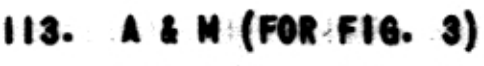


DWG.
ISS.
1
4B
7D
10D
13B
DWG.
ISS.
16A/R
17D
18B
19D



107. WHEN AN A-B TOLL PREC. SEL. CKT. IS CONNECTED BETWEEN THE OUTGOING END OF THIS CKT. AND THE TRK., ALL THE TRK. CONDUCTORS CONNECTED TO THE BANK LEVELS OF THE SEL. SHALL HAVE THE SAME RES. AND APPROX. THE SAME MAKE UP OF OPEN WIRE AND CABLE.

FEATURE OR OPTION		PROVIDE		
		FIGS.	APP OR WIR	QUANTITY
TRUNK TO NO. 1 CROSSBAR IF CONNECTED TO A SUBSCRIBER SENDER OR TRUNK TO PANEL	CONDC. LOOP 500 ~ OR OVER		ZI. V. Q	
	CONDC. LOOP UNDER 500 ~		Q	
TRUNK TO NO. 1 CROSSBAR	CONDC. LOOP 500 ~ OR OVER		M. V	

FIG. 1 (A & M ONLY)
REPEATER
SEE NOTES 301, 302, 303 AND 304

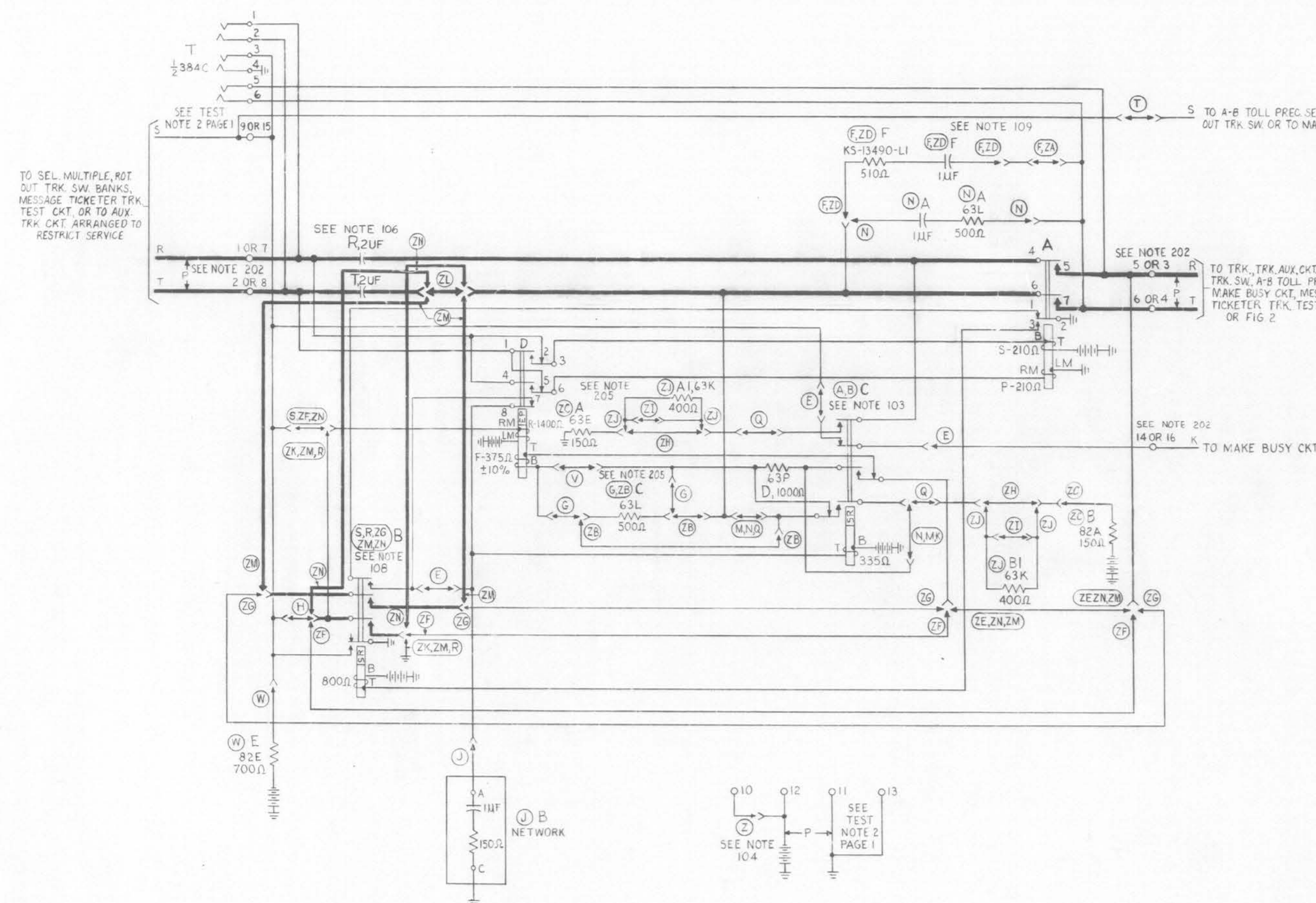
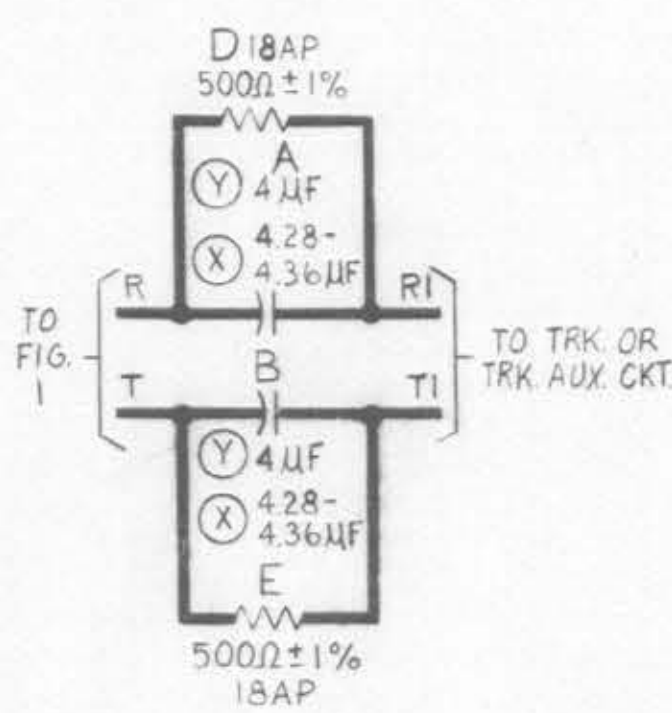


FIG. 2 (A & M ONLY)
SHORT LOOP COMPENSATOR
SEE NOTES 112 & 304



10-27718-02

OUTGOING REPEATER CIRCUIT

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85

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240

REPEATER
SEE NOTES 301, 302, 303 AND 304

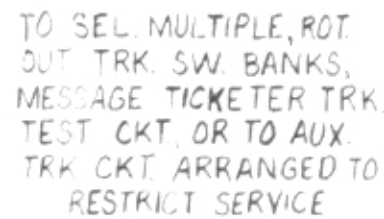
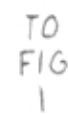


FIG. 2 (A&M ONLY)
SHORT LOOP COMPENSATOR
SEE NOTES 112 & 304



CIRCUIT REQUIREMENTS																			
APPARATUS				MECH REQ				CIRCUIT PREPARATION				DIRECT CURRENT FLOW REQ				TIME REQ			
DESIG	CODE	OPT	FIG.	RESID.	BSP FIG.	CONT PRES	ARM. TRVL	BLOCK OR INSULATE	TEST CLIP DATA		TEST SET PREP	SEE TEST NOTE	TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	TEST SEC	READJ SEC
RELAYS									CONN BAT.	CONN GRD									
A	221FAC		1,3	4-8	366		8	(D) NO	TST-JK-2	TST-JK-1	M	1,4,5	P/S	O	FS	14.1	13.4		
								(D) NO	TST-JK-2	TST-JK-1	M	5	P/S	NO	FS	11.7	12.4		
								(D) NO	TST-JK-2	TST-JK-1	M	1,4,6,8	P/S	O	FS	16			
								(D) NO	TST-JK-2	TST-JK-1	M	6,8	P/S	NO	FS	11.5			
B	248F	ZG, ZM	1,3	15-4	516		27												
								3(A)	GRD	9			O	FS	10.5	10			
								3(A)	GRD	9			NO	FS	8.5	9			
								TST-JK-2	TST-JK-1	V-BR	3,7		H					.333	
								TST-JK-2	TST-JK-1	V-BR	3		R					.750	.500
								3(A)	GRD	3			NO	FS	8.5	9			
B	248J	S	1	15-4	522		28												
								3(A)	GRD	9			O	FS	10.5	10			
								3(A)	GRD	9			NO	FS	8.5	9			
								TST-JK-2	TST-JK-1	V-BR	3,7		H					.333	
								TST-JK-2	TST-JK-1	V-BR	3		R					.750	.500
								3(A)	GRD	3			NO	FS	8.5	9			
B	248D	R,ZN	1	15-4	504		28												
								3(A)	GRD	9			O	FS	10.5	10			
								3(A)	GRD	9			NO	FS	8.5	9			
								TST-JK-2	TST-JK-1	V-BR	3,7		H					.333	
								TST-JK-2	TST-JK-1	V-BR	3		R					.750	.500
								3(A)	GRD	3			NO	FS	8.5	9			
C	247H	B	1	15-4	519		48												
								8(D)	GRD	9,16			O	FS	26	24.5			
								8(D)	GRD	9,16			NO	FS	16	17			
								TST-JK-2	TST-JK-1	V-M	3,17		H					.125	
								TST-JK-2	TST-JK-1	V-M	3		R					.275	.250
								8(D)	GRD	3,16			NO	FS	16	17			
C	247J	A	1,3	15-4	521		49												
								8(D)	GRD	9,10			O	FS	21	20			
								8(D)	GRD	9,10			NO	FS	13.3	14			
								TST-JK-2	TST-JK-1	V-M	3,17		H					.125	
								TST-JK-2	TST-JK-1	V-M	3		R					.275	.250
								8(D)	GRD	3,10			NO	FS	13.3	14			
D	252A		3		367		18	2(C),5(C),1(A), (A)NO,(B)O	5(C)	2(C)	B/G	11-13,15	F	O		14	13.3		
								5(C)	2(C)	B/G	11,15	F	H			-9.5	-10		
								5(C)	2(C)	B/G	11,15	F	R			-14	-13.3		
								5(C)	2(C)	B/G	11,15	F	NO			9.7	10.3		
								5(C)	2(C)	B/G	11,15,18	F	NO			-64	-67.5		
D	252A		1		367		18	5(C) WITH (A) OPTION OR 7(C) WITH (B) OPTION	2(C) WITH (A) OPTION OR 4(C) WITH (B) OPTION	B/G	11-13,15,19	F	O		14	13.3			
										B/G	11,14,15,19	F	H			-9.5	-10		
										B/G	11,15,19	F	R			-14	-13.3		
										B/G	11,15,19	F	NO			9.7	10.3		
										B/G	11,15,18,19	F	NO			-64	-67.5		

TEST NOTES:

- ARM NEED NOT TOUCH CORE ON OPERATE.
- JKS 9 & 11 AND 13 & 15 SHALL MAKE WHEN REP IS REMOVED.
- FOR USE WHEN TIMING REQUIREMENTS ARE APPLIED.
- TEST CONT SEPARATION MIN 3 CONT FOLLOW 2-3, 4-5 & 6-7 MIN & TEST AND READJ CONTS 2-3 AND 4-5 SHALL MAKE BEFORE CONT 6-7.
- FOR USE IN OFFICES WHERE PULSE REP REQUIREMENTS ARE NOT APPLIED.
- FOR USE IN OFFICES WHERE PULSE REP REQUIREMENTS ARE APPLIED. DO NOT APPLY PULSE REP REQUIREMENTS WHEN THIS CKT PULSES ON A LOOP BASIS INTO A CBR NO 1 OR 5 OFFICE OR A CBR TDM OFFICE.
- TST HOLD-USE 1400Ω LOOP IN PULSE TST SET.
- APPLY PULSE REQ (A1) 48-78% BK FOR BAT GRD PULSING OR 46-78% BK FOR LOOP PULSING CONNECT TST SET TO (T) JK SPRINGS 1,2 & 3 FOR INPUT AND 5-6 FOR OUTPUT.
- FOR USE WHERE TIMING REQUIREMENTS ARE NOT APPLIED.
- TEST-CONTACTS 2-3 SHALL BREAK BEFORE CONT 4-6 OR 7-8 MAKE. CONT PRES SPRINGS 2-3 & 5-6 MIN 15 GRAMS.
- APPLY CURRENT WITH THE BAT AT 48.5-50V.
- CONTACTS 1-3 & 4-6 MAY MAKE BEFORE CONTACT 7-8 BREAKS.
- CONT PRESS TEST-SPRINGS 2-3 & 5-6 MIN 35 GRAMS. SPRINGS 7-8 MIN 15 GRAMS. READJ SPRINGS 7-8 MIN 20 GRAMS.
- PRIOR TO ISSUE 4-B, THE HOLD VALUE WAS NOT SHOWN.
- APPLY CURRENT FLOW REQUIREMENTS IN ORDER SHOWN. RLS KEY OF TEST SET SHALL NOT BE CLOSED WHEN APPLYING HOLD OPR & NON-OPR CURRENT.
- TEST-CONTACTS 4-5 SHALL BREAK BEFORE 6-8 & 9-10 MAKE, CONT PRES SPRINGS 4-5 & 7-8, MIN 15 GRAMS.
- TST HOLD-USE LEAK (A) IN PULSE TST SET.
- IF SUFFICIENT CURRENT CANNOT BE OBTAINED, SHORT CIRCUIT RESISTANCE (C).
- BLOCK (A) NO & (B) O; INSULATE 1(A), 2(C) & 5(C) WITH (A) OPTION OR 1(A), 4(C) & 7(C) WITH (B) OPTION.

FIG 69

(FOR 4 FIG 2)

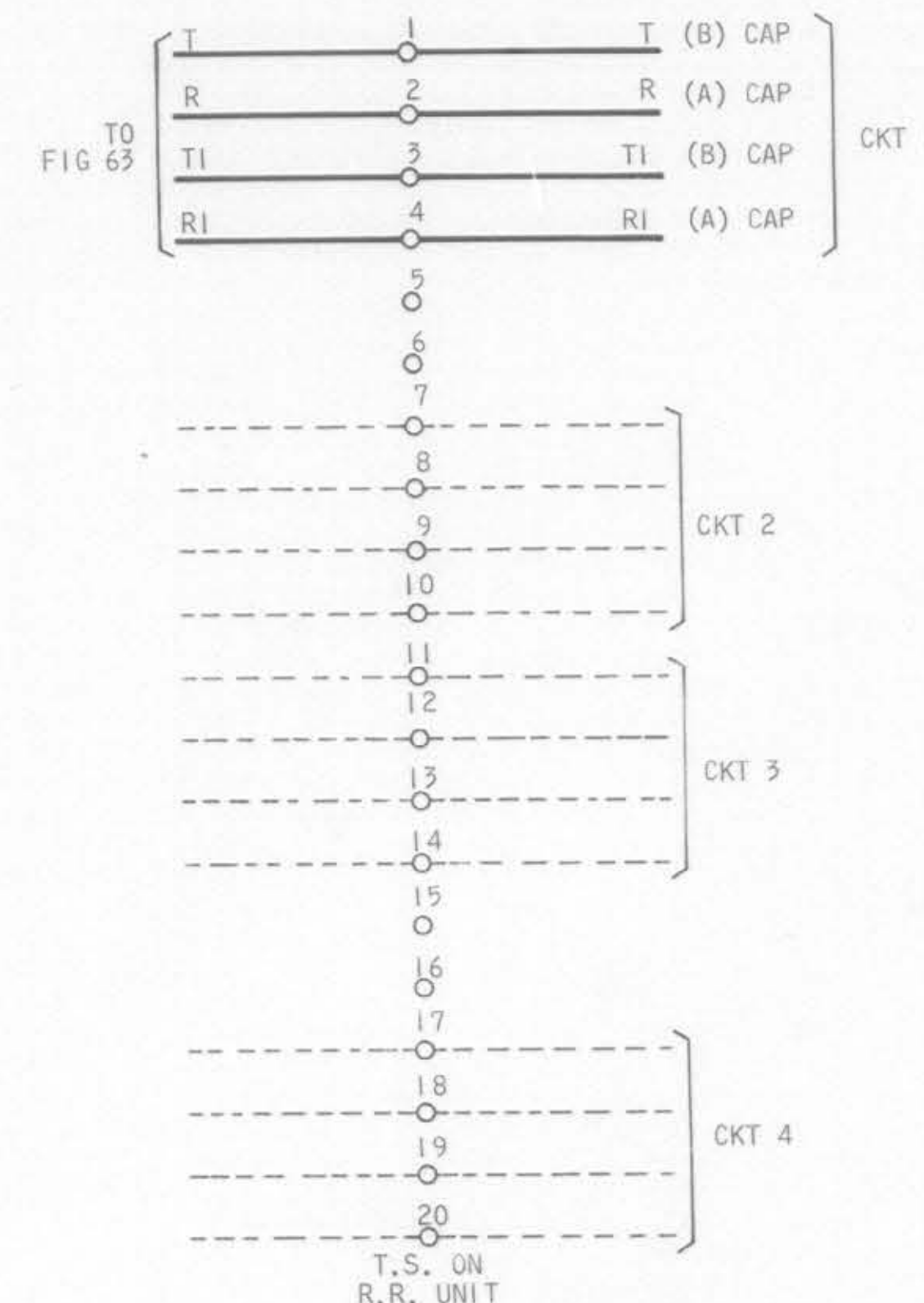
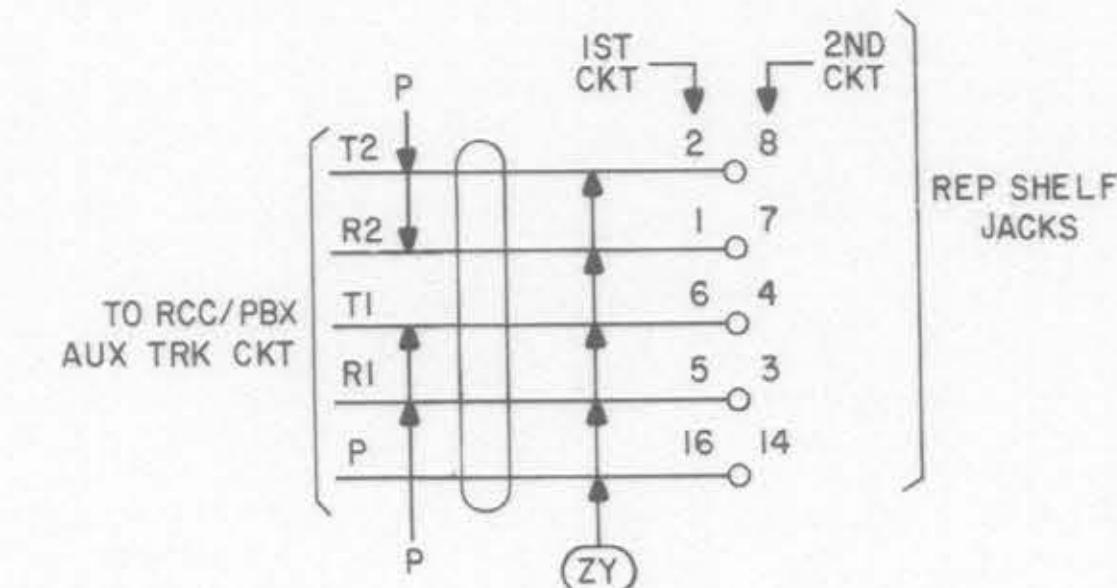


FIG 70

(FOR FIG 3)
FOR REPEATERS REQUIRING
CONNECTION TO RCC/PBX
AUX TRK CKT



OUTGOING REPEATER CIRCUIT

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FIG. K
(MFR. DISC.)
FOR OFFICES USING T.D.F. OR I.D.F.

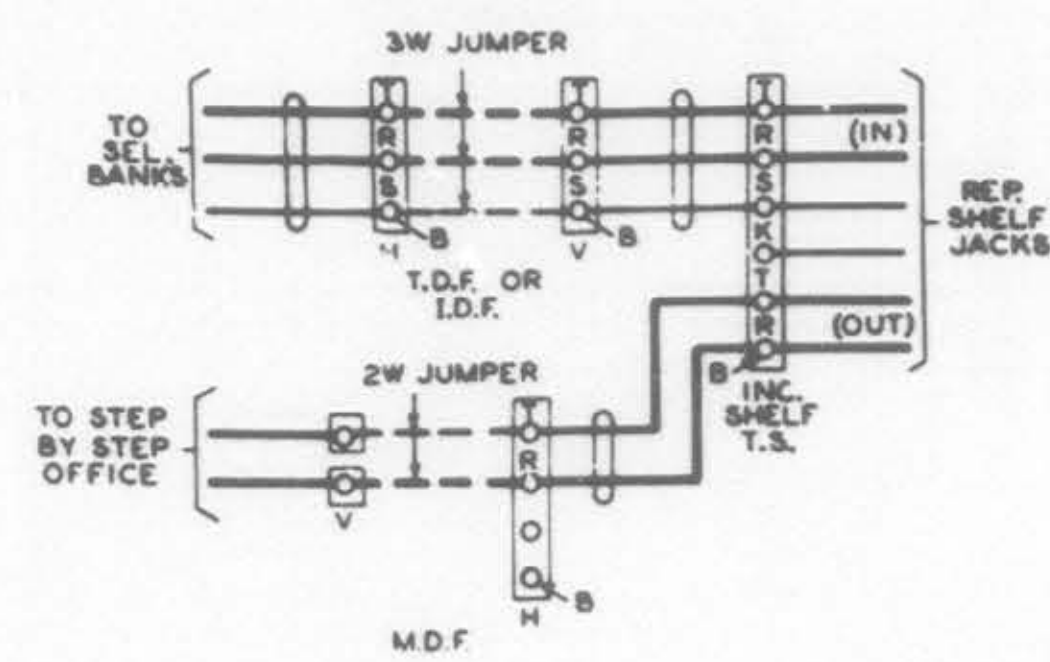


FIG. L
(MFR. DISC.)
FOR OFFICES USING T.D.F. OR I.D.F.
AND ROT. OUT. TRK. SWITCHES

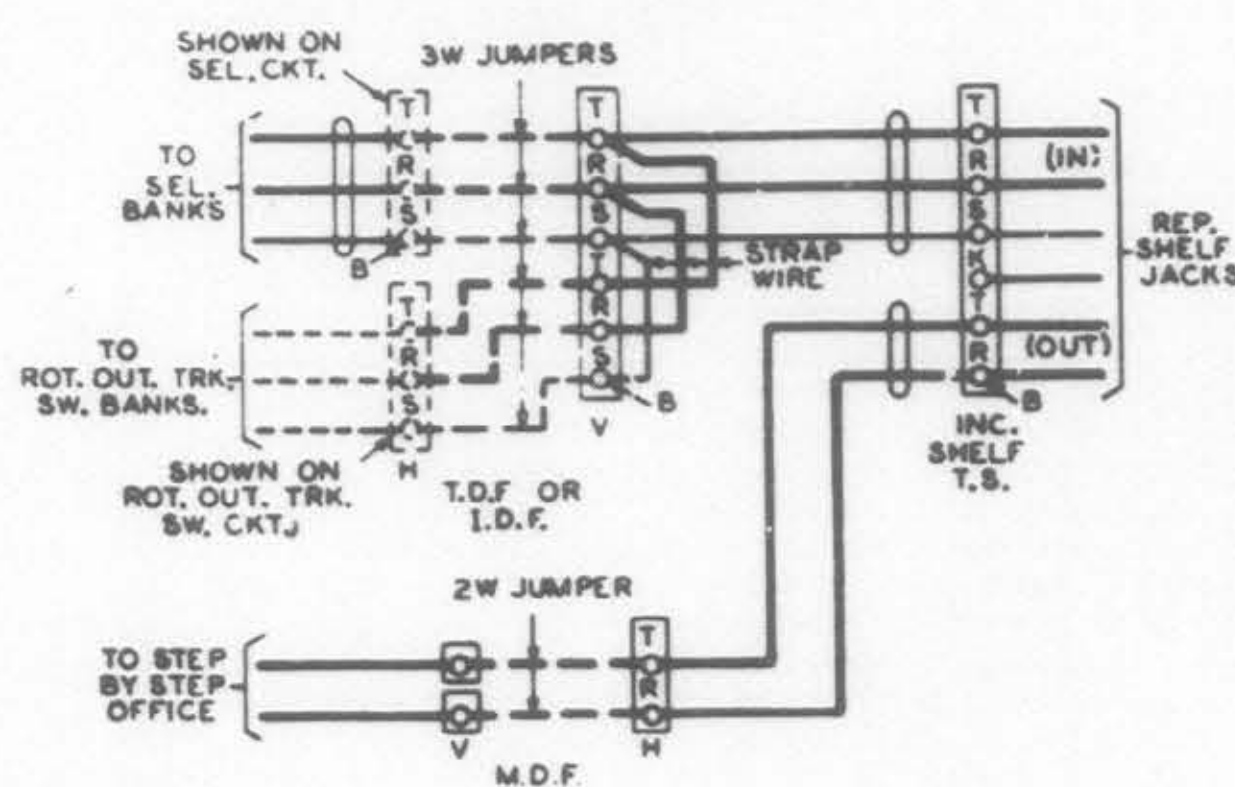


FIG. M
(MFR. DISC.)
FOR 350 A DIAL OFFICE
USING C.D.F.

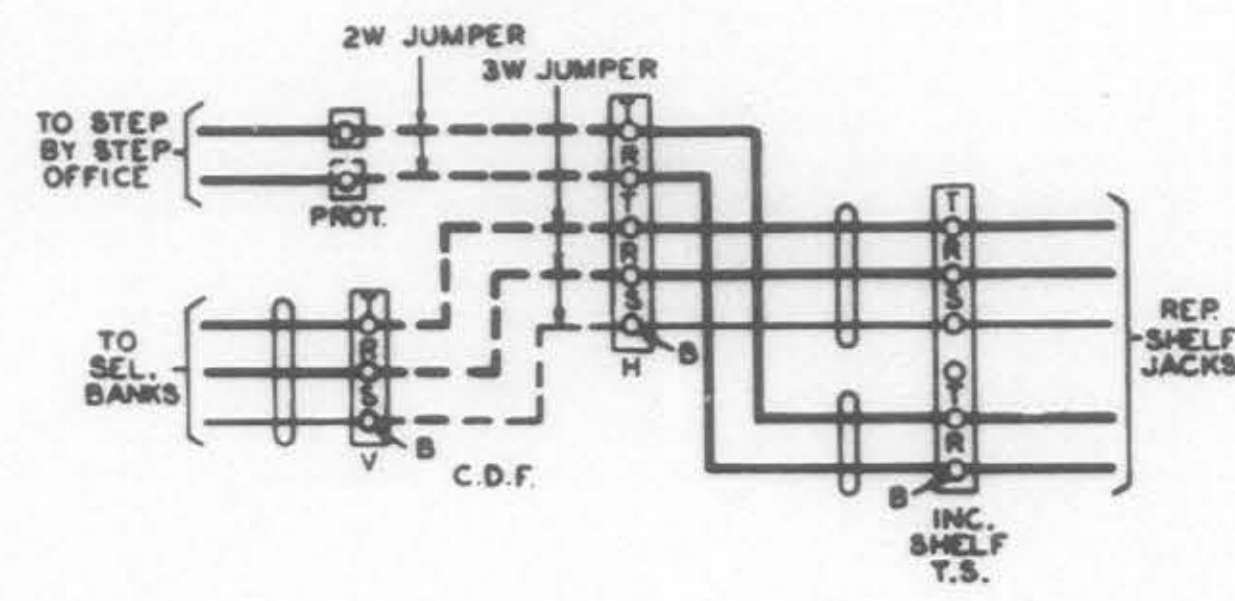
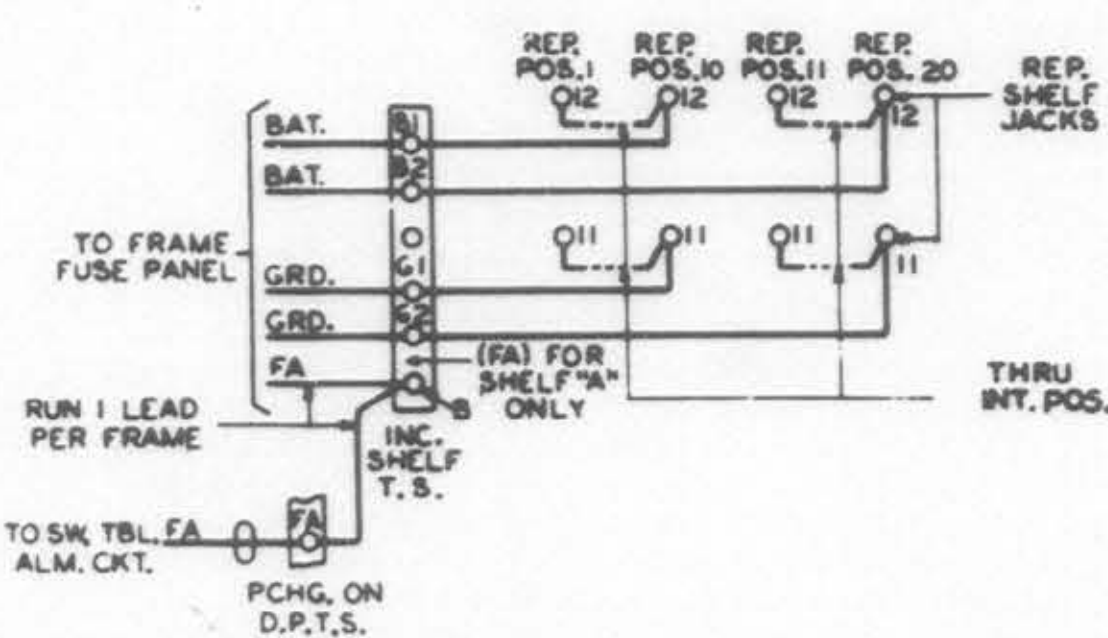


FIG. P
(MFR. DISC.)
FOR CENTRAL OFFICES



EQUIPMENT NOTES: (CONT.)
204. PRIOR TO ISSUE 9-D, THE BAT. AND GRD. LOOP LEADS IN FIGS. 57, 58, 59, 64, 65 AND 66 BETWEEN REP. POSITIONS ON THE SAME SHELF WERE TAKEN FROM TERMS 12 AND 11 RESPECTIVELY OF THE PRECEDING POSITION TO TERMS 10 AND 13 RESPECTIVELY OF THE SUCCEEDING POSITION. THE ARRANGEMENT NOW SHOWN PERMITS UNIVERSAL WIRING FOR 2 PER BASE OR 1 PER BASE REPS. IN FIG. 53 THE SEL. BANKS WERE TERMINATED ON THE V.D.F. IN ERROR, AND FIG. 67 WAS NOT SHOWN. THE "T" AND "B" LEADS IN FIG. 63 WERE REVERSED. CONNECTION TO ROT. OUT. TRK. SW. WAS NOT SHOWN IN FIG. 63 AND THIS FIG. WAS RATED "SPECIAL".

205. REPEATERS (OTHER THAN CALL INDICATOR) MANUFACTURED PER ISSUE 17-D OF THIS DRAWING SHALL BE EQUIPPED WITH "20", "2C" AND "2D" APPARATUS OPTIONS IN ALL CASES AND WIRING SO THAT ANY ONE OF "A", "M", "Q" OR "2A" WIRING OPTIONS MAY BE OBTAINED BY WIRING CHANGES AT THE (A), (B), (C) AND (D) RESISTANCES AND (F) CONDENSER.

FIG. R
(MFR. DISC.)
FOR 350 A DIAL OFFICES

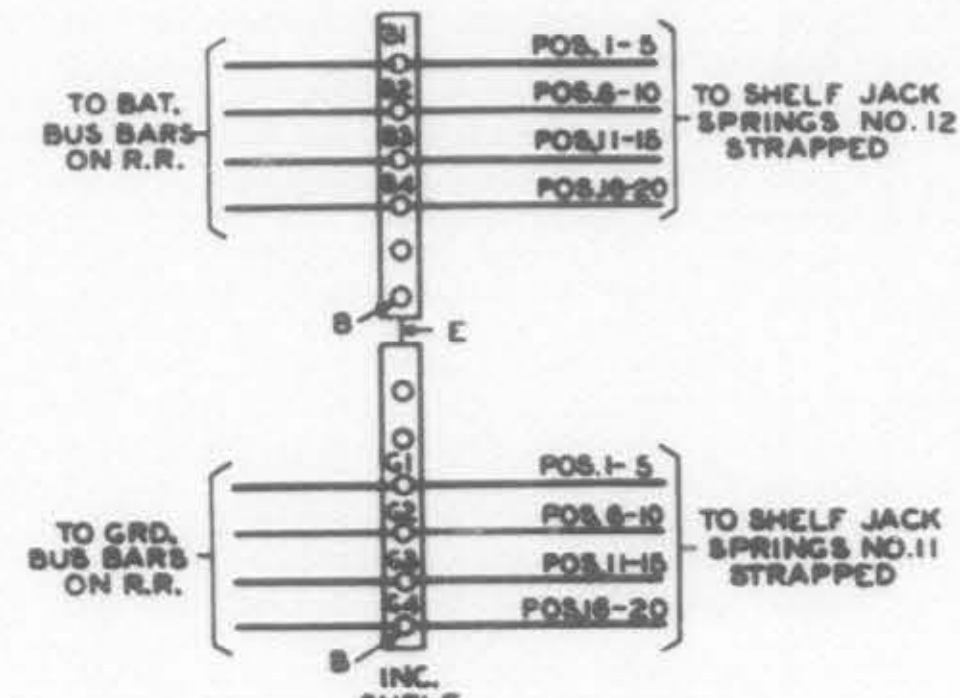


FIG. S
(MFR. DISC.)
FOR C.I. OFFICES USING T.D.F. OR I.D.F.
AND ROTARY OUT. TRK. SW.

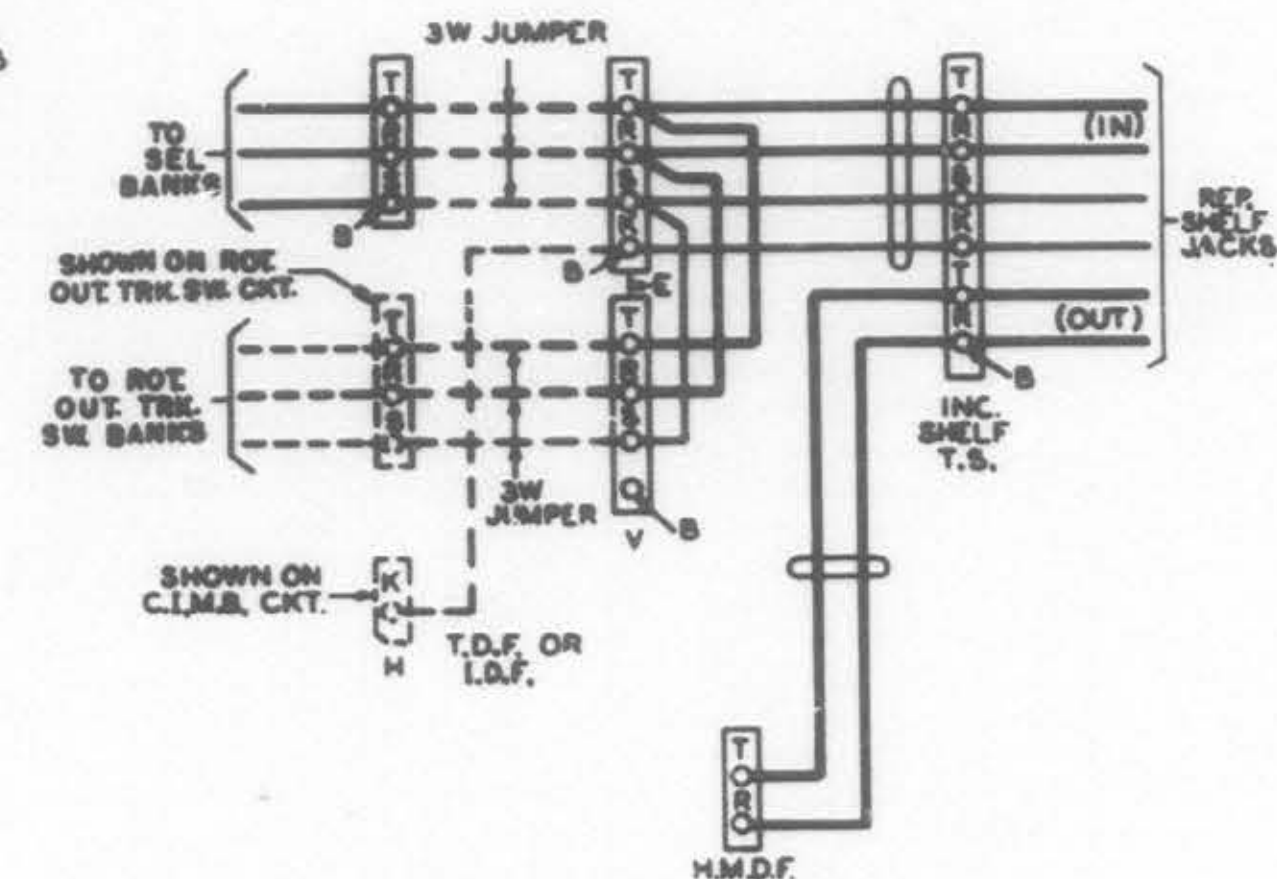


FIG. T
(MFR. DISC.)
FOR C.I. OFFICES
USING T.D.F. OR I.D.F.

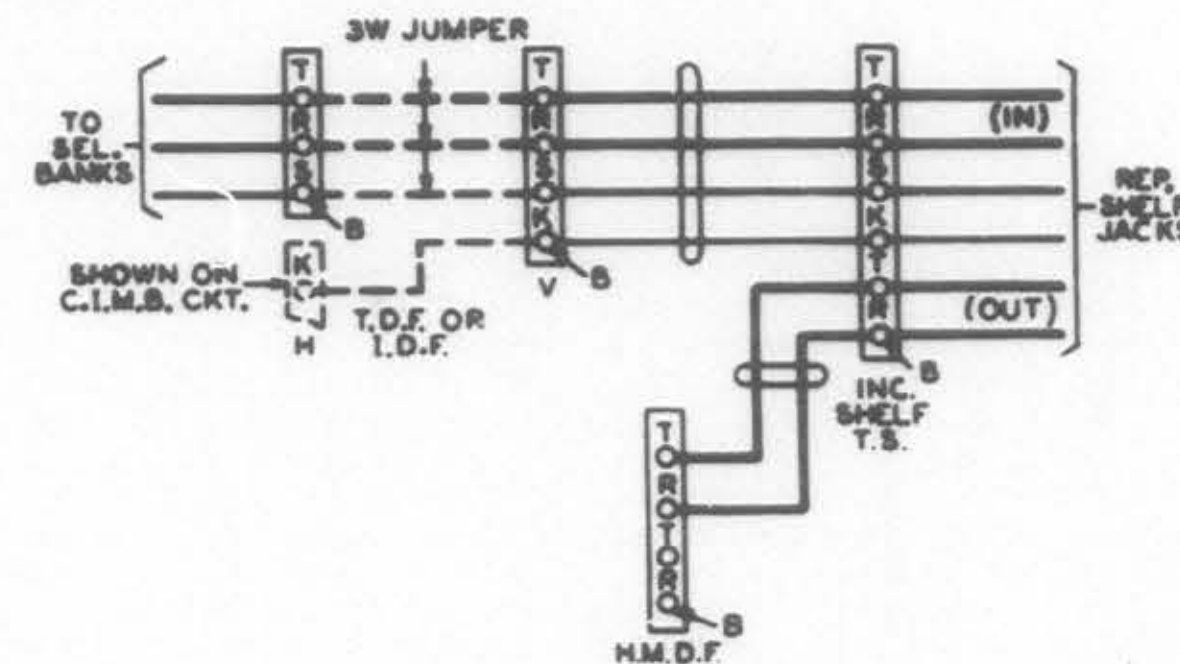


FIG. 65
(A&M ONLY)
FOR UNITS MOUNTED ON REP. FR.
20 REP. POS. PER SHELF
350A OR 355A OFFICE
2 REPS. PER PLATE
SEE NOTE 201

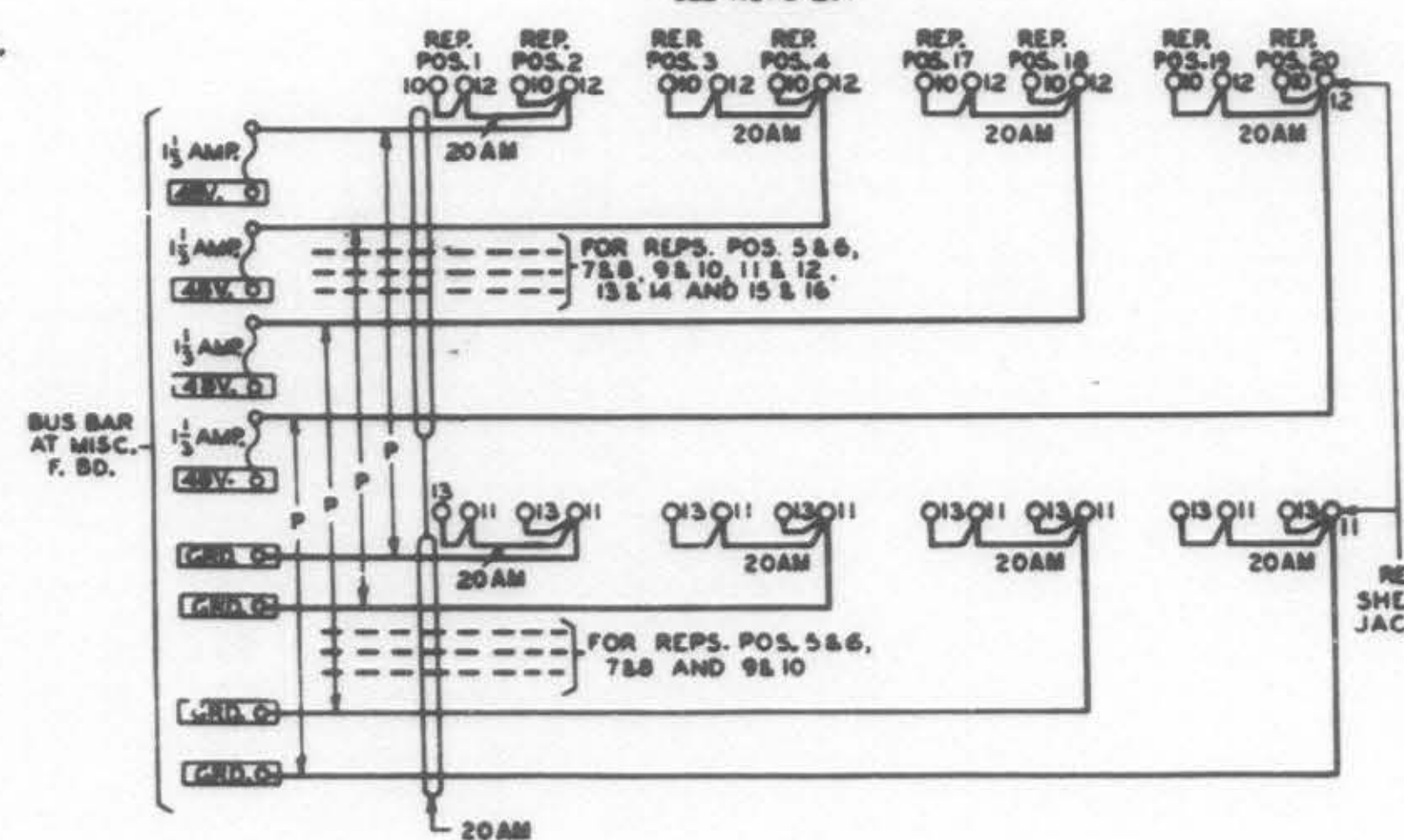


FIG. 51
FOR OFFICES USING T.D.F. OR I.D.F.

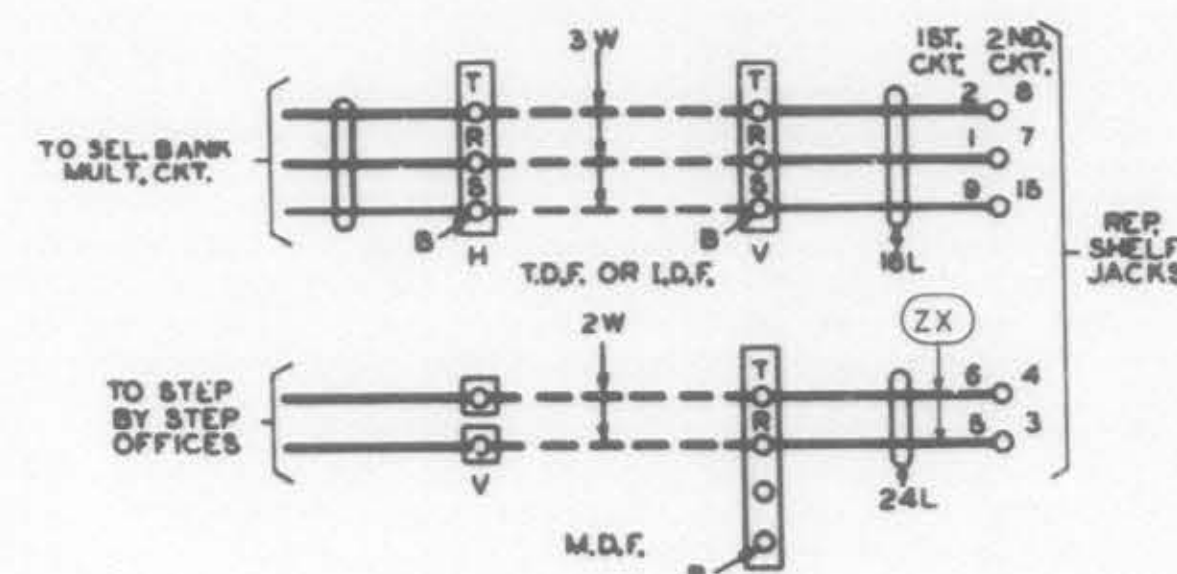


FIG. 52
FOR OFFICES USING T.D.F. OR I.D.F.
AND ROT. OUT. TRK. SWITCHES

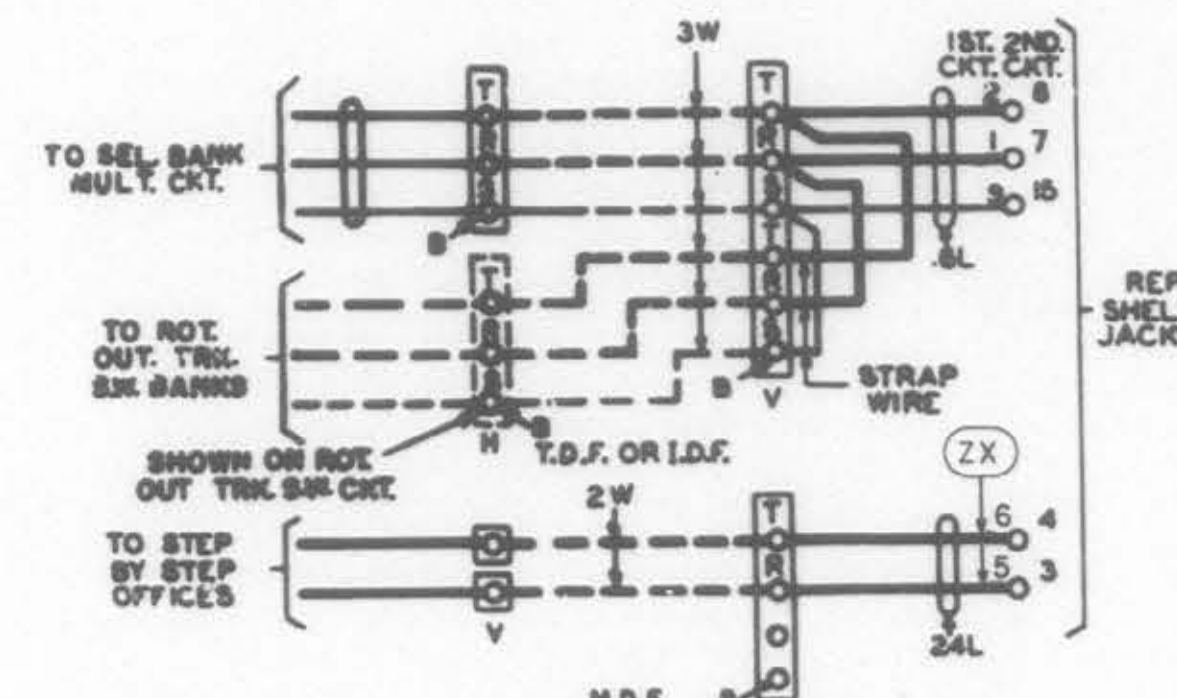


FIG. 53
FOR OFFICES
USING C.D.F. FOR INCOMING AND OUTGOING CABLES

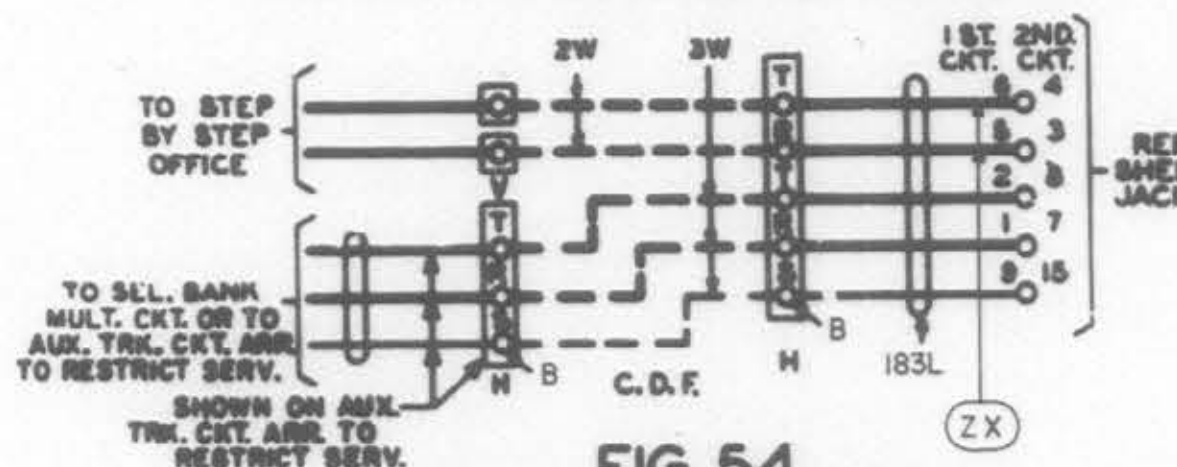


FIG. 54
FOR 350A OR 355A DIAL OFFICE
USING C.D.F. FOR OUTGOING CABLES

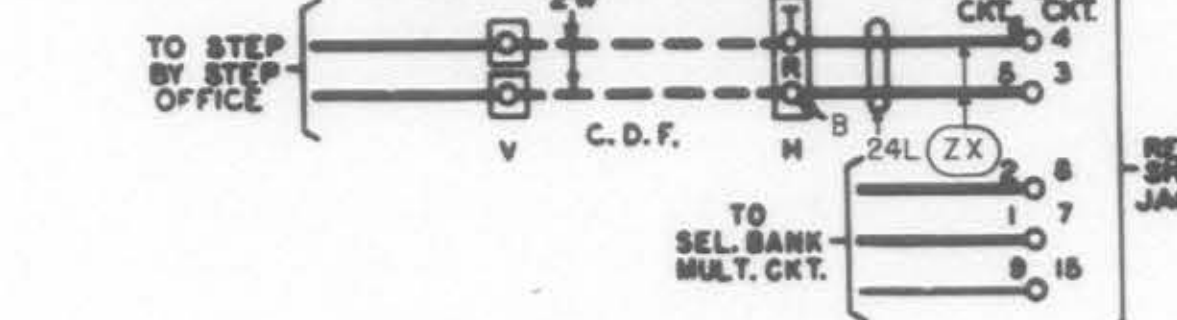


FIG. 55
(A&M ONLY)
FOR 350A DIAL OFFICE

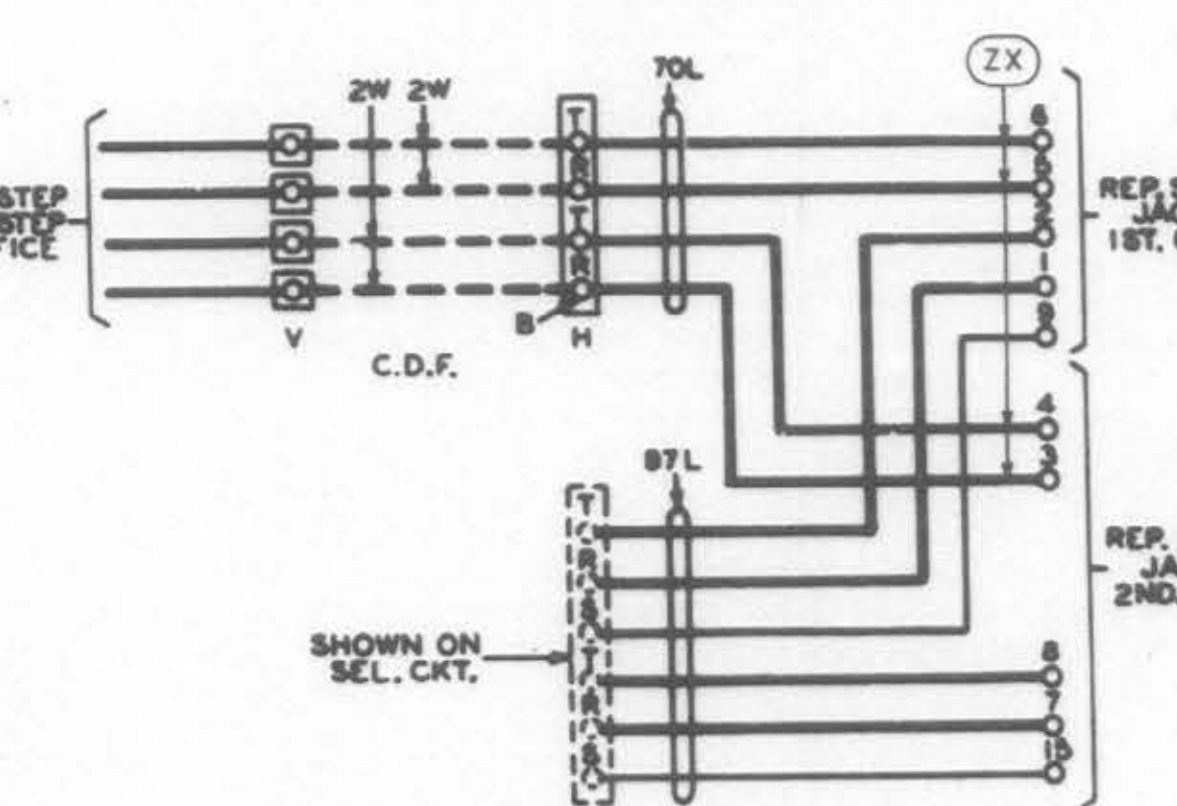


FIG. 56
FOR UNITS MOUNTED ON R.R.
2 REPEATERS PER PLATE
CENTRAL OFFICES

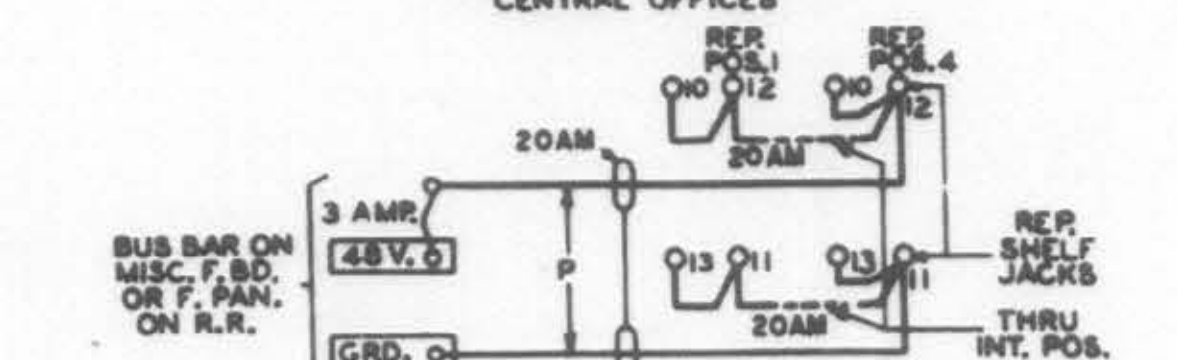


FIG. 68
FOR REPEATERS REQUIRING CONNECTION TO
MESSAGE TICKETER TRK. TEST CKT.

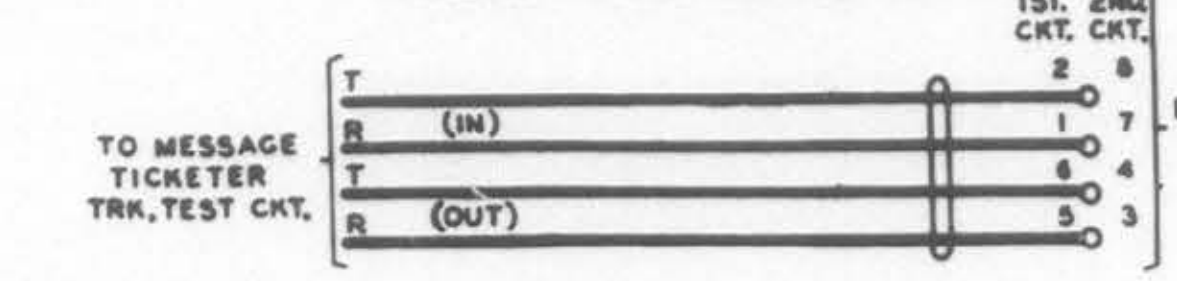


FIG. 57
FOR UNITS MOUNTED ON SW. FR.
2 REPEATERS PER PLATE
REPS. POS. 1 REPS. POS. 5 REPS. POS. 6 REPS. POS. 10 REPS. POS. 11 REPS. POS. 14

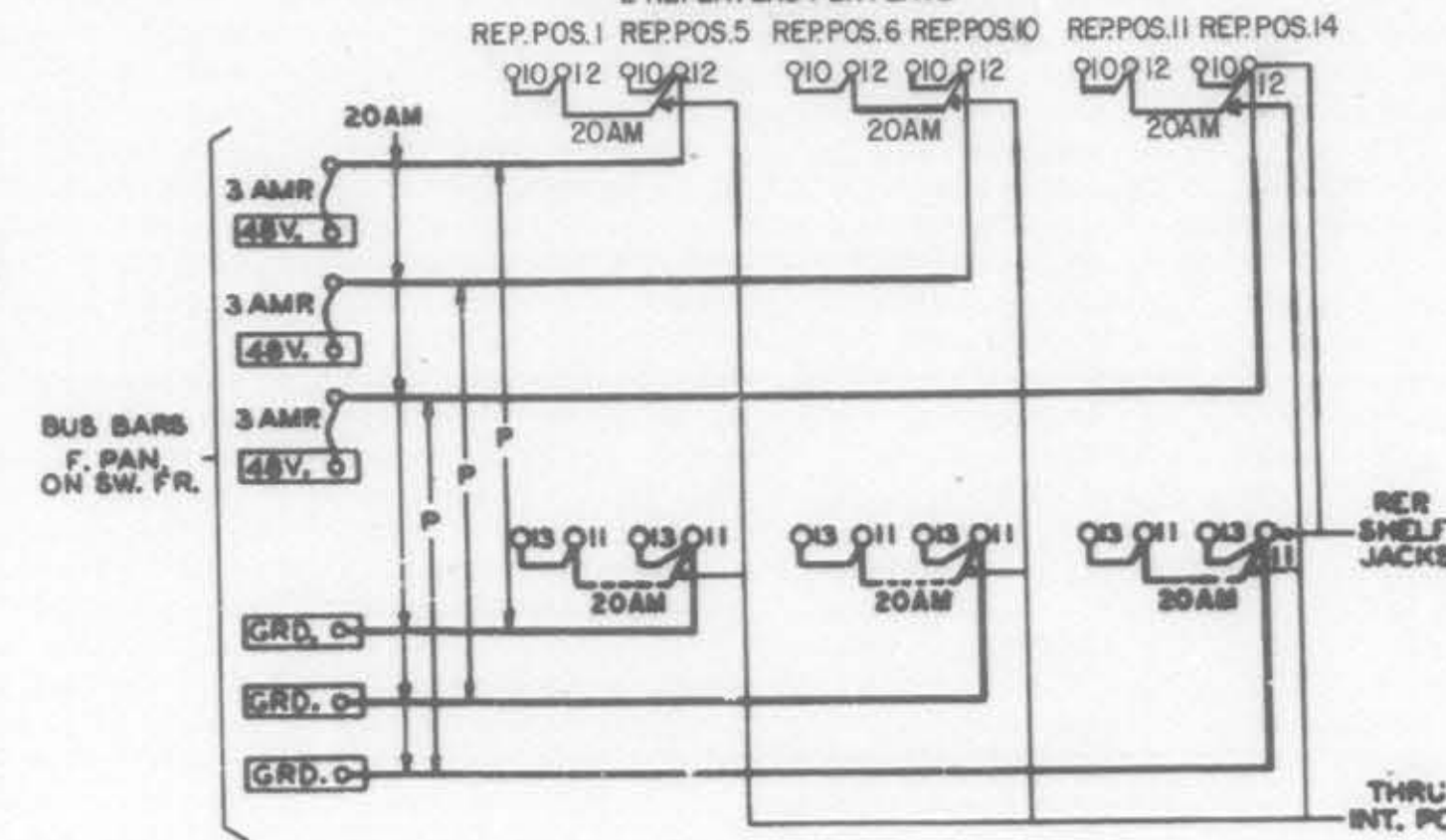


FIG. 58
FOR UNITS MOUNTED ON R.R.
2 REPEATERS PER PLATE
350A, 355A AND 355A OFFICES

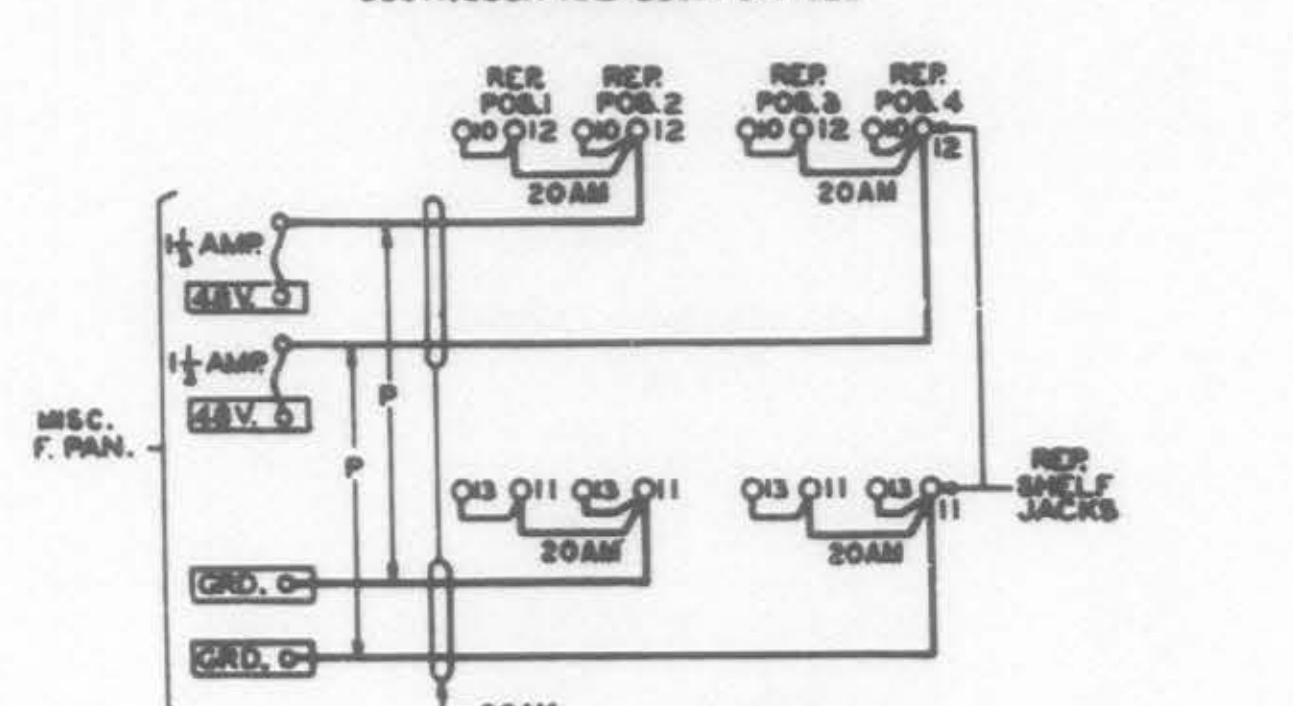


FIG. 59
FOR UNITS MOUNTED ON SW. FR. 350A OR 355A OFFICE
2 REPEATERS PER PLATE
SEE NOTE 201

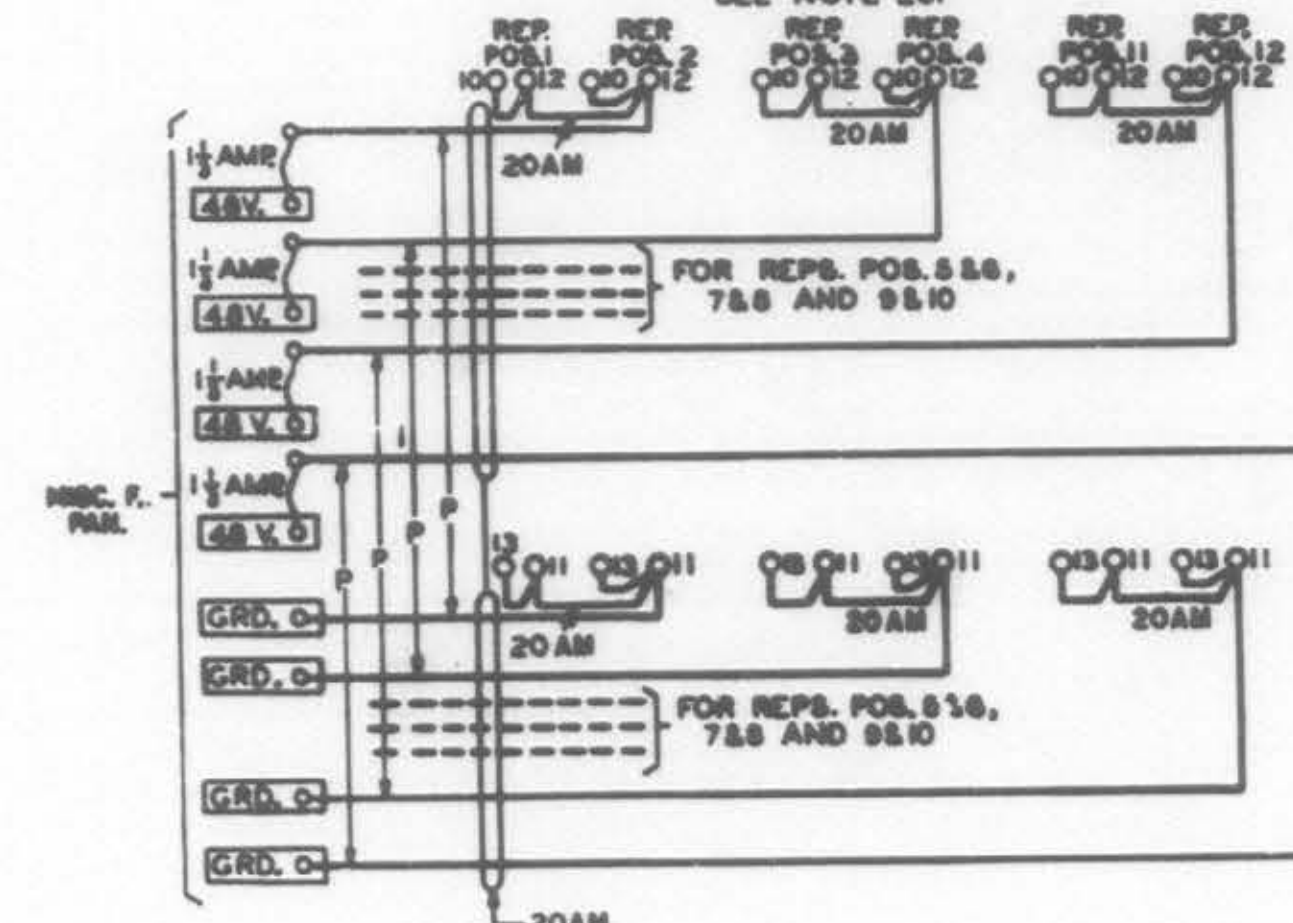


FIG. 60
FOR C.I. OFFICES USING T.D.F. OR I.D.F.

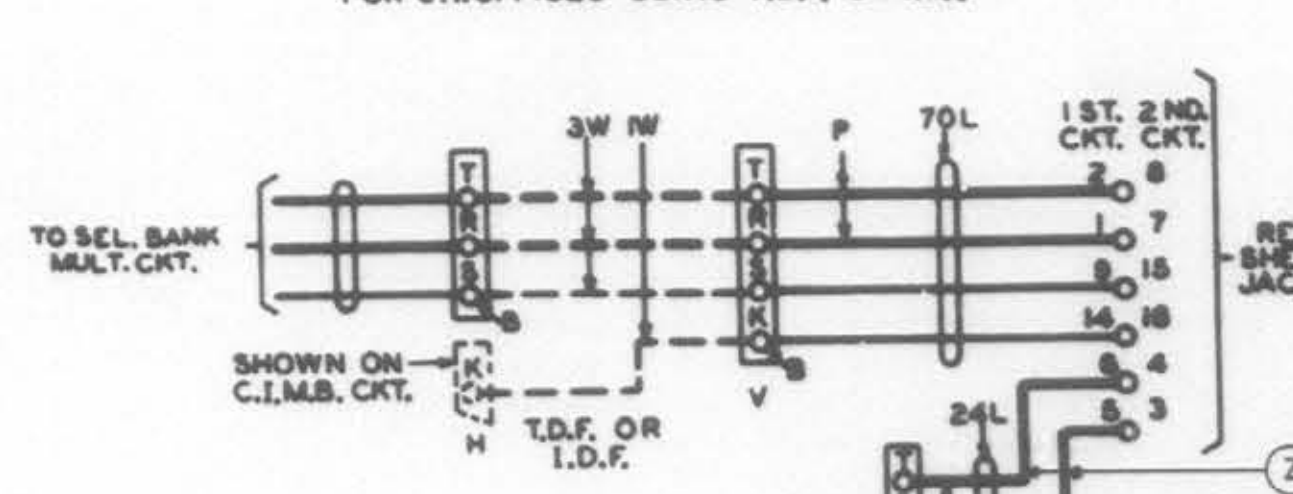


FIG. 66
FOR REPEATER CKTS. REQUIRING CONNECTION OF
SUCC. SELECTORS, ROT. OUT. TRK. SW. OR
MAKE BUSY CKT. IN SAME OFFICE

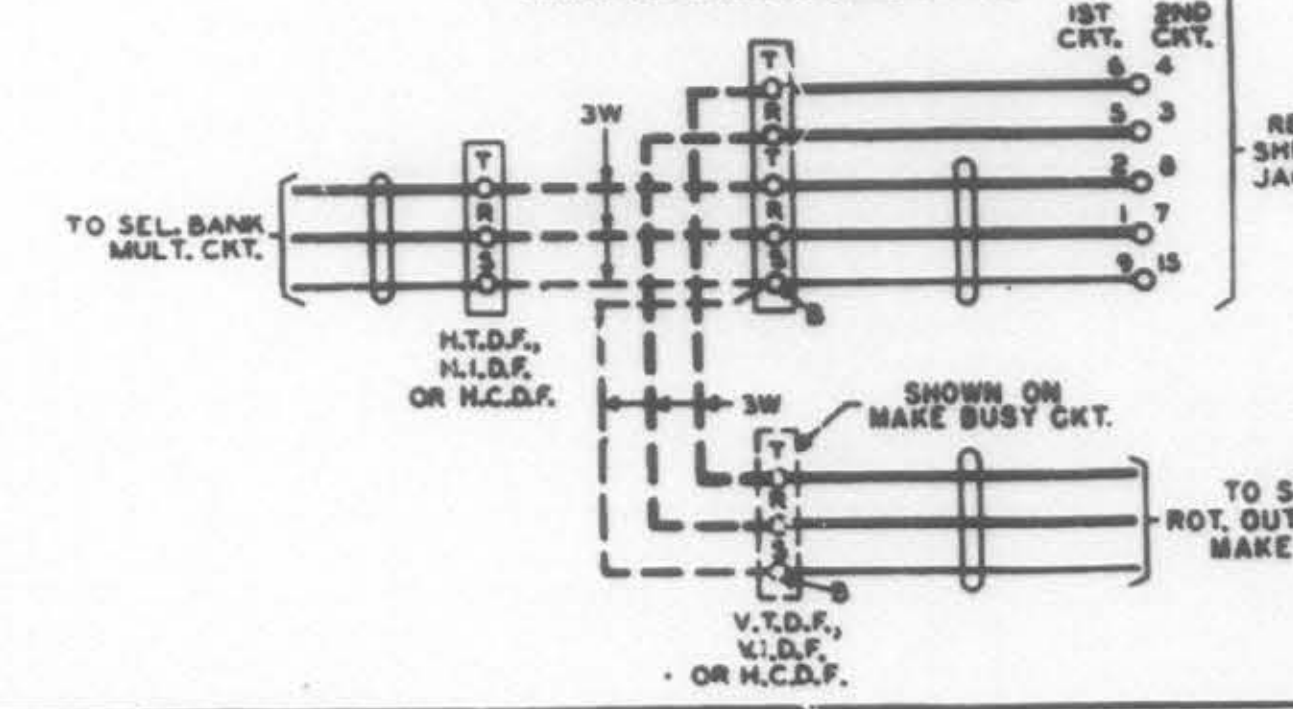


FIG. 61
FOR C.I. OFFICES USING T.D.F. OR I.D.F.
AND ROT. OUT. TRK. SW.

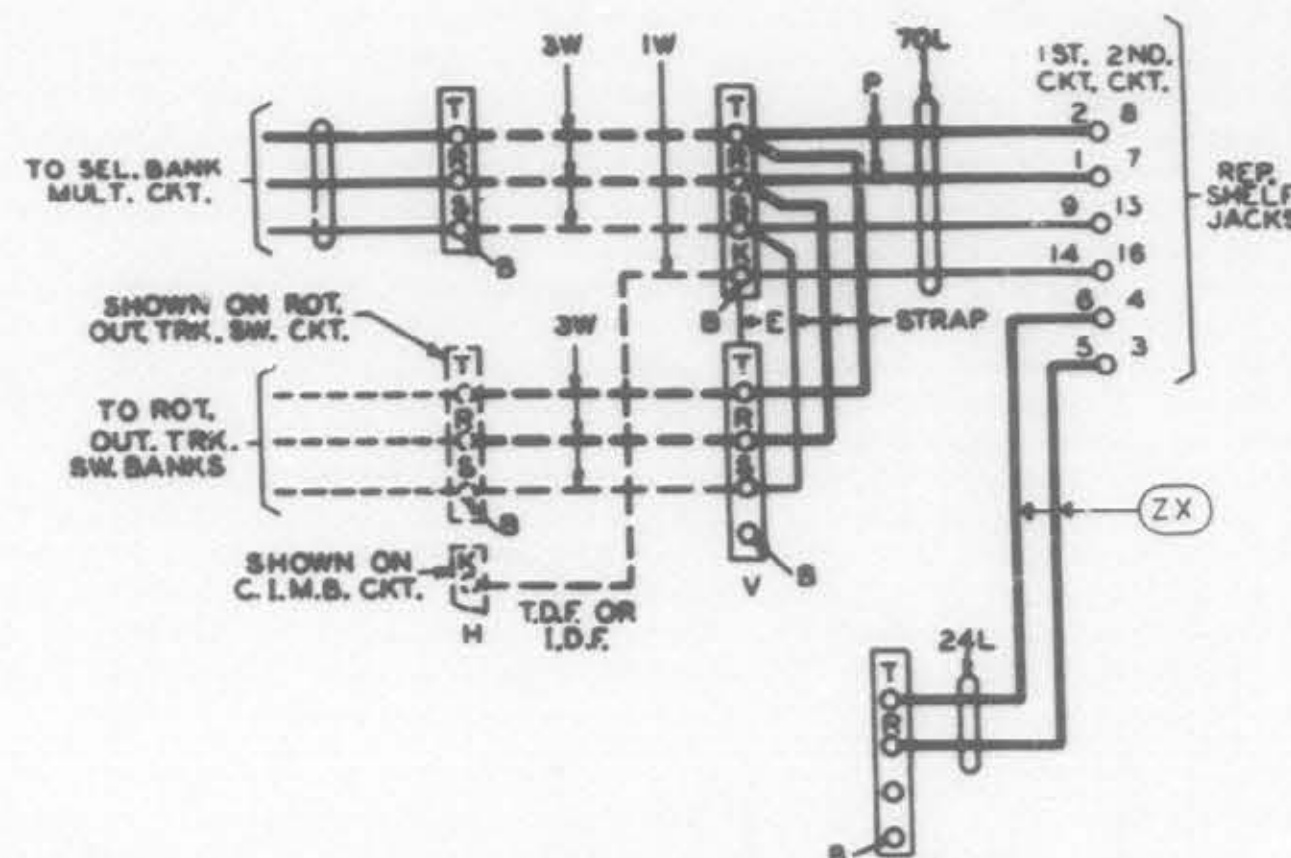


FIG. 62
FOR C.I. OFFICES
CONDUCTOR LOOP OVER 600'

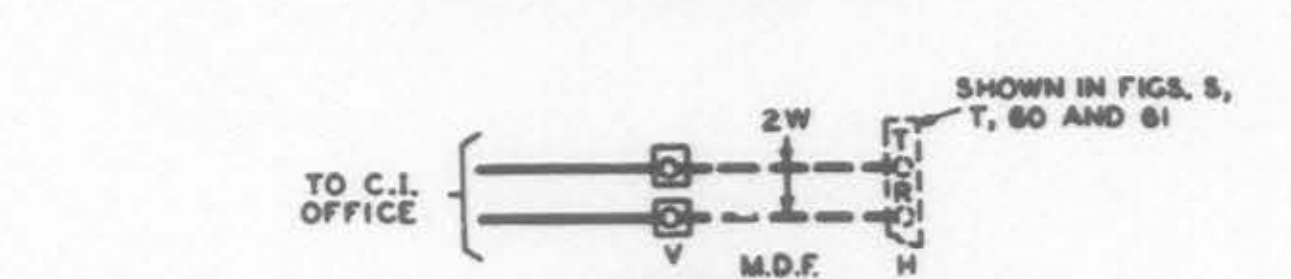


FIG. 63
FOR C.I. OFFICES
CONDUCTOR LOOP UNDER 600'



FIG. 67
FOR OFFICES USING C.D.F.
AND ROT. OUT. TRK. SWITCHES

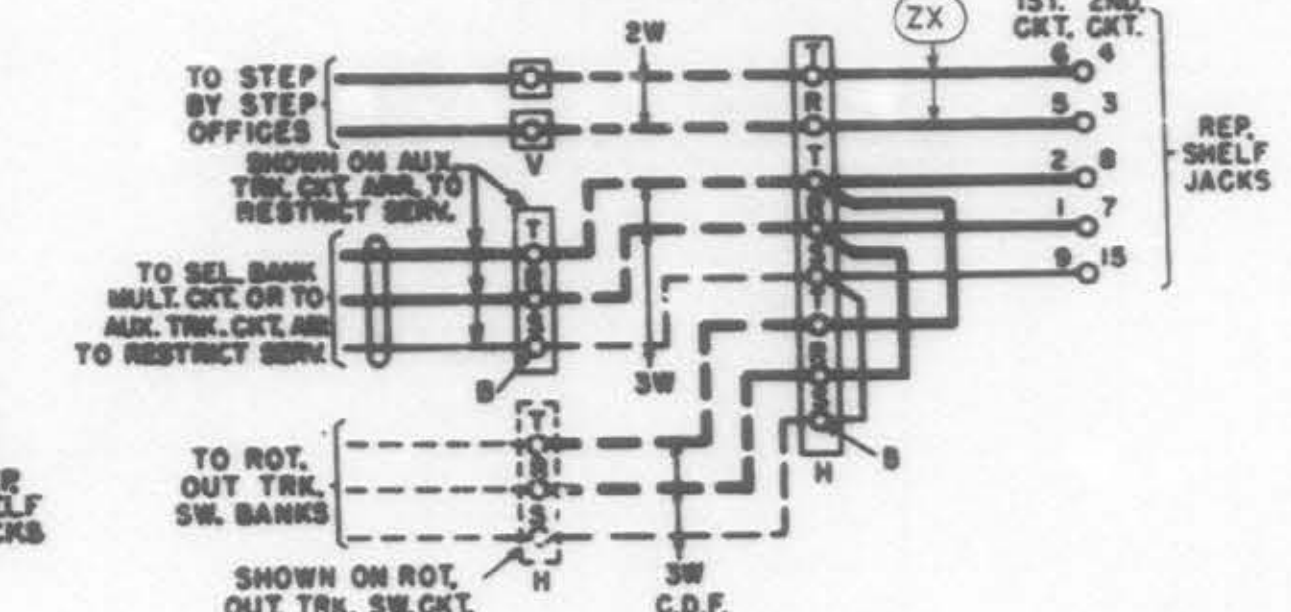
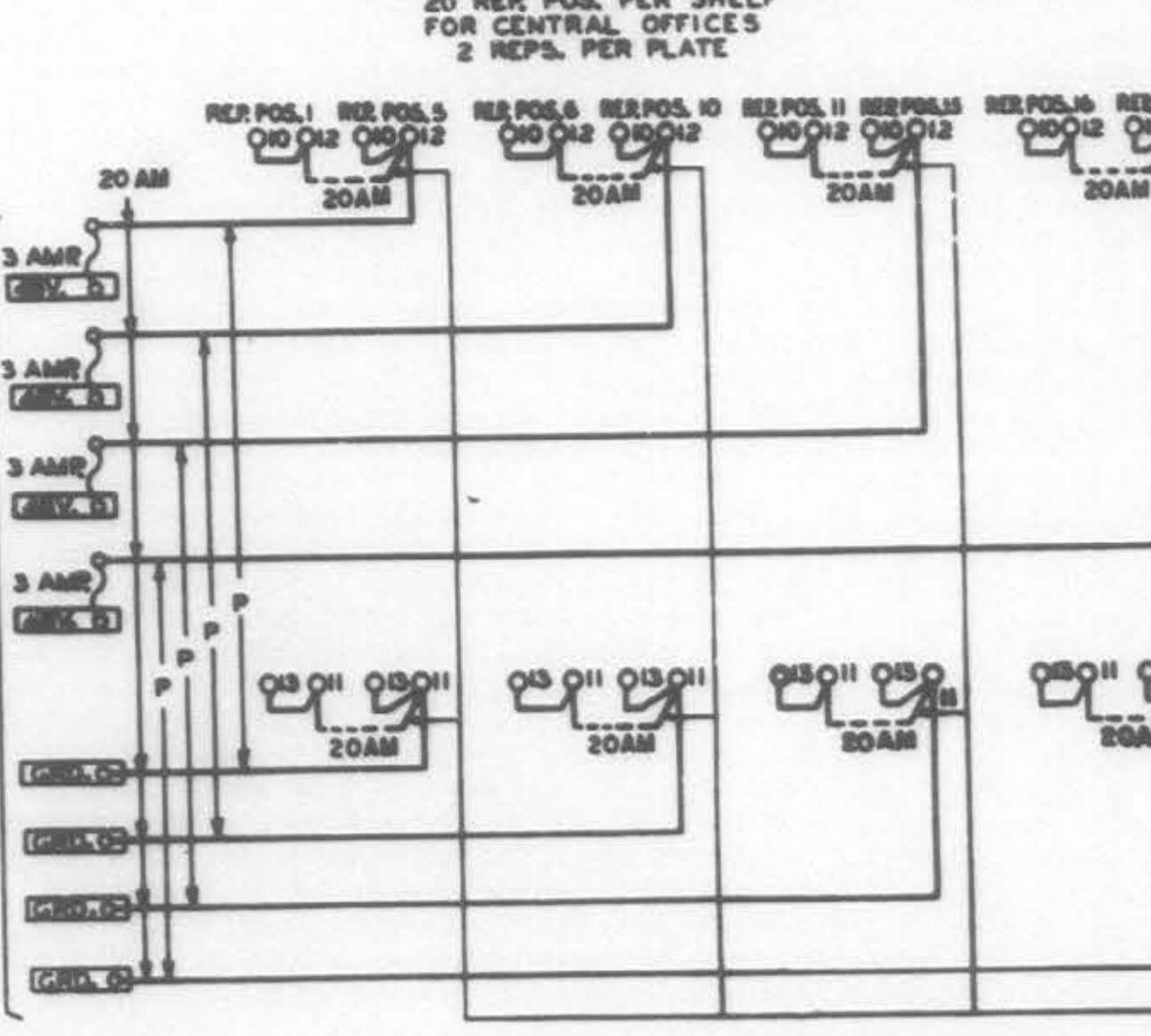


FIG. 64
(A&M ONLY)
FOR UNITS MOUNTED ON REP. FR.
20 REP. POS. PER SHELF
FOR CENTRAL OFFICES
2 REPS. PER PLATE



EQUIPMENT NOTES:
201. INTERMEDIATE POS. 3-16 WIRING SAME AS SHOWN FOR ADJACENT POS.
202. THE LEFT HAND NUMBER AT EACH PLUG TERMINAL IS FOR CKT. 1, AND THE RIGHT HAND NUMBER IS FOR CKT. 2
203. ON ISSUE 6-D, FIGS. 64 AND 65 WERE ADDED. POS. 15 TO 20 ARE RATED "A&M ONLY."

OUTGOING REPEATER CIRCUIT
BELL TELEPHONE LABORATORIES, INC. SD-31779-014

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SHEET INDEX (INITIATED ON ISSUE 20B)

[illegible]

SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DRAWINGS	J330178Y ED-30655-01 ED-31775-01 ED-31252-01 ED-31779-02
KEYSHEET DRAWINGS	
SXS - NO. 360A DIAL OFF	SD-31250-01
SXS - NO. 1	SD-31359-01
SXS - NO. 350A & BR OFF	SD-31364-01
SXS - NO. 355A	SD-31780-01
SXS - NO. 35E97	SD-32325-01
MAINTENANCE BSP'S	
226-508-504	
226-527-500	
226-527-501	

DWG 13B	CD ISSUE	DWG 13B	CD ISSUE	DWG 13B	CD ISSUE
1	1	2A	2A	3D	2A APP 1D
4B	2A APP 2B	5B	2A APP 3B	6D	APP 4D
7D	3D APP 5D	8D	2A APP 6D	9D	3D
10D	3D APP 1D	11B	3D APP 2B	12D	3D APP 3D
13B	3D APP 4B	14D	3D APP 5D	15D	3D APP 6D
16AR	3D APP 7AR	17D	3D APP 8D	18D	3D APP 9D
19D	3D APP 10D				
DWG ISSUE	EE OR CD ISSUE	DATE ISSUED	DRAWN	APPROVED	
20B	3D APP 11B	6-18-56	A.G.F. R.C.D.	A.P.C. R.C.D.	
21D	3C APP 12D	12-10-57	R.T.R. H.A.R.	J.P.D. M.G.D.	
22D	3D APP 13D	2-17-66	M.A.R. J.T.F.	R.V.J. G.M.	
23B	4D	8-13-69	W.G. N.C.	M.K.D. M.R. P.D.	
24D	5D	12-5-73	T.FO PJS GK	R.W.H. L.C.B. S.E.B.	
25B	5D APP 1B	7-5-74	AVG PJS GK	R.W.H. L.C.B. S.E.B.	
26B	5D APP 2B	3-5-76	KD SAK GK	R.W.H. G.F.C. S.E.B.	
27B	5D APP 3B	8-20-76	KD SAK AJP	R.W.H. G.F.C. S.E.B.	
28B	5D APP 4B	7/15/80	D.J. PVS	P.W.J. D.J. R.D.S.	

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 LAST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

REPLACING SD-31693-01 EXCEPT FOR ADDITIONS WHERE ALL TRUNKS BUSY REGISTRATION IS REQ. REPLACING SD-30214-01 EXCEPT FOR ADDITIONS FOR CALL INDICATOR OPERATION WITH PLUNG ER TYPE QUT TRUNK SW OR ALL TRUNKS BUSY REGISTRATION.

ISSUE	
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STEP BY STEP SYSTEMS
NO. 1, 350A, 355A, 360A OR 35-E-97
OUTGOING REPEATER CIRCUIT
BATTERY AND GROUND OR LOOP PULSING
LOOP SUPERVISION
ARRANGED FOR 2 REPEATERS PER BASE
AND FOR TEMPORARY USE TO
CALL INDICATOR OFFICE

AT&TCO
STANDARD

A & M ONLY FOR 350A,
360A & 35-E-97

SD-31779-01-A
5 SHEETS

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

BELL TELEPHONE LABORATORIES

ES	DWG SIZE 7S
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