

SHEET INDEX

FIG.	CONTENTS	SHEET NO.	ISSUE NO.																			
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	SHEET INDEX SUPPORTING INFORMATION	A1	1	2																		
	SHEET INDEX	A2	1	2																		
	CIRCUIT NOTES 101 & 102	B1	1	2																		
	CIRCUIT NOTES 102 TO END	B2	1	2																		
	EQUIPMENT NOTES INFORMATION NOTES FIG. & OPTION TABLE KEY TOPS WORKING LIMITS	B3	1	2																		
101	APPLN FOR SSI SEND & RCY WITH PRIVACY OR ON-PREM DIALING BETWEEN PBX POS & ONE OR TWO 4-W STA GRPS ON SAME PREM WITH SSI SEL SIG EQPT	B4	1	1																		
102	TOP VIEW 60508 KEY																					
1	LINE CKT																					
2	FLASHING CKT FOR INC SIG	C1	1	2																		
3	20-CYCLE OR DC OUT. SIG CKT																					
4	RINGING LP CKT																					
5	SEL SIG CODE REL	C2	1	2																		
6	20-CYCLE RINGING CKT FOR INC SIG																					
7	INC RINGING AUX CKT																					
8	KEY TEL SET BUSY INDICATING CKT	C3	1	2																		
23	RELAY CKT FOR SIMULTANEOUS SW OF THREE 4-WIRE PRIV LINES																					
24	20-CYCLE OUT. RINGING CONT CKT TO PROVIDE AUTO. RING SPURT WITH MANUAL RERING	C4	1	2																		
9	FLT TO ELIM 600-& 1500-CYCLE TONES																					
10	4-W PRIV LINE TER FOR 1 TO 6 STA GRPS OF KEY TEL SETS	C5	1	2																		
11	4-W PRIV LINE TER FOR PBX & 1 OR 2 STA GRPS OF KEY TEL SETS																					
14	SIDE-TONE CKT FOR KEY TEL SETS	C6	1	2																		
12	20-CYCLE OR DC OUT. SIG CKT FOR KEY TEL SETS																					
13	20-CYCLE RINGING CKT FOR INC SIG TO KEY TEL SETS																					
25	DC CONT REL SET TO OPERATE SEPARATE BELL OR HORN																					
26	SIG CUTOFF KEY CKT	C7	1	2																		
15	KEY CKT FOR SW TWO 4-WIRE PRIV LINES																					
16	KEY CKT FOR SW THREE 4-W PRIV LINES																					
19	SW INDICATOR LP																					
27	PBX TER CUTOFF CKT	C8	1	2																		

DWG ISSUE	CD ISSUE	DATE ISSUED	DRW	APPD
1	1	6-19-62	GMB	RMH
2D	1	APPRO 10-25-62	DNC	PBF
			DNC	DLV

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.

SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DRAWINGS	J53036A J53036B J53036C

SD-69410-01 STATION SYSTEMS 4-WIRE PRIVATE LINE CIRCUIT ARRANGED FOR SSI OR 600/1500-CYCLE SELECTIVE SIGNALING, 20-CYCLE SIGNALING, VOICE OR DC OUTGOING SIGNALING, OR LOUDSPEAKER INCOMING SIGNALING	AT&T STANDARD
SD-69410-01-A1 2 ^d Sheets <small>PRINTED IN U.S.A.</small>	
BELL TELEPHONE LABORATORIES <small>INCORPORATED</small>	

SHEET INDEX

FIG.	CONTENTS	SHEET NO.	ISSUE NO.																					
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
18	REL SW CKT FOR SIMULTANEOUS SW OF THREE 4-WIRE PRIV LINES SW KEY AT PBX FOR SW TWO 4-WIRE PRIV LINES SW KEYS AT PBX FOR SW THREE 4-WIRE PRIV LINES SW LP AT PBX	C9	1	2																				
20																								
21																								
22																								
17	KEY CKT FOR SW TWO OR THREE 4-WIRE PRIVATE LINES USING ILLUMINATED PUSHBUTTONS	C10	1	2																				
A B C D E F G H		C11	1	2																				
J K L M P R S T		C12	1	2																				
U V W		C13	1	2																				
	CIRCUIT REQUIREMENTS TABLE	D1	1	2																				
CAD.1	FOR FIG. 1,2,3,4,5,6,7,8,23,24	E1	1	2																				
CAD.2	FOR FIG. 5	E2	1	2																				
CAD.3	FOR FIG. 17	E3	1	1																				
CAD.4	FOR FIG. 17	E3	1	1																				
CAD.5	FOR FIG. U,V	E4	1	1																				

DRAWING ISSUE
1
20
DHC
DLY
DHC
DLY

CIRCUIT NOTES:

DESIG	AMP	POTENTIAL FUSED	ONE PER	
			FIG.	QUANTITY
A	2	24V SIG	FIG. 1 & ASSOC FIG. 2, 5, 7, 8, 17, & 23	
A	1/2 HV	MACH RING	6 FIG. 6	
B	2	24V SIG	FIG. 1 & ASSOC FIG. 3, 7, & 24	
C	2	24V SIG	ALL FIG. 12, 13, 17 & 18 ASSOC WITH SAME LINE	
D	1-1/3	14-26V SIG 32-46V SIG OR 44-52V SIG	(FUSE IN PBX) MAX. OF 21 FIG. 22	
E	2	24V SIG	MAX. OF 30 FIG. 19	
A		GRD	FIG. 1 & ASSOC FIG. 2, 17 & 23	
B		GRD	FIG. 1 & ASSOC FIG. 5, 6, 7, 25, FIG. D, E, F, U, & V	
C		GRD	ALL FIG. 13, 17, 18, 25, 27, FIG. D, E, F, G, H ASSOC WITH SAME LINE	
D		GRD	MAX. OF 21 FIG. 22	
E		GRD	MAX. OF 30 FIG. 19	
F		GRD	FIG. 21	
BATTERY SYMBOL		VOLTAGE RANGE		
-18		14-26V		
-24		20-26V		
-40		32-46V		
-48		44-52V		

102.

FEATURE OR OPTION	PROVIDE		
	FIG.	APP OR WIRING	QUANTITY
4-WIRE LINE CKT FOR KEY EQPT NO. 102A OR SW SYS NO. 301 OR 302	1		1 PER LINE
OUT SIG ON XMT LOOP	DIAL SEL SIG TONE EQPT ON-PREM)	VOICE CALLING	Z
		20-CYCLE	M
		SS1 600-1500 CYCLE	ZG
INC LS SIG AT KEY EQPT NO. 102A OR SW SYS NO. 301 OR 302	REQD	X	
	NOT REQD	W	
REQD FOR SW SYS NO. 301		V	
REQD FOR KEY EQPT NO. 102A OR FOR SW SYS NO. 302		T	
REQD WHEN LINE ALSO HAS APPEARANCE AT 2- & 4-WIRE KEY TEL SET (SINGLE STA GROUP ONLY) SEE NOTE 10B		S	
FLASHING CKT FOR INC SIG	2		1 PER LINE
OUT. SIG CKT	3		1 PER LINE
OUT. SIG	20-CYCLE	R	
	DC	Q	
OUT. 20-CYCLE SIG VIA RCY LOOP		N	
RING. LAMP CKT	4		1 PER 4 LINES
INC DIAL SEL SIG CODE REL FOR KEY EQPT NO. 102 OR SW SYS NO. 301 OR NO. 302 POSITIONS	5		1 PER CODE
INC 20-CYCLE SIG CKT	LOCKED-IN SIG RETIRED WHEN ANS AT:	SW SYS OR KEY EQPT POS ONLY	H
		KEY TEL SET ONLY	G
		KEY TEL SET OR SW SYS OR KEY EQPT POS	F
INC 20-CYCLE SIG VIA	XMT LOOP	K	
	RCY LOOP	J	
INC RING. AUX CKT	7		1 PER LINE
KEY TEL SET BUSY INDICATING CKT	8		1 PER LINE

CIRCUIT NOTES: (CONT)

FEATURE OR OPTION	PROVIDE			
	FIG.	APP OR WIR.	QUANTITY	
NO SW CONT OR DC SIG. WITH OTHER SIG VIA:	XMT LOOP	VOICE CALLING OUT	B	
		OUT. DIAL SEL SIG TONE EQPT ON-PREM		
	RCV LOOP	20-CYCLE OUT. SIG	A	
		INC LS SIG		
OUT. DC SW OR SIG	ON METALLIC BASIS OVER SIMPLEX OF RCY & XMT LOOP		C	
	ON GRD RETURN BASIS OVER SIMPLEX LEG OF XMT LOOP		D	
	ON GRD RETURN BASIS OVER SIMPLEX LEG OF RCY LOOP		E	
	ON GRD RETURN BASIS OVER SIMPLEX LEGS OF RCY & XMT LOOP		F	
	OUT. DC SW & SIG	ON GRD RETURN BASIS OVER COMPOSITE LEGS OF	XMT LOOP ASSOC WITH RCY LOOP ASSOC WITH	FIG. 10 OR 11 FIG. 1 FIG. 10 OR 11 FIG. 1
OUT. LOOP SIG VIA RCY LOOP ASSOC WITH			FIG. 1 FIG. 10 OR 11	
SS1 SEL SIG TONE EQPT AT TOLL OFF.	INC SIG FOR 1 OR 2 CODES VIA XMT LOOP ASSOC WITH		FIG. 1 FIG. 10 OR 11	
	DX SIG VIA RCY LOOP ASSOC WITH		FIG. 1 FIG. 10 OR 11	
	OUT. & INC 20-CYCLE SIG TO PBX VIA COMPOSITE OF	XMT LOOP RCV LOOP	P R	
FILTER REQD WHEN LS SIG IS USED ON LINE NETWORK WITH 600-1500 CYCLE SEL SIG			9	1 PER LINE
4-WIRE PRIV LINE TER FOR 1 TO 6 STA GRP OF KEY TEL SETS			10	1 PER LINE
4-WIRE PRIV LINE TER FOR PBX & 1 OR 2 STA GRP OF KEY TEL SETS			11	1 PER LINE
20-CYCLE OR DC OUT. SIG CKT FOR KEY TEL SETS			12	1 PER LINE
INC 20-CYCLE SIG CKT FOR KEY TEL SETS			13	1 PER LINE
SIDETONE CKT FOR KEY TEL SETS WHERE LINE ALSO HAS APPEARANCE AT PBX POS SEE FIG. 101	WITHOUT SS1 ON-PREM DIAL	NO. OF STA GRPS	1	E
			2	B
			1	A
			2	ZA
FOR SW CONT AT LOC OTHER THAN PBX	KEY CKT FOR SW TWO 4-WIRE PRIV LINES USING	LEVER-TYPE KEYS	15	1 PER LINE
	KEY CKT FOR SW THREE 4-WIRE PRIV LINES USING		16	1 PER 3 LINES
	KEY CKT FOR SW TWO OR THREE 4-WIRE PRIV LINES USING	ILLUM PB-TYPES KEYS	17	1 PER 3 LINES
	REL CKT FOR SIMULTANEOUS SW OF THREE 4-WIRE PRIV LINES ASSOC WITH	KT STAS	18	1 PER 3 LINES
	SW INDICATOR LAMP		FIG. 1 23	19
FOR SW CONT AT PBX	SW CKT FOR SW TWO 4-WIRE PRIV LINES	USING 498-TYPE KEY	20	1 PER PBX POS
		USING 552-TYPE KEY	ZC	
	SW CKT FOR SW THREE 4-WIRE PRIV LINES		21	1 PER 3 LINES
SW LAMP AT PBX			22	1 PER PBX POS
FOR FIG. 22 IN	14-26V PBX			ZD
	32-46V PBX			ZE
	44-52V PBX			ZF

(CONT ON SHEET B2)

STATION SYSTEMS 4-WIRE PRIVATE LINE CIRCUIT		SD-69410-01-B1
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CIRCUIT NOTES (CONT)

102.
(CONT)

FEATURE OR OPTION	PROVIDE		
	FIG.	AFF OR WIR.	QUANTITY
AUTO. RING. SPURT WITH MAN. RERING		ZH	
REQD			
NOT REQD		ZI	
20-CYCLE OUT. RING. CONT CKT TO PROV AUTO. RING. SPURT WITH MAN. RERING	24		1 PER LINE
FOR LOCKED-IN INC SIG			
DC CONT REL SET TO OPR SEP SIG 14-52V FOR INDOOR OR OUTDOOR USE	25		1 PER LINE OR CODE
SIG CUTOFF KEY CKT	26		1 PER LINE
PBX TERM. CUTOFF CKT	27		1 PER LINE
20-CYCLE SIG. OUT. & INC		W	
ON METALLIC BASIS OVER SIMPLEX OF RCY & XMT LOOP			
WHEN 20-CYCLE SIG. ON METALLIC BASIS OVER SIMPLEX OF RCY & XMT LOOP IS PROV			
OUT.		ZJ	
INC.		ZK	

104.

RECORD OF FIGURES, WIRING AND APPARATUS CHANGES							
CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT			
				STD	A&M	MD	

DRAWING ISSUE
1
20
DWC
DWC
DWC

- 105. CONNECT TO L, P AND S LEADS A MAXIMUM OF TWENTY 24-VOLT RATED LAMPS OR EQUIVALENT CURRENT DRAIN. WHERE MORE THAN 20 LAMPS ARE REQUIRED, PROVIDE AUXILIARY LAMP RELAY CIRCUITS.
- 106. 20-CYCLE OUTGOING SIGNALING MAY NOT BE CONNECTED TO THE SAME LOOP THAT IS BEING USED FOR DC SWITCHING.
- 107. FIG. A IS ALWAYS FURNISHED WHEN THE SF RECEIVER (SSI SELECTIVE SIGNALING) IS LOCATED ON THE PREMISES.
- 108. A STATION GROUP REFERS TO THOSE PICKUP APPEARANCES AT KEY TELEPHONE SETS ASSOCIATED WITH THE SAME TALKING BATTERY SUPPLY. EACH STATION GROUP CONNECTS A 600 OHM IMPEDANCE TERMINATION ACROSS TRANSMIT LEADS T1 AND R1 AND RECEIVE LEADS 7 AND R CONNECTING TO THIS CIRCUIT.

103.

NETWORK VALUES			
NETWORK		RESISTANCE	CAPACITANCE
NO.	CODE	IN OHMS	IN UF

EQUIPMENT NOTES:

- 201. A, B, E AND ZA APPARATUS SHOWN IN FIG. 14 SHALL BE ORDERED SEPARATELY AND MOUNTED IN EQUIPMENT UNIT ED-91929-01, G5 OR EQUIVALENT.
- 202. REPLACE WITH 52A LAMPS THE 51A LAMPS FURNISHED WITH THE 6050B KEY.

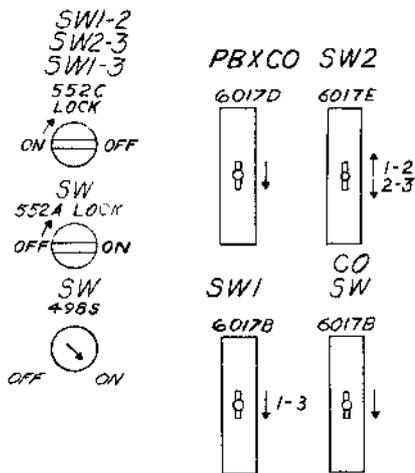
INFORMATION NOTES:

- 301. UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS,
CAPACITANCE VALUES ARE IN MICROFARADS,
VALUES PRECEDED BY THE SYMBOL + (PLUS)
OR - (MINUS) ARE IN VOLTS.

DRAWING	
ISSUE	
1	DRG DLY
20	TRG DRG DLY

WORKING LIMITS:

FIG. 6 AND 13: MAXIMUM EXTERNAL LOOP RESISTANCE - SEE TEST NOTE 1 OF CIRCUIT REQUIREMENT TABLE FOR EQUIVALENT DATUM.



FIGURES AND OPTIONS ON THIS DWG			
CKT FIG.		APP OR WIRING	
1	A	Z	ZK
2	B	Y	
3	C		
4	D	W	
5	E	V	
6	F	X	
7	G	T	
8	H	S	
9	J	R	
10	K	Q	
11	L		
12	M		
13	P	N	
14	R	M	
15	S		
16	T	K	
17	U	J	
18	V		
19	W	H	
20		G	
21		F	
22		E	
23			
24			
25		B	
26		A	
27		ZA	
		ZB	
		ZC	
		ZD	
		ZE	
		ZF	
		ZG	
		ZH	
		ZI	
		ZJ	

FIG. 101

APPLICATION FOR SSI SEND AND RECEIVE WITH PRIVACY OR ON-PREMISE DIALING
 BETWEEN PBX POSITION AND ONE OR TWO 4-WIRE STATION GROUPS ON SAME
 PREMISES WITH SSI SELECTIVE SIGNALING EQUIPMENT

DRAWING
 ISSUE

RCD
 DHC
 BLY

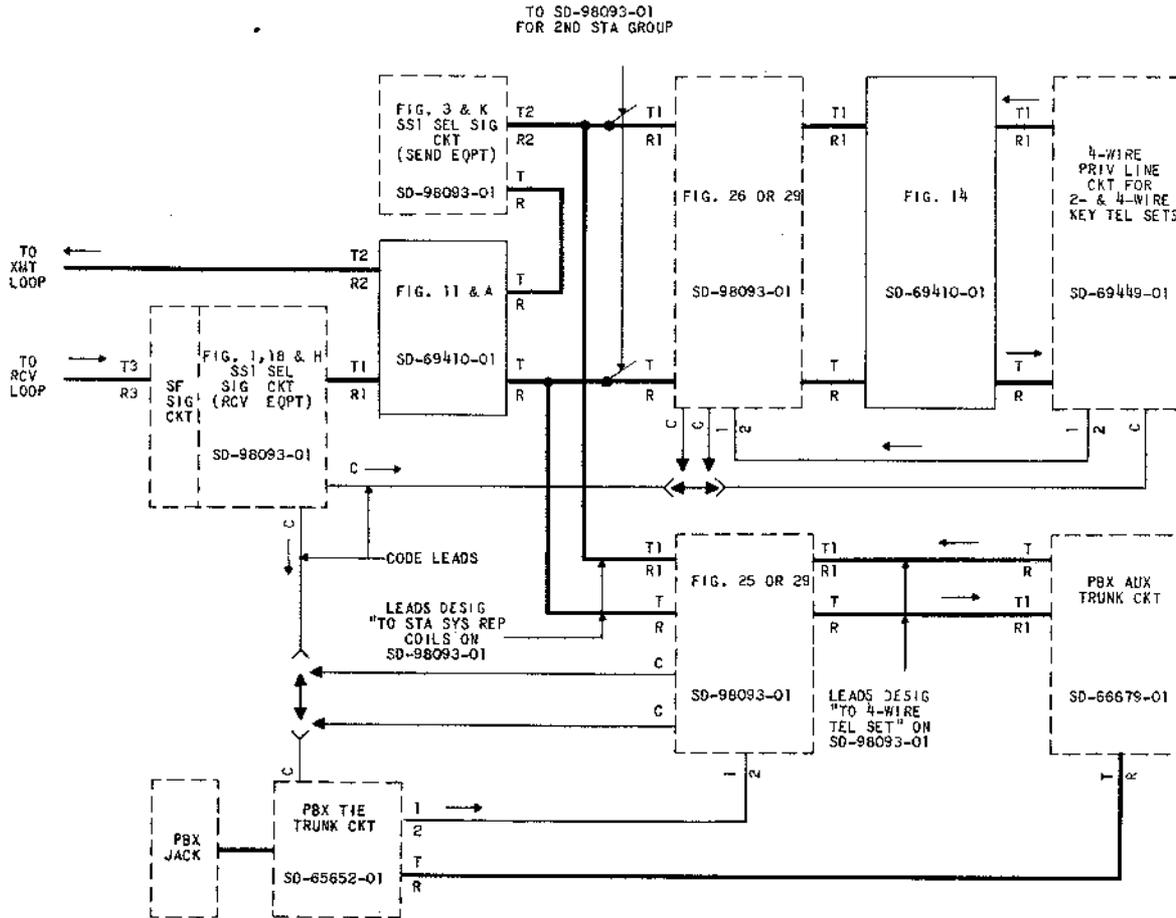
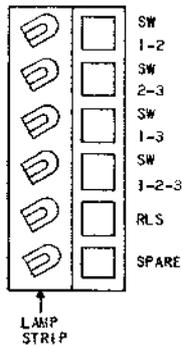


FIG. 102
 TOPVIEW
 60508



STATION SYSTEMS
 4-WIRE PRIVATE LINE CIRCUIT
 BELL TELEPHONE LABORATORIES
 INCORPORATED

SD-69410-01-B4
 3S
 PRINTED IN U.S.A.

FIG. 1
LINE CKT

DRAWING
ISSUE
1
6748
DNC
DLV
2D
7442
DNC
DLV

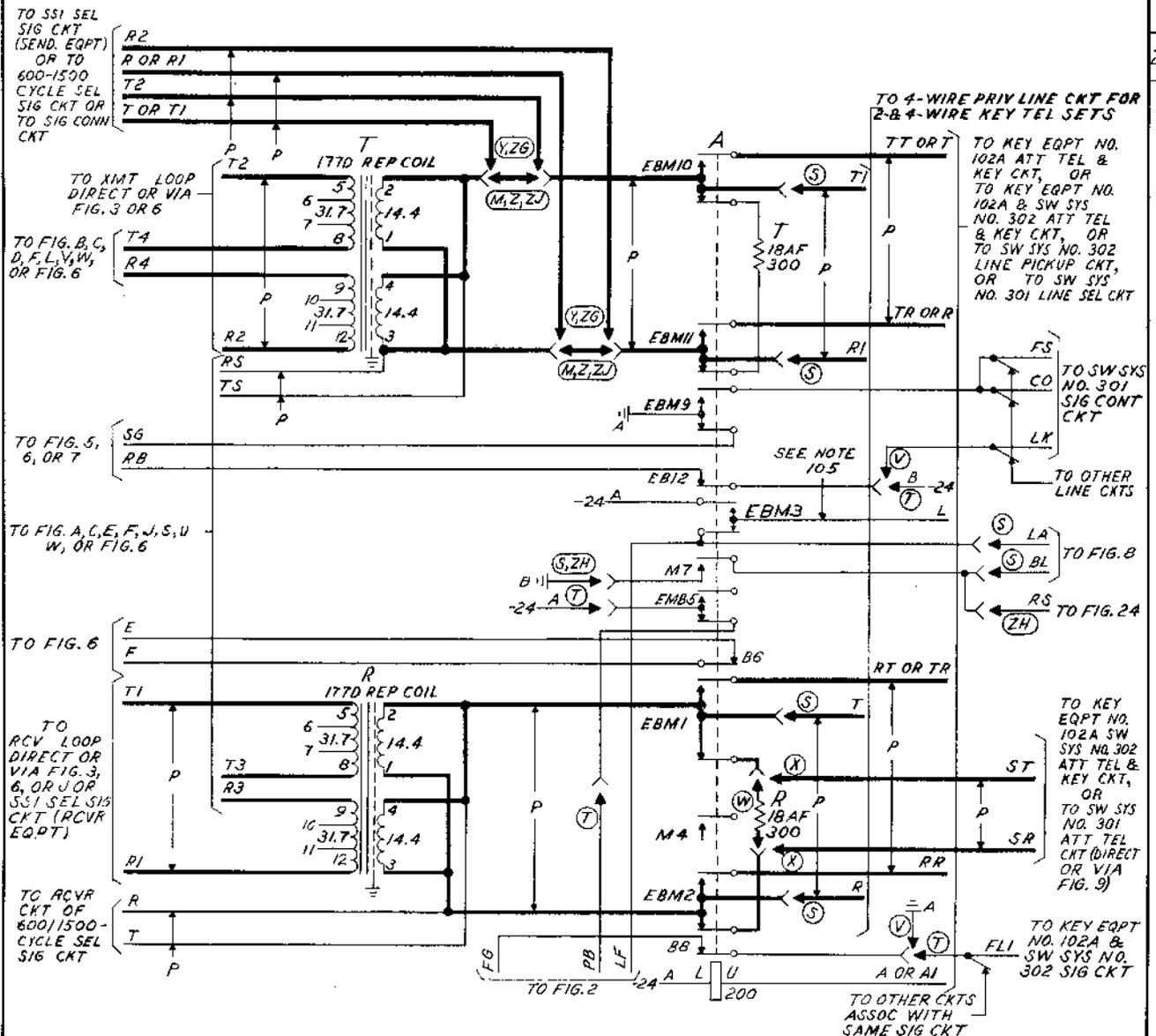


FIG. 2
FLASHING CKT FOR INCOMING SIGNALING

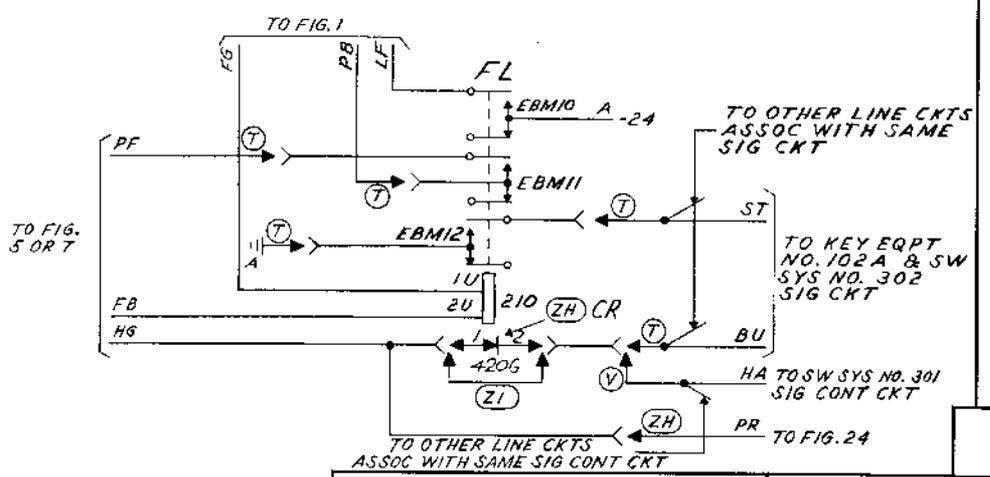


FIG. 3
20-CYCLE OR DC OUTGOING SIGNALING CKT
SEE NOTE 106

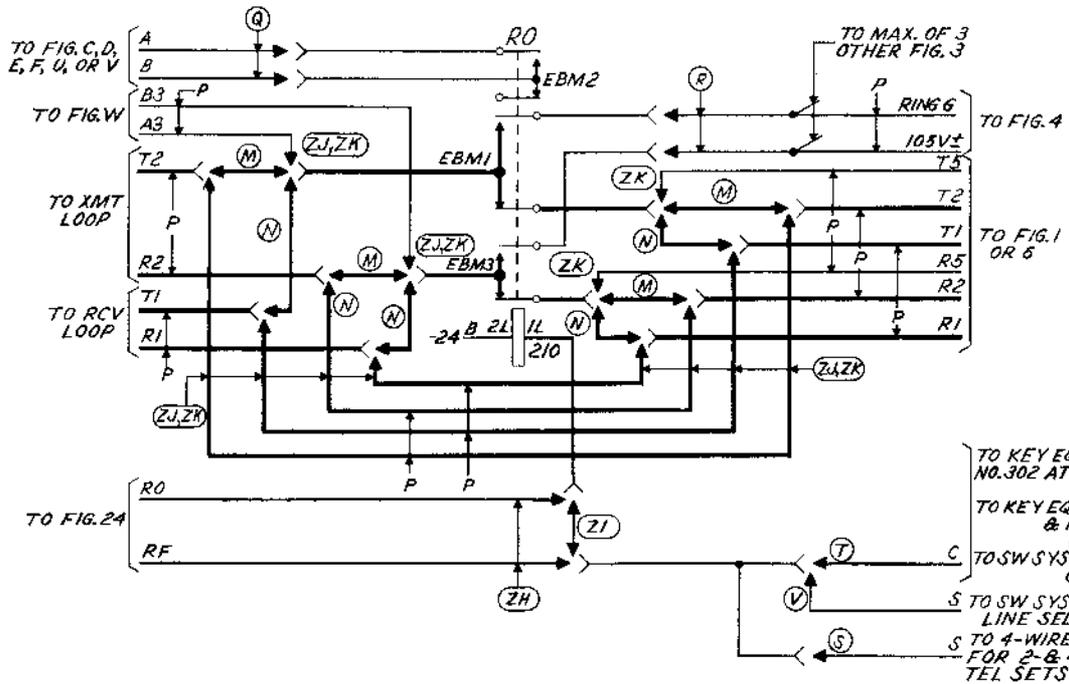


FIG. 4
RINGING LAMP CKT

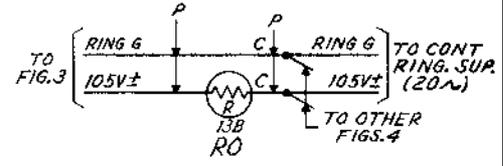


FIG. 5
SELECTIVE SIGNALING CODE RELAY

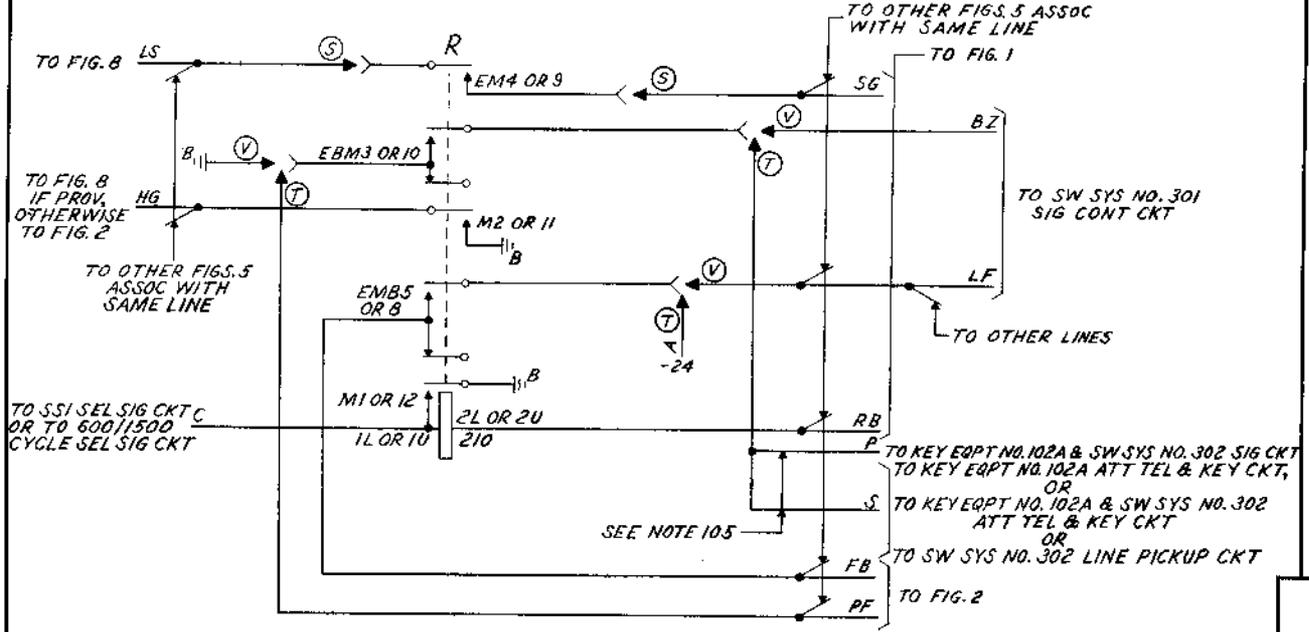


FIG. 5
20-CYCLE RINGING CKT
FOR INCOMING SIGNALING

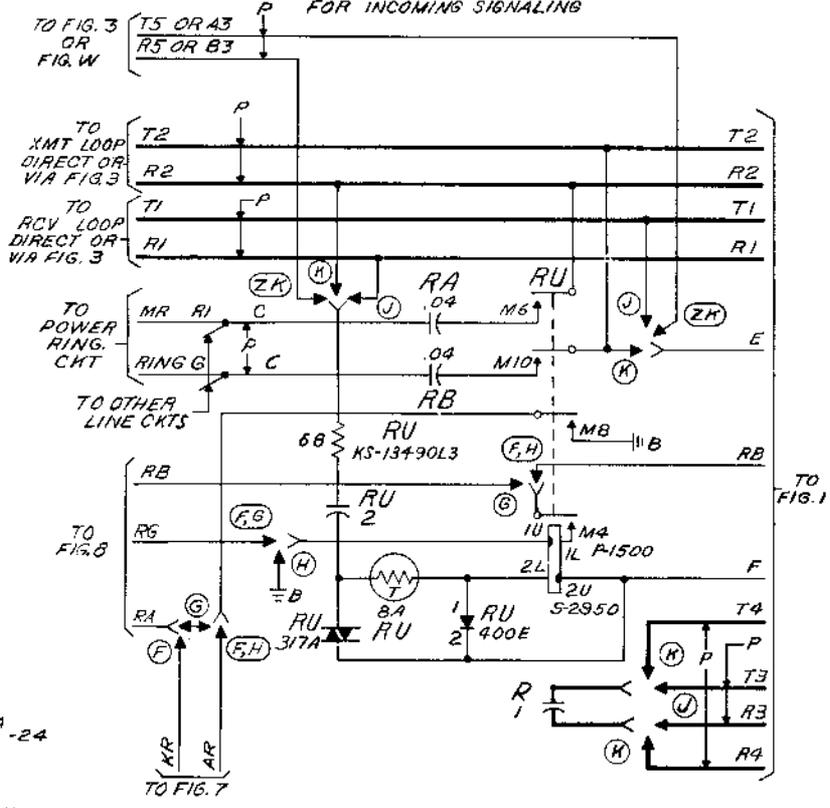


FIG. 8
KEY TELEPHONE SET
BUSY INDICATING CKT

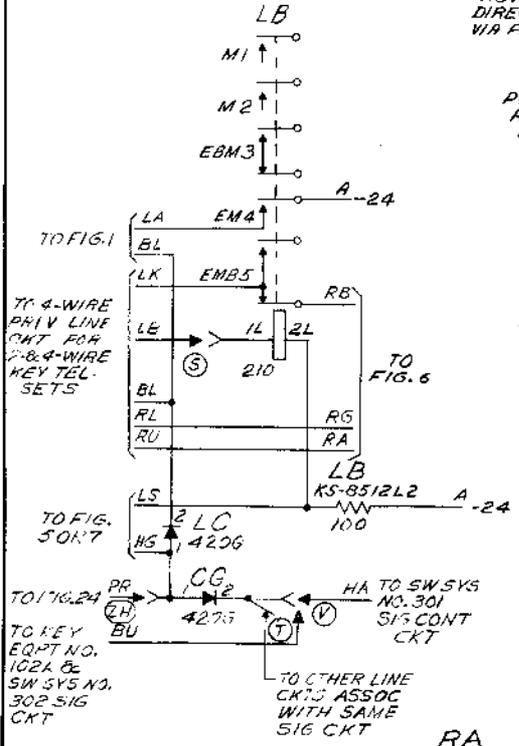
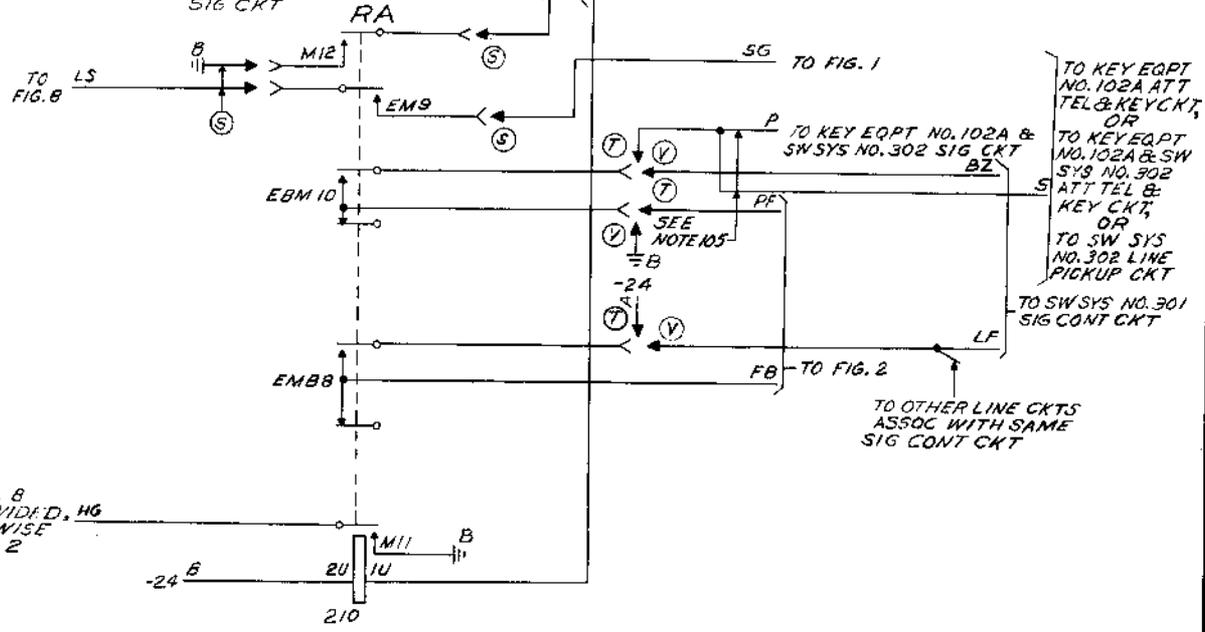


FIG. 7
INCOMING RINGING AUXILIARY CKT



DRAWING	1	5MB
ISSUE		DAC
		DLY
	20	5MC
		DAC
		DLY

FIG. 23
RELAY CKT FOR SIMULTANEOUS
SWITCHING OF THREE 4-WIRE PRIVATE LINES

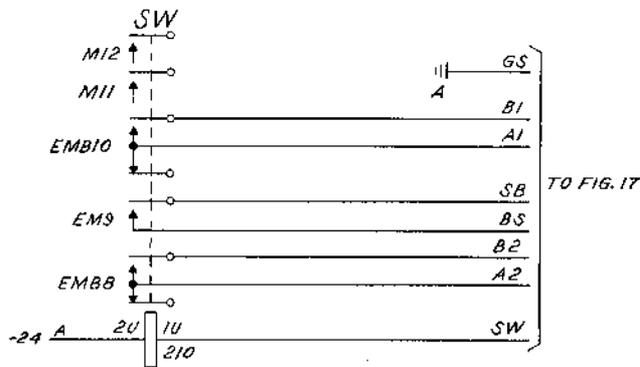


FIG. 24
20-CYCLE OUTGOING RINGING CONTROL CKT TO PROVIDE
AUTOMATIC RING SPURT WITH MANUAL RERING

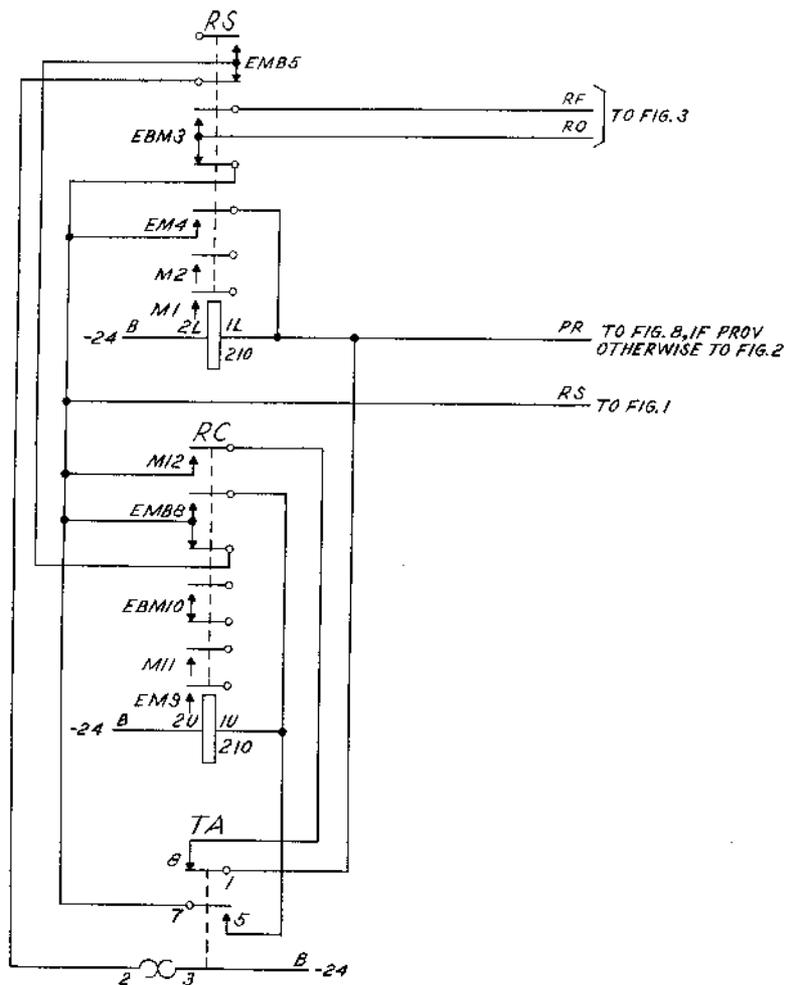
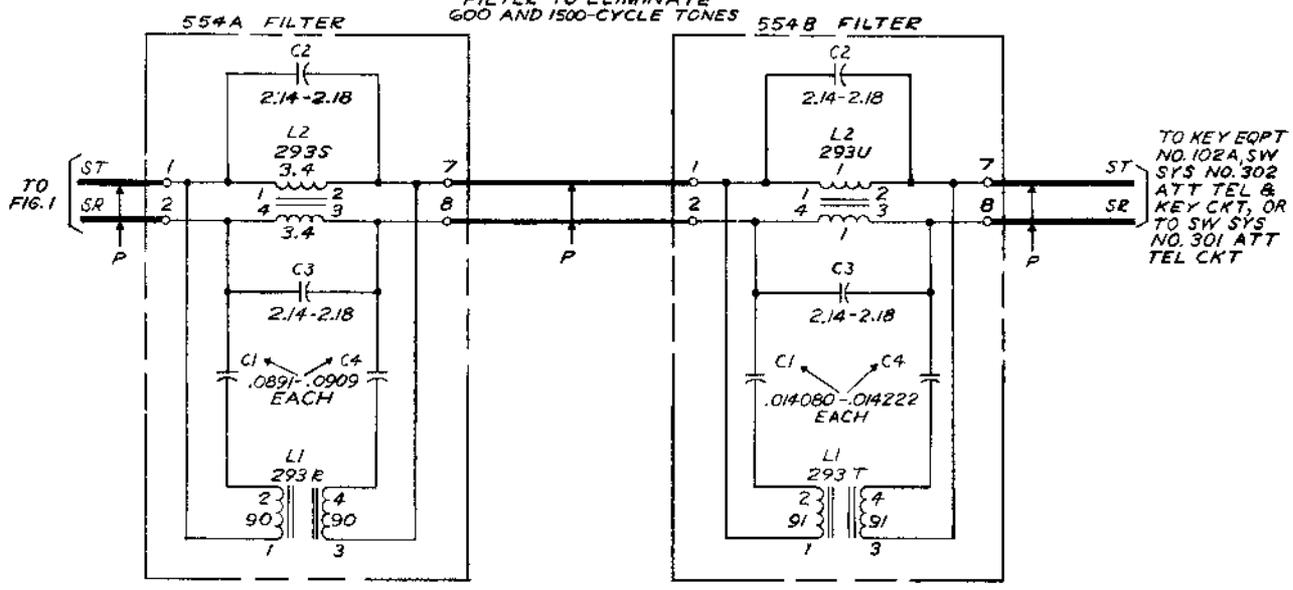
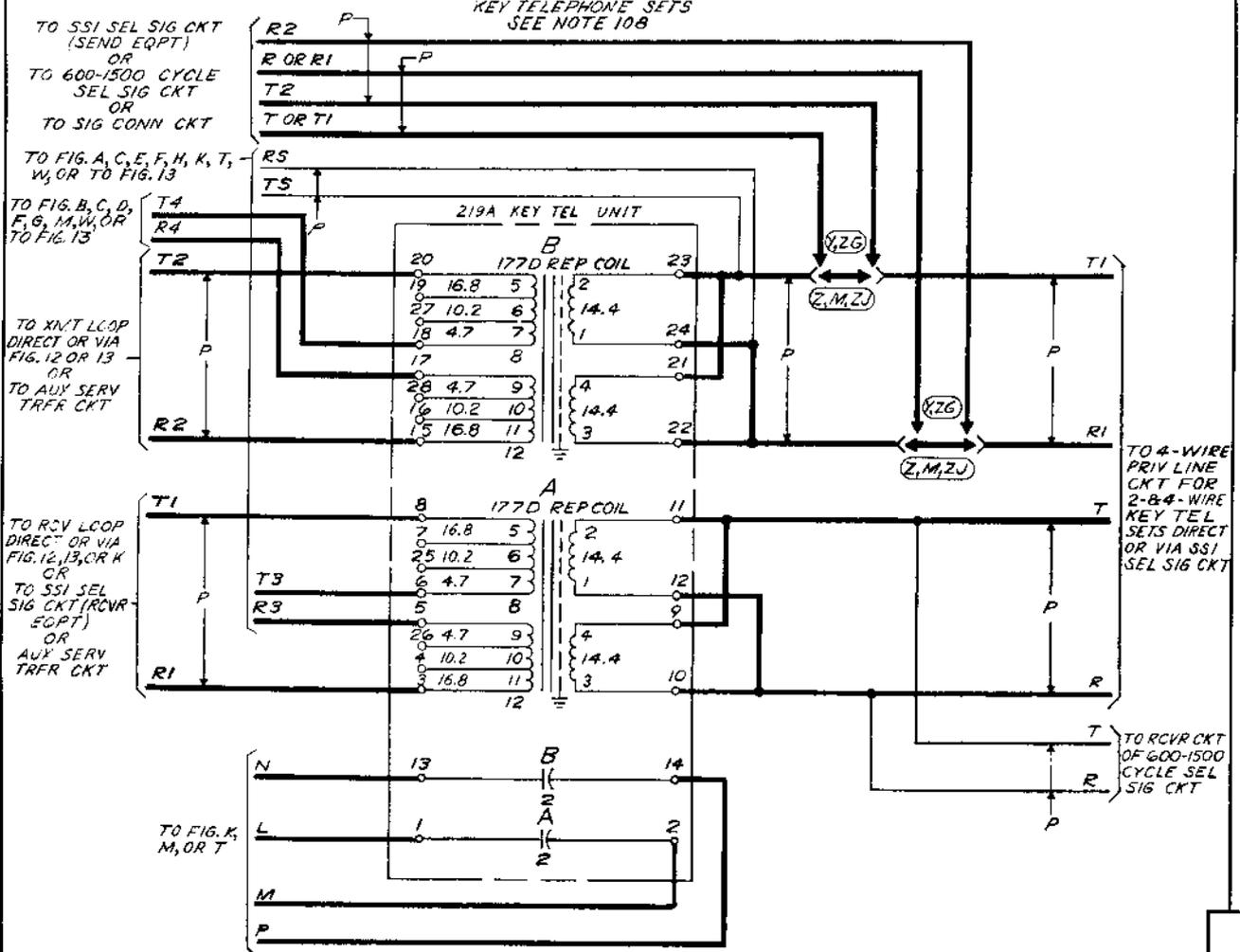


FIG. 9
FILTER TO ELIMINATE
600 AND 1500-CYCLE TONES



TO KEY EQPT
 NO. 102A, SW
 SYS NO. 302
 ATT TEL &
 KEY CKT, OR
 TO SW SYS
 NO. 301, ATT
 TEL CKT

FIG. 10
4-WIRE PRIVATE TERMINATION
FOR 1 TO 6 STATION GROUPS OF
KEY TELEPHONE SETS
SEE NOTE 108



TO SSI SEL SIG CKT
 (SEND EQPT)
 OR
 TO 600-1500 CYCLE
 SEL SIG CKT
 OR
 TO SIG CONN CKT

TO FIG. A, C, E, F, H, K, T,
 W, OR TO FIG. 13

TO FIG. B, C, D,
 F, G, M, W, OR
 TO FIG. 13

TO XNT LCOP
 DIRECT OR VIA
 FIG. 12 OR 13
 OR
 TO AUX SERV
 TRFR CKT

TO RCVR LCOP
 DIRECT OR VIA
 FIG. 12, 13, OR K
 OR
 TO SSI SEL
 SIG CKT (RCVR
 EQPT)
 OR
 TO AUX SERV
 TRFR CKT

TO FIG. K,
 M, OR T

TO 4-WIRE
 PRIV LINE
 CKT FOR
 2-8-4-WIRE
 KEY TEL
 SETS DIRECT
 OR VIA SSI
 SEL SIG CKT

TO RCVR CKT
 OF 600-1500
 CYCLE SEL
 SIG CKT

DRAWING ISSUE	
1	J.R.A. D.V.
20	T.M.C. D.V.

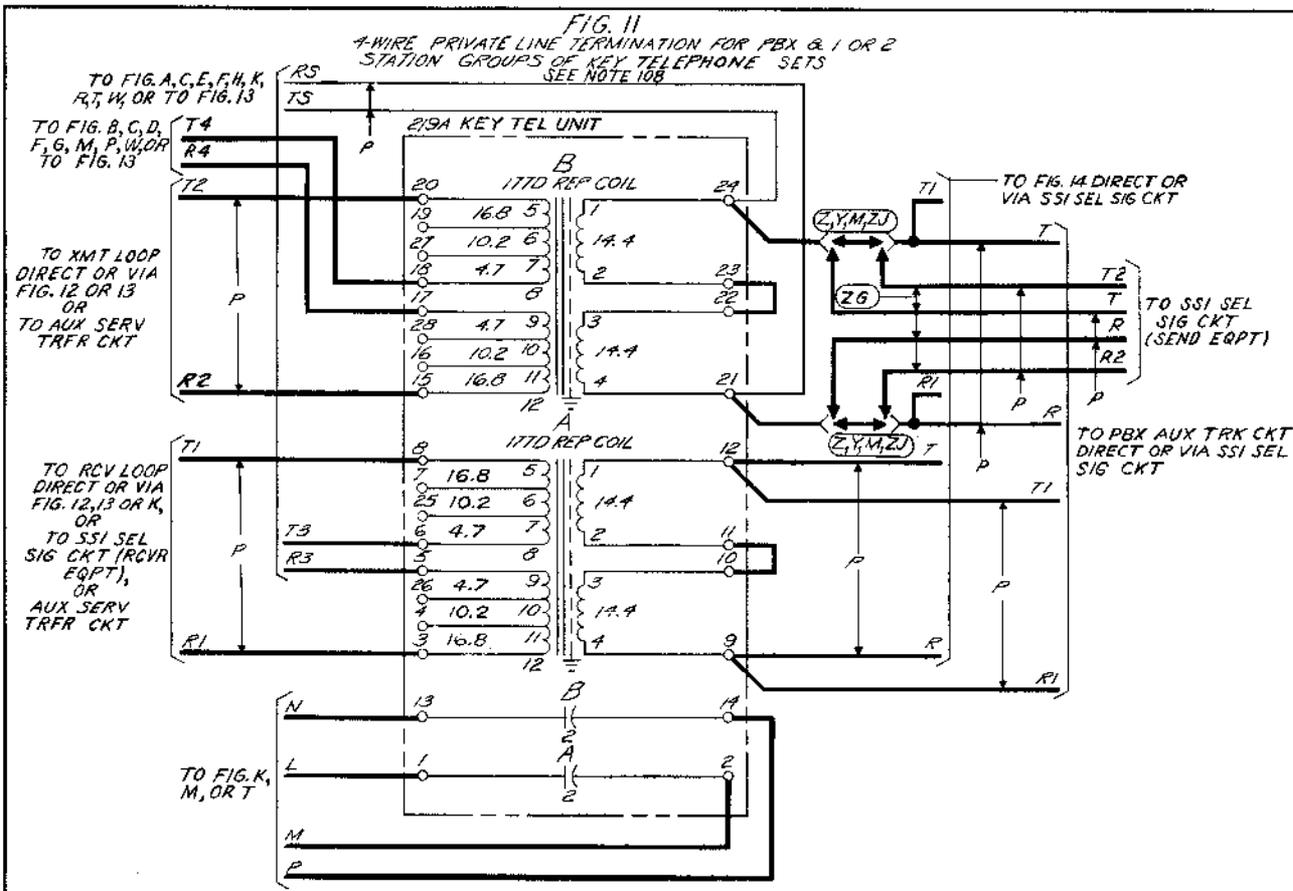


FIG. 14
SIDE-TONE CKT FOR KEY TELEPHONE SETS
SEE NOTE 201

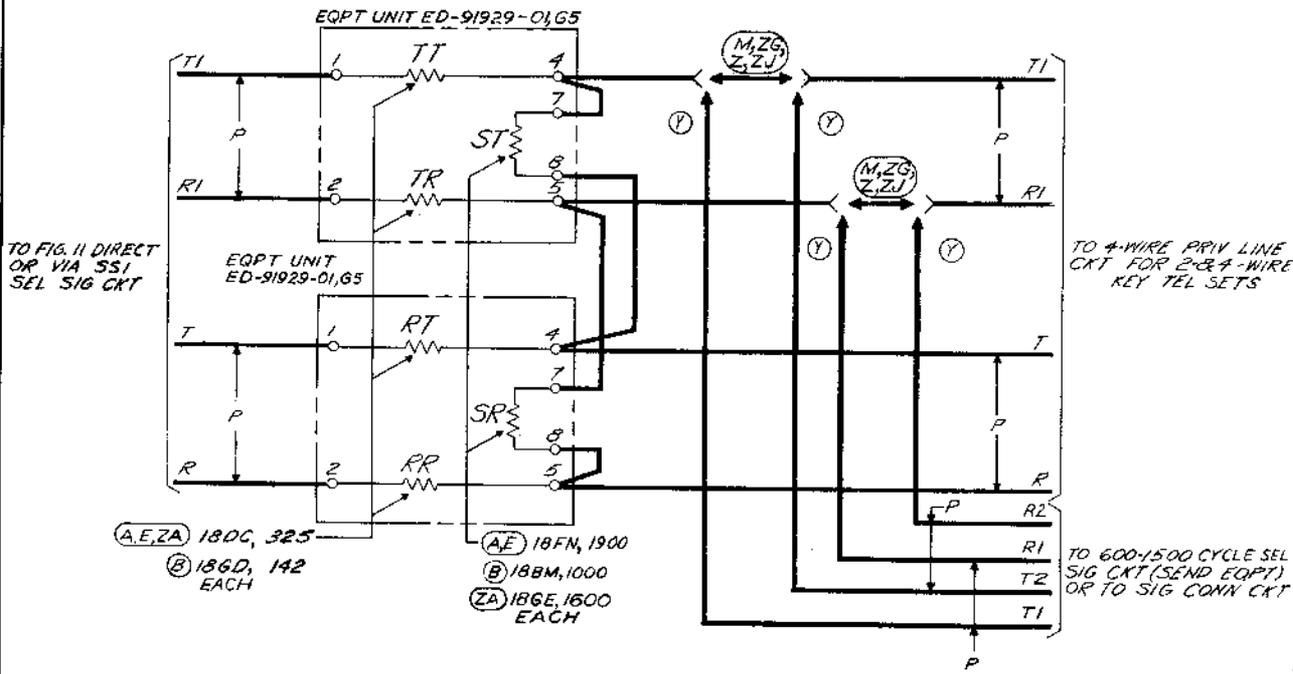


FIG. 15
 KEY CKT FOR SWITCHING TWO 4-WIRE PRIVATE LINES USING LEVER TYPE KEYS

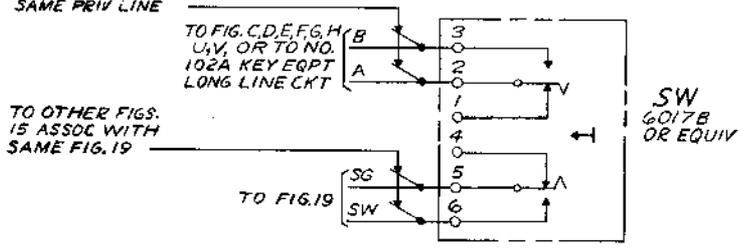


FIG. 16
 KEY CKT FOR SWITCHING THREE 4-WIRE PRIVATE LINES USING LEVER-TYPE KEYS

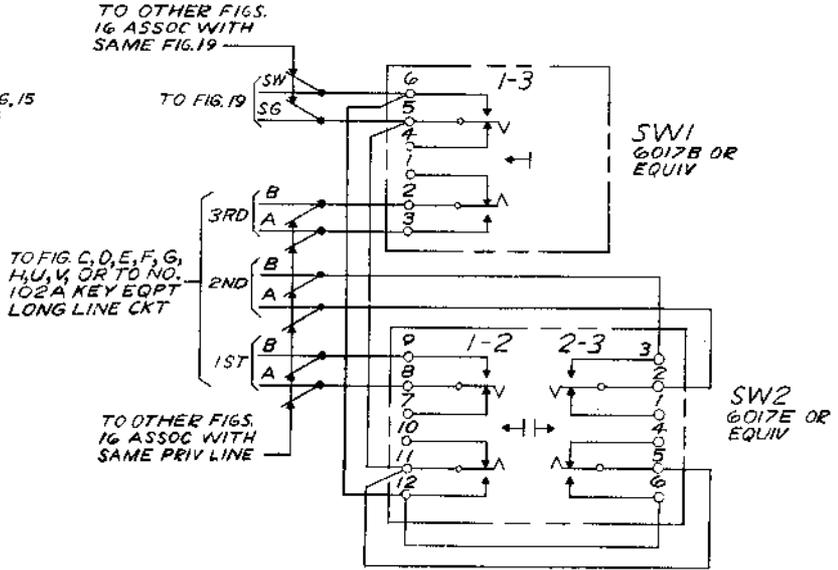


FIG. 19
 SWITCH INDICATOR LAMP

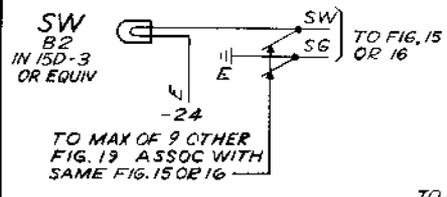
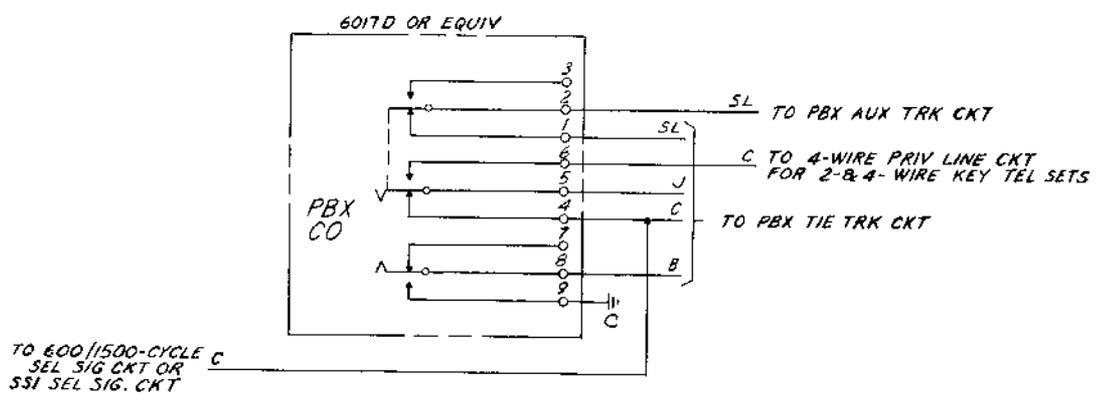


FIG. 27
 PBX TERMINATION CUTOFF CKT



DRAWING	MPK
ISSUE	DHC
	DLV
2D	TMC
	DHC
	DLV

FIG. 18
RELAY SWITCHING CKT
FOR SIMULTANEOUS SWITCHING
OF THREE 4-WIRE PRIVATE LINES

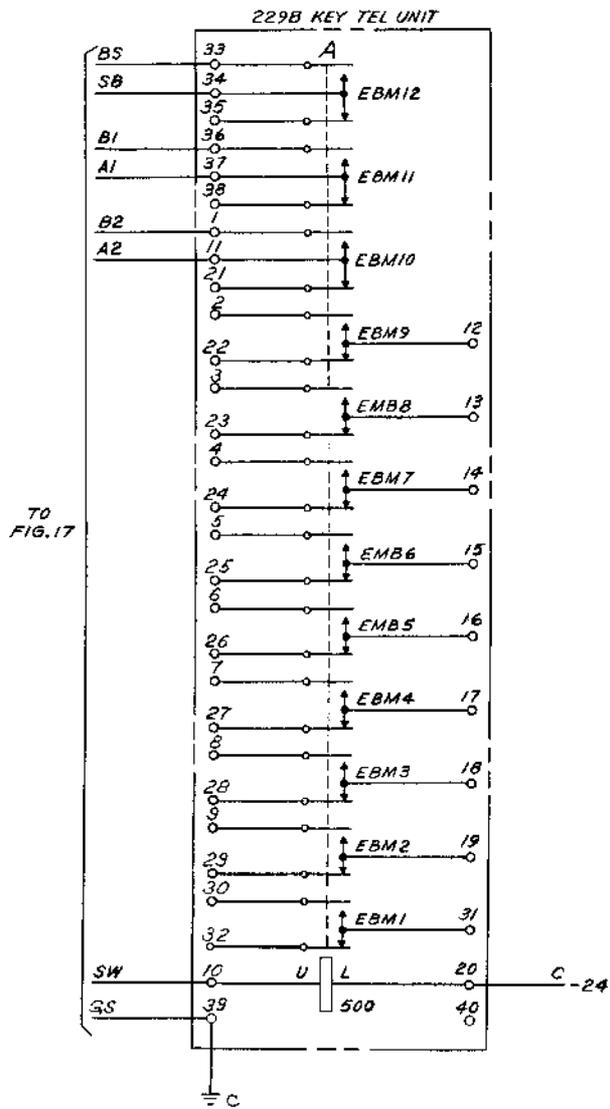


FIG. 21
SWITCHING KEYS AT PBX
FOR SWITCHING THREE
4-WIRE PRIVATE LINES

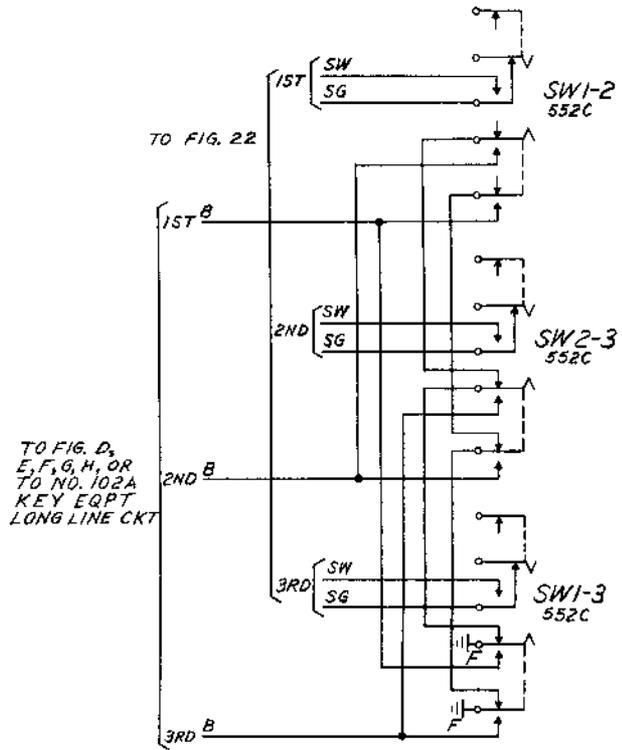


FIG. 20
SWITCHING KEY AT PBX
FOR SWITCHING TWO
4-WIRE PRIVATE LINES

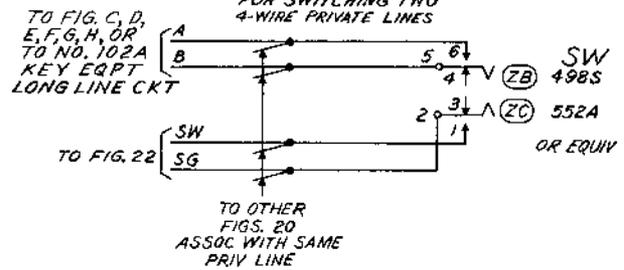


FIG. 22
SWITCH LAMP
AT PBX

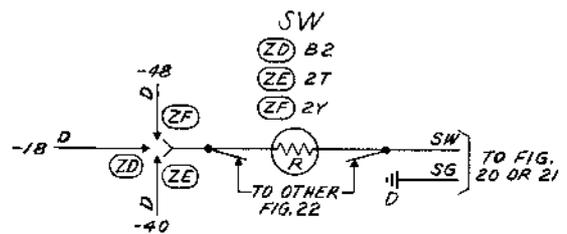
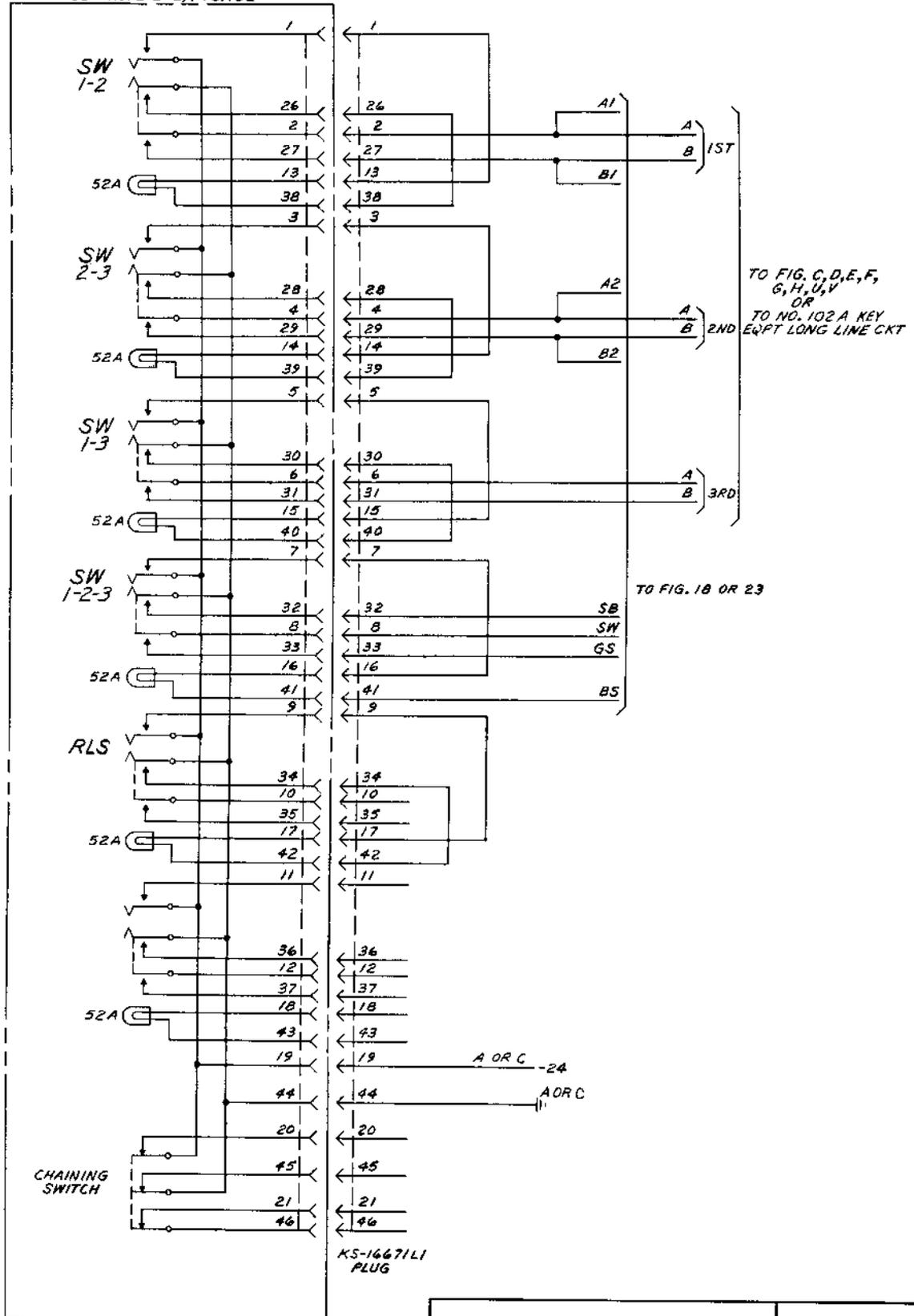


FIG. 17
 KEY CKT FOR SWITCHING TWO OR
 THREE 4-WIRE PRIVATE LINES USING
 ILLUMINATED PUSHBUTTONS

6050B KEY OR EQUIV
 SEE NOTE 202, FIG. 102



DRAWING	1
ISSUE	
BY	WAC
CHKD	DLV
DATE	2D
APP'D	WAC
CHK'D	DLV

TO FIG. C, D, E, F,
 G, H, U, V
 OR
 TO NO. 102 A KEY
 EQPT LONG LINE CKT

TO FIG. 18 OR 23

KS-16671/L1
 PLUG

STATION SYSTEMS		SD-69410-01-C10
4-WIRE PRIVATE LINE CIRCUIT		
BELL TELEPHONE LABORATORIES INCORPORATED	35	PRINTED IN U.S.A.

DRAWING ISSUE	
1	678 DHC DLY
2D	TMC DHC DLY

FIG. A
SEE NOTE 107

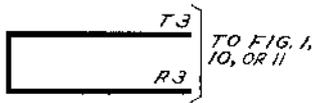


FIG. B

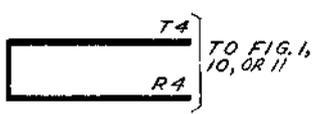


FIG. C

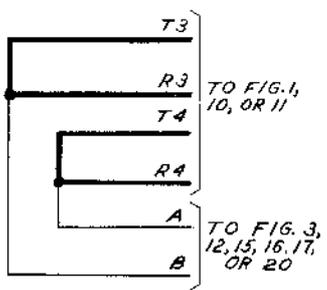


FIG. D

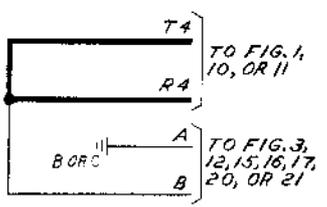


FIG. E

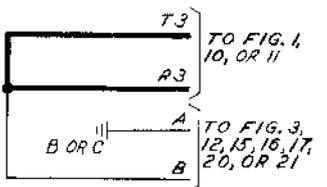


FIG. F

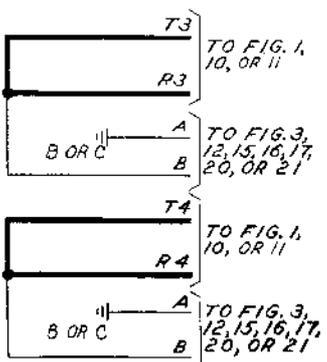


FIG. G

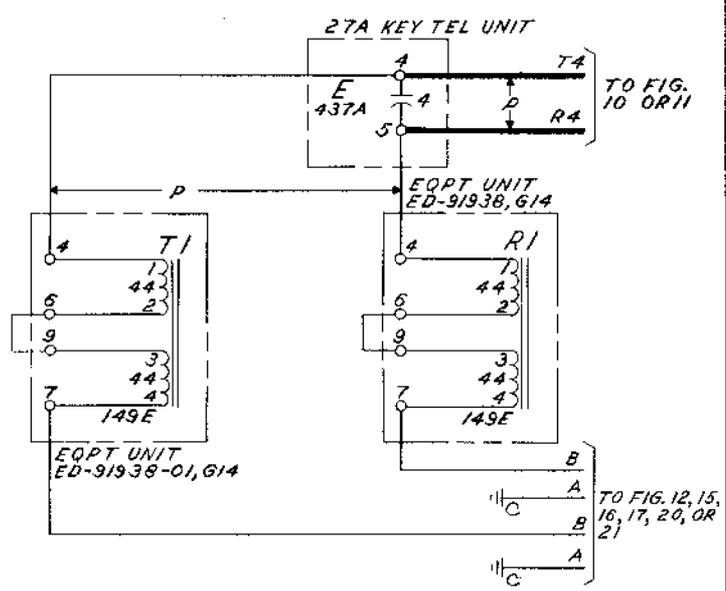
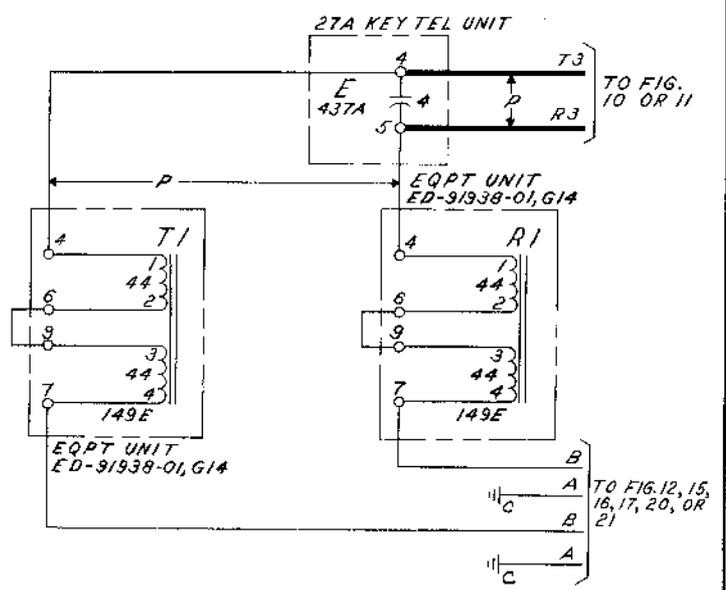


FIG. H



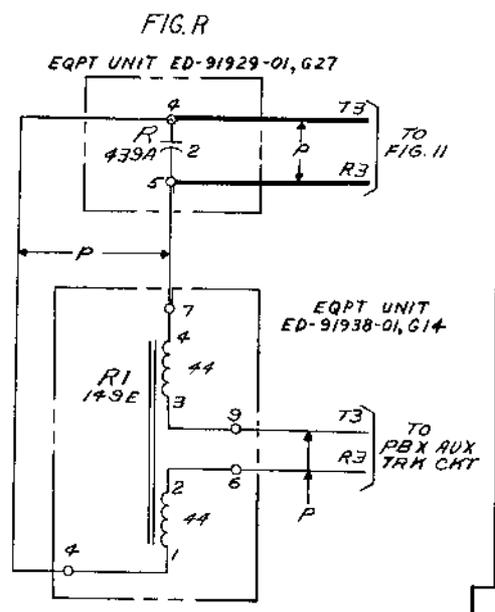
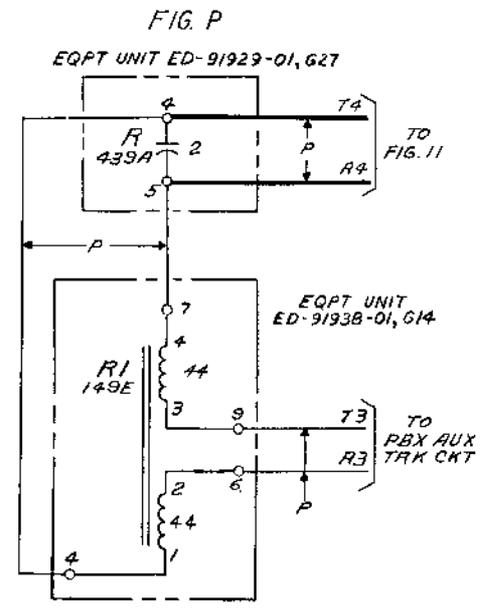
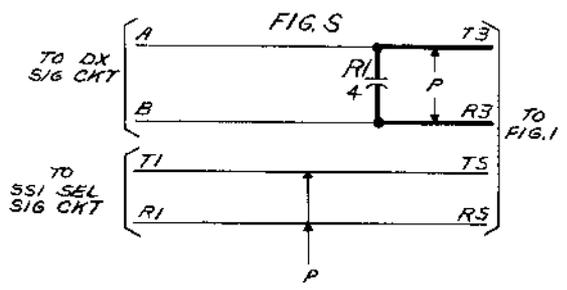
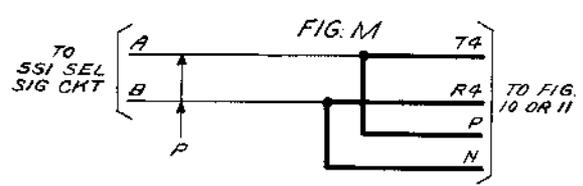
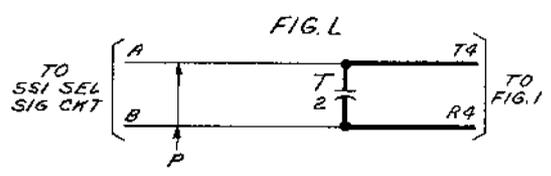
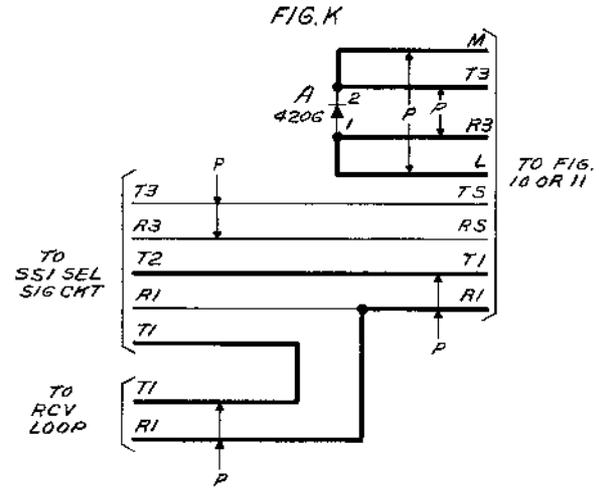
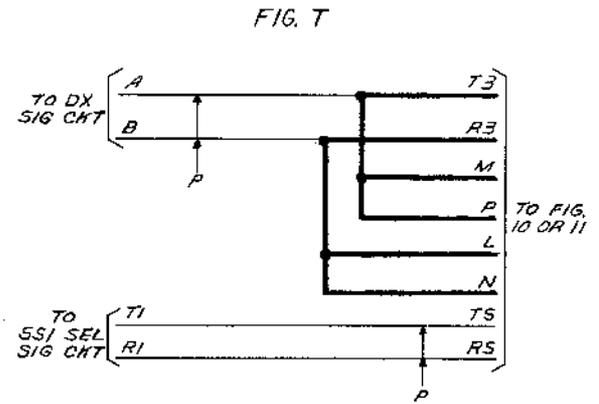
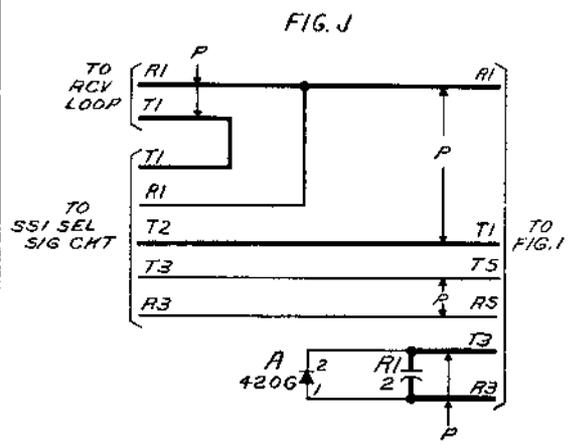


FIG. U

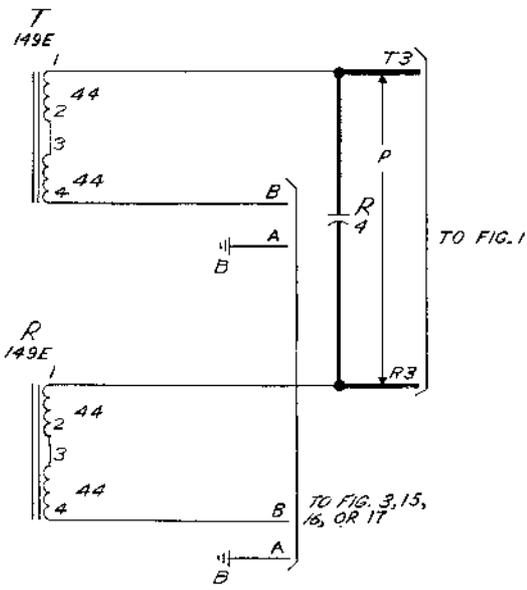


FIG. V

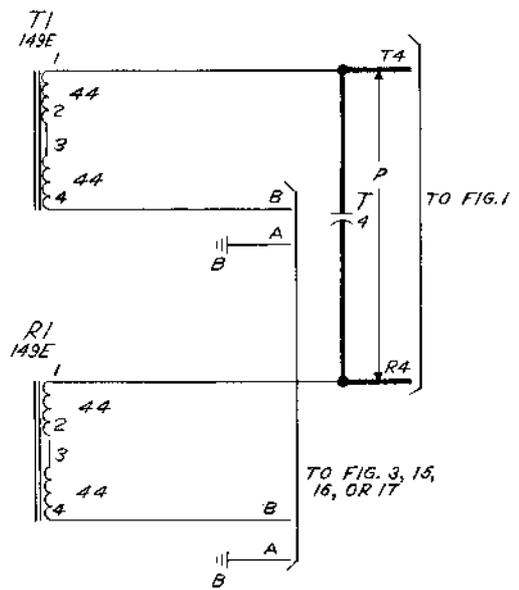
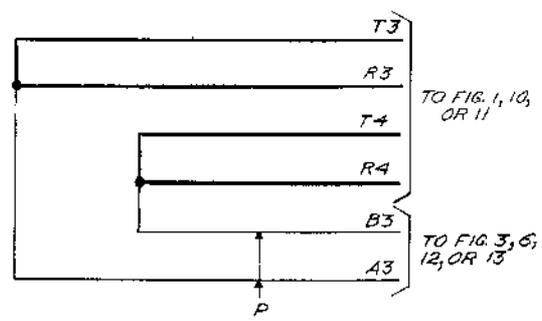


FIG. W



CIRCUIT REQUIREMENTS

4-WIRE PRIVATE LINE CIRCUIT

DRAWING
ISSUE

1
2D
DWC
DLV

APPARATUS				MECH REQ			CIRCUIT PREPARATION				TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REOT					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.		
RELAYS																		
A	AJ93		1	278					U(A)	GRD			0	48.0	45.5			
BL	L5		25								4		0					
FL	AK19		2	214			5(A)	2U(FL)	1U(FL)	B/G			0	43.5	41.0	MTD WITH (RO) REL.		
LB	AK17		8	212					1L(LB)	GRD			0	43.5	41.0	MTD WITH (RA) REL.		
R	AK17		5	212			12(A)	2L(R)	1L(R)	B/G			0	43.5	41.0	FOR ODD NO. CKT. ON UNIT		
R	AK17		5	212			12(A)	2U(R)	1U(R)	B/G			0	43.5	41.0	FOR EVEN NO. CKT. ON UNIT		
RA	AK17		7	212					1U(RA)	GRD			0	43.5	41.0	MTD WITH (LB) REL.		
RC	AK17		24	212					1U(RC)	GRD			0	43.5	41.0	MTD WITH (RS) REL.		
RO	AK19		3	214					1L(RO)	GRD			0	43.5	41.0	MTD WITH (FL) REL.		
RS	AK17		24	212					1L(RS)	GRD			0	43.5	41.0	MTD WITH (RC) REL.		
RU	AJ48		6	3			12(A),5(LB) 12(A),5(LB)	1L(RU) 1L(RU)	1U(RU) 1U(RU)	B/G B/G	2 2	P P	0 NO	8.5 6.9	8.0 6.5			
SW	AK32		23	210					1U(SW)	GRD	1	S	0	43.5	41.0	MTD WITH SPARE REL.		
TA	KS-16615 L15		24								3							
229B KTU																		
A	AJ43		18	249					U(A)	GRD			0	24.5	23.0			
220A KTU																		
R	AF123		12	217					2U(R)	GRD		P/S	0	19.0	18.0	PAR. AID.		
251A KTU																		
RU	AJ48		13	3				1L(RU) 1L(RU)	1U(RU) 1U(RU)	B/G B/G	2,5 2,5	P P	0 NO	8.5 6.9	8.0 6.5			
											1	S	0	AC	AC			

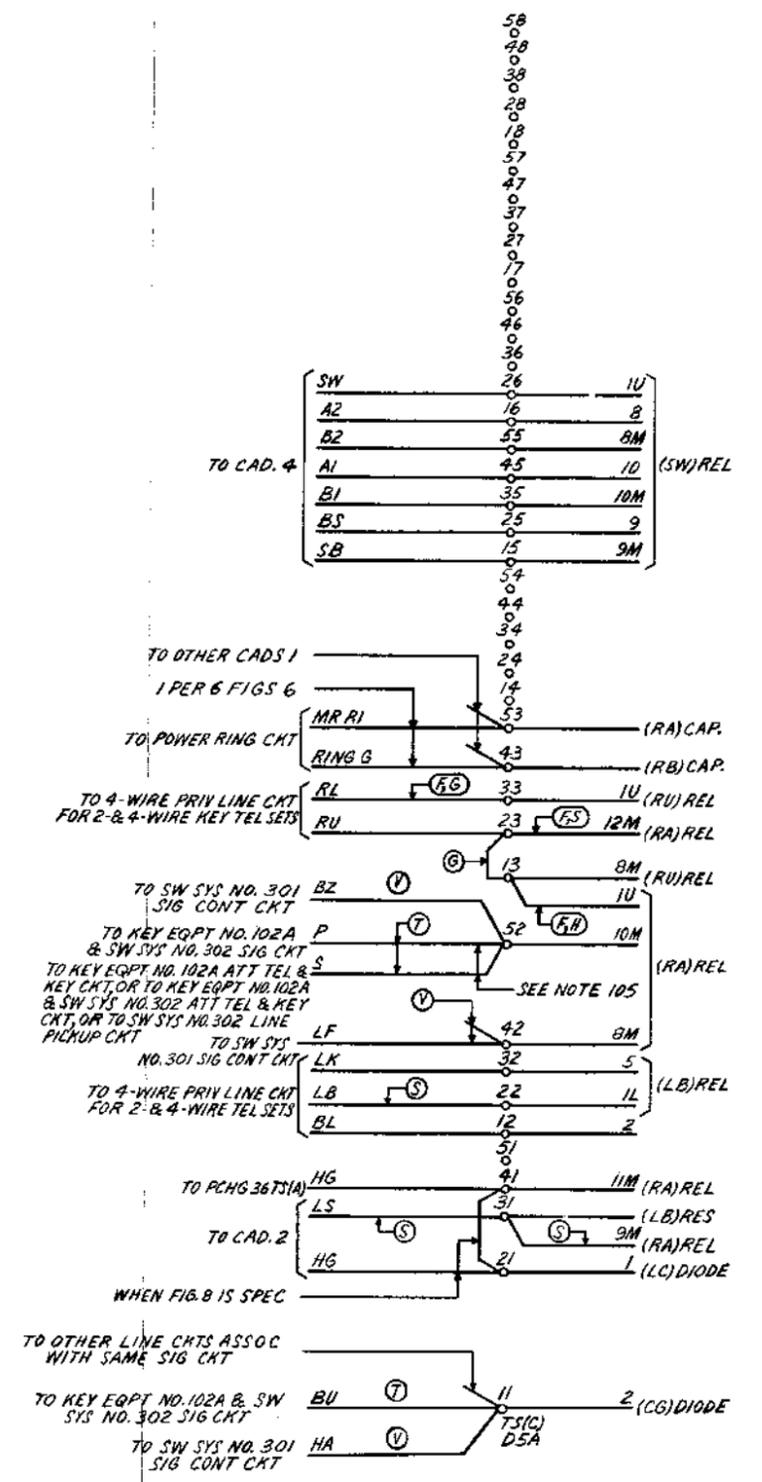
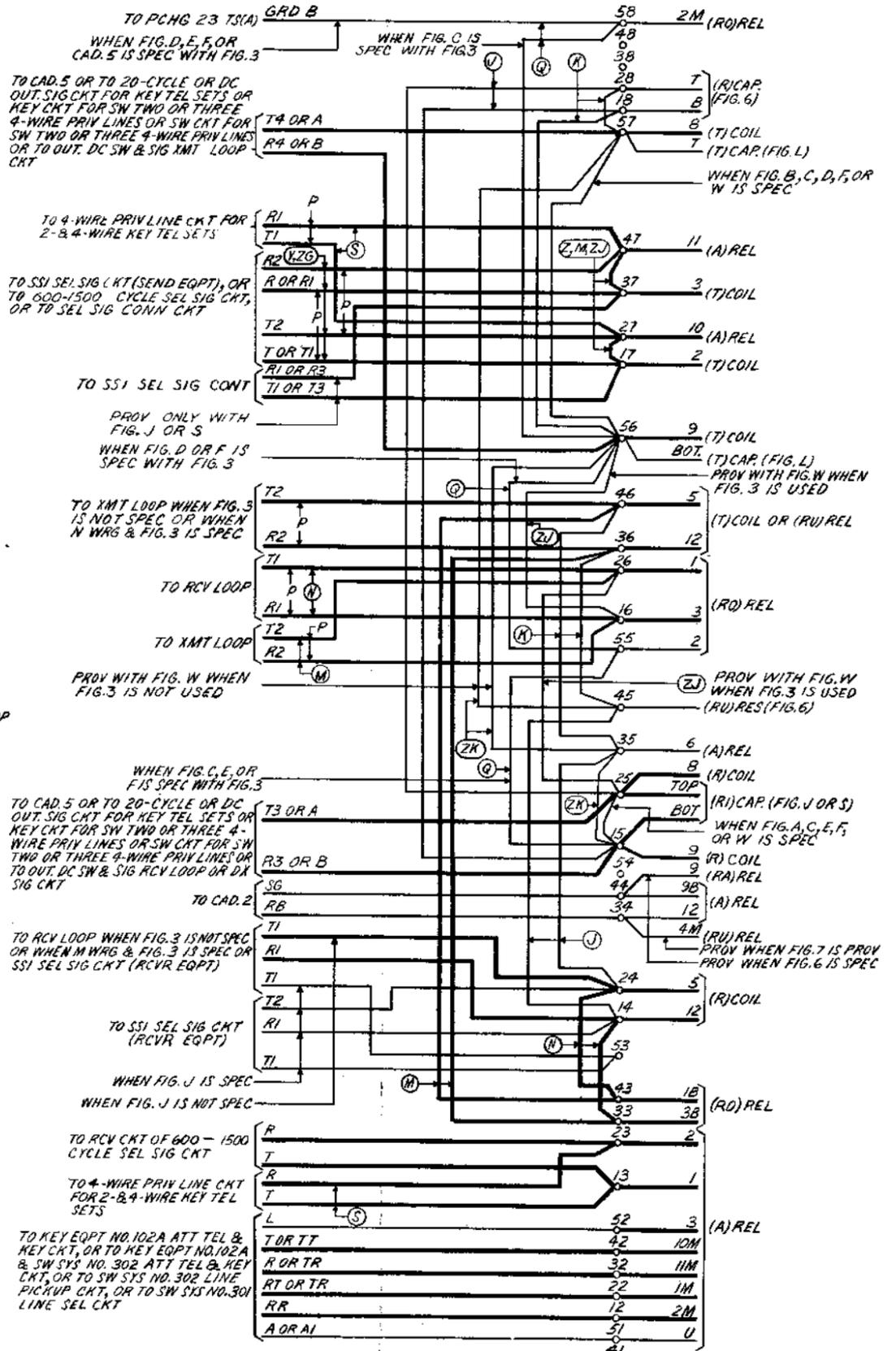
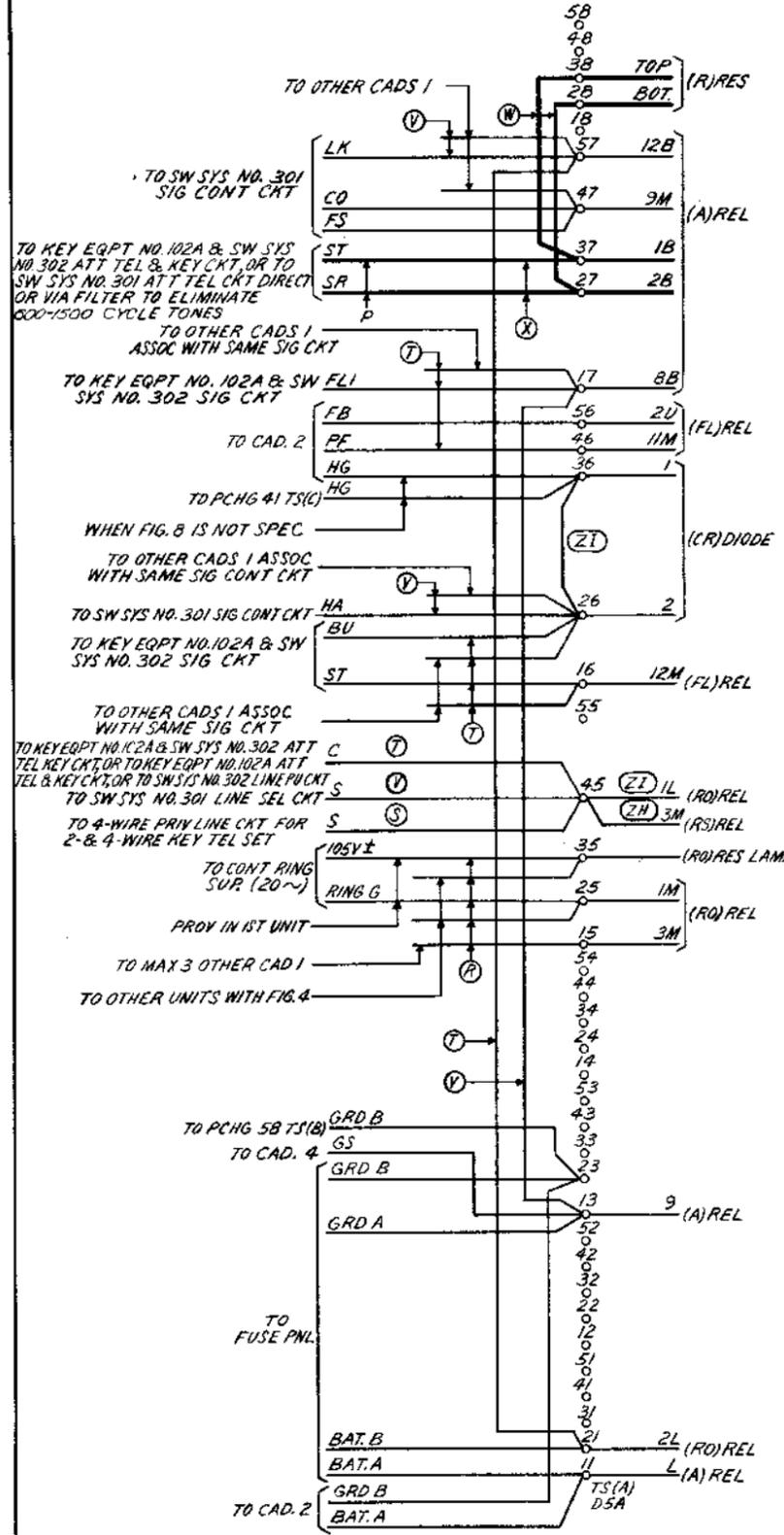
TEST NOTES:

- TEST AND READJ. (RU) RELAY BY APPLYING MIN 95V (20-CYCLE) RING SUPPLY IN SERIES WITH A 13B RESISTANCE LAMP OR EQUIVALENT AND A 7000 OHM RESISTOR AT THE LINE TERMINALS WITH THE LINE OPEN TOWARD THE DISTANT END.
- ARM. BACK TENSION MIN. 20 GRAMS READJ, 15 GRAMS TEST
- (TA) THERMAL RELAY IS FACTORY SET FOR OVERALL TIME OF 1.8 SEC (MIN) TO 2.5 SEC (MAX) WITH A MIN COOLING TIME OF 1 SEC ON 26 VOLTS (+0.5, -0).
- SHALL OPERATE RELIABLY WHEN MINIMUM OF 14 VOLTS DC IS APPLIED ACROSS WINDING.
- REMOVE UNSOLDERED WIRE AT TERM 19.

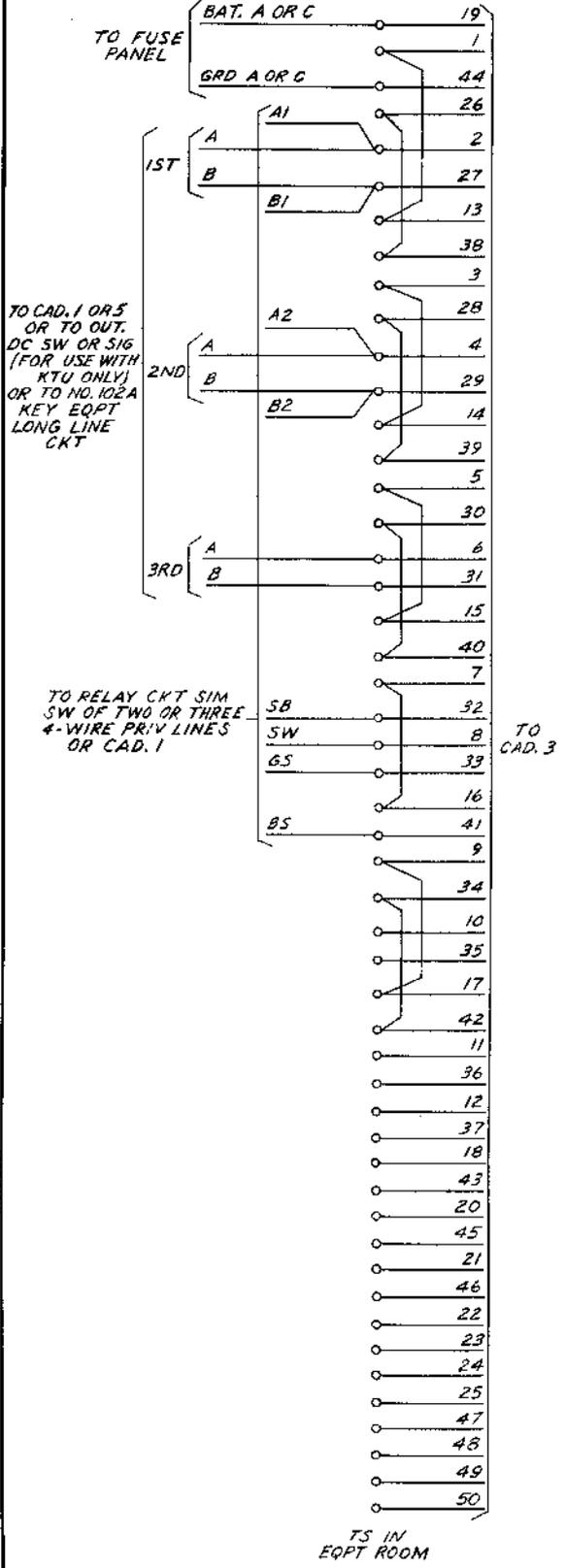
STATION SYSTEMS		SD-69410-01-D1
4-WIRE PRIVATE LINE CIRCUIT		
BELL TELEPHONE LABORATORIES INCORPORATED	DWG SIZE 35	PRINTED IN U.S.A.

CAD. 1
(FOR FIG. 1, 2, 3, 4, 6, 7, 8, 23 & 24)

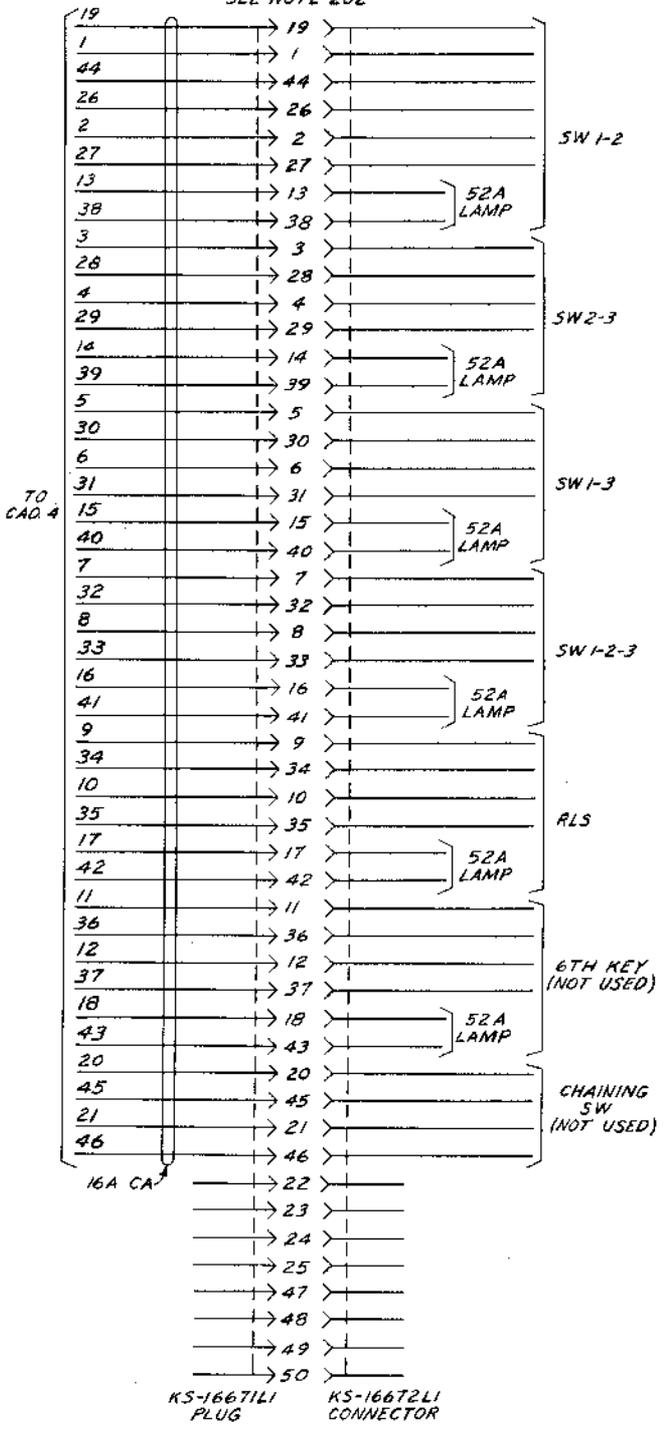
DRAWING
ISSUE
1
2D



CAD. 4
(FOR FIG. 17)



CAD. 3
(FOR FIG. 17)
6050 KEY OR EQUIV
SEE NOTE 202



CAD. 5
(FOR FIG. U, V)

