SHEET INDEX (INITIATED ON ISSUE 5)

CONTENTS	SHEET NO.	ISSUE NO. 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
SHEET INDEX SUPPORTING INFORMATION	A1	5	6	7	8	9	10	11																		
SHEET INDEX	A2	5	6	7	8	9	10	11																		
APPARATUS INDEX	A3	5	6	6	8	9	9	9																		
	A4	5	6	6	8	9	9	9																		
LEAD INDEX OPTION INDEX	A5	5	6	7	8	9	9	11																		
PART OF FS 1 (ATND POS CKT)	B1	5	6	6	8	9	10	11																		
PART OF FS 1 (POS LSPKR CKT) FS 2 OVERRIDE LINE LP AND INDICATOR FOR COORDINATOR	B2	5	6	6	6	6	6	6																		
PART OF FS 1 (OVERRIDE ATND CKT)	B3	5	6	6	6	6	6	6																		
PART OF FS 1 (LINE AMPLIFICATION CKT) FS 12 BUZ CKT	B4	5	6	6	8	9	9	9																		
FS 15 4-WIRE VOICE CALLUP LINE CKT FS 17 TEST BAT & GRD CKT FS 18 24V FUSE & ALARM LP CKT	B5	5	6	6	8	9	9	9																		
FS 3 ATND TEL CKT	B6	5	6	7	8	9	9	9																		
PART OF FS 4 LINE SELECTION CKT	B7	5	6	6	8	9	9	9																		
PART OF FS 5 LP & LP CONTROL CKT	B8	5	6	6	8	9	9	9																		
FS 6 OVERRIDE LINE CKT	B9	5	6	6	8	9	9	9																		
FS 10 4-WIRE PRIVATE LINE CKT FS 13 STA LINE CKT FS 14 AUTO LINE CKT	B10	5	6	6	8	9	9	9																		
PART OF FS 5 LP & LP CONTROL CKT	B11	5	6	6	8	9	9	9																		
FS 7 OVERRIDE LINE REMOTE SIG CKT	B12	5	6	6	6	6	6	6																		
PART OF FS 4 LINE SELECTION CKT	B13	5	5	5	5	5	5	5																		
FS 16 EMER PAGING LINE CKT	B14	4	6	6	6	6	6	6																		
FS 9 CO OR PBX LINE CKT	B15	5	6	6	6	9	9	9																		
FS 11 POS ROTARY DIAL & OUTGOING RING CKT	B16	5	6	7	8	8	8	8																		
FS 8 KEY TEL LINE CONN CKT FS 19 KEY TEL LP REGULATOR CKT FS 20 LOCAL DIAL OR INTERCOM LINE CONN CKT	B17	5	6	7	8	8	8	8																		
FS 21 RECORDER CONN CONTROL CKT FS 22 SINGLE CHANNEL RECORDER CONN CKT	B18		6	6	6	9	9	9																		
FS 23 REQUEST & ACKNOWLEDGE ACCESS CKT	B19		6	6	8	8	8	8																		
APP FIG. 1	C1	5	6	6	8	9	9	9																		
APP FIG. 2-11	C2	5	6	6	8	8	8	8																		
APP FIG. 12-22	C3	5	6	6	8	8	8	8																		
APP FIG. 23-27	C4	5	6	6	8	8	8	8																		
APP FIG. 28-35	C5	5	6	7	7	9	10	10																		
APP FIG. 36-46	C6	5	6	6	8	8	8	8																		
APP FIG. 47-66	C7	5	6	6	8	9	9	9																		
APP FIG. 67-78	C8	5	6	6	8	9	9	9																		

* SECTION D SHEET WITH SUFFIX A WAS FORMERLY WITHOUT A SUFFIX LETTER.

CONTENTS	SHEET NO.	ISSUE NO. 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
CIRCUIT NOTES (101-102)	D1	5	6	7	8	9	9	9																		
CIRCUIT NOTES (102-108)	D2	5	6	7	8	9	9	9																		
CIRCUIT NOTES (109-END) EQUIPMENT NOTES (201-206)	D3A	5	6	6	8	8	8	8																		
EQUIPMENT NOTES (207-END) INFO NOTES (301-319)	D3b	5	6	6	8	9	9	9																		
INFO NOTES (320,321)(TPSM TEST NOTES)	D4	5	5	5	5	5	5	5																		
INFO NOTES (322-325,327-331)(TRSM TEST NOTES)	D5A*	5	6	6	8	8	8	8																		
INFO NOTES (326)(CURRENT DRAINS)	D5b	5	5	6	8	8	8	8																		
CROSS CONN NOTES (401-403)	D6	5	6	6	6	6	6	6																		
CROSS CONN NOTES (403)	D7	2	6	6	6	6	6	6																		
CROSS CONN NOTES (404)	D8	2	2	2	2	2	2	2																		
CROSS CONN NOTES (405) WORKING LIMITS	D9	5	5	5	8	8	8	8																		
SC 1 POS ACTIVATION SC 2 LINE SELECTION CKT OPR SC 3 HEADSET TO LSPKR TRFR OPR SC 4 INCOMING OVERRIDE EMER	E1	3	6	6	8	8	8	8																		
SC 5 MAGNETIC LATCHING CKT OPR SC 6 ELECT LOCKING LINE CKT RELEASE SC 7 OVERRIDE LINE SELECTION OPR SC 8 OVERRIDE LINE RELEASE SC 9 POS TRMT PATH CONTROL SC 10 AUX INC OVERRIDE LINE INDICATIONS OPR	E2	5	5	5	8	8	8	8																		
SC 11 AUX INCOMING OVERRIDE LINE SC 12 OVERRIDE LINE SELECTION SC 13 REMOTE REPEATED OVERRIDE LINE SC 14 EMER PAGING LINE SELECTION OPR SC 15 RADIO LINE OPR	E3	5	6	6	8	8	8	8																		
SC 16 4-WIRE PRIVATE LINE RCV OPR SC 17 CALL INITIATION ON 4-WIRE PRIVATE LINE SC 18 OUTGOING CALL ON CO OR PBX LINE	E4	5	5	5	8	8	8	8																		
SC 19 INCOMING CO OR PBX CALL SC 20 HOLD OPR FOR CO OR PBX LINE SC 21 CO OR PBX LINE SELECTION SC 22 4-WIRE VOICE CALL-UP LINE OPR SC 23 SELECTION OPR FOR AUTO LINE	E5	5	5	5	8	8	8	8																		
SC 24 ATND INITIATES CALL ON STA LINE SC 25 STA SET INITIATES CALL ON STA LINE SC 26 LINE CUTOFF OPR SC 27 BUZ CUTOFF OPR SC 28 ALARM CKT OPR SC 29 ATND INITIATES CALL ON REQUEST & ACK CKT	E6	5	6	6	6	6	6	6																		
SC 30 COORDINATOR MONITORING LINE SELECTION SC 31 COORDINATOR MONITORING FEATURE AND LINE RELEASE SC 32 SINGLE POSITION MONITORING SELECTION	E7				8	8	8	8																		

SHEET INDEX NOTES

1. WHEN CHANGES ARE MADE IN THIS DRAWING, ONLY THOSE SHEETS AFFECTED WILL BE REISSUED.
2. THIS SHEET INDEX WILL BE REISSUED AND BROUGHT UP TO DATE EACH TIME ANY SHEET OF THE DRAWING IS REISSUED, OR A NEW SHEET IS ADDED.
3. THE ISSUE NUMBER ASSIGNED TO A CHANGED OR NEW SHEET WILL BE THE SAME ISSUE NUMBER AS THAT OF THE SHEET INDEX.
4. SHEETS THAT ARE NOT CHANGED WILL RETAIN THEIR EXISTING ISSUE NUMBER.
5. THE LAST ISSUE NUMBER OF THE SHEET INDEX IS RECOGNIZED AS THE LATEST ISSUE NUMBER OF THE DRAWING AS A WHOLE.

SUPPORTING INFORMATION

CATEGORY	NO.
EQUIPMENT DESIG REQT	J53048 (BSP812-205-156)
EQUIPMENT DRAWINGS	J53048A-( ) THRU J53048N-( ) J53048P-( ) J53048R-( ) J53049T-( ) J53048U-( ) J53048AA-( ) THRU J53048AP-( ) J53048CA-( ) J53048CB-( ) J53048CF-( ) THRU J53048CK-( ) J53048DA-( )

DWG ISSUE	CD ISSUE	DATE ISSUED		

DWG 155	CD 155	DWG 155	CD 155	DWG 155	CD 155
1	1	2D	2D	3A	2D APPIA
4A	2D APP 2A				

DWG 155	CD 155	DATE 155	DRAW	APPD
5B	3B	11-8-71	DHC -	CLD OFG JS
6B	4B	6-15-73	WS CHD	JHM OFG JS
7AC	4B APP 1AC	6-15-73	WS CHD	JHM OFG JS
8B	5B	1-5-76	CDL L	[illegible]
9BC	5B APP 1BU	12-13-77	ZEN CHD	HD OFG JS
10D	5B APP 2D	3-21-78	TB OL	HD WJM JS
11D	5B APP X 3D	5-15-78	CDL OL	HD HJM JS

ISSUE 11D

SD-69610-01 1 KC1

STATION SYSTEMS
SWITCHING SYSTEM
NO. 3010
ARRANGED FOR MULTIPLE ACCESS

AT&TCO STANDARD

(2) SD-69610-01 A1
113 SHEETS

BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-69610-01-A1

CONTENTS	SHEET NO.	ISSUE NO.																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
CIRCUIT REQUIREMENTS TABLE (AAO-PMW1)	F1	1	1	3	3	5	6	6	6	6	6	6														
CIRCUIT REQUIREMENTS TABLE (PMZ1-END)	F2	1	2	3	3	5	6	6	8	8	8	8														
CAD 101,102,103	G1	1	2	3	3	5	6	6	8	9	9	9														
CAD 104,105	G2	1	2	3	4	5	6	6	6	9	9	11														
CAD 106	G3	1	2	2	4	5	6	6	6	6	6	6														
CAD 107	G4	1	1	3	3	5	6	6	8	8	8	6														
CAD 108	G5	1	2	3	3	5	6	6	8	8	8	8														
CAD 109	G6	1	2	3	3	5	6	7	8	8	8	3														
CAD 110	G7	1	2	3	3	5	6	6	8	8	8	8														
CAD 111	G8	1	2	3	4	4	6	6	8	8	8	8														
CAD 112,113	G9	1	2	2	2	5	6	6	8	8	8	8														
CAD 114,115, PART OF CAD 116	G10	1	2	[illegible]	2	5	6	6	6	6	6	6														
PART OF CAD 116,117,118	G11A*	1	1	1	1	5	6	6	8	[illegible]	8	8														
CAD 119,120	G11B						6	6	8	8	8	8														
CAD 121	G11C									9	9	9														
PART OF CAD 201	G12A						6	7	8	8	8	8														
PART OF CAD 201,202,203	G12B**	1	2	2	4	5	6	7	8	8	8	8														
CAD 204,205	G13	1	2	2	4	5	6	6	8	8	8	8														
CAD 206	G14	1	2	3	4	5	6	6	8	8	8	8														
CAD 207	G15	1	2	2	4	5	6	6	6	6	6	6														
CAD 208	G16	1	2	2	2	5	6	6	8	8	8	8														
PART OF CAD 209	G17	1	2	2	4	5	5	5	8	8	8	8														
PART OF CAD 209, CAD 210	G18A*	1	2	2	4	5	6	6	6	6	6	6														
CAD 211, PART OF CAD 212	G18B					5	6	6	8	8	8	8														
PART OF CAD 212, CAD 213,214	G18C					5	6	6	8	8	8	8														
CAD 215,216	G18D					5	5	5	8	8	8	8														
CAD 217	G18E						6	6	6	6	6	6														
CAD 218	G18F								8	8	8	8														
CAD 301,302,303,304,305,306	G19	1	2	3	3	5	6	6	6	9	9	9														
CAD 307,308,309,310,311,312	G20	1	1	3	3	5	6	6	8	8	8	8														
CAD 313,314,315,316,317,318	G21A*	1	1	1	1	5	6	6	6	6	6	6														
CAD 319,320,321,322	G21B					5	6	6	6	9	9	9														
CAD 401,402,403	G22	1	2	2	4	5	6	6	6	6	6	6														
PART OF CAD 404	G23	1	2	2	4	5	5	5	5	5	5	5														
PART OF CAD 404	G24	1	2	2	4	5	5	5	5	5	5	5														
PART OF CAD 404	G25	1	2	2	4	5	5	5	5	5	5	5														
CAD 405, 406, 407, 408, 409	G26	1	2	2	4	4	6	6	6	6	6	6														
CAD 410, 411, 412, 413, & PART OF 414	G27	1	2	2	4	5	6	6	6	6	6	6														
PART OF CAD 414	G28	1	2	2	4	5	6	6	6	6	6	6														
PART OF 414 & CAD 415	G29	1	2	2	4	5	6	6	6	6	6	6														
CAD 501	G30	1	2	3	4	5	6	6	8	8	8	8														
CAD 502 & 503	G31	1	2	2	4	5	6	6	8	8	8	8														
CAD 504	G32	1	2	2	2	2	6	6	8	8	8	8														
CAD 505	G33	1	2	3	4	5	6	6	8	8	8	8														
PART OF CAD 506	G34	1	2	3	4	4	6	6	6	6	6	6														
PART OF CAD 506	G35		2	2	4	5	6	6	8	8	8	8														
CAD 507	G36		2	3	4	5	6	6	6	6	6	6														
CAD 508, 509	G37		2	3	4	4	6	6	8	8	8	8														
CAD 510, 511, 512, 513, 514, 515	G38A*		2	2	4	5	6	6	8	8	8	8														
CAD 516	G38B						6	6	8	8	8	8														
CAD 517,518,519,520,521,522	G38C						6	6	8	8	8	8														
CAD 523,524	G38D						6	6	8	8	8	8														
CAD 525	G38E						6	6	8	8	8	8														
CAD 526,527,528	G38F						6	6	8	8	8	8														

* SECTION G SHEET WITH SUFFIX A WAS FORMERLY WITHOUT A SUFFIX LETTER.

** SECTION G SHEET WITH SUFFIX B WAS FORMERLY WITHOUT A SUFFIX LETTER.

CONTENTS	SHEET NO.	ISSUE NO.																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
CAD 529	G38G						6	6	8	8	8	3														
CAD 601,602,603,604,605	G39		2	2	4	5	6	6	8	3	8	2														
CAD 606,607,608,609,610,611,612,613	G40		2	2	4	5	6	6	8	8	8	8														
CAD 614,615,616,617	G41					5	6	6	8	6	8	8														
CAD 701,702	G42								8	8	8	8														
CP1	J1	1	2	2	2	2	2	2	2	2	2	2														
CP2,3,4,5,6,7	J2	1	1	1	1	5	5	5	5	5	5	5														
CP8,9,10,11,12,13	J3	1	2	3	4	5	5	5	5	9	9	9														
CP14,15	J4									9	9	9														

DRAWING ISSUE: 1, 2B, 3A, 4A

ISSUE 11D

SWITCHING SYSTEM
NO. 301A

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SD-69610-01-A2

APPARATUS INDEX

DESIG	APP FIG. NO.	APP FIG. SH. NO.
CIRCUIT PACKS		
RIS1 (CP8)	81	C8
RIV (CP8)	64	C7
RL (CP1)	65	C7
S1 (CP1)	53	C7
VL (CP1)	64	C7

DESIG	LOCATION FS	APP FIG.	EQPT
RELAYS			
AAU	10D0	36	
ACO	15B6	28	
AKT	17B1	14	
AL	5B2	29	
AS1	10G3	19	
ASL	10E7	25	
B	6D5	1	
BCO	15E0	28	
BL	8B0	37	
BP	15F0	11	
BR	6D5	1	
BZC	7C5	41	
C0	2E1	47	
C1	2E1	47	
C2	2E2	47	
C3	2E2	47	
COAU	10C3	36	
COSL	10E6	25	
CTO (E-0)	9G(3,6)	33	
DCO	16D0	28	
DSI (E-0)	16A1	18	
FL	11G5	23	
FS	11E2	24	
FT	1A7	1	
H	7F2	1	
HCO	15C4	28	
HR	14A6	22	
HT	14G2	21	
KTS	15A7	28	CP15
L1AU	10C3	36	
L1SL	10D6	25	
LAU	10C1	36	
LC (E-0)	7C5	51	
LDD	16A2	1	
LP	2F2	47	
LP1	2F2	47	
LRG	8B0	37	
LS	6E1	1	
LSL	10C6	25	
M1	9E6	16,78	
MLO	7E6	24	
MLR	7F6	24	
MLT	7H6	24	
MONW	13D3	46	
MONZ	13D4	46	
OCO	16B1	28	
OVD (E-0)	9G(2,7)	9	

DESIG	LOCATION FS	APP FIG	EQPT
RELAYS (CONT)			
OVN	12E5	18	
PBZ	4B8	41	
PH	7E8	1	
PIL	FS4	1	
PLL	FS4	27	
PLO (E-O)	7B5	7	
PMWI	13B3	48	
PMZ1	13B4	48	
PR	7A2	1	
PSE	6F2	1	
PTT	6D1	1	
PV	7E8	61	
RC	18B0	1	
RCO	15E4	28	
RCOA	15E6	28	
RHR	14B5	69	
RHT	14B3	69	
RIS1	10H3	81	
RIV	5E4	64	
RIV (CP8)		64	
RK	6C1	1	
RL	2D7	1	
RLS	7G2	1	
RLST	7H2	1	
ROCO	15G0		
ROI(E-0)	12H3	10	
ROS1	10H3	30	
ROSL	10D7	25	
RQ	19D6	1	
RS1(E-0)	10H1	31	
RS1A (E-0)	10H1	31	
RV (E-0)	5B7	60	
SRLS	7F8	1	
ST	11C4	24	
VL	5G5	64	
VP	6B4	1	
W	6E3	1	
Z	6E4	1	

DESIG	LOCATION FS	APP FIG	EQPT
AMPLIFIERS			
A	1C5	1	
ACK	19C5	75	
LA	2A2	63	
LR	4D2	62	
LT	4B2	62	
OCN	3D4	73	
OR	3E4	62	
OT	3B4	62	
RC	18A7	35	
RQ	19C5	75	
RUI	1E4	82	

DESIG	LOCATION FS	APP FIG	EQPT
BRIDGES			
CB	1D0	1	

DESIG	LOCATION FS	APP FIG	EQPT
BUZZERS			
OC	2D1	68	

DESIG	LOCATION FS	APP FIG	EQPT
CAPACITORS			
BZ	4D7	32,70	
C1	1C8	1	
C2	1D8	1	
C3	1C8	1	
C4	1D7	1	
CF1	11E3	23	CP12
CF2	11F4	23	CP12
C14	8B2	38	CP11
CST	11G5	23	CP12
F3	10B6	25	
F4	10B5	25	
FL	9F8	23	
IL	17E0	77	
KT1	17B1	14	
KT2	17C1	14	
RAU	10C2	36	
RCO	15D3	28	CP8,15
ROR1	12E5	18	
ROR2	12F5	18	
ROT1	12A3	18	
ROT2	12C3	18	
RSL	10B7	25	
SRSL	10D6	25	
STSL	10C6	25	
TAU	10B2	36	
TSL	10B7	25	

CONNECTOR BLOCKS			
-24 GRD HRG	5(2,E)3	6	

CONNECTOR, RECORDER			
RB	15C1	12	

CORD ASSEMBLY			
FS	6B4	5	
RB	15C2	12	

DIALS			
A	16B7	32	
SUPV	16B7	49	

DIODES			
BLC	8(E1,4,D4,F4)	26	CP2
BLHPL	8(F1,H1)	1	CP2
BLHR	8(G4,F4)	1	CP2
BLIL	8C4	1	CP2
BLMN	8G4	1	CP2
BLZOV	8(C1,E1)	1	CP2
BZ (P-9)	4B7	2	CP5
BZCO	7F5	24	
BZC1	7F5	24	
CR4	8B3	38	CP11
CRFL	11G3	23	CP12

DESIG	LOCATION FS	APP FIG	EQPT
DIODES (CONT)			
FL	8E8	23	
FT	1B7	1	
FTT	6B1	1	
H	8G0	1	
KTS	15B7	28	
LBZ (0-9)	7F4	42	CP5
LFT	9F(3,7)	33	CP3
LIAU	11D3	36	
LISL	11D3	25	
LKT	17B6	13	
MOL	12H2	71	
MOSE	9F(3,6)	71	
PS	7H4	1	
PTT	6C2	1	
RCO	15E3	28	CP8,15
SLC	8(D1, E4,F4)	26	CP2
SLHPL	8(F1,G1)	1	CP2
SLHR	8(C4,G4)	1	CP2
SLIL	8C4	1	CP2
SLMN	8G4	46	CP2
SLZOV	8(C1,E1)	1	CP2
STO	11C4	24	

FILTERS			
A	16C4	32	
SUPV	16C4	49	

FOOTSWITCHES			
FS	6B5	5	

FUSES			
BF	5B0	29	
LP	5D0	29	
PF	5B1	29	
SEE CKT NOTE 101	5C1	54	
	5C1	59	
WK	8A8	59	

HANDSETS			
B	1H5	56	

HEADSETS			
A	1H4	55	
C	1H4	57	

DESIG	LOCATION FS	APP FIG	EQPT

DESIG	LOCATION FS	APP FIG	EQPT

INDUCTORS			
A	1C8	1	
B	1D8	1	
FL	8E8	23	
LAU	10B1	36	
ROI	12B4	18	

INTERRUPTERS			
LPC	4D5, 8D9, 11E8	40	

JACKS			
A (CONT)	1F9	4	
A IN	1C6	1	
A OUT	1C4	1	
ACK IN	19F6	76	
ACK OUT	19F4	76	
B(CONT)	1F9	4	
C(INST)	1G9	4	
D(INST)	1G9	4	
FS	6B3	45	
LA IN	2B1	20	
LA OUT	2B3	20	
LR IN	4D1	1	
LR OUT	4E3	1	
LT IN	4C3	1	
LT OUT	4C1	1	
OR IN	3F2	1	
OR OUT	3F5	1	
OT IN	3B5	1	
OT OUT	3B2	1	
RC IN	18A6	34	
RC OUT	18A8	34	
RQ IN	19C6	76	
RQ OUT	19C4	76	
TCA	1G9	80	
TCB	1G9	80	

DESIG	LOCATION FS	APP FIG	EQPT
KEYS			
LS	6E1	4	
SEE APP FIG.15&43	FS4	15 & 43	

LAMPS			
AL	5D0	29	
APL	8E9	39	
BZC	8E2	15,43	
CLD	8D2	49	
CO,SS,AL,STA,IL	8D3		
DL	8F1	32,49	
EPL	8E3	15,43,49	
FL	8F7	23	
H	8G2	15,43	
HS-LS	8F2	49	
MON	8G3		
OC	2D1	68	
OV	8E3	15,43	
OVN	8C2	49	
PL	8G2		
RAD	8G3		
ROS1	10G2	30	
ROLD	17G3	17	

LOUDSPEAKER SETS			
P	2A7	50	
	14(A1,B, C1,B)		

NETWORKS			
PBZ	4C8	41	
PC	7(B,D, E)2,7F8	26	CP2
PH	7F8	1	CP2
PN	15D7, 10C(3,7) 17G3	52	
PNL	9H2		CP9
PR	7A2	1	CP2
PTT	6D1	1	
RK	6C1	1	

PAD			
AR	2F4	1	
IL	17E1	77	
RA	1A1	1	
RC	18C7	34	
ROT	12E4	8	
TR	1C2	1	
TS1	10D1	19	

ISSUE 9BU

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-A3

6S

SD-69610-01-A3

APPARATUS INDEX (CONT)

DESIG	LOCATION FS	APP FIG.	EQPT
PLUGS			
FS	6B4	5	

POTENTIOMETERS			
ADJ	11F3	23	
BL	8B0	3	

RESISTORS			
BL (0-5)	8F4	66	CP4
BLC	8(E1,D4 E4,F4)	26	CP2
BLHPL	8G1	1	CP2
BLHR	8H4	1	CP2
BLIL	8C4	1	CP2
BLMN	8G4	46	CP2
BLZOV	8(C1,E1)	1	CP2
DL	8G1	1	
HL	8G1	1	
HR1	14D5	69	CP3
HR2	14D6	69	CP3
HR4	14E5	69	CP3
HR5	14E6	69	CP3
HS1	14C3	69	
HS2	14D3	69	
HS3	14C6	69	
HS4	14E6	69	
HT1	14D2	69	CP3
HT2	14D3	69	CP3
HT4	14E2	69	CP3
HT5	14E3	69	CP3
HRG	5D3	6	
LKT	17B6	13	
LPR	17B6	13	
LR	4E3	1	
LS	1G2	1	
LT	4D3	1	
MI	13B3	48	
MLO	7D6	24	
MLR	7D3	24	
MON	12E3	46	
OCN1	3E4	74	
OCN2	3E5	74	
OCN3	3C5	74	
OCN4	3C4	74	
OCN5	3C5	74	
OR	3F6	1	
OT	3B6	1	
PL (1-5)	2B4	44	CP7
PL (6-10)	2A4	44	CP7
RORI	12E2	72,8	
ROR2	12F2	72,8	
ROT1	12A2	72,8	
ROT2	12C2	72,8	
R9	1G5	1	
R10	1G5	1	
R13	1D4	1	
R14	1E1	1	
R15	1G6	1	

RESISTORS (CONT)			
R37	2B3	20	
R38	2C6	1	CP6
R39	2D6	1	CP6
R42	2E5	1	CP6
R43	2F5	1	CP6
R54	6E4	1	
R57	3B2	1	
R58	3B2	1	
R63	3F2	1	
R77	8B1	38	
R78	8C1	38	
R79	8A2	38	CP11
R80	8B2	38	CP11
R81	8A3	38	CP11
R82	8A3	38	
R83	8C3	38	
R84	8B2	38	CP11
RB	15C1	12	
RCO	15E3	28	CP8,15
RC1	18B8	34	
RC2	18B8	34	
RC3	18B8	34	
RF1	11F3	23	CP12
RF2	11F4	23	CP12
RFL	11F3	23	CP12
RL1	2C9	1	CP13
RL2	2C8	1	CP13
RL3	2C8	1	CP13
RL4	2C8	1	CP13
RL5	2C9	1	CP13
RM1	1A3	1	CP10,14
RM2	1A3	1	CP10,14
RM3	1A3	1	CP10,14
RM4	1D3	1	CP10,14
RM5	1C3	1	CP10,14
RM6	1A2	1	CP10,14
RM7	1C3	1	CP10,14
RM8	1B3	1	CP10,14
RM9	1D4	1	CP10,14
RM10	1C3	1	CP10,14
RM11	1B3	1	CP10,14
RM12	1D3	1	CP10,14
RQ1	19E6	76	
RQ2	19E6	76	
RQ3	19C3	76	
RQ4	19D3	76	
RQ5	19E3	76	
RQ6	19F3	76	
RQ7	19B3	76	
RQ8	19C3	76	
RRI	14C9	22	CP13
RR2	14D9	22	CP13
RR3	14C9	22	CP13
RR4	1489	22	CP13
RR5	14C9	22	CP13
RST	11G5	23	CP10
RTI	14C0	21	CP13
RT2	14D0	21	CP13
RT3	14C0	21	CP13
RT4	14B0	21	CP13
RT5	14C0	21	CP13
RVI	9C(3,6)	33	CP3
RV2	9C(3,6)	33	CP3
RV3	9C(3,6)	33	CP3
RV4	9C(3,6)	33	CP3
RV5	9C(3,6)	33	CP3
VCI	5E6	64	
VC2	5E6	64	
VC3	5F6	64	
VC4	5G6	64	

RINGERS			
BZ	4D7	32 70	

SWITCHES			
BL	8B0	3	

SWITCH HOOK			
FMS	6D4	79	

TERMINATING SETS			
T24	15B7 10(A3,A8) 17E3	52	

THERMISTORS			
RCO	15E4	28	CP8, CP15

TRANSFORMERS			
A	1C7	1	
B	1G2	1	
C	2A6	1	

TRANSMITTERS, HAND			
D	1H6	58	

TRANSISTORS			
LKT	17A6	13	
Q5	8B3	38	CP11
Q6	8A3	38	
Q7	11F3	23	CP12
Q8	11F4	23	CP12

VARISTORS			
HCO	15C3	28	CP8,CP15
RCO	15E3	28	CP8,CP15
VR1	2B6	1	CP13
VRR	14C7	22	CP8
VRT	14C2	21	CP13

DRAWING ISSUE 1 20 3A

ISSUE 9BU

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-A4

SD-69610-01-A4

LEAD INDEX

DESIG	LOCATION FS	LOCATION CAD
4-WIRE CALL-UP LINE CKT		
RR	5F4	39B7
RT	5F4	
TR	5F4	
TT	5F4	

DESIG	LOCATION FS	LOCATION CAD
4-WIRE PRIVATE LINE TERMINATING CKT		
R	12E7	41F0
R1	10F0, 12E7	39E7, 41F0
RA	10F0, 12E7	39E7, 41F0
SXR	10F0	39E7
SXT	10F0	39E7
T	12E7	41F0
T1	10F0, 12E7	39E7, 41F0
TA	10F0, 12E7	39E7, 41F0

DESIG	LOCATION FS	LOCATION CAD
20HZ RINGING SUPPLY		
R GRD	4D4, 10A5, 10G0, 15A4, 17H3	12F0, 13F0, 14E3, 18A/A6, 18C/C3
RING	4D4, 10A5, 10G0, 15A4, 17H3	

DESIG	LOCATION FS	LOCATION CAD
AUTOMATIC LINE CKT		
R	10B0	39B4
T	10B0	39B4

DESIG	LOCATION FS	LOCATION CAD
CO OR PBX LINE CKT		
R	15B0	39B4
R1	15B0	
T	15B0	39B4
T1	15B0	

DESIG	LOCATION FS	LOCATION CAD
CUST-PROV RADIO EQUIP.		
GRD	6B	40A0
PT	6B	
TR	1A0	
TT	1A0	

DESIG	LOCATION FS	LOCATION CAD
CUST-PROV RECORDER EQUIP.		
R	1H0, 2D8, 14B9, 17F9	15D1, 40C3
T	1G0, 2D7, 14B9, 17F9	

DESIG	LOCATION FS	LOCATION CAD
DISTANT OVERRIDE LINE, REMOTE SIG CKT, CR CO		
RR	12B6	4CH4-40H6
RT	12B6	
TR	12B6	
TT	12B6	

DESIG	LOCATION FS	LOCATION CAD
FAA RADIO RECEIVER EQUIP.		
RR	2F6	40AC
RT	2F6	

DESIG	LOCATION FS	LOCATION CAD
KEY TEL SYS KEY & TEL CKT		
A	10D5, 10F8, 15A6	41B3
L	17B7	
LG	17B7	
R	15A5, 17B0	
S	10F8	
T	15A5, 17B0	
RNG	4C7	

DESIG	LOCATION FS	LOCATION CAD
LINE CKT ARR FOR DIALING ONE OF 90 ATND		
A	17F0	40F9
BZ	4C5	
FS	11E0	
HA	11E0	
LF	8C9	
LF1	8C9	
LKT	17D5	
R	17F0	
RG	17F0	
RN	17F0	
S	17F0	
T	17F0	

DESIG	LOCATION FS	LOCATION CAD
OVERRIDE LINE CIRCUIT		
LON	12G1	
LOR	12H1	
MOL	12H1	
RR	12F1	
RT	12E1	
TR	12C1	
TT	12A1	

DESIG	LOCATION FS	LOCATION CAD
STATION LINE CKT		
R	10B5	39B4
T	10B5	39B4

DESIG	LOCATION FS	LOCATION CAD
SELECTIVE SIG CKT		
1	16C0	39D4
2	16B0	
C-	10H0	

DESIG	LOCATION FS	LOCATION CAD
INTERCOM LINE CKT		
T	17E0	41E4
R	17F0	
MG	11B5	
ST	11B5	
LF	8C8	
L-	17D5	
R-	4D7	
RN	4D7	
L-	8C6	

DESIG	LOCATION FS	LOCATION CAD
REQUEST AND ACKNOWLEDGEMENT CKT		
D	8E3	41B4
FL	8C8	
RGI	19E7	
RG5	19E7	
STI	11B5	
W	19F7	
X	19F7	
I3	19B7	
I4	19B7	

OPTION INDEX

APP OR WRG	LOCATION
2	APP FIG. 2
3	APP FIG. 3
4	APP FIG. 4
5	APP FIG. 5
6	APP FIG. 6
7	APP FIG. 7
8	APP FIG. 8
9	APP FIG. 9
10	APP FIG. 10
11	APP FIG. 11
12	APP FIG. 12
13	APP FIG. 13
14	APP FIG. 14
15	APP FIG. 15
16	APP FIG. 16
17	APP FIG. 17
18	APP FIG. 18
19	APP FIG. 19
20	APP FIG. 20
21	APP FIG. 21
22	APP FIG. 22
23	APP FIG. 23
24	APP FIG. 24
25	APP FIG. 25
26	APP FIG. 26
27	APP FIG. 27
28	APP FIG. 28
29	APP FIG. 29
30	APP FIG. 30
31	APP FIG. 31
32	APP FIG. 32
33	APP FIG. 33
34	APP FIG. 34
35	APP FIG. 35
36	APP FIG. 36
37	APP FIG. 37
38	APP FIG. 38
39	APP FIG. 39
40	APP FIG. 40
41	APP FIG. 41
42	APP FIG. 42
43	APP FIG. 43
44	APP FIG. 44
45	APP FIG. 45
46	APP FIG. 46
47	APP FIG. 47
48	APP FIG. 48
49	APP FIG. 49
50	APP FIG. 50
51	APP FIG. 51
52	APP FIG. 52
53	APP FIG. 53
54	APP FIG. 54
55	APP FIG. 55
56	APP FIG. 56
57	APP FIG. 57
58	APP FIG. 58
59	APP FIG. 59
60	APP FIG. 60
61	APP FIG. 61
62	APP FIG. 62
63	APP FIG. 63
64	APP FIG. 64
65	APP FIG. 65
66	APP FIG. 66
67	APP FIG. 67
68	APP FIG. 68
69	APP FIG. 69
70	APP FIG. 70
71	APP FIG. 71
72	APP FIG. 72
73	APP FIG. 73
74	APP FIG. 74
75	APP FIG. 75
76	APP FIG. 76
77	APP FIG. 77
78	APP FIG. 78
79	APP FIG. 79
80	APP FIG. 80
81	APP FIG. 81
82	APP FIG. 82

APP OR WRG	LOCATION
TA	2E7
TB	6G1
TC	4D6,4E6,7B2,7D2,7E2, 8C3,8C4,8C6,8D8,11B2, 11B5,16A3,16B3,16B5, 17B5,17E2,17E3
TD	1E6,1F5,8D8,8E3,11A5, 19B4,APP FIG. 1,75,76
TE	17F2,17F4,17E4
TF	2E7
TG	16A3,16B3,16B5,16C5
TH	581
YY	IG2,F2,E2,E3,F3,F4, 6F1,F3
YZ	IB8,C8,D7,E7,6D1
XA	IB8,IC8,6D1
XB	IG2,1H2,6D5,18B0
XC	1H2,15A1,15A2,15B0, 15C0,B2,C2
XD	I6E1
XE	8G1
XF	8G1
XG	18B7
XH	18B7
XI	17C5
XJ	17C5
XK	5E7,9D2,9E2,11B2
XL	6C4
XM	1D7
XN	486
XO	585
XP	5B6,5C7,5F6
XQ	5F6,5F7
XR	5F7
XS	7A1
XT	1581,B2,B6,B7,D4 APP FIG. 28
XU	15A6,B6,B7,D4,APP FIG.28
XV	1A2,A3,B3,C3,D3,D4,G2,G3, G5,G6,H2,6D5,18B8,C8 APP FIG. 1,34
XW	1A2,A3,B3,C3,D3,D4,E4,G2, G4,G6,H2, APP FIG.1,34,82

APP OR WRG	LOCATION
Z	2A0,2A1,2A2,5C6
Y	4B5,8C7,8C8,10G1, 10H1,11C3,APP FIG. 31
X	2B8,14C0,14C9
W	2A0,2A1,2A2,10F3, 10G4,10G5,10H0
V	4B5,8C7,8C8,10H1, APP FIG. 31
T	8C3,8C4
S	15E3
R	15E3
Q	10A3,10A7,17E1, APP FIG. 52
N	10A3,10A7,17E1, APP FIG. 52
M	2A0,2A1,2A2,10C7
K	2B8,14C0,14C9
J	8D6,8D7
H	9F2,9F3,9F6,9F7
G	4B6,10H0
F	7B1,7D1,7E1,8E6,8F5, 11D2,APP FIG. 10,13
E	7F7,9H4,9H5, APP FIG. 10,13
B	7A1,7B1
A	7A1,8E8
ZA	7F5
ZB	2B4,8D3,8E3
ZC	8C6,8D6,8D7
ZD	4B5,4C5,11C6,11D5, 16C0
ZE	7G4,7G8
ZF	1A7,APP FIG. 27
ZG	15B8,18B,C,E,F(4),6F3
ZH	10D1
ZI	10G4,16B1,16C1
ZJ	10E8
ZK	11D4,11E5
ZL	9B,C,D,F,G(4,5)
ZM	9C(2,6),9E(2,6)
ZN	1584
ZO	9H(2,3,6,7)

APP OR WRG	LOCATION
ZP	1D,E,F(2,3),6F2, 18B2-18F3
ZQ	1D,E,F(2-4),18B1-18F4
ZR	6F1,18B,C,E,F,(3)
ZS	15B3,15C2
ZT	15B2,15C2,15F1
ZU	15F1
ZV	8B7,8E8,15B5,1586, 17B5
ZW	8E8,10A1,10C1,17B5
ZX	8E8,10A6,10F8,17B5
ZY	10F8,11E1,12E0,17F0, 17G0,17G1,17H2
ZZ	16C3
YA	16A2,16B3,16C3
YB	16C0,16C1
YC	16C1,16D0
YD	16B0,16C1
YE	6F1,10G3
YF	8G0
YG	8G0,8G1
YH	8F8
YI	8C1
YJ	4C6,8D8
YK	8D8,17B5
YL	1G0,1H1,2D7,2D8
YM	1G1,1H1,2D7,2D8,17F8
YN	1D7,1D8,9F4,9F5,12A3, 12C3,12E3,12F3,12F4, 12H2
YO	9F4,9F5,9G3,9G7,12B3, 12C2,12C3,12D2,12E3, 12F2,12F5,12G4,12H2
YP	8E5
YQ	8E5
YR	1C4,1C,D(4,6),1E6
YS	1C4,1C,D(5,6),1E6
YT	16C2
YU	1D7,1D8
YV	4C6
YW	6F1,16E1
YX	6F1,9G3,9G7
XV	1G1
XW	1G1

DRAWING ISSUE

ISSUE 11D

SWITCHING SYSTEM NO. 301A

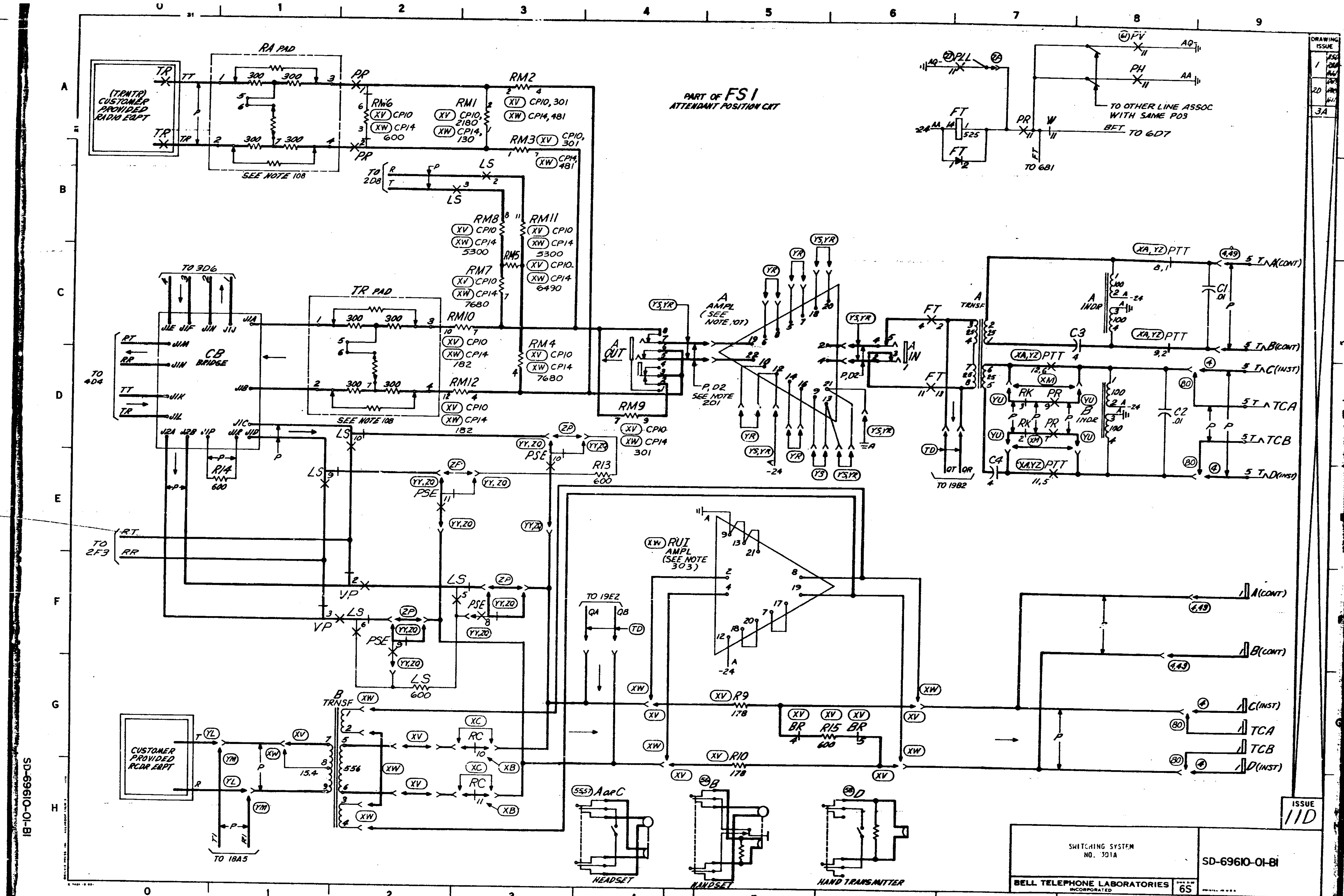
2

SD-69610-01-A5

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-A5

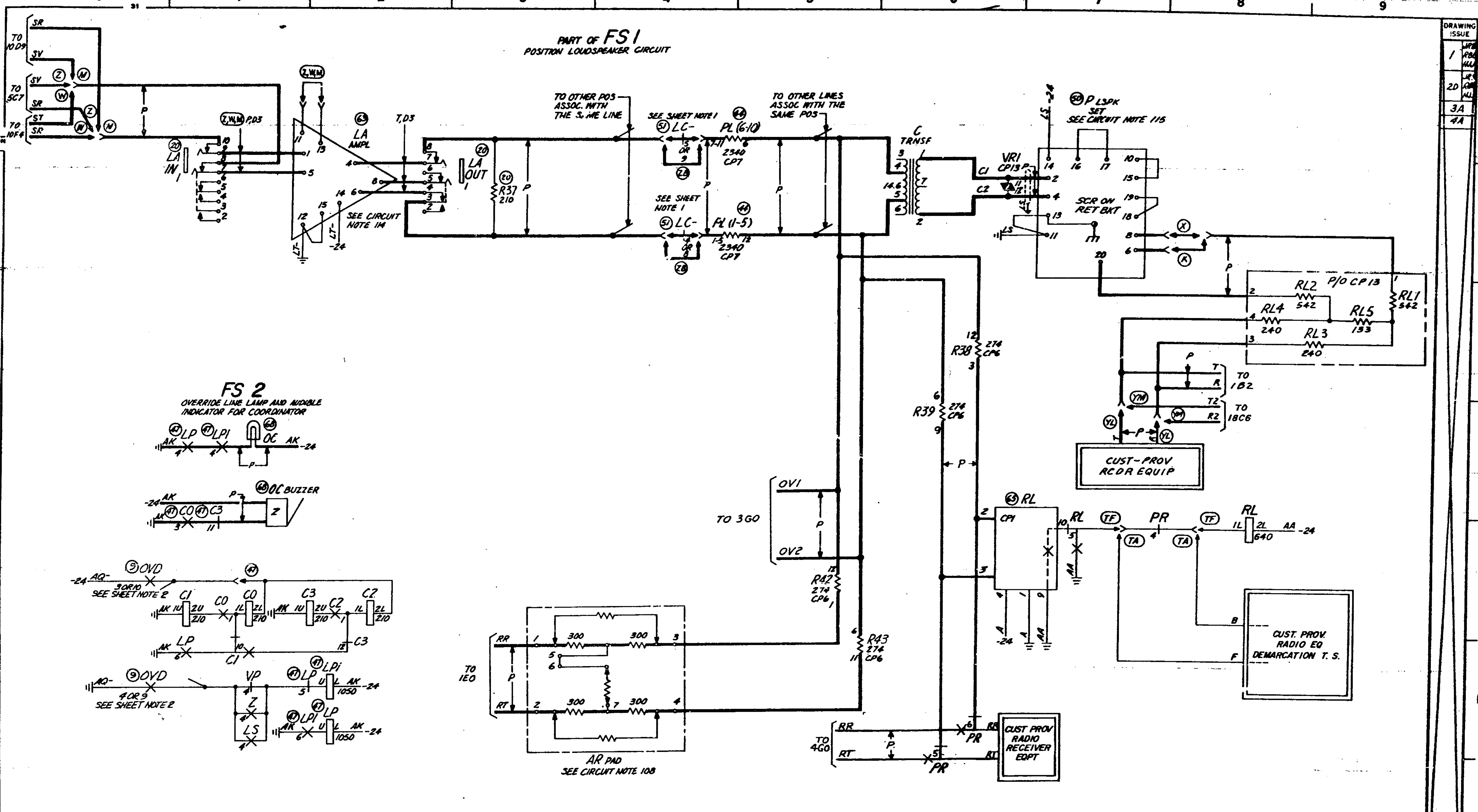

PART OF FS1
ATTENDANT POSITION CKT
RA PAD
SEE NOTE 108
(TRNTR) CUSTOMER PROVIDED RADIO EQPT
TR PAD
SEE NOTE 108
CB BRIDGE
TO 3D6
TO 4D4
TO 2F3
TO 2D8
A AMPL (SEE NOTE 101)
A TRNSF
A INDR
B INDR
TO OTHER LINE ASSOC WITH SAME P03
TO 6D7
TO 6B1
TO 19B2
RU1 AMPL (SEE NOTE 303)
TO 19E2
B TRNSF
CUSTOMER PROVIDED RCDR EQPT
TO 18A5
HEADSET
HANDSET
HAND TRANSMITTER
A(CONT)
B(CONT)
C(INST)
TCA
TCB
D(INST)

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-B1

ISSUE 11D



SHEET NOTES:

1. CONTACTS 4 AND 5 REFER TO LOWER EVEN RELAYS; CONTACTS 8 AND 9 REFER TO UPPER ODD RELAYS.
2. CONTACTS 3 AND 4 REFER TO LOWER EVEN RELAYS; CONTACTS 9 AND 10 REFER TO UPPER ODD RELAYS.

ISSUE 6B

SWITCHING SYSTEM NO. 301A

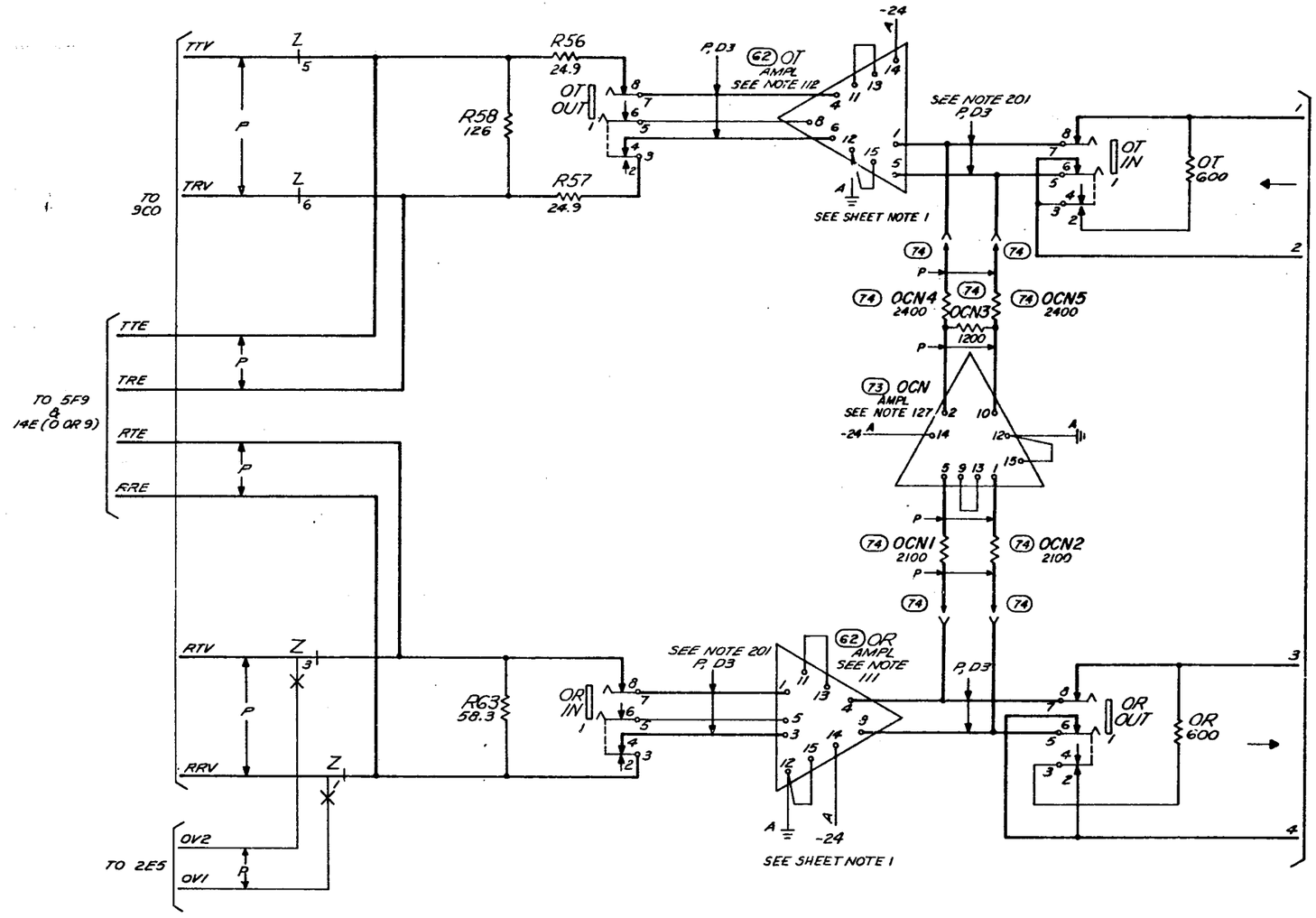
SD-69610-01-B2

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-B2

PART OF FS I
OVERRIDE ATTENDANT CKT



SHEET NOTES:

1. WHEN AMPLIFIERS ARE NOT PROVIDED INSERT PLUGS IN (OT IN) AND (OR OUT) JACKS.

DRAWING ISSUE

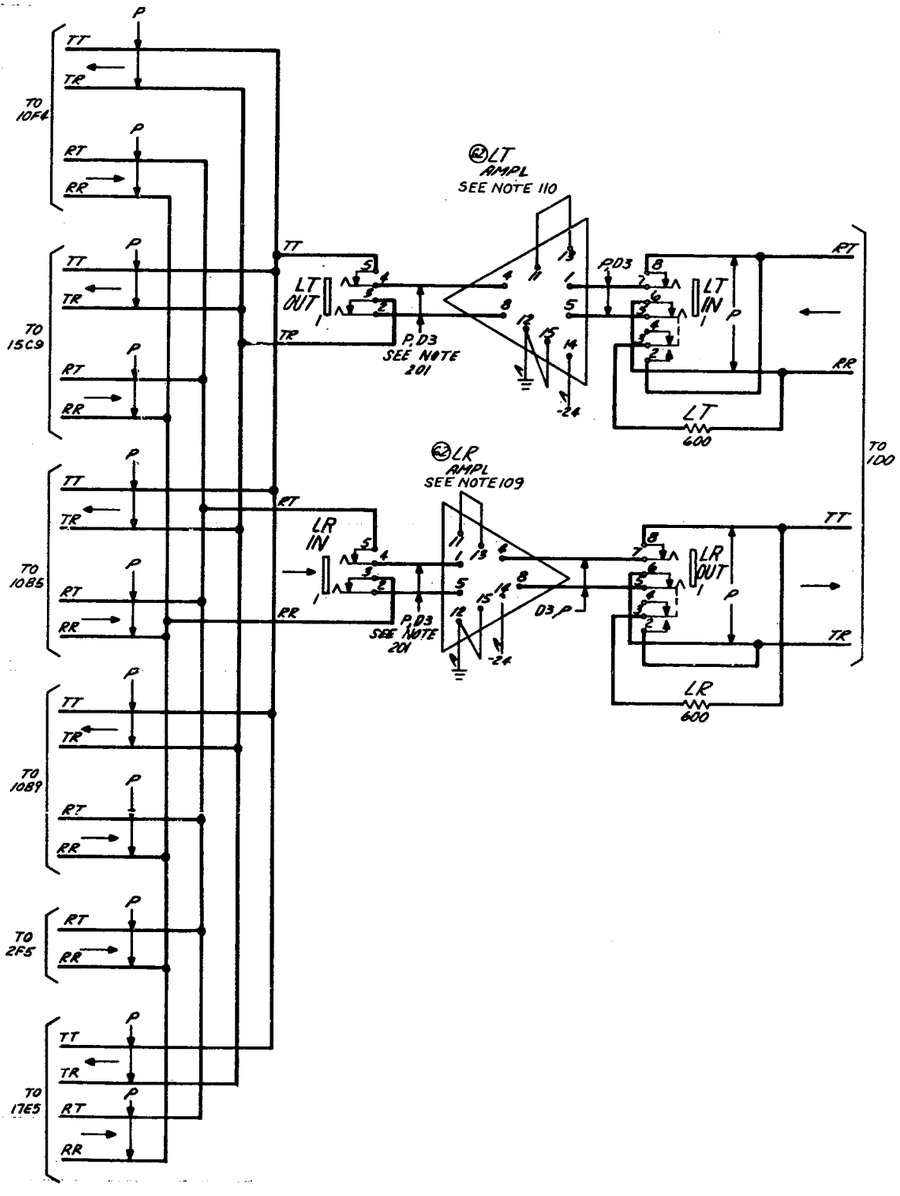
ISSUE 6B

SWITCHING SYSTEM NO. 301A

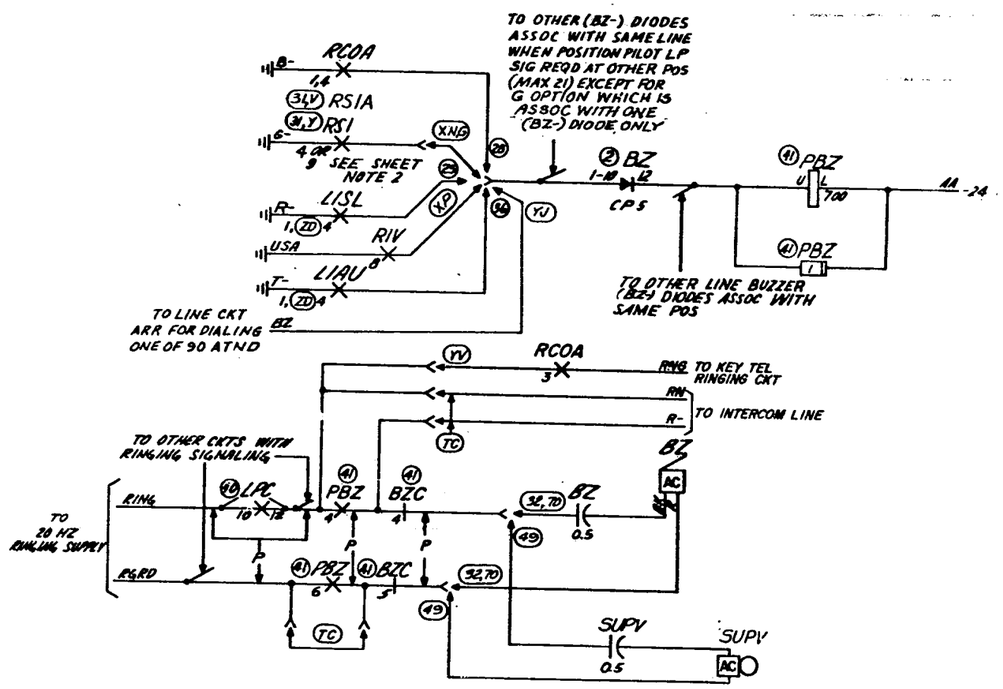
(2) SD-69610-01-83

SD-69610-01-83

PART OF FSI
LINE AMPLIFICATION CIRCUIT
SEE NOTE 1



FS 12
BUZZER CIRCUIT



SHEET NOTES:

1. WHEN AMPLIFIERS ARE NOT PROVIDED INSERT ~~PLUGS IN~~ (LR OUT) AND (LT IN) JACKS.
2. CONTACT 4 REFERS TO (LOWER) EVEN RELAYS; CONTACT 9 REFERS TO (UPPER) ODD RELAYS.

DRAWING ISSUE
1
2D
4A

ISSUE 9BU

SWITCHING SYSTEM NO. 301A

SD-69610-01-B4

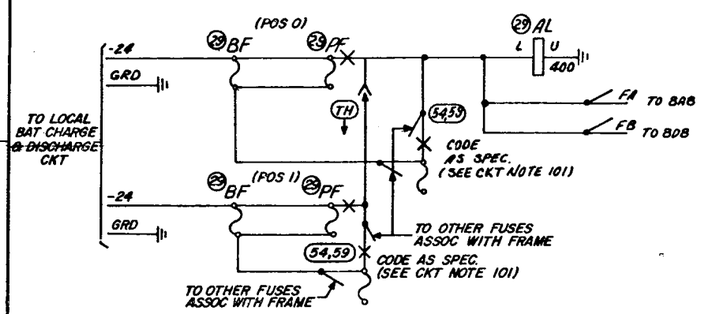
BELL TELEPHONE LABORATORIES INCORPORATED

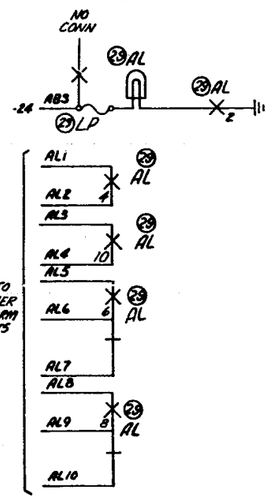
6S

SD-69610-01-B4

FS18

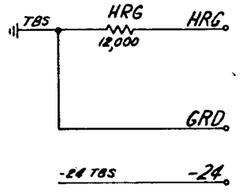
24 V FUSE AND ALARM LAMP CKT
SEE SHEET NOTE 2





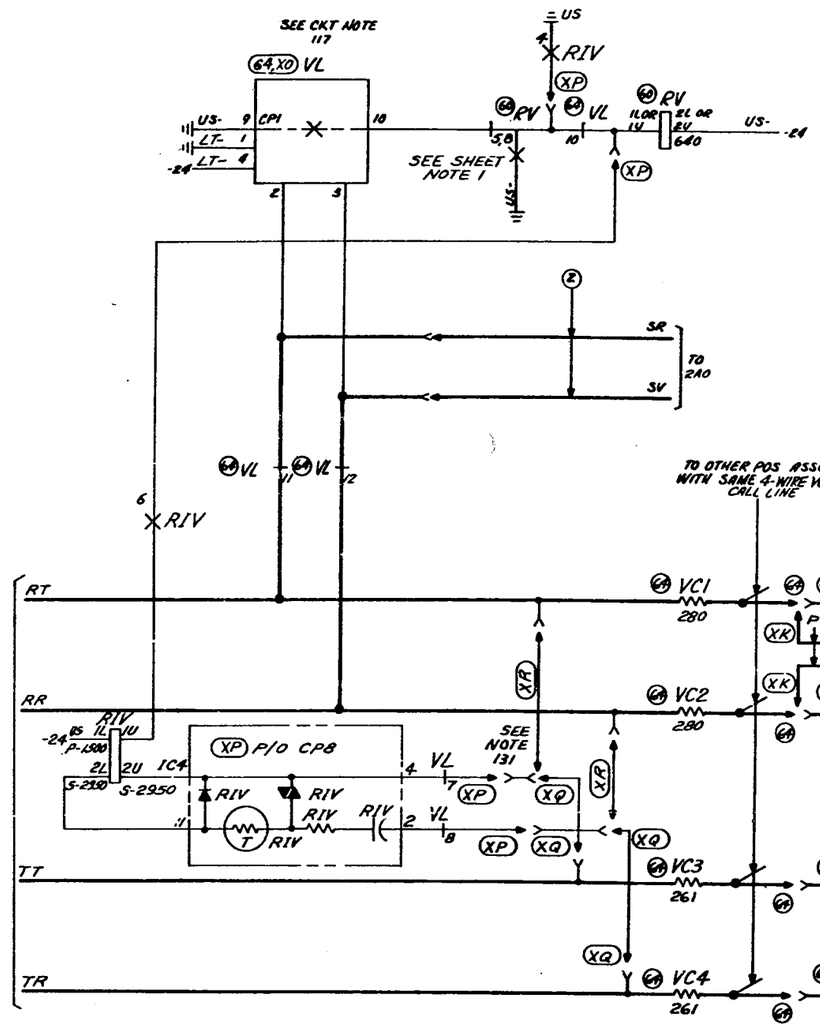
FS17

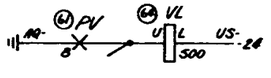
TEST BATTERY AND GROUND CKT



FS 15

4-WIRE VOICE CALL-UP LINE CKT





SHEET NOTE:

1. CONTACT 5 REFERS TO LOWER (EVEN) RELAY; CONTACT 8 REFERS TO UPPER (ODD) RELAY.
2. REFERENCE TO "POS" NUMBERS ARE FOR TWO POSITION BAYS. (TH) OPTION.

DRAWING ISSUE
1 1A 2B W1
3A
4A

ISSUE 98U

SWITCHING SYSTEM
NO. 301A

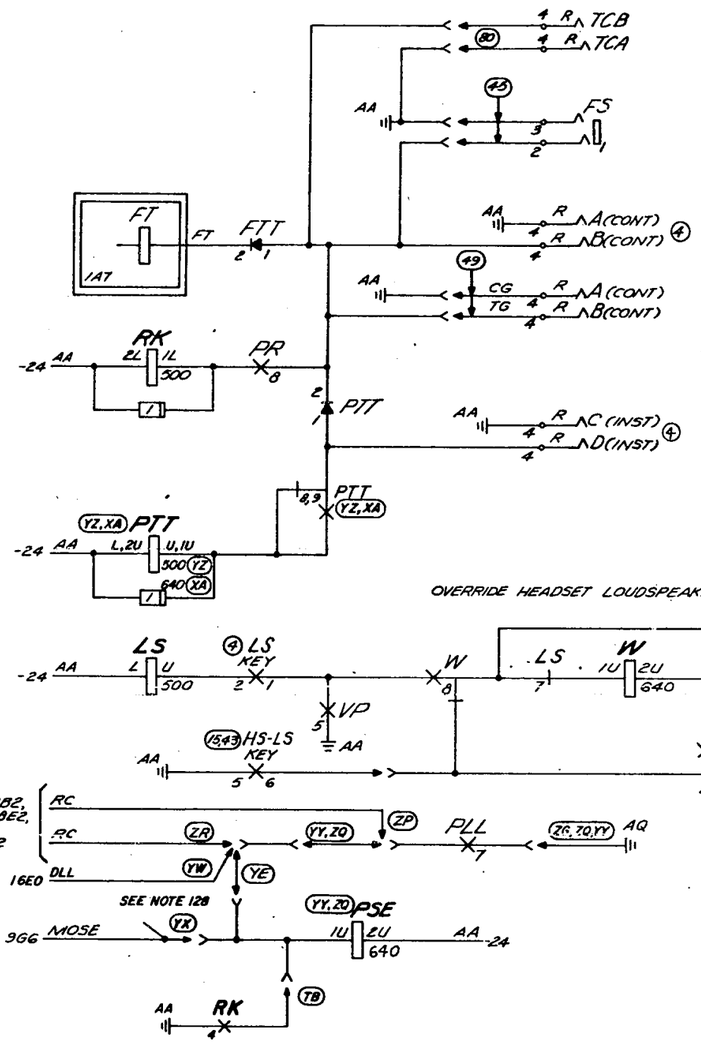
SD-69610-01-B5

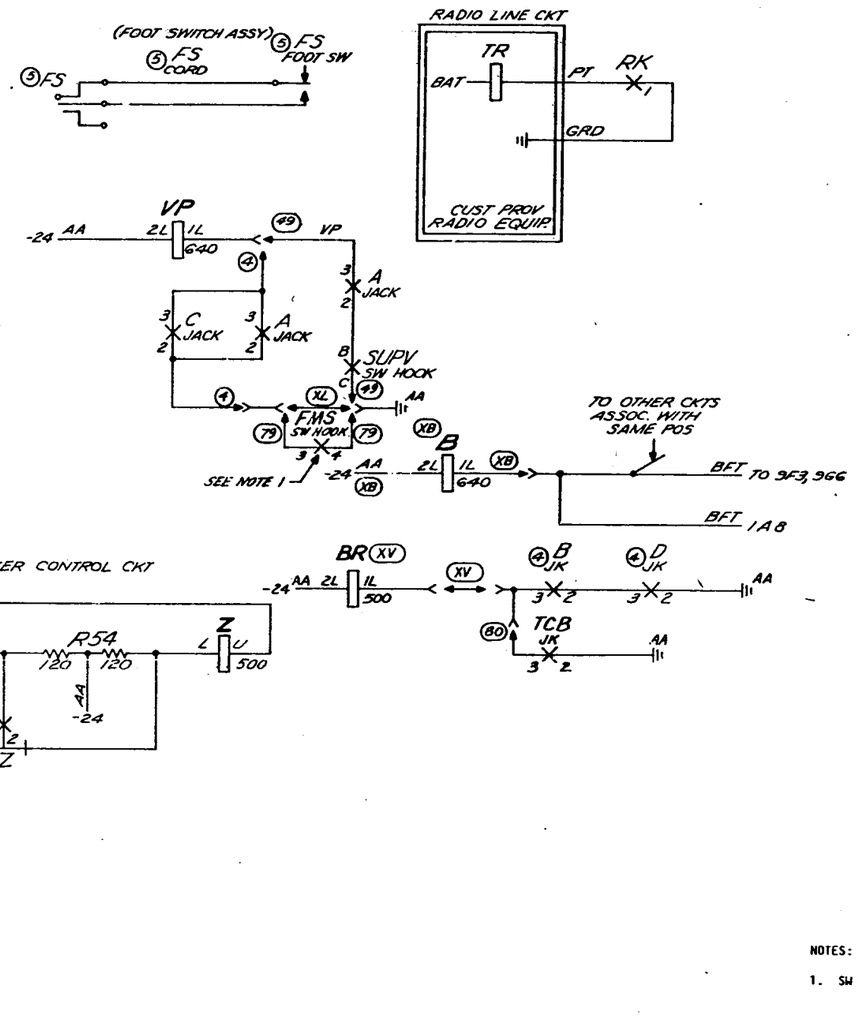
BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-69610-B5

FS 3

ATTENDANT TELEPHONE CKT





NOTES:

1. SW HOOK (FMS) SHOWN IN ON HOOK CONDITION.

SD-69610-01-86

ISSUE 9BU

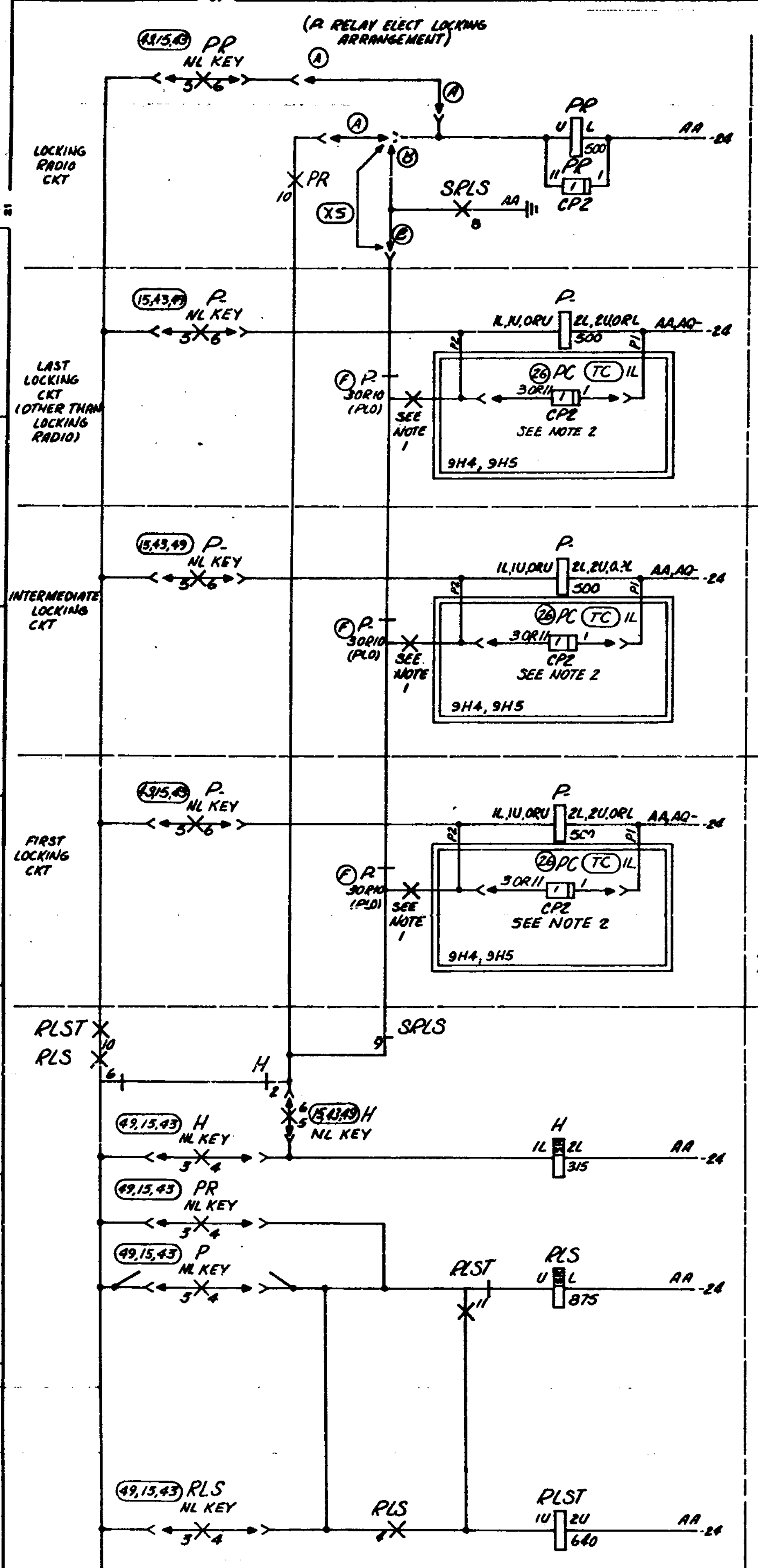
SWITCHING SYSTEM NO. 301A

(2)

SD-69610-01-86

BELL TELEPHONE LABORATORIES INCORPORATED

6S



PART OF FS 4
LINE SELECTION CKT
(SEE TABLE A)

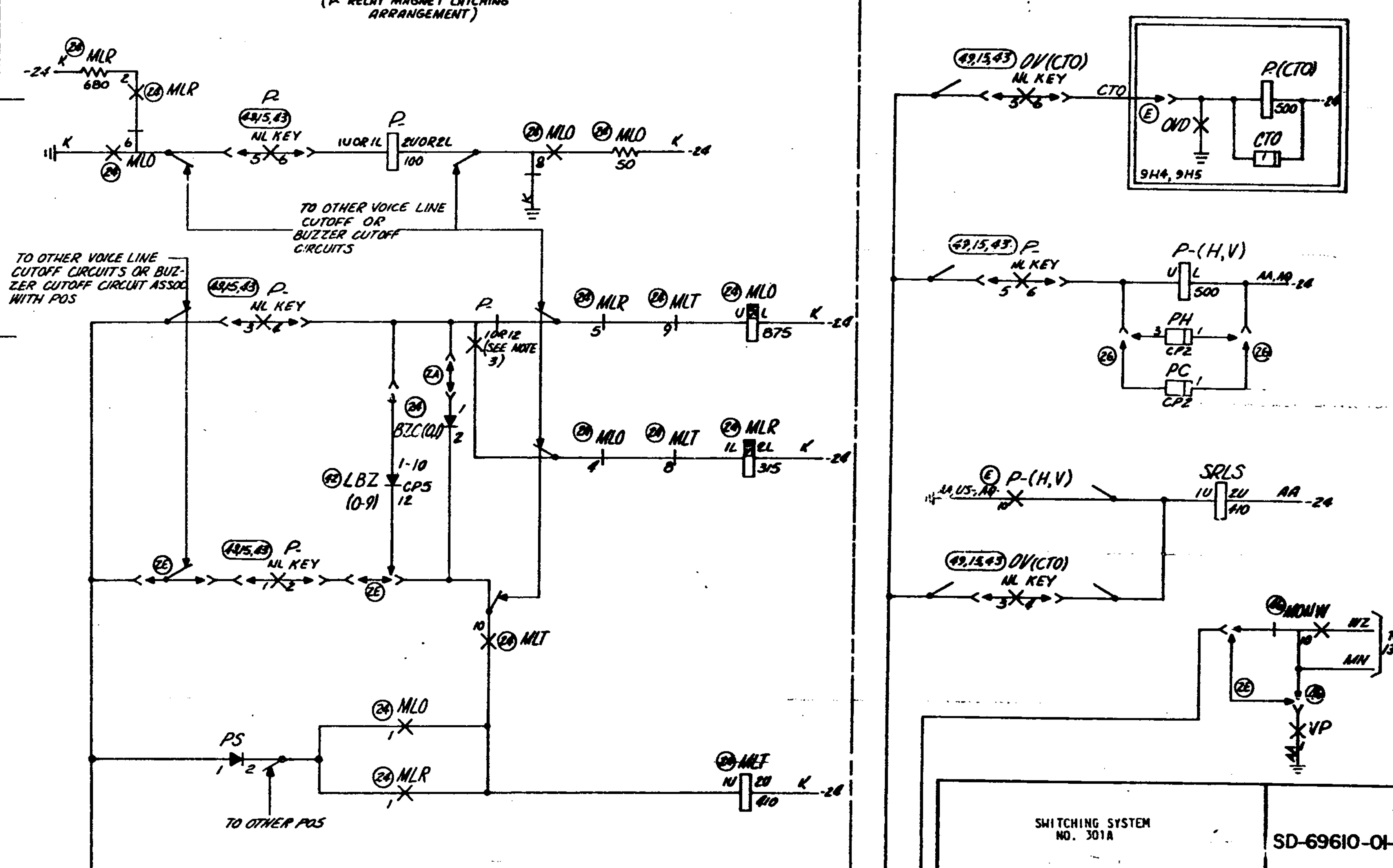
TABLE A

CONTROL CIRCUIT	RELAY P- DESIG		RELAY P- APP FIG.		BUTTON DESIG	FUNCTION	NOTES
	PR		1		RAD	RADIO	(A) - LAST LOCKING RELAY (B)(XS) - AUTOMATIC LINE (SEE NOTE 102)
ELEC LOCKING	PV		61		VL-	VOICE SIGNAL LINE	
				XK	SPM	SINGLE POS MON	
	PLL	ZY			LD	*	
		ZH	27		AL-	AUTOMATIC LINE	
		ZG			CO-	CENTRAL OFFICE OR PBX LINE	
		ZJ			STA-	STATION LINE	
		YE			SS-	4-WIRE PRIVATE LINE	TO BE USED WITH C CKT**
	PLO		7		OV-	OVERRIDE LINE	OPERATE AS REG PU ELEC LOCKING KEY
NON-LOCKING HOLD DOWN	PV		61		VL-	VOICE SIGNAL LINE	
	PH		1		EPL	EMERGENCY PAGING LINE	
	CTO		33		OV-	OVERRIDE LINE	MAX 4 KEYS OPER AT SAME TIME
MAGNETIC LATCHING	LC		51		CUT →	CUTOFF VOICE LINE AT POS	LIGHTED LAMP INDICATES LINE CUTOFF
	BZC		41		BZC	CUTOFF	LIGHTED LAMP INDICATES BUZZER CUTOFF
ELEC LOCKING	IL	TC	1		IL	INTERCOM LINE	

* LINE CKT ARRANGED FOR DIALING ONE OF 90 ATTENDANTS
** SEE NOTE 327

SHEET NOTES:

1. CONTACT 3 REFERS TO (LOWER) EVEN (PLO) RELAYS; WHEN (P-) REFERS TO (PLO), CONTACT 10 REFERS TO (UPPER) ODD (PLO) RELAYS. A CHAINING OCCURS FROM 3 TO 10, TO 3, ETC.
2. WHEN (P-) RELAY REFERS TO (PLO), (PLL), OR (PV) RELAYS, TERMINAL 3 REFERS TO EVEN RELAYS AND TERMINAL 11 REFERS TO ODD RELAYS.
3. WHEN (P-) RELAY IS AN (LC-) RELAY, CONTACT 1 IS ASSOCIATED WITH (LC) (LOWER) EVEN RELAYS; CONTACT 12, WITH (LC) (UPPER) ODD RELAYS. WHEN (P-) RELAY IS THE (BZC) RELAY, CONTACT 1 IS USED.



SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-B7

ISSUE 9BU

PART OF **FS 5**
LAMP AND LAMP CONTROL CKT

TABLE A			
LINE FUSE DESIG	LPC CONTACTS		INPUT FUSE DESIG
	LINE FUSE SIDE	INPUT FUSE SIDE	
01-02	2	1	D10
03-05	4	3	D11
06-08	5	7	D21
09-11	6		
12-14	8	9	D22
15-17	11		
18-20	13	15	D23
21-23	14		
24-26	16	18	D24
27-29	17		

SHEET NOTES:

1. SWITCH (BL) IS SHOWN IN EXTREME CCW POSITION FOR OVER VOLTAGE ON (LPS) AT ALL OTHER TIMES RELAY (LRG) IS NOT OPERATED.
2. CONTACT 5 REFERS TO (LOWER) EVEN RELAY; CONTACT 8 REFERS TO (UPPER) ODD RELAYS.
3. CONTACTS (1-5) REFER TO (LOWER) EVEN RELAYS; CONTACTS (8-12) REFER TO (UPPER) ODD RELAYS;
4. CONTACTS 2 OR 3 REFER TO (LOWER) EVEN RELAYS. CONTACTS 10 OR 11 REFER TO (UPPER) ODD RELAYS.
5. APP FIG 38 IS ASSOCIATED WITH 3 APP FIGS. 15 OR WITH 2 APP FIGS 43.
6. CONTACT 1 REFERS TO (LOWER) EVEN(PLO) RELAYS; WHEN(P-)REFERS TO(PLO)RELAYS, CONTACT 12 REFERS TO (UPPER) ODD(PLO) RELAYS.
7. TERMINALS 5 AND 7 REFER TO EVEN HALF OF CP2; TERMINALS 10 AND 8 REFER TO ODD HALF OF CP2.
8. CONTACTS 1 OR 2 REFER TO (LOWER) EVEN RELAY; CONTACTS 12 OR 11 REFER TO (UPPER) ODD RELAYS.
9. ASSOCIATE CONTACTS; 1 AND 8, 2 AND 10, AND 4 AND 11 WITH REGULATOR CIRCUITS 1,2 AND 3 RESPECTIVELY.
10. ASSOCIATE EACH OF THE FOLLOWING SETS OF CONTACTS WITH 14 LAMPS MAXIMUM:
    AAU1 (J) OR COAU9 (ZC) AND L1AU2;
    AAU2 (J) OR COAU10 (ZC) AND L1AU3;
    AAU6 (J) OR COAU11 (ZC) AND L1AU5;
    VL1,RV1 OR RV9; VL2,RV2 OR RV11; VL4, RV4 OR RV12; COSL4, L1SL2; COSL6, L1SL3; COSL10, L1SL5; ACO1,BCO3; RCO6; ACO2, BCO5, RCO8; ACO4, BCO6, RCO10; HR5, RHR3; HR6, RHR4; HR8, RHR5; HT5, RHT8; HT6, RHT9; HT8, RHT11.
11. BL (1,3,5) BL (7,9,11) BL 12 AND LRG (5,7,9) ARE ASSOC WITH AG2, AG3 AND AG4 RESPECTIVELY.
12. NO CROSS CONNECTIONS ARE PROVIDED IF APP FIG. 19 IS ASSOCIATED WITH A "C" CIRCUIT.

ISSUE 9BU

SWITCHING SYSTEM NO. 301A

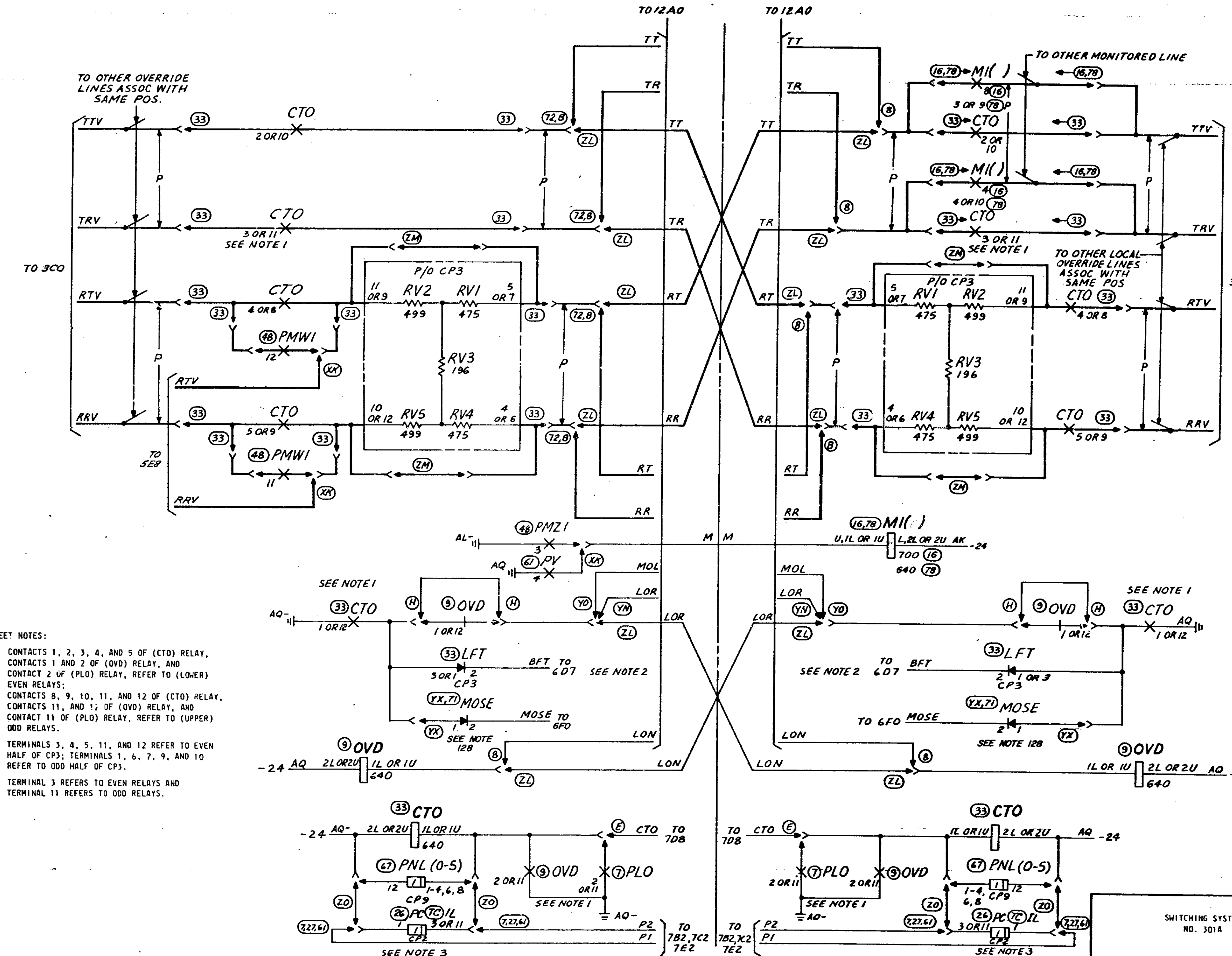
BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-88

SD-69610-01-88

FS 6

OVERRIDE LINE CKT
(WITH BOTH POSITION TERMINATIONS SHOWN)



SHEET NOTES:

1. CONTACTS 1, 2, 3, 4, AND 5 OF (CTO) RELAY, CONTACTS 1 AND 2 OF (OVD) RELAY, AND CONTACT 2 OF (PLO) RELAY, REFER TO (LOWER) EVEN RELAYS;
   CONTACTS 8, 9, 10, 11, AND 12 OF (CTO) RELAY, CONTACTS 11, AND 12 OF (OVD) RELAY, AND CONTACT 11 OF (PLO) RELAY, REFER TO (UPPER) ODD RELAYS.
2. TERMINALS 3, 4, 5, 11, AND 12 REFER TO EVEN HALF OF CP3; TERMINALS 1, 6, 7, 9, AND 10 REFER TO ODD HALF OF CP3.
3. TERMINAL 3 REFERS TO EVEN RELAYS AND TERMINAL 11 REFERS TO ODD RELAYS.

SWITCHING SYSTEM
NO. 301A

BELL TELEPHONE LABORATORIES
INCORPORATED

2

SD-69610-01-B9

6S

ISSUE 9BU

FS14
AUTOMATIC LINE CKT

TO 17CO
TK P RK
(ZW)
TAU 2.0-2.5
AAU (36) 9
TO OTHER POS ASSOC WITH THE SAME LINE
52 NO T24 TERMINATING SET
TO OTHER LINES ASSOC WITH THE SAME POS
(27) PLL 1 TT
(27) PLL 2 TR
(27) PLL 3 RT
(27) PLL 6 RR
TO 4EO
(36) T
(36) R
TO AUTOMATIC LINE CKT
LAU INDR
4 3 85
2 1 85
RAU 2.0-2.5
AAU (36) 11
(52) PN NET.
10 11
LAU 37 1470
LT AAU 12
AAU LF 18
-24
(ZW)
(14) AKT
LKT 10
LKT 12 -24
(36) AAU T- L U 500
(27) PLL 3
(ZH) AO
LIAU AAU T- 2L 1L 640 6
-24
COAU LAU (36) T- 8 2T 1T
STAU TO 1IE3
COAU T- 2L 1U 640
AAU (36) T- 8
(ZW) A TO KEY TEL SYS KEY & TEL CKT

FS10
4-WIRE PRIVATE LINE CKT
SEE NOTE 210 AND 327

(19) TSI PAD
SEE NOTE 108
TI 1 3 5 6
TO OTHER POS ASSOC WITH SAME LINE
TO OTHER LINES ASSOC WITH SAME POS
(19) ASI 9
(27) PLL 1 TT
RI 2 4 7
(19) ASI 11
(27) PLL 2 TR
TO 4BO
TA
(19) ASI 1
(27) PLL 5 RT
P
RA
(19) ASI 2
(27) PLL 6 RR
(W) P
ST
SR
TO 2AO
TO 4-WIRE PRIVATE LINE TERM. CKT
SXT
SXR
(81) 4 P/O CP8
(30)
(81)
RISI RISI RISI RISI RISI T
2
RING
R GRD
TO 20 Hz RINGING SUPPLY
ROSI R
ROSI 10
(30)
12
RISI 4
(81)
2U RISI 2L 11
P-1500 1L H- -24
S-2350 1U
(59) SI CPI
2
3
(W)
(W)
(31,Y) RSI
(31,V) RSIA
SEE NOTE 403
(6)
TO SEL SIG CKT
C- 6- R-
1L BRN 2L OR 2U G H- 640
(31,Y) RSI
(31,V) RSIA
SEE NOTE 402
(14) W
(81)
TO H5
RISI H-
50RB SEE SHEET NOTE 1
ASI LX 12
TO 11C7
TO OTHER ASI OR RSIA RELAYS ASSOC WITH SAME SSI LINE
TO OTHER POS ASSOC WITH SAME LINES
(19) ROSI H-L U 700
(19) ASI H- L U 500
-24
-24
RO
PLL 4 16C4
F-R NL BUTTON
(27) PLL 3
(YE,ZJ)
AQ-
TO 11D3 STSL
(25) LISL R- 2L 1L 640 8
(25) COSL R- L U 600
(25) ASL R- 8
(25) COSL LSL 6
(25) ROSL R-L U 700
(25) LSL 10
RO PLL 4 F-R BUTTON 16C4
TO OTHER POS ASSOC WITH THE SAME LINE
(25) ASL R-2U 1U 640
(27) PLL 3
AQ-
(ZJ)
PICKUP KEY
RING KEY
S
(ZK)
A
KEY TEL SYS KEY & TEL CKT

FS13
STATION LINE CKT

TO 20 HZ RINGING SUPPLY
RING R GRD
17CO
TK P RK
(ZK)
P
POSL 6
F3 .100-.195
ASL 9
TSL (25) 4.28-4.36
TO OTHER POS ASSOC WITH SAME LINE
52 NO T24 TERMINATING CKT
TO OTHER LINES ASSOC WITH SAME POS
(27) PLL 1 TT
(27) PLL 2 TR
(27) PLL 3 RT
(27) PLL 6 RR
TO 4FO
(52) PN NET.
10 11
(25) T
(25) R
TO STATION LINE CKT
P
POSL 8
F4 .100-.195
ASL 11
RSL (25) 4.28-4.36
LSL 1L 1U 3-61
LSL 1 3 LT 4 LT -24
COSL 7
STSL 25
COSL 9
SRSL 2.0-2.5
(25)
M P
ST SR
TO 2AO

SHEET NOTES:

1. CONTACT 5 REFERS TO (LOWER) EVEN RELAYS; CONTACT 8 REFERS TO (UPPER) ODD RELAYS.

DRAWING ISSUE

1	4G	
	1FL	
	1FL	
20	2A	
	2M	
	TS	
3A		
4A		

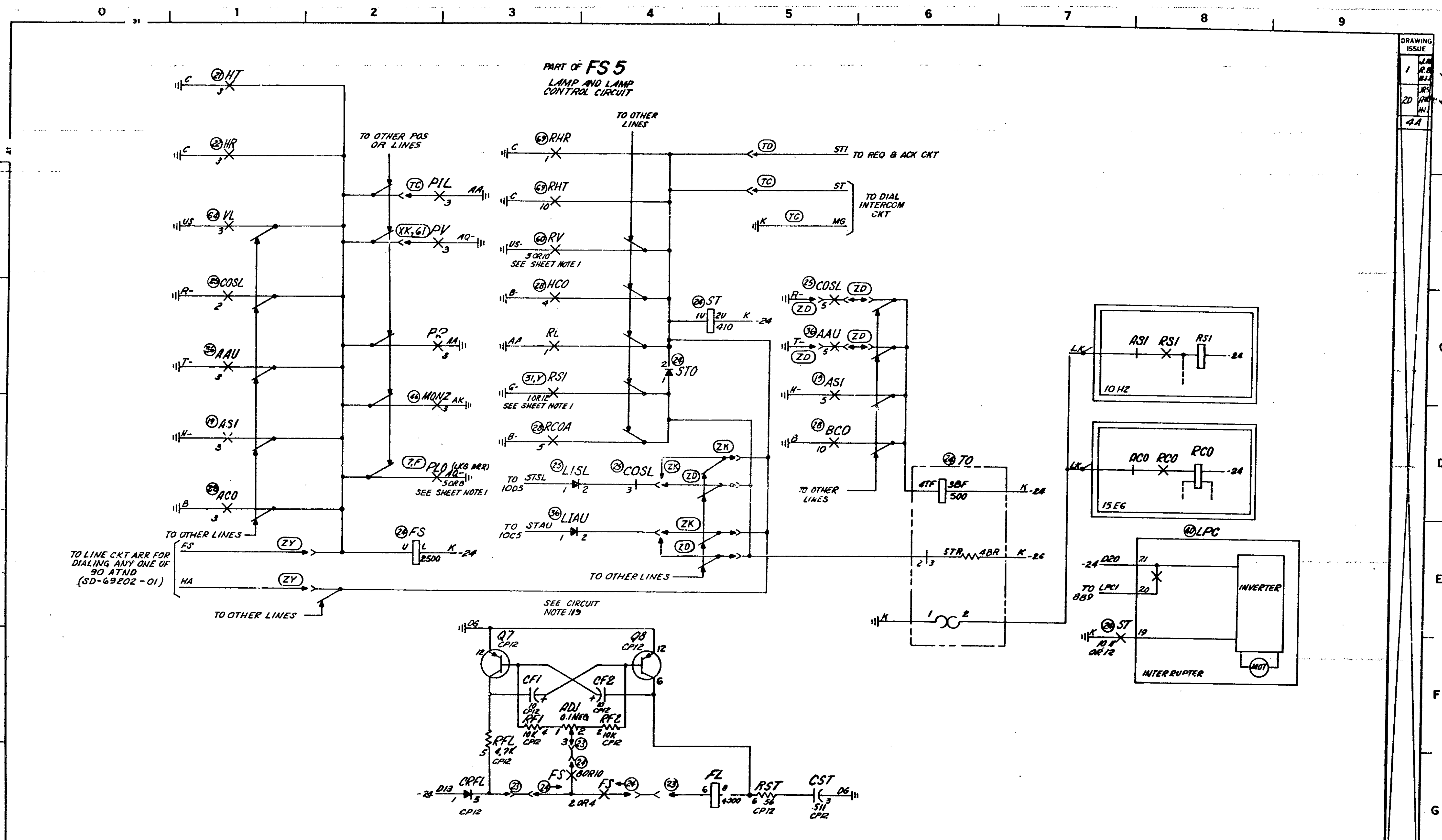
ISSUE 9BU

STATION SYSTEM NO. 301A

SD-69610-01-B10

BELL TELEPHONE LABORATORIES

SD-69610-01-B10



SHEET NOTES:

1. CONTACTS 1,3,5 REFERS TO (LOWER) EVEN RELAYS; CONTACTS 8,10,12 REFERS TO (UPPER) ODD RELAYS.

ISSUE 9BU

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-B11

SD-69610-01-B11

FS 7

OVERRIDE LINE REMOTE SIGNALING CKT

OVERRIDE LINE CKT

(YO) TO OTHER POS ASSOC WITH SAME LINE

CTO (12,8) TT (12,8) ROT1 258 (YN) (YO) (8) ROT1 2 TT

CTO (12,8) TR (12,8) ROT2 258 (YN) (YO) (8) ROT2 2 TR

(8) ROT1 R R-W (10) ROI FT 1 OR 12

BL-W b (10) FT -24 2 OR 11 SEE NOTE 1

TO DISTANT OVERRIDE LINE, REMOTE SIGNALING CKT, OR CO SEE NOTES 113, 122, AND 123

T R

TI RI

TA RA

(ZM) (12,8) RT (12,8) RORI 89.8 (YO) (YN) (8) RORI RT

P/O CP3

(YO) (8) ROT PAD SEE NOTE 108

3 4 300 300 7 300 300 1 5 6 2

(8) OVN 3100 U L

(ZM) (12,8) RR (12,8) ROR2 89.8 (YO) (YN) (8) ROR2 RR

TO 4-WIRE PRIVATE LINE TERMINATING CKT

RI TI

-24 AQ- OVD (8) LON OVN 6 F

CTO 1 OR 12 OVD (YN) LOR (YN) (10) ROI 1L OR 1U 2L OR 2U 640 F -24

(YO) LFT BFT 9F(3,6)

MOL (71) MOL 1 2 (YO) TO OTHER POS ASSOC WITH SAME LINE

NOTES:

1. CONTACTS 1 AND 2 REFER TO LOWER (EVEN) CONTACTS: CONTACTS 11 AND 12 REFER TO UPPER (ODD) CONTACTS.

DRAWING ISSUE

ISSUE 6B

SWITCHING SYSTEM NO. 301A

(2) SD-69610-01-812

BELL TELEPHONE LABORATORIES

SD-69610-01-812

PART OF FS 4
LINE SELECTION CIRCUIT
(SEE TABLE A)

W-Z RELAY
ARRANGEMENT

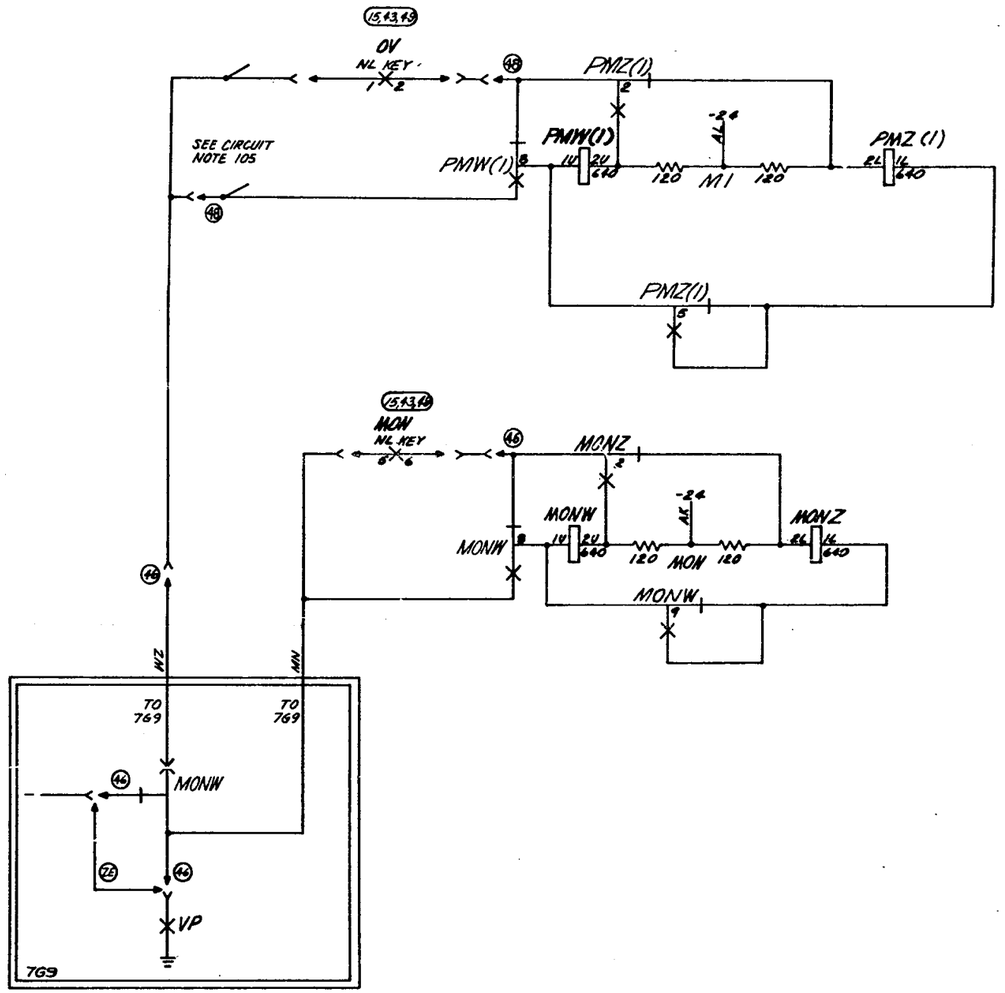


TABLE A

CONTROL CIRCUIT	RELAY P- DESIG	RELAY P- APP FIG.	BUTTON DESIG	FUNCTION	NOTES
W-Z RELAY	MON (W-Z)	46	MON	SW POS TO MONITORING	KEY MUST REOPERATE TO RLS MON
	PMW(1) PMZ(1)	48	OV	MONITOR POS ASSOC WITH KEY	MONITOR BY OPERATING OVERRIDE KEY

DRAWING ISSUE
1
2

ISSUE 5B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

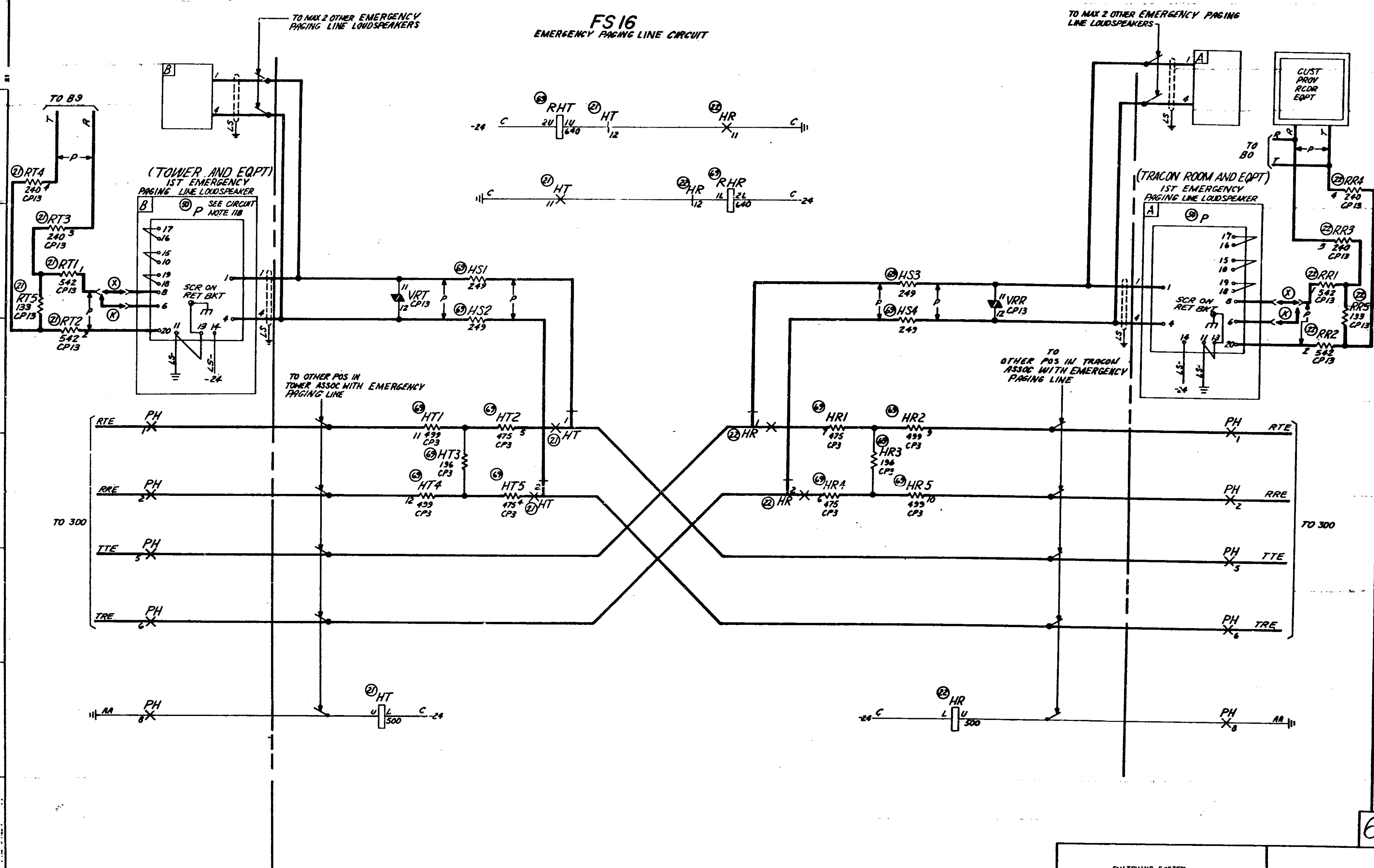
6S

SD-69610-01-BI3

SD-69610-01-BI3

FS16

EMERGENCY PAGING LINE CIRCUIT


TO MAX 2 OTHER EMERGENCY PAGING LINE LOUDSPEAKERS
TO B9
(TOWER AND EQPT) 1ST EMERGENCY PAGING LINE LOUDSPEAKER
SEE CIRCUIT NOTE 118
SCR ON RET BKT
RHT
HT
HR
RHR
VRT
HS1
HS2
HS3
HS4
VRR
TO OTHER POS IN TOWER ASSOC WITH EMERGENCY PAGING LINE
TO OTHER POS IN TRACON ASSOC WITH EMERGENCY PAGING LINE
(TRACON ROOM AND EQPT) 1ST EMERGENCY PAGING LINE LOUDSPEAKER
CUST PROV RCDR EQPT
TO B0
RTE
RRE
TTE
TRE
AA
TO 300
PH
HT1
HT2
HT3
HT4
HT5
HR1
HR2
HR3
HR4
HR5
RT1
RT2
RT3
RT4
RT5
RR1
RR2
RR3
RR4
RR5

DRAWING ISSUE
1
2D
3A
4A

6B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-B14

FS 9
CO OR PBX LINE CKT

TO CO OR PBX LINE CKT

(11) BP
(XC) (11) ACO
P/O CP15 (XU) KTS
(XT)
(12) RB RECORDER CONNECTOR
46
710
TO 115V 60Hz

TO 20Hz RINGING SUPPLY
R GRD
RING
(ZV) (ZN)
ROCO
HCO
HCO L U 180
ACO
HCO
CPB (XT) CP15 (XU)
BCO
RCO
RCO GB
RCO
RCO RCO
P/O CP8 (XT) CP15 (XU)

TO KEY TEL SYS KEY & TEL CKT
(XU) KTS -24 B 5 4 +1 1 2000
P/O CP15
(28) ACO -24 L U 950
DCO
OCO
DCO
(52,N,Q) T24 TERMINATING SET
(52) PN NETWORK

TO OTHER POS ASSOC WITH CO OR PBX
TO OTHER CO OR PBX LINE
(27) PLL
TT
TR
RT
RR
TO 4CO
TO OTHER POS ASSOC WITH SAME LINE
TO OTHER LINES ASSOC WITH SAME POS

RCO (28) -24 B- 1L 1U P-1500 2L 2U S-2950
(28) RCO ACO LK TO 1107
BCO RCOA 1L 2L 640 B- -24

(28) BCO -24 B- L S U 620 ACO HCO B-
(11) BP L S U 500 (ZT) (ZU) BP B (ZR) PLL 18C1-G1
TO OTHER POS ASSOC WITH SAME LINE
ROCO -24 B 2U 1U 690 RO PLL 4 F-R KEY 16D5

DRAWING ISSUE
ISSUE 93U

SWITCHING SYSTEM NO. 301A
(2) SD-69610-01-B15

SD-69610-01-B15

FS 11

POSITION ROTARY DIAL AND OUTGOING RINGING CKT (SEE NOTE 209)

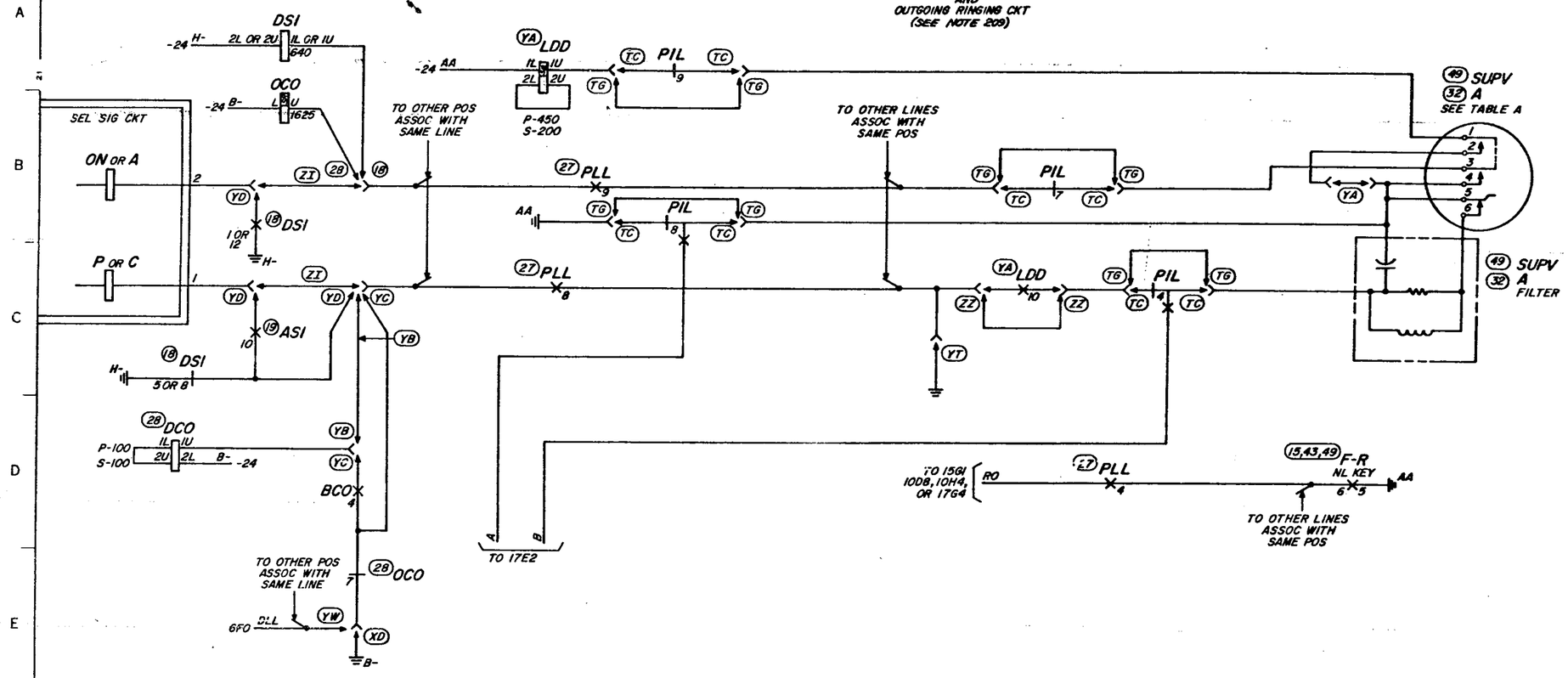


TABLE A

APP FIG. NO.	DIAL TERMINAL DESIG OR WIRE COLOR					
	1	2	3	4	5	6
32	W	W	Y	Y	G	BL
49	W	W	Y	Y	G	BL

DRAWING ISSUE

ISSUE 8B

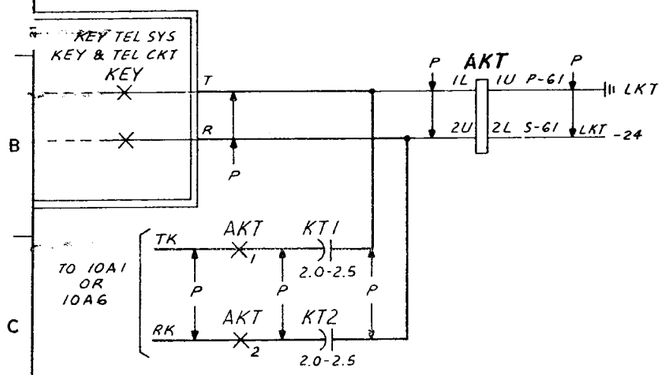
SWITCHING SYSTEM NO. 301A

SD-69510-01-816

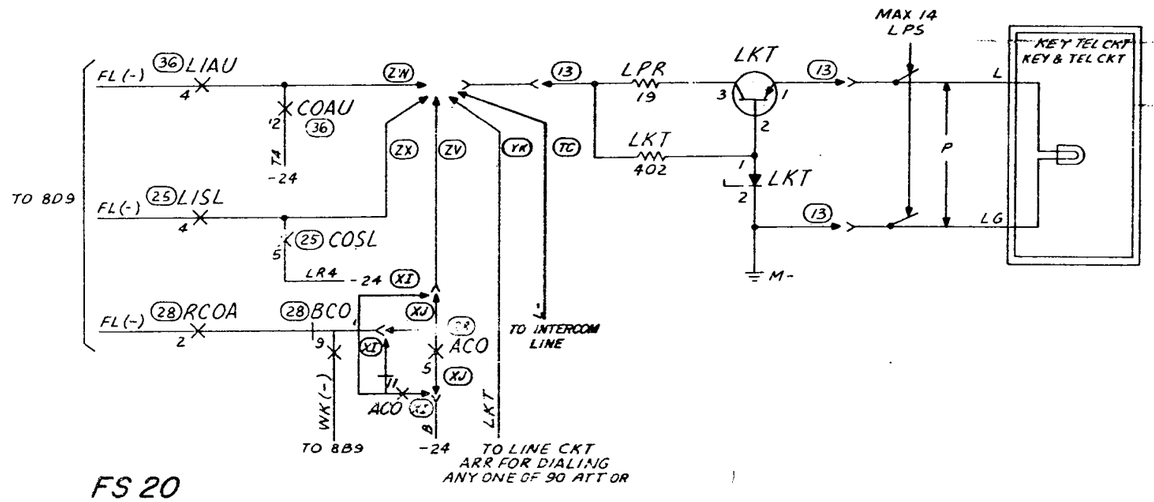
BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-69510-01-816

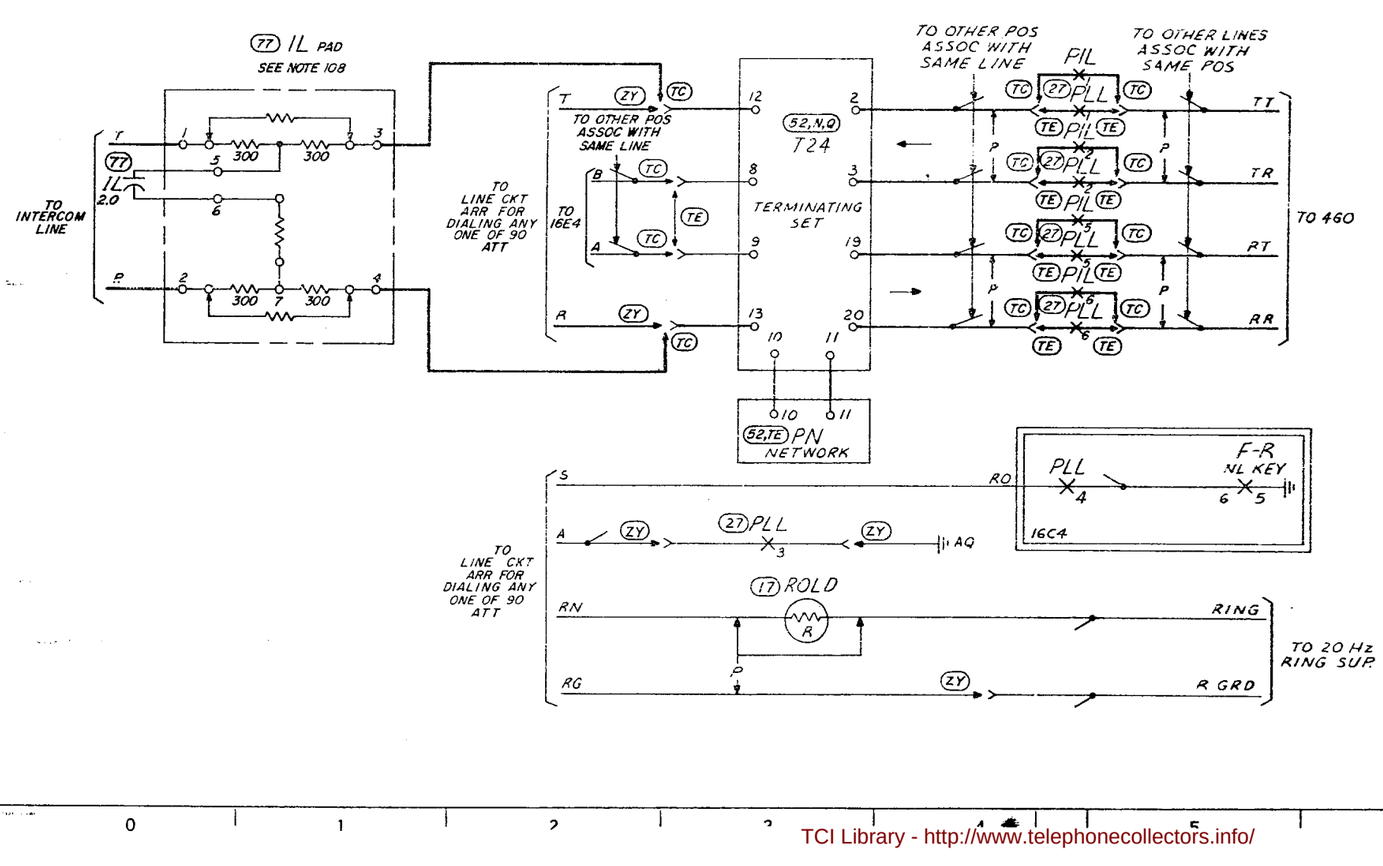
(14) FS 8
KEY TELEPHONE LINE CONNECTION CKT



FS 19
KEY TELEPHONE LAMP REGULATOR CKT



FS 20
LOCAL DIAL LINE CONNECTION CKT
OR INTERCOM LINE CONNECTION CKT
SEE NOTE 330



DRAWING ISSUE

ISSUE 8B

SD-69610-01-817

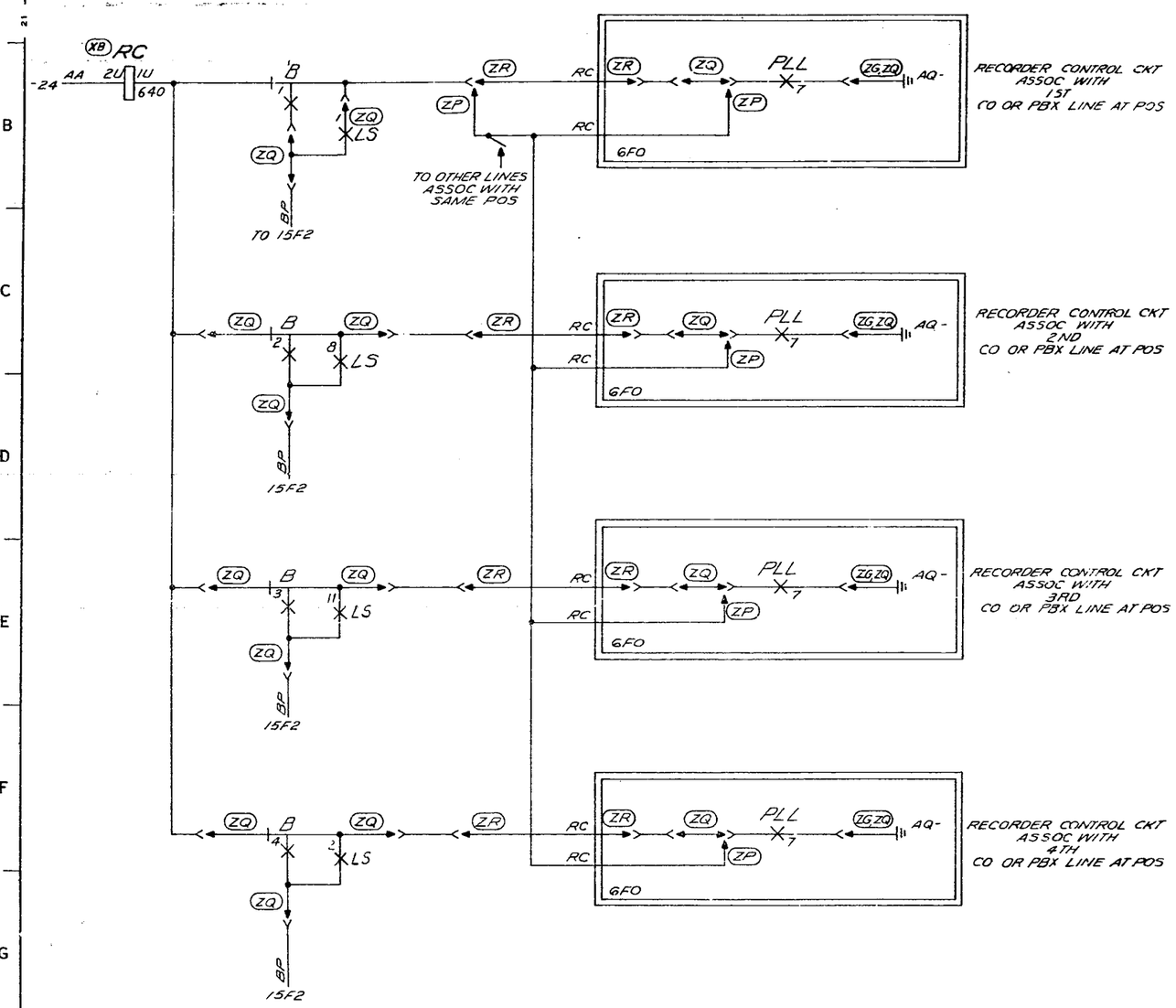
(2) SD-69610-01-817

BELL TELEPHONE LABORATORIES INCORPORATED

SCALE 6S

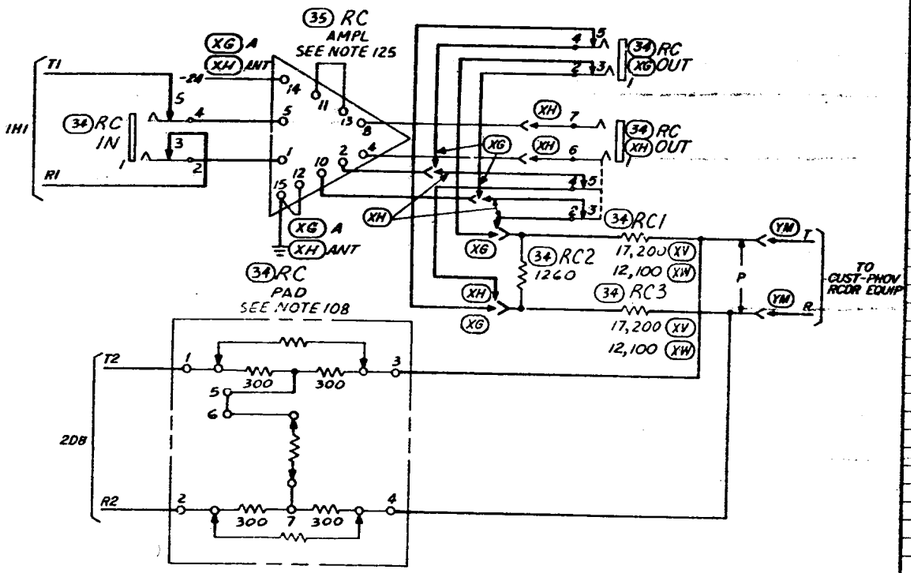
FS 21 (MFR DISC)

RECORDER CONNECTOR CONTROL CKT



FS 22

SINGLE CHANNEL RECORDER CONNECTOR CKT



DRAWING ISSUE

ISSUE 3BU

SD-69610-01-B18

BELL TELEPHONE LABORATORIES INCORPORATED

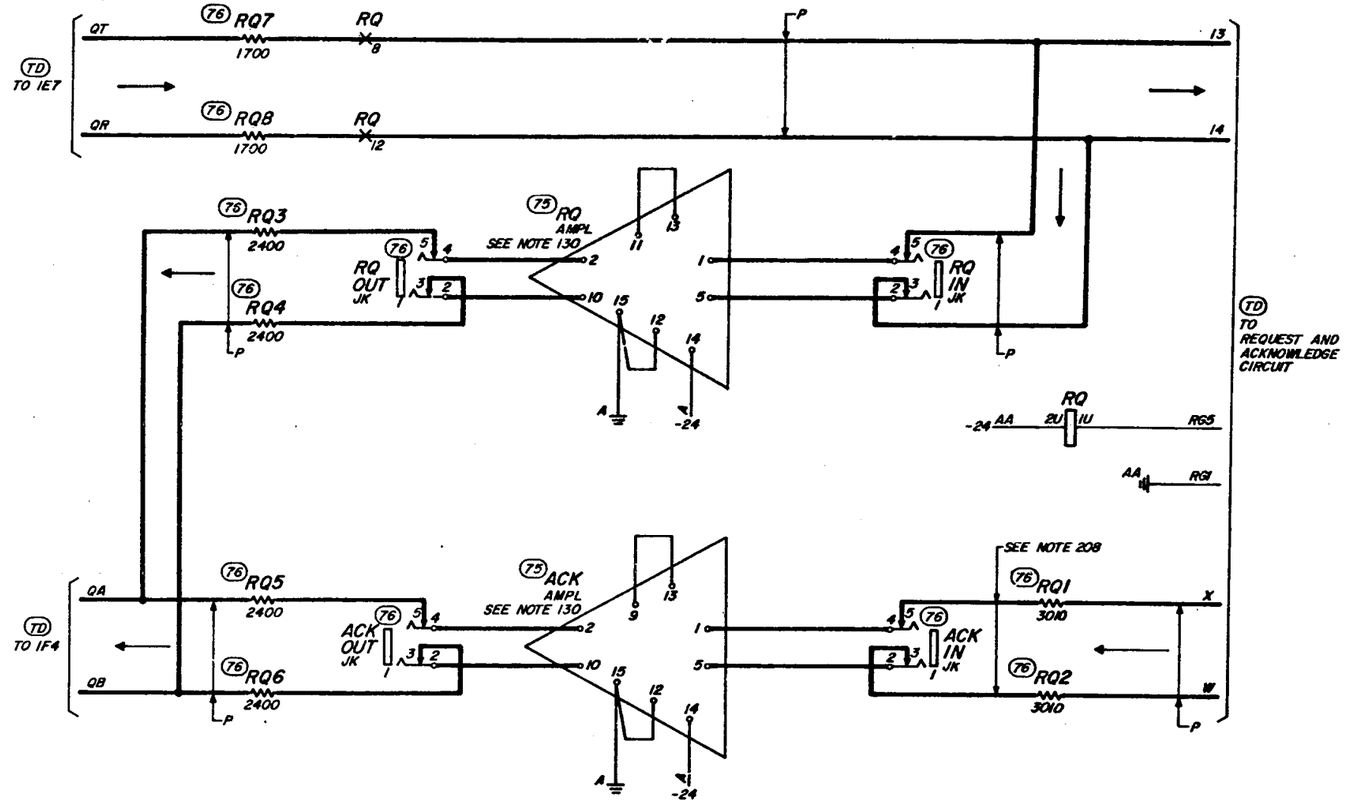
2

SD-69610-01-B18

6S

FS 23

REQUEST & ACKNOWLEDGE ACCESS CIRCUIT



SD-69610-01-B19

ISSUE 8B

SWITCHING SYSTEM NO. 301A	SD-69610-01-B19
BELL TELEPHONE LABORATORIES INCORPORATED	6S

APP FIG. I

RELAY

DESIG	B		W		BR		RLST				H	
CODE	AK22				AK30						AK1	
OPTION	XB				XV							
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12			EBM	8F0			M					
11			EBM	1A7			EBM	7G1				
10			EBM				EBM	7F0				
9			EMB				EMB					
8			EMB	6E2			EMB					
7												
6												
5	EMB				EMB	1G6					B	
4	EMB	18F1			EMB	1G5					B	15B8
3	EBM	18E1			EBM							
2	EBM	18C1			EBM						EBM	7F1
1	EBM	18B1			M						M	
COIL		6D5		6E3		6D5		7H2				7F2

DESIG	SRLS				LDD		LS		PTT		PIL		DESIG
CODE	AK1				AG31		AJ43		AJ43		AJ43		CODE
OPTION					YA				YZ		TC		OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12	EBM						EBM	18F1	EBM		EBM	8C5	12
11	EBM						EBM	18E1	EBM		EBM		11
10	M				M	16C3	EBM	1D2	EBM		EBM	a	10
9	B	7F1					EBM	1E2	EBM	6D1	EBM	16B3	9
8	EMB	7A1			M		EMB	18C1	EMB	6D1	EMB	16C3	8
7							EBM	6E3	EBM		EBM	16B5	7
6					M		EMB	1F2	EMB	1D7	EMB	17F4	6
5							EMB	1F3	EMB	1D7	EMB	17F4	5
4					M		EBM	2F1	EBM		EBM	16D5	4
3							EBM	1B2	EBM		EBM	b	3
2					M		EBM	1B3	EBM	1C8	EBM	17E4	2
1							EBM	18B1	EBM	1B8	EBM	17E4	1
COIL		7F8				16A2		6E1		6D1		FS4	COIL

PIL	
a	7B,D,E1
b (TC)	11B2

RELAY

DESIG	PH		PR		PTT		RC		VP		RK	
CODE	AJ43		AJ43		AK30						AK26	
OPTION					XA		XB					
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12	EBM	8F5	EBM	8G6	M	1C8	M					
11	EBM	1A8	EBM	1A7	EBM	1E8	EBM	1H2				
10	EBM	7F7	EBM	7A1	EBM	1C8	EBM	1G2				
9	EBM		EBM	a	EMB	6D1	EMB					
8	EMB	14C(0,8)	EMB	6C1	EMB	1B8	EMB					
7	EBM		EBM	b								
6	EMB	14F(0,8)	EMB	2F6								
5	EMB	14E(0,8)	EMB	2G6					EMB	6E2	M	
4	EBM		EBM	2E7					EMB	2F1	BM	c
3	EBM		EBM	11C2					EBM	1F1	B	a
2	EBM	14E(0,8)	EBM	1B2					EBM	1F2	BM	b
1	EBM	14C(0,8)	EBM	1A2					M	7H9	M	6B6
COIL		7E8		7A2		6D1		18B0		6B4		6C1

DESIG	RQ				RL		PSE		RLS		Z		DESIG
CODE	AK26				AK30				AG42		AJ43		CODE
OPTION							YY						OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12	M	19B4					M		EMB		EBM		12
11	B						EBM	1E2			EBM		11
10	BM						EBM	1E3	M		EBM		10
9	B						EMB	1F2	B		EBM		9
8	M	19B4					EMB	1F3	M		EMB		8
7									B		EBM		7
6									EMB	7F0	EMB	3B2	6
5					EMB	2E7			B		EMB	3B2	5
4					EMB				M	7H1	EBM	2F1	4
3					EBM						EBM	3E1	3
2					EBM	8G7					EBM	6E3	2
1					M	11C3					EBM	3F1	1
COIL		19D6				2D7		6F2		7G2		6E4	COIL

PR	
a (YU)	1D7
b (YU)	1D7

RK	
a (YU)	1D7
b (YU)	1D7
c (TB)	6G1

CIRCUIT PACK

EQPT LOC					
DESIG		HPL (CP2)		IL (CP2)	
CODE		ED-1E178 G2		ED-1E178 G2	
OPTION				TC	
ELEM. IDEN		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12					
11					
10		BLHPL	8F1		
9					
8		SLHPL	8F1		
7		SLHPL	8G1	SLIL	8C4
6					
5		BLHPL	8G1	BLIL	8C4
4		BLHPL	a	BLIL	8C4
3				IL	7E2
2					
1				IL	7E2
		a	8F1 8G1		

CIRCUIT PACK

EQPT LOC					
DESIG		HR (CP2)			
CODE		ED-1E178 G2			
OPTION					
ELEM. IDEN		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12					
11		PR	7A2		
10		BLHR	8G4		
9					
8		SLHR	8G4		
7		SLHR	8E4		
6					
5		BLHR	8E4		
4		BLHR	a		
3		PH	b		
2					
1					
		a	8F4 8G4		
		b	7(B,D,E) 2 7F8		

CIRCUIT PACK

EQPT LOC.					
DESIG		LS (CP13)			
CODE		ED-1E178 G11			
OPTION					
ELEM. IDEN.		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12		VR1	2B6		
11		VR1	2B6		
10					
9					
8					
7					
6					
5					
4		RL4	2C8		
3		RL3	2C8		
2		RL2	2C8		
1		RL1	2C9		

CIRCUIT PACK

EQPT LOC.					
DESIG		MAR (CP10)		MAR (CP14)	
CODE		ED-1E178 G10		ED-1E178 G12	
OPTION		XV		XW	
ELEM. IDEN.		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12		RM12	1D3	RM12	1D3
11		RM11	1B3	RM11	1B3
10		RM10	1C3	RM10	1C3
9		RM9	1D4	RM9	1D4
8		RM8	1B3	RM8	1B3
7		RM7	1C3	RM7	1C3
6		RM6	1A2	RM6	1A2
5		RM5	1C3	RM5	1C3
4		RM4	1D3	RM4	1D3
3		RM3	1A3	RM3	1A3
2		RM2	1A3	RM2	1A3
1		RM1	1A3	RM1	1A3

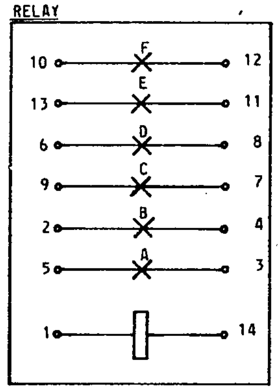
CIRCUIT PACK

EQPT LOC.					
DESIG		R (CP6)			
CODE		ED-1E178 G6			
OPTION					
ELEM. IDEN.		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12		R42	2E5		
11		R43	2F5		
10					
9		R39	2D6		
8					
7					
6					
5					
4					
3		R38	2C6		
2					
1					

CIRCUIT PACK

EQPT LOC.					
DESIG		ZOV (CP2)			
CODE		ED-1E178 G2			
OPTION					
ELEM. IDEN.		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12					
11					
10		BLZOV	8C1		
9					
8		SLZOV	8C1		
7		SLZOV	8E1		
6					
5		BLZOV	8E1		
4		BLZOV	a		
3					
2					
1					
		a	8C1 8E1		

RELAY



DESIG	FT
CODE	295A
OPTION	
CONT ARR	LOC
F	
E	1D6
D	
C	
B	1C6
A	
COIL	1A7

AMPLIFIER

DESIG	LOC	CODE
A	1C5	(YR) KS-16754,L3
		(YS) KS-20449,L1

BRIDGE

DESIG	LOC	CODE
CB	1D0	ALTEC LANSING CO-40431A

CAPACITOR

DESIG	LOC	CODE
C1	1C8	530C
C2	1D8	
C3	1C8	542G
C4	1D7	542G

DIODE

	DESIG	LOC	CODE
	FT	1B7	446F
	FTT	6B1	446F
(YG)	H	8G0	446F
	PS	7H4	446F
	PTT	6C2	446F

INDUCTOR

DESIG	LOC	CODE
A	1C8	274W
B	1D8	274W

JACK

DESIG	LOC	CODE
A IN	1C6	239CM
A OUT	1C4	280CM
LR IN	4D1	239CM
LR OUT	4D3	280CM
LT IN	4C3	280CM
LT OUT	4C1	239CM
OR IN	3F2	280CM
OR OUT	3F5	280CM
OT IN	3B5	280CM
OT OUT	3B2	280CM

NETWORK

DESIG	LOC	CODE
PTT	6D1	185A
RK	6C1	185A

PAD

DESIG	LOC	CODE
AR	2F4	1C
RA	1A1	1C
TR	1C2	1C

RESISTOR

	DESIG	LOC	CODE
(XF)	DL	8G1	KS-20289L-6C,121
	HL	8G1	KS-20289L-6C,121
	LR	4E3	KS-20810 L-1A,600
	LS	1G2	KS-20810 L-1A,600
	LT	4D3	KS-20810 L-1A,600
	OR	3F6	KS-20810 L-1A,600
	OT	3B6	KS-20810 L-1A,600
(XV)	R9	1G5	KS-20810 L-1A,178
(XV)	R10	1G5	KS-20810 L-1A,178
	R13	1D4	KS-20810 L-1A,600
	R14	1E1	KS-20810 L-1A,600
(XV)	R15	1G6	KS-20810 L-1A,600
	R54	6E4	19Z
	R56	3B2	KS-20810 L-1A,24.9
	R57	3B2	KS-20810 L-1A, 24.9
	R58	3B2	KS-20810 L-1A, 126
	R63	3F2	KS-20810 L-1A, 58.3

TRANSFORMER

DESIG	LOC	CODE
A	1C7	202A REP COIL
B	1G2	177B REP COIL
C	2A6	189E REP COIL

DRAWING ISSUE 1

ISSUE 98U

SWITCHING SYSTEM
NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-C1

③ APP FIG. 3

POTENTIOMETER

DESIG	LOC	CODE
BL	880	KS-14567, L2

SWITCH

DESIG	LOC	CODE
BL	880	KS-14567, L2

② APP FIG. 2

CIRCUIT PACK

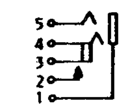
EQPT LOC.					
DESIG		BZ (CP5)			
CODE		ED-1E178 G1			
OPTION					
ELEM. IDEN.		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12		BZ12	4B7		
11					
10		BZ9	4B7		
9		BZ8	4B7		
8		BZ7	4B7		
7		BZ6	4B7		
6		BZ5	4B7		
5		BZ4	4B7		
4		BZ3	4B7		
3		BZ2	4B7		
2		BZ1	4B7		
1		BZ0	4B7		

④ APP FIG. 4

JACK

		CONT. A	CONT. B	INST. C	INST. D
DESIG		A	B	C	D
LOC	5	1C9	1C9	1D9	1E9
LOC	4	6B3	6B3	6C3	6D3
LOC	3	6C5	6D6	6C4	6D6
LOC	2	6C5	6D6	6C4	6D6
LOC	1	1F9	1F9	1G9	1G9

241C



KEY

DESIG	LOC	CODE
HS-LS	6E1	552A

⑤ APP FIG. 5

CORD ASSEMBLY

DESIG	LOC	CODE
FS	6B4	W2CR

FOOTSWITCH

DESIG	LOC	CODE
FS	6B5	KS-16821,L1

PLUG

DESIG	LOC	CODE
FS	6B4	310

⑥ APP FIG. 6

CONNECTOR BLOCK

DESIG	LOC	CODE
-24	5E3	68A
HRG	5D3	68A
GRD	5D3	68A

RESISTOR

DESIG	LOC	CODE
HRG	5D3	~~KS-19150,L2,12KΩ~~ KS-13490,L2,12KΩ

⑧ APP FIG. 8

DESIG	OVN					
CODE	AJ7					
OPTION						
	CONT ARR	LOC				
12						
11						
10						
9						
8						
7						
6	M	12G2				
5						
4						
3						
2						
1						
COIL	X	12E5	X		X	

CAPACITOR

DESIG	LOC	CODE
ROR1	12E5	437E
ROR2	12F5	437E
ROR1	12A3	437E
ROR2	12C3	437E

INDUCTOR

DESIG	LOC	CODE
ROI	12B4	1595A, 2.27H

PAD

DESIG	LOC	CODE
ROT	12E4	1C

RESISTOR

DESIG	LOC	CODE
ROR1	12E2	KS-20810 L-1A, 89.8Ω
ROR2	12F2	KS-20810 L-1A, 89.8Ω
ROT1	12A2	KS-20810 L-1A, 258Ω
ROT2	12C2	KS-20810 L-1A, 258Ω

⑦ APP FIG. 7

RELAY

DESIG			PLO(EVEN)		PLO (ODD)		DESIG
CODE			AK22				CODE
OPTION							OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12					EBM	8F5	12
11					EBM	9H(4,5)	11
10					EBM	7(B,D,E)1	10
9					EMB	8E5	9
8					EMB	11D2	8
7							7
6							6
5			EMB	11D2			5
4			EMB	8E5			4
3			EBM	7(B,D,E)1			3
2			EBM	9H(4,5)			2
1			EBM	8F5			1
COIL	X		X	7B5	X	7B5	COIL

⑨ APP FIG. 9

RELAY

DESIG					OVD (EVEN)		OVD (ODD)	
CODE					AK22			
OPTION								
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12							EBM	9F(3,7)
11							EBM	9H(3,6)
10							EBM	2E0
9							EMB	2F0
8							EMB	8C0
7								
6								
5					EMB	8C0		
4					EMB	2F0		
3					EBM	2E0		
2					EBM	9H(3,6)		
1					EBM	9F(3,7)		
COIL	X		X		X	9G(2,7)	X	9G(2,7)

⑩ APP FIG. 10

RELAY

DESIG	ROI (EVEN)		ROI (ODD)			
CODE	AK22					
OPTION						
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12			EBM	12B5		
11			EBM	12B5		
10			EBM	8F5		
9			EMB	8F5		
8			EMB			
7						
6						
5	EMB					
4	EMB	8F5				
3	EBM	8F5				
2	EBM	12B5				
1	EBM	12B5				
COIL	X	12H3	X	12H3	X	

(MFR DISC) ⑪ APP FIG. 11

RELAY

BP						DESIG
AJ43						CODE
						OPTION
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
EBM	15B0					12
EBM						11
EBM						10
EBM						9
EMB	15C0					8
EBM						7
EMB						6
EMB						5
EBM						4
EBM	15B1					3
EBM	15C2					2
EBM	15B2					1
X	15F0	X		X		COIL

DRAWING ISSUE 1

ISSUE 8B

SWITCHING SYSTEM
NO. 301A

SD-69610-01-C2

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-C2

APP FIG. 12

CORD ASSEMBLY

DESIG	LOC	CODE
RB	15C2	*M2EP

CONNECTOR, RECORDER

DESIG	LOC	CODE
RB	15C1	KS-19645, L2 OR KS-19645, L3

* THE M2EP CORD ASSEMBLY INCLUDES THE 2012B TRANSFORMER (RB)

APP FIG. 13

DIODE

DESIG	LOC	CODE
LKT	17B6	426P

RESISTOR

DESIG	LOC	CODE
LKT	17B6	144C, 402
LPR	17B6	KS-8512, L60C, 19

TRANSISTOR

DESIG	LOC	CODE
LKT	17A6	9A

APP FIG. 14

RELAY

DESIG	AKT					
CODE	AJ42					
OPTION						
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12	M	10C2				
11						
10	M	10C2				
9						
8	M					
7	B					
6	M					
5						
4	M					
3						
2	M	17C0				
1	M	17B0				
COIL		17B1				

CAPACITOR

DESIG	LOC	CODE
KT1	17B1	437E
KT2	17C1	437E

APP FIG. 15

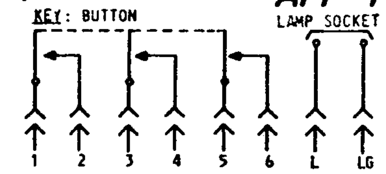


TABLE A (SEE CIRCUIT NOTE 121)

CODE 635 G2		POS NO.	LOC
BUTTON DESIGNATION			
LINE SEL	RADIO	1, 2	FS4
	SS, STA, AL, IL		FS4
	CO, LD		FS4
	EPL, VL		FS4
	OV		a
MON (MONITORING)			13D2
CUT OFF (VOICE LINE)		3, 4, 5, 6	FS4
BZC (BUZZER CUTOFF)			FS4
H (HOLD)			7F(0,1)
F-R (FLASH-RING)			16C2
HS-LS (HEADSET LOUD-SPEAKER OVERIDE TRANSFER)			6E1
RLS (RELEASE)			7H0
		a	FS4 13B2

LAMP

CODE 51A	POS NO.	LOC
LAMP DESIGNATION		
CO, SS, STA, AL, LD (WIRE LINE)	1, 2, 3, 4, 5, 6	8D3
VL (VOICE LINE)		8D3
EPL (EMERG PAGING LINE)		8E3
OV (OVRD LINE)		8F3
LD (LINE CKT FOR DIALING ONE OF 90 ATT)		8D2
MON (MONITOR TR)		8F3
RAD (RADIO LINE		8G3
IL (INTERCOM LINE)		8D3
OVN (INC OVRD IND)		8C1
CLD (VOICE LINE CUTOFF)		8D1
BZC (BUZZER CUTOFF)		8E1
HS-LS (HDS LSPK TR)		8F1
DL (DIAL IND)		8G1
H (HOLD)		8G1
PL (PILOT LAMPS)		8G1

APP FIG. 16 (A & M)

RELAY

R1						DESIG
AF512						CODE
						OPTION
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
						12
						11
						10
						9
EBM	9A6					8
						7
EMB						6
						5
EBM	9B6					4
						3
						2
						1
	9E6					COIL

APP FIG. 17

LAMP, RESISTANCE

DESIG	LOC	CODE
ROLD	17G3	13G

APP FIG. 18

RELAY

DESIG			DS1 (EVEN)		DS1 (ODD)	
CODE			AK30			
OPTION						
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12					M	16B0
11					EBM	
10					EBM	
9					EMB	
8					EMB	16C0
7						
6						
5			EMB	16C0		
4			EMB			
3			EBM			
2			EBM			
1			M	16B0		
COIL				16A1		16A1

APP FIG. 19

RELAY

AS1					
AJ43					
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
EBM	10H1				
EBM	10E2				
EBM	16C1				
EBM	10D2				
EMB	8D7				
EBM	8D7				
EMB	8D7				
EMB	11C5				
EBM	8D7				
EBM	11D1				
EBM	10F2				
EBM	10F2				
	10G3				

PAD

DESIG	LOC	CODE
TS1	10D1	1C

APP FIG 20

JACK

DESIG	LOC	CODE
LA IN	2B1	515A
LA OUT	2B3	280A

RESISTOR

DESIG	LOC	CODE
R37	2B3	KS-20810 L-1A, 210Ω

APP FIG 21

RELAY

HT					
AJ43					
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
EBM	14B4				
EBM	14C3				
EBM					
EBM					
EMB	8F6				
EBM					
EMB	8F6				
EMB	8F6				
EBM					
EBM	11A1				
EBM	14E3				
EBM	14D3				
	14G2				

CIRCUIT PACK

EQPT LOC.					
DESIG		RT (CP13)			
CODE		ED-1E178-GR11			
OPTION					
ELEM. IDEN.		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12					
11		VRT	14C2		
10					
9					
8					
7					
6					
5					
4		RT4	14B0		
3		RT3	14C0		
2		RT2	14D0		
1		RT1	14C0		

APP FIG. 22

RELAY

HR				DESIG	
AJ43				CODE	
				OPTION	
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
EBM	14C4				
EBM	14B5				
EBM					
EBM					
EMB	8F6				
EBM					
EMB	8F6				
EMB	8F6				
EBM					
EBM	11A1				
EBM	14E5				
EBM	[illegible]				
	14G6				

CIRCUIT PACK

EQPT LOC.					
DESIG		RR (CP13)			
CODE		ED-1E178-GR11			
OPTION					
ELEM. IDEN.		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12					
11		VRR	14C7		
10					
9					
8					
7					
6					
5					
4		RR4	14B9		
3		RR3	14C9		
2		RR2	14D9		
1		RR1	14C9		

ISSUE 8B

SWITCHING SYSTEM NO. 301A

SD-69610-01-C3

BELL TELEPHONE LABORATORIES INCORPORATED

6S

(23) APP FIG. 23

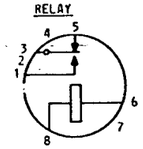
CIRCUIT PACK

EQPT LOC.					
DESIG	FL (CP12)				
CODE	ED-1E179 G2				
OPTION					
ELEM. IDEN.	TERM			TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12		Q7	11F3		
11					
10					
9					
8					
7					
6		Q8	11F4		
5		RFL	11F3		
4		RF1	11F3		
3		CST	11G5		
2		RF2	11F4		
1		CRFL	11G3		

POTENTIOMETER

DESIG	LOC	CODE
ADJ	11F3	KS- 14786 L1, .1MEG

RELAY



DESIG	FL
CODE	305E
OPTION	
X	LOC
8	11G5
7	
6	11G5
5	
4	
3	8E9
2	
1	8E9

CAPACITOR

DESIG	LOC	CODE
(YH) FL	8F8	~~701G~~,1.96 701C

DIODE

DESIG	LOC	CODE
FL	8E8	458A

INDUCTOR

DESIG	LOC	CODE
FL	8E8	1051A

LAMP

DESIG	LOC	CODE
FL	8F7	A1

(24) APP FIG. 24

RELAY

DESIG			FS				MLO				MLR		MLT				ST								DESIG
CODE			AF60				AG28				AK1						AK1								CODE
OPTION																									OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
12			M				M						EBM				EBM	11E7							12
11							M						EBM				EBM	11E7							11
10			M	11G3			M						M	7G5			M	11E7							10
9							M						B	7E6			B								9
8			M	11G3			EBM	7D5					EMB	7F6			EMB								8
7			B																						7
6			M				EBM	7E3																	6
5											B	7E6							B						5
4			M	11G4			EBM	7F5			B								B						4
3							M																		3
2			M	11G4			M				EBM	7D3							EBM						2
1							M				M	7H5							M						1
COIL	X		X	11E2	X		X	7E6	X		X	7F6	X	7H6	X		X	11C4							COIL

RELAY

DESIG	LOC	CODE
TO		271A

11D6
11D6
11D6
11D6

DIODE

DESIG	LOC	CODE
BZCO	7F5	446F
BZC1	7F5	446F
STO	11C4	446F

RESISTOR

DESIG	LOC	CODE
MLO	7D6	KS-13657, L1, 50Ω
MLR	7D3	KS-13491, L1, 680Ω

(25) APP FIG. 25

RELAY

DESIG			RSL		LTSL		COSL				LSL						RDSL								DESIG
CODE			AK30				AG29				AJ40						AF57								CODE
OPTION																									OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
12			M														M								12
11			EBM	10B6																					11
10			EBM				EBM	8E6			B	10D7					M								10
9			EMB	10B6			PMEB	10D6																	9
8			EMB	10E6			EMB	10D6									EBM	10B5							8
7							bM	10C6																	7
6							EBM	8E6			M	10D6					EBM	10A5							6
5					EMB	8E7	bM	a																	5
4					EMB	a	PMEB	8E6									M								4
3					EBM	8E7	bM	11D4																	3
2					EBM	8E7	EM	11C1									M								2
1					M	4C6																			1
COIL	X		X	10E7	X	10D6	X	10E6	X		X	10C6	X		X		X	10D7	X		X		X		COIL
					a	(ZD) 4C6 (ZX) 1784	a	(ZD) 11C5 (ZX) 1784																	

CAPACITOR

DESIG	LOC	CODE
F3	10B6	441T (DUAL)
F4	10B5	
RSL	10B7	437 QA
TSL	10B7	437 QA
SRSL	10D6	437 E (DUAL)
STSL	10C6	

DIODE

DESIG	LOC	CODE
LISL	1103	446F

LAMP, RESISTANCE

DESIG	LOC	CODE
LSL	10C6	11B

(26) APP FIG. 26

CIRCUIT PACK

EQPT LOC.			
DESIG	C (CP2)		
CODE	ED-1E178 G2		
OPTION			
ELEM. IDEN.	TERM	TERM	
TERM	DESIG	FS LOC	DESIG	FS LOC
12				
11	PC(ODD)	f		
10	HLC (ODD)	a		
9				
3	SLC(ODD)	b		
7	SLC(EVEN)	c		
6				
5	HLC(EVEN)	d		
4	BLC(E-O)	e		
3	PC(EVEN)	g		
2				
1				

a	8(E1,D4 E4,F4)
b	8(E1,D4 E4,F4)
c	8(E1,D4 E4,F4)
d	8(E1,D4 E4,F4)
e	8 (E1,D4, E4,F4)
f	7(B,D,E)2 9H(2,6)
g	7(B,D,E)2 9H(2,6)

(27) APP FIG. 27

RELAY

DESIG					PLL								DESIG
CODE					AJ43								CODE
OPTION													OPTION
X	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	X
12					EBM	8D5							12
11					EBM	1A7(2)							11
10					EBM	g							10
9					EBM	16B2							9
8					EMB	16C2							8
7					EBM	h							7
6					EMB	d							6
5					EMB	c							5
4					EBM	16D3							4
3					EBM	b							3
2					EBM	f							2
1					EBM	e							1
COIL	X		X		X	FS4	X		X		X		COIL

b	7B,D, E(1) 10D1, 10G3, 15B7, 17G3	f	10B4, 10B8, 10E3 15C8 17E4
		g	7B,D, E(1)
c	10B4, 10B8, 10F3, 15C8, 17F4	h	6F2 8B,C, E,F(3)
d	10C4, 10C8, 10F3, 15C8, 17F4		
e	10B4, 10B8, 10D3, 15B8 17E4		

DRAWING ISSUE

1	JDF ABB MWJ
20	JRS RBB MWJ
3A	
4A	

ISSUE 8B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-C4

SD-69610-01-C4

31

(28) APP FIG 28

RELAY

DESIG			ACO						BCO			
CODE			AJ107						AG29			
OPTION												
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12			EMB	15E6								
11			BM	c								
10			EBM	15E0					EBM	11D5		
9			M	b					PMEB	a		
8			EBM	15C3					EMB	15E3		
7									BM	15D3		
6			EMB	15D4					EBM	8B7		
5			M	a					BM	8B7		
4			EBM	8B6					PMEB	b		
3			BM	11D1					BM	8B7		
2			EBM	8B6					EM			
1			BM	8B6								
COIL				15B6						15E0		
			a (XJZV)	17C5	c (XI)	17C5			a (ZV)	17C4		
			b (XC)	15B1					b (YC)	16D0		

			HCO				RCO		RCOA		ROCO		DESIG
			AJ100				AJ48		AK22				CODE
													OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12											EBM	15B4	12
11											EBM		11
10							M	8B7			EBM		10
9											EMB		9
8			M	15C4			M	3B7			EMB	15C4	8
7													7
6			M	15E1			M	8B7					6
5									EMB	11D3			5
4			M	11C3			M	15E5	EMB	4B6			4
3									EBM	b			3
2									EBM	a			2
1									EBM	4B6			1
COIL				15C4				15E4		15E6		15G0	COIL
									b (YV)	4D6			

RELAY

DESIG	DCO				OCO			
CODE	AJ134				AG12			
OPTION								
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12	B							
11								
10								
9								
8					M			
7					B	a		
6					M			
5								
4					M	15C6		
3								
2	M	15C5						
1	M	15B5						
COIL		16D0				16B1		
					a (YC)	16D0		

DIODE

DESIG	LOC	CODE
(XU) KTS	15B7	533F

(30) APP FIG 30

RELAY

ROS1					
AF57					
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
M	10F1				
M	10G1				
EBM					
EBM					
M					
M					
	10H3				

LAMP RESISTANCE

DESIG	LOC	CODE
ROS1	10G2	138

(31) APP FIG 31

RELAY

a(EVEN)		a(ODD)				DESIG
AK22						CODE
						OPTION
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
		EBM	11D3 (Y)			12
		EBM	8C7 (Y)			11
		EBM	8C7 (V,Y)			10
		EMB	4B6 (Y)			9
		EMB	10H1 (V,Y)			8
						7
						6
EMB	10H1 (V,Y)					5
EMB	3B6 (Y)					4
EBM	8C7 (V,Y)					3
EBM	8C7 (Y)					2
EBM	11D3 (Y)					1
	10H1		10H1			COIL
a	RS1 (Y) RS1A (V)	a	RS1 (Y) RS1A (V)			

(32) APP FIG 32

DIAL

DESIG	LOC	CODE
A	16B7	8B

LAMP

DESIG	LOC	CODE
DL	8F1	53A

FILTER

DESIG	LOC	CODE
A	16C7	61A

CAPACITOR

DESIG	LOC	CODE
BZ	4D7	542A

BUZZER

DESIG	LOC	CODE
BZ	4D7	G1B

CIRCUIT PACK

EQPT LOC.				
DESIG	CO (CP8)		CO (CP15)	
CODE	ED-1E178 G8		ED-27846-( )G18	
OPTION	XT		XU	
ELEM. IDEN.	TERM		TERM	
TERM	DESIG	FS LOC	DESIG	FS LOC
12			KTS	15A1
11	RCO	15E3	RCO	15E3
10	HCO	15E3	HCO	15E3
9				
8				
7				
6	HCO	15E3	HCO	15E3
5			KTS	15A6
4	RCO	15E3	RCO	15E3
3			KTS	15A2
2	RCO	15E3	RCO	15E3
1			KTS	15A7

(33) APP FIG 33

RELAY

DESIG					CTO (EVEN)		CTO (ODD)						DESIG
CODE					AK22								CODE
OPTION													OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12							EBM	9F(2,8)					12
11							EBM	9B(2,6)					11
10							EBM	9B(2,6)					10
9							EMB	9D(2,7)					9
8							EMB	9C(2,7)					8
7													7
6													6
5					EMB	9D(2,7)							5
4					EMB	9C(2,7)							4
3					EBM	9B(2,6)							3
2					EBM	9B(2,6)							2
1					EBM	9F(2,8)							1
COIL						9G(3,6)		9G(3,6)					COIL

CIRCUIT PACK

EQPT. LOC.					
DESIG		RV (CP3)			
CODE		ED-1E178 G3			
OPTION					
ELEM. IDEN.		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12		RV5(E)	9D(2,6)		
11		RV2(E)	9C(2,6)		
10		RV5(O)	9D(2,6)		
9		RV2(O)	9C(2,6)		
8					
7		RV1(O)	9C(3,6)		
6		RV4(O)	9D(3,6)		
5		RV1(E)	9C(3,6)		
4		RV4(E)	9D(3,6)		
3		LFT(E)	9F(3,7)		
2					
1		LFT(O)	9F(3,7)		

(34) APP FIG 34

JACK

DESIG	LOC	CODE
RC IN	18B6	239CM
RC OUT	18B8	(XH) 293A
	18A8	(XG) 239CM

PAD

DESIG	LOC	CODE
RC	18C7	1C

RESISTOR

DESIG	LOC	CODE
RC1	18B8	(XV) KS-20810,L1A,17,200
		(XH) KS-20810,L1A,12,100
RC2	18B8	KS-20810,L1A,1260
RC3	18B8	(XV) KS-20810,L1A,17,200
		(XH) KS-20810,L1A,12,100

(35) APP FIG 35

AMPLIFIER

DESIG	LOC	CODE
RC	18B7	227F

(29) APP FIG 29

RELAY

DESIG	AL							
CODE	AF126							
OPTION								
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12								
11								
10	M	5E0						
9								
8	EBM	5F0						
7								
6	EMB	5E0						
5								
4	M	5D0						
3								
2	M	5D1						
1								
COIL		5B2						

FUSE

DESIG	LOC	CODE
BF	5B0	AGS TYPE BUSSMAN FUSE CO. OR EQUIVALENT
LP	5D0	70A
PF	5B1	70A

LAMP

DESIG	LOC	CODE
AL	5D0	2G

DRAWING ISSUE
1
20

ISSUE 10D

SWITCHING SYSTEM
NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-C5

SD-69610-01-C5

APP FIG. 36

RELAY

DESIG	AAU		L1AU		C1AU							
CODE	AJ43		AK30									
OPTION												
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT APR	LOC	CONT ARR	LOC	CONT ARR	LOC
12	E8M	10C1			M	a						
11	E8M	10C2			E8M	b						
10	E8M	10C2			E8M	c						
9	E8M	10B2			EMB	d						
8	EMB	10C4			EMB	10C4						
7	E8M											
6	EMB	a										
5	EMB	b	EMB	8D7								
4	E8M	10C4	EMB	a								
3	E8M	11C1	E8M	8D7								
2	E8M	c	E8M	8D7								
1	E8M	d	M	4C6								
COIL		10D0		10C3		10C3						

a (J) 8D6 — b (ZD) 11C5 — c (J) 8D6 — d (J) 8D6

a (ZD) 4C6 — a (ZW) 17A4

a (ZW) 17B4 — b (ZC) 8D7 — c (ZC) 8D7 — d (ZC) 8D7

RELAY

DESIG	CODE
LAU	UA48

CAPACITOR

DESIG	LOC	CODE
RAU	10C2	437E(DUAL)
TAU	10B2	

1T — 2T — 10C4

3T — 3B — 10C1

1B — 2B

DIODE

DESIG	LOC	CODE
LIAU	11D3	446F

INDUCTOR

DESIG	LOC	CODE
LAU	10B1	274AH

APP FIG. 37

RELAY

	BL			LRG			DESIG
	AJ41			AJ46			CODE
							OPTION
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
		B	8C5	E8	8B1			12
		B	8C5	M	8B2			11
		M		M	8B2			10
		B	8C5	B	8D0			9
		M		M	9B2			8
		B	8C5	B	8E0			7
		M		E8				6
		B	8C5	B	8E0			5
		M		M	8C4			4
		B	8C5					3
		M		M	8C4			2
		B	8C5	M	8C4			1
			8B0		8B0			COIL

APP FIG. 38

CIRCUIT PACK

EQPT. LOC.					
DESIG	BL (CP11)				
CODE	ED-1E179 G3				
OPTION					
ELEM. IDEN.	TERM			TERM	
TERM	DESIG.	FS LOC		DESIG	FS LOC
12					
11					
10					
9					
8					
7					
6					
5					
4	R81	8A3			
3	CR4	8B3			
2	R84	8B2			
1	C14	8B2			

RESISTOR

DESIG	LOC	CODE
R77	8B1	19AAE
R78	8C1	
R82	8A3	KS-8512, L6C 6.04Ω
R83	8C3	KS-8512, L3C 40.2Ω

TRANSISTOR

DESIG	LOC	CODE
Q6	8A3	9M

APP FIG. 39

INDICATOR

DESIG	LOC	CODE
APL	8E9	150-49

LAMP

DESIG	LOC	CODE
APL	8E9	A2

APP FIG. 40

INTERRUPTER

DESIG	LOC	CODE
LPC	4D5;8D9; 11E8	KS-19384, ( )

APP FIG. 41

RELAY

DESIG	BZC						PBZ		DESIG
CODE	AM1						AF51		CODE
OPTION									OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12			E8M						12
11			E8M						11
10			E8M				M		10
9			EMB						9
8			EMB				M	8E8	8
7									7
6							M	4D6	6
5	EMB	4D6							5
4	EMB	4D6					M	4D6	4
3	E8M								3
2	E8M	8E0							2
1	E8M	7C5							1
COIL		7C5						4B8	COIL

NETWORK

DESIG	LOC	CODE
PBZ	4C8	185A

APP FIG. 42

CIRCUIT PACK

EQPT LOC.					
DESIG	LBZ (CP5)				
CODE	ED-1E178 G2				
OPTION					
ELEM. IDEN.	TERM			TERM	
TERM	DESIG	FS LOC		DESIG	FS LOC
12					
11					
10	LBZ9	7F5			
9	LBZ8	7F5			
8	LBZ7	7F5			
7	LBZ6	7F5			
6	LBZ5	7F5			
5	LBZ4	7F5			
4	LBZ3	7F5			
3	LBZ2	7F5			
2	LBZ1	7F5			
1	LBZ0	7F5			

APP FIG. 43

KEY: BUTTON — LAMP SOCKET

1 2 3 4 5 6 L LG

TABLE B (SEE CIRCUIT NOTE 12)

652,B2

BUTTON DESIGNATIONS		POS NO.	LOC
LINE SEL	RADIO	1,2, 3,4, 5,6, 7,8, 9,10	FS4
	SS,STA,AL,IL		FS4
	CO,LD		FS4
	EPL,VL		FS4
	OV		a
MON (MONITORING)			13D2
CUT OFF (VOICE LINE)			FS4
BZC (BUZZER CUTOFF)			FS4
H (HOLD)			7F(0,1)
F-R (FLASH-RING)			16D2
HS-LS (HEADSET LOUD-SPEAKER OVERRIDE TRANSFER			6E1
RLS (RELEASE)			7H0
		a	FS4 13B2

LAMP

51A

LAMP DESIGNATION	POS NO.	LOC
CO,SS,STA,AL,LD(WIRE LINE)	1,2, 3,4, 5,6, 7,8, 9,10	8D3
VL (VOICE LINE)		8D3
EPL(EMERG PAGING LINE)		8E3
OV (OVRD LINE)		8F3
LD(LINE CKT FOR DIALING ONE OF 90 ATT)		8D2
MON (MONITOR TR)		8F3
RAD (RADIO LINE)		0G3
IL (INTERCOM LINE)		8D3
OVN(INC OVRD IND)		8C1
CLD (VOICE LINE CUTOFF)		8D1
BZC (BUZZER CUTOFF)		8E1
HS-LS (HDS LSPK TR)		8F1
DL (DIAL)		8G1
H (HOLD)		8G1
PL (PILOT LAMPS)		8G1

APP FIG. 44

CIRCUIT PACK

EQPT LOC.					
DESIG	PL (CP7)				
CODE	ED-1E178 G7				
OPTION					
ELEM. IDEN.	TERM			TERM	
TERM	DESIG	FS LOC		DESIG	FS LOC
12					
11	PL10	2A4			
10	PL9	2A4			
9	PL8	2A4			
8	PL7	2A4			
7	PL6	2A4			
6					
5	PL5	2B4			
4	PL4	2B4			
3	PL3	2B4			
2	PL2	2B4			
1	PL1	2B4			

APP FIG. 45

JACK

DESIG	LOC	CODE
FS	6B3	238A

APP FIG. 46

RELAY

DESIG	MONW		MONZ						DESIG
CODE	AK30								CODE
OPTION									OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12	M								12
11	E8M								11
10	E8M	7G9							10
9	EMB	13E3							9
8	EMB	13D2							8
7									7
6									6
5			EMB						5
4			EMB						4
3			E8M	11D2					3
2			E8M	13D3					2
1			M	8G5					1
COIL		13D3		13D4					COIL

RESISTOR

DESIG	LOC	CODE
MON	13E3	19Z

CIRCUIT PACK

EQPT LOC.					
DESIG	MN (CP2)				
CODE	ED-1E178 G2				
OPTION					
ELEM. IDEN.	TERM			TERM	
TERM	DESIG	FS LOC		DESIG	FS LOC
12					
11					
10					
9					
8					
7	SLMN	8G4			
6					
5	BLMN	8G4			
4	BLMN	8G4			
3					
2					
1					

DRAWING ISSUE

1	
20	
4A	

ISSUE 8B

SWITCHING SYSTEM NO. 3014

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-C6

SD-69610-01-C6

(47) APP FIG. 47

RELAY

DESIG	C1		C0		C2		C3				LP		LP1			
CODE	AK19				AK19						AG4		AG4			
OPTION																
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12	EBM						EBM	2F2								
11	EBM						EBM	2E1								
10	EBM	2F1					EBM									
9																
8											M		M			
7											B		B			
6											M	2F1	M	2F2		
5											B	2F2	B			
4											M	2D1	M	2D1		
3			EBM	2E1	EBM											
2			EBM		EBM											
1			EBM	2E1	EBM	2E2										
COIL		2E1		2E1		2E2		2E2				2F2		2F2		

(48) APP FIG. 48

RELAY

PMZ1		PMW1					
AK30							
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
		M	9D2				
		EBM	9E2				
		EBM					
		EMB					
		EMB	13B2				
EMB	13C3						
EMB							
EBM	9E3						
EBM	13B3						
M	8F5						
	13B4		13B3				

RESISTOR

DESIG	LOC	CODE
M1	13B3	19.'

(49) APP FIG. 49

CONSOLE, TELEPHONE

DESIG	LOC	CODE
SUPV	SEE NOTE 1	60A1-60 OR 61

(51) APP FIG. 51

RELAY

LC (EVEN)		LC (ODD)						DESIG
AM1								CODE
								OPTION
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
		EBM	7F5					12
		EBM	8D0					11
		EBM	8D3					10
		EMB	2A4					9
		EMB	2B4					8
								7
								6
EMB	2A4							5
EMB	2B4							4
EBM	8D3							3
EBM	8D0							2
EBM	7F5							1
	7C5		7C5					COIL

(52) APP FIG. 52

NETWORK

DESIG	LOC	CODE
PN	15D7 10C3 10C7 17G3	4066 SEE BSP 332-852-100 & 332-852-(101-107)

TERMINATING SET

DESIG	LOC	CODE
T24	15B7 10A3 10B8 17E3	1C ~~1A~~ (N) 1D ~~1B~~ (Q)

DRAWING ISSUE: 1, 2D, 3A

(53) APP FIG. 53

RELAY

DESIG									DESIG
CODE									CODE
OPTION									OPTION
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
12									12
11									11
10									10
9									9
8									8
7									7
6									6
5									5
4									4
3									3
2									2
1									1
COIL									COIL

CIRCUIT PACK

DESIG	LOC	CODE
S1 (CP1)	10G5	ED-69534 G1

(54) APP FIG. 54

FUSE

DESIG	LOC	CODE
SEE CKT NOTE 101	5C1	70B

(50) APP FIG. 50

LOUDSPEAKER SET

DESIG	LOC	CODE
P	2A7 14(A1,8) 14(C1,8)	106F

(56) APP FIG. 56

HANDSET

DESIG	LOC	CODE
B	1H5	G5L4-60 OR 61 G5L9-60 OR 61

(58) APP FIG. 58

TRANSMITTER, HAND

DESIG	LOC	CODE
D	1H6	KS-20385,L1

(55) APP FIG. 55

HEADSET

DESIG	LOC	CODE
A	1H4	52 RR (OR EQUIV.)

(57) APP FIG. 57

HEADSET

DESIG	LOC	CODE
C	1H4	KS-19796, L10,L11,L12, L13,L14, OR L15

(59) APP FIG. 59

FUSE

DESIG	LOC	CODE
SEE CKT NOTE 101	5C1	70A

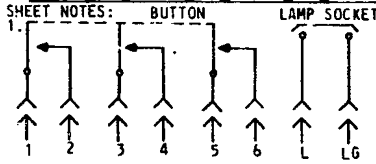
(60) APP FIG. 60

RELAY

DESIG	RV (EVEN)		RV (ODD)					
CODE	AK30							
OPTION								
	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
12			M	8D7				
11			EBM	8D7				
10			EBM	11B3				
9			EMB	8D7				
8			EMB	5B6				
7								
6								
5	EMB	5B6						
4	EMB	8D7						
3	EBM	11B3						
2	EBM	8D7						
1	M	8D7						
COIL		5B7		5B7				

SHEET NOTES:

1\.



BUTTON DESIGNATION		POS NO.	LOC
LINE SEL	RADIO	1,2, 3,4, 5,6,	FS4
	SS,STA,AL,IL		FS4
	CO,LD		FS4
	EPL,VL		
	OV		a
BZC (BUZZER CUTOFF)			FS4
H (HOLD)			7F(0,1)
F-R (FLASH-RING)			16D2
RLS (RELEASE)			7H0
		a	FS4 13B2

(61) APP FIG. 61

RELAY

PV					
AJ43					
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC
EBM	8D5				
EBM	1A8				
EBM	a				
EBM					
EMB	5G5				
EBM					
EMB	5G8				
EMB	5F8				
EBM	9E3				
EBM	b				
EBM	5E8				
EBM	5D8				
	7E8				
a	7F7 (E) 7(B,D E) (F)				
b	11B2 (XK)				

LAMP DESIGNATION	POS NO.	LOC
CO,SS,STA,AL(WIRE LINE)	1,2, 3,4, 5,6	8D3
VL (VOICE LINE)		8D3
EPL (EMERG PGING LINE)		8E3
OV (OVRD LINE)		8F3
LD(LINE CKT FOR DIALING ONE OF 90 ATT)		8D2
RAD (RADIO LINE)		8G3
IL (INTERCOM LINE)		8D3
OVN (INC OVRD IND)		8C1
BZC (BUZZER CUTOFF)		8E1
H (HOLD)		8G1
DL (DIAL LAMP)		8G1
CLD (VOICE LINE CUTOFF)		8D1
PL (PILOT LAMP		8G1

(62) APP FIG. 62

AMPLIFIER

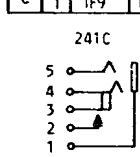
DESIG	LOC	CODE
LR	4D2	227F
LT	4B2	227F
OR	3E4	227F
OT	3B4	227F

(63) APP FIG. 63

AMPLIFIER

DESIG	LOC	CODE
LA	2A2	227F

JACK		A	B
LOC	5	1C9	1C9
	4	6C2	6C2
	3	6C5	
	2	6C5	
	1	1F9	1F9



COMPONENT	LOC
AC BUZZER	4E7
SW HOOK	6C5
CAPACITOR	4E7
DIAL	16A4
FILTER	16C4

(64) APP FIG. 64

RELAY

VL		RIV				DESIG
AJ43		AJ48				CODE
		XP				OPTION
CONT ARR	LOC	CONT ARR	LOC	CONT ARR	LOC	
EBM	5D5					12
EBM	5D5					11
EBM	5B7	M				10
EBM						9
EMB	5F6	M	4C6			8
EBM	5F5					7
EMB		M	5D5			6
EMB						5
EBM	8E7	M	5B6			4
EBM	11B1					3
EBM	8E7					2
EBM	8E7					1
	5G5		5E4			COIL

CIRCUIT PACK

EQPT LOC					
DESIG		VL (CP1)		RIV (CP8)	
CODE		ED-69534 G1		ED-1E178 G8	
OPTION		XO		XP	
ELEM IDEN		TERM.		TERM.	
TERM.		DESIG	FS LOC	DESIG	FS LOC
12					
11				RIV	5F5
10		VL	5B5		
9		VL	5B5		
8					
7					
6					
5					
4		VL	5B5	RIV	5F6
3		VL	5B5		
2		VL	5B5	RIV	5F6
1		VL	5B5		

RESISTOR

DESIG	LOC	CODE
VC1	5E7	KS-20810,L1A,280
VC2	5E7	KS-20810,L1A,280
VC3	5F7	KS-20810,L1A,261
VC4	5G7	KS-20810,L1A,261

APP FIG. 65

CIRCUIT PACK

DESIG	LOC	CODE
RL(CP1)	2E6	ED-69534G1

(66) (MFR DISC) APP FIG. 66

CIRCUIT PACK

EQPT LOC					
DESIG		BL (CP4)			
CODE		ED-1E178 G4			
OPTION					
ELEM. IDEN		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12					
11					
10					
9					
8		BL5	8F4		
7					
6		BL4	8F4		
5					
4		BL3	8F4		
3		BL2	8F4		
2		BL1	8F4		
1		BL0	8F4		

ISSUE 9BU

SWITCHING SYSTEM
NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-C7

6S

SD-69610-01-C7

31

(MFR DISC)

(67) APP FIG. 67

CIRCUIT PACK

EQPT LOC.					
DESIG		PNL (CP9)			
CODE		ED-1E178 G5			
OPTION					
ELEM. IDEN.		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12		PNL(0-5	9H(2,7)		
11					
10					
9					
8		PNL5	9H(2,7)		
7					
6		PNL4	9H(2,7)		
5					
4		PNL3	9H(2,7)		
3		PNL2	9H(2,7)		
2		PNL1	9H(2,7)		
1		PNL0	9H(2,7)		

(68) APP FIG. 68

BUZZER

DESIG	LOC	CODE
OC	2D1	7A49

INDICATOR

DESIG	LOC	CODE
OC	2D1	15F-49

LAMP

DESIG	LOC	CODE
OC	2D1	A2

(69) APP FIG. 69

RELAY

DESIG	RHR		RHT						DESIG
CODE	AK22								CODE
OPTION									OPTION
12			EBM						12
11			EBM	8F7					11
10			EBM	11B3					10
9			EMB	8F7					9
8			EMB	8F7					8
7									7
6									6
5	EMB	8F7							5
4	EMB	8F7							4
3	EBM	8F7							3
2	EBM								2
1	EBM	11A3							1
COIL		14B5		14B3					COIL

RESISTOR

DESIG	LOC	CODE
HS1	14C3	KS-20810 L1A, 249
HS2	14C3	KS-20810 L1A, 249
HS3	14C6	KS-20810 L1A, 249
HS4	14C6	KS-20810 L1A,249

CIRCUIT PACK

EQPT LOC.					
DESIG		HL (CP3)			
CODE		ED-1E178 G3			
OPTION					
ELEM. IDEN.		TERM		TERM	
TERM		DESIG	FS LOC	DESIG	FS LOC
12		HT4	14E2		
11		HT1	14D2		
10		HR5	14E6		
9		HR2	14D6		
8					
7		HR1	14D5		
6		HR4	14E5		
5		HT2	14D3		
4		HT5	14E3		
3					
2					
1					

(70) APP FIG. 70

BUZZER

DESIG	LOC	CODE
BZ	4D7	E1C-49

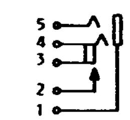
(79) APP FIG. 79

SWITCH HOOK

DESIG	LOC	CODE
FMS	6D4	143AH

(80) APP FIG. 80

JACK



DESIG		TCA	TCB
LOC	5	1D9	1D9
	4	6A3	6A3
	3		6E6
	2		6E6
	1	1G9	1G9
CODE		241A	241A

(71) APP FIG. 71

DIODE

	DESIG	LOC	CODE
	MOL	12H2	446F
(YX)	MOSE	9F(3,6)	446F

(72) APP FIG. 72

RESISTOR

DESIG	LOC	CODE
ROR1	12E2	KS-20810 L1A,89.8
ROR2	12F2	KS-20810 L1A,89.8
ROT1	12A2	KS-20810 L1A,258
ROT2	12C2	KS-20810 L1A,258

(73) APP FIG. 73

AMPLIFIER

DESIG	LOC	CODE
OCN	3D4	227F

(74) APP FIG. 74

RESISTOR

DESIG	LOC	CODE
OCN1	3E4	KS-20810 L1A, 2100
OCN2	3E5	KS-20810 L1A, 2100
OCN3	3C5	KS-20810 L1A, 1200
OCN4	3C4	KS-20810 L1A, 2400
OCN5	3C5	KS-20810 L1A, 2400

(81) APP FIG. 81

RELAY

DESIG	RIS1	
CODE	AJ48	
OPTION		
	CONT ARR	LOC
12		
11		
10	H	
9		
8	H	
7		
6	H	10H0
5		
4	H	10H2
3		
2		
1		
COIL		10H3

CIRCUIT PACK

EQPT LOC			
DESIG		RIS1 (CP 8)	
CODE		ED-1E178 C8	
OPTION			
ELEM IDENT		TERM.	
TERM.		DESIG	FS LOC
12			
11		RIS1	10C3
10			
9			
8			
7			
6			
5			
4		RIS1	10G2
3			
2		RIS1	10G2
1			

(75) APP FIG. 75

AMPLIFIER

DESIG	LOC	CODE
RQ	19C5	227F
ACK	19F5	227F

(76) APP FIG. 76

RESISTOR

DESIG	LOC	CODE
RQ1	19E6	KS-20810 L1A, 3010
RQ2	19F6	KS-20810 L1A, 3010
RQ3	19C3	KS-20810 L1A, 2400
RQ4	19D3	KS-20810 L1A, 2400
RQ5	19E3	KS-20810 L1A, 2400
RQ6	19F3	KS-20810 L1A, 2400
RQ7	19B3	KS-20810 L1A, 1700
RQ8	19C3	KS-20810 L1A, 1700

JACK

DESIG	LOC	CODE
RQ IN	19C3	239CM
RQ OUT	19C6	239CM
ACK IN	19F3	239CM
ACK OUT	19F6	239CM

(77) APP FIG. 77

CAPACITOR

DESIG	LOC	CODE
IL	17E0	535J

PAD

DESIG	LOC	CODE
IL	17E1	1D

(78) APP FIG. 78

RELAY

DESIG	MI-0		MI-1	
CODE	AK22			
OPTION				
	CONT ARR	LOC	CONT ARR	LOC
12			EBM	
11			EBM	
10			EBM	9A6
9			EBM	9B6
8			EBM	
7				
6				
5	EBM			
4	EBM	9B6		
3	EBM	9A6		
2	EBM			
1	EBM			
COIL		9E6		9E6

APP FIG. 82

~~AMPLIFIER~~

	DESIG	LOC	CODE
(XW)	RUI	1E4	KS-20449,L1

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CIRCUIT NOTES:

101.

DESIG	FUSE AMP	POTENTIAL	ONE PER
A	1-1/3	-24 TALK	APP FIG. 1,62,73,75,35,82
AA	1-1/3	-24 SIG	APP FIG. 1,41
AF-	1-1/3	-24 SIG	APP FIG. 51
AG-	1-1/3	-24 SIG	APP FIG. 37,38
AK	1-1/3	-24 SIG	APP FIG. 46,47,69 OR 2 APP FIG. 16,17,78 AND/OR 18
AL-	1-1/3	-24 SIG	8 APP FIG. 48
ANT	1-1/3	-24 TALK	APP FIG. 35
AQ-	1-1/3	-24 SIG	3 APP FIG. 9 & 33 OR 3 APP FIG. 7 & 33 OR 2 APP FIG. 7,9, & 33 OR 6 APP FIG. 27 OR 6 APP FIG. 61
B-	1-1/3	-24 SIG	APP FIG. 28
C	1-1/3	-24 SIG	APP FIG. 21,22,69
D1	1-1/3	-24 SIG	APP FIG. 23 OR 2 PER APP FIG. 40
D2-	1-1/3	-24 SIG	5 PER APP FIG. 40
DB	1-1/3	-24 SIG	2 APP FIG. 23
F	1-1/3	-24 SIG	11 APP FIG. 10
FL	1-1/3	-24 SIG	3 PER APP FIG. 25,28,31, 36,60, OR 69 OR 1 PER 7 APP FIG. 41
FT	1-1/3	-24 TALK	ALL APP FIG. 8 PER FRAME
G-	1-1/3	-24 SIG	5 APP FIG. 31
H-	1-1/3	-24 SIG	2 APP FIG. 18,19,31,36,53,81
HR	1-1/3	-24 SIG	3 PER APP FIG. 22
HT	1-1/3	-24 SIG	3 PER APP FIG. 21
J	1-1/3	-24 SIG	16 APP FIG. 11
K	1-1/3	-24 SIG	APP FIG. 24
LB-	1-1/3	-24 SIG	4 PER APP FIG. 28
LF-	1-1/3	-24 SIG	2 PER APP FIG. 10
LH-	1-1/3	-24 SIG	3 PER APP FIG. 19
LKT	1-1/3	-24 TALK	3 APP FIG. 14
LR-	1-1/3	-24 SIG	4 PER APP FIG. 25
LS-	1-1/3	-24 TALK	APP FIG. 50
LT-	1-1/3	-24 TALK	2 APP FIG. 51 & 63 OR 64 & 1 PER APP FIG. 25 OR 1 APP FIG. 36
LU-	1-1/3	-24 SIG	3 PER APP FIG. 64
T-	1-1/3	-24 SIG	4 PER APP FIG. 36
TBS	1-1/3	-24 SIG	APP FIG. 6
US-	1-1/3	-24 SIG	APP FIG 60 & 2 APP FIG. 64
WK	1-1/3		MAX 42 APPEARANCES (MAX 14 PER LINE PER FUSE)

CIRCUIT NOTES: (CONT)

101. (CONT)

DESIG	FUSE AMP	POTENTIAL	ONE PER
A		TALK GRD	APP FIG. 1,62,73,75
A1		GRD	APP FIG. 1,4,39
AA		GRD	APP FIG. 1
AG		GRD	APP FIG. 37 & 1 PER 3 APP FIG. 38
AK		GRD	APP FIG. 46,47
AL-		GRD	8 APP FIG. 48
ANT		GRD	APP FIG. 35
AQ		GRD	3 APP FIG. 9 & 33, OR 3 APP FIG. 7 OR 33, OR 2 APP FIG. 7,9 & 33 OR
B-		GRD	APP FIG. 28
C		GRD	APP FIG. 21,22,69
DG-		GRD	2 APP FIG. 23,40
F		GRD	11 APP FIG. 10
FT		GRD	ALL APP FIG. 8 PER FRAME
G-		GRD	APP FIG. 31
H		GRD	2 APP FIG. 18,19,53
K		GRD	APP FIG. 24
LKT		GRD	3 APP FIG. 14
LS		TALK GRD	APP FIG. 50
LT-		TALK GRD	2 APP FIG. 51 & 63 OR 64 & 1 PER APP FIG. 25 OR 36
M-		GRD	APP FIG. 13
R-		GRD	APP FIG. 25
T-		GRD	APP FIG. 36
TBS		GRD	APP FIG. 6
US		GRD	APP FIG. 60 & 2 APP FIG.64
USA		GRD	APP FIG. 64 (XP)

BATTERY	VOLTAGE RANGE
-24	20-28

CIRCUIT NOTES: (CONT)

102.

FEATURE OR OPTION			PROVIDE APP FIG.	PROVIDE APP OR WRG	PROVIDE QUANTITY
MULT ACCESS ATND POS CKT	PROV WITH PRE-EMPTION CONT		1,34, 35,62, 73,74	ZE	1 PER NON COOR POS
					1 PER COOR POS
	PROV WITH EMER PAGING LINE SEL CKT			E	
	PROV WITH RADIO LINE ARR FOR	KEY LOCKING SEL CKT	65	A	1 PER POS
		AUTO LOCKING SEL CKT — WHEN NON-LOCKING LINES ARE SEL		B	
		AUTO LOCKING SEL CKT — WHEN NO OTHER LINES ARE SEL		XS	
		REMOVAL OF SIDE TONE TO ATTN DURING RADIO TRANS		TB	
		CONT CLOSURE TO DEMARCATION STRIP WHEN POS RLS RADIO FROM HEADSET — PROVIDED		TA	PROVIDE AS REQD
		CONT CLOSURE TO DEMARCATION STRIP WHEN POS RLS RADIO FROM HEADSET — NOT PROVIDED		TF	
	PROV WITH OVER-RIDE LINE		33		
		PROV WITHOUT OUTGOING ABILITY AT TERM — LOCKING ARR	7,26	F	1 PER 2 LINES
		PROV WITHOUT OUTGOING ABILITY AT TERM — NON-LOCKING ARR	26	E, ZO	
		PROV WITHOUT OUTGOING ABILITY AT TERM — ONE WAY ONLY		H	1 PER LINE
	PROV WITH INCOMING ABILITY AT TERM		9		1 PER 2 LINES
	PROV WITH MONITORING ABILITY AT TERM	COOR	48		1 PER LINE
		SINGLE POS	61	XK,F	
	PROV WITH MONITORED ABILITY AT TER		78		1 PER LINE (MAX 2 MON PER POS)
	PROV WITH REMOTE SIG		8	YO	1 PER TERM
		MULT OVERRIDE PROV	10		1 PER 2 TERM
		MULT OVERRIDE PROV — ASSOC WITH LKG SEL CKT	72	YQ	1 PER POS BEYOND FIRST (MAX 14 PER TERM)
		MULT OVERRIDE PROV — ASSOC NON-LKG SEL CKT	71	YP	1 PER POS
		MULT OVERRIDE NOT PROV	8	YN	1 PER TERM
		MULT OVERRIDE NOT PROV	10		1 PER 2 TERM
	PROV WITH LOCAL SIG ABILITY			ZL	1 PER TERM
	PROV WITH REMOTE SIG ABILITY		8	ZM	
			10		1 PER 2 TERM
	RECEIVER UNIT ISOLATION AMPLIFIER		82	XW	1 PER POS
INPUT CKT FOR BUZ CONT			2		1 PER 10 LINES ASSOC WITH BUZ SIG PER POS (MAX 2 PER SYS)
POS ARR FOR CONT TRMTR FOR LOCKING WIRE LINE SEL CKT				ZF	1 PER POS
DARK ENVIRONMENT	CONT CKT		3,37		
	REGULATING CKT FOR	1-7 LPS	38	T	MAX 3 PER POS (SEE NOTE 124)
		8-18 LPS (3 APP FIG. 15)			

CIRCUIT NOTES: (CONT)

102. (CONT)

FEATURE OR OPTION			PROVIDE APP FIG.	PROVIDE APP OR WRG	PROVIDE QUANTITY
LOUDSPEAKER CUTOFF CKT	PROV	WITH MONITORING FEATURE AT POS	26, 51		1 PER 2 LINES ASSOC WITH VOICE SIG PER POS
			42		1 PER 10 LINES ASSOC WITH VOICE SIG PER POS
		WITHOUT MONITORING FEATURE AT POS		ZE	1 PER LINE PER POS
	NOT PROV			ZB	1 PER LINE PER POS
LOCKING WIRE LINE SEL CKT			26		1 PER 2 LOCKING WIRE LINE SEL CKTS PER POS
				F,YY	1 PER LOCKING WIRE LINE SEL CKTS PER POS
	ARR FOR	AUTO LINE ASSOC WITH MAAT POS	27	ZH	1 PER LINE PER POS
		CO OR PBX LINE ASSOC WITH MAAT POS		ZG, YW	
		LOCAL DIAL LINE CONN CKT		ZY	
		4-WIRE PRIVATE LINE TO BE USED WITH SD-69566-01		YE	
		STA LINE ASSOC WITH MAAT POS		ZJ	
BUZ CONT & CUTOFF CKT			41		1 PER POS
	WITH MONITORING ABILITY	PROV AT POS		ZA	1 PER POS (MAX 2 PER SYS)
		NOT PROV AT POS		ZE	-
VOICE SIG ISOLATION CKT			44		1 PER 5 LINES ASSOC WITH VOICE SIG PER POS
MAAT COORDINATOR POS	ARR FOR AUX AUD & VISIBLE INDICATING CKT FOR INCOMING OVERRIDE CALLS		47		1 PER POS
	WITH MONITORING MODE TRNSF CKT	PROV	46		
		NOT PROV		ZE	
VOICE LINE SEL CKT			61		1 PER POS PER LINE
	ARR FOR MAAT POS	NON-LOCKING SEL	26	E	1 PER 2 VOICE SEL CKT
		LOCKING SEL		F	

DRAWING ISSUE

ISSUE 9BU

SD-69610-01-DI

SWITCHING SYSTEM NO. 301A

(2)

SD-69610-01-DI

BELL TELEPHONE LABORATORIES INCORPORATED

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CIRCUIT NOTES: (CONT)

102. (CONT)

FEATURE OR OPTION			APP FIG.	APP OR WRG	QUANTITY
KEY TEL LINE CONN CKT FOR USE WITH AUTO & STA LINE CKTS			14		1 PER AUTO. OR STA LINE ASSOC WITH KEY TEL
LOCAL DIAL LINE CONN CKT		900 OHM LINE	17, 52	TE,ZY	1 PER LINE CKT ARR FOR DIALING 1 OF 90 ATND
		600 OHM LINE		N	
				Q	
	ASSOC WITH 301A ATND POS			YJ	1 PER 14 POS
	ASSOC WITH KTS			YK	1 PER 14 KTS
4-WIRE PRIVATE LINE CKT (TO BE USED WITH FS 1 OF SD-69566-01 AS "C" CKT)			19		
	ARR FOR INCOMING VOICE SIG		20,53 63	W,Y	1 PER LINE
					1 PER 2 LINES (MAX 21 POS)
				W,Y, V	1 (22-42 POS) PER LINE
	ARR FOR INCOMING GRD SIG		31	G,Y	1 PER 2 CODES
	ARR FOR INCOMING 20Hz RINGING			Y	1 PER 2 LINES (MAX 21 POS)
				Y,V	1 PER LINE
			81	XN	
	ARR FOR OUTGOING	RING	30		1 PER LINE
		DIALING	18	YD	1 PER 2 LINE
VOICE SIG LINE CKT	ARR FOR	VOICE	20,63	Z,XO	1 PER LINE TERM.
		INC RNG	64	XP	
			60		1 PER 2 LINE TERM.
EMER VOICE PAGING CKT			21,22 69		1 PER SYS
FLUTTER LP INDICATION CKT			23	YH	1 PER 21 POS
AUDIBLE & VISIBLE CONT CKT			24		1 PER SYS
	ASSOC WITH MONITORING ARR AT POS			ZA	MAX 2 POS PER SYS
STA LINE CKT			25	ZK, ZX	1 PER LINE
	ARR FOR INCOMING VOICE SIG		20,63	M	
	900-OHM LINE		52	N	
	600-OHM LINE			Q	
CO OR PBX LINE CKT ARR FOR			28	ZV, YC, XU	
	METALLIC INCOMING RING.			R	
	GRD INCOMING RING.			S	
	20 HZ MANUAL OUTGOING RING			ZN	
	900-OHM LINE		52	N	
	600-OHM LINE			Q	
	RECORDING		12		1 PER POS PER LINE
AUTO LINE CKT			36, 52	ZC, ZK, ZW	1 PER LINE TER
	900 OHM LINE			N	
	600 OHM LINE			Q	
FLASH & WINK LP INDICATION CKT			40		1 PER 21 POS

CIRCUIT NOTES: (CONT)

102. (CONT)

FEATURE OR OPTION			APP FIG.	APP OR WRG	QUANTITY
FOOT SW		PLUG	5		1 PER POS
		JACK	45		
POS TEL JACKS AND LOUDSPEAKER TRNSF KEY		NON-SUPV	4	XL	1 PER CONTROLLER POS
		FLUSH MTD SUPV POS	4,79		
TEST BAT & GRD CKT			6		1 PER BAY AS REQD
KEY TEL LP REGULATOR CKT			13		1 PER LINE ASSOC WITH KEY TEL
FUNCT & LINE SEL CKT		6-BUTTON KEY	15		PROV AS REQD (SEE NOTE 121)
		10-BUTTON KEY	43		
FEEDER FUSE & ALARM CKT			29		1 PER POS BAY B AS REQD
				TH	1 PER 2ND POS OF 2 POS BAY AS REQD
BUZ CKT PROV	WITH ROTARY DIAL WITH ILLUMINATION		32		1 PER CONTROLLER POS
	WITHOUT ROTARY DIAL		70	YT	
AUX POS PILOT LP			39		1 PER POS
CALL DIRECTOR TEL SET			49		1 PER SUPV POS
POS LOUDSPEAKER SET	VAR RECORDING		50	X	1 PER POS
	CONSTANT RECORDING			K	
EMER VOICE PAGING LOUDSPEAKER SET	VAR RECORDING			X	PROV AS REQD (MAX 4 PER TER)
	CONSTANT RECORDING			K	
FUSE	2 AMP		54		SEE NOTE 101
	1-1/3 AMP		59		
HEADSET TRANSCEIVER	52 RR		55		PROV AS REQD
	KS-19796L1 OR EQUIV		57		
HEADSET TRANSCEIVER			56		
HAND TRANSMITTER			58		
REQUEST & ACKNOWLEDGE ACCESS CKT			75,76	TD	1 PER POS
INTERCOM LINE			52,77	N,TC	1 PER LINE
MULT SUPV JACKS AT TOWER CHIEF DESK			80	XM	1 PER POS

CIRCUIT NOTES: (CONT)

103.

NETWORK VALUES			
NETWORK NO.	NETWORK CODE	RESISTANCE IN OHMS	CAPACITANCE IN UF
1	185A	470	.11

104.

RECORD OF APP FIGS. WIRING, AND APPARATUS CHANGES							
CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USED IN CIRCUIT STD	A&M	MD	
2D				APP FIG 65 ZD, ZK			
	J OR ZC	J	122	ZC		J	
	ZK OR ZD	ZD		ZK		ZD	
	ZL OR ZM	ZL		ZL,ZM			
	ZP OR ZQ	ZP		ZQ		ZP	
	ZS OR ZT	ZS		ZS,ZT			
	APP FIG 8,10,11, 12,13, 14,17 18,66 67,ZN, ZO,ZR, ZU,ZV, ZW,ZX, ZY,YH, YI,YJ, YK,		122	APP FIG 8,10,11, 12,13,14, 17,18, ZN,ZO, ZR,ZU, ZV,ZW, ZY,YH, YI,YJ, YK		66,67	
5B	YA OR ZZ	ZZ		YA		ZZ	
	ZI OR YD & YE	ZI		YD,YE		ZI	
	YB OR YC	YB		YC		YB	
	YG OR YF	YF		YG		YF	
	YL OR YM	YL		APP FIG. 34,35, YM		YL	
	APP FIG 34,35		122	APP FIG. 34,35			
	APP FIG.5 71,72 YN,YO, YP,YQ	NONE		APP FIG.5 71,72 YN,YO YP,YQ			
	YS OR YR	YR		YS		YR	
	APP FIG 70 YT	NONE	102	APP FIG 70 YT			
	YU	NONE	102	YU			
6B	APP FIG. 73,74	NONE	102	APP FIG. 73,74			
	YX OR YO	NONE	128	YO		YX	
	YV	NONE		YV			
	APP FIG. 75,76,77 TB,TD,TH	NONE		APP FIG. 75,76,77 TB,TD,TH			
	APP FIG. 16 OR 78	16		APP FIG. 78	16		
	YY OR APP FIG. 11, ZQ,XB, ZR,ZS,ZT, ZU, XC	APP FIG. 11, ZQ,XB, ZR,ZS,ZT, ZU		YY,XC		APP FIG. 11, ZQ,XB ZR,ZS,ZT, ZU	
	TA OR TF	TF		TA,TF			
	TC OR TE TG	TE,TG		TC,TE		TG	
	YZ OR XA	YZ		XA		YZ	
	XE,XF	XF		XE		XF	
	XG,XH	XH		XG		XH	
7AC	YW OR XD	YD		YW		XD	
	XI,XJ	XJ		XI		XJ	

CIRCUIT NOTES: (CONT)

104. (CONT)

RECORD OF APP FIGS. WIRING, AND APPARATUS CHANGES							
CHANGED ON ISS	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CIRCUIT STD	A&M	MD	
8B				XK,XN XM,APP FIG.80, 81,XU, XR			
	APP FIG. 79 OR XL	XL		APP FIG 79,XL			
	XO OR XP	XO		XO,XP			
9BU	XV,XW	XV		XW		XV	
	XT,XU	XT		XU		XT	
	82	NONE		82			

105. A MAXIMUM OF FIVE POSITIONS MAY BE MONITORED SIMULTANEOUSLY.

106. THE RESISTANCE OF THE TA, TB, TC, AND TD LEADS BETWEEN C1 AND C2 CAPACITORS IN APP FIG. 1 AND THE TIPS OF THE A, B, C, AND D JACKS OF APP FIG.4 SHOULD NOT EXCEED 50 OHMS FOR NORMAL TRANSMISSION.

107. ADJUST THE POTENTIOMETER ON AMPLIFIER (A) OPTION YR OF APP FIG. 1 TO PROVIDE +15 DBM OUTPUT TO A 600-OHM METER INSERTED IN JACK (A OUT) WITH THE -23 DBM INPUT FROM A 600-OHM 1000 CPS SIGNAL SOURCE INSERTED IN JACK (A IN). THE OUTPUT LEVEL SHALL NOT INCREASE BY MORE THAN 2.5 DB WHEN THE INPUT SIGNAL IS INCREASED FROM -11 DBM TO -5 DBM.

108. EQUIP PADS (TR), (TS1), (AR), (IL), (RC), (ROT) AND (RA) WITH AN 89-TYPE RESISTOR IN ACCORDANCE WITH THE FOLLOWING TABLE TO PROVIDE THE CORRECT LEVELS FOR TRANSMISSION:

RES CODE	PAD LOSS IN DB
89A	0
89E	1
89F	1.25
89G	1.5
89J	2
89L	2.5
89N	3
89R	3.5
89T	4
89AA	5
89AC	5.5
89AD	5.75
89AE	6
89AF	6.25
89AG	6.5
89AH	6.75
89AJ	7
89AK	7.25
89AL	7.5
89AM	7.75

RES CODE	PAD LOSS IN DB
89AN	8
89AP	8.25
89BA	10
89BH	13.5
89BJ	14
89BK	14.5
89BL	15
89BM	15.5
89BN	16
89BQ	16.25
89BP	16.5
89BR	17
89BS	17.5
89BT	18
89BU	18.5
89BW	19
89CA	20
89CF	25
89CG	30
89DC	17.25

THE EXPECTED VALUES FOR EACH ARE:

PAD DESIG	EXPECTED VALUE IN DB
AR	1.25
RA	15 *
RC	0 OR 1
ROT	7(301A)
	4(301)
TR	(TS) 17.25
	(TS) 16.25
TS1	7
IL	6

* A 15 DB PAD PRODUCES A -8VU SIGNAL. IF A LOWER LEVEL INTO THE FAA RADIO TRANSMITTING EQUIPMENT IS DESIRED, A PAD WITH GREATER ATTENUATION SHOULD BE INTRODUCED. FOR EXAMPLE, IF A -18VU SIGNAL IS DESIRED A 25 DB PAD SHOULD BE SPECIFIED.

DRAWING ISSUE

ISSUE 9BU

SWITCHING SYSTEM NO. 301A

(2) SD-69610-01-D2

BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-69610-01-D2

CIRCUIT NOTES: (CONT)

109. ADJUST AMPLIFIER (LR) FOR 18.2 DB GAIN AS FOLLOWS:
  (A) TIGHTEN SCREW DESIGNATED (10-24) (21-36)
  (B) LOOSEN SCREWS DESIGNATED (21-36) AND (0-13) SO THAT THEY DO NOT CONTACT THE STRAPS BENEATH THE SCREW.
  (C) INSERT A 1000 HZ, 600-OHM SIGNAL OF -20.2 DBM IN TEST JACK (LR IN).
  (D) INSERT A 600-OHM METER IN JACK (LR OUT).
  (E) ADJUST THE AMPLIFIER POTENTIOMETER FOR -2 DBM READING.

110. ADJUST AMPLIFIER (LT) FOR 12.8 DB GAIN AS FOLLOWS:
  (A) TIGHTEN SCREW DESIGNATED (10-24) (21-36).
  (B) LOOSEN SCREWS DESIGNATED (0-13) AND (21-36) SO THAT THEY DO NOT CONTACT THE STRAPS BENEATH THE SCREW.
  (C) INSERT A 1000 HZ, 600-OHM SIGNAL OF -14.8 DBM IN TEST JACK (LT IN).
  (D) INSERT A 600-OHM METER IN JACK (LT OUT).
  (E) ADJUST THE AMPLIFIER POTENTIOMETER FOR A -2 DBM READING.

111. ADJUST AMPLIFIER (OR) FOR 33.7 DB GAIN AS FOLLOWS:
  (A) TIGHTEN SCREWS DESIGNATED (21-36) AND (10-24) (21-36).
  (B) LOOSEN SCREW DESIGNATED (0-13) SO THAT IT DOES NOT CONTACT THE STRAPS BENEATH THE SCREW.
  (C) INSERT A 1000 HZ, 600-OHM SIGNAL OF -36.7 DBM IN TEST JACK (OR IN).
  (D) INSERT A 600-OHM METER IN TEST JACK (OR OUT).
  (E) ADJUST THE AMPLIFIER POTENTIOMETER FOR -3.0 DBM READING.

112. ADJUST AMPLIFIER (OT) FOR 28.3 DB GAIN AS FOLLOWS:
  (A) TIGHTEN SCREWS DESIGNATED (21-36) AND (10-24) (21-36).
  (B) LOOSEN SCREW DESIGNATED (0-13) SO THAT IT DOES NOT CONTACT THE STRAPS BENEATH THE SCREW.
  (C) INSERT A 1000 HZ, 600-OHM SIGNAL OF -31.7 DBM IN TEST JACK (OT IN).
  (D) INSERT A 600-OHM METER IN TEST JACK (OT OUT).
  (E) ADJUST THE AMPLIFIER POTENTIOMETER FOR A -3.4 DBM READING.

113. REMOTE OVERRIDE AND 4-WIRE VOICE SIGNALING LINES SHOULD BE DESIGNED FOR 16 DB PRIVATE LINE NET LOSS SPECIFICATIONS.

114. ADJUST AMPLIFIER (LA) FOR 25.9 DB M , 25.9 DB W OR 26.9 DB Z GAIN AS FOLLOWS:
  (A) TIGHTEN SCREWS DESIGNED (21-36) AND (10-24) (21-36).
  (B) LOOSEN SCREW DESIGNATED (0-13) SO THAT IT DOES NOT CONTACT THE STRAPS BENEATH THE SCREW.
  (C) INSERT A 1000 HZ, 600-OHM SIGNAL OF -26 DBM IN JACK (LA IN).
  (D) INSERT A 600-OHM METER IN TEST JACK (LA OUT).
  (E) ADJUST THE AMPLIFIER POTENTIOMETER FOR A-.1 DBM M, - .1 DBM W OR + .9 DBM Z READING.

115. ADJUST THE 106-TYPE POSITION LOUDSPEAKER AS FOLLOWS:
  (A) REMOVE THE STRAP ACROSS TERMINALS 18 & 19 AND CONNECT A 3.8-OHM 1-WATT RESISTOR BETWEEN TERMINALS 18 & 20.
  (B) WITH THE MANUALLY OPERATED VOLUME CONTROL IN THE MAXIMUM VOLUME POSITION, ADJUST THE INTERNALLY LOCATED POT.(106C:R7;106F:R26) LOC ON TB1 TO OBTAIN AN OUTPUT OF .52 VOLTS ACROSS TERMINALS 18 & 20 WITH A 1000-CYCLE SIGNAL SOURCE OF -35 DBM CONNECTED TO TERMINALS 2 AND 4.
  (C) REMOVE THE 3.8-OHM RESISTOR AND REPLACE THE STRAP ON TERMINALS 18 AND 19.
  (D) WITH NORMAL INCOMING VOICE SIGNALS REDUCE THE EXTERNAL VOLUME CONTROL TO PROVIDE A COMFORTABLE LISTENING LEVEL.
  (E) FOR 106F, CONNECT SPADE-TIPPED LEAD FROM PILOT LAMP SOCKET TO SCREW TERMINAL 10.
  (F) IF MINIMUM AUDIBILITY LEVEL FEATURE IS REQUIRED. CUT STRAP BETWEEN SOLDER TYPE TERMINALS 23 & 24.

116. MAAT IS DEFINED AS "MULTIPLE ACCESS ATTENDANT TELEPHONE."

117. TURN SENS POT. OF CPI TO OPERATE RL OR RV WHEN A -29 DBM 1000HZ SIGNAL IS INSERTED INTO RR AND RT LEADS OF THE RADIO LINE OR 4-WIRE VOICE CALL-UP LINE RESP, OR TO OPERATE RSI WHEN A -28 DBM 1000 HZ SIGNAL IS INSERTED INTO RI AND TI OF THE 4-WIRE SS-1 LINE. (WHEN APPLYING BAT. & GRD OPEN PR4B, VL10B OR AS1128 TO PREVENT RL,RV OR RSI RESP FROM OPERATING. DEPRESSION OF ASSOCIATED RADIO, VL OR SS BUTTON RELEASES INCOMING INDICATIONS FROM CONSOLE.)

118. ADJUST THE EMERGENCY PAGING LINE LOUDSPEAKER SET AS FOLLOWS:
  (A) REMOVE THE STRAP ACROSS TERMINALS 18 AND 19 AND CONNECT A 3.8-OHM 1-WATT RESISTOR BETWEEN TERMINALS 18 AND 20.
  (B) WITH THE MANUALLY OPERATED VOLUME CONTROL IN THE MAXIMUM VOLUME POSITION, ADJUST THE INTERNALLY LOCATED POTENTIOMETER (106C: R7; 106F: R26) LOCATED ON TB1 TO OBTAIN AN OUTPUT OF .52 VOLTS ACROSS TERMINALS 18 AND 20 WITH A 1000-CYCLE SIGNAL SOURCE CONNECTING TO TERMINAL 2 & 4 AT EACH LOUDSPEAKER & WHOSE LEVEL IS AS INDICATED IN THE FOLLOWING TABLE FOR UP TO FOUR SPEAKERS IN PARALLEL.

1000 Hz SOURCE LEVEL(DBM)	NO. OF SPEAKERS ASSOC WITH TOWER OR RADAR ROOM
- 8.5	1
- 14	2
- 11	3
-.12	4

CIRCUIT NOTES: (CONT)

118. (CONT)
  (C) REMOVE THE 3.8-OHM RESISTOR AND REPLACE THE STRAP ON TERMINALS 18 AND 19.
  (D) WITH NORMAL INCOMING VOICE SIGNALS REDUCE THE EXTERNAL VOLUME CONTROL TO PROVIDE A COMFORTABLE LISTENING LEVEL.
  (E) FOR 106F, CONNECT SPADE-TIPPED LEAD FROM PILOT LAMP SOCKET TO SCREW TERMINAL 10.
  (F) IF MINIMUM AUDIBILITY LEVEL FEATURE IS REQUIRED CUT STRAP BETWEEN SOLDER TYPE TERMINALS 23 & 24.

119. FLUTTER CIRCUIT (APP FIG. 23) ADJUSTMENT
  (1) BLOCK OPERATE (FS) RELAY (APP FIG. 24)
  (2) ADJUST (ADJ) POTENTIOMETER TO YIELD MAXIMUM BRIGHTNESS WHITE DISTINCT FLUTTER SIGNAL ON THE (FL) LAMP (APP FIG. 23) REMAINS OBSERVABLE.
  (3) RELEASE (FS) RELAY.

120. APP FIG. 65 DOES NOT APPEAR IN ISSUE 1.

121. A LINE OR FUNCTION IS ASSIGNED A BUTTON AS SHOWN IN TABLE "A" IN APP FIG. 15 ON SHEET C3, IN TABLE "B" IN APP FIG. 43 ON SHEET C6, OR ON SHEET C7. AN OVERRIDE LINE WITH INCOMING ABILITY ONLY IS NOT ASSIGNED A BUTTON. THE SAME BUTTON IS USED FOR BOTH OUTGOING OVERRIDE ABILITY AND MONITORING ABILITY ON A PARTICULAR OVERRIDE LINE. THE POSITION PILOT LAMP (PL) IS ASSOCIATED WITH THE RELEASE BUTTON. THE POSITION OVERRIDE LAMP (OVN) IS ASSOCIATED WITH THE FLASH-RING BUTTON. ANY LINE OR FUNCTION MAY OR MAY NOT BE PROVIDED AT A POSITION BY NOT PROVIDING EQUIPMENT NECESSARY OR BY NOT CROSS CONNECTING TO ANY BUTTON AT THE POSITION.

122. APP FIG. 8,10,11,12,13,14,17,18,34, AND 35 EQUIPMENT APPEARING THRU ISSUE 4A WERE REMOVED IN ISSUE 5B. WIRING OPTIONS J,ZC,ZD, AND ZK APPEARING IN THIS DRAWING BEFORE ISSUE 5B WERE DELETED IN ISSUE 5B. THE ABOVE INFORMATION WAS REMOVED AS A"D"NO. RECORD CHANGE. APP FIG. 8,10,11,12,13,14,17,18, 34, AND 35 AND OPTIONS J,ZC,ZD, AND ZK WERE REUSED IN ISSUE 5B.

123. THE REMOTE SIGNALING ARRANGEMENT (FS7) FOR AN OVERRIDE LINE IS USED WHEN BOTH TERMINATIONS OF THE LINES ARE NOT WITHIN THE SAME SYSTEM (EQUIPMENT ROOM). THE SIGNALING RANGE IS 1550-OHMS. IF THIS RANGE IS EXCEEDED, THE OVERRIDE LINE REMOTE SIGNAL EXTENSION CIRCUIT, SD-69901-01, IS USED BETWEEN TERMINATIONS.

124. PROVIDE OPTION YI WHEN REGULATED VOLTAGES AT A POSITION WITH MORE THAN ONE REGULATOR CKT, DIFFER BY MORE THAN .7 VOLTS OR ARE OTHERWISE DEEMED TOO DIFFERENT SUCH THAT A NOTICEABLE VARIATION OF ILLUMINATION OCCURS IN THE POSITION LAMP FIELD.

125. ADJUST AMPLIFIER (RC) FOR 35 DB(OR MAXIMUM) GAIN AS FOLLOWS:
  (A) TIGHTEN SCREWS DESIGNATED (21-36) AND (21-36) (10-24).
  (B) LOOSEN SCREWS DESIGNATED (0-13) SO THAT IT DOES NOT CONTACT THE STRAPS BENEATH THE SCREW.
  (C) INSERT A 1000 HZ, 600-OHM SIGNAL OF -35 DBM IN TEST JACK (RC IN).
  (D) INSERT A 600-OHM METER IN TEST JACK (RC OUT)(1200 OHM OUTPUT).
  (E) ADJUST THE AMPLIFIER POTENTIOMETER FOR A 0 DBM READING.

126. ADJUST (A) AMPLIFIER YS OPTION AS FOLLOWS:
  (A) INSERT A 1000 HZ, 600-OHM SIGNAL OF -31 DBM IN TEST JACK (A IN).
  (B) ROTATE (R1) POTENTIOMETER FULLY CLOCKWISE.
  (C) INSERT A 600-OHM DBM METER IN TEST JACK (A OUT).
  (D) ADJUST (R23) POTENTIOMETER FOR +24 DBM READING.
  (E) ADJUST (R1) POTENTIOMETER FOR +7 DBM READING.

127. ADJUST AMPLIFIER (OCN) FOR 10 DB GAIN AS FOLLOWS:
  (A) TIGHTEN SCREW DESIGNATED (0-13).
  (B) LOOSEN SCREWS DESIGNATED (21-36) AND (21-36)(10-24).
  (C) INSERT A 1000HZ, 600 OHM SIGNAL OF -5 DBM IN TEST JACK (OR OUT).
  (D) INSERT A 600 OHM METER IN TEST JACK (OT IN).
  (E) ADJUST THE AMPLIFIER POTENTIOMETER FOR -28 DBM READING.

128. PRIOR TO 6B, YX WAS PART OF YO OPTION.

129. (A & M)

FEATURE OR OPTION			PROVIDE		
			APP FIG.	APP OR WRG	QUANTITY
MULT ACCESS ATND POS CKT	PROVIDE WITH OVER-RIDE LINE	PROV WITH MONITOR-ED ABILITY AT TERM	16		1 PER LINE (MAX 2 PON PER POS)

130. ADJUST AMPLIFIERS (RQ) AND (ACK) FOR 32DB GAIN AS FOLLOWS:
  (A) TIGHTEN SCREWS DESIGNATED (21-36) AND (21-36)(10-24).
  (B) LOOSEN SCREW DESIGNATED (0-13) SO THAT IT DOES NOT CONTACT THE STRAPS BENEATH THE SCREW.
  (C) INSERT A 1000 HZ 600-OHM SIGNAL OF -32 DBM IN TEST JACK (RQ IN) OR (ACK IN) RESPECTIVELY.
  (D) INSERT A 600-OHM METER IN TEST JACK (RQ OUT) OR (ACK OUT) RESPECTIVELY. (THESE ARE 1200-OHM OUTPUTS OF AMPLIFIERS.)
  (E) ADJUST AMPLIFIERS (RQ) OR (ACK) RESPECTIVELY, POTENTIOMETER FOR A 0 DBM READING.

131. PROVIDE OPTION XQ WHEN THE INCOMING RINGING DETECTOR IS BRIDGED TO THE TRANSMIT PAIR; PROVIDE OPTION XR, WHEN BRIDGED TO THE RECEIVE PAIR.

EQUIPMENT NOTES:

201. INPUT AND OUTPUT TRANSMISSION LEADS BETWEEN AMPLIFIERS AND ASSOCIATED JACKS SHALL BE RUN AS "D3" WIRING, AND IN SEPARATE PATHS.

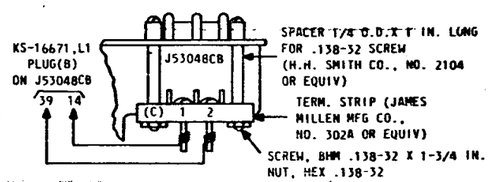
202. IN UNITS WIRED PER CADS 108, 109, 110 AND 111 WITH F OPTION, THE WIRE FROM TERMINAL 43 OF (A) TERMINAL STRIP SHALL TERMINATE ON THE HIGHEST NUMBERED RELAY EQUIPPED.

203. INTERCONNECTION OF MISCELLANEOUS RELAY UNITS SHALL BE ACCOMPLISHED BY THE INSTALLER. LW WIRING SHALL BE USED WITHIN THE RELAY RACK AND SWITCHBOARD CABLE BETWEEN RELAY RACKS.

204. CONNECTION TO THE VARIOUS LOUDSPEAKERS MAY BE MADE DIRECTLY OR VIA A PLUG AND CONNECTOR ARRANGEMENT. THE LATTER ARRANGEMENT, IF REQUIRED MUST BE DONE ON A JOB BASIS. IN EITHER CASE, THE CABLE TO THE LOUDSPEAKER SHOULD END IN SPADE TERMINALS SO AS TO INSURE CONVENIENT CONNECTION TO THE LOUDSPEAKER TERMINALS. (SEE CADS 407, 408 AND 410-413).

205. FOR RECORDER CONNECTOR CONNECTING INFORMATION SEE BSP 463-231-100.

206. EQUIPMENT ARRANGEMENT FOR ADDING SEPARATE RINGER PER APP FIG. 70.



DRAWING ISSUE

ISSUE 8B

SD-69610-01-D3A

SWITCHING SYSTEM NO. 301A (2) SD-69610-01-D3A

BELL TELEPHONE LABORATORIES INCORPORATED 6S

EQUIPMENT NOTES: (CONT)

207. CROSS REFERENCE FOR APPARATUS AND CAD FIGURES:

APP FIG.	CAD
1	101,103-105,118,302-307,322
2	103,304,503
3	402,415
4	402
5	FOOTSW. CORD, & PLUG
6	116,208
7	108,110
8	211,314,315
9	107,110
10	211
11	212
12	RCDR CONN
13	214,308
14	215
15	403,512,514
16	115
17	213
18	206,218
19	206,218,311,312
20	204-206,309-312
21	207
22	207
23	210
24	202,301
25	204
26	106-111
27	109
28	201
29	116,208,210
30	206
31	206,209,218
32	401
33	107,108,110
34	117,316,322
35	117
36	203
37	112
38	112
39	409
40	210

APP FIG.	CAD
41	101,104,307,322
42	106
43	404,513,514
44	102
45	402
46	114
47	114
48	113
49	414,512
50	401,408,410-413
51	106,502
52	201,203,204,213
53	206
54	210
55	HEADSET (A)
56	HANDSET (B)
57	HEADSET (C)
58	TRMTR (D)
59	116,208,210
60	205
61	111
62	AMPLS (227F)
63	204,206
64	205,309,310
65	CKT PACK (RL)
66	107
67	107
68	405,406
69	207,313
70	(EIC-49 RINGER)
71	118,317,318
72	216,319
73	AMPL(227F)
74	320
75	AMPL(227F)
76	321,119
77	516, 529
78	119
79	
80	
81	218
82	121

208. RQ1 AND RQ2 RESISTORS ARE TERMINATED ON UNIT TERM. STRIP "Q".

209. STATION LOCKOUT DURING DIALING ON SS1-A (SD-69544-01, FS 7) CANNOT BE PROVIDED WITH A 301A S.S. DIAL LOCKOUT IS PROVIDED BY FS 11 OPTIONS YA AND YD, AND APP FIG. 18.

210. WHEN INCOMING 20 Hz RINGING LINE UNIT PER J53048S-( ) IS PROVIDED, OPTIONAL CROSS CONNECTIONS ARE OMITTED. THE SHOP WILL PROVIDE SURFACE WIRED CONNECTIONS IN ACCORD WITH TABLE A.

TABLE A

RELAY DESIG	FROM		TO			
	AS1-0	AS1-1	RS1-0	RS1-1	RS1A-0	RS1A-1
TERMINALS	4M		2B			
	6M		3B			
	7M				3B	
		4M		10B		
		6M		11B		
		7M				10B
	12B		5		5	
		12B		8		8

INFORMATION NOTES:

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

302. THE LOSS OF A 2-WIRE LINE WILL DEPEND ON THE FACILITY, BUT THE MAX. LOSS IS EXPECTED TO BE 10 DB. THE LOSS FOR A 4-WIRE LINE WILL BE 16 DB.

303. ADJUST (A),(OR),(OT),(LR),(LT),(RC), AND (LA) AMPLIFIERS IN ACCORDANCE WITH CIRCUIT NOTES. INITIALLY DETERMINE VALUE FOR (TR) PAD VIA (OT) AMPLIFIER LEVEL IN INFORMATION NOTE 320 AND THEREAFTER PROCEED WITH LEVEL MEASUREMENTS IN NOTES 320-324. ALL REMAINING LEVELS GIVEN IN INFORMATION FIGURES MAY VARY BY ±1.5 DB. OPERATE (VP) RELAY DURING TESTING.

ON KS-20449,L1 AMP (RUI) FURNISH Z,S,V AND W OPTION.

LINEUP PROCEEDURE FOR RUI AMP.

1. SEND 1000HZ -22 dbm INTO A AMP INPUT (SEE FIG. 3, BSP 480-708-581).
2. TURN OUTPUT LEVEL CONTROL POT FULLY CLOCKWISE.
3. ADJUST GAIN POT TO OBTAIN A READING OF -7 dbm ON TMS CONNECTED TO PINS 8 AND 19 (TMS MAY BE BRIDGED OR AT 600 OHMS).
4. TURN OUTPUT LEVEL CONTROL POT COUNTERCLOCKWISE UNTIL TMS READS -27 dbm.

304. THE (T24) 1-TYPE TERMINATING SET TRSG. AMPL., & RCVG. AMPL. AND (S1) SCREW SWITCHES ARE CLOSED. ALL SIMPLEX SCREW SWITCHES ARE OPENED. THE NETWORK BUILD-OUT CAPACITORS AND/OR APPROPRIATE SCREW SWITCHES ON THE (PN) PRECISION NETWORK ARE CLOSED TO PROVIDE LINE BALANCE.

305. FOR 4-WIRE LINE TRANSMIT LEVEL MEASUREMENT DO NOT OPERATE ANY (PLL) RELAY. PLUG THE TEST MEASURING SET INTO (LT OUT) JACK. PLUG THE OSCILLATOR INTO THE (A IN) JACK FIRSTLY AND THE (OR IN) JACK SECONDLY.

306. FOR 2-WIRE TRANSMIT LEVEL MEASUREMENT OPERATE (PLL) OR (PIL) RELAY ASSOCIATED WITH LINE.DO NOT OPERATE LINE RELAY. CONNECT TEST MEASUREMENT SET INPUT LEADS TO TERMINALS 12 & 13 OF (T24). PLUG THE OSCILLATOR INTO THE (A IN) JACK FIRSTLY AND THE (OR IN) JACK SECONDLY.

307. FOR FOUR-WIRE LINE RECEIVE LEVEL MEASUREMENT DO NOT OPERATE ANY (PLL) RELAY. PLUG THE OSCILLATOR INTO THE (LR IN) JACK. PLUG THE TEST MEASURING SET INTO THE (OT OUT) JACK FIRSTLY AND SECONDLY, SUBSTITUTE THE TEST MEASURING SET FOR THE RECEIVER.

308. FOR TWO-WIRE LINE RECEIVE LEVEL MEASUREMENT OPERATE (PLL) OR (PIL) RELAY ASSOCIATED WITH LINE. DO NOT OPERATE LINE RELAY. CONNECT OSCILLATOR OUTPUT LEADS TO TERMINALS 12 AND 13 OF (T24). PLUG TEST MEASURING SET FIRSTLY INTO (OT OUT) JACK AND SECONDLY SUBSTITUTE TEST MEASURING SET FOR RECEIVER.

309. FOR RECEIVE LEVEL MEASUREMENT AT THE RECEIVER SUBSTITUTE THE TEST MEASURING SET FOR THE RECEIVER. DETERMINE THAT (W) AND (Z) RELAYS ARE NORMAL. FOR RECEIVE LEVEL MEASUREMENT AT THE LOUDSPEAKER SET SUBSTITUTE THE TEST MEASUREMENT SET FOR THE LOUDSPEAKER SET AND OPERATE THE LS KEY, AND/OR (W) AND (Z) RELAYS.

310. FOR THE SIDETONE LEVEL MEASUREMENT SUBSTITUTE TEST MEASURING SET FOR RECEIVER.

311. FOR INCOMING VOICE SIGNAL RECEIVE LEVEL MEASUREMENT SUBSTITUTE THE TEST MEASURING SET FOR THE POSITION LOUDSPEAKER AND DETERMINE THAT APPROPRIATE (LC) RELAYS ARE NORMAL. PLUG THE OSCILLATOR INTO THE (LA IN) JACK. SUBSTITUTE THE TEST MEASURING SET FOR THE POSITION LOUDSPEAKER.

312. FOR RECORDING LEVEL MEASUREMENT SUBSTITUTE THE TEST MEASURING SET FOR THE FAA PROVIDED RECORDING EQUIPMENT AND DETERMINE THAT (LC) OR (RC) IS NORMAL, OR LS IS OPERATED. W & Z ARE NORMAL WHEN TESTING RCVR RECORDING AND ARE OPERATED WHEN TESTING LOUDSPEAKER RECORDING AT THE POS.

313. FOR RADIO TRANSMIT LEVEL MEASUREMENT SUBSTITUTE THE TEST MEASURING SET FOR THE FAA PROVIDED RADIO TRANSMITTING EQUIPMENT. OPERATE PR RELAY DURING TESTING.

314. FOR ECHO RETURN LOSS MEASUREMENT ON THE (OR) AND (OT) AMPLIFIER SIDE OF THE (CB) BRIDGE, PLUG THE TEST MEASURING SET INTO THE (OT OUT) JACK AND PLUG THE OSCILLATOR INTO THE (OR IN) JACK.

315. FOR ECHO RETURN LOSS MEASUREMENT ON THE (LT) AND (LR) AMPLIFIER SIDE OF THE (CB) BRIDGE, PLUG THE TEST MEASURING SET INTO THE (LT OUT) JACK AND PLUG THE OSCILLATOR INTO THE (LR IN) JACK.

316. FOR SIDETONE LEVEL MEASUREMENT AT THE POSITION LOUDSPEAKER: PLUG THE OSCILLATOR OUTPUT INTO (A IN) JACK WITH FIRSTLY NO LINES CONNECTED TO THE POSITION AND SECONDLY WITH EACH TWO-WIRE LINE ASSOCIATED WITH THE POSITION CONNECTED INDIVIDUALLY TO THE POSITION AND DETERMINE THAT THE 1000 HZ SIGNAL IS NOT DISCERNIBLE AT THE LOUDSPEAKER OUTPUT. OPERATE LS RELAY DURING TESTING.

317. FOR OVERRIDE, EMERGENCY PAGING AND VOICE CALL-UP LINE RECEIVE LOSS PLUG OSCILLATOR INTO (OR IN) JACK. PLUG TEST MEASURING SET FIRSTLY INTO (LT OUT) JACK AND SECONDLY SUBSTITUTE THE TEST MEASURING SET FOR THE RECEIVER.

318. FOR OVERRIDE, EMERGENCY PAGING AND VOICE CALL-UP TRANSMIT LEVEL MEASUREMENT PLUG TEST MEASURING SET INTO THE (OT OUT) JACK. PLUG THE OSCILLATOR INTO THE (LR IN) JACK FIRSTLY AND THE (A IN) JACK SECONDLY.

319. FOR LOCAL OVERRIDE, OR EMERGENCY PAGING LINE LOSS BETWEEN TERMINATIONS PLUG OSCILLATOR INTO (OT IN) JACK AT ONE POSITION AND TEST MEASURING SET INTO (OR OUT) JACK AT ANOTHER POSITION. REVERSE OSCILLATOR AND TEST MEASURING SET AT TERMINATIONS IN ORDER THAT BOTH TRANSMISSION PATHS BETWEEN TERMINATIONS ARE CHECKED. DETERMINE THAT APPROPRIATE SELECTION AND LINE RELAY (IF ASSOCIATED WITH LINE) ARE OPERATED.

ISSUE 9BU

SWITCHING SYSTEM NO. 301A (2)

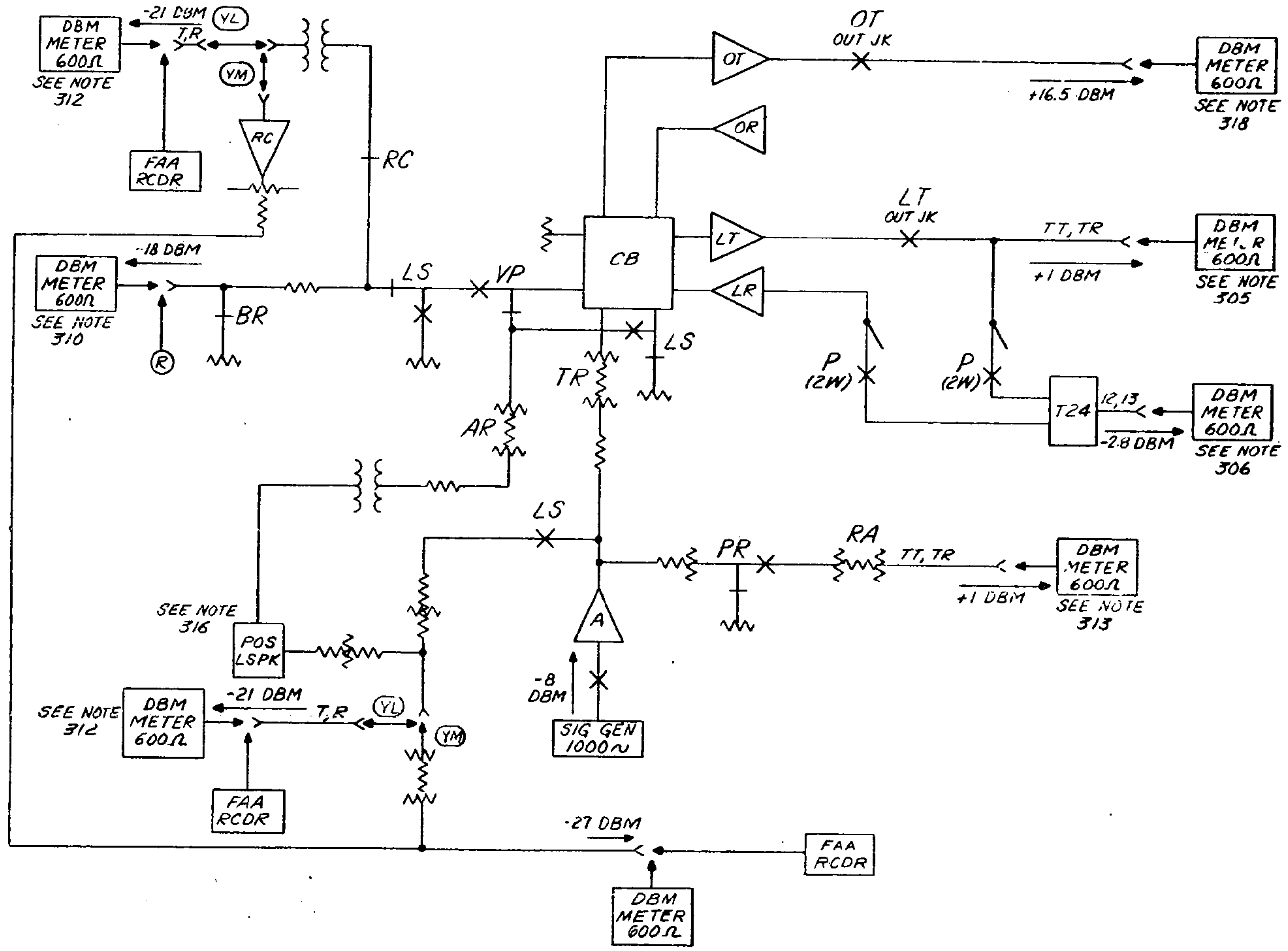
BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-D3B

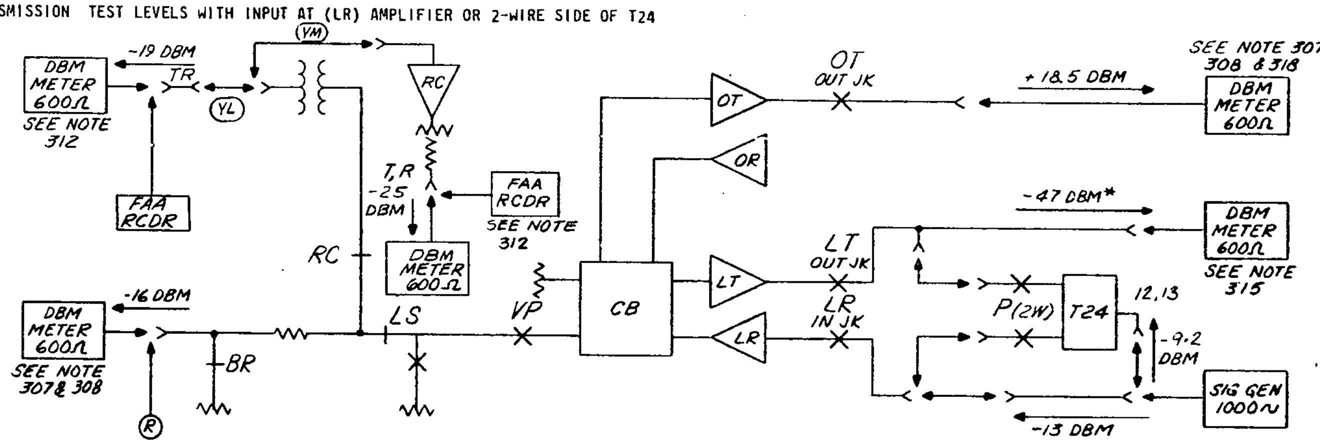
SD-69610-01-D3B

INFORMATION NOTES: (CONT)

320. TRANSMISSION TEST LEVELS WITH INPUT AT (A) AMPLIFIER, SEE NOTE 303



321. TRANSMISSION TEST LEVELS WITH INPUT AT (LR) AMPLIFIER OR 2-WIRE SIDE OF T24



* THE LOSS MAY BE GREATER THAN THE SPECIFIED LEVEL

ISSUE 5B

SWITCHING SYSTEM NO. 301A

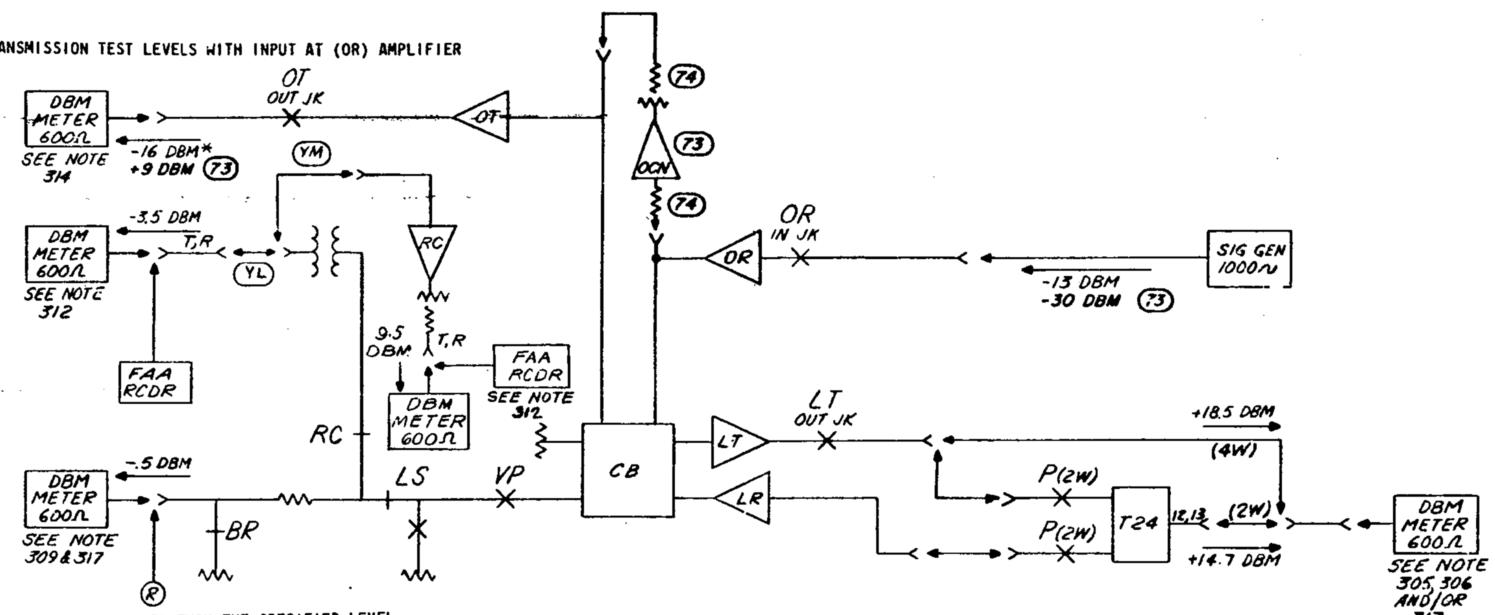
BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-D4

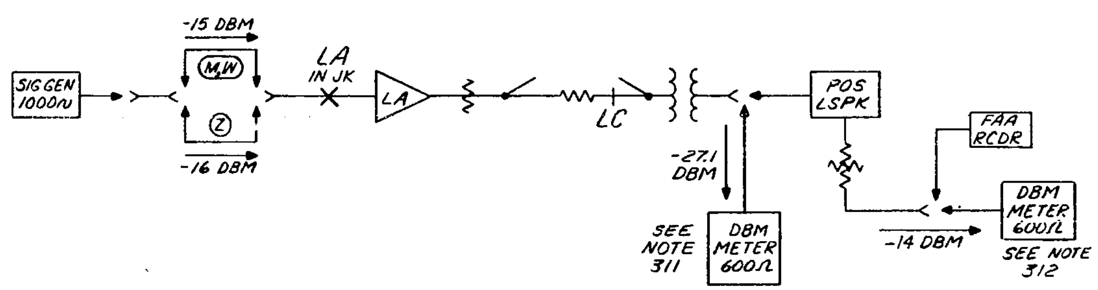
INFORMATION NOTES: (CONT)

322. TRANSMISSION TEST LEVELS WITH INPUT AT (OR) AMPLIFIER

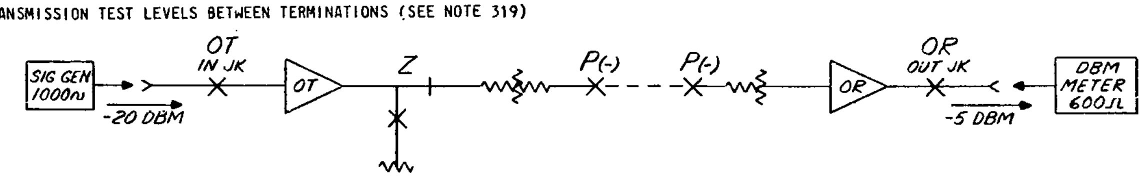


* THE LOSS MAY BE GREATER THAN THE SPECIFIED LEVEL

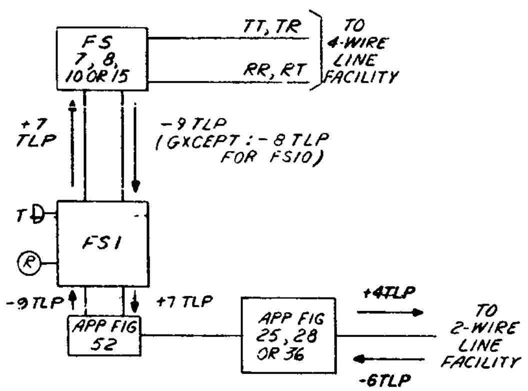
323. TRANSMISSION TEST LEVELS WITH INPUT AT (LA) AMPLIFIER



324. TRANSMISSION TEST LEVELS BETWEEN TERMINATIONS (SEE NOTE 319)



325. TRANSMISSION LEVEL POINT REFERENCE FOR 2-&4- WIRE LINES: (SEE NOTE 302)



INFORMATION NOTES: (CONT)

327. ADJUST THE (TB) AMPLIFIER IN FS1 OF SD-69566-01 FOR SPECIFIC APPLICATION TO THE 301A SWITCHING SYSTEM IN THE FOLLOWING MANNER (NOTE: (TB) AMPLIFIER IS NOT USED WITH J53048F):

1. INSERT A 0DBM SIGNAL FROM A 600-OHM IMPEDANCE SOURCE INTO (BUS IN) JACK IN FS1 OF SD-69566-01.
2. BLOCK OPERATED CONTACTS 1 AND 2 OF (AS1) RELAY OF THE ASSOCIATED LINE AND DISCONNECT THE LINE.
3. CONNECT A 600-OHM DETECTOR TO THE TA AND RA LEADS.
4. TIGHTEN SCREW (21-36), (10-24), AND LOOSEN SCREWS (0-13) AND (21-36) ON AMPLIFIER.
5. ADJUST (TB) POTENTIOMETER UNTIL THE DETECTOR READS -17 DBM, ZQ AND YY OPTIONS OR -18 DBM, ZP OPTION FOR FS10.
6. REMOVE OSCILLATOR FROM (BUS IN) JACK.
7. UNBLOCK CONTACTS 1 AND 2 OF (AS1) RELAY OR RECONNECT TA AND RA LEADS.

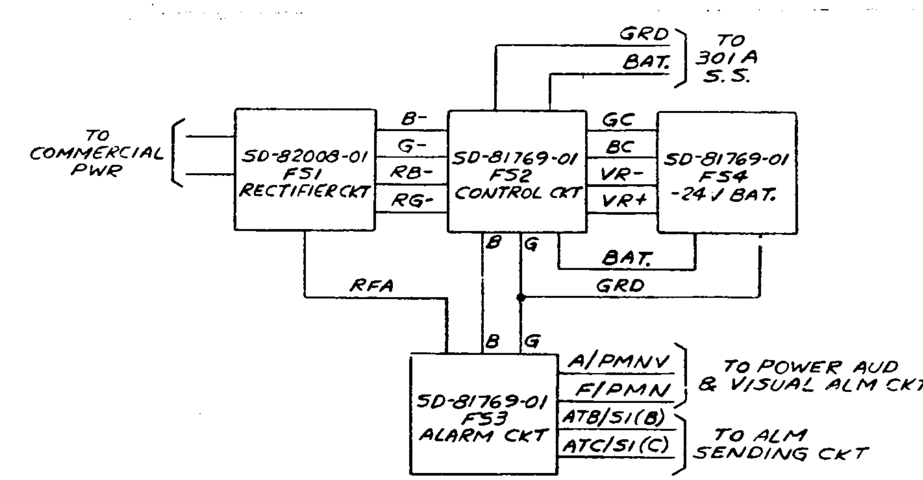
328. TRANSMISSION TEST LEVEL FOR MULTIPLE OVERRIDE LINE:

329. ADJUST TALKBACK ARRANGEMENT ASSOCIATED WITH THE 4-WIRE VOICE CALL-UP LINE TO PROVIDE AN ADDITIONAL 6DB OF LOSS. (EXAMPLE: PROVIDE 22DB LOSS FOR A 16DB LINE LOSS).

330. FOR THE 2 WIRE DIAL INTERCOM LINE CIRCUIT, THE T24 I-TYPE TERMINATING SET COMPROMISE NETWORK AND ALL NBOC SCREWS ARE CLOSED. THE IL PAD SHALL BE EQUIPPED WITH A 89AE RESISTOR. THE T24 TERMINATING SET SHALL BE EQUIPPED WITH 89A RESISTORS.

331. -24 VOLTS IN PLACE OF ±10 VOLTS MUST BE PROVIDED ON L- LEADS FROM INTERCOM LINE CIRCUIT.

332. THIS NOTE INDICATES A TYPICAL RECTIFIER FAILURE ALARM SYSTEM FOR THE 301A S.S.



DRAWING ISSUE 2D 3A

ISSUE 8B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-D5A

INFORMATION NOTES: (CONT)

326.

LIST 1 CURRENT DRAINS
FOR POWER PLANT FOR 301A SWITCHING SYSTEM (SD-69610-01)
AMPERE BUSY HOUR DRAIN PER 100 CALL SECONDS

APPARATUS FIGURE	ESTIMATED TRAFFIC FACTOR (SEE NOTE 2)	24V BAT. SIG (SEE NOTE 4)	24V BAT. TALK	QUANTITY (PER APP FIG. UNLESS OTHERWISE STATED)
1	36	.0085	.0099	
	20	.0119		
3	36	.0024		PER TRACON ROOM POS
		.0037		PER TOWER CAB POS
9	2	.0012		
	0.75	.0048		PER COOR POS
16	5	.0010		
19	7	.0013		
		.0011		PER LP IN TRACON ROOM PER APP FIG.19
		.0013		PER LP IN TOWER CAB PER APP FIG.19
21	1	.0013		
		.0013		PER LP IN TOWER CAB PER APP FIG.21
22	1	.0013		
		.0011		PER LP IN TRACON ROOM PER APP FIG.22
23	36	.0010		
	27	.0012		PER POS (MAX. 21)
24	3	.0052		
25	3	.0031	.0031	
		.0011		PER LP IN TRACON ROOM PER APP FIG.25
		.0013		PER LP IN TOWER CAB PER APP FIG.25
28	6	.0071		
		.0011		PER LP IN TRACON ROOM PER APP FIG.25
		.0013		PER LP IN TOWER CAB PER APP FIG.25
29	SEE NOTE 3	.0059		
30	0.5	.0001		
31	1	.0021		
35	36		.0005	
36	3	.0037		
		.0011		PER LP IN TRACON ROOM PER APP FIG.36
		.0013		PER LP IN TOWER CAB PER APP FIG.36
37	36	.0007		
	33	.0009		PER LP PER APP FIG.37
38	36	.0011		
40	6	.0036		
41	1	.0010		
46	4	.0064		
47	0.5	.0013		
48	0.5	.0064		
50	36		.0026	
53	36		.0004	
61	2	.0013		(E) PER APP FIG.61
				(F) PER 6 PER FIG. 61
63	36		.0005	
64	36		.0004	XO OPTION
	4	.0013		
		.0011		PER LP IN TRACON ROOM PER APP FIG.64
		.0013		PER LP IN TOWER CAB PER APP FIG.64
65	36		.0004	
68	1		.0054	
73	36		.0005	
75	36		.0010	

INFORMATION NOTES: (CONT)

326. (CONT)

LIST 2 CURRENT DRAINS
AMPERE HOUR-PER BUSY HOUR
(SEE NOTE 1)

APPARATUS FIGURE	BATTERY SIG	BATTERY TALK	GROUND SIG	GROUND TALK	QUANTITY (PER APP FIG. UNLESS OTHERWISE STATED)
1	.4640	.2680	.3410	.2680	
3	.0650		.0140		PER ALL APP FIG.3 PER POS IN TRACON
	.0745		.0140		PER ALL APP FIG.3 PER POS IN TOWER CAB
7			.0214		PER ALL APP FIG.7 PER POS
9	.1075		.0830		PER ALL APP FIG.9 PER POS
	.0955		.0125		PER ALL APP FIG.9 PER COOR POS
16	.0190				
19	.0222		.0272		
	.0222				PER LP IN TRACON ROOM PER APP FIG.19
	.0250				PER LP IN TOWER CAB PER APP FIG. 19
21	.0250				PER LP IN TOWER CAB PER APP FIG. 21
			.0208		
22			.0208		
	.0222				PER LP IN TRACON ROOM PER APP FIG.22
23	.0194		.0194		
	.0228				PER POS PER APP FIG.23
24	.1880		.0883		
			.0788		PER APP FIG.40, PER APP FIG.24
25	.0830	.0610	.0493	.0610	
	.0222				PER LP IN TRACON ROOM PER APP FIG.25
	.0250				PER LP IN TOWER CAB PER APP FIG.25
			.0191		PER BUZZER PER APP FIG.25
27			.0293		PER ALL APP FIG.27 PER POS
28	.0140		.0808		
	.0222				PER LP IN TRACON ROOM PER APP FIG.28
	.0250				PER LP IN TOWER CAB PER APP FIG.28
			.0191		PER BUZZER PER APP FIG.28
29	.1162		.1162		
30	.0191				
31	.0415				
	.0529		.0277		(G) PER APP FIG.31
	.0250				(H) PER APP FIG.31
32			.0750		
33			.0415		
35		.0145		.0145	
36	.0222				PER LP IN TRACON ROOM PER APP FIG.36
	.0250				PER LP IN TOWER CAB PER APP FIG.36
			.0191		PER BUZZER PER APP FIG.36
37	.0190		.0008		
	.0225				PER LP PER APP FIG.37
38	.0308		.5850		
39			.0333		
40	.0975				
41	.0724				
46	.1275				
47	.0255		.2050		
48	.1275		.0190		
49			.0170		
50		.0707		.0707	
53		.0038		.0038	
60			.0533		
61	.0266				(E) PER APP FIG.61
			.0266		
63		.0145		.0145	
64	.0266	.0038		.0038	
	.0222				PER LP IN TRACON ROOM PER APP FIG.64
	.0250				PER LP IN TOWER CAB PER APP FIG.64
65		.0038		.0038	
68	.1075				
69			.0208		
73		.0145		.0145	
75	.0145			.0145	

NOTES: (LIST 1)

1. LIST 1 CURRENT DRAINS ARE COMPUTED ON THE BASIS OF AMPERE HOURS PER 100 CALL SECONDS (CCS). THESE VALUES ARE MULTIPLIED BY A TRAFFIC FACTOR TO OBTAIN THE TRUE CURRENT DRAIN. FOR EXAMPLE; A CIRCUIT BUSY 50% OF THE TIME CORRESPONDS TO 1800 SECONDS OF TRAFFIC PER HOUR; THEREFORE, THE TRAFFIC FACTOR IS 18. IF A CIRCUIT OPERATES CONTINUOUSLY THE FACTOR IS 36.
2. THE TRAFFIC FACTORS SHOWN ARE ESTIMATES ONLY (EXCEPT WHERE 36 IS SHOWN) AND SHOULD BE REVISED FOR SPECIFIC INSTALLATION OPERATIONS.
3. THIS TRAFFIC FACTOR SHALL BE DETERMINED LOCALLY.
4. CURRENT DRAINS FOR LAMPS ARE SHOWN AT MAXIMUM AVERAGE DRAIN.

NOTES: (LIST 2)

1. LIST 2 CURRENT DRAINS ARE COMPUTED ON THE BASIS OF PEAK CURRENT FOR SHORT HOLDING TIME CIRCUITS AND AVERAGE CURRENT FOR LONG HOLDING TIME CIRCUITS.
   A TRAFFIC MULTIPLIER FACTOR OF $\frac{2000}{3600}$ OR 55.5% IS USED FOR DETERMINING INTERMITTENT CURRENT DRAINS AND A FACTOR OF $\frac{2700}{3600}$ OR 75% IS USED FOR A CONTINUOUSLY OPERATING CIRCUIT.
2. CONTINUOUS BATTERY IS ASSUMED FOR AMPLIFIER OPERATION.
3. CURRENT DRAINS FOR LAMPS AND REGULATOR CIRCUIT ARE BASED ON MAXIMUM AVERAGE LAMP DRAIN.

DRAWING ISSUE 4A

ISSUE 8B

SD-69610-D5B

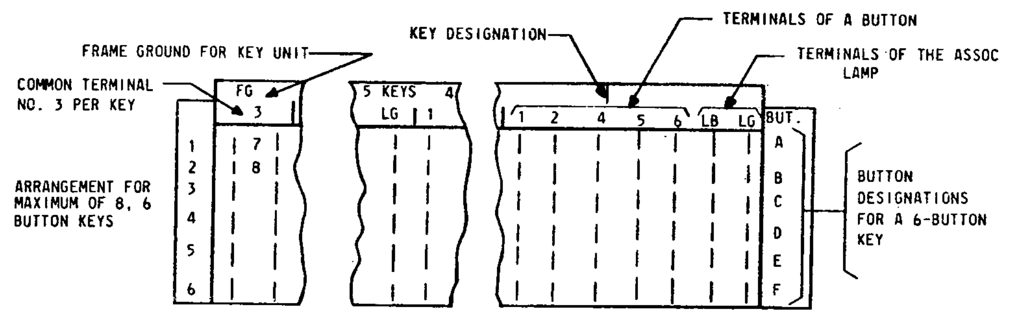
SWITCHING SYSTEM NO. 301A (2) SD-69610-D5B

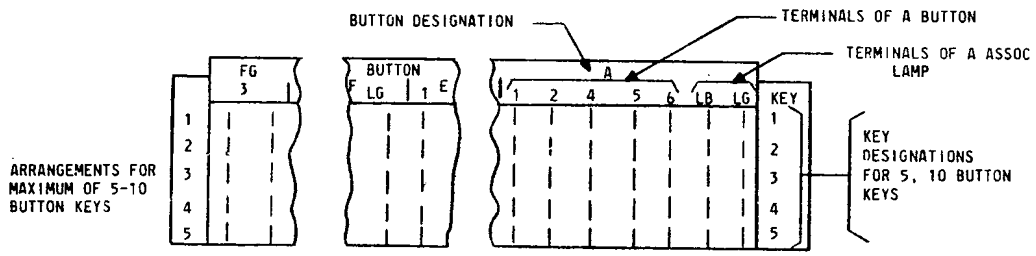
BELL TELEPHONE LABORATORIES INCORPORATED 6S

401. FOR CROSS-CONNECTIONS USE 24 BU TYPE WIRE.

402. ALL QUICK-CONNECT TERMINALS ARE ARRANGED FOR ONLY ONE WIRE WHEN A CROSS-CONNECTION INCLUDES MORE THAN TWO TERMINALS, THE WIRE SHOULD NOT BE CUT AT THE IMMEDIATE TERMINALS.

403. CONNECTION OF CONSOLE BUTTONS AND LAMPS TO ASSOCIATED LINE PICK-UP RELAY CIRCUITS THE CONNECTING BLOCK FOR THE TERMINATION OF THE CONSOLE BUTTONS AND LAMPS MAY BE ARRANGED EITHER OF TWO WAYS.





TERMINATIONS FOR CONTROL, PICK-UP & LOUDSPEAKER CUT-OFF RELAYS, LAMP BATTERY & GROUND, ECT. LEADS APPEAR ON CONNECTING BLOCKS IMMEDIATELY BELOW THOSE ASSOCIATED WITH THE CONSOLE.

(P REL-KEY) BLOCK: TERMINATES THE WINDINGS OF THE PICK-UP & CUT-OFF RELAYS.

(LP BAT) BLOCK: TERMINATES THE LAMP BATTERY SUPPLY LEADS.

(CONT) BLOCK: TERMINATES COMMON CONTROL LEADS.

(LP REG) BLOCK: TERMINATES GROUND LEADS FOR LAMP BRIGHTNESS CONTROL.

(LC1-12) BLOCK. TERMINATES TRANSFER CONTACT 1 OR 12 FOR EACH LOUDSPEAKER CUT-OFF (LC-) RELAY.

(LC3-10) BLOCK: TERMINATES BREAK CONTACT 3 OR 10 FOR EACH LOUDSPEAKER CUT-OFF (LC-) RELAY.

IN THESE CONNECTING BLOCKS SOME VERTICAL ROWS OF TERMINALS HAVE BEEN DESIGNATED 070, 071, 080, 081, 09-16, 220, 221, ---250, 251 AND 26. NUMBERS 07 THROUGH 26 REPRESENT MOUNTING PLATE POSITIONS ON THE ONE POSITION FRAME. SIMILARLY, NUMBERS 07 THROUGH 11 AND 19 THROUGH 23 REPRESENT MOUNTING PLATE POSITIONS ON THE TWO POSITION FRAME.

MOUNTING PLATE POSITIONS 07 & 08 MAY BE EQUIPPED WITH LOUDSPEAKER CUT-OFF RELAY UNITS SINCE THESE UNITS MAY BE WIRED FOR MAXIMUM 10 CIRCUITS EACH. TWO VERTICAL ROWS (0 & 1) OF TERMINALS ARE REQUIRED PER PLATE POSITION. THIS APPLIES TO ONE POSITION FRAME ONLY. LOUDSPEAKER CUT-OFF RELAY UNITS ARE MOUNTED MISCELLANEOUSLY FOR TWO POSITION FRAME.

MOUNTING PLATE POSITIONS 09 THROUGH 16 ON ONE POSITION FRAME AND 07 THROUGH 19 AND 19 THROUGH 23 ON TWO POSITION FRAME ARE UNIVERSALLY WIRED AND MAY BE EQUIPPED WITH WIRE LINE, VOICE LINE OR OVERRIDE RELAY UNITS. SINCE THESE UNITS MAY BE WIRED FOR MAXIMUM 6 CIRCUITS EACH, ONE VERTICAL ROW OF TERMINALS IS REQUIRED PER PLATE POSITION.

MOUNTING PLATE POSITIONS 22 THROUGH 25 ON ONE POSITION FRAME ONLY MAY BE EQUIPPED WITH MONITORING RELAY UNITS SINCE THESE UNITS MAY BE WIRED FOR MAXIMUM 8 CIRCUITS EACH, TWO VERTICAL ROWS (0 & 1) OF TERMINALS ARE REQUIRED PER PLATE POSITION.

VERTICAL ROWS DESIGNATED A, AK & 26 REPRESENT INDIVIDUAL RELAY CIRCUITS.

IN THE (CONT) CONNECTING BLOCK, EACH LEAD DESIGNATION IS PROVIDED WITH MULTI-TERMINAL TERMINATIONS. THIS ARRANGEMENT MINIMIZES THE NUMBER OF KEYS THAT MAY BE CROSS-CONNECTED TO A CONTROL LEAD.

403. (CONT'D)

DESCRIPTION		CONNECT TERM	CONNECT CONN BLOCK	CONNECT CAD	CONNECT FS	TO TERM DESIG	TO TERM NO.	TO CONN BLOCK	TO CAD	TO FS	REMARKS
BUTTON	HS-LS	5	BUTTON OR KEY	512 OR 513	3	GRD	AK3	P-REL KEY	506 OR 525	3	
		6				HL-HS	A1				
	F-R	5			11	GRD	AK3			11	
		6				FR	AK2				
	H	4			4	H	AK1			4	STRAP TERM 4 TO TERM 5 ON CONN BLOCK
		5				-	-				
		6				SRLS	A0	P-REL KEY	506 OR 525		
	RAD	4				RLSA	•	CONT	508 OR 523		
		5				RLST	•				
		6				PR	A5	P-REL KEY	506 OR 525		
	RLS	4				RLSA	•	CONT	508 OR 523		
	BZC	1				RLS	•				
		2				MLT	•				
		4				BZC1	A2	P-REL KEY	506 OR 525		
		5				ML	•	CONT	508 OR 523		
		6				BZC	A3	P-REL KEY	506 OR 525		
	EPL	5				RLS	•	CONT	508 OR 523		
		6				PH	A4	P-REL KEY	506 OR 525		
	MON	5				MONW	AK4				
		6				MON	AK5				
	AL, CO STA, SS VL OR OV	4				RLSA	•	CONT	508 OR 523		FOR (VL) & (OV) BUTTONS ONLY WHEN CONNECTING RELAY CKT IS ARRANGED FOR ELECTRICALLY LOCKING OPERATION.
		5				RLST	•				
		6				P	NOTE 1	P-REL KEY	506 OR 525		
	VL	5				RLS	•	CONT	508 OR 523		WHEN CONNECTING RELAY CIRCUIT IS ARRANGED FOR ELECTRICALLY NON-LOCKING OPERATION. (USE A COMMON LEAD ON OV4 TO CONN TO AKO)
		6				P	NOTE 1	P-REL KEY	506 OR 525		
	OV	4				SRLSW	AKO				
		5				RLS	•	CONT	508 OR 523		
		6				P	NOTE 1	P-REL KEY	506 OR 525		
	CLD	1				RLS	•	CONT	508 OR 523		PROVIDE PER ZE OPTION WHERE POSITION FRAME IS NOT ARRANGED FOR MONITORING.
		2				MLT	•				
		4				LCA	NOTE 2	LC 1/12	510 OR 521		
		5				ML	NOTE 3	CONT	508 OR 523		
		6				LC	NOTE 4	P-REL KEY	506 OR 525		
LAMP	HS-LS	LB			5	HL-HS	A3	LP-BAT	507 OR 524	5	
		LG				LPG	•	LP-REG	509		
	OVN	LB				OV	A5	LP-BAT	507 OR 524		(OVN) LAMP SHOULD BE ASSOCIATED WITH THE F-R BUTTON.
		LG				LPG	•	LP-REG	509		
	H	LB				HL	AKO	LP-BAT	507 OR 524		
		LG				LPG	•	LP-REG	509		
	RAD	LB				R	A1	LP-BAT	507 OR 524		
		LG				LPG	•	LP-REG	509		
	PL	LB				PL	A0	LP-BAT	507 OR 524		(PL) LAMP SHOULD BE ASSOCIATED WITH THE (RLS) BUTTON.
		LG				LPG	•	LP-REG	509		
	BZC	LB				BZC	A4	LP-BAT	507 OR 524		
		LG				LPG	•	LP-REG	509		
	EPL	LB				H	A2	LP-BAT	507 OR 524		
		LG				LPG	•	LP-REG	509		
	MON	LB				MON	240	LP-BAT	507		
		LG				LPG	•	LP-REG	509		
	AL,CO,OV, IL OR STA	LB				LP	NOTE 1	LP-BAT	507 OR 524		
		LG				LPG	•	LP-REG	509		

ISSUE 6B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-69610-01-06

403. (CONT'D)

DESCRIPTION		CONNECT TERM	CONNECT CONN BLOCK	CONNECT CAD	CONNECT FS	TO TERM DESIG	TO TERM NO.	TO CONN BLOCK	TO CAD	TO FS	REMARKS
LAMP	SS OR VL	LB	BUTTON OR KEY	512 OR 513	5	LP	NOTE 1	LP-BAT	507 OR 524	5	PROVIDE PER ZB OPTION WHERE LOUDSPEAKER CUTOFF IS NOT REQUIRED
		LG				LPG	*	LP-REG	509		
		LB				LCT	NOTE 2	LC 3/10 OUT	511 OR 522		PROVIDE WHERE LOUDSPEAKER CUTOFF IS REQUIRED
		LCN	LC 3/10 IN	511 OR 522		LP	NOTE 1	LP-BAT	507 OR 524		
		LG	BUTTON OR KEY	512 OR 513		LPG	*	LP-REG	509		
	CLD	LB				LC	NOTE 4	LP-BAT	507 OR 524		
		LG				LPG	*	LP-REG	509		
KEY	ALL	3		514	4	RLS	*	CONT	508 OR 523	4	ONE COMMON TERM. 3 LEAD IS PROVIDED PER EACH KEY
BUTTON	OV	1		512 OR 513		WZ	*				PROVIDE WHERE MONITORING AT A COORDINATORS POSITION IS REQUIRED
		2				PMZ	2200-2511	P-REL KEY	506		

AN * IN THE TERMINAL NUMBER COLUMN INDICATES THAT MORE THAN ONE TERMINAL HAS BEEN ASSIGNED FOR THE ASSOCIATED LEAD FUNCTION. IN SOME CASES, MANY BUTTONS MAY BE CONNECTED TO SIMILIAR COMMON CONTROL LEADS. ALSO, FUNCTIONAL ASSIGNMENTS FOR BUTTONS MAY BE CHANGED AT ANY TIME AT THE DISCRETION OF THE FAA PERSONNEL. THEREFOR, TEL. CO. PERSONNEL SHOULD UTILIZE COMMON CONTROL TERMINALS SO AS TO MINIMIZE EFFORT WHEN MAKING CHANGES.

NOTE 1: 090-165 FOR ONE POSITION FRAME
070-115 OR 190-235 FOR TWO POSITION FRAME

NOTE 2: 0700-0813 FOR ONE POSITION FRAME
00-13 FOR TWO POSITION FRAME

NOTE 3: ML00-ML13 FOR ONE POSITION FRAME
ML00-ML15 FOR TWO POSITION FRAME

NOTE 4: 0700-0814 FOR ONE POSITION FRAME
00-14 FOR TWO POSITION FRAME

DRAWING ISSUE 2D

SD-69610-01-D7

6B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-D7

6S

DESCRIPTION		CONNECT UNIT	CONNECT TERM STRIP	CONNECT TERM NO.	CONNECT CAD	CONNECT FS	TO UNIT	TO TERM STRIP	TO TERM NO.	TO CAD	TO FS	LEAD DESIG	REMARKS	
CROSS CONNECTION FOR SELECTIVE SIGNALING LINES	ARRANGE FOR VOICE SIGNALING	J53048H	B	25	206	10	J53048H	B	54	206	10		1ST CKT ON SEL SIG LINE UNIT	CONNECT VOICE SIGNAL INPUT TO CODE RELAY
			A	53				A	54					CONNECT CODE RELAY TO ASSIGNED SEL SIG LINE CIRCUIT
			C	15		5		C	13		5			
				11			J53048E	A OR B	•	208		LH-		CONNECT TO LAMP SIGNAL SUPPLY FOR MAXIMUM 14 POSITION APPEARANCES
				17			J53048D	A	•	210		FL-		CONNECT TO INTERRUPTER SIGNAL SUPPLY FOR MAXIMUM 14 POSITION APPEARANCES
			A	11			J53048A	P REL LINE	L5	505		LPS-		CONNECT TO MAXIMUM 14 POSITIONS ASSIGNED TO LINE CIRCUIT APPEARANCES
			C	25			J53048H	C	23	206				CONNECT CODE RELAY FOR 2ND GROUP OF MAXIMUM 14 POSITION APPEARANCES
				21			J53048E	A OR B	•	208		LH-		CONNECT TO LAMP SIGNAL SUPPLY FOR 2ND GROUP OF MAXIMUM 14 POSITION APPEARANCES
				27			J53048D	A	•	210		FL-		CONNECT TO INTERRUPTER SIGNAL SUPPLY FOR 2ND GROUP OF MAXIMUM 14 POSITION APPEARANCES
			A	21			J53048A	P REL LINE	L5	505		LPS-		CONNECT TO 2ND GROUP OF MAXIMUM 14 POSITIONS ASSIGNED LINE CKT APPEARANCES
			B	54		10	J53048H	B	44	206	10			CONNECT 2ND CODE RELAY TO ASSIGNED SEL SIG LINE CIRCUIT FOR 3RD GROUP OF MAXIMUM 14 POSITION.
			A	54				A	44					
			C	35				C	33					
				31		5	J53048E	A OR B	•	208	5	LH-		REPEAT EXCEPT FOR 3RD GROUP OF 14 APPEARANCES.
				37			J53048D	A	•	210		FL-		
			A	31			J53048A	P REL LINE	L5	505		LPS-		
			B	35		10	J53048H	B	34	206	10		2ND CKT ON SEL SIG LINE UNIT	SAME AS INFORMATION AS 1ST CIRCUIT ON UNIT.
			A	43				A	34					
			C	16				C	14					
				12		5	J53048E	A OR B	•	208	5	LH-		
				18			J53048D	A	•	210		FL-		
			A	12			J53048A	P REL LINE	L5	505		LPS-		
			C	26			J53048H	C	24	206				
				22			J53048E	A OR B	•	208		LH-		
				28			J53048D	A	•	210		FL-		
			A	22			J53048A	P REL LINE	L5	505		LPS-		
			B	34		10	J53048H	B	24	206	10			
			A	34				A	24					
			C	36				C	34					
				32		5	J53048E	A OR B	•	208	5	LH-		
				38			J53048D	A	•	210		FL-		
			A	32			J53048A	P REL LINE	L5	505		LPS-		
	ARRANGE FOR INCOMING CODED GROUND SIGNALING	SS1 SELECTIVE SIGNALING LINE CIRCUIT			209	10	J53048H	B	54	206	10	C-	1ST CKT ON SEL SIG LINE UNIT — 1ST CODE	CONNECT EACH CODE LEAD (C-) TO AN INDIVIDUAL TERMINAL FOR CODE RELAY ASSIGNMENT WHERE A SINGLE CODE WILL SIGNAL MORE THAN 28 POSITIONS, THE (C-) LEAD MUST BE MULTIPLED TO A SECOND CODE RELAY.
									44				1ST CKT ON SEL SIG LINE UNIT — 2ND CODE	
									34				2ND CKT ON SEL SIG LINE UNIT — 1ST CODE	
									24				2ND CKT ON SEL SIG LINE UNIT — 2ND CODE	
							J53048G	A	51	209			DIAL CODE REL UNIT — ADDITIONAL CODES	
								B, C, & D	11, 21, 31, 41, & 51					
		J53048H	A	53	206		J53048H	A	54	206			1ST CKT ON SEL SIG LINE UNIT — 1ST CODE	CONNECT ALL CODE RELAYS TO THE ASSIGNED SELECTIVE SIGNALING LINE CIRCUIT.
				43					44				1ST CKT ON SEL SIG LINE UNIT — 2ND CODE	
				53 OR 43					34				2ND CKT ON SEL SIG LINE UNIT — 1ST CODE	
									24				2ND CKT ON SEL SIG LINE UNIT — 2ND CODE	
							J53048G	A	52	209		RS-2	DIAL CODE REL UNIT — ADDITIONAL CODES	
								B, C, & D	12, 22, 32, 42, & 52					
			C	11,21, OR 31		5	J53048E	A OR B	•	208	5	LH	1ST CKT ON SEL SIG LINE UNIT — 2ND CKT ON SEL SIG LINE UNIT	CONNECT TO ONE TERMINAL PER EACH 14 POSITION APPEARANCES PER SELECTIVE SIGNALING LINE CKT.
				12,22, OR 32										
				13,23 OR 33			J53048H	C	15, 25 35 OR 45	206			1ST CKT ON SEL SIG LINE UNIT	EACH SELECTIVE SIGNALING LINE CIRCUIT MAY HAVE A MAXIMUM OF 42 POSITION APPEARANCES THEREFORE EACH LINE CIRCUIT TERMINAL, MAXIMUM 3, MAY BE CONNECTED TO 14 OR LESS ASSIGNED CODE RELAYS WHOSE COMBINED POSITION APPEARANCES DOES NOT EXCEED 14.

DRAWING ISSUE 2D

SD-69610-01-D8

2

SWITCHING SYSTEM NO. 301A

SD-69610-01-D8

BELL TELEPHONE LABORATORIES INCORPORATED

404 (CONT'D)

DESCRIPTION		CONNECT UNIT	CONNECT TERM STRIP	CONNECT TERM NO.	CONNECT CAD	CONNECT FS	TO UNIT	TO TERM STRIP	TO TERM NO.	TO CAD	TO FS	LEAD DESIG	REMARKS	
CROSS CONNECTION FOR SELECTIVE SIGNALING LINES	ARRANGE FOR INCOMING CODED GROUND SIGNALING	J53048H	C	14, 24 OR 34	206	5	J53048H	C	16, 26, 36 OR 46	206	5		2ND CKT ON SEL SIG LINE CKT	EACH SELECTIVE SIGNALING LINE CIRCUIT MAY HAVE A MAXIMUM OF 42 POSITION APPEARANCES, THEREFORE EACH LINE CIRCUIT TERMINAL, MAXIMUM 3, MAY BE CONNECTED TO 14 OR LESS ASSIGNED CODE RELAYS WHOSE COMBINED POSITION APPEARANCES DOES NOT EXCEED 14.
				13, 23, 33, 14, 24, OR 34			J53048G	A	53 & 54	209		RS-	DIAL CODE REL UNIT	
								B, C & D	13, 23, 33, 43, 53, 14, 24, 34, 44 & 54			RS-		
				17, 27, 37 OR 47			J53048D	A	*	210		FL	1ST CKT ON SEL SIG LINE UNIT	EACH SELECTIVE SIGNALING LINE CIRCUIT MAY HAVE A MAXIMUM OF 42 POSITION APPEARANCES. EACH INTERRUPTER BATTERY SUPPLY LEAD (FL-) MAY FURNISH A VISUAL INDICATION FOR MAXIMUM 14 POSITION APPEARANCES THEREFORE CONNECT EACH (FL-) LEAD TO ONE OR MORE TERMINALS ASSOCIATED WITH ONE OR MORE CODE RELAYS SO AS NOT TO EXCEED COMBINED POSITION APPEARANCE OF 14 MAXIMUM.
				18, 28, 38, OR 48									2ND CKT ON SEL SIG LINE UNIT	
		J53048G	A	53 & 54	209								DIAL CODE REL UNIT	
			B, C & D	17, 18, 27, 28, 37, 38, 47, 48, 57 & 58										
		J53048H	A	11, 21, 31 & 41	206		J53048A	P REL LINE	L5	505		LPS-	1ST CKT ON SEL SIG LINE UNIT	EACH SELECTIVE SIGNALING LINE CIRCUIT MAY HAVE A MAXIMUM OF 42 POSITION APPEARANCES EACH (LPS-) LEAD MAY BE CONNECTED TO MAXIMUM 14 POSITIONS. CONNECT (LPS-) LEAD FROM CODE RELAY TERMINALS TO ONE OR MORE POSITION AS REQ'D.
				12, 22, 32 & 42									2ND CKT ON SEL SIG LINE UNIT	
		J53048G	B, C & D	15, 16, 25, 26, 35, 36, 45, 46, 55 & 56	209								DIAL CODE REL UNIT	
	ARRANGE FOR 20-Hz INCOMING RINGING	J53048S	A	11,21 OR 31,41	218	5	J53048E	A OR B		208	5	L1-1 H	1ST CKT ON SEL SIG LINE UNIT	CONNECT TO ONE TERMINAL PER EACH 14 POSITION APPEARANCES PER SELECTIVE SIGNALING LINE CKT.
				12,22 OR 51									2ND CKT ON SEL SIG LINE UNIT	
				12,22 51			J53048A	P REL LINE	L5	505		LPS-	1ST CKT ON SEL SIG LINE UNIT	EACH SELECTIVE SIGNALING LINE CIRCUIT MAY HAVE A MAXIMUM OF 42 POSITION APPEARANCES EACH (LPS-) LEAD MAY BE CONNECTED TO MAXIMUM OF 14 POSITIONS. CONNECT (LPS-) LEAD FROM CODE RELAY TERMINALS TO ONE OR MORE POSITIONS AS REQ'D.
				11,21, 31,41									2ND CKT ON SEL SIG LINE UNIT	

WORKING LIMITS:

TA, TB, TC OR TD LEAD MAX RESISTANCE	50 OHMS
-24V (AK) AND "OR" LEAD MAX RESISTANCE (LOOP TO OC LAMP)	38 OHMS
L AND LG LEAD MAX RESISTANCE (LOOP TO A 51A LAMP)	30 OHMS
MAX CONDUCTOR LOOP RESISTANCE BETWEEN TERMINATIONS OF AUTOMATIC LINE AT:	
20V MIN DC SIG VOLTAGE	3700 OHMS
24V MIN DC SIG VOLTAGE	3860 OHMS
MIN CURRENT REQUIRED TO OPERATE (HCO) RELAY FROM CENTRAL OFFICE BATTERY AND GROUND (WORST CASE):	
(HCO) IN SERIES WITH TERMINALS 12 AND 13 OF (T24)	10MA
MAX CONDUCTOR LOOP RESISTANCE FOR (LSL) RELAY	950 OHMS

DRAWING ISSUE 20

ISSUE 8B

SD-69610-01-09

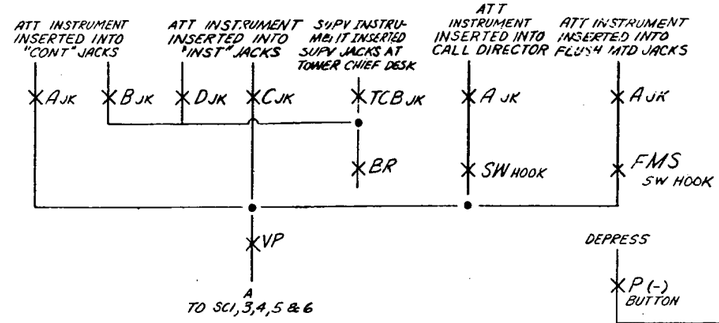
SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

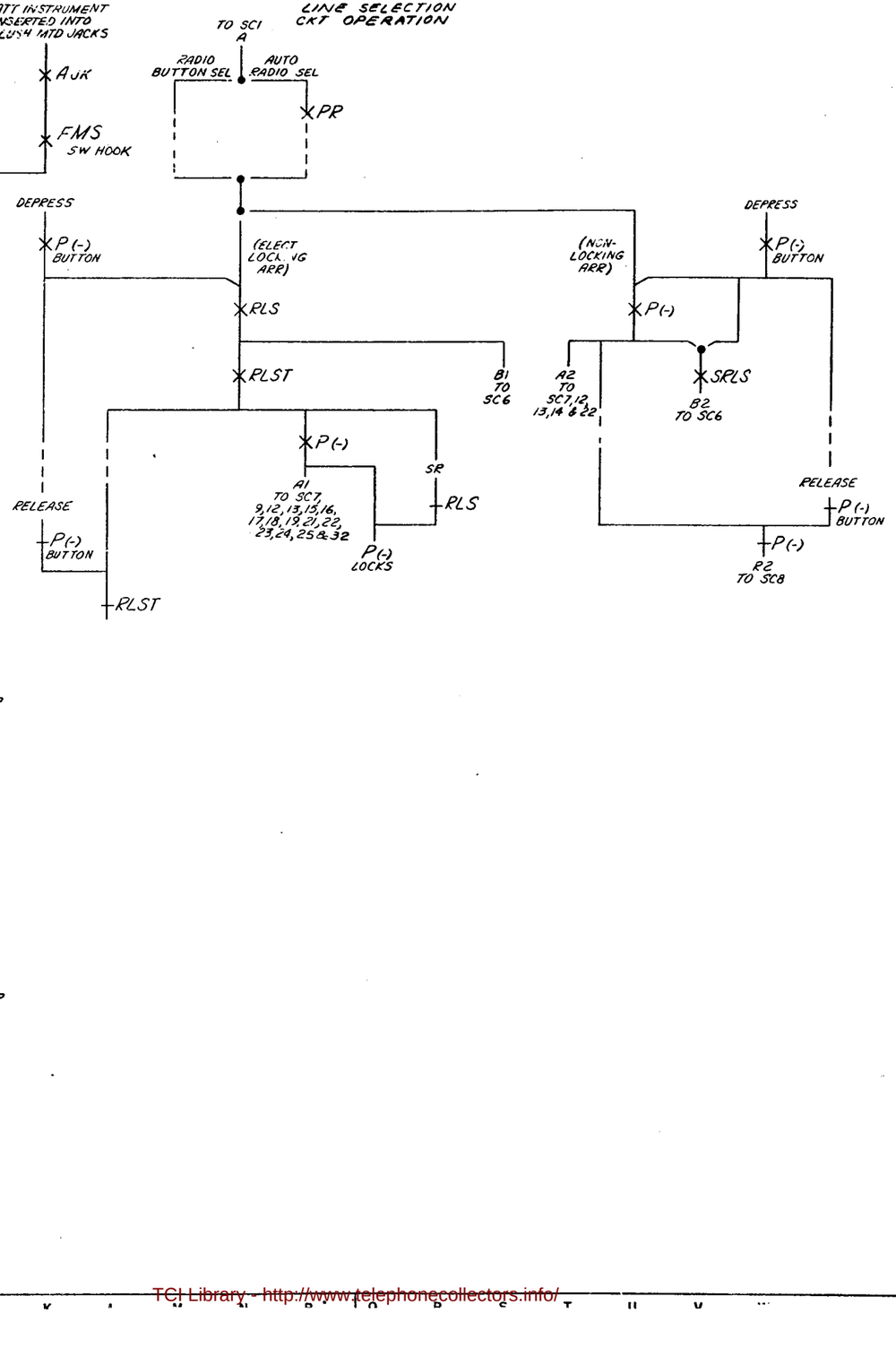
SHEET NO. 65

SD-69610-01-09

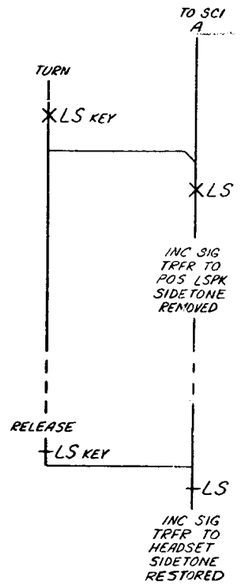
SC1
POSITION ACTIVATION



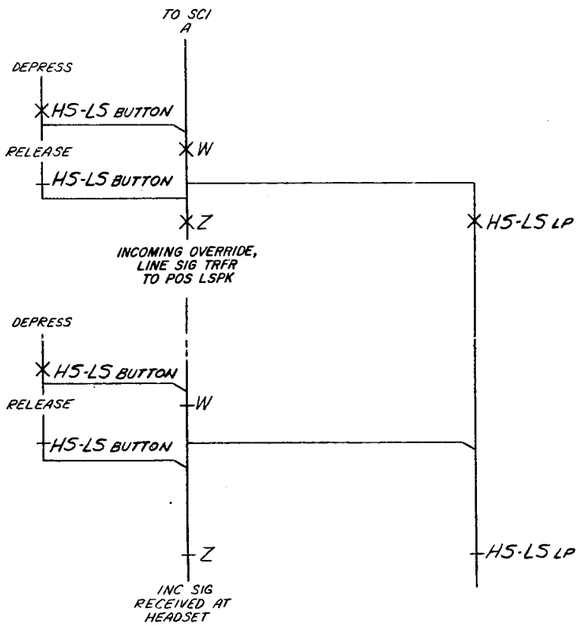
SC2
LINE SELECTION CKT OPERATION



SC3
HEADSET TO LSPK TRANSFER OPERATION



SC4
INCOMING OVERRIDE, LINE SIG TRFR TO POSITION LOUDSPEAKER



DRAWING ISSUE
2D
3A

ISSUE 88

SWITCHING SYSTEM NO. 301A

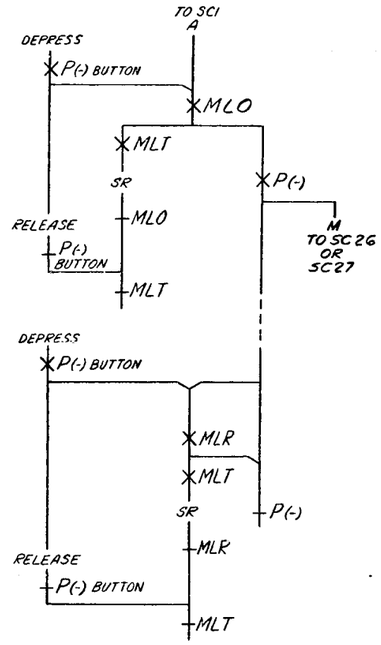
BELL TELEPHONE LABORATORIES INCORPORATED

6S

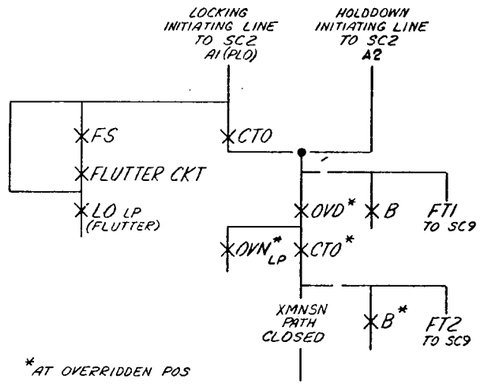
SD-69610-01-EI

SD-69610-01-EI

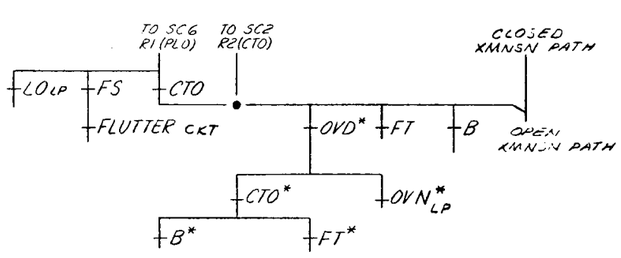
SC5
MAGNETIC LATCHING CIRCUIT OPERATION



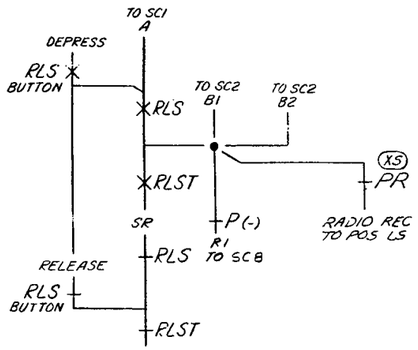
SC7
OVERRIDE LINE SELECTION OPERATION (LOCAL SIGNALING)



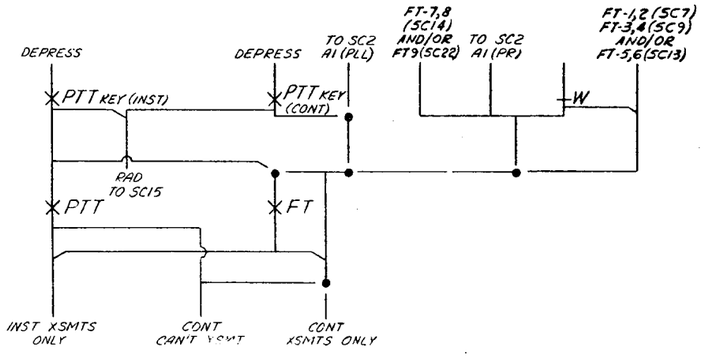
SC8
OVERRIDE LINE RELEASE (LOCAL SIGNALING)



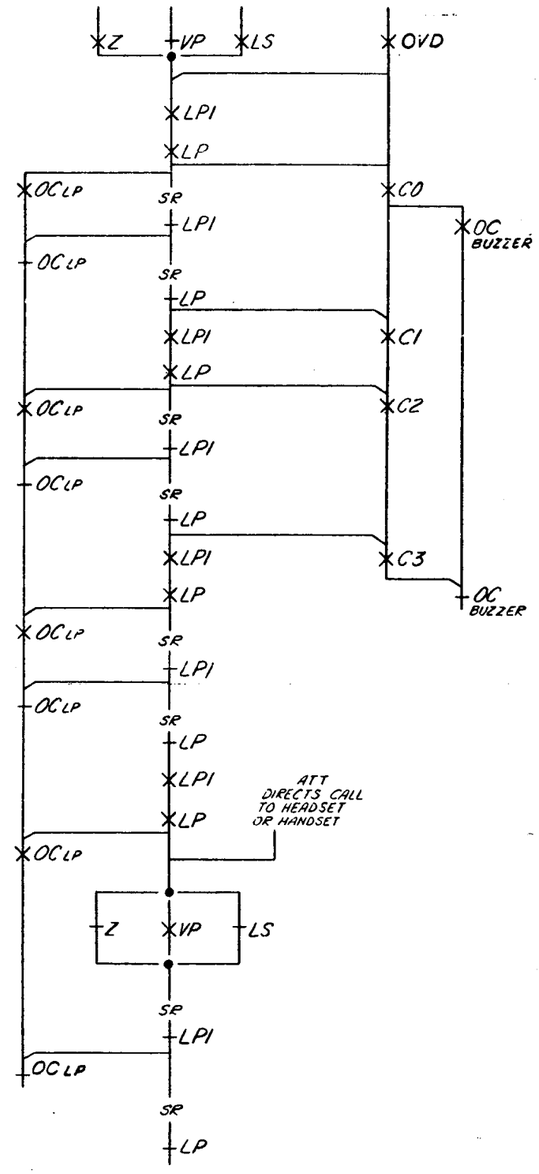
SC6
ELECT LOCKING LINE CIRCUIT RELEASE



SC9
POSITION TRANSMIT PATH CONTROL



SC10
AUXILIARY INCOMING OVERRIDE LINE INDICATIONS OPERATION



DRAWING ISSUE 20

ISSUE 8B

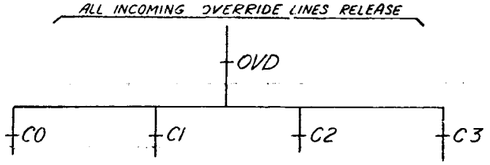
SD-69610-01-E2

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

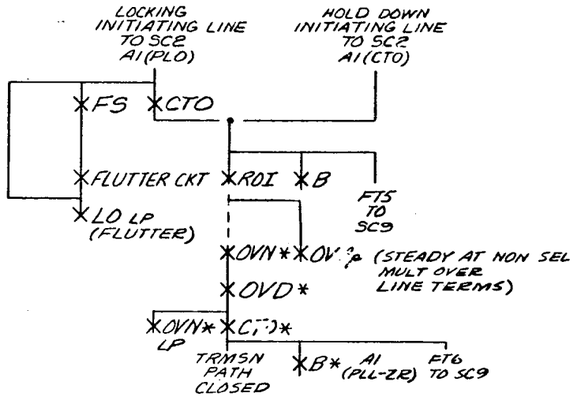
SC11

AUXILIARY INCOMING OVERRIDE LINE INDICATION CIRCUIT RELEASE



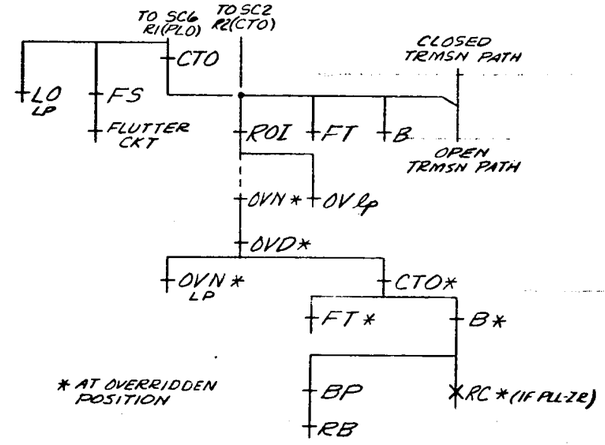
SC12

OVERRIDE LINE SELECTION OPERATION (REMOTE SIGNALING)



SC13

OVERRIDE LINE RELEASE

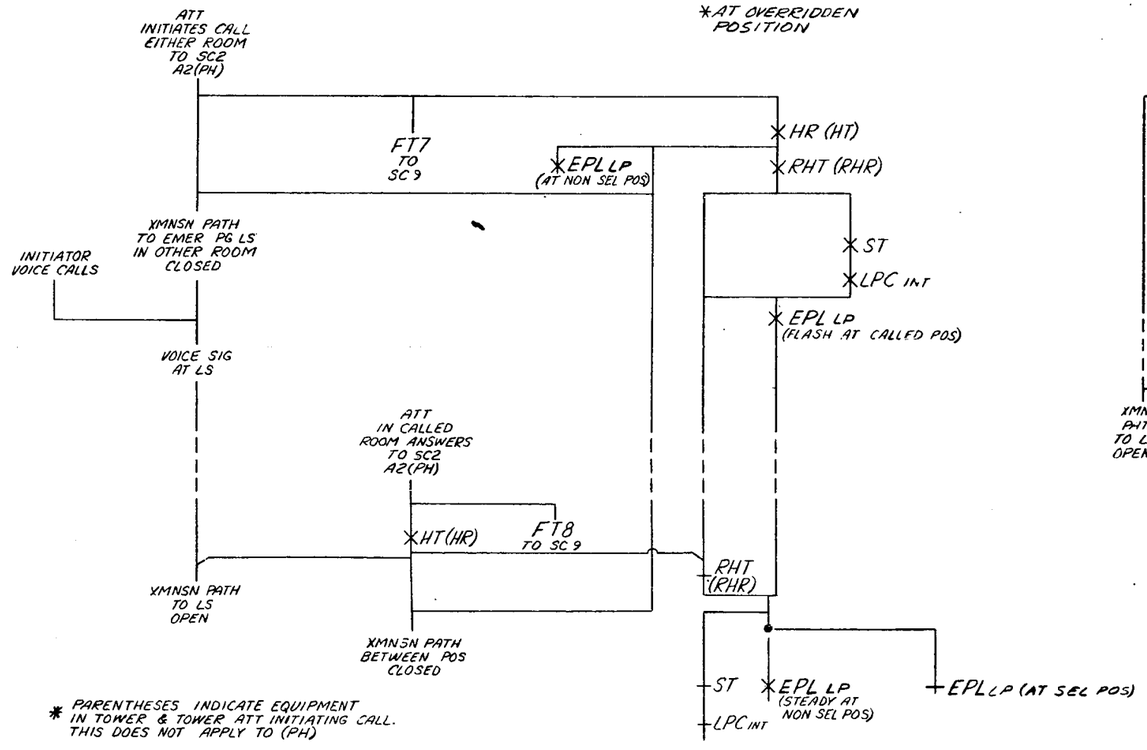


* AT OVERRIDDEN POSITION

SC14

EMERGENCY PAGING LINE SELECTION OPERATION *

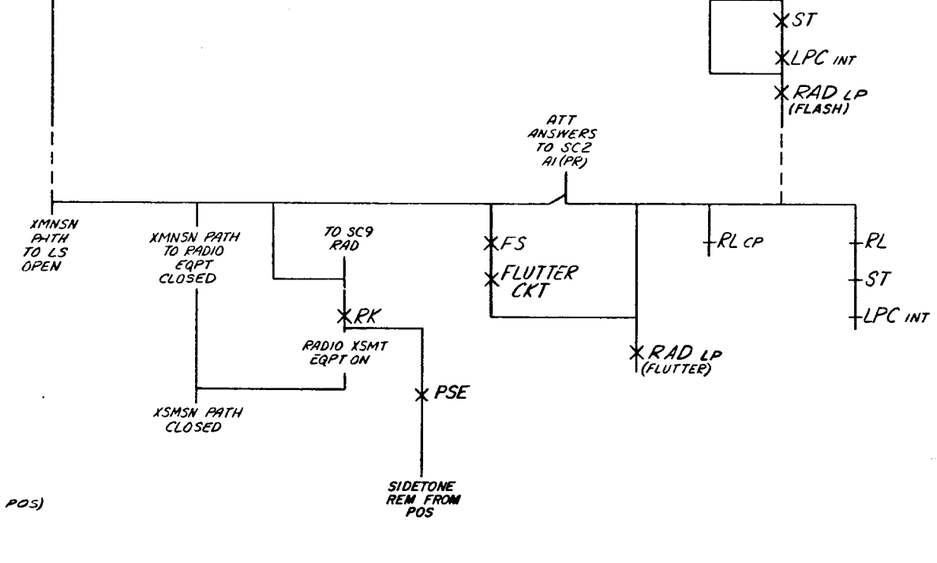
* AT OVERRIDDEN POSITION



* PARENTHESES INDICATE EQUIPMENT IN TOWER & TOWER ATT INITIATING CALL. THIS DOES NOT APPLY TO (PH)

SC15

RADIO LINE OPERATION



DRAWING ISSUE 20 JFM RBB WJJ 34

ISSUE 8B

SD-69610-01-E3

SWITCHING SYSTEM NO. 30A

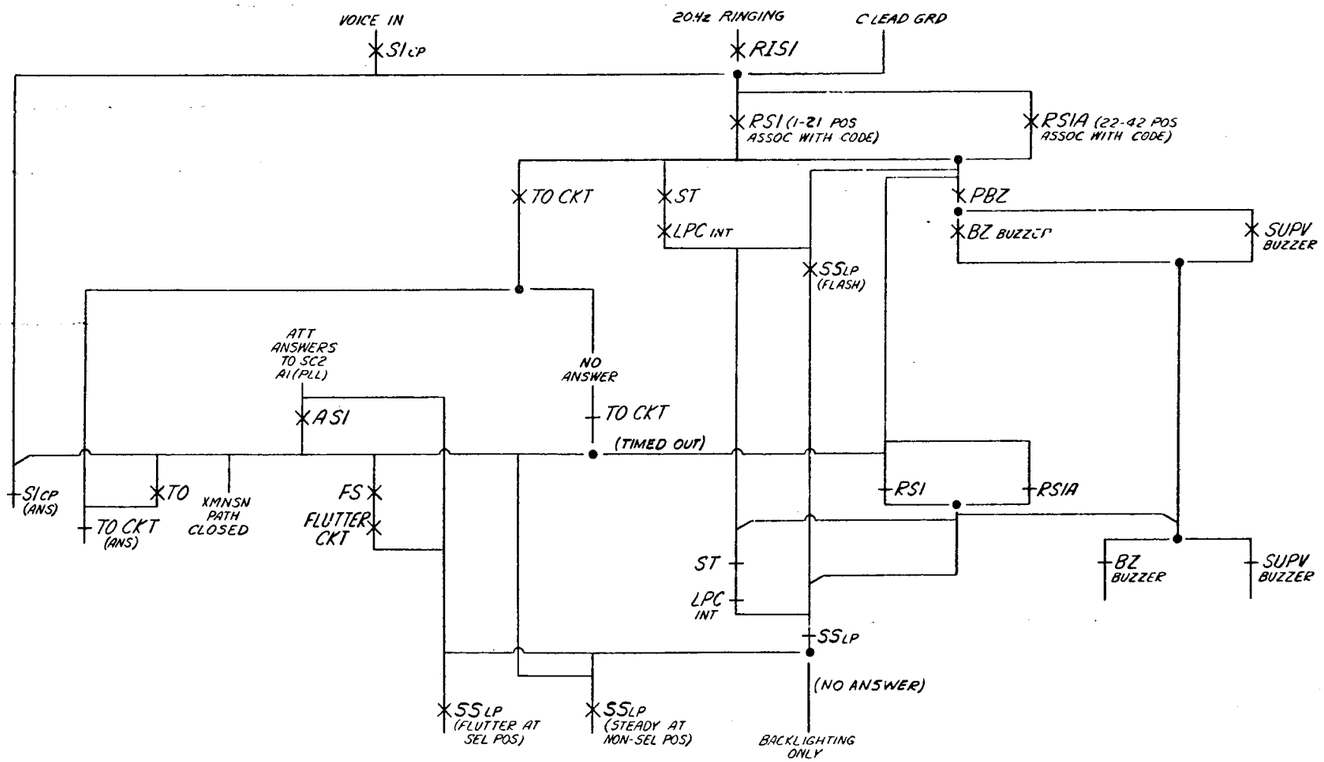
BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 6S

PRINTED IN U.S.A.

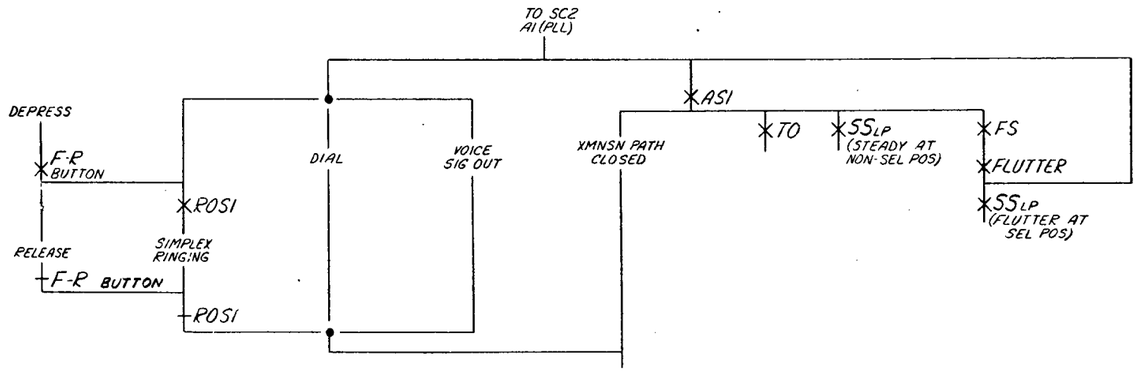
SC16

4 WIRE PRIVATE LINE RECEIVE OPERATION
(NOT APPLICABE WHEN USED AS PART OF C CKT)



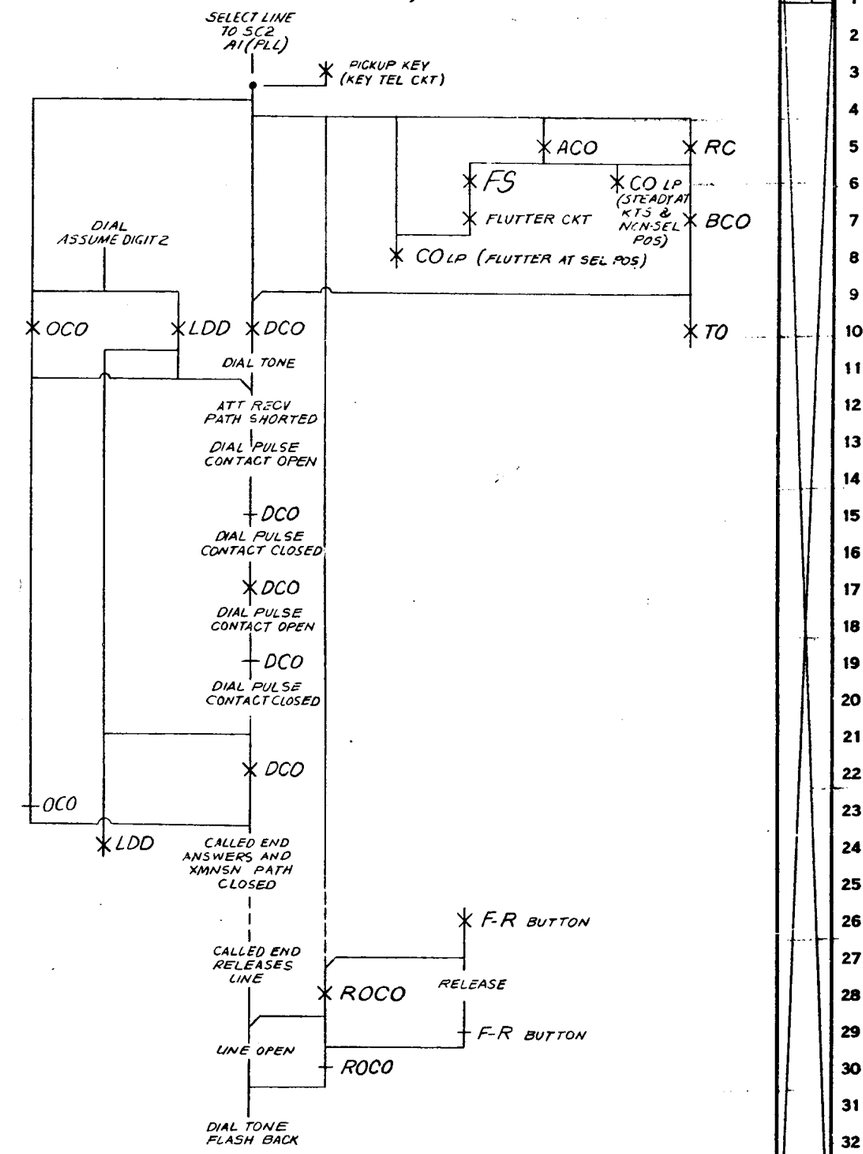
SC17

CALL INITIATION ON 4-WIRE PRIVATE LINE
(NOT APPLICABLE WHEN USED AS PART OF C CKT)



SC18

OUTGOING CALL ON CO OR PBX LINE
(WITH OPTION 1C)



DRAWING ISSUE
2D

ISSUE 8B

SWITCHING SYSTEM NO. 301A

SD-69610-01-E4

BELL TELEPHONE LABORATORIES INCORPORATED

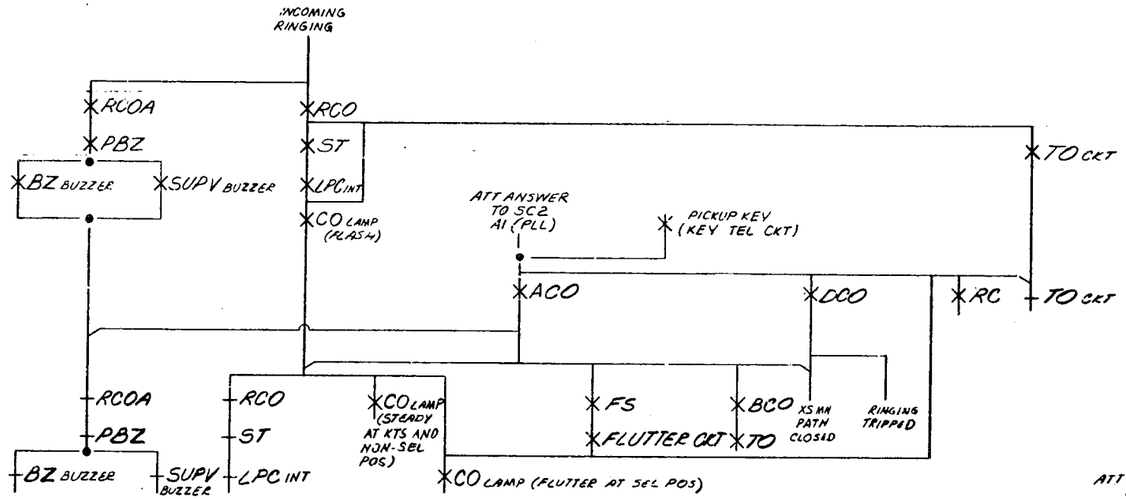
DWG SIZE 6S

PRINTED IN U.S.A.

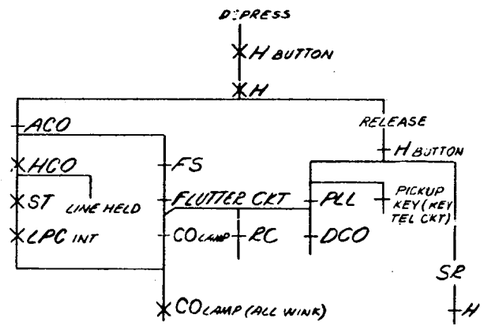
SD-69610-01-E4

6

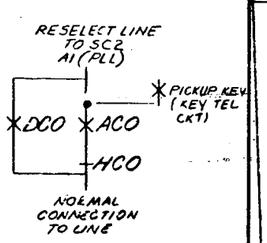
SC19
INCOMING CO OR PBX CALL (ANSWERED BEFORE TIME-OUT)



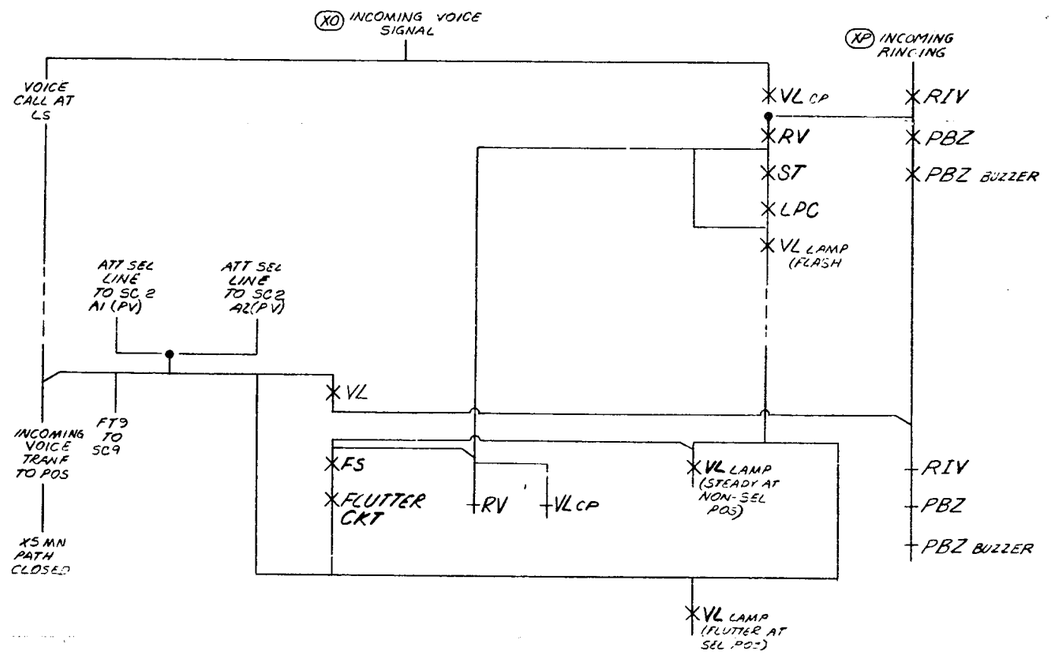
SC20
HOLD OPERATION FOR CO OR PBX LINE



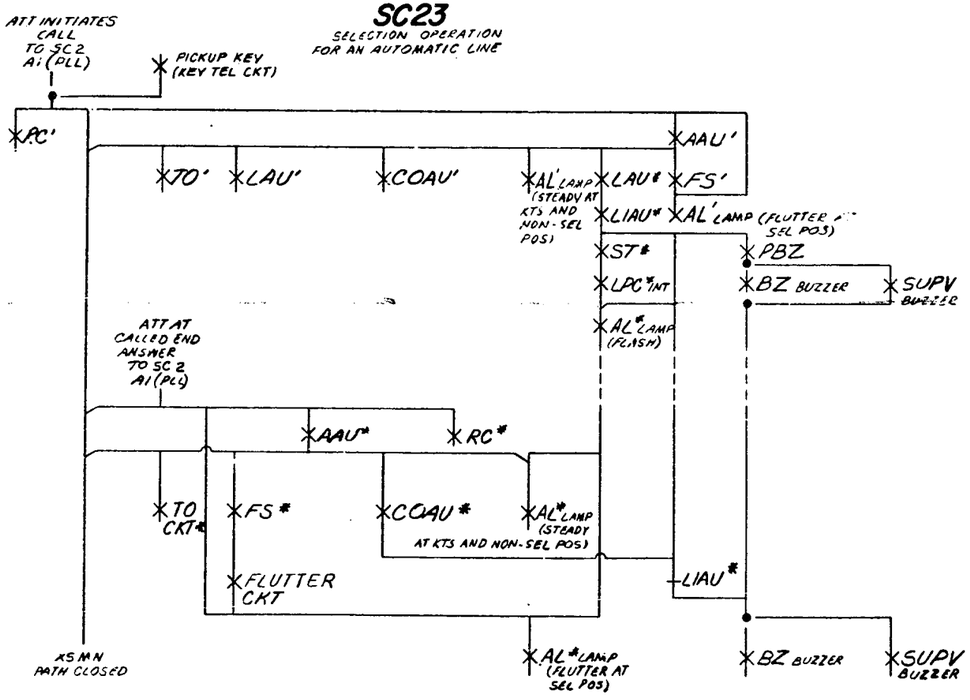
SC21
CO OR PBX LINE SEL FROM HOLD CONDITION



SC22
4-WIRE VOICE CALL-UP LINE OPERATION



SC23
SELECTION OPERATION FOR AN AUTOMATIC LINE



'INDICATES EQUIPMENT AT SELECTING LOCATION
*INDICATES EQUIPMENT AT CALLED LOCATION

DRAWING ISSUE
20 JFM KBB HJJ
3A

ISSUE 88

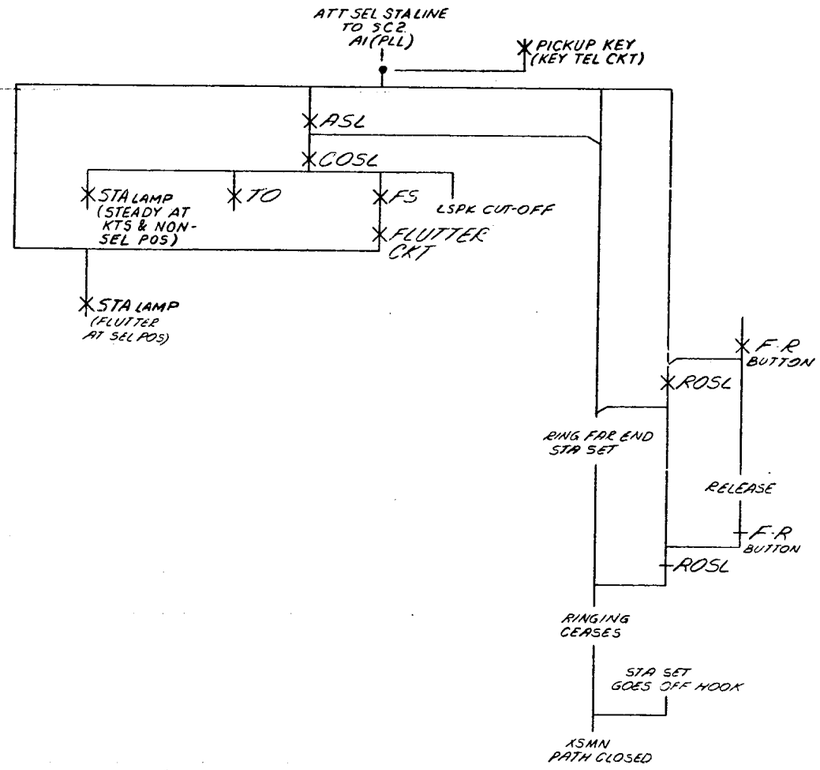
SD-69610-01-E5

SWITCHING SYSTEM NO. 301A

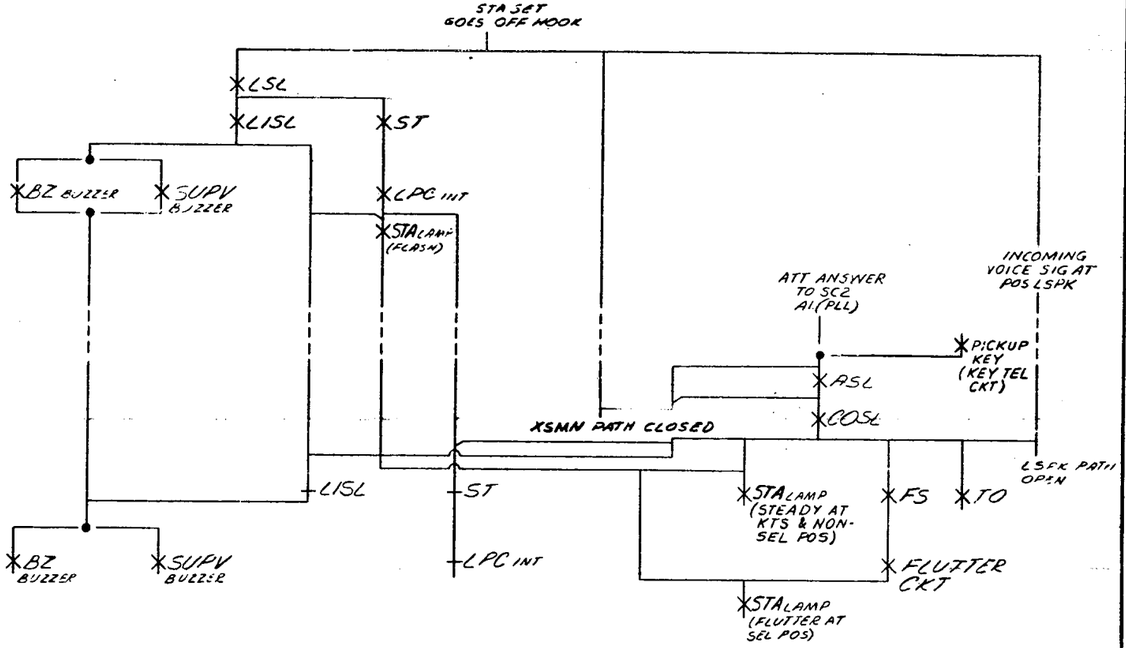
BELL TELEPHONE LABORATORIES INCORPORATED

6S

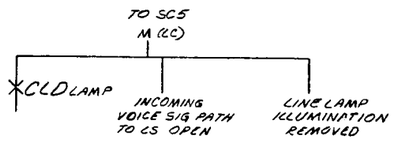
SC24
ATTENDANT INITIATES A CALL ON THE STATION LINE



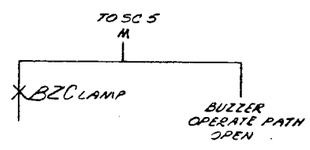
SC25
STATION SET INITIATES A CALL ON THE STA LINE



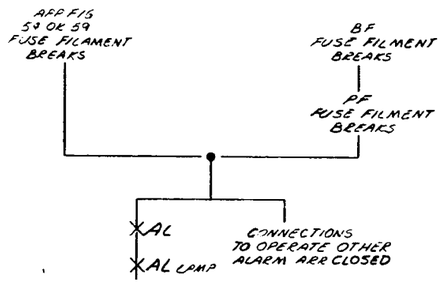
SC26
LINE CUTOFF OPERATION



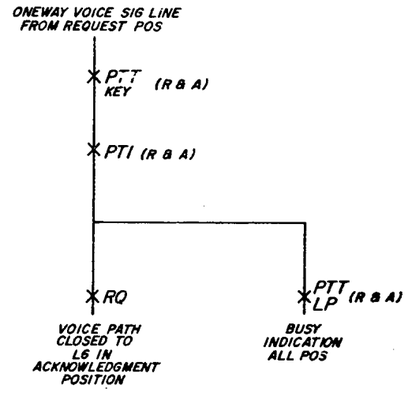
SC27
BUZZER CUTOFF OPERATION



SC28
ALARM CIRCUIT OPERATION



SC29
ATTENDANT INITIATES A CALL ON THE REQUEST AND ACKNOWLEDGMENT CIRCUIT (OPTION TD)



DRAWING ISSUE

2D	JFM RBB HJJ

ISSUE 6B

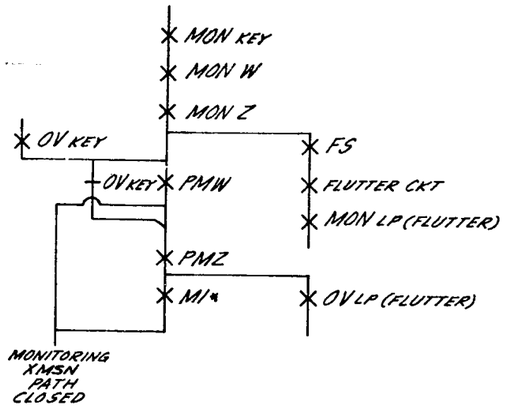
SWITCHING SYSTEM NO. 301A

SD-69610-01-E6

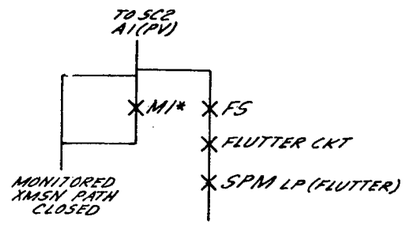
BELL TELEPHONE LABORATORIES

SD-69610-01-E6

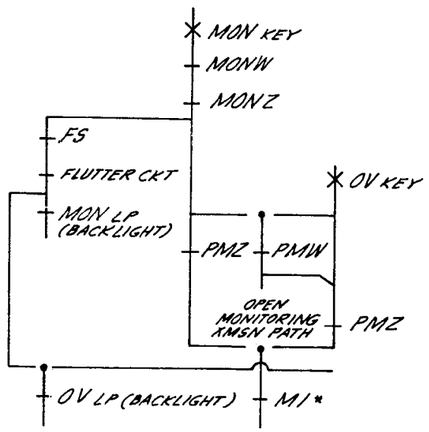
SC 30
COORDINATOR MONITORING LINE SECTION



SC 32
SINGLE POSITION MONITORING SELECTION



SC 31
COORDINATOR MONITORING FEATURE AND LINE RELEASE



* = AT MONITORED POS

ISSUE 8B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

65

SD-69610-01-E7

SD-69610-01-E7

CIRCUIT REQUIREMENTS

APPARATUS DESIG	APPARATUS CODE	APPARATUS OPT	APPARATUS FIG.	MECH REQT BSP FIG.	MECH REQT CONT PRES	MECH REQT ARM. TRVL.	CIRCUIT PREPARATION BLOCK OR INSULATE	TEST CLIP DATA CONN BAT.	TEST CLIP DATA CONN GRD	TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REQT TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	REMARKS
RELAYS																	
AAU	AJ43		36	249					U (AAU)	GRD	15	P	0		24.2	23	
ACO	AJ107		28	226					U (ACO)	GRD	15	P	0		13.4	12.7	
AKT	AJ42		14	66				1L(AKT)	2U(AKT)	M	11,15	P/S	0		29	27.5	
AL	AF126		29	288				L(AL)		BAT		P	0		41	39	
AS1	AJ43		19	249					U(AS1)	GRD	15	P	0		24.2	23	
ASL	1/2AK30		25	202					1U(ASL)	GRD	15		0		23.1	22	MOUNTED WITH L1SL
B	1/2AK22		2	216			11M (PR)		1L (B)	GRD			0		22.3	26	
B2	AJ43		11	249					U (B2)	GRD	15	P	0		24.2	23	
B3	AJ43		14	249					U (B3)	GRD	15	P	0		24.2	23	
BCO	AG29		28	408B					U (BCO)	GRD	15	P	0	FS	23.5	22	
BR	1/2AK30		1	202					1L (BR)	GRD			0		23.1	22	MOUNTED WITH RLST
BL	AJ41		37	40					U (BL)	GRD		P	0		5.8	5.6	
BP	AJ43		11	249					U(BP)	GRD		P	0		24.2	23	
BZC	1/2AM1		41	216			8B(ML0)	2U(BZC)	1U(BZC)	B/G	7,8,10						OTHER 1/2 OF AM1 RELAY
							8B(ML0)	1U(BZC)	2U(BZC)	B/G	7,9,10						NOT USED
C1	1/2AK19		47	214			1M (C1)	2L (C1)	1L (C1)	B/G			0		43.1	41	MOUNTED WITH C2
C2	1/2AK19		47	214				2U (C2)		BAT			0		43.1	41	MOUNTED WITH C1
C3	1/2AK19		47	214			1M (C3)	2L (C3)	1L (C3)	B/G			0		43.1	41	MOUNTED WITH CO
CO	1/2AK19		47	214				2U (CO)		BAT			0		43.1	41	MOUNTED WITH C3
COAU	1/2AK30		36	202					1U (COAU)	GRD	15		0		23.1	22	MOUNTED WITH L1AU
COSL	AG29		25	408B					U (COSL)	GRD	15	P	0	39	23.5	22	
												P	H	39	5.9	3.7	
CTO	1/2AK22		33	216					1L (CTO)	GRD		P	R	39	1.9	2.2	
CTO	1/2AK22		33	216					1U (CTO)	GRD			0		27.3	26	MOUNTED WITH CTO (ODD)
													0		27.3	26	MOUNTED WITH CTO (EVEN)
DCO	AJ134		29	75					1U (DCO)	GRD	3	P/S	0		14.4	13.7	
DS1(EVEN)	1/2AK30		18	202					1L(DS1)	GRD			0		23.1	22	MOUNTED WITH DS1(ODD)
DS1(ODD)	1/2AK30		18	202					1U(DS1)	GRD			0		23.1	22	MOUNTED WITH DS1(EVEN)
FL	303E		23								2		0	FS	2		
													R	FS	1		
FS	AF60		24	12					U (FS)	GRD		P	0		6.5	6.2	
FT	295A		1								1		0		33		
H	1/2AK1		1	201			2M (H)		1L (H)	GRD			0	46	38.3	36.5	MOUNTED WITH SRLS
													H		5.2	4.9	
HCO	AJ100		28	46			8M (ACO)	U (HCO)	L (HCO)	GRD	5,15	P	0		10.5	10	
							8M (ACO)			GRD		P	H		5.6	5.3	
HR	AJ43		22	249					U (HR)	GRD	15	P	0		24.2	23	
HT	AJ43		21	249					U (HT)	GRD	15	P	0		24.2	23	

CIRCUIT REQUIREMENTS

APPARATUS DESIG	APPARATUS CODE	APPARATUS OPT	APPARATUS FIG.	MECH REQT BSP FIG.	MECH REQT CONT PRES	MECH REQT ARM. TRVL.	CIRCUIT PREPARATION BLOCK OR INSULATE	TEST CLIP DATA CONN BAT.	TEST CLIP DATA CONN GRD	TEST SET PREP	SEE TEST NOTE	DIRECT CURRENT FLOW REQT TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	REMARKS
RELAYS																	
L1AU	1/2AK30		36	202					1L (L1AU)	GRD	15		0		23.1	22	MOUNTED WITH COAU
LAU	UA48		36	205/205	SPL	SPL		3B (LAU)	3T (LAU)	B/G	4,5,15		0		3.6	3.4	
LC(EVEN)	1/2AM1		51	216			8B (ML0)	2U (LC)	1U (LC)	B/G	7,9,10,15						MOUNTED WITH LC (ODD)
							8B (ML0)	1U (LC)	2U (LC)	B/G	7,9,10,15						
LC(ODD)	1/2AM1		51	216			8B (ML0)	2U (LC)	1U (LC)	B/G	7,9,10,15						MOUNTED WITH LC (EVEN)
							8B (ML0)	1U (LC)	2U (LC)	B/G	7,9,10,15						
LDD	AG31	YA	1	48					1U(LDD)	GRD		P	0	90	37	35	
													H		4.9	4.6	
													R		3.2	3.6	
LP1	AG4		47	398			5(LP)		U(LP1)				0	FS	12.4	11.8	
													H	FS	1.7	1.6	
													R	FS	.9	1.2	
LP	AG4		47	398					U(LP)	GRD			0	FS	12.4	11.8	
													H	FS	1.7	1.6	
													R	FS	.9	1.2	
LRG	AJ46		37	266					U(LRG)	GRD	6		0		12.3	11.7	
L1SL	1/2AK30		25	202					1L (L1SL)	GRD	15		0		23.1	22	MOUNTED WITH ASL
LS	AJ43		1	249					U (LS)	GRD		P	0		24.2	23	
LSL	AJ40		25	52			9B(AS1)11B(AS1)	1L (LSL)	2U (LSL)	M	11,12,13,14		0		17.3	16.5	
							9B(AS1)11b(AS1)	1L (LSL)	2U (LSL)	M	11,15		R		.19	.2	
MI-0	1/2AK22		78	216					1L (MI-0)	GRD	15		0		27.3	26	MOUNTED WITH MI-1
MI-1	1/2AK22		78	216					1U (MI-1)	GRD	15		0		27.3	26	MOUNTED WITH MI-0
MLO	AG28		24	268B					U (MLO)	GRD		P	0	20	15.5	14.5	
												P	H	20	2.5	2.3	
MLR	1/2AK1		24	201					1L (MLR)	GRD		P	R	20	1.1	1.3	
													0	46	38.3	36.5	MOUNTED WITH MLT
													H		5.2	4.9	
MLT	1/2AK1		24	201					1U (MLT)	GRD			0		25.8	24.5	MOUNTED WITH MLR
MONW	1/2AK30		46	202			8B (MONW)	2U (MONW)	1U (MONW)	B/G		P	0		23.1	22	MOUNTED WITH MONZ
							9M (MONW)										
							9B (MONW)										
MONZ	1/2AK30		46	202			9B (MONW)	2L (MONZ)	1L (MONZ)	B/G	15		0		23.1	22	MOUNTED WITH MONW
							9M (MONW)										
OVD	1/2AK22		9	216					1L (OVD)	GRD	15		0		27.3	26	MOUNTED WITH OVD (ODD)
OVD	1/2AK22		9	216					1U (OVD)	GRD	15		0		27.3	26	MOUNTED WITH OVD (EVEN)
OVN	AJ7		8	1				L(OVN)	U(OVN)	B/G	15	P	0		1.7	1.6	
OCO	AG12		29	388					U (OCO)	GRD		P	0	FS	6.8	6.4	
												P	H	FS	.9	.8	
OL	AJ7		11	1				L OL)	U (OL)	B/G		P	0		1.7	1.6	
P8Z	AF51		41	3					U (P8Z)	GRD	15		0		20.5	19.5	
PH	AJ43		1	249					U (PH)	GRD	15	P	0		24.2	23	
PLL	AJ43		27	249			10B (PLL)		U (PLL)	GRD	15	P	0		24.2	23	
PLO	1/2AK22		7	216			3B (PLO)		1L (PLO)	GRD	15		0		27.3	26	MOUNTED WITH PLO (ODD)
PLO	1/2AK22		7	216			10B (PLO)		2L (PLO)	GRD	15		0		27.3	26	MOUNTED WITH PLO (EVEN)
PMW1	1/2AK30		48	202			8B (PMW1)	2U (PMW1)	1U (PMW1)	GRD			0		23.1	22	MOUNTED WITH PMZ1
							5B (PMW1)										
							5M (PMW1)										
							5B (PMZ1)										
							5M (PMZ1)										

NOTES:

1. PROCEDURE FOR TESTING DRY REED RELAYS (295A)

   PREPARATION: CONNECT THE TIP OF TEST T AND R JACK TO THE NO. 14 TERMINAL OF RELAY UNDER TEST.
   CONNECT THE TEST SET GROUND TO UNUSED TERMINALS 2,5,6,9,10, 13 TO TEST A PARTICULAR SET OF CONTACTS.
   CONNECT DIRECT BATTERY TO TERMINAL L2 OF TEST SET PLACE SWITCH 7 IN NEUTRAL POSITION.
   CONNECT SLEEVE OF TEST T AND R JACK TERMINAL TO 3,4,7,8,11,12 ASSOCIATED WITH CONTACT TO BE TESTED.

STEP	PROCEDURE	INDICATION	CHECK
A	OPERATE (1) KEY	LAMP LIGHTED	CLOSURE OF LOAD CONTACTS
B	OPERATE (1) KEY	LAMP EXTINGUISHED	OPEN OF LOAD CONTACTS

2. SEE BSPC40-263-501 FOR FL RELAY TESTING.
3. ARMATURE BACK TENSION MINIMUM 20 GRAMS READJUST, 15 GRAMS TEST.
4. ARM TRAVEL MAX 17.
5. OPEN TIP AND RINGS TOWARD DISTANT END.
6. SWITCH S1 IN ANY POS BUT THAT OF EXTREME CCW.

DRAWING ISSUE / JA

ISSUE 6B

SWITCHING SYSTEM NO. 301A

SD-69610-01-FI

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 6S

SD-69610-01-FI

CIRCUIT REQUIREMENTS

DESIG	CODE	OPT	FIG.	BSP FIG.	CONT PRES	ARM. TRVL	BLOCK OR INSULATE	CONN BAT.	CONN GRD	TEST SET PREP	SEE TEST NOTE	TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	REMARKS
RELAYS																	
PIL	AJ43	TC	1	249			1OB (PIL)		U (PIL)	GRD		P	0		24.2	23	
PMZ1	1/2AK30		48	202			5B (PMW1) 5M (PMW1)		1L (PMZ1)	GRD	15		0		23.1	22	MOUNTED WITH PMW1
PSE	1/2AK30	YY	1	202					1U(PSE)	GRD		P	0		23.1	22	MOUNTEL WITH RL
PR	AJ43		1	249					U (PR)	GRD	15	P	0		24.2	23	
PTT	AJ43	YZ	6	249			8M (PTT) 8B (PTT)		U (PTT)	GRD		P	0		24.2	23	
PTT	1/2AK30	XA	1	202			10M (PTT) 10B (PTT)		1U (PTT)	GRD			0		23.1	22	MOUNTED WITH VP
PV	AJ43		61	249			10B (PV)		U (PV)	GRD	15	P	0		24.2	23	
RC	1/2AK30	XB	1	202					1U(RC)	GRD			0		23.1	22	MOUNTED WITH VP
RCO	AJ48		28	3					1U(RCO)	GRD	15	P	0		8.4	8	
									1U(RCO)	GRD		P	H		6.8	6.5	
								2L(RCO)	2U(RCO)	B/G		S	0		5.4	5.1	
RCOA	1/2AK22		28	216			9B(BCO)		1L(RCOA)	GRD	15		0		27.3	26	MOUNTED WITH ROCO
RHR	1/2AK22		69	216					1L(RHR)	GRD	15		0		27.3	26	
RHT	1/2AK22		69	216					1U(RHT)	GRD	15		0		27.3	26	
RIS1	AJ48		81	3					1U(RIS1)	GRD	15	P	0		8.4	8	
									1U(RIS1)	GRD		P	H		8.8	6.5	
								2L(RIS1)	2U(RIS1)	B/G		S	0		5.4	5.1	
RIV	AJ48	XP	64	3					1U(RIV)	GRD	15	P	0		8.4	8	
									1U(RIV)	GRD		P	H		6.8	6.5	
								2L(RIV)	2U(RIV)	B/G		S	0		5.4	5.1	
RK	1/2AK26		1	10			1M(RK),8M(PR) 4(RK)		1L(RK)	GRD			0		14.9	14.2	MOUNTED WITH RQ
RL	1/2AK30		1	202					1L(RL)	GRD	15		0		23.1	22	MOUNTED WITH PSE
RLS	AG42		1	279B			4M(RLS)		1L(RLS)	GRD		P	0	FS	14.7	14	
RLST	1/2AK30		1	202					1U(RLST)	GRD			0		23.1	22	MOUNTED WITH BR
ROCO	1/2AK22		28	216					1U(RCO)	GRD			0		27.3	26	MOUNTED WITH RCOA
ROI (EVEN)	1/2AK22		10	216					1L(ROI)	GRD	15		0		27.3	26	MOUNTED WITH ROI (ODD)
ROI (ODD)	1/2AK22		10	216					2L(ROI)	GRD	15		0		27.3	26	MOUNTED WITH ROI (EVEN)
ROS1	AF57		30	210					U(ROS1)	GRD		P	0		26.8	25.5	
ROSL	AF57		25	210					U(ROSL)	GRD		P	0		26.8	25.5	
RQ	1/2AK26								1U(RQ)	GRD			0		14.9	14.2	MOUNTED WITH RK
RS1	1/2AK22	Y	31	216					1L(RS1)	GRD	15		0		27.3	26	MOUNTED WITH RS1 (ODD)
RS1	1/2AK22	Y	31	216					1U(RS1)	GRD	15		0		27.3	26	MOUNTED WITH RS1 (EVEN)
RS1A	1/2AK22	V	31	216					1L(RS1)	GRD	15		0		27.3	26	MOUNTED WITH RS1A (ODD)
RS1A	1/2AK22	V	31	216					1U(RS1)	GRD	15		0		27.3	26	MOUNTED WITH RS1A (EVEN)
RV	1/2AK30		60	202					1L(RV)	GRD	15		0		23.1	22	MOUNTED WITH RV (ODD)
RV	1/2AK30		60	202					1U(RV)	GRD	15		0		23.1	22	MOUNTED WITH RV (EVEN)
SRLS	1/2AK1		1	201					1U(SRLS)	GRD			0		25.8	24.5	MOUNTED WITH H
ST	1/2AK1		24	201					1U(ST)	GRD			0		25.8	24.5	OTHER HALF OF AK1 NOT USED

CIRCUIT REQUIREMENTS

DESIG	CODE	OPT	FIG.	BSP FIG.	CONT PRES	ARM. TRVL	BLOCK OR INSULATE	CONN BAT.	CONN GRD	TEST SET PREP	SEE TEST NOTE	TEST WDG	TEST FOR	AFTER SOAK MA	TEST MA	READJ MA	REMARKS
RELAY																	
TO	271A		24	132/1					4TF(TO)	GRD			0		16.5	15.5	
TW	AJ3			226					U(TW)			P	0		17.9	17	
													H		8.5	8.1	
VL	AJ43		64	249					U(VL)	GRD	15		0		24.2	23	
VP	1/2AK30		1	202					1L(VP)	GRD			0		23.1	22	MOUNTED WITH RC OR PTT
W	1/2AK22		2	216				2U(W)	1U(W)	GRD			0		27.3	26	MOUNTED WITH B
Z	AJ43		2	249				L(Z)	U(Z)	GRD		P	0		24.2	23	

DRAWING ISSUE: 1, 20, 3A

NOTES (CONT'D)

7. ARMATURE BACK TENSION MINIMUM 40 GRAM READJUST 35 GRAM TEST. ARMATURE BACK TENSION 110 GRAM READJUST 115 GRAM TEST.
8. TERMINAL CONNECTION FOR SOAK AND OPERATE CURRENTS.
9. TERM CONNECTIONS FOR NF AND R.
10. FOR OPERATE TEST: (1) SOAK-300 MA (2) NF+32 MA (3) OPERATE-TEST(-105 MA): READJ (-100 MA).
    FOR RELEASE TEST: (1) SOAK-300 MA (2) RELEASE-TEST (+28.4 MA):READJ (+27 MA).
11. COILS SERIES AIDING
12. CONTACT MAKE 5, NO MAKE 85, READJUST: MAKE 35 NO MAKE 10, TEST.
13. CONTACT BREAK 5, NO BREAK 85, READJUST, BREAK 35, NO BREAK 10, TEST.
14. ARMATURE BACK TENSION, MINIMUM 20 GRAMS READJUST, 15 GRAMS TEST.
15. BLOCK CONTACTS ASSOC WITH SIGNALING, IF NO INDICATION IS DESIRED AT ATTENDENT POSITIONS.

ISSUE 8B

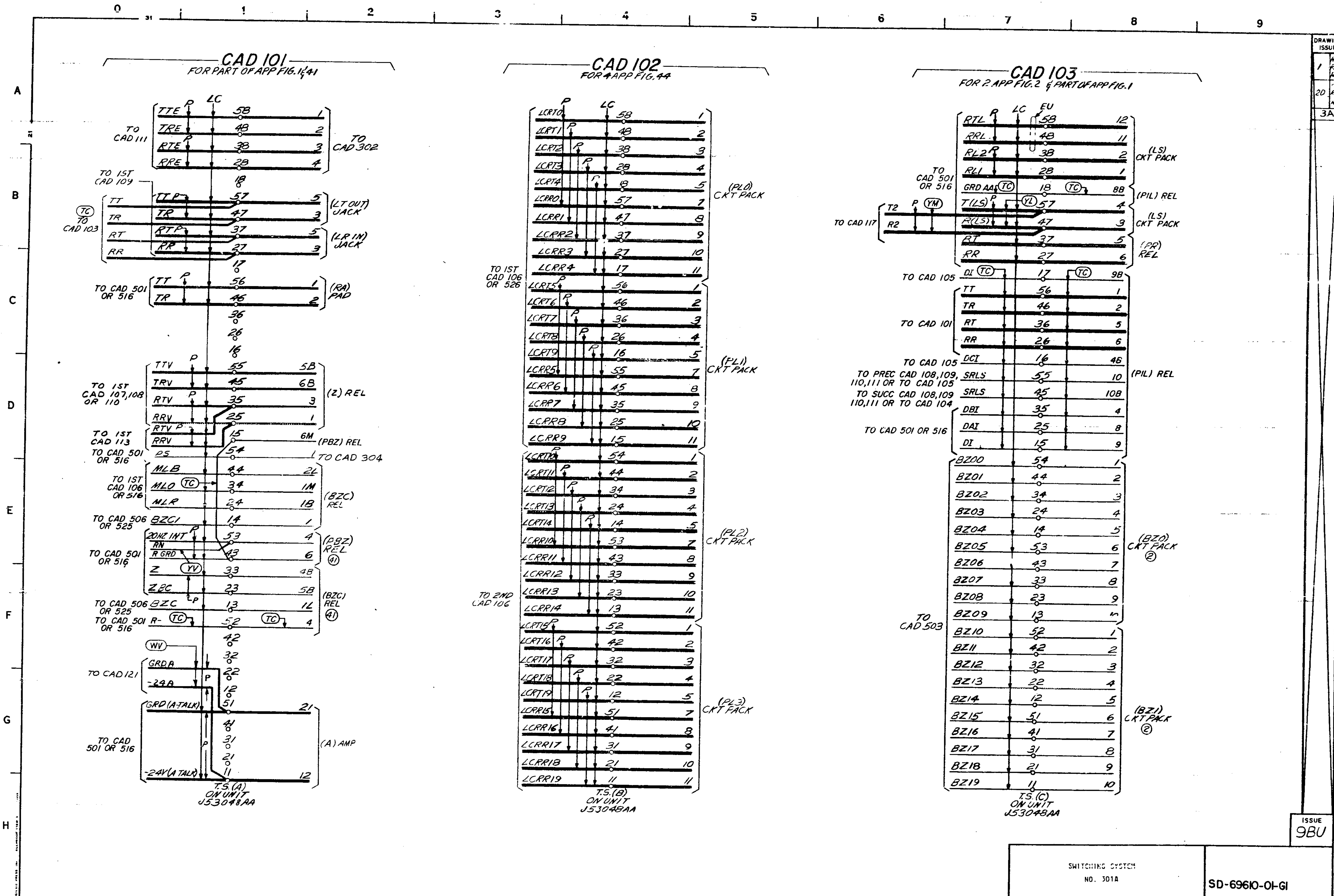
SWITCHING SYSTEM
NO. 301A

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SD-69610-01-F2

SD-69610-01-F2



CAD 101
FOR PART OF APP FIG. 1 & 41
CAD 102
FOR 4 APP FIG. 44
CAD 103
FOR 2 APP FIG. 2 & PART OF APP FIG. 1
TO CAD 111
TO CAD 302
TO 1ST CAD 109
(LT OUT) JACK
(LR IN) JACK
TO CAD 103
TO CAD 501 OR 516
(RA) PAD
TO 1ST CAD 107, 108 OR 110
(Z) REL
TO 1ST CAD 113
(PBZ) REL
TO CAD 304
TO 1ST CAD 106 OR 516
(BZC) REL
TO CAD 506 OR 525
TO CAD 121
(A) AMP
T.S.(A) ON UNIT J53048AA
(PL0) CKT PACK
(PL1) CKT PACK
(PL2) CKT PACK
(PL3) CKT PACK
TO 1ST CAD 106 OR 526
TO 2ND CAD 106
T.S.(B) ON UNIT J53048AA
(LS) CKT PACK
(PIL) REL
(PR) REL
TO CAD 117
TO CAD 105
TO CAD 101
TO PREC CAD 108, 109, 110, 111 OR TO CAD 105
TO SUCC CAD 108, 109, 110, 111 OR TO CAD 104
TO CAD 503
(BZ0) CKT PACK
(BZ1) CKT PACK
T.S.(C) ON UNIT J53048AA

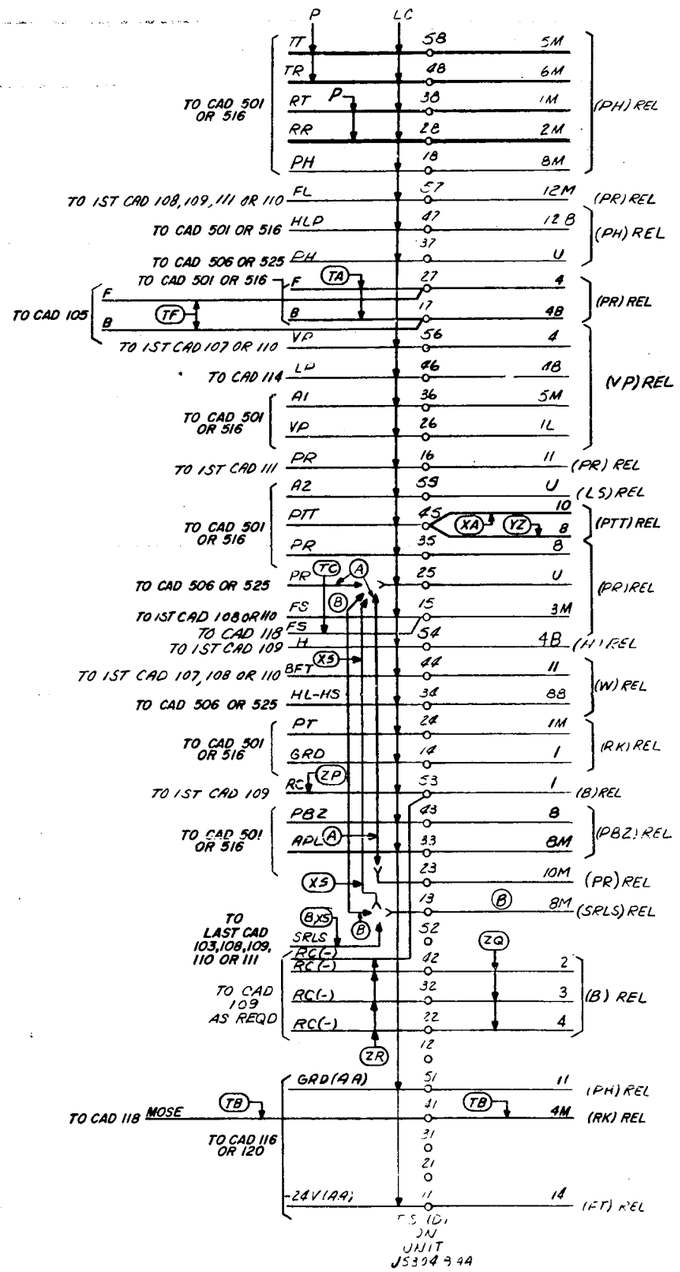
ISSUE 9BU

SWITCHING SYSTEM NO. 301A

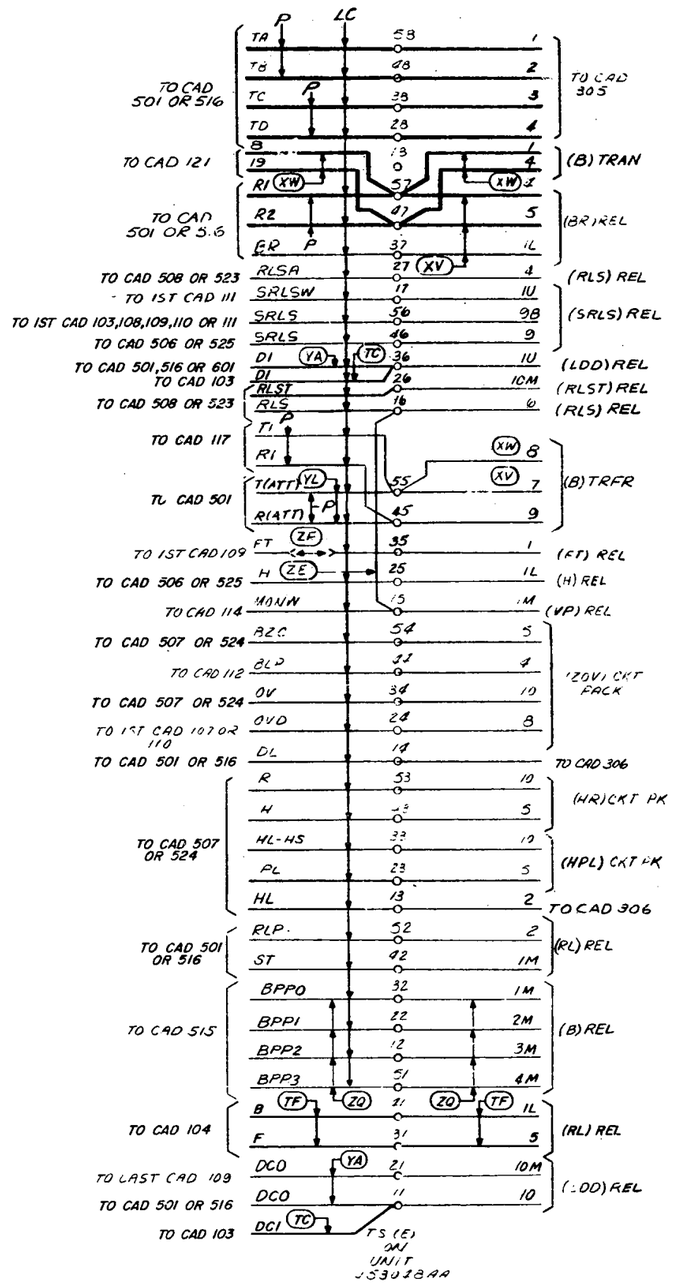
BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G1

CAD 104
(FOR PART OF APP FIG 1, 41)



CAD 105
(FOR PART OF APP FIG 1)



DRAWING ISSUE
1
2D
3A
4A

ISSUE 110

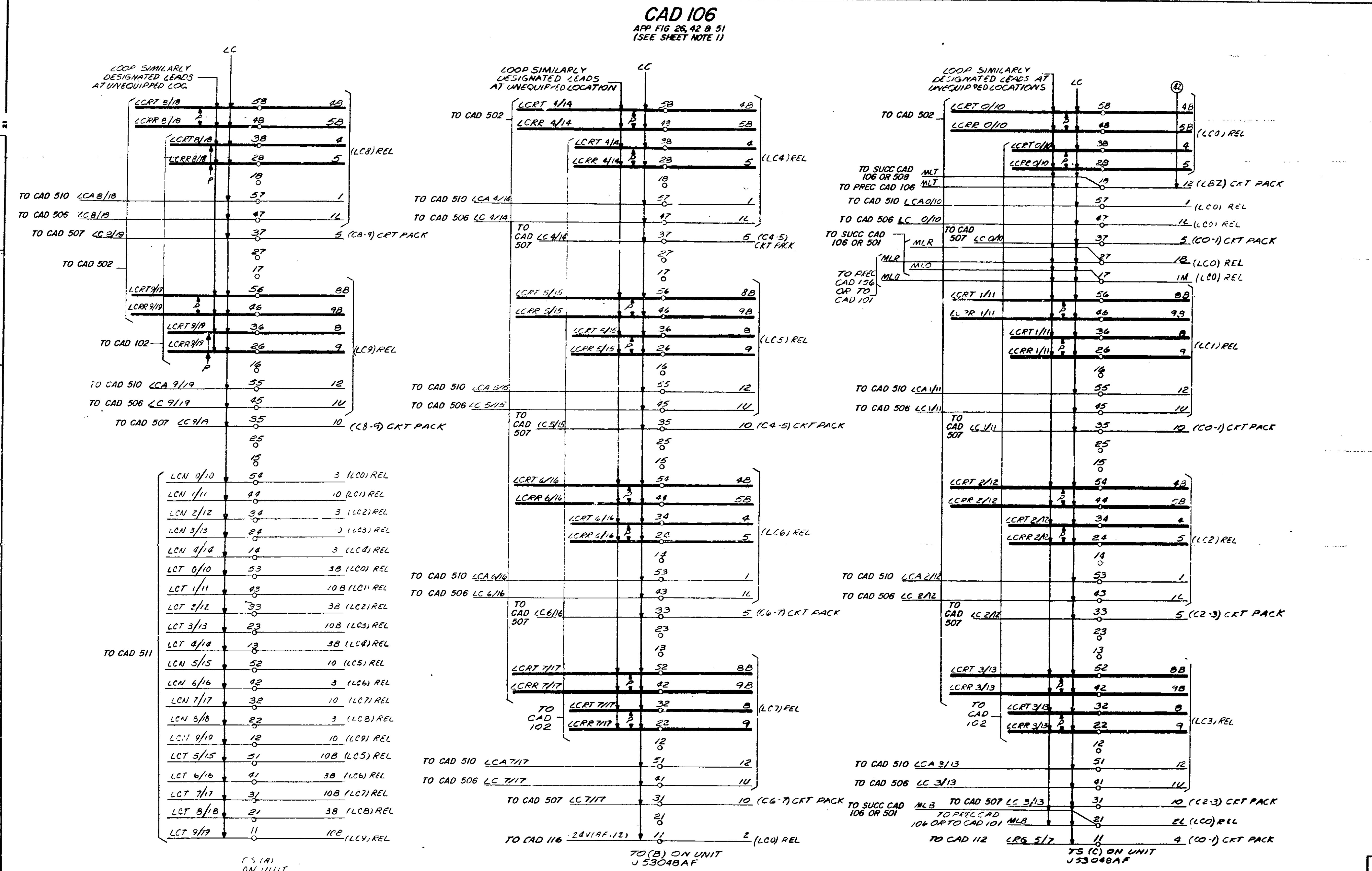
SWITCHING SYSTEM NO. 301A

SD-69610-01-G2

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-G2



SHEET NOTE

1. CAD 106 APPLIES TO USE OF TWO J53048AF UNITS ON 1-POSITION FRAME. SEE CAD 217 FOR USE OF J53048AF UNIT WITH 2-POSITION FRAME.

ISSUE 6B

SWITCHING SYSTEM NO. 301A

SD-69610-01-G3

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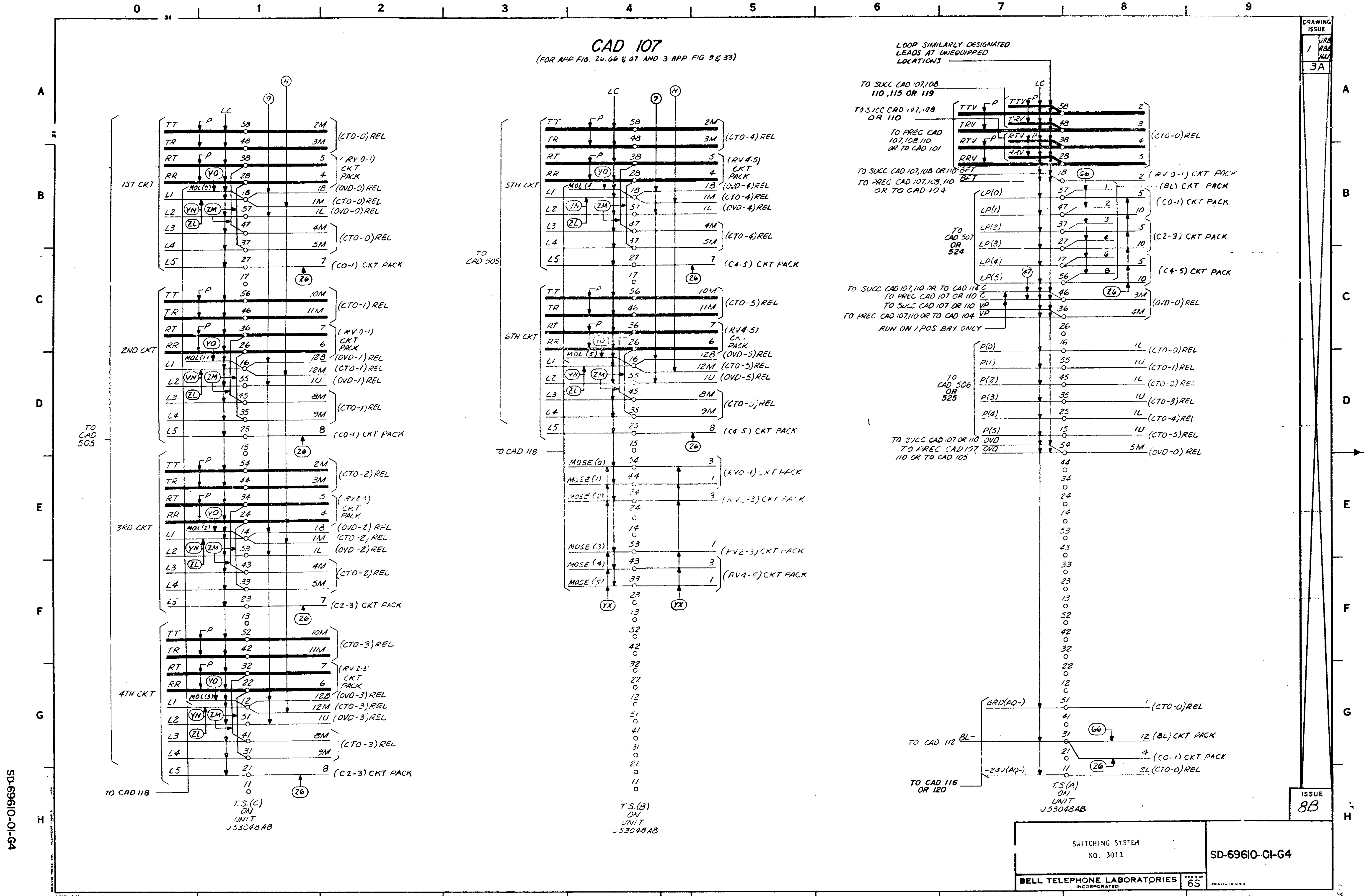
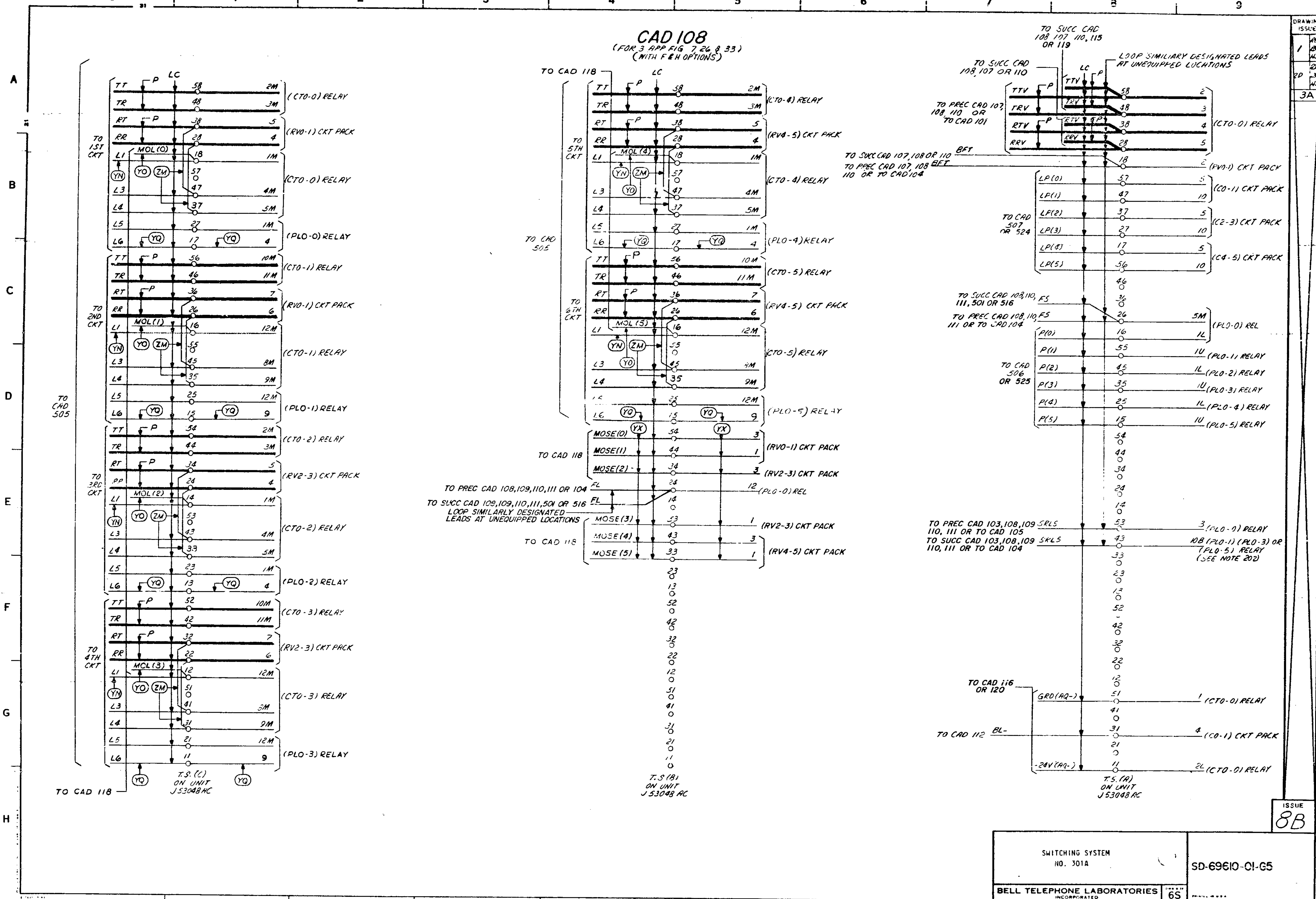


CAD 107
(FOR APP FIG. 26, 66 & 67 AND 3 APP FIG 9 & 33)
LOOP SIMILARLY DESIGNATED LEADS AT UNEQUIPPED LOCATIONS
1ST CKT
2ND CKT
3RD CKT
4TH CKT
5TH CKT
6TH CKT
TO CAD 505
TO CAD 118
(CTO-0) REL
(RV 0-1) CKT PACK
(OVD-0) REL
(CO-1) CKT PACK
(CTO-1) REL
(OVD-1) REL
(CTO-2) REL
(RV 2-3) CKT PACK
(OVD-2) REL
(C2-3) CKT PACK
(CTO-3) REL
(OVD-3) REL
(CTO-4) REL
(RV 4-5) CKT PACK
(OVD-4) REL
(C4-5) CKT PACK
(CTO-5) REL
(OVD-5) REL
MOSE (0)
MOSE (1)
MOSE (2)
MOSE (3)
MOSE (4)
MOSE (5)
(RV2-3) CKT PACK
(RV4-5) CKT PACK
TO SUCC CAD 107,108 110,115 OR 119
TO SUCC CAD 107,108 OR 110
TO PREC CAD 107,108,110 OR TO CAD 101
TO SUCC CAD 107,108 OR 110 BFT
TO PREC CAD 107,108,110 OR TO CAD 104
(BL) CKT PACK
(C2-3) CKT PACK
TO CAD 507 OR 524
TO SUCC CAD 107,110 OR TO CAD 114
TO PREC CAD 107 OR 110
TO SUCC CAD 107 OR 110 VP
TO PREC CAD 107,110 OR TO CAD 104 VP
RUN ON 1 POS BAY ONLY
TO CAD 506 OR 525
TO SUCC CAD 107 OR 110 OVD
TO PREC CAD 107 110 OR TO CAD 105 OVD
GRD(AQ-)
TO CAD 112 BL-
-24V(AQ-)
TO CAD 116 OR 120
T.S.(C) ON UNIT J53048AB
T.S.(B) ON UNIT J53048AB
T.S.(A) ON UNIT J53048AB
DRAWING ISSUE
3A
ISSUE 8B
SWITCHING SYSTEM NO. 301
BELL TELEPHONE LABORATORIES INCORPORATED
6S
SD-69610-01-G4



SWITCHING SYSTEM NO. 301A

SD-69610-01-G5

BELL TELEPHONE LABORATORIES INCORPORATED

ISSUE 8B

SD-69610-01-G5

CAD 109

(FOR 3 APP FIG 26 & 6 APP FIG. 27)

TO CAD 505

1ST CKT — (PLL-0) REL
TT(0) 58 1M
TR(0) 48 2M
RT(0) 38 5M
RR(0) 28 6M
L1(0) 18 4M
L2(0) 57 9M
L3(0) 47 8M
L4(0) 37 3M
L5(0) 27 12B

2ND CKT — (PLL-1) REL
TT(1) 56 1M
TR(1) 46 2M
RT(1) 36 5M
RR(1) 26 6M
L1(1) 16 4M
L2(1) 55 9M
L3(1) 45 8M
L4(1) 35 3M
L5(1) 25 12B

3RD CKT — (PLL-2) REL
TT(2) 54 1M
TR(2) 44 2M
RT(2) 34 5M
RR(2) 24 6M
L1(2) 14 4M
L2(2) 53 9M
L3(2) 43 8M
L4(2) 33 3M
L5(2) 23 12B

4TH CKT — (PLL-3) REL
TT(3) 52 1M
TR(3) 42 2M
RT(3) 32 5M
RR(3) 22 6M
L1(3) 12 4M
L2(3) 51 9M
L3(3) 41 8M
L4(3) 31 3M
L5(3) 21 12B

TS (C) ON UNIT J53048AD

TO CAD 505

5TH CKT — (PLL-4) REL
TT 58 1M
TR 48 2M
RT 38 5M
RR 28 6M
L1 18 4M
L2 57 9M
L3 47 8M
L4 37 3M
L5 27 12B

6TH CKT — (PLL-5) REL
TT 56 1M
TR 46 2M
RT 36 5M
RR 26 6M
L1 16 4M
L2 55 9M
L3 45 8M
L4 35 3M
L5 25 12B

LOOP SIMILARLY DESIGNATED LEADS AT UNEQUIPPED LOCATIONS

TO CAD 118 OR SUCC CAD 109 — D3 (TC)

TO SUCC CAD 109 OR 506 OR 525 — ER (ZZ) (YT) — 4
TO PREF CAD 109 — DCO — 8
TO SUCC CAD 109 OR 501 — TS(A) — 51
(YA) TO SUCC CAD 103 OR TO CAD 105 — DCO
TO PREC CAD 109 — D2 — 34
TO SUCC CAD 109 OR 501 OR 516 — D3 — 9
TO SUCC CAD 109,108,111,110 OR 501 OR 516 — FL — 24 (TG) — 12M
TO PREC CAD 109,108,111,110 OR TO CAD 104
TO SUCC CAD 103 — H
TO PREC CAD 103 OR TO CAL 104 — H

(PLL-0) REL
53 3
14 3
34 3
23 3
2 3
52 3
42 51 (A) T.S.
32 7M
22 (ZP) (ZP)
12 7 (PLL-0) REL
51 7 (PLL-1) REL
41 7 (PLL-2) REL
31 7 (PLL-3) REL
21 7 (PLL-4) REL
11 7 (PLL-5) REL

TO SUCC CAD 109 RG
TO PREC CAD 10 RG
OR TO CAD 104 — (ZG)
(1E, 2M, 21, 2J, 2Y)
(ZG, 20, YY)

TS (B) ON UNIT J53048AD

TO SUCC CAD 109

LOOP SIMILARLY DESIGNATED LEADS AT UNEQUIPPED LOCATIONS

TO PREC CAD 109 OR TO CAD 101 — (PLL-0) REL
TT 58 1
TR 48 2
RT 38 5
RR 28 6
FT 18 7M

TO PREC CAD 109 FT OR TO CAD 105

(CO-1) CKT PACK
LP(0) 57 5
LP(1) 47 10

(C2-3) CKT PACK
LP(2) 37 5
LP(3) 27 10

TO CAD 507 OR 524

(C4-5) CKT PACK
LP(4) 17 5
LP(5) 56 10

TO CAD 506 OR 525

P(0) 16 J (PLL-0) REL
P(1) 55 J (PLL-1) REL
P(2) 45 J (PLL-2) REL
P(3) 35 J (PLL-3) REL
P(4) 25 J (PLL-4) REL
P(5) 15 J (PLL-5) REL

TO SUCC CAD 109 MOSE
TO CAD 118 OR MOSE
PREC CAD 109 — (YE) (YE)

TO PREC CAD 108,103,109, SLRS 110,111 OR TO CAD 105
TO SUCC CAD 108,103,109, SLRS 110,111 OR TO CAD 104 — (YE)

TO CAD 104 AS REQ'D — (YW) (2R) (YW,ZR)

TO CAD 515 OR CAD 516 OR PREC CAD 109

DLL(0) RC(-) 7M (PLL-0) REL
DLL(1) RC(-) 7M (PLL-1) REL
DLL(2) RC(-) 7M (PLL-2) REL
DLL(3) RC(-) 7M (PLL-3) REL
DLL(4) RC(-) 7M (PLL-4, REL
DLL(5) FC(-) 7M (PLL-5) REL

TO TS (B) 44 — (YT)
G-RD (AQ.) 51 11 (PLL-0) REL
41 42 (B) TS
TO CAD 116 OR 120 — 31 4 (10-1) CKT PACK
21
-24 11 L (PLL-0) REL
BL-
TO CAD 112

TO SUCC CAD 109

TS. (A) ON UNIT J53048AD

DRAWING ISSUE
1 UNIT PRO ALL
LD 4W
3A

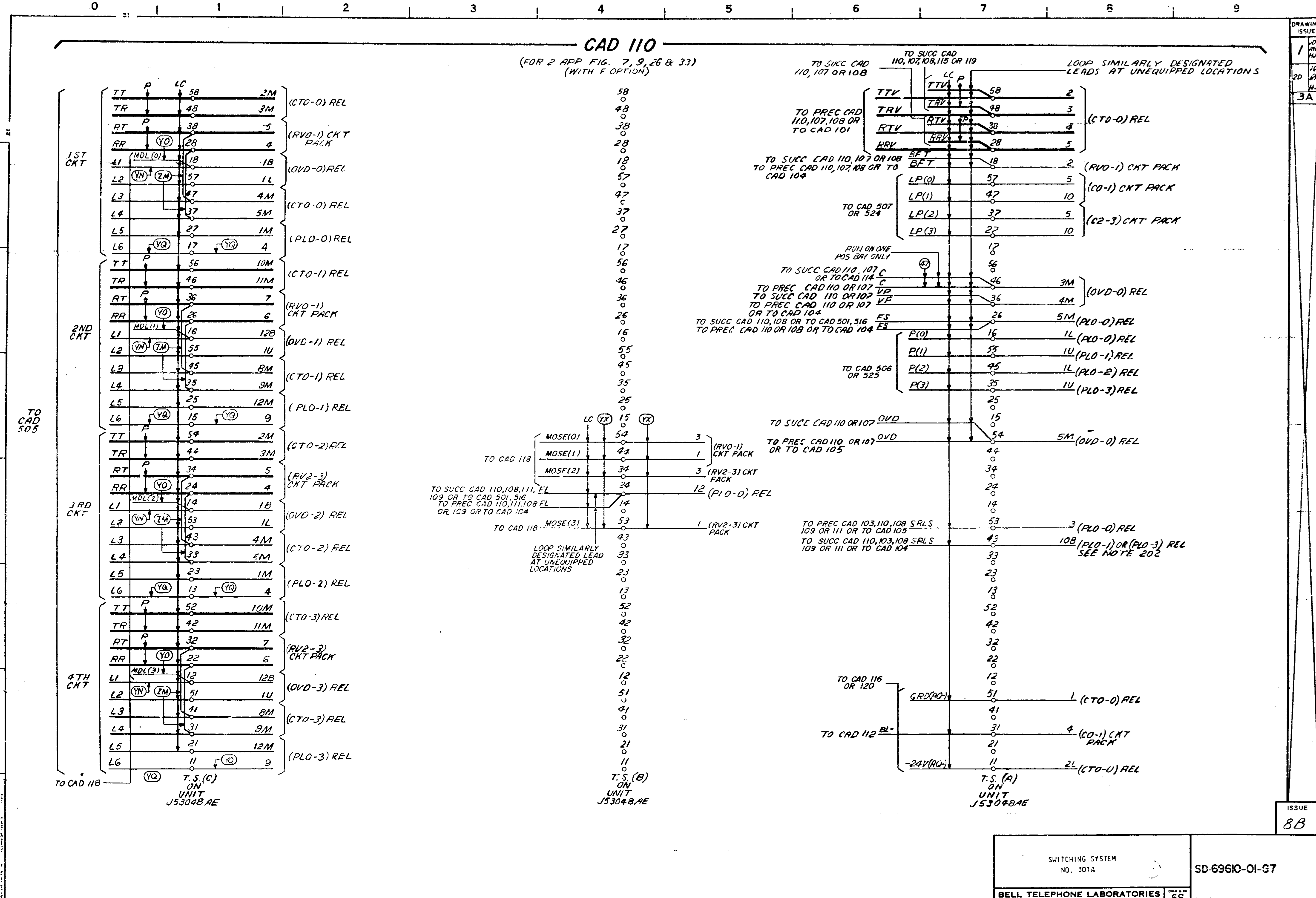
ISSUE 8B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED — DEPT 6S

SD-69610-01-66

SD-69610-01-66

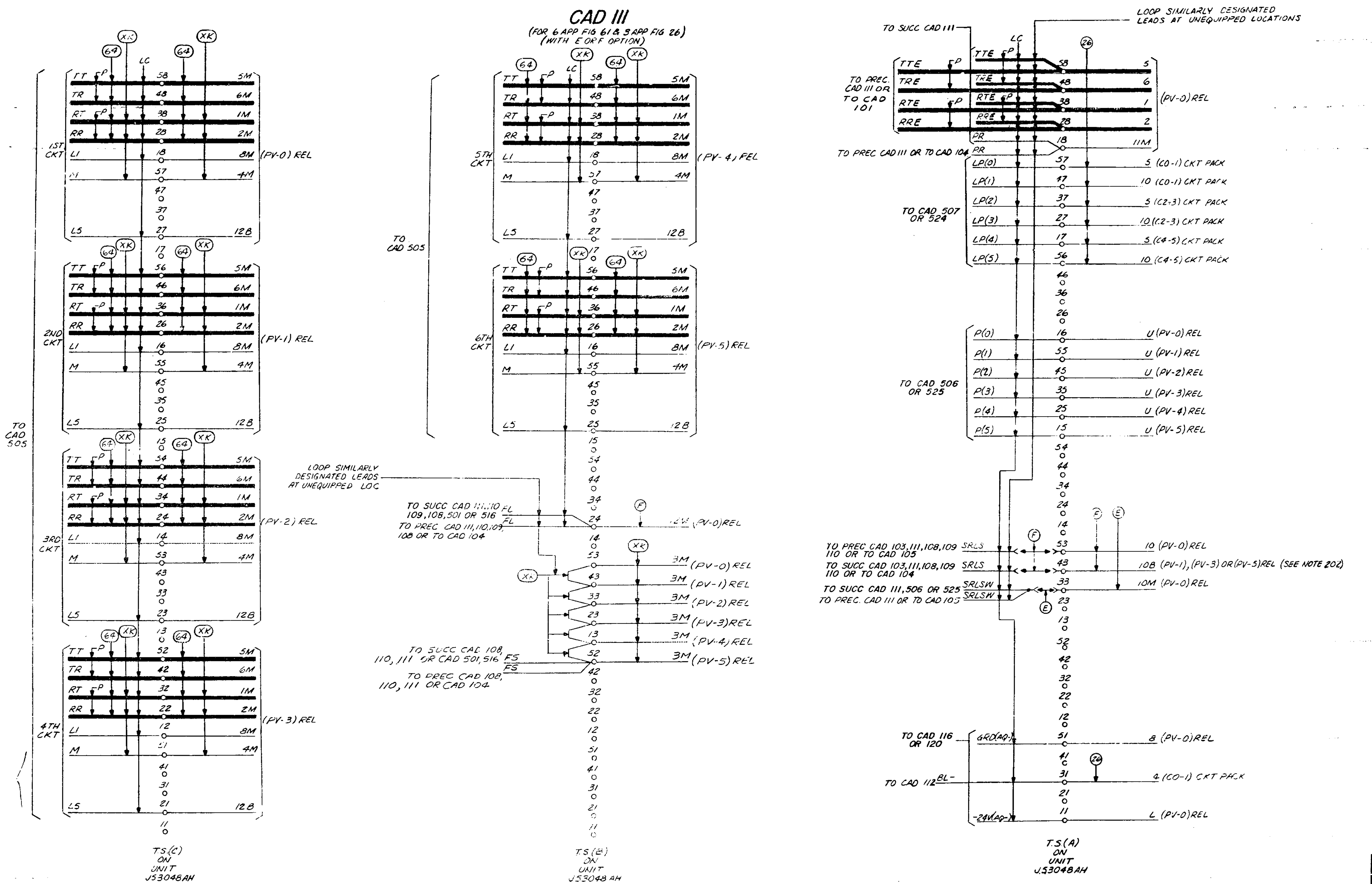


SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G7

ISSUE 8B



ISSUE 8B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G8

SD-69610-01-G8

CAD 112

(FOR 1A APP FIG 37 & 3A APP FIG 38)

TO CAD 509

LPG0 LC 58 (38) (R78-0) RESISTOR
LPG1 48
LPG2 38
(Y1) 28 (R77-0) RESISTOR
BLA-0
LRG 18 U (LRG) RELAY
LPG3 57 (R78-1) RESISTOR
TO CAD 509
LPG4 47
LPG5 37
(Y1) 27 (R77-1) RESISTOR
BLA-1
17
LPG6 56 (R78-2) RESISTOR
LPG7 46
36
BLA-2 26 (R77-2) RESISTOR
TO CAD 501 OR 516
16

TO CAD 107, 108, 109, 110, 111 OR FOR FRAME MGT PLT POS

(09) OR BL1 (07 OR 19) 55 1B
(10) OR BL3 (08 OR 20) 45 3B
(11) OR BL5 (09 OR 21) 35 5B
(12) OR BL7 (10 OR 22) 25 7B
(13) OR BL9 (11 OR 23) 15 9B
(14) BL11 54 11B
(15) BL12 44 12B
(16) BL12
BL2 34 11M
BL1 24 10M
BL0 14 8M
(BL) RELAY

TO CAD 118 BL (TC) 53
43
TO CAD 105 TO CAD 114 BLP BLP 33 9B
TO 2ND CAD 106 (1 POS BAY) LRG 7 23 7B (LRG) RELAY
TO 1ST CAD 106 (2 POS BAY) OR 516 LRG 5 13 5B
52
TO CAD 501 OR 516 -24V(AG1) -24V(AG1) 42 L
RUN ON ONE POS BAY ONLY
32 4M
22 2M
12 1M
(T) 51 12
GRD(AG)
TO CAD 501 OR 516 GRD(AG) 41
18GA
-24V(AG4) 31 12
-24V(AG3) 21 7 (BL) RELAY
TO CAD 116 OR 120 -24V(AG2) 11 1

T.S. (A) ON UNIT J53048AG

CAD 113

(FOR 8A APP FIG 48)

(48) LC
FLO 58 1M
MO 48 3M (PMZI-0) REL
38
28
WZ
W2 18 8M (PMWI-0) REL
FL1 57 1M
TO PREC CAD 113 OR TO CAD 118 M1 47 3M (PMZI-1) REL
37
27
FL
FL 17 1 (PMZI-0) REL
FL2 56 1M
TO SUCC CAD 113 M2 46 3M (PMZI-2) REL
36
26
16
FL3 55 1M
M3 45 3M (PMZI-3) REL
35
TO CAD 504 25
15
FL4 54 1M
M4 44 3M (PMZI-4) REL
34
24
14
FL5 53 1M
M5 43 3M (PMZI-5) REL
33
23
GRD(AL) 13 3 (PMZI-0) REL
FL6 52 1M
M6 42 3M (PMZI-6) REL
TO CAD 116 32
22
12
FL7 51 1M
M7 41 3M (PMZI-7) REL
31
21
-24V(AL) 11 (MI-0) RES

T.S. (A) ON UNIT J53048AL

TO SUCC CAD 113
P LC P
RTV RTV 58 12
TO PREC CAD 113 OR CAD 101 RRV RRV 48 11
MRT(0) P 38 12M (PMWI-0) REL
MRR(0) 28 11M
PMZ(0) 18 2 (PMZI-0) REL
57
47
MRT(1) P 37 12M
MRR(1) 27 11M (PMWI-1) REL
PMZ(1) 17 2 (PMZI-1) REL
56
46
MRT(2) P 36 12M
MRR(2) 26 11M (PMWI-2) REL
PMZ(2) 16 2 (PMZI-2) REL
55
45
MRT(3) P 35 12M
TO CAD 504 MRR(3) 25 11M (PMWI-3) REL
PMZ(3) 15 2 (PMZI-3) REL
TO CAD 506
54
44
MRT(4) P 34 12M
MRR(4) 24 11M (PMWI-4) REL
PMZ(4) 14 2 (PMZI-4) REL
53
43
MRT(5) P 33 12M
MRR(5) 23 11M (PMWI-5) REL
PMZ(5) 13 2 (PMZI-5) REL
52
42
MRT(6) P 32 12M
MRR(6) 22 11M (PMWI-6) REL
PMZ(6) 12 2 (PMZI-6) REL
51
41
MRT(7) P 31 12M
MRR(7) 21 11M (PMWI-7) REL
PMZ(7) 11 2 (PMZI-7) REL

T.S. (B) ON UNIT J53048AL

DRAWING
/ C/M RRD M/L
20 (PM GM M/)

ISSUE 8B

SWITCHING SYSTEM NO. 301A

SD-69610-01-G9

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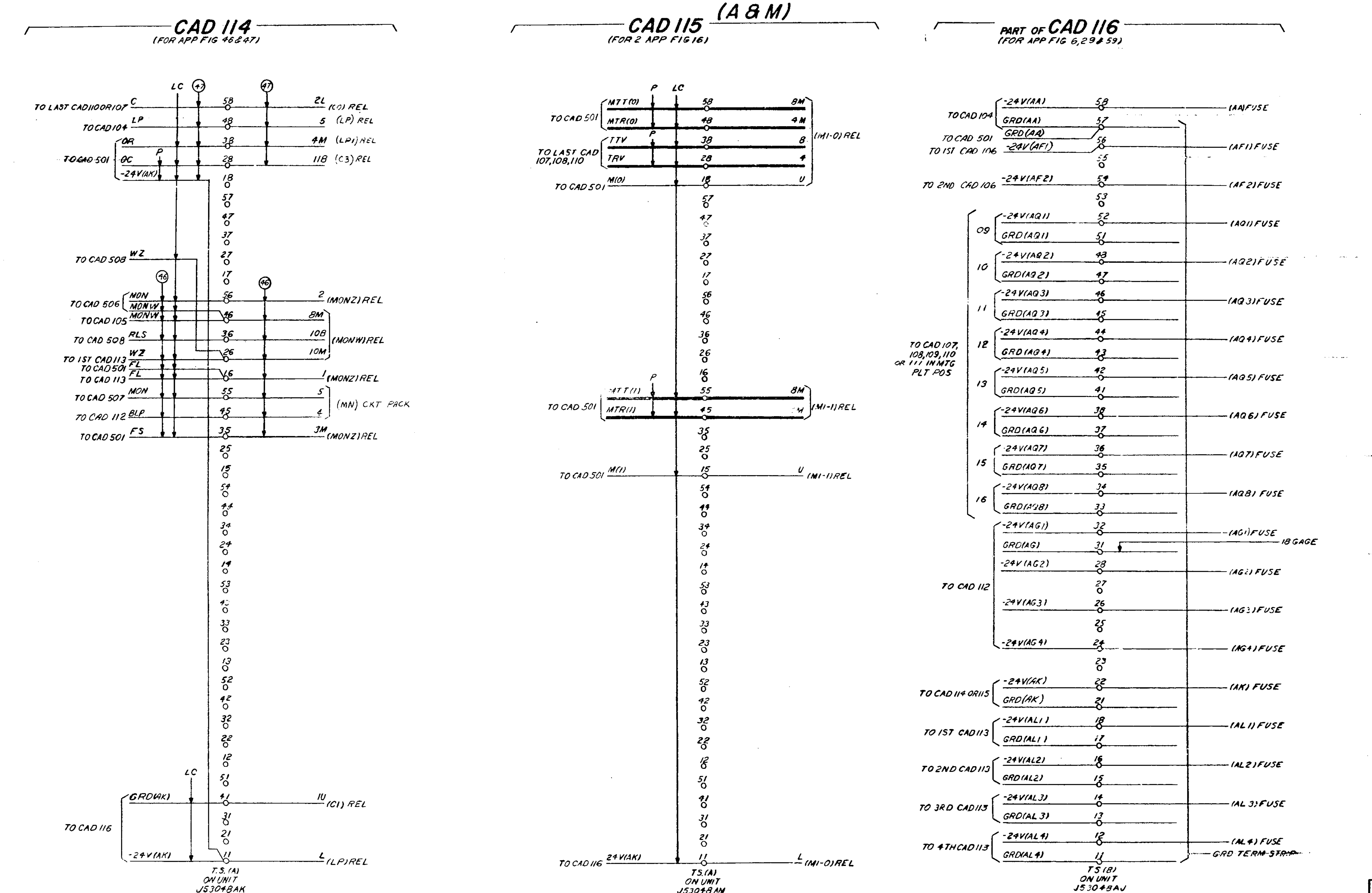
DWG SIZE 6S

SD-69610-01-69


CAD 114
(FOR APP FIG 46 & 47)
CAD 115 (A & M)
(FOR 2 APP FIG 16)
PART OF CAD 116
(FOR APP FIG 6, 29 & 59)
TO LAST CAD 110 OR 107
TO CAD 104
TO CAD 501
TO CAD 508
TO CAD 506
TO CAD 105
TO 1ST CAD 113
TO CAD 113
TO CAD 507
TO CAD 112
TO CAD 116
(CO) REL
(LP) REL
(LP1) REL
(C3) REL
(MONZ) REL
(MONW) REL
(MN) CKT PACK
(C1) REL
T.S. (A) ON UNIT J53048AK
TO LAST CAD 107, 108, 110
(MI-0) REL
(MI-1) REL
T.S. (A) ON UNIT J53048AM
TO CAD 107, 108, 109, 110 OR 111 IN MTG PLT POS
TO 2ND CAD 106
TO 1ST CAD 106
TO CAD 114 OR 115
TO 2ND CAD 113
TO 3RD CAD 113
TO 4TH CAD 113
18 GAGE
GRD TERM STRIP
T.S. (B) ON UNIT J53048AJ

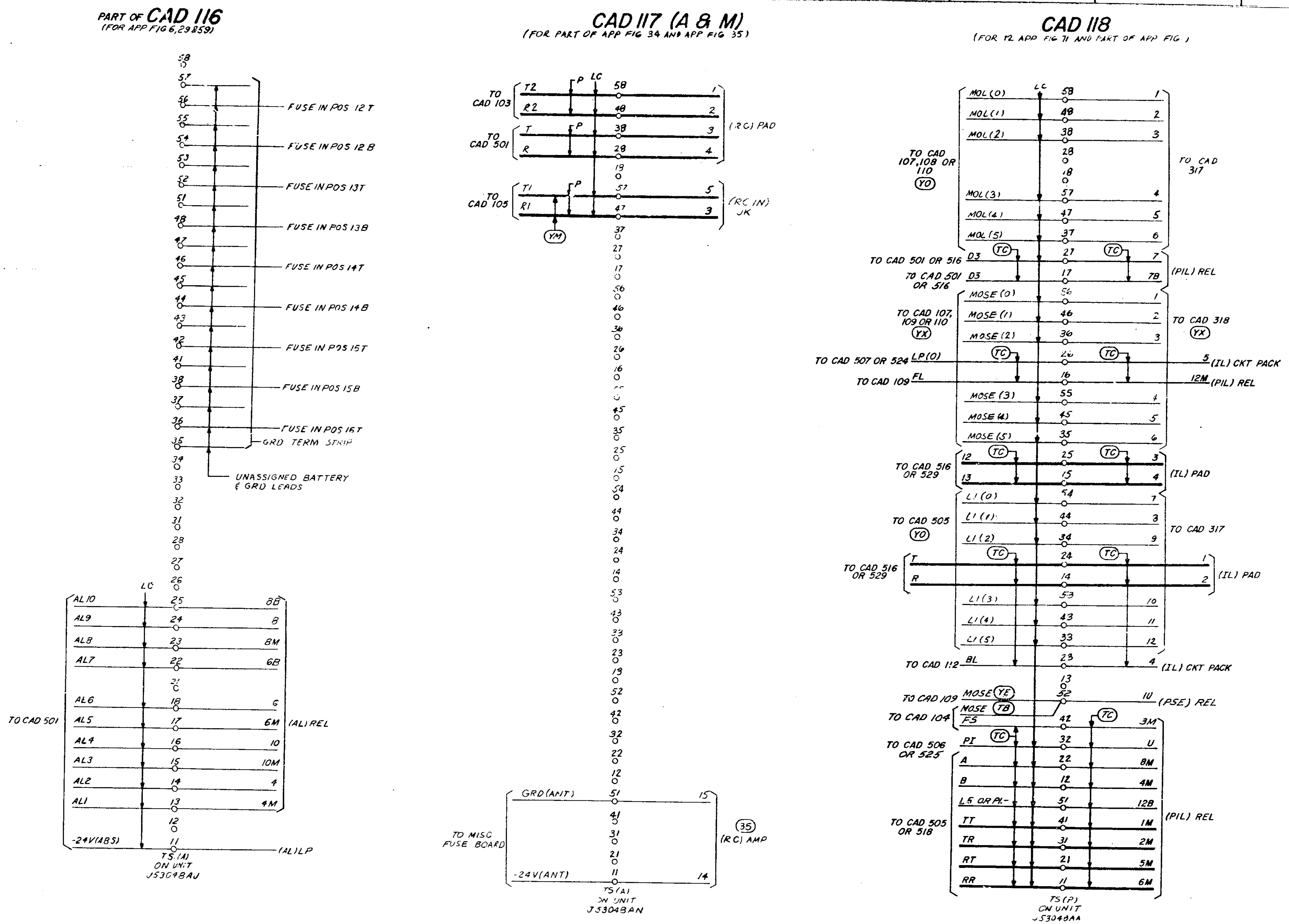
ISSUE 6B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

65

SD-69610-01-G10


PART OF CAD 116
(FOR APP FIG 6,29 & 59)
FUSE IN POS 12 T
FUSE IN POS 12 B
FUSE IN POS 13T
FUSE IN POS 13B
FUSE IN POS 14T
FUSE IN POS 14B
FUSE IN POS 15T
FUSE IN POS 15B
FUSE IN POS 16T
GRD TERM STRIP
UNASSIGNED BATTERY & GRD LEADS
TO CAD 501
(AL) REL
(AL) LP
TS (A) ON UNIT J53048AJ
CAD 117 (A & M)
TO CAD 103
TO CAD 501
TO CAD 105
(RC) PAD
(RC IN) JK
GRD (ANT)
-24V (ANT)
TO MISC FUSE BOARD
(RC) AMP
TS (A) ON UNIT J53048AN
CAD 118
TO CAD 107, 108 OR 110
TO CAD 317
TO CAD 501 OR 516
(PIL) REL
TO CAD 107, 109 OR 110
TO CAD 318
TO CAD 507 OR 524
(IL) CKT PACK
TO CAD 109
TO CAD 516 OR 529
(IL) PAD
TO CAD 505
TO CAD 112
TO CAD 104
(PSE) REL
TO CAD 506 OR 525
TO CAD 505 OR 518
TS (P) ON UNIT J53048AA

SD-69610-G11A

ISSUE 8B

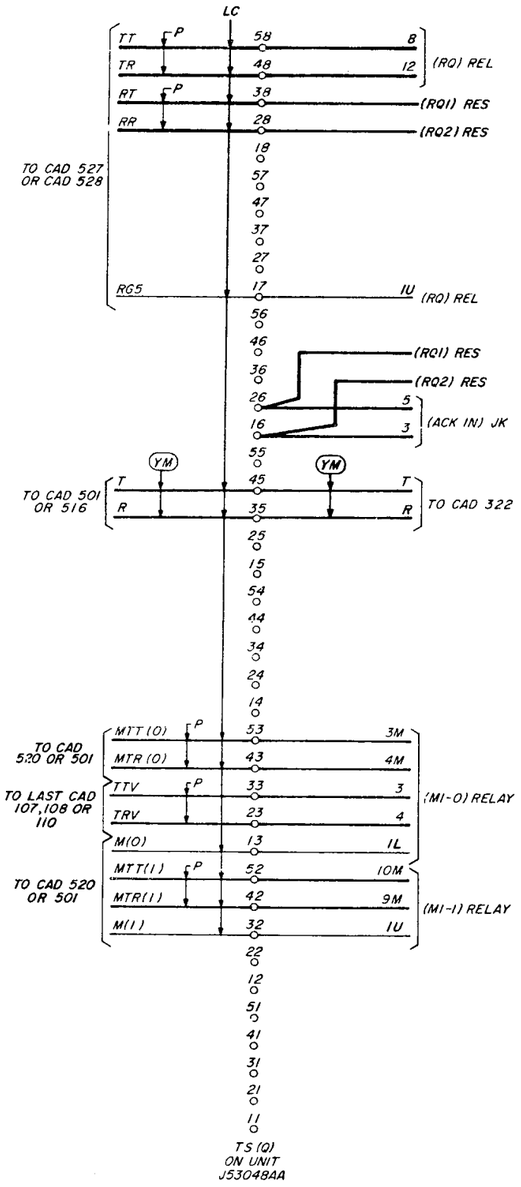
SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

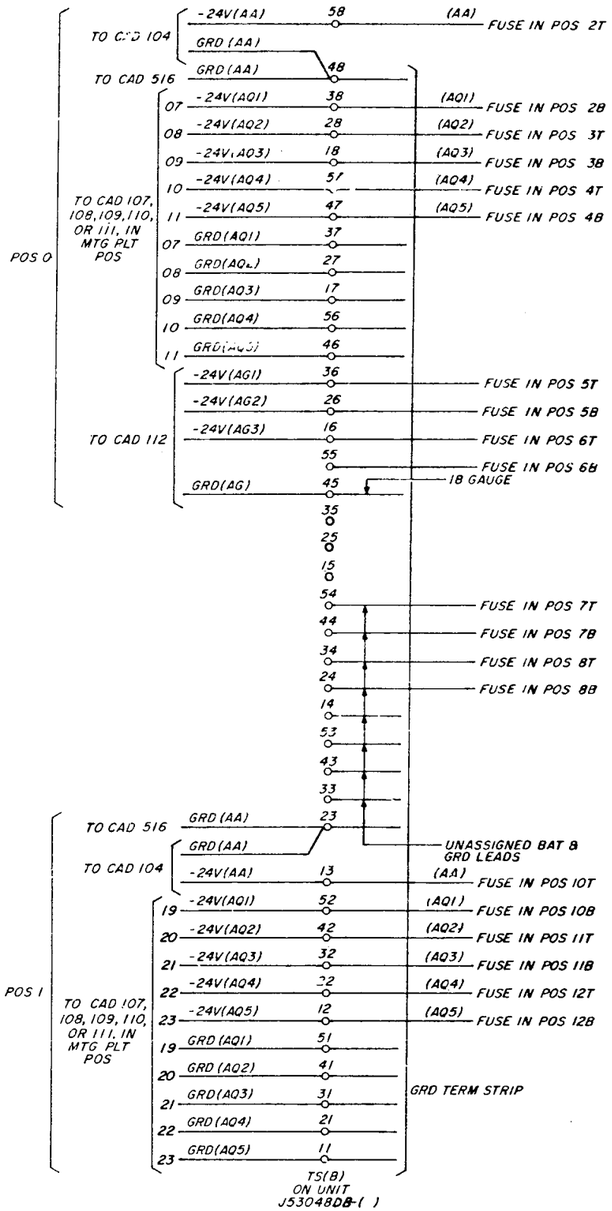
6S

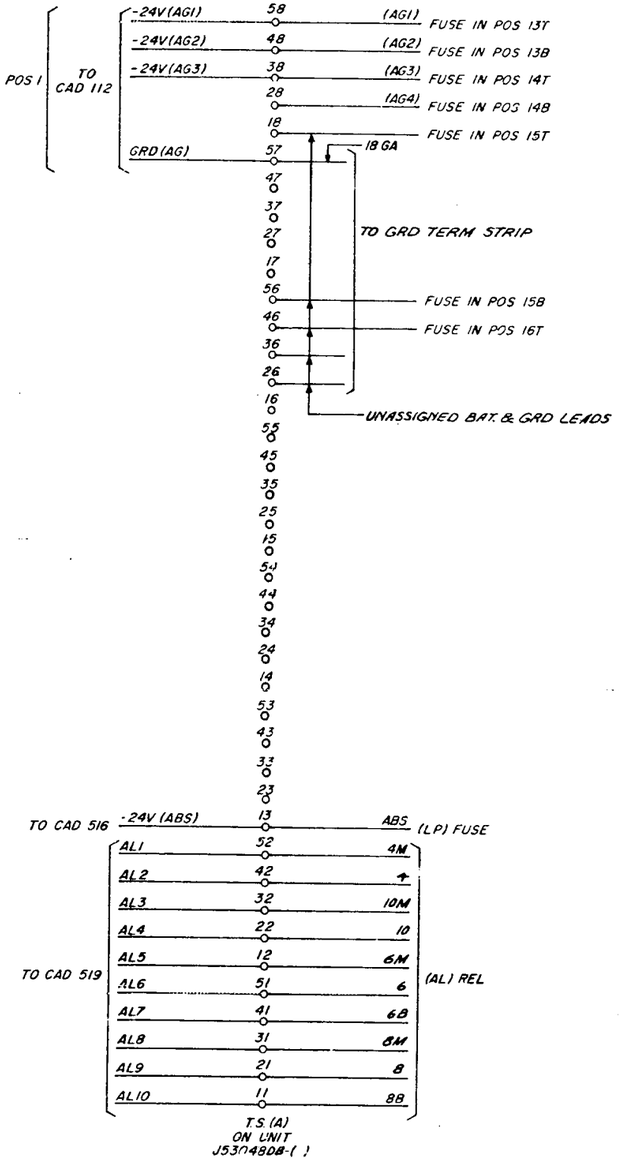
SD-69610-01-G11A

CAD 119
(FOR APP FIG. 76 & 78)



CAD 120
(FOR APP FIG 6, 29 & 59)
TWO POS FRAME





ISSUE 8B

SWITCHING SYSTEM NO. 301A

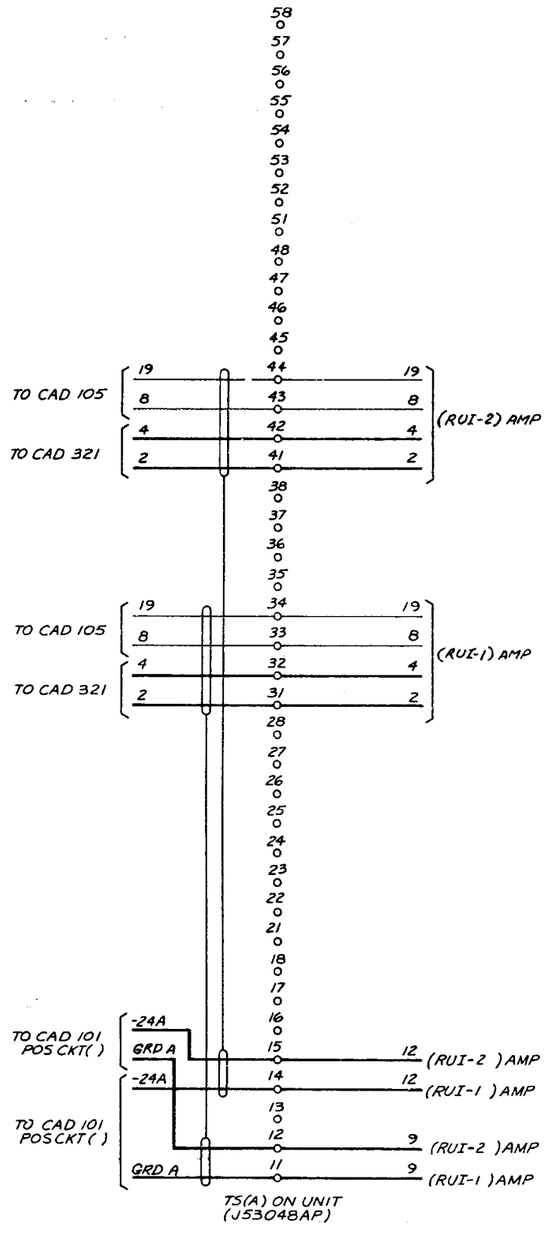
SD-69610-01-G118

BELL TELEPHONE LABORATORIES

SD-69610-01-G118

CAD 121

FOR APP FIG. 92



ISSUE 9BU

SWITCHING SYSTEM
NO. 301A

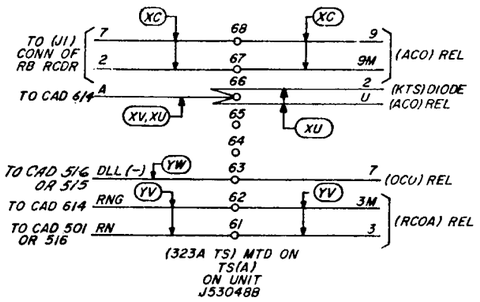
SD-69610-01-GIIC

BELL TELEPHONE LABORATORIES
INCORPORATED

DRG SIZE 6S

PRINTED IN U.S.A.

PART OF CAD 201



(323A TS) MTD ON TS(A) ON UNIT J530488

SD-69610-01-G12A

ISSUE 10D

SWITCHING SYSTEM NO. 301A

SD-69610-01-G12A

BELL TELEPHONE LABORATORIES INCORPORATED

PART OF CAD 201
(FOR APP FIGS. 28 & 52)

TO (RB) RECORDER CONNECTOR (SEE NOTE 205)

TO CAD 212

TO CAD 602

TO CAD 202
TO SUCC CAD 201
TO CAD 614

TO 1ST CAD 505 AS REQ'D OR TO CAD 702

TO CAD 614
TO CAD 202
TO SUCC CAD 201

TO CAD 202
TO SUCC CAD 201

TO CAD 202
TO SUCC CAD201

TO 1ST CAD 503 AS REQ'D

TO 22ND CAD 503 AS REQ'D

TO CAD 208 AS REQ'D

TO CAD 202
TO SUCC CAD 201
TO CAD 212

TO CAD 505

TO CAD 210 AS REQ'D

TO SUCC CAD 201

TO 20 NZ SUPPLY OR PREC CAD 201

TO SUCC CAD 201 AS REQ'D

TO PREC CAD 201 OR 201 AS REQ'D

TO CAD 614

TO 29TH CAD 505 OR 702 AS REQ'D

TO 15TH CAD 505 OR 702 AS REQ'D

TO 1ST CAD 505 OR 702 AS REQ'D

TO CAD 208

TO CAD 210

TO CAD 214

TO CAD 210

TO CAD 208

TS (A) ON UNIT J53048B

8M (HCO) RELAY
8 (ACO) REL
2U (RCO) REL
12 (ALO) REL
1U (ROCO) REL
2
3
19
20
1 (KTS) DIODE
+1 (KTS) REL (CD 15)
U (OCO) REL
4 (BCO) REL
1U (DCO) REL
10M (BCO) REL
4M (HCO) REL
3M (ACO) REL
4M
1M (RCOA) REL
4M
2M (ACO) REL
1M
5M (RCOA) REL
10
8 (RCO) REL
6
3M
12M (AOCO) REL
5M
3M (BCO) REL
2M
12B (ROCO) REL
8
4
2
1 (BCO) REL
2 (RCOA) REL
9
9M (ACO) REL
(ACO) REL

CAD 202
(FOR APP FIG. 24)

TO CAD 203
TO 1ST CAD 510 OR 516
TO CAD 201

TO 1ST CAD 210

TO CAD 613
TO CAD 204
TO CAD 205
TO CAD 206 OR 218
TO CAD 207

TO CAD 616
TO CAD 617

TO 1ST CAD 210

TO CAD 207
TO CAD 201
TO CAD 205
TO 1ST CAD 210

TO 2ND CAD 210

TO CAD 206 OR 218
TO CAD 209
TO CAD 201

TO 1ST CAD 501 OR 516

TO 1ST CAD 217

TO 1ST CAD 501, 516 OR AS REQ'D
TO 2ND CAD 501, 516 OR AS REQ'D
TO CAD 613

TO 1ST CAD 501 OR 516

TO CAD 203
TO CAD 201
TO CAD 203
TO CAD 204

TO CAD 206 OR 218
TO CAD 201
TO CAD 203
TO CAD 204
TO CAD 206 OR 218

TO CAD 617

TO CAD 209

-24 V (K)

U
3M
10M
8
10 (FS) REL
2M
4M
1U
10M
11M
12M (ST) REL
3 TO CAD 301
8 (MLO) REL
5 (MLR) REL
4 (MLI) REL
10 (MLT) REL
1
6 (MLO) REL
1
2 TO CAD 301
2B
4TF
(TO) REL
1B
+8R

TS (A) ON UNIT J53048M

CAD 203
(FOR APP FIG 36 & 52)

TO CAD 602

TO CAD 215

(LAU) INDUCTOR

(T24) TERM. SET (52)

TO 1ST CAD 505 AS REQ'D

U (AAU) REL

TO CAD 202
TO SUCC CAD 203
TO SUCC CAD 203
TO CAD 214
TO SUCC CAD 203
TO 22ND CAD 503

TO CAD 202
TO SUCC CAD 203

TO 1ST CAD 503
TO CAD 214
TO CAD 208 AS REQ'D

TO CAD 208 AS REQ'D

TO CAD 614
TO CAD 210 AS REQ'D

TO CAD 210 AS REQ'D

TO CAD 215

TO MISC. FUSE BOARD

TO 29TH CAD 505 OR 702 AS REQ'D
TO 15TH CAD 505 OR 702 AS REQ'D
TO 1ST CAD 505 OR 702 AS REQ'D

TO CAD 209

TS (A) ON UNIT J53048T

2 (LIAU) RELEASE
5M (AAU) REL
1M (LIAU) REL
3M (AAU) REL
4M (LIAU) REL
12 (COAU) REL
10M
6M
2M (AAU) REL
4
5
3 (LIAU) REL
2
(AAU) REL
12
10 M
10
6
2
1 (AAU) REL
8
12M
L
(COAU) REL

DRAWING ISSUE

1	WRS ABA HLJ
2D	WRS ABA HLJ
4A	

ISSUE 10D

SWITCHING SYSTEM NO. 5014

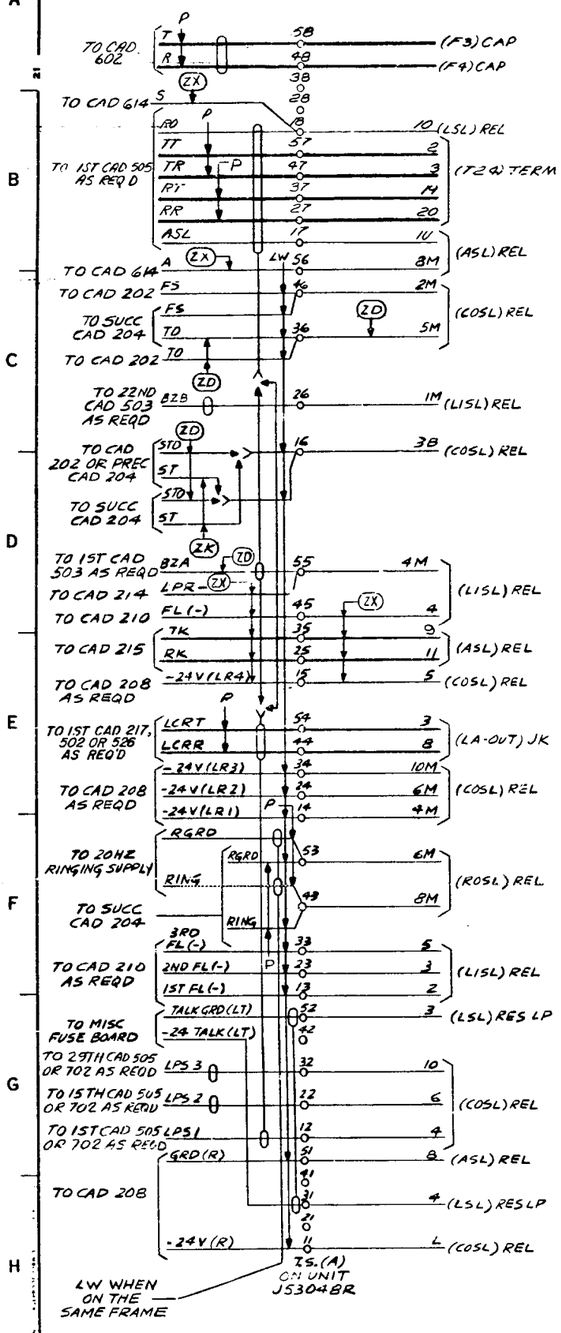
BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G12B

SD-69610-01-G12B

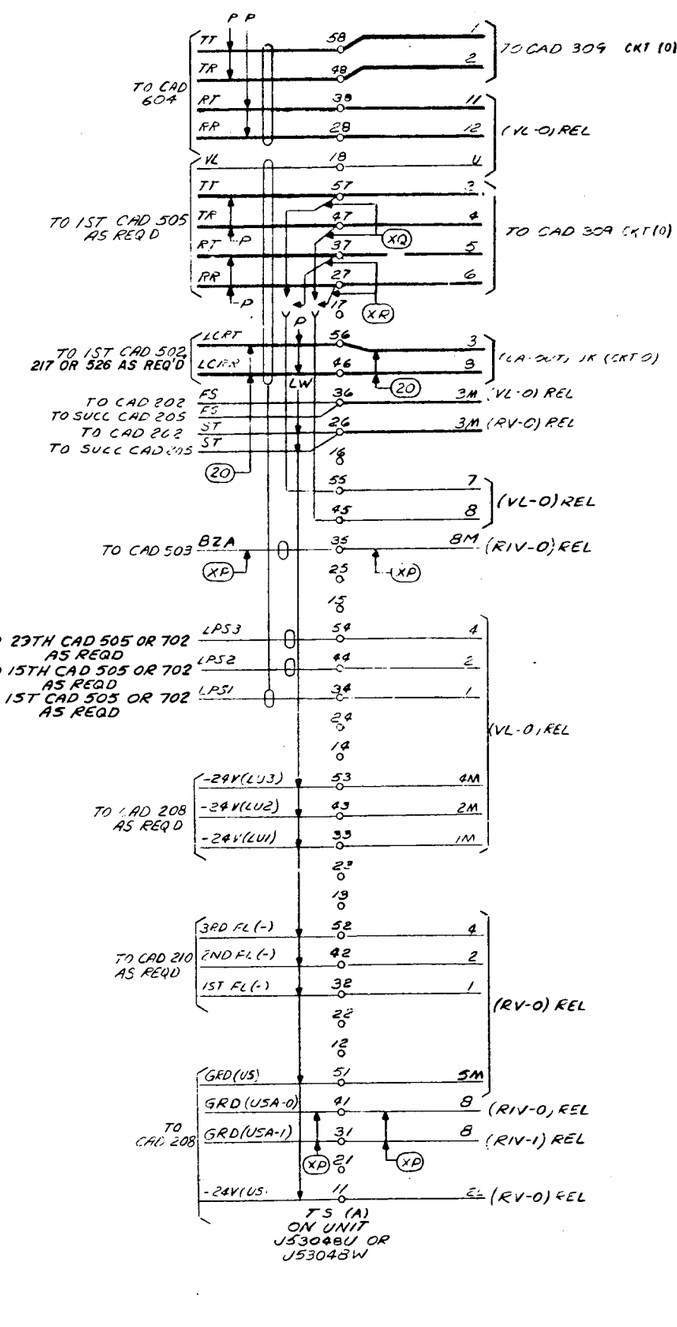
CAD 204

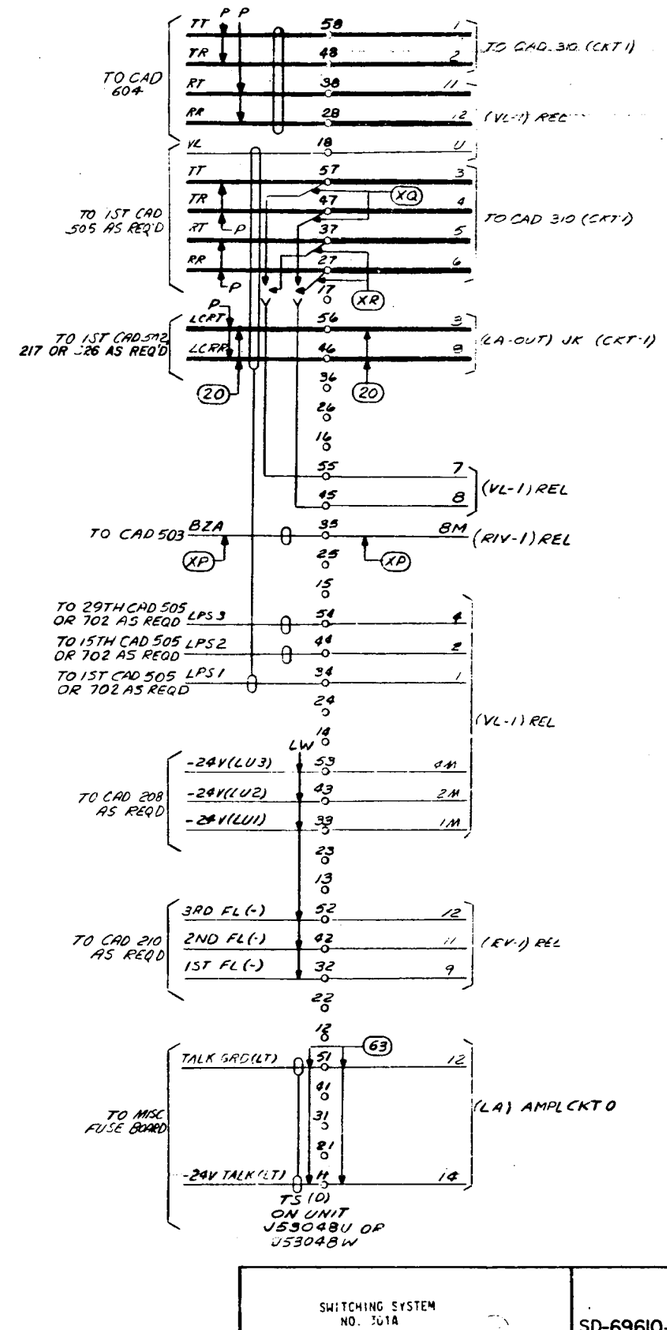
(FOR APP FIG. 20, 25, 52, & 63)



CAD 205

(FOR APP FIG 60 AND 2 APP FIG 66 & 20)





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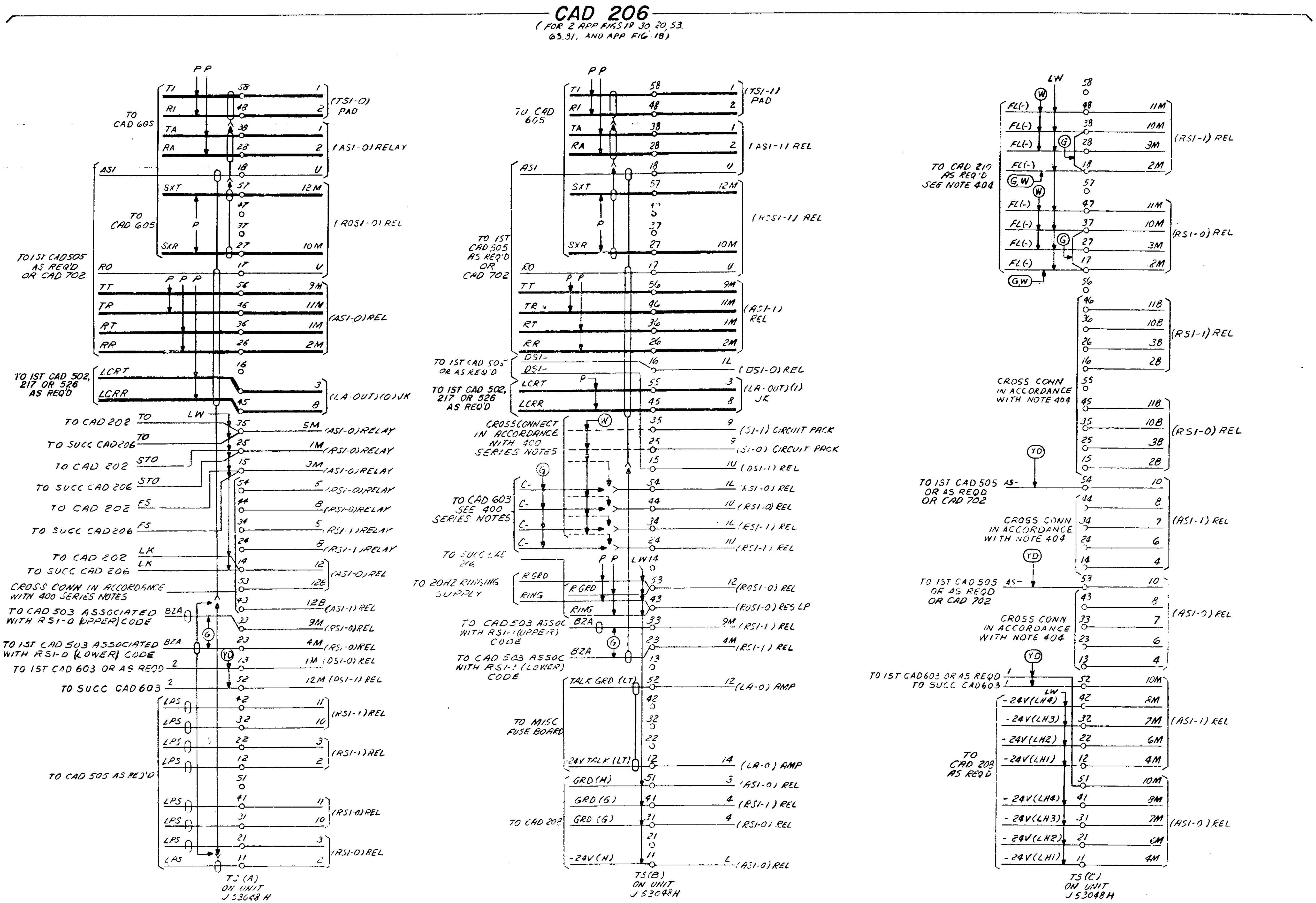
ISSUE 8B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-GI3



CAD 206
(FOR 2 APP FIGS 19, 30, 20, 53, 63, 31, AND APP FIG 18)
TO CAD 605
TO 1ST CAD 505 AS REQ'D OR CAD 702
TO 1ST CAD 502, 217 OR 526 AS REQ'D
TO CAD 202
TO SUCC CAD 206
CROSS CONN IN ACCORDANCE WITH 400 SERIES NOTES
TO CAD 503 ASSOCIATED WITH RSI-0 (UPPER) CODE
TO 1ST CAD 503 ASSOCIATED WITH RSI-0 (LOWER) CODE
TO 1ST CAD 603 OR AS REQD
TO SUCC CAD 603
TO CAD 505 AS REQ'D
TS (A) ON UNIT J 53048 H
TO CAD 603 SEE 400 SERIES NOTES
TO 20HZ RINGING SUPPLY
TO MISC FUSE BOARD
TO CAD 203
TS (B) ON UNIT J 53048H
TO CAD 210 AS REQ'D SEE NOTE 404
CROSS CONN IN ACCORDANCE WITH NOTE 404
TO CAD 208 AS REQ'D
TS (C) ON UNIT J 53048H

SWITCHING SYSTEM NO 301A

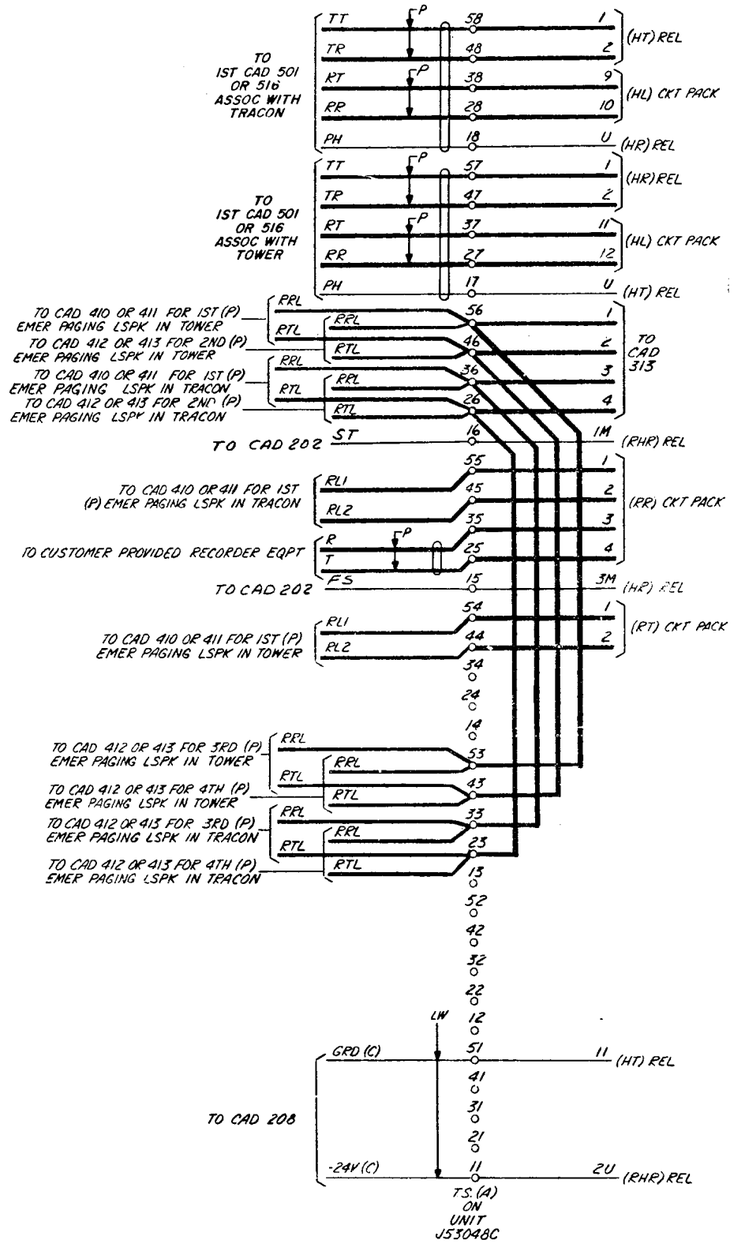
BELL TELEPHONE LABORATORIES INCORPORATED

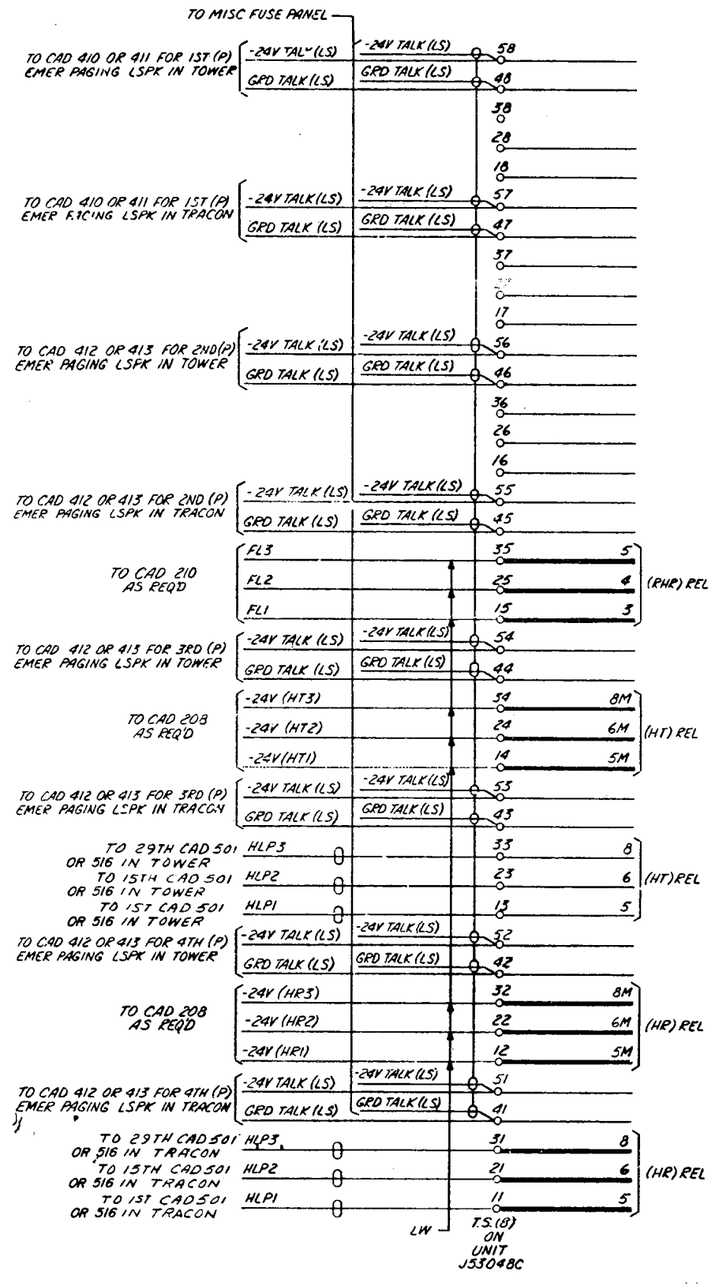
SD-69610-01-G14

ISSUE 8B

CAD 207

APP FIG. 21, 22 & 69





DRAWING ISSUE

1	[illegible]
2D	[illegible]
4A	

ISSUE 6B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

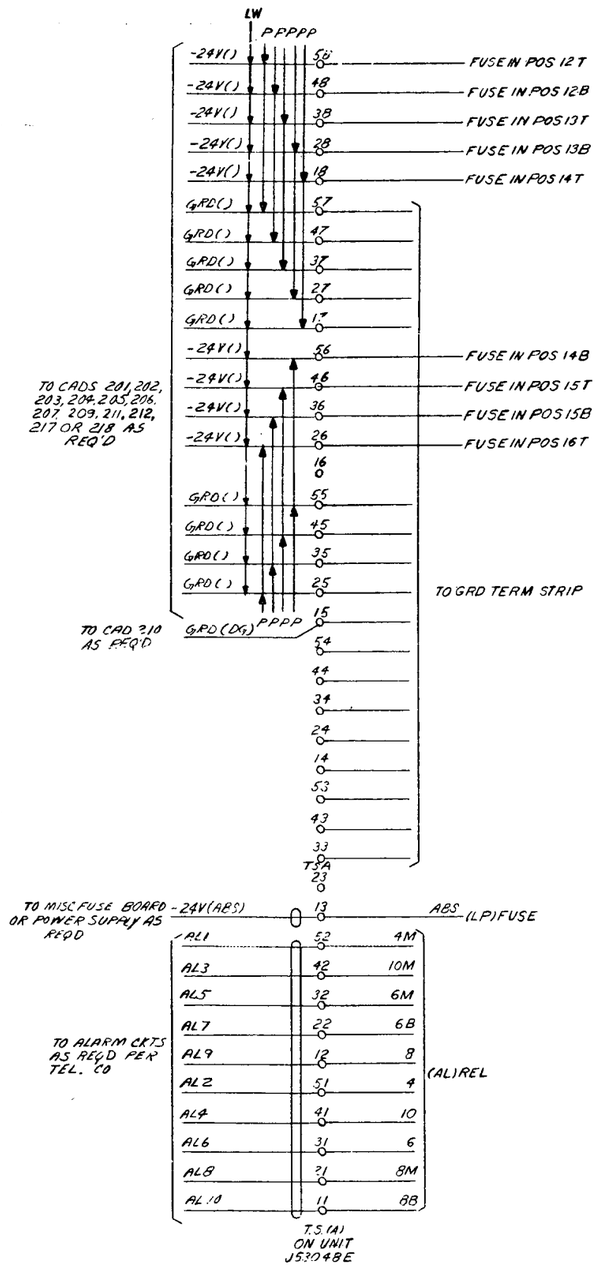
FORM 65

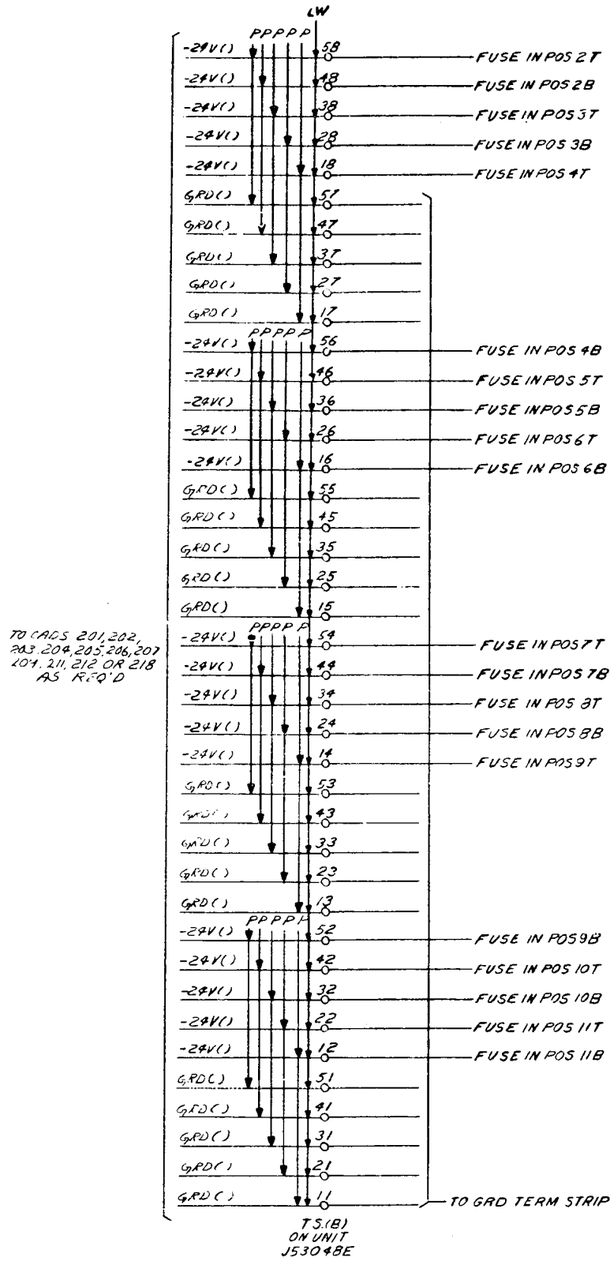
SD-69610-01-015

SD-69610-01-015

CAD 208

(FOR APP FIG 6, 29 & 59)





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20	...

ISSUE 8B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

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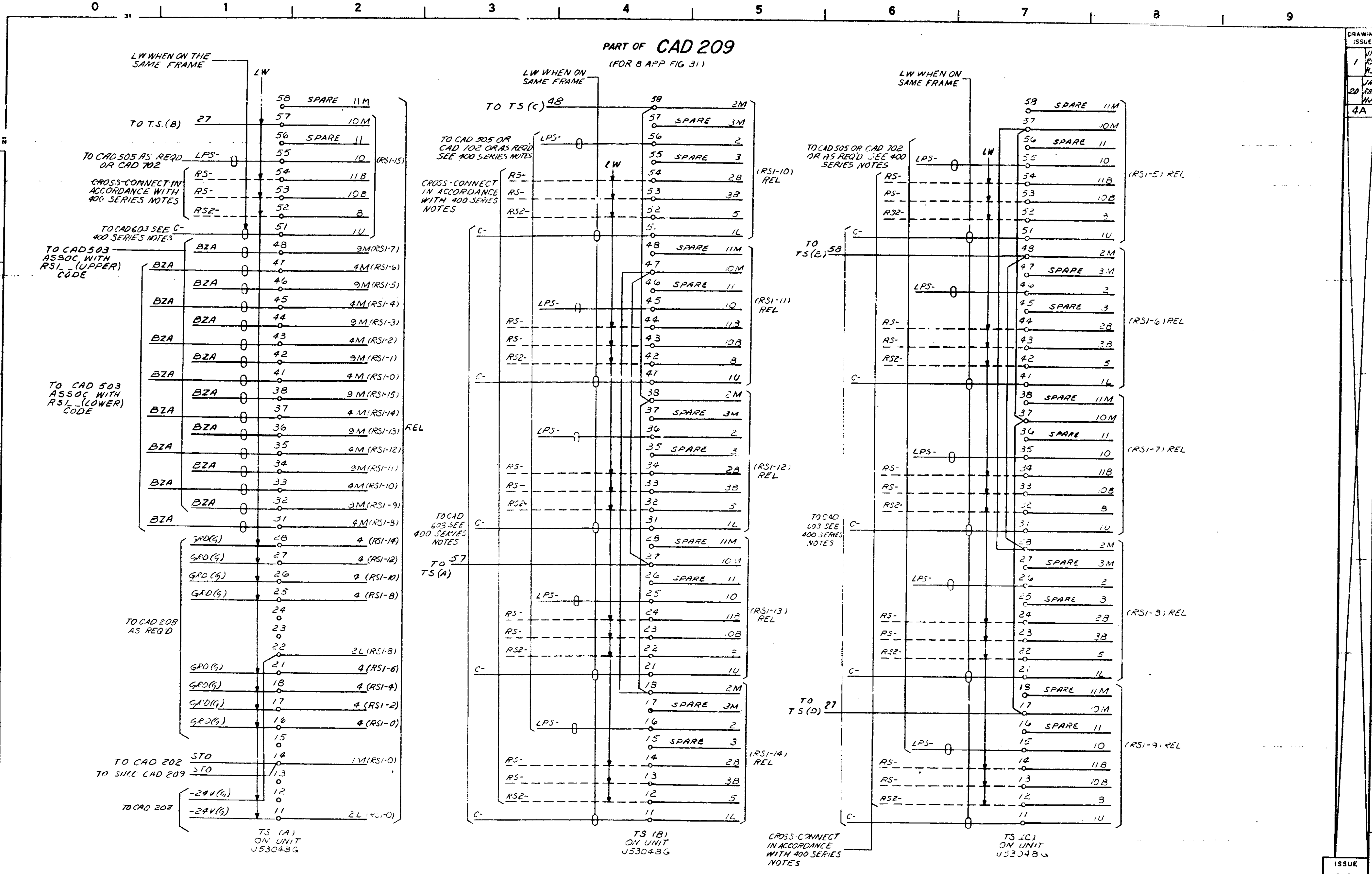
SD-69610-01-G16



DRAWING ISSUE

ISSUE 8B

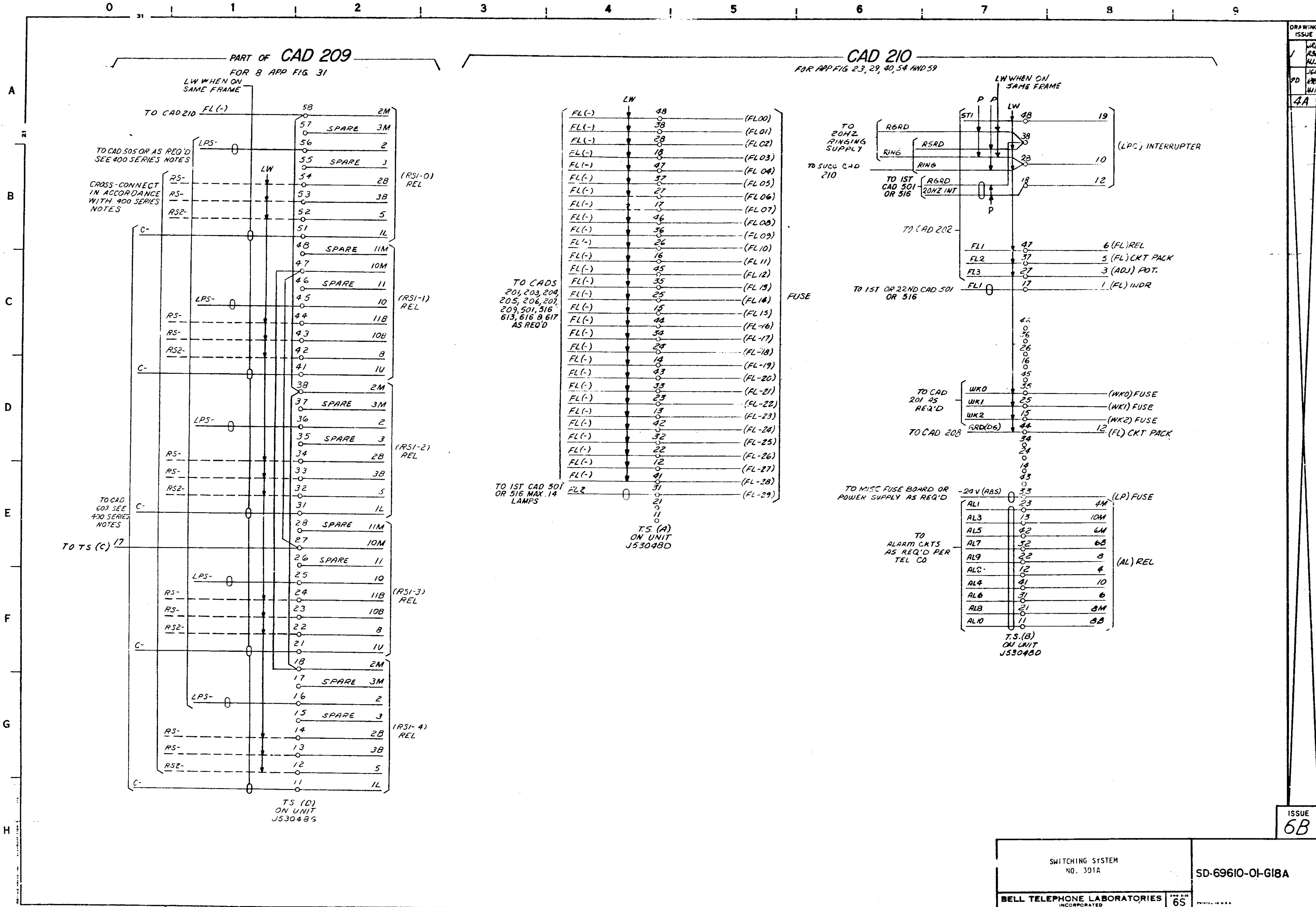
SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G17

6S

SD-69610-01-G17


PART OF CAD 209
FOR 8 APP FIG 31
CAD 210
FOR APP FIG 23, 29, 40, 54 AND 59
LW WHEN ON SAME FRAME
TO CAD 210
TO CAD 505 OR AS REQ'D SEE 400 SERIES NOTES
CROSS-CONNECT IN ACCORDANCE WITH 400 SERIES NOTES
TO CAD 603 SEE 400 SERIES NOTES
TO TS (C)
(RSI-0) REL
(RSI-1) REL
(RSI-2) REL
(RSI-3) REL
(RSI-4) REL
TS (D) ON UNIT J53048G
TO CADS 201, 203, 204, 205, 206, 207, 209, 501, 516 613, 616 & 617 AS REQ'D
TO 1ST CAD 501 OR 516 MAX. 14 LAMPS
FUSE
T.S (A) ON UNIT J53048D
TO 20HZ RINGING SUPPLY
TO SUCC CAD 210
TO 1ST CAD 501 OR 516
(LPC) INTERRUPTER
TO CAD 202
(FL) REL
(FL) CKT PACK
(ADJ) POT.
(FL) INDR
TO 1ST OR 22ND CAD 501 OR 516
TO CAD 201 AS REQ'D
TO CAD 208
(WK0) FUSE
(WK1) FUSE
(WK2) FUSE
(FL) CKT PACK
TO MISC FUSE BOARD OR POWER SUPPLY AS REQ'D
(LP) FUSE
TO ALARM CKTS AS REQ'D PER TEL CO
(AL) REL
T.S.(B) ON UNIT J53048D
ISSUE 6B

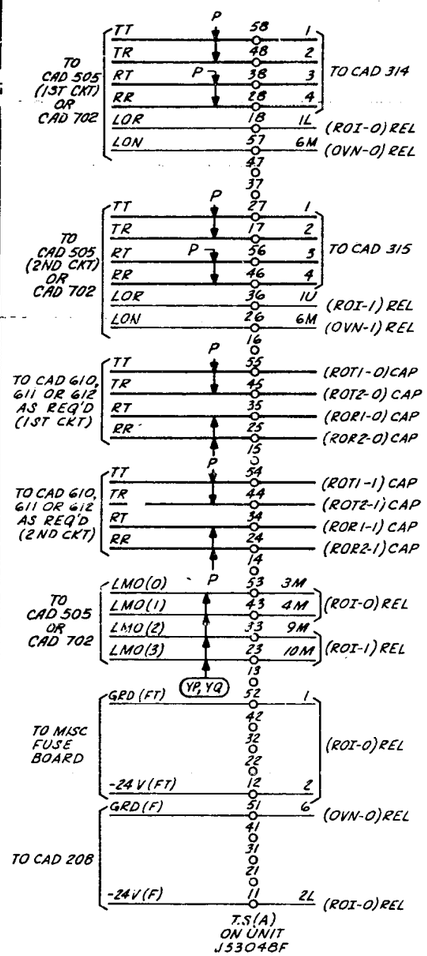
SWITCHING SYSTEM NO. 301A

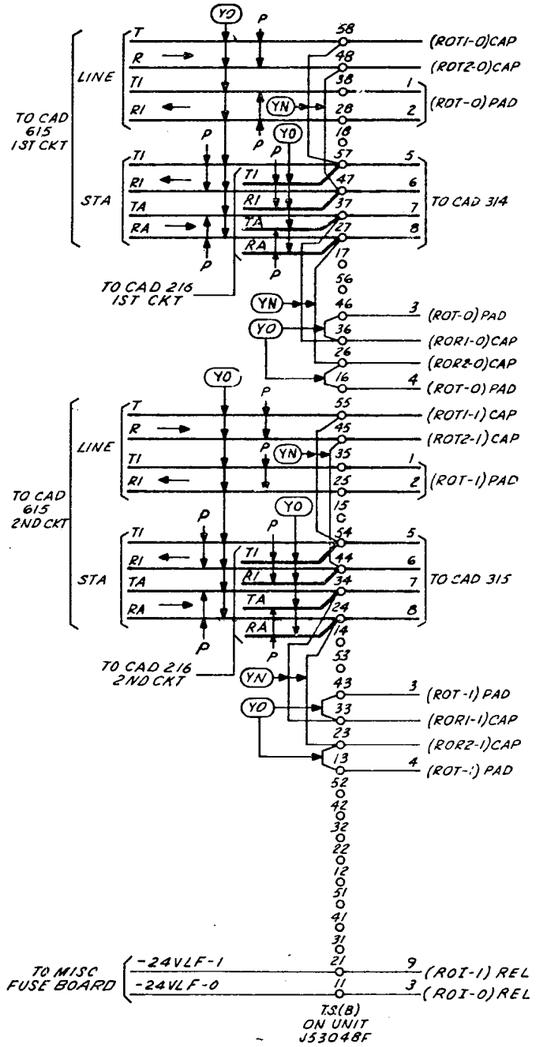
SD-69610-01-G18A

BELL TELEPHONE LABORATORIES INCORPORATED

CAD 211

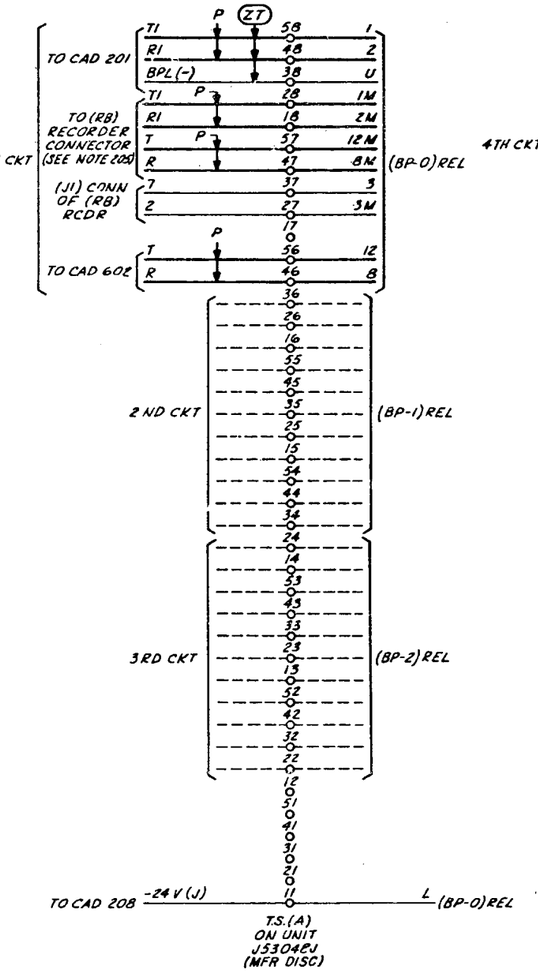
(FOR APP FIG.10 AND 2 APP FIG.8)

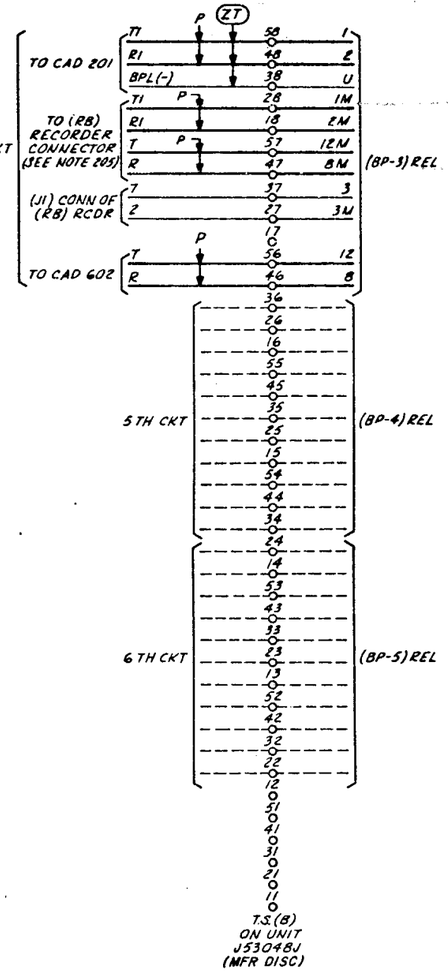




PART OF CAD 212 (MFR DISC)

(FOR 8 APP FIG. 11)





DRAWING ISSUE

ISSUE 8B

SD-69610-01-G18B

SWITCHING SYSTEM NO. 301A

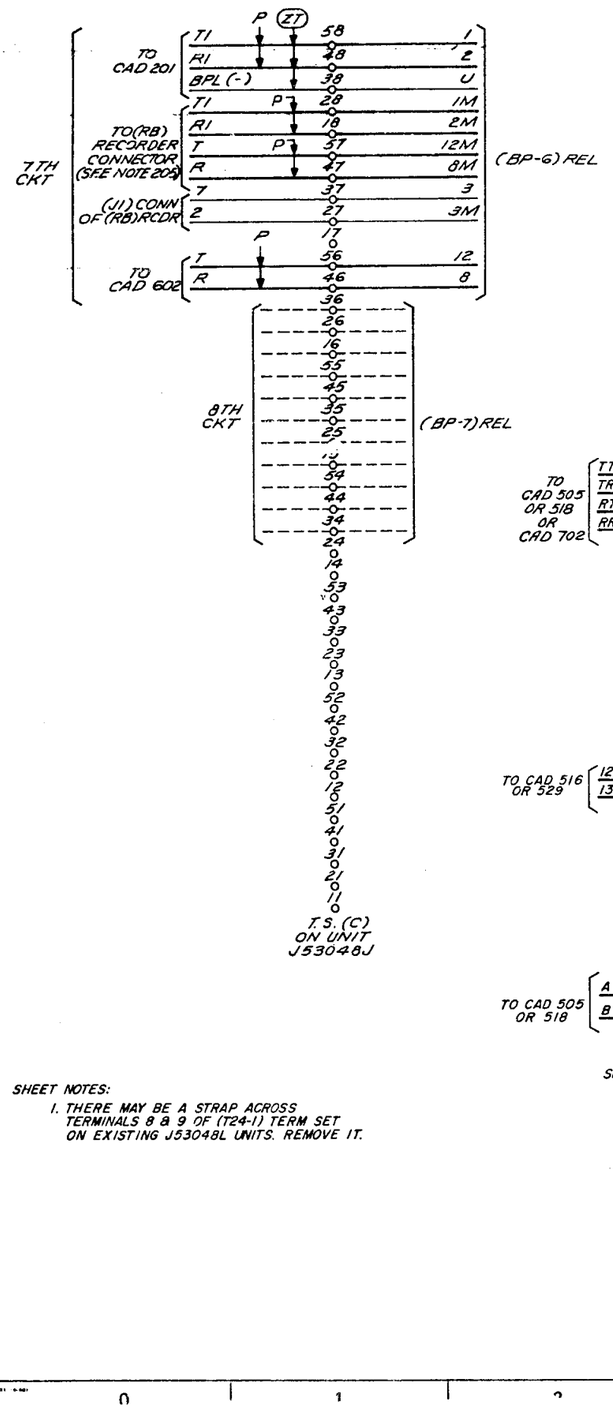
(2)

SD-69610-01-G18B

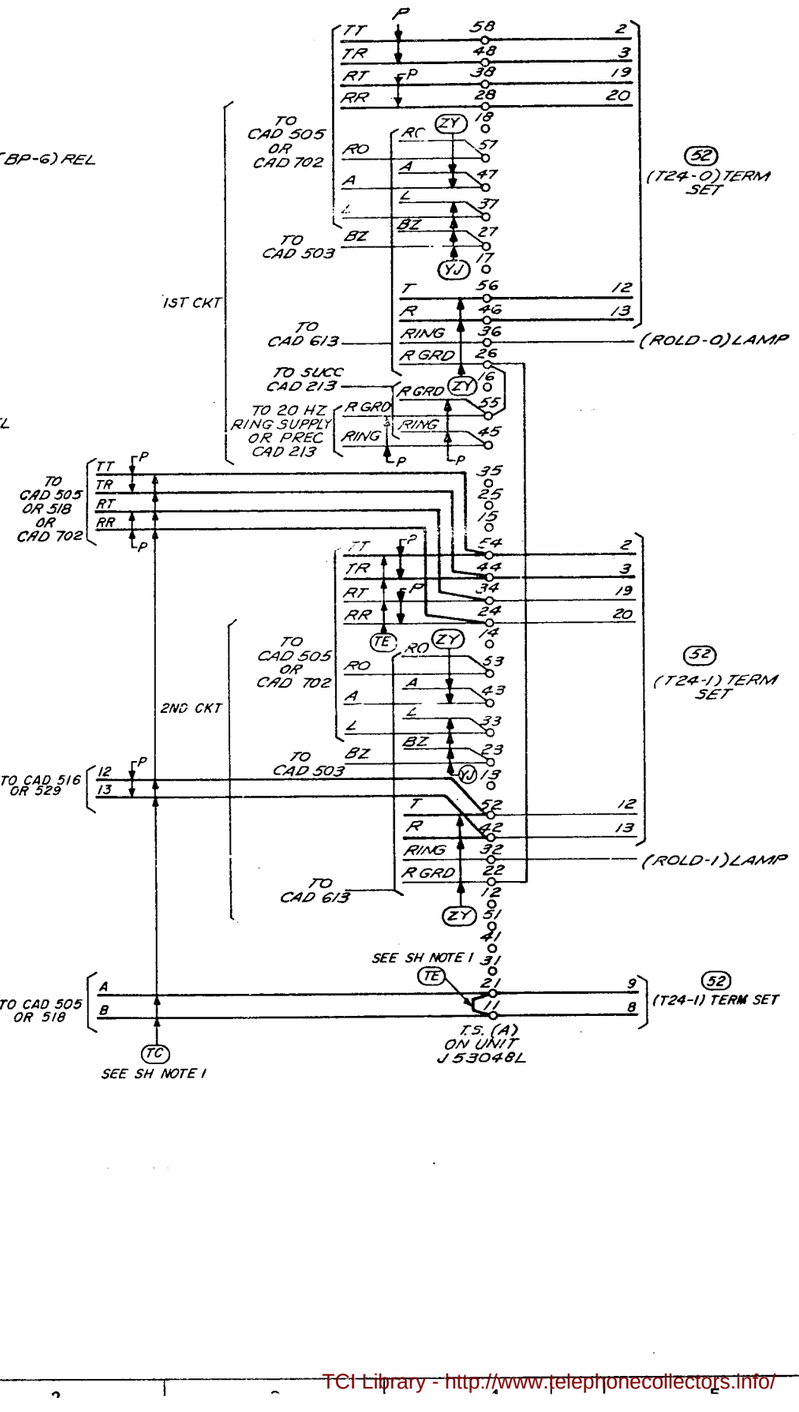
BELL TELEPHONE LABORATORIES INCORPORATED

SHEET 6S

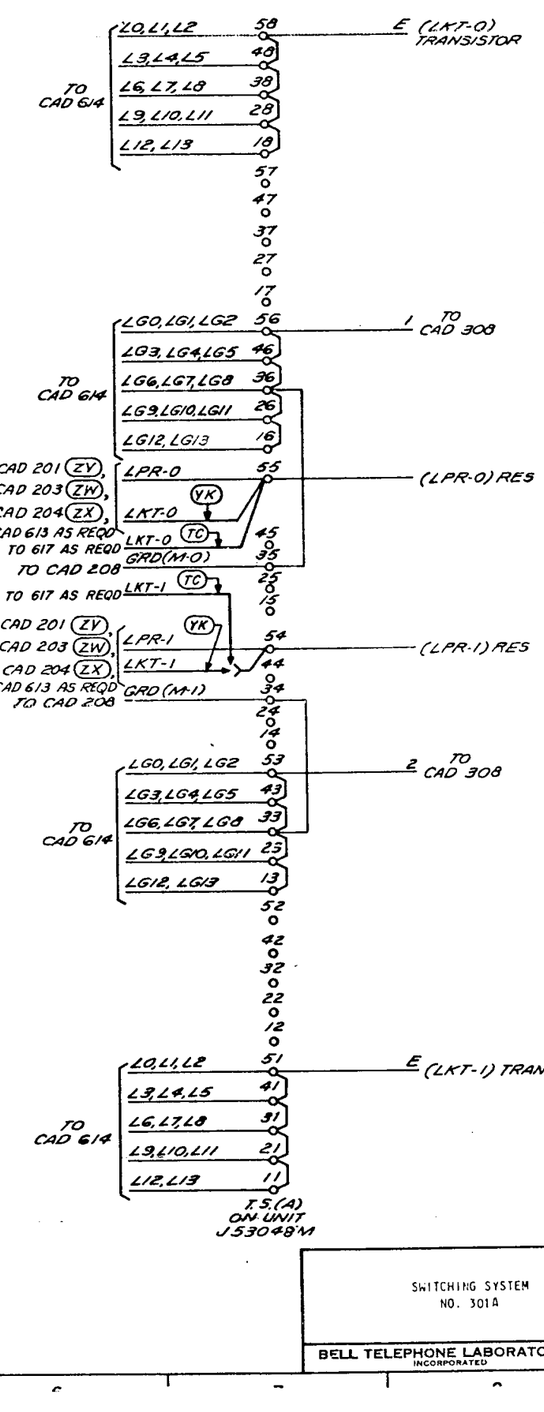
(MFR DISC) PART OF CAD 212
(FOR 8 APP FIG. 11)



CAD 213
(FOR 2 APP FIG. 52 AND 17)



CAD 214
(FOR 2 APP FIG. 13)



SHEET NOTES:

1. THERE MAY BE A STRAP ACROSS TERMINALS 8 & 9 OF (T24-1) TERM SET ON EXISTING J53048L UNITS. REMOVE IT.

ISSUE 8B

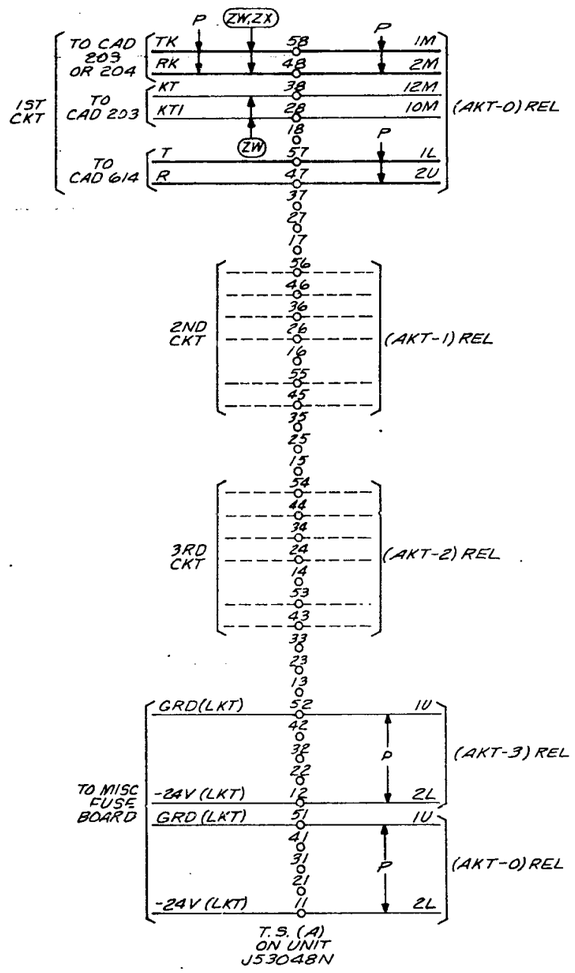
SWITCHING SYSTEM NO. 301A

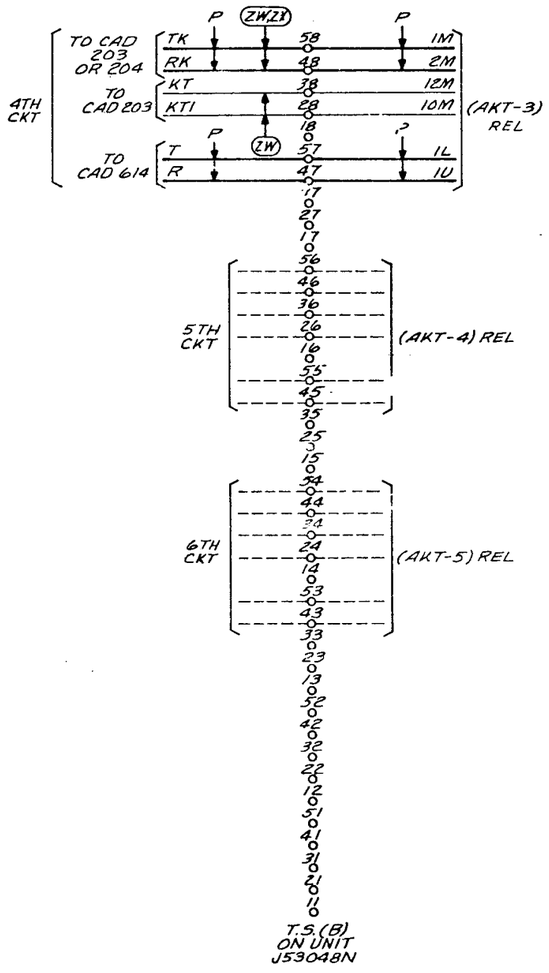
BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-618C

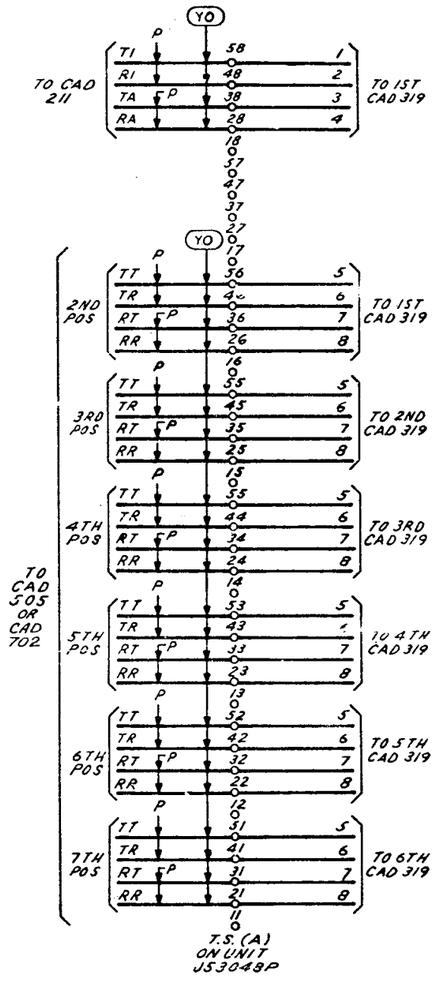
SD-69610-01-618C

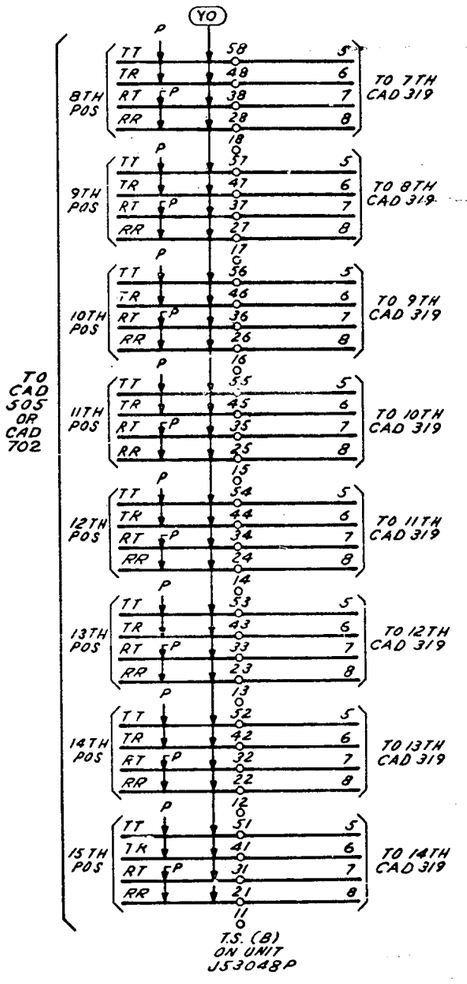
CAD 215
(FOR 6 APP FIG. 14)





CAD 216
(FOR 14 APP FIG. 72)





DRAWING ISSUE

ISSUE 8B

SWITCHING SYSTEM NO. 3014

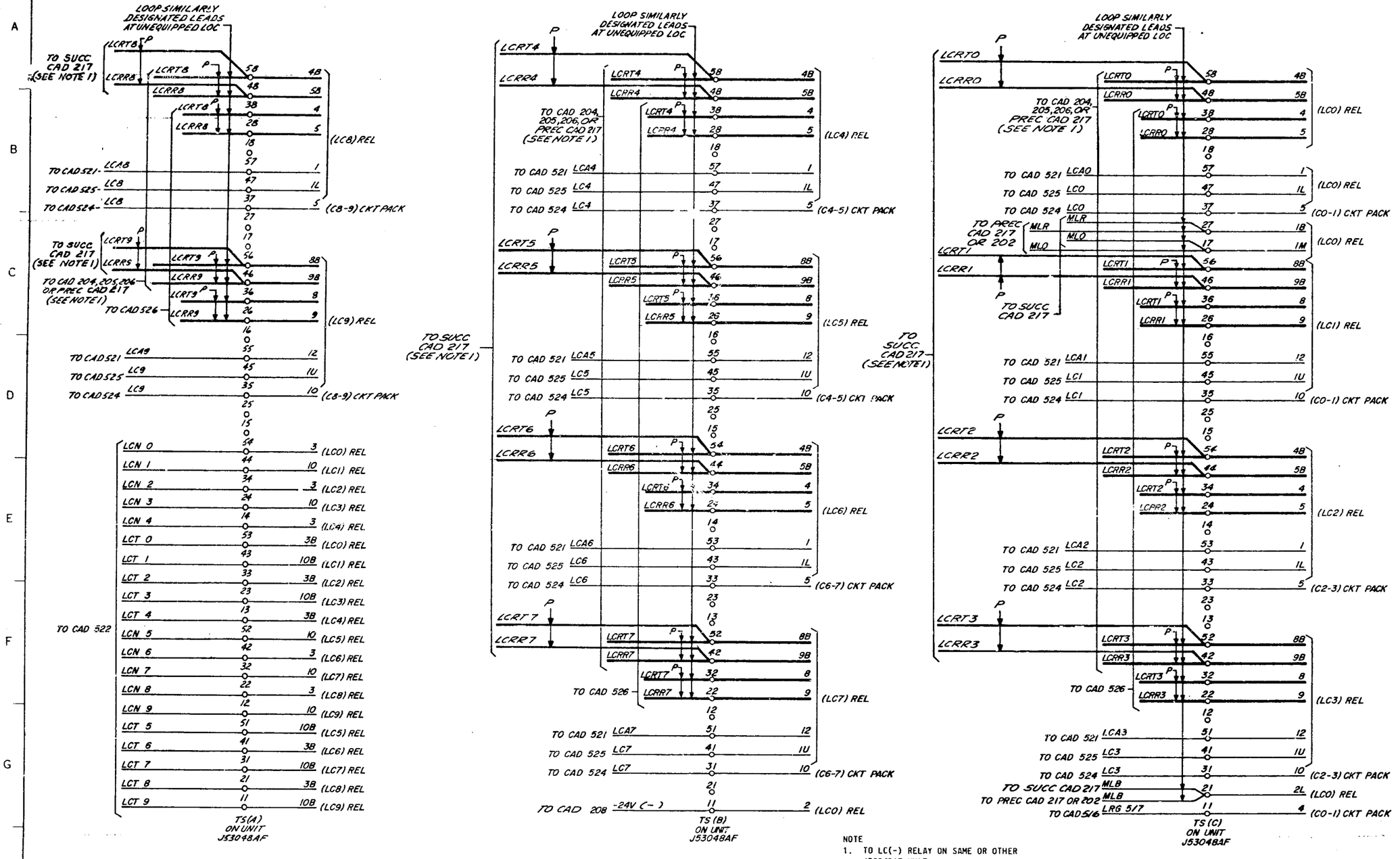
(2) SD-69610-01-G18D

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G18D

CAD 217

(FOR APP FIG. 26,42 & 51)
(2 POSITION FRAME)



NOTE
1. TO LC(-) RELAY ON SAME OR OTHER J53048AF UNIT.

ISSUE 6B

SWITCHING SYSTEM NO. 310A

BELL TELEPHONE LABORATORIES INCORPORATED

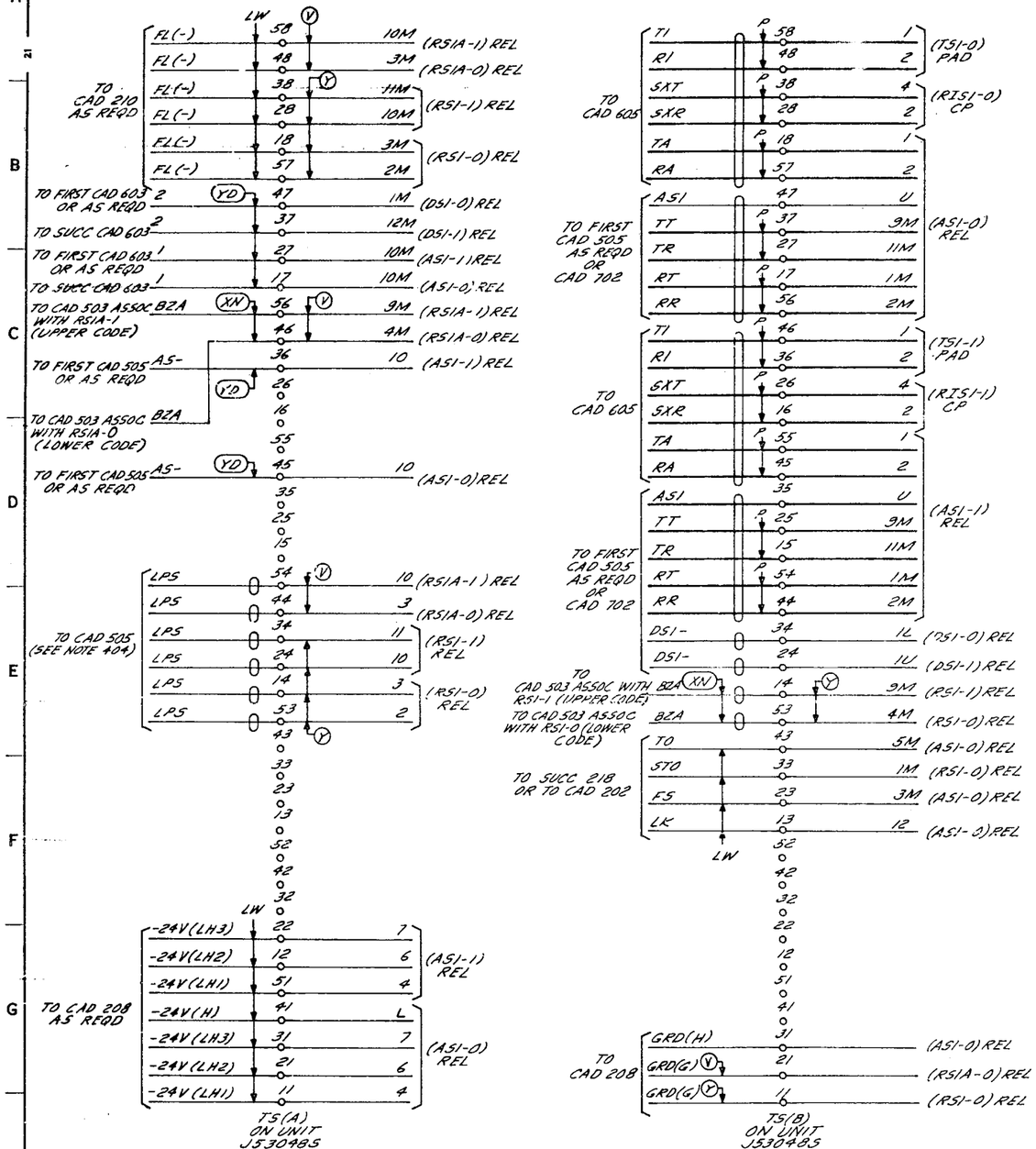
SD-69610-01-G18E

6S

SD-69610-01-G18E

CAD 218

FOR APP FIG. 18, 19, 31 AND 81



ISSUE 8B

SWITCHING SYSTEM NO. 301A

SD-69610-01-GI8F

BELL TELEPHONE LABORATORIES INCORPORATED

DWG SIZE 6S

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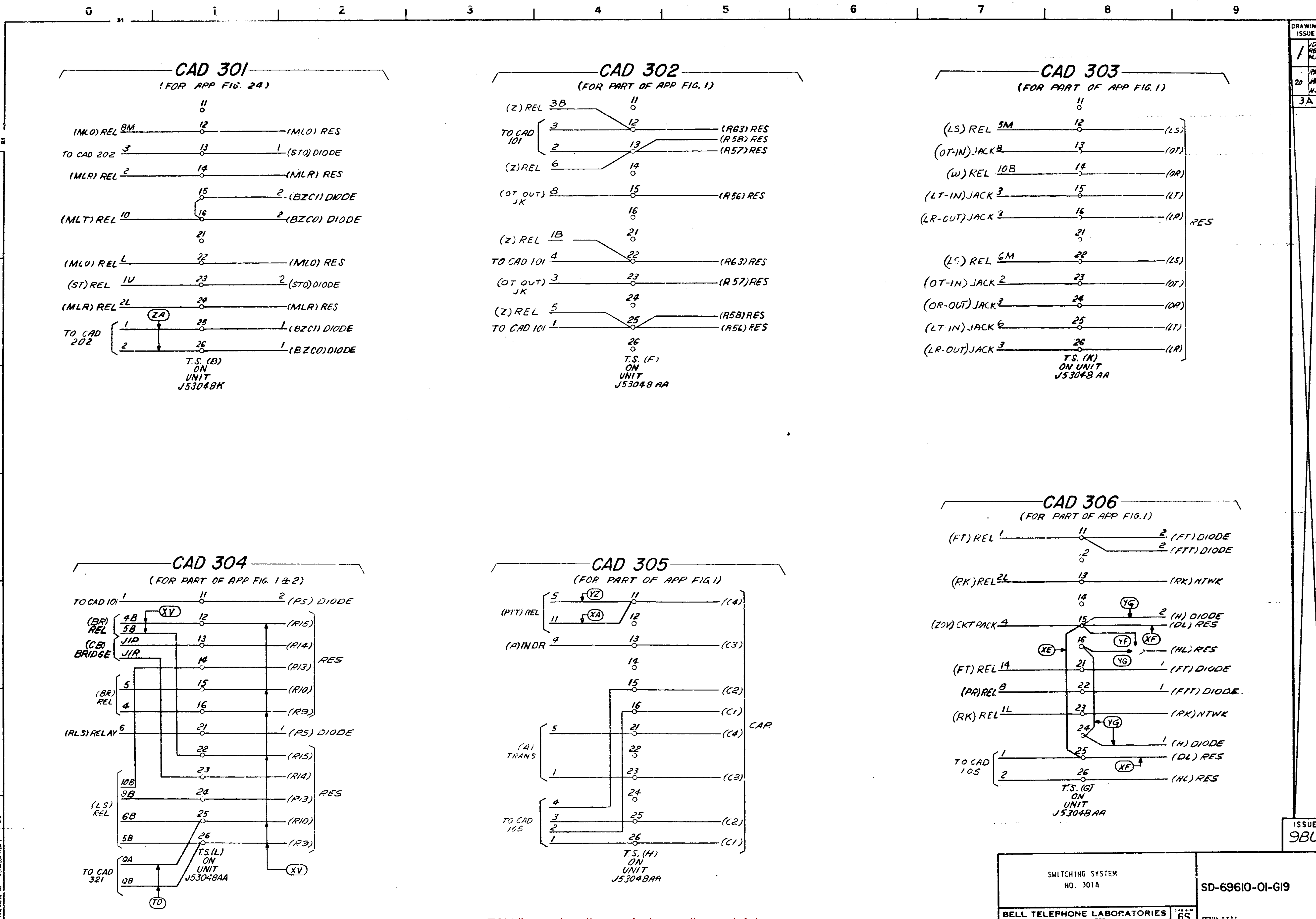
CAD 301
(FOR APP FIG. 24)
(MLO) REL
TO CAD 202
(MLR) REL
(MLT) REL
(ST) REL
(MLO) RES
(STO) DIODE
(MLR) RES
(BZC1) DIODE
(BZC0) DIODE
TO CAD 202
ZA
T.S. (B) ON UNIT J53048K
CAD 302
(FOR PART OF APP FIG. 1)
(Z) REL
TO CAD 101
(OT OUT) JK
(R63) RES
(R58) RES
(R57) RES
(R56) RES
T.S. (F) ON UNIT J53048AA
CAD 303
(FOR PART OF APP FIG. 1)
(LS) REL
(OT-IN) JACK
(W) REL
(LT-IN) JACK
(LR-OUT) JACK
(OR-OUT) JACK
(LT IN) JACK
RES
T.S. (K) ON UNIT J53048AA
CAD 304
(FOR PART OF APP FIG. 1 & 2)
TO CAD 101
(BR) REL
(CB) BRIDGE
(RLS) RELAY
(LS) REL
TO CAD 321
(PS) DIODE
RES
XV
TD
T.S. (L) ON UNIT J53048AA
CAD 305
(FOR PART OF APP FIG. 1)
(PTT) REL
(A) INDR
(A) TRANS
TO CAD 105
YZ
XA
CAP.
T.S. (H) ON UNIT J53048AA
CAD 306
(FOR PART OF APP FIG. 1)
(FT) REL
(RK) REL
(20V) CKT PACK
(PR) REL
TO CAD 105
(FT) DIODE
(FTT) DIODE
(RK) NTWK
(H) DIODE
(DL) RES
(HL) RES
YG
YF
XF
XE
T.S. (G) ON UNIT J53048AA

ISSUE 9BU

SWITCHING SYSTEM NO. 301A

SD-69610-01-G19

BELL TELEPHONE LABORATORIES INCORPORATED

6S

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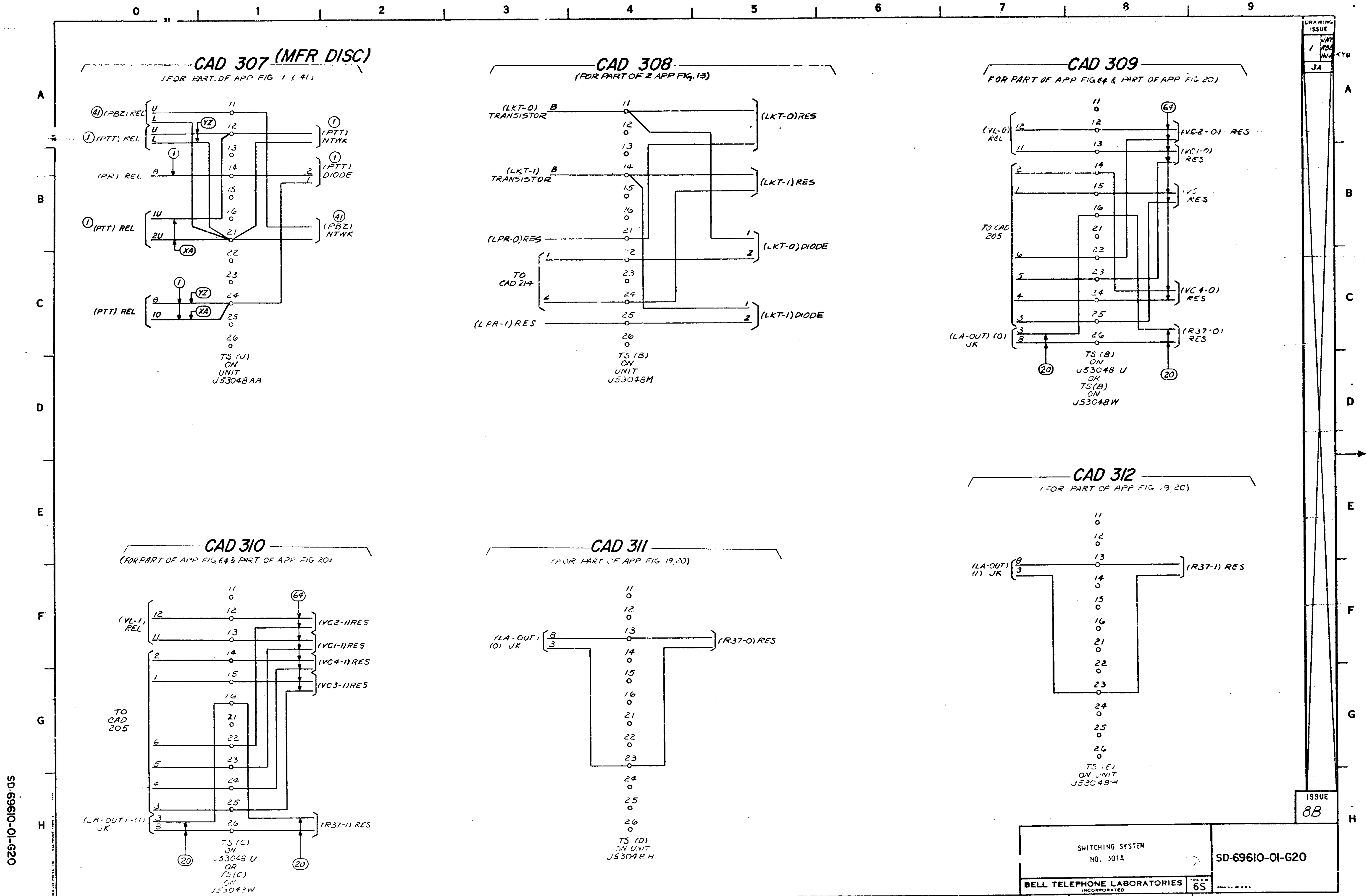
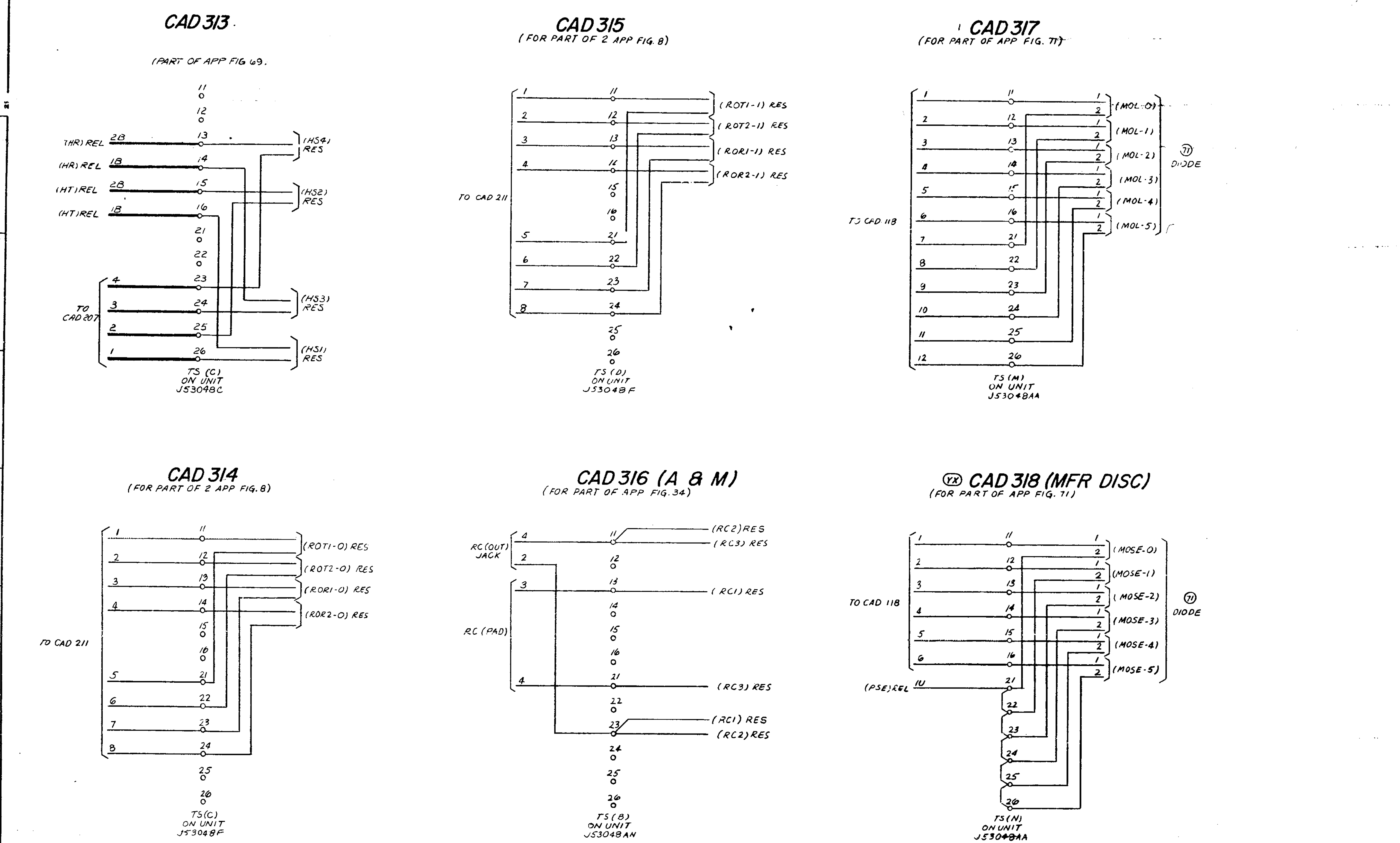


CAD 307 (MFR DISC)
(FOR PART OF APP FIG 1 & 41)
(PBZ) REL
(PTT) REL
(PTT) NTWK
(PR) REL
(PTT) DIODE
(PBZ) NTWK
(PTT) REL
TS (U) ON UNIT J53048AA
CAD 308
(FOR PART OF Z APP FIG. 13)
(LKT-0) TRANSISTOR
(LKT-0) RES
(LKT-1) TRANSISTOR
(LKT-1) RES
(LPR-0) RES
(LKT-0) DIODE
TO CAD 214
(LPR-1) RES
(LKT-1) DIODE
TS (B) ON UNIT J53048M
CAD 309
FOR PART OF APP FIG 64 & PART OF APP FIG 20)
(VL-0) REL
(VC2-0) RES
(VC1-0) RES
TO CAD 205
(VC4-0) RES
(LA-OUT) (0) JK
(R37-0) RES
TS (B) ON J53048 U OR TS (B) ON J53048W
CAD 310
(FOR PART OF APP FIG 64 & PART OF APP FIG 20)
(VL-1) REL
(VC2-1) RES
(VC1-1) RES
(VC4-1) RES
(VC3-1) RES
TO CAD 205
(LA-OUT) (1) JK
(R37-1) RES
TS (C) ON J53048 U OR TS (C) ON J53048W
CAD 311
(FOR PART OF APP FIG 19, 20)
(LA-OUT) (0) JK
(R37-0) RES
TS (D) ON UNIT J53048H
CAD 312
(FOR PART OF APP FIG 19, 20)
(LA-OUT) (1) JK
(R37-1) RES
TS (E) ON UNIT J53048H
ISSUE 8B
SWITCHING SYSTEM NO. 301A
BELL TELEPHONE LABORATORIES INCORPORATED
6S
SD-69610-01-G20


CAD 313
(PART OF APP FIG 69.
TO CAD 207
TS (C) ON UNIT J53048C
CAD 315
(FOR PART OF 2 APP FIG. 8)
TO CAD 211
TS (D) ON UNIT J53048F
CAD 317
(FOR PART OF APP FIG. 71)
TO CAD 118
DIODE
TS (M) ON UNIT J53048AA
CAD 314
(FOR PART OF 2 APP FIG. 8)
TO CAD 211
TS(C) ON UNIT J53048F
CAD 316 (A & M)
(FOR PART OF APP FIG. 34)
RC (OUT) JACK
RC (PAD)
TS (B) ON UNIT J53048AN
CAD 318 (MFR DISC)
(FOR PART OF APP FIG. 71)
TO CAD 118
DIODE
TS (N) ON UNIT J53048AA

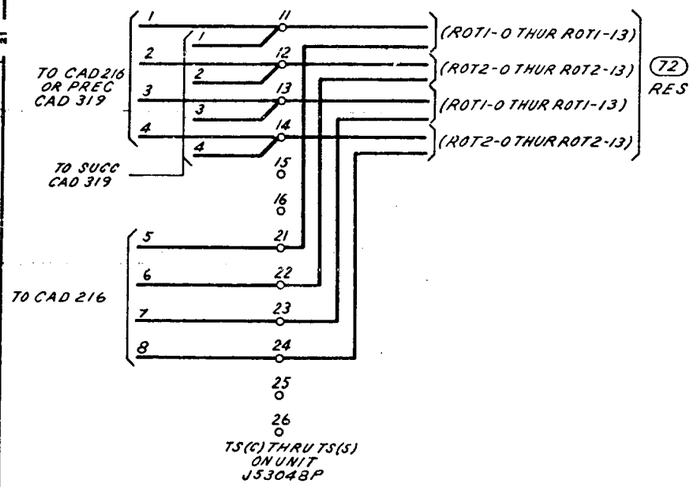
SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

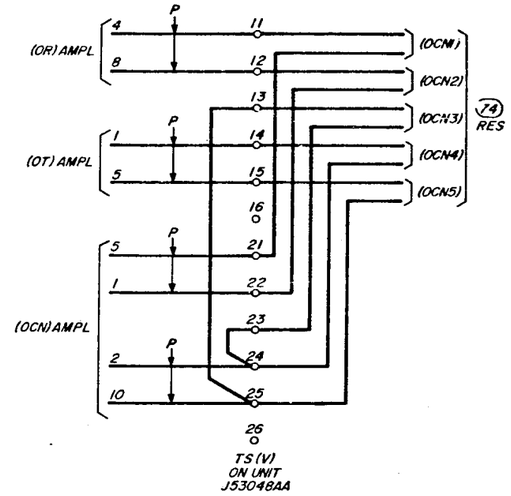
SD-69610-01-G21A

ISSUE 6B

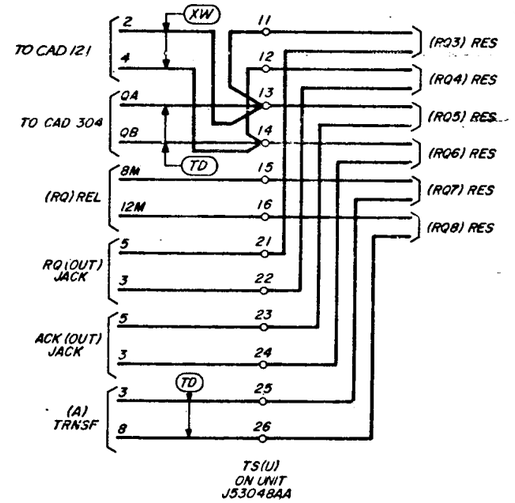
CAD 319
(FOR 14 APP FIG 72)



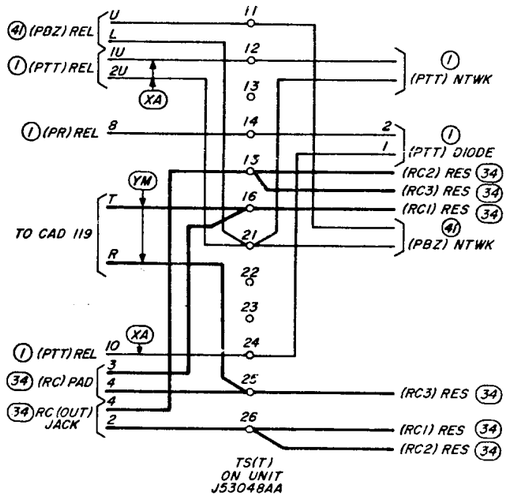
CAD 320
(FOR P/O APP FIG 74)



CAD 321
(FOR P/O APP FIG 76)



CAD 322
(FOR P/O APP FIG 1, 34 & 41)



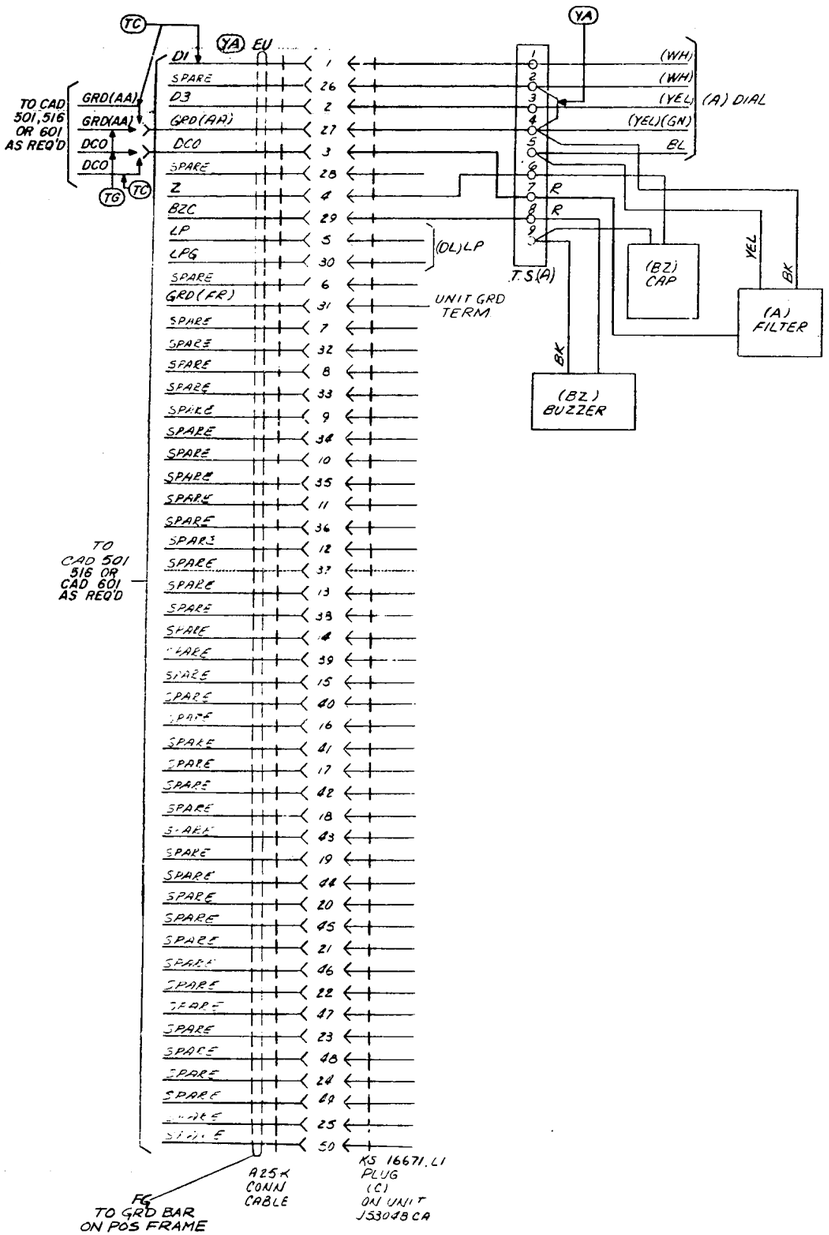
ISSUE 9BU

SWITCHING SYSTEM NO. 301A (2)

SD-69610-01-0218

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-0218



ISSUE
6B

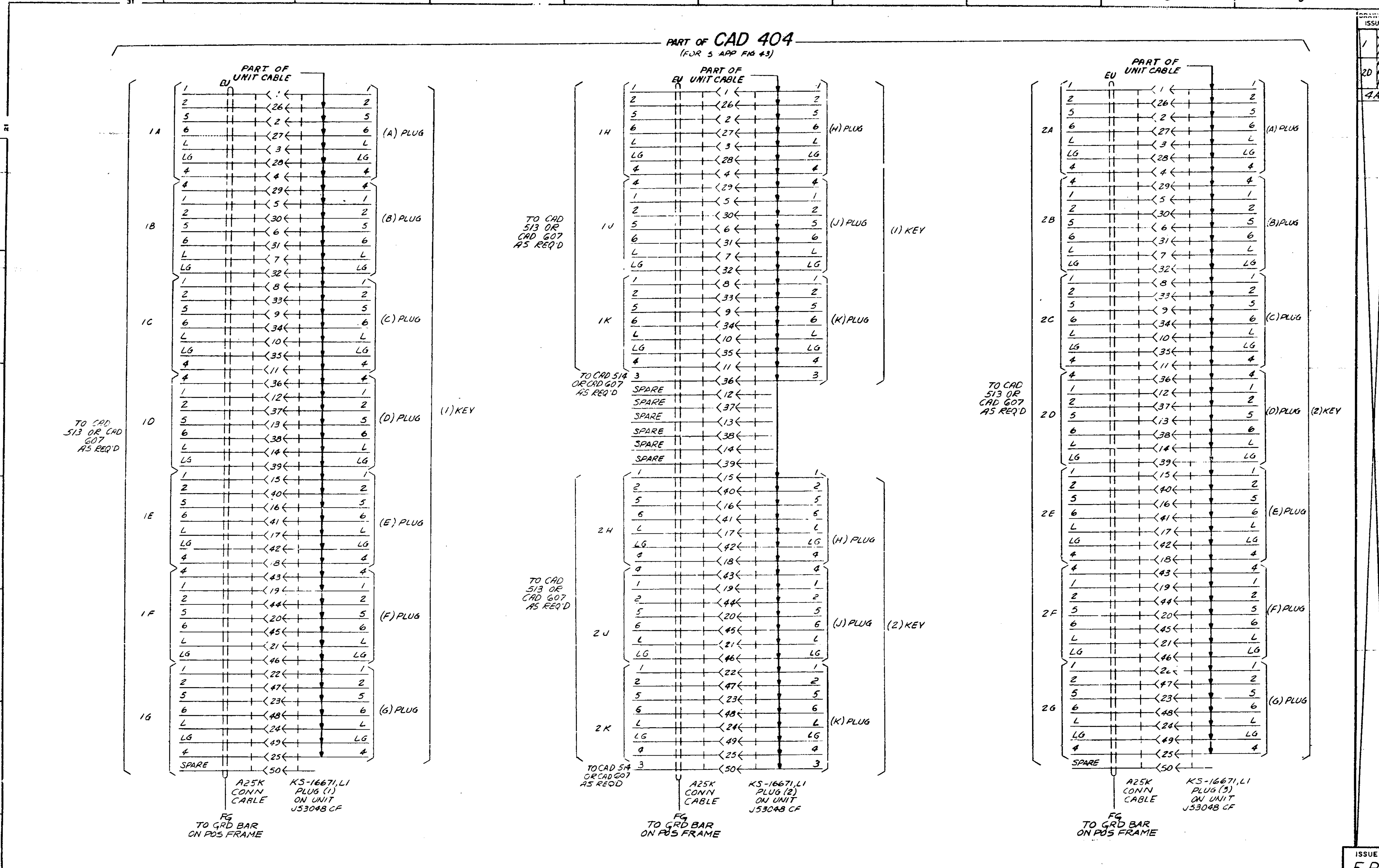
SWITCHING SYSTEM
NO. 301A

SD-69610-01-G22

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SD-69610-01-G22

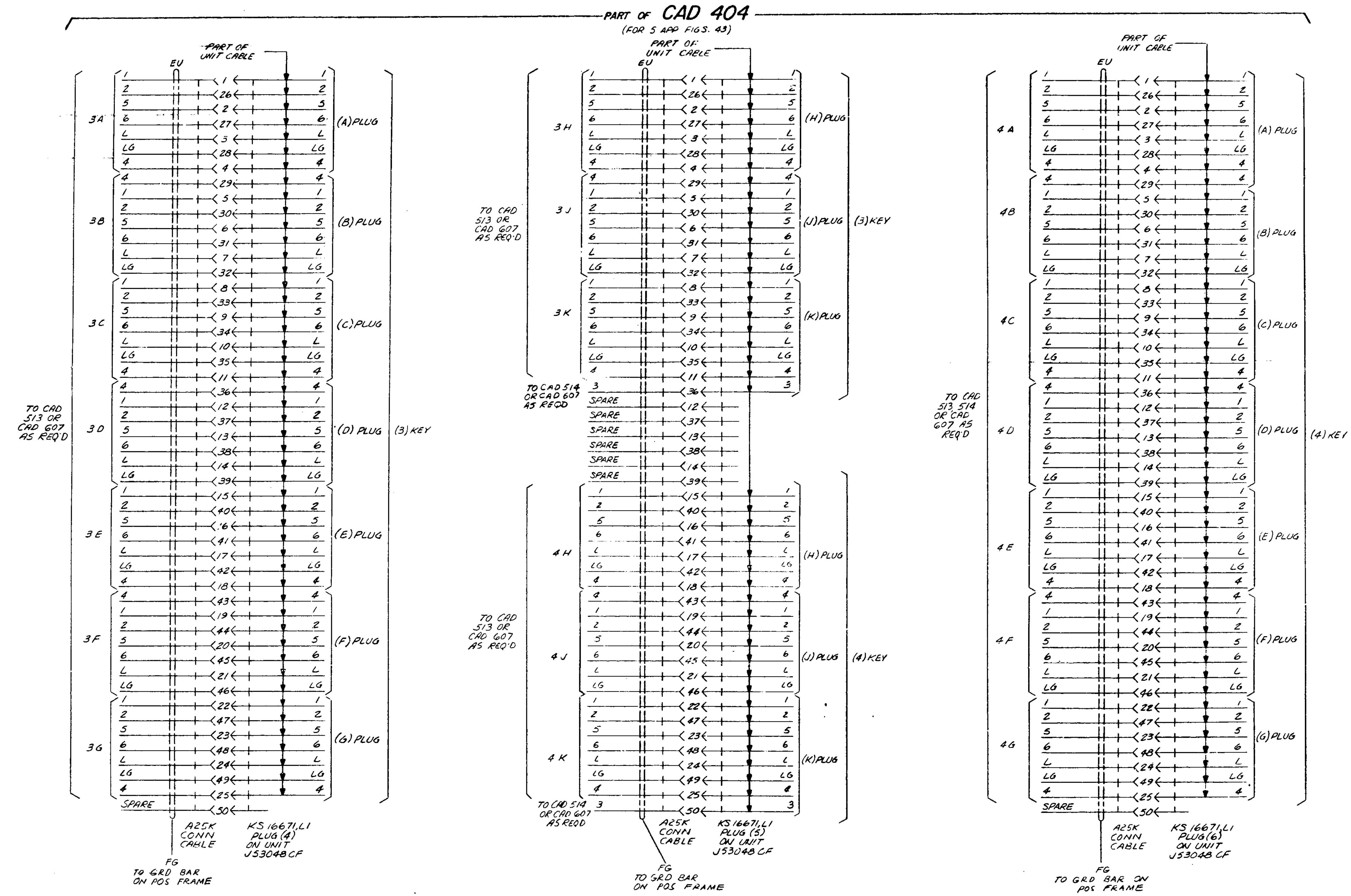


ISSUE 5B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G23



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ISSUE 5B

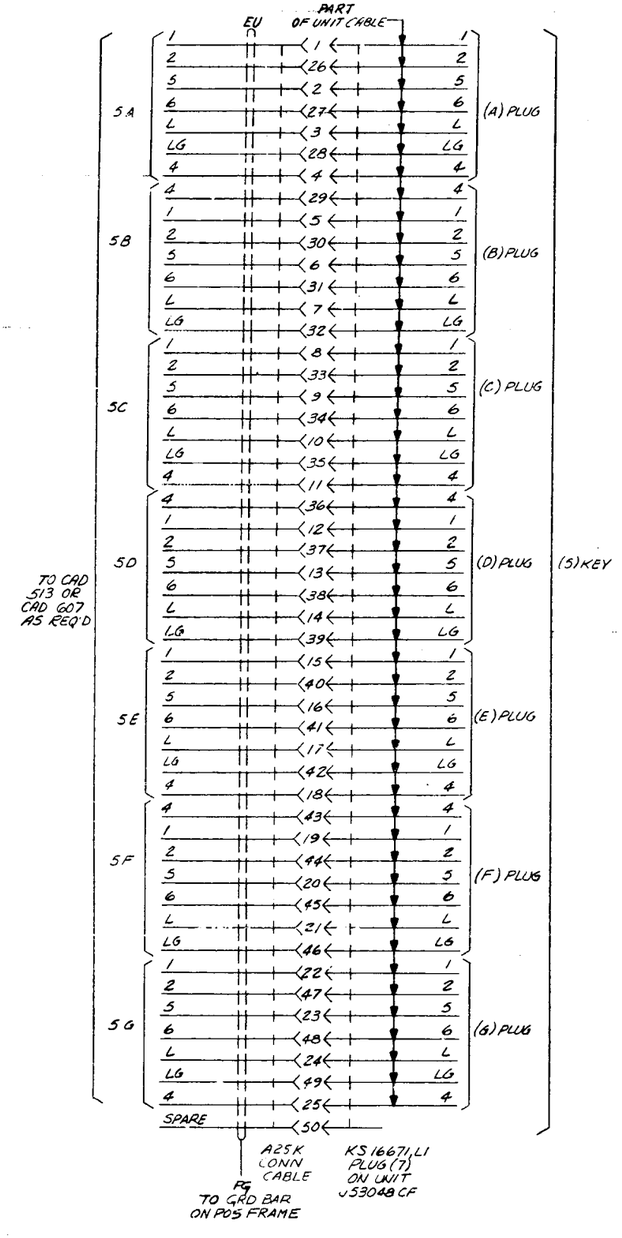
SWITCHING SYSTEM NO. 301A

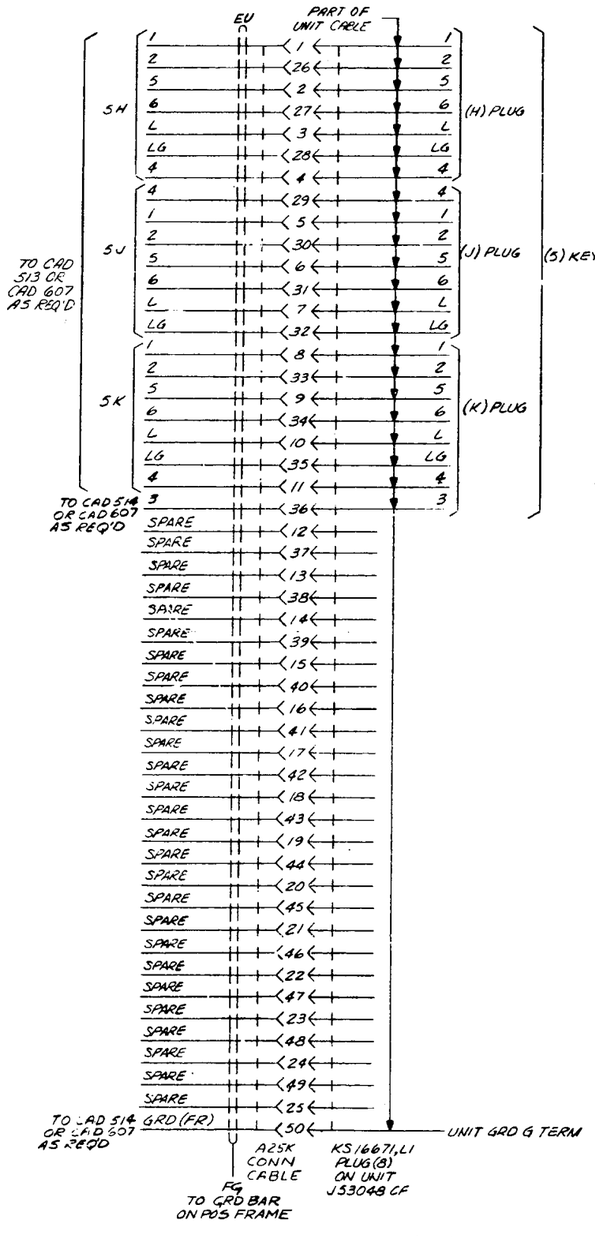
BELL TELEPHONE LABORATORIES INCORPORATED

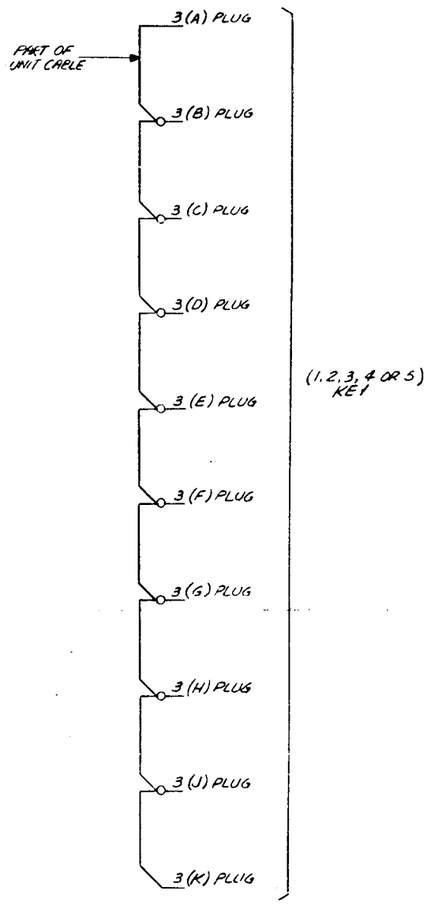
6S

SD-69610-01-G24

PART OF CAD 404
(FOR 5 APP FIGS. 43)







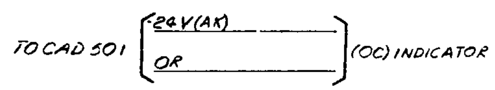
DRAWING ISSUE
1
2D
4A

ISSUE 5B

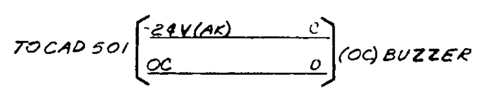
SD-69610-01-G25

SWITCHING SYSTEM NO. 301A
BELL TELEPHONE LABORATORIES INCORPORATED
6S
SD-69610-01-G25

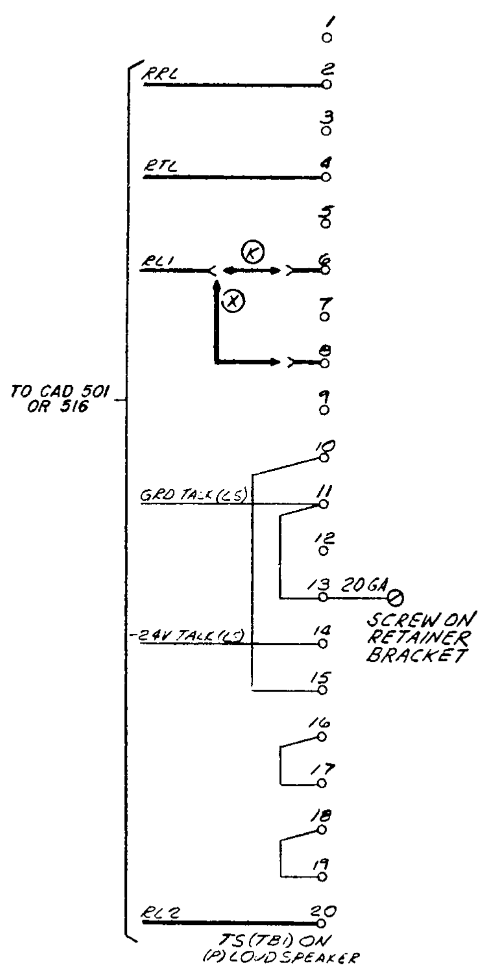
CAD 405
(FOR PART OF APP FIG 6B)



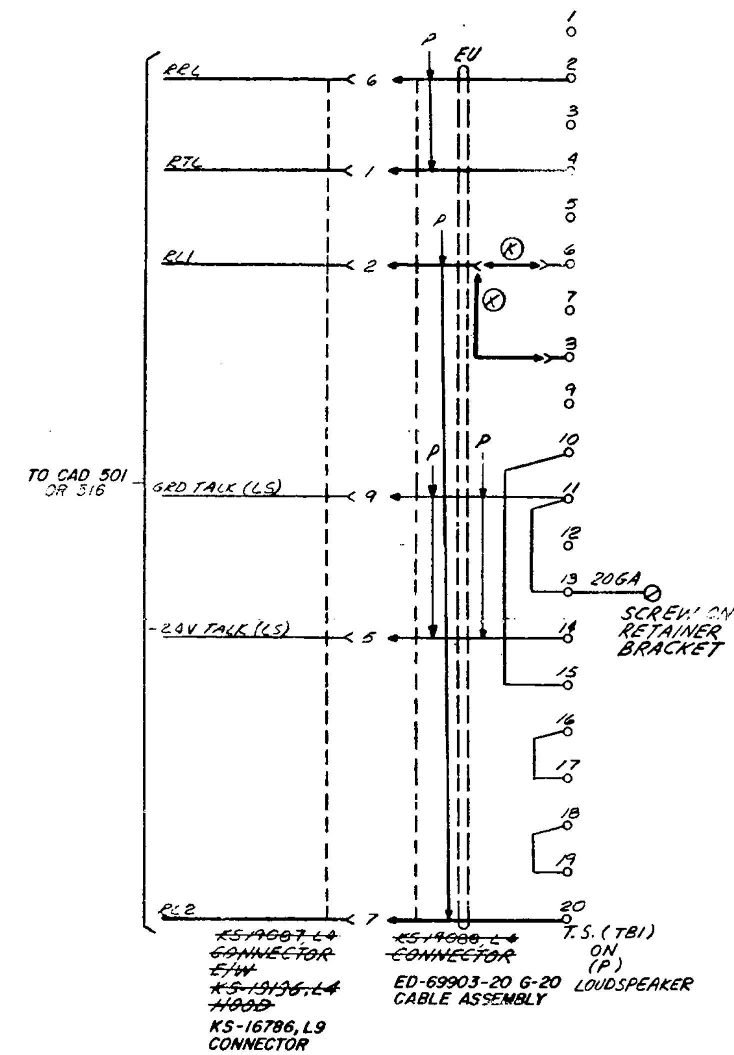
CAD 406
(FOR PART OF APP FIG 6B)



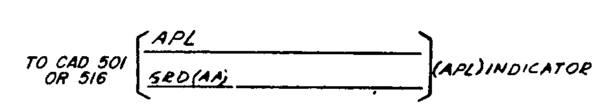
CAD 407
(FOR APP FIG 50 WO/CONN ASSY)
SEE NOTE 204



CAD 408
(FOR APP FIG 50 W/CONN ASSY)
SEE NOTE 204



CAD 409
(FOR APP FIG 39)



DRAWING ISSUE
1
2B
4A

ISSUE 6B

SWITCHING SYSTEM
NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

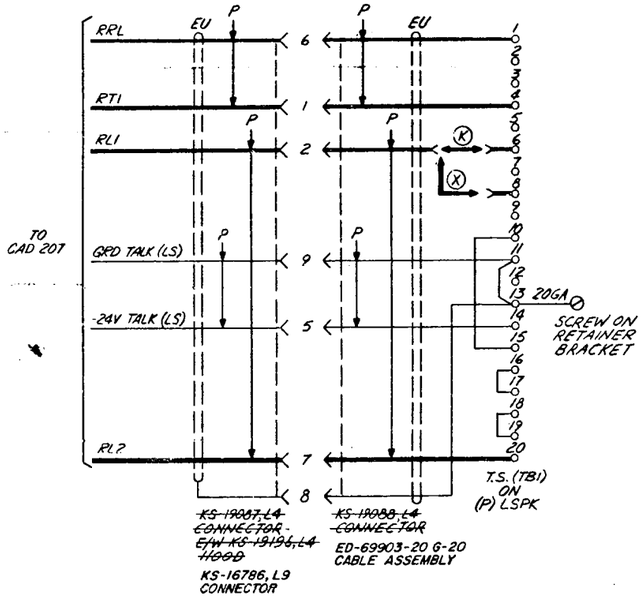
6S

SD-69610-01-G26

SD-69610-01-G26

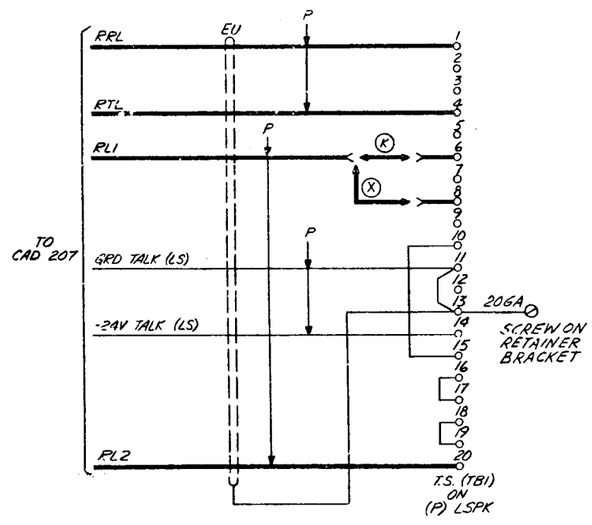
CAD 410

(APP FIG. 50 W/CONN ASSY) SEE NOTE 204



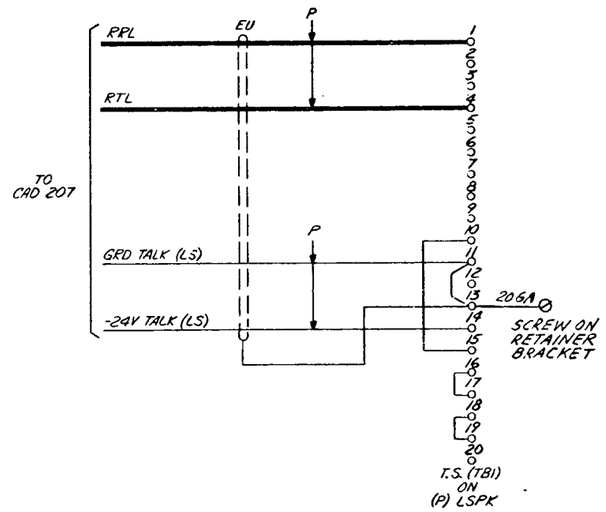
CAD 411

(APP FIG. 50 W/O CONN ASSY) SEE NOTE 204



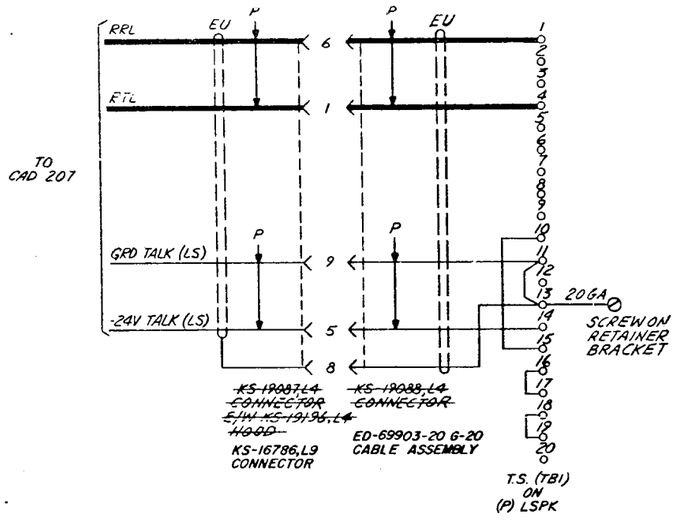
CAD 412

(APP FIG. 50 W/O CONN ASSY) SEE NOTE 204



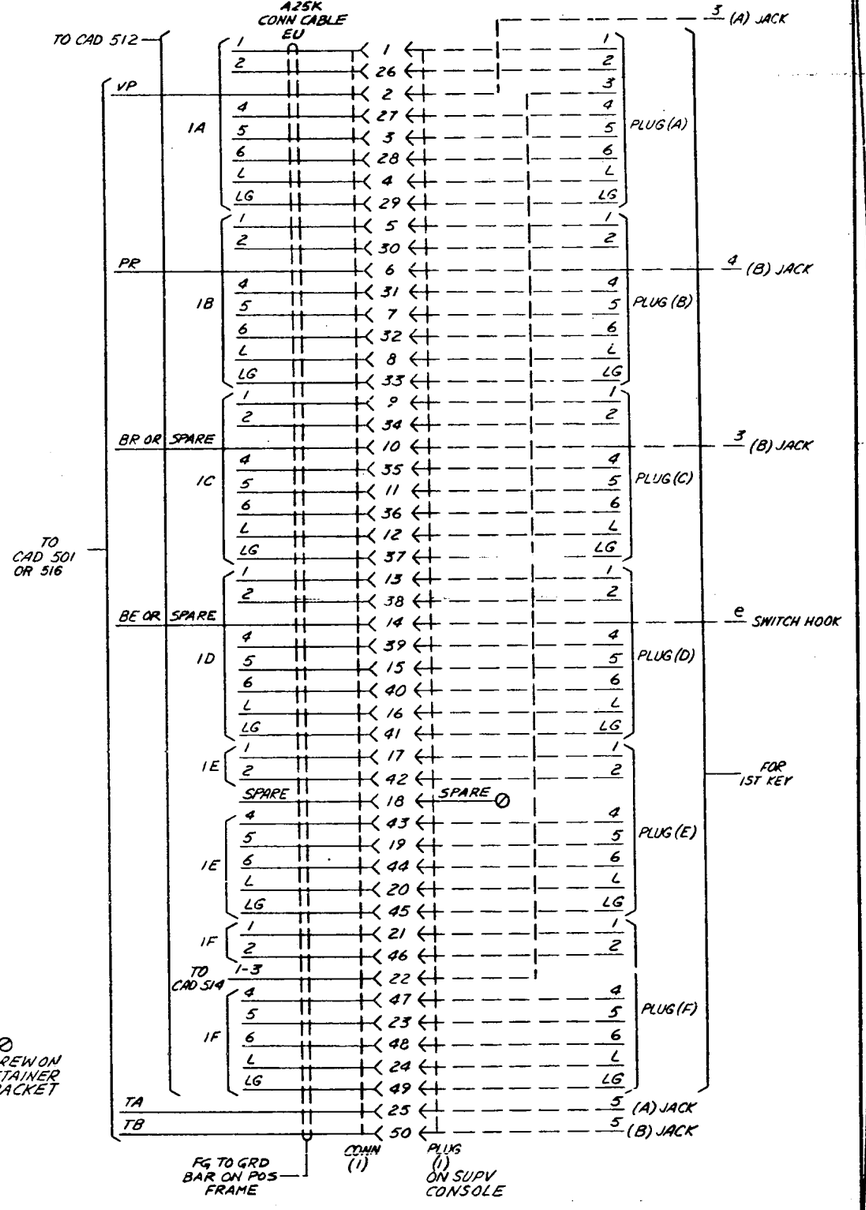
CAD 413

(APP FIG. 50 W/CONN ASSY) SEE NOTE 204



PART OF CAD 414

(FOR APP FIG. 49)



DRAWING ISSUE 20 4A

ISSUE 6B

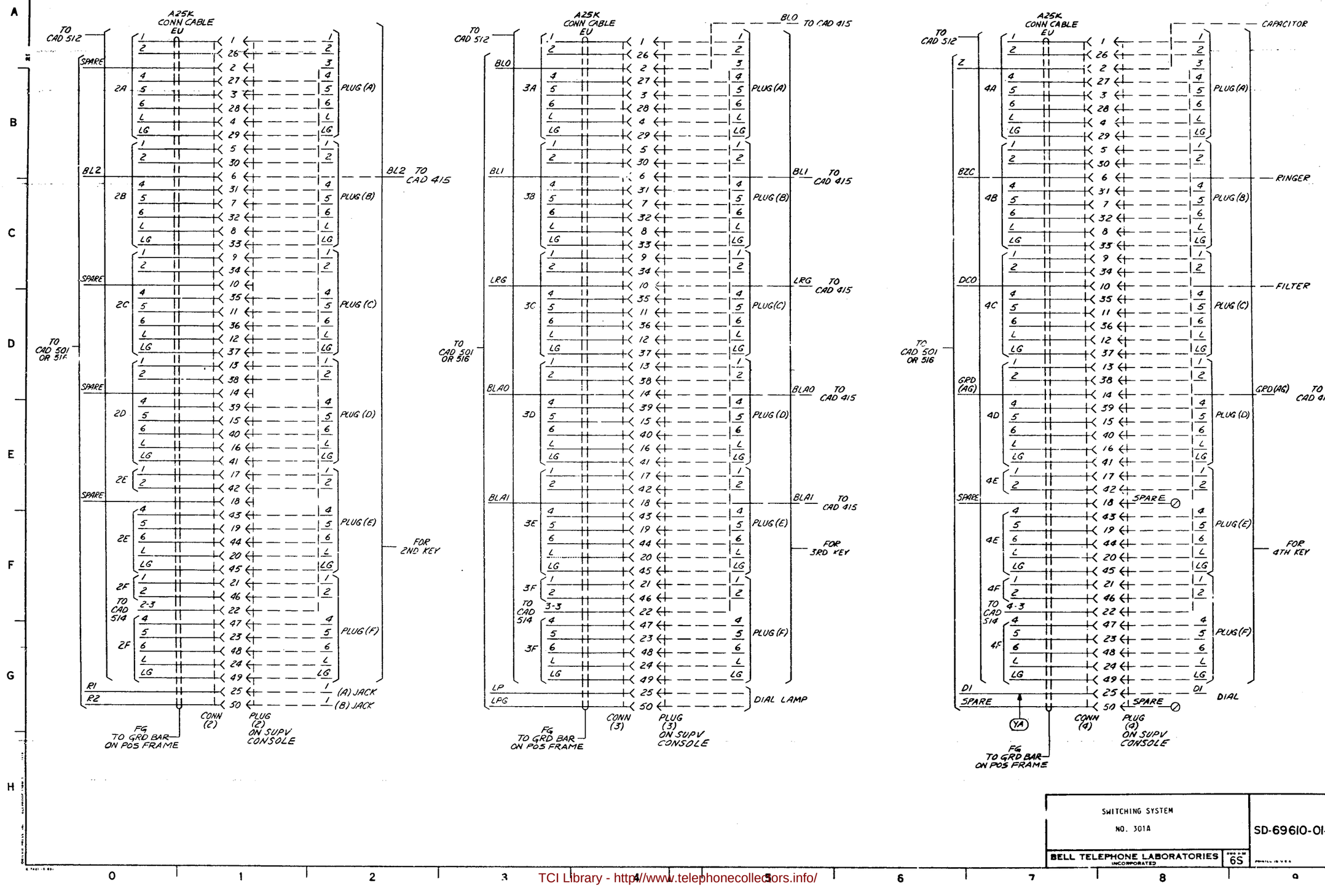
SD-69610-01-G27

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G27

PART OF **CAD 414**
(FOR APP FIG. 49)



DRAWING ISSUE
2D J.F.M. R.B.B. W.J.
4A

ISSUE 6B

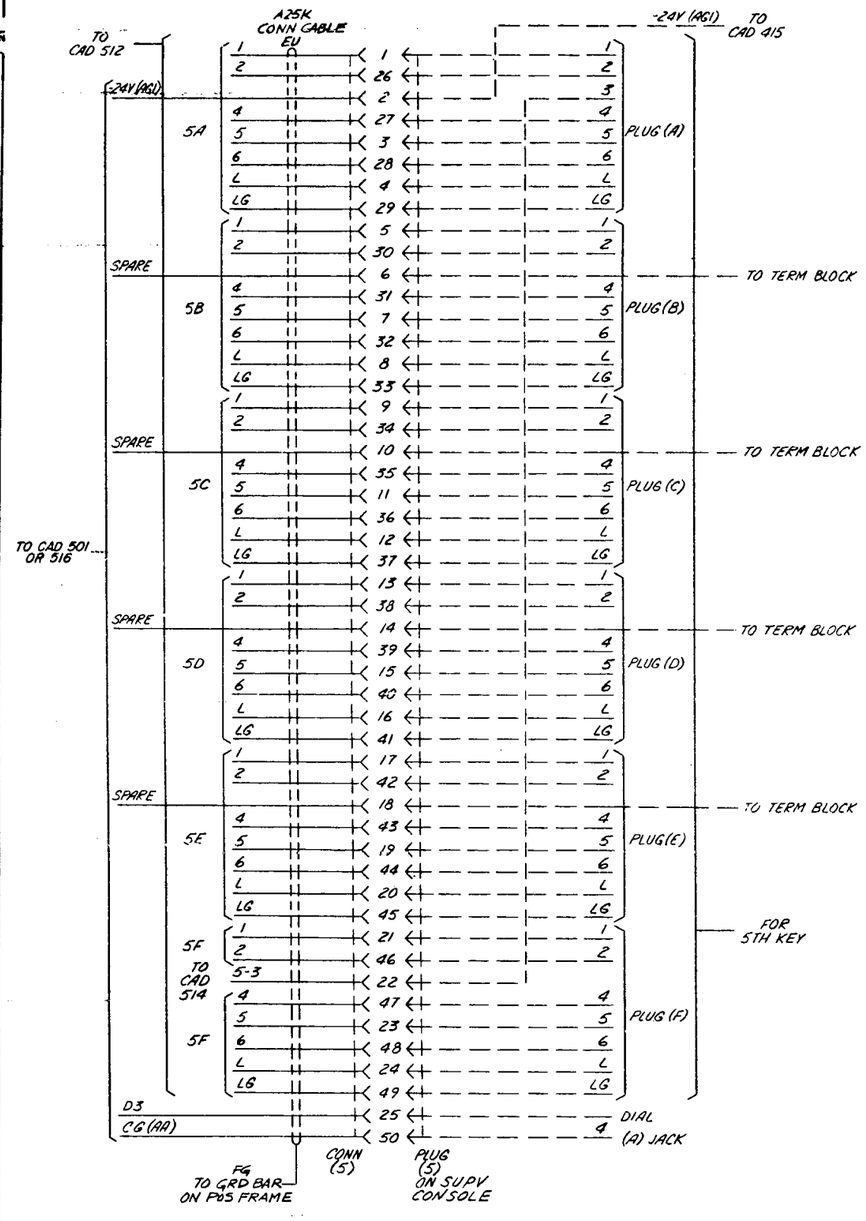
SWITCHING SYSTEM
NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

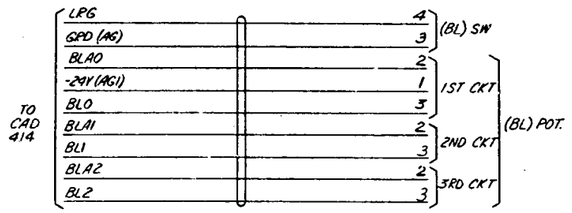
SD-69610-01-G28

SD-69610-01-G28

PART OF **CAD 414**
(FOR APP FIG. 49)



CAD 415
(FOR APP FIG. 3)



DRAWING ISSUE
2D JFM EEM WJ
4A

ISSUE 6B

SWITCHING SYSTEM
NO. 301A

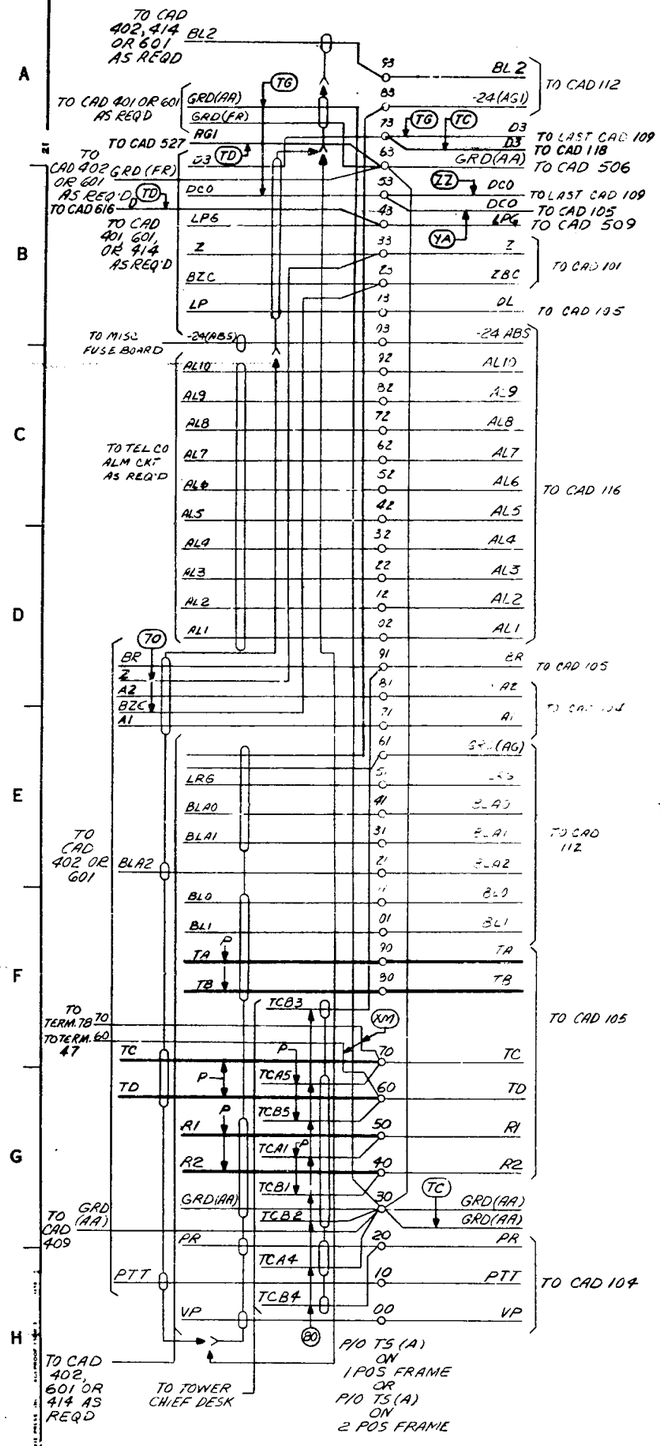
BELL TELEPHONE LABORATORIES INCORPORATED

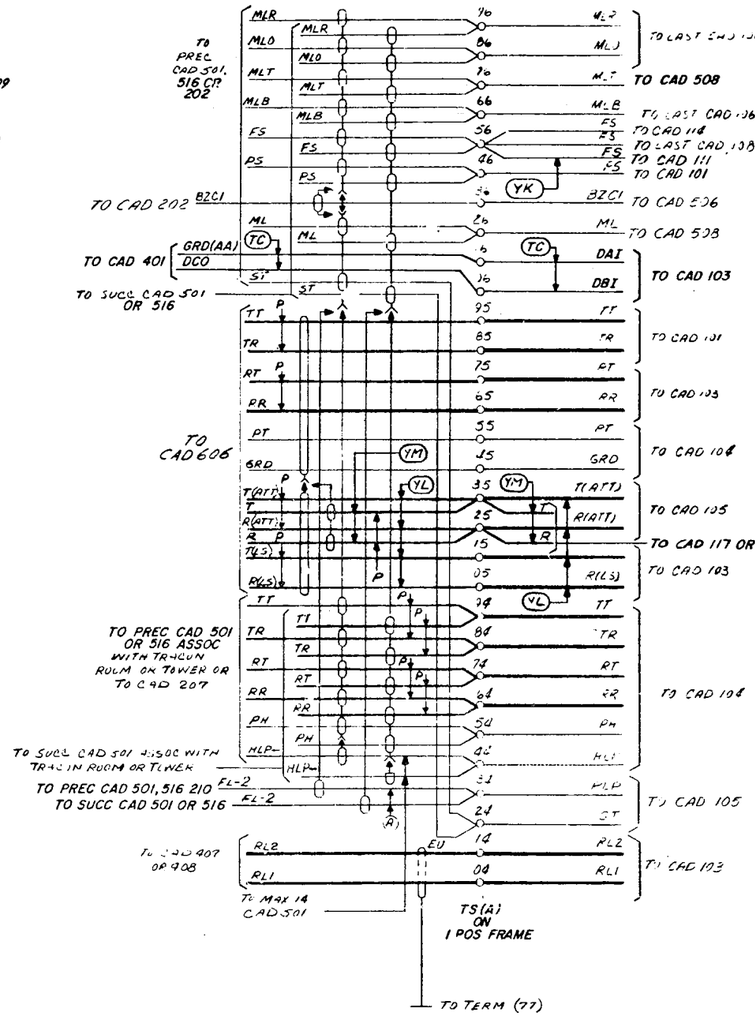
DWG SIZE 6S

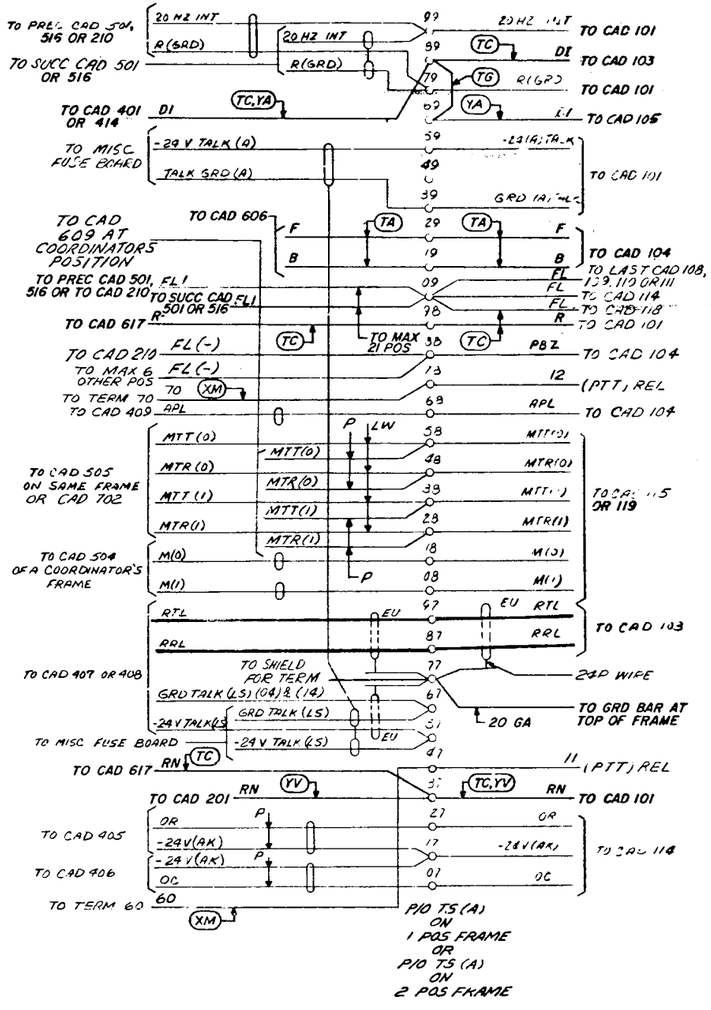
SD-69610-01-G29

SD-69610-01-G29

CAD 501







SD-69610-01-G30

ISSUE 8B

SWITCHING SYSTEM NO. 501A

SD-69610-01-G30

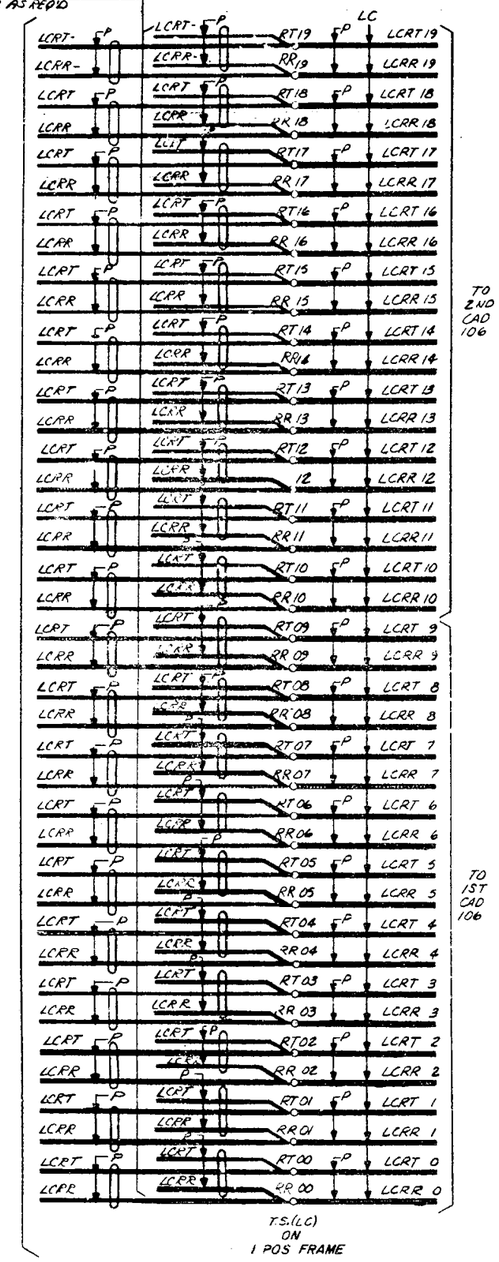
BELL TELEPHONE LABORATORIES INCORPORATED

6S

CAD 502
(FOR APP FIG. 51)

TO SUCCEEDING CADS 502 AS REQD

TO PRECEDING CADS 502 OR CADS 209, 205 OR 206

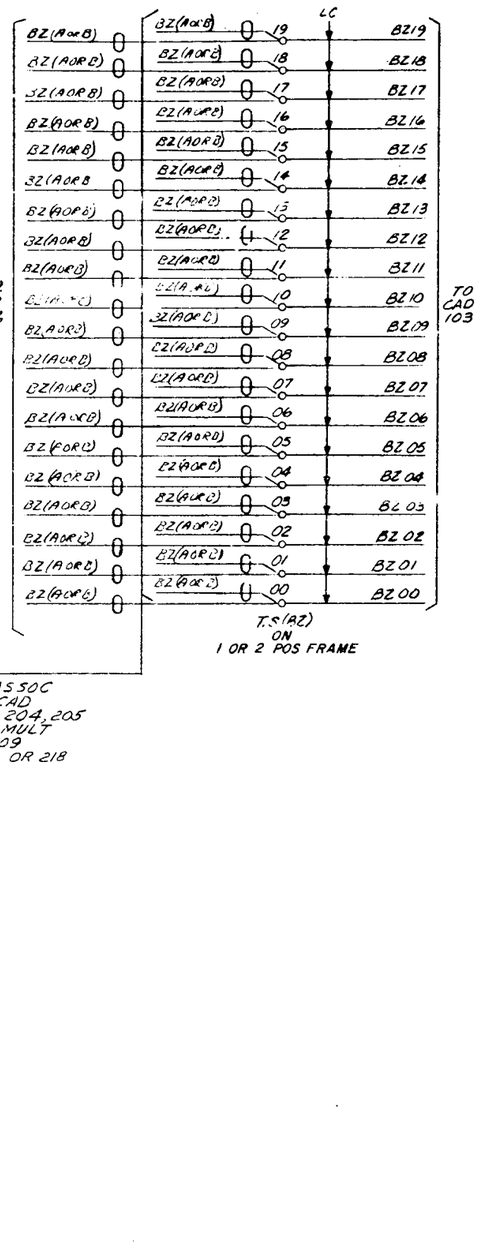


TO END CAD 106

TO 1ST CAD 106

CAD 503
(FOR 2 APP FIG. 2)

TO CADS 201, 203, 204, 205, 206, 209, 213 & 218



TO CAD 103

TO MAX 20 OTHER POS ASSOC WITH SAME CAD 201, 203, OR 204, 205 (DISREGARD MULT WHEN CAD 209 AND/OR 206 OR 218 IS USED)

ISSUE 8B

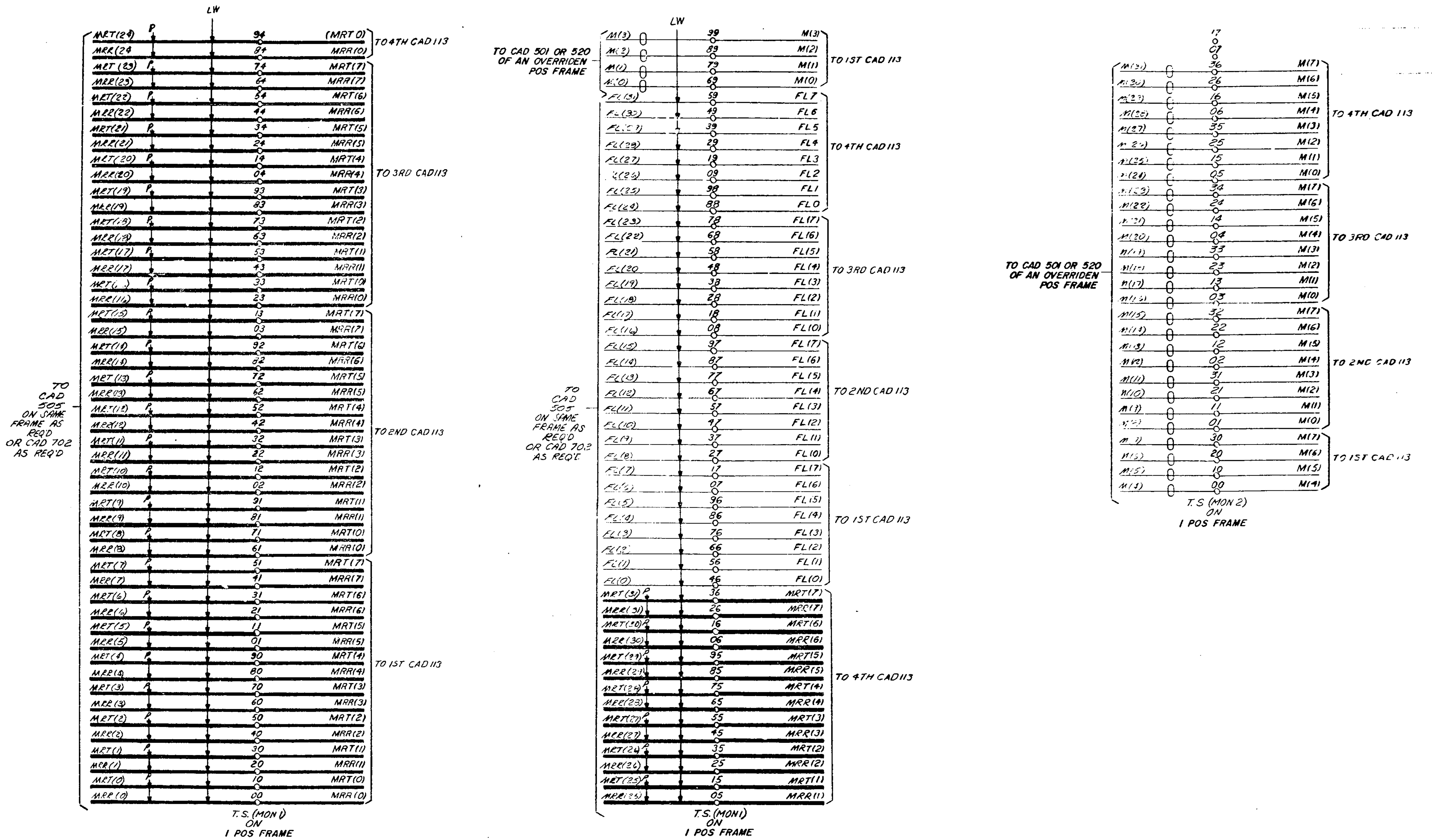
SWITCHING SYSTEM NO. 301A

SD-69610-01-G31

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 6S

CAD 504



ISSUE 8B

SWITCHING SYSTEM NO. 301A

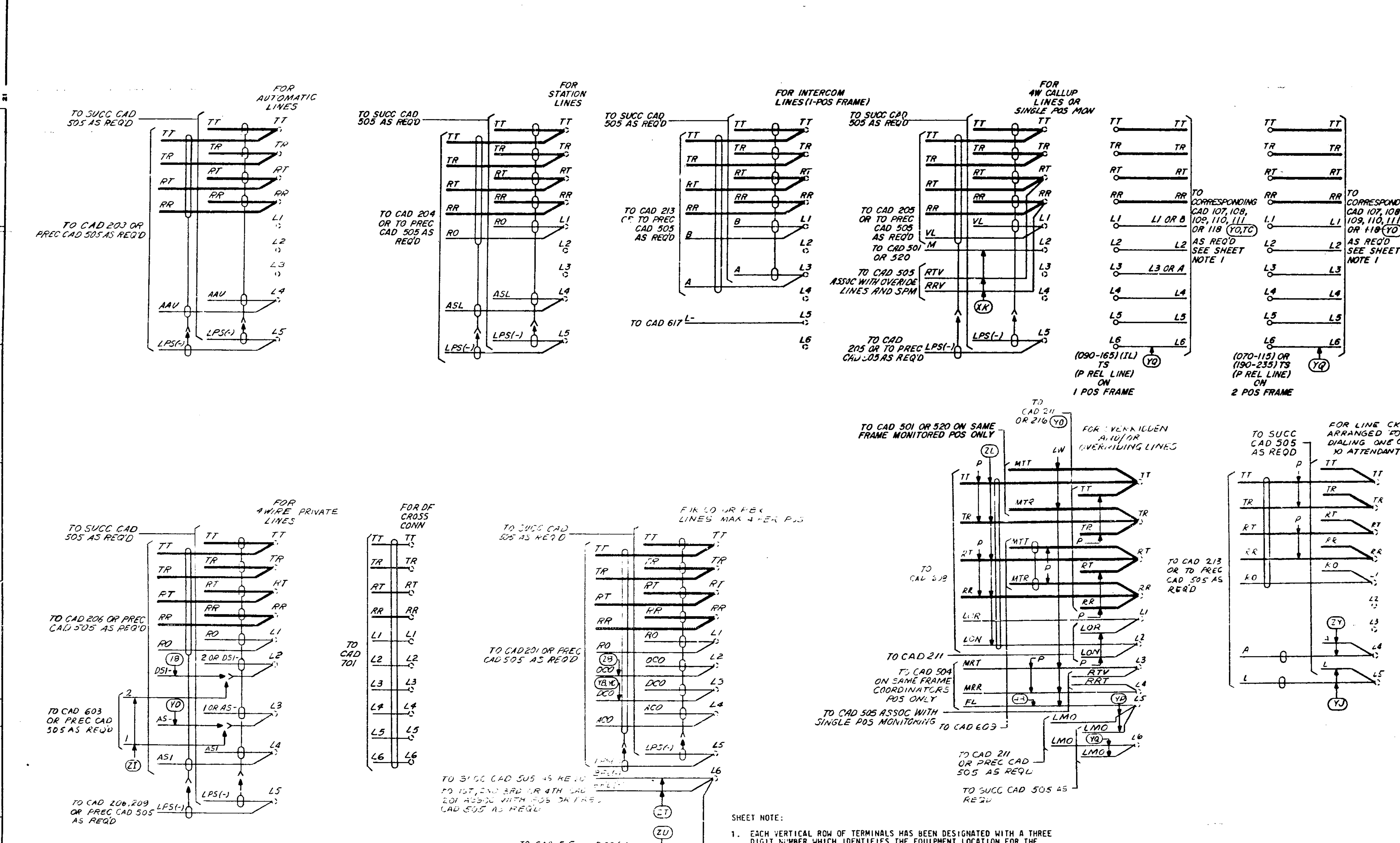
BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-G32

SD-69610-G32

CAD 505



SHEET NOTE:

1. EACH VERTICAL ROW OF TERMINALS HAS BEEN DESIGNATED WITH A THREE DIGIT NUMBER WHICH IDENTIFIES THE EQUIPMENT LOCATION FOR THE OTHER TERMINATION OF THE INTERCONNECTION. THE 1ST AND 2ND DIGITS IDENTIFY A MOUNTING PLATE POSITION ON THE POSTITION FRAME. THE FRAME LOCAL CABLE FOR THESE POSITIONS, 09 TO 16, (1 POS FRAME) OR 07 TO 11, 19 TO 23 (2 POS FRAME) HAS BEEN ARRANGED FOR UNIVERSAL WIRING FOR ALL UNITS THAT MAY BE MOUNTED. THE 3RD DIGIT IDENTIFIES A RELAY CIRCUIT WITHIN A UNIT LOCATED IN THE ASSOCIATED MOUNTING PLATE POSITION.
EXAMPLE: IF UNIT J53048AD WAS MOUNTED IN POSITION 09, THEN TERMINALS (TT-15) FOR ROWS 090-095 WOULD TERMINATE ON UNIT TERMINAL STRIPS CORRESPONDING TO CIRCUITS 0-5 RESPECTIVELY, IN ACCORDANCE WITH CAD 109.

ISSUE 8B

SWITCHING SYSTEM NO. 301A

SD-69610-01-G33

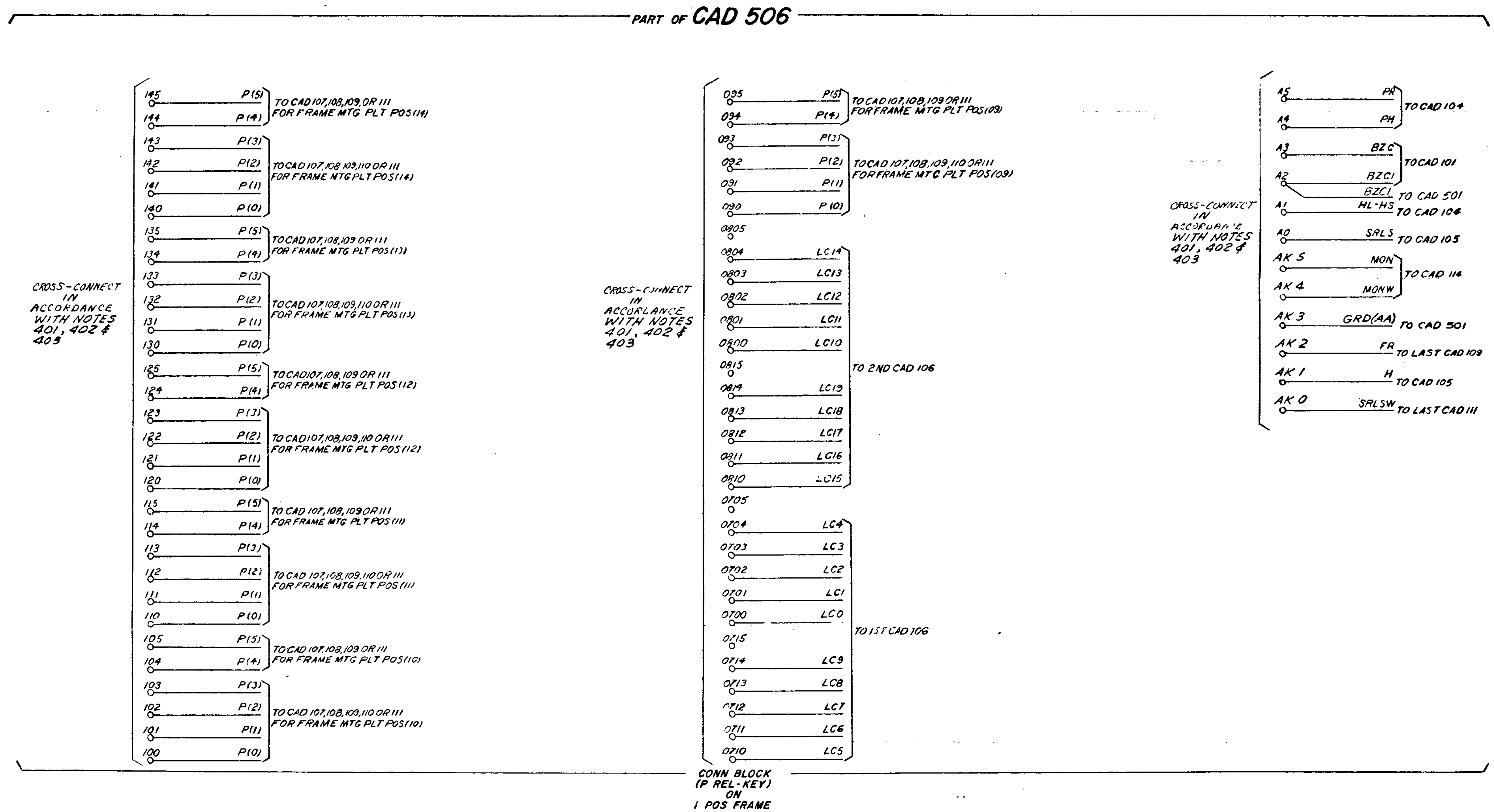
BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-G33

A B C D E F G H

PART OF CAD 506



CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403
145 P(5)
144 P(4)
TO CAD 107,108,109,OR 111 FOR FRAME MTG PLT POS(14)
143 P(3)
142 P(2)
141 P(1)
140 P(0)
TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS(14)
135 P(5)
134 P(4)
TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS(13)
133 P(3)
132 P(2)
131 P(1)
130 P(0)
TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS(13)
125 P(5)
124 P(4)
TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS(12)
123 P(3)
122 P(2)
121 P(1)
120 P(0)
TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS(12)
115 P(5)
114 P(4)
TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS(11)
113 P(3)
112 P(2)
111 P(1)
110 P(0)
TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS(11)
105 P(5)
104 P(4)
TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS(10)
103 P(3)
102 P(2)
101 P(1)
100 P(0)
TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS(10)
CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403
095 P(5)
094 P(4)
TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS(09)
093 P(3)
092 P(2)
091 P(1)
090 P(0)
TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS(09)
0805
0804 LC14
0803 LC13
0802 LC12
0801 LC11
0800 LC10
0815
0814 LC19
0813 LC18
0812 LC17
0811 LC16
0810 LC15
TO 2ND CAD 106
0705
0704 LC4
0703 LC3
0702 LC2
0701 LC1
0700 LC0
0715
0714 LC9
0713 LC8
0712 LC7
0711 LC6
0710 LC5
TO 1ST CAD 106
CONN BLOCK (P REL-KEY) ON 1 POS FRAME
CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403
A5 PR
A4 PH
TO CAD 104
A3 BZC
A2 BZC1
TO CAD 101
BZC1 TO CAD 501
A1 HL-HS TO CAD 104
A0 SRLS TO CAD 105
AK 5 MON
AK 4 MONW
TO CAD 114
AK 3 GRD(AA) TO CAD 501
AK 2 FR TO LAST CAD 109
AK 1 H TO CAD 105
AK 0 SRLSW TO LAST CAD 111

DRAWING ISSUE	
1	
20	
3A	
4A	

ISSUE 6B

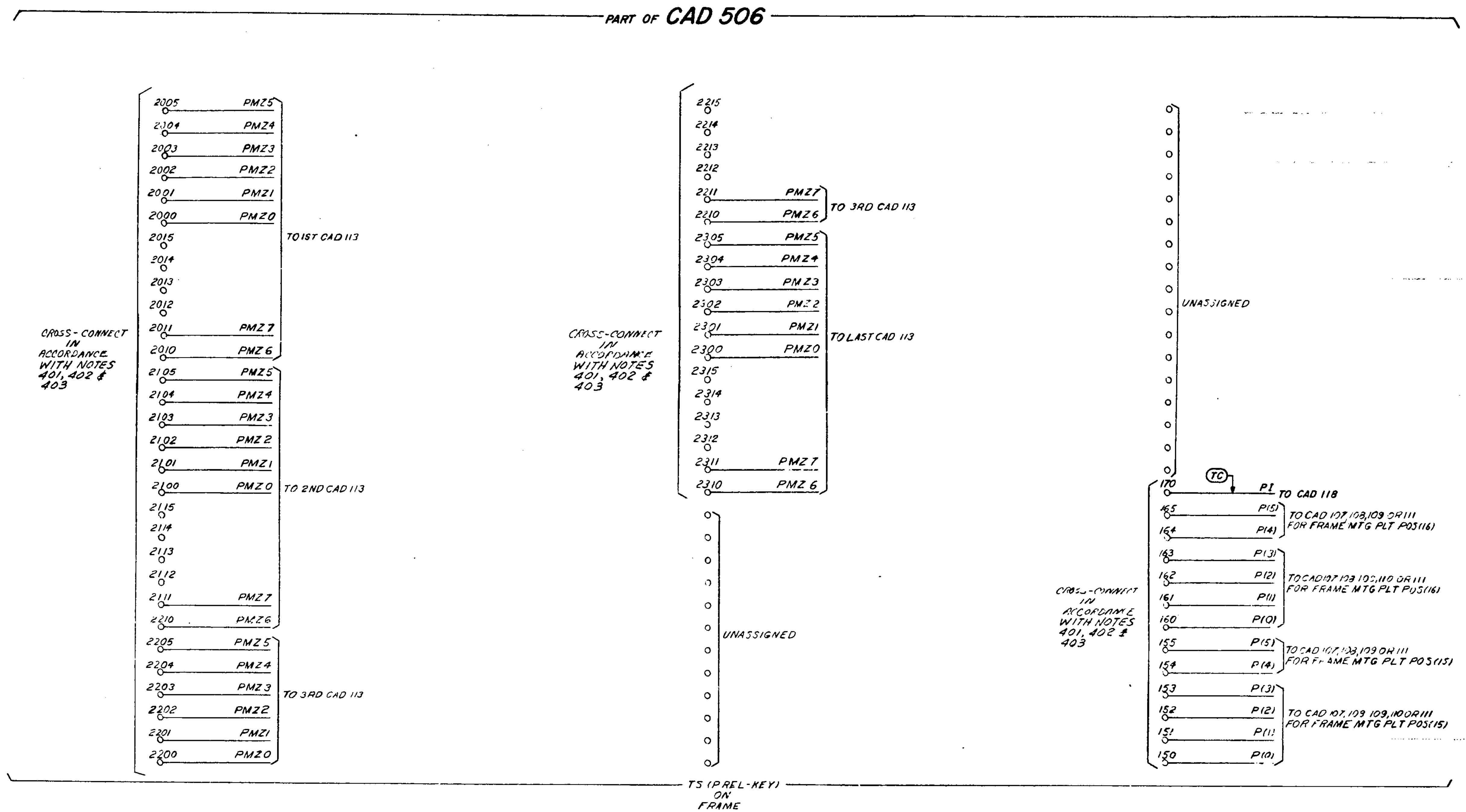
SWITCHING SYSTEM
NO. 301A

SD-69610-01-G34

BELL TELEPHONE LABORATORIES INCORPORATED

6S

SD-69610-01-G34


PART OF CAD 506
CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403
2005 PMZ5
2004 PMZ4
2003 PMZ3
2002 PMZ2
2001 PMZ1
2000 PMZ0
2015
2014
2013
2012
2011 PMZ7
2010 PMZ6
TO 1ST CAD 113
2105 PMZ5
2104 PMZ4
2103 PMZ3
2102 PMZ2
2101 PMZ1
2100 PMZ0
2115
2114
2113
2112
2111 PMZ7
2110 PMZ6
TO 2ND CAD 113
2205 PMZ5
2204 PMZ4
2203 PMZ3
2202 PMZ2
2201 PMZ1
2200 PMZ0
TO 3RD CAD 113
2215
2214
2213
2212
2211 PMZ7
2210 PMZ6
TO 3RD CAD 113
2305 PMZ5
2304 PMZ4
2303 PMZ3
2302 PMZ2
2301 PMZ1
2300 PMZ0
2315
2314
2313
2312
2311 PMZ7
2310 PMZ6
TO LAST CAD 113
UNASSIGNED
UNASSIGNED
TC
170 P1 TO CAD 118
165 P(5)
164 P(4)
TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS(16)
163 P(3)
162 P(2)
161 P(1)
160 P(0)
TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS(16)
155 P(5)
154 P(4)
TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS(15)
153 P(3)
152 P(2)
151 P(1)
150 P(0)
TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS(15)
TS (PREL-KEY) ON FRAME

SD-69610-01-G35

ISSUE 8B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G35

CAD 507

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

240 (46) MON TO CAD 114

IL(0) LP(0) TO CAD 118

165	LP(5)	TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS (16)
164	LP(4)	
163	LP(3)	TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS 116)
162	LP(2)	
161	LP(1)	
160	LP(0)	
155	LP(5)	TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS 115)
154	LP(4)	
153	LP(3)	TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS (15)
152	LP(2)	
151	LP(1)	
150	LP(0)	
145	LP(5)	TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS (14)
144	LP(4)	
143	LP(3)	TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS (14)
142	LP(2)	
141	LP(1)	
140	LP(0)	

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

135	LP(5)	TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS (13)
134	LP(4)	
133	LP(3)	TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS (13)
132	LP(2)	
131	LP(1)	
130	LP(0)	
125	LP(5)	TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS (12)
124	LP(4)	
123	LP(3)	TO CAD 101,108,109,110 OR 111 FOR FRAME MTG PLT POS. (12)
122	LP(2)	
121	LP(1)	
120	LP(0)	
115	LP(5)	TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS (11)
114	LP(4)	
113	LP(3)	TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS (11)
112	LP(2)	
111	LP(1)	
110	LP(0)	
105	LP(5)	TO CAD 107,108,109, OR 111 FOR FRAME MTG PLT POS (10)
104	LP(4)	
103	LP(3)	TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS. (10)
102	LP(2)	
101	LP(1)	
100	LP(0)	
095	LP(5)	TO CAD 107,108,109 OR 111 FOR FRAME MTG PLT POS (09)
094	LP(4)	
093	LP(3)	TO CAD 107,108,109,110 OR 111 FOR FRAME MTG PLT POS (09)
092	LP(2)	
091	LP(1)	
090	LP(0)	

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

0805		
0804	LC14	TO 2ND CAD 106
0803	LC13	
0802	LC12	
0801	LC11	
0800	LC10	
0815		
0814	LC19	
0813	LC18	
0812	LC17	
0811	LC16	
0810	LC15	
0705		
0704	LC4	TO 1ST CAD 106
0703	LC3	
0702	LC2	
0701	LC1	
0700	LC0	
0715		
0714	LC9	
0713	LC8	
0712	LC7	
0711	LC6	
0710	LC5	
AK5		TO CAD 105
AK4		
AK3		
AK2		
AK1		
AK0	HL	
A5	OV	
A4	BZC	
A3	HL-MS	
A2	H	
A1	R	
A0	PL	

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

CONN BLOCK (LP BAT) ON 1 POS FRAME

DRAWING ISSUE

1	VGL KAC HLJ
2D	VRS KAC HLJ
3A	
4A	

ISSUE 6B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED 6S

SD-69610-01-G36

SD-69610-01-G36

CAD 508

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

ML33
ML32
ML31
ML30
ML25
ML24
ML23
ML22
ML21
ML20
ML 15
ML 14
ML 13
ML 12
ML 11
ML 10
ML 05
ML 04
ML 03
ML 02
ML 01
ML 00 — ML TO CAD 501

CONN BLOCK (CONT) OR 1 POS FRAME

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

PLSA 5
PLSA 4
PLSA 3
PLSA 2
PLSA 1
PLSA 0 — PLSA TO CAD 105

WZ 5
WZ 4
WZ 3
WZ 2
WZ 1
WZ 0 — WZ TO CAD 114

MLT 5 — MLT TO CAD 501
MLT 4
MLT 3
MLT 2
MLT 1
MLT 0 — MLT TO 2W6 CAD 106

RLS 5 — RLS TO CAD 114
RLS 4
RLS 3
RLS 2
RLS 1
RLS 0 — RLS TO CAD 105

CAD 509

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

15 LPG 5
14 LPG 4
13 LPG 3
12 LPG 2
11 LPG 1
10 LPG 0 — TO CAD 112
09
08 LPG 1
07 LPG 0
06 LPG — TO CAD 501 OR 516
05
04 RUN ON ONE POS BAY ONLY
03
02

CONN BLOCK (LP-REG) ON 1 OR 2 POS FRAME

DRAWING ISSUE
1 1A 2A WJ
2D 1B 2B WJ
3A
4A

ISSUE 8B

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G37

SD-69610-01-G37

CAD 510

CROSS CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

0815		
0814		
0813	LCA 19	TO 2ND CAD 106
0812	LCA 18	
0811	LCA 17	
0810	LCA 16	
0805	LCA 15	
0804	LCA 14	
0803	LCA 13	
0802	LCA 12	
0801	LCA 11	
0800	LCA 10	
0715		
0714		
0713	LCA 9	TO 1ST CAD 106
0712	LCA 8	
0711	LCA 7	
0710	LCA 6	
0705	LCA 5	
0704	LCA 4	
0703	LCA 3	
0702	LCA 2	
0701	LCA 1	
0700	LCA 0	

CONN BLOCK (LC 1/12) ON 1 POSITION FRAME

CAD 511

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

0815		
0814		
0813	LCT 19	TO 2ND CAD 106
0812	LCT 18	
0811	LCT 17	
0810	LCT 16	
0805	LCT 15	
0804	LCT 14	
0803	LCT 13	
0802	LCT 12	
0801	LCT 11	
0800	LCT 10	
0715		
0714		
0713	LCT 9	TO 1ST CAD 106
0712	LCT 8	
0711	LCT 7	
0710	LCT 6	
0705	LCT 5	
0704	LCT 4	
0703	LCT 3	
0702	LCT 2	
0701	LCT 1	
0700	LCT 0	

CONN BLOCK (LC 3/12 IN) ON 1 POSITION FRAME

0815		
0814		
0813	LCN 19	TO 2ND CAD 106
0812	LCN 18	
0811	LCN 17	
0810	LCN 16	
0805	LCN 15	
0804	LCN 14	
0803	LCN 13	
0802	LCN 12	
0801	LCN 11	
0800	LCN 10	
0715		
0714		
0713	LCN 9	TO 1ST CAD 106
0712	LCN 8	
0711	LCN 7	
0710	LCN 6	
0705	LCN 5	
0704	LCN 4	
0703	LCN 3	
0702	LCN 2	
0701	LCN 1	
0700	LCN 0	

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

CONN BLOCK (LC 5/12 IN) ON 1 POSITION FRAME

CAD 512

(FOR APP FIG 15 AT ATTENDANT CONSOLE OR APP FIG. 49, SUPERVISORS SET)

(A-F)1	1-8(AF)1	TO CAD 403 OR 601 OR 414 AS REQ'D
(AF)2	1-8(AF)2	
(A-F)4	1-8(A-F)4	
(A-F)5	1-8(A-F)5	
(A-F)6	1-8(A-F)6	
(A-F)8	1-8(A-F)L	
(A-F)G	1-8(A-F)LG	

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

CONN BLOCK (KEY-) ON 1 OR 2 POSITION FRAME

CAD 513

(FOR APP FIG 43 AT ATTENDANT CONSOLE)

(1-5)1	1-5(A-K)1	TO CAD 404 OR 607 AS REQD
(1-5)2	1-5(A-K)2	
(1-5)4	1-5(A-K)4	
(1-5)5	1-5(A-K)5	
(1-5)6	1-5(A-K)6	
(1-5)8	1-5(A-K)L	
(1-5)G	1-5(A-K)LG	

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

CONN BLOCK (BUTTON-) ON 1 POSITION FRAME

CAD 514

(FOR APP FIG 15 OR 43 AT ATT CONSOLE)

FG1	GRD(FR)	TO 1ST CAD 403, OR CAD 404, 601 OR 607
FG2	GRD(FR)	TO 2ND CAD 403 OR CAD 601
FG3	GRD(FR)	TO 3RD CAD 403 OR CAD 601
FG4	GRD(FR)	TO 4TH CAD 403 OR CAD 601
8	8-3	TO 8TH CAD 403 OR CAD 601
7	7-3	TO 7TH CAD 403 OR CAD 601
6	6-3	TO 6TH CAD 403 OR CAD 601
5	5-3	TO 5TH CAD 403 OR CAD 404, 601 OR 607
4	4-3	TO 4TH CAD 403 OR CAD 404, 601 OR 607
3	3-3	TO 3RD CAD 403 OR CAD 404, 601 OR 607
2	2-3	TO 2ND CAD 403 OR CAD 404, 601 OR 607
1	1-3	TO 1ST CAD 403 OR CAL 404, L01 OR 607

TO BUS BAR GRD AT TOP OF BAY

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

CONN. BLOCK (3) ON 1 OR 2 POSITION FRAME

CAD 515

DLL5	9	TO CAD 109
DLL4	8	
DLL3	7	
DLL2	6	
DLL1	5	
DLL0	4	

TO OTHER CAD 515 OR 516 ASSOC WITH SAME CAD 201

TO CAD 201

(YW) TS(DLL) ON 1 POS FRAME (YW)

BPP3	3	BPP3
BPP2	2	BPP2
BPP1	1	BPP1
BPP0	0	BPP0

TO CAD 505 OR CAD 202

TO CAD 105

(ZU) TS(RC) ON 1 POS FRAME (ZQ)

DRAWING ISSUE

1	1A, 4A, 4U
2B	1BP, 4BP, 4UP
4A	

ISSUE 8B

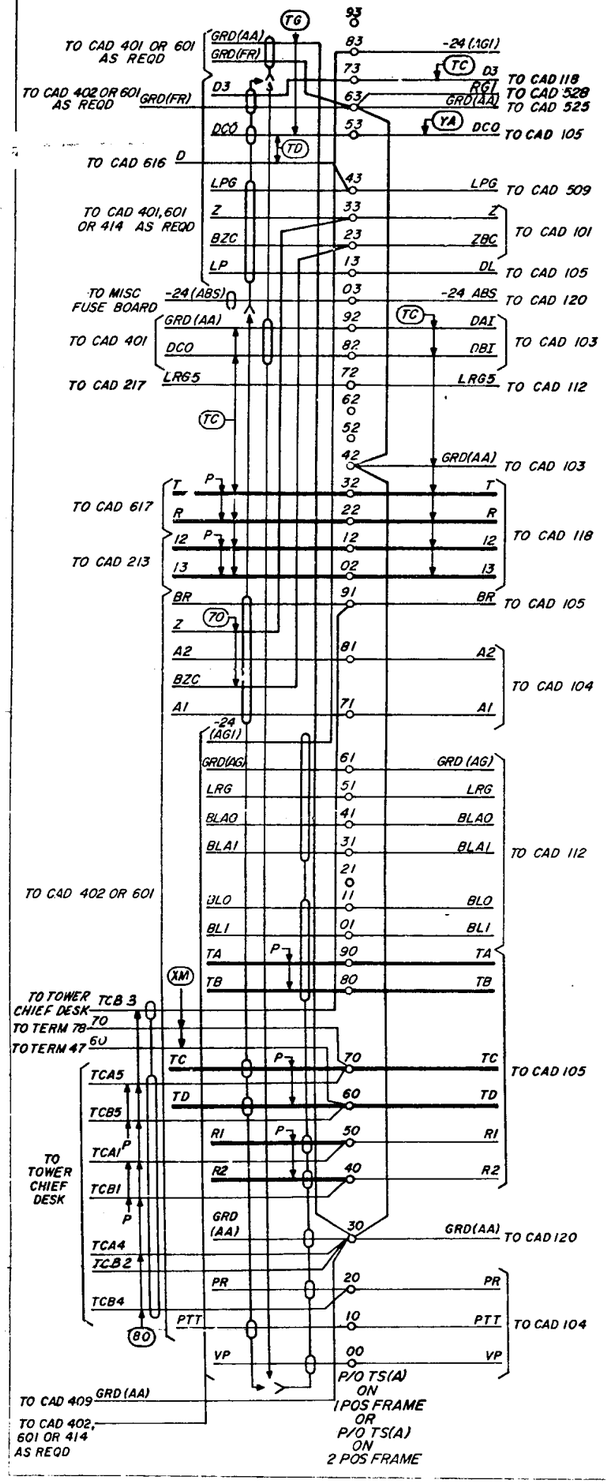
SWITCHING SYSTEM NO. 301A (2) SD-69610-01-G38A

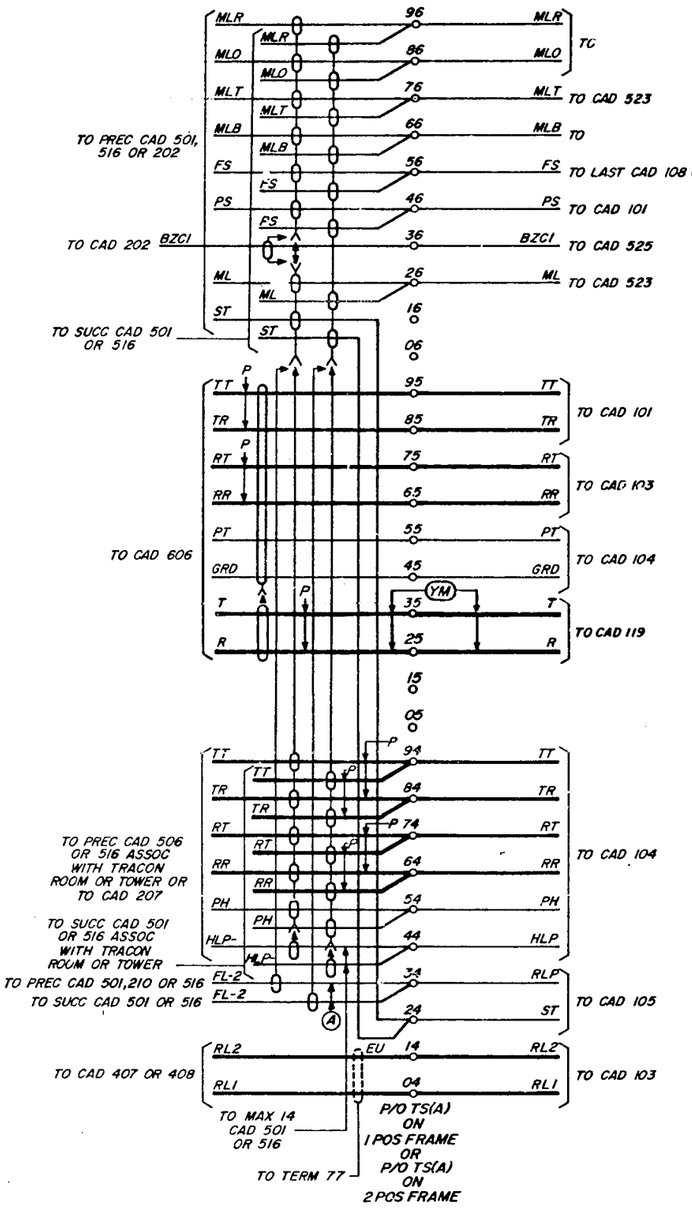
BELL TELEPHONE LABORATORIES INCORPORATED 6S

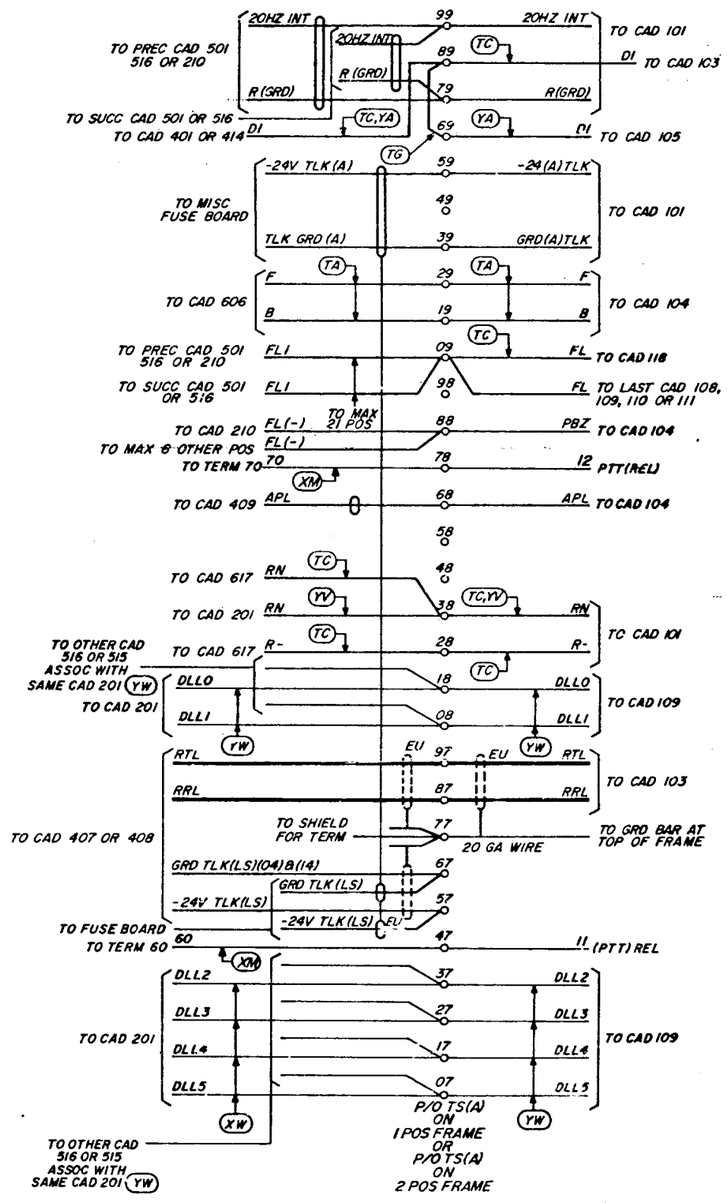
SD-69610-01-G38A

CAD 516

2 POS FRAME







SD-69610-01-G38B

ISSUE 8B

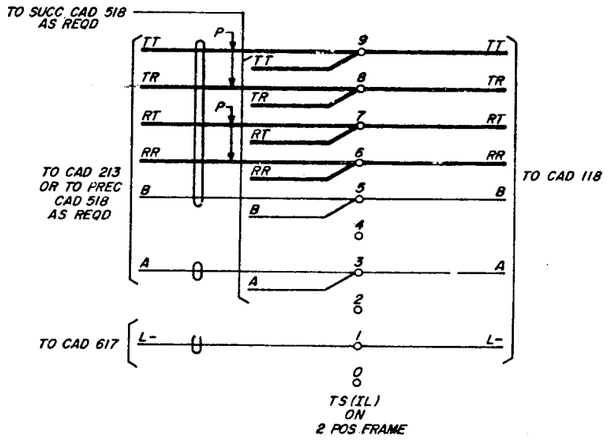
SWITCHING SYSTEM NO. 301A

SD-69610-01-G38B

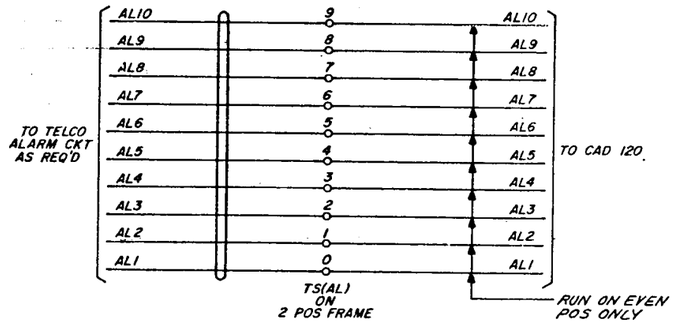
BELL TELEPHONE LABORATORIES INCORPORATED

CAD 517
(NOT USED)

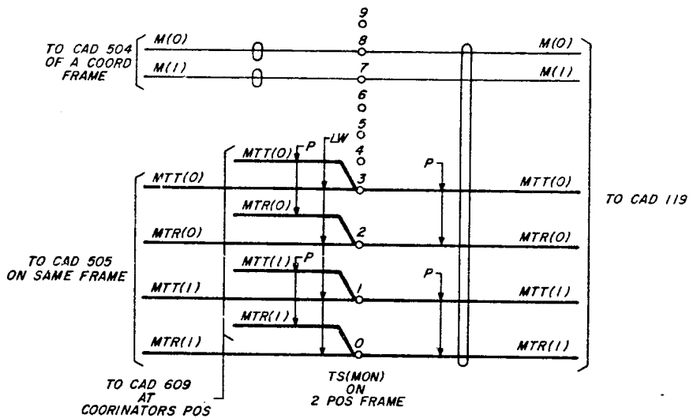
(TC) CAD 518



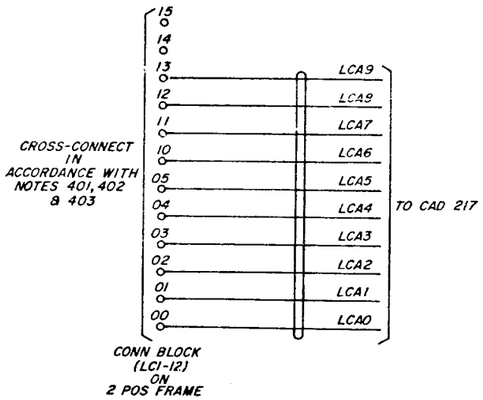
CAD 519



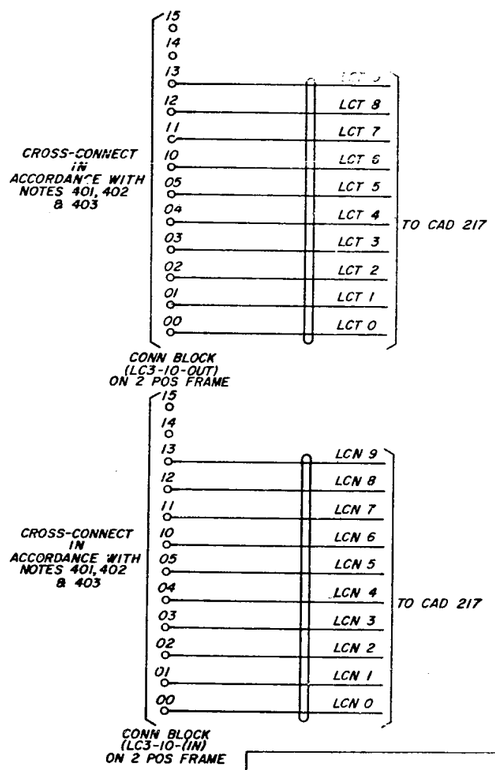
CAD 520



CAD 521



CAD 522



ISSUE 8B

SWITCHING SYSTEM NO. 301A

SD-69610-01-G38C

BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-G38C

CAD 523

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401,402 & 403

ML15
ML14
ML13
ML12
ML11
ML10
ML05
ML04
ML03
ML02
ML01
ML00 — ML — TO CAD 516

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401,402 & 403

RLSA5
RLSA4
RLSA3
RLSA2
RLSA1
RLSA0 — RLSA — TO CAD 105

5
4
3
2
1
0

MLT5 — MLT — TO CAD 516
MLT4
MLT3
MLT2
MLT1
MLT0

RLS5
RLS4
RLS3
RLS2
RLS1
RLS0 — RLS — TO CAD 105

RLST5
RLST4
RLST3
RLST2
RLST1
RLST0 — RLST — TO CAD 105

CONN BLOCK (CONT) ON 2 POS FRAME

CAD 524

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401,402 & 403

115 OR 235	LP(5)	TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS (11) OR (23)
114 OR 234	LP(4)	
113 OR 233	LP(3)	
112 OR 232	LP(2)	TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS (11) OR (23)
111 OR 231	LP(1)	
110 OR 230	LP(0)	
105 OR 225	LP(5)	TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS (10) OR (22)
104 OR 224	LP(4)	
103 OR 223	LP(3)	
102 OR 222	LP(2)	TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS (10) OR (22)
101 OR 221	LP(1)	
100 OR 220	LP(0)	
095 OR 215	LP(5)	TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS (09) OR (21)
094 OR 214	LP(4)	
093 OR 213	LP(3)	
092 OR 212	LP(2)	TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS (09) OR (21)
091 OR 211	LP(1)	
090 OR 210	LP(0)	
085 OR 205	LP(5)	TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS (08) OR (20)
084 OR 204	LP(4)	
083 OR 203	LP(3)	
082 OR 202	LP(2)	TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS (08) OR (20)
081 OR 201	LP(1)	
080 OR 200	LP(0)	
075 OR 195	LP(5)	TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS (07) OR (19)
074 OR 194	LP(4)	
073 OR 193	LP(3)	
072 OR 192	LP(2)	TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS (07) OR (19)
071 OR 191	LP(1)	
070 OR 190	LP(0)	

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401,402 & 403

15 — LP(0) — TO CAD 118
14 — LC9
13 — LC8
12 — LC7
11 — LC6
10 — LC5
05
04 — LC4 — TO CAD 217
03 — LC3
02 — LC2
01 — LC1
00 — LC0

A5 — OV
A4 — BZC
A3 — HL-HS
A2 — H
A1 — R
A0 — PL — TO CAD 105

AK5
AK4
AK3
AK2
AK1
AK0 — HL

CONN BLOCK (LP-BAT) ON 2 POS FRAME

ISSUE 8B

SWITCHING SYSTEM NO. 301A

SD-69610-01-G38D

BELL TELEPHONE LABORATORIES INCORPORATED

CAD 525

P10 (TC) — TO CAD 118

115 OR 235	P(5)	TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS (11) OR (23)
114 OR 234	P(4)	
113 OR 233	P(3)	
112 OR 232	P(2)	TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS (11) OR (23)
111 OR 231	P(1)	
110 OR 230	P(0)	
105 OR 225	P(5)	TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS (10) OR (22)
104 OR 224	P(4)	
103 OR 223	P(3)	
102 OR 222	P(2)	TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS (10) OR (22)
101 OR 221	P(1)	
100 OR 220	P(0)	
095 OR 215	P(5)	TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS (09) OR (21)
094 OR 214	P(4)	
093 OR 213	P(3)	
092 OR 212	P(2)	TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS (09) OR (21)
091 OR 211	P(1)	
090 OR 210	P(0)	
085 OR 205	P(5)	TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS (08) OR (20)
084 OR 204	P(4)	
083 OR 203	P(3)	
082 OR 202	P(2)	TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS (08) OR (20)
081 OR 201	P(1)	
080 OR 200	P(0)	
075 OR 195	P(5)	TO CAD 107, 108, 109 OR 111 FOR FRAME MTG PLT POS (07) OR (19)
074 OR 194	P(4)	
073 OR 193	P(3)	
072 OR 192	P(2)	TO CAD 107, 108, 109, 110 OR 111 FOR FRAME MTG PLT POS (07) OR (19)
071 OR 191	P(1)	
070 OR 190	P(0)	

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

15		
14	LC9	TO CAD 217
13	LC8	
12	LC7	
11	LC6	
10	LC5	
05		
04	LC4	
03	LC3	
02	LC2	
01	LC1	
00	LC0	

CROSS-CONNECT IN ACCORDANCE WITH NOTES 401, 402 & 403

A5	PR	TO CAD 104
A4	PH	
A3	BZC	TO CAD 101
A2	BZC1	TO CAD 516
A1	HL-HS	TO CAD 104
A0	SRLS	TO CAD 105
AK5		
AK4		
AK3	GRD (AA)	TO CAD 516
AK2	FR	TO LAST CAD 109
AK1	H	TO CAD 105
AK0	SRLSW	TO LAST CAD 111

CONN BLOCK (P REL-KEY) ON 2 POS FRAME

SD-69610-01-638E

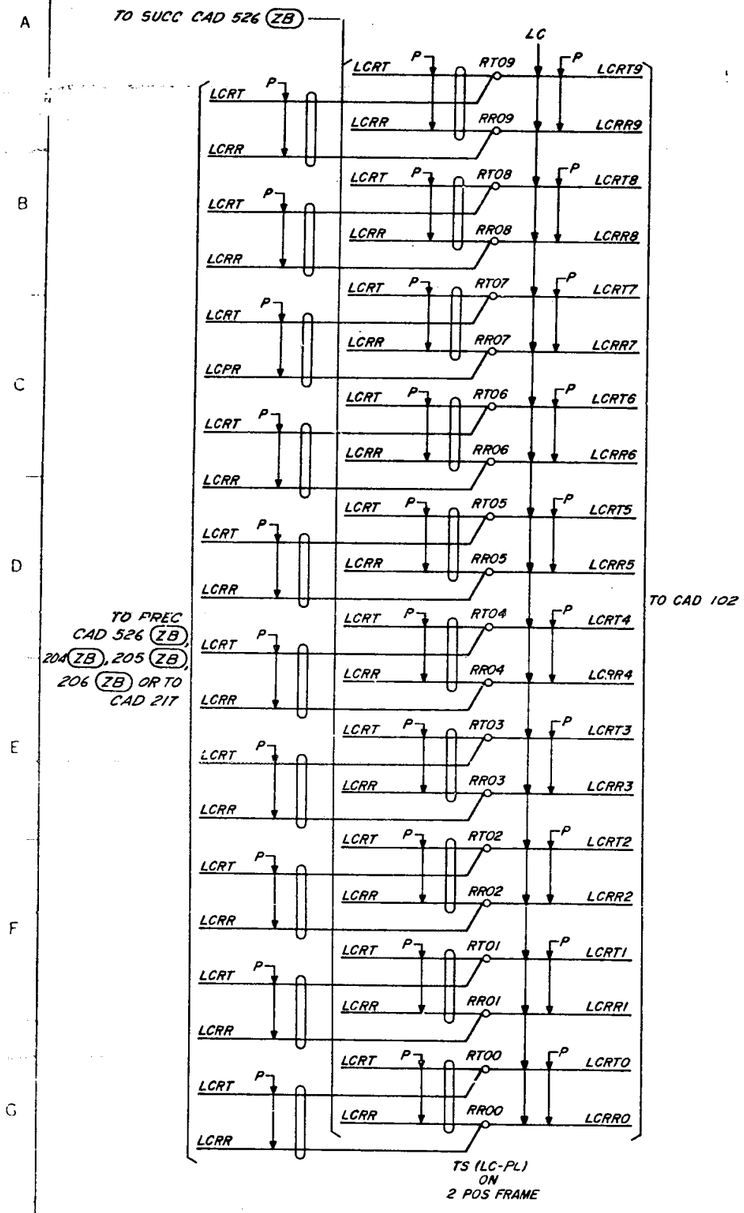
ISSLE 8B

SWITCHING SYSTEM NO 301A

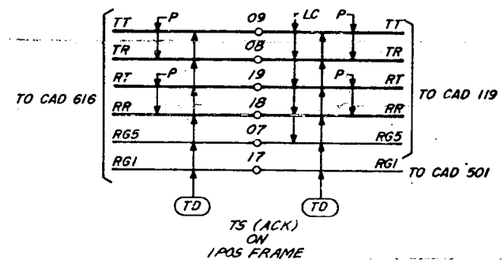
BELL TELEPHONE LABORATORIES INCORPORATED

SD-69610-01-638E

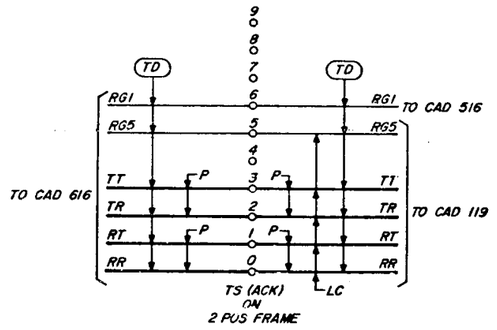
CAD 526
(FOR APP FIG. 51)



CAD 527
(FOR APP FIG. 76)



CAD 528

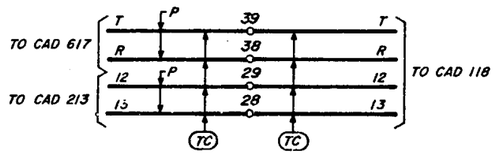


SD-69610-01-G38F

ISSUE 8B

SWITCHING SYSTEM NO. 301A	SD-69610-01-G38F
BELL TELEPHONE LABORATORIES INCORPORATED	65

CAD 529



TS (1D)
ON
1 POS FRAME

SD-69610-01-G38G

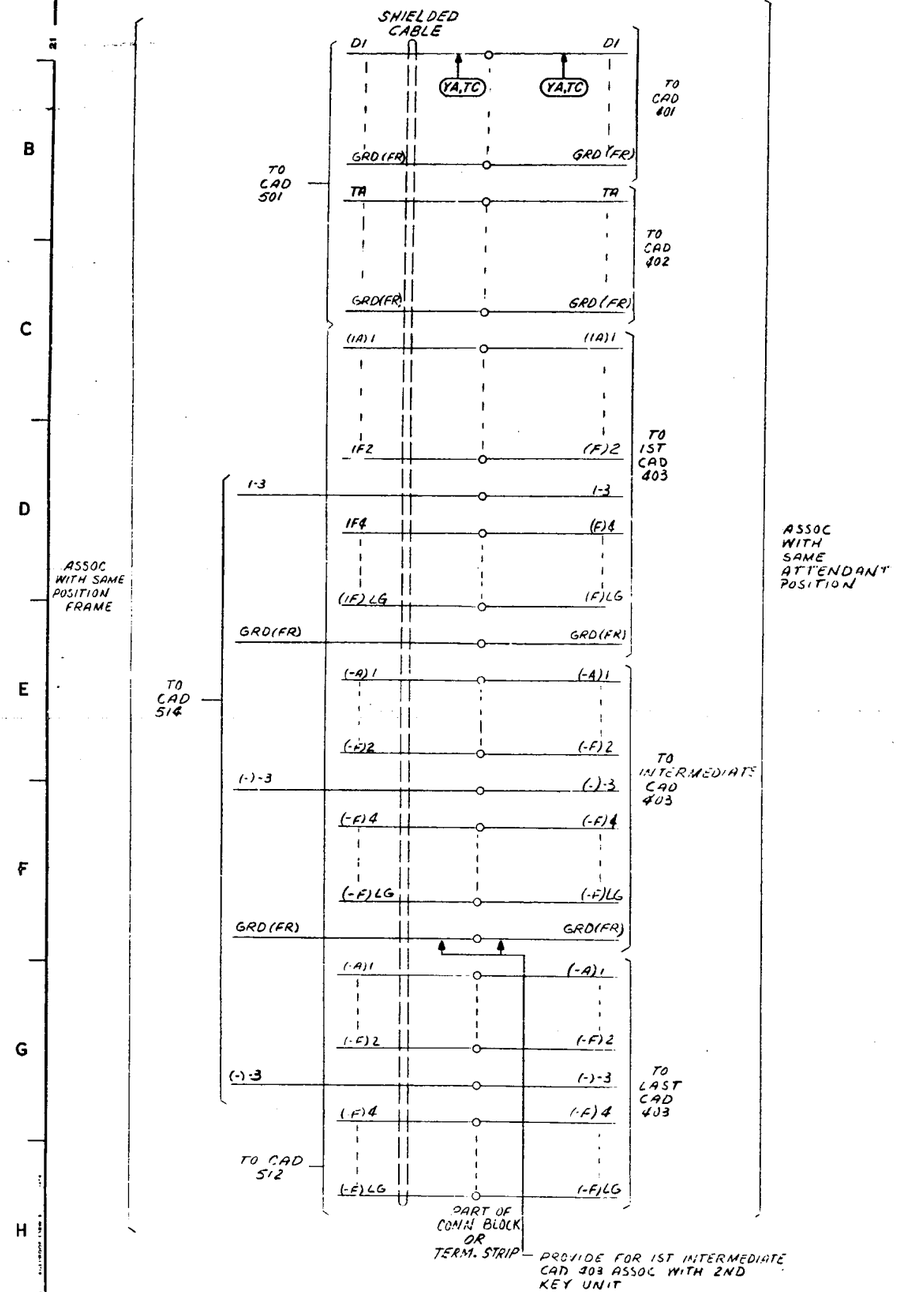
ISSUE
8B

SWITCHING SYSTEM
NO. 301A

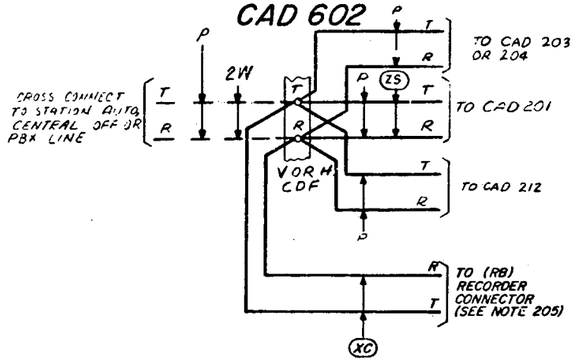
BELL TELEPHONE LABORATORIES
INCORPORATED

SD-69610-01-G38G

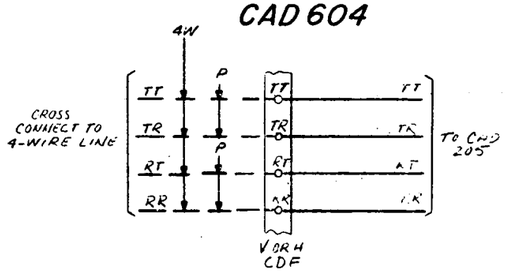
CAD 601



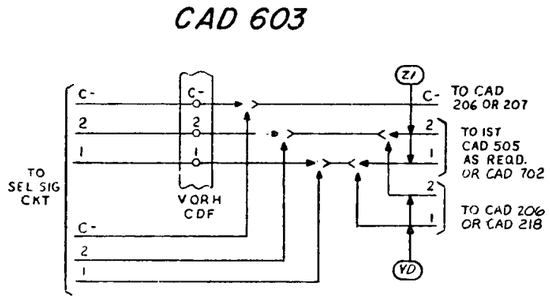
CAD 602



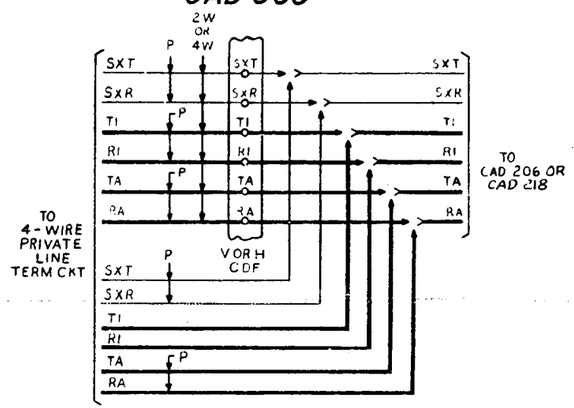
CAD 604



CAD 603



CAD 605



DRAWING ISSUE
2D JM RB WJ
3A
4A

ISSUE 8B

SD-69610-01-G39

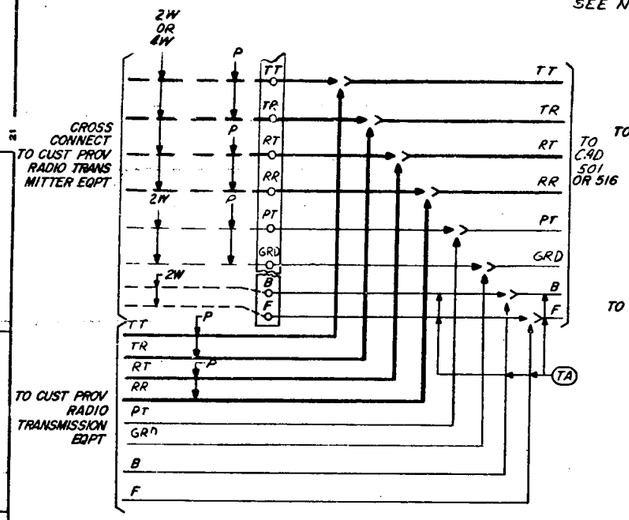
SWITCHING SYSTEM NO. 301A

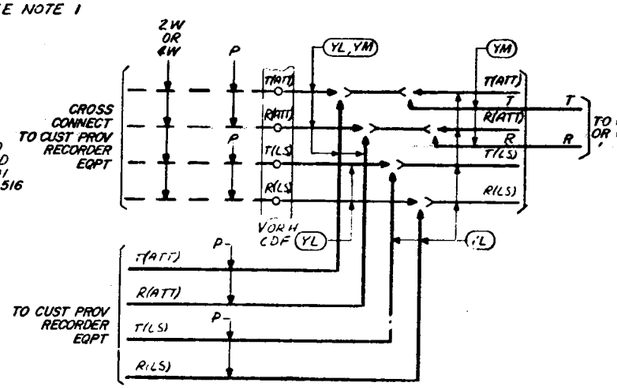
BELL TELEPHONE LABORATORIES INCORPORATED

6S

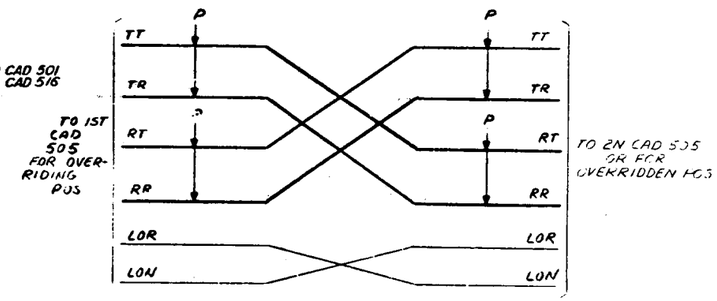
SD-69610-01-G39

CAD 606
SEE NOTE 1

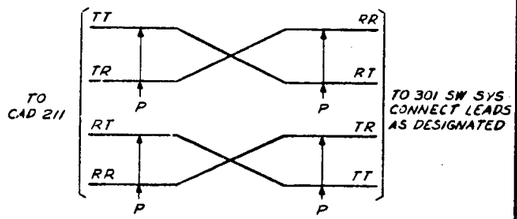




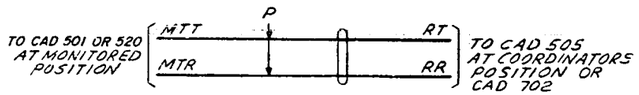
CAD 608



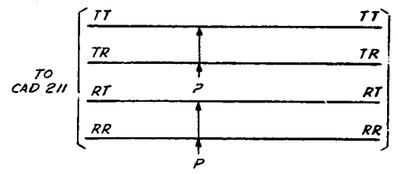
CAD 612



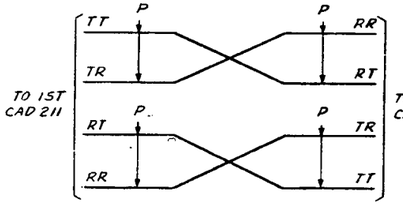
CAD 609



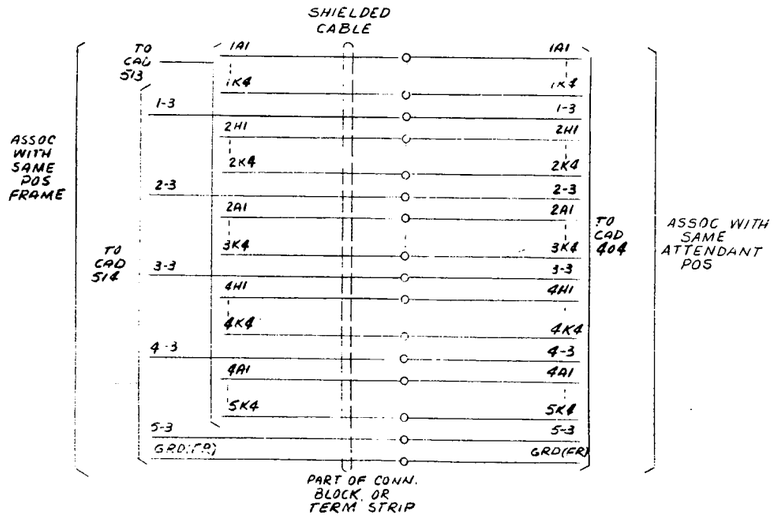
CAD 610



CAD 611



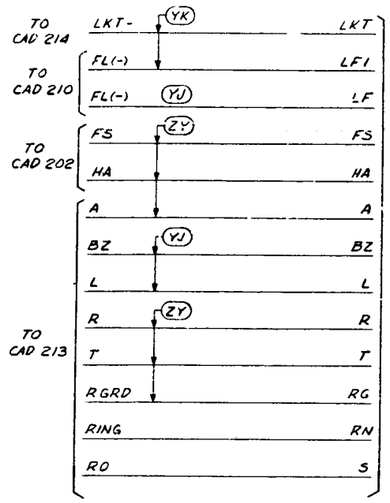
CAD 607



NOTES:

1. YL OPTION LEADS ARE DESIG "ATT" AND "LS" ASSOCIATED WITH T,R.
   YM OPTION LEADS ARE DESIG "T" AND "R" WITHOUT ATND AND LS.

CAD 613



DRAWING ISSUE
20 JAN 69 WJJ
4.A

ISSUE 8B

SWITCHING SYSTEM NO. 301A

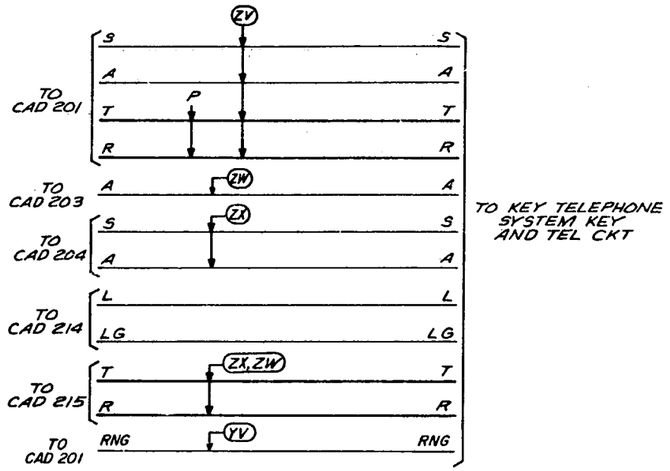
SD-69610-01-G40

BELL TELEPHONE LABORATORIES INCORPORATED

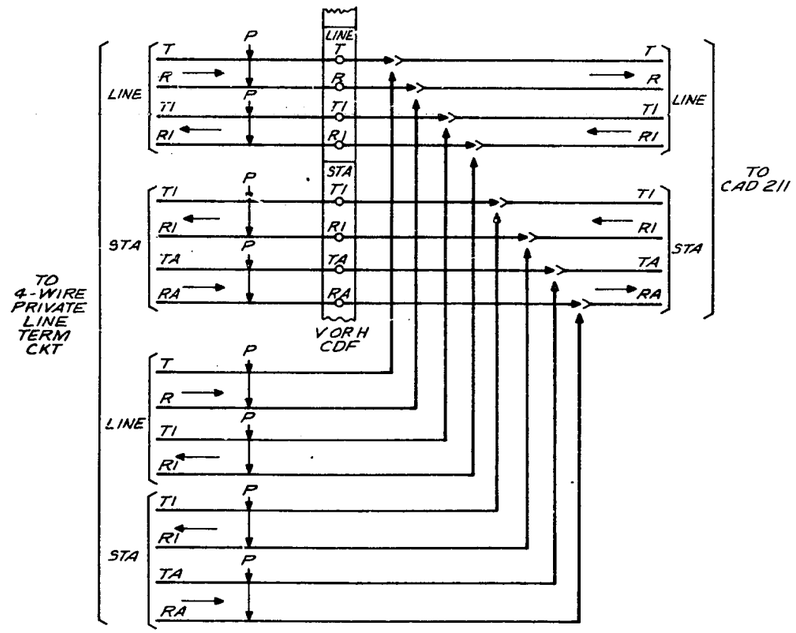
SIZE 6S

SD-69610-01-G40

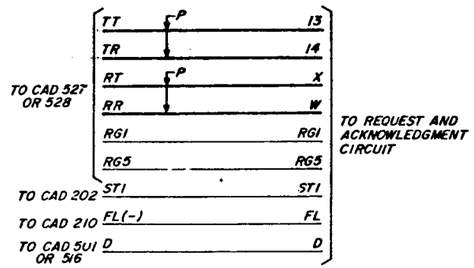
CAD 614



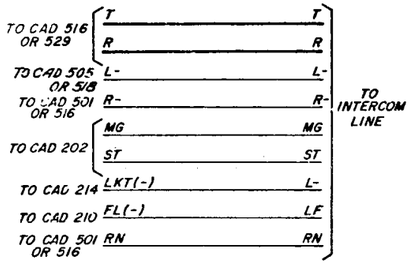
CAD 615



TD CAD 616



TC CAD 617



DRAWING ISSUE

ISSUE 8B

SWITCHING SYSTEM
NO. 301A

2

SD-69610-01-641

BELL TELEPHONE LABORATORIES INCORPORATED

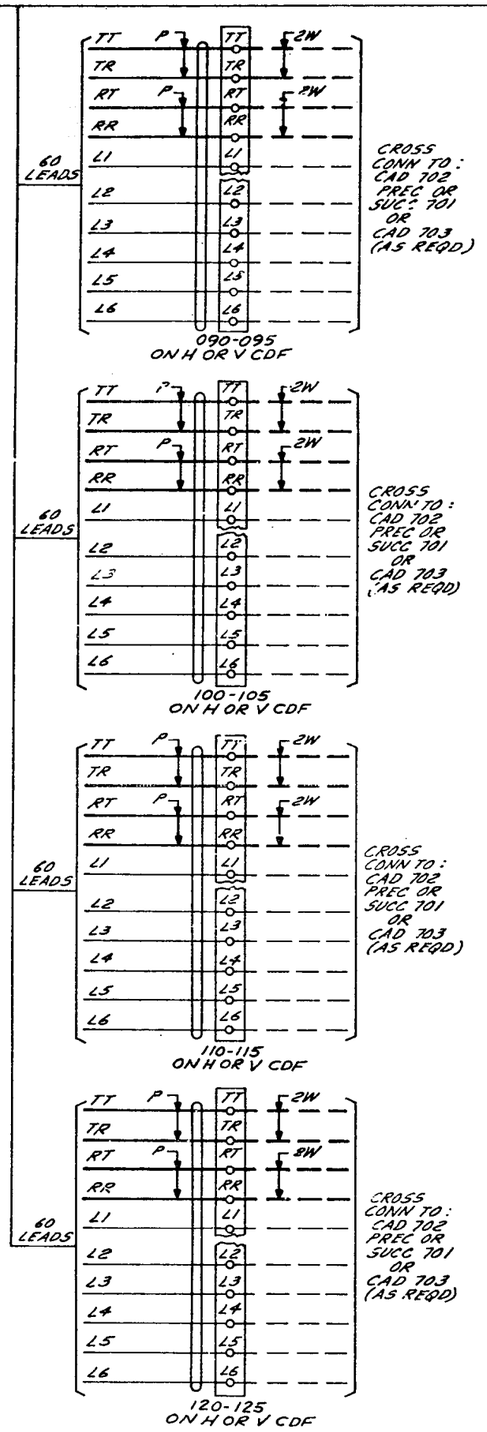
SIZE 6S

SD-69610-01-641

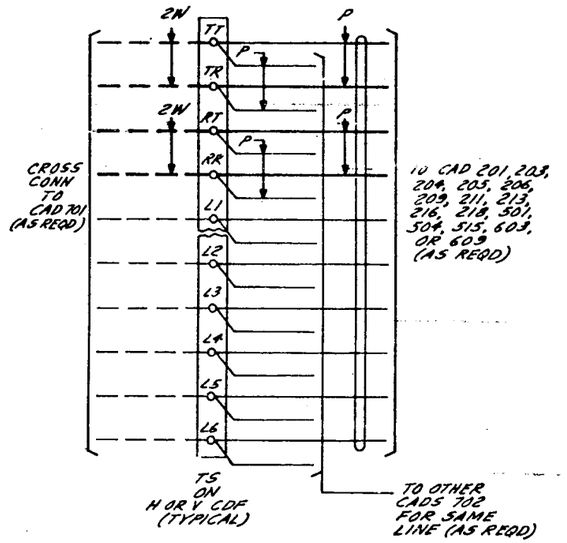
	LEADS	CUM
POS 1 (090-169)	480.	
POS 2 (090-169)	480	960
POS 3 (090-169)	480	1440
POS 5	480	2400
POS 10	480	4800
POS 15	480	7200
POS 20	480	9600
POS 30	480	14,400
POS 40	(480)	19,200
POS 41	(480)	
POS 42	(480)	20,160

TO CAD 305 (AS REQD)
(480 LEADS PER POS)

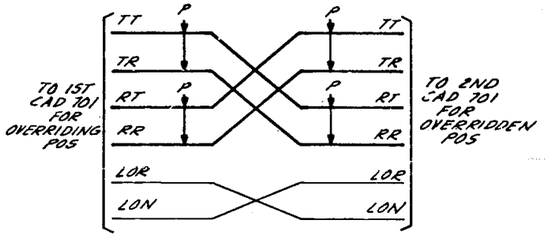
CAD 701
ONE PER POS (AS REQD)
480 TERM.



CAD 702
(PROVIDE AS REQD)



CAD 703



ISSUE 8B

SWITCHING SYSTEM NO. 301A

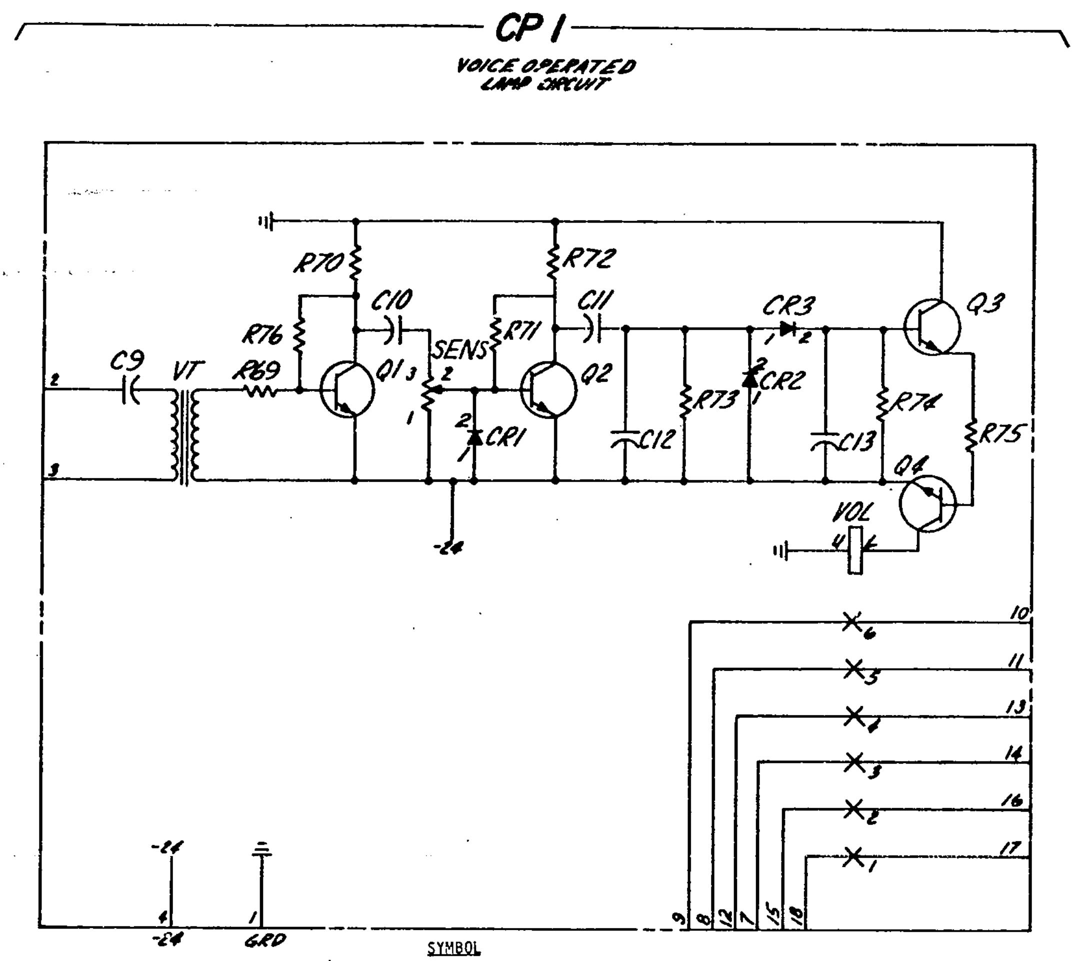
BELL TELEPHONE LABORATORIES INCORPORATED

CARD SIZE 6S

SD-69610-01-G42

PRINTED IN U.S.A.

SD - 69610-01-G42



SYMBOL

RL	FS1
S1	FS10
VL	FS15

COMPONENT LIST

CAPACITOR

DESIG	CODE
C9	542AD, .1
C10	542A, .5
C11	542A, .5
C12	KS14138 L1, 0047
C13	542A, .5

DIODE

DESIG	CODE
CR1	400J
CR2	400G
CR3	446F

POTENTIOMETER

DESIG	CODE
SENS	KS-16803, L3 B TAPER, 1 MEG

RELAY

DESIG	CODE
VOL	MB4

RESISTOR

DESIG	CODE
R69	KS-13490, L1, 2200
R70	KS-13490, L1, 24K
R71	KS-13490, L1, .82M
R72	KS-13490, L1, 16K
R73	KS-13490, L1, 2M
R74	KS-13490, L1, 51K
R75	KS-13490, L1, 5.1K
R76	KS-13490, L1, 47K

TRANSFORMER

DESIG	CODE
VT	2532S

TRANSISTOR

DESIG	CODE
Q1	16F
Q2	16F
Q3	16F
Q4	16F

MANUFACTURING REFERENCES

CATEGORY	NO.
CIRCUIT PACK CODE AND ASSEMBLY DRAWING CP1	SD-69534-( ) GROUP 1
CONNECTOR ON FRAME CP1	906C

DRAWING ISSUE	
1	
2D	

2

SWITCHING SYSTEMS
NO. 301A

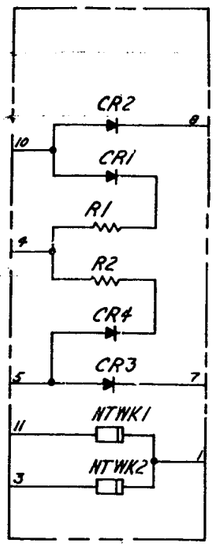
SD-69610-01-J1

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SD-69610-01-J1

CP2



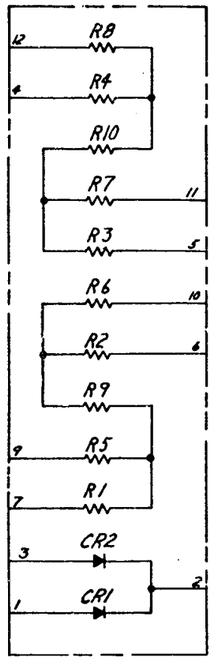
COMPONENT LIST

DIODE	CODE
CR1	446F
CR2	446F
CR3	446F
CR4	446F

NETWORK	CODE
NET 1	185A
NET 2	185A

RESISTOR	CODE
R1	144B, 121Ω
R2	144B, 121Ω

CP3

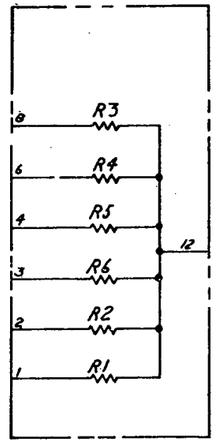


COMPONENT LIST

DIODE	CODE
CR1	446F
CR2	446F

RESISTOR	CODE
R1	221A, 475Ω
R2	221A, 475Ω
R3	221A, 475Ω
R4	221A, 475Ω
R5	221A, 499Ω
R6	221A, 499Ω
R7	221A, 499Ω
R8	221A, 499Ω
R9	221A, 196Ω
R10	221A, 196Ω

CP4 (MFR DISC)



COMPONENT LIST

RESISTOR	CODE
R1	144B, 121Ω
R2	144B, 121Ω
R3	144B, 121Ω
R4	144B, 121Ω
R5	144B, 121Ω
R6	144B, 121Ω

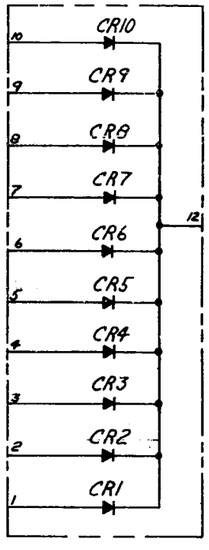
MANUFACTURING REFERENCES

CATEGORY	NO.
CIRCUIT PACK CODE AND ASSEMBLY DRAWING	
CP-1	ED-69534- ( ) GROUP 1
CP-2	ED1E178- ( ) GROUP 2
CP-3	ED1E178- ( ) GROUP 3
CP-4 (MFR DISC)	ED1E178- ( ) GROUP 4
CP-5	ED1E178- ( ) GROUP 1
CP-6	ED1E178- ( ) GROUP 6
CP-7	ED1E178- ( ) GROUP 7
CONNECTOR ON FRAME CP1	906C CONN.
CONNECTOR ON FRAME CP2-CP7	NONE

DRAWING ISSUE

1	[illegible]

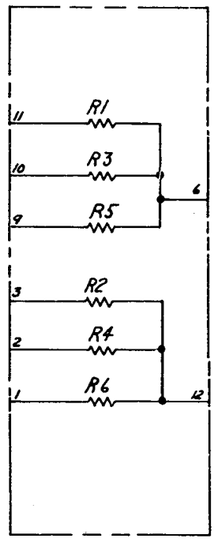
CP5



COMPONENT LIST

DIODE	CODE
CR1	446F
CR2	446F
CR3	446F
CR4	446F
CR5	446F
CR6	446F
CR7	446F
CR8	446F
CR9	446F
CR10	446F

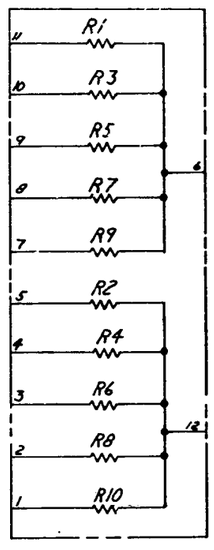
CP6



COMPONENT LIST

RESISTOR	CODE
R1	221A, 274Ω
R2	221A, 274Ω
R3	221A, 274Ω
R4	221A, 274Ω
R5	221A, 274Ω
R6	221A, 274Ω

CP7



COMPONENT LIST

RESISTOR	CODE
R1	221A, 2340Ω
R2	221A, 2340Ω
R3	221A, 2340Ω
R4	221A, 2340Ω
R5	221A, 2340Ω
R6	221A, 2340Ω
R7	221A, 2340Ω
R8	221A, 2340Ω
R9	221A, 2340Ω
R10	221A, 2340Ω

SD-69610-01-J2

ISSUE 5B

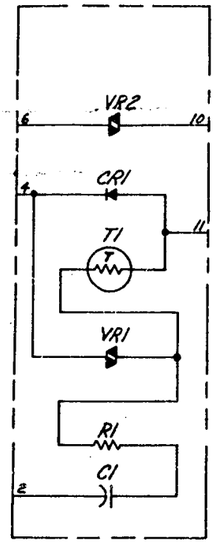
SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 6S

SD-69610-01-J2

CP8 (MFR DISC)



COMPONENT LIST

CAPACITOR	CODE
C1	542F

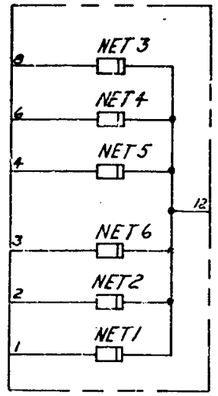
DIODE	CODE
CR1	446B

RESISTOR	CODE
R1	221A, 68.1Ω

THERMISTOR	CODE
T1	8A

VARISTOR	CODE
VR1	317A
VR2	317B

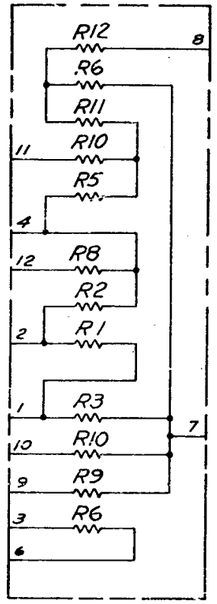
CP9 (MFR DISC)



COMPONENT LIST

NETWORK	CODE
NET 1	185A
NET 2	185A
NET 3	185A
NET 4	185A
NET 5	185A
NET 6	185A

CP10 (MFR DISC)



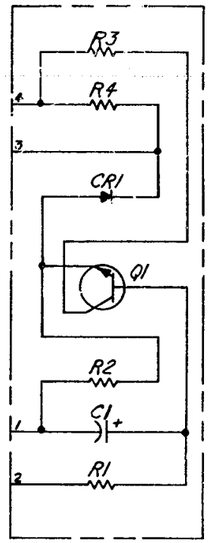
COMPONENT LIST

RESISTOR	CODE
R1	221A (2180Ω)
R2	221A (301Ω)
R3	221A (301Ω)
R4	221A (600Ω)
R5	221A (7680Ω)
R6	221A (7680Ω)
R7	221A (182Ω)
R8	221A (182Ω)
R9	221A (301Ω)
R10	221A (5300Ω)
R11	221A (6490Ω)
R12	221A (5300Ω)

MANUFACTURING REFERENCES

CATEGORY	NO.
CIRCUIT PACK CODE AND ASSEMBLY DRAWING	
CP-8 (MFR DISC)	ED-1E178-( ) GROUP 8
CP-9 (MFR DISC)	ED-1E178- ( ) GROUP 5
CP-10 (MFR DISC)	ED-1E178- ( ) GROUP 10
CP-11	ED-1E179- ( ) GROUP 3
CP-12	ED-1E179- ( ) GROUP 2
CP-13	ED-1E178- ( ) GROUP 11
CONNECTOR ON FRAME CP11, 12	KS-19437,L1 CONN
CONNECTOR ON FRAME CP 8,9,10	NONE

CP11



COMPONENT LIST

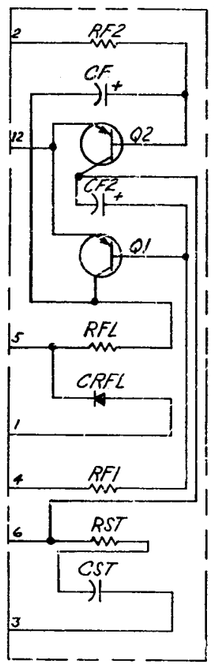
RESISTORS	CODE
R1	221A (1300Ω)
R2	144B (261Ω)
R3	144B (301Ω)
R4	KS-19151, L1 (10K)

CAPACITOR	CODE
C1	602C (20 UF)

DIODE	CODE
CR1	446B

TRANSISTOR	CODE
Q1	16K

CP12



COMPONENT LIST

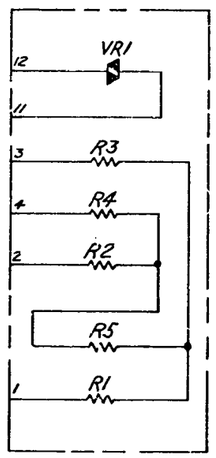
RESISTOR	CODE
RFL	KS-19150,L1 (4.7K)
RF1	KS-19150,L1 (10K)
RF2	KS-19150,L1 (10K)
RST	KS-19150,L1 (56Ω)

CAPACITOR	CODE
CST	596G (.511 UF)
CF1	600A (1.0 UF)
CF2	600A (1.0 UF)

DIODE	CODE
CRFL	446B

TRANSISTOR	CODE
Q1	12D
Q2	12D

CP13



COMPONENT LIST

RESISTOR	CODE
R1	221A (542Ω)
R2	221A (542Ω)
R3	221A (240Ω)
R4	221A (240Ω)
R5	221A (133Ω)

VARISTOR	CODE
VR1	100A

DRAWING ISSUE

1	VR5 RB HH
2D	
3A	
4A	

ISSUE 9BU

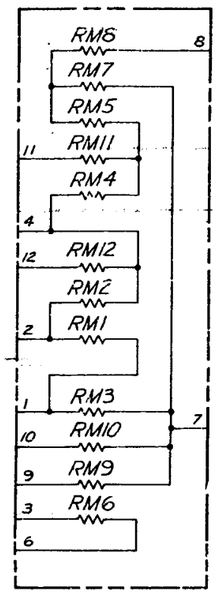
SD-69610-01-J3

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 6S

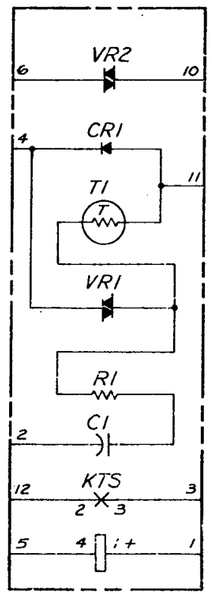
(XM) CP 14



COMPONENT LIST

RESISTOR	CODE
RM1	KS-16312,L4F,130
RM2	KS-16312,L4F,481
RM3	KS-16312,L4F,481
RM4	KS-16312,L4F,7680
RM5	KS-16312,L4F,6490
RM6	KS-16312,L4F,600
RM7	KS-16312,L4F,7680
RM8	KS-16312,L4F,5300
RM9	KS-16312,L4F,301
RM10	KS-16312,L4F,182
RM11	KS-16312,L4F,5300
RM12	KS-16312,L4F,182

(XU) CP 15



COMPONENT LIST

RELAY	CODE
KTS	326B (SEE NOTE 1)

CAPACITOR	CODE
C1	542F

DIODE	CODE
CR1	446F

RESISTOR	CODE
R1	KS-20810,L1A,68.1

THERMISTOR	CODE
T1	8A

VARISTOR	CODE
VR1	317A
VR2	317B

NOTE 1. RELAY NOT ADJUSTABLE, REPLACE RELAY IF THERE IS MALFUNCTION.

MANUFACTURING REFERENCES

CATEGORY	NO.
CP14	ED-1E178-( ) GROUP 12
CP15	ED-27846-( ) GROUP 18
CONNECTOR ON FRAME CP14,15	NONE

ISSUE 10D

SWITCHING SYSTEM NO. 301A

BELL TELEPHONE LABORATORIES INCORPORATED

SIZE 6S

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