(ZS) 197EU SWITCH (SEE NOTE 203), (ZT) 197JU SWITCH (SEE NOTE 210)
242A PLUG
344 JACK

CIRCUIT NOTES:

101.

FEATURE OR OPTION				PROVIDE FIG.	APP OR WIR.	QUANTITY
NO. 1 OR 355A OFFICE	SELECTOR CIRCUIT	3 WIRE		3	V	1 PER CKT.
		4 WIRE			T	
		DIAL TONE	REQUIRED		Z	
			NOT REQUIRED		Y	
	BUSY TONE ONLY				X	
NO. 1 OFFICES					G, S	
NO. 355A OFFICE	WHEN USED WITH PRE-PAY COIN LINES				G, S	
	OTHER THAN PRE-PAY COIN LINES-TIMED RELEASE OF PERM. SIG.	REQUIRED			G, S ZM	1 PER CKT.
		NOT REQUIRED			G, S	
NO. 1 OR 355A OFFICE	WHEN THIS CKT IS USED AS A FIRST SELECTOR AND AUTOMATIC PROCESSING OF FIRST SELECTOR PERMANENT SIGNALS IS	NOT REQUIRED			ZP, ZX	
		REQUIRED AND REDUCTION OF THE ROH TONE ON CERTAIN LINES IS	NOT REQD		ZQ, ZX	
			REQD		ZQ, ZY	

105. (A & M ONLY)

FEATURE OR OPTION				PROVIDE FIG.	APP OR WIR.	QUANTITY
360A OFFICE	SELECTOR CIRCUIT	3 WIRE		3, 4	F, V, Z, P	1 PER CKT
		4 WIRE			F, T, Z, P	
		DIAL TONE	REQUIRED		Z	
			NOT REQUIRED		Y	
	BUSY TONE ONLY				X	
	SOLDERED TYPE BANKS	3 WIRE			ZC, ZG	
		4 WIRE			ZE, ZG	
	CLINCHED TYPE BANKS	3 WIRE			ZD, ZH	
		4 WIRE			ZF, ZH	
WITH TIMED RELEASE OF PERMANENT SIGNAL				2	J, ZL	
NO. 356A OFFICE	LOCAL SELECTORS SEE NOTE 104			3	F, T, X, Z, ZP	
	OPERATORS, INC SELECTORS			3	G, S, T, X, Y, Z, P	
	INC SELETORS CONNECTED TO INTER-LOCAL TRUNK.				G, S, V, X, Y, Z, P	

105. CONT (A & M ONLY)

FEATURE OR OPTION				PROVIDE FIG	APP OR WIR	QUANTITY
350A OFFICES					G, S	
NO. 350A OFFICE	SELECTOR CIRCUIT	3 WIRE		3	V	1 PER CKT
		4 WIRE			T	
		DIAL TONE	REQUIRED		Z	
			NOT REQUIRED		Y	
	BUSY TONE ONLY				X	
	WHEN THIS CKT IS USED AS A FIRST SELECTOR AND AUTOMATIC PROCESSING OF FIRST SELECTOR PERMANENT SIGNALS IS	NOT REQUIRED			ZP	
		REQUIRED			ZQ	

106. "P" LEAD IS NOT REQUIRED WHEN ARRANGED TO WORK WITH NON-COMON CONTROL TOUCH-TONE CALLING OR COMMON CONTROL EQUIPMENT.

107. THE DIFFERENCE BETWEEN THE (C) NETWORKS OF OPT ZU AND ZV IS AS FOLLOWS:

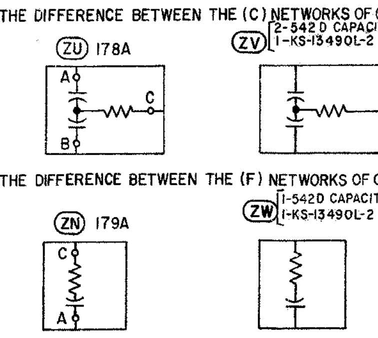
(ZU) 178A

(ZV) [2-542D CAPACITORS, 1-KS-13490L-2 RESISTOR 150Ω.]

THE DIFFERENCE BETWEEN THE (F) NETWORKS OF OPT ZN AND ZW IS AS FOLLOWS:

(ZN) 179A

(ZW) [1-542D CAPACITOR, 1-KS-13490L-2 RESISTOR 150Ω.]



DWG ISS.	C.D. ISSUE	DWG ISS.	C.D. ISSUE	DWG ISS.	C.D. ISSUE
1	1	2D	2D	3B	2D APP 1B
4D	2D APP 2D	5B	2D APP 3B	6AR	2D APP 4R
7B	2D APP 5B				

DWG ISS.	C.D. ISSUE	DATE ISSUED	APPROVED		
8D	3D	3-11-52	C.F. H.M.	O.C.H. R.L.L.	
9D	3D APP 1D	6-19-52	DEVCO L.L.	V.J.A. R.L.L.	
10D	3D APP 2D	3-2-53	E.E.C. F.C.R.	M.M.S. E.W.O.	
11B	3D APP 3B	11-16-54	G.P. GJW	A.R.R. E.W.O.	EA
12D	3D APP 4D	11-16-54	G.P. GJW	A.R.R. E.W.O.	EA
13B	3D APP 5B	6-8-55	T.A.C. H.P.	J.P.D. E.W.O.	IFD
14B	3D APP 6B	1-18-56	A.N.S. W.S.	M.B.B. E.W.O.	WS
15D	3D APP 7D	11-27-56	W.J.P. GJW	D.A.M. R.C.D.	JW
16D	4D	10-3-57	J.M. J.B.S.	A.N.F. R.C.D.	TEB
WORN DRAWING REPRODUCED WITHOUT CHANGE 11-21-58					
17D	4D APP 1D	9-17-63	JPD JTF	G.O. RJJ GM	
18B	4D APP 2B	8-21-64	ES JTF	FM RJJ GM	
19D	4D APP 3D	1-26-65	REH JTF	MPC RJJ GM	
20B	4D APP 4B	6-24-68	GA LL	MEB RMW PD	
21B	4D APP 5B	8-17-71	DJH PJS HY	FLS LCB SEB	
22D	4D APP 6D	7-31-72	EC SAK HY	FLS LCB SEB	
23B	4D APP 7B	9-3-76	PHG SAK JAS	DFH GFC SEB	

102.

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	M.D.	
2D				FIG. 2			
2D	R, S OR Q	S	101	R, S, Q			
7B	M OR N	N		M		N	
8D				FIG. 3		FIG. 1	
8D			204	A		U	
8D			204	E		P	
8D			204	B		D	
8D					H		
8D						R, Q	
8D	ZA OR ZB	ZA		ZB		ZA	
12D			105	FIG. 4			
12D						H	
15D	ZJ OR ZK	ZJ		ZK		ZJ	
16D	ZL OR ZM	ZL		ZM	ZL		
16D					FIG. 2		
16D					J		
17D						K	
18B	ZN	NONE		ZN			
19D	ZP OR ZQ	ZP		ZP, ZQ			
21B	ZR	NONE		ZR			
21B	ZS OR ZT	ZS		ZT		ZS	
22D	ZV	ZU	107	ZV		ZU	
22D	ZW	ZN OR NONE	107	ZW		ZN	
23B	ZX, ZY	ZX		ZX, ZY			

103. IN NO. 355A, MULTIPLE TO MAXIMUM 9 OTHER SELECTORS. IN NO. 356A, MULTIPLE TO ALL OTHER SELECTORS, PRIOR TO ISSUE 8D, FIG. 2 MULTIPLED TO ALL OTHER SELECTORS.

104 IN NO. 356A OFFICE, FUSE WITH ASSOCIATED LINE FINDER FOR LOCAL FIRST SELECTORS.

FIG. 2 (A&M ONLY)

FOR TIMED RELEASE ON PERMANENT SIGNAL (355A AND 356A) ONLY

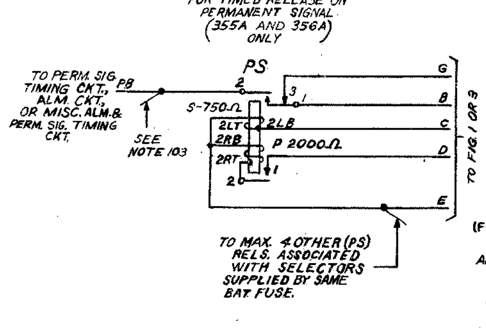


FIG 3

SELECTOR CKT. SEE NOTE 301

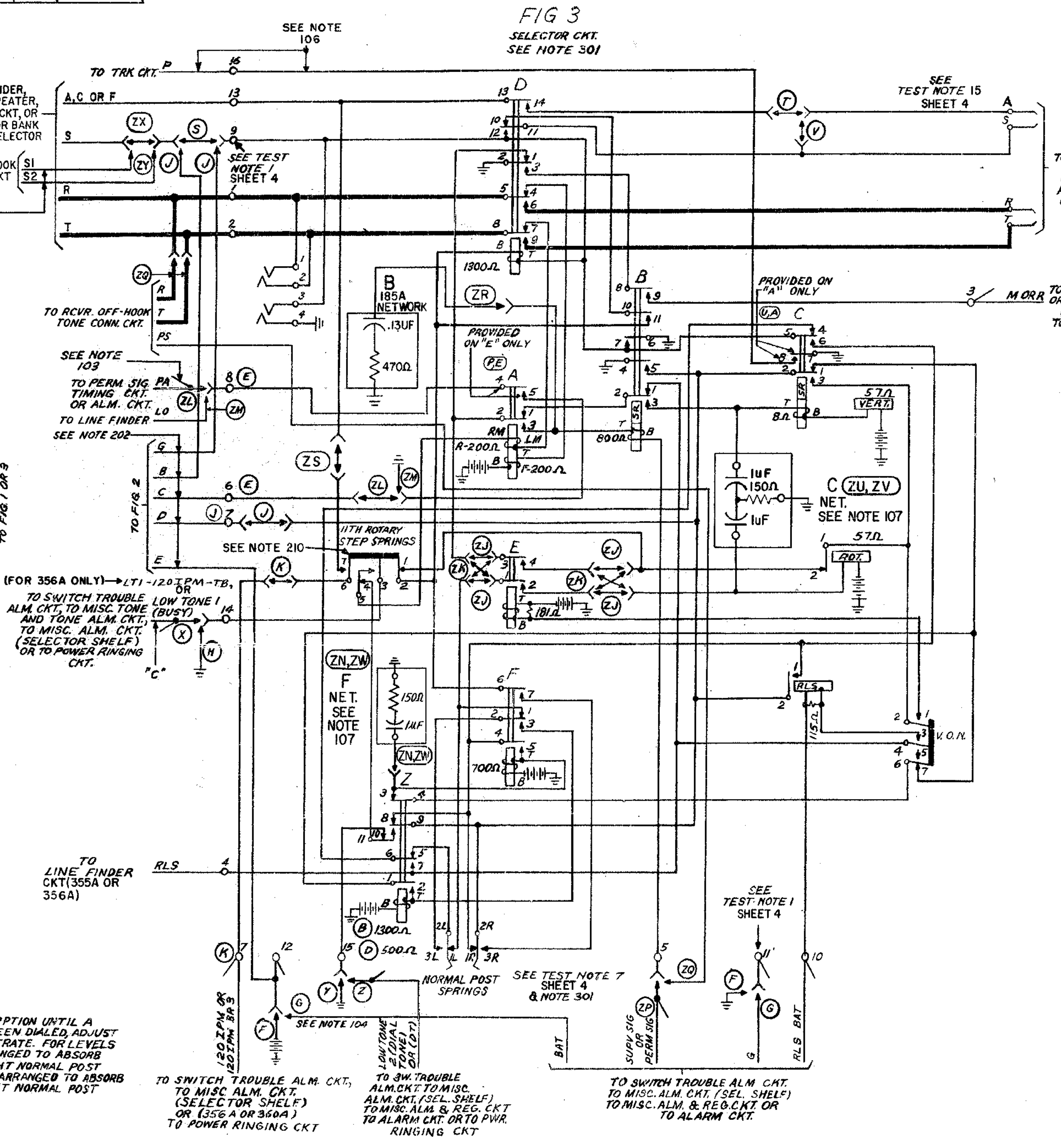
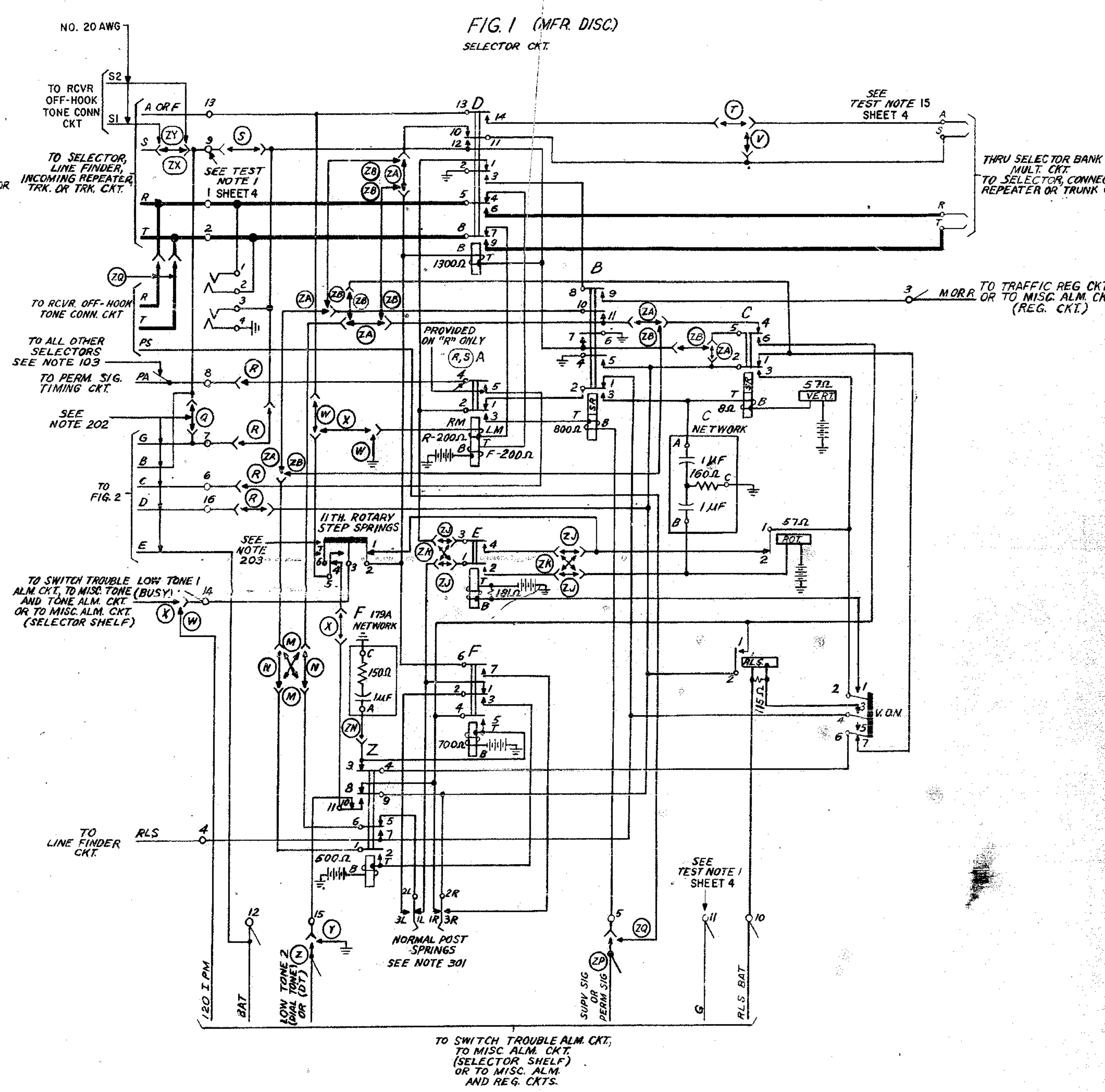


FIG. 1 (MFR DISC)

SELECTOR CKT.



45-52 V.

WORKING LIMITS

LIMITS ARE FOR SINGLE OFFICE AREAS. FOR MULTI-OFFICE AREAS, AND FOR OPERATOR PULSING, SEE KEY SHEETS.

	45 V. MIN. PULSING FROM SUB.			48 V. MIN. PULSING FROM SUB.		
TYPE OF DIAL	2, 4 OR 5	6	7	2, 4 OR 5	6	7
MAX. EXT. CKT. LOOP*	750Ω	1200Ω	1100Ω	850Ω	1500Ω	1400Ω
MAX. EXT. CKT. LOOP**	850Ω	1400Ω	1300Ω	1000Ω	1500Ω	1500Ω
MAX. EXT. CKT. LOOP***	1000Ω	1400Ω	1400Ω	1115Ω	1500Ω	1500Ω
MIN. INS. RES.		15,000Ω			15,000Ω	

* WHEN USING 1000Ω LOOP-LEAK "B" IN PULSING TEST SET.
** WHEN USING 1200Ω LOOP-LEAK "A" IN PULSING TEST SET.
*** WHEN USING 1400Ω LOOP-LEAK "A" IN PULSING TEST SET.

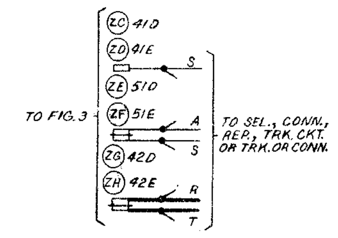
INFORMATION NOTES:

301. FOR LEVELS REQUIRING REPEATED ABSORPTION UNTIL A LEVEL ARRANGED TO ABSORB ONCE HAS BEEN DIALED, ADJUST THE LEFT NORMAL POST SPRING TO OPERATE. FOR LEVELS REQUIRING BLOCKING UNTIL A LEVEL ARRANGED TO ABSORB ONCE HAS BEEN DIALED, ADJUST THE RIGHT NORMAL POST SPRING TO OPERATE. FOR LEVELS TO BE ARRANGED TO ABSORB ONLY ONCE, ADJUST THE LEFT AND RIGHT NORMAL POST SPRINGS TO OPERATE.

FIG. 4

BANK MULT 360A SEE NOTE 105

SEE TEST NOTE 15, SHEET 4



OPTIONS USED				
FIGS.		APP. OR WIRING		
1		Z	M	ZJ
2		Y	K	ZK
3		X	J	ZL
4		W	H	ZM
		V	G	ZN
		U	F	ZP
		T	E	ZQ
		S	D	ZR
		R		ZS
		Q	B	ZT
		P	A	ZU
		N	ZA	ZV
			ZB	ZW
			ZC	ZX
			ZD	ZY
			ZE	
			ZF	
			ZG	
			ZH	

226-527-500
226-524-500
226-400-502
226-305-504
226-305-502
226-305-501
226-300-507
226-300-506
226-300-504
226-205-500

MAINTAINENCE BSP'S

NO. 360A SD-31250-01
NO. 356A SD-32149-01
NO. 355A SD-31780-01
NO. 350A SD-31364-01
NO. 1 SD-31359-01

KEYSHEET INFO.

ED-30976-01
EQUIPMENT INFO.

4

REPLACING SD-31964-01 AND SD-30972-01 FOR 356A

ISSUE 23B HW

SD-30976-01 1D99

STEP BY STEP SYSTEMS

NO. 1 350A, 355A, 356A OR 360A
3 OR 4 WIRE SELECTOR
ARRANGED FOR PEG COUNT ON CUT THRU TO ABSORB DIGITS ONCE ONLY AND/OR REPEATEDLY AND TO RETURN OVERFLOW SIGNAL ON SPECIFIED LEVELS
NO. 1 OR 350A
ARRANGED FOR USE AS FIRST SELECTOR FOR 2 PARTY MESSAGE RATE SERVICE
NO. 355A OR 356A
ARRANGED FOR TIMED RELEASE ON PERMANENT SIGNAL
(DA SEL) (TIMED RLS)

AT&T CO STANDARD

A&M ONLY FOR 350A, 356A & 360A

R3

SD-30976-01
4 SHEETS

BELL TELEPHONE LABORATORIES, INC

SD-30976-01

FIG. 51 (MFR. DISC.)
(FOR FIG. 1)

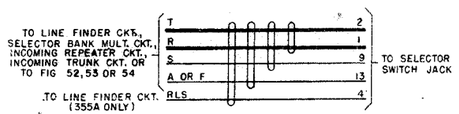


FIG. 52
FOR MIXING LOCAL AND INCOMING TRUNKS TO SUCCEEDING SELECTORS ON THE SAME SHELVES BY CROSS CONNECTING BOTH AT THE T.D.F. OR FOR CONNECTION TO INCOMING REPEATER CKT. ONLY AT T.D.F.

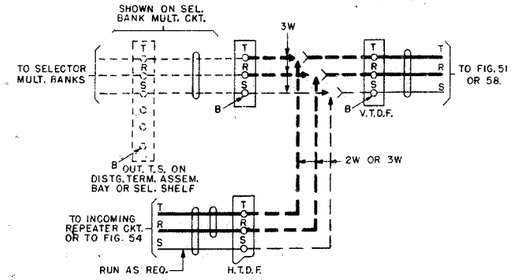


FIG. 53
FOR MIXING LOCAL AND INCOMING TRUNKS TO SUCCEEDING SELECTORS ON THE SAME SHELVES BY CROSS CONNECTING LOCALS AT THE T.D.F. AND INCOMINGS AT THE M.D.F.

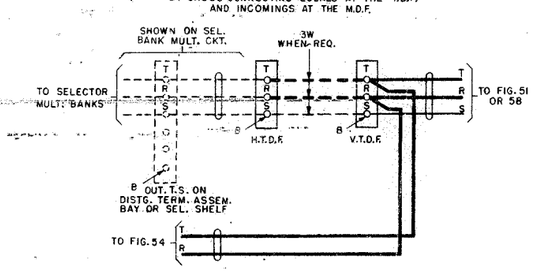


FIG. 54
CROSS CONNECTIONS AT M.D.F. OR C.D.F.
(NO. 1, 350A OR 355A)

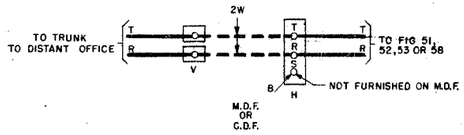


FIG. 55 (A & M ONLY)
(FOR FIG. 1 OR 3)
FOR REGISTER LEADS IN NO. 1 OR 350A OFFICES

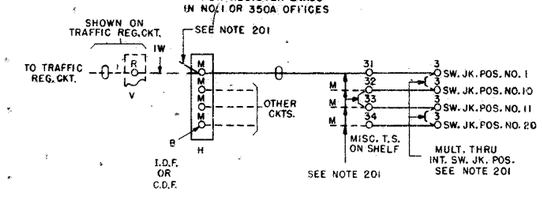


FIG. 56
(FOR FIG. 1 OR 3)
FOR REGISTER LEADS IN 355A OFFICES

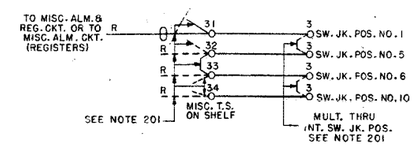


FIG. 57 (A&M ONLY)
(FOR FIG. 2)
(FOR 355A ONLY) SEE NOTE 202

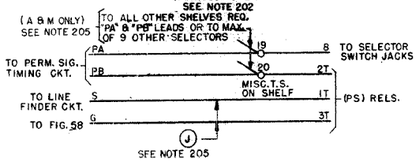


FIG. 58
(FOR FIG. 3)
(FOR NO. 1, 350A OR 355A)

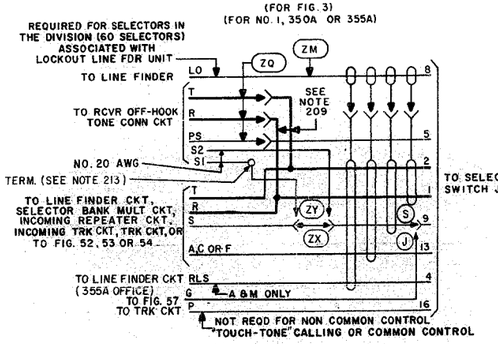


FIG. 59
(FOR PART OF FIG 1 OR 3)
20 CAPACITY SHELF UNIT
FOR NO. 1 & 350A
SEE NOTE 206

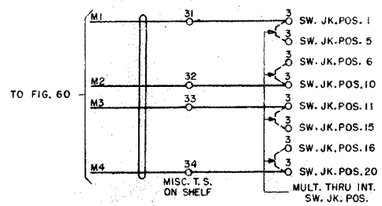


FIG. 60
DISTRIBUTING FR. TERMINATION OF FR. REGISTER LEADS
SEE NOTE 206

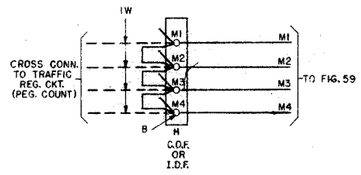


FIG. 61 (A&M ONLY)
(FOR FIGS. 2 & 3)
NO. 356A
FOR LOC. SEL. ON LINE FR.

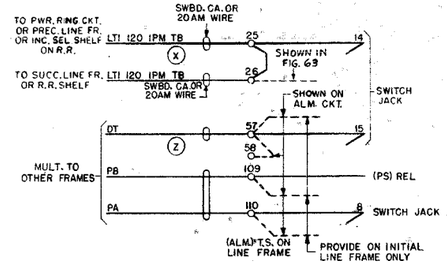


FIG. 62 (A&M ONLY)
(FOR FIG. 3)
NO. 356A
FOR INC. SEL. ON R.R. CONNECTED TO INTERLOCAL TRUNKS

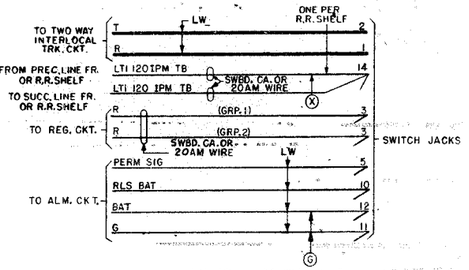


FIG. 63 (A&M ONLY)
(FOR FIG. 3)
FOR INCOMING SELECTOR NO 356A ONE PER LINE FR. FOR BUSY FLASH AND BUSY TONE LEADS

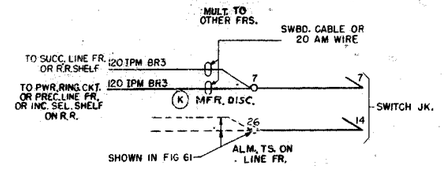
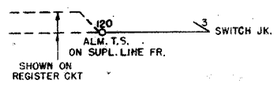


FIG. 64 (A&M ONLY)
(FOR FIG. 3)
NO. 356A
FOR INCOMING SELECTOR ONE PER SUPPLEMENTARY LINE FR. FOR REGISTER LEAD



DRAWING ISSUE
20B
21B HW
PE

ISSUE 23B HW

3 OR 4 WIRE SELECTOR (2)

SD-30976-01-2

BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

SD-30976-01-2

E-7422-8-2(8-64)

FIG. 65 (A&M ONLY)
(FOR FIG. 3)
NO. 356 A
FOR INC. SELECTOR ON LINE FRAMES
ONE PER SEL.

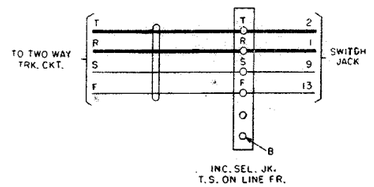


FIG. 66 (A&M ONLY)
(FOR FIG. 3)
NO. 356 A
FOR INC. SEL. ON R.R. CONNECTED TO OPR. OFF. TRUNK.

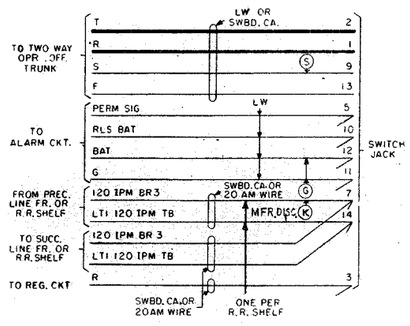
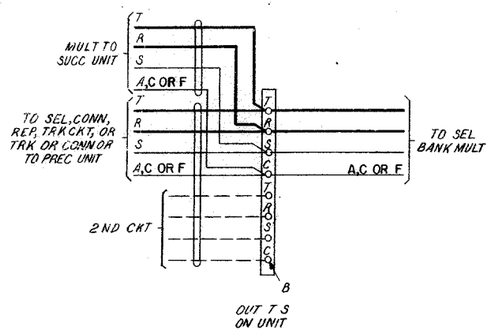
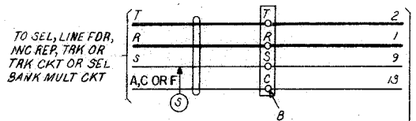
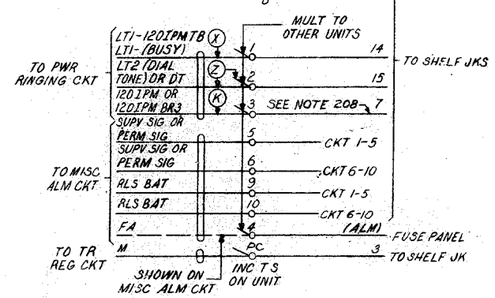


FIG. 67 (A&M ONLY)
(FOR FIGS. 3 & 4)
NO. 360 A







EQUIPMENT NOTES:

201. THE WIRING TO REGISTER CKTS IN FIGS. 55 AND 56 IS BASED ON ONE REGISTER FOR ALL SELECTORS ON THE SAME SHELF. IN FIG. 55, SHELF STRAPS BETWEEN SWITCH JACK TERMINALS 3 OF SWITCH POSITIONS 5 AND 6 OR 15 AND 16 OR MISC. SHELF TERMINALS 32 AND 33 SHALL BE CUT, AND ADDITIONAL LEADS RUN TO THE DISTRIBUTING FRAME AS REQUIRED WHEN REGISTRATION ON A QUARTER OR HALF SHELF BASIS IS SPECIFIED. LEADS FROM DIFFERENT SHELVES SHALL BE CONNECTED TO THE SAME REGISTER CKT BY MULTIPLING TOGETHER THE ASSOCIATED TERMINALS AT THE DISTRIBUTING FRAME. IN FIG. 56, SHELF STRAPS BETWEEN SWITCH JACK TERMINALS 3 AND MISC SHELF TERMINALS 32 AND 33 SHALL BE CUT, AND ADDITIONAL LEADS RUN TO REGISTER CKTS IN ACCORDANCE WITH JOB REQUIREMENTS TO PROVIDE REGISTERS FOR FROM 2 TO 4 GROUPS OF SELECTORS PER SHELF, 2 GROUPS MAXIMUM PER HALF SHELF. LEADS ON DIFFERENT SHELVES TO BE CONNECTED TO THE SAME REGISTER CKT SHALL BE MULTIPLED BETWEEN SHELVES WITH LOOSE WIRING AS REQUIRED.

202. THE (PS) RELAYS PER FIG. 2 ARE LOCATED ON THE SHELF WITH THE MISC EQUIPMENT IN 355A OFFICES OR AT THE BOTTOM OF THE LINE FRAME IN 356A OFFICES. ON NEW SHELVES, WIRING FROM THESE RELAYS TO THE SHELF JACKS AND MISC T.S. ON THE SHELF SHALL BE FURNISHED IN THE SHOP AS REQUIRED. BATTERY SUPPLY TO THE (PS) RELS SHALL BE FURNISHED BY WIRING TO THE SHELF OR FRAME FUSE PANEL. WHEN THE (PS) RELAYS ARE REQUIRED IN CONJUNCTION WITH EXISTING OLD STYLE 355A SHELVES PER ED-30579-01 THEY SHALL BE MOUNTED ON A JOB BASIS ON THE NEAREST AVAILABLE RELAY RACK SPACE, 20 RELAYS FOR TWO SHELVES PER MOUNTING PLATE.

203. (MFR. DISC.) 11TH ROTARY STEP SPRINGS 6-7 PROVIDED ONLY ON SWITCHES MANUFACTURED ON OR AFTER FEB. 11, 1952. WHEN MODIFYING EXISTING SWITCHES PER FIG.1 (NOT HAVING THESE SPRINGS) FOR BUSY FLASH TO OPERATORS, REPLACE THE EXISTING 11TH ROTARY STEP SPRINGS WITH SPRING ASSEMBLY, PER P-463573.

204. "P" & "D" OPTIONS MAY BE REUSED WHEN MODIFYING CKTS PER FIG.1. "U" OPTION MAY BE REUSED WHEN LEAD "P" IS NOT REQUIRED.

205. PRIOR TO ISS.8D, THE MULTIPLE OF LEADS "PA" & "PB" IN FIG.57 "TO ALL OTHER SHELVES", WAS NOT RATED "A&M ONLY", AND THE "S" & "G" LEADS IN THIS FIG., AND FIGS. 58-64 WHERE NOT SHOWN.

206. ON A 20 CAPACITY SHELF WIRED PER FIG.59, SWITCHES MAY BE GROUPED FOR TRAFFIC REGISTRATIONS, WHEN REQUIRED, ON A QUARTER, HALF OR FULL SHELF BASIS, OR ON THE BASIS OF MORE THAN ONE SHELF. WHEN GROUPED ON A HALF OR FULL SHELF BASIS THE M1, M2, M3 AND M4 TERMS AT THE DISTRIBUTING FRAME SHALL BE STRAPPED TOGETHER AND CROSS-CONNECTED TO THE TRAFFIC REGISTERS AS REQUIRED. FOR SWITCH GROUPS ARRANGED OVER MORE THAN ONE SHELF THE ASSOCIATED "M" LEADS OF THE DIFFERENT SHELVES SHALL BE MULTIPLED TOGETHER AT THE DISTRIBUTING FRAME AND CROSS-CONNECTED TO THE TRAFFIC REGISTERS AS REQUIRED.

207. WHEN SELECTORS PER FIG.3 ARE INSTALLED AS OPERATOR INCOMING SELECTORS ON EXISTING SHELVES WIRED WITH THE BUSY FLASH LEAD CONNECTED TO SHELF JACK TERMINALS 14, THIS LEAD SHALL BE DISCONNECTED FROM TERMINALS 14 AT THE POSITIONS OF THE ADDED SELECTORS AND CONNECTED TO TERMINALS 7 INSTEAD, AND BUSY TONE OR GROUND AS REQUIRED CONNECTED TO TERMINALS 14 AT THESE POSITIONS.

208. IF SELECTOR PER SD-30976-01 ARE TO BE MOUNTED ON EXISTING 360A OFFICE SHELVES HAVING THE 120 IPM BUSY FLASH LEAD CONNECTED WITH SHELF JACK TERMINALS NO.6, THIS LEAD AT THE POSITIONS OCCUPIED BY THESE SELECTORS SHALL BE TRANSFERRED TO SHELF JACK TERMINALS NO. 7.

209. WHEN THIS UNIT IS USED AS A FIRST SELECTOR AND AUTOMATIC PROCESSING OF FIRST SELECTOR PERMANENT SIGNALS IS REQUIRED PER "ZQ" OPTION, CROSS CONNECTIONS ARE TO BE MADE AT EITHER THE VIDF, VTDF OR CDF AS SHOWN ON THE RECEIVER OFF-HOOK TONE CONNECTING CIRCUIT, SD-33034-01.

210. 197EU SWITCH HAVING 7 SPRING PILE UP ON THE 11TH ROTARY STEP SPRING IS REPLACED WITH A 197JU SWITCH HAVING A 5 SPRING PILE UP. THIS CHANGE IS DUE TO BUSY FLASH BEING RATED MANUFACTURE DISCONTINUED.

211.

212.

213. WHEN "ZY" OPTION IS REQUIRED A TERMINAL IS PROVIDED AT THE ASSOCIATED SELECTOR SHELF 344 TYPE JACK TO FACILITATE THE TRANSFER OF THE "S" LEAD FROM JACK SPRING 9 TO RECEIVER OFF-HOOK TONE CONN CKT.

DRAWING ISSUE
20B NO
21B HW
ISSUE 23B HW

3 OR 4 WIRE SELECTOR (2)
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BELL TELEPHONE LABORATORIES INCORPORATED
CODE SIZE 6S
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E-7422-8-2(8-64)

CIRCUIT REQUIREMENTS

DRAWING ISSUE 21B

DESIG	APPARATUS CODE	OPT.	FIG.	RESID	MECH REQT BSP FIG.	MECH REQT CONT PRES	MECH REQT ARM. TRVL	CIRCUIT PREPARATION BLOCK OR INSULATE	CIRCUIT PREPARATION TEST CLIP DATA CONN BAT.	CIRCUIT PREPARATION TEST CLIP DATA CONN GRD	TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REQT TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	TIME TEST MSEC	REQ READJ MSEC
MAGNETS																			
	197 EU SWITCH	ZS	1,3									7							
	197JU SWITCH	ZT	1,3									7							
RELAYS																			
A	221A	S	1	7-11	726		8		7(D)	4(D)	M	2/3/4	R/F	O	FS	15.1	14.8		
		P	3						7(D)	4(D)	M	4	R/F	NO	FS	13.9	14.4		
								(B) NO	TST JK2	TST JK1	M	2/3/5	R/F	O	FS	15.1	14.8		
									TST JK2	TST JK1	M	5	R/F	NO	FS	13.9	14.4		
A	221P	R	1	7-11	727		8		7(D)	4(D)	M	2/4/6	R/F	O	FS	15.1	14.8		
		E	3						7(D)	4(D)	M	4	R/F	NO	FS	13.9	14.4		
								(B) NO	TST JK2	TST JK1	M	2/5/6	R/F	O	FS	15.1	14.8		
									TST JK2	TST JK1	M	5	R/F	NO	FS	13.9	14.4		
B	248G		1,3	1.5-4	517		27	1(A)		3(A)	GRD	8		O	FS	10.5	10		
										3(A)	GRD	8		NO	FS	8.5	9		
									TST JK1	TST JK2	V-BR	9/10		H					333
				MIN.					TST JK1	TST JK2	V-BR	10		R				750	500
				1.5				1(A)		3(A)	GRD	10		NO	FS	8.5	9		
C	221EF		1	S-4	164		13			3(B)	GRD	8		O	500	90	85		
	221EF	U	3	S-4	164		13	(VON) NO		3(B)	GRD	8		NO	500	62	69		
	221FL	A	3	S-4	191		13		TST JK1	TST JK2	V-M	10/11		H					100
									TST JK1	TST JK2	V-M	10		R				155	140
								(VERT) NO		3(B)	GRD	10		NO	500	62	69		
D	222KC		1,3	-4	385		15		2(11TH ROT)		BAT	12		O	FS	27	25.5		
									2(11TH ROT)		BAT	12/13		NO	FS	20.5	22		
									2(11TH ROT)		BAT	12/14		NO	FS	12	12.7		
E	221NL		1,3	7-9	700		16	(C)O		1(VON)	GRD	2		O	FS	105	100		
								(C)O		1(VON)	GRD			NO	FS	85	90		
F	222EG		1	4-9	17		12			3(Z)	GRD	2/21/19		O	FS	11.8	11.3		
			1,3	6-8						3(Z)	GRD	19		NO	FS	7.9	8.3		
										3(Z)	GRD	2/21/20		O	FS	14.9	14.1		
										3(Z)	GRD	20		NO	FS	10	10.5		
PS	R453	Z			14/1	H	35			RT(PS)	GRD	24	P	O		13.8	13.0		
										LB(PS)	GRD		S	O		28.5			
Z	225U		1	S-4	702 MOD		33	(C)O 7(VON)		3(F)	GRD	16/23/22		O	FS	39	37		
		D	3							3(F)	GRD	22		NO	FS	30	31.5		
										3(F)	GRD	17/22		O	FS	70.5	67		
										3(F)	GRD	18/22		NO	FS	50.5	53.5		
Z	225Y	B	3	S-4	702		29	(C)O 7(VON)		3(F)	GRD	16/23/22		O	FS	13.7	13		
										3(F)	GRD	22		NO	FS	10.4	11		
										3(F)	GRD	17/22		O	FS	26.5	25		
										3(F)	GRD	18/22		NO	FS	19.5	21		

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E-7423-A (8-63)

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TEST NOTES:

1. JACK SPRINGS 9 & 11 SHALL MAKE CONTACT WHEN SPRING IS REMOVED.
2. ARMATURE NEED NOT TOUCH CORE.
3. TEST: CONTACT SEPARATION MIN 3. CONTACT FOLLOW SPRINGS 2-3 MIN 8.
4. WHEN USED AS AN INC SEL WITHOUT REP, BLOCK (D) REL OPERATED.
5. FOR USE EXCEPT FOR INC SEL WITHOUT AN INC REP.
6. TEST: CONTACT SEPARATION MIN 3. CONTACT FOLLOW SPRINGS 2-3 & 4-5 MIN 8.
7. APPLY THE FOLLOWING ADJUSTMENTS WHEN THE SW HAS THE RIGHT NORMAL POST CAM OPERATED ON THE FIRST LEVEL.
   (A) RIGHT NORMAL POST SPG CONT PRESSURE THE CONT PRESSURE OF NO.2 SPG AGAINST NO.1 SPG SHALL BE MIN 35 GRAMS.
   (B) RELATION OF RIGHT NORMAL POST CAM TO ROLLER: WITH THE PLAY BETWEEN THE CAM & THE NORMAL POST TAKEN UP, THE ROLLER MAY CONT THE CAM BUT IN NO CASE SHALL THE CLEARANCE BETWEEN THE CAM AND THE ROLLER EXCEED .005". ALL OTHER REQ IN BSP A477.002 ARE APPLICABLE.
   (C) THESE ABOVE REQUIREMENTS ARE WAIVED WHEN THE LEFT NORMAL POST CAM, IN ADDITION TO THE RIGHT, IS ALSO OPERATED ON THE FIRST LEVEL. IN THIS CASE THE MINIMUM CONTACT PRESSURE SHALL NOT BE LESS THAN 20 GRAMS FOR EACH SIDE.
8. FOR USE WHEN TIMING REQ ARE NOT APPLIED.
9. TEST HOLD: USE 14000 LOOP IN PULSING TST SET.
10. FOR USE WHEN TIMING REQ ARE APPLIED.
11. TEST HOLD: USE LEAK "A" IN PULSING TEST SET.
12. SHORT CKT TEST JK SPRINGS 3-4.
13. CONTACTS 1-2 MAY BREAK.
14. NO CONTACT MAY BREAK.
15. THE UPPER WIPER IS NORMALLY ADJUSTED AS A TWO COND WIPER FOR 4 WIRE OPERATION. WHERE 3 WIRE OPERATION IS SPEC THE UPPER WIPER SHALL BE ADJUSTED AS A SINGLE COND WIPER.
16. FOR SPRINGS 1 & 2 ONLY.
17. FOR WHOLE COMBINATION.
18. CONTACTS 1-2 MAY MAKE & 3-4, 5-6 MAY BREAK.
19. ADJUSTMENT "A".
20. ADJUSTMENT "B".
21. ADJUSTMENT "A" RATED "MFR DISC." REPLACED BY ADJUSTMENT "B" ON ISS 3B.
22. SPRGS 1 & 2 SHALL MAKE BEFORE SPRG 1 STRIKES BUSHING ON SPRG 4.
23. SPRG COMBINATION THE SAME AS BSP FIG. 702 EXCEPT ARM. TRVL 33-29, CONTACTS 1 & 2 TO MAKE 27-25, & 3 & 4 TO BREAK 19-15.
24. INSULATE 1B (PS) WITH "J" OR "R" OPTION.

DRAWING ISSUE 20B 21B HW

ISSUE 23B HW

3 OR 4 WIRE SELECTOR (2)

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BELL TELEPHONE LABORATORIES INCORPORATED

GRID SIZE 6S

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