

CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER
A	1-1/3	48V TALK	FIG. 1
B	3	48V TALK	10 FIG. 2
C	1-1/3	+24V TALK	ZL OPTION

BATTERY SYMBOL	BATTERY VARIATIONS
-48	44-52V

102.

FEATURE OF OPTION	PROVIDE	
	FIG.	QUANTITY
LONG LINE CIRCUIT	1	1 PER CKT
RESISTANCE LAMP PROTECTION CKT (SEE NOTE 106)	2	1 PER 20 FIG. 1 WHEN REQD
LONG LINE CKT LOCATED IN INTERMEDIATE CENTRAL OFFICE COND LOOP TO TERMINATING CENTRAL OFFICE (SEE ALSO ZJ OPTION)	0-250 OHMS	W
LONG LINE CIRCUIT LOCATED IN TERMINATING CENTRAL OFFICE (SEE ALSO ZJ OPTION)	OVER 250 OHMS	X
PULSING RELAY BIAS RESISTOR	STEP BY STEP	SINGLE CIRCUIT OPERATION *Y TANDEM OPERATION *Y
PANEL NO. 1 ESS OR CROSSBAR (SEE SHEET -013)		SINGLE CIRCUIT OPERATION *Y TANDEM OPERATION *Z
RELAYED RINGING (±10%) WITH TRIPPING DURING SILENT INTERVAL ONLY		P
RELAYED RINGING WITH TRIPPING DURING RINGING INTERVAL AND DURING SILENT INTERVAL	AC-DC AUD	S, T
	SUP. -AUD	T, U
BYPASSED RINGING		ZI
MOTOR START LEAD REQUIRED WHEN RINGING MACHINE IS OPERATED ON A CALL START BASIS		D
FOR USE WITH NO. 1 ESS OFFICES		ZB
CONVENTIONAL TIP AND RING LEAD ARRANGEMENT	ZD, ZE	
LOOP SIGNALING ON SIMPLEX LEGS OF 24V4 REPEATER WITH DIAL LONG LINE CIRCUIT LOCATED AT	ZF	
STATION END OF FACILITY	ZG	
CO OR PBX END OF FACILITY	ZH	
NOT ARRANGED FOR USE WITH 24V4 REPEATERS	ZC, ZE	
IN TANDEM WITH LONG LINE CKT OTHER THAN 48V SUPPLY (PBX LL CKT) ARRANGED TO RECEIVE WET PULSING AND SUPERVISION	1	ZJ
48V OPERATION	1, 2	ZK
72V OPERATION	1, 2	ZL
RATIO OF 120T REP COIL	.8 (600: 900 OHM)	ZU
	.8 TO 1.25 (900: 900 OHM)	ZT
	1.25 (900: 600 OHM)	ZV

* NON-RECORD OPTION

103.

NETWORK VALUES			
NO.	CODE	RESISTANCE IN OHMS	CAPACITANCE IN UF
1	186A	120	0.35
2	185A	470	0.11

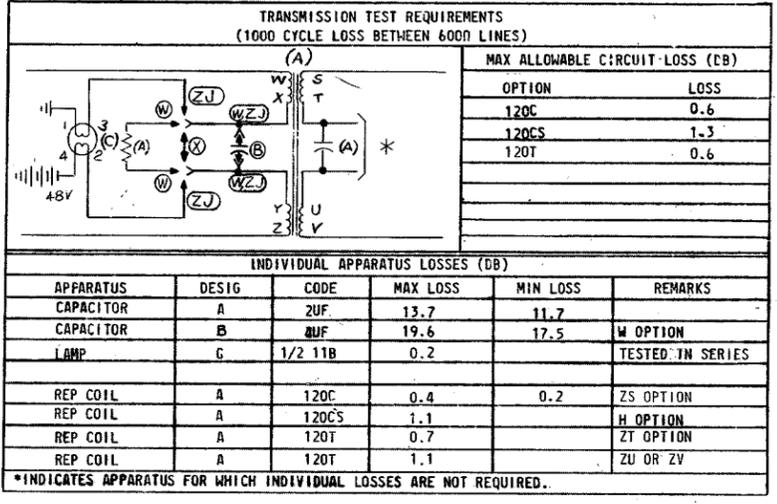
104.

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
4AC	FIG. B	FIG. A	102	FIG. B		FIG. A
6B	FIG. C OR FIG. D	FIG. C	102, 108	FIG. D		FIG. C
6B	D	NONE	102, 108	D		
6B	B	R OR T	102, 107	B		
6B	A OR ZA	A	107	ZA		A
6B	ZB	NONE	102	ZB		
9B						B
10D	ZC, ZD, ZE, ZF, ZG, ZH	ZC	102	ZC, ZD, ZE, ZF, ZG, ZH		
11B	ZI	R	102	ZI		R
12D	ZK, ZL	ZK	102	ZK, ZL		
	ZM, ZN	ZM	111	ZN		ZM
13D	ZJ	X, W	102, 204	X, W, ZJ		
	ZT, ZU OR ZV	ZS	105	ZT, ZU, ZV		ZS
15A	ZS OR H	ZS	105			ZS, H

105.

RATIO OF LINE OR TRUNK IMPEDANCE OF LOOP CONN TO REP COIL TERMS. S-V TO IMPEDANCE OF LOOP CONN TO REP COIL TERMS. W-Z	OPTION **	CODE	TERMINAL CONNECTIONS														
			S	T	U	V	W	X	Y	Z							
0.8 TO 1.25	ZS	120C	4	3	8	7	2	1	6	5							
0.8 TO 1.25	H	120CS	4	3	8	7	2	1	6	5							
0.8 TO 1.25 (600:600 OR 900:900)	ZT	120T	4H	3	8	7H	2	1	6	5							
0.8 (600:900)	ZU	120T	4L	3	8	7L	2	1	6	5							
1.25 (900:600)	ZV	120T	2	1	6	5	3	4L	7L	8							
CODE	DP-TION	IMPEDANCE RATIO	WINDING RESISTANCE														
120C	ZS	1:1	2-1,6-5 TO 4-3,8-7					2-1,6-5					4-3,8-7				
120CS	H	1:1	20														
120T	ZT	2-1,6-5, TO 4H-3,8-7H	2-1,6-5					4H-3,8-7H									
		1:1	7.4														
120T	ZU	2-1,6-5, TO 4L-3,8-7L	2-1,6-5					4L-3,8-7L									
	ZV	1.5:1	7.4														

106. SINCE FIG. 2 IS PROTECTION UPON PROTECTION ITS APPLICATION SHOULD BE LIMITED TO CASES WHERE THE LINE IS OPEN WIRE OR CABLE ON JOINT USE POLES AND WHERE INDUCED VOLTAGES WOULD OTHERWISE CAUSE BURNED OUT LAMPS.
107. WHEN B OPTION IS ADDED TO PROVIDE IMPROVED PARTY LINE SERVICE, ZA OPTION MUST ALSO BE ADDED.
108. FIG. D IS REQUIRED WHEN D OPTION IS SPECIFIED.
109. FOR INTERCONNECTING INFORMATION SEE COMPATABILITY APPLICATION SCHEMATIC, SD-99421-01, FOR THE TRANSMISSION SYSTEM TO WHICH CONNECTIONS ARE TO BE MADE.
110. OMITTED ON ISSUE 15A.
111. PRIOR TO ISSUE 13D, 14A TYPE RESISTANCE LAMP WAS PROVIDED, 14B TYPE RESISTANCE LAMP IS PROVIDED TO LIMIT CURRENT TO MAXIMUM OF 65MA ON SHORT LOOPS.



FIGURES AND OPTIONS ON THIS DWG

CKT FIG.	APP OR WIRING
1	ZIC
2	Y ZD
A	X ZE
B	W ZF
C	V ZG
D	U ZH
	T ZI
	S ZJ
	R ZK
	ZL
	P ZM
	ZN
	ZS
	H ZT
	ZU
	ZV
	ZW
	D
	B
	A
	ZA
	ZB

DWG ISSUE	EE OR CD	DATE ISSUED	DRAWN	APPRO
1	I	8-15-61	WVH	WVH
2A	I APP 1A	5-2-62	WVH	WVH
3AR	2AR	10-19-62	AGS	AGS
4AC	2AR APP 1AC	10-19-62	AGS	AGS
5AR	2AR APP 2AR	10-19-62	AGS	AGS
6B	2AR APP 3B	2-19-64	REJ	WVH
7D	2AR APP 4D	1-14-65	LJL	WVH
8D	2AR APP 5D	9-13-65	GDP	WVH
9B	3B	7-11-66	SEA	WVH
10D	APP 1D	3-18-68	DS	WVH
11B	3B APP 2B	9-23-68	FVH	WVH
12D	3B APP 3D	7-29-69	EWV	WVH
13D	4D	12-22-70	BH	WVH
14D	4D APP 1D	3-21-73	BD	WVH
15A	4D APP 2A	3-21-73	BD	WVH
16D	4D APP 3D	1-30-74	TBB	WVH
17D	4D APP 4D	12-12-77	RAW	WVH

REPRODUCED WITH-OUT CHANGE 2-1-71

WORKING LIMITS
SEE RANGE CHARTS FOR DIAL LONG LINE CIRCUITS
SEE SHEET -013 FOR SINGLE CIRCUIT OPERATION
SHEET -0128 CANCELED ON ISSUE 15A.

199236T
EQUIP INFO.

ISSUE 17D

REPLACED BY SD-1C359-01

SD-96555-01

COMMON SYSTEMS
DIAL LONG LINE CIRCUIT
10 OR 20 PPS REPEATING

FOR SUBSCRIBER LINES, PBX STATION LINES
OR PBX MANUAL SELECTED TRUNKS
DIAL CENTRAL OFFICE OR PBX

AT & TCO STANDARD

SD-96555-011
7 SHEETS

BELL TELEPHONE LABORATORIES
INCORPORATED

PART OF FIG. 1
LONG LINE CIRCUIT

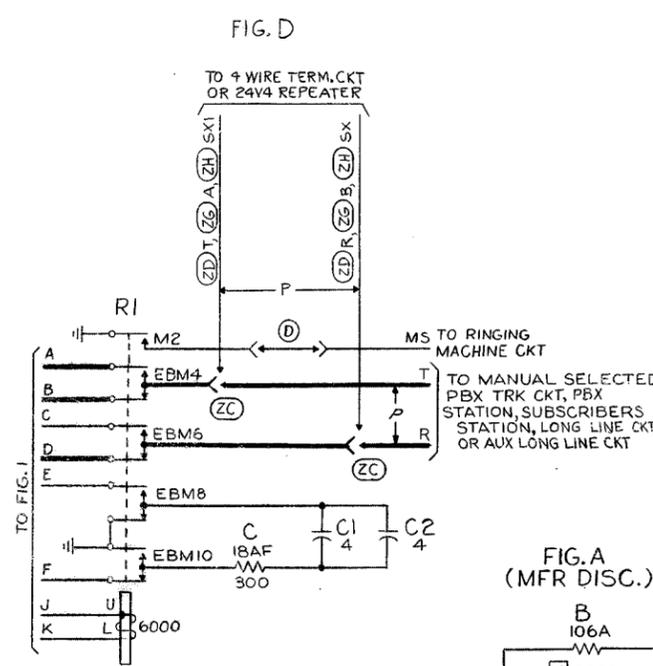
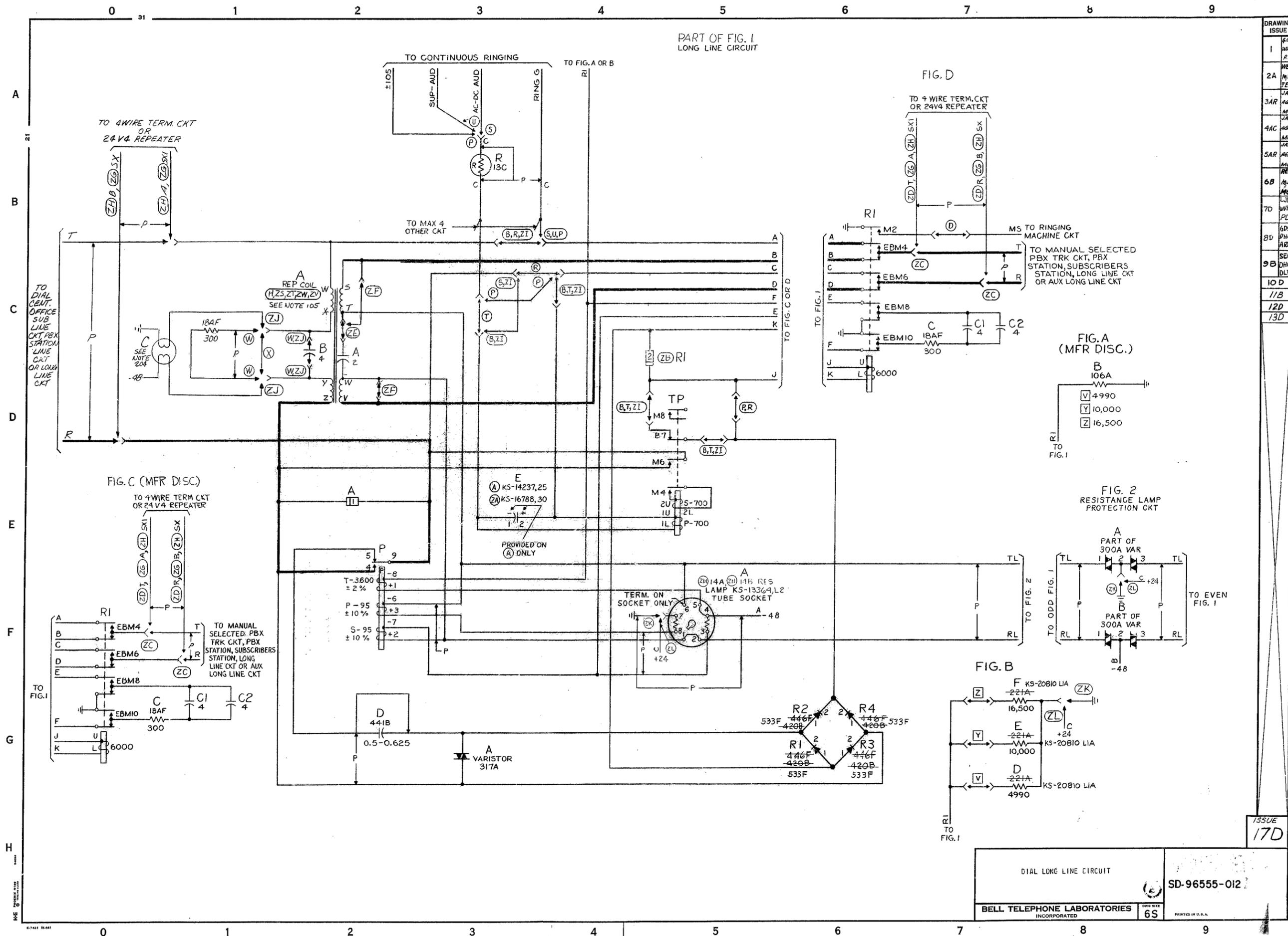


FIG. A
(MFR DISC.)

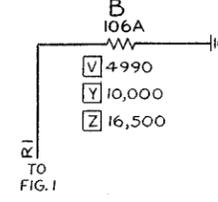


FIG. 2
RESISTANCE LAMP
PROTECTION CKT

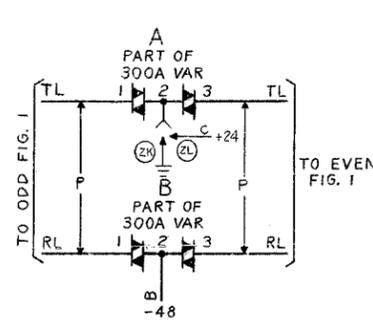


FIG. B

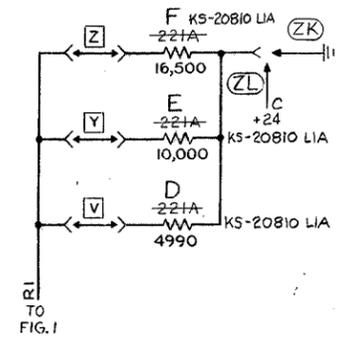
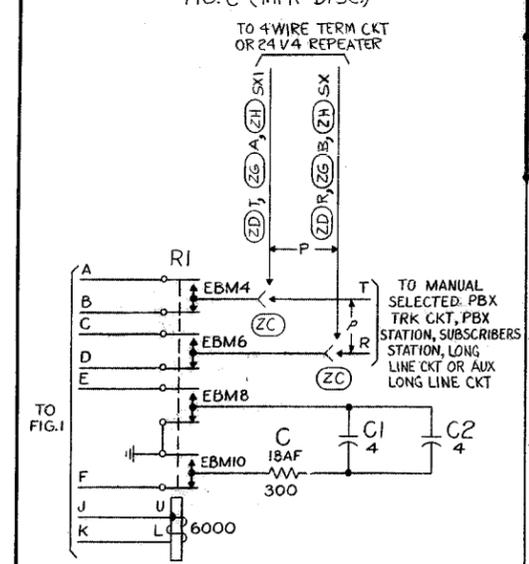


FIG. C (MFR DISC.)



DRAWING ISSUE	
1	6-4
2A	1-1
3AR	1-1
4AC	1-1
5AR	1-1
6B	1-1
7D	1-1
8D	1-1
9B	1-1
10D	1-1
11B	1-1
12D	1-1
13D	1-1

ISSUE
17D

SD-96555-012

DIAL LONG LINE CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

SD-96555-012

DWG SIZE 6S

PRINTED IN U.S.A.

WORKING LIMITS (CONT)

- 1.1 DIALING (48V) MAXIMUM CONDUCTOR LOOP 10 PPS 20 PPS 3000 OHMS 2000 OHMS
- 1.2 SUPERVISION (48V) MAXIMUM EXTERNAL CIRCUIT LOOP 3100 OHMS
- 1.3 TALKING (STATION LOOP) MAXIMUM EXTERNAL CIRCUIT LOOP -48V 1800 OHMS -72V 1000 - 2800 OHMS (SEE NOTE 7 & 1.6-4)

- 1.4 INSULATION RESISTANCE MINIMUM 30,000 OHMS

- 1.5 TRIPPING RANGE (FOR S & U OPTIONS)
 - 1. RINGING PLANTS HAVING 44-52 VOLT SUPERIMPOSING BATTERY (S AND CERTAIN U OPTIONS) 3000 OHMS MAX EXTERNAL CIRCUIT LOOP
 - 2. RINGING PLANTS HAVING 36-40 VOLT SUPERIMPOSING BATTERY (U OPTION) 2400 OHMS MAX EXTERNAL CIRCUIT LOOP

NOTE: SOME SUPERIMPOSED RINGING PLANTS HAVE 36 VOLT SUPERIMPOSED BATTERY, ALL AC-DC PLANTS HAVE 48 VOLT SUPERIMPOSED BATTERY.

1.6 RINGING RANGE

- 1. MAXIMUM EXTERNAL CIRCUIT LOOP RANGE FOR OPERATION OF (R1) RELAY IS 2300 OHMS WITH MINIMUM 84 VOLTS AC RINGING VOLTAGE. (3000 OHMS IS ALLOWED WITH 105 VOLTS AC)
- 2. MAXIMUM RINGING RANGE WITH BYPASSED RINGING IS 3000 OHMS USING 1 HIGH IMPEDANCE RINGER AND 0.5 UF CAPACITOR.
- 3. MAXIMUM RINGING RANGE WITH RELAYED RINGING IS 3000 OHMS USING TWO HIGH IMPEDANCE RINGERS.
- 4. MAXIMUM RINGING CAPABILITY ON STATION LOOPS IS: FOR -48V BAT. 3 BRIDGED OR 10 GROUNDED HIGH IMPEDANCE RINGERS FOR -72V BAT. 2 BRIDGED OR 8 GROUNDED HIGH IMPEDANCE RINGERS
- 5. IF AN E6 OR E7 TYPE REPEATER IS USED WITH THIS CIRCUIT TO IMPROVE TRANSMISSION, THEIR RESISTANCE MUST BE INCLUDED WITH THE CONDUCTOR LOOP AS FOLLOWS:
 - A. WITH RINGING VOLTAGE AT 84V OR HIGHER E6-65 OR 90 OHMS PLUS LINE BALANCING NETWORK RESISTANCE. E7-18 TO 44 OHMS DEPENDING ON TRANSFORMER TAP.
 - B. WITH RINGING VOLTAGE BELOW 84V E6-500 OHMS PLUS LINE BALANCING NETWORK RESISTANCE. E7-200 OHMS.

1.7 CENTRAL OFFICE RANGES (SINGLE CIRCUIT OPERATION)

- 1. THE RANGE OF THE CENTRAL OFFICE OR PBX WILL BE CONTROLLING IF IT IS LESS THAN RANGES GIVEN HEREIN FOR LOOP A. SEE NOTES 6 & 7 UNDER NOTES.
- 2. 20 PPS RANGE

45-52V	A	45-52V	B
CO.	SD-96555-01.	PBX	
300-1400		0-2000	
- 3. 10 PPS RANGE

45-52V	A	45-52V	B	STA
CO.	SD-96555-01.			
300-1400		0-1800		
- 4. PERMISSIBLE CAPACITY IN PBX RERING BRIDGE FOR THROUGH DIALING AT 10 PPS.
 - IF IN LOOP A 2 UF
 - B 2 UF
- 5. STATION DIALS SHALL GENERATE PULSES IN THE RANGE OF 58 TO 64 PER CENT BREAK (7L AND 8C DIALS TYPICAL).
- 6. BIAS RESISTANCE FOR (P) RELAY SHALL BE SELECTED PER NOTE 102 UNLESS OTHERWISE NOTED.

1.8 PRIVATE BRANCH EXCHANGE RANGES 47-52V CONDUCTOR LOOP RANGES (T) BETWEEN THE LONG LINE CIRCUIT AND PBX TRUNK CIRCUIT WITH CORRESPONDING STATION CONDUCTOR LOOPS (STA).

	TABLE X	
	T	STA
1. 550C, SC (NOTES 1 AND 5)		
2. 551A & B (NOTES 1 AND 5)		
3. B1088 & B1089 RELAYS	1170	250
4. B1088 & B1089 RELAYS (LIM STA)	2420	TABLE X
5. B42 RELAYS	1145	100
6. B42 RELAYS (LIM STA)	1685	TABLE Y

	TABLE Y	
	T	STA
7. 605A (NOTES 1 AND 5)	1330	1330
8. (LIMITED STA)	2435	TABLE Z
9. 505C, 506A, & 506B		
10. 186A RELAY TRUNKS	(NOTE 2)	70
11. 186B RELAY TRUNKS	1640	70

	TABLE Z	
	T	STA
12. 750A		
13. KEY STATIONS	(NOTE 2)	20
14. KEYLESS STATIONS	(NOTE 2)	200
15. 755A		
16. KEY STATIONS	(NOTE 2)	100
17. KEYLESS STATIONS	(NOTE 2)	285

NOTES:

- 1. MODIFY THE ATTENDANT'S DIAL CIRCUITS PER THE NOTES REFERRED TO BELOW FOR THE CENTRAL OFFICE CONDITION INDICATED AND LIMIT (T) TO THE RANGE SHOWN.

TYPE OF CENTRAL OFFICE	STANDARD DIAL CIRCUITS		OLD TYPE DIAL CIRCUITS	
	MOD REQD	(T) RANGE	MOD REQD	(T) RANGE
NO. 1 ESS, PANEL, NOTES 3A & B AND CROSSBAR		0-*	NOTE 4A	150-*
			NOTE 4B	100-*
STEP-BY-STEP	NONE	0-*	NOTE 4A	0-*

*MAX VALUE OF (T) NOT LIMITED BY DIAL CIRCUIT
- 2. T IS LIMITED BY THE 20 CYCLE SIGNALING RANGE OF THE PBX TRUNK AS INDICATED BELOW.

TRUNK CIRCUITS - 20 CYCLE SIGNALING RANGES

PBX	TRUNK A-C RELAY	MAX TRUNK CONDUCTOR LOOP MIN A-C VOLTAGES AT 20 CYCLE				
		72	75	80	84	95
505C, 506A AND B	56L AND 186A REL	520	525	540	550	635
701A	J29	1200	1300	1500	1600	2000
740A, B, C AND AX	221GD	600	700	800	1000	1200
750A, 755A	J44	700	800	1000	1200	1500

- 3. MODIFY STANDARD ATTENDANT'S DIAL CIRCUITS (I.E., THOSE EQUIPPED WITH A 1000 OHM 18BH RESISTANCE) AS FOLLOWS:
 - A. REPLACE THE 1000 OHM 18BH RESISTANCE BY A 500 OHM 18AC RESISTANCE.
 - B. SHUNT THE (T1) AND (R1) CAPACITORS IN 605A AND 552 (701A AND 740AX) BOARDS WITH 100,000 OHM KS-8058 RESISTANCE.

NOTES (CONT):

- 4. MODIFY OLD TYPE ATTENDANT'S DIAL CIRCUITS (I.E., 550C DIAL CIRCUITS WITH E TYPE RELAYS AND 550SC DIAL CIRCUITS WITH 206 AND 263 RELAYS) AS FOLLOWS:
 - A. PER SD-66501-01,
 - B. PER SD-66572-01, FIGS. 3 AND C - 550C PER SD-66573-01, FIGS. 3 AND C - 550SC
- 5. IF THE CONDUCTOR LOOP FROM THE SOURCE OF RINGING TO THE PBX TRUNK CIRCUIT EXCEEDS THE 20 CYCLE SIGNALING RANGE OF THE PBX TRUNK A-C RELAY AS SHOWN IN THE RANGE TABLE ON THE CIRCUIT DRAWING, MODIFY THE TRUNK CIRCUIT BY MEANS OF A THERMISTOR, LARGER CAPACITOR OR MORE SENSITIVE RELAY, AS REQUIRED.
- 6. THE EMERGENCY LOW VOLTAGE OF 42.75 VOLTS IN THE NO. 1 ESS OFFICE WILL REDUCE THE MAXIMUM RANGE OF THIS CIRCUIT BY A FACTOR OF 5%.
- 7. RANGE ON STATION TALKING BATTERY IS TO INSURE 23MA CURRENT IN TALKING CIRCUIT.

DRAWING ISSUE	
3AR	JAF
4AC	JAF
5AR	JAF
6B	JAF
7D	JAF
8D	JAF
9B	JAF
10D	JAF
11B	JAF
12D	JAF
13D	JAF

ISSUE 17D

SD-96555-013

DIAL LONG LINE CKT	(2)	SD-96555-013
BELL TELEPHONE LABORATORIES INCORPORATED	6S	PRINTED IN U.S.A.

SD-96555-01															CIRCUIT REQUIREMENTS															DRAWING
DIAL LONG LINE CIRCUIT															ISSUE															
APPARATUS			MECH REQ			CIRCUIT PREPARATION				TEST SET			DIRECT CURRENT FLOW REQ					REMARKS	JAF											
DESIG	CODE	OPT.	FIG.	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	3AR													
RELAYS								CONN BAT.	CONN GRD								JAF													
P	280AJ		1	A			4,6(R1)	3 SKT (A)	8 SKT (A)	B/G	1,4	P/S	0	-25	1.2	0.6	3AR													
								3 SKT (A)	8 SKT (A)	B/G	1,4	P/S	NO	-25	0.5	0.4	4AC													
												T	0	0.5			JAF													
							4,6,8(R1)	10 (R1)	5 SKT (A)	B/G	1,2,5	T	0	0.7			5AR													
								10 (R1)	5 SKT (A)	B/G	1,2,6	T	0	0.8			JAF													
								10 (R1)	5 SKT (A)	B/G	1,2,7	T	0	1.1			JAF													
																	5AR													
																	JAF													
RI	AJ121	C		203			4 & 6(R1)	L(R1)	U(R1)	B/G	3,4		0	4.3	3.9		6B													
	AJ129	D		335			4,6(R1)	L(R1)	U(R1)	B/G	3,4		0	4.3	3.9		JAF													
																	JAF													
TP	AG58		1	388			M6(TP)	1L(TP)	1U(TP)	B/G	8	P	0	FS	15.5	13.8	7D													
												P	NO	FS	6.9	7.3	JAF													
												P	H	FS	2.1	2	JAF													
												P	R	FS	1.2	1.5	JAF													
							M4,M6(TP)	2L(TP)	2U(TP)	B/G		S	0		15.5		JAF													

- TEST NOTES:
- REMOVE (A) RESISTANCE LAMP FROM ITS SOCKET AND MAKE CONNECTIONS TO RELAY IN ACCORDANCE WITH BSP METHOD OF MAKING TEST CONN TO APPARATUS.
 - THE SPECIFIED TEST CURRENT IS OBTAINED WITH REVERSAL KEY NORMAL. DISREGARD ANY CHANGE IN CURRENT WHEN REVERSAL KEY IS OPERATED.
 - PARALLEL COMB. WITH 420B DIODE BRIDGE, POLARITY OF TEST LEAD MUST BE OBSERVED.
 - CONN TERM. 1 OF (A) SOCKET TO TERM. 6 (A) SOCKET.
 - CKT COMB. TER(P)REL & (B)RES, Z OPTION.
 - CKT COMB. TER(P)REL & (B)RES, Y OPTION.
 - CKT COMB. TER(P)REL & (B)RES, V OPTION.
 - DISCONNECT LEADS AT 1L(TP) TO REMOVE (E) CAPACITOR FROM CKT.

DIAL LONG LINE CIRCUIT

SD-96555-014

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

SD-96555-01															CIRCUIT REQUIREMENTS															DRAWING
DIAL LONG LINE CIRCUIT															ISSUE															
APPARATUS			MECH REQ			CIRCUIT PREPARATION				TEST SET			DIRECT CURRENT FLOW REQ					REMARKS	JAF											
DESIG	CODE	OPT.	FIG.	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	3AR													
RELAYS								CONN BAT.	CONN GRD								JAF													
																	3AR													
																	JAF													
																	JAF													
																	4AC													
																	JAF													
																	JAF													
																	5AR													
																	JAF													
																	JAF													
																	6B													
																	JAF													
																	JAF													
																	7D													
																	JAF													
																	JAF													
																	8D													
																	JAF													
																	JAF													
																	9B													
																	JAF													
																	JAF													
																	10D													
																	JAF													
																	JAF													
																	11B													
																	JAF													
																	JAF													
																	12D													
																	JAF													
																	JAF													
																	13D													
																	JAF													

DIAL LONG LINE CIRCUIT

SD-96555-014

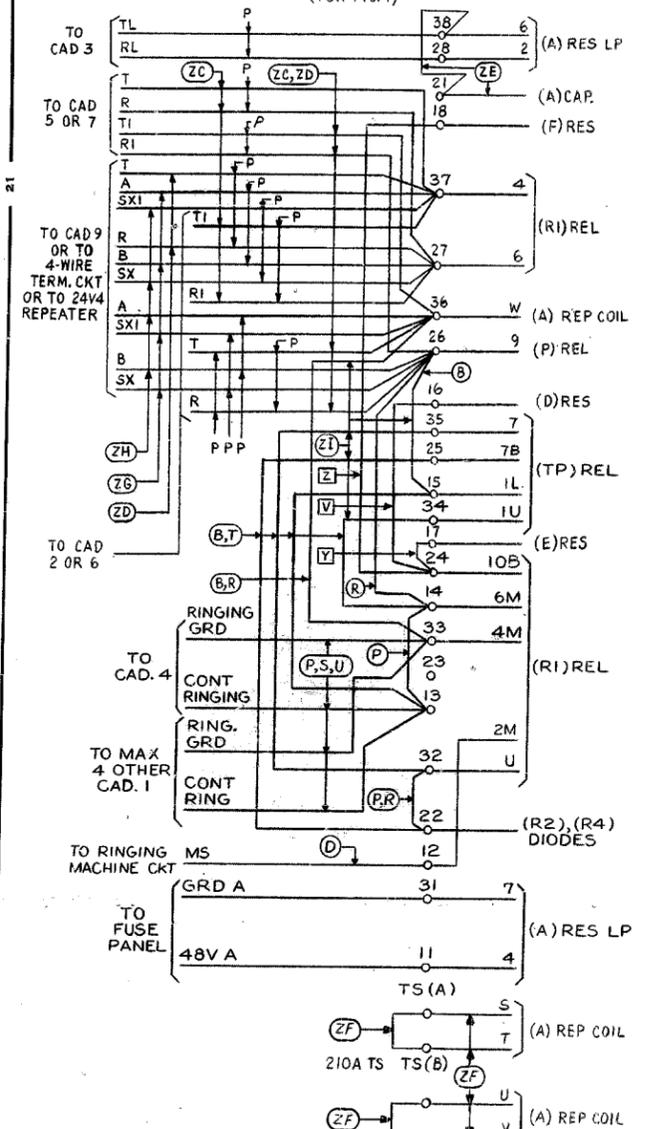
BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U. S. A.

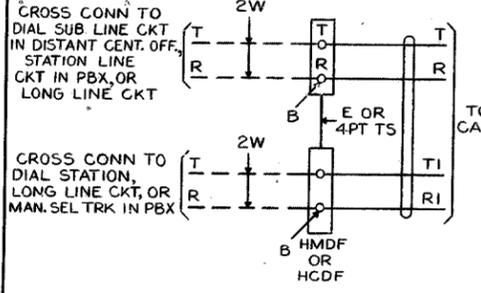
SD-96555-014

ISSUE
17D

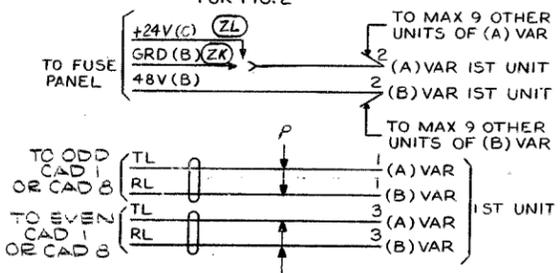
CAD. 1 (MFR DISC) (FOR FIG. 1)



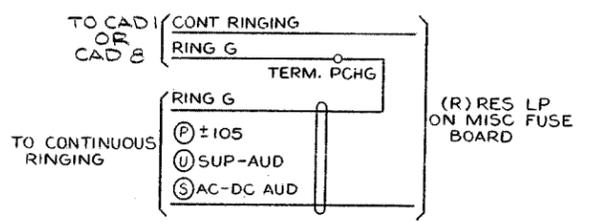
CAD. 2 (MFR DISC) (FOR FIG. 1)



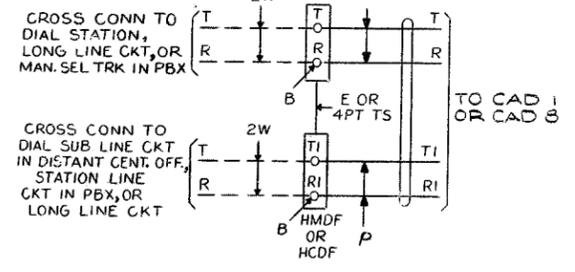
CAD. 3 FOR FIG. 2



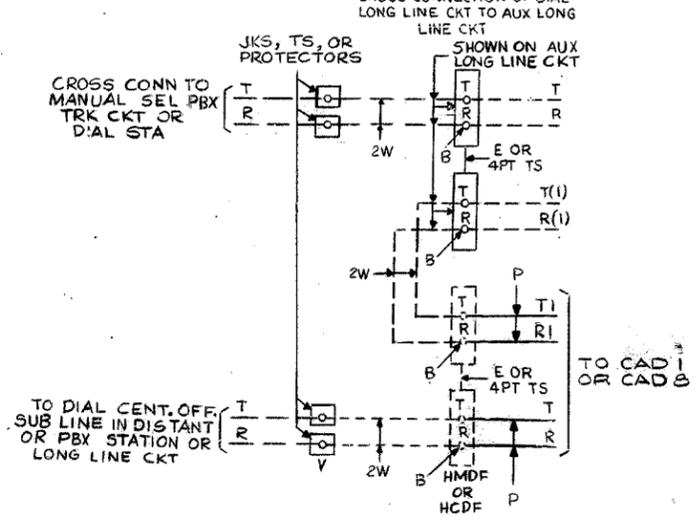
CAD. 4 FOR FIG. 1



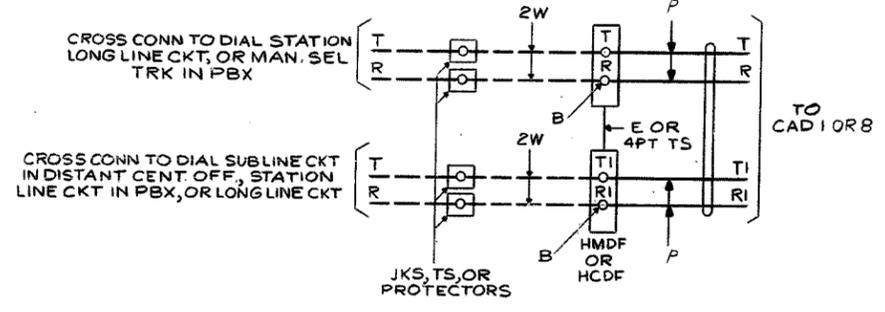
CAD. 5



CAD. 6 FOR FIG. 1



CAD. 7



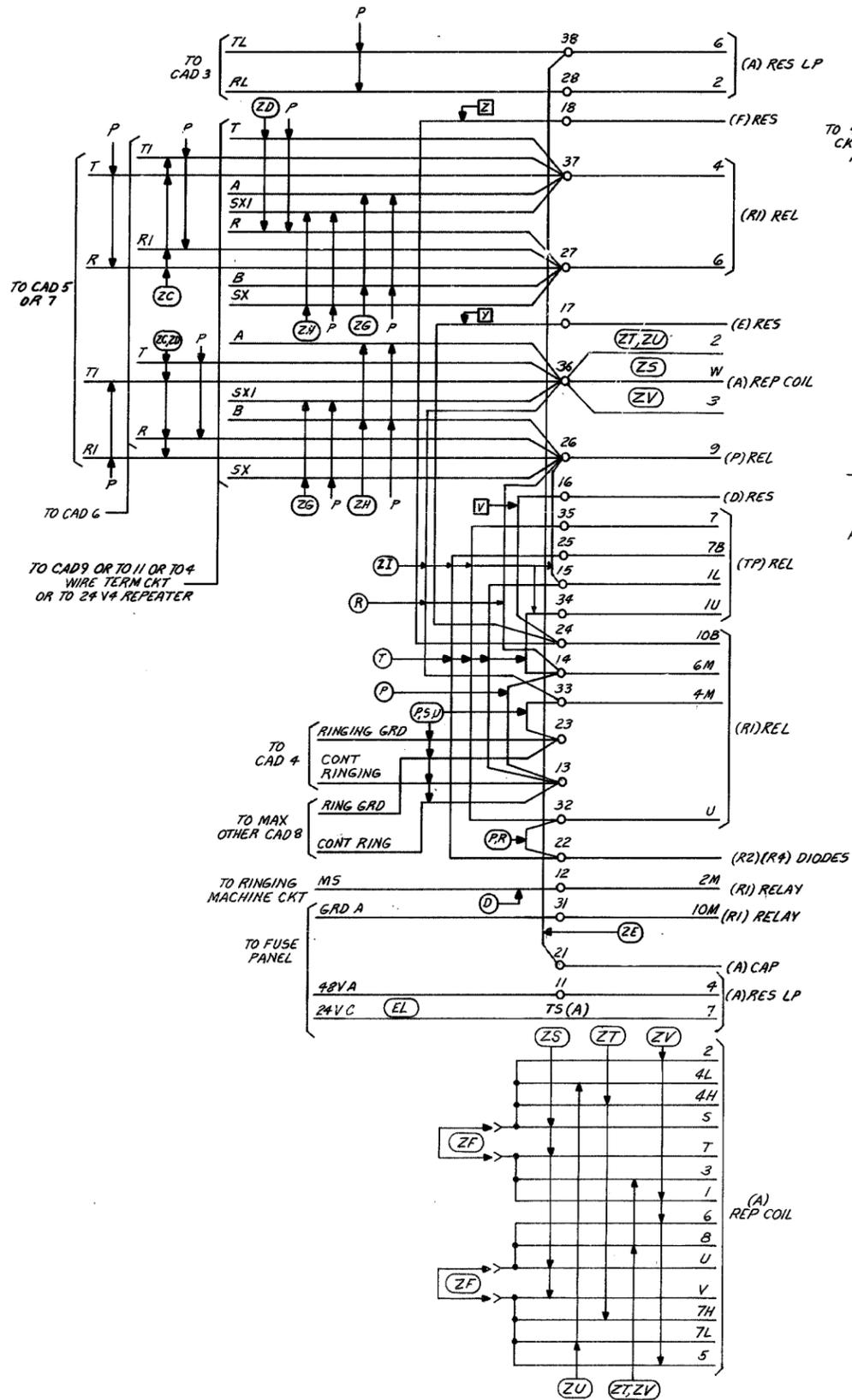
DRAWING ISSUE	
3AR	JAF
4AC	MGS
5AR	JAF
6B	MGS
7D	LJL
8D	WPH
9B	PD
10D	GDP
11B	DHC
12D	MEM
13D	SEA
	DHC
	DLV
	GC

ISSUE 17D

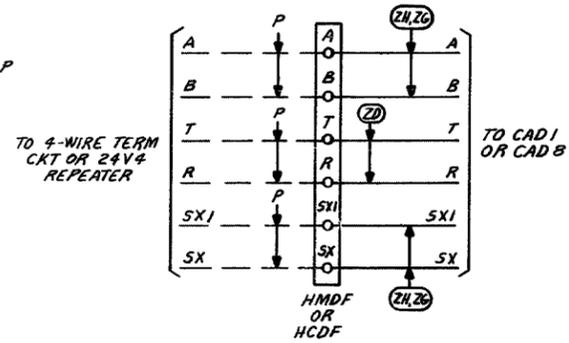
SD-96555-015

DIAL LONG LINE CIRCUIT		SD-96555-015	
BELL TELEPHONE LABORATORIES INCORPORATED		6S	PRINTED IN U.S.A.

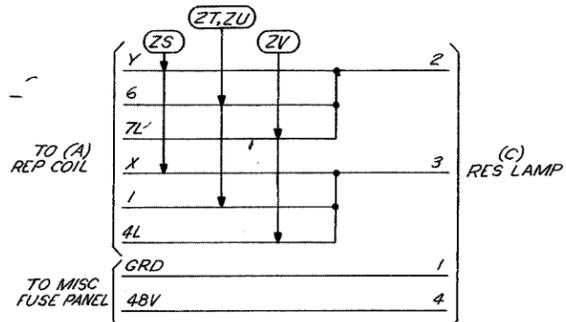
CAD 8 (FOR FIG. 1)



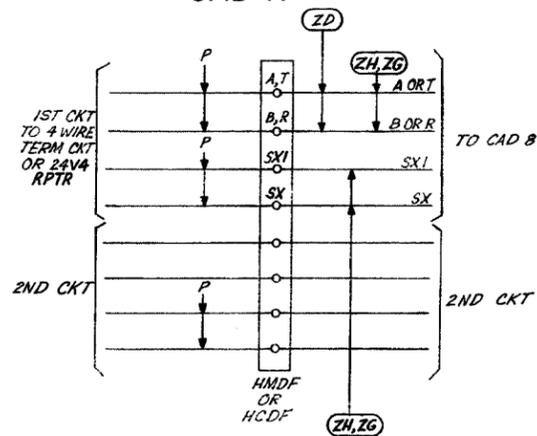
CAD 9 (MFR DISC)



(ZJ) CAD 10



CAD 11



EQUIPMENT NOTES:

- 201. ON ISSUE 98, CAD 1 WAS RATED A & M ONLY. CAD 2 WAS RATED MFR DISC. CAD 7 & CAD 8 WERE ADDED.
- 202. ON ISSUE 100, CAD 1 WAS RATED MFR DISC AND CAD 9 WAS ADDED.
- 203. THE INSTALLER SHALL REMOVE "ZE" STRAP ON TS (A) WHEN "ZF" OPTION IS APPLIED.
- 204. WHEN (C) LAMP IS PROVIDED PER "ZJ" OPTION, IT SHALL BE MOUNTED ON A MISCELLANEOUS BASIS AND WIRED PER CAD 10.

MFR DISC

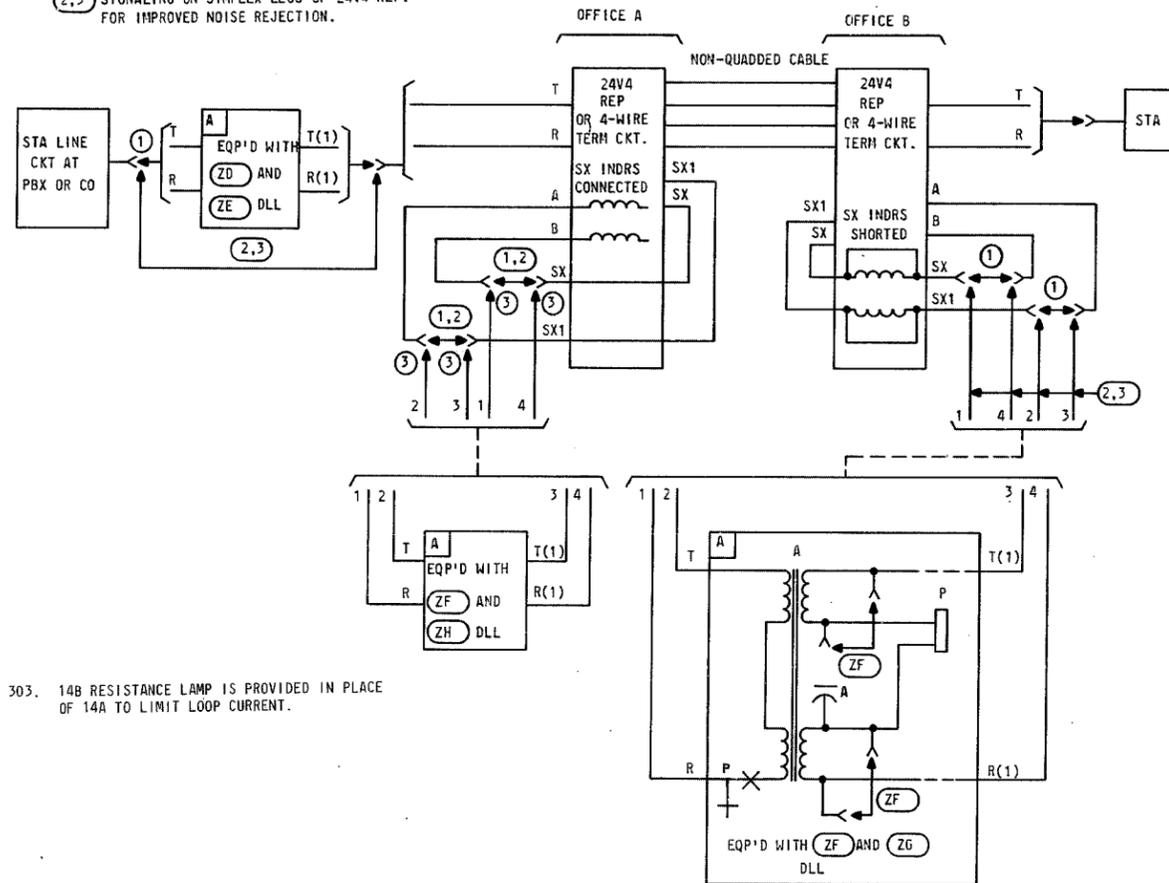
DRAWING ISSUE	
100	D.S.
118	W.C.
120	E.S.
130	G.C.

ISSUE	
170	G.C.

DIAL LONG LINE CKT	
SD-96555-016	
BELL TELEPHONE LABORATORIES INCORPORATED	6S PRINTED IN U.S.A.

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.
- 302. SIGNALING ARRANGEMENT USING 24V4 REPEATERS WITH
2 WIRE EXTENSIONS.
 - ① CONVENTIONAL ARRANGEMENT
 - ②,③ SIGNALING ON SIMPLEX LEGS OF 24V4 REP.
FOR IMPROVED NOISE REJECTION.



- 303. 14B RESISTANCE LAMP IS PROVIDED IN PLACE
OF 14A TO LIMIT LOOP CURRENT.

DRAWING	ISSUE
100	17D
11B	
12D	
13D	

ISSUE
17D

DIAL LONG LINE CKT

SD-96555-017

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
6S

PRINTED IN U.S.A.