

**650A KEY SERVICE UNIT**  
**1P2 KEY TELEPHONE SYSTEM**  
**10-STATION SINGLE LINK INTERCOM**  
**CONNECTIONS**

**1. GENERAL**

**1.01** This section is reissued to provide additional connection information for 10-station single link intercom used for PICTUREPHONE® service.

**1.02** Fig. 1 is a general diagram of 66B3-50 connecting blocks and connector field in the 650A Key Service Unit (KSU) with related equipment (66B4-25 connecting blocks) which must be mounted external to the KSU.

**1.03** Basic single link intercom service requires one 605A KTU for each three stations. Example 1, Fig. 3 shows strapping of four 605A KTUs to provide station codes 1-0. Video-audio station bridging may be provided in two arrangements. One arrangement uses two circuits of a 605A KTU and internal KSU wiring option T. The second and third circuits of the fourth 605A KTU are available for bridging two station codes as shown in Example 2, Fig. 3. If more than two station codes are bridged, each bridge will reduce the number of station codes available by one. The second arrangement uses externally mounted 421A KTU per station code equipped for video-audio station bridging and internal option V. A 69D apparatus mounting (or equivalent) must be provided for mounting the 421A KTU(s). No station codes are sacrificed when this arrangement is used. Either of the two arrangements may be selected for any one station code.

**Note:** Option V is always required for the 10-station intercom arrangement as covered in this section.

**1.04** Intercom conferenced with a single group line may be provided, in two ways, if a CO or PBX line is available. One arrangement uses an externally mounted 417A KTU in a 69D apparatus mounting (or equivalent) and internal KSU wiring

option N. Two circuits of a 605A KTU are required per station code. The second arrangement uses an externally mounted 417A KTU and an externally mounted 421A KTU per station equipped for conferencing. A 69D apparatus mounting (or equivalent) must be provided for each KTU. Either of the two arrangements may be selected for any one station code.

**Note:** Video and audio *A* leads must be isolated from each other in single link intercom service.

**Note:** Video pairs for more than one line appearing at a station should be bridged at the KTS equipment and extended only once to the 1A service unit of that station.

**1.05** At this time, no provision is made for equalization of intercom *only* video station loops. Therefore, on intercom only stations, the externally mounted 607A KTU will not be used and the following cable length distances between the 1A service unit and the key telephone equipment should be treated as a maximum:

- 500 ft. with 252A switchboard cable (24 gauge)
- 425 ft. with D-type inside wiring cable (24 gauge)
- 615 ft. with D-type inside wiring cable (22 gauge)

For cabling distances other than those shown see Section 518-800-110.

**1.06** The distance between the 650A KSU and the 66-type connecting block field must not exceed 25 feet. All video, audio, lamp, and ringing leads including cross connections must be twisted

pairs. The telephone station loop shall not exceed 50 ohms (1000 feet of 24-gauge D-inside wire).

**1.07** Refer to CD- and SD-69606-01, SD-69621-01 and CD- and SD-69657-01 for additional information.

**1.08** Video station connections are covered in Section 518-800-401. Connect audio stations using the connection section covering the telephone set involved.

**1.09** Refer to Section 518-010-105 for proper grounding procedures.

**1.10** Table A shows features and options including externally mounted KTU requirements.

**2. CONNECTIONS**

**2.01** Options and service straps are provided in the field by strapping at the 66B3-50 connecting blocks in the KSU, (Fig. 3, Table B) and appropriate connections at external connecting blocks. Optional connections shown in Fig. 3 agree with SD-69621-01 as shown in Table A.

*Note:* All key telephone units requiring option straps must be strapped by field forces. Strap wiring must be skinned.

**2.02** Intercom audible signaling arrangements are shown in Fig. 5.

**2.03** Connections to an external 51-type power unit using the 15-foot wiring harness supplied with the 650A1 KSU are shown in Fig. 4.

**2.04** The internally mounted 422B KTU must have only the following straps installed on TB1:

1 to 2

3 to 4

5 to 6

**2.05** The 423A KTU must have only terminals 1 to 2 (TB1) strapped.

**2.06 Connection Index**

Table B—10-Station Intercom Video/Audio Station Bridging AB-, AS-, LK-, BL-, R-, and RC- Lead Strapping on 66B3-50 Connecting Blocks

Fig. 2—10-Station Single Link Intercom, Connections

Fig. 3—Option and Service Straps on 66B3-50 Connecting Blocks in KSU

Fig. 4—Internal and External Power Connections to 66B3-50 Connecting Blocks in KSU

Fig. 5—Intercom Audible Signaling Connections

Fig. 6—Connections for Station Busy Tone Using Externally Mounted 422B KTU (Read Notes)

Fig. 7—Connections for Single Key, Preset Audio Only Conference Using Externally Mounted KTUs

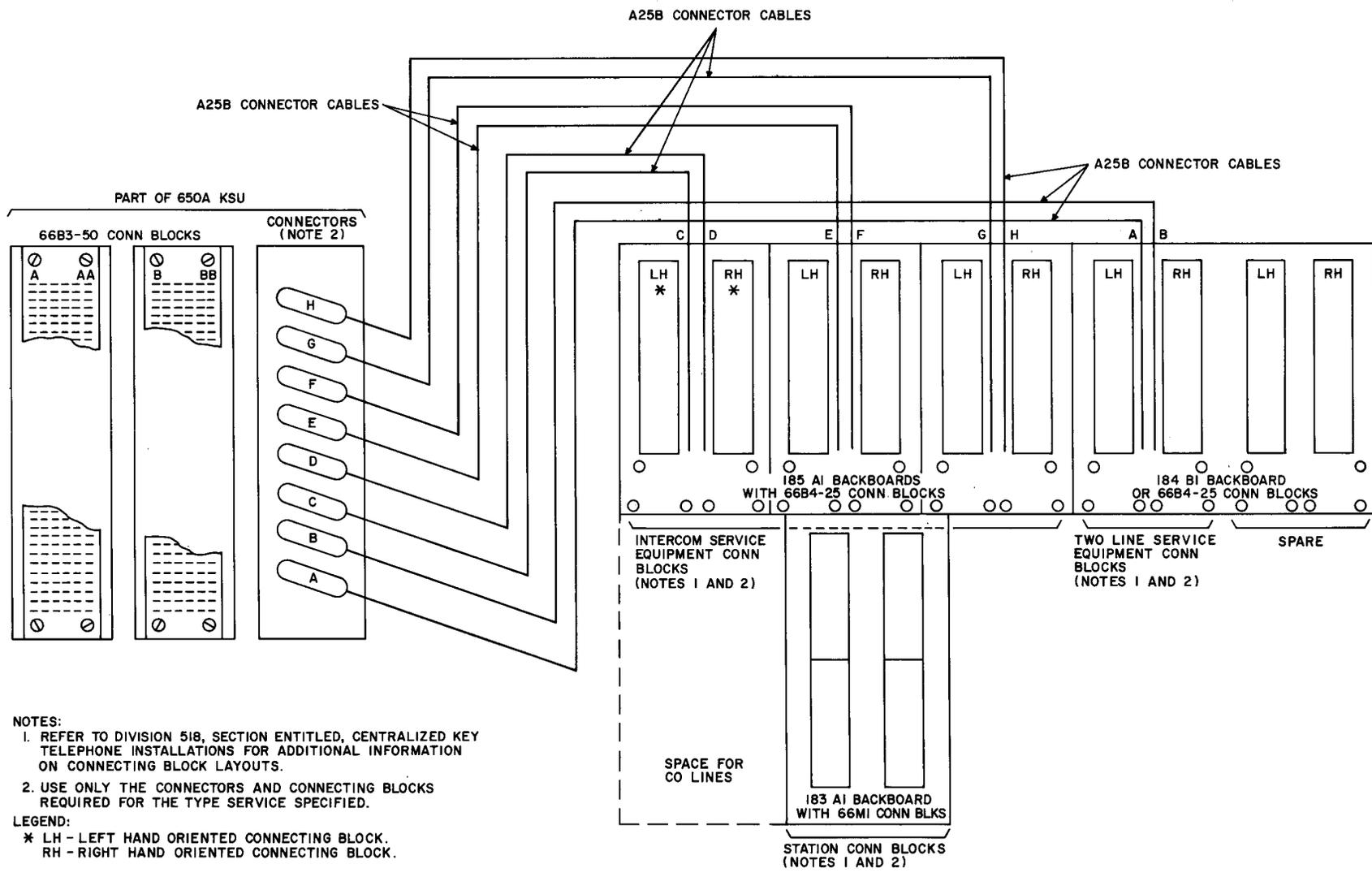
Fig. 8—Connections for Dial Selected, Preset Audio Only Conference Using Externally Mounted KTUs

Fig. 9—Connections for Busy Video Station Audible Cutoff (BVSAC) for One Station Using Externally Mounted 421A KTU

Fig. 10—Connections for Busy Video Station Audible Cutoff (BVSAC) for More Than One Station Using Externally Mounted 421A and 422B KTUs (Note 10)

Fig. 11—Connections for Video and Audio Station Bridging Using Two Externally Mounted 421A KTUs

Fig. 12—Connections for Intercom Add-on Conference to an External Key Telephone System Line Using Externally Mounted 417A KTU.



**NOTES:**

1. REFER TO DIVISION 518, SECTION ENTITLED, CENTRALIZED KEY TELEPHONE INSTALLATIONS FOR ADDITIONAL INFORMATION ON CONNECTING BLOCK LAYOUTS.

2. USE ONLY THE CONNECTORS AND CONNECTING BLOCKS REQUIRED FOR THE TYPE SERVICE SPECIFIED.

**LEGEND:**

\* LH - LEFT HAND ORIENTED CONNECTING BLOCK.  
 RH - RIGHT HAND ORIENTED CONNECTING BLOCK.

**Fig. 1—General Diagram of 66B3-50 Connecting Blocks and Connector Field to Equipment Connecting Blocks**

TABLE A

## FEATURES AND OPTIONS INCLUDING EXTERNALLY MOUNTED KTU REQUIREMENTS

FEATURES		NOTES	OPTIONS		REQUIRED KTUS (NOTE 1)	
			SD-69606-01	SD-69621-01		
10-Station Intercom	Basic Service			V		
	Video-audio sta Bridging	4	Z	T		
		2, 5	R		421A (1)	
	Intercom conferenced with external line	3, 4	V	N	417A (1)	
		3, 5, 6	Q		417A (1) 421A (1)	
	Station busy tone		Note 108	S	422B (1)	
	Preset audio only conference	Signal key selected		X, Y	R	421A (3) 404A (1)
		Dial selected		W, Y	Q	421A (2) 413A (1) 404A (1)
	Busy video station audible cutoff	One station		T	M	421A (1)
		More than one station		S	K	422B (1) 421A (1 per 6 sta)
	Lower priority video station		2	N		421A
	Power	Internal			J	
External				H		

**Notes:**

1. KTUs must be mounted external to the KSU in a 69-type apparatus mounting or equivalent. A 19-type power unit (or equivalent) is required to supply power to these units if the combined drain of batteries A and B exceeds 350 milliamperes.
2. For intercom, one 421A KTU is required for each bridged video station in priority arrangement, including the highest priority station.
3. When a conference circuit (417A KTU), which is controlled by a nonlocking key (control at one station only is used in single link intercom service) is used, always strap terminal 6 to 10 (option X) and terminal 1 to 2 (option Z) as shown in SD-69651-01.
4. Uses two circuits of a 605A KTU per station code.
5. No loss of available codes.
6. For this arrangement use combination of Fig. 11 and 12.

**TABLE B**  
**10-STATION INTERCOM VIDEO/AUDIO STATION BRIDGING AB-, AS-, LK-, BL-, R-,**  
**AND RC-LEAD STRAPPING\* ON 66B3-50 CONNECTING BLOCKS†**

10 VIDEO STATIONS (CODES 1-0)											
2 AUDIO STATIONS (SHARING CODES 1 AND 2) (NOTE 1)											
STA CODES		STRAP		LEAD DESIG		STA CODES		STRAP		LEAD DESIG	
VIDEO	AUDIO	CONN BLK A†		604A KTU	605A KTU‡	VIDEO	AUDIO	CONN BLK B†		422B KTU	605A KTU‡
		FROM	TO					FROM	TO		
1	-	26	4	AB1	AB1 (1)	1		13	1	BL1	BL1 (1)
2	-	27	5	AB2	AB2 (1)	2		14	2	BL2	BL2 (1)
3	-	18	6	AS3	AB3 (1)	3		15	3	BL3	BL3 (1)
4	-	19	7	AS4	AB1 (2)	4		16	4	BL4	BL1 (2)
5	-	20	8	AS5	AB2 (2)	5		17	5	BL5	BL2 (2)
6	-	21	9	AS6	AB3 (2)	6		18	6	BL6	BL3 (2)
7	-	22	10	AS7	AB1 (3)	7		19	7	BL7	BL1 (3)
8	-	23	11	AS8	AB2 (3)	8		20	8	BL8	BL2 (3)
9	-	24	12	AS9	AB3 (3)	9		21	9	BL9	BL3 (3)
0	-	25	13	AS0	AB1 (4)	0		22	10	BL0	BL1 (4)
-	2	17	14	AS2	AB2 (4)		2	11	2	BL2	BL2 (4)
-	1	16	15	AS1	AB3 (4)		1	12	1	BL1	BL3 (4)
		CONN BLK AA†						CONN BLK B†		407B KTU	605A KTU‡
1		1	11	LK1	LK1 (1)	1		41	27	R1	RC1 (1)
2		2	12	LK2	LK2 (1)	2		42	28	R2	RC2 (1)
3		3	13	LK3	LK3 (1)	3		43	29	R3	RC3 (1)
4		4	14	LK4	LK1 (2)	4		44	30	R4	RC1 (2)
5		5	15	LK5	LK2 (2)	5		45	31	R5	RC2 (2)
6		6	16	LK6	LK3 (2)	6		46	32	R6	RC3 (2)
7		7	17	LK7	LK1 (3)	7		47	33	R7	RC1 (3)
8		8	18	LK8	LK2 (3)	8		48	34	R8	RC2 (3)
9		9	19	LK9	LK3 (3)	9		49	35	R9	RC3 (3)
0		10	20	LK0	LK1 (4)	0		50	36	R0	RC1 (4)
	2	12	21	LK2	LK2 (4)		2	28	37	R2	RC2 (4)
	1	11	22	LK1	LK3 (4)		1	27	38	R1	RC3 (4)

\* AB = "A" lead for video station; AS = "A" lead for audio station (use with Fig. 3).

†  66B3-50 connecting blocks furnished in 650A KSU.

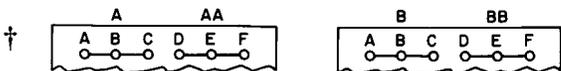
‡ Connections shown utilize four 605A KTUs (maximum capability of 12 video-audio switches).  
 Number in parenthesis indicates which 605A KTU is used.

TABLE B (Cont)

10-STATION INTERCOM VIDEO/AUDIO STATION BRIDGING AB-, AS-, LK-, BL-, R-, AND RC-LEAD STRAPPING\* ON 66B3-50 CONNECTING BLOCKS†

9 VIDEO STATIONS (CODES 1-9) 3 AUDIO STATIONS (SHARING CODES 1-3)											
STA CODES		STRAP		LEAD DESIG		STA CODES		STRAP		LEAD DESIG	
VIDEO	AUDIO	CONN BLK A†		604A KTU	605A KTU‡	VIDEO	AUDIO	CONN BLK B†		422B KTU	605A KTU‡
		FROM	TO					FROM	TO		
1	-	26	4	AB1	AB1 (1)	1		13	1	BL1	BL1 (1)
2	-	27	5	AB2	AB2 (1)	2		14	2	BL2	BL2 (1)
3	-	28	6	AB3	AB3 (1)	3		15	3	BL3	BL3 (1)
4	-	19	7	AS4	AB1 (2)	4		16	4	BL4	BL1 (2)
5	-	20	8	AS5	AB2 (2)	5		17	5	BL5	BL2 (2)
6	-	21	9	AS6	AB3 (2)	6		18	6	BL6	BL3 (2)
7	-	22	10	AS7	AB1 (3)	7		19	7	BL7	BL1 (3)
8	-	23	11	AS8	AB2 (3)	8		20	8	BL8	BL2 (3)
9	-	24	12	AS9	AB3 (3)	9		21	9	BL9	BL3 (3)
-	3	18	13	AS3	AB1 (4)		3	10	3	BL3	BL1 (4)
-	2	17	14	AS2	AB2 (4)		2	11	2	BL2	BL2 (4)
-	1	16	15	AS1	AB3 (4)		1	12	1	BL1	BL3 (4)
		CONN BLK AA†						CONN BLK B†		407B KTU	605A KTU‡
1		1	11	LK1	LK1 (1)	1		41	27	R1	RC1 (1)
2		2	12	LK2	LK2 (1)	2		42	28	R2	RC2 (1)
3		3	13	LK3	LK3 (1)	3		43	29	R3	RC3 (1)
4		4	14	LK4	LK1 (2)	4		44	30	R4	RC1 (2)
5		5	15	LK5	LK2 (2)	5		45	31	R5	RC2 (2)
6		6	16	LK6	LK3 (2)	6		46	32	R6	RC3 (2)
7		7	17	LK7	LK1 (3)	7		47	33	R7	RC1 (3)
8		8	18	LK8	LK2 (3)	8		48	34	R8	RC2 (3)
9		9	19	LK9	LK3 (3)	9		49	35	R9	RC3 (3)
	3	13	20	LK3	LK1 (4)		3	29	36	R3	RC1 (4)
	2	12	21	LK2	LK2 (4)		2	28	37	R2	RC2 (4)
	1	11	22	LK1	LK3 (4)		1	27	38	R1	RC3 (4)

\* AB = "A" lead for video station; AS = "A" lead for audio station (use with Fig. 3).



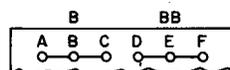
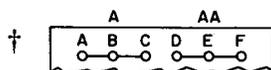
66B3-50 connecting blocks furnished in 650A KSU.

‡ Connections shown utilize four 605A KTUs (maximum capability of 12 video-audio switches). Number in parenthesis indicates which 605A KTU is used.

**TABLE B (Cont)**  
**10-STATION INTERCOM VIDEO/AUDIO STATION BRIDGING AB-, AS-, LK-, BL-, R-,**  
**AND RC-LEAD STRAPPING\* ON 66B3-50 CONNECTING BLOCKS†**

8 VIDEO STATIONS (CODES 1-8) 4 AUDIO STATIONS (SHARING CODES 1-4)											
STA CODES		STRAP		LEAD DESIG		STA CODES		STRAP		LEAD DESIG	
VIDEO	AUDIO	CONN BLK A†		604A KTU	605A KTU‡	VIDEO	AUDIO	CONN BLK B†		422B KTU	605A KTU‡
		FROM	TO					FROM	TO		
1	-	26	4	AB1	AB1 (1)	1		13	1	BL1	BL1 (1)
2	-	27	5	AB2	AB2 (1)	2		14	2	BL2	BL2 (1)
3	-	28	6	AB3	AB3 (1)	3		15	3	BL3	BL3 (1)
4	-	29	7	AB4	AB1 (2)	4		16	4	BL4	BL1 (2)
5	-	20	8	AS5	AB2 (2)	5		17	5	BL5	BL2 (2)
6	-	21	9	AS6	AB3 (2)	6		18	6	BL6	BL3 (2)
7	-	22	10	AS7	AB1 (3)	7		19	7	BL7	BL1 (3)
8	-	23	11	AS8	AB2 (3)	8		20	8	BL8	BL2 (3)
-	4	19	12	AS4	AB3 (3)		4	9	4	BL4	BL3 (3)
-	3	18	13	AS3	AB1 (4)		3	10	3	BL3	BL1 (4)
-	2	17	14	AS2	AB2 (4)		2	11	2	BL2	BL2 (4)
-	1	16	15	AS1	AB3 (4)		1	12	1	BL1	BL3 (4)
		CONN BLK AA†						CONN BLK B†		407B KTU	605A KTU‡
1		1	11	LK1	LK1 (1)	1		41	27	R1	RC1 (1)
2		2	12	LK2	LK2 (1)	2		42	28	R2	RC2 (1)
3		3	13	LK3	LK3 (1)	3		43	29	R3	RC3 (1)
4		4	14	LK4	LK1 (2)	4		44	30	R4	RC1 (2)
5		5	15	LK5	LK2 (2)	5		45	31	R5	RC2 (2)
6		6	16	LK6	LK3 (2)	6		46	32	R6	RC3 (2)
7		7	17	LK7	LK1 (3)	7		47	33	R7	RC1 (3)
8		8	18	LK8	LK2 (3)	8		48	34	R8	RC2 (3)
	4	14	19	LK4	LK3 (3)		4	30	35	R4	RC3 (3)
	3	13	20	LK3	LK1 (4)		3	29	36	R3	RC1 (4)
	2	12	21	LK2	LK2 (4)		2	28	37	R2	RC2 (4)
	1	11	22	LK1	LK3 (4)		1	27	38	R1	RC3 (4)

\* AB = "A" lead for video station; AS = "A" lead for audio station (use with Fig. 3).



66B3-50 connecting blocks furnished in 650A KSU.

‡ Connections shown utilize four 605A KTUs (maximum capability of 12 video-audio switches).  
Number in parenthesis indicates which 605A KTU is used.

TABLE B (Cont)

10-STATION INTERCOM VIDEO/AUDIO STATION BRIDGING AB-, AS-, LK-, BL-, R-,  
AND RC-LEAD STRAPPING\* ON 66B3-50 CONNECTING BLOCKS†

7 VIDEO STATIONS (CODES 1-7) 5 AUDIO STATIONS (SHARING CODES 1-5)											
STA CODES		STRAP		LEAD DESIG		STA CODES		STRAP		LEAD DESIG	
VIDEO	AUDIO	CONN BLK A†		604A KTU	605A KTU‡	VIDEO	AUDIO	CONN BLK B†		422B KTU	605A KTU‡
		FROM	TO					FROM	TO		
1	—	26	4	AB1	AB1 (1)	1		13	1	BL1	BL1 (1)
2	—	27	5	AB2	AB2 (1)	2		14	2	BL2	BL2 (1)
3	—	28	6	AB3	AB3 (1)	3		15	3	BL3	BL3 (1)
4	—	29	7	AB4	AB1 (2)	4		16	4	BL4	BL1 (2)
5	—	30	8	AB5	AB2 (2)	5		17	5	BL5	BL2 (2)
6	—	21	9	AS6	AB3 (2)	6		18	6	BL6	BL3 (2)
7	—	22	10	AS7	AB1 (3)	7		19	7	BL7	BL1 (3)
—	5	20	11	AS5	AB2 (3)		5	8	5	BL5	BL2 (3)
—	4	19	12	AS4	AB3 (3)		4	9	4	BL4	BL3 (3)
—	3	18	13	AS3	AB1 (4)		3	10	3	BL3	BL1 (4)
—	2	17	14	AS2	AB2 (4)		2	11	2	BL2	BL2 (4)
—	1	16	15	AS1	AB3 (4)		1	12	1	BL1	BL3 (4)
		CONN BLK AA†						CONN BLK B†		407B KTU	605A KTU‡
1		1	11	LK1	LK1 (1)	1		41	27	R1	RC1 (1)
2		2	12	LK2	LK2 (1)	2		42	28	R2	RC2 (1)
3		3	13	LK3	LK3 (1)	3		43	29	R3	RC3 (1)
4		4	14	LK4	LK1 (2)	4		44	30	R4	RC1 (2)
5		5	15	LK5	LK2 (2)	5		45	31	R5	RC2 (2)
6		6	16	LK6	LK3 (3)	6		46	32	R6	RC3 (2)
7		7	17	LK7	LK1 (3)	7		47	33	R7	RC1 (3)
	5	15	18	LK5	LK2 (3)		5	31	34	R5	RC2 (3)
	4	14	19	LK4	LK3 (3)		4	30	35	R4	RC3 (3)
	3	13	20	LK3	LK1 (4)		3	29	36	R3	RC1 (4)
	2	12	21	LK2	LK2 (4)		2	28	37	R2	RC2 (4)
	1	11	22	LK1	LK3 (4)		1	27	38	R1	RC3 (4)

\* AB = "A" lead for video station; AS = "A" lead for audio station (use with Fig. 3).



66B3-50 connecting blocks furnished in 650A KSU.

‡ Connections shown utilize four 605A KTUs (maximum capability of 12 video-audio switches).  
Number in parenthesis indicates which 605A KTU is used.

**TABLE B (Cont)**  
**10-STATION INTERCOM VIDEO/AUDIO STATION BRIDGING AB-, AS-, LK-, BL-, R-,**  
**AND RC-LEAD STRAPPING\* ON 66B3-50 CONNECTING BLOCKS†**

6 VIDEO STATIONS (CODES 1-6) 6 AUDIO STATIONS (SHARING CODES 1-6)											
STA CODES		STRAP		LEAD DESIG		STA CODES		STRAP		LEAD DESIG	
VIDEO	AUDIO	CONN BLK A†		604A KTU	605A KTU‡	VIDEO	AUDIO	CONN BLK B†		422B KTU	605A KTU‡
		FROM	TO					FROM	TO		
1	-	26	4	AB1	AB1(1)	1		13	1	BL1	BL1(1)
2	-	27	5	AB2	AB2(1)	2		14	2	BL2	BL2(1)
3	-	28	6	AB3	AB3(1)	3		15	3	BL3	BL3(1)
4	-	29	7	AB4	AB1(2)	4		16	4	BL4	BL1(2)
5	-	30	8	AB5	AB2(2)	5		17	5	BL5	BL2(2)
6	-	31	9	AB6	AB3(2)	6		18	6	BL6	BL3(2)
-	6	21	10	AS6	AB1(3)		6	7	6	BL6	BL1(3)
-	5	20	11	AS5	AB2(3)		5	8	5	BL5	BL2(3)
-	4	19	12	AS4	AB3(3)		4	9	4	BL4	BL3(3)
-	3	18	13	AS3	AB1(4)		3	10	3	BL3	BL1(4)
-	2	17	14	AS2	AB2(4)		2	11	2	BL2	BL2(4)
-	1	16	15	AS1	AB3(4)		1	12	1	BL1	BL3(4)
		CONN BLK AA†						CONN BLK B†		407B KTU	605A KTU‡
1		1	11	LK1	LK1(1)	1		41	27	R1	RC1(1)
2		2	12	LK2	LK2(1)	2		42	28	R2	RC2(1)
3		3	13	LK3	LK3(1)	3		43	29	R3	RC3(1)
4		4	14	LK4	LK1(2)	4		44	30	R4	RC1(2)
5		5	15	LK5	LK2(2)	5		45	31	R5	RC2(2)
6		6	16	LK6	LK3(2)	6		46	32	R6	RC3(2)
	6	16	17	LK6	LK1(3)		6	32	33	R6	RC1(3)
	5	15	18	LK5	LK2(3)		5	31	34	R5	RC2(3)
	4	14	19	LK4	LK3(3)		4	30	35	R4	RC3(3)
	3	13	20	LK3	LK1(4)		3	29	36	R3	RC1(4)
	2	12	21	LK2	LK2(4)		2	28	37	R2	RC2(4)
	1	11	22	LK1	LK3(4)		1	27	38	R1	RC3(4)

\* AB = "A" lead for video station; AS = "A" lead for audio station (use with Fig. 3).



66B3-50 connecting blocks furnished in 650A KSU.

‡ Connections shown utilize four 605A KTUs (maximum capability of 12 video-audio switches).  
 Number in parenthesis indicates which 605A KTU is used.

TABLE B (Cont)

**10-STATION INTERCOM VIDEO/AUDIO STATION BRIDGING ADDITIONAL LEAD STRAPPING  
ON-66B3-50 CONNECTING BLOCKS†**

ADDITIONAL STRAPPING REQUIRED FOR 10-STATION INTERCOM (V OPTION)						
LEAD DESIG	CONNECTING BLOCK A†		CONNECTING BLOCK AA †		CONNECTING BLOCK B†	
	STRAP		STRAP		STRAP	
	FROM	TO	FROM	TO	FROM	TO
VOR	3			50		
VOT	36	38				
TRC3 (4)	39	41				
R	43	45				
R	45	46				
VOR	50			50		
SS			43	44		
GV			47	48		
CG					39	40

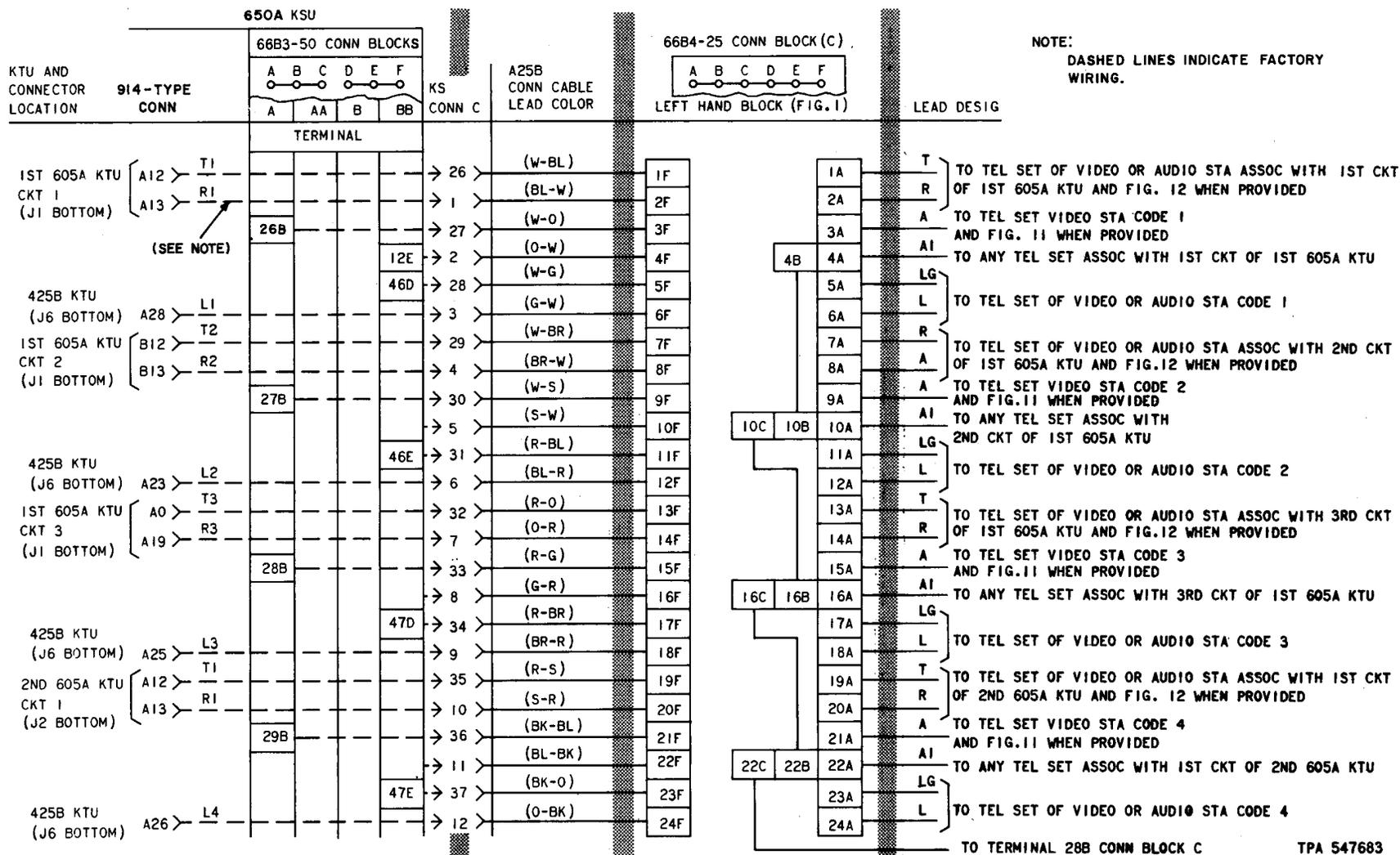
\* AB = "A" lead for video station; AS = "A" lead for audio station (use with Fig. 3).



66B3-50 connecting blocks furnished in 650A KSU.

‡ Connections shown utilize four 605A KTUs (maximum capability of 12 video-audio switches). Number in parenthesis indicates which 605A KTU is used.

**Note 1:** Use strapping in this portion of Table B when 421A KTUs and 417A KTU are provided externally for video-audio bridging and add-on conference respectively.



**Fig. 2—10-Station Single Link Intercom Connections (Sheet 1)**

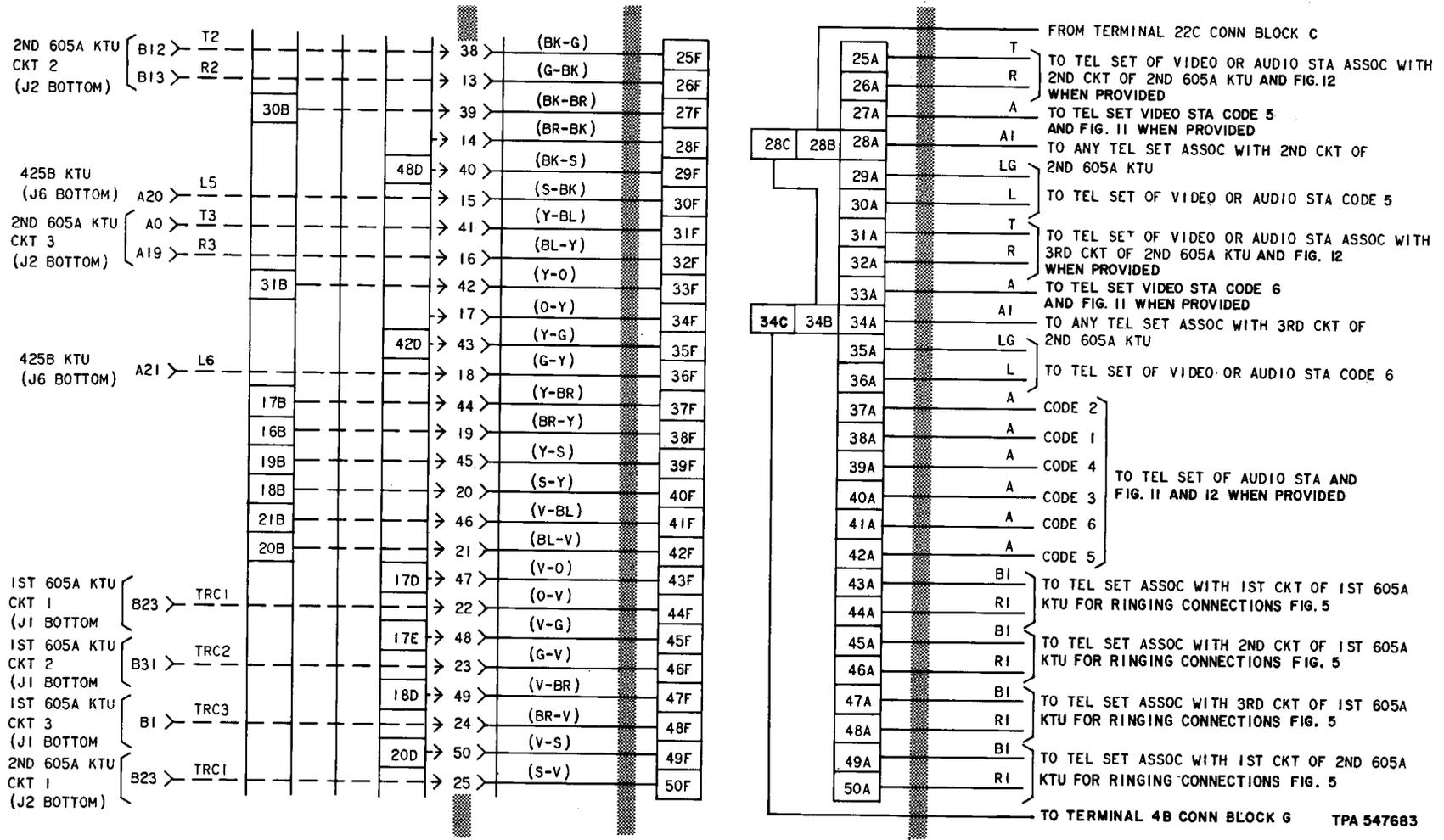
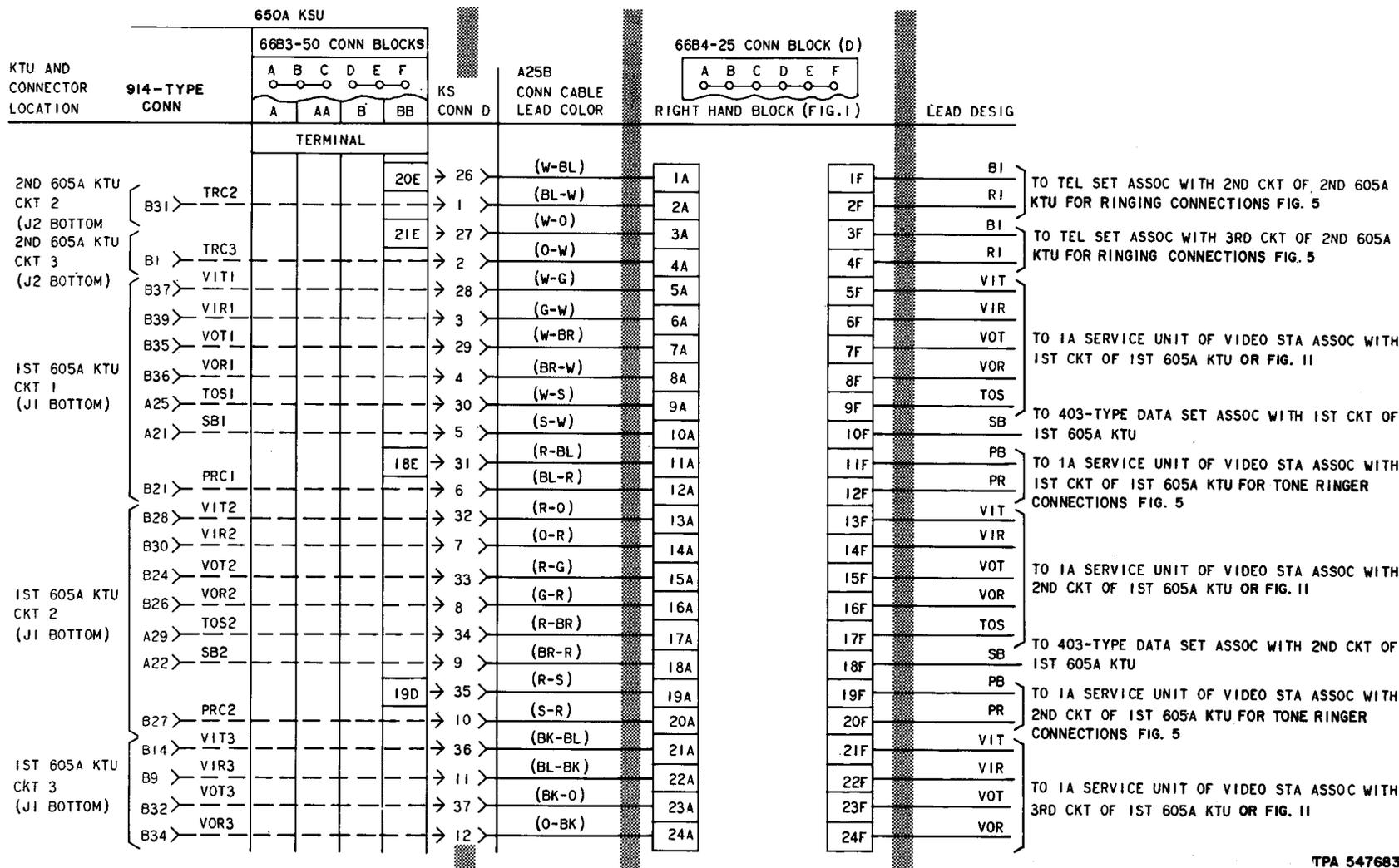
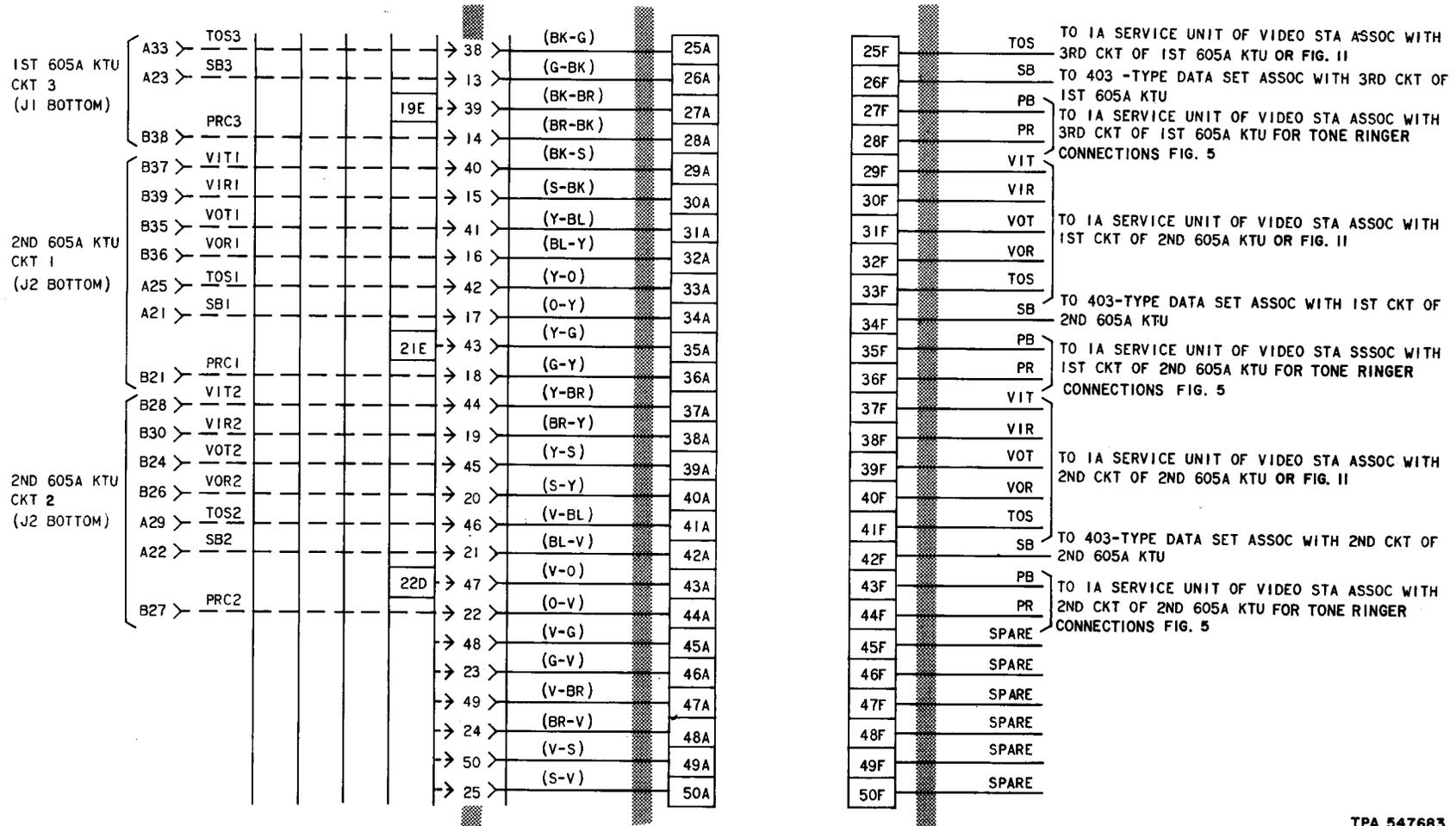


Fig. 2—10-Station Single Link Intercom Connections (Sheet 2)



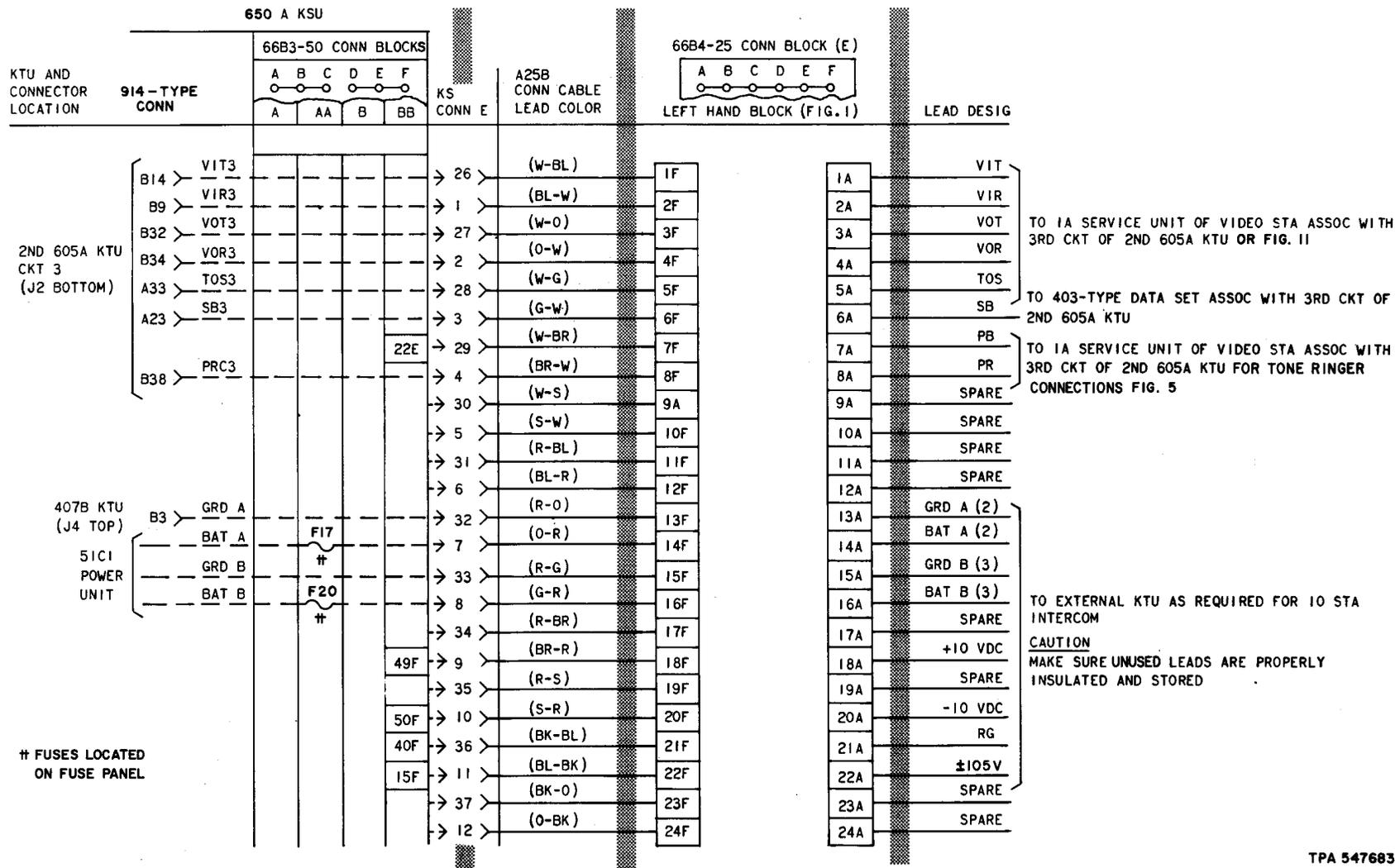
TPA 547683

**Fig. 2—10-Station Single Link Intercom Connections (Sheet 3)**



TPA 547683

Fig. 2—10-Station Single Link Intercom Connections (Sheet 4)



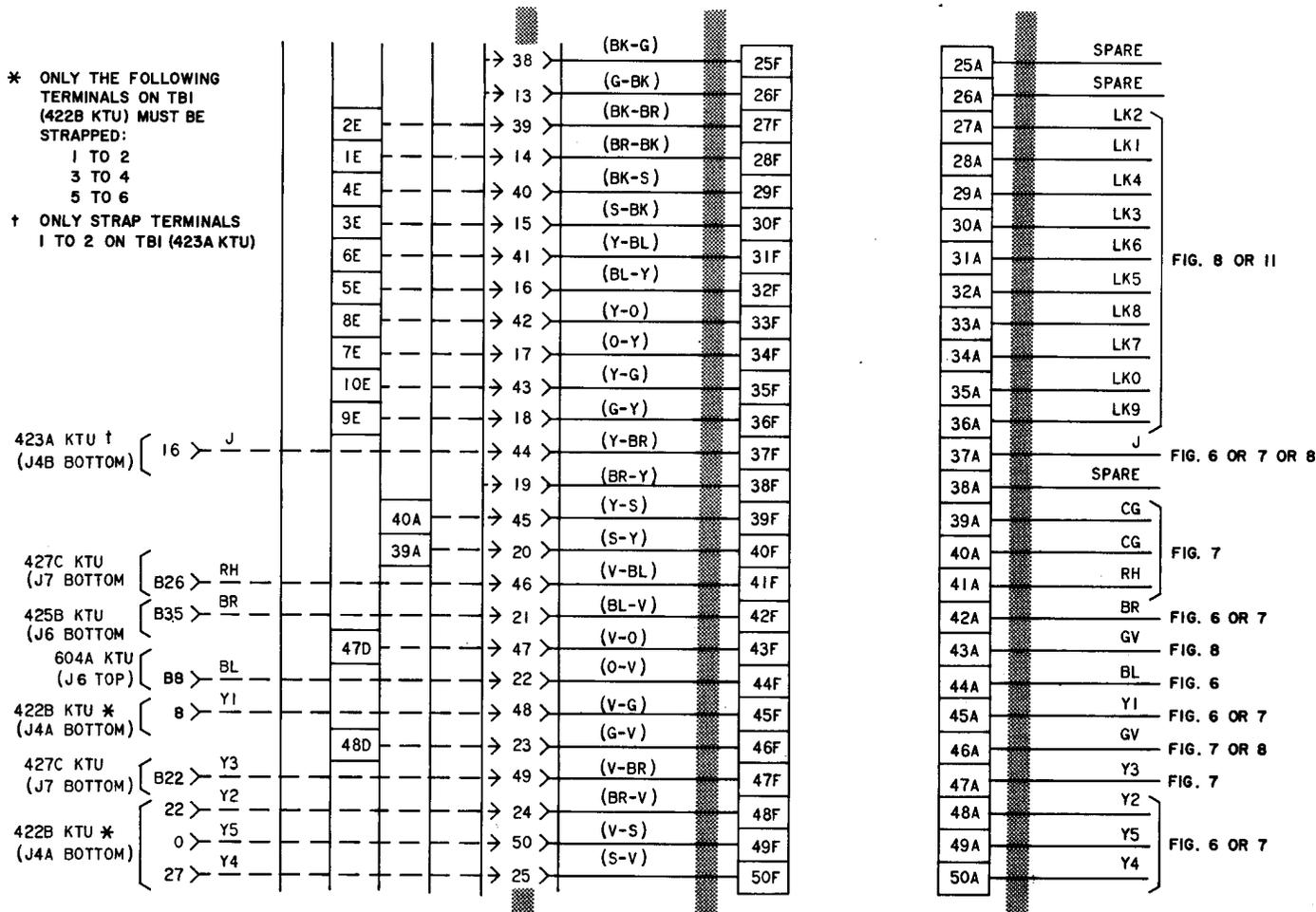


Fig. 2—10-Station Single Link Intercom Connections (Sheet 6)

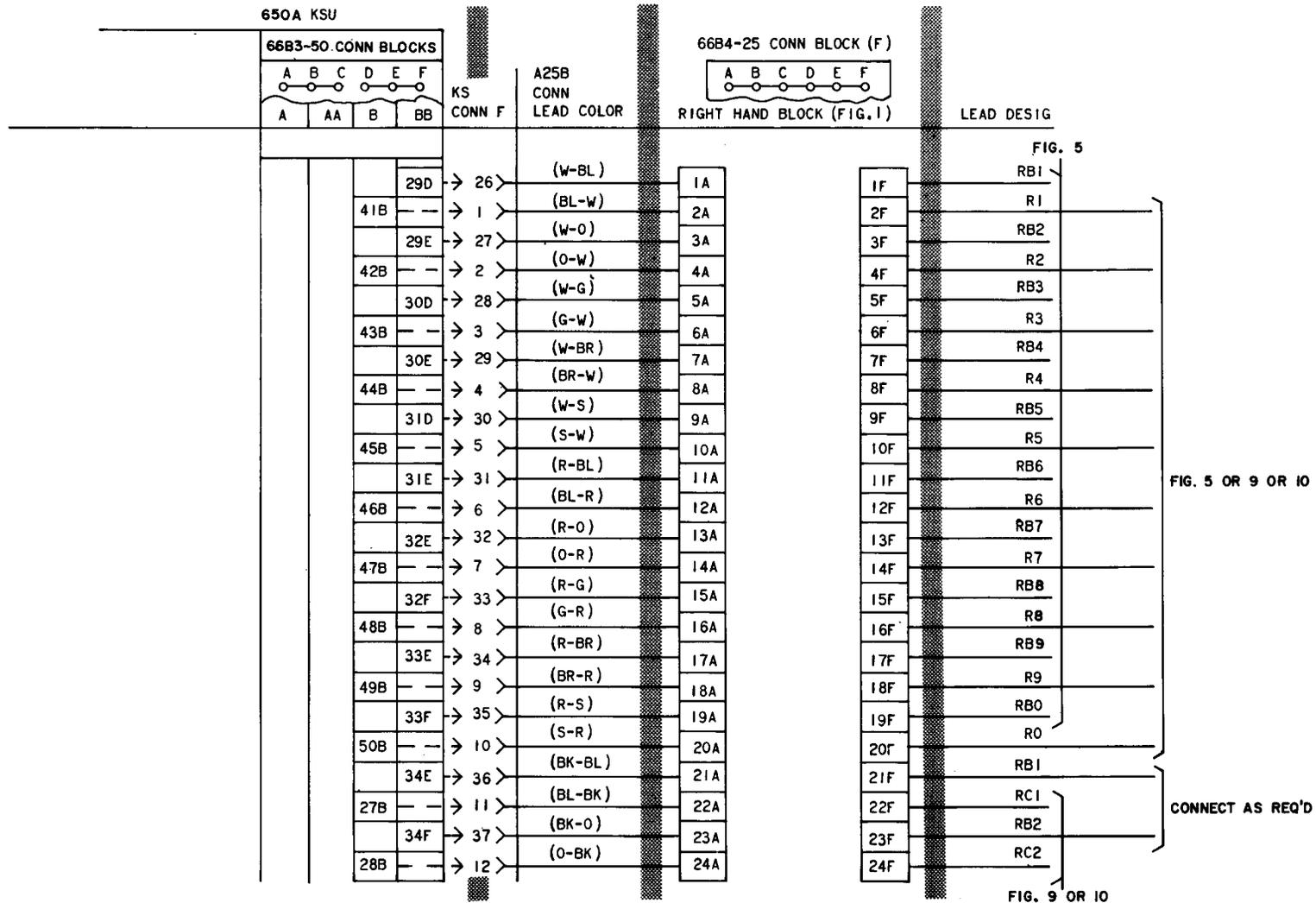
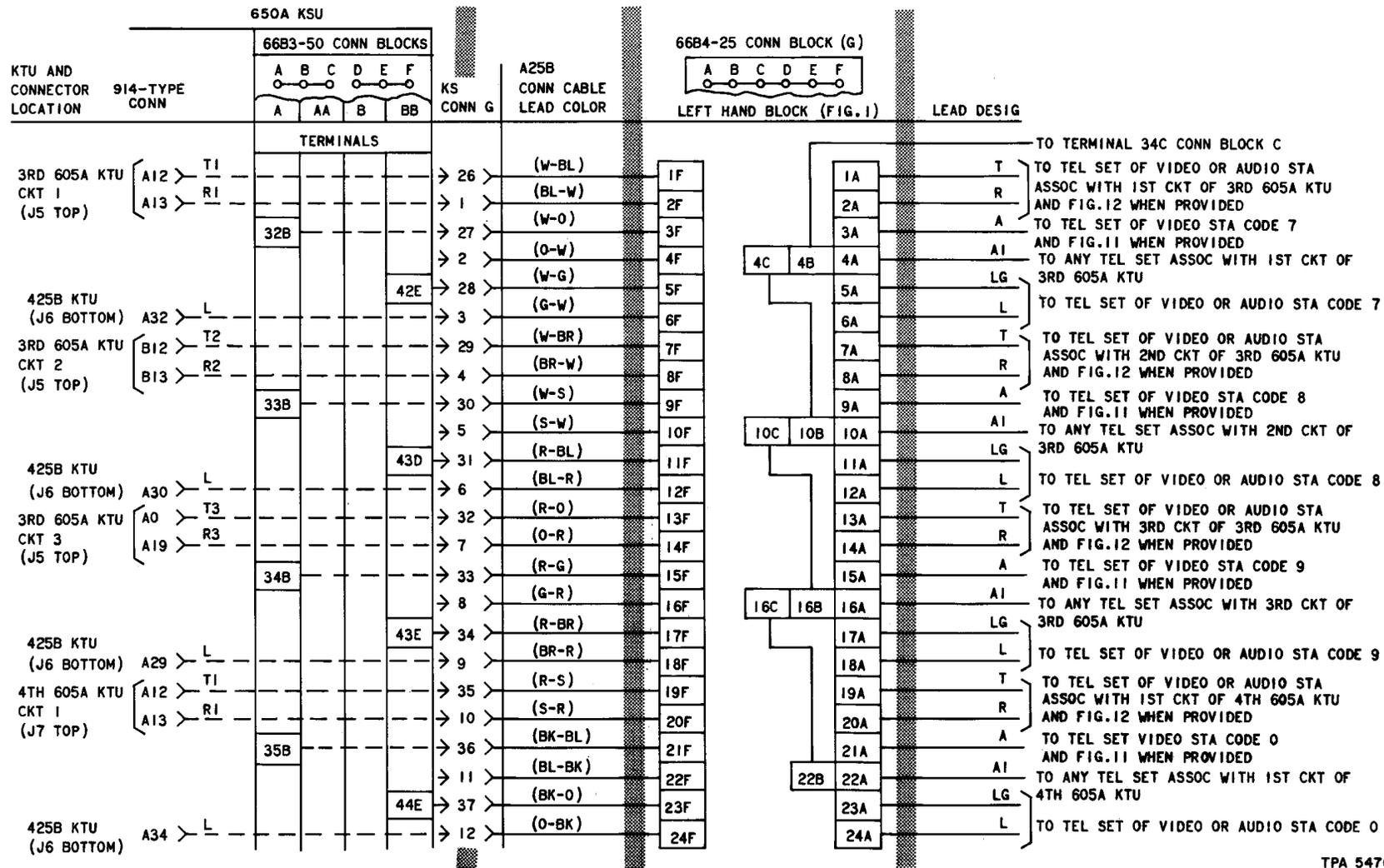


Fig. 2—10-Station Single Link Intercom Connections (Sheet 7)

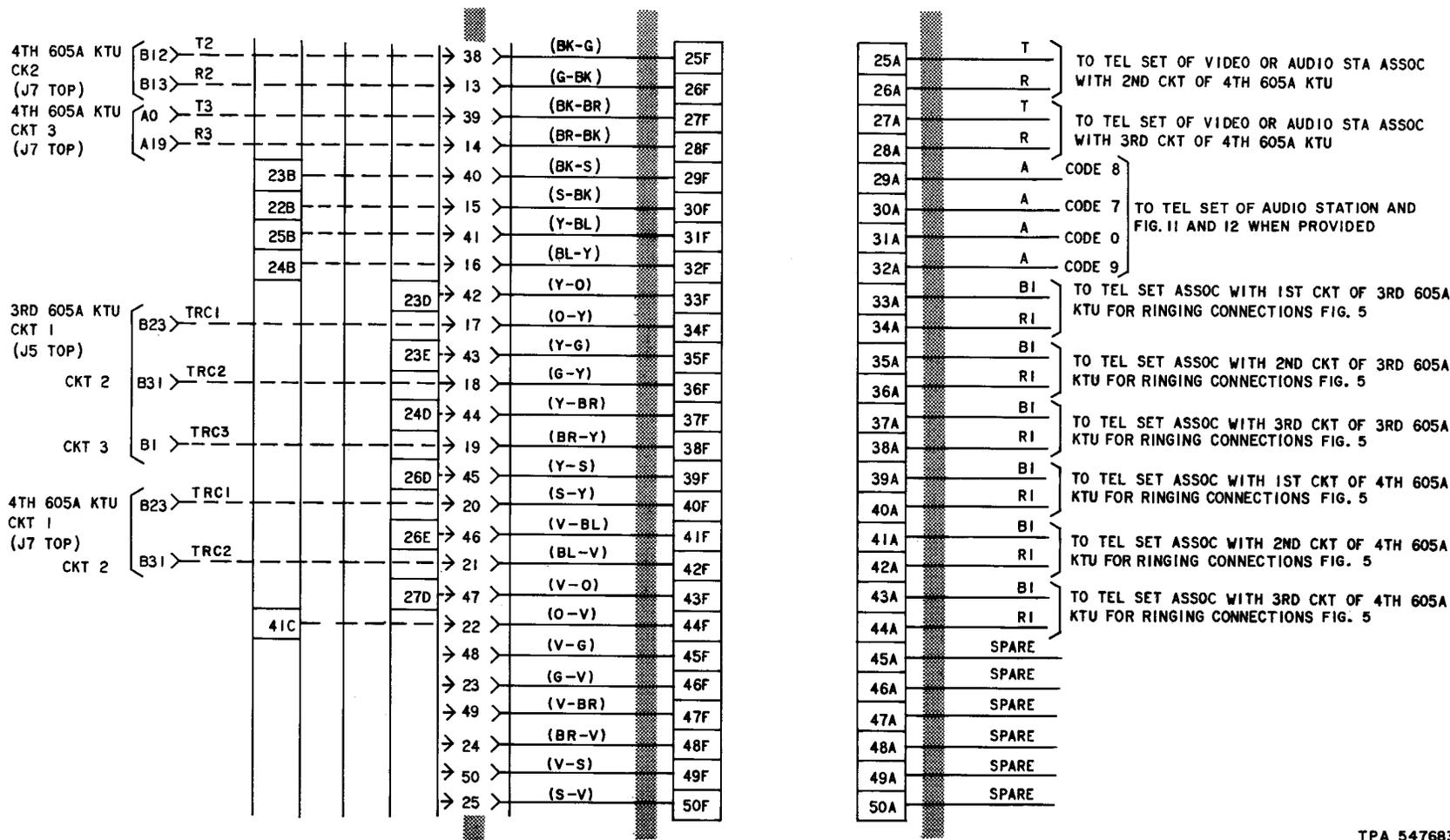
TPA 547683





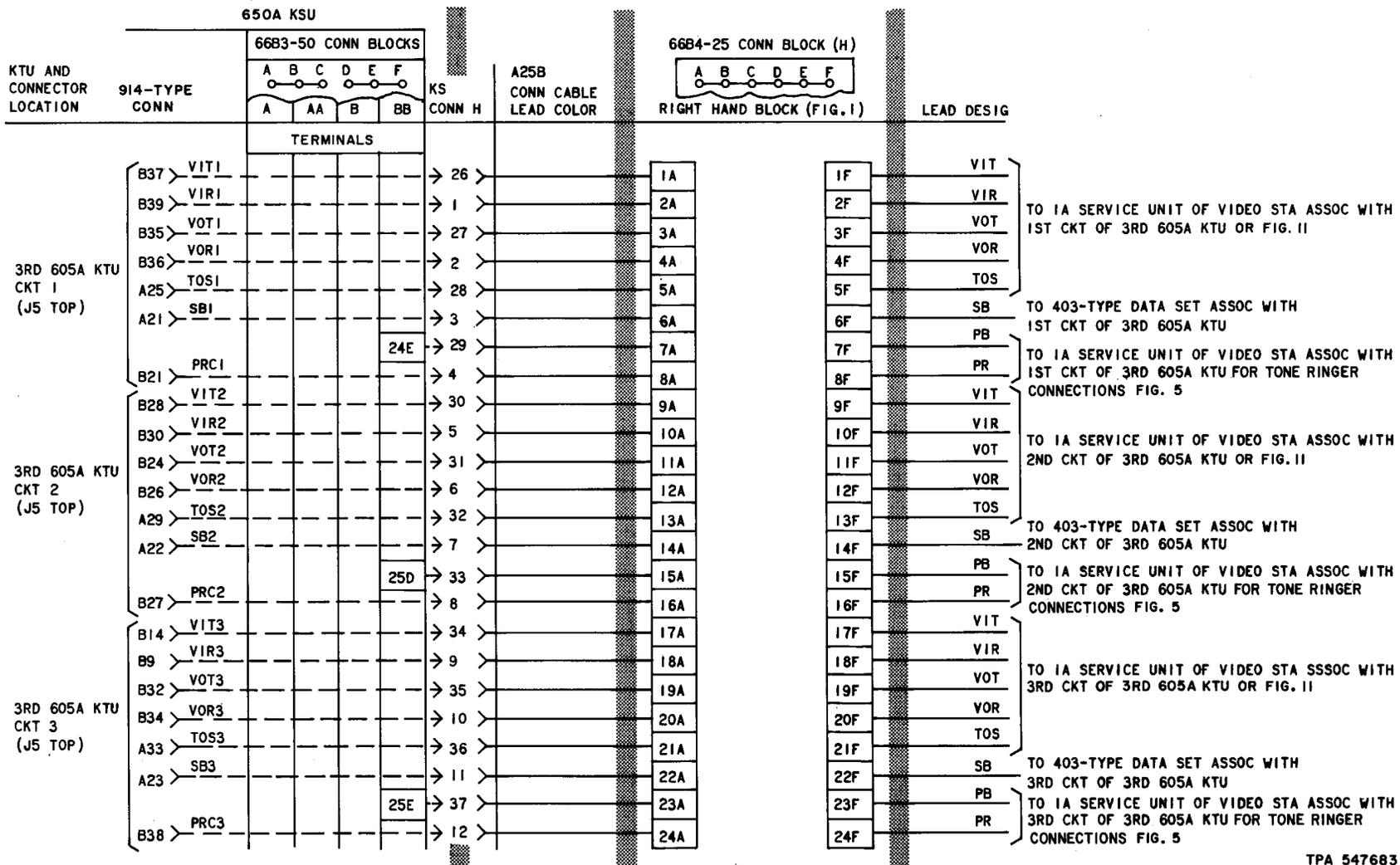
TPA 547683

**Fig. 2—10-Station Single Link Intercom Connections (Sheet 9)**



TPA 547683

Fig. 2—10-Station Single Link Intercom Connections (Sheet 10)



TPA 547683

Fig. 2-10-Station Single Link Intercom Connections (Sheet 11)



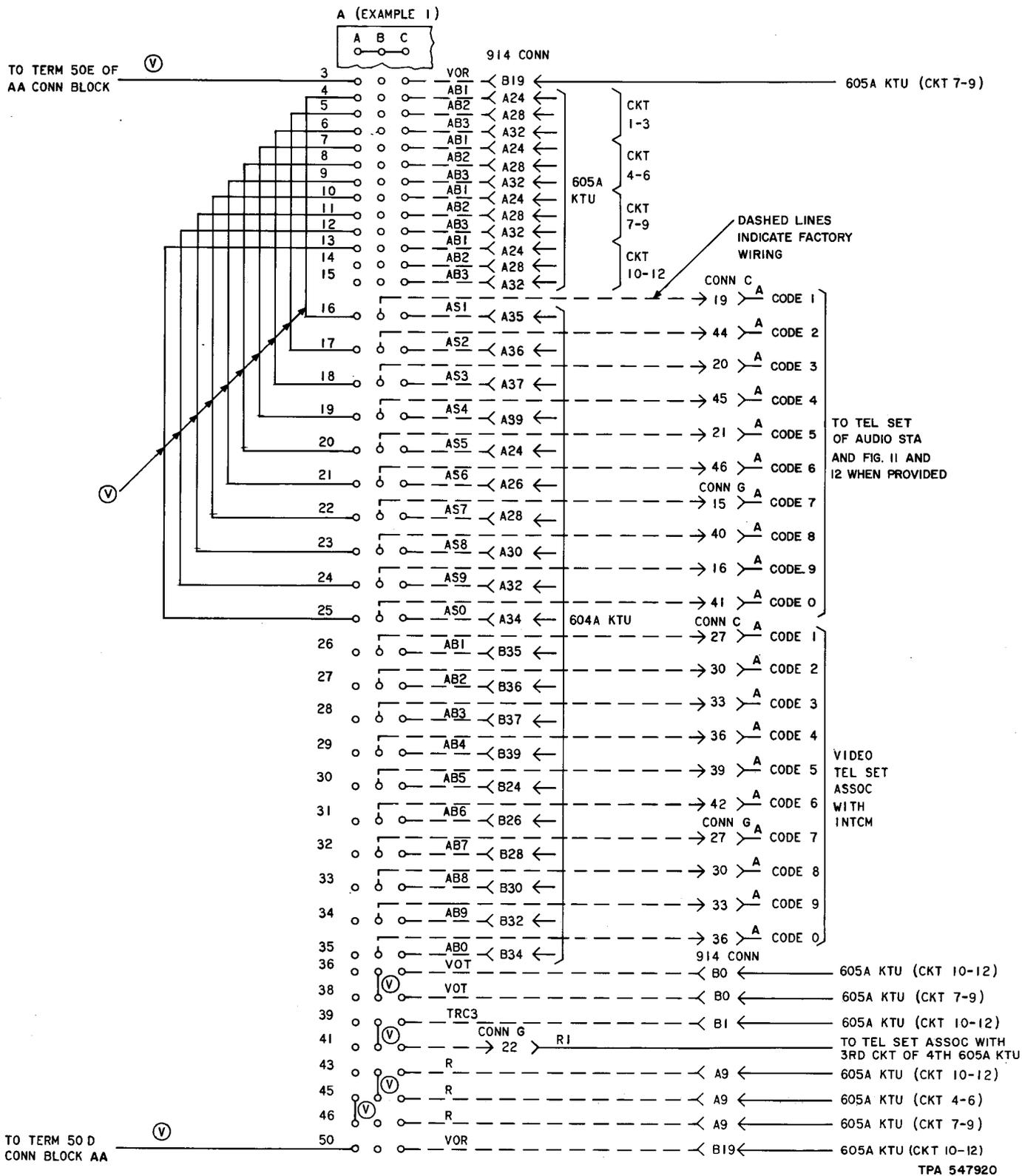


Fig. 3—Option and Service Straps on 66B3-50 Connecting Blocks in KSU (Sheet 1)

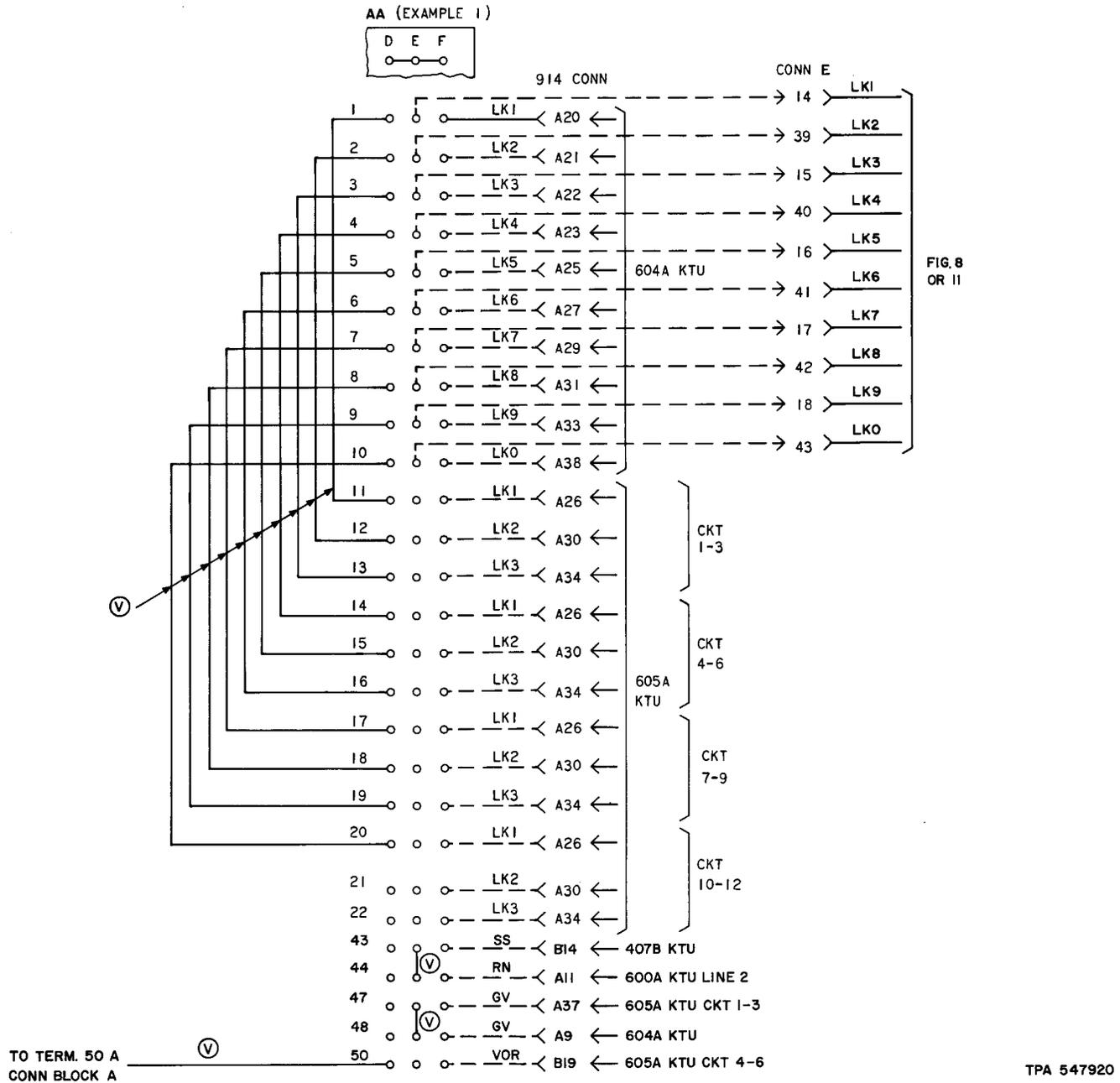


Fig. 3—Option and Service Straps on 66B3-50 Connecting Blocks in KSU (Sheet 2)



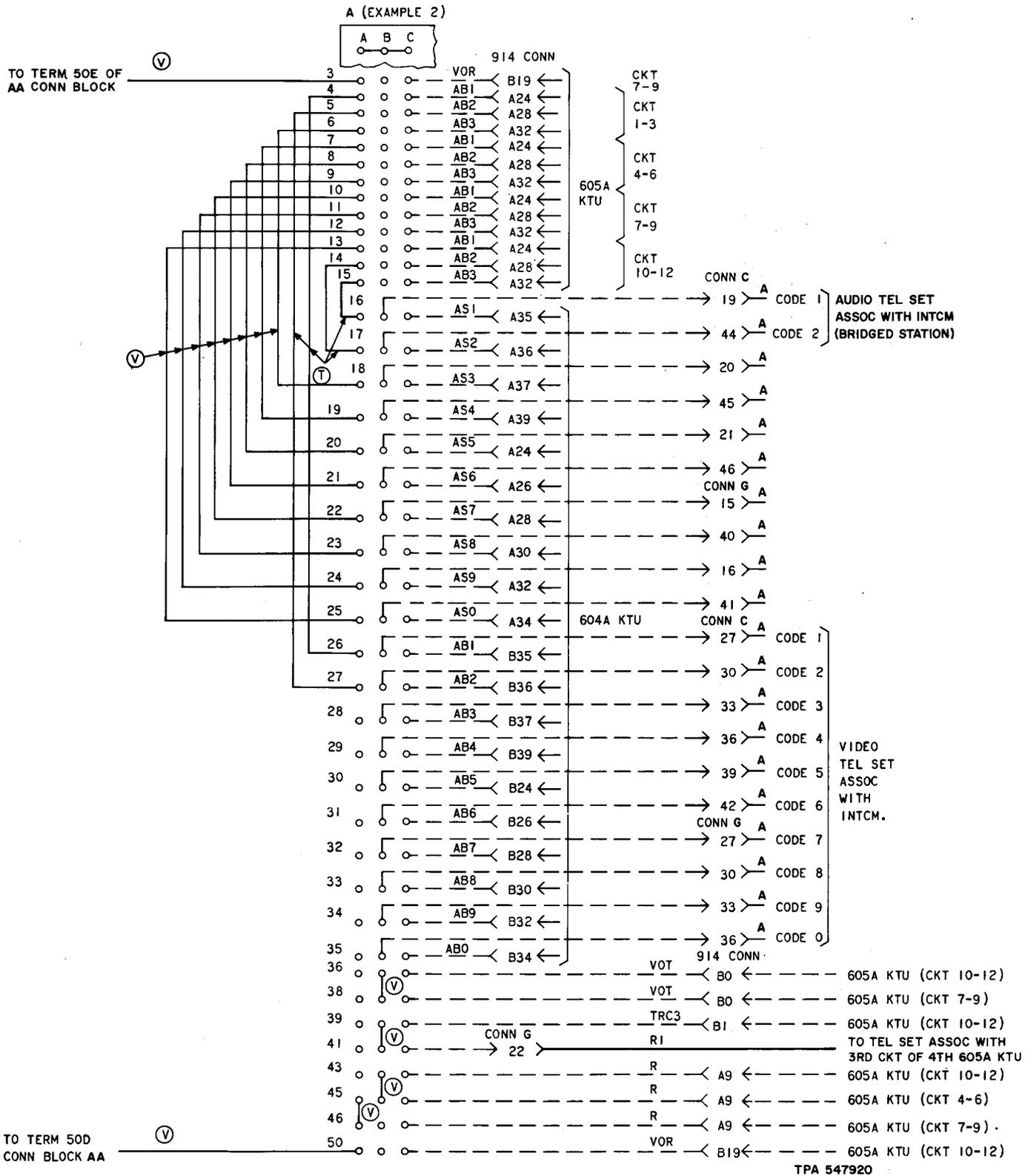


Fig. 3—Option and Service Straps on 66B3-50 Connecting Blocks in KSU (Sheet 4)

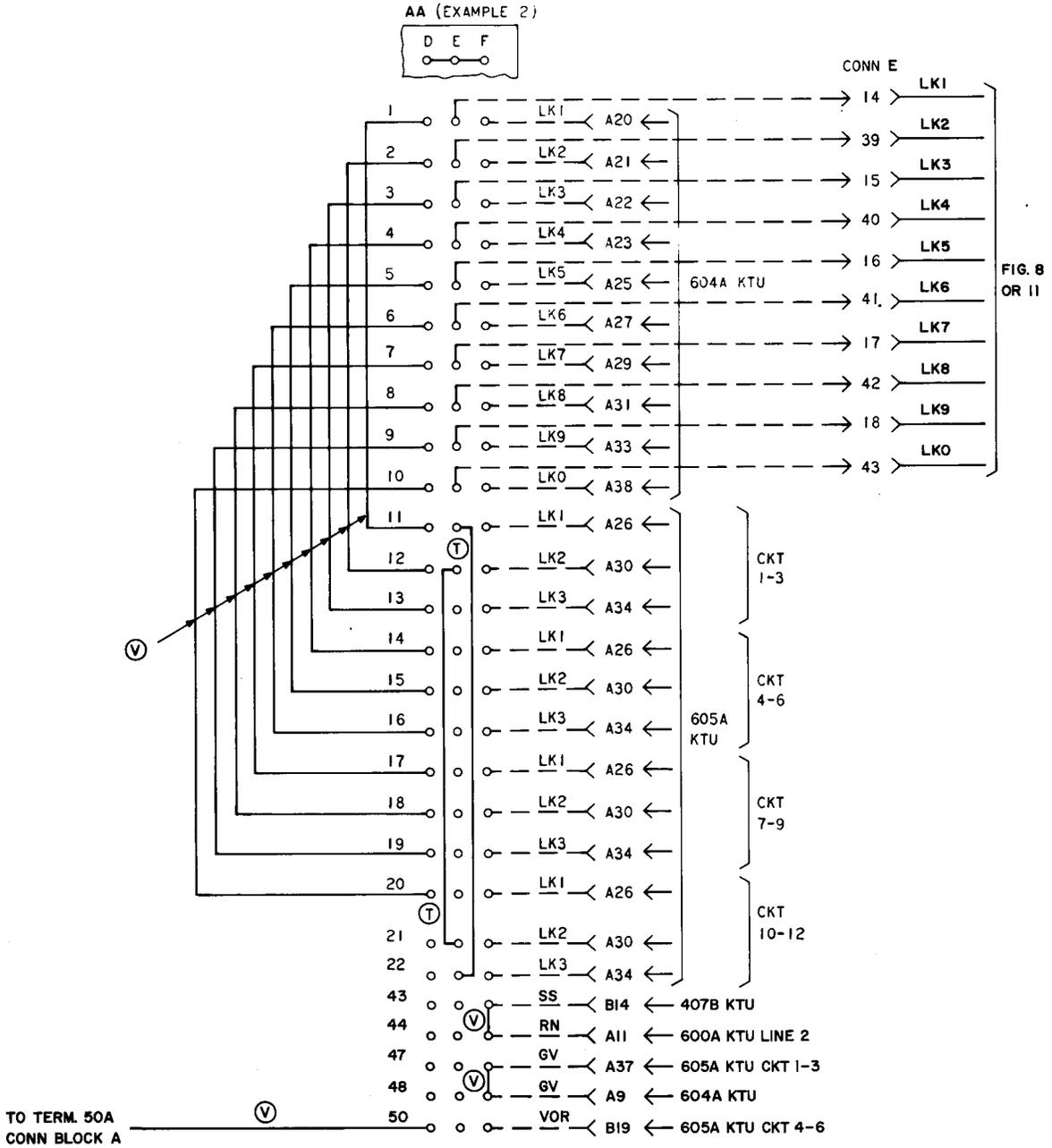


Fig. 3—Option and Service Straps on 66B3-50 Connecting Blocks in KSU (Sheet 5)

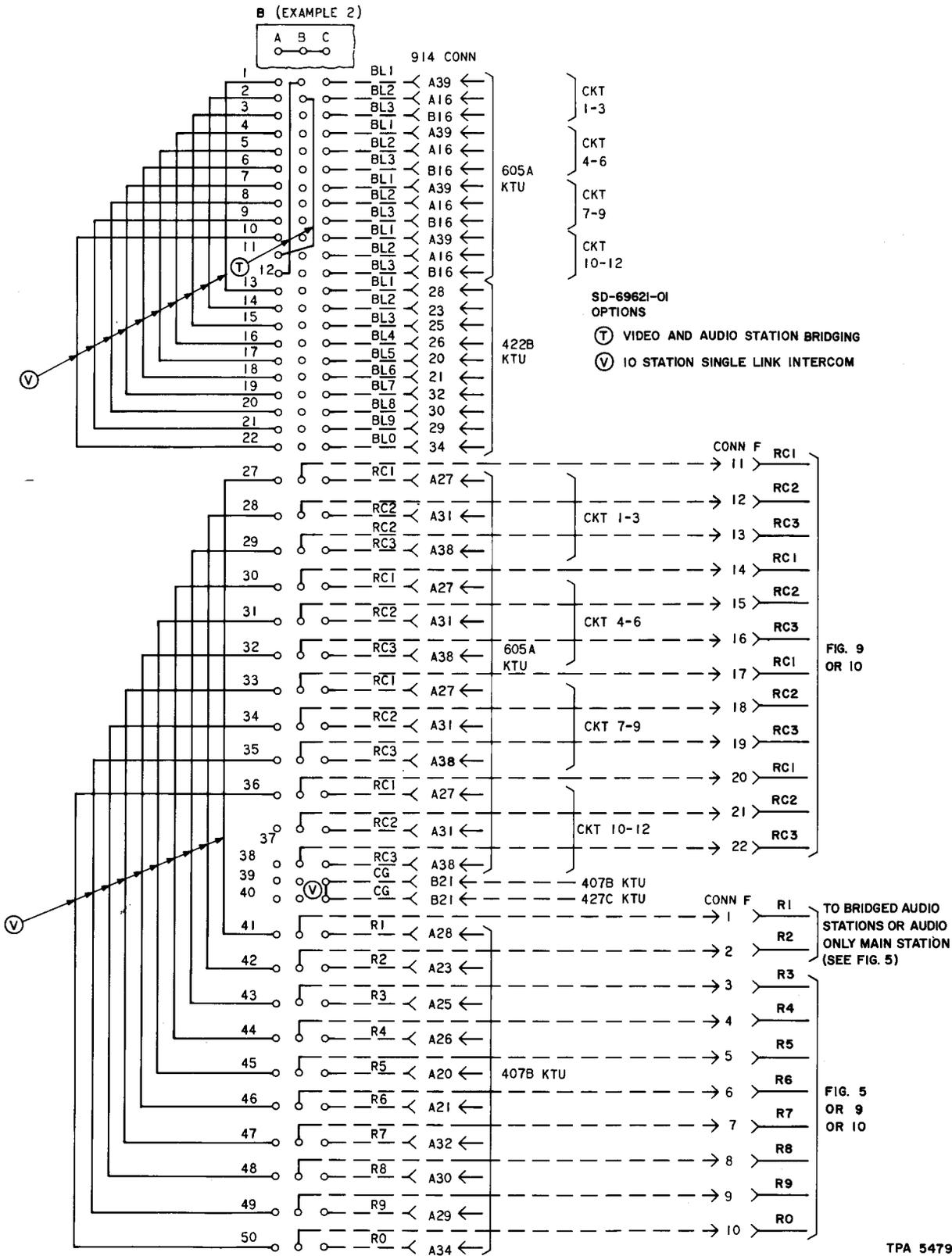
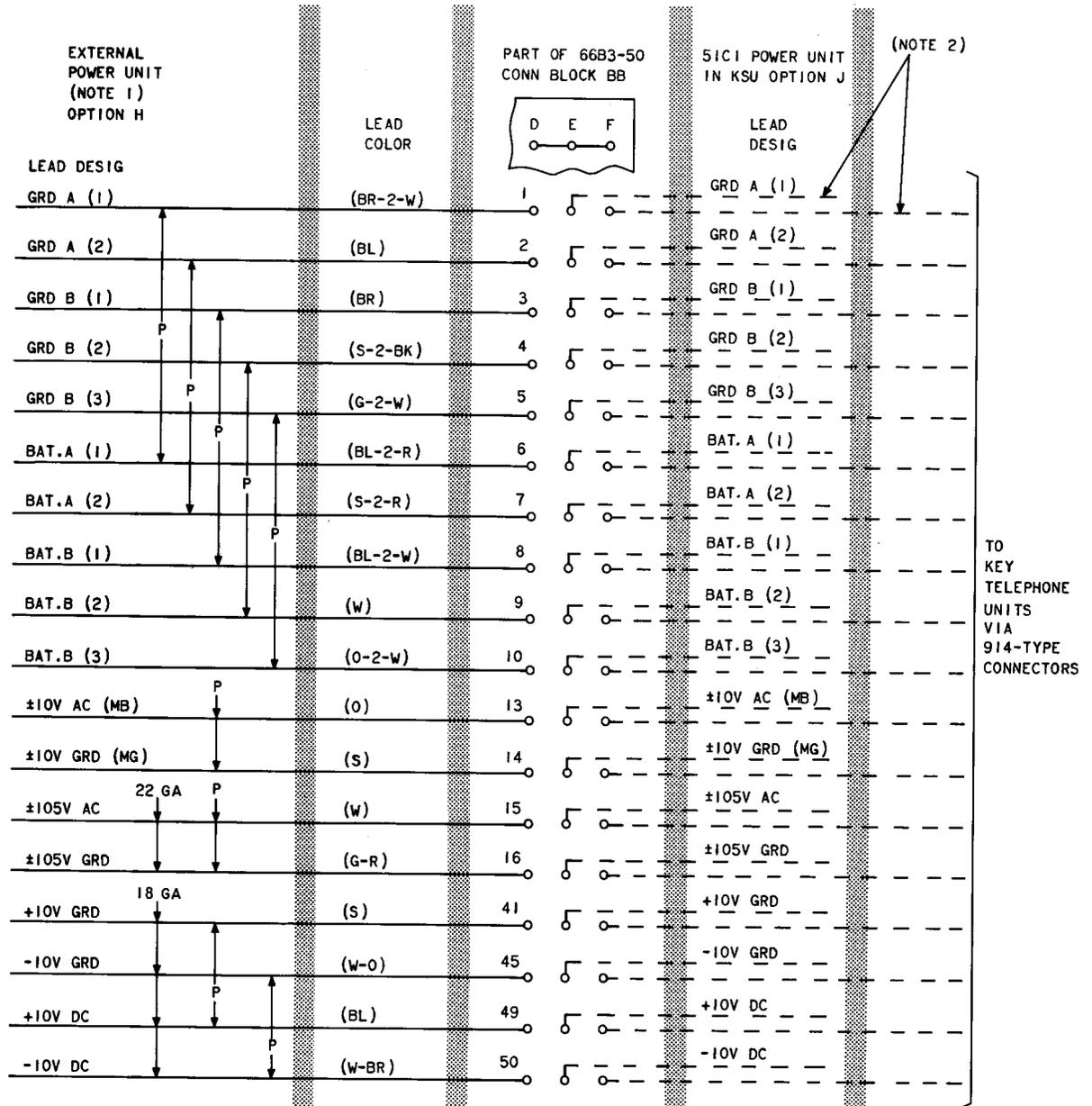
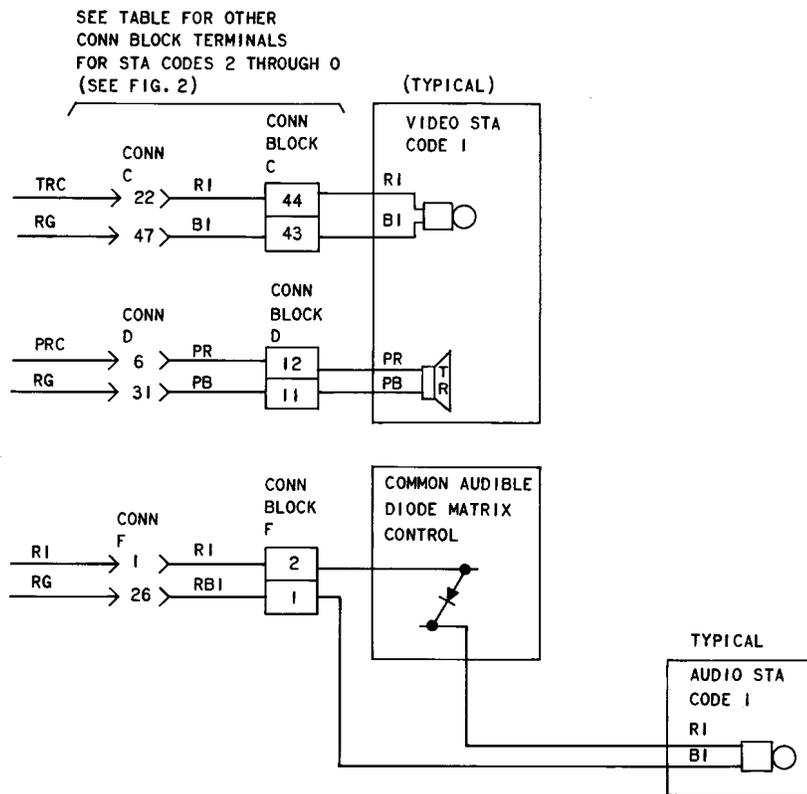


Fig. 3—Option and Service Straps on 66B3-50 Connecting Blocks in KSU (Sheet 6)



- NOTES:
1. THE 15 FT. WIRING HARNESS IS SUPPLIED WITH 650 AI KSU TO CONNECT AN EXTERNAL POWER UNIT.
  2. DASHED LINES INDICATE FACTORY WIRING.

Fig. 4—Internal and External Power Connections to 66B3-50 Connecting Blocks in KSU



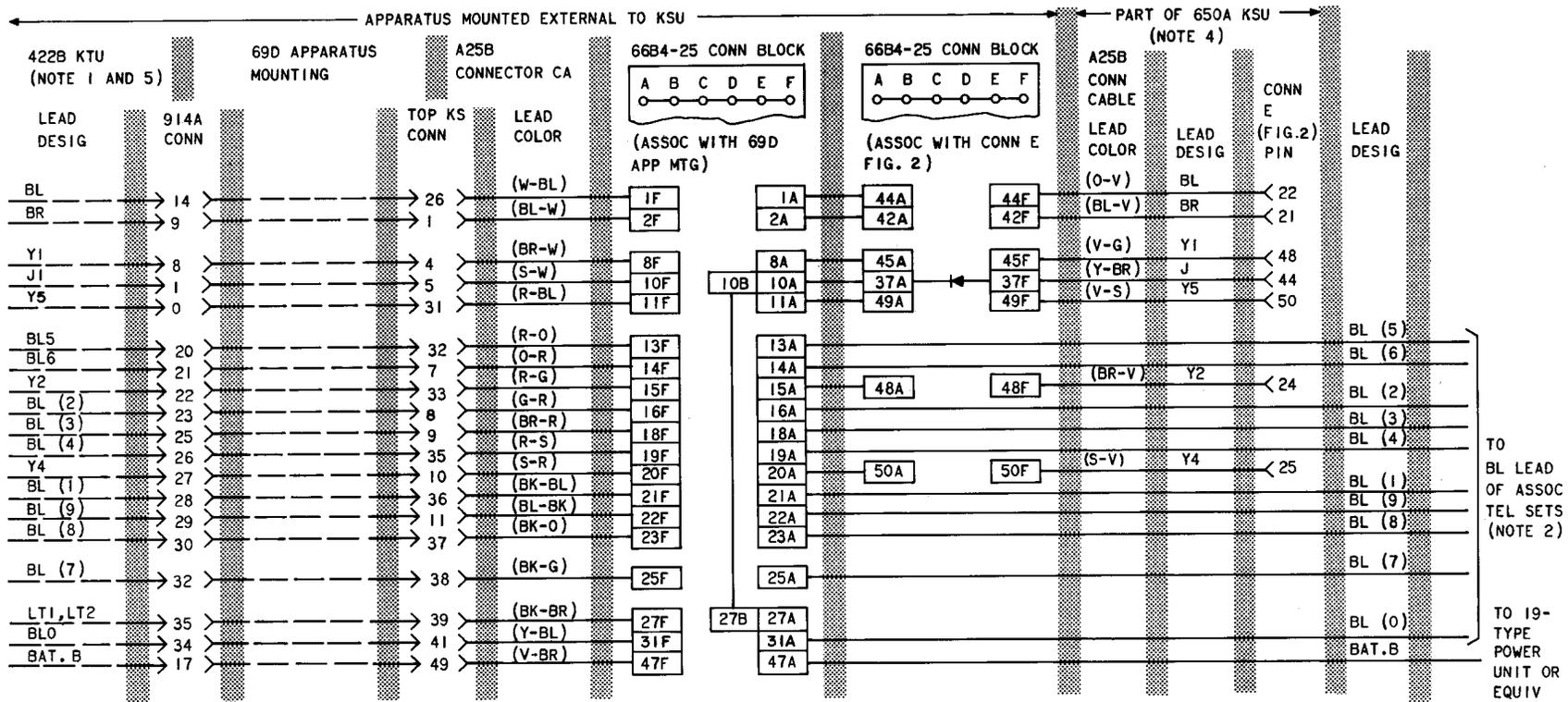
TABLE

CONN BLK	LEAD DESIG (FIG. 2)						STA CODE	LEAD DESIG (FIG. 2)						CONN BLK			
	R1	B1	PR	PB	R (-)	RB (-)		R1	B1	PR	PB	R (-)	RB (-)				
C	46	45					2	7	34	33					G		
D			20	19								8	7				H
F					4	3							14	13	F		
C	48	47					3	8	36	35					G		
D			28	27								16	15				H
F					6	5								16	15	F	
C	50	49					4	9	38	37					G		
D			36	35								24	23				H
F					8	7								18	17	F	
D	2	1					5	0	40	39					G		
D			44	43								32	31				H
F					10	9								20	19	F	
D	4	3					6	*	42	41					G		
E			8	7								40	39				H
F					12	11											
							*		44	43					G		
												48	47				H

\* FOR BRIDGED STATIONS

TPA 548293

Fig. 5—Intercom Audible Signaling Connections



- NOTES:
1. DASHED LEADS INDICATE FACTORY WIRING.
  2. CONNECT BL LEADS TO STATION HAVING THE SAME NUMERICAL SUFFIX.
  3. A 446F DIODE MUST BE INSTALLED IN STATION TEL SET AS SHOWN.
  4. TERMINALS 4 AND 6 OF TBI MUST BE STRAPPED ON THE 423A KTU IN THE KSU (R OPTION SD-69567-01)
  5. TERMINALS 6 AND 8 OF TBI MUST BE STRAPPED ON THE 422B KTU WHICH IS EXTERNALLY MOUNTED (R OPTION SD-69567-01).
  6. THIS OPTION AGREES WITH SD-69621-01
  7. REMOVE STRAP BETWEEN 43 AND 44 ON CONNECTING BLOCK AA WHEN Ⓢ OPTION IS PROVIDED.
  8. Ⓢ OPTION CANNOT BE PROVIDED WITH OPTION (M) OR (K).

OPTION:  
 Ⓢ STATION BUSY TONE (NOTE 8).

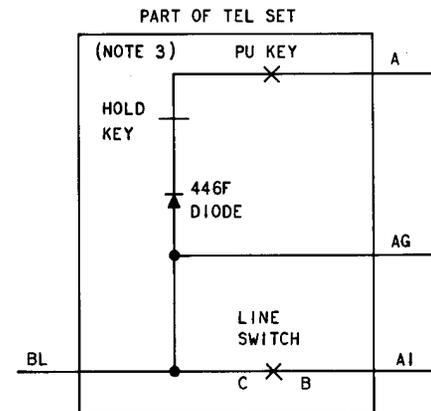
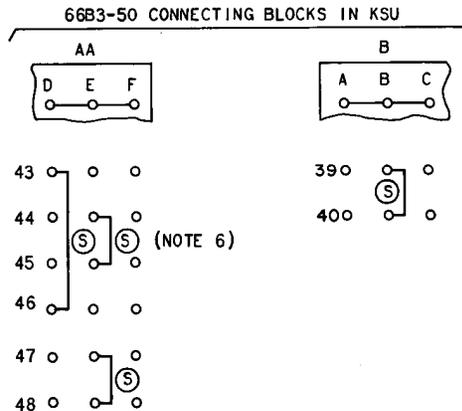
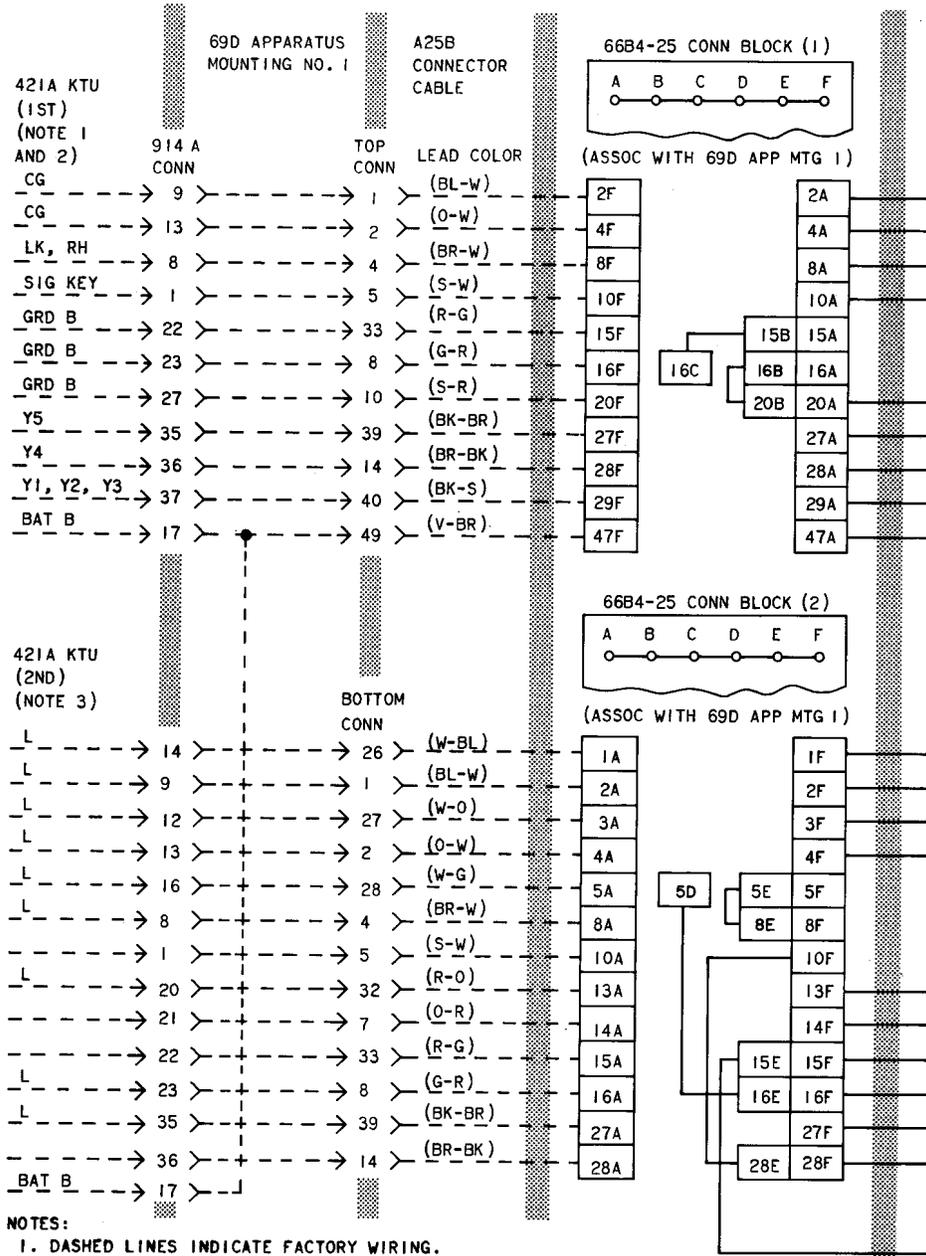


Fig. 6—Connections for Station Busy Tone Using Externally Mounted 422B KTU (Read Notes)

APPARATUS MOUNTED EXTERNAL TO KSU



NOTES:

1. DASHED LINES INDICATE FACTORY WIRING.
2. STRAP 1 TO 2 ON TBI TERMINAL STRIP 1ST 421A KTU.
3. STRAP 1 TO 2 AND 7 TO 8 ON TBI TERMINAL STRIP 2ND 421A KTU.
4. STRAP 7 TO 8 ON TBI TERMINAL STRIP 3RD 421A KTU.
5. TEL SET RINGERS TO BE RUNG BY THE DIODE MATRIX SHOULD BE CONNECTED WITHOUT THE RINGER CAPACITOR.
6. 446F DIODES MUST BE ORDERED SEPARATELY AND INSTALLED AS REQUIRED.
7. THIS OPTION AGREES WITH SD-69621-01.
8. MAKE SURE STRAPS BETWEEN TERMINALS 47 AND 48 ON CONN BLOCK AA AND 39 AND 40 ON CONN BLOCK B ARE REMOVED WHEN (R) OPTION IS PROVIDED.
9. (R) OPTION REDUCES THE NUMBER OF AVAILABLE STATION CODES BY ONE WHEN PROVIDED.

TPA 547739-1

Fig. 7—Connections for Single Key, Preset Audio Only Conference Using Externally Mounted KTUs (Sheet 1)

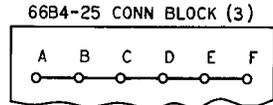
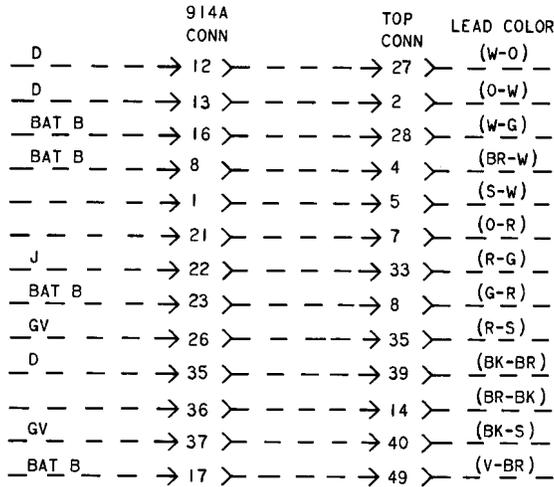


APPARATUS MOUNTED EXTERNAL TO KSU

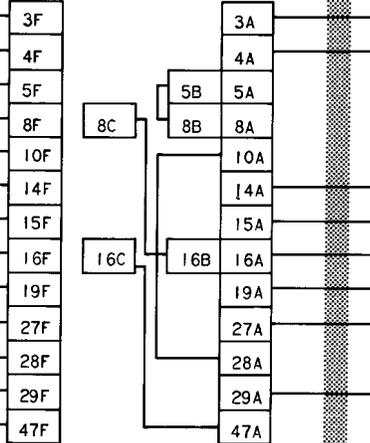
421A KTU  
3RD  
(NOTE 4)

69D APPARATUS  
MOUNTING NO. 2

A25B  
CONNECTOR  
CABLE



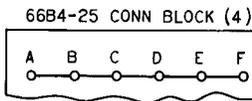
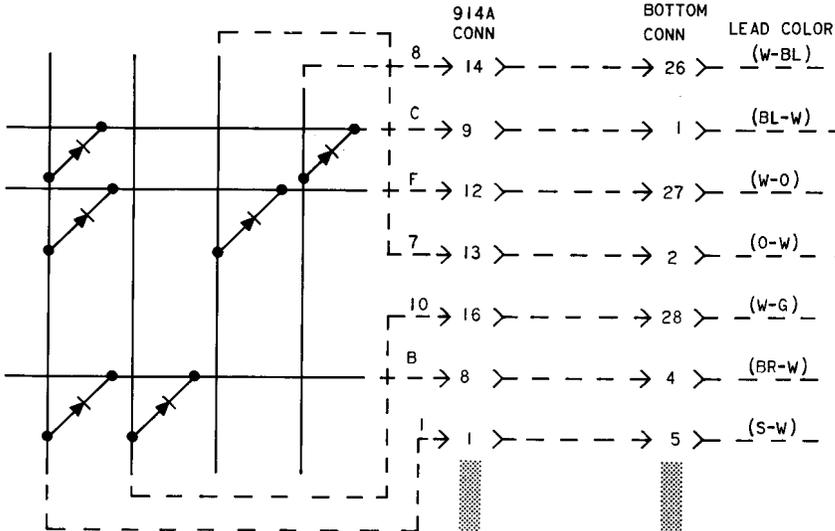
(ASSOC WITH 69D APP MTG 2)



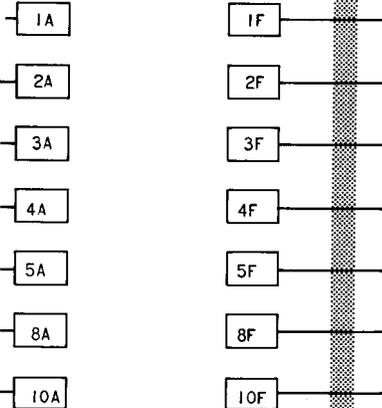
404A KTU  
(NOTES 5 AND 6)

69D APPARATUS  
MOUNTING

A25B  
CONNECTOR  
CABLE

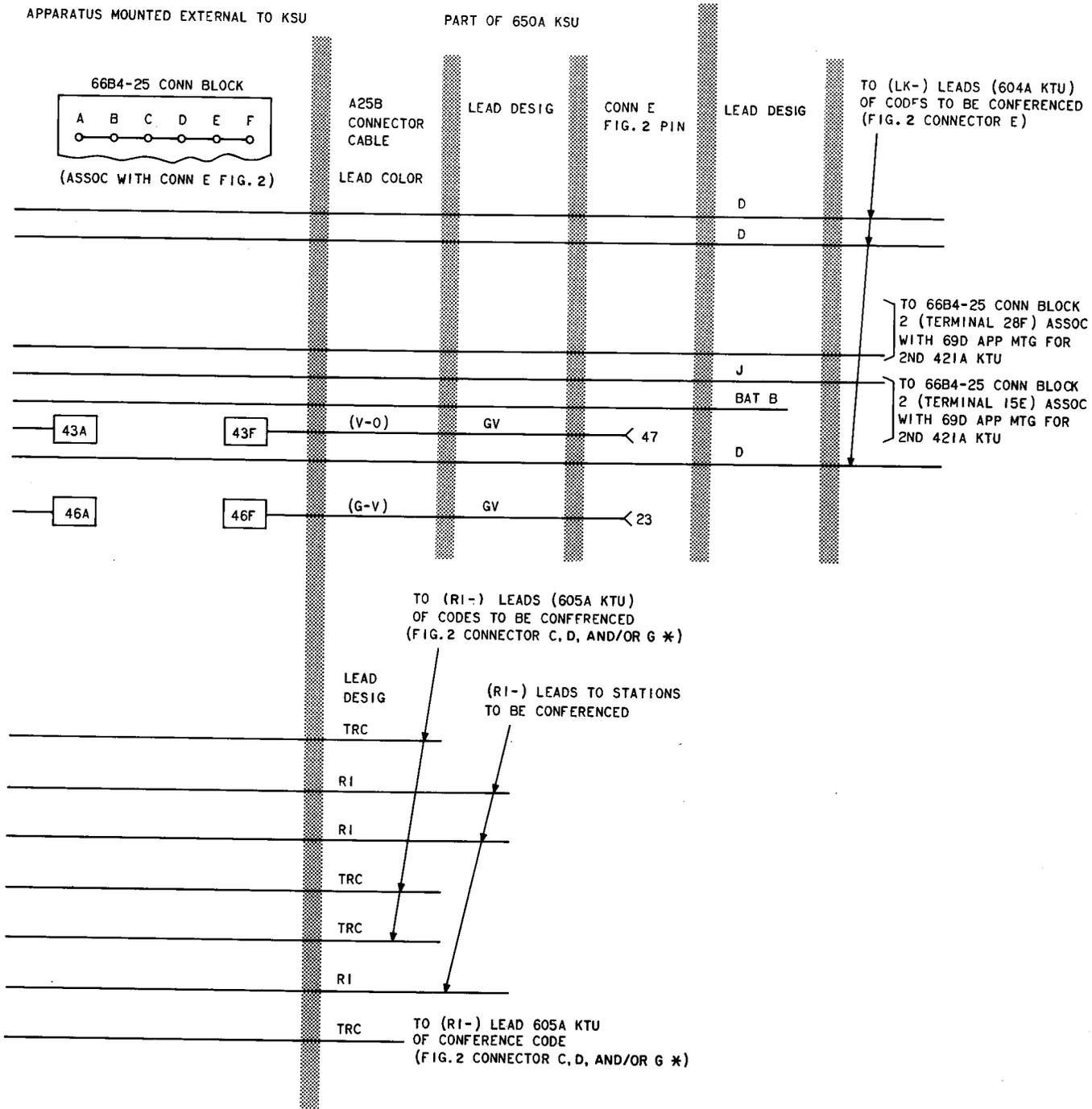


(ASSOC WITH 69D APP MTG 2)



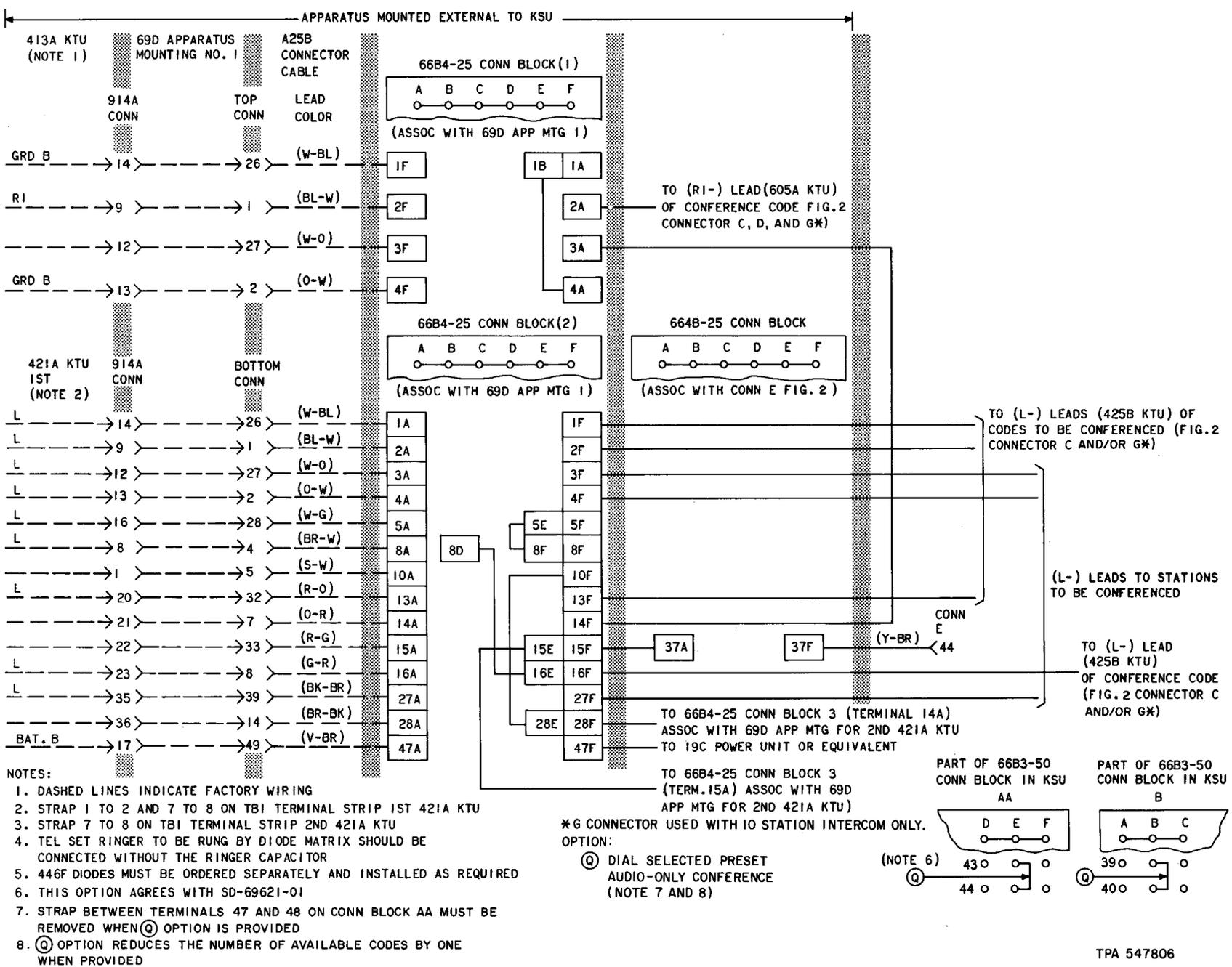
TPA 547739-2

Fig. 7—Connections for Single Key, Preset Audio Only Conference Using Externally Mounted KTUs (Sheet 3)



TPA 547739

Fig. 7—Connections for Single Key, Preset Audio Only Conference Using Externally Mounted KTUs (Sheet 4)



NOTES:

1. DASHED LINES INDICATE FACTORY WIRING
2. STRAP 1 TO 2 AND 7 TO 8 ON TBI TERMINAL STRIP 1ST 421A KTU
3. STRAP 7 TO 8 ON TBI TERMINAL STRIP 2ND 421A KTU
4. TEL SET RINGER TO BE RUNG BY DIODE MATRIX SHOULD BE CONNECTED WITHOUT THE RINGER CAPACITOR
5. 446F DIODES MUST BE ORDERED SEPARATELY AND INSTALLED AS REQUIRED
6. THIS OPTION AGREES WITH SD-69621-01
7. STRAP BETWEEN TERMINALS 47 AND 48 ON CONN BLOCK AA MUST BE REMOVED WHEN ⓐ OPTION IS PROVIDED
8. ⓐ OPTION REDUCES THE NUMBER OF AVAILABLE CODES BY ONE WHEN PROVIDED

Fig. 8—Connections for Dial Selected, Preset Audio Only Conference Using Externally Mounted KTUs (Sheet 1)

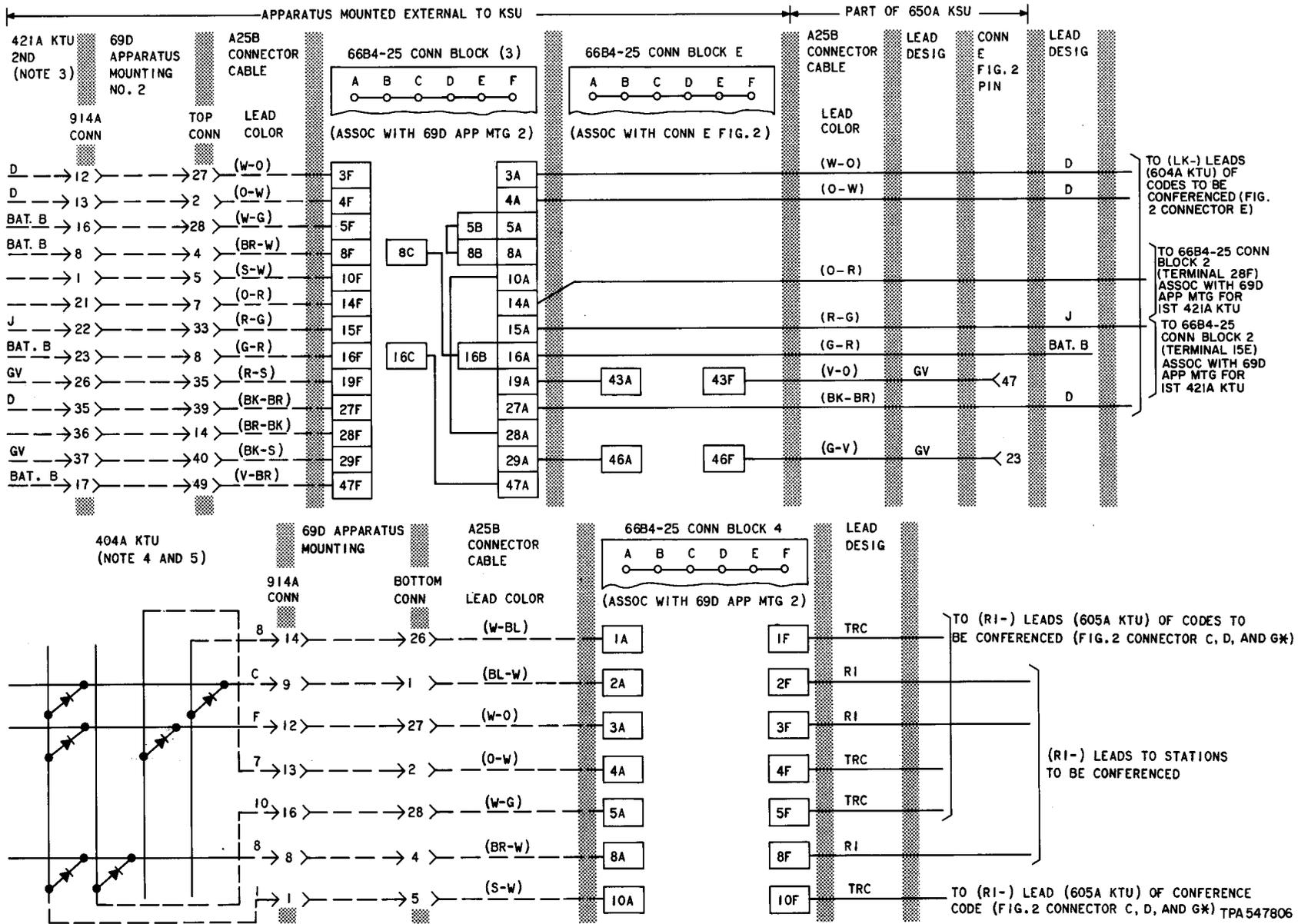
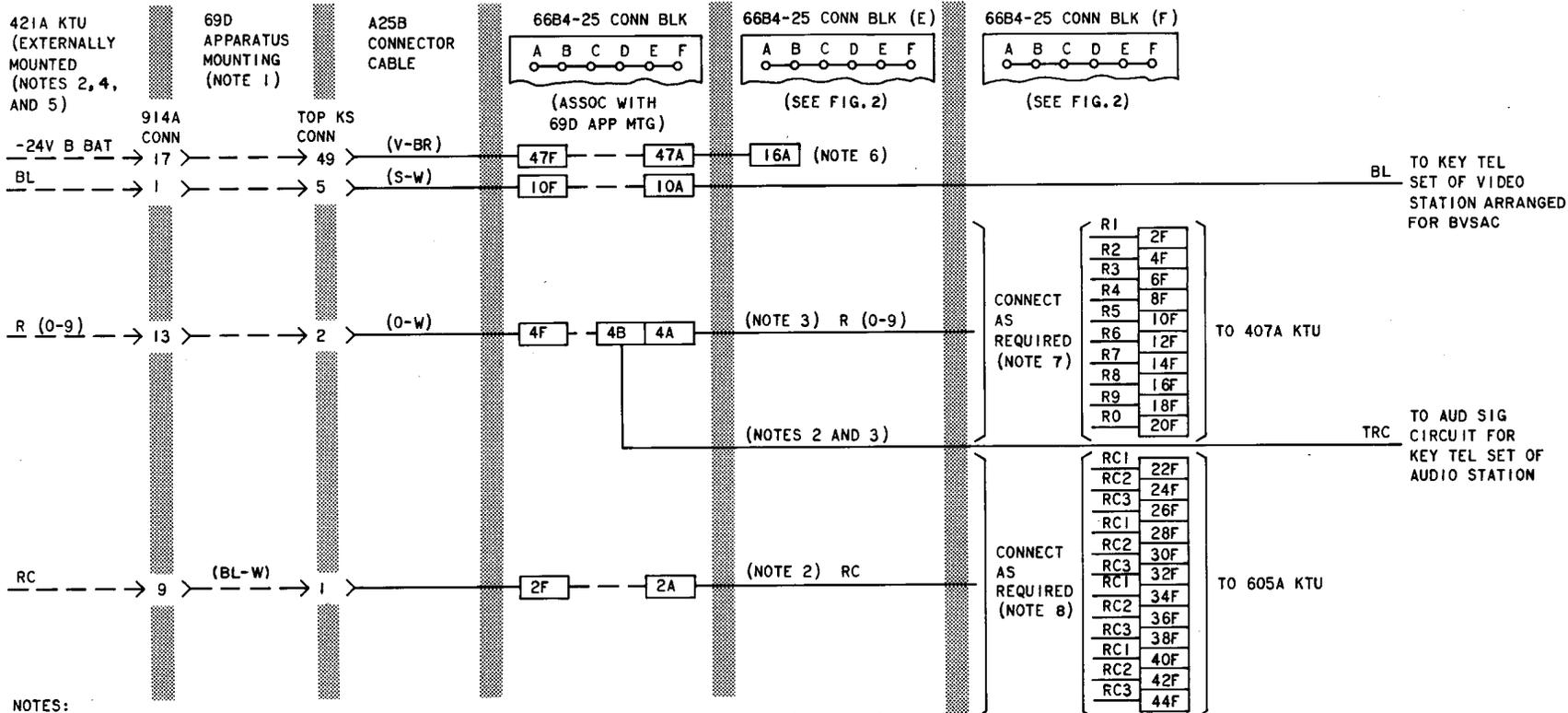
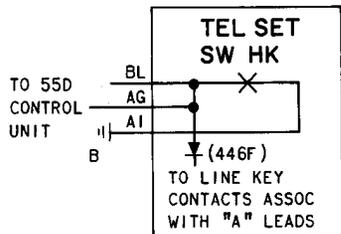


Fig. 8—Connections for Dial Selected, Preset Audio Only Conference Using Externally Mounted KTUs (Sheet 2)

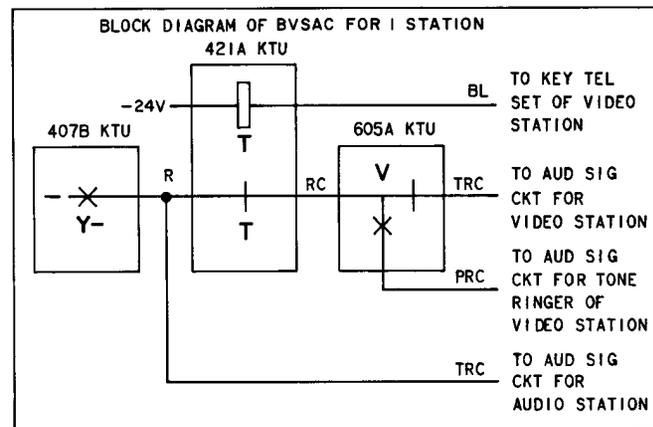


**NOTES:**

1. DASHED LINES INDICATE FACTORY FURNISHED WIRING.
2. WIRE FOR VIDEO-AUDIO STATION BRIDGING. THE AUDIO-VIDEO SWITCH IN THE 605A KTU ISOLATES THE RINGING CIRCUITS IN THE VIDEO STATION.
3. THE MAXIMUM ALLOWABLE LENGTH OF UNPAIRED RINGING LEAD IS TEN FEET.
4. A 446F DIODE MUST BE INSTALLED IN THE STATION SET IN THE FOLLOWING MANNER:
5. PLACE W OPTION STRAP ON TBI (421A KTU) BETWEEN TERMINALS 1 AND 2.
6. TOTAL ALLOWABLE EXTERNAL LOAD ON INTERNAL POWER SUPPLY IS 350 MA FOR 10-STATION INTERCOM ARRANGEMENT. IF THIS IS EXCEEDED AN EXTERNAL POWER UNIT MUST BE PROVIDED.
7. CONNECT TO "R" LEAD OF STATION CODE ARRANGED FOR BVSAC.
8. THE 605A KTU CONSISTS OF 3-IDENTICAL AUDIO-VIDEO LINK CIRCUITS (4 605A KTU'S TOTAL 12 CIRCUITS) CONNECT TO RC LEAD OF CIRCUIT BEING USED FOR STATION ARRANGED FOR BVSAC.

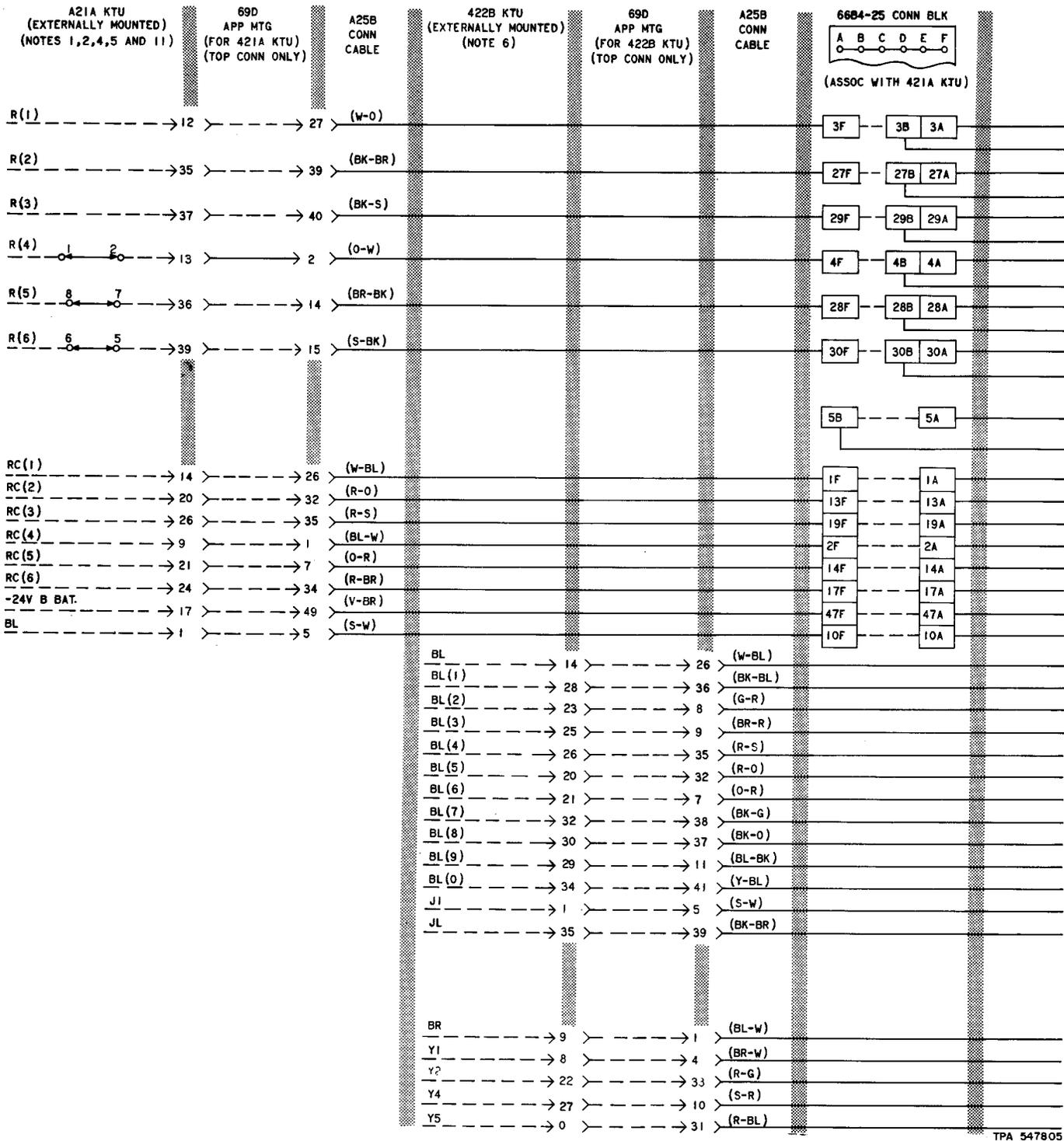


REFER TO APPROPRIATE SECTION FOR TEL SET TO BE MODIFIED



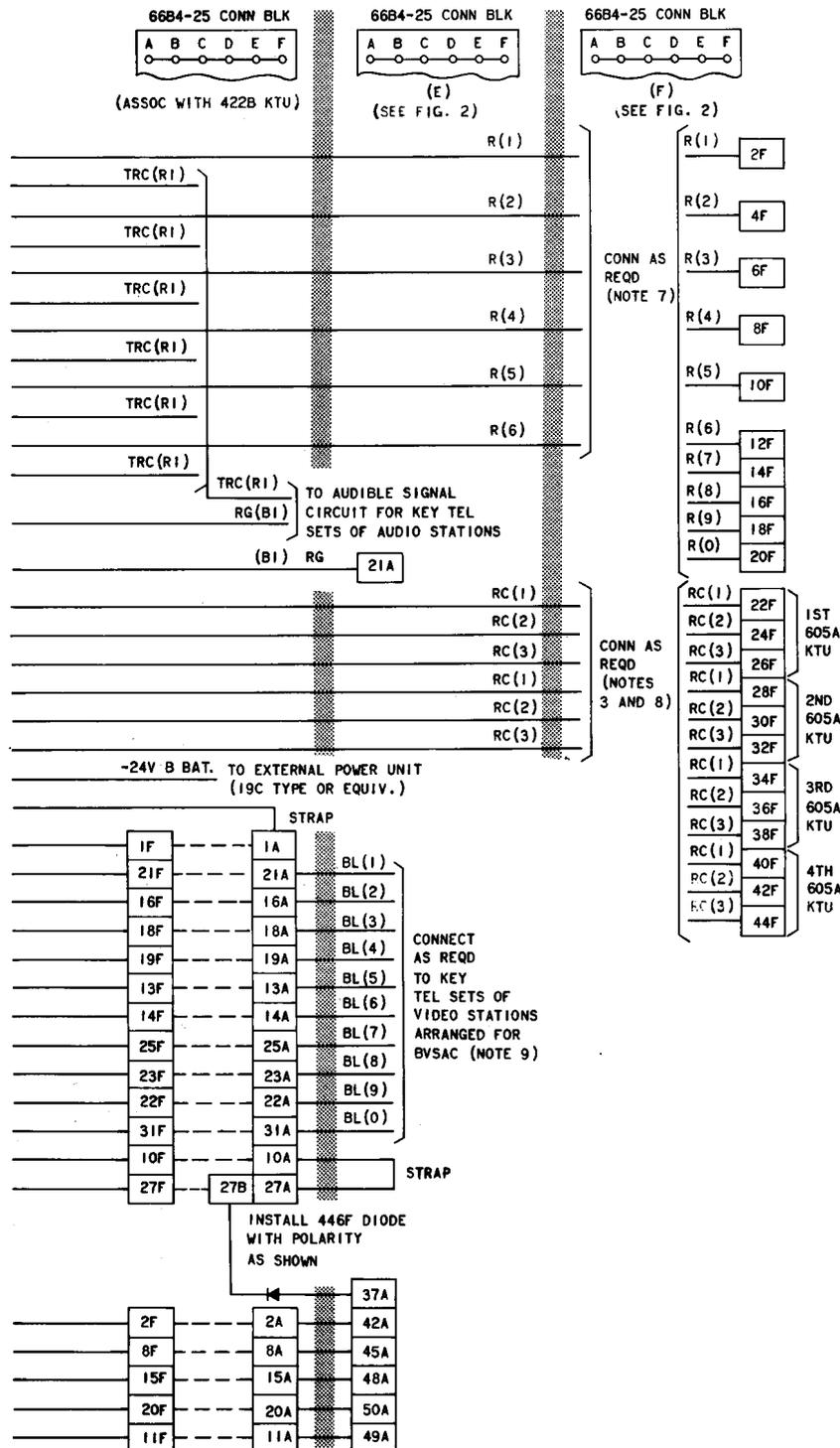
**Fig. 9—Connections for Busy Video Station Audible Cutoff (BVSAC) for One Station Using Externally Mounted 421A KTU**

SECTION 518-800-413

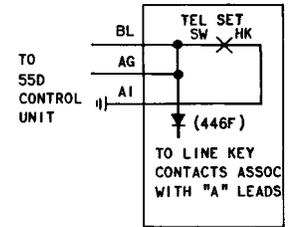


TPA 547805

Fig. 10—Connections for Busy Video Station Audible Cutoff (BVSAC) for More Than One Station Using Externally Mounted 421A and 422B KTUs (Note 10, Sheet 1)



- NOTES:
1. DASHED LINES INDICATE FACTORY FURNISHED WIRING
  2. STATION ARRANGED FOR BVSAC MUST BE WIRED FOR VIDEO-AUDIO BRIDGING. THE VIDEO-AUDIO SWITCH IN THE 605A KTU ISOLATES THE RINGING CIRCUITS IN THE VIDEO STATION.
  3. THE MAXIMUM ALLOWABLE LENGTH OF UNPAIRED RINGING LEAD IS TEN FEET.
  4. A 446F DIODE MUST BE INSTALLED IN THE STATION SET IN THE FOLLOWING MANNER:

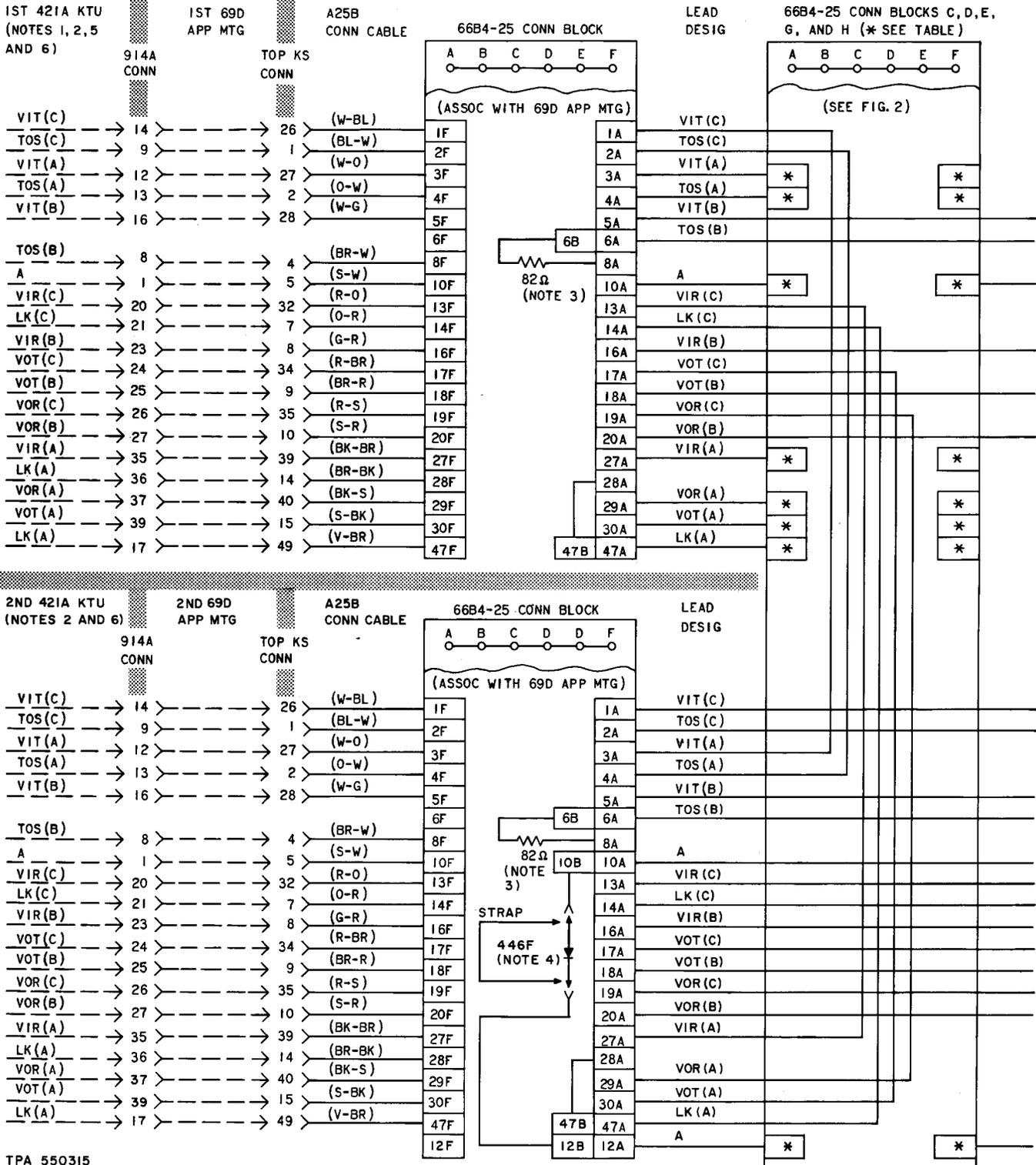


5. PLACE (V) OPTION STRAP TBI (421A KTU) BETWEEN TERMINALS 1 AND 2, 7 AND 8, AND 5 AND 6 AS SHOWN WHEN REQUIRED.
6. PLACE (R) OPTION STRAP ON TBI (422A KTU) BETWEEN TERMINALS 6 AND 8.
7. CONNECT TO "R" LEAD OF STATION CODE ARRANGED FOR BVSAC.
8. THE 605A KTU CONSISTS OF 3-IDENTICAL AUDIO-VIDEO LINK CIRCUITS (TWO 605A KTU'S TOTAL 6 CIRCUITS) CONNECT TO RC LEAD OF CIRCUIT BEING USED FOR STATION ARRANGED FOR BVSAC.
9. CONNECT BL LEADS TO VIDEO STATIONS ARRANGED FOR BVSAC IN ACCORDANCE WITH STATION CODES 0-9.
10. STATION BUSY TONE AND BVSAC OPTIONS CANNOT BE USED TOGETHER.
11. DO NOT CONNECT STRAPS (R-) TO (RC-) ON 6683-50, INTERNAL CONNECTING BLOCK (B) (OPTION N AND T) WHEN BVSAC (OPTION K) IS USED.

TPA 547805

Fig. 10—Connections for Busy Video Station Audible Cutoff (BVSAC) for More Than One Station Using Externally Mounted 421A and 422B KTUs (Note 10, Sheet 2)

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TPA 550315

Fig. 11—Connections for Video and Audio Station Bridging Using Two Externally Mounted 421A KTUs (Sheet 1)

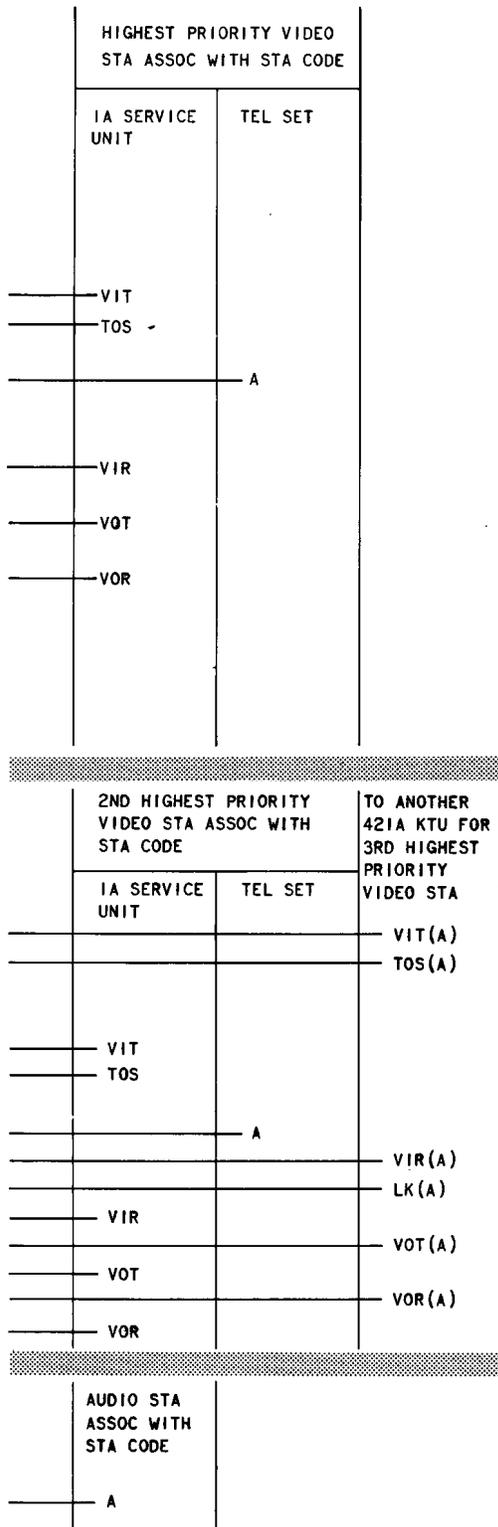


TABLE  
66B4-25 CONN BLOCK TERMINALS  
FOR STA CODES 1-0

STA CODE	66B4-25 CONN BLOCK								
	BLOCK	LEAD DESIG							
		VIT(A)	VIR(A)	VOT(A)	VOR(A)	TOS(A)	LK(A)	VIDEO A LEAD	AUDIO A LEAD
* TERMINAL									
1	C							3	38
	D	5	6	7	8	9			
	E						28		
2	C							9	37
	D	13	14	15	16	17			
	E						27		
3	C							15	40
	D	21	22	23	24	25			
	E						30		
4	C							21	39
	D	29	30	31	32	33			
	E						29		
5	C							27	42
	D	37	38	39	40	41			
	E						32		
6	C							33	41
	E	1	2	3	4	5	31		
7	G							3	30
	H	1	2	3	4	5			
	E						34		
8	G							9	29
	H	9	10	11	12	13			
	E						33		
9	G							15	32
	H	17	18	19	20	21			
	E						36		
0	G							21	31
	H	25	26	27	28	29			
	E						35		

NOTES:

1. DASHED LINES INDICATE FACTORY WIRING.
2. STRAP THE FOLLOWING TERMINALS ON TBI OF ALL 421A KTUS.  
1 TO 2, 5 TO 6, 7 TO 8.
3. THE 82 OHM RESISTOR (KS-13490 L1) MUST BE ORDERED SEPARATELY AND INSTALLED AS REQUIRED.
4. 446F DIODE MUST BE ORDERED SEPARATELY AND INSTALLED WHEN AN AUDIO STATION IS ASSOC WITH THE LOWER PRIORITY VIDEO STATION. WHEN ONLY A LOWER PRIORITY VIDEO STATION IS PROVIDED INSTALL A STRAP IN PLACE OF DIODE.
5. USE WITH FIG. 12 FOR ADD ON CONFERENCE ARRANGEMENT.
6. 421A KTU MUST BE MOUNTED ONLY IN THE TOP CONNECTOR OF A 69D APPARATUS MOUNTING FOR THIS ARRANGEMENT. BOTTOM CONNECTOR CANNOT BE USED. TPA 550315

Fig. 11—Connections for Video and Audio Station Bridging Using Two Externally Mounted 421A KTUs (Sheet 2)

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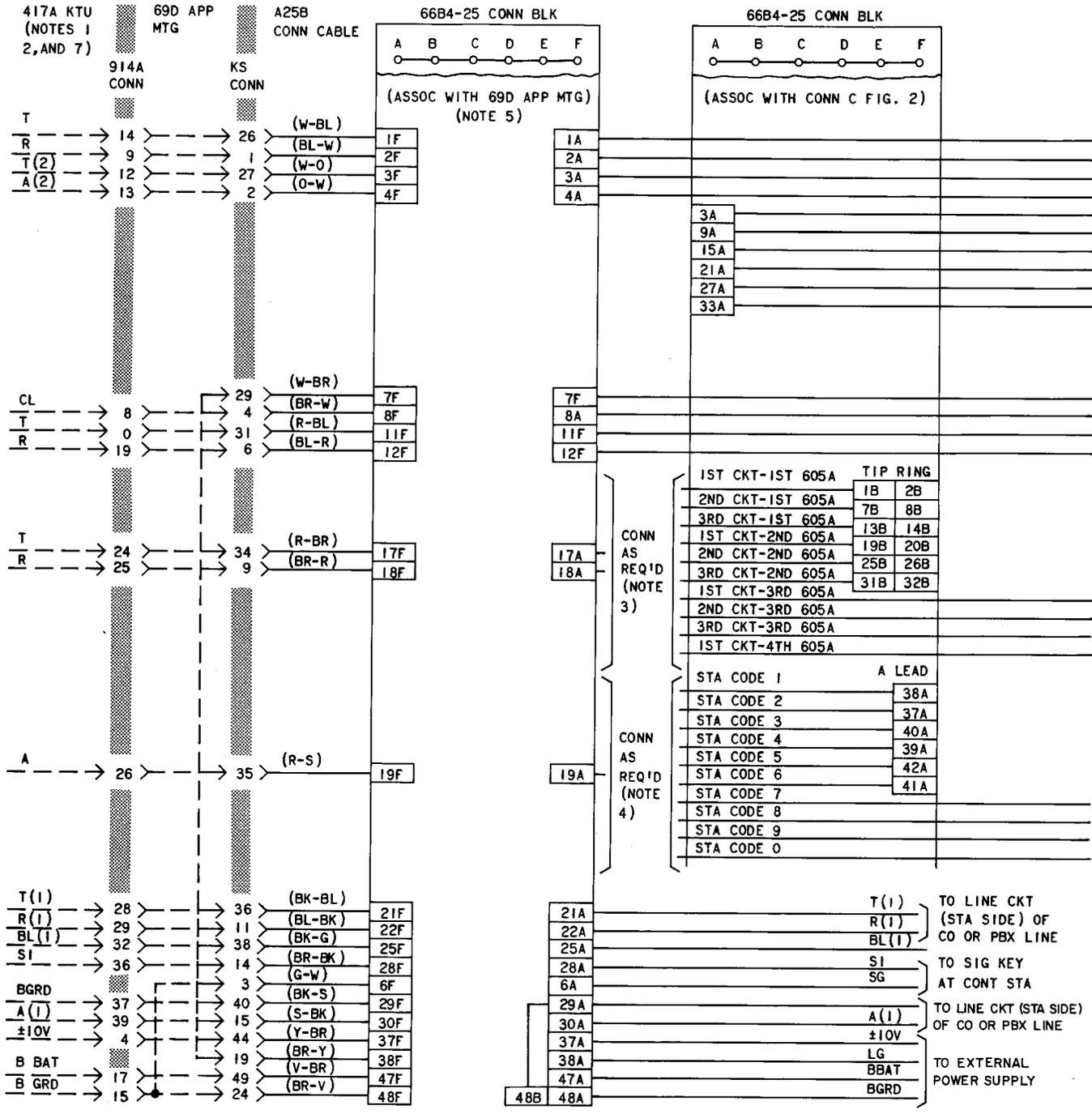
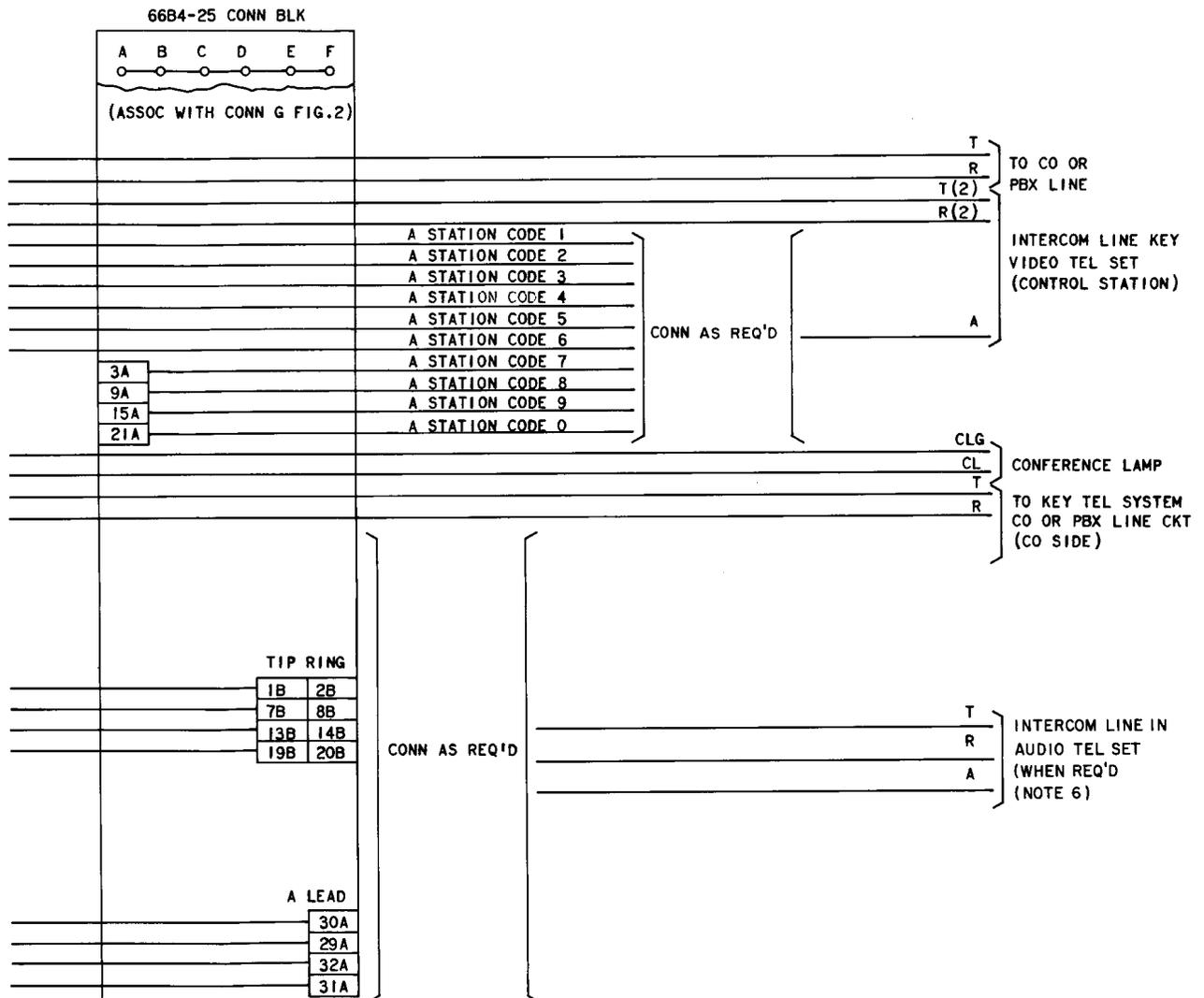


Fig. 12—Connections for Intercom Add-on Conference to an External Key Telephone System Line Using Externally Mounted 417A and 421A KTUs—as Required Note 6 (Sheet 1)



NOTES:

1. DASHED LINES INDICATE FACTORY WIRING.
2. CONNECT ONLY TERMINALS 1 TO 2 AND 6 TO 10 ON TERMINAL BOARD OF 417A KTU.
3. SEE FIG. 2 FOR ADDITIONAL INFORMATION.
4. SEE FIG. 2 AND 3 FOR ADDITIONAL INFORMATION.
5. TERMINATIONS BASED ON STANDARD CUTDOWN.
6. SEE FIG. 11 WHEN 421A KTU CONNECTIONS (VIDEO-AUDIO STATION BRIDGING) ARE REQUIRED WITH INTERCOM ADD ON CONFERENCE.
7. THE 417A KTU MUST BE MOUNTED ONLY IN THE TOP CONNECTOR OF A 69D APPARATUS MOUNTING FOR THIS ARRANGEMENT. BOTTOM CONNECTOR CANNOT BE USED.

TPA 550316

Fig. 12—Connections for Intercom Add-on Conference to an External Key Telephone System Line Using Externally Mounted 417A and 421A KTUs—as Required Note 6 (Sheet 2)