200H-TYPE KEY TELEPHONE UNITS

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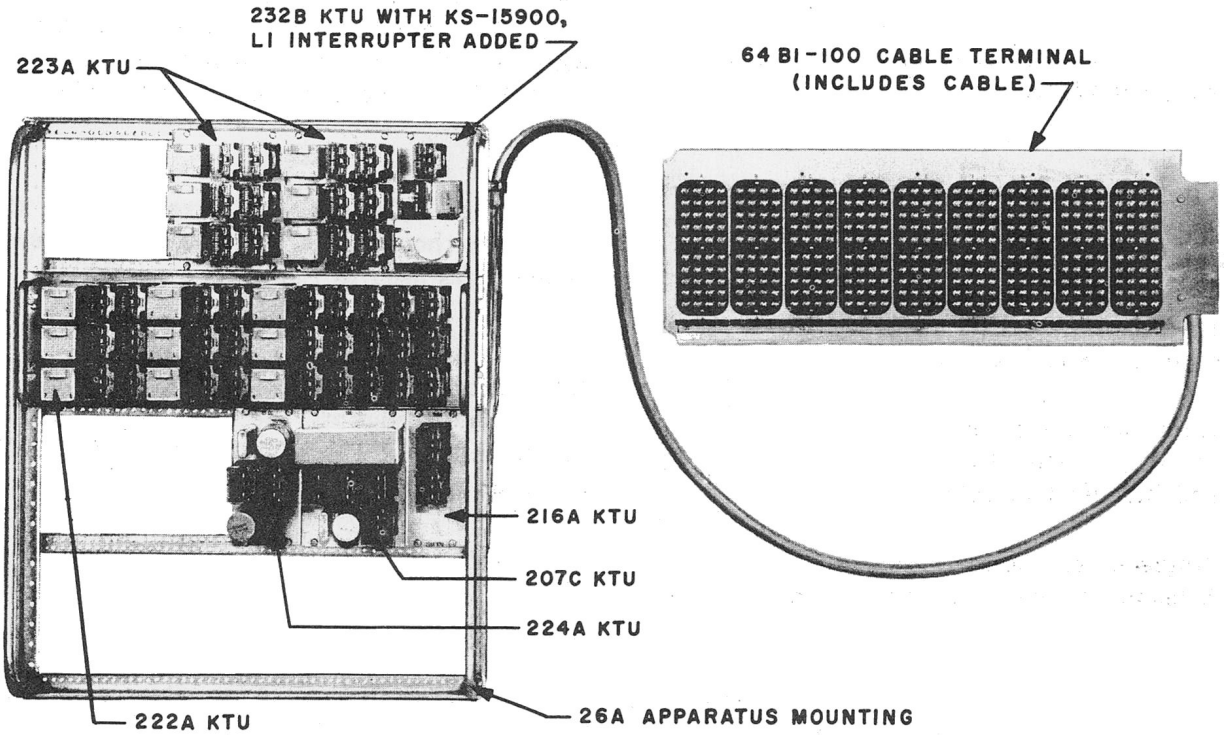


Fig. 1 — 200H15DC Key Telephone Unit

1.00 INTRODUCTION

1.01 This section covers the identification, connections, and maintenance for the 200H-type key telephone units.

1.02 This section is reissued to:

- Add information on the 232B KTU.
- Reverse *RS* and *RG* leads in Table A to conform with the way the package is factory-wired.
- Make corrections and changes in the connection and schematic drawings.

1.03 The 232A KTU is rated Manufacture Discontinued. As manufacturing facilities permit, new 200H-type key telephone units will be equipped with 232B units, although the package code will not be changed to reflect this fact.

1.04 Due to extensive changes, marginal arrows have been omitted.

2.00 IDENTIFICATION

2.01 The 200H-type key telephone units are packaged units of the 6A, 2-talking link key telephone system. These packages provide for:

- Intercommunication facilities for a maximum of 18 codes.
- A primary and secondary talking link which enables a system to carry two simultaneous and independent conversations.
- Single-spurt audible signaling over *T* and *R* leads or over a separate pair.
- Flashing lamps on incoming calls.
- Busy lamps on stations using the secondary link, and busy lamps on all stations when the primary link is in use.
- Dial-selective signaling and means for signaling by keys.
- Camp-on.
- A busy tone to the station originating camp-on and to any other stations which may try to originate a call after the system has been camped-on.
- Automatic cutoff.
- Intercommunication for stations associated with separate installations or combinations of the following: key and telephone circuit; 1A or 1A1 key telephone system; and 100, 101A or B, and 102A key equipment.
- Time-out control.
- Manual intercommunicating circuit with busy lamps.

2.02 The 200H-type KTU consists of panel-type key telephone units mounted and factory-wired on a 26A apparatus mounting, with or without a 64B1-100 cable terminal. (See Fig. 1.)

2.03 Fig. 2 shows the arrangement, coding (without cable terminal), and key telephone units used in the 200H-type KTU.

2.04 Numbers and letters added to the basic code designate the four arrangements of the 200H-type KTU. For example, 200H15DC is a unit as follows:

200H — type

15 — number of station circuits

D — dial-selective intercommunicating circuit

C — 64B1-100 cable terminal

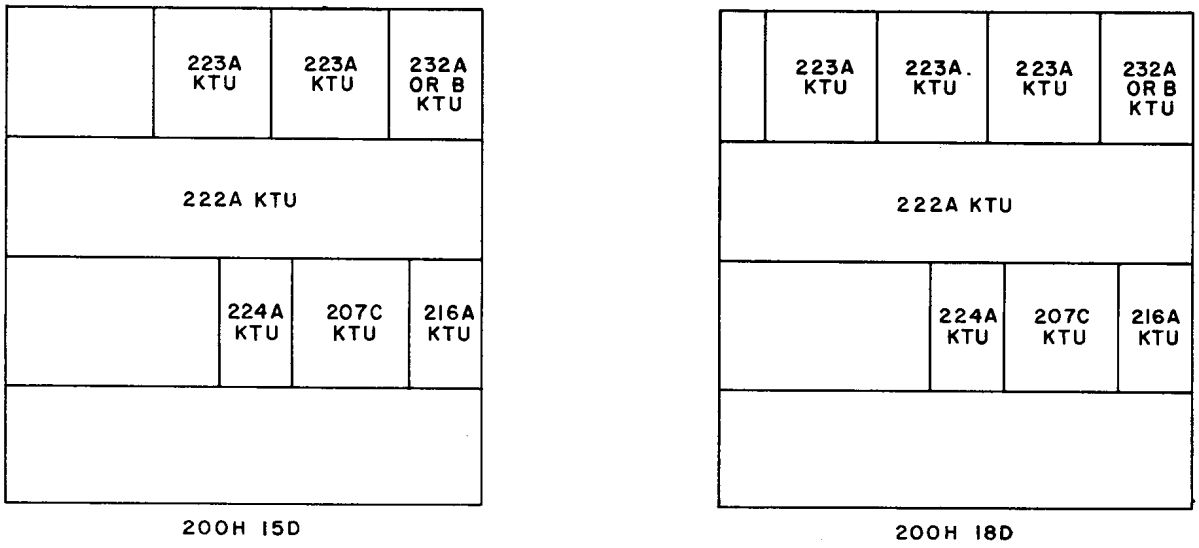


Fig. 2 — Block Diagram

2.05 The 64B1-100 cable terminal, when ordered as a sub code C, is a 100-pair inside wiring cable terminated at one end on the back of a terminal plate assembly per ED-69366-50, Group 3, and terminated at the other end on the back of key telephone units.

2.06 The 64B1-100 cable terminal equipped with a 15-foot cable tail may be ordered separately. It may have application other than for the 200H-type key telephone units.

2.07 The 232A or B KTU is furnished with each 200H-type unit, but the KS-15900, List 1 interrupter is ***not*** furnished and, if required, must be ordered separately. All leads associated with the 232A or B KTU are accessible at the terminal panel when a 64B1-100 cable terminal is provided.

2.08 The 26A apparatus mounting may be installed on the wall, on relay racks, directly on the floor, or in equipment cabinets. Refer to the C Section covering equipment cabinets and apparatus mountings for installation.

2.09 The 200H-type KTU provides mounting space for power plants or additional local requirements.

3.00 CONNECTIONS

3.01 Table A shows where the connections are made for running cables or key cables at both the key telephone units and the terminal plate.

3.02 Fig. 3 shows strapping between units, power connections, and key cable connections.

3.03 This package is factory-wired for the digit 2 to be used as the initial digit of 2-digit codes. When required, any other digit except 1 may be used as the initial digit. The digit so assigned cannot be used as a single-digit station code.

3.04 Refer to SD-69286-01 and the C Section entitled 6A Key Telephone System, Two-Talking Link Connections for additional features.

4.00 MAINTENANCE

Circuit drawings (Fig. 4 through 11) are included as an aid in making connections and clearing trouble.

5.00 CIRCUIT NOTES

5.01 For all system arrangements where direct current is used to operate the bells, buzzers, or lamps, assume a current drain of 0.056 ampere for each 7A-type bell or buzzer and a current drain of 0.035 ampere for each A3 lamp. The current drain for the 2-talking link is as follows:

2-Talking Link Arrangement	Max Current Drain at Min Voltage (20 Volts)		Current Drain During Normal Talking Condition (24 Volts)	
	Battery Supply			
	A	B	A	B
	amperes			
Installation over 9 Codes and Using Transfer Circuit (max 36 codes)	0.374	0.827	0.205	0.200
Installation with Camp-On Circuit	0.454	1.061	0.215	0.210

5.02 The dc and ac power supply may be provided from a J86471A, List 1 power plant. Direct current, 20 to 26 volts, may be supplied from local or building battery. Power supply for lamps may be supplied from 393A or 393B transformer, and ringing supply may be over pair leads from central office, PBX, or J86731C, List 1 power plant (107C frequency generator).

5.03 At installations where the 200H-type KTU is used in conjunction with other key systems, the J86731B, List 1 power plant may be required for the lamp supply. The 10-volt capacity of this power plant is four hundred twenty-five 51A lamps.

5.04 Power supply arrangements and limitations appear in the C Sections covering station systems power supply.

5.05 Fuse Requirements:

Desig	Amp	Potential Fused	Quantity
		volts	
A Bat.	2	— 20 to — 26 tlk bat.	One per system
B Bat.	2	— 20 to — 26 sig bat.	

5.06 Options provided for in 200H-type KTU:

Option		Wiring
Station Audible Signal	Over *T* and *R* leads	Y
	Over separate signaling pair	Z
Flash, Wink, Ring, and Time-Out Circuit*	Provided in package	X
	Provided externally	W

* This option does not appear as a 6A Key Telephone System option.

5.07 6A system options wired into the 200H-type KTU:

(a) Options Associated with System

Wiring	Option
W	With Transfer Circuit (over 9 codes)
G	With Camp-On
H	Without Aux Rel Busy Lamp Ckt
S	Without Aux Rel Lamp Flash Ckt
AL	Single Spurt Audible Signal
AJ	Dial, Busy, and Audible Tone*

* Busy tone only furnished.

(b) Options Associated with Stations

E	With Automatic Cutoff	
Y	Over T & R Leads	Station Aud Signal
Z	Over Separate Pair	
AE	Signal Key Selection of Local Station	

5.08 The *CO* lead connection is required when an associated No. 1A or 1A1 system flashing circuit is used as part of the No. 6A installation.

TABLE A

200H-TYPE KTU CONNECTIONS

Feature		Lead Desig	64B1-100 Cable Terminal			Term. on 207C KTU	Term. on 222A KTU	Term. on 223A KTU		Term. on 232A or B KTU	Term. on 224A KTU
			TS E	Inside Wire Cable							
Dial Intercom	Sta 21	T	1	W	Blue Binder		1A				
		R	2	BL			2A				
		LG	3	W			4A				
		L	4	O			3A				
	Sta 22	T	5	W			11A				
		R	6	G			12A				
		LG	7	W			14A				
		L	8	BR			13A				
	Sta 23	T	9	W			21A				
		R	10	S			22A				
		LG	11	R			24A				
		L	12	BL			23A				
	Sta 24	T	13	R			31A				
		R	14	O			32A				
		LG	15	R			34A				
		L	16	G			33A				
	Sta 25	T	17	R			1B				
		R	18	BR			2B				
		LG	19	R			4B				
		L	20	S			3B				
	Sta 26	T	21	BK			11B				
		R	22	BL			12B				
		LG	23	BK			14B				
		L	24	O			13B				
	Sta 27	T	25	BK			21B				
		R	26	G			22B				
		LG	27	BK			24B				
		L	28	BR			23B				
	Sta 28	T	29	BK			31B				
		R	30	S			32B				
		LG	31	Y			34B				
		L	32	BL			33B				
	Sta 29	T	33	Y			1C				
		R	34	O			2C				
		LG	35	Y			4C				
		L	36	G			3C				
	Sta 20	T	37	Y				1A	1st		
		R	38	BR				2A			
		LG	39	Y				4A			
		L	40	S				3A			

TABLE A (Cont)

200H-TYPE KTU CONNECTIONS

Feature		Lead Desig	64B1-100 Cable Terminal			Term. on 207C KTU	Term. on 222A KTU	Term. on 223A KTU		Term. on 232A or B KTU	Term. on 224A KTU
			TS F	Inside Wire Cable							
Dial Intercom	Sta 3	T R	1 2	V BL	Blue Binder			11A 12A	1st		
		LG L	3 4	V O				14A 13A			
	Sta 4	T R	5 6	V G				21A 22A			
		LG L	7 8	V BR				24A 23A			
	Sta 5	T R	9 10	V S				1A 2A	2nd		
		LG L	11 12	W BL	Orange Binder			4A 3A			
	Sta 6	T R	13 14	W O				11A 12A			
		LG L	15 16	W G				14A 13A			
	Sta 7	T R	17 18	W BR				21A 22A			
		LG L	19 20	W S				24A 23A			
	Sta 8	T R	21 22	R BL				1A 2A	3rd		
		LG L	23 24	R O				4A 3A			
	Sta 9	T R	25 26	R G				11A 12A			
		LG L	27 28	R BR				14A 13A			
	Sta 0	T R	29 30	R S				21A 22A			
		LG L	31 32	BK BL				24A 23A			
Signal Key Leads	Sta 21 Sta 22	S S	33 34	BK O			7A 17A				
	Sta 23 Sta 24	S S	35 36	BK G			27A 37A				
	Sta 25 Sta 26	S S	37 38	BK BR			7B 17B				
	Sta 27 Sta 28	S S	39 40	BK S			27B 37B				

TABLE A (Cont)

200H-TYPE KTU CONNECTIONS

Feature		Lead Desig	64B1-100 Cable Terminal			Term. on 207C KTU	Term. on 222A KTU	Term. on 223A KTU		Term. on 232A or B KTU	Term. on 224A KTU
			TS G	Inside Wire Cable							
Signal Key Leads	Sta 29	S	1	Y	Orange Binder		7C	7A			
	Sta 20	S	2	BL					1st		
	Sta 3	S	3	Y				17A			
	Sta 4	S	4	O				27A			
	Sta 5	S	5	Y				7A			
	Sta 6	S	6	G				17A	2nd		
	Sta 7	S	7	Y				27A			
	Sta 8	S	8	BR				7A			
	Sta 9	S	9	Y				17A	3rd		
	Sta 0	S	10	S				27A			
Station Audible Signal—*Z* Option	Sta 21	RS RG	11 12	V BL			5A 6A				
	Sta 22	RS RG	13 14	V O			15A 16A				
	Sta 23	RS RG	15 16	V G			25A 26A				
	Sta 24	RS RG	17 18	V BR			35A 36A				
	Sta 25	RS RG	19 20	V S			5B 6B				
	Sta 26	RS RG	21 22	W BL	Green Binder		15B 16B				
	Sta 27	RS RG	23 24	W O			25B 26B				
	Sta 28	RS RG	25 26	W G			35B 36B				
	Sta 29	RS RG	27 28	W BR			5C 6C				
	Sta 20	RS RG	29 30	W S				5A 6A			
	Sta 3	RS RG	31 32	R BL				15A 16A	1st		
	Sta 4	RS RG	33 34	R O				25A 26A			
	Sta 5	RS RG	35 36	R G				5A 6A			
	Sta 6	RS RG	37 38	R BR				15A 16A	2nd		
	Sta 7	RS RG	39 40	R S				25A 26A			

TABLE A (Cont)
200H-TYPE KTU CONNECTIONS

Feature		Lead Desig	64B1-100 Cable Terminal			Term. on 207C KTU	Term. on 222A KTU	Term. on 223A KTU		Term. on 232A or B KTU	Term. on 224A KTU
			TS H	Inside Wire Cable							
Sta Aud Sig — *Z* Option	Sta 8	RS RG	1 2	BK BL	Green Binder			5A 6A	3rd		
	Sta 9	RS RG	3 4	BK O				15A 16A			
	Sta 0	RS RG	5 6	BK G				25A 26A			
To Power Supply		"B" GRD "B" BAT.	7 8	BK BR		20B 19B					
To Lamp Supply		GRD ± or LB	9 10	BK S		32B 29B					
To Power Supply		"A" GRD "A" BAT.	11 12	Y BL		10B 9B					
Aud Sig Pwr Sup Options	*Y* *Z*	R GRD GRD or R GRD	13 *	Y *			20A 6A				
	Y *Z*	105V± BAT.,±, or 105V±	14 *	O *			19A 29A				
X Option† to Interrupter in Package		CO TO	15 16	Y G						37 36	
		BT1 or BZ1 BT or BZ	17 18	Y BR						32 31	
		RO LF	19 20	Y S						34 1	
10-Volt AC Supply		GRD 10V AC	21 22	V BL						27 26	
Lamp Supply		± or LB ± or LB	23 24	V O						9 10	
W Option‡ to External Interrupter		CO TO	25 26	V G			18A				22
		BT1 or BZ1 BT or BZ	27 28	V BR							35 24
		RO LF	29 30	V S			40A 9B				
Manual Intercom		T R	31 32	W BL	Brown Binder					30 40	
Lamp Supply		L ± or LB	33 34	M O						28 19	
Spare		± or LB	35 36	W G						20	
			37 38	W BR							
			39 40	W S							

*Select spare pair locally.

† When KTU is equipped with a 64B1-100 cable terminal, strap as follows: on terminal strip H strap punching 15 to 25, 16 to 26, 17 to 27, 18 to 28, and 20 to 30.

‡ When KTU is not equipped with a 64B1-100 cable terminal, remove the following straps:

from punching	to punching
37 (232A or B)	18A (222A)
35 (232A or B)	22 (224A)
32 (232A or B)	35 (224A)
31 (232A or B)	24 (224A)
1 (232A or B)	9B (222A)

TABLE A (Cont)

200H-TYPE KTU CONNECTIONS

Feature	Lead Desig	64B1-100 Cable Terminal			Term. on 207C KTU	Term. on 222A KTU	Term. on 223A KTU	Term. on 232A or B KTU	Term. on 224A KTU
		TS J	Inside Wire Cable						
To Key Tel Sys No. 1A or 1A1	LF LF	1 2	R BL	Brown Binder				2 3	
	LF LF	3 4	R O					4 5	
	LF LF	5 6	R G					6 7	
	LF LW	7 8	R BR					8 11	
	LW LW	9 10	R S					12 13	
	LW LW	11 12	BK BL					14 15	
	LW LW	13 14	BK O					16 17	
	LW	15 16	BK G					18	
Spare		17 18	BK BR						
		19 20	BK S						
		21 22	Y BL						
		23 24	Y O						
		25 26	Y G						
		27 28	Y BR						
		29 30	Y S						
		31 32	V BL						
		33 34	V O						
		35 36	V G						
		37 38	V BR						
		39 40	V S						

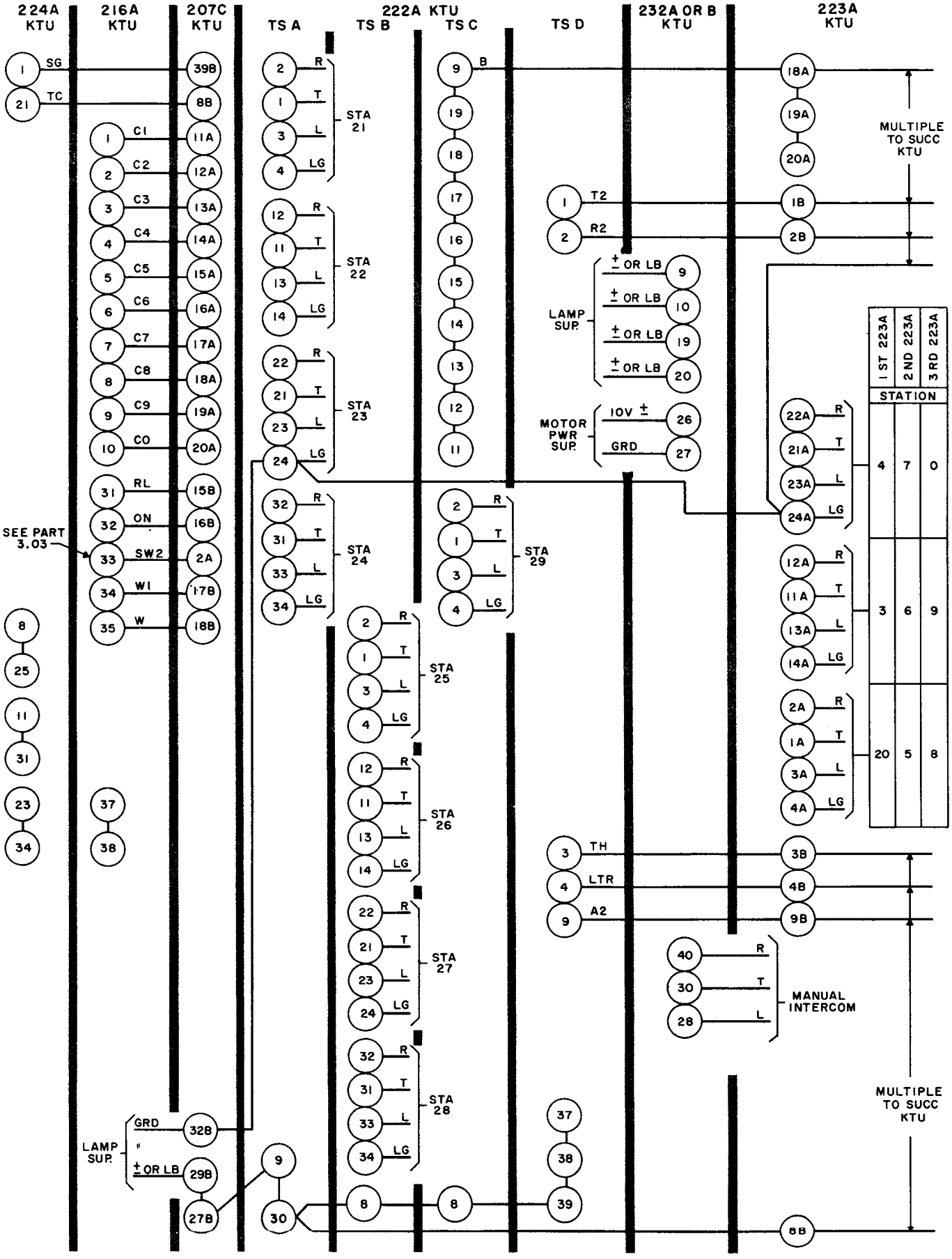


Fig. 3 — Strapping and Connections of KTU

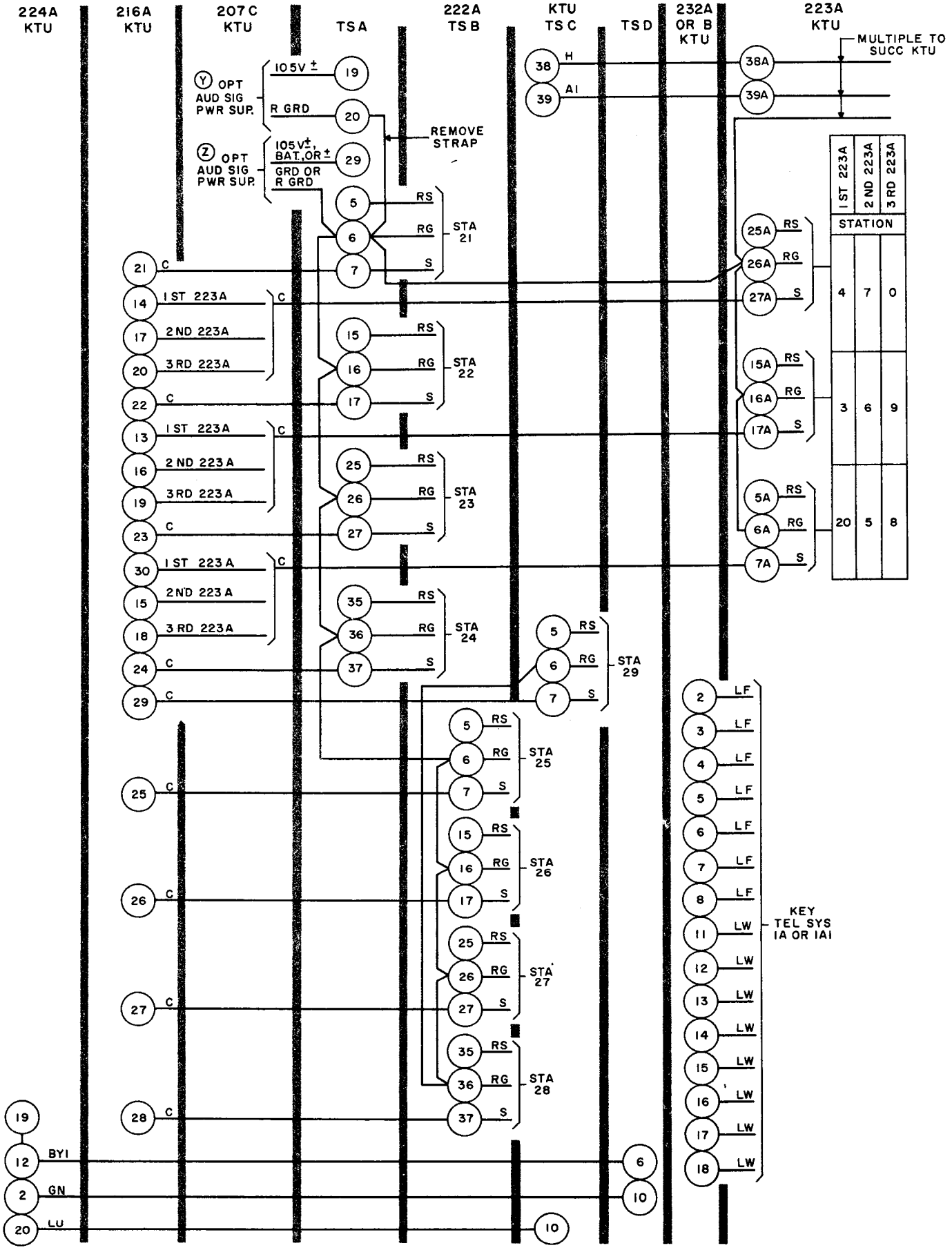


Fig. 3 — Strapping and Connections of KTU (Cont)

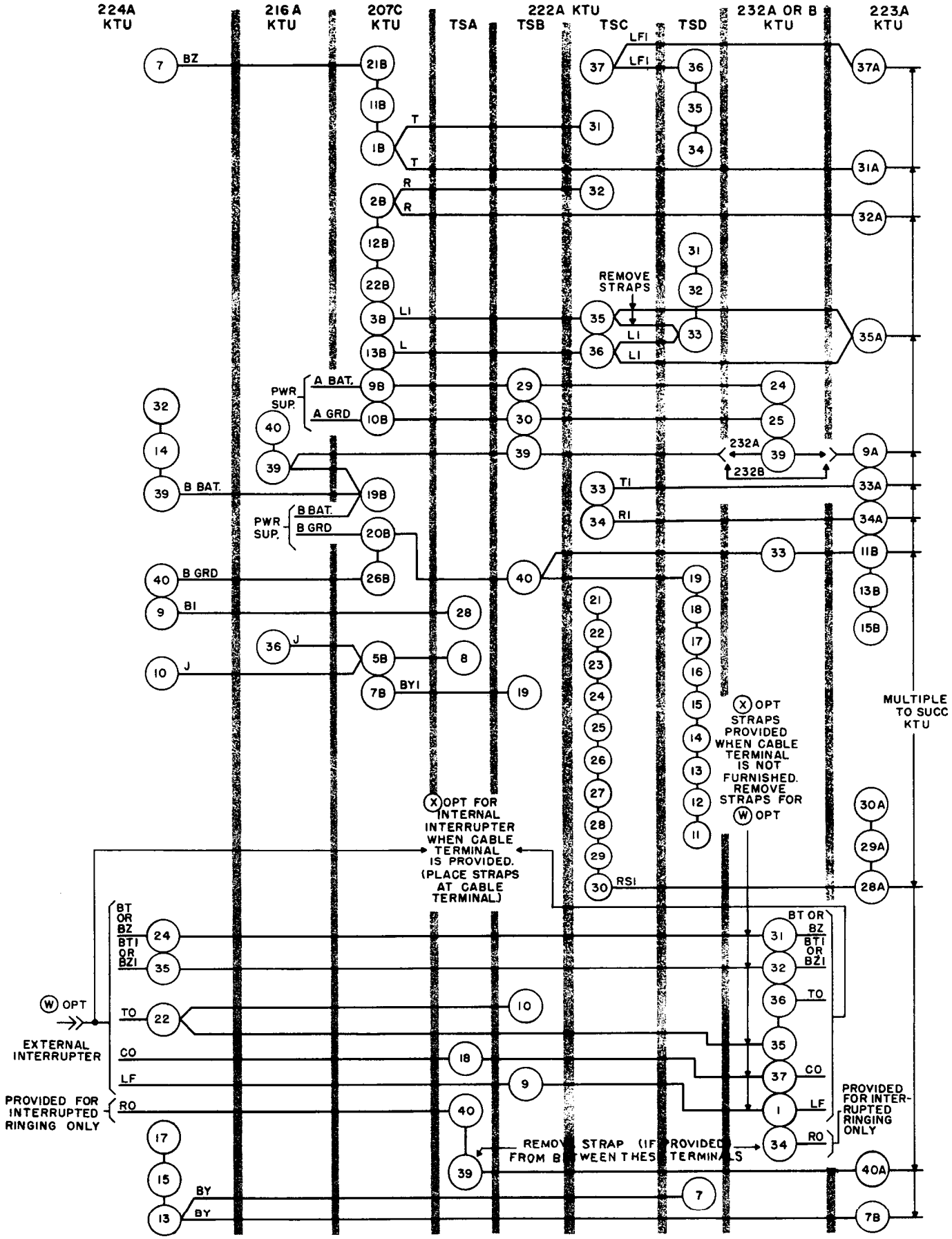


Fig. 3 — Strapping and Connections of KTU (Cont)

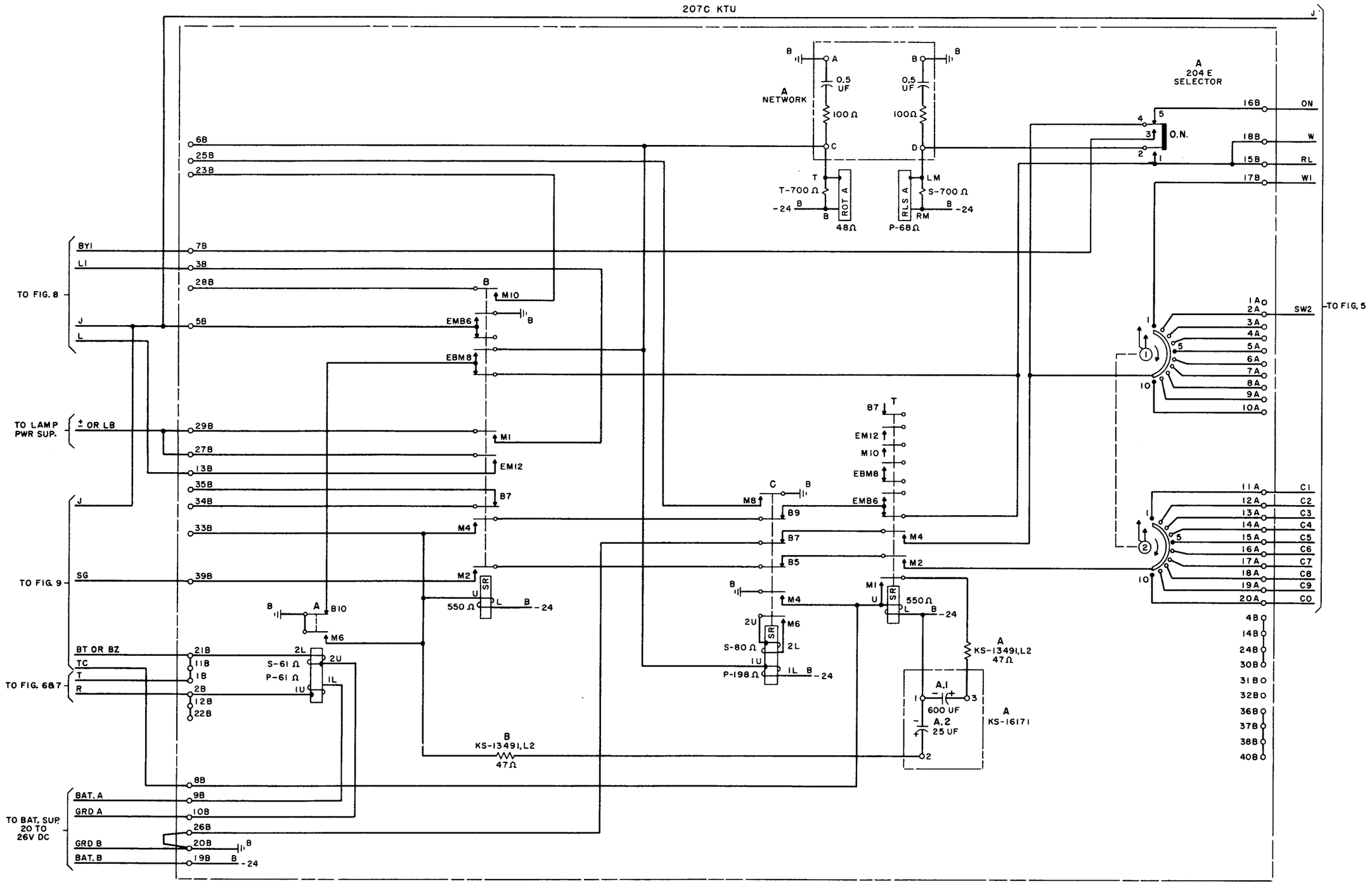


Fig. 4 — 207C KTU, Selector Circuit

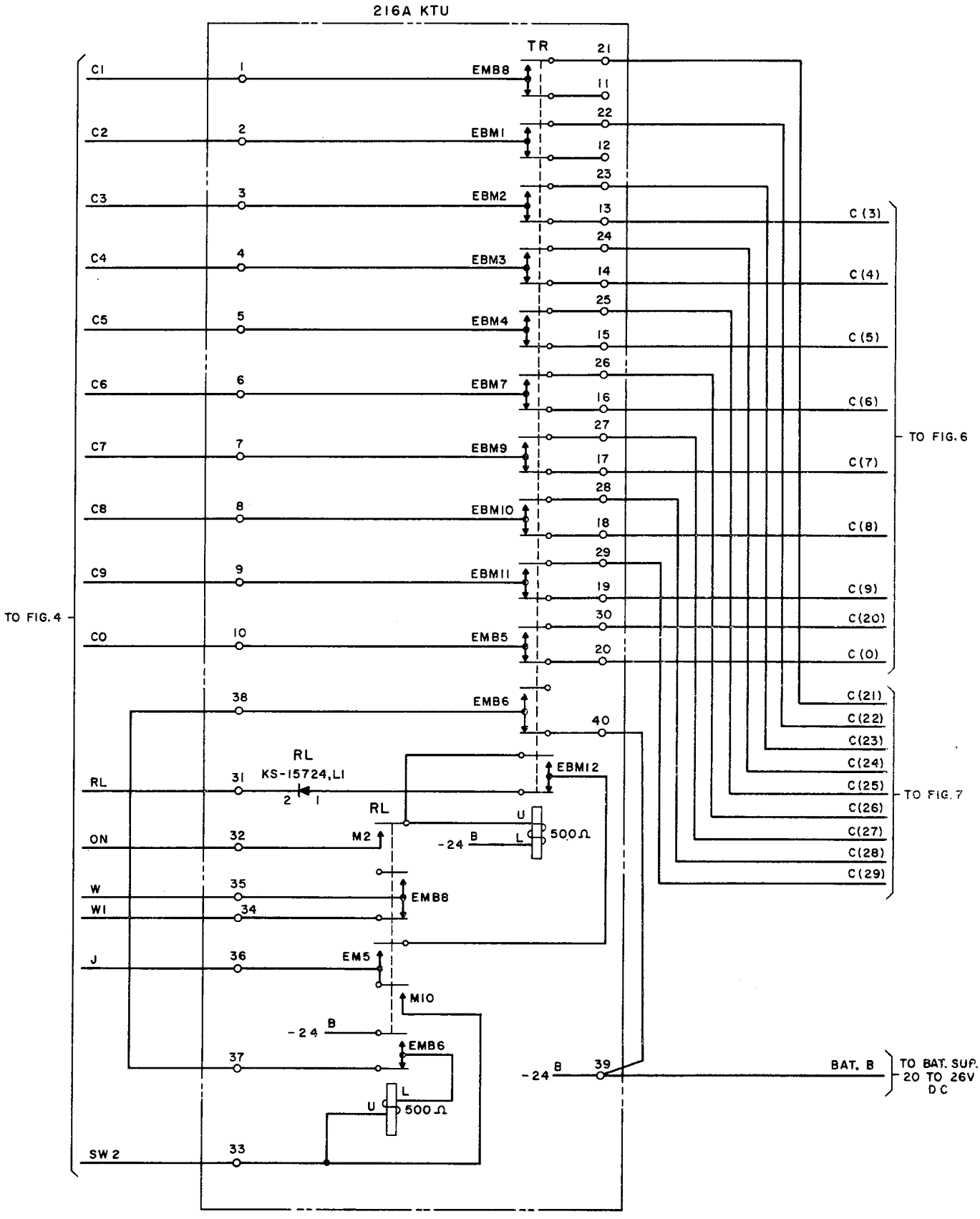


Fig. 5 — 216A KTU, Transfer Circuit

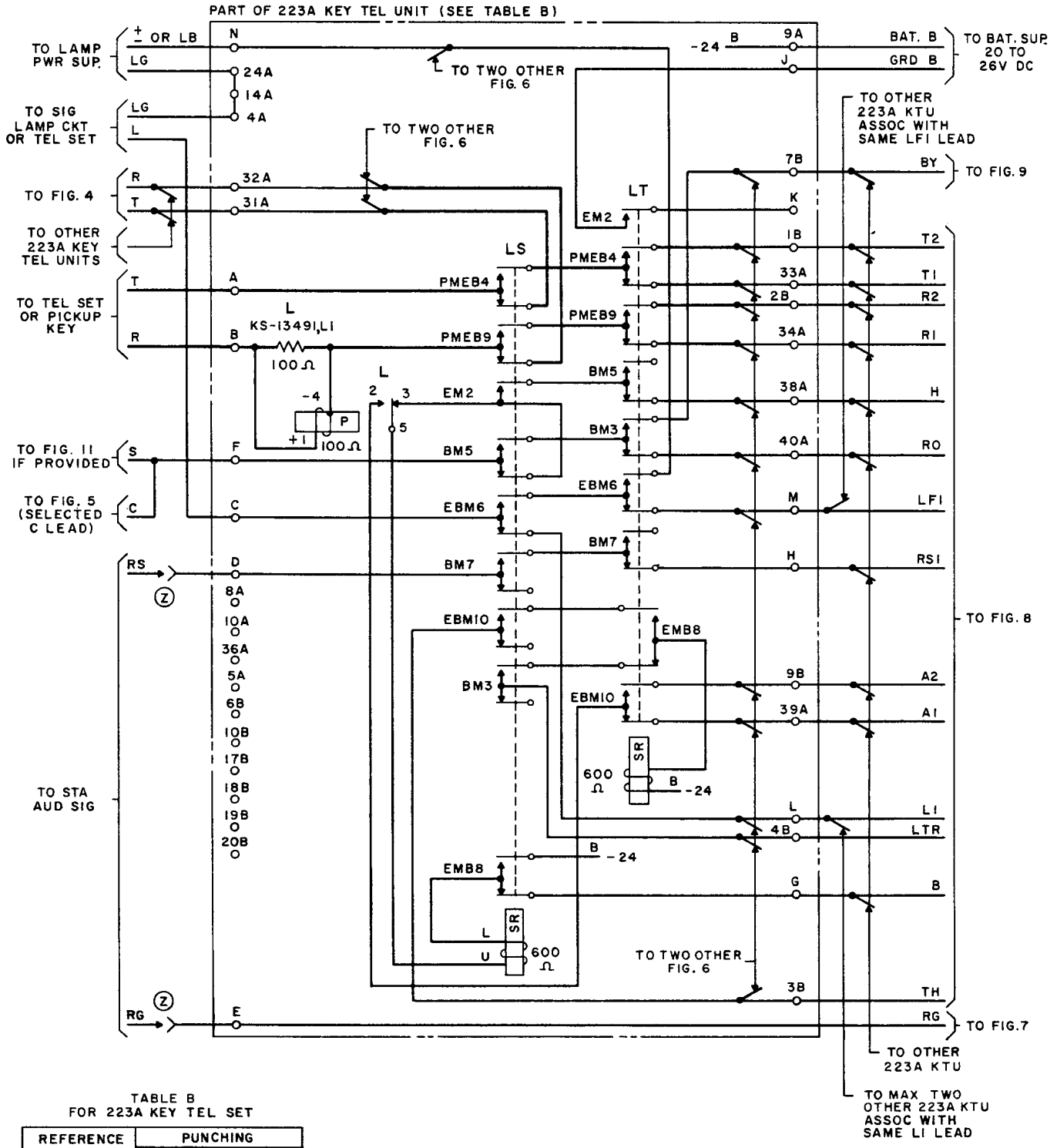


TABLE B
FOR 223A KEY TEL SET

REFERENCE DESIGNATION	PUNCHING		
	CKT 1	CKT 2	CKT 3
A	1A	11A	21A
B	2A	12A	22A
C	3A	13A	23A
D	5A	15A	25A
E *	6A	16A	26A
F	7A	17A	27A
G *	18A	19A	20A
H	28A	29A	30A
J	11B	13B	15B
K	12B	14B	16B
L	35A		
M	37A		
N	8B		

* ALL E AND G TERMINALS ARE CROSS-CONNECTED ON THE TERMINAL SIDE DURING MANUFACTURE OF THE UNITS. CHANGES IN THESE WIRING ARRANGEMENTS SHOULD BE CHANGED LOCALLY AS REQUIRED.

Fig. 6 — 223A KTU — Station Signaling Circuit, 2-Link Operation

TABLE C FOR 222A KEY TEL UNIT

REFERENCE DESIGNATION	PUNCHING								
	CKT 1	CKT 2	CKT 3	CKT 4	CKT 5	CKT 6	CKT 7	CKT 8	CKT 9
A	1A	11A	21A	31A	1B	11B	21B	31B	1C
B	2A	12A	22A	32A	2B	12B	22B	32B	2C
C	3A	13A	23A	33A	3B	13B	23B	33B	3C
D	5A	15A	25A	35A	5B	15B	25B	35B	5C
E *	6A	16A	26A	36A	6B	16B	26B	36B	6C
F	7A	17A	27A	37A	7B	17B	27B	37B	7C
G *	11C	12C	13C	14C	15C	16C	17C	18C	19C
H	21C	22C	23C	24C	25C	26C	27C	28C	29C
J	11D	12D	13D	14D	15D	16D	17D	18D	19D
K	21D	22D	23D	24D	25D	26D	27D	28D	29D
L *	31D	32D	33D	31D	32D	33D	31D	32D	33D
M *	34D	35D	36D	34D	35D	36D	34D	35D	36D
N *	37D	38D	39D	37D	38D	39D	37D	38D	39D

* ALL E, G, L, M, AND N TERMINALS ARE CROSS-CONNECTED ON THE TERMINAL SIDE DURING MANUFACTURE OF THE UNITS. CHANGES IN THESE WIRING ARRANGEMENTS SHOULD BE CHANGED LOCALLY AS REQUIRED.

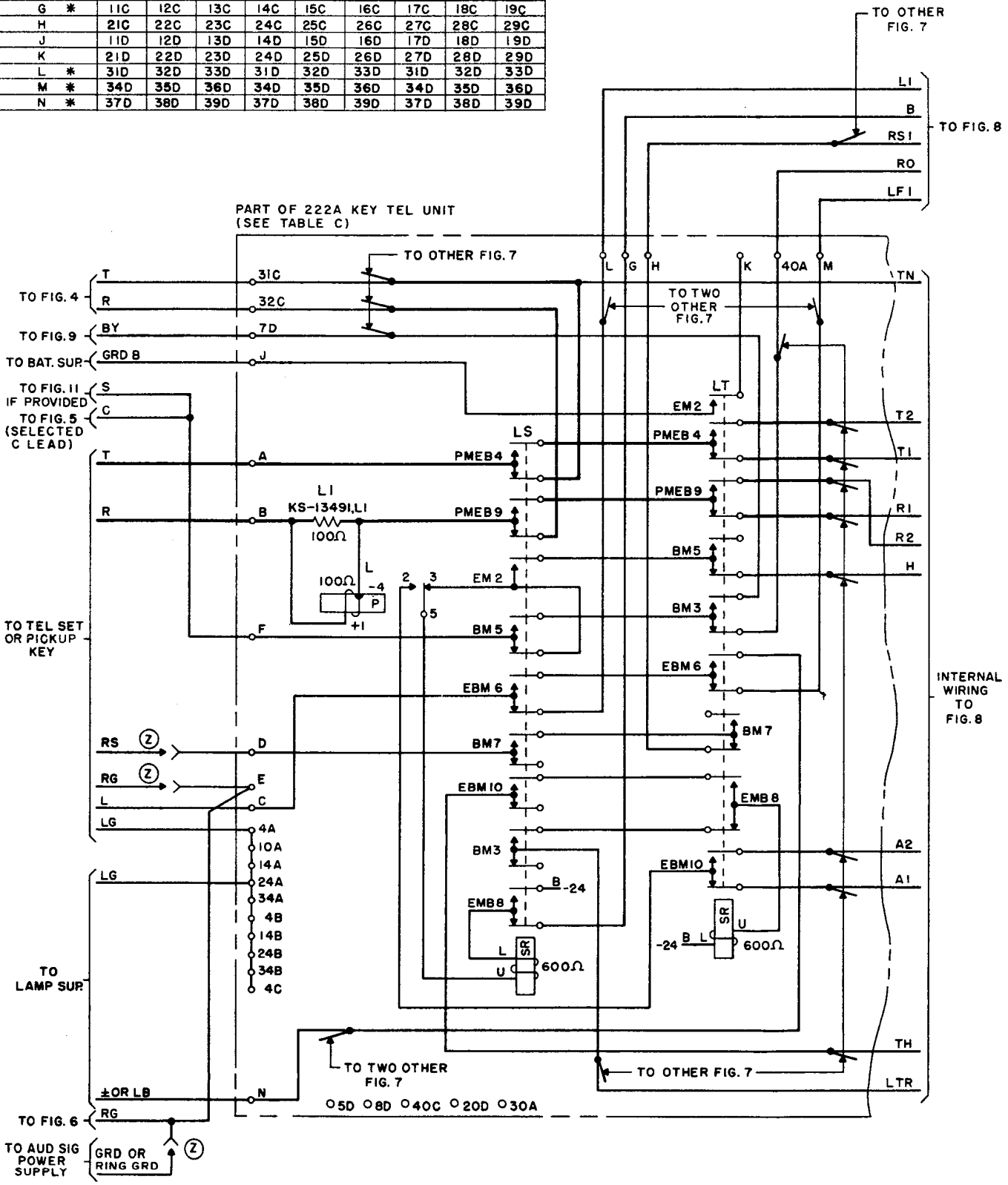


Fig. 7 — 222A KTU — Station Signaling Circuit, 2-Link Operation

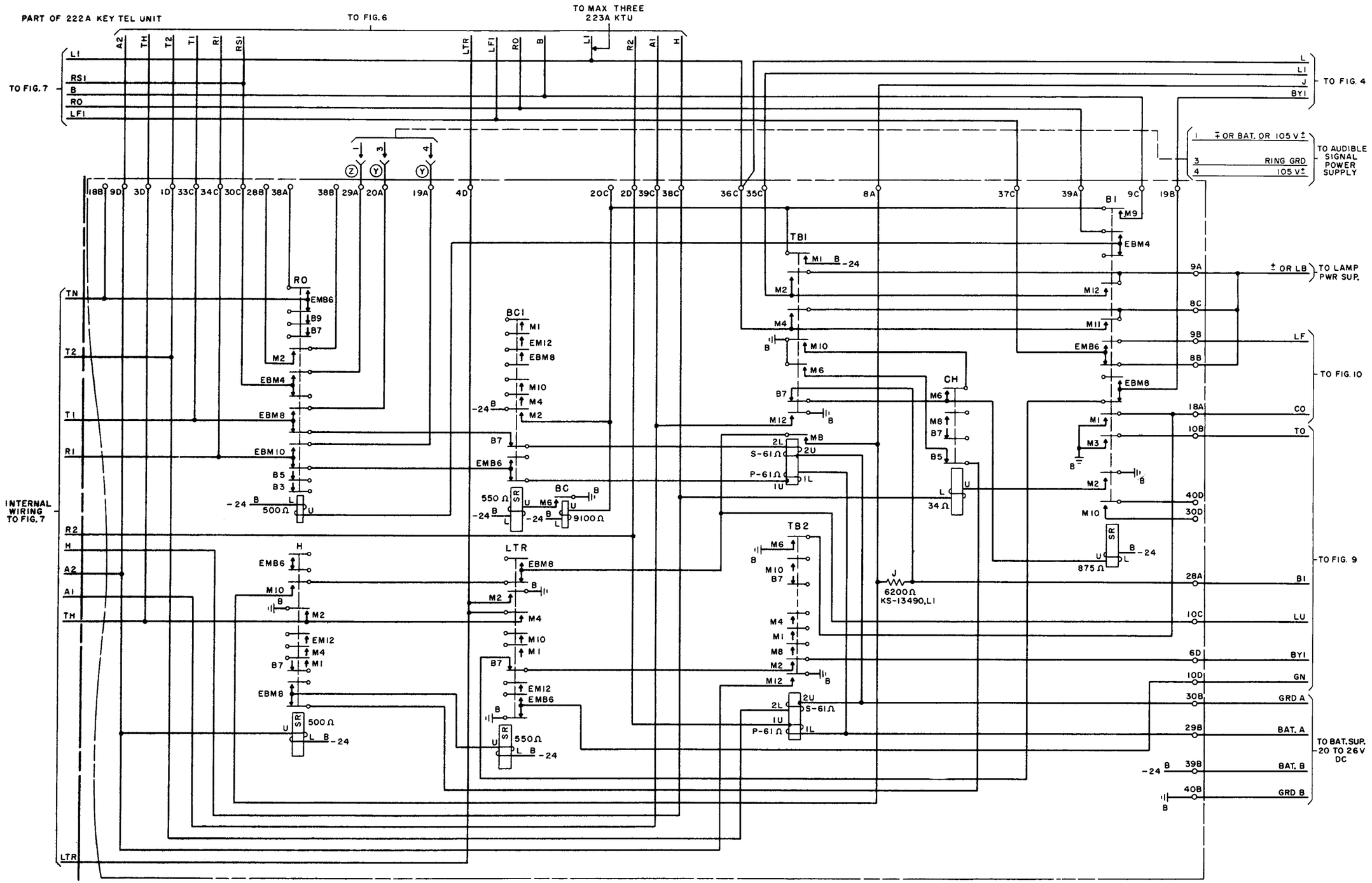


Fig. 8 — 222A KTU, 2-Talking Link Circuit

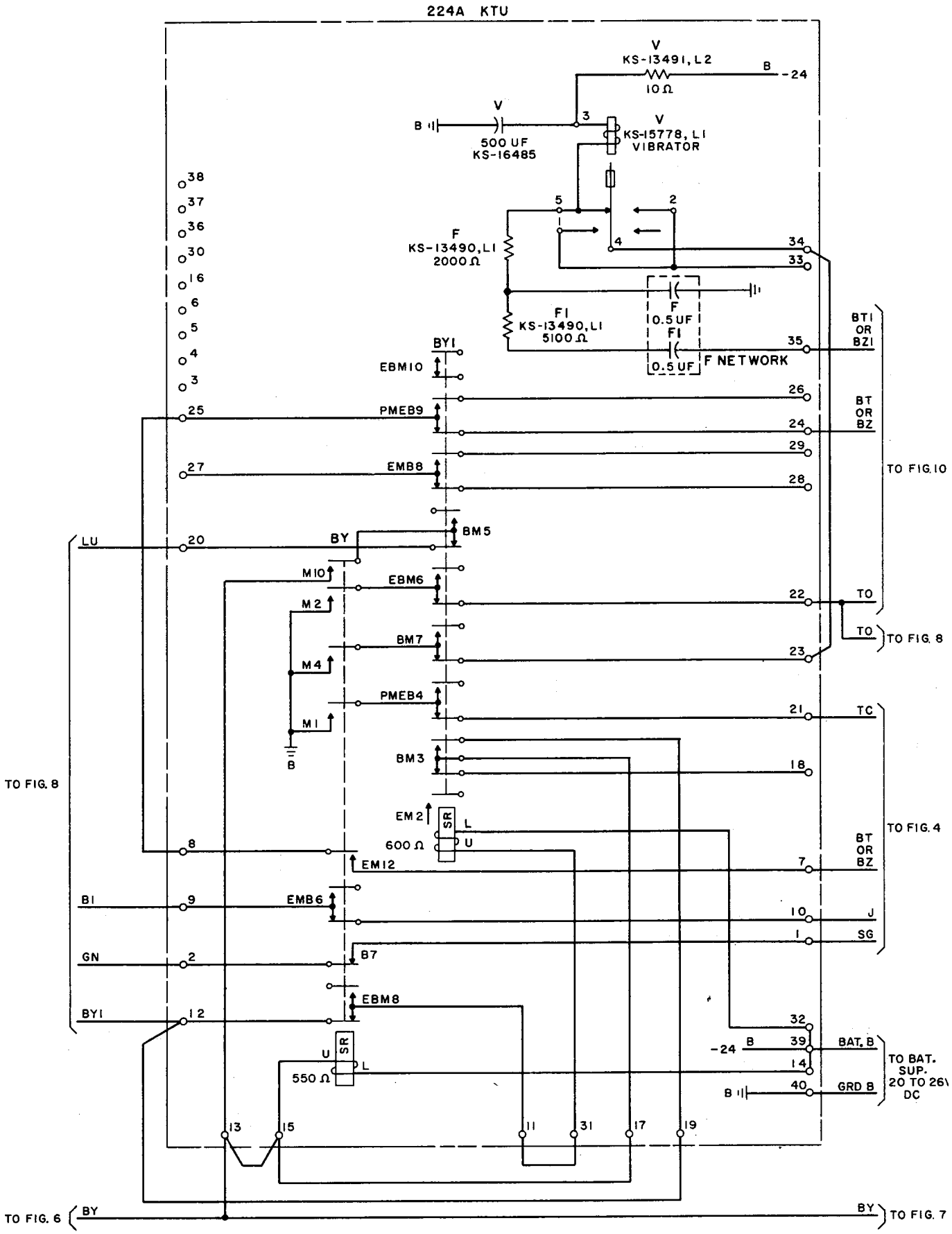
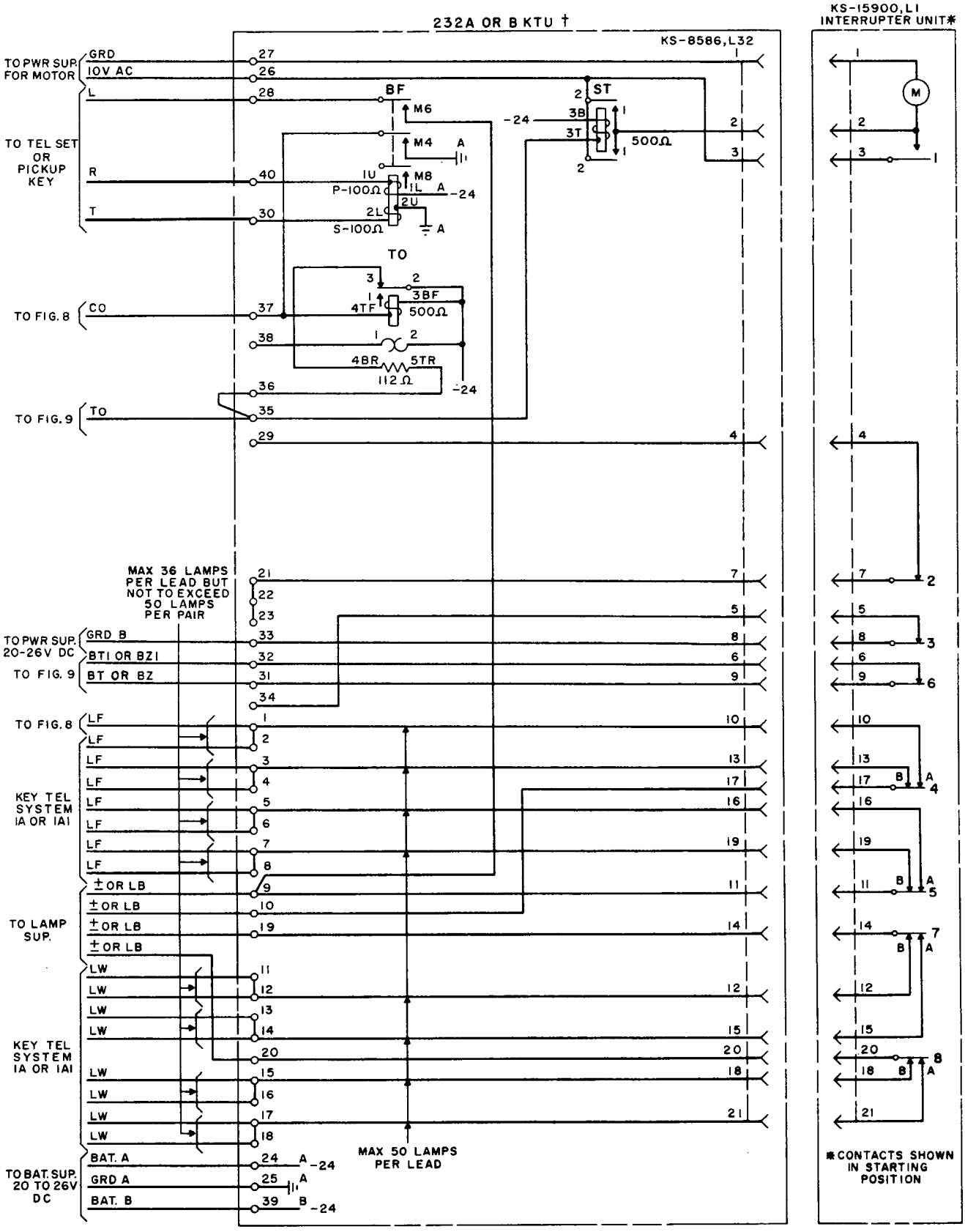


Fig. 9 — 224A KTU, Busy Signal and Camp-On Control Circuit



† 232A KTU-BF RELAY BATTERY CONNECTION TERMINATES ON TERMINAL 24. TO AND ST RELAY BATTERY CONNECTIONS TERMINATE ON TERMINAL 39.

232B KTU-M4 OF BF RELAY IS WIRED TO 4TF OF TO RELAY. ALL INTERNAL BATTERY CONNECTIONS TERMINATE ON TERMINAL 24.

Fig. 10 — 232A or B KTU, Electromechanical Flash, Wink, Ring, and Time-Out Circuit

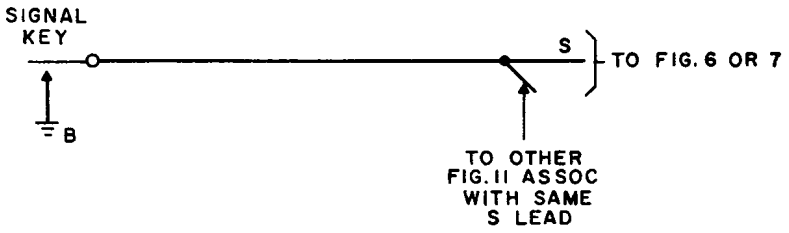


Fig. 11 — Signal Key Circuit