

SERVICE  
1A2 KEY TELEPHONE SYSTEM  
PANELS  
601-, 602-, AND 603-TYPE

1. GENERAL

1.01 The 601A, 602A, and 603A (Fig. 1, 2, and 3) panels provide auxiliary mounting facilities for the 400 series key telephone units required to provide basic dial intercom, deluxe dial intercom, and intercom TOUCH-TONE® calling, respectively.

1.02 This section is reissued to:

- Cover complete redesign of factory wiring within the panels

- Add identification and installation information formerly contained in Section 518-215-118 which is hereby canceled.

Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

**Caution:** Issue 1 of this section and Issue 2 of Section 518-215-118 cannot be used for identification, installation, and connections of 601A, 602A, and 603A panels.

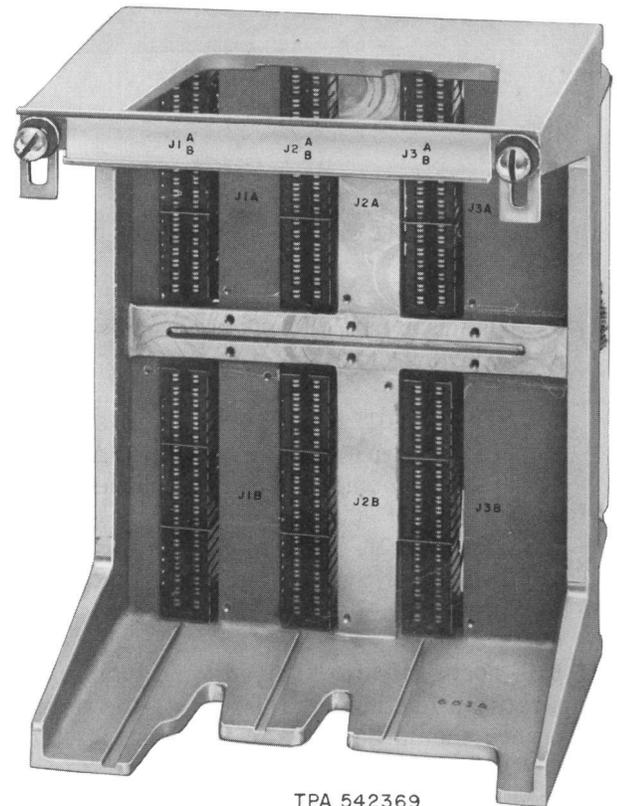
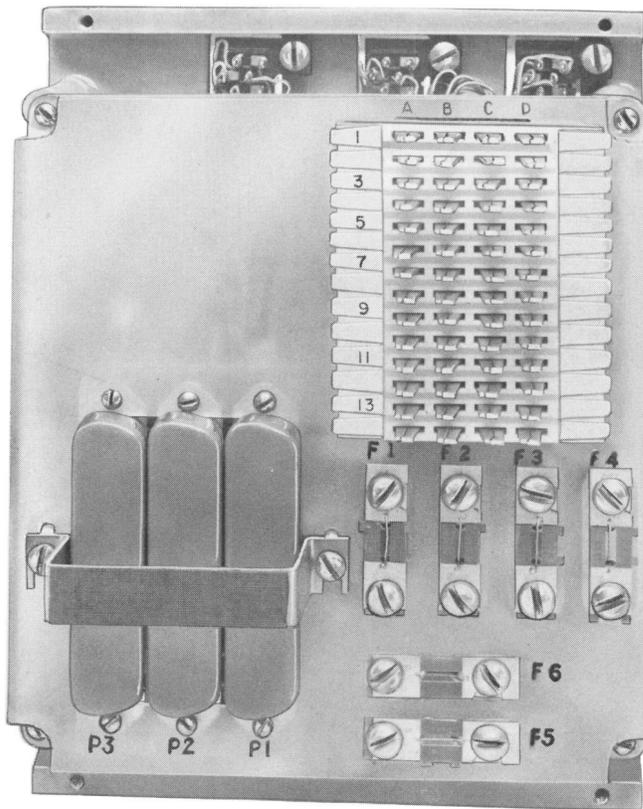


Fig. 1—601A Panel

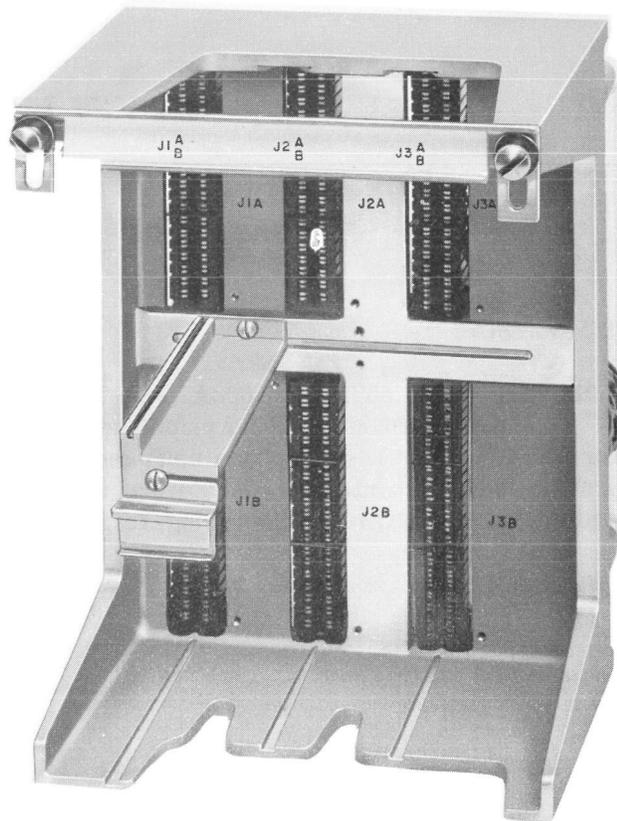
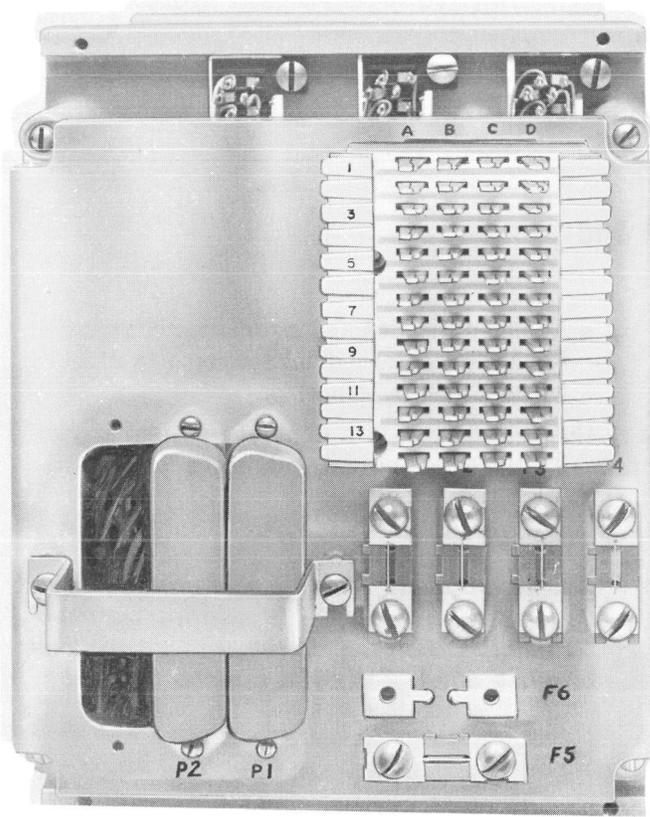


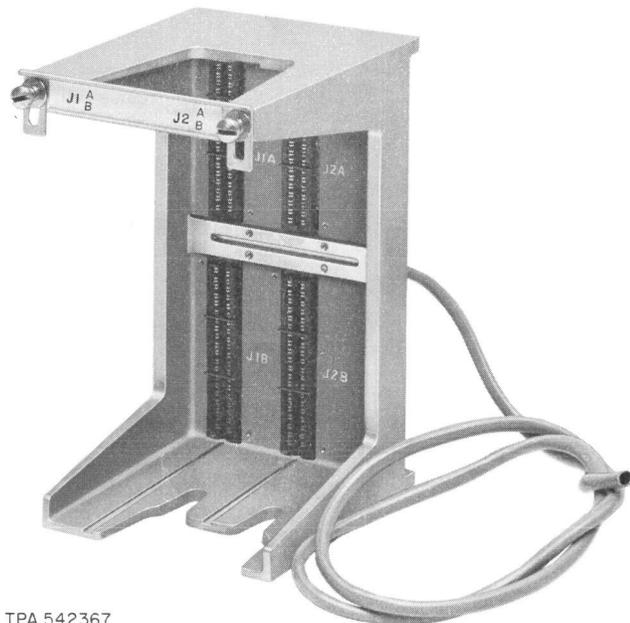
Fig. 2—602A Panel

1.03 This issue of the section is based on the following drawings:

- SD-69608-01, Issue 3—Station Systems, Key Telephone System No. 1A2, Dial Intercommunicating and Miscellaneous Panels
- SD-69567-01, Issue 8—Station Systems, Key Telephone System No. 1A2, Dial Selective Intercommunicating Line Circuit.

If this section is to be used with equipment or apparatus reflecting later issues of the drawings, reference should be made to the SDs to determine the extent of the changes and the manner in which the section may be affected.

1.04 **Basic Dial Intercom:** A station (on pickup) is connected to a common talking path which is part of the selector circuit. Station selection is



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Fig. 3—603A Panel

then accomplished by dialing one digit (for 10-station selector) or two digits (for 19-station selector).

**1.05 *Deluxe Dial Intercom:*** Same as basic dial intercom plus flashing lamps on incoming calls, dial tone, station busy tone, audible ringback tone, and interrupted ringing.

## 2. IDENTIFICATION

### PURPOSE

In 1A2 Key Telephone System arrangements to provide auxiliary mounting facilities for 584-type panels in large centralized installations.

### ORDERING GUIDE

Panel, 601A

Panel, 602A

Panel, 603A

#### (a) *Replaceable Components*

- Fuse, 24C (2A)\*
- Fuse, 24E (1/2A)\*
- Fuse, 24G (1-1/3A) †

\* For 601 and 602A panels.

† For 602A panel only.

#### (b) *Associated Apparatus (Order Separately)*

- Block, Connecting, 66B4-25 (as required)
- Cable, Connector, A25B, A50B, or A75A (as required)
- Mounting, Apparatus, 69B or 69D (as required, order per Table A)
- Unit, Telephone, Key (as required, order per Table A)
- 1A1 Matrix Block

### DESIGN FEATURES

- (a) Can be installed on a 23-inch relay rack by using a 99A (MD) or 99B bracket or in a 16-type apparatus mounting.
- (b) Four No. 8-32 RHM mounting screws are furnished with each panel.
- (c) A retainer is provided to lock the KTUs in the connectors.

#### *601A Panel*

- (d) Arranged to mount three basic dial intercom circuits (Table A).

#### *602 Panel*

- (e) Arranged to mount one deluxe dial intercom circuit (Table A).

#### *601A and 602A Panels*

- (f) Factory wiring is provided from the connectors to the jacks. This permits use of connector cables for line and station terminations.
- (g) Connecting block on panel for terminating power, option, and TOUCH-TONE leads.
- (h) Fuse panel provided with 24-type fuses for power distribution (Table B).
- (i) Dimensions are 6 inches wide by 8 inches high.

#### *603A Panel*

- (j) Designed to mount 426A and 427B (Series 4) or C KTUs (Table A) to provide TOUCH-TONE calling in 601A and 602A panels.
- (k) Equipped with a 5-foot cable stub for connecting to the 601A or 602A panel.
- (l) Dimensions are 4-1/2 inches wide by 8 inches high.

TABLE A

KTU	DIAL INTERCOM FUNCTION	PANELS			APPARATUS MOUNTINGS *	
		601A	602A	603A	69B	69D
407B	10-Code Selector Circuit	●	●			
413A	Auxiliary Ringup Circuit				●	
420A	Long Line Circuit				●	
421A	Transfer Circuit (for DSS)					● †
422B	Station Busy Selector Circuit		●			
423A	Dial Tone, Busy Tone, and Audible Ringback Tone Circuit		●			
424A	19-Code Selector Circuit	●	●			
425B	Flashing Lamp Circuit		●			
426A & 427B (Series 4) or C	TOUCH-TONE Adapter Circuit			●		

\* The 69-type apparatus mountings and associated KTUs provide optional features for the dial intercom systems. See Fig. 4 through 13 for additional information.

† If interrupted signal for intercom differs from that provided by existing panel interrupter, a separate 421A KTU and 69D apparatus mounting must be provided.

TABLE B

FUSE FUNCTIONS FOR 601A AND 602A PANELS

PANEL		FUSE		CONN SERVED	±10V	±18V	SS †	A BAT.	B BAT.
		SIZE	CODE						
601A	F1	1/2A	24E	J1A&B			●		
	F2	2A	24C		●				
	F3	1/2A	24E	J2A&B			●		
	F4	2A	24C		●				
	F5	1/2A	24E	J3A&B			●		
	F6	2A	24C		●				
602A	F1	1-1/3A	24G	J3A&B*				●	
	F2	1-1/3A	24G	Serves all conn					●
	F3	1/2A	24E	J3A&B			●		
	F4	1/2A	24E	J1B		●			
	F5	2A	24C	J3A&B	●				

\* Also serves 603A panel.

† May be ±10V, -24V, ±18V, or ±105V, depending on option provided.

### 3. INSTALLATION

**3.01** For information on apparatus mountings and relay racks, refer to Section 463-140-100.

**3.02** Fig. 4 through 13 show panel and connecting block layouts for 601A, 602A, and 603A panels.

**3.03** When a 424A KTU (19-code circuit) is used in the 602A panel, an additional 422B KTU, 69D apparatus mounting, an A25B connector cable, and a 66B4-25 connecting block are required. (See Fig. 9 for layout.)

**Note:** A separate 421A KTU must be provided in a 69D apparatus mounting if interrupted signal for intercom differs from that provided by existing panel interrupter (see Fig. 8 and 9 for layout)

**3.04** Panel and connecting block layouts are shown for optional features such as preset conference, DSS, and long line circuits. These configurations require additional 66-type connecting blocks, connector cables, 69-type apparatus mountings, and KTUs. (See Fig. 6, 7, 10, 11, and 12, whichever apply, for layouts of these options.)

**3.05** Install panels on relay rack or 16-type apparatus mountings in the usual manner. A 99A (MD) or 99B bracket must be used when installing the panels on a relay rack.

**3.06** Install 69-type apparatus mountings (if required).

**3.07** Install 66B4-25 connecting blocks and stencil each block as required (Fig. 4 through 12).

### 601A and 602A Panels

**3.08** Install A25B connector cables from panels to connecting blocks.

**Note:** A75A and A50B connector cables can also be used to connect 601A and 602A panels, respectively, to the connecting blocks. When using the A75A connector cable, the conductors in the BL-W, O-W, and G-W binders are terminated on connecting blocks 1, 2, and 3, respectively. When using the A50B connector cable, terminate the conductors in the BL-W and O-W binder on connecting blocks 1 and 2, respectively.

**3.09** After all other panel connections have been made, use 20-gauge strapping wire to terminate power leads to connecting block on the panel. Strip ends of wire and be careful to avoid shorting adjacent terminals; then, connect power leads to the power supply provided for the 584-type panels.

**3.10** Install key telephone units.

**3.11** Make certain fuses are properly installed and not blown after power leads have been terminated.

### 603A Panel

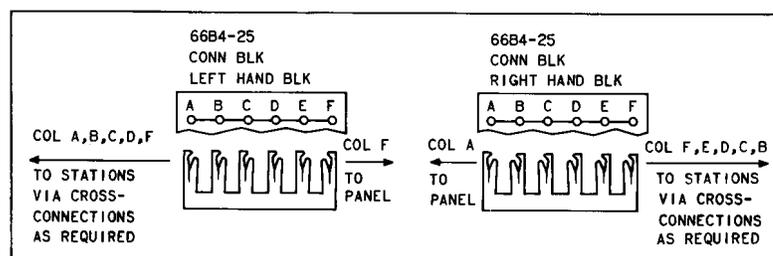
**3.12** Terminate free end of cable stub on connecting block located on 601A (Fig. 15) or 602A (Fig. 23) panel. Do not cut cable stub.

**3.13** Install key telephone units.

### 4. CONNECTIONS

**4.01** Fig. 14 and 22 show the connections of A25B connector cables to 66B4-25 connecting blocks for 601A and 602A panels, respectively.

**4.02** The method of terminating leads on the 66B4-25 connecting block is shown below:



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**4.03** TOUCH-TONE (603A panel), power, interrupter and option connections for the 601A, and 602A panels are shown in Fig. 15 and 23, respectively. These connections should be made on the 66T1 connecting block located on the panel before installing KTUs.

**4.04** Fig. 14 through 31 cover station connections, option connections, basic dial intercom, deluxe dial intercom, and 603A panel connections.



*Do not cut cable tail on 603A panel. Store excess length by dressing in place.*

### CONNECTION INDEX

#### 601A Panel (Basic Dial Intercom)

- Fig. 14—A25B Connector Cables to 66B4-25 Connecting Blocks
- Fig. 15—Power Leads, Option Strapping, and TOUCH-TONE Connections
- Fig. 16—424A KTU—Transfer Digit Lead Connections
- Fig. 17—407B KTU—Station Connections
- Fig. 18—424A KTU—Station Connections
- Fig. 19—420A KTU, Long Line Circuit Mounted in 69B Apparatus Mounting
- Fig. 20—421A KTU Arranged for DSS Mounted in 69B Apparatus Mounting
- Fig. 21—1A1 Matrix Block, Optional Dial Selected Preset Conference

#### 602A Panel (Deluxe Dial Intercom)

- Fig. 22—A25B Connector Cables to 66B4-25 Connecting Blocks

Fig. 23—Power and Interrupter Leads, Option Strapping, and TOUCH-TONE Connections

Fig. 24—424A KTU—Transfer Digit Lead Connections

Fig. 25—422B KTU—X1-X0, Station Busy Selector Circuit for Adding Tens Group and Optional 421A KTU to Provide Interrupted Signaling

Fig. 26—407B KTU, Station Connections

Fig. 27—424A KTU, Station Connections

Fig. 28—420A KTU, Long Line Circuit—Mounted in 69B Apparatus Mounting

Fig. 29—421A KTU Arranged for DSS Mounted in 69D Apparatus Mounting

Fig. 30—421A and 413A KTUs, Preset Conference Circuit Mounted in 69D Apparatus Mounting, and 1A1 Matrix Block

Fig. 31—421A KTU, Preset Conference Circuit Mounted in 69D Apparatus Mounting

### 5. REFERENCES

- 5.01** For additional information, refer to the following:
- Section 518-010-101 Centralized Key Telephone Installations
  - Section 518-215-400 Service, 1A2 KTS Key Telephone Units, 400 Series.
  - Section 518-215-410, Service, 1A2 KTS, Panels, 583-and 584-Type
  - Section 461-620-100, Matrix Block-1A1, Identification, Installation, Wiring and Maintenance

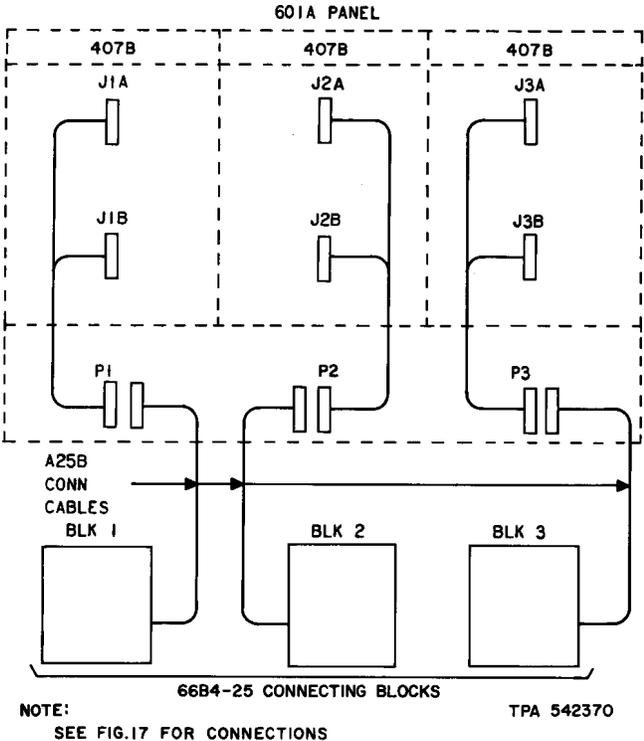


Fig. 4—601A Panel and Connecting Block Layout with Three 407B KTUs

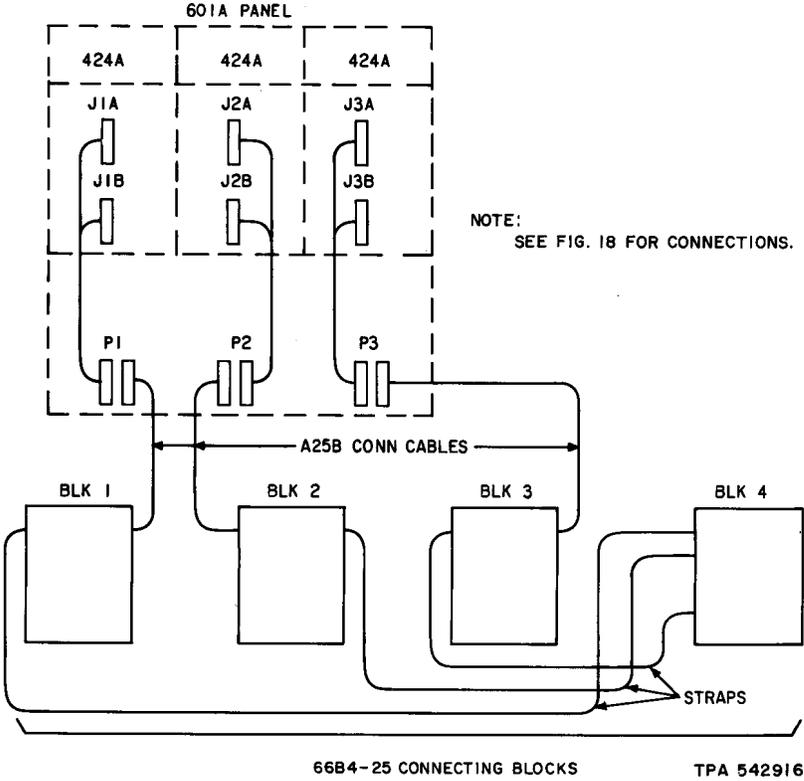
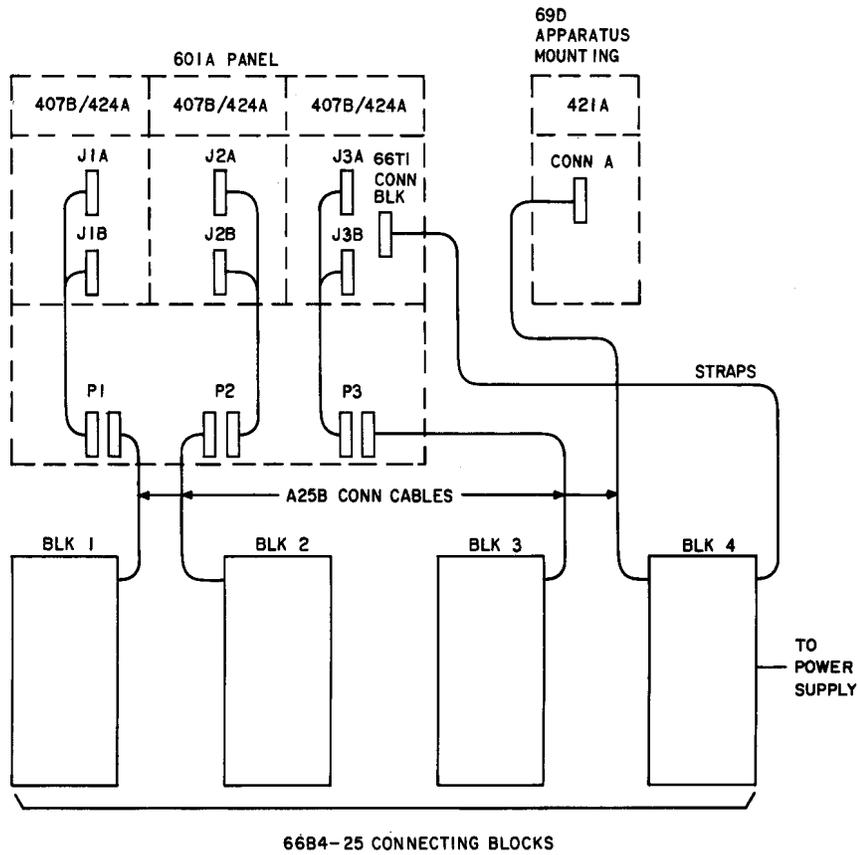


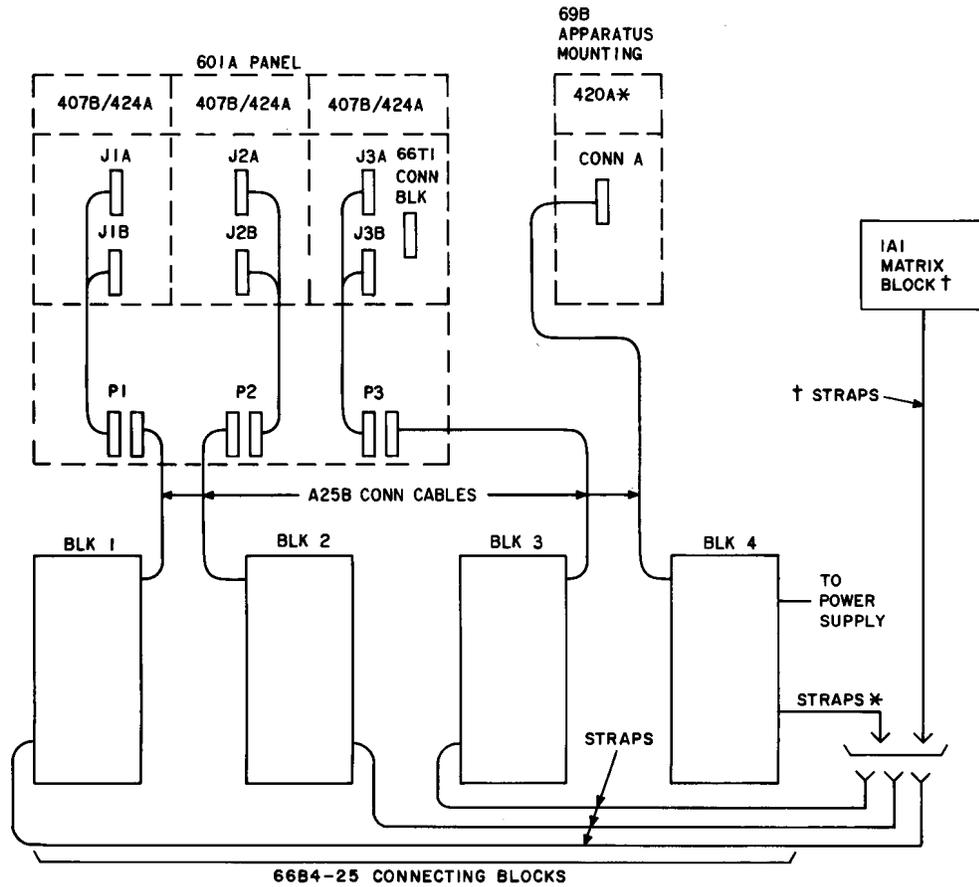
Fig. 5—601A Panel and Connecting Block Layout with Three 424A KTUs



NOTE:  
SEE FIG. 20 FOR CONNECTIONS.

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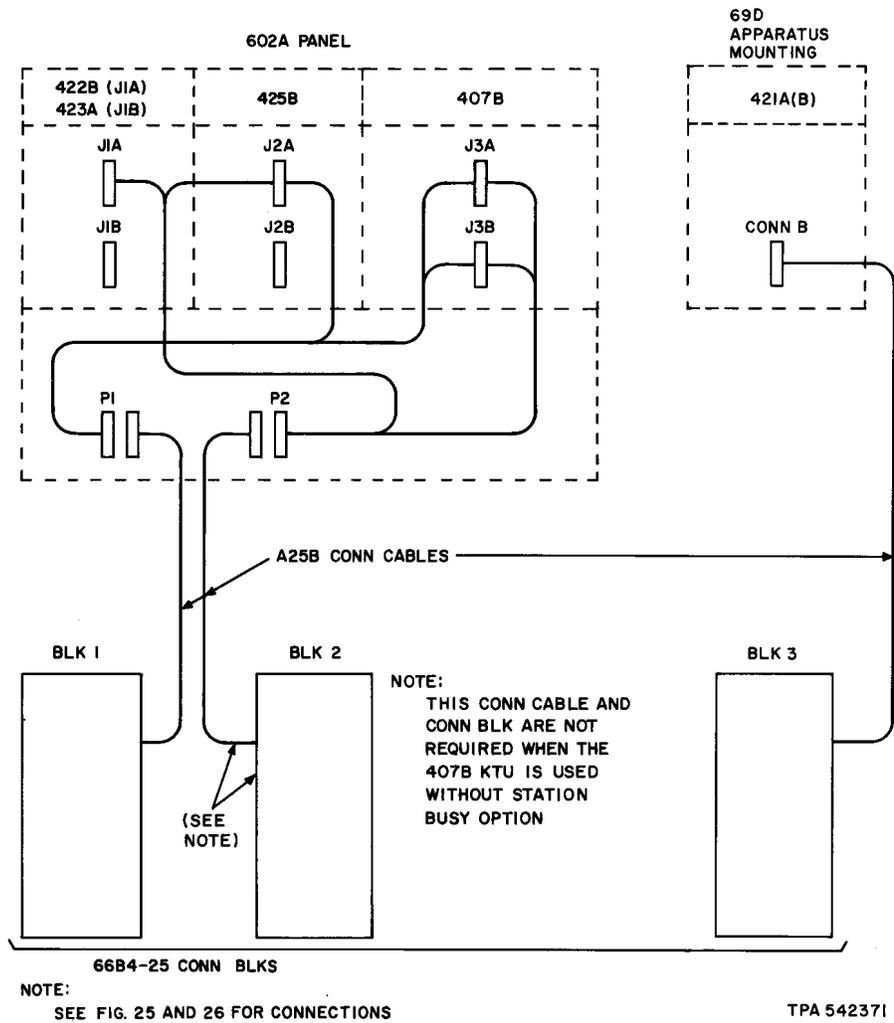
**Fig. 6—601A Panel and Connecting Block Layout with Optional DSS Circuit**



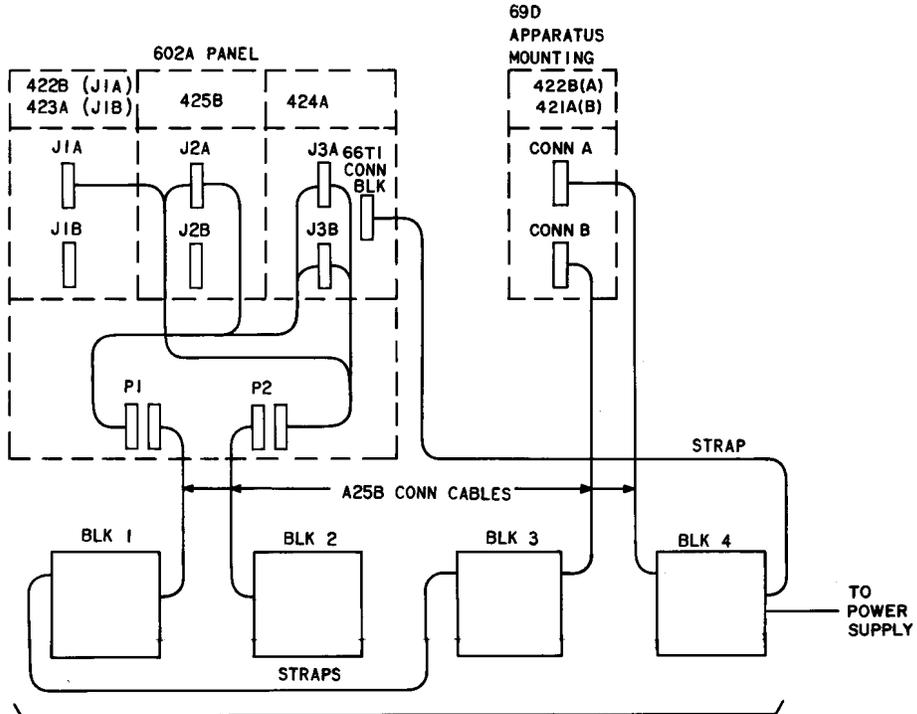
\* SEE FIG. 19 FOR CONNECTIONS TO LONG LINE CIRCUIT.  
 † SEE FIG. 21 FOR CONNECTIONS TO PRESET CONFERENCE CIRCUIT.

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Fig. 7—601A Panel and Connecting Block Layout with Optional Long Line Circuit or Preset Conference Circuit

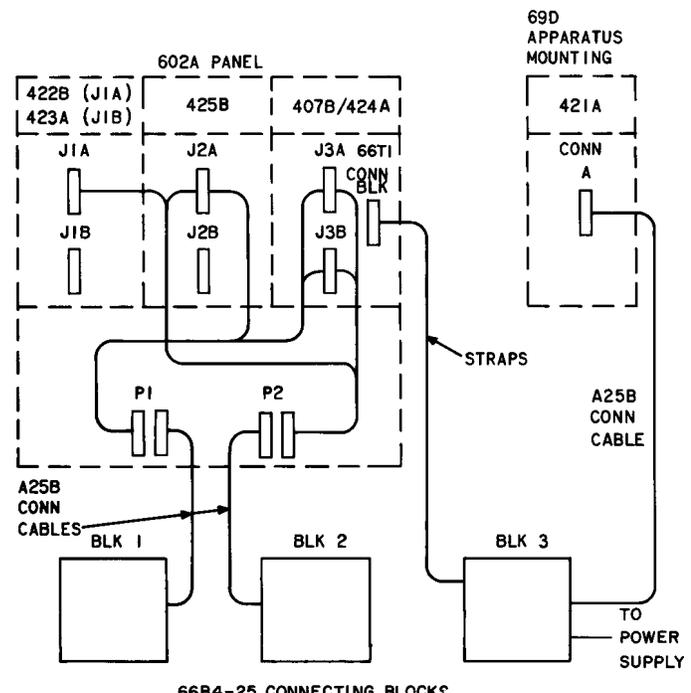


**Fig. 8—602A Panel and Connecting Block Layout with 407B KTU (10-Code Circuit)**



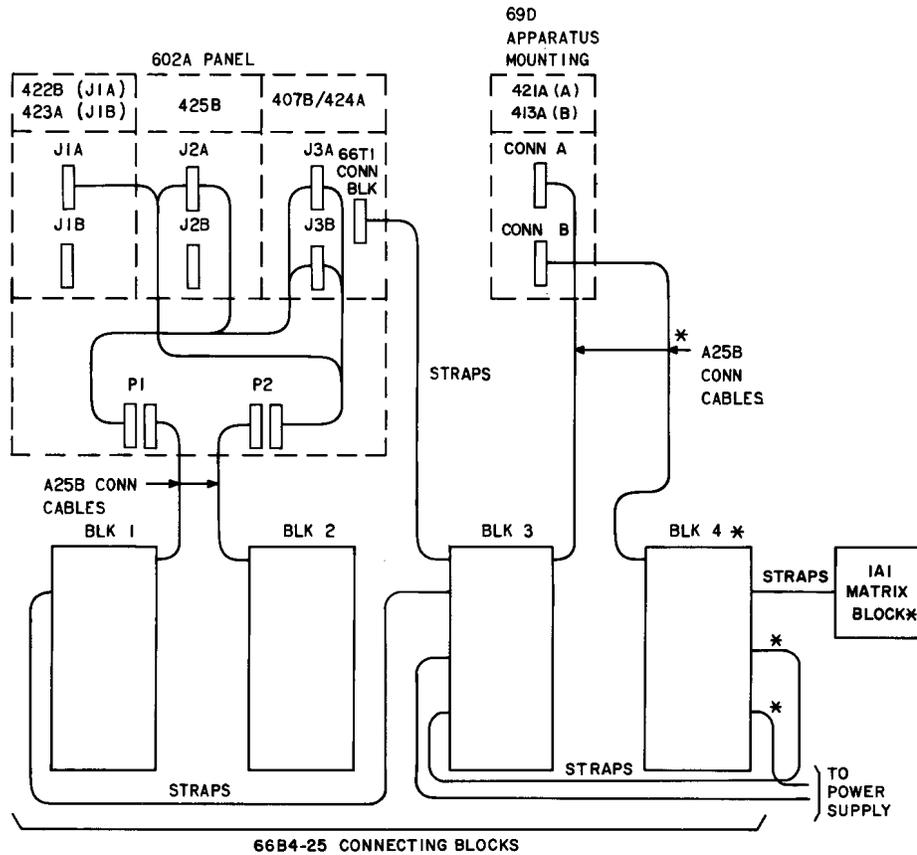
66B4-25 CONNECTING BLOCKS  
 NOTE: SEE FIG. 25 AND 27 FOR CONNECTIONS. TPA 542919

**Fig. 9—602A Panel and Connecting Block Layout with 424A KTU (19-Code Circuit)**



66B4-25 CONNECTING BLOCKS  
 NOTE: SEE FIG. 29 FOR CONNECTIONS. TPA 542920

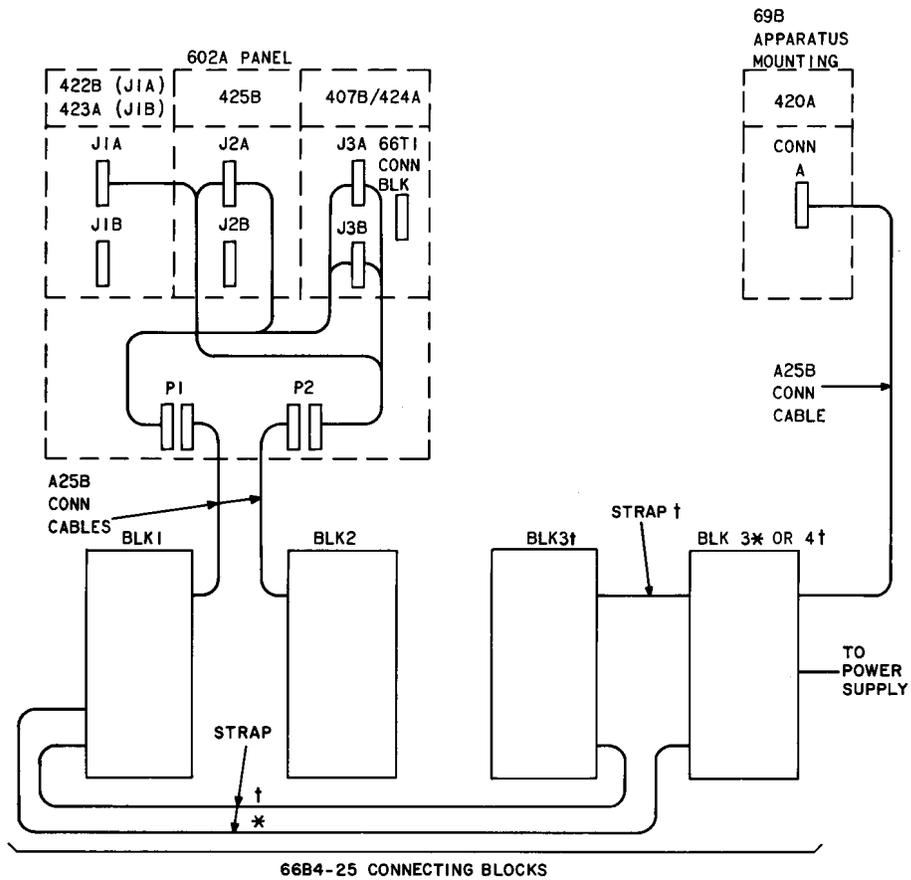
**Fig. 10—602A Panel and Connecting Block Layout with Optional DSS Circuit**



NOTE:  
 SEE FIG. 30 FOR CONNECTIONS FOR DIAL SELECTED PRESET CONFERENCE AND  
 FIG. 31 FOR CONNECTIONS FOR SIGNAL KEY OPERATED PRESET CONFERENCE.  
 \* NOT REQUIRED FOR SIGNAL KEY OPERATED PRESET CONFERENCE

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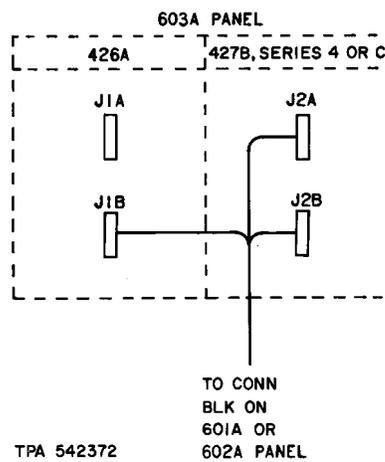
Fig. 11—602A Panel and Connecting Block Layout with Optional Preset Conference Circuit



NOTE:  
 SEE FIG. 28 FOR CONNECTIONS.  
 \* IF USING 407B KTU  
 † IF USING 424A KTU

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Fig. 12—602A Panel and Connecting Block Layout with Optional Long Line Circuit



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Fig. 13—603A Panel Layout

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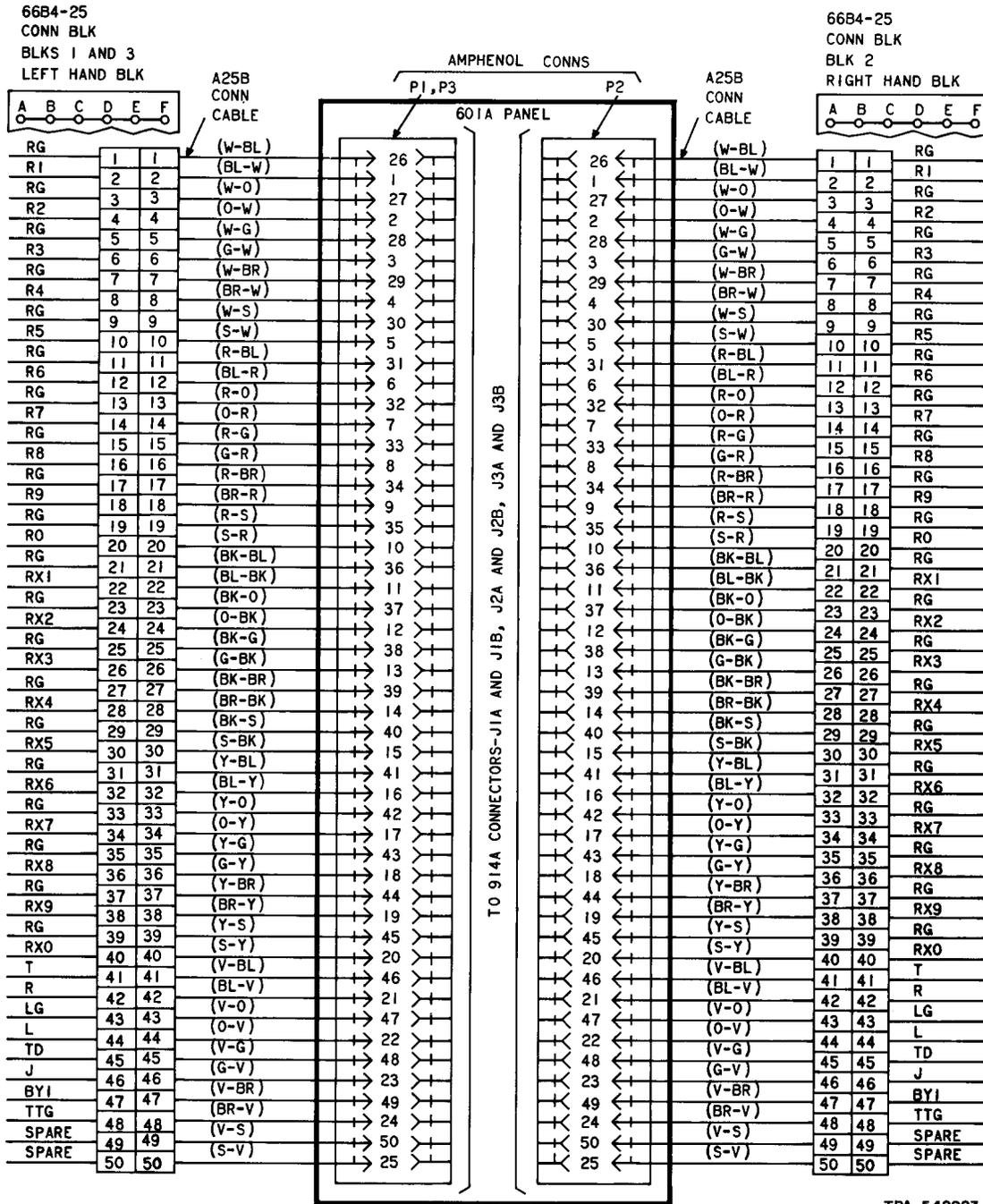


Fig. 14—601A Panel, Connection of A25B Connector Cables to 66B4-25 Connecting Blocks



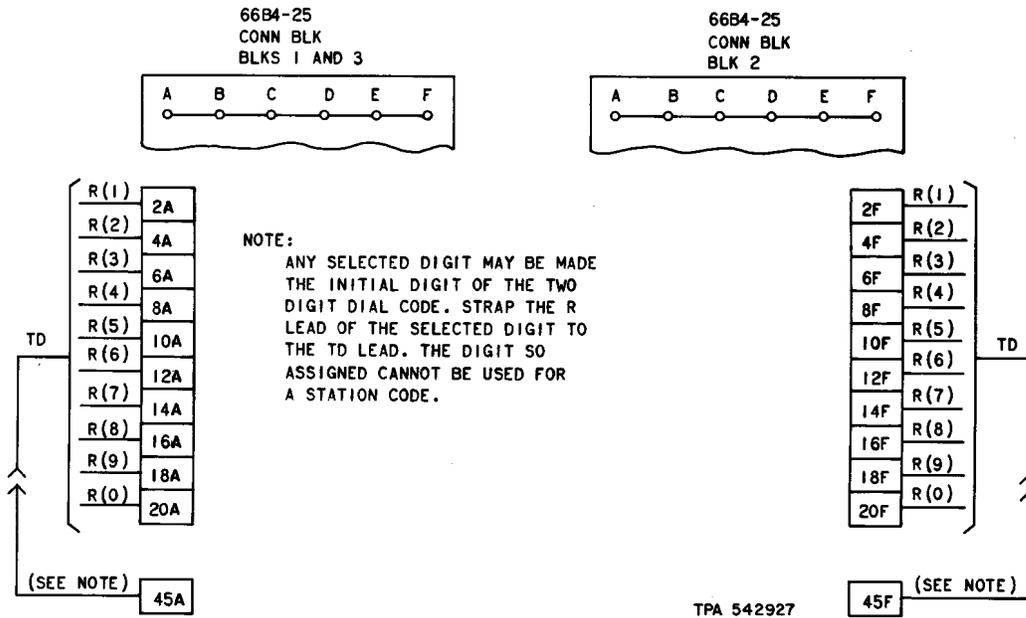


Fig. 16—601A Panel, 424A KTU Connection of Transfer Digit Lead

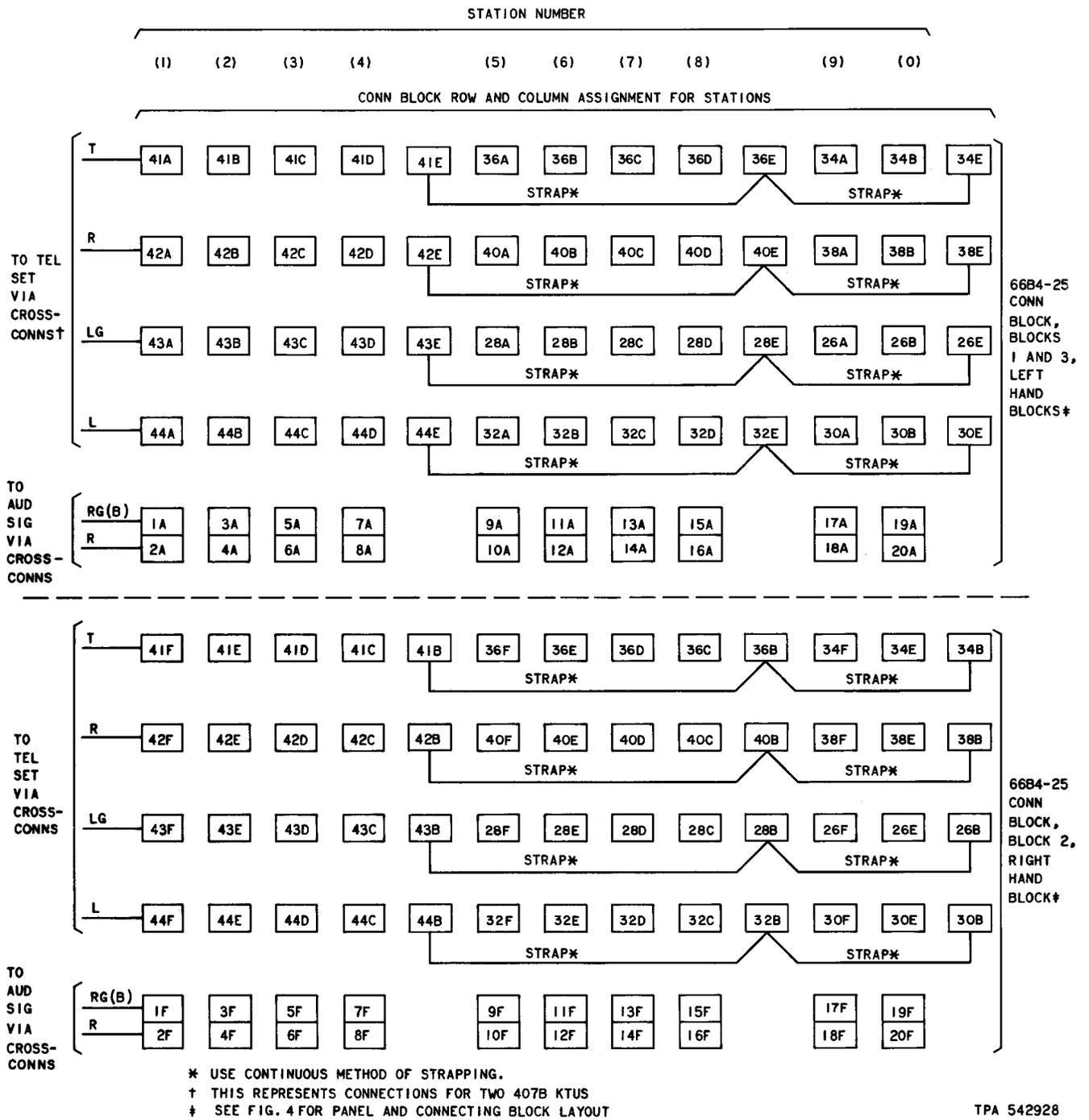


Fig. 17—601A Panel, 407B KTU, Station Connections via Cross-Connections for Basic Dial Intercom

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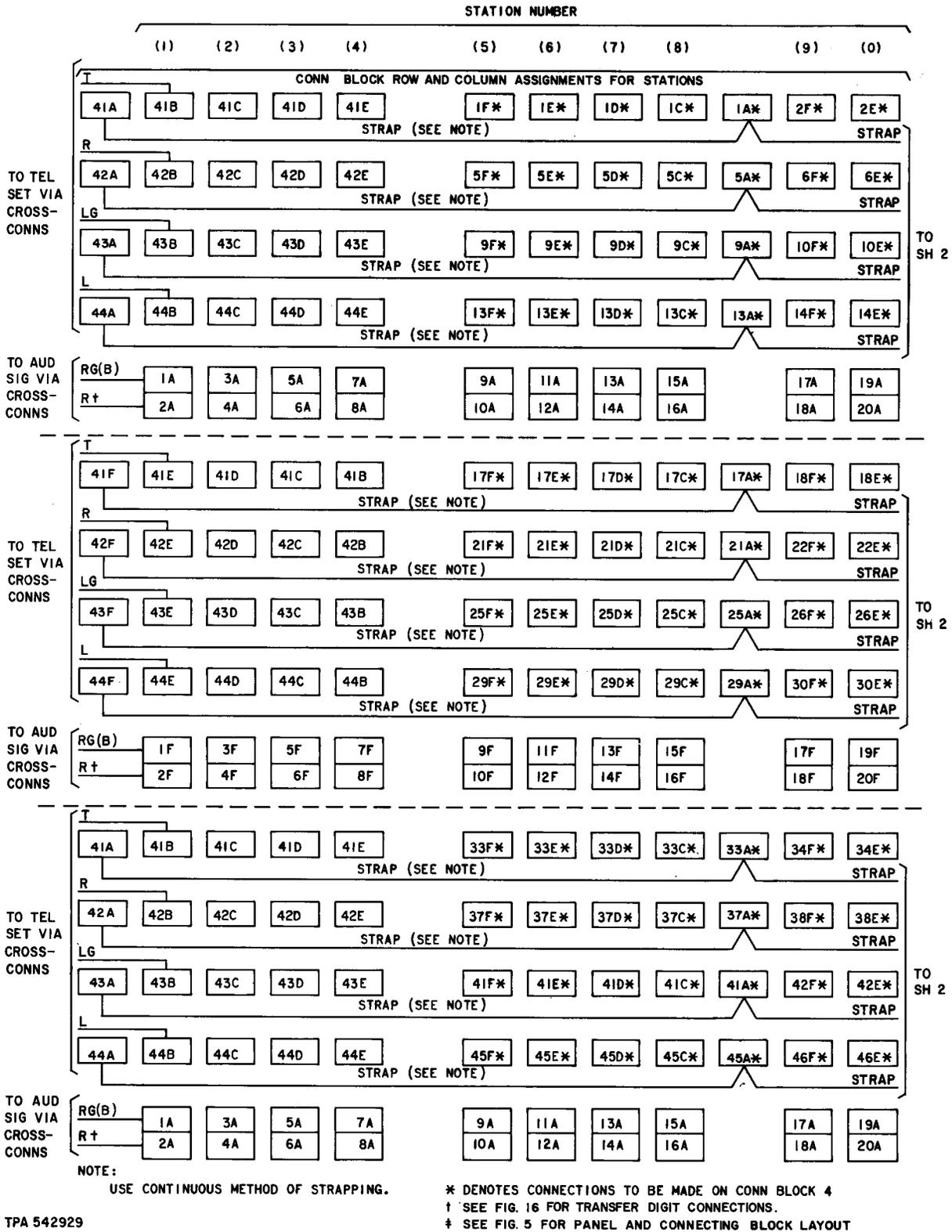
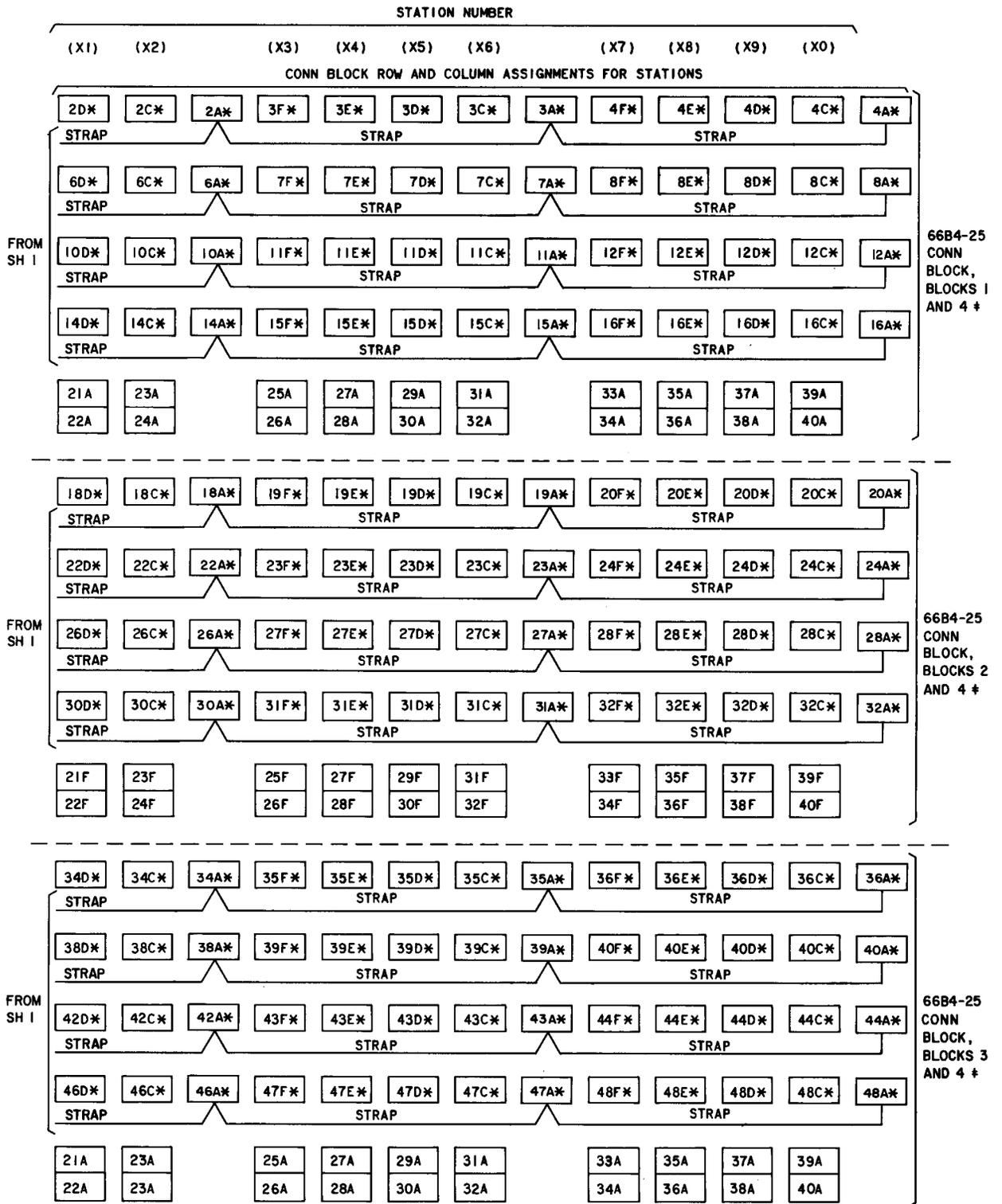


Fig. 18—601A Panel, 424A KTU, Station Connections via Cross-Connections for Basic Dial Intercom (Sheet 1)



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Fig. 18—601A Panel, 424A KTU, Station Connections via Cross-Connections for Basic Dial Intercom (Sheet 2)

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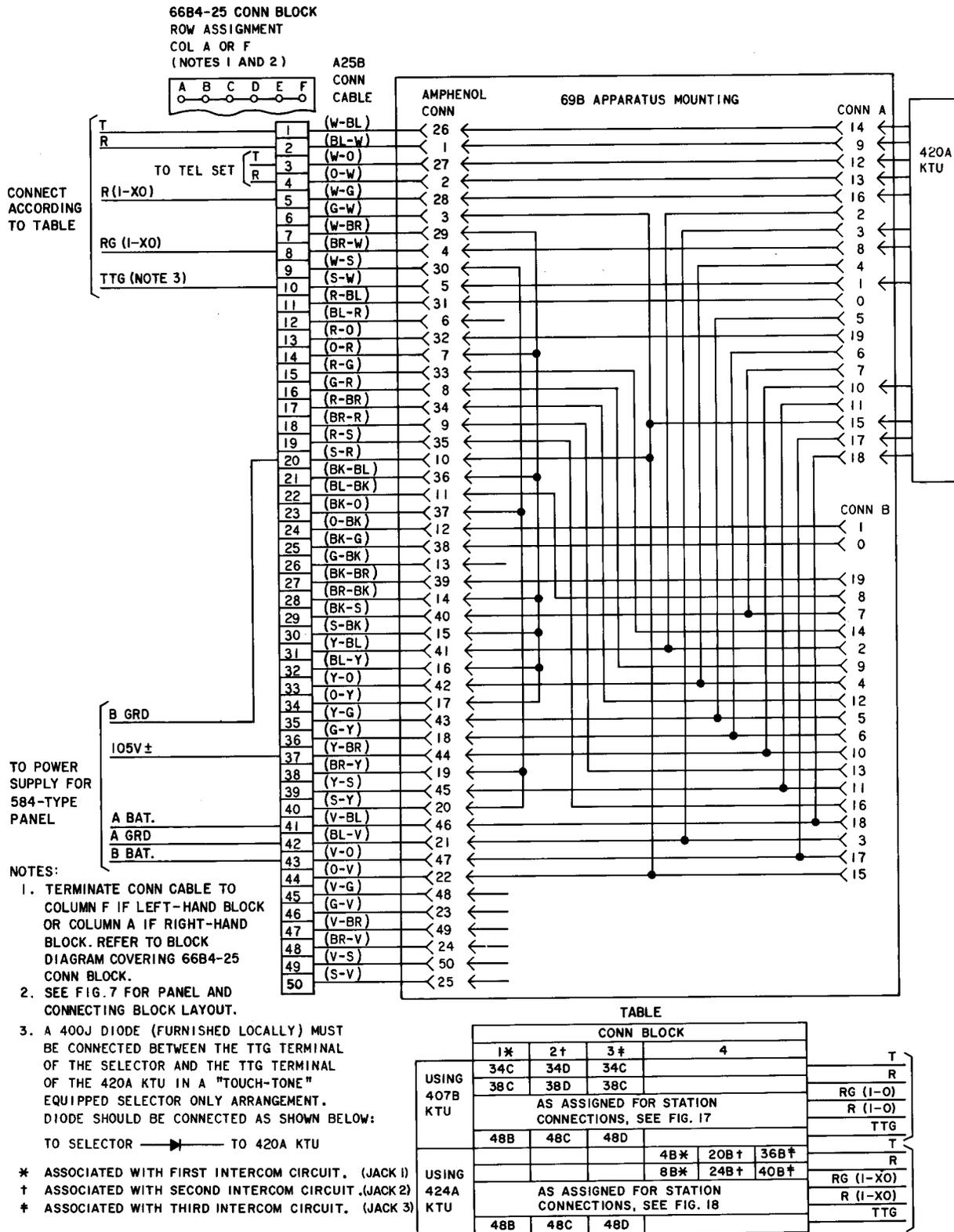


Fig. 19—601A Panel, 420A KTU, Long Line Circuit, Basic Dial Intercom, Connections to Optional KTU Mounted in 69B Apparatus Mounting

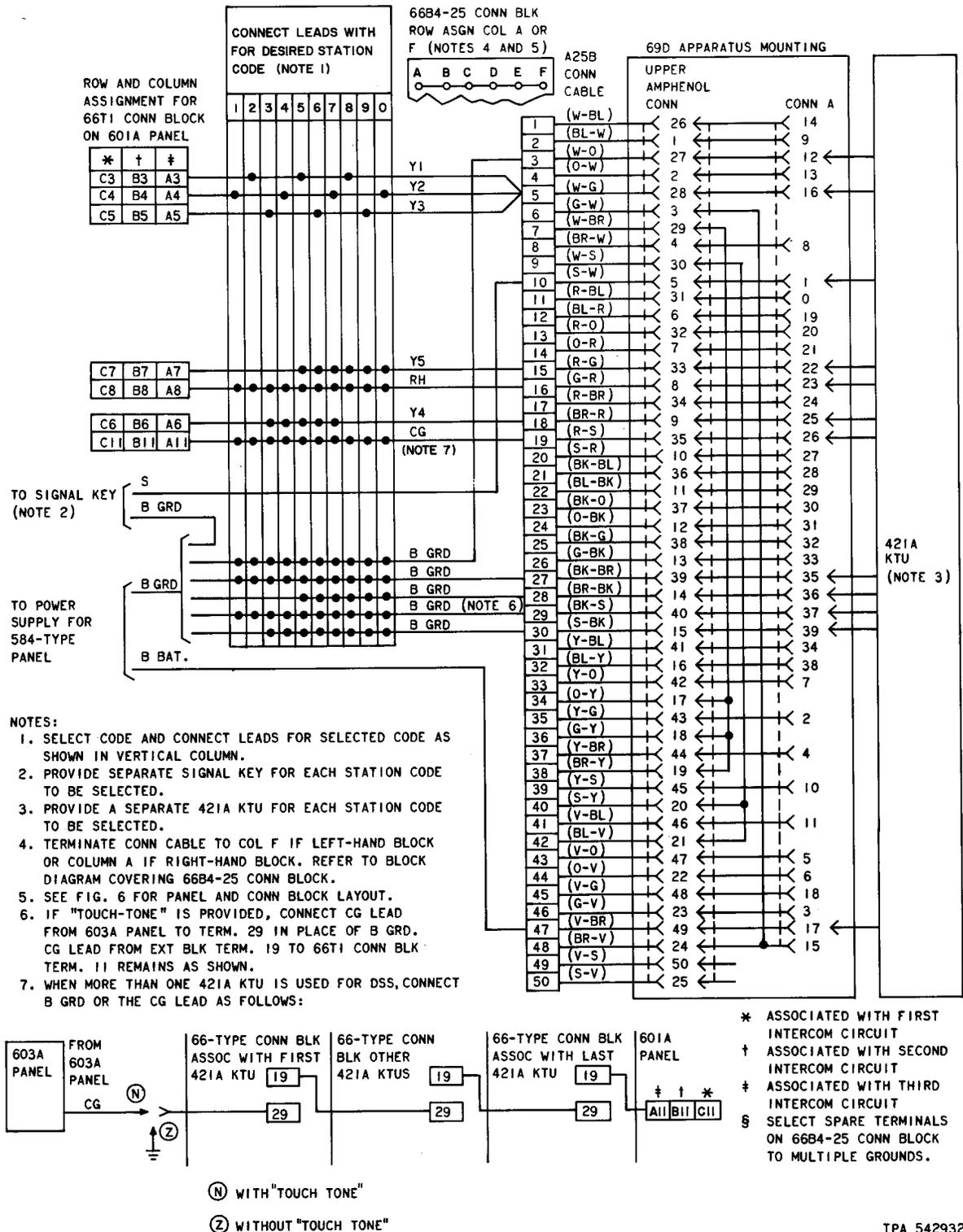
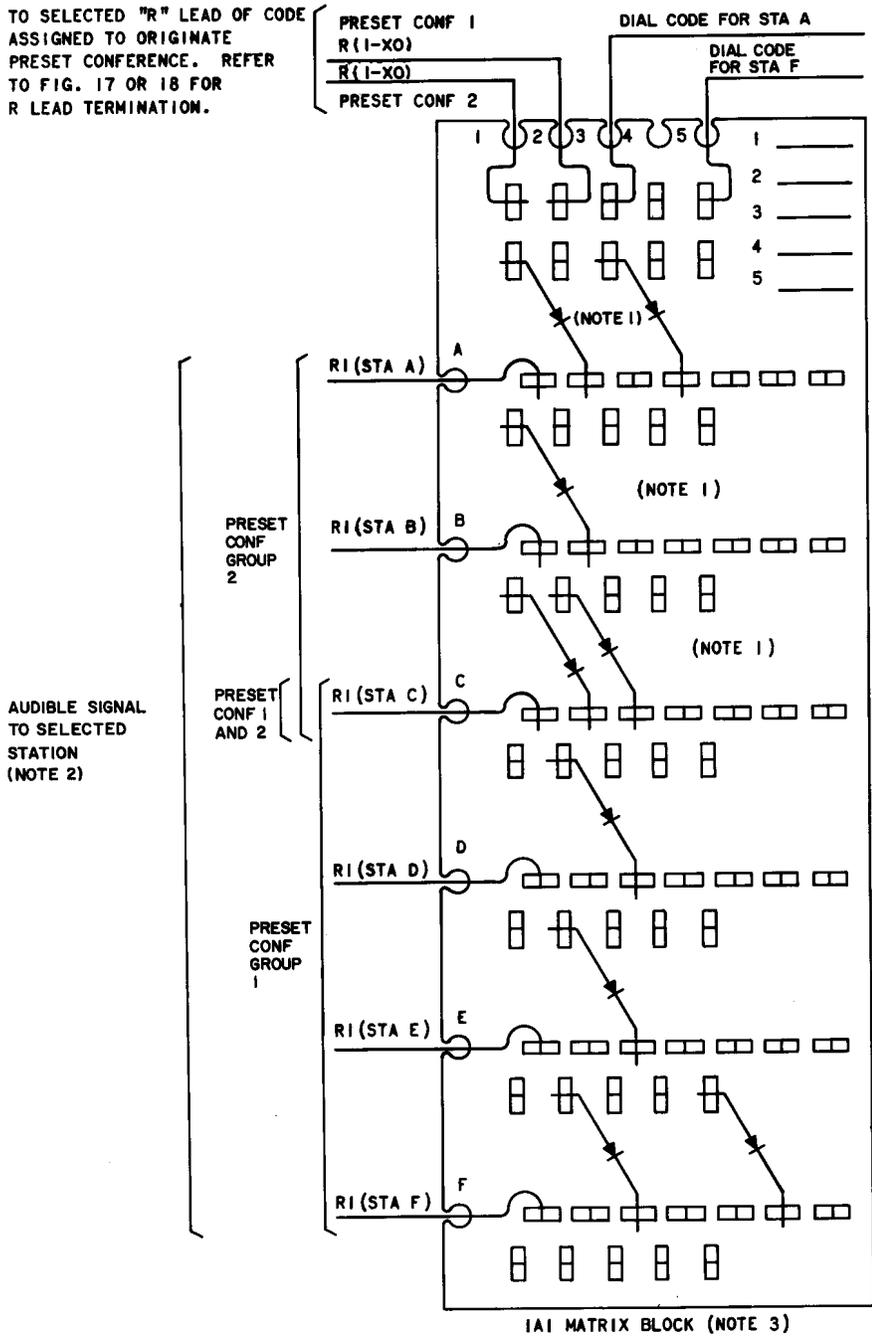


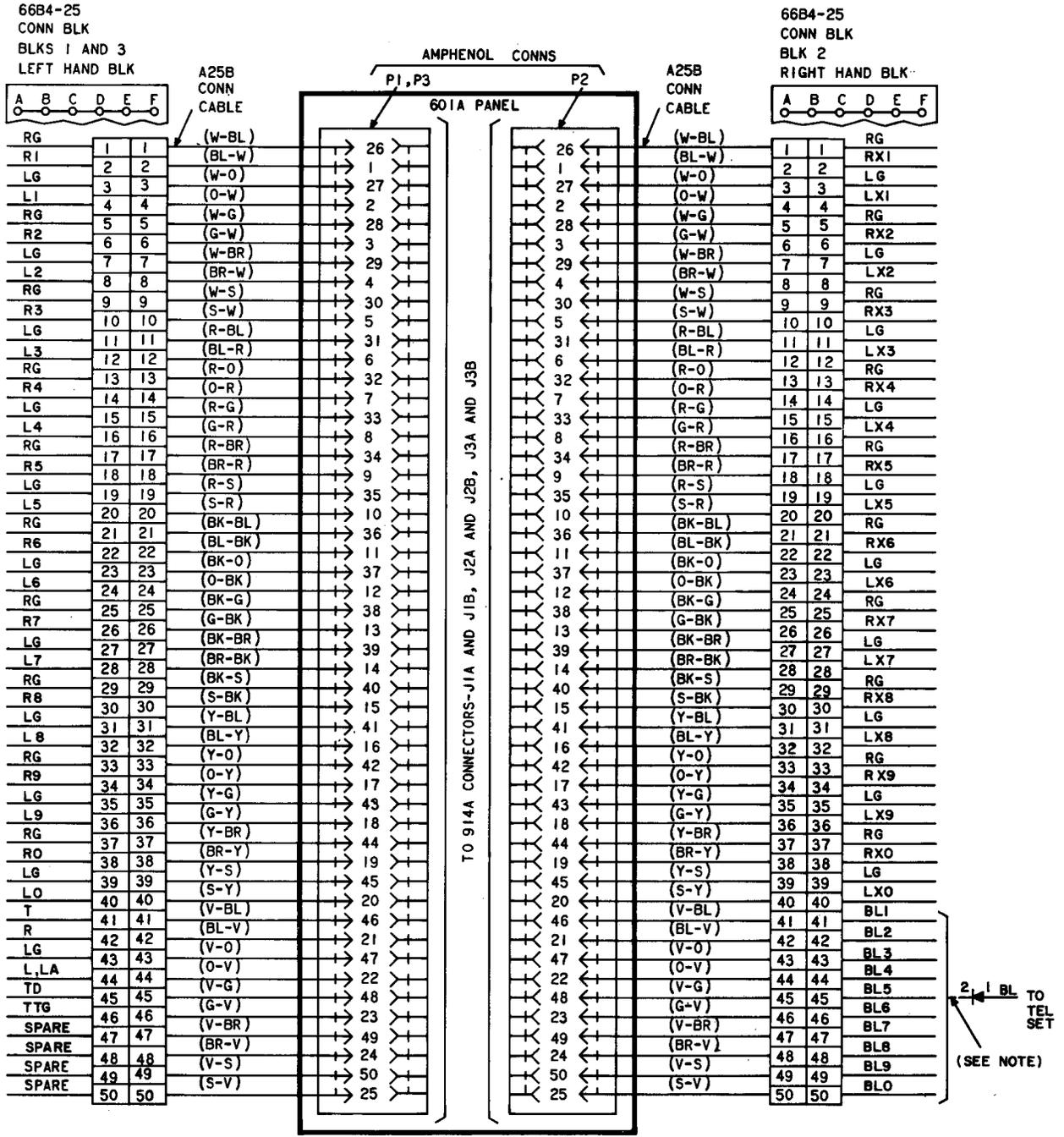
Fig. 20—601A Panel, 421A KTU, Arranged for DSS, Basic Dial Intercom, Connections to Optional KTU Mounted in 69D Apparatus Mounting



- NOTES:
1. USE 446F DIODE (PROCURE LOCALLY)
  2. WHEN RINGERS ARE USED AS AUDIBLE SIGNALS, REMOVE RINGER CAPACITORS FROM CIRCUITS.

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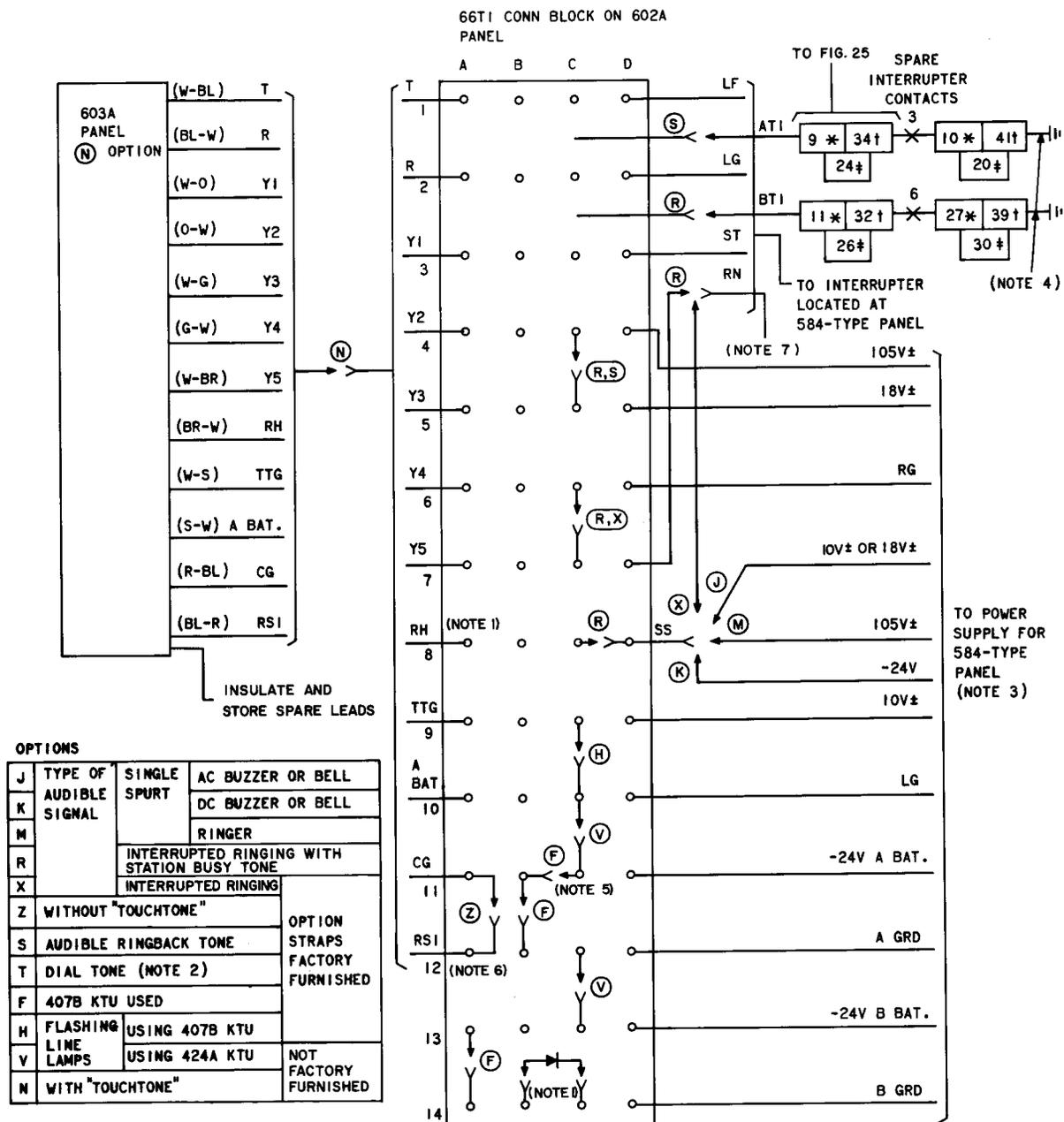
Fig. 21—601A Panel, Basic Dial Intercom, Connections to Optional Dial Selected Preset Conference Circuit Using 1A1 Matrix Block



NOTE:  
 WHEN BL LEAD IS USED TO PROVIDE BUSY TONE, CONNECT 400J  
 DIODE IN EACH BL LEAD AS REQUIRED. POLE LOCALLY  
 PROCURED DIODE AS SHOWN.

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Fig. 22—602A Panel, Connection of A25B Connector Cables to 66B4-25 Connecting Blocks

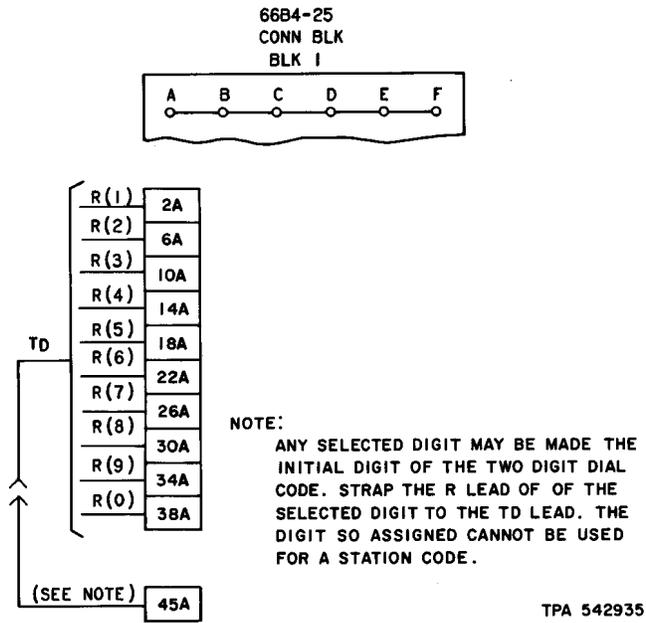


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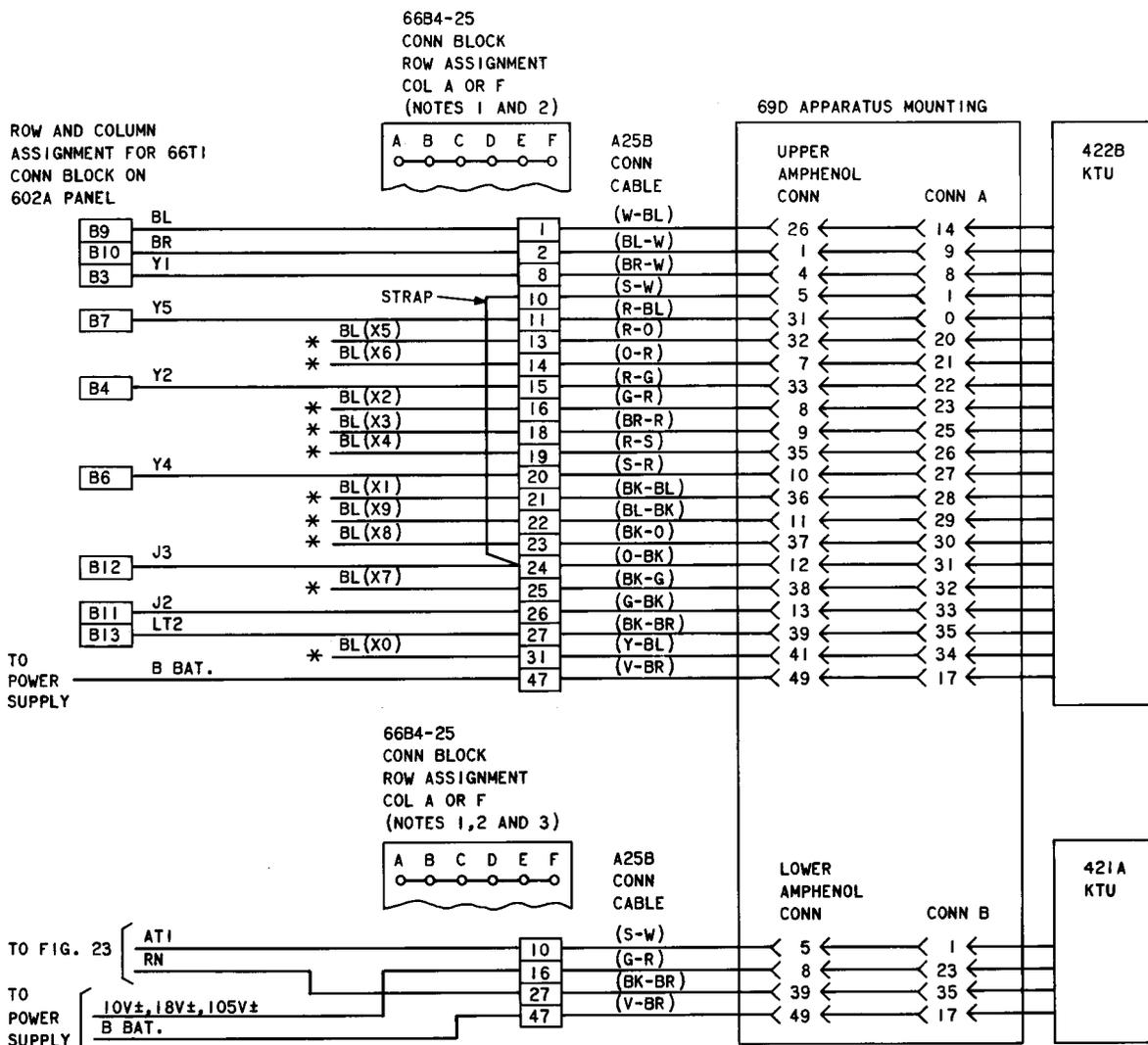
1. IF (T) AND (N) OPTIONS ARE PROVIDED, A 400J DIODE (PROCURED LOCALLY) MUST BE PLACED BETWEEN TERMINALS B14, C14 AND RH LEAD MOVED FROM TERM. A8 TO TERM. B8.
  2. DIAL TONE PROVIDED BY PLUGGING IN 423A KTU.
  3. USE 20 GAUGE STRAPPING WIRE (STRIP WIRE BEFORE TERMINATING ON CONNECTING BLOCK) FOR POWER CONNECTIONS TO AVOID SHORTS. MAKE CONNECTIONS ON 602A PANEL CONNECTING BLOCK BEFORE CONNECTING TO THE POWER SUPPLY.
  4. CONNECT TO B GRD AS SHOWN.
  5. REMOVE (F) OPTION IF 424A KTU IS USED.
  6. REMOVE (Z) OPTION IF "TOUCH-TONE" IS USED.
  7. CONNECT RN LEAD TO PANEL IF INTERRUPTED SIGNAL FOR INTERCOM IS THE SAME AS PROVIDED BY 584-TYPE PANEL INTERRUPTER. IF DIFFERENT INTERRUPTED SIGNAL IS REQUIRED FOR INTERCOM, CONNECT TO FIG. 25.
- \* TERMINALS ON 584B (MD) PANEL  
 † TERMINALS ON 584C (MD) PANEL  
 ‡ TERMINALS ON 584D PANEL.

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Fig. 23—602A Panel, Connection of Power and Interrupter Leads, Option Strapping, and TOUCH-TONE



**Fig. 24—602A Panel, 424A KTU Connection of Transfer Digit Lead**



NOTES:

1. TERMINATE CONN CABLE TO COL F IF LEFT-HAND BLOCK OR COLUMN A IF RIGHT-HAND BLOCK. REFER TO BLOCK DIAGRAM COVERING 66B4-25 CONN BLOCK.
2. SEE FIG. 9 FOR PANEL AND CONNECTING BLOCK LAYOUT.
3. WHEN CONNECTING THE 421A KTU PER THE LAYOUT IN FIG. 9 THE FIRST 8 LEADS (W-BL THRU BR-W) OF THE A25B CONN CABLE MUST BE INSULATED AND STORED AND THE REMAINDER CUT DOWN IN THE NORMAL MANNER.

\* TO TEL SET, SEE FIG. 27 FOR CONNECTIONS

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Fig. 25—602A Panel, 422B KTU, X1-X0 Station Busy Selector Circuit Connections for Adding Tens Group and Optional 421A KTU to Provide Interrupted Signaling

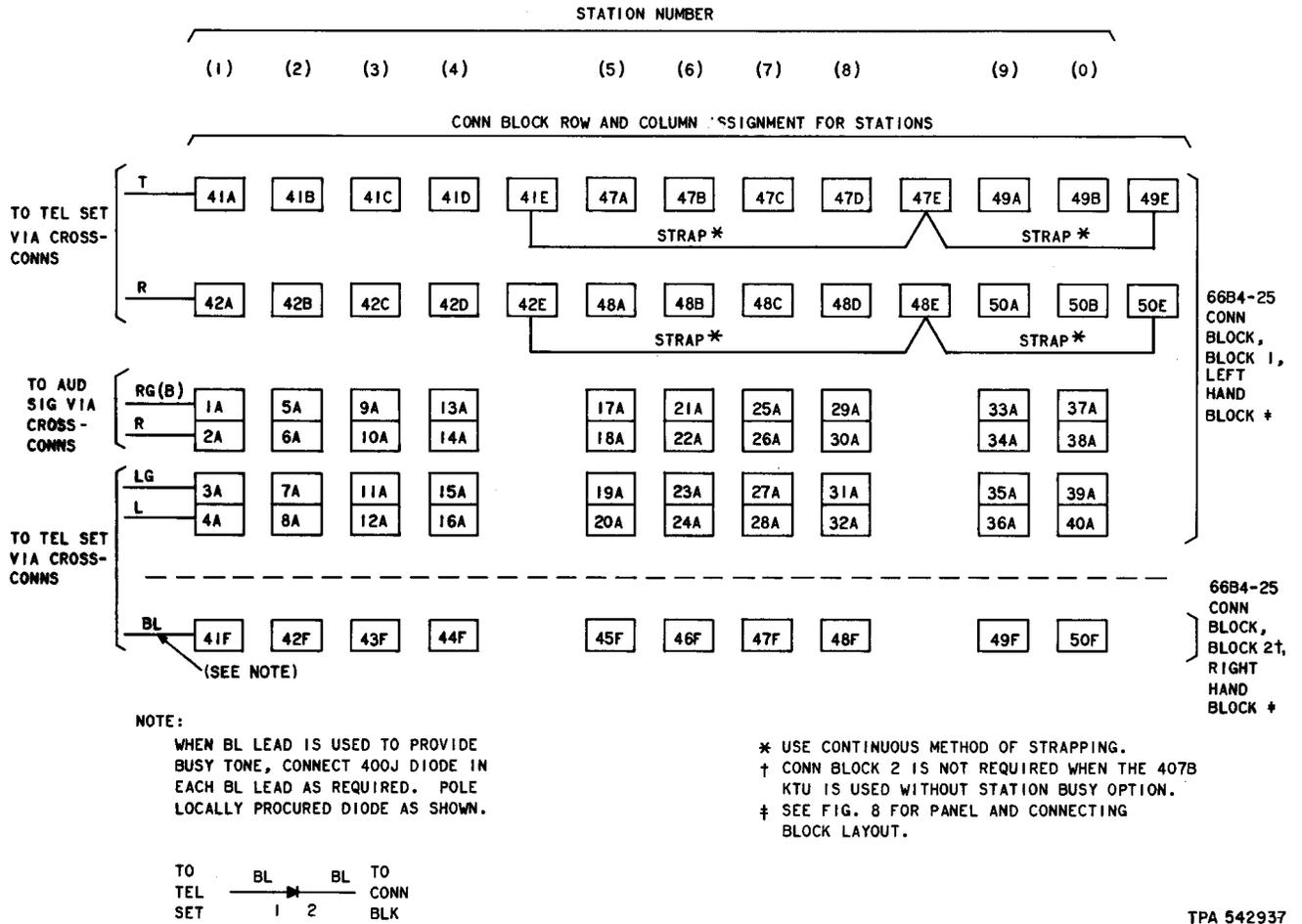
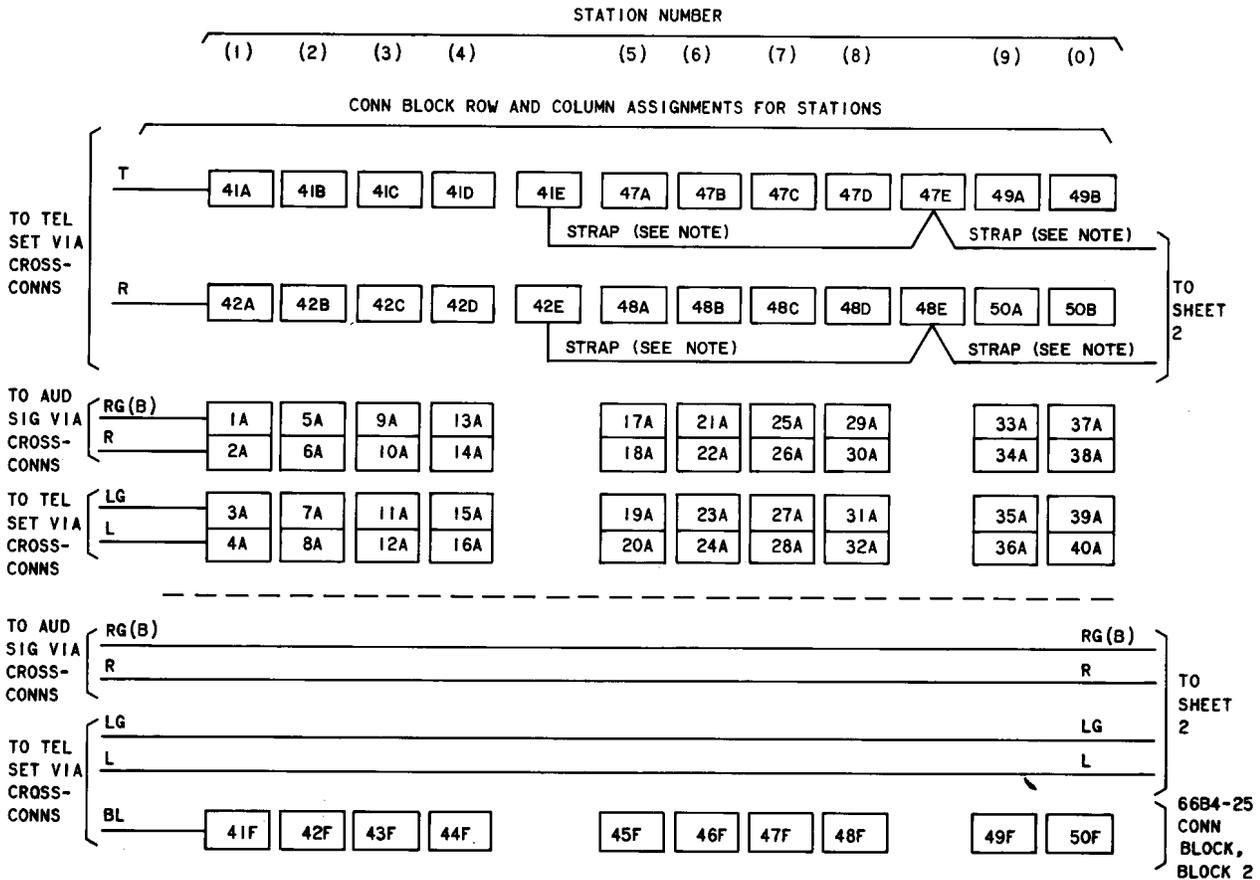


Fig. 26—602A Panel, 407B KTU, Station Connections via Cross-Connections for Deluxe Dial Intercom

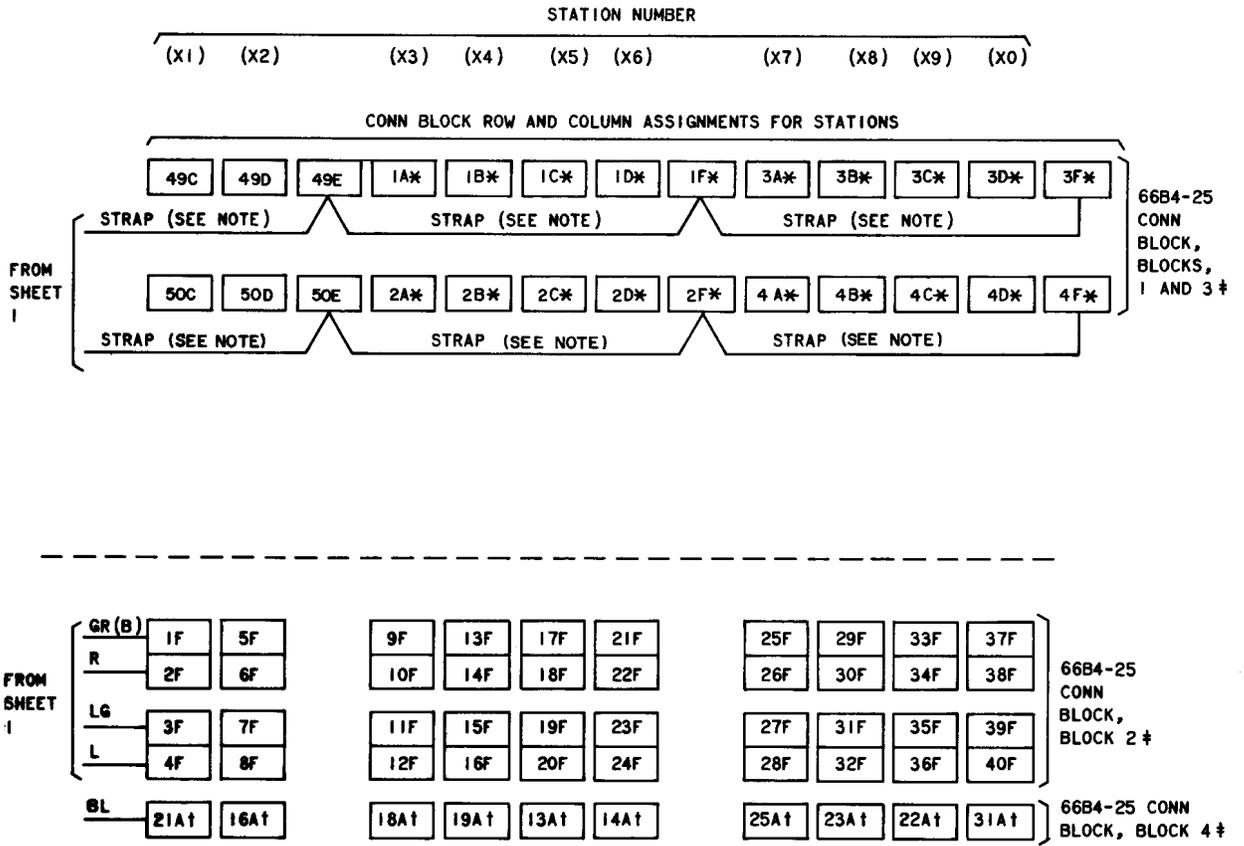


NOTE:  
USE CONTINUOUS METHOD OF STRAPPING.

\* DENOTES CONNECTIONS TO BE MADE ON CONNECTING BLOCK 3  
 † DENOTES CONNECTIONS TO BE MADE ON CONNECTING BLOCK 4 (ASSOCIATED WITH 69D APPARATUS MOUNTING)  
 ‡ SEE FIG. 9 FOR PANEL AND CONNECTING BLOCK LAYOUT

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Fig. 27—602A Panel, 424A KTU, Station Connections via Cross-Connections for Deluxe Dial Intercom (Sheet 1)



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**Fig. 27—602A Panel, 424A KTU Station Connections via Cross-Connections for Deluxe Dial Intercom (Sheet 2)**

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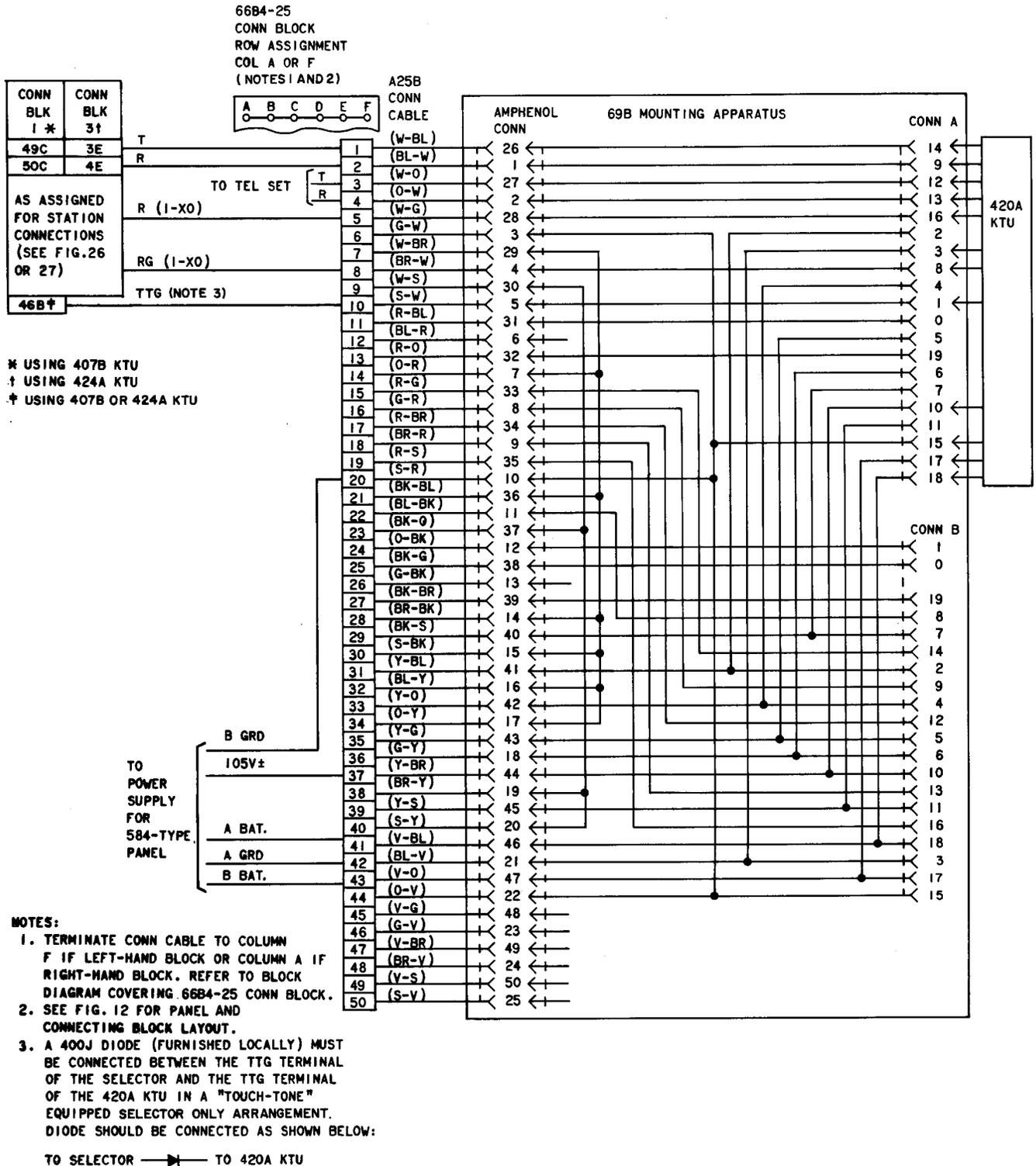
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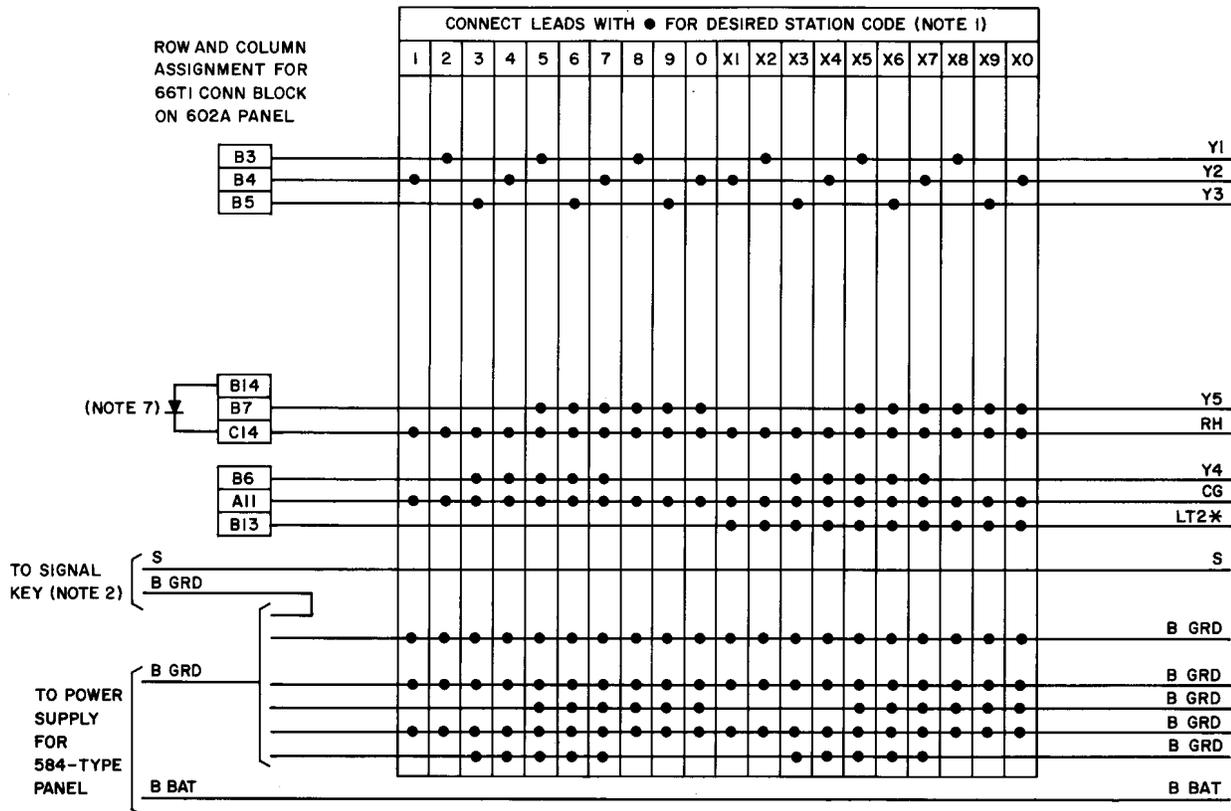
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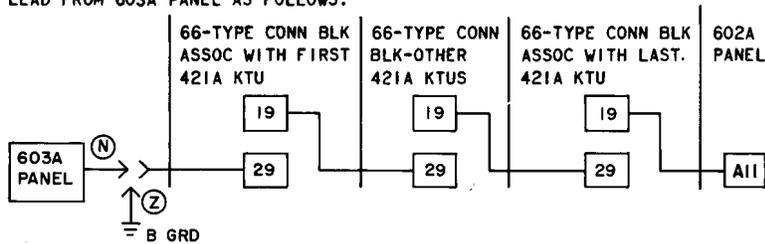
Fig. 28—602A Panel, 420A KTU, Long Line Circuit, Deluxe Dial Intercom, Connections to Optional KTU in 69B Apparatus Mounting

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- NOTES:
1. SELECT CODE AND CONNECT LEADS FOR SELECTED CODE AS SHOWN IN VERTICAL COLUMN.
  2. PROVIDE SEPARATE SIGNAL KEY FOR EACH STATION CODE TO BE SELECTED.
  3. PROVIDE SEPARATE 421A KTU FOR EACH STATION CODE TO BE SELECTED.
  4. SEE FIG. 10 FOR PANEL AND CONNECTING BLOCK LAYOUT.

5. WHEN MORE THAN ONE 421A KTU IS USED FOR DSS CONNECT B GROUND OR THE CG LEAD FROM 603A PANEL AS FOLLOWS:



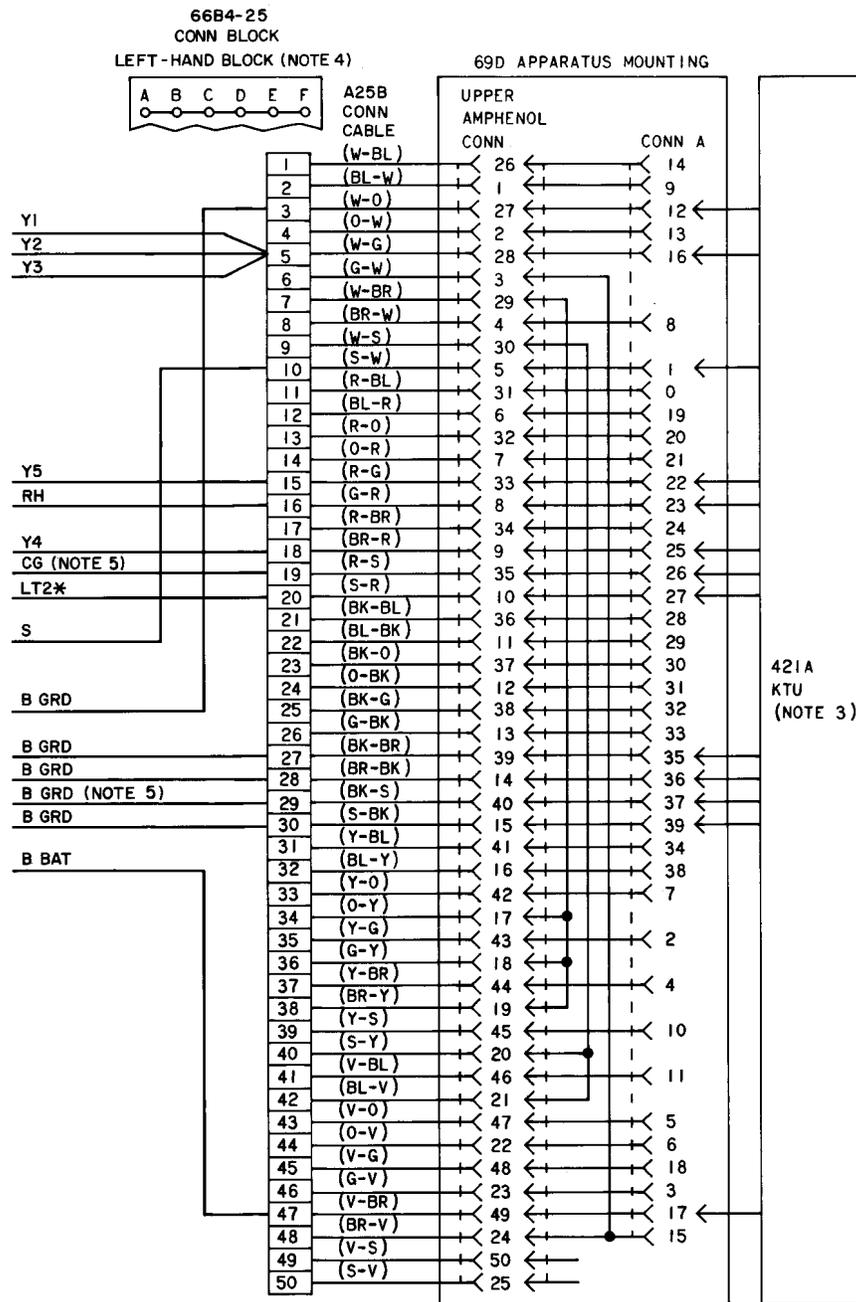
(N) - WITH "TOUCH-TONE"

(Z) - WITHOUT "TOUCH-TONE"

6. A 400J DIODE (PROCURE LOCALLY) MUST BE CONNECTED AS SHOWN IN A DIAL-TONE EQUIPPED SELECTOR-ONLY ARRANGEMENT ON 66TI CONNECTING BLOCK. MOVE RH LEAD FROM TERMINAL A8 TO TERMINAL B8. (SEE NOTE 1, FIG. 23.)

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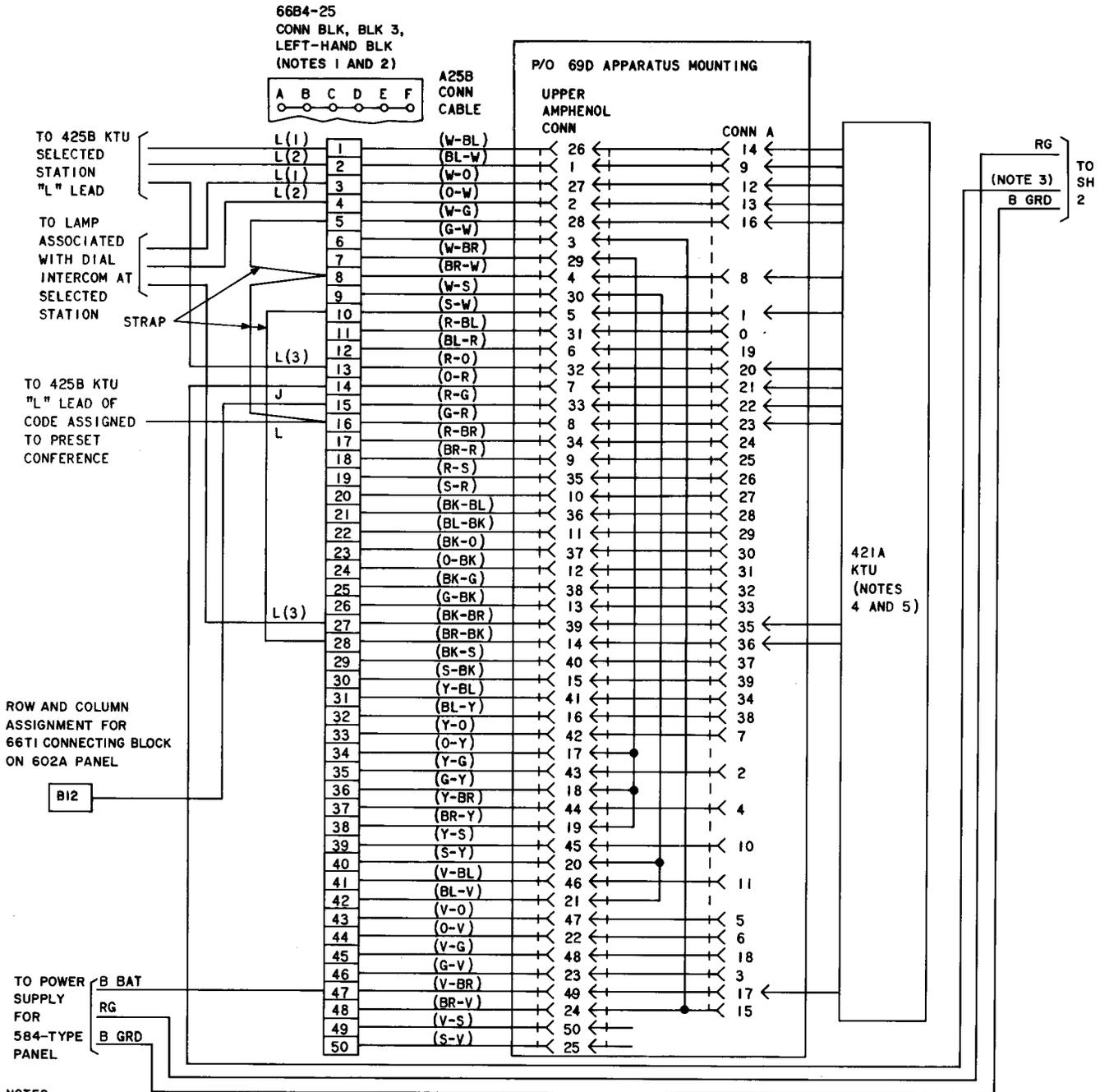
Fig. 29—602A Panel, 421A KTU, Arranged for DSS, Deluxe Dial Intercom, Connections to Optional KTU Mounted in 69D Apparatus Mounting (Sheet 1)



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Fig. 29—602A Panel 421A KTU, Arranged for DSS, Deluxe Dial Intercom, Connections to Optional KTU Mounted in 69D Apparatus Mounting (Sheet 2)

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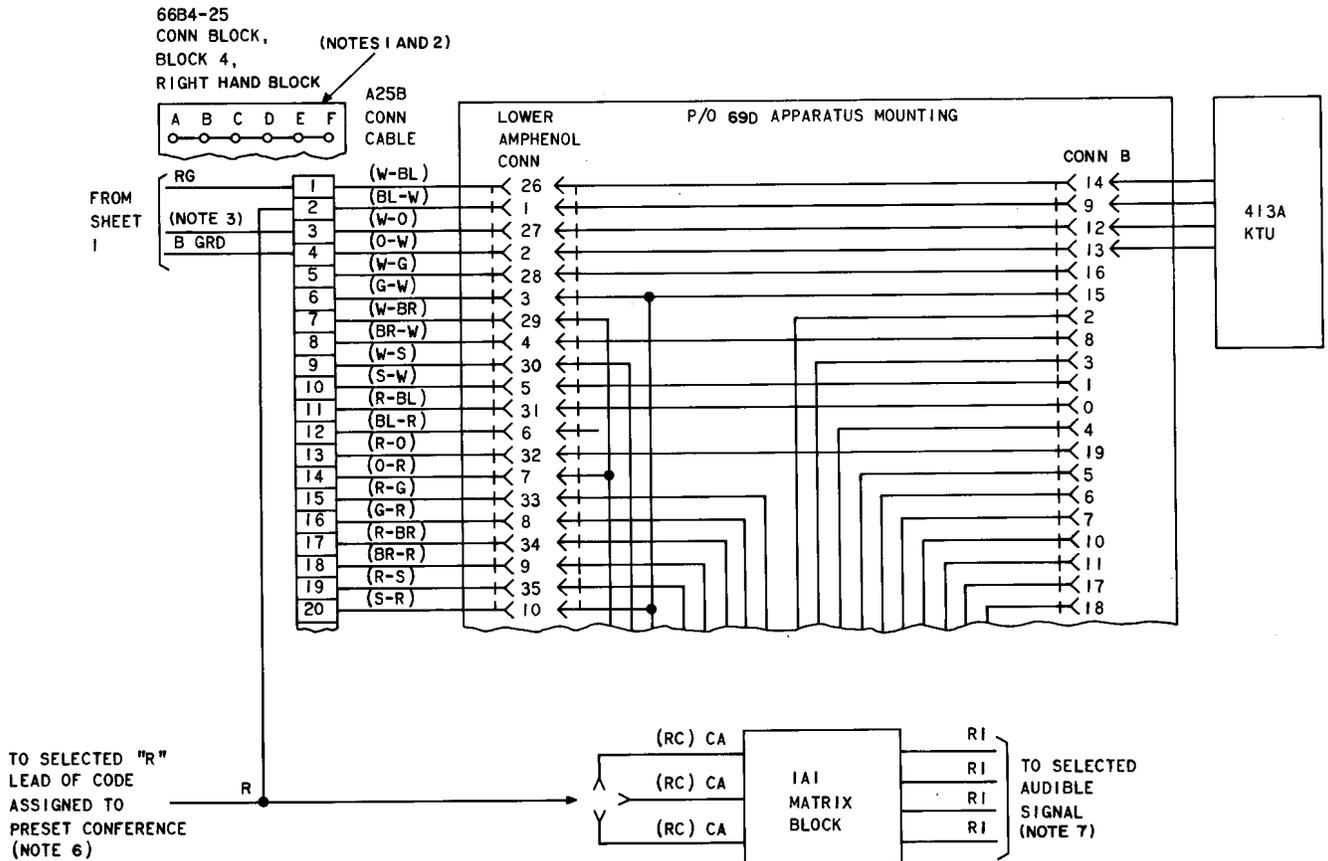


NOTES:

1. TERMINATE CONN CABLE TO COLUMN F IF LEFT-HAND BLOCK OR COLUMN A IF RIGHT-HAND BLOCK. REFER TO BLOCK DIAGRAM COVERING 66B4-25 CONN BLOCK.
2. SEE FIG. 11 FOR PANEL AND CONNECTING BLOCK LAYOUT.
3. PROVIDE THE 413A KTU ONLY WHEN ACCESS TO THE PRESET CONFERENCE IS BY DIAL CODE OR BY DIAL CODE AND DSS. DO NOT PROVIDE THE 413A KTU WHEN ACCESS TO THE PRESET CONFERENCE IS LIMITED TO DSS.
4. WHEN THIS CIRCUIT IS PROVIDED, RING VOLTAGE (105V±) MUST BE USED TO OPERATE THE AUDIBLE SIGNALS CONNECTED TO THE DIAL INTERCOM LINE.
5. "W" OPTION MUST BE PROVIDED ON THE 421A KTU. ON 421A KTU OPTION BLOCK, STRAP TERMINALS AS FOLLOWS: 1 TO 2, 5 TO 6, 7 TO 8.
6. THE "CA" LEAD MUST CONNECT TO THE DIODE MATRIX WHETHER OR NOT THE 413A KTU IS PROVIDED.
7. WHEN RINGERS ARE USED AS AUDIBLE SIGNALS, REMOVE RINGER CAPACITORS FROM CIRCUIT.

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Fig. 30—602A Panel, Deluxe Dial Intercom, Connections to Optional Preset Conference Circuit (421A KTU, Mounted in 69D Apparatus Mounting, 413A KTU Mounted in 69B Apparatus Mounting and a 1A1 Matrix Block) (Sheet 1)



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**Fig. 30—602A Panel, Deluxe Dial Intercom, Connections to Optional Preset Conference Circuit (421A KTU, Mounted in 69D Apparatus Mounting, 413A KTU Mounted in 69B Apparatus Mounting and a 1A1 Matrix Block) (Sheet 2)**

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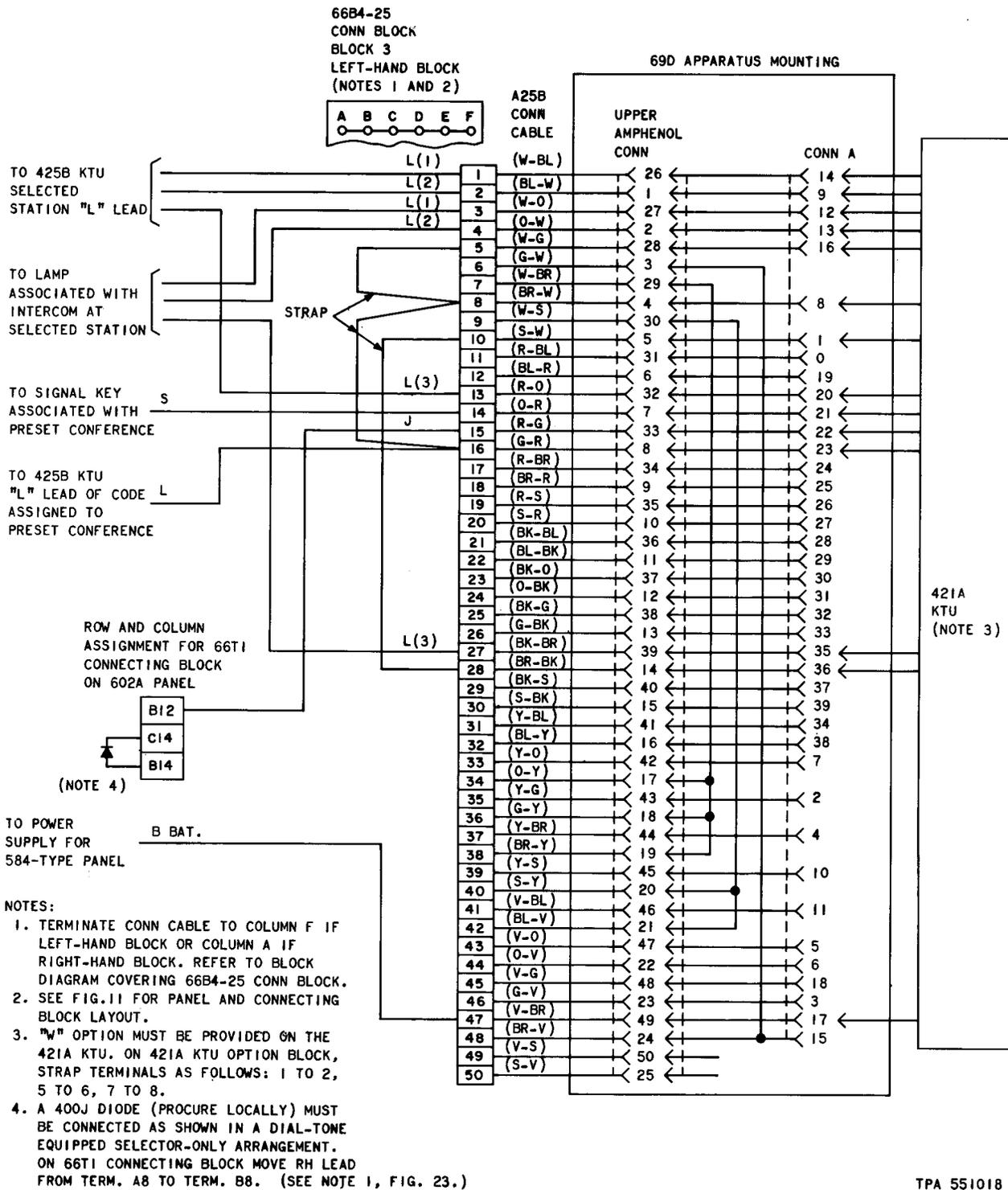


Fig. 31—602A Panel, Deluxe Dial Intercom, Connections to Optional Signal Key Preset Conference Circuit (421A KTU Mounted in 69D Apparatus Mounting)