

CIRCUIT NOTES:

DESIG	AMP	POTENTIAL FUSED	ONE PER
101.	1 1/3	48V SIG	CKT

FEATURE OR OPTION		FIG.	APP OR WIR	QUANTITY
4 WIRE TERM. SET & PAD CONTROL CIRCUIT		1		1 PER TIE CKT
NON-LOADED FACILITIES BETWEEN THE TOLL OFFICE AND PBX	26 GA UP TO 1000 FT	2	Y OR Z	2 PER FIG. 1
	24 GA UP TO 2000 FT			
	22 GA UP TO 3000 FT			
	19 GA UP TO 4000 FT			
REP COIL FOR (SEE NOTE 105)	26 GA 1000 TO 4000 FT	3	W OR X	2 PER FIG. 1
	24 GA 1000 TO 7000 FT			
	22 GA 1000 TO 12000 FT			
	19 GA OVER 12000 FT			
LOADED FACILITIES BETWEEN THE TOLL OFFICE AND PBX	26 GA OVER 4000 FT	4	Y OR Z	2 PER FIG. 1
	24 GA OVER 7000 FT			
	INTERMEDIATE OF LOADED FACILITY AT 10000-12000 (SEE NOTE 105)	4	W OR X	
	7510 TO 12000	4	U OR V	
IMPEDANCE COMPENSATOR	FIGS. H175, H28	5	T	ONE PER FIG. 2, 3 OR 4 WHEN REQD
	FIGS. H28, H33	5	S	
LOW FREQUENCY IMPEDANCE CONNECTOR	24 GA, H28	6	R	ONE PER FIG. 5 WHEN REQD
	22 GA, H28	6		

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

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
4B	M, N	N	10B	M		N

105. THE TYPE AND CONSTANTS OF REPEATING COILS OF FIGS. 2, 3 & 4 ARE SHOWN BELOW.

TRUNK IMPEDANCE AT 1000~	CODE	FIG.	OPTION	IMPEDANCE RATIO LINE TO DROP	2-1 OR 6-5	4-3 OR 8-7
UP TO 7500	120P	2	Y	1:4	7.8	5.5
	120TS		Z			
	120K	3	W	1:1.5	5.0	5.5
	120KS		X			
7510 TO 12000	120P	4	Y	1:1	7.8	5.5
	120TS		Z			
	120K	4	W	1.5:1	5.0	5.5
	120KS		X			
OVER 12000	120L	4	U	2.5:1	2.5	8.1
	120LS		V			

106. PROVIDE PADS IN ACCORDANCE WITH THE FOLLOWING TABLE FOR LOSSES DESIRED.

LOSS IN db	RES CODE	LOSS IN db	RES CODE	LOSS IN db	RES CODE
0	89A	5.25	89AB	10.50	89BB
0.50	89B	5.50	89AC	10.75	89CB
0.75	89C	5.75	89AD	11.00	89CB
1.00	89D	6.00	89AE	11.25	89CL
1.25	89E	6.25	89AF	11.50	89DB
1.50	89F	6.50	89AG	11.75	89CM
1.75	89G	6.75	89AH	12.00	89DE
2.00	89H	7.00	89AJ	12.25	89CN
2.25	89I	7.25	89AK	12.50	89DF
2.50	89J	7.50	89AL	12.75	89CP
2.75	89K	7.75	89AM	13.00	89BG
3.00	89L	8.00	89AN	13.25	89CR
3.25	89M	8.25	89AP	13.50	89BH
3.50	89N	8.50	89AQ	13.75	89CS
3.75	89P	8.75	89AS	14.00	89BJ
4.00	89Q	9.00	89AT	14.25	89CT
4.25	89R	9.25	89AU	14.50	89BK
4.50	89S	9.50	89AV	14.75	89CU
4.75	89T	9.75	89AY	15.00	89BL
5.00	89U	10.00	89BA		
	89AA	10.25	89CJ		

107. PROVIDE "Z", "X" & "V" OPTIONS ONLY WHEN REQUIRED BY GOVERNMENT MATERIAL RESTRICTIONS ON "Y", "W" & "U" OPTIONS.

108. "M" WIRING AND APPARATUS IS ADDED TO IMPROVE RETURN LOSS REQUIREMENTS.

INFORMATION NOTES:

301. (B OR B1) CAPACITOR SHALL BE STRAPPED TO OBTAIN CAPACITANCE SPECIFIED BY THE TELEPHONE COMPANY TO BUILD OUT THE CABLE PAIR CAPACITANCE TO APPROXIMATELY THAT OF 0.8 LOADING SECTION.

302. (N80) CAPACITOR SHALL BE STRAPPED TO OBTAIN CAPACITANCE SPECIFIED BY THE TELEPHONE COMPANY TO EQUALIZE OFFICE CABLE CAPACITANCE.

303. THE CAPACITANCE VALUES OF A 525A CAPACITOR ARE AS FOLLOWS:

TERMINAL	NORMAL CAPACITANCE IN UF
1	.001
2	.002
3	.004
4	.007
5	.012
6	.020
7	.034

304. UNLESS OTHERWISE SPECIFIED: RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES ARE IN MICROFARADS.

FIGURES AND OPTIONS ON THIS DWG	
CKT FIG.	APP OR WIRING
1	Z
2	Y
3	X
4	W
5	V
6	U
	T
	S
	R
	Q
	P
	O
	N

44-52V

SD-65789-01

2099

FBX Systems
4 WIRE TERMINATING SET
AND PAD CONTROL CIRCUIT
For Use With Tie Trunk Circuits

A&M ONLY

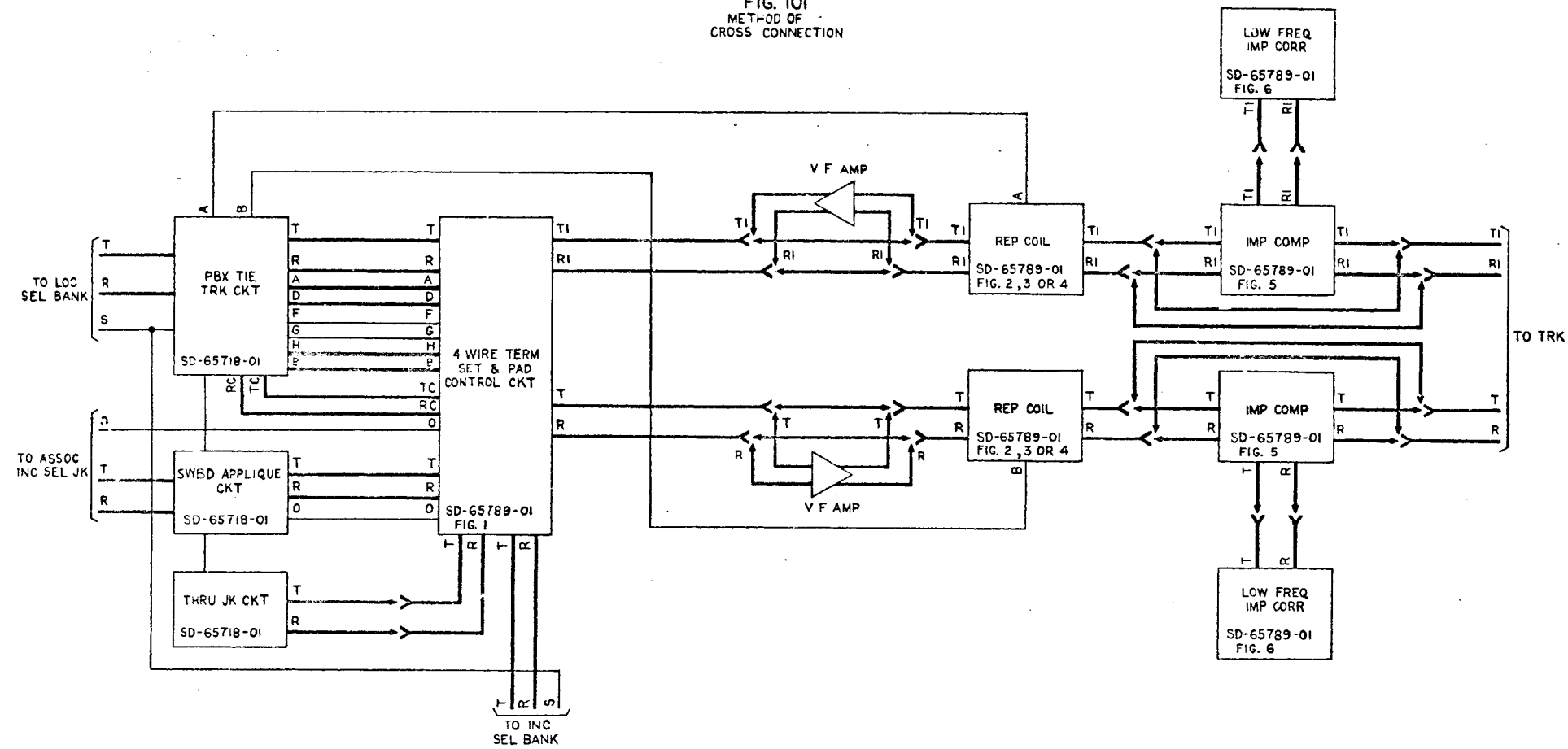
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7 SHEETS

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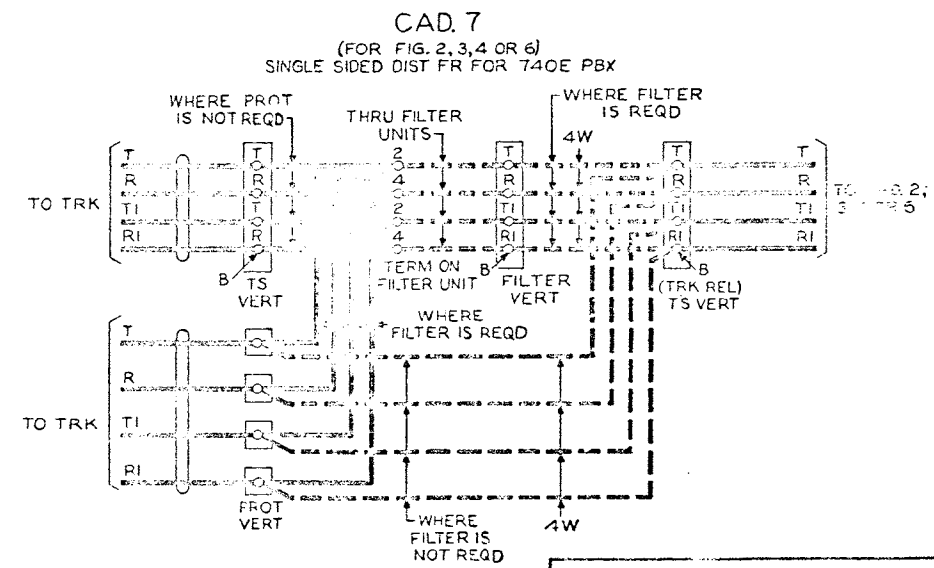
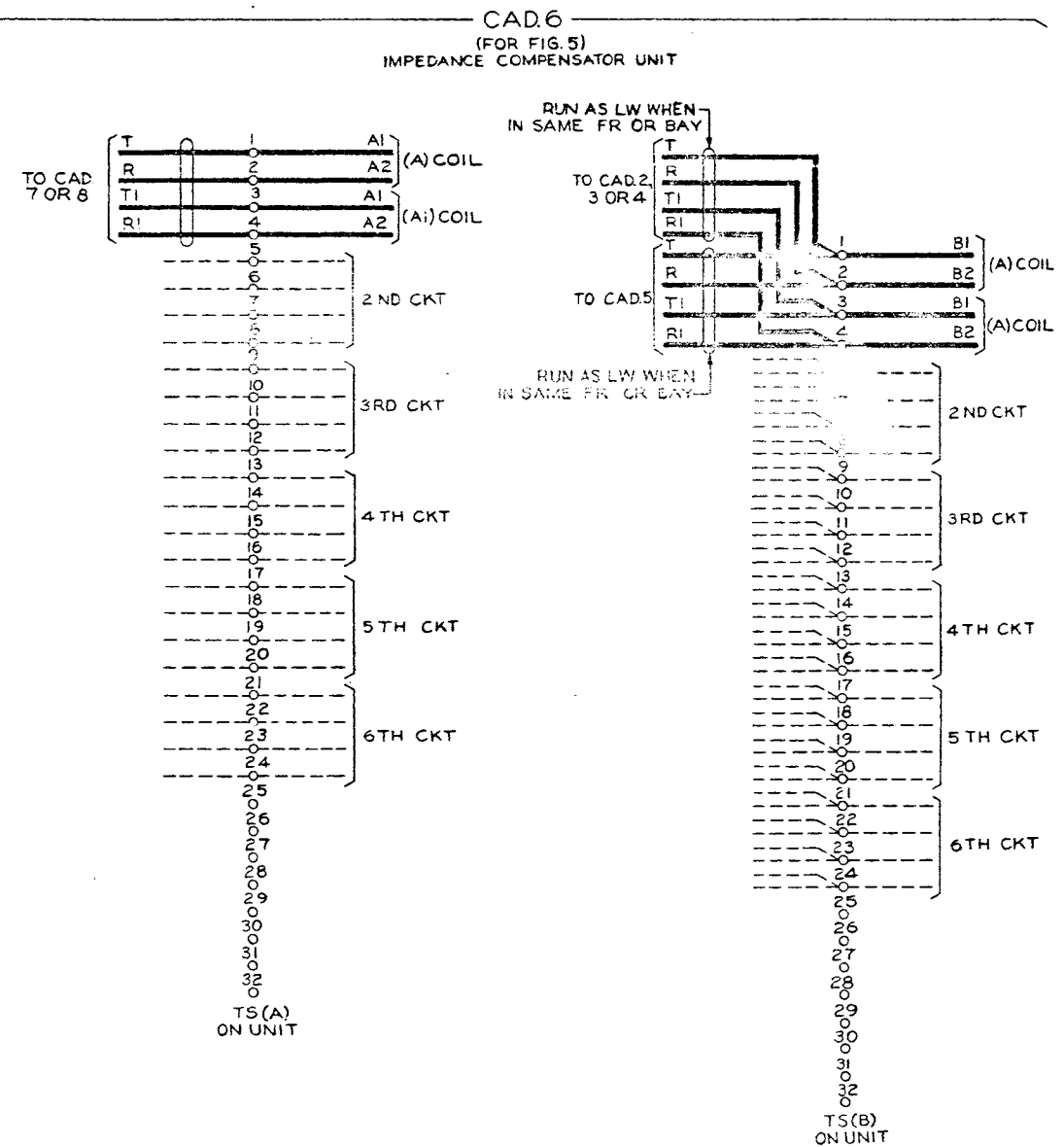
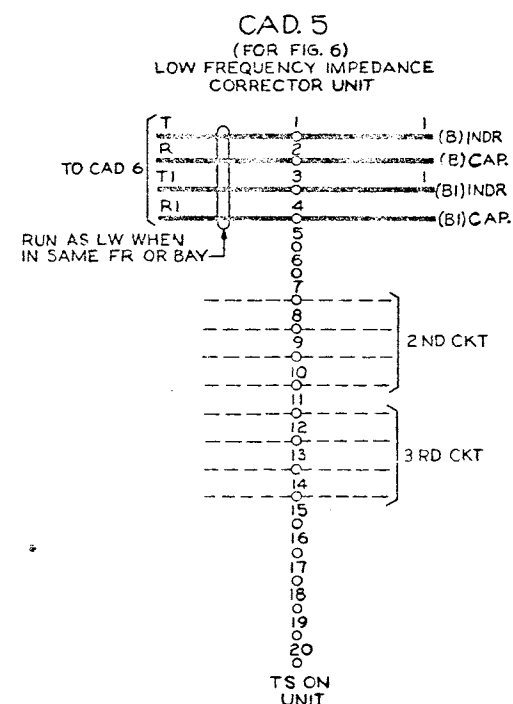
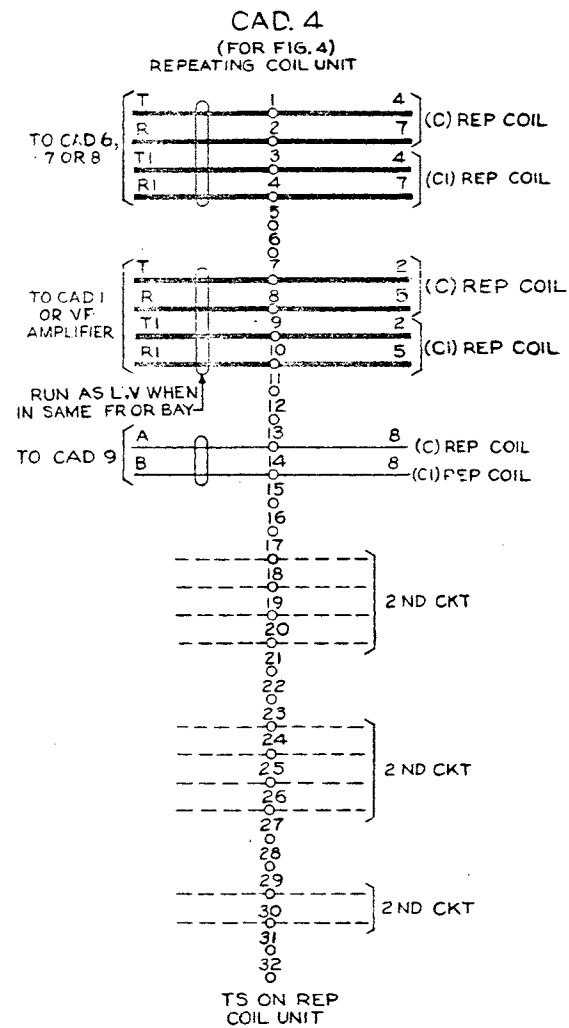
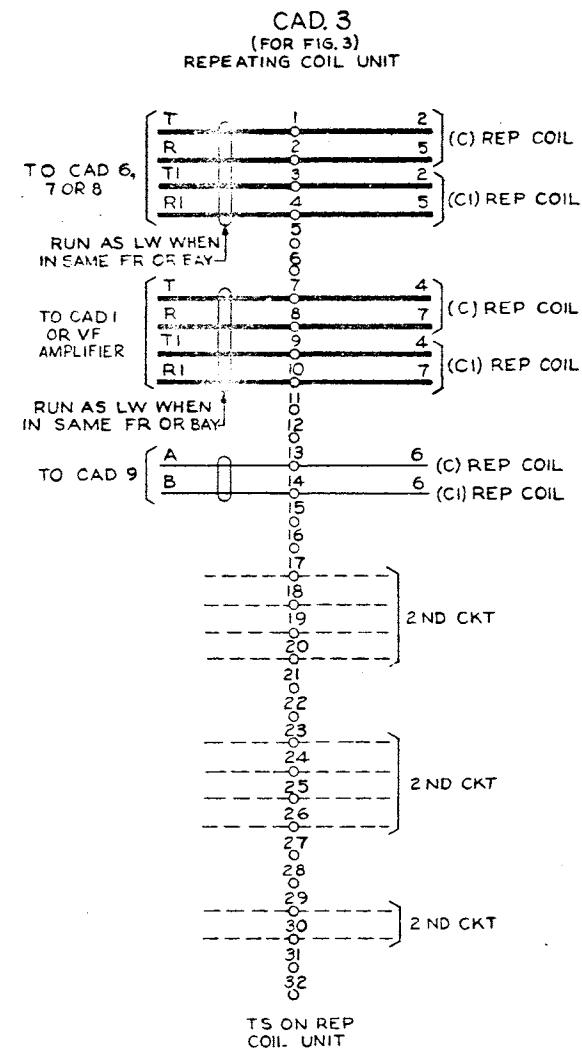
FIG. 101
METHOD OF
CROSS CONNECTION



DRAWING	ISSUE
2B	1/1/58
3D	1/1/58
4B	1/1/58
5D	1/1/58
6D	1/1/58
7B	1/1/58

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4 WIRE TERMINATING SET AND PAD CONTROL CIRCUIT		2	SD-65789-012
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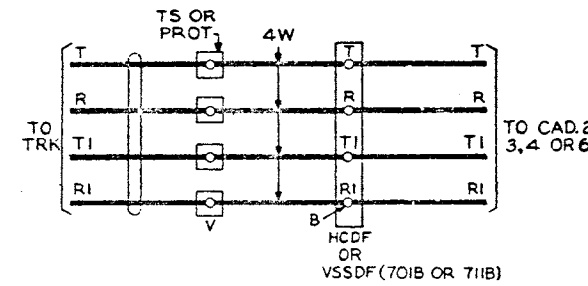


4 WIRE TERMINATING SET
AND FAD CONTROL CIRCUIT

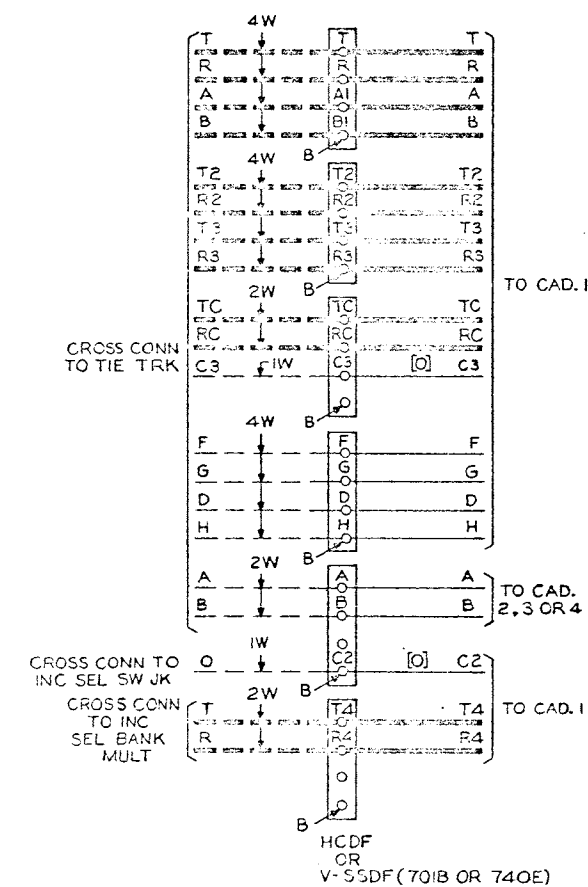
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CAD. 8
(FOR FIG. 2, 3, 4 OR 6)
DIST FR FOR OTHER THAN 740E PBX



CAD. 9
LEADS TO TIE TRK AND INC SEL

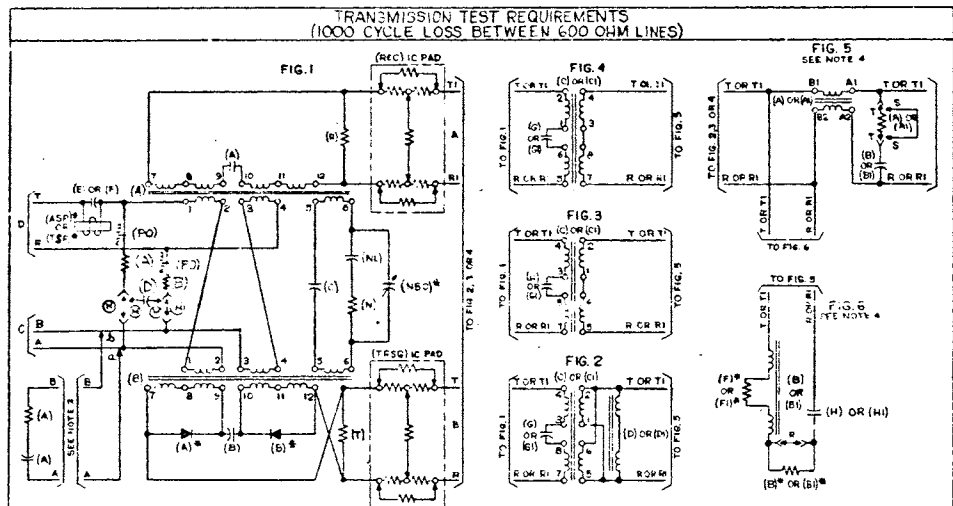


EQUIPMENT NOTES:
201. MFG TOLERANCES PERMIT NOT MORE THAN TWO OF THE TWELVE GROUPS OF CAPACITORS ON A 525A CAPACITOR TO HAVE ONE OF THE TERMINALS 1 TO 6 CLIPPED, INDICATING A DEFECTIVE UNIT. IF SUCH A GROUP CANNOT BE USED WITHOUT DIFFERING BY MORE THAN $\pm 0.004\mu F$ FROM THE REQUIRED VALUE, A $.006\mu F$ CAPACITOR PER KS-13391, L2 OR A $.02\mu F$ CAPACITOR PER KS-13393, L1 OR EQUIVALENT MAY BE CONNECTED BETWEEN TERMINALS A AND C IN PLACE OF THE DEFECTIVE UNIT.

DRAWING	ISSUE
2B	REV 1
3D	REV 2
4B	REV 3
5D	REV 4
6D	REV 5
7B	REV 6

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4-WIRE TERMINATING SET AND PAD CONTROL CIRCUIT		2	SD-65789-016
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MAX ALLOWABLE CIRCUIT LOSS (db)											
MEASURE FROM 'A' TO 'D' OR 'B' TO 'D'					MEASURE FROM 'A' TO 'B'						
TERMINATION REQUIRED					FIGS. 1, 2, 3, 4, 5, 6						
CONDITION					OPTIONS Y, Z, W, X, U, V						
'A' TO 'D'					TERMINATE 'C' & 'D' AS FOLLOWS						
'B' TO 'D'					SEE NOTE 3						
TERMINATION					C = 185Ω ± 1.07-1.09UF						
E = 600Ω ± 1%					D = 900Ω ± 2.04-2.16UF						
A = 600Ω ± 1%											
SEE NOTE 1											
REQUIREMENTS					REQUIREMENTS						
NOMINAL LOSS OF IC PLUG-IN PAD IN SERIES WITH THE FOLLOWING											
OPTION	FREQ	FIG. 1		FIGS. 2		FIGS. 3		FIGS. 4		NOMINAL LOSS OF IC PLUG-IN PAD IN SIDES 'A' AND 'B' PLUS THE FOLLOWING:	
	SEE NOTE 1	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	FREQUENCY	MIN LOSS (db)
NONE	0.1000 ~	6.0	5.2							200 ~	23.5
	100 ~ DEV		+6.0							1000 ~	35.0
	200 ~ DEV	+2.0	0.0								
Y	0.1000 ~			8.5	7.2			6.4	5.4		
	100 ~ DEV				+6.0				+6.0		
	200 ~ DEV			+2.0	0.0			+2.0	0.0		
Z	0.1000 ~			9.0	7.9			7.1	5.7		
	100 ~ DEV				+6.0				+6.0		
	200 ~ DEV			+2.0	0.0			+2.0	0.0		
W	0.1000 ~					6.6	5.5	6.6	5.5		
	100 ~ DEV						+6.0		+6.0		
	200 ~ DEV					+2.0	0.0	+2.0	0.0		
X	0.1000 ~					7.2	5.8	7.2	5.8		
	100 ~ DEV						+6.0		+6.0		
	200 ~ DEV					+2.0	0.0	+2.0	0.0		
U	0.1000 ~							7.3	6.1		
	100 ~ DEV								+6.0		
	200 ~ DEV							+2.0	0.0		
V	0.1000 ~							8.0	6.7		
	100 ~ DEV								+6.0		
	200 ~ DEV							+2.0	0.0		

INDIVIDUAL APPARATUS LOSSES AT 1000~ (db)					
APPARATUS	DESIG	CODE	LOSS	MIN LOSS	REMARKS
CAPACITOR	A, B	2.14-2.16UF	12.8	12.1	
CAPACITOR	G, G1	2UF	13.7	11.7	
CAPACITOR	KL	2.04-2.16UF	12.7	11.7	
CAPACITOR	C	1.07-1.09UF	7.4	6.8	
CAPACITOR	H, H1	0.25UF	1.9	0.8	
INDUCTOR	C, D1	148H	0.1		
INDUCTOR	H, S1	274H	0.2		
120P COIL	A, A1	636	0.3		
REP COIL	A, B	120P	1.8	1.3	1, 2, 3, 4, 5 & 6 IN SERIES
REP COIL	Y	120H	0.4	0.2	
REP COIL	Z	120HS	1.1	0.5	
REP COIL	W	120K	0.6	0.3	
REP COIL	X	120KS	1.2	0.6	
REP COIL	U	120L	1.3	0.9	
REP COIL	V	120LS	2.0	1.5	
RESISTOR	R, T	6250Ω	18.1	17.8	TESTED IN SERIES
RESISTOR	A, B	1740Ω	7.9	7.6	TESTED IN SERIES

- NOTES:
- "+DEV" SIGNIFIES INCREASE IN LOSS OVER 1000~ LOSS.
 - INDICATES MEASUREMENTS SHALL BE MADE BY THE INSTALLER ON ALL SHOP TESTED EQUIPMENT REGARDLESS OF WHETHER THEY HAVE BEEN REQUESTED BY THE CUSTOMER. ALL OTHER MEASUREMENTS ON SHOP TESTED EQUIPMENT MAY BE OMITTED BY THE INSTALLER.
 - RESISTOR (A) & CAPACITOR (A), WHICH FORMS PART OF THE PAD CONNECTED TO THE 120P REP COILS ARE LOCATED IN THE CONNECTING CIRCUIT (SD-65718-01) AND SHALL BE CONNECTED TO POINTS "A" AND "B" OF THIS CIRCUIT IN ORDER TO COMPLETE THE PAD.
 - WHEN FIG. 5 OR FIGS. 5 & 6 ARE USED, 0.4db SHALL BE ADDED TO THE LOSSES FROM 'A' TO 'D' OR 'B' TO 'D' FOR 1000~ TEST.
 - * INDICATES APPARATUS FOR WHICH INDIVIDUAL LOSS IS NOT REQUIRED.

ELECTROLYTIC CAPACITOR TEST REQUIREMENTS
(1000 CYCLE TEST, USING 75A TEST SET, BETWEEN 600 OHM LINES)

OVER-ALL LOSSES				
TEST	TEST SET TERMINALS	CONNECT TO	MIN LOSS IN db	REMARKS
CAP	3-6	1A, 2M (E OR F)	7.4	

INDIVIDUAL APPARATUS LOSSES						
APPARATUS	DESIG	CODE	TEST SET TERMINALS	CONNECT TO	MIN LOSS IN db	REMARKS
CAP	E OR F	KS-1313	3-6	A-B	7.4	DISCONNECT LAB FROM CKT

CAUTION
DISCHARGE CAPACITOR IN ACCORDANCE WITH THE A200 SECTION BSP COVERING THE TESTING OF ELECTROLYTIC CAPACITORS. DO NOT SHORT CIRCUIT CAPACITORS.

SD-65789-017

4 WIRE TERMINATING SET
AND PAD CONTROL CIRCUIT ②

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