

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	6-19-53		ROC. DNC	WFW LHA
5D	5D	4-20-60		STAR DNC	WHA LHA
6D	6D	6-25-64		LJL DNC	APS FNR PD
7D	6D APPID	6-1-67		JTC RBB	APS FNR PD

DWB ISS	CD ISS	DATE	OWN	APP
4D	4D	6-19-59	ROC -	WFW LHA
5D	5D	4-20-60	STAR DNC	WHA LHA
6D	6D	6-25-61	LJL DNC	APS FNR PD
7D	6D APPID	6-1-67	JHL RBO	APS FNR DNC

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: 40

SUPPORTING INFORMATION	
CATEGORY	NO.

IK03

AT&TCO
STANDARD

SD- 69286-01-AI
51 SHEETS

BELL TELEPHONE LABORATORIES
INCORPORATED

OWC 512
35

PRINTED IN U. S. A.

HINDBK 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																
		C18	4	5	6	7															B14	
		C19	4	5	6	7															B15	
		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	FILE
5D	FILE
6D	FILE
7D	FILE

(2 PAGES) PAGE 2

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

BELL TELEPHONE LABORATORIES
INCORPORATED

35

SD-69286-01-A2

CIRCUIT NOTES:

101.	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.

103.	FEATURE OR OPTION		FIG.	APP OR WIR	PROVIDE 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	3		1 PER STA
		1ST 9 STAS (MFR DISC)	4		
		FOR STAS OVER 1ST 9 (MFR DISC)	5		
		TWO-TALKING LINK ARR	6		
		1ST 9 STAS (MFR DISC)	7		
		FOR STAS OVER 1ST 9 (MFR DISC)	8		
	SINGLE-TALKING LINK CKT (MFR DISC)		4		1 PER SYS
	TWO-TALKING LINK CKT (MFR DISC)		7		
	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	SINGLE-TALKING LINK ARR WITH CAMP-ON	11		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	23		1 PER STA
		1ST 9 STAS (MFR. DISC)	24		
		FOR STAS OVER 1ST 9	25		
		TWO-TALKING LINK ARR	26		
		1ST 9 STAS	27		
		FOR STAS OVER 1ST 9	28		
	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)

103. (CONT)	FEATURE OR OPTION		FIG.	APP OR WIR	PROVIDE 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 KIU			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
	BUSH SIG & CAMP-ON CONT CKT	SINGLE-TALKING LINK ARR WITH CAMP-ON	34		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

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

SD-69286-01-B1

BELL TELEPHONE LABORATORIES
INCORPORATED

3S
PRINTED IN U. S. A.

DRAWING

ISSUE

5D

6D

7D

8D

9D

10D

11D

12D

13D

14D

15D

16D

17D

18D

19D

20D

21D

22D

23D

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25D

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87D

88D

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90D

91D

92D

93D

94D

95D

96D

97D

98D

99D

100D

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-13491 L1 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 224A 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.

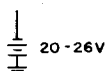
THE KS-13491 L1, OR EQUIV., 1000 OHM CANCEL BUSY (CB) RESISTOR ORDERED SEPARATELY, WILL RELEASE THE STATION BUSY RELAY WHEN THE TEL STATION IS USED FOR A 6A CALL.

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.



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

DRAWING ISSUE	
4D	ST/80
5D	ST/80
6D	ST/80
7D	ST/80

INFORMATION NOTES

301. 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.

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

KEY TELEPHONE SYSTEM NO. 6A
INTERCOMMUNICATING LINE CIRCUIT

SD-69286-01-B3

BELL TELEPHONE LABORATORIES
INCORPORATED

3 S

PRINTED IN U. S. A.

DRAWING ISSUE	
4D	STW
5D	STW DHC
6D	LJL DHC PD
7D	JHL KBB KCS

FIG. 101

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

FIG. 2 WIRING OPTION W

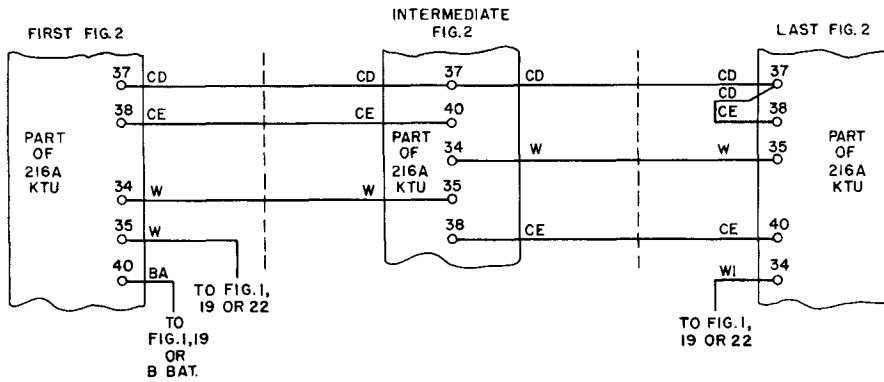


FIG. 10 WIRING OPTION K

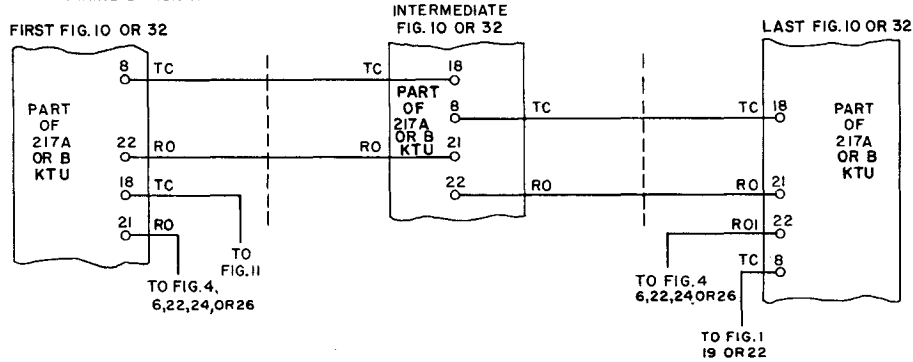
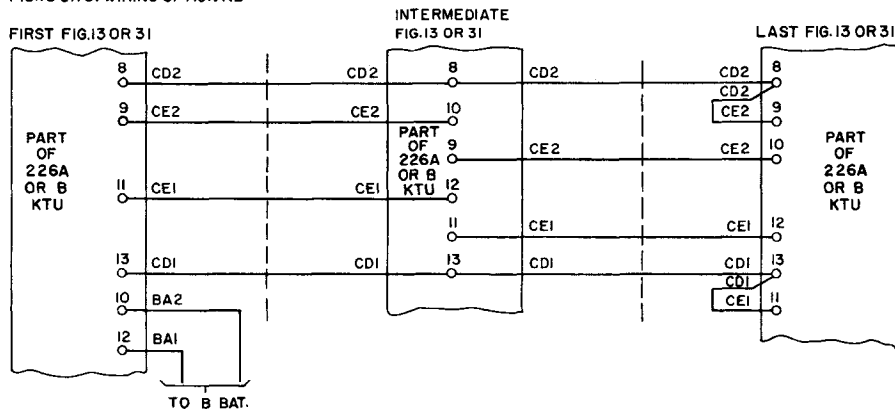


FIG. 13 OR 31 WIRING OPTION AB



STATION SYSTEMS

KEY TELEPHONE SYSTEM NO. 6A
INTERCOMMUNICATING LINE CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

OWN SIZE
3 S

SD-69286-01-B4

PRINTED IN U. S. A.

DRAWING	
ISSUE	
4D	STAMP
5D	STAMP
6D	STAMP
	STAMP

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. 1A, 1A1, OR 1A2 DWGS WHICH WOULD SHOW CONNECTIONS BETWEEN A NO. 6A AND A NO. 1A, 1A1, OR 1A2 SYSTEM. CONSEQUENTLY THE DIAGRAMS ARE OFFERED AS AN EXAMPLE OF THESE INTERCONNECTIONS. CONNECTIONS TO OTHER NO. 1A, 1A1, OR 1A2 UNITS MAY BE DETERMINED ON A LOCAL BASIS.

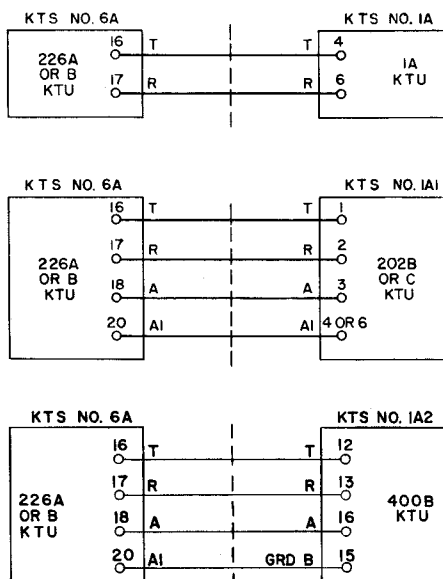


FIG. 103
BASIC BLOCK DIAGRAM FOR
SELECTOR ONLY ARRANGEMENT

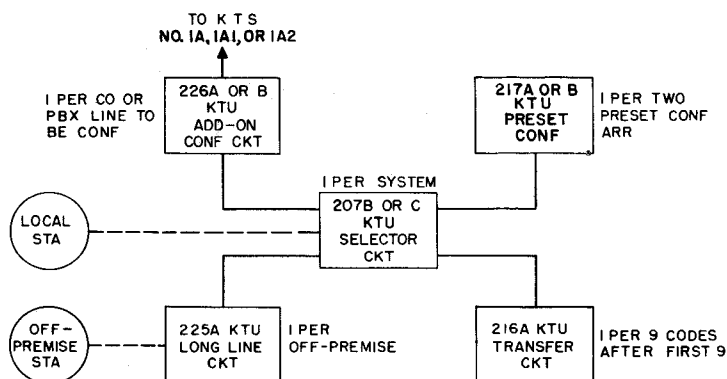


FIG. 104 (MFR. DISC.)
BASIC BLOCK DIAGRAM FOR
SINGLE-TALKING LINK ARRANGEMENT

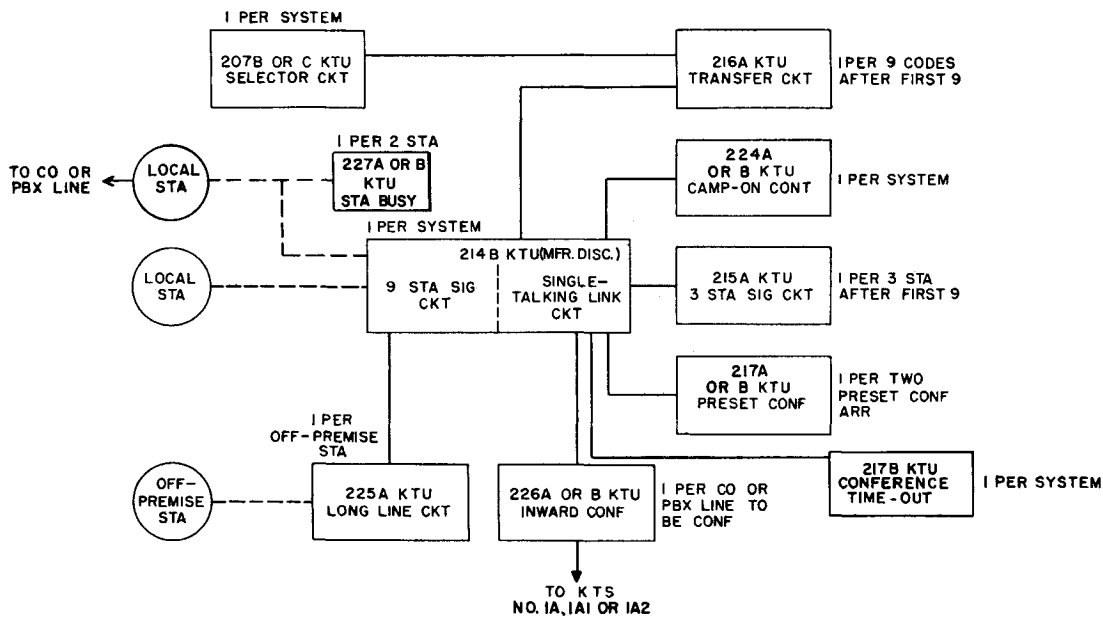


FIG. 105
BASIC BLOCK DIAGRAM FOR
TWO-TALKING LINK ARRANGEMENT

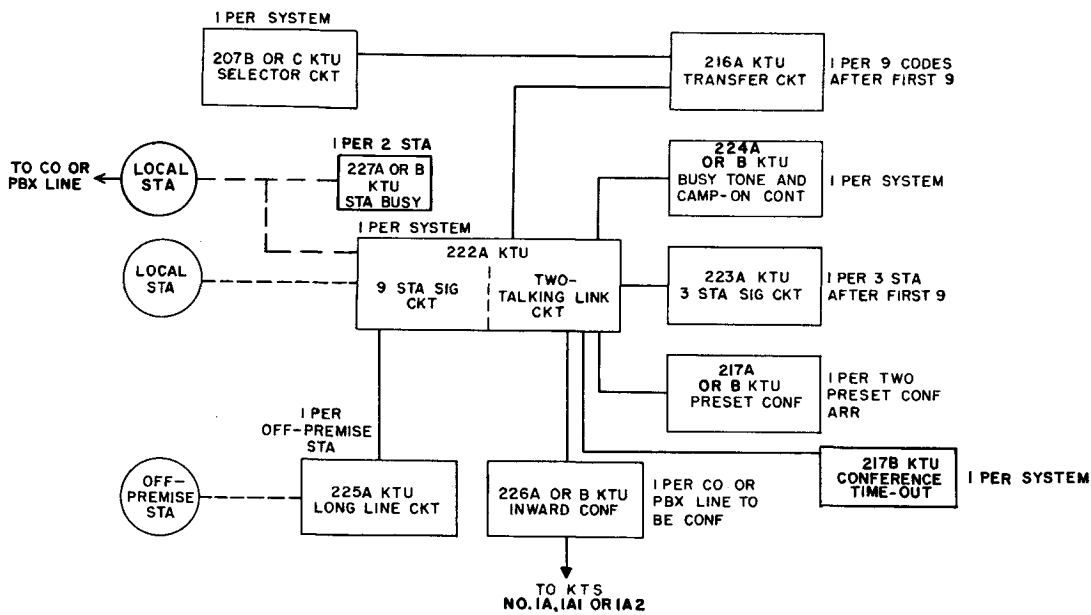


FIG. 106 (MFR DISC)
MULTIPLE ADD-ON

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

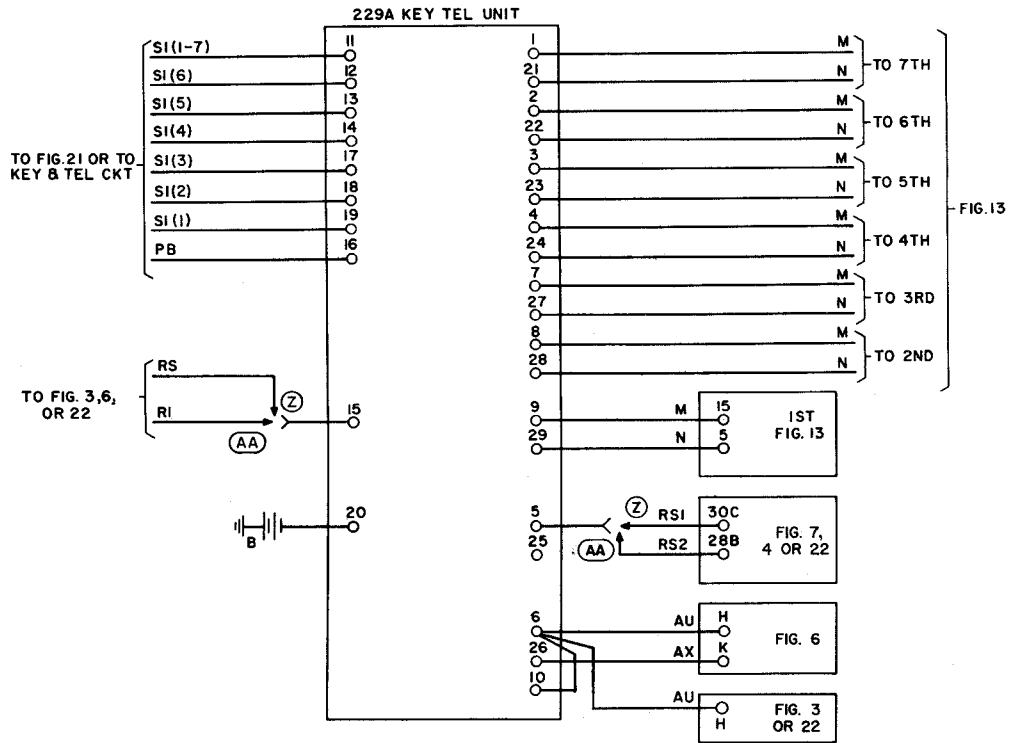
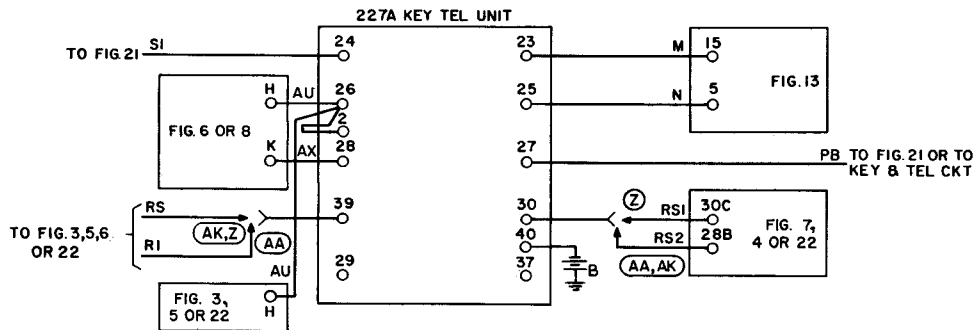


FIG. 107 (MFR DISC)
SINGLE ADD-ON

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



DRAWING	
ISSUE	
4D	1/1/66
5D	5/1/66
6D	11/1/66
7D	1/1/67

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

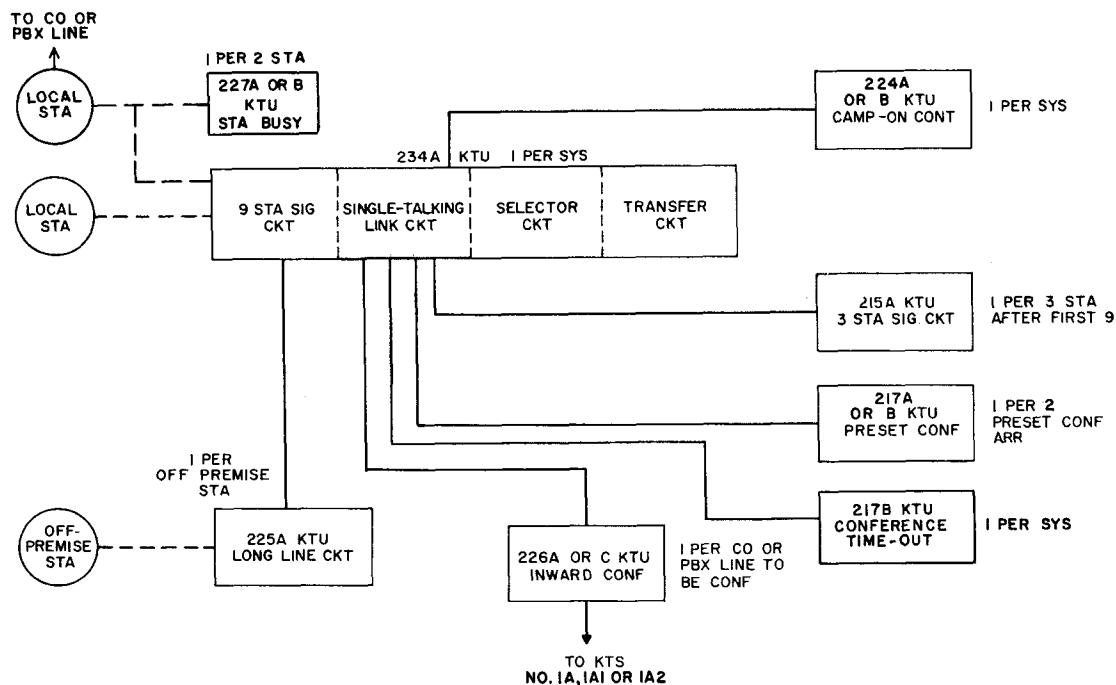
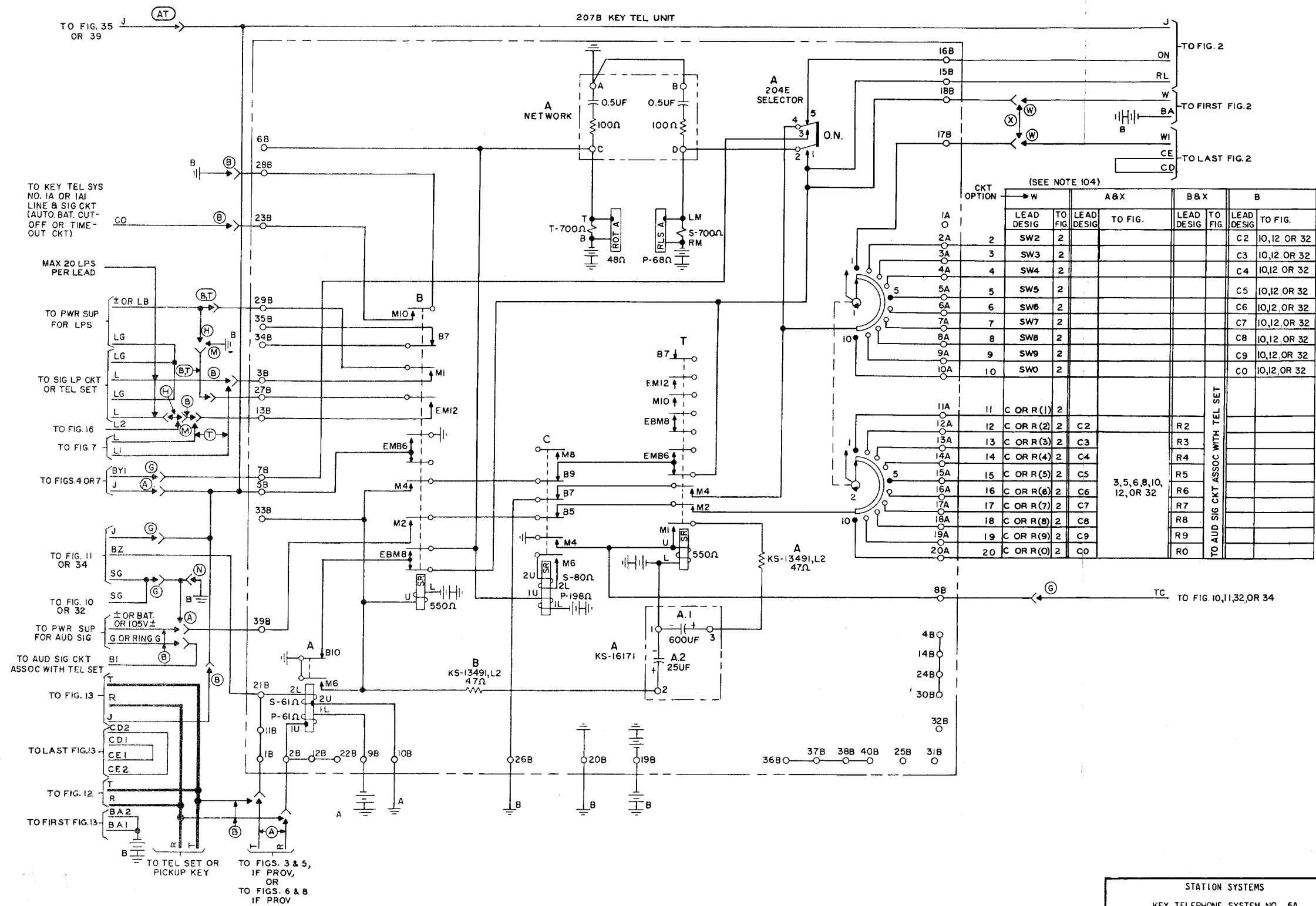


FIG. 1 (MFR DISC.)
SELECTOR CIRCUIT
REPLACED BY FIG. 19



DRAWING ISSUE	
4D	SY/
5D	ST/uy DHC
6D	LJL DHC PD

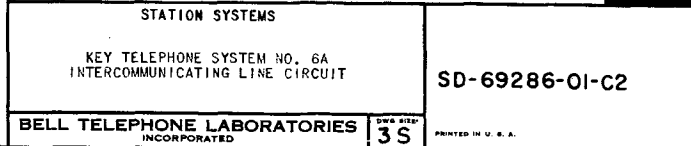
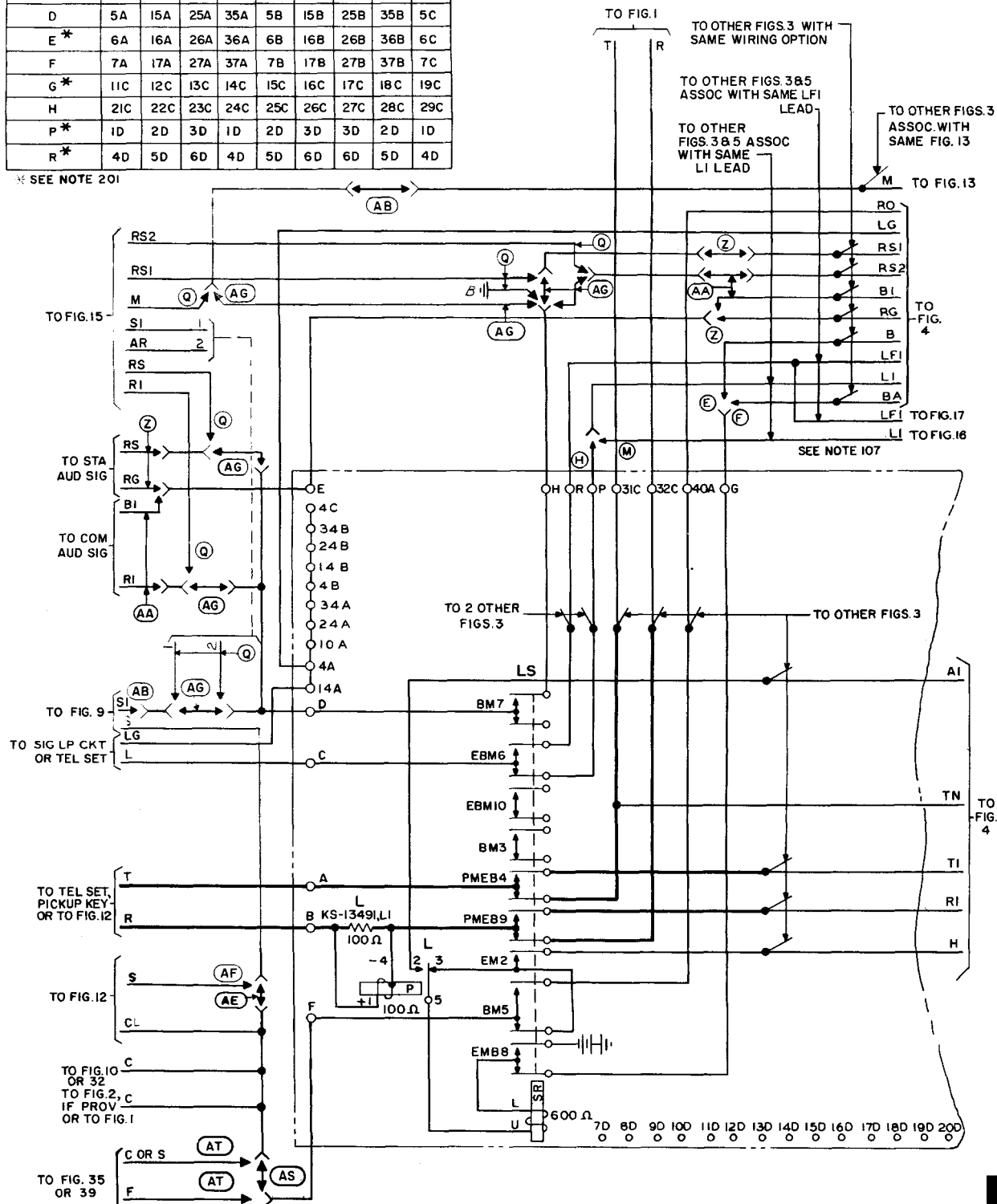


FIG.3 (MFR DISC.)

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	2D	1D	
R *	4D	5D	6D	4D	5D	6D	5D	4D	

* SEE NOTE 201

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



STATION SYSTEMS

KEY TELEPHONE SYSTEM NO. 6A

INTERCOMMUNICATING LINE CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

SD-69286-01-C3

DWE SIZE
3 S

PRINTED IN U. S. A.

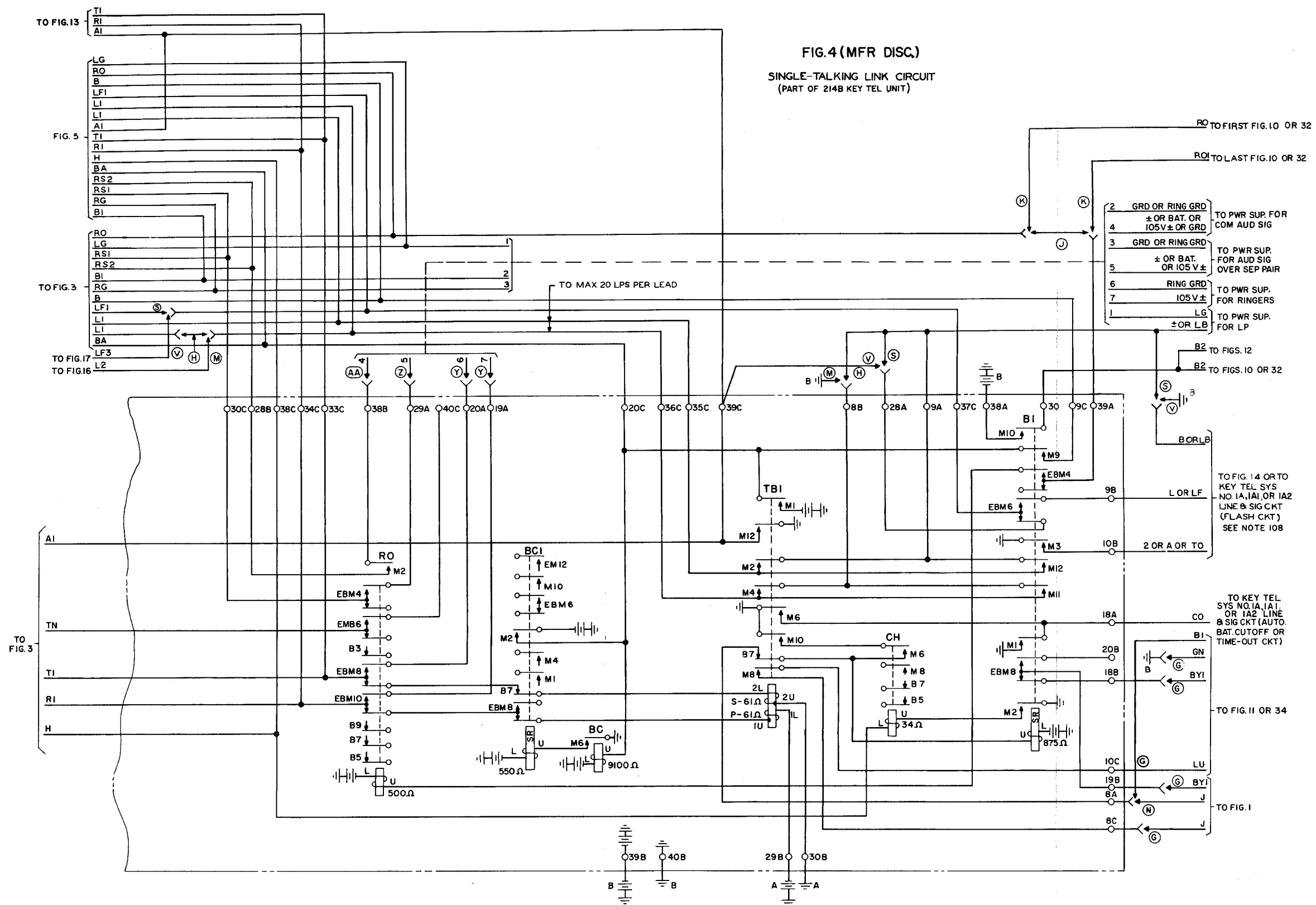
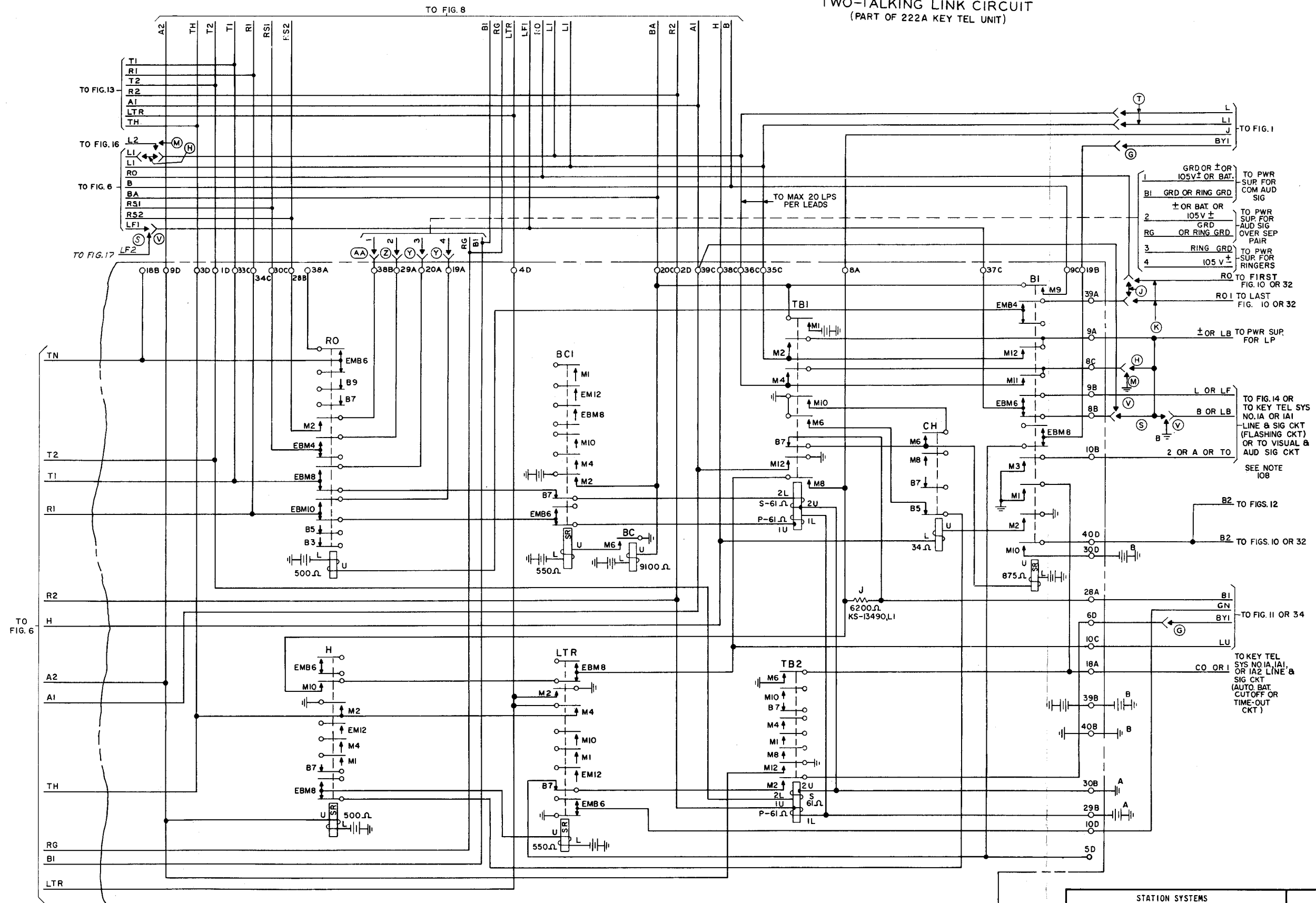
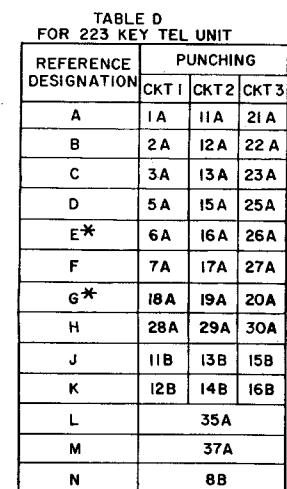


FIG.7 (MFR DISC.)
TWO-TALKING LINK CIRCUIT
(PART OF 222A KEY TEL UNIT)



DRAWING ISSUE	
4D	ST/NA
5D	ST/DA DHC
6D	LJL DHC PD
7D	JML RAB PEG



STATION SYSTEMS

KEY TELEPHONE SYSTEM NO. 6A
INTERCOMMUNICATING LINE CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

SD-69286-01-C8

6S PRINTED IN U. S. A.

DRAWING ISSUE	
4D	ST/MS DHC
5D	LJL DHC
6D	PD

FIG. 9
SIGNAL KEY
SEE NOTE 106

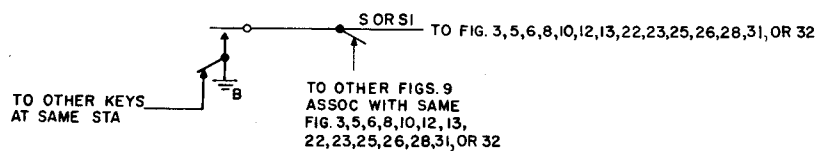
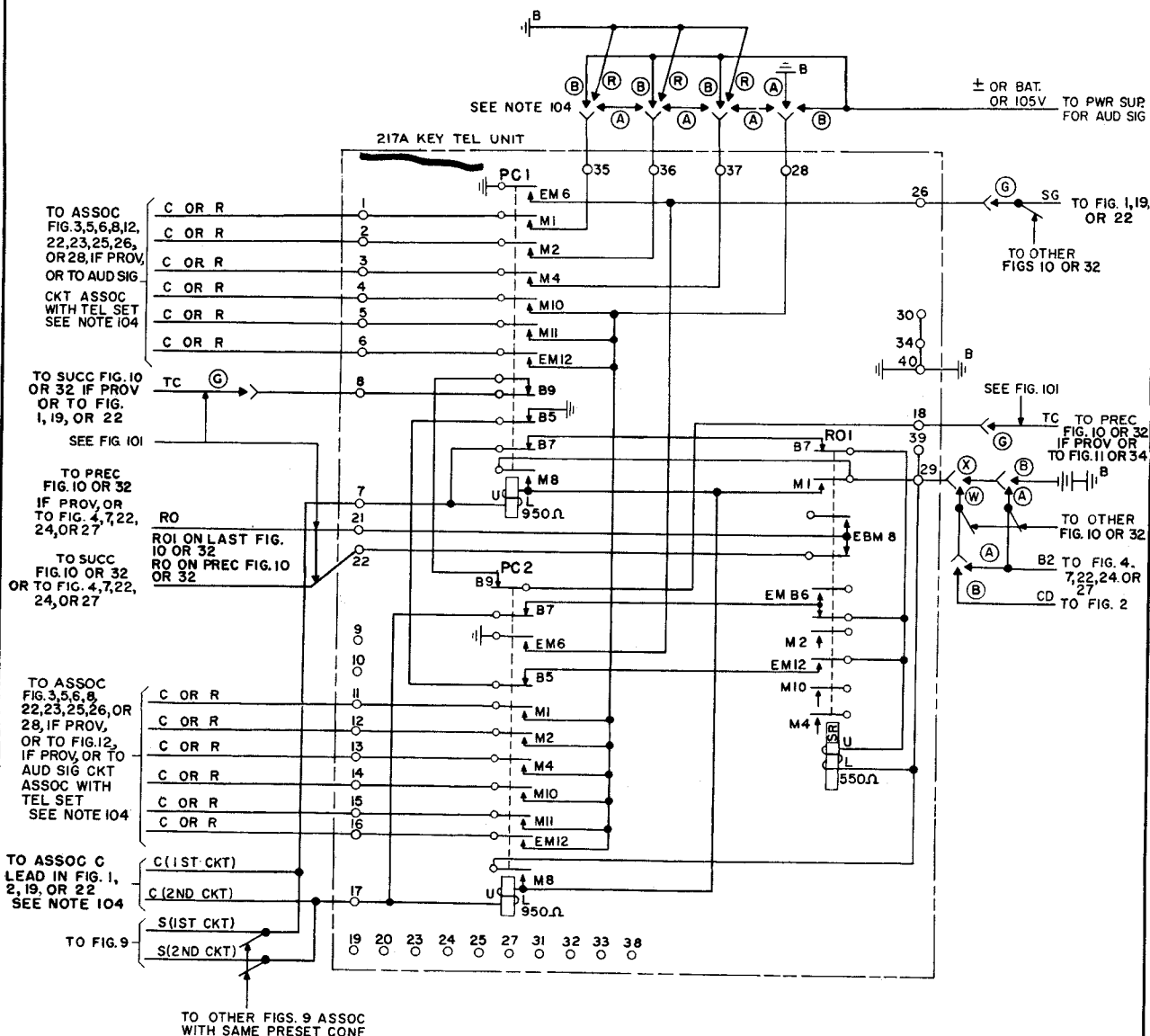


FIG. 10 (MFR DISC)
PRESET CONFERENCE CIRCUIT



DRAWING ISSUE	
4D	ST/WJ -
5D	ST/BO DNC
6D	LJL DNC PD
7D	JHL RBB PES

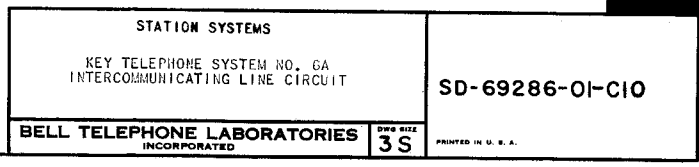
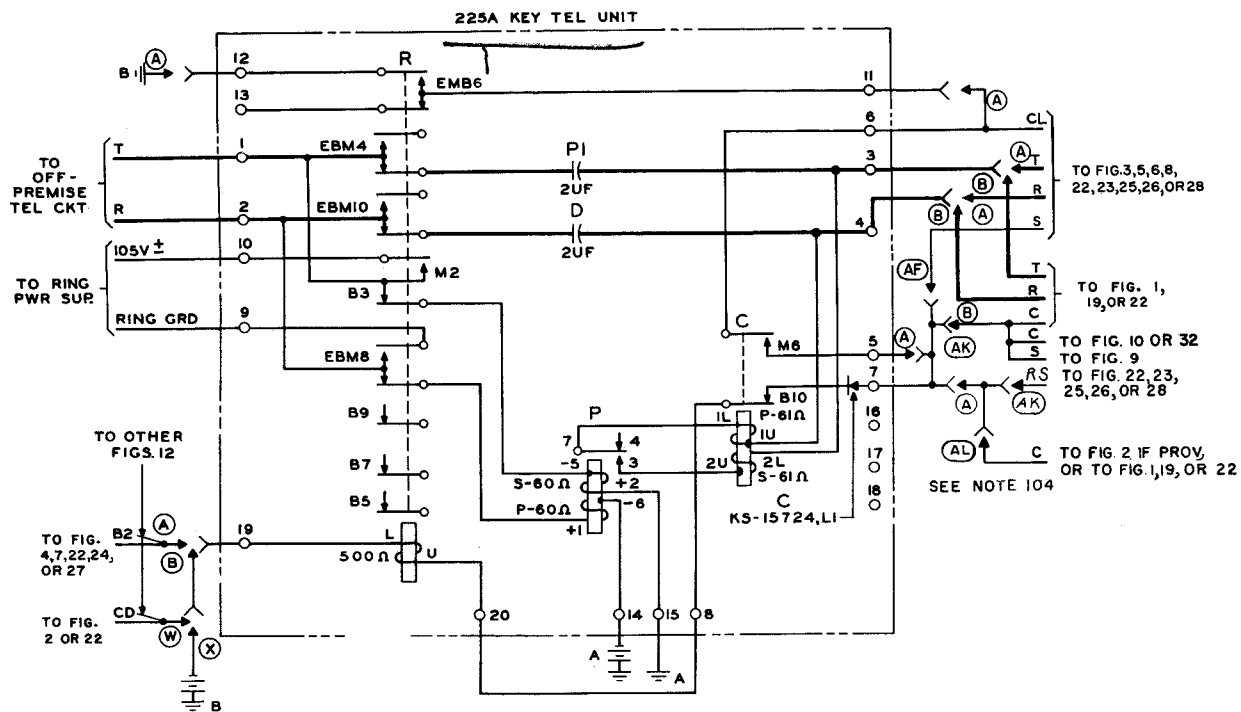
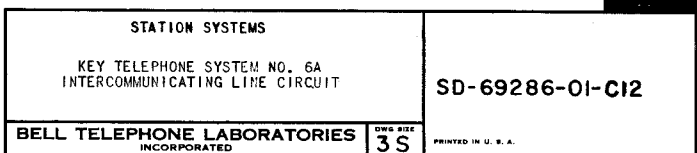


FIG. 12
LONG LINE CIRCUIT



DRAWING ISSUE	
4D	ST/WV
5D	ST/WV DHC
6D	LJU DHC PD
7D	JML RBB PES



DRAWING	ISSUE
4D	17/10/55
5D	17/11/55
6D	17/12/55
7D	17/1/56

FIG.14
FLASHING & BUSY CIRCUIT

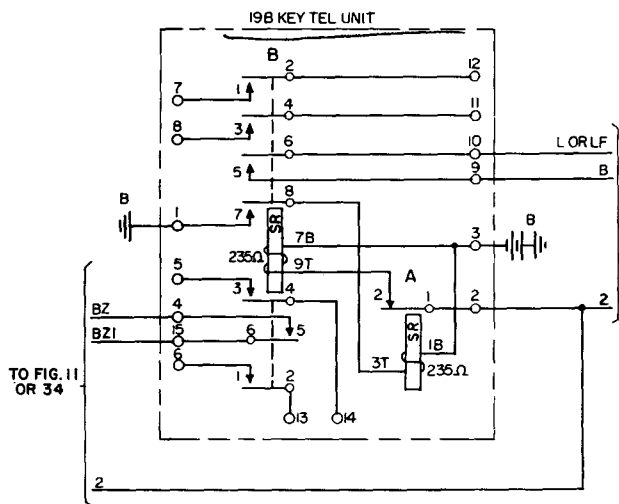


FIG.15 (MFR DISC.)
AUXILIARY RELAY-STATION CIRCUIT
SEE NOTE 105

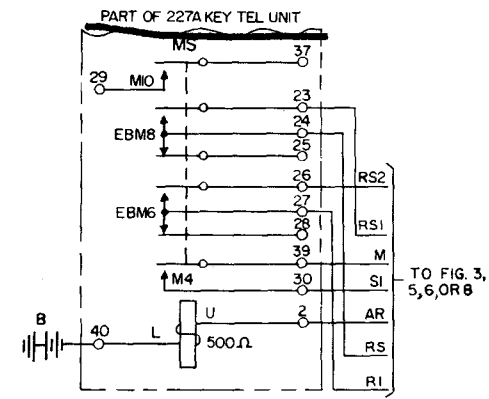


FIG.16
AUXILIARY RELAY-BUSY LAMP CIRCUIT
SEE NOTE 107

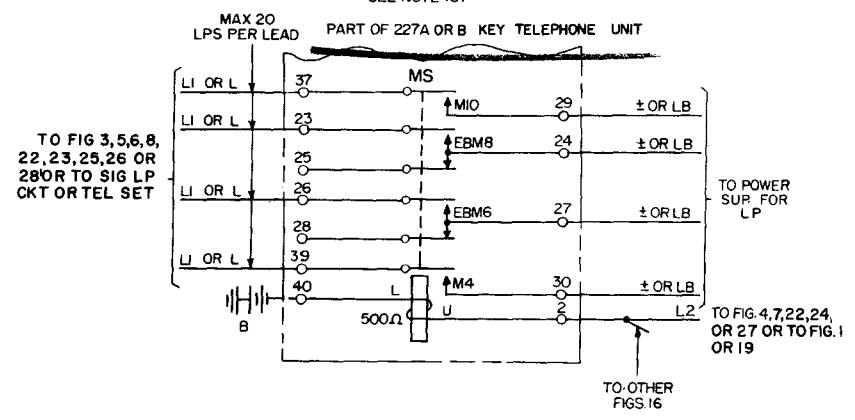
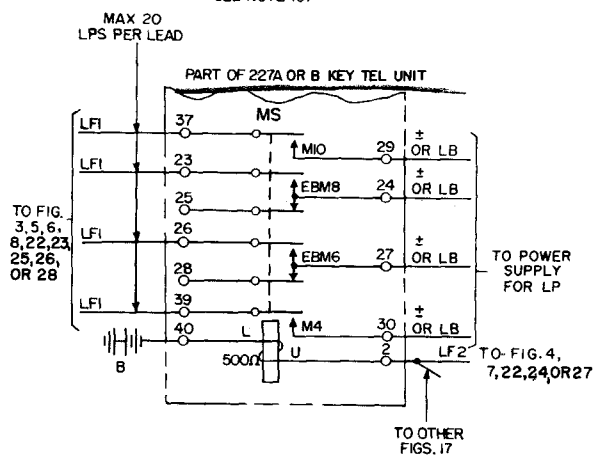
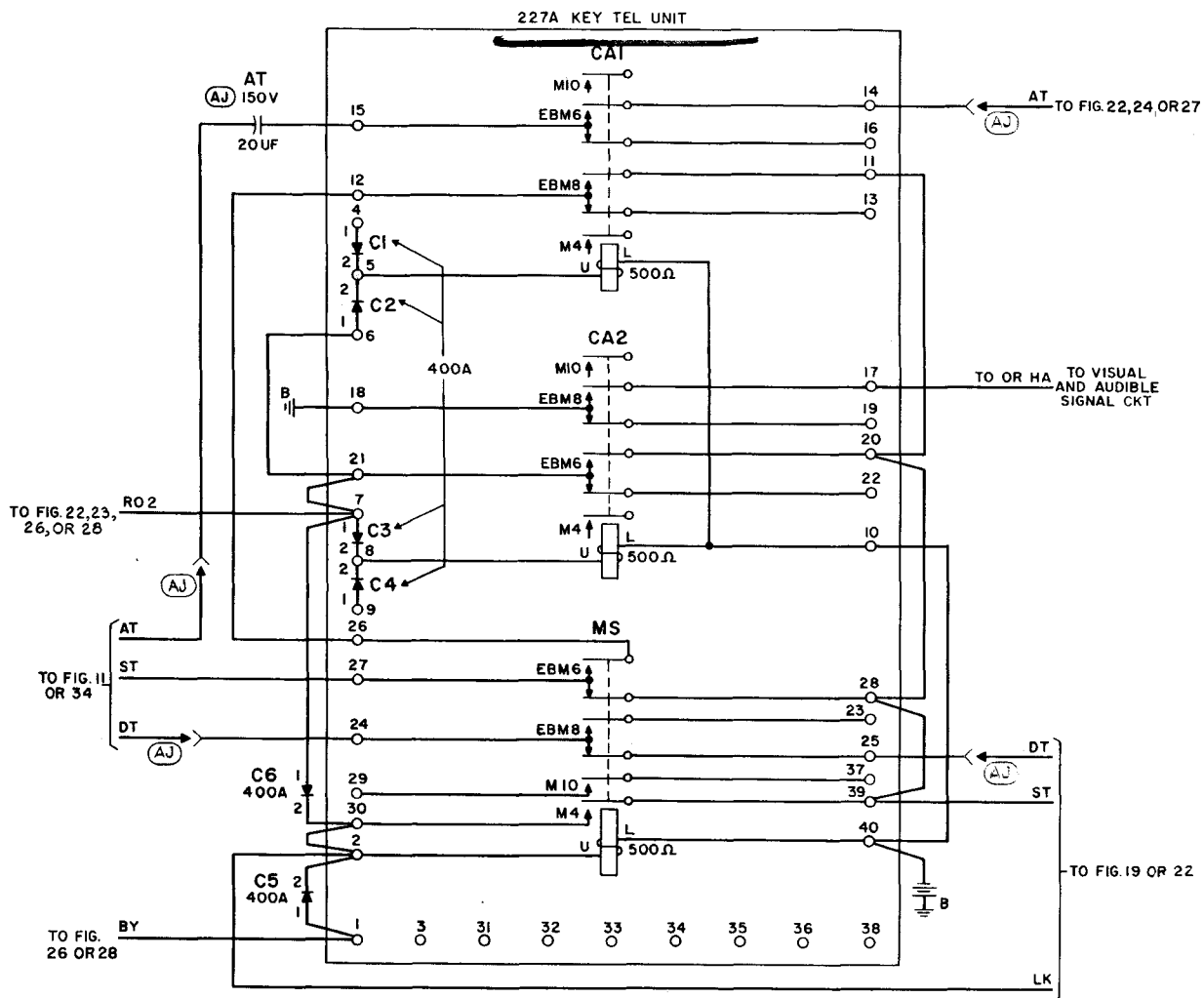


FIG.17
AUXILIARY RELAY-LAMP FLASH CIRCUIT
SEE NOTE 107



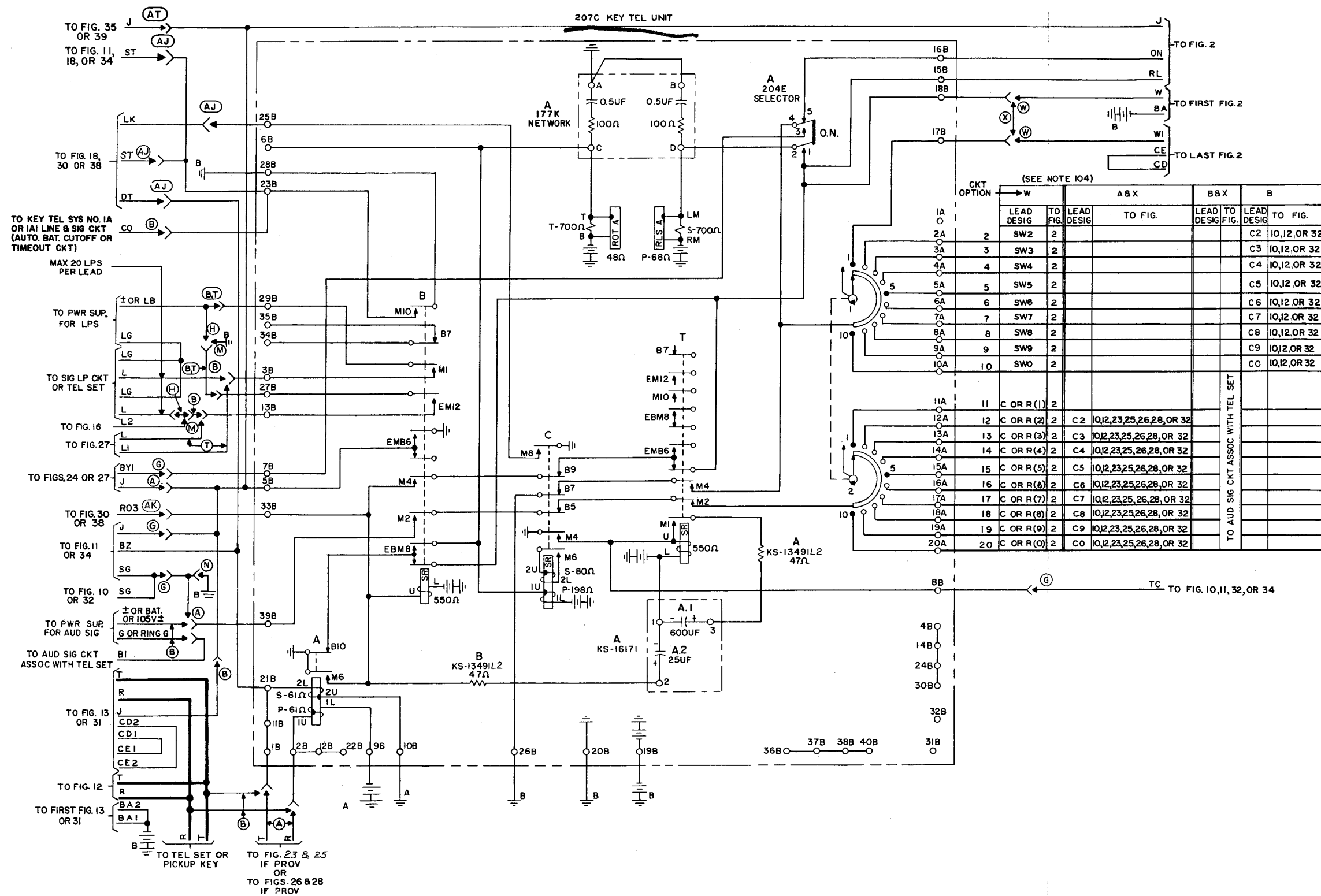
STATION SYSTEMS		SD-69286-01-C13
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT		
BELL TELEPHONE LABORATORIES INCORPORATED	DWG. SIZE 3S	PRINTED IN U. S. A.

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



PRINTED IN U. S. A.

FIG. 19
SELECTOR CIRCUIT



DRAWING ISSUE	
5D	1/11 DLC
6D	1/11 DLC
7D	1/11 DLC
8D	1/11 DLC

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

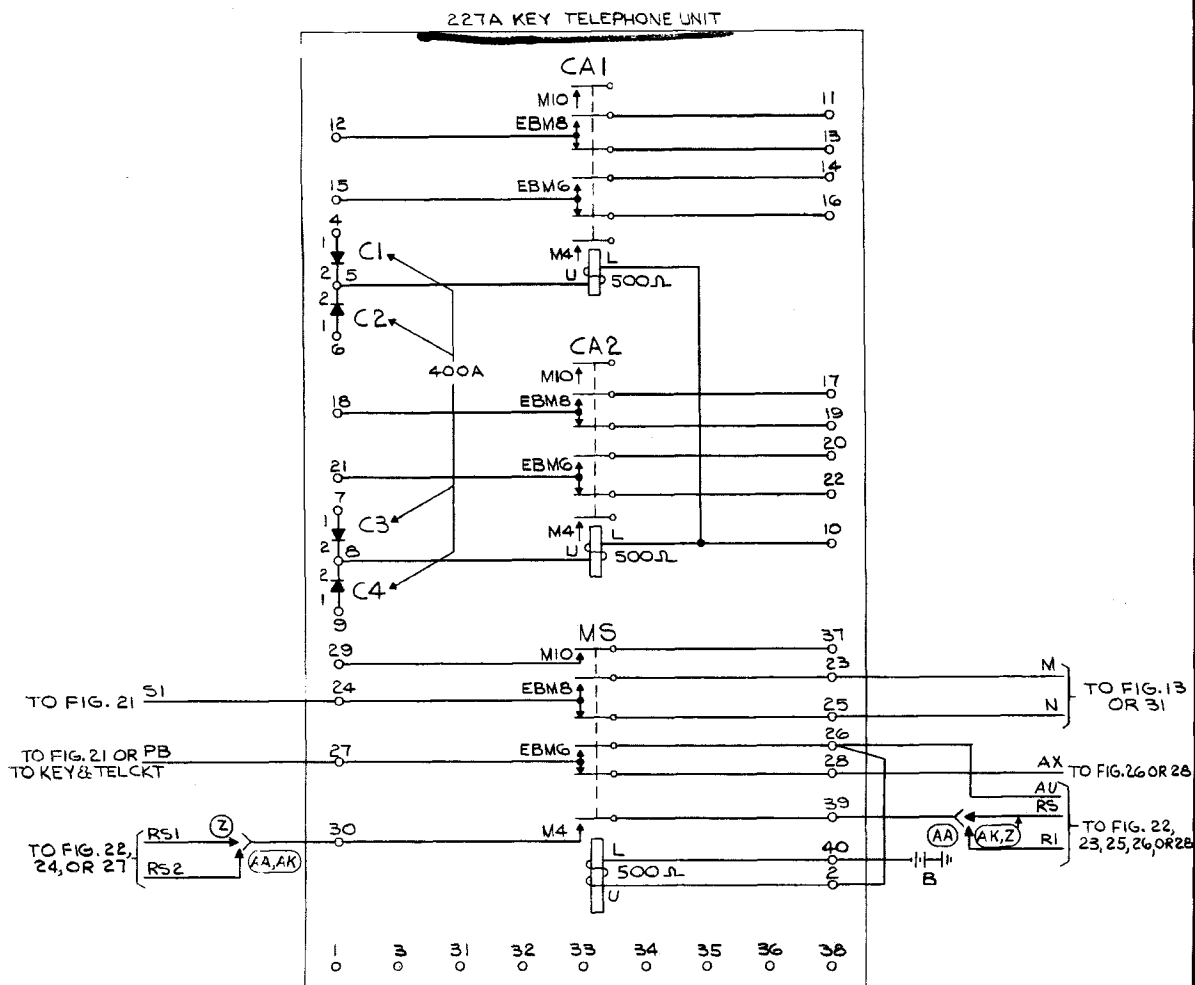
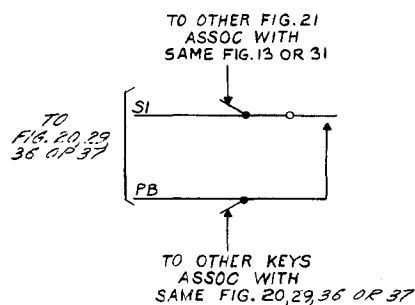


FIG. 21
ADD-ON KEY



STATION SYSTEMS

KEY TELEPHONE SYSTEM NO. 6A
INTERCOMMUNICATING LINE CIRCUIT

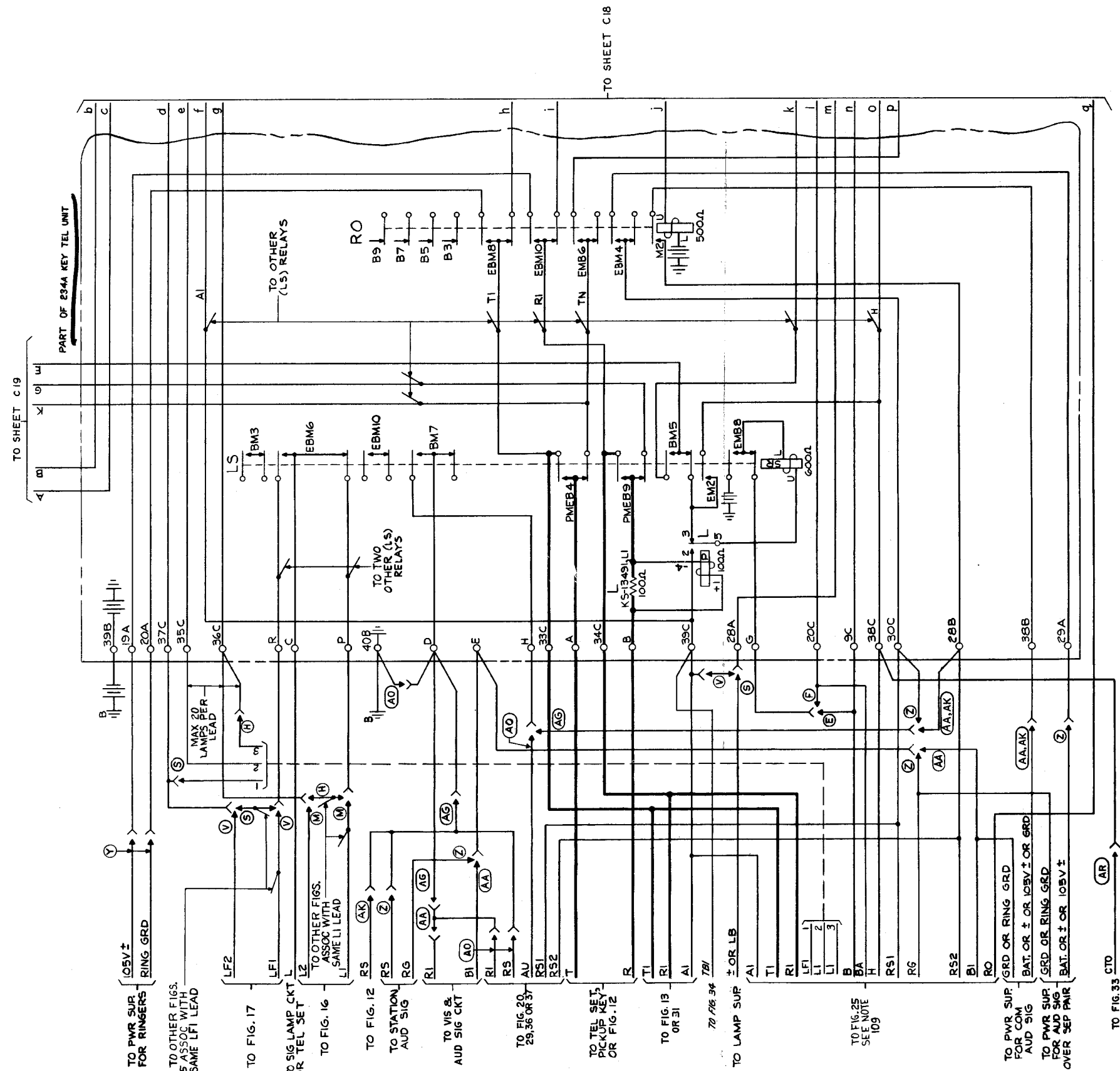
SD-69286-01-C16

BELL TELEPHONE LABORATORIES
INCORPORATED

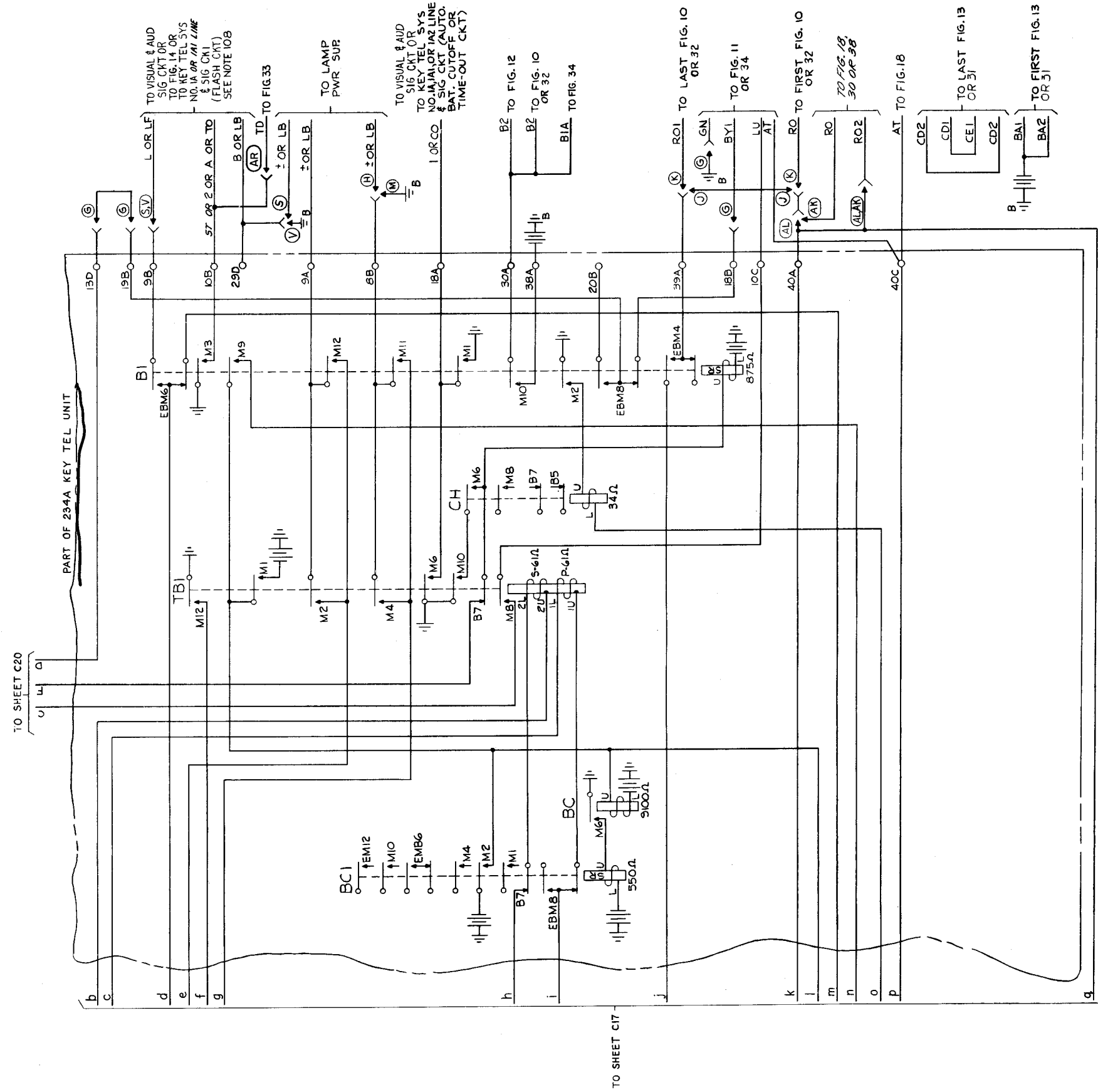
DWG SIZE
35

PRINTED IN U. S. A.

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



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



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

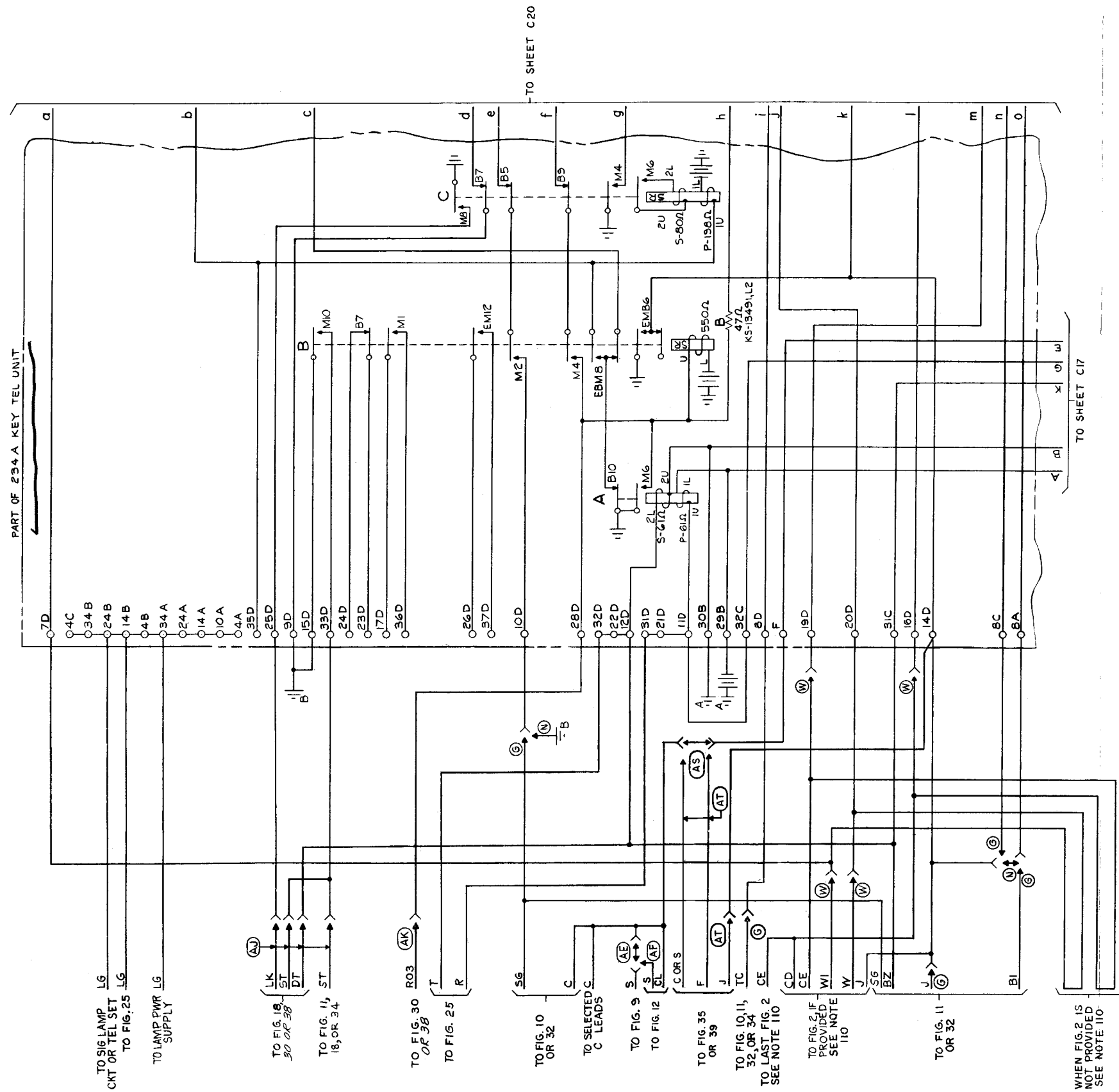


TABLE FOR 234A KEY TEL UNIT

REF	DESIG	CT	KT	2CT	3CT	4CT	5CT	6CT	7CT	8CT	9CT
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	4A	14A	24A	34A	4B	14B	24B	34B	4C		
E	5A	15A	25A	35A	5B	15B	25B	35B	5C		
F	6A	16A	26A	36A	6B	16B	26B	36B	6C		
G	7A	17A	27A	37A	7B	17B	27B	37B	7C		
H	8A	18A	28A	38A	8B	18B	28B	38B	8C		
P	1D	2D	3D	4D	5D	6D	7D	8D	9D		
R	10D	11D	12D	13D	14D	15D	16D	17D	18D		

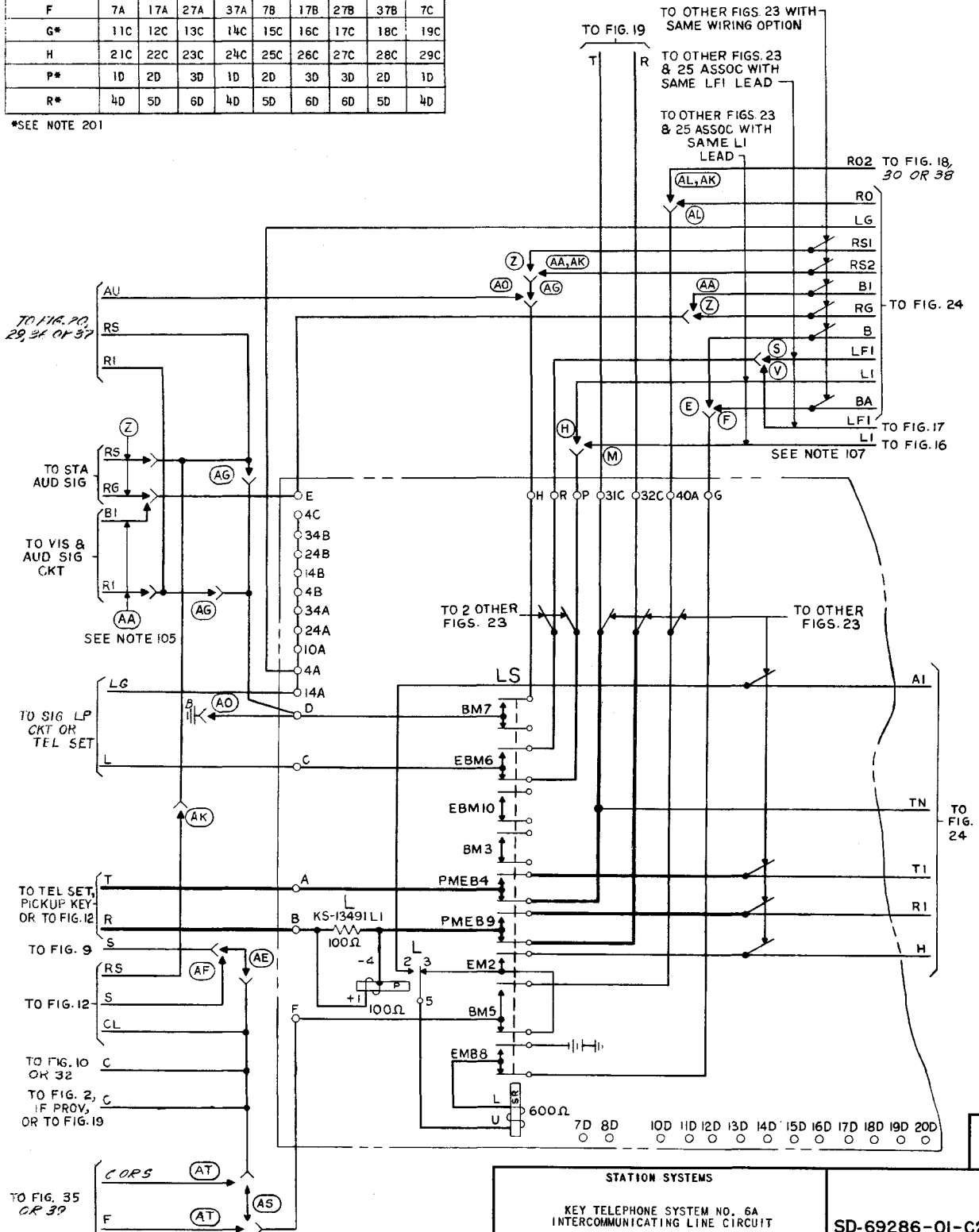
* SEE NOTE 201

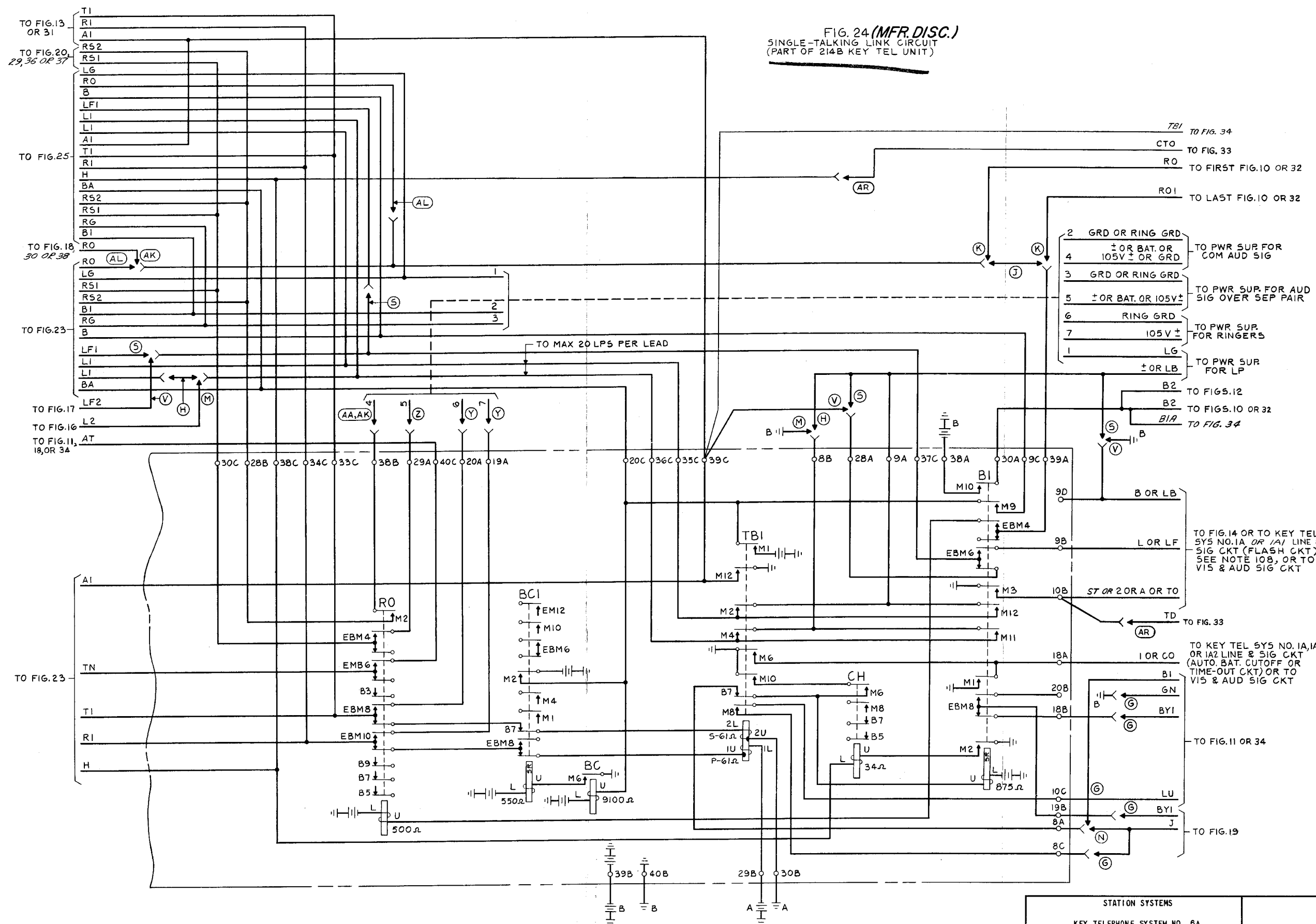
TABLE A FOR 214B KEY TEL UNIT

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





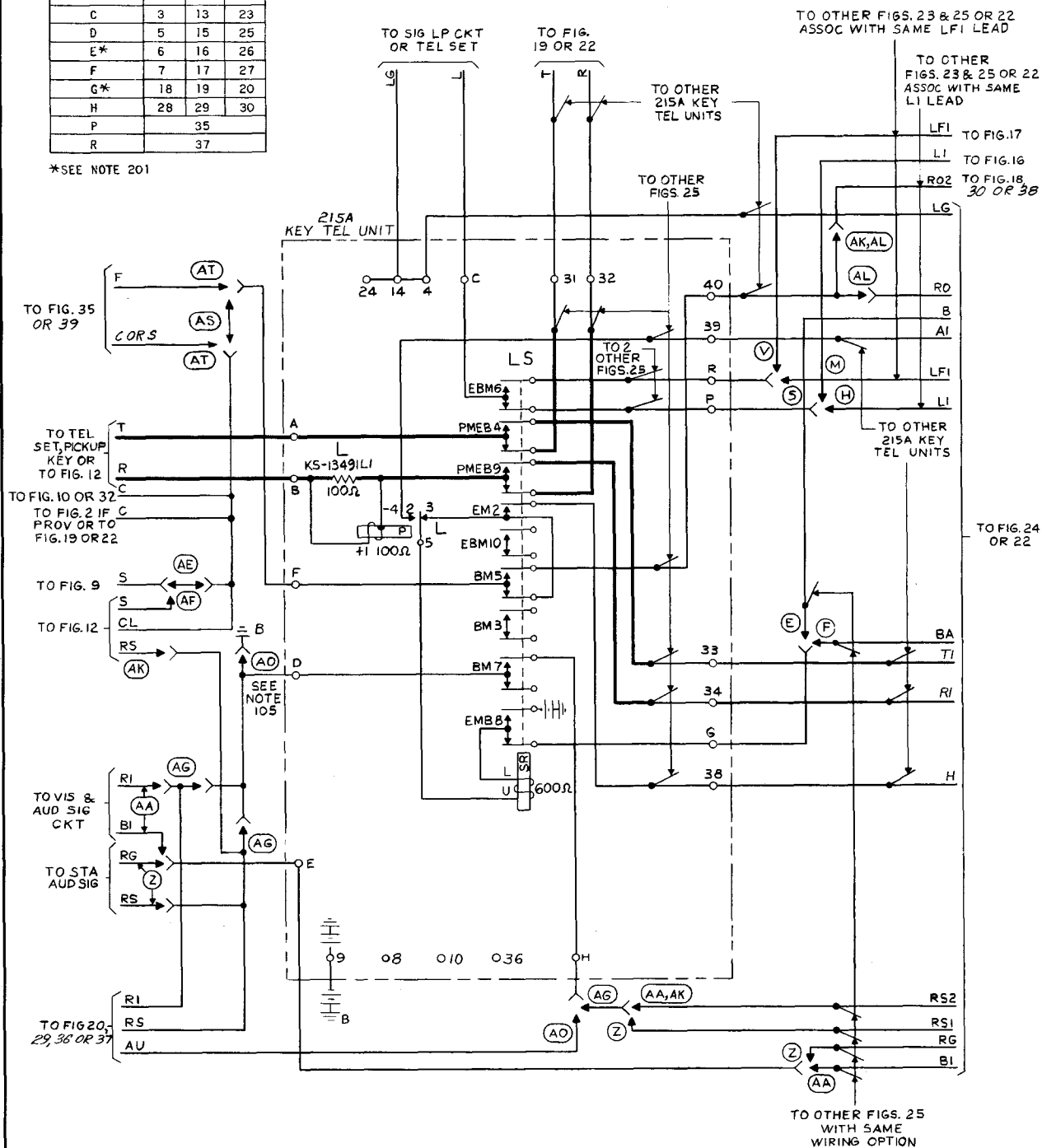
STATION SYSTEMS		SD-69286-01-C22
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT		
BELL TELEPHONE LABORATORIES INCORPORATED	OWN SIZE 6S	PRINTED IN U. S. A.

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		

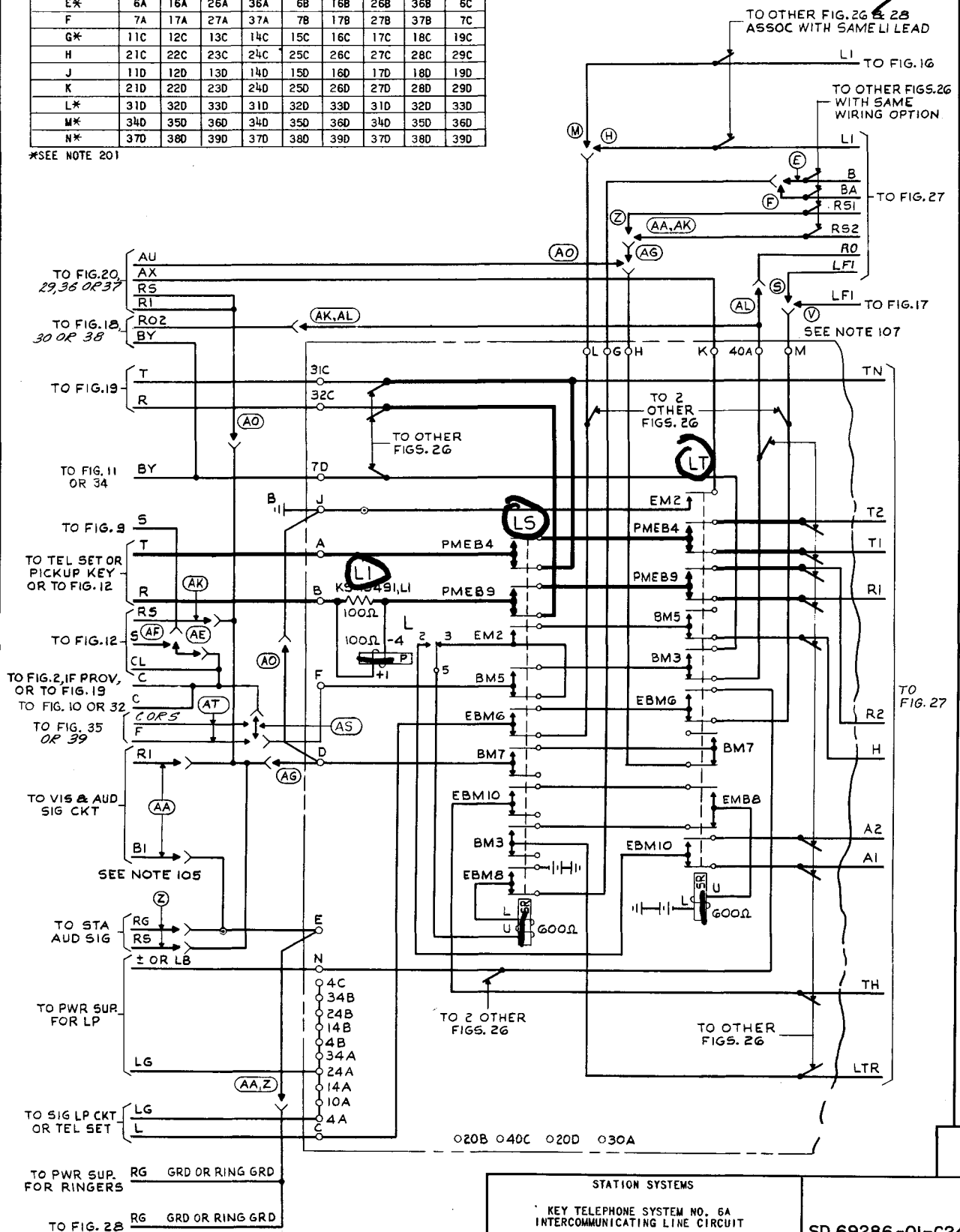
*SEE NOTE 201

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



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

DRAWING ISSUE	
50	5/08 DHC
60	LJL DHC PD
70	JHL RBB PFG



SD-69286 -OI-C24

DWG SIZE
35

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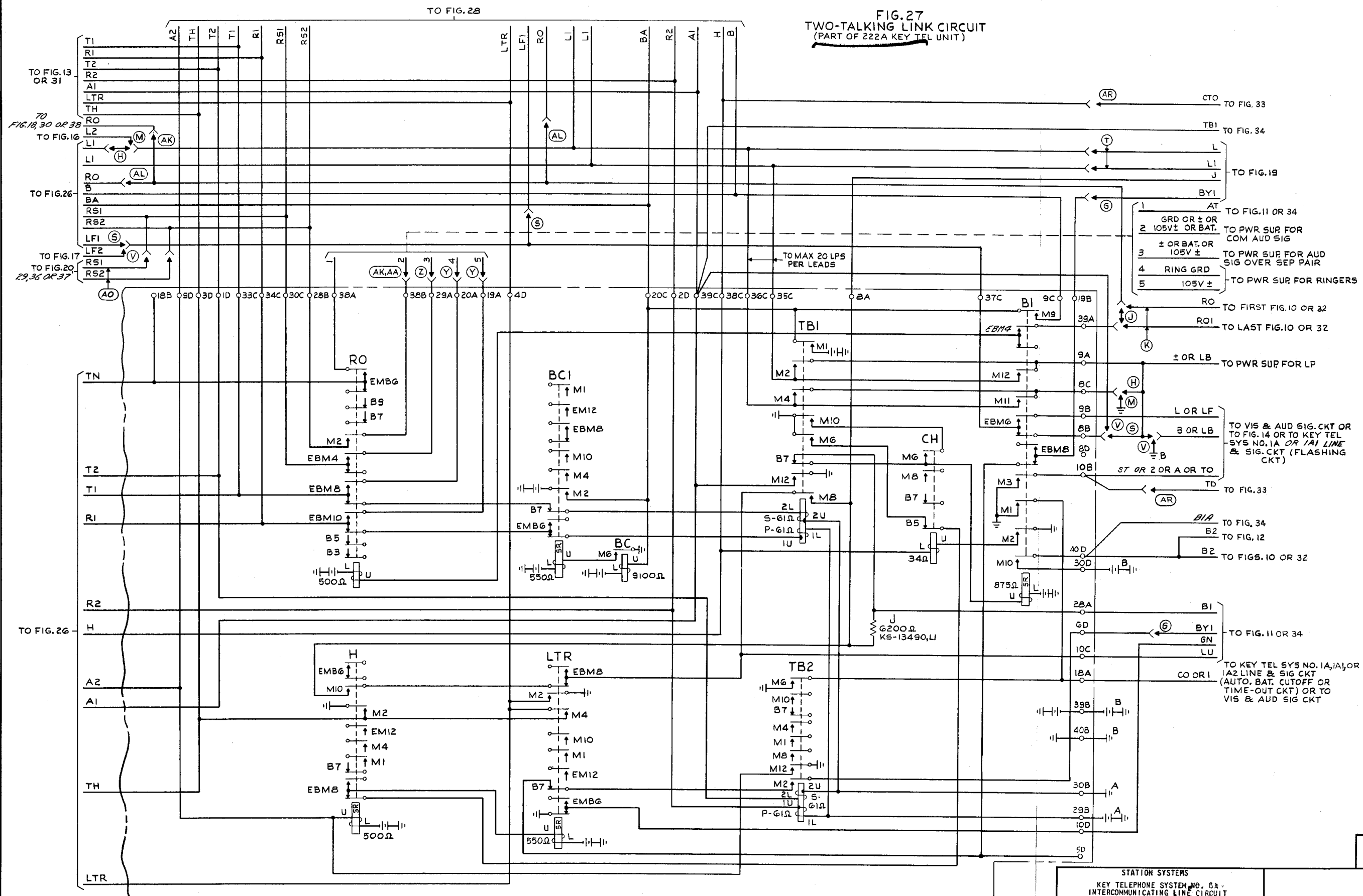


FIG. 28
STATION SIGNALING CIRCUIT
TWO-LINK OPERATION
(PART OF 223A KEY TEL UNIT)
SEE TABLE D

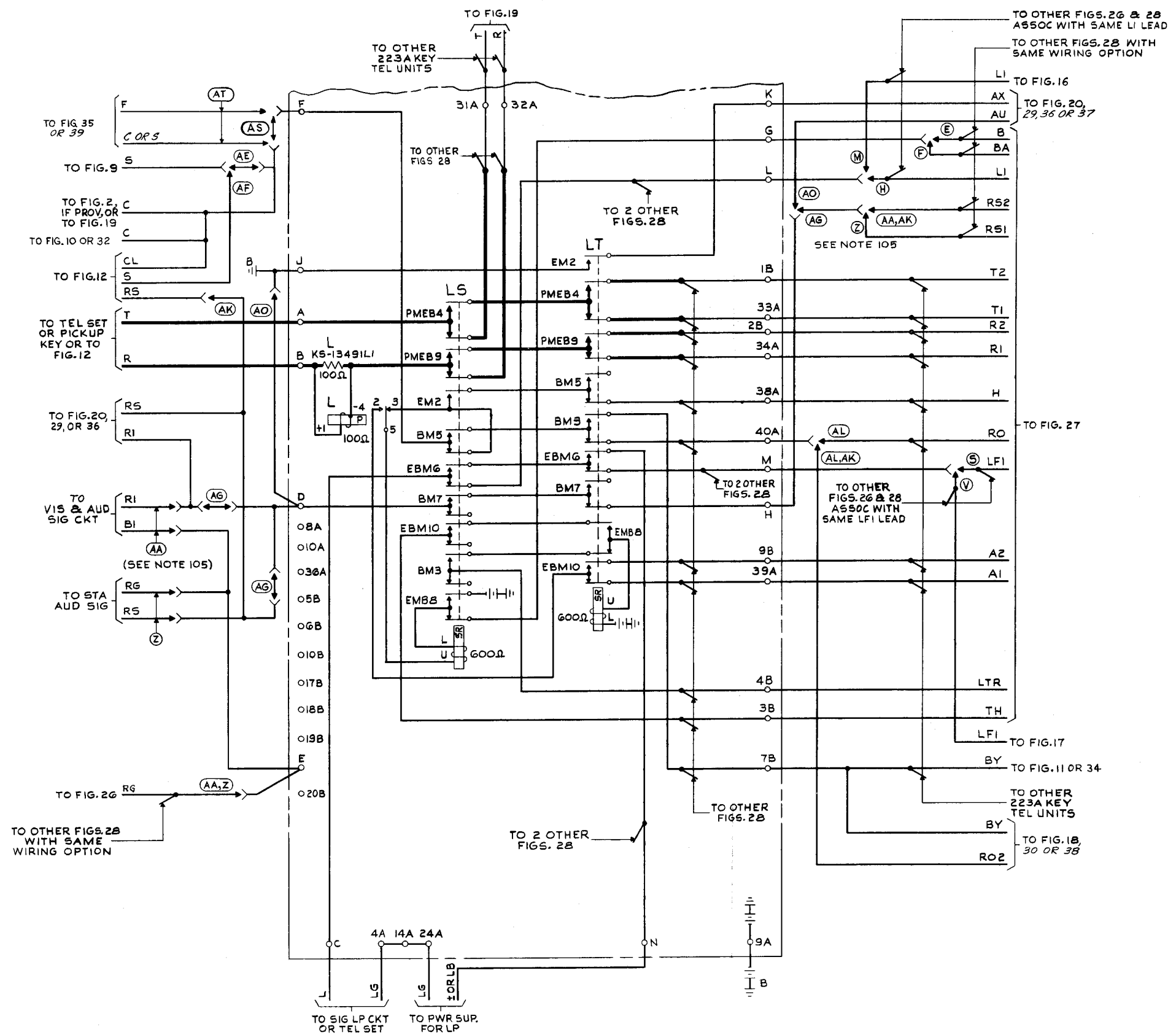


TABLE D
FOR 223 KEY TEL UNIT

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 ISSUE	
5D	SYNOPSIS
6D	DETAILS
7D	REVISIONS

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

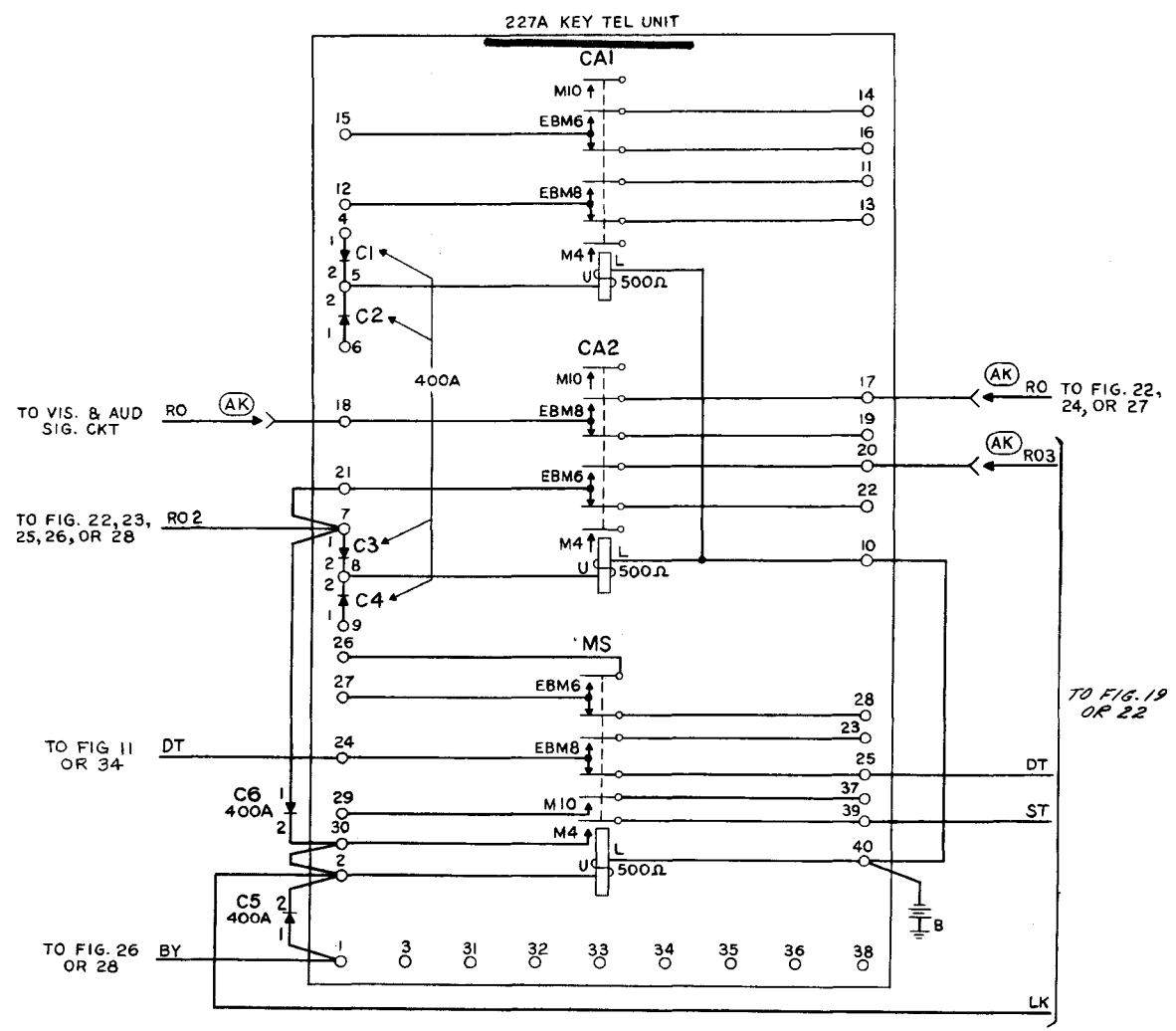


FIG. 29 (MFR DISC)
MULTIPLE ADD-ON TRANSFER CIRCUIT
SEE NOTE 105

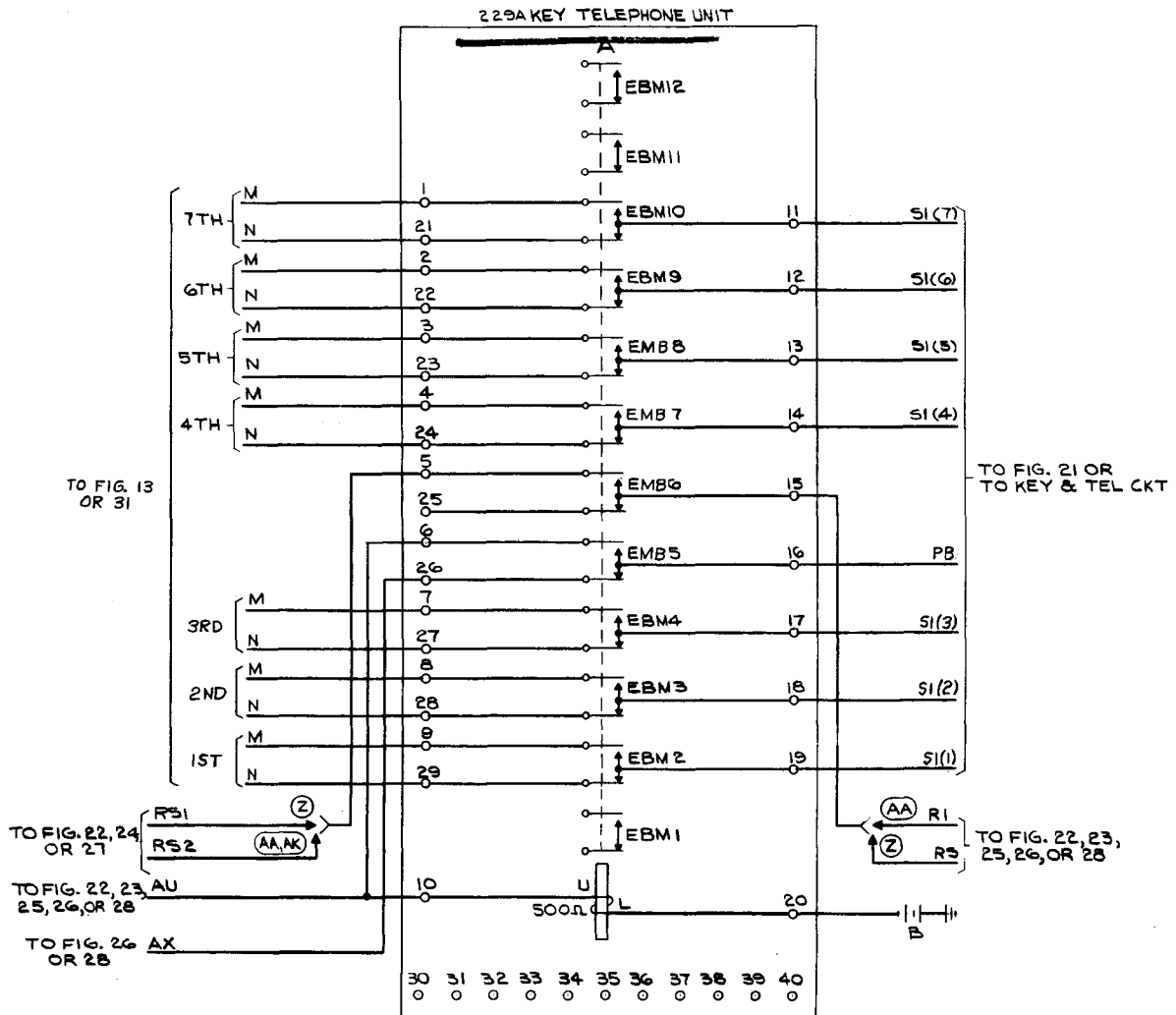
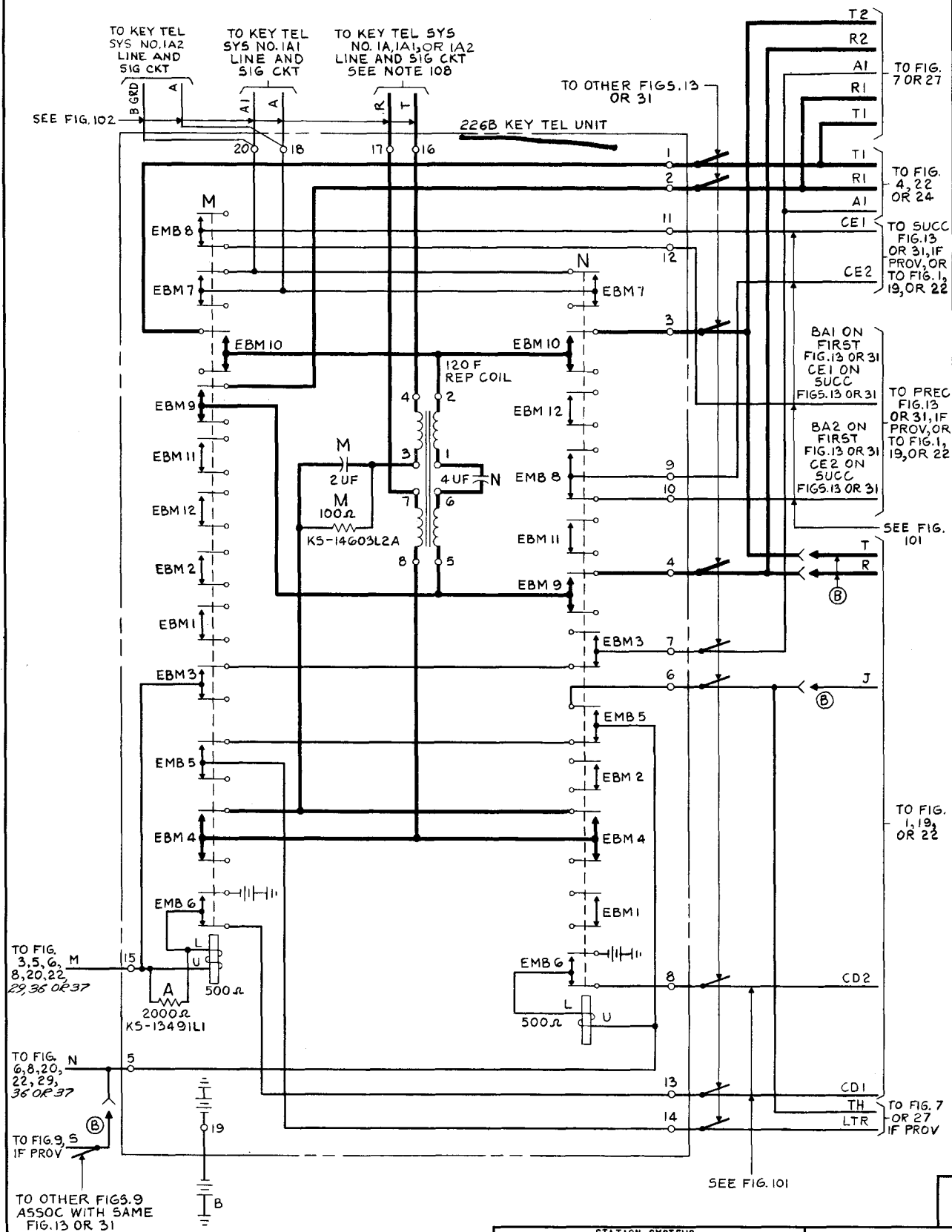


FIG. 31
ADD-ON CONFERENCE CONTROL CIRCUIT

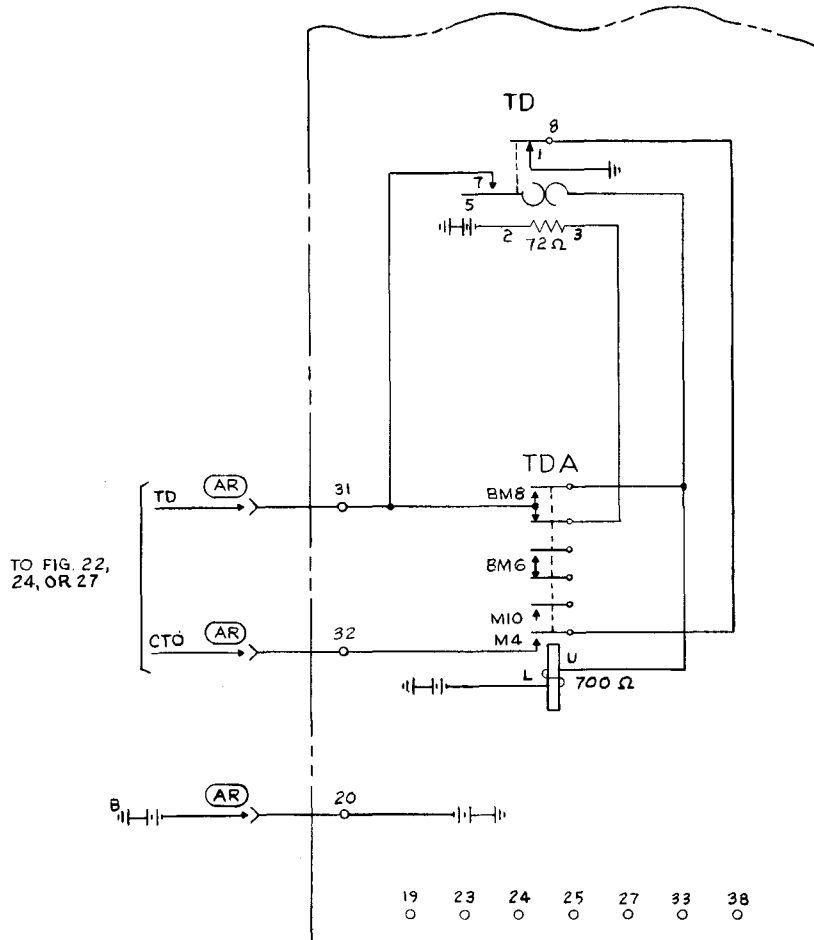
DRAWING ISSUE	
5D	ST/1 DHC
6D	L/L DHC PD
7D	M/K DHC 225



STATION SYSTEMS	
KEY TELEPHONE SYSTEM NO. 6A INTERCOMMUNICATING LINE CIRCUIT	
BELL TELEPHONE LABORATORIES INCORPORATED	SD-69286-01-C29
OWS SIDE 3S	PRINTED IN U.S.A.

SD-69286-01-C30

FIG. 33
CONFERENCE TIME-OUT CIRCUIT
PART OF 217B KEY TEL UNIT



STATION SYSTEMS

KEY TELEPHONE SYSTEM NO. 6A
INTERCOMMUNICATING LINE CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

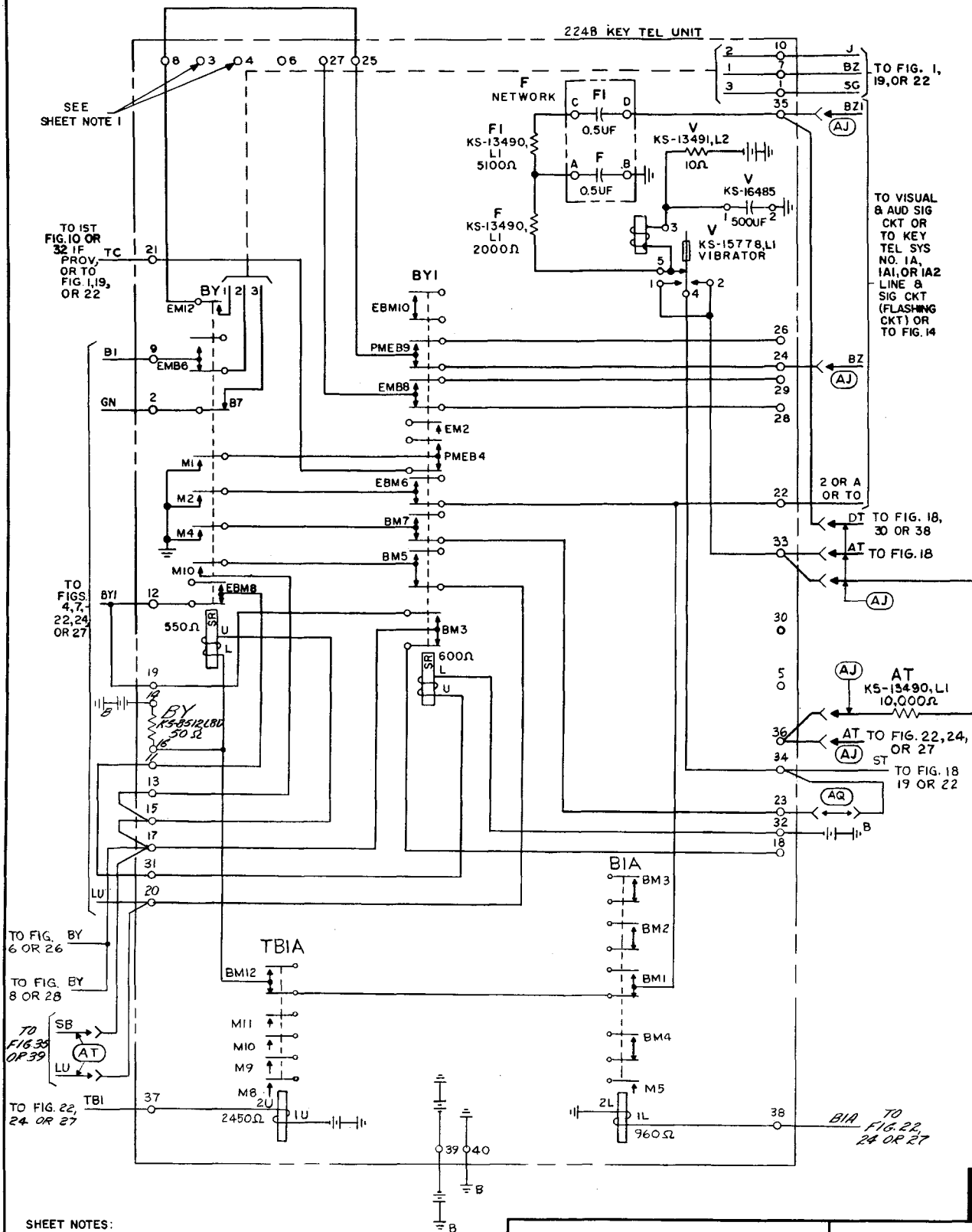
OWN SIZE
3S

SD-69286-01-C31

PRINTED IN U.S.A.

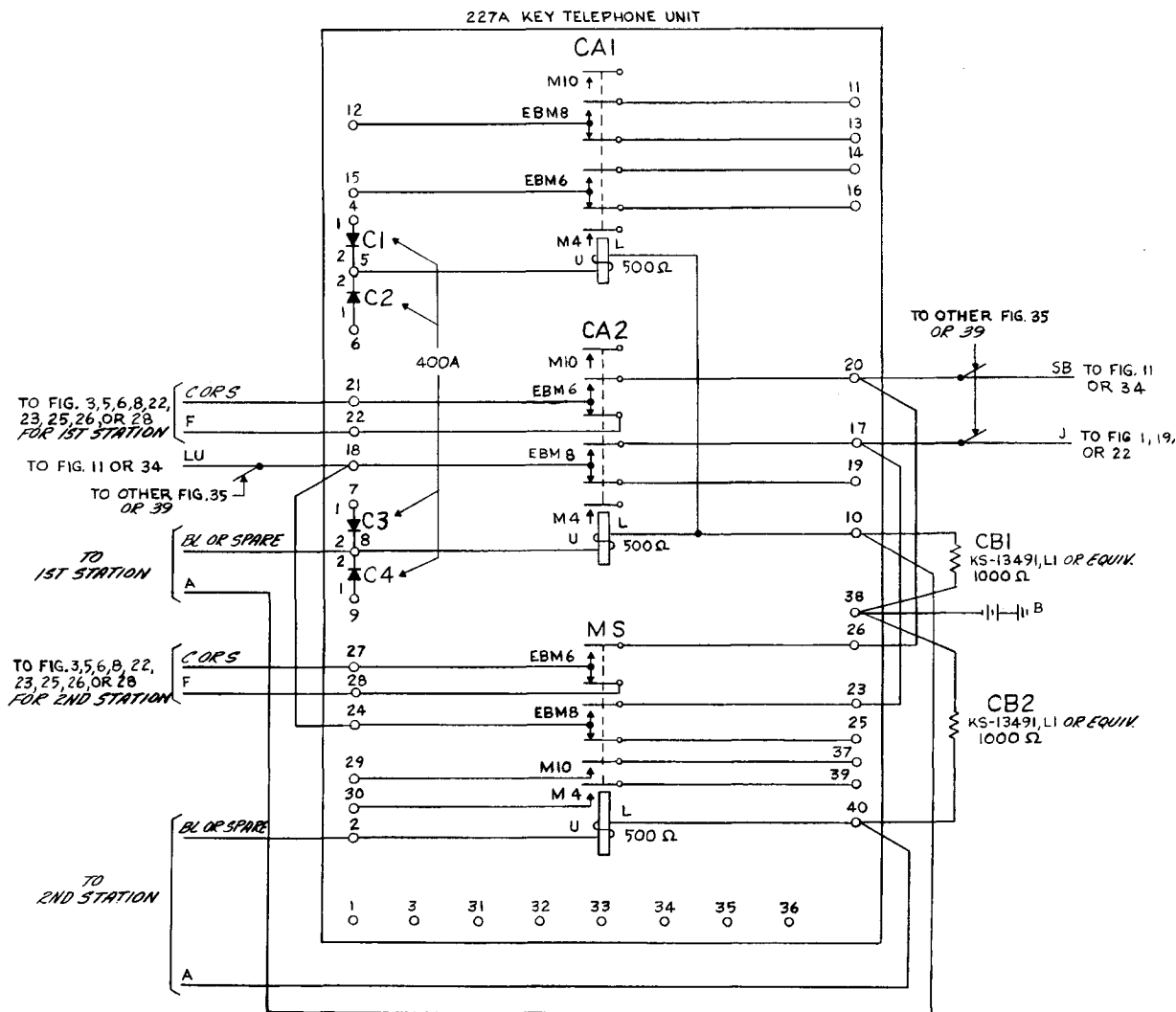
FIG. 34
BUSY SIGNAL AND CAMP-ON CONTROL CIRCUIT

DRAWING	ISSUE
6D	1. J. L. D. H. C. P. O.
7D	J. L. D. H. C. P. O.



SHEET NOTES:
1. TERMINALS 3 & 4 NOT AVAILABLE FOR FUTURE USE DUE TO INTERFERENCE FROM (BY) RESISTOR.

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



STATION SYSTEMS

KEY TELEPHONE SYSTEM NO. 6A
INTERCOMMUNICATION LINE CIRCUIT

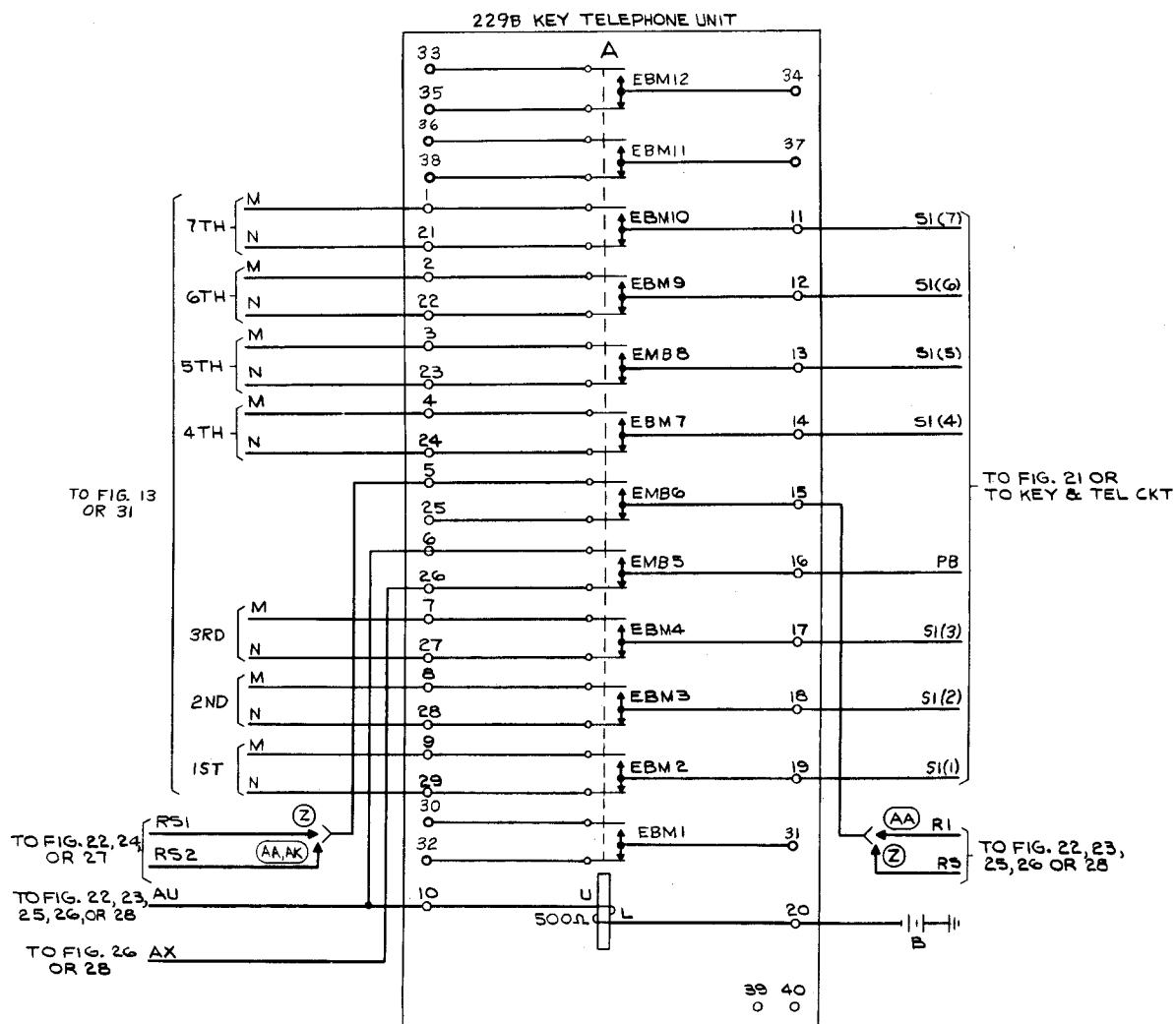
BELL TELEPHONE LABORATORIES
INCORPORATED

SDW SIZE
35

SD-69286-01-C33

PRINTED IN U.S.A.

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



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

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
3S

SD-69286-01-C34

PRINTED IN U.S.A.

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

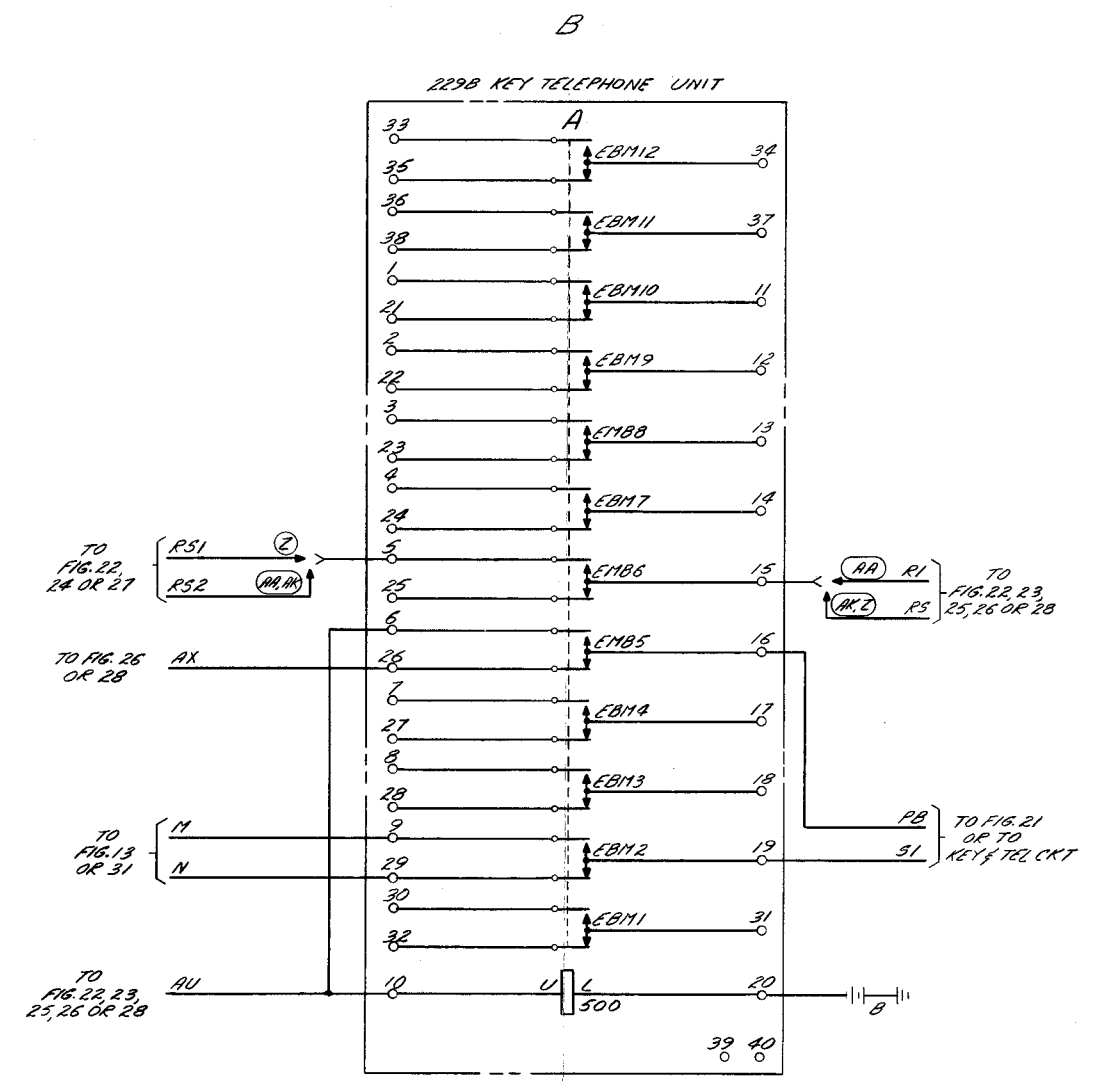
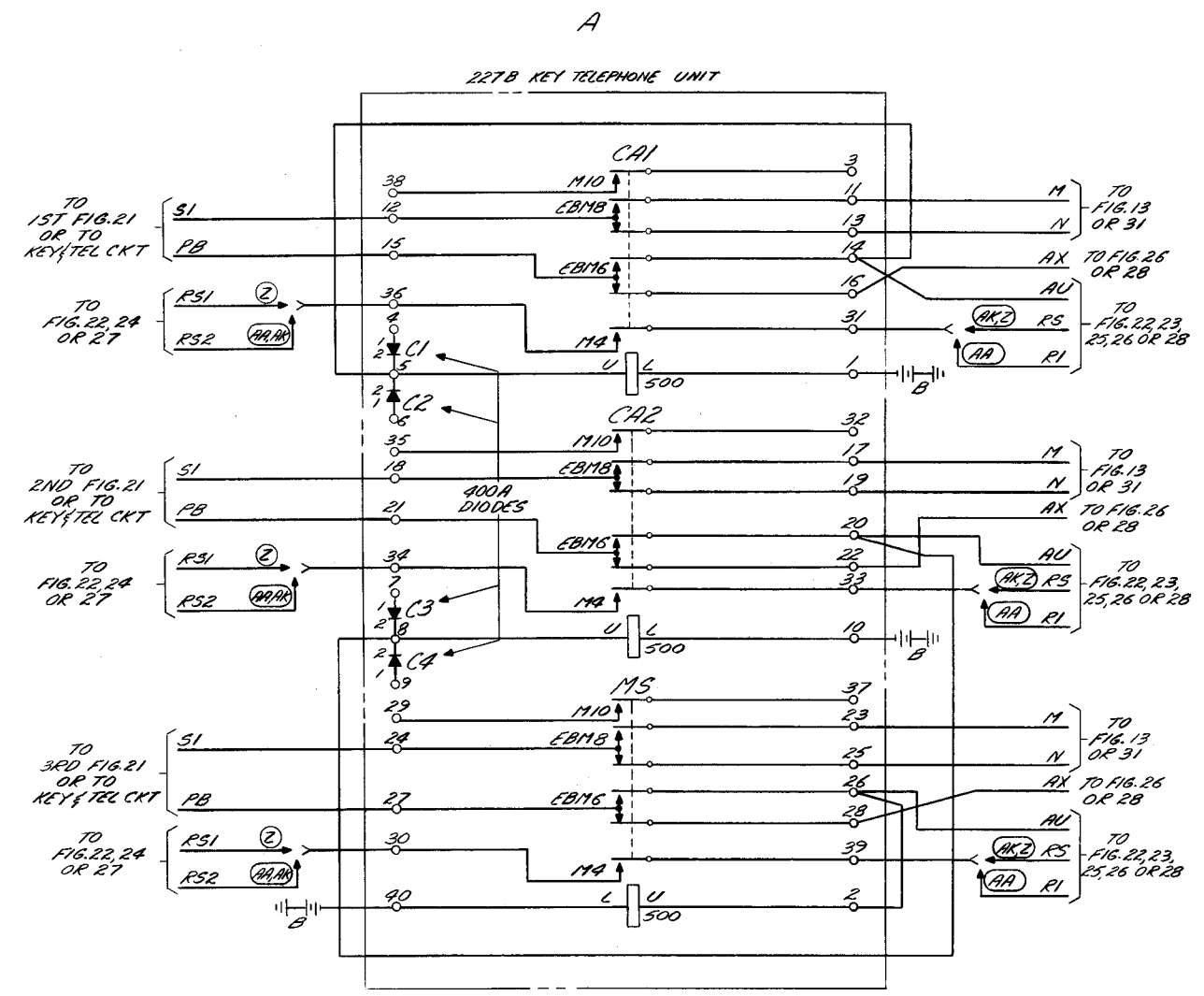


FIG. 38
RINGING & TONE CONTROL CIRCUIT

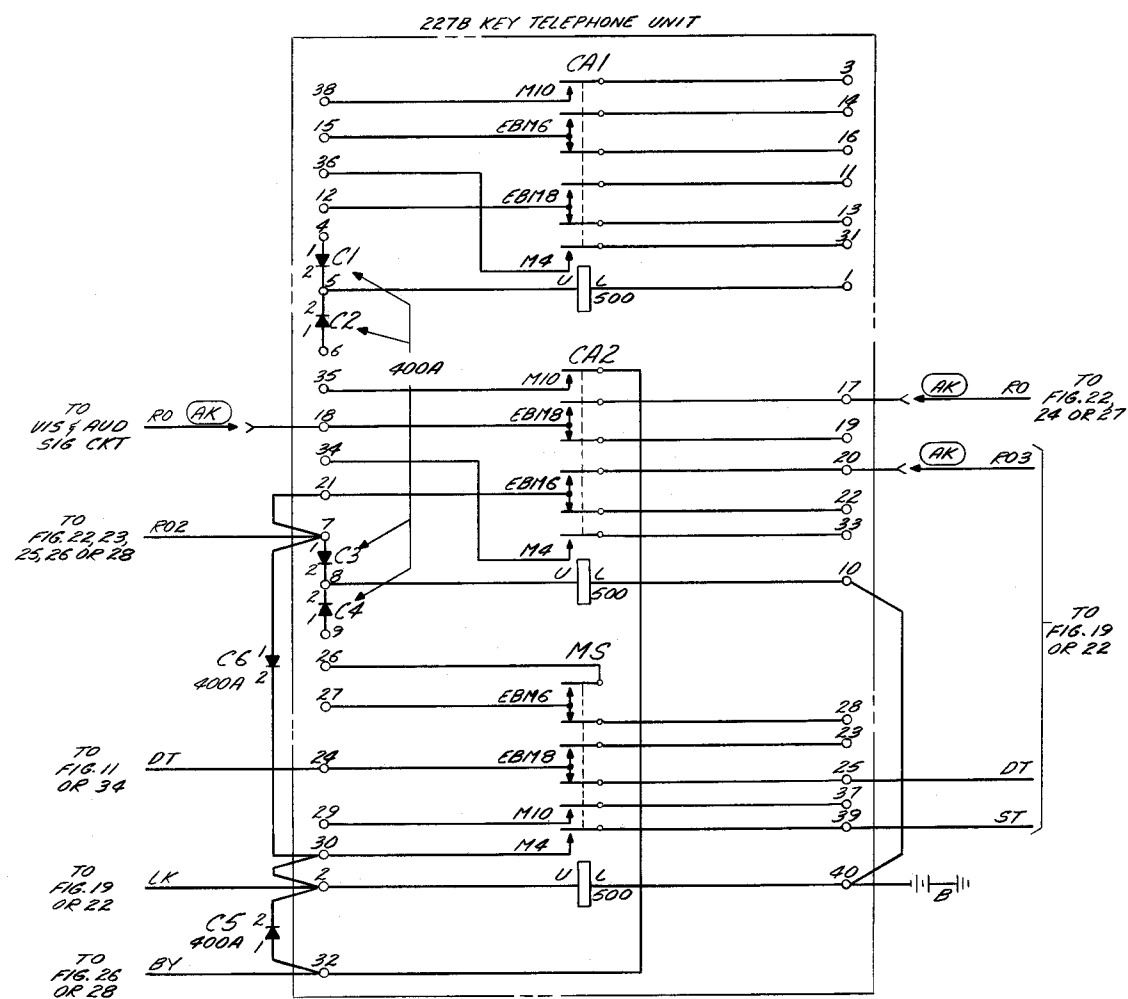
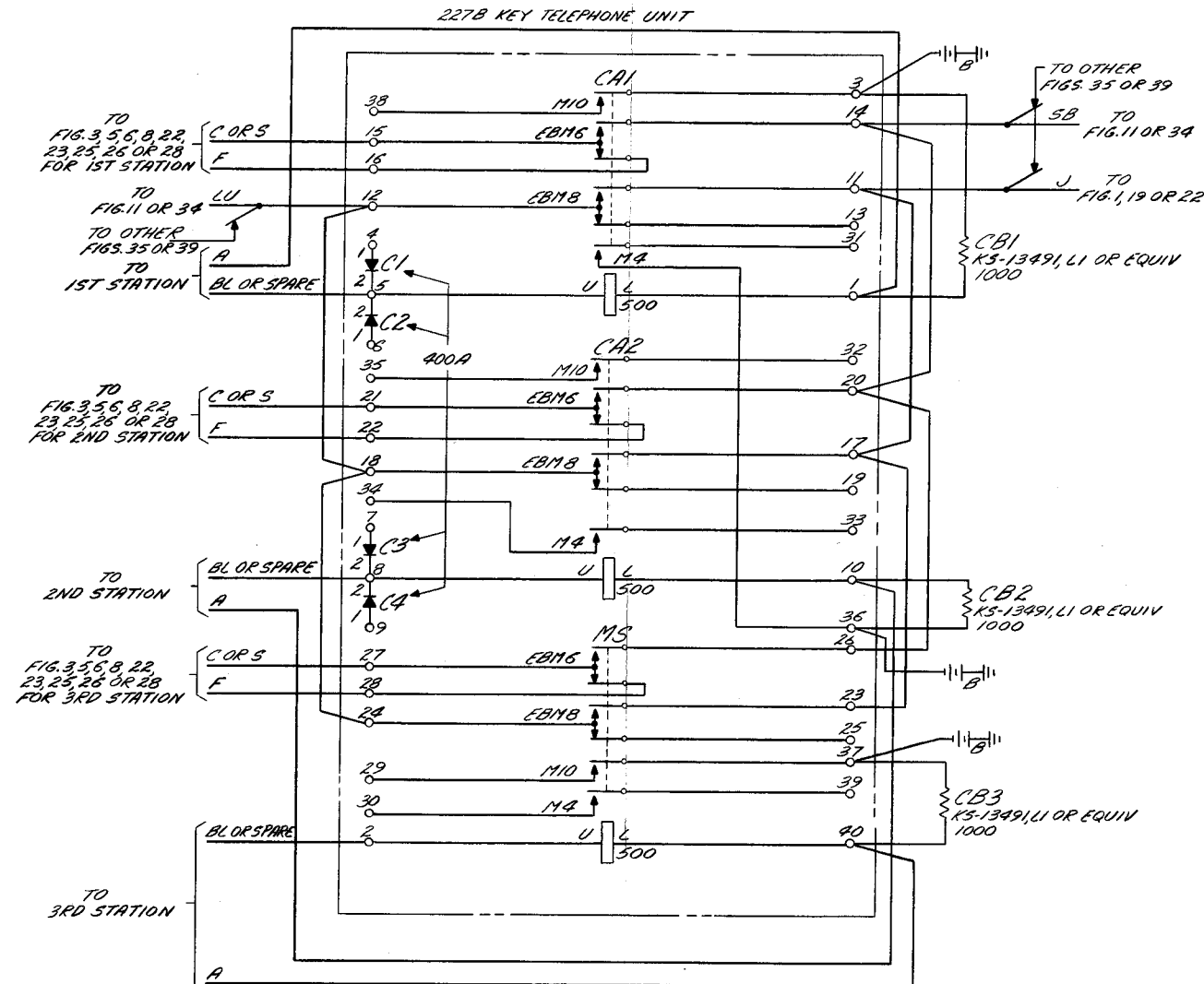


FIG. 39
STATION BUSY CIRCUIT
(SEE NOTE 113)



SD-69286-01 5 PAGES										CIRCUIT REQUIREMENTS										DRAWING ISSUE	
KEY TELEPHONE SYSTEM NO. 6A, INTERCOMMUNICATING LINE CIRCUIT																					
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 SET PREP	SEE TEST NOTE	TEST WDG	TEST FOR	AFTER SOAK	TEST	READJ					
								CONN BAT.	CONN GRD					MA.	MA.	MA.					
RELAYS																					
19B KEY TEL UNIT																					
A	Y221		14	131/164	H	SPL			3T(A)	GRD	1		O		54.0	51.0					
													NO		36.0	38.0					
													H		4.1	3.8					
													R		1.9	2.5					
B	Y284		14	212/123	SPL	29			9T(B)	GRD	1,2		O	FS	49.5	47.0					
											1		NO	FS	33.0	35.0					
											1		H	FS	8.3	7.9					
											1		R	FS	2.0	2.6					
207C KEY TEL UNIT																					
MAGNET																					
A	204E SEL		19						T(A)	GRD	3	ROT	O		330.0	300.0					
									TERM. 6B	GRD	4,5	ROT	O		400.0	380.0					
									TERM. 15B	GRD	6	RLS	O		165.0	150.0					
RELAYS																					
A	AJ40		19	52				TERM. 1B	TERM. 2B	M	7	P/S	O		17.5	16.5					
													R		0.1	0.2					
B	AG26		19	222B			(C)O		U(B)	GRD			O	FS	26.5	25.0					
													H	FS	4.1	3.9					
													R	FS	2.1	2.5					
C	AG27		19	45B			6(C)	2L(C)	2U(C)	B/G		S	O		47.5	45.0					
									1U(C)	GRD	8	P	O	FS	34.0	32.0					
											8	P	H	FS	4.8	4.5					
											8	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					
T	AG26		19	222B			1(T)		TERM. 8B	GRD			O	FS	26.5	25.0					
													H	FS	4.1	3.9					
													R	FS	2.1	2.5					
214B KTU (MFR DISC)																					
BC	AJ7		4, 24	1			(TB1)NO, (BC1)NO		TERM. 20C	GRD	9		O		1.7	1.6					
BC1	AG26		4, 24	222B					U(BC1)	GRD			O	FS	26.5	25.0					
													H	FS	4.1	3.9					
													R	FS	2.1	2.5					
B1	AG28		4, 24	268B			(TB1)O		U(B1)	GRD			O	FS	15.5	14.5					
													H	FS	2.5	2.3					
													R	FS	1.1	1.3					
CH	AF89		4, 24	41B			(B1)NO	L(CH)	U(CH)	B/G			O		47.5	45.0					
L	280M		4, 23	B				TERM. 32C	TERM. 31C	B/G	10		O	-54		1.1					
													NO	-54		0.8					
													O	-54	6.4	6.1					
													R	54	1.7	1.8					
LS	AG29		3, 23	408B			(B1)O		U(LS)	GRD			O	FS	23.5	22.0					
							(BC1)O						H	FS	3.9	3.7					
							2(B1)						R	FS	1.9	2.2					
RO	AF125		4, 24	245					U(RO)	GRD			O		21.0	20.0					
TB1	AJ42		4, 24	66				2L(TB1)	1U(TB1)	M		P/S	O		29	27.5					

TEST NOTES:

- ADJACENT RELAYS SHALL NOT BE ENERGIZED.
- FRONT CONTACT MAKE, 6 READJ, 4 TEST.
- 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.
- 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.
- FOR (C) RELAY ONLY. REMOVE PARALLEL CONNECTION TO T(ROT) MAGNET.
- 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.

(5 PAGES) PAGE 1

STATION SYSTEMS

KEY TELEPHONE SYSTEM NO. 6A

INTERCOMMUNICATING LINE CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69286-01-DI

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CIRCUIT REQUIREMENTS

DRAWING
ISSUE

APPARATUS				MECH REQ			CIRCUIT PREPARATION				DIRECT CURRENT FLOW REQ						REMARKS
DESIG	CODE	OPTION	FIG.	BSP FIG.	CONT PRESS	ARM. TWVL	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.			
RELAYS																	
215A KEY TEL UNIT																	
L	280M		5, 25	B				TERM. 32C	TERM. 31C	B/G	I		O	-54		1.1	
													NO	-54		0.8	
													O	-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			O	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			O		17.0	16.0	
TR	AJ43		2	249					U(TR)	GRD			O		24.5	23.0	
217A KTU(MFR.DISC)																	
PC1	AJ46		10	266			(R01)O		U(PC1)	GRD			O		12.3	11.7	
PC2	AJ46		10	266			(R01)O		U(PC2)	GRD			O		12.3	11.7	
R01	AG26		10	222B			5(PC2), 7(PC1), 7(PC2), (B1)O		U(R01)	GRD			O	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	I			(TB1)NO, (BC1)NO		TERM. 20C	GRD	2		O		1.7	1.6	
BC1	AG26		7, 27	222B					U(BC1)	GRD			O	FS	26.5	25.0	
													H	FS	4.1	3.9	
													R	FS	2.1	2.5	
BI	AG28		7, 27	268B			(TB1)O		U(BI)	GRD			O	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			O		47.5	45.0	
H	AG26		7, 27	222B					TERM. 9D	GRD			O	FS	26.5	25.0	
													H	FS	4.1	3.9	
													R	FS	2.1	2.5	
LI	280M		6, 26	B				TERM. 32C	TERM. 31C	B/G	3		O	-54		1.1	
													NO	-54		0.8	
													O	-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			O	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			O	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			O	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			O		21.0	20.0	
TB1	AJ42		7, 27	66				2L(TB1)	IU(TB1)	M		P/S	O		29	27.5	
TB2	AJ42		7, 27	66				2L(TB2)	IU(TB2)	M		P/S	O		29	27.5	

TEST NOTES:

1. DISCONNECT ALL WIRES ON TERMS. 31 & 32 BEFORE CONNECTING TEST SET. CONNECT METALLIC JUMPER ACROSS A AND B TERMS. TO SELECT RELAY UNDER 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. DISCONNECT ALL WIRES ON TERMS. 31C & 32C BEFORE CONNECTING TEST SET. CONNECT METALLIC JUMPER ACROSS A AND B TERMS. TO SELECT RELAY UNDER TEST.

STATION SYSTEMS

KEY TELEPHONE SYSTEM NO. 6A
INTERCOMMUNICATING LINE CIRCUITBELL TELEPHONE LABORATORIES
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(5 PAGES) PAGE 2

CIRCUIT REQUIREMENTS

DRAWING
ISSUE

APPARATUS				MECH REQ			CIRCUIT PREPARATION				TEST SET		DIRECT CURRENT FLOW REQ					REMARKS
DESIG	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	READJ		
								CONN BAT.	CONN GRD								MA.	
RELAYS																		
223A KEY TEL UNIT																		
L	280M		8, 28	B				TERM. 32C	TERM. 31C	B/G	I		O	-54		1.1		
													NO	-54		0.8		
													O	-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			O	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			O	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			O	FS	26.5	25.0		
													H	FS	4.1	3.9		
													R	FS	2.1	2.5		
BY1	AG29		11	408B					U(BY1)	GRD			O	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	O		17.5	16.5		
													R		0.1	0.2		
P	280FP		12	B			(R)NO			M	4	P/S	O	-28		0.7		
													NO	-28		0.5		
													O	-28	5.9	5.6		
													REL	+28	3.1	3.3		
R	AF125		12	245			(B1)0		U(R)	GRD	5		O		21.0	20.0		
226A KTU(MFR.DISC.)																		
M	AJ43		13	249					U(M)	GRD			O		24.5	23.0		
N	AJ43		13	249					U(N)	GRD			O		24.5	23.0		
226B KEY TEL UNIT																		
M	AJ43		31	249					U(M)	GRD			O		32.0	29.0		
N	AJ43		31	249					U(N)	GRD			O		24.5	23.0		
227A KTU(MFR.DISC.)																		
CA1	AF86		18,30 35	237					U(CA1)	GRD			O		17.0	16.0		
CA2	AF86		18,30 35	237					U(CA2)	GRD			O		17.0	16.0		
MS	AF86		15,16 17,18 20,31 35	237					U(MS)	GRD			O		17.0	16.0		
229A KTU(MFR.DISC.)																		
A	AJ43		29	249					U(A)	GRD			O		24.5	23.0		
234A KEY TEL UNIT																		
MAGNET																		
A	204E SEL		22						T(A) TERM. 6B	GRD	6 7,8	ROT. ROT.	O O		330.0 400.0	300.0 380.0		
							8(B)		TERM. 15B	GRD	9	RLS	O		165.0	150.0		

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

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(5 PAGES) PAGE 3

CIRCUIT REQUIREMENTS

DRAWING
ISSUE

APPARATUS				MECH REQ			CIRCUIT PREPARATION				DIRECT CURRENT FLOW REQ							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	READJ		
								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			(TB1)NO, (BC1)NO		TERM. 20C	GRD	2		O		1.7	1.6		
BC1	AG26		22	222B					U(BC1)	GRD			O	FS	26.5	25.0		
													H	FS	4.1	3.9		
													R	FS	2.1	2.5		
BI	AG28		22	268B			(TB1)O		U(B1)	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			(B1)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			(B1)O (BC1)O 2(B1)		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		
TB1	AJ42		22	66				2L(TB1)	1U(TB1)	M		P/S	O		29	27.5		
TR	AJ43		22	249					U(TR)	GRD			O		24.5	23.0		

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.

STATION SYSTEMS

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(5 PAGES) PAGE 4

**DRAWING
ISSUE**

6D	LJL DHC PD
7D	JMK RBB PEG

(5 PAGES) PAGE 5

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