

BELL TELEPHONE LABORATORIES, INC.

NOV 21 1955

TOLL SYSTEMS
**SWITCHBOARD NO.3 AND
 TANDEM SWITCHBOARD NO.3
 KEY SHEET**

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DWG ISS.	C.D. ISSUE	DATE ISSUED	APPROVED	
29	29	4-25-51	H.B.M. C.J.S.	A.H.L. R.L.L.
	31	6-30-60		

No. 3. SWBDS.

MIAMI

ORLANDO

W.P.B.

PENSACOLA

A & M ONLY

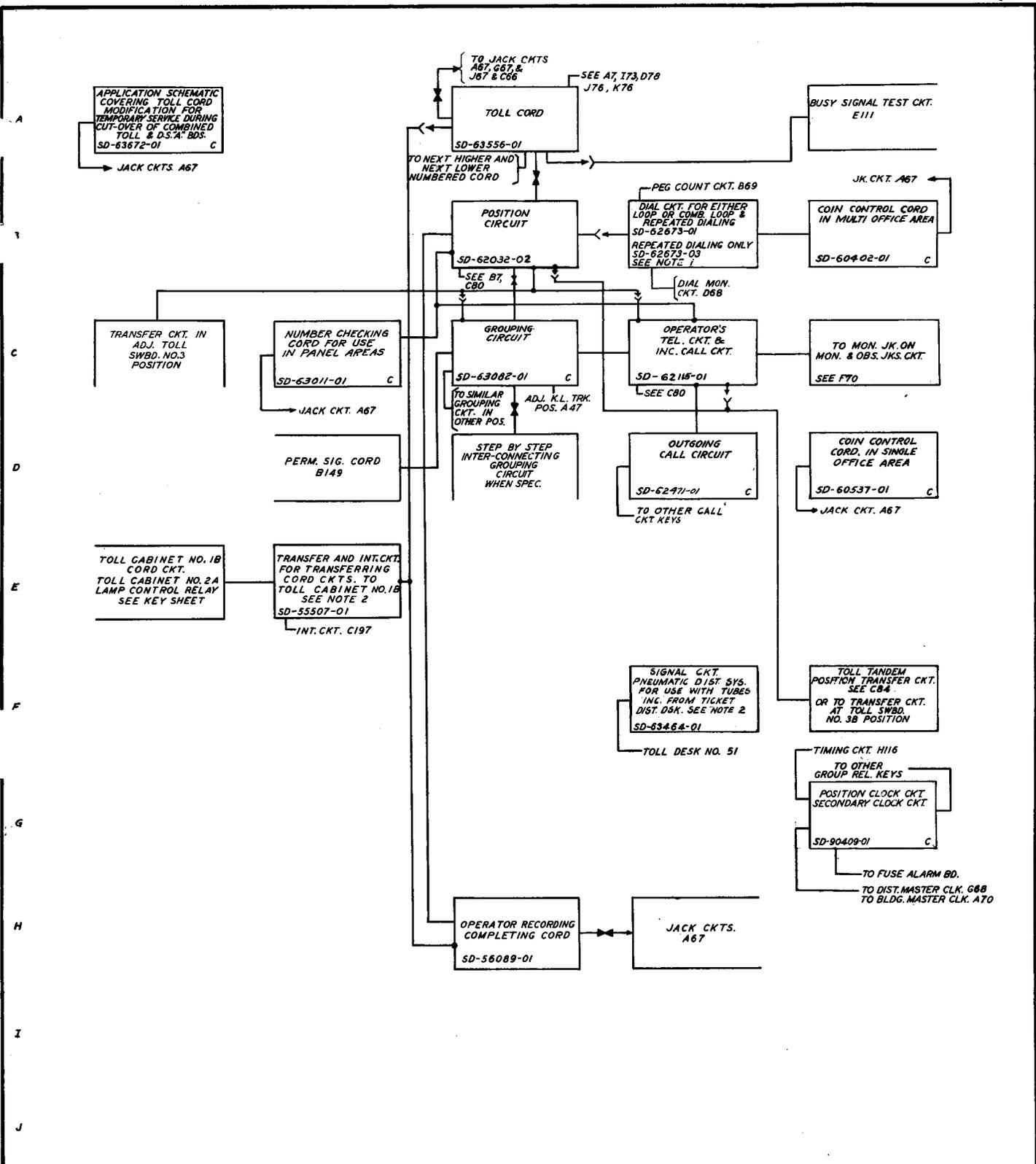
FOR EXPLANATION OF CONVENTIONS SEE
 MASTER KEY SHEET SD-90250-01

REPLACING SD-60465-01, SD-60533-01, SD-60608-01, &
 SD-62440-02. REPLACED BY SD-63410-01 FOR TOLL OPR. ROOM
 DESKS. REPLACING SD-64102-01 FOR TESTING AND MAINTENANCE

SD-62440-01

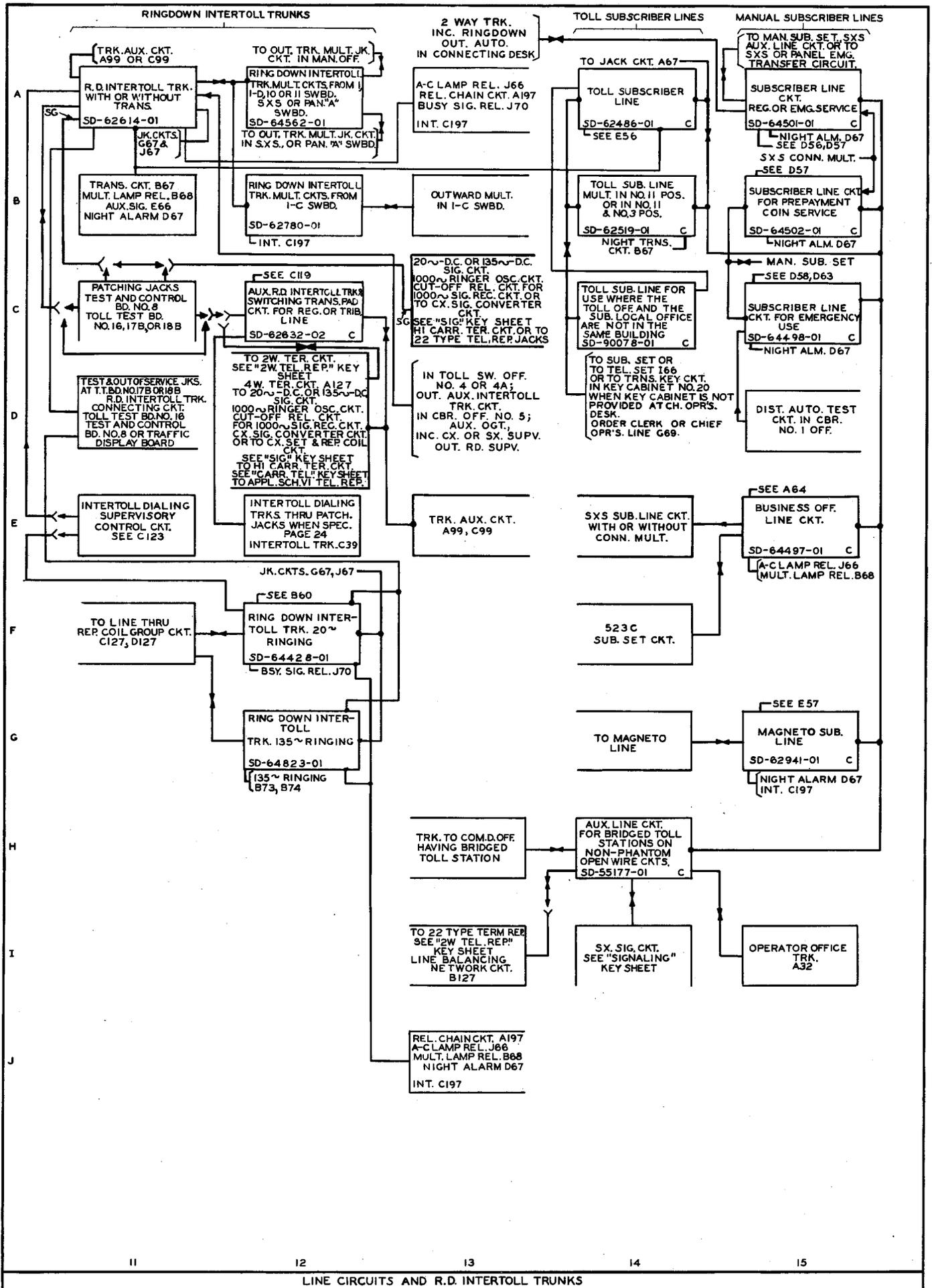
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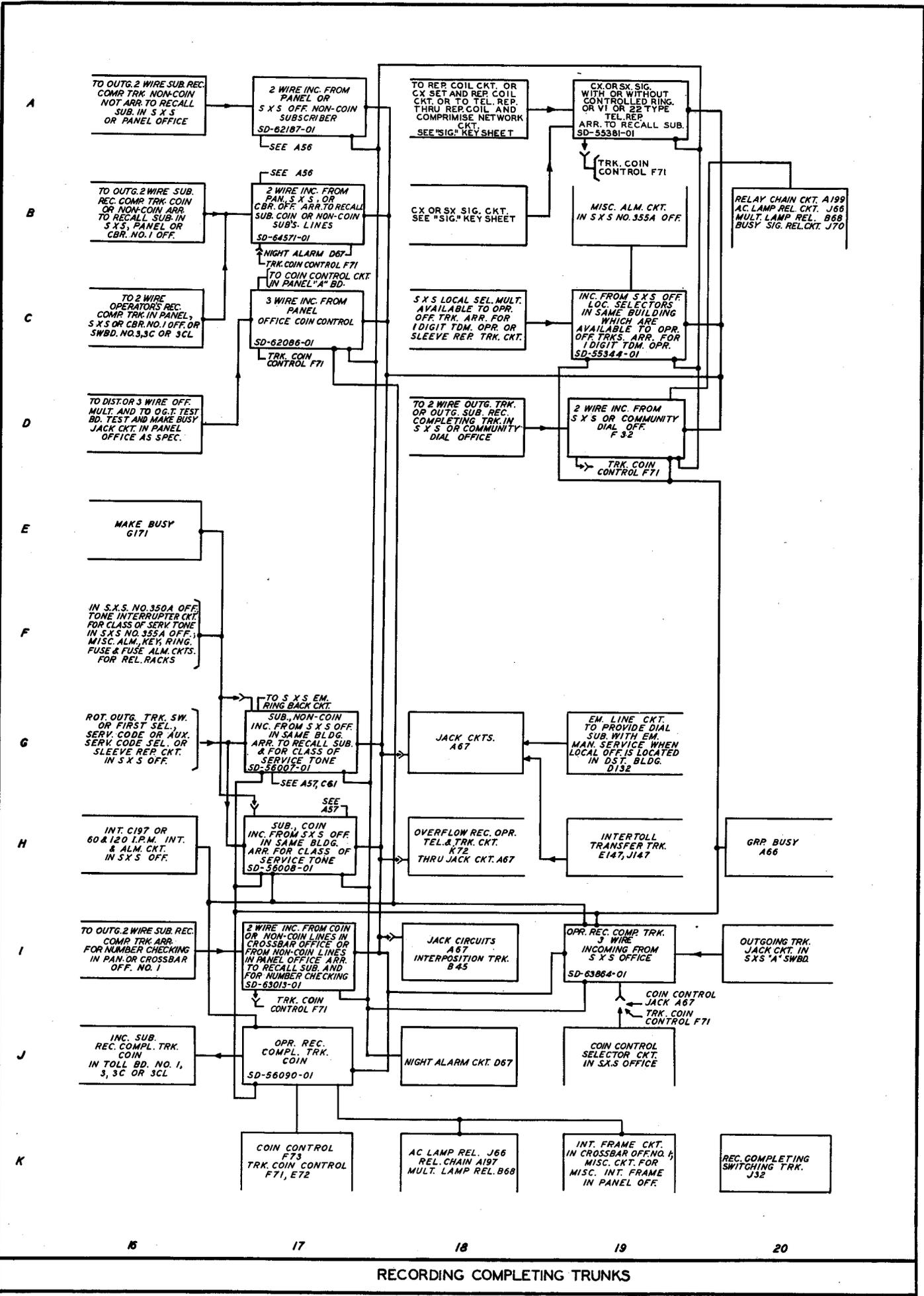
SD 62440 J1



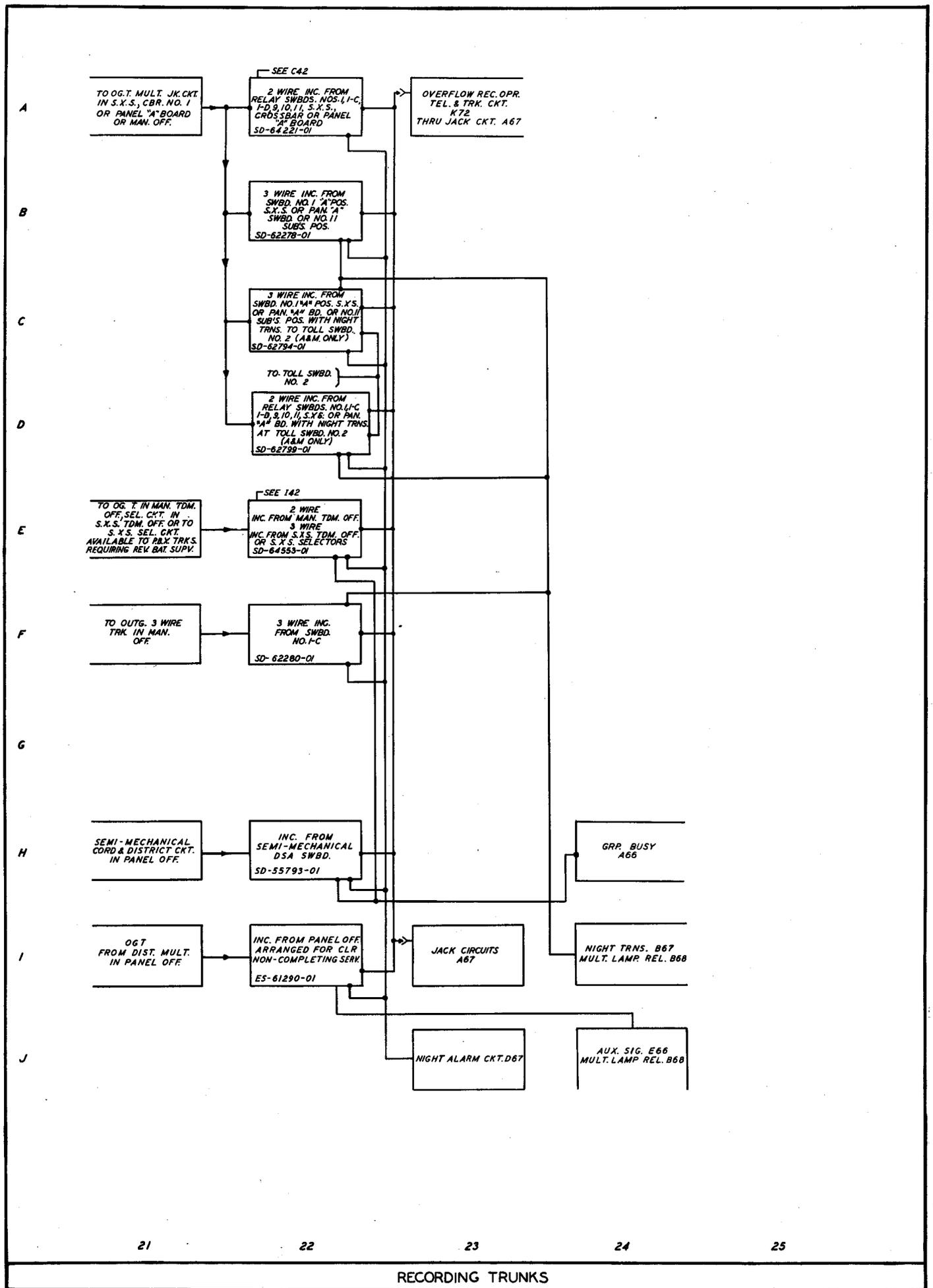
- NOTES:
1. SPECIFY ONLY ON INWARD OR OUTWARD POS.
 2. SPECIFY FOR OUTWARD POS. ONLY.
 3. OUTWARD POS. HANDLING CLR, ASSISTANCE AND S X S "A" TRAFFIC.

INWARD-OUTWARD AND THRU POSITIONS (SEE NOTE 3)





RECORDING COMPLETING TRUNKS



21

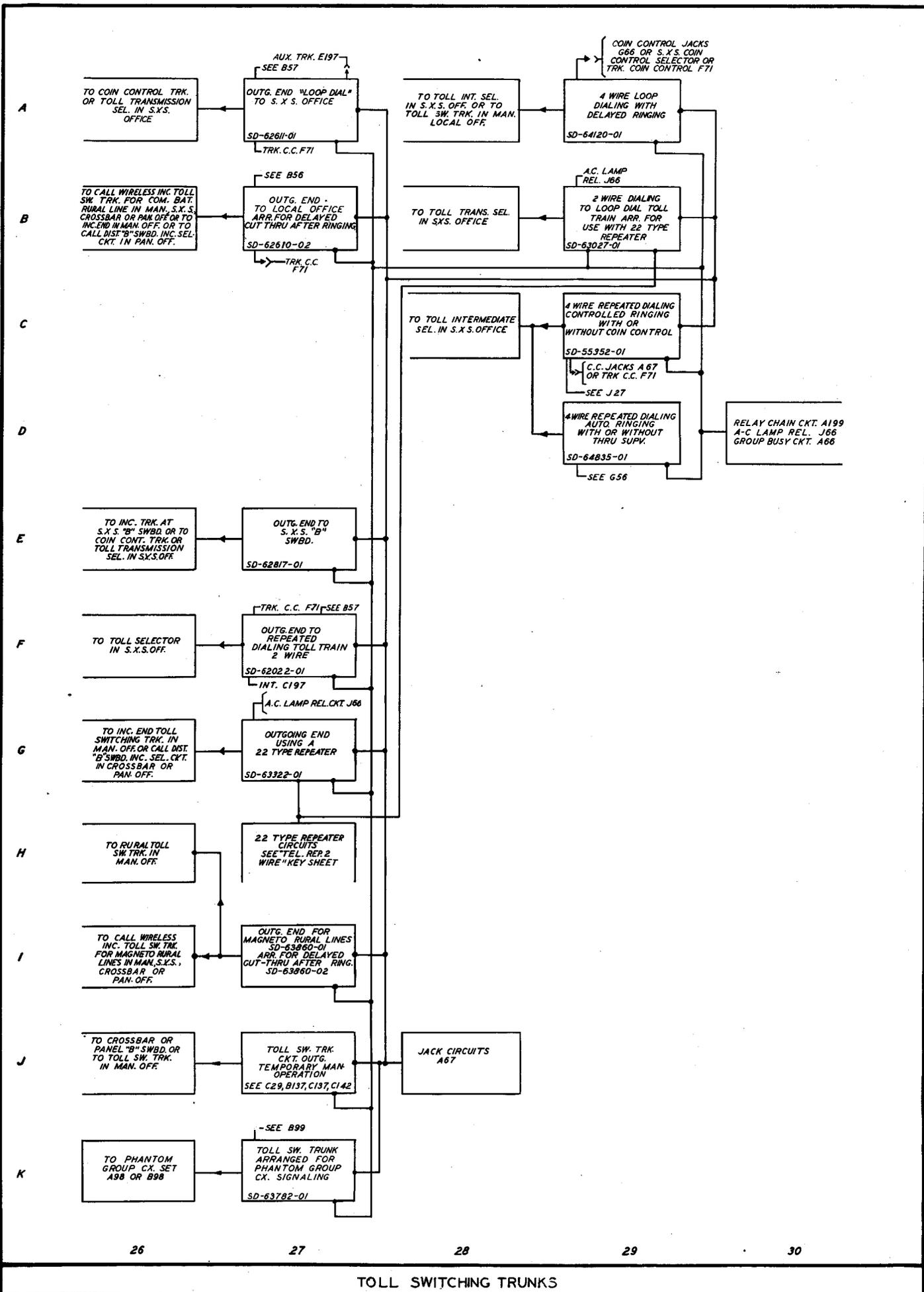
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RECORDING TRUNKS



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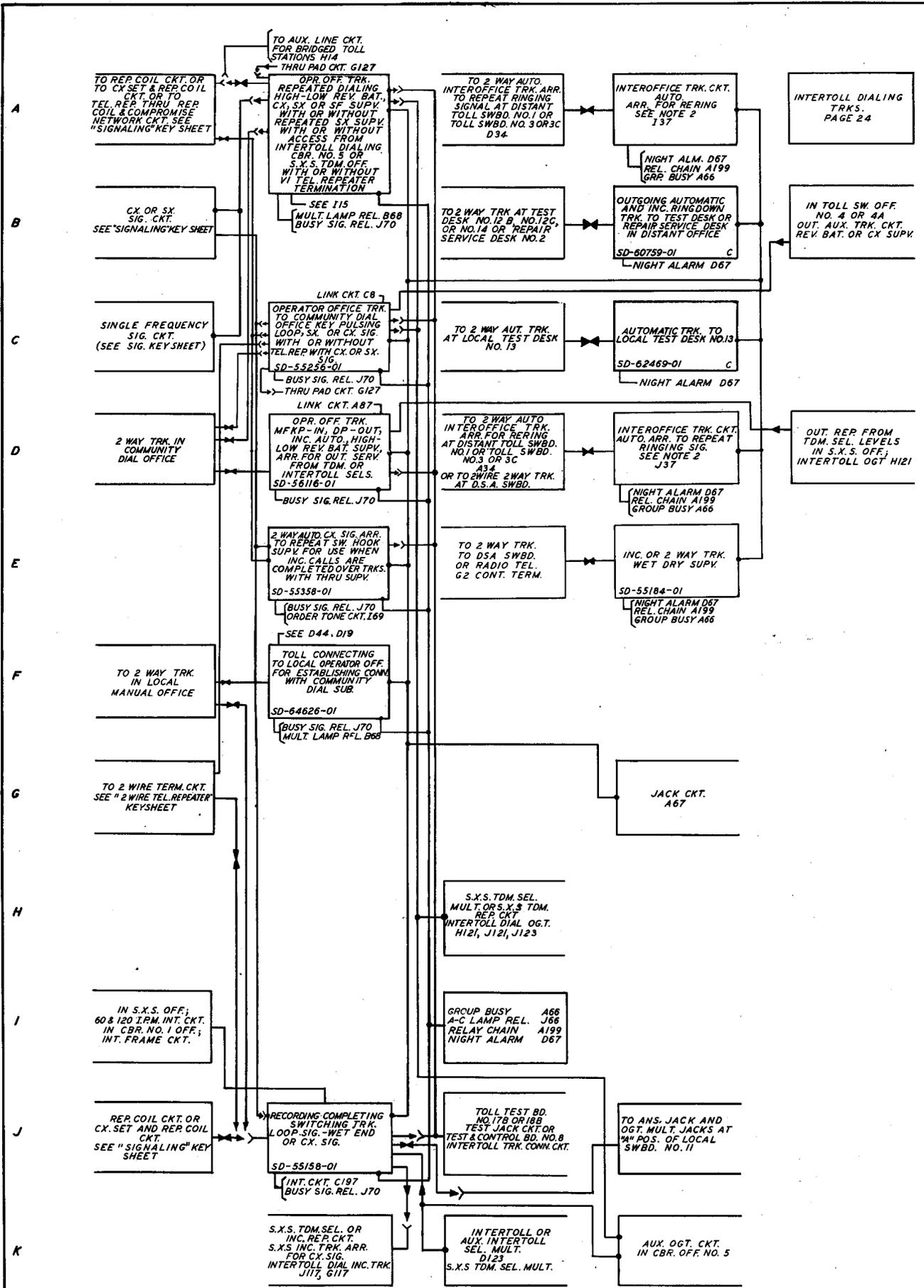
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29

30

TOLL SWITCHING TRUNKS



NOTES:
 1. SEE DESK OR CABINET KEY SHEET FOR TRKS. AT DESKS OR CABINETS CONNECTING TO TRK. JK. CKT. A67.
 2. SPECIFY FOR REGULAR INTERPOSITION TRAFFIC BETWEEN TOLL POSITIONS IN DIFFERENT BUILDINGS IN SAME TOLL CENTER.

31

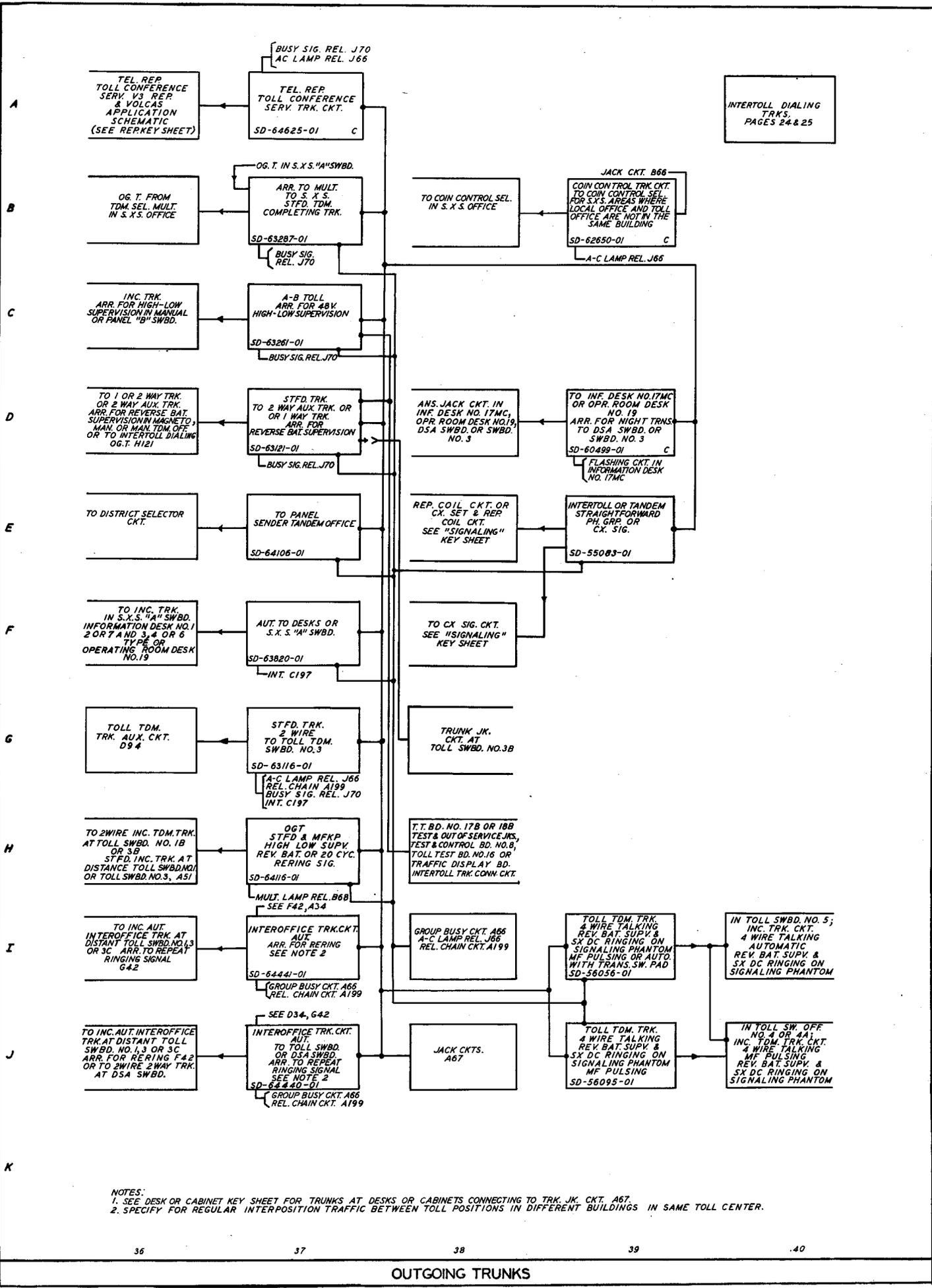
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33

34

35

TWO WAY TRUNKS



INTERTOLL DIALING TRKS. PAGES 24 & 25

TEL. REP. TOLL CONFERENCE SERV. VS. REP. & VOLCAS APPLICATION SCHEMATIC (SEE REKEY SHEET)

BUSY SIG. REL. J70
AC LAMP REL. J66

TEL. REP. TOLL CONFERENCE SERV. TRK. CKT. SD-64625-01 C

OG. T. FROM TDM SEL. MULT. IN S.X.S. OFFICE

ARR. TO MULT. TO S.X.S. STFD. TDM. COMPLETING TRK. SD-63287-01

TO COIN CONTROL SEL. IN S.X.S. OFFICE

JACK CKT. B66
COIN CONTROL TRK. CKT. TO COIN CONTROL SEL. FOR S.X.S. AREAS WHERE LOCAL OFFICE AND TOLL OFFICE ARE NOT IN THE SAME BUILDING SD-62650-01 C

INC. TRK. ARR. FOR HIGH-LOW SUPERVISION IN MANUAL OR PANEL "B" SWBD.

A-B TOLL ARR. FOR 48V. HIGH-LOW SUPERVISION SD-63261-01

TO 1 OR 2 WAY TRK. OR 2 WAY AUX. TRK. ARR. FOR REVERSE BAT. SUPERVISION IN MAGNETO, MAN. OR MAN. TDM. OFF. OR TO INTERTOLL DIALING OG.T. H121

STFD. TRK. TO 2 WAY AUX. TRK. OR OR 1 WAY TRK. ARR. FOR REVERSE BAT. SUPERVISION SD-63121-01

ANS. JACK CKT. IN INF. DESK NO. 17MC, OPR. ROOM DESK NO. 19, DSA SWBD. OR SWBD. NO. 3

TO INF. DESK NO. 17MC OR OPR. ROOM DESK NO. 19 ARR. FOR NIGHT TRNS. TO DSA SWBD. OR SWBD. NO. 3 SD-60499-01 C

TO DISTRICT SELECTOR CKT.

TO PANEL SENDER TANDEM OFFICE SD-64106-01

REP. COIL. CKT. OR CK. SET & REP. COIL CKT. SEE "SIGNALING" KEY SHEET

INTERTOLL OR TANDEM STRAIGHT FORWARD PH. GRP. OR CK. SIG. SD-55083-01

TO INC. TRK. IN S.X.S. "A" SWBD. INFORMATION DESK NO. 1, 2 OR 7 AND 3, 4 OR 6 TRK. OR OPERATING ROOM DESK NO. 19

AUT. TO DESKS OR S.X.S. "A" SWBD. SD-63820-01

TO CK. SIG. CKT. SEE "SIGNALING" KEY SHEET

TOLL TDM. TRK. AUX. CKT. D94

STFD. TRK. 2 WIRE TO TOLL TDM. SWBD. NO. 3 SD-63116-01

TRUNK JK. CKT. AT TOLL SWBD. NO. 3B

TO 2 WIRE INC. TDM. TRK. AT TOLL SWBD. NO. 1B OR 3B
STFD. INC. TRK. AT DISTANCE TOLL SWBD. NO. 3, A51

OGT STFD. & MFKP. HIGH LOW SUPV. REV. BAT. OR 20 CYC. RERING SIG. SD-64116-01

T.T. BD. NO. 17B OR 18B TEST & OUT OF SERVICE JRS, TEST & CONTROL BD. NO. 8, TOLL TEST BD. NO. 16 OR TRAFFIC DISPLAY BD. INTERTOLL TRK. CONN. CKT.

TO INC. AUT. INTEROFFICE TRK. AT DISTANT TOLL SWBD. NO. 1, 3 OR 3C ARR. TO REPEAT RINGING SIGNAL G42

INTEROFFICE TRK. CKT. AUT. ARR. FOR RERING SEE NOTE 2 SD-64441-01

GROUP BUSY CKT. A66 A-C LAMP REL. J66 REL. CHAIN CKT. A199

TOLL TDM. TRK. 4 WIRE TALKING REV. BAT. SUPV. & SX DC RINGING ON SIGNALING PHANTOM MF PULSING OR AUTO. WITH TRANS. SW. PAD SD-56056-01

IN TOLL SWBD. NO. 5; INC. TRK. CKT. 4 WIRE TALKING AUTOMATIC REV. BAT. SUPV. & SX DC RINGING ON SIGNALING PHANTOM

TO INC. AUT. INTEROFFICE TRK. AT DISTANT TOLL SWBD. NO. 1, 3 OR 3C ARR. FOR RERING F42 OR TO 2 WIRE 2 WAY TRK. AT DSA SWBD.

INTEROFFICE TRK. CKT. AUT. TO TOLL SWBD. OR DSA SWBD. ARR. TO REPEAT RINGING SIGNAL SEE NOTE 2 SD-64440-01

JACK CKTS. A67

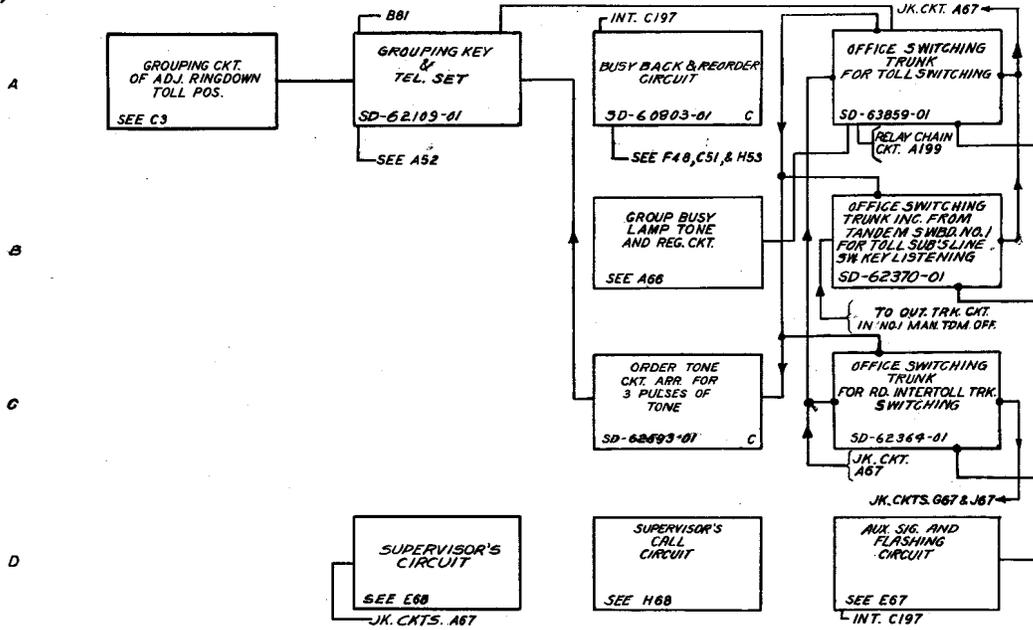
TOLL TDM. TRK. 4 WIRE TALKING REV. BAT. SUPV. & SX DC RINGING ON SIGNALING PHANTOM MF PULSING SD-56095-01

IN TOLL SW. OFF. NO. 4 OR 4A; INC. TDM. TRK. CKT. 4 WIRE TALKING REV. BAT. SUPV. & SX DC RINGING ON SIGNALING PHANTOM

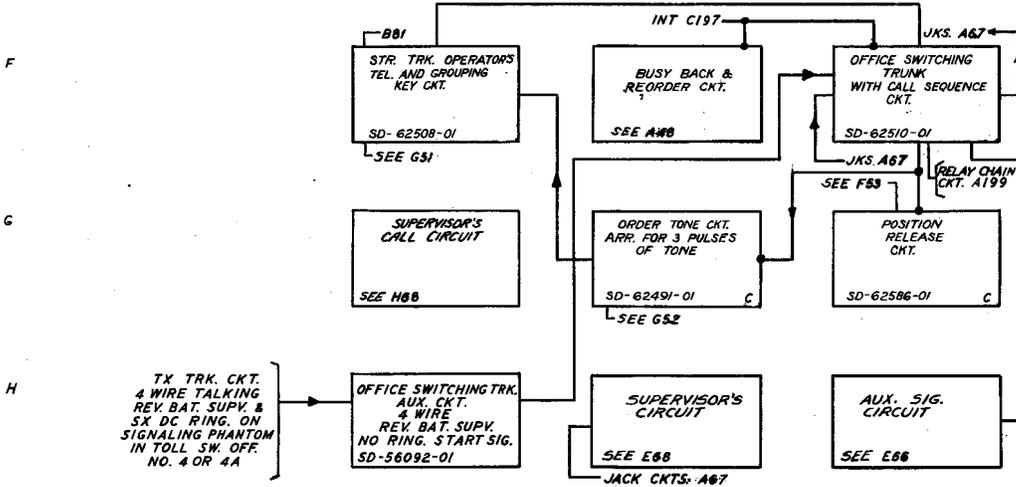
NOTES:
1. SEE DESK OR CABINET KEY SHEET FOR TRUNKS AT DESKS OR CABINETS CONNECTING TO TRK. JK. CKT. A67.
2. SPECIFY FOR REGULAR INTERPOSITION TRAFFIC BETWEEN TOLL POSITIONS IN DIFFERENT BUILDINGS IN SAME TOLL CENTER.

OUTGOING TRUNKS

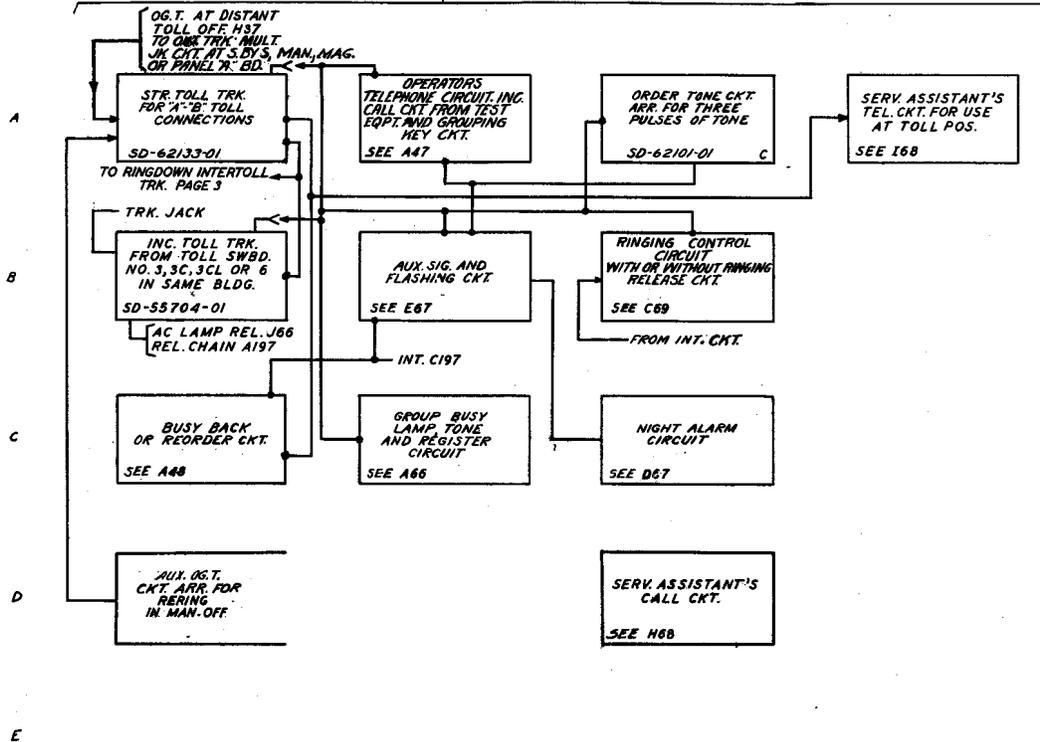
KEY LISTENING



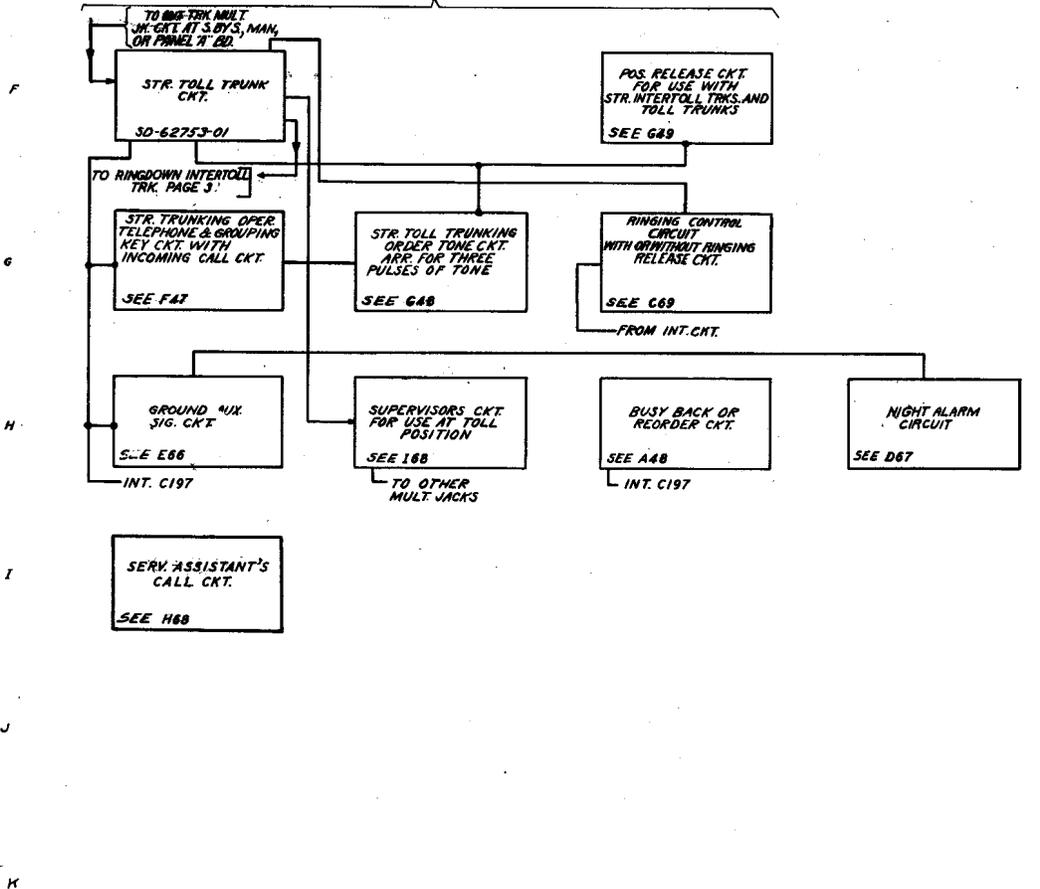
AUTOMATIC LISTENING



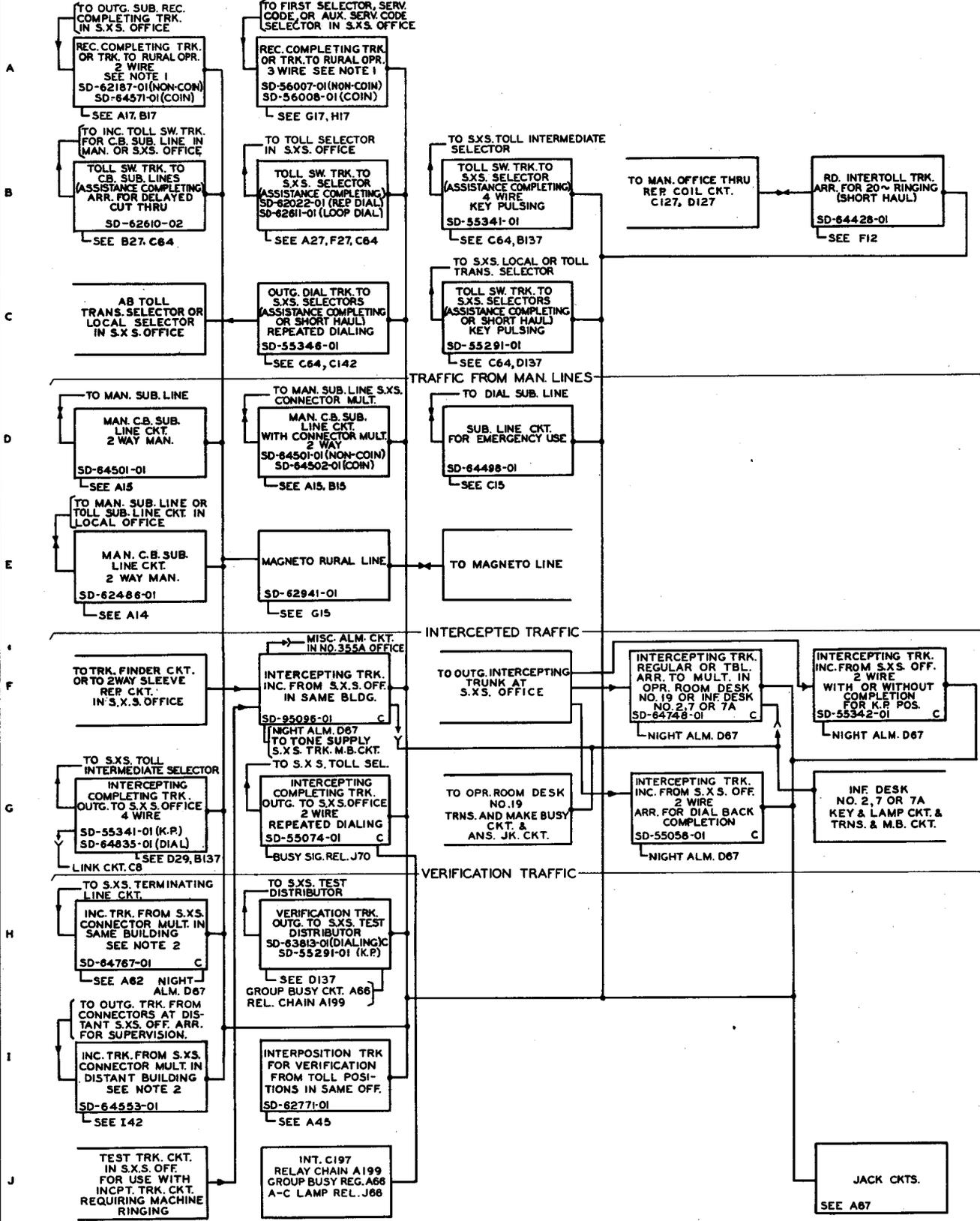
KEY LISTENING



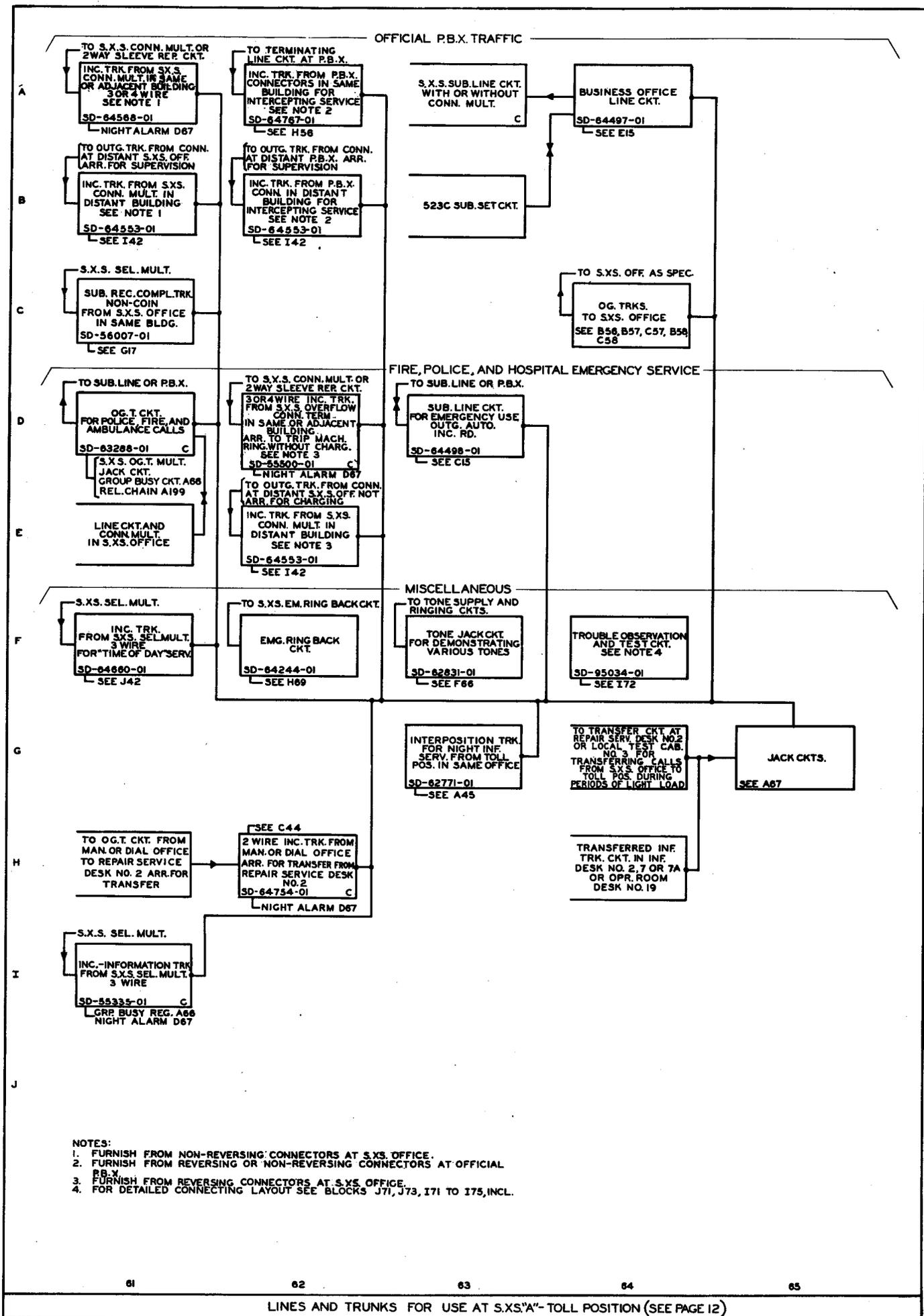
AUTOMATIC LISTENING

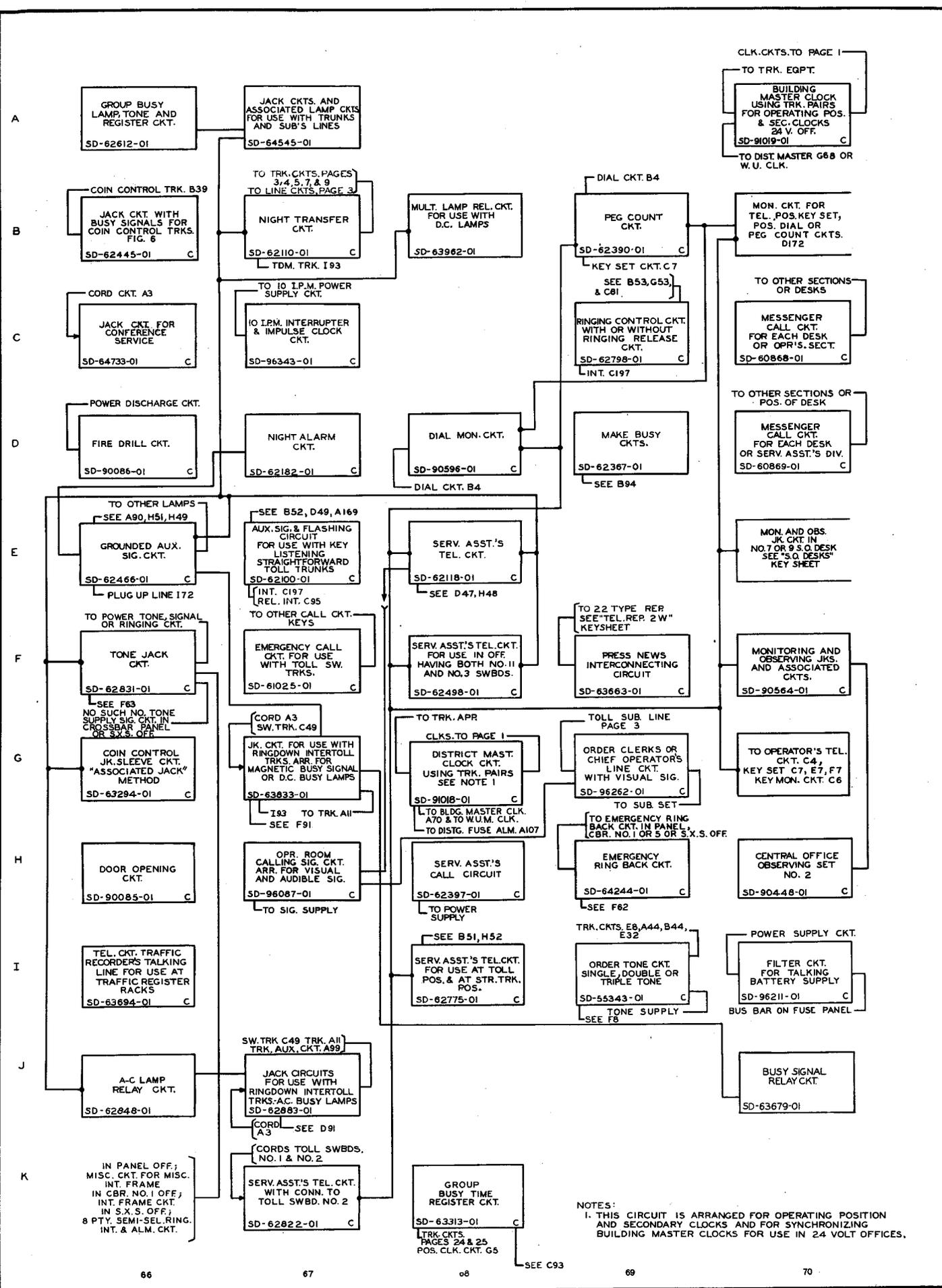


SPECIAL SERVICE AND SHORT HAUL TRAFFIC



NOTES:
 1. RURAL OPERATOR REACHED BY DIALING SPECIAL CODE.
 2. FURNISH FROM REVERSING CONNECTORS AT S.X.S. OFFICE.





66

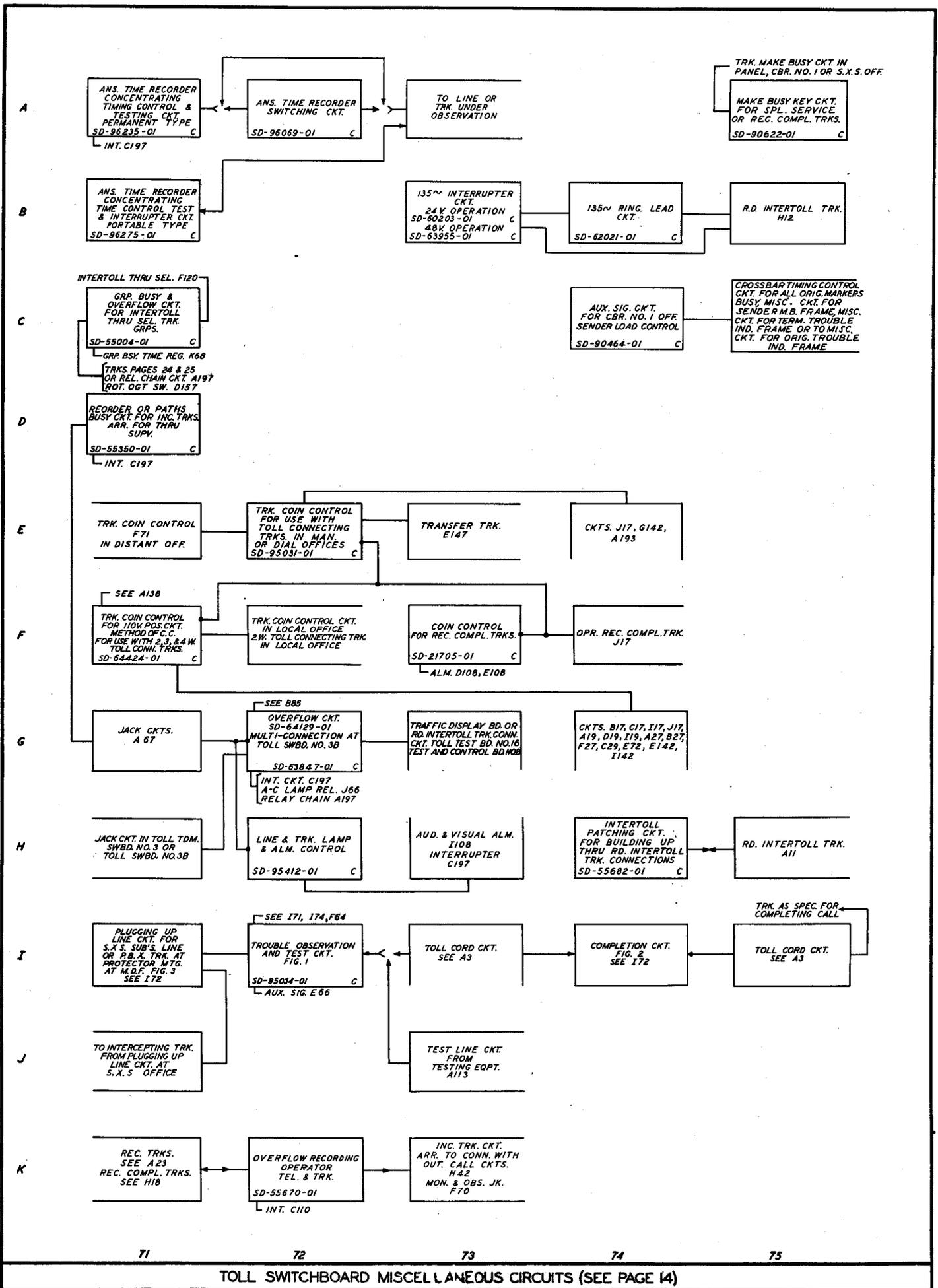
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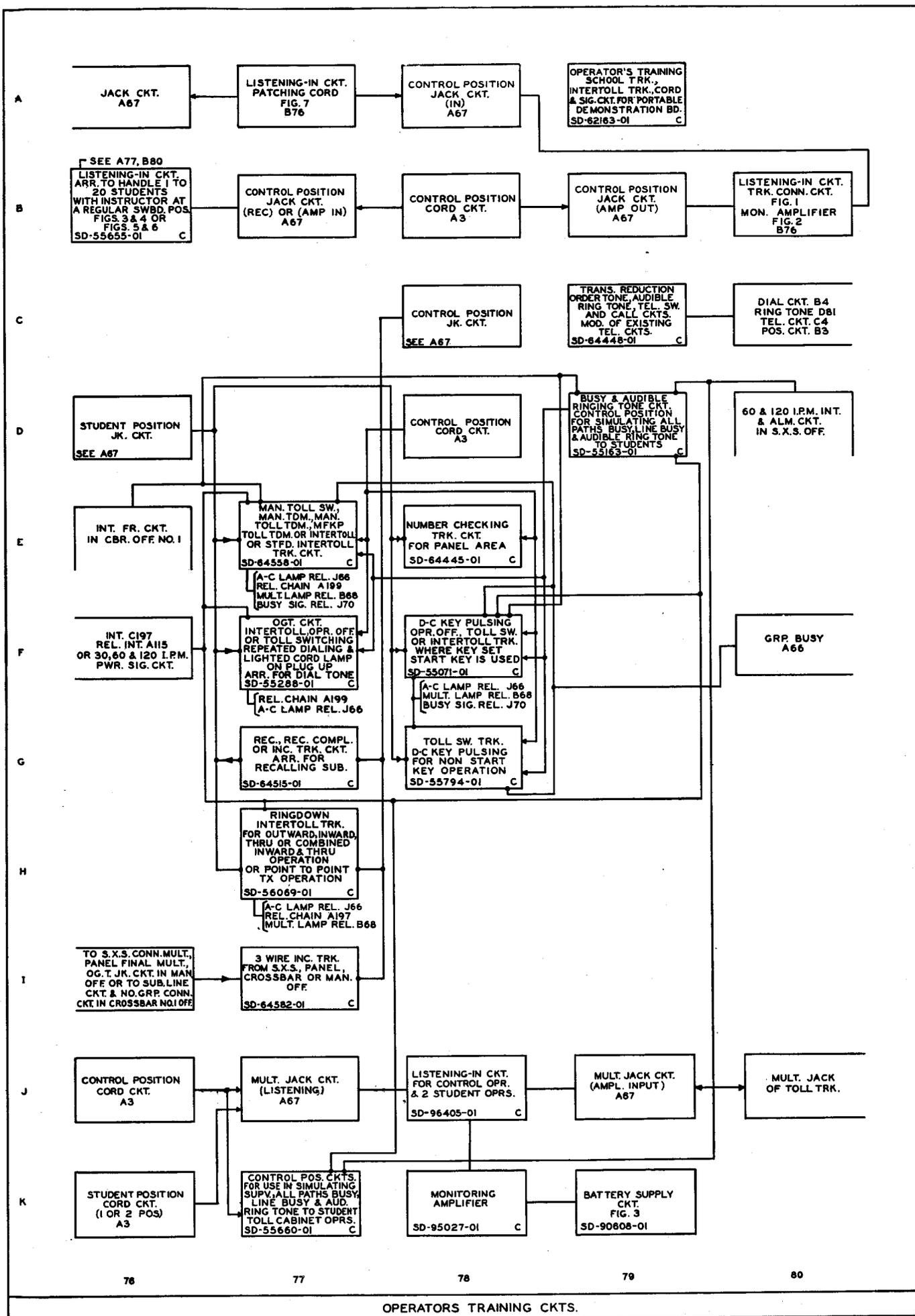
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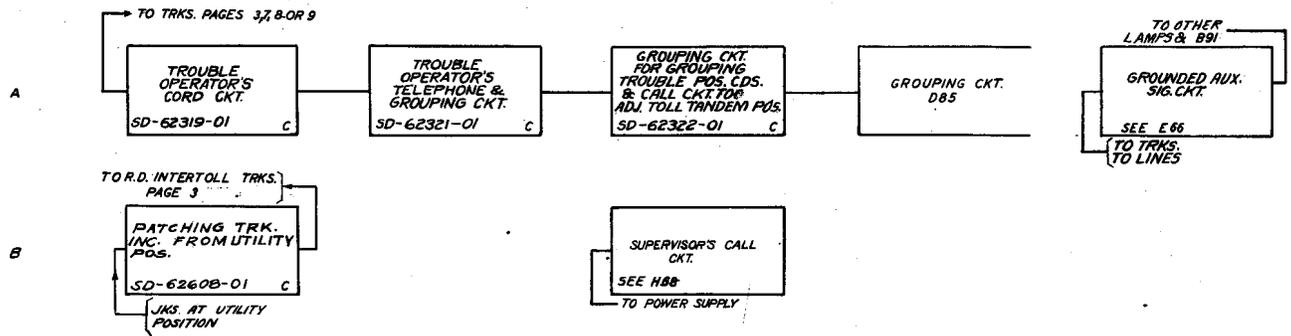
TOLL SWITCHBOARD MISCELLANEOUS CIRCUITS (SEE PAGE 15)

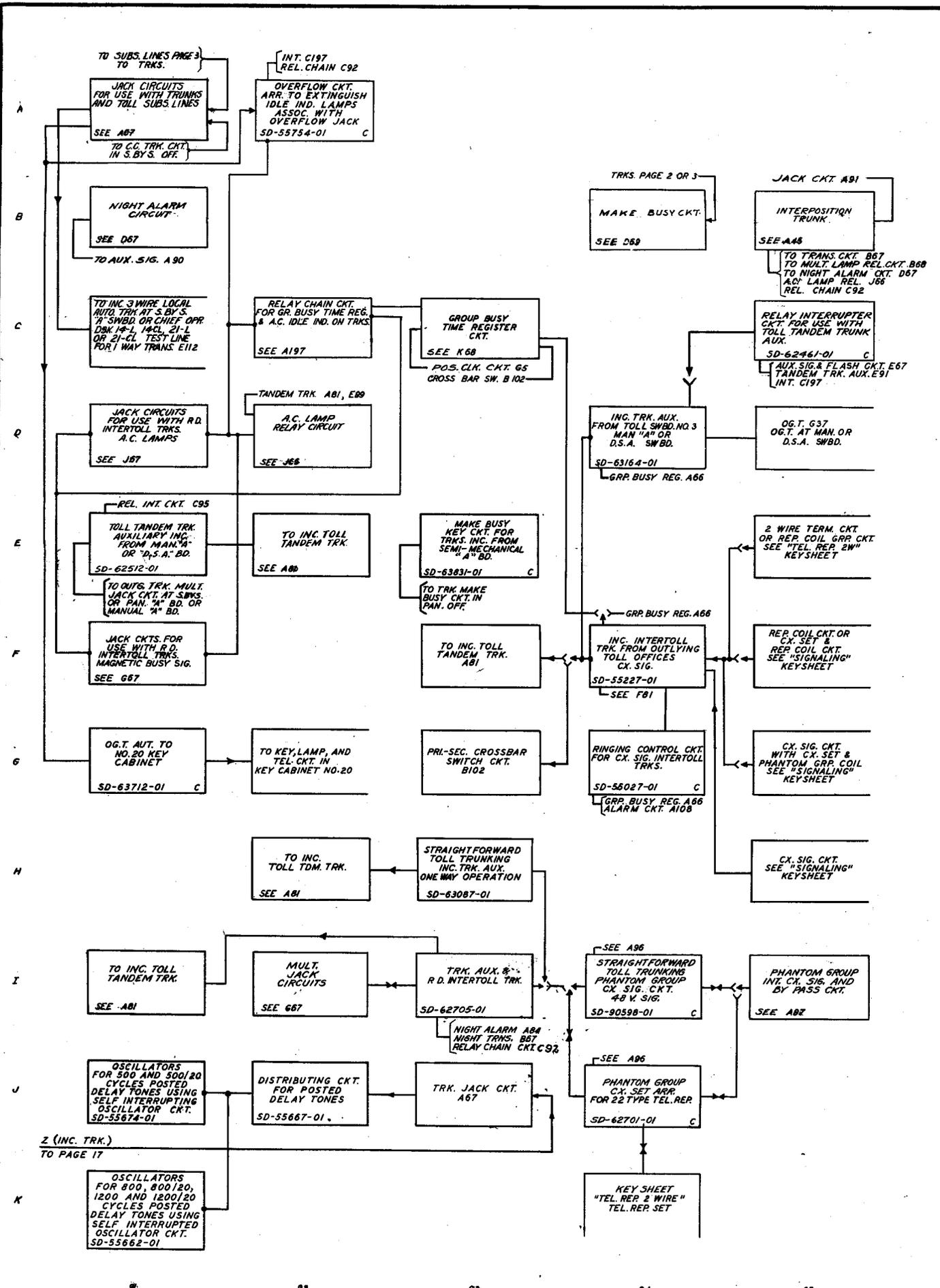


TOLL SWITCHBOARD MISCELLANEOUS CIRCUITS (SEE PAGE 14)



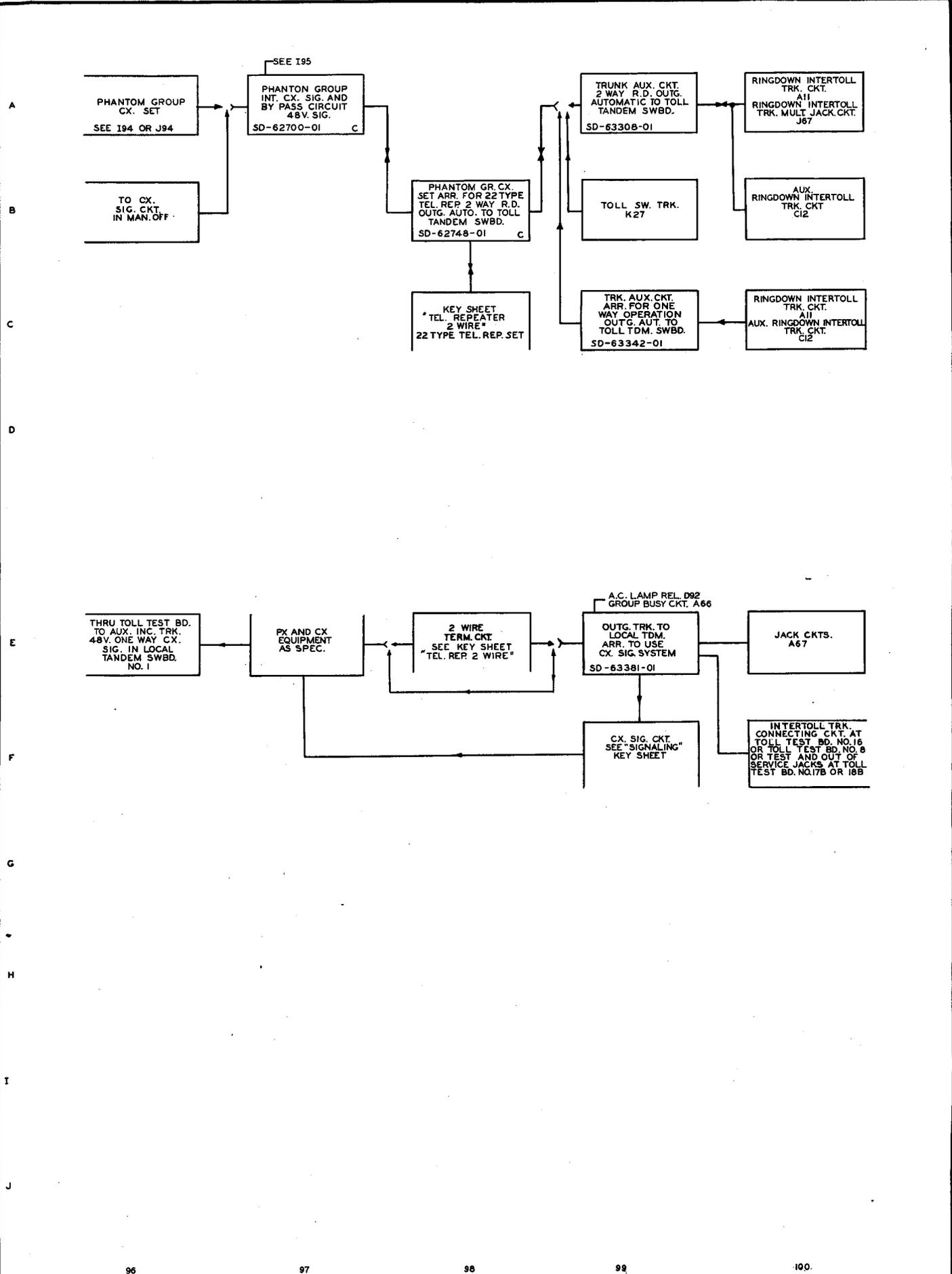
OPERATORS TRAINING CKTS.





Z (INC. TRK.)
TO PAGE 17

TOLL TANDEM SWITCHBOARD MISCELLANEOUS CIRCUITS



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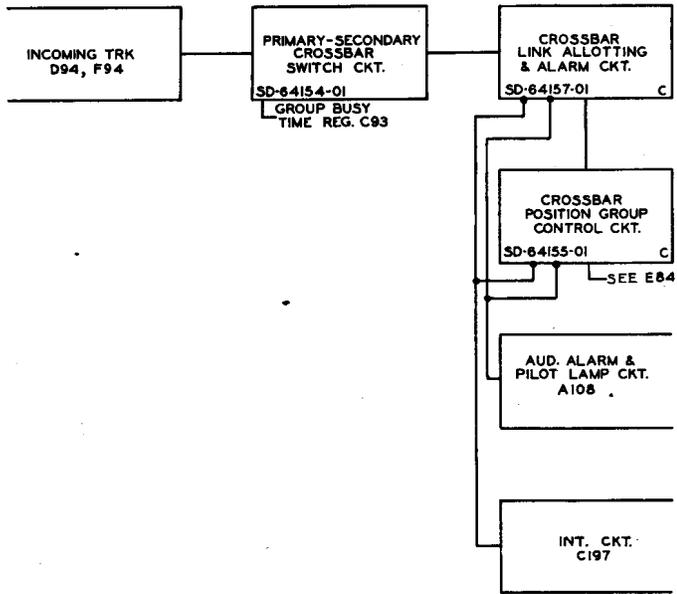
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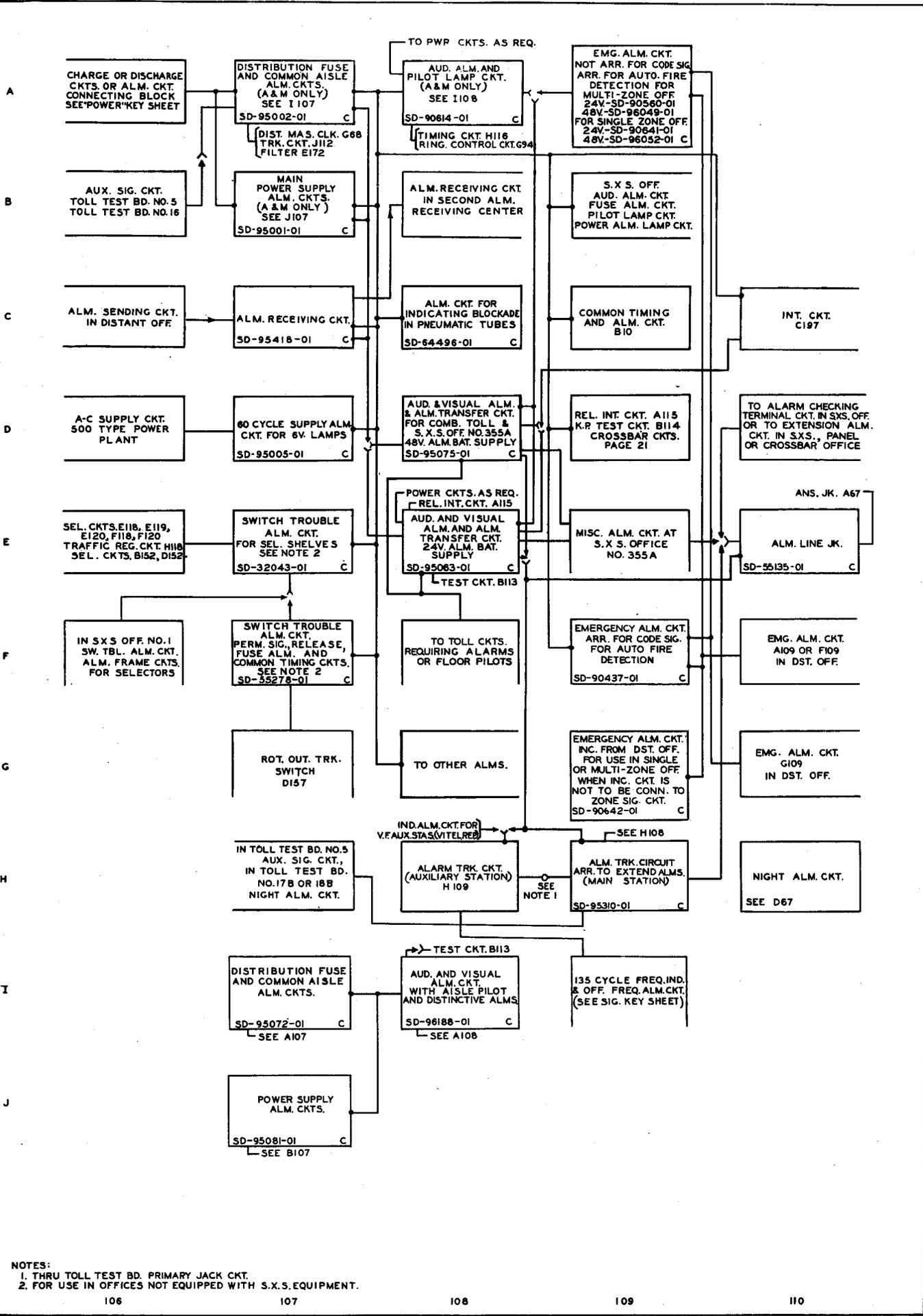
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100

STRAIGHTFORWARD TOLL TRUNKING - COMPOSITE SIGNALING

A
B
C
D
E
F
G
H
I
J





NOTES:
 1. THRU TOLL TEST BD. PRIMARY JACK CKT.
 2. FOR USE IN OFFICES NOT EQUIPPED WITH S.X.S. EQUIPMENT.

106

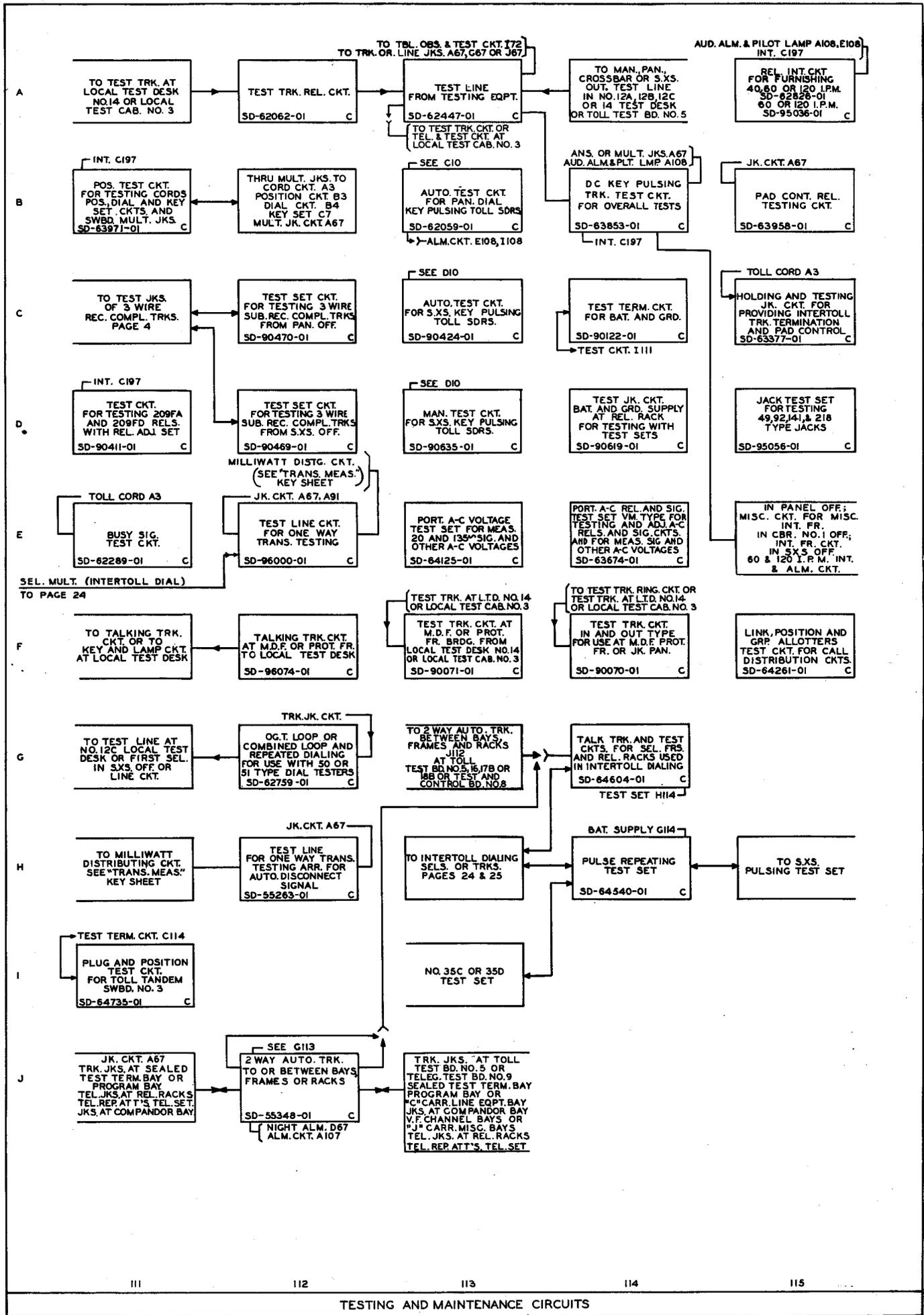
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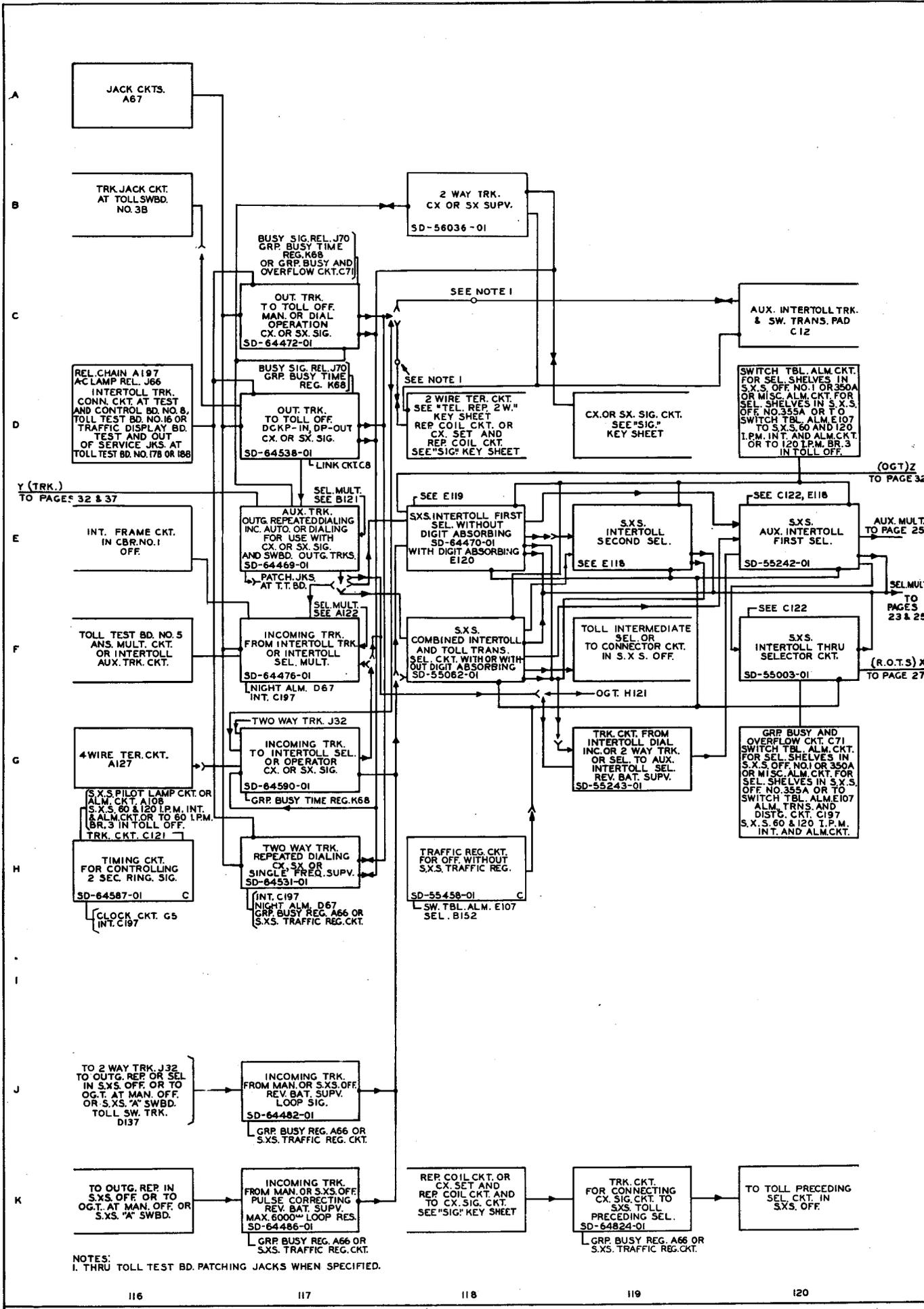
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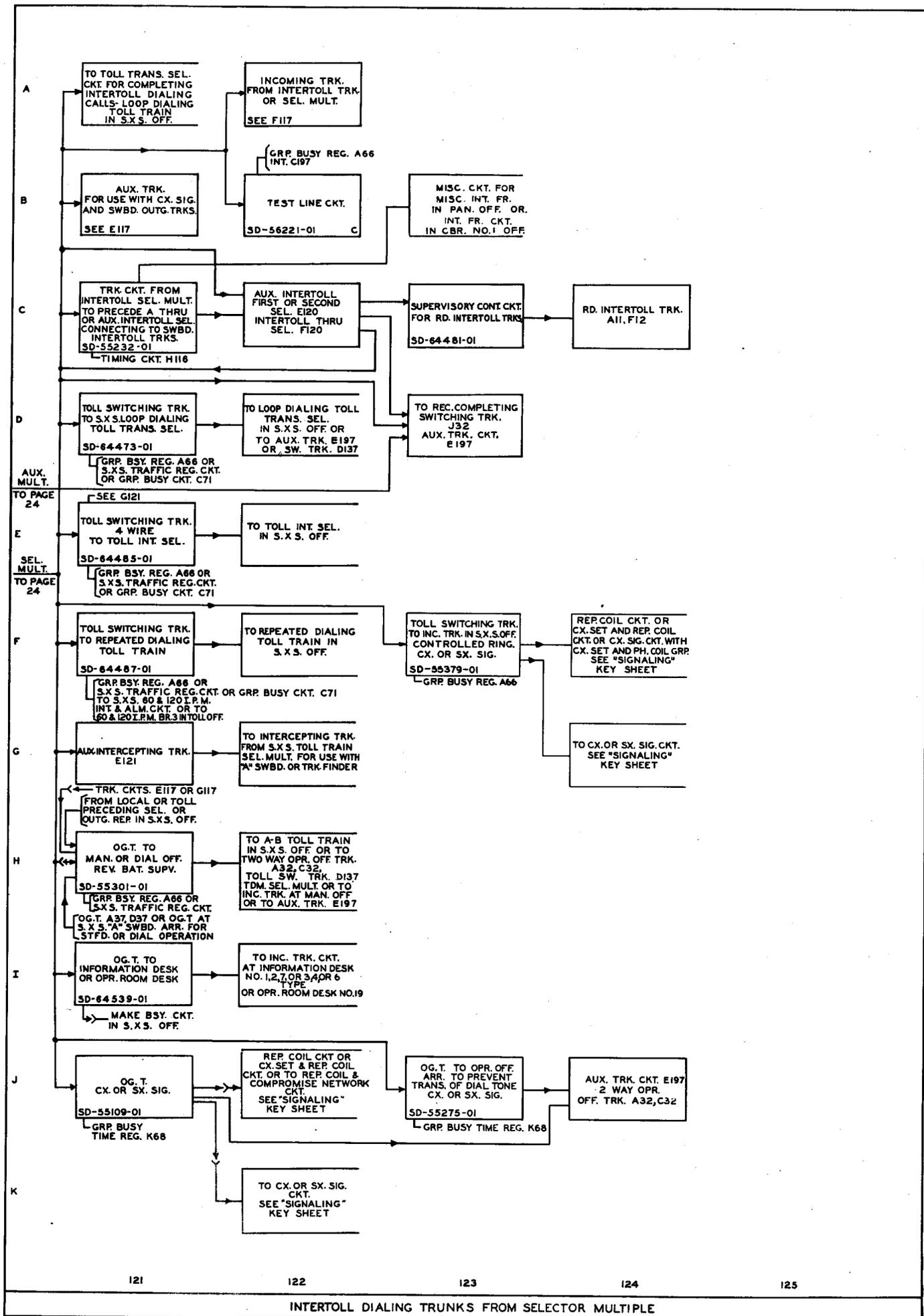
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ALARM CIRCUITS







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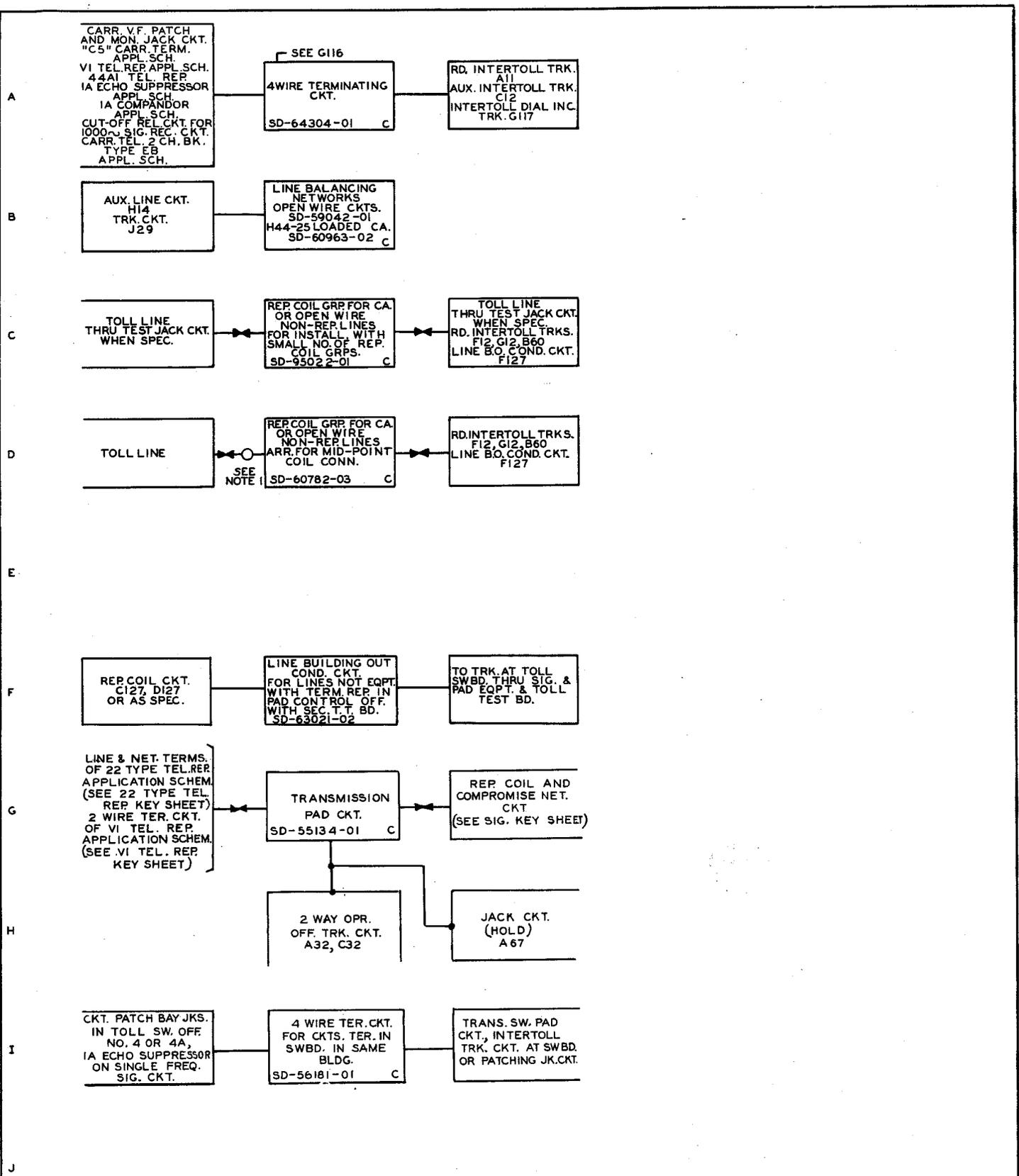
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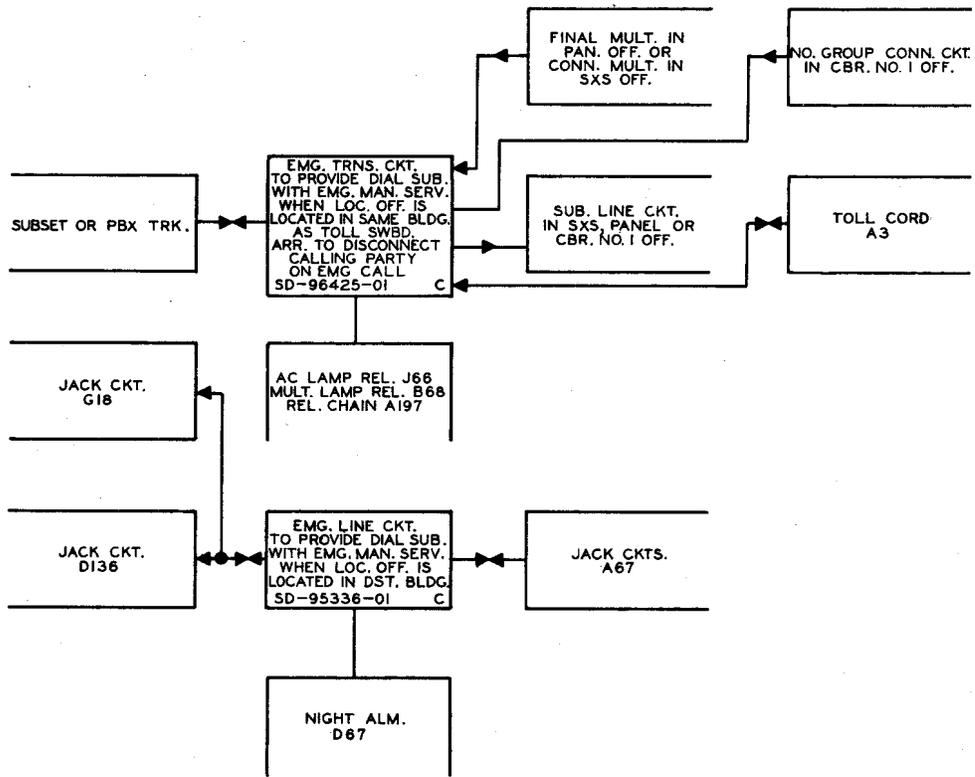
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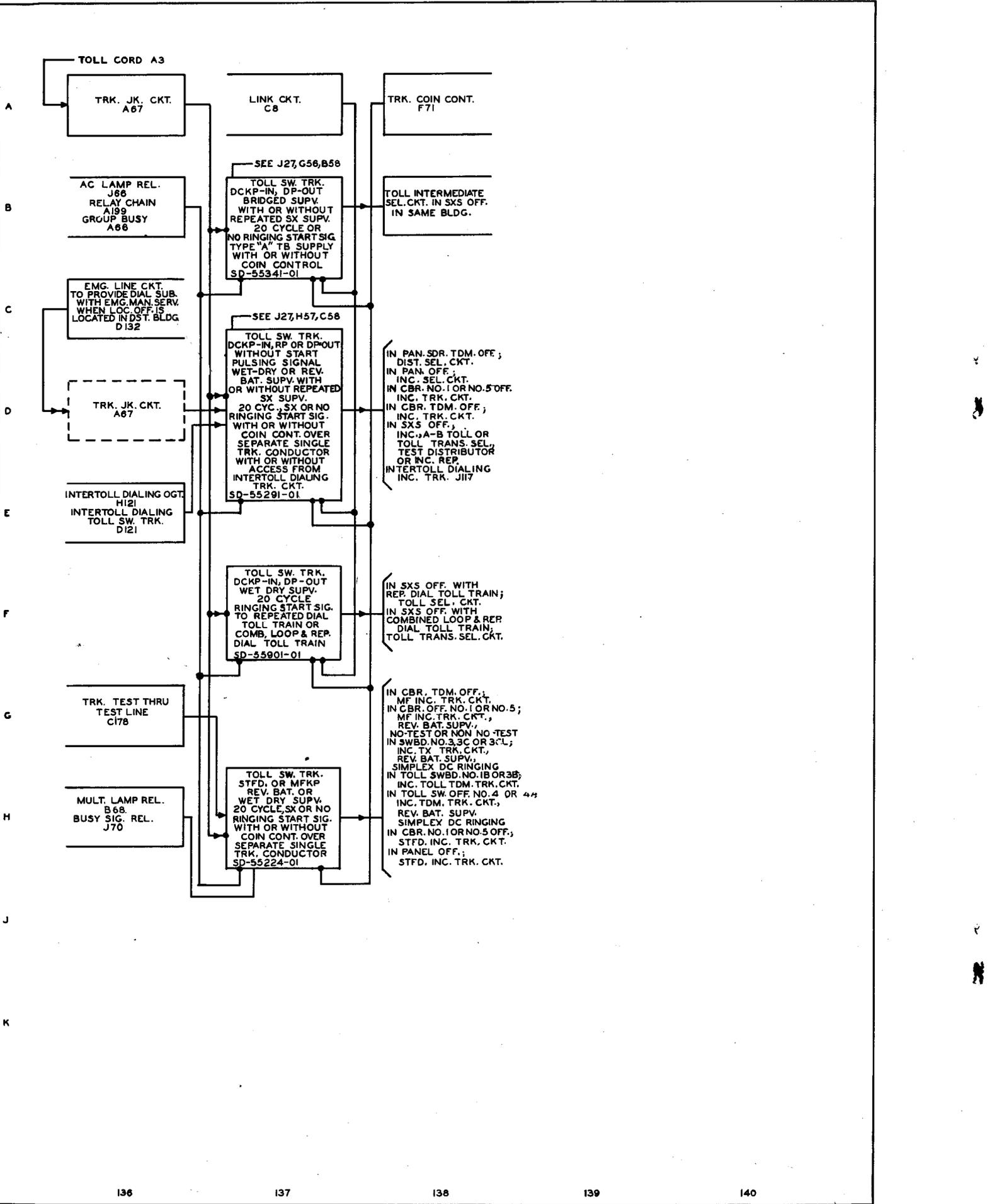
INTERTOLL DIALING TRUNKS FROM SELECTOR MULTIPLE



NOTES:
I. THRU TOLL TEST BD. PRIMARY JACKS WHEN SPEC.

A
B
C
D
E
F
G
H
I
J





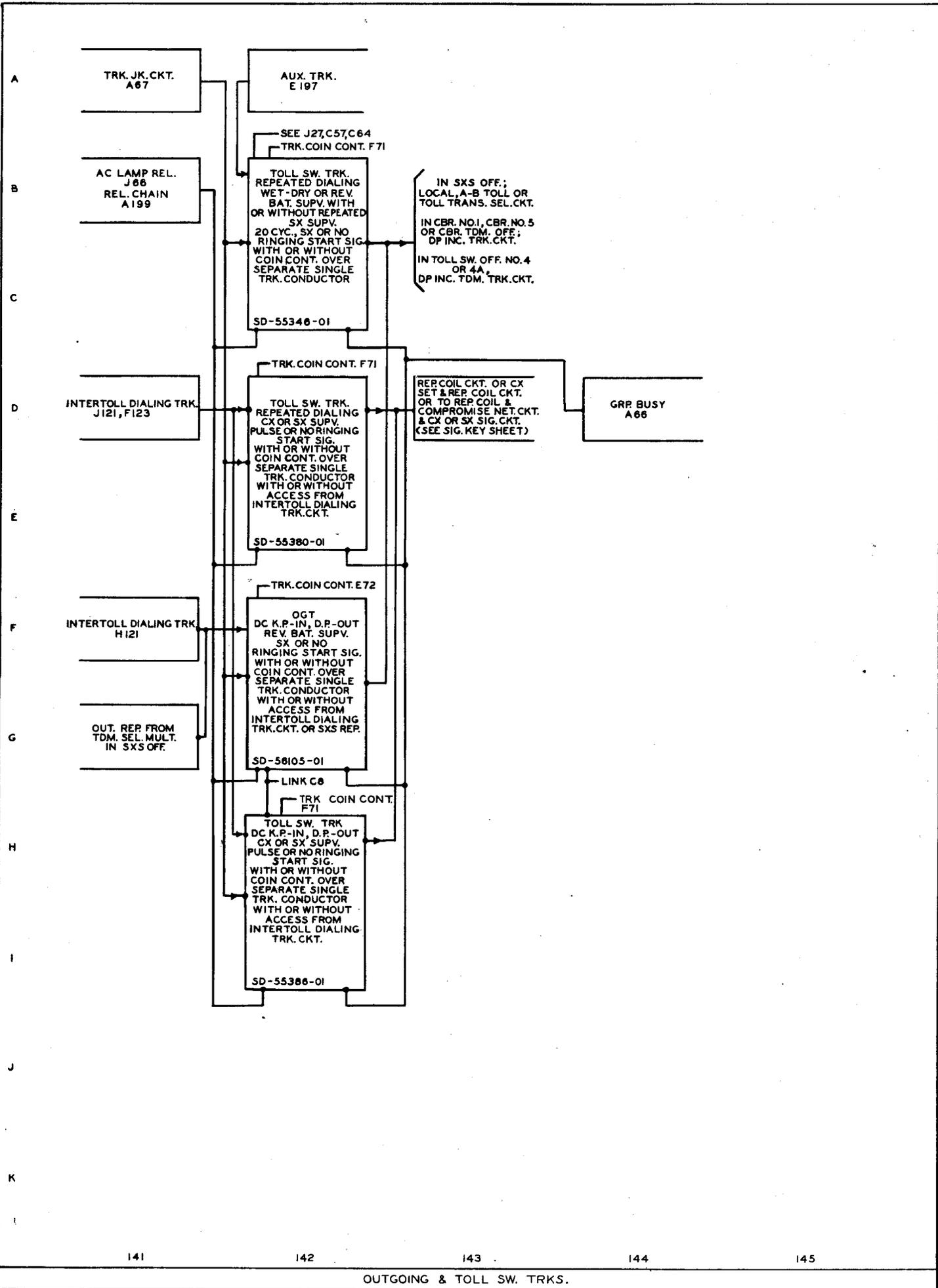
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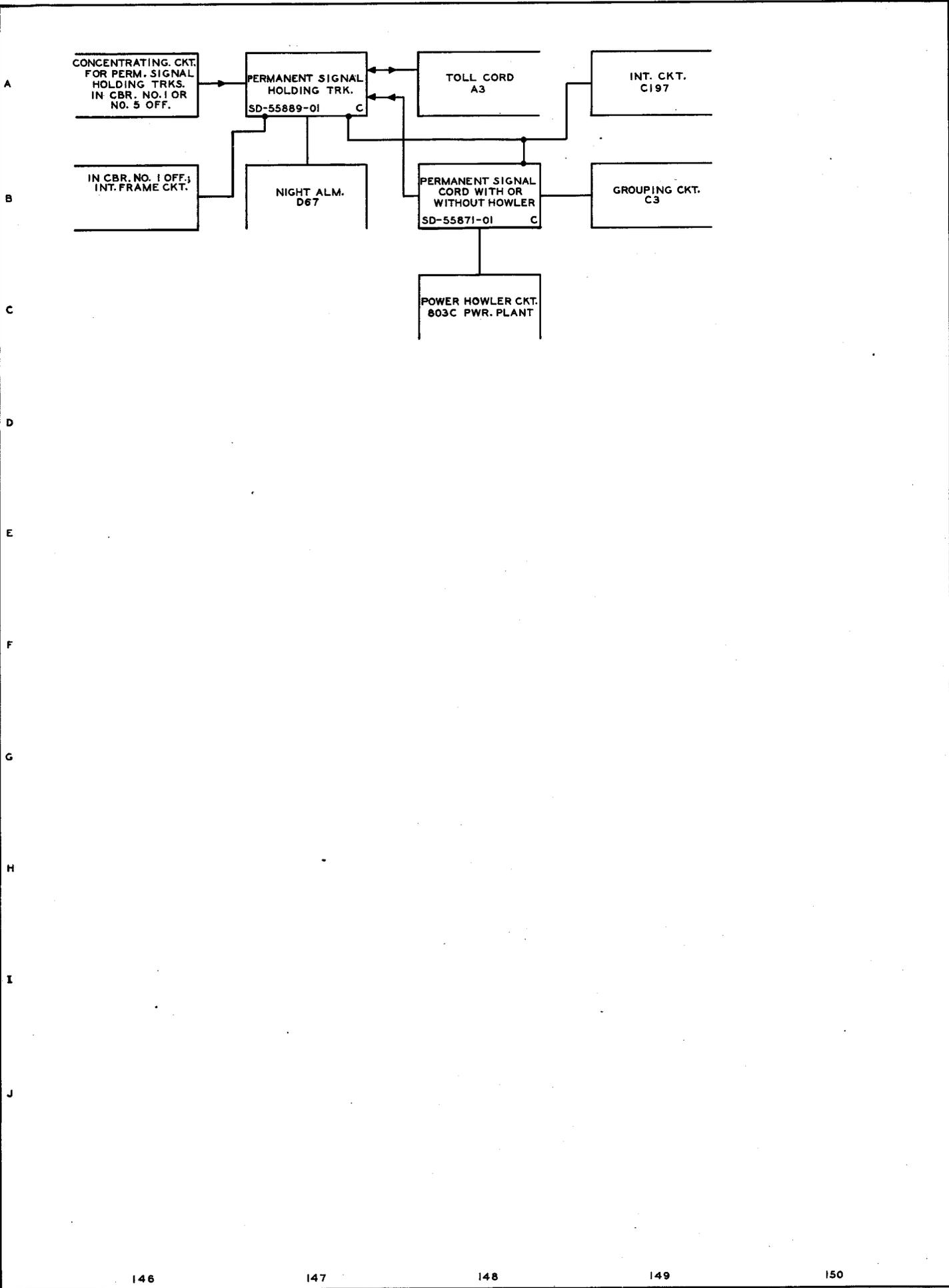
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OUTGOING & TOLL SW. TRKS.



146

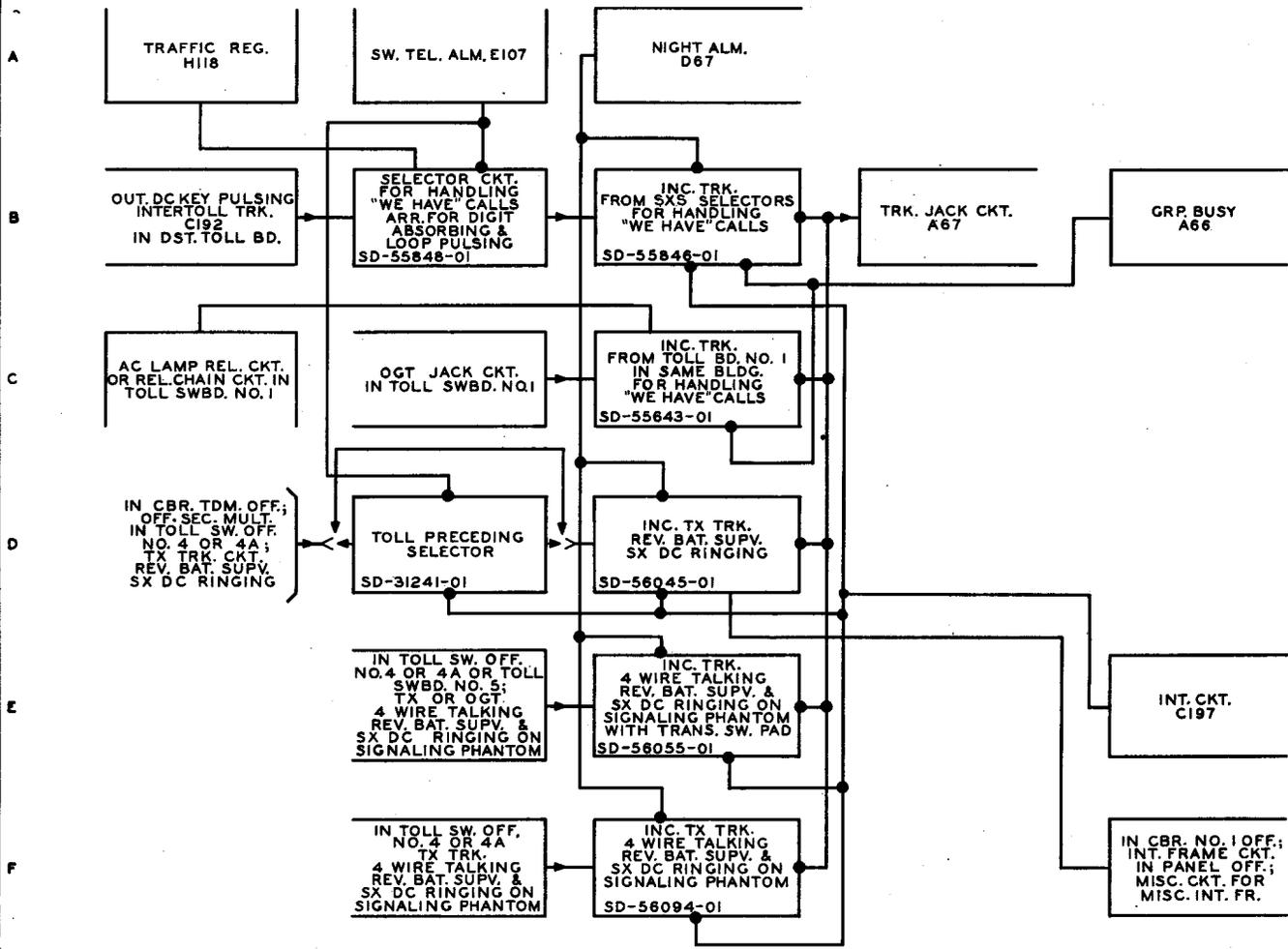
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150

INCOMING TRKS.



J.V.D.

151

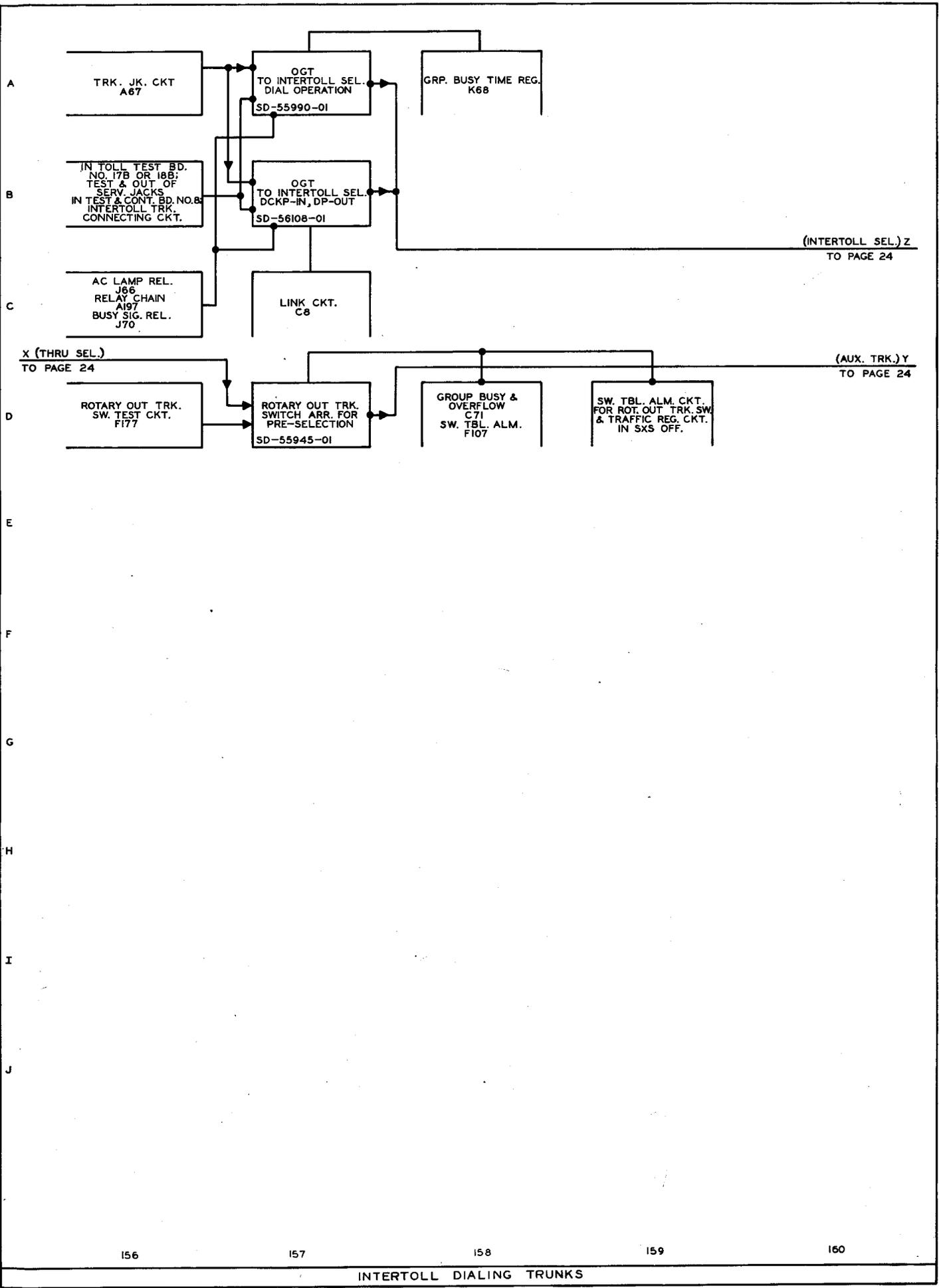
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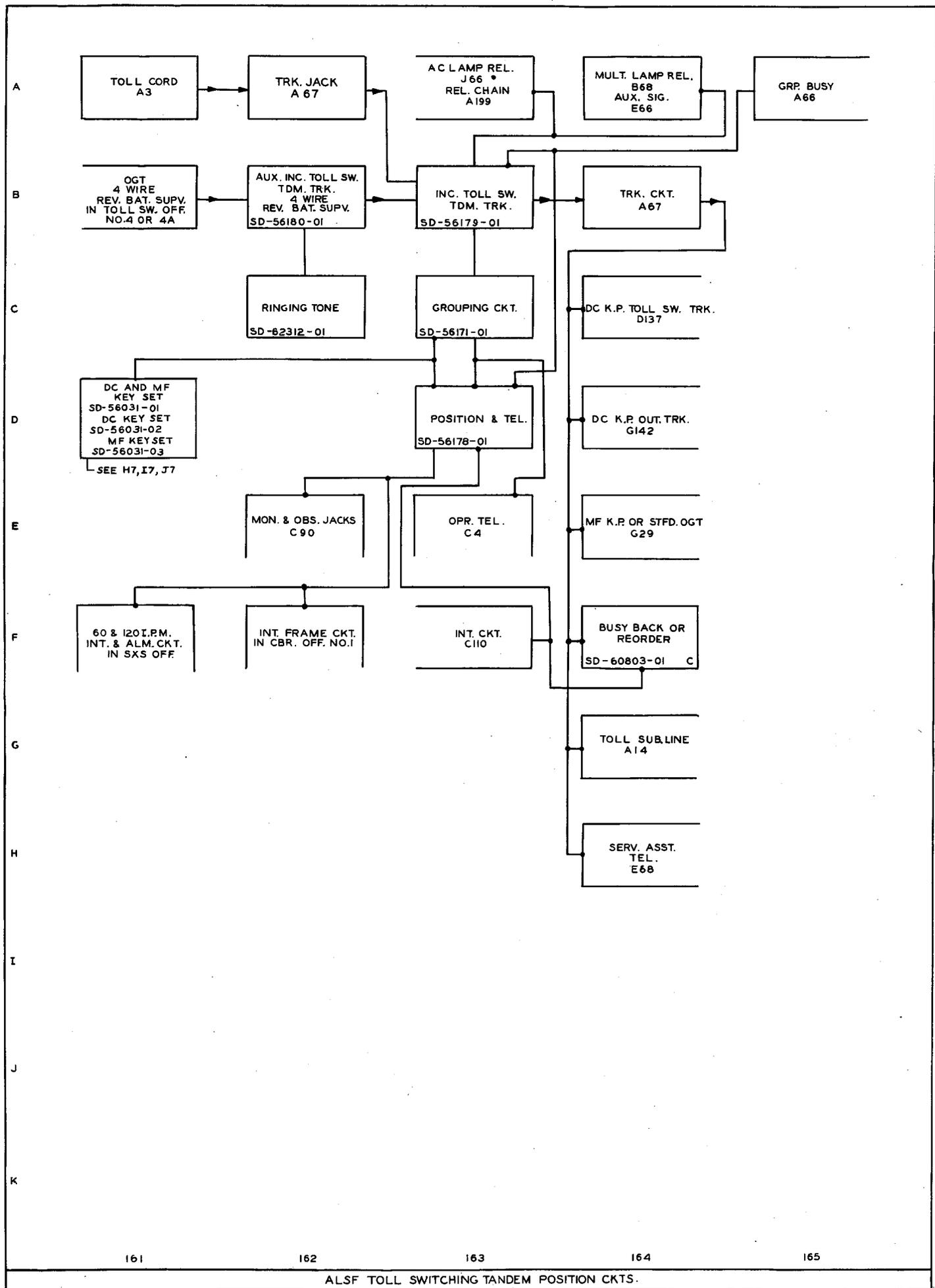
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INCOMING TRKS.





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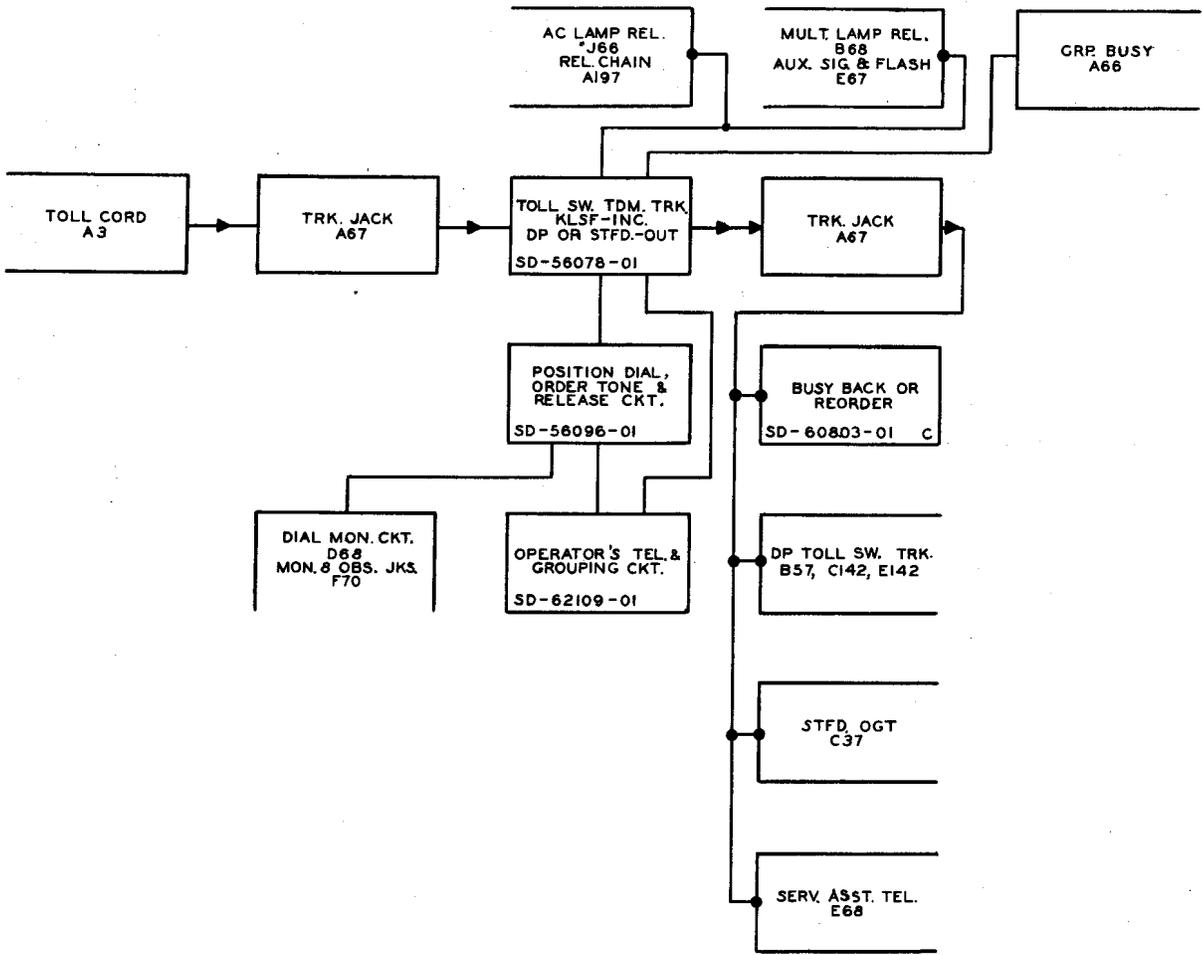
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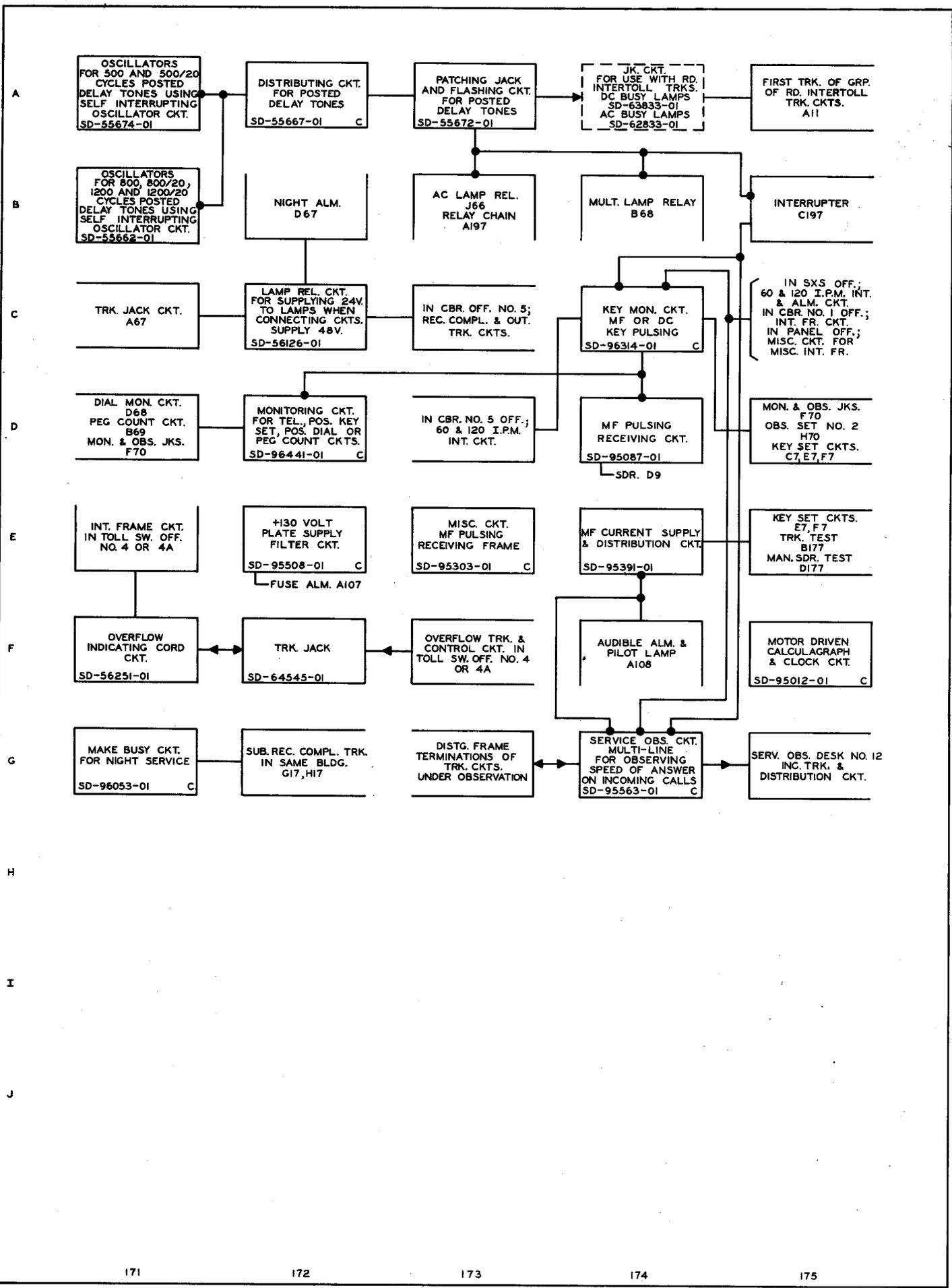
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ALSF TOLL SWITCHING TANDEM POSITION CKTS.

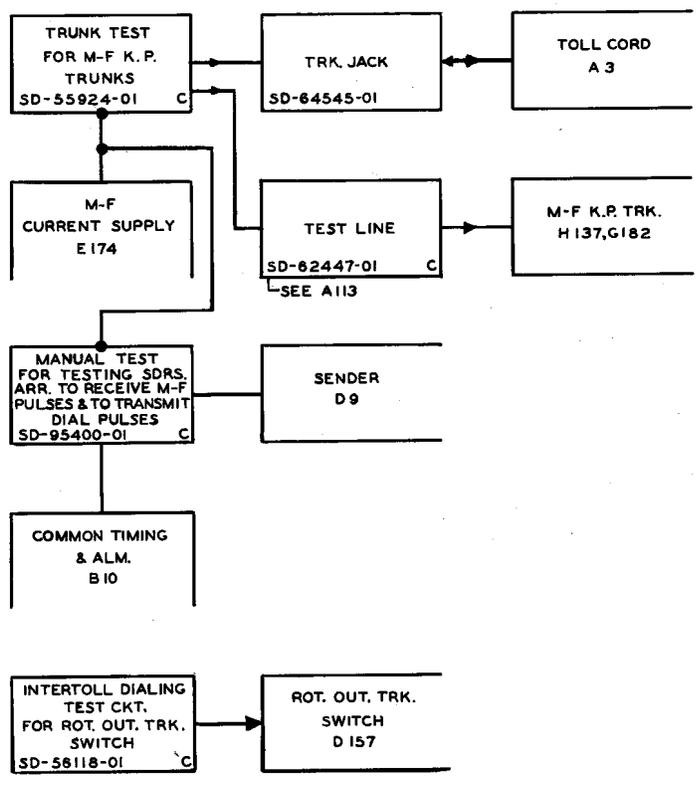
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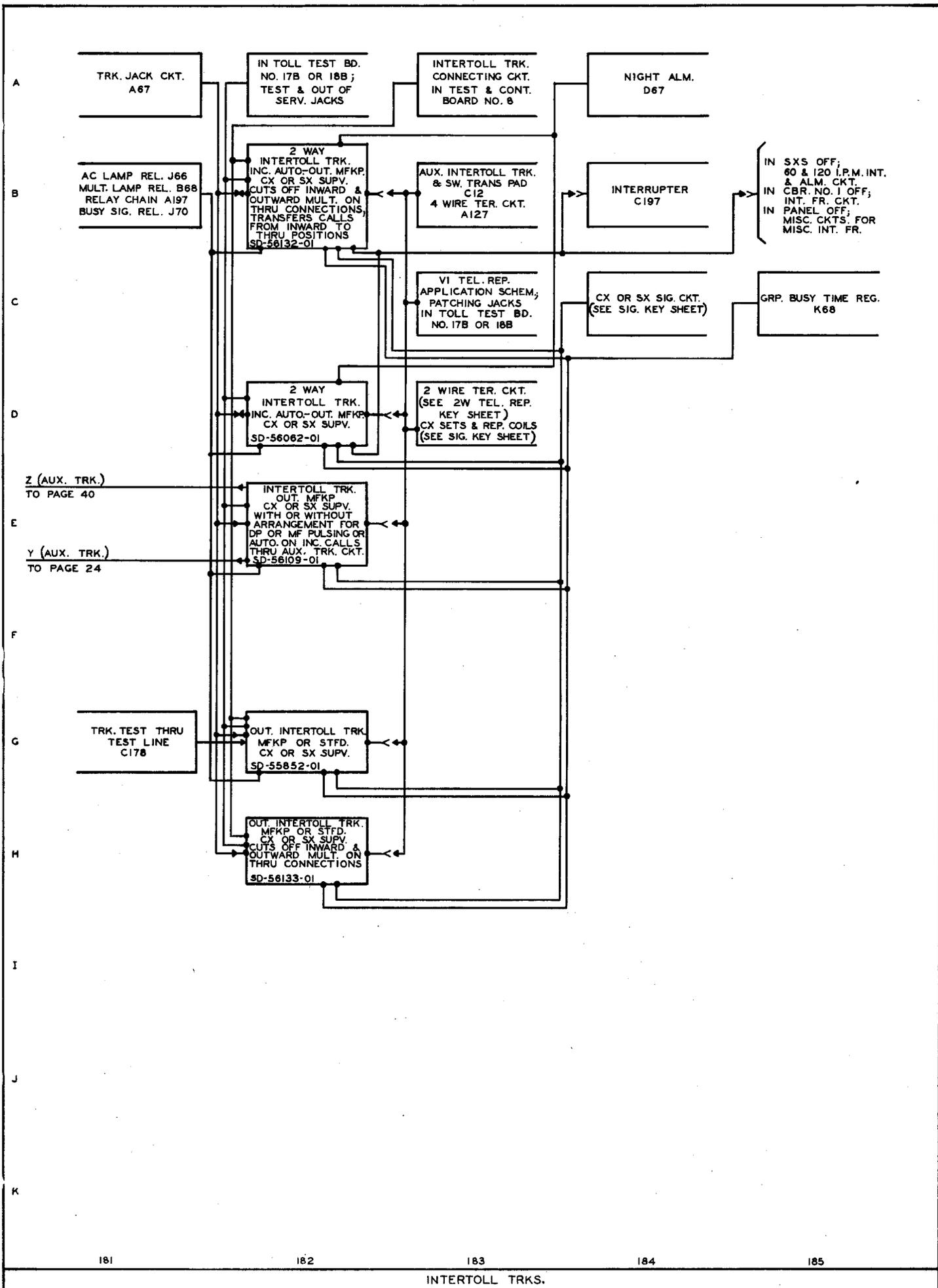


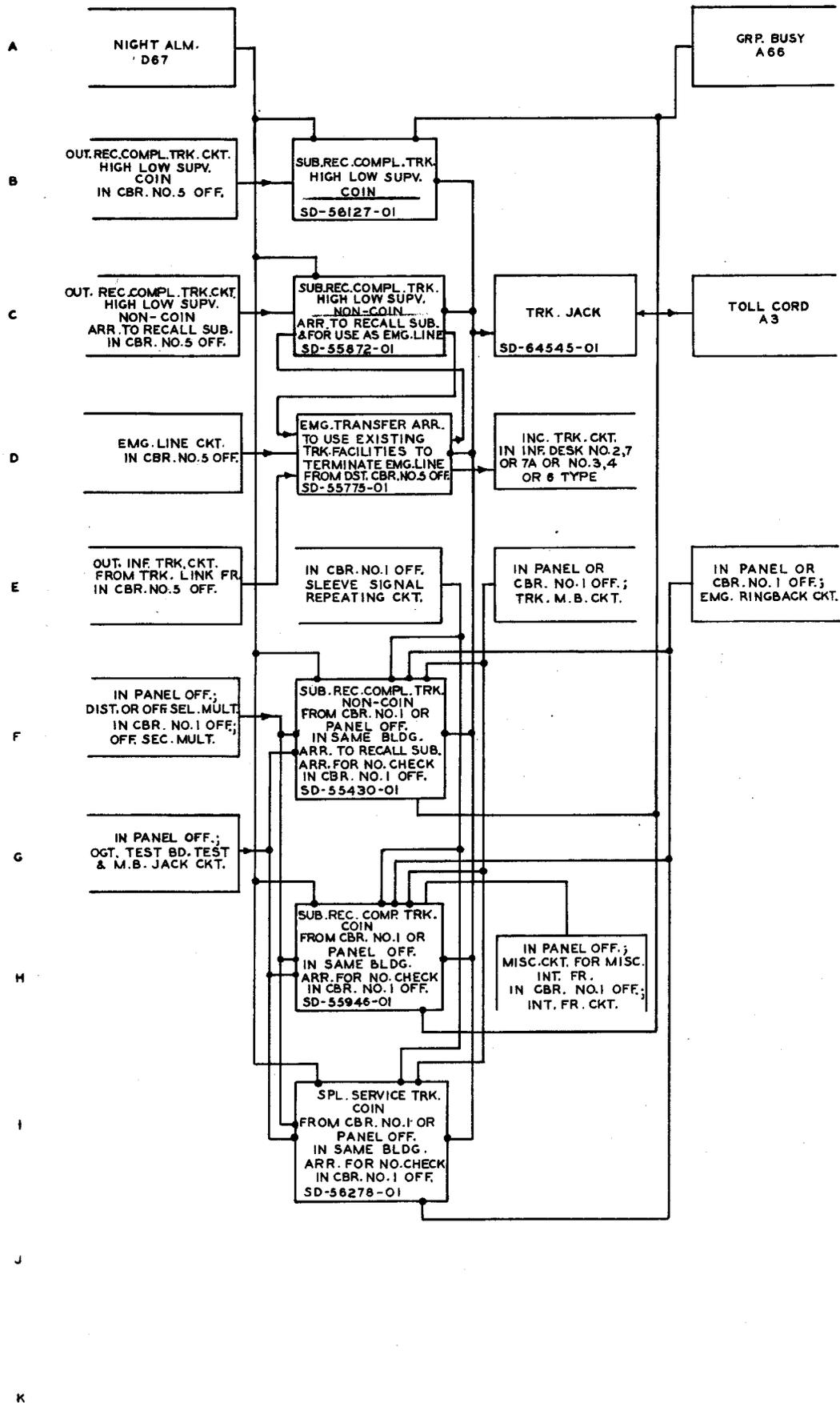


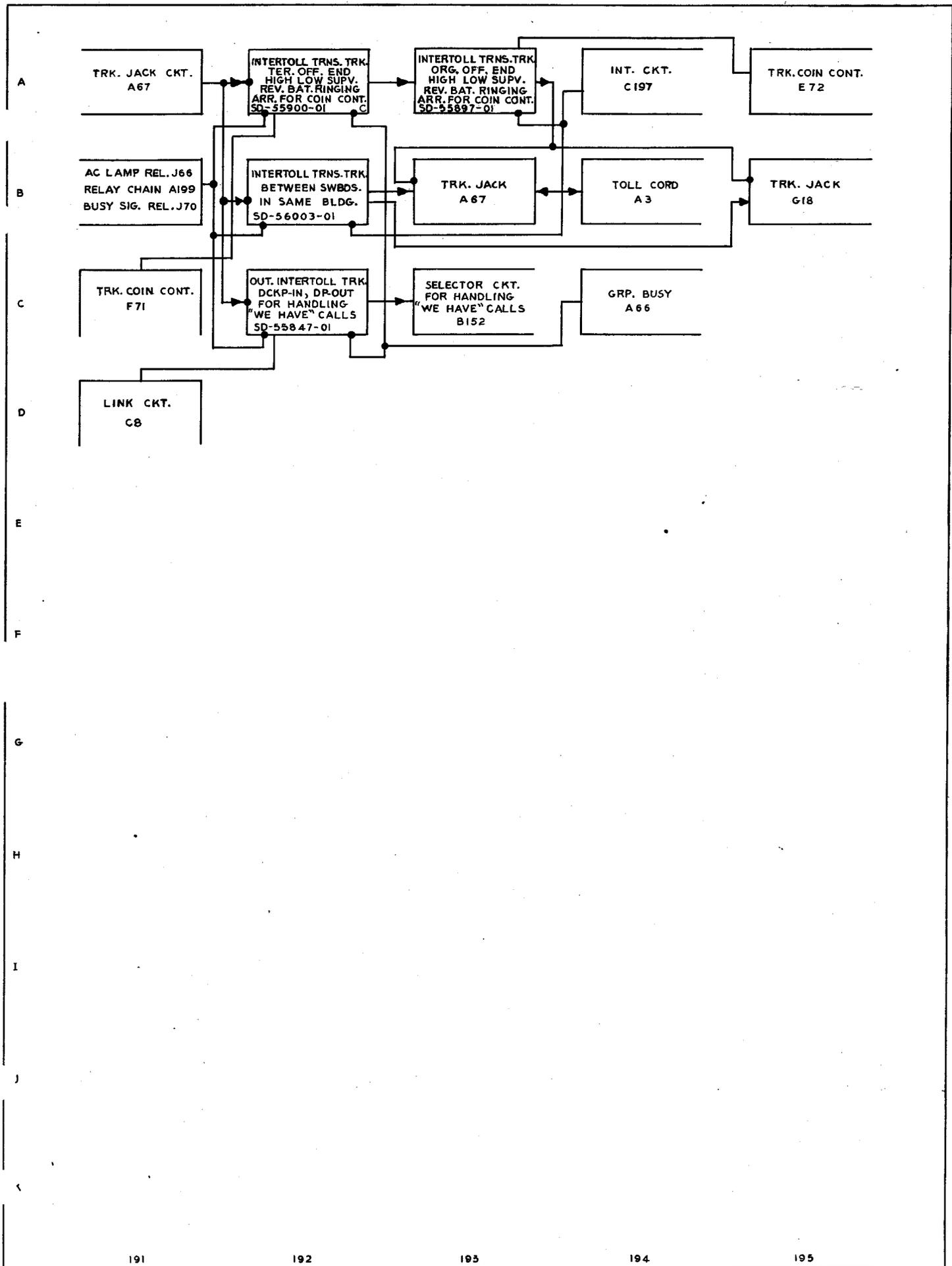
MISCELLANEOUS CIRCUITS

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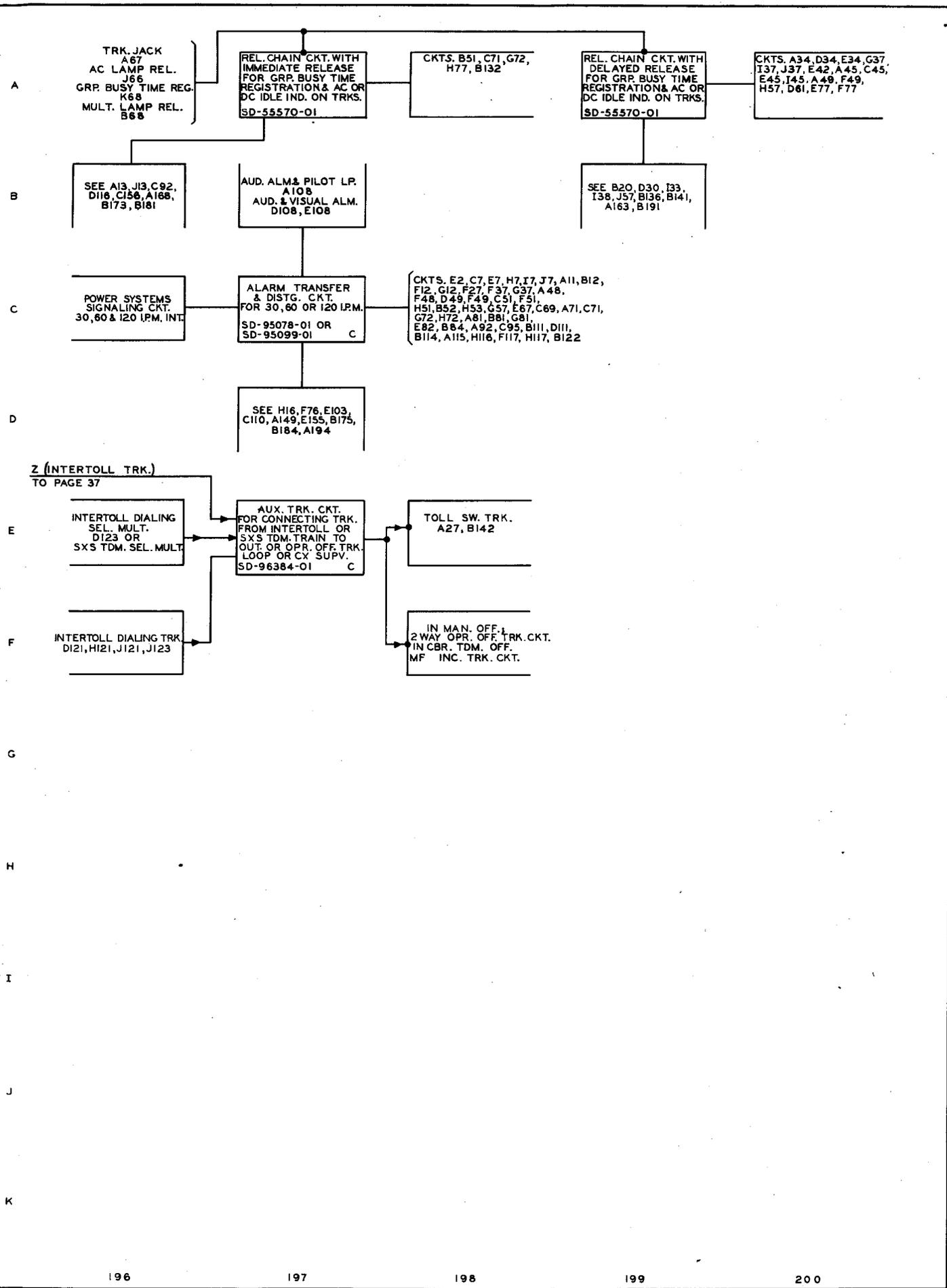
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INTERTOLL & INTERTOLL TRANSFER TRKS.



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200

MISCELLANEOUS CIRCUITS

CURRENT DRAIN
AMPERE HOURS PER BUSY HOUR

CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1 (SEE NOTE 1) 24V. SIG.		DRAINS LIST 2 24V. SIG.		REMARKS
CIRCUIT TITLE	CIRCUIT NO.		BAT.	LAMP GRD	BAT.	LAMP GRD	
LAMP CKTS.							
GROUP BUSY LAMP, TONE & REG.	SD-62612-01	2,4	.081	.062RR	.081	.062RR	PER (GB) RELAY
JACKS WITH BUSY SIG. OR DC BUSY LAMPS	SD-63833-01	3	.002	.002	.004	.004	PER TRK. ANS. LAMP-A1 OR 2U
		3	.005	.005	.010	.010	" " " " -2G
		3	.008	.008	.015	.015	" " BUSY " -2J
		3	.009	.009	.018	.018	" " " " -K1
		3	.011	.011	.023	.023	" " " " -G2
		3	.035	.035	.035	.035	PER GRP. OF 4 BUSY SIGNALS - 42A
JACKS WITH BUSY LAMPS	SD-62883-01	3	.002	.002	.004	.004	PER TRK. ANS. LAMP-A1 OR 2U
		3	.005	.005	.010	.010	" " " " -2G
JACK & LAMP FOR TRKS.	SD-64545-01	3	.002	.002	.004	.004	PER TRK. ANS. LAMP-A1 OR 2U
		3	.005	.005	.010	.010	" " " " -2G
		3	.009	.009	.018	.018	PER GRP. BUSY LAMP-K1
		3	.010	.010	.020	.020	" " " " -A1 OR 2U
		3	.025	.025	.050	.050	" " " " -2G
		3,6	.011	.011	.023	.023	" TRK. " " -G2
		3	.002	.002	.006	.006	PER IDLE TRK. IND. LAMP-2J
		3	.002	.002	.007	.007	" " " " -K1
		3	.002	.002	.008	.008	" " " " -2U
LAMP RELAY	SD-56126-01	2,3,5	A .011	A .011	A .011	A .011	PER (LR) RELAY
LAMP RELAY-AC	SD-62848-01	3,4	.007	.007RR	.006	.006RR	PER (L) RELAY
MULTIPLE LAMP RELAY	SD-63962-01	2,4	.032	.032RR	.027	.027RR	PER (LP) RELAY - FIG. 1
		2,4	.028	.028RR	.023	.023RR	" (LP1) " " 2
		2,4	.073	.073RR	.061	.061RR	" (LP2) " " 3

NOTES:

1. GROUND DRAINS SHOWN IN LIST 1 ARE FOR USE WHERE ADDITIONS ARE MADE TO CENTRALIZED FUSE PANELS.
2. DRAINS FOR LAMPS OR BUSY SIGNALS FUSED WITH TRK. CKTS., GRP. BUSY CKTS. OR MULTIPLE LAMP RELAY CKTS. ARE SHOWN ON CONNECTING JACK & LAMP CIRCUITS.
3. BATTERY DRAIN SHOWN ON THIS CKT. IS FUSED ON CONNECTING CKT.
4. "RR" DENOTES RELAY RACK GROUND.
5. "A" DENOTES 48V. SIG. BAT. OR R.R. GROUND.
6. DRAINS SHOWN APPLY WHETHER 24V. OR 48V. BAT. IS USED.

**CURRENT DRAIN
AMPERE HOURS PER BUSY HOUR**

CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1 (SEE NOTE 1)									DRAINS LIST 2					
			48 VOLTS					24 VOLTS				48 VOLTS			24 VOLTS		
			SIG. BAT.	TALK BAT.	FR. GRD.	R.R. GRD.	F.B. GRD.	SIG. BAT.	R.R. GRD.	SWBD. GRD.	SIG. BAT.	TALK BAT.	FR. GRD.	R.R. GRD.	F.B. GRD.	SIG. BAT.	R.R. GRD.
ALARM RECEIVING	SD-95418-01		.184			.216						.102		.120			
AMPLIFIER, MONITORING	SD-90575-01	2 3	A.006					.010 .500	.010 .500		A.006				.010 .278	.010 .278	
AMPLIFIER AND PAD	SD-95026-01	2,4,5	A.007					.500	.500		A.007				.278	.278	
BUSY SIGNAL RELAY	SD-63679-01	6,7,8						.055	.070						.047	.059	
CHAIN, RELAY	SD-55570-01	8,9,10,11 8,9,11,12 8,9,11,13 8,11,13,14		.013		.013		.059	.059		.007 .007 .011 .056	.007 .007 .011 .056		.011 .011 .011 .056	.006 .006 .049 .049	.006 .006 .049 .049	
CONTROL																	
INDICATOR	SD-62676-01	11						.034	.034						.038	.038	
SUPERVISORY	SD-64481-01		.008					.004	.007		.005				.003	.004	
DIAL																	
LOOP DIALING ONLY	SD-62673-01							.015	.017						.015	.017	
LOOP & REPEATED DIALING	SD-62673-01							.028	.026						.028	.026	
REPEATED DIALING ONLY	SD-62673-03							.023	.015						.023	.015	
CORD																	
OPR. REC. COMPL.	SD-56089-01		.018		.018		.007				.067		.067	.026			
TOLL, OUTWARD POS.	SD-63556-01						.033			.005				.071		.011	
TOLL, INWARD POS.	SD-63556-01						.057			.009				.071		.011	
KEY SET																	
MF	SD-55309-01		.093		.093						.093		.093				
DC & MF	SD-56100-01		.047		.047		.021	.021			.047		.047	.021	.021		
DC	SD-62066-01		.007		.007		.050	.050			.007		.007	.050	.050		
LINK	SD-90705-01	15,16	.084		.091						.168		.182				
MULTIPLE																	
RD. INTERTOLL TRK.	SD-62780-01	7					.031	.073						.062	.146		
RD. INTERTOLL TRK	SD-64562-01	7,17 7,17,18 7,19 7,18,19					.040 .062 .019 .019	.123 .059						.027 .041 .013 .013	.082 .039		

- NOTES:
- GROUND DRAINS SHOWN IN LIST 1 ARE FOR USE WHERE ADDITIONS ARE MADE TO CENTRALIZED FUSE PANELS.
 - "A" DENOTES 130 V. PLT. BAT. DRAIN.
 - VALUES SHOWN ARE FOR FIL. OR ADDITIONAL SIG. BAT. AND FIL. OR ADDITIONAL R.R. GROUND.
 - THIS DRAIN IS FIL. OR SIG. BAT. & GRD., 24 V. OR 48 V. AS SPEC.
 - BAT. IS FUSED ON BAT. SUPPLY CKT.
 - PER 34 GRPS. OF BUSY SIGNALS.
 - DRAINS FOR LAMPS OR BUSY SIGNALS FUSED WITH TRK. CKTS., GRP. BUSY RELAY CKTS., OR MULTIPLE LAMP RELAY CKTS. ARE SHOWN ON CONNECTING JACK & LAMP CKT.
 - BAT. DRAIN SHOWN FOR THIS CKT. IS FUSED ON CONNECTING CKT. AND MUST BE ADDED TO CONN. CKT. DRAIN.
 - PER (LP) RELAY (NO DELAY FIGS. 1,2 OR 3).
 - WHEN 24 V. FURNISHED BY CONNECTING TRK. IS SPECIFIED.
 - WHEN THIS CKT. CONNECTS TO RELAY CHAIN CKT., AC LAMP RELAY CKT., MULT. LAMP RELAY CKT., BUSY SIGNAL RELAY CKT., JACK CKT., RD. INTERTOLL TRK. MULT. CKT., OR INDICATOR CONTROL CKT. DRAINS SHOWN THEREON AS BEING FUSED OR GROUNDED ON THIS CKT. MUST BE ADDED TO VALUES SHOWN.
 - WHEN 48 V. DIRECT OR RES. BAT. FURNISHED BY TRUNK IS SPEC. PER (LP) RELAY (DELAY FIGS. 11, 12 OR 13).
 - WHEN 48 V. RES. BAT. FURNISHED BY TRK. IS SPECIFIED.
 - DRAINS ARE PER LINK.
 - MAX. DRAIN ON ANY ONE POWER LEAD IS LIST 2 VALUE MULTIPLIED BY THE NUMBER OF KEY PULSING SENDERS IN THE OFFICE.
 - WHEN FIG. E IS USED (WITH TIMED RECALL).
 - ADDITIONAL DRAIN FOR BAT. FUSED ON CONNECTING TRUNK.
 - WHEN FIG. D IS USED (WITHOUT TIMED RECALL).

**CURRENT DRAIN
AMPERE HOURS PER BUSY HOUR**

CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1 (SEE NOTE 19)									DRAINS LIST 2						
CIRCUIT TITLE	CIRCUIT NO.		48 VOLTS					24 VOLTS				48 VOLTS			24 VOLTS			
			SIG. BAT.	TALK BAT.	FR. GRD.	R.R. GRD.	F.B. GRD.	SIG. BAT.	R.R. GRD.	SWBD. GRD.	SIG. BAT.	TALK BAT.	FR. GRD.	R.R. GRD.	F.B. GRD.	SIG. BAT.	R.R. GRD.	SWBD. GRD.
OSCILLATORS 800 ETC. CYCLES	SD-55662-01	2,3,8	P.048						F.685	.024	F.640	P.048				F.380	.013	F.356
500 ETC. CYCLES	SD-55674-01	2,4,8	P.048						F.900	.024	F.855	P.048				F.500	.013	F.475
PATCHING, INTERTOLL	SD-55682-01	2,3,8	P.085						F.725	.024	F.640	P.085				F.405	.013	F.356
PATCHING JACK & FLASHING POSITION	SD-55672-01	2,4,8	P.085						F.940	.024	F.855	P.085				F.535	.013	F.475
POSITION & TEL., ALSF	SD-56178-01			.150		.150			.043	.023					.024	.013	.013	
POSITION, CROSSBAR GRP. CONTROL	SD-64155-01	5							.300		.270				.186		.167	
POSITION INDICATOR	SD-64117-01								.170		.045				.150		.040	
POSITION INDICATOR	SD-90014-01	6							.152				.125		.125			
POS. INDICATOR, SPLITTING & CONT.	SD-63165-01	7							.022	.022					.020		.020	
RECEIVING, MF	SD-95087-01		1.860			2.300			.060	.008					.152		.020	
REGISTER, GRP. BUSY SELECTOR	SD-62231-01								.076		.073				.065		.063	
FOR "WE HAVE" CALLS	SD-55848-01		.033		.006						.033		.006					
TOLL PRECEDING	SD-31241-01		.016		.002						.020		.002					
INTERTOLL THRU	SD-55003-01		.016		.003						.021		.005					
COMB. INTERTOLL & TOLL TRANS.	SD-55062-01		.122	.105	.300		.105				.097	.084	.240		.084			
INTERTOLL OR AUX. INTERTOLL WITH DIGIT ABSORBING	SD-55242-01		.027		.002						.019		.001					
INTERTOLL WITHOUT DIGIT ABSORBING	SD-64470-01		.027		.002						.019		.001					
SENDER																		
DCKP-IN, RP-OUT	SD-62058-01		.287				.320	.021			.376				.418	.028		
DCKP-IN, DP-OUT	SD-95480-01		.470			.470					.780			.780				
MFKP-IN, DP-OUT	SD-95481-01		.930			.490					1.550			.810				
SIGNAL GRD. AUXILIARY	SD-62466-01	21,25						.095	.095						.047	.047		
		22,25						.042	.042						.021	.021		
		23,25						.040	.040						.020	.020		
		24,28						.095	.095						.047	.047		
PNEUMATIC	SD-63464-01	6						.050		.050					.030		.030	
SPLITTING, TOLL TDM.	SD-62257-01	6						.075	.053	.025					.042	.030	.014	
SUPPLY, MF SIG. CURRENT	SD-95391-01	2,12,13	R.033	F.859			F.850	F1.275	F1.275		P.033	F.473		F.473	F.710	F.710		
SWITCH																		
CROSSBAR PRI.-SEC.	SD-64154-01	11	.034		.018						.046		.024					
ROTARY OUT. TRUNK	SD-55945-01	18	.049		.008						.042		.008					
SWITCHING TRANS. PAD	SD-62632-02	20						.020	.020						.013	.013		
TEL. & TRK., OVERFLOW REC. OPR.	SD-55670-01							.115		.070					.064		.056	
TELEPHONE, OPERATORS	SD-62115-01							.076		.076					.042		.076	
TEL. & CONT., TOLL TANDEM	SD-62226-01							.180	.200	.035					.105	.117	.020	
TEL. & GROUPING, KEY LIST	SD-62109-01							.072		.072					.040		.040	
TEL. & GROUPING, AUTO. LIST	SD-62508-01							.086		.086					.048		.048	
TEST, MAN. FOR MFKP-IN, DP-OUT, SDRS.	SD-95400-01										.556		.556		.556		.556	
TEST LINE, INTERTOLL DIALING	SD-56221-01										.179		.109					
TRANSFER & INT.	SD-55507-01							.055		.055					.031		.031	
TRUNK																		
INC. FROM MAN. OFF.	SD-55081-01	1,14	.141		.100			.019	.042		.170		.120		.023	.051		
INC. FROM MAN. OFF, CX SUPV.	SD-55082-01	1,15	.098		.056			.019	.042		.118		.069		.023	.051		
OUT. INTERTOLL OR TDM. STFD, CX SUPV.	SD-55083-01	1	.034		.024			.036	.054		.037		.027		.040	.060		
INTERTOLL DIALING OUT, CX SUPV.	SD-55109-01	1	.101		.057						.078		.039			.028		
2 WAY, REC. COMPL. SW.	SD-55158-01	1,16	.050		.050		A.014	A.014			.067		.067		A.019	A.019		
INC. OR 2WAY WET-DRY SUPV.	SD-55184-01	1	.038		.038				.015		.075		.075			.030		
TOLL SW, MFKP OR STFD.	SD-55224-01	1					.015	.042							.015	.042		
INC. INTERTOLL, CX SUPV.	SD-55227-01	1	.120		.150						.096		.120					
INTERTOLL DIALING OUT. FROM SEL MULT. TO PRECEDE THRU OR AUX. SEL	SD-55232-01		.035		.011						.047		.015					
INTERTOLL DIALING OUT. REV. BAT. SUPV.	SD-55243-01		.100		.075						.139		.100					
OPR. OFF. 2 WAY, REPEATED DIALING	SD-55255-01	1,17	.051		.075			.019		.078		.107			.028			
		1,9	.061		.086			.019		.088		.122			.028			
		1,10	.040		.040					.059		.059						

NOTES:

- WHEN THIS CKT. CONN. TO RELAY CHAIN CKT., A.C. LAMP RELAY CKT., MULT. LAMP RELAY CKT., BUSY LAMP TONE & REG. CKT., GROUP BUSY CKT., BUSY SIGNAL RELAY CKT., JACK CKT., R.D. INTERTOLL TRK. MULT. CKT. OR INDICATOR CONTROL CKT. DRAINS SHOWN THEREON AS BEING FUSED OR GROUNDED ON THIS CKT. MUST BE ADDED TO VALUES SHOWN.
- "P" DENOTES 130 V. PLATE DRAIN.
- WHEN REGULATED BAT. IS USED.
- WHEN NON-REGULATED BAT. IS USED.
- DRAIN FOR THIS CKT. IS INCLUDED WITH TRK. & LINK CKTS.
- PER POSITION.
- PER SUB-GROUP.
- "F" DENOTES 24 V. FIL. BAT. & GRD. DRAINS.
- CX, SX OR SF SUPERVISION.
- ADDITIONAL DRAIN FOR REPEATED SX SUPV. (FIG. G).
- PER LINK.
- "F" DENOTES 24 V. OR 48 V. FIL. BAT. & GRD. DRAINS AS SPEC.
- PER OSCILLATOR GROUP CKT.
- REV. BAT. SUPERVISION.
- HIGH-LOW SUPERVISION.
- "A" ADDITIONAL DRAIN WHEN "J" OPTION IS USED.
- HIGH-LOW REV. BAT. SUPERVISION.
- DRAIN SHOWN IS PER INTERTOLL TRUNK.
- GROUND DRAINS SHOWN IN LIST 1 ARE FOR USE WHERE ADDITIONS ARE MADE TO CENTRALIZED FUSE PANELS.
- PER FIG. 2.
- PER 2G AUX. SIG. LAMP
- PER 2U AUX. SIG. LAMP
- PER AI AUX. SIG. LAMP
- PER (P) RELAY.
- GROUND DRAIN SHOWN HERE IS FURNISHED BY CONNECTING NIGHT ALM. CKT.
- BAT. DRAIN IS FUSED ON CONNECTING LAMP OR TRK. CKT.

**CURRENT DRAIN
AMPERE HOURS PER BUSY HOUR**

CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1 SEE NOTE 16									DRAINS LIST 2					
CIRCUIT TITLE	CIRCUIT NO.		48 VOLTS			24 VOLTS			48 VOLTS			24 VOLTS					
			SIG. BAT.	TALK BAT.	FR. GRD.	R.R. GRD.	F.B. GRD.	SIG. BAT.	R.R. GRD.	SWBD. GRD.	SIG. BAT.	TALK BAT.	FR. GRD.	R.R. GRD.	F.B. GRD.	SIG. BAT.	R.R. GRD.
TRUNK - OPR. OFF., 2 WAY, DCKP-IN, DP OUT	SD-55256-01	1/13	.067			.067			.019		.096			.096			.028
		1/2	.093			.086			.019		.134			.117			.028
INTERTOLL DIALING OUT. FROM SEL. MULT. TO OPR. OFF. CX OR SX SUPV.	SD-55275-01	1	.141			.100					.189			.135			
TOLL SW., DCKP-IN, DP OR RP-OUT	SD-55291-01	1/3	.100			.100			.028		.100			.100			.028
		1/4	.070			.070			.028		.070			.070			.028
		1/5	.027			.027					.027			.027			
INTERTOLL DIALING OUT. REV. BAT. SUPV.	SD-55301-01	1/6	.060			.047					.081			.063			
		1/7	.015			.012					.081			.063			
TOLL SW., DCKP-IN, DP-OUT, TO S X S OFF. IN SAME BLDG.	SD-55341-01	1/8		.193			.340		.031		.175			.310			.028
		1/9		.238			.385		.031		.216			.341			.028
REC. COMPL. FROM S X S OFF. IN SAME BLDG. CONNECTING TO OPR. OFF. TRK. ARR. FOR ONE DIGIT TDM OPERATION	SD-55344-01	1		.070		.078	.007		.021		.094		.102	.010			.028
TOLL SW., REPEATED DIALING	SD-55346-01	1/10	.060			.060			.031		.055			.055			.028
		1/11	.193			.154			.031		.176			.141			.028
		1/12	.048			.048			.031		.044			.044			.028
TOLL SW., REPEATED DIALING TO S X S OFF. IN SAME BLDG. 2 WAY AUTO. CX SUPV.	SD-55352-01	1		.182		.248	.092		.031		.165		.226	.084			.028
INTERTOLL DIALING TOLL SW. CX. OR SX SUPV.	SD-55358-01	1	.173			.136		.020	.059		.121		.096		.014		.042
TOLL SW., REPEATED DIALING, CX. OR SX SUPV.	SD-55379-01	1	.190			.100					.139		.076				
REC. COMPL. CX OR CX SUPV.	SD-55381-01	1	.045			.037			.022		.058		.048				.028
TOLL SW., DCKP-IN, DP-OUT, CX OR SX SUPV.	SD-55386-01	1	.170			.160			.026		.184		.174				.028
INTERPOSITION	SD-55421-01	1						.018	.038							.046	.095
REC. COMPL. FROM PANEL OR CBR. NO. 1 OFF. IN SAME BLDG. INC. AUTO FROM SWBD. NO.3B OR TDM. SWBD. NO.3	SD-55430-01	1		.061		.086	.061	.127	.147		.084		.119	.084	.176	.204	
INC. FROM TOLL SWBD. NO.1 IN SAME BLDG. FOR "WE HAVE" CALLS	SD-55582-01	1						.025	.100						.025	.100	
INC. FROM TOLL SWBD. NO.1 IN SAME BLDG. FOR "WE HAVE" CALLS	SD-55643-01	1						.012	.044						.020	.073	
INC. KEY LIST FROM SWBD. NO.3, 3C, 3CL OR 6	SD-55704-01	1						.228	.200						.228	.200	
INC. REC. FROM SEMI-MECHANICAL DSA SWBD.	SD-55793-01	1						.080	.100						.178	.222	
INC. FROM SXS SELECTORS FOR "WE HAVE" CALLS	SD-55846-01	1	.044			.053			.014		.086		.105				.028
OUT. INTERTOLL DCKP FOR "WE HAVE" CALLS	SD-55847-01	1	.075			.075			.017		.125		.125				.028
OUT. INTERTOLL MFKP OR STDF. CX OR SX SUPV.	SD-55852-01	1	.177			.122		.066	.066		.126		.088		.047	.047	
REC. COMPL. NON-COIN & FOR USE AS EMG. LINE CKT. FROM CBR. NO.5 OFF.	SD-55872-01	1	.018			.018			.021		.025		.025				.028
TOLL SW., DCKP, WET-DRY SUPV. TO SXS, TOLL TRAIN	SD-55901-01	1	.133			.133			.028		.133		.133				.028
INTERTOLL DIALING OUT TO INTERTOLL SEL. DIAL OPERATION	SD-55990-01	1	.437			.490		.050	.083		.307		.344		.033	.061	
REC. COMPL. FROM SXS OFF. IN SAME BLDG., NON-COIN	SD-56007-01	1		.180			.250		.023		.250			.348			.032
REC. COMPL. FROM SXS OFF. IN SAME BLDG., COIN	SD-56008-01	1		.180			.250		.023		.250			.348			.032
INTERTOLL DIALING, 2 WAY, CX OR SX SUPV.	SD-56036-01	1	.072			.046					.051		.032				
INTERPOSITION FROM TDM. SWBD. NO. 3 TO SWBD. NO. 3 IN SAME BLDG.	SD-56043-01	1	.014			.014			.025		.031		.031				.056
INC. TX, REV. BAT. SUPV.	SD-56045-01	1	.039			.039			.025		.043		.043				.028
INC. 4 W TALK. REV. BAT. SUPV., WITH TRANS. SW. PAD	SD-56055-01	1	.044			.044			.015		.088		.088				.028
OUT. TOLL TDM., 4 W TALK., REV. BAT. SUPV., MFKP OR AUTO, WITH TRANS. SW. PAD	SD-56056-01	1	.031			.031			.042		.021		.021				.038
TOLL TDM. AUX., 4 W TALK., REV. BAT. SUPV., SX DC RING. ON SIG. PHANTOM	SD-56060-01	1	.050			.040					.042		.033				
2 WAY INTERTOLL, INC. AUTO., OUT. MFKP, CX OR SX SUPV.	SD-56062-01	1	.269			.247			.039		.193		.177				.028
TOLL SW. TDM., KLSF TO & DP OR STDF. FROM SW. TRK. TDM. POS	SD-56078-01	1	.032			.032			.038		.032		.032				.038
OPR. REC. COMPL. COIN	SD-56090-01	1		.160			.135	.025	.040		.215		.182	.034	.054		
INC. TX, 4 W TALK., REV. BAT. SUPV.	SD-56094-01	1	.034			.034			.014		.068		.068				.028
OUT. TOLL TDM., 4 W TALK., REV. BAT. SUPV., MFKP	SD-56095-01	1	.056			.056			.042		.037		.037				.028
OUT. DCKP-IN, DP-OUT, REV. BAT. SUPV.	SD-56105-01	1	.234			.234			.033		.168		.168				.024
INTERTOLL DIALING OUT TO INTERTOLL SEL. DCKP-IN, DP-OUT	SD-56108-01	1	.313			.384	.047		.081		.251		.308	.037			.065
INTERTOLL, OUT. MFKP CX OR SX SUPV. ARR. FOR DP OR AUTO. OR INC. CALLS THRU AUX. TRK. CKT.	SD-56109-01	1/14	.261			.197			.021		.260		.211				.028
		1/15	.187			.150			.021		.249		.200				.028

- NOTES:
- WHEN THIS CKT. CONNECTS TO RELAY CHAIN CKT., AC LAMP RELAY CKT., BUSY SIG. RELAY CKT., MULT. LAMP RELAY CKT., BUSY LAMP, TONE & REG. CKT., J. CKT., RD. INTERTOLL TRK. MULT. CKT., GRP. BUSY CKT., OR INDICATOR CONTROL CKT., DRAINS SHOWN THEREON AS BEING FUSED OR GROUNDED ON THIS CKT. MUST BE ADDED TO VALUES SHOWN.
 - CX, SX OR SF SUPERVISION.
 - REV. BAT. SUPV. WITH INTERTOLL MULTIPLE.
 - REV. BAT. SUPV. WITHOUT INTERTOLL MULTIPLE.
 - ADDITIONAL DRAIN FOR WET-DRY SUPERVISION.
 - INTERTOLL ONLY.
 - MIXED TRAFFIC.
 - WITHOUT CONTROLLED START OF RINGING.
 - WITH CONTROLLED START OF RINGING.
 - WET-DRY SUPERVISION.
 - REV. BAT. SUPV. WITH REPEATED SX SUPERVISION.
 - REV. BAT. SUPV. WITHOUT REPEATED SX SUPERVISION.
 - HIGH-LOW REV. BAT. SUPERVISION.
 - WITH CONNECTION TO 2 WAY AUX. TRK.
 - WITHOUT CONNECTION TO 2 WAY AUX. TRK.
 - GROUND DRAINS SHOWN IN LIST 1 ARE FOR USE WHERE ADDITIONS ARE MADE TO CENTRALIZED FUSE PANELS.

CURRENT DRAIN FOR CIRCUITS

CURRENT DRAIN
AMPERE HOURS PER BUSY HOUR

CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1 (SEE NOTE 15)									DRAINS LIST 2							
			48 VOLTS					24 VOLTS				48 VOLTS			24 VOLTS				
			SIG. BAT.	TALK. BAT.	F.R. GRD.	R.R. GRD.	F.B. GRD.	SIG. BAT.	R.R. GRD.	SWBD. GRD.	SIG. BAT.	TALK. BAT.	F.R. GRD.	R.R. GRD.	F.B. GRD.	SIG. BAT.	R.R. GRD.	SWBD. GRD.	
TRUNK-2WAY OPR.OFF, HIGH-LOW REV. BAT. SUPV. OUT., MFKP-IN, DP-OUT, WITH ACCESS FROM TDM,OR INTERTOLL SELS., INC.AUTO.	SD-56116-01	I	.106			.106				.019			.151			.151			.028
REC.COMPL.,HIGH-LOW SUPV.,COIN	SD-56127-01	I	.047			.056				.041	.070		.065			.079			.058 .028
TRUNK-2 WAY INTERTOLL, INC. AUTO., OUT. MFKP, CX OR SX SUPV.	SD-56132-01	I	.256			.206				.028			.256			.206			.028
TRUNK-OUT. INTERTOLL,MFKP OR STFD,CX OR SX SUPV.	SD-56133-01	I	.228			.159				.039			.163			.117			.028
" INC.TOLL SW,TDM.,ALSF TOLL SW,TDM,POS	SD-56179-01	I	.077			.100							.077			.100			
TRUNK-AUX. INC.TOLL SW. TDM.,4 WIRE, REV. BAT. SUPV.,ALSF TOLL SW. TDM.POS.	SD-56180-01	I	.070			.025							.092			.034			
TRUNK-SPL. SERV.,COIN, FROM PAN. OR CBR. NO.1 OFF. IN SAME BLDG.	SD-56278-01	I		.124				.167	.098	.104			.124			.167	.098	.104	
TRUNK-INC. REC. FROM PAN,OFF. ARR. FOR CLR. NON-COMPL. SERV.	ES-61290-01	I							.030	.035								.042	.043
TRUNK-TOLL SW. TO SXS REPEATED DIALING TOLL TRAIN	SD-62022-01	I							.092	.100								.071	.077
TRUNK-REC.COMPL. FROM PAN. OFF. IN SAME BLDG., COIN	SD-62086-01	I		.061		.018	.061		.173	.176			.094		.028	.094	.268	.272	
" INC. A-B TOLL ,KLSF	SD-62133-01	I							.200	.195							.166	.161	
TRUNK-REC.COMPL. FROM PAN. OR SXS OFF.,NON-COIN	SD-62187-01	I							.040	.045								.062	.070
TRUNK-REC. FROM MAN,OR DIAL DSA SWBD. IN SAME BLDG.	SD-62278-01	I							.006	.046								.009	.069
" REC. FROM SWBD. NO.1C IN SAME BLDG.	SD-62280-01	I							.035	.080								.051	.117
" OFF SWITCHING, KLSF	SD-62364-01	I							.065	.065								.065	.065
TRUNK-OFF. SWITCHING FROM TDM. SWBD. NO.1, KLSF	SD-62370-01	I							.155	.150								.155	.150
" INC. REC. FROM MAN. OFF.	SD-62437-02	I		.060					.084	.138			.083					.115	.190
" OFF. SWITCHING, ALSF	SD-62510-01	I							.065	.056								.086	.074
" AUX. TOLL TDM.	SD-62512-01	I	.015						.041	.038		.026						.071	.066
" TOLL SW. TO LOCAL OFF.	SD-62610-02	I							.020	.075								.022	.084
" TOLL SW. TO SXS OFF.	SD-62611-01	I							.070	.080								.070	.080
" 2 WAY RD. INTERTOLL	SD-62614-01	I,2,10							.048	.059								.032	.039
		I,3							.052	.052								.034	.034
		I,4							.034	.034								.023	.023
" INC. TOLL TDM. OR UTILITY	SD-62674-01	I							.285	.260								.237	.216
		I,5							.140	.160								.094	.107
		I,6							.090	.090								.060	.060
" AUX. & RD. INTERTOLL	SD-62705-01	I,7							.150	.150								.100	.100
		I							.145	.135								.145	.135
		I							.009	.012								.023	.030
TRUNK-INC. REC. FROM MAN. "A" OR DSA SWBD. IN SAME BLDG.	SD-62794-01	I							.006	.075								.009	.107
" INC. REC. FROM MAN. "A" OR DSA SWBD.	SD-62799	I							.022	.025								.031	.036
" TOLL SW. TO SXS "B" SWBD.	SD-62817-01	I							.040	.055								.045	.061
" INTERPOSITION, INC. FROM TOLL SWBD. NO.2	SD-62818-01	I							.005	.013								.009	.024
TRUNK-REC.COMPL. FROM CBR. NO.1 OR PANEL OFF WITH OR WITHOUT NUMBER CHECKING	SD-63013-01	I							.040	.041								.056	.057
" TOLL SW. TO SXS OFF.	SD-63027-01	I							.122	.130								.122	.130
" AUX. INC. TOLL TDM.	SD-63087-01	I							.075									.083	
" OUT. STFD. TO TDM. SWBD. NO. 3	SD-63116-01	I,8							.034	.041								.029	.035
		I,9							.027	.027								.022	.022
		I							.050	.055								.050	.055
TRUNK-OUT. TO MAN., MAN. TDM. OR MAGNETO OFF., REV. BAT. SUPV.	SD-63121-01	I							.095	.090								.079	.075
TRUNK-AUX. TOLL TDM. INC. FROM SWBD. NO.3, MAN. "A" OR DSA SWBD.	SD-63164-01	I,10,11							.148	.141								.123	.117
		I,13	.044			.044			.026	.033		.045		.045				.027	.034
		I,14	.044			.044			.048	.055		.045		.045				.049	.056
" OUT. STFD.,HIGH-LOW SUPV.	SD-63261-01	I				.044			.070	.077		.045		.045		.045		.071	.078

1. WHEN THIS CKT. CONNECTS TO RELAY CHAIN CKT., A C LAMP RELAY CKT., BUSY SIG. RELAY CKT., MULT. LAMP RELAY CKT., BUSY LAMP, TONE & REG. CKT., GROUP BUSY CKT., JACK CKT., RD. INTERTOLL TRK. MULT. CKT., OR INDICATOR CONTROL CKT., DRAIN SHOW THEREON AS BEING FUSED OR GROUNDED ON THIS CKT. MUST BE ADDED TO VALUES SHOWN.
2. WITHOUT BUSY SIGNALS OR MULT. CUT-OFF (FIG. B)
3. ADDITIONAL DRAIN FOR FIG. B1 (MULT. CUT-OFF).
4. ADDITIONAL DRAIN WHEN BUSY SIGNALS ARE USED.
5. WITHOUT BUSY SIGNALS.
6. ADDITIONAL DRAIN FOR UP TO 51 GRPS. OF BUSY SIGNALS.
7. ADDITIONAL DRAIN FOR OVER 51 GRPS. OF BUSY SIGNAL.
8. NO BUSY SIGNALS (FIG. I)
9. WITH BUSY SIGNALS (FIGS. I & 2).

10. SEE SD-64562-01 AND CIRCUIT NOTE 102 OF SAME DRAWING.
11. FIGS. I & A.
12. FIGS. I & B.
13. ADDITIONAL DRAIN WHEN LESS THAN 13 OR MORE THAN 26 GRPS. OF BUSY SIGNALS ARE USED.
14. ADDITIONAL DRAIN WHEN MORE THAN 12 & LESS THAN 27 GRPS. OF BUSY SIGNALS ARE USED.
15. GROUND DRAINS SHOWN IN LIST 1 ARE FOR USE WHERE ADDITIONS ARE MADE TO CENTRALIZED FUSE PANELS.

**CURRENT DRAIN
AMPERE HOURS PER BUSY HOUR**

CIRCUIT DRAWINGS		SEE NOTE NO.	DRAINS LIST 1 (SEE NOTE 9)									DRAINS LIST 2						
			48 VOLTS			2.4 VOLTS			48 VOLTS			24 VOLTS						
CIRCUIT TITLE	CIRCUIT NO.		SIG. BAT.	TALK. BAT.	F.R. GRD.	R.R. GRD.	F.B. GRD.	SIG. BAT.	R.R. GRD.	SWBD. GRD.	SIG. BAT.	TALK. BAT.	F.R. GRD.	R.R. GRD.	F.B. GRD.	SIG. BAT.	R.R. GRD.	SWBD. GRD.
TRUNK-INTERTOLL DIALING INC. TO "INTERTOLL SEL. OR OPR.	SD-64590-01	1	.125			.090					.101			.075				
" TEL. REP. TOLL CONFERENCE SERVICE	SD-64525-01	6						.093	.106							.052	.059	
		7						.160	.186							.089	.104	
		8						.017	.030							.010	.017	
"TOLL CONNECTING TO LOCAL OFF. FOR ESTABLISHING CONN. WITH C.D.O. SUB.	SD-64626-01	1/2						.014	.019							.019	.026	
		1/3						.026	.029							.056	.064	
INC. FROM SXS SEL. MULT. IN SAME BLDG. ARR. TO ABSORB ONE TO 5 DIGITS	SD-64660-01	1		.115		.135	.060		.010		.153		.178	.081		.014		
2 WAY RD. INTERTOLL, 135 CYC. RINGING	SD-64823-01	1						.107	.121							.071	.080	
INTERTOLL DIALING INC. FOR CONNECTING CX SIG. CKT. TO SXS TOLL PRECEDING SEL.	SD-64824-01	1	.090			.163					.073		.130					
TOLL SW., REPEATED DIALING TO SXS TOLL INTERMEDIATE SEL. IN SAME BLDG.	SD-64835-01	1/4	.125	.092		.229	.092		.032		.114	.084		.209	.084		.029	
		1/5	.078	.092		.235	.092		.032		.072	.084		.214	.084		.029	
INTERPOSITION, AUTO., OUT. TO SXS "A" SWBD.	SD-90124-01	1						.010	.040							.056	.222	

NOTES:

1. WHEN THIS CKT. CONN. TO RELAY CHAIN CKT., AC LAMP RELAY CKT., BUSY SIG. RELAY CKT., MULT. LAMP RELAY CKT., BUSY LAMP, TONE & REG. CKT., GROUP BUSY CKT., RD. INTERTOLL TRK. MULT. CKT. OR INDICATOR CONTROL CKT., DRAINS SHOWN THEREON AS BEING FUSED OR GROUNDED ON THIS CKT. MUST BE ADDED TO VALUES SHOWN.
2. WHEN USED AS INCOMING TRUNK.
3. WHEN USED AS 2 WAY TRUNK.
4. BRIDGED SUPV. WITH REPEATED SX SUPERVISION.
5. BRIDGED SUPV. WITHOUT REPEATED SX SUPERVISION.
6. PER FIG. 1.
7. PER FIG. 2.
8. PER FIG. 5 OR 6.
9. GROUND DRAINS SHOWN IN LIST 1 ARE FOR USE WHERE ADDITIONS ARE MADE TO CENTRALIZED FUSE PANELS.

SWITCHBOARD NO. 3

ALARM (ALSO SEE EMERGENCY ALARM)

Alarm Line	See Line	
Alarm Trk.	See Trunk	
Switch Trouble		
For Sel.	SD-32043-01	E107
With Perm. Sig.,	SD-55278-01	F107
Release, Fuse Alm.		
& Common Timing		
Night	SD-62182-01	D67
Pneumatic Tube	SD-64496-01	C108
Blockade		
Aud. Alm. & Pilot	SD-90614-01	A108
Lamp		
Main Power Supply	SD-95001-01	B107
Distrib. Fuse &	SD-95002-01	A107
Common Aisle		
6 Volt Lamp-60-Cycle	SD-95005-01	D107
Supply		
Audible and Visual	SD-95063-01	E108
Alarm - 24V Alm.		
Bat.		
Distribution Fuse &	SD-95072-01	I107
Common Aisle		
Audible & Visual Alm.	SD-95075-01	D108
Toll & SXS No.355A		
48V Alm. Bat.		
Power Supply	SD-95081-01	J107
Audible & Visual	SD-96188-01	I108
Aux. Sig. & Flash.	SD-62100-01	E67
For K.L. Trks.		

ALARM RECEIVING SD-95418-01 C107

ANS. TIME RECORDER

Permanent Type	SD-96235-01	A71
Portable Type	SD-96275-01	B71
Switching Ckt.	SD-96069-01	A72

BATTERY SUPPLY

Amplifier SD-90608-01 K79

BUSY BACK

Off. Sw. & Strfrd. SD-60803-01 A48

CALL

Messenger		
Desk or Opr's. Sec-	SD-60868-01	C70
tion		
Desk or Service	SD-60869-01	D70
Asst's Div.		
Emg. - For Toll Sw.	SD-61025-01	F67
Trks.		
Incoming	SD-62115-01	C4
Service Asst's.	SD-62397-01	H68
Outgoing	SD-62471-01	D4

CALCULAGRAPH

Motor Driven SD-95012-01 F175

CLOCK

Position or Secondary	SD-90409-01	G5
District Master	SD-91018-01	G68
Building Master	SD-91019-01	A70
Motor Driven	SD-95012-01	F175
10 I.P.M. Int. &	SD-96343-01	C67
Impulse		

COIN CONTROL

Rec. Compl. Trk.	SD-21705-01	F73
Trk., Terminating	SD-64424-01	F71
End		
Trk., Org. End	SD-95031-01	E72

CONDENSER

Line Building Out SD-63021-02 F127

CONTROL

Crossbar Pos. Group	SD-64155-01	C103
Intertoll Dialing	SD-64481-01	C123
Supervisory		
Line & Trk. Lamp &	SD-95412-01	H72
Alarm		

CORD

Permanent Sig., with	SD-55871-01	B148
or without Howler		
Opr's. Rec. Comp.	SD-56089-01	H3
Overflow Indicating	SD-56251-01	F171
Coin Control - Multi-	SD-60402-01	B5
Off. Areas		
Number Checking	SD-63011-01	C2
Toll	SD-63556-01	A3
Appl. Sch. - Mod. of	SD-63672-01	A1
Cords for Cut-Over		
of Toll & DSA Bds.		

CX SET - Ph. Grp. - 2 Wy. SD-62748-01 B98
RD - Outg. Auto. to
Toll Tdm. Swbd. - Arr.
for 22A1 Rep.

CX SIG. - Ph. Grp. - SD-62700-01 A97
Int.
By Pass Ckt. - 2 Wy
48V Sig. - Arr. for
22A1 Rep. - Strfrd.
Trk.

DIAL

Position	SD-56096-01	C168
Loop or Loop & Rep.	SD-62673-01	B4
Dial		
Rep. Dial	SD-62673-03	B4

DISTRIBUTING

For Posted Delay Tones SD-55667-01 J92

DOOR OPENING	SD-90085-01	H66	JACK		
EMERGENCY ALARM			Patching, for Posted Delay Tones	SD-55672-01	A173
Arr. for Code Sig., Arr. for Auto. Fire Detection	SD-90437-01	F109	With Busy Sig. for C.C. Trks.	SD-62445-01	B66
Not Arr. for Code Sig., Arr. for Auto. Fire Detection in Multi-Zone Off., 24V	SD-90560-01	A109	TONE	SD-62831-01	F63, F66
Not Arr. for Code Sig., Arr. for Auto. Fire Detection in Single-Zone Off., 24V	SD-90641-01	A109	For RD. Intertoll Trks. - A-C Busy Lamp	SD-62883-01	J67
Inc. from Distant Off. for Use when Inc. Ckt. Is Not to be Connected to Zone Sig. Ckt.	SD-90642-01	G109	For RD. Intertoll Trks. - D-C Busy Lamp	SD-63377-01	C115
Not Arr. for Code Sig., Arr. for Auto. Fire Detection in Multi-Zone Off., 48V	SD-96049-01	A109	For Trks. & Sub. Lines	SD-63833-01	G67
Not Arr. for Code Sig., Arr. for Auto. Fire Detection in Single Zone Off., 48V	SD-96052-01	A109	For Conference Service	SD-64545-01	A67
FILTER			Monitoring & Observing Test - Bat. & Grd. at Relay Rack	SD-90564-01	F70
+130V Plate Supply	SD-95508-01	E172	JACK SLEEVE - C.C.	SD-90619-01	D114
Talk Bat. Supply	SD-96211-01	I70	KEY		
FIRE DRILL	SD-90086-01	D66	M.B. for Spl. Serv. or Rec. Compl. Trks.	SD-90622-01	A75
FLASHING			KEY SET		
Flash. & Aux. Sig. - For K.L. Trks.	SD-62100-01	E67	MF	SD-55309-01	F7
For Posted Delay Tones	SD-55672-01	A173	DC & MF	SD-56031-01	D161
GROUP BUSY LAMP, TONE REGISTER	SD-62612-01	A66	DC	SD-56031-02	D161
GROUP BUSY & OVERFLOW	SD-55004-01	C71	MF	SD-56031-03	D161
GROUPING			DC	SD-62066-01	C7
ALSF Toll Sw. Tdm. Pos.	SD-56171-01	C163	LINE		
Off. Sw. & Stfd. - K.L. Pos.	SD-62109-01	A47	Alarm	SD-55135-01	E110
Off. Sw. & Stfd. - A.L. Pos.	SD-62508-01	F47	Aux. For Bridged Toll Stations	SD-55177-01	H14
Regular Toll Pos.	SD-63082-01	C3	Trans. Test, Arr. for Auto. Disconnect Sig.	SD-55263-01	H112
INTERRUPTER			Intertoll Dialing, Test	SD-56221-01	B122
135 Cycle - 24V Opr. Relay - For 40, 60 or 120 I.P.M.	SD-60203-01	B73	Test from Testing Eqpt.	SD-62447-01	A113
135 Cycle - 48V Opr. Relay - For 60 or 120 I.P.M.	SD-62826-01	A115	Toll Sub.	SD-62486-01	A14, E56
30, 60 or 120 I.P.M. with Alarm, Transfer & Distributing Ckts.	SD-63955-01	B73	Toll Sub. - Mult. in No. 11 Swbd.	SD-62519-01	B14
	SD-95036-01	A115	Magneto Rural	SD-62941-01	G15, E57
	SD-95078-01	C197	Business Office	SD-64497-01	E15, A64
	SD-95099-01	C197	Manual Sub. - Emg.	SD-64498-01	C15, D58, D63
			Manual Sub. - Reg. or Emg.	SD-64501-01	A15, D56, D57
			Manual Sub. - Prepay Coin	SD-64502-01	B15, D57
			Toll Sub. - Toll Off. & Local Off. Not in Same Bldg.	SD-90078-01	C14

LINE (Continued)			Listening-in Ckt. -	SD-55655-01	B76
Emg. - To Provide a	SD-95336-01	F107	Arr. to Handle 1 to		
Dial Sub. with			20 Students with		
Emg. Man. Serv.			Instructor at a		
When Local Off. is			Regular Swbd. Pos.	SD-64448-01	C79
Located in Dist.			Misc. Tones, Trans.		
Bldg.			Reduction, Tel. Sw.		
Trans. Test	SD-96000-01	E112	& Call Ckts. - Mod.		
Order Clerk or Ch.	SD-96262-01	G69	Ckt.	SD-64745-01	C64
Opr.			Misc. Tones, Trans.		
LINK	SD-90705-01	C8	Reduction, Mon.,		
LINK ALLOTING &			Talking & Start		
ALARM - CROSSBAR	SD-64157-01	B103	Dial Control	SD-96405-01	J78
MAKE BUSY			Listening-in Ckt.		
Trunk	SD-62367-01	D69	OSCILLATORS		
For Night Serv. for	SD-96053-01	G171	For 800, 800/20, 1200	SD-55662-01	K91,
Loc. Off. Trks.			& 1200/20 Cycles		B171
MAKE BUSY KEY			Posted Delay Tones		
For Spl. Serv. - or	SD-90622-01	A75	Using Self Inter-		
Rec. Compl. Trks.			rupting Oscillator		
MISC. FRAME			Ckt.	SD-55674-01	J91,
MFP Receiving Fr.	SD-95303-01	E173	For 500 and 500/20		A171
MONITORING			Cycles Posted Delay		
Dial	SD-90596-01	D68	Tones Using Self		
M-F or D-C Key Plsg.	SD-96314-01	C174	Interrupting Oscil-		
For Tel. Pos. Key	SD-96441-01	D172	lator Ckt.		
Set, Pos. Dial or			OVERFLOW		
Peg Count Ckts.			For Multi-Convec-	SD-63847-01	G72
MONITORING AMPLIFIER	SD-95027-01	K78	tion at Toll		
NETWORKS - LINE & BAL.			Swbd. No. 3B		
Open Wire	SD-59042-01	B127	For Uni-Connections	SD-64129-01	G72
H44-25 Cable	SD-60963-02	B127	PAD		
OBSERVING & SERVICE			Trans., for Opr.	SD-55134-01	G127
OBSERVING			Off. Trks.		
Central Office Set	SD-90448-01	H70	PATCHING		
No. 2			Intertoll, for	SD-55682-01	H74
Multi-Line For	SD-95563-01	G174	Building Up		
Observing Speed of			Thru RD.		
Answer on Incoming			Intertoll Trk.		
Calls			Connections		
OPERATOR'S TRAINING			PATHS BUSY		
Control Pos. Ckts.	SD-55163-01	D79	For Inc. Trks.	SD-55350-01	D71
for Simulating			Arr. for Thru		
All Paths Busy,			Supv.		
Line Busy & Aud.			PEG COUNT	SD-63290-01	B69
Ring. Tone to			POSITION		
Student Toll			ALSF Toll Sw.	SD-56178-01	D163
Operators			Tdm Pos.		
Control Pos. Ckts.	SD-55660-01	K77	For Inward, Outward	SD-62032-02	B3
for Simulating Supv.			& Thru Positions		
All Paths Busy, Line			POSITION RELEASE		
Busy & Aud. Ring,			For KLSF Sw. Trk.	SD-56096-01	C168
Tone to Student Toll			Tdm. Pos.		
Cabinet Operators					

POSITION RELEASE (Cont'd.)

For Stfd. Toll Lines
And Stfd. Toll Trks.
Arr. for AL With or
Without MF or DC
Key Pulsing SD-62586-01 G49

PRESS NEWS SD-63663-01 F69

RECEIVING

MF Pulsing SD-95087-01 D174

REGISTER

Traffic-Intertoll SD-55458-01 H118
Dial
Group Busy SD-62612-01 A66
Group Busy Time SD-63313-01 K68

RELAY (Also see RELAY CHAIN)

Lamp, to Supply 24V SD-56126-01 C172
to Lamps when
Connecting Ckts.
Supply 48V
Test Trk. SD-62062-01 A112
A-C Lamp SD-62848-01 J66
Busy Signal SD-63679-01 J70
D-C Lamp SD-63962-01 B68

RELAY CHAIN

With Immediate SD-55570-01 A197
Release
Delayed SD-55570-01 A199

REORDER

For Inc. Trks. Arr. SD-55350-01 D71
for Thru Supv.
Off. Sw. & Stfd. SD-60803-01 A48

REPEATING COIL GROUPS

Open Wire or Cable SD-60782-03 D127
Non-Rep. Arr. for
Mid.-Point Coil Conn
Open Wire or Cable SD-95022-01 C127
Non-Rep. for Small
Offices

RINGBACK

Emergency SD-64244-01 F62,
H69

RINGING LEAD

135 Cycle SD-62021-01 B74

RINGING CONTROL

SD-62798-01 C69

SELECTOR

Toll Preceding SD-31241-01 D152
SXS Intertoll Thru SD-55003-01 F120
SXS Comb. Intertoll SD-55062-01 F118
& Toll Trans.

SXS Intertoll - With SD-55242-01 E118
Digit Absorbing
SXS Aux. Intertoll SD-55242-01 E120
SXS for Handling "We SD-55848-01 B152
Have" Calls - Arr.
for Digit Absorbing
& Loop Plsg.
SXS Intertoll - Without SD-64470-01 E118
Digit Absorbing

SENDER

DCKP - In, RP-Out SD-62058-01 C9
DCKP-In, DP-Out SD-95481-01 E9
MFKP-In, DP-Out SD-95481-01 D9

SERVICE ASST.

Regular SD-62118-01 E68
For Nos. 3 & 11 SD-62498-01 F68
Swbds.
For Toll & Strfd. SD-62775-01 I68
Trk. Pos.
Conn. to Toll Swbd. SD-62822-01 K67
No. 2

SIGNAL

Grd. Auxiliary SD-62466-01 E66
Pneumatic Distrib. SD-63464-01 F4
System
Aux. for Crossbar Sdr. SD-90464-01 C74
Load Control
Calling - For Operat- SD-96087-01 H67
ing Room

SUPPLY

MF Current & SD-95391-01 E74
Distribution

SWITCH

Intertoll Dial Rot. SD-55945-01 D157
Out. Trk. - Arr.
for Preselection
Pri. Sec. Crossbar SD-64154-01 B102

TELEPHONE

Overflow Recording SD-55670-01 K72
Opr. Tel. & Trk.
For Off. Sw. & Stfd. SD-62109-01 A47
K.L. Trks.
Toll Operators SD-62115-01 C4
For Off. Sw. & Stfd. SD-62508-01 F47
A.L. Trks.
Traffic Recorder at SD-63694-01 I66
Traffic Reg. Rack

TERMINATING

4 Wire, for Ckts. SD-56181-01 I127
Terminating in
Same Bldg. with
Toll Sw. Off. No. 4
or 4A
4 Wire, for Ckts. SD-64304-01 A127
Not in Same Bldg.
with Toll Sw. Off.
No. 4 or 4A

TEST

Trunk - For M-F KP Trks.	SD-55924-01	BL77
Intertoll Dialing Rot. Out Trk. Switch	SD-56118-01	F177
Auto., for KP Toll Senders	SD-62059-01	B113
Busy Signal	SD-62289-01	E111
DC Key Pulsing	SD-63853-01	B114
Trk. for Overall Tests		
Pad Control Relay Position for Cord, Dial, Key Set, Jacks	SD-63958-01	B115
	SD-63971-01	B111
Link, Pos. & Grp. Allotters for Call Distg. Ckts.	SD-64261-01	F115
Intertoll Dial-Sel. Fr. & Rel. Racks	SD-64604-01	G114
For Testing 209FA & FD Relay	SD-90411-01	D111
Auto., for DCKP Senders	SD-90424-01	C113
Man., for DCKP-In, DP-Out Senders	SD-90635-01	D113
Man., for MFKP-In, DP-Out Senders	SD-95400-01	D117
Bat. & Grd. Terminals	SD-90122-01	C114

TEST SETS

A.C. Rel. & Sig.- Meas. A.C. Volt	SD-63674-01	E114
A.C. Voltage	SD-64125-01	E113
Pulse Repeating	SD-64540-01	H114
For 3W SXS Sub.	SD-90469-01	D112
Rec. Compl. Trk. For 3W Panel Sub.	SD-90470-01	C112
Rec. Compl. Trk. Jack	SD-95056-01	D115

TIMING

For Controlling 2 Sec. Ringing Sig.	SD-64587-01	H116
Common & Alm.	SD-95052-01	B10

TONE - ORDER

Single, Double & Triple Tone	SD-55343-01	I69
1, 2 or 3 Pulses for KLSF Sw. Trk. Tdm. Pos.	SD-56096-01	C168
3 Pulses for K.L. "AB" Stfd. Trks.	SD-62101-01	A53
3 Pulses for A.L. Stfd. Trks.	SD-62491-01	G48
3 Pulses for K.L. Off. Sw. Stfd. Trks.	SD-62593-01	C48

TRAINING SCHOOL

Trks., Cord & Sig. Ckts. for Portable Demonstration Bd.	SD-62163-01	A79
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TRANSFER

For Transferring Cord Ckts. to Toll Cab. No. 1B	SD-55507-01	E2
Emg. - Arr. to Use Existing Trunk Facilities to Terminate Emg. Lines From Dst. Cbr. No. 5 Off.	SD-55775-01	D187
Night Emg. - To Provide Dial Sub. in SXS, Pan. or Cbr. No. 1 Off. with Emg. Man. Serv. When Local Off. is Located in Same Bldg. Arr. to Disconnect Calling Pty. on Emg. Call	SD-62110-01 SD-96425-01	B67 B132

TRouble OBSERVATION & TEST	SD-95034-01	F64, I72
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TRUNK

Alarm

Arr. to Extend Alm. Indications	SD-95310-01	H109
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Auxiliary

2 Way Stfd. R.D. - Out. Auto. to Toll Tdm. - for CX Sig.	SD-63308-01	A99
1 Way Opr. - Out. Auto. to Toll Tdm. - for CX Sig.	SD-63342-01	C99
Conn. from Intertoll or SXS Tdm. Train to Out. or Opr. Off. Trk. - Loop or CX Sig.	SD-96384-01	E197

Incoming

Incpt. from SXS Off. Arr. for Dial Back Completion	SD-55058-01	G59
From Man. Off. - Loop Sig. - Thru Supv. - High-Low Dry End - Rev. Bat. Wet End	SD-55081-01	A44
From Man. Off. - CX Sig. - Thru Supv. Auto. - Wet Dry Supv.	SD-55082-01	B44
3 W Information from SXS Sel. Mult. (SXS "A")	SD-55184-01 SD-55355-01	E34 I61
Incpt. from SXS Off. With or Without Completion for DCKP Pos.	SD-55342-01	F60
3 or 4W from SXS Overflow Conn. Mult. - Trips Mach. Ring. Without Charging	SD-55500-01	D62

TRUNK (Cont'd.)

Incoming (Cont'd.)

Automatic from Swbd. No. 3B or Toll Tdm. Swbd. No. 3 for use as a Ckt. Request	SD-55582-01	E42	From Local Opr. Room Desks	SD-63109-01	D42
From Toll Swbd. No. 1 in Same Bldg. for Handling "We Have" Calls	SD-55643-01	G153	3W Off. Sw. - K.L. For Toll Sw.	SD-63859-01	A49
3W From Toll Swbd. No. 3, 3C or 6 in Same Bldg., Arr. for Key Listening, Stfd.	SD-55704-01	B51	From Inf. Desks or Opr. Room Desk No. 19	SD-64221-01	G42
From SXS Sel. for Handling "We Have" Calls	SD-55846-01	B153	Interoffice From Distant Toll Swbd. Arr. to Repeat Ring. Sig.	SD-64440-01	G42
Perm. Sig. Holding From Cbr. No. 5 Off.	SD-55889-01	A147	Interoffice from Distant Toll Swbd. Arr. to Rering	SD-64441-01	F42
TX- Rev. Bat. Supv. Simplex DC Ring.	SD-56045-01	D153	2W from Man. Tdm. Off. 3W from SXS Tdm. Off. or SXS Sel.	SD-64533-01	I42
4W Talk. - Rev. Bat. Supv. - SX DC Ring on Sig. PH. - Pad Cont.	SD-56055-01	E153	2W from SXS Conn. Mult. Off. P.B.X. Tr.	SD-64533-01	B61
4W Off. Sw. Aux. Ckt. - AL - Inc. From No. 4 Toll Off. - Rev. Bat. Supv. With Auto. Start of Mach. Ring.	SD-56092-01	H47	2W from P.B.X. Conn. Mult. - Off. P.B.X. Tr.	SD-64533-01	B62
TX - 4W Talk. - Rev. Bat. Supv. Simplex DC Ring. on Sig. PH	SD-56094-01	F153	2W from SXS Conn. Mult. - Emg. Serv.	SD-64533-01	E62
Spl. Serv. - Coin - From Panel or Cbr. No. 1 In Same Bldg.	SD-56278-01	I187	Verification from SXS Sel. Mult. in Distant Building	SD-64553-01	I56
From SXS Off. - For Testing Coin Toll Trains & Ordering Up M.B. Conn.	SD-61053-01	B42	3 or 4W from SXS Conn. Mult. - Off. P.B.X. Tr.	SD-64568-01	A61
2W K.L. "A-B" Stfd. From Man. "A", DSA, Toll or Magneto Swbd.	SD-62133-01	A51	From Community Dial Off.	SD-64626-01	D44
3W Off. Sw. - K.L. - for RD Intertoll Trk. Sw.	SD-62364-01	G49	From SXS Sel. Mult. - Arr. to Absorb 1 to 5 Digits	SD-64660-01	J42
2W Off. Sw. - K.L. - From Local Tdm. Swbd. No. 1 For Toll Sub. Line Sw.	SD-62370-01	B49	Regular Traffic Time of Day Serv.	SD-64660-01	F61
3W Off. Sw. With Call Sequence Ckt.- A.L. - For Trks. & Toll Sub. Lines	SD-62510-01	F49	Incpt. from SXS Off. With Mult. in No. 19 Opr. Room Desk	SD-64748-01	F59
2W Off. Sw. With Call Sequence Ckt.- A.L. Stfd. - From Man. "A" or DSA Swbd.	SD-62753-01	F51	From Man. or Dial Off. - Arr. for Trns. from Repair Service Desk No. 2	SD-64767-01	A62
			Official PBX from SXS Off. in Same Bldg.	SD-64767-01	H56
			Verification from SXS Conn. Mult. in Same Bldg.	SD-90566-01	H42
			Arr. for Use with Out. Call Ckts.	SD-95096-01	F57
			Incpt. from SXS Off. in Same Bldg.		
			<u>Interposition</u>		
			Out. to or Inc. from Toll Swbd. No. 1 - For Terminations or Test Bd. Conn. Between Toll Positions	SD-55421-01	E45
			From Tdm. Swbd. No. 3 In Same Bldg.	SD-56043-01	F45
			Regular Interposition	SD-62771-01	A45, I57

TRUNK (Cont'd.)

Interposition (Cont'd.)

Night Inf. - (SXS "A") SD-62771-01 G63
 From Point to Point to SD-64430-01 B45
 C.L.R. Pos.
 Inc. from Toll Swbd. SD-62818-01 D45
 No. 2
 Outg. to SXS "A" SD-90124-01 C45
 Swbd.

Intertoll Dialing

Out. from Sel. Mult.- SD-55109-01 J121
 CX or SX Sig.
 Out. from Sel. Mult.- SD-55232-01 C121
 to Precede a Thru
 or Aux. Intertoll
 Sel.
 Out. from Intertoll SD-55243-01 G119
 Dial Inc. or 2 Way
 Trk. or Sel. to Aux.
 Intertoll Sel.
 Out. from Sel. Mult. SD-55275-01 J123
 to Opr. Off. - CX
 or SX Sig.
 Out. from Sel. Mult. SD-55301-01 H121
 to Man. or Dial Off.
 Out. to Intertoll SD-55990-01 A157
 Sel., Dial Opera-
 tion
 2 Way, CX or SX Sig. SD-56036-01 B118
 Out. to Intertoll SD-56108-01 B157
 Sel. DCKP from
 Swbd. DP from Sdr.
 Aux. - Out. Dial - Inc. SD-64469-01 E117
 Auto. or Dial - For
 Use with CX or SX
 Sig. & Swbd. Out.
 Trks.
 Out. to Toll Off. - SD-64472-01 C117
 Man. or Dial Opr. -
 CX or SX Sig.
 Toll Sw. Trk. Out. to SD-64473-01 D121
 SXS Loop Dial Toll
 Trans. Sel.
 Inc. from Intertoll SD-64476-01 F117
 Trk. or Sel. Mult.
 Inc. from Man. or SXS SD-64482-01 J117
 Off. - Loop Sig.
 4W Toll Sw. Trk. to SD-64485-01 E121
 Toll Intermediate
 Sel.
 Aux. Intercepting SD-64485-01 G121
 Inc. from Man. or SXS SD-64486-01 K117
 Off. - Pulse Correct-
 ing
 Toll Sw. Trk. to SXS SD-64487-01 F121
 Rep. Dial Toll Train
 2 Way - Repeated Dial SD-64531-01 H117
 CX, SX or Single
 Frequency Sig.
 Out. to Toll Off. - SD-64538-01 D117
 DCKP-In, DP-Out,
 CX or SX Sig.
 Out. from Sel. Mult. SD-64539-01 I121
 to Inf. Desks or
 Opr. Room Desk
 No. 19

Inc. to Intertoll Sel. SD-64590-01 G117
 or Operator - CX or
 SX Sig.
 Talk. Trk. - Test SD-64604-01 G114
 Ckts. for Sel. Fr.
 & Rel. Racks
 To Connect CX Sig. SD-64824-01 K119
 Ckt. to SXS Toll
 Preceding Sel.

Intertoll

DCKP, for Handling SD-55847-01 C192
 "We Have" Calls
 MFKP or Stfd., CX SD-55852-01 G182
 or SX Supv.
 2 Way - Inc. Auto. - SD-56062-01 D182
 Out. MFKP - CX
 Supv.
 Out. MFKP - SD-56109-01 E182
 Inc. DP or Auto.
 CX Supv.
 2 Way - Inc. Auto. SD-56132-01 B182
 Out. MFKP -
 SX or CX Supv.
 Type B
 Out. - MFKP or Stfd. SD-56133-01 H182
 SX or CX Supv.
 Type B
 RD. - Regular - With SD-62614-01 A11
 or Without Trans-
 fer
 RD. - Aux. Intertoll SD-62632-02 C12
 & Sw. Trans. Pad
 RD. - Arr. for 20 SD-64428-01 F12,
 Cycle Ringing B60
 RD. - Arr. for 135 SD-64823-01 G12
 Cycle Ringing

Operator's Training

D-C KP Toll Sw. or SD-55071-01 F78
 Intertoll Where
 Key Set Start Key
 is Used
 Intertoll Trk., Opr. SD-55288-01 F77
 Off. or Toll Sw. -
 Dial. - Arr. For
 Dial Tone
 Rd. Intertoll, for SD-56069-01 H77
 Outward, Inward,
 Thru or Combined
 Inward & Thru
 Operation or Point
 to Point TX
 Operation
 D-C KP Toll Sw. for SD-55794-01 G78
 Non-Start Key
 Operation
 Number Checking SD-64445-01 E78
 Recording, Rec. Compl. SD-64515-01 G77
 or Inc. Trk. - Arr.
 for Recall Sub.
 Inc. from SXS, Panel SD-64553-01 C77
 or Mar. Off 2W
 Man. Toll Sw., Man. SD-64558-01 E77
 Tdm., Man. Toll Tdm.,
 M-F KP Toll Tdm. or
 Intertoll or Stfd.
 Intertoll

TRUNK (Cont'd.)

Operator's Training (Cont'd.)

Inc. from SXS, Panel, SD-64582-01 I77
 Crossbar or Man.
 Off. 3W

Outgoing

Incpt. Compl. to SXS SD-55074-01 G57
 Off. - Repeated
 Dialing
 Tandem Stfd. - CX SD-55083-01 E39
 or SX Supv.
 To P.B.X. First Sels - SD-55291-01 C63
 K.P. - Off. P.B.X.
 Tr.
 Verification to SXS SD-55291-01 H57
 Test Distributor
 DCKP
 Incpt. Completing to SD-55341-01 G56
 SXS Off. in Same
 Bldg. - DCKP
 To SXS Sels. - Dial. - SD-55346-01 C57
 Spl. Service
 To P.B.X. First Sels. - SD-55346-01 C63
 Dial. - Off. P.B.X.
 Tr.
 Toll Tandem - 4W SD-56056-01 I39
 Talk Rev. Bat.
 Supv. - SX DC Ring.
 on PH MFKP or
 Auto. with Trans.
 Sw Pad
 Toll Tdm. Trk. 4W SD-56095-01 J39
 Talk - Rev. Bat.
 Supv. SX DC Ring
 on Sig. PH
 DCKP-IN, DP-OUT - SD-56105-01 G142
 Rev. Bat. Supv. -
 Simplex or No
 Ringing Start Sig. -
 With or Without Coin
 Control over
 Separate Single
 Trk. Conductor -
 With or Without
 Access from Inter-
 toll Dialing Trk.
 Ckt. or SXS
 Repeater
 To Inf. Desk No. 17 SD-60499-01 D39
 MC or Opr. Room
 Desk No. 19 - Arr.
 For Night Trns.
 To DSA Swbd. or
 Swbd. No. 3
 Coin Control - to SD-62650-01 B39
 SXS C.C. Sel. -
 SXS & Toll Off.
 Not in Same Bldg.
 Loop or Comb. Loop SD-62759-01 G112
 & Rep. Dial - For
 50 or 51 Type Dial
 Testers
 Number Checking to SD-62890-01 H45
 Panel "A" Swbd.
 2W Stfd. to Toll SD-63116-01 G37
 Tdm. Swbd. No. 3

To Man., Man. Tdm. SD-63121-01 D37
 or Magneto Off. -
 Rev. Bat. Supv.
 To Man. or Panel SD-63261-01 C37
 "B" Swbd. - A-B
 Toll - 48V H.L.
 Supv.
 To SXS Off. - Arr. SD-63287-01 B37
 Mult. to SXS
 Stfd.
 To Police, Fire and SD-63288-01 D61
 Ambulance Subs.
 Lines for Emg.
 Use in Same Bldg.
 with SXS Off.
 To Local Tandem SD-63381-01 E99
 Off. - CX Sig.
 Verification to SXS SD-63813-01 H57
 Test Distributor
 Dial
 To SXS "A" Swbd., SD-63820-01 F37
 Inf. Desks or
 Opr. Room Desk
 No. 19
 To Panel Sender SD-64106-01 E37
 Tdm. Off.
 Stfd. & MF Pulsing- SD-64116-01 H37
 High Low Supv. -
 Rev. Bat. or 20
 Cycle Rering
 Signal
 Number Checking - SD-64412-01 I45
 MF or Stfd. to
 Cbr. Off. No. 1
 Interoffice to SD-64440-01 J38
 Distant Toll
 Swbd. or DSA
 Swbd. Arr. to
 Repeat Ringing
 Sig.
 Interoffice To SD-64441-01 I37
 Distant Toll
 Swbd. Arr. for
 Rering
 Incpt. Completing SD-64835-01 G56
 to SXS Off. in
 Same Bldg. -
 Repeated Dialing

Recording

2W Inc. from Semi- SD-55793-01 H22
 Mech. DSA Swbd.
 2W Inc. from Panel ES-61290-01 I22
 Arr. for CLR Non-
 Completing Serv.
 3W Inc. from Panel SD-62278-01 B22
 "A" or Man. Off.
 3W Inc. from Swbd. SD-62280-01 F22
 No. 1C
 Inc. from Man. Off.
 or SXS or Panel
 "A" Swbd. - With
 Night Transfer
 to Toll Swbd.
 No. 2
 3W SD-62794-01 C22
 2W SD-62799-01 D22
 2W Inc. from Panel SD-64221-01 A22
 "A" or Man. Off.

TRUNK (Cont'd.)

Recording (Cont'd.)

2W Inc. from Man. SD-64553-01 E22
 Tdm. Off. - 3W from
 SXS Tdm. Off. or
 SXS Sel.

Recording Completing

3W Inc. from SXS SD-55344-01 C19
 Local Sels. Conn.
 to Opr. Off. Trks.
 Arr. for 1 Digit
 Tdm. Opr.

CX or SX Sig. - With SD-55381-01 A19
 or Without V or 22
 Type Tel. Rep. - Arr.
 to Recall Sub.

3W Inc. from Panel SD-55430-01 F187
 Off. 4W Inc. from
 Cbr. Off. No. 1 -
 Arr. to Recall
 Sub. and for No.
 Checking in Cbr.
 Off. No. 1 - Non-
 coin

Non-Coin Arr. to Re- SD-55872-01 C187
 call Sub. & for
 Use as Emg. Line
 from Cbr. No. 5
 Off.

3W Inc. from Panel SD-55946-01 H187
 Off. 4W Inc. from
 Cbr. Off. No. 1 -
 Arr. for No. Check-
 ing in Cbr. Off.
 No. 1 - Coin

3W Inc. from SXS SD-56007-01 F17,
 Off. Arr. to Recall G17,
 Sub. & for Class of A57,
 Service Tone - C61
 Non-Coin

3W Inc. from SXS Off. SD-56008-01 H17,
 Arr. for Coin Cont. A57
 & for Class of Serv.

Operator's - 2 Wire SD-56090-01 J17
 Coin - DSA to Toll
 or Toll to Mobile
 Serv. Pos.

Subscriber, High- SD-56127-01 B187
 Low Supv. - Coin

3W Inc. from Panel SD-62086-01 C17
 Off. - Coin Control

2W Inc. from Panel SD-62187-01 A17,
 or SXS Off. - Non- A56
 Coin

3W Inc. from SXS Off. SD-62320-01 G17,
 Arr. to Recall Sub. A57

2W Inc. from Coin SD-63013-01 I17
 or Non-coin Lines
 in Crossbar Off. or
 Non-coin Lines in
 Panel Off. - Arr. to
 Recall Sub. & for
 Number Checking

3W Opr. from SXS Off. SD-63864-01 I19

2W Inc. from SXS SD-64571-01 B17,
 Panel, Cbr. No. 1 A56

2W Inc. from SXS or SD-64626-01 D19
 Community Dial
 Off.

Toll Switching

Stfd. or MFKP - SD-55224-01 H137

Rev. Bat. or Wet-
 Dry Supv. - 20
 Cycle, SX or No
 Ring. Start Sig.-
 With or Without
 Coin Control Over
 Separate Single
 Trk. Conductor

To Man. Off. - SD-55291-01 J27

Temp. Man. Opr. SD-55291-01 C58,
 DCKP-In, RP or B137
 DP-Out Without
 Start Pulsing
 Sig. - Wet-Dry
 or Rev. Bat.

Supv. With or
 Without Repeated
 SX Supv. - 20
 cyc., SX or No
 Ringing Start
 Sig. With or
 Without Coin
 Control Over
 Separate Single
 Trk. Conductor -
 With or Without
 Access From
 Intertoll Dialing
 Trk. Ckt.

To Man. Off. - SD-55341-01 J27

Temp. Man. Opr. SD-55341-01 B58,
 DCKP-In, DP-Out B137
 Bridged Supv.
 With or Without -
 Repeated SX
 Supv., 20 Cycle
 or No Ringing
 Start Sig. Type
 "A" TB Supply
 With or Without
 Coin Control

To Man. Off. - SD-55346-01 J27

Temp. Man. Opr. SD-55346-01 B142
 Repeated Dialing -
 Wet-Dry or Rev.
 Bat. Supv. With
 or Without
 Repeated Simplex
 Supv. - 20 Cycle,
 Simplex or No
 Ringing Start
 Sig. - With or
 Without Coin Cont.
 Over Separate
 Single Trk. Con-
 ductor

To Man. Off. - SD-55352-01 J27

Temp. Man. Opr. SD-55352-01 C29
 4W to SXS Toll
 Intermediate
 Sel. - Dial-
 Controlled Ring. -
 Coin Control

TRUNK (Cont'd.)

Toll Switching (Cont'd.)

Repeated Dialing - SD-55380-01 E142
 CX or SX Supv. -
 Pulse or No Ringing
 Start Sig. - With
 or Without Coin
 Cont. Over Separate
 Single Trk. Conduc-
 tor - With or With-
 out Access from
 Intertoll Dialing
 Trk. Ckt.
 DCKP-In, DP-Out - CX SD-55386-01 H142
 or SX Supv. - Pulse
 or No Ringing Start
 Sig. - With or With-
 out Coin Cont. Over
 Separate Single
 Trk. Conductor -
 With or Without
 Access from Inter-
 toll Dialing Trk.
 Ckt. and/or Swbd.
 No. 3B in Same
 Bldg.
 DCKP, Wet-Dry Supv., SD-55901-01 F137
 Controlled Ring.,
 to Repeated Dial
 Toll Train or
 Combined Loop &
 Repeated Dial Toll
 Train
 To SXS Toll Sel. SD-62022-01 F27,
 Rep. Dial B57
 To Man., Panel or
 SXS Off. - Arr. for SD-62610-02 B27,
 Delayed Cut Thru B56
 After Ring.
 To SXS Off. - Loop SD-62611-01 A27,
 Dial B57
 To SXS "B" Swbd. SD-62817-01 E27
 To SXS Toll Trans. SD-63027-01 B29
 Sel. - Loop Dial. -
 With 22 Type Rep.
 To Man. Off. or Panel SD-63322-01 G27
 or Crossbar "B"
 Swbd. - With 22
 Type Rep.
 Arr. for Ph. Grp CX SD-63782-01 K27
 Sig.
 To Man., Panel or SXS
 Off. - For Magneto SD-63860-01 I27
 Rural Lines
 To Man., Panel or SXS SD-63860-02 I27
 Off. - For Magneto
 Rural Lines & Arr.
 for Delayed Cut-thru
 After Ring
 4W to Man. Off. or SD-64120-01 A29
 SXS Toll Inf. Set -
 Loop Dial.
 To SXS Toll Inter- SD-64835-01 D29
 mediate Sel. - 4W -
 Dial. - Auto. Ring. -
 Thru Supv.

*SD 56482 -
 IN-BAND*

*SA 56245 - 482
 30434 483
 52481*

Toll Switching Tdm.

KLSF - Inc. DP or SD-56078-01 B168
 Stfd. Out.
 ALSF Toll Sw. Tdm. SD-56179-01 B163
 Pos. Inc.
 ALSF Toll Sw. Tdm. SD-56180-01 B162
 Pos. Aux. Inc. -
 4 Wire - Rev. Bat.
 Supv. - from Toll
 Sw. Off. No. 4 or
 4A

Transfer - Intertoll

Orig. Off. End, High SD-55897-01 A193
 Low Supv. Rev.
 Bat. Ringing, Arr.
 for Coin Control
 Ter. Off. End, High SD-55900-01 A192
 Low Supv., Rev.
 Bat. Ringing, Arr.
 for Coin Control
 Between Swbds. in SD-56003-01 B192
 Same Bldg.
 2 Way
 Rec. Compl. Sw. - SD-55158-01 J32
 Loop Sig. Wet End -
 or CX Sig.
 Auto. - Wet Dry SD-55184-01 E34
 Supv.
 Opr. Off., Repeated SD-55255-01 A32
 Dialing, High-Low
 Rev. Bat., CX, SX
 or SF Supv., With
 or Without Access
 From Intertoll
 Dialing, Chr. No. 5
 or SXS Tdm. Off.
 With or Without
 V1 Tel. Repeater
 Termination
 Opr. Off. to SD-55256-01 C32
 Community Dial
 Office, DCKP,
 Loop, CX or SX Supv.,
 With or Without
 Tel. Rep.
 Auto. - To or Between SD-55348-01 J112
 Bays, Frames or
 Racks
 CX Sig. - Auto. - SD-55358-01 E32
 Arr. to Repeat
 Switchboard Supv.
 Opr. Off. to SD-55116-01 D32
 Community Dial Off.,
 MFKP, High Low Rev.
 Bat. Supv. Arr. for
 Out. Serv. from
 Tdm. or Intertoll
 Selectors
 To Repair Service SD-60759-01 B34
 Desk No. 2 or
 L.T.D. No.
 12B, 12C,
 or 14

TRUNK (Cont'd.)

2 Way (Cont'd.)

To L.T.D. No. 13 SD-62469-01 C34
 Interoffice to SD-64440-01 D34
 Distant Toll or
 DSA Bd. - Auto. -
 Arr. to Repeat
 Ring Sig.
 Interoffice to SD-64441-01 A34
 Distant Toll Off. -
 Auto. - Arr. for
 Rering
 To Local Off. - Toll SD-64626-01 F32
 Conn. for Establish-
 ing Conn. with Com-
 munity Dial Sub.

Miscellaneous

Tel. Rep. Toll SD-64625-01 A37
 Conference
 Test Trk., from SD-90070-01 F114
 L.T.D. No. 14 or
 L.T. Cab. No. 3 -
 In Out Type - For
 Use at M.D.F.,
 Prot. Frame or
 Jack Panel
 Test Trk. From SD-90071-01 F113
 L.T.D. No. 14 or
 L.T. Cab. No. 3 -
 Bridging - For
 Use at M.D.F.
 & Prot. Frame
 Talking Trk. at M.D.F. SD-96074-01 F112
 or Prot. Frame to
 L.T.D.

Trunk Mult.

R.D. Intertoll from SD-62780-01 B12
 Swbd. No. 1C
 R.D. Intertoll from SD-64562-01 A12
 Swbd. No. 1, 1D,
 10 or 11 or DSA
 Swbd.

TANDEM SWITCHBOARD NO. 3

BUSY BACK SD-62315-01 B84
 Mod. for C.B. Supv. SD-62315-02 B84
 Trks.
 CALL SEQUENCE SD-62674-01 A81
 CONTROL
 Ringing - For CX SD-55027-01 G94
 Sig. Intertoll
 Trks.
 Operator SD-62226-01 A83
 Indicator - For Idle SD-62676-01 D83
 Ind. Lamp
 Control Ckt. SD-63165-01 F83

CORD

Trouble Operator's SD-62319-01 A86

GROUPING

Position SD-55687-01 D85
 Trouble Operators SD-62321-01 A87
 For Grouping Tbl. SD-62322-01 A88
 Pos. Cords &
 Call Ckt. to
 Adj. Pos.

INDICATOR

Position SD-63165-01 F83
 Position SD-64117-01 E83
 Position SD-90014-01 B83

INTERRUPTER

Relay SD-62461-01 C95

KEY

Make Busy SD-63831-01 E93

OVERFLOW

Arr. To Extinguish SD-55754-01 A92
 Idle Ind. Lamps
 Assoc. with
 Overflow Jacks
 Common SD-62315-01 B84
 Mod. for C.B. Supv. SD-62315-01 B84
 Trks.

PHANTOM GROUP CX SET

Arr. for 22 Type SD-62701-01 J94
 Tel. Rep.
 Stfd. Toll Trunking SD-90598-01 I79
 48V Sig.

REGISTER

Group Busy SD-62612-01 A66

REORDER

For Trks. from No. 3 SD-62311-01 D82
 Toll & Outlying
 Toll & Local Off.
 Mod. for C.B. Supv. SD-62311-02 E82
 Trks.
 For Trks. from No. 3 SD-62687-01 B81
 Toll & Local Off.
 & Trks. for Use
 with Toll Sub.
 Lines
 Mod. for C.B. Supv. SD-62687-02 E82
 Trks.

SPLITTING

SD-62257-01 A82
 SD-63165-01 F83

TELEPHONE

Operator's SD-62226-01 A83
 Serv. Assist. SD-62237-01 B82
 Tbl. Operator's SD-62321-01 A87

TEST

Plug & Position SD-64735-01 I111

TONE			Inc. Patching from	SD-62608-01	B86	
	Ringling	SD-62312-01	D81	Utility Pos.		
TRANSFER			Inc. Toll Tdm. or	SD-62674-01	A81	
	Transfer Control of	SD-64561-01	C84	Utility		
	Toll Tdm. Pos. to			2W R.D. Intertoll	SD-62705-01	I93
	No. 3 Toll Pos.			OG. Auto to Key	SD-63712-01	G91
TRUNK				Cab. No. 20		
	Inc. Intertoll from	SD-55227-01	F94	Aux. from Man.	SD-62512-01	E91
	Toll Office - CX			or DSA		
	Sig.			Aux. - Stfd. - For	SD-63087-01	H93
	4W Rev. Bat. Supv.	SD-56060-01	G81	Use With Ph. Grp.		
	& SX DG Ring. on			CX Sets		
	Sig. Ph.			Aux. From No. 3 Toll,	SD-63164-01	D94
				Man. "A" or DSA Swbd.		