

SHEET INDEX

FIG.	CONTENTS	SHEET NO.	ISSUE NO.																			OLD SHEET NO.
			4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
	SHEET INDEX	A1	4	5	6	7															A1	
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	CIRCUIT NOTES: 101-103	B1	4	5	6	7															C1	
	CIRCUIT NOTES: 104-108																				C2	
	EQUIPMENT NOTES	B2	4	5	6	7															D1	
	BAT. VARIATION																				C2	
	INFORMATION NOTES	B3	4	5	6	7															E1	
101	FIGS. 2, 10 & 13 MULTIPLE STRAPPING	B4	4	5	6	6															F1	
102	KTS NO. 1A & 1A1 INTERCONNECTION	B5	4	5	6	6															F2	
103	BASIC BLOCK DIAGRAM FOR SEL ARR																					
104	BASIC BLOCK DIAGRAM FOR SINGLE-TALKING LINK ARR (MFR DISC)	B6	4	5	6	7															F3	
105	BASIC BLOCK DIAGRAM FOR TWO-TALKING LINK ARR																					
106	MULTIPLE ADD-ON (MFR DISC)	B7	4	5	6	6															F4	
107	SINGLE ADD-ON (MFR DISC)																					
108	BASIC BLOCK DIAGRAM FOR SINGLE TALKING LINK ARR INCORPORATING SEL & TRANSFER SINGLE-LINK CKT	B8	4	5	6	7															F5	
1	SEL CKT (MFR DISC, REPL BY FIG. 19)	C1	4	4	6	7															B1	
2	TRANSFER CKT	C2	4	5	6	6															B2	
3	STA SIG CKT - SINGLE-LINK (PART OF 214B KTU) (MFR DISC, REPL BY FIG. 23)	C3	4	5	6	7															B3	
4	SINGLE-TALKING LINK CKT (PART OF 214B KTU) (MFR DISC, REPL BY FIG. 24)	C4	4	5	6	6																
5	STA SIG CKT-SINGLE-LINK (PART OF 215A KTU) (MFR DISC, REPL BY FIG. 25)	C5	4	5	6	7															B4	
6	STA SIG CKT - TWO-LINK (PART OF 222A KTU) (MFR DISC, REPL BY FIG. 26)	C6	4	5	6	7															B5	
7	TWO-TALKING LINK CKT (PART OF 222A KTU) (MFR DISC, REPL BY FIG. 27)	C7	4	5	6	6															B6	
8	STA SIG CKT - TWO-LINK (PART OF 223A KTU) (MFR DISC, REPL BY FIG. 28)	C8	4	5	6	7															B7	
9	SIG KEY CKT	C9	4	5	6	6															B8	
10	PRESET CONFERENCE CKT (MFR DISC, REPL BY FIG. 32)																				B9	
11	BUSY SIG & CAMP-ON CONT CKT (MFR DISC, REPL BY FIG. 34)	C10	4	5	6	7															B10	
12	LONG LINE CKT	C11	4	5	6	6															B11	
13	ADD-ON CONFERENCE CONT CKT (MFR DISC, REPL BY FIG. 31)	C12	4	5	6	7																
14	FLASHING & BUSY CKT	C13	4	5	6	7																
15	AUX REL - STA CKT (MFR DISC.)																					
16	AUX REL - BUSY LP CKT																					
17	AUX REL - LP FLASH CKT																					

DWG ISS	CD ISS	DWG ISS	CD ISS	DWG ISS	CD ISS
1	1	2B	2B	3D	3D
DWG ISS	CD ISS	DATE	DWN	APP	
4D	4D	6-19-59	ROC	WFW	LHA
5D	5D	4-20-60	STAP	WFW	LHA
6D	6D	6-25-61	LJL	APS	FNR
7D	6D	6-1-61	LJL	APS	FNR

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING, ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.
6. "OLD SHEET NO." REFERS TO SHEET NO. PRIOR TO ISSUE: 4D

SUPPORTING INFORMATION

CATEGORY	NO.

SD-69286-01	IK03	AT&TCO STANDARD
Station Systems KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT Two-Wire, Selective Signaling		
BELL TELEPHONE LABORATORIES INCORPORATED		SD-69286-01-A1 51 SHEETS
DWG. SHEET 35	PRINTED IN U.S.A.	HNDK DWG

SHEET INDEX (CONT.)

FIG.	CONTENTS	SHEET NO.	ISSUE NO.																			OLD SHEET NO.
			4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
18	RINGING AND TONE CONT CIRCUIT (MFR DISC, REPL BY FIG. 30)	C14	4	5	6	6														B12		
19	SEL CIRCUIT	C15	4	5	6	7														B13		
20	SINGLE ADD-ON TRANSFER CIRCUIT (MFR. DISC)	C16	4	5	6	7														B11		
21	ADD-ON KEY																					
22	SELECTOR & TRANSFER SINGLE-LINK CIRCUIT	C17	4	5	6	7														B14		
		C18	4	5	6	7														B15		
		C19	4	5	6	7																
		C20	4	5	6	6																
23	STA SIG CIRCUIT - SINGLE-LINK (PART OF 214B KTU) (MFR. DISC)	C21		5	6	7																
24	SINGLE-TALKING LINK CIRCUIT (PART OF 214B KTU) (MFR. DISC)	C22		5	6	7																
25	STA SIG CIRCUIT - SINGLE-LINK (PART OF 215A KTU)	C23		5	6	7																
26	STA SIG CIRCUIT - TWO-LINK (PART OF 222A KTU)	C24		5	6	7																
27	TWO-TALKING LINK CIRCUIT (PART OF 222A KTU)	C25		5	6	7																
28	STA SIG CIRCUIT - TWO-LINK (PART OF 223A KTU)	C26		5	6	7																
29	MULT ADD-ON TRANSFER CIRCUIT (MFR. DISC. REPL. BY FIG. 36)	C28		5	6	6																
30	RINGING AND TONE CONT CIRCUIT (MD)	C27		5	6	7																
31	ADD-ON CONF CONT CIRCUIT	C29		5	6	7																
32	PRESET CONFERENCE CIRCUIT (PART OF 217B KTU)	C30			6	6																
33	CONFERENCE TIME-OUT CIRCUIT (PART OF 217B KTU)	C31			6	6																
34	BUSY SIG & CAMP-ON CONTROL CIRCUIT	C32			6	7																
35	STATION BUSY CIRCUIT (MFR. DISC)	C33			6	7																
36	MULT ADD-ON TRANSFER CIRCUIT	C34			6	6																
37	SINGLE ADD-ON TRANSFER CIRCUIT	C35				7																
38	RINGING AND TONE CONT CIRCUIT	C36				7																
39	STATION BUSY CIRCUIT																					
	CIRCUIT REQUIREMENTS	D1	4	5	6	7														G1		
		D2	4	5	6	7														G2		
		D3	4	5	6	7															G3	
		D4	4	5	6	6																
		D5			6	7																

DRAWING ISSUE
 4D
 5D
 6D
 7D

(2 PAGES) PAGE 2

STATION SYSTEMS		SD-69286-01-A2
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT		
BELL TELEPHONE LABORATORIES <small>INCORPORATED</small>	35	

CIRCUIT NOTES:

DESIG	AMP	POTENTIAL FUSED	ONE PER
A		20V TALK	
B		20V SIG	
		10V AC	

POWER SUPPLY FOR THIS SYSTEM MAY BE PROVIDED FROM A 20-26 VOLT DC SOURCE SUCH AS J86471B, LIST 2 POWER PLANT. DC MAY ALSO 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 107C FREQUENCY GENERATOR. THE REQUIRED VOLTAGES MAY ALSO BE PROVIDED BY THE 29C1 OR 30C1 POWER UNITS.

102. THIS CIRCUIT WILL BE FUSED IN ACCORDANCE WITH THE FOLLOWING:

- PROVIDE ONE 2 AMPERE FUSE FOR TALKING BATTERY DESIGNATED (A).
- PROVIDE ONE 2 AMPERE FUSE FOR SIGNALING BATTERY DESIGNATED (B).
- PROVIDE ONE 2 AMPERE FUSE PER MAXIMUM 36 SIGNAL LAMPS DESIGNATED (C).
- PROVIDE ONE 2 AMPERE FUSE DESIGNATED (D) POWER SUPPLY FOR DC AUDIBLE SIGNALS.

FEATURE OR OPTION	FIG.	PROVIDE	
		APP OR WIR	QUANTITY
SEL CKT (MFR DISC)	1		1 PER SYS
TRANS CKT (TO INCREASE SYS CAP. FROM 9 TO 36 CODES)	2		1 PER 9 CODES
STA SIG CKT	SINGLE-TALKING LINK ARR	1ST 9 STAS (MFR DISC)	1 PER STA
		FOR STAS OVER 1ST 9 (MFR DISC)	
	TWO-TALKING LINK ARR	1ST 9 STAS (MFR DISC)	
		FOR STAS OVER 1ST 9 (MFR DISC)	
SINGLE-TALKING LINK CKT (MFR DISC)	4		1 PER SYS
TWO-TALKING LINK CKT (MFR DISC)	7		1 PER SYS
SIG KEY CKT (FOR PUSH BUTTON STA SEL)	9		1 PER STA PER CALLED CODE
PRESET CONF CKT (MFR DISC)	10		1 PER 2 PRESET CONF ARR
(MFR DISC) BUSH SIG & CAMP-ON CONT CKT	11	SINGLE-TALKING LINK ARR WITH CAMP-ON	1 PER SYS
		TWO-TALKING LINK ARR	
LONG LINE CKT	12		1 PER OFF-PREMISE STA
ADD-ON CONF CONTROL CKT (MFR DISC)	13		1 PER CO OR PBX CONF LINE
FLASHING CKT (TWO FLASHING CONTACTS REQD MAY BE OBTAINED FROM ASSOC KEY TEL SYS NO. 1A OR 1A1) SEE NOTE 108	14		1 PER SYS
AUX RELAY-STA CKT (TO PROVIDE EXTRA CONTACTS FOR STA SIG CKTS) SEE NOTE 105. (MFR DISC)	15		1 PER STA SIG CKT AS REQD.
AUX RELAY-BUSY LAMP CKT (TO PROVIDE CONTACTS TO CONTROL MORE THAN 40 LINE BUSY)	16		1 PER 80 LPS
AUX RELAY-LAMP FLASHING CKT (TO PROVIDE CONTACTS TO FLASH MORE THAN 20 LAMPS AT ONE TIME)	17		1 PER 80 LPS
RINGING AND TONE CONTROL CKT (MFR DISC)	18		1 PER SYS
SEL CKT	19		1 PER SYS
ADD-ON TRANSFER CKT (MFR. DISC)	20		1 PER CODE WITH ADD-ON
ADD-ON KEY	21		1 PER STA PER ADD-ON LINE
SEL AND TRANSFER SINGLE LINK CKT	22		1 PER SYS
STA SIG CKT	SINGLE-TALKING LINK ARR	1ST 9 STAS (MFR. DISC)	1 PER STA
		FOR STAS OVER 1ST 9	
	TWO-TALKING LINK ARR	1ST 9 STAS	
		FOR STAS OVER 1ST 9	
SINGLE-TALKING LINK CKT (MFR. DISC)	24		1 PER SYS
TWO-TALKING LINK CKT	27		1 PER SYS
MULTIPLE ADD-ON TRANSFER CKT (MFR DISC)	29		1 PER 7 ADD-ON CONF CONT CKTS
RINGING AND TONE CONT CKT (MFR. DISC)	30		1 PER SYS
ADD-ON CONF CONT CKT	31		1 PER CO OR PBX CONF LINE

CIRCUIT NOTES (CONT)

FEATURE OR OPTION	FIG.	PROVIDE	
		APP OR WIR	QUANTITY
USED WITH SEL ONLY ARR		B	
USED WITH SINGLE OR TWO-TALKING LINK ARR		A	
MAX 9 CODES		X	
OVER 9 CODES		W	
STA IS AUTO. CUTOFF		E	
STA IS NOT AUTO. CUTOFF		F	
STA AUD SIG		OVER T & R LEADS	Y
		OVER SEP SIG PAIR	Z
		STA ASSOC WITH COM AUD ARR	AA
SYS WITH PRESET CONF		K	
SYS WITHOUT PRESET CONF		J	
SYS WITH CAMP-ON		G	
SYS WITHOUT CAMP-ON		N	
TWO-TALKING LINK ARR WITH CAMP-ON		T	
SIG KEY SELECTION OF STA		LOCAL STA. OR OFF-PREMISE STATION WHEN INTERRUPTED RINGING IS PROVIDED.	AE
		OFF-PREMISE STA. WHEN SINGLE SPURT RINGING IS PROVIDED	AF
LONG LINE CKT ASSOC WITH PRESET CONF-USED WITH THE SELECTOR ONLY ARR		R	
STA TO ORIGINATE ADD-ON CONF		AB	
WITHOUT AUX REL BUSY LP CKT		H	
WITH AUX REL BUSY LP CKT		M	
WITH ADD-ON TRANSFER CKT		AO	
WITHOUT ADD-ON TRANSFER CKT OR AUX REL STA CKT		AG	
WITH AUX REL STA CKT		Q	
DIAL, BUSY, & AUDIBLE TONE		AJ	
INTERRUPTED RINGING		AK	
SINGLE SPURT RINGING		AL	
WITHOUT AUX REL LP FLASH CKT		S	
WITH AUX REL LP FLASH CKT		V	
BUSY SIGNAL AND CAMP-ON CONTROL CKT WHEN USED WITH A 207B KIT		AQ	
WITH CONFERENCE TIME-OUT CKT		AR	
WITHOUT STATION BUSY CKT		AS	
WITH STATION BUSY CKT		AT	
PRESET CONF CKT	32		1 PER 2 PRESET CONF ARR
CONFERENCE TIME-OUT CKT	33		1 PER SYS
BUSY SIG & CAMP-ON CONT CKT	34	SINGLE-TALKING LINK ARR WITH CAMP-ON	1 PER SYS
		TWO-TALKING LINK ARR	
STATION BUSY CKT (MFR. DISC.)	35		1 PER 2 STA AS REQD
MULTIPLE ADD-ON TRANSFER CKT	36		1 PER 7 ADD-ON CONF CONT CKTS
SINGLE ADD-ON TRANSFER CKT	37		1 PER CODE WITH ADD-ON
RINGING AND TONE CONT CKT	38		1 PER SYS
STATION BUSY CKT	39		1 PER 3 STA AS REQ

DRAWING ISSUE

5D
6D
7D

STATION SYSTEMS
KEY TELEPHONE SYSTEM NO. 6A
INTERCOMMUNICATING LINE CIRCUIT

SD-69286-01-B1

BELL TELEPHONE LABORATORIES
INCORPORATED

3S

PRINTED IN U. S. A.

CIRCUIT NOTES (CONT):

104. ANY DIGIT EXCEPT 1 MAY BE ASSIGNED AS THE INITIAL DIGIT OF A TWO-DIGIT CODE.

THE NUMBER USED AS THE INITIAL DIGIT OF A TWO-DIGIT CODE MAY NOT BE USED FOR A STATION CODE.

THE OPERATE PATHS TO THE PRESET CONFERENCE CIRCUIT (C LEADS) AND TO THE OFF-PREMISE CIRCUIT (C LEADS) MUST CONNECT THROUGH THE FIRST BANK OF THE SELECTOR WHEN THE 'SELECTOR ONLY' ARRANGEMENT IS USED. THESE PATHS CONNECT THROUGH THE SECOND BANK OF THE SELECTOR WHEN SINGLE OR TWO-LINK ARRANGEMENTS ARE USED.

MAXIMUM 3 OFF-PREMISE STATIONS MAY BE INCLUDED IN PRESET CONFERENCE GROUPS WHEN 'SELECTOR ONLY' ARRANGEMENT IS USED BY CONNECTING A GROUND SIGNAL ON THE M1, M2, AND M4 CONTACTS OF THE (PC1) RELAY (R OPTION).

105. WHEN THE SINGLE ADD-ON FEATURE IS USED, AN AUXILIARY RELAY IS REQUIRED. FIG. 37 SHOWS THE CONNECTIONS REQUIRED FOR THIS FEATURE USING A 227B, WITH A MAXIMUM OF THREE STATIONS PER UNIT, OR A 229B KTU. FIG. 36 SHOWS THE CONNECTIONS USING A 229B KTU FOR MULTIPLE LINE ADD-ON. THIS FIG. HAS A MAXIMUM OF 7 ADD-ON LINES.

106. SIGNALING KEYS MAY BE PROVIDED BY KEY TEL SYSTEM NO. 1A, 1A1, OR 1A2 KEY AND TEL CIRCUITS, 551A KEYS, 549-TYPE KEYS OR EQUIVALENT NON-LOCKING KEYS. IF GRD POTENTIALS PERMIT, THE SIG KEY NEED NOT CONNECT DIRECTLY TO B GRD.

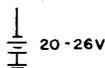
107. THE (MS) RELAY OF THE 227A OR B KTU IS SHOWN AS AN AUXILIARY LAMP RELAY FOR FIGS. 16 AND 17. OTHER UNITS MAY BE USED ON A LOCALLY ENGINEERED BASIS. IT IS RECOMMENDED THAT A FIG. 16 OR FIG. 17 (AS THE CASE MAY BE) BE ADDED TO AN INSTALLATION WHENEVER THE FIG. 16 OR THE FIG. 17 IS REQUIRED. THIS IS TO INSURE PROPER CURRENT LOADING OF RELAY CONTACTS AS THE INSTALLATION CHANGES AND GROWS.

108. THE "TO" LEAD CONNECTION IS REQUIRED WHEN THE ASSOCIATED NO. 1A OR 1A1 SYSTEM FLASHING CIRCUIT OR VISUAL AND AUDIBLE SIGNAL CIRCUIT IS USED AS PART OF THE NO. 6A INSTALLATION. REFER TO SD-69294-01 FOR ELECTRO-MECHANICAL FLASH, RING, AND BUSY CIRCUITS.

109. TWO L1 LEADS ARE SUPPLIED TO PROVIDE A MEANS FOR LAMP LOAD DISTRIBUTION WHEN THE TOTAL LAMPS DO NOT EXCEED 40.

110. WHEN PROVIDING OVER 9 STATIONS BUT NOT EXCEEDING 18 STATIONS PLACE A STRAP FROM PUNCHING 16D TO 19D AND FROM PUNCHING 7D TO 20D.

111. THE KS-13491L1 RESISTOR IS USED TO DELAY RELEASE OF (M) RELAY TO INSURE OPERATION OF (N) RELAY ON LINK TRANSFER.



CIRCUIT NOTES (CONT):

112. CONNECT THE LU LEAD TO SCREW TERMINAL 20 OF THE 227A KTU, FIG. 11. IF THE CAMP-ON CIRCUIT FAILS TO CUT THROUGH ON TWO TALKING LINK SYSTEMS DURING LINK TRANSFER IT MAY BE DUE TO RELAY (LTR) OPERATING AND RELEASING BEFORE RELAY (BY) RELEASES. IF THIS HAPPENS DISCONNECT THE LU LEAD FROM TERMINAL 20 AND CONNECT A 3900 OHM, KS-13490 L1 RESISTOR ACROSS SCREW TERMINALS 20 AND 30. CONNECT THE LU LEAD TO TERMINAL 30.

113. ONE STATION BUSY CIRCUIT MAY BE USED FOR TWO STATIONS PER FIG. 35 OR THREE STATIONS PER FIG. 39 THAT ARE CONNECTED TO A CO OR PBX LINE.

CONNECT BL OR SPARE LEAD TO ASSOCIATED TEL. STATION. CONNECT "A" LEAD TO TEL. STATION PICKUP KEY ASSOCIATED WITH 6A TEL. SYSTEM.

THE KS-13491L1, OR EQUIV. 1000 OHM CANCEL BUSY (CB) RESISTOR ORDERED SEPARATELY, WILL RELEASE THE STATION BUSY RELAY WHEN THE TEL STATION IS USED FOR A 6A CALL.

ON 227A OR B UNITS, WHERE ONLY ONE OR TWO RELAYS ARE USED THE REMAINING RELAYS MAY BE UTILIZED.

114. TO CONNECT A TOUCH-TONE TELEPHONE STATION TO THIS SYSTEM REFER TO SD-69447-01 FOR THE 247A (MFR. DISC.) KTU TOUCH-TONE ADAPTER OR TO SD-69529-01 FOR THE 247B KTU.

EQUIPMENT NOTES:

201. ALL G TERM., ALL E TERM., ALL L TERM., ALL M TERM., ALL N TERM., ALL R TERM., ALL P TERM., ARE CROSS-CONNECTED ON THE INSTALLER'S SIDE DURING MANUFACTURE OF THE UNITS. CHANGES IN THESE WIRING ARRANGEMENTS SHOULD BE MADE LOCALLY AS REQUIRED.

DRAWING ISSUE	
4D	57/80
5D	57/80
6D	LJL
	DWC
	PD
7D	JJK
	RBB
	RBB

STATION SYSTEMS	
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT	
BELL TELEPHONE LABORATORIES INCORPORATED	SD-69286-01-B2
3 S	PRINTED IN U. S. A.

INFORMATION NOTES

30. THE CURRENT VALUES ARE TABULATED ACCORDING TO SYSTEM ARRANGEMENT. IN EACH CASE AN INITIAL SYSTEM OF 9 CODES WITH NO OPTIONAL FEATURES IS ASSUMED. TO OBTAIN THE PROPER CURRENT VALUE FOR AN INSTALLATION, ADD TO THE INITIAL 9-CODE SYSTEM CURRENT VALUE, THOSE CURRENTS ASSOCIATED WITH THE PARTICULAR OPTIONS USED. ONLY THOSE OPTIONAL FEATURES WHICH AFFECT THE CURRENT DRAINS ARE TABULATED.

FOR ALL SYSTEM ARRANGEMENTS WHERE DC IS USED TO OPERATE THE BELLS, BUZZERS OR LAMPS, ASSUME A CURRENT DRAIN OF 0.056 AMPERES FOR EACH 7A-TYPE BELL OR BUZZER AND A CURRENT DRAIN OF 0.035 AMPERES FOR EACH A3 LAMP.

ALLOWABLE FEEDER RESISTANCE AND CHARGING RATES ARE COMPUTED IN ACCORDANCE WITH METHODS FOUND IN B S P.

DRAWING	ISSUE
40	ST/BA
50	TYPE
	DAC
60	L.J.L.
	DHC
	PD
70	MK
	PAB
	RES

SELECTOR ONLY ARRANGEMENT		MAX. CURRENT DRAIN AT MIN. (20 VOLT) VOLTAGE		CURRENT DRAINS DURING NORMAL (24 VOLTS) TALKING CONDITION	
		'A' BAT. SUP	'B' BAT. SUP	'A' BAT. SUP	'B' BAT. SUP
INITIAL 9-CODE INSTALLATION WITH NO FEATURES WHICH AFFECT CURRENT DRAINS		0.137 AMP	0.590 AMP	0.165 AMP	0.044 AMP
WHERE THESE FEATURES ARE USED, ADD THE ASSOC CURRENT VALUE TO THE INITIAL 9-CODE INSTALLATION CURRENT VALUE	INSTALLATION OVER 9 CODES & USING TRANS CKT (MAX. 36 CODES)	0	0.080 AMP	0	0.140 AMP
	INSTALLATION WITH PRESET CONFERENCING CKT	0	0.064 AMP	0.005 AMP	0
	LONG LINE CKT	0.066 AMP	0	0.005 AMP	0

SINGLE-TALKING LINK ARRANGEMENT		MAX. CURRENT DRAIN AT MIN. (20 VOLTS) VOLTAGE		CURRENT DRAINS DURING NORMAL (24 VOLTS) TALKING CONDITION	
		'A' BAT. SUP	'B' BAT. SUP	'A' BAT. SUP	'B' BAT. SUP
INITIAL 9-CODE INSTALLATION WITH NO FEATURES WHICH AFFECT CURRENT DRAINS		0.237 AMP	0.614 AMP	0.165 AMP	0.080 AMP
WHERE THESE FEATURES ARE USED, ADD THE ASSOC CURRENT VALUE TO THE INITIAL 9-CODE INSTALLATION CURRENT VALUE	INSTALLATION OVER 9 CODES & USING TRANS CKT (MAX. 36 CODES)	0	0.080 AMP	0	0
	INSTALLATION WITH PRESET CONFERENCING CKT	0	0.286 AMP	0.010 AMP	0.020 AMP
	INSTALLATION WITH CAMP-ON CKT	0.080 AMP	0.234 AMP	0.010 AMP	0.010 AMP
	LONG LINE CKT	0.066 AMP	0	0.005 AMP	0
	ADD-ON CONFERENCE CKT	0	0	0.005 AMP	0.010 AMP
	CONFERENCE TIME-OUT CKT	0	0.308 AMP	0	0.034 AMP
STATION BUSY CKT		0	0.044 AMP	0	0.053 AMP

DOUBLE-TALKING LINK ARRANGEMENT		MAX. CURRENT DRAIN AT MIN. (20 VOLTS) VOLTAGE		CURRENT DRAINS DURING NORMAL (24 VOLTS) TALKING CONDITION	
		'A' BAT. SUP	'B' BAT. SUP	'A' BAT. SUP	'B' BAT. SUP
INITIAL 9-CODE INSTALLATION WITH NO FEATURES WHICH AFFECT CURRENT DRAINS		0.374 AMP	0.747 AMP	0.205 AMP	0.200 AMP
WHERE THESE FEATURES ARE USED, ADD THE ASSOC CURRENT VALUE TO THE INITIAL 9-CODE INSTALLATION CURRENT VALUES.	INSTALLATION OVER 9 CODES & USING TRANS CKT (MAX. 36 CODES)	0	0.080 AMP	0	0
	INSTALLATION WITH PRESET CONFERENCING CKT	0	0.286 AMP	0.025 AMP	0.025 AMP
	INSTALLATION WITH CAMP-ON CKT	0.080 AMP	0.260 AMP	0.010 AMP	0.010 AMP
	LONG LINE CKT	0.066 AMP	0	0.005 AMP	0
	ADD-ON CONFERENCE CKT	0	0	0.005 AMP	0.010 AMP
	CONFERENCE TIME-OUT CKT	0	0.308 AMP	0	0.034 AMP
STATION BUSY CKT		0	0.044 AMP	0	0.053 AMP

STATION SYSTEMS		SD-69286-01-B3
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT		
BELL TELEPHONE LABORATORIES <small>INCORPORATED</small>		<small>OVER SIZE</small> 3 S <small>PRINTED IN U. S. A.</small>

FIG. 10I

WHEN MORE THAN ONE FIG. 2, 10, 13, 31, OR 32 ARE INSTALLED THE STRAPPING ARRANGEMENT SHOWN BELOW SHOULD BE FOLLOWED.

DRAWING ISSUE	
4D	STW
5D	STW
6D	L.J.L.
	D.H.C.
	P.D.

FIG. 2 WIRING OPTION W

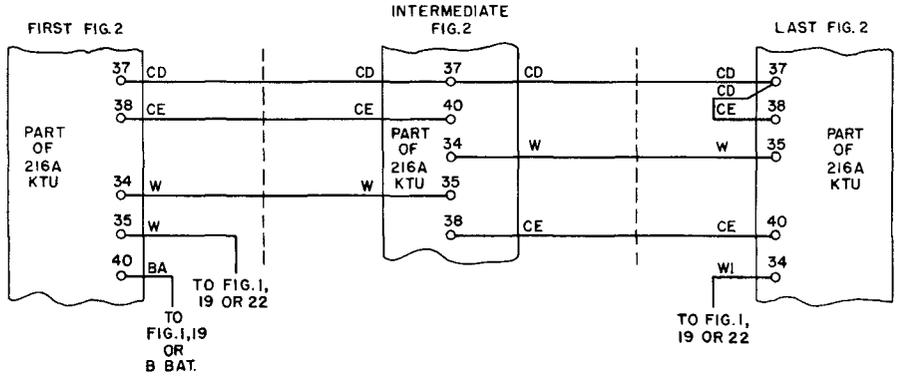


FIG. 10 WIRING OPTION K

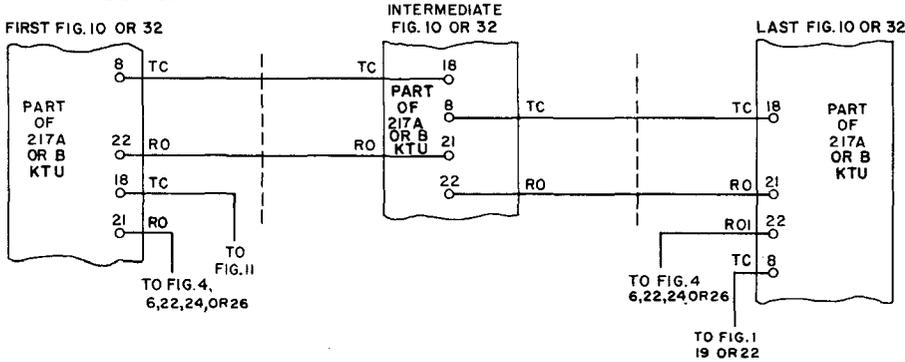
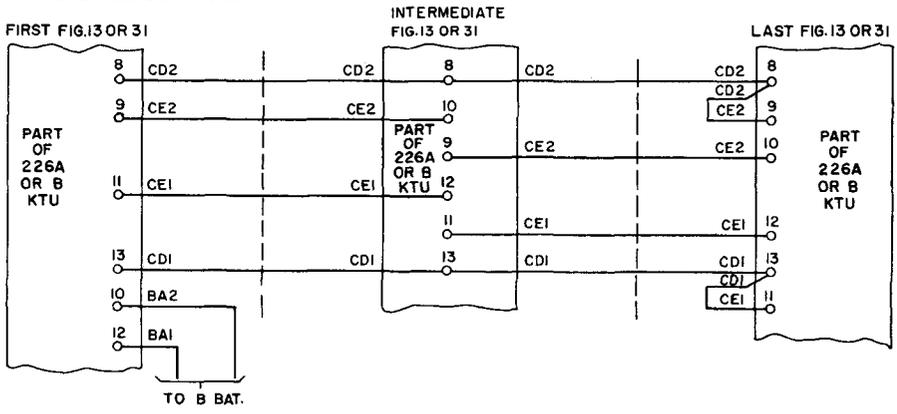


FIG. 13 OR 31 WIRING OPTION AB



STATION SYSTEMS	
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT	
BELL TELEPHONE LABORATORIES INCORPORATED	SD-69286-01-B4 3S PRINTED IN U. S. A.

DRAWING	ISSUE
4D	5/17/64
5D	5/17/64
6D	5/17/64

FIG. 102

IT IS ANTICIPATED THAT THERE WILL BE A TIME LAG BETWEEN THE ISSUING OF THE NO. 6A KTS DWG AND REISSUING OF THE KTS NO. IA, IA1, OR IA2 DWGS WHICH WOULD SHOW CONNECTIONS BETWEEN A NO. 6A AND A NO. IA, IA1, OR IA2 SYSTEM. CONSEQUENTLY THE DIAGRAMS ARE OFFERED AS AN EXAMPLE OF THESE INTERCONNECTIONS. CONNECTIONS TO OTHER NO. IA, IA1, OR IA2 UNITS MAY BE DETERMINED ON A LOCAL BASIS.

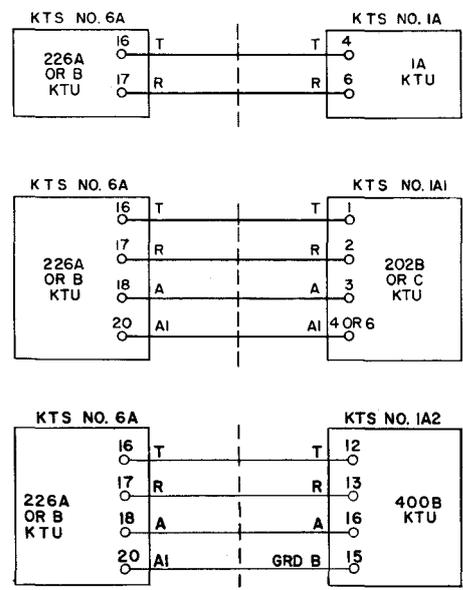
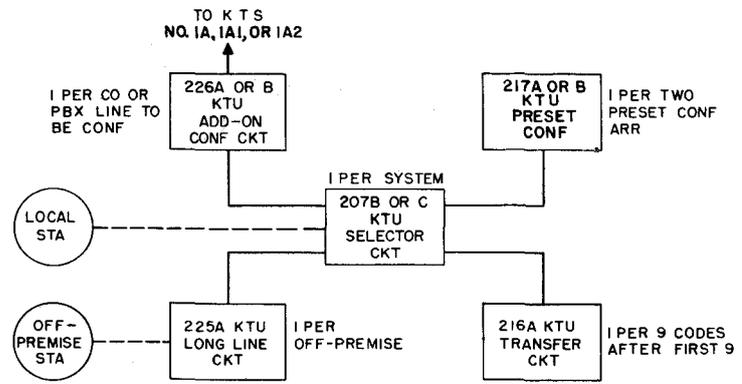


FIG. 103

BASIC BLOCK DIAGRAM FOR SELECTOR ONLY ARRANGEMENT



DRAWING	ISSUE
4 D	STP
5 D	STP
6 D	STP
7 D	STP

FIG. 104 (MFR. DISC.)
 BASIC BLOCK DIAGRAM FOR
 SINGLE-TALKING LINK ARRANGEMENT

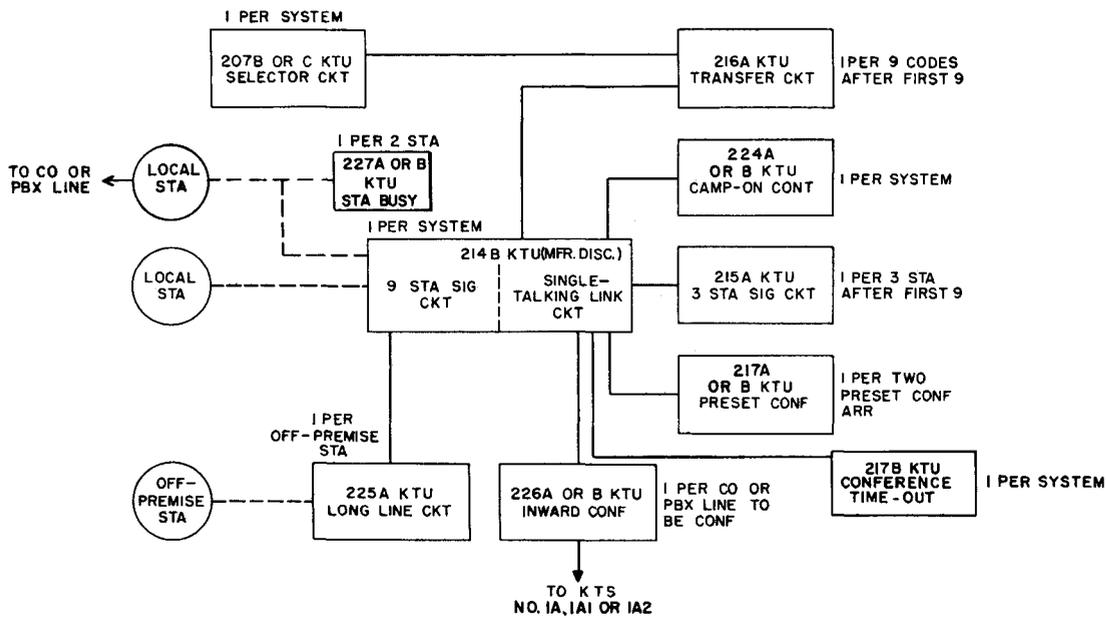


FIG. 105
 BASIC BLOCK DIAGRAM FOR
 TWO-TALKING LINK ARRANGEMENT

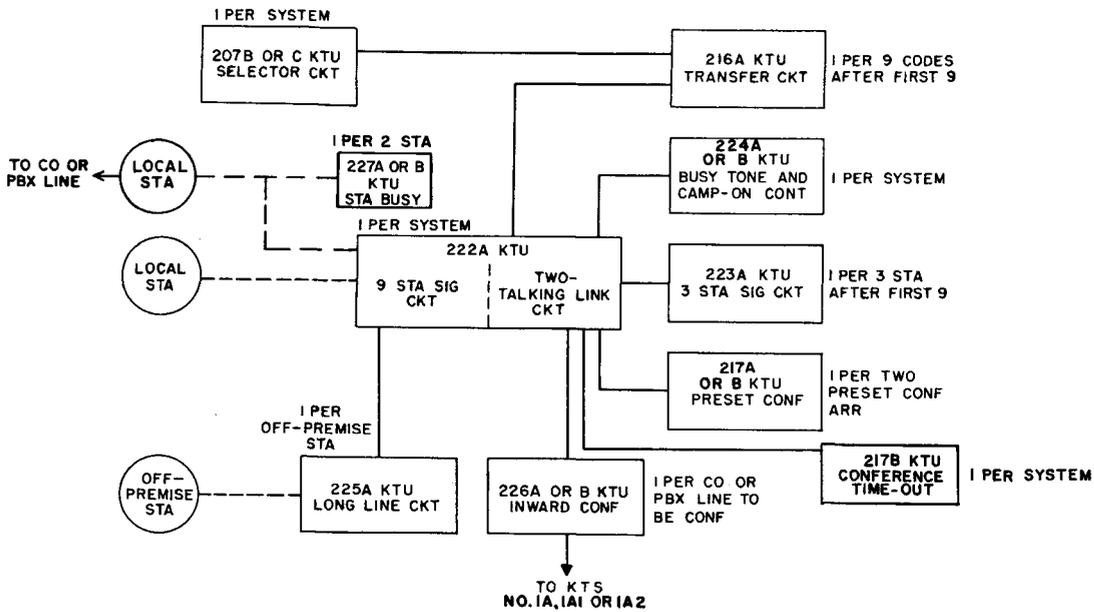


FIG. 106 (MFR DISC) MULTIPLE ADD-ON

WHEN MORE THAN ONE FIG. 13 IS TO BE INSTALLED
AT THE SAME STATION CODE THE STRAPPING
ARRANGEMENT SHOWN BELOW SHOULD BE FOLLOWED

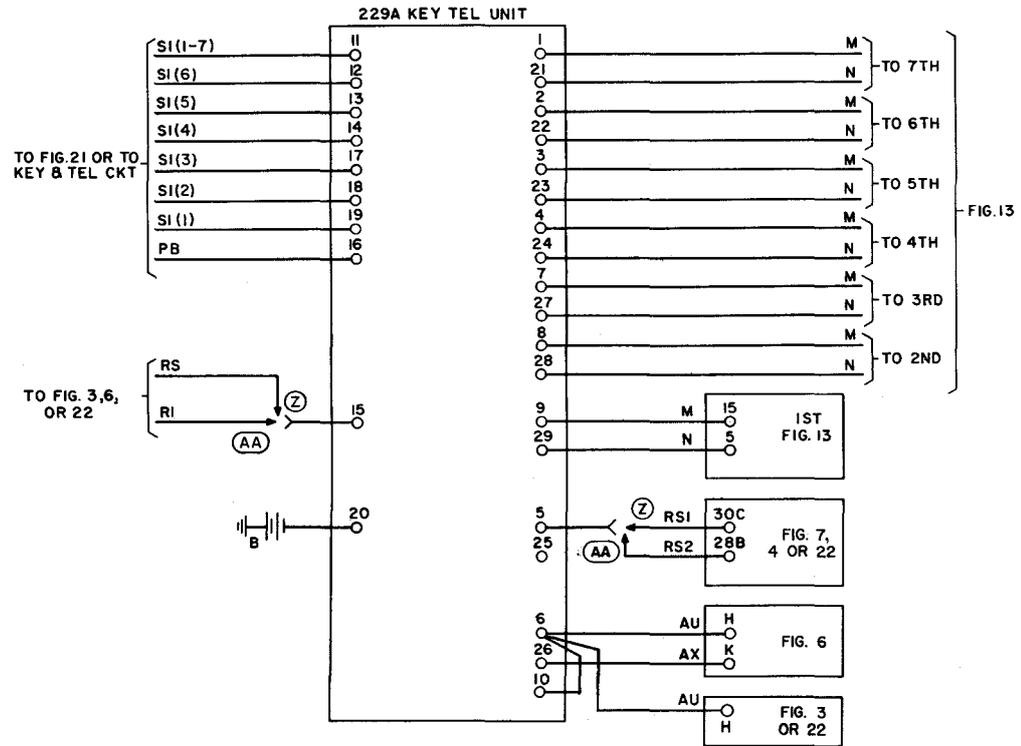
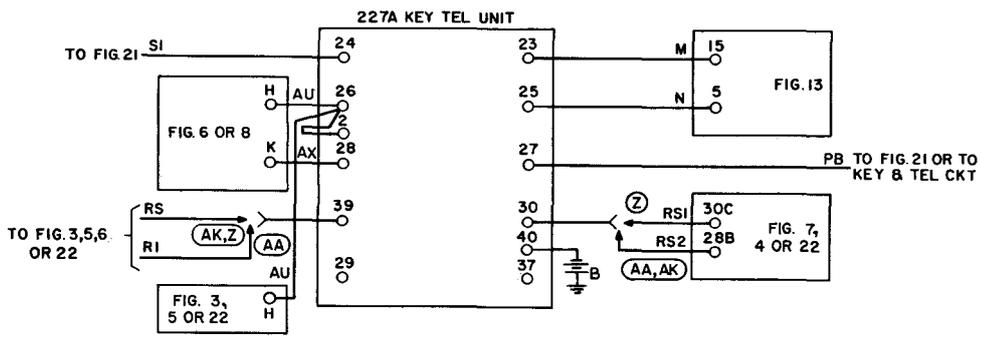


FIG. 107 (MFR DISC) SINGLE ADD-ON

WHEN ONLY ONE FIG. 13 IS TO BE ASSOCIATED
WITH A STATION CODE THE STRAPPING
ARRANGEMENT SHOWN BELOW SHOULD BE FOLLOWED



DRAWING	ISSUE
4D	STJ/MS
5D	STJ/MS DHC
6D	DHC PD
7D	PK PBB PES

FIG.108
 BASIC BLOCK DIAGRAM FOR SINGLE-TALKING
 LINK ARRANGEMENT INCORPORATING SELECTOR & TRANSFER
 SINGLE LINK CIRCUIT

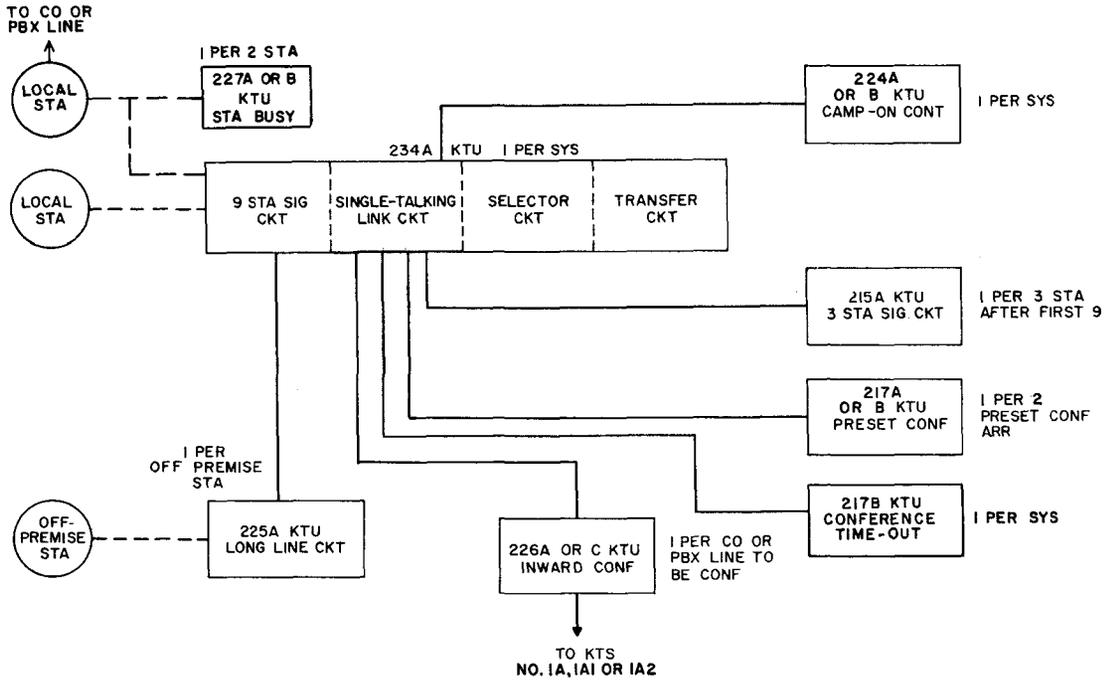


FIG. 2
TRANSFER CIRCUIT

DRAWING ISSUE	
4D	SYN
5D	STP
6D	LJL
	DNC
	PD

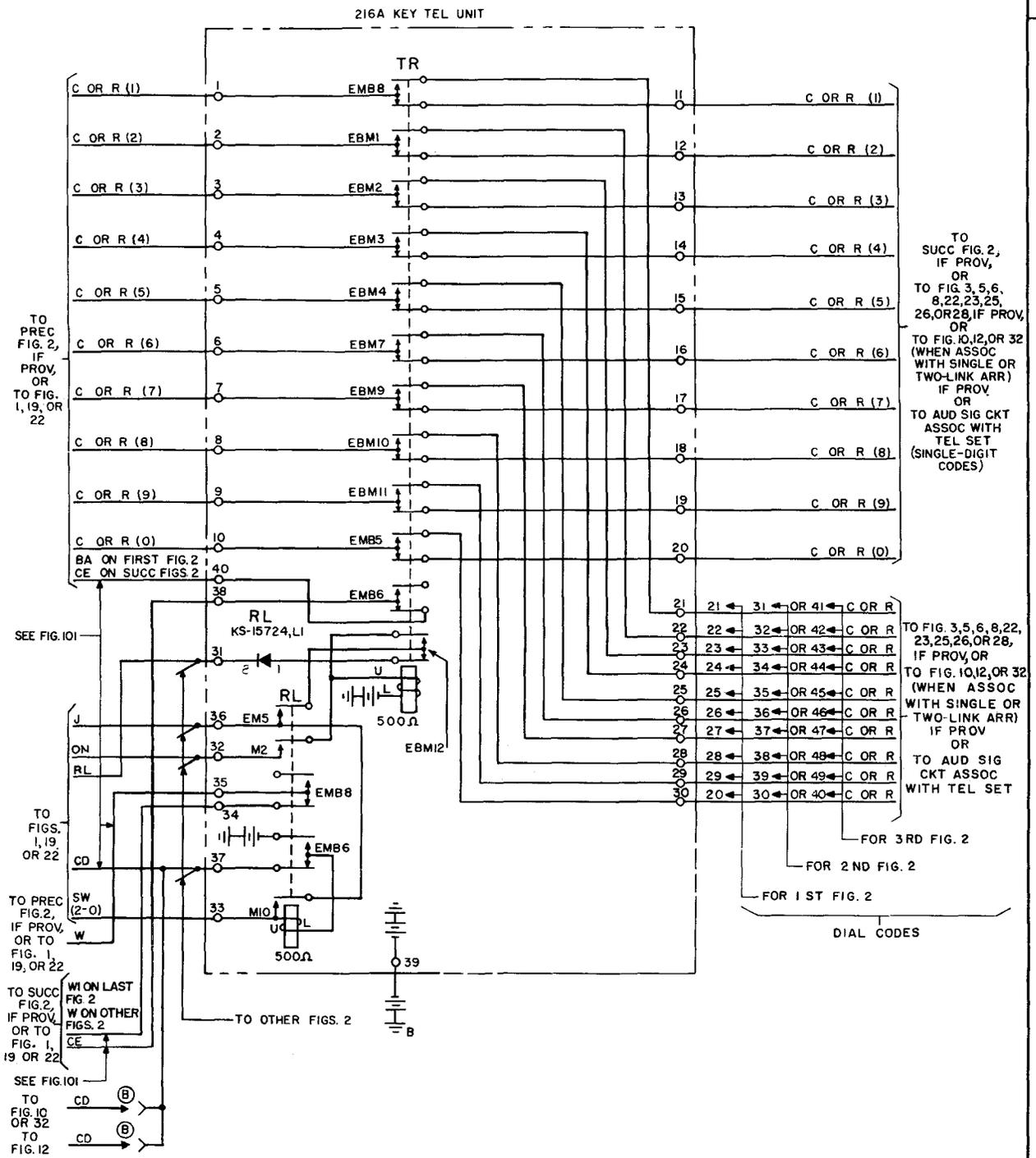


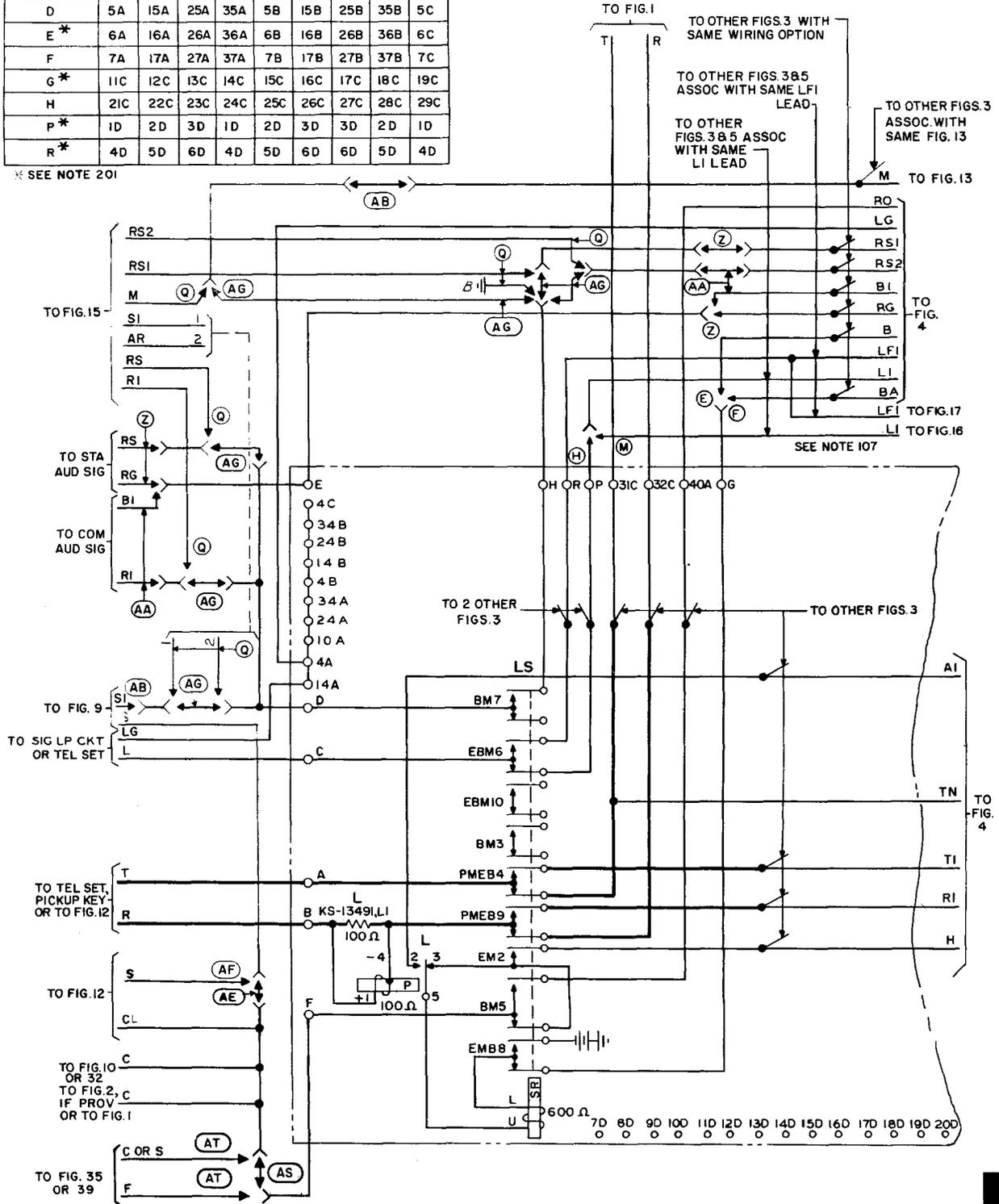
FIG. 3 (MFR DISC.)

STATION SIGNALING CIRCUIT
FOR SINGLE-LINK OPERATION
(PART OF 214B KEY TEL UNIT)
SEE TABLE A

TABLE A FOR 214B 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
P*	1D	2D	3D	1D	2D	3D	3D	2D	1D
R*	4D	5D	6D	4D	5D	6D	6D	5D	4D

* SEE NOTE 201



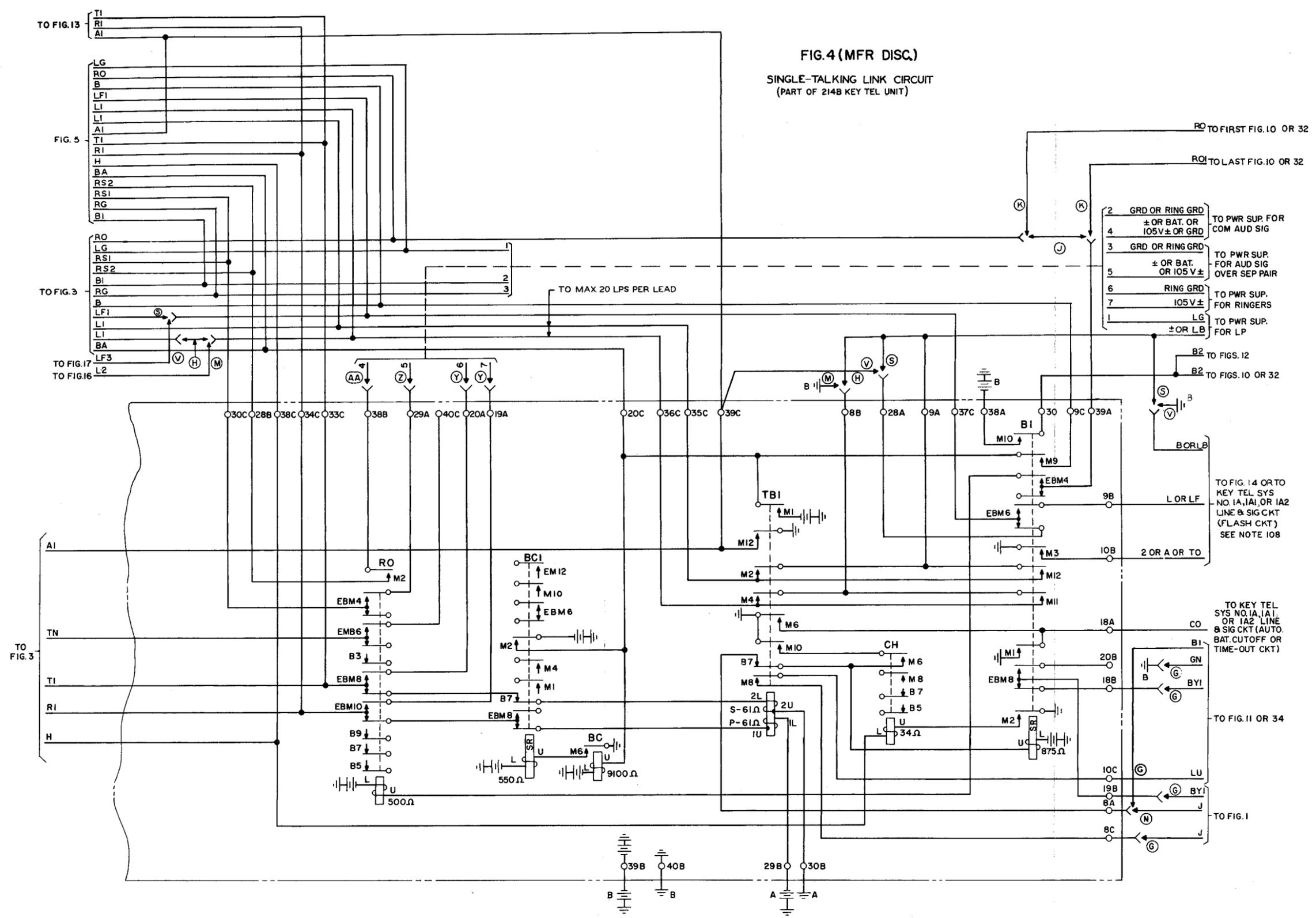


FIG. 4 (MFR DISC.)
 SINGLE-TALKING LINK CIRCUIT
 (PART OF 214B KEY TEL UNIT)

DRAWING
ISSUE
4D
5D
6D
7D

TABLE C FOR 222A KEY TEL UNIT

REFERENCE DESIGNATION	PUNCHING								
	CKT1	CKT2	CKT3	CKT4	CKT5	CKT6	CKT7	CKT8	CKT9
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

*SEE NOTE 201

**FIG. 6 (MFR DISC)
STATION SIGNALING CIRCUIT
TWO-LINK OPERATION
(PART OF 222A KEY TEL UNIT)
SEE TABLE C**

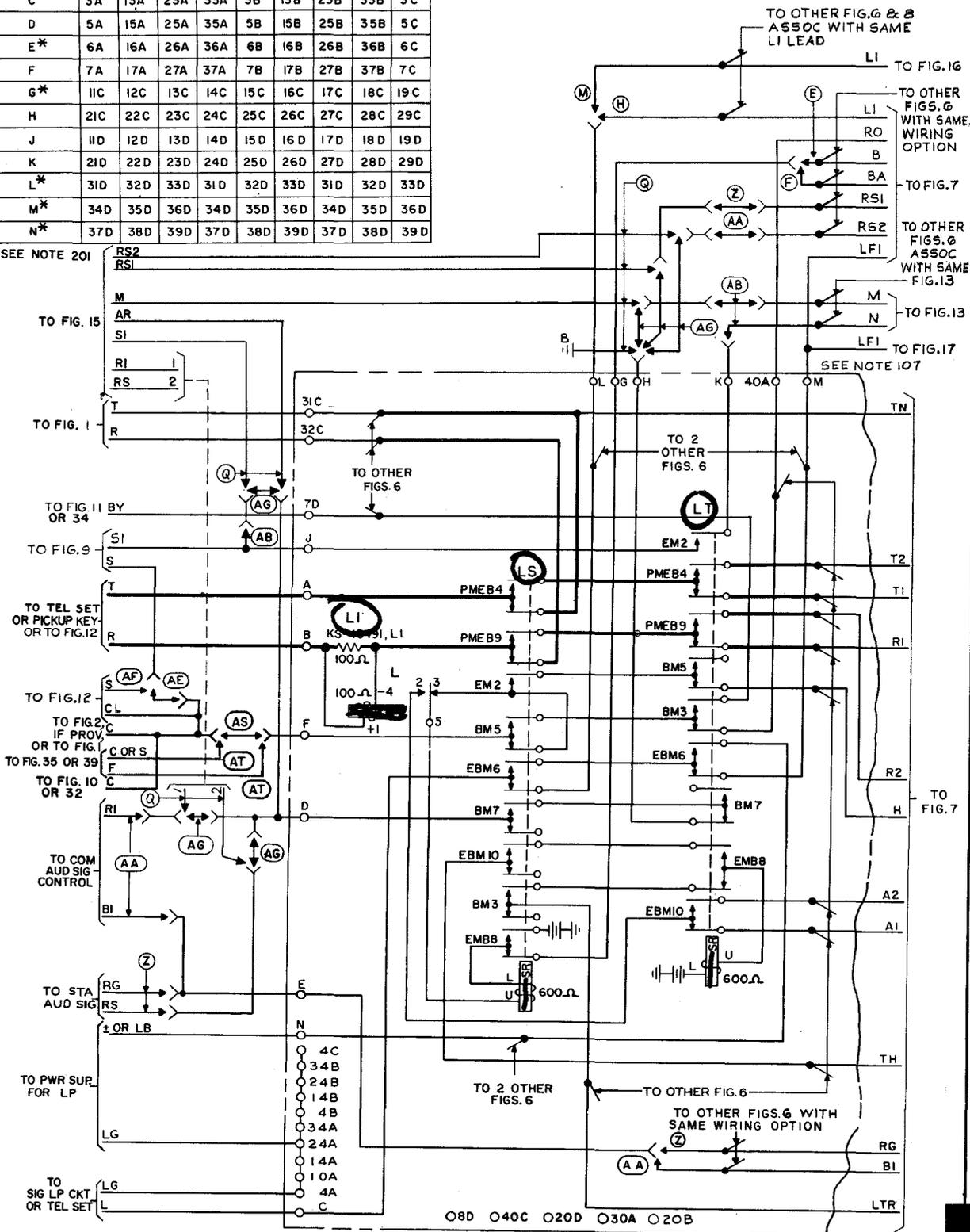
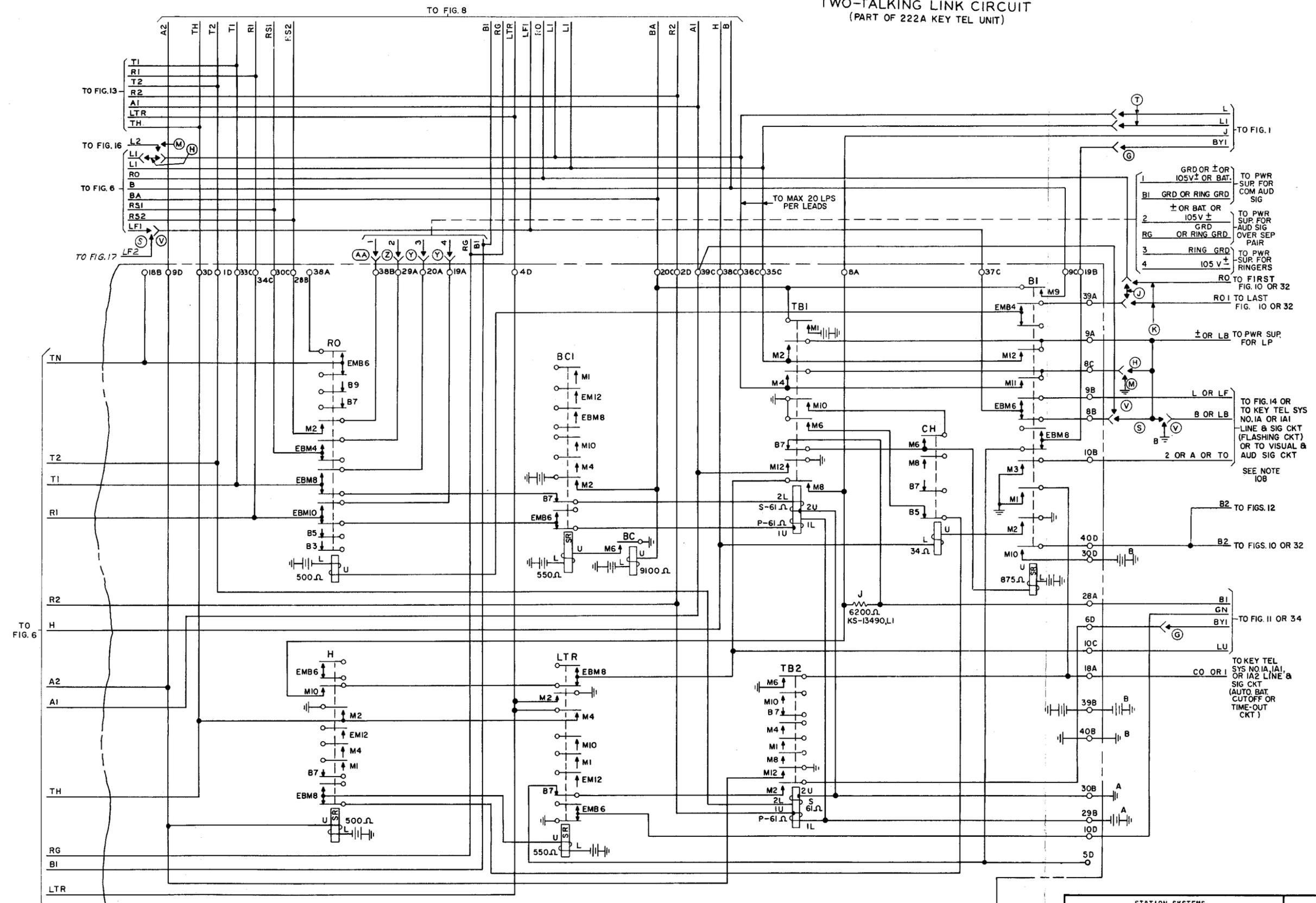


FIG.7 (MFR DISC.)
 TWO-TALKING LINK CIRCUIT
 (PART OF 222A KEY TEL UNIT)



DRAWING	ISSUE
4D	REVISED
5D	BY: JIL
6D	DATE: PD

FIG. 9
SIGNAL KEY
SEE NOTE 106

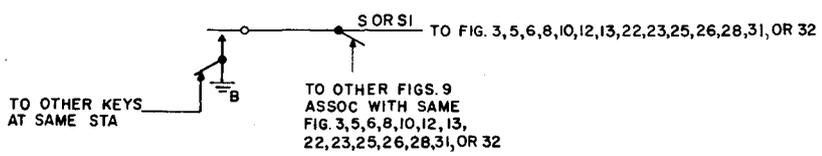


FIG. 10 (MFR DISC)
PRESET CONFERENCE CIRCUIT

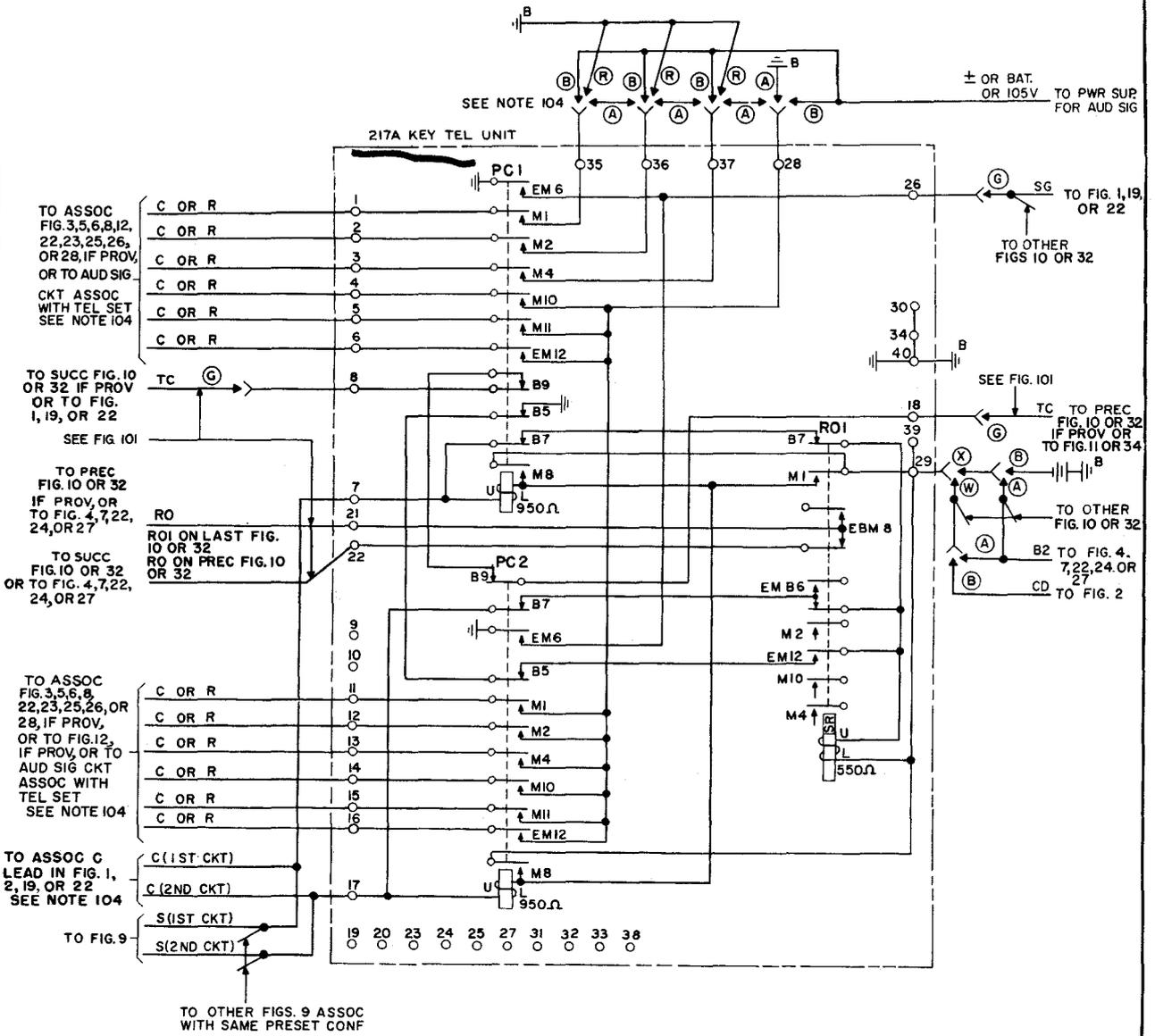
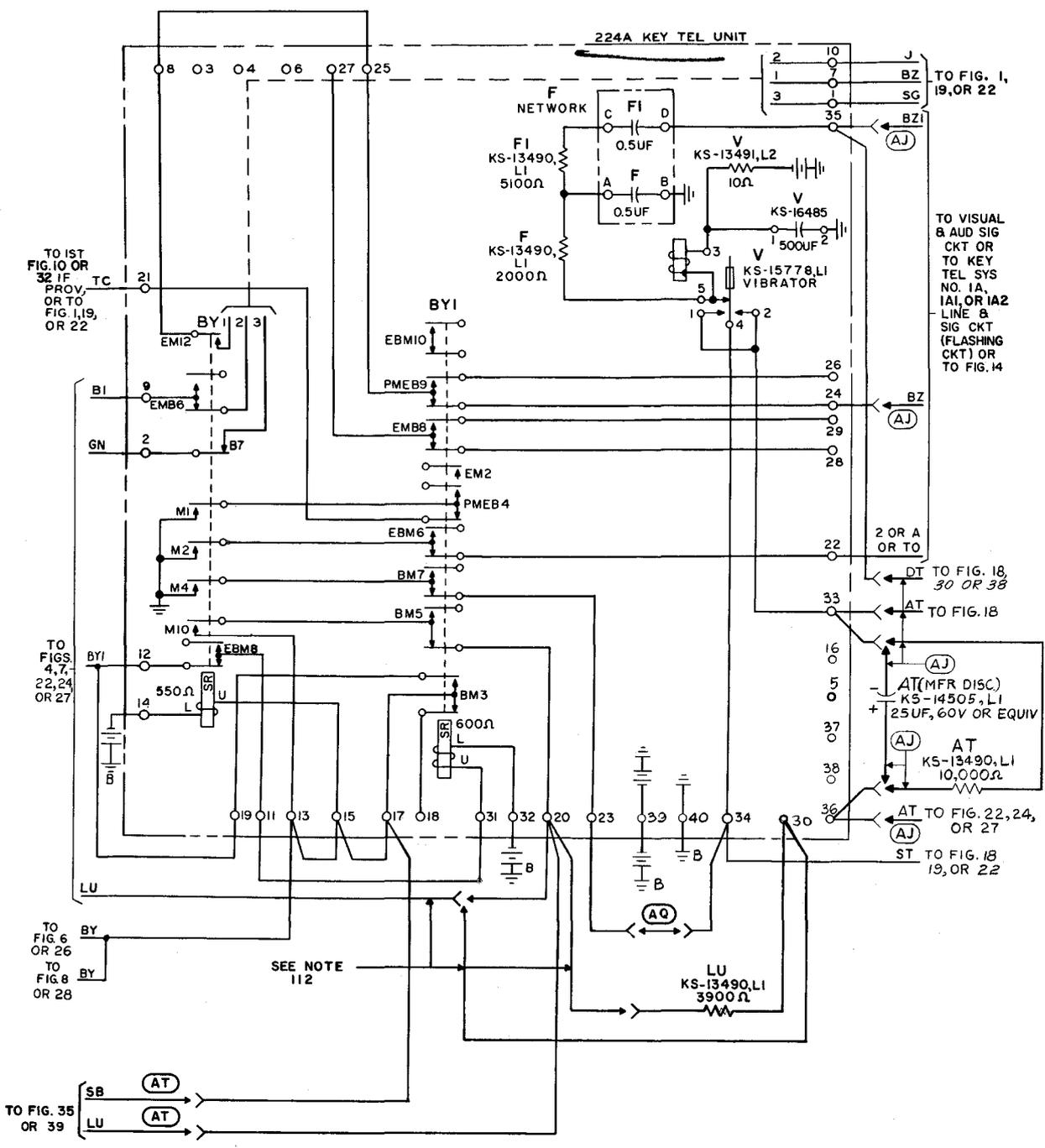


FIG. II (MFR DISC)
BUSY SIGNAL AND CAMP-ON CONTROL CIRCUIT

DRAWING	ISSUE
4D	STYMA
5D	BY/BO
	DWC
6D	L.J.L.
	DPC
	PD
7D	P.H.C.
	12/26
	12/26



TO FIG. 1,
19, OR 22

TO VISUAL
& AUD SIG
CKT OR
TO KEY
TEL SYS
NO. 1A,
1A1, OR 1A2
LINE 8
SIG CKT
(FLASHING
CKT) OR
TO FIG. 14

TO FIG. 18,
30 OR 38

TO FIG. 18

AT (MFR DISC)
KS-14505, LI
25UF, 60V OR EQUIV

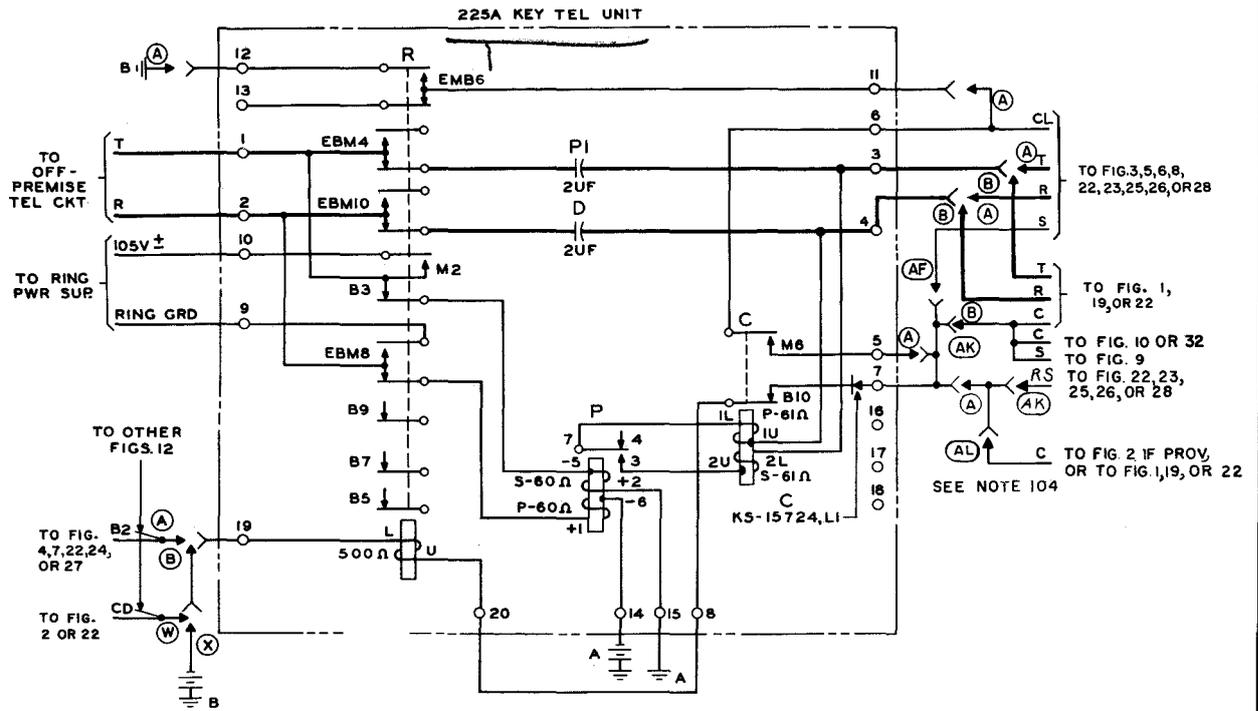
AT
KS-13490, LI
10,000Ω

TO FIG. 22, 24,
OR 27

ST TO FIG. 18
19, OR 22

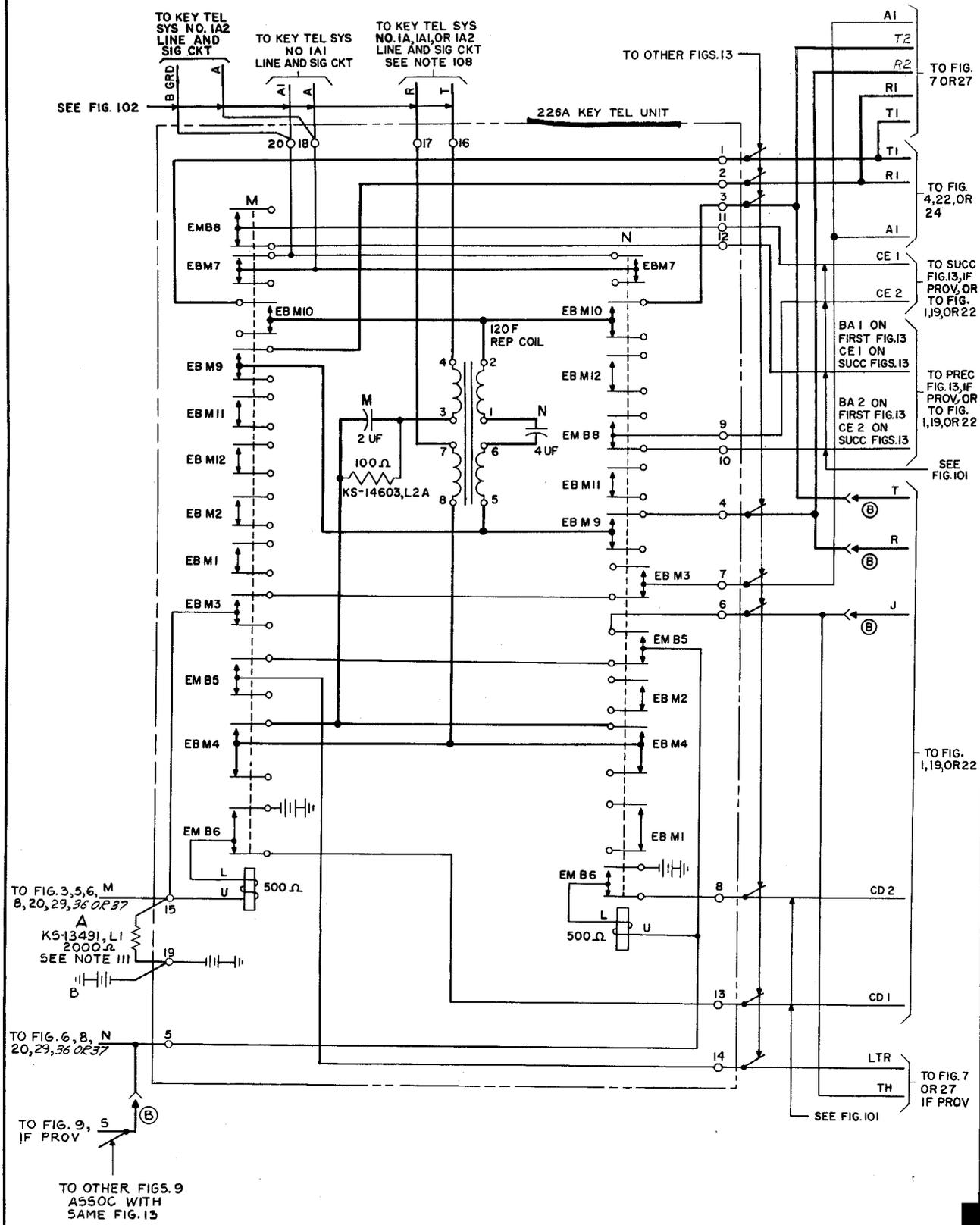
FIG. 12
LONG LINE CIRCUIT

DRAWING	ISSUE
4D	5777
5D	6177
6D	LJL DHC PD



STATION SYSTEMS		SD-69286-01-C11
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT		
BELL TELEPHONE LABORATORIES INCORPORATED		DWG. SIZE 3S PRINTED IN U. S. A.

FIG. 13 (MFR DISC)
ADD-ON CONFERENCE CONTROL CIRCUIT



DRAWING	ISSUE
4D	57MM
5D	STY
6D	LJL
7D	DHC
	PD
	TR
	RBB
	RCS

DRAWING	ISSUE
4D	REVISED
5D	REVISED
6D	REVISED
7D	REVISED

FIG.14
FLASHING & BUSY CIRCUIT

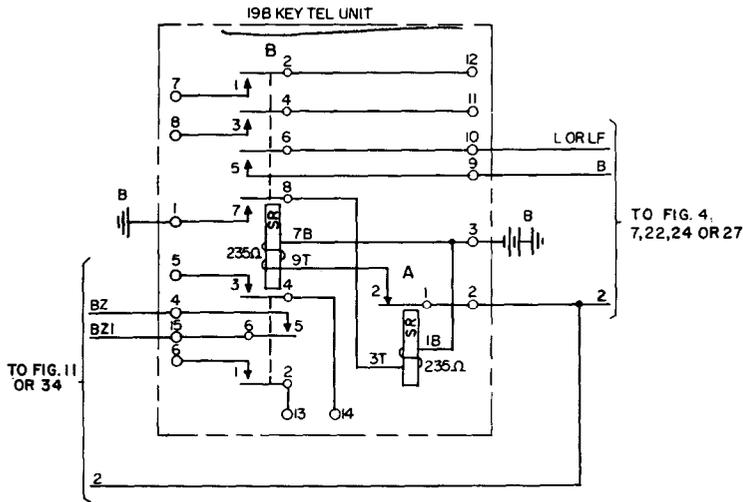


FIG.15 (MFR DISC.)
AUXILIARY RELAY-STATION CIRCUIT
SEE NOTE 105

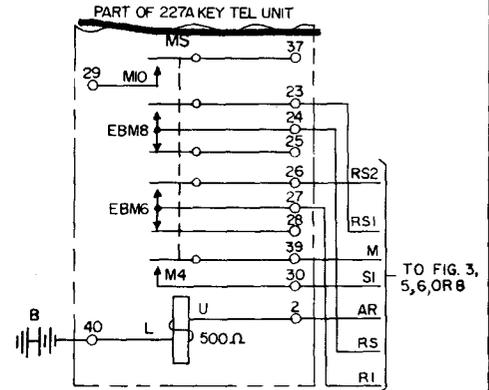


FIG.16
AUXILIARY RELAY-BUSY LAMP CIRCUIT
SEE NOTE 107

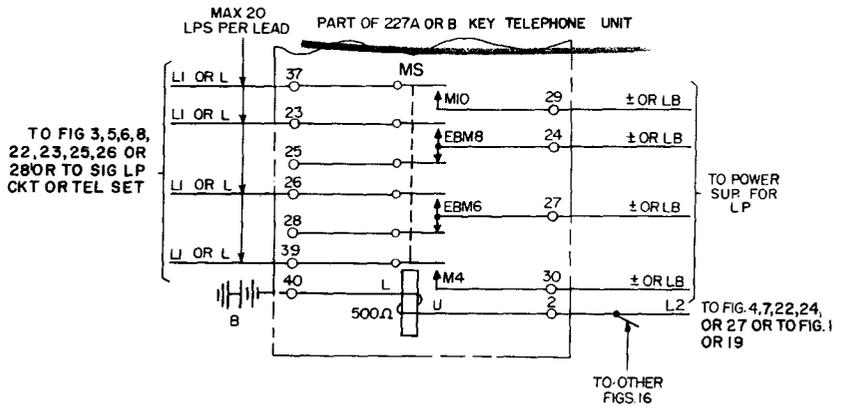
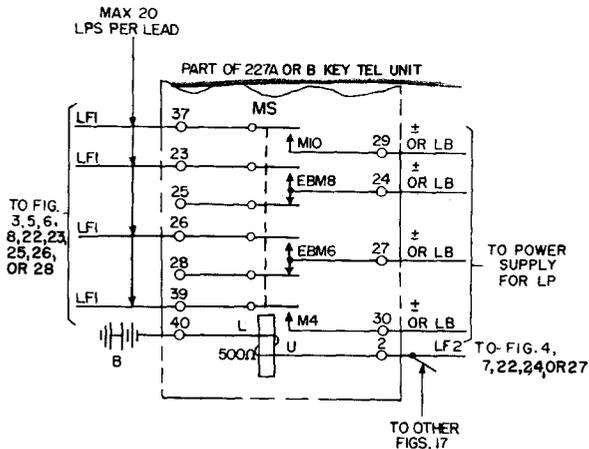


FIG.17
AUXILIARY RELAY-LAMP FLASH CIRCUIT
SEE NOTE 107



STATION SYSTEMS	
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT	
SD-69286-01-C13	
BELL TELEPHONE LABORATORIES INCORPORATED	DWG. SIZE 3 S PRINTED IN U. S. A.

DRAWING	ISSUE
4D	137MA
5D	STP, DHC, L.J.L.
6D	DHC, P.D.

FIG. 18 (MFR DISC)
RINGING AND TONE CONTROL CIRCUIT

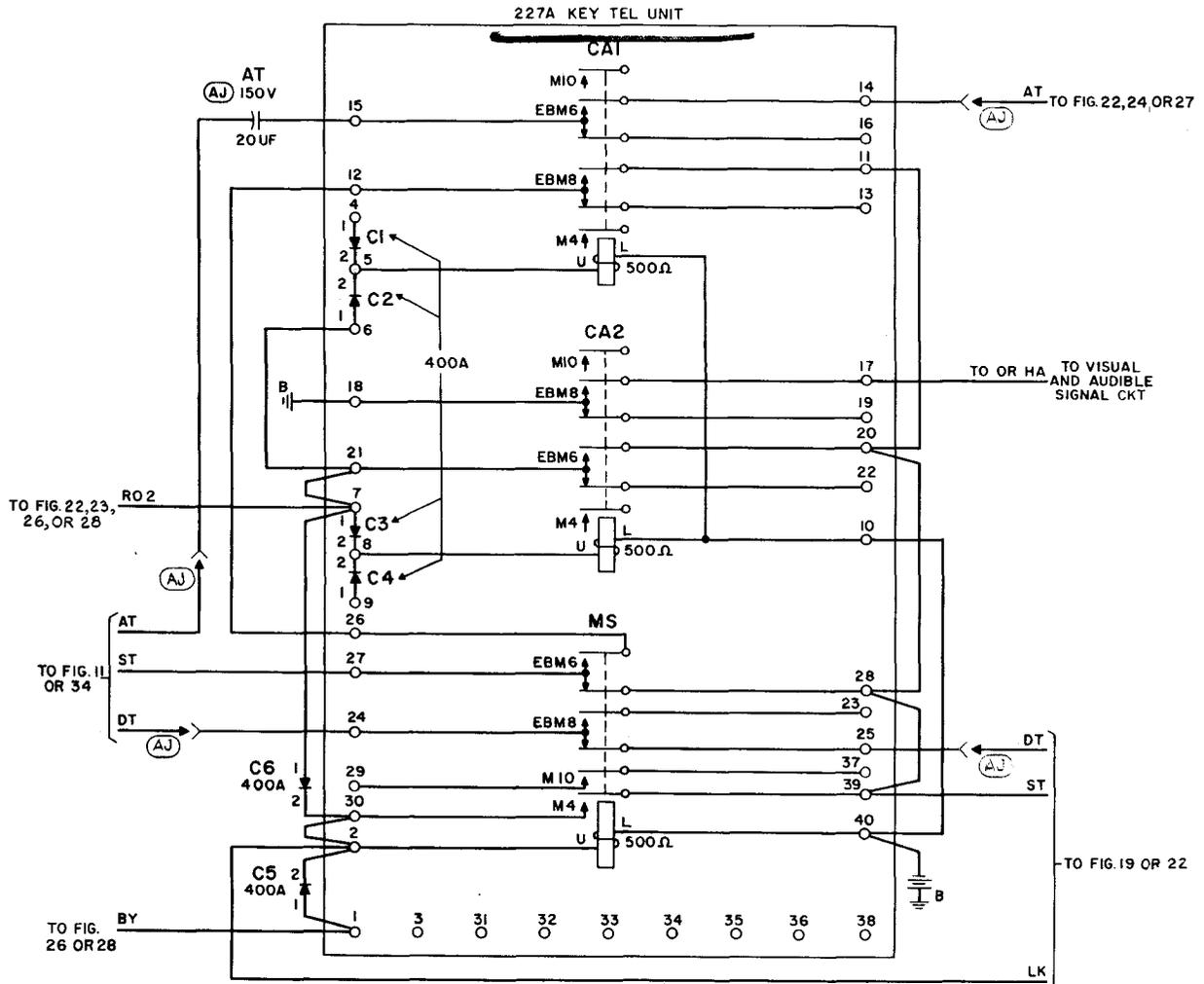
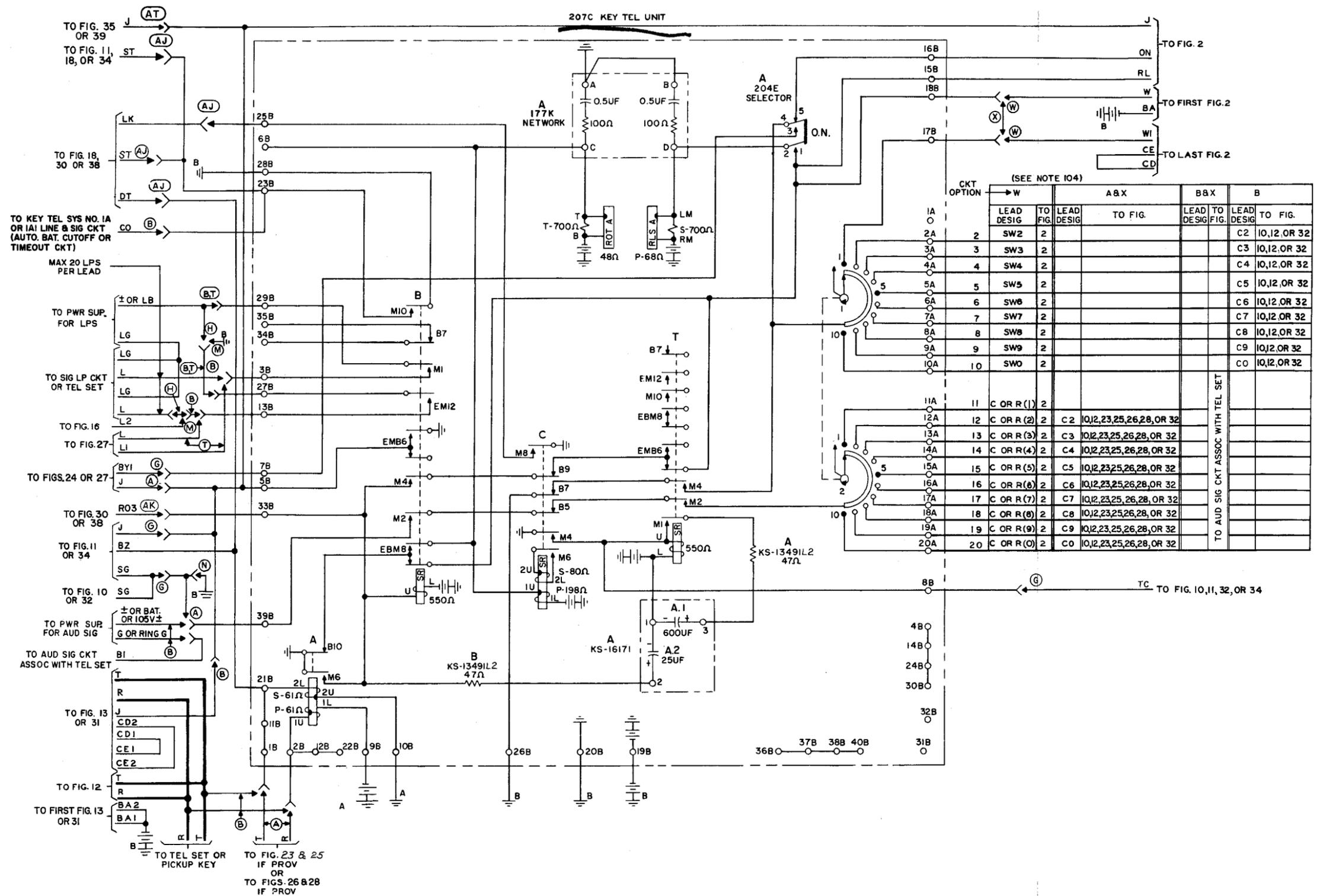


FIG. 19
SELECTOR CIRCUIT



DRAWING	40
ISSUE	5D
BY	6D
CHECKED	7D
DATE	

DRAWING ISSUE	
5D	1/16
6D	1/8
7D	1/4
8D	1/2

FIG. 20 (MFR. DISC.)
SINGLE ADD-ON TRANSFER CIRCUIT
SEE NOTE 105

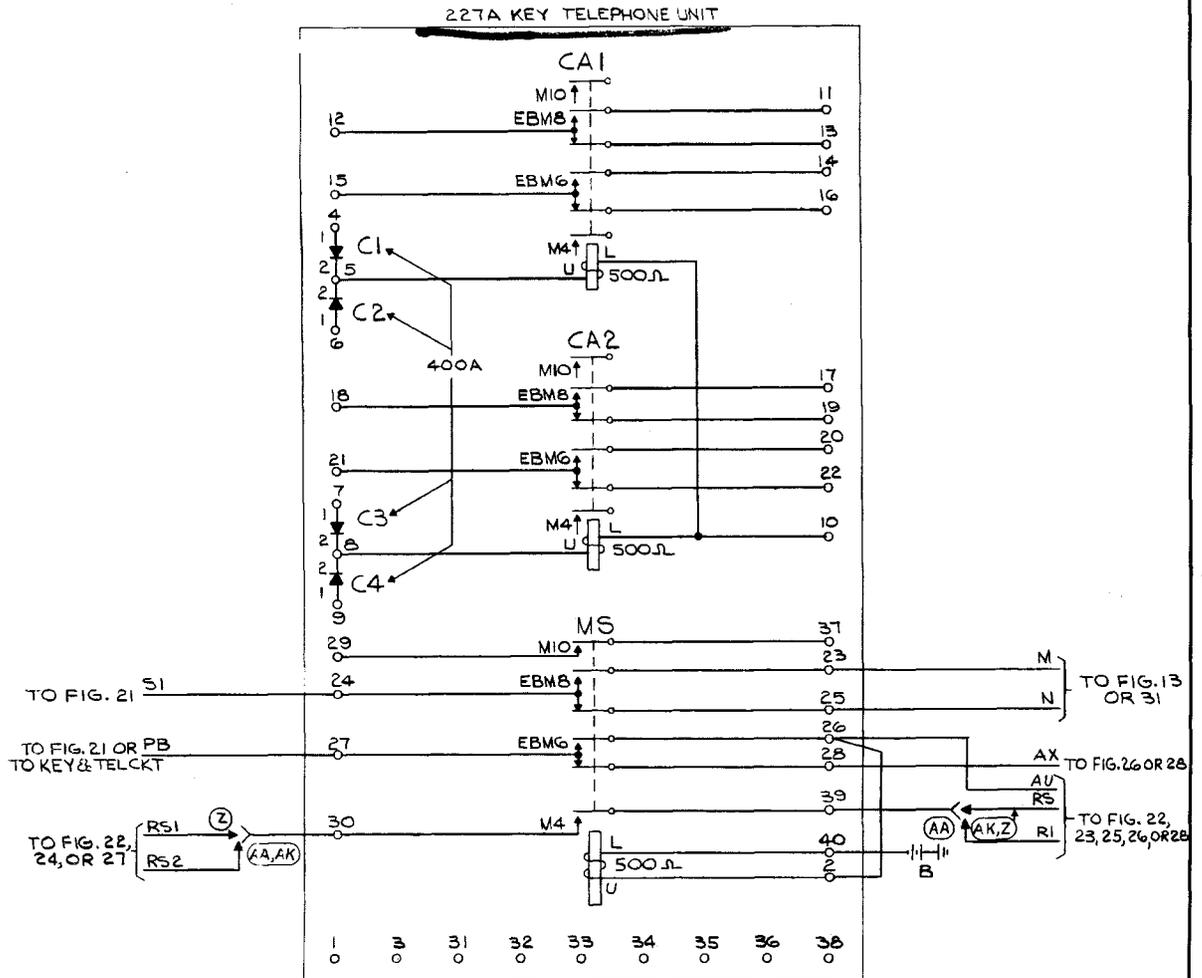
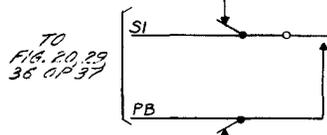


FIG. 21
ADD-ON KEY

TO OTHER FIG. 21
ASSOC WITH
SAME FIG. 13 OR 31

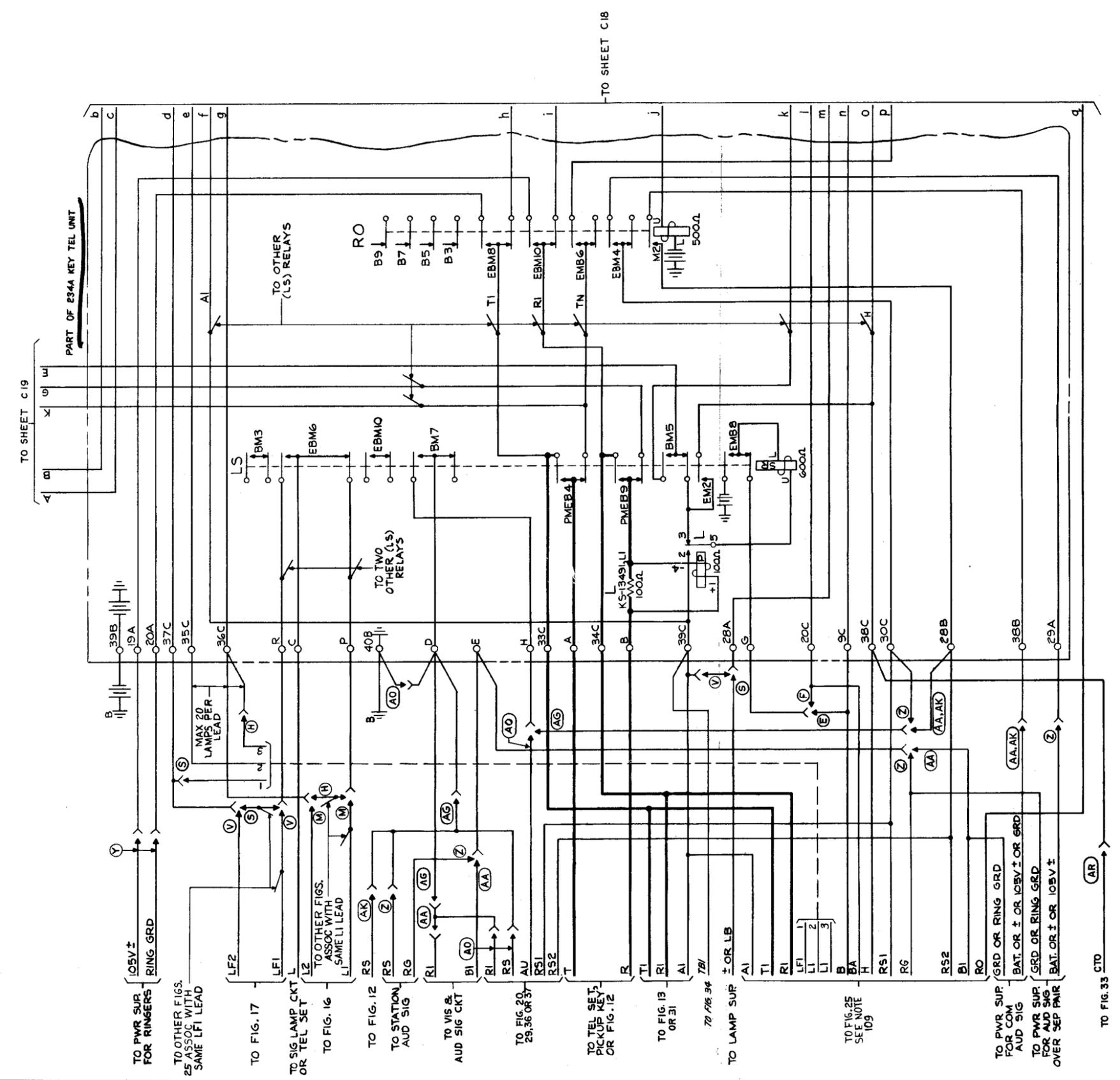


TO OTHER KEYS
ASSOC WITH
SAME FIG. 20, 29, 36 OR 37

STATION SYSTEMS		SD-69286-01-C16
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT		
BELL TELEPHONE LABORATORIES INCORPORATED	DWG SIZE 3S	PRINTED IN U.S.A.

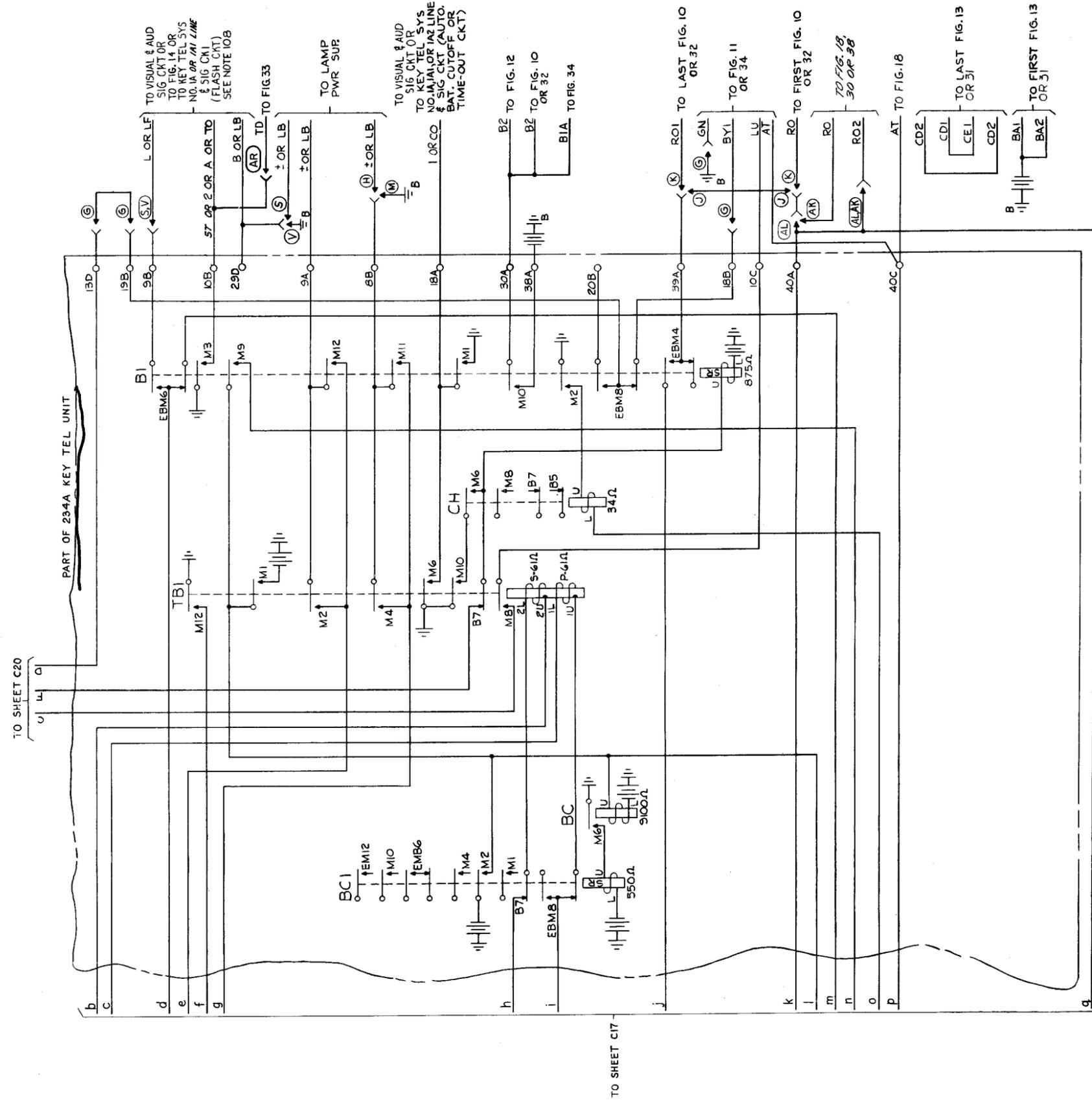
DRAWING	ISSUE
4D	STRA
5D	DMC
6D	L.J.L.
	DHC
	PD
7D	J.H.C.
	W.B.

PART OF FIG. 22
SELECTOR AND TRANSFER
SINGLE-LINK CIRCUIT



STATION SYSTEMS KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT		SD-69286-01-C17
BELL TELEPHONE LABORATORIES INCORPORATED		
PRINTED IN U. S. A.		6S

PART OF FIG. 22
SELECTOR AND TRANSFER
SINGLE-LINK CIRCUIT



DRAWING	4D	57/8
ISSUE	5D	57/8
	6D	57/8
	7D	57/8

PART OF FIG. 2.2
 SELECTOR AND TRANSFER
 SINGLE-LINK CIRCUIT

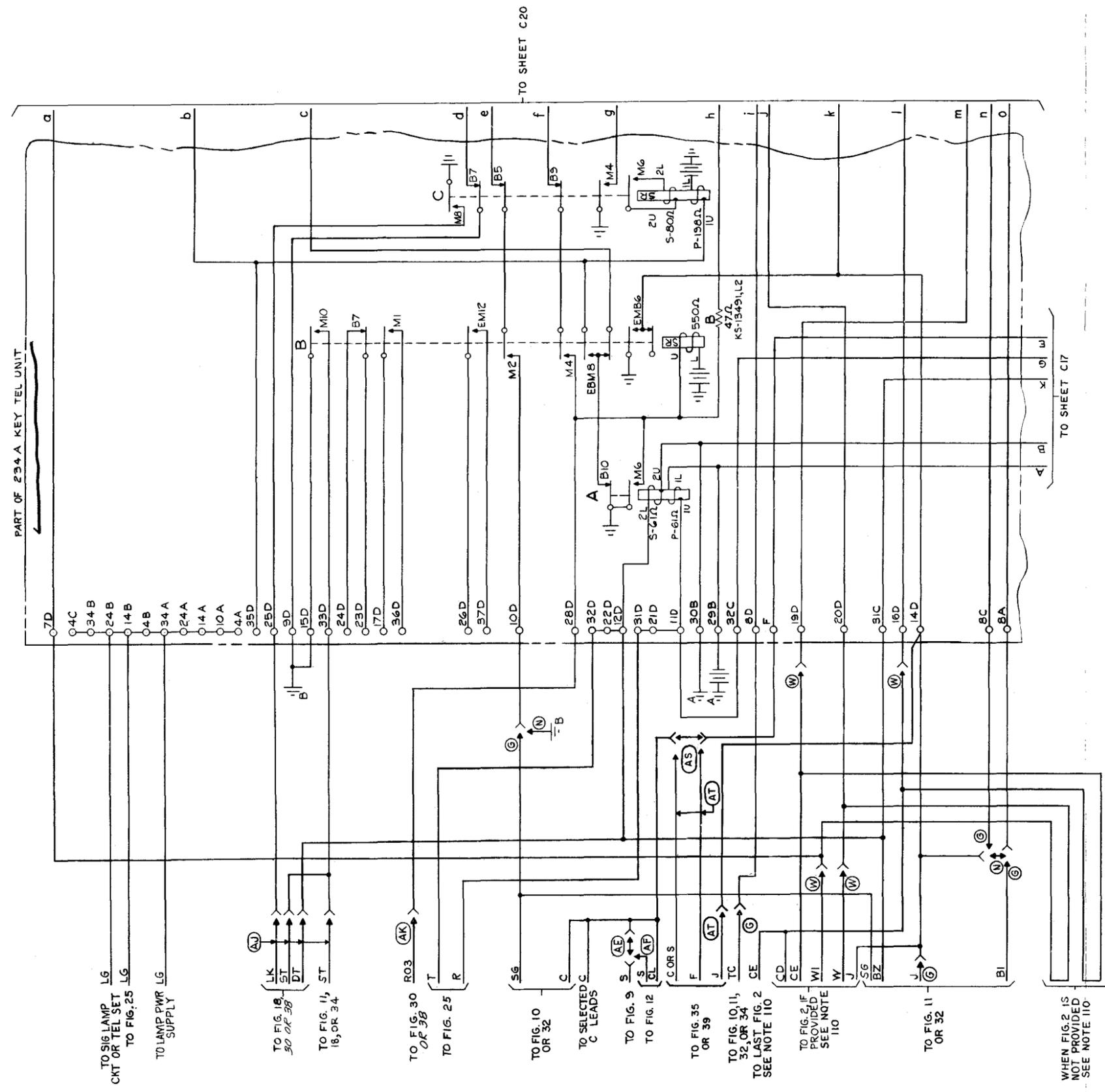


TABLE FOR 234A KEY TEL UNIT

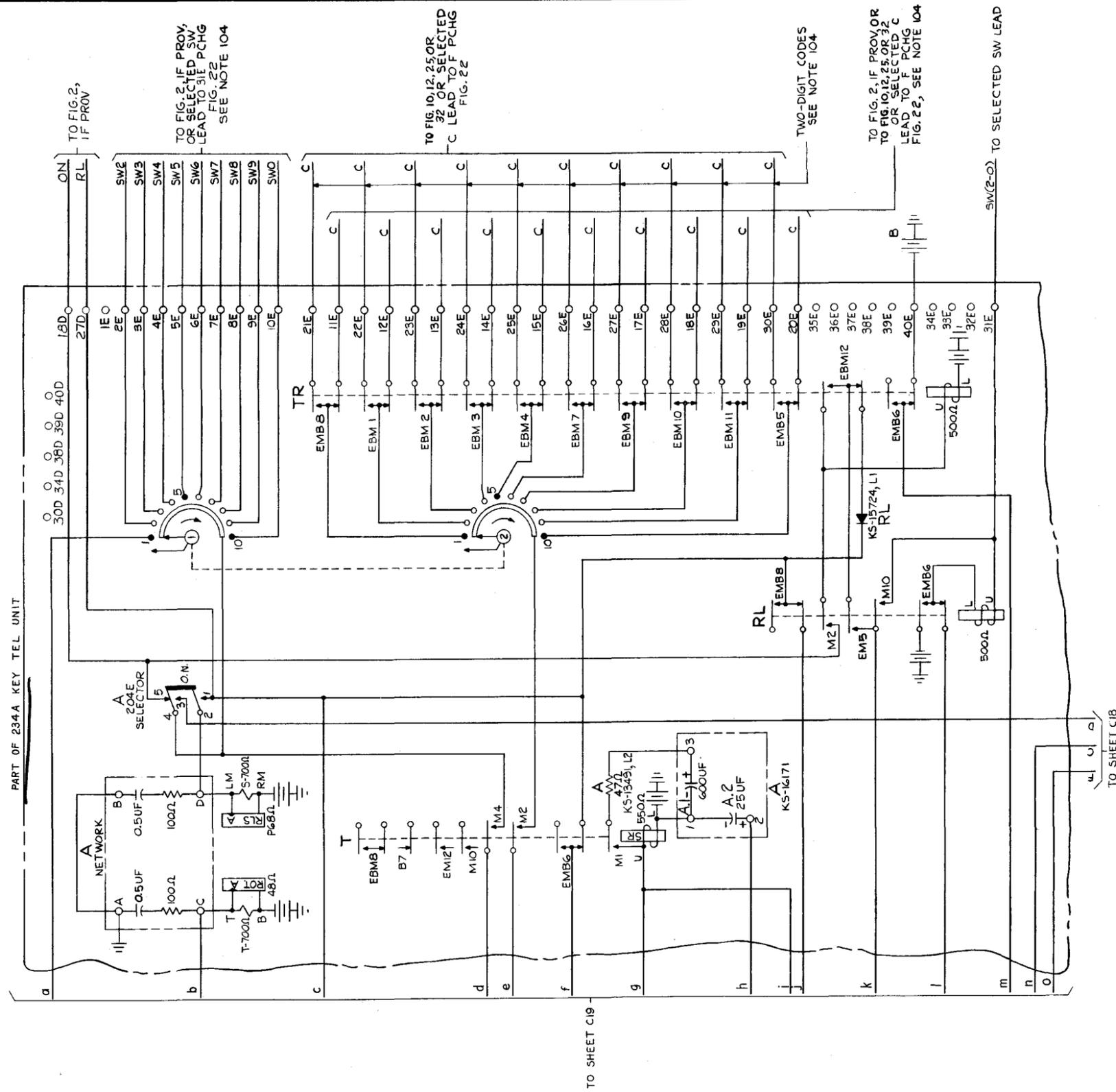
REF	DESIG	PUNCHING									
		CKT	1	2	3	4	5	6	7	8	9
A	1A	11A	21A	31A	41A	51A	61A	71A	81A	91A	10A
B	2A	12A	22A	32A	42A	52A	62A	72A	82A	92A	10A
C	3A	13A	23A	33A	43A	53A	63A	73A	83A	93A	10A
D	4A	14A	24A	34A	44A	54A	64A	74A	84A	94A	10A
E	5A	15A	25A	35A	45A	55A	65A	75A	85A	95A	10A
F	6A	16A	26A	36A	46A	56A	66A	76A	86A	96A	10A
G	7A	17A	27A	37A	47A	57A	67A	77A	87A	97A	10A
H	8A	18A	28A	38A	48A	58A	68A	78A	88A	98A	10A
P	1D	2D	3D	4D	5D	6D	7D	8D	9D	10D	
R	4D	5D	6D	7D	8D	9D	10D				

* SEE NOTE 201

WHEN FIG. 2 IS NOT PROVIDED SEE NOTE 110

STATION SYSTEMS KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT		SD-69286-01-C19
BELL TELEPHONE LABORATORIES INCORPORATED		

PART OF FIG. 22
SELECTOR AND TRANSFER
SINGLE-LINK CIRCUIT



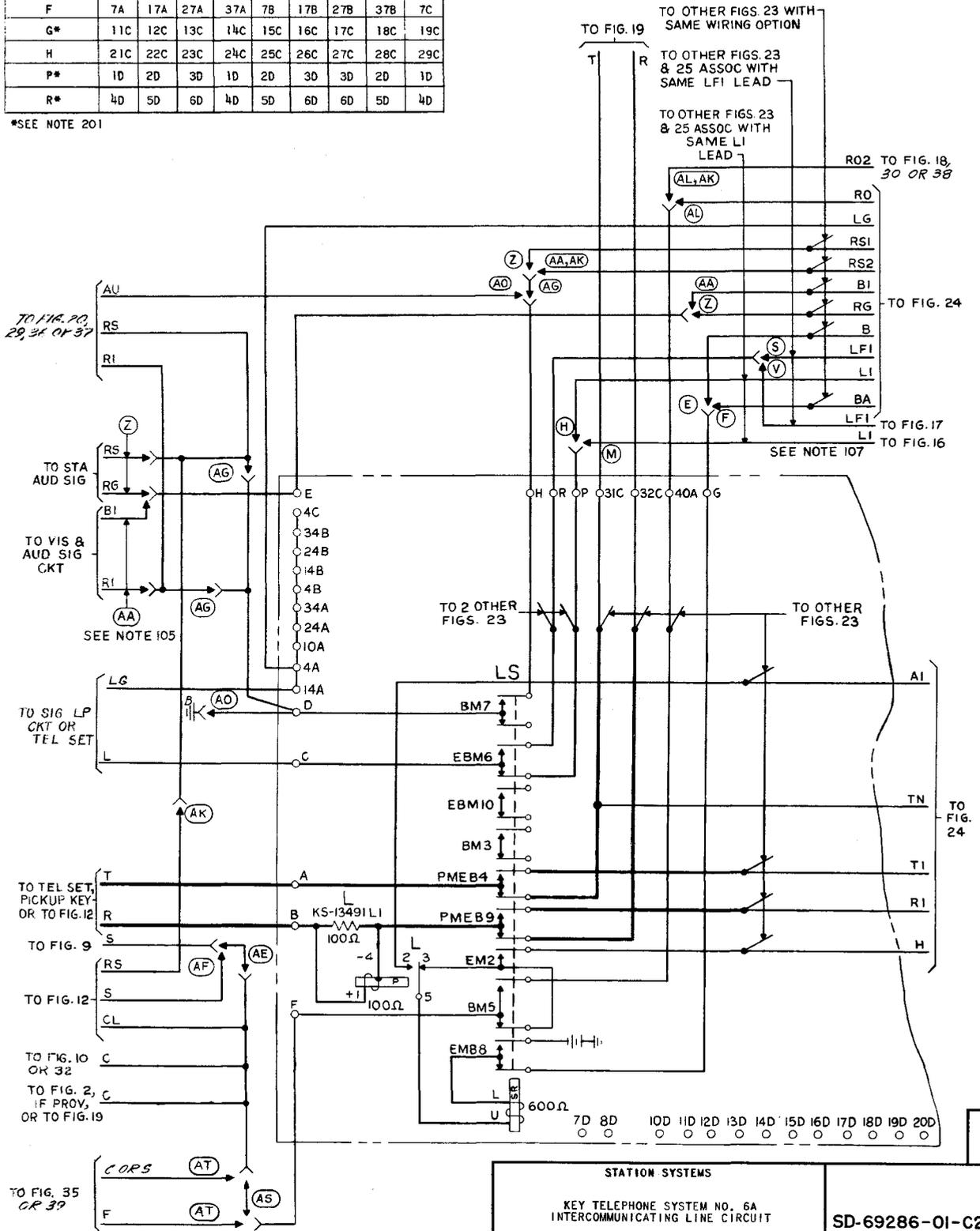
DRAWING	4D	SV30
ISSUE	5D	ST DRC
	6D	LJL DRC PD

TABLE A FOR 214B 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
P*	1D	2D	3D	1D	2D	3D	3D	2D	1D
R*	4D	5D	6D	4D	5D	6D	6D	5D	4D

*SEE NOTE 201

FIG. 23(MFR.DISC.)
 STATION SIGNALING CIRCUIT
 FOR SINGLE-LINK OPERATION
 (PART OF 214B KEY TEL UNIT)
 SEE TABLE A



DRAWING ISSUE	
5D	BY: [unclear]
6D	CHK: [unclear]
7D	APP: [unclear]

FIG. 24 (MFR. DISC.)
SINGLE-TALKING LINK CIRCUIT
(PART OF 214B KEY TEL UNIT)

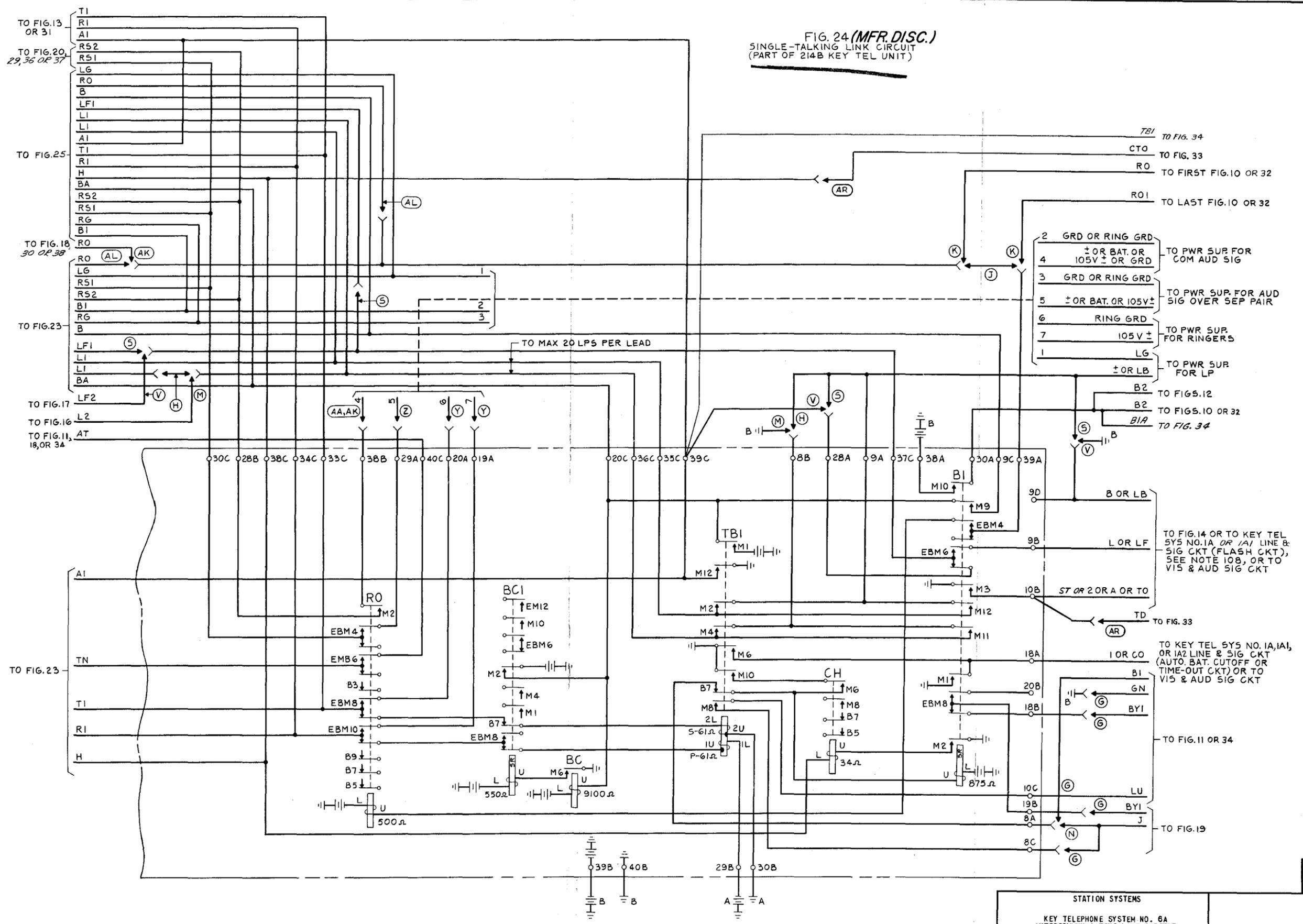


TABLE B FOR 215A KEY TEL UNIT

REFERENCE DESIGNATION	PUNCHING		
	CKT1	CKT2	CKT3
A	1	11	21
B	2	12	22
C	3	13	23
D	5	15	25
E*	6	16	26
F	7	17	27
G*	18	19	20
H	28	29	30
P	35		
R	37		

*SEE NOTE 201

FIG. 25
 STATION SIGNALING CIRCUIT
 FOR SINGLE-LINK OPERATION
 (PART OF 215A KEY TEL UNIT)
 SEE TABLE B

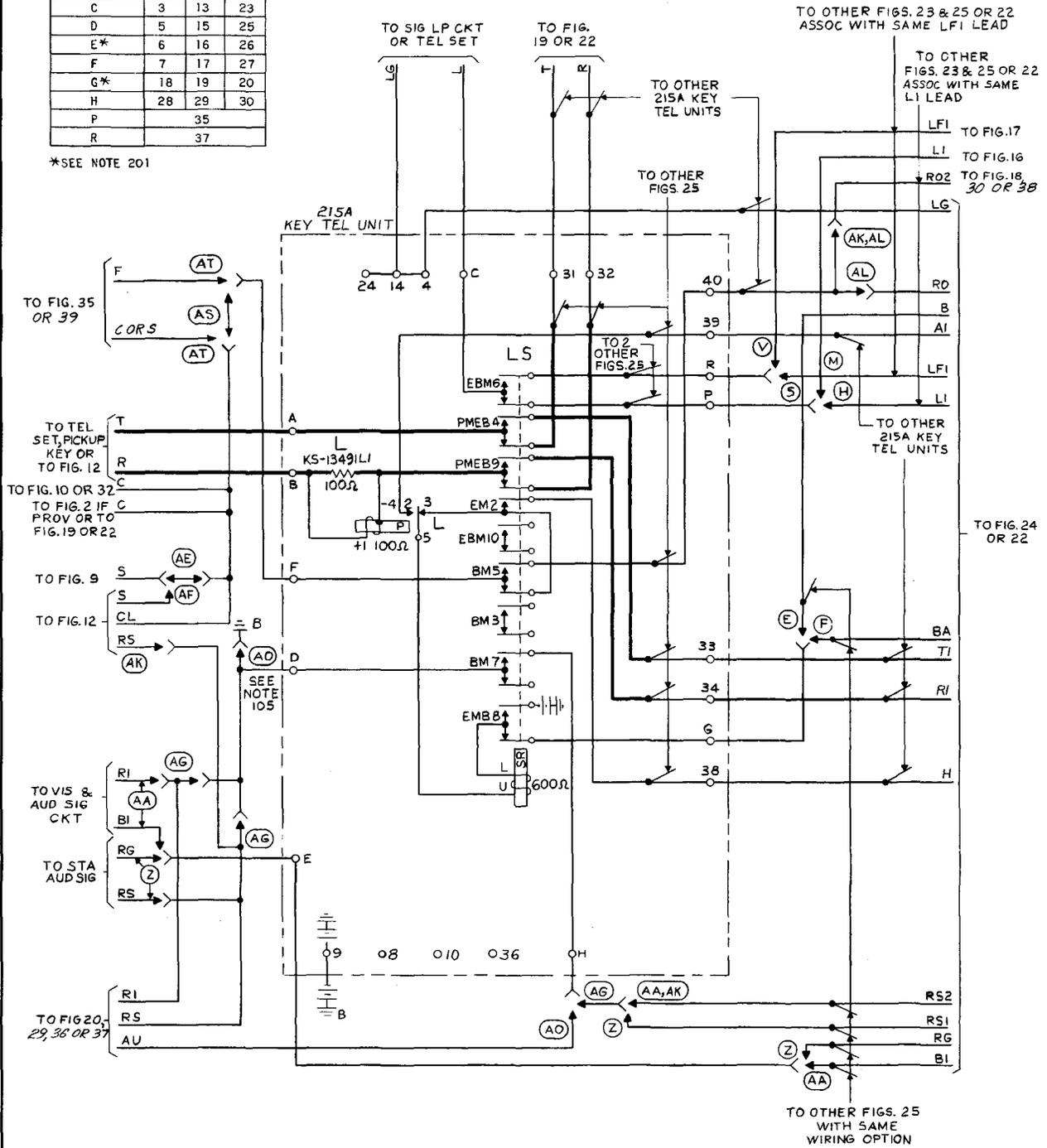
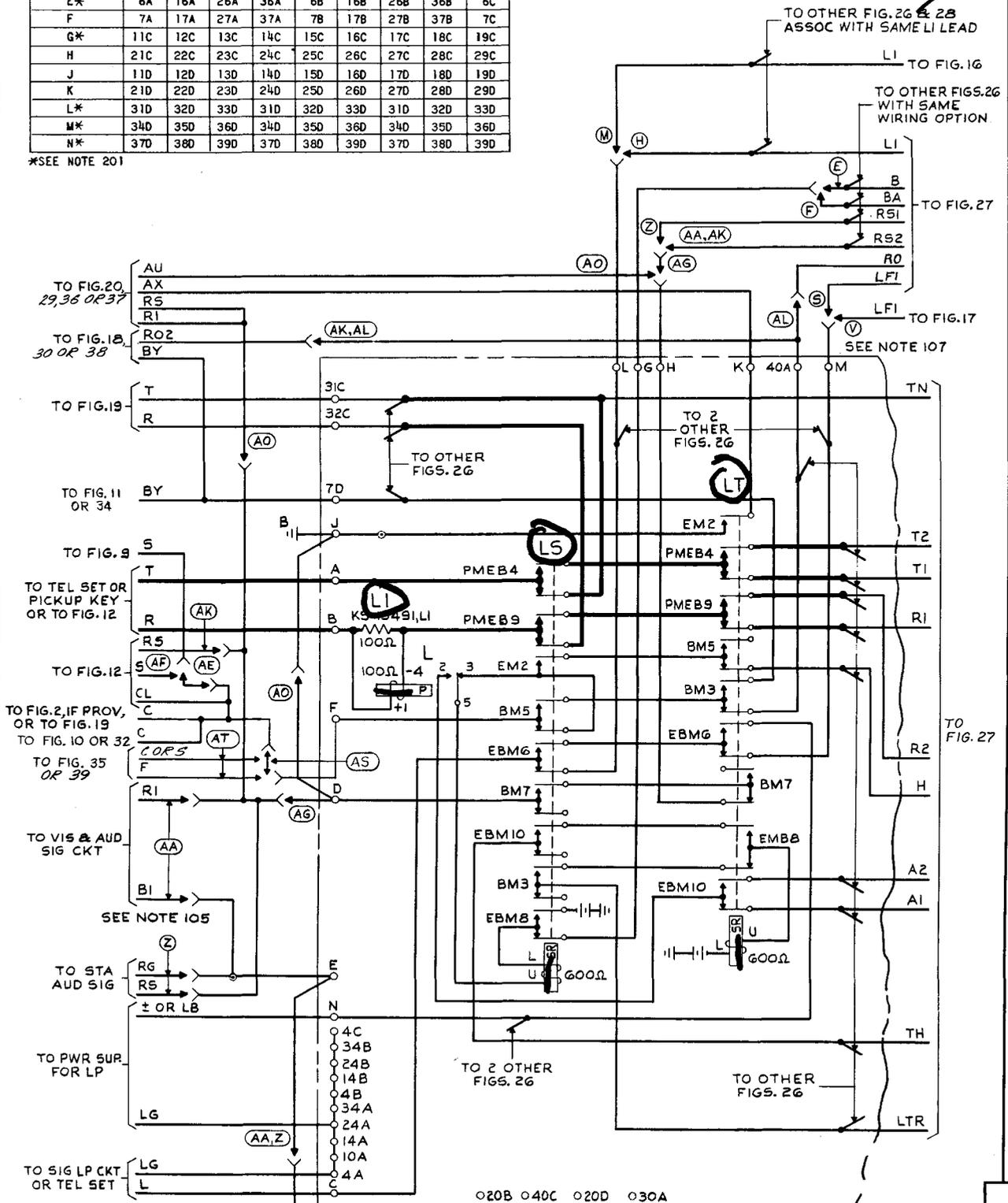


TABLE C FOR 222A KEY TEL UNIT

REFERENCE DESIGNATION	PUNCHING								
	CKT1	CKT2	CKT3	CKT4	CKT5	CKT6	CKT7	CKT8	CKT9
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

*SEE NOTE 201

FIG.26
STATION SIGNALING CIRCUIT
TWO-LINK OPERATION
(PART OF 222A KEY TEL UNIT)
SEE TABLE C



TO PWR SUP. FOR LP
TO SIG LP CKT OR TEL SET
TO PWR SUP. FOR RINGERS
TO FIG. 28

STATION SYSTEMS
KEY TELEPHONE SYSTEM NO. 6A
INTERCOMMUNICATING LINE CIRCUIT
SD-69286-01-C24
BELL TELEPHONE LABORATORIES
INCORPORATED
3S
PRINTED IN U.S.A.

DRAWING ISSUE	
50	5% DMC
6D	LJI DMC PD
7D	JHL RBB RGS

FIG. 28
 STATION SIGNALING CIRCUIT
 TWO-LINK OPERATION
 (PART OF 223A KEY TEL UNIT)
 SEE TABLE D

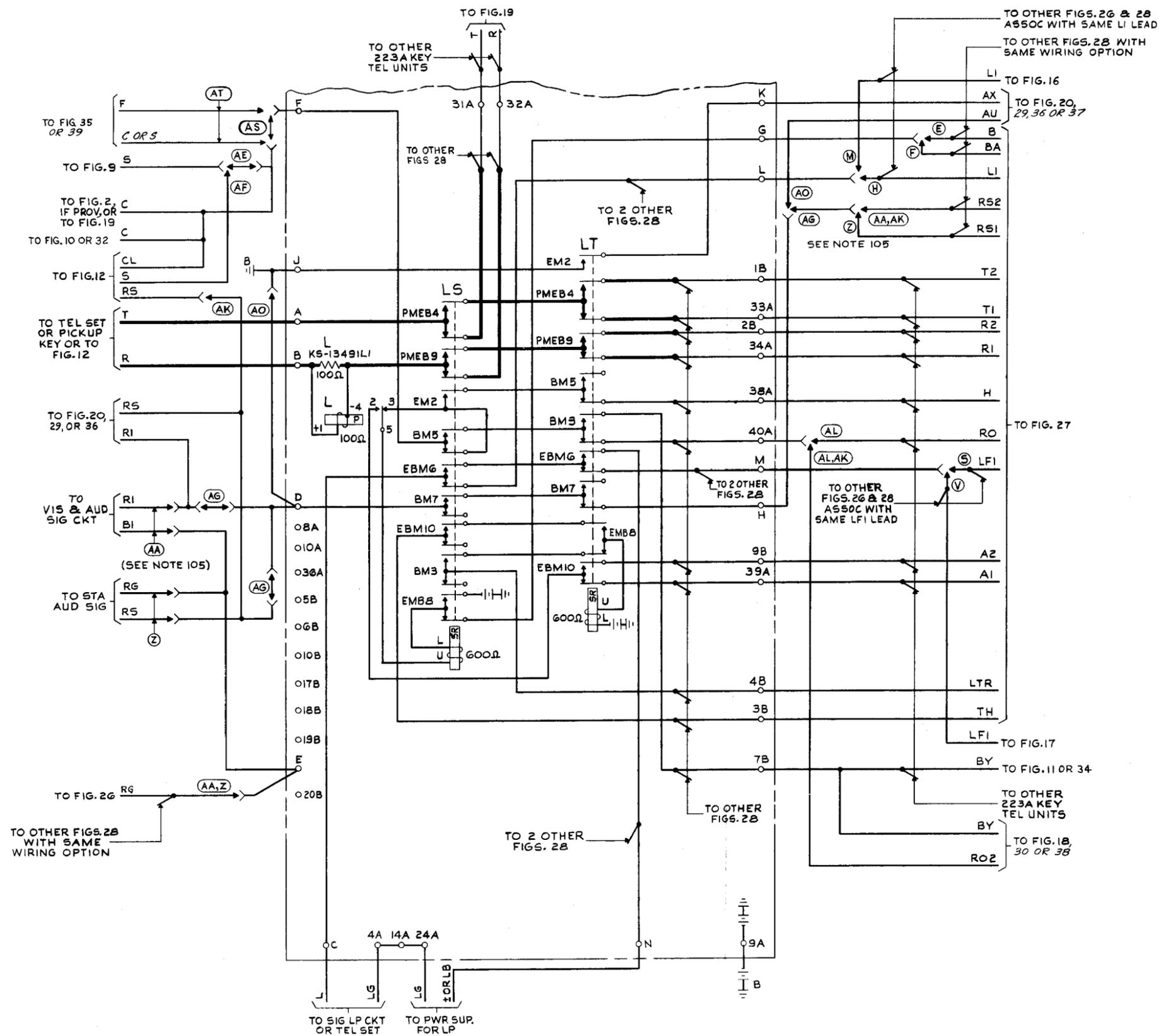


TABLE D
 FOR 223 KEY TEL UNIT

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		

*SEE NOTE 201

DRAWING	5D	STW
ISSUE		DWC
	6D	LAL
		DHC
		PD
	7D	JR
		AB
		RG

FIG. 30 (MFR. DISC.)
RINGING AND TONE CONTROL CIRCUIT

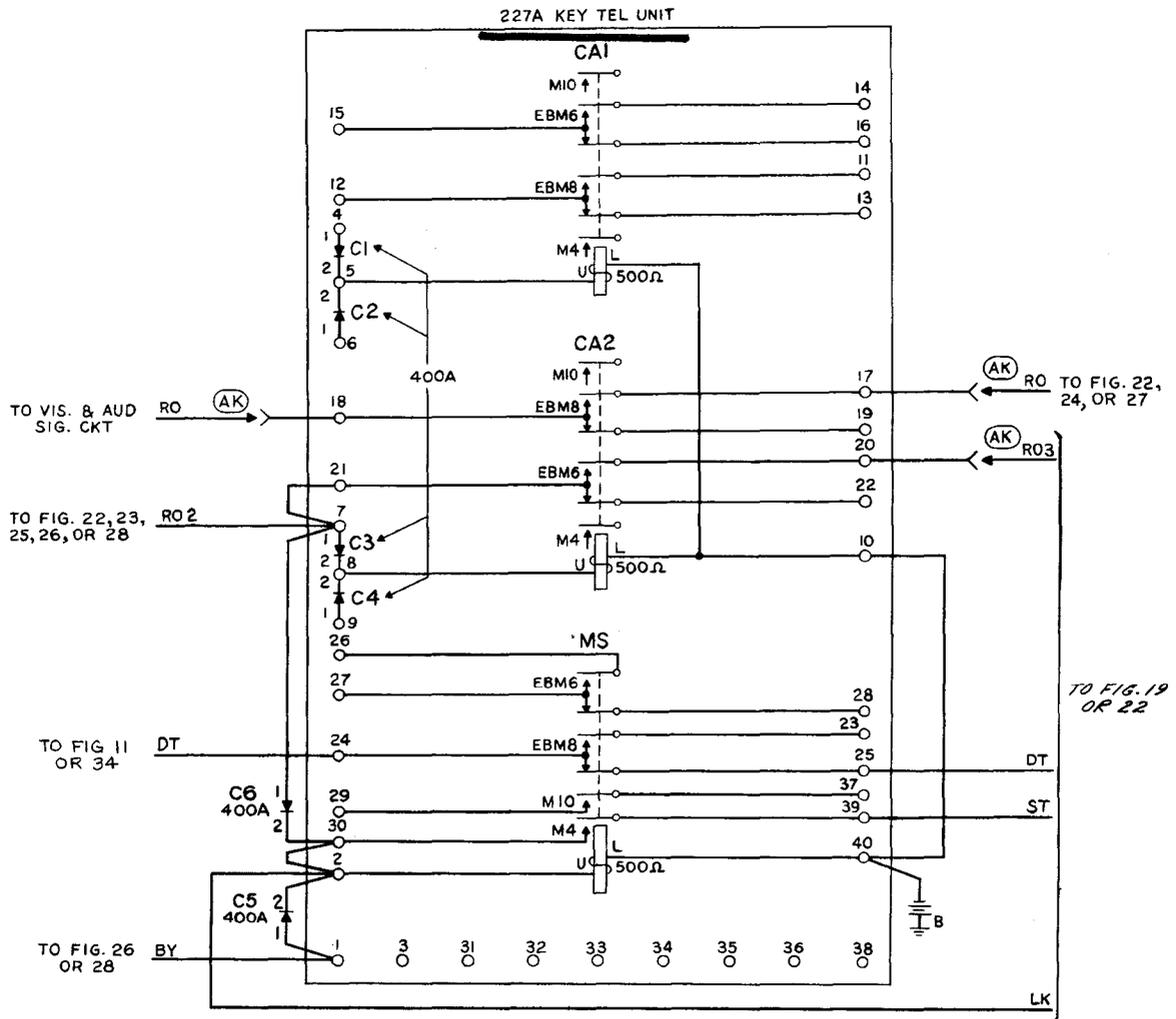


FIG. 29 (MFR DISC)
 MULTIPLE ADD-ON TRANSFER CIRCUIT
 SEE NOTE 105

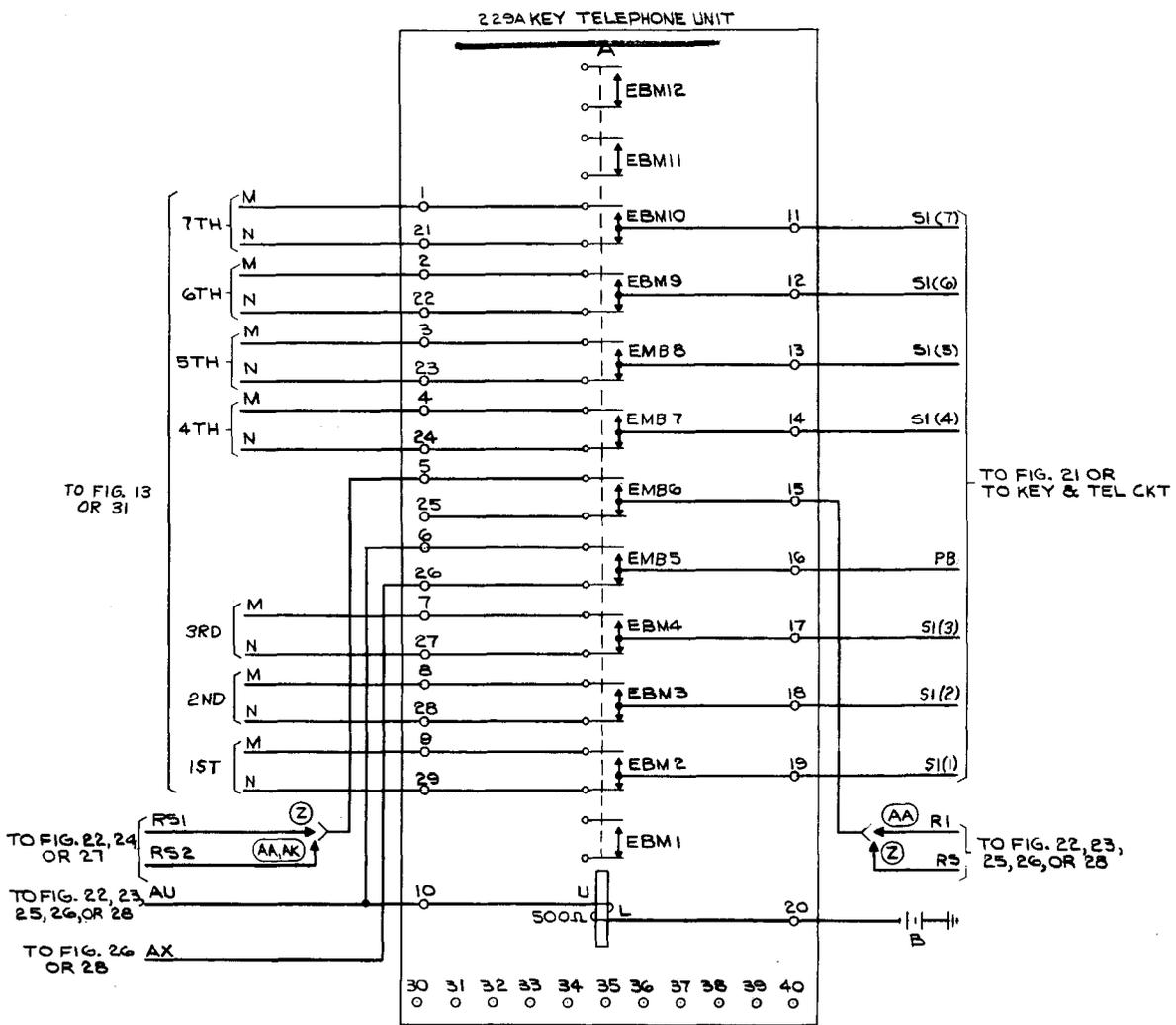
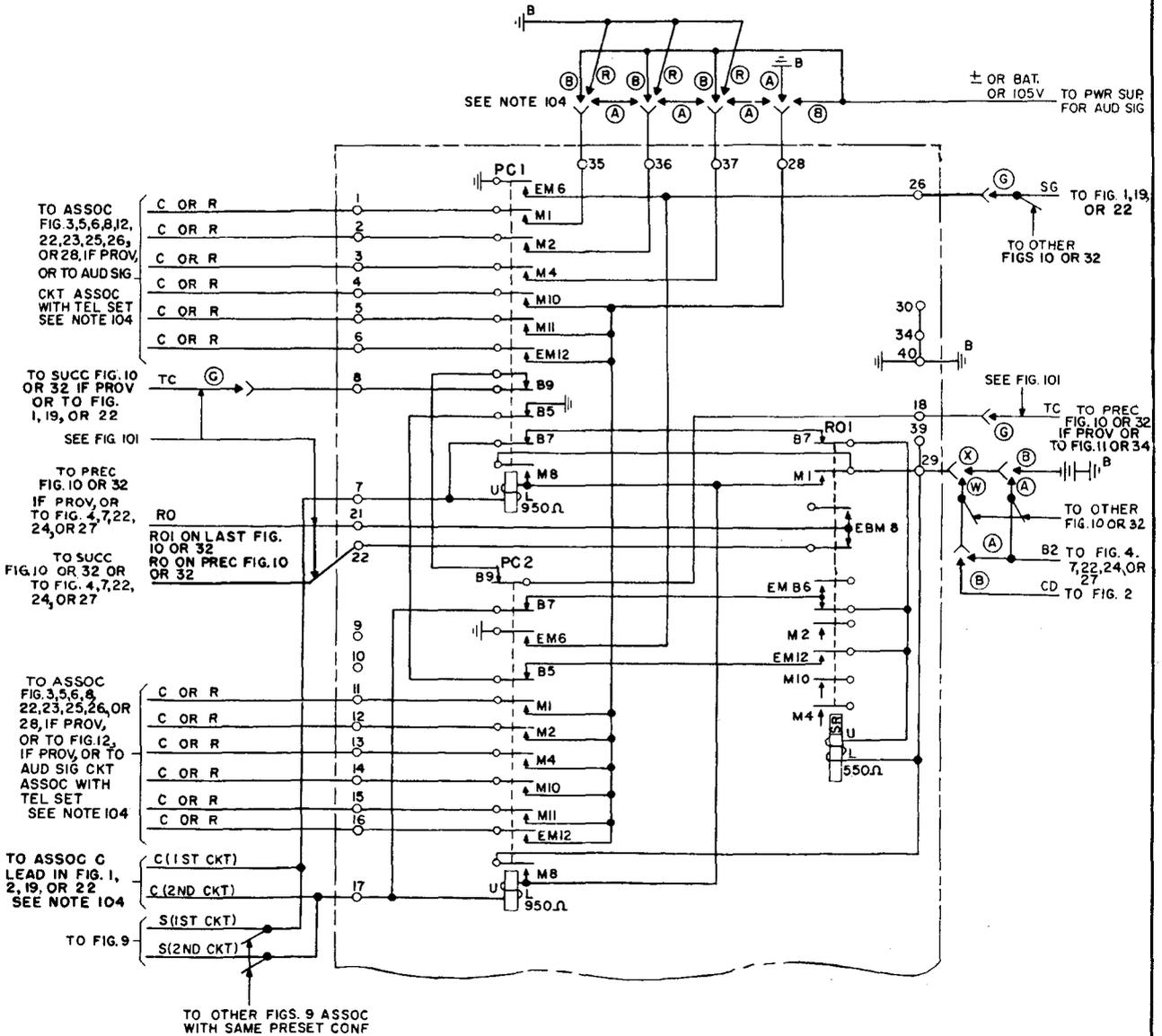


FIG. 32
PRESET CONFERENCE CIRCUIT
(PART OF 217B KEY TEL UNIT)



DRAWING	
ISSUE	
6D	LJL DHC PD
7D	JRC RMB PEG

FIG. 35 (MFR. DISC.)
STATION BUSY CIRCUIT
SEE NOTE 113

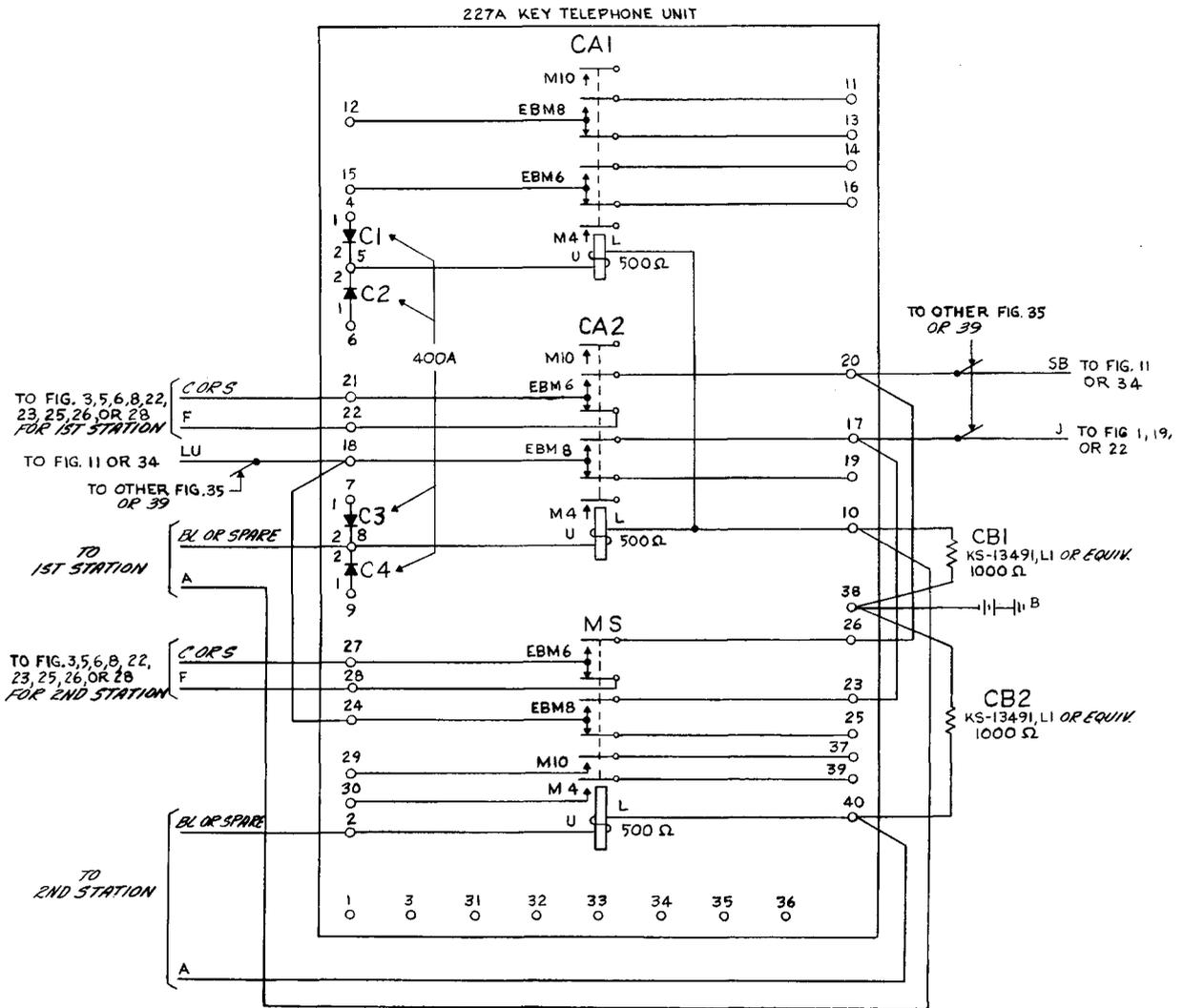


FIG. 36
MULTIPLE ADD-ON TRANSFER CIRCUIT
SEE NOTE 105

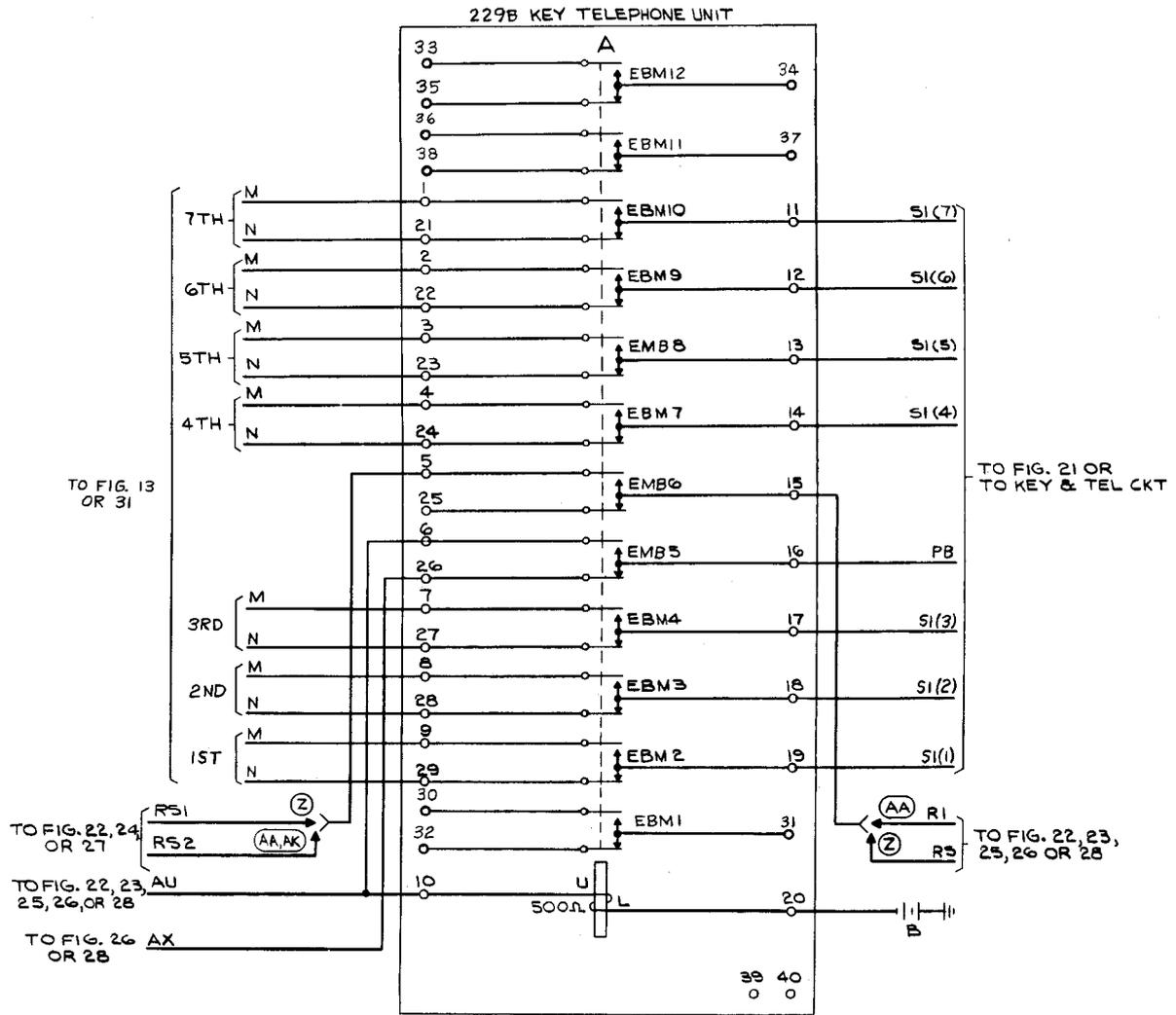


FIG. 37
SINGLE ADD-ON TRANSFER CIRCUIT
(SEE NOTE 105)

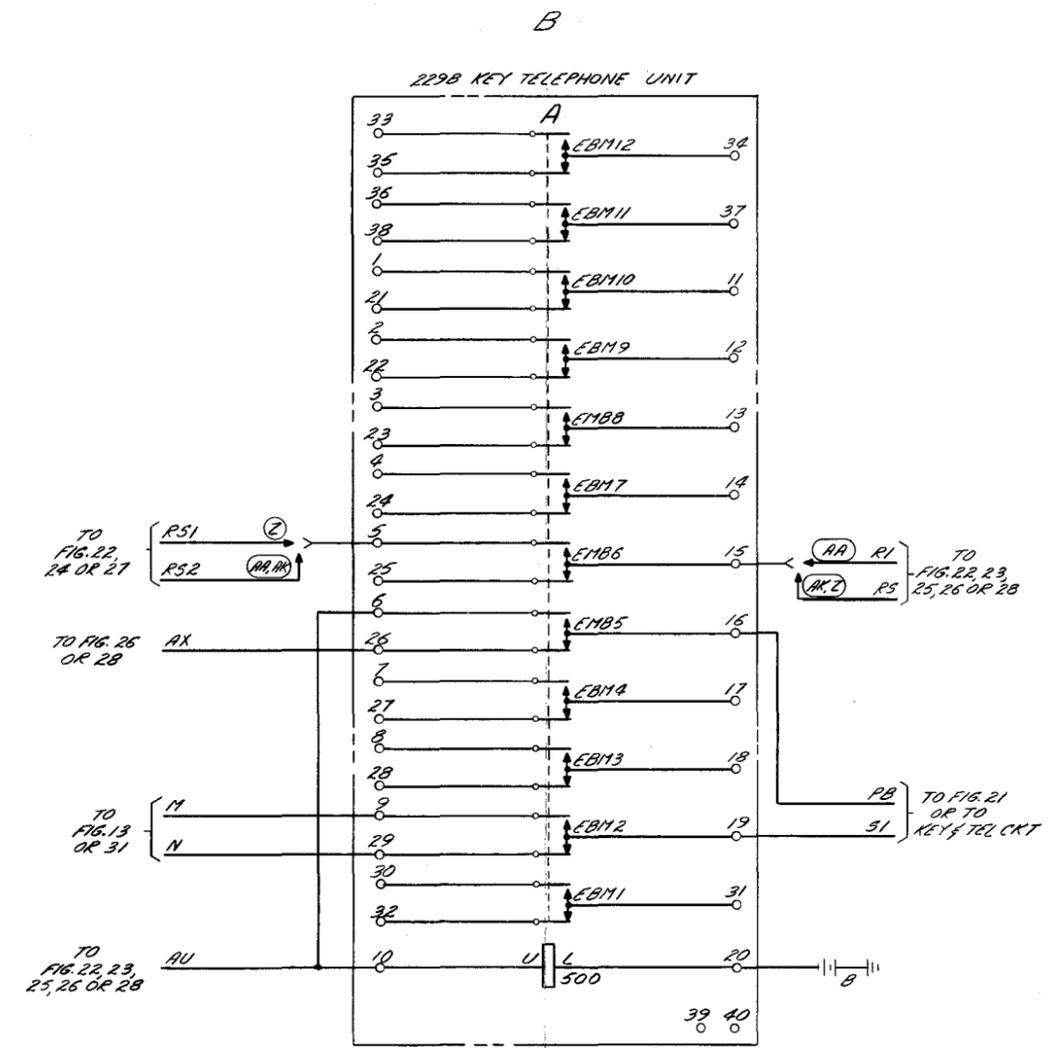
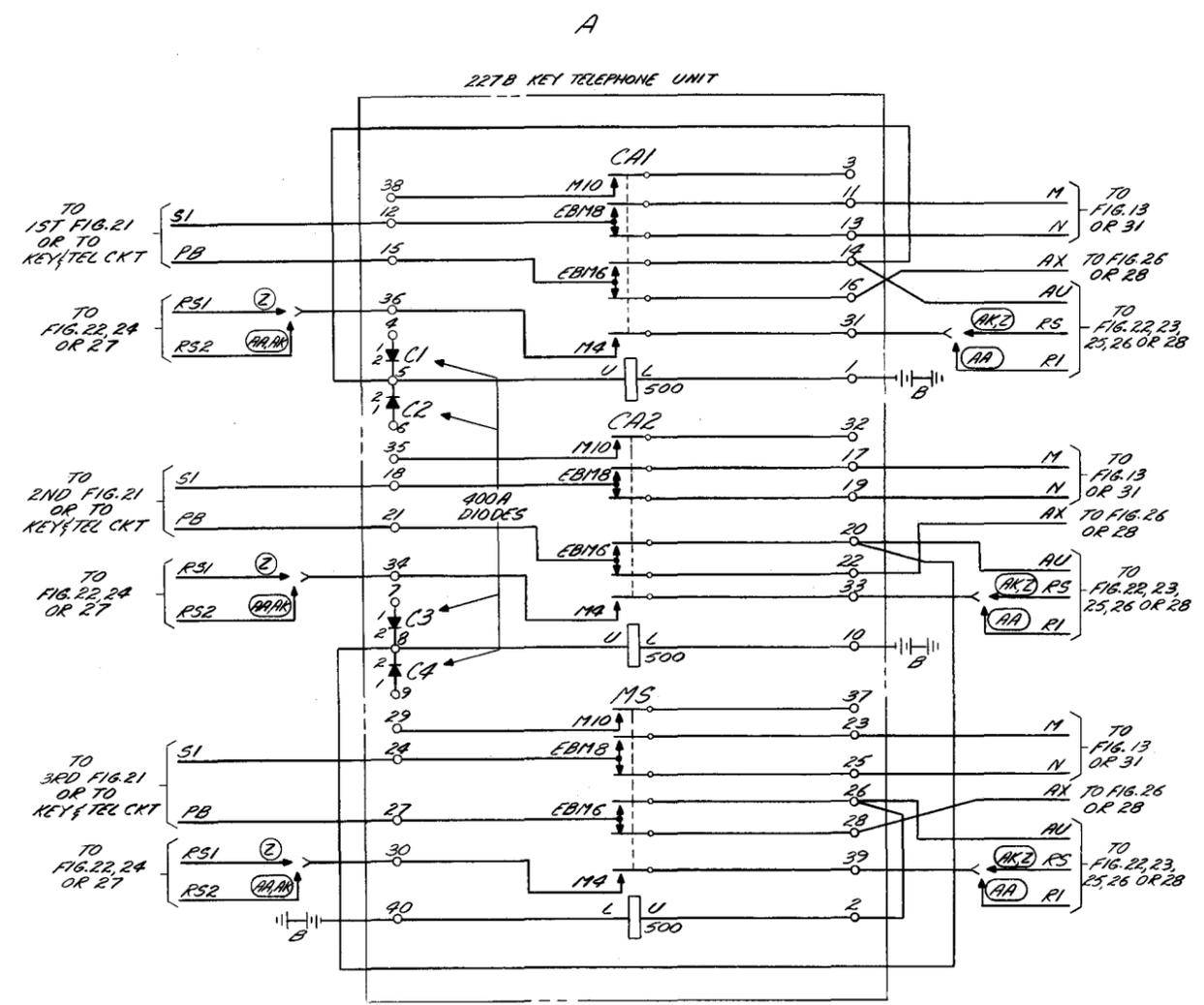


FIG. 38
RINGING & TONE CONTROL CIRCUIT

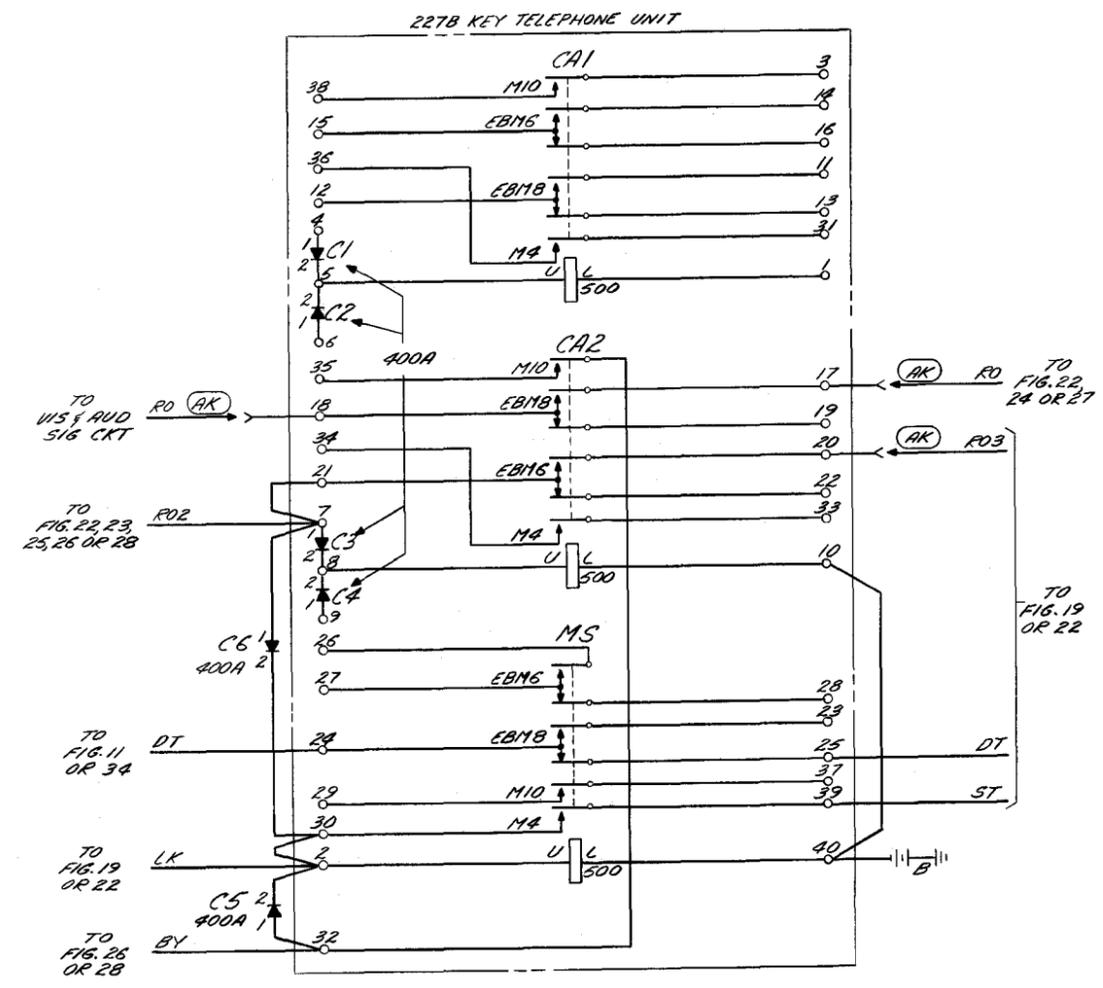
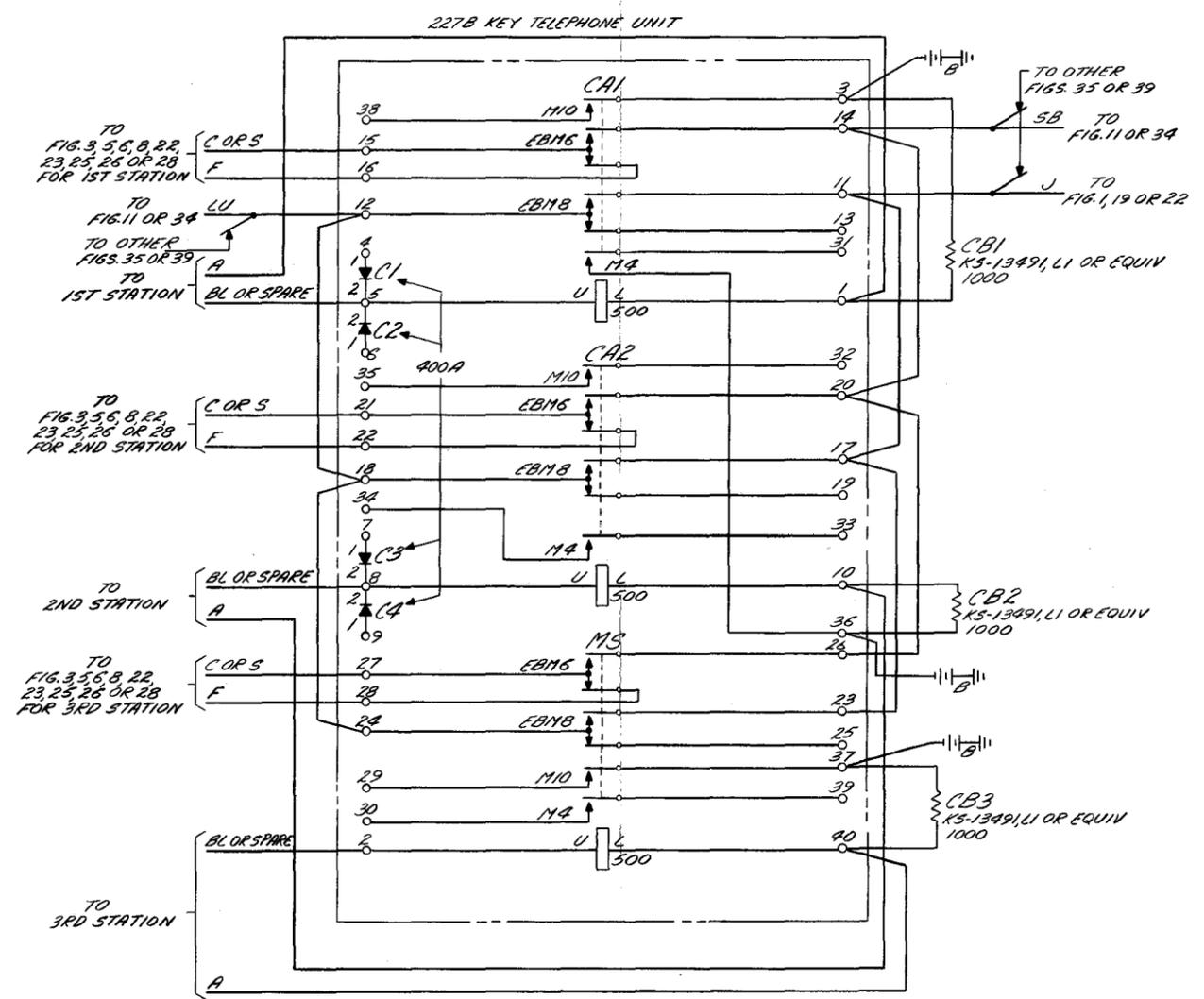


FIG. 39
STATION BUSY CIRCUIT
(SEE NOTE 113)



CIRCUIT REQUIREMENTS

DRAWING
ISSUE
4D
5D
6D
7D

APPARATUS				MECH REQ			CIRCUIT PREPARATION				DIRECT CURRENT FLOW REQ						REMARKS
DESIG	CODE	OPTION	FIG.	BSP FIG	CONT PRES.	ARM. TRVL	BLOCK OR INSULATE	TEST CLIP DATA		TEST SET PREP	SEE TEST NOTE	TEST WDG	TEST FOR	AFTER SOAK			
								CONN BAT.	CONN GRD					TEST MA.	TEST MA.	READJ MA.	
RELAYS																	
215A KEY TEL UNIT																	
L	280M		5, 25	B				TERM. 32C	TERM. 31C	B/G	1		0	-54			1.1
													NO	-54			0.8
													0	-54	6.4	6.1	
													R	54	1.7	1.8	
LS	AG29		5, 25	408B			(B1)O (BC1)O 2(B1)		U(LS)	GRD			0	FS	23.5	22.0	
													H	FS	3.9	3.7	
													R	FS	1.9	2.2	
216A KEY TEL UNIT																	
RL	AF124		2	287			10(RL)		TERM. 33	GRD			0		17.0	16.0	
TR	AJ43		2	249					U(TR)	GRD			0		24.5	23.0	
217A KTU (MFR. DISC)																	
PC1	AJ46		10	266			(R01)O		U(PC1)	GRD			0		12.3	11.7	
PC2	AJ46		10	266			(R01)O		U(PC2)	GRD			0		12.3	11.7	
R01	AG26		10	222B			5(PC2), 7(PC1), 7(PC2), (B1)O		U(R01)	GRD			0	FS	26.5	25.0	
													H	FS	4.1	3.9	
													R	FS	2.1	2.5	
222A KEY TEL UNIT																	
BC	AJ7		7, 27	1			(TB1)NO, (BC1)NO		TERM. 20C	GRD	2		0		1.7	1.6	
BC1	AG26		7, 27	222B					U(BC1)	GRD			0	FS	26.5	25.0	
													H	FS	4.1	3.9	
													R	FS	2.1	2.5	
B1	AG28		7, 27	268B			(TB1)O		U(B1)	GRD			0	FS	15.5	14.5	
													H	FS	2.5	2.3	
													R	FS	1.1	1.3	
CH	AF89		7, 27	41B			(B1)NO	L(CH)	U(CH)	B/G			0		47.5	45.0	
H	AG26		7, 27	222B					TERM. 9D	GRD			0	FS	26.5	25.0	
													H	FS	4.1	3.9	
													R	FS	2.1	2.5	
L1	280M		6, 26	B				TERM. 32C	TERM. 31C	B/G	3		0	-54		1.1	
													NO	-54		0.8	
													0	-54	6.4	6.1	
													R	54	1.7	1.8	
LS	AG29		6, 26	408B			(B1)O (BC1)O 2(B1)		U(LS)	GRD			0	FS	23.5	22.0	
													H	FS	3.9	3.7	
													R	FS	1.9	2.2	
LT	AG29		6, 26	408B					U(LT)	GRD			0	FS	23.5	22.0	
													H	FS	3.9	3.7	
													R	FS	1.9	2.2	
LTR	AG26		7, 27	222B					U(LTR)	GRD			0	FS	26.5	25.0	
													H	FS	4.1	3.9	
													R	FS	2.1	2.5	
RO	AF125		7, 27	245					U(RO)	GRD			0		21.0	20.0	
TB1	AJ42		7, 27	66				2L(TB1)	IU(TB1)	M		P/S	0		29	27.5	
TB2	AJ42		7, 27	66				2L(TB2)	IU(TB2)	M		P/S	0		29	27.5	

TEST NOTES:

- DISCONNECT ALL WIRES ON TERMS. 31 & 32 BEFORE CONNECTING TEST SET. CONNECT METALLIC JUMPER ACROSS A AND B TERMS. TO SELECT RELAY UNDER TEST.
- CONTACT MAKE 5, NO MAKE 8.5 READJ; MAKE 3.5, NO MAKE 10, TEST. ARMATURE BACK TENSION MIN 18 GRAMS READJ, 15 GRAMS TEST.
- DISCONNECT ALL WIRES ON TERMS. 31C & 32C BEFORE CONNECTING TEST SET. CONNECT METALLIC JUMPER ACROSS A AND B TERMS. TO SELECT RELAY UNDER TEST.

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STATION SYSTEMS	
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT	
SD-69286-01-02	
BELL TELEPHONE LABORATORIES INCORPORATED	3S PRINTED IN U. S. A.

CIRCUIT REQUIREMENTS

DRAWING
ISSUE

APPARATUS				MECH REQ			CIRCUIT PREPARATION			TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REQ					REMARKS
DESIG	CODE	OPTION	FIG.	BSP FIG.	CONT PRESS.	ARM. TRVL.	BLOCK OR INSULATE	TEST CLIP DATA				TEST WDG.	TEST FOR	AFTER SOAK MA.	TEST MA.	READJ MA.	
								CONN BAT.	CONN GRD.								
RELAYS																	
223A KEY TEL UNIT																	
L	280M		8, 28	B				TERM. 32C	TERM. 31C	B/G	1	0	-54		1.1		
												NO	-54		0.8		
												0	-54	6.4	6.1		
												R	54	1.7	1.8		
LS	AG29		8, 28	408B			(B1)0 (BC1)0 2(B1)		U(LS)		GRD	0	FS	23.5	22.0		
												H	FS	3.9	3.7		
												R	FS	1.9	2.2		
LT	AG29		8, 28	408B					U(LT)		GRD	0	FS	23.5	22.0		
												H	FS	3.9	3.7		
												R	FS	1.9	2.2		
224A KTU(MFR.DISC.)																	
MAGNET																	
V	KS-15778, LI VIBRATOR		11								2						
RELAYS																	
BY	AG26		11	222B					U(BY)		GRD	0	FS	26.5	25.0		
												H	FS	4.1	3.9		
												R	FS	2.1	2.5		
RY1	AG29		11	408B					U(RY1)		GRD	0	FS	23.5	22.0		
												H	FS	3.9	3.7		
												R	FS	1.9	2.2		
225A KEY TEL UNIT																	
C	AJ40		12	52				1L(C)	2U(C)		M 3	P/S	0	17.5	16.5		
													R	0.1	0.2		
P	280FP		12	B			(R)NO				M 4	P/S	0	-28	0.7		
													NO	-28	0.5		
													0	-28	5.9		
													REL	+28	3.1		
R	AF125		12	245			(B1)0		U(R)		GRD	5	0	21.0	20.0		
226A KTU(MFR.DISC.)																	
M	AJ43		13	249					U(M)		GRD	0		24.5	23.0		
N	AJ43		13	249					U(N)		GRD	0		24.5	23.0		
226B KEY TEL UNIT																	
M	AJ43		31	249					U(M)		GRD	0		32.0	29.0		
N	AJ43		31	249					U(N)		GRD	0		24.5	23.0		
227A KTU(MFR.DISC.)																	
CA1	AF86		18,30 35	237					U(CA1)		GRD	0		17.0	16.0		
CA2	AF86		18,30 35	237					U(CA2)		GRD	0		17.0	16.0		
MS	AF86		15,16 17,18 20,31 35	237					U(MS)		GRD	0		17.0	16.0		
229A KTU(MFR.DISC.)																	
A	AJ43		29	249					U(A)		GRD	0		24.5	23.0		
234A KEY TEL UNIT																	
MAGNET																	
A	204E SEL		22						T(A)		GRD	6	ROT	0	330.0		
									TERM. 6B		GRD	7, 8	ROT	0	400.0		
							8(B)		TERM. 15B		GRD	9	RLS	0	165.0		

TEST NOTES:

- DISCONNECT ALL WIRES ON TERMS. 31 & 32 BEFORE CONNECTING TEST SET. CONNECT METALLIC JUMPER ACROSS A AND B TERMS. TO SELECT RELAY UNDER TEST.
- IF VIBRATOR FAILS TO OPERATE REPLACE WITH NEW ONE.
- ARMATURE BACK TENSION MIN 20 GRAMS READJ, 15 GRAMS TEST. CONTACTS BREAK ON 5, NOT BREAK ON 8.5, READJ; BREAK 3.5, NOT BREAK 10, TEST. CONTACTS MAKE ON 5, NO MAKE ON 8.5, READJ; MAKE 3.5, NO MAKE 10, TEST.
- CONNECT THE TEST CLIP LEADS TO TERMS. 1 AND 2. WHERE NEGATIVE SOAK IS REQUIRED, REVERSE THE BAT. AND GRD CONNECTION TO TERMS. 14 AND 15.
- IF SYSTEM IS NOT EQUIPPED WITH 'A' WIRING AND APPARATUS FOR 1 OR 2 LINK OPERATION, (B1) RELAY WILL NOT BE FURNISHED.

- FOR (ROT) MAGNET ALONE. REMOVE PARALLEL CONNECTION TO 1U(C) RELAY.
- FOR CKT COMBINATION OF (ROT) MAGNET AND (C) RELAY.
- (ROT) MAGNET SHALL STEP THE WIPER ONE COMPLETE STEP.
- MOVE SELECTOR OFF NORMAL BEFORE TESTING (RLS) MAGNET.

KEY TELEPHONE SYSTEM NO. 6A
INTERCOMMUNICATING LINE CIRCUIT

SD-69286-01-D3

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(5 PAGES) PAGE 3

4D
5D
6D
7D

LITH
DNC
DNC
DNC
DNC

CIRCUIT REQUIREMENTS

DRAWING
ISSUE

APPARATUS				MECH REQ			CIRCUIT PREPARATION				DIRECT CURRENT FLOW REOT						REMARKS	
DESG	CODE	OPTION	FIG.	BSP FIG.	CONT PRESS.	ARM. TRVL.	BLOCK OR INSULATE	TEST CLIP DATA		TEST SET PREP	SEE TEST NOTE	TEST WDG	TEST FOR	AFTER SOAK		TEST MA.		READJ MA.
								CONN BAT.	CONN GRD					MA.	MA.			
RELAYS																		
A	AJ40		22	52				TERM. 1B	TERM. 2B	M	1	P/S	O			17.5	16.5	
													R			0.1	0.2	
B	AG26		22	222B			(C)O		U(B)	GRD			O	FS		26.5	25.0	
													H	FS		4.1	3.9	
													R	FS		2.1	2.5	
BC	AJ7		22	1			(TBI)NO, (BCI)NO		TERM. 20C	GRD	2		O			1.7	1.6	
BCI	AG26		22	222B					U(BCI)	GRD			O	FS		26.5	25.0	
													H	FS		4.1	3.9	
													R	FS		2.1	2.5	
BI	AG28		22	268B			(TBI)O		U(BI)	GRD			O	FS		15.5	14.5	
													H	FS		2.5	2.3	
													R	FS		1.1	1.3	
C	AG27		22	45B			6(C)	2L(C)	2U(C) 1U(C)	B/G GRD		S	O			47.5	45.0	
											3	P	O	FS		34.0	32.0	
											3	P	H	FS		4.8	4.5	
											3	P	R	FS		2.7	3.4	
								TERM. 6B		GRD	4	P	O	FS		220.0	210.0	
											4	P	H	FS		31.0	29.5	
											4	P	R	FS		12.8	16.0	
CH	AF89		22	41B			(BI)NO	L(CH)	U(CH)	B/G			O			47.5	45.0	
L	280M		22	B				TERM. 32C	TERM. 31C	B/G	5		O	-54			1.1	
													NO	-54			0.8	
													O	-54		6.4	6.1	
													R	54		1.7	1.8	
LS	AG29		22	408B			(BI)O (BCI)O 2(BI)		U(LS)	GRD			O	FS		23.5	22.0	
													H	FS		3.9	3.7	
													R	FS		1.9	2.2	
RL	AF124		22	287			10(RL)		TERM. 33	GRD			O			17.0	16.0	
RO	AF125		22	245					U(RO)	GRD			O			21.0	20.0	
T	AG26		22	222B			1(T)		TERM. 8B	GRD			O	FS		26.5	25.0	
													H	FS		4.1	3.9	
													R	FS		2.1	2.5	
TBI	AJ42		22	66				2L(TBI)	1U(TBI)	M		P/S	O			29	27.5	
TR	AJ43		22	249					U(TR)	GRD			O			24.5	23.0	

4D
6D
LW
DK
PD

TEST NOTES:

1. ARMATURE BACK TENSION MIN 20 GRAMS READJ, 15 GRAMS TEST. CONTACTS BREAK ON 5, NOT BREAK ON 8.5, READJ; BREAK 3.5, NOT BREAK 10, TEST. CONTACTS MAKE ON 5, NO MAKE ON 8.5, READJ; MAKE 3.5, NO MAKE 10, TEST.
2. CONTACT MAKE 5, NO MAKE 8.5 READJ; MAKE 3.5, NO MAKE 10, TEST. ARMATURE BACK TENSION MIN 18 GRAMS READJ, 15 GRAMS TEST.
3. FOR (C) RELAY ONLY. REMOVE PARALLEL CONNECTION TO T (ROT) MAGNET.
4. FOR CKT COMBINATION OF (ROT) MAGNET AND (C) RELAY.
5. DISCONNECT ALL WIRES ON TERMS. 31C & 32C BEFORE CONNECTING TEST SET. CONNECT METALLIC JUMPER ACROSS A AND B TERMS. TO SELECT RELAY UNDER TEST.

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CIRCUIT REQUIREMENTS

DRAWING
ISSUE

APPARATUS				MECH REQT			CIRCUIT PREPARATION				TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REQT					REMARKS
DESIG	CODE	OPT	FIG.	BSP FIG.	CONT PRESS.	ARM. TRVL	BLOCK OR INSULATE	TEST CLIP DATA		TEST WDG			TEST FOR	AFTER SOAK MA.	TEST MA.	READJ MA.		
								CONN BAT.	CONN GRD									
RELAYS																		
217B KEY TEL UNIT																		
PC1	AJ46		32	266			(R01)O		U(PC1)			O		12.3	11.7			
PC2	AJ46		32	266			(R01)O		U(PC2)			O		12.3	11.7			
RO1	AG26		32	222B			5(PC2) 7(PC1) 7(PC2) (B1)O		U(RO)			O H R	FS FS FS	26.5 4.1 2.1	25.0 3.9 2.5			
TD	KS-16615-L17		33						3(TD)	GRD								
															SET FOR MIN 23 SEC MAX 40 SEC			
TDA	AF50		33	18					U(TDA)	GRD			O	23.0	22.0			
224B KEY TEL UNIT																		
MAGNET																		
V	KS-15778-L1		34															
VIBRATOR																		
RELAYS																		
B1A	AK10		34	7					1L(B1A)	BAT		BOT	O H	16.3 2.7	15.5 2.6			
BY	AG26		34	222B			3(BY1)		U(BY)	GRD			O H R	FS FS FS	26.5 4.1 2.1			
BY1	AG29		34	408B					U(BY1)	GRD			O H R	FS FS FS	23.5 3.9 1.9			
TB1A	AK10		34	7					2U(TB1A)	GRD		TOP	O H	7.8 1.6	7.4 1.5			
229B KEY TEL UNIT																		
A	AJ43		29	249					U(A)	GRD			O	24.5	23.0			
227B KEY TEL UNIT																		
CA1	AF86		3738 39	237					U(CA1)	GRD			O	17.0	16.0			
CA2	AF86		3738 39	237					U(CA2)	GRD			O	17.0	16.0			
MS	AF86		3738 39	237					U(MS)	GRD			O	17.0	16.0			

TEST NOTES:

- IF VIBRATOR FAILS TO OPERATE REPLACE WITH NEW ONE.

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STATION SYSTEMS KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT		SD-69286-01-D5
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