

SD-68400-01

BELL TELEPHONE LABORATORIES, INC.

DWG. ISS.	C.D. ISSUE	DATE ISSUED	APPROVED	
1	1	4-24-51	C.J.K.	A.H.L. R.L.L.
2	2	9-11-52	E.E.G. F.C.R.	B.P. E.W.O.
3	3	6-28-55	T.J.B. M.J.S.	B.P. E.W.O.

W.F.O.

TOLL SYSTEMS
TOLL SWITCHING SYSTEM NO.4A
AND ASSOCIATED
TOLL SWITCHBOARD NO. 5
AND TOLL TEST BOARD NO.17C
KEY SHEET

CONTENTS

PAGE TITLE	PAGE
ALARM CIRCUITS	11
CIRCUIT PATCHING BAY	2
CURRENT DRAIN DATA	24 TO 29 INCL.
FULL SELECTOR CIRCUITS	7, 8
INDEX	32 TO 38 INCL.
MAINTENANCE DESKS	
CHIEF SWMN'S. DESK	14
AUTO. OUT. INTERTOLL TRK. TEST CKTS.	22
AUTO. OUT. TOLL CONN. TRUNK TEST FRAME	15
MAN. OUT. TRUNK TEST FRAME	20
SENDER MAKE BUSY FRAME	13
MAXIMUM ALLOWABLE RESISTANCE LIMITS	30, 31
OF CRITICAL LEADS	
MISCELLANEOUS CIRCUITS	10, 23
PATCHING TRUNK BAY OR	1, 21
TANDEM PATCHING TRUNK BAY	
ROUTINE TEST CIRCUITS	12, 23
TOLL TEST BOARD NO.17C	16
TOLL SWITCHBOARD NO. 5	9, 18
TRUNKS	
CONNECTING TO INC. LINK & CONN.	4, 19
CONNECTING TO OUT. LINK & CONN.	5, 6, 17
INTERTOLL OR TOLL TANDEM	3

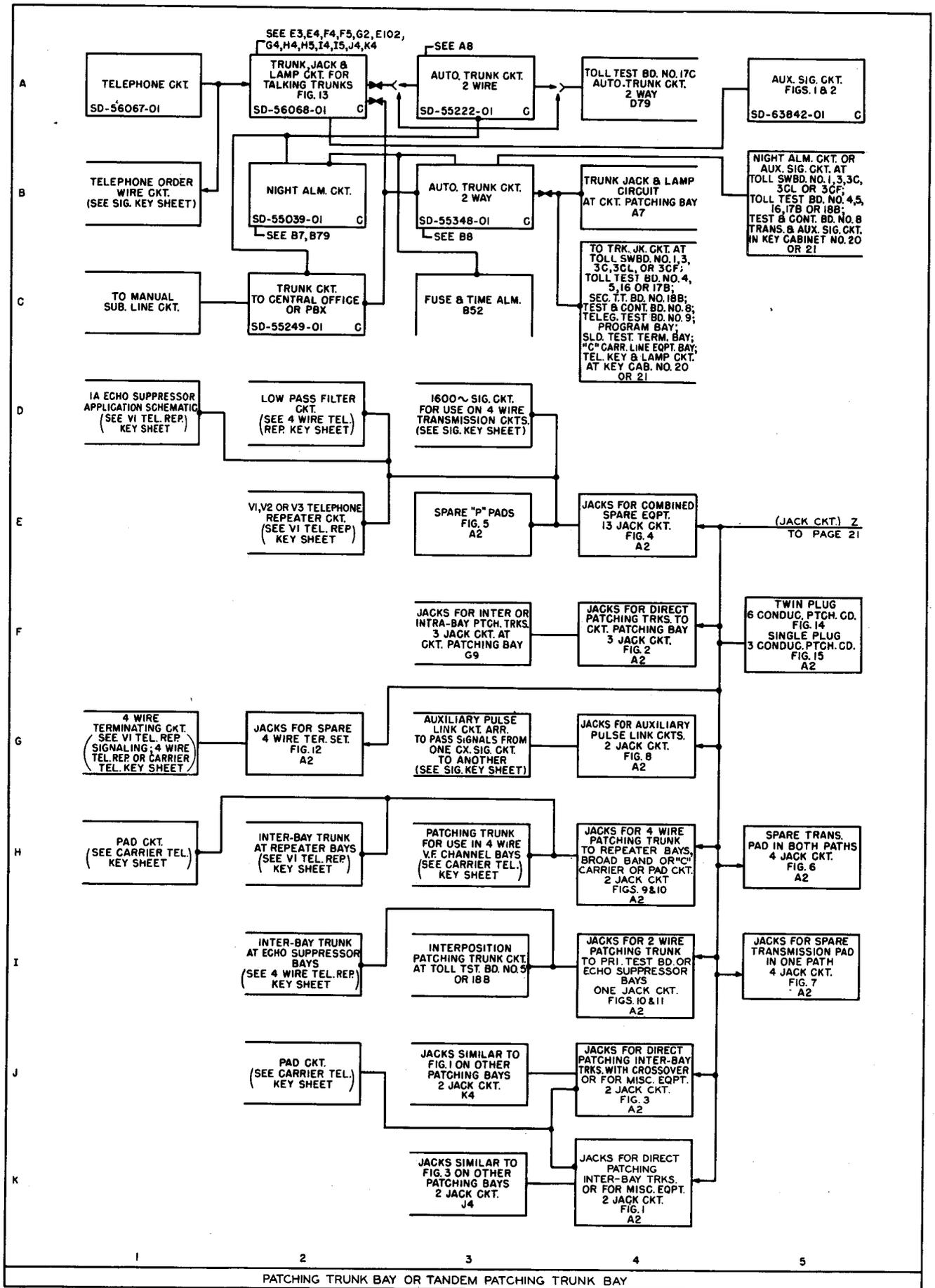
PRINTED IN U.S.A.

AT&TCO
STANDARD

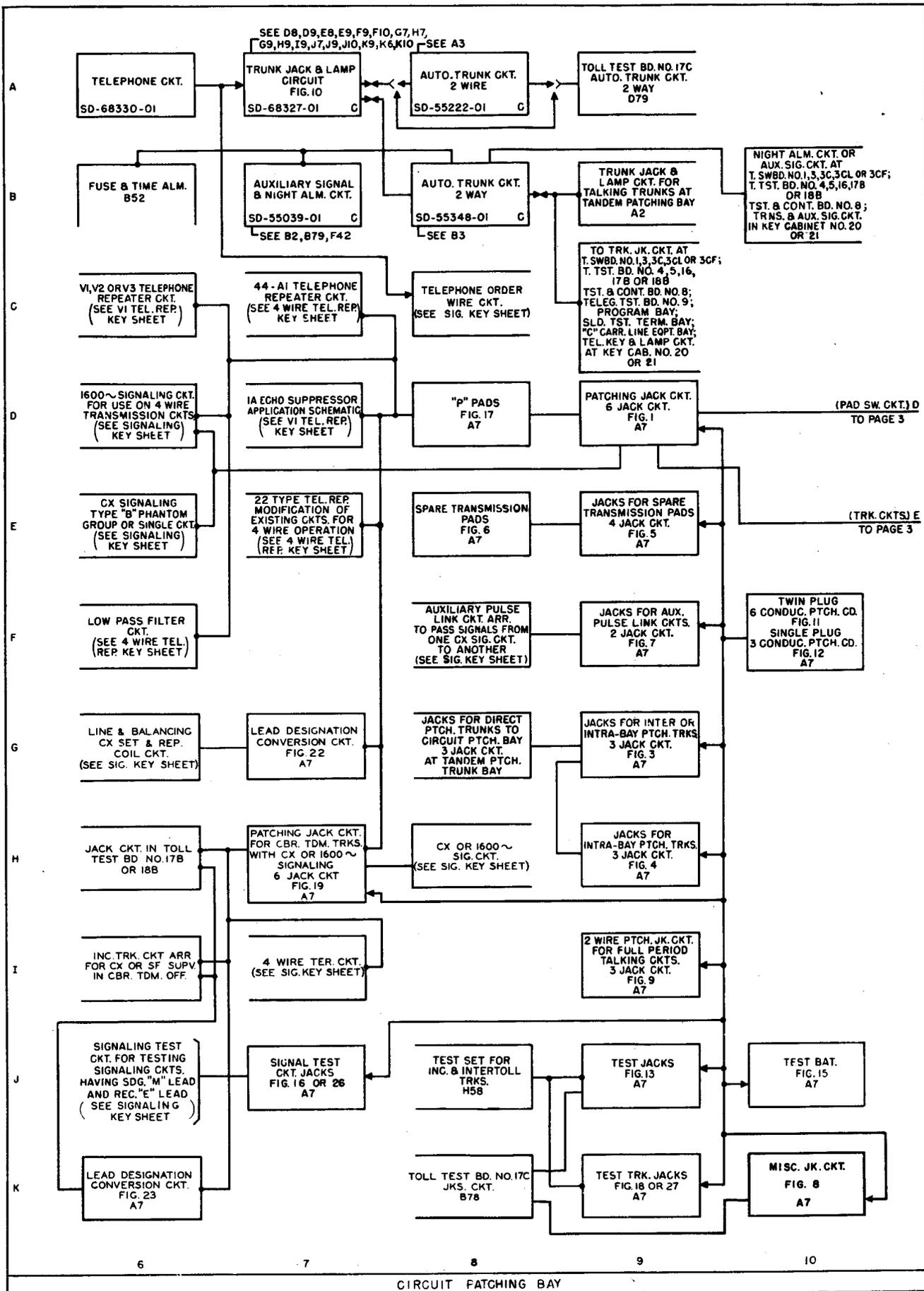
FOR EXPLANATION OF CONVENTIONS SEE
MASTER KEY SHEET SD-90250-01

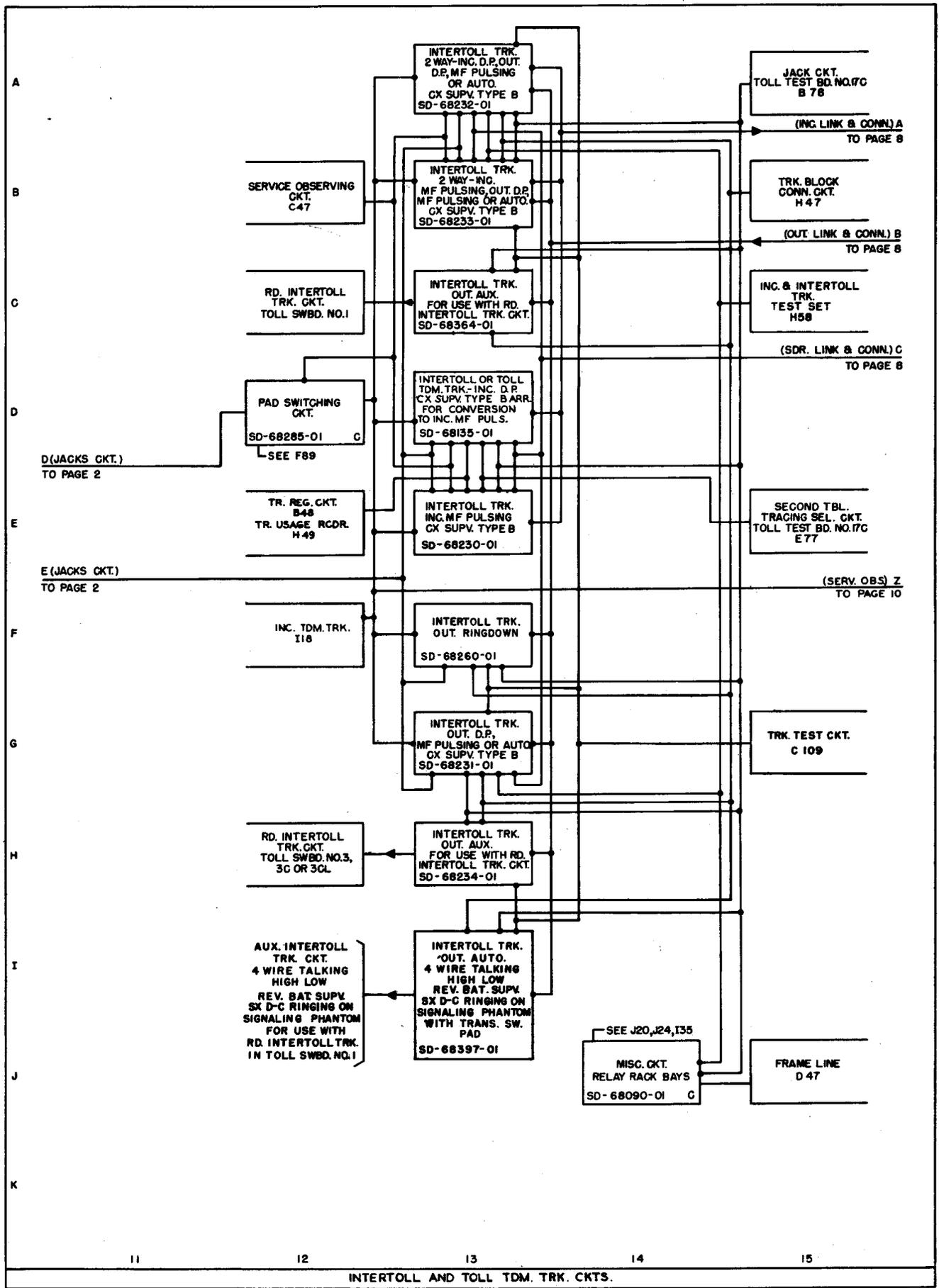
SD-68400-01

Rec-10-3-56-878

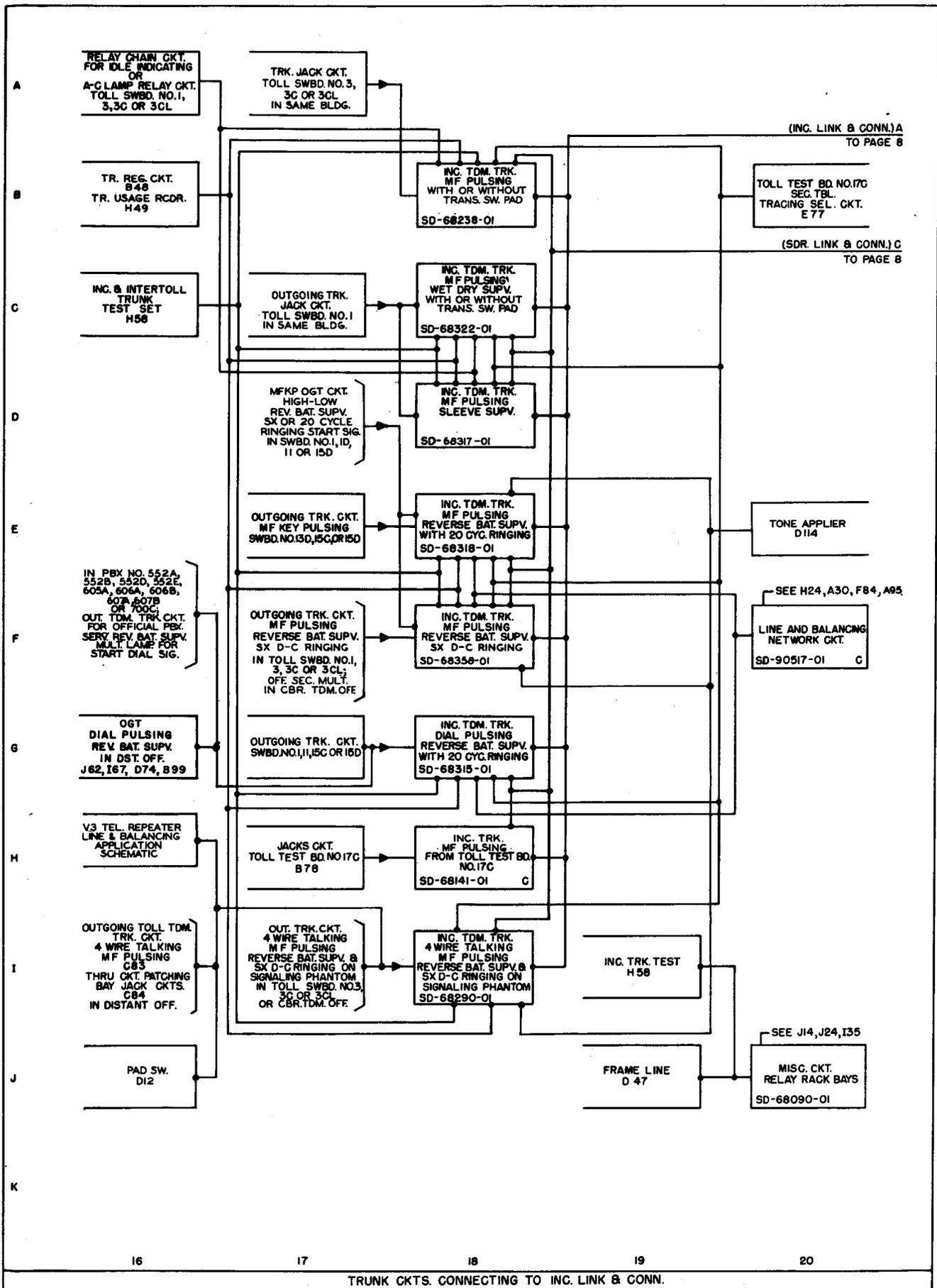


PATCHING TRUNK BAY OR TANDEM PATCHING TRUNK BAY

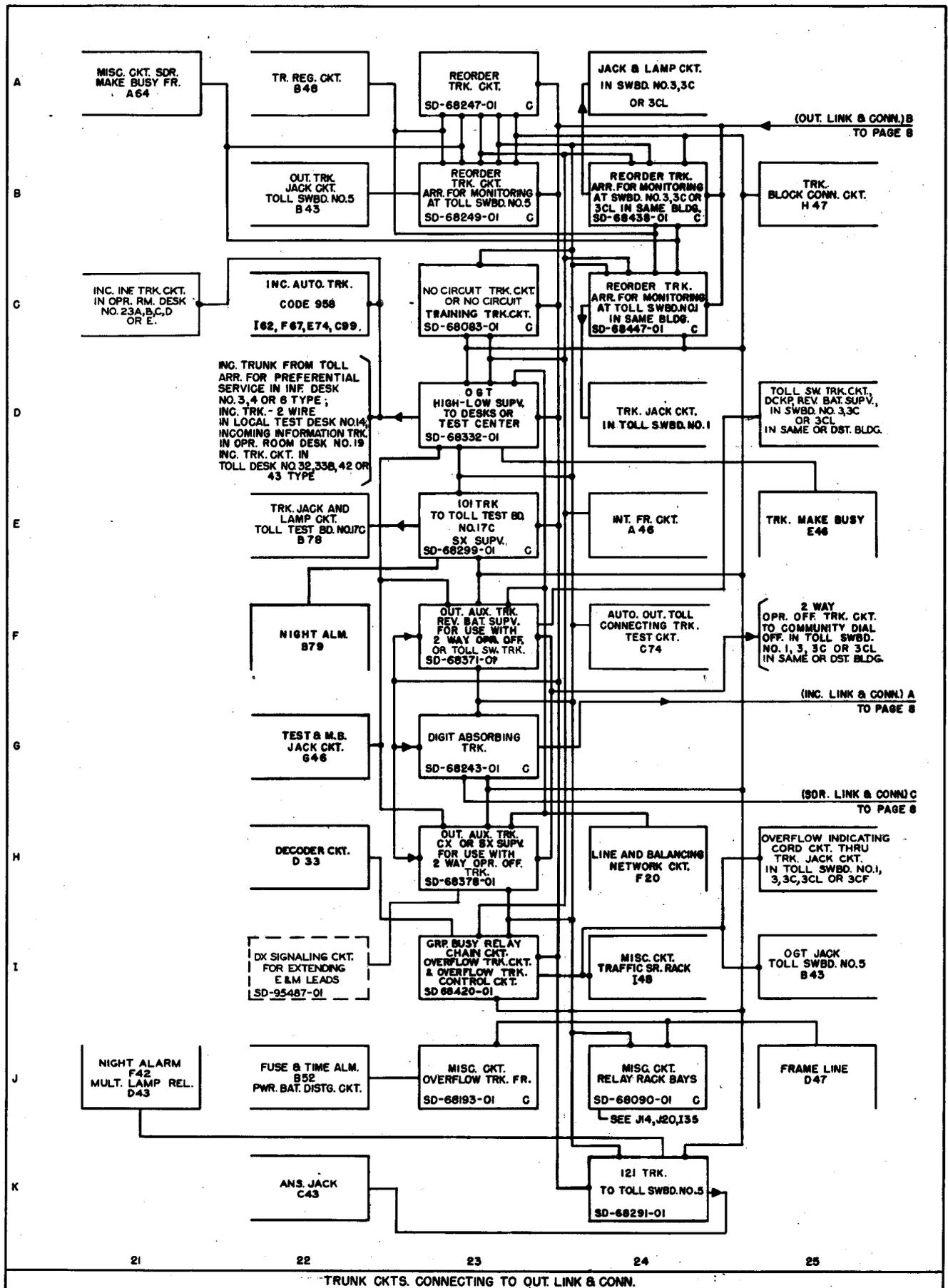




INTERTOLL AND TOLL TDM. TRK. CKTS.



TRUNK CKTS. CONNECTING TO INC. LINK & CONN.



MISC. CKT. SDR.
MAKE BUSY FR.
A64

TR. REG. CKT.
B48

REORDER
TRK. CKT.
SD-68247-01 C

JACK & LAMP CKT.
IN SWBD. NO.3,3C
OR 3CL

(OUT. LINK & CONN.) B
TO PAGE 8

OUT. TRK.
JACK CKT.
TOLL SWBD. NO.5
B43

REORDER
TRK. CKT.
ARR. FOR MONITORING
AT TOLL SWBD. NO.5
SD-68249-01 C

REORDER TRK.
ARR. FOR MONITORING
AT SWBD. NO.3,3C OR
3CL IN SAME BLDG.
SD-68438-01 C

TRK.
BLOCK CONN. CKT.
H47

INC. INF TRK. CKT.
IN OPR. RM. DESK
NO.23A,B,C,D
OR E.

INC. AUTO. TRK.
CODE 958
I62, F67, E74, C99.

NO CIRCUIT TRK. CKT.
OR NO CIRCUIT
TRAINING TRK. CKT.
SD-68083-01 G

REORDER TRK.
ARR. FOR MONITORING
AT TOLL SWBD. NO.1
IN SAME BLDG.
SD-68447-01 C

INC. TRUNK FROM TOLL
ARR. FOR PREFERENTIAL
SERVICE IN INF. DESK
NO. 3, 4 OR 8 TYPE ;
INC. TRK. - 2 WIRE
IN LOCAL TEST DESK NO.14,
INCOMING INFORMATION TRK.
IN OPR. ROOM DESK NO.19
INC. TRK. CKT. IN
TOLL DESK NO.32,33B,42 OR
43 TYPE

OBT
HIGH-LOW SUPV.
TO DESKS OR
TEST CENTER
SD-68332-01

TRK. JACK CKT.
IN TOLL SWBD. NO.1

TOLL SW TRK. CKT.
DCKP. REV. BAT. SUPV.
IN SWBD. NO. 3,3C
OR 3CL
IN SAME OR DST. BLDG.

TRK. JACK AND
LAMP CKT.
TOLL TEST BD. NO.17C
B78

101 TRK
TO TOLL TEST BD.
NO.17C
SX SUPV.
SD-68299-01 C

INT. FR. CKT.
A46

TRK. MAKE BUSY
E46

NIGHT ALM.
B79

OUT. AUX. TRK.
REV. BAT. SUPV.
FOR USE WITH
2 WAY OPR. OFF.
OR TOLL SW TRK.
SD-68371-01

AUTO. OUT. TOLL
CONNECTING TRK.
TEST CKT.
C74

2 WAY
OPR. OFF. TRK. CKT.
TO COMMUNITY DIAL
OFF. IN TOLL SWBD.
NO. 1, 3, 3C OR 3CL
IN SAME OR DST. BLDG.

(INC. LINK & CONN.) A
TO PAGE 8

TEST & M.B.
JACK CKT.
G46

DIGIT ABSORBING
TRK.
SD-68243-01 C

(SDR. LINK & CONN.) C
TO PAGE 8

DECODER CKT.
D33

OUT. AUX. TRK.
CX OR SX SUPV.
FOR USE WITH
2 WAY OPR. OFF.
TRK.
SD-68378-01

LINE AND BALANCING
NETWORK CKT.
F20

OVERFLOW INDICATING
CORD CKT. THRU
TRK. JACK CKT.
IN TOLL SWBD. NO.1,
3,3C,3CL OR 3CF

DX SIGNALING CKT.
FOR EXTENDING
E & M LEADS
SD-95487-01

GRP BUSY RELAY
CHAIN CKT.
OVERFLOW TRK. CKT.
& OVERFLOW TRK.
CONTROL CKT.
SD-68420-01

MISC. CKT.
TRAFFIC SR. RACK
I48

OBT JACK
TOLL SWBD. NO.5
B43

NIGHT ALARM
F42
MULT. LAMP REL.
D43

FUSE & TIME ALM.
B52
PWR. BAT. DISTG. CKT.

MISC. CKT.
OVERFLOW TRK. FR.
SD-68193-01 C

MISC. CKT.
RELAY RACK BAYS
SD-68090-01 C
SEE J14, J20, I35

FRAME LINE
D47

ANS. JACK
C43

121 TRK.
TO TOLL SWBD. NO.5
SD-68291-01

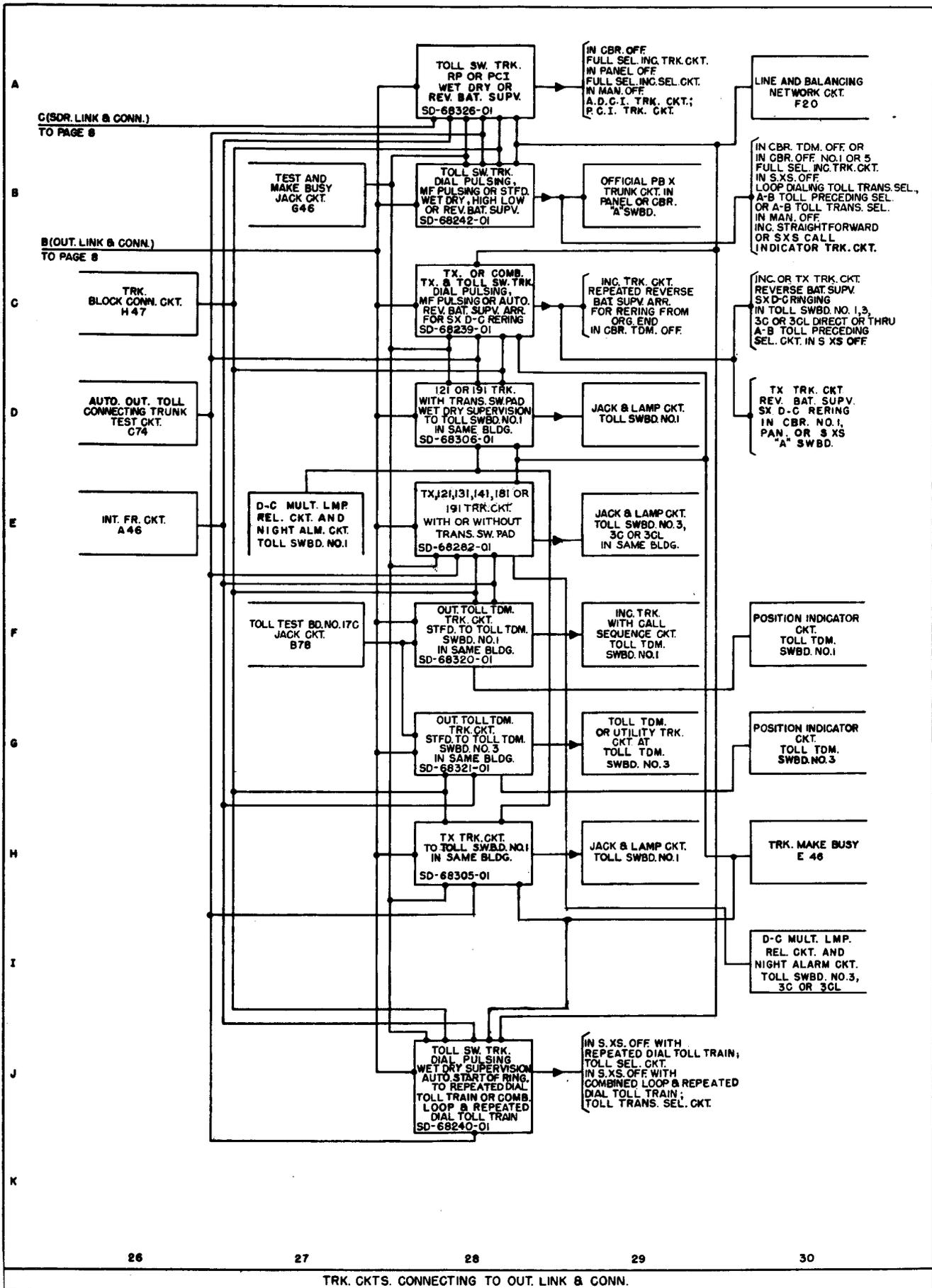
21

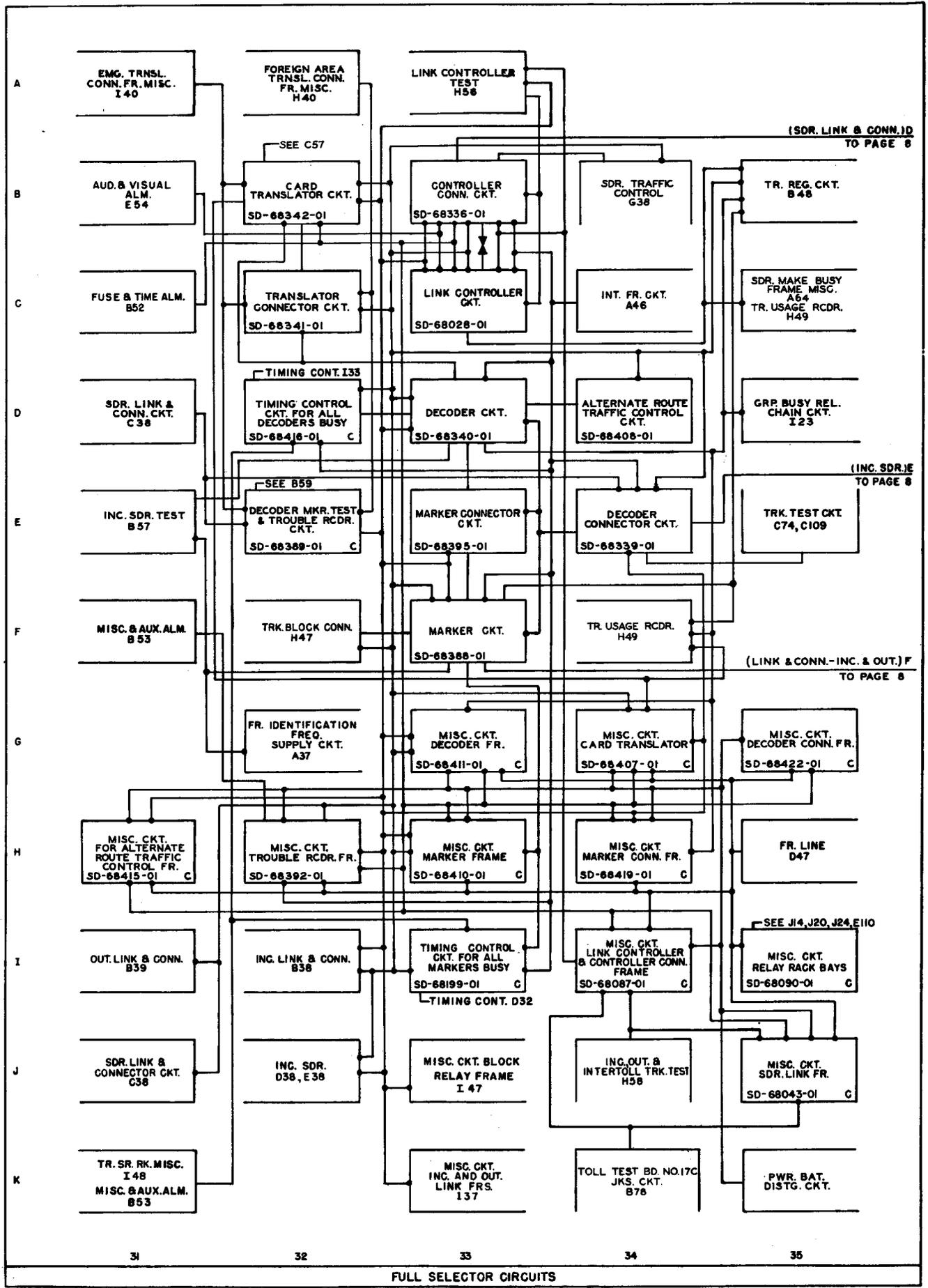
22

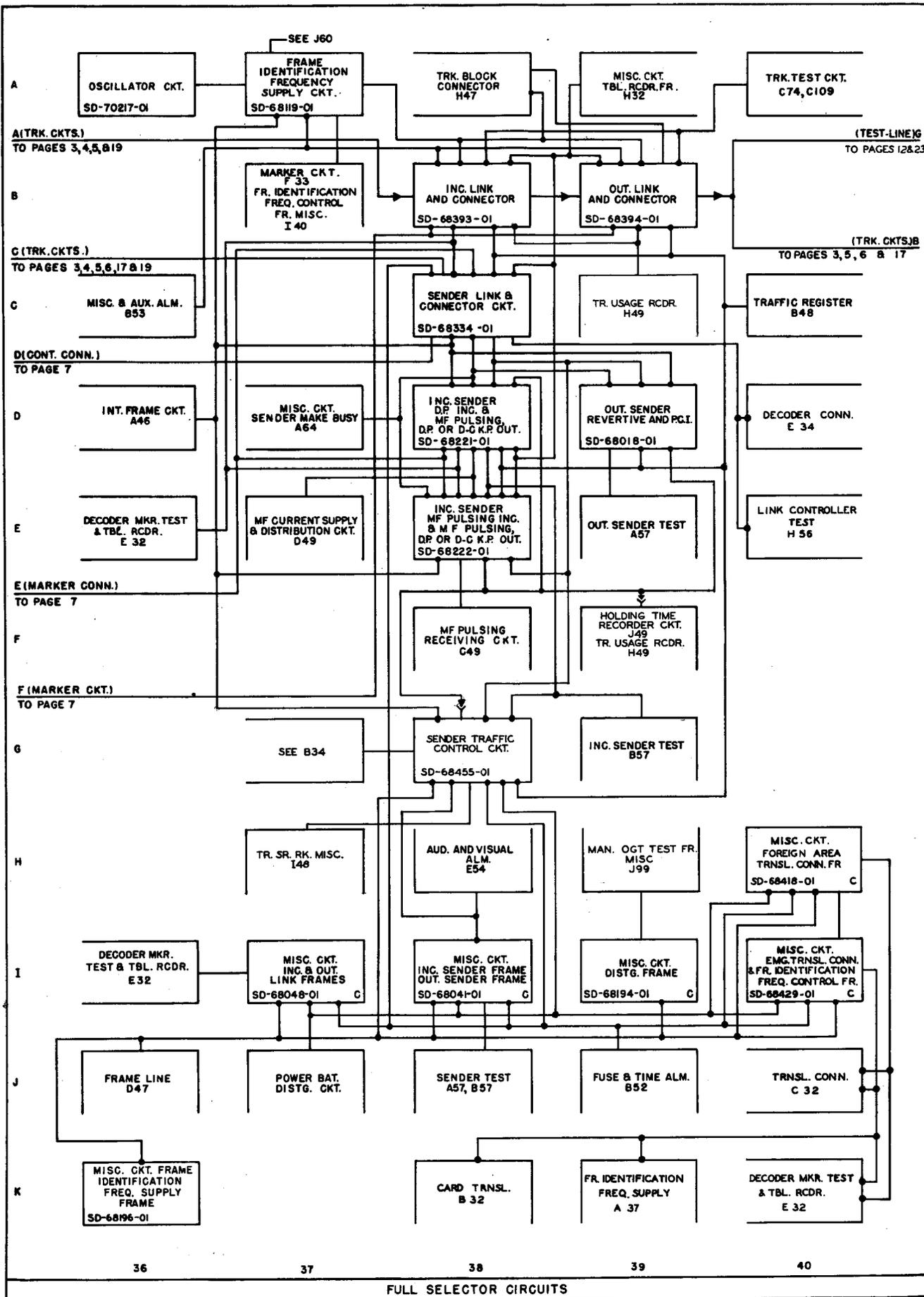
23

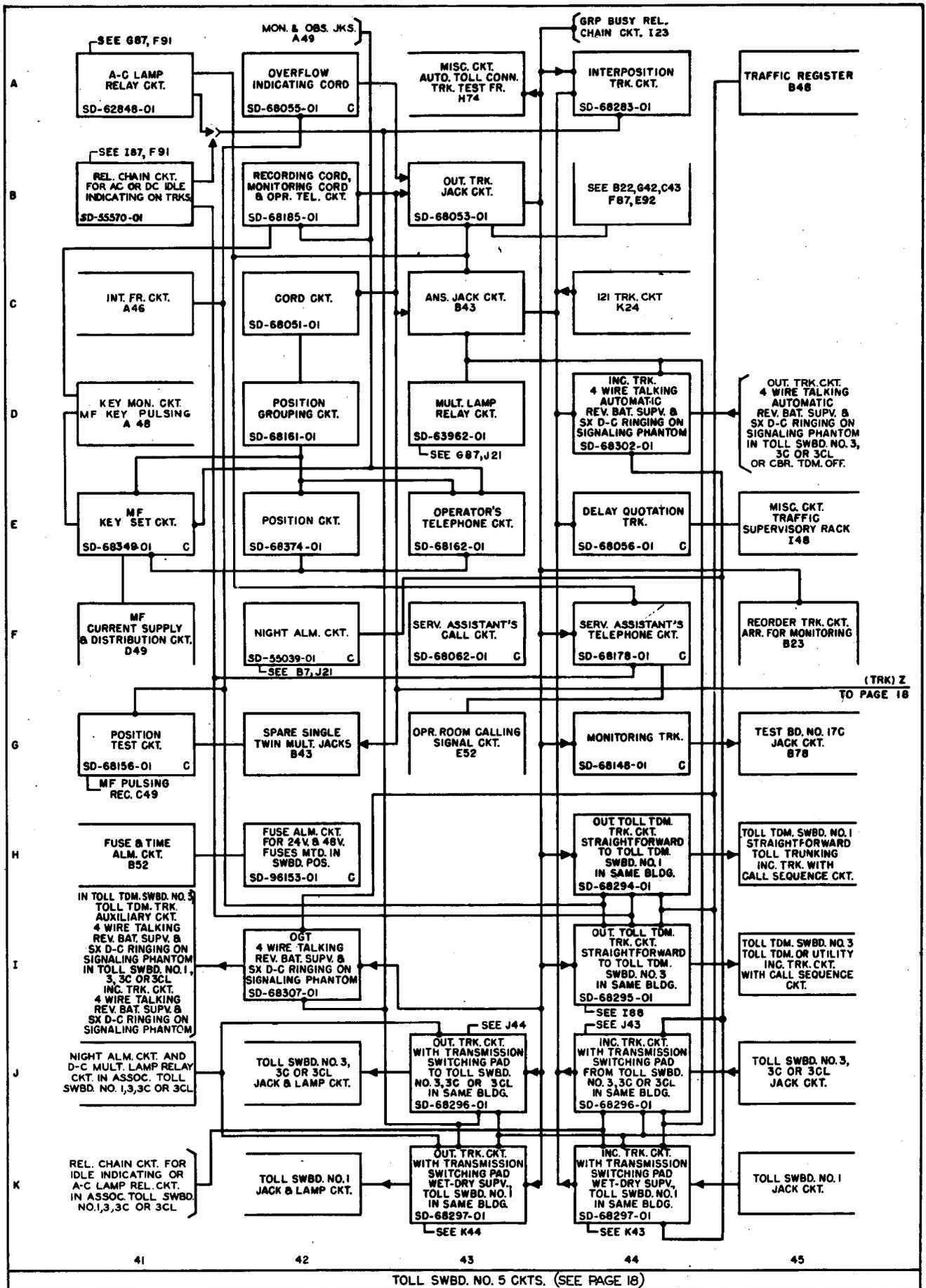
24

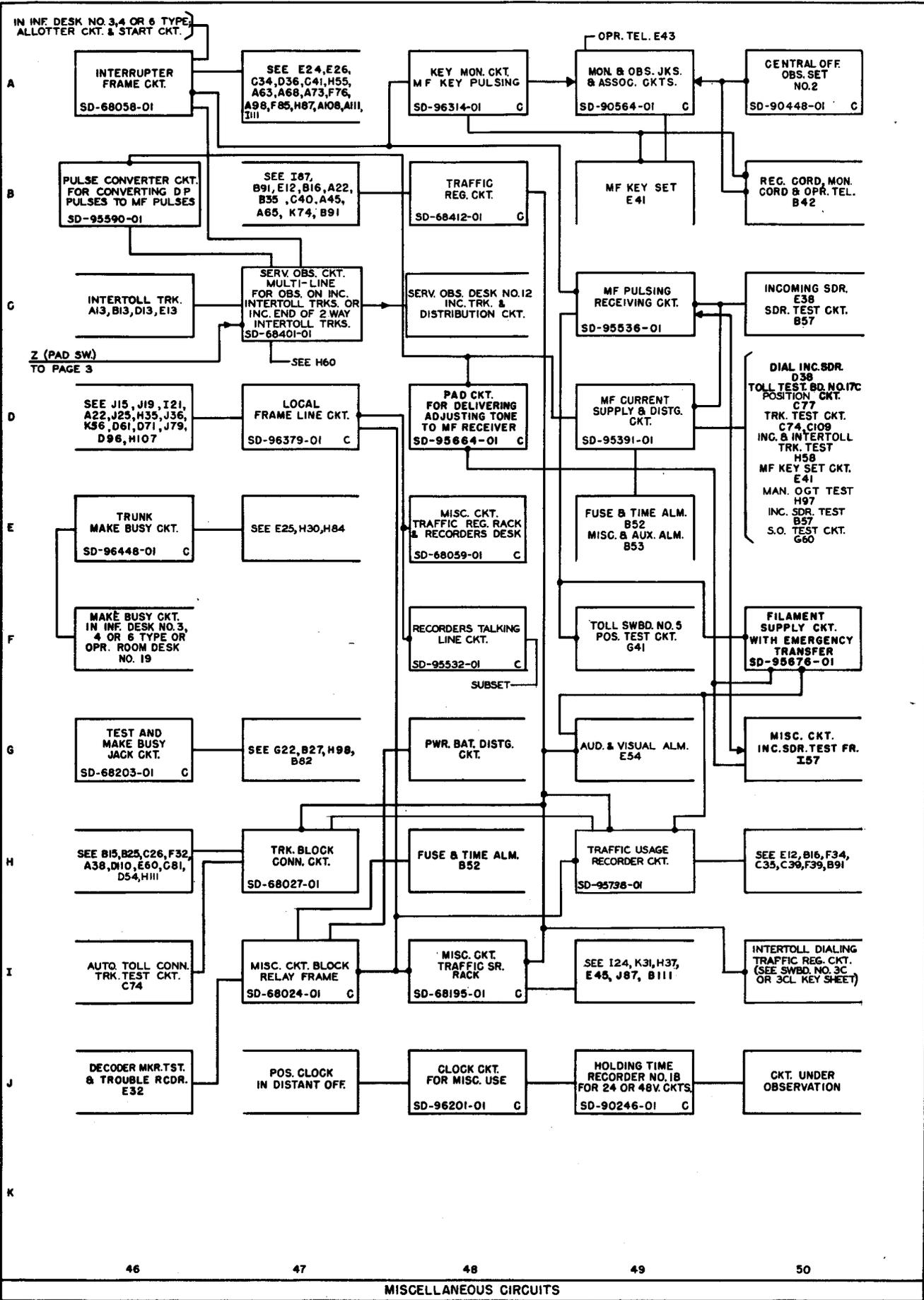
25

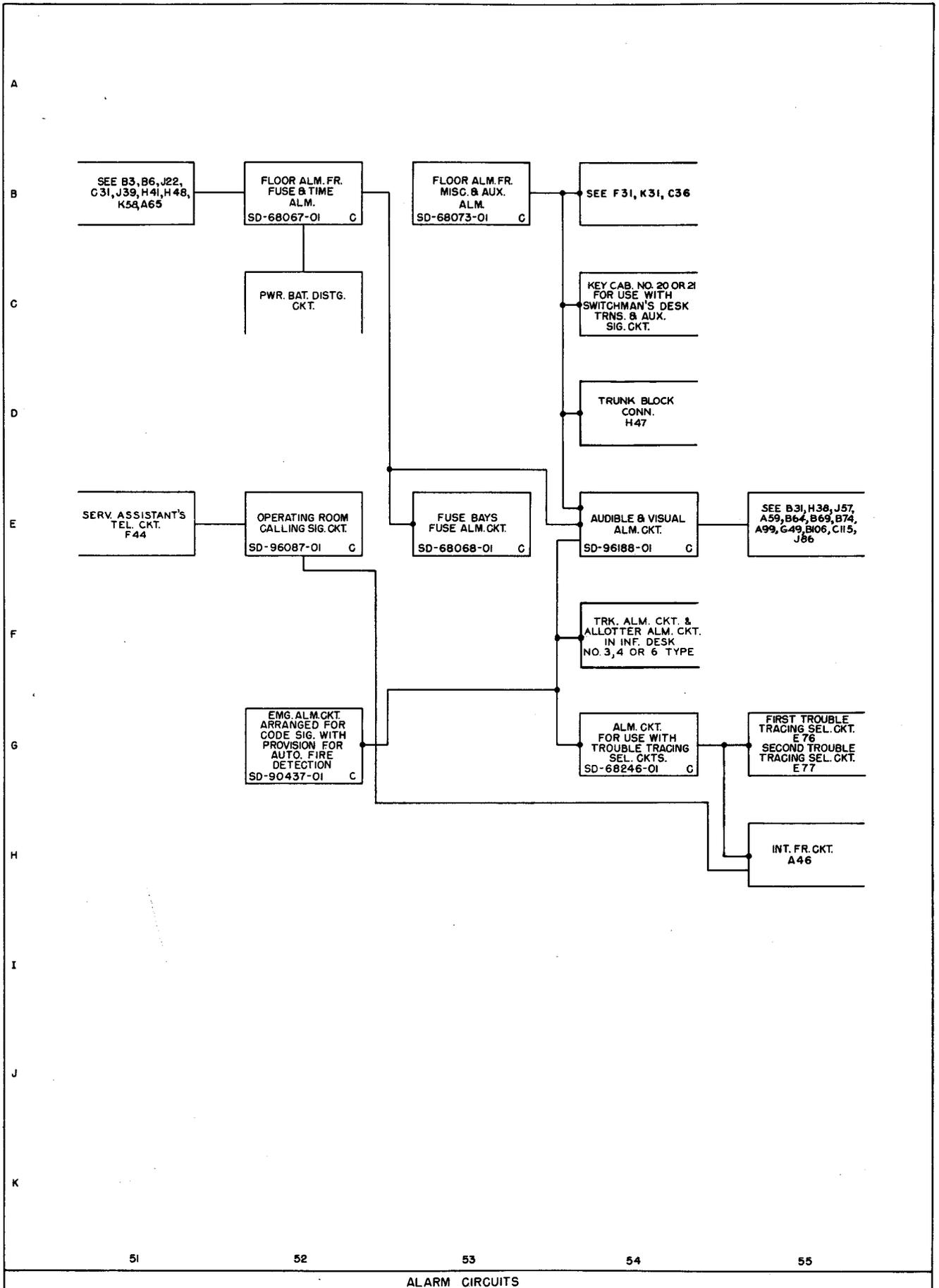


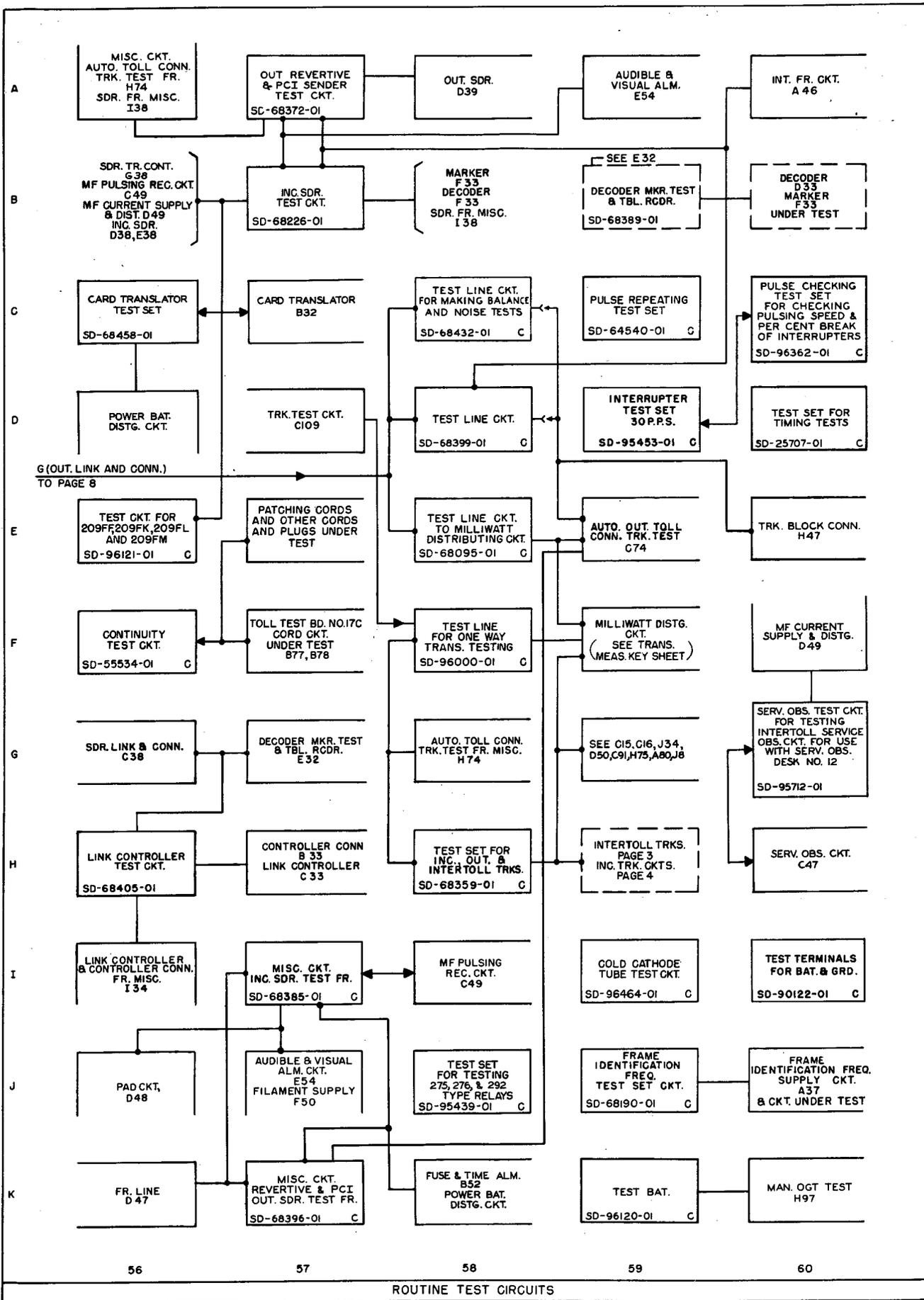


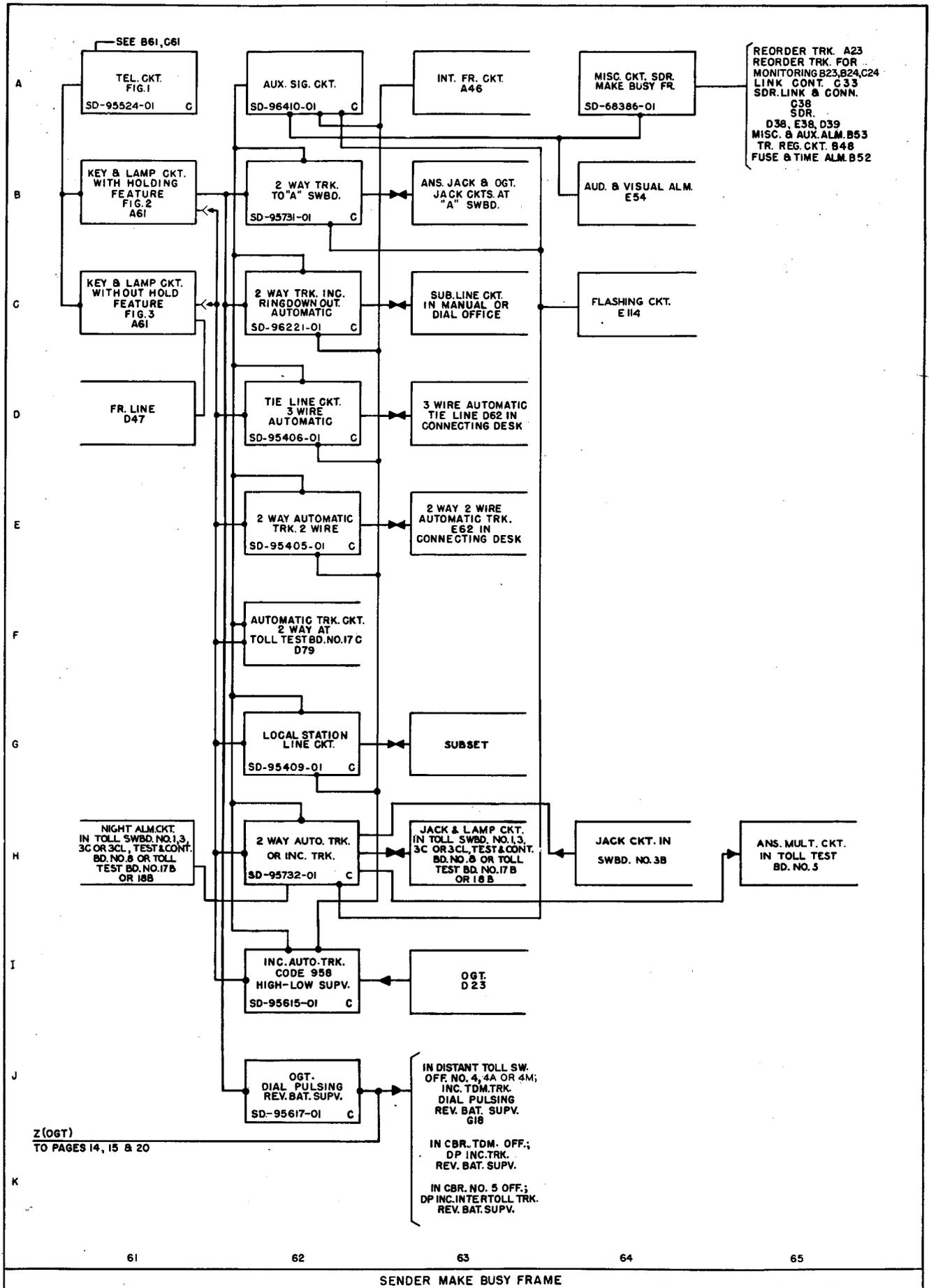


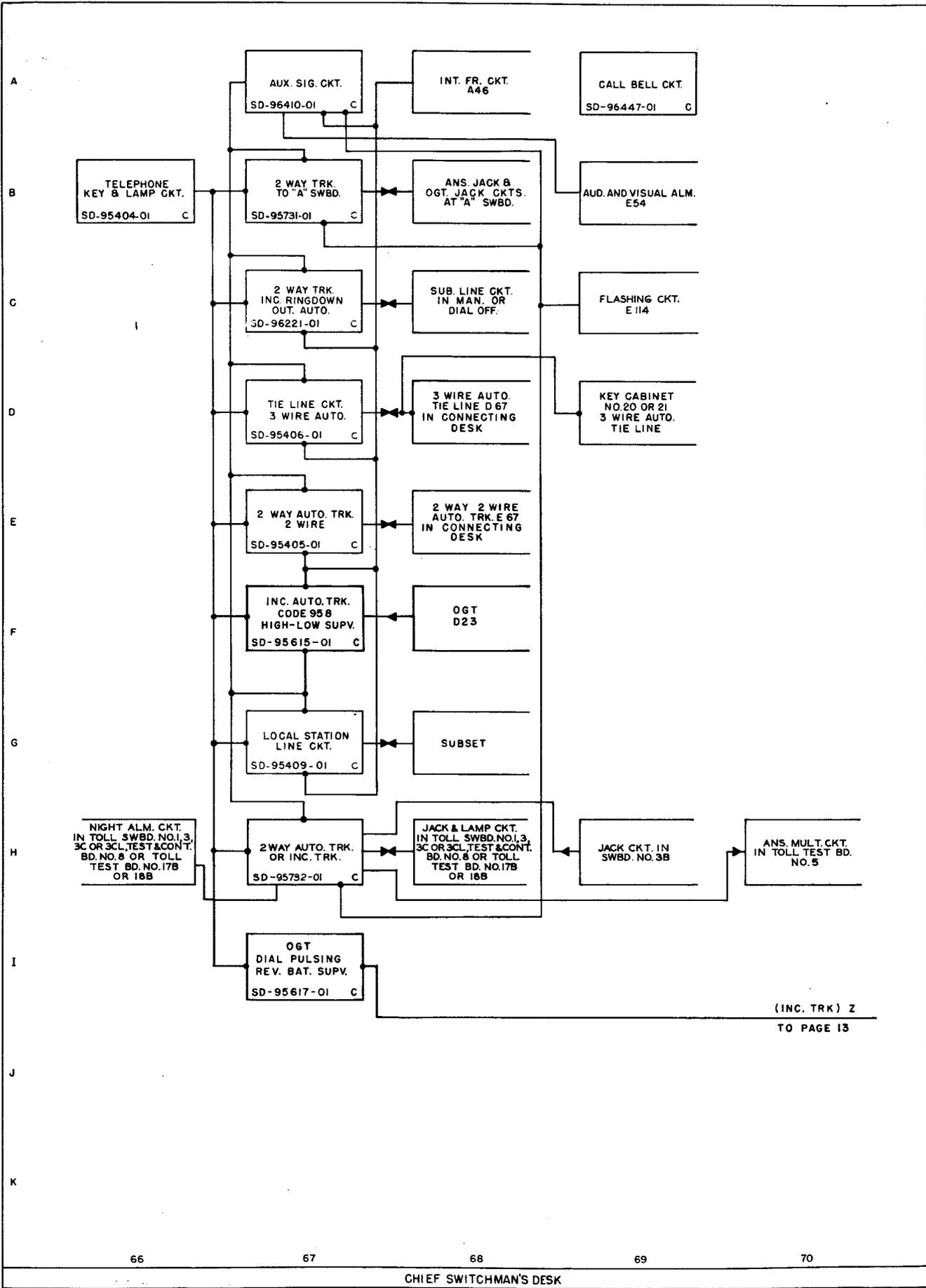


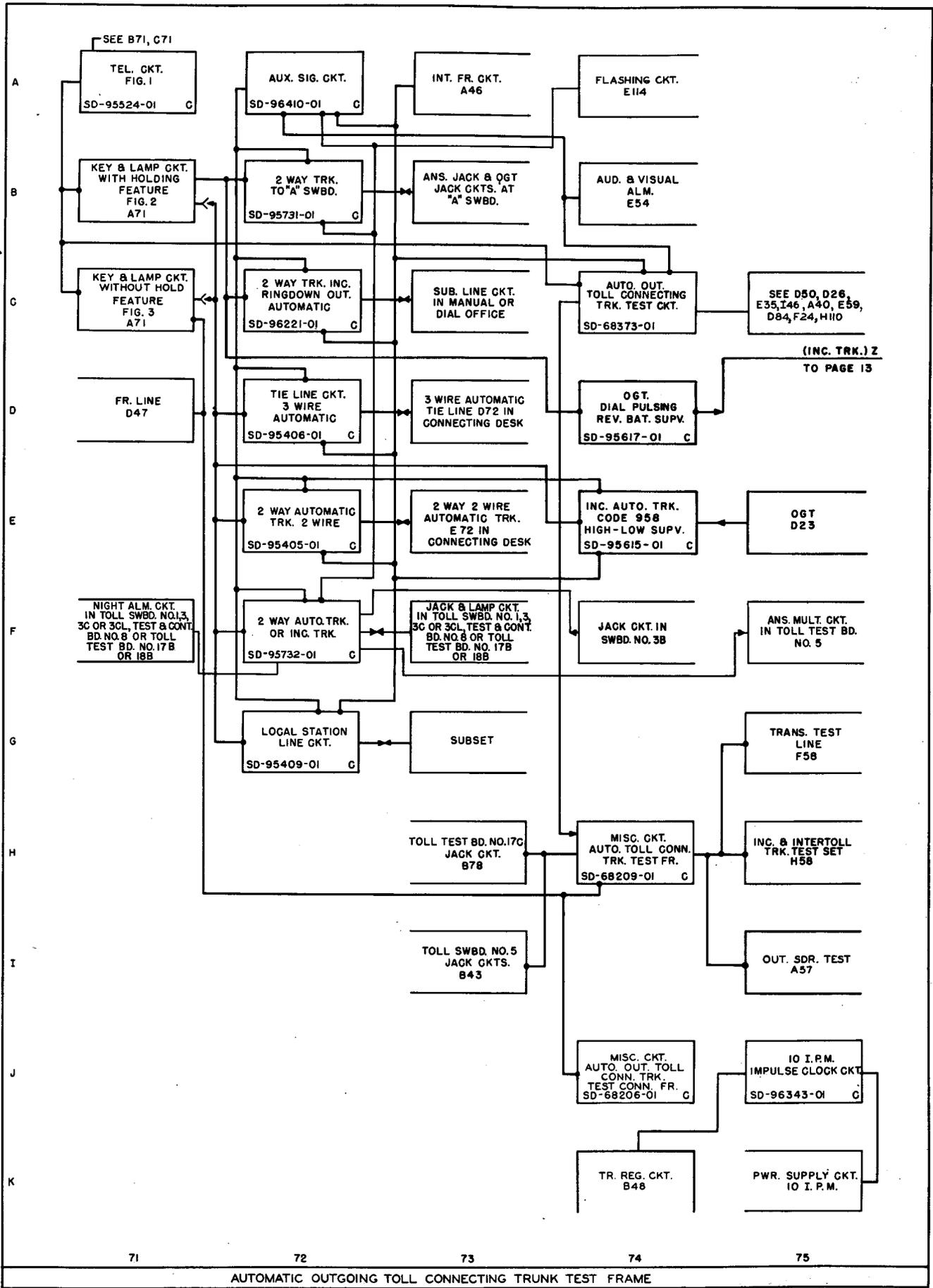












71

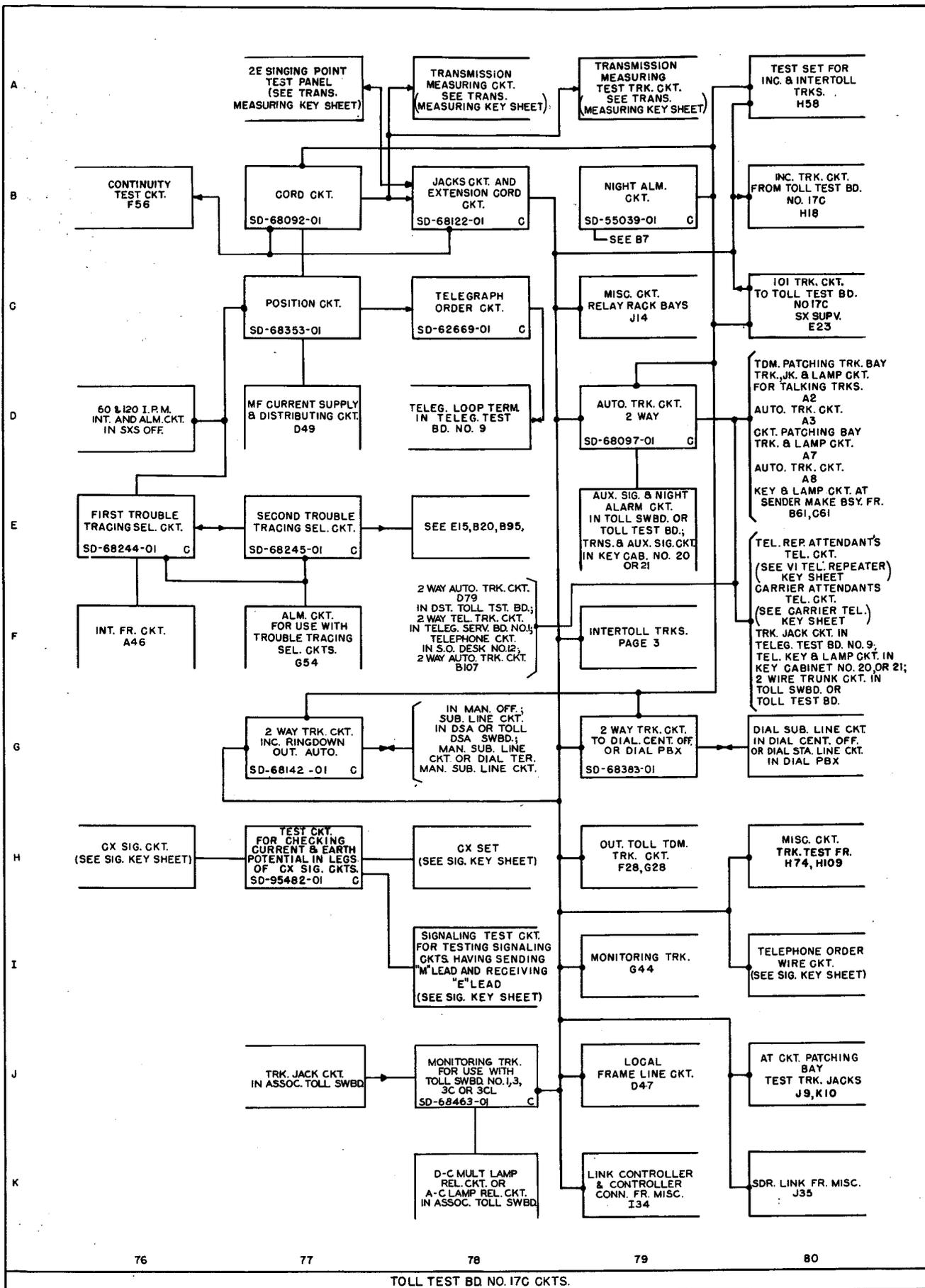
72

73

74

75

AUTOMATIC OUTGOING TOLL CONNECTING TRUNK TEST FRAME



76

77

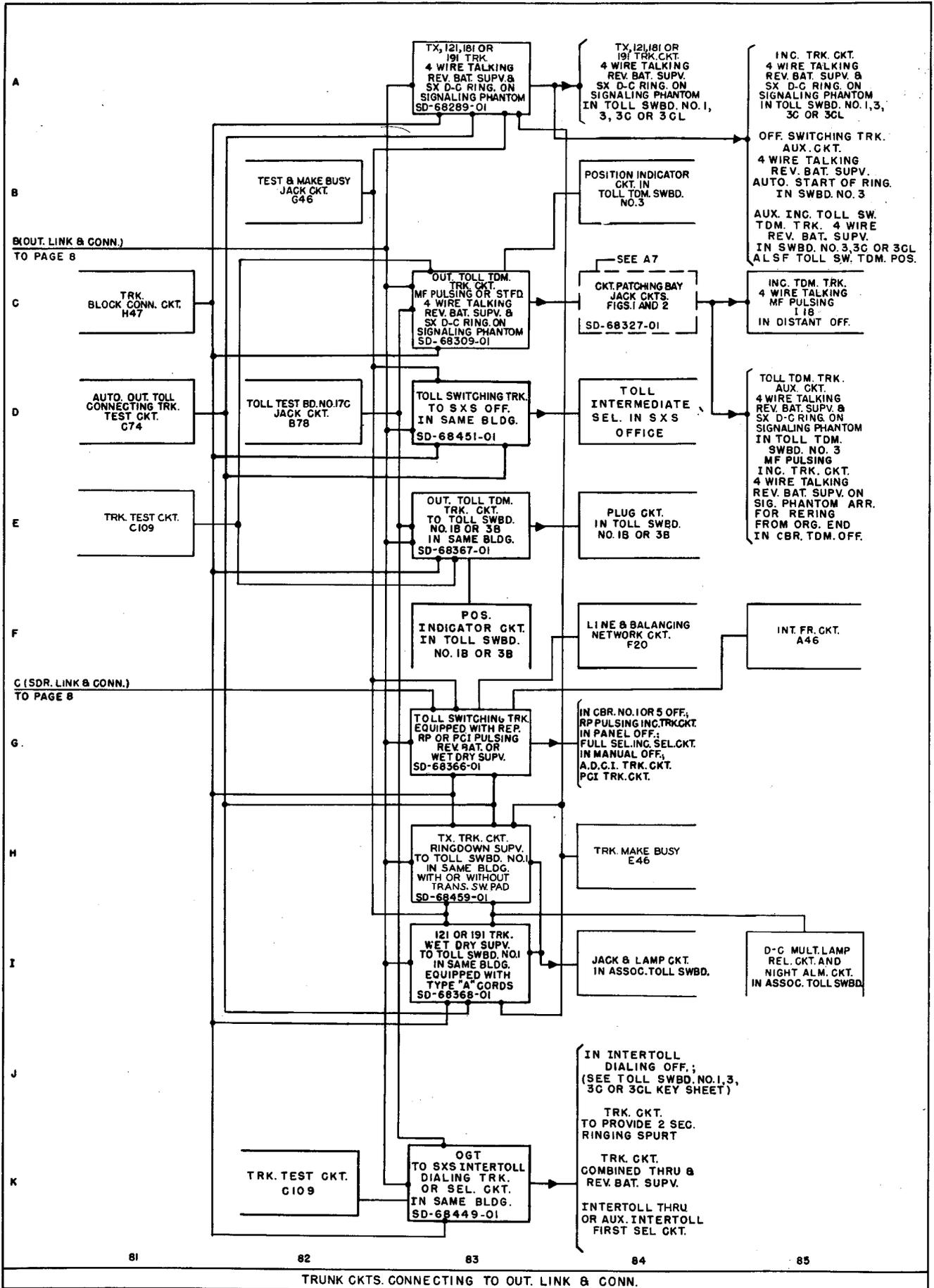
78

79

80

TOLL TEST BD. NO. 17C CKTS.

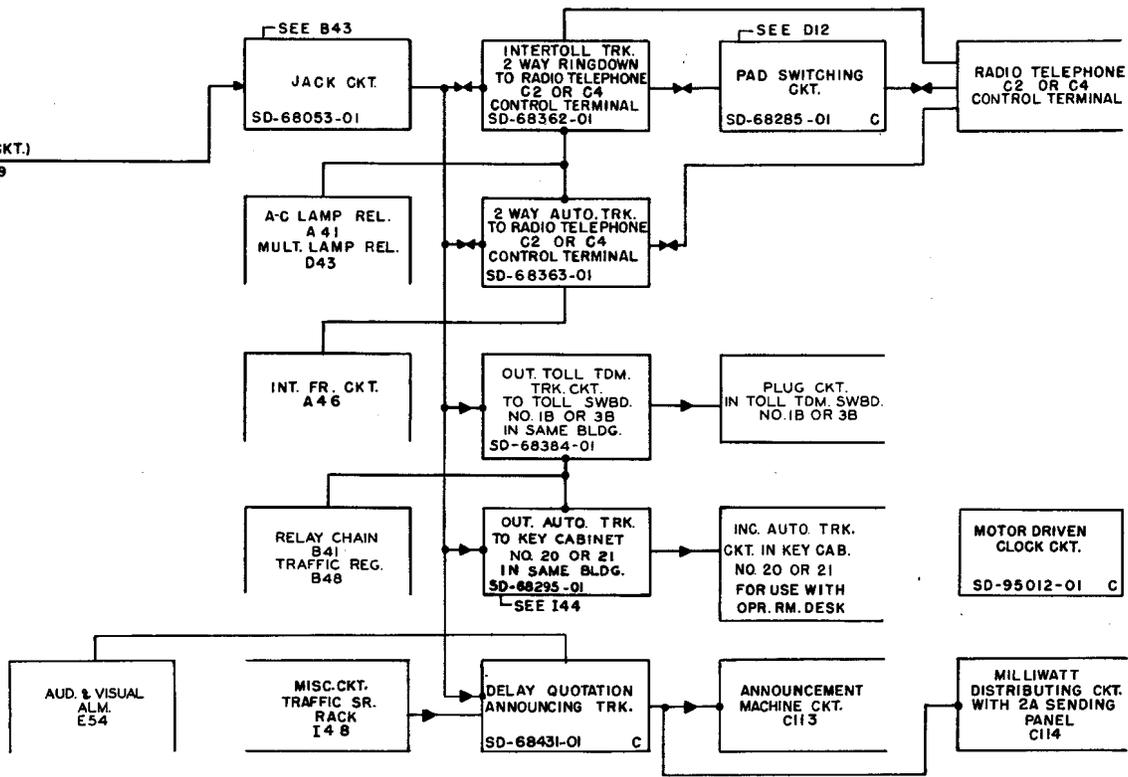
SD-68400-01 - PAGE 16



TRUNK CKTS. CONNECTING TO OUT. LINK & CONN.

A
B
C
D
E
F
G
H
I
J
K

Z (CORD CKT.)
TO PAGE 9



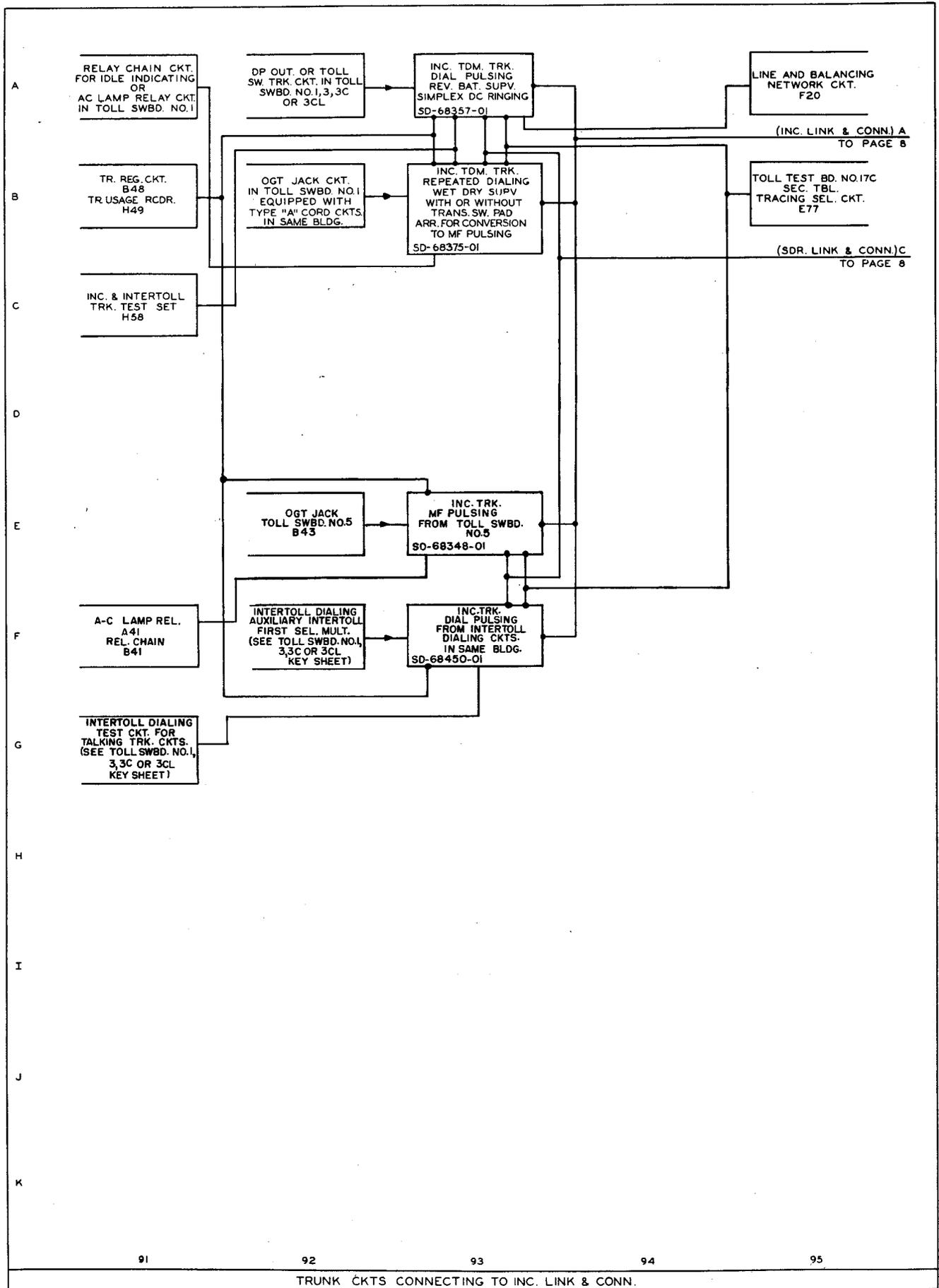
86

87

88

89

90



91

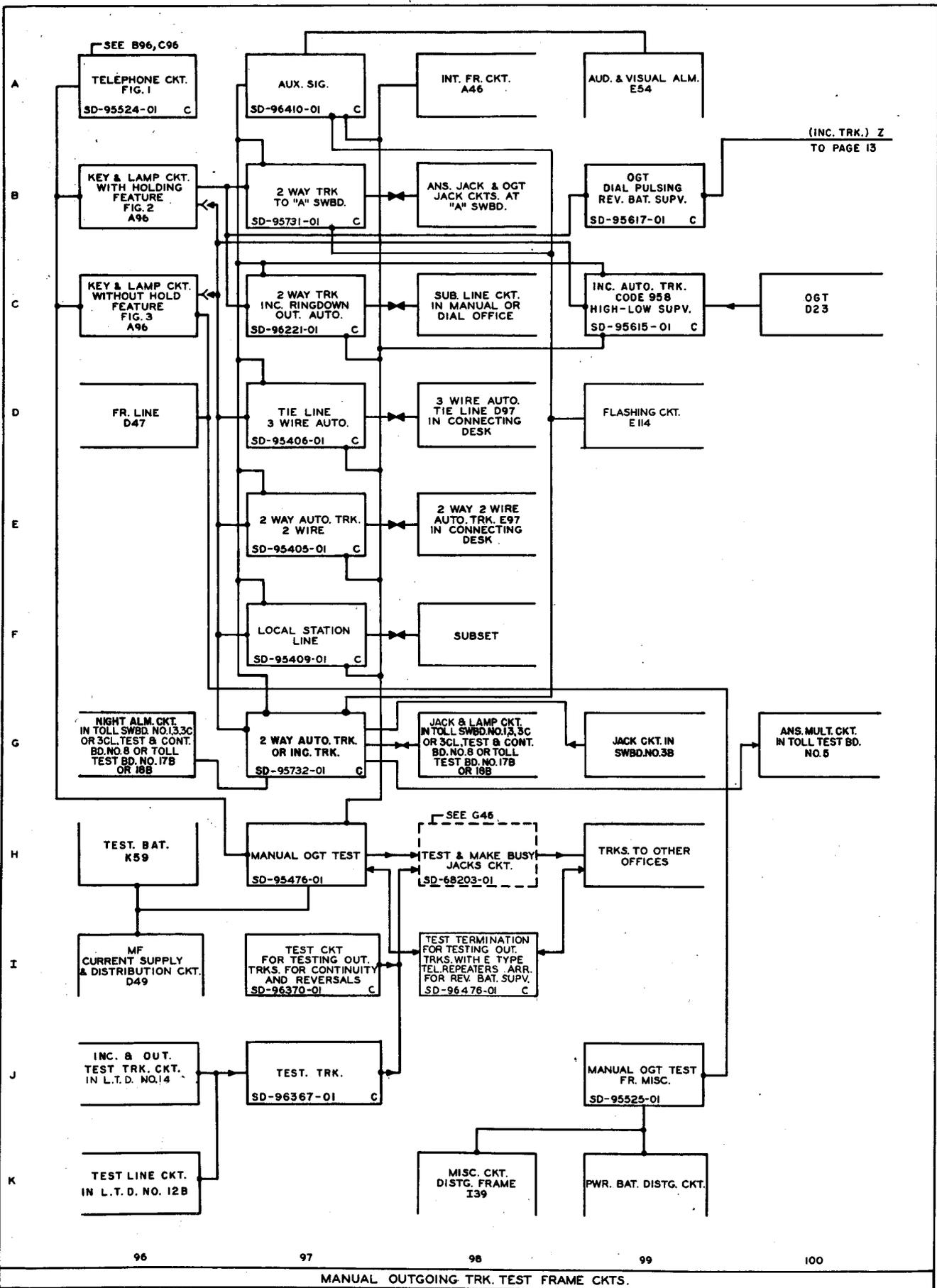
92

93

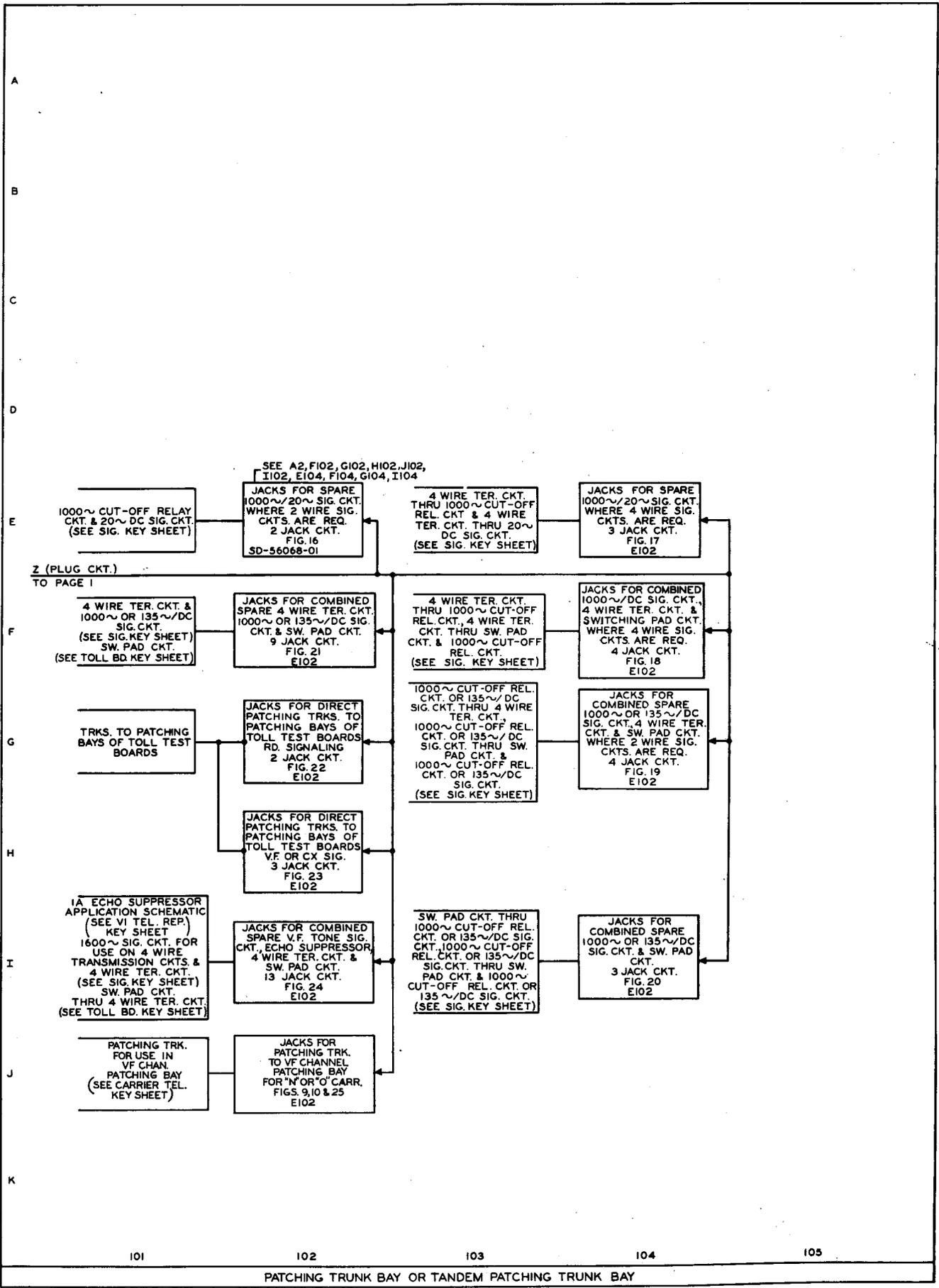
94

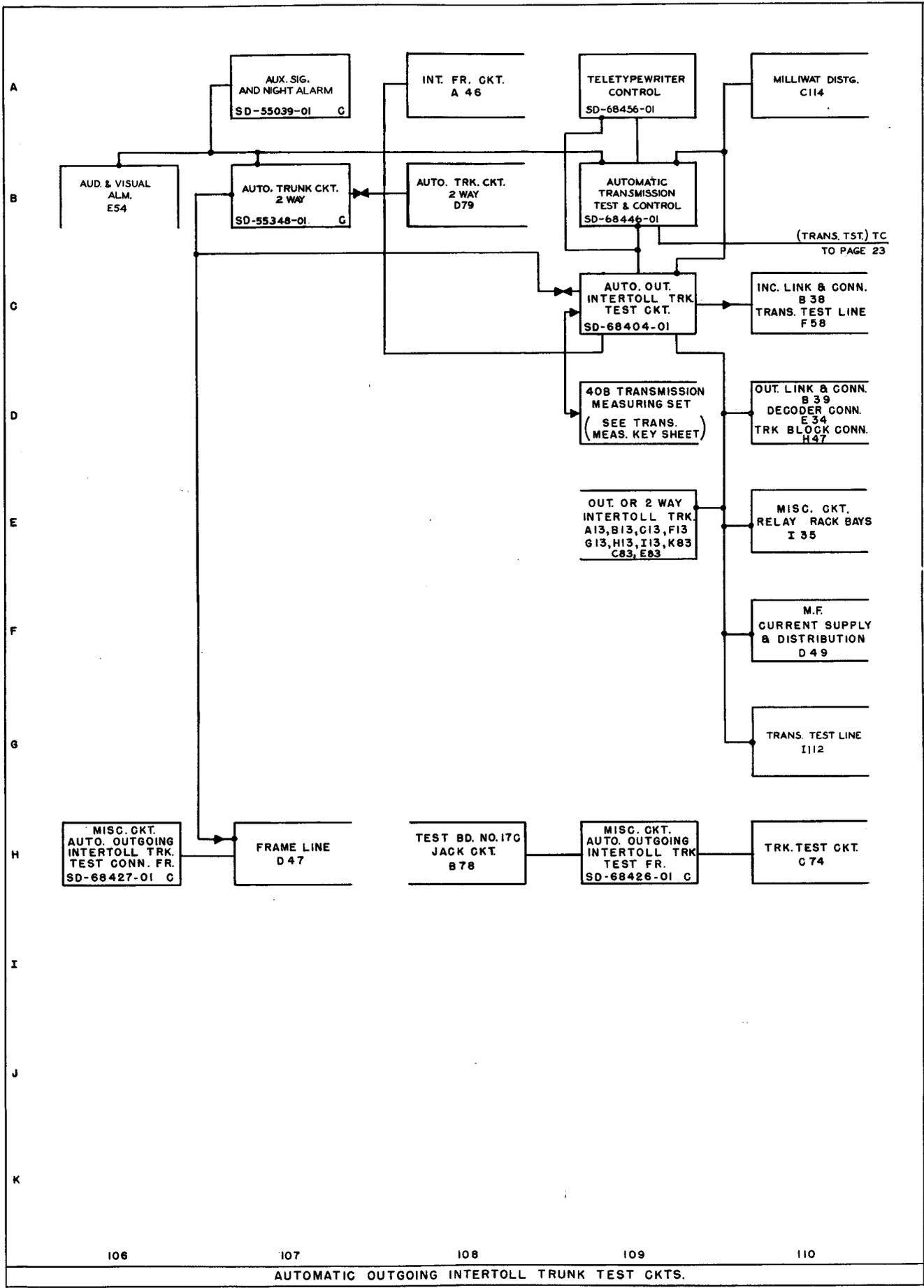
95

TRUNK CKTS CONNECTING TO INC. LINK & CONN.



MANUAL OUTGOING TRK. TEST FRAME CKTS.





106

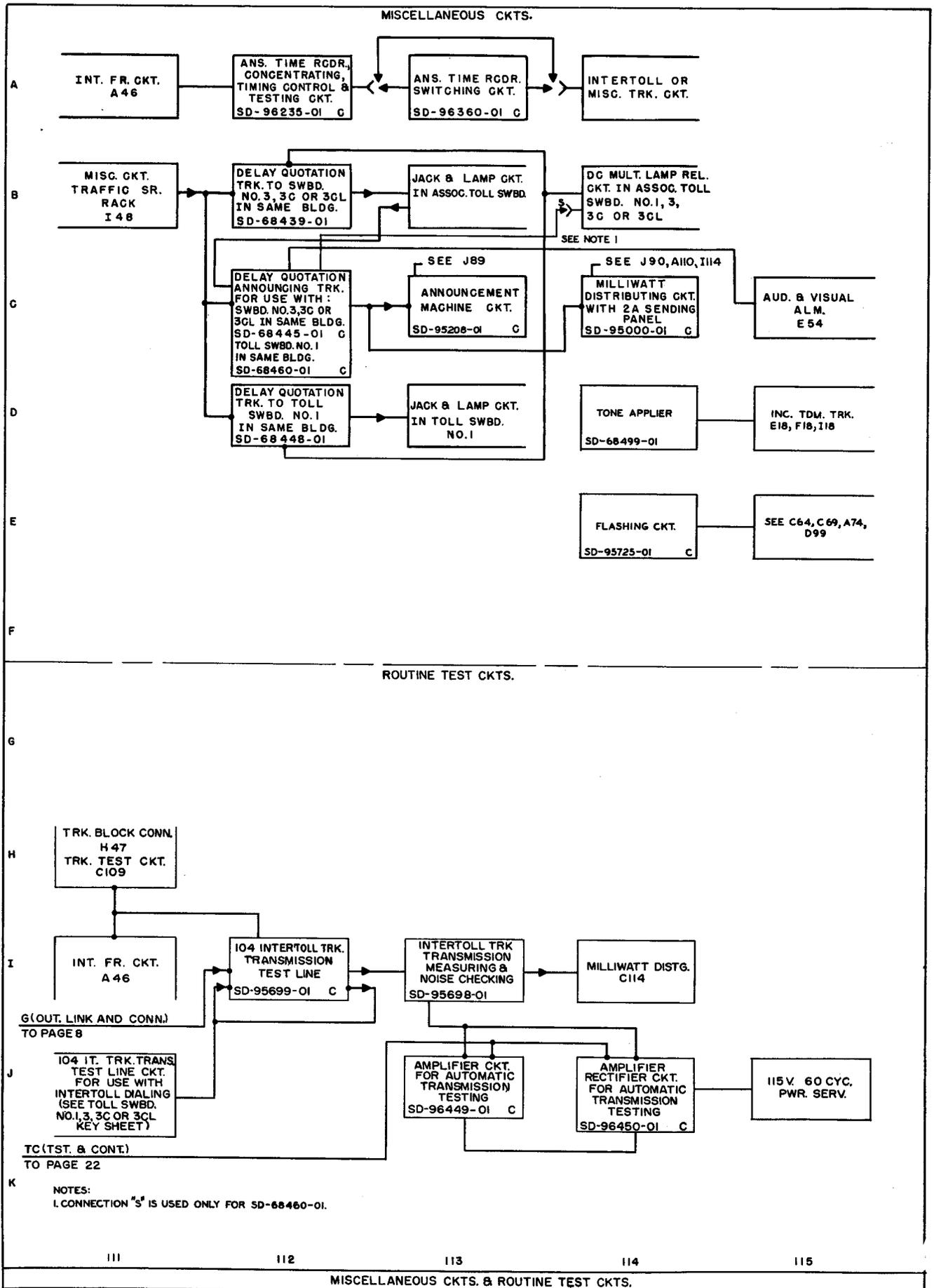
107

108

109

110

AUTOMATIC OUTGOING INTERTOLL TRUNK TEST CKTS.



CURRENT DRAIN AMPERE HOURS PER BUSY HOUR														
CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1				DRAINS LIST 2							
CIRCUIT TITLE	CIRCUIT NO.		48V BAT.		24V BAT.		48V BAT.		48V GRD.		24V BAT.		24V GRD.	
			SIG	TALK	SIG	TALK	SIG	TALK	SIG	TALK	SIG	TALK	SIG	TALK
APPLIER, TONE	SD-68499-01													
CONNECTOR														
TRK BLOCK	SD-68027-01	3				.850		.850						
LINK CONTROLLER	SD-68336-01		1.890			1.720		1.720						
DECODER	SD-68339-01	4	.428			.680		.790						
		5	.031			.028		.031						
TRANSLATOR	SD-68341-01	6	2.540			2.040		2.170						
MARKER	SD-68395-01	4	2.080			1.740		1.180						
CONTROL														
ALTERNATE ROUTE TRAFFIC	SD-68408-01		.040			.022		.022						
		1	.260			.145		.145						
		2	.360			.200		.400						
TMG FOR ALL DECODERS BUSY	SD-68416-01		.085			.085		.154						
SENDER TRAFFIC	SD-68455-01	7	.056			.042		.018						
		8	.358			.268		.168						
CONTROLLER, LINK	SD-68028-01		1.230			2.270		2.270						
CONVERTER														
PULSE, FOR CONVERTING DP TO MF	SD-95590-01	9	.052	E.014		.260	E.014	.196						
CORD														
TOLL SWBD NO. 5	SD-68051-01		.067			.076		.011						
TOLL TEST BD NO. 17C	SD-68092-01	10				.500		.500						

NOTES:

1. ADD PER 10 ROUTE TRANSFER RELAYS.
2. ADD PER 10 ROUTE TRANSFER LAMPS OF FIG. 9.
3. DRAIN PER BAY OF TRK BLOCK CONN FRAME.
4. DRAIN PER DECODER.
5. ADD PER CONN PER DECODER.
6. MAXIMUM DRAIN ON ANY ONE POWER LEAD IS LIST 2 DRAIN MULTIPLIED BY TWICE THE NUMBER OF DECODERS IN THE OFFICE.
7. DRAIN PER SENDER GROUP OF 40 OR LESS SENDERS ULTIMATELY.
8. DRAIN PER SENDER GROUP OF OVER 40 SENDERS ULTIMATELY.
9. "E" INDICATES 130V PLATE DRAIN.
10. DRAINS PER POSITION.

CURRENT DRAIN AMPERE HOURS PER BUSY HOUR														
CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1				DRAINS LIST 2							
			48V BAT.		24V BAT.		48V BAT.		48V GRD.		24V BAT.		24V GRD.	
CIRCUIT TITLE	CIRCUIT NO.		SIG	TALK	SIG	TALK	SIG	TALK	SIG	TALK	SIG	TALK	SIG	TALK
DECODER	SD-68340-01	1,2,3	.0013	A0003			12.2	A.78	12.2	A.78				
FRAME, INTERRUPTER	SD-68058-01						1.10		2.20		1.10		2.20	
GROUPING, POSITION	SD-68161-01		.051				.028		.028					
JACK, TOLL SWBD NO. 5	SD-68053-01	4,5			.010						.020		.020	
LINK														
SENDER	SD-68334-01	6	.125				.089		.089					
		7					1.76		1.76					
INCOMING	SD-68393-01	8	.017				.013							
OUTGOING	SD-68394-01	8	.017				.013							
MARKER	SD-68388-01	9	9.11	C1.00			11.24	C1.00	11.24					
MEASURING														
IT. TRK TRANS AND NOISE CHECKING	SD-95698-01						4.00		4.00					
MISCELLANEOUS														
SDR MAKE BUSY FR	SD-68386-01						3.22		3.22					
TBL RECORDER FR	SD-68392-01		10.0				24.0		24.0					
CARD TRANSLATOR	SD-68407-01	9		C.350	.200			C.195			.110			
OBSERVING														
MULTI-LINE SERV FOR USE WITH SERV OBS DESK NO. 12	SD-68401-01	10	1.266		E.045		.780	E.025	.710	E.025				
		10,11	.050		E.015		.028	E.011	.028	E.011				
		12	.102				.057		.057					
OSCILLATOR	SD-70217-01	D,13	E.006		H.960		E.006				H.960		H.950	

NOTES:

- THE LIST 1 DRAINS ARE PER BUSY HOUR DECODER USE.
- FOR THE TOTAL +130V LIST 2 DRAIN: MULTIPLY THE VALUES SHOWN BY THE NUMBER OF DECODERS LESS ONE. ADD TO THIS TOTAL, 3.50 AH/BH TO COVER THE DRAIN OF THE REMAINING DECODER ON MASS TEST.
- "A" INDICATES +130V SIG BAT. AND GRD DRAIN.
- DRAINS PER D-C ANS LAMP ONLY.
- THE BAT. IS FUSED ON THE ASSOCIATED TRK CKTS BUT THE DRAINS ARE NOT INCLUDED IN THE TRK CKTS.
- DRAINS PER SENDER.
- ADD PER ASSOCIATED CONTROLLER.
- DRAINS PER HOLD MAGNET.
- "C" INDICATES +130V SIG BAT. DRAIN.
- "E" INDICATES 130V PLATE DRAIN
- ADD PER 2 AMPLIFIERS.
- ADD PER CONNECTOR.
- "H" INDICATES 24V FIL BAT. AND GRD DRAIN.

CURRENT DRAIN
AMPERE HOURS PER BUSY HOUR

CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1				DRAINS LIST 2					
			48V. BAT.		24V. BAT.		48V. GRD.		24V. GRD.			
CIRCUIT TITLE	CIRCUIT NO.		SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.
POSITION												
TOLL TEST BD. NO.17C	SD-68353-01	2,8,9			H.500	A.007			H.280	A.007	J.280	
TOLL SWBD. NO. 5	SD-68374-01		.089				.066	.134				
RECEIVING, MF PULSING												
RECORDER, TRAFFIC USAGE	SD-95536-01	2	.094		A.069		.098	.215		A.156		
RECORDER, TRAFFIC USAGE	SD-95738-01						1.28	1.28				
RELAY												
AC LAMP	SD-62848-01	12,14 15	.042				.038	.038			.006	.006
MULTIPLE LAMP	SD-63962-01	2,3,16			.032					.027	.027	
		2,3,17			.028					.023	.023	
		2,3,18			.073					.061	.061	
RELAY CHAIN												
AC OR DC IDLE IND. ON TRKS.	SD-55570-01	10,12 11,12	.013				.011	.011		.049		
GRP BUSY, OVERFLOW TRK. CKT. & OVERFLOW TRK. CONTROL CKT.	SD-68420-01	15	.050				.050	.080				
		19	.081				.081	.014				
		20	.052				.035	.098				
SENDER												
OUT. RP & PCI	SD-68018-01		1.80				1.44	1.62		.400	.400	
DP INC.	SD-68221-01		1.95				2.87	3.02		.200	.200	
MFP INC.	SD-68222-01		2.25				3.22	2.90		.200	.200	
SUPPLY												
FR. IDENTIFICATION FREQ.	SD-68119-01	1,2	19.20	A.500			19.20	A.500	19.70			
		3	.019				.019					
		4	2.94				2.94	2.94				
MF CURRENT & DISTRIBUTION	SD-95591-01	2,5,6	B.850	A.033	B.1275	B.473	6.473	6.473	A.033	B.710	C.710	
FILAMENT, FOR MF RECEIVERS	SD-95676-01		.132				.396	.230				
		24	1.312				3.940	3.940				
TELEPHONE												
TOLL SWBD. NO. 5	SD-68162-01		.150				.140	.140				
REC. & MON. CORD	SD-68165-01		.158				.088	.081				
CKT. PTCH. BAY	SD-68330-01		.083	.114			.046	.046	.063			
TEST												
CARD TRANSLATOR	SD-68458-01						3.50	3.50				
INC. SDR.	SD-68226-01		2.000	.100			5.000	5.000	.100	.100		
OUT. RP & PCI SDR.	SD-68372-01		2.000	.100			5.000	5.000	.100	.100		
AUTO. OUT. TOLL CONNECTING TRK	SD-68373-01	7					3.000	C.100	3.000	1.000	1.000	
LINK CONTROLLER	SD-68405-01						6.67	6.67				
MAN. OGT FOR MAN. OGT TEST FR.	SD-95476-01						4.450	4.450				
DECODER MARKER AND TROUBLE RECORDER	SD-68389-01						24.00	24.00				
OUT. AUTO. INTERTOLL TRK.	SD-68404-01	2					16.00	16.00	1.00	A.060	1.00	
TRANSLATOR CARD	SD-68342-01	21,22,23	.0064				25.0	E.010	22.2	E.010		

NOTES:

1. AMPLIFIER DRAIN PER OFF FUSES ARE ON DISTG. FUSE PANEL.
2. "A" INDICATES 130V. PLATE DRAIN.
3. ADDITIONAL PER LINK FRAME (OUT. OR INC.) AND JUMP HUNT GRP FUSES ARE ON CONT. FR. DRAIN ON CONT. FR.
4. ADDITIONAL PER OFFICE. FUSES ARE ON CONTROL FRAME.
5. "B" INDICATES 24V. OR 48V. FIL. BAT. DRAIN AS SPECIFIED.
6. "C" INDICATES 24V. OR 48V. FIL. GRD. DRAIN AS SPECIFIED.
7. DRAIN IS PER OSCILLATOR.
8. "D" INDICATES 130V. SIG. BAT. DRAIN.
9. "H" INDICATES 24V. SIG. OR 24V. FIL. BAT. DRAIN AS SPECIFIED.
10. "J" INDICATES 24V. SIG. OR 24V. FIL. GRD. DRAIN AS SPECIFIED.
11. PER (LP) RELAY (DELAY FIGS. 11, 12 & 13).
12. BAT. DRAIN SHOWN ON THIS CKT. IS FUSED ON CONNECTING CKT.
13. DRAINS FOR LAMPS FUSED WITH TRK. CKTS. OR MULT. LAMP RELAY CKTS. ARE SHOWN ON CONNECTING JK. CKT.
14. PER FIG. 4.
15. PER FIG. 1.
16. PER (LP) RELAY (FIG. 1).
17. PER (LPI) RELAY (FIG. 2).
18. PER (LP2) RELAY (FIG. 3).
19. PER FIG. 2.
20. PER FIG. 3, 4, 5 OR 6.
21. "E" INDICATES +130V. SIG. BAT. AND GRD. DRAIN.
22. THE LIST 1 DRAIN IS PER BUSY HOUR CARD TRANSLATOR USE.
23. THE MAXIMUM DRAIN ON ANY ONE POWER LEAD IS THE LIST 2 DRAIN TIMES THE NUMBER OF DECODERS PLUS 2, IN THE OFFICE.
24. ADD FOR EACH FIG. 4 (EMERGENCY BAT. SUPPLY).

CURRENT DRAIN
AMPERE HOURS PER BUSY HOUR

CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1			DRAINS LIST 2											
			48V. BAT.		24V. BAT.	48V. BAT.		48V. GRD.		24V. BAT.		24V. GRD.					
			SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.			
TRUNK																	
INTERTOLL, INC. DP, CX SUPV.	SD-68135-01		.185					.133		.259							
INTERTOLL, INC. MFP, CX SUPV.	SD-68230-01		.178					.128		.255							
INTERTOLL, OUT. DP, MFP OR AUTO., CX SUPV.	SD-68231-01		.203					.145		.096							
INTERTOLL, 2 WAY, INC. DP, OUT. DP, MFP OR AUTO., CX SUPV.	SD-68232-01		.239					.174		.199							
INTERTOLL, 2 WAY, INC. MFP, OUT. DP, MFP OR AUTO., CX SUPV.	SD-68233-01		.231					.169		.197							
INTERTOLL, OUT. AUX. FOR USE WITH RD. INTERTOLL TRK. CKT.	SD-68234-01		.047					.062		.040							
INC. TDM, MFP, FROM SWBD. NO. 3, 3C OR 3CL IN SAME BLDG.	SD-68238-01		.094					.052		.228						.028	
OUT. TX OR COMB. TX & TOLL SW., DP, MFP OR AUTO., REV. BAT. SUPV., ARR. FOR SIMPLEX DC RERING	SD-68239-01		.037					.037		.033							
TOLL SW., DP, WET DRY SUPV. AUTO. START OF RINGING TO REPEATED DIAL TOLL TRAIN OR COMB. LOOP & REPEATED DIAL TOLL TRAIN	SD-68240-01		.144					.144		.125							
TOLL SW., DP, MFP OR STFD., WET DRY, HIGH LOW OR REV. BAT. SUPV.	SD-68242-01	1	.037					.037		.029							
		2	.057					.065		.057							
INTERTOLL, OUT. RINGDOWN	SD-68260-01		.021					.021		.011							
TX, 121, 131, 141, 181, OR 191 TO SWBD. NO. 3, 3C OR 3CL IN SAME BLDG.	SD-68282-01	3	.111					.089		.081						.030	
TX, 121, 181 OR 191, 4 WIRE TALKING, REV. BAT. SUPV. & SIMPLEX DC RINGING ON SIGNALING PHANTOM	SD-68289-01		.019					.037		.020							
INC. TDM, 4 WIRE TALKING, MFP, REV. BAT. SUPV. & SIMPLEX DC RINGING ON SIGNALING PHANTOM	SD-68290-01		.091					.061		.212							
121 - TO TOLL SWBD. NO. 5	SD-68291-01	3	.040					.032		.073							
OUT. TOLL TDM, STFD. TO TOLL TDM. SWBD. NO. 1 IN SAME BLDG.	SD-68294-01		.105					.084		.042							
OUT. TOLL TDM, STFD. TO TOLL TDM. SWBD. NO. 3 IN SAME BLDG.	SD-68295-01		.034					.027		.050							
INC. OR OUT. WITH TRANS. SW. PAD FOR USE WITH SWBD. NO. 3, 3C OR 3CL IN SAME BLDG.	SD-68296-01	3	.107					.070		.092						.028	
INC. OR OUT. WITH TRANS. SW. PAD, WET DRY SUPV., FOR USE WITH TOLL SWBD. NO. 1 IN SAME BLDG.	SD-68297-01		.107					.070		.092						.018	
INC., 4 WIRE TALKING, AUTO., REV. BAT. SUPV. & SIMPLEX DC RINGING ON SIGNALING PHANTOM	SD-68302-01		.016					.032		.064							
OUT. TX TO TOLL SWBD. NO. 1 IN SAME BLDG.	SD-68305-01		.018					.035		.044						.013	
121 OR 191 WITH TRANS. SW. PAD, WET DRY SUPV. TO TOLL SWBD. NO. 1 IN SAME BLDG.	SD-68306-01		.033					.066		.074						.038	
INTERPOSITION-TOLL SWBD. NO. 5	SD-68283-01	3						.080		.070							

NOTES:

1. DIAL OFFICE TERMINATION.
2. MANUAL OFFICE TERMINATION.
3. ADDITIONAL 24V. SIG. BAT. DRAIN FUSED ON THIS CKT. IS SHOWN ON JACK CKT., REL. CHAIN CKT. OR MULT. LAMP REL. CKT. AND MUST BE ADDED TO TRK. DRAIN.

CURRENT DRAIN AMPERE HOURS PER BUSY HOUR														
CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1				DRAINS LIST 2							
			48V. BAT.		24V. BAT.		48V. BAT.		48V. GRD.		24V. BAT.		24V. GRD.	
CIRCUIT TITLE	CIRCUIT NO.		SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.
TRUNK														
OUT. 4 WIRE TALKING, REV. BAT. SUPV. & SIMPLEX DC RINGING ON SIGNALING PHANTOM	SD-68307-01								.031					
OUT. TOLL TDM, MFP OR STFD., 4 WIRE TALKING, REV. BAT. SUPV. & SIMPLEX DC RINGING ON SIGNALING PHANTOM	SD-68309-01	1,9	.046			.037	.064							
		2,9	.054			.043	.070							
		8	.072			.058	.085							
INC. TDM, DP, REV. BAT. SUPV., WITH 20 CYCLE RINGING	SD-68315-01		.078			.078	.245							
INC. TDM, MFP, SLEEVE SUPV. FROM TOLL SWBD. NO.1 IN SAME BLDG.	SD-68317-01		.060			.040	.205					.031		
INC. TDM, MFP, REV. BAT. SUPV., WITH 20 CYCLE RINGING	SD-68318-01		.085			.085	.253							
OUT. TOLL TDM, STFD. TO TOLL TDM. SWBD. NO.1 IN SAME BLDG.	SD-68320-01		.170			.136	.070							
OUT. TOLL TDM, STFD. TO TOLL TDM. SWBD. NO.3 IN SAME BLDG.	SD-68321-01		.070			.056	.042							
INC. TDM, MFP, WET DRY SUPV., FROM TOLL SWBD. NO.1 IN SAME BLDG.	SD-68322-01		.102			.067	.233					.018		
TOLL SW, RP OR PCI, WET DRY OR REV. BAT. SUPV.	SD-68326-01	3	D .068			D .068	D .077							
OUT. TO DESKS OR TEST CENTER	SD-68332-01		.096			.087	.085							
INC., MF PULSING FROM TOLL SWBD. NO. 5	SD-68348-01		.063			.063	.050					.032		
INC. TDM, DP, REV. BAT. SUPV., SIMPLEX DC RINGING	SD-68357-01		.064			.064	.230							
INC. TDM, MFP, REV. BAT. SUPV., SIMPLEX DC RINGING	SD-68358-01		.099			.066	.234							
INTERTOLL, 2 WAY RINGDOWN TO RADIO TEL. C2 OR C4 CONTROL TERMINAL	SD-68362-01	7	.126			.126	.148							
2 WAY AUTO. TO RADIO TEL. C2 OR C4 CONTROL TERMINAL	SD-68363-01	7	.079			.079	.061					.035		
INTERTOLL, OUT. AUX., FOR USE WITH RINGDOWN INTER-TOLL TRK. CKT.	SD-68364-01		.028			.020	.020					.017		
TOLL SW. EQUIPPED WITH REPEATER, RP OR PCI, REV. BAT. OR WET DRY SUPV.	SD-68366-01	4,5		A .010	B .120	.068	.077		A .010		B .067	G .067		
121 OR 191, WET DRY SUPV. TO TOLL SWBD. NO.1 IN SAME BLDG. EQUIPPED WITH TYPE "A" CORDS	SD-68368-01	6	.018		.003	.035	.044		.006		.024			
OUT. AUX., REV. BAT. SUPV., FOR USE WITH 2 WAY OPR. OFF. TRK.	SD-68371-01		.074			.164	.126							
INC. TDM, REPEATED DIALING, WET DRY SUPV. FROM TOLL SWBD. NO.1 IN SAME BLDG. ARR. FOR CONVERSION TO MFP.	SD-68375-01		.122			.080	.077					.077		
OUT. TOLL TDM. TO TOLL SWBD. NO.1B OR 3B IN SAME BLDG.	SD-68367-01	1,6	.095		.022	.076	.076		.018		.058			
		2,6	.100		.022	.080	.080		.018		.058			
		10			.015					.012				

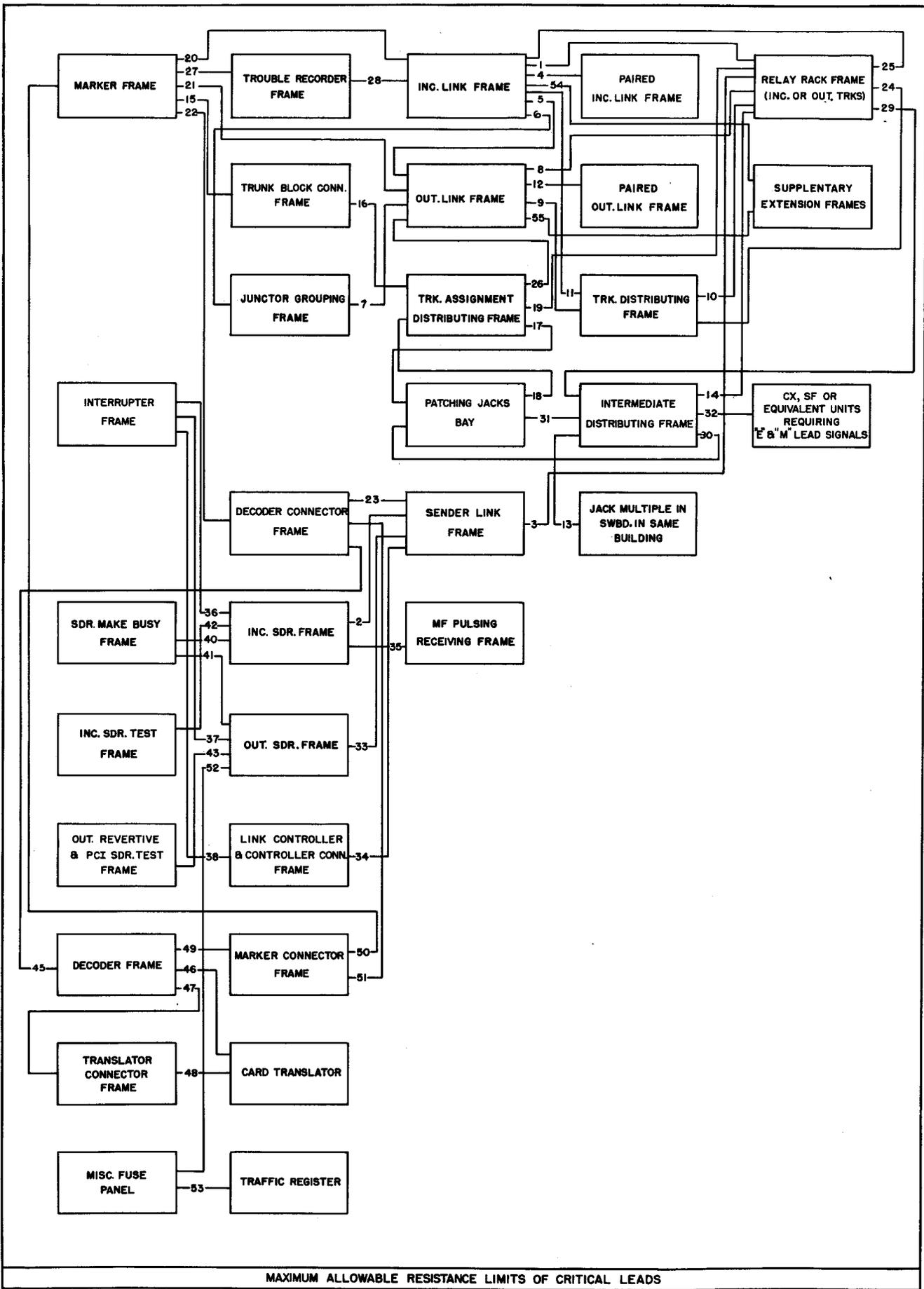
NOTES:

- WITHOUT POS. IDLE INDICATING.
- WITH POS. IDLE INDICATING.
- "D" ADD .015 IF FIG. A IS USED.
- "A" INDICATES 130V. PLATE DRAIN.
- "B" INDICATES 24V. FIL. BAT. DRAIN.
"G" INDICATES 24V. FIL. GRD. DRAIN.
- THE 24V. SIG. BAT. SHALL BE TAKEN FROM THE CENTRAL OFF. BAT. WHICH SUPPLIES THE TOLL SWBD.
- ADDITIONAL 24V. SIG. BAT. DRAIN FUSED ON THIS CKT. IS SHOWN ON JACK CKT., REL. CHAIN CKT. OR MULT. LAMP REL. CKT. AND MUST BE ADDED TO TRK. DRAIN.
- FOR MF PULSING.
- FOR STFD. OPERATION.
- ADD WHEN PAD CONTROL RES. IS NOT FURNISHED IN THE PLUG CKT.

CURRENT DRAIN AMPERE HOURS PER BUSY HOUR														
CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1				DRAINS LIST 2							
			48V. BAT.		24V. BAT.		48V. BAT.		48V. GRD.		24V. BAT.		24V. GRD.	
CIRCUIT TITLE	CIRCUIT NO.		SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.	SIG.	TALK.
TRUNK														
OUT. AUX. CX SUPV. FOR USE WITH 2 WAY OPR. OFF. TRK. OR TOLL SW. TRK.	SD-68378-01		.091				.130		.146					
OUT. TOLL TDM. TO TOLL SWBD. NO.1B OR 3B IN SAME BLDG.	SD-68384-01		.163		.022		.130		.198		.018		.018	
OVERFLOW & CONTROL	SD-68034-01	3	.095				.065		.060					
2 WAY, TO DIAL CENT. OFF. OR DIAL PBX	SD-68383-01	4	.021				.021		.031					
OUT. AUTO. IT. 4 WIRE TALKING, HIGH LOW REV. BAT. SUPV. SX DC RING. ON SIG. PH., WITH OR WITHOUT TRANS. SWITCHING PAD.	SD-68397-01		.061				.086		.124					
DELAY QUOTATION, TO SWBD. NO.3, 3C, OR 3CL IN SAME BLDG.	SD-68439-01	5	.286	A.040			.190	A.024	.188	A.024			.007	
DELAY QUOTATION TO TOLL SWBD. NO.1 IN SAME BLDG.	SD-68448-01	5	.298	A.037			.199	A.024	.187	A.024			.022	
OUT. TO INTERTOLL DIALING CKTS. IN SAME BLDG.	SD-68449-01		.185				.132		.073					
INC. FROM INTERTOLL DIALING CKTS. IN SAME BLDG.	SD-68450-01		.288				.198		.162					
TOLL SWITCHING, TO SXS OFF. IN SAME BLDG.	SD-68451-01		.180				.180		.161					
TX, RD. SUPV. TO TOLL SWBD. NO.1	SD-68459-01		.029				.057		.066		.089			
+130V. DRAIN FOR TRK. CKTS.		2												

NOTES:

- 1.
2. FOR LIST I INCLUDE 0.1 AMP. HR. PER BUSY HOUR PER 1000 TRK. CKTS. REGARDLESS OF TYPE AND EXCLUSIVE OF ANY OTHER +130V. DRAIN.
3. PER FIG.1
4. ADDITIONAL 24V. SIG. BAT. DRAIN FUSED ON THIS CKT. IS SHOWN ON JACK CKT., REL. CHAIN CKT. OR MULT. LAMP REL. CKT. AND MUST BE ADDED TO TRK. DRAIN.
5. "A" INDICATES +130 V. SIG. BAT. AND GRD. DRAIN
6. PER ONE 4 POS. TURRET.
7. PER TWO 4 POS. TURRETS.



MAXIMUM ALLOWABLE RESISTANCE LIMITS OF CRITICAL LEADS

ALARM

Night, and Aux. Sig. Floor Alm. Fr. Fuse & Time	SD-55039-01	B2, B7, F42, B79, A107,
Fuse Bays Fuse	SD-68067-01	B52
Floor Alm. Fr. Misc. & Aux.	SD-68068-01	E53
For Use with Trouble Tracing Sel. Ckts.	SD-68073-01	B53
Code Sig. & Auto.	SD-68246-01	G54
Fire Detection Emg. Fuse - For 24V & 48V Fuses Mtd. in Swbd. Pos.	SD-90437-01	G52
Aud. & Visual	SD-96153-01	H42
	SD-96188-01	E54

AMPLIFIER

For Auto. Trans. Testing	SD-96449-01	J113
-----------------------------	-------------	------

AMPLIFIER-RECTIFIER

For Auto. Trans. Testing	SD-96450-01	J114
-----------------------------	-------------	------

ANNOUNCEMENT MACHINE	SD-95208-01	C113
----------------------	-------------	------

BATTERY

Test	SD-96120-01	K59
------	-------------	-----

BELL

Ch. Swmn's Desk Call	SD-96447-01	A69
----------------------	-------------	-----

CALL CKT.

Toll Swbd. No. 5 Serv. Assistant's	SD-68062-01	F43
---------------------------------------	-------------	-----

CLOCK

Motor Driven	SD-95012-01	I90
Misc. Use	SD-96201-01	J48
10 I.P.M.	SD-96343-01	J75

CONNECTOR

Trk. Block	SD-68027-01	H47
Sender	SD-68334-01	C38
Controller	SD-68336-01	B33
Decoder	SD-68339-01	E34
Translator	SD-68341-01	C32
Inc.	SD-68393-01	B38
Out.	SD-68394-01	B39
Marker	SD-68395-01	E33

CONTROL

Timing, For All Markers Busy	SD-68199-01	I33
---------------------------------	-------------	-----

CONTROL (Cont'd)

Traffic, For Alternate Route Timing, For All Decoders Busy Overflow Trk.	SD-68408-01	D34
Auto. Trans.	SD-68416-01	D32
Sender Traffic	SD-68420-01	I23
Teletypewriter	SD-68446-01	B109
	SD-68455-01	G38
	SD-68456-01	A109

CONTROLLER

Link	SD-68028-01	C33
------	-------------	-----

CONVERTER

Pulse, for Covert- ing Dial Pulses to MF Pulses	SD-95590-01	B46
---	-------------	-----

CORD

Tdm. Patching Trk. Bay - Patching	SD-56068-01	F5
Toll Swbd. No. 5 - Pos.	SD-68051-01	C42
Toll Swbd. No. 5 Overflow Indicating	SD-68055-01	A42
Toll Test Bd. No.17C	SD-68092-01	B77
Toll Swbd. No. 5 - Recording & Mon.	SD-68185-01	B42
Ckt. Patching Bay - Patching	SD-68327-01	F10

DECODER

	SD-68340-01	D33
--	-------------	-----

FLASHING

	SD-95725-01	E114
--	-------------	------

GROUPING

Toll Swbd. No. 5 Position	SD-68161-01	D42
------------------------------	-------------	-----

JACKS

Tdm. Patching Trk. Bay	SD-56068-01	A2
---------------------------	-------------	----

Toll Swbd. No. 5 Out. & Ans.	SD-68053-01	B43
---------------------------------	-------------	-----

Toll Test Bd. No. 17C	SD-68122-01	B78
Test & Make Busy	SD-68203-01	G46

Ckt. Patching Bay - Trk. & Lamp	SD-68327-01	A7
------------------------------------	-------------	----

Monitoring & Obser- ving, & Associ- ated Ckts.	SD-90564-01	A49
--	-------------	-----

KEY & LAMP

Ch. Swmn's Desk	SD-95404-01	B66 B61, C61
Sdr. M.B. Fr.	SD-95524-01	

Auto. Out. Toll Connecting Trk. Test Fr.	SD-95524-01	B71, C71
Man. OGT Test Fr.	SD-95524-01	A96

KEY SET

Toll Swbd. No. 5-MF	SD-68349-01	E41
LINE		
Test, to Milliwatt Distributing Ckt.	SD-68095-01	E58
Test	SD-68399-01	D58
Test, for Balance & Noise Tests	SD-68432-01	C58
Sdr. M.B. Fr. - 3 Wire Auto. Tie	SD-95406-01	D62
Ch. Swmn's Desk - 3 Wire Auto. Tie	SD-95406-01	D67
Auto. Out. Toll Connecting Trk. Test Fr. - 3 Wire Auto. Tie	SD-95406-01	D72
Man. OGT Test Fr. - 3 Wire Auto. Tie	SD-95406-01	D97
Sdr. M.B. Fr. - Local Sta.	SD-95409-01	G62
Ch. Swmn's Desk - Local Sta.	SD-95409-01	G67
Auto. Out. Toll Connecting Trk. Test Fr. Local Station	SD-95409-01	G72
Man. OGT Test Fr. Local Sta.	SD-95409-01	F97
Recorder's Talking It. Trk. Trans. Test	SD-95532-01	F48
One Way Trans. Test	SD-95699-01	I112
Local Frame	SD-96000-01	F58
	SD-96379-01	D47
LINK		
Sender	SD-68334-01	C38
Inc.	SD-68393-01	B38
Out.	SD-68394-01	B39
MAKE BUSY TRUNK	SD-96448-01	E46
MARKER	SD-68388-01	F33
MEASURING		
It. Trk. Trans., & Noise Checking	SD-95698-01	I113
MISC. FRAME		
Block Relay Fr.	SD-68024-01	I47
Inc. Sdr. & Out.		
Sdr.	SD-68041-01	I38
Sdr. Link Fr.	SD-68043-01	J35
Inc. & Out. Link	SD-68048-01	I37
Interrupter	SD-68058-01	A46
Traffic Reg. Rack & Rcdr's Desk	SD-68059-01	E48
Link Controller & Controller Conn.	SD-68087-01	I34, J14, J20, J24,
Relay Rack Bays	SD-68090-01	I35
Overflow Trk.	SD-68193-01	J23
Distg.	SD-68194-01	I39
Traffic Supervisory Rack	SD-68195-01	I48

MISC. FRAME (Cont'd)

Frame Identifica- tion Freq. Supply	SD-68196-01	K36
Auto. Out. Toll Connecting Trk. Test Conn.	SD-68206-01	J74
Auto. Out. Toll Conn. Trk. Test	SD-68209-01	H74
Inc. Sdr. Test	SD-68385-01	I57
Sdr. M.B.	SD-68386-01	A64
Trouble Recorder	SD-68392-01	H32
Out. Revertive & PCI Sdr. Test	SD-68396-01	K57
Card Translator	SD-68407-01	G34
Marker	SD-68410-01	H33
Decoder	SD-68411-01	G33
Alternate Route Traffic Control	SD-68415-01	H31
Foreign Area Translator Con- nector	SD-68418-01	H40
Mkr. Conn.	SD-68419-01	H34
Decoder Conn.	SD-68422-01	G35
Auto. Out. Intertoll Trk. Test	SD-68426-01	H109
Auto. Out. Intertoll Trk. Test Conn.	SD-68427-01	H106
Emergency Trans- lator Conn. & Fr.		
Ident. Freq. Control	SD-68429-01	I40
Man. OGT Test	SD-95525-01	J99

MONITORING

Key, for Monitoring on MF Key Sets	SD-96314-01	A48
---------------------------------------	-------------	-----

NETWORK	SD-90517-01	F20
---------	-------------	-----

OBSERVING & SERV. OBS.

Multi-Line Serv.Obs., for Observing on Inc. Intertoll Trks. or Inc. End of 2 Way Intertoll Trks. for Use with Serv. Obs. Desk No. 12	SD-68401-01	C47
Central Off. Obs. Set. No. 2	SD-90448-01	A50

OSCILLATOR	SD-70217-01	A36
------------	-------------	-----

PAD

For Delivering Ad- justing Tone to MF Receiver	SD-95664-01	D48
--	-------------	-----

POSITION

Toll Test Bd. No. 17C	SD-68353-01	C77
Toll Swbd. No. 5	SD-68374-01	E42

PULSE CONVERTER (See Converter)

RECEIVING			TELEGRAPH ORDER	SD-62669-01	C78
MF Pulsing	SD-95536-01	C49	TELEPHONE		
RECORDER			Tdm. Patching		
Trouble	SD-68389-01	B59, E32	Trk. Bay	SD-56067-01	A1
Holding Time No. 1B	SD-90246-01	J49	Opr's. - Toll Swbd.		
Traffic Usage	SD-95738-01	H49	No. 5	SD-68162-01	E43
Ans. Time, Con-			Serv. Assistant's,		
centrating, Timing			Toll Swbd. No. 5	SD-68178-01	F44
Control & Testing	SD-96235-01	A112	Recording - Toll		
REGISTER			Swbd. No. 5	SD-68185-01	B42
Traffic	SD-68412-01	B48	Ckt. Patching Bay	SD-68330-01	A6
RELAY			Ch. Swmn's Desk	SD-95404-01	B66
AC Lamp	SD-62848-01	A41	Sdr. M.B. Fr.	SD-95524-01	A61
Multiple Lamp	SD-63962-01	D43	Auto. Out. Toll		
RELAY CHAIN			Connecting Trk.		
AC or DC Idle			Test Fr.	SD-95524-01	A71
Indicating	SD-55570-01	B41	Man. OGT Test Fr.	SD-95524-01	A96
Group Busy	SD-68420-01	I23	TEST BATTERY (See Battery)		
SELECTOR			TEST CKT.		
First Tbl. Tracing	SD-68244-01	E76	Continuity	SD-55534-01	F56
Second Tbl. Tracing	SD-68245-01	E77	Position - Toll		
SENDER			Swbd. No. 5	SD-68156-01	G41
Out., RP and P.C.I.	SD-68018-01	D39	Inc. Sdr.	SD-68226-01	B57
Inc., DP Inc., &			Out. Revertive &		
MFP, DP or DCKP Out.	SD-68221-01	D38	PCI Sender	SD-68372-01	A57
Inc., MFP Inc. & MFP,			Auto. Out. Toll		
DP or DCKP Out.	SD-68222-01	E38	Connecting Trk.	SD-68373-01	C74
SERVICE OBSERVING (See Observing)			Decoder - Marker	SD-68389-01	E32
SIGNAL			Auto. Out. Inter-		
Aux.	SD-55039-01	B7, A107	toll Trk.	SD-68404-01	C109
Aux. - Patching Trk.			Link Controller	SD-68405-01	H56
Bay or Tdm. Patch-	SD-63842-01	A5	Automatic Trans.	SD-68446-01	B109
ing Trk. Bay	SD-96087-01	E52	Bat. & Grd. Test		
Opr. Room Calling	SD-96410-01	A62	Terminals	SD-90122-01	I60
Aux. - Sdr. M.B. Fr.	SD-96410-01	A67	2A Sending Panel,		
Aux. - Swmn's Desk			Trans.	SD-95000-01	C114
Aux. - Auto. Out.			Man. OGT for Man.		
Toll Connecting			OGT Test Fr.	SD-95476-01	H97
Trk. Test Fr.	SD-96410-01	A72	For Checking Current		
Aux. Man OGT			& Earth Potential		
Test Fr.	SD-96410-01	A97	in Legs of CX		
SUPPLY			Signaling Ckts.	SD-95482-01	H77
Frame Identifica-			Serv. Obs., for		
tion Frequency	SD-68119-01	A37	Testing It. Serv.		
MF Current &	SD-95391-01	D49	Obs. Ckt., for Use		
Distribution			with Serv. Obs.		
Filament, with			Desk No. 12	SD-95712-01	G60
Emg. Trns.	SD-95676-01	F50	209FF, 209FK, 209FL		
SWITCHING			and 209FM Relays	SD-96121-01	E56
Pad Switching	SD-68285-01	D12	For Testing Out.		
Ans. Time Recorder	SD-96360-01	A113	Trks. for Contin-		
			uity and Reversals		
			for Man. OGT Test	SD-96370-01	I97
			Fr.	SD-96464-01	I59
			Cold Cathode Tube		
			TEST SET		
			For Timing Tests	SD-25707-01	D60
			Pulse Repeating	SD-64540-01	C59
			Frame Identifica-		
			tion Frequency	SD-68190-01	J59

TEST SET (Cont'd)

For Testing Inc., Out. & Intertoll Trk. Ckts.	SD-68359-01	H58
Card Translator For 275, 276 & 292 Type Relays	SD-68458-01	C56
Interrupter, 30 P.P.S.	SD-95439-01	J58
Pulse Checking, for Checking Speed & Per Cent Break of Interrupters	SD-95453-01	D59
	SD-96362-01	C60

TEST TERMINATION

For Testing Out. Trks. with E Type Tel. Repeater Arr. for Rev. Bat. Supv.	SD-96476-01	G60
TONE APPLIER	SD-68499-01	D114

TRANSLATOR

Card	SD-68342-01	B32
------	-------------	-----

TRUNKS

Incoming

From Toll Test Bd. No. 17C, MF Pulsing	SD-68141-01	H18
From Swbd. No. 3, 3C or 3CL in Same Bldg. - MF Puls- ing, with or without Trans. Sw. Pad.	SD-68238-01	B18
Tdm. - 4 Wire Talk- ing - MF Pulsing - Rev. Bat. Supv. & SX D-C Ringing on Signaling Phantom	SD-68290-01	I18
From Swbd. No. 3, 3C or 3CL In Same Bldg. - With Trans. Sw. Pad. - To Toll Bd. No. 5	SD-68296-01	J44
From Toll Swbd. No. 1 In Same Bldg. - With Trans. Sw. Pad. - To Toll Bd. No. 5	SD-68297-01	K44
To Toll Bd. No. 5 - 4 Wire Talking - Auto. - Rev. Bat. Supv. & SX D-C Ringling on Signal- ing Phantom	SD-68302-01	D44
From Man. Swbd. No. 1, 11, 15C or 15D - Tdm. - Dial Pulsing - Rev. Bat. Supv. - With 20 Cycle Ring.	SD-68315-01	G18
From Toll Swbd. No. 1 In Same Bldg. - MF Plsg. - Sleeve Supv.	SD-68317-01	D18

TRUNKS (Cont'd)

Incoming (Cont'd)

From Man. or DSA Swbd. - MF Puls- ing - Tdm. - Rev. Bat. Supv. - With 20 Cycle Ring.	SD-68318-01	E18
From Toll Swbd. No. 1 In Same Bldg. MF Plsg. - Wet Dry Supv. - With or with- out Trans. Sw Pad	SD-68322-01	C18
From Toll Swbd. No. 5, MF Pulsing	SD-68348-01	E93
From Toll Swbd. No. 1, 3, 3C or 3CL, Dial Pulsing, Rev. Bat. Supv., Simplex DC Ringing	SD-68357-01	A93
From Man., Toll or DSA Swbd. or Cbr. Tdm. Off. Tdm., MF Plsg., Rev. Bat. Supv.	SD-68358-01	F18
Simplex DC Ringing	SD-68358-01	F18
From Toll Swbd. No. 1 In Same Bldg. Equip- ped with Type "A" Cord Ckts., Tdm., Repeated Dialing, Wet Dry Supv., with or without Trans. Sw. Pad, Arr. for Con- version to MFP	SD-68375-01	B93
DP from Intertoll Dialing Ckts. In Same Bldg.	SD-68450-01	F93
Auto., Code 958, High-Low Supv., for Sender M.B. Fr., Ch. Swmn's Desk, Auto. Out. Toll Con- necting Trk. Test Fr. or Man. OGT Test Fr.	SD-95615-01	I62, F67, E74, C99
From Swbd. No. 3B in Same Bldg.	SD-95732-01	H62, H67, F72, G97

Intertoll

Inc., or Inc. Toll Tdm., Dial Pulsing CX Supv. Type B, Arr. for Conversion to MFP	SD-68135-01	D13
Inc. MFP - CX Supv. Type B	SD-68230-01	E13
Out. DP, MFP or Auto., CX Supv. Type B	SD-68231-01	G13
2 Way - Inc. DP - Out. DP, MFP or Type B	SD-68232-01	A13
2 Way - Inc. MFP - Out. DP, MFP or Auto. - CX Supv. Type B	SD-68233-01	B13

TRUNKS (Cont'd)

Intertoll (Cont'd)

Out. Aux. - For Use With Ringdown In- tertoll Trk. Ckt. In Swbd. No. 3, 3C or 3CL	SD-68234-01	H13
Out. Ringdown 2 Way RD to Radio Tel. C2 or C4 Control Term.	SD-68260-01	F13
Out. Aux. - For Use With Ringdown In- tertoll Trk. Ckt. In Toll Swbd. No.1	SD-68362-01	F88
Out. Auto., 4 Wire Talking, High-Low Rev. Bat. Supv., SX D-C Ringing on Sig. Phantom with Trans. Sw. Pad	SD-68364-01	C13
	SD-68397-01	I13

Outgoing

TX or Comb. TX and Toll Sw. - DP, MFP or Auto. - Rev. Bat. Supv. - Arr. for SX DC Rering Toll Sw. - DP - Wet Dry Supv. - Auto. Start of Ring. - To Repeated Dial Toll Train or Com- bined Loop & Rep. Dial Toll Train	SD-68239-01	C28
Toll Sw. - DP, MFP or SF - Wet Dry, High Low or Rev. Bat. Supv.	SD-68240-01	J28
To Swbd. No. 3, 3C or 3CL In Same Bldg. - TX, 121, 131, 141, 181 or 191 - With or Without Trans. Sw. Pad	SD-68242-01	B28
TX, 121, 181 or 191 - 4 Wire Talking - Rev. Bat. Supv. & SX D-C Ringing on Signaling Phantom	SD-68282-01	E28
121, to Toll Swbd. No. 5	SD-68289-01	A83
From Toll Swbd. No. 5 to Toll Tdm. Swbd. No. 1 In Same Bldg. - Toll Tdm. - Stfd.	SD-68291-01	K24
From Toll Swbd. No. 5 to Tdm. Swbd. No. 3 In Same Bldg. - Toll Tdm. - Stfd.	SD-68294-01	H44
Auto., from Toll Swbd. No. 5 to Key Cabinet No. 20 or 21 In Same Bldg.	SD-68295-01	I44
	SD-68295-01	I88

TRUNKS (Cont'd)

Outgoing (Cont'd)

From Toll Swbd. No. 5 to Swbd. No. 3, 3C or 3CL In Same Bldg. - With Trans. Sw. Pad	SD-68296-01	J43
From Toll Swbd. No. 5 to Toll Swbd. No. 1 In Same Bldg. - With Trans. Sw. Pad. - Wet-Dry Supv.	SD-68297-01	K43
To Toll Test Bd. No. 17C, 101 Trk., SX Supv.	SD-68299-01	E23
To Toll Swbd. No. 1 In Same Bldg. - TX - Sleeve Supv.	SD-68305-01	H28
To Toll Swbd. No. 1 In Same Bldg. - 121 or 191 Trk. - With Trans. Sw. Pad - Wet-Dry Supv.	SD-68306-01	D28
From Toll Bd. No. 5 - 4 Wire Talking - Rev. Bat. Supv. & SX D-C Ringing on Signaling Phantom	SD-68307-01	I42
Toll Tdm. - MFP or SF-4 Wire Talk- ing - Rev. Bat. Supv. & SX D-C Ringing On Signal- ing Phantom	SD-68309-01	C83
To Toll Tdm. Swbd. No. 1 In Same Bldg. - Toll Tdm. Stfd.	SD-68320-01	F28
To Tdm. Swbd. No. 3 In Same Bldg. - Toll Tdm. - Stfd.	SD-68321-01	G28
Toll Sw. - RP or PCI - Wet-Dry or Rev. Bat. Supv.	SD-68326-01	A28
To Desks or Test Center High-Low Supv.	SD-68332-01	D23
Toll Sw., Equip- ped with Repeater, RP or PCI Pulsing, Rev. Bat. or Wet- Dry Supv.	SD-68366-01	G83
Toll Tdm., to Toll Swbd. No. 1B or 3B In Same Bldg.	SD-68367-01	E83
121 or 191 - Wet- Dry Supv. to Toll Swbd. No. 1 In Same Bldg. Equipped with Type "A" Cords	SD-68368-01	I83
Aux., Rev. Bat. Supv. For Use With 2 Way Opr. Off. Trk. In Same Or Dst. Bldg.	SD-68371-01	F23

TRUNKS (Cont'd)

Outgoing (Cont'd)

Aux., CX or SX Supv. For Use with 2 Way Opr. Off. or Toll Sw. Trk. in Same or Dst. Bldg.	SD-68378-01	H23
From Toll Swbd. No. 5 to Toll Tdm. Swbd. No. 1B or 3B in Same Bldg. Toll Tdm.	SD-68384-01	H88
To SXS Intertoll Dialing Trk. or Sel. Ckt. in Same Bldg.	SD-68449-01	K83
Toll Sw., to SXS Off. in Same Bldg.	SD-68451-01	D83
To Toll Swbd. No. 1 in Same Bldg., TX, with or Without Trans. Sw. Pad, RD. Supv.	SD-68459-01	H83
Dial Pulsing, Rev. Bat. Supv., for Ch. Swmn's Desk, Sdr. M.B. Fr., Man. OGT Test Fr. or Auto. Out. Toll Connecting Trk. Test Fr.	SD-95617-01	J62, I67 D74, B99

2 Way

Auto. - 2 Wire - Between Tdm. Patching Trk. Bay & Toll Test Bd. No. 17C	SD-55222-01	A3, A8
From Tdm. Patching Trk. Bay to Cent. Off. or P.B.X.	SD-55249-01	C2
Auto. - to or from Tdm. Patching Trk. Bay, Ckt. Patching Bay, Toll Swbd. No. 1 3, 3C, 3CL or 3CF Toll Test Bd. No. 4, 5, 16, 17B or 18B, Tst. & Cont. Bd. No. 8, Teleg. Tst. Bd. No. 9, Program Bay, Sld. Tst. Term. Bay, "C" Carr. Line Eqpt. Bay and Key Cab. No. 20 or 21	SD-55348-01	B3, B8
Auto. Out. It. Trk. Test Fr. to "A" Swbd.	SD-55348-01	B107

TRUNKS (Cont'd)

2 Way (Cont'd)

Toll Test Bd. No. 17C to and from Tdm. Patching Trk. Bay, Ckt. Patching Bay, Teleg. Tst. Bd. No. 9 Key Cabinet No. 20 or 21, Toll Swbd. or Toll Test Bd.	SD-68097-01	D79
Toll Test Bd. No. 17C, Incoming Ringdown, Out. Automatic	SD-68142-01	G77
Auto., 2 Way to Radio Tel. C2 or C4 Control Ter- minal	SD-68363-01	G88
Toll Test Bd. No. 17C, to Dial Cent. Off. or Dial PBX	SD-68383-01	G79
Sdr. M.B. Fr. - Auto. - Between Desks	SD-95405-01	E62
Ch. Swmn's Desk - Auto. - Between Desks	SD-95405-01	E67
Auto. Out. Toll Connecting Trk. Test Fr., Auto., Between Desks	SD-95405-01	E72
Man. OGT. Test Fr., Auto., Between Desks	SD-95405-01	E97
Sdr. M.B. Fr. to "A" Swbd.	SD-95731-01	B62
Ch. Swmn's Desk to "A" Swbd.	SD-95731-01	B67
Auto. Out. Toll Connecting Trk. Test Fr. to "A" Swbd.	SD-95731-01	B72
Man. OGT Test Fr. to "A" Swbd.	SD-95731-01	B97
Auto. to Toll Swbd. No. 1, 3, 3C or 3CL Toll Test Bd. No. 5, Test & Control Bd. No. 8 or Toll Test Bd.	SD-95732-01	H62, H67, F72, G97
No. 17B or 18B Sdr. M.B. Fr. to Sub. Line Ckt.	SD-96221-01	C62
Ch. Swmn's Desk to Sub. Line Ckt.	SD-96221-01	C67
Auto. Out. Toll Connecting Trk. Test Fr., to Sub. Line Ckt.	SD-96221-01	C72
Man. OGT Test Fr. to Sub. Line Ckt.	SD-96221-01	C97

TRUNKS (Cont'd)

Miscellaneous

Delay Quotation - Toll Swbd. No. 5 No Circuit or No Circuit Training Monitoring - Toll Swbd. No. 5	SD-68056-01	E44
Digit Absorbing Reorder	SD-68083-01	C23
Reorder Arr. for Monitoring at Toll Swbd. No. 5	SD-68148-01	G44
Toll Bd. No. 5	SD-68243-01	G23
Interposition Overflow	SD-68247-01	A23
Delay Quotation Announcing, for Toll Swbd. No. 5	SD-68249-01	B23
Reorder, Arr. for Monitoring at Swbd. No. 3, 3C or 3CL in Same Bldg.	SD-68283-01	A44
Delay Quotation, for Use with Swbd. No. 3, 3C or 3CL in Same Bldg.	SD-68420-01	I23
	SD-68431-01	J88
	SD-68438-01	B24
	SD-68439-01	B112

TRUNKS (Cont'd)

Miscellaneous (Cont'd)

Delay Quotation Announcing, for Use with Swbd. No. 3, 3C or 3CL in Same Bldg.	SD-68445-01	C112
Reorder, Arr. for Monitoring at Toll Swbd. No. 1 in Same Bldg.	SD-68447-01	C24
Delay Quotation, for Use with Toll Swbd. No. 1 in Same Bldg.	SD-68448-01	D112
Delay Quotation Announcing, for Use with Toll Swbd. No. 1 in Same Bldg.	SD-68460-01	C112
Toll Test Bd. 17C Monitoring Trk., for Use with Toll Swbd. No. 1, 3, 3C or 3CL	SD-68463-01	J78
Test Trk. for Man. OGT Test Fr.	SD-96367-01	J97

AA 261.477 = CONDUCTOR RESISTANCE

RESISTANCE (OHMS)

<u>GAUGE OF WIRE</u>	<u>PER 100 FEET</u>	<u>PER 5 FEET</u>
19	0.899	0.04494
20	1.13	0.0565
22	1.78	0.089
24	2.86	0.143