

SHEET INDEX

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
SHEET INDEX SUPPORTING INFORMATION OPTION INDEX	A1	1	2	3	4																
FS1 CONFERENCE SET CKT	B1	1	2	3	4																
APP FIG. 1	C1	1	2	3	4																
	C2	1	2	3	3																
	C3	1	2	3	3																
APP FIG. 2	C4	1	2	2	4																
CIRCUIT NOTES EQUIPMENT NOTES INFORMATION NOTES	D1	1	2	3	4																
CIRCUIT REQUIREMENTS	F1	1	2	2	2																
CPS 1 POWER SUPPLY	J1A	1	2	3	3																
	J1B	1	2	2	2																
CPS 2 PREAMPLIFIER & POWER AMPLIFIER	J2A	1	2	3	3																
	J2B	1	2	3	3																
CPS 3 P-12E601 CKT	J3	1	2	2	2																
CPS 4 P-12E604 CKT	J4	1	2	2	2																
CPS 5 P-12E607 CKT	J5	1	2	2	2																
CPS 6 840284 III CKT																					

DWG ISSUE	CD ISSUE	DATE ISSUED	DRAWN	APPD
1	1	4-6-78	JHS	JAD
2A	2A	9-4-74	CDZ	FEF
3D	2A APP 1D	12-14-78	ZEN	MR AB
4B1	2A APP 2B1	6-4-79	ZEN	MR FEF

OPTION INDEX

APP OR WRG	LOCATION
Z	107
Y	107
W	108
X	108

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

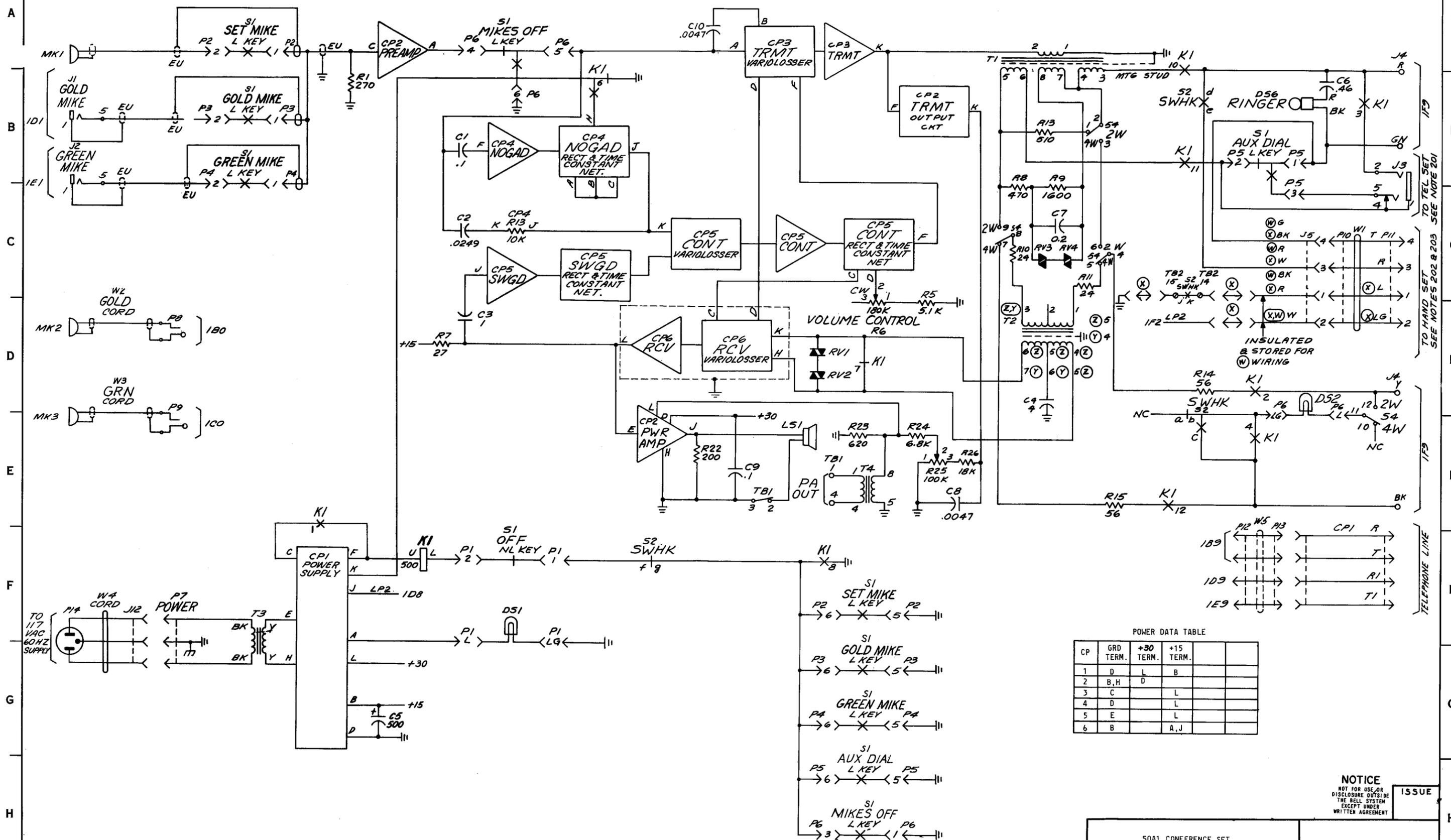
CATEGORY	NO.

NOTICE
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ISSUE

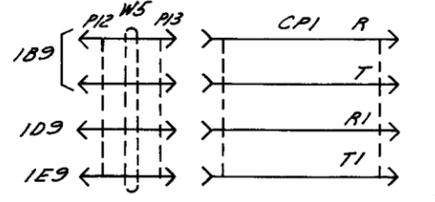
SD-69900-02	1K99
STATION SYSTEMS 50A1 CONFERENCE SET (73B CONTROL UNIT) CIRCUIT	
AT&TCO STANDARD	
SD-69900-02-A1	
15 SHEETS	
BELL TELEPHONE LABORATORIES <small>INCORPORATED</small>	3S <small>DWG SIZE</small>
<small>PRINTED IN U.S.A.</small>	

FS I CONFERENCE SET CIRCUIT



POWER DATA TABLE

CP	GRD TERM.	+30 TERM.	+15 TERM.		
1	D	L	B		
2	B, H	D			
3	C		L		
4	D		L		
5	E		L		
6	B		A, J		



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ISSUE

50A1 CONFERENCE SET
(73B CONTROL UNIT)
CIRCUIT

SD-69900-02-B1

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

TO HAND SET SEE NOTES 202 & 203

TELEPHONE LINE

PART OF APP FIG. 1

DRAWING
ISSUE

CIRCUIT PACK

EQPT LOC		CP1		CP2		CP3		CP4		CP5		CP6	
DESIG													
CODE		840284400		840695019		P-12E601		P-12E604		P-12E607		840284111	
OPTION													
ELEM IDENT		TERM.		TERM.		TERM.		TERM.		TERM.		TERM.	
TERM.		DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC	DESIG	FS LOC
A			1F2	PREAMP	1A2	TRMT	1A5	NOGAD	1B3				
B			1G2			TRMT	1A5	NOGAD	1B3				
C			1F1	PREAMP	1A2			NOGAD	1B4			RCV	1D4
D			1G2	PWR AMP	1E4	TRMT	1B5					RCV	1D5
E			1F1	PWR AMP	1E4								
F			1F2	TRMT	1B6	TRMT	1B5	NOGAD	1B3	CONT	1C6		
H			1G1	PWR AMP	1E4			NOGAD	1B4			RCV	1D5
J			1F2	PWR AMP	1E4			NOGAD	1B4	SWGD	1C3		
K			1F2	TRMT	1B6	TRMT	1A6	R13	1C3	CONT	1C4	RCV	1D5
L			1G2	PWR AMP	1D4							RCV	1D4

RELAY

DESIG		K1			
CODE		AF172			
OPTION					
	CONT ARR	LOC	CONT ARR	LOC	
12	M	1E8			
11	M	1B8			
10	M	1A8			
9					
8	EM	1F5			
7	B	1D6			
6	EBM	1B3			
5					
4	PM	1E8			
3	M	1B9			
2	EM	1D8			
1	M	1E2			
COIL	X	1F2	X		

CAPACITOR

DESIG	LOC	CODE
C1	1B3	542L
C2	1C3	594C, .0249
C3	1D3	542D
C4	1D7	542G
C5	1G2	SPRAGUE 34D507G020FL4
C6	1B9	575E
C7	1C7	542B
C8	1E6	570DH, .0047
C9	1E5	535AB, .1
C10	1A4	KS-19708, L4 .0047

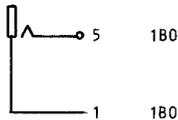
CONNECTOR

DESIG	P1	P2	P3	P4	P5	P6
CODE	508A	508B	508C	508D	508E	508L
OPTION						
TERM.	LOC	LOC	LOC	LOC	LOC	LOC
1	1F3	1A1	1B1	1B1	1B9	1H6
2	1F3	1A1	1B1	1B1	1B8	
3					1C9	1H5
4						1A3
5		1F6	1G6	1G6	1H6	1A3
6		1F5	1G5	1G5	1H5	1B3
L	1F3					1E6
LG	1F3					1E6

CONNECTOR

DESIG	LOC	CODE
P7	1F0	SWITCHCRAFT AC3G

JACK (SEE NOTE 1)
[2] J1, J2
SWITCHCRAFT
HI-D111

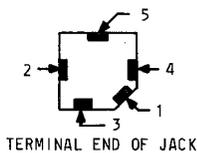


JACK (SEE NOTE 1)

DESIG	LOC	CODE
J3	1B9	SWITCHCRAFT HI-D NS-113B
J4	1B9, 1D9	623P JACK
J5	1C8	P23F089
J5	1C8	616T

NOTES:

1. TERMINAL NUMBERING FOR JACKS (J1) TO (J3) IS AS FOLLOWS:



NOTICE
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DISCLOSURE OUTSIDE
THE BELL SYSTEM
EXCEPT UNDER
WRITTEN AGREEMENT

ISSUE

50A1 CONFERENCE SET
(73B CONTROL UNIT)
CIRCUIT

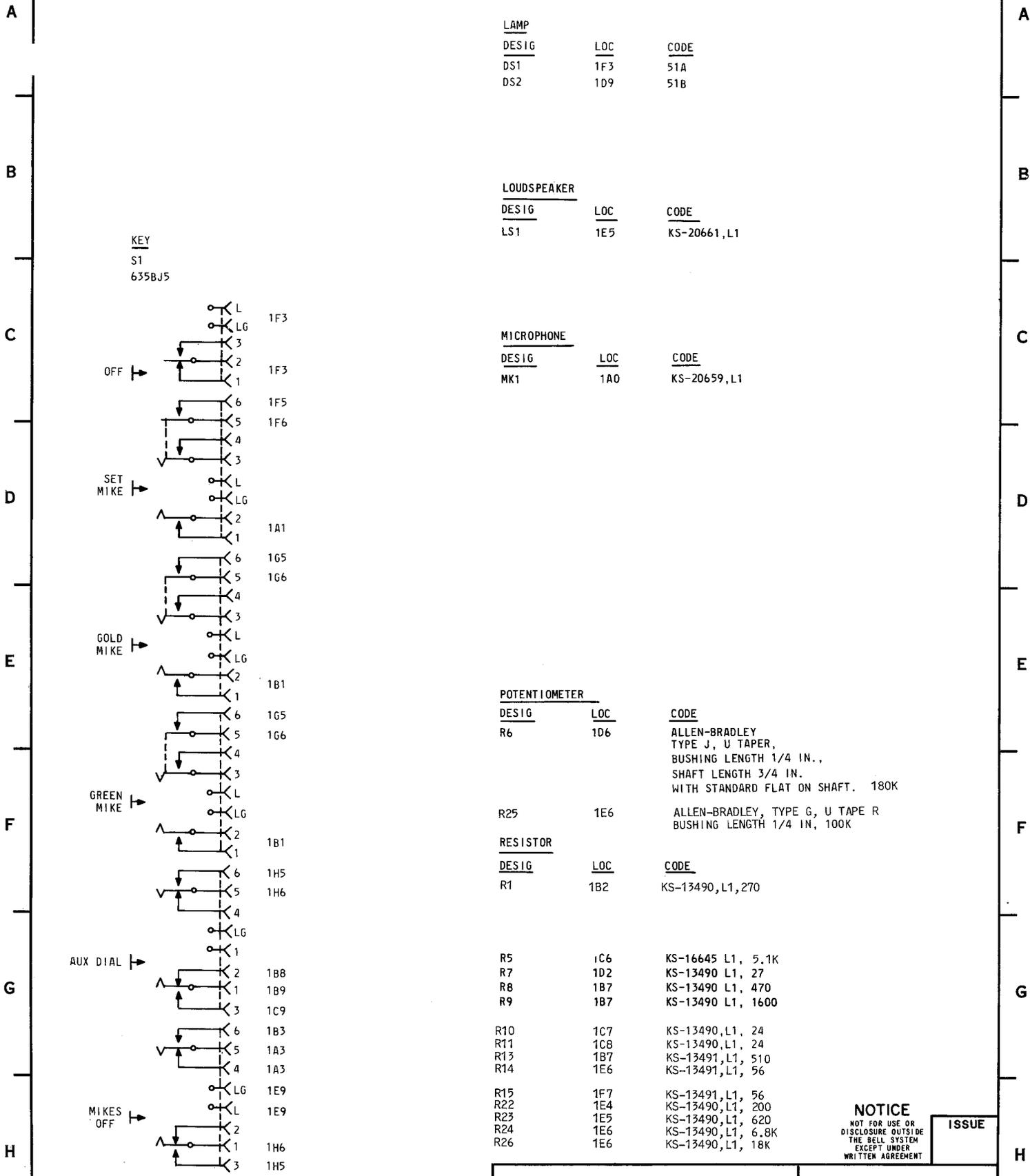
SD-69900-02-C1

BELL TELEPHONE LABORATORIES
INCORPORATED

DRAWING
SIZE
3S

PRINTED IN U.S.A.

PART OF APP FIG. 1



KEY
S1
635BJ5

LAMP		
DESIG	LOC	CODE
DS1	1F3	51A
DS2	1D9	51B

LOUDSPEAKER		
DESIG	LOC	CODE
LS1	1E5	KS-20661, L1

MICROPHONE		
DESIG	LOC	CODE
MK1	1A0	KS-20659, L1

POTENTIOMETER		
DESIG	LOC	CODE
R6	1D6	ALLEN-BRADLEY TYPE J, U TAPER, BUSHING LENGTH 1/4 IN., SHAFT LENGTH 3/4 IN. WITH STANDARD FLAT ON SHAFT. 180K
R25	1E6	ALLEN-BRADLEY, TYPE G, U TAPE R BUSHING LENGTH 1/4 IN, 100K

RESISTOR		
DESIG	LOC	CODE
R1	1B2	KS-13490, L1, 270
R5	1C6	KS-16645 L1, 5.1K
R7	1D2	KS-13490 L1, 27
R8	1B7	KS-13490 L1, 470
R9	1B7	KS-13490 L1, 1600
R10	1C7	KS-13490, L1, 24
R11	1C8	KS-13490, L1, 24
R13	1B7	KS-13491, L1, 510
R14	1E6	KS-13491, L1, 56
R15	1F7	KS-13491, L1, 56
R22	1E4	KS-13490, L1, 200
R23	1E5	KS-13490, L1, 620
R24	1E6	KS-13490, L1, 6.8K
R26	1E6	KS-13490, L1, 18K

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ISSUE

50A1 CONFERENCE SET (73B. CONTROL UNIT) CIRCUIT.	SD-69900-02-C2
BELL TELEPHONE LABORATORIES <small>INCORPORATED</small>	3S <small>PRINTED IN U. S. A.</small>

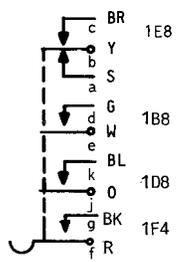
PART OF APP FIG. 1

A
B
C
D
E
F
G
H

RINGER		
DESIG	LOC	CODE
DS6	1B8	P1B

SWITCHHOOK		
DESIG	LOC	CODE
S2		P-21F451

TRANSFORMER		
DESIG	LOC	CODE
T1	1A7	2563A
② T2	1D7	2563AE
① T2	1D7	2563AG
T3	1F1	KS-20657, L2
T4	1E5	2564G



VARISTOR		
DESIG	LOC	CODE
[2] RV1,2	1D5	100A
[2] RV3,4	1C7	317B

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ISSUE

50A1 CONFERENCE SET
(73B CONTROL UNIT)
CIRCUIT

SD-69900-02-C3

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
3S

PRINTED IN U.S.A.

0 1 2 3 4

0 1 2 3 4

CIRCUIT NOTES:

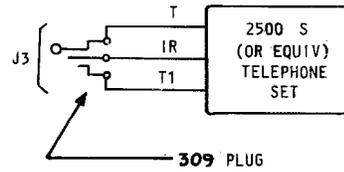
101. FUSING INFORMATION: NONE

FEATURE OR OPTION	PROVIDE		QUANTITY
	APP FIG.	APP OR WRG	
CONFERENCE SET	1		1 PER CKT
MICROPHONES & CORDS	2		1 PER CKT

RECORD OF APP FIGURES, 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	
3D	Y,Z	Z		Y		Z	
4B1	W,X	X	203	W		X	

EQUIPMENT NOTES:

201. A 2500S (OR EQUIV) TELEPHONE SET WITH POLARITY GUARD CAN BE CONNECTED AS SHOWN TO PROVIDE "TOUCH-TONE" SIGNALING.



202. SET PROVIDED WITH A 220A HANDSET WITH A 51A DIAL LAMP INSTALLED. IF ANOTHER HANDSET IS SUBSTITUTED REPLACE THE 51B LAMP WITH A 51A LAMP OR A 53B LAMP WITH A 53A LAMP, DEPENDING ON TYPE ORIGINALLY USED.

203. SETS STARTING WITH SERIAL NO. A100,000 ARE EQUIPPED WITH A 220C HANDSET. SOME OLDER SETS WHICH ARE EQUIPPED WITH 220A HANDSET MAY HAVE SERIAL NUMBERS HIGHER THAN 100,000, BUT THE SERIAL NUMBERS ARE NOT PRECEDED WITH THE LETTER DESIGNATION "A".

INFORMATION NOTES:

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

NOTICE
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ISSUE

50A1 CONFERENCE SET
 (73B CONTROL UNIT)
 CIRCUIT

SD-69900-02-D1

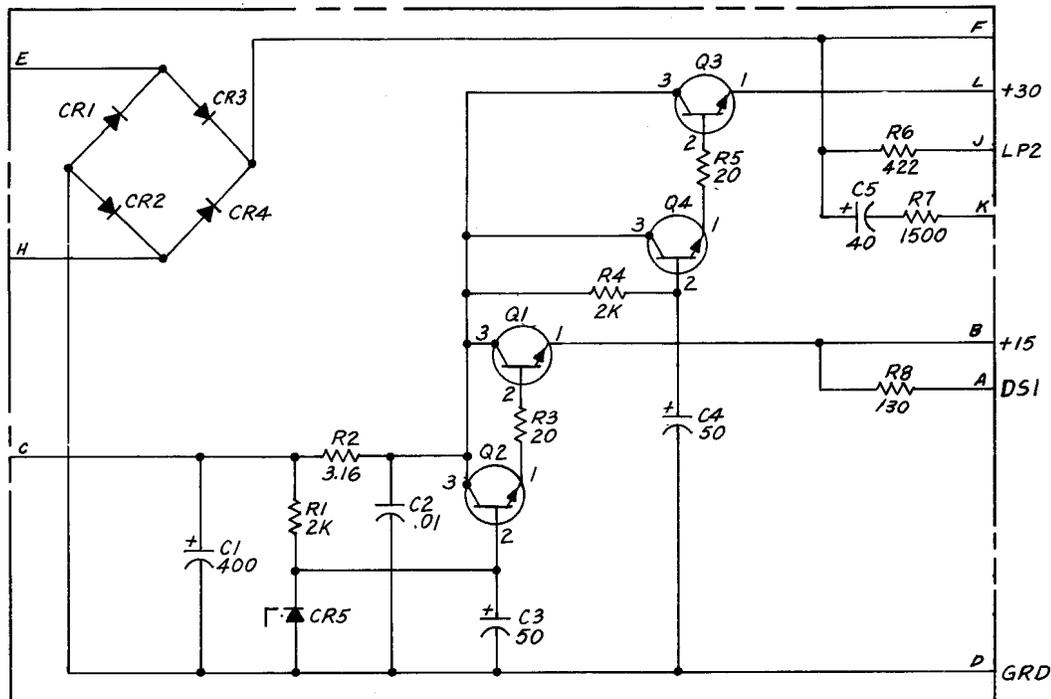
BELL TELEPHONE LABORATORIES
 INCORPORATED

DWG SIZE
3S

PRINTED IN U. S. A.

PART OF CPS I

POWER SUPPLY



COMPONENT LIST

CAPACITOR

DESIG	CODE
C1	KS-19658, L7
C2	KS-19774, L2, .01
C3	KS-19658, L19
C4	SPRAGUE 40D506F050DF4
C5	KS-16390, L8

CONNECTOR

DESIG	CODE
-	KS-19276, L1

DIODE

DESIG	CODE
CR1-CR4	533F
CR5	459AC

RESISTOR

DESIG	CODE
R1	KS-13490, L1, 2K
R2	KS-14603, L3A, 3.16
R3	KS-13490, L1, 20
R4	KS-13490, L1, 2K
R5	KS-13490, L1, 20
R6	KS-14603, L3A, 422
R7	KS-13490, L1, 1500
R8	KS-13490, L1, 130

TRANSISTOR

DESIG	CODE
Q1	20J
Q2	16F
Q3	20J
Q4	16F

NOTES:

- UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS,
RESISTANCE VALUES SUFFIXED WITH
THE LETTER K ARE IN KILOHMS,
CAPACITANCE VALUES ARE IN MICROFARADS,
VALUES PRECEDED WITH THE SYMBOL + (PLUS)
OR - (MINUS) ARE IN VOLTS.

NOTICE

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WRITTEN AGREEMENT

ISSUE

50A1 CONFERENCE SET
(73B CONTROL UNIT)
CIRCUIT

SD-69900-02-J1A

BELL TELEPHONE LABORATORIES
INCORPORATED

SIZE
3S

PRINTED IN U.S.A.

0

1

2

3

4

PART OF CPS I

POWER SUPPLY

INPUT/OUTPUT INFORMATION

NONE

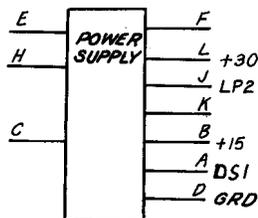
CIRCUIT DESCRIPTION

SEE CD-69900-02

MANUFACTURING REFERENCES

CATEGORY	NO.
CIRCUIT PACK CODE & ASSEMBLY DWG	840284400
CONNECTOR ON FRAME	KS-16182,L3

SYMBOL



ISSUE

50A1 CONFERENCE SET
(73B CONTROL UNIT)
CIRCUIT

SD-69900-02-JIB

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
3S

PRINTED IN U.S.A.

0

1

2

3

4

A

B

C

D

E

F

G

H

A

B

C

D

E

F

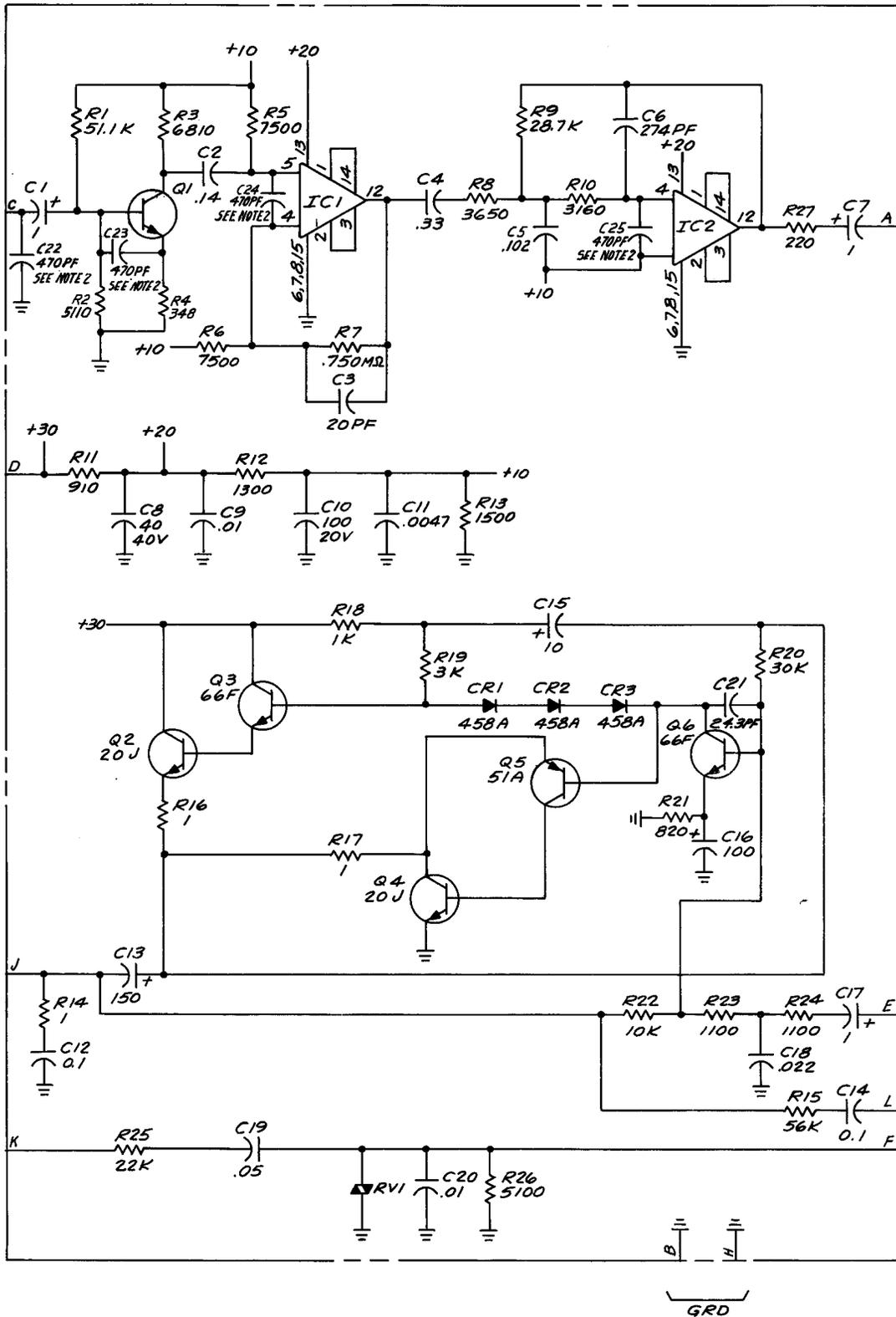
G

H

PART OF CPS 2

PRE AMP & PWR AMP CKT

DRAWING
ISSUE



NOTICE
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THE BELL SYSTEM
EXCEPT UNDER
WRITTEN AGREEMENT-

ISSUE

50A1 CONFERENCE SET
(73B CONTROL UNIT)
CIRCUIT

SD-69900-02-J2A

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
3S

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PART OF CPS 2

PREAMP & PWR AMP CIRCUIT

DRAWING
ISSUE

COMPONENT LIST

CAPACITOR

DESIG

CODE

C1	600A, 1
C2	535DE, .14
C3	KS-16958, L1, 20pF
C4	535U, .332
C5	535DY, .102
C6	KS-16742, L1, 274pF
C7	600A, 1
C8	SPRAGUE 34D406G040EE4, 40
C9	KS-19708, L4, .01
C10	SPRAGUE 34D107G020EJ4, 100
C11	KS-19708, L4, .0047
C12	KS-20736, L1, .01
C13	SPRAGUE 109D-157X0030T2, 150
C14	594G, .1
C15	604A, 10
C16	602B, 100
C17	600A, 1
C18	KS-19774, L6, .022
C19	KS-13814, L14, .05
C20	570DR, .01
C21	KS-16958, L32, 24.3pF
C22-25	KS-19774, L2, 470pF (NOTE 2)

CONNECTOR

DESIG

CODE

KS-19276, L1

DIODE

DESIG

CODE

CR1-CR3 458A

INTEGRATED CIRCUIT

DESIG

CODE

IC1, IC2 502W

RESISTOR

DESIG

CODE

R1	257A, 51.1K
R2	257A, 5110
R3	257A, 6810
R4	257A, 348
R5, R6	257A, 7500
R7	KS-20810, L1, .750M
R8	257A, 3650
R9	257A, 28.7K
R10	257A, 3160
R11	KS-16645, L1, 910
R12	KS-16645, L1, 1300
R13	KS-16645, L1, 1500
R14	KS-20616, L1A, 1
R15	KS-16645, L1, 56K
R16, R17	KS-20616, L1A, 1
R18	KS-16645, L1, 1K
R19	KS-16645, L1, 3K
R20	KS-16645, L1, 30K
R21	KS-16645, L1, 820
R22	KS-16645, L1, 10K
R23, R24	KS-16645, L1, 1100
R25	KS-16645, L1, 22K
R26	KS-16645, L1, 5100
R27	KS-16645, L1, 220

TRANSISTOR

DESIG

CODE

Q1	2N6006, GENERAL ELECT.
Q2	20J
Q3	66F
Q4	20J
Q5	51A
Q6	66F

VARIATOR

DESIG

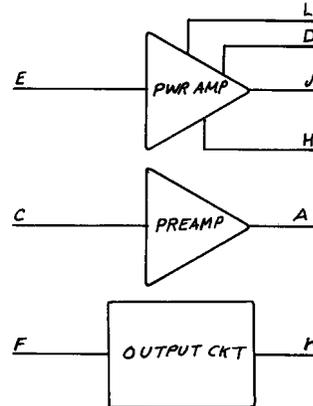
CODE

RV1 317D

MANUFACTURING REFERENCES

CATEGORY	NO.
CIRCUIT PACK CODE	840695019
CONNECTOR ON FRAME	KS-16182, L3

SYMBOL



INPUT/OUTPUT INFORMATION

NONE

CIRCUIT DESCRIPTION

SEE CD-69900-02

NOTES:

- UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS. RESISTANCE VALUES SUFFIXED WITH THE LETTER K ARE IN KILOHMS. CAPACITANCE VALUES ARE IN MICROFARADS. VALUES PRECEDED BY + (PLUS) OR - (MINUS) ARE IN VOLTS.
- CAPACITORS ARE ADDED BY SERVICE CENTER MODIFICATION WHEN REQUIRED TO SUPPRESS RADIO FREQUENCY INTERFERENCE AND ARE MOUNTED ON THE PRINTED WIRING SIDE OF THE BOARD.

NOTICE

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ISSUE

50A1 CONFERENCE SET
(73B CONTROL UNIT)
CIRCUIT

SD-69900-02-J2B

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
3S

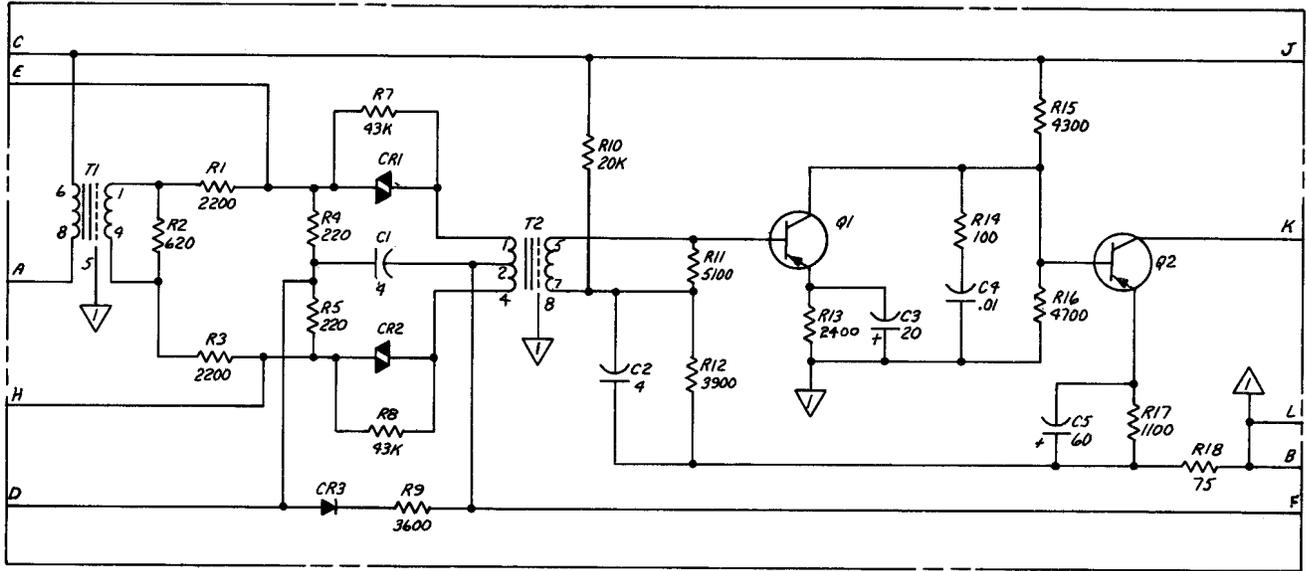
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CPS 3

P-12E601 CIRCUIT

MANUFACTURING REFERENCES

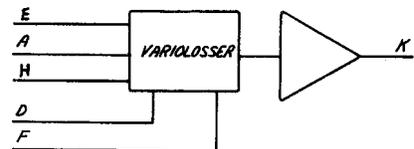
CATEGORY	NO.
CIRCUIT PACK CODE	P-12E601
CONNECTOR ON FRAME	KS-16182,L3



INPUT/OUTPUT INFORMATION
NONE

CIRCUIT DESCRIPTION
SEE CD-69900-02

SYMBOL



NOTES:

- UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS,
RESISTANCE VALUES SUFFIXED WITH THE
LETTER K ARE IN KILOHMS,
CAPACITANCE VALUES ARE IN MICROFARADS,
VALUES PRECEDED WITH THE SYMBOL + (PLUS)
OR - (MINUS) ARE IN VOLTS.

ISSUE

50A1. CONFERENCE SET
(73B CONTROL UNIT)
CIRCUIT

SD-69900-02-J3

BELL TELEPHONE LABORATORIES
INCORPORATED

DWG SIZE
3S

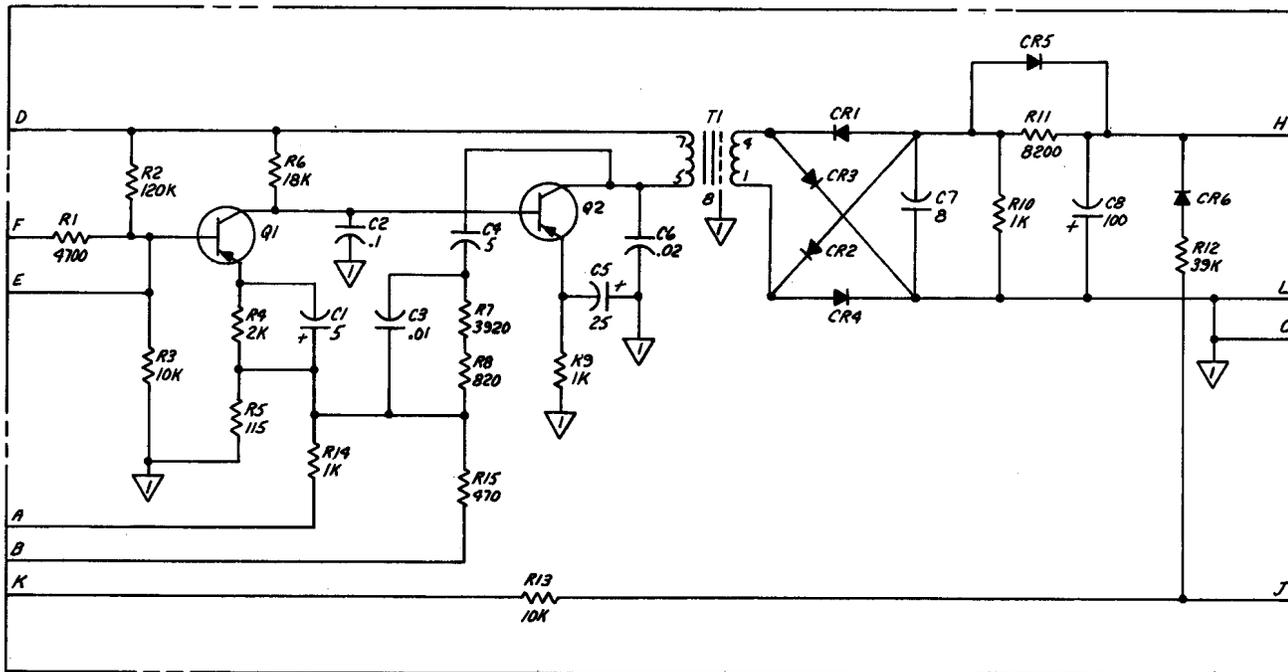
PRINTED IN U.S.A.

CPS 4

P-12E604 CIRCUIT

MANUFACTURING REFERENCES

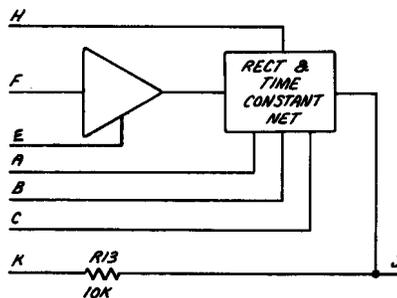
CATEGORY	NO.
CIRCUIT PACK CODE	P-12E604
CONNECTOR ON FRAME	KS-16182.L3



INPUT/OUTPUT INFORMATION
NONE

CIRCUIT DESCRIPTION
SEE CD-69900-02

SYMBOL



NOTES:

- UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS,
RESISTANCE VALUES SUFFIXED WITH THE
LETTER K ARE IN KILOHMS,
CAPACITANCE VALUES ARE IN MICROFARADS,
VALUES PRECEDED WITH THE SYMBOL + (PLUS)
OR - (MINUS) ARE IN VOLTS.

ISSUE

50A1 CONFERENCE SET
(73B CONTROL UNIT)
CIRCUIT

SD-69900-02-J4

BELL TELEPHONE LABORATORIES
INCORPORATED

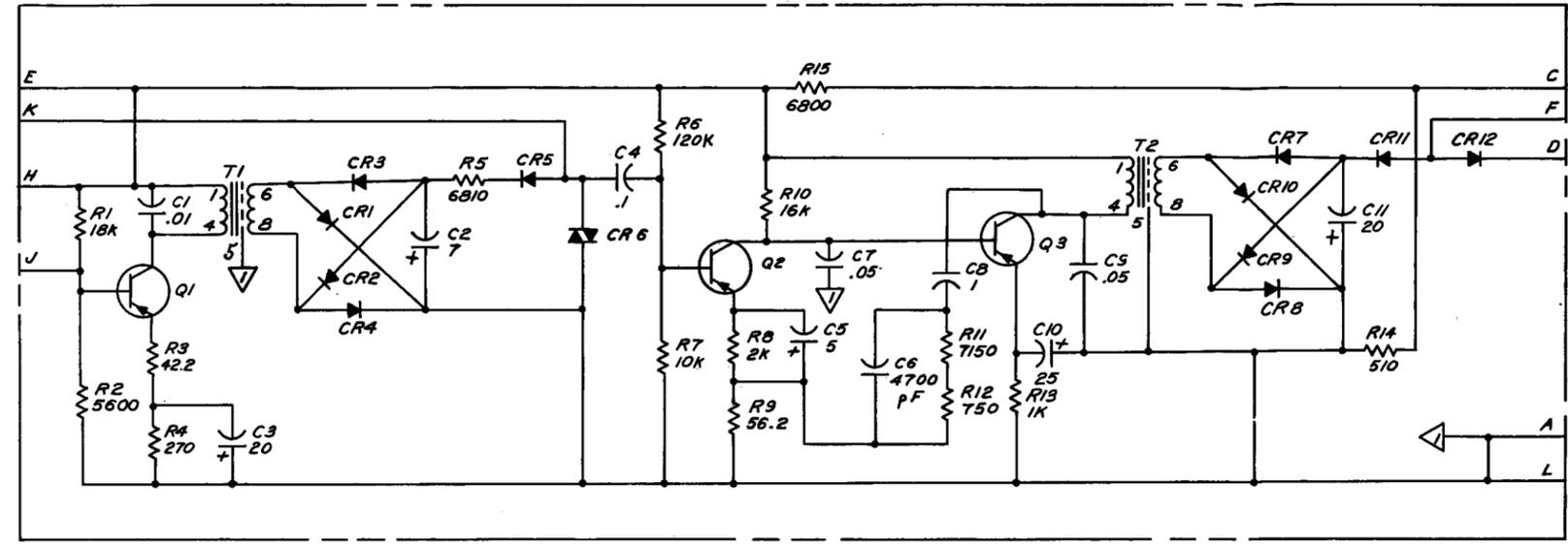
DWG SIZE
3S

PRINTED IN U.S.A.

CPS 5
P-12E607 CIRCUIT

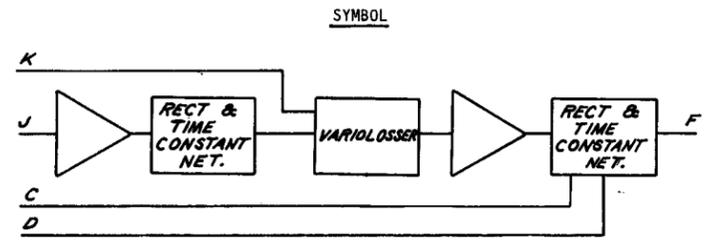
MANUFACTURING REFERENCES

CATEGORY	NO
CIRCUIT PACK CODE	P-12E607
CPS 5	840284111
CPS 6	840284111
CONNECTOR ON FRAME	KS-16182.L3



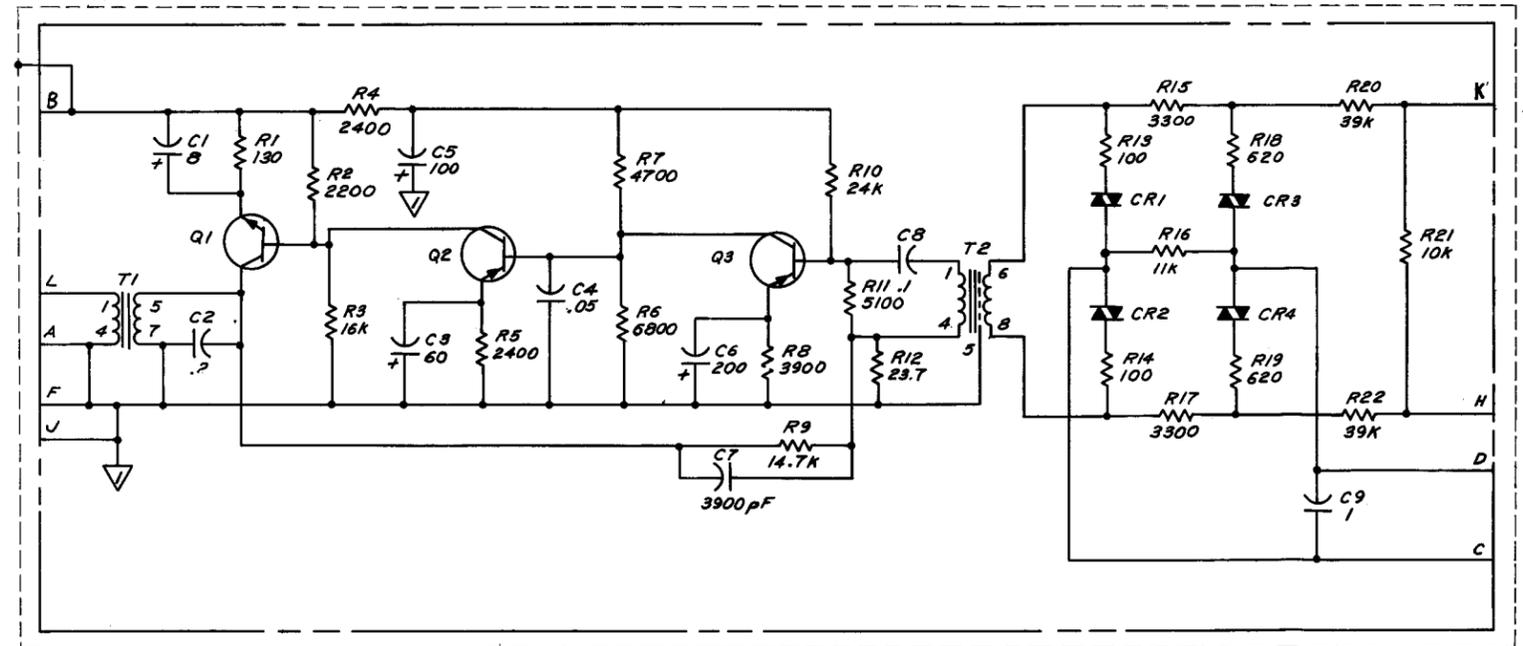
INPUT/OUTPUT INFORMATION
NONE

CIRCUIT DESCRIPTION
SEE CD-69900-02



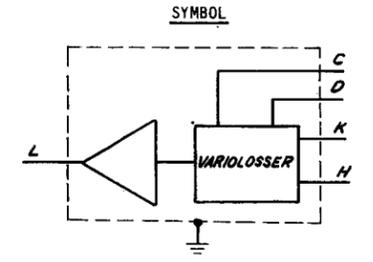
CPS 6
840284111 CIRCUIT

COMPONENT LIST
CIRCUIT PACK CODE
DESIG P-12E610



INPUT/OUTPUT INFORMATION
NONE

CIRCUIT DESCRIPTION
SEE CD-69900-02



- NOTES:
- UNLESS OTHERWISE SPECIFIED:
RESISTANCE VALUES ARE IN OHMS,
RESISTANCE VALUES SUFFIXED WITH THE
LETTER K ARE IN KILOHMS,
CAPACITANCE VALUES ARE IN MICROFARADS,
VALUES PRECEDED BY THE SYMBOL + (PLUS)
OR - (MINUS) ARE IN VOLTS.

50A1 CONFERENCE SET (73B CONTROL UNIT) CIRCUIT	SD-69900-02-J5
BELL TELEPHONE LABORATORIES INCORPORATED	6S PRINTED IN U.S.A.