

SUPPORTING INFORMATION

DWG ISSUE	CD ISSUE	DATE ISSUED	Drawn	APPROV	
1	1	8-18-64	AKR WTS	JCH CEK FC	WV
2D	APP 1D	8-22-64	AKR WTS	CEK FC	WV
3A	APP 2A	8-27-64	OS CSK	CEK FC	WV
4B	APP 3B	8-31-64	WTS	CEK FC	
5A	APP 4A	8-31-64	EJB	CEK FC	WV
6A	APP 5A	8-31-64	WTS	CEK FC	WV
7B	2B	11-21-64	WTS	CEK FC	WV
8B	2B	11-21-64	WTS	CEK FC	WV
9A	2A	1-15-65	WTS	CEK FC	WV
11B	2B	2-8-72	WTS	CEK FC	WV
12B	2B	2-8-72	WTS	CEK FC	WV
13B	2B	2-8-72	WTS	CEK FC	WV
14B	2B	2-8-72	WTS	CEK FC	WV
15B	2B	2-8-72	WTS	CEK FC	WV
16A	3A	6-19-73	WTS	CEK FC	WV
17D	4D	1-28-74	WTS	CEK FC	WV
18A	4D	1-28-74	WTS	CEK FC	WV
19B	4D	11-17-76	WTS	CEK FC	WV
20D	4D	11-17-76	WTS	CEK FC	WV
21A	4D	11-17-76	WTS	CEK FC	WV
22B	4D	11-17-76	WTS	CEK FC	WV
23D	5D	11-17-76	WTS	CEK FC	WV
24B	5D	11-17-76	WTS	CEK FC	WV

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.

NOTICE
NOT FOR USE OR
DISCLOSURE OUTSIDE
THE BELL SYSTEM
EXCEPT UNDER
WRITTEN AGREEMENT

ISSUE
24B

1899

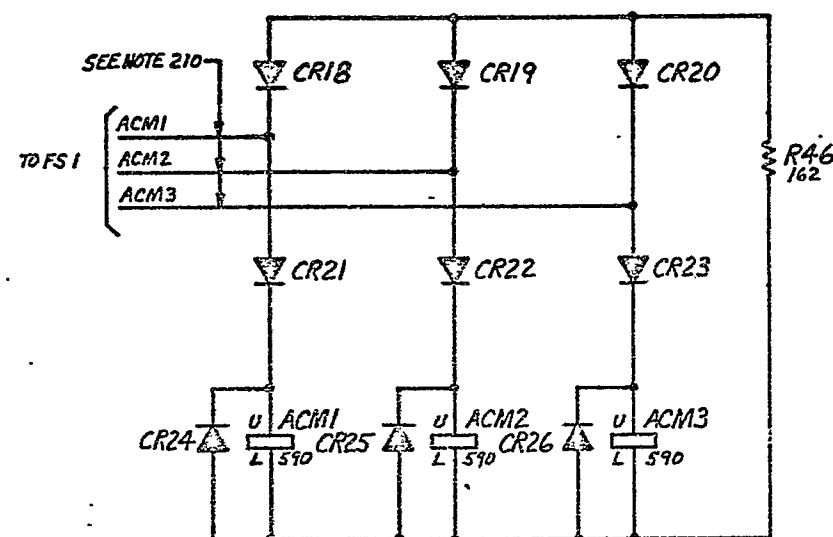
AT&T
STANDARD

SD-81756-01-A1
12 SHEETS

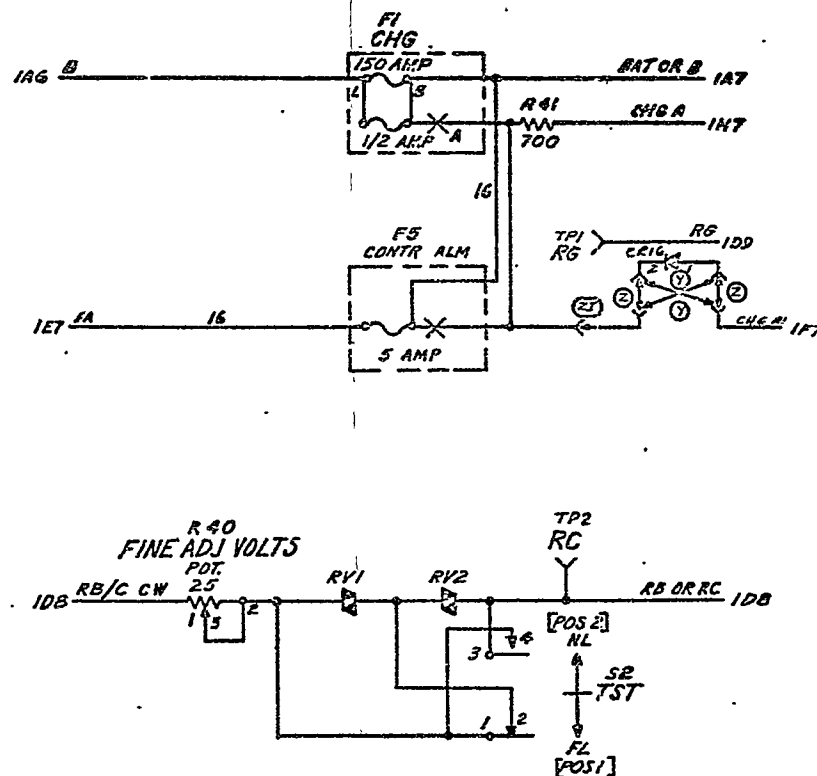
BELL TELEPHONE LABORATORIES

65

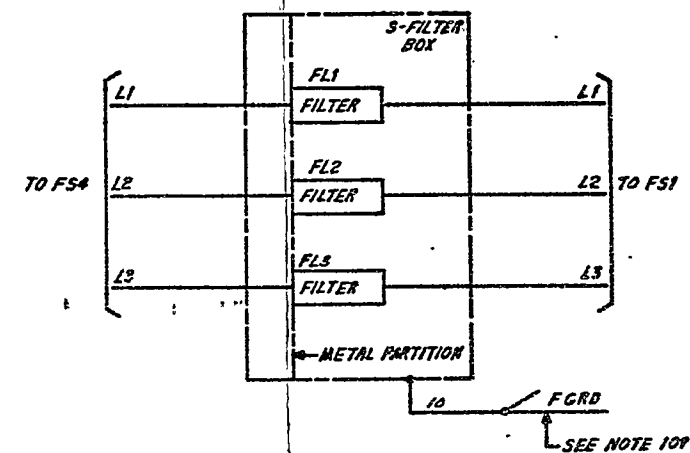
FS 5
AC MONITOR CIRCUIT



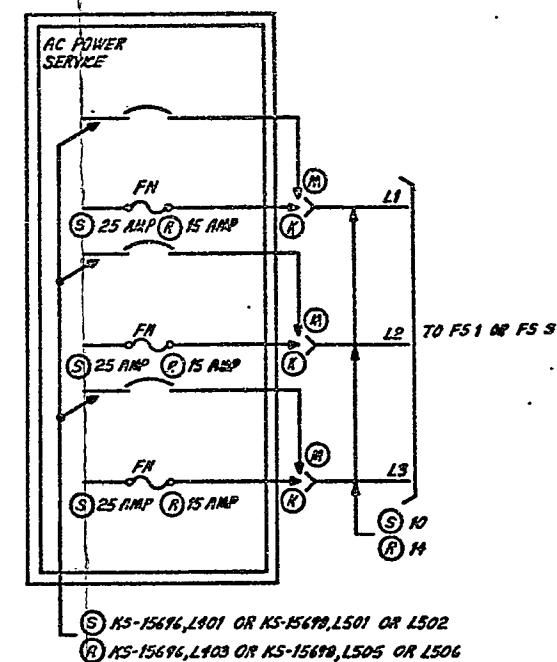
FS 2



FS 3 SPECIAL
AC LINE FILTERS
SEE NOTES 103, 107 & 108



FS 4
AC POWER SERVICE



RECTIFIER CIRCUIT

BELL TELEPHONE LABORATORIES
INCORPORATED

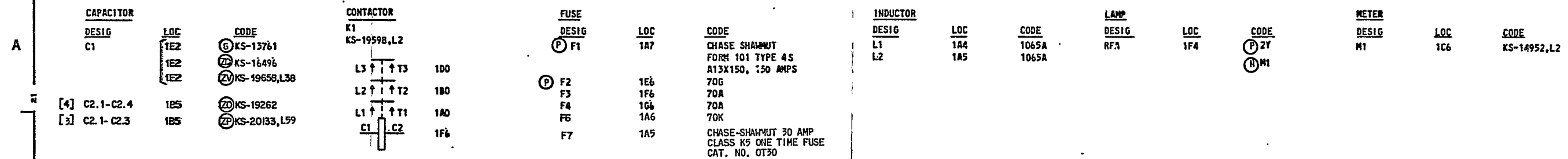
SD-81756-01-82

6S

ISSUE
19B

SD-81756-01-82

APP FIG. 1



1	AC	FC
2D	AC	FC
3A	AC	FC
4AR	AC	FC
4AC	AC	FC
7B	AC	FC
8B	AC	FC
9AR	AC	FC
12B	AC	FC

NETWORK

DESIG	LOC	CODE
N1	1F6	177J

RECTIFIER STACK

DESIG	LOC	CODE
CR1	1A3	ZZ KS-19574, L1 YA KS-19574, L4

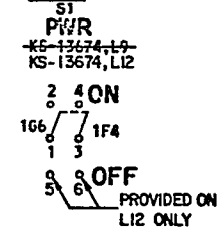
RESISTOR

DESIG	LOC	CODE
R1	1D3	47K, 51, 1 KS-20289, L6C, 51.1
R2	1D3	47K, 51, 1 KS-20289, L6C, 51.1
R3	1D3	47K, 51, 1 KS-20289, L6C, 51.1
R4	1B4	47K, 51, 1 KS-14175, L2D, 215
R5	1B4	47K, 51, 1 KS-8512, L10A, 215
R6	1C2	KS-14603, L2D, 1000 KS-14603, L2A, 1000
R7	1G6	KS-14603, L2B, 1000 KS-14603, L2A, 1000 KS-14603, L1, 825

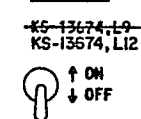
SHUNT

DESIG	LOC	CODE
R17	1C6	KS-9442, L6

SWITCH



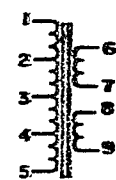
SWITCHTOP



TRANSFORMER

DESIG	LOC	CODE
T4	1C2	2060A

TRANSFORMER



DESIG	T1	T2	T3
CODE	2059B	2059C	2059C
OPTION	S	R	S
TERM.	LOC	LOC	LOC
1-5	1A1	1B1	1C1
6,7	1A1	1B1	1C1
8,9	1G0	1H0	1H0

APP FIG. 2

APP FIG. 3

DESIG	LOC	CODE
20		1F4
19		1F4
18		1G4
17		1F1
16		1G4
15		1F6
14		1F6
13		1F9
12		1F8
11		1E8
10		
9		
8		
7		
6		
5		
4		
3		1E9
2		
1		1F9

DESIG	LOC	CODE
20		1F4
19		1F4
18		1G4
17		1F1
16		1G4
15		1F6
14		1D2
13		1G6
12		1F4
11		
10		1H4
9		1H4
8		1D2
7		1F6
6		1G6
5		1G4
4		1G4
3		1F4
2		1F2
1		1E2

APP FIG. 5

DESIG	LOC	CODE
15		1FO
14		1FO
13		1FO
12		1FO
11		1FO
10		1F2
9		1FO
8		1FO
7		1EO
6		1EO
5		1EO
4		1EO
3		1EO
2		1EO
1		1EO

CONNECTOR

DESIG	LOC	CODE
TP1	2D5	KS-14523, L1
TP2	2C5	KS-14523, L1

FUSE

DESIG	LOC	CODE
F1	2B4	CHG-
F5	2C5	

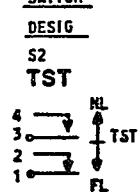
POTENTIOMETER

DESIG	LOC	CODE
R40	2D4	KS-16752, L2, 25

RESISTOR

DESIG	LOC	CODE
R41	2C5	119A, 700

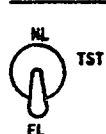
SWITCH



DIODE

DESIG	LOC	CODE
ZE	1G6	446F
CR3	1F6	446F
CR4	1G6	446F
CR5	2C5	446F

SWITCH TOP



APP FIG. 4

CONNECTOR

DESIG	LOC	CODE
TP1	2D5	KS-14523, L1
TP2	2C5	KS-14523, L1

FUSE

DESIG	LOC	CODE
F1	2B4	CHG-
F5	2C5	

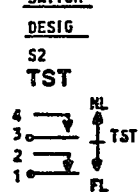
POTENTIOMETER

DESIG	LOC	CODE
R40	2D4	KS-16752, L2, 25

RESISTOR

DESIG	LOC	CODE
R41	2C5	119A, 700

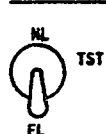
SWITCH



DIODE

DESIG	LOC	CODE
ZE	1G6	446F
CR3	1F6	446F
CR4	1G6	446F
CR5	2C5	446F

SWITCH TOP



VARISTOR

DESIG	LOC	CODE
RV1	2D4	100A
RV2	2D5	100A

RECTIFIER CIRCUIT

2

SD-81756-01-C1

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

0 1 2 3 4 5 6 7 8 9

APP FIG. 6

FILTER		
DESIG	LOC	CODE
FL 1	2B7	(ZF) SPRAGUE CAT. 30J X 25 (ZG) SPRAGUE CAT. JN17-2971C2
FL 2	2C7	(ZF) SPRAGUE CAT. 30J X 25 (ZG) SPRAGUE CAT. JN17-2971C2
FL 3	2C7	(ZF) SPRAGUE CAT. 30J X 25 (ZG) SPRAGUE CAT. JN17-2971C2

DIODE		
DESIG	LOC	CODE
CR18	2B0	A46F
CR19	2B1	
CR20	2B2	
CR21	2C0	
CR22	2C1	
CR23	2C2	
CR24	2D0	
CR25	2D1	
CR26	2D1	

(ZY) APP FIG. 7

RELAY						
DESIG	ACH1	ACH2	ACH3			
CODE	MA3E	MA3E	MA3E			
OPTION						
X	CONT. ARR.	LOC	CONT. ARR.	LOC	CONT. ARR.	LOC
6						
5						
4	H		H		H	
3	B	1H4	B	1H4	B	1H4
2	B	1E5	B	1E5	B	1E5
1	H		H		H	
COIL	X	2D0	X	2D1	X	2D2

RELAYS NOT ADJUSTABLE. REPLACE IN THE EVENT OF HALFFUNCTION.

RESISTOR		
DESIG	LOC	CODE
R46	2B2	KS-14603, L2A0, 162

DRAWING
ISSUE

A

B

C

D

E

F

G

ISSUE

19B

H

SD-81756-01-C2

RECTIFIER CIRCUIT

(2)

SD-81756-01-C2

BELL TELEPHONE LABORATORIES
INCORPORATED

6S

0 1 2 3 4 5 6 7 8 9

CIRCUIT NOTES:

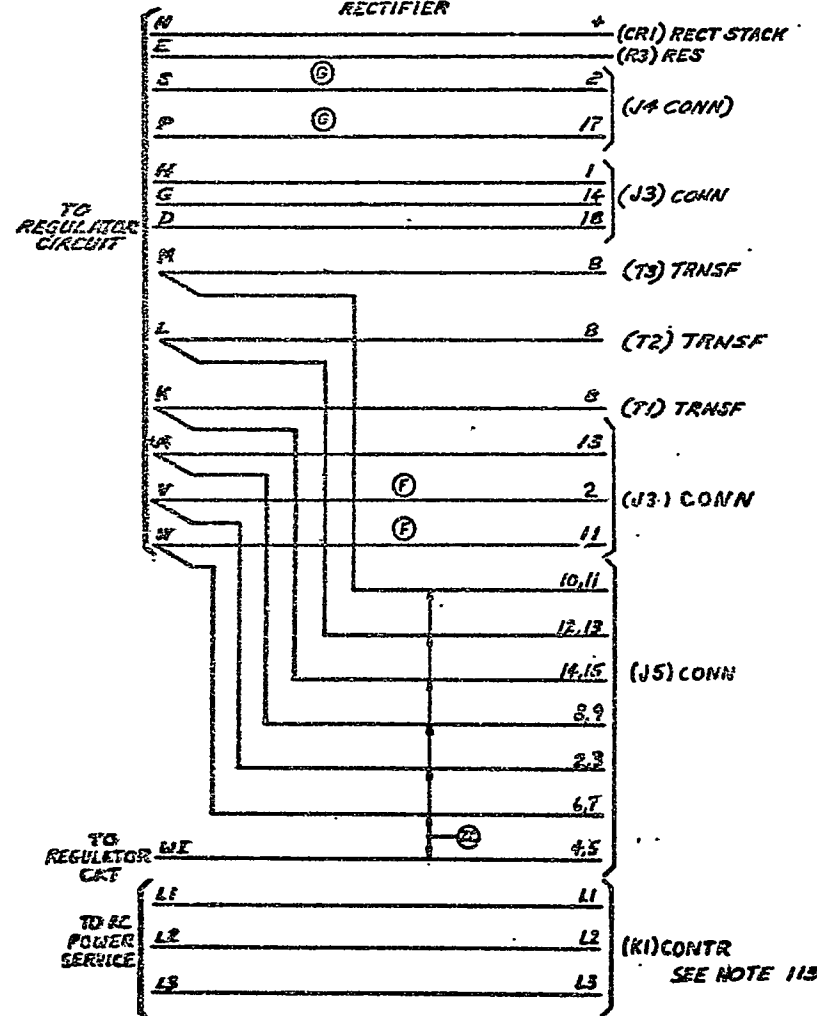
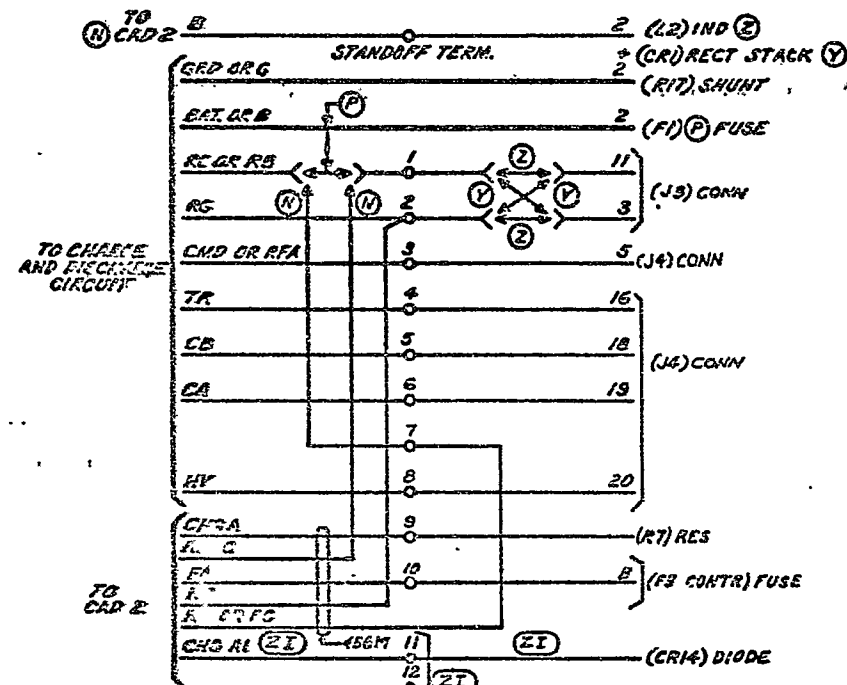
DESIG	FUSE A/P	POTENTIAL	ONE PER
F1	150	45	RECTIFIER
F5	5	48	RECTIFIER

FEATURE OR OPTION	APP FIG.	APP C2 FIG.	QUANTITY
NEGATIVE (POS GRD)		Z	
POSITIVE (NEG GRD)		Y	
200/250 VOLT SERVICE		S	
480 VOLT SERVICE		R	
AC MONITOR CKT	7	ZY	1 PER RECT

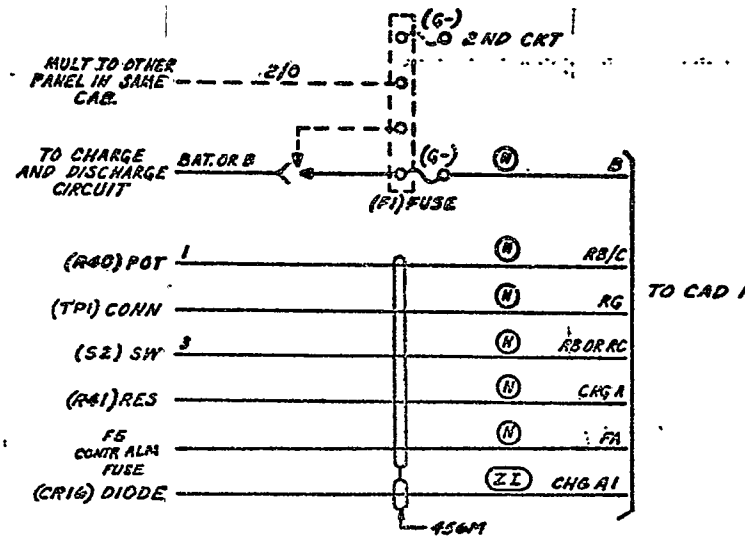
103.

RECORD OF FIGURES, WIRING AND APPARATUS CHANGES							
CHANGED ON ISS	IF JCN RECC S S S	IF IS RECC S S S	SEE NOTE	USE IN CIRCUIT			
				STD	ASH	ND	SPL
4B	W	U		W		U	
7B	N	P		N		P	
7B	NONE	K OR H		K,N			
8B	F	G	106	F		G	
8B	J	NONE		J			
13B	ZC	NONE	105	ZC			
14B	ZC OR ZF	ZD		ZE		ZD	
14B	ZC OR ZF	ZD	108				ZF BZ
15B	ZC OR ZF	ZH		ZI		ZH	
15B						147A	
15B						146A	
15B						420A	
15B						421G	
15B		RESISTOR, R9		KS-20289, L6C		KS-4603, L2A	KS-15307L1
15B		RESISTOR, R42-R45		KS-20289, L6C		221A	
17D							
	ZO OR ZP	ZO		ZP		ZO	
	ZQ OR ZV	ZQ	112	ZV		ZQ	
	ZW OR ZX	ZW		ZX		ZW	
	RESISTOR			KS-20289, L6C		147A	
				KS-4603, L2A		KS-4603, L2D	
	SWITCH			KS-3674, L12		KS-3674, L9	
19B	ZY	NONE	210	ZY			
20D	ZZ OR YA	ZZ	210, 212	YA		ZZ	
22B			116				
24B	VARISTOR						
	RESISTOR			KS-4603, L1A		KS-4603, L1D	
	J OR YB	J		YB		J	

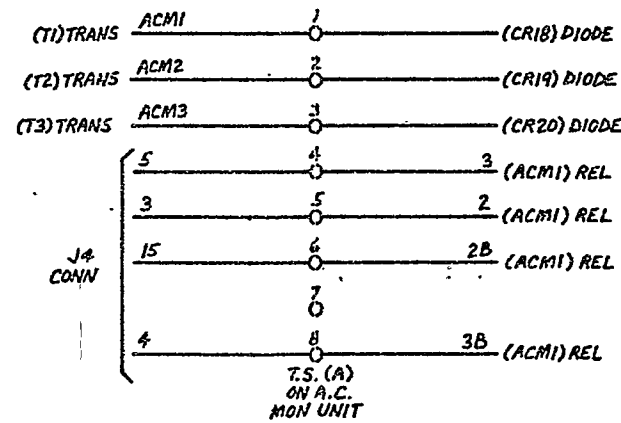
CAD 1 (FOR APP FIG. 1, 2 & 3)



CAD 2 CHG FUSE AND VOLT. ADJ PANEL (FOR APP FIG. 4)



CAD 3 (2) (FOR APP FIG. 7)



SD-81756-01-G1

COMPONENT LIST

CAPACITOR

DESIG CODE
 C3 KS-16390, L1

DIODE

DESIG CODE
 CR4-CR6 420A OR 446B

POTENTIOMETER

DESIG CODE
 R14 KS-19512, L1, 2000

RESISTOR

DESIG CODE
 R11 U 147A, 1210
 R12 U KS-14603, L1, 681, L1A, 681
 R13 147A OR KS-20289, L6C, 1620
 R15 +45A, 562
 R16 KS-20810, L1A, 562
 R17 +45A, 348
 R18 KS-20810, L1A 348
 R17 146A, 47 OR KS-20289, L6C, 47.5
 R18 +45A, 10, 000
 KS-20289, L6C, 10K

THERMISTOR

DESIG CODE
 RT1 17A

TRANSISTOR

DESIG CODE
 Q1 +6F
 66F

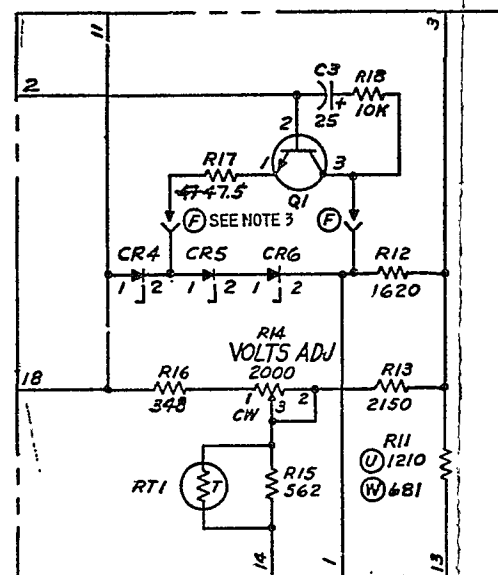
INPUT/OUTPUT INFORMATION

SEE CD-81756-01

CIRCUIT DESCRIPTION

SEE CD-81756-01

CPS 3



SUPPORTING INFORMATION

CATEGORY	NO.
CIRCUIT PACK CODE AND ASSEMBLY DRAWING CONNECTOR ON FRAME	ED-82093-(), G1 9060
EQPT DESIGN REQ	J87223

SYMBOL

CP SHOWN IN DETAIL IN FS

NOTES:

1. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS.

DWG	REV	FURN	STD	MFR	DISC	SEE
155						NOTE
4B	U		W	U		
8B	NOTE		F			
15B	RESISTOR	KS-20289, L6C	147A			
15B	RESISTOR	KS-20289, L6C	146A			
15B	DIODE	446B	420A			
17D	RESISTOR	KS-20289, L6C	145A			
17D	RESISTOR	KS-20289, L6C	146A			
17D	TRANSISTOR	66F	16F			
24B	RESISTOR	KS-14603, L1A	KS-14603, L1D			

3. SOME UNITS MANUFACTURED WITH R17, KS-13491, L1 47 OHMS.

SD-81756-01-J1

RECTIFIER CIRCUIT

2

SD-81756-01-J1

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COMPONENT LIST

RELAY

DESIG	CL	RFA1	RFA2	TR
CODE	1A5M3A3A	1A5M3A3A	1A5M3A3A	1A5M3A3A
OPTION				
	CONT	LOC	CONT	LOC
	ARR	ARR	ARR	ARR
6				
5				
4	M	2A3	6M	2B4
3	B		M	2C4
2	B		M	2C3
1	M	2A3	M	2B4
COIL	2B5	2C4	2A4	2B4

RELAYS NOT ADJUSTABLE, REPLACE IN THE EVENT OF MALFUNCTION.

CAPACITOR

DESIG	CODE
C4	606A

DIODE

DESIG	CODE
CR3	420G OR 446F
CR4	446F
CR5	446F
CR6	446F
CR7	446F

POTENTIOMETER

DESIG	CODE
R9	KS-19607, L1 OR KS-19607, L1A, 300

RESISTOR

DESIG	CODE
R7	145A, 10 KS-20810, L1A, 10
R8	KS-14603, L2D, 1000 KS-14603, L2A, 1000
R10	145A, 12, 100 KS-20810, L1A, 12, 100

THERMISTOR

DESIG	CODE
RT2	14B-8E

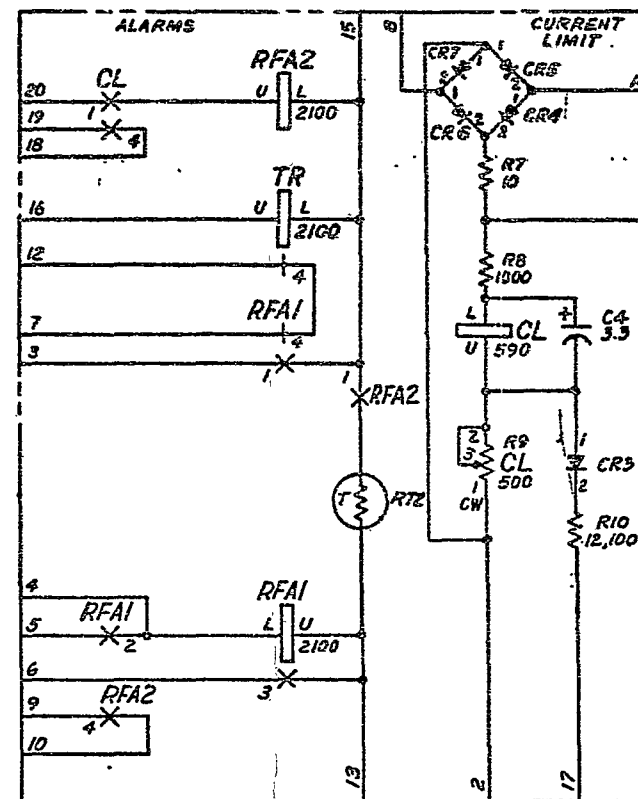
INPUT/OUTPUT INFORMATION

SEE CD-81756-01

CIRCUIT DESCRIPTION

SEE CD-81756-01

CPS 4



SUPPORTING INFORMATION

CATEGORY	NO.
CIRCUIT PACK CODE AND ASSEMBLY DRAWING CONNECTOR ON FRAME	ED-82094-C, G1 9040
EQPT DESIGN REQY	J97223

SYMBOL

CP SHOWN IN DETAIL IN FS

NOTES:

- UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS.

DWG	PREV	STD	MFR	SEE
ISS	FURN		DISC	NOTE
15B	DIODE	446F	420G	
15B	POTENT- METER	KS-19607, L1A	KS-19607, L1	
17D	RESISTOR	KS-20810, L1A	145A	
17D	RESISTOR	KS-14603, L2A	KS-14603, L2D	
17D	THERMISTOR	8E	1D	

SD-81756-01-J2

RECTIFIER CIRCUIT	2	SD-81756-01-J2
BELL TELEPHONE LABORATORIES INCORPORATED	65	MADE IN U.S.A.

COMPONENT LIST

DIODE

DESIG	CODE
CR8	446F
CR9	446F
CR10	446F
CR11	446T
CR12	446F

RESISTOR

DESIG	CODE
R42	221A OR KS-2081Q/LIA, 10,000
R43	221A OR KS-2081Q/LIA, 13,000
R44	221A OR KS-2081Q/LIA, 5,110
R45	221A OR KS-2081Q/LIA, 5,620

TRANSISTOR

DESIG	CODE
Q2	51C

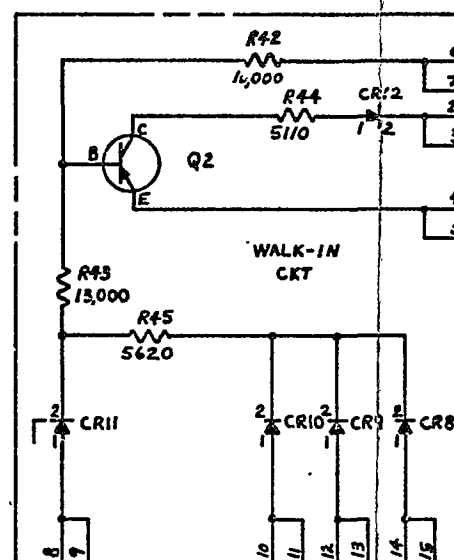
INPUT/OUTPUT INFORMATION

SEE CD-81756-01

CIRCUIT DESCRIPTION

SEE CD-81756-01

⊗ CPS 5



SUPPORTING INFORMATION

CATEGORY	NO.
CIRCUIT PACK	ED-82502-()
CONNECTOR ON FRAME (J5)	6030-ELCO CORP
EQPT DESIGN ROT	WILLOW-GROVE PA
	J87223

SYMBOL

CP SHOWN IN DETAIL IN FS

NOTES

1-UNLESS OTHERWISE SPECIFIED
RESISTANCE VALUES ARE IN OHMS.

2-

DWG	PREV	STD	IFR	SEE
ISS.	FURN		DISC	NOTE
15B	RESISTOR	KS-2081Q/LIA	221A	

SD-81756-01-J3

ISSUE
15B

RECTIFIER CIRCUIT

②

SD-81756-J3

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