

SHEET INDEX (CONT)

| CONTENTS | PAGE NO. | SHEET NO. | ISSUE NO. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | SHEET NO. | | | | | | | | | | | | | | |
|--|----------|-----------|-----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | | | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| TRK CKTS, REC AND REC COMPL, CKT DETAILS | 40 | D1 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | D1 | | | | | | | | | | | | | |
| TRK CKTS, OUT. & TOLL SW, CKT DETAILS | 41 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TRK CKTS, OUT. & TOLL SW, CKT DETAILS | 42 | D2 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | D2 | | | | | | | | | | | | | |
| | 43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SENDER CIRCUITS, CIRCUIT DETAILS | 44 | D3 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | D3 | | | | | | | | | | | | | |
| | 45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GENERAL | 46 | D4 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | D4 | | | | | | | | | | | | | |

DRAWING ISSUE
15 J.E. #3 P.D.

15

ATTENTION: SEE DRAWING NO. 15
 TELEPHONE LABORATORIES
 SD-64800-01-A2

SD-64800-01-A2

GENERAL DESCRIPTION

THE SWITCHBOARD NO. 3C OR 3CL IS USED PRIMARILY TO ESTABLISH CALLS BETWEEN TOLL CENTERS AND BETWEEN SUBSCRIBERS IN ONE TOLL CENTER AND SUBSCRIBERS IN ANOTHER TOLL CENTER.

THE CIRCUITS SHOWN ON THIS KEY SHEET ARE ARRANGED TO PROVIDE THE FOLLOWING FEATURES:

1. 92 TYPE JACKS.
2. 24 V. PAD CONTROL.
3. 48 V. BATTERY FOR TALKING.
4. 24V. HIGH-LOW SLEEVE SUPERVISION.
5. UNIVERSAL TWO RELAY CORD CIRCUITS ARRANGED FOR:
 - 5.01 MONITORING ON CONNECTIONS.
 - 5.02 REPEATED DIALING ON EITHER OR BOTH CORDS, IN CONJUNCTION WITH POSITION CIRCUIT.
 - 5.03 D-C OR M-F KEY PULSING ON EITHER OR BOTH CORDS, IN CONJUNCTION WITH POSITION CIRCUIT.
 - 5.04 APPLIES 48 V. BATTERY ON THE TIP CONDUCTOR FOR RINGING, IN CONJUNCTION WITH POSITION CIRCUIT.
 - 5.05 USE OF A RINGING RELAY, MAKING IT POSSIBLE TO USE A SIMPLE RINGING KEY.
 - 5.06 CODE RINGING ON RURAL LINES FROM POSITION CIRCUIT.
6. OPERATORS RECORDING COMPLETING CORDS IN DSA AND OUTWARD POSITIONS FOR COMPLETING CALLS (1) FROM DSA TO TOLL AND (2) FROM OUTWARD TO MOBILE OPERATORS.
7. HANDLE DSA TRAFFIC FOR CROSSBAR NO. 1 AND NO. 5 STEP-BY-STEP AND PANEL OFFICES.
8. SPLIT CONNECTIONS IN ORDER TO TALK TO EITHER END.
9. TONE REMOVAL OR FLASHING ON INTERCEPTED CALLS.
10. BUSY AND IDLE INDICATING BY MEANS FOR AC OR DC LAMPS OR TONE.
11. TRAIN STUDENT TOLL OPERATORS TO HANDLE CLR TRAFFIC.
12. NUMBER CHANGING BY MEANS OF A CORD IN EACH POSITION FOR PANEL AREAS.
13. SUCCESSIVE GROUPING OF POSITIONS WITH MEANS FOR OPERATING FROM ANY POSITION WITHIN THE GROUP.
14. CONTROL OF AN ADJACENT TOLL SWITCHBOARD NO. 3B POSITION WHICH HAS BEEN TRANSFERRED TO SWITCHBOARD NO. 3C.
15. COIN CONTROL UNDER CONTROL OF CORD RINGING KEYS AND POSITIONAL COIN CONTROL KEYS.
16. AUTOMATIC START OF RINGING ON TRUNKS REQUIRING THIS FEATURE UNDER CONTROL OF POSITIONAL KEY FROM INWARD POSITIONS.
17. TRUNKING ARRANGEMENTS AS FOLLOWS:
 - 17.01 RINGDOWN INTERTOLL TRUNKS BETWEEN DISTANT TOLL OFFICES.
 - 17.02 INTEROFFICE TRUNKS BETWEEN TOLL POSITIONS IN SEPARATE TOLL OFFICES IN SAME TOLL CENTER TO HANDLE INTERPOSITION TRAFFIC SUCH AS WH, AG AND CKT REQUEST.
 - 17.03 INTERPOSITION TRUNKS TO HANDLE MISCELLANEOUS TRAFFIC BETWEEN TOLL POSITIONS IN SAME OR ADJACENT BUILDING.
 - 17.04 RECORDING TRUNKS INCOMING FROM MANUAL OFFICES OR FROM RURAL POSITIONS OF DIAL "A" SWITCHBOARDS.
 - 17.05 RECORDING COMPLETING TRUNKS INCOMING FROM MANUAL, STEP-BY-STEP PANEL OR CROSSBAR OFFICES.
 - 17.06 TOLL SWITCHING TRUNKS OUTGOING TO MANUAL, STEP-BY-STEP, PANEL OR CROSSBAR OFFICES.
 - 17.07 RECORDING COMPLETING SWITCHING TRUNK INCOMING FROM AND OUTGOING TO MANUAL TRIBUTARY OFFICE ARRANGED FOR SELECTIVE SIGNALING.
 - 17.08 TWO-WAY DIAL OR KEY PULSING OPERATOR OFFICE TRUNKS TO COMMUNITY DIAL OFFICES.
 - 17.09 INTERTOLL DIALING TRUNKS BETWEEN TOLL AND TOLL OR TOLL AND LOCAL OFFICES.
 - 17.10 COMPOSITE OR SIMPLEX SIGNALING TRUNKS WHERE RANGES OF LOOP SIGNALING CIRCUITS ARE EXCEEDED OR WHERE PHANTOM CIRCUITS ARE NECESSARY.

17.11 TANDEM TRUNKS TO CROSSBAR TANDEM OFFICES AND TANDEM AND INTERTOLL TRUNKS TO TOLL SWITCHING TYPE OFFICES.

17.12 OPERATOR RECORDING COMPLETING TRUNKS FOR COMPLETING CALLS FROM DSA TO TOLL AND FROM OUTWARD TO MOBILE OPERATORS.

18. THE POSITIONS AVAILABLE ARE: (1) OUTWARD OR COMBINED OUTWARD AND DSA -10 CORDS; (2) INWARD -15 CORDS; (3) COMBINED DSA AND DSB -10 CORDS; (4) DSA OR COMBINED INWARD AND THRU -12 CORDS; (5) DSB; (6) (IN SWBD. NO. 3C ONLY) 3B TANDEM AND ASSOCIATED TROUBLE POSITIONS. MODIFICATIONS MAY BE PROVIDED IN OUTWARD POSITIONS FOR USE WITH TOLL CABINETS NO. 1B. COMBINATIONS OF THE ABOVE POSITIONS MAY BE USED TO BUILD UP SEPARATE DSA OR TOLL OR COMBINED SWITCHBOARD LINE-UPS.
19. ARRANGEMENTS ARE AVAILABLE FOR USE OF POWER PLANTS, INTERRUPTERS, ALARMS, ETC. IN COMMON WITH DIAL OFFICES IN THE SAME BUILDING.

INDEX

| CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) |
|--|----------------|--------------|---|----------------|--------------|
| ADJUSTING | | | APPLIQUE | | |
| MF PULSING RECEIVER | SD-95664-01 | B168 | TRAFFIC WEIGHTING, FOR USE WITH ANS TIME RCDRS ON LINES OR TRKS NOT HAVING FLASHING LAMPS | SD-96497-01 | J89 |
| MF PULSING RECEIVER USING ONE MILLIWATT 1000 CYCLE SUPPLY SOURCE | SD-95779-01 | B167 | TRAFFIC WEIGHTING, ARR FOR RELAY RACK MTG | SD-96538-01 | I86 |
| ALARM (ALSO SEE EMERGENCY ALARM) | | | BANK MULTIPLE SELECTOR | SD-32123-01 | C170 |
| ALARM LINE | SEE LINE | | BATTERY SUPPLY AMPLIFIER | SD-90608-01 | B64 |
| ALARM TRK | SEE TRUNK | | BUSY BACK | | |
| DSB POSITIONS BUSY & NIGHT | SD-21139-01 | B159 | ALSF TOLL SW TDM POS | SD-60803-01 | F154 |
| SWITCH TROUBLE FOR INTERTOLL SEL SHELVES | SD-32043-01 | E77 | CABINET | | |
| WITH PERM SIG, RELEASE, FUSE ALM & COMMON TIMING | SD-55278-01 | F77 | TRAFFIC REGISTER | SD-95531-01 | F122 |
| AUX SIG & NIGHT | SD-55039-01 | B88 | CALL | | |
| AUX NIGHT OBS OFF. END FOR OBS OPERATION OF NIGHT ALM CKT IN DISTANT MAN. OFF., ARR FOR ONE MINUTE DELAY IN OPERATION OF AUX SIG AND TO USE CONDUCTORS OF AN INTEROFFICE TRK CKT | SD-56350-01 | J27 | MESSENGER OR SUPERVISOR | SD-95097-01 | F88 |
| PNEUMATIC TUBE BLOCK-ADE | SD-64775-01 | C78 | CALCULAGRAPH | | |
| 6 V LAMP 60-CYCLE SUPPLY | SD-95005-01 | D77 | MOTOR DRIVEN | SD-95012-01 | D89 |
| AUDIBLE AND VISUAL, 24V, ALM BAT. | SD-95063-01 | E78 | CLOCK | | |
| DISTRIBUTION FUSE & COMMON AISLE | SD-95072-01 | A77 | MOTOR DRIVEN | SD-95012-01 | D89 |
| AUDIBLE & VISUAL, TOLL & SXS NO. 355A, 48V ALM BAT. | SD-95075-01 | D78 | 10 I.P.M. INT & IMPULSE | SD-96343-01 | E89 |
| POWER SUPPLY | SD-95081-01 | B77 | COIN CONTROL | | |
| FOR USE WITH SUSPENSION CKT | SD-95872-01 | H182 | FOR REC COMPL TRK | SD-21549-01 | J94 |
| FUSE | SD-96153-01 | B78 | FOR REC COMPL TRK | SD-21705-01 | I94 |
| AUDIBLE & VISUAL | SD-96188-01 | A78 | TRK, TERMINATING END | SD-64424-01 | C94 |
| FUSE, DSA SWBD FUSE BAYS | SD-96444-01 | B142 | TRK, ORG END | SD-95031-01 | K92 |
| ALARM RECEIVING | SD-95418-01 | G77 | COMPENSATOR | | |
| AMPLIFIER | | | IMPEDANCE | SD-95756-01 | F169 |
| MONITORING, FOR USE WITH OPR TRAINING | SD-95027-01 | B63 | CONDENSER | | |
| VOICE FREQUENCY | SD-95112-01 | G27 | LINE BUILDING OUT | SD-63021-01 | F97 |
| FOR AUTO. TRANS TESTING | SD-96449-01 | J118 | CONFERENCE | | |
| AMPLIFIER-RECTIFIER | | | BETWEEN LOCAL TRKS & ONE INTERTOLL TRK OR BETWEEN ONE LOCAL TRK & 2 INTERTOLL TRKS | SD-64733-01 | D167 |
| FOR AUTO. TRANS TESTING | SD-96450-01 | J119 | | | |

(1) SHOWN ON "B" SHEETS

DRAWING

ISSUE

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JT

#5

PD

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SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

SD-64800-01-A3

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
ES

PRINTED IN U.S.A.

TOLL SUB-LINE CKT SD-70682-
 FOR TTY SWBDS AT INTER POINTS
 TTY CONC

DRAWING
 ISSUE
 15
 CB
 PL

INDEX

| CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) |
|--|----------------|--------------|---|----------------|--------------|--|----------------|--------------|---|----------------|--------------|
| CONNECTOR | | | EMERGENCY ALARM | | | ISOLATION | | | DIAL TER MAN. SUB, | | |
| REMOTE CONTROL, FOR USE WITH S.O. DESK NO. 7 OR 12 FOR OBSERVING ON CORDS | SD-95793-01 | G26 | ARR FOR CODE SIG, ARR FOR AUTO. FIRE DETECTION | SD-90437-01 | F79 | FOR REDUCING BRIDGED CAPACITANCE EFFECTS ON CORD CIRCUITS | SD-95901-01 | I26 | ARR FOR COMPLETION BY OPR, NONCOIN, FOR PANEL OFF. | SD-56018-01 | H109 |
| CONTROL | | | NOT ARR FOR CODE SIG, ARR FOR AUTO. FIRE DETECTION IN MULTIZONE OFF., 24V | SD-90560-01 | A79 | JACK | | | OUT. AUX. FOR USE WITH DIAL SUB LINE IN CBR NO. 5 OFF., WITH OR WITHOUT EMER CONNECTION | SD-56143-01 | C113 |
| INDICATOR, FOR CONTROLLING IDLE INDICATING LAMPS ASSOCIATED WITH TRKS TO INTERTOLL ROTARY OUT TRUNK SWITCHES | SD-56275-01 | C138 | NOT ARR FOR CODE SIG, ARR FOR AUTO. FIRE DETECTION IN SINGLE ZONE OFF., 24V | SD-90641-01 | A79 | MAKE BUSY, FOR USE IN TERMINAL ROOM | SD-56446-01 | D91 | FROM SEL MULTIPLE FOR TESTING TANDEM OR INTERTOLL TRKS | SD-56221-01 | E74 |
| INTERTOLL DIALING SUPERVISORY | SD-64481-01 | C73 | INC FROM DISTANT OFF. FOR USE WHEN INC CKT IS NOT TO BE CONNECTED TO ZONE SIG CKT | SD-90642-01 | G79 | TEST, FOR OFFICES WITH SMALL NUMBER OF INTERTOLL TRKS | SD-64272-01 | G84 | MAN. SUB, ARR FOR DIAL TERMINATING SERV FROM CBR NO. 5 OFF. IN SAME BLDG, FOR NONCOIN OR GRD START COIN LINES | SD-56317-01 | B162 |
| LINE & TRK LAMP & ALARM | SD-95412-01 | J92 | NOT ARR FOR CODE SIG, ARR FOR AUTO. FIRE DETECTION IN MULTIZONE OFF., 48V | SD-96049-01 | A79 | FOR TRKS, & SUB LINES | SD-64545-01 | A86 | TOLL SUBSCRIBER | SD-56389-01 | A12 |
| TRAFFIC REGISTER CAMERA | SD-95797-01 | E122 | NOT ARR FOR CODE SIG, ARR FOR AUTO. FIRE DETECTION IN SINGLE ZONE OFF., 48V | SD-96052-01 | A79 | MONITORING & OBSERVING | SD-90564-01 | C90 | TOLL SUB, FOR USE WITH PBX TRK CKT ARR FOR GROUND START ON RING | SD-56501-01 | D12 |
| FOR USE WITH SUSPENSION CKT | SD-95872-01 | H182 | FILTER | | | TEST, BAT. & GRD AT RELAY RACK | SD-90619-01 | D84 | TEST | SD-62447-01 | A83, C118 |
| CONVERTER | | | +130V PLATE SUPPLY | SD-95508-01 | F95 | KEY & LAMP | | | BUSINESS OFFICE | SD-64497-01 | E15 |
| PULSE, FOR CONVERTING DC KEY PULSES TO MF PULSES | SD-95567-01 | F29 | TALK OR FILAMENT BAT. SUPPLY | SD-95571-01 | B95 | FOR DSB OR COMBINED DSB POSITION | SD-56029-01 | B129, C160 | MANUAL SUB, EMER | SD-64498-01 | C15, D58 |
| PULSE, FOR CONVERTING DIAL PULSES TO MF PULSES, FOR USE WITH INTERTOLL TYPE SERV OBS CKTS | SD-95590-01 | E29 | FIRE DRILL | | | FOR CAMA CONNECTIONS IN COMBINED TOLL OR DSA & CAMA POSITIONS USING 2 OUT OF 5 DC KEY PULSING | SD-56367-01 | I7 | MANUAL SUB, REG OR EMER | SD-64501-01 | A15, D51 |
| PULSE, FOR CONVERTING DIAL PULSES TO MF PULSES, FOR USE WITH CORD TYPE SERV OBS CKTS | SD-96453-01 | G29 | FLASHING | | | KEY SET | | | MANUAL SUB, PREPAY COIN | SD-64502-01 | B15, D52 |
| CORD | | | FOR POSTED DELAY TONES | SD-90086-01 | E88 | MF, SWBD NO. 3C | SD-55079-01 | D7 | EMER, TO PROVIDE A DIAL SUB WITH EMER MAN. SERV WHEN LOCAL OFF. IS LOCATED IN DST BLDG | SD-95336-01 | I12 |
| PERMANENT SIG, WITH OR WITHOUT HOWLER | SD-55871-01 | D108 | GENERATOR | | | DC, SWBD NO. 3C | SD-55367-01 | C7 | PLUGGING UP. TBL OBS & TEST & COMPLETION FOR CBR NO. 1 OR PANEL OFF. | SD-95399-01 | F107 |
| OPR REC COMPL | SD-56089-01 | G3 | MF SIGNAL, FOR SUPPLYING THE 6 FREQUENCIES REQUIRED FOR MF PULSING | SD-95867-01 | H168 | DC & MF, SWBD NO. 3C OR 3CL | SD-56031-01 | F7 | RECORDERS TALKING | SD-95532-01 | F123 |
| NUMBER CHECKING | SD-56183-01 | B2 | GROUPING | | | DC, SWBD NO. 3CL | SD-56031-02 | G7 | 104 INTERTOLL TRK TRANS TEST | SD-95700-01 | I117 |
| OVERFLOW INDICATING | SD-56251-01 | C123 | OFFICE KEY, FOR DSB OR COMBINED DSB POS | SD-56030-01 | A127 B158 | MF, SWBD NO. 3CL | SD-56031-03 | H7 | MAN. SUB, FOR USE WITH DIAL TERMINATING MANUAL LINE CKT IN DISTANT OFF. | SD-95713-01 | J14 |
| TOLL | SD-64737-01 | A3 | ALSF TOLL SW TDM POS | SD-56171-01 | C153 | POSITION & MF FOR CAMA | SD-95775-01 | C184 | EMER, ARR TO DISCONNECT CALLING PTY ON EMER CALLS | SD-95713-01 | K13 |
| DEMONSTRATION | | | TROUBLE POS | | | LAMP & JACK | | | BUSINESS OFF., OUT. TO DIAL OFF. | SD-95714-01 | G14 |
| TONE & FLASHING, FOR SIMULATING SIGNALS TO OPERATORS | SD-56340-01 | C167 | TOLL POS | SD-64577-01 | G92 | DIAL COIN SERV CHARGE FOR OGT TO PANEL SDR TDM OFF. FROM PANEL OR CROSSBAR NO. 1 OFF. | SD-96366-01 | C115 | ORDER CLERK OR CH OPR | SD-96262-01 | I87 |
| DIAL | | | INTERRUPTER | | | LINE | | | TRANSMISSION TEST | SD-98100-01 | E81 |
| MILLIWATT | SD-95000-01 | I119 | 135 CYCLE - 24V OPER | SD-60203-01 | D93 | ALARM | SD-55135-01 | E80 | LINK | SD-90705-01 | C8 |
| DOOR OPENING | SD-90085-01 | H90 | 135 CYCLE - 48V OPER | SD-63955-01 | D93 | MAGNETO RURAL, WITH FLASHING RECALL | SD-55125-01 | G12 | MAKE BUSY | | |
| DRILL | | | RELAY - FOR 30, 60 OR 120 I.P.M. | SD-95036-01 | A85 | AUXILIARY, FOR BRIDGED TOLL STATIONS | SD-55177-01 | E12 | TRUNK | SD-62367-01 | G87 |
| OPERATOR KEY PULSING | SD-95830-01 | E64 | 30, 60 OR 120 I.P.M., WITH ALARM, TRANSFER & DISTRIBUTING CKTS | SD-95078-01 | A80 | SUB, MANUAL ORG, DIAL TERMINATING, WITH OR WITHOUT COIN CONTROL FOR CBR NO. 1 OFF. | SD-55779-01 | J109 | FOR SWBD | SD-96470-01 | E167 |
| | | | 10 I.P.M. | SD-96343-01 | E89 | BUSINESS OFF., FOR CBR NO. 1 OR 5 OFF. | SD-55956-01 | I108 | MEASURING | | |
| | | | | | | OUT. AUX. FOR USE WITH DIAL SUB LINE IN CBR NO. 1 OR PANEL OFF., WITH OR WITHOUT EMER CONNECTION | SD-55957-01 | J107 | IT. TRK TRANS, & NOISE CHECKING | SD-95698-01 | I118 |

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| SWITCHBOARD NO. 3C OF L KEY SHEET | SD-64800-01-A4 |
| BELL TELEPHONE LABORATORIES INCORPORATED | PRINTED IN U.S.A. |

SD-64800-01-A4

(1) SHOWN ON "B" SHEETS

| CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) |
|--|----------------|--------------|--|----------------|--------------|---|----------------|--------------|--|----------------|--------------|
| MONITORING | | | MISC TONES, TRANS REDUCTION, MON, TALKING & START DIAL CONTROL | SD-64745-01 | C64 | RELAY (ALSO SEE RELAY CHAIN) | | | SENDER | | |
| DSB POS KEY | SD-21648-01 | F127, D157 | | | | 30 IPM INTERRUPTER | SD-31868-01 | D170 | MFKP-IN, RP-OUT | SD-56072-01 | F9 |
| DIAL | SD-90596-01 | G89 | LISTENING-IN CKT, FOR CONTROL OPR & 2 STUDENT OPERATORS | SD-96405-01 | A63 | MULT LAMP, FOR USE WITH DC LAMPS & FOR SUPPLYING 24V BAT. FOR LIGHTING LAMPS WHEN CONNECTING CKTS SUPPLY 48V BAT. | SD-56494-01 | C93 | DCKP-IN, RP-OUT | SD-62058-01 | C9 |
| DIAL PULSE, FOR USE WITH SERV OBS CKTS CONNECTING TO SERV OBS DESK NO. 7 OR 12 | SD-95610-01 | H29 | | | | TEST TRK | SD-62062-01 | A82 | DCKP-IN, DP-OUT | SD-95480-01 | E9 |
| MF OR DC KEY PLSG | SD-96314-01 | H89 | PAD | | | AC LAMP | SD-95897-01 | C87 | MFKP-IN, DP-OUT | SD-95481-01 | D9 |
| FOR TEL, POS KEY SET, POS DIAL OR PEG COUNT CKTS | SD-96441-01 | K90 | TRANS, FOR OPR OFF. TRKS | SD-55134-01 | G97 | RELAY CHAIN | | | DSB, SWBD PART | SD-96285-01 | B157 |
| | | | FIXED | SD-95756-01 | F169 | IMMEDIATE RELEASE | SD-55570-01 | C88 | SIGNAL | | |
| NETWORKS - LINE & BAL | | | PATCHING | | | DELAYED RELEASE | SD-55570-01 | D88 | DSB CALLS WAITING | SD-21758-01 | B160 |
| OPEN WIRE | SD-59042-01 | B97 | INTERTOLL, FOR BUILDING UP THROUGH RD INTERTOLL TRK CONNECTIONS | SD-55682-01 | E92 | REORDER | | | OVERFLOW, FOR PERM SIG HOLDING TRK GROUPS | SD-55867-01 | A110 |
| H44-25 CABLE | SD-60963-02 | B97 | | | | ALSF TOLL SW TDM POS | SD-60803-01 | F154 | PNEUMATIC DISTR SYSTEM | SD-64772-01 | D5 |
| COMPROMISE AND BALANCING | SD-90517-01 | A100 | PATHS BUSY | | | REPEATING COIL GROUPS | | | AUX - (COIN PILOT) | SD-90464-01 | K94 |
| | | | FOR INC TRKS ARR FOR THROUGH SUPV | SD-55350-01 | J87 | OPEN WIRE | SD-60782-02 | D97 | AUX FOR CROSSBAR SDR LOAD CONTROL | SD-90464-01 | E94 |
| OBSERVING | | | PEG COUNT | SD-62390-01 | J90 | H44-25 CABLE | SD-63275-02 | D97 | CALLS WAITING, FOR CAMA | SD-95868-01 | F183 |
| SERVICE, MULTILINE, FOR OBS ON TOLL CORDS ARR FOR DIALING, FOR USE WITH SERV OBS DESK NO. 7 OR 12 | SD-56295-01 | I27 | POSITION | | | B88-50 CABLE | SD-63811-01 | D97 | CALLING, FOR OPERATING ROOM | SD-96087-01 | A89 |
| SERVICE, MULTILINE, FOR OBS ON CORDS IN KEY PULS TOLL POSITIONS, FOR USE WITH SERV OBS DESK NO. 7 OR 12 | SD-56316-01 | F27 | FOR DSB OR COMBINED DSB POSITION | SD-55996-01 | B128 C159 | H88-50 CABLE | SD-63811-02 | D97 | SIGNALING | | |
| CENTRAL OFF., SET NO. 2 | SD-90448-01 | D90 | | | | H172-63 CABLE | SD-63811-03 | D97 | 2 WAY, FOR CAMA | SD-95776-01 | E183 |
| SERVICE, MULTILINE, FOR SPEED OF ANS ON INC CALLS | SD-95563-01 | H27 | ALSF TOLL SW TDM POS | SD-56178-01 | D153 | OPEN WIDE & NONLOADED CABLE, FOR SMALL INSTALLATIONS | SD-95022-01 | C97 | SUPERVISORY | | |
| SERVICE, MULTILINE, FOR OBS 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 | E27 | FOR TOLL POSITION | SD-64738-01 | B3 | RESERVATION | | | STUCK COIN & OVERTIME MONITORING WITH OR WITHOUT TRANSFER TO NIGHT POS | SD-55844-01 | G112 |
| OPERATOR'S TRAINING | | | RECEIVING | | | INTERTOLL DIALING DIRECTIONAL | SD-56470-01 | I137 | STUCK COIN | SD-56032-01 | H112 |
| CONTROL POS CKTS FOR SIMULATING NO CKT, REORDER & LINE BUSY SIGNALS & AUD RINGING TONE TO STUDENTS | SD-55163-01 | D64 | MF PULSING | SD-95536-01 | A167 | RINGBACK | | | SUPPLY | | |
| CONTROL POS CKTS FOR USE IN SIMULATING SUPV, TONES & FLASHING TO STUDENT TOLL CABINET OPERATORS | SD-55660-01 | B62 | RECORDER | | | EMERGENCY | SD-64244-01 | H87 | MF CURRENT, & DISTRIBUTION | SD-95391-01 | H94 |
| LISTENING-IN CKT, ARR TO HANDLE 1 TO 20 STUDENTS WITH INSTRUCTOR AT A REGULAR SWBD POS | SD-55655-01 | K63 | TRAFFIC USAGE | SD-95738-01 | G167 | RINGING LEAD | | | FILAMENT, WITH EMER TRANSFER FOR MF PULS RECEIVING CKTS | SD-95676-01 | A168 |
| | | | ANS TIME CONCENTRATING, TIMING CONTROL & TESTING CKT, PERMANENT TYPE | SD-96235-01 | I88 | 135 CYCLE | SD-62021-01 | D94 | SUSPENSION | | |
| | | | ANS TIME CONCENTRATING, TIME CONTROL & TESTING CKT, PORTABLE TYPE | SD-96275-01 | J88 | SELECTING | | | FOR USE WHEN ALL POSITIONS ARE VACATED IN AN EMER FOR CAMA | SD-27018-01 | G182 |
| | | | TRAFFIC USAGE, PORTABLE NO. 1 | SD-96494-01 | G168 | POSITION, FOR MON ON CAMA POSITIONS | SD-27013-01 | D184 | SWITCH | | |
| | | | ANS TIME, MOD OF EXISTING PORTABLE CKT FOR REL RACK MTG WITH OR WITHOUT LAMP GROUP SWITCHING | SD-96532-01 | F89 | SELECTOR | | | INTERTOLL DIALING ROT. OUT TRK, ARR FOR PRESELECTION | SD-55945-01 | D137 |
| | | | REGISTER | | | TOLL PRECEDING | SD-31241-01 | D50 | SWITCHING | | |
| | | | TRAFFIC, FOR OPERATING GRP BUSY TIME REGISTERS GRP BUSY REGISTERS GRP BUSY TONE & LAMPS & PEG COUNT REGISTERS | SD-56233-01 | H122 | SXS COMB. INTERTOLL & TOLL TRANS | SD-55062-01 | F68 | ANS TIME RCDR | SD-96360-01 | I89 |
| | | | TRAFFIC, INTERTOLL DIALING | SD-56290-01 | H68 | SXS INTERTOLL, WITH DIGIT ABSORBING | SD-55242-01 | E68 | TELEPHONE | | |
| | | | | | | SXS AUX INTERTOLL | SD-55242-01 | E70 | TOLL OPERATOR | SD-55110-01 | A2 |
| | | | | | | SXS INTERTOLL THROUGH | SD-55242-01 | F70 | OVERFLOW RECORDING OPR TEL & TRK | SD-55670-01 | I92 |
| | | | | | | SXS FOR HANDLING "WE HAVE" CALLS ARR FOR DIGIT ABSORBING & LOOP PULS | SD-55848-01 | G48 | | | |
| | | | | | | SXS INTERTOLL, WITHOUT DIGIT ABSORBING | SD-64470-01 | E68 | | | |

SD-64800-01-A5

(1) SHOWN ON "B" SHEETS

SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

SD-64800-01-A5

BELL TELEPHONE LABORATORIES

INDEX

| CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) |
|--|----------------|--------------|---|----------------|--------------|--|----------------|--------------|--|----------------|--------------|
| TELEPHONE (CONT) | | | AC VOLTAGE | SD-64125-01 | E83 | TRUNK | | | TX, 121, 181 OR 191, 4 WIRE TALKING, REV BAT. SUPV, SX DC RINGING ON SIG PHANTOM WITH OR WITHOUT TRANSMISSION SW PAD | SD-56055-01 | I49 |
| DSB POSITION OPR | SD-55991-01 | C129, D160 | PULSE REPEATING | SD-64540-01 | I82 | ALARM | | | OFFICIAL PBX, FROM CBR SYS NO. 5 IN SAME BLDG | SD-56102-01 | I112 |
| SUPERVISOR, FOR USE IN DIVISION WITH DSB OR COMBINED DSB POS | SD-55993-01 | D127, E158 | FOR SXS SUB REC COMPL TRKS IN SAME BLDG | SD-90469-02 | D82 | ARR TO EXTEND 3 ALM INDICATIONS | SD-95310-01 | H79 | SPECIAL SERVICE COIN, FROM PANEL OR CBR NO. 1 OFFICE IN SAME BLDG | SD-56278-01 | K112 |
| ALSF TOLL SW TDM POS | SD-56178-01 | D153 | FOR PANEL SUB REC COMPL TRKS IN SAME BLDG | SD-90470-01 | C82 | AUXILIARY | | | VERIFICATION REQUEST, OFFICIAL PBX OR REPAIR SERVICE, EAM LEADS SUPV, PULSE RERING SIG | SD-56424-01 | H162 |
| ENERGIZED PERM OPR TRAINING UNIT OPR | SD-56462-01 | H64 | JACK | SD-95056-01 | D85 | CONN FROM INTERTOLL OR SXS TOM TRAIN TO OUT. OR OPR OFF. TRK, LOOP OR CX SIG | SD-96384-01 | H20 | SLEEVE REPEATING, FOR USE WITH 2 WAY TRK IN DIST CBR NO. 5 OFF. WHERE SLEEVE CONDUCTOR RES EXCEEDS 10 OHMS | SD-56458-01 | K49 |
| TRAFFIC RECORDER AT TRAFFIC REG RACKS | SD-63694-01 | H86 | CONTROL, FOR USE WITH POSITION TEST CKT | SD-96490-01 | C85 | INCOMING | | | TRANSFERRED INFO OR INCPT, FROM INFO DESK NO. 3, 4 OR 6 TYPE OR OPR ROOM DESK NO. 23A, B, C OR D | SD-56492-01 | G49 |
| TROUBLE OPERATOR SUPERVISOR | SD-64577-01 | G91 | TIMING | | | INCPT, FROM INTER-TOLL SEL LEVELS FOR USE WITH AN ANN. MACH, ANN. SYS NO. 7A | SD-32202-01 | A74 | FOR PBX SERVICE, REV BAT. SUPV, ARR TO RECALL ORIG END, FOR USE WITH CROSSBAR TDM OFFICE | SD-56496-01 | H49 |
| TERMINATING | SD-64743-01 | A88 | FOR CONTROLLING 2 SEC RINGING SIG | SD-64587-01 | H66 | FOR COMPLETING A-B TDM CALLS, REV BAT. SUPV, WITH RERING SUPV | SD-55067-01 | A47 | FROM LOCAL OPR ROOM DESKS | SD-63109-01 | D47 |
| 4 WIRE, FOR CKTS NOT IN SAME BLDG | SD-64304-01 | A97 | COMMON & ALM | SD-95052-01 | B10 | FROM MAN. OFF., LOOP SIG, THROUGH SUPV, HIGH-LOW DRY END, REV BAT. WET END | SD-55081-01 | A49 | FROM INFO DESKS OR OPR ROOM DESK NO. 19 | SD-64221-01 | C47 |
| 4 WIRE, FOR CKTS TERMINATING IN SWBD IN SAME BLDG | SD-96463-01 | I97 | FOR INITIAL CHG PERIOD REMINDING ON ORIGINATING CALLS | SD-95801-01 | I122 | AUTO., WET DRY SUPV | SD-55184-01 | A39 | INTEROFFICE FROM DISTANT TOLL SWBD ARR TO REPEAT RING. SIG | SD-64440-01 | G47 |
| TEST | | | TONE | | | FROM TOLL SWBD NO. 1, AUTO. | SD-55186-01 | E47 | INTEROFFICE FROM DISTANT TOLL SWBD ARR TO RERING | SD-64441-01 | F47 |
| POSITION, FOR CORD, DIAL, KEY SET, JACKS | SD-55056-01 | B81 | ORDER | SD-55343-01 | H88 | INFO, FROM SXS SEL MULT IN SAME BLDG | SD-55335-01 | I56 | FROM MAN. TDM SXS LOCAL OR TDM PANEL SDR TDM OR CBR TDM OFF. | SD-64553-01 | I47 |
| TRUNK, FOR MFKP TRKS | SD-55924-01 | B117 | RINGING | SD-62312-01 | E65, C152 | 3 OR 4W FROM SXS OVERFLOW CONN MULT, TRIPS MACH RING, WITHOUT CHARGING | SD-55500-01 | D57 | 2W FROM SXS CONN MULT, OFF. PBX TR | SD-64553-01 | B56 |
| AUTO., FOR MFKP-IN, RP-OUT SENDERS | SD-56097-01 | E117 | TRANSFER | | | FROM TOLL SWBD NO. 1 IN SAME BLDG FOR HANDLING "WE HAVE" CALLS | SD-55643-01 | F49 | 2W FROM PBX CONN MULT, OFF. PBX TR | SD-64553-01 | B57 |
| INTERTOLL DIALING ROT. OUT TRK SWITCH | SD-56118-01 | F117 | FOR TRANSFERRING CORD CKTS TO TOLL CAB. NO. 1B | SD-55507-01 | F3 | OFFICIAL PBX OR VERIFICATION REQUEST, HIGH-LOW REV BAT. SUPV | SD-55778-01 | B112 | 2W FROM SXS CONN MULT - EMER SERV | SD-64553-01 | E57 |
| MULT LAMP, FOR TESTING AC OR DC IDLE INDICATING AND BUSY LAMPS | SD-56471-01 | H84 | KEY SET, FOR USE WHEN DSB OR CAMA CALLS ARE HANDLED AT SWBD POS | SD-55992-01 | C128, D159 | TBL INCPT FROM PANEL OFF. | SD-55869-01 | G107 | 3 OR 4W FROM SXS CONN MULT, OFF. PBX TR | SD-64568-01 | A56 |
| AUTO., FOR RP TOLL SENDERS | SD-62059-01 | B83 | EMER, TO PROVIDE DIAL SUB IN CBR NO. 5 OFF. WITH EMER MANUAL SERV | SD-56142-01 | E114 | PERM SIG HOLDING FROM CBR NO. 1 OR PANEL OFF. | SD-55870-01 | D107 | VERIFICATION REQUEST, FROM SXS CONN MULT IN SAME BLDG | SD-64582-01 | H51 |
| DC KEY PULSING TRK, FOR OVER-ALL TESTS | SD-63853-01 | B84 | ROUTE, & MAKE BUSY | SD-56048-01 | C121 | PERM SIG HOLDING FROM PANEL, CBR NO. 1 OR CBR NO. 5 OFF. | SD-55889-01 | A107 | VERIFICATION REQUEST, FROM PANEL OR CBR NO. 1 OR 5 OFF. IN SAME BLDG | SD-64582-01 | D162 |
| PAD CONTROL RELAY | SD-63958-01 | B85 | KEY, LAMP & TRFR FOR HANDLING CAMA CALLS USING MF KEY PULS, ARR FOR 2 FREQUENCY REGISTER RESET | SD-56441-01 | J7 | OFFICIAL PBX, FROM CBR NO. 1 OFF., ARR FOR TERMINATING SERV | SD-55958-01 | I107 | | | |
| INTERTOLL DIAL, SEL FR & REL RACKS | SD-64604-01 | G82 | TROUBLE POS | SD-64577-01 | G93 | INCPT, REGULAR & TBL FROM PANEL OFF. TRK FOR | SD-55960-01 | H107 | | | |
| FOR TESTING 209FA & FD RELAY | SD-90411-01 | D81 | EMER, TO PROVIDE DIAL SUB IN SXS, PANEL OR CBR NO. 1 OFF. WITH EMER MAN. SERV WHEN LOCAL OFF. IS LOCATED IN SAME BLDG, ARR TO DISCONNECT CALLING PTY ON EMER CALL | SD-96425-01 | H12 | TX, REV BAT. SUPV, SIMPLEX RERING INC, REV BAT. RERING OUT. | SD-56045-01 | C50 | | | |
| AUTO., FOR DCKP SENDERS | SD-90424-01 | C83 | LAMP | SD-96470-01 | E167 | | | | | | |
| MAN., FOR DCKP-IN, DP-OUT SENDERS | SD-90635-01 | D83 | EMERG, ARR TO USE EXISTING TRUNK FACILITIES TO TERMINATE EMER LINES FROM DST CBR NO. 5 OFF. | SD-96517-01 | I167 | | | | | | |
| MAN., FOR MFKP-IN, DP-OUT SENDERS | SD-95400-01 | D117 | TROUBLE OBSERVATION & TEST | SD-95034-01 | A92, F59 | | | | | | |
| BAT. & GRD TERMINALS | SD-90122-01 | C84 | | | | | | | | | |
| SERV OBS, FOR TESTING INTERTOLL SERV OBS CKT | SD-95712-01 | D119 | | | | | | | | | |
| TRUNK, FOR TESTING COIN ZONE OPR TRK CKTS | SD-95875-01 | A119 | | | | | | | | | |
| TRK, FOR TESTING INC INCPT TRK CKTS | SD-96478-01 | A117 | | | | | | | | | |
| TEST SET | | | | | | | | | | | |
| AC REL & SIG, MEAS AC VOLT | SD-63674-01 | E84 | | | | | | | | | |

DRAWING ISSUE
15
CBM
P.R.

15

SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

SD-64890-01-A6

BELL TELEPHONE LABORATORIES
INCORPORATED

PRINTED IN U.S.A.

(1) SHOWN ON "B" SHEETS

INDEX

| CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) |
|---|----------------|--------------|---|----------------|--------------|---|----------------|--------------|---|----------------|--------------|
| TRUNK (CONT) | | | OUT. FROM SEL MULT TO OPR OFF., CS OR SX SIG | SD-55275-01 | J73 | TRUNK (CONT) | | | OPERATOR'S TRAINING | | |
| INCOMING (CONT) | | | OUT. FROM SEL MULT TO MAN. OR DIAL OFF. | SD-55301-01 | H71 | INTERTOLL DIALING (CONT) | | | D-C KP TOLL SW OR INTERTOLL WHERE KEY SET START KEY IS USED | SD-55071-01 | E63 |
| FROM COMMUNITY DIAL OFF. | SD-64626-01 | D49 | TOLL SW, TO INC TRK IN SXS OFF., TO INC TRK IN SXS OFF., CONTROLLED RING., CX OR SX SIG | SD-55379-01 | F73 | INTERTOLL | SD-64824-01 | J69 | INTERTOLL TRK OR OPR OFF., DIAL. ARR FOR DIAL TONE | SD-55288-01 | F62 |
| FROM SXS SEL MULT, ARR TO ABSORB 1 TO 5 DIGITS | SD-64660-01 | J47 | OUT. TO INTERTOLL SEL, DIAL OPERATION | SD-55990-01 | B67 | RD, ARR FOR 20 OR 135 CYCLE RINGING | SD-55123-01 | F17 | RD INTERTOLL, FOR OUTWARD, INWARD, THROUGH OR COMBINED INWARD & THROUGH OPERATION | SD-56069-01 | H62 |
| REGULAR TRAFFIC | SD-64660-01 | F56 | 2 WAY, CX OR SX SIG | SD-56036-01 | B68 | OUT. MFKP OR STFD, ARR FOR EMER ACCESS OPERATION, E&M LEAD SUPV | SD-55852-01 | F102 | DCKP TOLL SW FOR NONSTART KEY OPERATION | SD-55794-01 | F63 |
| TIME OF DAY SERV | SD-64660-01 | F56 | OUT. TO INTERTOLL SEL OR AUX INTER-TOLL TRK CKT, DCKP FROM POSITION, DP FROM SDR | SD-56108-01 | B137 | 2 WAY, INC AUTO., OUT. MFKP, CX SUPV | SD-56062-01 | B132 | NUMBER CHECKING | SD-64445-01 | C62 |
| FROM MAN. OR DIAL OFF., ARR FOR TRFR FROM REPAIR SERVICE DESK NO. 2 | SD-64754-01 | H57 | AUX INTERTOLL, FOR USE BETWEEN INTER-TOLL TRK CKT & ROTARY OUT. TRK SWITCH CKT | SD-56108-01 | B137 | OUT. MFKP, INC DP OR AUTO., CX SUPV | SD-56109-01 | C132 | RECORDING OR REC COMPLETING | SD-64515-01 | G62 |
| OFFICIAL PBX FROM SXS OFF. IN SAME BLDG | SD-64767-01 | A57 | NO CKT SIG. FROM INTERTOLL THROUGH SEL MULT | SD-56439-01 | H137 | 2 WAY, MFKP-IN, DP-OUT, E&M LEAD SUPV, ARR FOR CONNECTION TO AUX TRK CKT FOR OPERATION WITH INTERTOLL DIALING SEL OR CBR TDM OFF. | SD-56352-01 | E132 | MAN. TOLL SW, MAN. TDM, MAN. TOLL TDM, MFKP TOLL TDM OR INTERTOLL OR STFD INTERTOLL | SD-64558-01 | E62 |
| ARR FOR USE WITH OUT. CALL CKTS | SD-90566-01 | H47 | AUX, OUT. DIAL, INC AUTO. OR DIAL, FOR USE WITH CX OR SX SIG & SWBD OUT. TRKS | SD-64469-01 | E67 | AUX, 4 WIRE TALKING, HIGH-LOW REV BAT. SUPV, SX DC RING. ON SIG PHANTOM, FOR USE WITH RD INTER-TOLL TRK | SD-56405-01 | D20 | OUTGOING | | |
| INCPT OR RURAL SERV. FROM CBR NO. 1 OFF. IN SAME BLDG | SD-95403-01 | E49 | OUT. TO TOLL OFF., MAN. OR DIAL OPR, CX OR SX SIG | SD-64472-01 | C67 | OUT., DCKP-IN, DP-OUT, E&M LEAD SUPV, PULSE RERING SIG, WITHOUT START PULSING SIG, WITH OR WITHOUT TRANS SW PAD | SD-56453-01 | F134 | TO PANEL OR CBR OFF. NO. 1, WITH OR WITHOUT CONTROLLED RING, START SIGNAL, COIN CONT & PAD CONT | SD-55191-01 | D102 |
| SENDER MONITORING | SD-95469-01 | H50 | TOLL SW TRK OUT. TO SXS LOOP DIAL TOLL TRANSMISSION SEL | SD-64473-01 | D71 | RD, REGULAR | SD-62614-01 | B17 | VERIFICATION TO SXS TEST DISTRIBUTOR, DCKP | SD-55291-01 | H52 |
| INCPT, FROM CBR NO. 5 OFF. IN SAME BLDG, WITH OR WITHOUT TBL IDENTIFICATION | SD-95485-01 | J112 | INC FROM INTERTOLL TRK OR SEL MULT | SD-64476-01 | F67 | RD, AUX INTERTOLL & SWITCHING TRANS PAD | SD-62632-02 | A16 | TO SXS SELS, DIAL, SPL SERVICE | SD-55346-01 | C52 |
| INCPT, REGULAR AND TROUBLE, WITH OR WITHOUT MACH ANNOUNCEMENTS | SD-95789-01 | E162, H172 | INC FROM MAN. OR SXS OFF., LOOP SIG | SD-64482-01 | J67 | INTERMEDIATE, MF PULS, INC REV BAT. SUPV, OUT. E&M LEAD SUPV, INC 20 CYCLE, SX OR NO RERING, OUT. PULSE RINGING | SD-95443-01 | J132 | VERIFICATION TO SXS TEST DISTRIBUTOR, REPEATED DIALING | SD-55346-01 | H52 |
| FROM CBR NO. 1 OFF., VACANT CODE INCPT | SD-96189-01 | H114 | 4W TOLL SW TRK TO TOLL INTERMEDIATE SEL | SD-64485-01 | E71 | MONITORING | | | DCKP, NO TEST, TO CBR NO. 1 OFF., 20 CYC RINGING CONTROLLED BY OPR, TYPE "A" TB SUPPLY | SD-55819-01 | A102 |
| TO CAMA POSITION | SD-96482-01 | C183 | AUX INTERCEPTING | SD-64486-01 | K67 | SDR, FOR CBR NO. 1 OR PANEL OFF. SUB SDRS | SD-55868-01 | B107 | TO SXS SELS, DIAL, SPL SERVICE | SD-55346-01 | H52 |
| INCPT, REGULAR AND TBL, WITH OR WITHOUT MACH ANN. FROM SXS OFF. IN SAME OR DISTANT BLDG | SD-95796-01 | B172 | INC FROM MAN. OR SXS OFF., PULSE CORRECTING | SD-64487-01 | F71 | COIN SUPV & OVERTIME, FOR CBR NO. 1 OR PANEL OFF. | SD-56000-01 | E107 | VERIFICATION TO SXS TEST DISTRIBUTOR, REPEATED DIALING | SD-55346-01 | H52 |
| COIN ZONE OPERATOR, FROM CBR OFF. NO. 5 | SD-95851-01 | E112 | TOLL SW TRK TO SXS REP DIAL TOLL TRAIN | SD-64487-01 | F71 | COIN SUPV & OVERTIME MON FOR CBR NO. 1 OFFICE | SD-56086-01 | F109 | DCKP, NO TEST, TO CBR NO. 1 OFF., 20 CYC RINGING CONTROLLED BY OPR, TYPE "A" TB SUPPLY | SD-55819-01 | A102 |
| OFFICIAL PBX | SD-96189-01 | H114 | 2 WAY, DIAL PULSING, E, MAF OR E&M LEAD SUPV, ARR FOR CONVERSION TO MFKP | SD-64531-01 | H67 | | | | MFKP OR STFD, REV BAT. SUPV, 20 CYCLE, SIMPLEX OR NO RINGING START SIG, WITH OR WITHOUT COIN CONTROL | SD-55879-01 | E104 |
| FROM CBR NO. 1 OFF., VACANT CODE INCPT | SD-96189-01 | G114 | OUT. OR 2 WAY, E&M LEAD SUPV - OUT. SERV: DCKP-IN, DP-OUT - INC SERV: DP, MFP OR AUTO. | SD-64538-01 | D67 | | | | TOLL TANDEM, 4W TALK. REV BAT. SUPV, SX DC RING. ON SIG PHANTOM MFKP OR AUTO., WITH OR WITHOUT SW PAD OPERATION | SD-56056-01 | T44 |
| TO CAMA POSITION | SD-96482-01 | C183 | OUT. FROM SEL MULT TO INFO DESKS OR OPR ROOM DESK NO. 19 OR 23A, B, C, D OR E | SD-64539-01 | I71 | | | | MFKP OR STFD, REV BAT. SUPV WITH REPEATED SUPV, AUTO. START OF RINGING | SD-56082-01 | G42 |
| INCPT, REGULAR AND TBL, WITH OR WITHOUT MACH ANNOUNCEMENTS, E&M LEAD SUPV | SD-96488-01 | G162 | INC TO INTERTOLL SEL OR OPERATOR, CX OR SX SIG | SD-64590-01 | G67 | | | | | | |
| INTERPOSITION | | | TALK TRK & TEST CKTS FOR SEL FR & REL RACKS | SD-64604-01 | G82 | | | | | | |
| ONE WAY AUTO., TO OR FROM TOLL SWBD NO. 1 OR 1B | SD-55421-01 | D19 | | | | | | | | | |
| BETWEEN TOLL POSITIONS REGULAR INTERPOSITION | SD-62771-01 | A19, I52 | | | | | | | | | |
| NIGHT INF. (SXS "A") | SD-62771-01 | G58 | | | | | | | | | |
| FROM POINT TO POINT TO CLR POS | SD-64430-01 | B19 | | | | | | | | | |
| INTERTOLL DIALING | | | | | | | | | | | |
| OUT. FROM SEL MULT, CS OR SX SIG | SD-55109-01 | J71 | | | | | | | | | |
| OUT. FROM SEL MULT, TO PRECEDE A THROUGH OR AUX INTERTOLL SEL | SD-55232-01 | C71 | | | | | | | | | |
| OUT. FROM INTERTOLL DIAL INC OR 2 WAY TRK OR SEL TO AUX INTERTOLL SEL | SD-55243-01 | G69 | | | | | | | | | |

SD-64800-01-A7

(1) SHOWN ON "B" SHEETS

SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

SD-64800-01-A7

BELL TELEPHONE LABORATORIES
INCORPORATED

25 PRINTED IN U.S.A.

INDEX

| CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) |
|--|----------------|--------------|
| TRUNK (CONT) | | |
| OUTGOING (CONT) | | |
| DCKP-IN, DP-OUT, REV BAT. SUPV, SIMPLEX OR NO RINGING START SIG, WITH OR WITHOUT COIN CONT OVER SEPARATE SINGLE TRK CONDUCTOR, WITH OR WITHOUT ACCESS FROM INTERTOLL DIALING TRK CKT OR SXS REPEATER | SD-56105-01 | F147 |
| TO POLICE, FIRE OR AMBULANCE, LINES IN DIST DIAL OFF. | SD-56355-01 | A42 |
| TO INFO DESK NO. 17MC OR OPR ROOM DESK NO. 19, ARR FOR NIGHT TRFR TO DSA SWBD OR SWBD NO. 3C OR 3CL | SD-60499-01 | C44 |
| NUMBER CHECKING TO PANEL "A" SWBD | SD-62890-01 | A20 |
| FOR POLICE, FIRE & AMBULANCE CALLS | SD-63288-01 | H44 |
| STFD OR AUTO., HIGH-LOW SUPV | SD-63820-01 | F42 |
| STFD & MF PULSING HIGH-LOW SUPV, REV BAT. OR 20 CYCLE RERING SIGNAL | SD-64116-01 | H42 |
| NUMBER CHECKING, MF OR STFD TO CBR OFF. NO. 1 | SD-64412-01 | B20 |
| INTEROFFICE TO DISTANT TOLL SWBD OR DSA SWBD ARR TO REPEAT RINGING SIG | SD-64440-01 | J42 |
| INTEROFFICE TO DISTANT TOLL SWBD ARR FOR RERING | SD-64441-01 | I42 |
| RECORDING | | |
| 3W INC FROM PANEL "A" OR MAN. OFF. | SD-62278-01 | B27 |
| 3W INC FROM SWBD NO. 1C | SD-62280-01 | B28 |
| 2W INC FROM PANEL "A" OR MAN. OFF. | SD-64221-01 | A27 |
| RECORDING COMPLETING | | |
| 3W INC FROM SXS LOCAL SELS CONNECTING TO OPR OFF. TRKS ARR FOR 1 DIGIT TDM OPR | SD-55344-01 | A24 |
| 3W INC FROM PANEL OFF., 4W INC FROM CBR OFF. NO. 1, ARR TO RECALL SUB AND FOR NO. CHECKING IN CBR OFF. NO. 1, NONCOIN | SD-55430-01 | C24 |

| CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) |
|--|----------------|---------------|
| NONCOIN, ARR TO RECALL SUB & FOR USE AS EMER LINE FROM CBR NO. 5 OFF. | SD-55872-01 | C112 |
| COIN, FROM CBR NO. 5 OFF. | SD-55875-01 | F112 |
| 3W INC FROM PANEL OFF., 4W INC FROM CBR OFF. NO. 1, ARR FOR NO. CHECKING IN CBR OFF. NO. 1, COIN | SD-55946-01 | F24 |
| FROM SXS OFF. IN SAME BLDG, ARR TO RECALL SUB & FOR CLASS OF SERVICE TONE, NONCOIN | SD-56007-01 | G22, A52, C56 |
| FROM SXS OFF. IN SAME BLDG, ARR FOR COIN CONT & FOR CLASS OF SERV TONE | SD-56008-01 | H22, A52 |
| OPERATOR, 2 WIRE COIN, DSA TO TOLL, OR TOLL TO MOBILE SERV POS | SD-56090-01 | J22 |
| E&M LEAD SUPV, ARR FOR COIN CONTROL & RECALL USING 2 FREQUENCIES OVER TIP & RING | SD-56478-01 | E23 |
| E&M LEAD SUPV, WITH OR WITHOUT PULSE RERING, WITH OR WITHOUT COIN CONTROL OVER SEPARATE SINGLE TRK CONDUCTOR, ARR FOR USE WITH EMER TRANSFER CKT | SD-56488-01 | E24 |
| 2W INC FROM COIN OR NONCOIN LINES IN CROSSBAR OFF. NO. 1 OR NONCOIN LINES IN PANEL OFF., ARR TO RECALL SUB & FOR NUMBER CHECKING | SD-63013-01 | I22 |
| 3W OPR, FROM SXS OFF. | SD-63864-01 | I24 |
| SUB OR OPR, WITH OR WITHOUT RECALL, WITH OR WITHOUT COIN CONTROL | SD-64571-01 | B22, A51 |
| TOLL SWITCHING | | |
| TO MAN. OFF., TEMP. MAN. OPR | SD-55291-01 | I32 |
| DCKP-IN, RP OR DP-OUT WITHOUT START PULSE SIG, WET DRY OR REV BAT. SUPV WITH OR WITHOUT REPEATED SX SUPV, 20 CYC, SX OR NO RING. START SIG, WITH OR WITHOUT COIN CONTROL, WITH OR WITHOUT ACCESS FROM DIAL SW OFF. SWITCH MULT | SD-55291-01 | G34 |

| CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) |
|---|----------------|--------------|
| TRUNK (CONT) | | |
| TOLL SWITCHING (CONT) | | |
| TO SXS LOCAL OR TOLL TRANS SEL, K.P. (SXS "A") | SD-55291-01 | C53 |
| DCKP-IN, DP-OUT., BRIDGED SUPV, WITH OR WITHOUT REPEATED SX SUPV, 20 CYC OR NO RINGING START SIG, WITH OR WITHOUT COIN CONTROL | SD-55341-01 | J34 |
| TO MAN. OFF., TEMPORARY MAN. OPR | SD-55341-01 | I32 |
| DCKP-IN, DP-OUT, TO SXS TOLL INTERMEDIATE SEL, BRIDGED SUPV WITH OR WITHOUT REPEATED SIMPLEX SUPV 20 CYC OR NO RINGING START SIG, WITH OR WITHOUT COIN CONTROL | SD-55341-01 | J34 |
| 4W TO SXS TOLL INT SEL, K.P., (SXS "A") | SD-55341-01 | B53 |
| TO MAN. OFF., TEMP. MAN. OPR | SD-55346-01 | I32 |
| 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 CONDUCTOR | SD-55346-01 | C147 |
| TO MAN. OFF., TEMP. MAN. OPR | SD-55352-01 | I32 |
| 4W TO SXS TOLL INTERMEDIATE SEL, DIAL, CONTROLLED RING., COIN CONTROL | SD-55352-01 | B34 |
| REPEATED DIALING, E&M OR E, M&N LEAD SUPV PULSE OR NO RINGING START SIG, WITH OR WITHOUT COIN CONTROL, WITH OR WITHOUT ACCESS FROM INTERTOLL DIALING TRK CKT, WITH OR WITHOUT START DIAL SIGNAL | SD-55380-01 | D147 |
| DCKP-IN, DP-OUT, E&M OR E, M&N LEAD SUPV, PULSE OR NO RINGING START SIG, WITH OR WITHOUT COIN CONTROL, WITH OR WITHOUT ACCESS FROM INTERTOLL DIALING TRK CKT | SD-55386-01 | H147 |

| CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) |
|---|----------------|--------------|
| DCKP-IN, RP OR PCI-OUT, REV BAT. OR WET DRY SUPV WITH OR WITHOUT REPEATED SIMPLEX SUPV, 20 CYCLE, SIMPLEX OR NO RINGING START SIG WITH OR WITHOUT COIN CONTROL OVER SEPARATE SINGLE TRK CONDUCTOR | SD-55821-01 | K34 |
| DCKP, WET DRY SUPV, CONTROLLED RING., TO REPEATED DIAL TOLL TRAIN OR COMBINED LOOP & REPEATED DIAL TOLL TRAIN | SD-55901-01 | G104 |
| MFKP-IN, RP-OUT, WET DRY OR REV BAT. SUPV, 20 CYC, SX, OR NO RINGING START SIG WITH OR WITHOUT COIN CONTROL | SD-56245-01 | J147 |
| MFKP, E&M LEAD SUPV, PULSE RINGING START SIG, NONCOIN | SD-56434-01 | B150 |
| DCKP-IN, DP-OUT, REV BAT. SUPV, ARR FOR COIN CONT & RERING USING 2 FREQUENCIES OVER TIP & RING, WITH OR WITHOUT ACCESS FROM DIAL SWITCHING OFFICE | SD-56480-01 | H148 |
| DCKP-IN, DP-OUT, E&M LEAD SUPV, ARR FOR COIN CONTROL & RERING USING 2 FREQUENCIES OVER TIP & RING, WITH OR WITHOUT ACCESS FROM DIAL SWITCHING OFFICE | SD-56481-01 | D150 |
| MFKP, REV BAT. SUPV, ARR FOR COIN CONTROL AND RERING USING 2 FREQUENCIES OVER TIP & RING | SD-56482-01 | F148 |
| MFKP, E&M LEAD SUPV, ARR FOR COIN CONTROL AND RERING USING 2 FREQUENCIES OVER TIP & RING | SD-56483-01 | D149 |
| TO SXS TOLL SEL | SD-62022-01 | E32, B52 |
| TOLL SWITCHING TDM | | |
| ALSF TOLL SW TDM POS INC | SD-56179-01 | B153 |
| ALSF TOLL SW TDM POS AUX INC, 4 WIRE, REV BAT. SUPV, FROM TOLL SW OFF. NO. 4, 4A OR 4M | SD-56180-01 | B152 |

(1) SHOWN ON "B" SHEETS

SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

BELL TELEPHONE LABORATORIES
INCORPORATED

SD-64800-01-A8

25

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INDEX

| CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) | CIRCUIT NAME | DRAWING NUMBER | BLOCK LOC(1) |
|--|----------------|--------------|---|----------------|--------------|--|----------------|--------------|---|----------------|--------------|
| TRUNK (CONT) | | | | | | TRUNK (CONT) | | | TEST TRK, FROM L.T.D. NO. 14. IN OR OUT TYPE, FOR USE AT M.D.F., PROT FRAME OR JACK PANEL | SD-90070-01 | F84 |
| TOLL SWITCHING TDM (CONT) | | | OPR OFF., MFKP-IN, DP-OUT, E&M LEAD SUPV, WITH OR WITHOUT ACCESS FROM INTERTOLL OGT CKT | SD-56184-01 | D177 | MISCELLANEOUS (CONT) | | | TEST TRK, FROM L.T.D. NO. 14, BRIDGING, FOR USE AT M.D.F. & PROT FRAME | SD-90071-01 | F83 |
| AUX INC, FROM CBR TDM OFF., REV BAT. SUPV, SIMPLEX RERING | SD-56394-01 | B152 | DCKP-IN, DP-OUT, HIGH-LOW REV BAT. SUPV, ARR FOR COIN CONTROL & RERING USING 2 FREQ OVER TIP & RING, WITH OR WITHOUT ACCESS FROM DIAL SW OFFICE, ARR FOR USE WITH 600 OHM LINKS | SD-56474-01 | B188 | ENERGIZED PERM OPR TRAINING UNIT, CORD, JACK & LAMP | SD-56461-01 | H63 | TALKING TRK AT M.D.F. OR PROT FRAME TO L.T.D. | SD-96074-01 | F82 |
| AUX INC, STFD AND/OR MF PULSING, HIGH-LOW OR REV BAT. SUPV, 20 CYCLE OR SX RING. SIG | SD-56445-01 | H152 | DCKP-IN, DP-OUT, E&M LEAD SUPV, ARR FOR COIN CONTROL & RERING USING 2 FREQ OVER TIP & RING, WITH OR WITHOUT ACCESS FROM DIAL SW OFFICE, ARR FOR USE WITH 600 OHM LINKS | SD-56475-01 | F188 | TONE & HOLDING, FOR TBL TRACING IN 2 WIRE TOLL SW OFF. | SD-56466-01 | H119 | | | |
| TRANSFER - INTERTOLL | | | REPEATED DIALING, HIGH-LOW REV BAT. SUPV, ARR FOR COIN CONTROL & RERING, USING 2 FREQUENCIES OVER TIP & RING, WITH OR WITHOUT ACCESS FROM DIAL SWITCHING OFFICE | SD-56476-01 | D188 | TEL REP TOLL CONFERENCE | SD-64625-01 | J17 | | | |
| ORIG OFF. END, HIGH-LOW SUPV, REV BAT. RINGING, ARR FOR COIN CONT | SD-55897-01 | E102 | TO REPAIR SERVICE DESK NO. 2 OR L.T.D. NO. 12B, 12C, OR 14 | SD-60759-01 | B39 | | | | | | |
| TER OFF. END, HIGH-LOW SUPV, REV BAT. RINGING, ARR FOR COIN CONTROL | SD-55900-01 | C103 | TO L.T.D. NO. 13 | SD-62469-01 | C39 | | | | | | |
| BETWEEN SWBDS IN SAME BLDG | SD-56003-01 | J102 | INTEROFFICE TO DISTANT TOLL OR DSA BD, AUTO., ARR TO REPEAT RING. SIG | SD-64440-01 | E39 | | | | | | |
| 2 WAY | | | INTEROFFICE TO DISTANT TOLL OFF., AUTO., ARR FOR RERING | SD-64441-01 | D39 | | | | | | |
| REC COM SW, REV BAT., E&M OR E, M & N LEAD SUPV | SD-55158-01 | D37 | TO LOCAL OFF., TOLL CONN FOR ESTABLISHING CONN WITH COMMUNITY DIAL SUB | SD-64626-01 | F37 | | | | | | |
| AUTO., WET DRY SUPV | SD-55184-01 | A39 | MISCELLANEOUS | | | | | | | | |
| OPR OFF., TO COMMUNITY DIAL OFF., REPEATED DIALING, WITH DIAL BACK OPERATION, HIGH-LOW REV BAT., E&M OR E, M & N LEAD SUPV, WITH OR WITHOUT REPEATED SX SUPV | SD-55255-01 | A37 | COMBINED INC AND TEST, USING 2 PAIRS OF CONDUCTORS, ARR FOR MF PULS FROM TEST BD OR DC OR MF PULS OR DIALING FROM SEPARATE JACK BY OPERATOR | SD-56371-01 | G117 | | | | | | |
| OPR OFF. TO COMMUNITY DIAL OFF., DCKP, HIGH-LOW REV BAT., E&M OR E, M & N LEAD SUPV, WITH OR WITHOUT REPEATED SX SUPV | SD-55256-01 | C37 | | | | | | | | | |
| AUTO. TO OR BETWEEN BAYS, FRAMES OR RACKS | SD-55348-01 | J83 | | | | | | | | | |
| OPR OFF., DCKP-IN, DP-OUT, DC KEY PULSING, CX, SX OR E&M LEAD CX TYPE SUPV, ARR FOR DIAL BACK OPERATION & FOR OUT. SERV FROM INTERTOLL SELECTORS | SD-55951-01 | B177 | | | | | | | | | |
| OPR OFF. TO COMMUNITY DIAL OFF., MFKP-IN, DP-OUT, HIGH-LOW REV BAT. SUPV, ARR FOR OUT. SERV FROM TDM OR INTERTOLL SELECTORS | SD-56116-01 | D37 | | | | | | | | | |

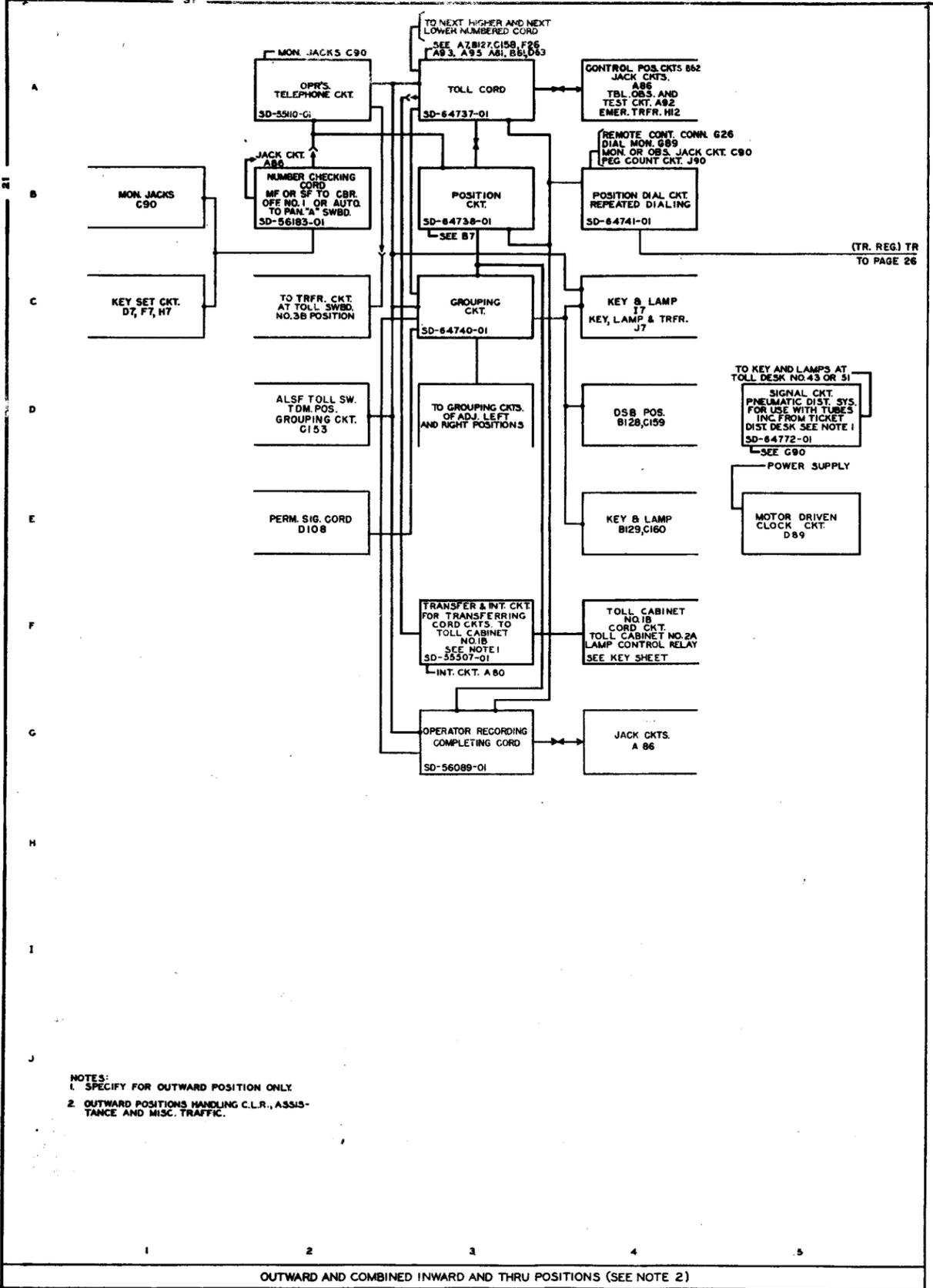
SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

SD-64800-01-A9

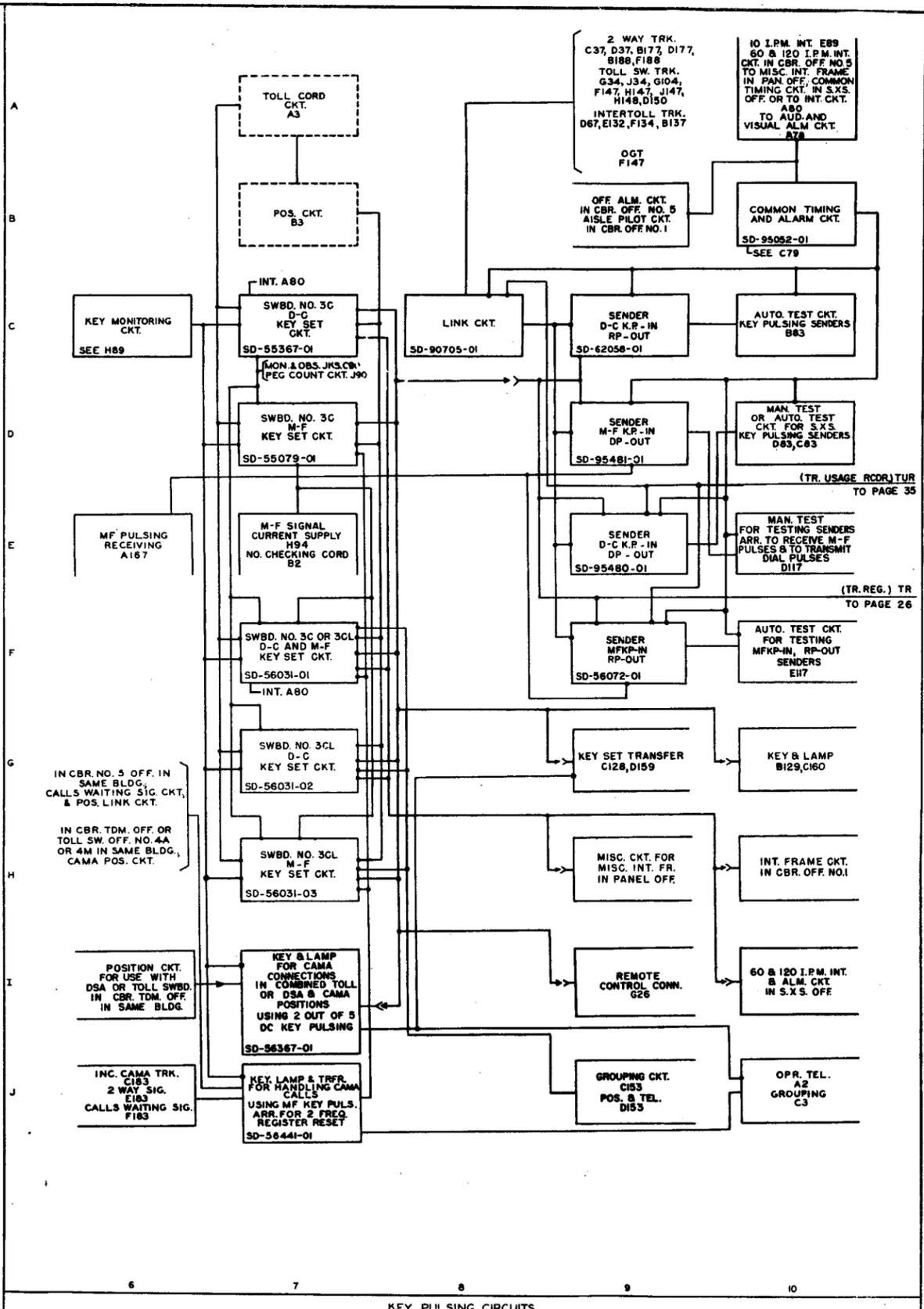
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(1) SHOWN ON "B" SHEETS



OUTWARD AND COMBINED INWARD AND THRU POSITIONS (SEE NOTE 2)



KEY PULSING CIRCUITS

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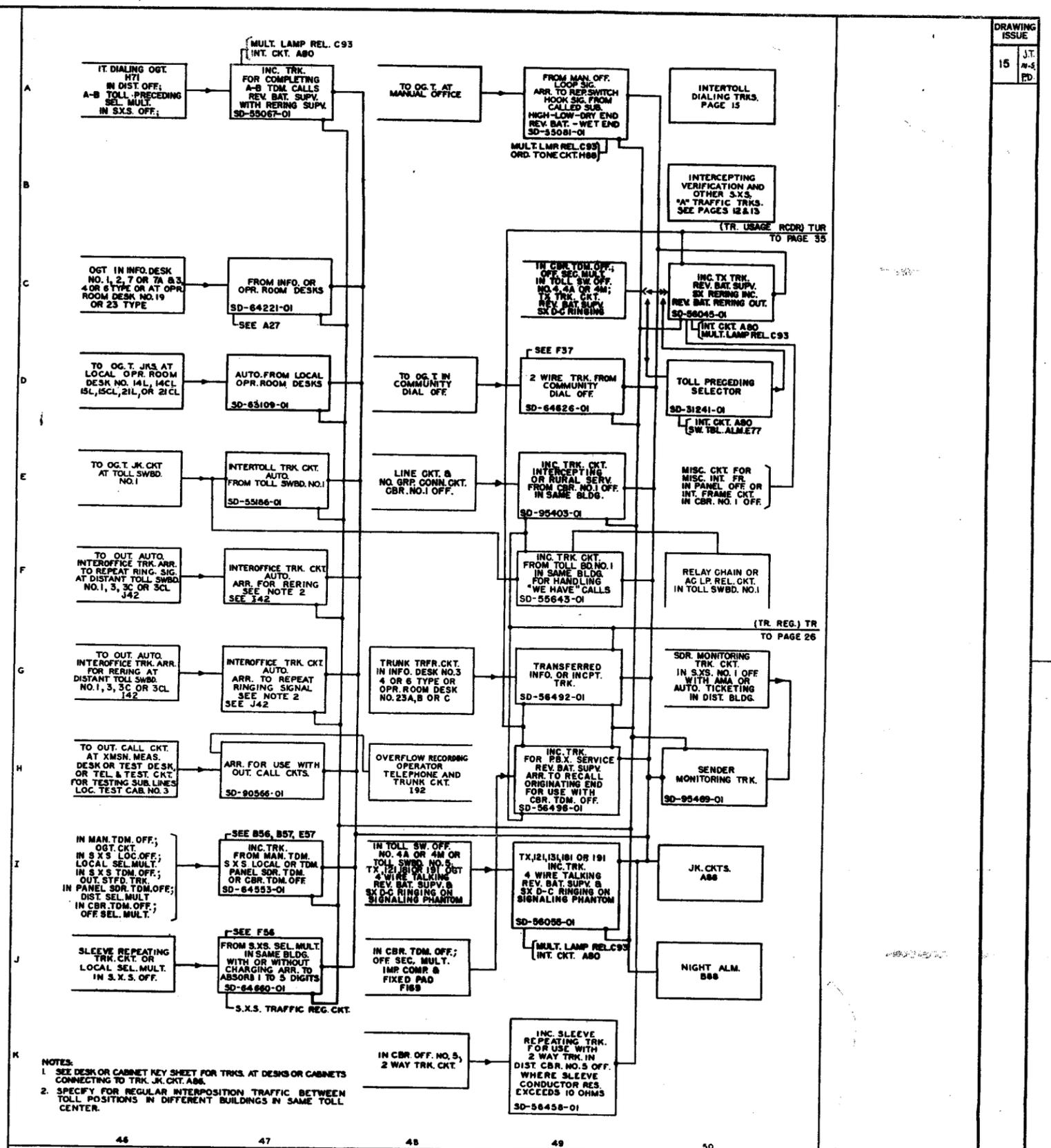
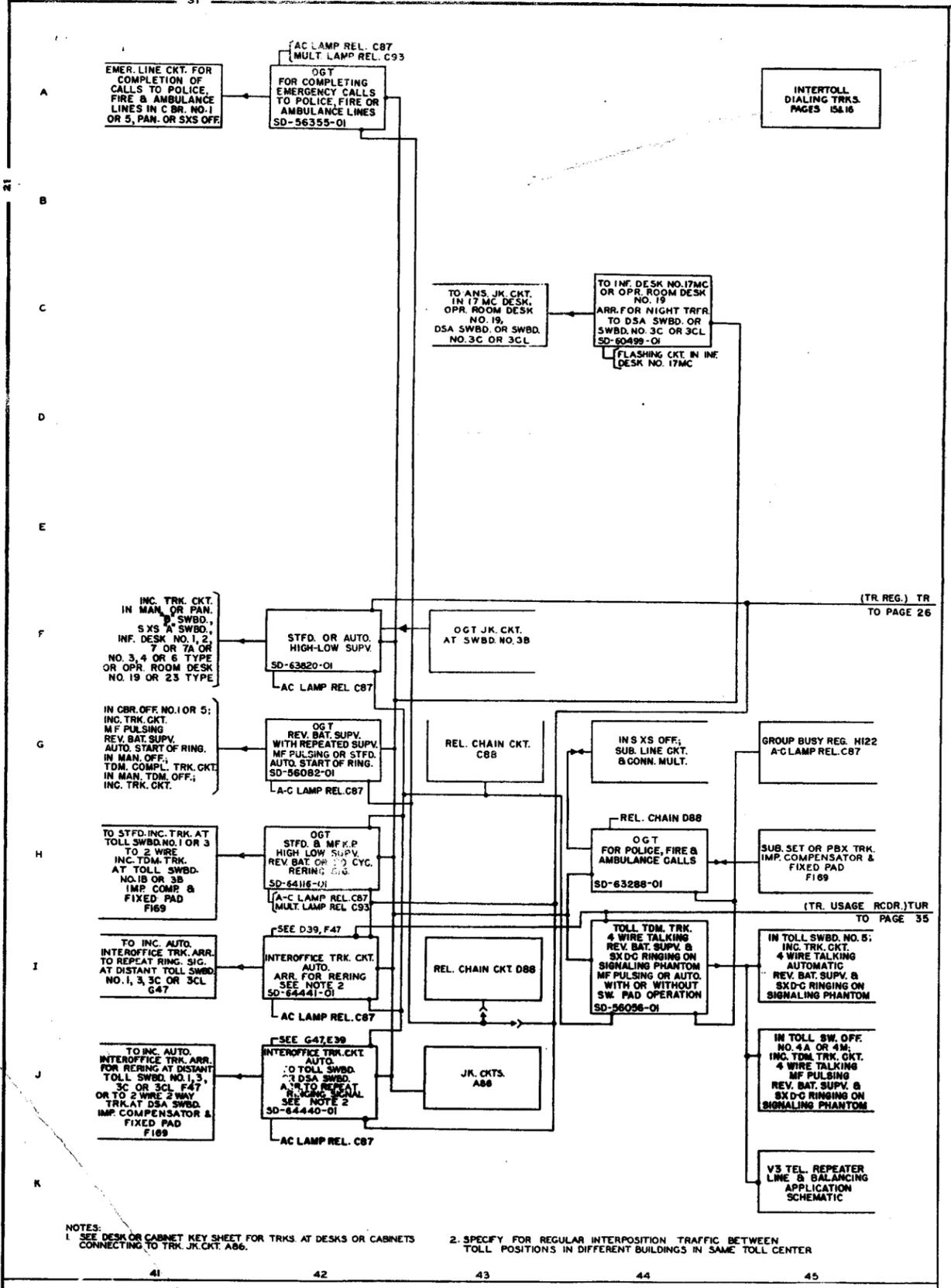
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KEY SHEET

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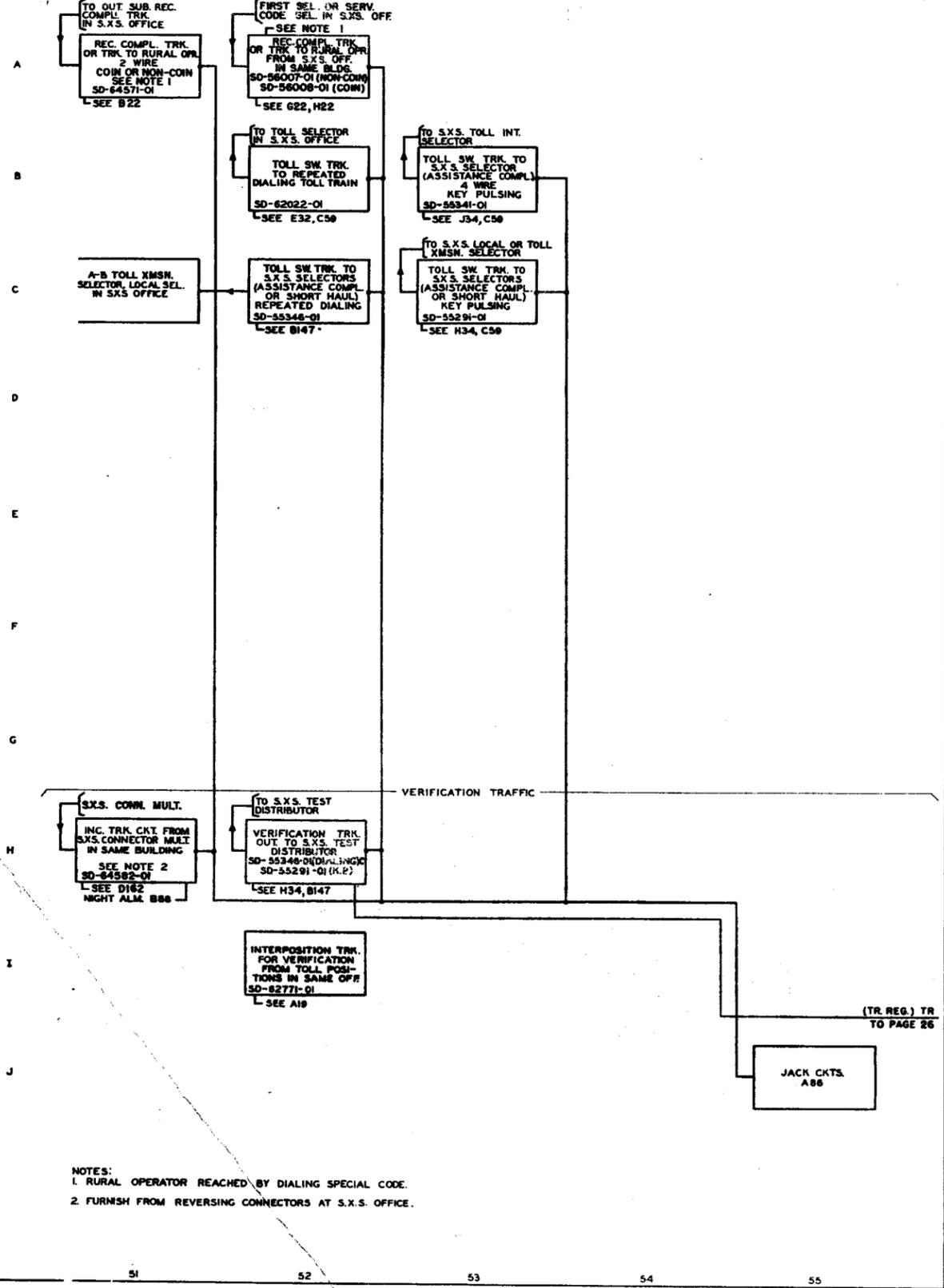
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SD-64800-01-B5

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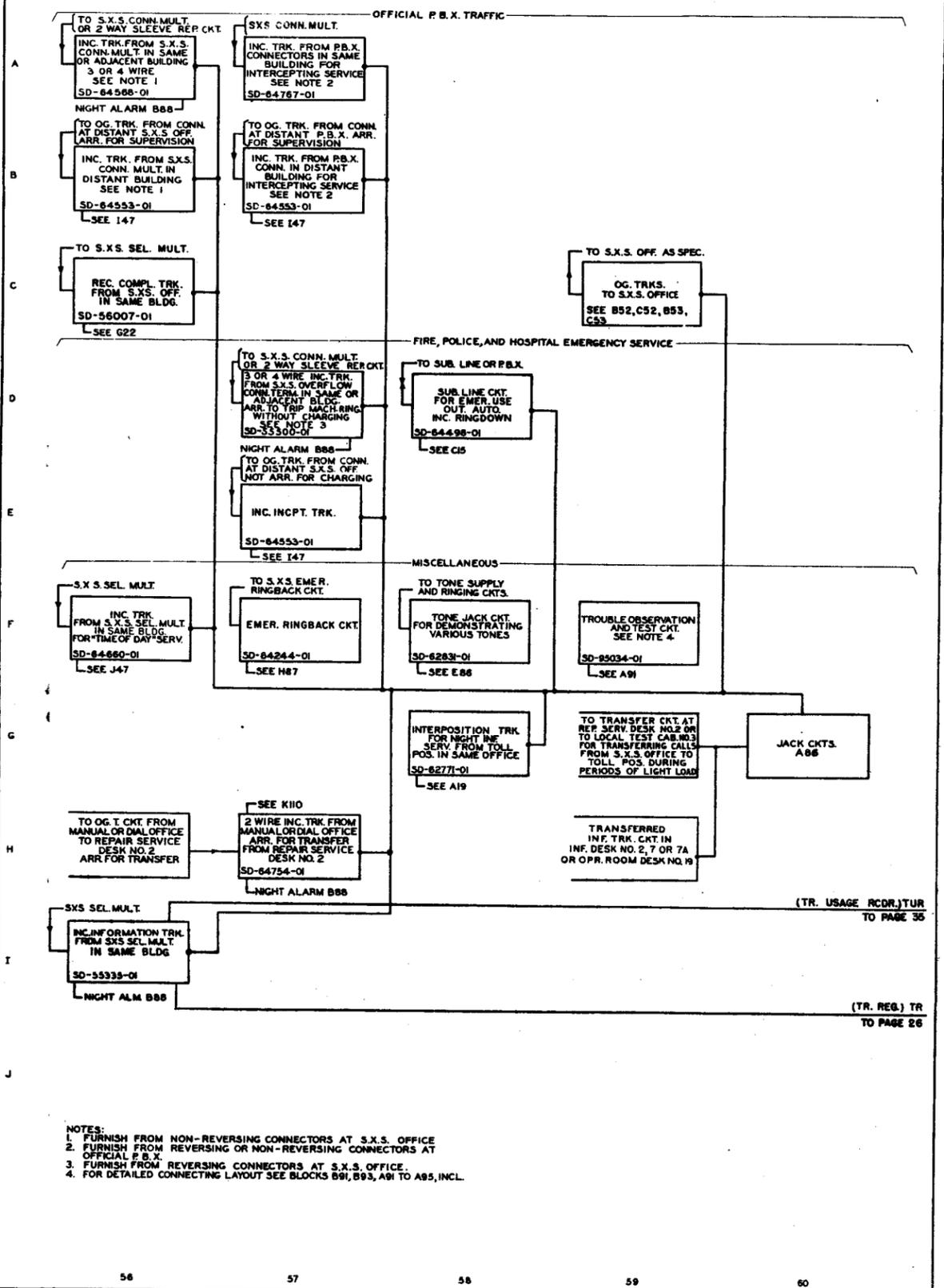
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SPECIAL SERVICE AND SHORT HAUL TRAFFIC



LINES AND TRUNKS FOR S.X.S. "A" TRAFFIC (SEE PAGES 13 & 36)

OFFICIAL P.B.X. TRAFFIC



LINES AND TRUNKS FOR S.X.S. "A" TRAFFIC (SEE PAGES 12 & 36)

| | | |
|---------|-----|------|
| DRAWING | 15 | J.F. |
| ISSUE | m-3 | P.D. |

SD-64800-01-B6

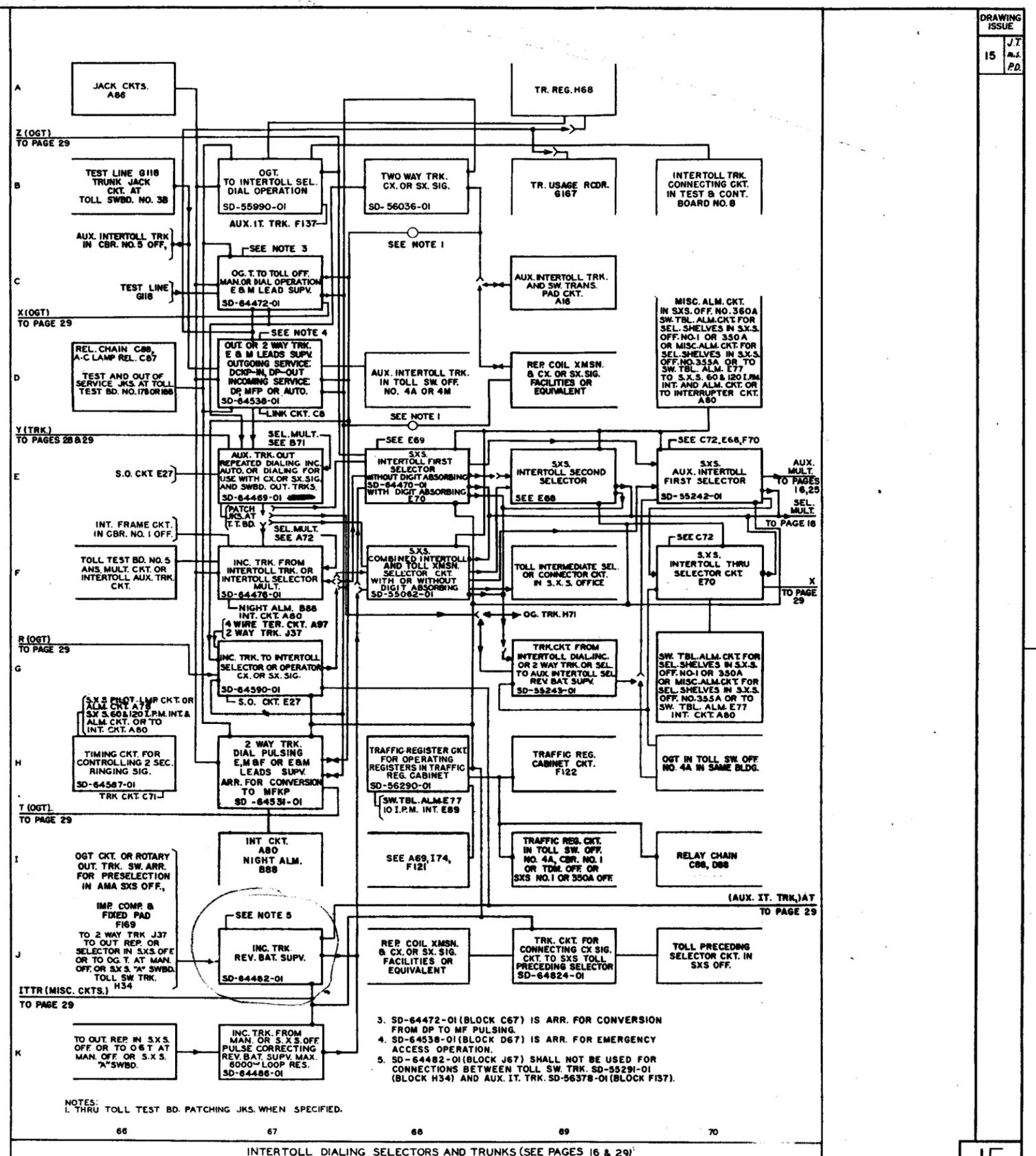
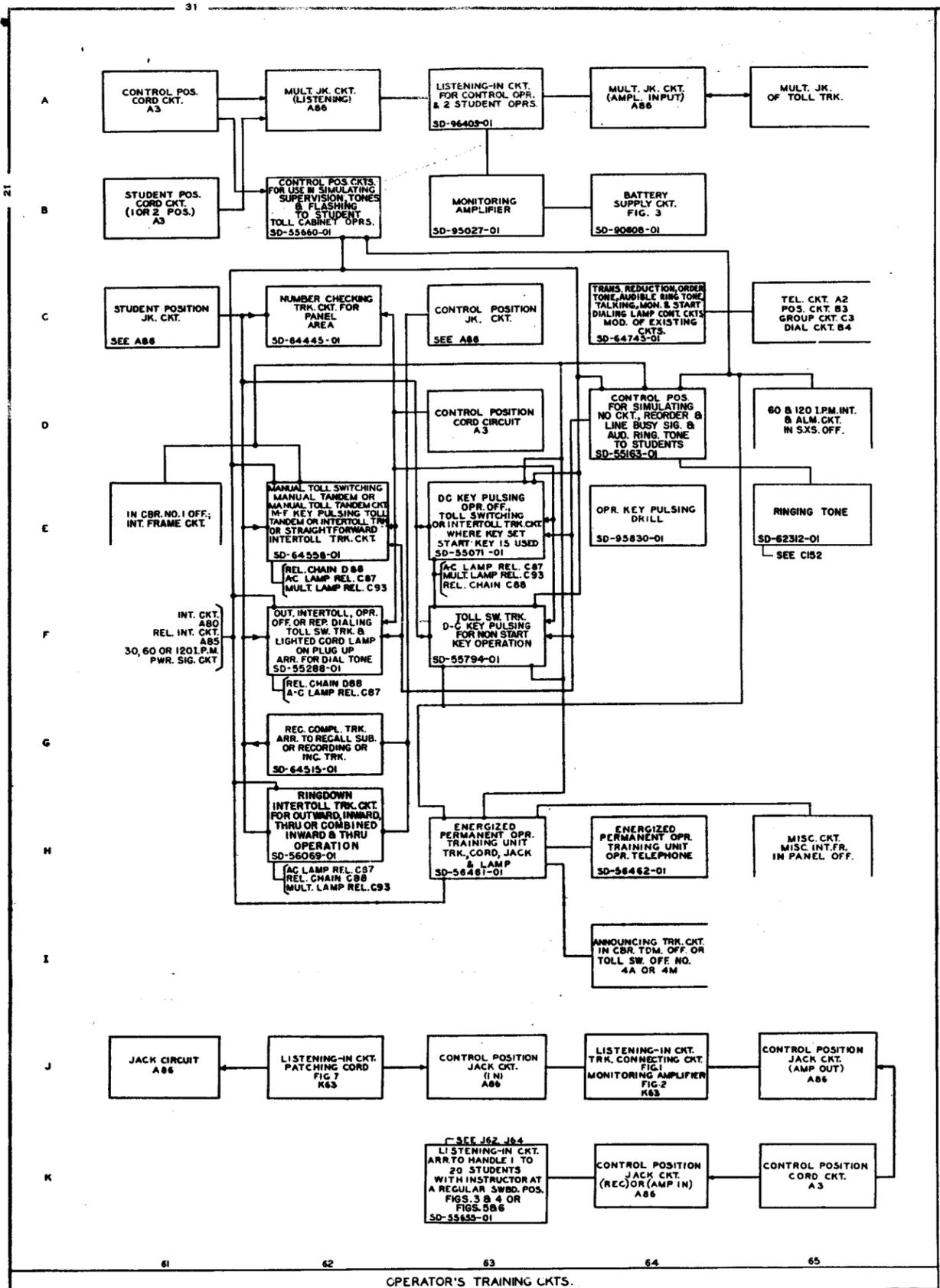
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KEY SHEET

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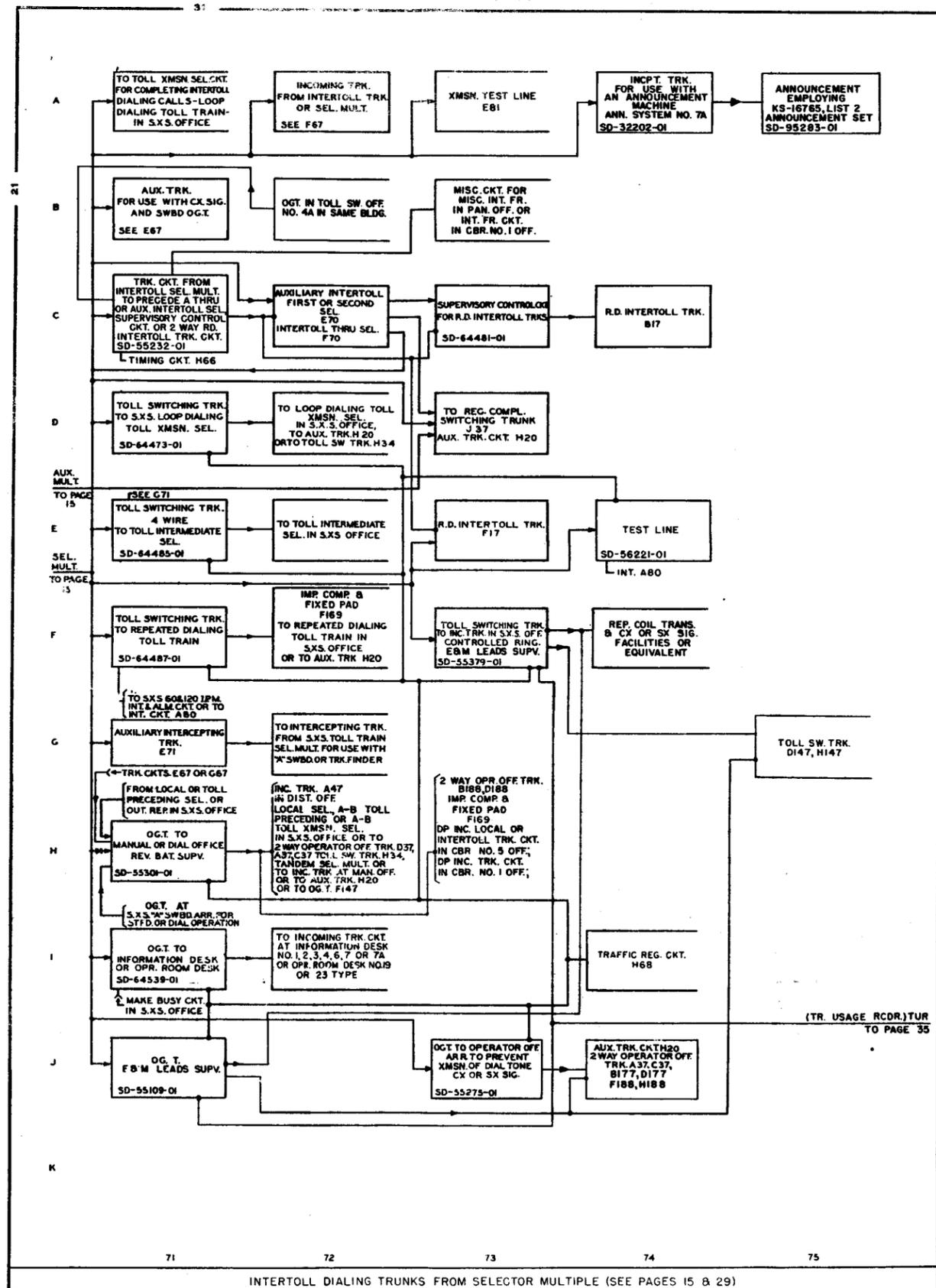
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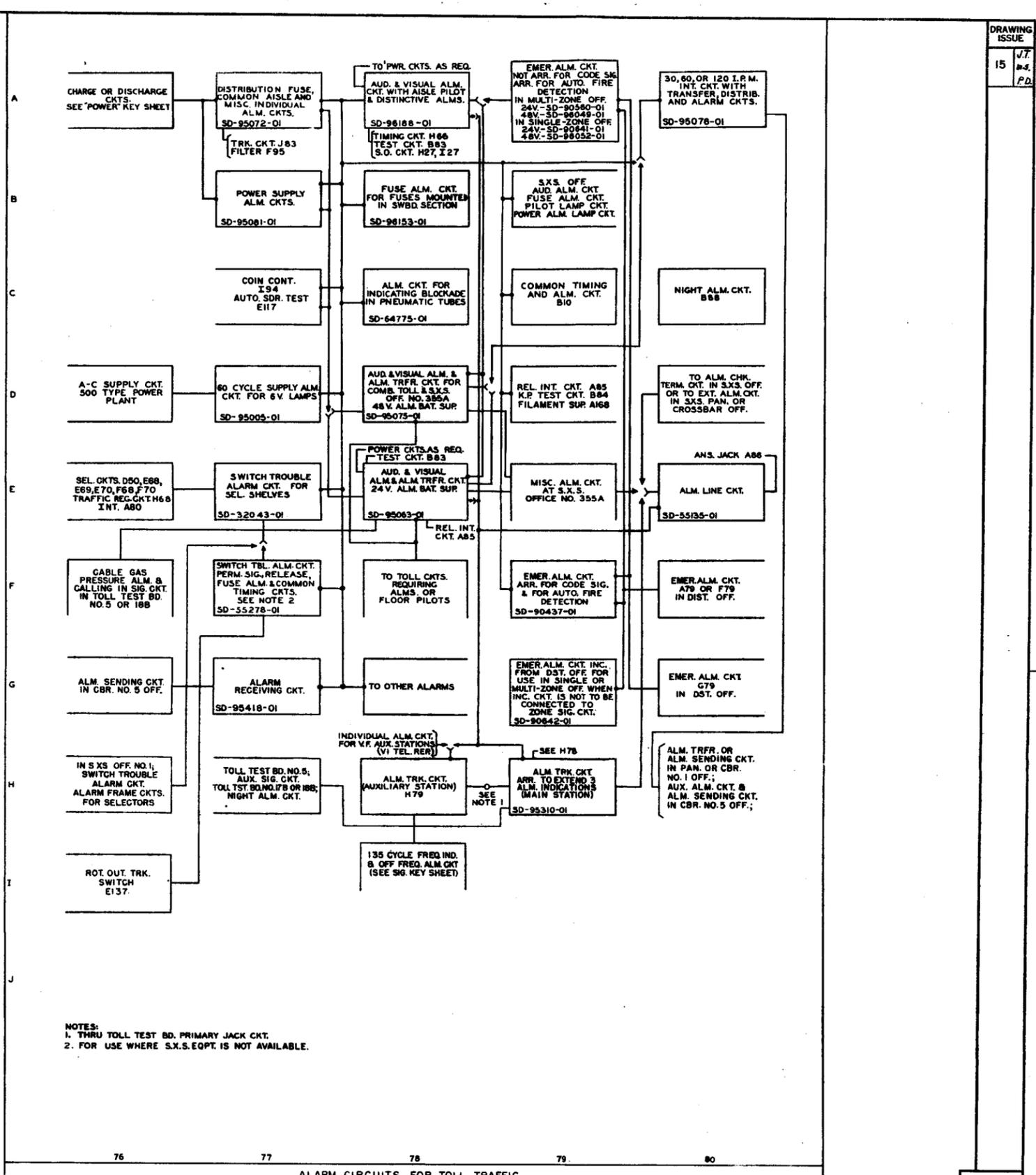
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SD-64800-01-B7



INTERTOLL DIALING TRUNKS FROM SELECTOR MULTIPLE (SEE PAGES 15 & 29)



ALARM CIRCUITS FOR TOLL TRAFFIC

NOTES:
1. THRU TOLL TEST BD. PRIMARY JACK CKT.
2. FOR USE WHERE S.X.S. EOPT. IS NOT AVAILABLE.

SD-64800-01-B8

SWITCHBOARD NO. 3C OR 3C1 KEY SHEET

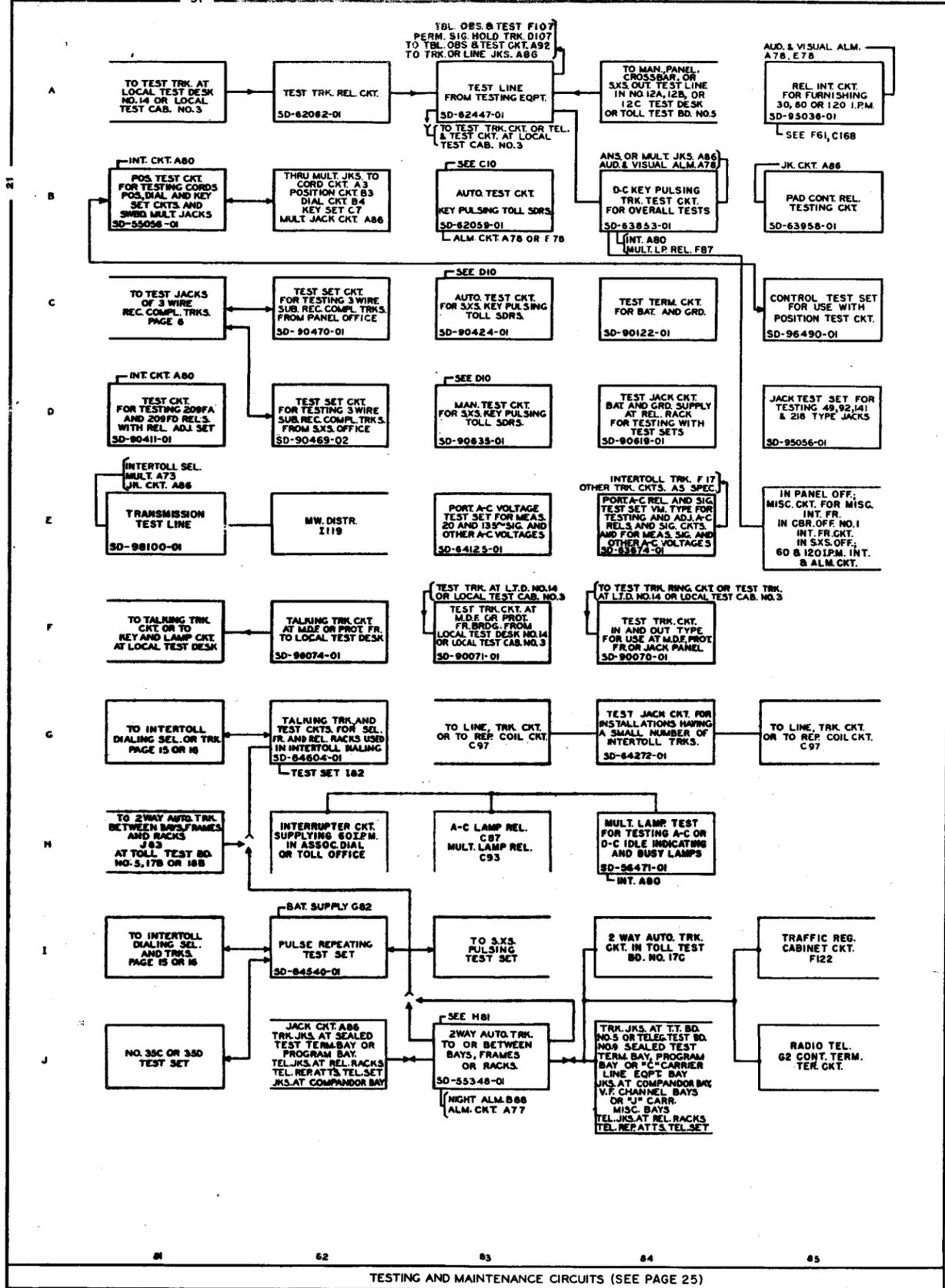
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BELL TELEPHONE LABORATORIES INCORPORATED

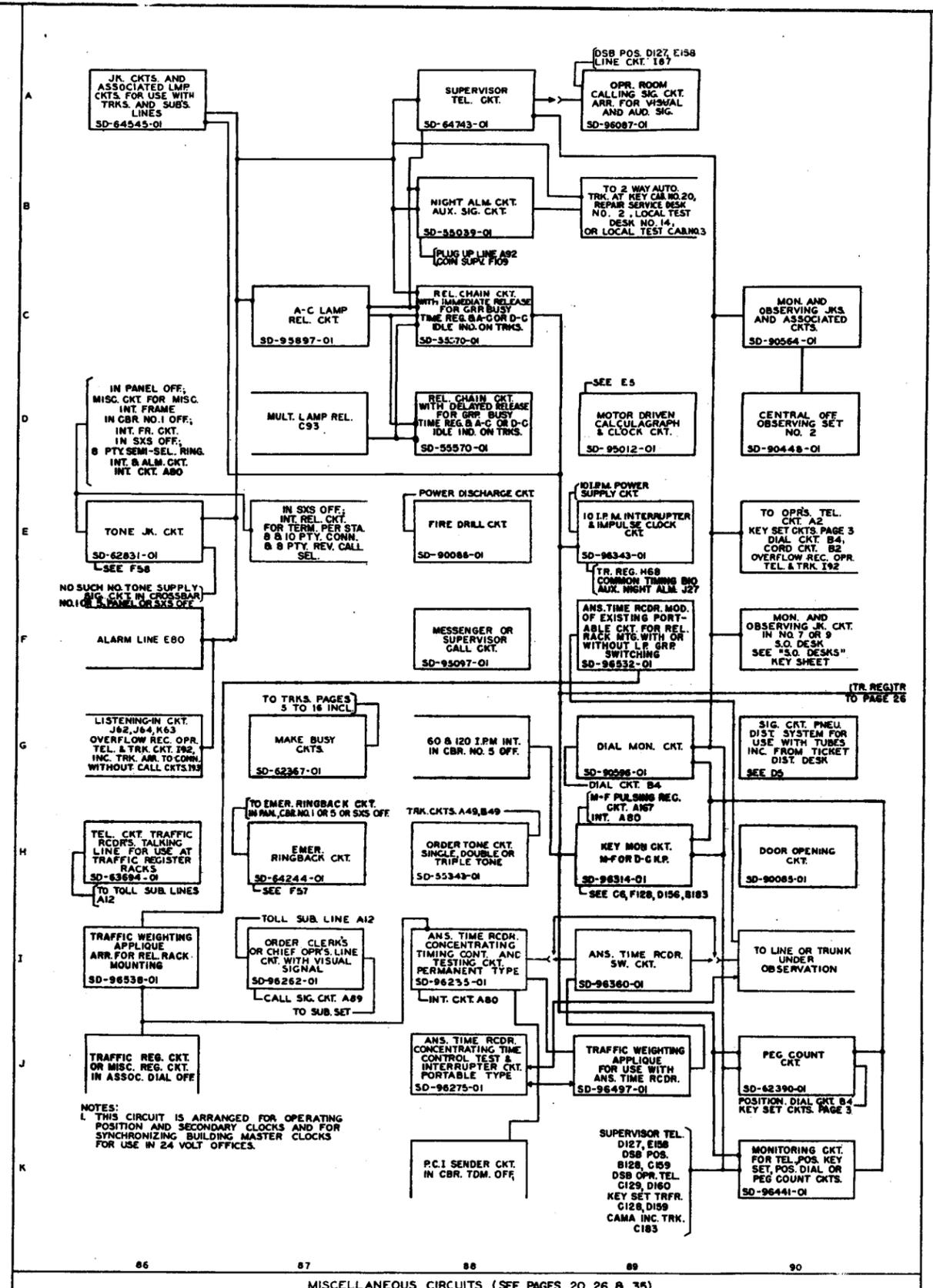
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TESTING AND MAINTENANCE CIRCUITS (SEE PAGE 25)



MISCELLANEOUS CIRCUITS (SEE PAGES 20, 26 & 35)

SD-64800-C1-B3

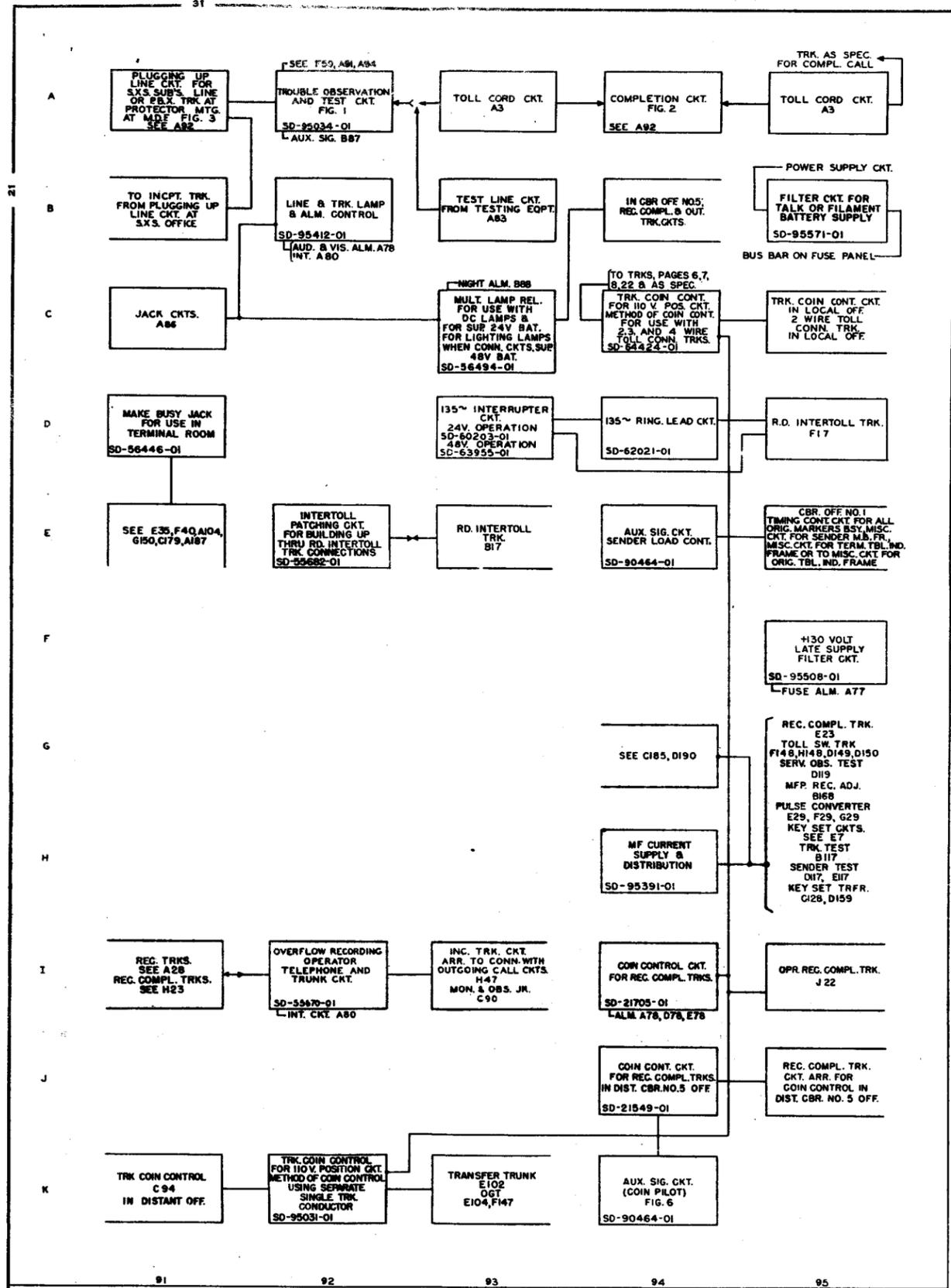
SWITCHBOARD NO. 3, OR 3CL KEY SHEET

SD-64800-01-B9

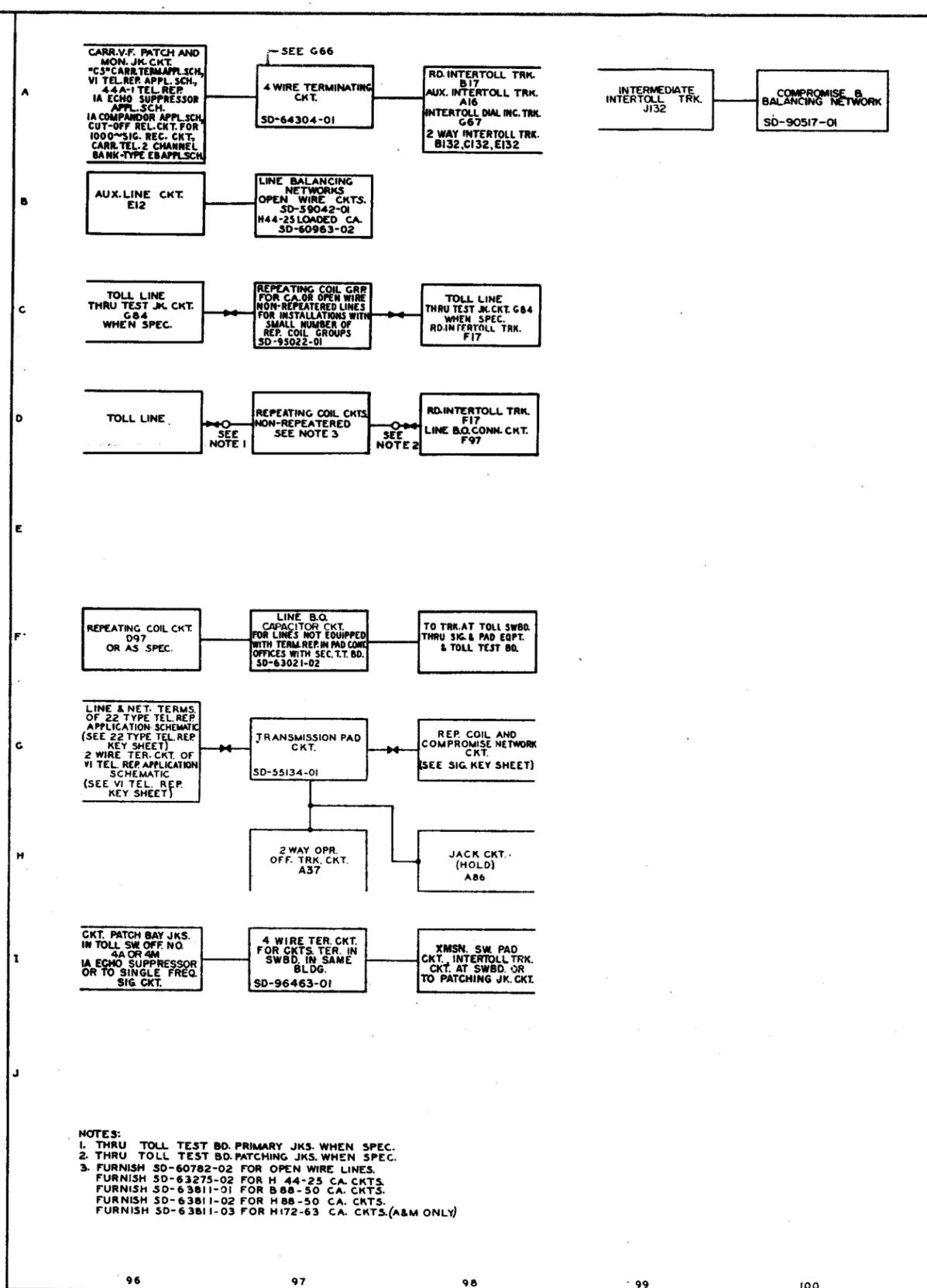
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MISCELLANEOUS CIRCUITS (SEE PAGES 19, 26 & 35)



LINE AND BALANCING CIRCUITS

- NOTES:
 1. THRU TOLL TEST BD. PRIMARY JKs. WHEN SPEC.
 2. THRU TOLL TEST BD. PATCHING JKs. WHEN SPEC.
 3. FURNISH SD-60782-02 FOR OPEN WIRE LINES.
 FURNISH SD-63275-02 FOR H 44-25 CA. CKTS.
 FURNISH SD-63811-01 FOR B 88-50 CA. CKTS.
 FURNISH SD-63811-02 FOR H 88-50 CA. CKTS.
 FURNISH SD-63811-03 FOR H172-63 CA. CKTS. (A&M ONLY)

SD-64800-01-B10

SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

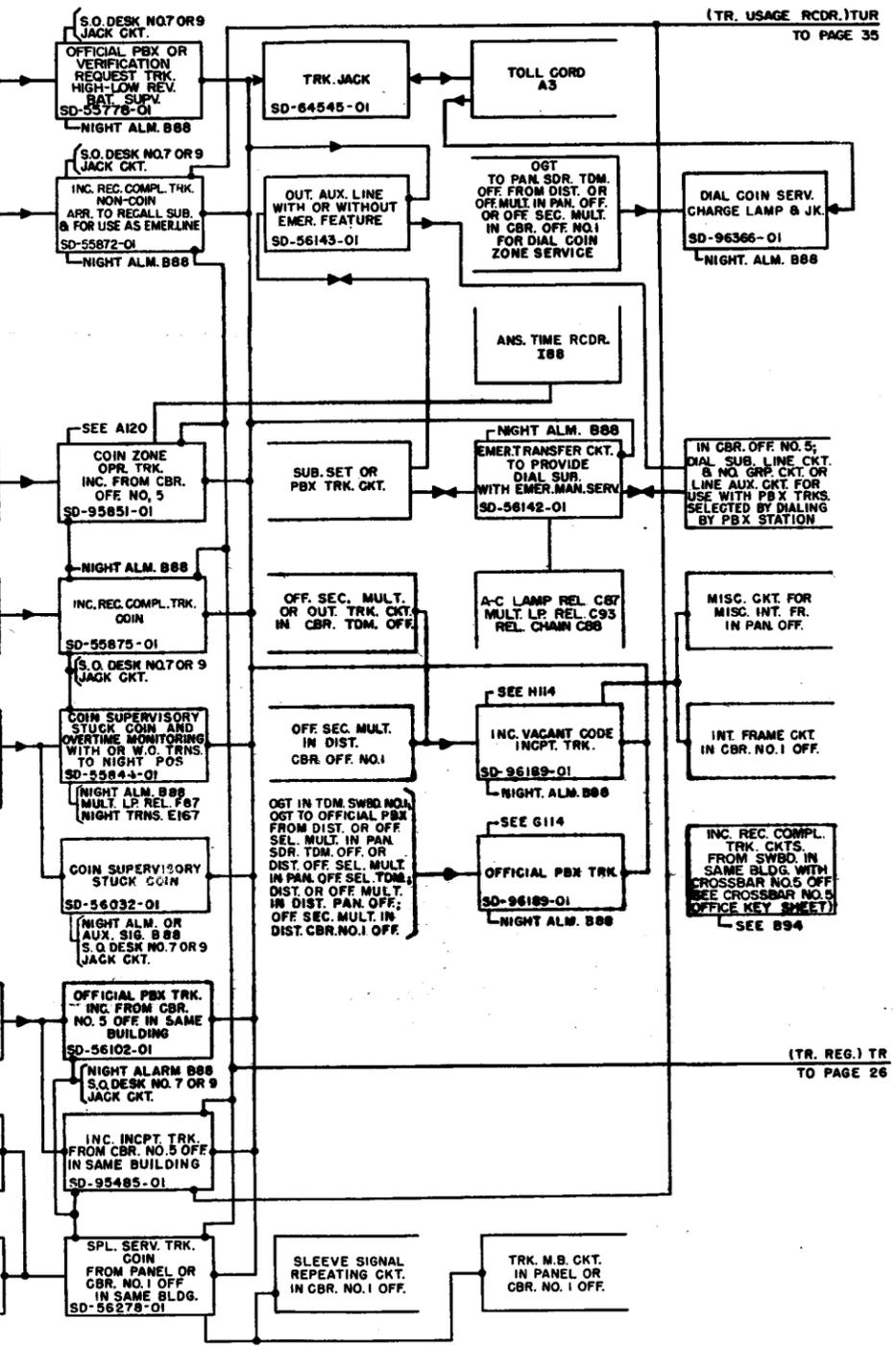
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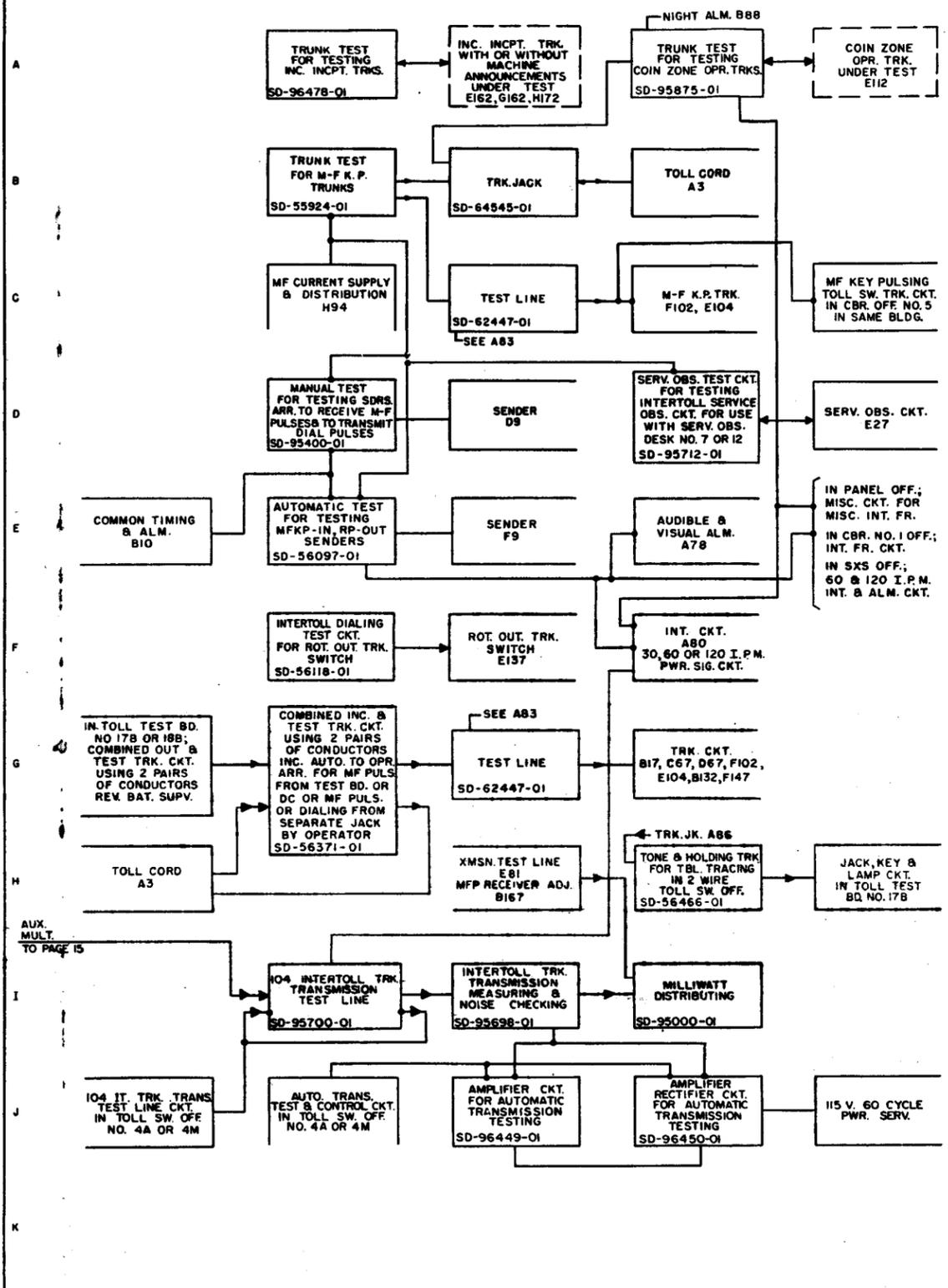
2S

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VERIFICATION REQUEST TRK. CKT. ARR. FOR SUPV. IN PANEL OR CBR. NO. 1 OFF;
OFFICIAL PBX TRK. CKT. FOR TER. SERV. IN CBR. NO. 1 OFF;
FREE TRK. CKT. HIGH LOW REV. BAT. SUPV. IN CBR. NO. 5 OFF;
OFFICIAL PBX OR VERIFICATION REQUEST TRUNK CKT. FROM LINE LINK FR. IN CBR. NO. 5 OFF;
IMP. COMP. & FIXED PAD F169 REG. COMPL. TRK. CKT. HIGH LOW SUPV. NON-COIN ARR. TO RECALL SUB OR VACANT CODE INCP. TRK. IN CBR. NO. 5 OFF; EMER. LINE CKT. K13 EMER. TRFR. I167



111 112 113 114 115
CROSSBAR NO. 1 AND NO. 5 AND PANEL OFFICE DSA TRAFFIC (SEE PAGES 23 & 34)



116 117 118 119 120
TESTING & MAINTENANCE CKTS. (SEE PAGE 18)

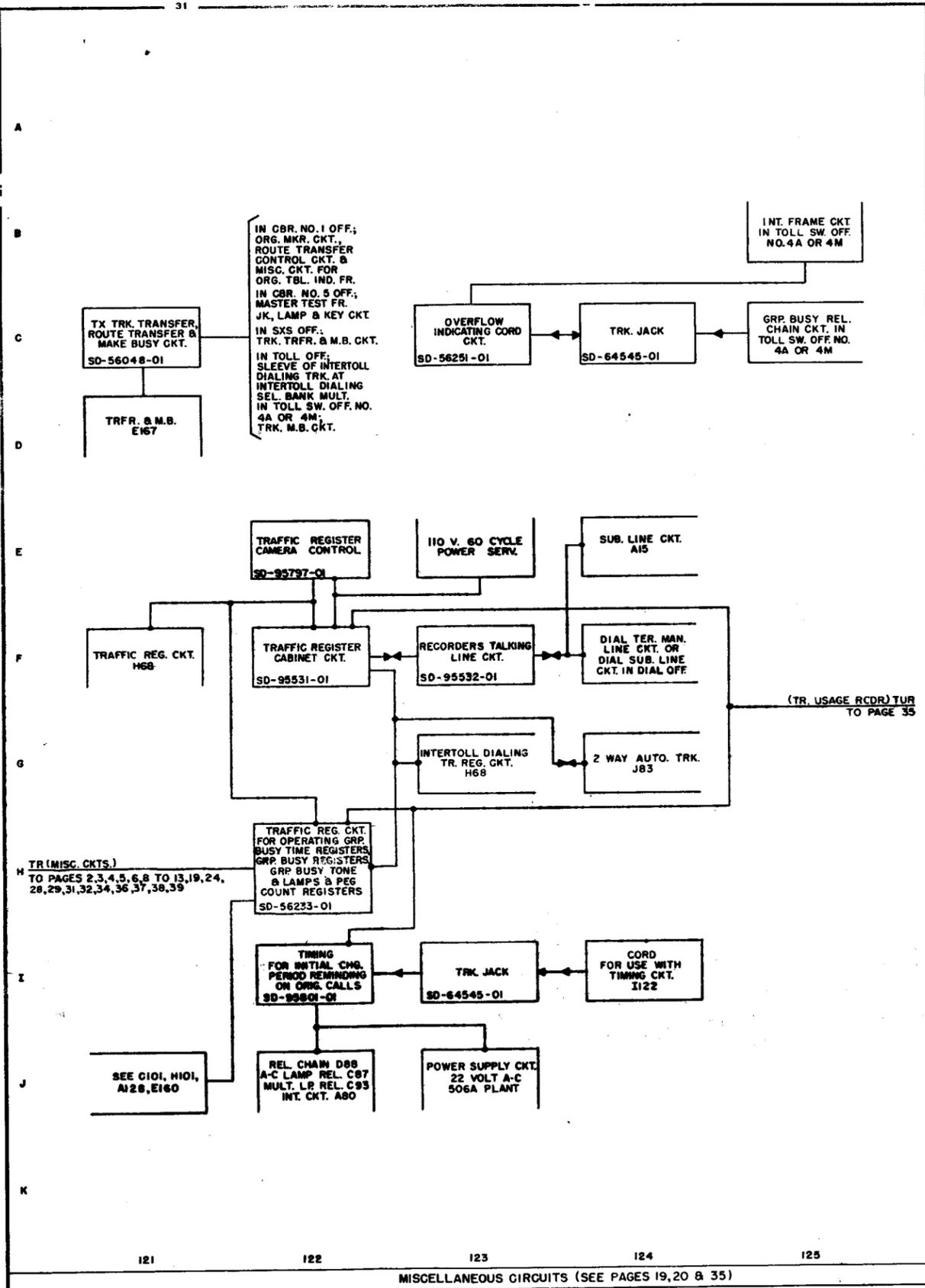
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SWITCHBOARD NO. 3C OR 3LL
KEY SHEET

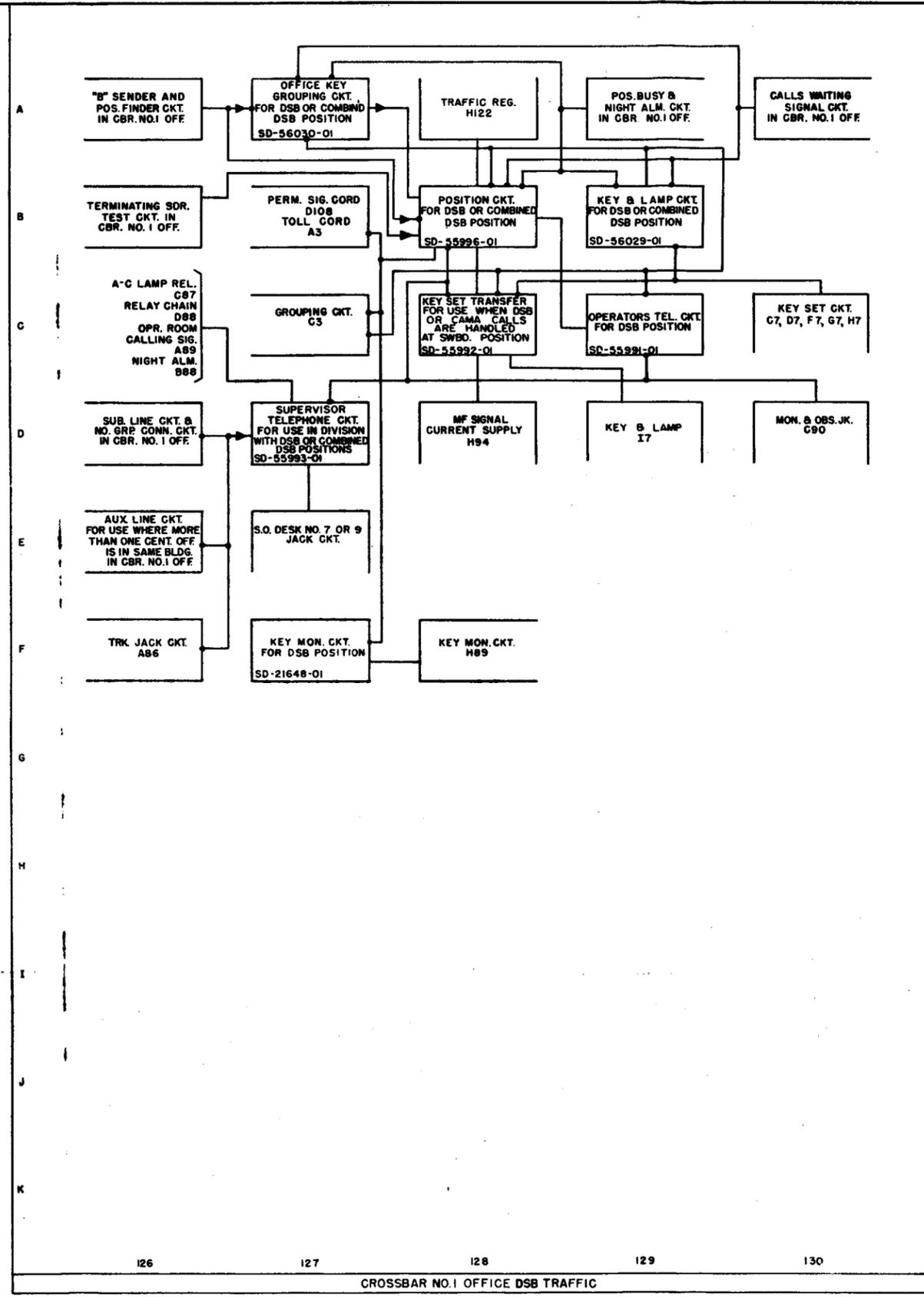
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MISCELLANEOUS CIRCUITS (SEE PAGES 19,20 & 35)



CROSSBAR NO. 1 OFFICE DSB TRAFFIC

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SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

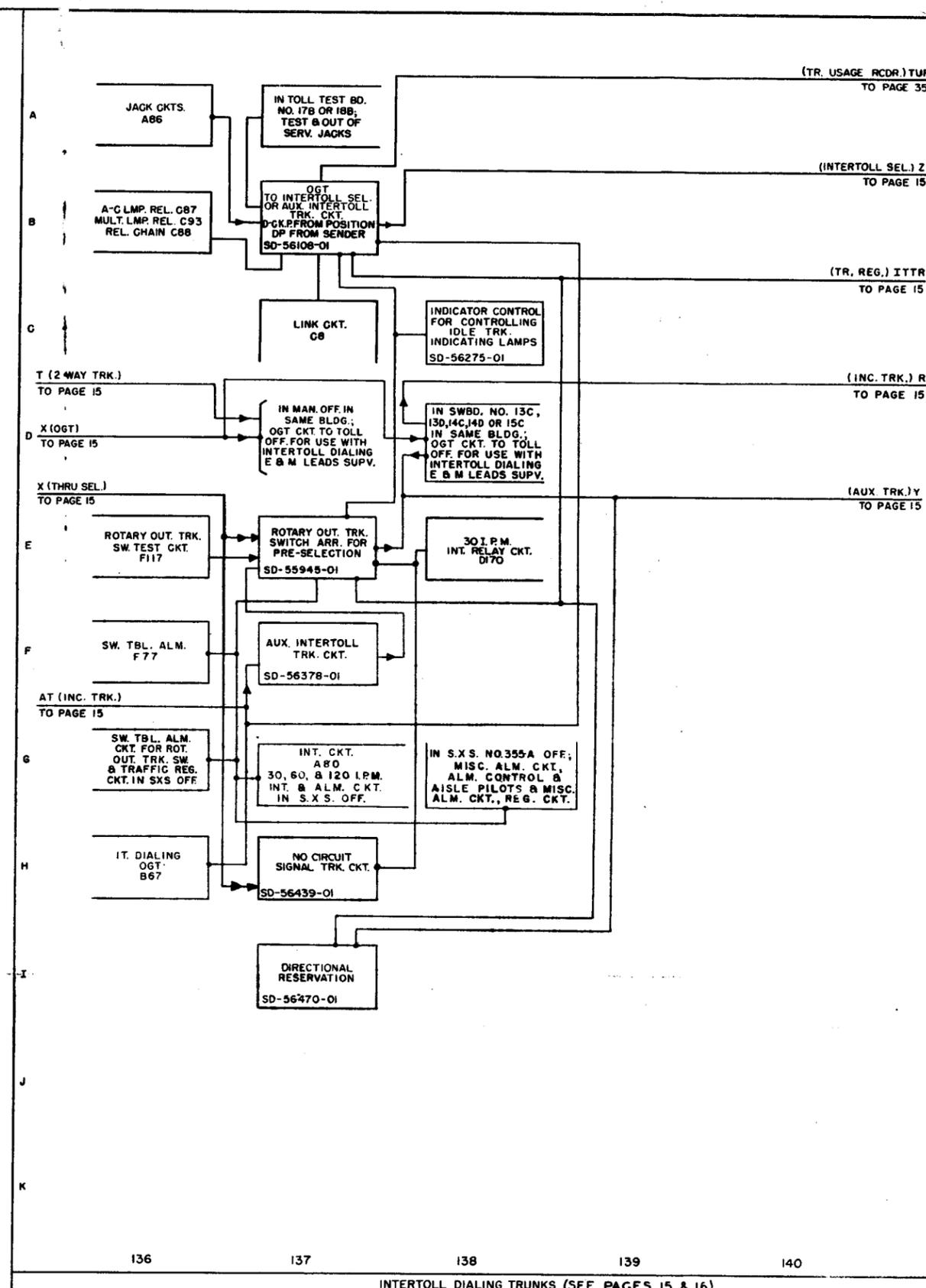
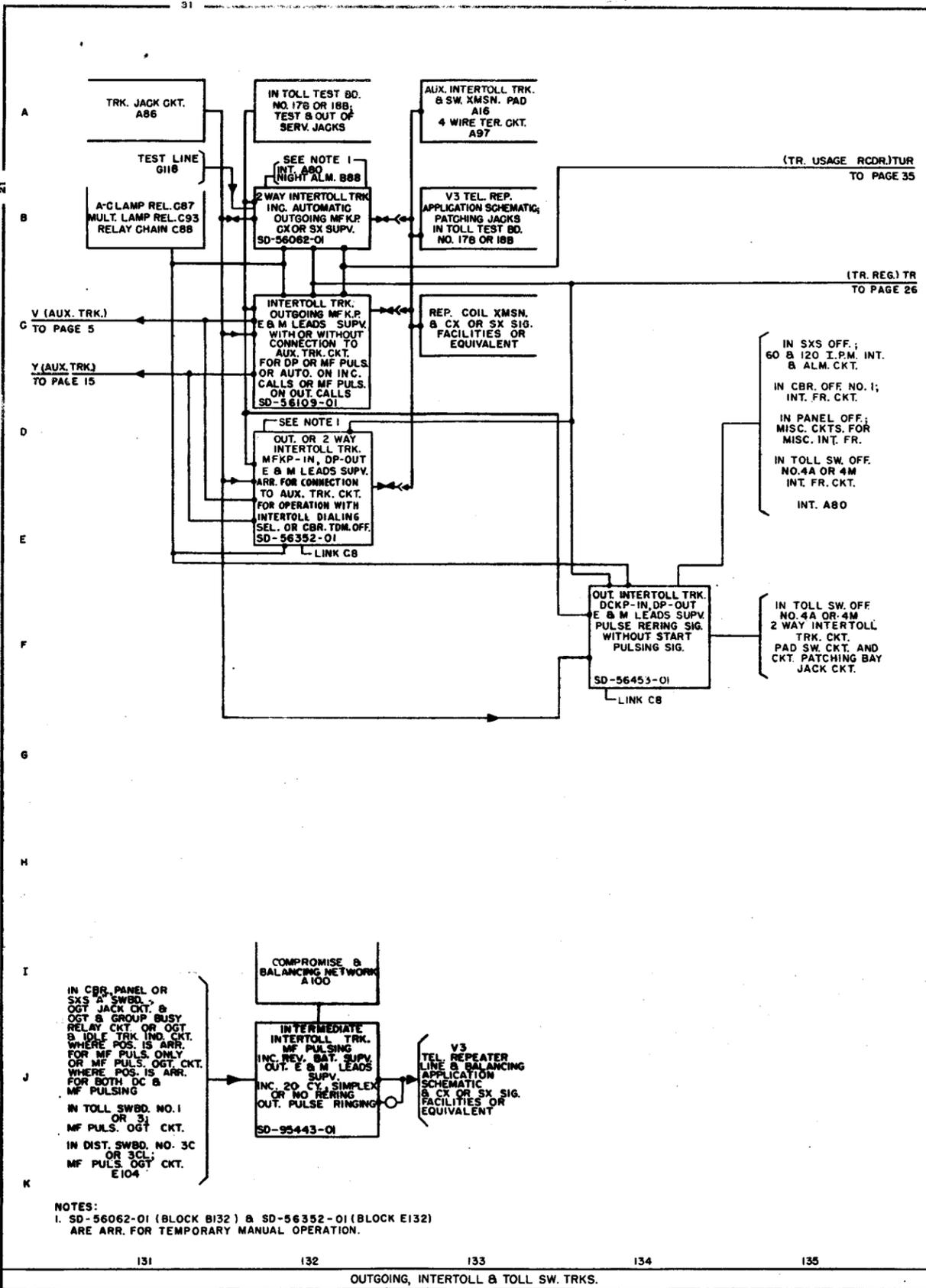
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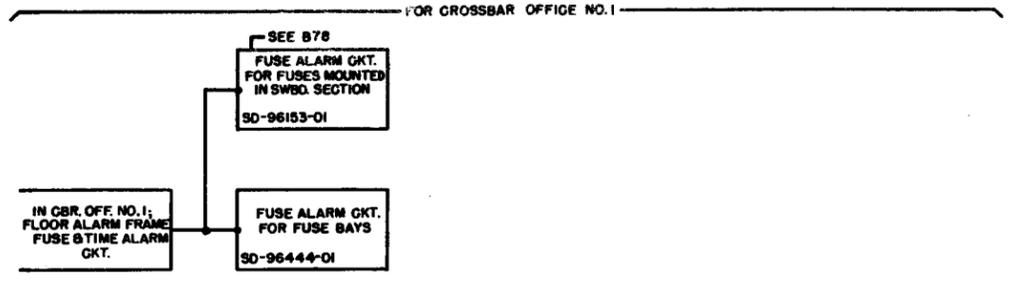
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SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

BELL TELEPHONE LABORATORIES
INCORPORATED

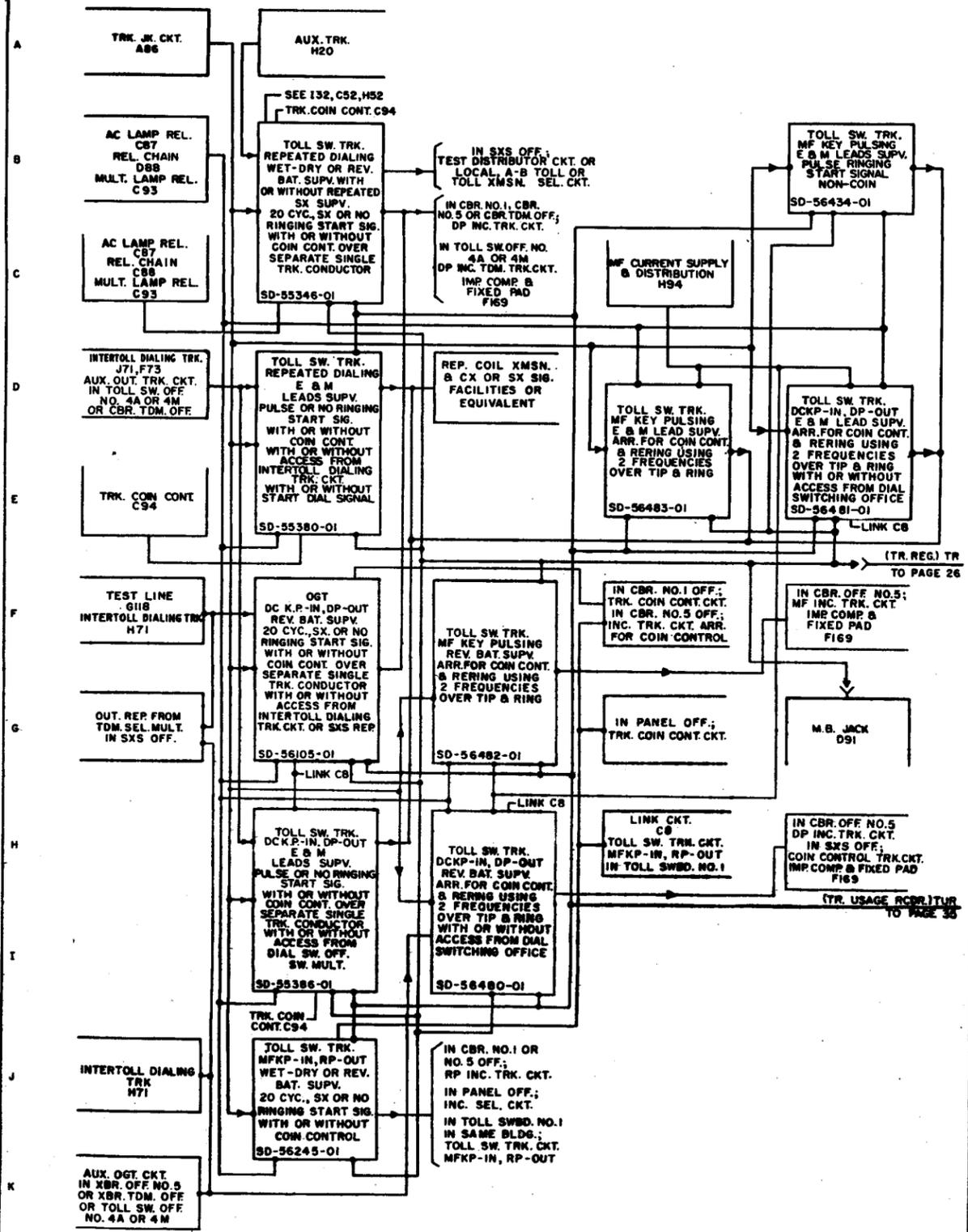
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141 142 143 144 145

ALARM CIRCUITS FOR USE WHEN SWBD. HANDLES DSA TRAFFIC ONLY



146 147 148 149 150

OUTGOING & TOLL SW TRKS.

SD-64800-01-B15

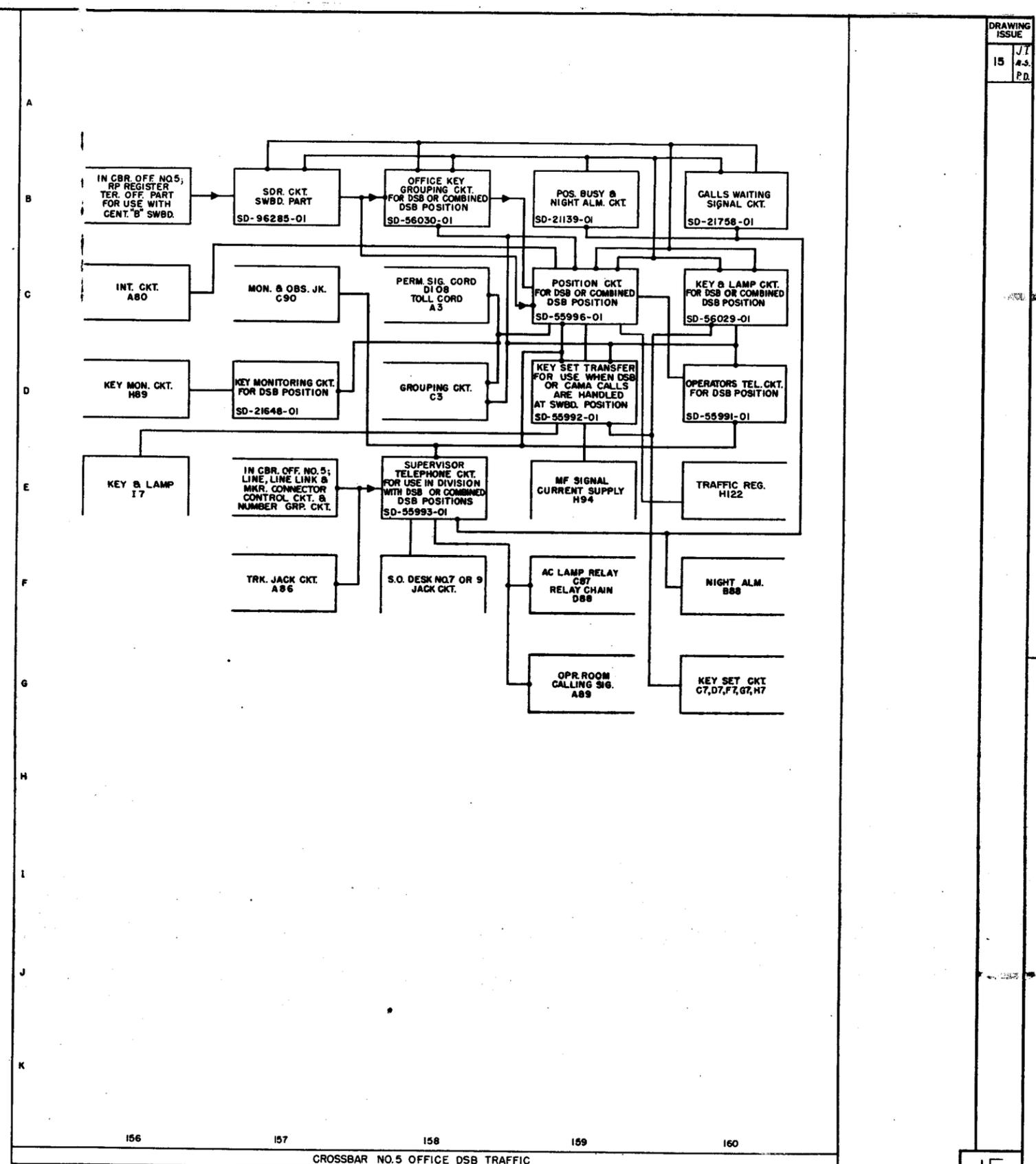
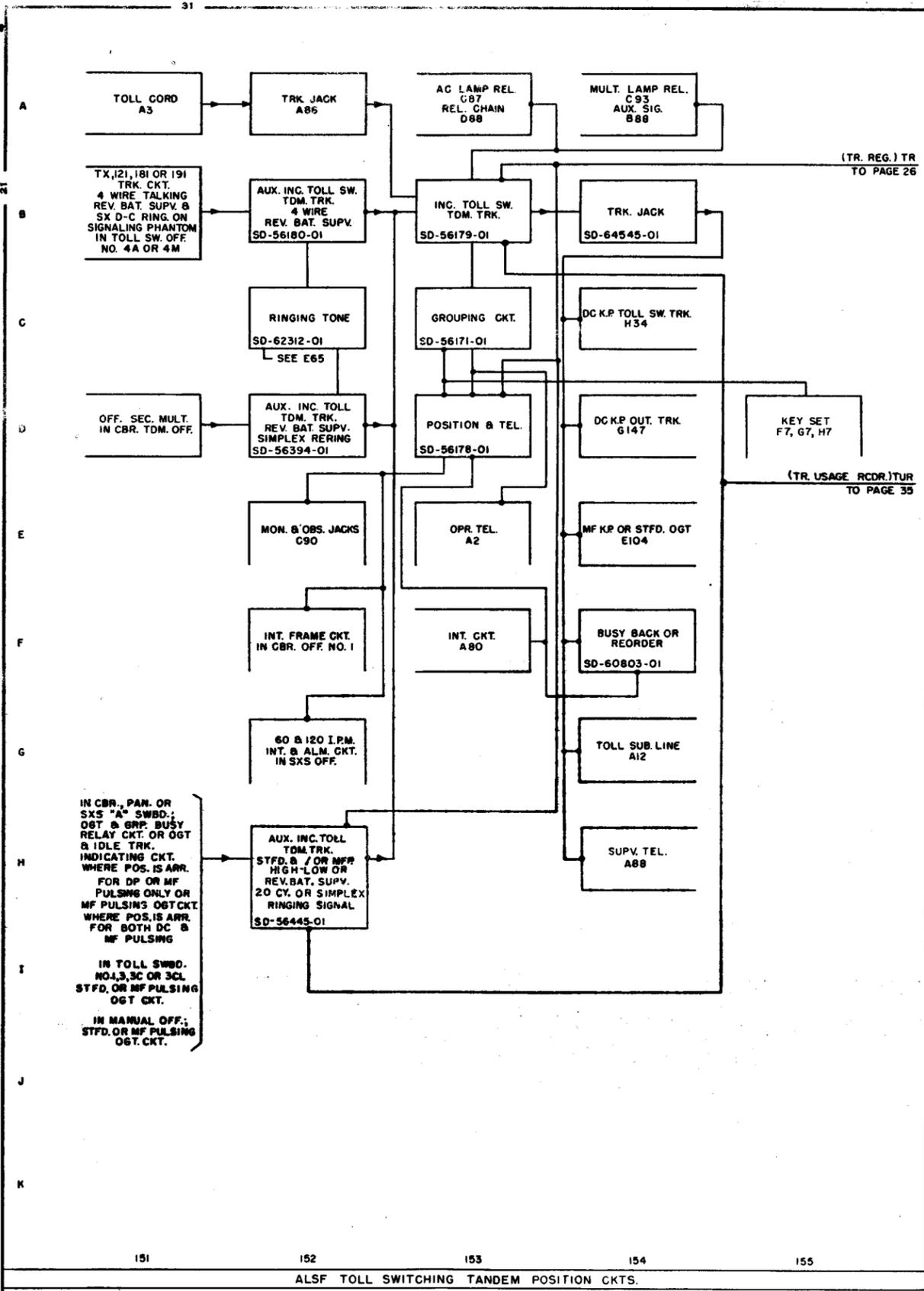
SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

BELL TELEPHONE LABORATORIES
INCORPORATED

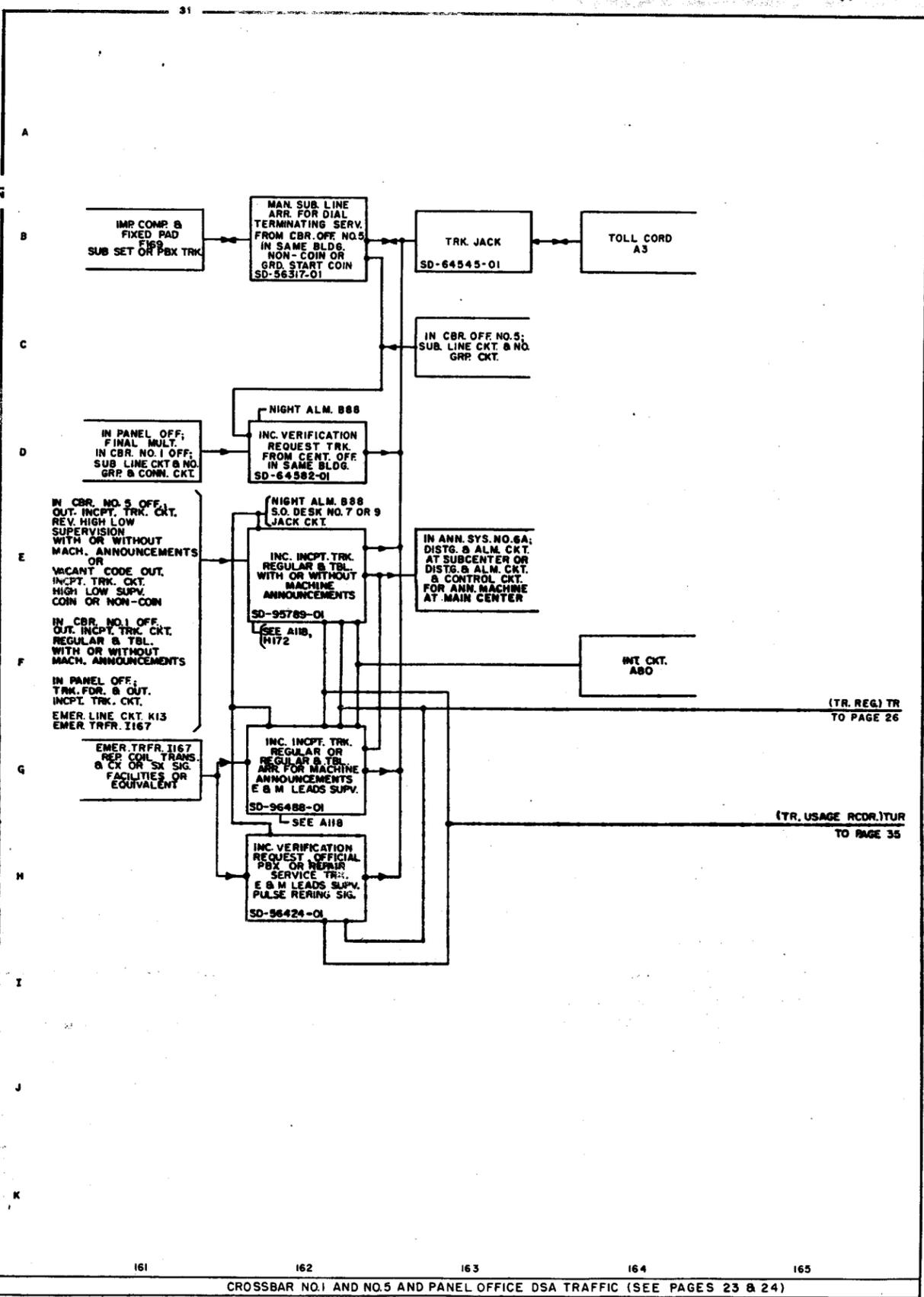
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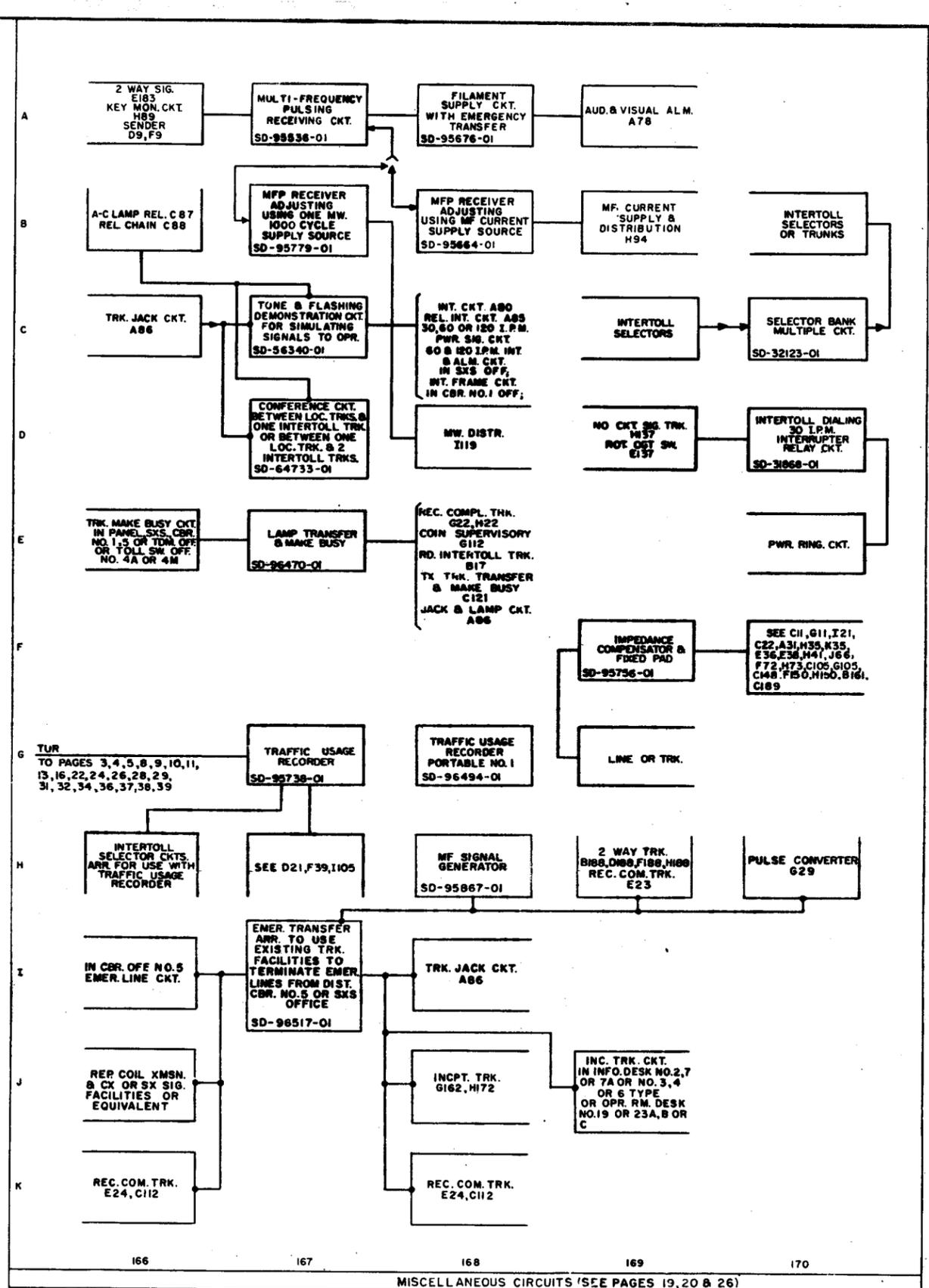
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SD-64800-01-B16



CROSSBAR NO. 1 AND NO. 5 AND PANEL OFFICE DSA TRAFFIC (SEE PAGES 23 & 24)



MISCELLANEOUS CIRCUITS (SEE PAGES 19, 20 & 26)

SD-64800-N-17

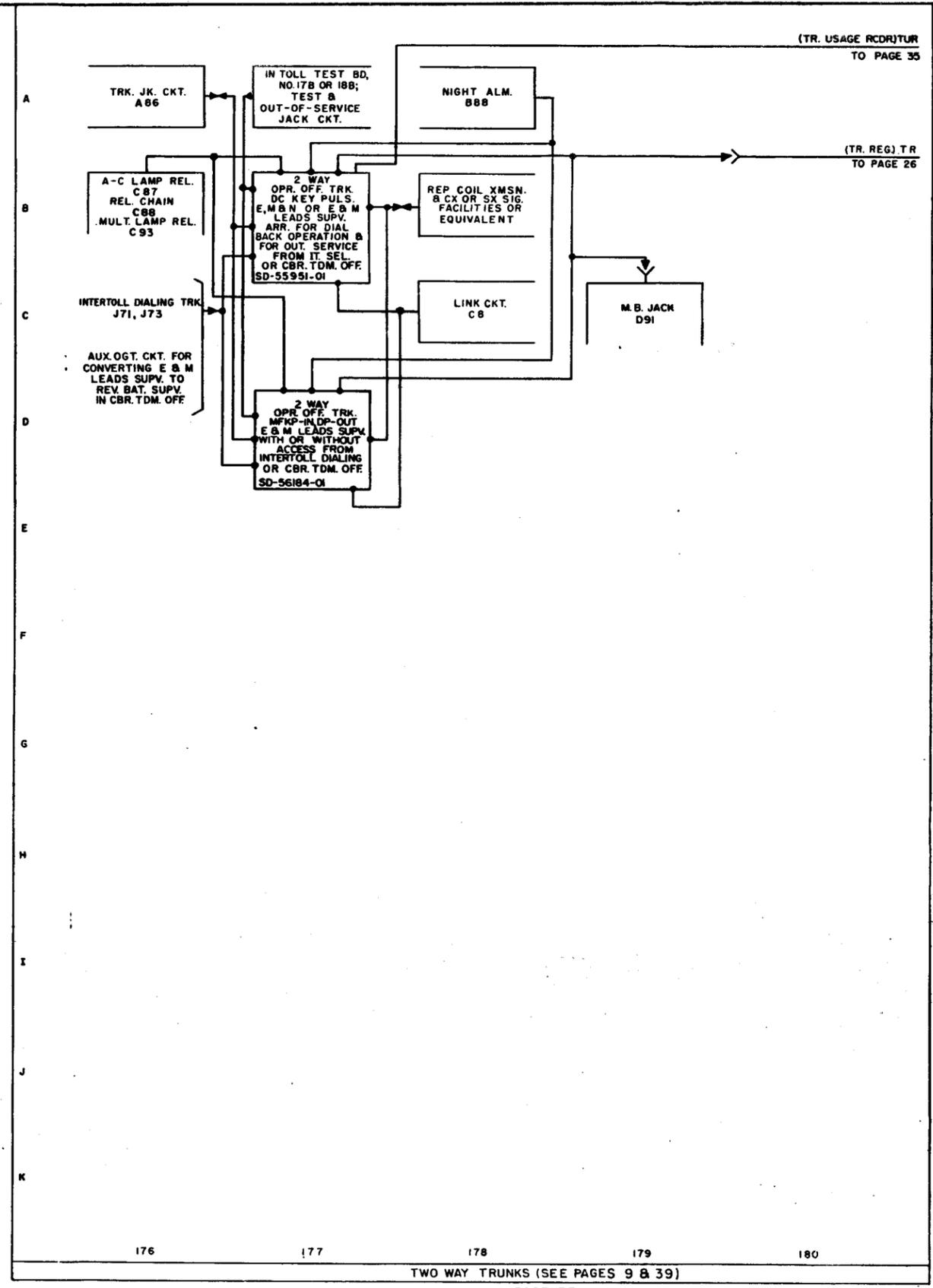
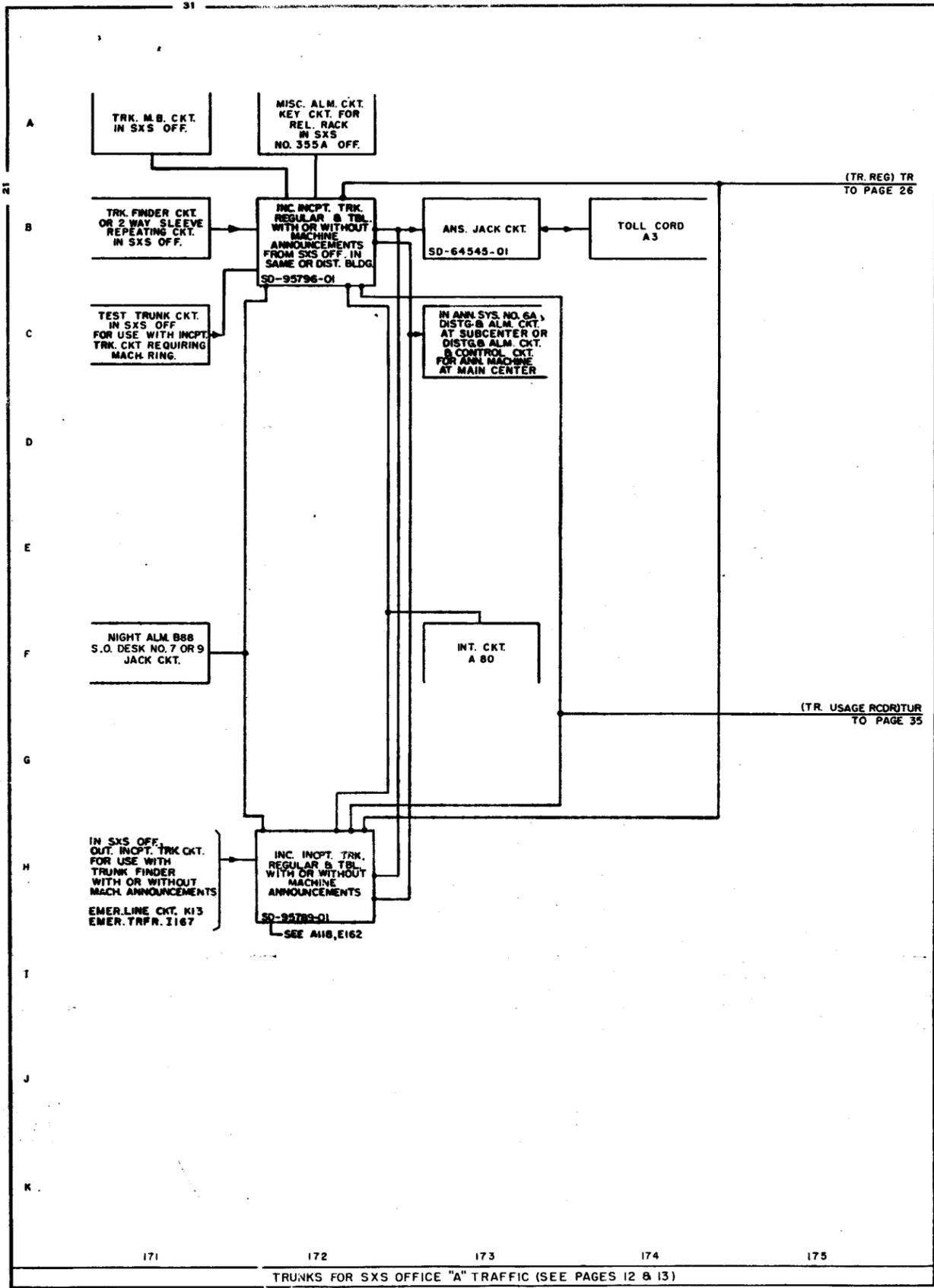
SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

BELL TELEPHONE LABORATORIES
INCORPORATED

SD-64800-01-B17

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SD-64800-01-B18

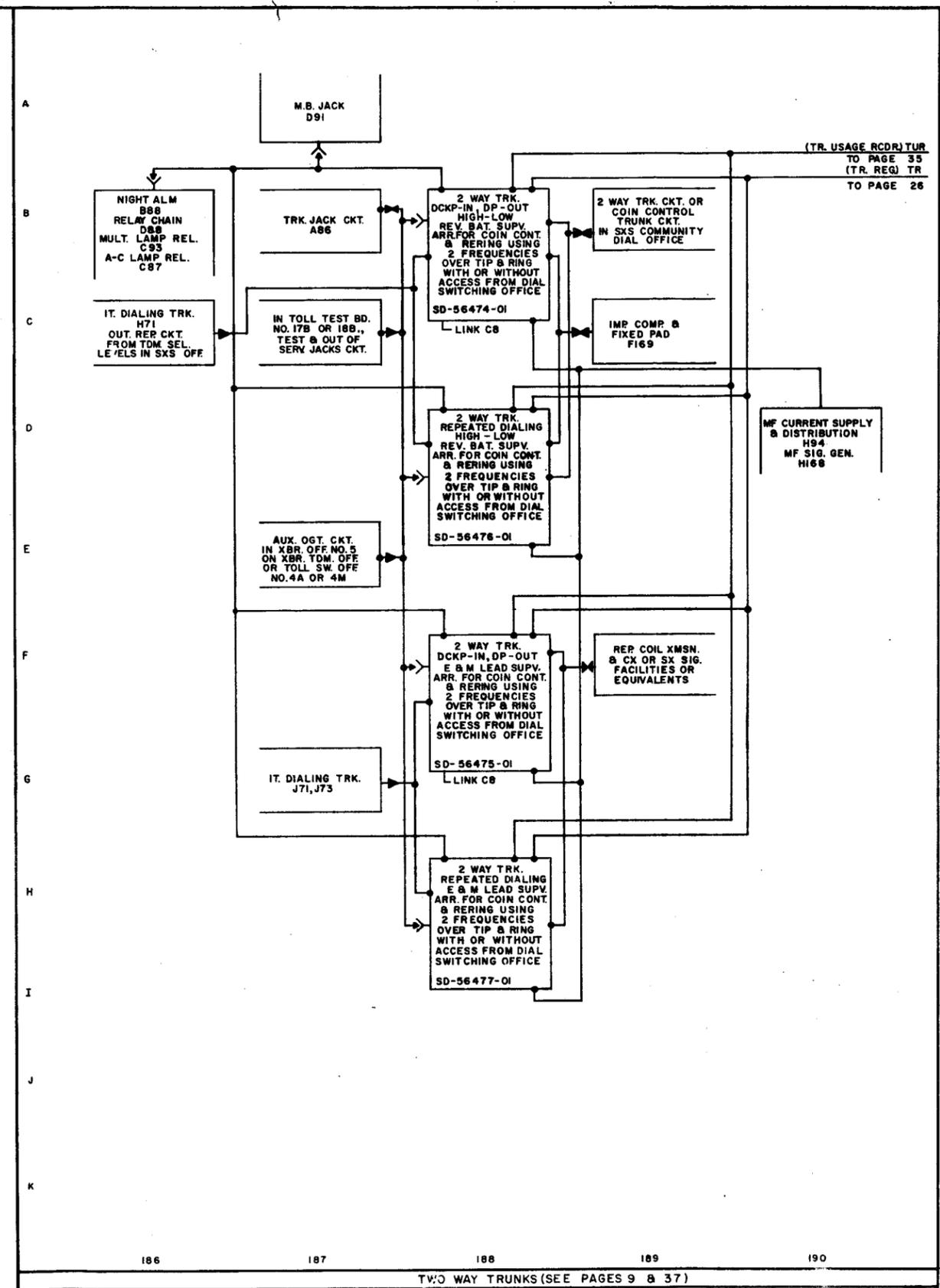
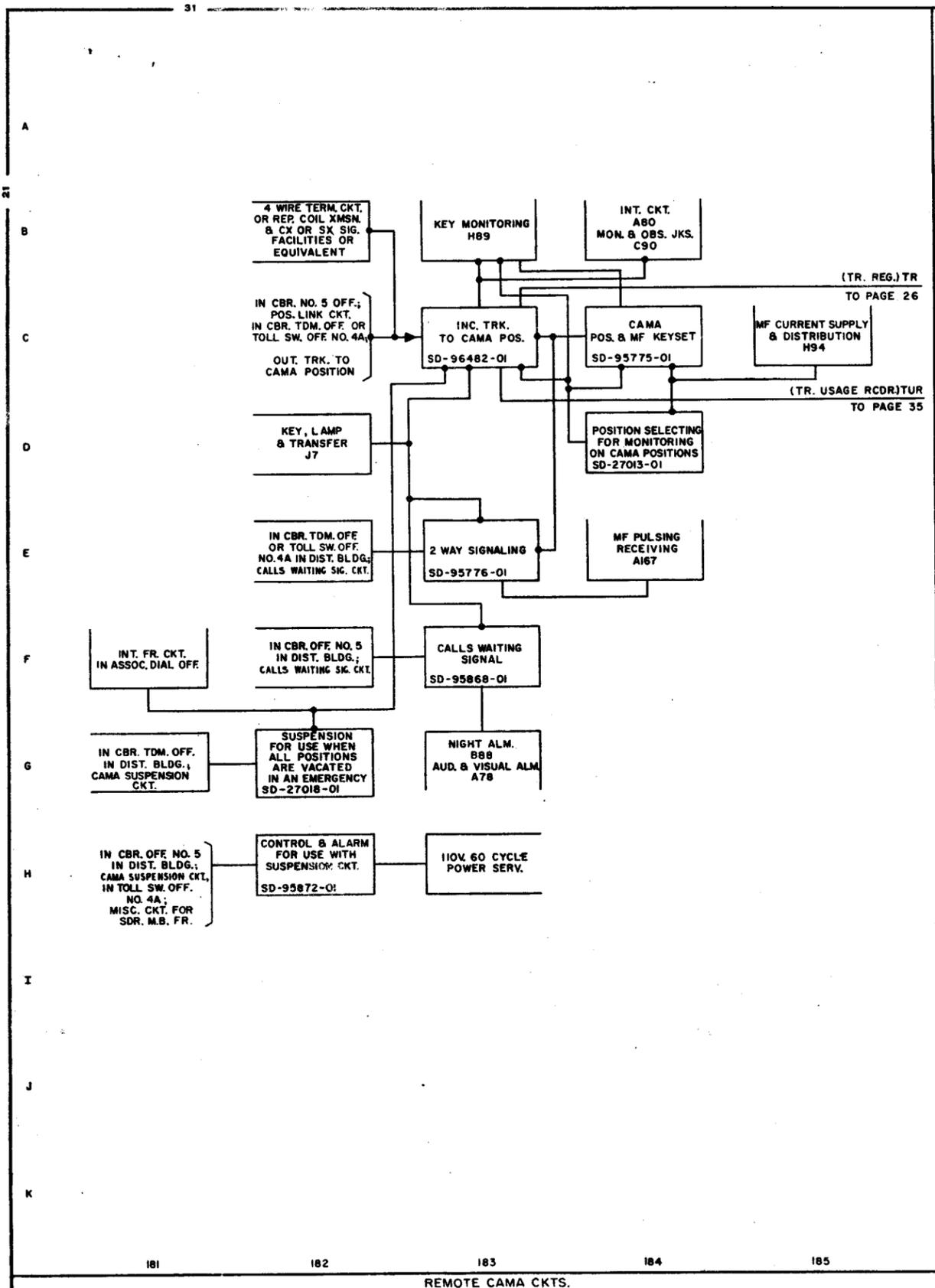
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SWITCHBOARD NO. 3C OR 3CL KE. SHEET

SD-64800-01-B18

BELL TELEPHONE LABORATORIES INCORPORATED

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SD-64800-01-B19

SWITCHBOARD NO. 3C OR 3LL
KEY SHEET

BELL TELEPHONE LABORATORIES
INCORPORATED

SD-64800-01-B19

2S

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TABLE 1

| RECORDING AND RECORDING COMPLETING TRUNKS CONNECTING TO OTHER SYSTEMS | | | | | | | | | | | | | | |
|---|---|---------------------------|-------------------------|--------------|--------------|--------------|-----------------------------------|--------------|--------------------------|--------------------------|-------------------------|-----------------------|-------------|---------|
| TYPE OF TRUNK | CONNECTING SYSTEM | LOC. OF CKT. ON KEY SHEET | POLARITY OF TRUNK LEADS | | | | | | KIND OF SUPV. | HAS COIN CONT. | HAS CLASS OF SERV. TONE | KIND OF RERING SIGNAL | SEE NOTE | |
| | | | INC LEADS | TRUNK NORMAL | TRUNK SEIZED | OPR. ANS. | ORG. OPR. OR SUB. DISC. (ON HOOK) | OPR. DISC. | | | | | | |
| RECORDING COMPLETING TRUNKS FROM LOCAL OFFICES IN SAME BUILDING | STEP BY STEP | A24 | T R | GRD. BAT. | GRD. BAT. | BAT. BAT. | BAT. BAT. | GRD. BAT. | REV. BAT. | NO | NO | NONE | 10 | |
| | | G22 | T R | GRD. BAT. | GRD. BAT. | GRD. BAT. | GRD. BAT. | GRD. BAT. | BRIDGED | NO | YES | 20~ NONE EMG | | |
| | | H22 | T R | GRD. BAT. | GRD. BAT. | BAT. GRD. | BAT. GRD. | GRD. BAT. | BRIDGED | YES | YES | 20~ | 6 | |
| | CROSSBAR NO. 1 | C24 | T R | BAT. GRD. | BAT. GRD. | GRD. BAT. | GRD. BAT. | BAT. GRD. | BRIDGED | NO | NO | 20~ NONE EMG | 1 | |
| | | F24 | T R | BAT. GRD. | BAT. GRD. | GRD. BAT. | GRD. BAT. | BAT. GRD. | BRIDGED | YES | NO | 20~ NONE EMG | 1,2,6 | |
| | PANEL | C24 | T R | BAT. GRD. | BAT. GRD. | GRD. BAT. | GRD. BAT. | BAT. GRD. | BRIDGED | NO | NO | 20~ NONE EMG | 1 | |
| | | F24 | T R | BAT. GRD. | BAT. GRD. | GRD. BAT. | GRD. BAT. | BAT. GRD. | BRIDGED | YES | NO | 20~ NONE EMG | 1,2,6 | |
| | RECORDING COMPLETING TRUNKS FROM LOCAL OFFICES IN DISTANT BUILDINGS | STEP BY STEP | B22 | T R | DRY | GRD. BAT. | GRD. BAT. | BAT. GRD. | DRY | HIGH LOW REV. BAT. | YES NO | | 20~ NONE | 3,4,5,9 |
| | | | E24 | | | | | | | CX OR SX | YES NO | | PULSE | 4,5,8 |
| | | CROSSBAR NO. 1 | B22 | T R | DRY | GRD. BAT. | GRD. BAT. | BAT. GRD. | DRY | HIGH LOW REV. BAT. | YES NO | | 20~ | 5,9 |
| I22 | | | T R | DRY | GRD. BAT. | GRD. BAT. | BAT. GRD. | DRY | HIGH LOW REV. BAT. | YES NO | | 20~ | 5,9,11 | |
| CROSSBAR NO. 5 | | C112 | T R | DRY | BAT. GRD. | GRD. BAT. | GRD. BAT. | DRY | REV. HIGH LOW | NO | | REV. BAT. | 6 | |
| | | F112 | T R | DRY | BAT. GRD. | GRD. BAT. | GRD. BAT. | DRY | REV. HIGH LOW | YES | | REV. BAT. | 6 | |
| PANEL | | B22 | T R | DRY | GRD. BAT. | GRD. BAT. | BAT. GRD. | DRY | HIGH LOW REV. BAT. | YES NO | | 20~ | 5,9 | |
| | | I22 | T R | DRY | GRD. BAT. | GRD. BAT. | BAT. GRD. | DRY | HIGH LOW REV. BAT. | YES NO | | 20~ | 5,9,11 | |
| OPERATORS RECORDING COMPLETING TRK. | | STEP BY STEP DSA SWBD. | I24 | T R | BAT. GRD. | BAT. GRD. | BAT. GRD. | BAT. GRD. | BRIDGED | YES NO | NO | 20~ | 5,7 | |
| RECORDING TRK. FROM LOC. OFF. | | STEP BY STEP TANDEM | C27 | T R | GRD. BAT. | GRD. BAT. | BAT. GRD. | GRD. BAT. | REV. BAT. | | | | | |
| | MANUAL TANDEM SWBD. | C27 | T R | GRD. BAT. | GRD. BAT. | BAT. GRD. | GRD. BAT. | REV. BAT. | | | | | | |
| RECORDING TRK. FROM LOC. OFF. IN DST. BLDG. | DSA OR MANUAL SWBD. | A27 | T R | GRD. BAT. | GRD. BAT. | DRY | DRY | HIGH LOW | | | | | | |

- NOTES:
1. THESE CKTS. MAY BE ARRANGED FOR NUMBER CHECKING IN A CBR. NO. 1 OFFICE AND FOR TOLL DIVERSION IN A PANEL OR CBR. NO. 1 OFFICE.
 2. WHEN THE SUBSCRIBER HANGS UP AND THE OPERATOR DISCONNECTS, COIN COLLECT BATTERY IS AUTOMATICALLY CONNECTED TO THE LINE BEFORE THE CKT. RESTORES TO NORMAL.
 3. WHEN COIN CONTROL IS PROVIDED RERING IS REQUIRED.
 4. THE CONNECTING CKT. IN THE LOCAL OFFICE DETERMINES THE USE OF CLASS OF SERVICE TONE.
 5. A SEPARATE SINGLE TRUNK CONDUCTOR IS REQUIRED FOR DISPOSAL OF COINS.
 6. THE COIN CONTROL FEATURE OPERATES OVER THE TRK. CONDUCTORS.
 7. THIS CKT. CONNECTS DIRECTLY TO AN OGT JACK CKT. AT THE SWITCHBOARD. AN OPR. RECORDING COMPLETING CORD CKT. MUST BE USED WITH THIS CKT. AT THE DSA SWITCHBOARD.
 8. SUPERVISION AND RERING ARE CONTROLLED OVER THE CX OR SX SIGNALING CKT. WHICH CONNECTS TO A SIMILAR CX OR SX SIGNALING CKT. AT THE DISTANT LOCAL OFFICE.
 9. A HIGH RES. BRIDGE IS CHANGED TO A LOW RES. BRIDGE WHEN OPR. ANS. AND TO A HIGH RES. BRIDGE WHEN OPR. DISCONNECTS.
 10. THIS CKT. IS FOR USE WITH LOCAL SELECTORS WHICH ARE AVAILABLE TO OPERATOR OFFICE TRUNKS ARRANGED FOR 1 DIGIT TANDEM OPERATION.
 11. OPTION FOR NUMBER CHECKING IS AVAILABLE WITH THIS CKT. FOR NON-COIN LINES.

TRK. CKTS., REC. AND REC. COMPL., CKT. DETAILS

TABLE 2

| OUTGOING AND TOLL SWITCHING TRUNKS CONNECTING TO OTHER SYSTEMS DC K.P.-IN, D.P.-OUT OR R.P.-OUT | | | | | | | | | | | | | | | | |
|--|-----------------------------|-------------------------|--------------|--------------|--|---------------------|----------------------|---------------|-----------------|------------------|-----------------------------|--------------|----------------------|---------------|-------|-------|
| CONNECTING SYSTEM | LOC. OF CKT. ON KEY SHEET | POLARITY OF TRUNK LEADS | | | | | | KIND OF SUPV. | KIND OF PULSING | HAS COIN CONTROL | KIND OF RERING START SIGNAL | SEE NOTE | | | | |
| | | OUT-GOING LEADS | TRUNK NORMAL | TRUNK SEIZED | POLARITY TO CUT TRK. THRU "FT" & "FR" (SEE NOTE 8) | LINE SEIZURE SIGNAL | SUB. ANS. (OFF-HOOK) | | | | | | SUB. DISC. (ON-HOOK) | | | |
| STEP BY STEP | TOLL INTERMEDIATE SEL. | J34 | T R | GRD. BAT. | GRD. BAT. | | | SEE NOTE 6 | GRD. BAT. | GRD. BAT. | BRIDGED | D.P. | YES NO | SEE NOTE 7 | 1 | |
| | | H54 | T R | GRD. BAT. | GRD. BAT. | | | NONE | BAT. GRD. | GRD. BAT. | REV. BAT. | D.P. | NO | NONE | | |
| | LOOP DIALING TOLL TRAIN | H34 | T R | GRD. BAT. | GRD. BAT. | | | BAT. | DRY | BAT. | WET DRY | D.P. | YES NO | 20~ | 2 | |
| | | H34 | T R | GRD. BAT. | GRD. BAT. | | | NONE | BAT. GRD. | GRD. BAT. | REV. BAT. | D.P. | YES NO | SX | 2 | |
| | REPEATED DIALING TOLL TRAIN | G104 | T R | GRD. BAT. | GRD. BAT. | | | BAT. | DRY | BAT. | WET DRY | D.P. | YES NO | 20~ | 2,3 | |
| | | I147 | | | | | | | | | CX OR SX | D.P. | YES NO | PULSE NONE | 2,3 | |
| | PANEL | LOCAL INC. SEL. | H34 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | BAT. GRD. | REV. BAT. | R.P. | NO | NONE | 5 |
| | | | K34 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | BAT. GRD. | REV. BAT. | R.P. | NO | NONE | 4,5 |
| | | TOLL INC. SEL. | H34 | T R | BAT. GRD. | BAT. GRD. | | | BAT. | DRY | BAT. | WET DRY | R.P. | YES NO | 20~ | 2,5 |
| | | | K34 | T R | BAT. GRD. | BAT. GRD. | | | BAT. | DRY | BAT. | WET DRY | R.P. | YES NO | 20~ | 2,4,5 |
| CROSSBAR NO. 1 | LOCAL INC. TRK. | H34 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | BAT. GRD. | REV. BAT. | R.P. | NO | NONE | 5 | |
| | | K34 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | BAT. GRD. | REV. BAT. | R.P. | NO | NONE | 4,5 | |
| | LOCAL INC. TRK. | F147 | T R | BAT. GRD. | BAT. GRD. | GRD. BAT. | | NONE | BAT. GRD. | GRD. BAT. | REV. BAT. | D.P. | NO | NONE | | |
| | | H34 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | BAT. GRD. | REV. BAT. | R.P. | YES NO | 20~ | 2,5 | |
| | TOLL INC. TRK. | K34 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | BAT. GRD. | REV. BAT. | R.P. | YES NO | 20~ | 2,4,5 | |
| | | A102 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | GRD. BAT. | BRIDGED | R.P. | NO | NONE | | |
| CROSSBAR NO. 5 | LOCAL INC. TRK. | F147 | T R | BAT. GRD. | BAT. GRD. | GRD. BAT. | | NONE | BAT. GRD. | GRD. BAT. | REV. BAT. | D.P. | NO | NONE | | |
| | | H34, K34 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | BAT. GRD. | REV. BAT. | R.P. | NO | NONE | 4,5 | |
| | TOLL INC. TRK. | F147 | T R | BAT. GRD. | BAT. GRD. | GRD. BAT. | | NONE | BAT. GRD. | GRD. BAT. | REV. BAT. | D.P. | YES NO | SX | 2 | |
| | | H34, K34 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | GRD. BAT. | REV. BAT. | R.P. | YES NO | SX | 2,4,5 | |
| CROSSBAR TANDEM | INC. TRK. | H34, K34 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | GRD. BAT. | REV. BAT. | R.P. | NO | NONE | 4,5,9 | |
| | | F147 | T R | BAT. GRD. | BAT. GRD. | GRD. BAT. | | NONE | BAT. GRD. | GRD. BAT. | REV. BAT. | D.P. | NO | NONE | 9 | |
| PANEL SENDER TANDEM | DISTRICT SEL. | K34 | T R | BAT. GRD. | BAT. GRD. | | | NONE | GRD. BAT. | GRD. BAT. | REV. BAT. | R.P. | NO | NONE | 4,5,9 | |
| | | F147 | T R | BAT. GRD. | BAT. GRD. | GRD. BAT. | | NONE | BAT. GRD. | GRD. BAT. | REV. BAT. | D.P. | NO | NONE | 9 | |
| TOLL SW NO. 4 TYPE | INC. TRK. | F147 | T R | BAT. GRD. | BAT. GRD. | GRD. BAT. | | NONE | GRD. BAT. | GRD. BAT. | REV. BAT. | D.P. | NO | NONE | 9 | |

- NOTES:
1. THE DISPOSAL OF COINS IS CONTROLLED OVER THE TIP AND RING OF THE TRK. CKT.
 2. A SEPARATE SINGLE TRK. CONDUCTOR IS REQUIRED FOR DISPOSAL OF COINS.
 3. THIS CKT. MAY ALSO CONNECT TO COMBINED LOOP DIALING & REPEATED DIALING TOLL TRAIN.
 4. THIS TRK. CKT. CONNECTS TO "KEY PULSING" A SWBD. LINK & CONTROLLER CKT. AND "A" SWBD. SENDER CKT. SHOWN ON CROSSBAR NO. 1 KEYSHEET.
 5. THE TOLL REVERTIVE PULSE SENDER IS RELEASED BY A MOMENTARY REVERSAL OF THE POLARITY ON THE TIP & RING FROM THE DIAL OFFICE AFTER PULSING IS COMPLETED.
 6. WHEN THE LINE IS SEIZED THE CONNECTION BETWEEN THE "C" AND "S" LEADS IN THE CONNECTOR IS OPENED CAUSING THE RELEASE OF A REL. IN THE TRK. CKT.
 7. WHEN THE OPR. RINGS OR RERINGS WITH SUB. RECEIVER ON-HOOK, THEN DURING THE RELEASE TIME OF A SLOW RELEASE REL. IN THE CKT. THE "C" LEAD IS OPENED, PERMITTING THE TRIPPING REL. IN THE CONNECTOR TO RELEASE AND CONNECT MACHINE RINGING TO THE CALLED LINE.
 8. WHERE NO POLARITY IS SHOWN IN THIS COLUMN THE "FT" & "FR" LEADS ARE CUT THRU WHEN THE SENDER IS ATTACHED.
 9. THE TRK. CKTS. ARE ARRANGED FOR 20 CYC. OR SX RERING.

TRK. CKTS., OUT. & TOLL SW., CKT. DETAILS

SD-64800-01-D1

SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

SD-64800-01-D1

BELL TELEPHONE LABORATORIES
INCORPORATED



PRINTED IN U.S.A.

TABLE 3 (CONTINUED ON NEXT PAGE)

| OUTGOING AND TOLL SWITCHING TRUNKS CONNECTING TO OTHER SYSTEMS MF K.P., REPEATED DIALING OR STRAIGHTFORWARD | | | | | | | | | | | | | |
|--|----------------------------|-------------------------|--------------|--------------|--|---------------------|----------------------|----------------------|---------------|-----------------|------------------|------------------------------|------------|
| CONNECTING SYSTEM | LOC. OF CKT. ON KEY SHEET | POLARITY OF TRUNK LEADS | | | | | | | KIND OF SUPV. | KIND OF PULSING | HAS COIN CONTROL | KIND OF RINGING START SIGNAL | SEE NOTE |
| | | OUT-GOING LEADS | TRUNK NORMAL | TRUNK SEIZED | START DIAL OR PULSING LAMP (SEE NOTE 10) | LINE SEIZURE SIGNAL | SUB. ANS. (OFF-HOOK) | SUB. DISC. (ON-HOOK) | | | | | |
| STEP BY STEP | TOLL INTERMEDIATE SELECTOR | A34 | T | GRD. | GRD. | NONE | SEE NOTE 8 | GRD. | GRD. | BRIDGED | D.P. | NO | SEE NOTE 9 |
| | | | R | BAT. | BAT. | NONE | SEE NOTE 8 | BAT. | BAT. | BRIDGED | D.P. | YES | SEE NOTE 9 |
| | TOLL INTERMEDIATE SELECTOR | B34 | T | GRD. | GRD. | NONE | SEE NOTE 8 | GRD. | GRD. | BRIDGED | D.P. | NO | SEE NOTE 9 |
| | | | R | BAT. | BAT. | NONE | SEE NOTE 8 | BAT. | BAT. | BRIDGED | D.P. | YES | SEE NOTE 9 |
| | LOCAL OR AB TOLL TRAIN | C147 | T | GRD. | GRD. | NONE | NONE | BAT. | GRD. | REV. BAT. | D.P. | NO | NONE |
| | | | R | BAT. | BAT. | NONE | NONE | GRD. | BAT. | REV. BAT. | D.P. | NO | NONE |
| | LOOP DIALING TOLL TRAIN | C147 | T | GRD. | GRD. | NONE | NONE | BAT. | GRD. | REV. BAT. | D.P. | YES | SX |
| | | | R | BAT. | BAT. | NONE | NONE | GRD. | BAT. | REV. BAT. | D.P. | NO | NONE |
| CROSSBAR NO. 1 | TOLL INC. TRK. | E104 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | MF | YES | 20~ |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | MF | NO | NONE |
| | LOCAL INC. TRK. | G 42, E104 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | MF | NO | NONE |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | MF | NO | NONE |
| | TOLL INC. TRK. | C147 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | D.P. | YES | 20~ |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | D.P. | NO | NONE |
| | LOCAL INC. TRK. | C147 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | D.P. | NO | NONE |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | D.P. | NO | NONE |
| CROSSBAR NO. 5 | "B" SWBD. | E104 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | NONE | YES | 20~ |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | NONE | NO | NONE |
| | TOLL INC. TRK. | E104 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | MF | YES | SX |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | MF | NO | NONE |
| | TOLL INC. TRK. | C147 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | D.P. | YES | SX |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | D.P. | NO | NONE |
| | LOCAL INC. TRK. | C147 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | D.P. | NO | NONE |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | D.P. | NO | NONE |
| PANEL | TOLL INC. TRK. | E104, G42 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | MF | NO | NONE |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | MF | NO | NONE |
| CROSSBAR TANDEM | "B" SWBD. | E104 | T | GRD. | GRD. | NONE | GRD. | BAT. | GRD. | REV. BAT. | NONE | YES | SX |
| | | | R | BAT. | BAT. | NONE | GRD. | BAT. | GRD. | REV. BAT. | NONE | NO | NONE |
| MANUAL OFFICE | TOLL SW. TRK. | A32 | T | GRD. | GRD. | NONE | GRD. | DRY | GRD. | WET DRY | NONE | NO | 20~ |
| | | | R | BAT. | BAT. | NONE | BAT. | DRY | BAT. | WET DRY | NONE | NO | 20~ |

TRK. CKTS., OUT. & TOLL SW., CKT. DETAILS (SEE NEXT PAGE FOR NOTES)

TABLE 3 (CONTINUED FROM PRECEDING PAGE)

| OUTGOING AND TOLL SWITCHING TRUNKS CONNECTING TO OTHER SYSTEMS MF K.P., REPEATED DIALING OR STRAIGHTFORWARD | | | | | | | | | | | | | |
|--|-----------------------------|-------------------------|--------------|--------------|--|---------------------|----------------------|----------------------|---------------|-----------------|------------------|------------------------------|----------|
| CONNECTING SYSTEM | LOC. OF CKT. ON KEY SHEET | POLARITY OF TRUNK LEADS | | | | | | | KIND OF SUPV. | KIND OF PULSING | HAS COIN CONTROL | KIND OF RINGING START SIGNAL | SEE NOTE |
| | | OUT-GOING LEADS | TRUNK NORMAL | TRUNK SEIZED | START DIAL OR PULSING LAMP (SEE NOTE 10) | LINE SEIZURE SIGNAL | SUB. ANS. (OFF-HOOK) | SUB. DISC. (ON-HOOK) | | | | | |
| TOLL SWITCHING NO. 4 TYPE | INC. TDM. TRK. | E104 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | MF | NO | NONE |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | MF | NO | NONE |
| TOLL TDM. SWBD. NO. 1B OR 3B | INC. TDM. TRK. | C147 | T | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | D.P. | NO | NONE |
| | | | R | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | D.P. | NO | NONE |
| TOLL TDM. SWBD. NO. 1B OR 3B | INC. TOLL TDM. TRK. | E104 | T | GRD. | GRD. | BAT. | NONE | GRD. | BAT. | REV. BAT. | MF | NO | NONE |
| | | | R | BAT. | BAT. | GRD. | NONE | BAT. | GRD. | REV. BAT. | MF | NO | NONE |
| DSA SWBD. | CALL WIRELESS TOLL SW. CORD | A32 | T | GRD. | GRD. | NONE | GRD. | DRY | GRD. | WET DRY | NONE | NO | NONE |
| | | | R | BAT. | BAT. | NONE | BAT. | DRY | BAT. | WET DRY | NONE | NO | NONE |
| TOLL TDM. SWBD. NO. 1B OR 3B | CALL WIRELESS TOLL SW. CORD | H32 | T | DRY | DRY | NONE | LOW RES. BRIDGE | GRD. | GRD. | HIGH LOW | NONE | NO | NONE |
| | | | R | GRD. | GRD. | NONE | BAT. | BAT. | BAT. | HIGH LOW | NONE | NO | NONE |
| TOLL TDM. SWBD. NO. 1B OR 3B | INC. TOLL TDM. TRK. | H42 | T | GRD. | GRD. | NONE | NONE | GRD. | GRD. | HIGH LOW | NONE | NO | NONE |
| | | | R | OPEN | BAT. | NONE | NONE | BAT. | BAT. | HIGH LOW | NONE | NO | NONE |
| TOLL TDM. SWBD. NO. 3B | INC. TOLL TDM. TRK. | H42 | T | GRD. | GRD. | NONE | NONE | GRD. | GRD. | HIGH LOW | MF OR NONE | NO | NONE |
| | | | R | OPEN | BAT. | NONE | NONE | BAT. | BAT. | HIGH LOW | MF OR NONE | NO | NONE |
| TOLL TDM. SWBD. NO. 1 OR 3 | AUX. INC. TRK. | H42 | T | GRD. | GRD. | NONE | NONE | GRD. | GRD. | HIGH LOW | NONE | NO | NONE |
| | | | R | OPEN | BAT. | NONE | NONE | BAT. | BAT. | HIGH LOW | NONE | NO | NONE |

NOTES:

1. THE DISPOSAL OF COINS IS CONTROLLED OVER THE TIP AND RING OF THE TRUNK CIRCUIT.
2. A SEPARATE SINGLE TRUNK CONDUCTOR IS REQUIRED FOR DISPOSAL OF COINS.
3. PULSING, SUPERVISION AND RERING ARE CONTROLLED OVER THE CX OR SX SIGNALING CKT. WHICH CONNECTS TO A SIMILAR CX OR SX SIGNALING CKT. AT THE DISTANT LOCAL OFFICE.
4. SIMPLEX RERING IS USED.
5. THIS TRK. IS USED STRAIGHTFORWARD TO A 3B TOLL TANDEM SWBD. AND MF PULSING TO A CROSSBAR TANDEM OR TOLL SWITCHING SYSTEM NO. 4 OR 4A OR STRAIGHTFORWARD ONLY.
6. TRK. SEIZURE INCLUDES THE OPERATION OF THE DIAL KEY.
7. THE TRK. CKT. SHOWN IN BLOCK G42 IS FOR USE WHEN REPEATED SX SUPV. IS REQUIRED AT THE TOLL SWBD.
8. WHEN THE LINE IS SEIZED THE CONNECTION BETWEEN THE "C" & "S" LEADS IN THE CONNECTOR IS OPENED CAUSING THE RELEASE OF A REL. IN THE TRK. CKT.
9. WHEN THE OPR. RINGS OR RERINGS WITH SUB. REC. ON-HOOK, THEN DURING THE RELEASE TIME OF A SLOW RELEASE REL. IN THE TRK. CKT. THE "C" LEAD IS OPENED PERMITTING THE TRIPPING REL. IN THE CONNECTOR TO RELEASE AND CONNECT MACHINE RINGING TO THE CALLED LINE.
10. "NONE" IN THIS COLUMN INDICATES A START PULSING SIGNAL REQUIRES NO CHANGE IN POLARITY OF OUTGOING LEADS.
11. THE TRK. CKTS. SHOWN IN BLOCKS E104 & C147 ARE ARRANGED FOR 20 CYC. OR SX RERING.
12. THE DISPOSAL OF COINS IS CONTROLLED BY THE COIN CONTROL KEY OF THE TOLL SW. TRK. CKT. IN THE MANUAL OFFICE.
- 13.
14. 20 CYCLE RERING IS USED.
15. RINGING IS UNDER MANUAL CONTROL OF RINGING KEY IN DSA CORD CKT.
16. REVERSE BAT. RERING IS USED.
17. THIS TRK. IS USED STRAIGHTFORWARD TO A TOLL TANDEM SWBD. AND MF PULSING TO A CROSSBAR TANDEM OR TOLL SW. OFF. NO. 4 OR 4A.

TRK. CKTS., OUT. AND TOLL SW., CKT. DETAILS (CONT. FROM PAGE 48)

64800-01-02

DRAWING ISSUE
15
J.T.
A.S.
P.D.

15

SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

SD-64800-01-02

BELL TELEPHONE LABORATORIES
INCORPORATED

25 PRINTED IN U.S.A.

TABLE 4

| SENDER CIRCUITS - MF K.P.-IN, D.P.-OUT & DC K.P.-IN, D.P.-OUT | | | | | | | | | | | | | |
|---|---|----------------------------|-----------------------|--------------|--------------|-----------------------------|----------------------|------------------------|--------------------------------------|---|------------------|------------------|----------|
| LOCATION OF CKT. ON KEY SHEET | TYPE OF SENDER | TYPE OF TERMINATING OFFICE | TRAIN | SENDER LEADS | SUPV. | POLARITY REQUIRED BY SENDER | | | | | | RING. START SIG. | SEE NOTE |
| | | | | | | SENDER STARTS PULSING | SENDER STOPS PULSING | SENDER RESUMES PULSING | PULSING COMPLETED | | | | |
| | | | | | | | | | SENDER SENDS RING. SIG. (SEE NOTE 1) | SENDER RINGS AND CUTS THRU (SEE NOTE 1) | SENDER CUTS THRU | | |
| E9 | DC K.P.-IN D.P.-OUT (SEE NOTES 6 & 7) | STEP BY STEP | LOOP DIALING TOLL | FT | WET DRY | TRK. CLOSURE | | | REV. T & R | REV. T & R | | 20~ OR NONE | 3 |
| | | | | FR | REV. BAT. | TRK. CLOSURE | | | IMMED. | IMMED. | | SX OR NONE | 3 |
| | | | | FR | REV. BAT. | TRK. CLOSURE | | | | | AFTER 1 SEC. | 20~ OR NONE | 3 |
| | | | REPEATED DIALING TOLL | FT | WET DRY | TRK. CLOSURE | | | REV. T & R | | | 20~ OR NONE | 3 |
| | | | | FR | REV. BAT. | TRK. CLOSURE | | | | | | NONE | 2,3 |
| | | | | FR | REV. BAT. | TRK. CLOSURE | | | | | | NONE | 4 |
| | | CROSSBAR NO. 1 | FT | REV. BAT. | TRK. CLOSURE | | | | | | NONE | 4 | |
| | | | FR | REV. BAT. | TRK. CLOSURE | | | IMMED. | IMMED. | | SX OR NONE | 4 | |
| | | | FR | REV. BAT. | TRK. CLOSURE | | | | | | NONE | 4 | |
| | | CROSSBAR TANDEM | FT | REV. BAT. | TRK. CLOSURE | | | | | | NONE | 4 | |
| | | | FR | REV. BAT. | TRK. CLOSURE | | | | | | NONE | 2,3,4 | |
| | | LINK TYPE CDO. | FT | REV. BAT. | TRK. CLOSURE | | | | | | NONE | 2,3,4 | |
| FR | REV. BAT. | | TRK. CLOSURE | | | | | | NONE | 2,3,4 | | | |
| D9 | MF K.P.-IN D.P.-OUT (SEE NOTES 6 & 7) | STEP BY STEP | LOOP DIALING TOLL | FT | WET DRY | GRD. | | | REV. T & R | REV. T & R | | 20~ OR NONE | 5 |
| | | | | FR | REV. BAT. | GRD. | | | IMMED. | IMMED. | | SX OR NONE | 5 |
| | | | | FR | REV. BAT. | BAT. | | | | | | NONE | 2,3,5 |
| | | | LOCAL A-B TOLL | FT | REV. BAT. | GRD. | | | | | | NONE | 2,3,5 |
| | | | | FR | REV. BAT. | BAT. | | | | | | NONE | 5 |
| | | | | FR | REV. BAT. | BAT. | | | | | | NONE | 5 |
| | | CROSSBAR NO. 5 | FT | REV. BAT. | GRD. | | | | | | SX OR NONE | 5 | |
| | | | FR | REV. BAT. | BAT. | | | | | | NONE | 5 | |
| | | CROSSBAR TANDEM | FT | REV. BAT. | GRD. | | | | | | NONE | 5 | |
| | | | FR | REV. BAT. | BAT. | | | | | | NONE | 5 | |
| | | LINK TYPE CDO. | FT | REV. BAT. | GRD. | BAT. | GRD. | | | | NONE | 5 | |
| | | | FR | REV. BAT. | BAT. | GRD. | BAT. | | | | NONE | 5 | |

NOTES:

- THIS COLUMN APPLIES ONLY WHEN SENDER IS ARRANGED TO SEND RINGING SIGNAL UNDER CONTROL OF POSITION.
- WHEN SENDERS ARE ARRANGED FOR STOP-GO, THEY STOP PULSING ON REVERSAL AND RESUME PULSING ON SECOND REVERSAL.
- WHEN SENDERS ARE NOT ARRANGED FOR STOP-GO, THEY CUT THRU AND RELEASE ON REVERSAL OF TIP AND RING.
- WHEN SENDER IS TO BE USED WITH A CROSSBAR TANDEM, CROSSBAR NO. 1 OR NO. 5 OR LINK TYPE CDO. OFFICE, THE ASSOCIATED TRUNK MUST BE ARRANGED TO ABSORB DELAY DIAL PRIOR TO GIVING CLOSURE OF FUNDAMENTAL TIP & RING. FOR DELAY DIAL OPERATION THE SENDER REVERSES THE NORMAL TRUNK POLARITY WHEN READY TO RECEIVE PULSING.
- SENDER WILL RING ONLY IF OPERATOR ACTUATES RINGING KEY.
- THIS SENDER TRANSMITS 10 P.P.S. WITH INTERDIGITAL TIMING OF 0.4, 0.6 OR 0.8 SEC. MINIMUM OR 20 P.P.S. WITH INTERDIGITAL TIMING OF 0.3 OR 0.4 SEC. MINIMUM.

- (A) PULSES SHALL BE 10 P.P.S. WHEN PULSING INTO A CX CONVERTER WHICH CONVERTS LOOP PULSING TO CX OR EQUIVALENT TYPE OF PULSING.
- (B) PULSES INTO STEP BY STEP SWITCHES SHALL BE 10 P.P.S. AND THE INTERDIGITAL TIMING SHALL BE 0.6 SEC. BETWEEN DIGITS FOR TRUNK SELECTION AND A MIN. OF 0.4 SEC. FOR THE DIGITS PULSED INTO THE CONNECTOR.
- (C) THE INTERDIGITAL TIMING SHALL BE 0.8 SEC. AT 10 P.P.S. BETWEEN DIGITS FOR TRUNK SELECTION THRU A TANDEM SELECTOR IN A C.D.O. TO A LINK TYPE C.D.O. WHEN THE TANDEM SELECTOR IN THE C.D.O. IS NOT ARRANGED FOR STOP-GO SIGNAL.
- (D) THE INTERDIGITAL TIMING SHALL BE 0.8 SEC. AT 10 P.P.S. BETWEEN DIGITS FOR TRUNK SELECTION WHEN STOP-GO SIGNAL IS REQUIRED FOR MORE THAN 2 OF 4 CLASSES WITH TWO OF THE CLASSES USING NORMAL INTERDIGITAL TIMING OF 0.6 SEC. BETWEEN DIGITS.
- (E) PULSES INTO SENDERS SUCH AS CROSSBAR TANDEM SENDERS SHALL BE 20 P.P.S. WITH INTERDIGITAL TIMING OF 0.3 SEC. BETWEEN DIGITS OR 10 P.P.S. WITH INTERDIGITAL TIMING OF 0.4 SEC. BETWEEN DIGITS.
- (F) THE INTERDIGITAL TIMING SHALL BE 0.4 SEC. AT 20 P.P.S. BETWEEN DIGITS FOR PULSING INTO SENDERS WHEN STOP-GO SIGNAL IS REQUIRED FOR MORE THAN 2 OF 4 CLASSES WITH 2 OF THE CLASSES USING NORMAL INTERDIGITAL TIMING OF 0.3 SEC. BETWEEN DIGITS.

TABLE 5

| SENDER CIRCUIT - DC K.P.-IN, R.P.-OUT | | | | | | | | | |
|---------------------------------------|------------------------|----------------------------|--------------|-----------|-----------------------------|-------------------------|-----------------|----------|--|
| LOCATION OF CKT. ON KEY SHEET | TYPE OF SENDER | TYPE OF TERMINATING OFFICE | SENDER LEADS | SUPV. | POLARITY REQUIRED BY SENDER | | RING START SIG. | SEE NOTE | |
| | | | | | SENDER STARTS PULSING | SENDER SENDS RING. SIG. | | | |
| C9 | DC K.P.-IN R.P.-OUT | PANEL | FT | WET DRY | BAT. | BAT. | 20~ OR NONE | 1 | |
| | | | FR | REV. BAT. | GRD. | GRD. | NONE | 1 | |
| | | | FT | REV. BAT. | BAT. | BAT. | 20~ OR NONE | 2 | |
| | | | FR | REV. BAT. | GRD. | GRD. | NONE | 2 | |
| | | | FR | REV. BAT. | BAT. | BAT. | 20~ OR NONE | 2 | |
| | | CROSSBAR NO. 1 | FT | REV. BAT. | BAT. | BAT. | 20~ OR NONE | 2 | |
| | | | FR | REV. BAT. | GRD. | GRD. | NONE | 2 | |
| | | | FR | REV. BAT. | BAT. | BAT. | 20~ OR NONE | 2 | |
| | | | FR | REV. BAT. | GRD. | GRD. | NONE | 2 | |
| | | | FR | REV. BAT. | GRD. | GRD. | NONE | 2 | |

NOTES:

- EITHER BAT. CUT-OFF OR GRD. CUT-OFF INCOMINGS.
- SOME GRD. CUT-OFF INCOMINGS.

SD-64800-01-03

SWITCHBOARD NO. 3C OR 3CL
KEY SHEET

SD-64800-01-D3

BELL TELEPHONE LABORATORIES
INCORPORATED

25

15

GENERAL

THE TABLES ON PAGES 40 TO 45 SHOW THE PRINCIPAL OPERATING FEATURES OF TRUNK AND SENDER CIRCUITS OF A NO. 3C OR 3CL SWITCHBOARD FROM THE POINT OF VIEW OF INTER-OFFICE OPERATION AND ARE INTENDED PRIMARILY TO FACILITATE THE SELECTION OF OPTIONS IN THE CONNECTING CIRCUITS IN OTHER OFFICES.

FOR EXAMPLE, ASSUME THAT A CROSSBAR TANDEM OFFICE IS TO COMPLETE CALLS FROM A NO. 3CL SWITCHBOARD USING MF PULSING AND THAT IT IS NECESSARY TO RERING THE TX OPERATOR ON CALLS COMPLETED TO TX POSITIONS THROUGH THE CROSSBAR TANDEM OFFICE. ASSUME THAT SD-25887-01 INCOMING TRUNK CIRCUIT ARRANGED FOR REVERSE BATTERY SUPERVISION AND 20 CYCLE OR SIMPLEX RERING FROM ORIGINATING END IS SELECTED FROM THE CIRCUIT IN THE CROSSBAR TANDEM OFFICE. REFERENCE TO THE FEATURE AND OPTION TABLE ON SD-25887-01 SHOWS THAT IT IS NECESSARY TO SELECT CERTAIN OPTIONS FOR THIS CIRCUIT TO WORK WITH THE NO. 3CL SWITCHBOARD.

TABLE 3 SHOWS THE TYPES OF SIGNALS THAT THE NO. 3CL SWITCHBOARD RECEIVES AND THE OPTIONS REQUIRED IN THE CONNECTING INCOMING TRUNK CIRCUIT AT THE CROSSBAR TANDEM OFFICE TO FUNCTION WITH THE NO. 3CL SWITCHBOARD.

REFERRING TO TABLE 3, IT IS SHOWN THAT THE OUTGOING TRUNK CIRCUIT ARRANGED FOR MF PULSING, REVERSE BATTERY SUPERVISION AND 20 CYCLE OR SIMPLEX RERING IN BLOCK E104 (SD-55879-01) WILL FUNCTION WITH THE INCOMING TRUNK CIRCUIT SD-25887-01. IF SD-55879-01 IS USED, THIS OUTGOING TRUNK:

1. REQUIRES A DELAY DIAL START PULSING SIGNAL.
2. TRANSMITS 20 CYCLE OR SIMPLEX RERING FOR RERING THE TX OPERATOR.
3. REQUIRES NO COIN CONTROL AS DISPOSAL OF COINS IS NOT USED ON CALLS COMPLETED THRU THE CROSSBAR TANDEM OFFICE.
4. CONTROLS THE CROSSBAR TANDEM OFFICE END BY TRUNK POLARITY AS FOLLOWS:
 - a. BATTERY ON TIP, GROUND ON RING - TRUNK NORMAL.
 - b. BATTERY ON TIP, GROUND ON RING - TRUNK SEIZED.
 - c. GROUND ON TIP, BATTERY ON RING - START PULSING SIGNAL (DELAY DIAL).
 - d. BATTERY ON TIP, GROUND ON RING - CALLED PARTY ANSWERS (OFF-HOOK)
 - e. GROUND ON TIP, BATTERY ON RING - CALLED PARTY DISCONNECTS (ON-HOOK).

THE FOLLOWING OPTIONS WILL THEN BE REQUIRED ON THE INCOMING TRUNK CIRCUIT SD-25887-01 IN THE CROSSBAR TANDEM OFFICE.

1. FIGURE B FOR MF PULSING SINCE IT IS ASSUMED THAT RERING OF THE TX OPERATOR IS REQUIRED ON CALLS COMPLETED TO TX POSITIONS THRU THE CROSSBAR TANDEM OFFICE AS SHOWN IN THE FEATURE OR OPTION TABLE.
2. FEATURE F AND OPTIONS ZG AND ZL IF 20 CYCLE RERING IS USED FOR THE INCOMING RERING SIGNAL AS SHOWN IN THE FEATURE OR OPTION TABLE.
3. FIGURE E AND OPTION ZF AND ZL IF SIMPLEX RERING IS USED FOR THE INCOMING RERING SIGNAL AS SHOWN IN THE FEATURE OR OPTION TABLE.
4. OPTIONS S, W AND X FOR TRUNK SUPERVISION AND MF PULSING WITH DELAY DIAL START PULSING SIGNAL SINCE THE TRUNK POLARITY SHOWN IN THE FEATURE OR OPTION TABLE MATCHES THE TRUNK POLARITY OF THE NO. 3CL SWITCHBOARD OUTGOING TRUNK CIRCUIT AS SHOWN IN THE FEATURE OR OPTION TABLE.
5. OPTIONS J AND N AS RESISTANCE COMPENSATION IS NOT REQUIRED WHEN THIS CIRCUIT IS USED WITH A NO. 3CL SWITCHBOARD AS SHOWN IN THE FEATURE OR OPTION TABLE AND INFORMATION NOTES 302 AND 303.

SD-64800-01-D4

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|---|----------------|
| SWITCHBOARD NO. 3C OR 3CL KEY SHEET | SD-64800-01-D4 |
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