

**ESS NO. 1
CENTREX CONSOLE
CONTROL CABINET
SD BINDER**

APPARATUS INDEX

EQPT LOC	APP FIG.	
	NO.	SH NO.
CIRCUIT PACKS		
103-08	1	C1
103-09	1	C1
103-10	1	C1
103-11	1	C1
103-12	1	C1
103-13	1	C1
103-16	1	C1
103-22	1	C1
103-23	1	C1
105-03	1	C2
105-06	1	C2
105-08	1	C2
105-09	1	C2
105-11	1	C2
105-12	1	C2
105-13	1	C2
107-03	1	C2
107-04	1	C2
107-05	1	C2
107-06	1	C2
107-07	1	C2
107-08	1	C2
107-09	1	C2
107-10	1	C2
107-11	1	C2
107-12	1	C2
107-13	1	C2
107-14	1	C2
107-15	1	C2
107-16	1	C2
113-16	3	C4
113-18	3	C4
DESIG		
LA	1	C2
LSS	1	C2
OBC	1	C2
OSC	1	C2
SYNC	1	C2
TG	1	C1

DESIG	LOCATION		
	FS	APP FIG	EQPT
RELAYS			
K32	4B1	3	
KSP	4E4	2	
RR	4E2	1	
4 R-E SHIFT GATES-CP			
PC	1C6	1	103-10
SG0	3B2	1	107-16
SG01	3B3	1	107-16
SG02	3B5	1	107-16
SG03	3B7	1	107-16
SG04-07	3E1	1	107-14
SG08-11	3E2	1	107-12
SG12-15	3E3	1	107-10
SG16-19	3E5	1	107-08
SG20	3E6	1	107-06
SG21	3E8	1	107-06
SG22	3G2	1	107-06
SG23	3G3	1	107-06
SG24	3G5	1	107-04
SG25	3G7	1	107-04
SG1	2B1	1	103-12
SG2	2B2	1	103-12
SG4	2B4	1	103-12
SG8	2B6	1	103-12
SG16	2B8	1	103-10
4 TR FLIP FLOPS - CP			
C	3G4	1	107-03
C1	2B1	1	103-11
C2	2B3	1	103-11
C4	2B5	1	103-11
C8	2B7	1	103-11
C16	2B8	1	103-09
MS	1E4	1	103-09
PC	1C7	1	103-09
R00	3B0	1	107-15
R01	3B2	1	107-15
R02	3B4	1	107-15
R03	3B6	1	107-15
R04-07	3E1	1	107-13
R08-11	3E2	1	107-11
R12-15	3E3	1	107-09
R16-R19	3E5	1	107-07
R20	3E6	1	107-05
R21	3E7	1	107-05
R22	3G1	1	107-05
R23	3G2	1	107-05
SS	1B4	1	103-09
ST	3G6	1	107-03
700 AND 2100 CPS OSCILLATORS - CP			
OSC	1B0	1	105-06

DESIG	LOCATION		
	FS	APP FIG	EQPT
CAPACITORS			
C30	4B1	3	
C31	4B1	3	
C32	4E6	2	
C33	4E6	2	
C34	4B1	3	
C35	1E1	1	
DIODES			
CR1	4B1	3	
CR2	4C2	3	
CR4	4B1	3	
CR5	4B1	3	
CR6	4B1	3	
DIODE TRANSLATORS - CP			
SB3	3		113-18
SB7	3		113-16
FLIP FLOPS - CP			
KSP	4E3	1	103-23
GATES - CP			
ASH	1B6	1	105-12
B0	1E5	1	105-12
B1	1D5	1	105-12
BC	1E4	1	105-11
INT	4F1	1	103-22
INU0	1F1	1	105-11
INV1	1C4	1	105-11
LSP	4G1	1	103-22
RR	4E1	1	103-22
SH	1F6	1	105-11
SK0	1F8	1	105-11
SH1	1F8	1	105-11
SH2	1G8	1	105-11
ST	1B5	1	105-11
STC	1F4	1	105-12
TR	2E5	1	105-12
INDUCTOR			
L10	4B2	3	
LINE AMPLIFIERS - CP			
LA	1D1	1	105-03
LINE SIGNAL AMPLIFIERS - CP			
LSS	1D2	1	105-09

DESIG	LOCATION		
	FS	APP FIG	EQPT
OSCILLATOR BUFFER CIRCUIT - CP			
OBC	1B1	1	105-08
RESISTORS			
R32	4B2	3	
R33	4B1	3	
R34	4B2	3	
R35	4E4	2	
R36	4E4	2	
R37	4E6	2	
R38	4E1	1	
TONE GATES- CP			
TG	2D1	1	103-16
ZERO CROSSINGS - CP			
SYNC	1C2	1	105-11

LEAD INDEX

DESIG	LOCATION	
	FS	CAD
CENTREX ATTENDANT'S CONSOLE LAMP CONTROL CKT		
A0-3	3A3	
A4-21	3D4	
B0-3	3A3	
B4	3D4	
B17-21	3D4	
INT	4F2	
LSP	4F2	
RES	3A3	
S0	3A3	
S1	3A3	
S4	3D4	
S5	3D4	
S9	3D4	
S10	3D4	
S14	3D4	
S15	3D4	
S19	3D4	
TR	2E6	
CENTREX DATA LINK CKT		
R1	100	9C1
R2	2D1	9C1
T1	100	9C1
T2	2D1	9C1

DESIG	LOCATION	
	FS	CAD
TEL CONSOLE 0		
BVK	SF4	10D4
BVR	SF4	10D4
CONFK1	SF4	10D4
CONFK2	SF4	10D4
CONF1	SF4	10D4
CONF2	SF4	10D4
EXDTK	SF8	10D4
EXDTR	SF8	10D4
EXSRCK	SF8	10D4
EXSRCR	SF8	10D4
HLDK	SF8	10D4
HLDR	SF8	10D4
LPK0	SF1	10C1
LPK1	SF1	10C1
LPK2	SF1	10C1
LPK3	SF2	10C1
LPK4	SF2	10C1
LPK5	SF2	10C1
LPRO	SF1	10C1
LPR1	SF1	10C1
LPR2	SF1	10C1
LPR3	SF2	10C1
LPR4	SF2	10C1
LPR5	SF2	10C1
NTK	SF3	10D4
NTR	SF3	10D4
PBK	SF3	10D4
PBR	SF3	10D4
RDTK	SF6	10D4
RDTR	SF6	10D4
RLSK	SF6	10D4
RLSR	SF6	10D4
RSRCK	SF6	10D4
RSRCR	SF6	10D4
SDTK	SF7	10D4
SOTR	SF7	10D4
SPK1	SF2	10D4
SPK2	SF3	10D4
SPK3	SF5	10D4
SPK4	SF5	10D4
SPR1	SF3	10D4
SPR2	SF3	10D4
SPR3	SF4	10D4
SPR4	SF5	10D4
SSRCK	SF7	10D4
SSRCR	SF7	10D4
STK	SF7	10D1
STR	SF7	10D1
SUPVK	—	10D4
SUPVR	—	10D4

CENTREX DATA RECEIVER AND TRANSMITTER CIRCUIT

BELL TELEPHONE LABORATORIES

2

SD-IE059-01-A2

6S

PRINTED IN U.S.A.

DRAWING
ISSUE
1
5A
7A

ISSUE
11B

LEAD INDEX (CONT)

DESIG	LOCATION	
	FS	CAD
TEL CONSOLE 1		
BVK	SF4	11D4
BVR	SF4	11D4
CONFK1	SF4	11D4
CONFK2	SF4	11D4
CONFR1	SF4	11D4
CONFR2	SF4	11D4
EXDTK	SF8	11D4
EXDTR	SF8	11D4
EXSRCK	SF8	11D4
EXSRCR	SF8	11D4
HLDK	SF8	11D4
HLDR	SF8	11D4
LPK0	SF1	11C1
LPK1	SF1	11C1
LPK2	SF1	11C1
LPK3	SF2	11C1
LPK4	SF2	11C1
LPK5	SF2	11C1
LPRO	SF1	11C1
LPR1	SF1	11C1
LPR2	SF1	11C1
LPR3	SF2	11C1
LPR4	SF2	11C1
LPR5	SF2	11C1
NTK	SF3	11D4
NTR	SF3	11D4
PBK	SF3	11D4
PBR	SF3	11D4
RDTK	SF6	11D4
RDTR	SF6	11D4
RLSK	SF6	11D4
RLSR	SF6	11D4
RSRCK	SF6	11D4
RSRCR	SF6	11D4
SDTK	SF7	11D4
SDTR	SF7	11D4
SPK1	SF2	11D4
SPK2	SF3	11D4
SPK3	SF5	11D4
SPK4	SF5	11D4
SPR1	SF3	11D4
SPR2	SF3	11D4
SPR3	SF4	11D4
SPR4	SF5	11D4
SSRCK	SF7	11D4
SSRCR	SF7	11D4
STK	SF7	11D1
STR	SF7	11D1
SUPVK	—	11D4
SUPVR	—	11D4

DESIG	LOCATION	
	FS	CAD
TEL CONSOLE 2		
BVK	SF4	12D4
BVR	SF4	12D4
CONFK1	SF4	12D4
CONFK2	SF4	12D4
CONFR1	SF4	12D4
CONFR2	SF4	12D4
EXDTK	SF8	12D4
EXDTR	SF8	12D4
EXSRCK	SF8	12D4
EXSRCR	SF8	12D4
HLDK	SF8	12D4
HLDR	SF8	12D4
LPK0	SF1	12C1
LPK1	SF1	12C1
LPK2	SF1	12C1
LPK3	SF2	12C1
LPK4	SF2	12C1
LPK5	SF2	12C1
LPRO	SF1	12C1
LPR1	SF1	12C1
LPR2	SF1	12C1
LPR3	SF2	12C1
LPR4	SF2	12C1
LPR5	SF2	12C1
NTK	SF3	12D4
NTR	SF3	12D4
PBK	SF3	12D4
PBR	SF3	12D4
RDTK	SF6	12D4
RDTR	SF6	12D4
RLSK	SF6	12D4
RLSR	SF6	12D4
RSRCK	SF6	12D4
RSRCR	SF6	12D4
SDTK	SF7	12D4
SDTR	SF7	12D4
SPK1	SF2	12D4
SPK2	SF3	12D4
SPK3	SF5	12D4
SPK4	SF5	12D4
SPR1	SF3	12D4
SPR2	SF3	12D4
SPR3	SF4	12D4
SPR4	SF5	12D4
SSRCK	SF7	12D4
SSRCR	SF7	12D4
STK	SF7	12D1
STR	SF7	12D1
SUPVK	—	12D4
SUPVR	—	12D4

DESIG	LOCATION	
	FS	CAD
TEL CONSOLE 3		
BVK	SF4	13D4
BVR	SF4	13D4
CONFK1	SF4	13D4
CONFK2	SF4	13D4
CONFR1	SF4	13D4
CONFR2	SF4	13D4
EXDTK	SF8	13D4
EXDTR	SF8	13D4
EXSRCK	SF8	13D4
EXSRCR	SF8	13D4
HLDK	SF8	13D4
HLDR	SF8	13D4
LPK0	SF1	13C1
LPK1	SF1	13C1
LPK2	SF1	13C1
LPK3	SF2	13C1
LPK4	SF2	13C1
LPK5	SF2	13C1
LPRO	SF1	13C1
LPR1	SF1	13C1
LPR2	SF1	13C1
LPR3	SF2	13C1
LPR4	SF2	13C1
LPR5	SF2	13C1
NTK	SF3	13D4
NTR	SF3	13D4
PBK	SF3	13D4
PBR	SF3	13D4
RDTK	SF6	13D4
RDTR	SF6	13D4
RLSK	SF6	13D4
RLSR	SF6	13D4
RSRCK	SF6	13D4
RSRCR	SF6	13D4
SDTK	SF7	13D4
SDTR	SF7	13D4
SPK1	SF2	13D4
SPK2	SF3	13D4
SPK3	SF5	13D4
SPK4	SF5	13D4
SPR1	SF3	13D4
SPR2	SF3	13D4
SPR3	SF4	13D4
SPR4	SF5	13D4
SSRCK	SF7	13D4
SSRCR	SF7	13D4
STK	SF7	13D1
STR	SF7	13D1
SUPVK	—	13D4
SUPVR	—	13D4

OPTION INDEX

APP OR WIRING	LOCATION
Z	2D1, 2D2, CAD 5
Y	2D1, 2D2, 2E1, CAD 5
X	1E1
W	4B1, APP FIG. 3
V	4B2, APP FIG. 3

DRAWING
ISSUE
1
FLB
FEB
1964
2A
FLB
FEB
1964ISSUE
11BCENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

SD-IE059-01-A3

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

PRINTED IN U.S.A.

FS I DATA RECEIVER

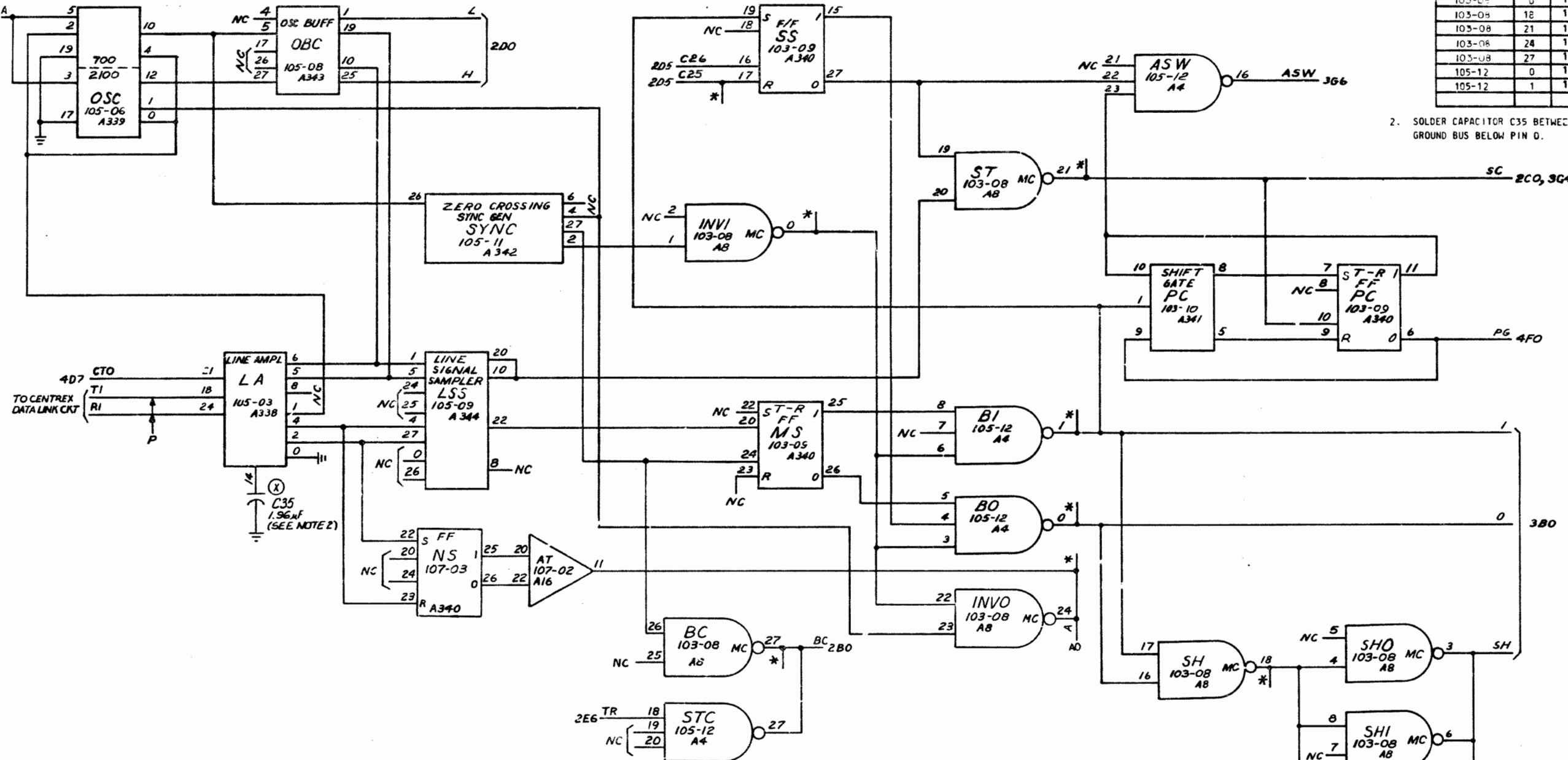
NOTES:

- * IN EXTERNAL COMPONENT CONNECTED PER COMPONENT CONNECTIONS TABLE.

COMPONENT CONNECTIONS TABLE

EQPT LOC	TERM	EQPT LOC	TERM	CP
103-09	17	105-13	6	A35
103-09	0	105-13	2	A35
103-08	18	105-13	1	A35
103-08	21	105-13	18	A35
103-08	24	105-13	10	A35
103-08	27	105-13	9	A35
105-12	0	105-13	7	A35
105-12	1	105-13	8	A35

- SOLDER CAPACITOR C35 BETWEEN PIN 14 AND THE GROUND BUS BELOW PIN D.



POWER AND FUSING DATA TABLE

CP	EQPT LOC	GRD TERM.	+24 TERM.	DESIG
A4	105-12	13	14	A
A8	103-08	13, 15	14	A
A16	107-02	13	14	A
A35	105-13		14	A
A338	105-07	13	14	A
A339	105-06	13	14	A
A340	103-09	13	14	A
A341	103-10		14	A
A342	105-11	13	14	A
A343	105-08	13	14	A
A344	105-09	13	14	A

CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

SD-IE059-01-B1

BELL TELEPHONE LABORATORIES
INCORPORATED

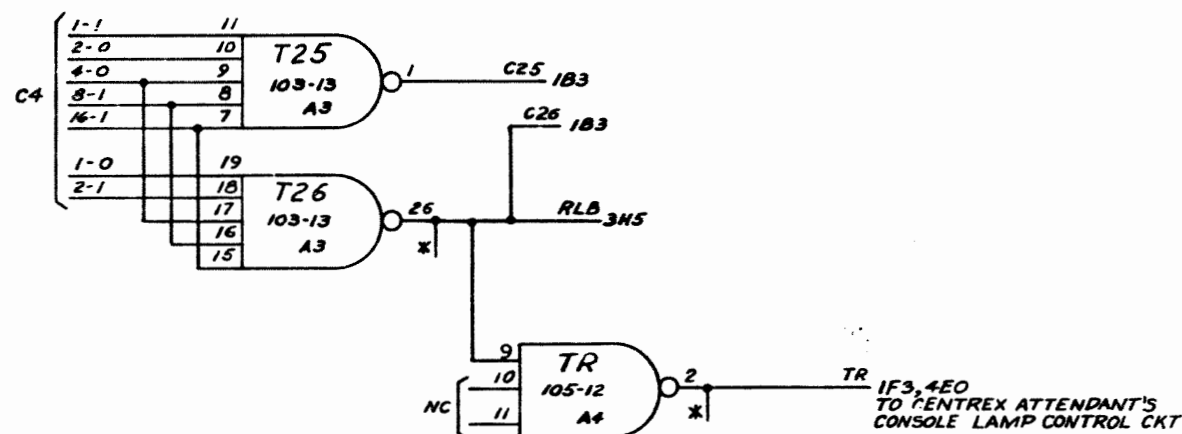
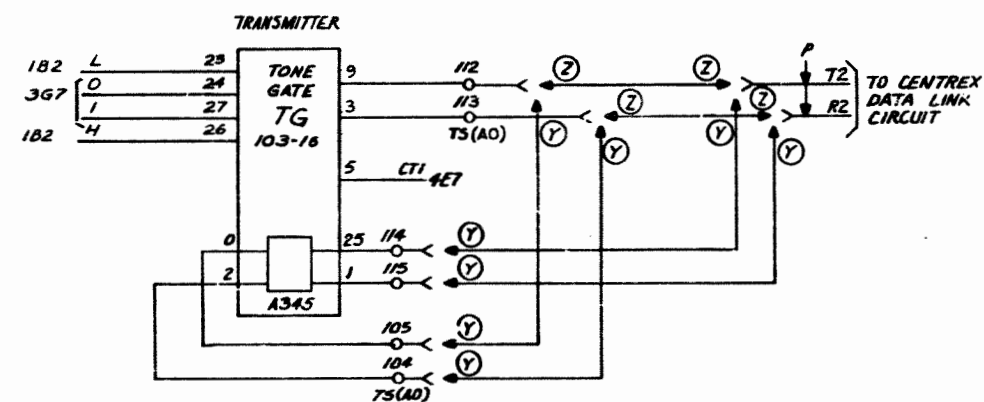
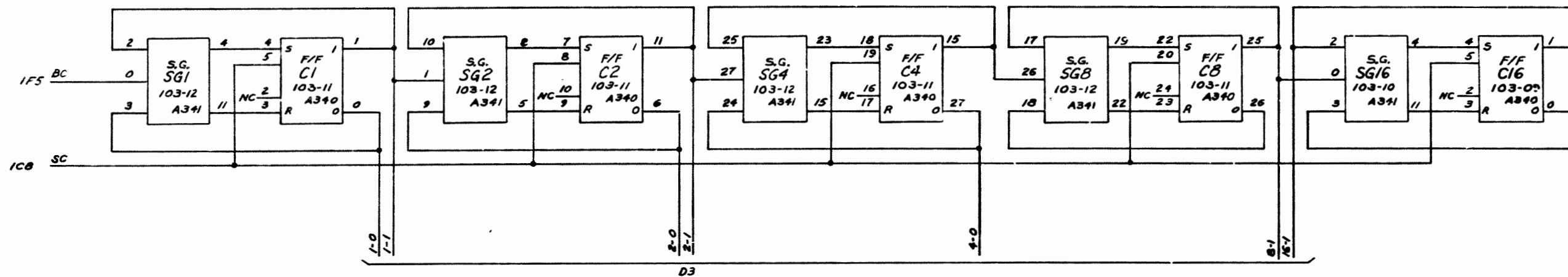
6S

PRINTED IN U.S.A.

FS 2 BIT COUNTER

NOTES:

1. * -AN EXTERNAL COMPONENT CONNECTED PER COMPONENT CONNECTIONS TABLE.



COMPONENT CONNECTIONS TABLE				
CKT ELEMENT	CONN TO RESISTORS			
EQPT LOC	TERM.	EQPT LOC	TERM.	CP
103-13	26	105-13	3	A35
105-12	2	105-13	4	A35

POWER AND FUSING DATA TABLE				
CP	EQPT LOC	GRD TERM.	+24 TERM.	DESIG
A3	103-13	13	14	A
A4	105-12	13	14	A
A35	105-13		14	A
A340	103-09	13	14	A
A340	103-11	13	14	A
A341	103-10		14	A
A341	103-12		14	A
A345	103-16	13	14	A

CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

2

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SD-1E059-01-B2

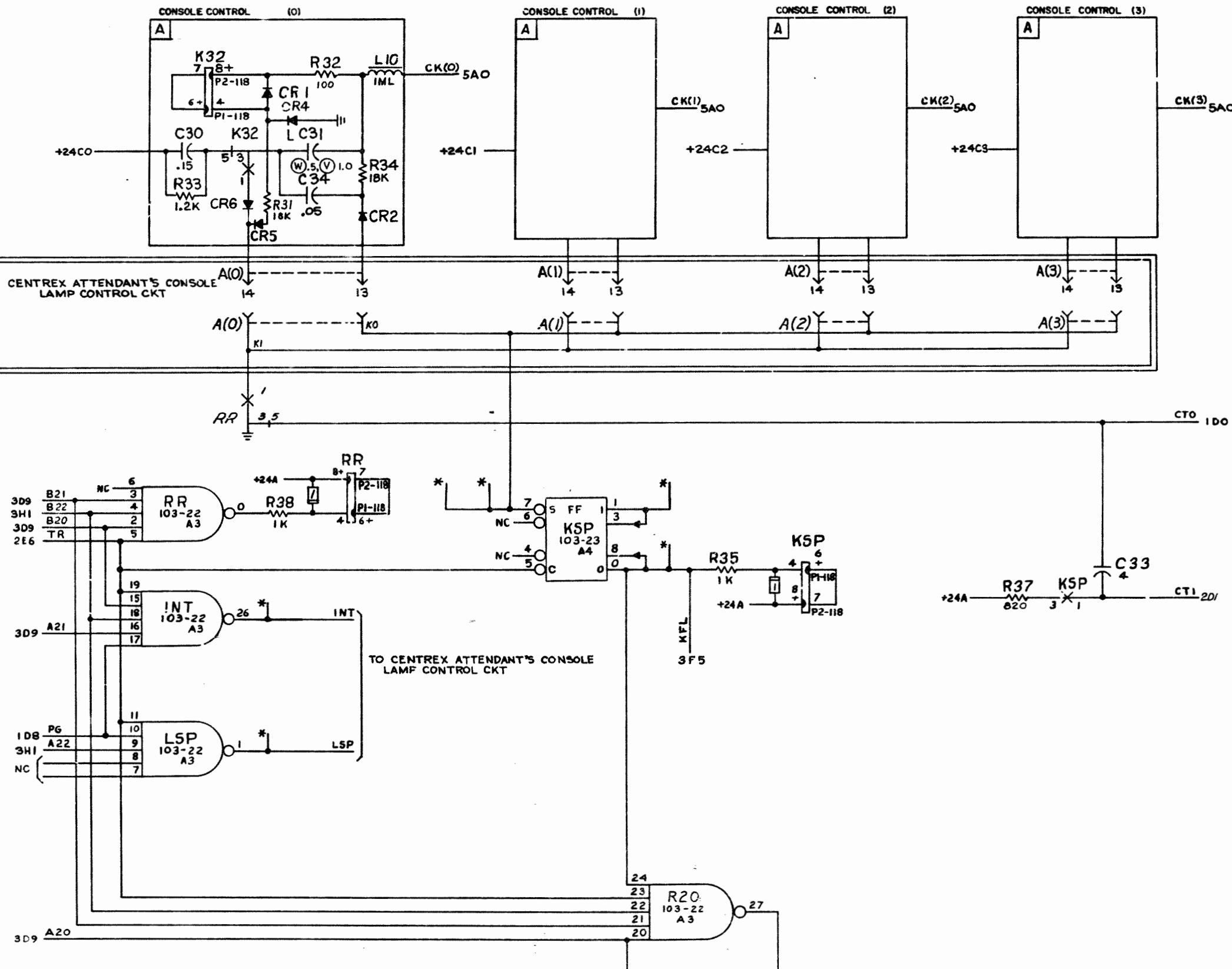
FS4 KEY SIGNAL PRESENT (SEE NOTE 202)

NOTES:

1. * & P EXTERNAL COMPONENT CONNECTED PER COMPONENT CONNECTIONS TABLE.

COMPONENT CONNECTIONS TABLE					
CKT ELEMENT	CONN TO RESISTORS				
EQPT LOC	TERM.	EQPT LOC	TERM.	CP	
103-22	1	105-13	17	A35	
103-22	26	105-13	19	A35	
103-23	0	105-13	16	A35	
103-23	1	105-13	12	A35	
103-23	7	105-13	20	A35	
103-23	7	105-13	0	A35	

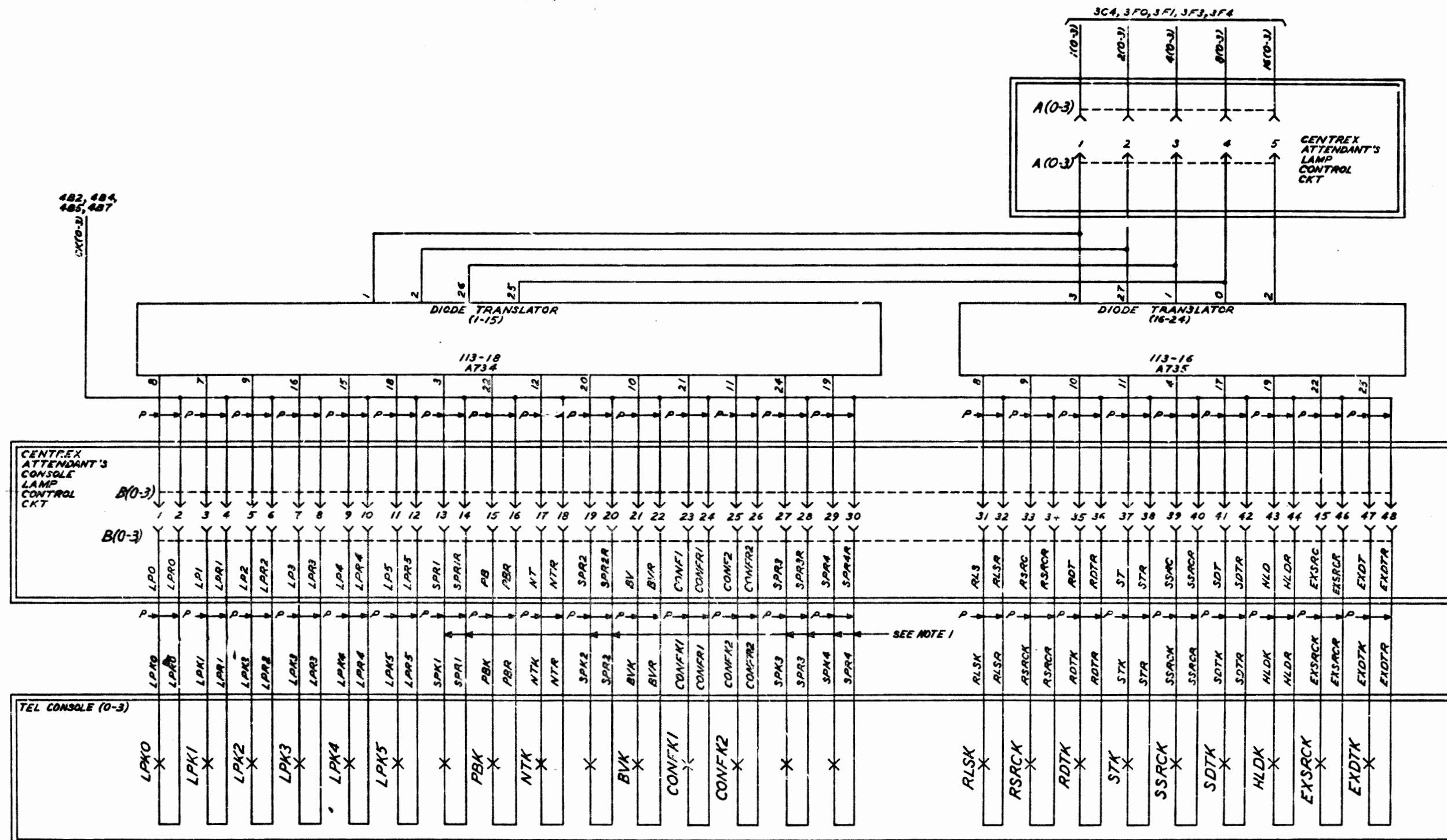
POWER AND FUSING DATA TABLE				
CP	EQPT LOC	GRD TERM.	+24 TERM.	DESIG
A3	103-22	13	14	A
A4	103-23	13	1	A
A35	105-13		14	A



FS 5 CONSOLE KEY TRANSLATOR (SEE NOTE 201,202)

NOTES:
1 THESE ARE SPARE LEADS.

DRAWING
ISSUE
1
REV
PLAN



POWER AND FUSING DATA TABLE

CP	EQPT LOC	GRD TERM	+24 TERM	DESIG
A734	113-1B		14	C ()
A735	113-16		14	C ()

CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

SD-IE059-01-B5

PART OF APP FIG. 1

CIRCUIT PACK

EQPT LOC		103-08		103-09		103-10		103-11		103-12		103-13		103-14		103-15		EQPT LOC	
DESIG		AB		A340		A341		A340		A341		A3		TG		A345		DESIG	
CODE																		CODE	
OPTION																		OPTION	
ELEMENT LOC		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		ELEMENT LOC	
TERM.		DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	TERM.	
27																		27	
26																		26	
25																		25	
24																		24	
23																		23	
22																		22	
21																		21	
20																		20	
19																		19	
18																		18	
17																		17	
16																		16	
15																		15	
14																		14	
13																		13	
12																		12	
11																		11	
10																		10	
9																		9	
8																		8	
7																		7	
6																		6	
5																		5	
4																		4	
3																		3	
2																		2	
1																		1	
0																		0	

CIRCUIT PACK

EQPT LOC		103-17		103-22		103-23		103-26		103-28		103-30		103-31		EQPT LOC	
DESIG		***		A3		A4		***		***		***		***		DESIG	
CODE																CODE	
OPTION																OPTION	
ELEMENT LOC		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		ELEMENT LOC	
TERM.		DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	TERM.	
27																27	
26																26	
25																25	
24																24	
23																23	
22																22	
21																21	
20																20	
19																19	
18																18	
17																17	
16																16	
15																15	
14																14	
13																13	
12																12	
11																11	
10																10	
9																9	
8																8	
7																7	
6																6	
5																5	
4																4	
3																3	
2																2	
1																1	
0																0	

*** WHEN THIS CIRCUIT IS USED IN CONJUNCTION WITH THE CENTREX ATTENDANT'S CONSOLE LAMP CONTROL CIRCUIT, THESE POSITIONS ARE USED ON THE CENTREX ATTENDANT'S CONSOLE LAMP CONTROL CIRCUIT.

CENTREX DATA RECEIVER AND TRANSMITTER CIRCUIT

BELL TELEPHONE LABORATORIES INCORPORATED

SD-IE059-01-C1



6S

SD-IE059-01-C1

PART OF APP FIG. 1

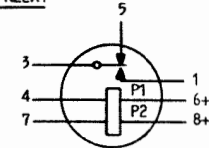
CIRCUIT PACK

EQPT LOC				107-16		107-19		107-20		107-22		107-24		107-25		107-26		107-28		107-29		107-31		107-32		EQPT LOC					
DESIG				XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX		DESIG					
CODE				XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX		XXX		CODE					
OPTION																										OPTION					
ELEMENT LOC				TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.		ELEMENT LOC			
TERM.				DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC			TERM.	
27																													27		
26																													26		
25																													25		
24																													24		
23																													23		
22																													22		
21																													21		
20																													20		
19																													19		
18																													18		
17																													17		
16																													16		
15																													15		
14																													14		
13																													13		
12																													12		
11																													11		
10																													10		
9																													9		
8																													8		
7																													7		
6																													6		
5																													5		
4																													4		
3																													3		
2																													2		
1																													1		
0																													0		

XXX WHEN THIS CIRCUIT IS USED IN CONJUNCTION WITH THE CENTREX ATTENDANT'S CONSOLE LAMP CONTROL CIRCUIT, THESE POSITIONS ARE USED ON THE CENTREX ATTENDANT'S CONSOLE LAMP CONTROL CIRCUIT.

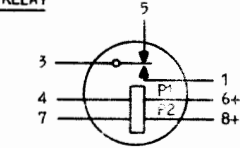
APP FIG. 2

RELAY



DESIG	RR
CODE	03G
OPTION	
8	4E2
7	4E2
6	4E2
5	4D1
4	4E2
3	4D1
2	
1	4D1

RELAY



DESIG	KSP
CODE	303G
OPTION	
8	4E4
7	4E4
6	4E4
5	
4	4E4
3	4E6
2	
1	4E6

NETWORK

DESIG	LOC	CODE
KSP	4E4	185C

RESISTOR

DESIG	LOC	CODE
R35	4E4	KS-19150, L2, 1KΩ
R37	4E6	KS-19151, L2, 820

CAPACITOR

DESIG	LOC	CODE
C35	1E1	596G

NETWORK

DESIG	LOC	CODE
RR	4E1	185C

RESISTOR

DESIG	LOC	CODE
R38	4E1	KS-19150, L2 1KΩ

CAPACITOR

DESIG	LOC	CODE
C33	4E6	542G

(SEE NOTE 01)

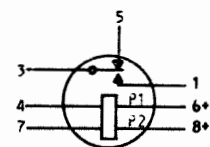
DRAWING	
ISSUE	
1	FILE FBI DOCP

/

65

PART OF APP FIG. 3

RELAY



DESIG	CODE
K32	3G3G
OPTION	
5	4B1
7	4B1
6	4B1
5	4B1
4	4B1
3	4B1
2	
1	4B1

RESISTOR

DESIG	LOC	CODE
R31	4C1	KS-19150, L2, 18K
R32	4B2	KS-19150, L2, 100
R33	4B1	KS-19150, L2, 1.2K
R34	4B2	KS-19150, L2, 18K

CAPACITOR

DESIG	LOC	CODE
C30	4B1	542A4
C31	4B1	542A4
C34	4B1	542P

DIODE

DESIG	LOC	CODE
CR1	4B1	458C
CR2	4C2	458C
CR4	4B1	446L
CR5	4B1	446F
CR6	4B1	446F

INDUCTOR

DESIG	LOC	CODE
L10	4A2	302DW

DRAWING	ISSUE
1	1
2A	2A
3A	3A
5A	5A
7A	7A

ISSUE
11B

CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

SD-IE059-01-C5

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

PRINTED IN U.S.A.

CIRCUIT NOTES:

DESIG	FUSE AMP	POTENTIAL	ONE PER
A	1 1/3	+24V	CKT
B	1 1/2	+24V	CKT
C ()	3/4	+24V	TEL CONSOLE

BATTERY **VOLTAGE RANGE**
 +24 20.5V-26.3V

+24V FUSES ARE SUPPLIED AS PART OF THE CENTREX ATTENDANT'S CONSOLE LAMP CONTROL CKT.

102.

FEATURE OR OPTION	PROVIDE		
	APP FIG.	APP OR REQ.	QUANTITY
DATA RECEIVER, BIT COUNTER AND SHIFT REGISTER	1		1 PER CKT
KEY SIGNAL PRESEN	2		1 PER CKT
CONSOLE KEY TRANSLATOR	3		1 PER TE CONSOLE
TRANSMITTER LOOP LENGTH (SEE WORKING LIMITS NOTE 1,2) SEE NOTE 203		Y	1 PER CKT
		Z	

103.

NETWORK VALUES		
NETWORK NO.	RESISTANCE IN OHMS	CAPACITANCE IN UF
1	560	0.25

104.

RECORD OF APP FIGURES, WIRING AND APPARATUS CHANGES							
CHANGED ON ISSUE	IF JOB RECORDS DO NOT SPECIFY	THIS OPTION WAS FURN	SEE NOTE	USE IN CKT			
				STD	A&M	MD	
11B	X	NONE	304	X			
	W OR V	W	305	V		W	

EQUIPMENT NOTES:

201. EQUIPMENT LOCATIONS 113-() ARE FOR CONSOLE 0.
FOR CONSOLE 1 EQUIPMENT LOCATIONS WOULD BE 119-().
FOR CONSOLE 2 EQUIPMENT LOCATIONS WOULD BE 207-().
FOR CONSOLE 3 EQUIPMENT LOCATIONS WOULD BE 213-().
202. NUMBER WITHIN THE PARENTHESIS REFERS TO CONSOLE
CONTROL POSITION 0, 1, 2, OR 3.
203. JOB RECORDS NEED NOT BE MAINTAINED FOR Z AND Y OPTIONS.
204. THIS EQUIPMENT SHALL BE SHIPPED WITH THOSE CIRCUIT
PACKS USED DURING THE EQUIPMENT TEST AT THE TIME OF
MANUFACTURE.

INFORMATION NOTES:

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

302.	HIGHEST RES. AN	
	CAP. USED ON	
	THIS DRAWING	
	R38	C35
	NOT USED	
	R36	C32

303. INDUCTOR NUMBERING STARTS WITH L10.
304. USE OF OPTION X (1.96ufd,C35) PROVIDES ADDITIONAL FILTERING OF THE +24 LEAD. LOCALLY GENERATED NOISE ON THE +24 MAY INTERFERE WITH THE LINE AMPLIFIER AND CAUSE ASW FAILURE INDICATIONS. INSTALLATIONS WITH BATTERY BACKUP AND NO AC RECTIFIERS WITHIN THE CABINET SHOULD CONTAIN THIS OPTION.
305. USE OF OPTION V PROVIDES ADDITIONAL DRIVE TO THE CK LEAD. INSUFFICIENT DRIVE RESULTS IN OCCASIONAL ERRONEOUS KEY SIGNALS. CABINET-TO-CONSOLE CABLE LENGTHS OF UNDER 500 FT. SHOULD BE OK WITH OPTION W. HOWEVER BETWEEN 500 AND 1000 FEET, OPTION V MAY BE REQUIRED.

WORKING LIMITS:

1. MAXIMUM LOOP RESISTANCE IS 1500 OHMS. MAXIMUM LOOP LENGTH IS 45,000 FT. THE SIGNALING PAIRS SHOULD MEET THE SAME TRANSMISSION REQUIREMENTS AS THOSE THAT APPLY TO A NORMAL SUBSET INSTALLATION. THAT IS:

NO LOADING ON LOOPS LESS THAN 18,000 FEET, NORMAL (H88) LOADING ON LOOPS OVER 18,000 FEET.
2. OPTIONS Y AND Z IN THIS CIRCUIT SHOULD BE COORDINATED WITH OPTIONS X,W,Y & Z IN THE CONNECTING CIRCUIT. SD-14265-01, AS FOLLOWS:

LOOP LENGTH	SD-14265-01	SD-1E059-01
LESS THAN 10,000 FT.	Y	Y
10,000-22,000 FEET	W, Y	Z
22,000-30,000 FEET	X	Y
30,000-45,000 FEET	W, X	Z

0 1 2 3 4 5 6 7 8 9

TROUBLESHOOTING WAVEFORMS
CTX DATA RECEIVER AND TRANSMITTER CKT

INFORMATION NOTES: (CONT)

350. LINE AMPLIFIER OUTPUT (SHEET B1/LOC D1 A338 TERM. 2 OR 4)

IF SIGNAL IS PRESENT, A TONE OF CORRESPONDING FREQUENCY IS BEING RECEIVED AND PROPERLY AMPLIFIED. IF SIGNAL IS DISTORTED, CHECK PACK AND INTEGRITY OF TIP-RING PAIR T1 & R1.

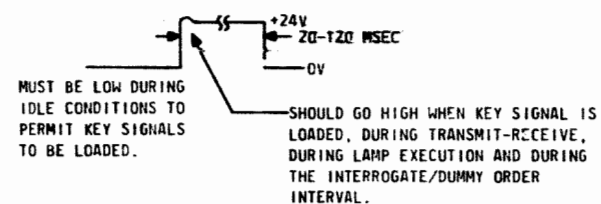


351. MS FLIP-FLOP (SHEET B1/LOC E4 A340 TERM. 25)

IF A SIMILAR SIGNAL IS PRESENT, WITH PULSE WIDTHS OF APPROXIMATELY 200-400 MICROSECONDS, THEN RECEIVED "ONES" ARE BEING DETECTED PROPERLY BY THE LINE SIGNAL SAMPLER, AND VERIFIES PROPER OPERATION OF THE OSCILLATORS, OSC. BUFFER, & ZERO CROSSING SYNC GENERATOR.



352. RR GATE (SHEET B4/LOC E1 103-22 TERM. 0)



353. LSP LEAD (SHEET B4/LOC G1 103-22 TERM. 1)

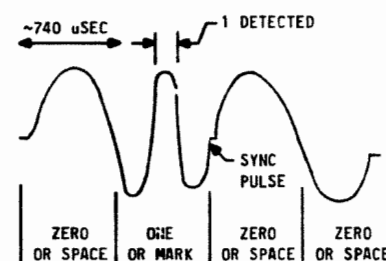
IF LAMP SIGNAL (BIT 22) IS RECEIVED, AND IF PARITY IS GOOD, LEAD WILL GO LOW AT END OF TRANSMISSION AND REMAIN THERE UNTIL REGISTER IS RESET BY A PULSE ON THE RES LEAD.



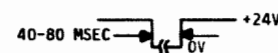
LAMP SIGNAL PRESENT INDICATION, TO LAMP CONTROL CIRCUIT.

INFORMATION NOTES: (CONT)

354. LOOP SIGNALLING WAVEFORM (TYPICAL)



355. INT LEAD (SHEET B4/LOC F1 103-22 TERM. 26)

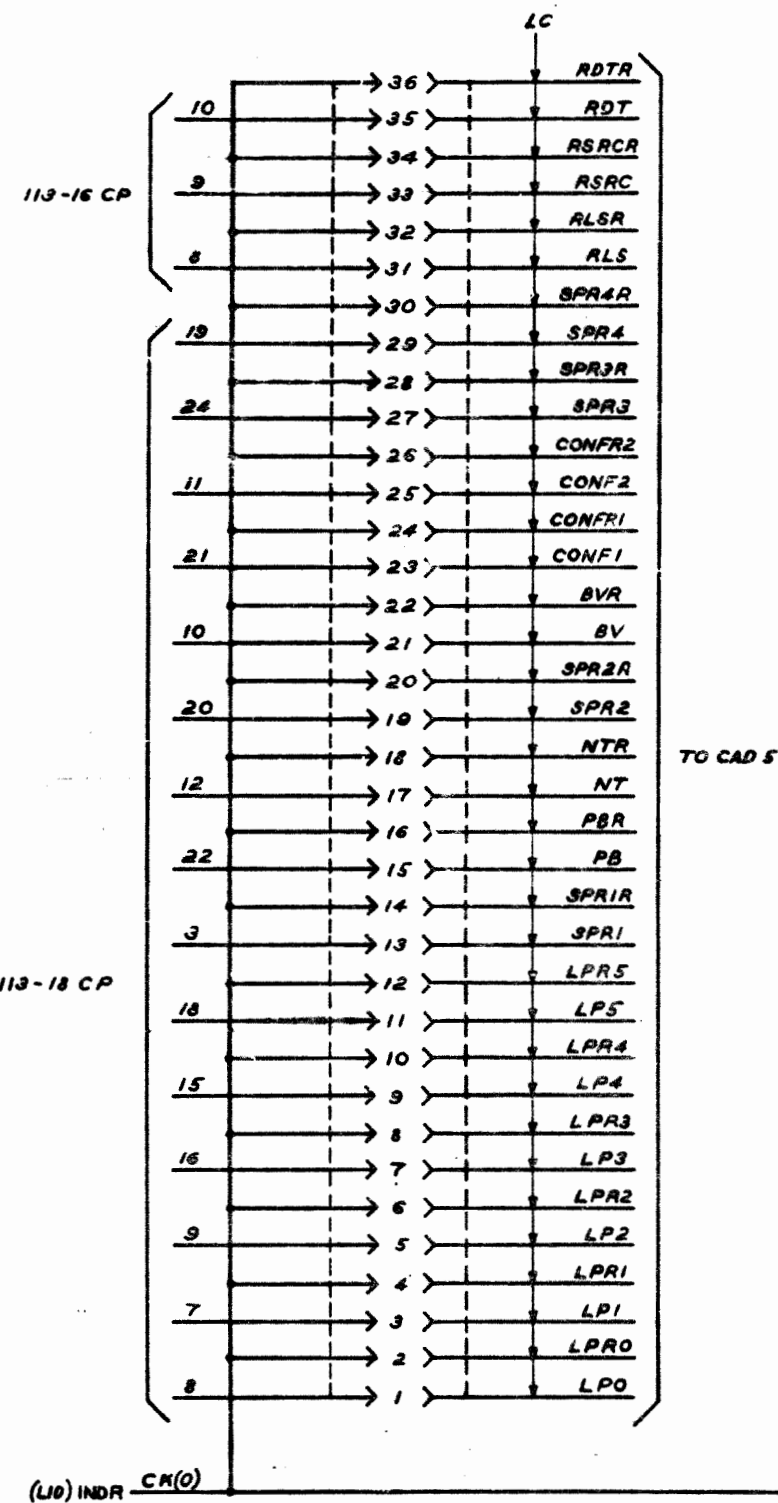


GOES LOW AT END OF TRANSMIT-RECEIVE
WHEN BIT 22 = 0
AND BIT 21 = 1

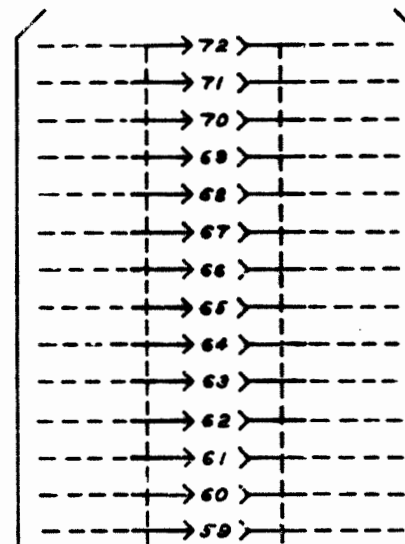


PART OF CAD 1

(FOR APP FIG. 3
CONSOLE CONTROL UNIT 0)



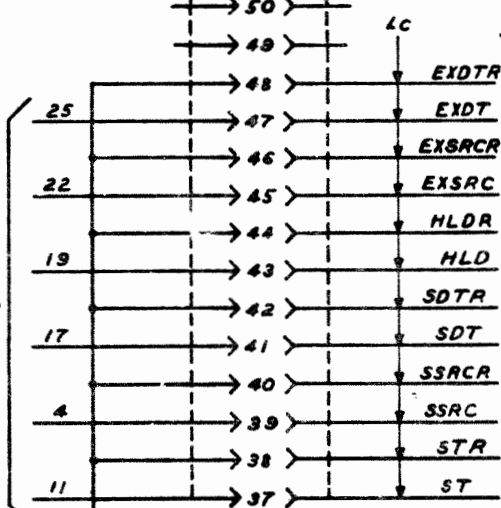
SHOWN ON
CENTREX ATTENDANT'S
CONSOLE LAMP
CONTROL CKT



SHOWN ON
CENTREX ATTENDANT'S
CONSOLE LAMP
CONTROL CKT

SHOWN ON
CENTREX ATTENDANT'S
CONSOLE LAMP
CONTROL CKT

113-16CP



CONN (5) ON CONSOLE CONTROL UNIT 0
SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

2

6S

SD-IE059-01-62

8

SD-IE059-01-62

0 1 2 3 4 5 6 7 8 9

DRAWING
ISSUE
1
7A

PART OF CAD 2

(FOR APP F16-3 CONSOLE CONTROL UNIT 1)

A

B

C

D

E

F

G

SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

CONN (A) ON CONSOLE CONTROL UNIT 1
SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

SD-IE059-01-63

7

CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

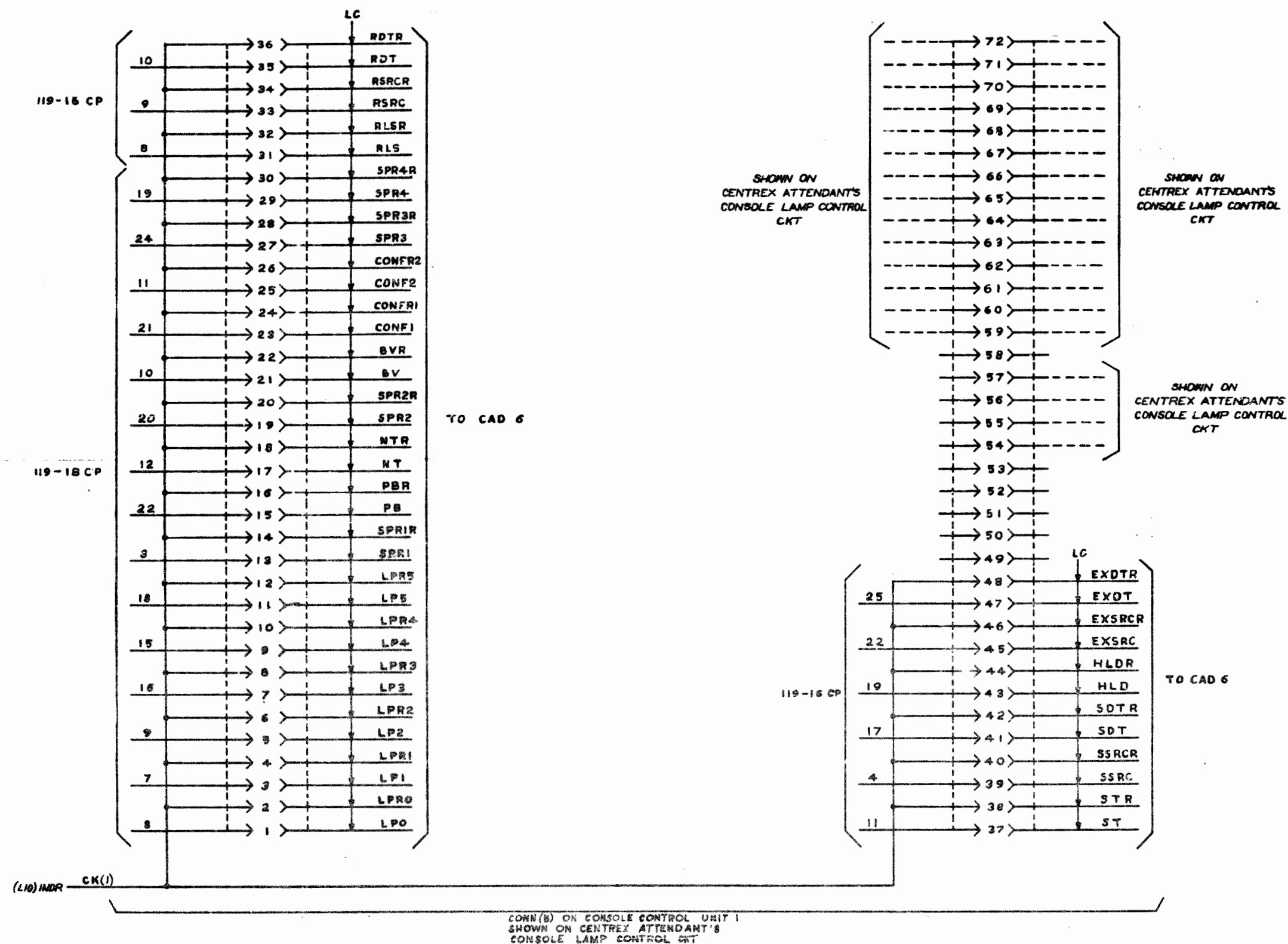
SD-IE059-01-63

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

PRINTED IN U.S.A.

PART OF CAD 2 (FOR APP FIG 3 CONSOLE CONTROL UNIT 1)



CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

SD-1E059-01-64

BELL TELEPHONE LABORATORIES
INCORPORATED

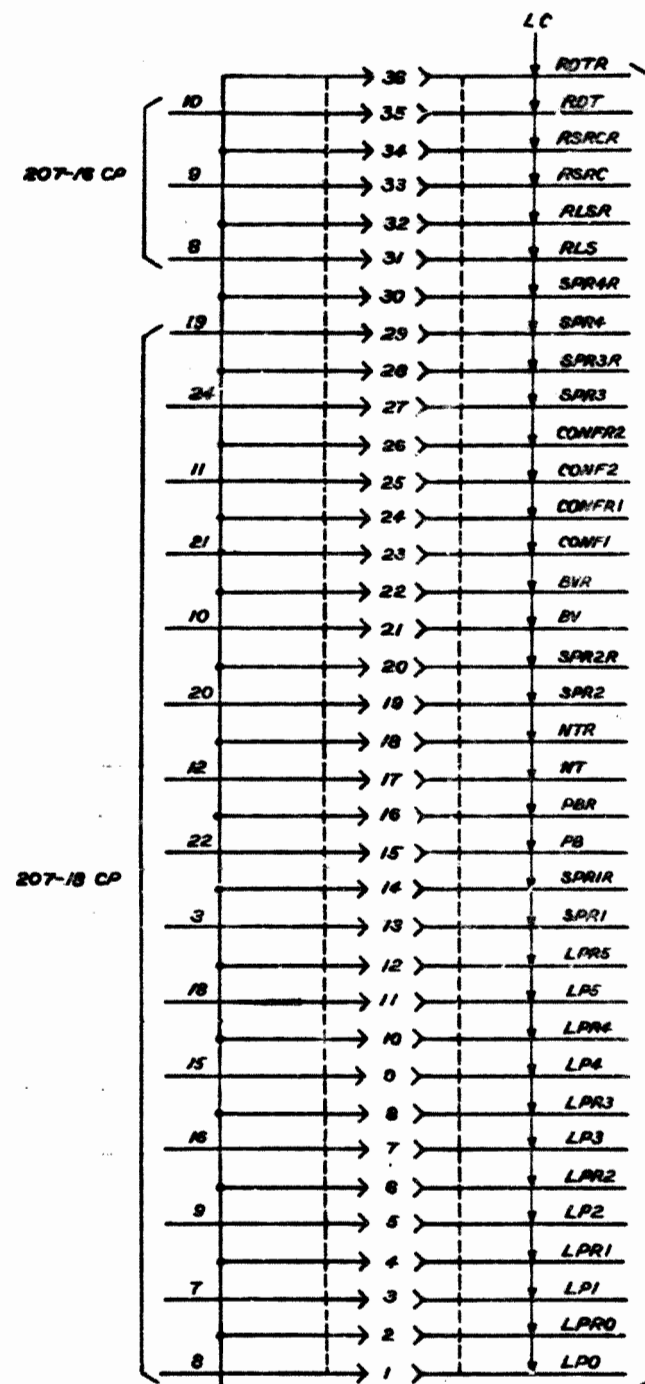
65

<https://www.telephonecollectors.info/>



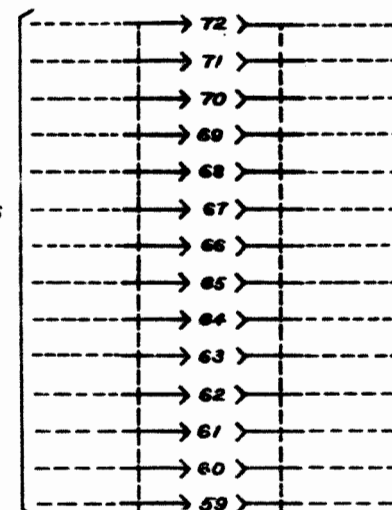
John

PART OF CAD 3
(FOR APP FIG. 3 CONSOLE CONTROL UNIT 2)



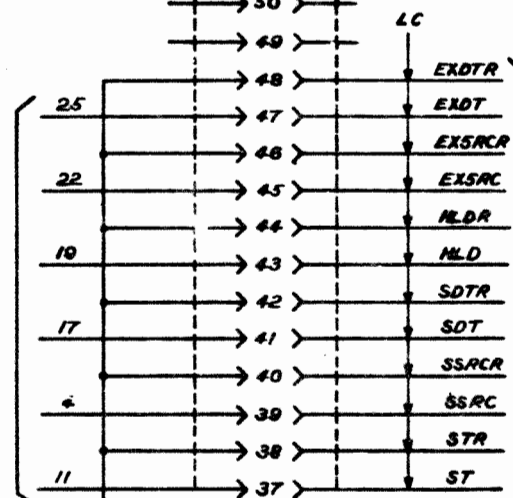
TO CAD 7

SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT



SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT



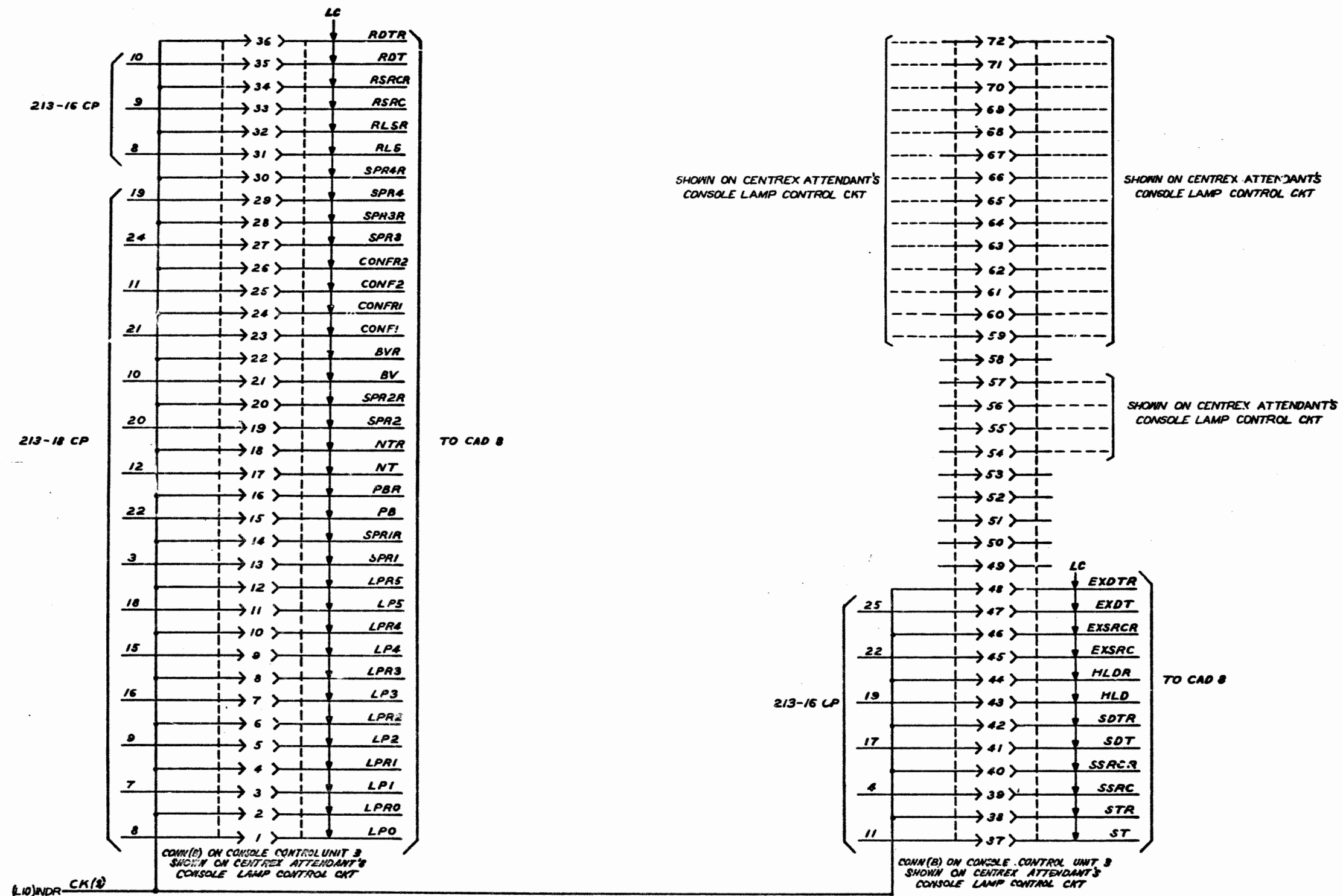
TO CAD 7

(L10)INDR CK(4)

CONN (8)
ON CONSOLE CONTROL UNIT 2
SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

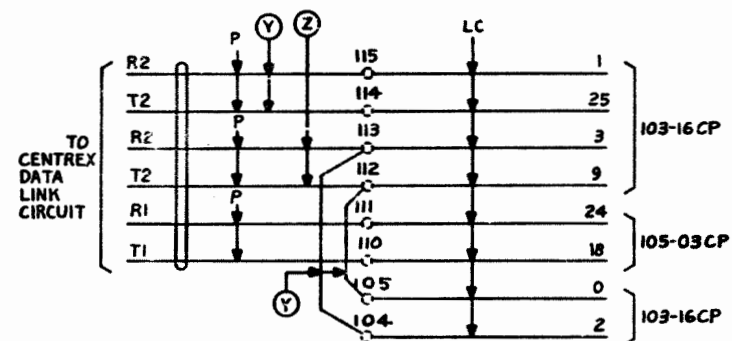


PART OF CAD 4
(FOR APP FIG. 3 CONSOLE CONTROL UNIT 3)



SD-IE059-01-66

PART OF CAD 5 (FOR APP FIG. 1)



SHOWN ON
CENTREX ATTENDANT'S CONSOLE
LAMP CONTROL CKT

SHOWN ON
CENTREX ATTENDANT'S CONSOLE
LAMP CONTROL CKT

PART OF TS (AO)
AT TOP OF CABINET
SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

SD-IE059-01-69

CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

2

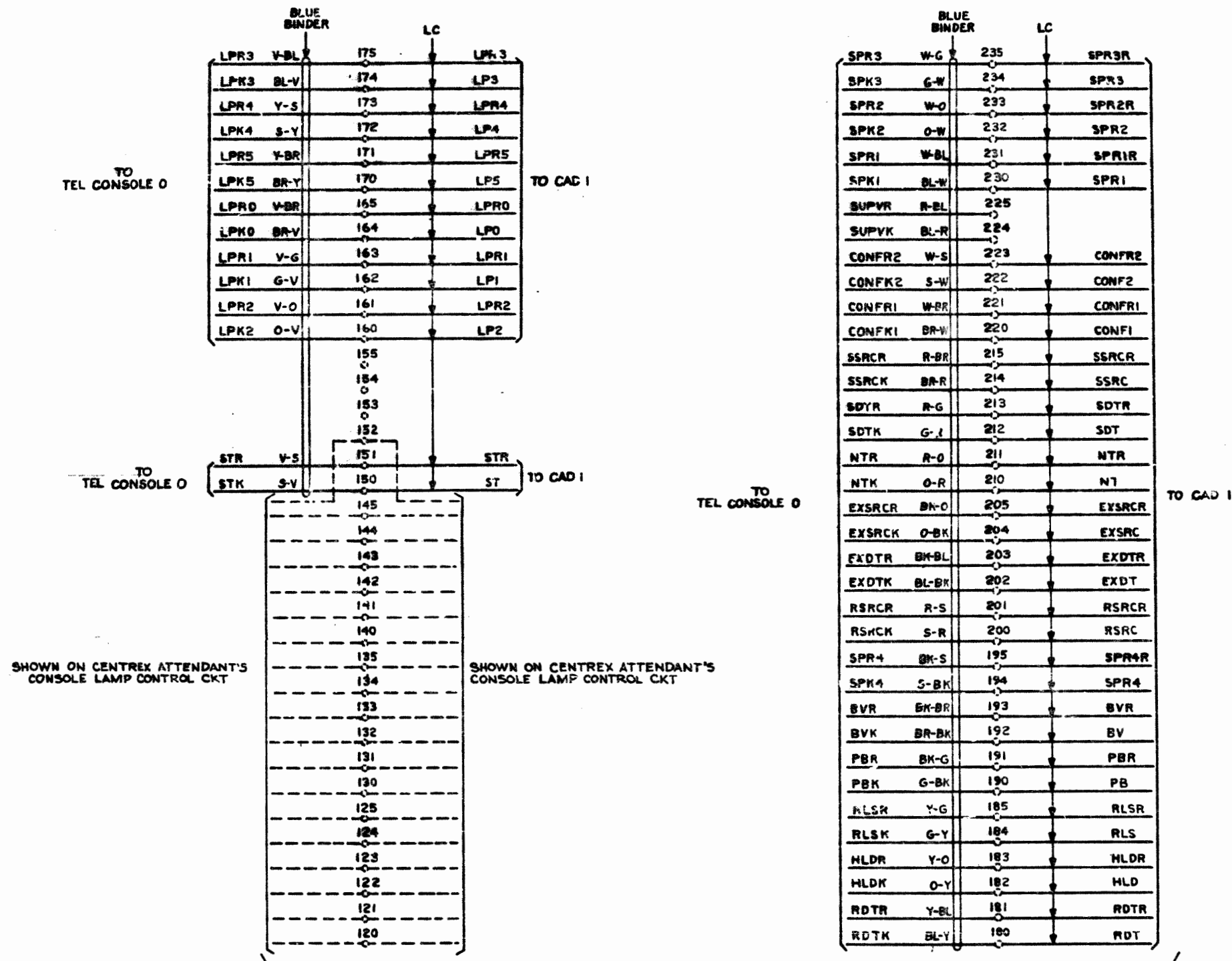
6S

SD-IE059-01-69

PRINTED IN U.S.A.

ISSUE
118

PART OF CAD 5 (FOR APP FIG. 3)



PART OF TS(BO) AT TOP OF CABINET
SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

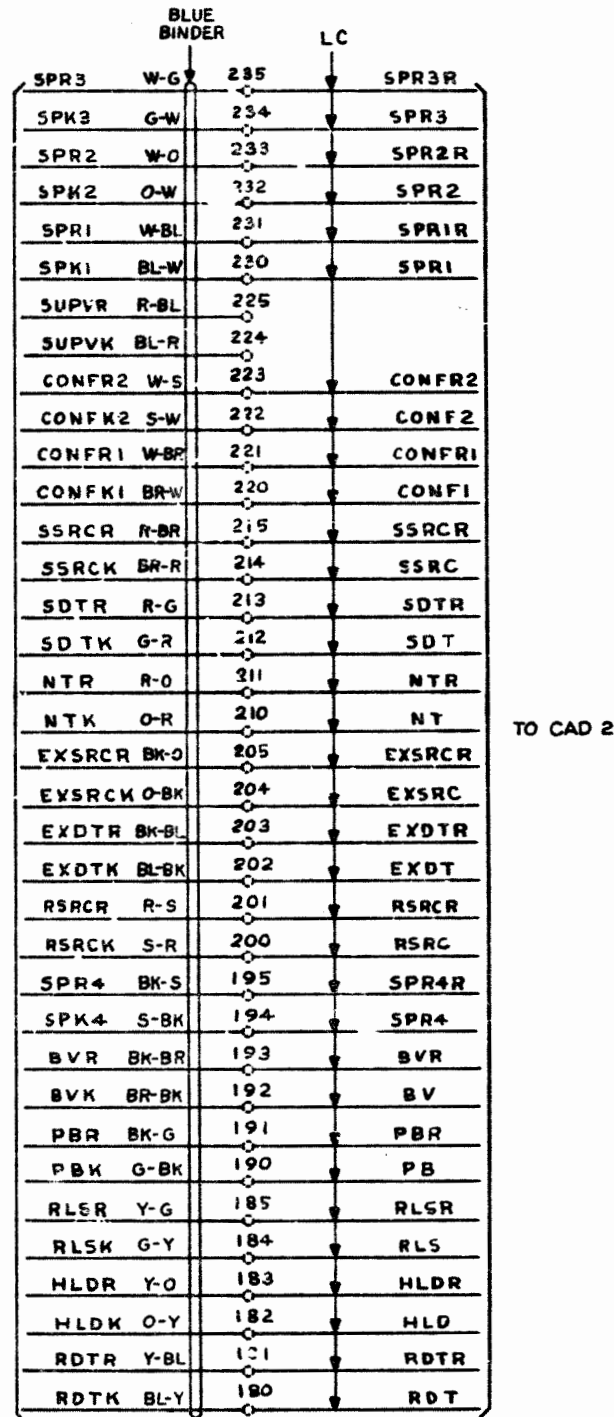
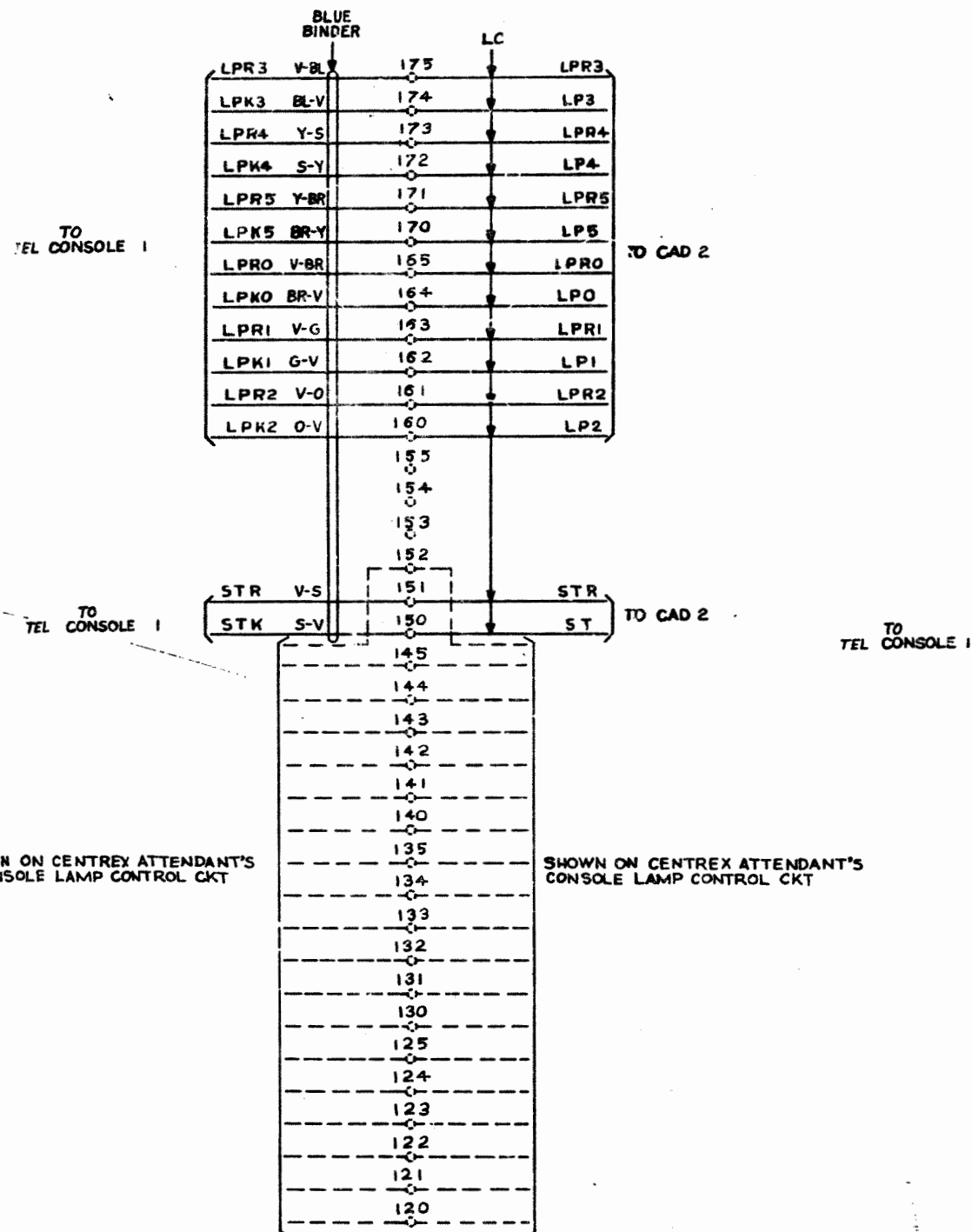
SD-1E059-01-810

2

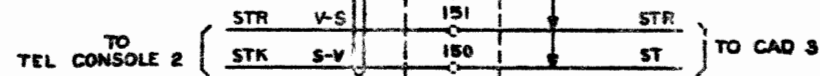
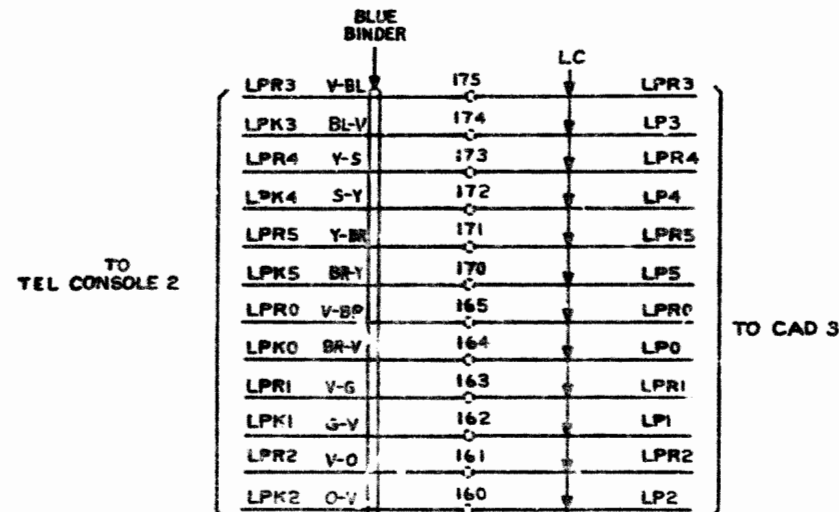
55

PRINTED IN U.S.A.

CAD 6 (FOR APP FIG. 3)



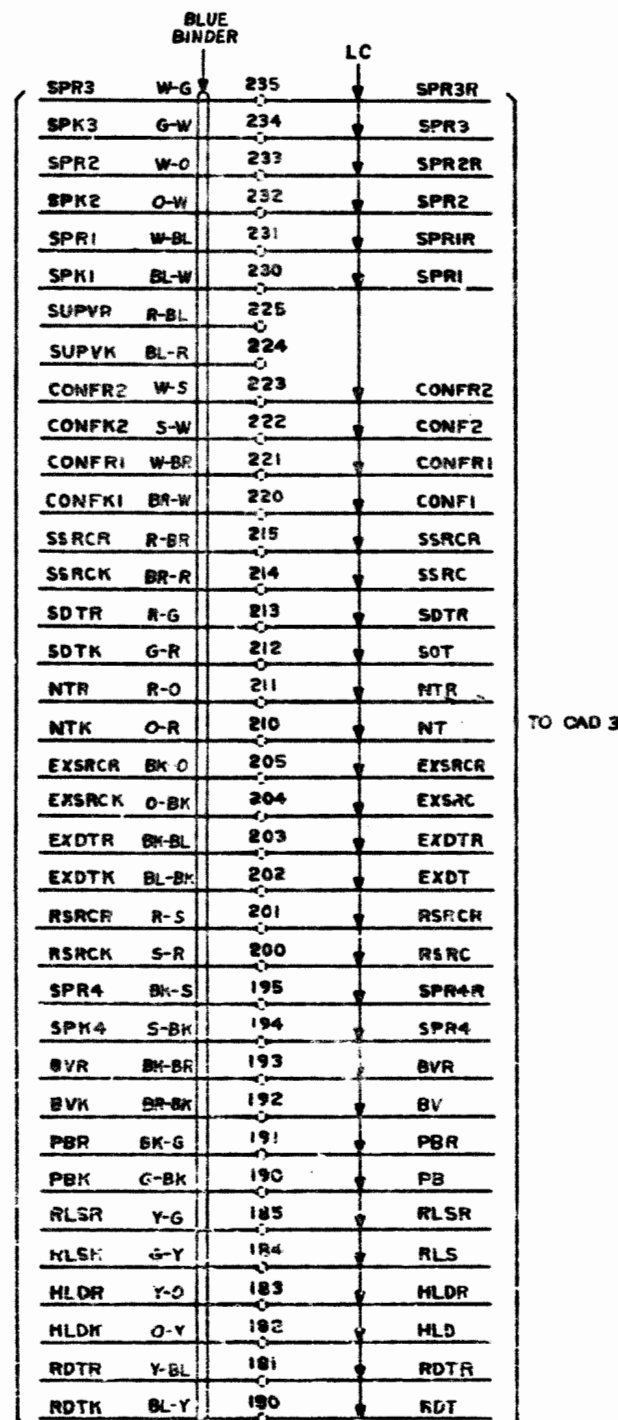
CAD 7 (FOR APP FIG 3)



SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

PART OF TS (B2)
AT TOP OF CABINET
SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT



PART OF TS (B2)
AT TOP OF CABINET
SHOWN ON CENTREX ATTENDANT'S
CONSOLE LAMP CONTROL CKT

CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

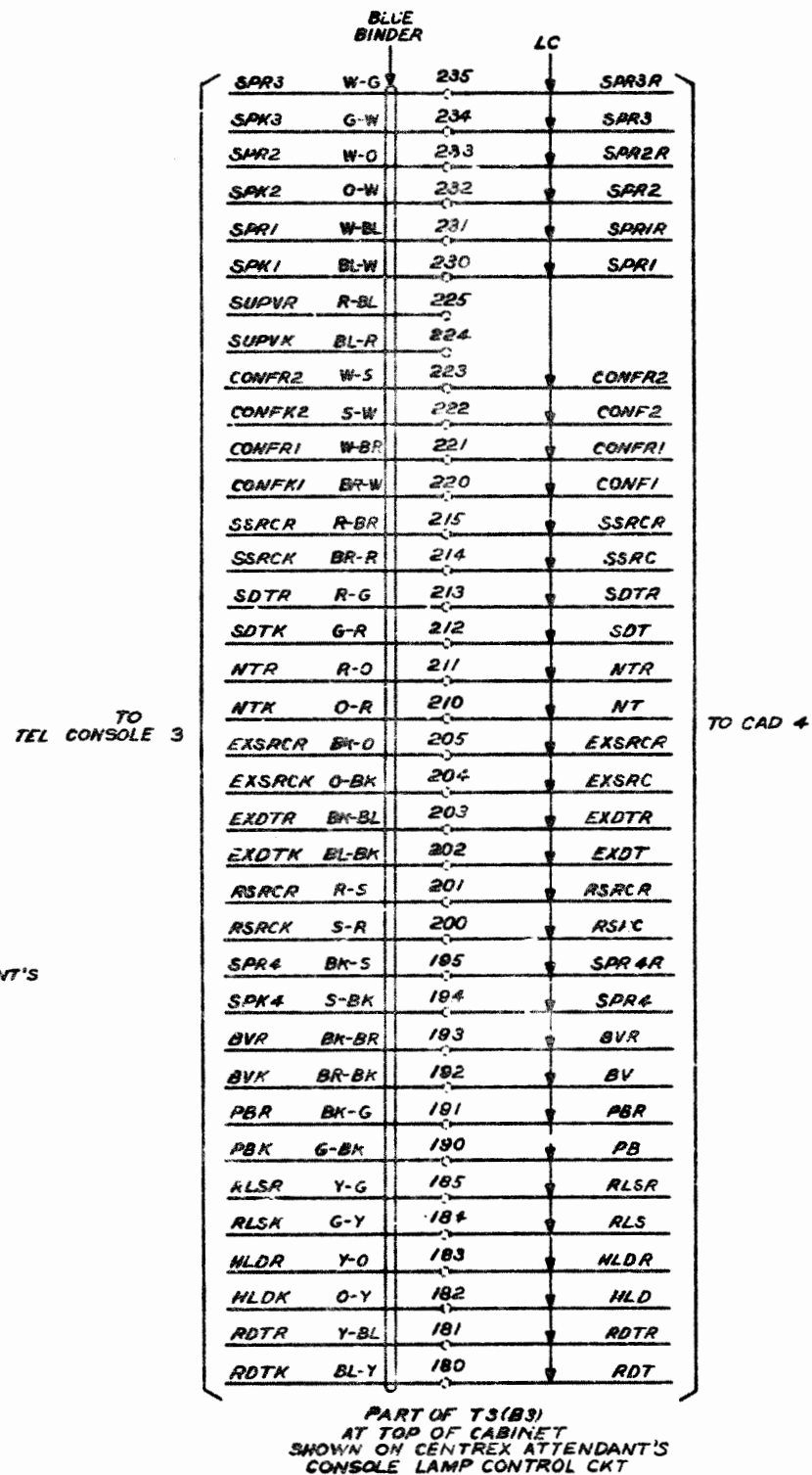
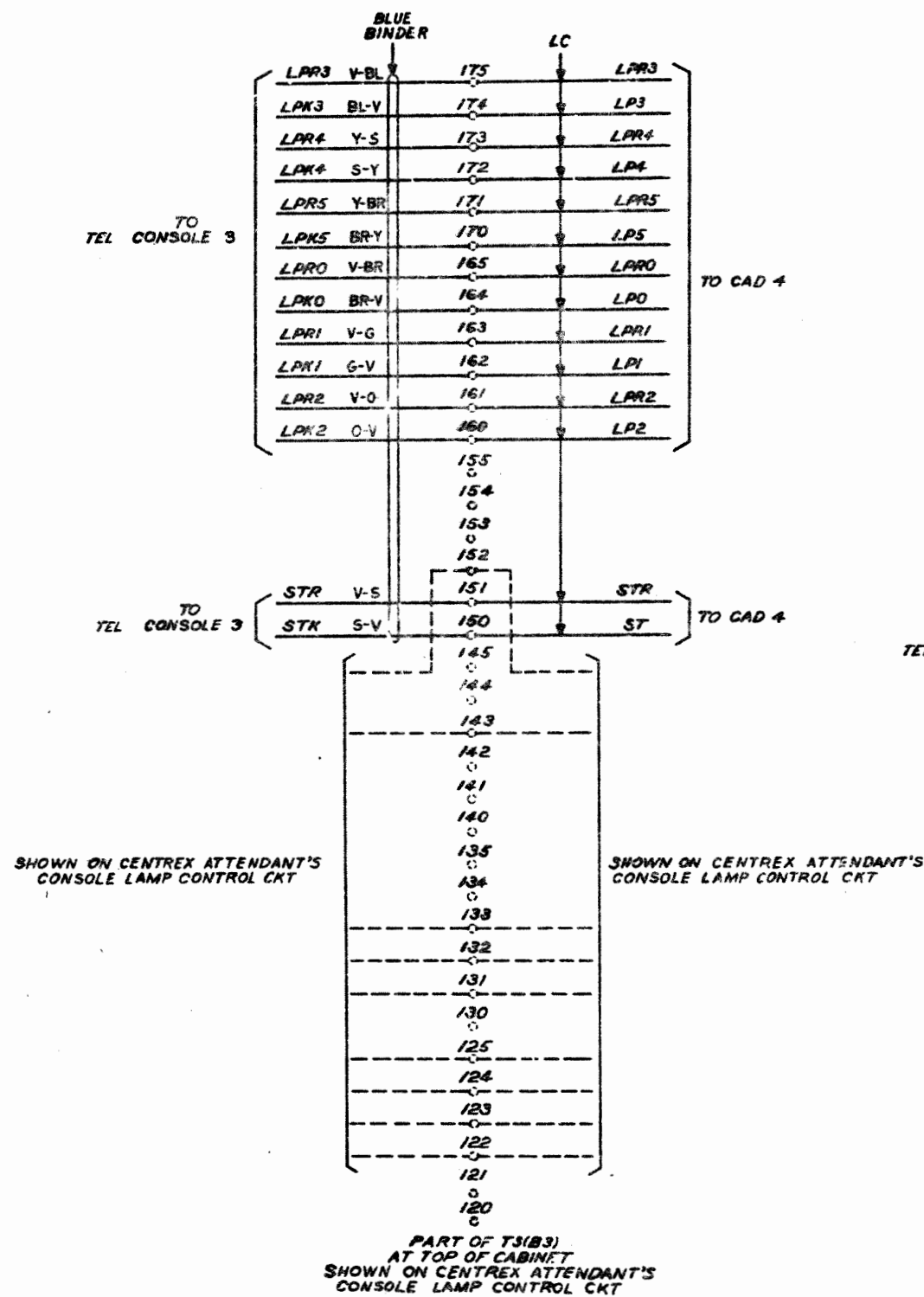
BELL TELEPHONE LABORATORIES
INCORPORATED

2

SD-15059-01-002

6S

CAD 8 (FOR APP FIG. 3)



CENTREX DATA RECEIVER
AND TRANSMITTER CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

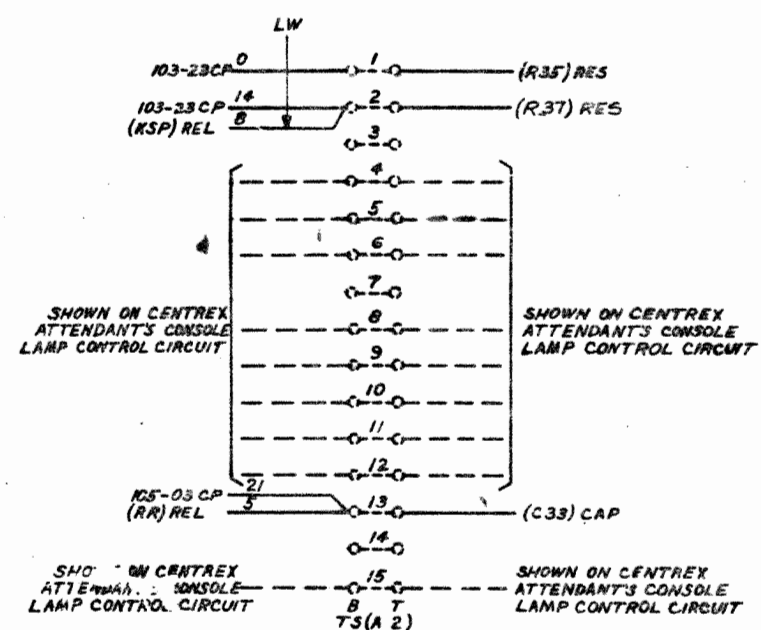
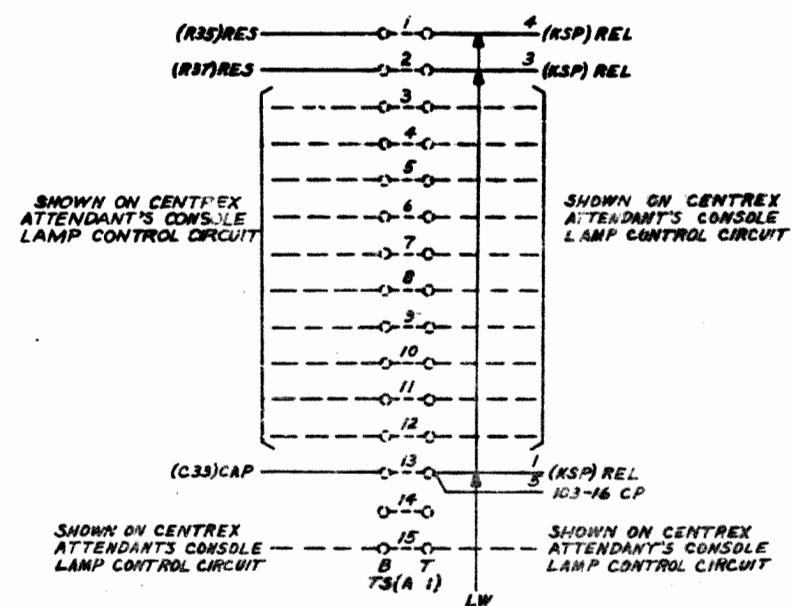
2

SD-IE059-01-613

65

PRINTED IN U.S.A.

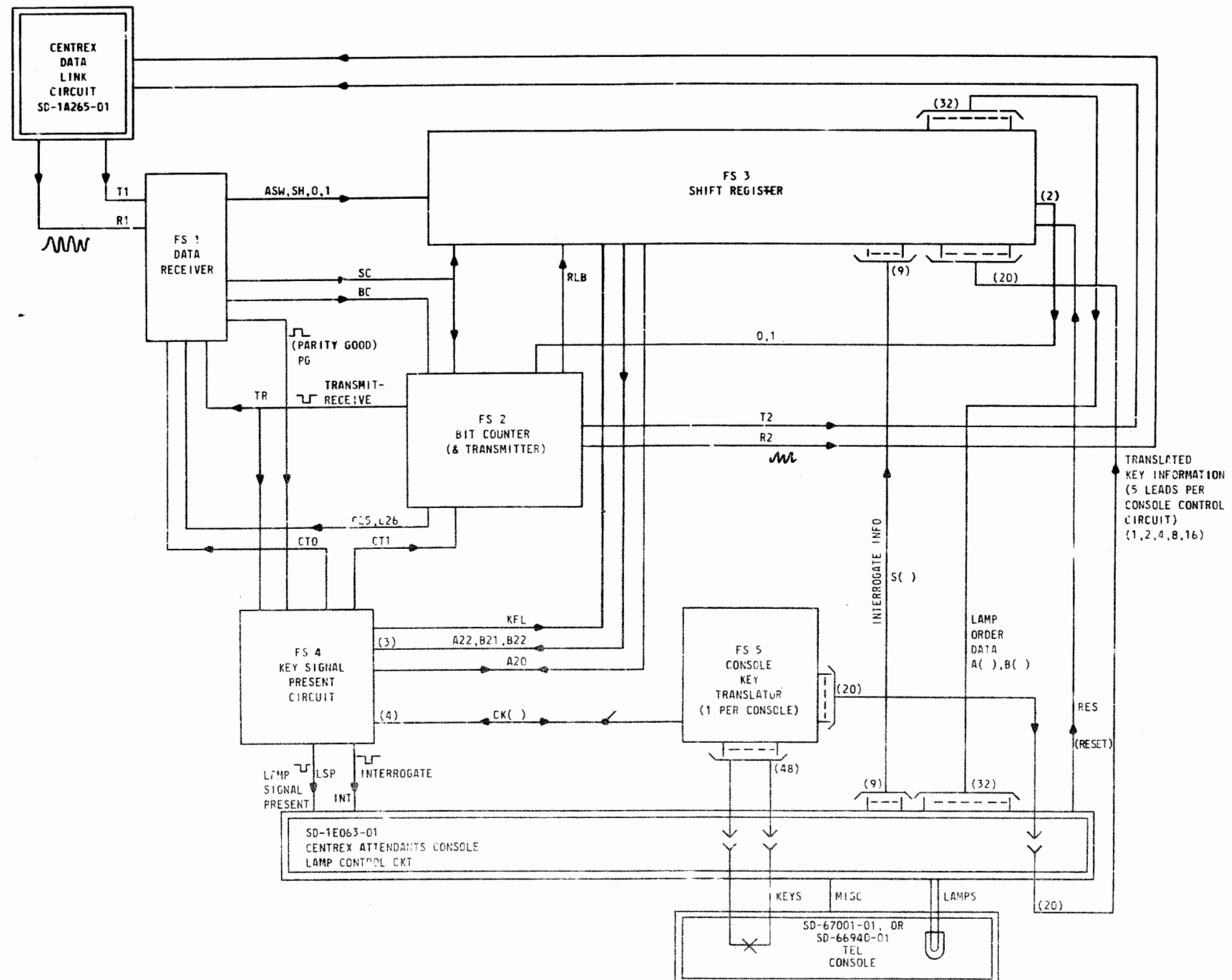
CAD 9
(FOR APP FIG. 3)



BD 1 BLOCK DIAGRAM CENTREX DATA RECEIVER AND TRANSMITTER CIRCUIT

NOTES:

1. ALL POWER FOR THIS CIRCUIT IS SUPPLIED BY THE CENTREX ATTENDANTS CONSOLE LAMP CONTROL CIRCUIT.



TRANSLATED
KEY INFORMATION
(5 LEADS PER
CONSOLE CONTROL
CIRCUIT)
(1,2,4,8,16)

SD-67001-01, OR
SD-66940-01
TEL
CONSOLE

