513-, 514-, AND 515-TYPE KEY SERVICE UNITS
1A2 KEY TELEPHONE SYSTEM
CONNECTIONS AND MAINTENANCE

1. GENERAL

1.01 This section covers the connections for a new series of key service units for the 1A2 Key Telephone System.

2. CONNECTION INDEX

2.01 The layout of connecting blocks is shown in Fig. 1. The wiring plans are shown in Fig. 2A, Fig. 2B, Table A, and Table B.

Fig. 1—Layout of 66R1, 66R2, and 66R3 Connecting Blocks

Fig. 2A—513-Type Key Service Unit, General Wiring Plan

Fig. 2B—514-Type Key Service Unit, General Wiring Plan

Table A—Connections Required for Adding a 514-Type KSU to a 513-Type KSU

Table B—Connections Required for Connecting an External Power Supply to a 513-Type KSU

2.02 Dedicated wiring is shown in Fig. 3 through Fig. 11.

Fig. 3—Connections for ±18-Volt Circuit

Fig. 4—Connections for AT1 and BT1 Circuits

Fig. 5—Connections for Bat. A(1) and Bat. A(2) Circuits

Fig. 6—Connections for Bat. B(1) and Bat. B(2) Circuits

Fig. 7—Connections for MB, MG, and ST Circuits

Fig. 8—Connections for Lamp Steady Circuits

Fig. 9—Connections for Lamp Flash Circuits

Fig. 10—Connections for Lamp Wink Circuits

Fig. 11—Connections for ±105-Volt and RN Circuits

2.03 Connections for Key Telephone Units are shown numerically by KTU code in Fig. 12 through Fig. 33. Fig. 34 shows connections for preset conference for deluxe dial intercom line.

Fig. 12—Connections for 400D KTU (CO/PBX Line Circuit)

Fig. 13—Connections for 401A KTU (Manual Intercom Circuit)

Fig. 14—Connections for 404A KTU (Diode Matrix Circuit)

Fig. 15—Connections for 407B KTU (Dial Intercom 10-Code Circuit

Fig. 16—Connections for 413A KTU (Auxiliary Ringup Circuit)

Fig. 17—Connections for 414A KTU (Ringdown Tie Line Circuit)

Fig. 18—Connections for 415A KTU (Automatic Tie Line Circuit)

Fig. 19—Connections for 416A KTU (Station Line Circuit)

Fig. 20—Connections for 417A KTU (Add-On Conference Circuit)

Fig. 21—Connections for 418A KTU (Short Range Tie Line Circuit)

Fig. 22—Connections for 419A KTU (Automatic Ringdown Tie Line Circuit)

Fig. 23—Connections for 420A KTU (Dial Intercom Long Line Circuit)

Fig. 24—Connections for 421A KTU (Power Failure Transfer Circuit)

Fig. 25—Connections for 421A KTU (DSS Feature of Dial Intercom Line)

Fig. 26—Connections for 422A or B KTU (Dial Intercom Station Busy Circuit)

Fig. 27—Connections for 423A KTU (Dial Intercom, Audible Ringback Tone, Dial Tone, Busy Tone Circuit)

Fig. 28—Connections for 424A KTU (Dial Intercom 19-Code Circuit)

Fig. 29—Connections for 425A KTU (Dial Intercom Flashing Lamp Circuit)

Fig. 30—Connections for 426A KTU (TOUCH-TONE® Adapter Circuit)

Fig. 31—Connections for 427A or B KTU (TOUCH-TONE Adapter Circuit)

Fig. 32—Connections for 428A KTU (Multiline Exclusion Circuit)

Fig. 33—Connections for 429A KTU and 430A KTU (Supplementary Hold Detector Circuit and Flutter Generator Circuit)

Fig. 34—Connections for Preset Conference Circuit for Deluxe Dial Intercom Line

2.04 Factory installed wiring for connectors (jacks) 1 through 18 (nondedicated wiring) is shown in numerical order in Fig. 35 through 50.

2.05 Connection information for 69E and 69F apparatus mountings is shown in Fig. 51 through Fig. 75.

Fig. 51—Cable to Connecting Block Connections for 69E or F Apparatus Mounting

Fig. 52—Power Supply to Connecting Block Connections for 69E or F Apparatus Mounting

Fig. 53—Supplementary Connection Information for 69E or F Apparatus Mounting

Fig. 54—Connections for 400D KTU (CO/PBX Line Circuit) in 69E or F Apparatus Mounting

Fig. 55—Connections for 401A KTU (Manual Intercom Circuit) in 69E or F Apparatus Mounting

Fig. 56—Connections for 404A KTU (Diode Matrix) in 69E or F Apparatus Mounting

Fig. 57—Connections for 413A KTU (Auxiliary Ringup Circuit) in 69E or F Apparatus Mounting

Fig. 58—Connections for 414A KTU (Ringdown Tie Line Circuit) in 69E or F Apparatus Mounting

Fig. 59—Connections for 415A KTU (Automatic Tie Line Circuit) in 69E or F Apparatus Mounting

Fig. 60—Connections for 416A KTU (Station Line Circuit) in 69E or F Apparatus Mounting

Fig. 61—Connections for 417A KTU (Add-on Conference Circuit) in 69E or F Apparatus Mounting

Fig. 62—Connections for 418A KTU (Short Range, DC Signaling, Tie Line Circuit) in 69E or F Apparatus Mounting

Fig. 63—Connections for 419A KTU (Automatic Ringdown Tie Line Circuit) in 69E or F Apparatus Mounting

Fig. 64—Connections for 420A KTU (Dial Intercom Long Line Circuit) in 69E or F Apparatus Mounting

Fig. 65—Connections for 421A KTU (Power Failure Transfer Circuit) in 69E or F Apparatus Mounting

Fig. 66—Connections for 421A KTU (DSS Feature of Dial Intercom Line) in 69E or F Apparatus Mounting

Fig. 67—Connections for 422A or B KTU (Dial Intercom Station Busy Circuit) in 69E or F Apparatus Mounting

Fig. 68—Connections for 423A KTU (Dial Intercom, Audible Ringback Tone, Dial Tone, Busy Tone Circuit) in 69E or F Apparatus Mounting

Fig. 69—Connections for 425A KTU (Dial Intercom Flashing Lamp Circuit) in 69E or F Apparatus Mounting

Fig. 70—Connections for 426A KTU (TOUCH-TONE Adapter Circuit) in 69E or F Apparatus Mounting

Fig. 71—Connections for 427A or B KTU (TOUCH-TONE Adapter Circuit) in 69E or F Apparatus Mounting

Fig. 72—Connections for 428A KTU (Multiline Exclusion Circuit) in 69E or F Apparatus Mounting

Fig. 73—Connections for 430A KTU (Flutter Generator Circuit) in 69E or F Apparatus Mounting

Fig. 74—Connections for 429A KTU (Supplementary Hold Detector Circuit) in 69E or F Apparatus Mounting

Fig. 75—Connections for Preset Conference Circuit for Deluxe Dial Intercom Line in 69E or F Apparatus Mounting

3. SUPPLEMENTARY INFORMATION

3.01 When a KTU is taken out of service, or replaced by another, all nondedicated wiring for that unit should be removed.

3.02 If power supply is dc, refer to Sections 518-114-418 and 518-114-422.

4. DRAWINGS

4.01 This section is based on the following drawing:

SD-69597-01.

5. MAINTENANCE

5.01 Maintenance of a 1A2 KTS is limited to normal station repairs and wiring checks of the mounting facility and terminal field. No field maintenance is to be performed on the plug-in KTUs.

5.02 Care must be used when removing and inserting plug-in KTUs into the connectors to avoid damage to the printed wiring and other components.

5.03 When a trouble situation is encountered, the following procedure may be helpful:

(a) Visit station reporting trouble

(b) Determine if trouble is at individual station or common to the system.

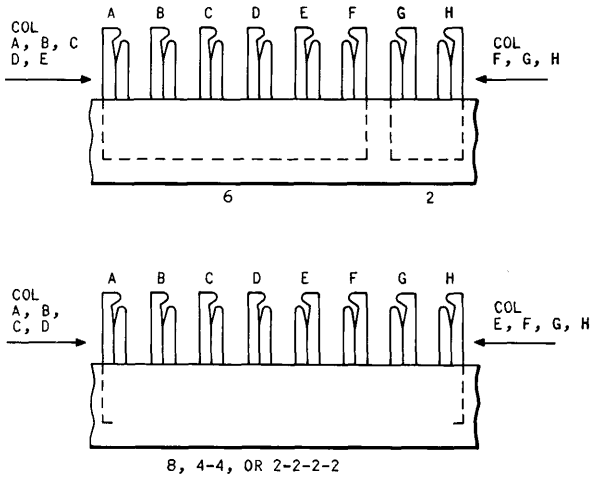
(c) If common to the system:

(1) Check power supply and fuses

(2) From nature of trouble report, determine which KTU may not be working properly

(3) Replace KTU with one known to be working properly to determine whether trouble is in KTU or external to it (be sure to strap in the correct options on replacement KTU, if applicable)

(d) If replacement of the KTU does not clear the trouble, the trouble is external to the KTU and the complete wiring serving the KTU should be checked.



METHOD OF BRINGING IN CONDUCTORS FOR TERMINATION TO COLUMNS ON 66R1, 66R2 OR 66R3 CONNECTING BLOCK

66R1 CONNECTING BLOCK

ROW	COLUMN A	B	C	D	E	F	G	H
1	○	○	○	○	○	○	○	
48	○	○	○	○	○	○	○	
49	○	○	○	○	○	○	○	
50	○	○	○	○	○	○	○	

LAYOUT OF 66R1 CONNECTING BLOCK

66R2 CONNECTING BLOCK

ROW	COLUMN A	B	C	D	E	F	G	H
1	○	○	○	○	○	○	○	○
12	○	○	○	○	○	○	○	○
13	○	○	○	○	○	○	○	○
14	○	○	○	○	○	○	○	○
15	○	○	○	○	○	○	○	○
23	○	○	○	○	○	○	○	○
24	○	○	○	○	○	○	○	○
28	○	○	○	○	○	○	○	○
29	○	○	○	○	○	○	○	○
30	○	○	○	○	○	○	○	○
31	○	○	○	○	○	○	○	○
32	○	○	○	○	○	○	○	○
42	○	○	○	○	○	○	○	○
43	○	○	○	○	○	○	○	○
50	○	○	○	○	○	○	○	○

LAYOUT OF 66R2 CONNECTING BLOCK

66R3 CONNECTING BLOCK

ROW	COLUMN A	B	C	D	E	F	G	H
1	○	○	○	○	○	○	○	○
20	○	○	○	○	○	○	○	○
21	○	○	○	○	○	○	○	○
24	○	○	○	○	○	○	○	○

LAYOUT OF 66R3 CONNECTING BLOCK

Fig. 1—Layout of 66R1, 66R2, and 66R3 Connecting Blocks

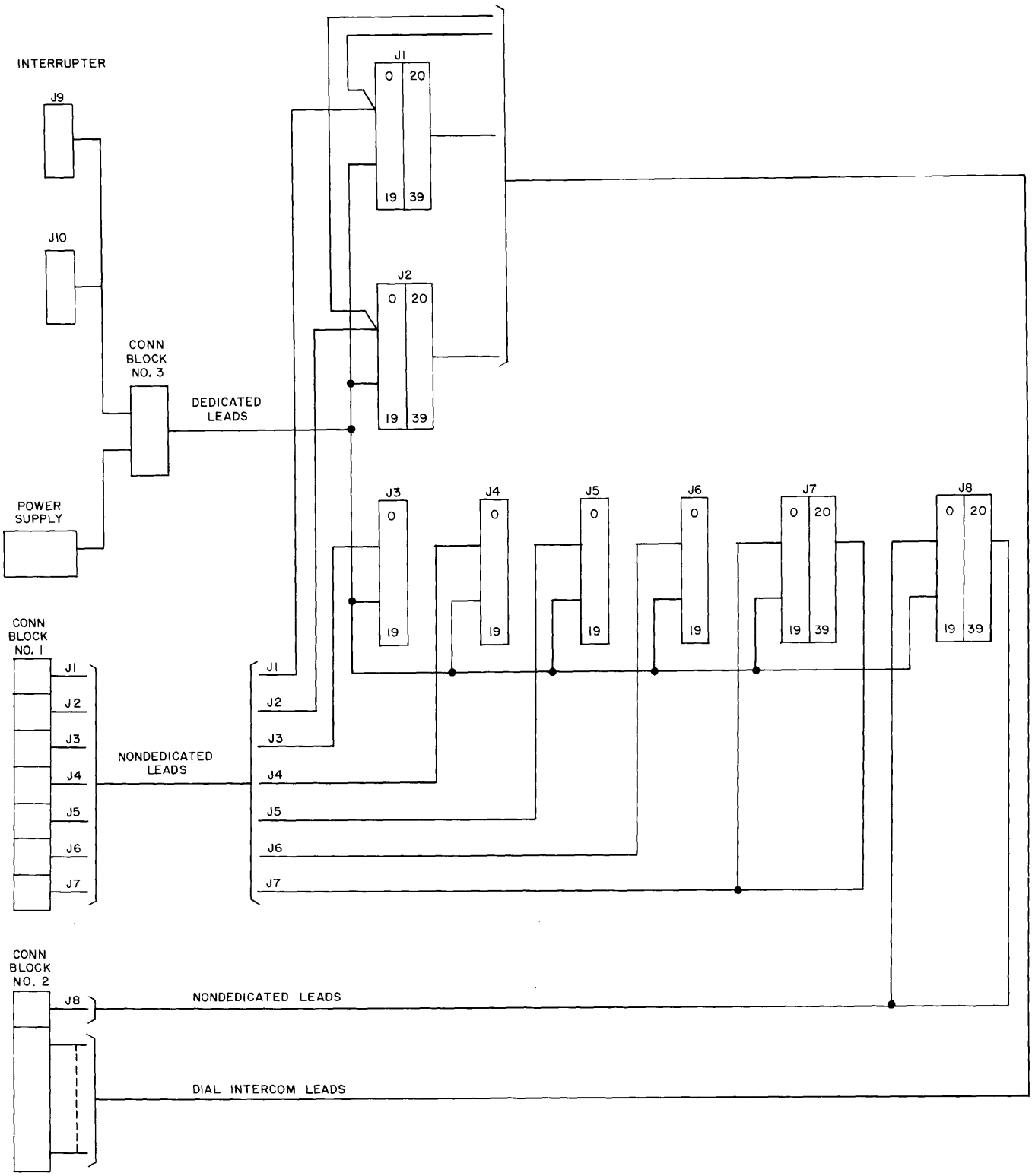


Fig. 2A—513—Type Key Service Unit, General Wiring Plan

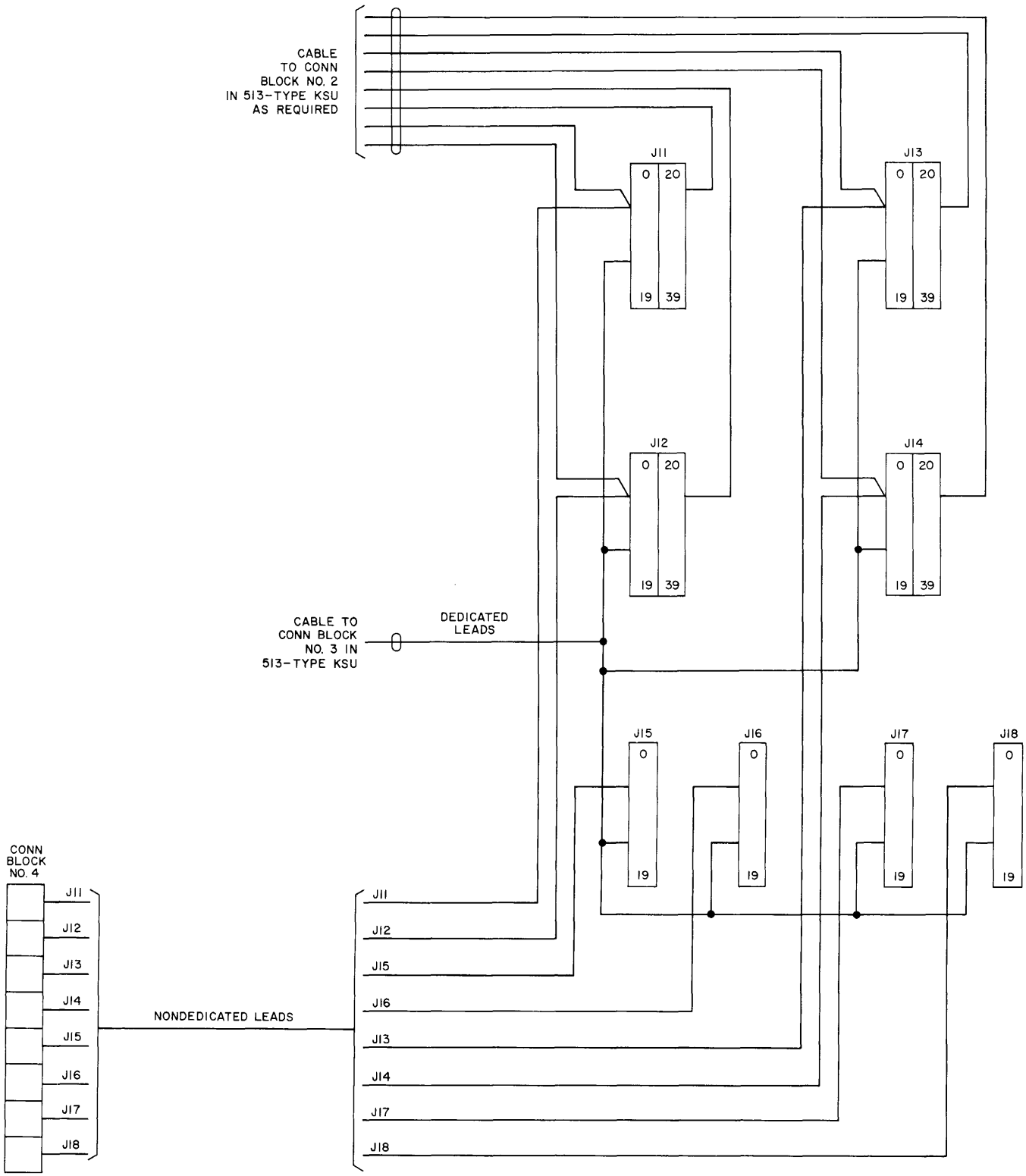


Fig. 2B—514—Type Key Service Unit, General Wiring Plan

TABLE A

CONNECTIONS REQUIRED FOR ADDING 514-TYPE KSU TO A 513-TYPE KSU

LEAD DESIG	LEAD COLOR	BINDER COLOR	CONN BLOCK 3 CONNECTOR
BAT A (1)	BL-R	G	14F
GRD A (1)	R-BL	G	14C
BAT A (2)	BL-R	Y	15F
GRD A (2)	R-BL	Y	15C
BAT B (1)	O-R	G	12F
GRD B (1)	R-O	G	12C
BAT B (2)	O-R	Y	13F
GRD B (2)	R-O	Y	13C
MG	G-R	G	10B
ST	R-G	G	9G
LS1	W-G	O	2C
LS2	W-G	G	4C
LS3	W-G	R	6C
LS4	W-G	Y	8C
LF1	S-R	O	1C
LF2	S-R	G	3C
LF3	S-R	R	5C
LF4	S-R	Y	7C
LW1	R-S	O	1F
LW2	R-S	G	3F
LW3	R-S	R	5F
LW4	R-S	Y	7F
±105V	R-BR	G	11F
RN	BR-R	G	9B
RG	G	*	11B
LG1	O	*	2G
LG2	BL	*	2F
LG3	BR	*	6G
LG4	S	*	6F
A1	W	*	13D

* Taped together in one bundle

TABLE B

CONNECTIONS REQUIRED FOR CONNECTING AN EXTERNAL POWER SUPPLY TO A 513-TYPE KSU

PWR SUP DESIG	LEAD DESIG	LEAD COLOR *	CONN BLOCK 3 CONNECTOR
B TALK	BAT A (1)	BL-W	14G
	BAT A (2)	O-W	15G
B SIG	BAT B (1)	G-W	12G
	BAT B (2)	G-R	13G
TALK GRD	GRD A (1)	W-BL	14B
	GRD A (2)	W-O	15B
SIG GRD	GRD B (1)	W-G	12D
	GRD B (2)	R-G	13B
±10V AC	±10V (1)	BR	17G
±10V AC or 10V AC INTER	±10V (2)	S	19G
	MB	O-R	10G
10V GRD	10V GRD (1)	W-BR	17C
10V GRD or GRD	10V GRD (2)	W-S	19C
	MG	R-O	10C
±18V AC	±18V	S-R	16H
18V GRD	18V GRD	S-BK	16A
105V 30Hz	±105V	BL-R	11G
105V GRD or GRD	105V GRD	BL-BK	11C

* Factory supplied leads are in one sleeve (except BL-R and BL-BK). They must be removed and replaced by leads of sufficient length to reach the external power supply.

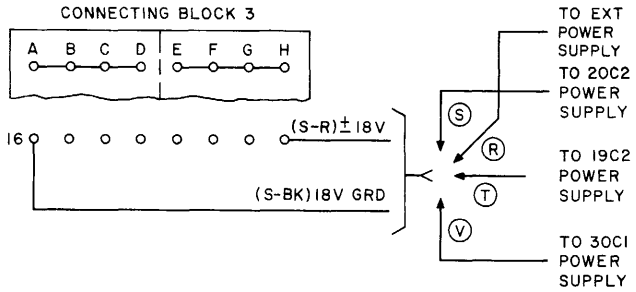
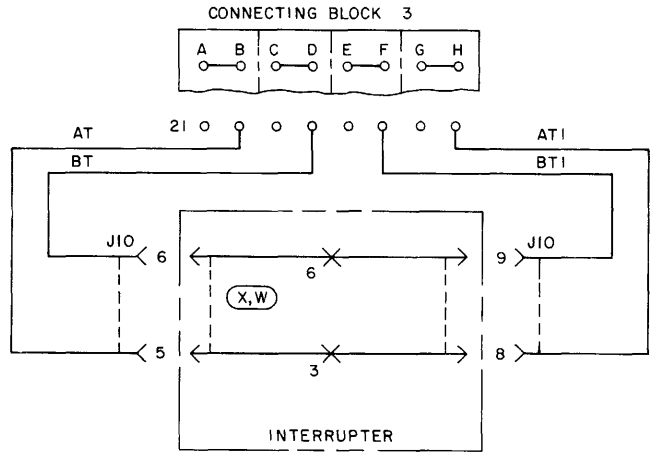


Fig. 3—Connections for ±18-Volt Circuit



OPTIONS

X	KS-15900, L1 INTERRUPTER 10V AC MOTOR
W	KS-19384, L2 INTERRUPTER 24V DC MOTOR

Fig. 4—Connections for AT1 and BT1 Circuits

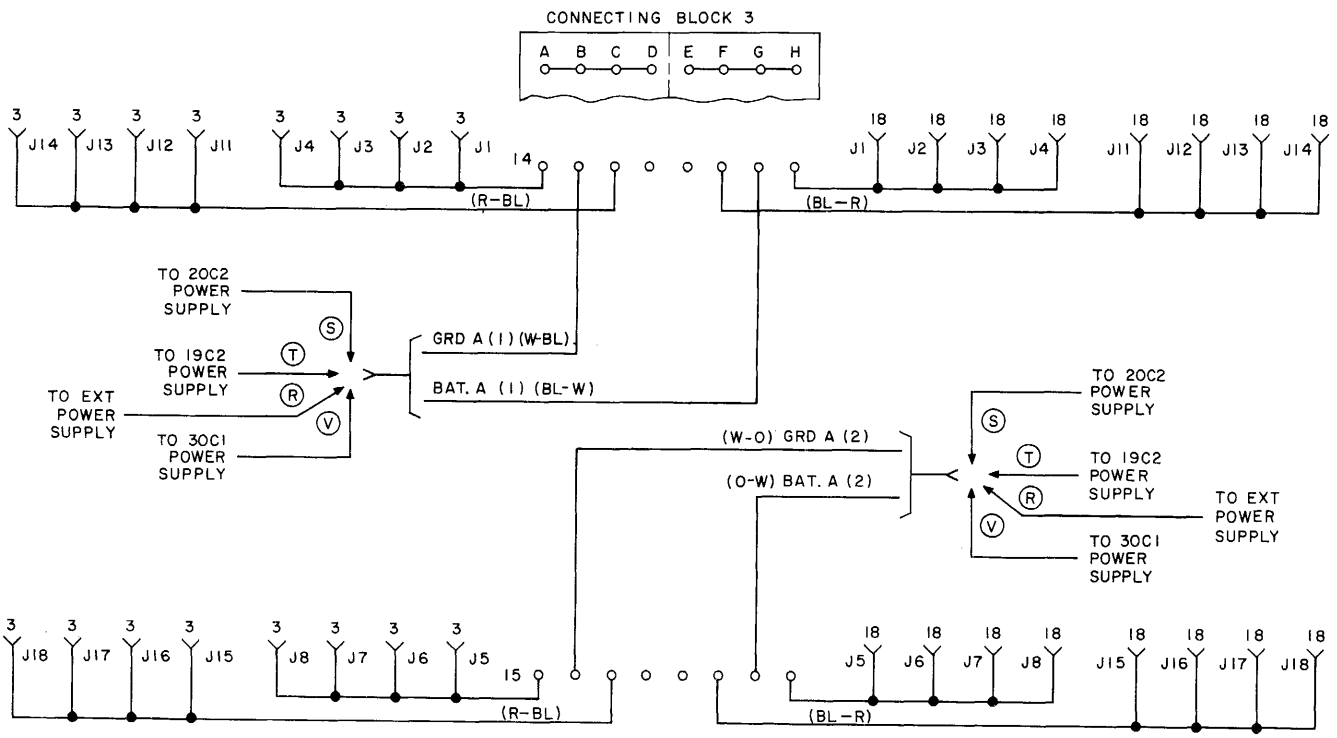


Fig. 5—Connections for Bat. A(1) and Bat. A(2) Circuits

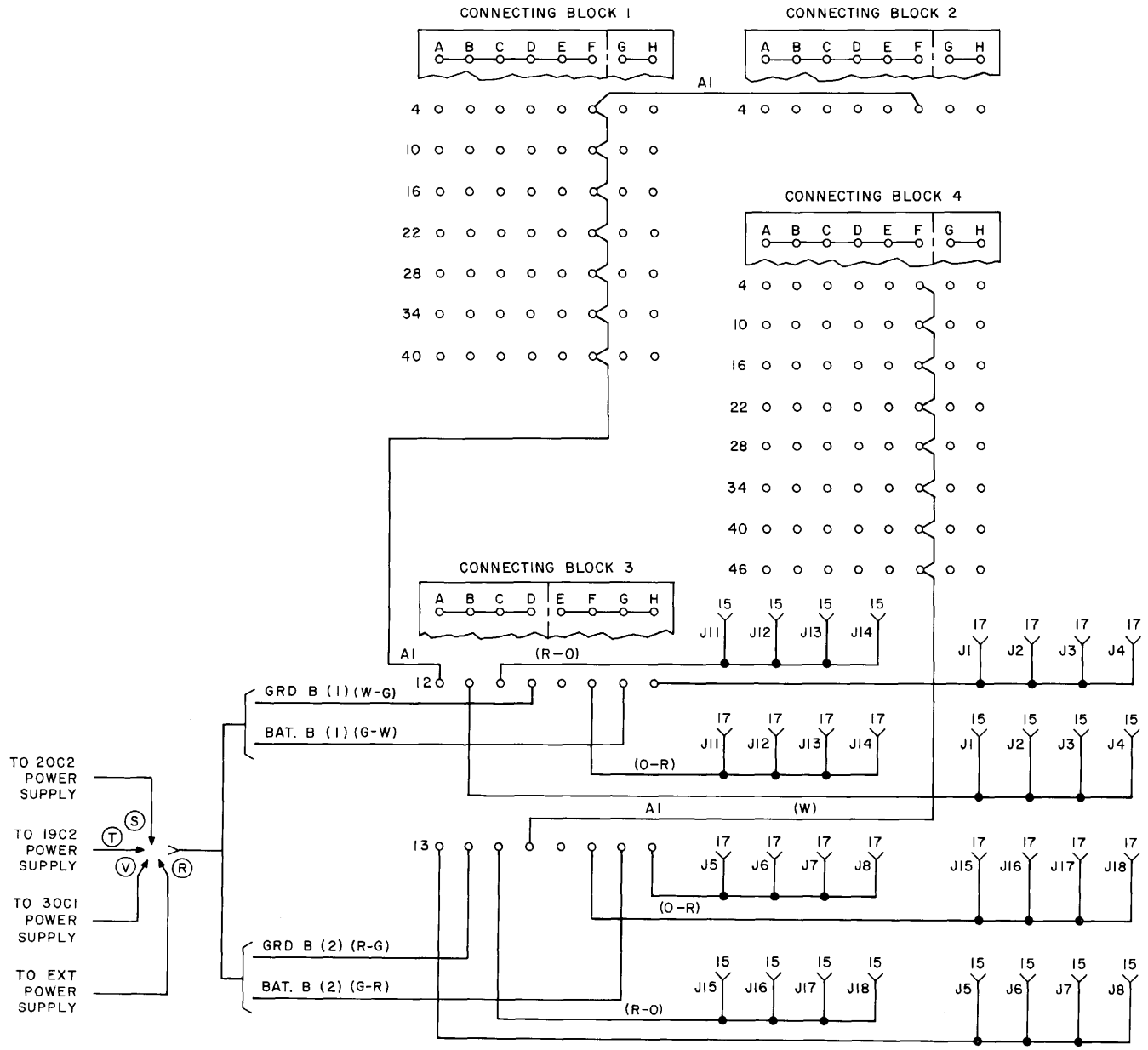
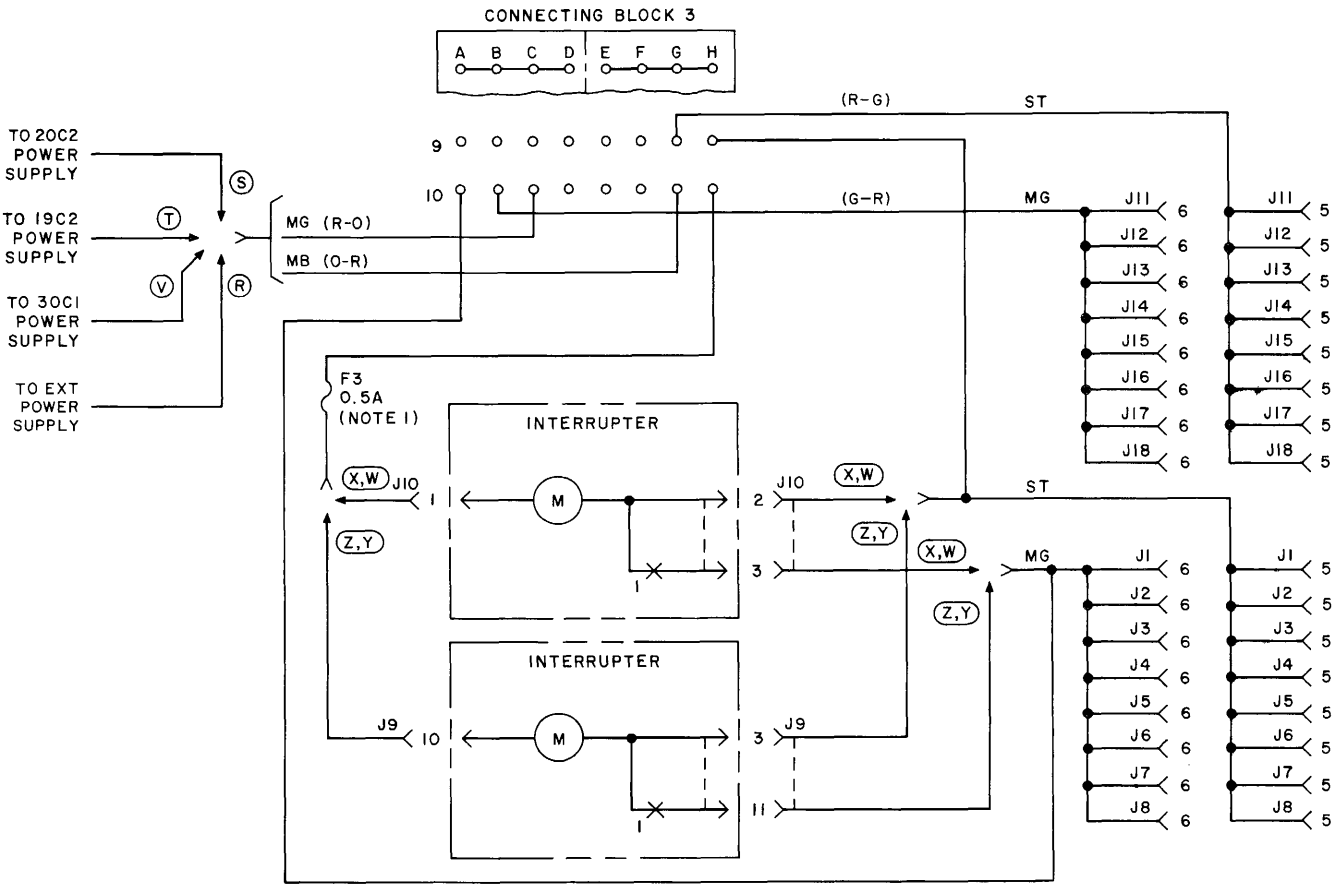


Fig. 6—Connections for Bat. B(1) and Bat. B(2) Circuits



NOTES:

1. WHEN 30-TYPE POWER SUPPLY ("V" OPTION) IS PROVIDED, THE MB LEAD IS SEPARATELY FUSED AT THE SUPPLY AND FUSE 3 SHOULD BE STRAPPED OUT.
2. WHEN 19C2 POWER SUPPLY ("T" OPTION) IS PROVIDED, AN EXTERNALLY LOCATED RINGING SOURCE MUST BE LOCALLY PROVIDED.

INTERRUPTER OPTIONS

Z	KS-19175, L1 INTERRUPTER 10V AC MOTOR
Y	KS-19385, L2 INTERRUPTER 24V DC MOTOR
X	KS-15900, L1 INTERRUPTER 10V AC MOTOR
W	KS-19384, L2 INTERRUPTER 24V DC MOTOR

Fig. 7—Connections for MB, MG, and ST Circuits

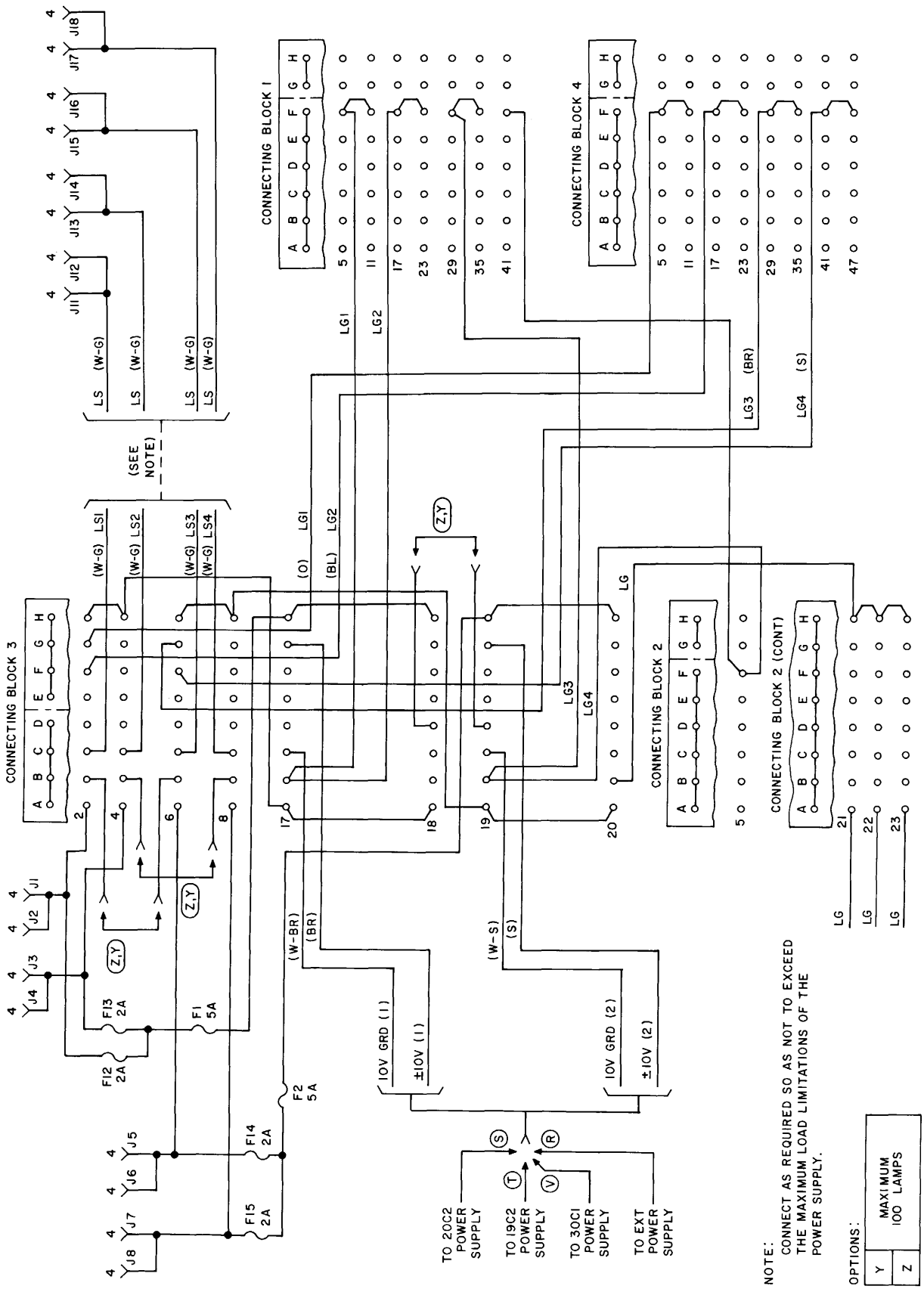


Fig. 8—Connections for Lamp Steady Circuits

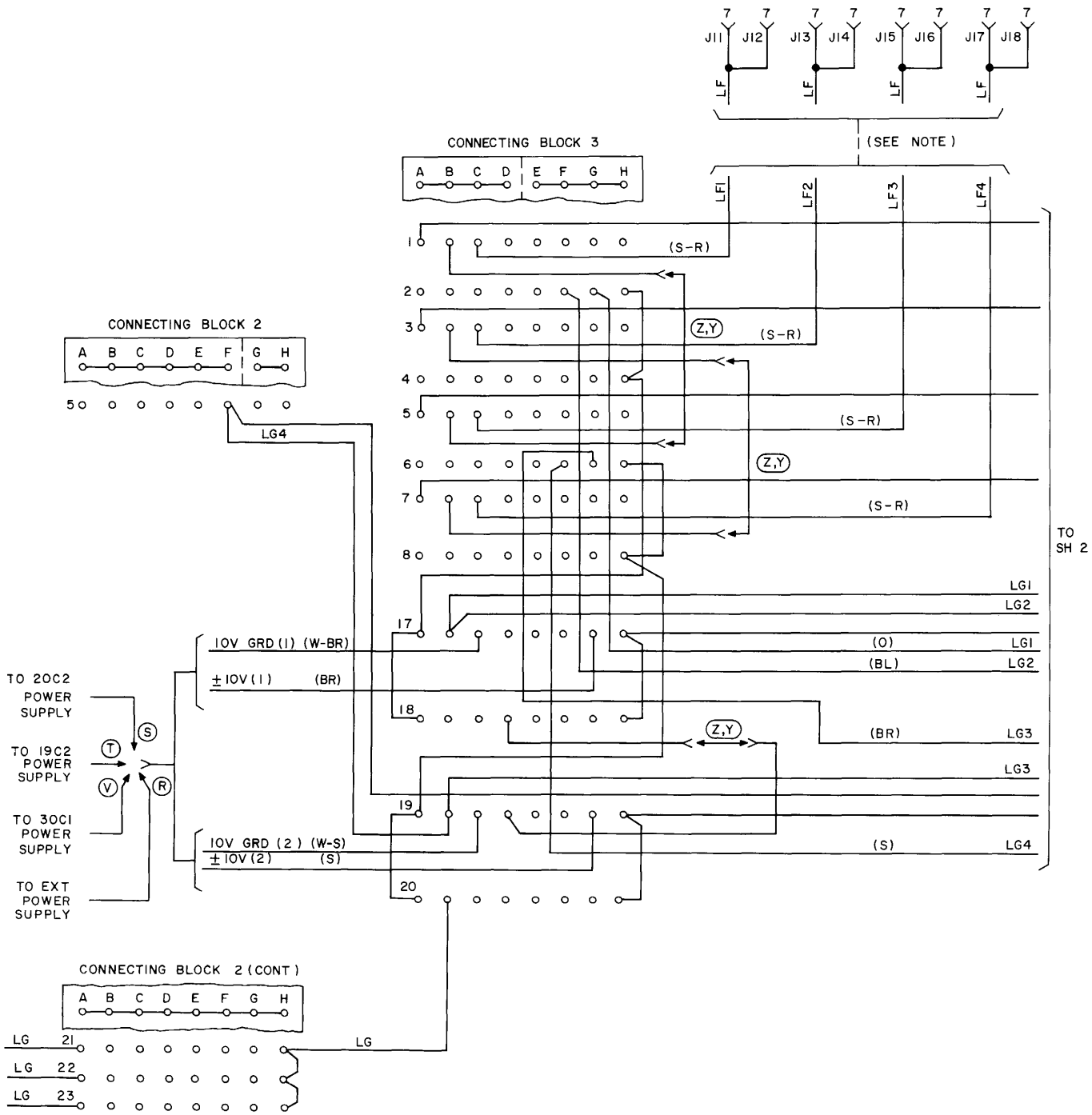
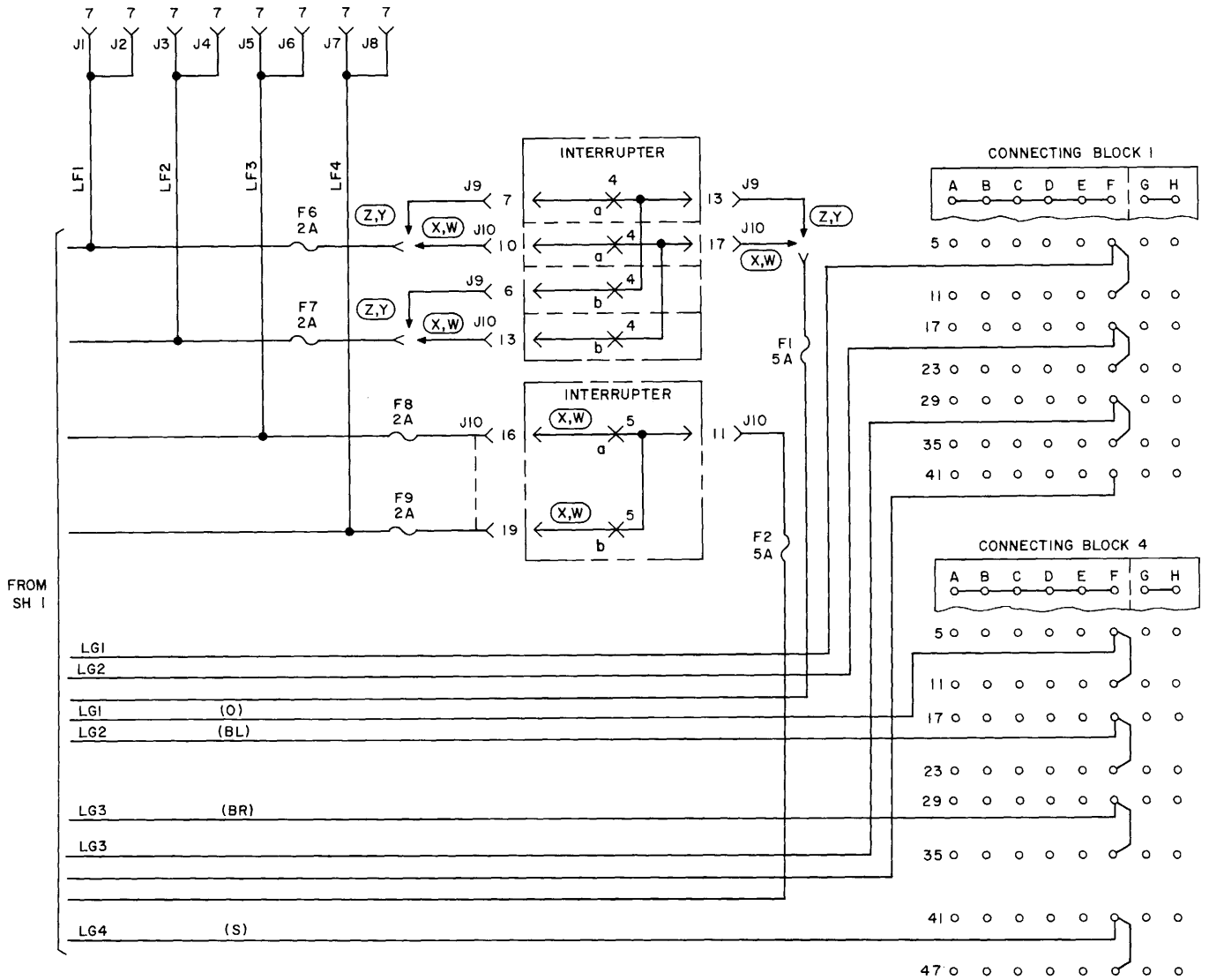


Fig. 9—Connections for Lamp Flash Circuits (Sheet 1)



NOTE:
CONNECT AS REQUIRED SO AS NOT TO EXCEED THE MAXIMUM LOAD LIMITATIONS OF POWER SUPPLY AND INTERRUPTER CONTACTS (MAXIMUM 50 LAMPS PER CONTACT)

OPTIONS:

W	KS-19384,L2 INTERRUPTER 24V DC MOTOR	MAX 200 LAMPS
X	KS-15900,L1 INTERRUPTER 10V AC MOTOR	
Y	KS-19385,L2 INTERRUPTER 24V DC MOTOR	MAX 100 LAMPS
Z	KS-19175, L1 INTERRUPTER 10V AC MOTOR	

Fig. 9—Connections for Lamp Flash Circuits (Sheet 2)

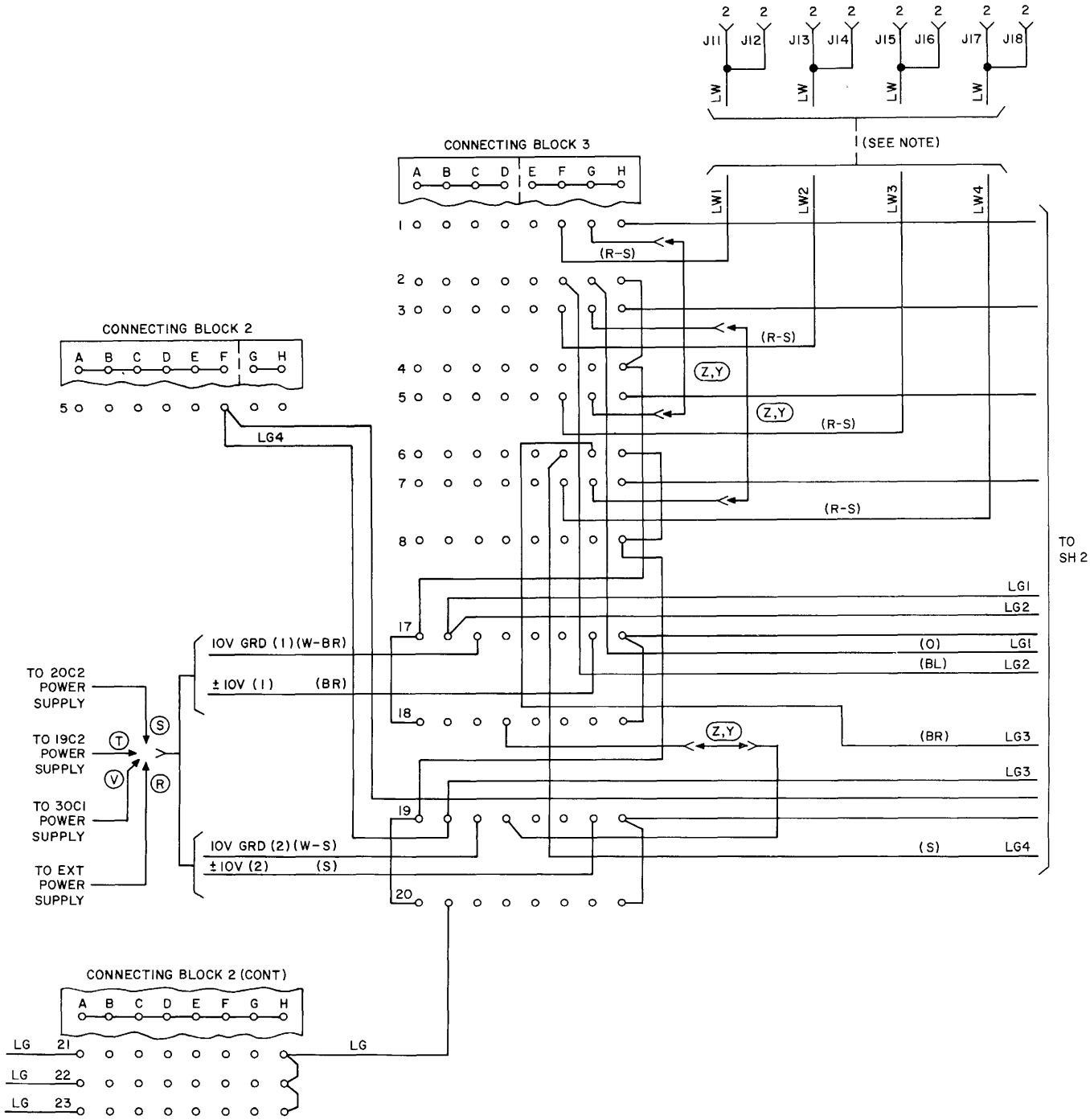
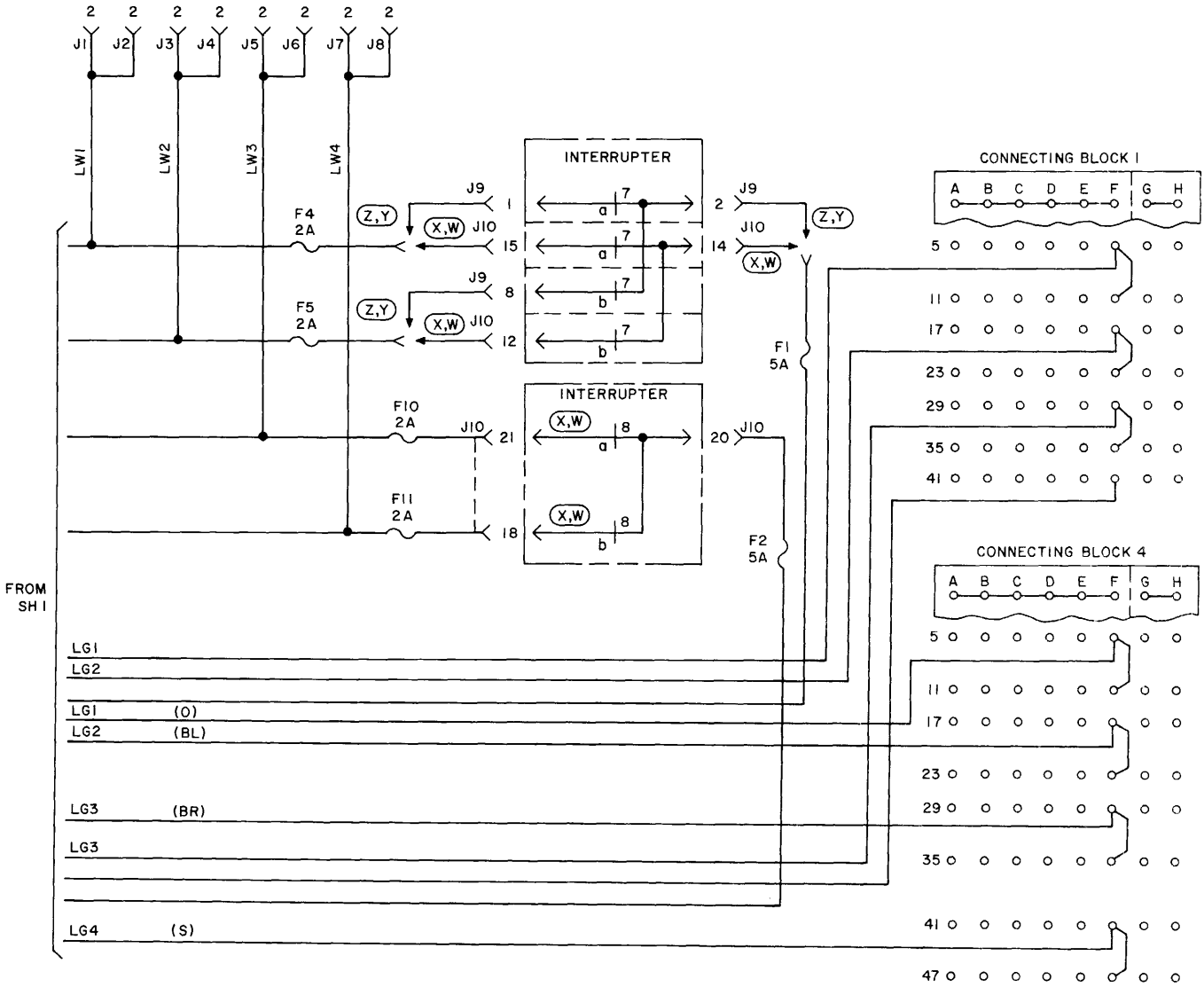


Fig. 10—Connections for Lamp Wink Circuits (Sheet 1)



NOTE:

CONNECT AS REQUIRED SO AS NOT TO EXCEED THE MAXIMUM LOAD LIMITATIONS OF POWER SUPPLY AND INTERRUPTER CONTACTS (MAXIMUM 50 LAMPS PER CONTACT).

OPTIONS:

W	KS-19384, L2 INTERRUPTER 24V DC MOTOR	MAX 200 LAMPS (WINK-HOLD)
X	KS-15900, L1 INTERRUPTER 10V AC MOTOR	
Y	KS-19385, L2 INTERRUPTER 24V DC MOTOR	MAX 100 LAMPS (WINK-HOLD)
Z	KS-19175, L1 INTERRUPTER 10V AC MOTOR	

Fig. 10—Connections for Lamp Wink Circuits (Sheet 2)

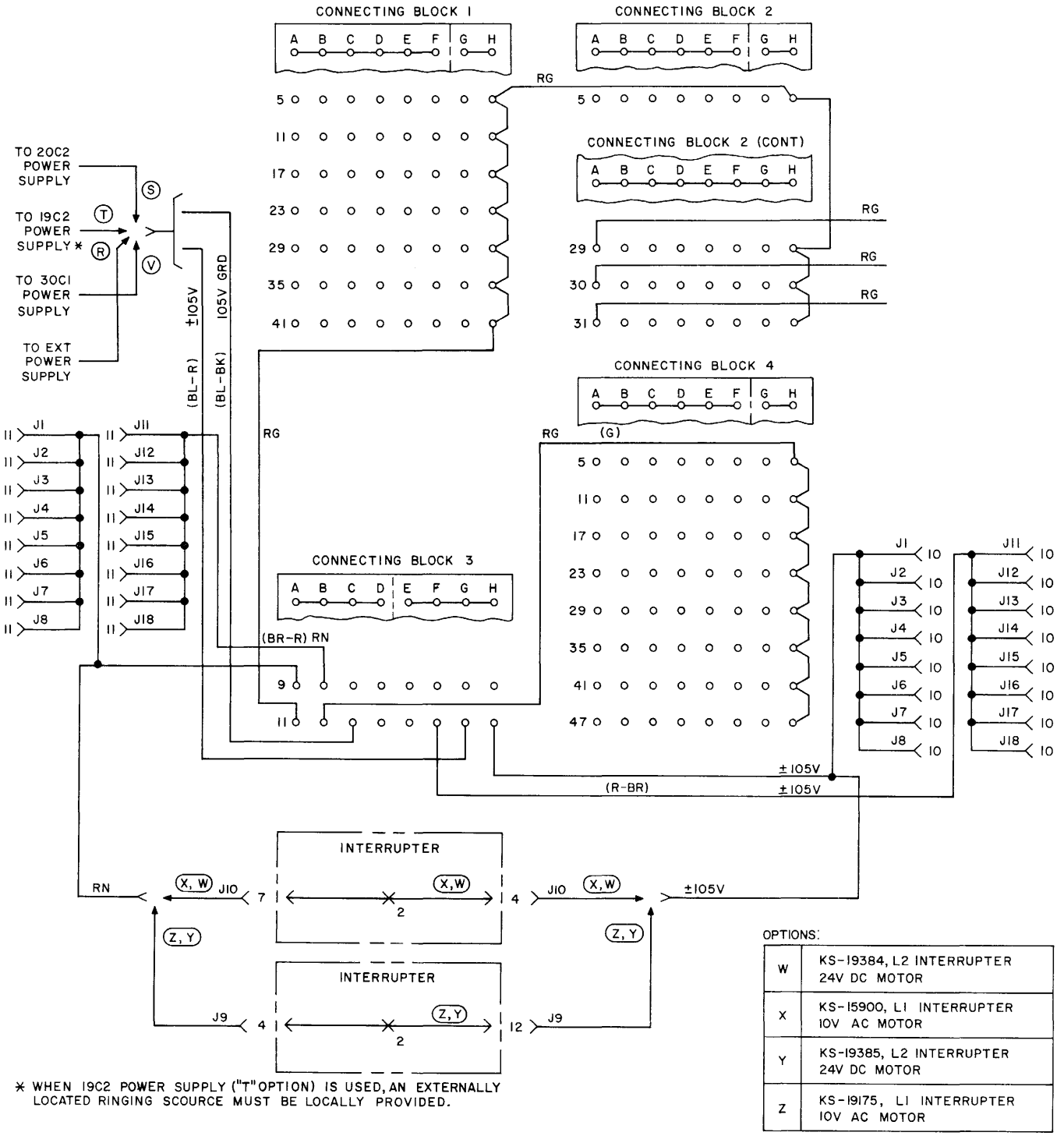


Fig. 11—Connections for ±105-Volt and RN Circuits

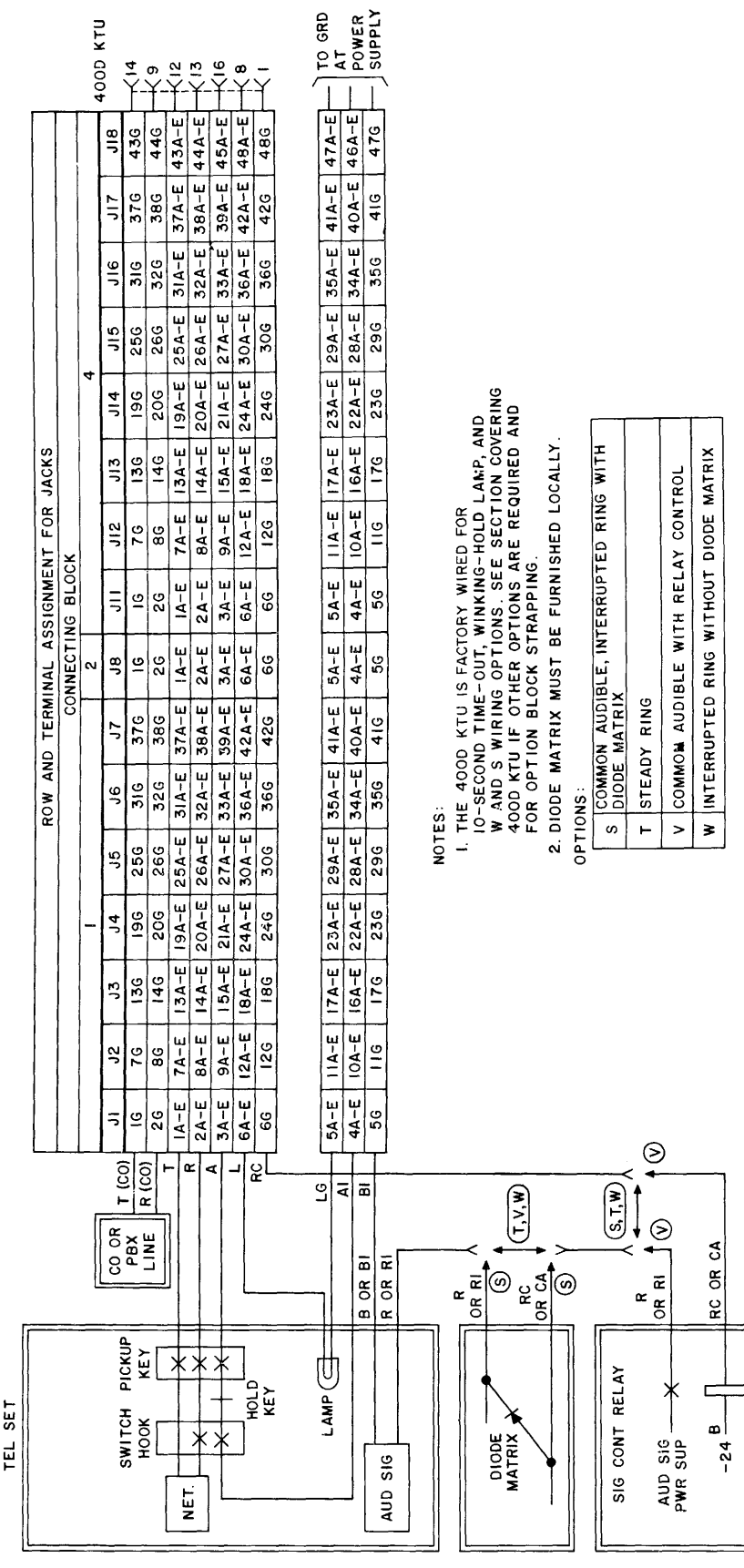


Fig. 12—Connections for 400D KTU (CO/PBX Line Circuit)

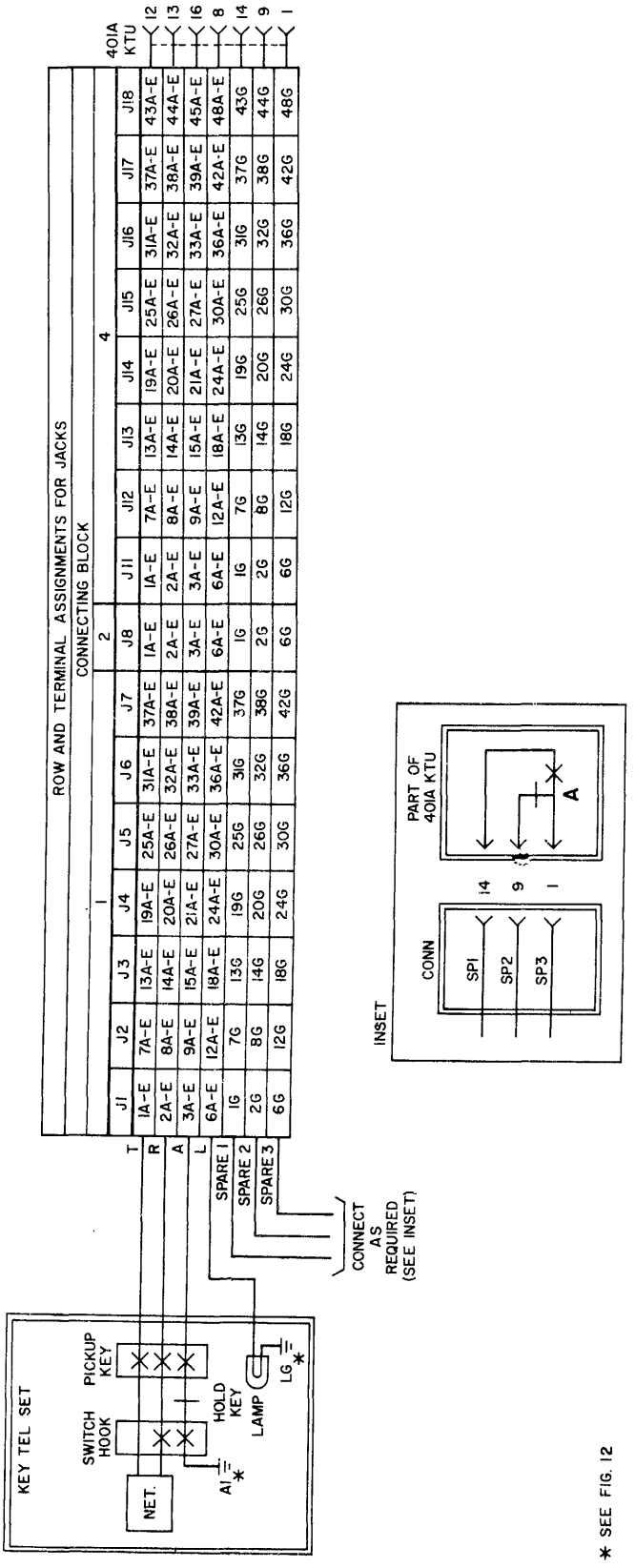


Fig. 13—Connections for 401A KTU (Manual Intercom Circuit)

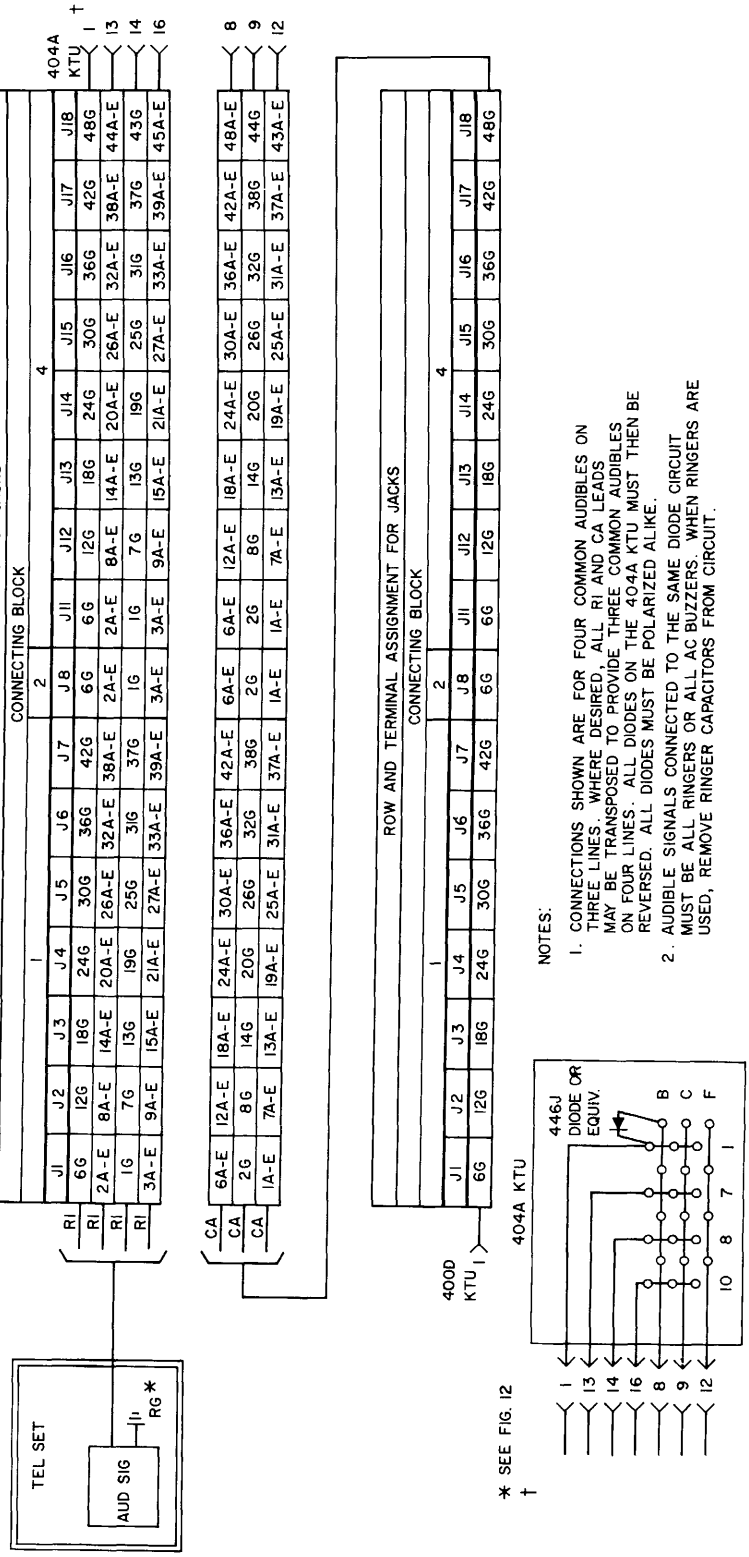


Fig. 14—Connections for 404A KTU (Diode Matrix Circuit)

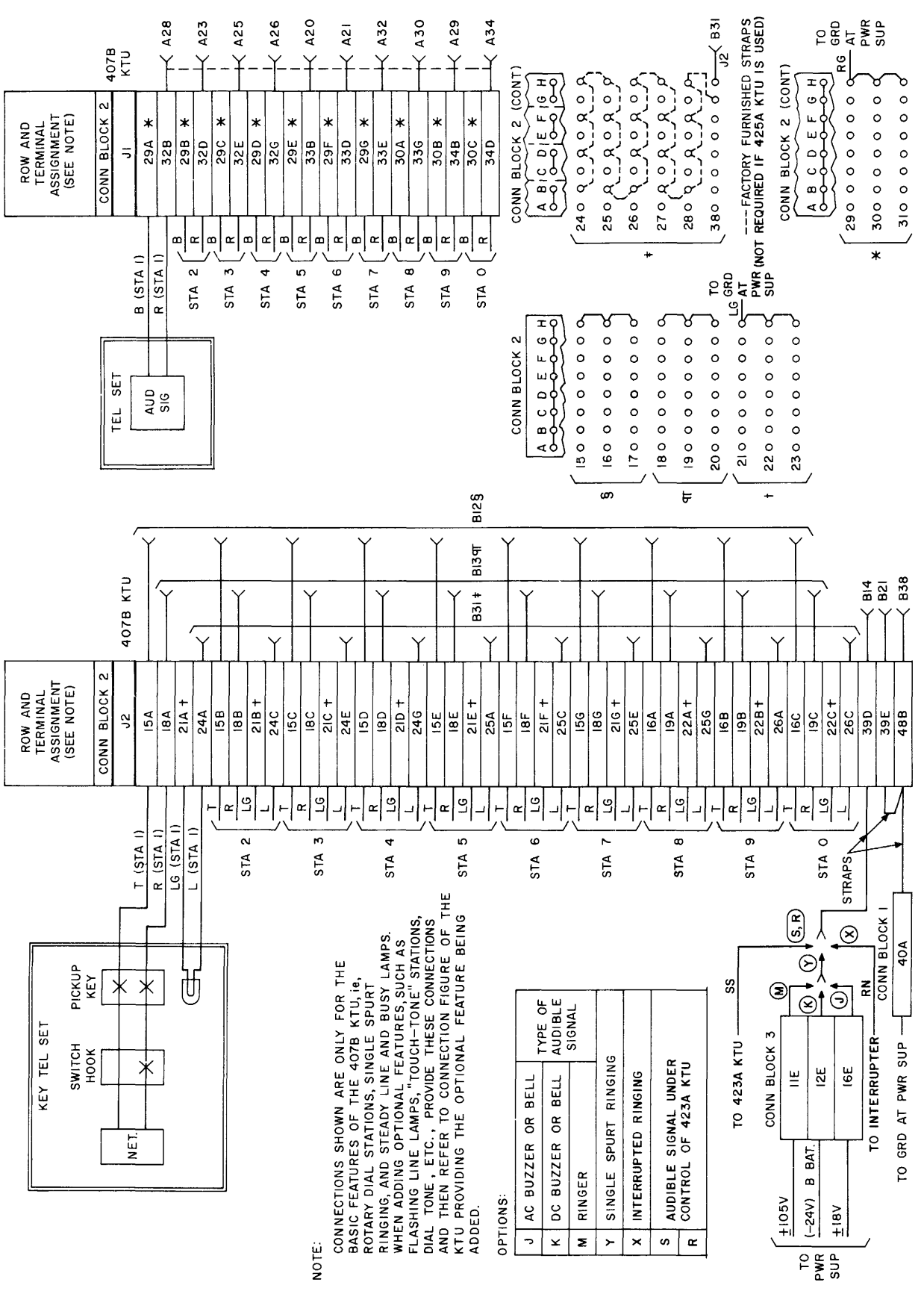


Fig. 15—Connections for 407B KTU (Dial Intercom 10-Code Circuit)

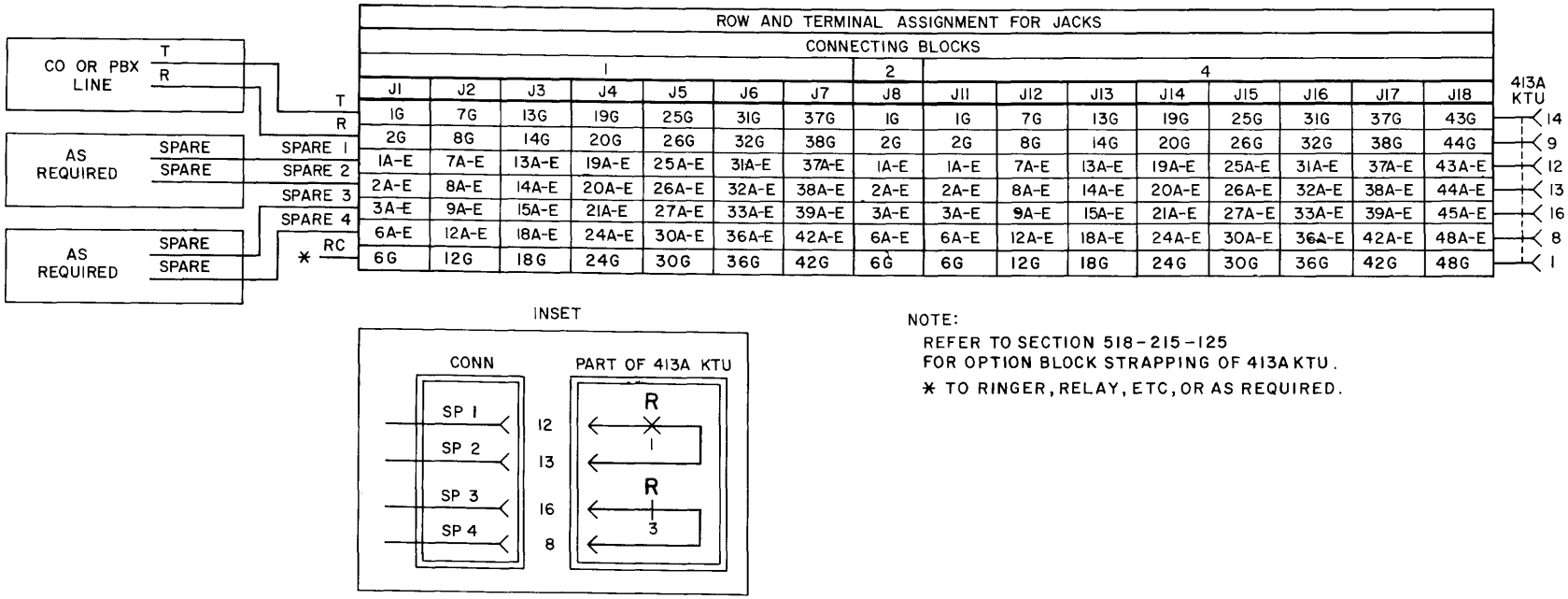
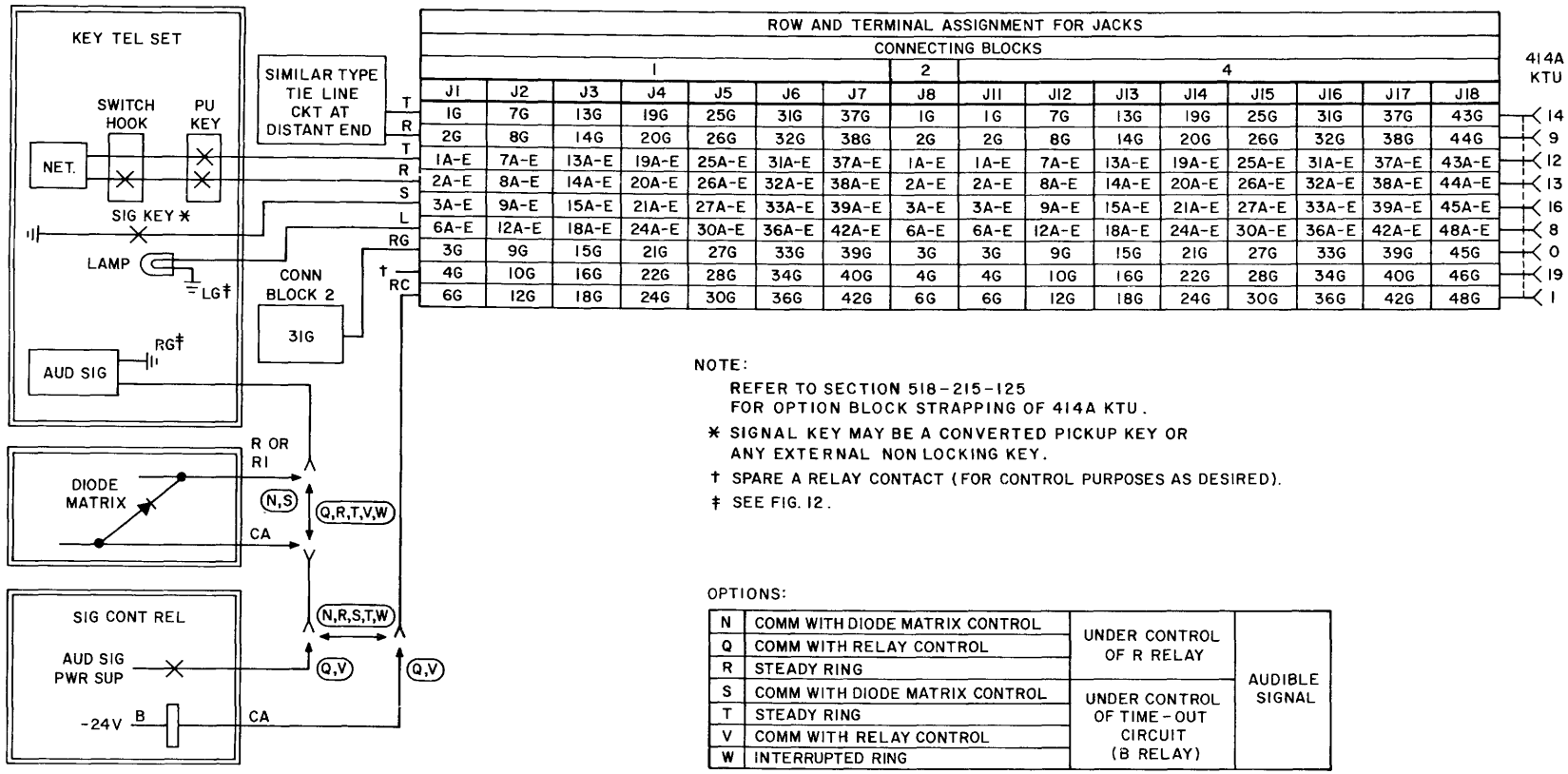


Fig. 16—Connections for 413A KTU (Auxiliary Ring-Up Circuit)



ROW AND TERMINAL ASSIGNMENT FOR JACKS

CONNECTING BLOCKS																
1							2	4								414A KTU
J1	J2	J3	J4	J5	J6	J7	J8	J11	J12	J13	J14	J15	J16	J17	J18	
1G	7G	13G	19G	25G	31G	37G	1G	1G	7G	13G	19G	25G	31G	37G	43G	14
2G	8G	14G	20G	26G	32G	38G	2G	2G	8G	14G	20G	26G	32G	38G	44G	9
1A-E	7A-E	13A-E	19A-E	25A-E	31A-E	37A-E	1A-E	1A-E	7A-E	13A-E	19A-E	25A-E	31A-E	37A-E	43A-E	12
2A-E	8A-E	14A-E	20A-E	26A-E	32A-E	38A-E	2A-E	2A-E	8A-E	14A-E	20A-E	26A-E	32A-E	38A-E	44A-E	13
3A-E	9A-E	15A-E	21A-E	27A-E	33A-E	39A-E	3A-E	3A-E	9A-E	15A-E	21A-E	27A-E	33A-E	39A-E	45A-E	16
6A-E	12A-E	18A-E	24A-E	30A-E	36A-E	42A-E	6A-E	6A-E	12A-E	18A-E	24A-E	30A-E	36A-E	42A-E	48A-E	8
3G	9G	15G	21G	27G	33G	39G	3G	3G	9G	15G	21G	27G	33G	39G	45G	0
4G	10G	16G	22G	28G	34G	40G	4G	4G	10G	16G	22G	28G	34G	40G	46G	19
6G	12G	18G	24G	30G	36G	42G	6G	6G	12G	18G	24G	30G	36G	42G	48G	1

NOTE:
REFER TO SECTION 518-215-125 FOR OPTION BLOCK STRAPPING OF 414A KTU.

* SIGNAL KEY MAY BE A CONVERTED PICKUP KEY OR ANY EXTERNAL NON LOCKING KEY.

† SPARE A RELAY CONTACT (FOR CONTROL PURPOSES AS DESIRED).

‡ SEE FIG. 12.

OPTIONS:

N	COMM WITH DIODE MATRIX CONTROL	UNDER CONTROL OF R RELAY	AUDIBLE SIGNAL
Q	COMM WITH RELAY CONTROL		
R	STEADY RING		
S	COMM WITH DIODE MATRIX CONTROL	UNDER CONTROL OF TIME-OUT CIRCUIT (B RELAY)	
T	STEADY RING		
V	COMM WITH RELAY CONTROL		
W	INTERRUPTED RING		

Fig. 17—Connections for 414A KTU (Ringdown Tie Line Circuit)

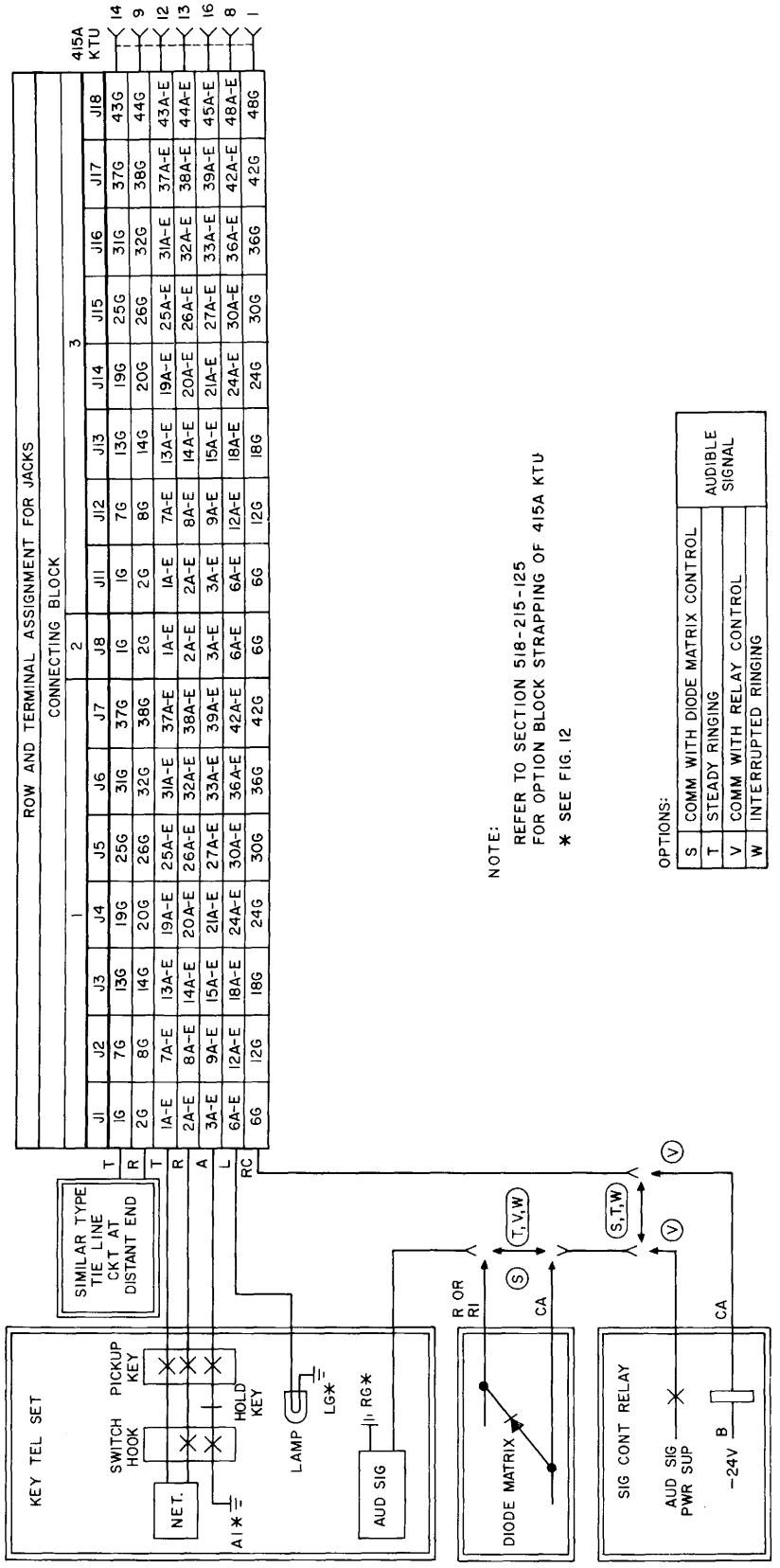


Fig. 18—Connections for 415A KTU (Automatic Tie Line Circuit)

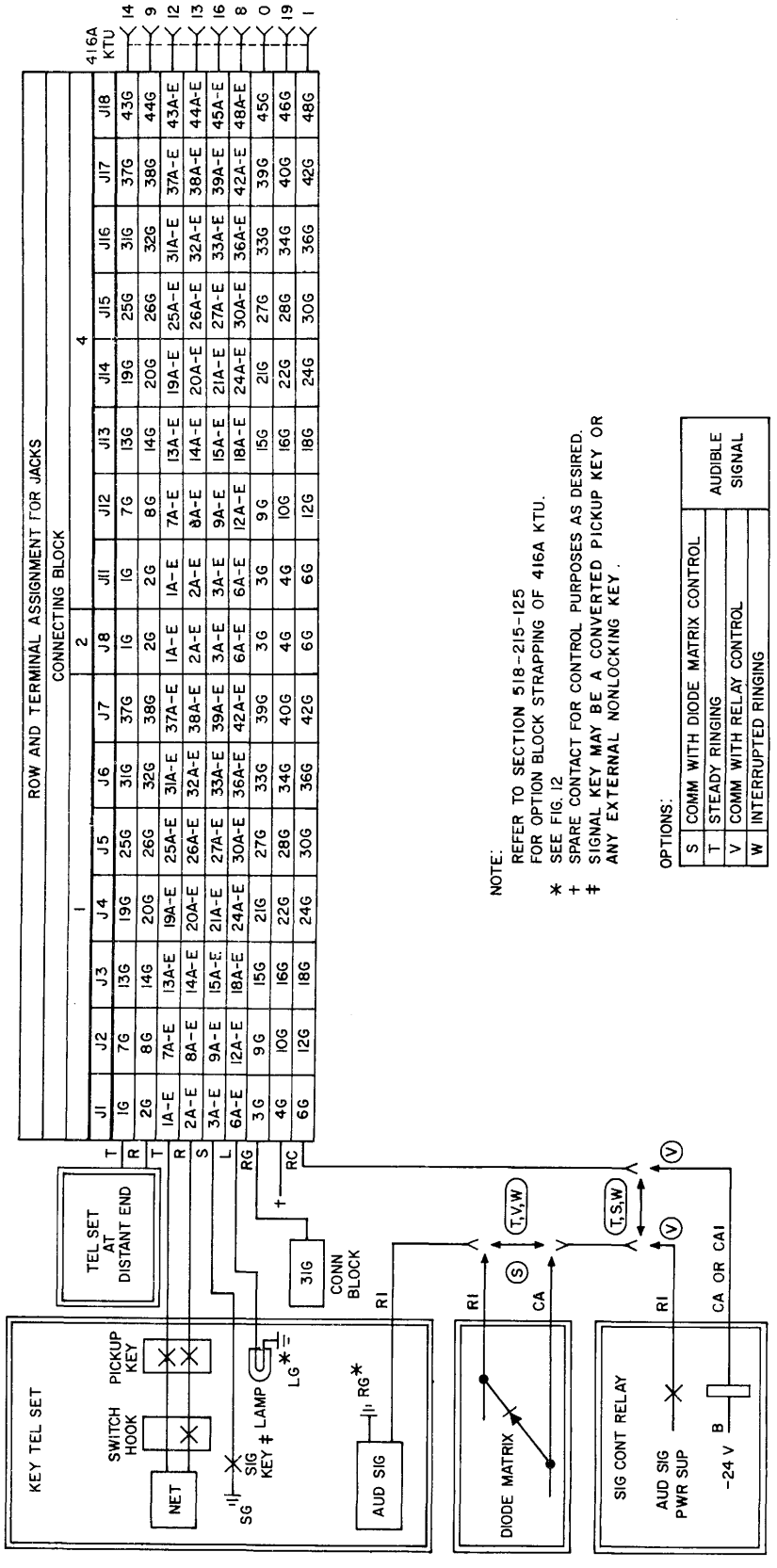


Fig. 19—Connections for 416A KTU (Station Line Circuit)

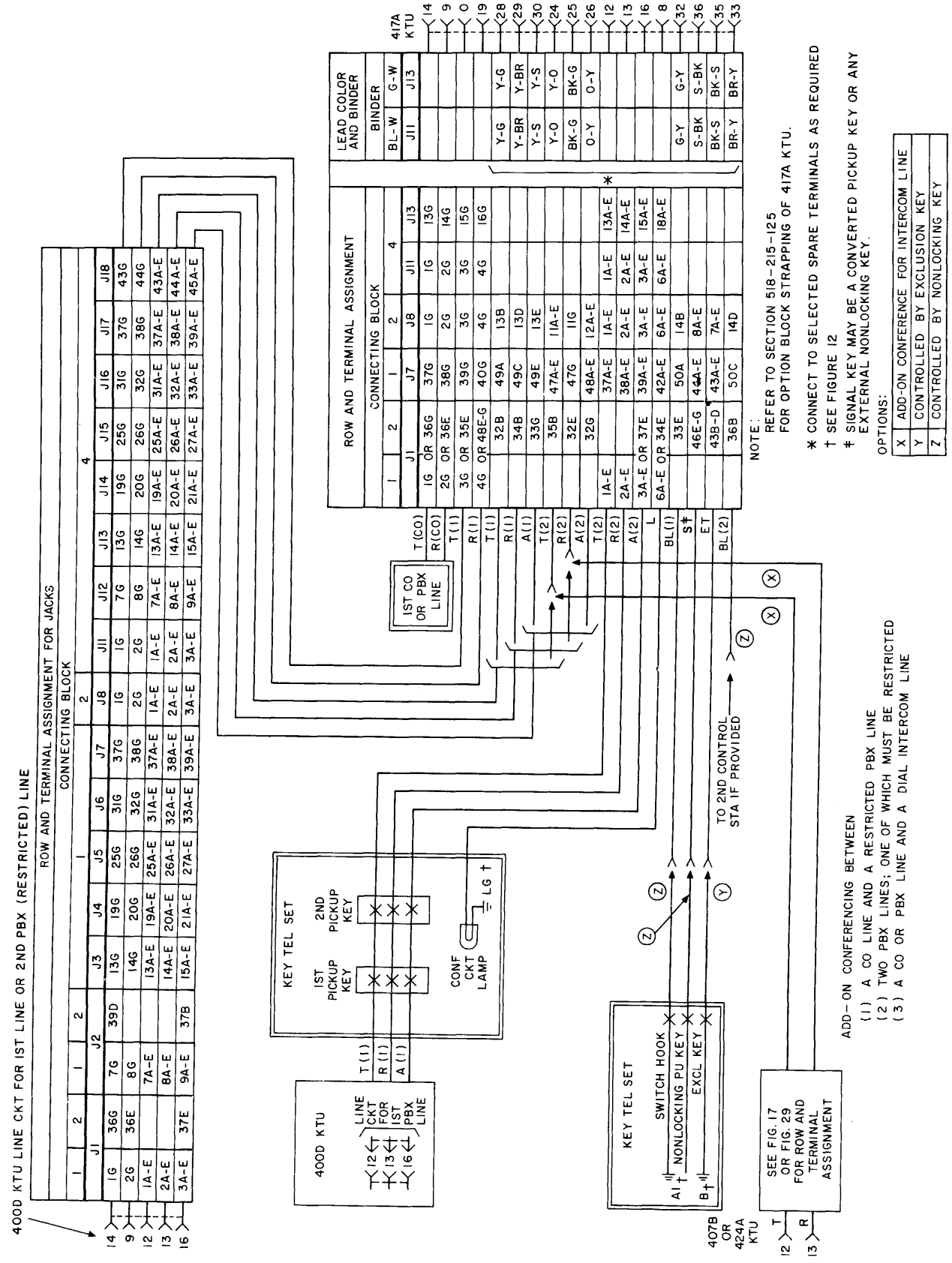
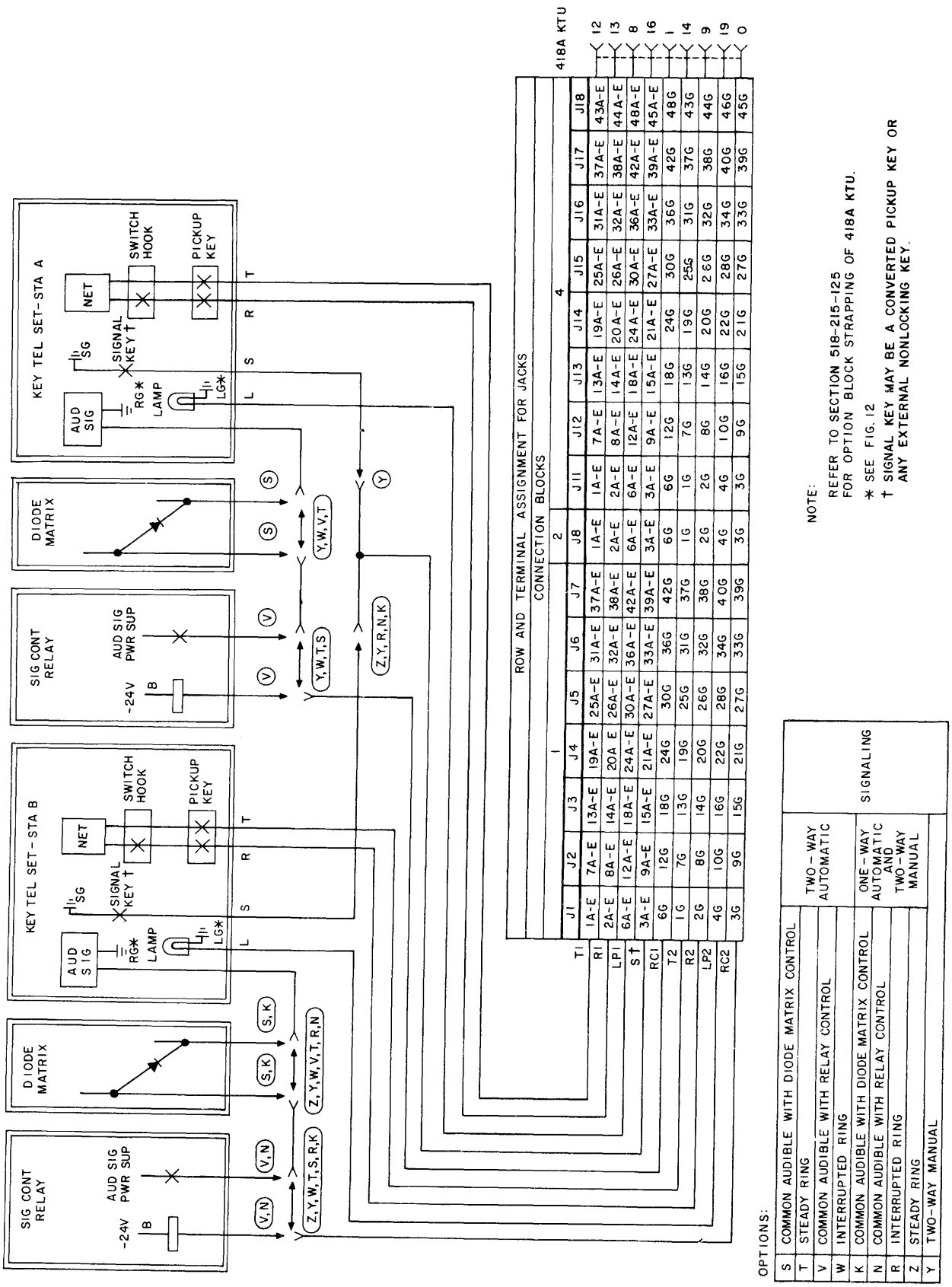


Fig. 20—Connections for 417A KTU (Add-On Conference Circuit)



	1						2					4							
	J1	J2	J3	J4	J5	J6	J7	J8	J11	J12	J13	J14	J15	J16	J17	J18		
T1	1A-E	7A-E	13A-E	19A-E	25A-E	31A-E	37A-E	1A-E	1A-E	7A-E	13A-E	19A-E	25A-E	31A-E	37A-E	43A-E	12	
R1	2A-E	8A-E	14A-E	20A E	26A-E	32A-E	38A-E	2A-E	2A-E	8A-E	14A-E	20A-E	26A-E	32A-E	38A-E	44A-E	13	
LP1	6A-E	12A-E	18A-E	24A-E	30A-E	36A-E	42A-E	6A-E	6A-E	12A-E	18A-E	24A-E	30A-E	36A-E	42A-E	48A-E	8	
S †	3A-E	9A-E	15A-E	21A-E	27A-E	33A-E	39A-E	3A-E	3A-E	9A-E	15A-E	21A-E	27A-E	33A-E	39A-E	45A-E	16	
RC1	6G	12G	18G	24G	30G	36G	42G	6G	6G	12G	18G	24G	30G	36G	42G	48G	1	
T2	1G	7G	13G	19G	25G	31G	37G	1G	1G	7G	13G	19G	25G	31G	37G	43G	14	
R2	2G	8G	14G	20G	26G	32G	38G	2G	2G	8G	14G	20G	26G	32G	38G	44G	9	
LP2	4G	10G	16G	22G	28G	34G	40G	4G	4G	10G	16G	22G	28G	34G	40G	46G	19	
RC2	3G	9G	15G	21G	27G	33G	39G	3G	3G	9G	15G	21G	27G	33G	39G	45G	0	

Fig. 21—Connections for 418A KTU (Short Range Tie Line Circuit)

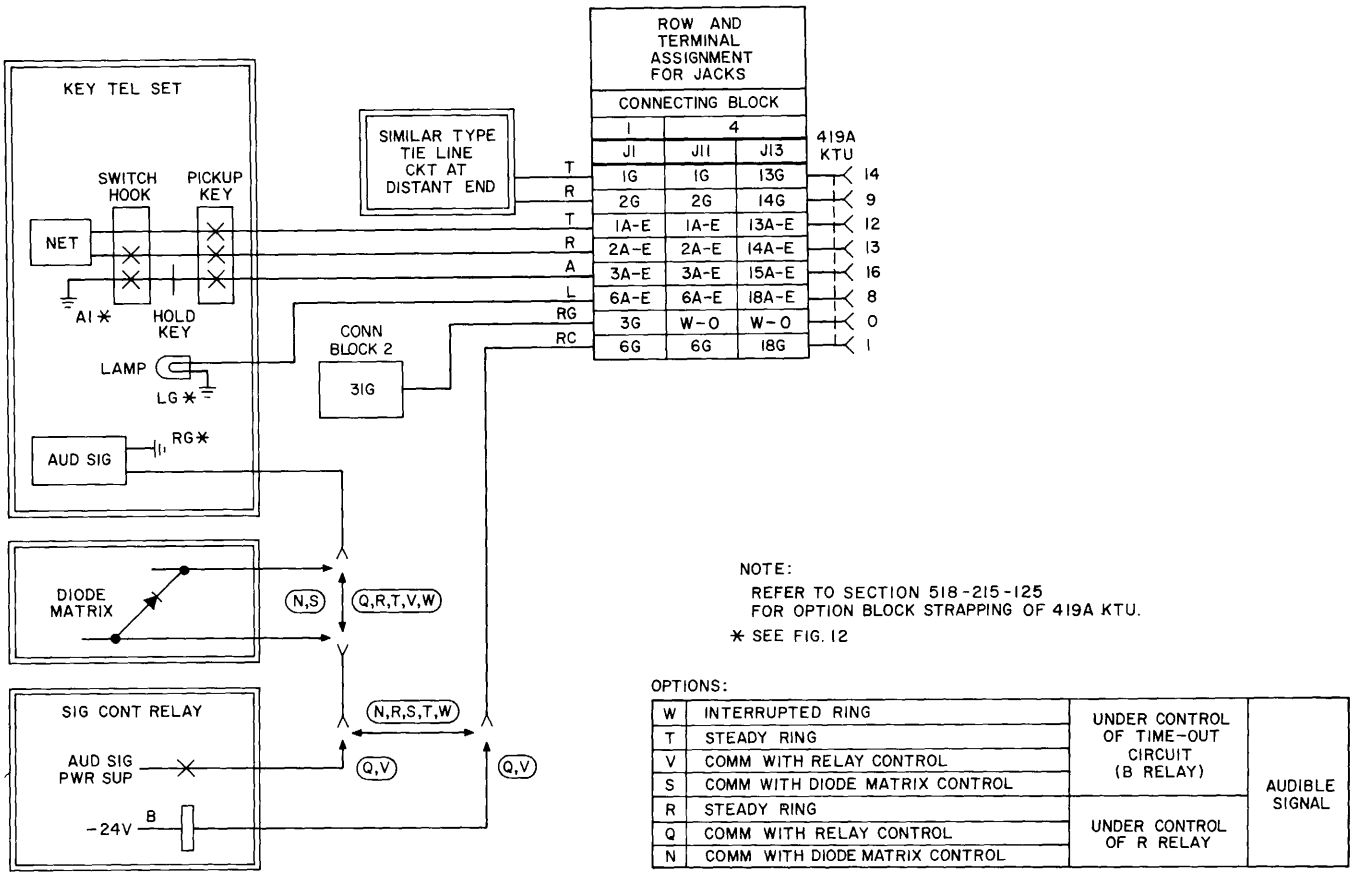
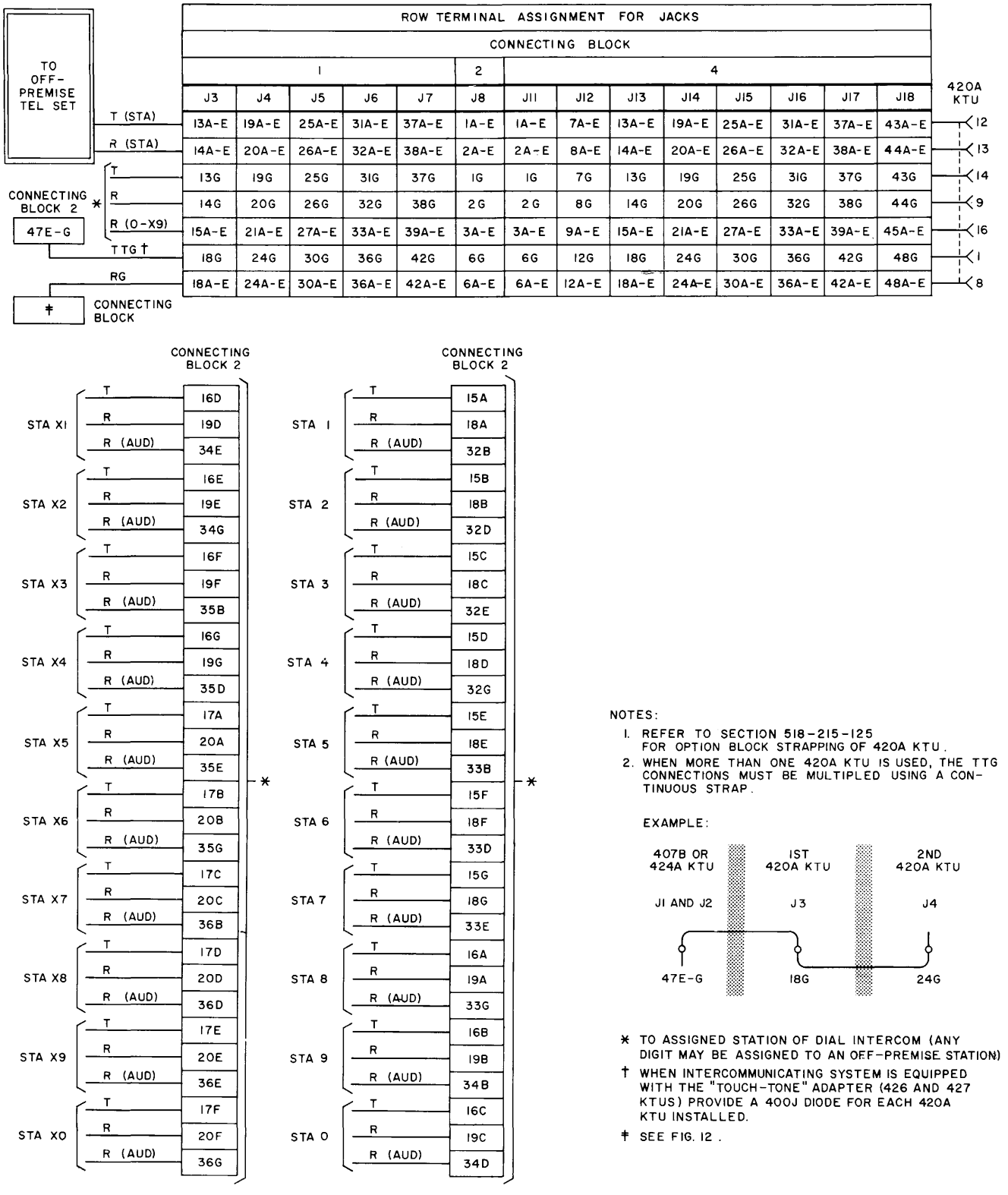


Fig. 22—Connections for 419A KTU (Automatic Ringdown Tie Line Circuit)



NOTES:

1. REFER TO SECTION 518-215-125 FOR OPTION BLOCK STRAPPING OF 420A KTU.
2. WHEN MORE THAN ONE 420A KTU IS USED, THE TTG CONNECTIONS MUST BE MULTIPLED USING A CONTINUOUS STRAP.

EXAMPLE:

* TO ASSIGNED STATION OF DIAL INTERCOM (ANY DIGIT MAY BE ASSIGNED TO AN OFF-PREMISE STATION)

† WHEN INTERCOMMUNICATING SYSTEM IS EQUIPPED WITH THE "TOUCH-TONE" ADAPTER (426 AND 427 KTUS) PROVIDE A 400J DIODE FOR EACH 420A KTU INSTALLED.

‡ SEE FIG. 12.

Fig. 23—Connections for 420A KTU (Dial Intercom Long Line Circuit)

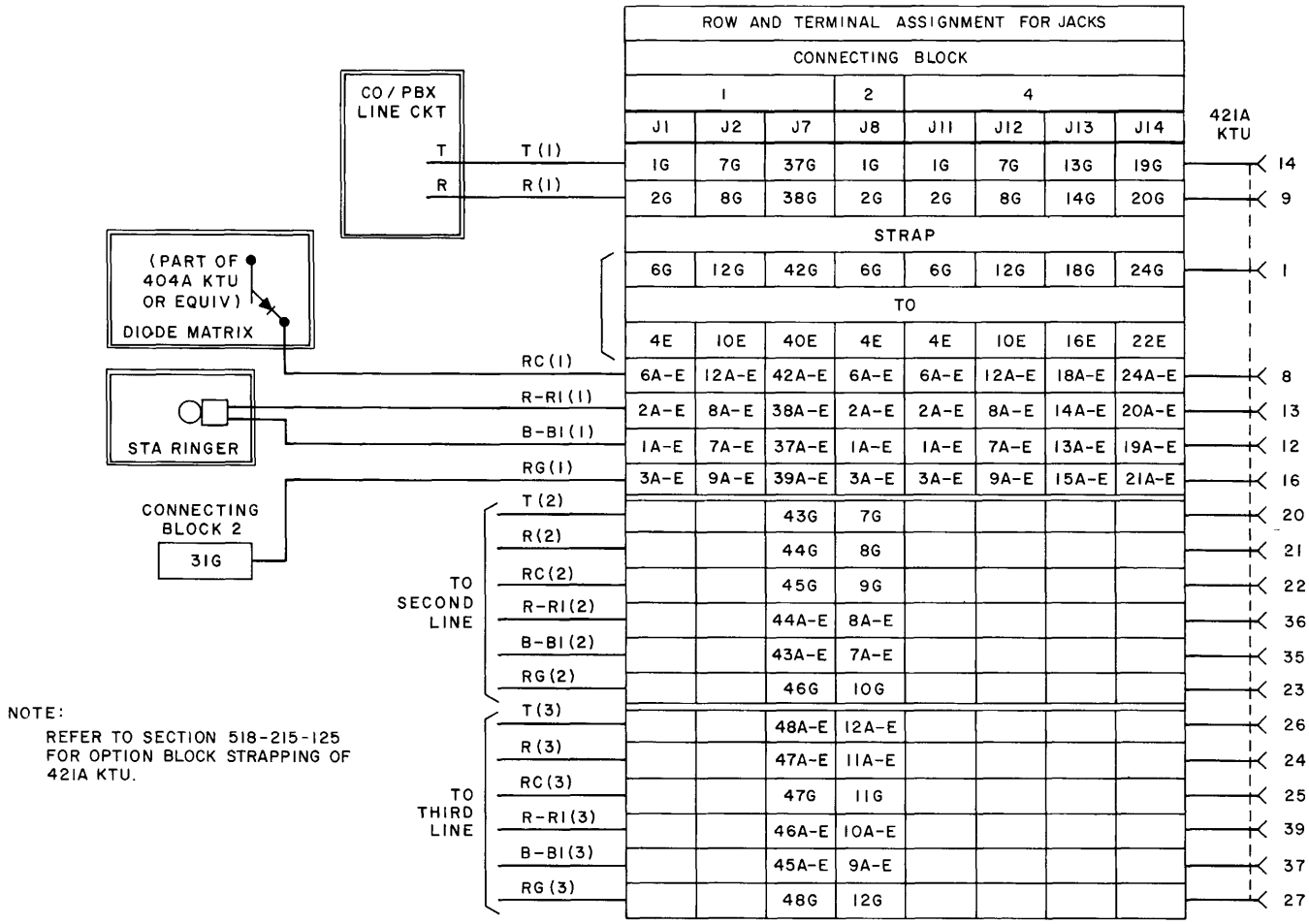


Fig. 24—Connections for 421A KTU (Power Failure Transfer Circuit)

TABLE

FOR STA CODE	B GRD	CONNECT TERMINALS ON 407B OR 424A KTU (RH) B26	(Y1) B25	(Y2) B24	(Y3) B22	(Y4) A36	(Y5) A37	424A (LT2) A39
	TO TERMINALS ON 421A KTU							
1	25,27	39		37				
2	25,27	39	37					
3	22,25,27	39			37	36		
4	22,25,27	39		37		36		
5	22,23,25,27	39	37			36	35	
6	22,23,25,27	39			37	36	35	
7	22,23,25,27	39		37		36	35	
8	23,25,27	39	37				35	
9	23,25,27	39			37		35	
0	23,25,27	39		37			35	
X1	8,25,27	39		37				13
X2	8,25,27	39	37					13
X3	8,22,25,27	39			37	36		13
X4	8 ,22,25,27	39		37		36		13
X5	8,22,23,25,27	39	37			36	35	13
X6	8,22,23,25,27	39			37	36	35	13
X7	8,22,23,25,27	39		37		36	35	13
X8	8,23,25,27	39	37				35	13
X9	8,23,25,27	39			37		35	13
X0	8,23,25,27	39		37			35	13

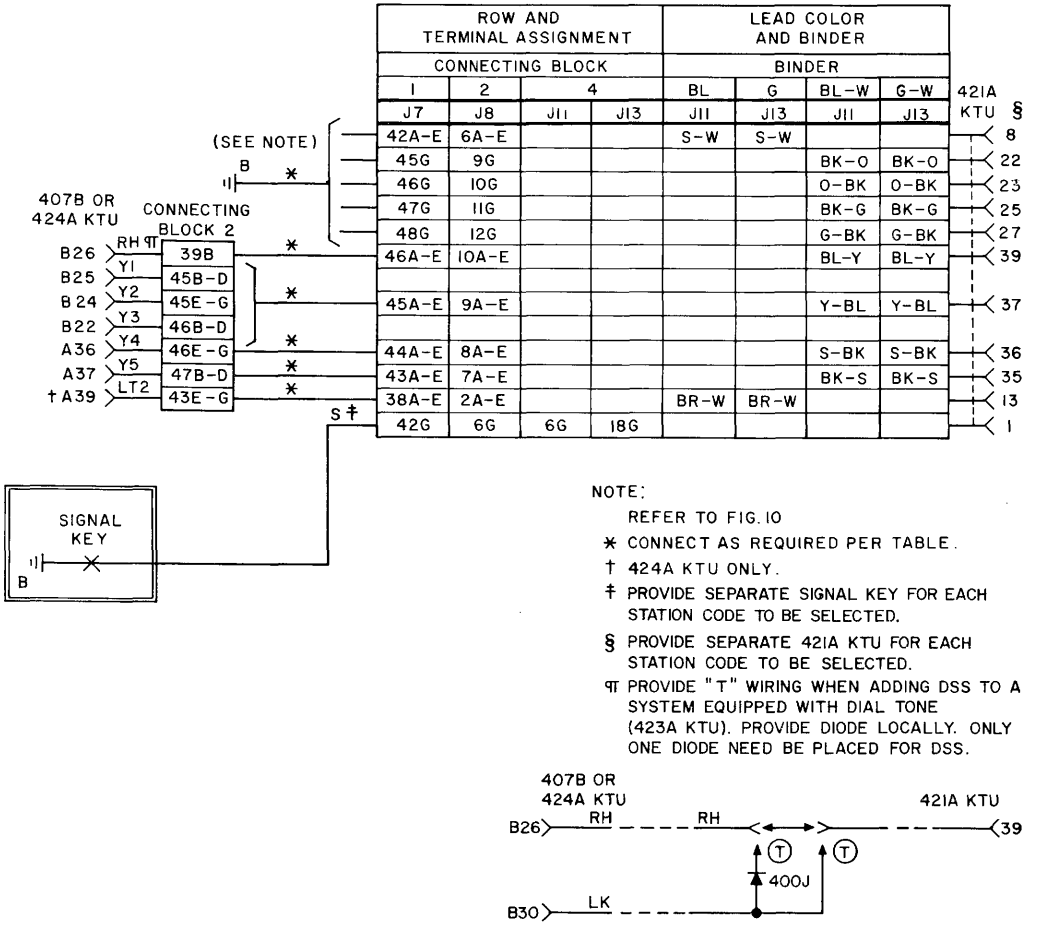
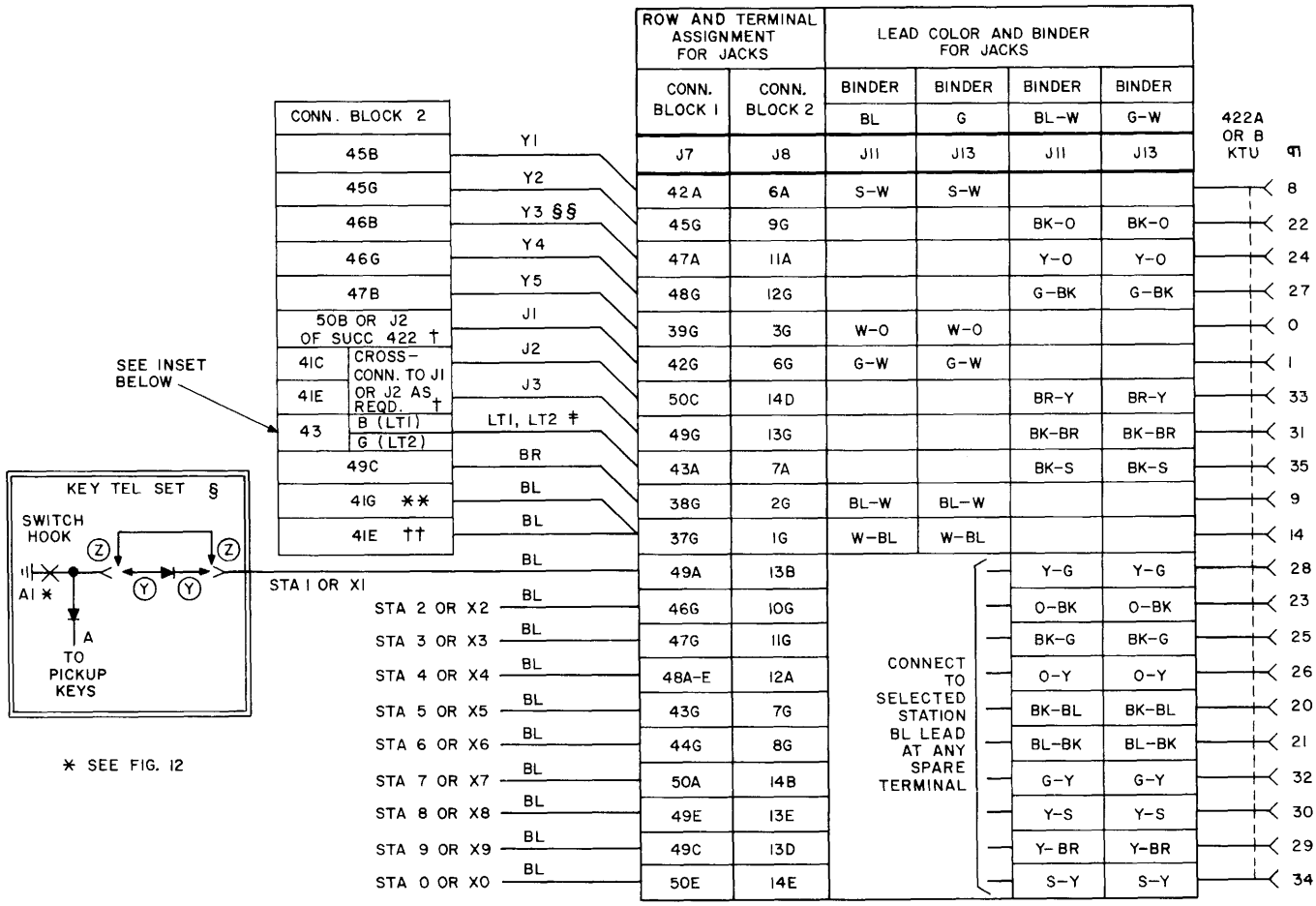
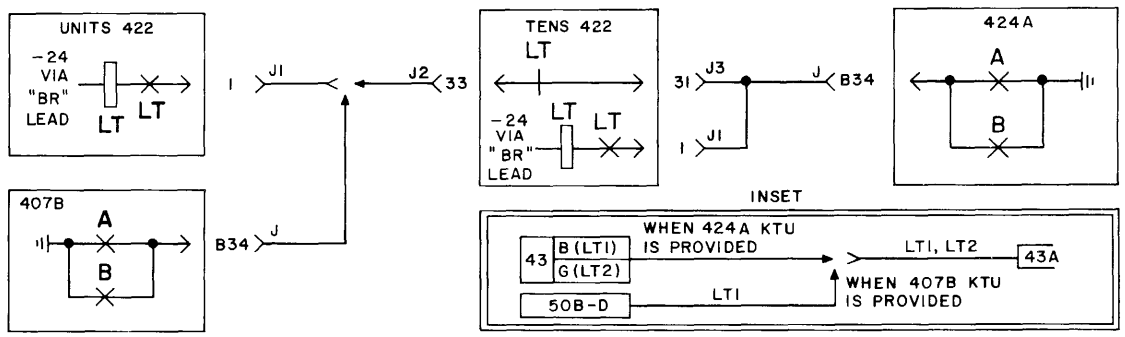


Fig. 25—Connections for 421A KTU (DSS Feature of Dial Intercom Line)



† CONNECT J1, J2, AND J3 LEADS AS FOLLOWS:



J2 AND J3 LEADS OF UNITS 422 KTU PERFORM NO FUNCTION.

‡ CONNECT UNITS 422 KTU TO LTI LEAD OF 425A KTU AND CONNECT TENS 422 KTU TO LT2 LEAD OF OF 425A KTU.

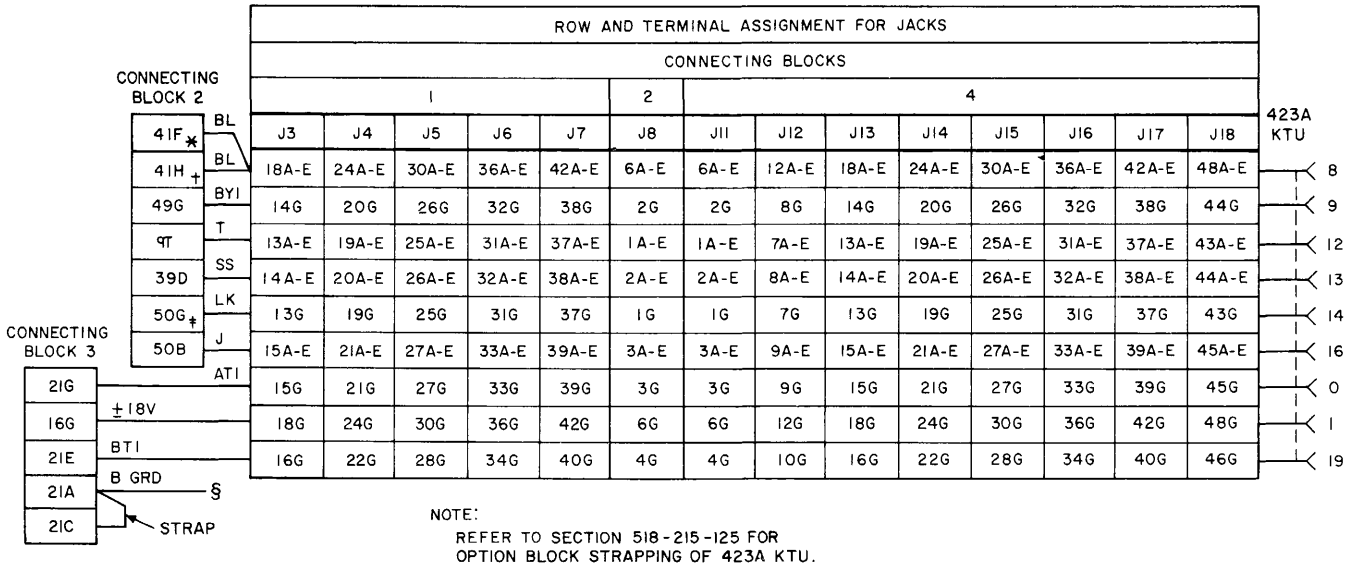
§ FOR CONNECTION OF DIODE IN THE "A" LEAD, USE THE STATION BUSY OPTION AS SHOWN IN THE CONNECTION SECTION OF TYPE SET USED. ALSO, PROVIDE Z OPTION WHEN 422B KTU IS USED, OR Y OPTION WHEN 422A KTU IS USED.

¶ PROVIDE A SEPARATE 422 KTU FOR THE UNITS GROUP (1—0, SINGLE-DIGIT NOS.) AND FOR THE TENS GROUP (X1—X0, TWO-DIGIT NOS.).

** FOR UNITS 422 KTU §§ 422A ONLY

†† FOR TENS 422 KTU

Fig. 26—Connections for 422A or B KTU (Dial Intercom Station Busy Circuit)



CONNECTING BLOCK 2		ROW AND TERMINAL ASSIGNMENT FOR JACKS — CONNECTING BLOCKS 1					2	4							423A KTU
41F *	BL	J3	J4	J5	J6	J7	J8	J11	J12	J13	J14	J15	J16	J17	J18	
41H +	BL	18A-E	24A-E	30A-E	36A-E	42A-E	6A-E	6A-E	12A-E	18A-E	24A-E	30A-E	36A-E	42A-E	48A-E	8
49G	BYI	14G	20G	26G	32G	38G	2G	2G	8G	14G	20G	26G	32G	38G	44G	9
9T	T	13A-E	19A-E	25A-E	31A-E	37A-E	1A-E	1A-E	7A-E	13A-E	19A-E	25A-E	31A-E	37A-E	43A-E	12
39D	SS	14A-E	20A-E	26A-E	32A-E	38A-E	2A-E	2A-E	8A-E	14A-E	20A-E	26A-E	32A-E	38A-E	44A-E	13
50G ‡	LK	13G	19G	25G	31G	37G	1G	1G	7G	13G	19G	25G	31G	37G	43G	14
50B	J	15A-E	21A-E	27A-E	33A-E	39A-E	3A-E	3A-E	9A-E	15A-E	21A-E	27A-E	33A-E	39A-E	45A-E	16
	ATI	15G	21G	27G	33G	39G	3G	3G	9G	15G	21G	27G	33G	39G	45G	0
	±18V	18G	24G	30G	36G	42G	6G	6G	12G	18G	24G	30G	36G	42G	48G	1
	BTI	16G	22G	28G	34G	40G	4G	4G	10G	16G	22G	28G	34G	40G	46G	19

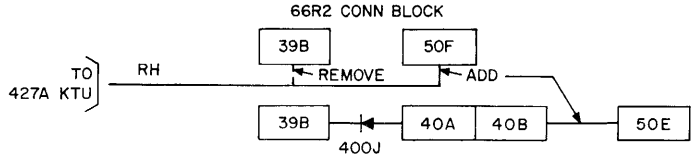
CONNECTING BLOCK 3: 21G, 16G, 21E, 21A, 21C; B GRD §; STRAP

NOTE:
REFER TO SECTION 518-215-125 FOR OPTION BLOCK STRAPPING OF 423A KTU.

* TO TENS 422 KTU

\+ TO UNITS 422 KTU

‡ WHEN ADDING THE 423A KTU TO A SYSTEM EQUIPPED FOR "TOUCH-TONE" (426A AND 427A OR B KTUS). A 400J DIODE MUST BE INSTALLED BETWEEN THE "RH" AND "LK" LEADS OF THE 407B OR 424A KTU. REWIRE AS FOLLOWS:



IF THE SYSTEM IS EQUIPPED WITH DSS (421A KTU) REWIRE "RH" LEADS BY TERMINATING ONE LEAD TO TERMINAL 50F AND THE OTHER LEAD TO A 183A2 ADAPTER INSTALLED OVER TERMINALS 50G AND 50H.

§ SEE FIG. 12

9T WHEN A 407B KTU IS PROVIDED FOR THE DIAL INTERCOM, CONNECT "T" LEAD TO ANY UNUSED TERMINAL (16D-G OR 17A-F) OF CONNECTING BLOCK 2. WHEN A 424A KTU IS PROVIDED, CONNECT "T" LEAD TO TERMINAL ASSIGNED TO CODE USED FOR 1ST DIGIT OF TWO DIGIT CODE (15A-G OR 16A-C).

Fig. 27—Connections for 423A KTU (Dial Intercom, Audible Ringback Tone, Dial Tone, Busy Tone Circuit)

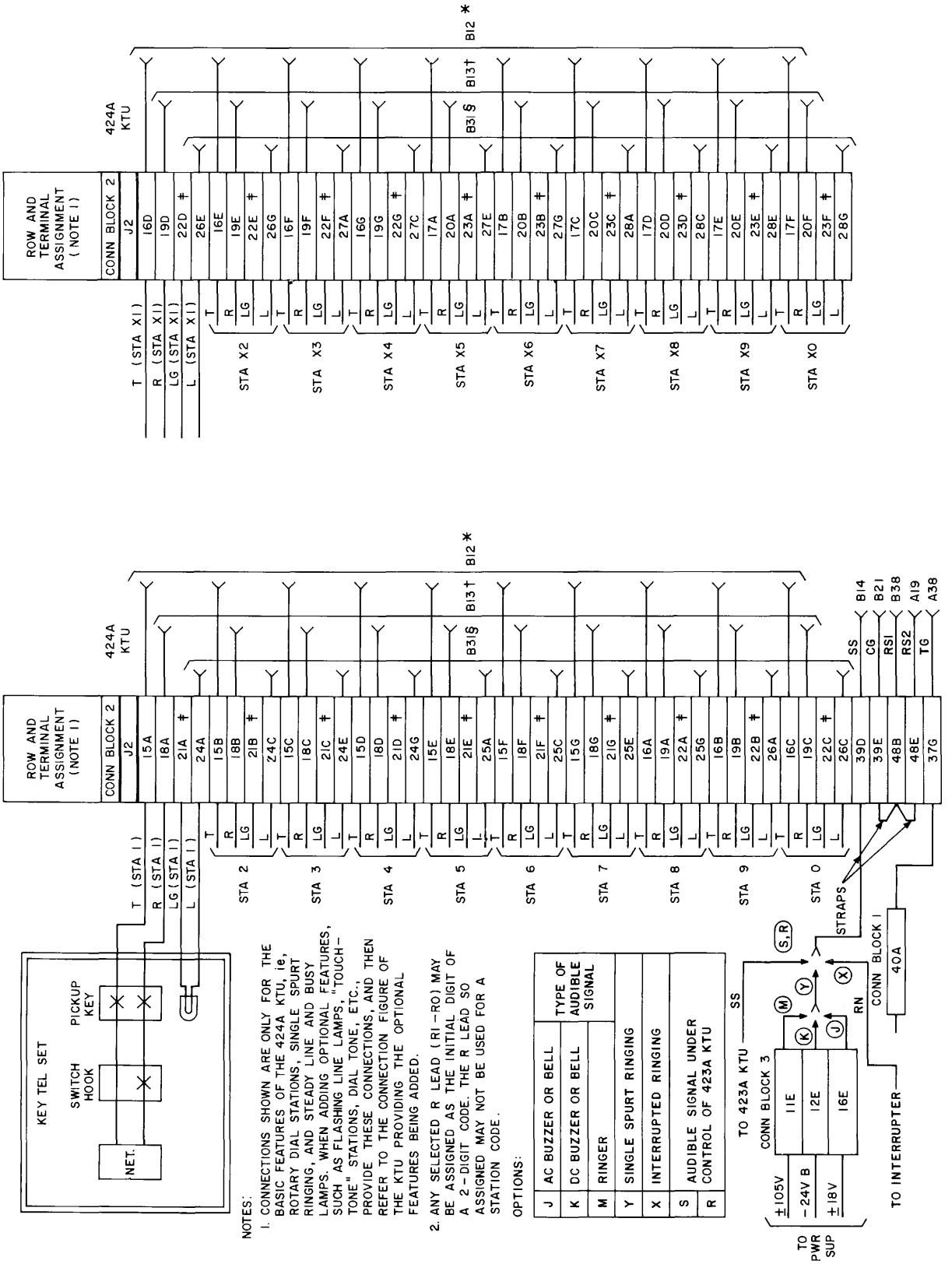


Fig. 28—Connections for 424A KTU (Dial Intercom 19-Code Circuit) (Sheet 1)

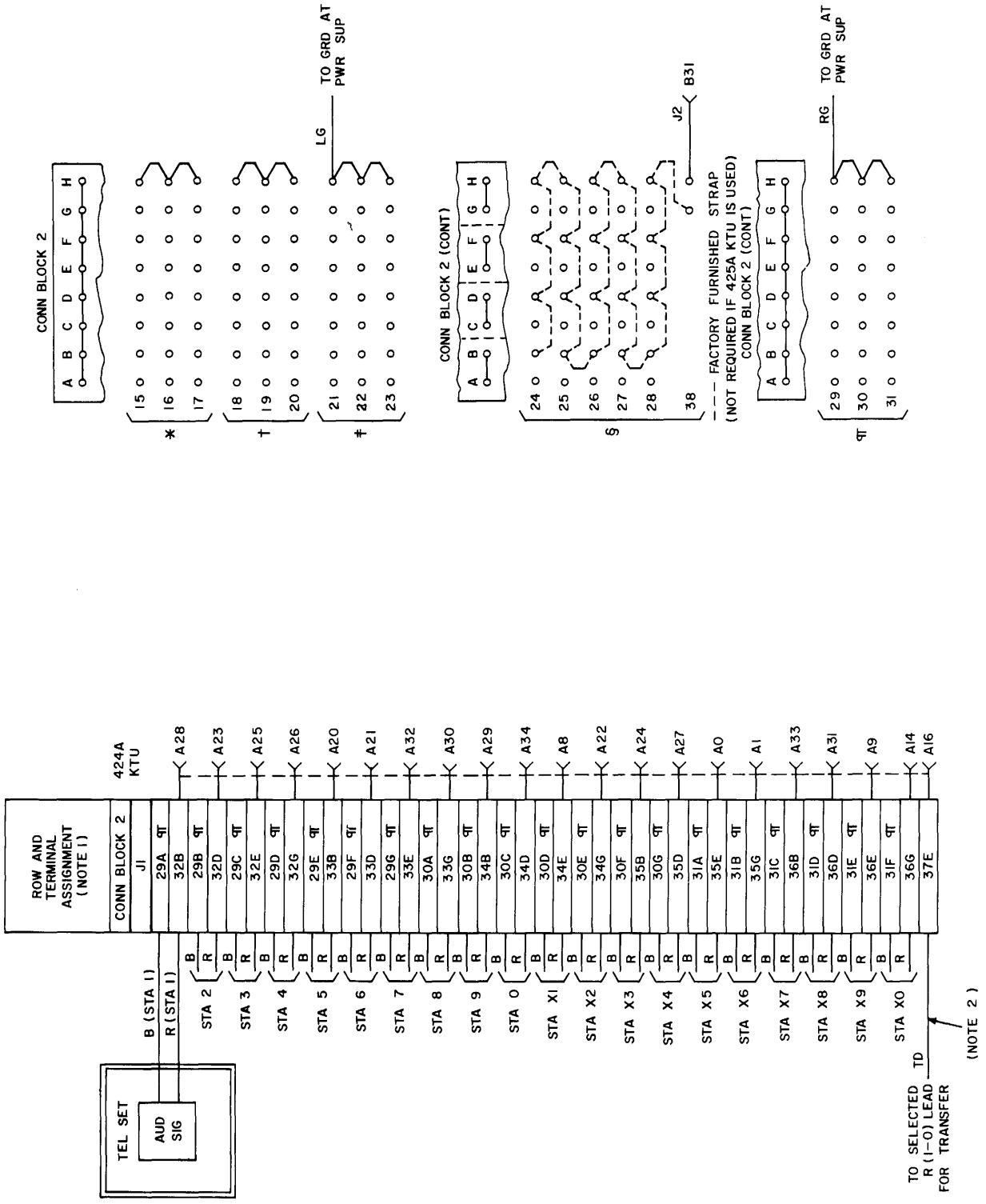


Fig. 28—Connections for 424A KTU (Dial Intercom 19-Code Circuit) (Sheet 2)

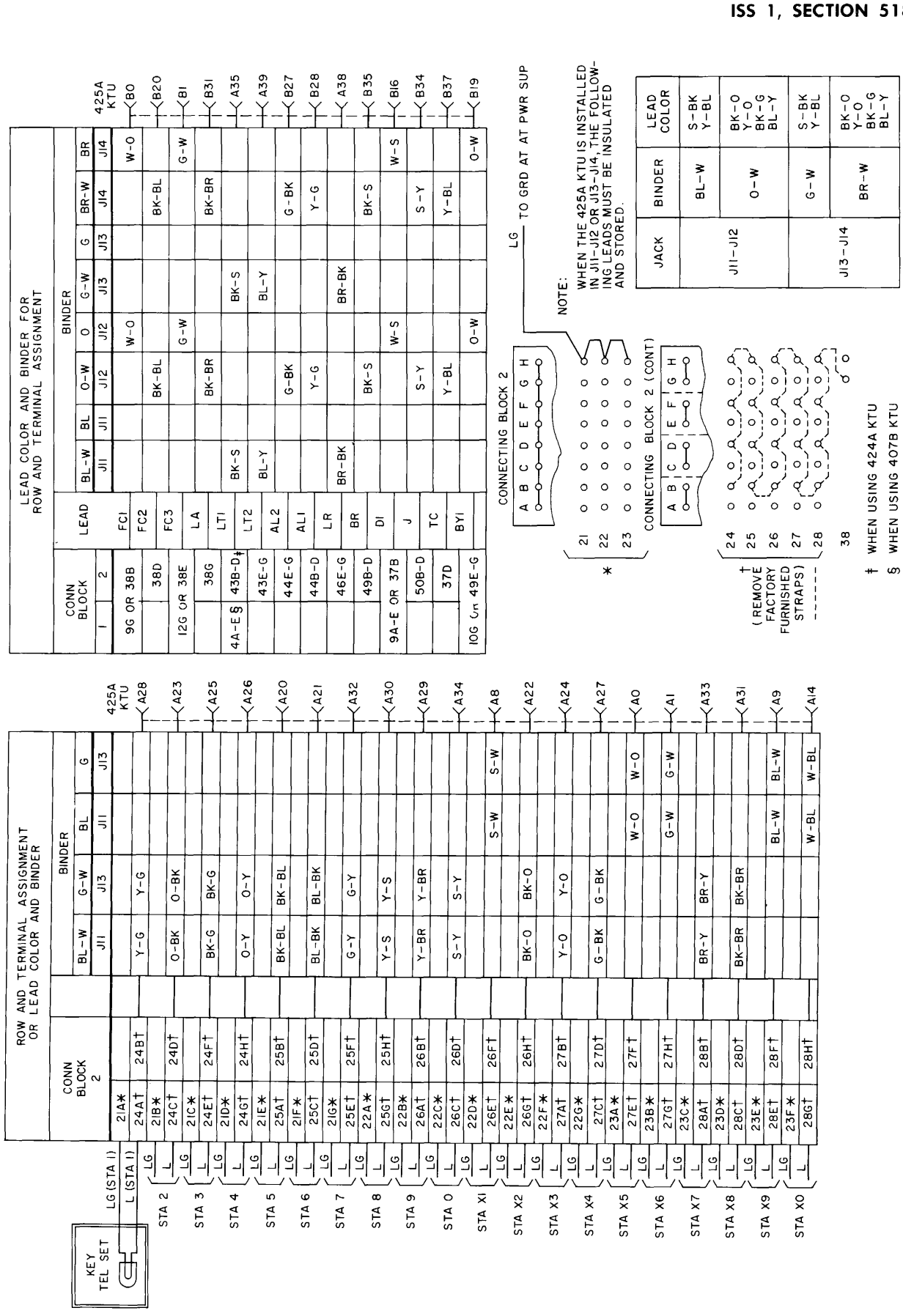


Fig. 29—Connections for 425A KTU (Dial Intercom Flashing Lamp Circuit)

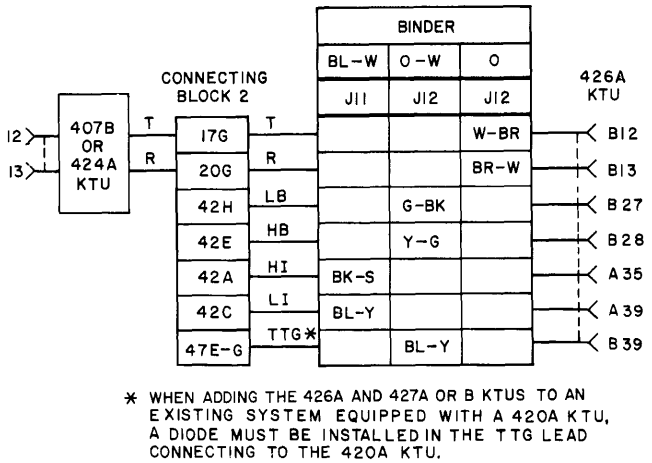
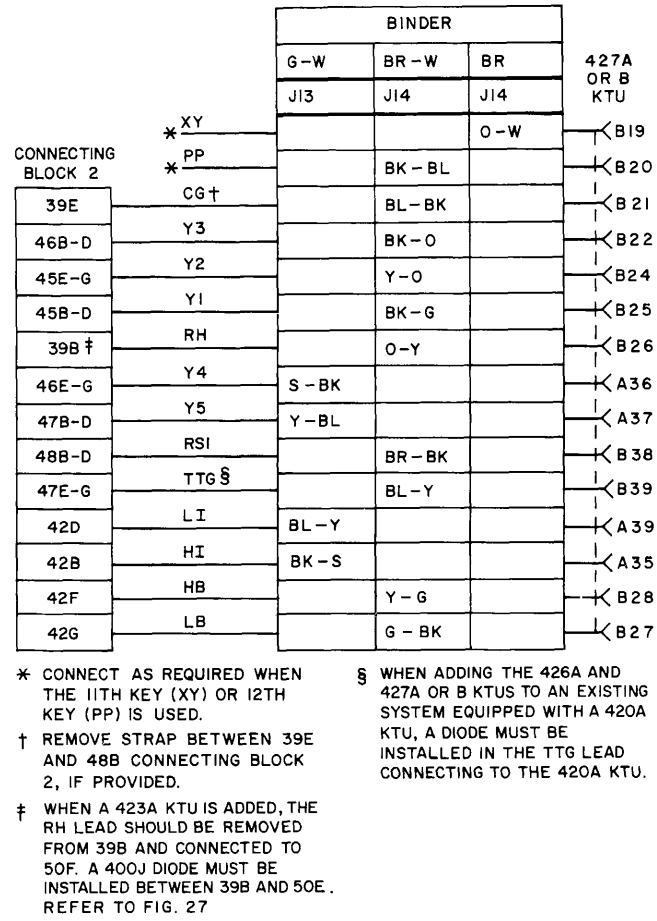


Fig. 30—Connections for 426A KTU (TOUCH-TONE Adapter Circuit)



* CONNECT AS REQUIRED WHEN THE 11TH KEY (XY) OR 12TH KEY (PP) IS USED.

† REMOVE STRAP BETWEEN 39E AND 48B CONNECTING BLOCK 2, IF PROVIDED.

‡ WHEN A 423A KTU IS ADDED, THE RH LEAD SHOULD BE REMOVED FROM 39B AND CONNECTED TO 50F. A 400J DIODE MUST BE INSTALLED BETWEEN 39B AND 50E. REFER TO FIG. 27

§ WHEN ADDING THE 426A AND 427A OR B KTUS TO AN EXISTING SYSTEM EQUIPPED WITH A 420A KTU, A DIODE MUST BE INSTALLED IN THE TTG LEAD CONNECTING TO THE 420A KTU.

Fig. 31—Connections for 427A or B KTU (TOUCH-TONE Adapter Circuit)

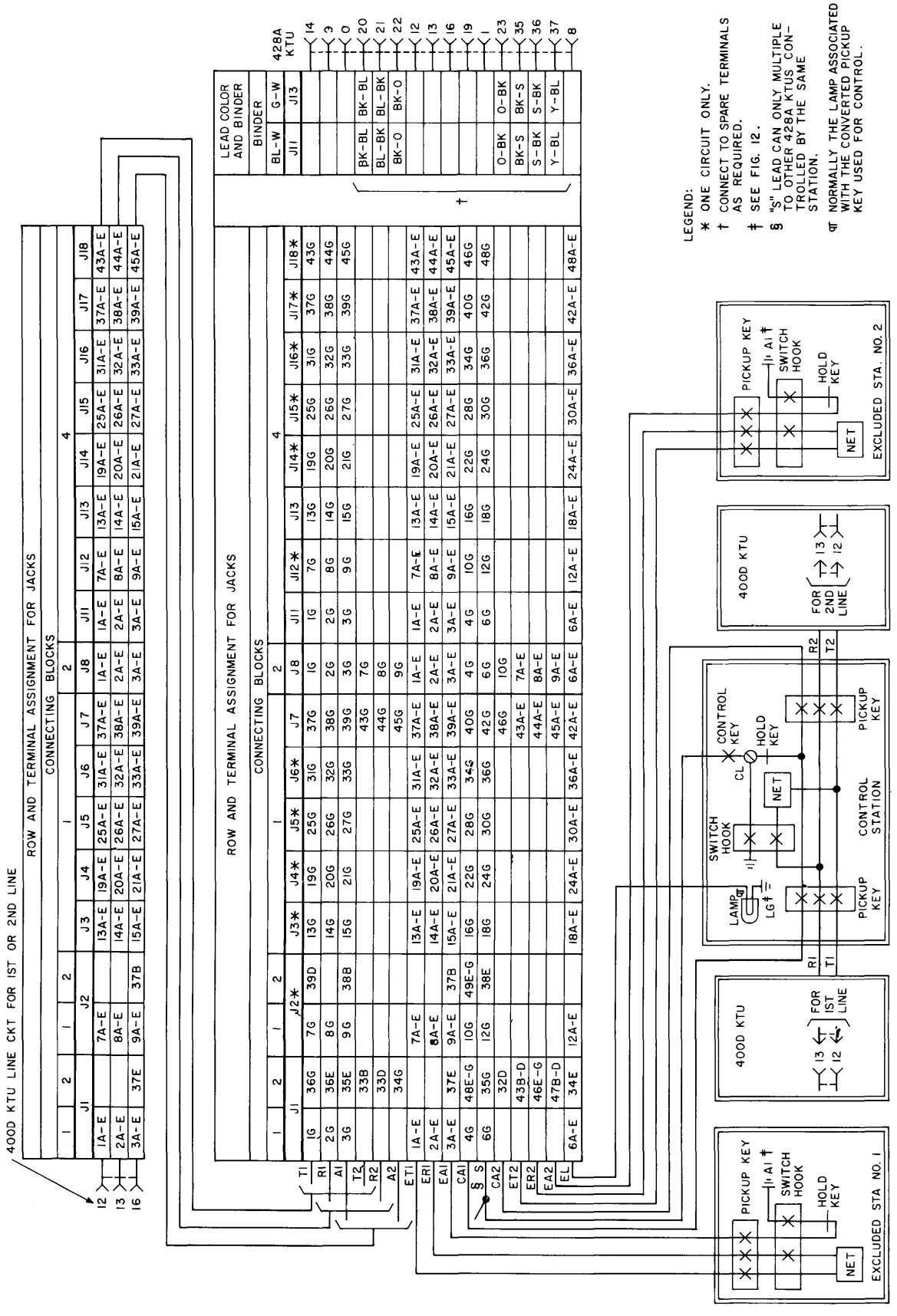
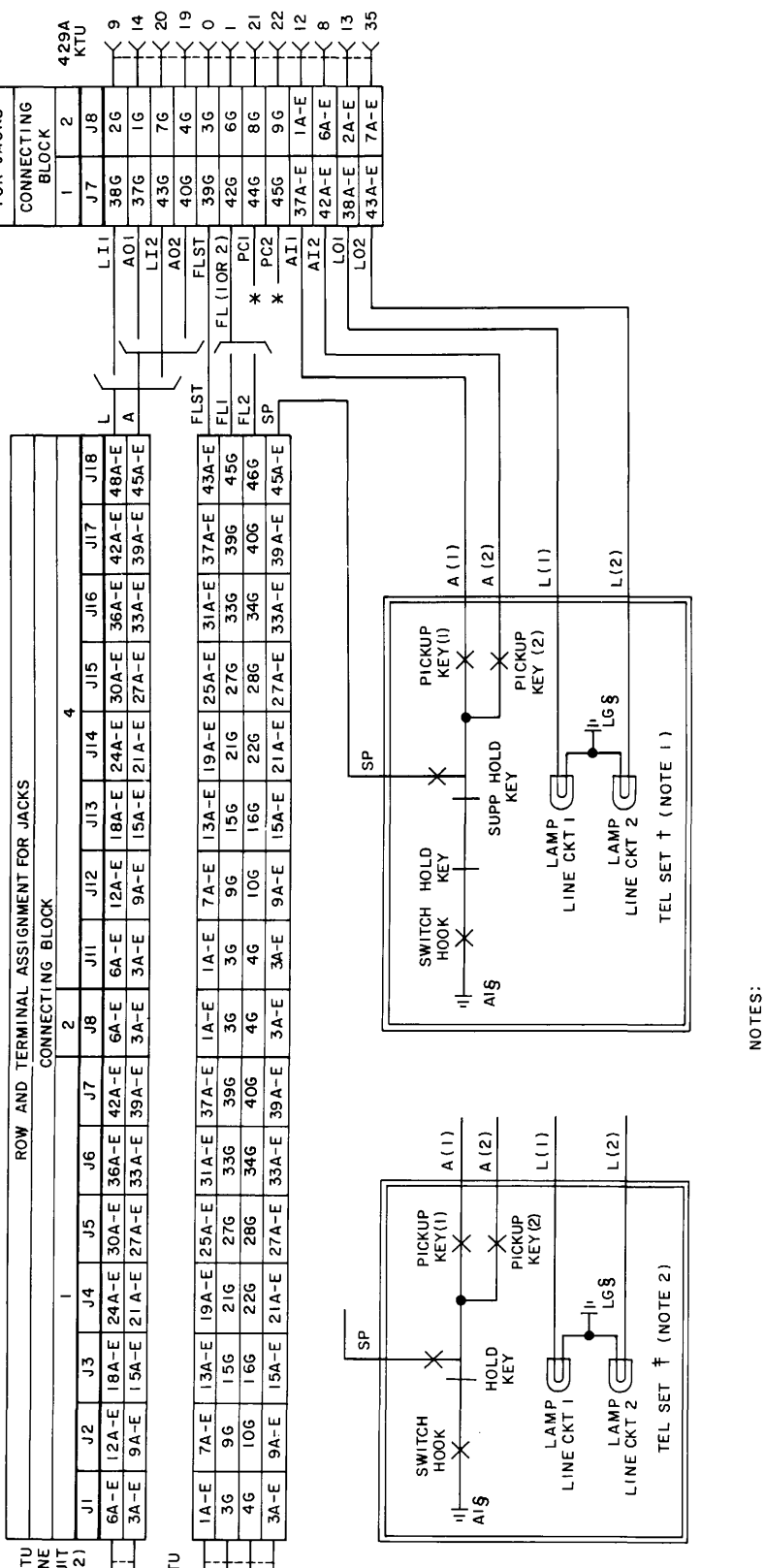


Fig. 32—Connections for 428A KTU (Multiline Exclusion Circuit)



NOTES:

1. FOR PRIORITY HOLD, THE A AND L LEADS FROM EACH TEL SET CONNECT THROUGH THE 429A KTU TO THE 400D KTU.
2. FOR I HOLD, THE A AND L LEADS FROM THE TEL SET SELECTED FOR I HOLD CONNECT THROUGH THE 429A KTU TO THE 400D KTU. THE A AND L LEADS FROM THE OTHER TEL SETS CONNECT DIRECTLY TO THE 400D KTU.
3. THE 429A KTU WILL PROVIDE SUPPLEMENTARY HOLD FOR TWO CO OR PBX LINE CIRCUITS. EACH HOLD CIRCUIT MAY BE ASSIGNED AS PRIORITY OR I HOLD.
4. LIMITATIONS OF THE 430A KTU ARE AS FOLLOWS:
   A. FL1 OR FL2 LEAD CAN SERVE A MAXIMUM OF 50 LAMPS.
   B. SP LEAD CAN CONNECT TO A MAXIMUM OF 20 STATIONS.

* TO MESSAGE REGISTER IF PROVIDED
† WIRED FOR PRIORITY HOLD
‡ WIRED FOR I HOLD
§ SEE FIG. 12

Fig. 33—Connections for 429A KTU and 430A KTU (Supplementary Hold Detector Circuit and Flutter Generator Circuit)

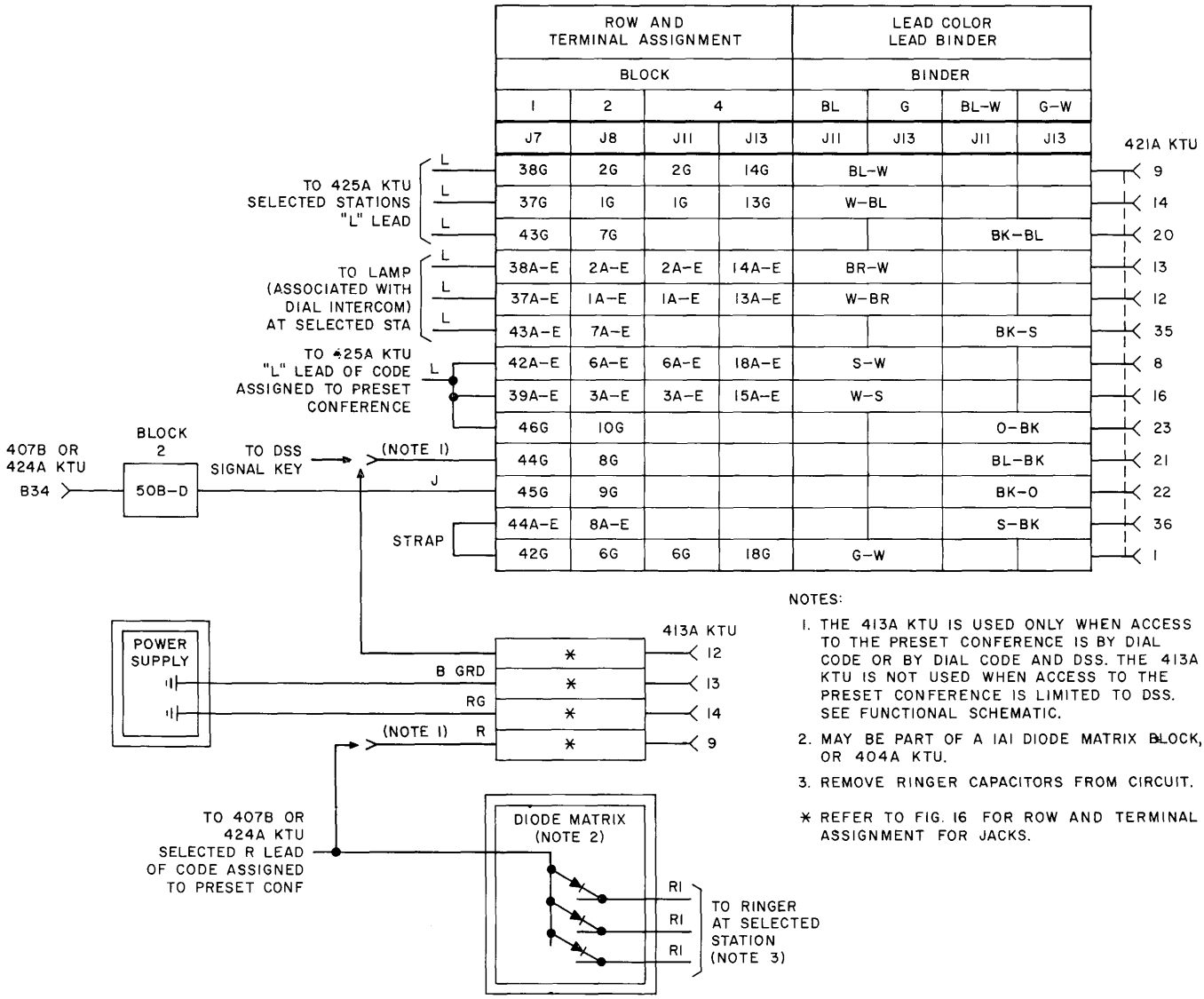


Fig. 34—Connections for Preset Conference Circuit for Deluxe Dial Intercom Line

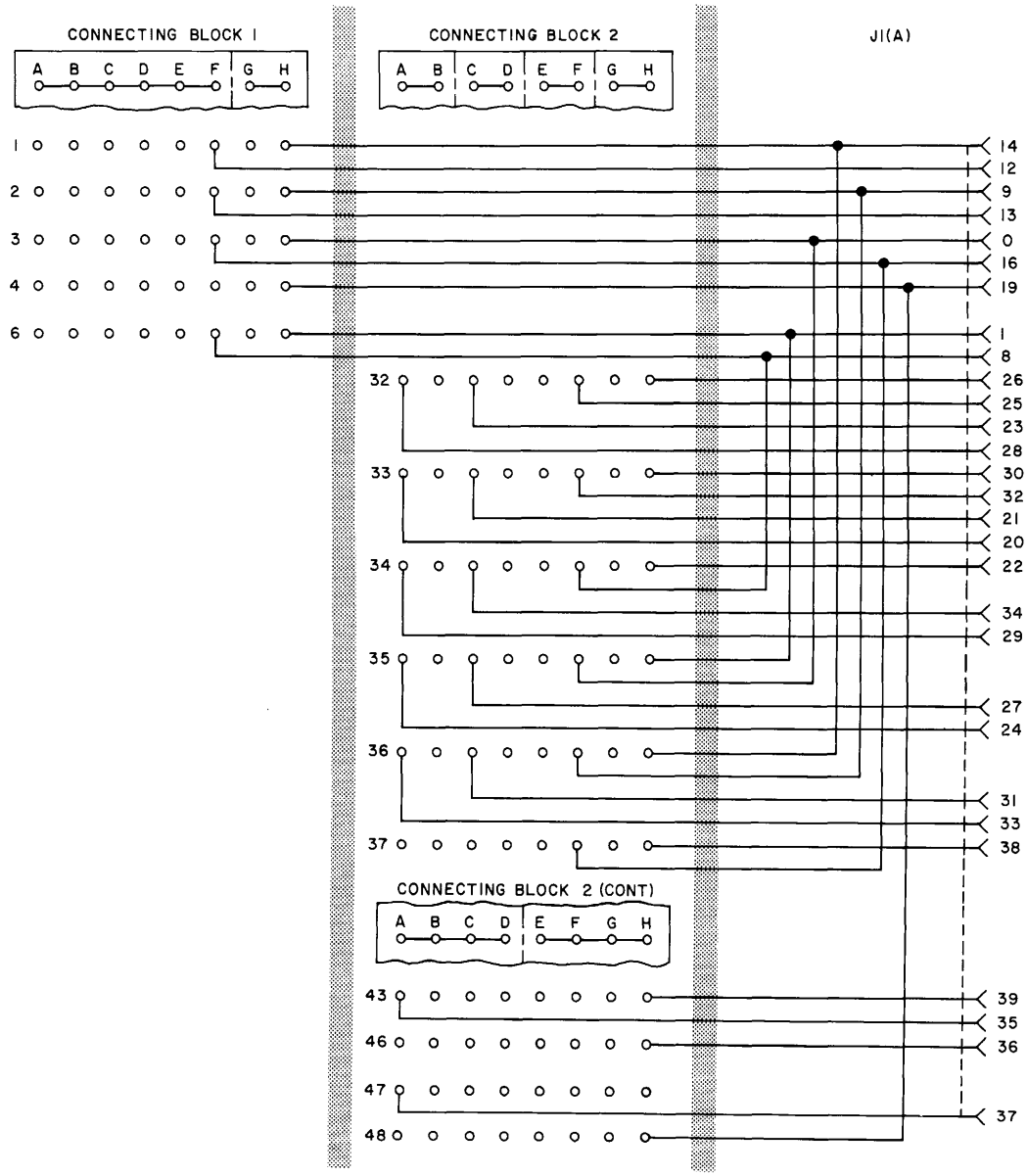


Fig. 35—Connections for Jack No. 1

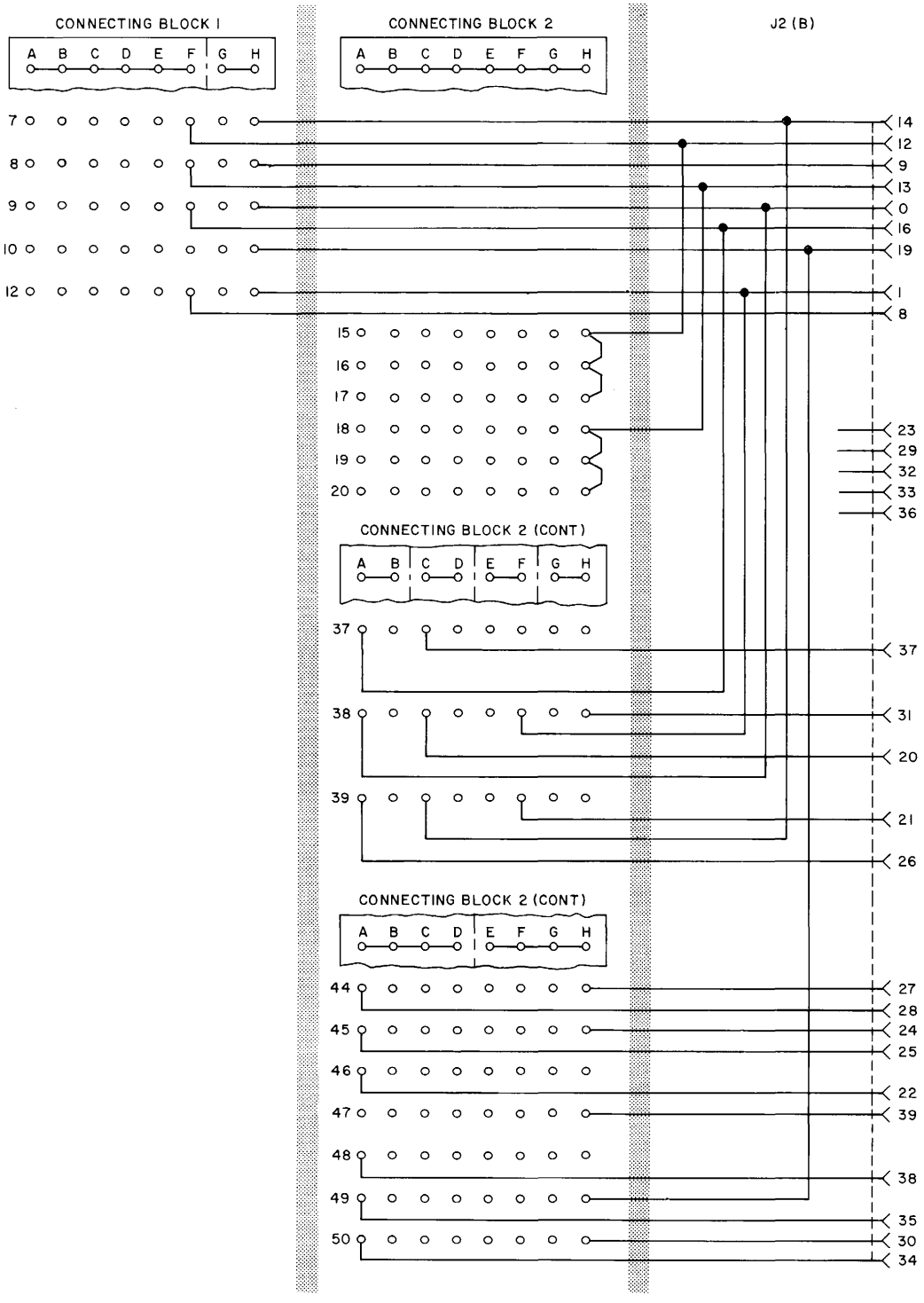


Fig. 36—Connections for Jack No. 2

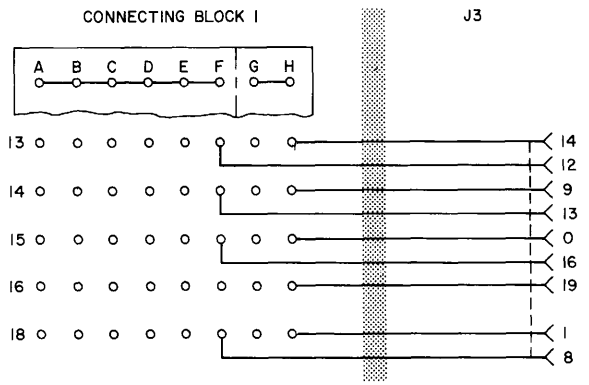


Fig. 37—Connections for Jack No. 3

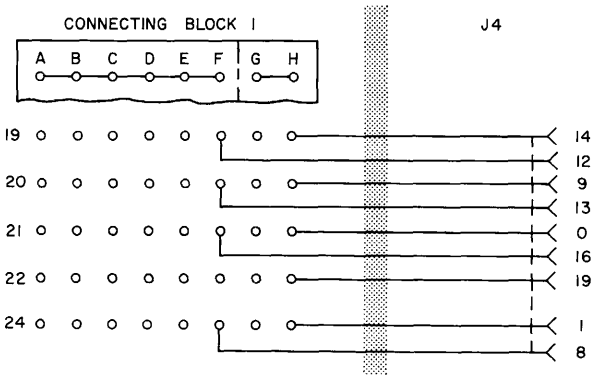


Fig. 38—Connections for Jack No. 4

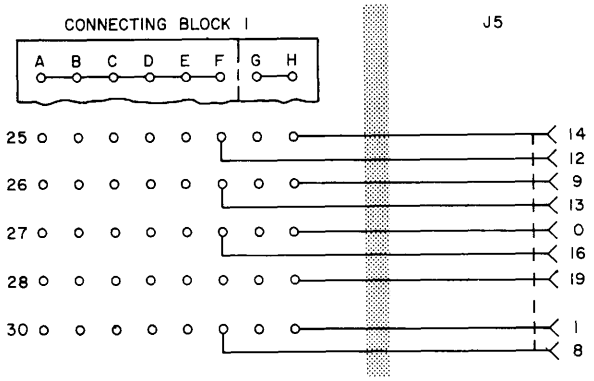


Fig. 39—Connections for Jack No. 5

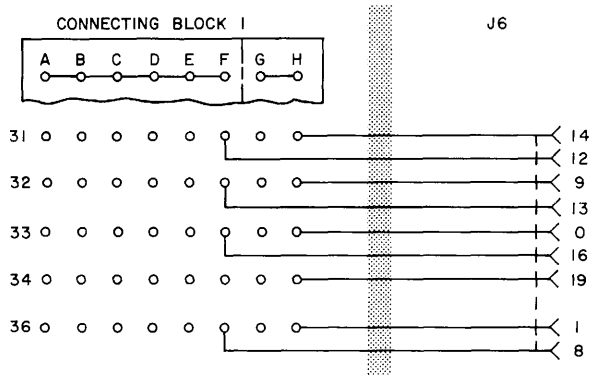


Fig. 40—Connections for Jack No. 6

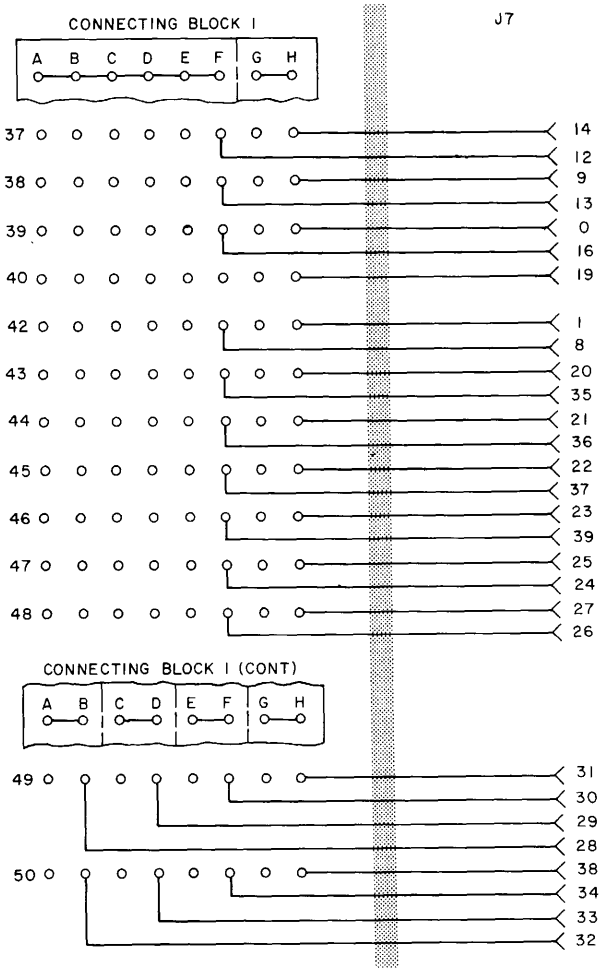


Fig. 41—Connections for Jack No. 7

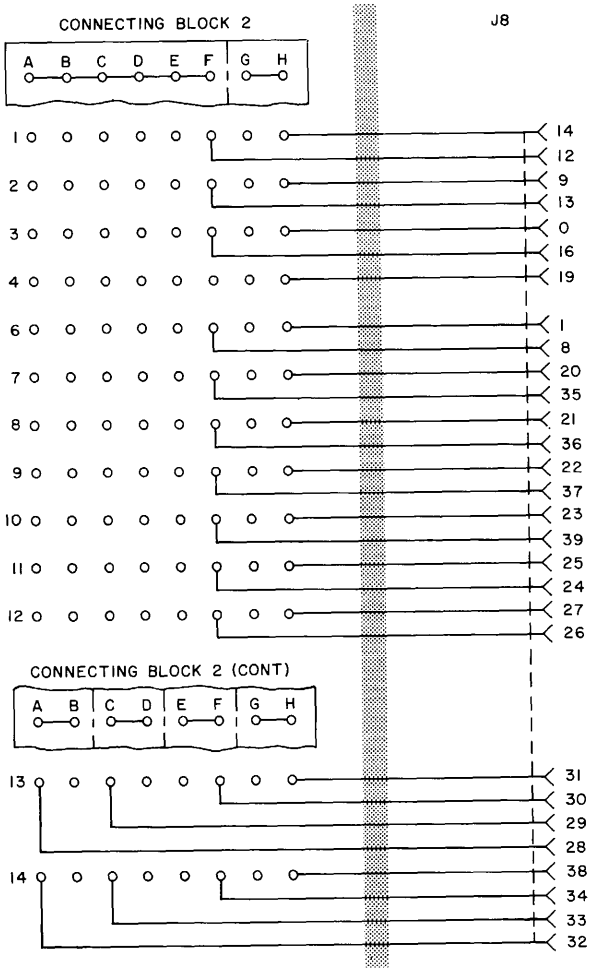


Fig. 42—Connections for Jack No. 8

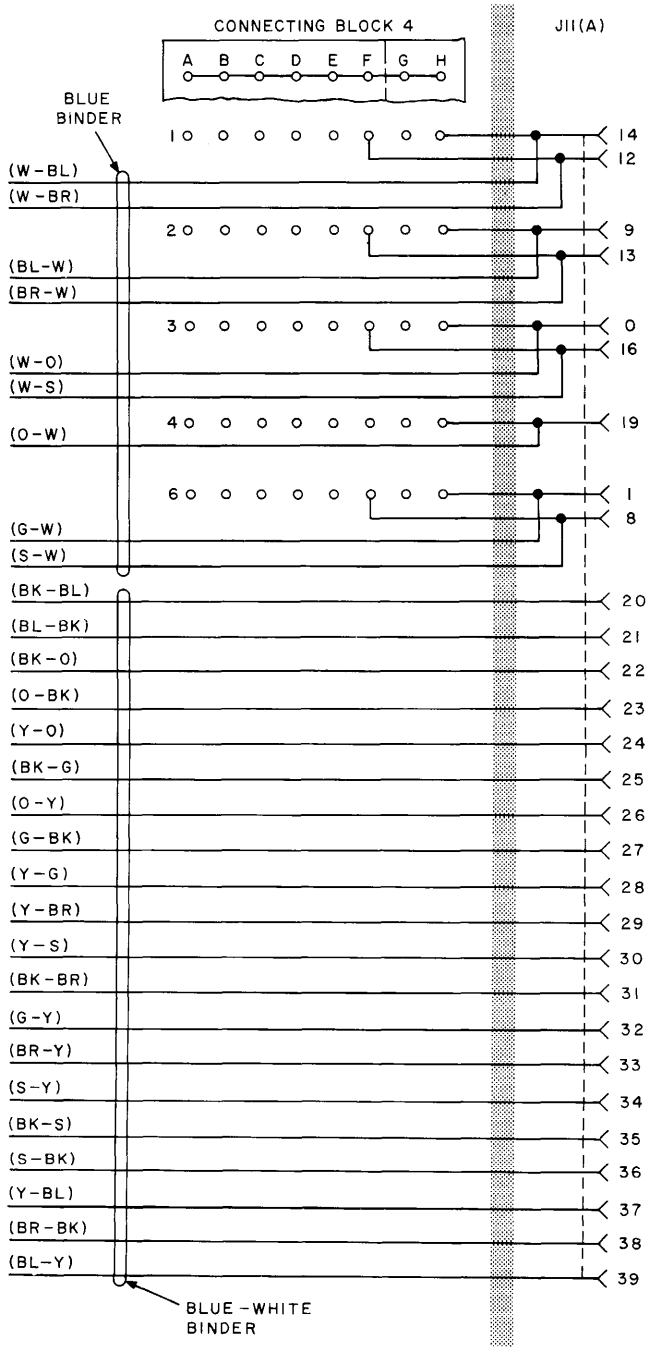


Fig. 43—Connections for Jack No. 11

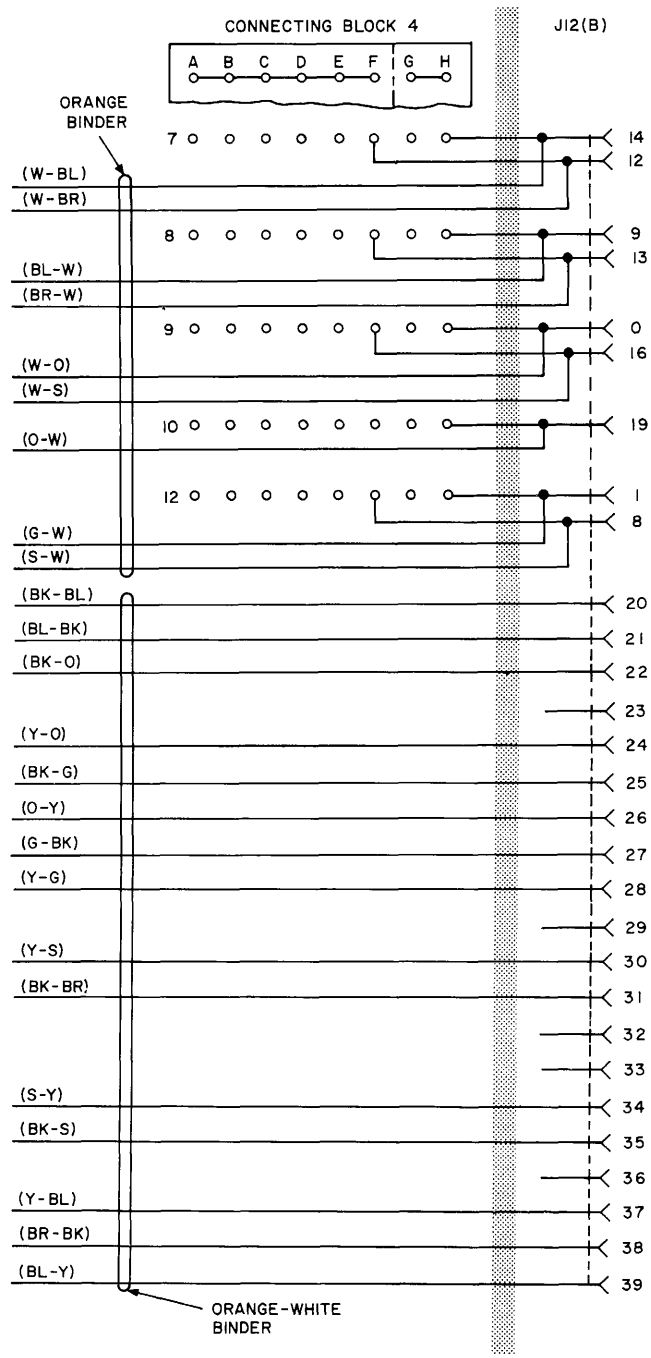


Fig. 44—Connections for Jack No. 12

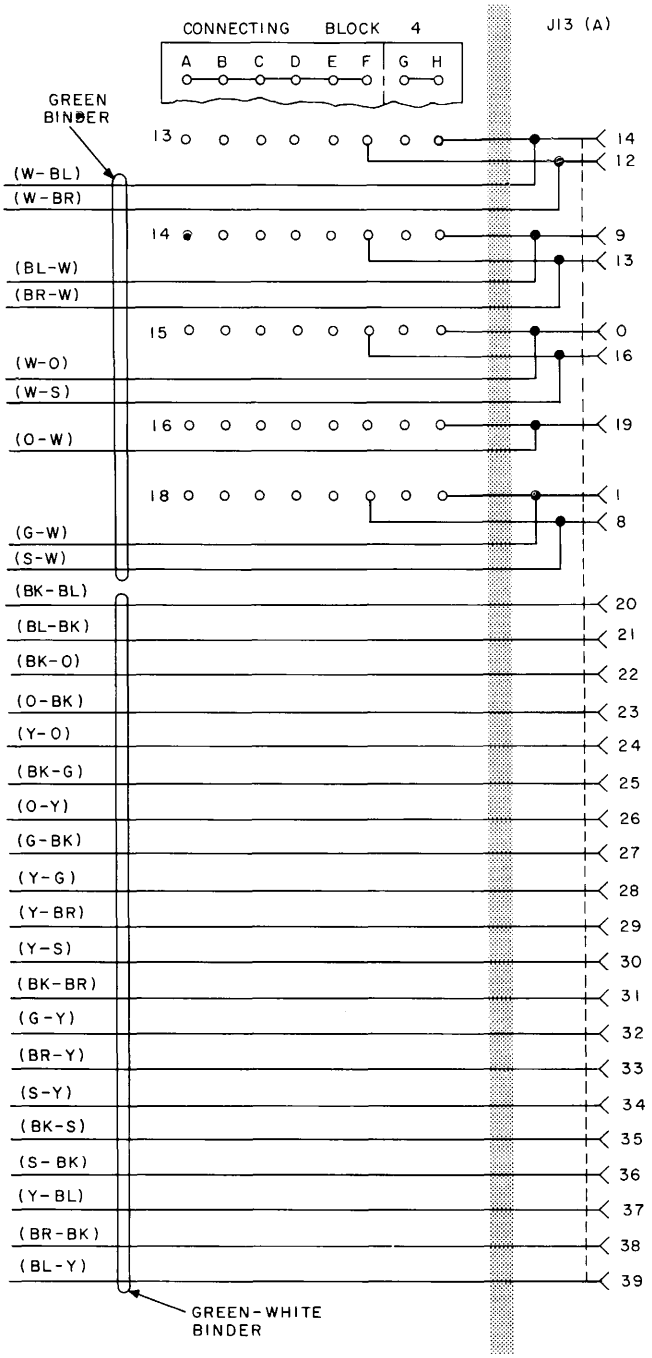


Fig. 45—Connections for Jack No. 13

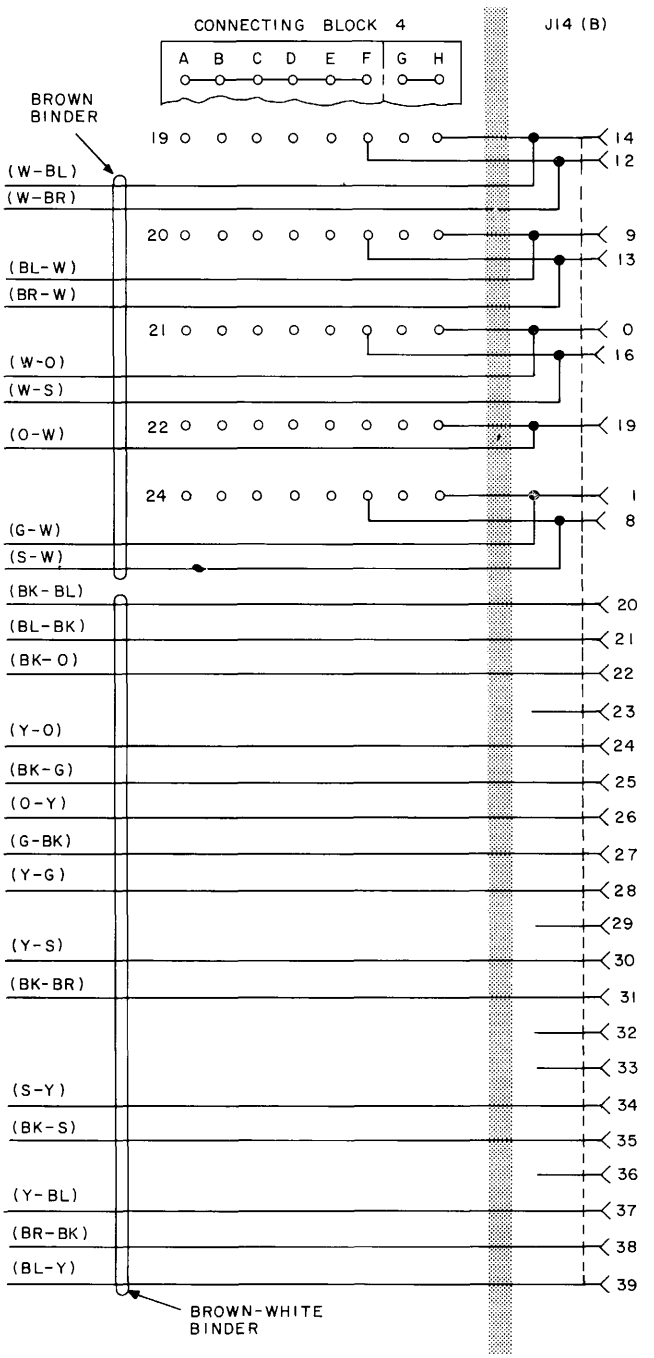


Fig. 46—Connections for Jack No. 14

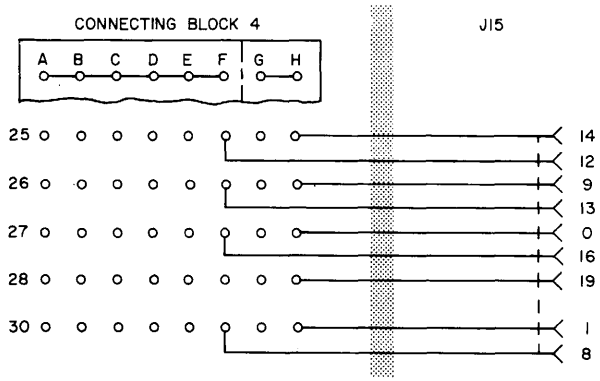


Fig. 47—Connections for Jack No. 15

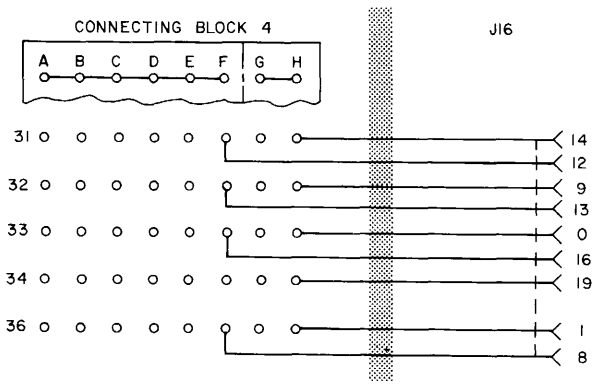


Fig. 48—Connections for Jack No. 16

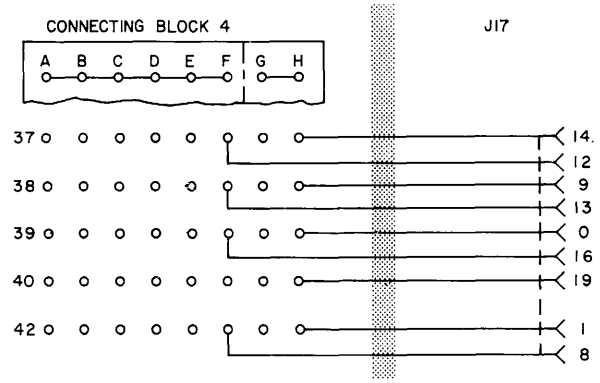


Fig. 49—Connections for Jack No. 17

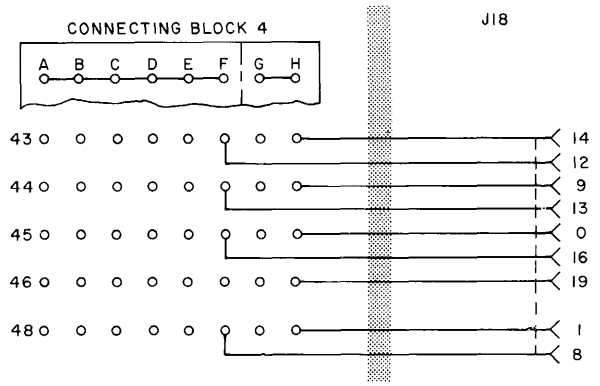
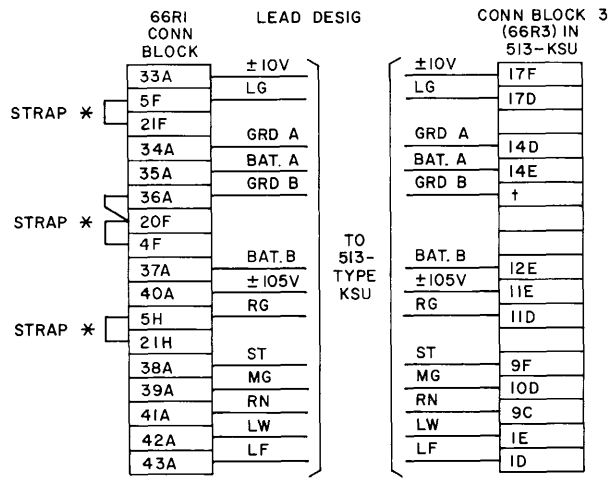


Fig. 50—Connections for Jack No. 18

66RI CONN BLOCK ROW AND TERMINAL ASSIGNMENT		
CONDUCTOR COLOR	BLUE BINDER	GREEN BINDER
(W-BL)	1H	17H
(BL-W)	2H	18H
(W-O)	3H	19H
(O-W)	4H	20H
(G-W)	6H	22H
(W-BR)	1F	17F
(BR-W)	2F	18F
(W-S)	3F	19F
(S-W)	6F	22F
	ORANGE BINDER	
(W-G)	33F	
(R-BL)	34F	
(BL-R)	35F	
(R-O)	36F	
(O-R)	37F	
(R-G)	38F	
(G-R)	39F	
(R-BR)	40F	
(BR-R)	41F	
(R-S)	42F	
(S-R)	43F	
	BLUE-WHITE BINDER	GREEN-WHITE BINDER
(BK-BL)	7H	23H
(BL-BK)	8H	24H
(BK-O)	9H	25H
(O-BK)	10H	26H
(BK-G)	11H	27H
(G-BK)	12H	28H
(BK-BR)	13H	29H
(BR-BK)	14H	30H
(BK-S)	15H	31H
(S-BK)	16H	32H
(Y-BL)	7F	23F
(BL-Y)	8F	24F
(Y-O)	9F	25F
(O-Y)	10F	26F
(Y-G)	11F	27F
(G-Y)	12F	28F
(Y-BR)	13F	29F
(BR-Y)	14F	30F
(Y-S)	15F	31F
(S-Y)	16F	32F

Fig. 51—Cable to Connecting Block Connections for 69E or F Apparatus Mounting



LEGEND:

* CONTINUOUS STRAPPING.

† CONNECT TO ANY UNUSED AI TERMINAL ON CONNECTING BLOCK 1, 2, OR 4.

Fig. 52—Power Supply to Connecting Block Connections for 69E or F Apparatus Mounting

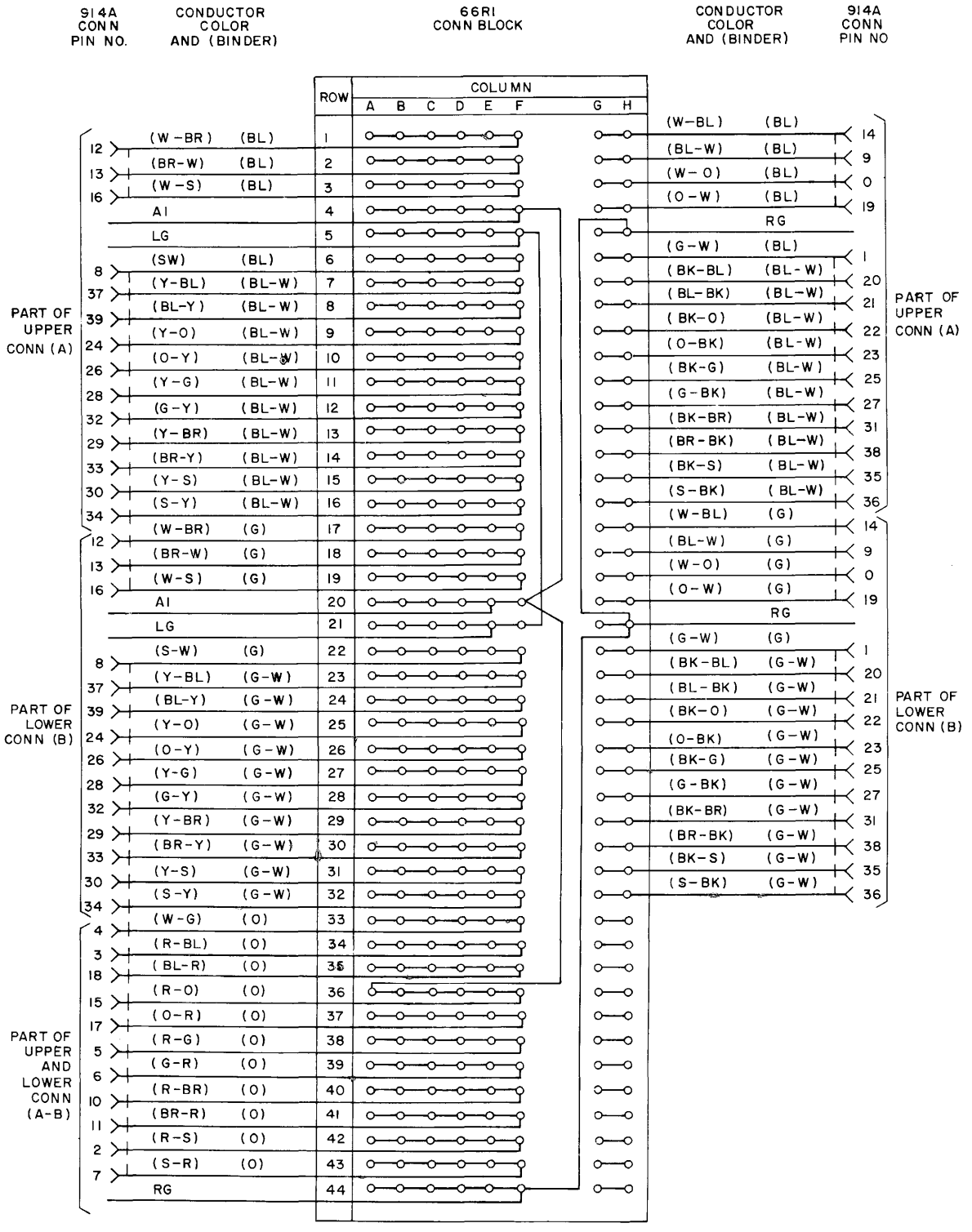
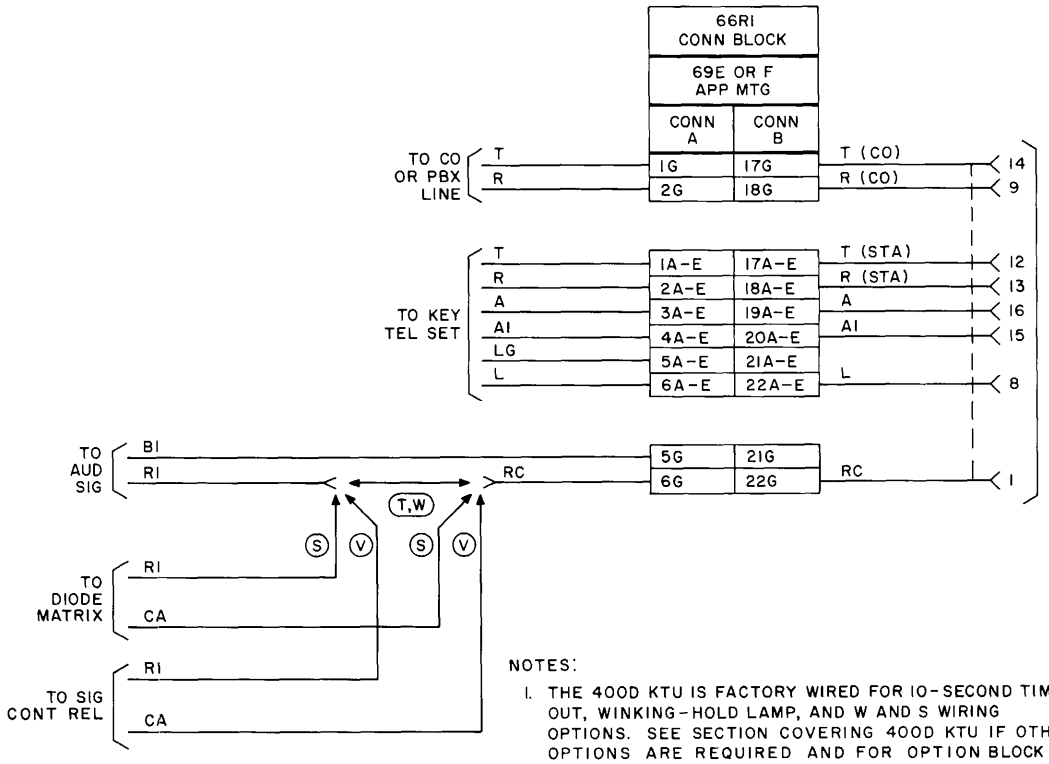


Fig. 53—Supplementary Connection Information for 69E or F Apparatus Mounting



NOTES:

1. THE 400D KTU IS FACTORY WIRED FOR 10-SECOND TIME-OUT, WINKING-HOLD LAMP, AND W AND S WIRING OPTIONS. SEE SECTION COVERING 400D KTU IF OTHER OPTIONS ARE REQUIRED AND FOR OPTION BLOCK STRAPPING.
2. DIODE MATRIX MUST BE FURNISHED LOCALLY.

OPTIONS:

S	COMMON AUDIBLE, INTERRUPTED RING WITH DIODE MATRIX
T	STEADY RING
V	COMMON AUDIBLE WITH RELAY CONTROL
W	INTERRUPTED RING WITHOUT DIODE MATRIX

Fig. 54—Connections for 400D KTU (CO/PBX Line Circuit) in 69E or F Apparatus Mounting

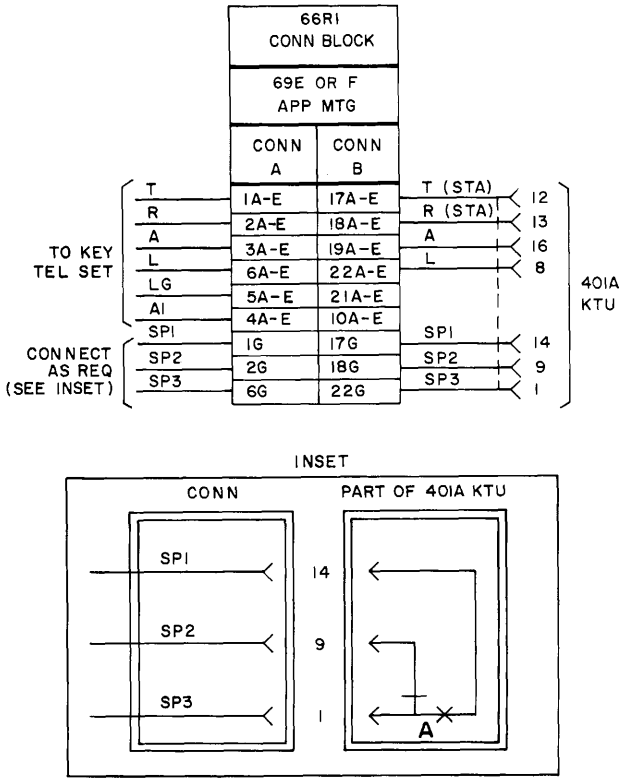
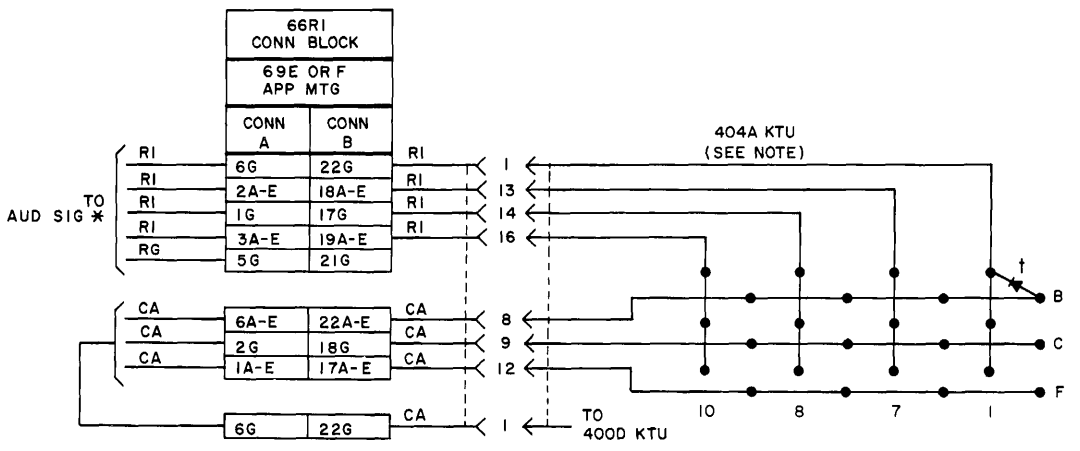


Fig. 55—Connections for 401A KTU (Manual Intercom Circuit) in 69E or F Apparatus Mounting



NOTE:

CONNECTIONS SHOWN ARE FOR FOUR COMMON AUDIBLES ON THREE LINES. WHERE DESIRED, ALL RI AND CA LEADS MAY BE TRANSPOSED TO PROVIDE THREE COMMON AUDIBLES ON FOUR LINES. ALL DIODES ON THE 404A KTU MUST THEN BE REVERSED.

* AUDIBLE SIGNALS CONNECTED TO THE SAME DIODE CIRCUIT MUST BE ALL RINGERS OR ALL AC BUZZERS. WHEN RINGERS ARE USED, REMOVE RINGER CAPACITORS FROM CIRCUIT.

† PROVIDE 446J DIODES OR EQUIVALENT. ALL DIODES MUST BE POLARIZED ALIKE.

Fig. 56—Connections for 404A KTU (Diode Matrix) in 69E or F Apparatus Mounting

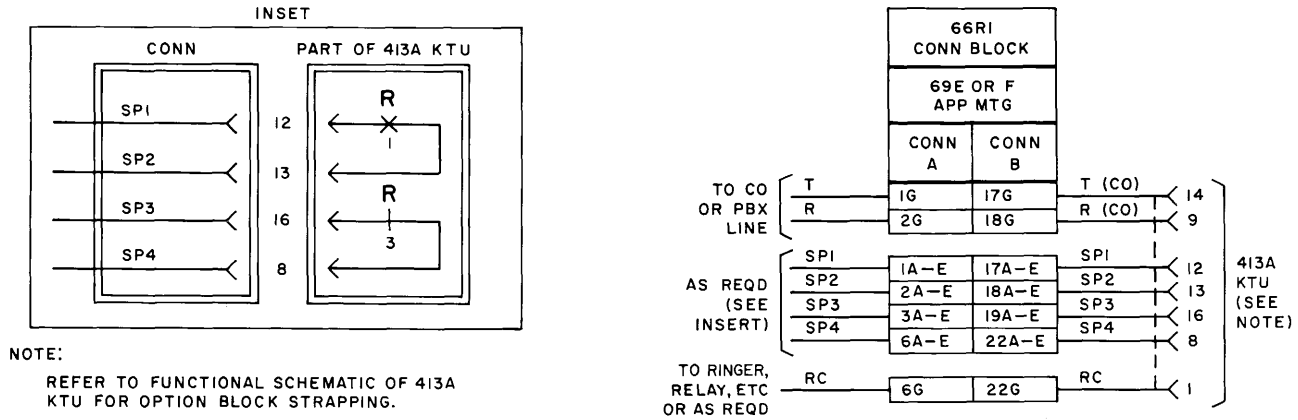
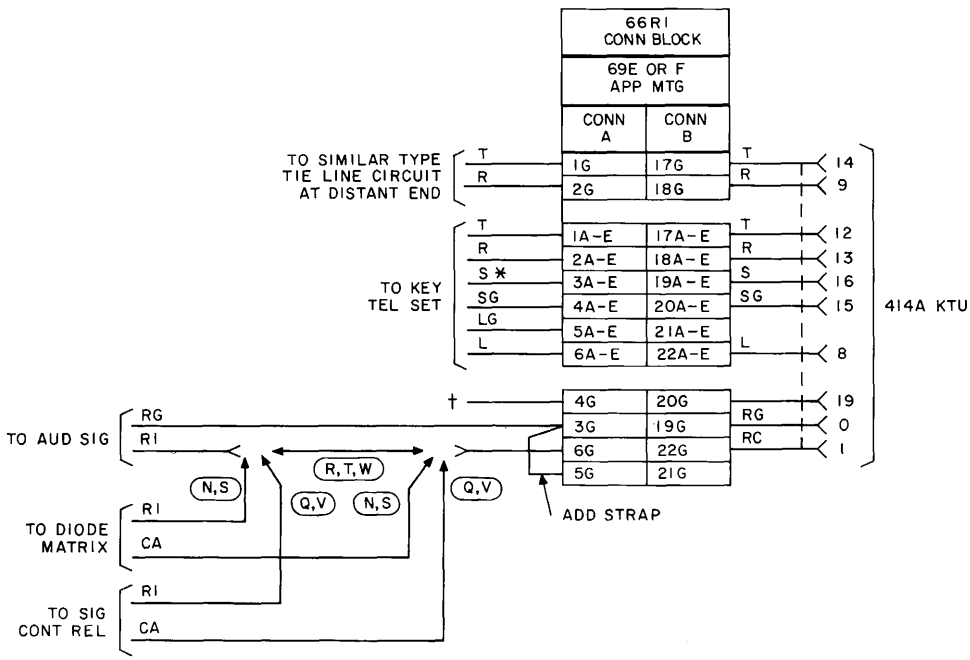


Fig. 57—Connections for 413A KTU (Auxiliary Ring-up Circuit) in 69E or F Apparatus Mounting



NOTE:

REFER TO FUNCTIONAL SCHEMATIC OF 414A KTU FOR OPTION BLOCK STRAPPING.

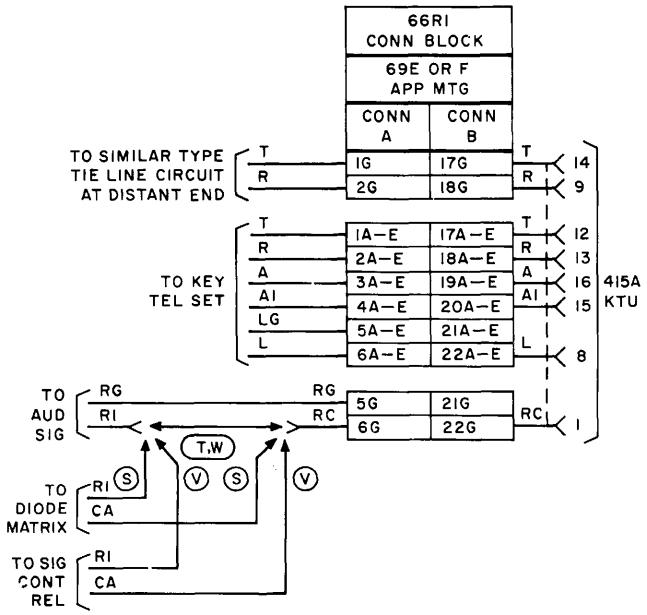
* SIGNAL KEY MAY BE A CONVERTED PICKUP KEY OR ANY EXTERNAL NONLOCKING KEY.

† SPARE A RELAY CONTACT (FOR CONTROL PURPOSE AS DESIRED).

OPTIONS:

N	COMM WITH DIODE MATRIX CONTROL	UNDER CONTROL OF R RELAY	AUDIBLE SIGNAL
Q	COMM WITH RELAY CONTROL		
R	STEADY RING		
S	COMM WITH DIODE MATRIX CONTROL	UNDER CONTROL OF TIME-OUT CIRCUIT (B RELAY)	
T	STEADY RING		
V	COMM WITH RELAY CONTROL		
W	INTERRUPTED RING		

Fig. 58—Connections for 414A KTU (Ringdown Tie Line Circuit) in 69E or F Apparatus Mounting

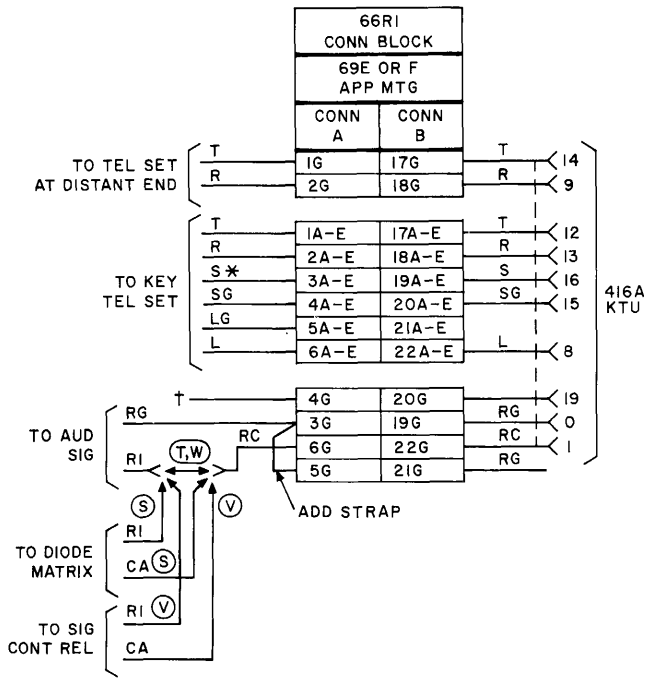


NOTE:
REFER TO FUNCTIONAL SCHEMATIC OF 415A KTU FOR OPTION BLOCK STRAPPING.

OPTIONS:

S	COMM WITH DIODE MATRIX CONTROL	AUDIBLE SIGNAL
T	STEADY RINGING	
V	COMM WITH RELAY CONTROL	
W	INTERRUPTED RINGING	

Fig. 59—Connections for 415A KTU (Automatic Tie Line Circuit) in 69E or F Apparatus Mounting



NOTE:
REFER TO FUNCTIONAL SCHMEMATIC OF 416A KTU FOR OPTION BLOCK STRAPPING.

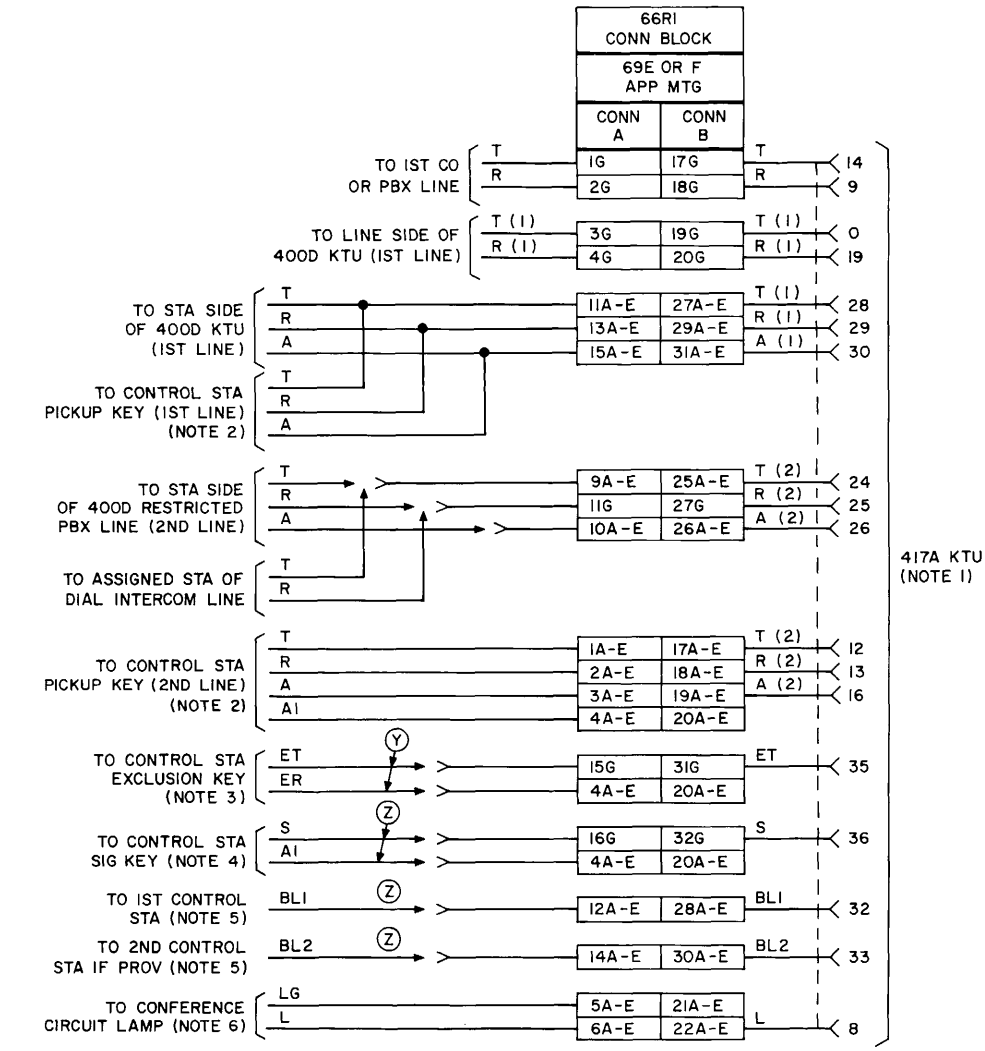
* SIGNAL KEY MAY BE A CONVERTED PICKUP KEY OR ANY EXTERNAL NONLOCKING KEY.

† SPARE CONTACT FOR CONTROL PURPOSES AS DESIRED.

OPTIONS:

S	COMM WITH DIODE MATRIX CONTROL	AUDIBLE SIGNAL
T	STEADY RINGING	
V	COMM WITH RELAY CONTROL	
W	INTERRUPTED RINGING	

Fig. 60—Connections for 416A KTU (Station Line Circuit) in 69E or F Apparatus Mounting



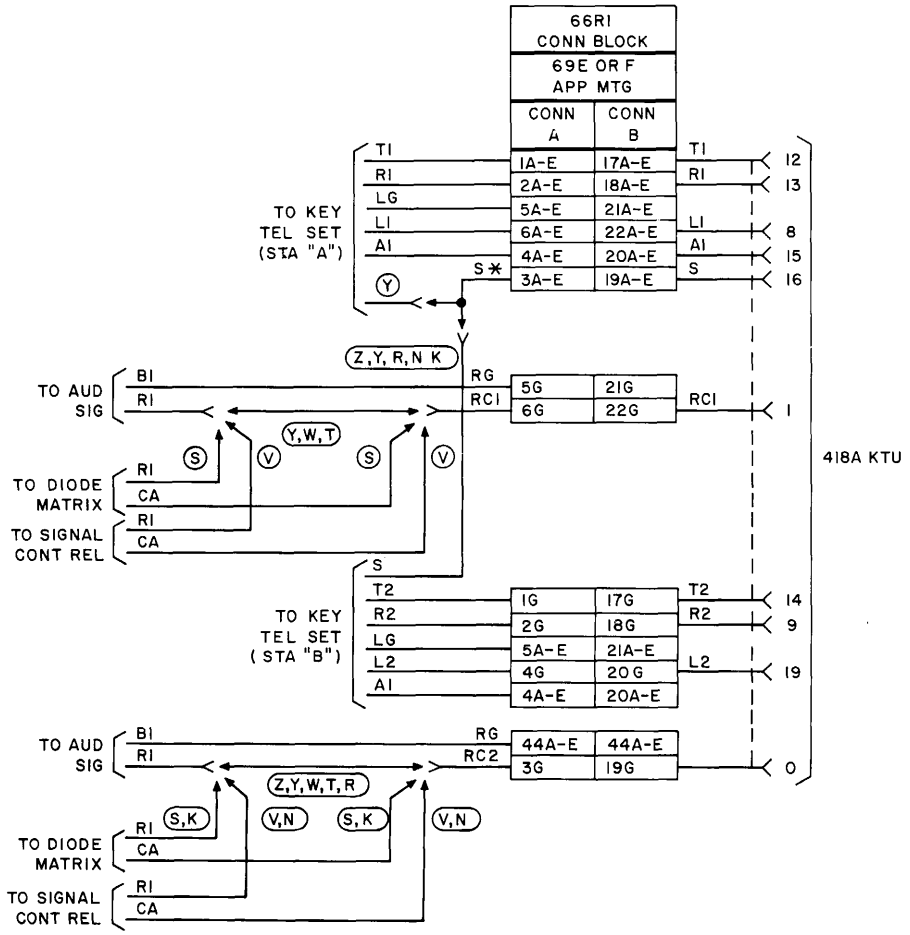
NOTES:

1. THE 417A KTU PROVIDES CONFERENCING BETWEEN:
   (A) A CO LINE AND RESTRICTED PBX LINE
   (B) TWO PBX LINES, ONE OF WHICH MUST BE RESTRICTED
   (C) A CO OR PBX LINE AND A DIAL INTERCOM LINE
2. ASSOCIATED LAMP LEADS FROM 400D KTUS OR INTERCOM CIRCUIT ARE RUN DIRECTLY TO THE TELEPHONE SET.
3. REMOVE AND INSULATE EXCLUSION KEY LEADS FROM IT AND IR IN TELEPHONE SET, IF CONNECTED.
4. SIGNAL KEY MAY BE CONVERTED PICKUP KEY OR AN EXTERNAL NONLOCKING KEY.
5. INSTALL A KS-15724, L1 DIODE IN "A" LEAD OF TELEPHONE SET WHEN CONFERENCE CIRCUIT IS CONTROLLED BY A NONLOCKING KEY. CONNECT IN ACCORDANCE WITH BUSY LAMP OPTION OF TELEPHONE SET INVOLVED.
6. LAMP INDICATES CONFERENCE CIRCUIT IS ACTIVATED.
7. FOR COMPLETE OPTION STRAPPING SEE FUNCTIONAL SCHEMATIC IN SECTION COVERING 417A KTU.

OPTIONS: (NOTE 7)

Z	CONTROLLED BY NONLOCKING KEY (MUST BE PROVIDED WHEN CONTROL STATION IS EQUIPPED WITH SPEAKERPHONE).
Y	CONTROLLED BY LOCKING KEY (EXCLUSION KEY).

Fig. 61—Connections for 417A KTU (Add-on Conference Circuit) in 69E or F Apparatus Mounting



NOTE:

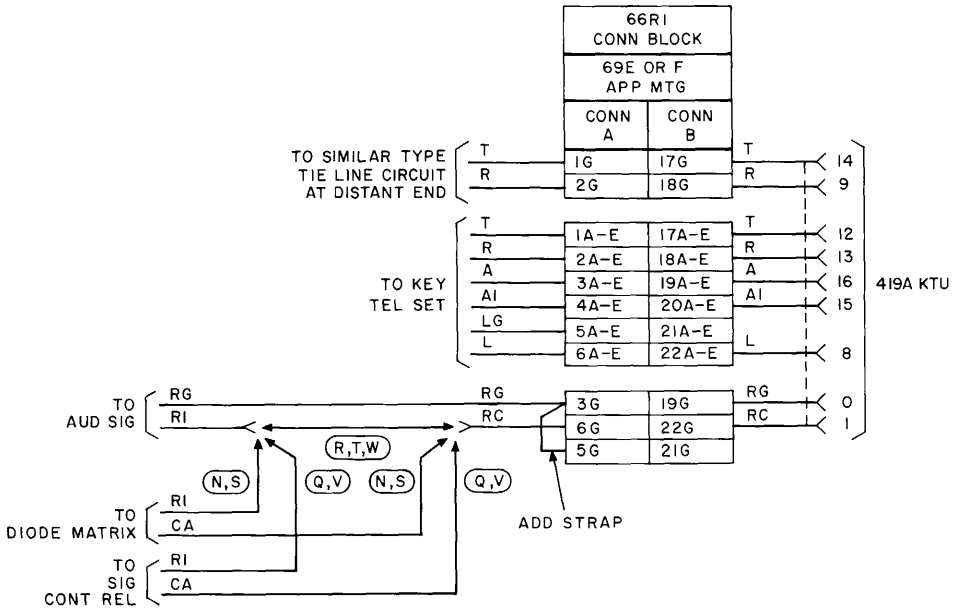
REFER TO FUNCTIONAL SCHEMATIC OF 418A KTU FOR OPTION BLOCK STRAPPING AND INFORMATION.

* SIGNAL KEY MAY BE A CONVERTED PICKUP KEY OR ANY EXTERNAL NONLOCKING KEY.

OPTIONS:

S	COMMON AUDIBLE WITH DIODE MATRIX CONTROL	TWO-WAY AUTOMATIC	SIGNALING
T	STEADY RING		
V	COMMON AUDIBLE WITH RELAY CONTROL		
W	INTERRUPTED RING		
K	COMMON AUDIBLE WITH DIODE MATRIX CONTROL	ONE-WAY AUTOMATIC AND TWO-WAY MANUAL	
N	COMMON AUDIBLE WITH RELAY CONTROL		
R	INTERRUPTED RING		
Z	STEADY RING		
Y	TWO-WAY MANUAL		

Fig. 62—Connections for 418A KTU (Short Range, DC Signaling, Tie Line Circuit) in 69E or F Apparatus Mounting



NOTE:
REFER TO FUNCTIONAL SCHEMATIC OF 419A KTU FOR OPTION BLOCK STRAPPING.

OPTIONS:

W	INTERRUPTED RING	UNDER CONTROL OF TIME-OUT CIRCUIT (B RELAY)	AUDIBLE SIGNAL
T	STEADY RING		
V	COMM WITH RELAY CONTROL		
S	COMM WITH DIODE MATRIX CONTROL		
R	STEADY RING	UNDER CONTROL OF R RELAY	
Q	COMM WITH RELAY CONTROL		
N	COMM WITH DIODE MATRIX CONTROL		

Fig. 63—Connections for 419A KTU (Automatic Ringdown Tie Line Circuit) in 69E or F Apparatus Mounting

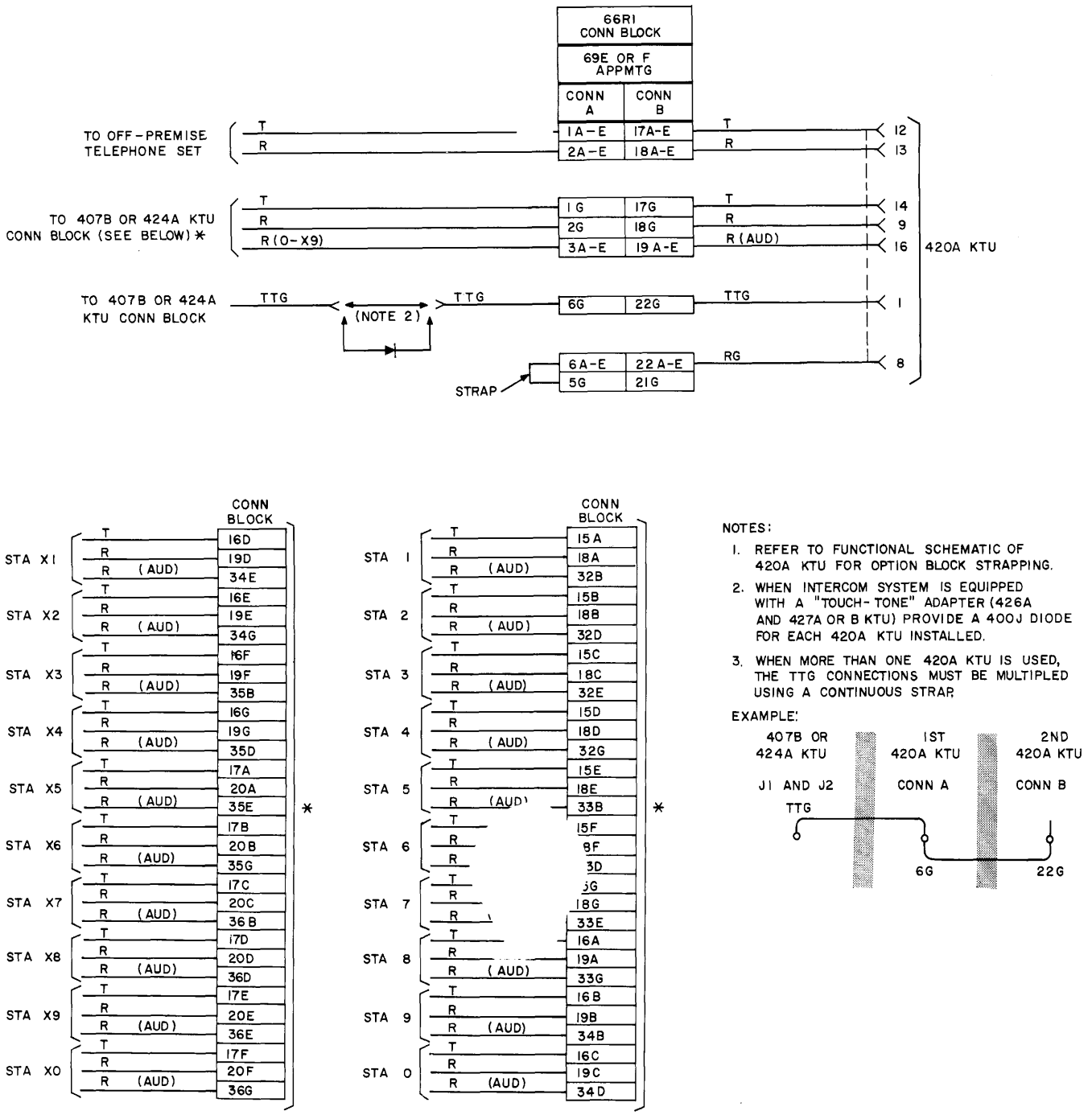


Fig. 64—Connections for 420A KTU (Dial Intercom Long Line Circuit) in 69E or F Apparatus Mounting

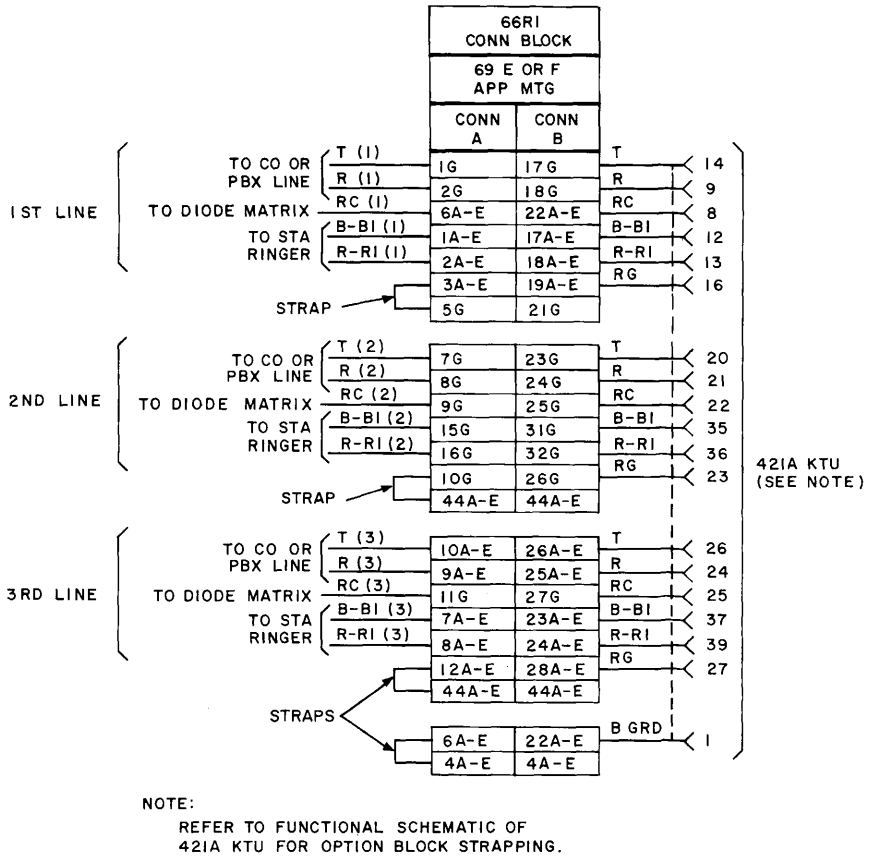
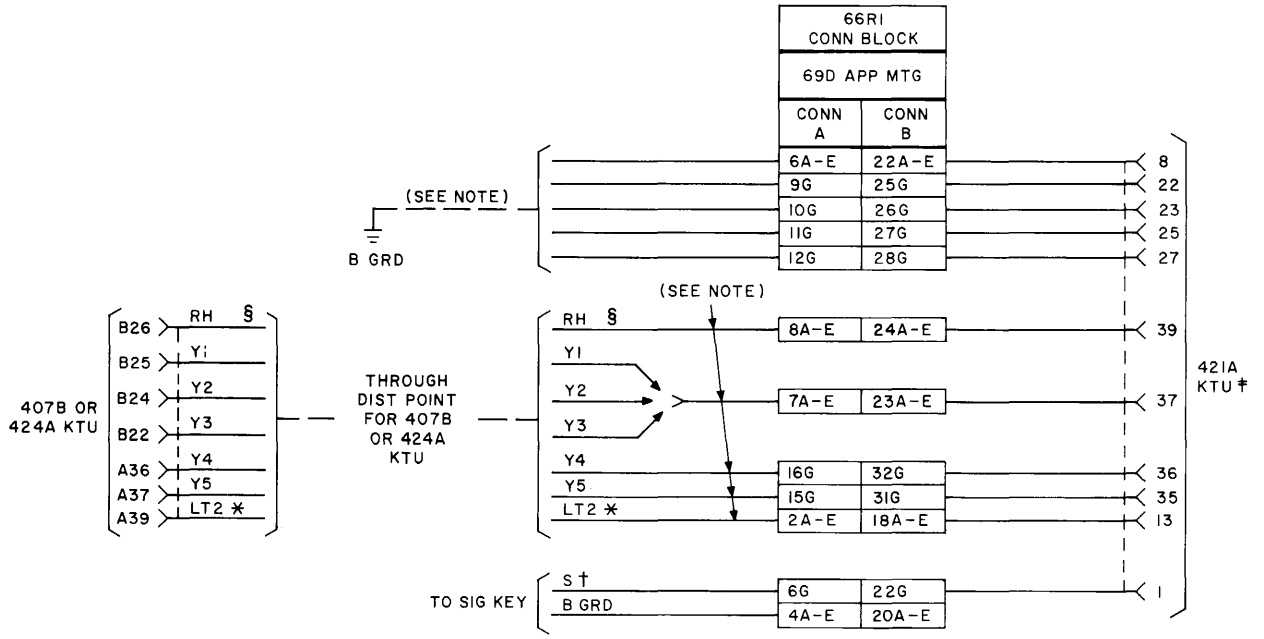


Fig. 65—Connections for 421A KTU (Power Failure Transfer Circuit) in 69E or F Apparatus Mounting



TABLE

FOR STA CODE	CONNECT B GRD	TERMINALS ON 407B OR 424A KTU (RH) B26	(Y1) B25	(Y2) B24	(Y3) B22	(Y4) A36	(Y5) A37	424A (LT2) A39
	TO TERMINALS ON 421A KTU							
1	25,27	39		37				
2	25,27	39	37					
3	22,25,27	39			37	36		
4	22,25,27	39		37		36		
5	22,23,25,27	39	37			36	35	
6	22,23,25,27	39			37	36	35	
7	22,23,25,27	39		37		36	35	
8	23,25,27	39	37				35	
9	23,25,27	39			37		35	
0	23,25,27	39		37			35	
X1	8,25,27	39		37				13
X2	8,25,27	39	37					13
X3	8,22,25,27	39			37	36		13
X4	8,22,25,27	39		37		36		13
X5	8,22,23,25,27	39	37			36	35	13
X6	8,22,23,25,27	39			37	36	35	13
X7	8,22,23,25,27	39		37		36	35	13
X8	8,23,25,27	39	37				35	13
X9	8,23,25,27	39			37		35	13
X0	8,23,25,27	39		37			35	13

NOTE :

CONNECT AS REQUIRED PER TABLE

* 424A KTU ONLY

† PROVIDE SEPARATE SIGNAL KEY FOR EACH STATION CODE TO BE SELECTED.

‡ PROVIDE A SEPARATE 421A KTU FOR EACH STATION CODE TO BE SELECTED.

§ PROVIDE "T" WIRING WHEN ADDING DSS TO A SYSTEM EQUIPPED WITH DIAL TONE (423A KTU). PROVIDE DIODE LOCALLY. ONLY ONE DIODE NEED BE PLACED FOR DSS.

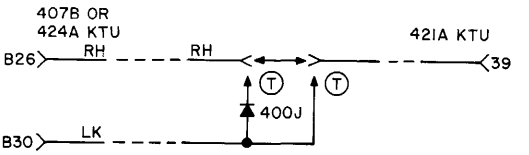
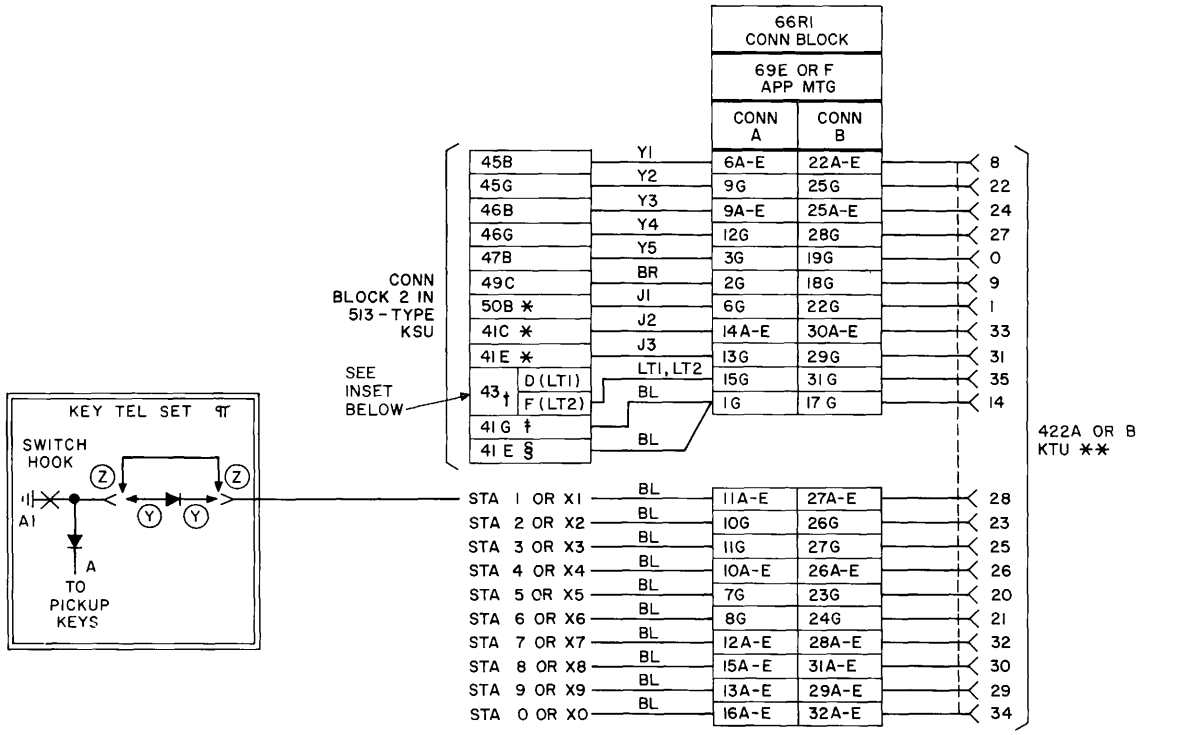
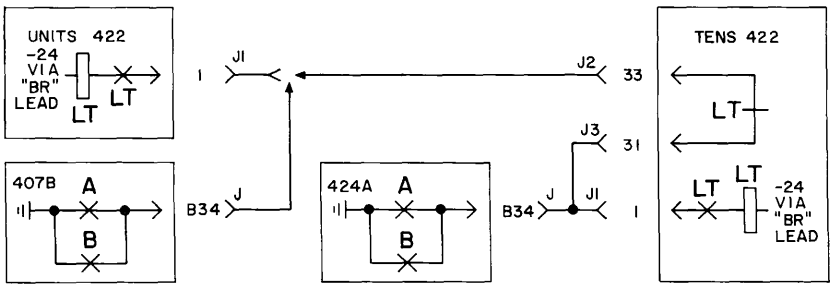


Fig. 66—Connections for 421A KTU (DSS Feature of Dial Intercom Line) in 69E or F Apparatus Mounting



LEGEND:

* CONNECT J1, J2, AND J3 LEADS AS FOLLOWS:



J2 AND J3 LEADS OF UNITS 422 KTU PERFORM NO FUNCTION

† OR CONNECT UNITS 422 KTU TO LTI LEAD OF 425A KTU AND CONNECT TENS 422 KTU TO LT2 LEAD OF 425A KTU OF CONNECTING BLOCK TERMINAL ASSOCIATED WITH MOUNTING FACILITY USED.

‡ OR TO CONNECTING BLOCK TERMINAL ASSOCIATED WITH MOUNTING FACILITY FOR UNITS 422 KTU.

§ OR TO CONNECTING BLOCK TERMINAL ASSOCIATED WITH MOUNTING FACILITY FOR TENS 422 KTU.

¶T FOR CONNECTION OF DIODE IN THE "A" LEAD, USE THE STATION BUSY OPTION AS SHOWN IN THE CONNECTION SECTION OF TYPE SET USED. ALSO PROVIDE (Z) OPTION WHEN 422B KTU IS USED. OR (Y) OPTION WHEN 422A KTU IS USED.

** PROVIDE A SEPARATE 422 KTU FOR THE UNITS GROUP (1-0, SINGLE-DIGIT NOS.) AND FOR THE TENS GROUP (X1-X0, TWO-DIGIT NOS.).

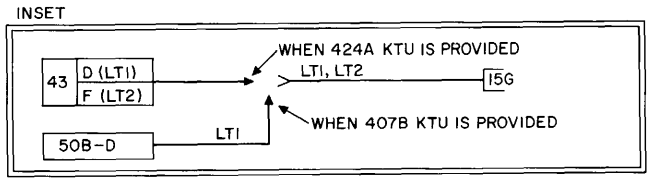
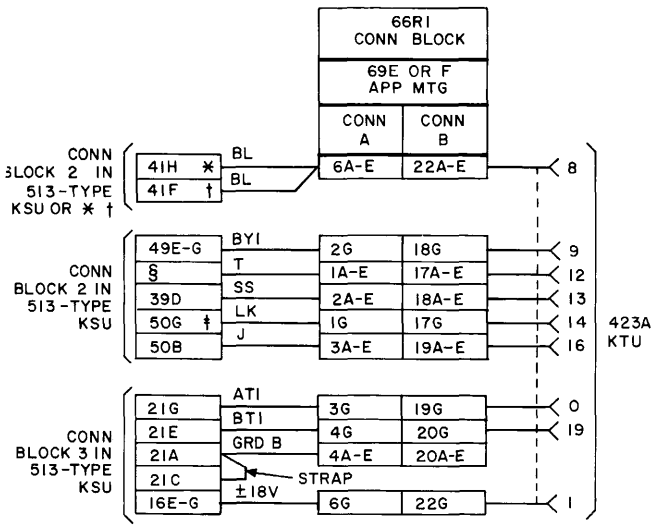


Fig. 67—Connections for 422A or B KTU (Dial Intercom Station Busy Circuit) in 69E or F Apparatus Mounting



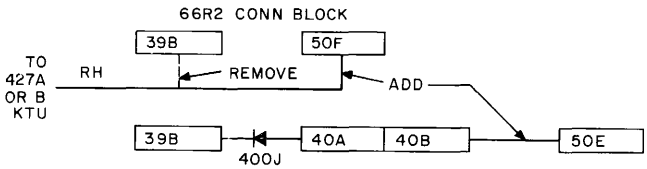
NOTE:

REFER TO FUNCTIONAL SCHEMATIC OF 423A KTU FOR OPTION BLOCK STRAPPING.

* TO CONNECTING BLOCK TERMINAL ASSOCIATED WITH MOUNTING FACILITY FOR UNITS 422 KTU.

† TO CONNECTING BLOCK TERMINAL ASSOCIATED WITH MOUNTING FACILITY FOR TENS 422 KTU.

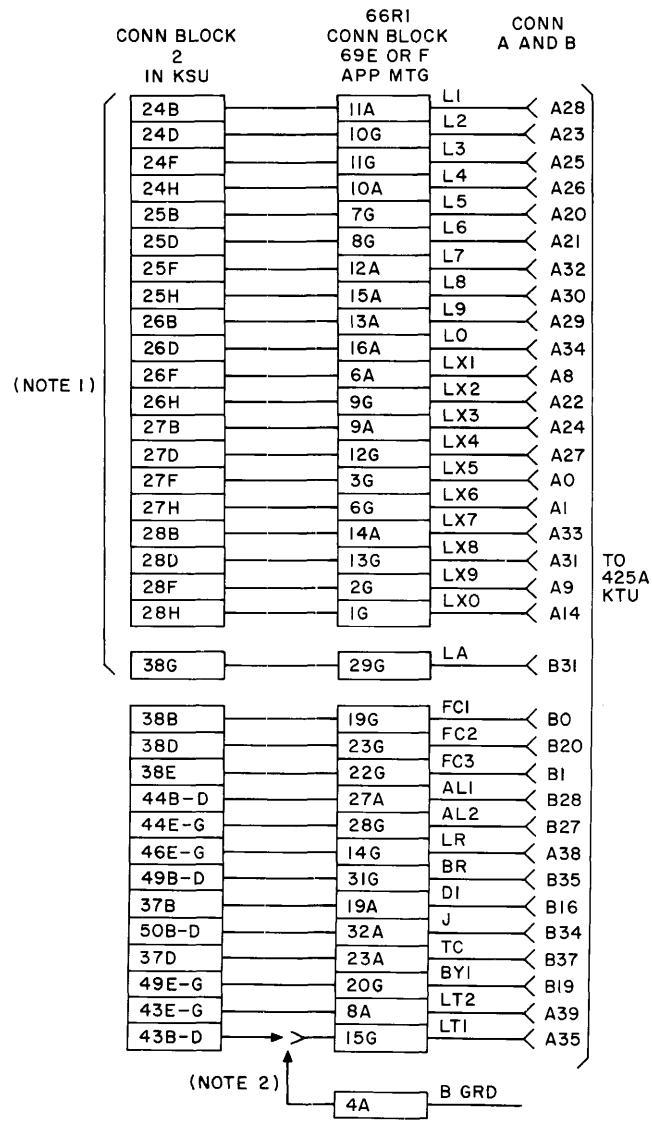
‡ WHEN ADDING THE 423A KTU TO A SYSTEM EQUIPPED FOR "TOUCH-TONE" (426A AND 427A OR B KTUS), A 400J DIODE MUST BE INSTALLED BETWEEN THE "RH" AND "LK" LEADS OF THE 407B OR 424A KTU. REWIRE AS FOLLOWS:



IF THE SYSTEM IS EQUIPPED WITH DSS (421A KTU), REWIRE "RH" LEADS BY TERMINATING ONE LEAD TO TERMINAL 50F AND THE OTHER LEAD TO A 183A2 ADAPTER INSTALLED OVER TERMINALS 50G AND 50H.

§ WHEN A 407B KTU IS PROVIDED FOR THE DIAL INTERCOM, CONNECT "T" LEAD TO ANY UNUSED TERMINAL (16D-G OR 17A-F) OF CONNECTING BLOCK 2. WHEN A 424A KTU IS PROVIDED, CONNECT "T" LEAD TO TERMINAL ASSIGNED TO CODE USED FOR 1ST DIGIT OF TWO DIGIT CODE (15A-G OR 16A-C).

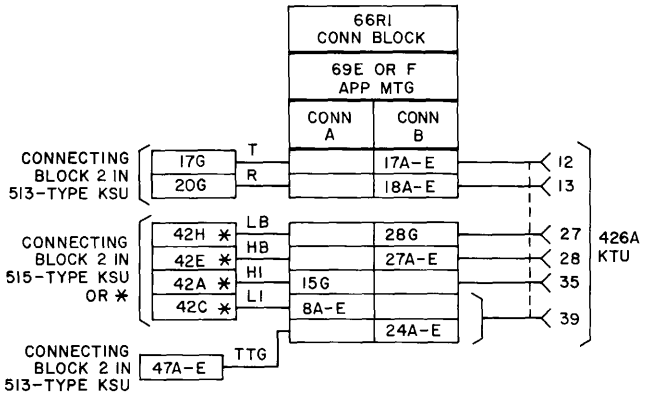
Fig. 68—Connections for 423A KTU (Dial Intercom, Audible Ringback Tone, Dial Tone, Busy Tone Circuit) in 69E or F Apparatus Mounting



NOTES:

1. REMOVE FACTORY FURNISHED STRAPS FROM THESE TERMINALS.
2. WHEN 407B KTU IS PROVIDED STRAP TO B GRD. WHEN 424A KTU IS PROVIDED STRAP TO TERMINAL 43B-D OF CONN BLK 2 IN THE KSU.
3. WHEN THE 425A KTU IS INSTALLED IN A 69E OR 69F APPARATUS MOUNTING, THE FOLLOWING LEADS MUST BE INSULATED AND STORED: THE S-BK AND Y-BL LEADS IN THE BL-W BINDER; THE BK-O, Y-O, BK-G, AND BL-Y LEADS IN THE G-W BINDER.

Fig. 69—Connections for 425A KTU (Dial Intercom Flashing Lamp Circuit) in 69E or F Apparatus Mounting

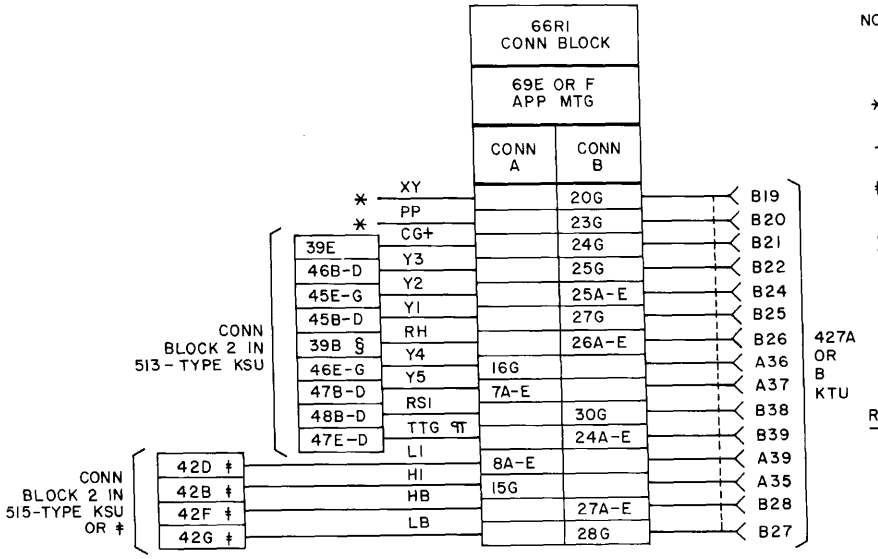


NOTE:

REFER TO CONNECTIONS AND FUNCTIONAL SCHEMATICS OF 407B, 424A, 426, AND 427A OR B KTUS.

* TO CONNECTING BLOCK TERMINAL ASSOCIATED WITH MOUNTING FACILITY FOR 427A OR B KTU, IF EXTERNAL.

Fig. 70—Connections for 426A KTU (TOUCH-TONE Adapter Circuit) in 69E or F Apparatus Mounting



NOTE:

REFER TO CONNECTIONS AND FUNCTIONAL SCHEMATICS OF 407B, 424A, 426A, AND 427A OR B KTU.

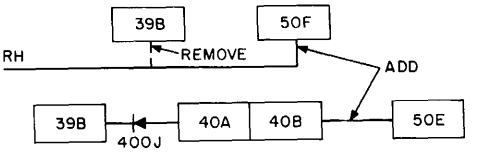
* CONNECT AS REQUIRED WHEN THE 11TH KEY (XY) OR 12TH KEY (PP) IS USED.

† REMOVE STRAP BETWEEN 39E AND 48B OF CONNECTING BLOCK 2, IF PROVIDED.

‡ TO CONNECTING BLOCK TERMINAL ASSOCIATED WITH MOUNTING FACILITY FOR 426A KTU, IF EXTERNAL.

§ WHEN ADDING THE 427A OR B KTU TO A SYSTEM EQUIPPED WITH DIAL TONE (423A KTU), CONNECT THE "RH" LEAD TO TERMINAL 50F INSTEAD OF 39B. A 400J DIODE MUST ALSO BE INSTALLED BETWEEN THE "RH" AND "LK" LEADS OF THE 407B OR 424A KTU. INSTALL DIODE AS FOLLOWS;

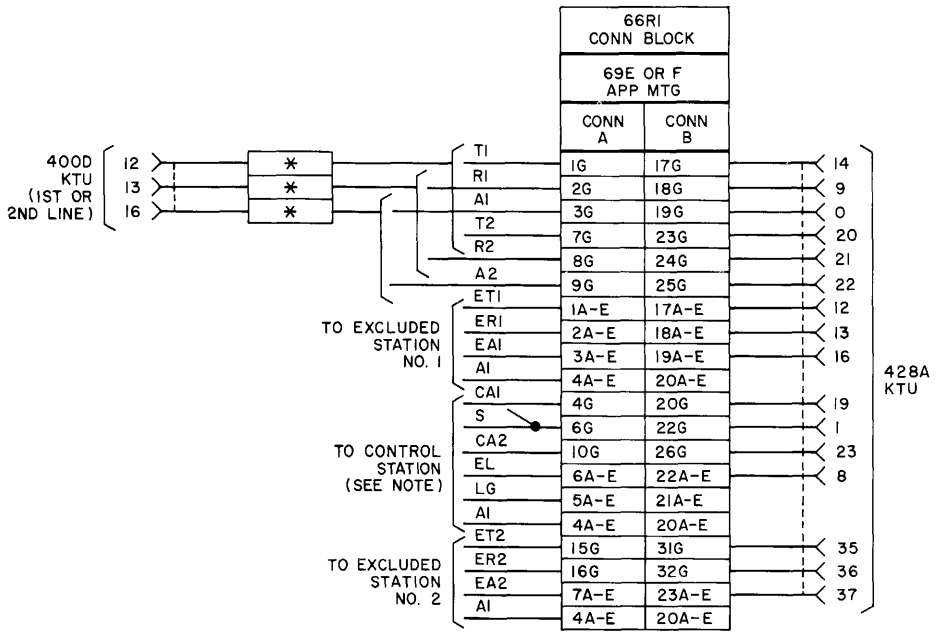
66R2 CONN BLOCK



IF THE SYSTEM IS EQUIPPED WITH DSS (421A KTU) REWIRE "RH" LEADS BY TERMINATING ONE LEAD TO TERMINAL 50F AND THE OTHER LEAD TO A 183A2 ADAPTER INSTALLED OVER TERMINALS 50G AND 50H.

¶T WHEN ADDING THE 426A AND 427A OR B KTUS TO AN EXISTING SYSTEM EQUIPPED WITH A 420A KTU, A DIODE MUST BE INSTALLED IN THE TTG LEAD CONNECTING TO THE 420A KTU. SEE FIG. COVERING CONNECTIONS OF THE 420A KTU.

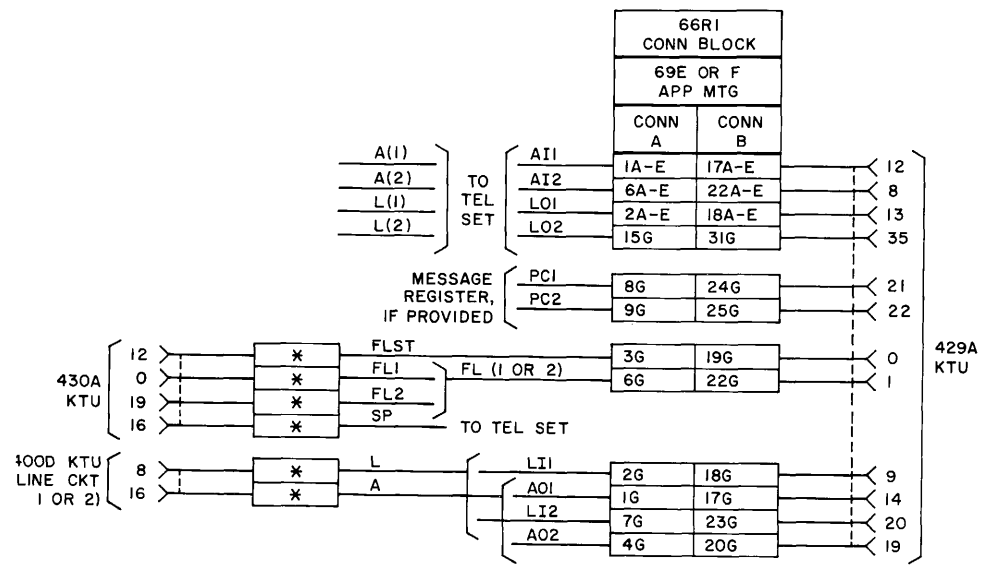
Fig. 71—Connections for 427A KTU (TOUCH-TONE Adapter Circuit) in 69E or F Apparatus Mounting



NOTE:
"S" LEAD CAN ONLY MULTIPLE TO OTHER 428A KTUS CONTROLLED BY THE SAME STATION.

* TO CONNECTING BLOCK TERMINAL ASSOCIATED WITH MOUNTING FACILITY FOR KTU.

Fig. 72—Connections for 428A KTU (Multiline Exclusion Circuit) in 69E or F Apparatus Mounting



NOTES:

1. FOR PRIORITY HOLD, THE A AND L LEADS FROM EACH TEL SET CONNECT THROUGH THE 429A KTU TO THE 400D KTU.
2. FOR I HOLD, THE A AND L LEADS FROM THE TEL SET SELECTED FOR I HOLD CONNECT THROUGH THE 429A KTU TO THE 400D KTU. THE A AND L LEADS FROM THE OTHER TEL SETS CONNECT DIRECTLY TO THE 400D KTU.
3. THE 429A KTU WILL PROVIDE SUPPLEMENTARY HOLD FOR TWO CO OR PBX LINE CIRCUITS. EACH HOLD CIRCUIT MAY BE ASSIGNED AS PRIORITY OR I HOLD.

* TO CONNECTING BLOCK TERMINAL ASSOCIATED WITH MOUNTING FACILITY FOR KTU.

Fig. 73—Connections for 429A KTU (Supplementary Hold Detector Circuit) in 69E or F Apparatus Mounting

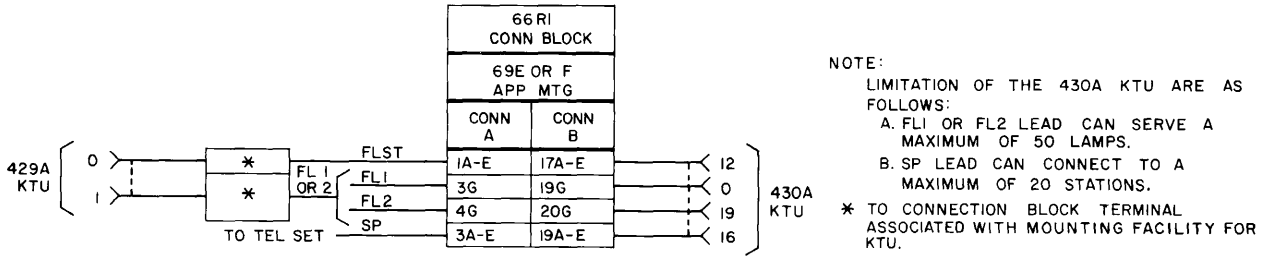


Fig. 74—Connections for 430A KTU (Flutter Generator Circuit) in 69E or F Apparatus Mounting

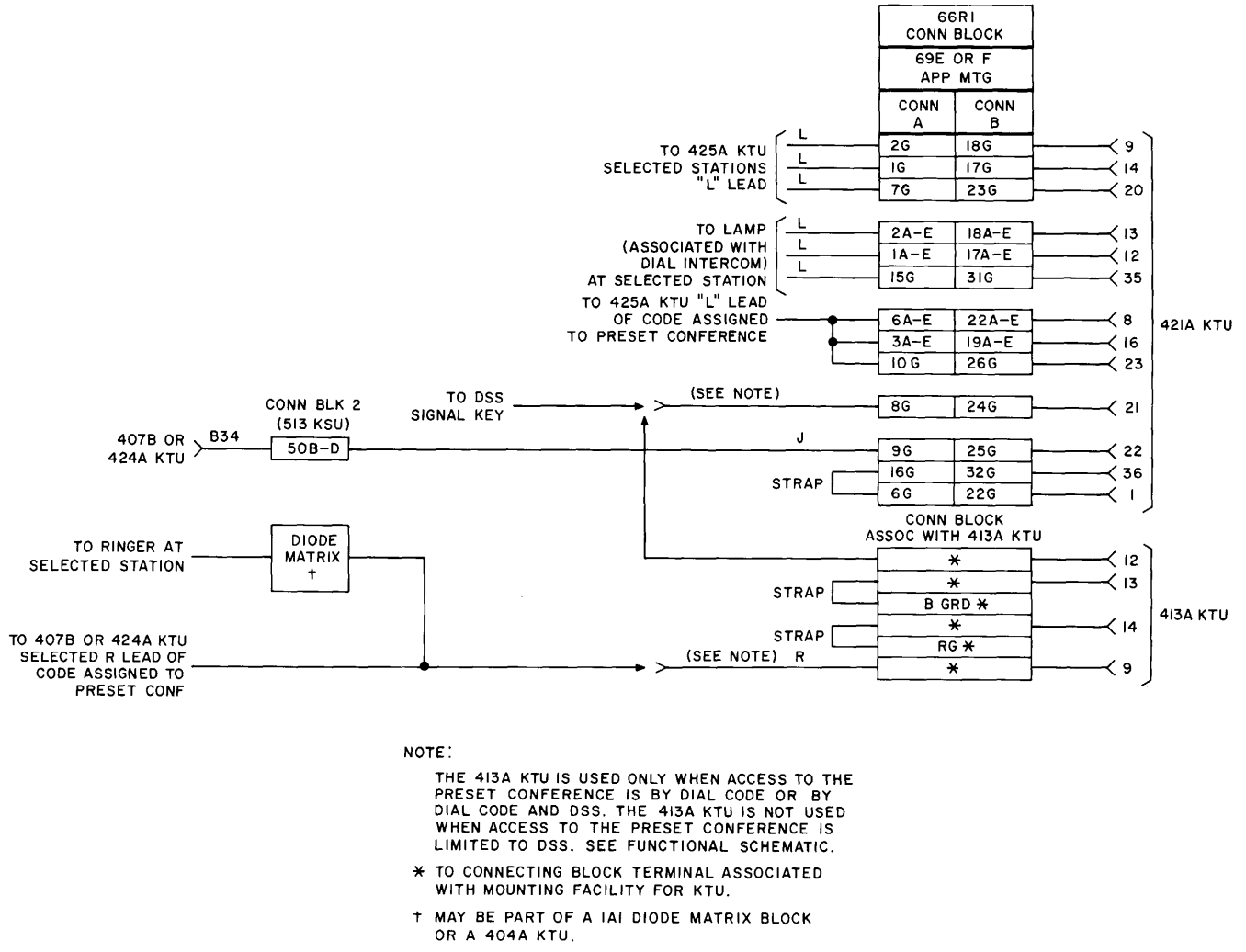


Fig. 75—Connections for Preset Conference Circuit for Deluxe Dial Intercom Line in 69E or F Apparatus Mounting