

## SUBSCRIBER LOOP CARRIER 96 (SLC\*-96) MINI-HUT INSTALLATION OF FRAMES, HARDWARE, AND CONNECTORS

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4. INSTALLATION OF CROSS-CONNECT FIELD, TEST ACCESS FACILITY, AND SPLICE CHAMBER . . . . .	3	1. GENERAL	
A. Installation of Cross-Connect Field and Splice Chamber . . . . .	3	1.01 This section covers the installation of frames, cross-connect hardware, test access facility, routing of intermediate cables, and grounding for the SLC-96 mini-hut.	
2700-Pair Arrangement Using 76-Type Terminal Blocks . . . . .	11	1.02 When this section is reissued, the reason for reissue will be listed in this paragraph.	
1200- or 1800-Pair Arrangement Using 76-Type Terminal Blocks . . . . .	18	2. GROUNDING	
1800- or 2700-Pair Arrangement Using 108-Type Terminal Blocks . . . . .	20	2.01 The materials which must be ordered separately for the installation of a ground system for the mini-hut are as follows:	
B. Test Access Facility . . . . .	20		
Installation of Test Access Facility (600 Pairs or Less) With Cross-Connect Field . . . . .	22	QUANTITY	DESCRIPTION
Installation of Test Access Facility (1000-Pair Maximum) Without Cross-Connect Field . . . . .	26	11	Connector AT-7796X, No. 6
5. INSTALLATION OF ANCHORS AND FRAMES . . . . .	30	2	B Ground Clamp
A. Installation of Anchors . . . . .	30	As Required	D Bond Clamp
B. Installation of Frames Onto Concrete Floor . . . . .	32	55 ft	B Ground Wire (solid copper)
		2.02 After the hut is installed, an interior ground ring (B ground wire) is installed near the top of the hut as shown in Fig. 1. This ground ring is attached to each wall panel at the holes provided in the top channel of the wall panel as shown in Fig. 1, Detail 2.	

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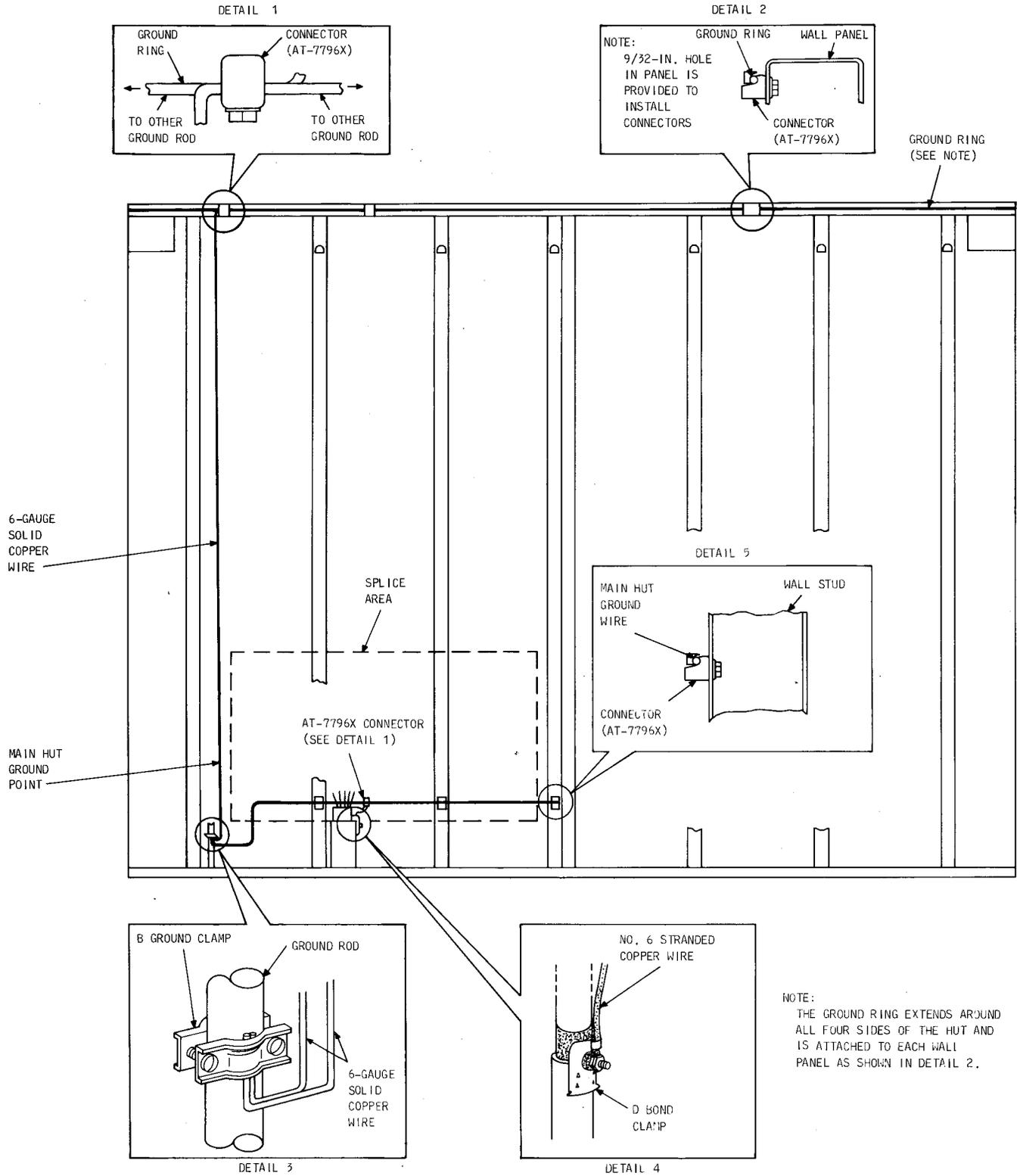


Fig. 1—Installation of Ground System

**2.03** A 6-gauge solid-copper wire is connected to the ground ring as shown in Fig. 1, Detail 1, routed down between the wall studs, and attached to the wall studs at the splice area as shown in Fig. 1, Detail 5. This copper wire is considered the main ground point of the hut.

**2.04** The shields of the outside plant cables are terminated with D bond clamps, according to Section 081-852-118, and connected to the main ground point of the hut with a 6-gauge ground wire and AT-7796X connector as shown in Fig. 1, Detail 4.

**2.05** There are two locations for installing ground rods provided with the hut foundation. The first ground rod is connected to the main ground of the hut using a B ground clamp, 6-gauge wire, and an AT-7796X connector as shown in Fig. 1, Detail 3. The second ground rod is located near the power panel on the opposite side of the hut from the first ground rod. This second rod is connected to the ground ring using the same method and materials as described for the first rod. The power neutral ground is also connected to the second rod per ED-97949-10.

**2.06** In some installations it may not be possible to install the ground rods at the designated locations in the foundation due to the soil conditions. In these cases, No. 6 copper wires connected to external ground rods are brought through the foundation in place of the ground rods. The connections described in paragraph 2.05 are made to this wire.

**3. ROUTING OF INTERMEDIATE CABLES**

**3.01** The following material must be ordered separately for the installation of the intermediate cables:

Quantity	Description
14	Cable Hooks (AT-6784 Size 10L)

**3.02** The intermediate cables (derived pair, digital line, and miscellaneous cables) should be routed up from the splice area between the vertical metal studs of the wall panels to the area above the equipment frames. The cables are then routed around the inside of the hut to the appropriate equipment frame and then lashed (using cable ties) to the cable hooks. The cable routing is shown in Fig. 2.

**3.03** The derived pair and digital line intermediate cables should be dressed along the left side of each frame and the miscellaneous cable along the right side of each frame. These cables are then secured to the frame using cable tie clamps and cable ties (ED-97162-52 Group 16).

**3.04** The intermediate cables must be identified at each end using the cable numbers shown in Table A. This identification may be a marking on the cable sheath or a tag placed at each end of the cable. Table A also lists the overall sheathed length and the unsheathed length at the equipment and cross-connect end of the intermediate cables.

**3.05** At each equipment frame, the shield at one end of each digital line cable **must be terminated and bonded to the metal upright of the frame.** Terminate the shield at the equipment frame only. **Do not** terminate the shield on both ends of the cable. The shield should be terminated with a D bond clamp and bond strap as outlined in Section 081-852-118.

**Note:** The bond strap should be terminated at the fourth mounting hole from the top of the frame, using a 12-24 screw (furnished with the 1A power and jack panel). Remove paint from around the mounting hole before terminating the bond strap.

**4. INSTALLATION OF CROSS-CONNECT FIELD, TEST ACCESS FACILITY, AND SPLICE CHAMBER**

**4.01** The materials furnished with the SLC-96 mini-hut for the installation of the cross-connect field, test access facility, and splice chamber are listed in Table C (Items 1 through 27). The materials which must be obtained by the Telephone Company, either locally or from Western Electric Company, are listed in Table D (Items 28 through 58).

**A. Installation of Cross-Connect Field and Splice Chamber**

**4.02** The cross-connect field may be constructed using either 76-type terminal blocks for 1200-, 1800-, and 2700-pair arrangements or 108-type terminal blocks for 1800- and 2700-pair arrangements. The construction of these different arrangements is covered in the following paragraphs.

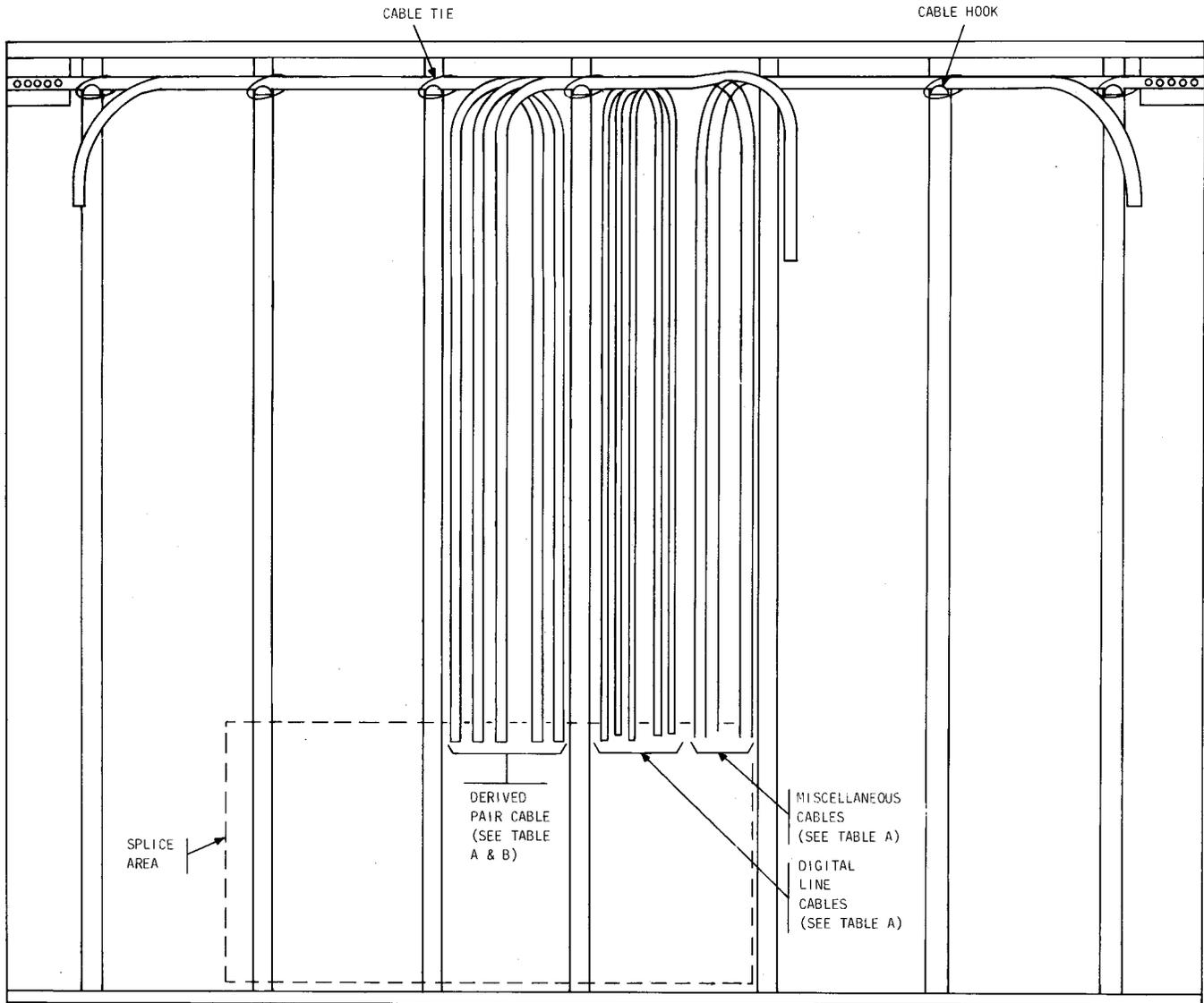


Fig. 2—Routing of Intermediate Cables

**TABLE A**  
**INTERMEDIATE CABLE IDENTIFICATION**

TYPE CABLE (NOTE 1)	CABLE NO.	BAY NO.	SHEATHED LENGTHS (FT) (NOTE 4)	CABLE SIZE	UNSHEATHED LENGTHS AND CONECs CODES	
					EQUIPMENT END	CROSS-CONNECT END
Derived Pair Cable (Note 2)	11	1	12	200-pair	33-in. (Note 6)	For 710 splicing to cross-connect panel, see Table B (FSEB) (Note 7)
	21	2	10			
	31	3	8 1/2			
	41	4	12			
	51	5	14			
Digital Line Cable (Note 2)	12	1	14	100-pair (Note 5)	23-in. (Note 6)	15-in. (Blank)
	22	2	12			
	32	3	7			
	42	4	10			
	52	5	12			
Miscellaneous Pair Cable (Note 3)	13	1	12	25-pair	33-in. (Note 6)	15-in. (Blank)
	23	2	10			
	33	3	9			
	43	4	12			
	53	5	14			

**Notes:**

1. The derived pair, digital line, and miscellaneous pair cables may be ordered from the stocklist of ED-97948-30 "SLC-96 C Mini-Hut Remote Terminal Arrangements."
2. The intermediate cables may be required to have fire retardant sheaths by local policy or building codes. For this reason ABMM (24 ga.) cable is recommended. A shielded 22-, 24-, or 26-gauge conductor cable will meet the transmission requirements; however, some routing problems will be encountered in the mini-hut with a 200-pair ABAM 22-gauge cable.
3. ABAM or D Inside Wiring Cable is recommended.
4. The digital line and miscellaneous pair cables are ordered in 17-ft lengths, and then cut to the lengths specified in table.
5. Four shielded 5-pair cables may be used in place of each 100-pair cable. The shield of each cable must be terminated and grounded at the bay framework. Each of the four cables is to be terminated with a 710-BC1-25 connector.
6. Equipped with male 710-BD1-25 connectors.
7. Equipped with female 710-SD1-25 connectors.

TABLE B

## LENGTH OF DERIVED PAIR CABLE AT CROSS-CONNECT END

DERIVED PAIR CABLE NO.	25 PAIR SEQUENCE TERMINAL COUNT	CABLE BINDER GROUP COLOR CODE	WIRING HARNESS LENGTH (IN.)
11	1-25	BL-W	20
	26-50	O-W	28
	51-75	G-W	20
	76-100	BR-W	28
	101-125	S-W	20
	126-150	BL-R	28
	151-175	O-R	20
	176-200	G-R	28
21	201-225	BL-W	20
	226-250	O-W	28
	251-275	G-W	20
	276-300	BR-W	28
	301-325	S-W	20
	326-350	BL-R	28
	351-375	O-R	20
	376-400	G-R	28
31	401-425	BL-W	20
	426-450	O-W	28
	451-475	G-W	20
	476-500	BR-W	28
	501-525	S-W	20
	526-550	BL-R	28
	551-575	O-R	20
	576-600	G-R	28
41	601-625	BL-W	20
	626-650	O-W	28
	651-675	G-W	20
	676-700	BR-W	28
	701-725	S-W	20
	726-750	BL-R	28
	751-775	O-R	20
	776-800	G-R	28
51	801-825	BL-W	20
	826-850	O-W	28
	851-875	G-W	20
	876-900	BR-W	28
	901-925	S-W	20
	926-950	BL-R	28
	951-975	O-R	20
	976-1000	G-R	28

TABLE C

## MATERIAL FURNISHED WITH SLC-96 MINI-HUT

ITEM NO.	ITEM DESCRIPTION	2700 PAIR 76-TYPE SAI	1800 PAIR 76-TYPE SAI	2700 PAIR 108-TYPE SAI	1800 PAIR 108-TYPE SAI	1200 PAIR 76-TYPE FDI	600 PAIR TEST ACCESS FACILITY	1000 PAIR TEST ACCESS FACILITY
1	Bottom Cover (L520988)	1	1	1	1	1	—	1
2	Top Cover (L520987)	1	1	1	1	1	—	1
3	Front Cover (L520989)	2	2	2	2	2	—	2
4	Cable Bar (L520990)	2	2	2	2	2	—	2
5	Mounting Bracket (L520894)	9	9	9	9	9	—	5
6	Bottom Mounting Angle (L520892)	1	1	1	1	1	—	1
7	Top Mounting Angle (L520893)	1	1	1	1	1	—	—
8	Tool Retainer Bracket (L520985)	1 (See Note)	1 (See Note)	1	1	1 (See Note)	1	—
9	Test Cord Retainer (L520896)	2	2	2	2	2	1	1
10	Reel Hanger (L520986)	1	1	1	1	1	—	—
11	Cable Hanger (L520895)	—	—	—	—	—	6	12
12	No. 8 × 5/8 Round Head Wood Screw	16	—	—	—	—	34	66
13	No. 8-32 Hex Nut	6	6	8	8	6	—	—
14	No. 8-32 × 5/8 Pan HMS	6	6	8	8	6	—	—
15	No. 8 Lock Washer	6	6	8	8	6	—	—
16	No. 10 × 5/8 Round Head Wood Screw	24	—	—	—	—	—	—
17	No. 10-24 × 1/2 Pan HMS	22	16	16	16	16	—	16
18	1/4-14 × 1 1/2 Hex Washer Head Self-Drilling Screw	12	—	—	—	—	8	12
19	1/4-20 × 7/8 Pan HMS	8	8	8	8	8	—	8
20	1/4-20 Hex Nut	8	8	8	8	8	—	8
21	1/4 Lock Washer	8	8	8	8	8	—	8
22	1/4 Flat Washer	8	8	8	8	8	—	8
23	1/4-20 × 1/2 Hex HD Cap Screw	—	26	20	20	18	—	—
24	5/16-18 × 7/8 Hex HD Cap Screw	20	20	20	20	20	—	12
25	5/16-18 Hex Nut	20	20	20	20	20	—	12
26	5/16 Lock Washer	20	20	20	20	20	—	12
27	5/16 Flat Washer	20	20	20	20	20	—	12

**Note:** Supplied but only used when 108-type terminal blocks are used for cross-connecting.

**TABLE D**  
**MATERIAL REQUIRED BUT NOT FURNISHED**

ITEM NO.	ITEM DESCRIPTION	2700 PAIR 76-TYPE SAI	1800 PAIR 76-TYPE SAI	2700 PAIR 108-TYPE SAI	1800 PAIR 108-TYPE SAI	1200 PAIR 76-TYPE FDI	600 PAIR TEST ACCESS FACILITY	1000 PAIR TEST ACCESS FACILITY
28	Terminal Block (88P1-100HA)	—	—	—	—	—	1 Per 50 Pair	1 Per 50 Pair
29	Terminal Block (76S1-900CF/F)	2	—	—	—	—	—	—
30	Terminal Block (76S1-900CM/F)	1	—	—	—	—	—	—
31	Terminal Block (76S1-600CF/DE)	—	2	—	—	1	—	—
32	Terminal Block (76S1-600CM/DE)	—	1	—	—	1	—	—
33	Terminal Block (108S1-900CF)	—	—	2	—	—	—	—
34	Terminal Block (108S1-900CM)	—	—	1	—	—	—	—
35	Terminal Block (108S1-600CF)	—	—	—	2	—	—	—
36	Terminal Block (108S1-600CM)	—	—	—	1	—	—	—
37	Wire Terminal (101B2)	2	2	2	2	2	1	1
38	Cable Clamp (900326885)	2	2	2	2	2	1	1
39	Finger (842330912)	8	—	—	—	—	—	—
40	Wiring Trough (841512023)	—	—	—	2	—	—	—
41	Wiring Trough (841512015)	—	—	2	—	—	—	—
42	Wiring Trough (842322729)	—	—	—	—	1	—	—
43	Plywood Backboard (43 1/4 × 17 1/2 × 3/4)	—	—	—	—	—	1	—
44	Plywood Backboard (48 × 43 1/4 × 3/4)	1	—	—	—	—	—	—
45	Test Cord (842324303)	2	2	—	—	2	—	—
46	Test Cord (AT-8662D)	—	—	2	2	—	1	1
47	Tool (788D4)	—	—	1	1	—	—	—
48	F Cross-Connect Wire	—	—	1 Reel	1 Reel	—	—	—
49	G Cross-Connect Wire (No. 268 Spool)	1 Reel	1 Reel	—	—	1 Reel	—	—
50	Designation Strip (188AY1-900)	—	—	1	1	—	—	—
51	Designation Strip (188AB1-1800)	—	—	1	—	—	—	—
52	Designation Strip (188AB1-1200)	—	—	—	1	—	1	1
53	Designation Strip (188GY1-1000)	—	—	—	—	—	—	1
54	Plywood Backboard (36 × 33 1/2 × 3/4)	—	—	—	—	—	—	—
55	Wiring Trough (842322661)	—	2	—	—	—	—	—
56	Designation Strip (188AG1-900)	—	—	1 (Note)	1 (Note)	—	—	—
57	Connector 710-SD-25	—	—	—	—	—	2 Per Item 28	2 Per Item 28
58	Connector 710-BD-25	—	—	—	—	—	2 Per Item 28	2 Per Item 28

**Note:** This designation strip is required only when the feeder terminal block terminates metallic feeder (green designation strip).

**2700-Pair Arrangement Using 76-Type Terminal Blocks**

**4.03** Install nine mounting brackets (Item 5) to the metal wall studs at the locations, using the hardware shown in Fig. 3, Details 1 and 2.

**4.04** Install top and bottom mounting angles (Items 6 and 7) along with the top cover (Item 2) for the splice chamber as shown in Fig. 3, Details 1 and 2.

**4.05** Attach the bottom cover (Item 1) for the splice chamber to the metal wall studs at the location, using the hardware shown in Fig. 3, Detail 4.

**4.06** Install two cable bars (Item 4) to the metal wall studs at the locations shown in Fig. 3, Detail 3.

**4.07** Attach the two (2) front covers (Item 3) for the splice chamber to the top and bottom covers as shown in Fig. 3, Details 2 and 4.

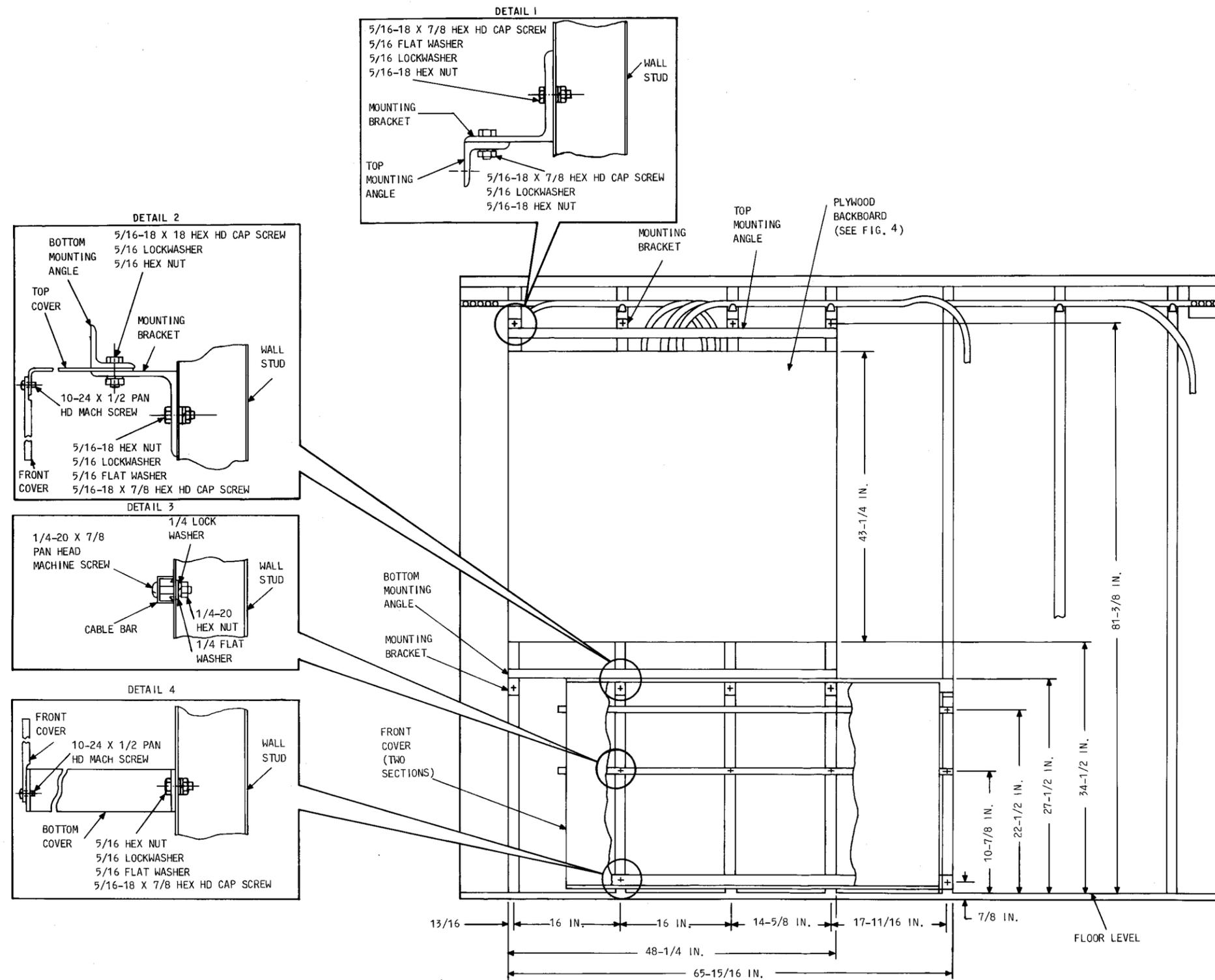
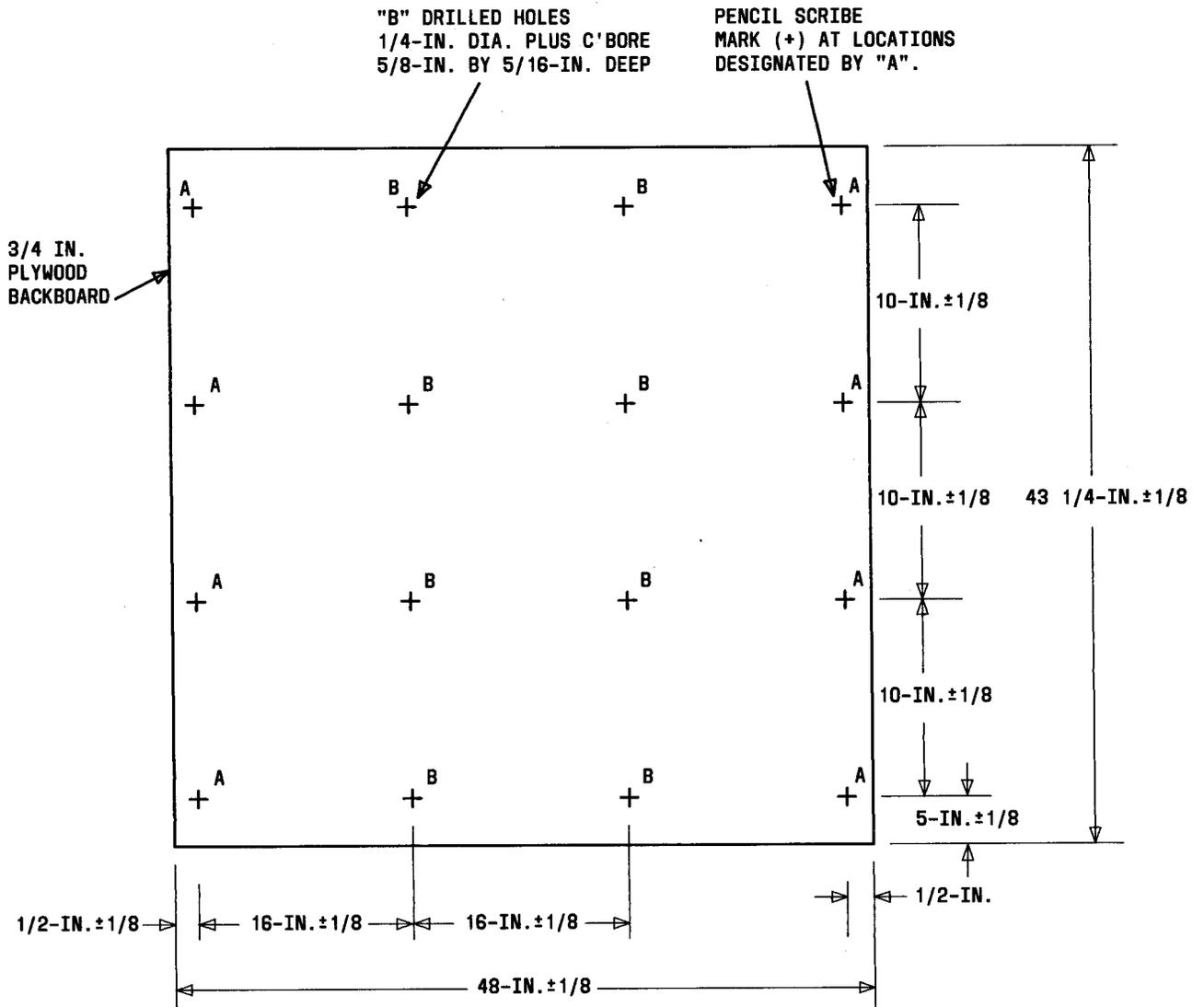


Fig. 3—Installation of Cross-Connect Field and Splice Chamber

**4.08** Obtain a plywood backboard (Item 44) and drill and scribe clearance and mounting holes at the locations shown in Fig. 4. The plywood backboard must be obtained locally.

**4.09** Mount the plywood backboard to the metal wall studs using sixteen 1/4-14 X 1-1/2 inch long hex washer head self-drill and tap screws (Item 18). See Fig. 3 for location of the plywood backboard.



**Fig. 4—Plywood Backboard for Cross-Connect Field**

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**4.10** Attach two 76S1-900CF/F (Item 29) and one 76S1-900CM/F (Item 30) terminal blocks to the mounting angles and plywood backboard using two 10-24 X 1/2-inch long pan head machine screws (Item 17) and eight No. 10 X 5/8-inch long round head wood screws (Item 16) for each terminal block. The mounting location of the terminal blocks is shown in Fig. 5.

**4.11** Attach eight fingers (Item 39) to the plywood backboard using two No. 8 X 5/8-inch long round head wood screws (Item 12) for each finger. See Fig. 5 for mounting location of fingers.

**4.12** Install two test cord retainers (Item 9), two terminal assemblies (Item 37), two cable clamps (Item 38), and test cords (Item 45) to the metal wall studs per Fig. 5, Detail 1.

**Note:** If a test access facility is required, refer to paragraph 4.32 for installation of test cord retainers and test cords.

**4.13** Install reel hanger (Item 10) to the metal wall stud at the location shown in Fig. 5, using two 8-32 X 5/8 inch long pan head machine screws (Item 14), No. 8 lock washer (Item 15), and 8-32 hex nut (Item 13).

NOTE:

USE 8-32 X 5/8 SCREW, NO. 8 LOCKWASHER, AND 8-32 NUT WHEN TEST CORD RETAINERS ARE ATTACHED TO METAL WALL STUD. IF TEST ACCESS FACILITY IS EMPLOYED, ATTACH RETAINERS TO PLYWOOD BACKBOARD USING NO. 8 X 5/8 WOOD SCREW.

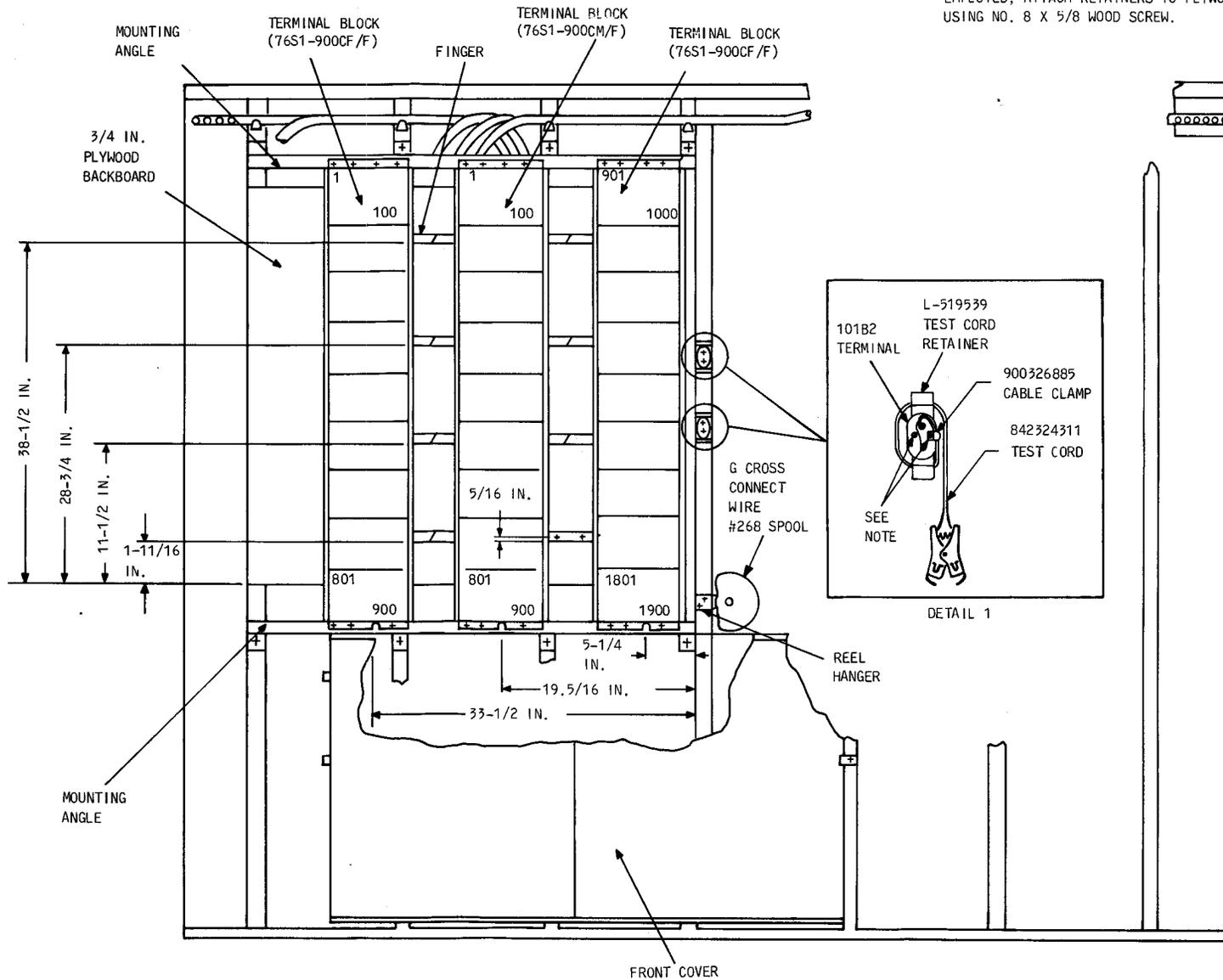
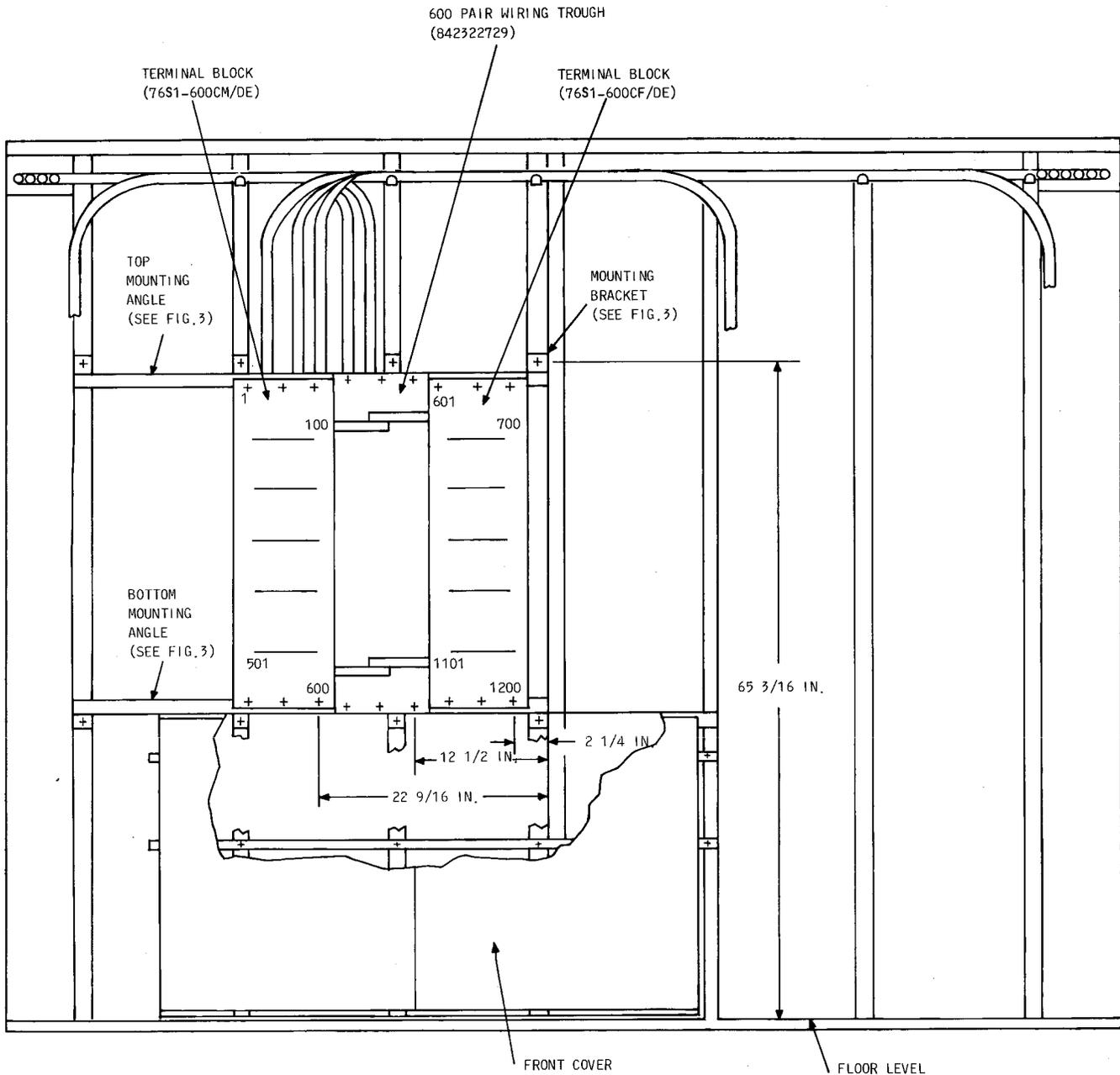


Fig. 5—2700-Pair Arrangement Using 76-Type Terminal Blocks

**1200-or 1800-Pair Arrangement Using 76-Type Terminal Blocks**

**4.14** Follow the procedures outlined in paragraphs 4.03 through 4.07 covering 2700-pair arrangement, except refer to Fig. 6 and 7 for the location of the four top mounting brackets and top mounting angle.

**4.15** For 1200-pair arrangement, attach one 76S1-600CF/DE and one 76S1-600CM/DE terminal block (Items 31 and 32) to the top and bottom mounting angles at the locations shown in Fig. 6, using six 1/4-20 X 1/2-inch long hex head cap screws (Item 23) for each terminal block.



**Fig. 6—1200-Pair Arrangement Using 76-Type Terminal Blocks**

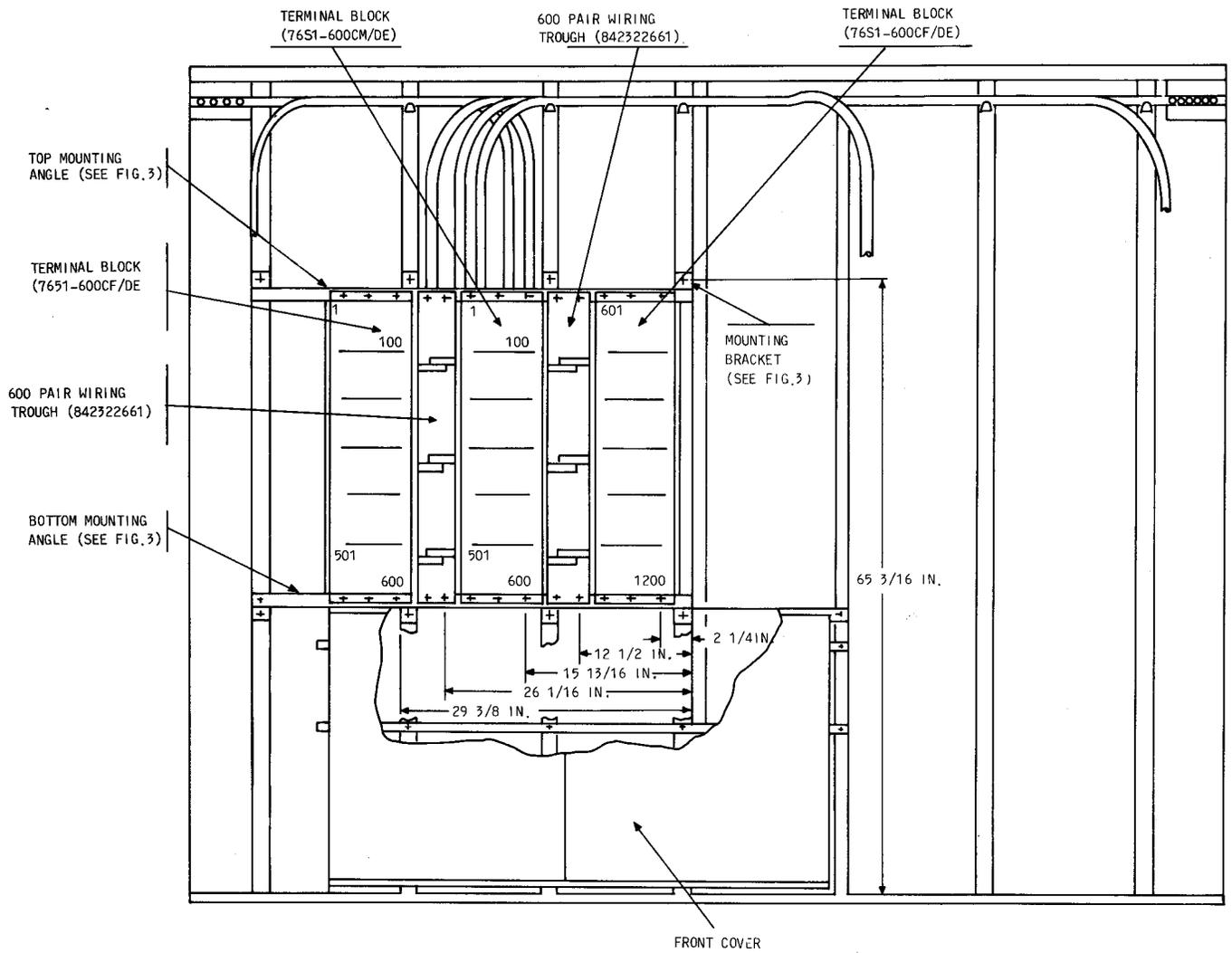


Fig. 7—1800-Pair Arrangement Using 76-Type Terminal Blocks

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**4.16** Install one 600-pair wiring trough (Item 42) to the top and bottom mounting angles using six 1/4-20 X 1/2-inch long hex head cap screws (Item 23).

**4.17** *For 1800-pair arrangement*, attach two 76S1-600CF/DE and one 76S1-600CM/DE terminal blocks (Items 31 and 32) to the top and bottom mounting angles at the locations shown in Fig. 7, using six 1/4-20 X 1/2-inch long hex head cap screws (Item 23) for each terminal block.

**4.18** Install two 600-pair wiring troughs (Item 55) to the top and bottom mounting angles using four 1/4-20 X 1/2-inch long hex head cap screws (Item 23) for each wiring trough.

**4.19** Install, for either arrangement, test cord retainers, test cord, terminal assemblies, cable clamps, test cord, and reel hanger as outlined in paragraphs 4.12 and 4.13.

**4.20** Follow the procedures outlined in paragraphs 4.03 through 4.07 covering 2700-pair arrangement using 76-type terminal blocks, except refer to Fig. 8 for the location of the four top mounting brackets and top mounting angle.

### **1800- or 2700-Pair Arrangement Using 108-Type Terminal Blocks**

**4.21** *For 1800-pair arrangement*, attach two 108S1-600CF and one 108S1-600CM terminal blocks (Items 35 and 36) to the top and bottom mounting angles at the locations shown in Fig. 8, using six 1/4-20 X 1/2 inch long hex head cap screws for each terminal block.

**4.22** Install two 600-pair wiring troughs (Item 40) to the top and bottom mounting angles using four 1/4-20 X 1/2 inch long hex head cap screws for each trough (Fig. 8). See paragraph 4.25 for test cord and designation strips.

**4.23** *For 2700-pair arrangement*, attach two 108S1-900CF and one 108S1-900CM terminal blocks (Items 33 and 34) to the top and bottom mounting angles at the locations shown in Fig. 8, using six 1/4-20 X 1/2 inch long hex head cap screws for each terminal block.

**4.24** Install two 900-pair wiring troughs (Item 41) to the top and bottom mounting angles, using four 1/4-20 X 1/2 inch long hex head cap screws for each wiring trough. See Fig. 8.

**4.25** Install, for either arrangement, two test cord retainers (Item 9), two terminal assemblies (Item 37), two cable clamps (Item 38), and two test cords (Item 46) per Fig. 8, Detail 1. Also, install the appropriate designation strips on the terminal blocks as follows:

- Derived Feeder—Yellow Strips 188AY1-900 (Item 50)
- Metallic Feeder—Green Strips 188AG1-900 (Item 56)
- Distribution—Blue Strips 188AB1-1800 (Item 51) or 188AB1-1200 (Item 52)

**Note:** If a test access facility is required, refer to paragraph 4.32 for installation of test cord retainer and test cord.

**4.26** Attach the tool retainer bracket assembly (Item 8) to the metal wall stud at the location shown in Fig. 8, using two 8-32 X 5/8 inch long pan head machine screws (Item 14), No. 8 lock washer (Item 15), and 8-32 hex nut (Item 13).

**Note:** If a test access facility is required, refer to paragraph 4.32 for installation of tool retainer bracket assembly.

### **B. Test Access Facility**

**4.27** A test access facility should be provided for all derived feeder pairs that go to a remotely mounted (outside the hut) interface to facilitate cable troubleshooting.

**4.28** An acceptable method of providing access is with the 108P1-100HA terminal blocks. This block provides a surface-mountable block with positions for 50 "in" and 50 "out" pairs as well as the required patch plugs to connect the in and out pairs together. Multiple blocks should be used as required to provide the required number of terminations.

**4.29** Jumper wires cannot be connected to the "out" terminals of these blocks, and thus a flexibility point is avoided to preserve pair identity. Removing the patch plug opens the pair to allow connection of an approved test set for cable troubleshooting (via a standard 88-type interface test probe).

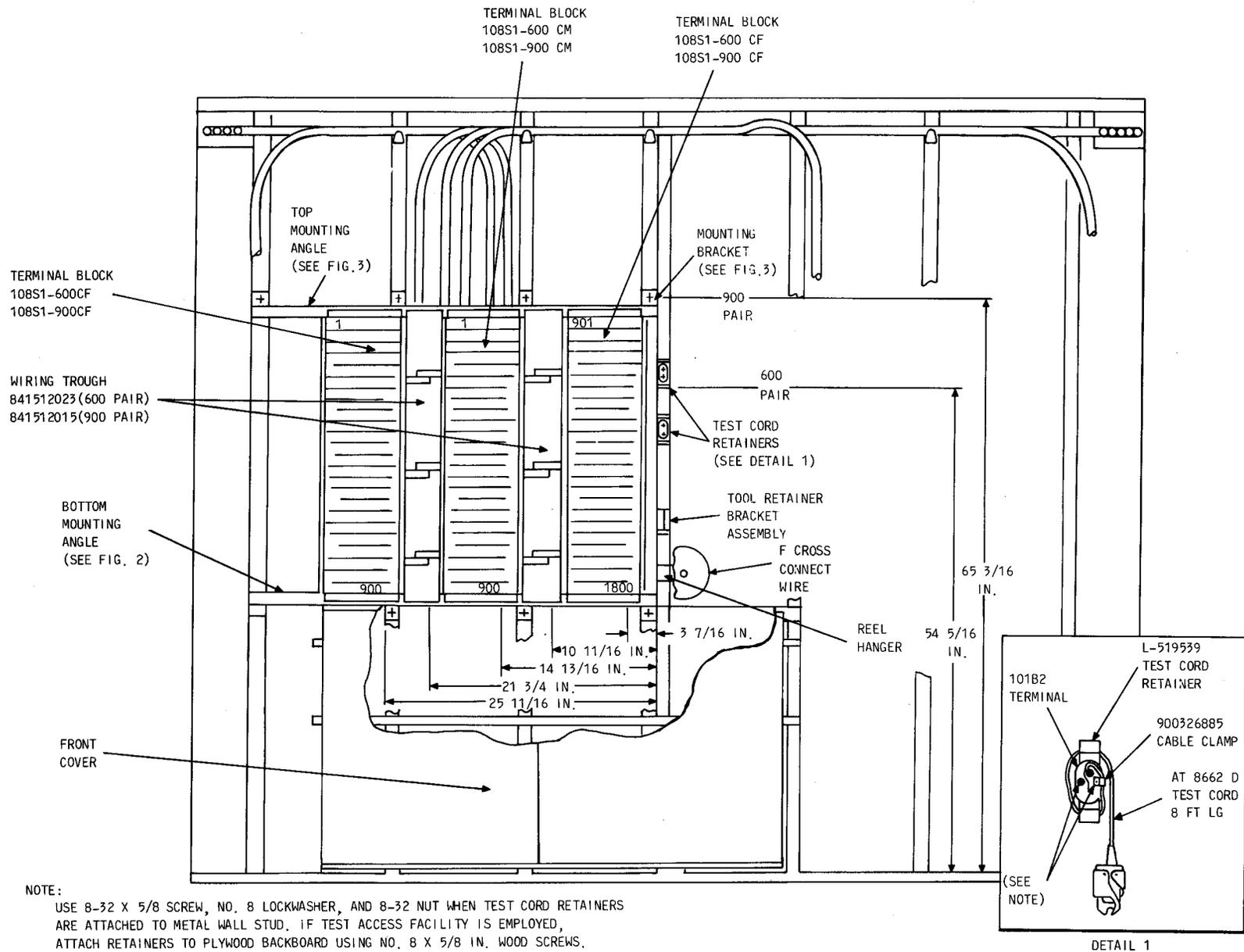


Fig. 8—1800- or 2700-Pair Arrangement Using 108-Type Terminal Blocks

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**Installation of Test Access Facility (600-Pairs or Less)  
With Cross-Connect Field**

**4.30** Install cross-connect field and splice chamber as outlined in paragraphs 4.03 through 4.13 (2700-pair arrangement using 76-type blocks), 4.14 through 4.19 (1200- or 1800-pair arrangement using 76-type blocks), or 4.20 through 4.26 (1800- or 2700-pair arrangement using 108-type blocks).

**4.31** Obtain a plywood backboard (Item 43) and drill and scribe mounting and clearance holes at the locations shown in Fig. 9.

**4.32** Install test cord retainers (Item 9), tool retainer bracket (Item 8), and cable hangers (Item 11) on the plywood backboard, at the locations shown in Fig. 9, using No. 8 X 5/8 inch long round head wood screws (Item 12).

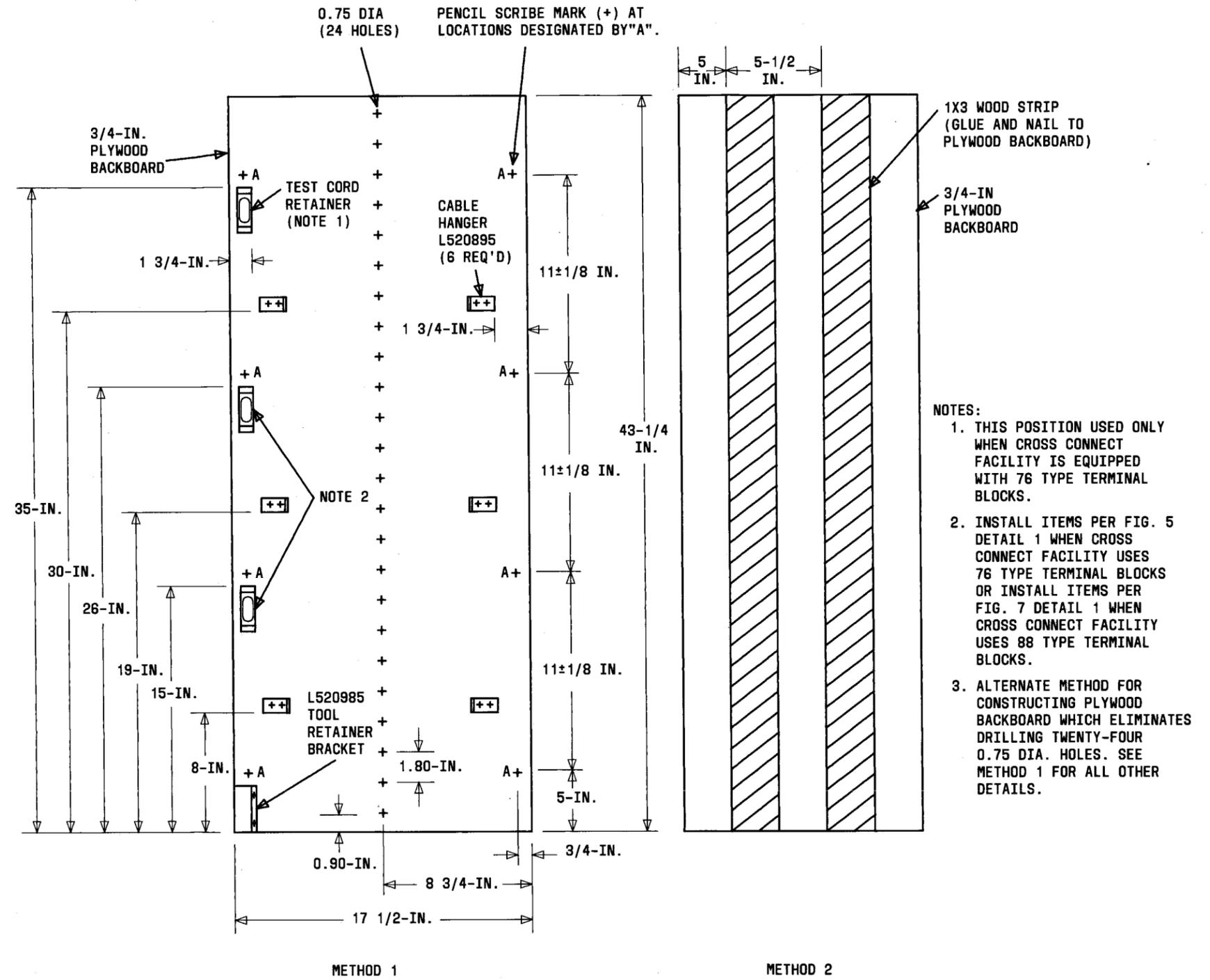


Fig. 9—Plywood Backboard for Test Access Facility (600 Pairs or Less)

4.33 Position the plywood backboard at the location shown in Fig. 10 and secure to metal wall studs, using 1/4 - 14 X 1-1/2 inch long hex washer head self-drill screws (Item 18).

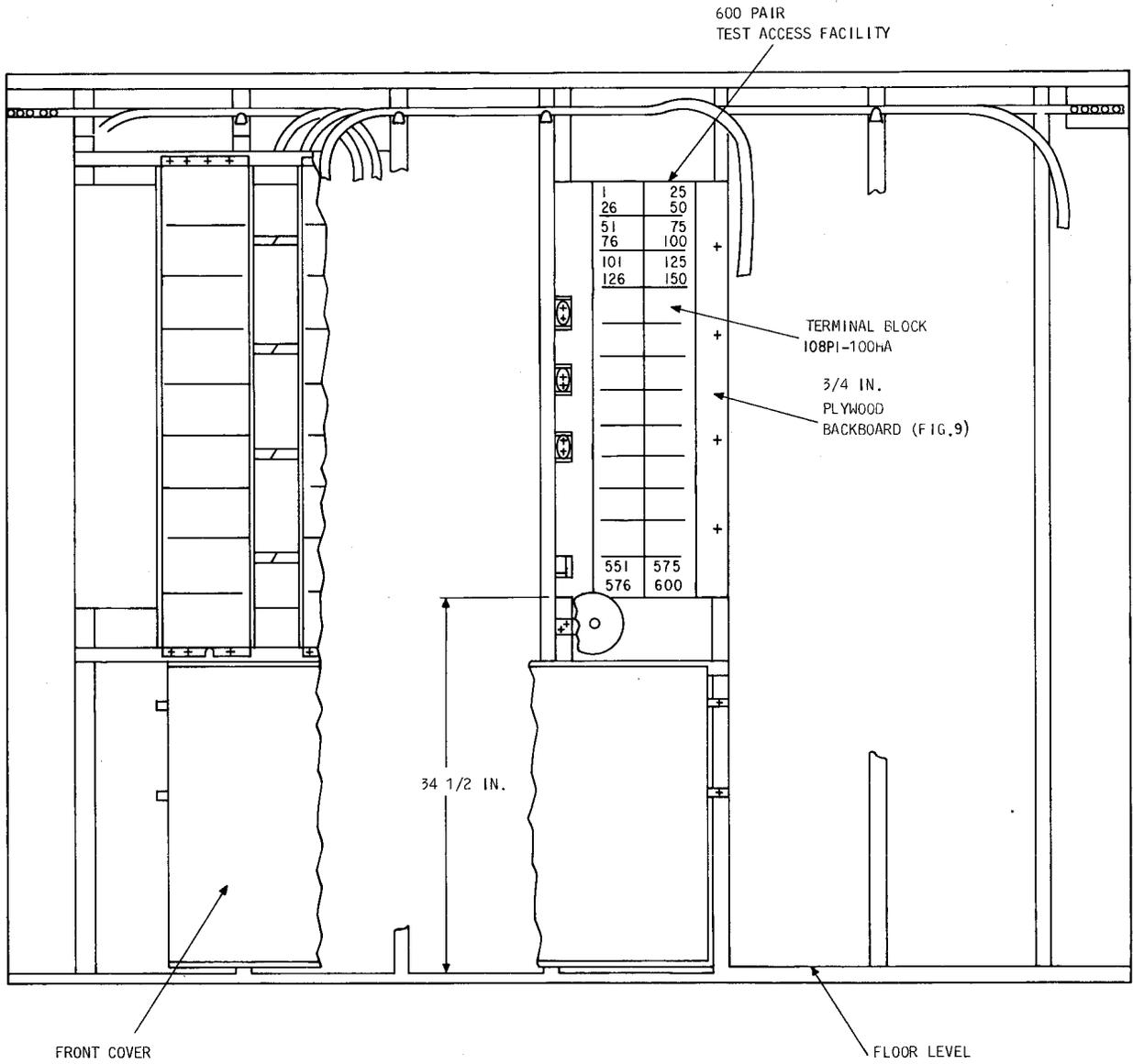


Fig. 10—Installation of Test Access Facility (600 Pairs or Less)

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**4.34** Attach the desired number of 108P1-100HA terminal blocks (Item 28) to the plywood backboard, using No. 8 X 5/8 inch long round head wood screws (Item 12). The cables shall be connectorized with 710 connectors according to Section 640-250-218.

**Note:** One 108P1-100HA terminal block will accommodate 50 pairs.

**4.35** Install the 188GY1-1000 (Item 53) designation strips on the terminal blocks, and install the patch plugs provided with the 108P1-100HA terminal blocks to the blocks as shown in Fig. 11.

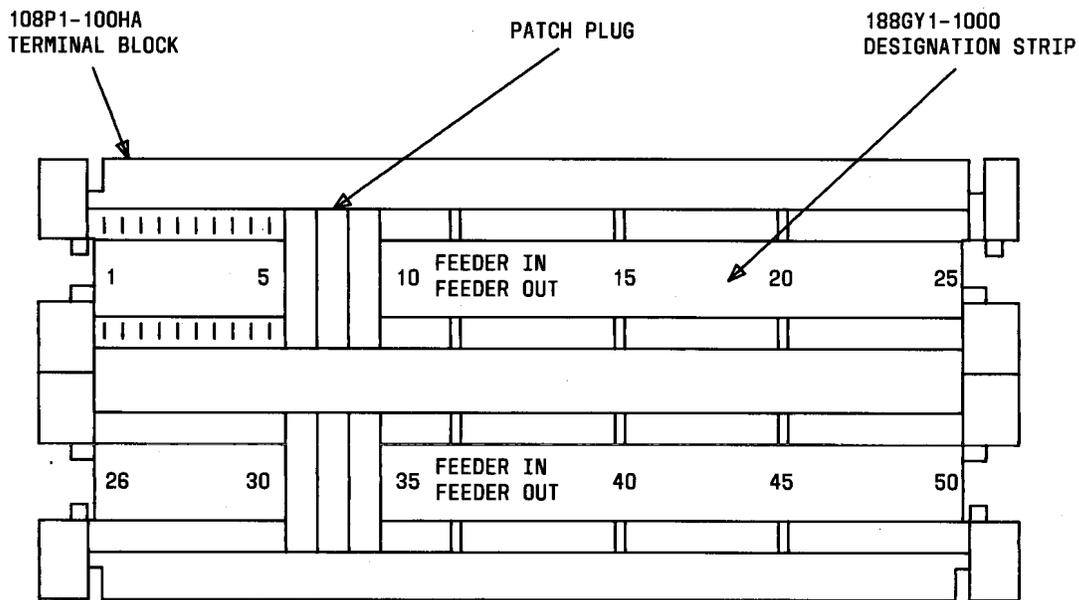
**Installation of Test Access Facility (1000-Pairs Maximum) Without Cross-Connect Field**

**4.36** Install five mounting brackets (Item 5) to the metal wall studs 27-1/2 inches from the floor, using the hardware shown in Fig. 3.

**4.37** Install bottom mounting angle (Item 6) and top cover (Item 7) for the splice chamber as shown in Fig. 3.

**4.38** Follow the procedures outlined in paragraphs 4.05 through 4.07 to complete splice chamber.

**4.39** Obtain a plywood backboard (Item 54) and drill and scribe mounting and clearance holes at the locations shown in Fig. 12.



**Fig. 11—Installation of Designation Strips and Patch Plugs**

NOTES:

1. ALTERNATE METHOD FOR CONSTRUCTING PLYWOOD BACKBOARD WHICH ELIMINATES DRILLING FORTY 0.75 DIA. HOLES. SEE METHOD 1 FOR ALL OTHER DETAILS.
2. INSTALL PER FIG. 8 DETAIL 1.

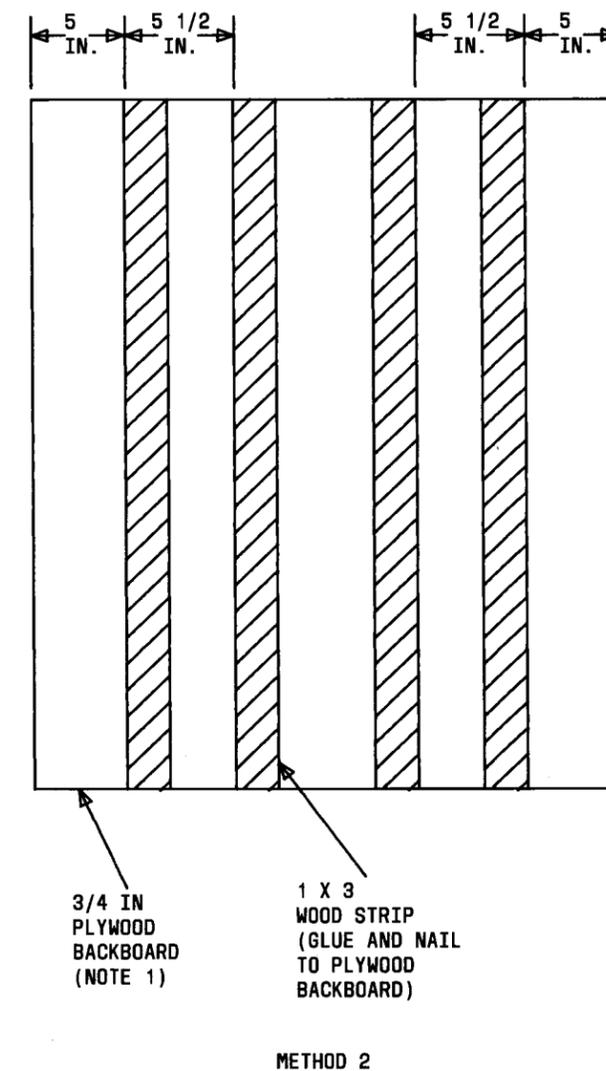
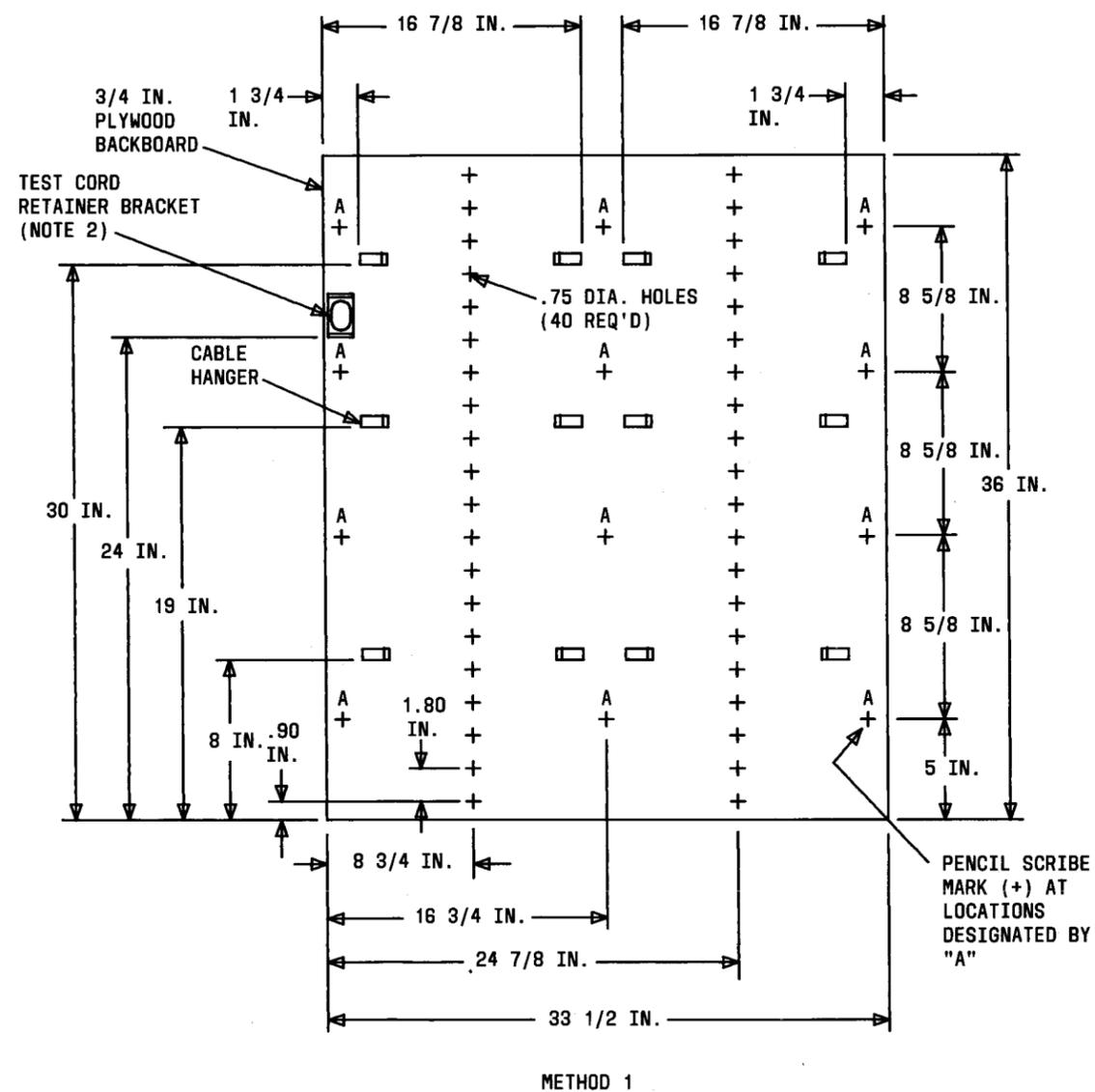


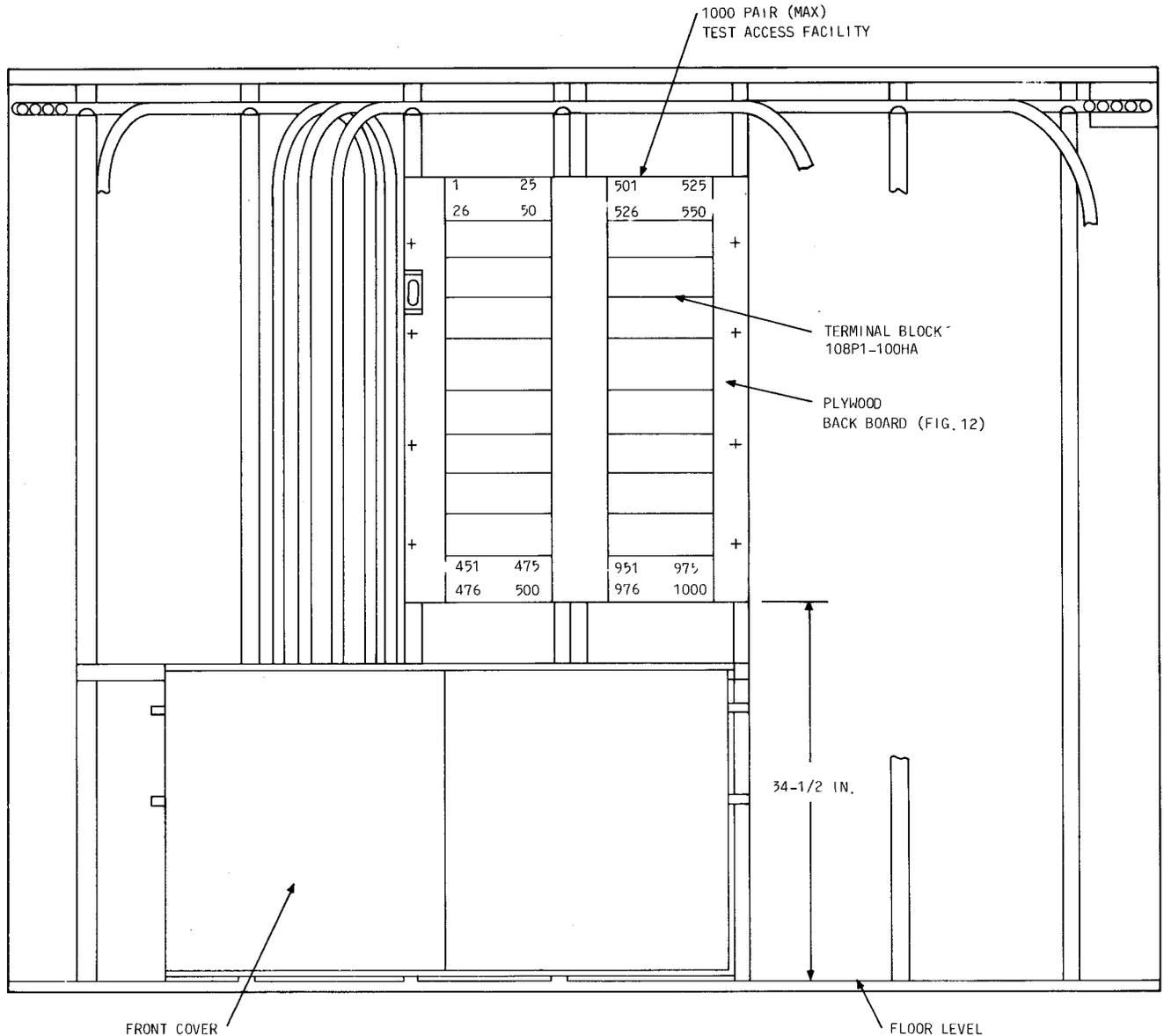
Fig. 12—Plywood Backboard for Test Access Facility (1000 Pairs Maximum)

**4.40** Install test cord retainer (Item 9) and cable hangers (Item 11) on the plywood backboard, at the locations shown in Fig. 12, using No. 8 X 5/8-inch long round head wood screws (Item 12).

**4.41** Position the plywood backboard at the location shown in Fig. 13 and secure to metal wall studs, using 1/4 - 14 X 1-1/2 inch long hex washer head self-drill screws (Item 18).

**4.42** Attach the desired number of 108P1-100HA terminal blocks (Item 28) to the plywood backboard, using No. 8 X 5/8 inch long round head wood screws (Item 12). The cables shall be connectorized with 710 connectors according to Section 640-250-218.

**Note:** One 108P1-100HA terminal block will accommodate 50 pairs.



**Fig. 13—Installation of Test Access Facility (1000 Pairs Maximum)**

4.43 Install the 188GY1-1000 (Item 53) designation strips on the terminal blocks, and install the patch plugs provided with the 108P1-100HA terminal blocks to the blocks as shown in Fig. 11.

5. INSTALLATION OF ANCHORS AND FRAMES

A. Installation of Anchors

5.01 Anchors should be installed for all five frames to accommodate future frame installation in the event all frames are not required for the initial installation. It is also recommended that the sequence of frame installation be as shown in Fig. 14.

5.02 Install 3/8- or 1/2-inch self-drill anchors in the concrete pad as follows.

- (1) Locate and mark, on the concrete pad, the holes to be drilled in accordance with Fig. 14.

*Note:* The number of anchors required for each frame depends on the earthquake zone in which the hut is installed. Overhead bracing is not required. The number of anchors and their sizes are given in Table E.

- (2) Select the proper chuck and seat it on the shank of a Roto Stop Hammer (Western Electric Specification R-4416).

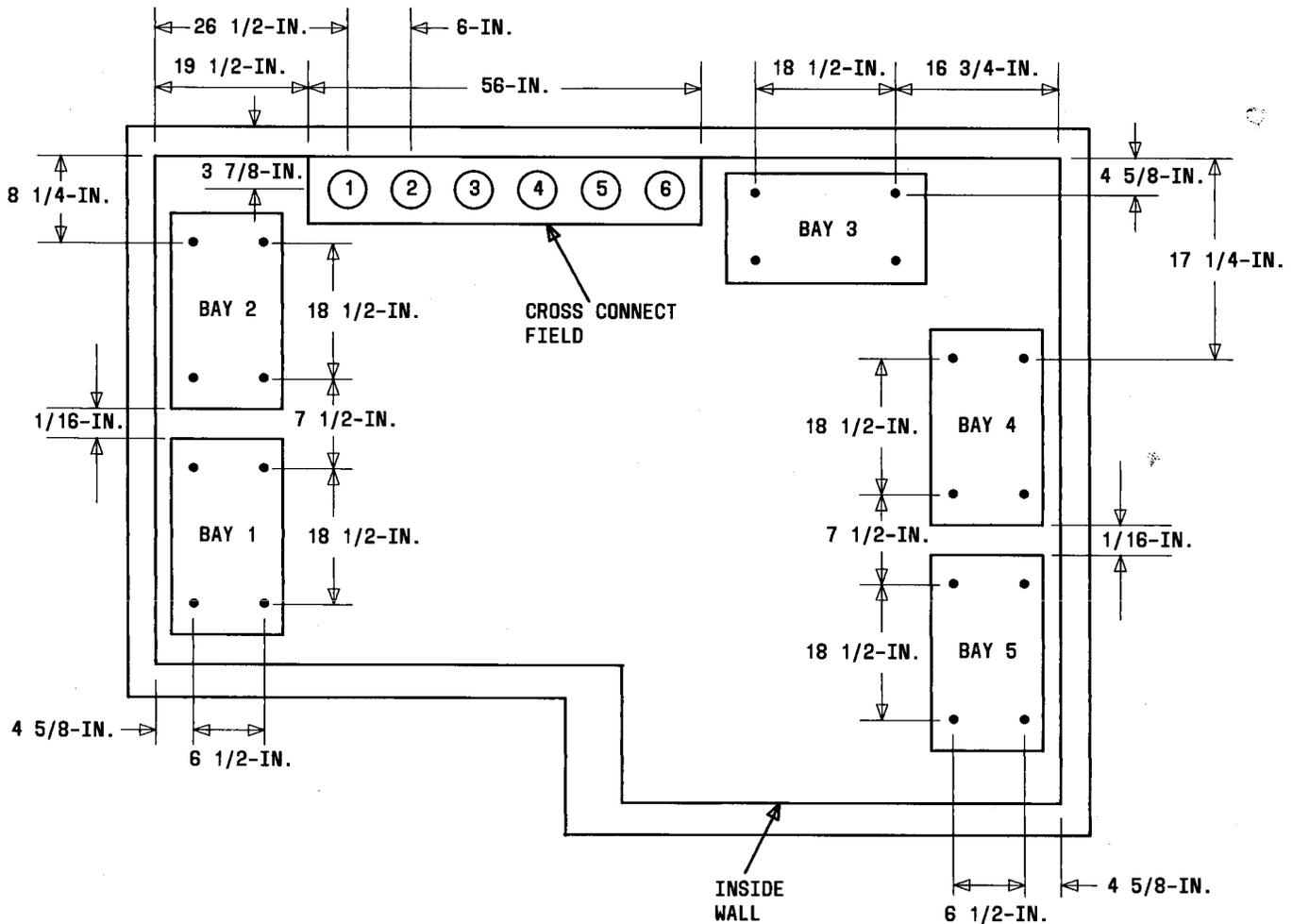


Fig. 14—Floor Layout

TABLE E

## FLOOR ANCHORING AND EARTHQUAKE BRACING REQUIREMENTS

EARTHQUAKE ZONE	FLOOR ANCHOR REQUIREMENTS	FLOOR ANCHOR GROUP ED-97173-51
1	One 3/8-inch Self-Drill (Diagonally Placed) (See Note)	5 or 7
2	Two 1/2-inch Self-Drills (Diagonally Placed) or four 3/8-inch Self-Drills (in each corner)	6 or 7
3	Four 1/2-inch Self-Drills (in each corner)	6
4	Four 1/2-inch Self-Drills (in each corner)	6

**Note:** If frames are not junctioned, a minimum of two 3/8-inch self-drills diagonally placed per frame is required.

**Note:** The size chuck required will depend upon the size anchors selected.

- (3) Position and lock the chuck/shank assembly in the hammer.
- (4) Insert and seat anchor in the chuck.
- (5) Operate the hammer without rotation to position the anchor. Use hammer action until the teeth are just embedded below the concrete surface.
- (6) Flip the roto stop control lever to engage rotation and drill until the chuck is within 1/16 inch above the concrete surface (Fig. 15).

**Note:** Let the tool do the work. Apply just enough pressure to control the tool. Vertical force in excess of the weight of the tool tends to reduce the hammering force which defeats the drilling process for the self-drill inserts.

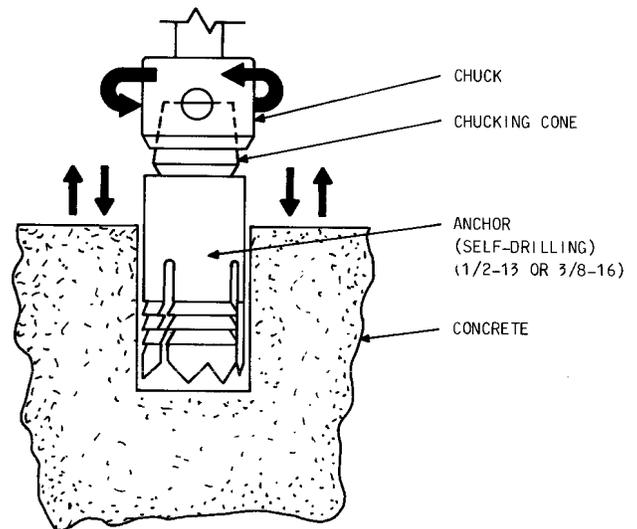


Fig. 15—Drilling Hole Using Self-Drilling Anchor and Roto Stop Hammer

- (7) Stop the tool and lift up approximately 1 inch to disengage impact; then start tool, withdrawing the anchor.
- (8) Disengage rotation and, while the anchor is still attached to the chuck, start the tool to expel the concrete cuttings from the anchor.
- (9) Completely remove concrete cuttings from the hole. Inspect the hole for any concrete chips. The hole must be absolutely clean for proper seating of the anchor.
- (10) Insert and lightly seat the expansion plug in the anchor.
- (11) Check that the tool is engaged in the impact position only. Insert anchor in the hole and set with the impact of the tool until chuck is 1/16 inch above the concrete (Fig. 16).

**DANGER:** Keep hand away from tool trigger when attempting to break off chucking cone.

- (12) Break off the chucking cone. A hard push of the tool will be sufficient to break off this cone.
- (13) Remove the cone from the chuck with the ejector key.

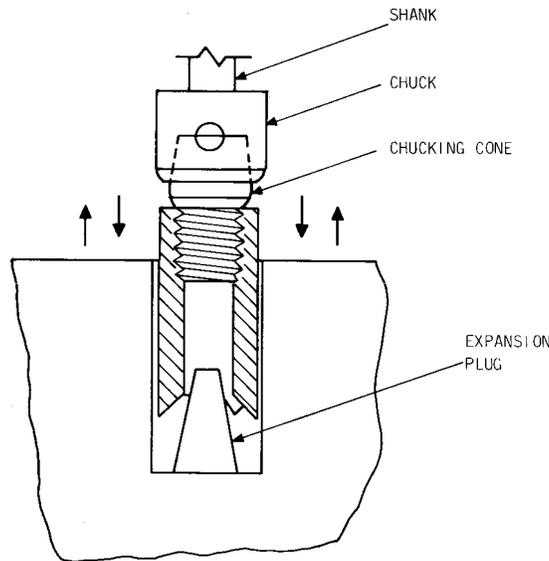
**B. Installation of Frames Onto Concrete Floor**

**5.03** The bay framework used in the SLC-96 mini-hut is the 7-foot unequal flange frame ED-97162-52 GR3, GR10, GR13, GR16, and GR19. The floor fastening hardware required for the framework when it is mounted to a concrete pad is the ED-97173-51 GR6 and GR7. The frames and floor fastening hardware must be ordered separately.

**5.04** The materials contained in each group are listed in Table F.

**5.05** Assemble frames as outlined in Fig. 17.

**5.06** Attach the frames to the concrete pad as follows.

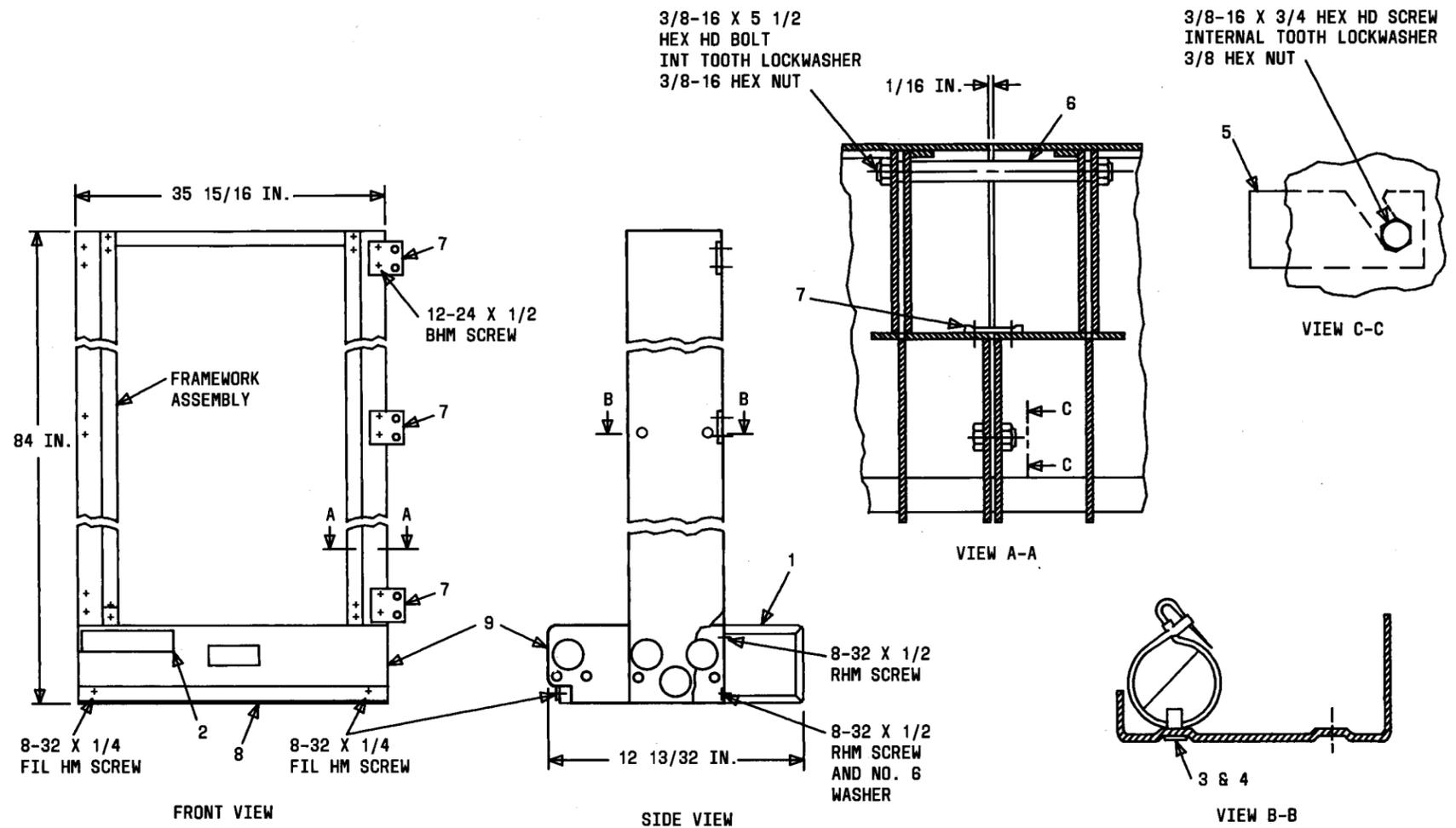


**Fig. 16—Setting Anchor**

**TABLE F**  
**MATERIALS REQUIRED FOR FRAME INSTALLATION**

IDENTIFICATION NUMBER	DESCRIPTION	QUANTITY	
840942866	Framework Assembly	1	ED-97162-52 Group 3
840943088	Guard Rail Cover	1	
400558078	Name Plate (KS-20642, 13P)	1	
P-181490	8-32 × 1/2 FIL HM SCR	2	ED-97162-52 Group 10
840943039	Guard Rail Assembly	1	
P-181454	8-32 × 1/2 RHM SCR	4	
P-284148	No. 8 Washer	2	ED-97172-52 Group 13
840245203	Cable Tie Clamp	12	
840245211	Cable Tie	12	
840943104	Junction Plate	3	ED-97162-52 Group 16
840947972	Spacer	1	
P-49K802	Spacer	1	
P-182142	12-24 × 1/4 BHM SCR	8	ED-97162-52 Group 19
P-108511	3/8-16 × 3/4 Hex H Cap SCR	1	
P-290675	3/8-16 × 5 1/2 Hex H Bolt	1	
P-182907	3/8-16 Hex Nut	2	ED-97173-51 Group 6 (Zones 1 and 2)
P-369017	ITT Lock Washer	2	
840943369	Hold Down Bar	2	
842439887	Shim	8	ED-97173-51 Group 7 (Zones 3 and 4)
842439879	Shim	4	
842439861	Shim	4	
841209737	1/2-13 Self-Drilling Anchor	2	ED-97173-51 Group 6 (Zones 1 and 2)
P-40B417	1/2-13 × 4 Stud	2	
* 842096356	1/2-in. Plain Washer	2	
841064793	1/2-13 Hex Nut	2	ED-97173-51 Group 7 (Zones 3 and 4)
* 840943369	Hold Down Bar	2	
842439887	Shim	8	
842439879	Shim	4	ED-97173-51 Group 7 (Zones 3 and 4)
842439861	Shim	4	
841209729	3/8-16 Self-Drilling Anchor	4	
P-427634	3/8-16 × 3 1/2 Stud	4	ED-97173-51 Group 7 (Zones 3 and 4)
842096349	3/8-in. Plain Washer	4	
841064777	3/8-16 Hex Nut	4	

\* = Item required (to be ordered individually) when frames are mounted to the steel and plywood floor.



- STEP 1 - ATTACH THE GUARD RAIL ASSEMBLY TO THE REAR OF THE FRAMEWORK USING FOUR 8-32 X 1/2 RHM SCREWS AND TWO NO. 8 FLAT WASHERS.
- STEP 2 - REMOVE THE PROTECTIVE BACKING FROM THE NAMEPLATE AND APPLY THE NAMEPLATE TO THE GUARD RAIL COVER.
- STEP 3 - INSERT TWELVE CABLE TIE CLAMPS INTO THE HOLES PROVIDED IN THE FRAMEWORK.
- STEP 4 - INSTALL CABLE TIES BY INSERTING TIES THROUGH HOLE IN CABLE TIE CLAMPS.

- IF TWO OR MORE FRAME ASSEMBLIES ARE TO BE JOINED, PERFORM THE FOLLOWING (IF NOT PROCEED TO STEP 8):
- STEP 5 - INSTALL FLAT SPACER BETWEEN FRAMES USING 3/8-16 X 3/4 HEX HD SCREW, WASHER, AND 3/8-16 HEX NUT.
  - STEP 6 - INSTALL TUBULAR SPACER BETWEEN FRAMES USING 3/8-16 X 5 1/2 HEX HD BOLT, WASHER, AND 3/8-16 HEX NUT.
  - STEP 7 - ATTACH THREE JUNCTION PLATES TO THE JOINED FRAMES USING 12-24 X 1/2 BHM SCREWS.
  - STEP 8 - FASTEN FRAME TO FLOOR (SEE PARA. 5.06 FOR CONCRETE FLOOR OR PARA 5.07 FOR INTEGRAL)
  - STEP 9 - POSITION GUARD RAIL COVER ON THE FRAMEWORK ASSEMBLY AND ATTACH USING TWO 8-32 X 1/4 FIL HD MACH SCREWS.

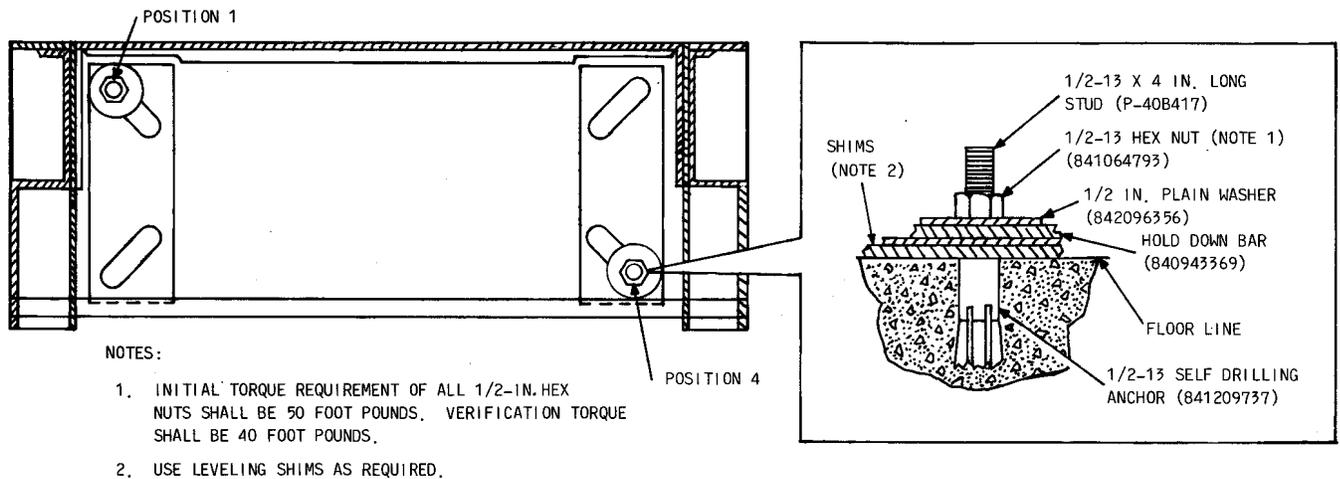
Fig. 17—Assembly of Framework

(1) Place assembled frame(s) over the anchors and insert a thread stud through the hole in the frame and into the threaded portion of the anchor.

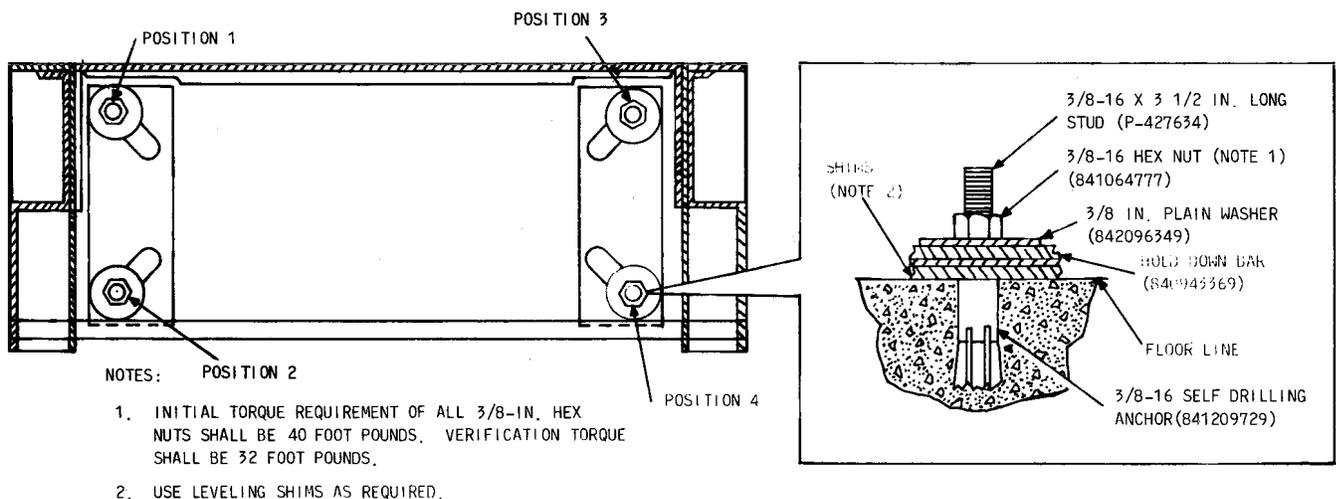
(2) Attach the frame(s) to the concrete pad for either Zones 1 and 2 or 3 and 4 as shown in Fig. 18 and 19, respectively.

(3) If joining of the bays is required in order to satisfy the floor anchoring requirements listed in Table E, it should be accomplished in the following manner. Join bays 1 and 2 and 4 and 5 (Fig. 14) with the hardware listed for ED-97162-52 Group 19 in Table F and as illustrated in Fig. 17.

**Note:** Studs shall be installed to the full depth of the thread in the anchor.



**Fig. 18—Floor Fastening Required for Earthquake Zones 1 and 2**



**Fig. 19—Floor Fastening Required for Earthquake Zones 3 and 4**

**SECTION 640-250-217**

**C. Installation of Frames Onto Integral Mini-Hut Floor**

**5.07** When the mini-hut is mounted on the integral plywood and steel floor panel, the frames are attached to the floor using 1/2- by 2-inch lag screws and the tie-down hardware indicated in Table F. Each frame should be attached with four screws. The 3/8-inch diameter lead holes should be drilled through the floor at the locations shown in Fig. 14. If joining the frames to satisfy uniform line-up requirements is necessary, join bays 1 and 2, 4 and 5 (Fig. 14) with the hardware listed for ED-97162-52 Group 19 as illustrated in Fig. 17.

**5.08** Install front guard rail cover on frames as shown in Fig. 17, Step 8.

**6. INSTALLATION OF CABLE ENTRANCE CONDUITS IN STEEL AND PLYWOOD FLOOR**

**6.01** When the mini-hut is mounted onto the integral steel and plywood floor, up to six holes for four-inch conduit must be cut in the floor to provide for the cable entrance. The location of these holes is shown in Fig. 14. The number of holes required will be given on the engineering workprint. The cable ducts to be used should be selected based on the information given in Table G.

**6.02** The conduit should be flush with the floor, and the area between the conduit and the floor should be sealed.

TABLE G

MINI-HUT CABLE DUCT SELECTION FOR SLC-96 (FIG. 14)

TYPE CABLE	1800- OR 2700-PAIR INTERFACE	1200-PAIR INTERFACE
DISTRIBUTION CABLES	<p>Two distribution cables should be brought into the mini-hut in <b>holes 1 and 5</b>.</p> <p>(a) A maximum of 600 pairs when using 108S1-600CF or 76S1-600CF/DE terminal blocks for each cable.</p> <p>(b) A maximum of 900 pairs when using 108S1-900CF or 76S1-900CF/F terminal boards for each cable.</p>	<p>A distribution cable should be brought into the hut in <b>hole 5</b></p>
FEEDER CABLES	<p>One feeder cable should be run into the mini-hut in <b>hole 3</b> only if metallic feeder is terminated on the feeder block.</p>	<p>Should be run in <b>hole 1</b> if metallic feeder is terminated on the feeder block.</p>
MISCELLANEOUS CABLE (Test pair, order wire, and fault locate) AND DIGITAL LINES	<ol style="list-style-type: none"> <li>1. Should be run in <b>hole 6</b> if feeder terminal boards are terminated with only SLC-96 derived pairs (Max. 125 pairs).</li> <li>2. Should be run in <b>hole 3</b> with feeder cable if metallic feeder is terminated on the feeder block.</li> <li>3. Should be run in <b>hole 6</b> with feeder out pairs if a test access field is used.</li> </ol>	<p>Should be run in <b>hole 6</b></p>
TEST ACCESS FEEDER OUT PAIRS		<p>Should be run in <b>hole 6</b></p>

**Note:** If cables are run in holes specified, it will avoid congested areas in the splice chambers.