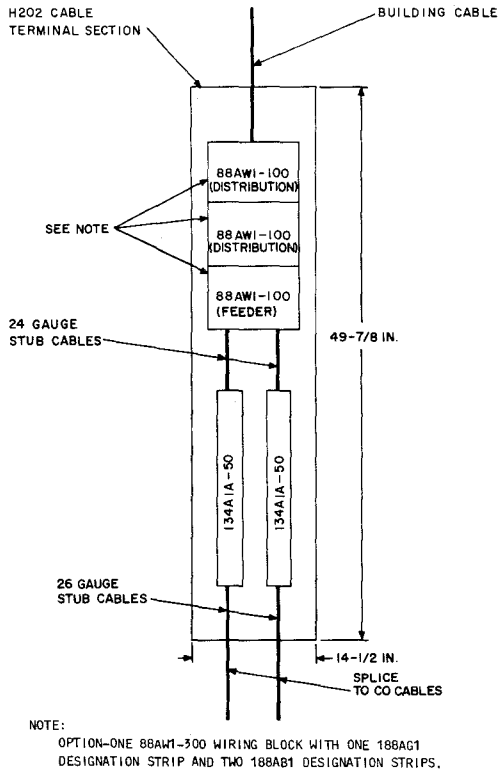


Fig. 7—100-Pair Entrance Cable—134-Type Protectors—200-Pair Building Cable

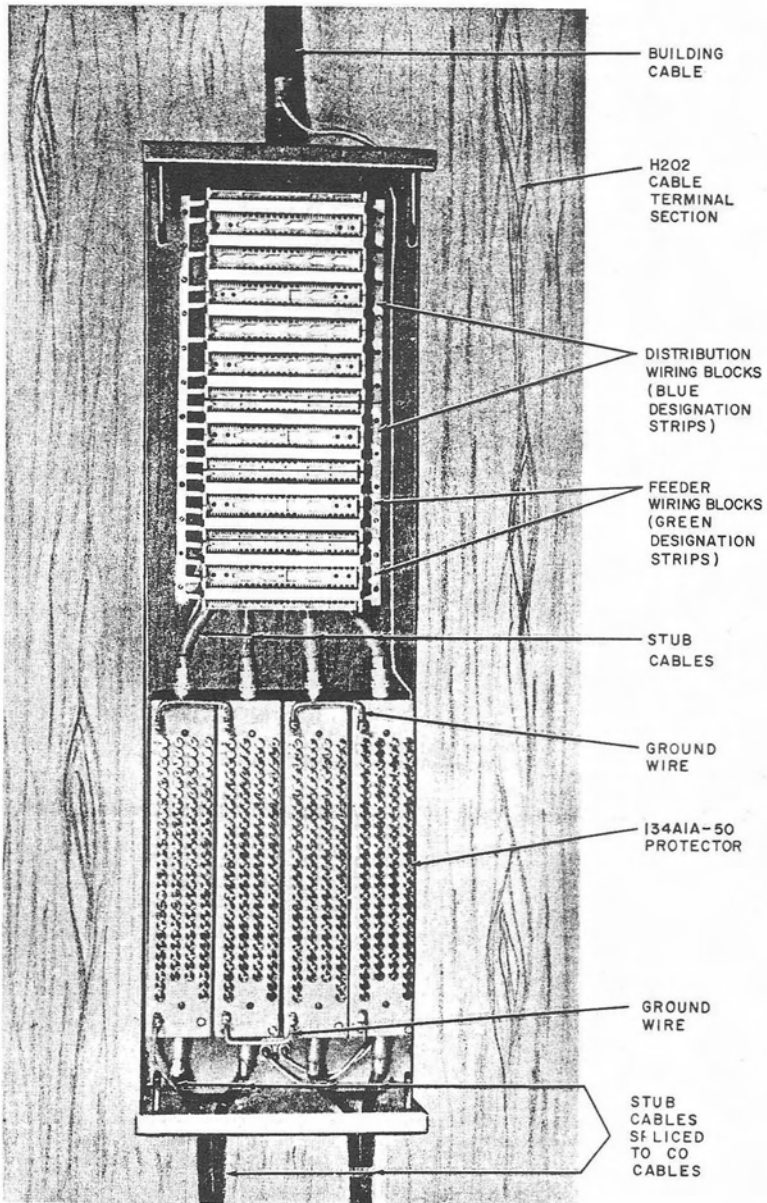


Fig. 8—200-Pair Entrance Cable—134-Type Protectors—400-Pair Building Cable

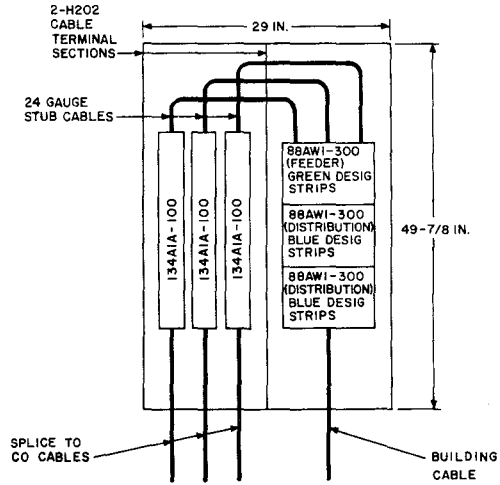


Fig. 9—300-Pair Entrance Cable—134-Type Protectors—600-Pair Building Cable

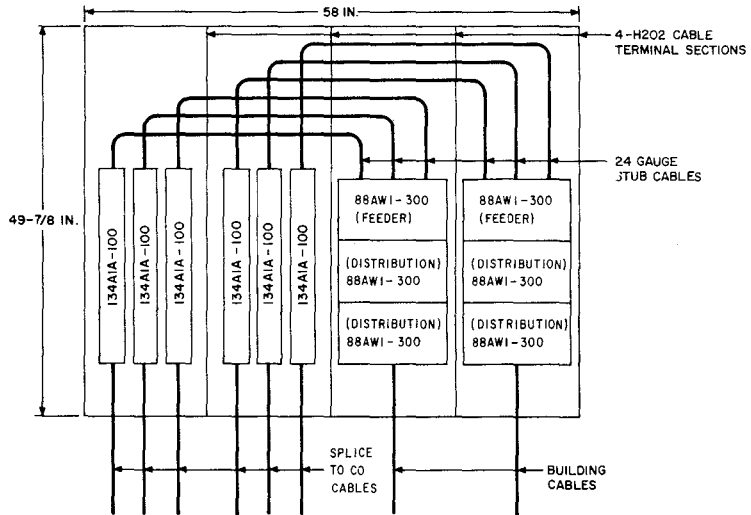


Fig. 10—600-Pair Entrance Cable—134-Type Protectors—1200-Pair Building Cable

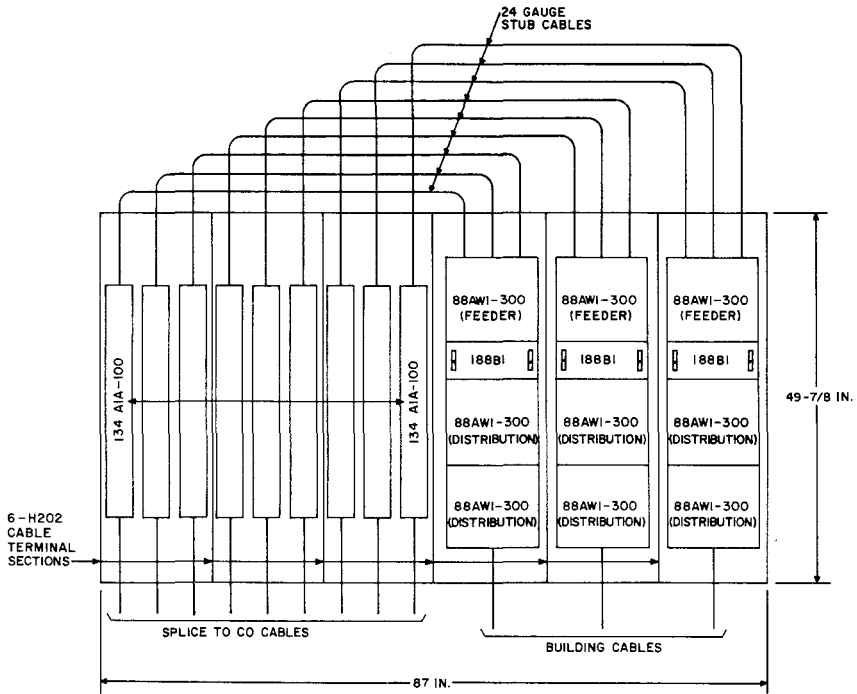


Fig. 11—900-Pair Entrance Cable—134-Type Protectors—1800-Pair Building Cable

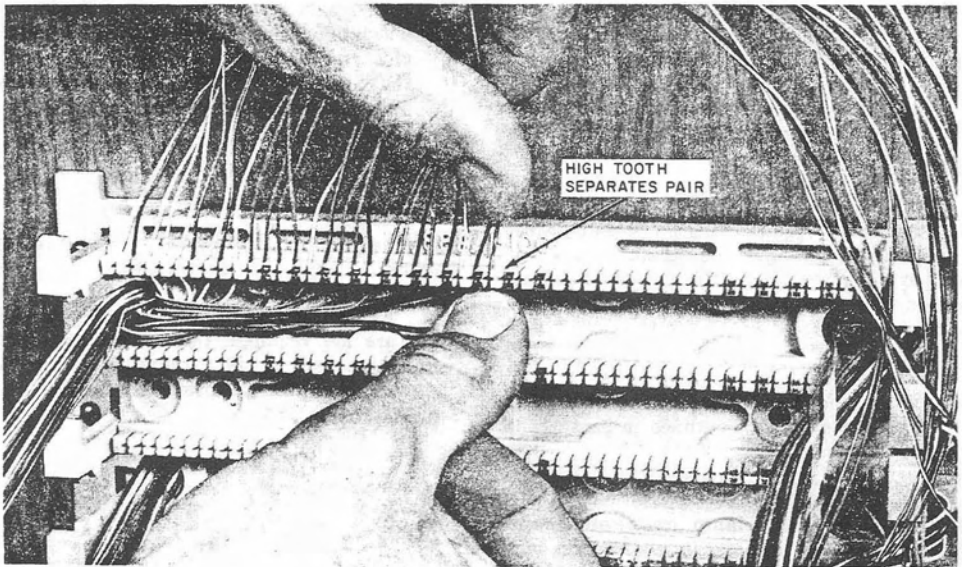


Fig. 12—Placing Conductors in Index Strip

3.05 Dress the cable conductors in the wiring slot of the wiring block, then using the 788J impact tool, seat and cut the conductors at the edge of the index strip (Fig. 13). *Exercise care to prevent cutting wrong side. Remove cut conductors and check the index strip to assure that no short pieces of the cut conductors are wedged in the wiring slots preventing a solid connection when the connecting blocks are seated.*

Note: Conductors may be seated in the index strip using the 788B 5-pair insertion tool. Conductors must then be cut using the 788C 5-pair cutoff tool.



Avoid movement of cables after the conductors have been seated and cut to prevent the conductors from being pulled out of the index strip before placing the connecting blocks.

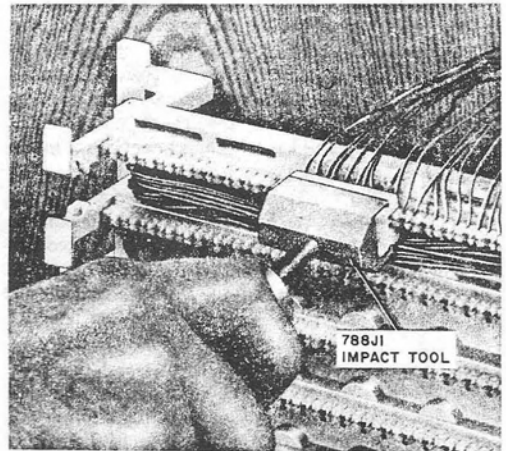


Fig. 13—Seating and Trimming Conductors

3.06 Install 88-type connecting blocks, alternating colors (slate and white), on the feeder wiring block as outlined in Section 631-050-120.

3.07 Install 88A retainers on the top or bottom of feeder wiring blocks as required. The retainers snap in place.

3.08 Remove the required length of plastic jacket and underlying metallic shield from end of **distribution cable(s)**. **Feed the cable(s) through the entrance hole(s) in the cable terminal section.**

3.09 Prepare the distribution wiring block(s) and distribution cable as outlined in paragraphs 3.04, 3.05, 3.06, and 3.07.

3.10 Install a bond clamp on **feeder and distribution cables** in accordance with the procedures in Section 081-852-118.

3.11 Splice the black 26-gauge stub cable from the 134-type protector to the central office feeder cable. Where a plastic sheath feeder cable containing **400 pairs or less** is spliced to a protected terminal inside the building, **the splice must be enclosed in a metallic splice case**. The cross-section of these smaller size cables does not provide an adequate current carrying capacity to protect the splice in the event of a power contact. On plastic sheath cables containing **more than 400 pairs**, either a metallic or plastic splice closure may be used. Ground the entrance cable within fifty feet of the building entrance, as outlined in Section 633-560-101, to provide adequate protection. A No. 6 ground wire must also be run from the protector to protector ground. See Section 631-400-102 for selection of proper ground.

Note: Waterproof cable must not be used for general distribution within buildings. It may be used as an entrance facility provided

a transition to air core cable is made within a metallic, sealed splice case prior to appearance of exposed pairs in any terminal or cabinet. It should never be fanned and terminated directly on protectors and connectors within buildings.

Mounting 88-Type Hardware Without 135-Type Protector(s)

3.12 At installations where 134-type protector(s) are not required, the 88-type hardware is installed as outlined in paragraphs 3.01 through 3.11 with the 134-type protector omitted. (See Fig. 14 through 17.)

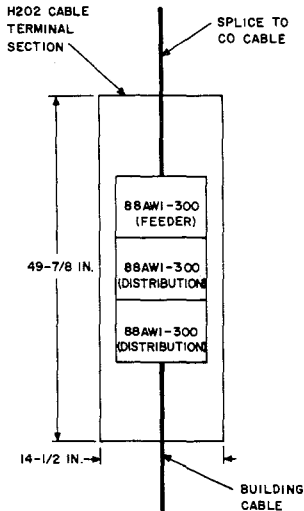


Fig. 14—300-Pair Entrance Cable (Nonprotected)—600-Pair Building Cable

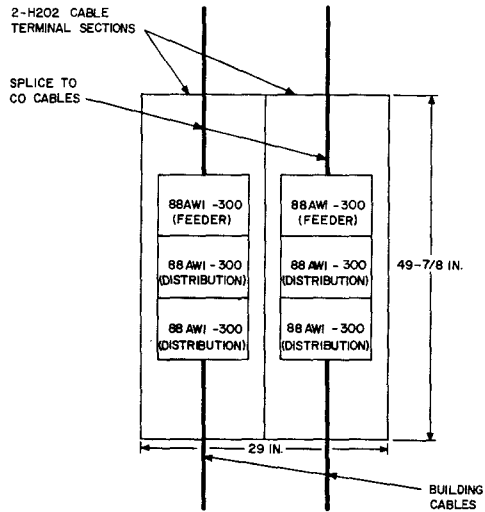


Fig. 15—600-Pair Entrance Cable (Nonprotected)—1200-Pair Building Cable

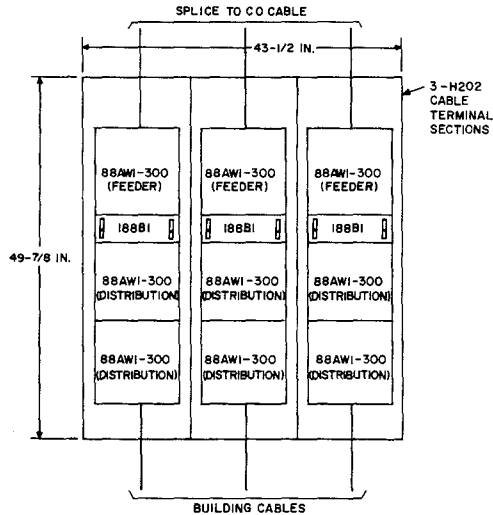


Fig. 16—900-Pair Entrance Cable (Nonprotected)—1800-Pair Building Cable

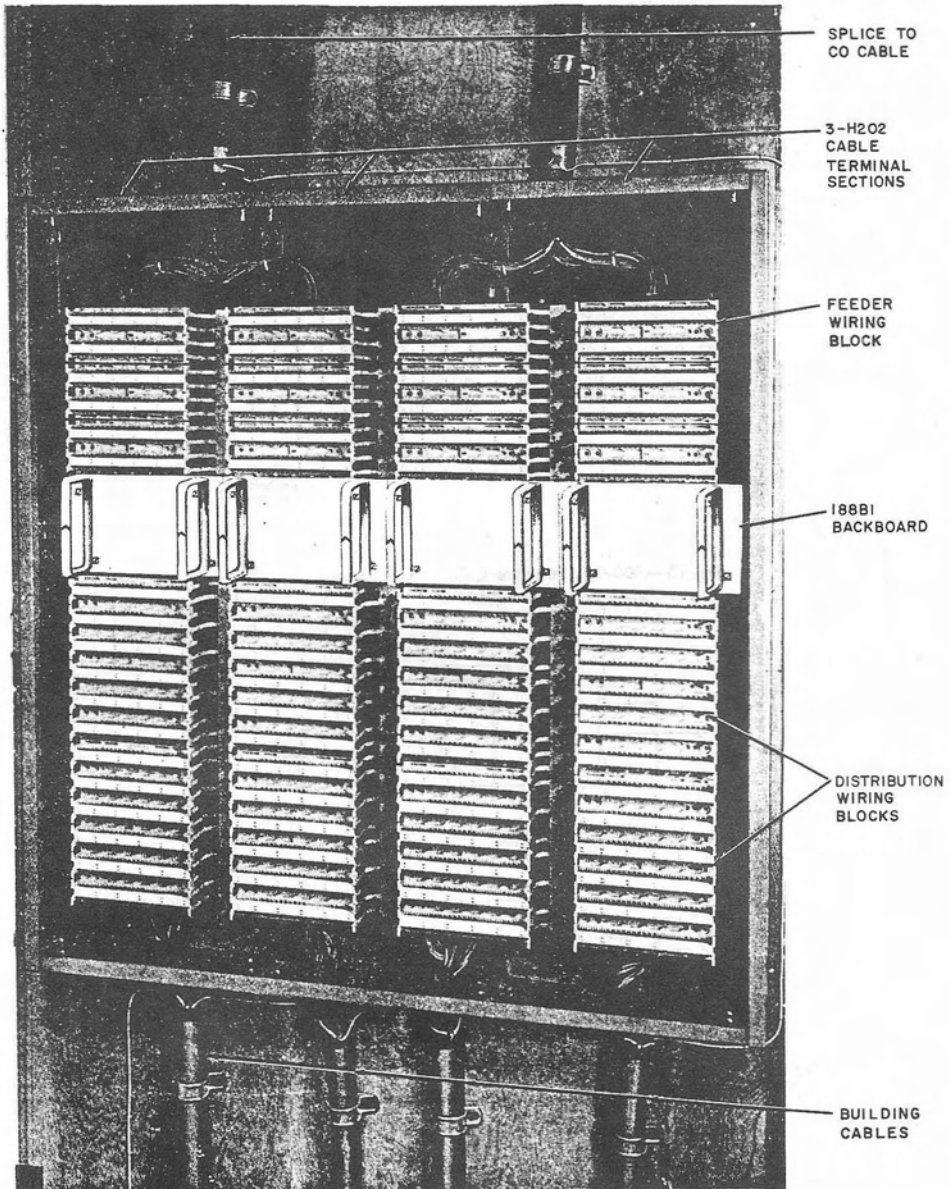


Fig. 17—1200-Pair Entrance Cable (Nonprotected)--2400-Pair Building Cable

4. INSTALLATION OF 88-TYPE HARDWARE— MECHANICAL PROTECTION NOT REQUIRED

Mounting 134-Type Protector and 88-Type Hardware

4.01 At installations where mechanical protection is not required, a 3/4-inch plywood or particleboard backboard is recommended and should be sufficient size to allow room for terminating apparatus plus space for running cross-connecting wires, cables, and splices.

Note: 3/4-inch thick, AD grade, interior plywood or high density particleboard should be used. Particleboard used for floor underlayment is *not* suitable as screw retention is poor. Drill a 1/8-inch or 9/64-inch pilot hole for a No. 8 or No. 10 type AB sheet metal screw, respectively, to secure apparatus to particleboard backboard.

4.02 Starting at the left-hand side of the wall, mount the 134-type protector(s) to the wall (Fig. 18, 19, 20, and 21).

4.03 Mount the feeder wiring blocks on the wall as shown in Fig. 18, 19, 20, and 21.

4.04 When the equipment configuration dictates the use of more than one feeder wiring block in the first column of blocks, the additional feeder wiring block columns should be spaced approximately two inches apart.

4.05 When the configuration consists of more than two columns of feeder and distribution wiring blocks, install the 188BI backboard between the feeder and distribution wiring blocks.

4.06 Prepare the 24-gauge gray PVC stub cable of the protector and route binder groups underneath the feeder wiring blocks.

4.07 Place cable conductors, connecting blocks, and wire retainers on wiring blocks as outlined in paragraphs 3.04, 3.05, 3.06, and 3.07.

4.08 Prepare *building* cable sheath and install bond clamps as outlined in paragraph 3.10.

4.09 Feed the binder groups underneath the blue wiring blocks. Place the cable conductors and connecting blocks on the wiring blocks as outlined in paragraphs 3.04, 3.05, and 3.06.

4.10 Splice the black 26-gauge stub cable(s) to the entrance cable as outlined in paragraph 3.11.

Mounting 88-Type Hardware Without 134-Type Protectors

4.11 At installations where 134-type protector(s) are not required, the 88-type hardware is installed the same as outlined in paragraphs 4.01 through 4.10 with the 134-type protector omitted (see Fig. 22, 23, 24, and 25).

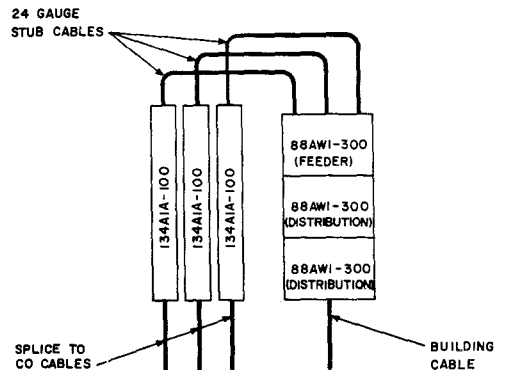


Fig. 18—Wall Mounting Terminal—300-Pair Entrance Cable—134-Type Protectors—600-Pair Building Cable

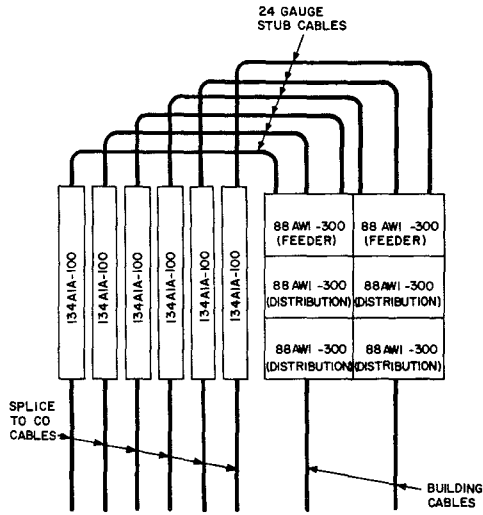


Fig. 19—Wall Mounted Terminal—600-Pair Entrance Cable—134-Type Protectors—1200-Pair Building Cable

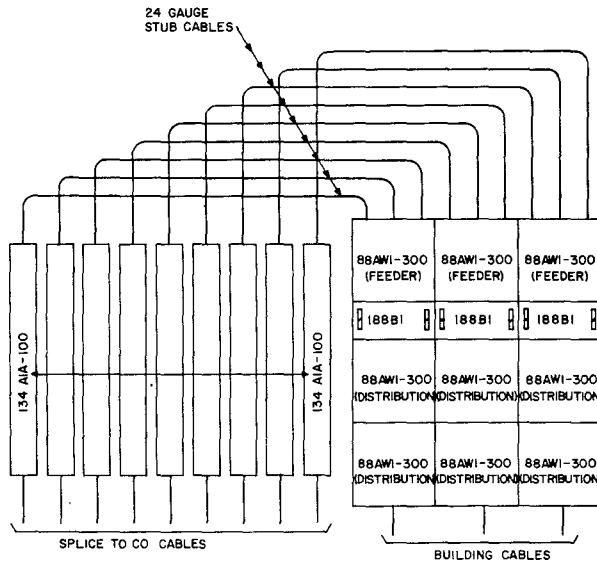


Fig. 20—Wall Mounted Terminal—900-Pair Entrance Cable—134-Type Protectors—1800-Pair Building Cable

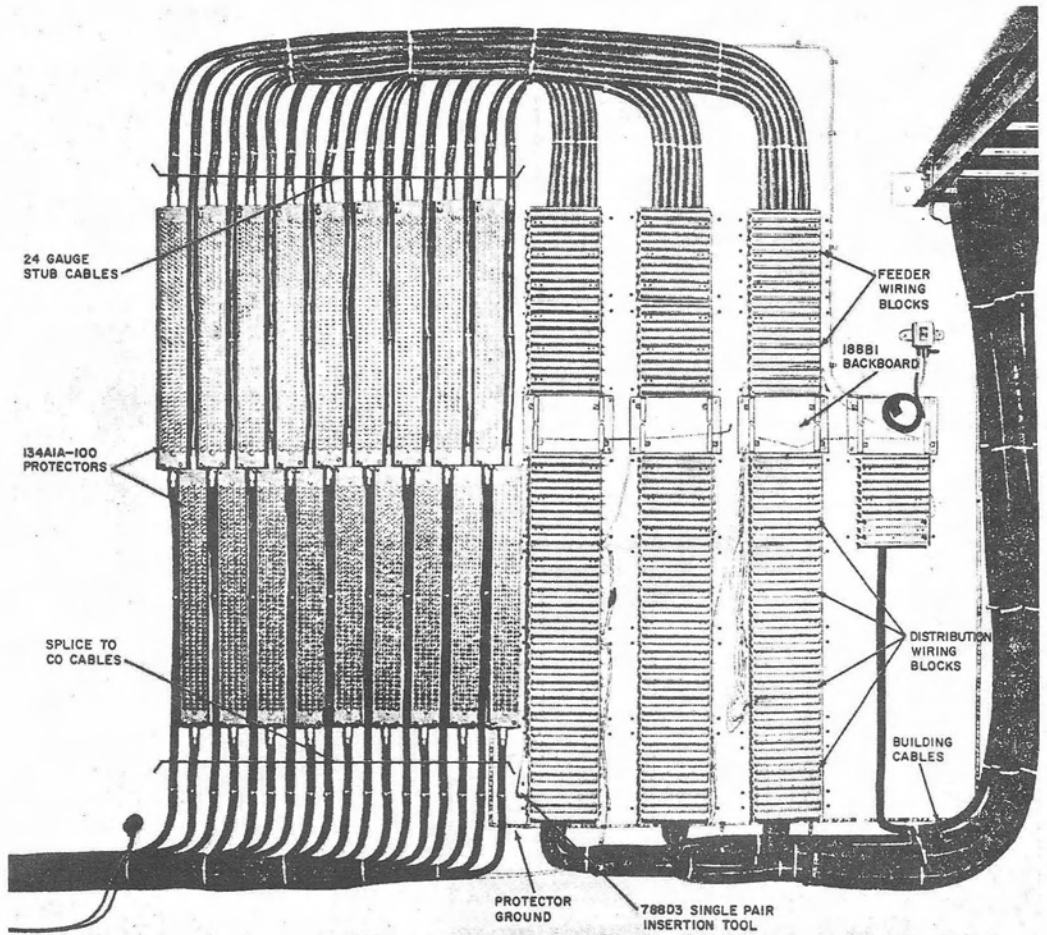


Fig. 21—Wall Mounted Terminal—1800-Pair Entrance Cable—134-Type Protectors—3600-Pair Building Cable

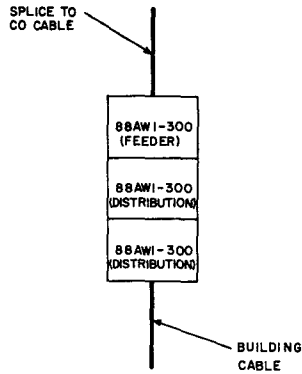


Fig. 22—Wall Mounted Terminal—300-Pair Entrance Cable (Nonprotected)—600-Pair Building Cable

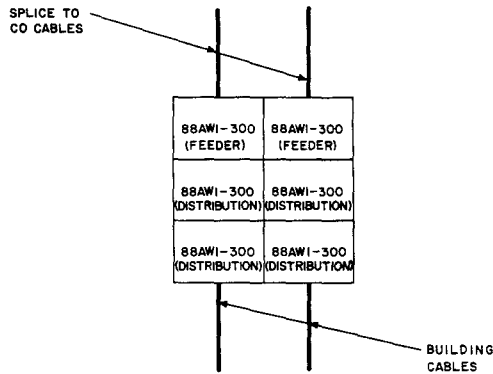


Fig. 23—Wall Mounted Terminal—600-Pair Entrance Cable (Nonprotected)—1200-Pair Building Cable

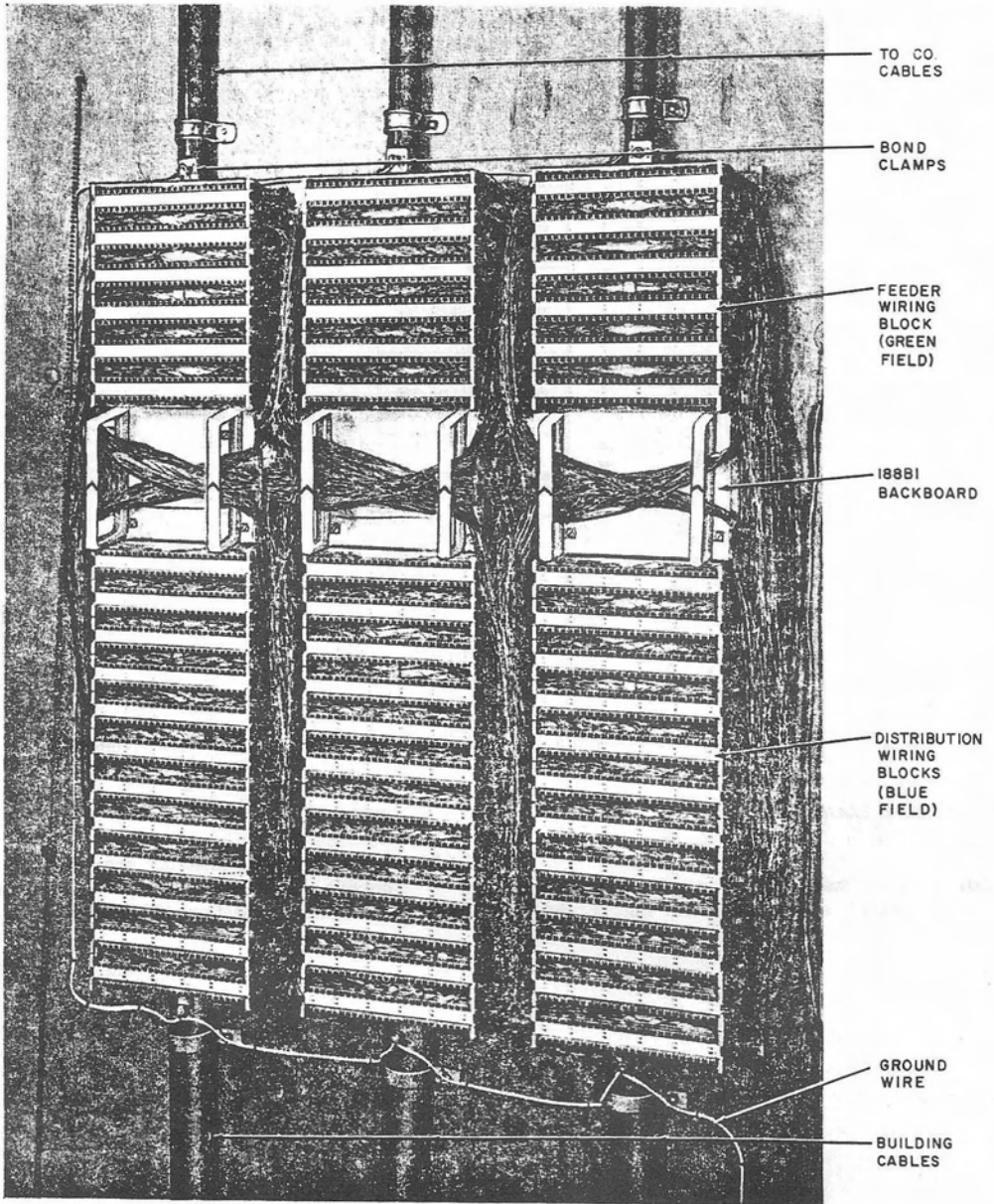


Fig. 24—Wall Mounted Terminal—900-Pair Entrance Cable (Nonprotected)—2400-Pair Building Cable

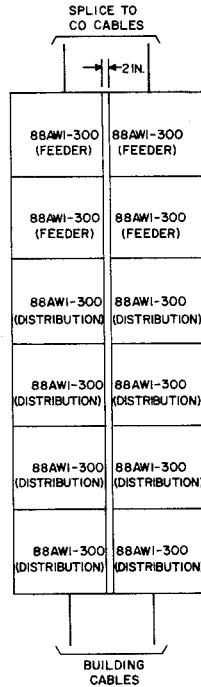


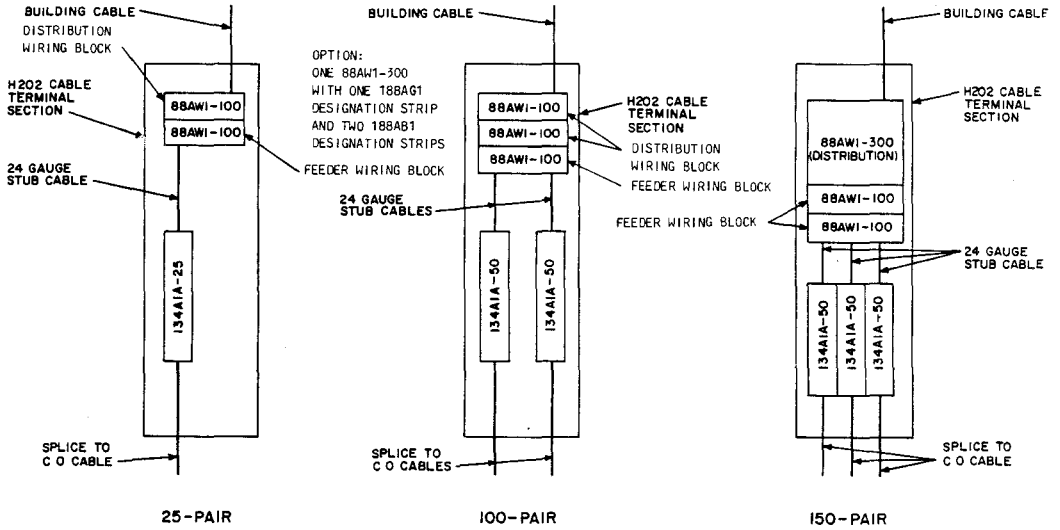
Fig. 25—Wall Mounted Terminal—1200-Pair Entrance Cable (Nonprotected)—2400-Pair Building Cable

5. TYPICAL EXAMPLES

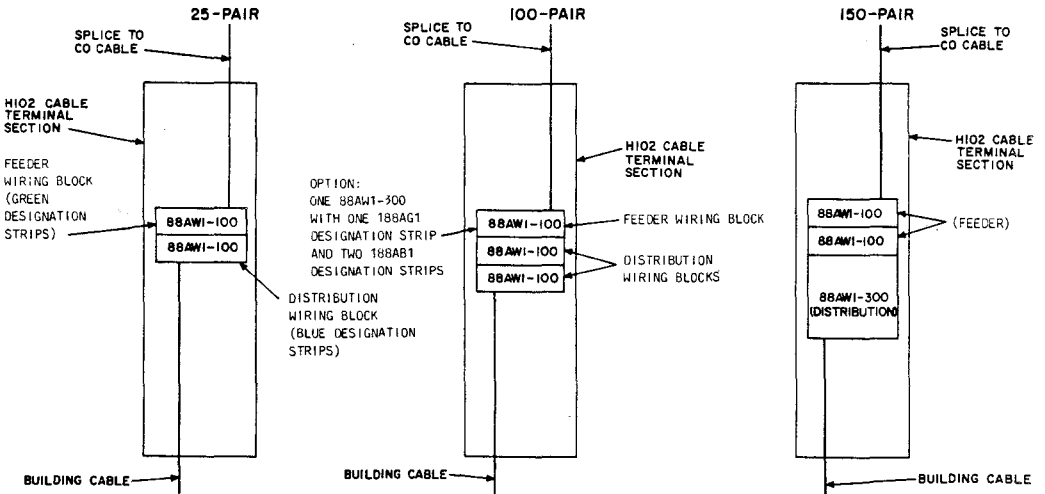
5.01 Typical examples of exposed and unexposed terminals are illustrated in Fig. 26 and 27.

6. WIRING

6.01 Using F cross-connecting wire, connect the outside plant cable pairs to the building cable pairs as outlined in Section 462-265-202.

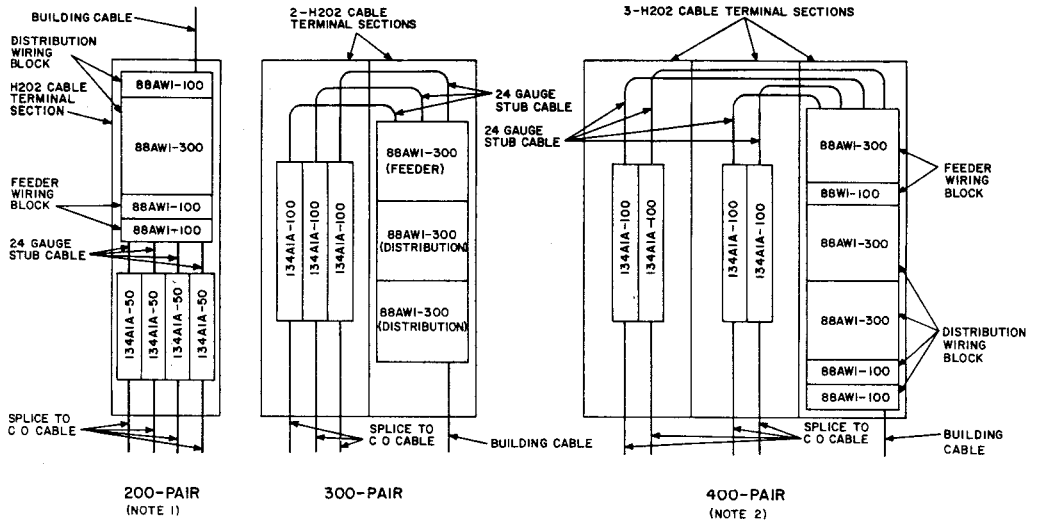


INSTALLATION WITH 134-TYPE PROTECTORS

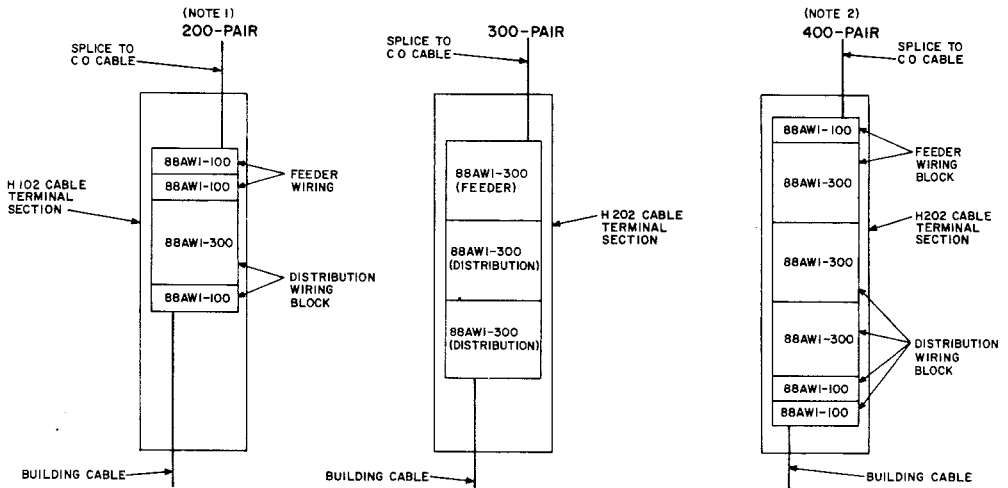


NONPROTECTED INSTALLATION

Fig. 26—Typical Maintenance Terminal—25 to 50 Pairs



INSTALLATION WITH 134-TYPE PROTECTORS



NONPROTECTED INSTALLATION

NOTES:

1. OPTION—TWO 88AWI-300 WIRING BLOCKS WITH TWO 188AG1 DESIGNATION STRIPS AND FOUR 188AB1 DESIGNATION STRIPS.
2. OPTION—FOUR 88AWI-300 WIRING BLOCKS WITH FOUR 188AG1 DESIGNATION STRIPS AND EIGHT 188AB1 DESIGNATION STRIPS.

Fig. 27—Typical Main Entrance Terminal—200 to 400 Pairs