

SD-25760-01

BELL TELEPHONE LABORATORIES, INC.

**CROSSBAR SYSTEMS  
NO. 5  
KEY SHEET**

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GENERAL DESCRIPTION FOR NO. 5 CROSSBAR SYSTEM  
IS SHOWN IN BSP SECTION 971.501.01

FOR CURRENT DRAIN DATA  
SEE SD-25760-02

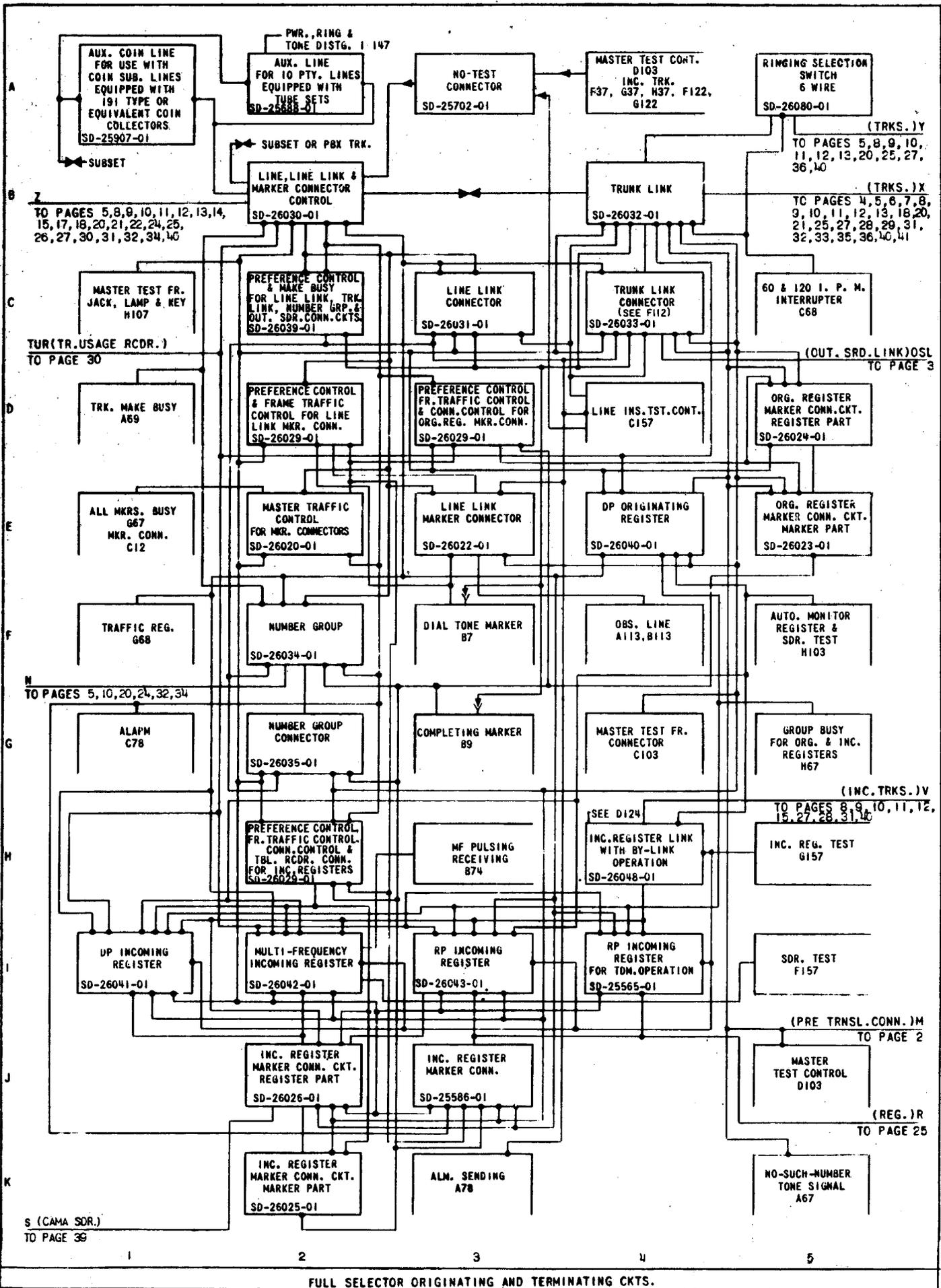
FOR EXPLANATION OF CONVENTIONS  
SEE MASTER KEY SHEET SD-90250-01

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10	10	7-11-58	S. V. S. L. H. E.	S. W. E. W. O.

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**AT & TCO  
STANDARD**

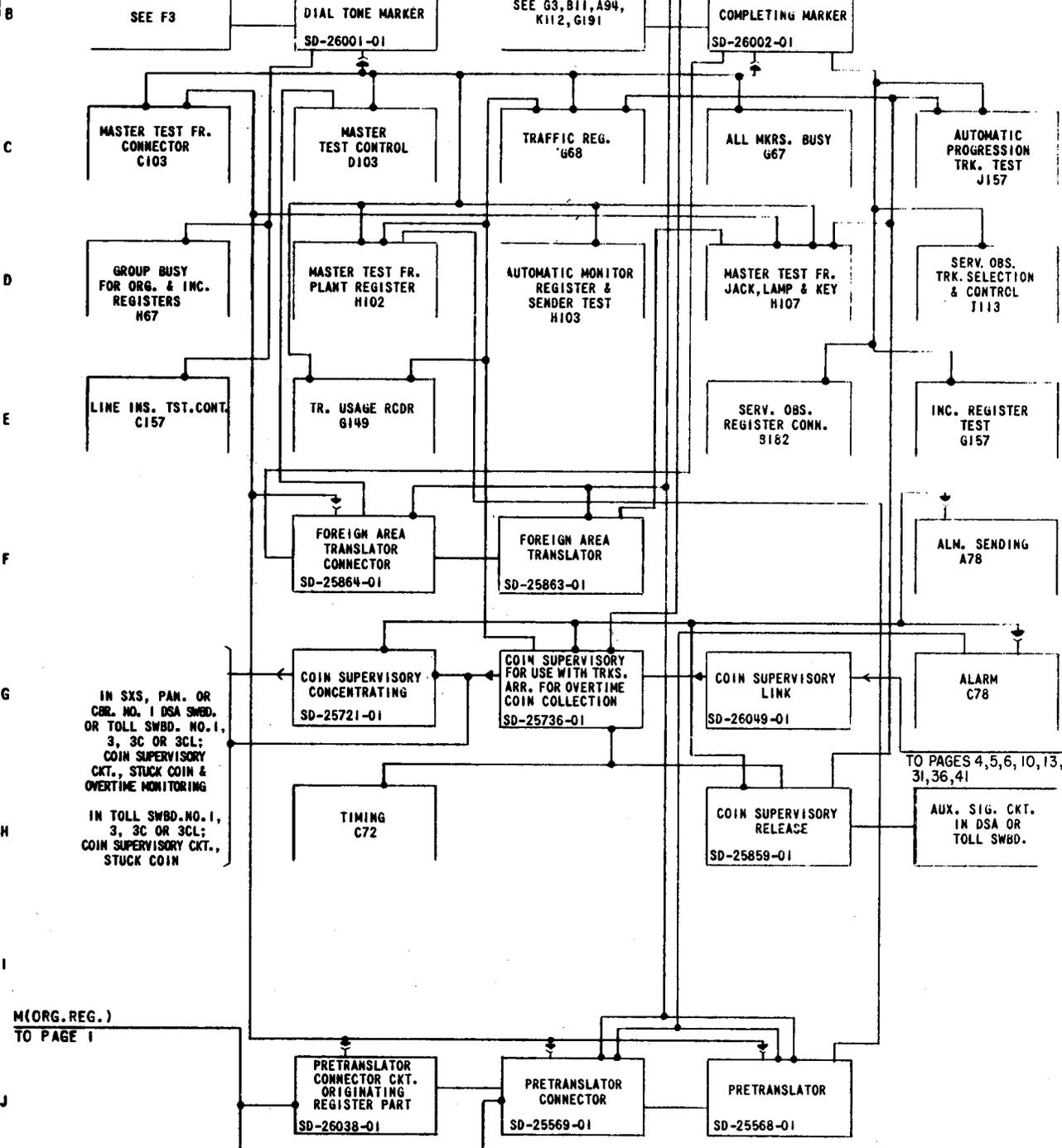
**SD-25760-01**



FULL SELECTOR ORIGINATING AND TERMINATING CKTS.

PRTD  
TO PAGE 30

(MISC.FR.)MF  
TC PAGE 30



M(ORG.REG.)  
TO PAGE 1

(TRK.)S  
TO PAGES 4,5,6, 10,13, 18,20,29,  
31,36,41

6

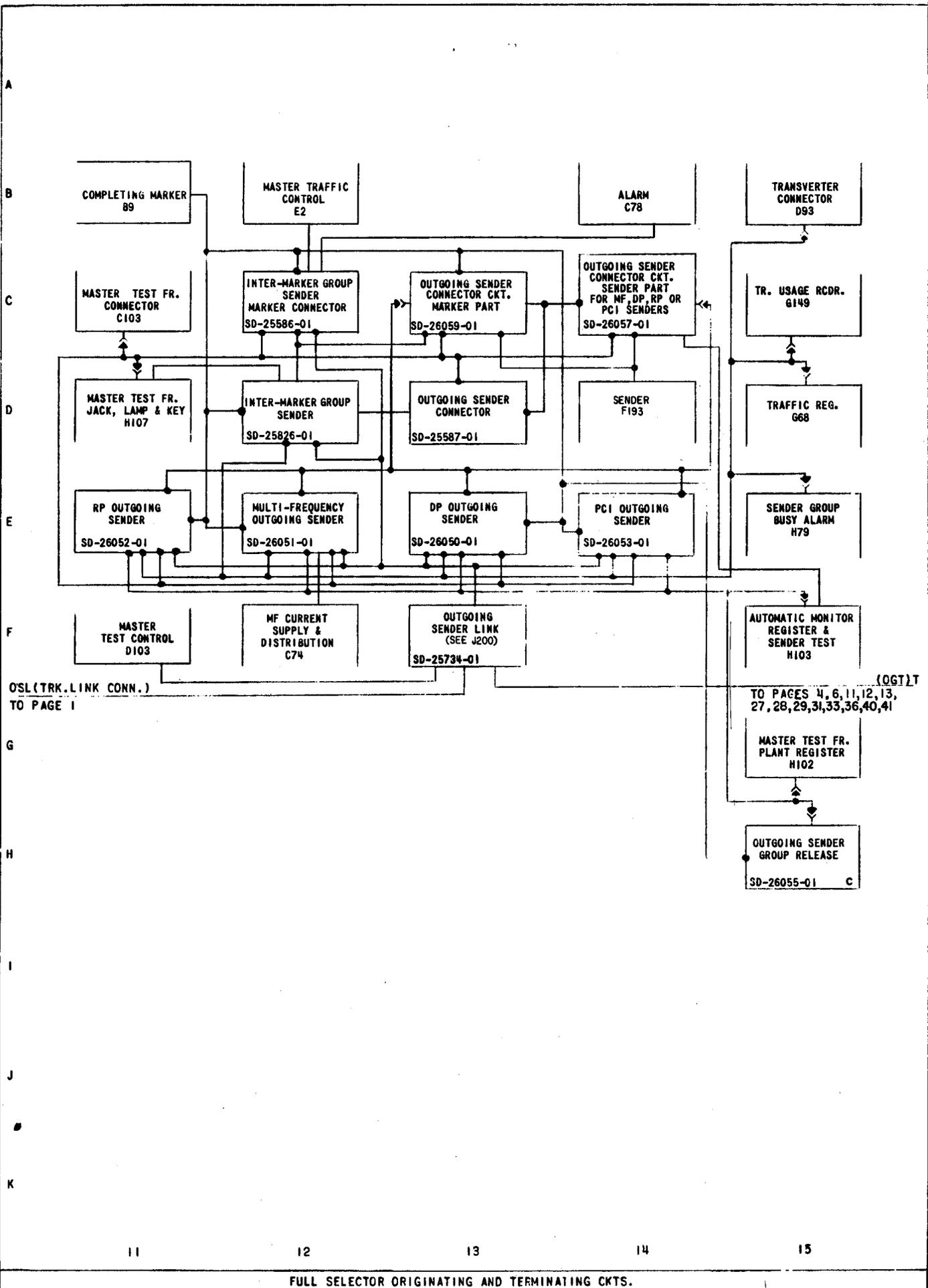
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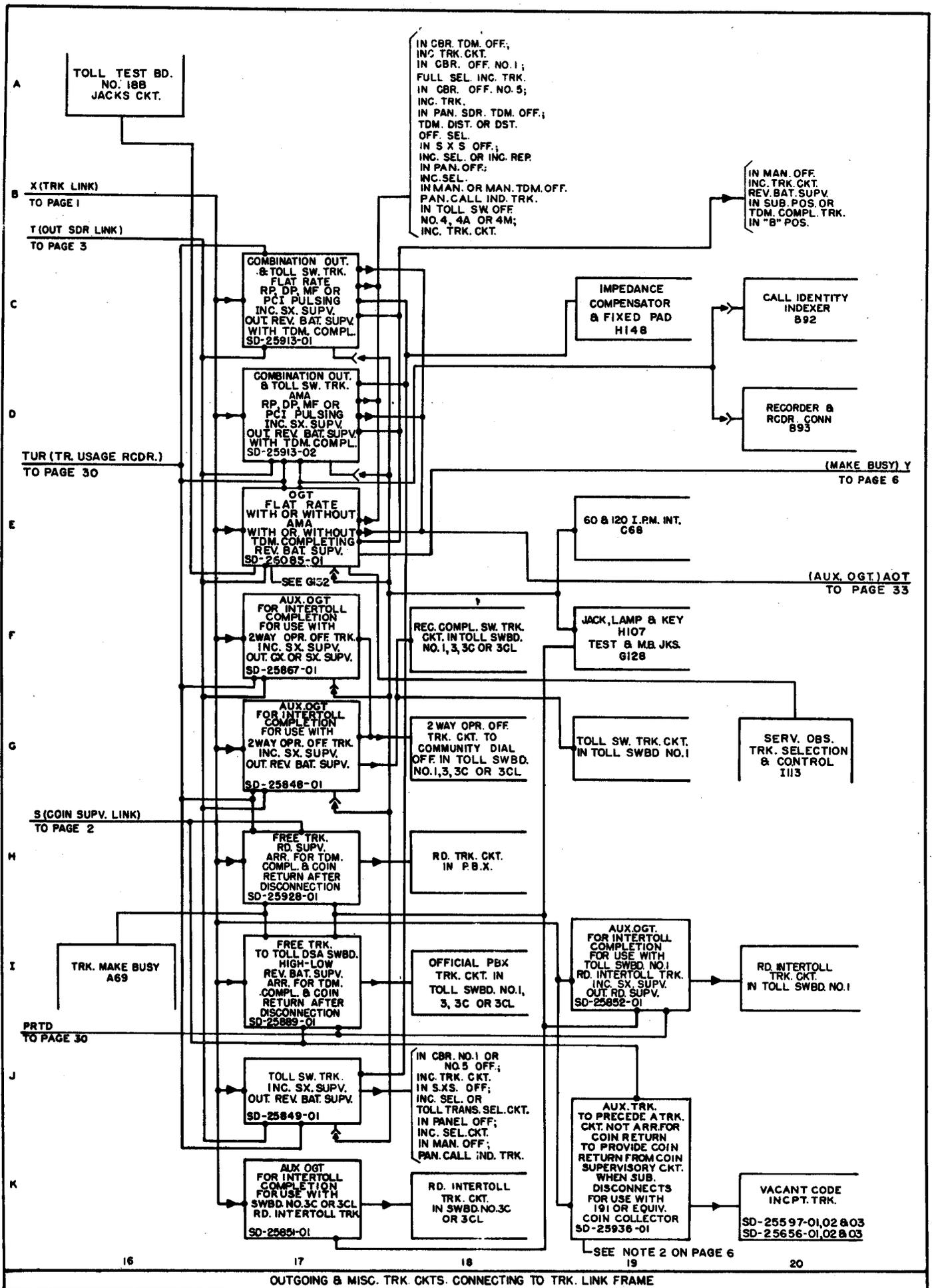
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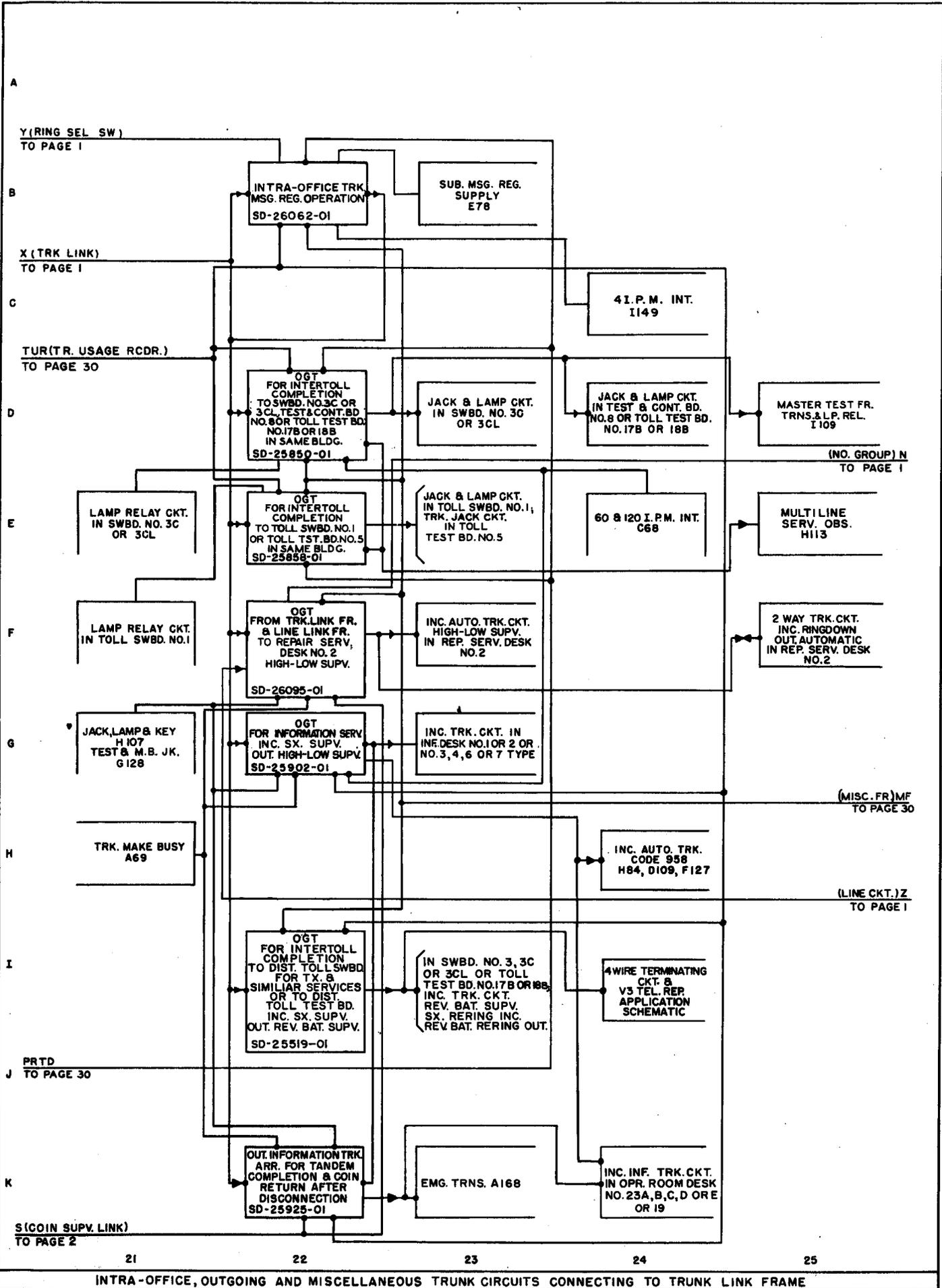
FULL SELECTOR ORIGINATING AND TERMINATING CKTS.



FULL SELECTOR ORIGINATING AND TERMINATING CKTS.



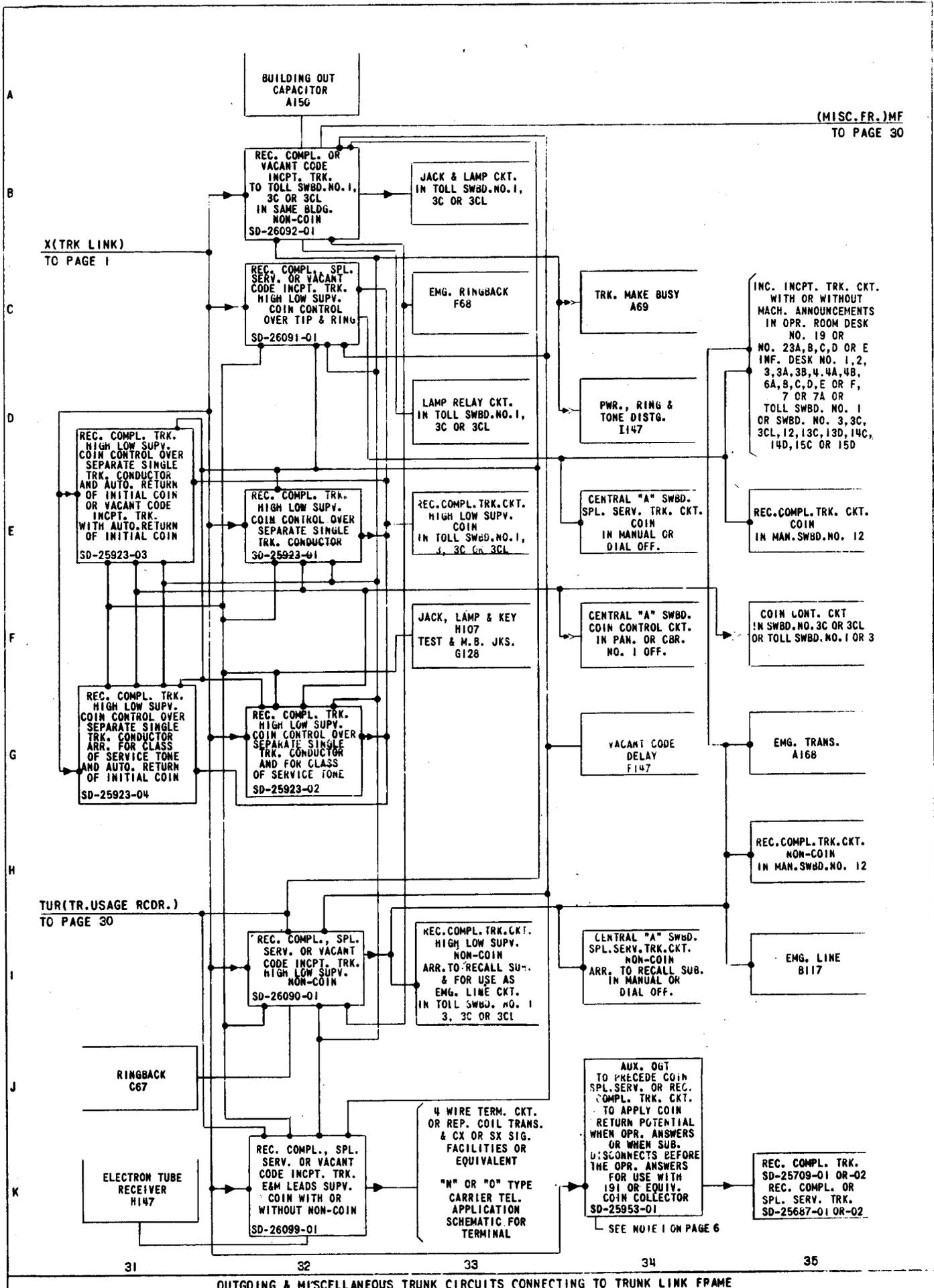
OUTGOING & MISC. TRK. CKTS. CONNECTING TO TRK. LINK FRAME



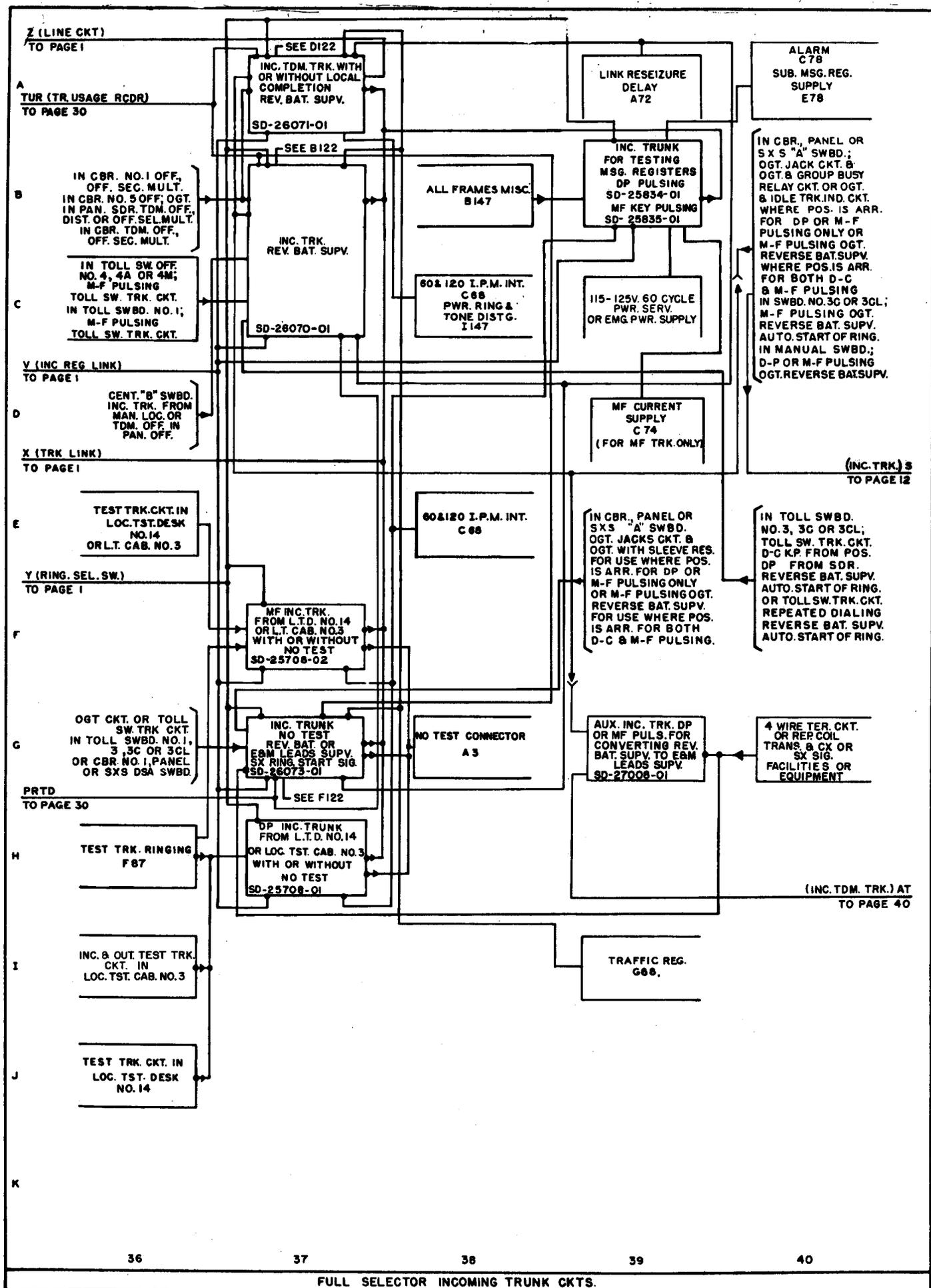


X(TRK LINK)  
TO PAGE 1

TUR(TR.USAGE RCDR.)  
TO PAGE 30



0961 7 mm - 800  
1960



Z (LINE CKT)  
TO PAGE 1

A  
TUR (TR.USAGE RCDR)  
TO PAGE 30

B  
IN CBR. NO.1 OFF,  
OFF. SEC. MULT.  
IN CBR. NO. 5 OFF; OGT.  
IN PAN. SDR.TDM.OFF.  
DIST. OR OFF.SEL.MULT.  
IN CBR. TDM. OFF,  
OFF. SEC. MULT.

C  
IN TOLL SW. OFF.  
NO. 4, 4A OR 4M;  
M-F PULSING  
TOLL SW. TRK. CKT.  
IN TOLL SWBD. NO. 1;  
M-F PULSING  
TOLL SW. TRK. CKT.

V (INC REG LINK)  
TO PAGE 1

D  
CENT. "B" SWBD.  
INC. TRK. FROM  
MAN. LOC. OR  
TDM. OFF. IN  
PAN. OFF.

X (TRK LINK)  
TO PAGE 1

E  
TEST TRK.CKT. IN  
LOC.TST.DESK  
NO.14  
OR L.T. CAB. NO.3

Y (RING. SEL. SW.)  
TO PAGE 1

F  
MF INC. TRK.  
FROM L.T.D. NO.14  
OR L.T. CAB. NO.3  
WITH OR WITHOUT  
NO TEST  
SD-25708-02

G  
OGT CKT. OR TOLL  
SW. TRK CKT.  
IN TOLL SWBD. NO. 1,  
3, 3C OR 3CL  
OR CBR. NO. 1, PANEL  
OR SX S DSA SWBD.

PRTD  
TO PAGE 30

H  
TEST TRK. RINGING  
F87

I  
INC. & OUT. TEST TRK.  
CKT. IN  
LOC. TST. CAB. NO. 3

J  
TEST TRK. CKT. IN  
LOC. TST. DESK  
NO. 14

K

SEE D122  
INC. TDM. TRK. WITH  
OR WITHOUT LOCAL  
COMPLETION  
REV. BAT. SUPV.  
SD-26071-01

SEE B122  
INC. TRK.  
REV. BAT. SUPV.  
SD-26070-01

ALL FRAMES MISC.  
B147

60 & 120 I.P.M. INT.  
C88  
PWR. RING &  
TONE DISTG.  
I147

LINK RESEIZURE  
DELAY  
A72

INC. TRUNK  
FOR TESTING  
MSG. REGISTERS  
DP PULSING  
SD-25834-01  
MF KEY PULSING  
SD-25835-01

115-125V. 60 CYCLE  
PWR. SERV.  
OR EMG. PWR. SUPPLY

MF CURRENT  
SUPPLY  
C74  
(FOR MF TRK. ONLY)

ALARM  
C78  
SUB. MSG. REG.  
SUPPLY  
E78

IN CBR., PANEL OR  
SX S "A" SWBD;  
OGT. JACK CKT. &  
OGT. & GROUP BUSY  
RELAY CKT. OR OGT.  
& IDLE TRK. IND. CKT.  
WHERE POS. IS ARR.  
FOR DP OR M-F  
PULSING ONLY OR  
M-F PULSING OGT.  
REVERSE BAT. SUPV.  
WHERE POS. IS ARR.  
FOR BOTH D-C  
& M-F PULSING  
IN SWBD. NO. 3C OR 3CL;  
M-F PULSING OGT.  
REVERSE BAT. SUPV.  
AUTO. START OF RING.  
IN MANUAL SWBD;  
D-P OR M-F PULSING  
OGT. REVERSE BAT. SUPV.

(INC. TRK.) 3  
TO PAGE 12

60 & 120 I.P.M. INT.  
C88

IN CBR., PANEL OR  
SX S "A" SWBD.  
OGT. JACKS CKT. &  
OGT. WITH SLEEVE RES.  
FOR USE WHERE POS.  
IS ARR. FOR DP OR  
M-F PULSING ONLY  
OR M-F PULSING OGT.  
REVERSE BAT. SUPV.  
FOR USE WHERE POS.  
IS ARR. FOR BOTH  
D-C & M-F PULSING.

IN TOLL SWBD.  
NO. 3, 3C OR 3CL;  
TOLL SW. TRK. CKT.  
D-C K.P. FROM POS.  
DP FROM SDR.  
REVERSE BAT. SUPV.  
AUTO. START OF RING.  
OR TOLL SW. TRK. CKT.  
REPEATED DIALING  
REVERSE BAT. SUPV.  
AUTO. START OF RING.

NO TEST CONNECTOR  
A3

SEE F122  
INC. TRUNK  
NO TEST  
REV. BAT. OR  
E&M LEADS SUPV.  
SX RING. START SIG.  
SD-26073-01

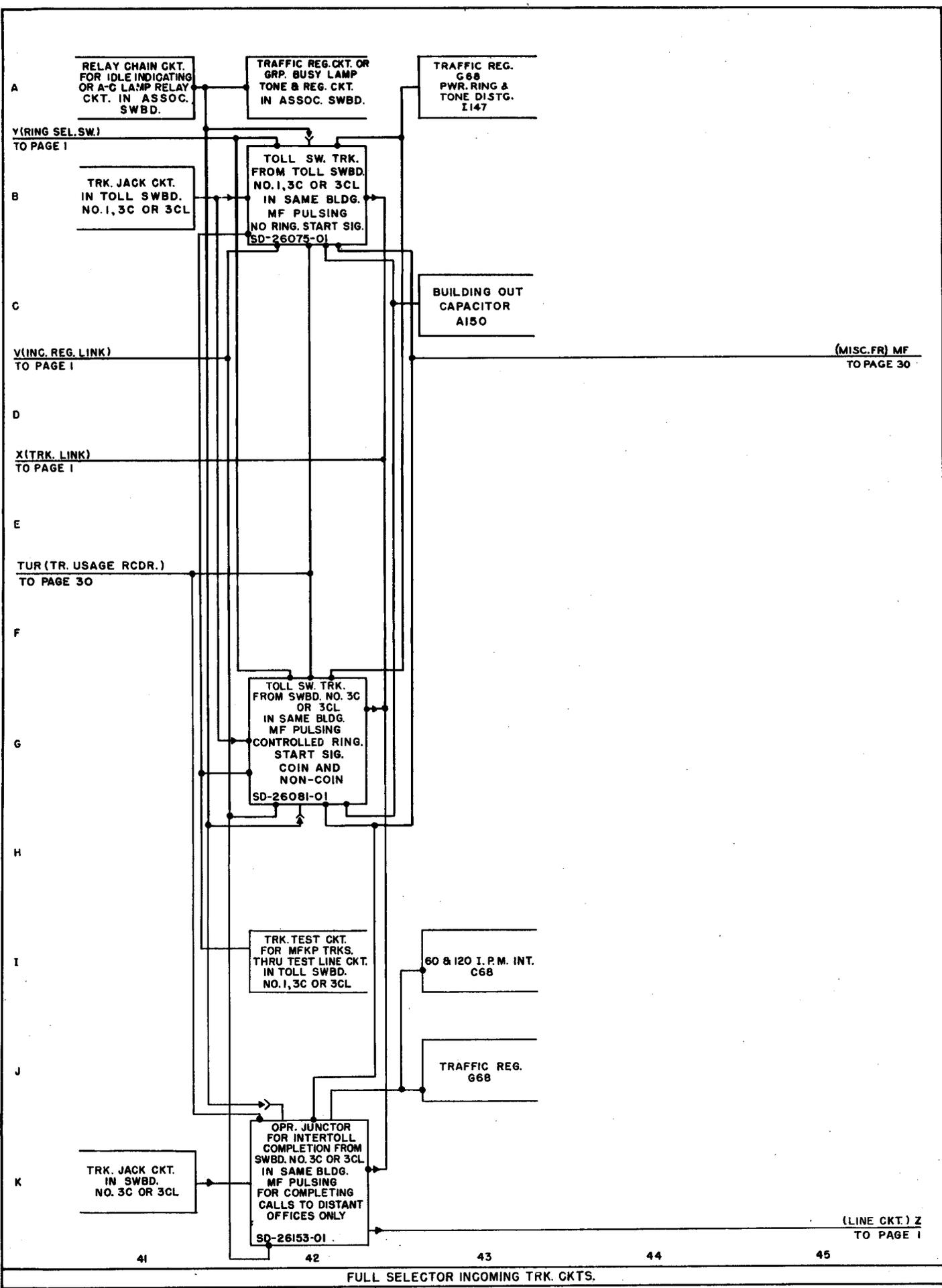
AUX. INC. TRK. DP  
OR MF PULS. FOR  
CONVERTING REV.  
BAT. SUPV. TO E&M  
LEADS SUPV.  
SD-27008-01

4 WIRE TER. CKT.  
OR REP. COIL  
TRANS. & CX OR  
SX SIG.  
FACILITIES OR  
EQUIPMENT

DP INC. TRUNK  
FROM L.T.D. NO.14  
OR LOC. TST. CAB. NO.3  
WITH OR WITHOUT  
NO TEST  
SD-25709-01

(INC. TDM. TRK.) AT  
TO PAGE 40

TRAFFIC REG.  
G88



FULL SELECTOR INCOMING TRK. CKTS.

A

Y (RING SEL. SW.)  
TO PAGE 1

B

C

V (INC. REG. LINK)  
TO PAGE 1

D

E

F

G

Z (LINE CKT.)  
TO PAGE 1

H

X (TRK. LINK)  
TO PAGE 1

I

S (COIN SUPV. LINK)  
TO PAGE 2

K

4 WIRE TERM. CKT.  
OR REP. COIL TRANS.  
& CX OR SX SIG.  
FACILITIES OR  
EQUIVALENT

IN CBR. KEY PLSG.  
CENT. "A" SWBD.;  
RP. PULSING OGT  
REV. BAT. SUPV.  
SX RING. START SIG.  
WITH OR WITHOUT  
COIN CONTROL  
IN CBR., PAN. OR  
SXS "A" SWBD.;  
D.P. PULSING OGT  
REV. BAT. SUPV.  
SX. CONT. RING.  
WITH OR WITHOUT  
COIN CONTROL  
IN TOLL SWBD. NO. 1,  
3, 3C OR 3CL;  
MF PULSING OGT  
REV. BAT. SUPV.  
SX. CONT. RING.  
IN PAN. OFF.  
CENT. "B" SWBD.  
INC. TRK. FROM  
LONG DISTANCE OFF.  
IN TOLL SWBD. NO. 1,  
3, 3C OR 3CL;  
TOLL SW. TRK. CKT.  
REV. BAT. SUPV.

SEE I122

SEE H122

SD-26077-01

INC. TRK.  
R.P. D.P. OR MFP.  
REV. BAT. OR  
E & M LEADS SUPV.  
SX OR SINGLE FREQ.  
RING. START SIG.  
COIN CONT. OVER  
SEPARATE SINGLE  
TRK. CONDUCTOR OR  
SINGLE OR  
2 FREQUENCIES  
SD-26083-01

INC. TRK.  
R.P. D.P. OR MFP.  
REV. BAT. SUPV.  
OR E & M LEADS SUPV.  
CONTROLLED RING.  
SD-26074-01

INC. TRK.  
REPEATED DIALING  
USING BY-LINK  
REV. BAT. SUPV.  
WITH OR WITHOUT  
TDM. COMPLETING  
SD-26077-01

TRAFFIC REG.  
G88  
PWR. RING &  
TONE DISTG.  
I147

CENTRAL "A" SWBD.  
COIN CONTROL CKT.  
IN PAN. OR CBR.  
NO. 1 OFF

TOLL SWBD. NO. 1  
TRK. JACK CKT.  
(COIN CONT. JK.)

TRK. COIN CONT. CKT.  
POSITION METHOD  
OF COIN CONT.  
IN TOLL SWBD.  
NO. 1 OR 3

ELECTRON TUBE  
RECEIVER  
H147

LINK RESEIZURE  
DELAY  
A72

INCP.T. TRK.  
FOR USE WITH  
ANNOUNCEMENT MACH.  
ANN. SYSTEM NO. 7A  
SD-26121-01

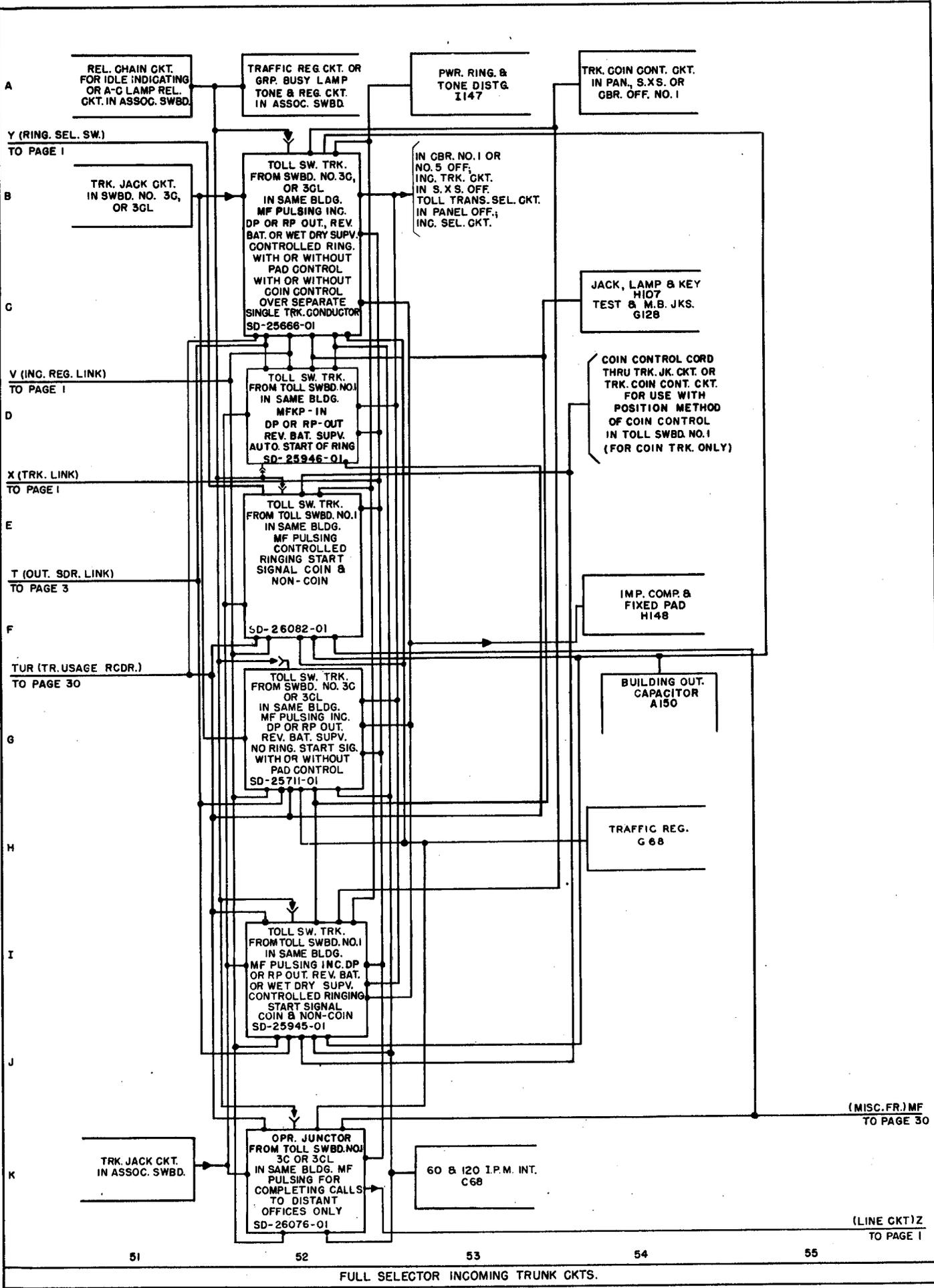
2AA TEL.  
ANSWERING SET

(NO. GROUP) N  
TO PAGE 1

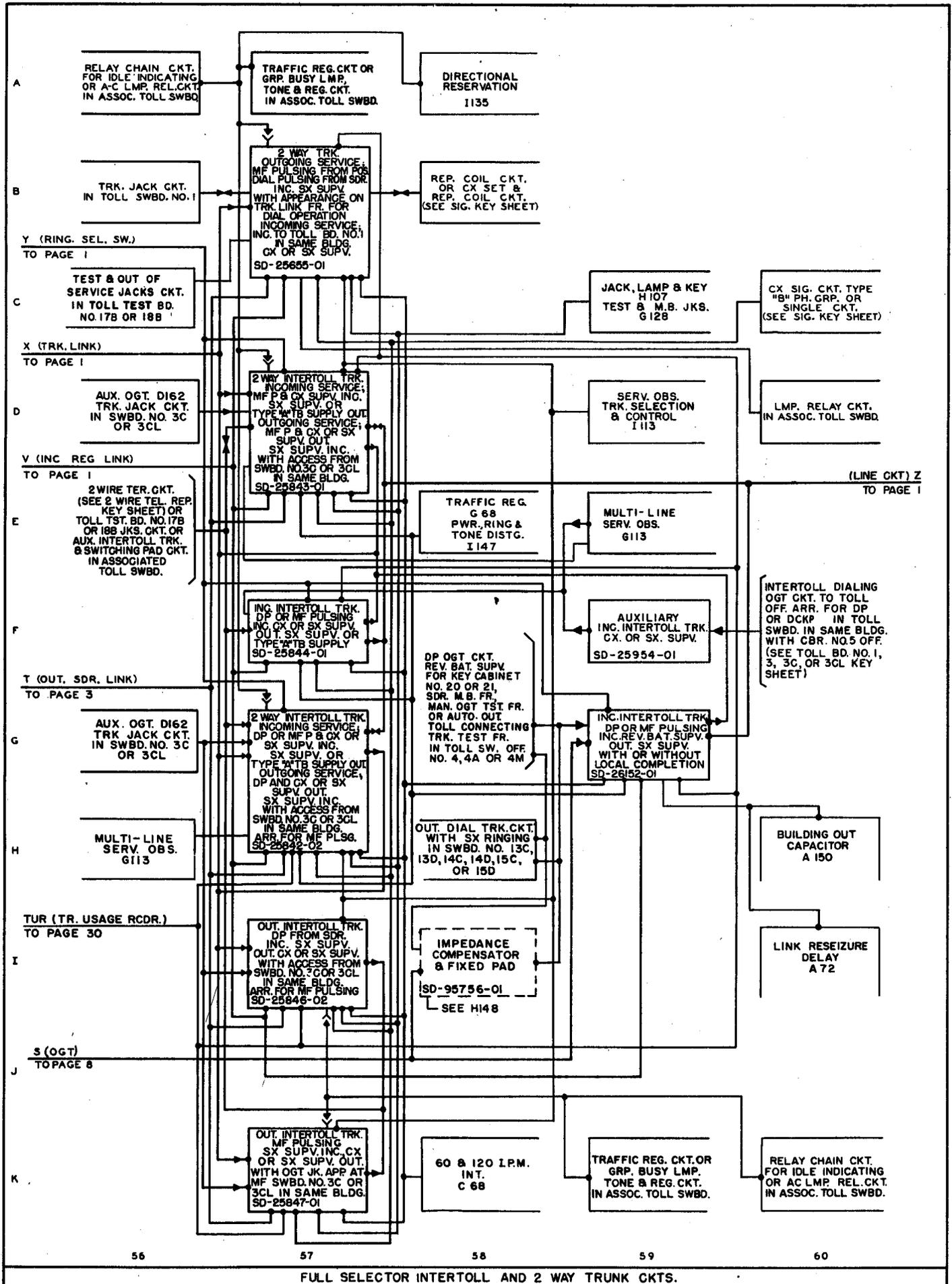
(MISC. FR.) MF  
TO PAGE 30

ALARM  
C78

(AUX. TRK.) AT1  
TO PAGE 33



FULL SELECTOR INCOMING TRUNK CKTS.



**A** RELAY CHAIN CKT. FOR IDLE INDICATING OR A-C LMP. REL. CKT. IN ASSOC. TOLL SWBD.

TRAFFIC REG. CKT. OR GRP. BUSY L.M.P. TONE & REG. CKT. IN ASSOC. TOLL SWBD.

DIRECTIONAL RESERVATION 1135

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

2 WAY TRK. OUTGOING SERVICE; MF PULSING FROM POS DIAL PULSING FROM SDR. INC. SX SUPV. WITH APPEARANCE ON TRK. LINK FR. FOR DIAL OPERATION

REP. COIL CKT. OR CX SET & REP. COIL CKT. (SEE SIG. KEY SHEET)

INCOMING SERVICE; INC. TO TOLL. BD. NO. 1 IN SAME BLDG. CX OR SX SUPV. SD-25655-01

**C** TEST & OUT OF SERVICE JACKS CKT. IN TOLL TEST BD. NO. 17B OR 18B

JACK, LAMP & KEY H107 TEST & M.B. JKS. G128

CX SIG. CKT. TYPE "B" PH. GRP. OR SINGLE CKT. (SEE SIG. KEY SHEET)

**D** AUX. OGT. DI62 TRK. JACK CKT. IN SWBD. NO. 3C OR 3CL

2 WAY INTERTOLL TRK. INCOMING SERVICE; MF P & CX SUPV. INC. SX SUPV. OR TYPE WTB SUPPLY OUT

SERV. OBS. TRK. SELECTION & CONTROL I113

LMP. RELAY CKT. IN ASSOC. TOLL SWBD.

**E** 2 WIRE TER. CKT. (SEE 2 WIRE TEL. REP. KEY SHEET) OR TOLL TST. BD. NO. 17B OR 18B JKS. CKT. OR AUX. INTERTOLL TRK. & SWITCHING PAD CKT. IN ASSOCIATED TOLL SWBD.

TRAFFIC REG. G 68 PWR. RING & TONE DISTG. I147

MULTI-LINE SERV. OBS. G113

**F** INC. INTERTOLL TRK. DP OR MF PULSING INC. CX OR SX SUPV. OUT SX SUPV. OR TYPE WTB SUPPLY SD-25844-01

DP OGT CKT. REV. BAT. SUPV. FOR KEY CABINET NO. 20 OR 21, SDR. M.B. FR. MAN. OGT TST. FR. OR AUTO. OUT TOLL CONNECTING TRK. TEST FR. IN TOLL SW. OFF. NO. 4, 4A OR 4M

AUXILIARY INC. INTERTOLL TRK. CX OR SX SUPV. SD-25954-01

INTERTOLL DIALING OGT CKT. TO TOLL OFF. ARR. FOR DP OR DCKP IN TOLL SWBD. IN SAME BLDG. WITH CBR. NO. 5 OFF. (SEE TOLL. BD. NO. 1, 3, 3C, OR 3CL KEY SHEET)

**G** AUX. OGT. DI62 TRK. JACK CKT. IN SWBD. NO. 3C OR 3CL

2 WAY INTERTOLL TRK. INCOMING SERVICE; DP OR MF P & CX OR SX SUPV. INC. SX SUPV. OR TYPE WTB SUPPLY OUT

INC. INTERTOLL TRK. DP OR MF PULSING INC. REV. BAT. SUPV. OUT. SX SUPV. WITH OR WITHOUT LOCAL COMPLETION SD-26152-01

**H** MULTI-LINE SERV. OBS. G113

OUT. DIAL TRK. CKT. WITH SX RINGING IN SWBD. NO. 13C, 13D, 14C, 14D, 15C, OR 15D

BUILDING OUT CAPACITOR A150

**I** TUR (TR. USAGE RCDR.) TO PAGE 30

OUT. INTERTOLL TRK. DP FROM SDR. INC. SX SUPV. OUT. CX OR SX SUPV. WITH ACCESS FROM SWBD. NO. 3C OR 3CL IN SAME BLDG. ARR. FOR MF PULSING SD-25846-02

IMPEDANCE COMPENSATOR & FIXED PAD SD-95756-01 SEE H148

LINK RESEIZURE DELAY A72

**J** S (OGT) TO PAGE 8

OUT. INTERTOLL TRK. MF PULSING INC. SX SUPV. INC. CX OR SX SUPV. OUT. WITH OGT JK. APP. AT MF SWBD. NO. 3C OR 3CL IN SAME BLDG. SD-25847-01

60 & 120 I.P.M. INT. C 68

TRAFFIC REG. CKT. OR GRP. BUSY L.M.P. TONE & REG. CKT. IN ASSOC. TOLL SWBD.

RELAY CHAIN CKT. FOR IDLE INDICATING OR A-C LMP. REL. CKT. IN ASSOC. TOLL SWBD.

**K**

A

TUR (TR. USAGE RCDR.)  
TO PAGE 30

B

Y (RING SEL. SW.)  
TO PAGE 1

C

S (CCIN SUPV. LINK)  
TO PAGE 2

D

X (TRK. LINK)  
TO PAGE 1

E

T (OUT. SDR. LINK)  
TO PAGE 3

F

G

H

I

J

K

INTER-MARKER GROUP  
TRK., FLAT RATE  
SUB. TO SUB.  
SD-26140-01

INTER-MARKER GROUP  
TRK., FLAT RATE &  
AMA  
SUB. TO SUB.  
SD-26141-01

INTER-MARKER GROUP  
TRK., FOR COIN LINES  
WITH OR WITHOUT  
TIMING  
SUB. TO SUB.  
SD-26142-01

INTER-MARKER GROUP  
TRK., FLAT RATE  
WITH OR WITHOUT AMA  
REV. BAT. OR  
SX SUPV. OUT.  
SUB. TO TRK.  
SD-26145-01

INTER-MARKER GROUP  
TRK., FLAT RATE &  
MSG. REG. OPERATION  
SUB. TO SUB.  
SD-25839-02

INTER-MARKER GROUP  
TRK., REV. BAT.  
OR SX. SUPV.,  
TRK. TO SUB.  
SD-26143-01

SEE J152  
INTER-MARKER GROUP  
TRK., FOR COIN LINES  
WITH OR WITHOUT  
TIMING  
REV. BAT. SUPV.  
SUB. TO TRK.  
SD-26147-01

INTER-MARKER GROUP  
TRK., FLAT RATE &  
MSG. REG. OPERATION  
WITH OR WITHOUT TNG.  
REV. BAT. SUPV.  
SUB. TO TRK.  
SD-25836-01

4 I.P.M. INT.  
I149

SERV. OBS.  
TRK. SELECTION  
& CONTROL  
I113

60 & 120 I.P.M. INT.  
C68

MSG. REG. PWR.  
SUPPLY  
E78

PWR. SUPPLY CKT.  
22 VOLT AC  
506A PLANT

CALL IDENTITY  
INDEXER  
B92

RECORDER &  
RECORDER CUMM.  
B93

(LINE CKT.)Z  
TO PAGE 1

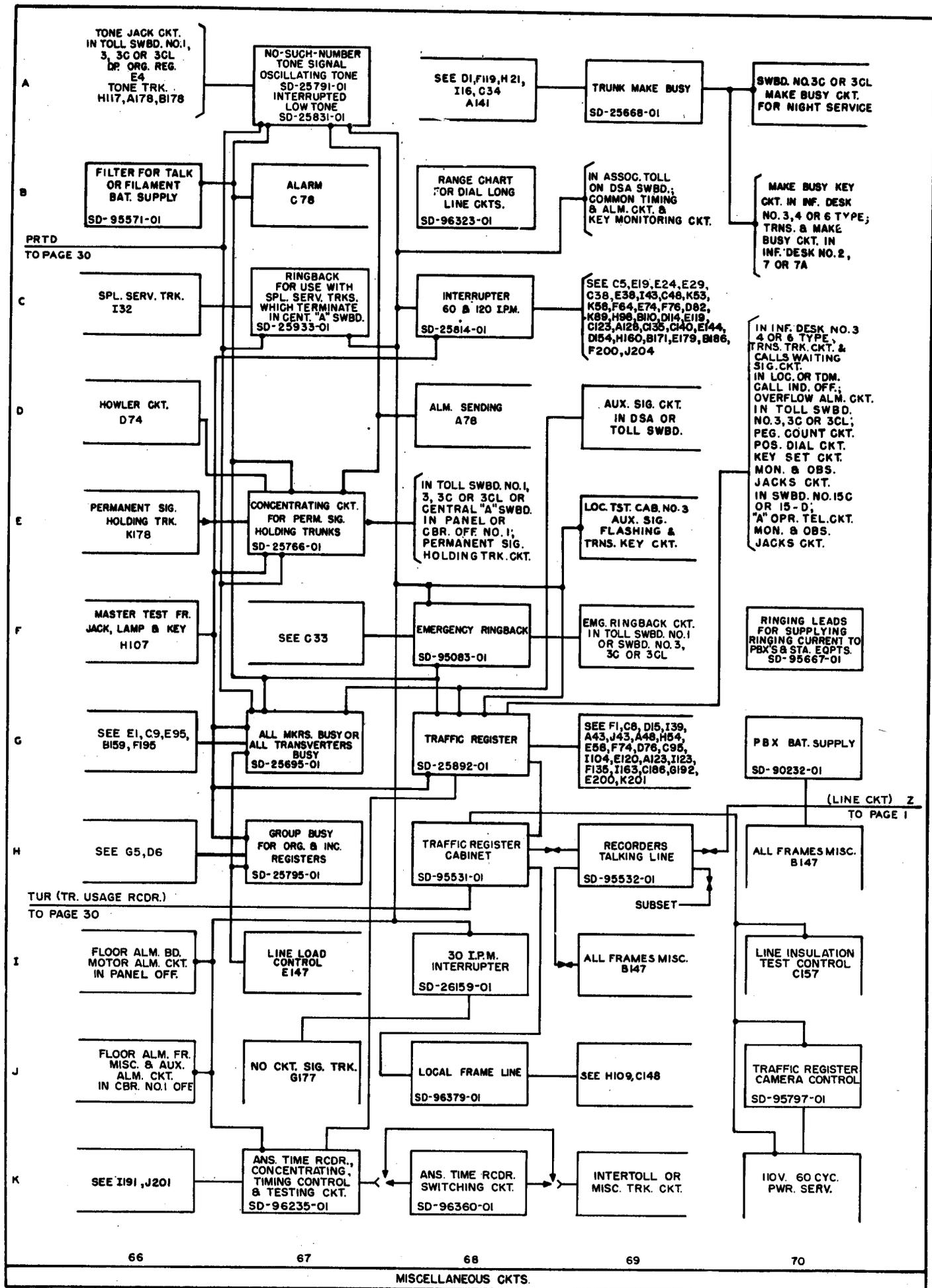
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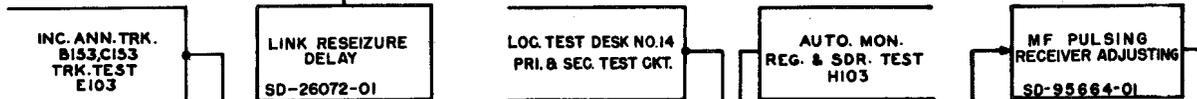
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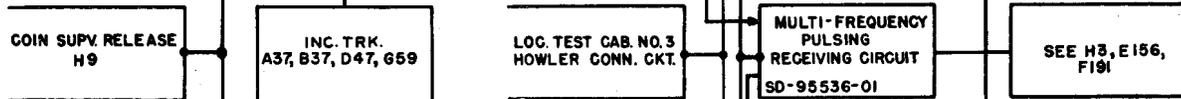


V (INC. REG. LINK)  
TO PAGE I

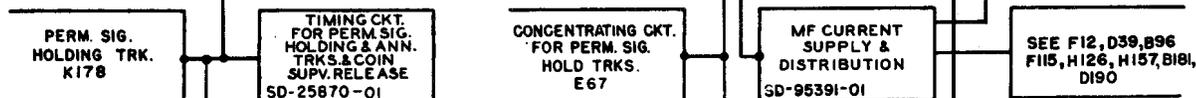
A



B

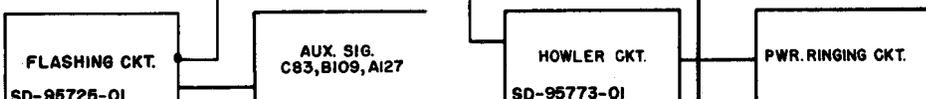


C

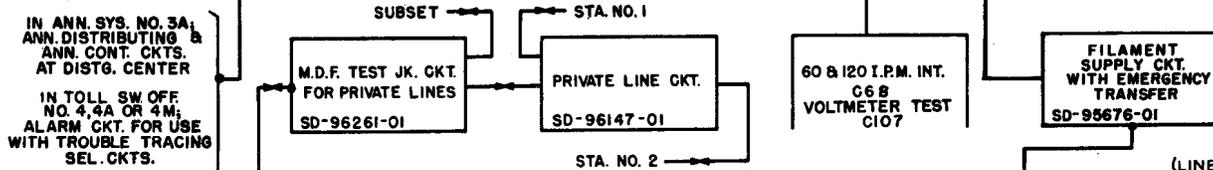


PRTD  
TO PAGE 30

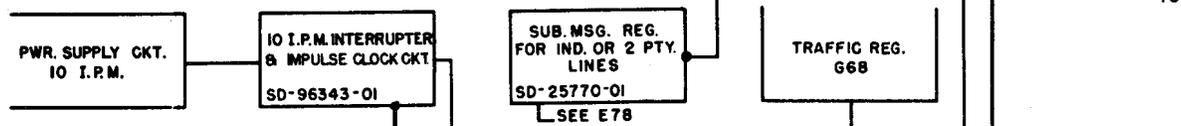
D



E



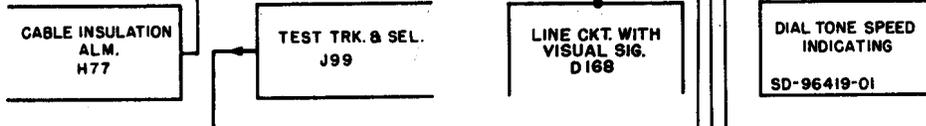
F



G



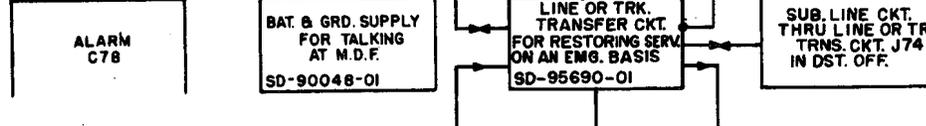
H



I



J



K



71

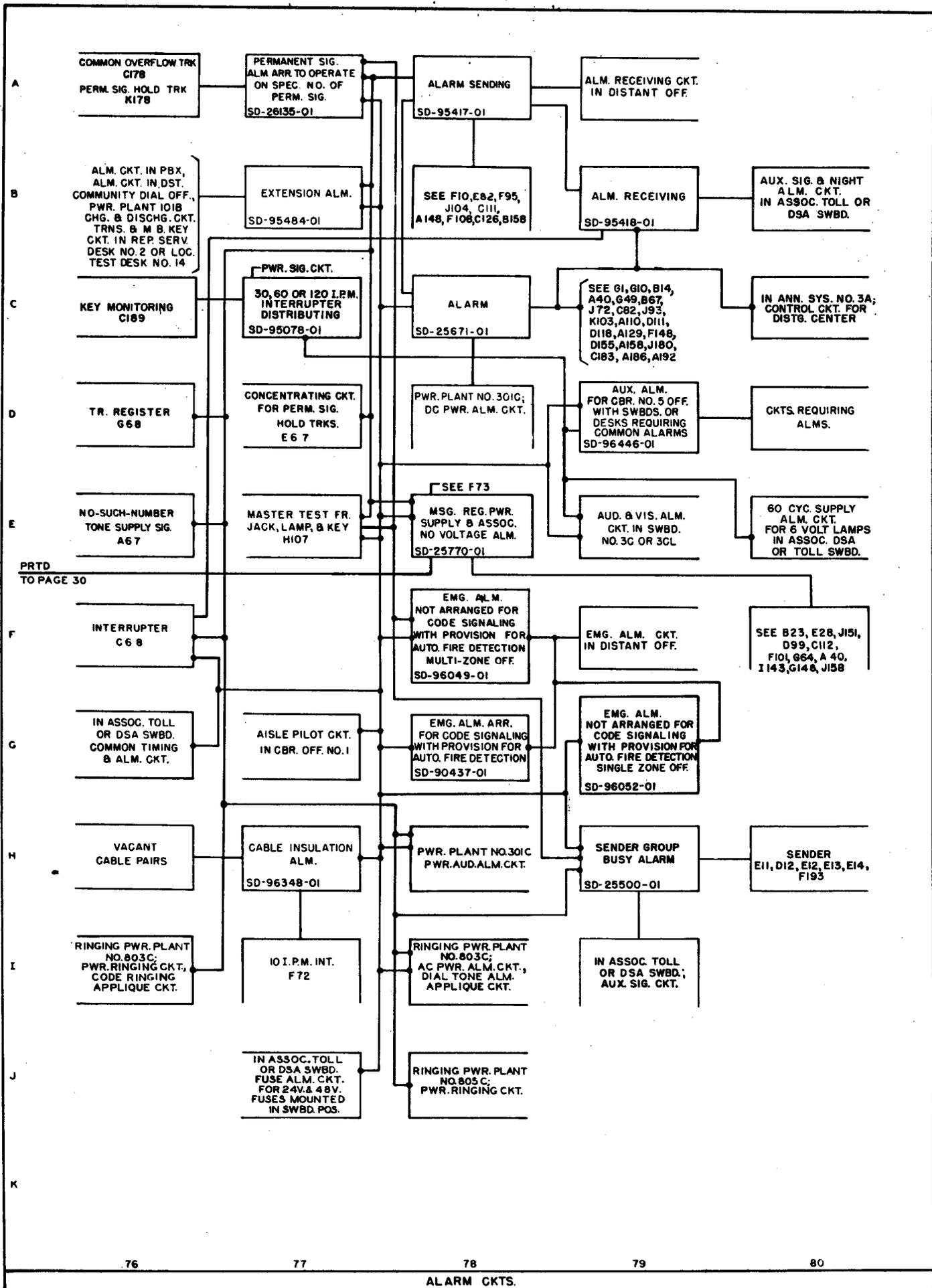
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74

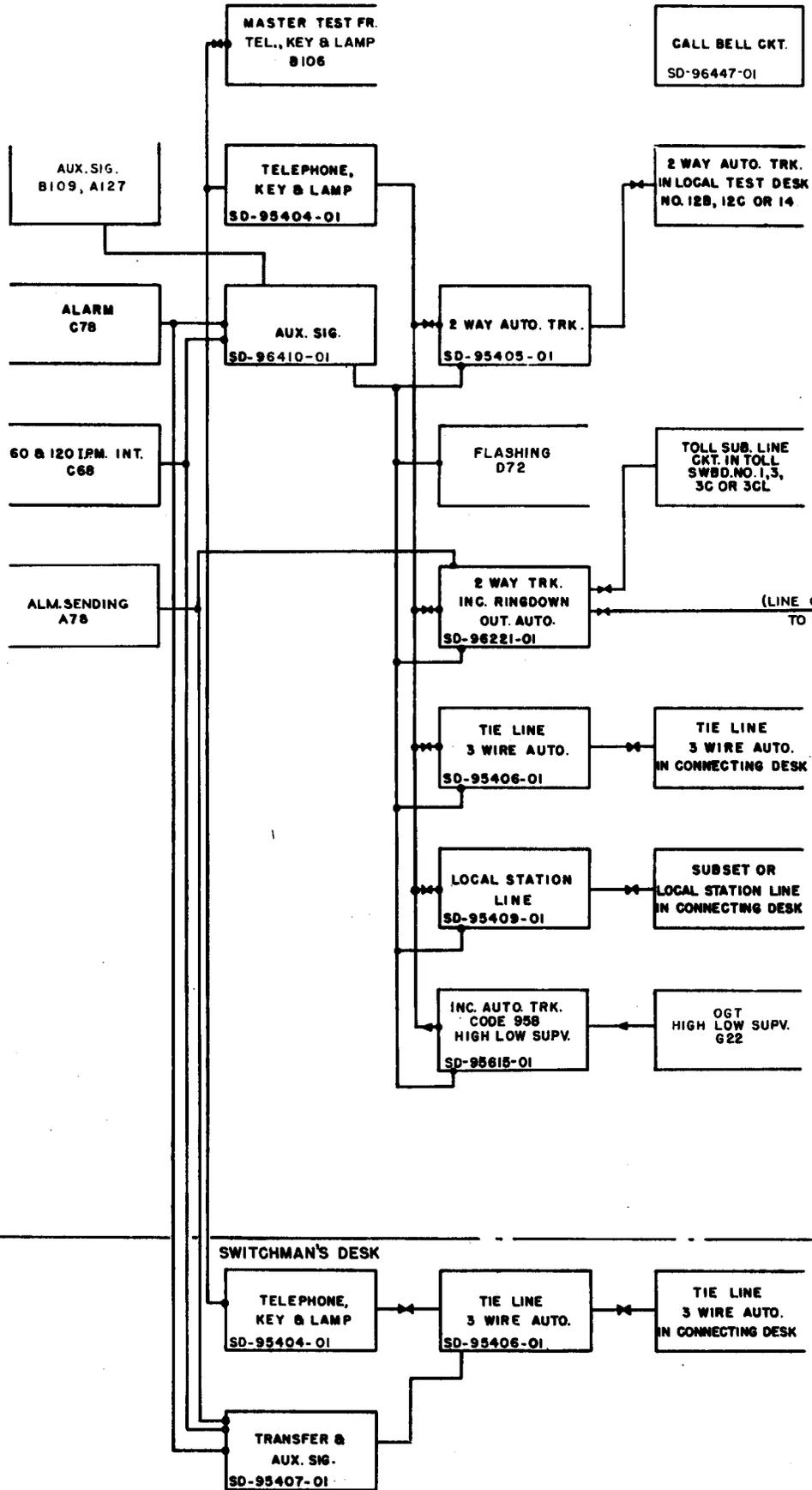
75

MISCELLANEOUS CIRCUITS



CHIEF SWITCHMAN'S DESK

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K



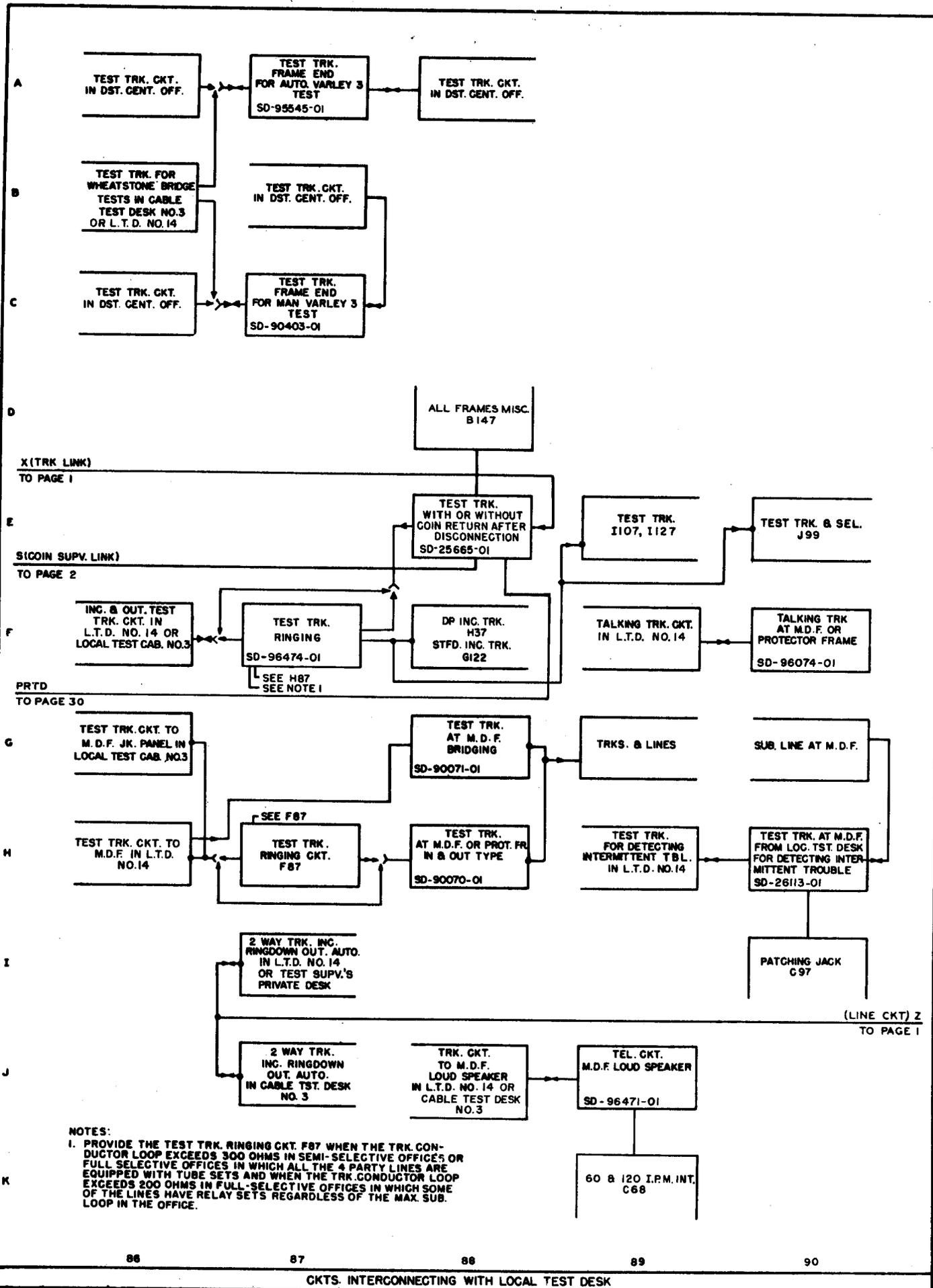
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82

83

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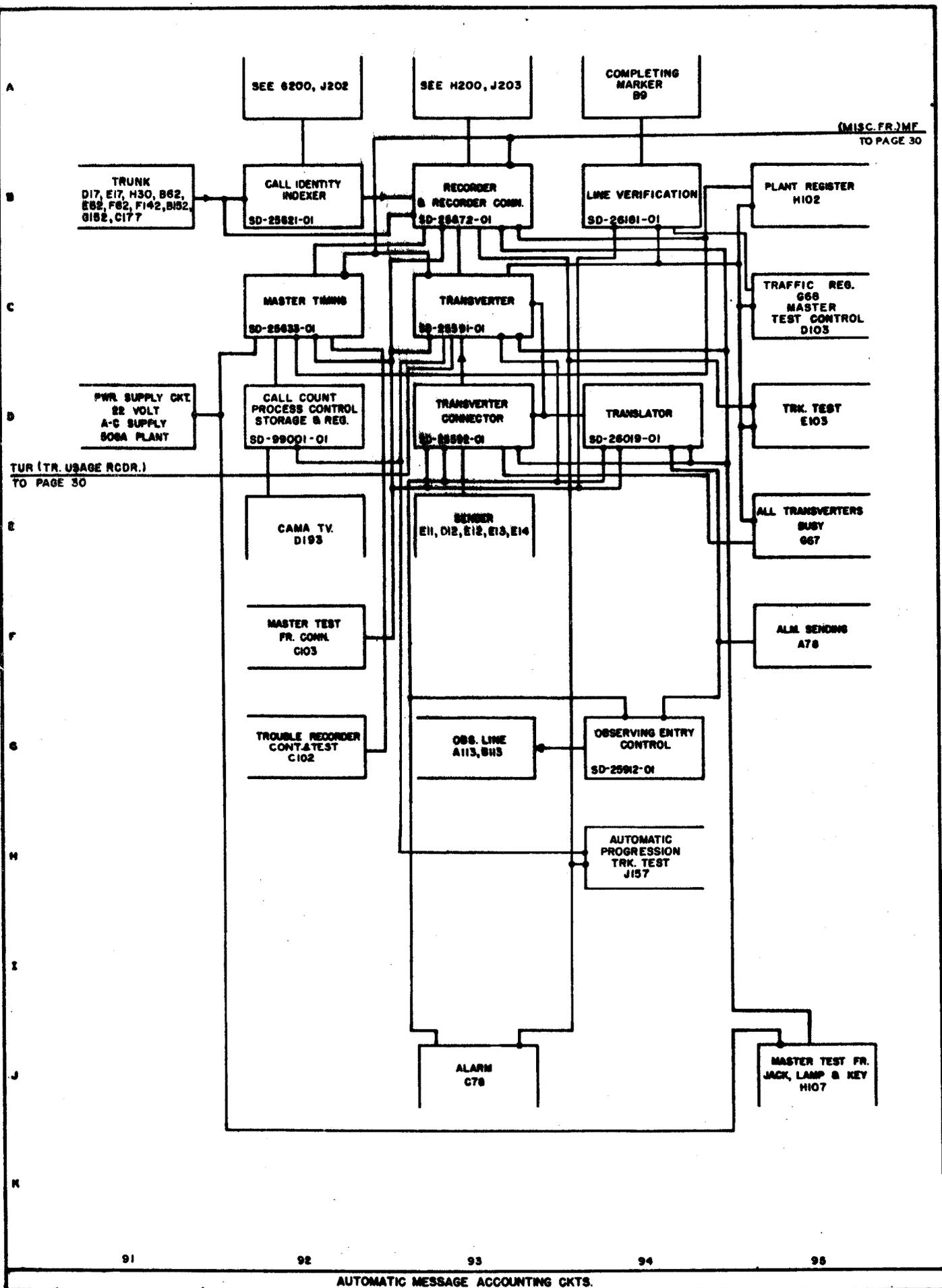
85



**NOTES:**  
 I. PROVIDE THE TEST TRK. RINGING CKT. F87 WHEN THE TRK. CONDUCTOR LOOP EXCEEDS 300 OHMS IN SEMI-SELECTIVE OFFICES OR FULL SELECTIVE OFFICES IN WHICH ALL THE 4 PARTY LINES ARE EQUIPPED WITH TUBE SETS AND WHEN THE TRK. CONDUCTOR LOOP EXCEEDS 200 OHMS IN FULL-SELECTIVE OFFICES IN WHICH SOME OF THE LINES HAVE RELAY SETS REGARDLESS OF THE MAX. SUB. LOOP IN THE OFFICE.

86 87 88 89 90

CKTS. INTERCONNECTING WITH LOCAL TEST DESK



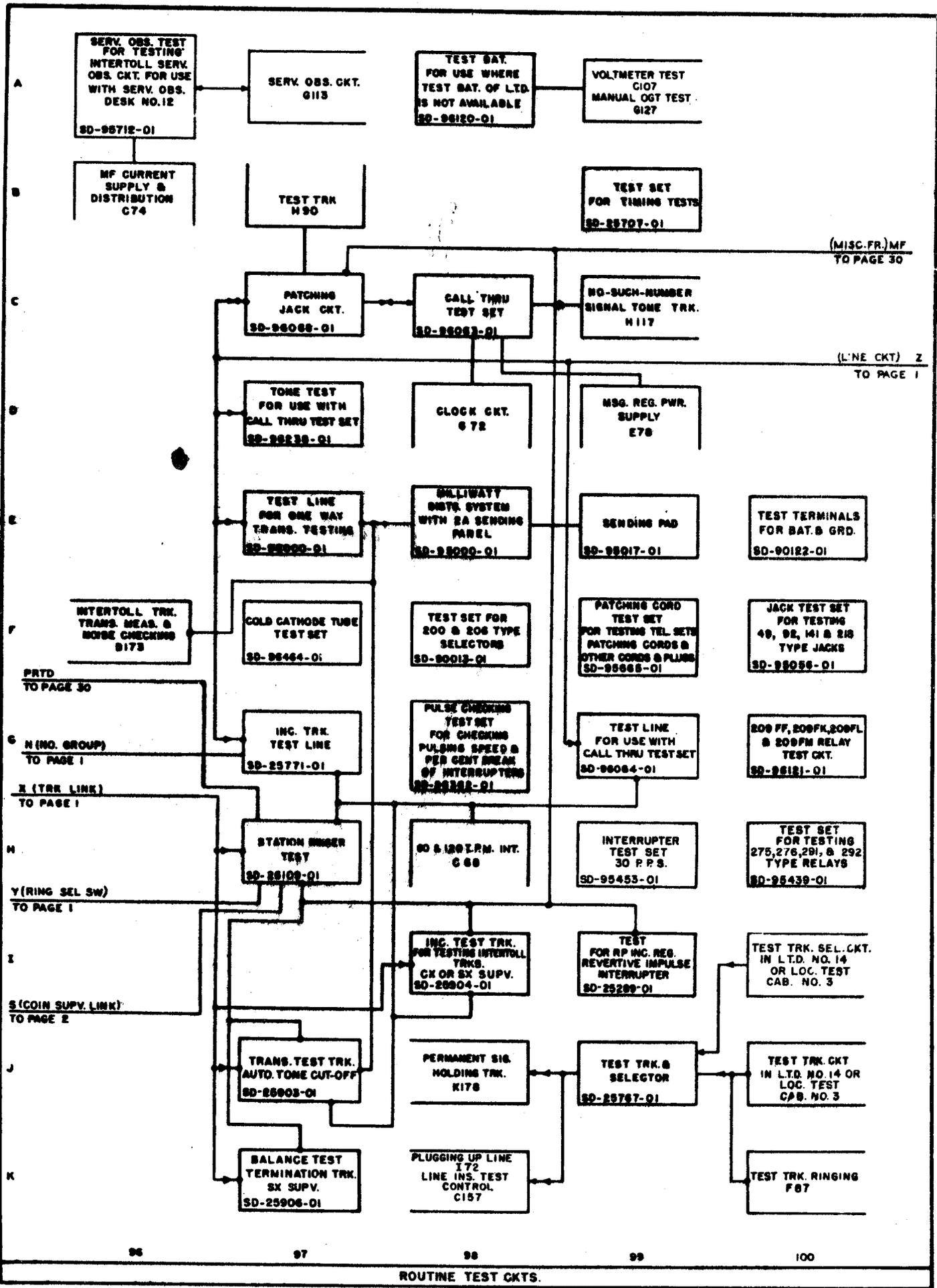
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92

93

94

95



A

B

C

D

E

F

G

H

I

J

K

PRTD  
TO PAGE 30

N (NO. GROUP)  
TO PAGE 1

X (TRK LINK)  
TO PAGE 1

Y (RING SEL SW)  
TO PAGE 1

S (COIN SUPV. LINK)  
TO PAGE 2

(MISC. FR.) MF  
TO PAGE 30

(LINE CKT) Z  
TO PAGE 1

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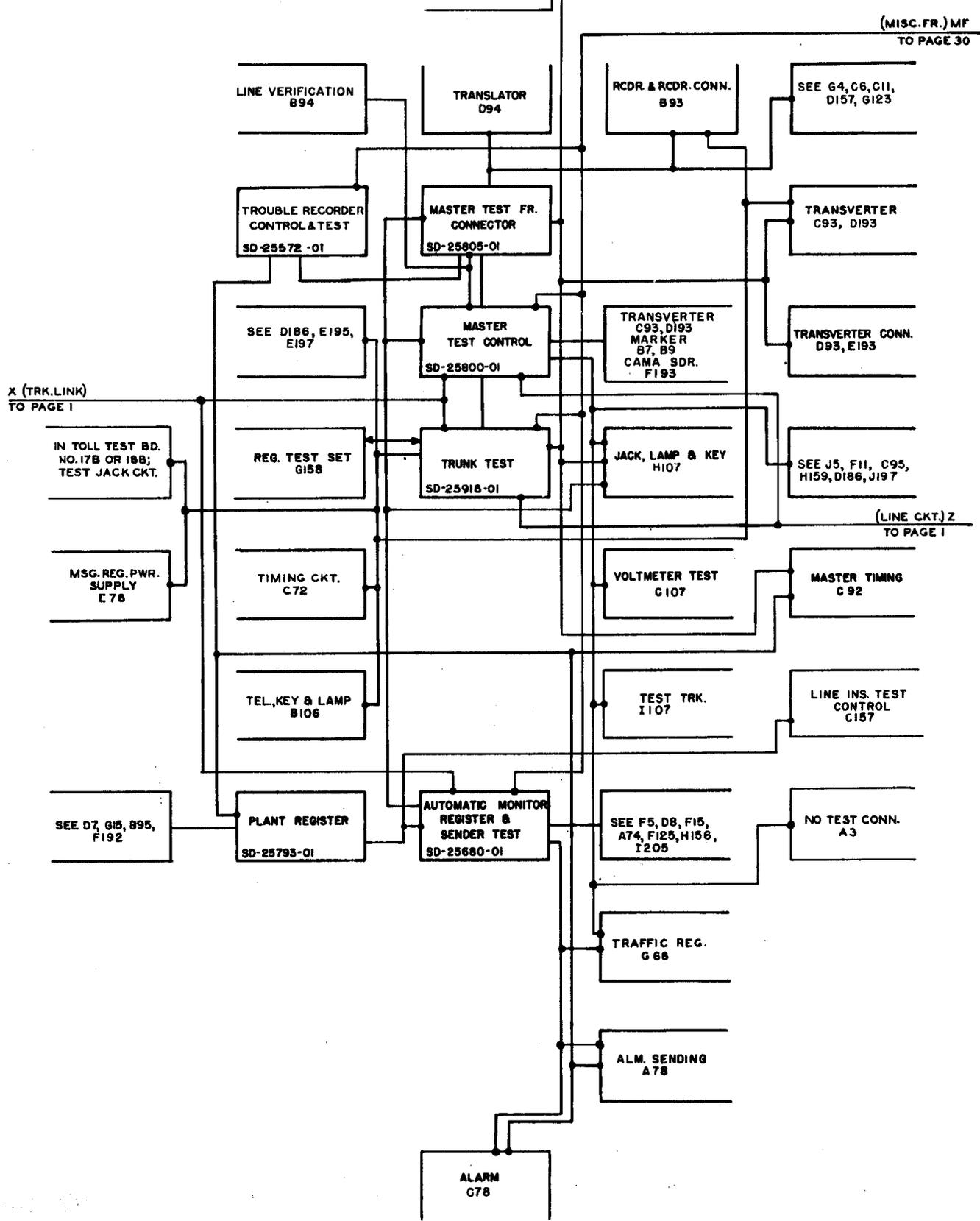
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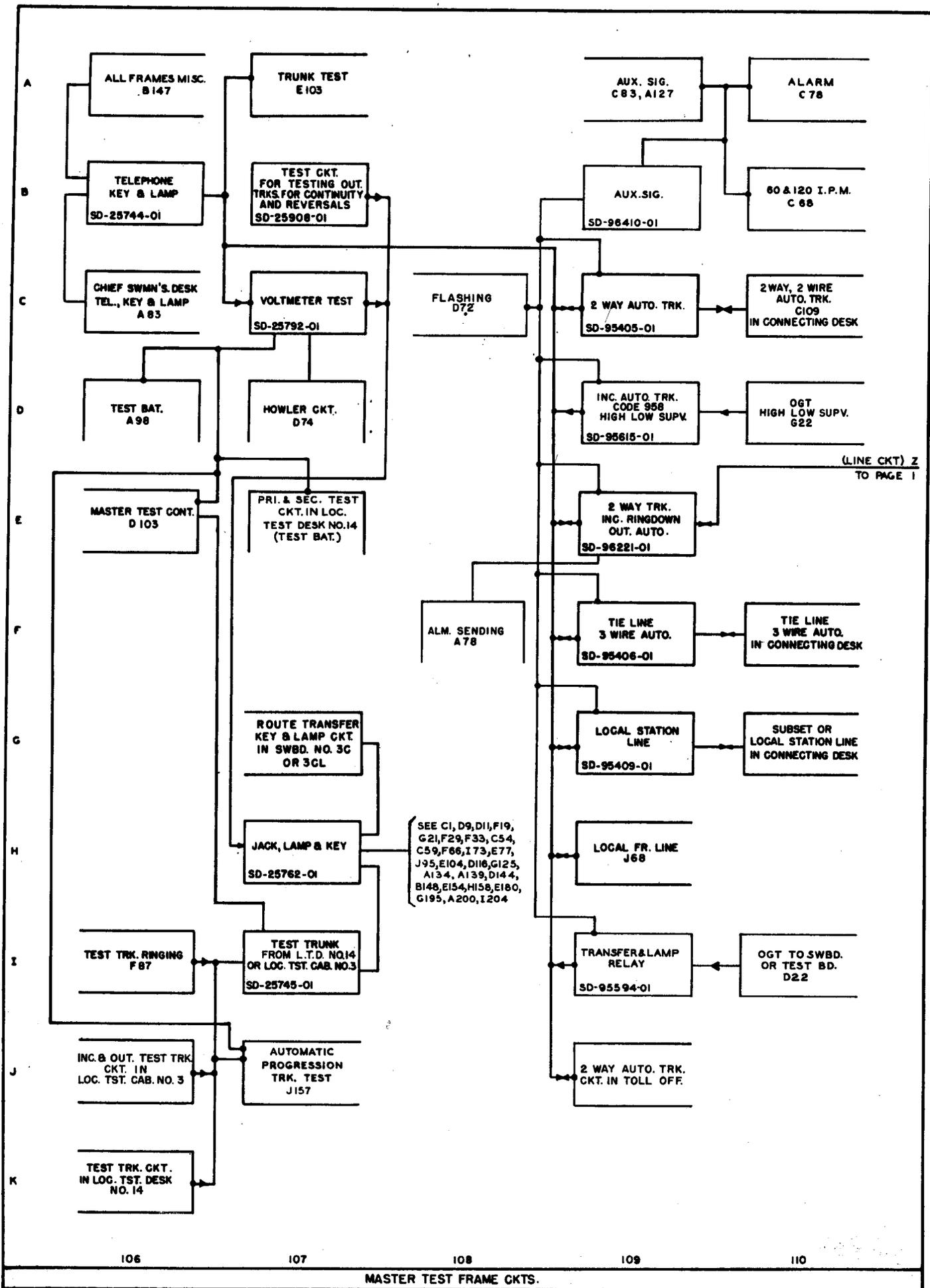
100

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B  
C  
D  
E  
F  
G  
H  
I  
J  
K



101                      102                      103                      104                      105

MASTER TEST FRAME CKTS.



(LINE CKT) Z  
TO PAGE 1

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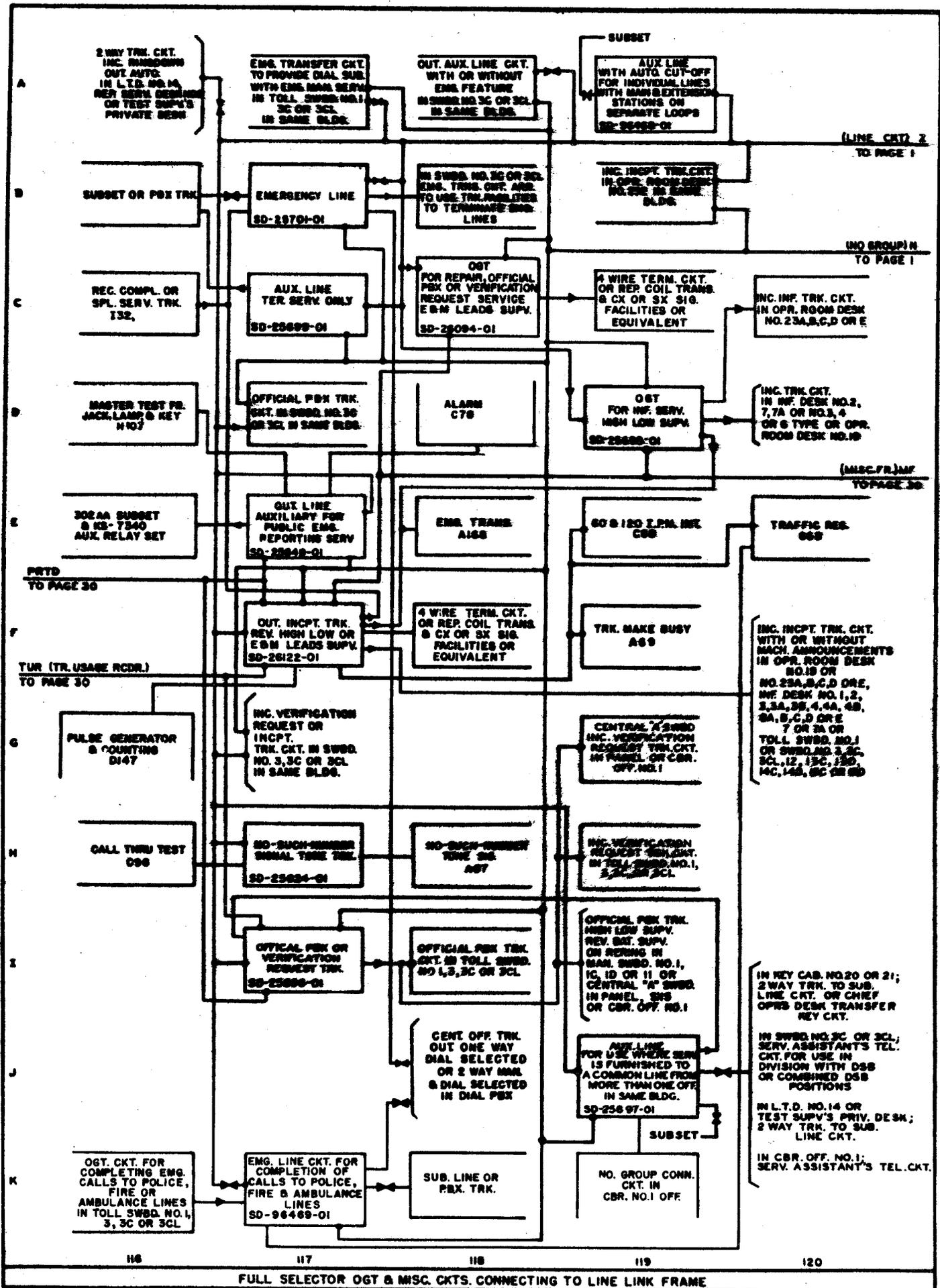
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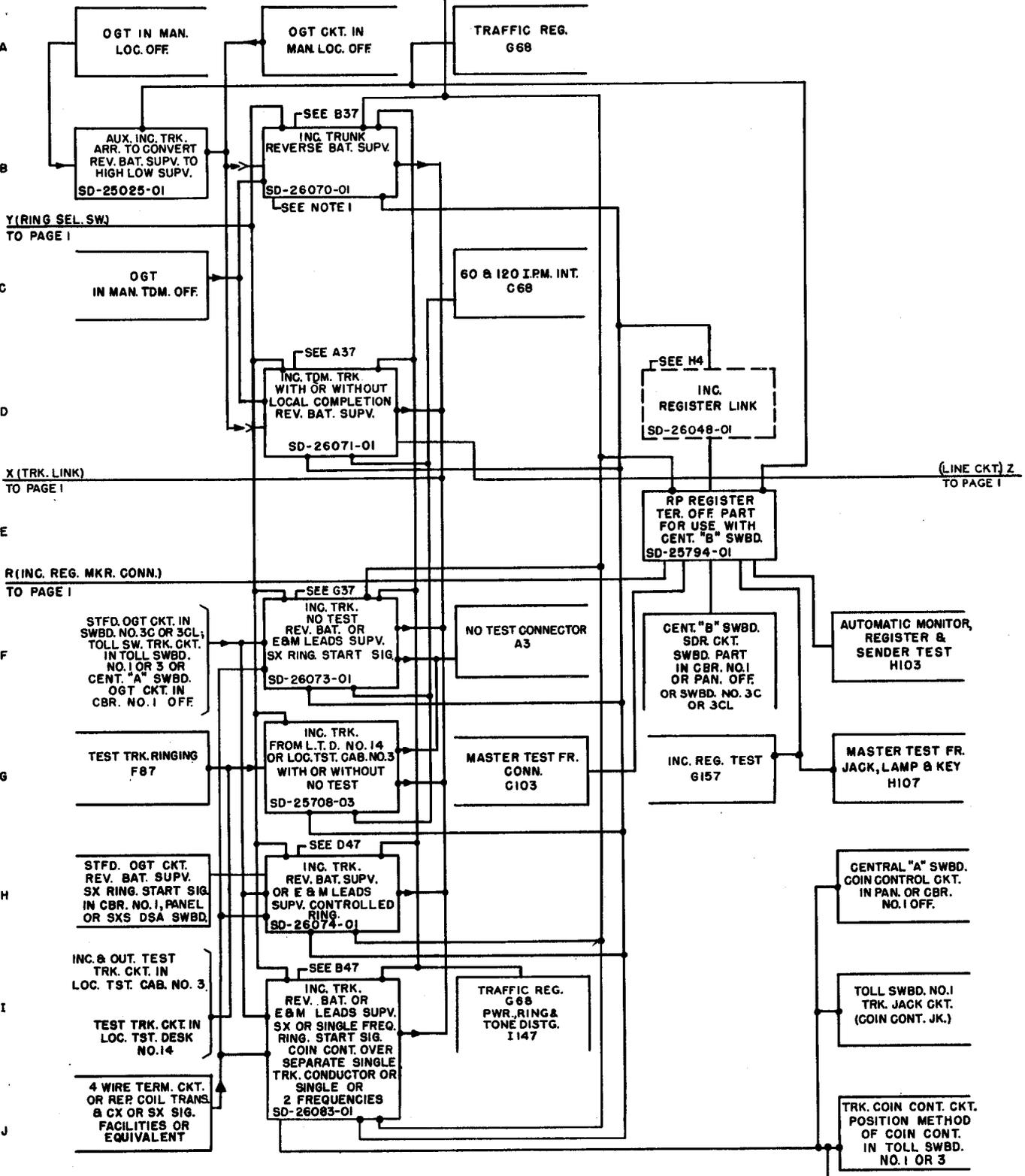
MASTER TEST FRAME CKTS.



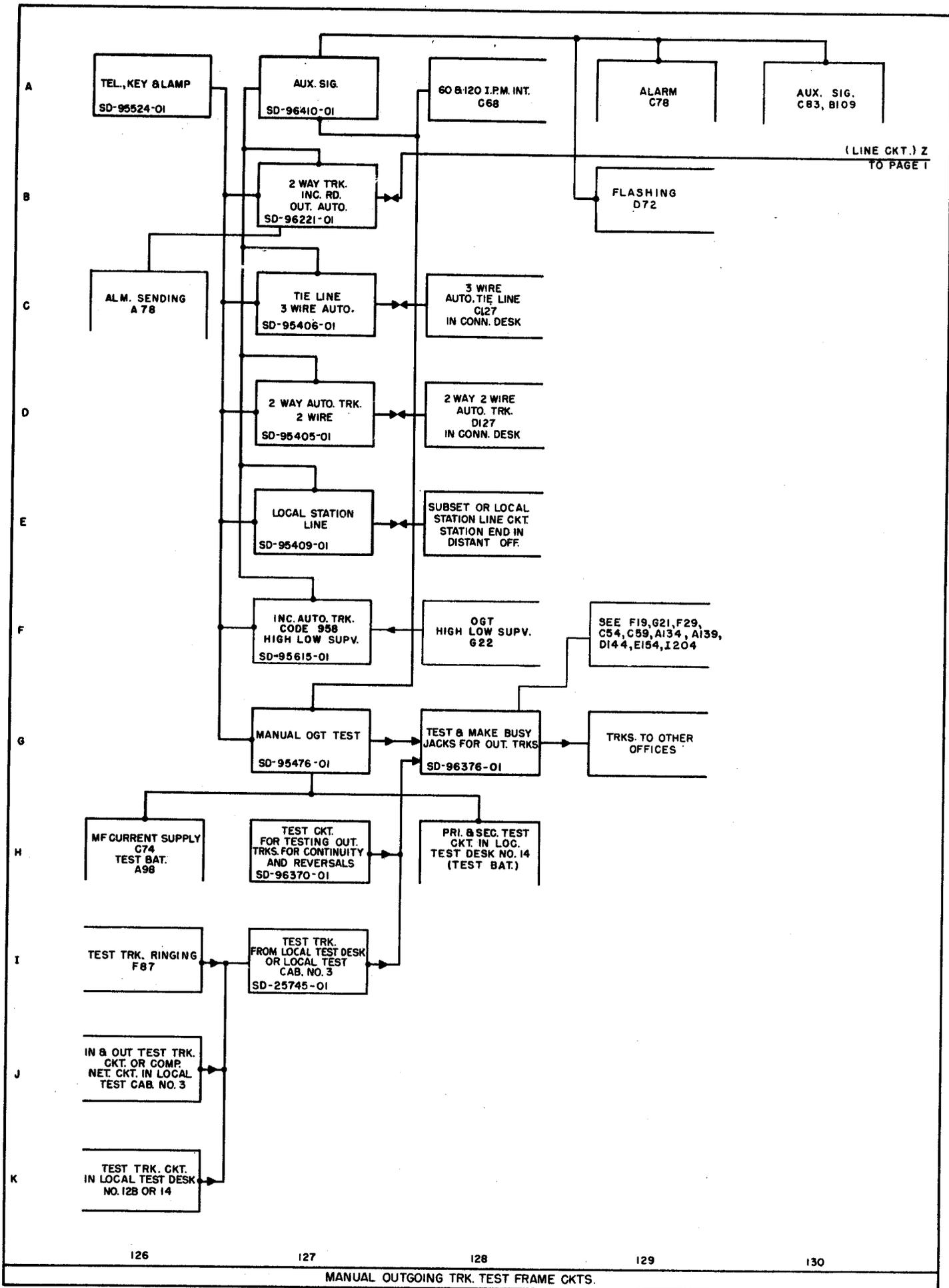


FULL SELECTOR OGT & MSC. CKTS. CONNECTING TO LINE LINK FRAME

TUR (TR. USAGE RCDR)  
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NOTES:  
L THE ALL TRUNKS BUSY REGISTER SHALL BE OMITTED FROM B122 AND CONNECTED TO B121 WHEN B121 IS PROVIDED.



(LINE CKT.) Z  
TO PAGE 1

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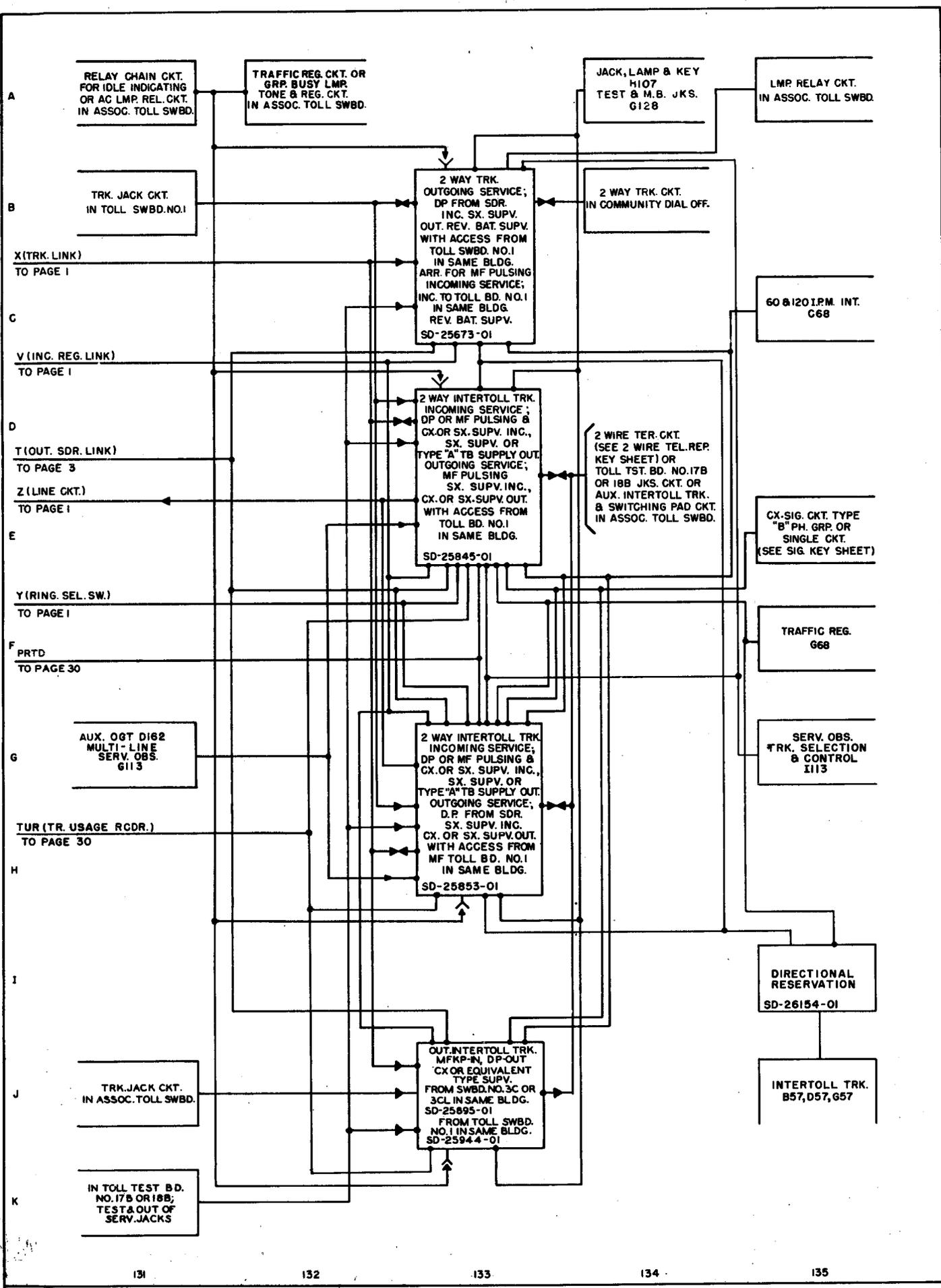
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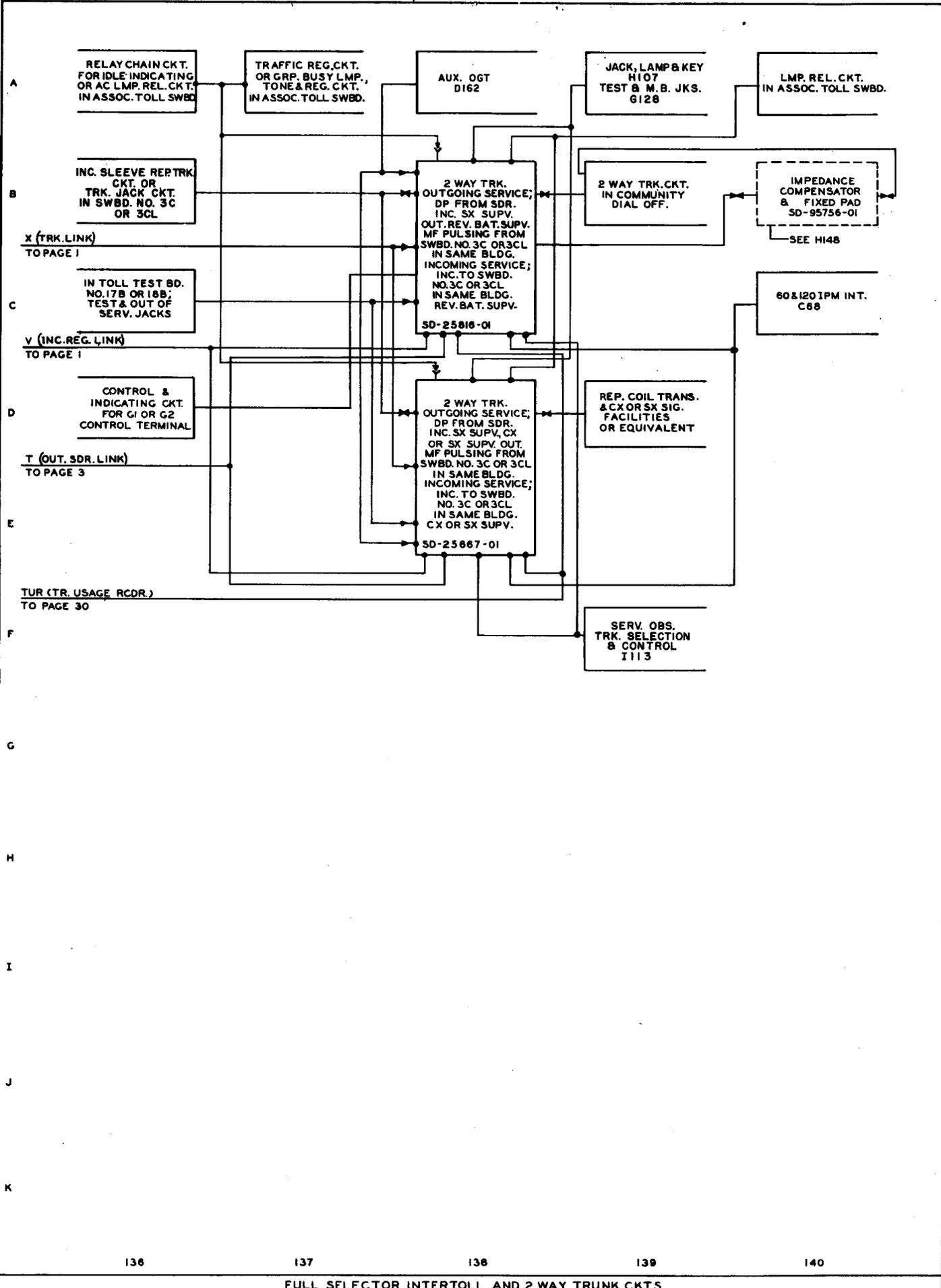
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MANUAL OUTGOING TRK. TEST FRAME CKTS.



FULL SELECTOR INTERTOLL AND 2 WAY TRUNK CKTS.



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V (INC. REG. LINK)  
TO PAGE 1

T (OUT. SDR. LINK)  
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TUR (TR. USAGE RCDR.)  
TO PAGE 30

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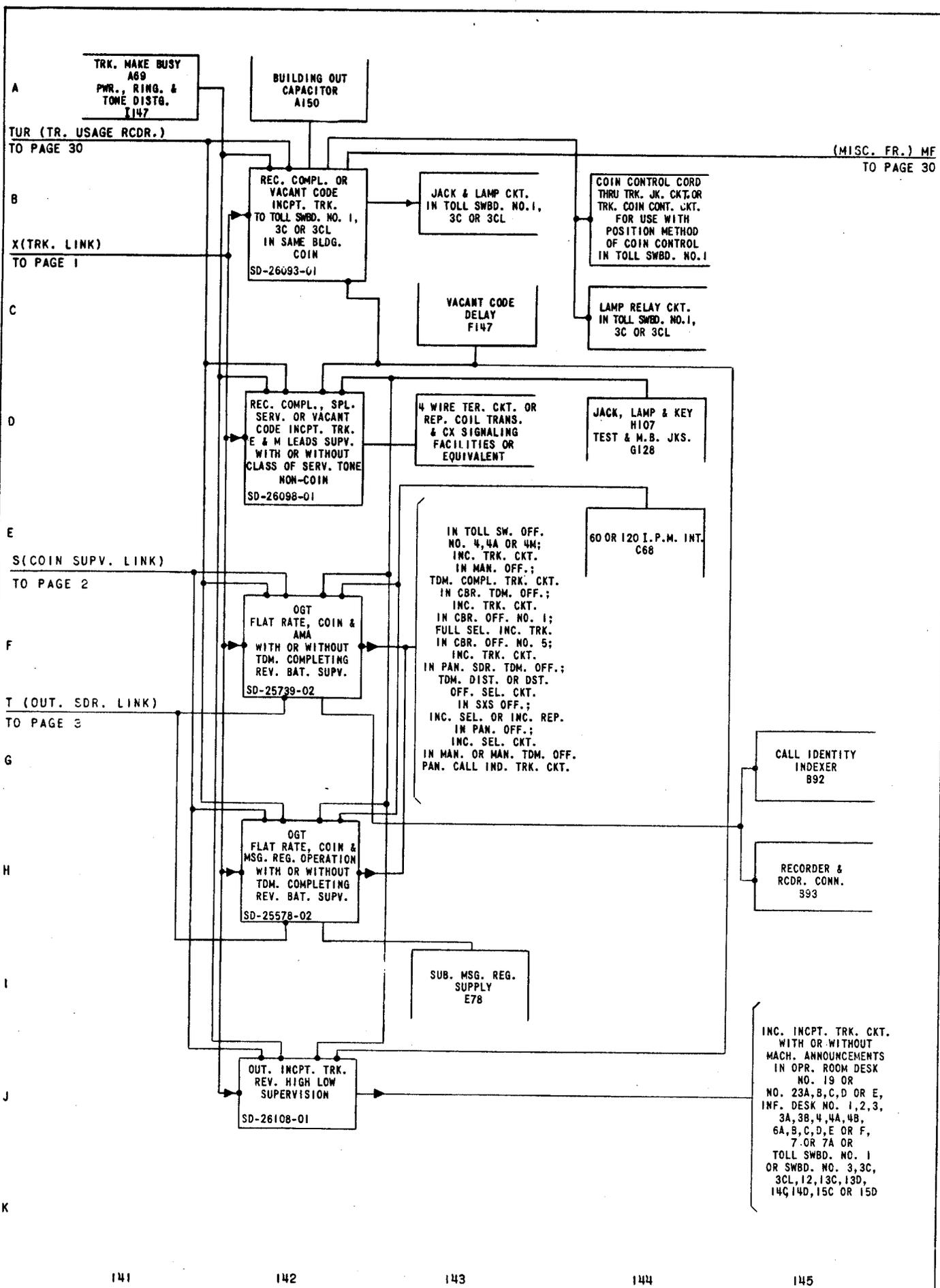
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FULL SELECTOR INTERTOLL AND 2 WAY TRUNK CKTS.



A

TUR (TR. USAGE RCDR.)  
TO PAGE 30

(MISC. FR.) MF  
TO PAGE 30

B  
X (TRK. LINK)  
TO PAGE 1

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S (COIN SUPV. LINK)  
TO PAGE 2

F

T (OUT. SDR. LINK)  
TO PAGE 3

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H

I

J

K

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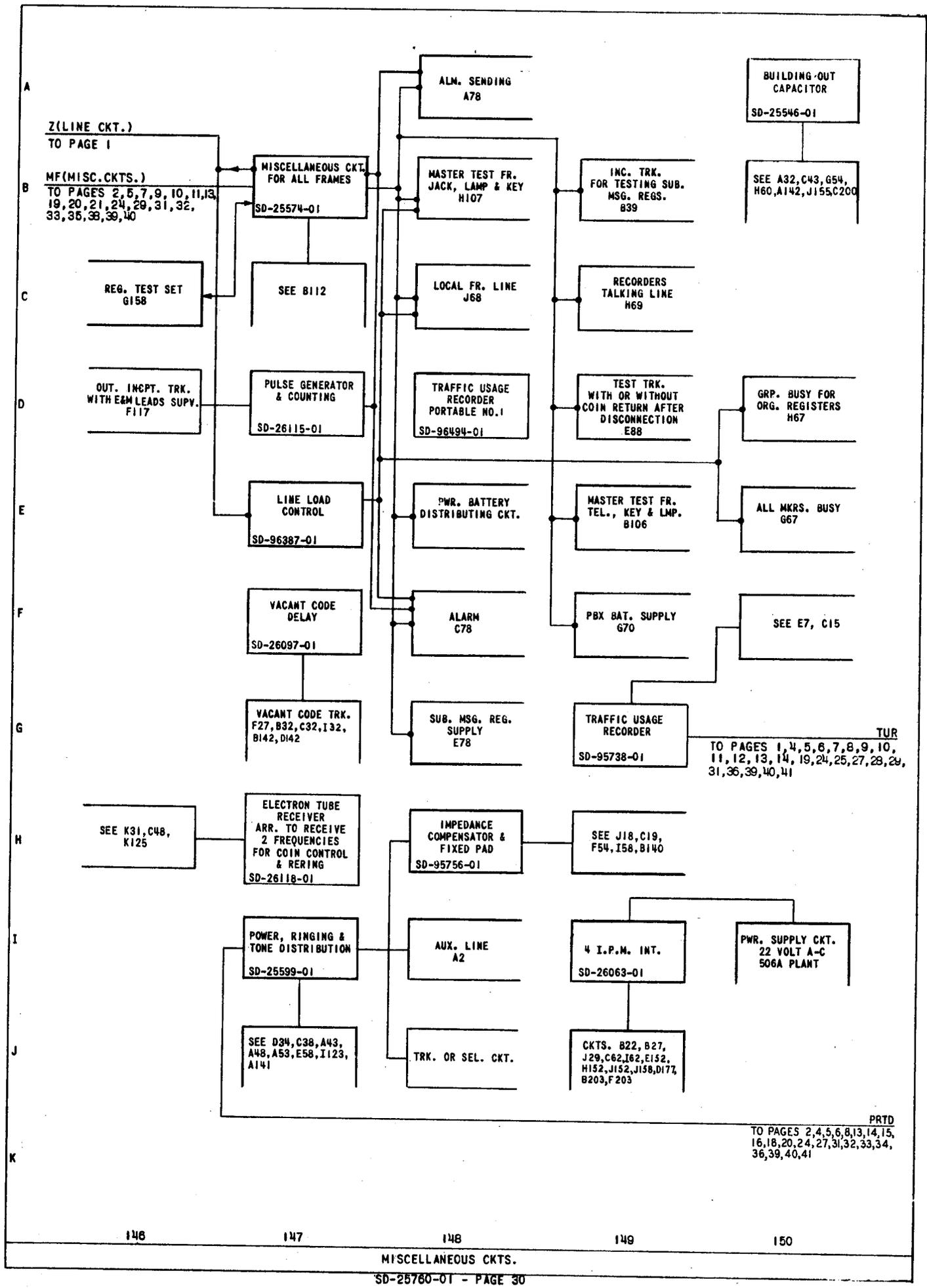
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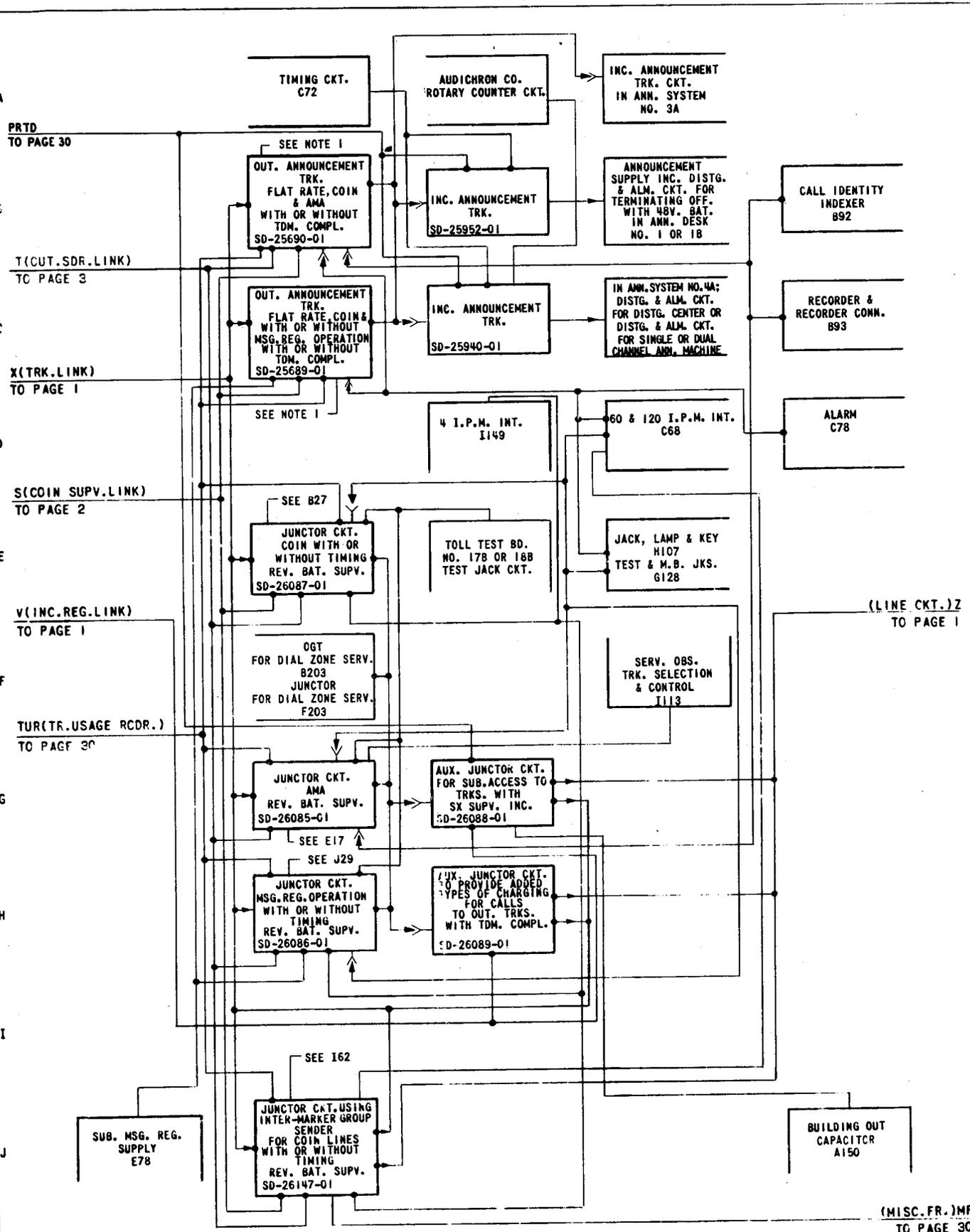
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OUTGOING AND MISC. TRK. CKTS. CONNECTING TO TRK. LINK FRAME



TUR  
TO PAGES 1, 4, 5, 6, 7, 8, 9, 10,  
11, 12, 13, 14, 19, 24, 25, 27, 28, 29,  
31, 36, 39, 40, 41

PRTD  
TO PAGES 2, 4, 5, 6, 8, 13, 14, 15,  
16, 18, 20, 24, 27, 31, 32, 33, 34,  
36, 39, 40, 41



NOTES:

- SD-25690-01 (BLOCK B152) & SD-25689-01 (BLOCK C152) CONNECT TO SD-25952-01 (BLOCK B153) OR SD-25940-01 (BLOCK C153) IN SAME OR DISTANT CROSSBAR NO. 5 OFFICE.

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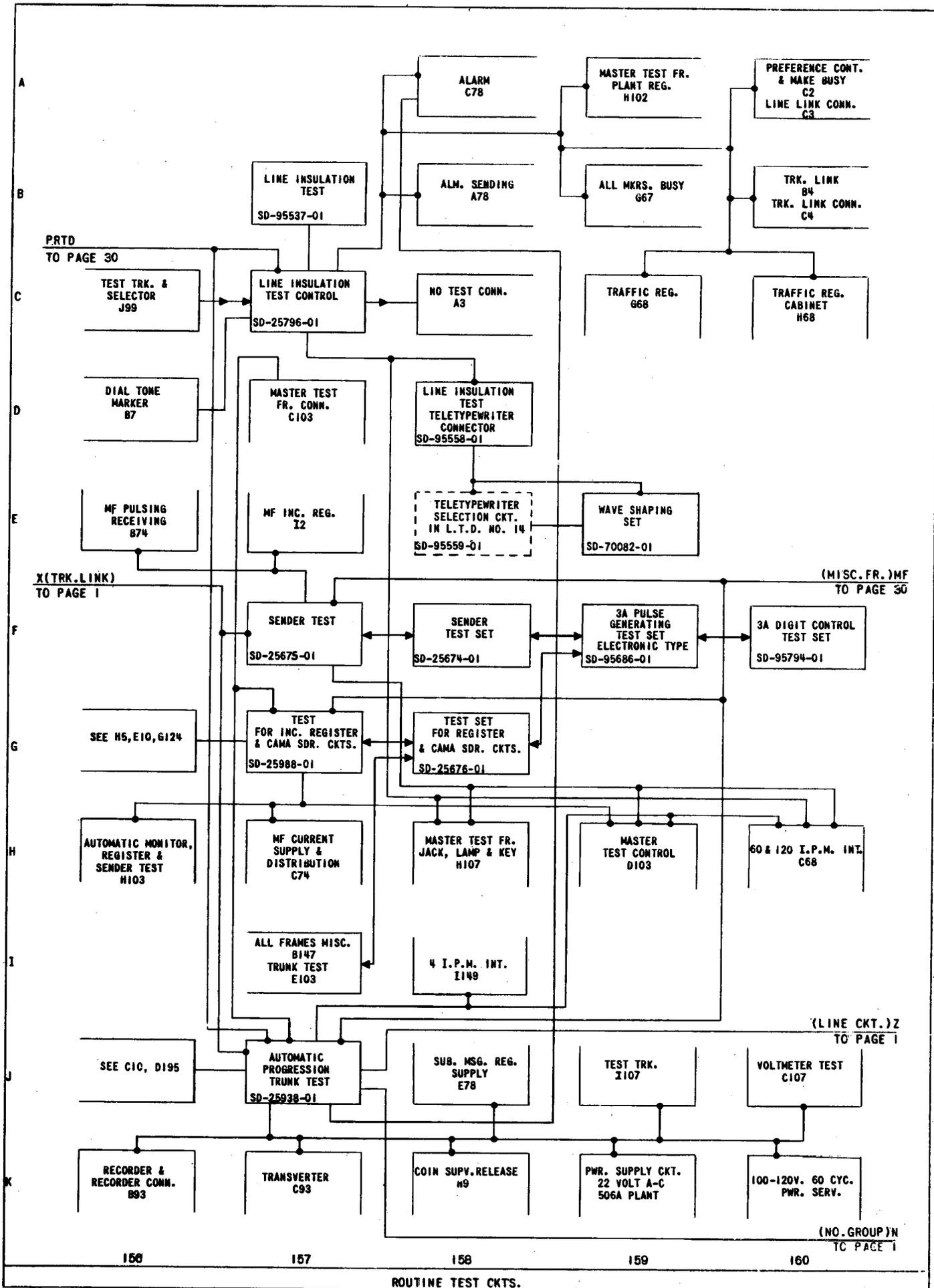
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OUTGOING & MISC. TRK. CKTS. CONNECTING TO TRK. LINK FRAME



PRTD  
TO PAGE 30

X(TRK.LINK)  
TO PAGE 1

(MISC. FR.) MF  
TO PAGE 30

(LINE CKT.) Z  
TO PAGE 1

(NO. GROUP) N  
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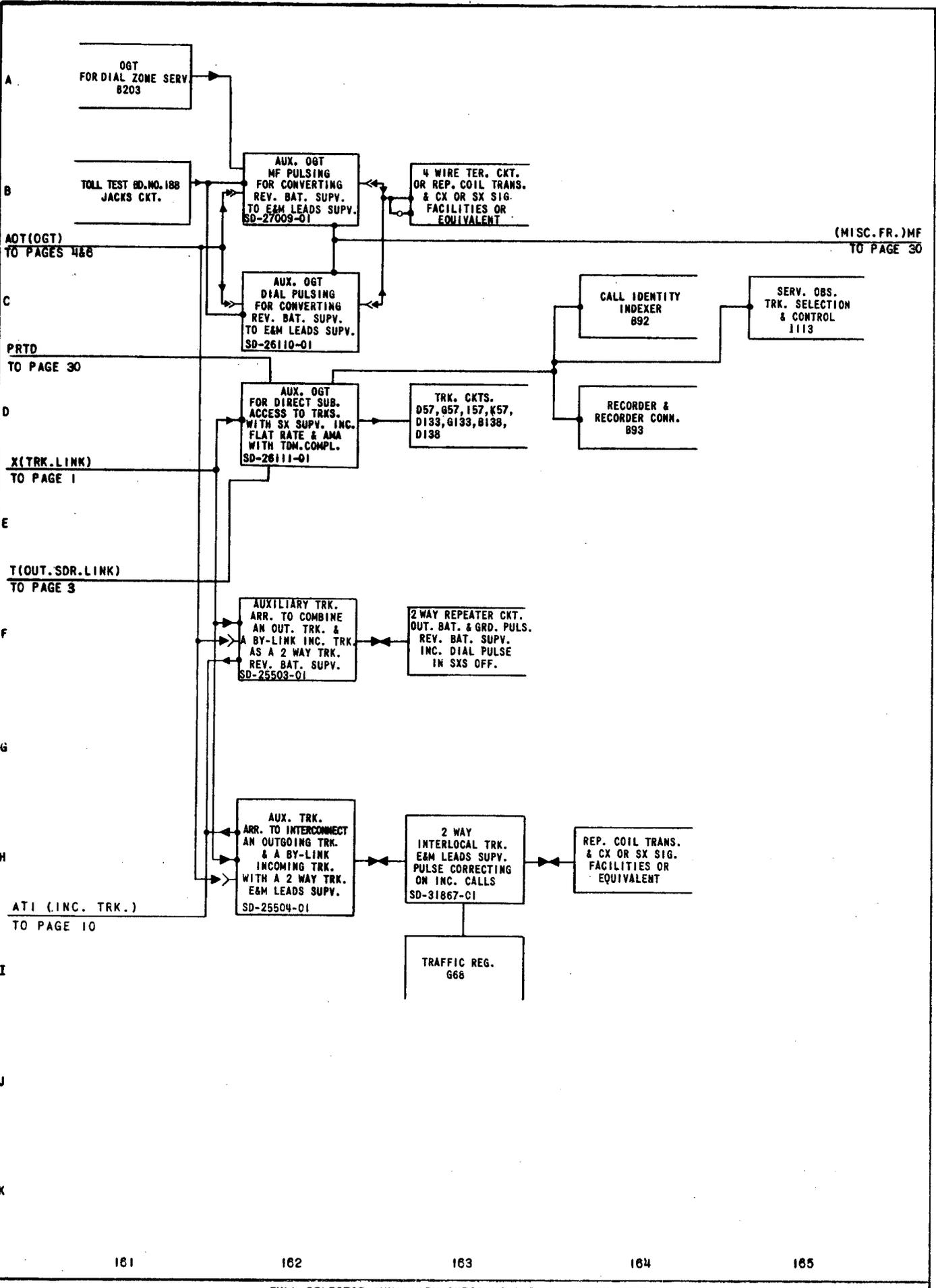
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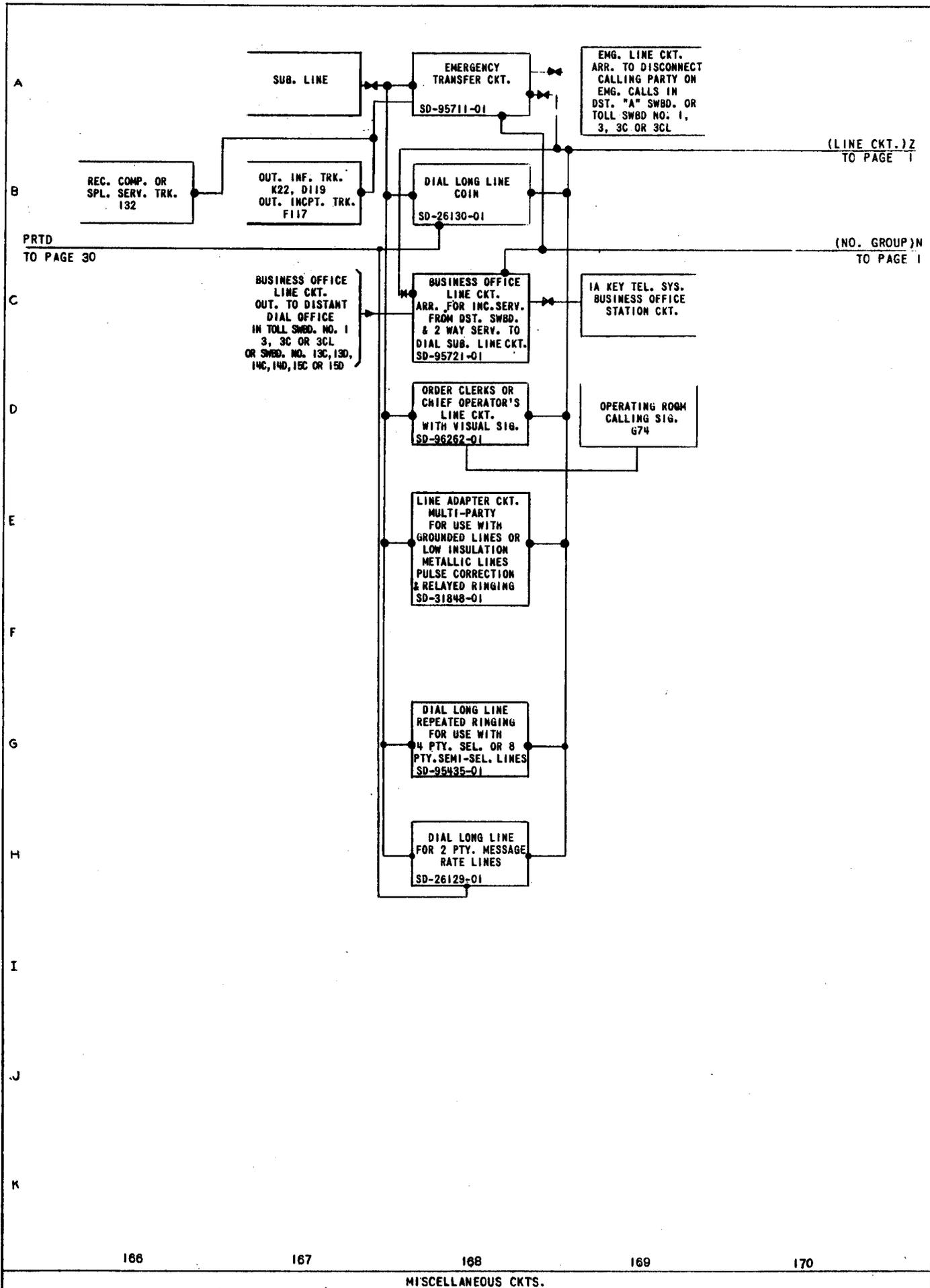
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PRTD  
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(LINE CKT.) Z  
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(NO. GROUP) N  
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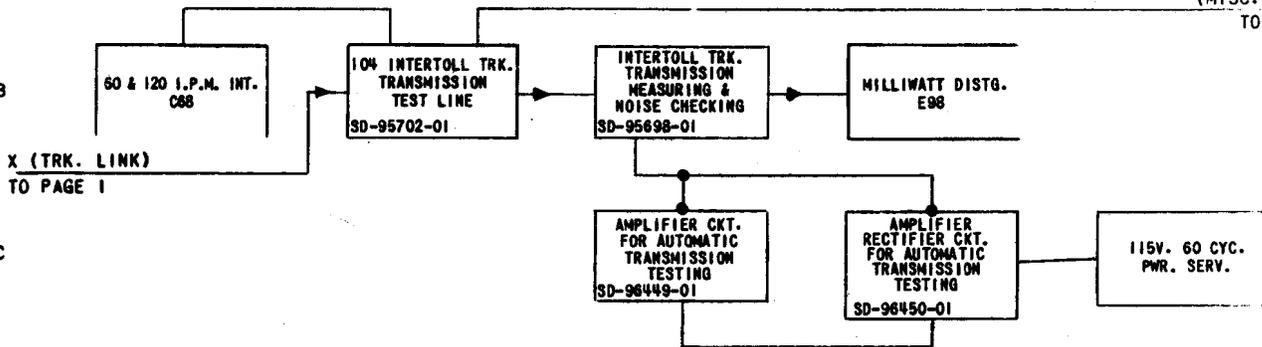
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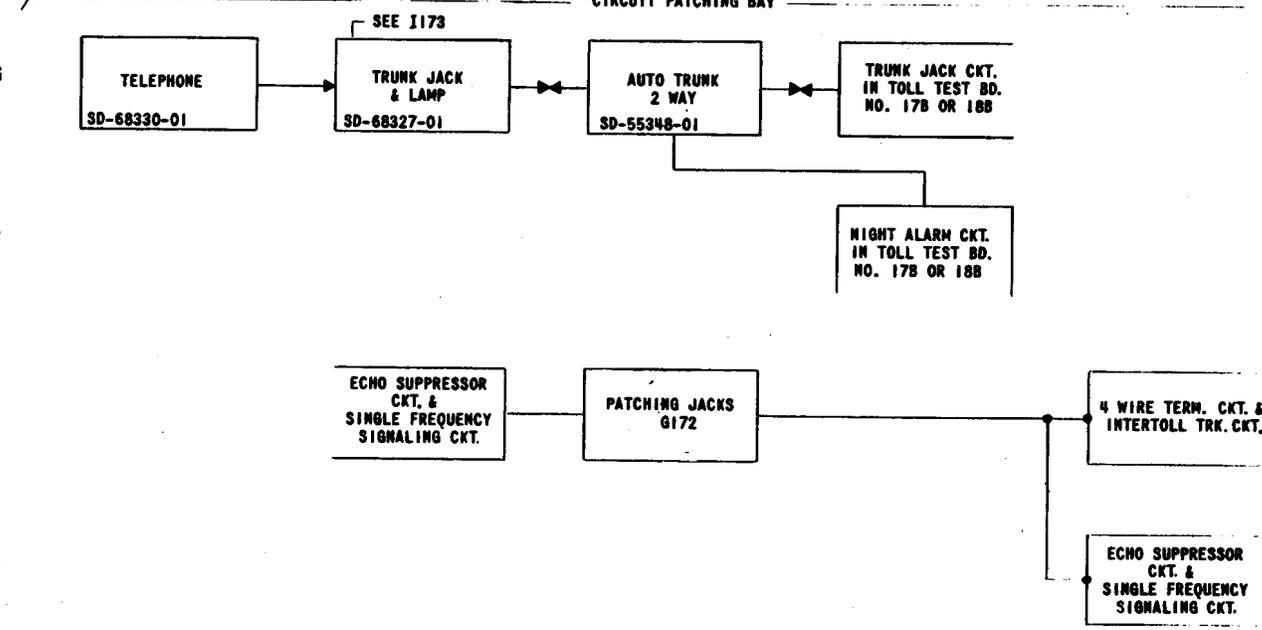
ROUTINE TEST

(MISC. FR.) MF  
TO PAGE 30



X (TRK. LINK)  
TO PAGE I

CIRCUIT PATCHING BAY



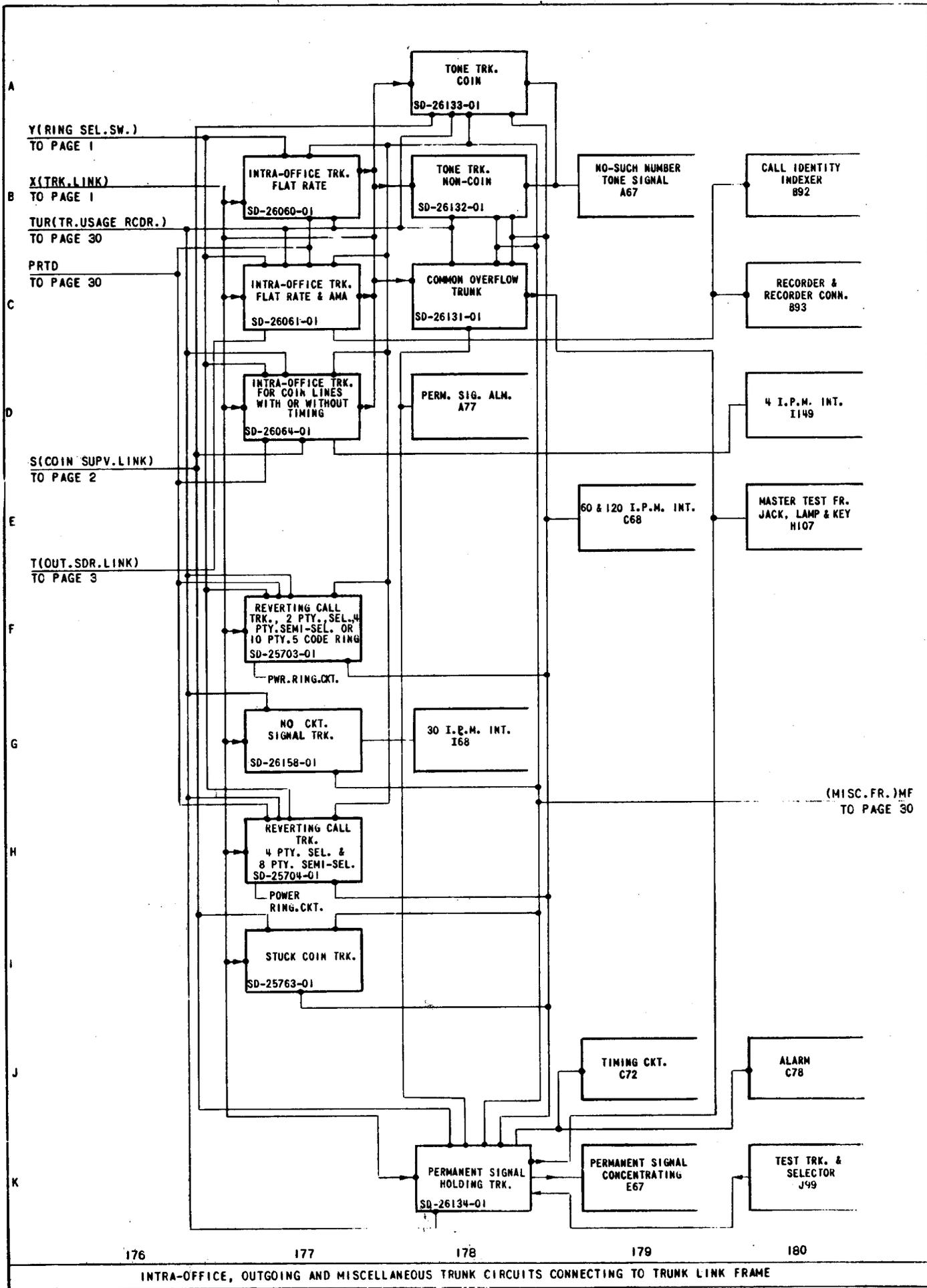
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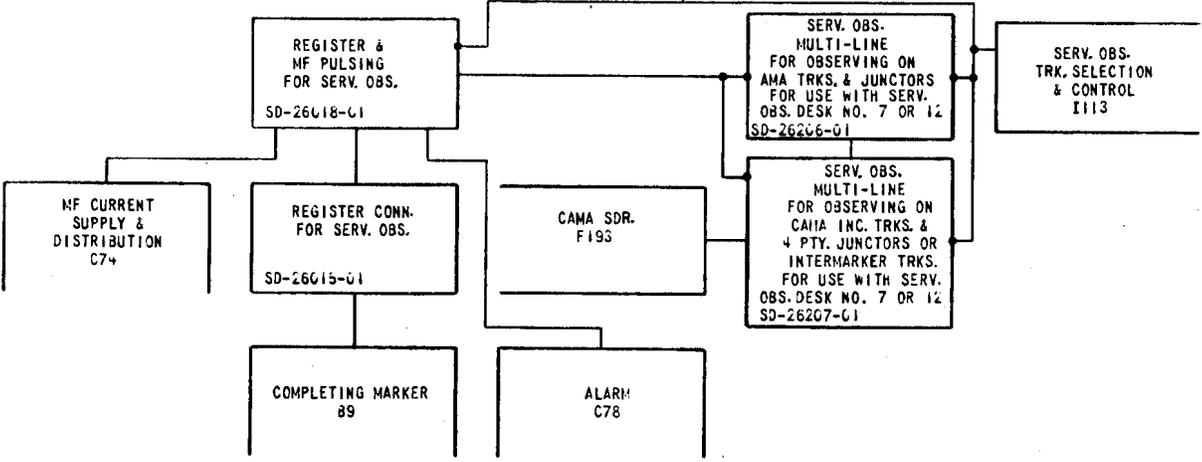
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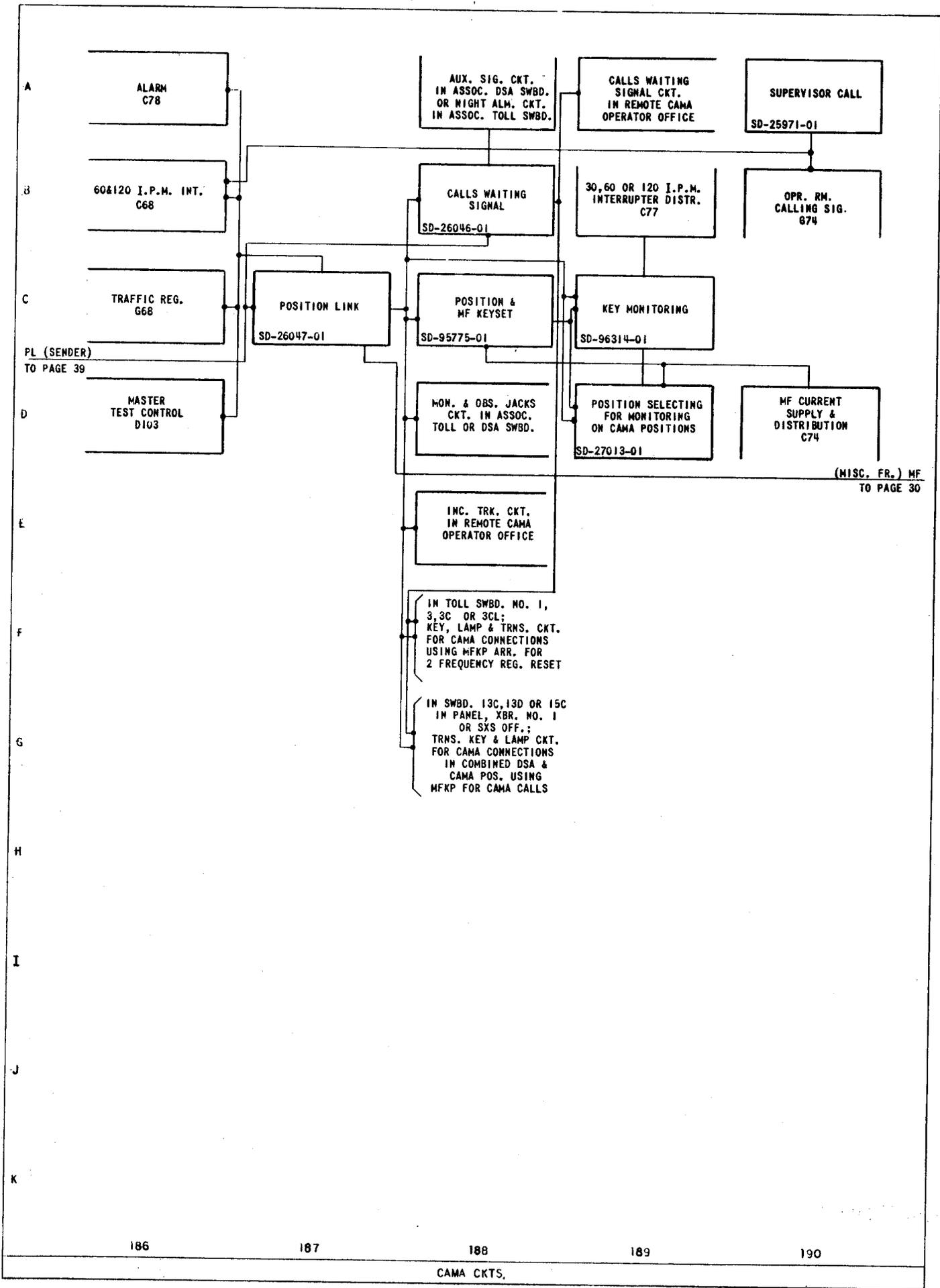


176 177 178 179 180  
 INTRA-OFFICE, OUTGOING AND MISCELLANEOUS TRUNK CIRCUITS CONNECTING TO TRUNK LINK FRAME

A  
B  
C  
D  
E  
F  
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H  
I  
J  
K



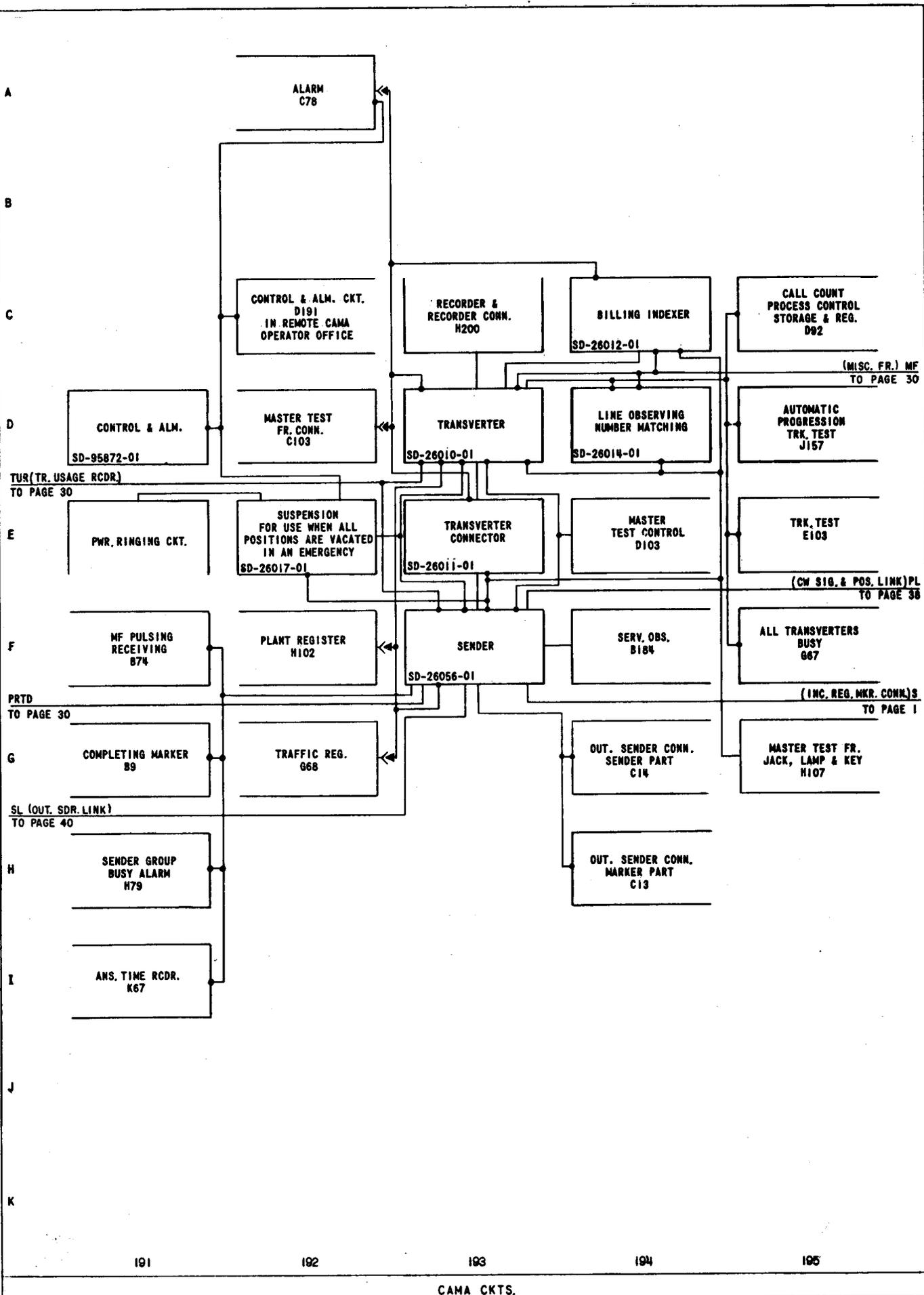
181                      182                      183                      184                      185



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PL (SENDER)  
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CAMA CKTS.



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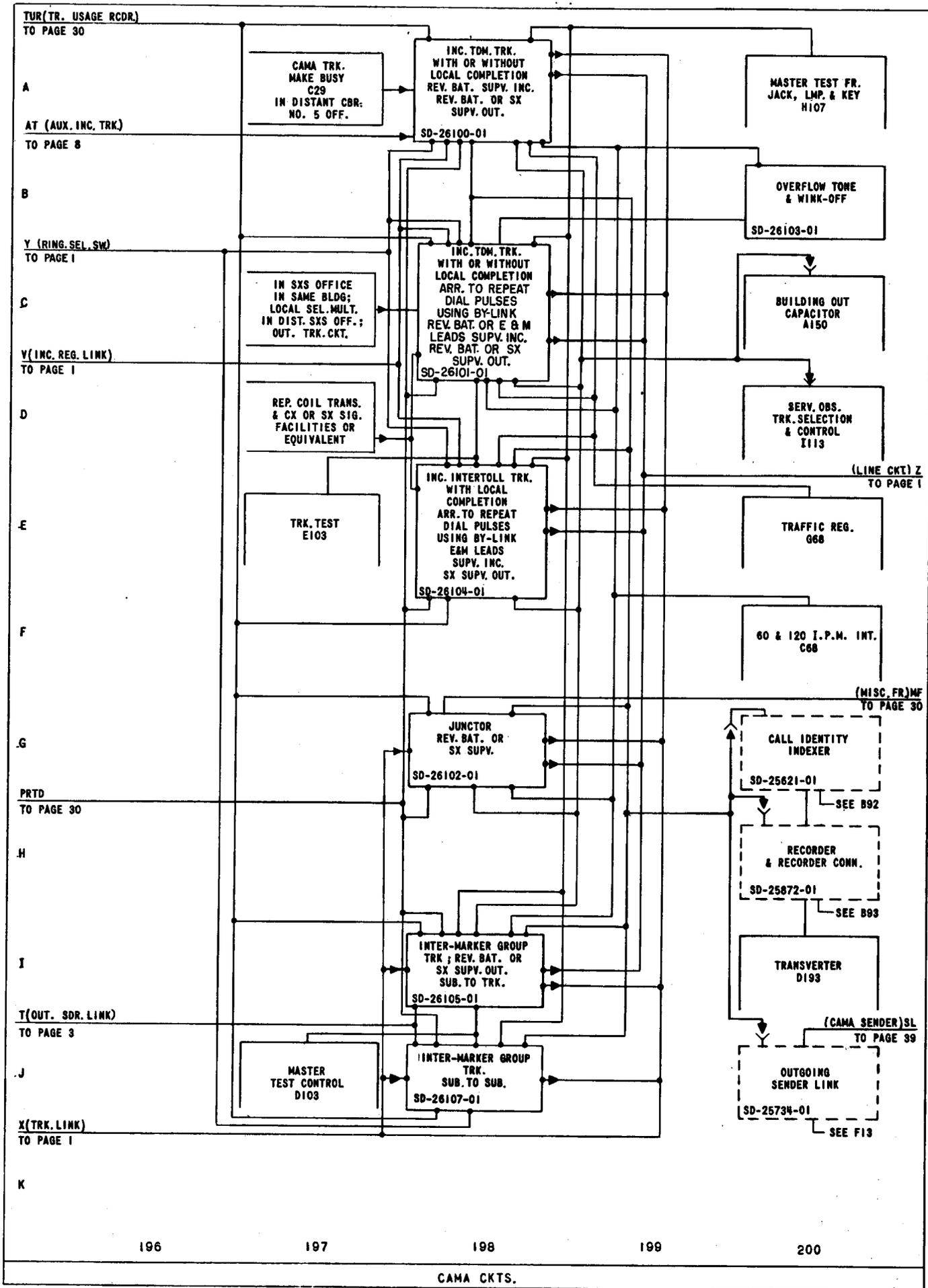
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CAMA CKTS.



TUR (TR. USAGE RCDR.)  
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AT (AUX. INC. TRK.)  
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Y (RING. SEL. SW)  
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Y (INC. REG. LINK)  
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PRTD  
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I

T (OUT. SDR. LINK)  
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J

X (TRK. LINK)  
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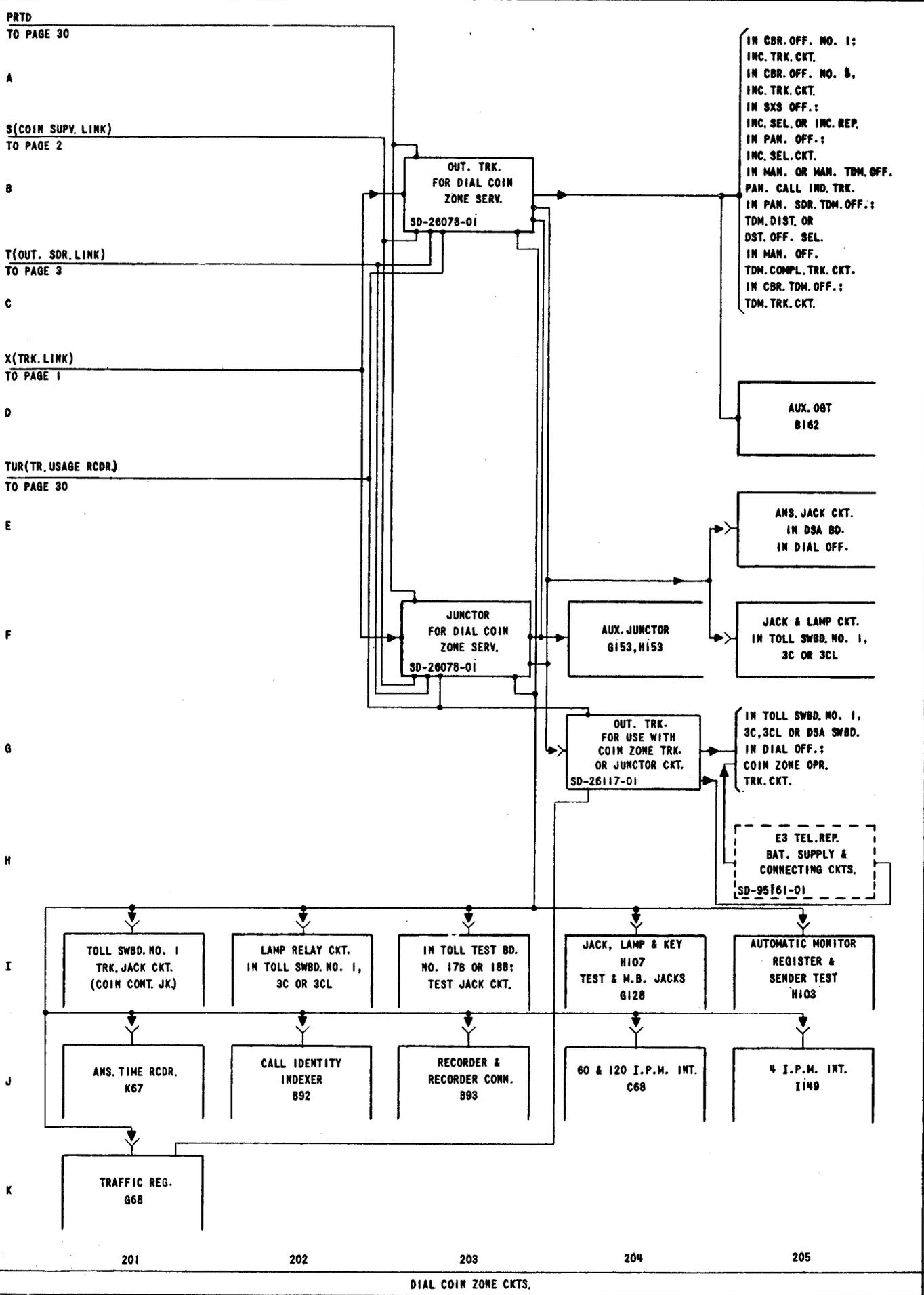
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CAMA CKTS.

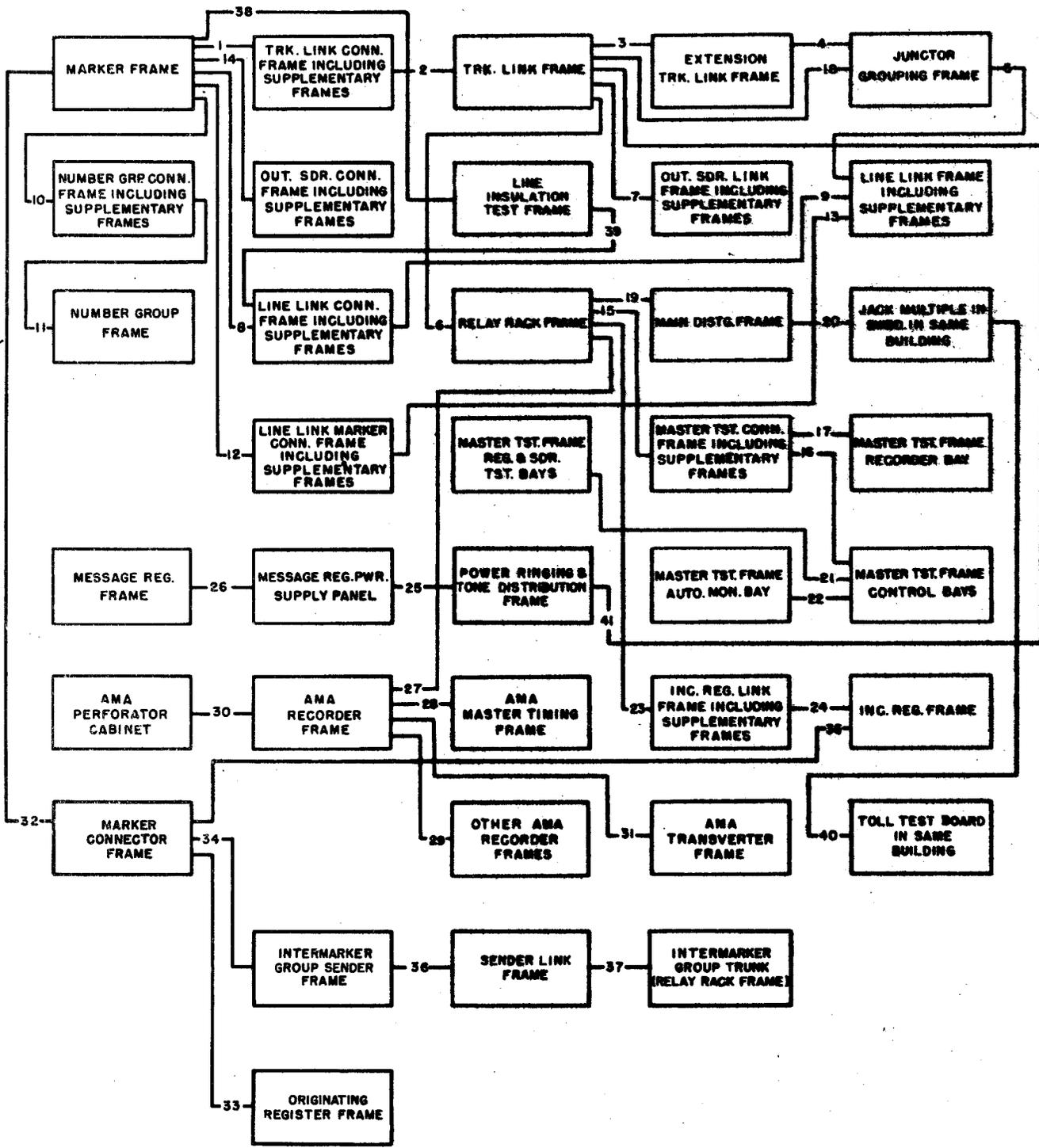


DIAL COIN ZONE CKTS.

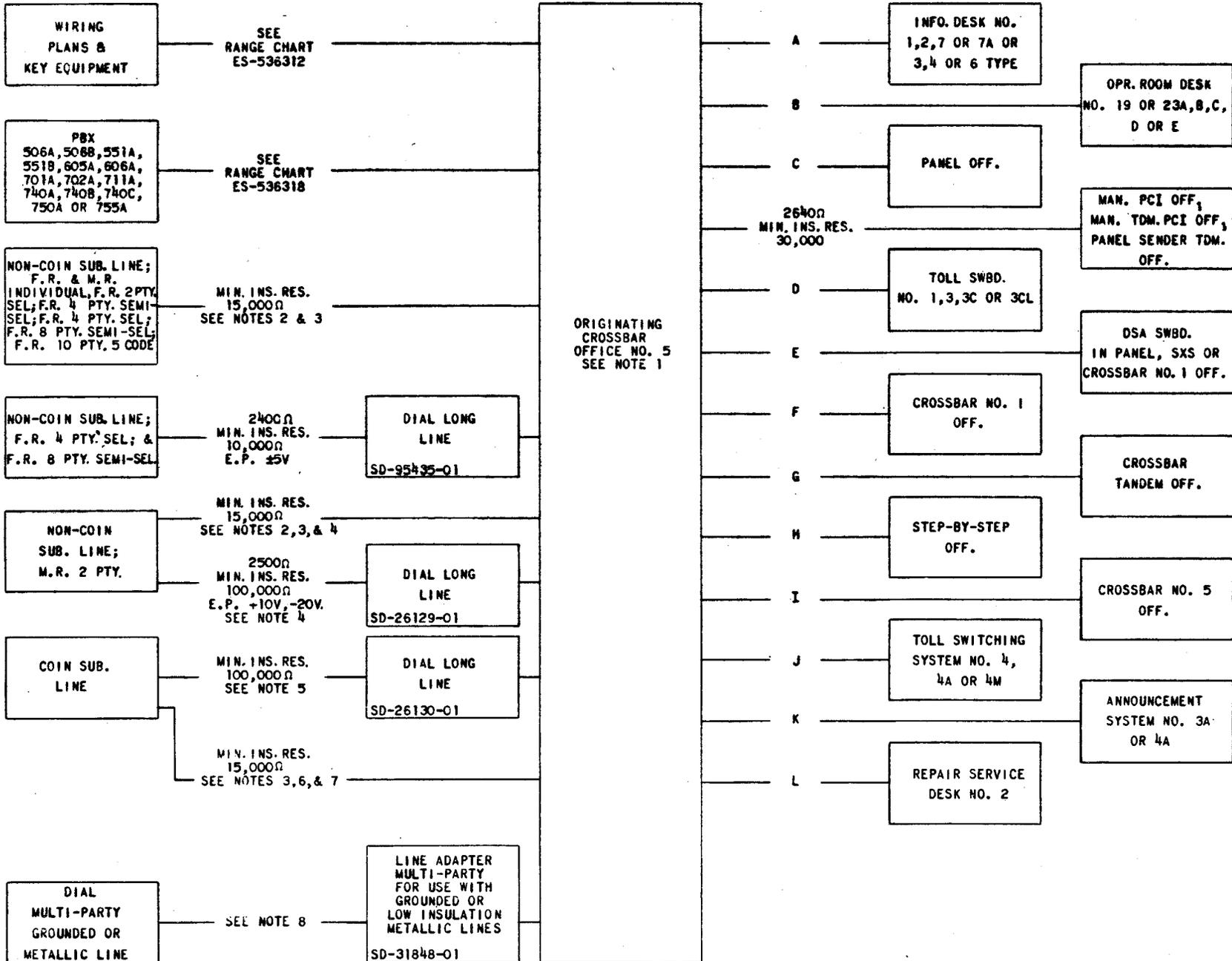
1. THE FOLLOWING TABLE COVERS THE DESIGNATIONS OF CRITICAL LEADS AND THEIR MAXIMUM ALLOWABLE RESISTANCE LIMITS BETWEEN VARIOUS FRAMES, RELAY RACKS AND CABINETS TO INSURE SATISFACTORY OPERATION OF THE ASSOCIATED CIRCUITS MOUNTED THEREON. THE LEADS ARE NUMBERED ON THE CHART FOR USE AS A REFERENCE FOR THE LEAD DESIGNATIONS IN THE TABLE. THE RESISTANCE LIMITS INCLUDE THE SWITCHBOARD CABLE STRIPPERS AND THE MULTIPLE OF THE LEADS ON THE SUPPLEMENTARY FRAMES.

LEAD NO.	LEAD DESIGNATIONS	RESISTANCE (OHMS)	SEE NOTE
1 + 2 + 3 + 4 + 5	T & R	31.46	1 (A)
1 + 2 + 3	J0-9, LH0-9, & BST	20	
1 + 2 + 6	RS 0-9	25	
1 + 2 + 7	SS 0-9	25	
8 + 9 OR 38 + 39 + 9	LH 0-4	10	
	LB	15	
	LL 0-9	15.35	
	VGB 0-13, HGO-9, BS, CS 0-29 & SMO-9	15	
10 + 11	WL, WG, WF, FT 0-3, FU 0-9, VG00-13, HGO-9, RCOI-15, & VFO-4	8	
12 + 13	VGA 0-13	15	
14	XS & XSMA	15	
15 + 16	NTLH	10	
17	SO-8	1	
4 + 5	S	5.34	
3	S	6.66	
6	S	8	
18 + 5	S	12	
19 + 20 + 40	S	10	
21	ALL LEADS	8	
22	ALL LEADS	8	
23 + 24	D	10	
25	MRS TP & MRS RP	1	
26	MRS R & MRS T	1	
27	RC	10	
	DJ & CH	9	
28	RL & RNT	5	
29	BT	6	
28 + 30	PAM & PA	10	
30 + 31	PAM & PA	10	
28 + 30	FO-7, EO-7, DO-7, CO-7, BO-7 & AO-2	30	
30 + 31	FO-7, EO-7, DO-7, CO-7, BO-7, & AO-2	30	
32 + 35 OR 32 + 34 OR 32 + 33	XII, II, LT, TT, FVD, OA, OB, PHC, THC, RO, INC, TAN, TOL, PCR, PCD, PCDI, OR	20	
32 + 37	T, R, D	10	
41	MRS-RP, MRS-TP	5	

(A) THIS IS NOT A RESISTANCE LIMIT BUT A CAPACITY LIMIT. THE LIMIT IS 31.46 OHMS OF CABLE AND FOR 1,2,3,4,OR 5 NO INDIVIDUAL RUN MAY EXCEED 18.29 OHMS OF CABLE.



MAXIMUM ALLOWABLE RESISTANCE LIMITS OF CRITICAL LEADS



LOOP DESIG.	CKT. TITLE	SD-DWG. NO.	OHMS MAX. EXT. CKT. LOOP			OHMS MAX. CONDUCTOR LOOP			OHMS MIN. INS. RES.	SEE NOTE	NO. OF MILES OF CABLE NOT TO EXCEED		REMARKS
			PLSG.	SUPV.	RING.	PLSG.	SUPV.	RING.			ANY LOADING		
A	OUT. INFO. TRK.	25698-01		3350			2995		30,000	14			
				3350			2550		30,000	42			
				3350			2200		30,000	43			
		25902-01		2550			2195		30,000	14			
				2550			2520		30,000	42			
				2550			2325		30,000	43			
		25925-01		NONE			1920		30,000	14			
				NONE			3030		30,000	42			INDUCTOR ONLY USED
			NONE			4050		30,000	43				
OUT. INCPT. TRK.	26122-01		3525			2910		30,000	44,45				
VACANT CODE INCPT. TRK.	26090-01		3615			3000		30,000	44,45				
	26091-01		3615			3000		30,000	44,45				
B	OUT. INFO. TRK.	25968-01		3350			2550		30,000	46,49			
				3350			3120		30,000	47,48			
		25902-01		2550			2520		30,000	46,49			
				2550			2320		30,000	47,48			
		25925-01		NONE			3030		30,000	46			
				NONE			4450		30,000	48			INDUCTOR ONLY USED
				NONE			6450		30,000	49			
		VACANT CODE INCPT. TRK.	26090-01		3615			3000		30,000	10,11		
			26091-01		3615			3000		30,000	10,11		
OUT. INCPT. TRK.	26122-01		3525			2910		30,000	10,11				
C	OUTGOING TRK.	26085-01 (TYPICAL)	8000			1300			30,000	38	12	RP PULSING	
						2010			30,000	39	20		
						1640			30,000	40	14		
						2700			30,000	41	24		
D	OFFICIAL PBX OR VERIFICATION REQUEST TRK.	25696-01		3000			2690		30,000	12,25			
	REC. COMPL. TRK.	25923-01 25923-02 25923-03 25923-04		3740			2945		60,000	13,15			
		26090-01		3615			2875		60,000	13,17			
		26091-01		3615			2875		60,000	13,15,16			
	COIN SUPERVISORY	25736-01		6000			3540		30,000	18,19,20,21		RANGE IS FOR EACH PAIR OF CONDUCTORS MAX. E.P. ±20V.	
	CONCENTRATING FOR PERM. SIG. HOLDING TRKS.	25766-01		6490			3000		30,000	22,23,24		MAX. E.P. ±20V.	
	FREE TRK.	25889-01		3200			2890			12,25			
EMG. TRANSFER	95711-01		3250			2940		30,000	26				
E	SPECIAL SERV. TRK.	26090-01		3615			3000		30,000	27			
		26091-01		3615			3000		30,000	29			
	CONCENTRATING FOR PERM. SIG. HOLDING TRKS.	25766-01		6490			3000		30,000	22,32		MAX. E.P. ±20V.	
	EMG. TRANSFER	95711-01		3000			2715		30,000	33			
	COIN SUPERVISORY	25736-01		6000			3540		30,000	34		RANGE IS FOR EACH PAIR OF CONDUCTORS MAX. E.P. ±20V.	
OFFICIAL PBX OR VERIFICATION REQUEST TRK.	25696-01		3000			2715		30,000	35				
F	OUTGOING TRK.	26085-01 (TYPICAL)		8000			2900		30,000	36	32	RP PULSING	
	RP SENDER	26052-01	3300										
	OUTGOING TRK.	26085-01 (TYPICAL)		8000			5105		30,000	36	40	MF PULSING	
	MF SENDER	26051-01	6400										

RANGE CHART TABLE - ORIGINATING OFFICE END

LOOP DESIG.	CKT. TITLE	SD-DWG. NO.	OHMS MAX. EXT. CKT. LOOP			OHMS MAX. CONDUCTOR LOOP			OHMS MIN. INS. RES.	SEE NOTE	NO. OF MILES OF CABLE NOT TO EXCEED ANY LOADING	REMARKS
			PLSG	SUPV	RING	PLSG	SUPV	RING				
G	OUTGOING TRK.	26085-01 (TYPICAL)		8000		2885			30,000	50	34	DP PULSING
	DP SENDER	26050-01	6400									
	OUTGOING TRK.	26085-01 (TYPICAL)		8000		4705			60,000	50	40	MF PULSING
	MF SENDER	26051-01	6400									
	OUTGOING TRK.	26085-C1 (TYPICAL)		8000		2640			60,000	51		PCI PULSING
	PCI SENDER	26053-01	5850									
H	OUTGOING TRK.	26085-01 (TYPICAL)		8000		1200	1200		30,000	52		LOOP PULSING
				8000		1900	1900		30,000		BAT. & GRD. PULSING	
				8000		3000	3000		30,000		53	8-11 P.P.S.
				8000		1200	1200		30,000		54	
	DP SENDER	26050-01	6400	8000		2000	2000		30,000	55		
I	OUTGOING TRK.	26085-01 (TYPICAL)		8000		5520			30,000	56	60	MF PULSING
	MF SENDER	26051-01	6400									
J	OUTGOING TRK.	26085-01 (TYPICAL)		8000		3975			30,000	37		
	MF SENDER	26051-01	6400									
K	OUT. ANNOUNCEMENT TRK.	25689-01 25690-01		5500		4340			30,000	30, 31		
L	OUTGOING TRK.	26095-01		3500		2990			30,000	28		

NOTES:

1. ALL INTEROFFICE LOOP VALUES ON THE CHART INCLUDE THE RES. OF THE OUTSIDE CABLING, THE CENTRAL OFFICE WIRING AND THE HEAT COILS. THE RES. OF THE CENTRAL OFFICE APPARATUS IS NOT INCLUDED. FOR COIN AND NON-COIN LINES, VALUES ARE SHOWN IN TERMS OF CONDUCTOR LOOP BETWEEN THE CENTRAL OFFICE LINE CIRCUIT AND THE STATION APPARATUS, ALLOWING FOR A MAXIMUM OF 200 OHMS IN THE STATION APPARATUS IN ALL CASES EXCEPT FOR THE 191 COIN COLLECTOR, FOR WHICH A MAXIMUM OF 300 OHMS IS ALLOWED.
2. MAXIMUM ZUF BRIDGED CAPACITY FOR INDIVIDUAL NON-COIN LINES, MAXIMUM ZUF CAPACITY ON EITHER SIDE OF THE LINE TO GROUND FOR 2 PARTY SELECTIVE AND 4 PARTY SEMISELECTIVE LINES, MAXIMUM 2.5 UF CAPACITY FOR 10 PARTY 5 CODE RINGING LINES AND 4 PARTY SELECTIVE AND 0 PARTY SEMISELECTIVE LINES.
3. THE MAXIMUM CONDUCTOR LOOP RESISTANCE FOR SUBSCRIBER LINES IN SUPERIMPOSED AND AC-DC RINGING OFFICES USING THE AJ47 TRIP RELAY AND THE EA44 AND/OR EA36 LINE RELAYS WITH MINIMUM OFFICE VOLTAGES OF 45V. AND 48V. IS AS FOLLOWS: RANGE INFORMATION FOR OFFICES USING OTHER THAN THE AJ47 TRIP RELAY AND THE EA44 AND/OR EA36 LINE RELAYS ARE SHOWN IN BSP AA442.030. FOR GENERAL PRINCIPLES AND METHODS IN DETERMINATION OF RANGES FOR INTEROFFICE TRUNKS SEE BSP AA400.801.

MIN. DAT.	LINE RELAY	ALL NONCOIN LINES- EXCEPT PBX LINES AND TIP PARTY OF 2-PARTY LINES HAVING STATION IDENTIFICATION		TIP PARTY OF 2-PARTY LINES HAVING STATION IDENTIFICATION		COIN LINES-5-CENT INITIAL DEPOSIT TYPE COIN COLLECTOR (GROUND START) (SEE NOTE 9)		COIN LINES-10-CENT INITIAL DEPOSIT TYPE COIN COLLECTOR (GROUND START) (SEE NOTE 9)		EARTH POT. ±(VOLTS)	TYPE OF RINGING			
		1000-OHM STATION		3640-OHM STATION		MAX. COND. LOOP(OHMS)		MAX. COND. LOOP(OHMS)						
		RINGING	SILENT	RINGING	SILENT	RINGING	SILENT	RINGING	SILENT					
45	EA36 (SEC.WDG.OONLY)	1250	1250	1250	1250	1250	1250	1250	1250	1150	1150	0	SUPER-IMPOSED	
				1250	1250	1250	1250	1250	1250	1150	1150	5		
			1250	1250	1250	1250	1250	1200	1110	1110	10			
	1400	1420	1400	1420	1400	1420	1400	1420	1300	1320	0			
EA44 OR EA36 (PRI.& SEC.WDGS.) IN SERIES				1400	1420	1400	1420	1340	1340	1300	1300	5		
					1400	1420	1400	1420	1200	1200	1110	1110		10
	1380	1380	1380	1380	1380	1380	1380	1380	1380	1280	1280	0		
			1380	1380	1380	1380	1380	1380	1340	1340	1280	1280		5
EA36 (SEC.WDG.OONLY)				1380	1380	1380	1380	1200	1200	1200	1200	10		
	1400	1540	1400	1540	1400	1540	1400	1490	1300	1440	0			
			1400	1540	1400	1540	1340	1340	1300	1340	5			
			1400	1540	1400	1540	1200	1200	1200	1200	10			
EA44 OR EA36 (PRI.& SEC.WDGS.) IN SERIES	1250	1250	1250	1250	1250	1250	1250	1250	1250	1150	1150	0	AC-DC	
			1250	1250	1250	1250	1250	1250	1250	1150	1150	5		
			1250	1250	1250	1250	1200	1200	1110	1110	10			
	1520	1420	1450	1420	1500	1420	1450	1420	1320	1320	0			
EA36 (SEC.WDG.OONLY)			1440	1420	1480	1420	1340	1340	1300	1300	5			
			1420	1420	1470	1420	1200	1200	1110	1110	10			
	1380	1380	1380	1380	1380	1380	1380	1380	1280	1280	0			
			1380	1380	1380	1380	1340	1340	1280	1280	5			
EA44 OR EA36 (PRI.& SEC.WDGS.) IN SERIES			1380	1380	1380	1380	1200	1200	1200	1200	10			
	1640	1540	1600	1540	1640	1540	1490	1490	1470	1440	0			
			1590	1540	1630	1540	1340	1340	1340	1340	5			
			1570	1540	1620	1540	1200	1200	1200	1200	10			

4. MAXIMUM ALLOWABLE RESISTANCE OF RINGER IN TIP PARTY SUBSCRIBER SET FOR IDENTIFICATION PURPOSES IS 1100 OHMS. IN OFFICES WHERE TIP STATION IDENTIFICATION IS MADE WITH A 3640-OHM RINGER RESISTANCE IT WILL BE NECESSARY TO USE THE 1100-OHM RINGER RESISTANCE ON LINES ASSOCIATED WITH THE LONG LINE CIRCUIT.
5. THE CONDUCTOR LOOP RESISTANCE WITH AND WITHOUT THE S36 RELAY AT COIN STATION IS AS FOLLOWS:

EARTH POTENTIAL (VOLTS) ±	WITH S36 RELAY	MAX. LOOP RES. (OHMS)	MIN. LOOP RES. (OHMS)
0	YES	3000	1200
	NO	1900	
5	YES	2800	
	NO	1750	
10	YES	2600	
	NO	1600	
15	YES	2400	
	NO	1440	
20			
	NO	1290	

NOTES: (CONT.)

6. THE RANGE SHOWN FOR COIN SUBSCRIBER LINE USING OTHER THAN THE 10-CENT INITIAL DEPOSIT TYPE COIN COLLECTOR ALSO APPLIES TO SIDE TONE COIN COLLECTOR WITH ANTI-SIDE TONE SUBSET WHICH HAS JUF BRIDGED ACROSS THE LINE AT ALL TIMES.
7. FOR COIN TEST THE LIMITS ARE AS FOLLOWS:

CONDUCTOR LOOP	MIN. INS. RES.	MIN. COIN VOLTAGE	EARTH POTENTIAL	SUBSET RES.
1450Ω	10,000Ω	125V.	±10V.	200Ω
1420Ω	10,000Ω	125V.	±10V.	300Ω

8. THE SUBSCRIBER LOOP RANGE SHALL NOT EXCEED THE VALUES SHOWN IN TABLES A & B BELOW.

GROUND RETURN LINES	SUB. LOOP RANGE	MIN. INS. RES.	E.P.
	1200Ω	3000Ω	±6V.
	1200Ω	3500Ω	±16V.

METALLIC LINES	SUB. LOOP RANGE	MIN. INS. RES.		E.P.
		WIRE TO WIRE	EITHER WIRE TO GRD.	
	1200Ω	2700Ω	1600Ω	±6V.
1100Ω	2700Ω	1900Ω	±16V.	
1700Ω	3900Ω	2200Ω	±6V.	
1600Ω	3900Ω	2600Ω	±16V.	
2100Ω	10,000Ω	10,000Ω	±5V.	

9. COIN RANGES ARE BASED ON A MINIMUM 125-VOLT COIN BATTERY. IN OFFICES WHERE THE COIN POTENTIAL IS OTHER THAN 125 VOLTS MINIMUM, THE RANGE CAN BE COMPUTED BY APPLYING THE FOLLOWING FORMULA.

CONDUCTOR LOOP (OHMS)

$$= R_{LK} \times \frac{2[(V-63)-E.P.]}{.065 \times R_{LK} + 63} - 305$$

WHERE V = COIN CONTROL VOLTAGE

E.P. = + OR - EARTH POTENTIAL

R<sub>LK</sub> = MIN. INSULATION RESISTANCE

TO OBTAIN EXTERNAL CIRCUIT LOOP, ADD 200 OHMS FOR LINES WITH THE 5-CENT INITIAL DEPOSIT TYPE COIN COLLECTOR AND 300 OHMS FOR LINES WITH THE 10-CENT INITIAL DEPOSIT TYPE COIN COLLECTOR.

10. WHEN DISTANT TRUNK SD-95789-01 IS USED IN OPERATING ROOM DESK NO. 19 OR 23E.
11. WHEN DISTANT TRUNK SD-95740-01 IS USED IN OPERATING ROOM DESK NO. 23A, B, C OR D.
12. WHEN DISTANT TRUNK SD-55778-01 IS USED IN SWITCHBOARD NO. 3, 3C OR 3CL.
13. WHEN DISTANT TRUNK SD-55873-01 IS USED IN TOLL SWITCHBOARD NO. 1.
14. WHEN DISTANT TRUNK SD-90434-01 IS USED IN INFORMATION DESK NO. 1.
15. WHEN DISTANT TRUNK SD-56127-01 IS USED IN SWITCHBOARD NO. 3.
16. WHEN DISTANT TRUNK SD-55875-01 IS USED IN SWITCHBOARD NO. 3C OR 3CL.
17. WHEN DISTANT TRUNK SD-55872-01 IS USED IN SWITCHBOARD NO. 3, 3C OR 3CL.
18. THE 6,000Ω VALUE APPLIES TO EACH TRUNK CONDUCTOR.
19. WHEN DISTANT TRUNK SD-56032-01 IS USED IN SWITCHBOARD NO. 3C OR 3CL.
20. WHEN DISTANT TRUNK SD-55844-01 IS USED IN SWITCHBOARD NO. 3, 3C OR 3CL.
21. WHEN DISTANT TRUNK SD-56123-01 IS USED IN TOLL SWITCHBOARD NO. 1.
22. THE 6490Ω VALUE APPLIES TO EACH TRUNK CONDUCTOR.
23. WHEN DISTANT TRUNK SD-56119-01 IS USED IN TOLL SWITCHBOARD NO. 1.
24. WHEN DISTANT TRUNK SD-55889-01 IS USED IN SWITCHBOARD NO. 3, 3C OR 3CL.
25. WHEN DISTANT TRUNK SD-56241-01 IS USED IN TOLL SWITCHBOARD NO. 1.

NOTES: (CONT.)

26. WHEN DISTANT TRUNK SD-95713-01 IS USED IN TOLL SWITCHBOARD NO. 1, 3, 3C OR 3CL.
27. WHEN DISTANT TRUNK SD-95745-01 IS USED IN DSA SWITCHBOARD.
28. WHEN DISTANT TRUNK SD-95782-01 IS USED AT REPAIR SERVICE DESK NO. 2.
29. WHEN DISTANT TRUNK SD-96365-01 IS USED IN DSA SWITCHBOARD.
30. WHEN DISTANT TRUNK SD-25940-01 IS USED AT ANNOUNCEMENT SYSTEM NO. 4A.
31. WHEN DISTANT TRUNK SD-95777-01 IS USED AT ANNOUNCEMENT SYSTEM NO. 3A.
32. WHEN DISTANT TRUNK SD-95474-01 IS USED IN DSA SWITCHBOARD.
33. WHEN DISTANT TRUNK SD-95713-01 IS USED IN DSA SWITCHBOARD.
34. WHEN DISTANT TRUNK SD-95473-01 IS USED IN DSA SWITCHBOARD.
35. WHEN DISTANT TRUNK SD-95673-01 IS USED IN DSA SWITCHBOARD.
36. WHEN DISTANT TRUNK SD-26204-01 IS USED IN CROSSBAR NO. 1 OFFICE.
37. WHEN DISTANT TRUNK SD-68358-01 IS USED IN TOLL SWITCHING SYSTEM NO. 4A OR SD-68331-01 IS USED IN TOLL SWITCHING SYSTEM NO. 4 OR 4M.
38. WHEN TERMINATING PANEL OFFICE IS GROUND CUTOFF TYPE AND REPEATING INCOMING SELECTORS ARE NOT USED.
39. WHEN TERMINATING PANEL OFFICE IS GROUND CUTOFF TYPE AND REPEATING INCOMING SELECTORS ARE USED.
40. WHEN TERMINATING PANEL OFFICE IS BATTERY CUTOFF TYPE AND INCOMING SELECTOR IS EQUIPPED WITH R132 RELAY.
41. WHEN TERMINATING PANEL OFFICE IS BATTERY CUTOFF TYPE AND INCOMING SELECTOR IS EQUIPPED WITH N3 RELAY.
42. WHEN DISTANT TRUNK SD-90527-01 IS USED IN INFORMATION DESK NO. 2, 7 OR 7A.
43. WHEN DISTANT TRUNK SD-96355-01 IS USED IN INFORMATION DESK NO. 3, 4 OR 6 TYPE.
44. WHEN DISTANT TRUNK SD-95789-01 IS USED IN INFORMATION DESK NO. 1, 2, 7 OR 7A.
45. WHEN DISTANT TRUNK SD-95740-01 OR SD-95426-01 IS USED IN INFORMATION DESK NO. 3, 4 OR 6 TYPE.
46. WHEN DISTANT TRUNK SD-90527-01 IS USED IN OPERATING ROOM DESK NO. 19.
47. WHEN DISTANT TRUNK SD-95585-01 IS USED IN OPERATING ROOM DESK NO. 23E.
48. WHEN DISTANT TRUNK SD-95513-01 IS USED IN OPERATING ROOM DESK NO. 23A, B, C OR D.
49. WHEN DISTANT TRUNK SD-95580-01 IS USED IN OPERATING ROOM DESK NO. 23E.
50. WHEN DISTANT TRUNK SD-25887-01 IS USED IN CROSSBAR TANDEM OFFICE.
51. WHEN DISTANT TRUNK SD-25520-01 OR SD-25956-01 IS USED AT CROSSBAR TANDEM OFFICE.
52. WHEN DISTANT TRUNK SD-30200-01 (TYPICAL) IS USED AT SXS OFFICE.
53. WHEN DISTANT TRUNK SD-31648-01 IS USED AT SXS OFFICE.
54. WHEN DISTANT TRUNK SD-31841-01 IS USED AT SXS OFFICE WITH 221 FAE PULSING RELAY.
55. WHEN DISTANT TRUNK SD-31841-01 IS USED AT SXS OFFICE WITH 221 FAF PULSING RELAY.
56. WHEN DISTANT TRUNK SD-26070-01 (TYPICAL) IS USED AT CROSSBAR NO. 5 OFFICE.

TOLL SWBD. NO. 1  
OR SWBD. NO. 3,3C  
OR 3CL

A

TOLL SWITCHING  
SYSTEM  
NO. 4,4A OR 4M

B

CROSSBAR OFF.  
NO. 1

C

CROSSBAR TANDEM  
OFF.

D

CROSSBAR OFF.  
NO. 5

E

SXS OFF.

F

DSA SWBD. IN  
CROSSBAR NO. 1,  
PANEL OR SXS OFF.

G

PANEL, PANEL SDR.  
TANDEM

H

MAN. SWBD.  
NO. 1,1D,10,  
11 OR 12

I

TERMINATING  
CROSSBAR  
OFFICE NO. 5  
SEE NOTE 1  
PAGE 47

SEE  
RANGE CHART  
ES-536312

WIRING  
PLANS &  
KEY  
EQUIPMENTS

SEE  
RANGE CHART  
ES-536318

PBX  
506A, 506B,  
551A, 551B,  
605A, 606A,  
701A, 702A,  
711A, 740A,  
740B, 740C,  
750A OR 755A

MIN. INS. RES.  
15,000Ω  
SEE NOTES 2&3  
PAGE 47

NON-COIN  
SUB. LINE:  
F.R. & M.R.  
INDIVIDUAL  
F.R. 2 PTY. SEL;  
F.R. 4 PTY.  
SEMI-SEL;  
F.R. 8 PTY.  
SEMI-SEL;  
F.R. 10 PTY.  
5 CODE

DIAL LONG  
LINE  
SD-95435-01

2400Ω  
MIN. INS. RES.  
10,000Ω  
E.P. ± 5V.

NON-COIN SUB. LINE;  
F.R. 4 PTY. SEL; &  
F.R. 8 PTY. SEMI-SEL

MIN. INS. RES.  
15,000Ω  
SEE NOTES 2,3, & 4  
PAGE 47

NON-COIN  
SUB. LINE;  
M.R. 2 PTY.

DIAL LONG  
LINE  
SD-26129-01

2500Ω  
MIN. INS. RES.  
100,000Ω  
E.P. +10V, -20V.  
SEE NOTE 4  
PAGE 47

DIAL LONG  
LINE  
SD-26130-01

MIN. INS. RES.  
100,000Ω  
SEE NOTE 5  
PAGE 47

COIN SUB.  
LINE

LINE ADAPTER  
MULTI-PARTY  
FOR USE WITH  
GROUNDED OR  
LOW INSULATION  
METALLIC LINES  
SD-31848-01

MIN. INS. RES.  
15,000Ω  
SEE NOTE 3 PAGE 47  
& NOTES 6 & 7 PAGE 48

DIAL  
MULTI-PARTY  
GROUNDED OR  
METALLIC LINE

SEE NOTE 8  
PAGE 48

LOOP DESIG	CKT TITLE	SD-DWG NO.	OHMS MAX EXT CKT LOOP			OHMS MAX CONDUCTOR LOOP			OHMS MIN INS RES	SEE NOTE	NO. OF MILES OF CABLE NOT TO EXCEED	REMARKS		
			PLSG	SUPV	RING	PLSG	SUPV	RING					ANY LOADING	
A	INCOMING TRK	26083-01 OR 26074-01 (TYPICAL)		6000			4480		30,000	1,9	60	MF PULSING		
				6000			3810		30,000	2,10				
				6000			3950		30,000	36,11			42	DP PULSING
				6000			4135		30,000	5,7			43	REPEATED DIALING
				3115			2900		30,000	34,6,8			32	RP PULSING
B	INCOMING TRK	26070-01 (TYPICAL)		6400			3925		30,000	12	42	DP PULSING		
				6400			5825		30,000	12,13	60	MF PULSING		
C	INCOMING TRK	26070-01 (TYPICAL)		3115			2900		30,000	14	32	RP PULSING		
D	INCOMING TRK	26070-01 (TYPICAL)		3115			2900		30,000	15	32	RP PULSING		
				6400			4000		30,000	15	42	DP PULSING		
				6400			5470		30,000	15	60	MF PULSING		
E	INCOMING TRK	26070-01 (TYPICAL)		6400			5520		30,000	16	60	MF PULSING		
F	INCOMING TRK USING BY-LINK	26077-01		2410			2400 2400		30,000	19	60	WHEN BAT. & GRD PULSING IS USED		
				2410			2000 2120		30,000	17				
				2410			2000 2090		30,000	18				
				4465			4200 4125		30,000	20,23				
				4465			4095 4465		30,000	21,22,23				
G	INCOMING TRK	26083-01 OR 26074-01 (TYPICAL) 26070-01 (TYPICAL)		6400			3810		30,000	27	60	MF PULSING		
				3115			2900		30,000	24	32	RP PULSING		
				6400			3885		30,000	25	42	DP PULSING		
				6400			5785		30,000	26	60	MF PULSING		
				6400			3885		30,000	28	42	DP PULSING		
H	INCOMING TRK	26070-01 (TYPICAL)		3115			2900		30,000	33,34	32	RP PULSING		
I	INCOMING TRK	26070-01 (TYPICAL)		6400			4120		30,000	29	42	DP PULSING		
				6400			5990		30,000	30,31	60	IMP TRANS	MF PULSING	
				6400			6060		30,000	30,32		REP COIL TRANS		

NOTES:

1. WHEN DISTANT TRUNK SD-64404-01 IS USED IN TOLL SWITCHBOARD NO. 1.
2. WHEN DISTANT TRUNK SD-56144-01 IS USED IN TOLL SWITCHBOARD NO. 1.
3. WHEN DISTANT TRUNK SD-56128-01 IS USED IN TOLL SWITCHBOARD NO. 1.
4. WHEN DISTANT TRUNK SD-56246-01 IS USED IN TOLL SWITCHBOARD NO. 1.
5. WHEN DISTANT TRUNK SD-64898-01 IS USED IN TOLL SWITCHBOARD NO. 1.
6. WHEN DISTANT TRUNK SD-55291-01 IS USED IN SWITCHBOARD NO. 3, 3C OR 3CL.
7. WHEN DISTANT TRUNK SD-55346-01 IS USED IN SWITCHBOARD NO. 3, 3C OR 3CL.
8. WHEN DISTANT TRUNK SD-56245-01 IS USED IN SWITCHBOARD NO. 3, 3C OR 3CL.
9. WHEN DISTANT TRUNK SD-55224-01 IS USED IN SWITCHBOARD NO. 3.
10. WHEN DISTANT TRUNK SD-55879-01 IS USED IN SWITCHBOARD NO. 3C OR 3CL.
11. WHEN DISTANT TRUNK SD-56105-01 IS USED IN SWITCHBOARD NO. 3, 3C OR 3CL.
12. WHEN DISTANT TRUNK SD-68242-01 IS USED IN TOLL SWITCHING SYSTEM NO. 4A.
13. WHEN DISTANT TRUNK SD-68325-01 IS USED IN TOLL SWITCHING SYSTEM NO. 4 OR 4M.
14. WHEN DISTANT TRUNK SD-26201-01 (TYPICAL) IS USED IN CROSSBAR OFFICE NO. 1.
15. WHEN DISTANT TRUNK SD-25887-01 IS USED IN CROSSBAR TANDEM OFFICE.
16. WHEN DISTANT TRUNK SD-26085-01 (TYPICAL) IS USED IN CROSSBAR NO. 5 OFFICE.
17. WHEN DISTANT TRUNK SD-31779-01 IS USED IN SXS OFFICE.
18. WHEN DISTANT TRUNK SD-32008-01 IS USED IN SXS OFFICE.
19. WHEN DISTANT TRUNK SD-31142-01 IS USED IN SXS OFFICE.
20. WHEN DISTANT TRUNK SD-32087-01 IS USED IN SXS OFFICE.
21. WHEN DISTANT TRUNK SD-32204-01 IS USED IN SXS OFFICE.
22. WHEN DISTANT TRUNK SD-31949-01 IS USED IN SXS OFFICE.
23. WHERE THE ENTIRE LENGTH OF THE CABLE IS 19 GAUGE, THE MAXIMUM MILES OF CABLE IS 32; IN ALL OTHER CASES THE MAXIMUM MILES OF CABLE IS 24.
24. WHEN DISTANT TRUNK SD-25446-01 (TYPICAL) IS USED IN DSA SWITCHBOARD.
25. WHEN DISTANT TRUNK SD-95471-01 (TYPICAL) IS USED IN DSA SWITCHBOARD.
26. WHEN DISTANT TRUNK SD-95425-01 (TYPICAL) IS USED IN DSA SWITCHBOARD.
27. WHEN DISTANT TRUNK SD-95566-01 (TYPICAL) IS USED IN DSA SWITCHBOARD.
28. WHEN DISTANT TRUNK SD-96164-01 IS USED IN DSA SWITCHBOARD.
29. WHEN DISTANT TRUNK SD-14192-01 OR SD-14193-01 IS USED IN MANUAL SWITCHBOARD NO. 1, 1D, 1O OR 11.
30. WHEN DISTANT TRUNK SD-15193-01 IS USED IN MANUAL SWITCHBOARD NO. 12.
31. WHEN DISTANT TRUNK SD-12570-01 IS USED IN MANUAL SWITCHBOARD NO. 1, 1D OR 11.
32. WHEN DISTANT TRUNK SD-12999-01 IS USED IN MANUAL SWITCHBOARD NO. 1, 1D OR 11.
33. WHEN DISTANT TRUNK SD-21627-01 (TYPICAL) IS USED IN PANEL OFFICE.
34. WHEN DISTANT TRUNK SD-21143-01 (TYPICAL) IS USED IN PANEL SENDER TANDEM OFFICE.

TABLE I

INCOMING TRUNK CIRCUITS																
KIND OF PULSING FROM ORG. OFF.	KIND OF SUPV.	LOCATION OF TYPICAL CKTS. ON KEY SHEET	ORG. OFF. (SEE NOTE 1)	START PULSING SIG. FROM CBR. NO. 5 OFF. (SEE NOTE 2)	KIND OF RING. START SIG.	POLARITY OF INCOMING LEADS LOOKING INTO INCOMING TRUNK						SEE NOTE				
						LEADS	NORMAL	INC. REG. SEIZED	INC. REG. READY TO RECEIVE PULSING	AWTC. ANSWER (ON HOOK)	ANSWER (OFF HOOK)					
RP	REV. BAT.	A37, B37, G37	TOLL DSA, TOLL, PAN., PAN. SDR. TDM., CBR. NO. 1, CBR. NO. 5 OR CBR. TDM.	NONE	NONE	T	BAT.	BAT.	BAT.	BAT.	GRD.					
						R	GRD.	GRD.	GRD.	GRD.	BAT.					
		B47, D47	TOLL DSA OR TOLL SWBD.	NONE	SX	T	BAT.	BAT.	BAT.	BAT.	GRD.					
						R	GRD.	GRD.	GRD.	GRD.	BAT.					
DP (SEE NOTE 4)	REV. BAT.	A37, B37, G37	TOLL DSA, TOLL OR MAN. SWBD.	DELAY DIAL	NONE	T	BAT.	BAT.	GRD.	GRD.	BAT.	3				
						R	GRD.	GRD.	BAT.	BAT.	GRD.					
			OSA SWBD.	DELAY DIAL	NONE	T	GRD.	GRD.	BAT.	BAT.	GRD.					
						R	BAT.	BAT.	GRD.	GRD.	BAT.					
			CBR. TDM. OFF. FOR SXS AREAS ONLY OR CBR. NO. 5 OFF.	WINK	NONE	T	GRD.	BAT.	GRD.	GRD.	BAT.					
						R	BAT.	GRD.	BAT.	BAT.	GRD.					
		CBR. TDM. OFF. FOR CBR. & PANEL AREAS WITH OR WITHOUT SOME SXS OFFICES OR PAN. SENDER TDM. OFF.	WINK	NONE	T	BAT.	GRD.	BAT.	BAT.	GRD.						
					R	GRD.	BAT.	GRD.	GRD.	BAT.						
		G 47	SXS (BY LINK OPERATION)	NONE	NONE	T	GRD.	GRD.	GRD.	GRD.	BAT.					
						R	BAT.	BAT.	BAT.	BAT.	GRD.					
		B47, D47	TOLL DSA OR TOLL SWBD.	DELAY DIAL	SX	T	BAT.	BAT.	GRD.	GRD.	BAT.	3, 6				
						R	GRD.	GRD.	BAT.	BAT.	GRD.					
DSA SWBD.	DELAY DIAL					SX	T	GRD.	GRD.	BAT.	BAT.		GRD.			
							R	BAT.	BAT.	GRD.	GRD.		BAT.			
MF	REV. BAT.	A37, B37, G37	TOLL DSA, TOLL OR MAN. SWBD.	DELAY DIAL	NONE	T	BAT.	BAT.	GRD.	GRD.	BAT.	3				
						R	GRD.	GRD.	BAT.	BAT.	GRD.					
			OSA SWBD.	DELAY DIAL	NONE	T	GRD.	GRD.	BAT.	BAT.	GRD.					
						R	BAT.	BAT.	GRD.	GRD.	BAT.					
			CBR. NO. 5 OFF.	WINK	NONE	T	GRD.	BAT.	GRD.	GRD.	BAT.					
						R	BAT.	GRD.	BAT.	BAT.	GRD.					
		B37	TOLL DSA, TOLL OR TOLL SW. OFF. NO. 4 OR 4A	DELAY DIAL	NONE	T	BAT.	BAT.	GRD.	GRD.	BAT.	3				
						R	GRD.	GRD.	BAT.	BAT.	GRD.					
		B47, D47	TOLL DSA OR TOLL SWBD.	DELAY DIAL	SX	T	BAT.	BAT.	GRD.	GRD.	BAT.	3				
						R	GRD.	GRD.	BAT.	BAT.	GRD.					
						OSA SWBD.	DELAY DIAL	SX	T	GRD.	GRD.		BAT.	BAT.	GRD.	
									R	BAT.	BAT.		GRD.	GRD.	BAT.	
NONE (STFD.)	REV. BAT.	B122, D122	MAN. OR MAN. TDM. SWBD.	NONE	NONE	T	GRD.	-	-	GRD.	BAT.					
						R	BAT.	-	-	BAT.	GRD.					
		F122, H122	TOLL DSA OR TOLL SWBD.	NONE	SX	T	GRD.	-	-	GRD.	BAT.					
						R	BAT.	-	-	BAT.	GRD.					
		B121	MAN. SWBD. (AUX. CONVERTS REV. BAT. SUPV. TO HIGH-LOW SUPV.)	NONE	NONE	T	HIGH RES. BRIDGE	-	-	HIGH RES. BRIDGE	LOW RES. BRIDGE					
						R	BAT.	-	-	BAT.	GRD.					

TABLE 2

OUTGOING TRUNK CIRCUITS											
KIND OF PULSING FROM CBR. NO.5 OFF.	KIND OF SUPV.	LOCATION OF TYPICAL CKTS. ON KEY SHEET	TER. OFF.	START PULSING SIG. FROM TER. OFF. (SEE NOTE 2)	POLARITY OF OUTGOING LEADS TO TERMINATING OFFICE AT VERTICAL MAIN DISTG. FRAME						SEE NOTE
					LEADS	NORMAL	CBR. NO. 5 SDR. AWTG. SIG. TO START PULSING	CBR. NO. 5 SDR. STARTS PULSING	AWAITING ANSWER ON (HOOK)	ANSWER OFF (HOOK)	
RP	REV. BAT.	E 17 B27, J29, H30	PANEL, CBR. NO. 1 OR CBR. NO. 5	NONE	T	BAT.	BAT.	BAT.	BAT.	GRD.	
					R	GRD.	GRD.	GRD.	GRD.	BAT.	
DP (SEE NOTE 5)	REV. BAT.	E 17 B27, J29, H30	SXS OR SXS CALL IND.	NONE	T	GRD.	GRD.	GRD.	GRD.	BAT.	
					R	BAT.	BAT.	BAT.	BAT.	GRD.	
			CBR. TDM.	WINK	T	GRD.	BAT.	GRD.	GRD.	BAT.	
					R	BAT.	GRD.	BAT.	BAT.	GRD.	
PCI	REV. BAT.	E 17 B27, J29, H30	PCI MAN. OR MAN. TDM. OFFICE OR PANEL SENDER TDM. OFFICE	NONE	T	BAT.	BAT.	DRY	BAT.	GRD.	
					R	GRD.	GRD.	DRY	GRD	BAT.	
MF	REV. BAT.	E 17 B27, J29, H30	CBR. NO. 1, CBR NO. 5 OR CBR. TDM.	WINK	T	GRD.	BAT.	GRD.	GRD.	BAT.	
					R	BAT.	GRD.	BAT.	BAT.	GRD.	
NONE (STFD. OR AUTO.)	REV. BAT.	E 17 B27, J29, H30	MANUAL	NONE	T	GRD.	—	—	GRD.	BAT.	
					R	BAT.	—	—	BAT.	GRD.	

## NOTES:

- "TOLL DSA" IS A TOLL SWITCHBOARD POSITION WHICH MAY HANDLE DSA TRAFFIC ONLY OR BOTH TOLL AND DSA TRAFFIC.
- FOR "DELAY DIAL" OPERATION ON INCOMING CALLS THE NORMAL TRUNK POLARITY IS A STOP PULSING SIGNAL AND THE REGISTER REVERSES THE TRUNK POLARITY WHEN READY TO RECEIVE PULSING. FOR "WINK" OPERATION ON INCOMING CALLS THE NORMAL TRUNK POLARITY IS A START PULSING SIGNAL WHICH IS MOMENTARILY REVERSED THEN FOLLOWED BY THE NORMAL TRUNK POLARITY WHEN THE REGISTER IS READY TO RECEIVE PULSING. FOR "WINK" OPERATION ON OUTGOING CALLS THE NORMAL TRUNK POLARITY OF THE SENDER OR REGISTER IN THE TERMINATING OFFICE IS A START PULSING SIGNAL WHICH IS MOMENTARILY REVERSED THEN FOLLOWED BY THE NORMAL POLARITY WHEN READY TO RECEIVE PULSES FROM THE CROSSBAR NO. 5 OFFICE.
- THE POLARITY OF THE TIP AND RING LEADS AS SHOWN IS THE PREFERRED POLARITY BUT MAY BE REVERSED WHEN IT IS REQUIRED BY THE CONNECTING CIRCUIT.
- THE CROSSBAR NO. 5 INC. REGISTERS WILL RECEIVE 20 P.P.S. WITH INTERDIGITAL TIMING OF 0.28 SEC. MINIMUM OR 10 P.P.S. WITH INTERDIGITAL TIMING OF 0.4 SEC. MINIMUM.
- THE CROSSBAR NO. 5 OUT. DIAL PULSE SENDERS WILL TRANSMIT 20 P.P.S. WITH INTERDIGITAL TIMING OF 0.28 SEC. OR 10 P.P.S. WITH INTERDIGITAL TIMING OF 0.53 SEC.
- A SEPARATE SINGLE TRUNK CONDUCTOR CONNECTION TO TRUNK CIRCUIT 5D-26083-01 (BLOCK B47) IS REQUIRED FOR DISPOSAL OF COINS.

## General

The tables on pages 53 and 54 show the principal operating features of a Crossbar No. 5 office from the point of view of interoffice operation and is intended primarily to facilitate the selection of options in the connecting circuits in other offices.

For example, assume that a No. 3CL switchboard operator is to complete calls to coin subscriber lines in the crossbar office using DC key pulsing and that SD-56105-01 outgoing trunk circuit arranged for reverse battery supervision and simplex or no ringing start signal which functions with SD-95480-01 sender circuit arranged to receive DC key pulses and transmit dial pulses is selected for the circuit from the No. 3CL switchboard. Reference to the feature and option tables on these drawings shows that it is necessary to select certain options for the circuits to work with the crossbar office.

Table 1 shows the types of signals that the crossbar office receives and the options required in the connecting circuits at the originating office to function with the crossbar office.

Referring to table 1, it is shown that the incoming trunk circuit arranged for reverse battery supervision in block B47 (SD-26083-01) will function with the outgoing trunk circuit SD-56105-01. If SD-26083-01 is used, this trunk:

1. Transmits "delay dial" start pulsing signal to the toll office.
2. Requires simplex ringing start signal.
3. Requires coin control over separate single trunk conductor.
4. Will receive 10 or 20 dial pulses per second.
5. Controls originating end by trunk polarity as follows:
  - a. Battery on tip, ground on ring - trunk is normal.
  - b. Battery on tip, ground on ring - incoming register seized.
  - c. Ground on tip, battery on ring - incoming register ready to receive pulses.
  - d. Ground on tip, battery on ring - awaiting answer (on-hook).
  - e. Battery on tip, ground on ring - called party answers (off-hook).

The following options will then be required on the circuits in the toll office.

1. Option "Q" of the sender circuit if 20 P.P.S. is used or no option if 10 P.P.S. is used as shown in the feature or option table.
2. Figure A and options AB and A (class A or B) or B (class C or D) of the sender circuit to delay outpulsing until the incoming register in the crossbar office is ready to receive the pulses as shown in the feature or option table.
3. Figures 7 and 8 of the outgoing trunk circuit for simplex ringing start signal as shown in the feature or option table.
4. Figure 4 and option H of the outgoing trunk circuit if pad control is required since simplex ringing start signal is used as shown in the feature or option table.
5. Figure 5 and option E of the outgoing trunk circuit for coin control with pad control or figures 5 and 6 and option E for coin control without pad control as shown in the feature or option table.
6. No other options are necessary on the outgoing trunk circuit to satisfy the trunk polarity of the incoming trunk circuit in the crossbar office as shown in the feature or option table.

Table 2 shows the types of outgoing trunk circuits which may be used to complete calls to other offices.

For example, assume that the crossbar office is to complete calls to a step-by-step office via the outgoing trunk circuit in block E17 (SD-26085-01).

Referring to table 2, it is shown that this outgoing trunk circuit:

1. Is arranged for dial pulsing required by the step-by-step office.
2. Requires no start pulsing signal.
3. Functions under control of trunk polarity as follows:
  - a. Ground on tip, battery on ring - trunk is normal.
  - b. Ground on tip, battery on ring - crossbar sender starts pulsing.

- c. Ground on tip, battery on ring - awaiting answer (on-hook).
- d. Battery on tip, ground on ring - called party answers (off-hook).

Assume that SD-30200-01 incoming selector circuit and SD-30201-01 local

connector circuit are selected for the local train at the step-by-step office. Reference to the feature or option tables on these drawings shows that no options are required to provide the features required by the outgoing trunk circuit in the crossbar office.

## ADAPTER

Line, Multi-Party, for  
Use with Grounded  
Lines or Low Insula-  
tion Metallic Lines,  
Pulse Correcting &  
Relayed Ringing

SD-31848-01 E168

## ADJUSTING

MF Pulsing Receiver

SD-95664-01 A75

## ALARM

Sdr. Grp. Busy  
Office  
Msg. Reg. Pwr. Supply  
No Voltage

SD-25500-01 H79  
SD-25671-01 C78  
SD-25770-01 E78

Perm. Sig., Arr. to  
Operate on Spec. No.  
of Perm. Signals  
Emg., Arr. for Code  
Signaling with Auto.  
Fire Detection

SD-26135-01 A77  
SD-90437-01 G78

Extension  
CAMA, for Use with  
Suspension Ckt.  
Emg., Not Arr. for  
Code Signaling with  
Provision for Auto.  
Fire Detection for  
Use in Multi-Zone  
Off.

SD-95484-01 B77  
SD-95872-01 D191

Emg., Not Arr. for  
Code Signaling with  
Provision for Auto.  
Fire Detection for  
Use in Single Zone  
Off.

SD-96049-01 F78

Cable Insulation  
Aux., for Cbr. No. 5  
Off. with Swbds. or  
Desks Requiring  
Common Alarms

SD-96348-01 H77  
SD-96446-01 D79

## ALARM RECEIVING

SD-95418-01 B79

## ALARM SENDING

SD-95417-01 A78

## AMPLIFIER

Electron Tube  
For Auto. Trans. Test-  
ing

SD-95026-01 C115  
SD-96449-01 C173

## AMPLIFIER-RECTIFIER

For Auto. Trans.  
Testing

SD-96450-01 C174

## BATTERY SUPPLY

Amplifier

SD-90608-01 D115

## BELL

Chief Swmn's. Call

SD-96447-01 A85

## BUSY

All Markers or  
All Transverters  
Group, for Org. & Inc.  
Registers

SD-25695-01 G67  
SD-25795-01 H67

## CABINET

Traffic Register

SD-95531-01 H68

## CALL

CAMA Supervisor

SD-25971-01 A190

## CAPACITOR

Building Out

SD-25546-01 A150

## CLOCK

Misc. Use  
10 I.P.M. Impulse

SD-96201-01 G72  
SD-96343-01 F72

## CONCENTRATING

Coin Supervisory  
For Perm. Sig.  
Holding Trks.

SD-25721-01 G7  
SD-25766-01 E67

## CONNECTOR

Pretranslator  
Inc. Reg. Marker  
Inter-Marker-Group  
Sender Marker

SD-25569-01 J8  
SD-25586-01 J3  
SD-25586-01 C12

Out. Sender  
Transverter  
Recorder

SD-25587-01 D13  
SD-25592-01 D93  
SD-25872-01 B93

No Test  
Master Test Frame  
Foreign Area

SD-25702-01 A3  
SD-25805-01 C103  
SD-25864-01 F7

Translator  
CAMA Transverter  
Register, for Serv.

SD-26011-01 E193  
SD-26015-01 E182

Obs.  
Line Link Mkr.  
Org. Reg. Mkr., Mkr.

SD-26022-01 E3  
SD-26023-01 E5

Part  
Org. Reg. Mkr., Reg.  
Part

SD-26024-01 D5

Inc. Reg. Mkr., Mkr.  
Part  
Inc. Reg. Mkr., Reg.

SD-26025-01 K2

Part  
Tbl. Rcdr., for  
Inc. Registers

SD-26026-01 J2

Line Link  
Trunk Link  
Number Group

SD-26029-01 H2

Pretranslator, Org.  
Reg. Part  
Out. Sender, Sender

SD-26031-01 C3

Part for MF, DP, RP  
or PCI Senders  
Out. Sender, Mkr.

SD-26033-01 C4

Part  
Line Insulation Test  
Teletypewriter

SD-26035-01 G2

SD-26038-01 J7

SD-26057-01 C14

SD-26059-01 C13

SD-95558-01 D158

CONTROL			HOWLER	SD-95773-01	D74
Trouble Recorder	SD-25572-01	C102	INDEXER		
Line Insulation Test	SD-25796-01	C157	Call Identity	SD-25621-01	B92
Master Test	SD-25800-01	D103	CAMA, Billing	SD-26012-01	C194
Observing Entry, for Use in AMA Offices	SD-25912-01	G94	INDICATING		
Master Traffic, for Mkr. Connectors	SD-26020-01	E2	Dial Tone Speed	SD-96419-01	H75
Preference, Frame Traffic & Conn., for Org. Reg. Mkr. Conn.	SD-26029-01	D3	INTERRUPTER		
Preference, Frame Traffic & Conn., for Inc. Registers	SD-26029-01	H2	60 & 120 I.P.M.	SD-25814-01	C68
Preference & Frame Traffic, for Line Link Mkr. Conn.	SD-26029-01	D2	4 I.P.M.	SD-26063-01	I149
Marker Connector	SD-26030-01	B2	30 I.P.M.	SD-26159-01	I62
Preference, for Line Link, Trk. Link, No. Group & Out. Sdr. Conn. Ckts.	SD-26039-01	C2	JACK		
Traffic Reg. Camera	SD-95797-01	J70	Patching	SD-96068-01	C97
CAMA, for Use with Suspension Ckt. Line Load	SD-95872-01	D191	M.D.F. Test, for Private Lines	SD-96261-01	E72
	SD-96387-01	E147	Test & M.B. for Out. Trks.	SD-96376-01	G128
CONVERTER			JACK & LAMP		
Pulse, for Converting Dial Pulses to MF Pulses for Use with Intertoll Type Serv. Obs. Ckts.	SD-95590-01	F114	Ckt. Patching Bay Trk.	SD-68327-01	G172, I173
CUT-OFF			JACK, LAMP AND KEY	SD-25762-01	H107
Trans. Test Trk. Auto. Tone	SD-25903-01	J97	JUNCTOR		
DELAY			Operator, from Toll Swbd. No. 1, 3C or 3CL in Same Bldg., MFP, for Completing Calls to Dst. Offices Only	SD-26076-01	K52
Link Reseizure	SD-26072-01	A72	For Dial Coin Zone Serv.	SD-26078-01	F203
Vacant Code	SD-26097-01	F147	AMA, Rev. Bat. Supv. Msg. Reg. Operation, with or without Timing, Rev. Bat. Supv.	SD-26085-01	G152
DISTRIBUTING			Coin, with or without Timing, Rev. Bat. Supv.	SD-26086-01	H152
30, 60 or 120 IPM Int.	SD-95078-01	C77	Aux., for Sub. Access to Trks. with SX Supv. Inc.	SD-26087-01	E152
DISTRIBUTION			Aux., to Provide Added Types of Charging for Calls to Out. Trks. with Tdm. Compl.	SD-26088-01	G153
Power, Ring. and Tone	SD-25599-01	I147	CAMA, Rev. Bat. or SX Supv.	SD-26089-01	H153
FILTER			Using Inter-Mkr.-Grp. Sdr., for Coin Lines, with or without Timing, Rev. Bat. Supv.	SD-26102-01	G198
For Talk or Filament Bat. Supply	SD-95571-01	B66	Operator, For Intertoll Completion	SD-26147-01	J152
FLASHING	SD-95725-01	D72	From Swbd. No. 3C or 3CL in Same Bldg., MF Puls. For Completing Calls to Dist. Offices Only	SD-26153-01	K42
GENERATOR					
Pulse, & Counting for Use with Incpt. Trks. Using E&M Leads Supv.	SD-26115-01	D147			

KEYSET			Aux., With Automatic Cut-Off For Ind. Lines with Main & Extension Stations On Separate Loops	SD-96468-01	A119
CAMA Pos. & MF	SD-95775-01	C188	Emg., for Completion of Calls to Police, Fire & Ambulance Lines	SD-96469-01	K117
LEADS			LINE VERIFICATION	SD-26181-01	B94
Ringing, for Supply- ing Ring Current to PBX's and Sta. Equipments	SD-95667-01	F70	LINK		
LINE (Also see "Tie Line")			Out Sender Line	SD-25734-01	F13
Out. Auxiliary, for Public Emergency Reporting Service	SD-25649-01	E117	Trunk	SD-26030-01	B2
Aux., for 10 Pty. Lines Equipped with Tube Sets	SD-25688-01	A2	CAMA Position Inc. Reg., with By-Link Operation	SD-26032-01	B4
Aux., for Use Where Serv. is Furnished to a Common Line from More Than One Off. in Same Bldg.	SD-25697-01	J119	Coin Supervisory	SD-26047-01	C187
Aux. for Terminating Service Only	SD-25699-01	C117	LONG LINE	SD-26048-01	H4
Emergency Plugging Up, With Auto. Cut Through Inc. Trk. Test	SD-25701-01	B117	Dial, for other Long Lines Ckts. Shown only on Range Chart Dwg.	SD-26049-01	G9
Aux. Coin, for Use with Coin Sub. Lines Equipped with 191 Type or Equivalent Coin Collector	SD-25741-01	I72	MAKE BUSY		
Dial Long, for 2 Pty. Message Rate Lines	SD-25771-01	G97	For Use with Trks. to Xbr. Off. No. 1 which is Used as a Tandem Office	SD-25651-01	D29
Dial Long, Coin Local Station	SD-25907-01	A1	Trunk	SD-25668-01	A69
Dial Long, Repeated Ring. for Use with 4 Party Selective or 8 Part Semi-Selective Lines	SD-26030-01	B2	For Line Link, Trk. Link, No. Group & Cut. Sdr. Conn. Ckts.	SD-26039-01	C2
Recorders Talking 104 It. Trk. Trans. Test	SD-26129-01	H168	For Use with Trks. to CAMA Office	SD-26116-01	C29
Business Office, Arr. for Inc. Serv. from Dst. Swbd. & 2 Way Serv. to Dial Sub. Line Ckt.	SD-26130-01	B168	MARKER		
Transmission Test, One Way	SD-95409-01	G84, G109, E127, G168	Dial Tone Completing	SD-26001-01	B7
Test, For Use with Call Through Test Set	SD-95435-01	G168	SD-26002-01	SD-26002-01	B9
P.B.X. Single Line Obs., for Obs. Inc. Calls on P.B.X. Trks. Private	SD-95532-01	H69	MATCHING		
Order Clerks or Chief Opr.'s, with Visual Sig.	SD-95702-01	B172	CAMA Line Observing Number	SD-26014-01	D194
Local Frame	SD-95721-01	C168	MEASURING		
	SD-96000-01	E97	It. Trk. Trans., & Noise Checking	SD-95698-01	B173
	SD-96064-01	G99	MISC. FOR ALL FRAMES	SD-25574-01	B147
	SD-96111-01	D113	MONITORING		
	SD-96147-01	E73	CAMA Key Dial Pulse, for Use with Serv. Obs. Ckts.	SD-96314-01	C189
	SD-96262-01	D168	NUMBER GROUP	SD-95876-01	C114
	SD-96379-01	J68		SD-26034-01	F2

## OBSERVING

Obs. Line Org.Serv. Obs.	SD-25860-01	B113
Serv., Multi-Line, for Obs. On AMA Trk. & Junctor Ckts., for Use with Serv. Obs. Desk No. 7 or 12	SD-26206-01	A184
Serv., Multi-Line, for Obs. on CAMA Inc. Trks. & 4 Party Junctors or Inter-marker Trks., for Use with Serv. Obs. Desk No. 7 or 12	SD-26207-01	B184
Serv., Multi-Line for Obs. Out. Trk. Ckts.	SD-90266-01	H113
Serv. Obs. for Use with Serv. Obs. Desk. No. 10	SD-90580-01	A113
Serv. Obs. for Local Org. Service	SD-90647-01	B114
PEX Multi-Line Obs. Multi-Line	SD-95510-01	E114
Multi-Line Serv., for Observing on Inc. Intertoll Trks. or Inc. End of 2 Way Intertoll Trks. for Use with Serv. Obs. Desk No. 7 or 12	SD-95604-01	G113
PEX Multi-Line Obs. Line	SD-96162-01	E113

## PAD

Impedance Compensator & Fixed Pad	SD-95756-01	H148
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## PRETRANSLATOR

	SD-25568-01	J9
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## PULSING

MF, for Serv. Obs.	SD-26018-01	A182
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## RECEIVER

Electron Tube, Arr. to Rec. 2 Frequencies for Coin Control & Rering	SD-26118-01	H147
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## RECEIVING

Multi-Frequency Pulsing	SD-95536-01	B74
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## RECORDER

Trouble	SD-25572-01	C102
Auto. Mess. Accounting	SD-25872-01	B93
Traffic Usage	SD-95738-01	G149
Ans. Time, Concentrating, Timing Control & Testing	SD-96235-01	K67
Traffic Usage, Portable No. 1	SD-96494-01	D148

## REGISTER

RP Inc., for Tandem Operation	SD-25565-01	I4
Sub. Message, for Ind. or 2 Pty Lines	SD-25770-01	F73
Plant	SD-25793-01	H102
"B" Swbd. RP, Ter. Off. Part, for Use with Central "B" Swbd.	SD-25794-01	E124
Traffic	SD-25892-01	G68
For Serv. Obs.	SD-26018-01	A182
Dial Puls., Originating	SD-26040-01	E4
Dial Pulsing Inc.	SD-26041-01	I1
Multi-Frequency Inc.	SD-26042-01	I2
Revertive Pulsing Inc.	SD-26043-01	I3
Dial Tone Speed	SD-96403-01	G75
Call Count Process Control	SD-99001-01	D92

## RELEASE

Coin Supervisory	SD-25859-01	H9
Out. Sdr. Grp.	SD-26055-01	H15

## RESERVATION

Directional, for Use with 2 Way Intertoll Trk. Ckts.	SD-26154-01	I135
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## RINGBACK

For use with Spl. Serv. Trks. which Terminate in Cent. "A" Swbd.	SD-25933-01	C67
Emergency	SD-95083-01	F68

## RINGING

Test Trk.	SD-96474-01	F87
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## SELECTION

Serv. Obs. Trk., & Control, for Use With Serv. Obs. Desk No. 7 or 12	SD-26205-01	I113
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## SELECTING

Position, for Monitoring on CAMA Positions	SD-27013-01	D189
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## SELECTOR

Test Trk.	SD-25767-01	J99
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## SENDER

Inter-Marker Group	SD-25826-01	D12
DP Out.	SD-26050-01	E13
MF Pulsing Out.	SD-26051-01	E12
RP Out.	SD-26052-01	E11
PCI Out.	SD-26053-01	E14
CAMA	SD-26056-01	F193

SET			Swmn. & Chief Swmn's Desk	SD-95404-01	B83, J83
Wave Shaping	SD-70082-01	E159	Man. OGT Test Fr.	SD-95524-01	A126
SIGNAL			TEST		
No-Such-Number Tone, Oscillating Tone	SD-25791-01	A67	For Revertive Impulse Interrupter Used with RP Inc. Reg. Ckt.	SD-25289-01	I99
No-Such-Number Tone, Interrupted Low Tone	SD-25831-01	A67	Tbl. Recorder	SD-25572-01	C102
CAMA Calls Waiting	SD-26046-01	B188	Sender	SD-25675-01	F157
Opr. Room Calling	SD-96087-01	G74	Auto. Monitor, Reg. & Sdr.	SD-25680-01	H103
Chief Switchman's Desk Aux.	SD-96410-01	C83	Voltmeter	SD-25792-01	C107
Master Test Fr. Aux.	SD-96410-01	B109	Master Test Fr., for Testing Out. Trks. for Continuity and Reversals	SD-25908-01	B107
Man. OGT Test Fr. Aux.	SD-96410-01	A127	Master Test Fr., Trunk	SD-25918-01	E103
STORAGE			Auto. Progression Trk.	SD-25938-01	J157
Call Count Process Control	SD-99001-01	D92	Inc. Reg. & CAMA Sender	SD-25988-01	G157
SUPERVISORY			Station Ringer	SD-26109-01	H97
Coin, for Use with Trks. Arr. for Overtime Collection	SD-25736-01	G8	Bat. & Grd. Test Terminals	SD-90122-01	E100
SUPPLY			2A Sending Panel Trans.	SD-95000-01	E98
Message Reg. Pwr.	SD-25770-01	E78	Sending Pad Trans.	SD-95017-01	E99
M.D.F. Bat. & Grd.	SD-90048-01	J73	Man. OGT Test Fr.	SD-95476-01	G127
P.B.X. Battery	SD-90232-01	G70	Man. OGT		
M.F. Current & Distribution	SD-95391-01	C74	Line Insulation	SD-95537-01	B157
Filament, with Emg. Transfer for MF Signaling Receiving Ckts.	SD-95676-01	E75	Serv. Obs., for Testing It. Serv. Obs. Ckt., for Use with Serv. Obs. Desk No. 7 or 12	SD-95712-01	A96
SUSPENSION			Test Bat., for Use Where L.T.D. Bat. Is Not Available	SD-96120-01	A98
CAMA, for Use When All Positions are Vacated in an Emergency	SD-26017-01	E192	209FF, 209FK, 209FC and 209FM Relay	SD-96121-01	G100
SWITCH			Tone, for Use with Call Through Test Set	SD-96238-01	D97
Ring Selection, 6 Wire	SD-26080-01	A5	Man. OGT Test Fr. Test, for Testing Out. Trks. for Continuity & Reversals	SD-96370-01	H127
SWITCHING			TEST SET		
Ans. Time Recorder	SD-96360-01	K68	Sender	SD-25674-01	F158
TELEPHONE			Reg. & CAMA Sender	SD-25676-01	G158
Ckt. Patching Bay	SD-68330-01	G171	For Timing Test	SD-25707-01	B99
M.D.F. Loudspeaker for Use with L.T.D. No. 14 or Cable Test Desk No. 3	SD-96471-01	J89	206 Type Selector	SD-90013-01	F98
TELEPHONE, KEY & LAMP			Jack, for Testing 49, 92, 141 & 218 Type	SD-95056-01	F100
Master Test Fr.	SD-25744-01	B106	For Testing 275, 276, 291 and 292 Type Relays	SD-95439-01	H100
			Patching Cord	SD-95665-01	F99
			3A Pulse Generating, Electronic Type	SD-95686-01	F159
			3A Digit Control	SD-95794-01	F160
			Call Through	SD-96063-01	C98
			Pulse Checking	SD-96362-01	G98
			Cold Cathode Tube	SD-96464-01	F97

TIE LINE			Flat Rate & AMA, Sub. to Sub.	SD-26141-01	B62
3 Wire Auto.	SD-95406-01	F84, J84, F109, C127	For Coin Lines, with or without Timing, Sub. to Sub.	SD-26142-01	C62
TIMING			Rev. Bat. or SX Supv., Trk. to Sub.	SD-26143-01	G62
AMA Master	SD-25633-01	C92	Flat Rate, with or without AMA, Rev.	SD-26145-01	E62
For Perm.Sig. Holding	SD-25870-01	C72	Bat. or SX Supv. Out., Sub. to Trk.		
Trks. & Announcement			For Coin Lines, with or without Timing,	SD-26147-01	I62
Trks. & Coin Supv.			Rev. Bat. Supv., Sub. to Trk.		
Release					
TONE			<u>Incoming</u>		
Overflow, & Wink- Off for Use with CAMA By-Link Trk. Ckts.	SD-26103-01	B200	Aux., Stfd., Arr. to Convert Rev. Bat. Supv. to High- Low Supv.	SD-25025-01	B121
TRANSFER			Toll Sw., from Swbd. No. 3C or 3CL in Same Bldg.,MFP Inc., DP or RP Out., Rev.	SD-25666-01	B52
Line or Trk., for Restoring Service on an Emg. Basis Emg.	SD-95690-01	J74	Bat. or Wet Dry Supv., Controlled Ring., With or With- out Coin Control		
TRANSFER & AUX. SIG.	SD-95407-01	K83	over Separate Single Trk. Conductor		
TRANSFER & LAMP RELAY	SD-95594-01	I109	DP, from Loc. Test Desk No. 14, or Loc. Tst. Cabinet	SD-25708-01	H37
TRANSLATOR			No. 3, with or without No. Test		
Foreign Area	SD-25863-01	F8	MF, from Loc. Test Desk No. 14, or Loc. Tst. Cab.No.	SD-25708-02	F37
AMA	SD-26019-01	D94	3 With or Without No Test		
TRANSVERTER			Stfd., from Loc. Test Desk No. 14, or Loc. Test Cab.	SD-25708-03	G122
AMA	SD-25591-01	C93	No. 3 With or Without No Test		
CAMA	SD-26010-01	D193	Toll Sw., from Swbd. No. 3C or 3CL in Same Bldg., MF Plsg. Inc.,DP or RP Plsg. Out., Rev. Bat. Supv., No Ring. Start Signal With or Without Pad Con- trol	SD-25711-01	G52
TRUNK			DP, for Testing Sub. Msg.Registers	SD-25834-01	B39
<u>Intra-Office</u>			MF, for Testing Sub.Msg. Registers	SD-25835-01	B39
Flat Rate	SD-26060-01	B177	Intertoll, DP or MFP, Inc. CX or SX Supv., Out. SX Supv. or TYPE "A" TB Supply	SD-25844-01	F57
Flat Rate & AMA	SD-26061-01	C177	Announcement, for Use with Ann. Sys. No. 4A	SD-25940-01	C153
Msg. Reg. Operation	SD-26062-01	B22			
For Coin Lines, with or without Timing	SD-26064-01	D177			
<u>Inter-Marker-Group</u>					
Flat Rate & Msg. Reg. Operation,with or without Timing, Rev. Bat. Supv., Sub. to Trk.	SD-25836-01	K62			
Flat Rate & Msg. Reg. Operation, Sub. to Sub.	SD-25839-02	F62			
CAMA, Rev. Bat. or SX Supv. Out., Sub. to Trk.	SD-26105-01	I198			
CAMA, Sub. to Sub.	SD-26107-01	J198			
Flat Rate, Sub. to Sub.	SD-26140-01	A62			

## TRUNK (Cont'd)

Incoming (Cont'd)

Toll Sw., from Toll Swbd. No. 1 in Same Bldg., MF Pulsing Inc., DP or RP Pulsing Out., Rev. Bat. or Wet Dry Supv., Controlled Ring. Start Sig., Coin and Noncoin	SD-25945-01	I52	CAMA Tdm., with or without Local Completion, Rev. Bat. Supv. Inc., Rev. Bat. or SX Supv. Out.	SD-26100-01	A198
Toll Sw., from Toll Swbd. No. 1 in Same Bldg., MFKP-In, DP or RP-Out, Rev. Bat. Supv., Auto. Start of Ringing	SD-25946-01	D52	CAMA Tdm., with or without Local Completion, Arr. to Repeat Dial Pulses Using By-Link, Rev. Bat. or E&M Leads Supv. Inc., Rev. Bat. or SX Supv. Out.	SD-26101-01	C198
Announcement, for Use with Ann. Sys. No. 1 or 1B	SD-25952-01	B153	CAMA Intertoll, with Local Completion, Arr. to Repeat Dial Pulses Using By-Link, E&M Leads Supv. Inc., SX Supv. Out.	SD-26104-01	E198
Aux. Inc. Intertoll, CX or SX Supv.	SD-25954-01	F59	Incpt. From Trk. Link Fr. and/or Line Link Fr., for use with Ann. Machine, Ann. Sys. No. 7A	SD-26121-01	E48
Rev. Bat. Supv.	SD-26070-01	B37, B122	Intertoll, DP or MF Puls., Inc. Rev. Bat. Supv., Out. SX Supv. with or without Local Completion	SD-26152-01	G59
Tdm., with or without Local Completion, Rev. Bat. Supv.	SD-26071-01	A37, D122	Aux., DP or MF Pulsing, for Converting Rev. Bat. Supv. to E&M Leads Supv.	SD-27008-01	G39
No Test, SX Ring. Start Signal, Rev. Bat. or E&M Leads Supv.	SD-26073-01	G37, F122	Mtce. Desk Auto., Code 958, High Low Supv.	SD-95615-01	H84, D109, F127
RP, DP or MF Pulsing, Rev. Bat. Supv. or E&M Leads Supv., Controlled Ringing	SD-26074-01	D47, H122			
Toll Sw., from Toll Swbd. No. 1, 3C or 3CL in Same Bldg., MFP, No Ringing Start Signal	SD-26075-01	B42	<u>Outgoing</u>		
Rep. Dial. Using By-Link, Rev. Bat. Supv., with or without Tdm. Compl.	SD-26077-01	G47	For Intertoll Completion to Dst. Toll Swbd. for TX & Similar Services or to Dst. Toll Test Board, Inc. SX Supv., Out. Rev. Bat. Supv.	SD-25519-01	I22
Toll Sw., from Swbd. No. 3C or 3CL in Same Bldg., MF Pulsing, Controlled Ring. Start Sig., Coin and Noncoin	SD-26081-01	G42	Flat Rate, Coin & Msg. Reg. Operation, with or without Tdm. Compl., Rev. Bat. Supv.	SD-25578-02	H142
Toll Sw., from Toll Swbd. No. 1 in Same Bldg., MF Pulsing, Controlled Ring. Start Sig., Coin and Noncoin	SD-26082-01	E52	Announcement, Flat Rate, Coin and With or Without Msg. Reg. Opr. and With or Without Tdm. Compl.	SD-25689-01	C152
RP, DP, MFP or Stfd., Rev. Bat. or E&M Leads Supv., SX or Single Freq. Ring. Start Signal, Coin Control over Separate Single Trk. Conductor or Single or 2 Frequencies	SD-26083-01	B47, I122			

TRUNK (Cont'd)

Outgoing (Cont'd)

Announcement, Flat Rate, Coin and AMA With or Without Tdm. Compl.	SD-25690-01	B152	Intertoll Compl. to Toll Swbd. No. 1 or Toll Test Bd. No. 5 in Same Bldg., Inc. SX Supv.	SD-25858-01	E22
Official P.B.X. or Verification Request For Information Serv. from Line Link Fr., High-Low Supv.	SD-25696-01	I117	Aux., for Intertoll Compl. for Use With Toll Swbd. No. 1,3, 3C or 3CL 2 Way Opr. Off. Trk., Inc. SX Supv., Out., CX or SX Supv.	SD-25867-01	F17
Flat Rate, Coin & AMA, With or Without Tdm. Compl., Rev. Bat. Supv.	SD-25698-01	D119	Free, to Toll DSA Swbd., High-Low Rev. Bat. Supv., Arr. for Tdm. Completing & Coin Return after Disconnection	SD-25889-01	I17
Flat Rate, AMA & Msg. Operation With or Without Timing, Rev. Bat. Supv., With or Without Tdm. Completing	SD-25739-02	F142	Intertoll, MFKP - In, DP - Out, CX or Equiv. Type Supv., from Swbd. No. 3C or 3CL in Same Bldg.	SD-25895-01	J133
Intertoll, DP from Sdr., Inc. SX Supv., Out. CX or SX Supv., With Access From Swbd. No. 3C or 3CL in Same Bldg. Arr. for MF Plsg.	SD-25823-02	H30	For Inf. Service, Inc. SX Supv., Out. High-Low Supv. Combination Out. & Toll Sw., Flat Rate, RP, DP, MF or PCI Pulsing, Inc. SX Supv., Out. Rev. Bat. Supv., with Tdm. Compl.	SD-25902-01	G22
Intertoll, MFP & SX Supv. Inc., CX or SX Supv. Out., With OGT Jack Appearance at MF Swbd. No. 3C or 3CL in Same Bldg.	SD-25846-02	I57	Combination Out. & Toll Sw., AMA, RP, DP, MF or PCI Pulsing, Inc. SX Supv., Out. Rev. Bat. Supv., with Tdm. Compl.	SD-25913-01	C17
Aux., for Intertoll Compl. for Use with Toll Swbd. No. 1, 3, 3C or 3CL 2 Way Opr. Off. Trk., Inc. SX Supv., Out. Rev. Bat. Supv.	SD-25847-01	K57	Combination Out. & Toll Sw., AMA, RP, DP, MF or PCI Pulsing, Inc. SX Supv., Out. Rev. Bat. Supv., with Tdm. Compl.	SD-25913-02	D17
Toll Sw., RP, DP, MFP, or PCI, Inc. SX Supv., Out. Rev. Bat. Supv.	SD-25848-01	G17	Rec. Completing, High-Low Supv., Arr. for Coin Control Over Separate Single Trk. Conductor	SD-25923-01	E32
Intertoll Compl. to Swbd. No. 3C or 3CL, Test & Cont. Bd. No. 8, or Toll Test Bd. No. 17B or 18B in Same Bldg., Inc. SX Supv.	SD-25849-01	J17	Rec. Completing, High-Low Supv., Arr. for Coin Control Over Separate Single Trk. Conductor & for Class of Service Tone	SD-25923-02	G32
Aux., for Intertoll Compl. for Use With Swbd. No. 3C or 3CL Rd. Intertoll Trk., Inc. SX Supv., Out. RD. Supv.	SD-25850-01	D22	Rec. Compl., High-Low Supv., Arr. for Coin Control Over Separate Single Trk. Conductor and Auto. Return of Initial Coin, or Vacant Code Incpt., with Auto. Return of Initial Coin	SD-25923-03	E31
Aux., for Intertoll Compl. for Use with Toll Swbd. No. 1 Rd. Intertoll Trk., Inc. SX Supv., Out. RD. Supv.	SD-25851-01	K17	Rec. Compl., High-Low Supv., Coin Control over Separate Conductor, Arr. for Class of	SD-25923-04	G31
	SD-25852-01	I19			

Serv. Tone and Auto. Return of Initial Coin			Rec. Compl. or Vacant Code Incpt., to Toll Swbd. No. 1, 3C or 3CL in Same Bldg., Coin	SD-26093-01	B142
Inf. from Trk. Link Frame Arr. for Tdm. Completion & Coin Return after Disconnection	SD-25925-01	K22	From Line Link Fr. for Repair, Of- ficial PBX or Verification Re- quest Serv., E&M Leads Supv.	SD-26094-01	C118
Free, Ringdown Supv., Arr. for Tdm. Com- pleting & Coin Return after Dis- connection	SD-25928-01	H17	From Trk. Link Fr. & Line Link Fr. to Repair Serv. Desk No. 2, High- Low Supv.	SD-26095-01	F22
Aux., to Precede a Trk. Ckt. Not Arr. for Coin Return, to provide Coin Return from Coin Supv. Ckt. when Sub. Disconnects, for Use with 191 Type or Equivalent Coin Collector	SD-25936-01	K19	From Trk. Link Fr. for Info., Re- pair, Official PBX or Vacant Code Incpt. Serv., E&M Leads Supv.	SD-26096-01	F27
Intertoll, MFKP - In, DP - Out, CX or Equiv. Type Supv. from Toll Swbd. No. 1 in Same Bldg.	SD-25944-01	J133	Rec. Compl., Spl. Serv. or Vacant Code Incpt., E&M Leads Supv., with or without Class of Service Tone, Noncoin	SD-26098-01	D142
Aux., to Precede Coin Spl. Serv. or Rec. Compl. Trk., to Apply Coin Return Potential when Opr. Ans. or when Sub. Disconnects before Opr. Ans., for Use with 191 or Equiva- lent Coin Collector	SD-25953-01	K34	Rec. Compl. Spl. Serv. or Vacant Code Incpt., E&M Leads Supv., Coin with or without Noncoin	SD-26099-01	K32
For Dial Coin Zone Serv.	SD-26078-01	B203	Intercepting, from Trk. Link Fr. to Operator or Ann. System No. 6A, Rev. High-Low Supv.	SD-26108-01	J142
Flat Rate, with or without AMA, with or without Tdm. Compl., Rev. Bat. Supv.	SD-26085-01	E17	Aux., DP, for Converting Rev. Bat. Supv. to E&M Leads Supv.	SD-26110-01	C162
Flat Rate & Msg. Reg. Operation, with or without Timing, with or without Tdm. Compl., Rev. Bat. Supv.	SD-26086-01	J29	Aux., for Direct Sub. Access to Trks. with SX Supv. Inc., Flat Rate & AMA with Tdm. Compl.	SD-26111-01	D162
Coin, with or with- out Timing, Rev. Bat. Supv.	SD-26087-01	B27	For Use with Coin Zone Trk. or Juncter Ckt.	SD-26117-01	G204
Rec. Compl., Spl. Serv. or Vacant Code Incpt., High- Low Supv., Noncoin	SD-26090-01	I32	Intercepting, Rev. High-Low or E&M Leads Supv.	SD-26122-01	F117
Rec. Compl., Spl. Serv. or Vacant Code Incpt., High- Low Supv., Coin Control over Tip and Ring	SD-26091-01	C32	Aux., MFP, for Converting Rev. Bat. Supv. to E&M Leads Supv.	SD-27009-01	B162
Rec. Compl. or Vacant Code Incpt., to Toll Swbd. No. 1, 3C or 3CL in Same Bldg., Noncoin	SD-26092-01	B32			
			<u>Overflow</u>		
			Common	SD-26131-01	C178
			<u>Permanent Signal</u> <u>Holding</u>	SD-26134-01	K178

TRUNK (Cont'd)

Reverting Call

2 Pty., 4 Pty. SD-25703-01 F177  
Semi-Sel. or 10  
Pty. 5 Code  
4 Pty. Sel. & 8 SD-25704-01 H177  
Pty. Semi-Sel.

Stuck Coin

SD-25763-01 I177

Tone

No-Such-Number SD-25824-01 H117  
Signal  
Noncoin SD-26132-01 B178  
Coin SD-26133-01 A178

2 Way

Aux., Arr. to Com- SD-25503-01 F162  
bine an. Out.Trk.  
& a By-Link Inc.  
Trk. as a 2 Way  
Trk., Rev. Bat.  
Supv.

Aux., Arr. to SD-25504-01 H162  
Interconnect an  
Out. Trk. & a  
By-Link Inc.  
Trk. with a 2  
Way Trk., E&M  
Leads Supv.

Out. Service; MFP SD-25655-01 B57  
From Pos., DP  
from Sdr., Inc.  
SX Supv. With  
Appearance on  
Trk. Link Frame  
for Dial Opera-  
tion-Inc. Serv.;  
Inc. to Toll  
Swbd. No. 1 in  
Same Bldg., CX  
or SX Supv.

Out. Serv.; DP SD-25667-01 E138  
from Sdr., Inc.  
SX Supv., Out.  
CX or SX Supv.,  
MFP from Swbd.  
No. 3C or 3CL in  
Same Bldg. -  
Inc. Serv.; Inc.  
to Swbd. No.  
3C or 3CL in  
Same Bldg. CX  
or SX Supv.

Intertoll, Out. SD-25673-01 C133  
Serv.; DP from  
Sender, Inc.  
SX Supv., Out.  
Rev. Bat. Supv.,  
With Access from  
Toll Swbd. No. 1  
in Same Bldg. Arr.  
for MF Pulsing -  
Inc. Serv.; Inc.  
to Toll Swbd.  
No. 1 in Same Bldg.,  
Rev. Bat. Supv.

Out. Serv.; DP from SD-25816-01 C138  
Sender, SX Supv.  
Inc., Rev. Bat.Supv.  
Out.; MFP from Swbd.  
No. 3C or 3CL in  
Same Bldg. - Inc.  
Serv.; Inc. to Swbd.  
No. 3C or 3CL in  
Same Bldg. Rev. Bat.  
Supv.

Intertoll, Inc.Serv. SD-25842-02 G57  
DP or MFP & CX or  
SX Supv. Inc., SX  
Supv. or Type "A"  
TB Supply Out. -  
Outgoing Service;  
DP & CX or SX  
Supv. Out., SX  
Supv. Inc., With  
Access from Swbd.  
No. 3C or 3CL in  
Same Bldg. Arr.  
for MF Pulsing

Intertoll, Inc. SD-25843-01 D57  
Serv.; MFP & CX  
Supv. Inc., SX  
Supv. or Type "A"  
TB Supply Out -  
Outgoing Service;  
MFP & CX or SX  
Supv. Out., SX  
Supv. Inc. With  
Access From Swbd.  
No. 3C or 3CL in  
Same Bldg.

Intertoll, Inc. SD-25845-01 D133  
Serv.; DP or MF  
Pulsing and CX or  
SX Supv. Inc., SX  
Supv. or Type "A"  
TB Supply Out.  
Outgoing Service;  
MF Pulsing, SX Supv.  
Inc., CX or SX Supv.  
Out., with Access  
from Toll Swbd. No.  
1 in Same Bldg.

Intertoll, Inc.Serv.; SD-25853-01 H133  
DP or MFP & CX or SX  
Supv. Inc., SX Supv.  
or Type "A" TB Sup-  
ply Out.-Outgoing  
Service; DP Pulsing  
from Sdr., SX Supv.  
Inc., CX or SX Supv.  
Out. with Access from  
MF Toll Swbd. No. 1  
in Same Bldg.

Interlocal, E&M Leads SD-31867-01 H163  
Supv., Pulse cor-  
recting on Inc.Calls  
Auto., Ckt. Patching SD-55348-01 G173  
Bay

Mtce. Desks 2 Way SD-95405-01 C84  
Auto. to Swbd. or  
Desk C109,  
D127

Mtce. Desks 2 Way SD-96221-01 E84,  
Inc. Ringdown, E109  
Out. Auto. B127

TRUNK (Cont'd)

Miscellaneous

Test, to Loc. Test Desk No.14 or Loc. Test Cabinet No. 3 from Trk. Link Frame With or With- out Coin Return after Disconnection	SD-25665-01	E88	Test, at M.D.F. or Protector Frame, In and Out Type, from L.T.D. No. 14 or Loc Test Cab. No. 3	SD-90070-01	H88
Test, from L.T.D. No. 14 or Local Test Cabinet No.3	SD-25745-01	I107, I127	Test, at M.D.F. Bridging From L.T.D. No. 14	J-90071-01	G88
Inc. Test, for Test- ing Intertoll Trks., CX or SX Supv.	SD-25904-01	I98	Test, Frame End from Cable Test Desk No. 3 or L.T.D. No. 14 Arr. for Man. Varley 3 Test	SD-90403-01	C87
Balance Test Termi- nation, SX Supv.	SD-25906-01	K97	Test, Frame End from Cable Test Desk No. 3 or L.T.D. No. 14 Arr. for Auto. Varley 3 Test	SD-95545-01	A87
Test from Loc. Test Desk No. 14 for Detecting Inter- mittent Trouble	SD-26113-01	H90	Talking, at M.D.F. or Protector Frame to L.T.D. No. 14	SD-96074-01	F90
No Ckt. Signal	SD-26158-01	G177			