

# Citation® 7.1

## THX Certified

# Multichannel Power Amplifier



**harman/kardon**  
Power for the digital revolution®

# Features

## **User-Configurable Outputs:**

The Citation 7.1 may be used as a four, three or two-channel amplifier, with audiophile quality in all configurations. This flexibility permits you to configure power levels to meet specific system requirements upon initial installation and in later system modifications.

## **High Current Design:**

Delivers full power to speakers even when matched with complex impedance loads from various speaker configurations.

## **Low Negative Feedback:**

Improved sonic quality with almost total freedom from TIM (transient intermodulation distortion), THD (total harmonic distortion) and IMD (intermodulation distortion).

## **Quad Power Supply:**

Four (4) separate power supplies, one for each output channel, eliminate crosstalk among channels and provide the highest possible performance in bridged modes.

## **Power-up Sequencing:**

When controlled by the remote turn-on system in the 5.0 AV Controller, 7.1 Multi-channel Power Amplifiers in multiple amplifier systems turn on sequentially, each at a slightly different time, reducing power surges in a home's electrical system.

## **Ultrawide Bandwidth Design:**

Delivers all the subtleties of the source material, even inaudible harmonics that contribute to sonic performance. A Citation design and engineering hallmark.

## **Oversize Heat Sinks:**

Fan-free convection cooling assures high system reliability and quiet operation.

## **THX Certified:**

The Citation 7.1 Multichannel Power Amplifier meets or exceeds THX TM standards for sonic performance and is compatible with other THX certified components.

# Technical Specifications

## **General Description:**

High current, multichannel audio power amplifier, configurable for four, three or two-channel output. THX Certified.

## **Power Output:**

4 x 150 watts @ 8 Ohms, 4 x 240 watts @ 4 Ohms  
2 x 150 watts + 1 x 450 watts @ 8 Ohms  
2 x 450 watts @ 8 Ohms bridged  
FTC: 20 Hz - 20 kHz, .03% THD, All channels driven.

## **HCC:**

130 Amps/channel in dual mono mode.

## **Frequency Response:**

< 3 Hz - 200 kHz  $\pm$ 3 dB at rated output.

## **THD/IMD:**

Less than 0.03% at rated output.

## **Power Bandwidth:**

5 Hz - 130 kHz.

## **Input Impedance:**

22k Ohms.

## **Input Sensitivity:**

1.1 volts for rated output.

## **Dimensions (HxWxD) :**

7 1/2 x 17 15/16 x 17 1/2"  
191 x 456 x 445 mm.

## **Weight:**

75 lbs / 34 kg.

## **Power Requirements:**

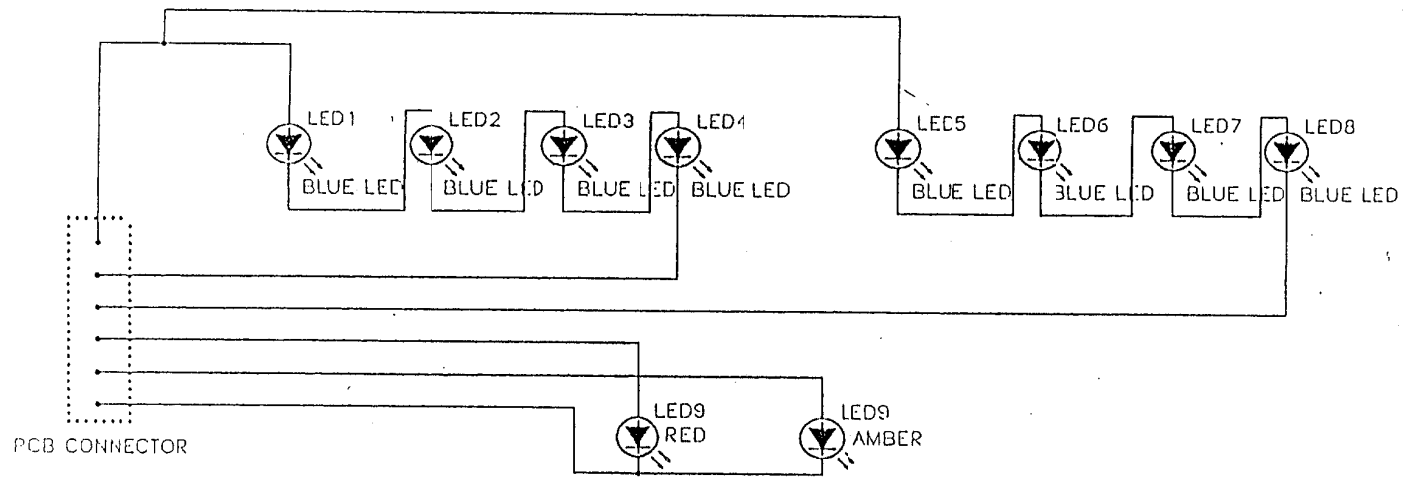
120/230VAC, 50 - 60 Hz; 2500 watts, maximum

CIT3B BOM

Quantity	Type	Value	Ref Designators
8	5mm LED	LD190CW5B	LED1,LED2,LED3,LED4,LED5, LED6,LED7,LED8
1	CONNECTOR	MOLEX 52045	J1
1	TRICOLOUR LED	RL280TWR64B-3C	LED9

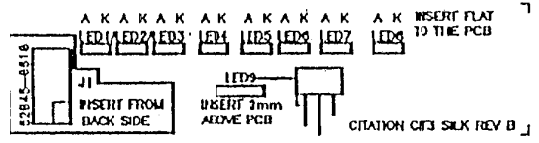
COPY

Citation 7.1  
Diagram



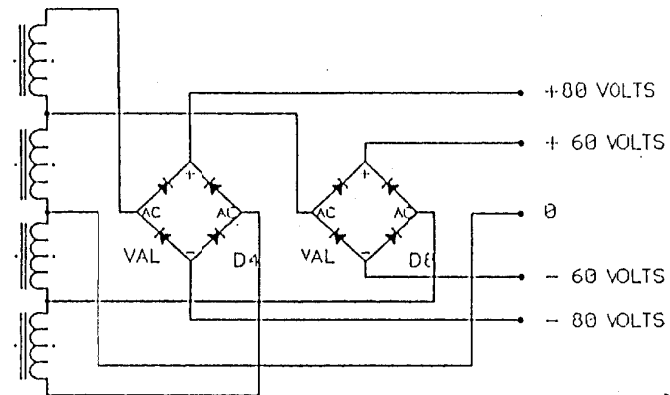
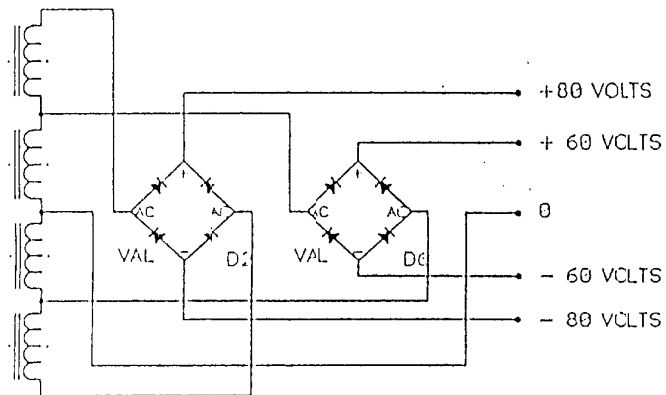
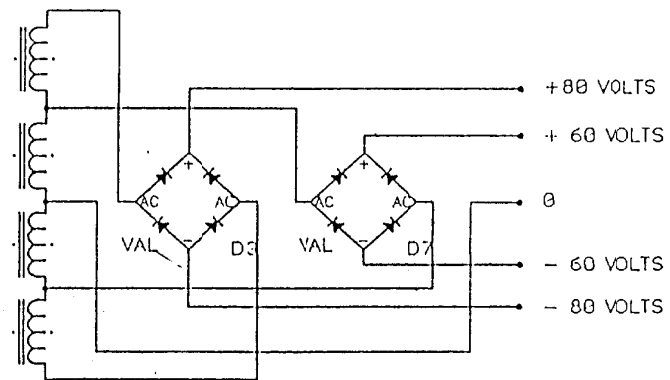
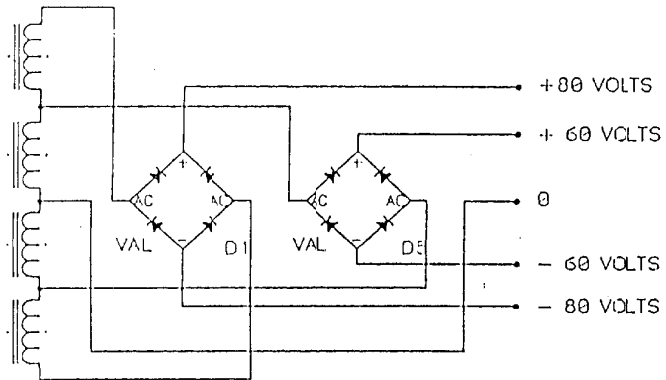
COPY

TITLE	LED PCB 5.1/7.1	FILENAME	LED.A.S01
DRAWN BY	S. MANTZ	DATE	7/25/95
		REV	REV B



C. + 3B

COPY



EACH CHANNEL HAS IT'S OWN SECONDARY/RECTIFIER SYSTEM

THE SECONDARY VOLTAGES SHOWN APPLY TO CIT7.1 ONLY  
THE 5.1 VOLTAGES ARE LOWER

WHERE '80 VOLTS' IS SHOWN THE CIT 5.1 HAS '70 VOLTS'  
WHERE '60 VOLTS' IS SHOWN THE CIT5.1 HAS '50 VOLTS'

COPY

TITLE	CIT5.1/7.1 SECS	FILENAME	CIT1A.504
DRAWN BY	S. MANTZ	DATE	8 JUNE 1995
		REV.	A

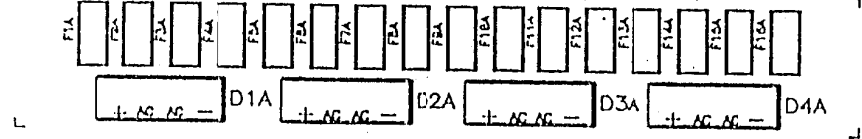
CIT2A BOM

Quantity	Type	Value	Ref Designators
4	BRIDGE RECTIFIER	BR8D	D1,D2,D3,D4
16	MALE FAST-ON	MALE FAST-ON	F1,F2,F3,F4,F5,F6,F7,F8, F9,F10,F11,F12,F13,F14, F15,F16

COPY

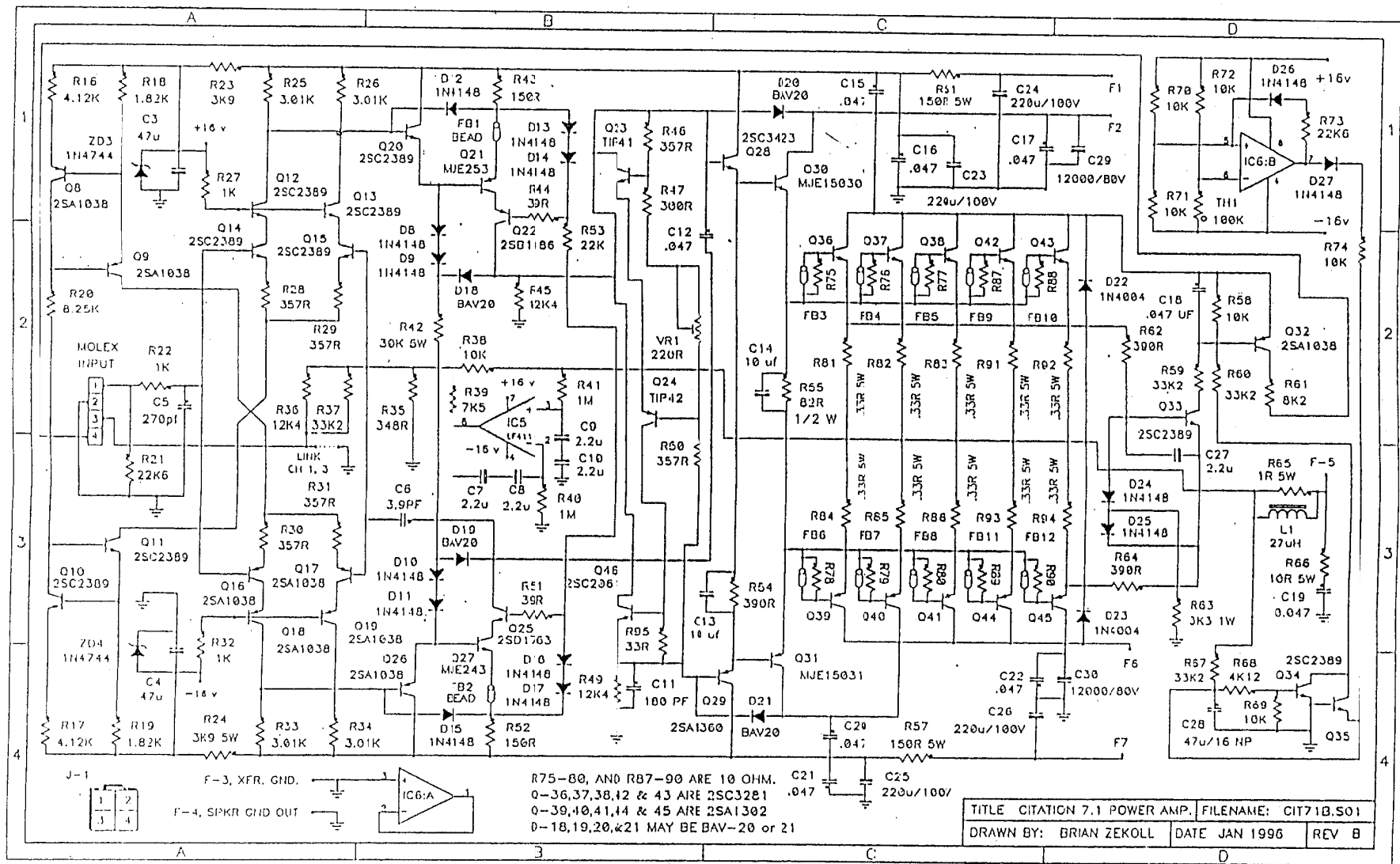


FIG 2 SSK REV A

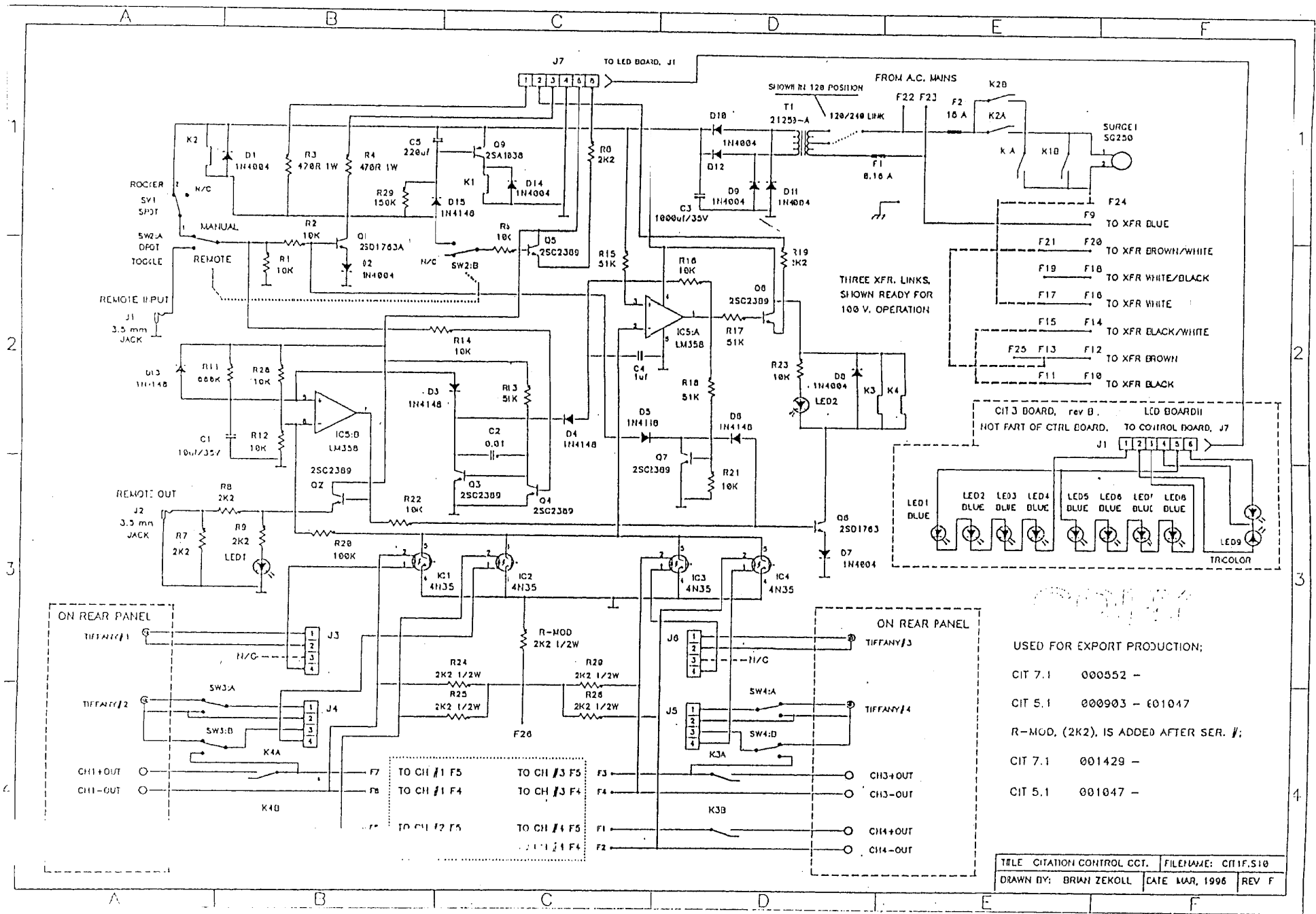


C: + 2 A

COPY



COPY



USED FOR EXPORT PRODUCTION;

CIT 7.1 000552 -

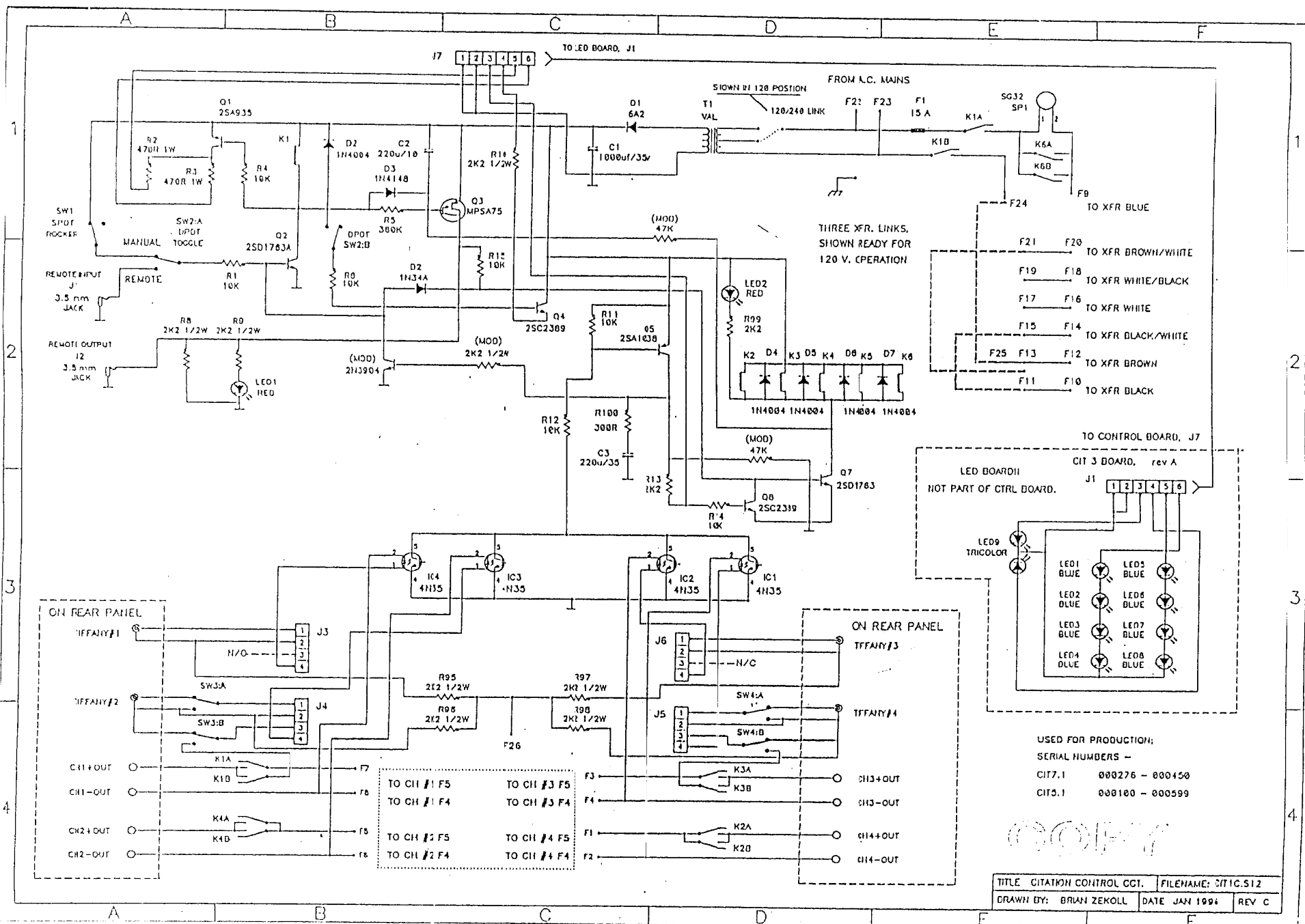
CIT 5.1 000903 - E01047

R-MOD, (2K2), IS ADDED AFTER SER. #;

CIT 7.1 001429 -

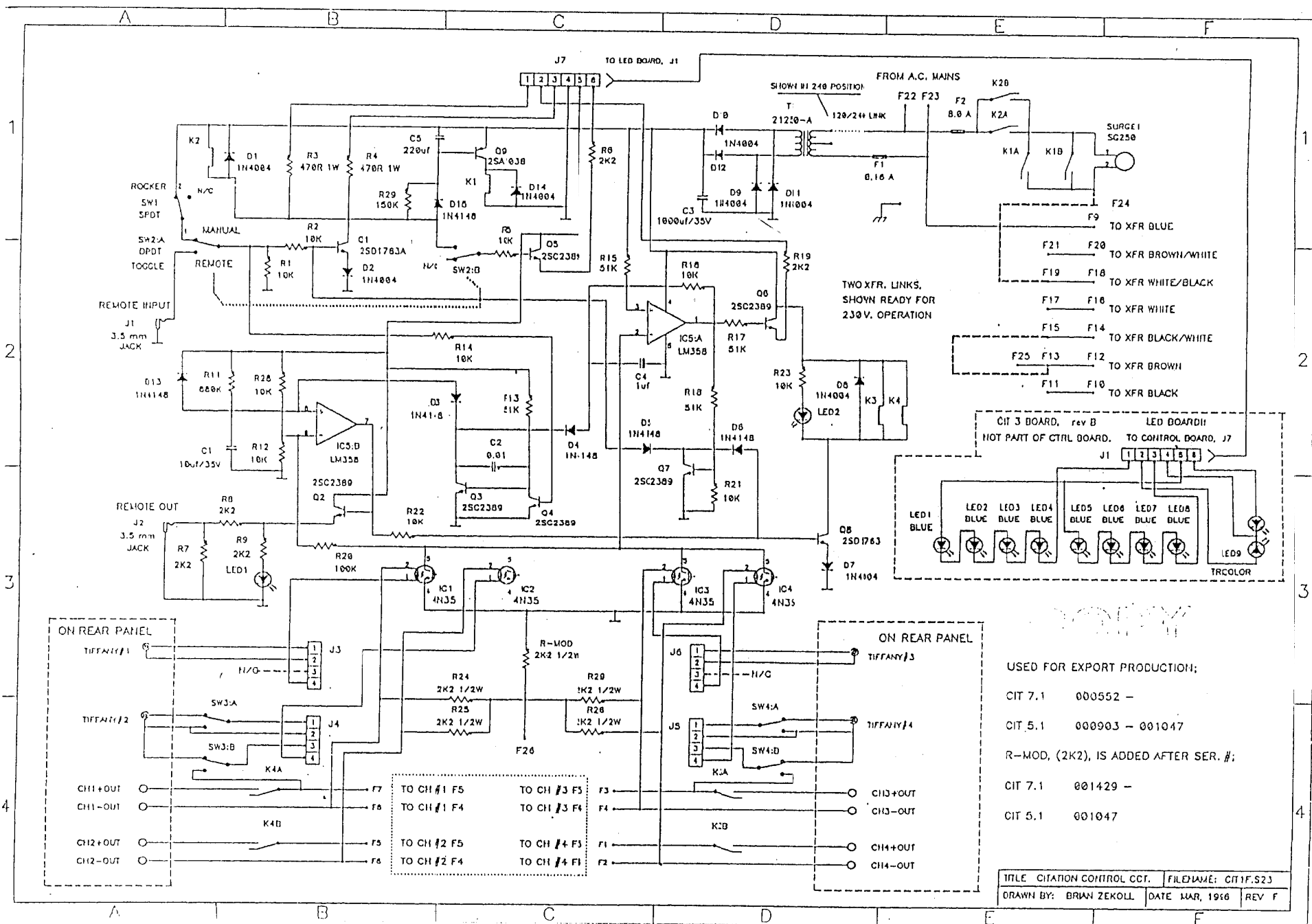
CIT 5.1 001047 -

TITLE	CITATION CONTROL CCT.	FILENAME:	CIT1F.S10
DRAWN BY:	BRIAN ZEKOLL	DATE	MAR, 1996
		REV	F



USED FOR PRODUCTION;  
 SERIAL NUMBERS -  
 CIT7.1 000276 - 000450  
 CIT5.1 000100 - 000599

TITLE CITATION CONTROL OCT. FILENAME: CITIC.S12  
 DRAWN BY: BRIAN ZEKOLL DATE JAN 1994 REV C



USED FOR EXPORT PRODUCTION;

CIT 7.1 000552 -

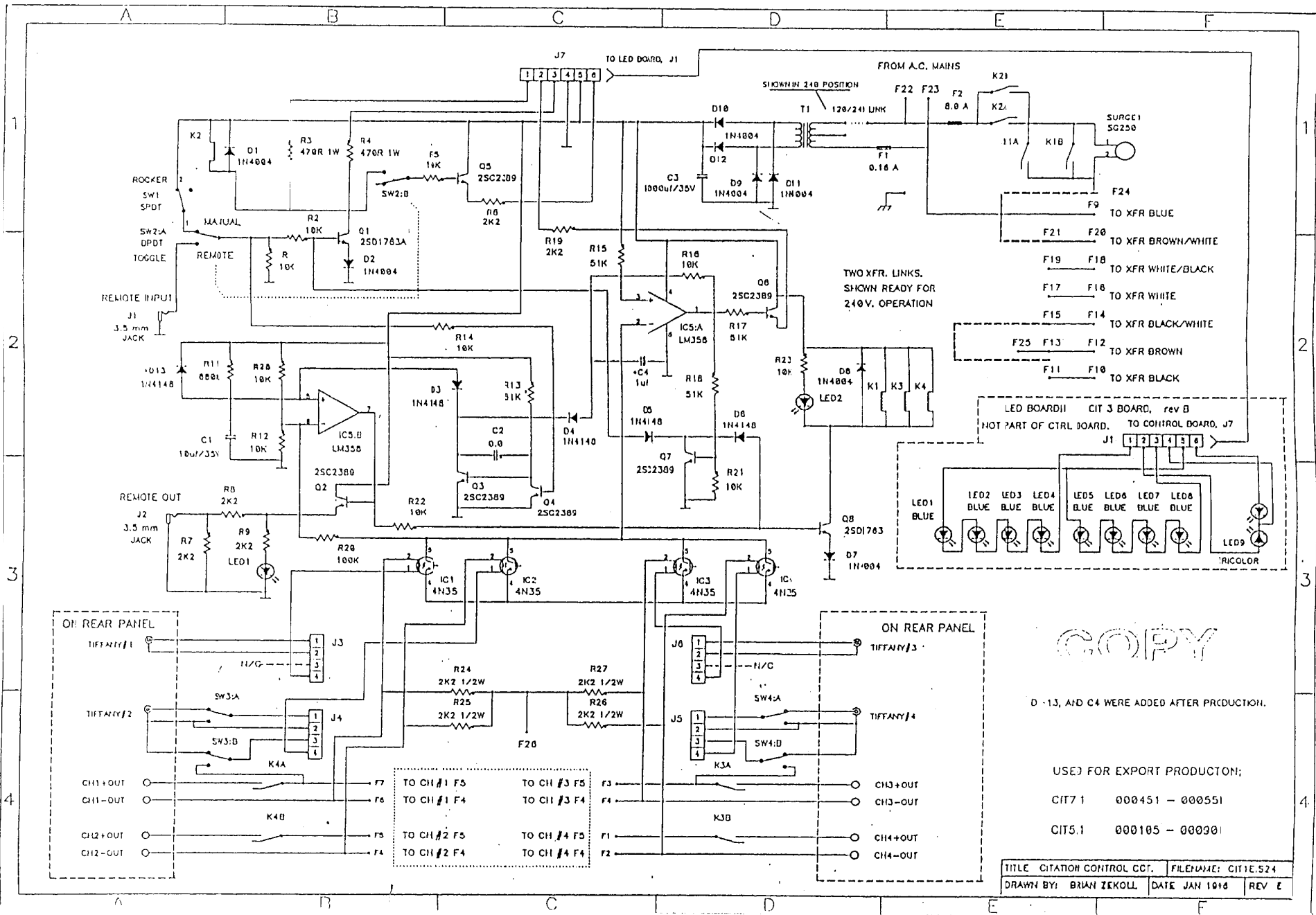
CIT 5.1 000903 - 001047

R-MOD, (2K2), IS ADDED AFTER SER. #;

CIT 7.1 001429 -

CIT 5.1 001047

TITLE	CITATION CONTROL CCF.	FILE NAME:	CIT1F.S23
DRAWN BY:	BRIAN ZEKOLL	DATE	MAR, 1956
		REV	F



COPY

D-13, AND C4 WERE ADDED AFTER PRODUCTION.

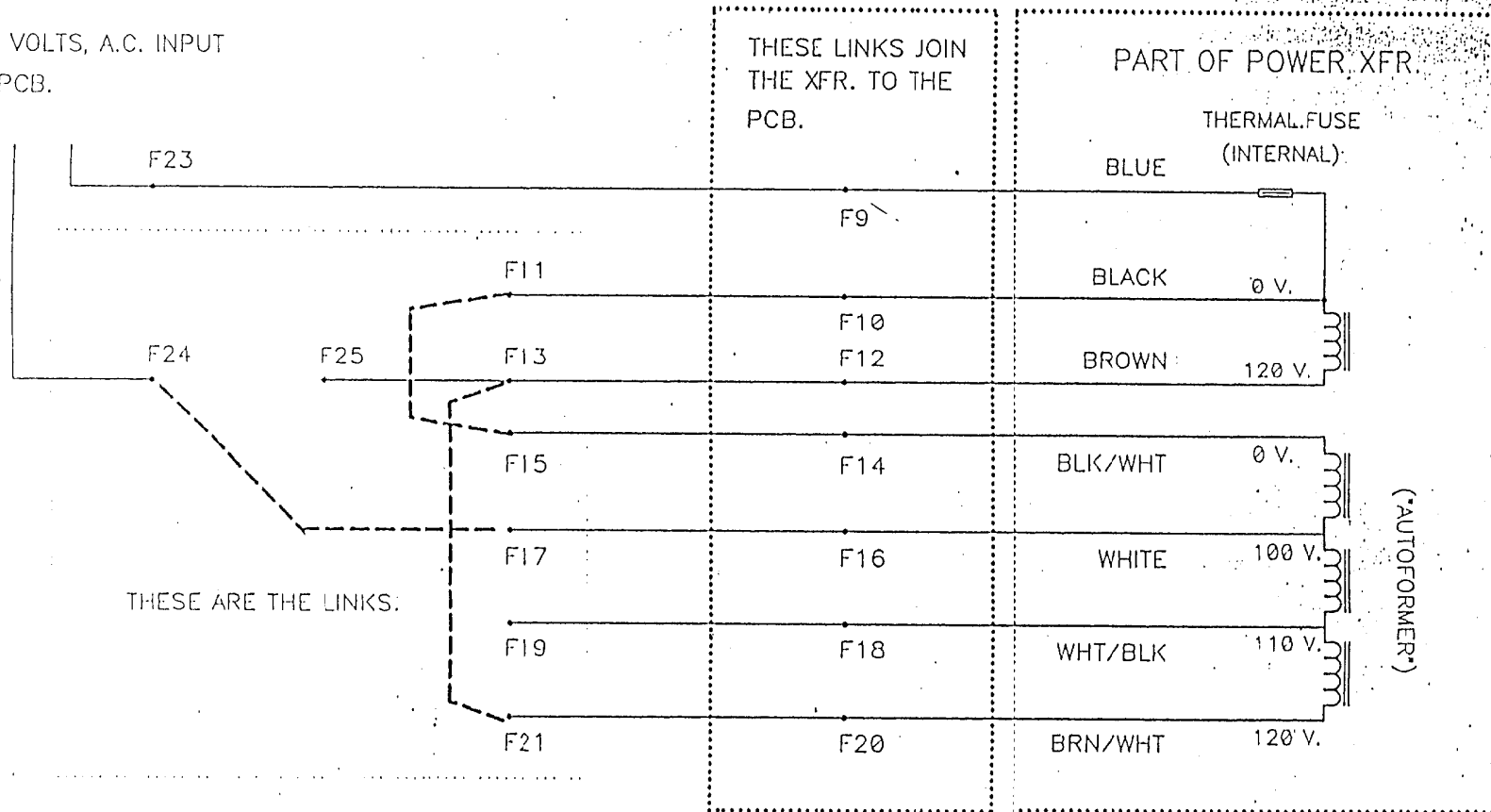
USE) FOR EXPORT PRODUCTION;

CIT 7 000451 - 000551

CIT 5.1 000105 - 000301

TITLE CITATION CONTROL CCT.	FILENAME: CIT1E.524
DRAWN BY: BRIAN ZEKOLL	DATE JAN 1978 REV E

100 VOLTS, A.C. INPUT  
ON PCB.



INSTRUCTIONS FOR PREPARING THE REAR BOARD FOR 100 VOLT OPERATION.

BE SURE THE VOLTAGE SELECTOR LINK FOR THE CIT1 BOARD IS SET FOR "120" VOLTS.

(LOCATED BETWEEN F24, AND D14.)

USE 1 LINK TO CONNECT F11 TO F15,

USE 1 LINK TO CONNECT F13 TO F21,

AND USE 1 LINK TO CONNECT F24 TO F17.

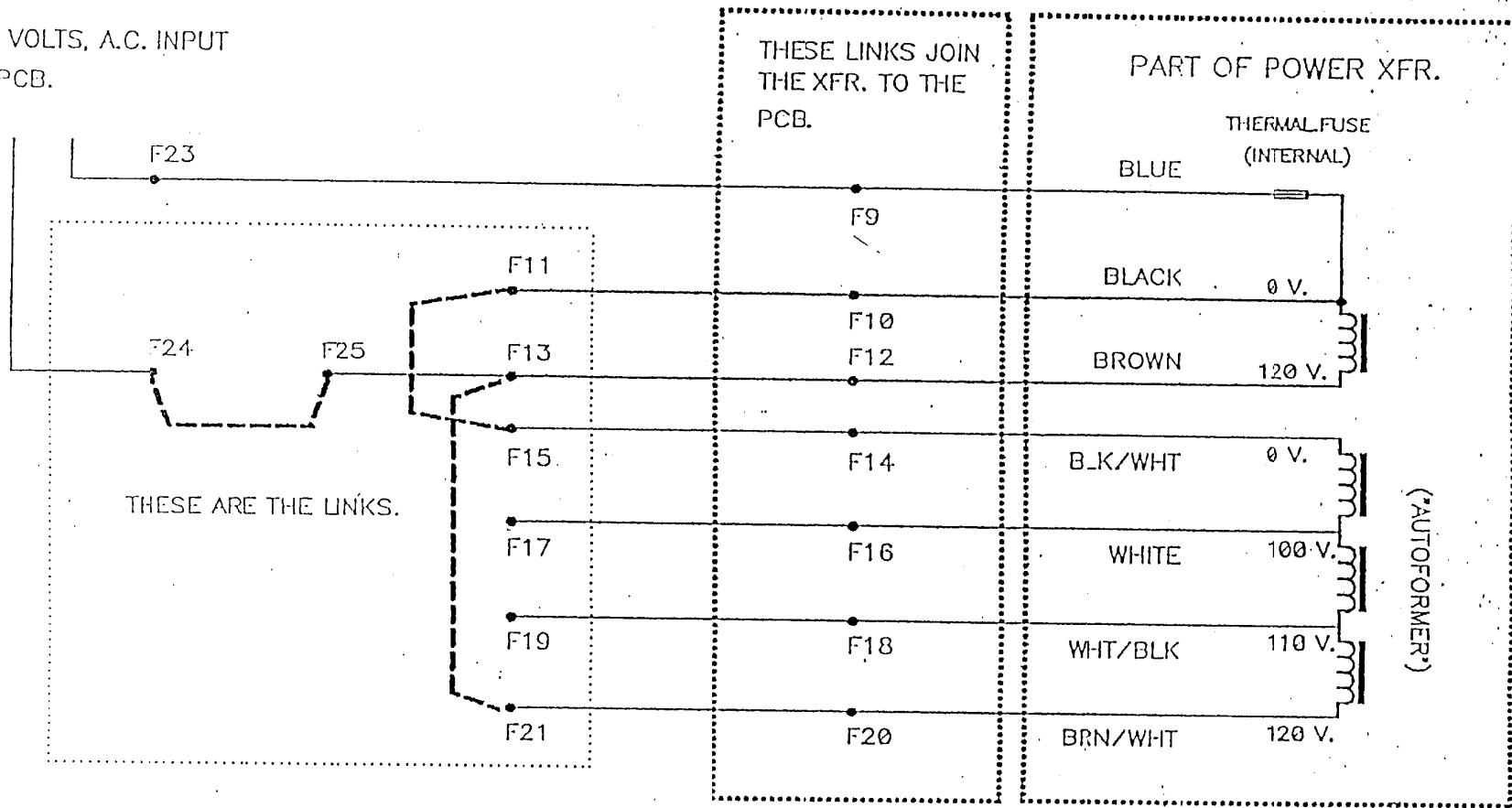
BE SURE THE MAIN FUSE IS .15 AMPS.

THIS DIAGRAM IS FOR CITATION 5.1,

AND 7.1 AMPLIFIERS.

TITLE REV E&F 100 VOLT	FILENAME WIRINGF.S10
DRAWN BY B. ZEKOLL	DATE JAN 1996
	REV E & F

120 VOLTS, A.C. INPUT  
ON PCB.



INSTRUCTIONS FOR PREPARING THE REAR BOARD FOR 120 VOLT OPERATION.

BE SURE THE VOLTAGE SELECTOR LINK FOR THE CIT1 BOARD IS SET FOR "120" VOLTS.

(LOCATED BETWEEN F24, AND D14.)

USE 1 LINK TO CONNECT F11 TO F15,

USE 1 LINK TO CONNECT F13 TO F21,

AND USE 1 LINK TO CONNECT F24 TO F25.

BE SURE THE MAIN FUSE IS 15 AMPS

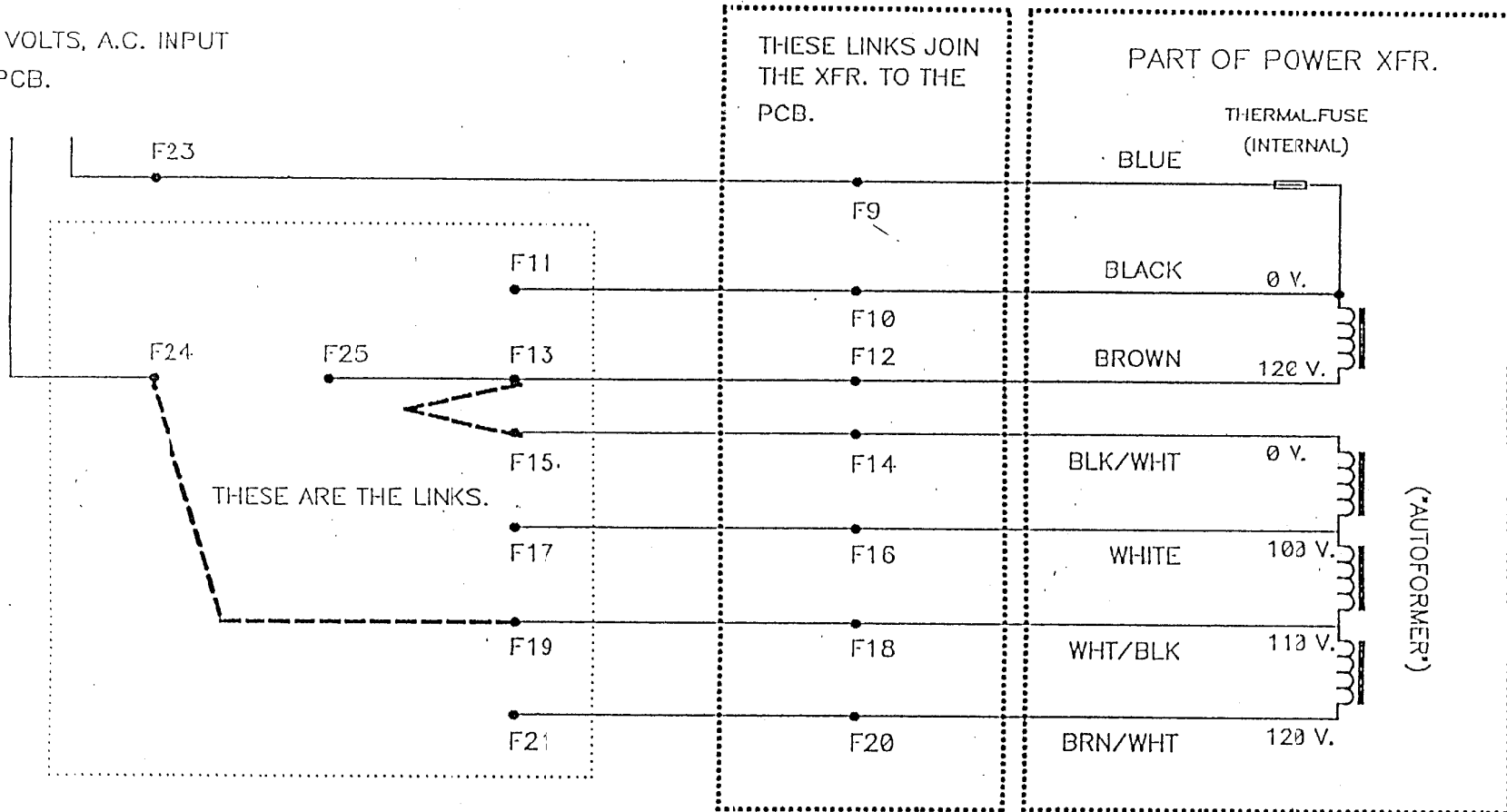
THIS DIAGRAM IS FOR CITATION 5.1,  
AND 7.1 AMPLIFIERS.

COPY

TITLE	REV E&F 120 VOLT	FILENAME	WIRINGEF.S12
DRAWN BY	B. ZEKOLL	DATE	JAN 1996 . . .
		REVE &	



230 VOLTS, A.C. INPUT  
ON PCB.



INSTRUCTIONS FOR PREPARING THE REAR BOARD FOR 230 VOLT OPERATION.

BE SURE THE VOLTAGE SELECTOR LINK FOR THE CIT1 BOARD IS SET FOR \*230\* VOLTS.  
(LOCATED BETWEEN F24, AND D14.)

USE 1 LINK TO CONNECT F13 TO F15,  
AND USE 1 LINK TO CONNECT F24 TO F19.

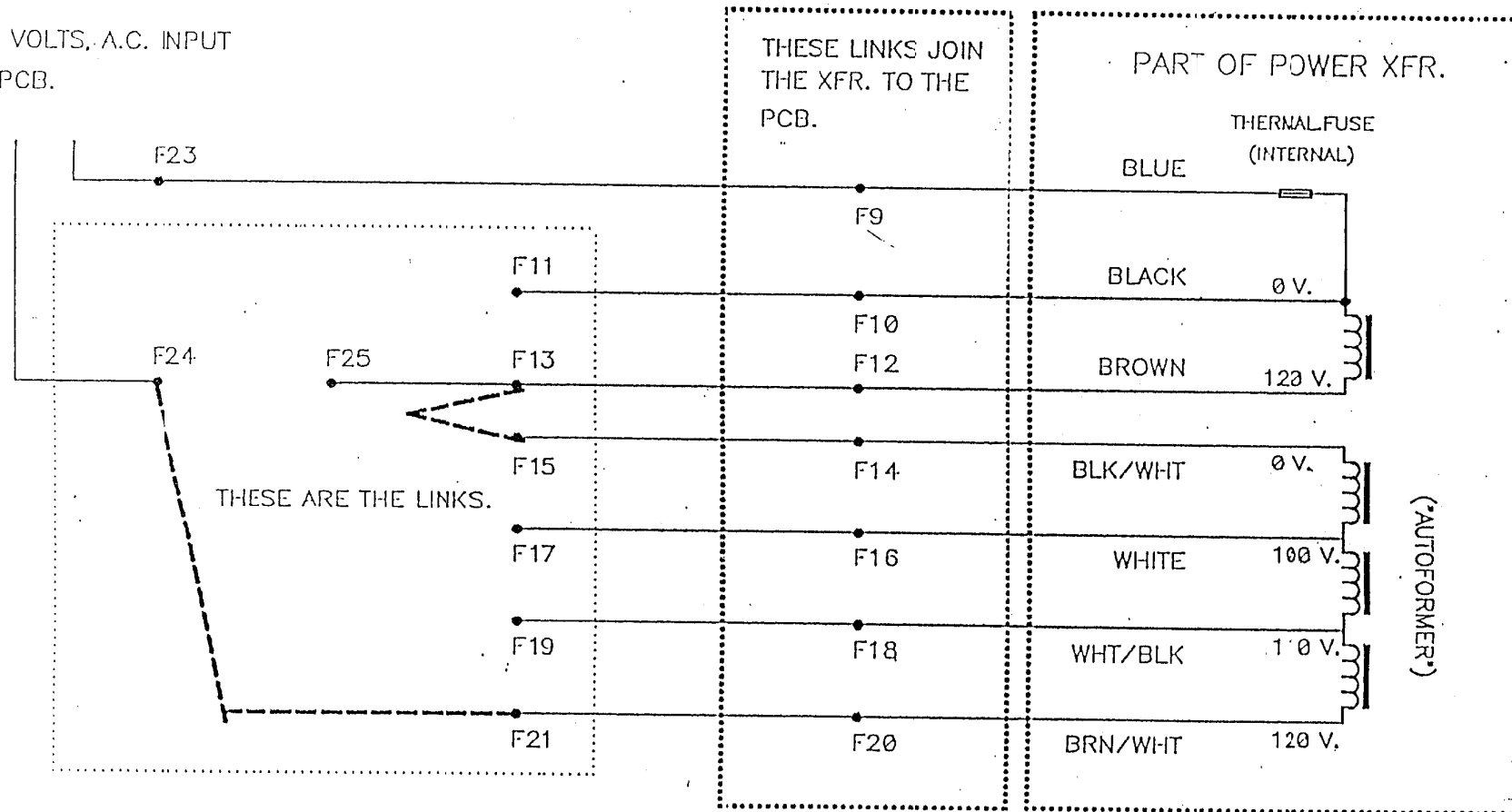
BE SURE THE MAIN FUSE IS 7.5 AMPS.

COPY

THIS DIAGRAM IS FOR CITATION 5.1,  
AND 7.1 AMPLIFIERS.

TITLE	REV E&F 230 VOLT	FILENAME	WIRING.F.S23
DRAWN BY	B. ZEKOLL	DATE	JAN 1996
		REV E & F	

240 VOLTS, A.C. INPUT  
ON PCB.



INSTRUCTIONS FOR PREPARING THE REAR BOARD FOR 240 VOLT OPERATION.

BE SURE THE VOLTAGE SELECTOR LINK FOR THE CIT1 BOARD IS SET FOR "230" VOLTS.

(LOCATED BETWEEN F24, AND D14.)

USE 1 LINK TO CONNECT F13 TO F15,

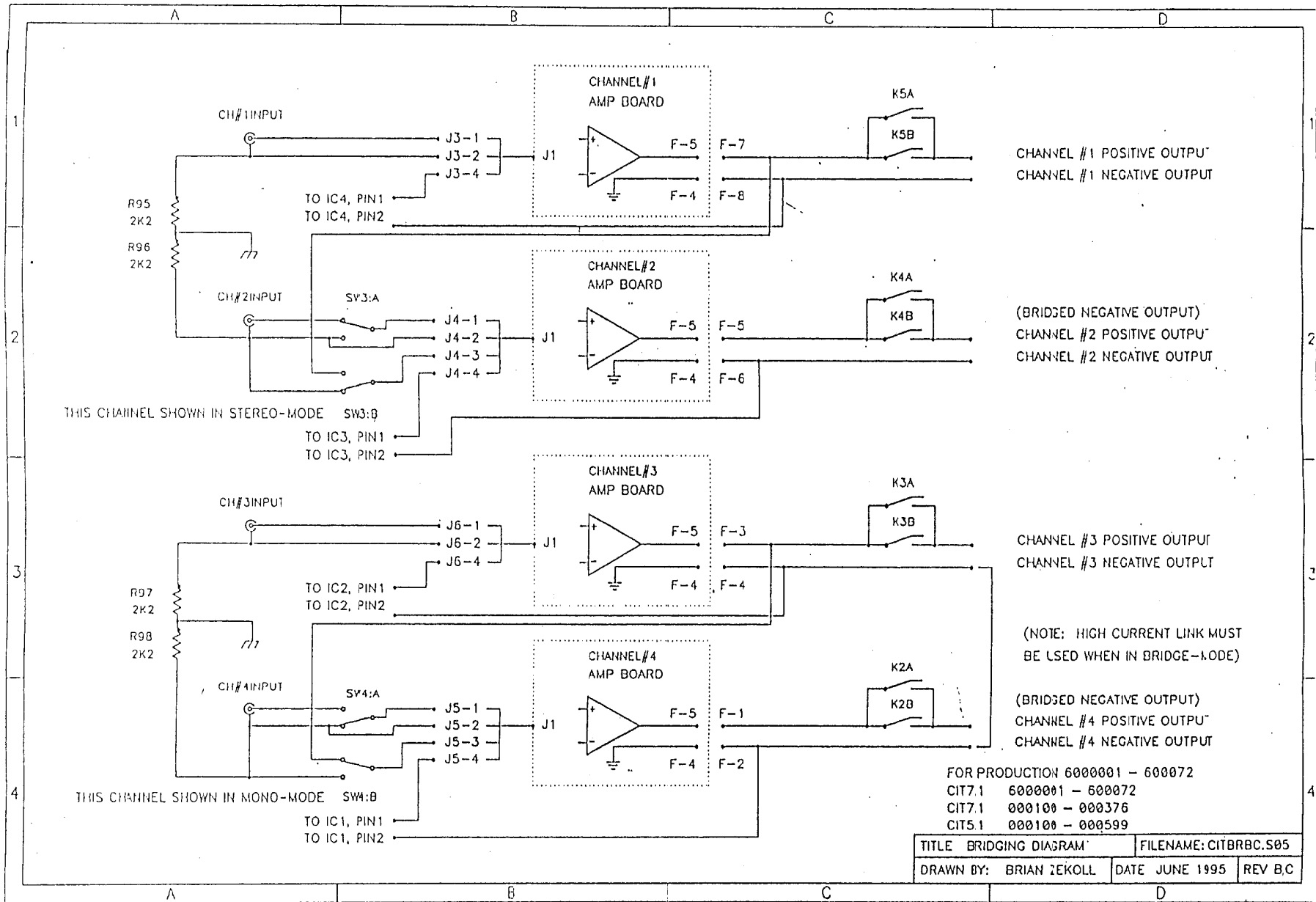
AND USE 1 LINK TO CONNECT F24 TO F21.

BE SURE THE MAIN FUSE IS 7.5 AMPS.

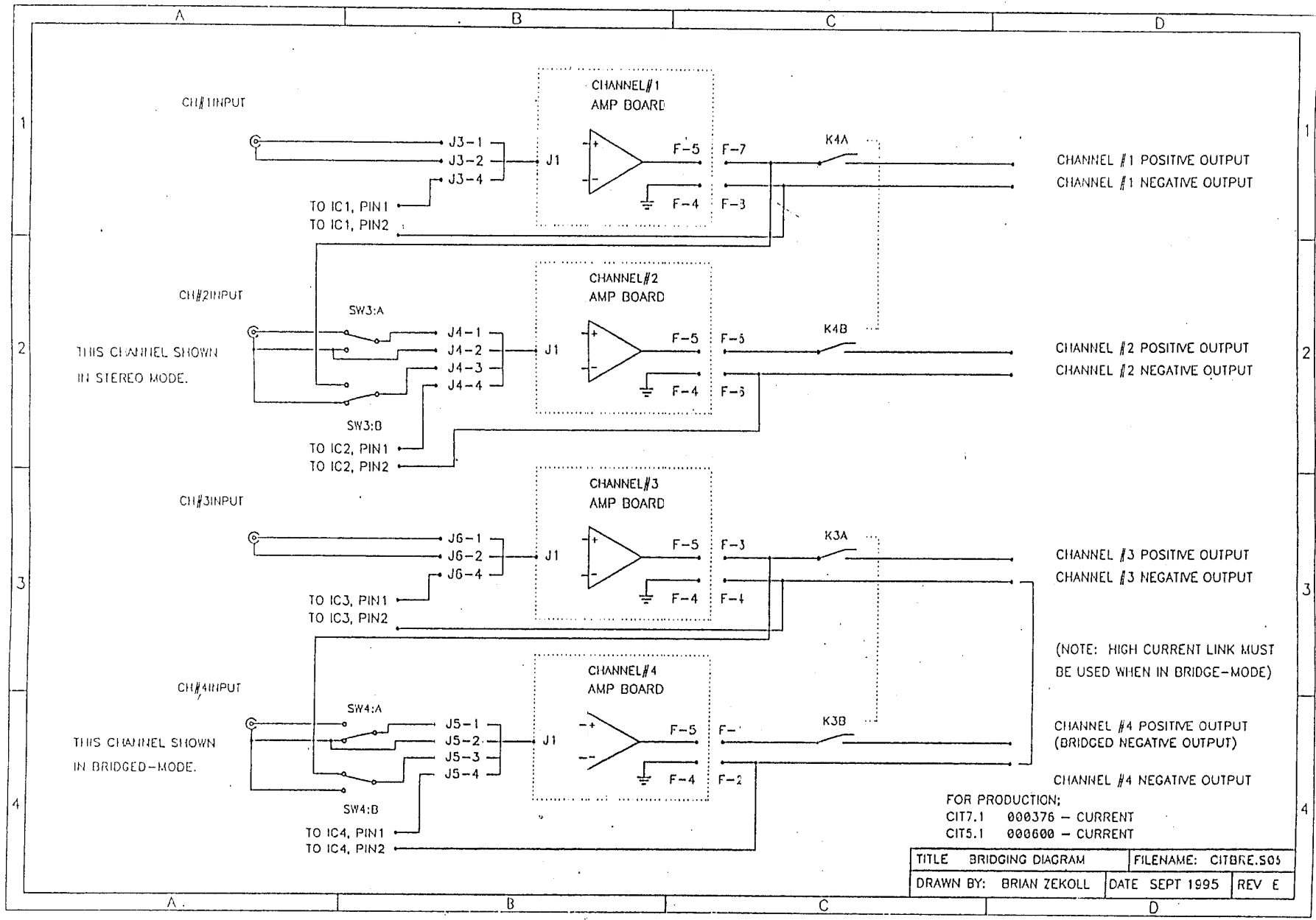
THIS DIAGRAM IS FOR CITATION 5.1,  
AND 7.1 AMPLIFIERS.

COPY

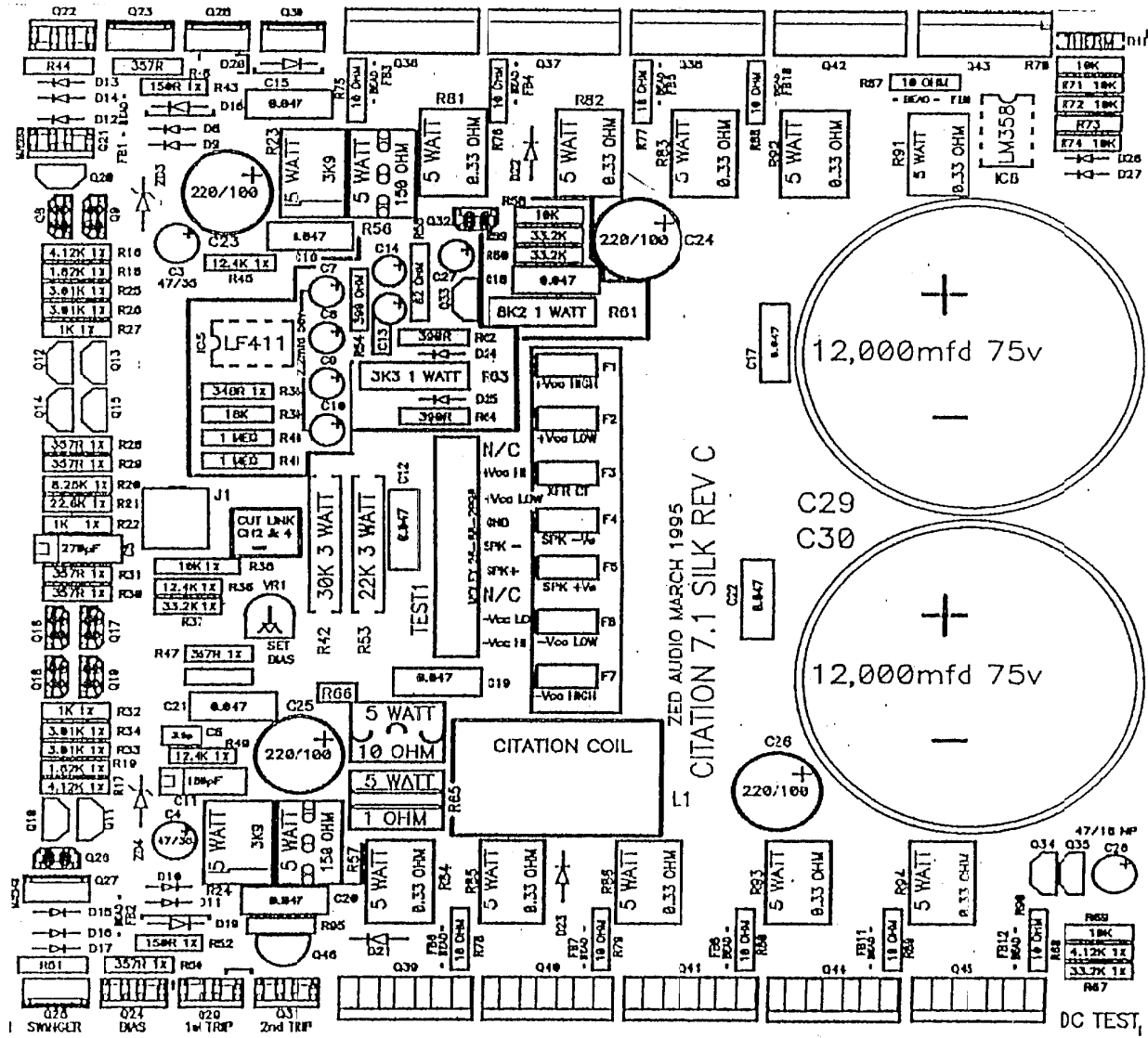
TITLE	REV E&F 240 VOLT	FILENAME	WIRINGEF.S24
DRAWN BY	R. ZEKOLL	DATE	JAN 1996
REV E & F			

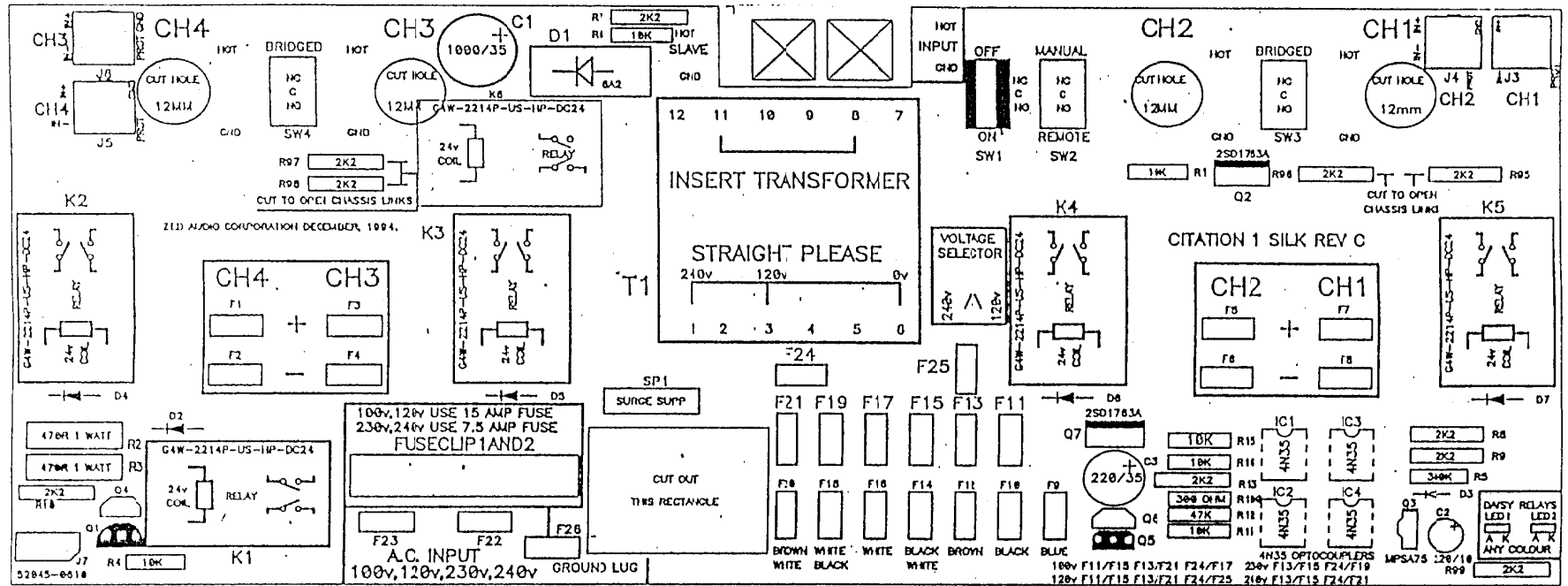


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Adoc

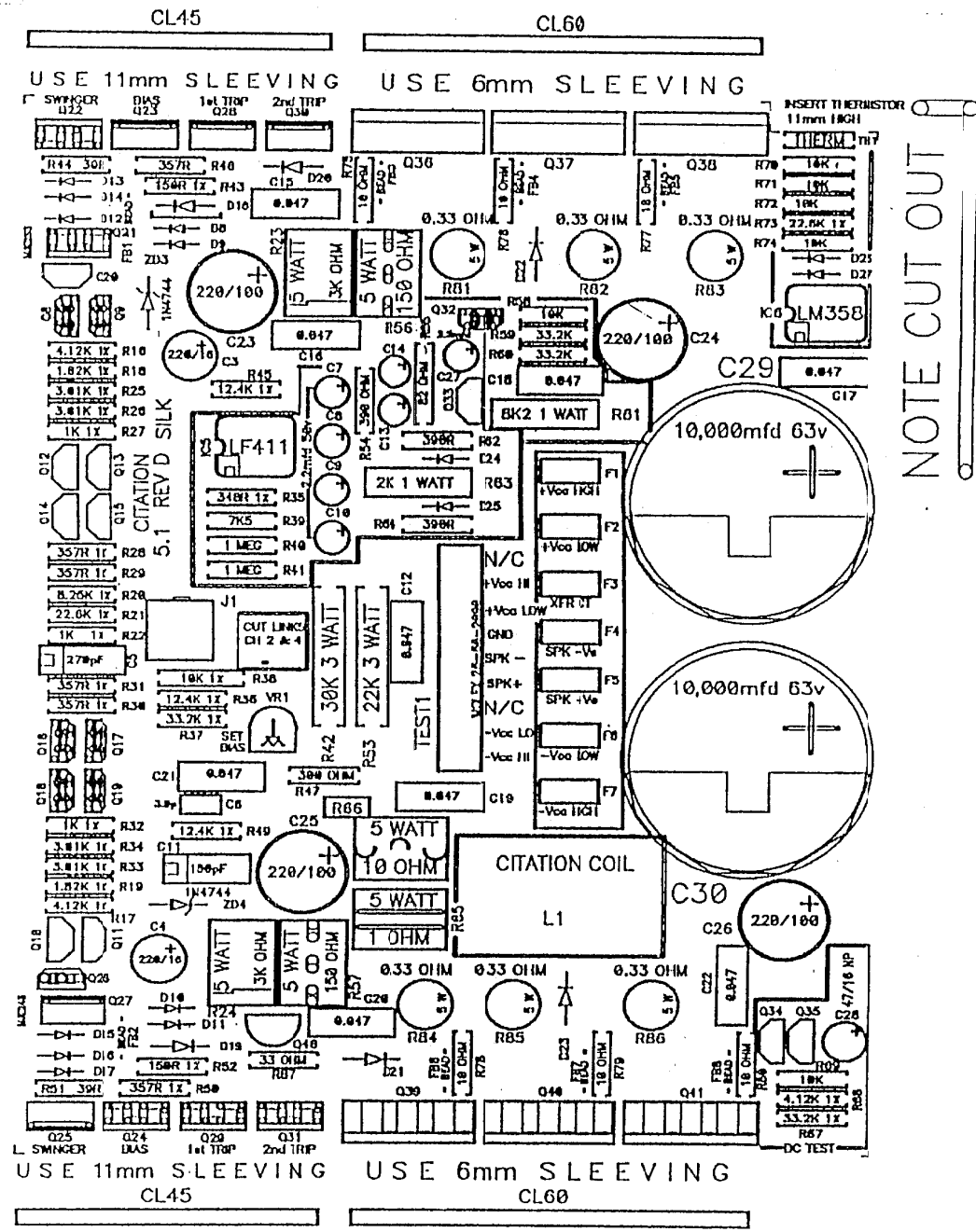




C. + 1 REV C

COPY

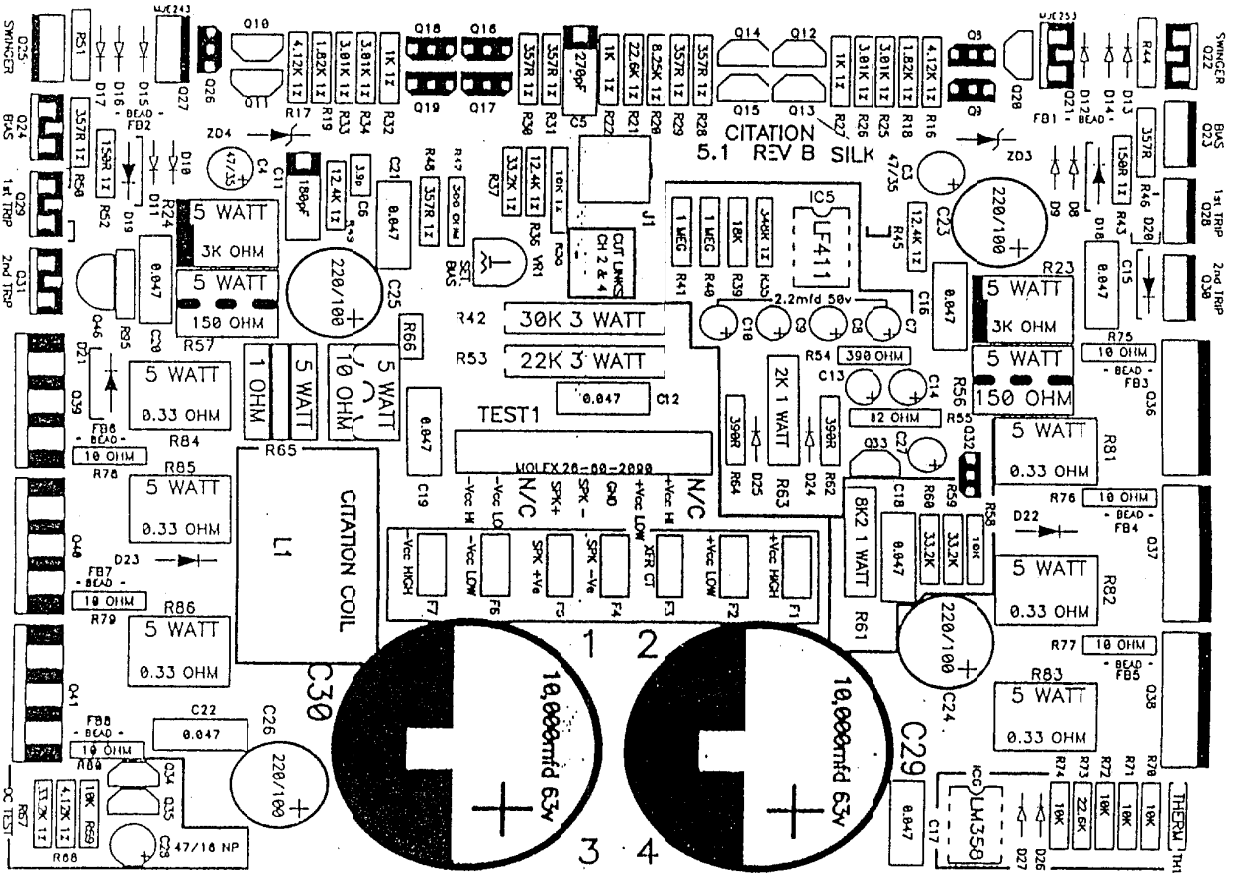
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NOTE CUT OUT

USE 11mm SLEEVING  
CL45

USE 6mm SLEEVING  
CL60



1  
2  
3  
4



CIT71C BOM

Quantity	Type	Value	Ref Designators
7	MALE FAST-ON	MALE FAST-ON	F1,F2,F3,F4,F5,F6,F7
1	MOLEX CONNECTOR	39-28-1043	J1
1	NON POLAR	47/16	C28
1	NPN	2SC2061	Q46
10	NPN	2SC2389	Q10,Q11,Q12,Q13,Q14,Q15, Q20,Q33,Q34,Q35
5	NPN	2SC3281	Q36,Q37,Q38,Q42,Q43
1	NPN	2SC3423-Y	Q28
1	NPN	2SD1763A	Q25
1	NPN	MJE243	Q27
1	NPN	MJE15030	Q30
1	NPN	TIP41C	Q23
8	PNP	2SA1038	Q8,Q9,Q16,Q17,Q18,Q19,Q26, Q32
5	PNP	2SA1302	Q39,Q40,Q41,Q44,Q45
1	PNP	2SA1360	Q29
1	PNP	2SB1186A	Q22
1	PNP	MJE253	Q21
1	PNP	MJE15031	Q31
1	PNP	TIP42C	Q24
9	POLY PROP DFP	0.047	C12,C15,C16,C17,C18,C19, C20,C21,C22
1	POLY PROP DFP	180pF	C11
1	POLY PROP DFP	270pF	C5
1	PT6V TRIMMER	220 OHM	VR1
1	TEST HEADER	26-60-2090	TEST1
1	THERMISTOR	100K	TH1

COPY

## CIT1.PCB REV-B, C PARTS LIST

Quantity	Type	Value	Ref Designators
2	1 WATT RESISTOR	470 OHM	R2,R3
10	1/2WATT RESISTOR	2K2	R7,R8,R9,R10,R13,R95,R96, R97,R98,R99
6	1/4WATT RESISTOR	10K	R1,R4,R6,R11,R14,R15
1	1/4WATT RESISTOR	47K	R12
1	1/4WATT RESISTOR	360K	R5
5	DIODE	1N4004	D2,D4,D5,D6,D7
1	DIODE	1N4148	D3
1	DIODE	6A2	D1
3	DPDT TOGGLE		SW2,SW3,SW4
6	DPST 24v RELAY	G4W-2214P-US-HP	K1,K2,K3,K4,K5,K6
1	ELEC CAP	220/35	C3
1	ELECTROLYTIC CAP	220/10	C2
1	ELECTROLYTIC CAP	1000/35	C1
1	FUSE CLIP PAIR	FUSE CLIP PAIR	FUSECLIP1AND2
2	LED	ANY COLOUR LED	LED1,LED2
26	MALE FAST-ON	MALE FAST-ON	F1,F2,F3,F4,F5,F6,F7,F8, F9,F10,F11,F12,F13,F14, F15,F16,F17,F18,F19,F20, F21,F22,F23,F24,F25,F26 J3,J4,J5,J6
4	MOLEX		J7
1	MOLEX CONNECTOR	52045-0610	J7
2	NPN	2SC2389	Q4,Q6
2	NPN	2SD1763A	Q2,Q7
4	OPTOCOUPLER	4N35	IC1,IC2,IC3,IC4
1	PNP	2SA935	Q1
1	PNP	2SA1038	Q5
1	PNP DARLINGTON	MPSA75	Q3
1	SPDT ROCKER		SW1
1	SUPPRESSOR	SG32	SP1
1	TRANSFORMER	CIT 1 XFR	T1

COPY

CIT1.PCB REV-B, C PARTS LIST

CIT1E BOM

Quantity	Type	Value	Ref Designators
2	1 WATT RESISTOR	470 OHM	R3,R4
9	1/2W RESISTOR	2K2	R6,R8,R9,R19,R23,R24,R25, R26,R27
1	1/2WATT RESISTOR	2K2	R7
8	1/4W RESISTOR	10K	R2,R5,R12,R14,R16,R21,R22, R28
4	1/4W RESISTOR	51K	R13,R15,R17,R18
1	1/4W RESISTOR	100K	R20
1	1/4W RESISTOR	680K	R11
1	1/4WATT RESISTOR	10K	R1
4	4N35/H11A1	4N35/H11A1	IC1,IC2,IC3,IC4
8	DIODE	1N4004	D1,D2,D7,D8,D9,D10,D11,D12
4	DIODE	1N4148	D3,D4,D5,D6
3	DPDT TOGGLE		SW2,SW3,SW4
4	DPST 24v RELAY	G4W-2214P-US-HP	K1,K2,K3,K4
1	ELECTROLYTIC CAP	10/35	C1
1	ELECTROLYTIC CAP	1000/35	C3
1	FUSE CLIP/PAIR	100 056 LIL FUSE	FCLIP2
1	FUSE CLIP PAIR	FUSE CLIP PAIR	FUSECLIP1+2
2	LED	ANY COLOUR LED	LED1,LED2
1	LM358	LM358	IC5
26	MALE FAST-ON	MALE FAST-ON	F1,F2,F3,F4,F5,F6,F7,F8, F9,F10,F11,F12,F13,F14, F15,F16,F17,F18,F19,F20, F21,F22,F23,F24,F25,F26
4	MOLEX		J3,J4,J5,J6
1	MOLEX CONNECTOR	52045-0610	J7
6	NPN	2SC2389	Q2,Q3,Q4,Q5,Q6,Q7
2	NPN	2SD1763A	Q1,Q8
1	POLY CAP	0.01mfd 100v	C2
1	SPDT ROCKER		SW1
1	SURGE SUPPRESSOR		SURGE1
1	TRANSFORMER	CIT 1 TRANSFRMR	T1

COPY