

SHEET INDEX (INITIATED ON ISSUE 19A)

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FS 4 TRANSFORMER	B3																									
FS 5 TRANSFORMER	B3																									
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CAD 9	G2																									
CAD 10	G2																									
CAD 11	G3																									

\* SHEETS WITH SUFFIX LETTER "A" WERE FORMERLY WITHOUT A SUFFIX LETTER

SHEET INDEX NOTES

- WHEN CHANGES ARE MADE IN THIS DRAWING, ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
- 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.
- THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
- SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
- THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.
- ON ISSUE 20 THIS DRAWING WAS CHANGED FROM THE ATTACHED TO THE DETACHED CONTACT ARRANGEMENT INCREASING THE NO. OF SHEETS FROM 6 TO 13. ALL PREVIOUSLY ISSUED SHEETS HAVE BEEN REPLACED BY SHEETS INDICATED ON ISSUE 20.
- ASSOCIATION OF CADS WITH SWITCHBOARD CABLE DETAIL DRAWINGS: CAD NUMBERS IN THE DETACHED ARRANGEMENT CORRESPOND TO THE CROSS CONNECTION FIGURE NUMBERS OF THE FORMER ATTACHED FORM LESS FIFTY.

SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DRAWINGS	26611-01 26000-01 <del>26011-01</del> J23252 H-( ) J23252 AJ-( ) J23252 BA-( ) J23252 BE-( ) J23252 BJ-( ) J23252 BZ-( ) J23256 K-( ) J29275 A-( )
EQUIPMENT DESIGN REQ	J23252 J23256

ISSUE	CD	DATE	ISSUE	CD	DATE	ISSUE	CD	DATE	ISSUE	CD	DATE
4A	3A	5D	5A	6D	7A	7A	APP 1A				
7D	4D	8D	4D	9D	4D	APP 2D					
10D	4D	11D	4D	12D	5D						
13A	3D	14D	5D	15A	APP 3A						
16D	5D	17D	6D	18A	APP 4D						
19A	6D	20A	APP 1A	7-17-68	RCB	RFB					
200	6D	APP 1D	7-17-68	RCB	RFB						
21A	4D	APP 4A	1-2-69	MD	DAJ						
22D	6D	APP 5D	12-16-69	PVS	RBC						
23A	6D	APP 6A	6-16-70	RCB	SM	RFB					
24A	6D	APP 7A	1-4-71	HDB	RFB						
25D	6D	APP 8D	3-3-72	GS	DP	RFB					
26A	6D	APP 9A	3-3-72	GS	DP	RFB					
27D	7D		12-8-72	HVG	RFB						
28D	7D	APP 1D	10-5-73	CDI	RFB						
25A	7D	APP 2A	10-5-73	CDI	RFB						
30D	7D	APP 3D	8-12-74	CDI	RFB						
31A	7D	APP 4A	8-12-74	CDI	RFB						
32A	7D	APP 5A	2-25-75	CDI	RFB						
33B	7D	APP 6B	9-18-75	CDI	RFB						
34A	7D	APP 7A	10-21-76	CDI	RFB						
35B	8B		4-26-77	CDI	RFB						
36B	8B	APP 1B	2-2-78	CDI	RFB						
37B	8B	APP 2B	11-15-78	CDI	RFB						

CLASS "A" INFORMATION  
ISSUE 34A INCLUDES LOI 328, 33A, 33B

NOTICE - NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.

REPLACED BY SD-27999-01 FOR ACD

CROSSBAR SYSTEMS  
NO. 5  
MASTER TEST FRAME  
TELEPHONE, KEY AND  
LAMP CIRCUIT

AT&TCO  
STANDARD

SD-25744-01-A1  
23 SHEETS

BELL TELEPHONE LABORATORIES  
INCORPORATED



OPTION INDEX

APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION	APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION	APP OR WRG	RATED ON ISSUE	REF NOTES	LOCATION
A 1	STD 1	102	APP FIG 1	R	STD 80	104	APP FIG 1	ZV	STD 270	102, 104	1F1
2	STD 1	102	APP FIG 1	Q	STD 1 MD 80	104	APP FIG 1	ZW	STD 270	102, 104	1G1
3	STD 1	102	APP FIG 3	N	STD 1 MD 80	104	APP FIG 1				
4	STD 1	102	APP FIG 4								
5	STD 140 MD 160	104, 108, 302	APP FIG 5, 181	M	STD 80	104	APP FIG 1				
				K	STD 100 MD 160	104, 106, 108	APP FIG 1, 106, E5, E6, G5				
6	STD 140 MD 160	104, 108, 302	APP FIG 7, 181, B2, C2	J	STD 1 MD 100	104, 108, 111	APP FIG 1				
B 7	STD 160	102, 104, 108, 302	APP FIG 7, 181, B2, C1, C2, 404, F4, G3	H	STD 100 MD 140	104, 106, 108, 111	APP FIG 1				
8	STD 160	102, 104, 109	APP FIG 8	G	STD 110	102, 104	APP FIG 2, 3				
9	A&M ONLY 270	104, 116, 117, 118	APP FIG 9, 1A2, B1, B2, C1, C2, D1, F4, G4, 8E1, E2	F	STD 1 MD 120	104	2H6				
				E	STD 120	104	APP FIG 1				
C 10	A&M ONLY 270	104, 116, 117, 118	APP FIG 10	B	STD 1 MD 120	104, 107, 108	1A6, 86, B7, E3, E5, E7, G2, G4, G7				
				A	STD 120	104, 107, 108, 110	APP FIG 1				
				ZA	STD 1 MD 13AC	104, 107	1B4-B7, C7				
				ZB	STD 13AC	104, 107	1B5, 86, C7				
				ZC	STD 140	102, 104	2B2, C2, C4				
				ZD	STD 140	102, 104	2B3, C2, C3, C4, C5				
				ZE	STD MD 140	104, 108	APP FIG 1, 1E3, E4				
				ZF	STD 140	102, 104, 108	APP FIG 1				
				ZG	STD 160 MD 250	104, 109, 114	106				
				ZH	STD 160	102, 104, 109	106, H1				
				ZI	STD 160	102, 104, 109	106				
				ZJ	STD 160	102, 104	4B4, F4				
				ZK	STD 1 MD 160	104, 108	1D1				
				ZL	STD 160	102, 104, 109	4C5, D5				
Z	STD 1	102, 104	APP FIG 2, 3	ZM	STD 1 MD 160	104, 108, 110	1E3, E7, E8, G3, G7, G8				
Y	STD 1 MD 11D	104	APP FIG 2, 3	ZN	STD 160	102, 104, 108	1D1, D6, E3-E7, G4, G5, G7				
G X	STD 1 MD 60	104	APP FIG 1, 106, E5, E6, G5	ZO	STD 200	104	APP FIG 1				
				ZP	MD 200	104, 112	APP FIG 1				
W	STD 60 MD 100	104	APP FIG 1, 106, E5, E6, G5	ZQ	MD 24A	104, 113	APP FIG 7				
V	STD 1 MD 60	104	APP FIG 1	ZR	STD 24A	104, 113	APP FIG 7				
U	STD 60	104, 106, 111	APP FIG 1	ZS	MD 24A	104, 113	4D4				
T	STD 1 MD 70	104	APP FIG 1	ZT	MD 250	104, 114, 115	1H1				
H S	STD 70	104, 105	APP FIG 1	ZU	STD 250	102, 104, 115	1H1				

ISSUE 35B

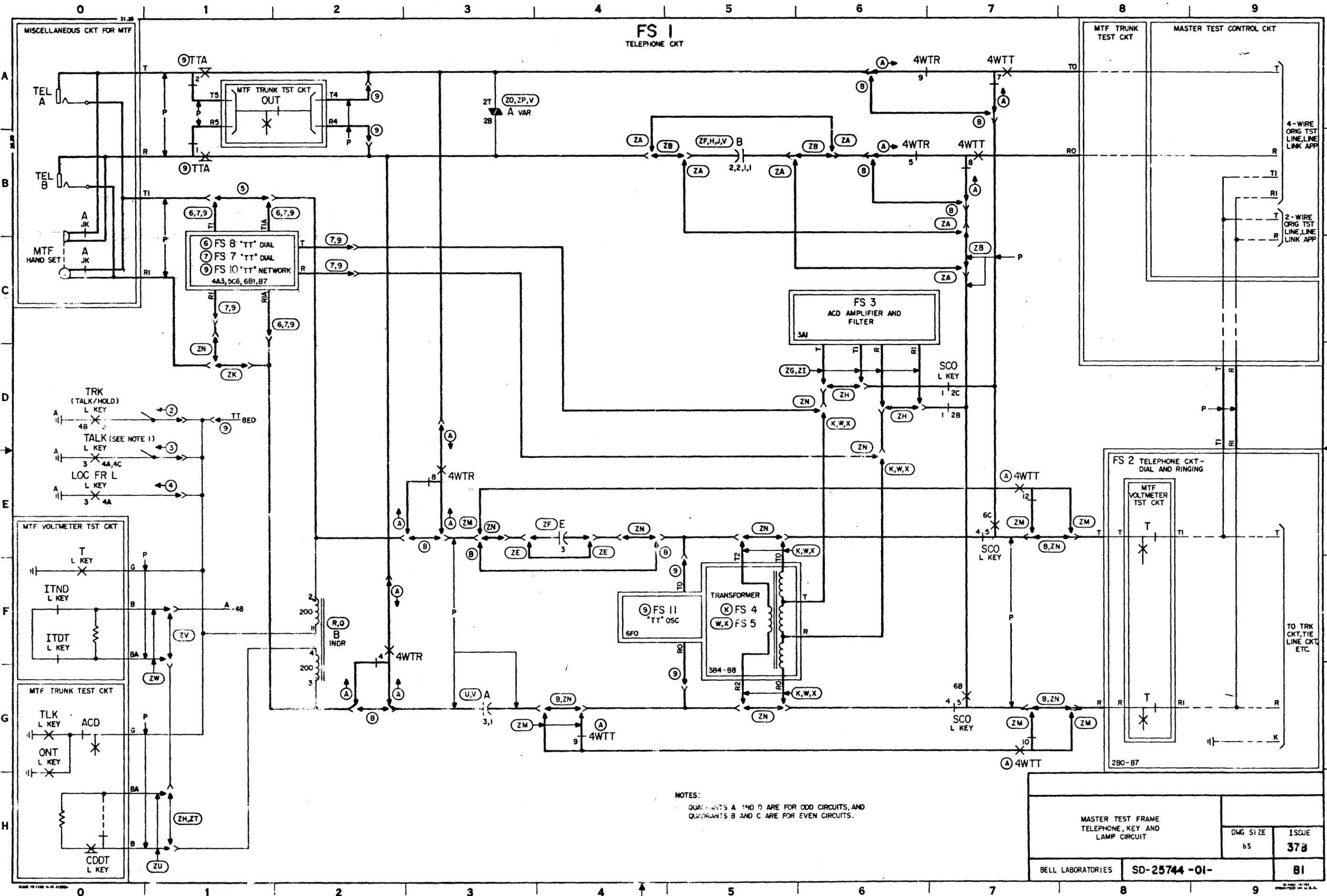
MASTER TEST FRAME TELEPHONE, KEY AND LAMP CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

SD-25744-01-A3

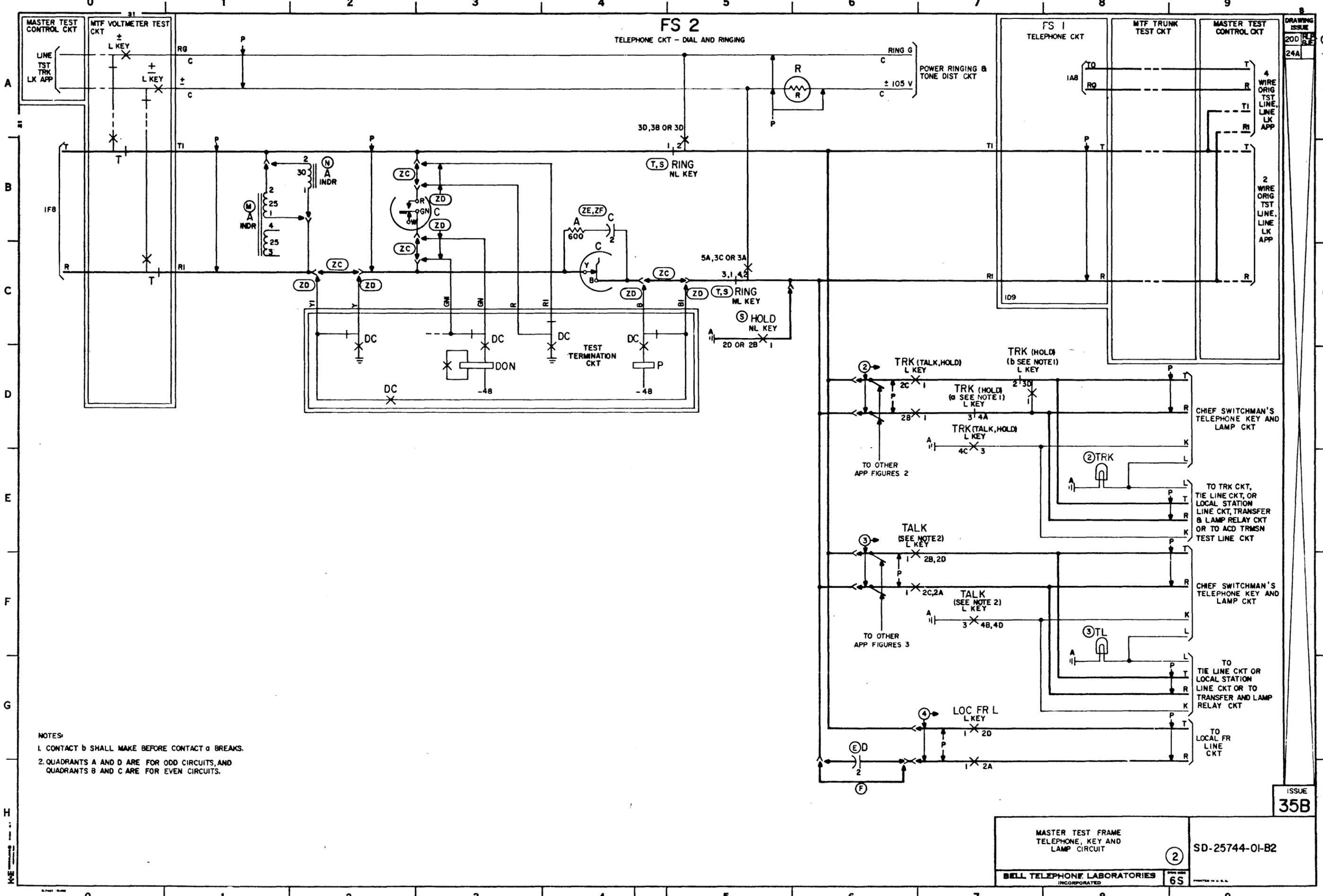
65

SD-25744-01-A3



NOTES:  
 QUADRANTS A AND D ARE FOR ODD CIRCUITS, AND  
 QUADRANTS B AND C ARE FOR EVEN CIRCUITS.

MASTER TEST FRAME TELEPHONE, KEY AND LAMP CIRCUIT		DWG SIZE 65	ISSUE 37B
BELL LABORATORIES		SD-25744 -01-	
		81	



NOTES:  
 1. CONTACT b SHALL MAKE BEFORE CONTACT a BREAKS.  
 2. QUADRANTS A AND D ARE FOR ODD CIRCUITS, AND QUADRANTS B AND C ARE FOR EVEN CIRCUITS.

MASTER TEST FRAME  
 TELEPHONE, KEY AND  
 LAMP CIRCUIT

BELL TELEPHONE LABORATORIES  
 INCORPORATED

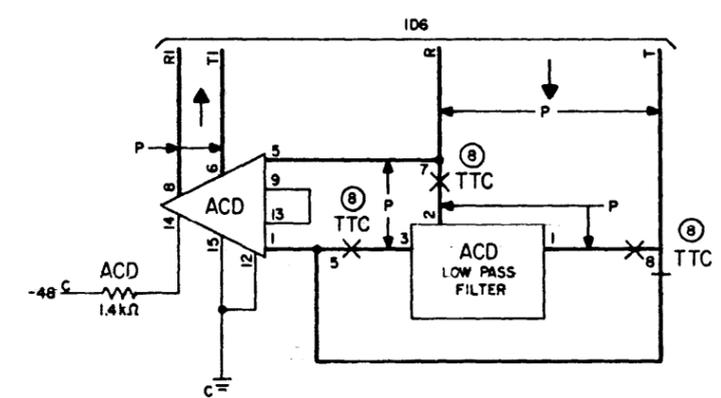
ISSUE  
**35B**

SD-25744-01-B2

SD-25744-01-B2

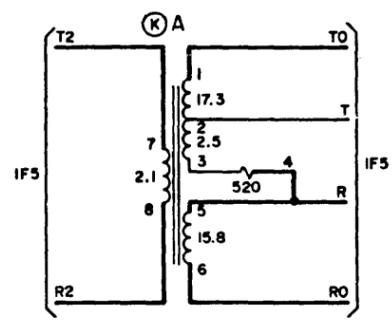
**FS 3**

ACD AMPLIFIER AND FILTER



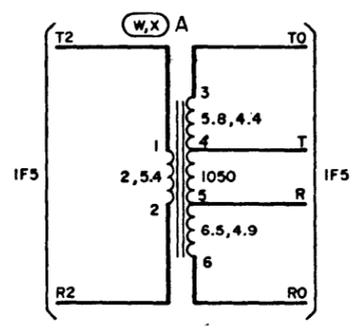
**FS 4**

TRANSFORMER



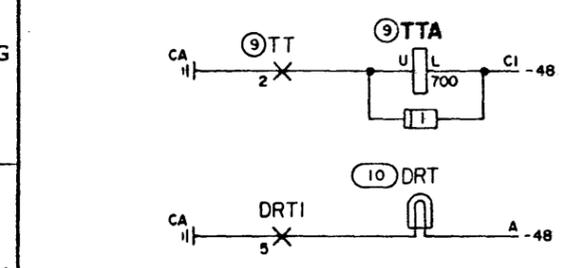
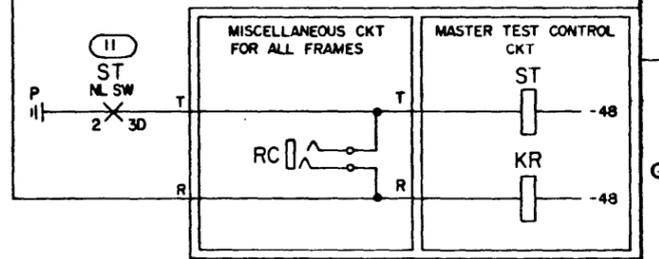
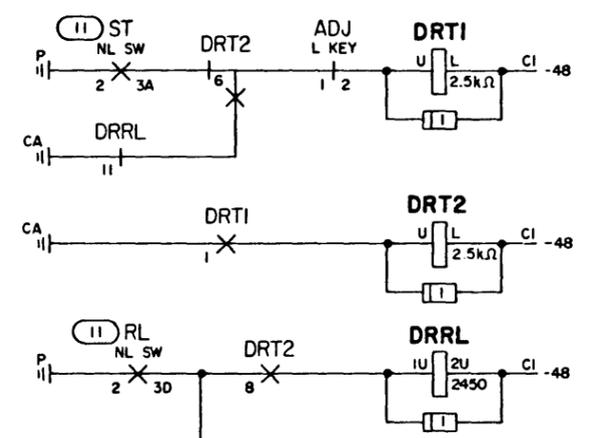
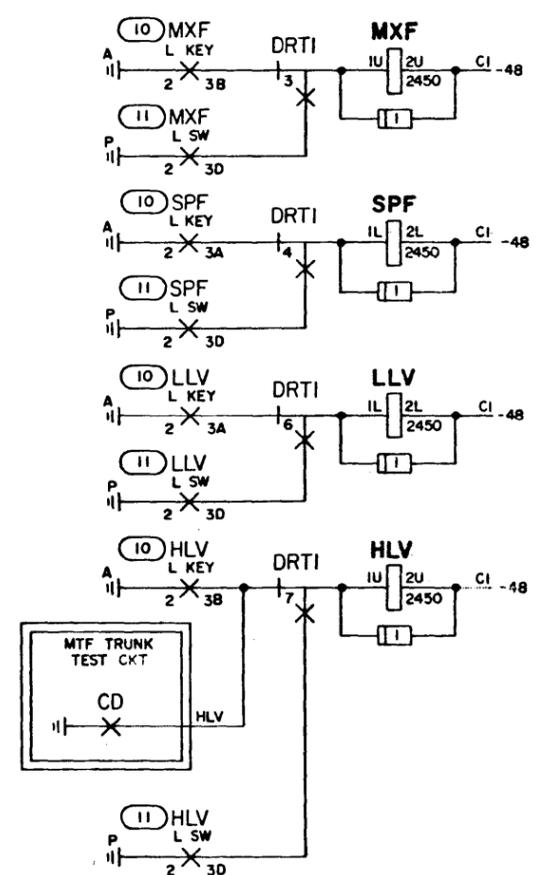
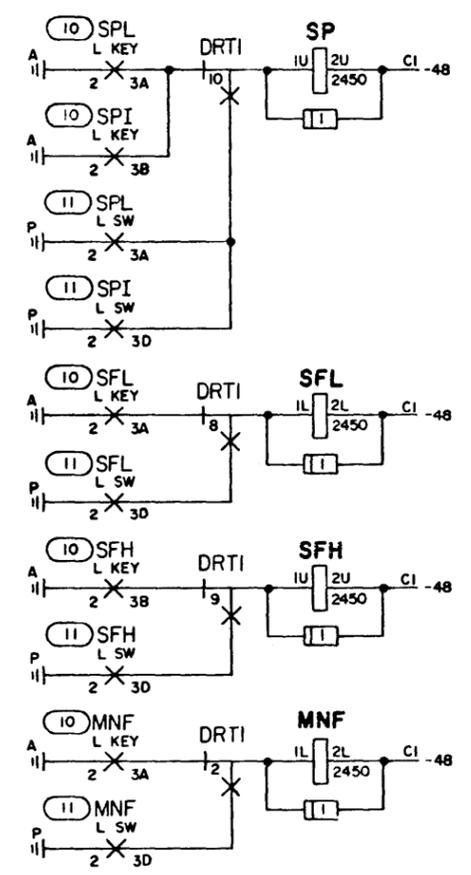
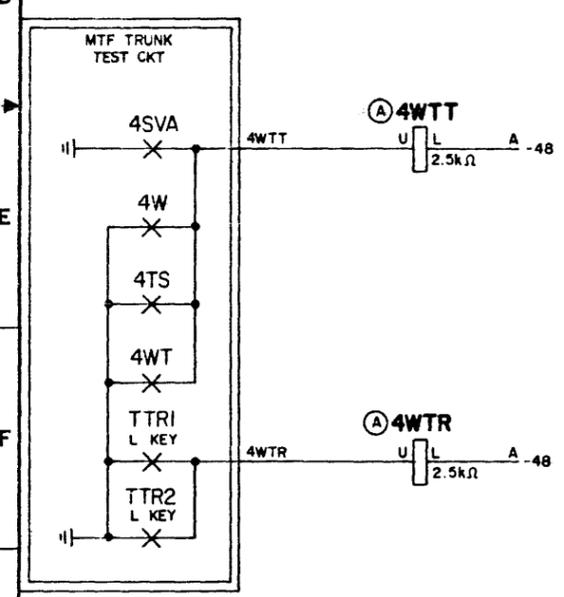
**FS 5**

TRANSFORMER



**FS 6**

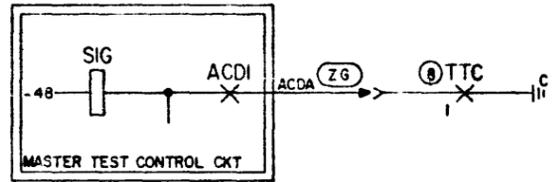
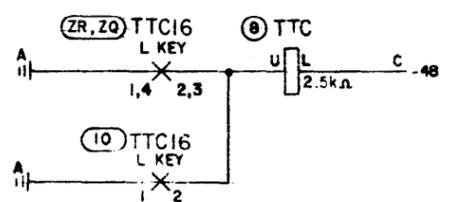
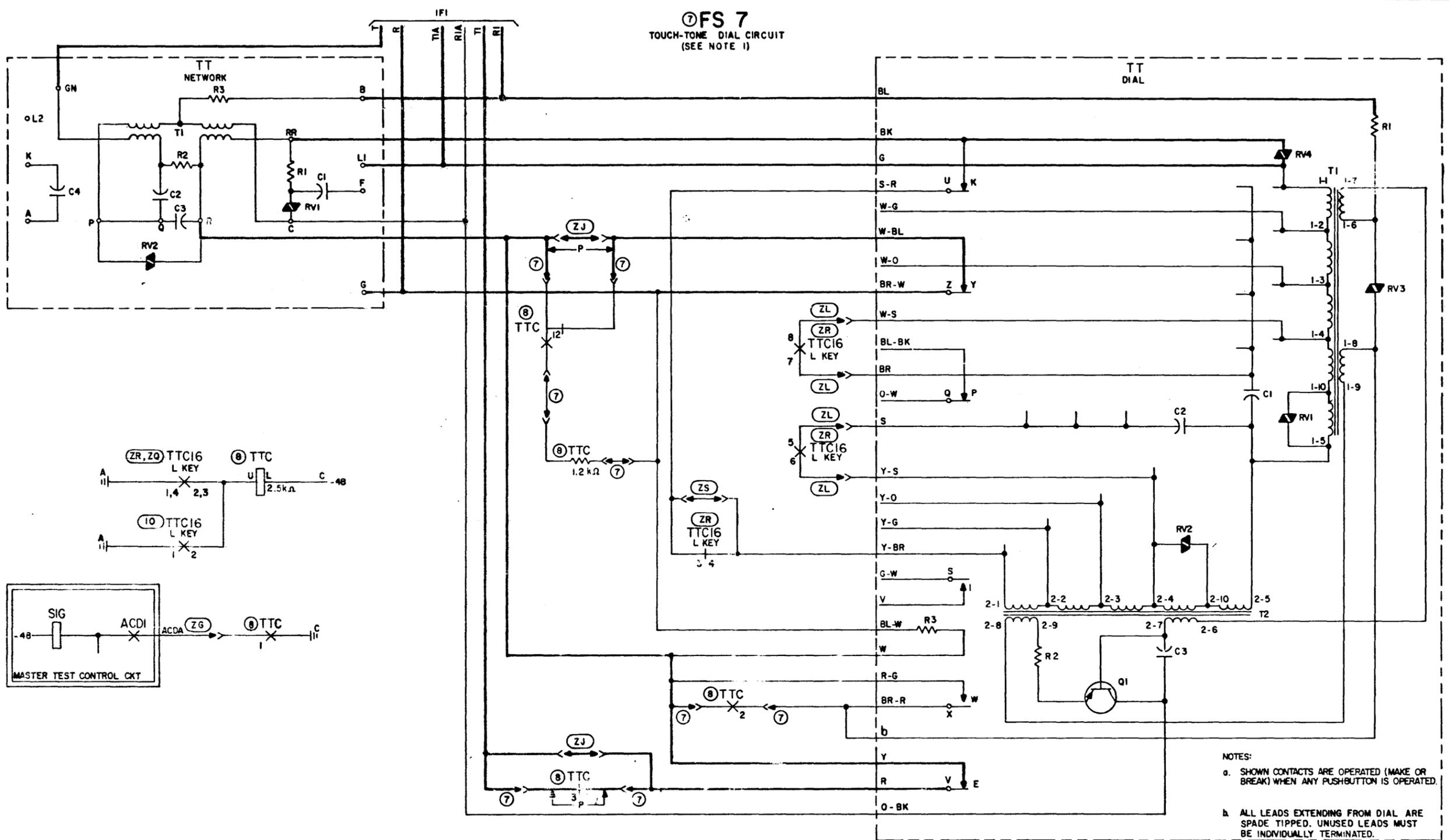
RELAYS



MASTER TEST FRAME TELEPHONE, KEY AND LAMP CIRCUIT		DWG SIZE 65	ISSUE 35B
BELL LABORATORIES		SD-25744-01-	
		B3	

**FS 7**  
TOUCH-TONE DIAL CIRCUIT  
(SEE NOTE 1)

DRAWING  
200 / NE  
24A



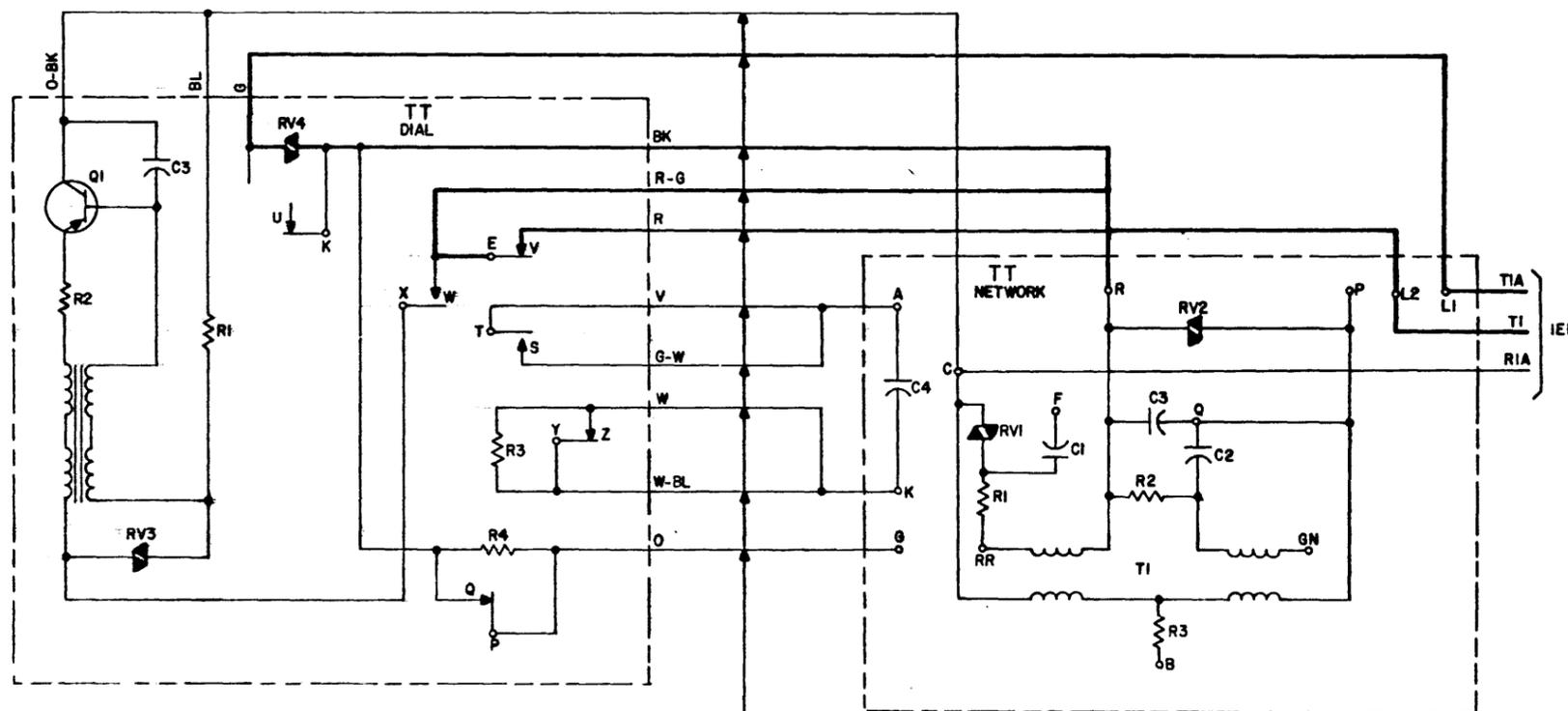
- NOTES:
- a. SHOWN CONTACTS ARE OPERATED (MAKE OR BREAK) WHEN ANY PUSHBUTTON IS OPERATED.
  - b. ALL LEADS EXTENDING FROM DIAL ARE SPADE TIPPED. UNUSED LEADS MUST BE INDIVIDUALLY TERMINATED.

NOTES:  
1. ALL APPARATUS AND WIRING IS PART OF APP FIG 7 UNLESS OTHERWISE SPECIFIED.

ISSUE  
**37B**

MASTER TEST FRAME TELEPHONE, KEY AND LAMP CIRCUIT	2	SD-25744-01-B4
BELL TELEPHONE LABORATORIES INCORPORATED	65	

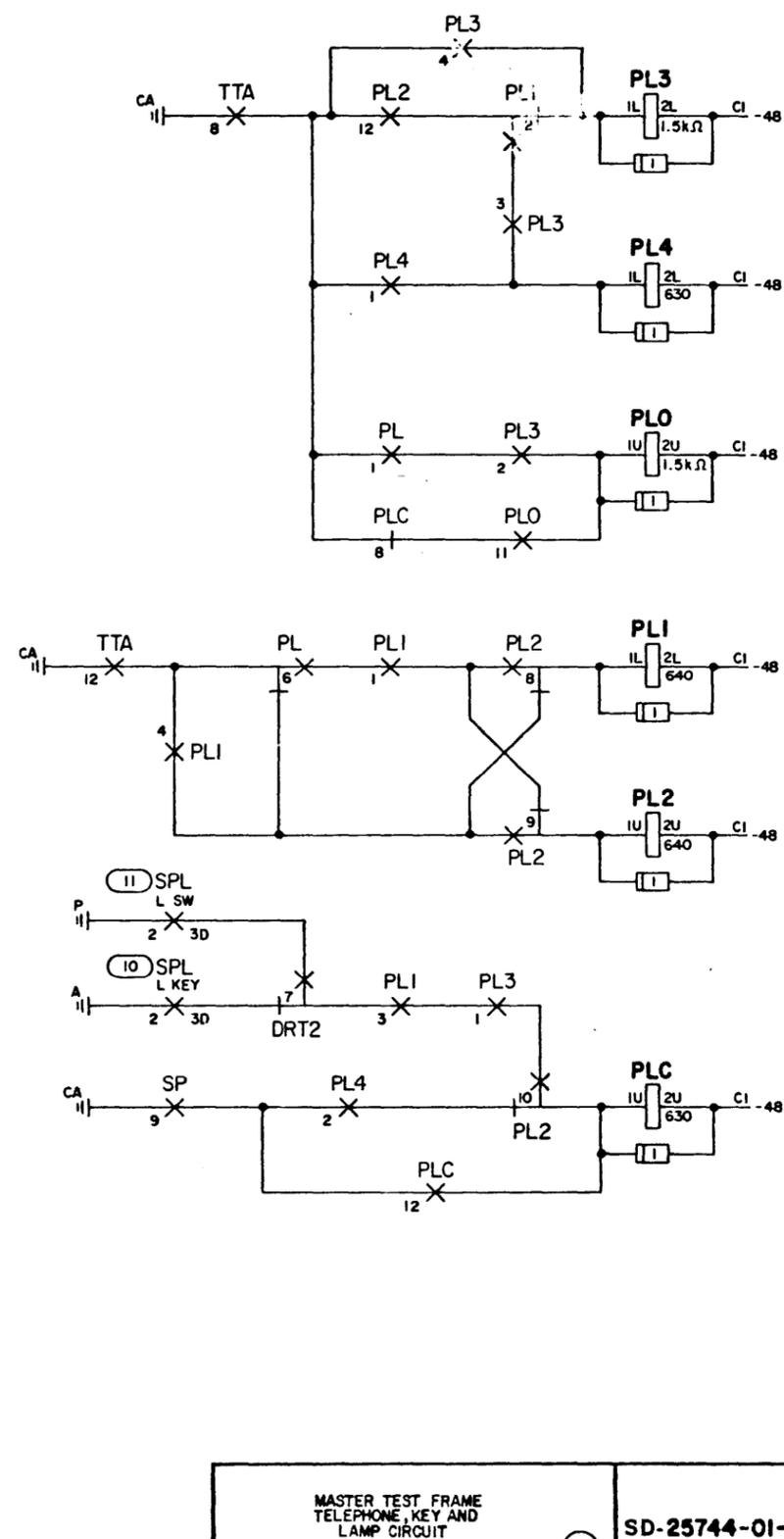
⑥ FS 8  
"TOUCH TONE" DIAL CIRCUIT



NOTE:  
1. SHOWN CONTACTS ARE OPERATED (MAKE OR BREAK) WHEN ANY PUSHBUTTON IS OPERATED.

LEADS FURNISHED WITH DIAL

⑨ FS 9  
PULSE GENERATOR  
(SEE NOTE 1)



NOTE:  
1. ALL APPARATUS AND WIRING IS PART OF APP FIG. 9 UNLESS OTHERWISE SPECIFIED.

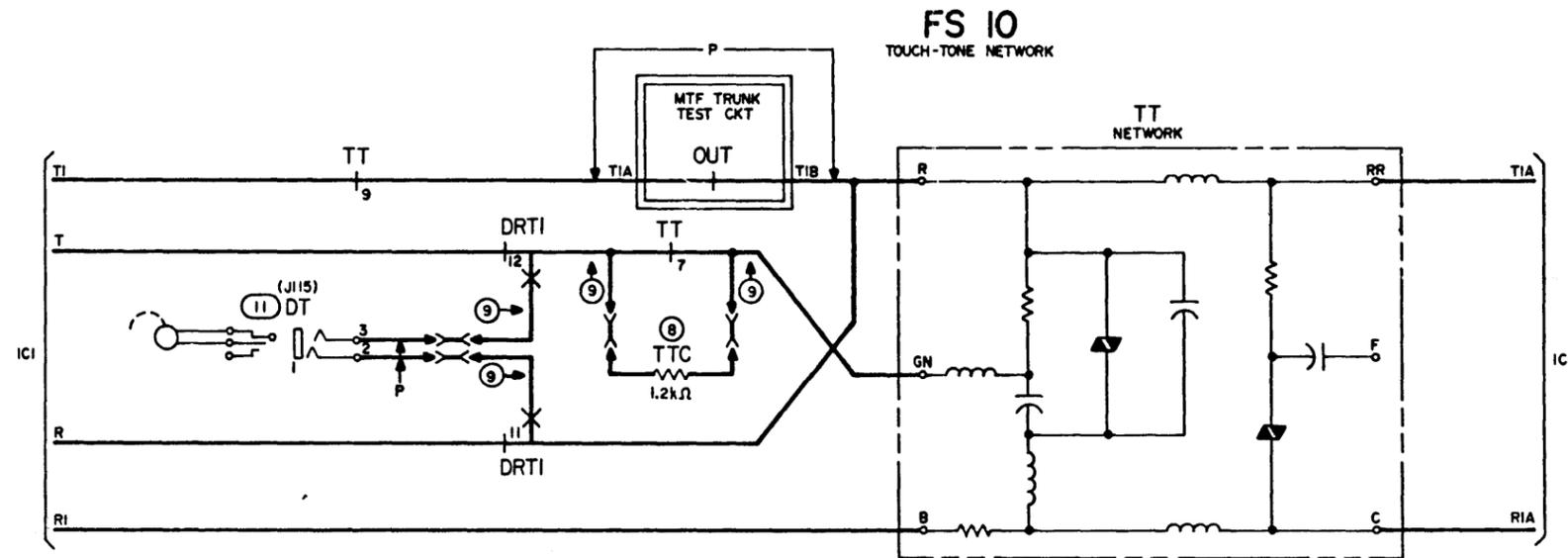
ISSUE  
37B

MASTER TEST FRAME  
TELEPHONE, KEY AND  
LAMP CIRCUIT

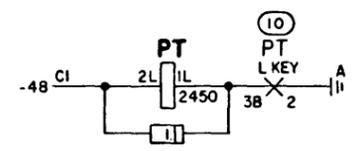
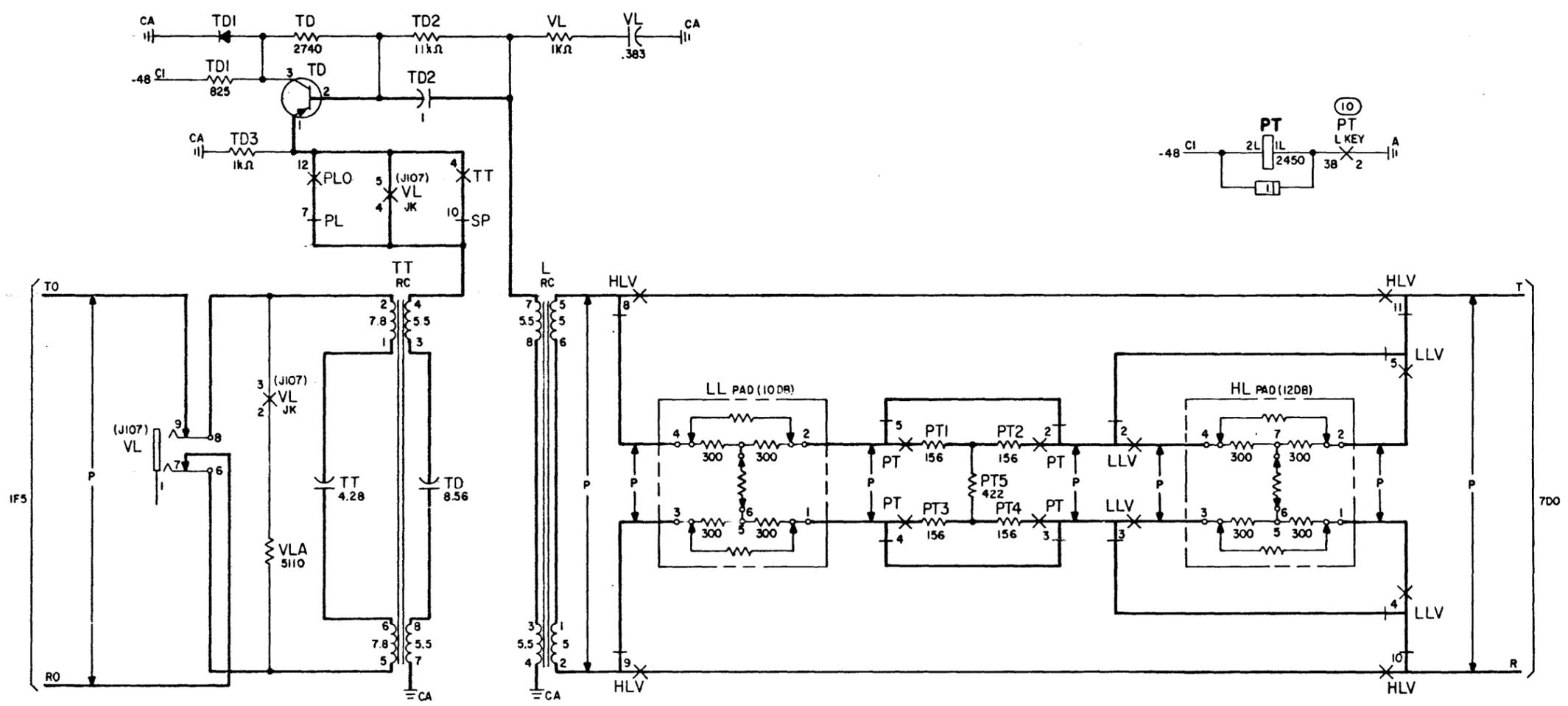
BELL TELEPHONE LABORATORIES  
INCORPORATED

SD-25744-01-B5

6S



⑨ PART OF FS II  
TOUCH-TONE OSCILLATOR  
(SEE NOTE 1)



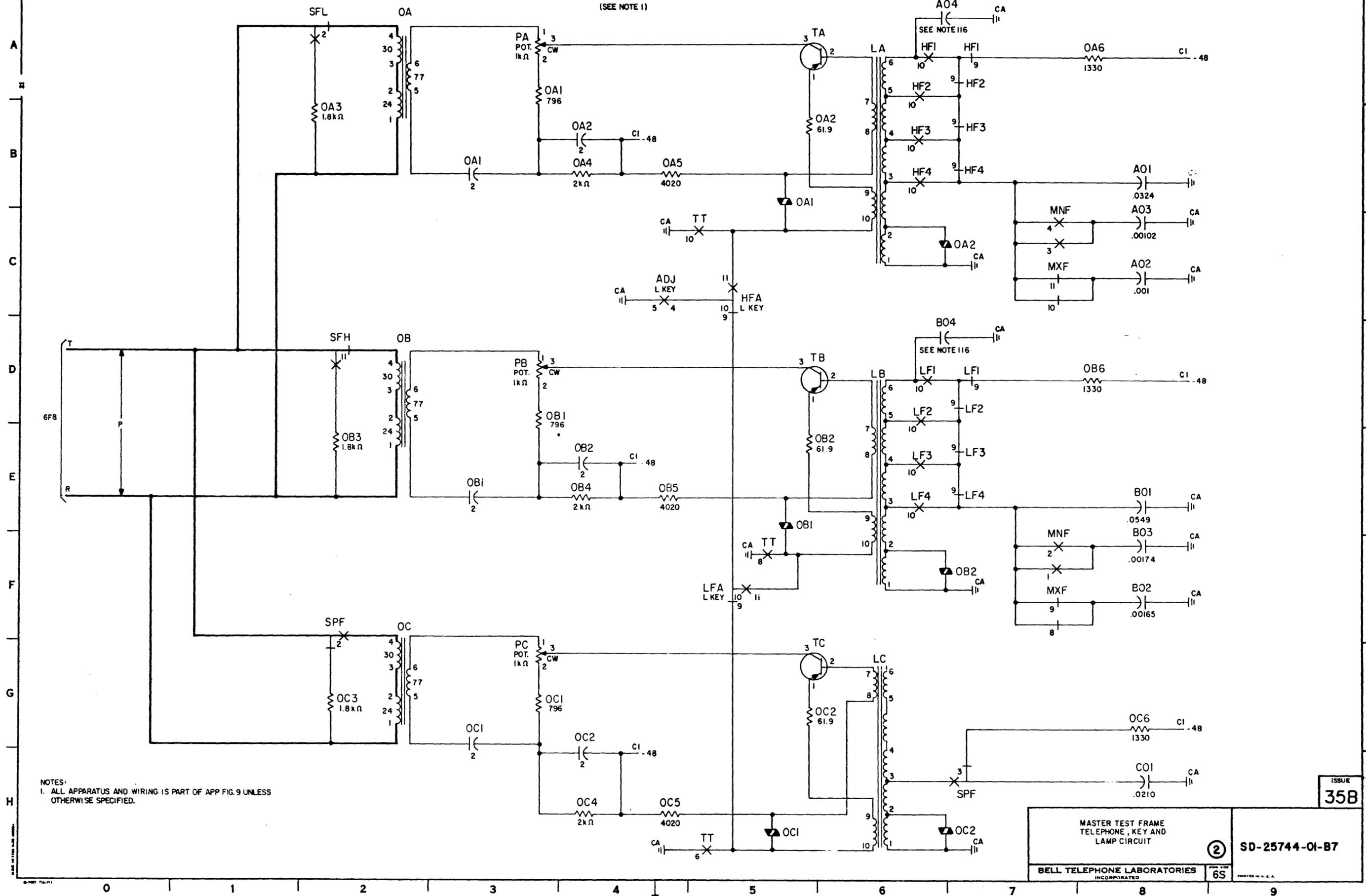
NOTES:  
1. ALL APPARATUS AND WIRING IS PART OF APP FIG. 9 UNLESS OTHERWISE SPECIFIED.

ISSUE  
358

MASTER TEST FRAME TELEPHONE, KEY AND LAMP CIRCUIT		②	SD-25744-01-B6
BELL TELEPHONE LABORATORIES INCORPORATED			

SD-25744-01-B6

⑨ PART OF FS II  
TOUCH-TONE OSCILLATOR  
(SEE NOTE 1)

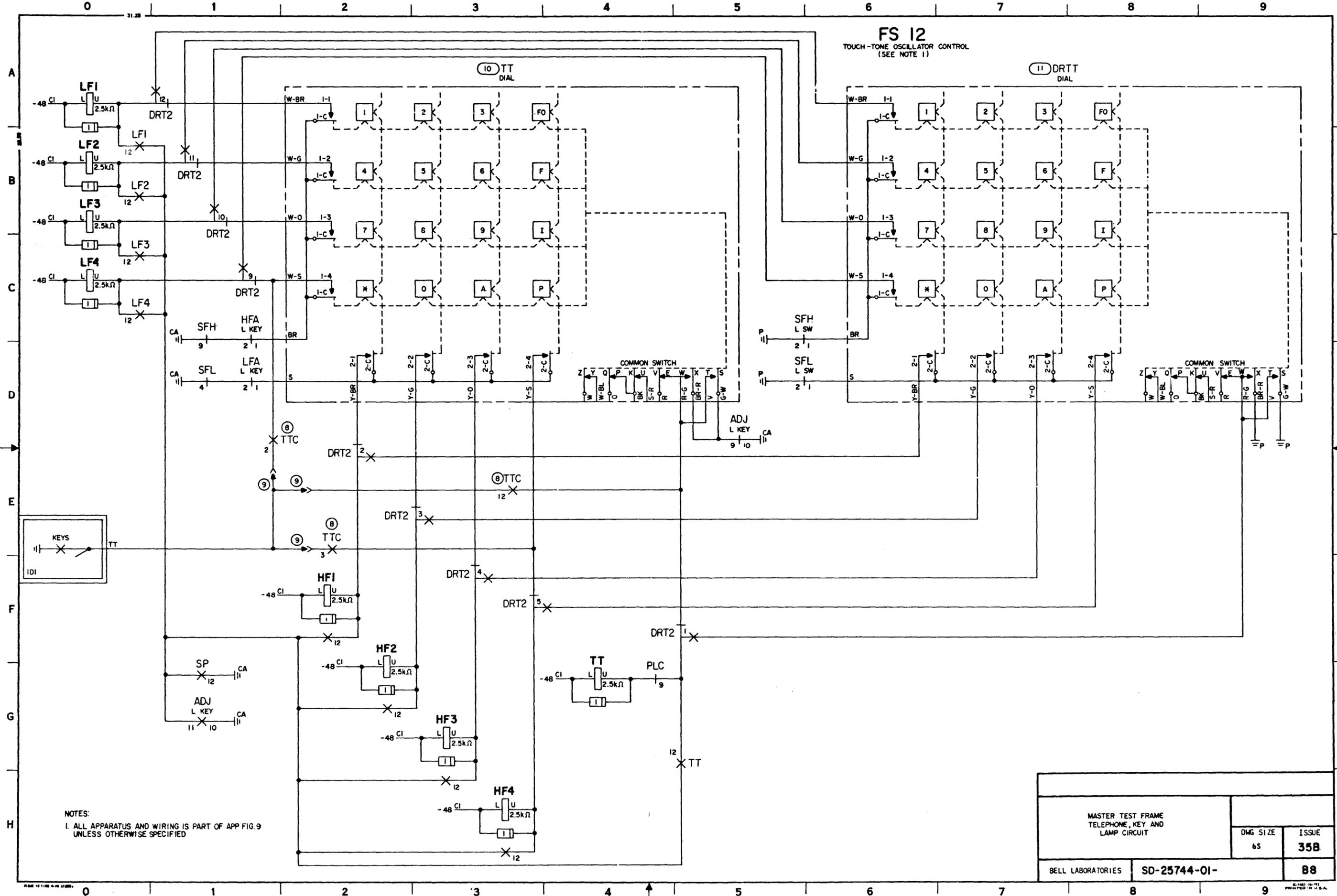


NOTES:  
1. ALL APPARATUS AND WIRING IS PART OF APP FIG. 9 UNLESS OTHERWISE SPECIFIED.

MASTER TEST FRAME TELEPHONE, KEY AND LAMP CIRCUIT		②	SD-25744-01-B7
BELL TELEPHONE LABORATORIES INCORPORATED			

ISSUE  
35B

SD-25744-01-B7

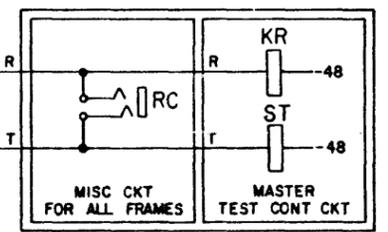
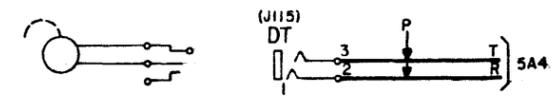
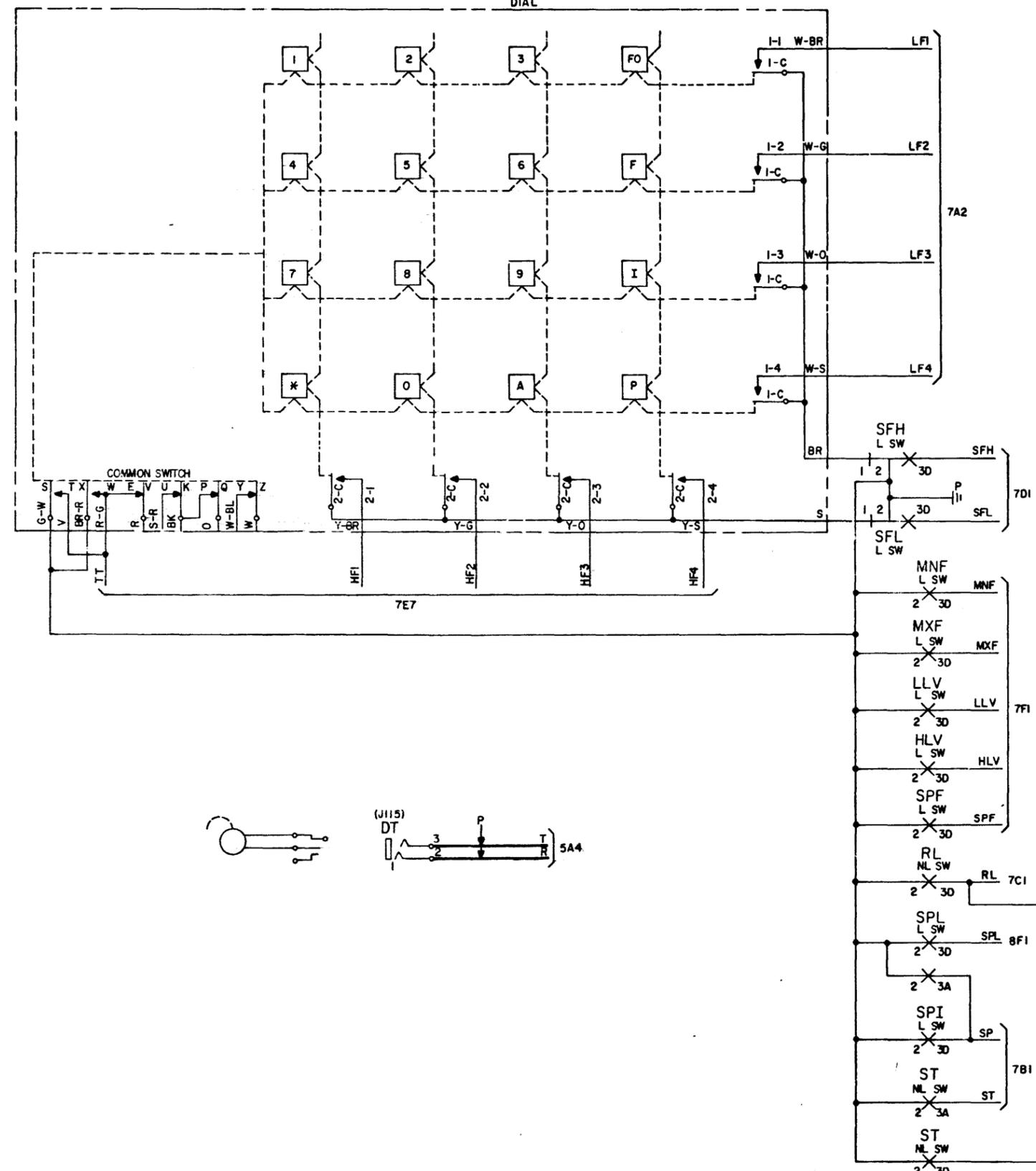


NOTES:  
 1. ALL APPARATUS AND WIRING IS PART OF APP FIG.9  
 UNLESS OTHERWISE SPECIFIED

MASTER TEST FRAME TELEPHONE, KEY AND LAMP CIRCUIT		DWG SIZE 65	ISSUE 35B
BELL LABORATORIES	SD-25744-01-	88	

**FS 7**  
REMOTE DIGIT REGISTER TESTING

**DRTT DIAL**



SD-25744-01-B9

ISSUE  
**30D**

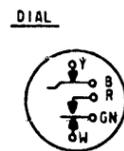
MASTER TEST FRAME TELEPHONE, KEY AND LAMP CIRCUIT	② <b>SD-25744-01-B9</b>
BELL TELEPHONE LABORATORIES INCORPORATED	6S PRINTED IN U.S.A.

# APP FIG 1

RELAY		4WTR		4WTT					
DESIG	CODE	AF139	AJ5						
OPTION	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12			EBM	1E7					
11			EBM						
10	M		EBM	1G7					
9	B	1A7	EBM	1G4					
8	EBM	1E3	EBM	1B7					
7	B		EBM	1A7					
6	EMB		EBM						
5	B	1B6	EBM						
4	EBM	1F2	EBM						
3	B		EBM						
2			EBM						
1			EBM						
COIL		3F1		3E1					

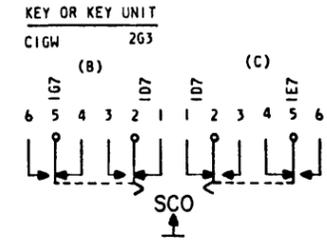
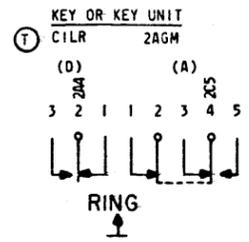
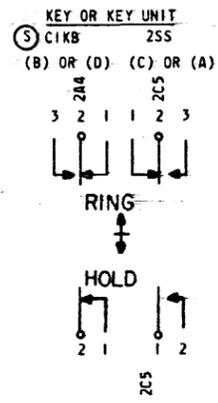
CAPACITOR			
OPTION	DESIG	LOC	CODE
U	A	1G3	444A
V	[1] A	1G3	439C
	B	1B5	
H	B	1B5	439A
J	B	1B5	441A
ZF	[1] B	1B5	437C
	C	2B4	
ZE	C	2B4	439A
E	D	2G6	439A
ZF	E	1E4	444A

COIL, INDUCTION			
OPTION	DESIG	LOC	CODE
K	A	3A5	1B1B
W	A	3A8	178E
X	A	3A8	178C



INDUCTOR	
DESIG	CODE
C	5LB OR 6E, 6EA3
OPTION	
Y	2C4
B	2C4
R	2B3
GN	2B3
W	

INDUCTOR			
OPTION	DESIG	LOC	CODE
M	A	2B1	274AE
N	A	2B2	274S
R	B	1F2	274L
Q	B	1F2	307N



(A) OR (C) (D) OR (B)

LAMP		
DESIG	LOC	CODE
R	2A6	13G(RES)

RESISTOR		
DESIG	LOC	CODE
A	2B4	18AE

TRANSFORMER		
DESIG	LOC	CODE
(SEE COIL, INDUCTION)		

VARISTOR			
OPTION	DESIG	LOC	CODE
ZP	A	1A3	33L
V	A	1A3	33A
ZO	A	1A3	100A

SD-25744-01-C1

ISSUE 368

MASTER TEST FRAME  
TELEPHONE, KEY AND  
LAMP CIRCUIT

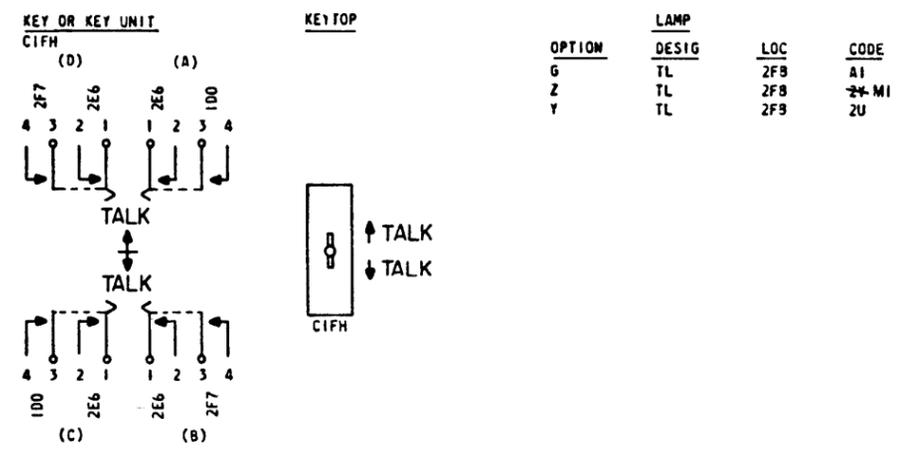
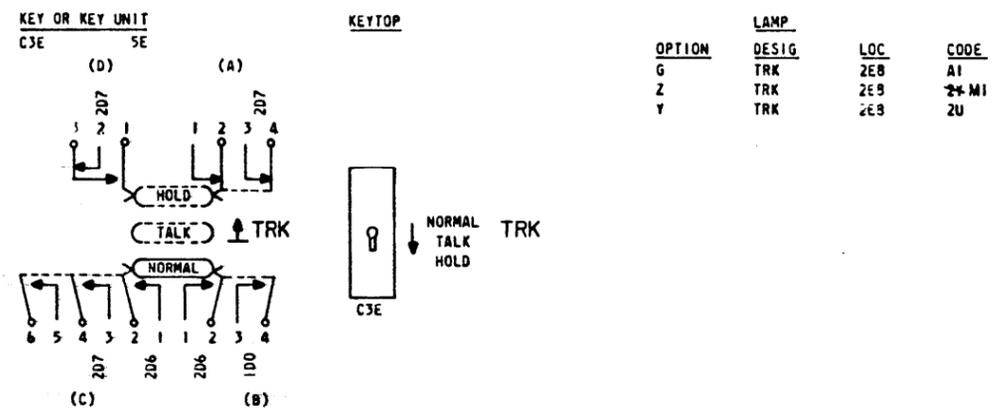
BELL TELEPHONE LABORATORIES  
INCORPORATED

SD-25744-01-C1

6S

APP FIG 2

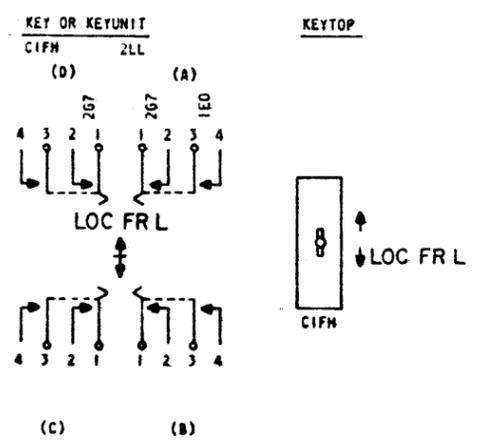
APP FIG 3



APP FIG 4

APP FIG 5 (MFR DISC)  
(WIRING ONLY)

APP FIG 6 (MFR DISC)



DIAL			TRANSMISSION NETWORK		
DESIG	LOC	CODE	DESIG	LOC	CODE
TT	5A1	66A3A	TT	5B4	4256 4228A

DRAWING  
ISSUE  
RICE  
200 RUP

ISSUE  
368

MASTER TEST FRAME  
TELEPHONE, KEY AND  
LAMP CIRCUIT

BELL TELEPHONE LABORATORIES  
INCORPORATED

SD-25744-01-C2

6S

SD-25744-01-C2

# APP FIG 7

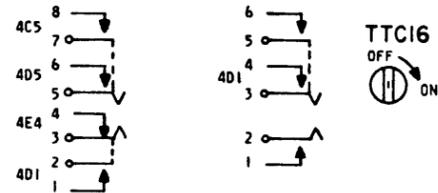
DIAL  
DESIG TT LOC 4A7 CODE 66E3A

KEY  
ZR TTC16 552T

KEY  
ZQ TTC16 552B

KEYTOP

TRANSMISSION NETWORK  
DESIG TT LOC 4A1 CODE 725E 4228A



# APP FIG 8

RELAY						
DESIG	TTC					
CODE	AJ5					
OPTION	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
X	12	EBM	c			
	11	EBM				
	10	EBM				
	9	EBM				
	8	EBM	3B2			
	7	EBM	3B2			
	6	EBM				
	5	EBM	3B1			
	4	EBM				
	3	EBM	b			
	2	EBM	a			
	1	EBM	AE1			
	COIL					
		a	4F3			
		b	8D1			
		b	4F4			
		b	8E2			
		c	4C5			
		c	8E3			

AMPLIFIER  
DESIG ACD LOC 3B1 CODE 227A OR 227E 227F

FILTER  
DESIG ACD LOC 3B2 CODE 593BT

RESISTOR  
DESIG ACD LOC 3B0 CODE 228A, 1.4K52  
⑦ TTC 4D4 KS-19150, L1, 1.2kΩ  
⑨ TTC 6B3 KS-19150, L1, 1.2kΩ

DRAWING ISSUE  
200  
22D  
24A

ISSUE  
368

MASTER TEST FRAME  
TELEPHONE, KEY AND  
LAMP CIRCUIT

BELL TELEPHONE LABORATORIES  
INCORPORATED

SD-25744-01-C3

6S

SD-25744-01-C3

PART OF APP FIG 9

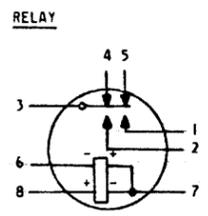
DRAWING ISSUE

RELAY		DRRL		DRT1		DRT2		[4]HF1-4		[4]LF1-4		LLV		HLV		MNF		MXF		DESIG	
CODE		AK4		AJB3		AJB3		AJ63		AJ63		AK4		AK4		AK4		AK4		CODE	
OPTION	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	OPTION						
12	M		EMB	6A3	EMB	8A1	M	8F2-H3	M	8B0-C0					M		M				12
11	EMB	3E7	EMB	6B3	EMB	8B1							EMB	6E7	EMB	7C7					11
10	EMB		EMB	3D3	EMB	8B1	M	7A6-B6	M	7D6-E6			EMB	6H7	EMB	7C7					10
9	EMB		EMB	3G3	EMB	8C1	B	7A7-B7	B	7D7-E7			EMB	6H3	EMB	7F7					9
8	EMB		EMB	3F3	EMB	3F8	M		M				EMB	6E3	EMB	7F7					8
7			EMB	3G5	EMB	5F7	B		B												7
6			EMB	3F5	EMB	3D7	M		M												6
5	EMB	6F5	EMB	3H0	EMB	8F3	B		B	EMB	6F7	EMB		EMB							5
4	EMB	6G5	EMB	3E5	EMB	8F3	M		M	EMB	6G7	EMB	7C7	EMB							4
3	EMB	6G6	EMB	3D5	EMB	8E2				EMB	6G6	EMB	7C7	EMB							3
2	EMB	6F6	EMB	3G3	EMB	8E2	M		M	EMB	6F6	EMB	7F7	EMB							2
1	M		EMB	3E7	EMB	8F4				M		M	7F7	EMB							1
COIL		6D7		3F8		3D8		8F2-H3		8A0-C0		3F5		3G5		3G3		3D5		COIL	

RELAY		PL		PL1		PL2		PL3		PL4		PLC		SFL		SFH		DESIG			
CODE		AF518		AK30		AK47		AK46		AK4		AK4		AK4		AK4		CODE			
OPTION	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	OPTION
12	EMB	5H1			EMB	5B8			M	6D2		M	5G8			M					12
11	M				EMB	5B8			EMB	5D8		M				EMB	7D2				11
10	EMB				EMB	5F8			EMB	5D8		M				EMB					10
9					EMB	5E8			EMB	5D8		B	8G4			EMB	8C1				9
8	EMB	5G3			EMB	5D8			EMB			B	5D8			EMB					8
7	B																				7
6	EMB	5D7																			6
5					EMB				EMB		B					EMB					5
4	EMB		EMB	5E7			EMB	5A8		B					EMB	8D1					4
3	M		EMB	3F8			EMB	5B8		M					EMB						3
2	EMB		EMB	5B8			EMB	5C8		M	5F8				EMB	7A2					2
1	M	5C8	M	5D8			M	5F8		M	5B8				M						1
COIL		5G5		5D9		5E9		5B9		5C9		5B9		5F9		3F3		3G3		COIL	

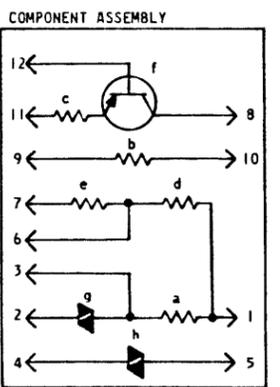
RELAY		SPF		SP		TT		TTA		DESIG	
CODE		AK4		AJ63		AJ501				CODE	
OPTION	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	OPTION
12	M		EMB	8G1	M	8G5	EMB	5D7			12
11	EMB		EMB	6E3	M	7C5	EMB	5H3			11
10	EMB		EMB	5F7	B	6A2	EMB				10
9	EMB		EMB	5H3	M	7F5	EMB	5B7			9
8			B	6A3	EMB						8
7			M	7H5	EMB						7
6			B		EMB						6
5	EMB				EMB						5
4	EMB		M	6D3	EMB						4
3	EMB	7H7			EMB						3
2	EMB	7F2		M	3G0	EMB	1A1				2
1	M	3E5			EMB	1B1					1
COIL		3E5		3D3		8F4		3G1			COIL

RELAY		DESIG																			
CODE																					
OPTION	CONT ARR	LOC	OPTION																		
12																					12
11																					11
10																					10
9																					9
8																					8
7																					7
6																					6
5																					5
4																					4
3																					3
2																					2
1																					1
COIL																					COIL



DESIG	PG
CODE	276N
OPTION	
8	5F3
7	5F3
6	5F3
5	
4	
3	5G4
2	5G4
1	5G4

CAPACITOR		CODE	
OPT	DESIG	LOC	
	A04	7A6	KS-14056, L34 (SEE NOTE 116)
	B04	7D6	KS-14056, L34 (SEE NOTE 116)
[1]	{ OA1	7B3	437C
	{ OA2	7B4	
	{ OB1	7E3	
	{ OB2	7E4	
[1]	{ OC1	7G3	437QA
	{ OC2	7G4	
	PG	5G2	[3] 437QA
	TD(TD.1)	6F2	437QA
	TD(TD.2)		437QA
	TD2	6D2	441A
	TT	6F2	437QA



RELAY		CA1		CA2		CA3		
CODE		(3) E0-94859-( ) G111						
OPTION	COMPONENT	CODE	DESIG	LOC	DESIG	LOC	DESIG	LOC
RESISTOR	a	TIME KS-20289, L6C, 4020	OA5	7B4	OB5	7E4	OC5	7H4
	b	224A KS-20810, L1A, 1.8kΩ	OA3	7B2	OB3	7E2	OC3	7G2
	c	TIME KS-20289, L6C, 61.9	OA2	7B6	OB2	7E6	OC2	7G6
	d	TIME KS-20289, L6C, 2kΩ	OA4	7B4	OB4	7E4	OC4	7H4
e	224A KS-20810, L1A, 796	OA1	7A3	OB1	7D3	OC1	7G3	
TRANSISTOR	f	12E	TA	7A5	TB	7D5	TC	7G5
	g		OA1	7B5	OB1	7E5	OC1	7H5
VARISOR	h	100A	OA2	7C7	OB2	7F7	OC2	7H7

SD-2574-01-C4

ISSUE 368

MASTER TEST FRAME TELEPHONE, KEY AND LAMP CIRCUIT

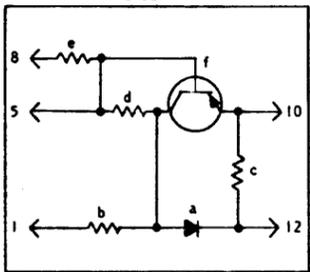
BELL TELEPHONE LABORATORIES INCORPORATED

SD-25744-01-C4

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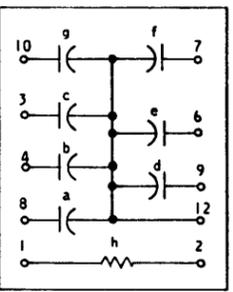
PART OF APP FIG. 9

COMPONENT ASSEMBLY



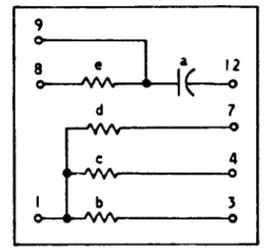
DESIG CA4			
CODE ED-94859-( ),G112			
OPTION			
COMPONENT	DESIG	LOC	CODE
DIODE	a	TD1	6D1 426M
	b	TD1	6D1 147D,825
RESISTOR	c	TD3	6D1 744E, KS-20289, L6C, 1kΩ
	d	TD	6D2 744E, KS-20289, L6C, 2740
TRANSISTOR	f	TD	6D2 224A, KS-20810, L1A, 11kΩ
			12E

COMPONENT ASSEMBLY



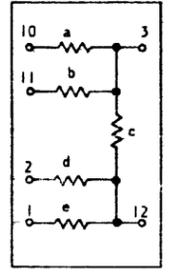
DESIG CA5				
CODE ED-94823-( ),G525				
OPTION				
COMPONENT	DESIG	LOC	CODE	
CAPACITOR	a	A01	7B8 570HE	
	b	A02	7C8 570FJ	
	c	A03	7C8 570MH	
	d	B01	7E8 570PK	
	e	B02	7F8 570NA	
	f	B03	7E8 570KJ	
	g	C01	7H8 570CK	
	RESISTOR	h	VLA	6G2 224A, KS-20810, L1A, 511Ω

COMPONENT ASSEMBLY



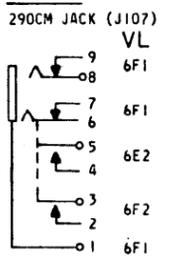
DESIG CA6			
CODE ED-94823-( ),G526			
OPTION			
COMPONENT	DESIG	LOC	CODE
CAPACITOR	a	VL	6D3 570E
RESISTOR	b	OA6	7A8 746C, KS-20289, L6C, 1330
	c	OB6	7LJ 746C, KS-20289, L6C, 1330
	d	OC6	7G8 746C, KS-20289, L6C, 1330
	e	VL	6D3 224A, KS-20810, L1A, 1kΩ

COMPONENT ASSEMBLY



DESIG CA7			
CODE ED-94933-( ),G099			
OPTION			
COMPONENT	DESIG	LOC	CODE
RESISTOR	a	PT1	6F5 KS-20810, L1A, 156
	b	PT2	6F5 KS-20810, L1A, 156
	c	PT5	6F5 KS-20810, L1A, 422
	d	PT4	6G5 KS-20810, L1A, 156
	e	PT3	6G5 KS-20810, L1A, 156

CONNECTOR



JACK

SEE CONNECTOR

KEY



ADJ	HFA	LFA
8G1		
8D5	7C5	7F5
7C4		
3D8	8C1	8D1

KEY TOP

ADJ, HFA, LFA



NETWORK

OPT	DESIG	LOC	CODE
	DRRL	3F8	
	DRT1	3D8	
	DRT2	3E8	
	HF1	8F2	
	HF2	8F2	
	HF3	8G3	
	HF4	8H3	
	HLV	3G5	
	LF1	8A0	
	LF2	8B0	
	LF3	8B0	
	LF4	8C0	
	LLV	3F5	
	MNF	3G3	
	MXF	3D5	
	PL	5G5	
	PLO	5C9	
	PL1	5D9	
	PL2	5E9	
	PL3	5B9	
	PL4	5B9	
	PLC	5F9	
	PT	6D7	
	SFH	3G3	
	SFL	3F3	
	SP	3D3	
	SPF	3E5	
	TT	8F4	
	TTA	3G1	

PAD

OPT	DESIG	LOC	CODE
	HL	6F6	1C PAD WITH 898E RESISTOR (12DB)
	LL	6F4	1C PAD WITH 898A RESISTOR (10DB)

POTENTIOMETER

OPT	DESIG	LOC	CODE
	PA	7A3	KS-16752, L5, 1kΩ
	PB	7D3	
	PC	7G3	

RESISTOR

OPT	DESIG	LOC	CODE
	PG1	5F0	19JL
	PG2	5F1	18FN
	PG3	5F1	19PJ
	PG4	5F2	19PK
	PG5	5F4	18GE
	PG6	5F5	19NT
	PG7	5F6	19NU

TRANSFORMER

OPT	DESIG	LOC	CODE
	L	6E3	120E (REP COIL)
	LA	7A6	2583A
	LB	7D6	2583B
	LC	7G6	2583C
	OA	7A2	2536G
	OB	7D2	2536G
	OC	7F2	2536G
	TT	6E2	120C (REP COIL)

TRANSMISSION NETWORK

OPT	DESIG	LOC	CODE
	TT	6A5	725E, 4228A

36B

MASTER TEST FRAME  
TELEPHONE, KEY AND  
LAMP CIRCUIT

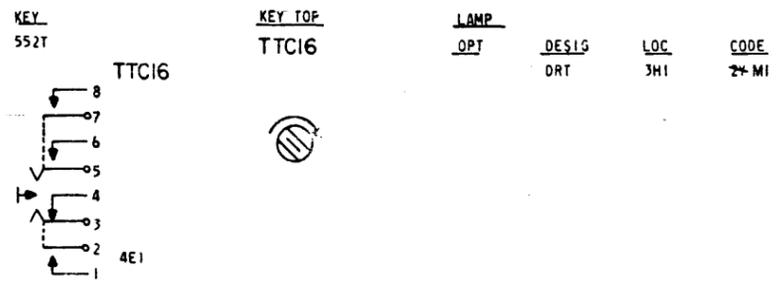
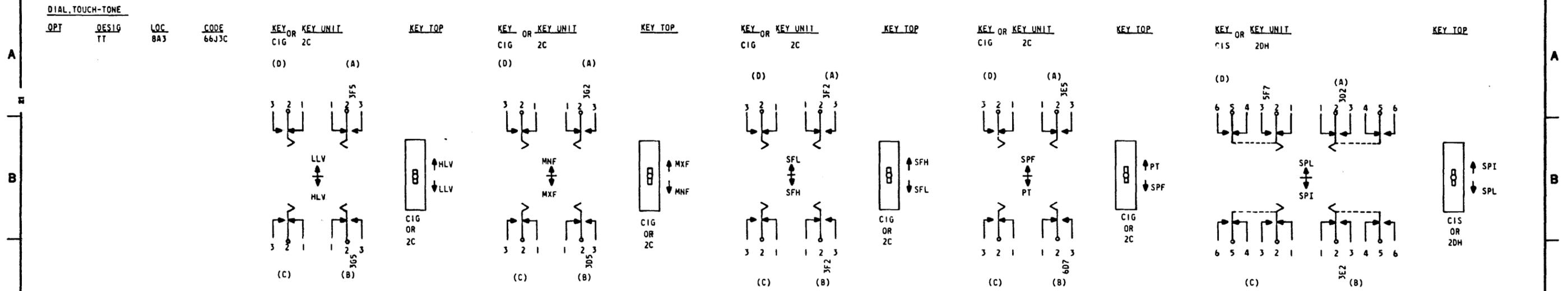
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93-10-93-23

APP FIG. 10



APP FIG. 11



SWITCH KS-20380, L-202

STATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18								
DESIG		MNF	MXF	LLV	HLV	SPF							SFL	SFH	SPL	SPI	ST	RL								
COLOR OF BUTTON	YELLOW	BLACK	YELLOW	BLACK	BLACK	BLACK	BLACK	WHITE	RED																	
OPT																										
FUNCTION	NLR	AL	NLR	EL	EL	EL	EL	NL	NL																	
CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT								
NO.	ARR	LOC	ARR	LOC	ARR	LOC	ARR	LOC	ARR	LOC	ARR	LOC	ARR	LOC	ARR	LOC	ARR	LOC								
TOP	A	-	BM		-	BM	BD6	BM	BC6	BM	3E2	BM		BM	3D7	BM										
B																										
C																										
BOT	D	-	BM	3H2	BM	3E5	BM	3F5	BM	3H5	BM	3E5	BM		BM	3F2	BM	3G2	BM	3E7	BM	3E2	BM	3G8	BM	3F7

ISSUE 35B

MASTER TEST FRAME  
TELEPHONE, KEY AND  
LAMP CIRCUIT

2 SD-25744-01-C6

BELL TELEPHONE LABORATORIES  
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65 PRINTED IN U.S.A.

SD-25744-01-C6

CIRCUIT NOTES:

DESIG	FUSE AMP	POTENTIAL	ONE PER
A	1-1/3	-48 SIG	APP FIG 1,10
B	1/2	±105	APP FIG 1
CR	1-1/3	-48 SIG	APP FIG 8
CR*	1-1/3	-48 SIG	APP FIG 9
A		GRD	APP FIG 1,2,3,4,8,10
CR*		GRD	APP FIG 8
CA#		GRD	APP FIG 9
PK#		GRD	APP FIG 11
BATTERY SYMBOL		VOLTAGE RANGE	
-48		45-50	

\* OBTAINED ON MTF JACK BAY OR ON MTF JACK BAY FOR ACD OR (A&M ONLY) OBTAINED FROM POWER, RINGING, AND TONE DISTRIBUTING FR.

\*\* OBTAINED FROM THE DIGIT REGISTER FRAME.

FEATURE OR OPTION	PROVIDE		
	APP FIG	APP OR WRG	QUANTITY
TELEPHONE CKT	1,7	ZN, ZF	ONE PER MTF
KEY AND LAMP CKT	2	WITH LOCKING HOLD KEY FEATURE	ONE PER TRK, TIE LINE, OR LOC STA LINE PER APP
		WITHOUT HOLDING FEATURE OR WITH NON-LOCKING POSITION HOLDING KEY FEATURE AUTOMATIC RELEASE	SEE NOTE 105 ONE PER TIE LINE OR LOC STA LINE PER APP
KEY CKT	4		ONE PER MTF PER APP
WHEN CIRCUITS CONNECTING TO APP FIG 2 OR 3		USE 48V SUPPLY	Z
		USE 24V SUPPLY	G
MEANS OF CONTROLLING REMOTE OFFICE TEST LINE (ROTL) IS		PROVIDED	ZD
		NOT PROVIDED	ZC
OFFICE IS NOT ACD AND DOES NOT CONNECT TO AN ACD OFFICE			ZH
"TOUCH-TONE" DIAL REMOTE CONTROL OF TTC 16 FREQUENCY PROVIDED (ACD OFFICE OR CONNECTING TO AN ACD OFFICE)	YES	8	ZL
		NO	ZJ
NON-ACD OFFICE CONNECTED TO AN ACD OFFICE			ZI, ZU
INTERCEPTING TRUNKS TO ACD		PROV	Zw
		NOT PROV	ZV

NETWORK NO.	NETWORK VALUES	
	RESISTANCE IN CHMS	CAPACITANCE IN UF

CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FLURN	SEE NOTE	USE IN CIRCUIT		
				STD	A&M	MD
6D	W OR X U OR V	X V		W U		X V
7D	S OR T	T		S		T
8D	Q OR R M OR N	Q N		R M		Q N
10D	W, X OR K J OR H	W OR X J	105, 111	K H		W J
11D	G	Y OR Z	102	G, Z		Y
12D	F OR E	F		E		F
13AC	A OR B	B	107, 108	A		B
14D	ZA OR ZB	ZA	107	ZB		ZA
16D	ZC OR ZD	ZC	102	ZC, ZD		
	APP FIG 5 OR 6	APP FIG 5	102	APP FIG 5 OR 6		
200	ZF	ZE & H OR J	108	ZF		ZE, H
	APP FIG 5, 6 OR 7	APP FIG 5	102, 108, 302	APP FIG 7		APP FIG 5 & 6
22D			102, 109	APP FIG 8, ZG, ZH		
			102, 109	ZI		
			102	ZJ		
			102, 109	ZL		
24A (AC)	ZK, ZM OR ZN	ZK & ZM WITH A	108, 110	ZN		ZK, ZM
	ZO OR ZP	ZP	112	ZO		ZP
25D	ZG, ZT OR ZU	ZG WITH ZT OR ZI WITH ZU OR ZH	102, 114, 115	ZU		ZT, ZG
27D	ZV OR ZW	ZV	102	ZV, ZW		
368	APP FIG 9, 10, 11	APP FIG 7	116, 117, 118	APP FIG 7	APP FIG 9, 10, 11	
	NETWORK		4228A		425E	
	AMPLIFIER		227F		227A OR 227E	
	DIAL		6EA3		6E	
RESISTOR			KS-20289, L6C		146C	
			KS-20289, L6C		144E	
			KS-20810, L1A		221A	

- 105. PROVIDE OPTION S WHEN NON-LOCKING POSITION HOLDING KEY FEATURE IS REQUIRED.
- 106. PROVIDE OPTIONS H AND U WHEN OPTION K IS FURNISHED.
- 107. OPTIONS ZA AND B, IF PROVIDED, MUST BE REMOVED AND REPLACED BY OPTIONS ZB AND A RESPECTIVELY IN ALL OFFICES ARRANGED FOR 4-WIRE OPERATION.
- 108. IF 2-WAY DNAL SERVICE IS ADDED, IF MULTILEVEL PRECEDENCE PREEMPTION IS ADDED, IF MULTILEVEL PREEMPTION IS ADDED OR OFFICE CONNECTS TO AN ACD OFFICE, APP FIG. 5 OR 6 AND OPTIONS B, K, ZK & ZM MUST BE REMOVED AND REPLACED BY APP FIG. 7 AND OPTIONS A & ZM RESPECTIVELY. OPTIONS ZE, H OR J MUST ALSO BE REMOVED AND REPLACED BY OPTION ZF.
- 109. IF OPTION ZG OR ZI IS PROVIDED, APP FIG. 8 AND OPTION ZL MUST ALSO BE PROVIDED.
- 110. PRIOR TO ISSUE 16D, OPTION ZM WAS PART OF OPTION A.
- 111. PRIOR TO ISSUE 10D, OPTION J WAS PART OF OPTION U.
- 112. PRIOR TO ISSUE 20D, OPTION ZP WAS PART OF OPTION U.
- 113. WHEN "TOUCH-TONE" DIAL REMOTE CONTROL OF TTC 16 FREQUENCY (ACD OFFICE OR CONNECTING TO AN ACD OFFICE) IS PROVIDED, OPTION ZQ, IF PROVIDED, MUST BE REMOVED AND REPLACED BY OPTION ZR, AND OPTION ZS, IF PROVIDED, MUST BE REMOVED.
- 114. IF AN OFFICE IS ARRANGED FOR AUTOMATIC CALL (MFR) DISTRIBUTION OPTIONS ZG AND ZT MUST BE PROVIDED.
- 115. IF CLOSE DOWN TRUNK CIRCUITS WHICH TERMINATE IN ANOTHER ACD OFFICE ARE PROVIDED IN AN ACD OFFICE NOT ARRANGED FOR OPERATOR CALL TRANSFER, OPTION ZT MUST BE REMOVED AND REPLACED BY OPTION ZU.

- 116. FREQUENCY ADJUSTMENT OF "TOUCH-TONE" OSCILLATORS OF (A&M APP FIG 9. ONLY)
  - A. CONNECT A BERKLEY EPUT METER WITH A TEN SECOND GATE OR EQUIVALENT TO THE OSCILLATOR OUTPUT JACK (VL). OPERATE KEYS AND THEN MOMENTARILY DEPRESS THE REQUIRED "TOUCH-TONE" PAD BUTTON OR OPERATE THE (SPF) KEY TO START THE OSCILLATOR. ADJUST OSCILLATOR TRANSFORMERS AND ADD TRIMMER CAPACITOR (0, 51, 100, 150, 200, 240, 300, 360, 430, OR 510 PICOFARADS AS REQUIRED) TO OBTAIN OUTPUT FREQUENCIES AS SHOWN IN THE FOLLOWING TABLE. (NOTE: INCREASING SIZE OF TRIMMER CAPACITOR TENDS TO BRING MAXIMUM AND MINIMUM FREQUENCY GENERATED BY THE TRANSFORMER CLOSER TOGETHER.) AFTER EACH FREQUENCY IS ADJUSTED, THE (ADJ) KEY MUST BE RELEASED TO RESTORE THE OSCILLATOR TO NORMAL.
  - B. OPERATE KEYS AND THEN MOMENTARILY DEPRESS THE REQUIRED "TOUCH-TONE" PAD BUTTON OR OPERATE THE (SPF) KEY TO START THE OSCILLATOR. ADJUST THE POTENTIOMETERS TO OBTAIN THE OUTPUT VOLTAGES LISTED IN THE FOLLOWING TABLE. AFTER EACH OUTPUT VOLTAGE IS ADJUSTED, THE (ADJ) KEY MUST BE RELEASED TO RESTORE THE OSCILLATOR TO NORMAL.

ADJUST TRANSFORMER	ADD TRIMMER CAPACITOR	OPERATE KEY	TO START OSCILLATOR:		FREQUENCY (Hz)
			OPERATE KEY	MOMENTARILY DEPRESS TT PAD BUTTON	
LB	804	(ADJ), (LFA), (MNF)	1		685.8-687.2
			4		757.7-759.2
			7		838.4-840.1
			X		925.9-927.8
			1		706.8-708.2
LA	A04	(ADJ), (HFA), (MNF)	4		780.8-782.3
			7		863.9-865.6
			X		954.2-956.1
			F0		1606.8-1610.2
			1		1189.7-1192.1
LC	(ADJ)	(SPF)	2		1314.6-1317.3
			3		1453.4-1456.4
			F0		1497.6-1500.6
			1		1225.9-1228.3
			2		1354.7-1357.4

- 117. VOLUME LEVER ADJUSTMENT OF "TOUCH-TONE" OSCILLATORS OF APP FIG 9.
  - A. CONNECT VACUUM TUBE VOLTMETER TO OSCILLATOR OUTPUT JACK (VL) ONLY)
  - B. OPERATE KEYS AND THEN MOMENTARILY DEPRESS THE REQUIRED "TOUCH-TONE" PAD BUTTON OR OPERATE THE (SPF) KEY TO START THE OSCILLATOR. ADJUST THE POTENTIOMETERS TO OBTAIN THE OUTPUT VOLTAGES LISTED IN THE FOLLOWING TABLE. AFTER EACH OUTPUT VOLTAGE IS ADJUSTED, THE (ADJ) KEY MUST BE RELEASED TO RESTORE THE OSCILLATOR TO NORMAL.

OPERATE KEYS	TO START OSCILLATOR: OPERATE KEY	MOMENTARILY DEPRESS TT PAD BUTTON	ADJUST POTENTIAL	ADJUST FOR OUTPUT VOLTS A.C.
(ADJ), (HFA), (HLV)		4	PA	1.34
(ADJ), (LFA), (HLV)		2	PB	1.34
(ADJ), (HLV)	(SPF)		PC	1.5

- 118. IF OPERATOR CALL TRANSFER IS ADDED TO AN ACD OFFICE, APP FIG. 7 MUST BE REMOVED AND REPLACED BY APP FIG 9, 10, AND 11.

DRAWING ISSUE  
200  
22D  
23A  
24A

ISSUE  
368

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EQUIPMENT NOTES:

- 201. ON ISSUE 50 CAD 3 WAS ADDED REPLACING CAD 1 WHICH IS RATED MFR DISC.
- 202. PRIOR TO ISSUE 60 CAD 4 WAS NOT SHOWN.
- 203. THE C1KB KEY SHALL BE EQUIPPED WITH A RED HANDLE.
- 204. PRIOR TO ISSUE 90 CAD 2 WAS STANDARD AND CAD 5 WAS NOT SHOWN.

INFORMATION NOTES:

- 301. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS, AND VALUES PRECEDED BY THE SYMBOL + (PLUS) OR - (MINUS) ARE IN VOLTS.
- 302. PRIOR TO ISSUE 160, APP FIG.6 WAS PROVIDED IN OFFICE ARRANGED FOR MULTILEVEL PREEMPTION.

DRAWING  
ISSUE  
200 C.A.

**TRANSMISSION TEST REQUIREMENTS**  
(1kHz LOSS BETWEEN 600 OHM TERMINATIONS)

MAX. ALLOWABLE CKT LOSS (dB)							
INDR	IND COIL	CAP (A)	VAR	BRIDG	TRANS	REC	SEE NOTE
274S	178C	1UF	33A	4.3	8.4	9.9	4
274S	178C	3UF	33L	5.9	8.3	5.8	3
274S	178E	3UF	33L	4.6	11.4	6.0	3
2744E	178E	3UF	33L	4.4	11.2	5.8	
	178C			5.7	8.1	5.6	

MAX. ALLOWABLE CKT LOSS (dB)			
TEMP °F	VAR	TRANS	REC
ANY	33L	11.5	
70°	33L		7.1
80°	33L		7.3
90°	33L		7.4
100°	33L		7.6
110°	33L		7.8
ANY	100A	11.5	7.1

MAX ALLOWABLE CKT LOSS (dB)			MAX ALLOWABLE CKT LOSS (dB)			ALLOWABLE INDIVIDUAL APPARATUS LOSSES (dB)					
TEMP °F	VAR	LOSS	TEMP °F	VAR	LOSS	APPARATUS	DESIG	CODE	MAX LOSS	MIN LOSS	REMARKS
70°	33L	12.5			0.4	CAPACITOR	A	1UF	8.5	6.6	OPTION V
80°	33L	12.6				CAPACITOR	B	1UF	8.5	6.6	OPTION J
90°	33L	12.7				CAPACITOR	B	2UF	13.7	11.7	OPTION H
100°	33L	12.8				CAPACITOR	A,E	3UF	17.2	15.1	OPTION U
105°	33L	12.9				CAPACITOR	D	2UF	13.7	11.7	OPTION E
ANY	100A	12.1				IND COIL	A	178C	8.6	6.1	OPTION X
						IND COIL	A	178E	12.4	8.0	OPTION W
						IND COIL	A	181B	11.1	9.3	OPTION K
						IND COIL	L	120E	0.6	0.3	
						IND COIL	TT	120C	0.4	0.2	
						INDUCTOR	A	274S	0.3		OPTION N
						INDUCTOR	A	274AF	1.1		Wdg 1-2 ONLY OPTION M
						RESISTOR	PT1,2,3,4	156	1.3	1.0	TESTED IN SERIES
						RESISTOR	PT5	422	4.8	4.4	TESTED IN SHUNT
						VARIATOR	A	33A, 33L			SEE NOTE I
						VARIATOR	A	100A	0.1		SEE NOTE A

**NOTES:**

- FOR METHOD OF MAKING INDIVIDUAL APPARATUS LOSS TEST, SEE BSP IN K SERIES.  
REQUIREMENTS USING 12dB PAD:  
ROOM TEMPERATURE: 70° 80° 90° 100° 105°  
INDIVIDUAL LOSS (33A VAR): 2.1 2.7 3.4 4.1 4.5  
INDIVIDUAL LOSS (33L VAR): 0.4 0.5 0.6 0.7 0.8  
LOSSES FOR TEMPERATURES OTHER THAN THOSE LISTED ABOVE MAY BE DETERMINED BY INTERPOLATION.
- \* INDICATES APPARATUS FOR WHICH INDIVIDUAL LOSSES ARE NOT REQUIRED.
- ROOM TEMPERATURE 85°. FOR EACH INCREASE OR DECREASE OF 10° IN TEMPERATURE, ADD OR SUBTRACT 0.3dB RESPECTIVELY FOR RECEIVING LOSS.
- ROOM TEMPERATURE 85°. FOR EACH INCREASE OR DECREASE OF 10° IN TEMPERATURE, ADD OR SUBTRACT 0.2dB RESPECTIVELY FOR BRIDGING LOSS AND 0.7dB RESPECTIVELY FOR RECEIVING LOSS.
- UNPLUG CA4 AND STRAP TERMINAL 4 OF TT IND COIL TO TERMINAL 7 OF L IND COIL.
- LOSS USING 12 DB PAD.

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ISSUE  
37B

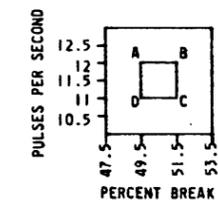
MASTER TEST FRAME TELEPHONE, KEY AND LAMP CIRCUIT	2	SD-25744-01-D2
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APPARATUS				MECH REQ			CIRCUIT PREPARATION				TEST SET		DIRECT CURRENT FLOW REQ				REMARKS
DESIG	CODE	OPT	FIG.	BSP FIG.	CONT PRES	ARM TRVL	BLOCK OR INSULATE	TEST CLIP DATA		TEST PREP	SEE TEST NOTE	TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	
								CONN BAT.	CONN GRD								
RELAYS																	
4NTR	AF139	A	1		256												
4NTT	AJ5	A	1		220												
DRRL	1/2AK4		9		202												
DRT1	AJ83		9		249		DRT2(NO)										
DRT2	AJ83		9		249												
RF1-4	AJ63		9		68												
HLV	1/2AK4		9		202												
LF1-4	AJ63		9		68												
LLV	1/2AK4		9		202												
MNF	1/2AK4		9		202												
MXF	1/2AK4		9		202												
PL	AF518		9		224												
PL0	1/2AK47		9		202												
PL1	1/2AK30		9		202												
PL2	1/2AK30		9		202												
PL3	1/2AK47		9		202												
PL4	1/2AK46		9		19												
PLC	1/2AK46		9		19		PLC(NO)										
PG	276R		9		4												
PT	1/2AK4		9		202												

APPARATUS				MECH REQ			CIRCUIT PREPARATION				TEST SET		DIRECT CURRENT FLOW REQ				REMARKS
DESIG	CODE	OPT	FIG.	BSP FIG.	CONT PRES	ARM TRVL	BLOCK OR INSULATE	TEST CLIP DATA		TEST PREP	SEE TEST NOTE	TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	
								CONN BAT.	CONN GRD								
SFH	1/2AK4		9		202												
SFL	1/2AK4		9		202												
SP	1/2AK4		9		202												
SPF	1/2AK4		9		202												
TT	AJ63		9		68												
TTA	AJ501		9		249												
TTC	AJ5		8		220												

TEST NOTES:

- I. TIMING REQUIREMENTS FOR (PG) PULSE GENERATOR
  - A. PREPARATION  
CONNECT BATTERY AND GROUND TERMINALS ON PERCENT BREAK METER TO BATTERY AND GROUND SUPPLIES RESPECTIVELY.  
CONNECT P TERMINAL ON PERCENT BREAK METER TO TERMINAL T12.
  - ADJUST CURRENT FLOW  
BLOCK (SP) OPERATED  
BLOCK (PLC) NO OPERATED  
BLOCK (TT) OPERATED TO START PULSING
  - B. IF PULSING IS NOT WITHIN THE SPECIFIED LIMITS, STRAP TERMINALS T1-T11, T13 TO ADJUST RESISTORS (PG2), (PG3), (PG4), (PG5), (PG6), AND (PG7). ADJUST (PG5), (PG6), AND (PG7) FIRST (PERCENT BREAK), THEN (PG3) AND (PG4) IF NECESSARY. RESISTOR (PG2) MAY HAVE TO BE STRAPPED FIRST TO OBTAIN PERCENT BREAK.
  - C. IF THE POINT OF INTERSECTION OF THE PERCENT BREAK AND THE PULSES PER SECOND LINE FALLS WITHIN THE AREA ENCLOSED BY A, B, C, AND D. THE PULSE GENERATOR IS SATISFACTORY.



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H

C-7423 (3-78) COL

32A

MASTER TEST FRAME  
TELEPHONE, KEY AND  
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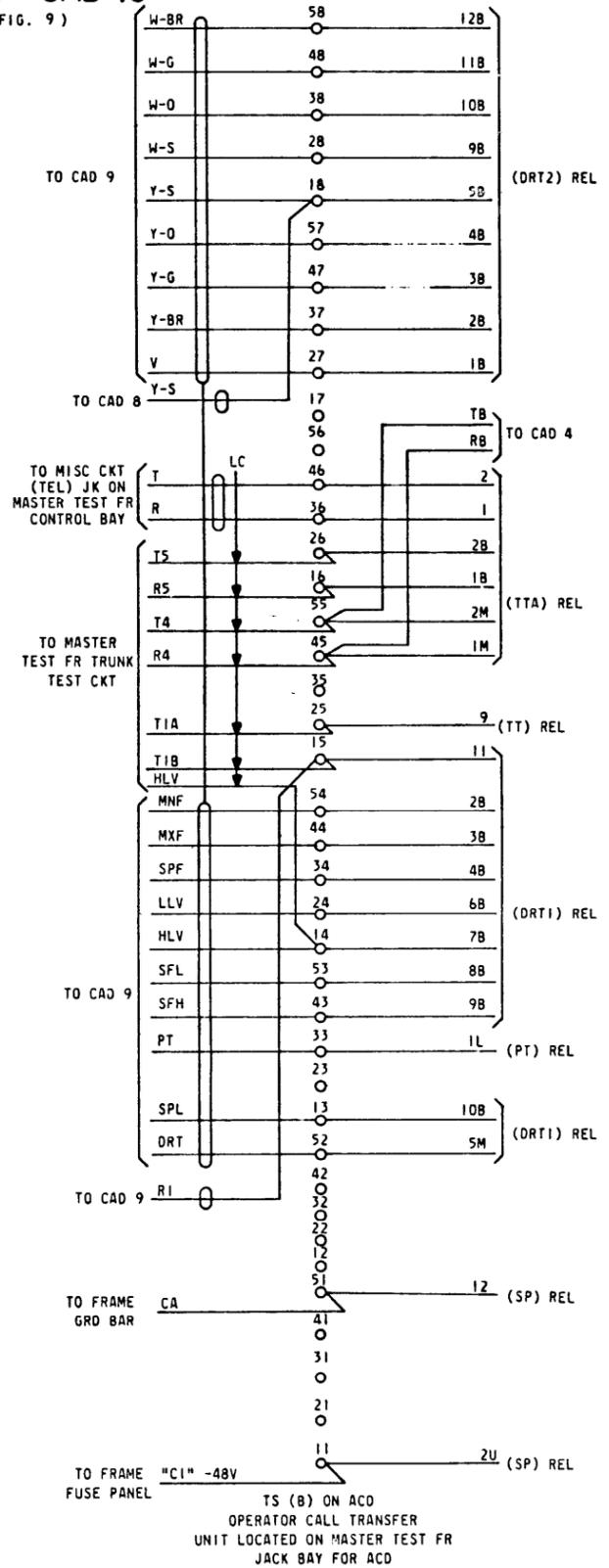
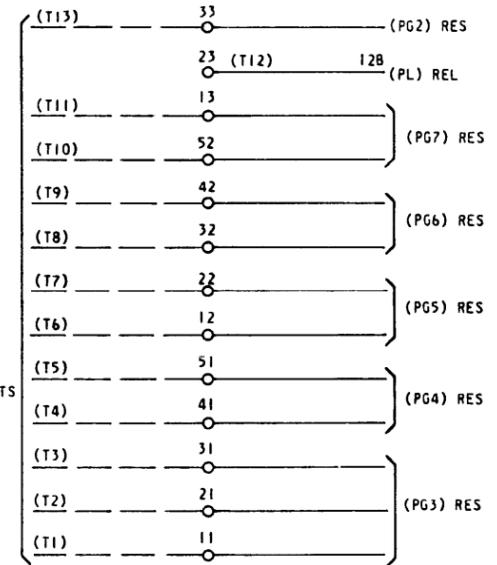
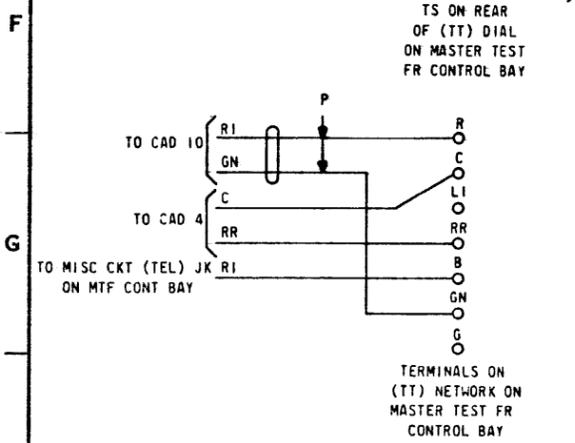
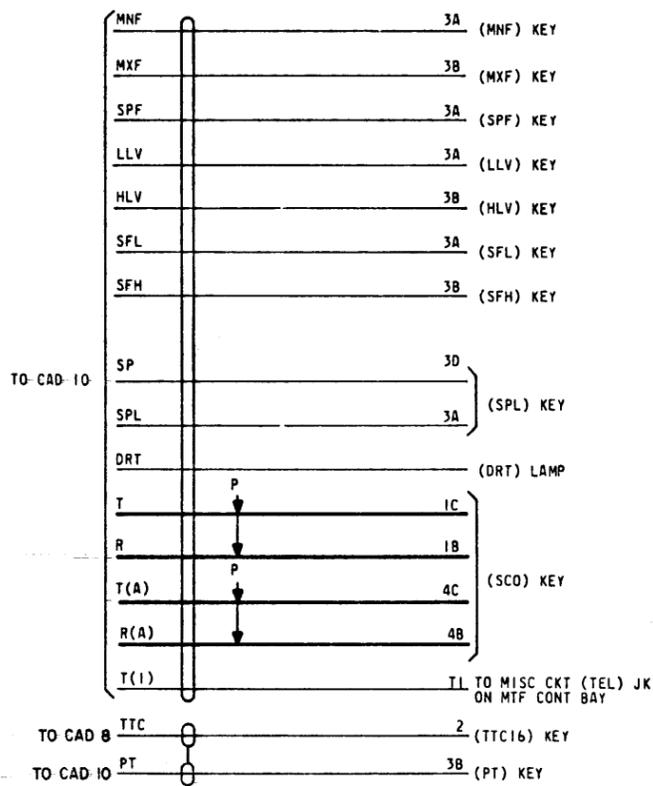
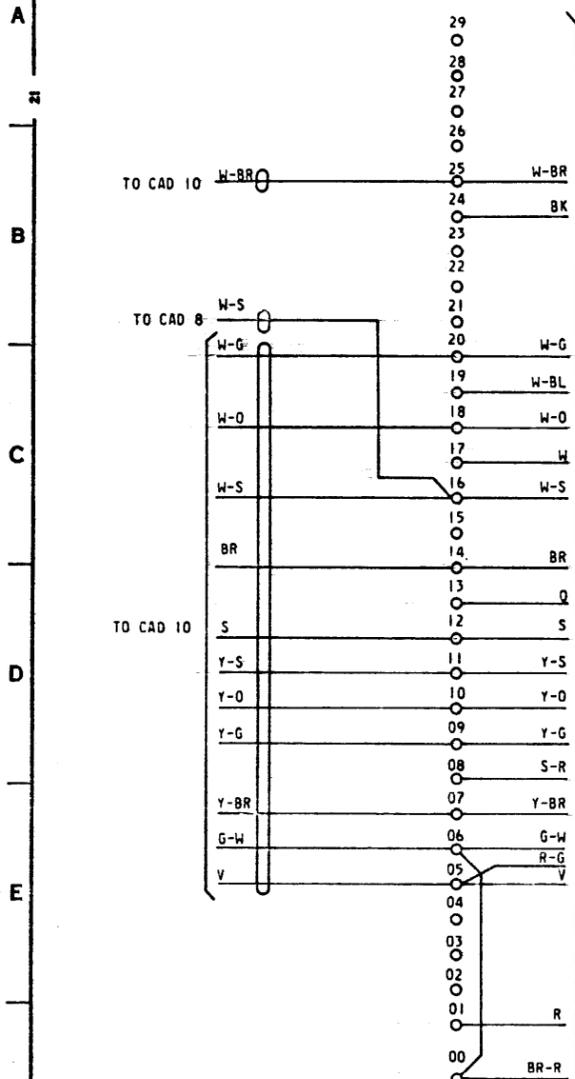
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6S



**CAD 9 (A & M ONLY)**  
(FOR APP FIG. 9, 10)

**PART OF CAD 10 (A & M ONLY)**  
(FOR APP FIG. 9)



STRAP  
ACCORDING  
TO TIMING  
REQUIREMENTS

TS (A) ON ACD  
OPERATOR CALL TRANSFER  
UNIT LOCATED ON MASTER TEST FR  
JACK BAY FOR ACD

TS (B) ON ACD  
OPERATOR CALL TRANSFER  
UNIT LOCATED ON MASTER TEST FR  
JACK BAY FOR ACD

ISSUE  
**35B**

MASTER TEST FRAME  
TELEPHONE, KEY AND  
LAMP CIRCUIT

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**PART OF CAD 10 (A & M ONLY)**

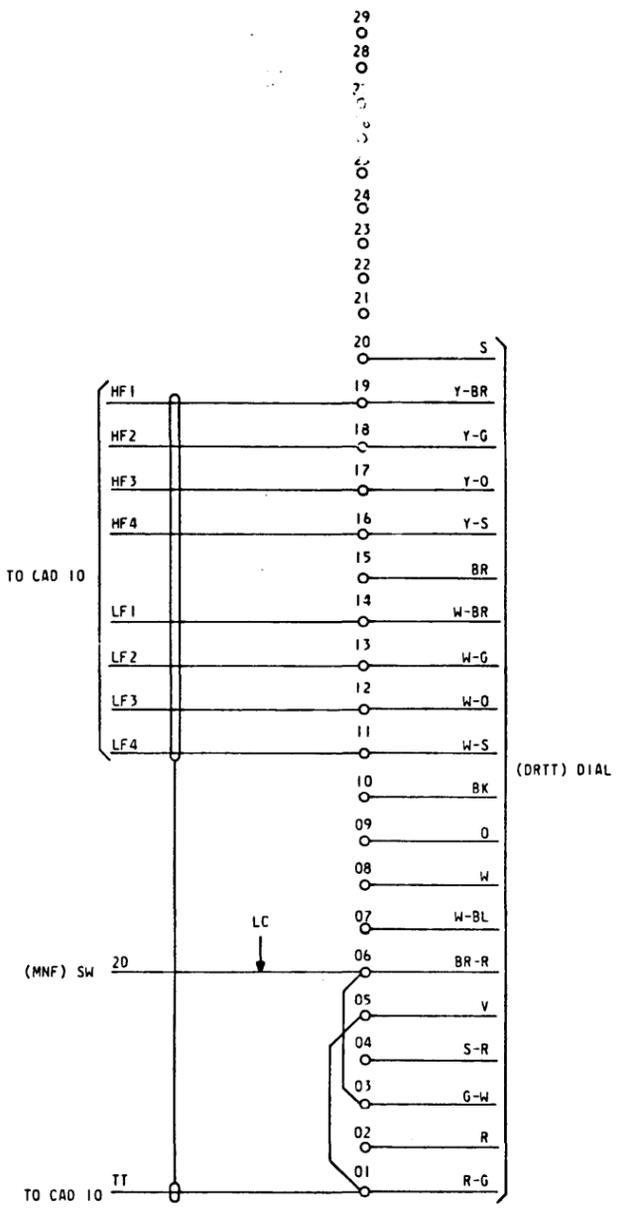
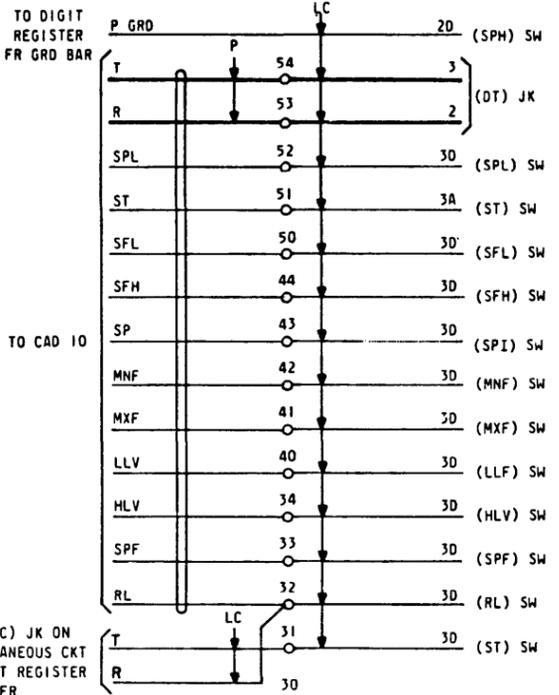
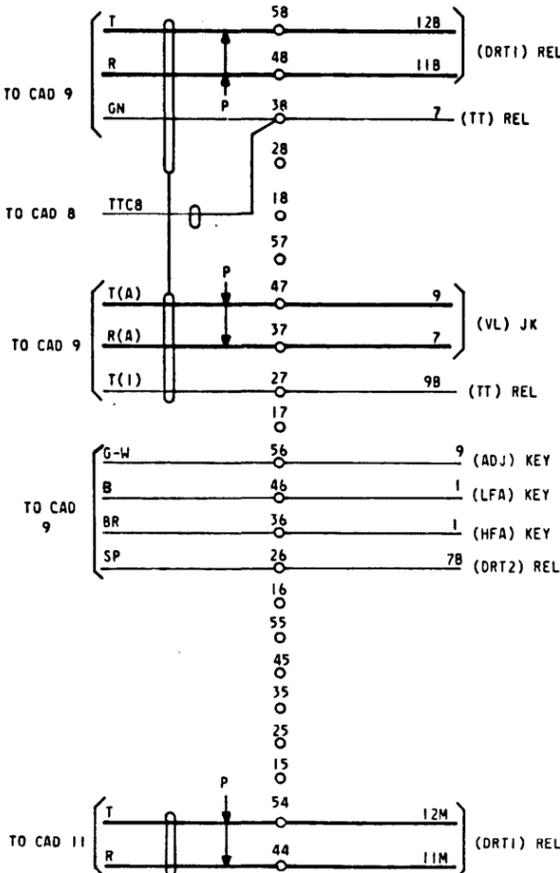
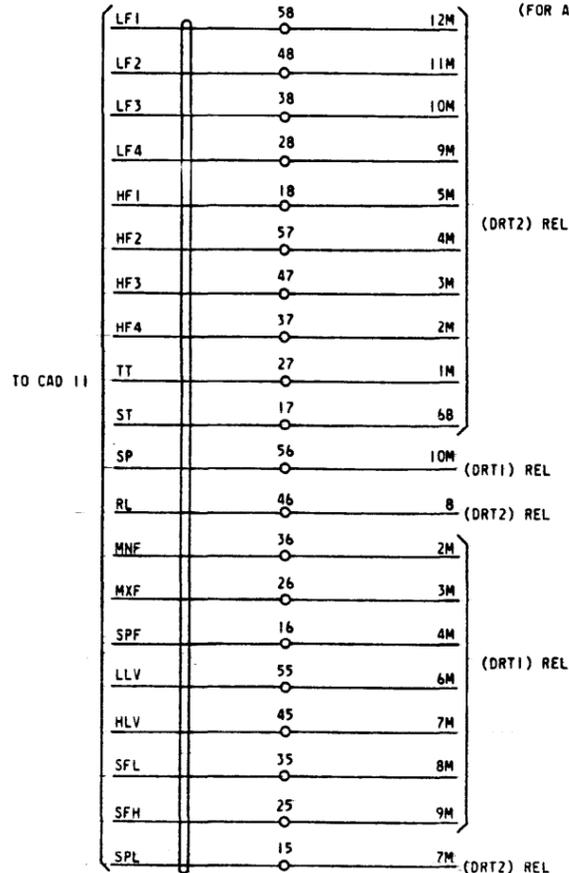
(FOR APP FIG. 9)

**CAD 11 (A & M ONLY)**

(FOR APP FIG. 11)

A  
B  
C  
D  
E  
F  
G  
H

A  
B  
C  
D  
E  
F  
G  
H



TS (C) ON ACD OPERATOR CALL TRANSFER UNIT LOCATED ON MASTER TEST FR JACK BAY FOR ACD

TS (D) ON ACD OPERATOR CALL TRANSFER UNIT LOCATED ON MASTER TEST FR JACK BAY FOR ACD

TS (TST) ON DIGIT REGISTER FR

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ISSUE 35B

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6S

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