

DRAWING
ISSUE
11B
12D
13D
14B
15B
16B
18B
19D
20B

LEAD INDEX

DESIG	LOCATION	
	FS	CAD
AUTOMATIC TRK TEST CKT, TEST & LINE VERIFICATION CKT		
TT	1A1	3A3

DESIG	LOCATION	
	FS	CAD
MISCELLANEOUS CKT FOR TROUBLE TICKETER		
LU	2D4	3B5

DESIG	LOCATION	
	FS	CAD
TRAFFIC REGISTER CKT		
LTB	1F7	1B6,1D6, 1F6,4G1

DESIG	LOCATION	
	FS	CAD
AUXILIARY TIMING CKT		
ET	2D0	3B7
ST	1G8	3B7

DESIG	LOCATION	
	FS	CAD
MISCELLANEOUS ALARM CKT (REG)		
LTB	1F7	3B5

DESIG	LOCATION	
	FS	CAD
TRAFFIC USAGE RECORDER CKT		
BR	1E7	1B9,1D9, 1G9,3G6
TU-	2G4	3A7

DESIG	LOCATION	
	FS	CAD
AUXILIARY TRUNK CKT, ROTARY OUTGOING TRUNK SWITCH CKT, SELECTOR BANK MULT CKT		
+	1D1	3D5,4B5, 4C1,4C5, 4F1
-	1D1	3D5,4B5, 4C1,4D5, 4F1
A	1D1	3D5,4B5, 4D1,4D5, 4E1,4G1
C	1D1	3D5,4B5, 4C1,4D1, 4D5,4E1, 4F1,4G1
EC	1D1	3D5,4B5, 4D1,4D5, 4G1
R	1D1	3D5,4B5, 4C1,4D1, 4D5,4F1
RI		4D1
S	1D1	3D5,4B5, 4C1,4D5, 4E1,4F1
SI		4E1
T	1D1	3D5,4B5, 4C1,4C5, 4D1,4F1
TI		4D1

DESIG	LOCATION	
	FS	CAD
OSCILLATOR CKT		
G	1E2	3C7
OSC(0)	2H0	3D0
OSC(1)	2H0	3C0
S	1E2	3C5

DESIG	LOCATION	
	FS	CAD
TOTALIZER CKT		
TT-	2G4	3A7, 4A1

DESIG	LOCATION	
	FS	CAD
OUTPULSER CONNECTOR CKT		
AB	2B0	3E3
R	2D4	3E3
SP	2G2	3E3
ST	2B0	3E3
T	2B0	3E3
TPT	2D4	3E3
TST	2B0	3E3

DESIG	LOCATION	
	FS	CAD
COMMON TIMING CKT		
A9	2D0	3B7
PU9	1H8	3B7

DESIG	LOCATION	
	FS	CAD
PULSER GENERATOR CKT		
S	1E3	3C5

DESIG	LOCATION	
	FS	CAD
MISCELLANEOUS CKT FOR TRUNK FRAME		
AB	2A0	3B3
C	1G1	3E0
CL1	1A1	3B3
CL2		3B3
FR	1A1	3E0
OSF	2H4	3A5
R	2D5	3B3
RO	1A7	3E0
R1	1A1	3B3
S	1A1	3B3
SP1	2A0	3B3
SS	1G1	3E0
T	2A0	3B3
TO	1A7	3E0
T1	1A1	3B3
TPT	2D5	3B3
TTO	2G0	3E0
TT1	1A1	3E0
XCL	1A1	3B3

DESIG	LOCATION	
	FS	CAD
SIGNALING AND TRANSMISSION FACILITIES		
+	1C8	2E0
-	1C8	2E0
R	1C8	2E0
T	1C8	2E0

DESIG	LOCATION	
	FS	CAD
TERMINAL BLOCK ON MISCELLANEOUS TRK SHELF		
ATB	1F7	3B5
LTB		3B5

OPTION INDEX

APP OR WRG	LOCATION
Z	1B4,1D6
Y	1B4,1D6
X	APP FIG. 1
W	APP FIG. 1
V	APP FIG. 1
T	APP FIG. 1
S	1F6
R	1F6
Q	APP FIG. 1, 2F1
N	2F1, 2G5
M	APP FIG. 1, 1C2, 1D2, 2D3, 2H1
K	1D2, 2D3
J	APP FIG. 1, 2C6, 2E0, 2E1, 2E2, 2E5, 2F3, 2H2
H	APP FIG. 1, 1E4, 1E5, 1F4, 1F5, 2C6, 2E0, 2E1, 2E2, 2E5, 2F3, 2H2, 2H5

APP OR WRG	LOCATION
G	APP FIG. 1, 1G6, 2F0, 2F1, 2G6, 3B2
F	APP FIG. 1, 1G6, 2F0, 2F1, 2H6, 3C5
E	2A1, 2A6, 2G0, 2G6, 3C5
B	2G0, 3B2
A	1F6
ZA	APP FIG. 1
ZB	APP FIG. 1, 2H3, 2H4
ZC	APP FIG. 1, 1D5, 2H3, 2H4
ZD	APP FIG. 1
ZE	APP FIG. 1, 2H3, 2H4
ZF	APP FIG. 1
ZG	APP FIG. 1, 1C6, 1C8
ZH	APP FIG. 1, 1E5, 1F4, 1F5, 1G6
ZI	1E5, 1F4, 1F5, 1G6
ZJ	1D3
ZK	APP FIG. 1, 1D3
ZL	APP FIG. 1, 1C4
ZM	APP FIG. 1, 2F8, 2G8
ZN	2G0
ZO	3B2
ZP	3C5
ZQ	2A1, 2A6, 2G0, 2G6
ZR	APP FIG. 1, 1D3, 1D4
ZS	APP FIG. 1, 2F2
ZT	APP FIG. 1, 2B1, 2G8, 2H4
ZU	APP FIG. 1, 2A1, 2A2, 2D2, 2E8, 2G7, 2G8, 2H4
ZV	1G4, 1G5
ZW	1G4
ZZ	2G3
YA	APP FIG. 1, 2G3, 2G4
YB	APP FIG. 1, 2E8, 2E9
YC	APP FIG. 1, 2E8, 2E9
YD	APP FIG. 1
YE	APP FIG. 1
YF	2B6
YG	2B6, 2B7

OUTGOING TRUNK CIRCUIT

2

SD-32245-01-A2

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

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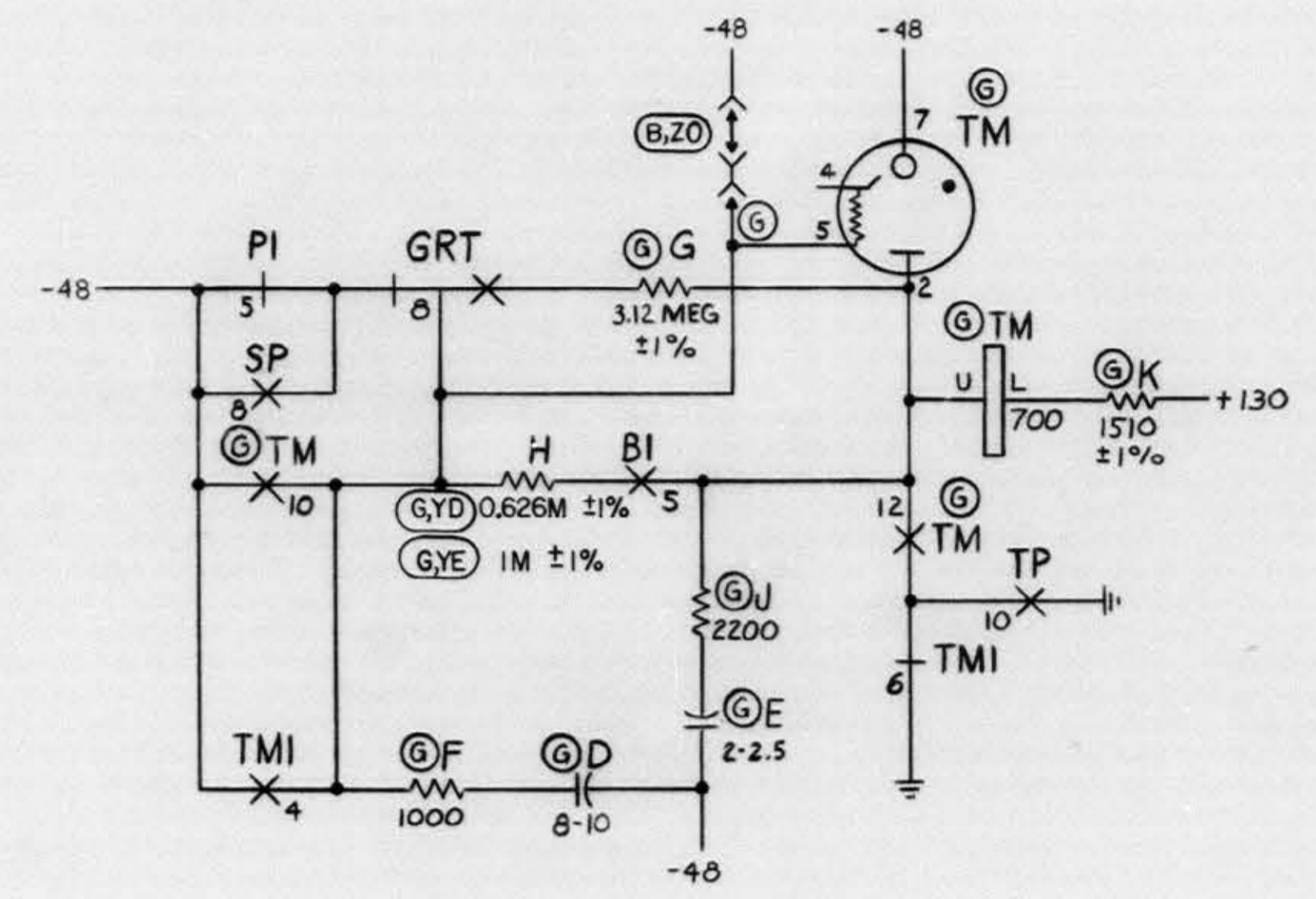
ISSUE
24B

SD-32245-01-A2

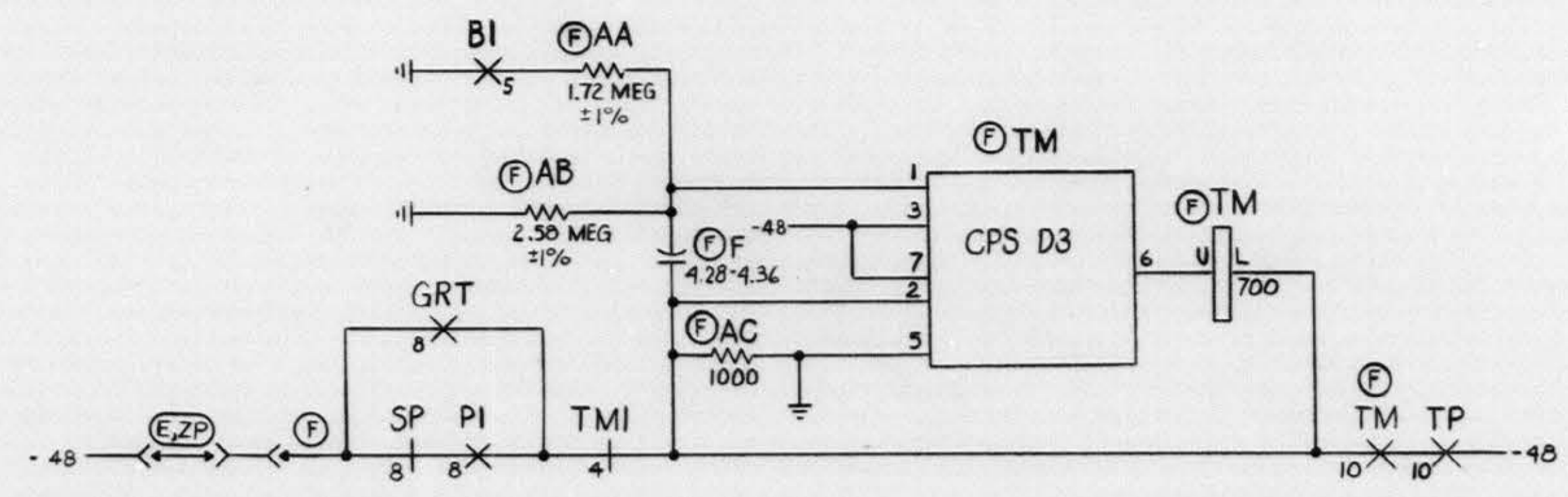
0 1 2 3 4 5 6 7 8 9

DRAWING
ISSUE
9D JFK
GM
DEA
11B A.P.
GM
18B

FS 3
130V TYPE TIMER FOR
OUTPULSER SEIZURE AND
GROUND REMOVAL TEST



FS 4
48V TYPE TIMER FOR
OUTPULSER SEIZURE AND
GROUND REMOVAL TEST



SD-32245-01-B3

24B

OUTGOING TRUNK CIRCUIT	2	SD-32245-01-B3
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0 1 2 3 4 5 6 7 8 9

PART OF APP FIG. I

RELAY DESIG CODE	B		B1		C		C1		CS1		GRT		DESIG CODE	
	AG36		AJ39		AG37		AG38		AG12 H,ZH		AJ514			
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC		
12												EM	a	12
11												M	1E3	11
10			M	2H3								EM	b	10
9			B	1G4								M	2B2	9
8			M	1F5	EBM	2B1						EM	c	8
7			B	1C6	EBM	2A1						B	2F6	7
6			EMB	1D4	EBM	a						M		6
5			B	1F6	EBM	c						M	2E2	5
4			M	1D5	EBM	1C4						EM	2D1	4
3					EBM	2F9						M	2G2	3
2					EBM	2A7						EM	2G2	2
1					EBM	2H3						M	2H3	1
COIL				1H6									2F3	COIL

- a 2G4
 - a 2F1
 - (N) 2F2
 - b (Q) 2F1
 - (F) 3B6
 - c (G) 3C1
- a 2C1
 - a 2G6
 - b 2F8
 - b 2H3
 - (F) 3C6
 - (G) 3B1

RELAY DESIG CODE	ID		MB		MB		PU OR PTKA		MF		MR		P1		DESIG CODE
	AF23		AF10		AK45				AJ9		AF512		AG48		
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12															12
11															11
10			M	2A6											10
9			M	2B2											9
8															8
7															7
6															6
5															5
4															4
3															3
2															2
1															1
COIL															COIL

- (ZC) 1H7
 - a (ZU) 2G8
 - (ZC) 1G7
 - b (ZU) 2G8
 - c (ZU) 2H4
 - d (ZU) 2A2
 - e (ZC) 2E0
 - (YG,ZU) 2B7
 - (ZC) 1G6
 - f (ZU) 2E8
- (F) 3C6
 - (G) 1G6
 - (F) 1G6
 - (G) 3B1

RELAY DESIG CODE	PTC		PTK		RP		RPA		SP		SP1		DESIG CODE
	AG49		AG38		AF42		AF9		AJ71		AF120		
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12													12
11													11
10			M	2F8									10
9			EBM	2A5									9
8													8
7			B	1E5									7
6			EMB	2B6	EMB	2H6							6
5			B	a									5
4			PM	2A7	EBM	a							4
3													3
2			EM	2G1	M	2F6							2
1			M	2F6									1
COIL				2F8									COIL

- (H) 2D6
- a (J) 2C6
- (H) 2D6
- a (J) 2C6
- (ZT) 2G8
- b (ZU) 2E7
- (H) 2H5
- a (J) 2C7
- (H) 2D6
- b (J) 2C6
- (F) 3C6
- a (G) 2G6
- (G) 3B1

RELAY DESIG CODE	TM		TM		TM1		TP		TPA		TR		TT		TT1		DESIG CODE
	AF50		AF57		AG6		AJ21		AF84		AF110		AJ5		AJ5		
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12																	12
11																	11
10			M	3C8													10
9			M	3C1	EBM	2A2											9
8																	8
7																	7
6																	6
5																	5
4			M	2H4	M	2H4	EBM	b									4
3																	3
2																	2
1																	1
COIL																	COIL

- a 2F0
- a 2F1
- (G) 3C2
- a 2F0
- (F) 3C6
- b (G) 3C1
- (ZC) 2H3
- (ZB,ZE) 2H3
- d (ZS) 2F2
- ID3
- (F) 3C8
- a (G) 3C2
- (H) 2D7
- a (J) 2C6

DRAWING
ISSUE
11B
12D
3D
4B
5AR

ISSUE
24B

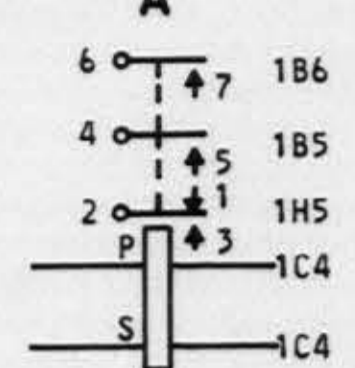
OUTGOING TRUNK CIRCUIT (2) SD-32245-01-C1
 BELL TELEPHONE LABORATORIES INCORPORATED 6S PRINTED IN U.S.A.

SD-32245-01-C1

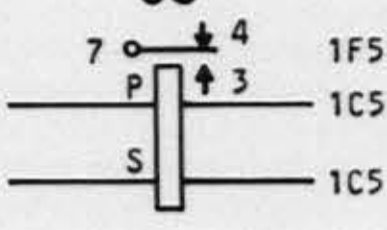
PART OF APP FIG. 1

A
B
C
D
E
F
G
H

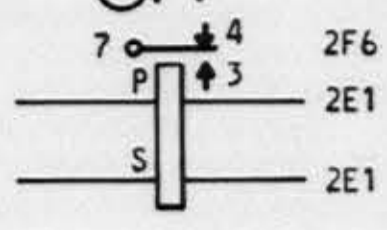
RELAY
221FAE



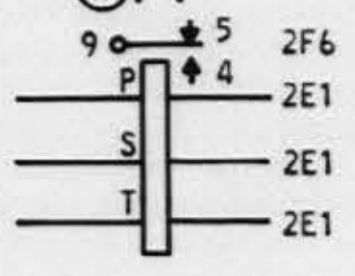
RELAY
280Y



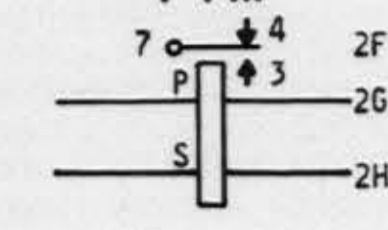
RELAY
280AP



RELAY
280FN



RELAY
280A



CAPACITOR

DESIG	LOC	CODE
(ZF) A	1C4	437A
(ZG, ZI) [1] A	1C4	574C
(ZF) B	1C4	437A
[2] C	2H7	437QA
(G) D	3C1	437A
(G) E	3C2	439A
(F) F	3C7	437QA
(ZG, ZI) G	1C7	439A
(H) [2] PT	2E2	542G

CIRCUIT PACK

DESIG	LOC	CODE
(F) TM	3B7	D3

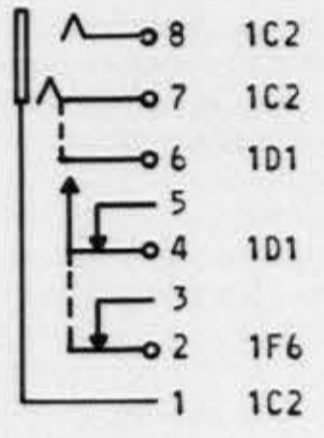
DIODE

DESIG	LOC	CODE
(ZC) A	2F0	446F
(ZC) B	1F6	446F
(ZC) C	2H2	446F
(ZK) D	1D3	446F
(YA) E	2G3	446F

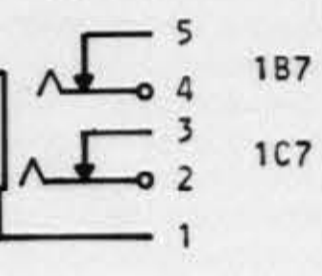
INDUCTOR

DESIG	LOC	CODE
(J) PT	2C7	307B

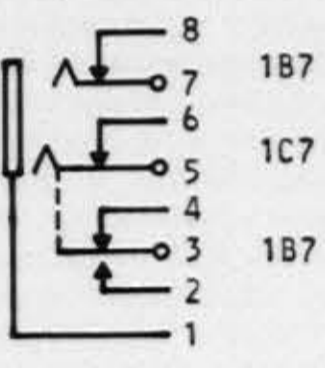
JACK
458C



JACK
239C



JACK
280C



LAMP

DESIG	LOC	CODE
A	2A3	13J (RES)
PT	2F4	11B (RES)

NETWORK

DESIG	LOC	CODE
(ZA) A	1H6	185A
(ZM) PTC	2F8	185A
(ZM) PTK	2F8	185A

RESISTOR

DESIG	LOC	CODE
(F) A	2A7	18CN
AA	3B6	221A, 1.72 MEG- KS-20810, L1A, 1.72 MEG
AB	3B6	445A, 2.58 MEG- 263A, 2.58 MEG
AC	3C7	18BH
AD	2D6	19RT
AE	2D7	19CL
AF	2D7	19WD
AG	2D8	18CR
AH	2H5	19GH
AI	1C7	221G, 909- KS-20810, LIA, 909
B	2E6	KS-13492, L3, 5100
BT	1D4	KS-13492, L1, 1300
C	1F7	18AD
CS1	1E5	18BH
D	2E1	18DA
E	2H8	18BR
E	2G8	18BR
F	3C1	KS-13492, L3, 1000
G	3B2	445A, 3.12 MEG- 263A, 3.12 MEG
H	3C1	221A, 0.626 MEG- KS-20810, LIA, 0.626 MEG
H	3C1	KS-16313, L4F, 1 MEG
J	3C2	KS-13492, L3, 2200
K	3B3	18DA
L	2H7	18G
M	1B4	19SR
MB	1E8	19AAD
MB	1E8	18DR
MB1	1D7	KS-13492, L2, 1000
N	1B4	18BG
P	1D6	18BG
PT	2E2	19AAT
PTKA	2E9	18AC
PTKA	2E9	KS-14603, L5BD, 499, 10 WATTS
PU	1H7	KS-8512, L4A, 1000
Q	1D6	19SR
S	2H5	19AAP
T	2F9	19ED
TM1	2E0	KS-8512, L4A, 715
U	1G4	18BT
V	2C7	18JU
W	2C7	18KB
X	2C7	19FJ
Y	2C7	18BT
Z	2C8	18FS

TRANSFORMERS

DESIG	LOC	CODE
(X) A	1B4	120C REP COIL
(W) A	1B4	120D REP COIL
(V) A	1B4	120CS REP COIL
(T) A	1B4	120DS REP COIL

TUBE, ELECTRON

DESIG	LOC	CODE
(G) TM	3B2	346C

VARIATOR

DESIG	LOC	CODE
(J) PT	2E5	20A

DRAWING ISSUE
11B
12D
13D
14B
15AR
17B
18B
19D
20B

ISSUE
2AB

OUTGOING TRUNK CIRCUIT 2 SD-32245-01-C2
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SD-32245-01-C2

CIRCUIT NOTES:

DESIG	FUSE AMP	POTENTIAL	ONE PER
	1-1/3	-48 TALK	APP FIG. 1
	1/2 HV	+130 SIG	FRAME
	1/2 HV	-COIN COUNT	FRAME
A		GRD	APP FIG. 1
B		GRD	FRAME*
BATTERY SYMBOL		VOLTAGE RANGE	
	-48	45-52V	
	+130	125-135V	
	-110	116-120 COIN CONTROL 100-120 COIN CONTROL	

* SEE NOTE 203

FEATURE OR OPTION	PROVIDE		
	APP FIG.	APP OR WRG	QUANTITY
TRUNK CKT (SEE NOTE 107)	1	*Z, Y, X	
OPEN WIRE OR LESS THAN 8 MILES OF CABLE			
8-14 MILES OF CABLE	1	*XZ	
14-32 MILES OF CABLE	1		
LAST TRUNK BUSY REGISTER		S	ONE LEAD PER LAST SEL MULT TRK (SEE NOTE 302)
TRUNK ARRANGED FOR ANI TYPE B		M	
ANI TYPE C		K	
REQUIRED		G, ZQ	
TEMPORARILY NOT REQUIRED (SEE NOTE 304)		G, ZN, ZO	
TRUNK PROVIDED WITH -48V TIMER (SEE NOTE 111)		F, ZQ, ZP	
REQUIRED		F, ZN	
TEMPORARILY NOT REQUIRED (SEE NOTE 304)			
WHERE TIMED DISCONNECT ON PARTIAL DIAL CALLS IS		ZE, ZC, ZD, ZT, ZF, ZY, ZG	
NOT REQUIRED			
FURNISHED IN THIS CIRCUIT			
IN 355A OFF. OR IN 35E97 OFF.			
IN NO. 1 OFF. OR IN 350A OFF.			
FURNISHED BY CSBR TANDEM OFFICE E/W IO DIGIT REGISTERS OR TSPS NO 1 OR NO 4 ESS		ZE, ZU, YG	

* NON-RECORD OPTION

NETWORK VALUES		
NETWORK NO.	RESISTANCE IN OHMS	CAPACITANCE IN UF
1	470	0.11

CIRCUIT NOTES: (CONT)

CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT		
				STD	A&M	MD
6B	N OR Q	Q		N	Q	
7AR			107		R	
9D	K OR M	M		K OR M		
9D	H OR J	J	110	H		J
9D	F OR G	G	110, 111	F OR G		
9D	B OR E	E	107	B OR E		
9D	A	R OR S	109	A OR S	R	
9D	-COIN CONT FUSE					1/2 AMP HV
11B	ZA	NONE		ZA		
12D	ZB OR ZC, ZE	ZB	102, 109	ZC, ZE		ZB
12D	ZD	NONE		ZD		
12D						T, V
12D	ZF OR ZG			ZG		ZF
12D			109	A		
13D	ZH OR ZI	ZI	110, 111, 112	ZH		ZI
14B	ZK	ZJ		ZK		ZJ
17B	ZL	ZG		ZL		ZG
18B	ZM	NONE		ZM		
18B	ZQ, ZN, ZO, ZP	E OR B		ZQ, ZN, ZO, ZP		E, B
18B	RESISTOR		221			145
20B	ZR	NONE		ZR		
22B	ZS	NONE		ZS		
	ZU OR ZT	ZT	102	ZU, ZT		

CONT ON THIS SHEET

105. PROVIDE (A) TRANSFORMER IN ACCORDANCE WITH FOLLOWING TABLE:

TRUNK IMPEDANCE AT 1000~*	CODE	OPTION		IMPEDANCE RATIO 2-1, 6-5 TO 4-3, 8-7	WDG RESISTANCE	
		APP	WRG		2-1 OR 6-5	4-3 OR 8-7
UP TO 1100 OHMS	120C	X		1:1	7.8	5.5
	120CS	V			20	20
1100 OHMS OR GREATER	120D	W		1.5:1	12.7	5.5
	120DS	T			30	20

* FOR IMPEDANCE DATA, SEE MASTER KEY SHEET

106. USE T OR V OPTIONS ONLY WHEN REQD BY GOVERNMENT MATERIAL RESTRICTIONS ON W AND X OPTIONS. (MFR DISC)

107. OFFICE RECORDS NEED NOT BE MAINTAINED FOR Z, Y, E, B AND "A" OPTIONS. (MFR DISC)

108. WHEN OPTION F IS PROVIDED, OPTION H MUST ALSO BE PROVIDED. (MFR DISC)

FEATURE OR OPTION	PROVIDE		
	APP FIG.	APP OR WRG	QUANTITY
FOR OPERATION IN 35E97 TYPE OFFICE ARRANGED WITH NON-BATTERY SEARCHING SELECTORS		A	
FOR OPERATION WITH TRAFFIC USAGE RECORDER		R	

CIRCUIT NOTES: (CONT)

- 110. OPTION H PROVIDES A 48 VOLT PARTY TEST AND A FEATURE WHICH GUARDS AGAINST TALK OFF WHEN E & M TO LOOP CONVERTERS ARE USED WITH THIS CKT. OPTION ZH ONLY PROVIDES A GUARD AGAINST TALK OFF.
- 111. WHEN OPTION F IS PROVIDED, OPTION H OR ZH MUST ALSO BE PROVIDED.
- 112. PRIOR TO ISSUE 13D, OPTION ZI WAS PART OF OPTION J.
- 113. PRIOR TO ISSUE 18B, OFFICE RECORDS WERE NOT MAINTAINED FOR OPTIONS R AND A.
- 114. PRIOR TO ISSUE 23B, YB OPTION WAS PART OF ZU OPTION.

EQUIPMENT NOTES:

- 201. IN ANI TYPE B OFFICES THE OSC(0), OSC(1), S AND G LEADS OF ALL TRUNKS SERVED BY THE SAME OSCILLATORS SHALL BE MULTIPLIED. A PAIR OF OSCILLATORS MAY SERVE TRUNKS IN A MAX OF 3 ADJACENT TRUNK FRAMES IN THE SAME IDENTIFIER GROUP. THESE MULTIPLE LEADS SHALL RUN FROM THE OSCILLATOR UNIT TO TRUNK ADJACENT TO THE OSCILLATOR UNITS AND THE S & G LEADS SHALL BE PAIRED. THE INTERFRAME MULTIPLYING OF THE S & G LEADS SHALL BE RUN HORIZONTALLY DIRECTLY BETWEEN FRAMES AT THE LEVEL OF THE BOTTOM TRUNK UNITS ON THE FRAME TO AVOID ELECTRICAL INTERFERENCE BETWEEN THESE PAIRED LEADS AND OTHER CIRCUITS.
- 202. THE TRUNK CONNECTOR (TP-) RELAYS OF THE OUTPULSER CONNECTOR CKT ARE LOCATED ON THE TRUNK FRAME AS PART OF A TRUNK CONNECTOR UNIT PER FRAME. THE LEADS FROM EACH TRUNK ARE INCLUDED IN THE FRAME LOCAL CABLE AND CONNECT DIRECTLY TO THE TERMINALS OF THE ASSOCIATED (TP) RELAY.
- 203. AS SHOWN IN CAD 8, B GROUND FOR SUPPLYING GROUND TO THE G LEADS TO THE OSCILLATORS IS OBTAINED FROM THE FRAME FUSE PANEL ON EACH ANI TYPE B TRK FRAME. THE MULTIPLYING OF S AND G LEADS BETWEEN TRUNKS IS COVERED BY NOTE 201.

104 (CONT) RECORD OF APP 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
23B	ZV OR ZW	ZV		ZW		ZV
	ZZ OR YA	ZZ		YA		ZZ
	YB OR YC	YB	114	YC		YB
24B	YF OR YG	YF	102	YF, YG		
	YD OR YE	YD	102	YE		YD

TRANSMISSION TEST REQUIREMENT (1000 CYCLE LOSS BETWEEN 600 OHMS LINES)

OPTION	MAX ALLOWABLE CKT LOSS (dB)	
	MAX LOSS	MIN LOSS
X	0.4	
W	0.7	
Y	1.1	
Z	1.3	

ALLOWABLE INDIVIDUAL APPARATUS LOSSES (dB)					
APPARATUS	DESIG	CODE	MAX LOSS	MIN LOSS	REMARKS
CAPACITOR	A, B	4UF	19.6	17.5	
TRANSFORMER	A	120C RC	0.4	0.2	X OPTION
TRANSFORMER	A	120D RC	0.7	0.4	W OPTION
TRANSFORMER	A	120CS RC	1.1	0.5	V OPTION
TRANSFORMER	A	120DS RC	1.3	0.8	T OPTION

* INDICATES APPARATUS FOR WHICH INDIVIDUAL LOSSES ARE NOT REQUIRED.

DRAWING ISSUE
11B Ad
12D Ad
13D WJ
14B WJ
16B
17B
18B
19D
20B

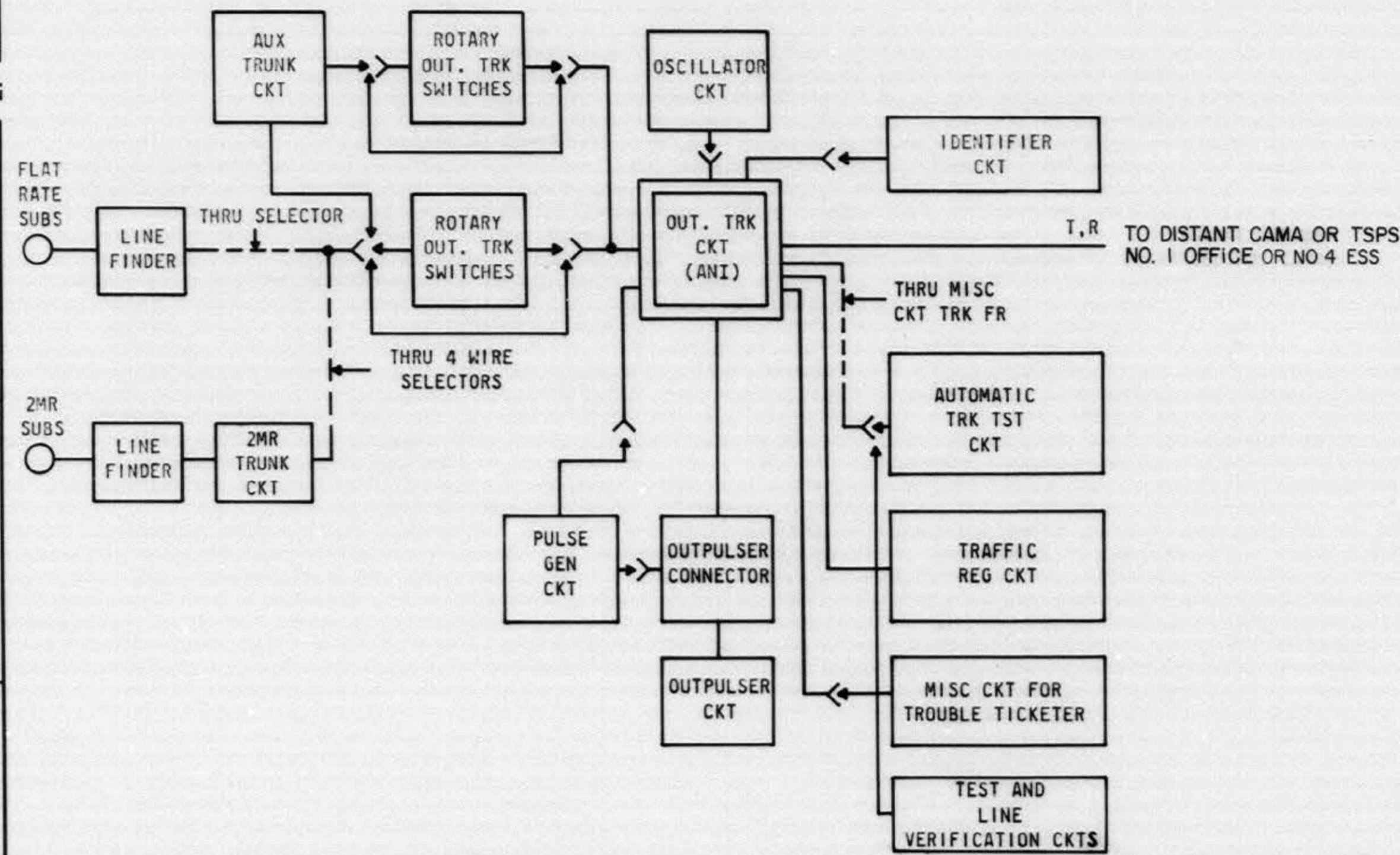
ISSUE
25B

OUTGOING TRUNK CIRCUIT ② SD-32245-01-D1
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SD-32245-01-D1

INFORMATION NOTES:
301.

BLOCK DIAGRAM



302. WHEN ROTARY OUT TRUNK SWITCHES ARE USED THE LAST TRUNK BUSY INDICATION WILL BE OBTAINED FROM THOSE SWITCHES.

303. THIS TRUNK MAY BE USED FOR OPERATOR IDENTIFIED TRAFFIC ON A TEMPORARY BASIS BY BLOCKING OPERATED THE (SP) RELAY.

304. PRIOR TO ISS 9D TEMPORARY NON-ANI WAS ACHIEVED BY BLOCKING (SP) OPERATED AS DESCRIBED IN NOTE 303.

305. UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS,
CAPACITANCE VALUES ARE IN MICROFARADS,
VALUES PRECEDED BY THE SYMBOL + (PLUS)
OR - (MINUS) ARE IN VOLTS.

306. TO MEASURE AC POTENTIAL, DISCONNECT THE TIP AND RING CONDUCTORS AT THE MDF AND CONNECT THEM TOGETHER TO A 15,000 OHM NON-INDUCTIVE RESISTANCE TO GROUND. THE AC VOLTAGE IS THEN MEASURED ACROSS THE 15,000 OHM RESISTOR WITH A HIGH RESISTANCE VOLTMETER.

307. PRIOR TO ISSUE 18B, 221 TYPE RESISTORS, BETWEEN 1 OHM AND 2.1 MEGOHM, WERE DESIGNATED AS 145 TYPE RESISTORS.

WORKING LIMITS

	PULSING		SUPERVISION	
	(A) REL	(A) REL	(A) REL	(CS) REL
MAX EXT CKT LOOP	1500Ω	2375Ω	7500Ω	
MIN INS RES	15,000Ω	15,000Ω	30,000Ω	
	(PT) REL			
MAX EXT CKT LOOP	1500Ω			
MIN INS RES	15,000Ω			
MAX RES TO GRD AT TIP PARTY OF 2 PARTY FR LINE	4004Ω			

PARTY TEST OPERATED FROM	EARTH POTENTIAL		
	DC	25-AC	60-AC
100-120V - CC SUPPLY	-11 +20	7V	10V
116-120V - CC SUPPLY	-16 +20	10V	14.5V
-45 TO -52 SUPPLY	-5 +5		20V*

* SEE NOTE 306

DRAWING ISSUE	
11B	DEP
12B	ADM
13D	W/E JS
14B	W/E JS
15B	SUM
16B	W/E JS
17B	W/E JS
18B	W/E JS

SD-32245-01-02

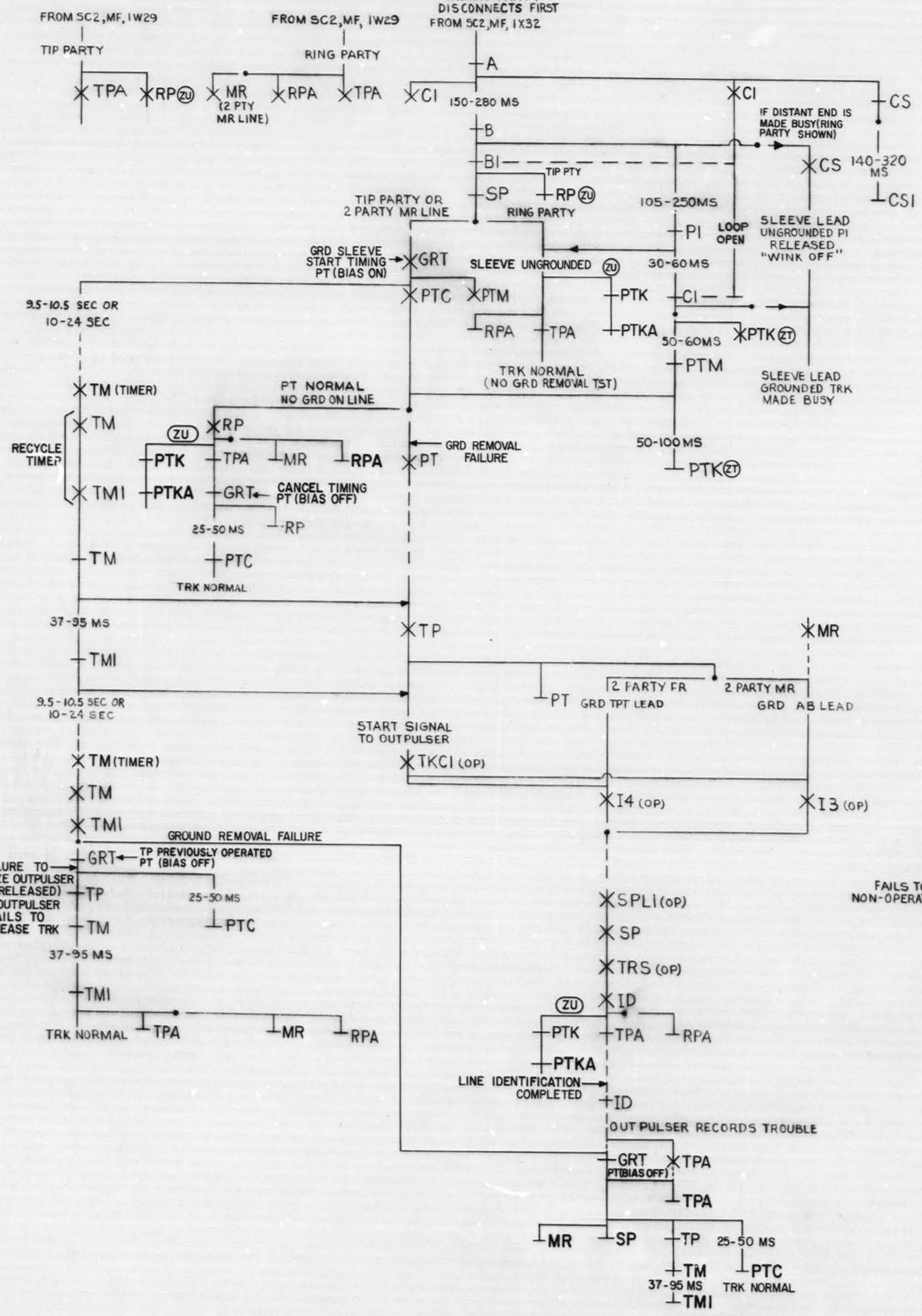
OUTGOING TRUNK CIRCUIT (2) SD-32245-01-D2

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DRAWING ISSUE	
1	JED
2D	JL
6B	LLB
	RD
	KEE
TAR	CRE
	E.A.
9D	JTF
	GM
10A	JB
	GM
11B	AD
	GH

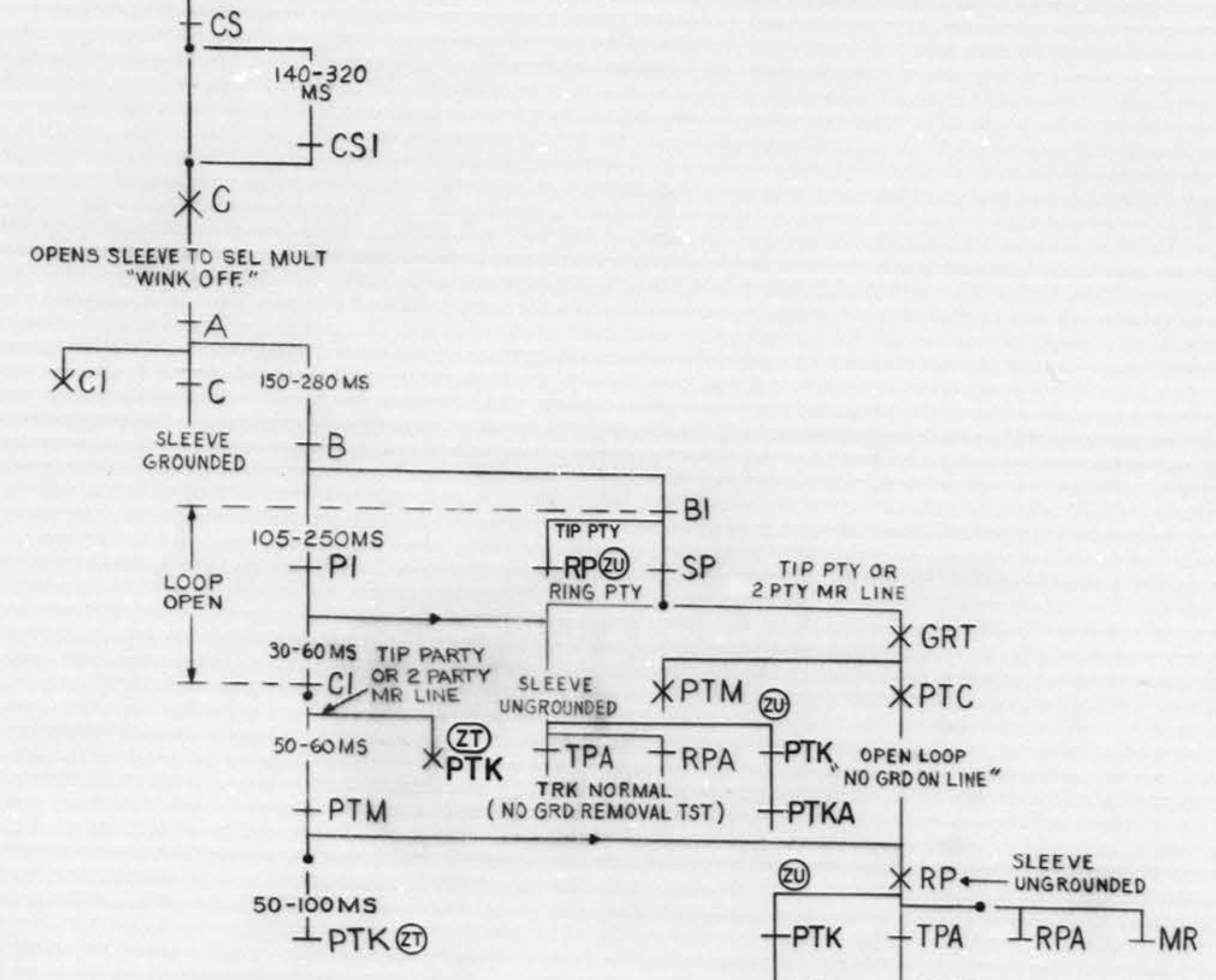
SC 3

GROUND REMOVAL TEST
CALLING PARTY
DISCONNECTS FIRST
FROM SC2,MF,1X32



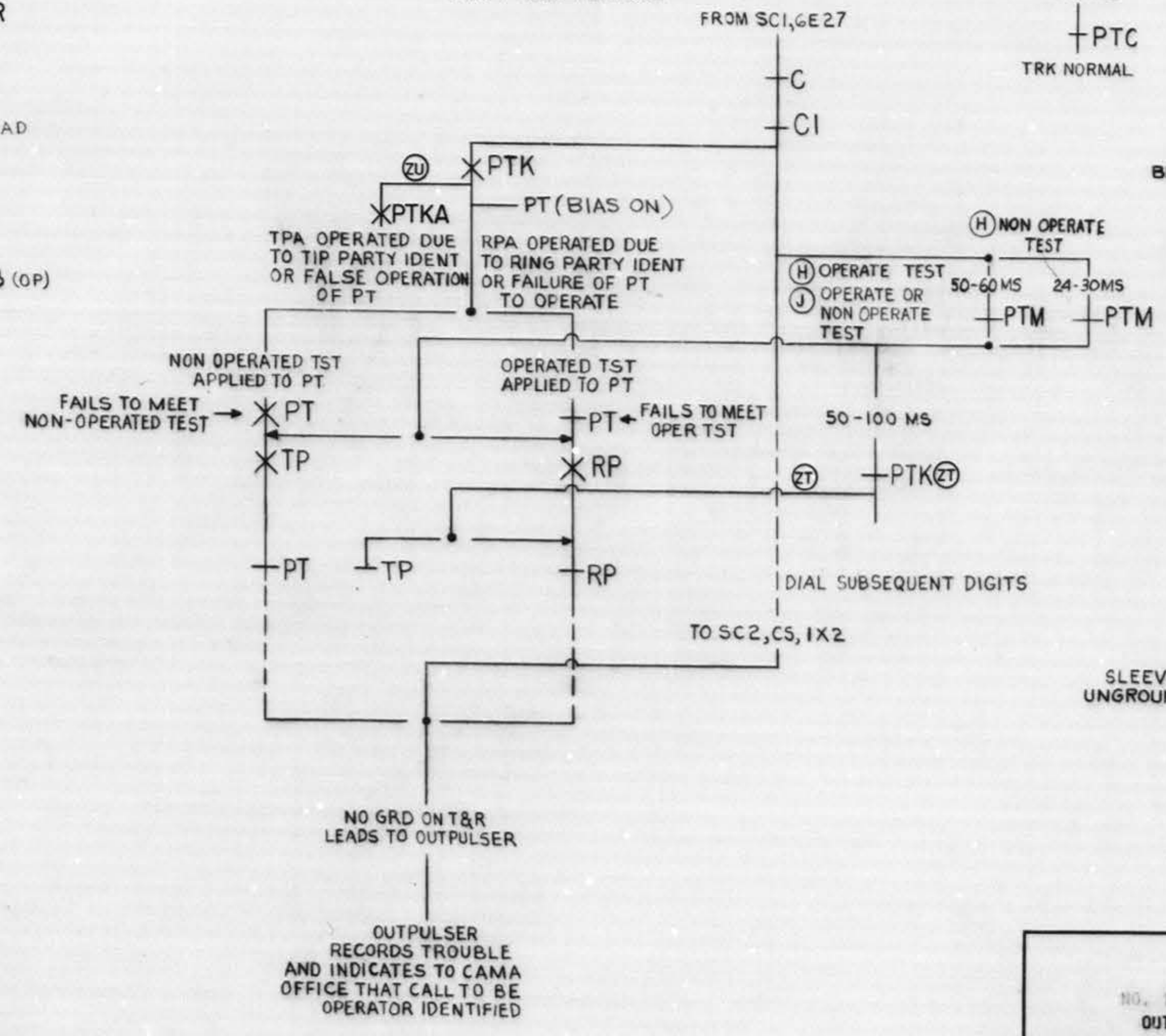
SC 4

CALLED PARTY DISCONNECTS
FIRST TIMED DISCONNECT
REVERSAL FROM DISTANT OFFICE



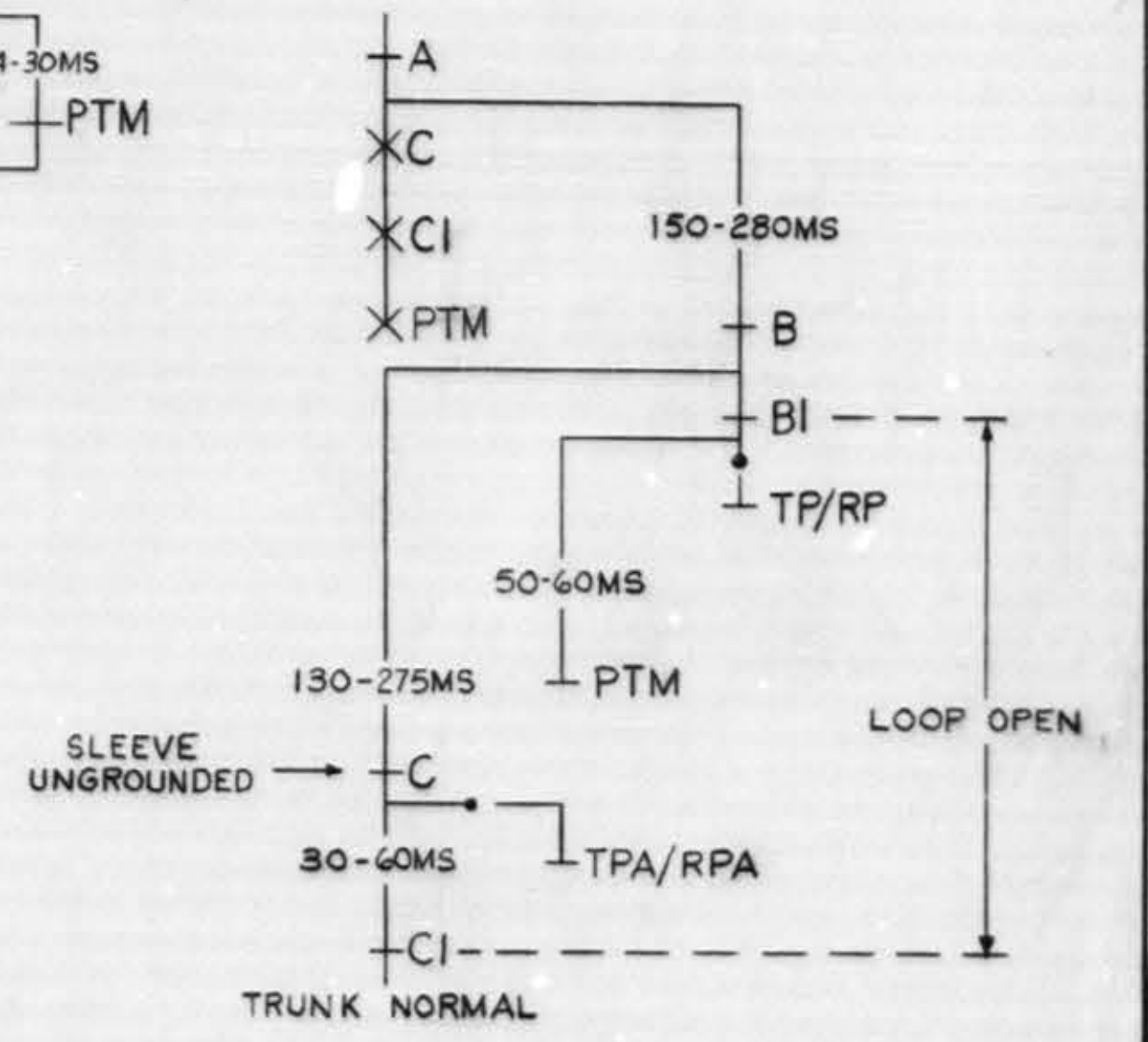
SC 5

FAILURE ON CHECK OF
PARTY TEST FEATURE



SC 6

ABANDON CALL
BEFORE END OF DIALING



NO. 1, 3504, 3554 OR 35E97
OUTGOING TRUNK CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

SD-32245-01-E2

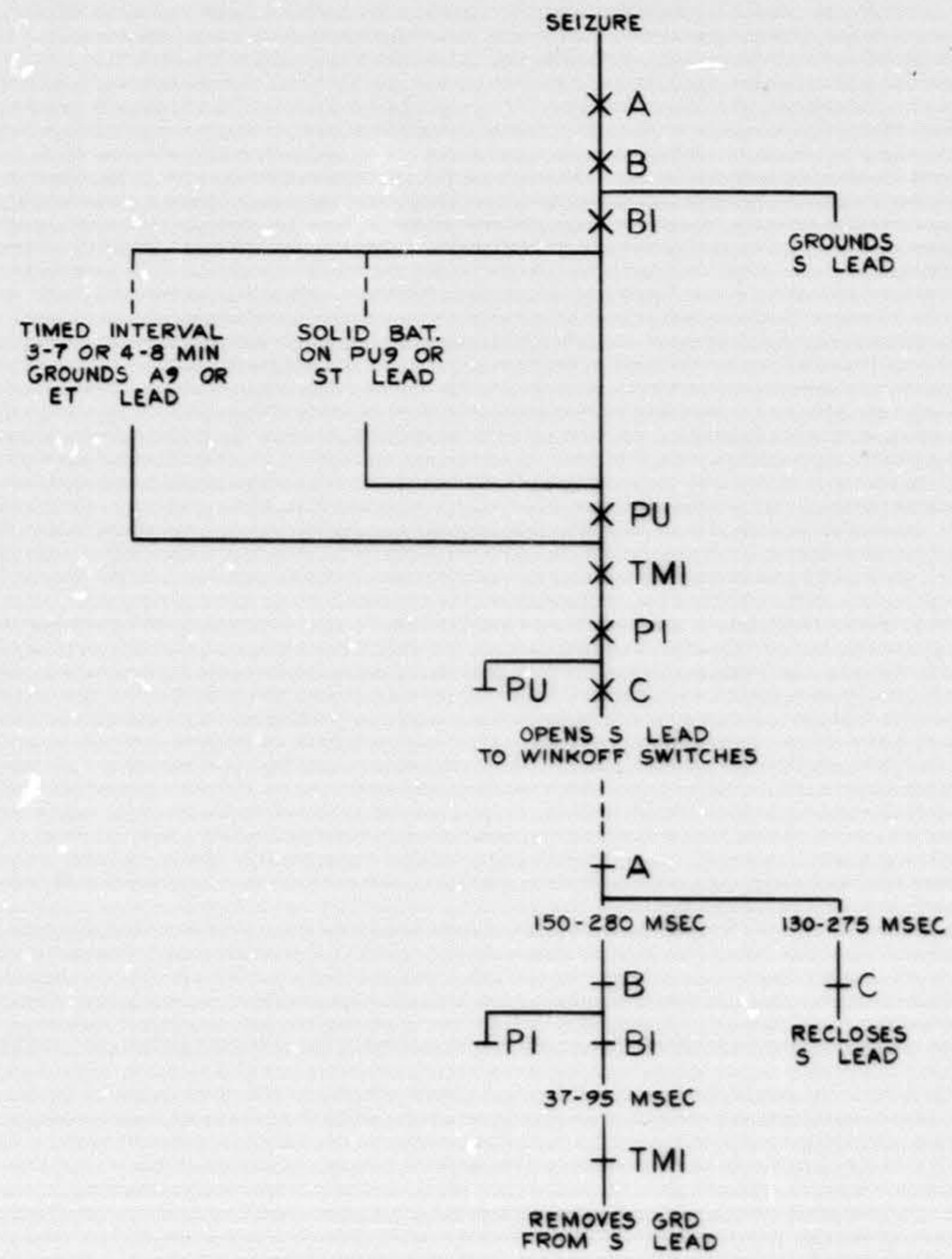
ISSUE 22B

A B C D E F G H J K L M N P Q R S T U V W X Y Z AA AB AC AD AE

DRAWING
ISSUE
12D
67
68

SC 7

TIMED DISCONNECT ON
PARTIAL DIAL CALLS



SD-32245-01-E3

12

STEP BY STEP SYSTEMS		②	SD-32245-01-E3
NO. 1, 350A, 355A OR 35E97 OUTGOING TRUNK CIRCUIT			
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A B C D E F G H J K L M N P Q R S T U V W X Y Z AA AB AC AD AE

CIRCUIT REQUIREMENTS

APPARATUS				MECH REQ			CIRCUIT PREPARATION				DIRECT CURRENT FLOW REQ					REMARKS			
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	
									CONN BAT.	CONN GRD									
RELAYS																			
A	221FAE		I	7-11	728		B	(B)NO (B)NO	(T)JK T (T)JK R	(T)JK R (T)JK R	M	1,2,3,7 1/3	S/T S/T	0 NO	FS FS	15.1 13.6	14.8 13.9		
B	AG36		I		296B				U(B) U(B) U(B)		GRD GRD GRD	4 4 4		0 H R	FS FS FS	15.5 2.5 1.5	14.7 2.3 1.8		
BI	AJ39		I		220				U(BI)		GRD	6		0		18.5	17.5		
C	AG37		I		297B				IU(C) IU(C) IU(C) (C1)NO	2L(C) 2L(C) 2L(C)	GRD GRD GRD B/G			P P P S	0 H R 0	FS FS FS 0	48.5 6.3 3.9 60.5	46 5.9 4.6	
CI	AG38		I		213B				IU(C1) IU(C1) IU(C1) 9(B)	2L(C1) 2L(C1) 2L(C1)	GRD GRD GRD B/G			P P P S	0 H R 0	FS FS FS 0	49.5 8.4 5.2 61.5	47 7.9 6	
CS	280Y		I		B			(A)O, (PI)NO (A)O, (PI)NO (A)O, (PI)NO (A)O, (PI)NO	(TT)JK T (TT)JK T (TT)JK T (TT)JK T	(TT)JK R (TT)JK R (TT)JK R (TT)JK R	B/G B/G B/G B/G			P P P S	0 NO -45 R 45	-45 -45 -45 45	1.1 0.8 4.5 1.2 0.9		
CSI	AG12	H,ZH	I		38B			10(MB) 10(MB) 10(MB)		U(CSI) U(CSI) U(CSI)	GRD GRD GRD			0 H R	FS FS FS	6.8 0.9 0.4	6.4 0.8 0.6		
GRT	AJ514		I		227			(SP)O, (MB)NO (PTC)NO		IU(GRT) 2L(GRT)	GRD BAT			P S	0 0	27 28	25.5		
ID	AF23		I		206				U(ID)		GRD			0		73	69.5		
MB	AF10	ZB	I		214			6(MB)	L(MB)		BAT			0		8	7.2		
MB	1/2AK45	ZC,ZE	I		204				2U(MB)		BAT	5		0		11	10.4	MTD WITH (PU) OR (PTKA)	
MF	AJ9		I		234				U(MF)		GRD			0		40	38		
MR	AF512		I		207			6B(B)	U(MR)		GRD			0		27	25		
PI	AG48		I		230B			SP(O) SP(O) SP(O)	U(P1) U(P1) U(P1)		GRD GRD GRD			0 M R	FS FS FS	10.8 2 1	10.2 1.9 1.2		
PT	280FN	M	I		B			(MB)NO (MB)NO (MB)NO (MB)NO (MB)NO (MB)NO	12(MB) 12(MB) 12(MB) 12(MB) 4 OR 11 (MB) 5(GRT)	4(TP) 4(TP) 4(TP) 4(TP) 12(MB) 12(MB)	B/G B/G B/G B/G B/G B/G			P P P P S T	0 NO -12 R 12 0 0	-12 -12 -12 12 1.2 3.9	0.3 0.2 1.1 0.3 1.2 3.9		
PT	280AP	J	I		B			(MB)NO (MB)NO (MB)NO (MB)NO (MB)NO	5(GRT) 5(GRT) 5(GRT) 5(GRT) 12(MB)	PCHG A38 PCHG A38 PCHG A38 PCHG A38 4(TP)	B/G B/G B/G B/G B/G			P P P P S	0 NO -65 R 65 0	-65 -65 -65 65 1.4	1.5 1.1 5.8 0.3 1.4		
PTC	AG49		I		416B				IU(PTC) IU(PTC) IU(PTC) 7(RPA)	2L(PTC) 2L(PTC) 2L(PTC)	GRD GRD GRD B/G			P P P S	0 H R 0	FS FS FS 0	59 8.4 5.9 74	56 8 6.6	
PTK	AG38		I		213B				IU(PTK) IU(PTK) IU(PTK) 12(PTK)	2L(PTK) 2L(PTK) 2L(PTK)	GRD GRD GRD B/G			P P P S	0 H R 0	FS FS FS 0	49.5 8.4 5.2 64.5	47 7.9 6	
PTKA	1/2AK45	ZU	I		204			5(PTKA)	1L(PTKA)		GRD			0 NO H		50.5 30.5 19	48 32.5 18	MOUNTED WITH (MB)	

CIRCUIT REQUIREMENTS

APPARATUS				MECH REQ			CIRCUIT PREPARATION				DIRECT CURRENT FLOW REQ					REMARKS		
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	
								CONN BAT.	CONN GRD									
PTM	280A	G	I		A		(SP)O, (MB)NO (SP)O, (MB)NO (SP)O	10(TPA) 10(TPA) PCHG A18	2 OR 8(MB) 2 OR 8(MB)	B/G B/G BAT	8,11 8,11		P NO S	0 NO 0	-65 -65 0	3 0C 0.5	1.5 1.1	CONN GRD DIR TO PCHG A28
PTM	280A	F	I		A		(MB)NO 6B(PTK) (MB)NO 6B(PTK)	10(TPA) 10(TPA) 10(TPA) PCHG A18	2 OR 8(MB) 2 OR 8(MB)	B/G B/G B/G BAT	8,11 8,11		P NO P S	0 NO NO 0	-65 -65 -65 0	3 0C 0C 0.5	1.5 1.1	CONN GRD DIR TO PCHG A28
PU	1/2AK45	ZC	I		204		4B(PU) (B)O	2L(PU) 2L(PU) 2L(PU)		BAT BAT BAT	9 9 9		0 NO H		50.5 30.5 19	48 32.5 18	MOUNTED WITH (MB) MOUNTED WITH (MB) MOUNTED WITH (MB)	
RP	AF42		I		224		(SP)O		U(RP)	GRD				0		95	90	
RPA	AF9		I		213				U(RPA)	GRD				0		8.7	8.2	
SP	AJ71		I		290		12(SP) 12(SP) 12(SP)		IU(SP) IU(SP) IU(SP)	GRD GRD GRD			P P S	0 NO 0	23.5 11.4 13.9	21 12		
SPI	AF120		I		406			L(SPI)	U(SPI)	B/G				0		20.5	19.5	
TM	AF50	F	I		18		(TM)O		U(TM)	GRD	7			0		23.5	22	
TM	AF57	G	I		210		(TM)O		U(TM)	GRD	8			0		27	22.5	
TMI	AG6		I		239B				U(TMI) U(TMI) U(TMI)	GRD GRD GRD				0 M R	FS FS FS	9.3 1.6 0.8	8.8 1.5 1	
TP	AJ21		I		259		(SP)O		U(TP)	GRD				0		100	95	
TPA	AF84		I		236				U(TPA)	GRD				0		8.7	8.2	
TR	AF110	M	I		272		6(TR)	L(TR)		BAT				0		17.5	15.5	
TT	AJ5		I		220			L(TT)		BAT				0		13.3	12.6	
TT1	AJ5		I		220				U(TT1)	GRD				0		13.3	12.6	

- TEST NOTES:
- CONTACT SEP: MIN 3 CONTACT FOLLOW 2-3, 4-5 & 6-7: MIN 8 TEST & READJUST: CONTACT 2-3 & 4-5 SHALL MAKE BEFORE 6-7.
 - ARM, NEED NOT TOUCH CORE.
 - INSERT PLUG IN (TT) JACK.
 - ARM, BACK TENSION: MAX 60 GMS, READJUST; 65 GMS TEST.
 - REMOVE ASSOCIATED FUSE.
 - WHEN F OPTION IS PROVIDED INSULATE 5(P1) REL; WHEN G OPTION IS PROVIDED INSULATE 8B(P1) REL.
 - PULSE REPEATING REQUIREMENTS A1.
 - SEE TIMING REQUIREMENTS.
 - REMOVE TIMING AMPLIFIER CARD FROM SOCKET THEN APPLY DIRECT BATTERY TO L(TM).
 - REMOVE ASSOCIATED FUSE.
 - CONN GRD TO 2(MB) WITH OPT ZB AND 8(MB) WITH OPTS ZC OR ZB.

OUTGOING TRUNK CIRCUIT

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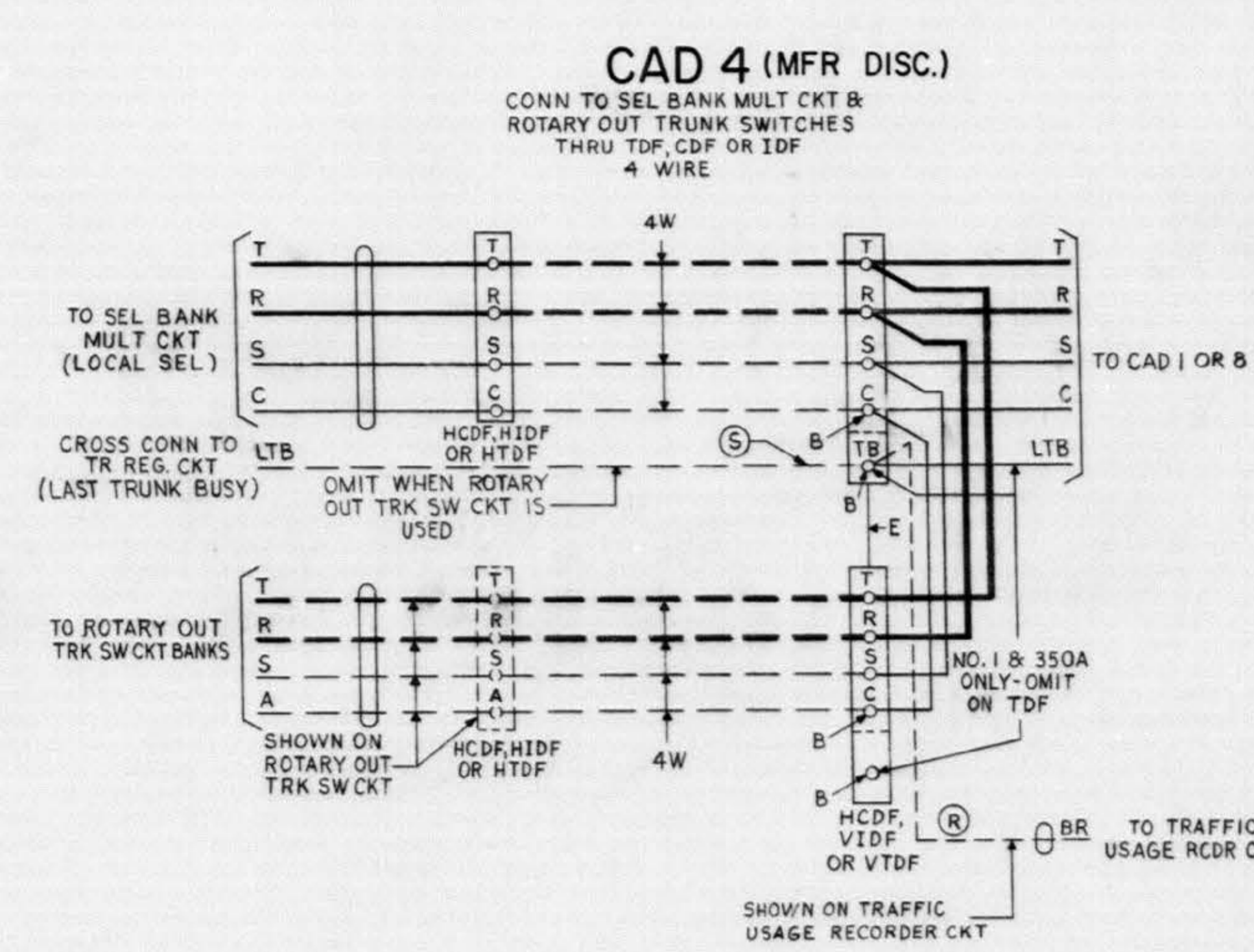
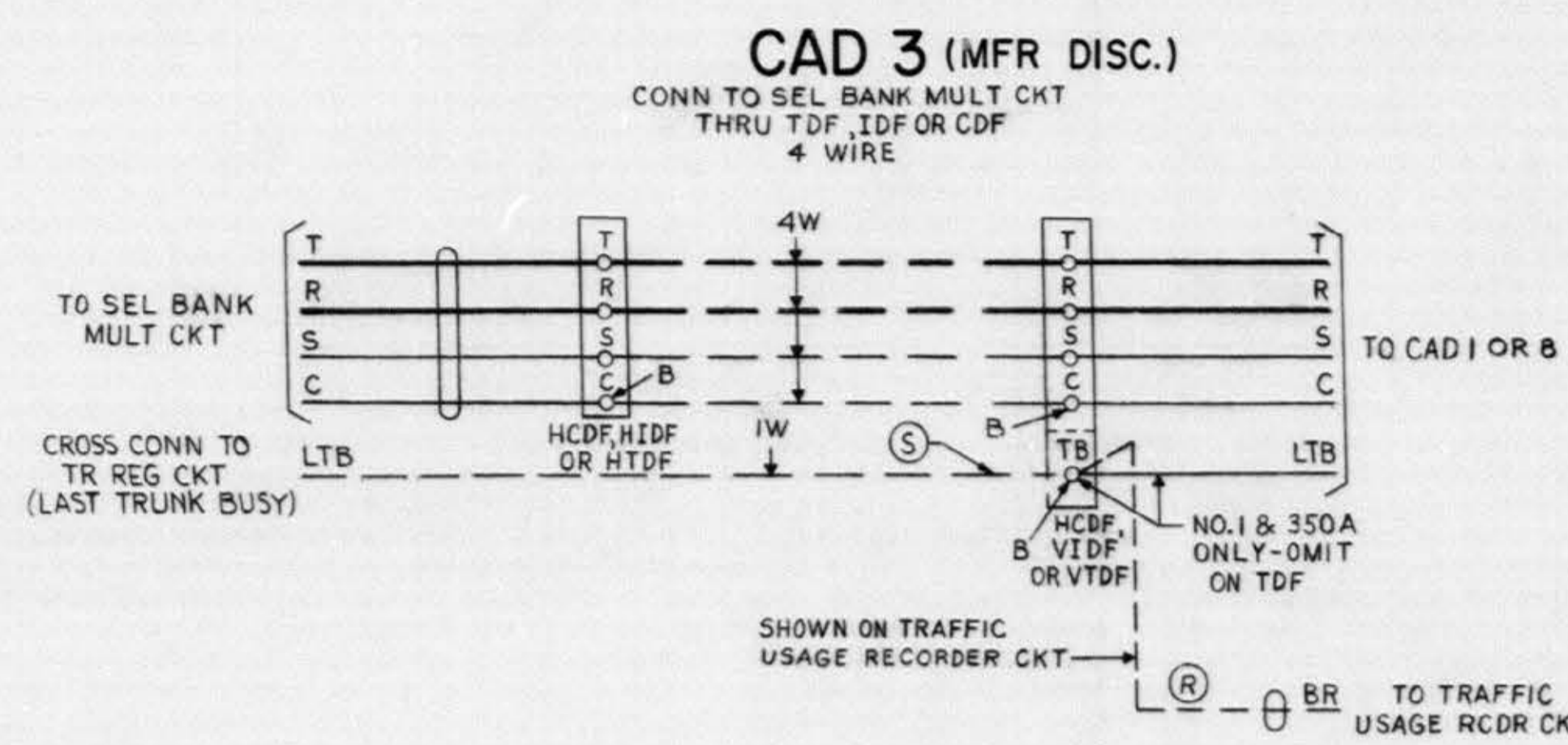
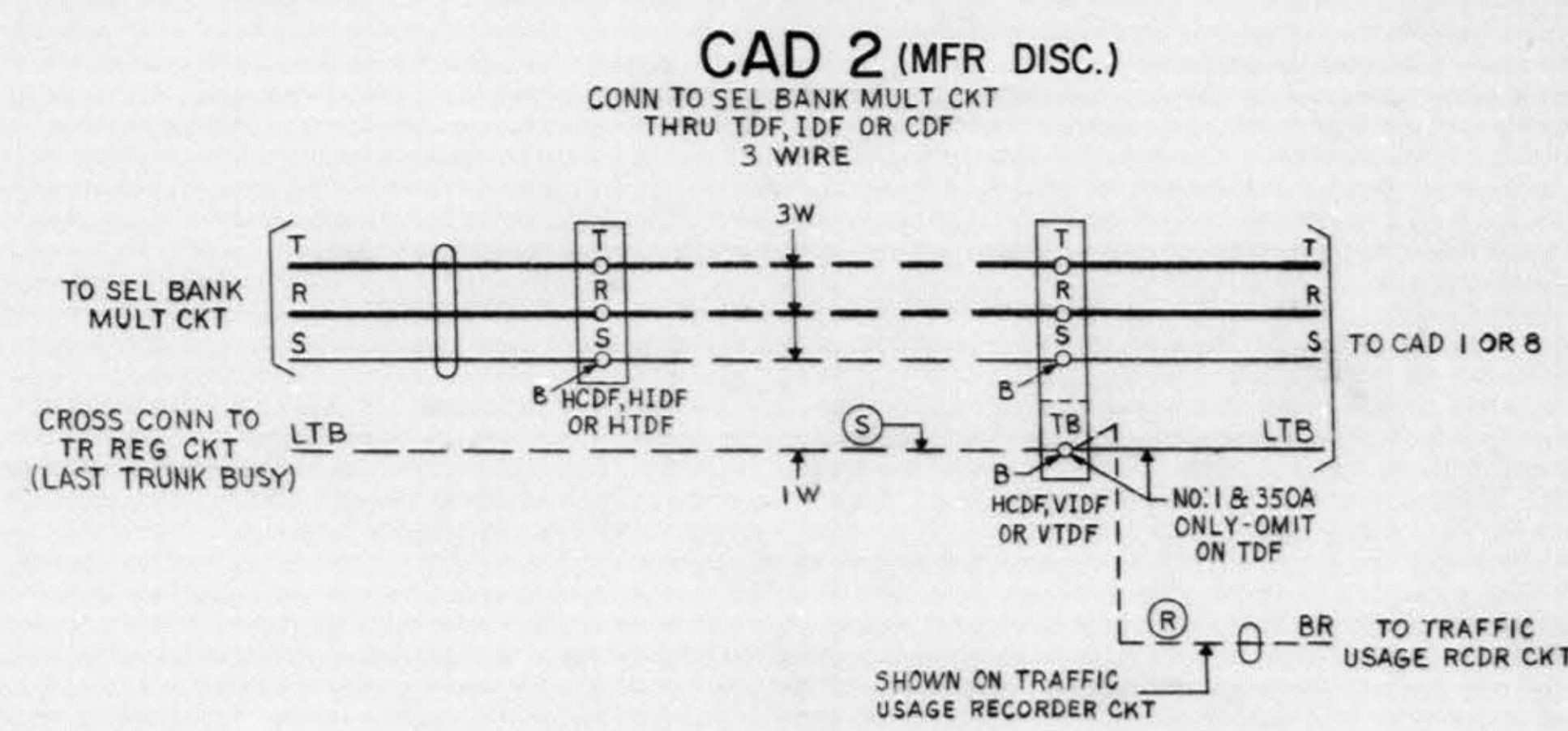
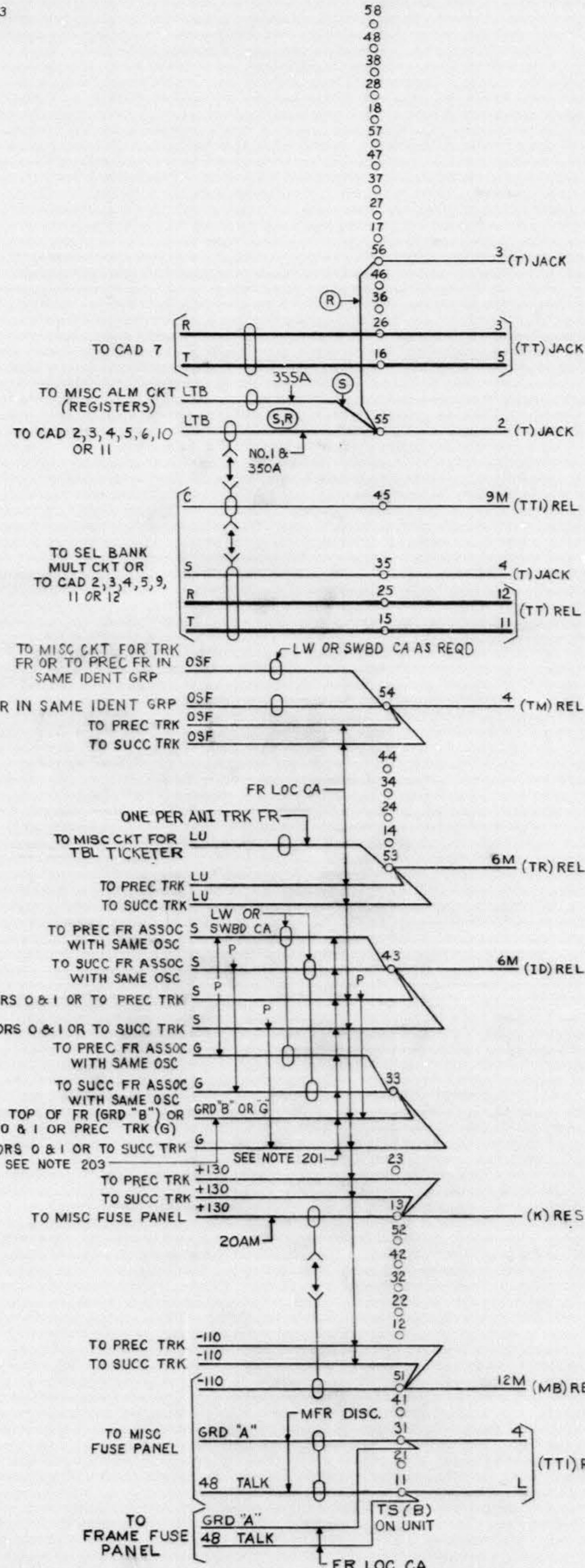
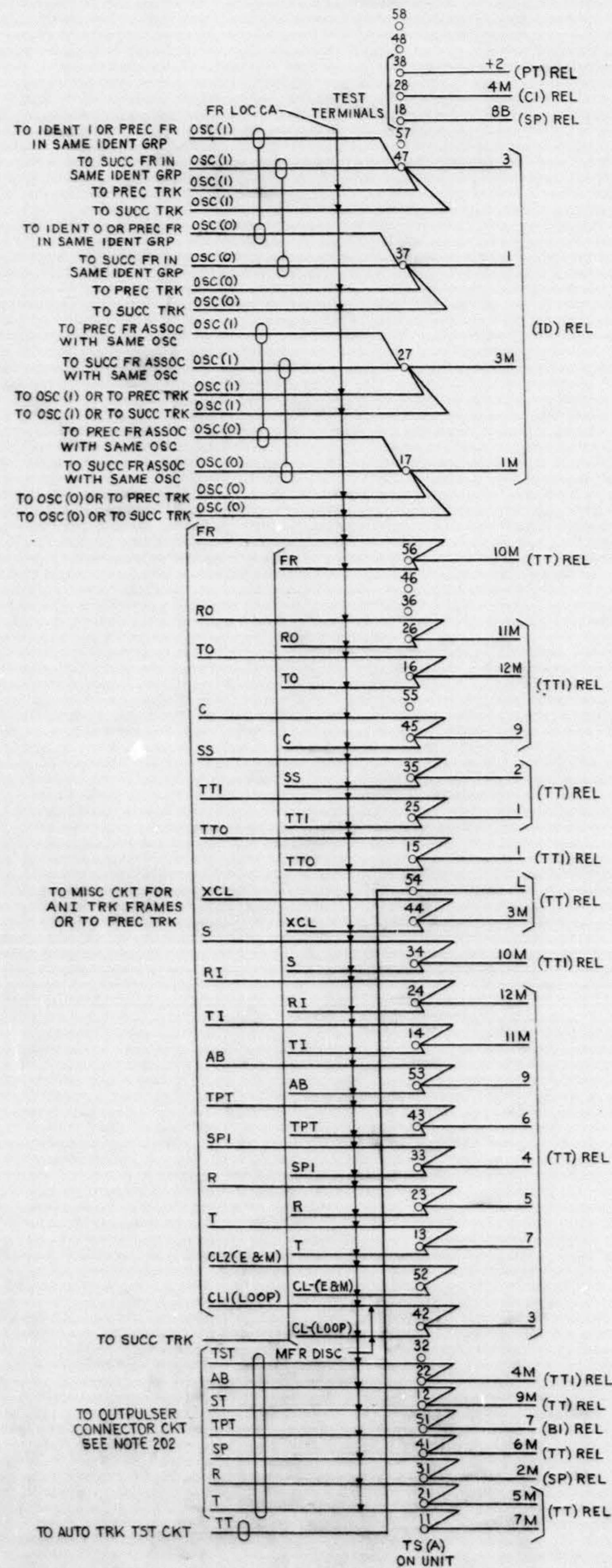
6S

SD-32245-01-F1

26B

SD

CAD 1 (MFR DISC)
 (FOR APP FIG. 1)
 TRUNK UNIT
 SEE NOTES 201 & 203



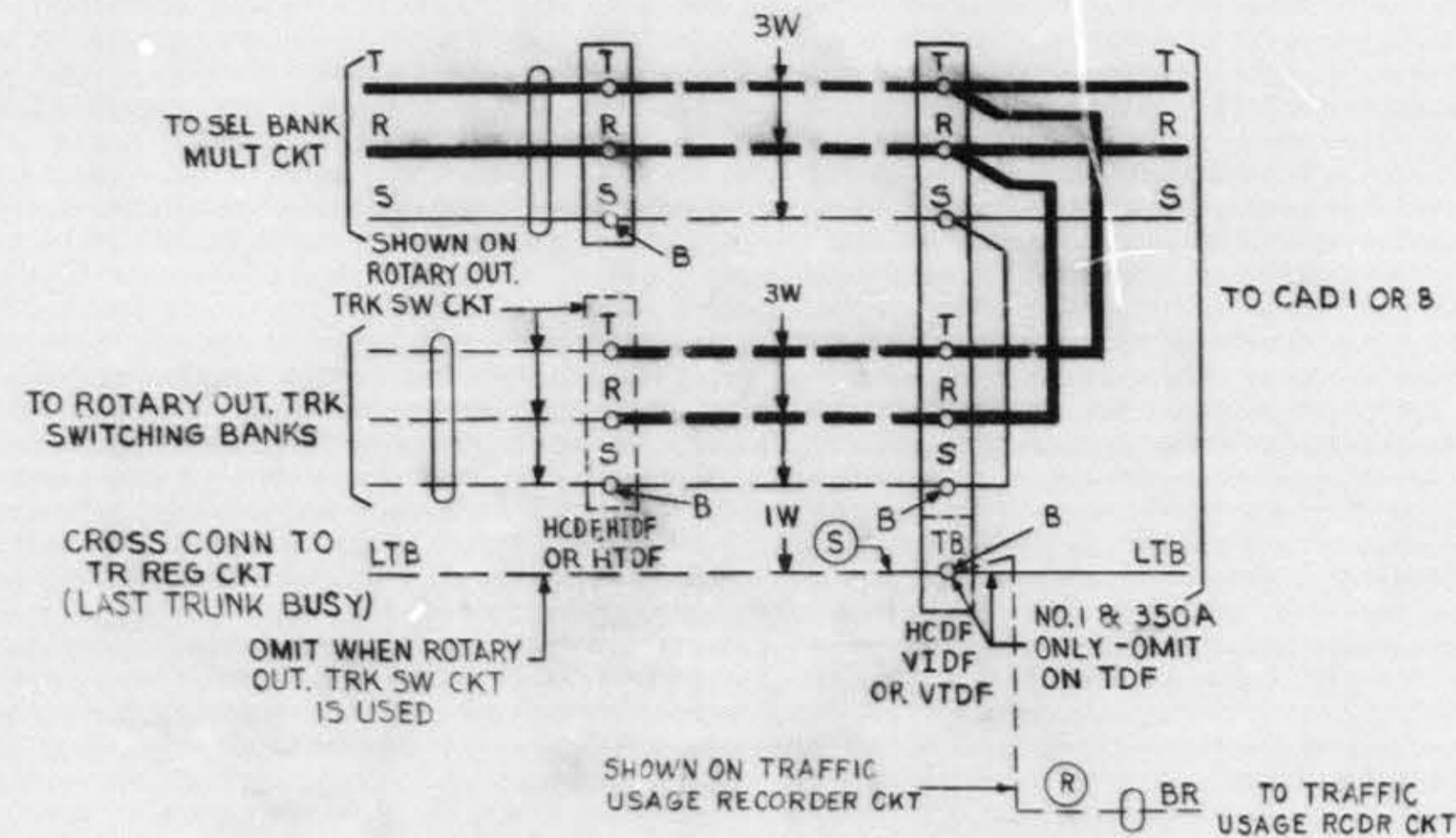
SD-32245-01-G1

DRAWING	ISSUE
2D	JL
3D	AD
4D	WM
5D	JL
6B	LLB
7A	CE
8B	EA
9D	JTF
11B	AD
12D	AD
14B	GM

OUTGOING TRUNK CIRCUIT **2** SD-32245-01-G1

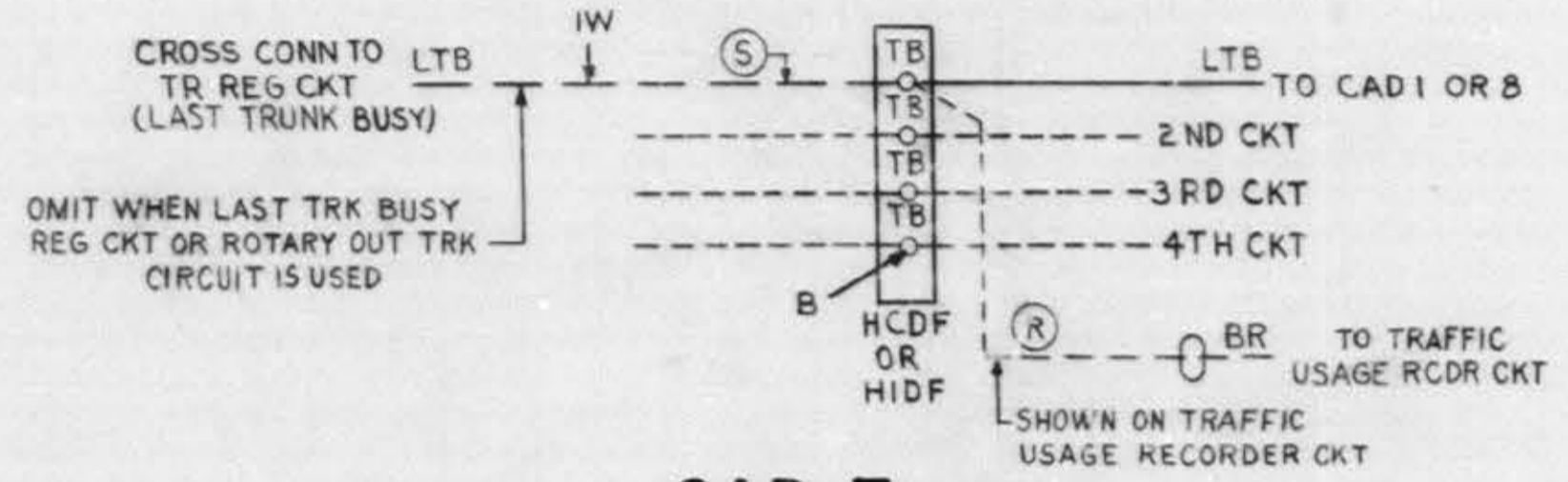
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CAD 5 (MFR DISC.)
 CONN TO SEL BANK MULT CKT &
 ROTARY OUT. TRUNK SWITCHES
 THRU TDF, IDF OR CDF
 3 WIRE



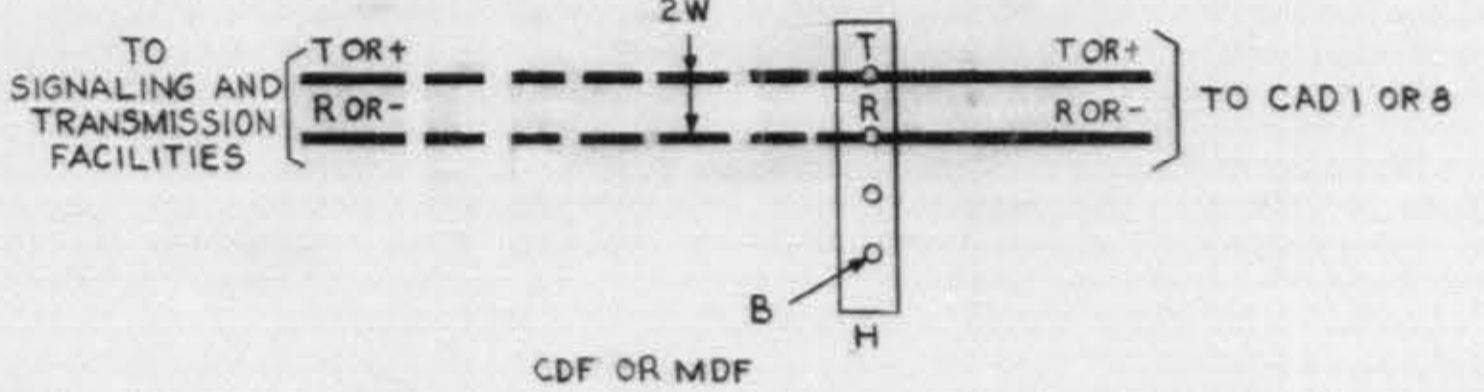
CAD 6 (MFR DISC.)

FOR NO. 1 & 350A OFFICES WHERE
 TRUNKS CROSS CONN AT TDF &
 TRAFFIC REGISTERS AT CDF OR IDF



CAD 7

CONN TO TRUNK THRU MDF OR CDF



DRAWING	ISSUE	DATE	BY
1	JL	1/28	PD
2D	JL	1/28	AS
3D	AD	1/28	RAC
4D	AD	1/28	AS
5D	JT	1/28	PD A
9D	JFK	1/28	HO
	JTF		HO
	GM		HO
11B	AD		GM
	DEB		GM
12D	AD		GM
	DEB		GM
20B			

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STEP BY STEP SYSTEMS
 OUTGOING TRUNK CIRCUIT

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20

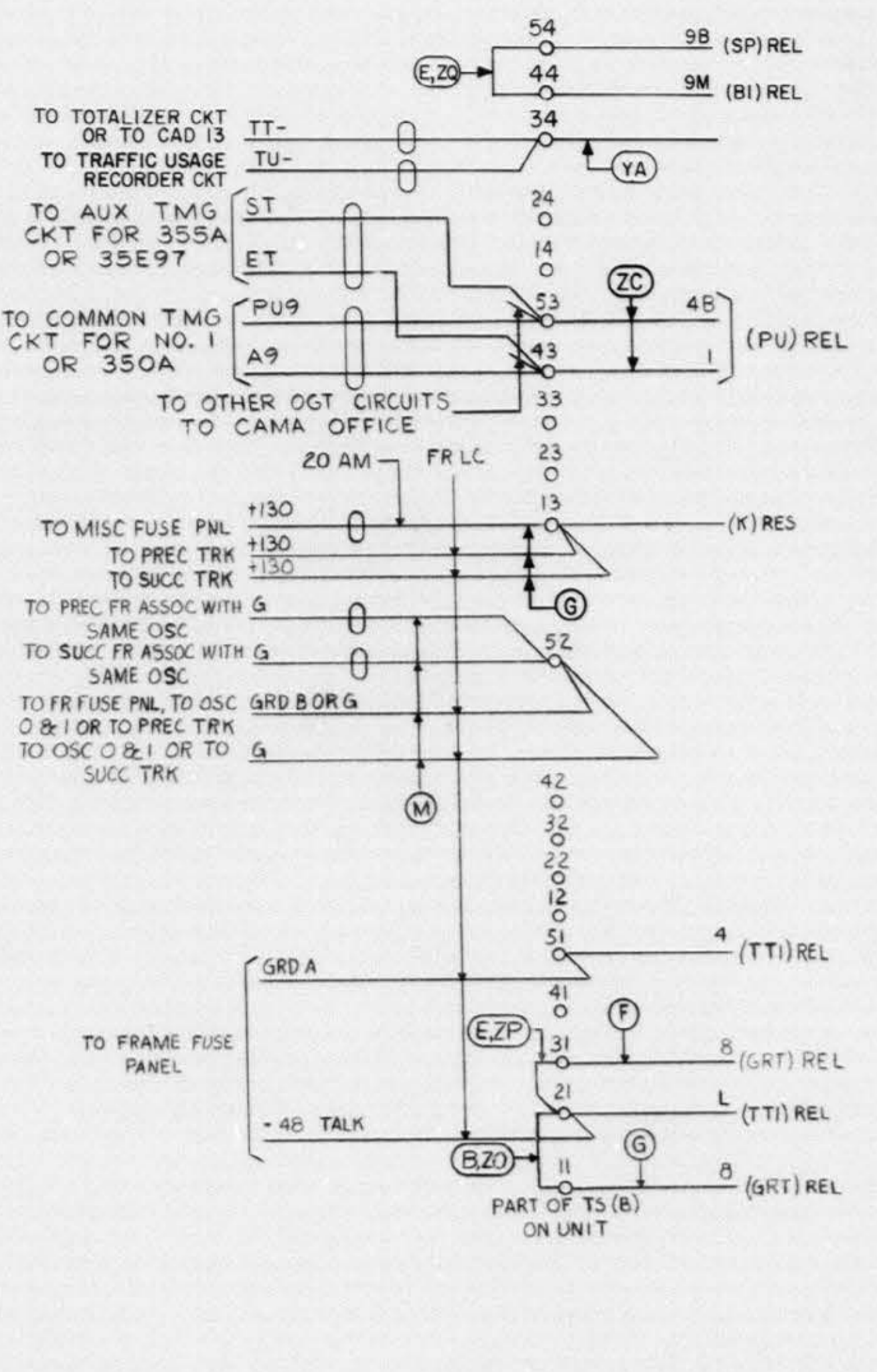
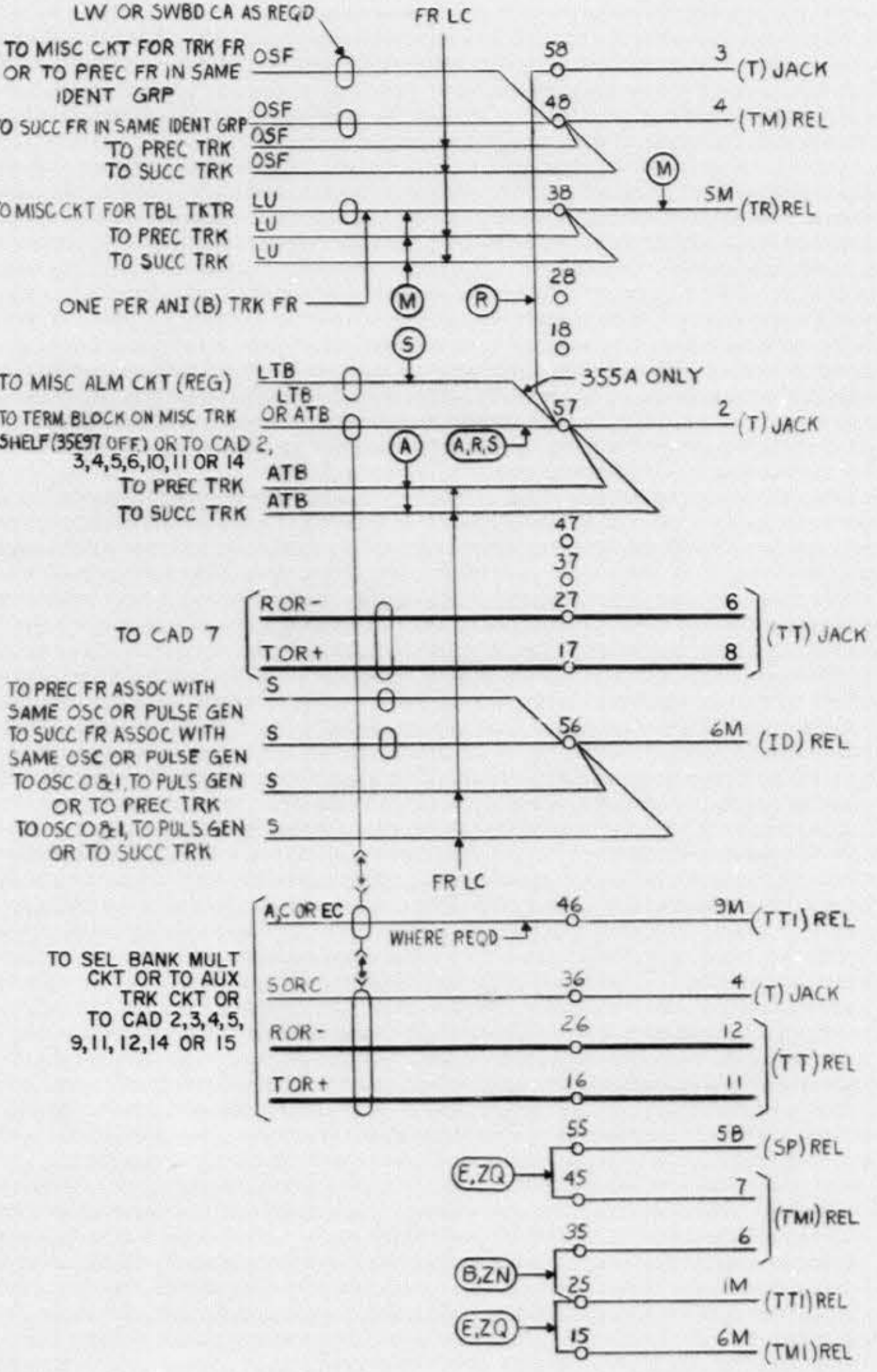
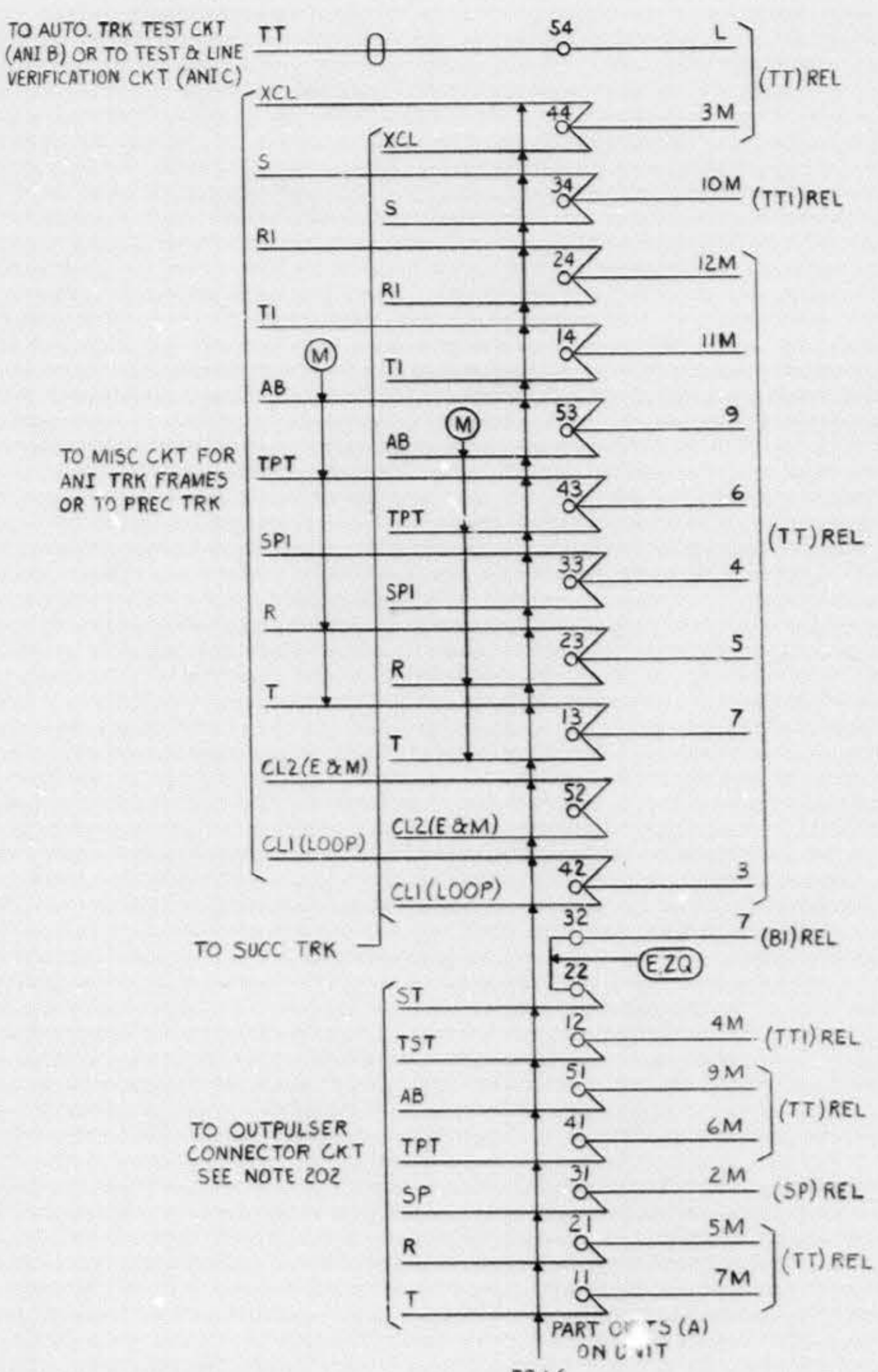
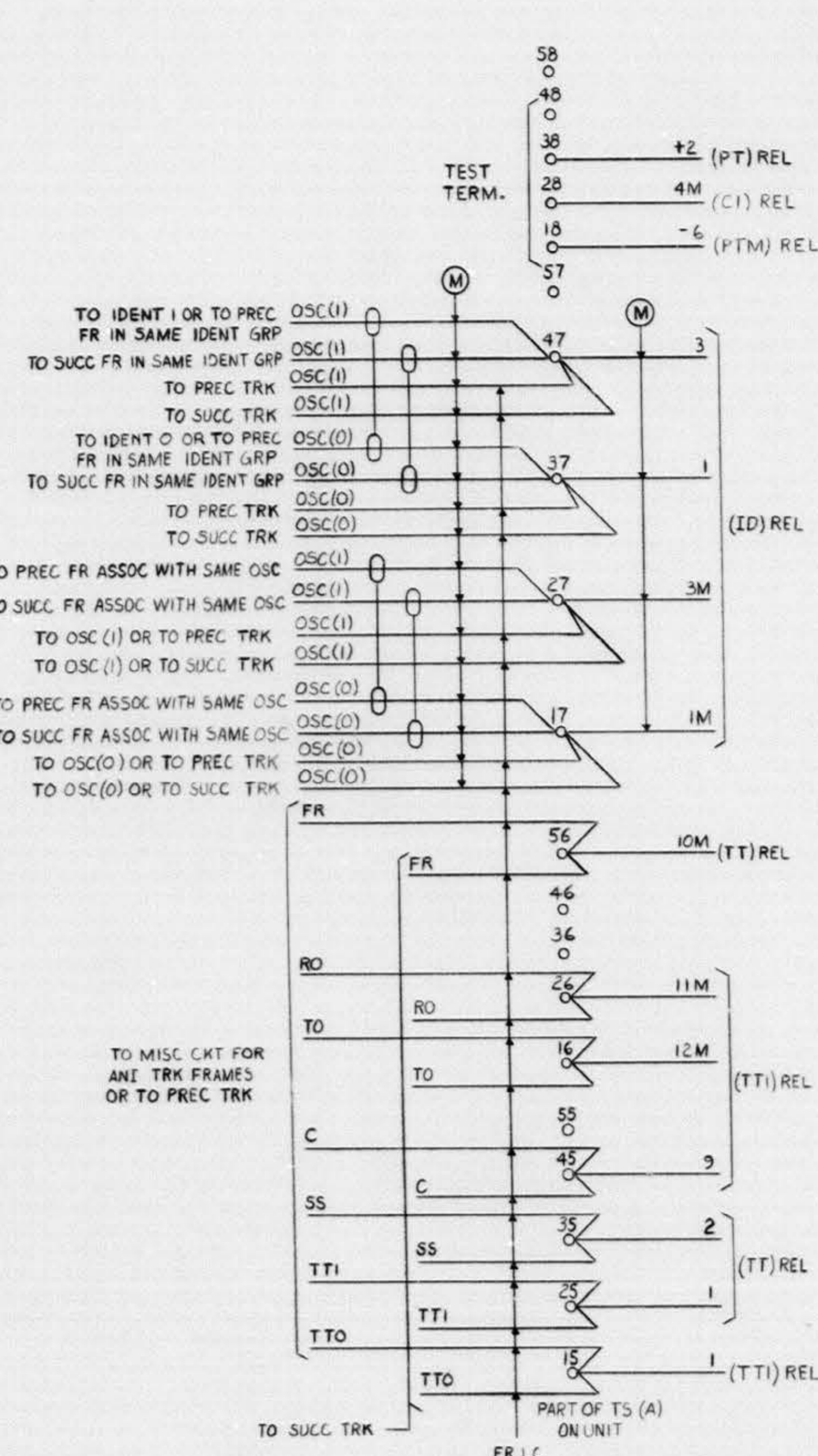
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CAD 8
TRUNK UNIT
(FOR FIG. 1)
SEE NOTES 201 & 203

DRAWING	JFN
ISSUE	23B
90	J77
11B	GM
12D	AD
14B	SM
18B	WE
19D	JS

A
B
C
D
E
F



SD-32245-01-63

H

OUTGOING TRUNK CIRCUIT

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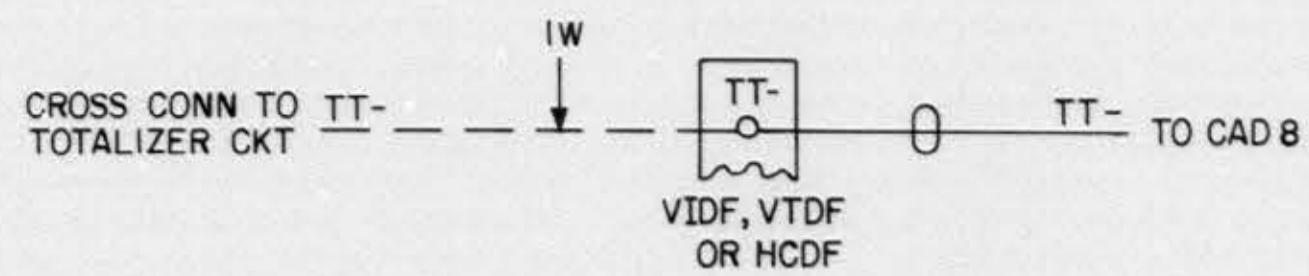
6S

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ISSUE
23B

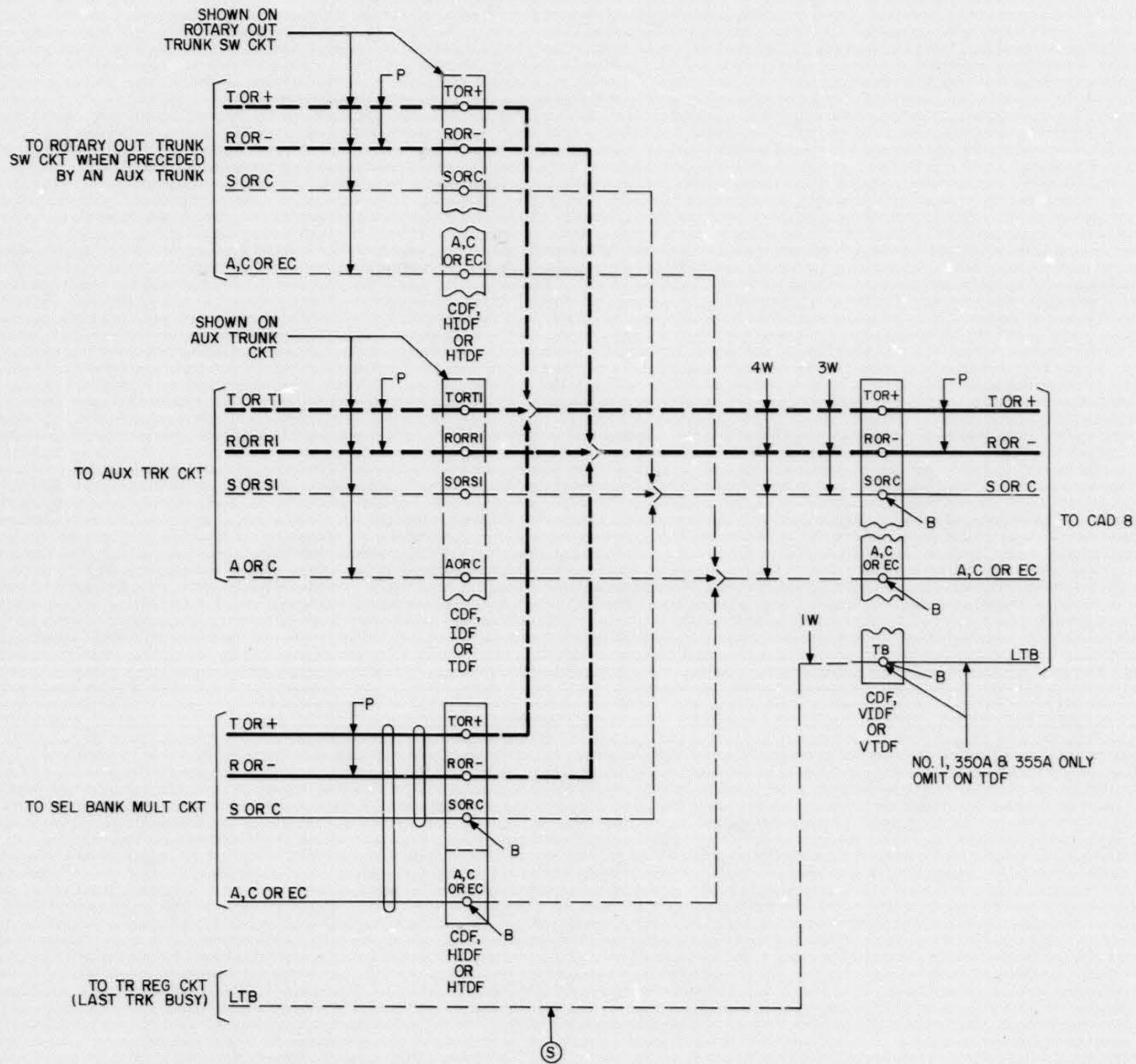
A
B
C
D
E
F
G
H

CAD 13



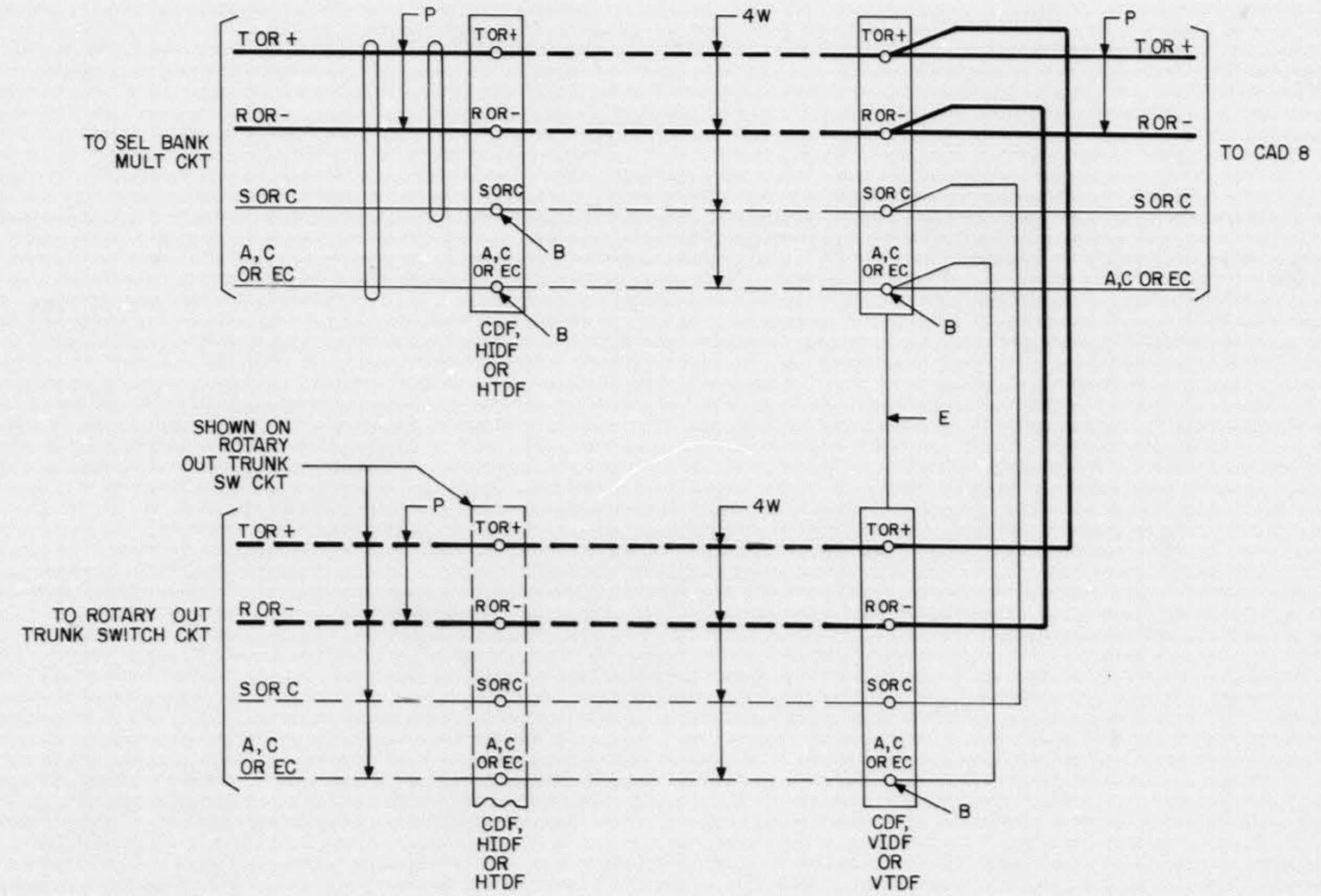
CAD 14

CONN TO SEL BANK MULTIPLE CKT, OR TO AUX TRUNK CKT, OR TO ROTARY OUT TRUNK SWITCH CKT WHEN PRECEDED BY AUX TRUNKS VIA IDF, TDF, CDF 3 OR 4 WIRE



CAD 15

CONN TO SEL BANK MULTIPLE CKT AND ROTARY OUT TRUNK SWITCH CKT NOT ASSOCIATED WITH AUX TRUNK CKT



KOD 11 113 2-78 40511

ISSUE
23B

OUTGOING TRUNK CIRCUIT	②	SD-32245-01-G4
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