

CMA Series

# Schematic

**B I A M P<sup>®</sup>**

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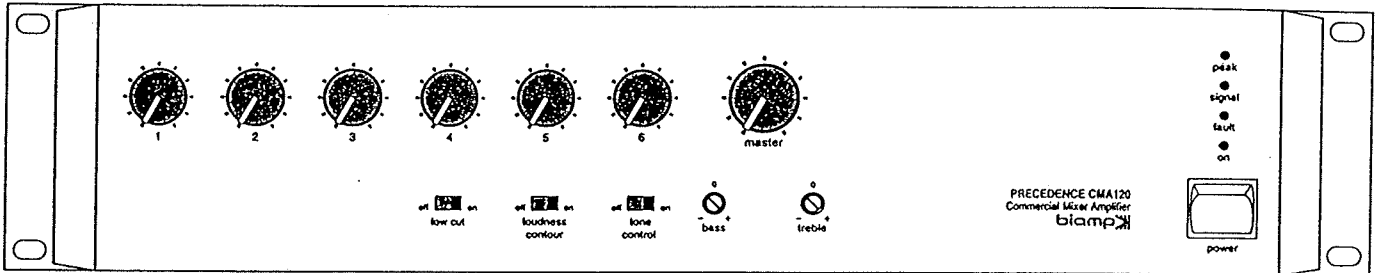
S Y S T E M S





# CMA Series

## Commercial Mixer/Amplifiers



The **CMA Series** of commercial mixer/amplifiers combines a versatile 6-input mic/line mixer with either 30 Watt, 60 Watt, or 120 Watt amplification. Mixing functions include mic/line/telephone inputs, selectable automatic & manual channel muting, channel priority assignment, remote level control, tone control, a built-in compressor, an internal chime, phantom power, and extensive output patching. The amplifier includes an output transformer, and provides rated power into direct or distributed speaker systems. The CMA Series carries a five-year warranty.

### FEATURES

- ◆ integrated mixer, power amplifier, and output transformer
- ◆ four electronically balanced microphone/line input channels
- ◆ two transformer balanced microphone/line/tel input channels
- ◆ rear panel trim control & pad switch on each input channel
- ◆ +24 Volt phantom power selectable on each input channel
- ◆ input isolation transformer option on mic/line input channels
- ◆ automatic muting of selected channels (-10, -20, or -40dB)
- ◆ automatic muting triggered by selected "priority" channels
- ◆ manual muting of selected channels (-10, -20, or -40dB)
- ◆ manual muting triggered from remote contact closures
- ◆ remote control of master level via rear panel terminals
- ◆ integral output compressor with rear panel threshold control
- ◆ recessed treble & bass controls plus "loudness" & "low-cut"
- ◆ two insert points for signal processing and remote control
- ◆ two line-outs and one stack-in for system interconnections
- ◆ 30W, 60W, or 120W power into direct or distributed systems
- ◆ front panel indicators for power, fault, signal, and peak
- ◆ internal 'pre-announcement' chime tone with level control
- ◆ input/output connections provided on barrier strip terminals
- ◆ integral security cover and removable rack-wing/handles
- ◆ covered by Five-Year "Gold Seal" Warranty

### ARCHITECT'S & ENGINEER'S SPECIFICATION

(available on floppy disc)

The commercial mixer/amplifier shall provide a 6-input mic/line mixer with an integral power amplifier. Three models shall be available, providing a choice of 30 Watt, 60 Watt, or 120 Watt power amplification. The power amplifier shall include a selectable output transformer, and shall be capable of delivering rated power into direct or distributed speaker systems. Front panel indicators shall be provided for amplifier signal present, peak, and fault.

The mixer shall provide four electronically balanced mic/line input channels and two transformer balanced mic/line/telephone input channels. Input transformers shall be optional on the mic/line channels. Each channel shall include a rear panel trim control, a front panel level control, and a +24V phantom power switch. Automatic and/or manual muting, by -10dB, -20dB, or -40dB, shall be selectable on each channel. Automatic muting shall be triggered by selected priority channels and manual muting shall be triggered by external contact closures. The output section of the mixer shall include a master level control, recessed tone controls with on/off switch, loudness & low-cut filter switches, a built-in compressor with a rear panel threshold control, and an internal pre-announcement chime tone with rear panel level control. Rear panel terminals shall allow remote control of master level. Two separate insert points shall be provided for connection of external signal processing or remote control devices. Two line outputs and one stacking input shall be provided for other system interconnections. All channel input and amplifier output connections shall be on barrier strip screw terminals. The mixer/amplifier shall include a see-through security cover and removable rack-wing/handles.

Frequency Response shall be +0/-1.5dB from 20Hz to 20kHz at rated power into a direct load. Total Harmonic Distortion shall be less than 0.4% at 1kHz at rated power. Equivalent Input Noise shall be -123dB at mic input with 150Ω termination. Signal-to-Noise shall be greater than 78dB from 20Hz to 20kHz at line input at rated power. Power consumption shall be less than 90W (CMA 30), 220W (CMA 60), or 375W (CMA 120). Dimensions shall be 3.68" (2 rack spaces) high, 19" wide, and 14.33" deep. Weight shall be 17.64 lbs. (CMA 30), 22 lbs. (CMA 60), or 26.46 lbs. (CMA 120). The mixer/amplifier shall carry a five-year warranty.

The 30 Watt mixer/amplifier shall be a Precedence CMA 30.

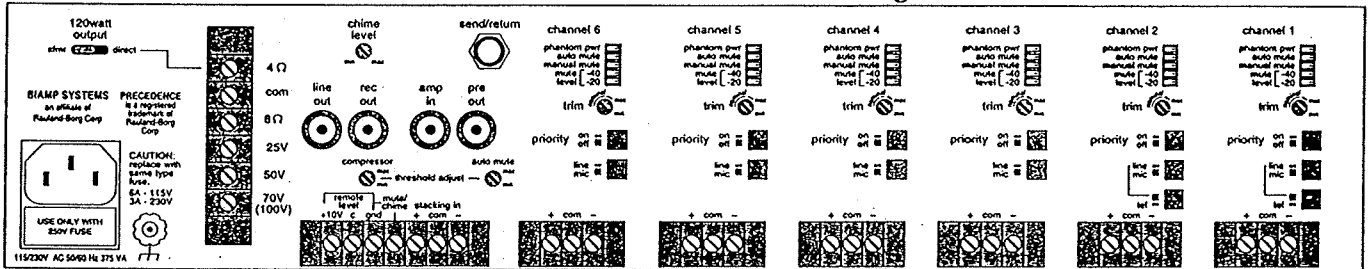
The 60 Watt mixer/amplifier shall be a Precedence CMA 60.

The 120 Watt mixer/amplifier shall be a Precedence CMA 120.

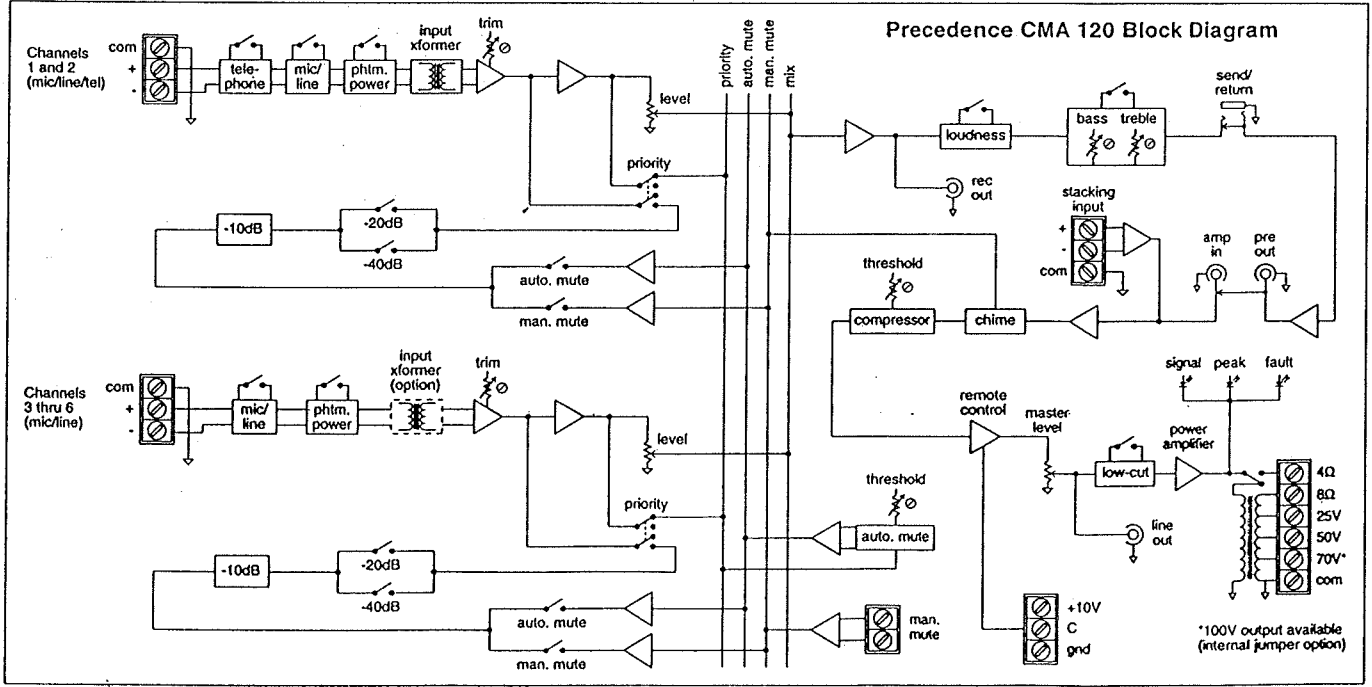
**SPECIFICATIONS**

<b>Output Power:</b>		<b>Input Impedance / Sensitivity</b>	
CMA 30	30 Watts	mic inputs	6kΩ / -77dBu (110μV)
CMA 60	60 Watts	line inputs	15kΩ / -37dBu (14mV)
CMA 120	120 Watts	telephone inputs	600Ω / -60dBu (775μV)
<b>Power Bandwidth (THD &lt; 0.4%):</b>		amplifier input	10kΩ / +4dBu (1.2V)
direct output	20Hz-20kHz	stacking input	20kΩ / -8dBu (300mV)
transformer output	50Hz-20kHz	patch/return input	10kΩ / -8dBu (300mV)
<b>Frequency Response (+0/-1.5dB):</b>		<b>Output Impedance / Level:</b>	
direct output	20Hz-20kHz	preamp output & line output	200Ω / +4dBu (1.2V)
transformer output	50Hz-20kHz	record output	200Ω / +4dBu (1.2V)
<b>Total Harmonic Distortion (1kHz @ rated power):</b>	< 0.2%	patch/send output	50Ω / -8dBu (300mV)
<b>Output Regulation (no load to full load)</b>	< 0.5dB	<b>Amplifier Output Impedance / Level:</b>	
<b>Equivalent Input Noise (mic in, 150Ω termination):</b>	-123dB	<b>CMA 30</b>	<b>CMA 60</b>
<b>Signal-to-Noise Ratio (20Hz-20kHz @ rated power):</b>		4Ω / 11V	4Ω / 16V
line inputs	78dB	8Ω / 16V	8Ω / 22V
telephone inputs	78dB	20.8Ω / 25V	10.4Ω / 25V
master level off	98dB	83.3Ω / 50V	41.7Ω / 50V
<b>Compressor:</b>		163.3Ω / 70V	81.7Ω / 70V
attack time	< 1mSecond	333.3Ω / 100V (opt.)	166.7Ω / 100V (opt.)
release time	> 1 Second	<b>Power Consumption (120VAC 60Hz / 240VAC 50Hz):</b>	
compression ratio	4 : 1	<b>CMA 30</b>	<b>CMA 60</b>
threshold adjust range	15dB	< 90W	< 220W
<b>Dimensions (all models; includes rack/handles &amp; feet):</b>		<b>CMA 120</b>	< 375W
height (two rack spaces)	3.68" (93.5mm)	<b>Weight:</b>	
width	19" (482mm)	CMA 30	17.64 lbs. (8kg)
depth	14.33" (364mm)	CMA 60	22 lbs. (10kg)
		CMA 120	26.45 lbs. (12kg)

**Precedence CMA 120 Rear Panel Diagram**

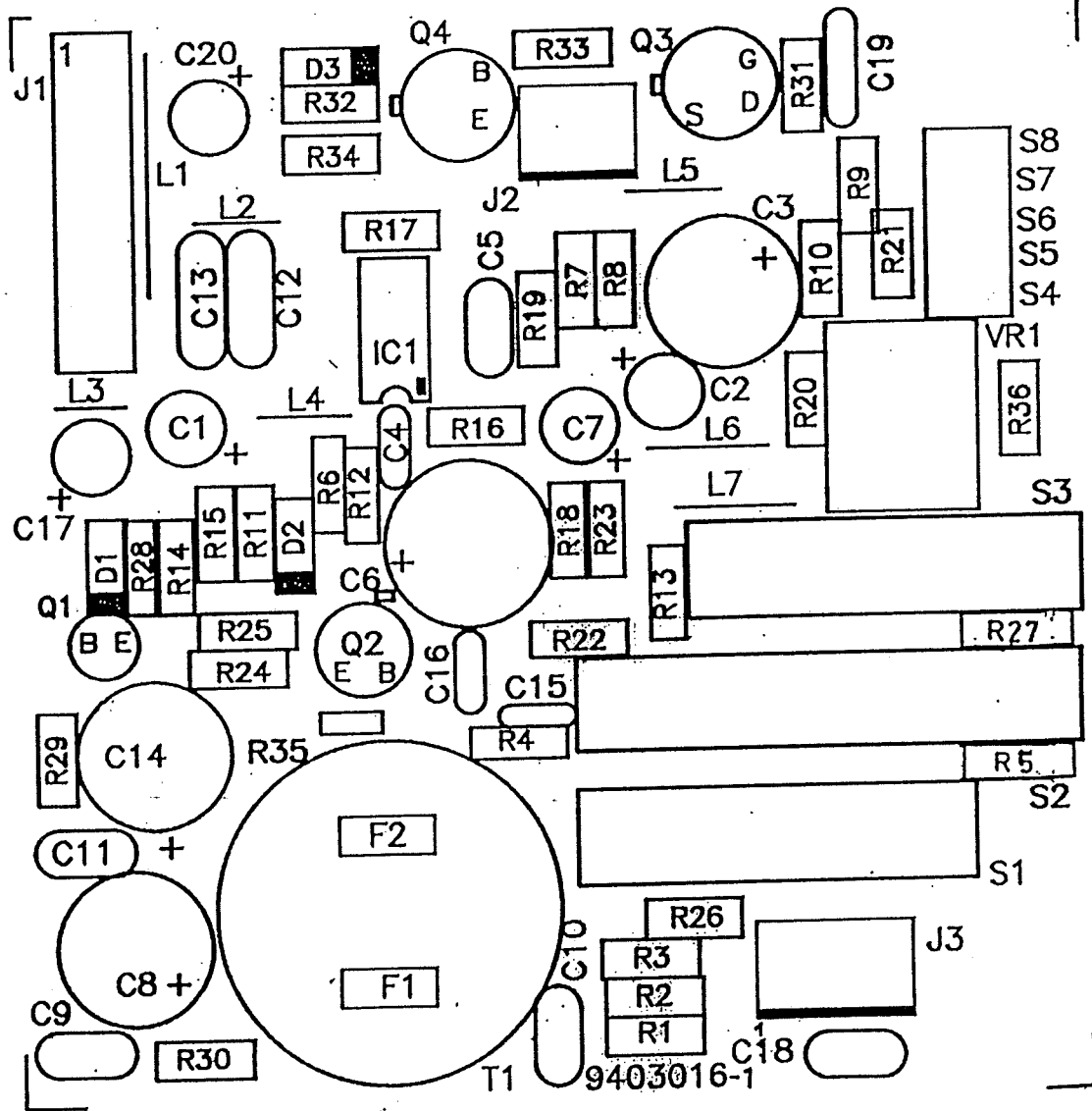


**Precedence CMA 120 Block Diagram**



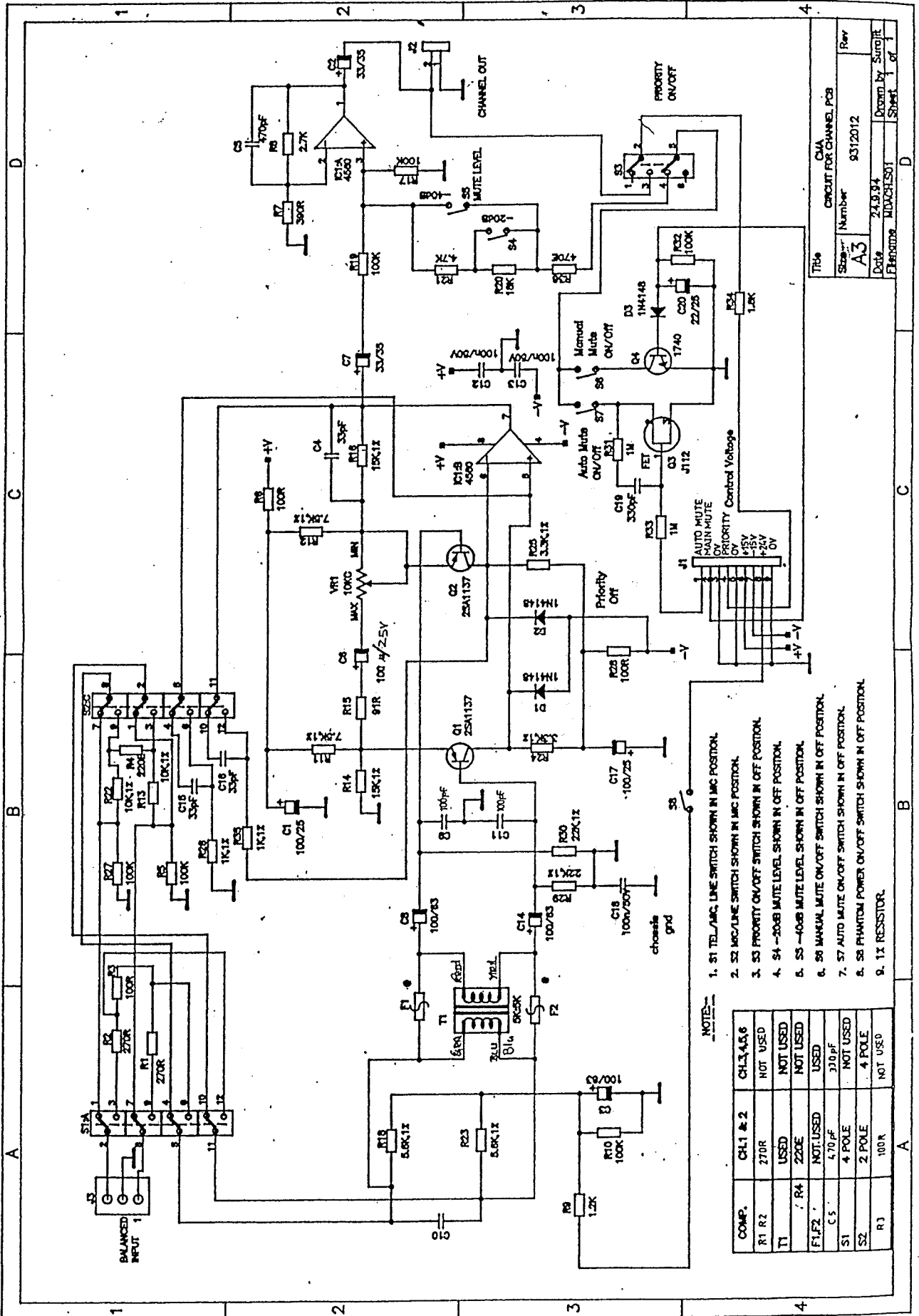
scale - 2 : 1

REDUCE TO 70 mm



CHANNEL PCB  
PCB SIZE = 70 X 73 mm  
PCB NO- 9403016-1  
13.9.94

COMPONENT SIDE  
ARTWORK NO -94036-1



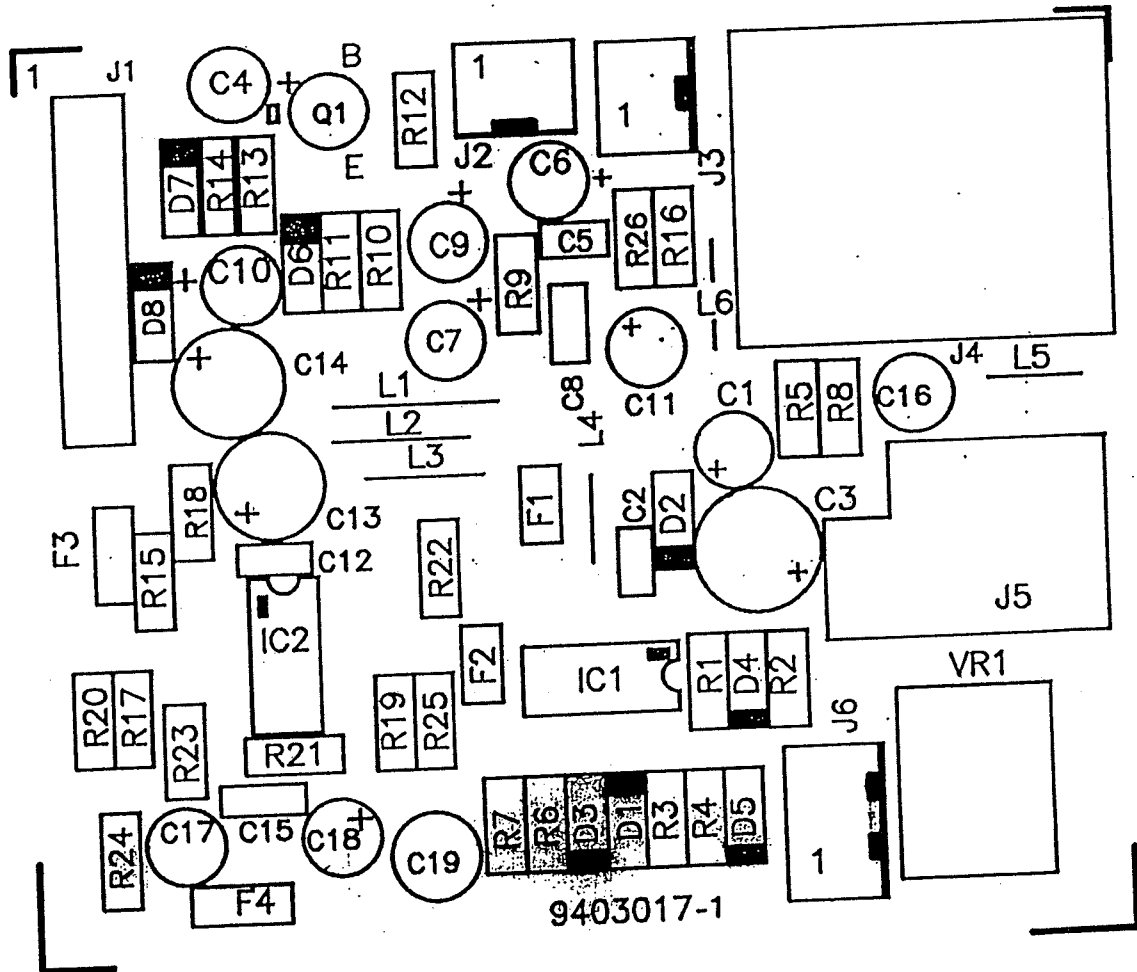
Title: CIRCUIT FOR CHANNEL PCB  
 Sheet Number: A3  
 Date: 24.8.84  
 Drawn by: Suresh  
 Sheet 1 of 1

- NOTES:-
- S1 TEL/MAG. LINE SWITCH SHOWN IN MAG. POSITION.
  - S2 MIC/LINE SWITCH SHOWN IN MIC. POSITION.
  - S3 PRIORITY ON/OFF SWITCH SHOWN IN OFF POSITION.
  - S4 -30dB MUTE LEVEL SHOWN IN OFF POSITION.
  - S5 -60dB MUTE LEVEL SHOWN IN OFF POSITION.
  - S6 MANUAL MUTE ON/OFF SWITCH SHOWN IN OFF POSITION.
  - S7 AUTO MUTE ON/OFF SWITCH SHOWN IN OFF POSITION.
  - S8 PHANTOM POWER ON/OFF SWITCH SHOWN IN OFF POSITION.
  - 1X RESISTOR.

COMP.	CH.1 & 2	CH.3,4,5,6
R1 R2	270R	NOT USED
T1	USED	NOT USED
F1 F2	R4	NOT USED
C3	NOT USED	USED
S1	470PF	330PF
S2	4 POLE	4 POLE
R3	100K	NOT USED

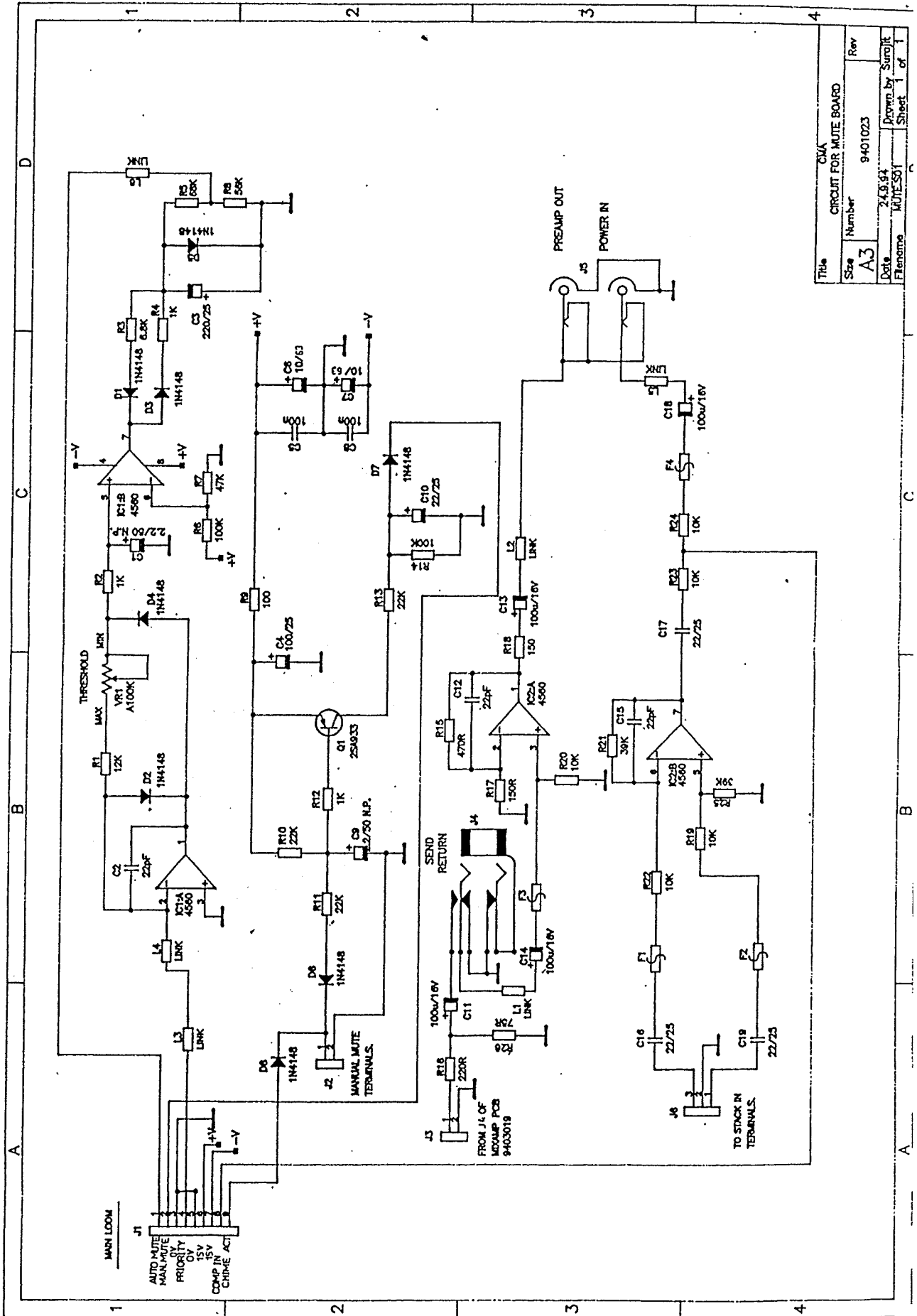
SCALE - 2:1

REDUCE TO 70 mm



CMA MUTE PCB  
PCB SIZE = 70 x 65 mm  
PCB NO -9403017-1  
DATE = 19.7.94

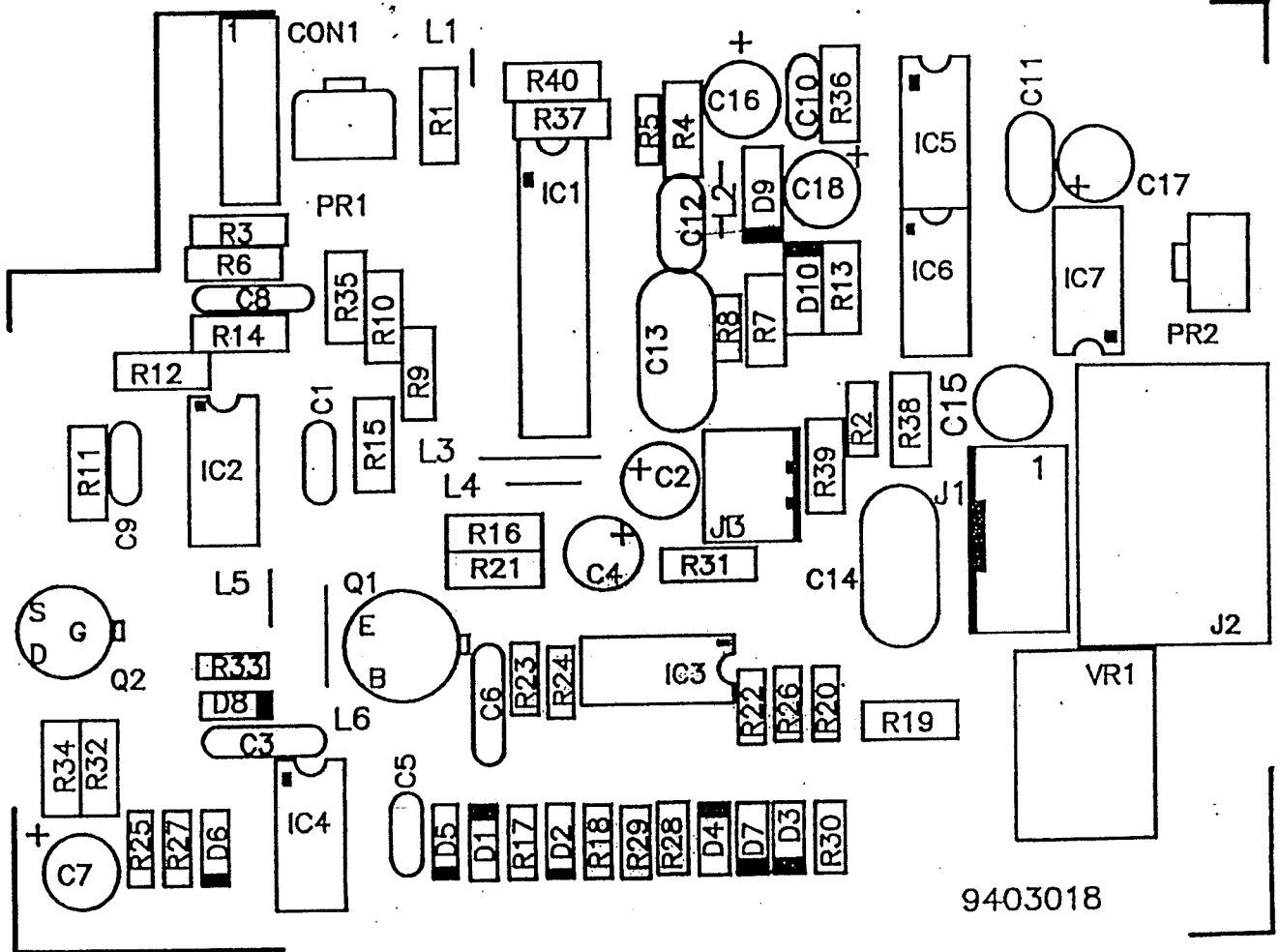
COMPONENT SIDE  
ARTWORK NO -94039



Title		CWA	
Circuit for MUTE BOARD			
Size	Number	9401023	Rev
A3			
Date	2.9.94	Drawn by	Surejit
Filename	MUTESOI	Sheet	1 of 1



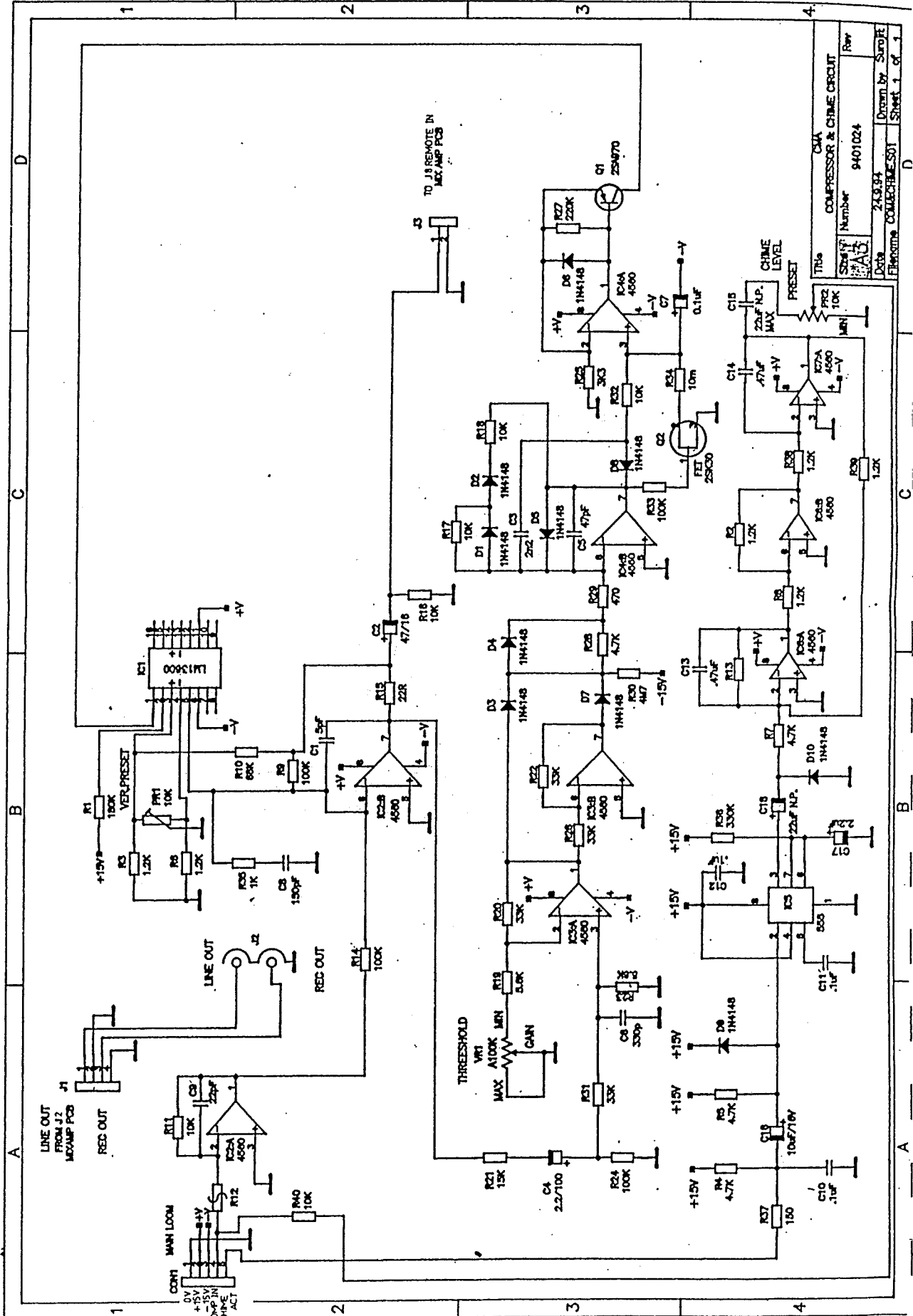
REDUCE TO 84 mm SCALE - 2:1



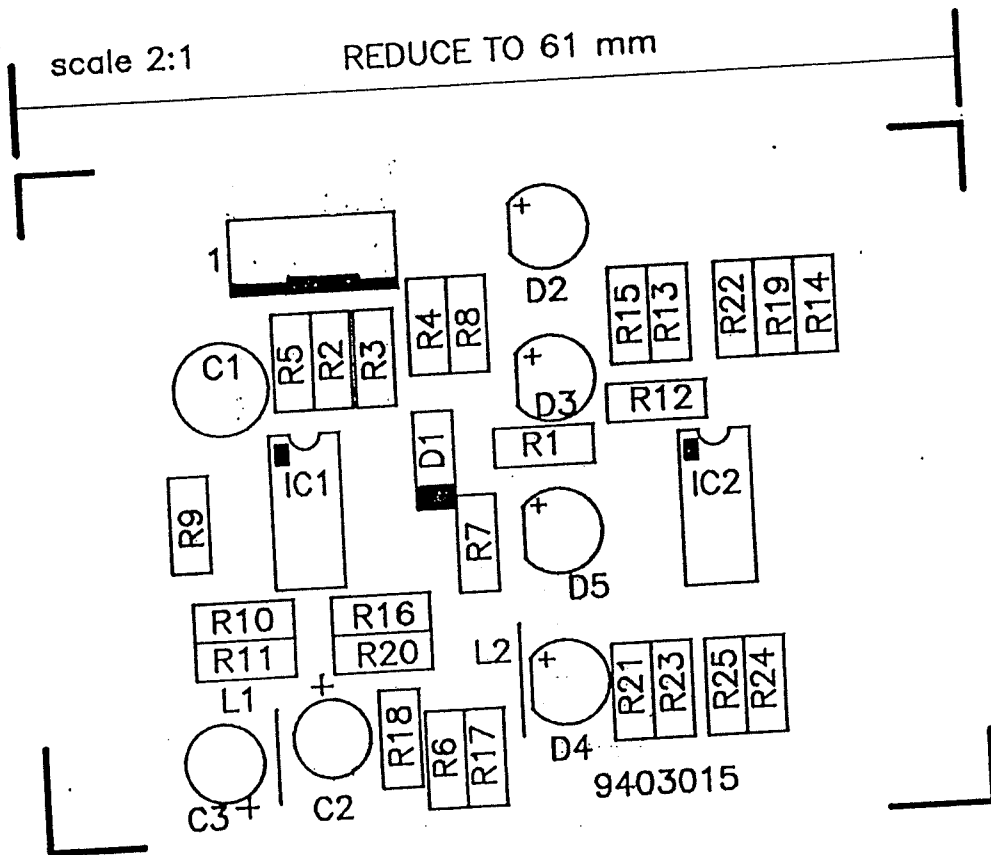
9403018

COMPONENT SIDE  
ARTWORK NO -94042

CMA COMPRESSOR PCB  
PCB SIZE = 84 x 63.5 mm  
PCB NO - 9403018  
DATE - 13.9.94

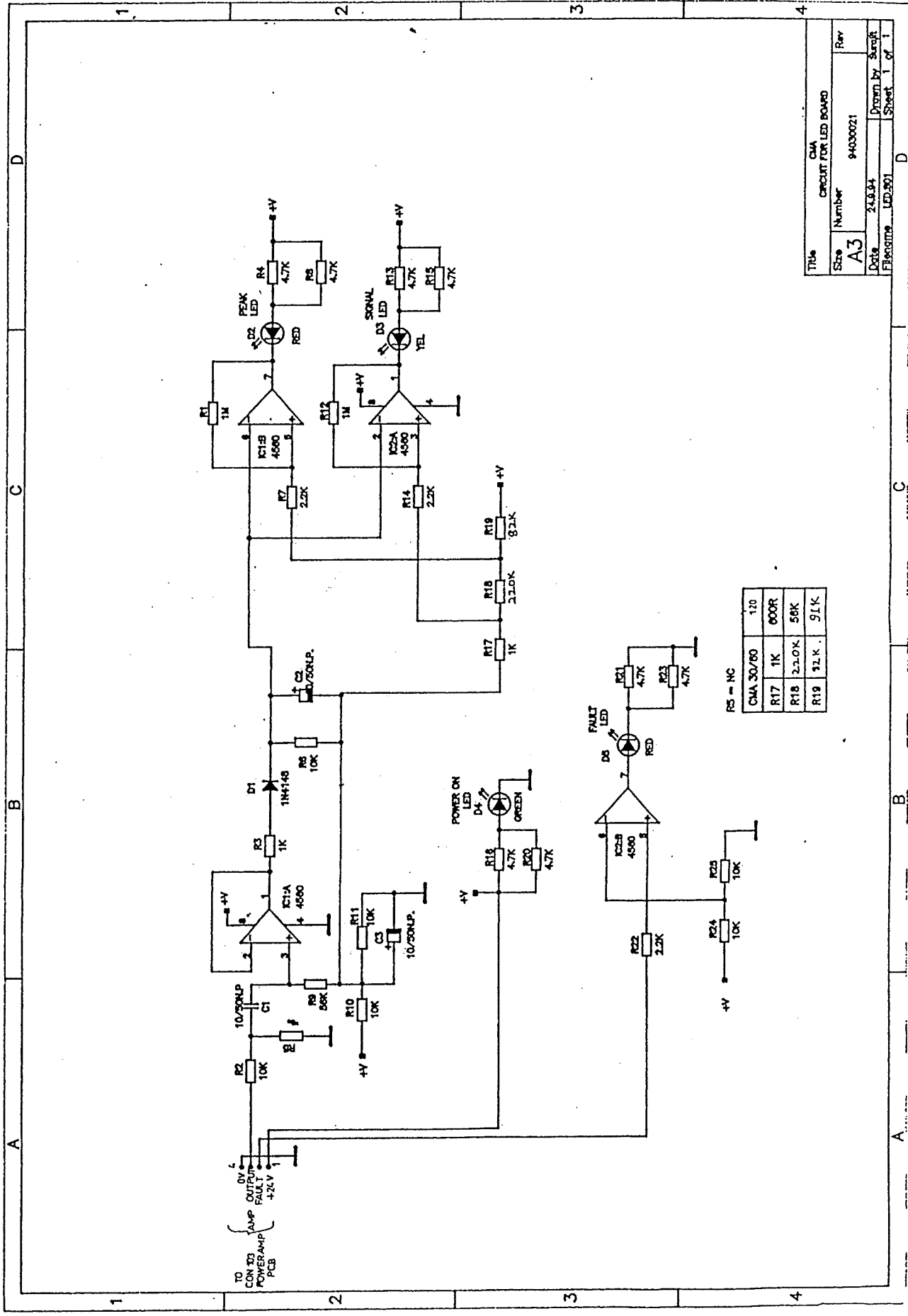


Title	COMA COMPRESSOR & CHIME CIRCUIT
Sheet No.	9401024
Number	9401024
Date	2/3/94
Drawn by	Sundar
Checked by	
Approved by	
File Name	COMA.CIR
Sheet	1 of 1



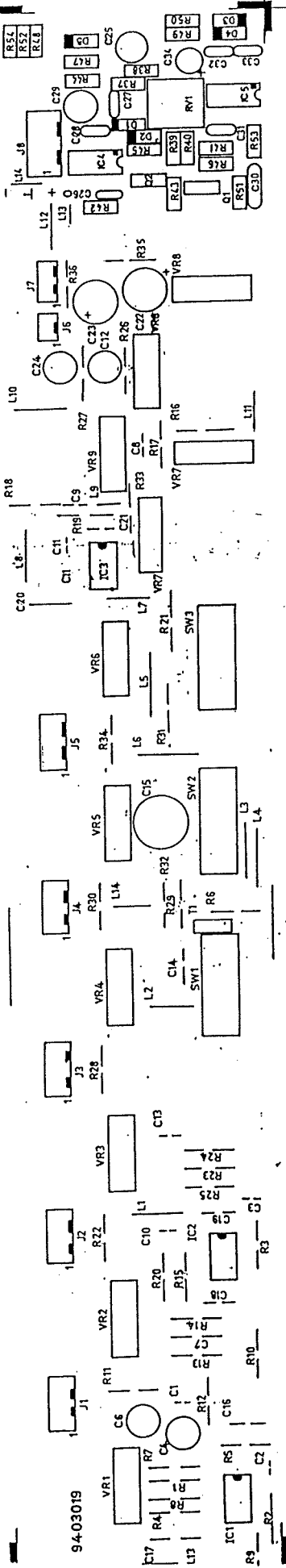
PCB SIZE = 61 x 44 mm  
 CMA LED PCB  
 PCB NO -9403015  
 DATE - 25.7.94

COMPONENT SIDE.  
 ARTWORK NO -94033



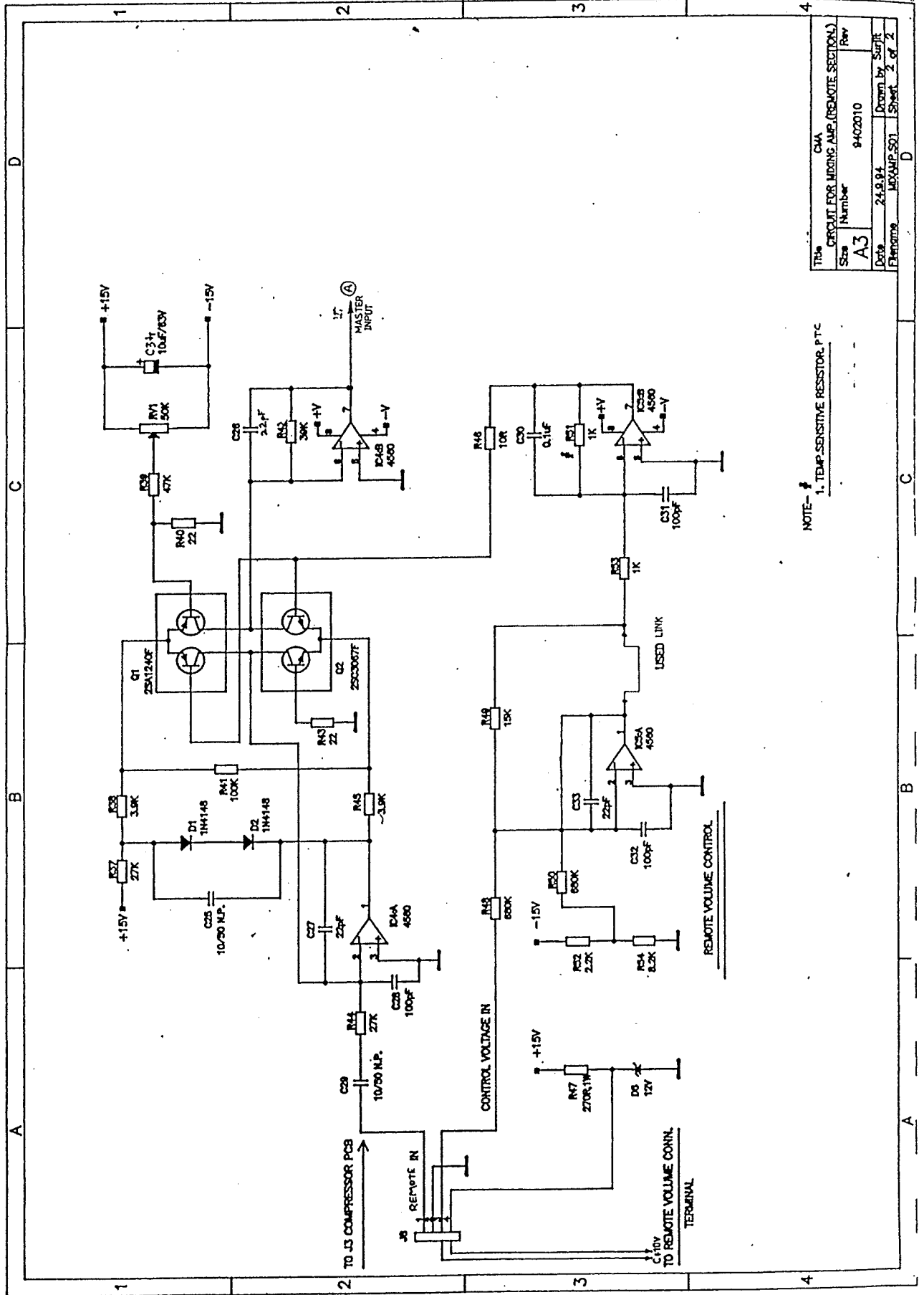
Title	CMA	Rev	
Size	Number	94030021	
Date	24.8.84	Drawn by	Saroff
Filename	LED.801	Sheet	1 of 1

COMPONENT SIDE



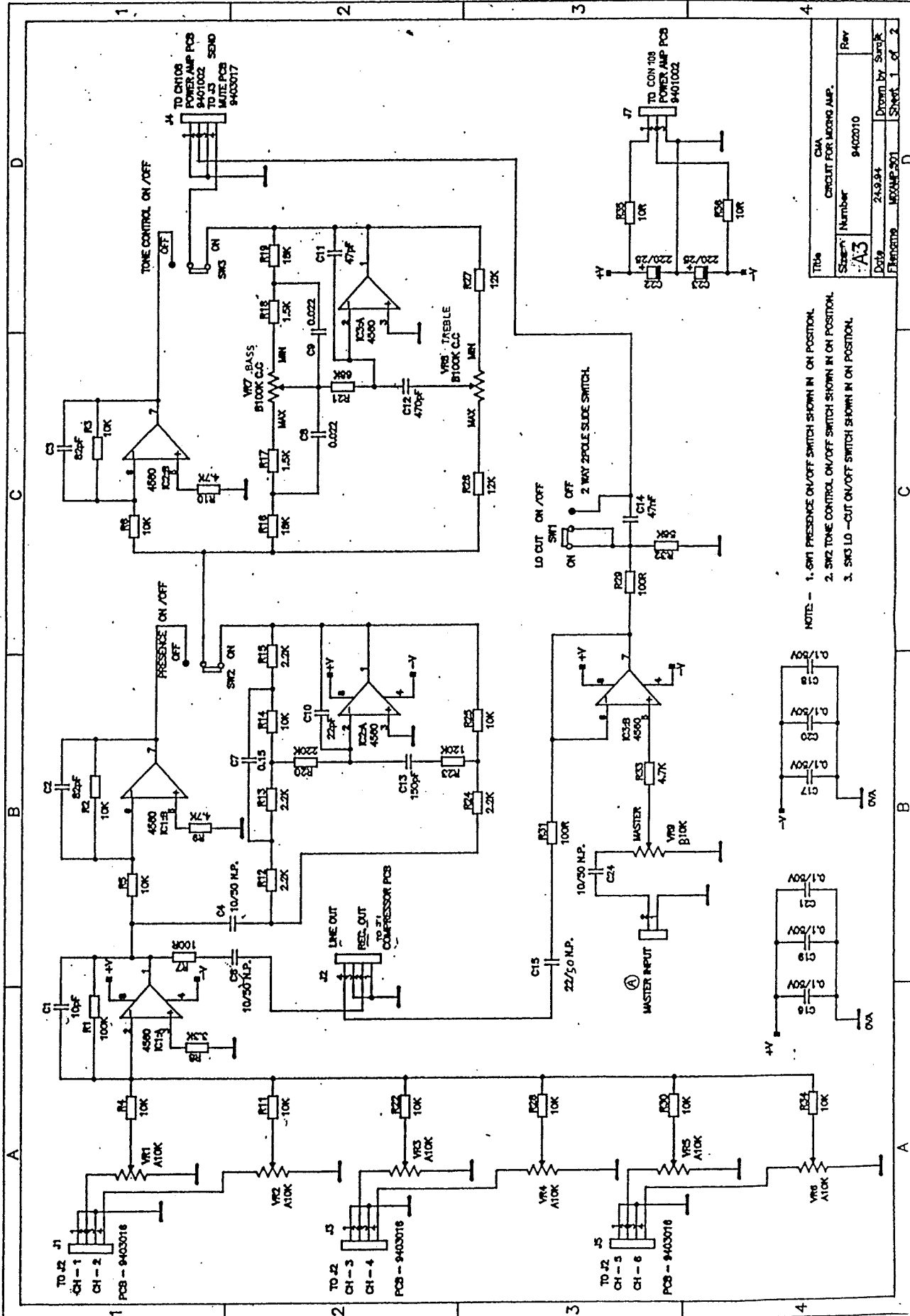
REDUCE TO 306.5 mm  
NEG & POS

CMA MIX AMP PCB  
PCB NO: 9403019



NOTE - 1. TEMP SENSITIVE RESISTOR, P.T.C.

TRM# CMA	
CIRCUIT FOR MIXING AMP. (REMOTE SECTIONS)	
Size	Number
A3	9402010
Date	Drawn by
24.9.94	SMJ/PC
Phonotype	Sheet
MAXAMP-501	2 of 2

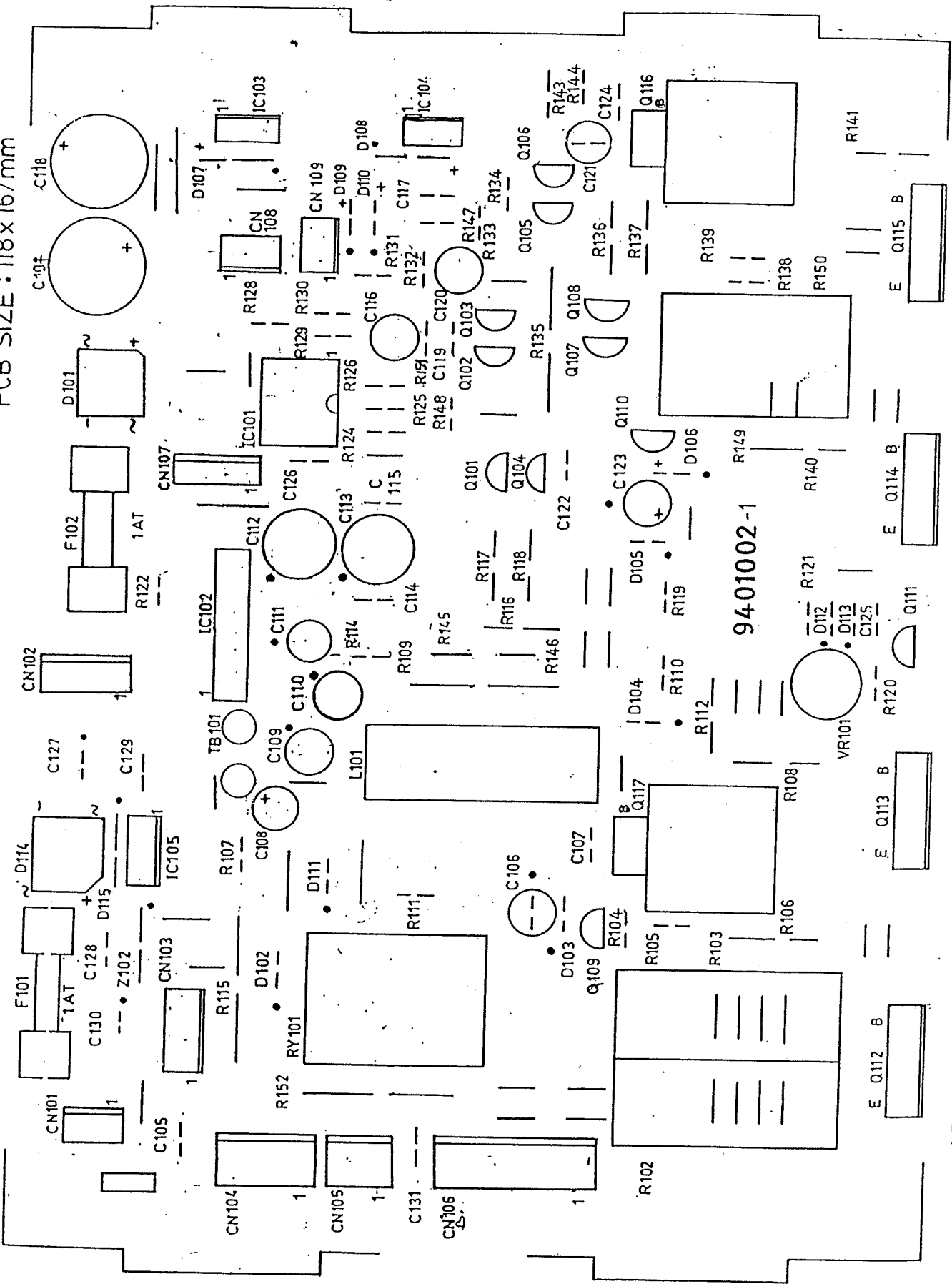


NOTE - 1. SW1 PRESENCE ON/OFF SWITCH SHOWN IN ON POSITION.  
 2. SW2 TONE CONTROL ON/OFF SWITCH SHOWN IN ON POSITION.  
 3. SW3 LO -CUT ON/OFF SWITCH SHOWN IN ON POSITION.

Title		CMA	
Circuit for Mono Amp.			
Sheet	Number	9402010	Rev
A3			
Date	24.9.84	Drawn by	Surok
Filename	MOAMP-201	Sheet	1 of 2

COMPONENT SIDE POWER AMP PCB

PCB SIZE : 118 x 167 mm



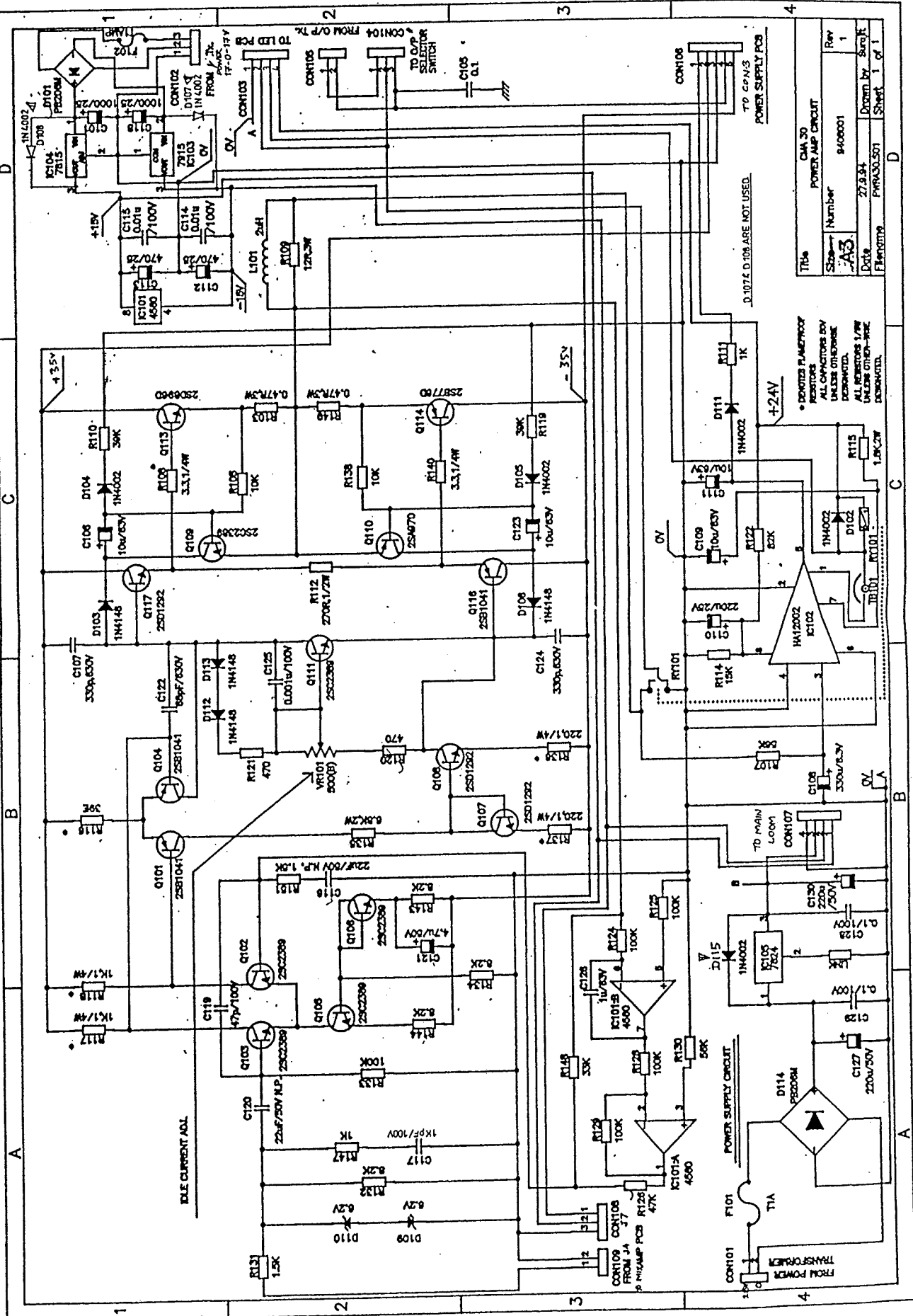
ARTWORK NO: 94005-1

REDUCE TO 160MM

SCALE 2:1



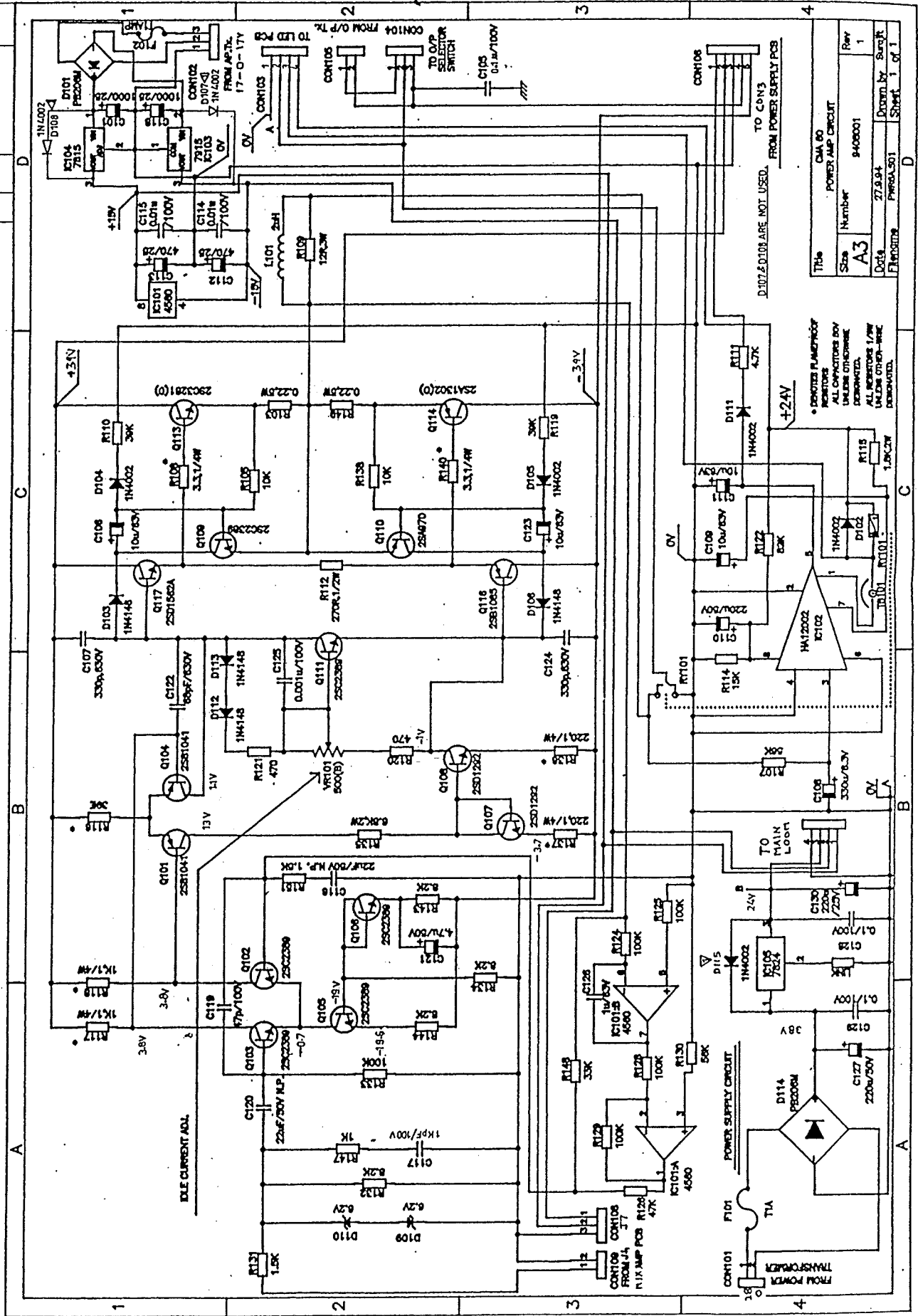
REV D115 WAS 2H3,  
D102 & R107 ADDED.



Title	CMA 30
Number	POWER AMP CIRCUIT
Size	A3
Date	27.9.84
Flattener	PARASO.501
Rev	1
Drawn by	SARJF
Sheet	1 of 1

\* DONOR'S FLAMEPROOF  
RESISTORS  
ALL CAPACITORS BY  
UNLESS OTHERWISE  
DETERMINED.  
ALL RESISTORS 1/4W  
UNLESS OTHER-WISE  
DETERMINED.

26-054	D 15' WAS 2115	DATE
	D 107 & D 108 ASSEMB	

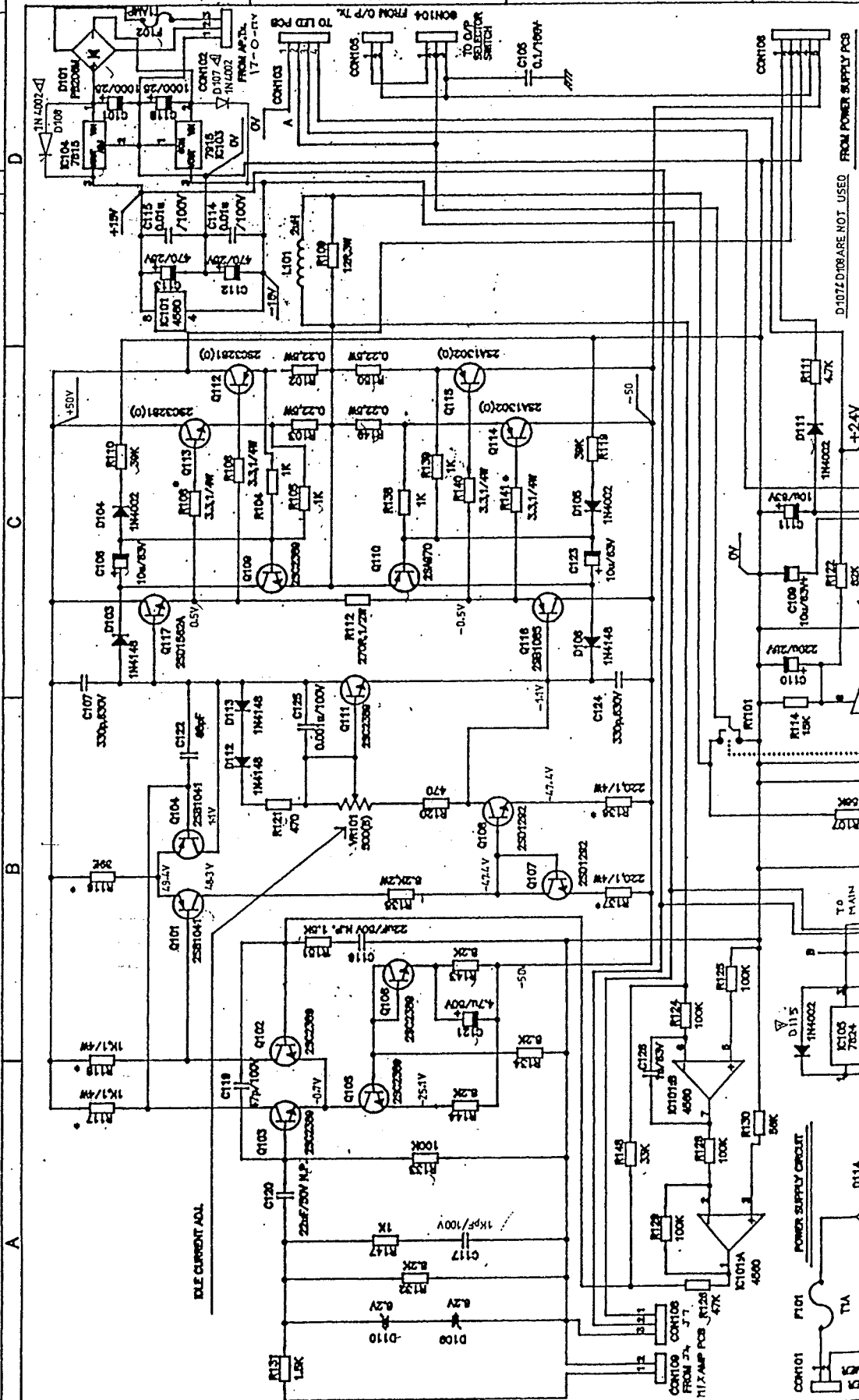


Title	CMA 80	Rev	1
Size	A3	Drawn by	Bergt
Number	940001	Date	27.9.94
Sheet	1 of 1	File Name	PowerSupply

D.107 & D.108 ARE NOT USED. FROM POWER SUPPLY PCB

• DENOTES PLAMPROOF INDICATES ALL CAPACITORS DOY INCLUDE DISCHARGE DEVICES. ALL RESISTORS 1/4W UNLESS INDICATED OTHERWISE.

Check D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D114, D115, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D131, D132, D133, D134, D135, D136, D137, D138, D139, D140, D141, D142, D143, D144, D145, D146, D147, D148, D149, D150, D151, D152, D153, D154, D155, D156, D157, D158, D159, D160, D161, D162, D163, D164, D165, D166, D167, D168, D169, D170, D171, D172, D173, D174, D175, D176, D177, D178, D179, D180, D181, D182, D183, D184, D185, D186, D187, D188, D189, D190, D191, D192, D193, D194, D195, D196, D197, D198, D199, D200, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D214, D215, D216, D217, D218, D219, D220, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230, D231, D232, D233, D234, D235, D236, D237, D238, D239, D240, D241, D242, D243, D244, D245, D246, D247, D248, D249, D250, D251, D252, D253, D254, D255, D256, D257, D258, D259, D260, D261, D262, D263, D264, D265, D266, D267, D268, 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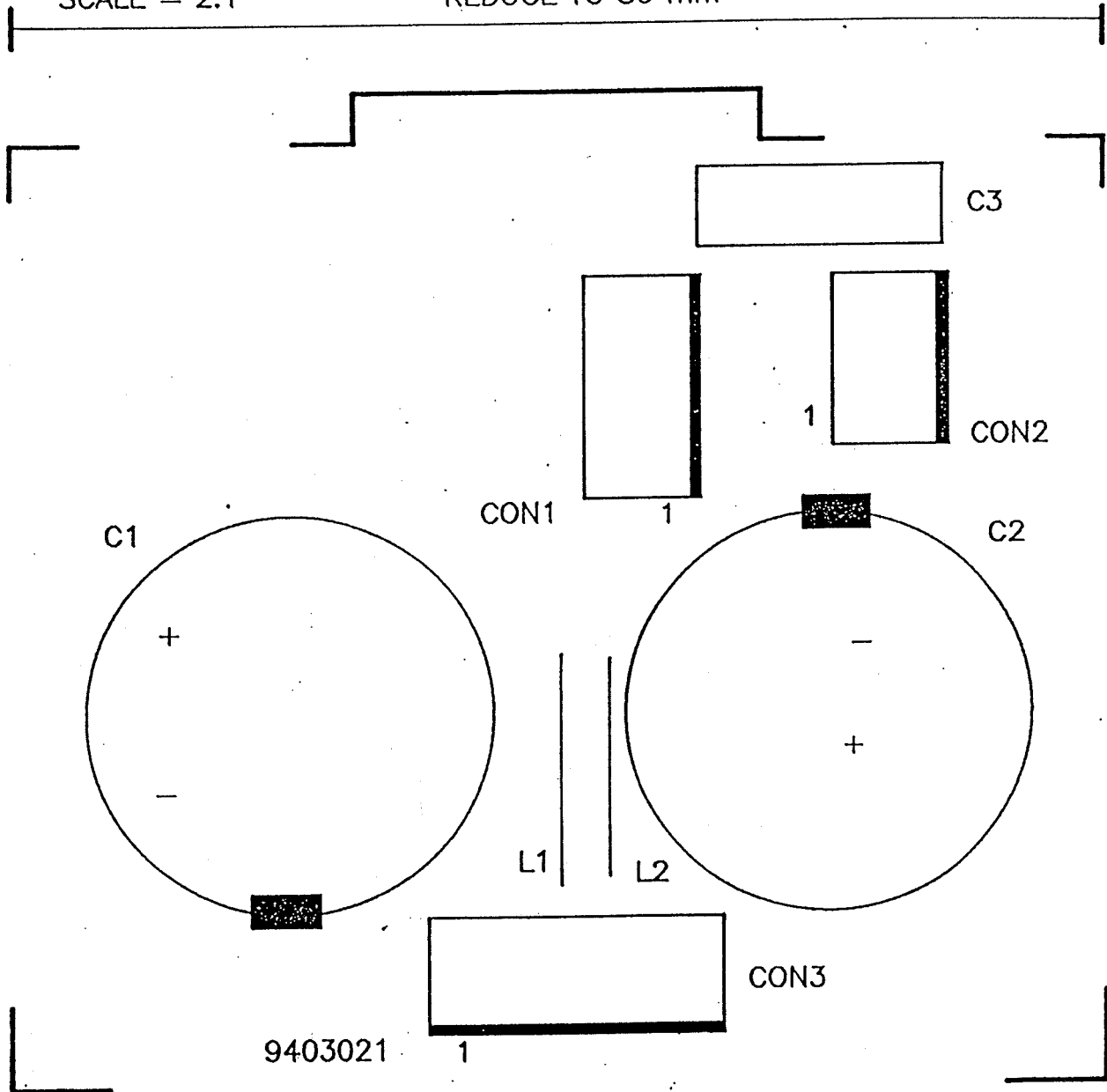
Title	QMA 120 POWER AMP CIRCUIT
Size	A3
Number	940002
Rev	1
Date	27.3.84
Drawn by	Stuart
Checked by	
Project	Part 120.301
Sheet	1 of 1

D-107ED DBARE NOT USED FROM POWER SUPPLY PCB

• INDICATES PUMP/PROOF RESISTORS  
ALL CAPACITORS 50V UNLESS OTHERWISE SPECIFIED  
ALL RESISTORS 1/4W UNLESS OTHERWISE SPECIFIED

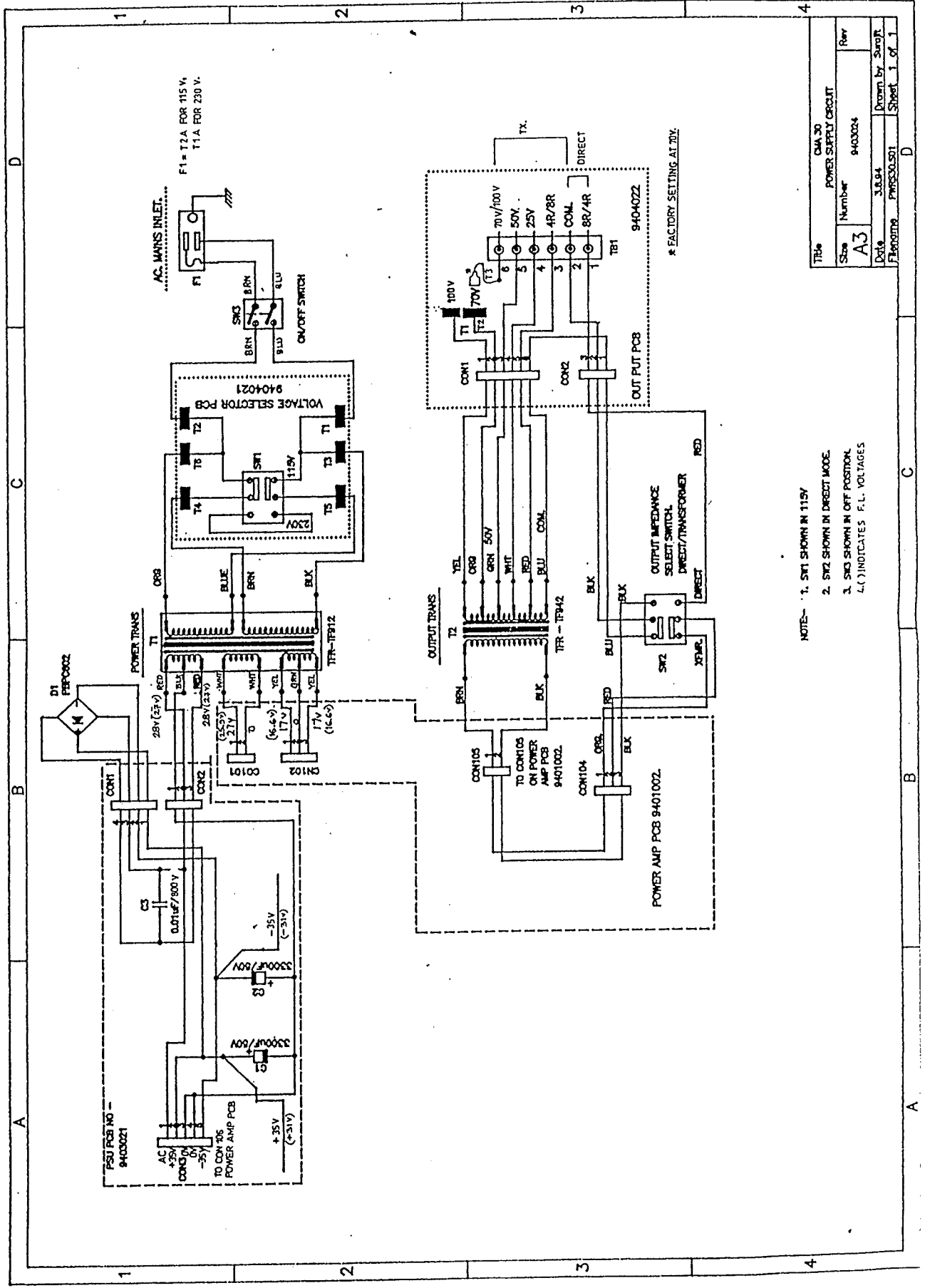
SCALE = 2:1

REDUCE TO 80 mm



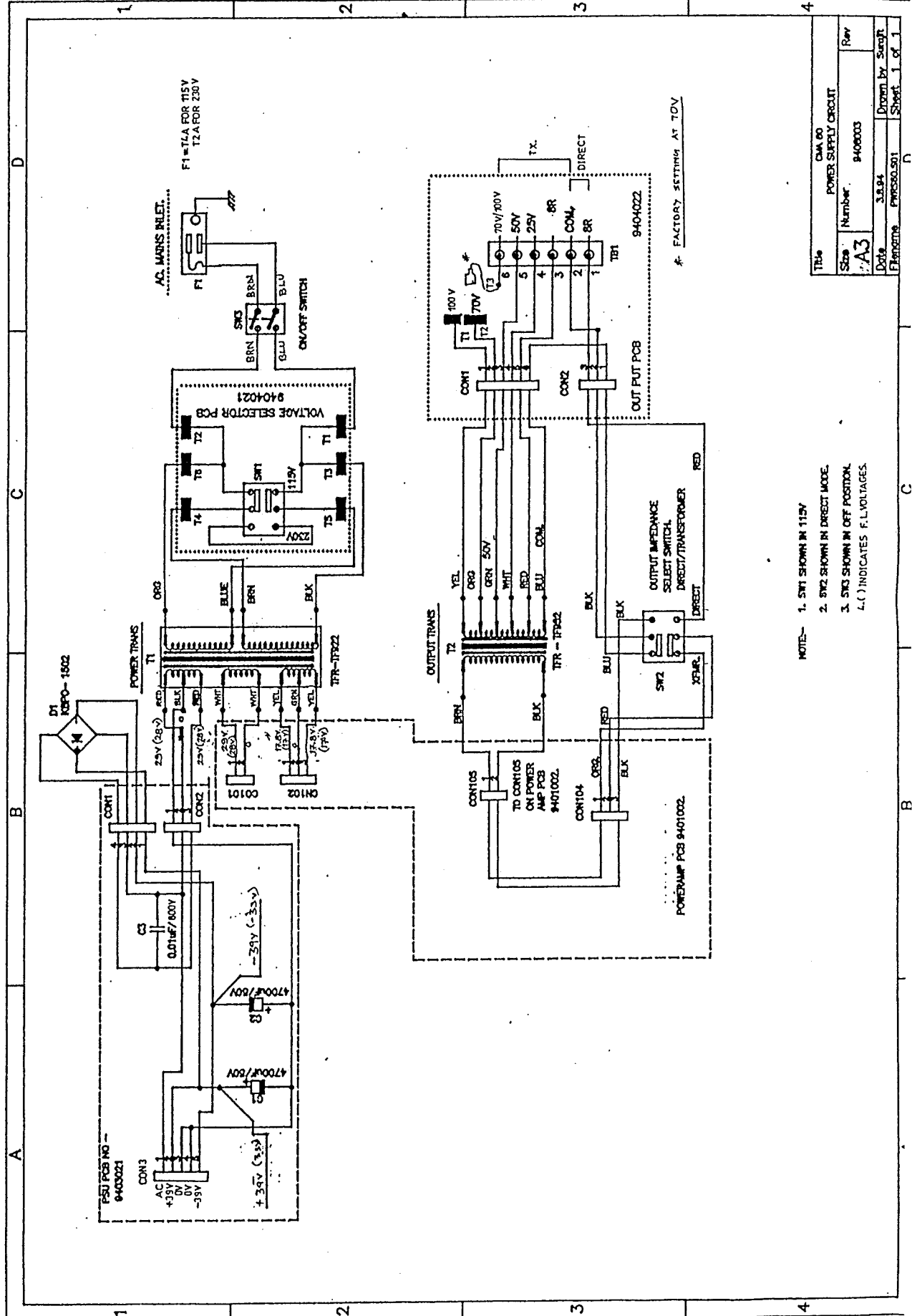
PCB SIZE = 80 X 70 mm  
CMA PSU PCB  
PCB NO -9403021  
DATE - 22.7.94

COMPONENT SIDE  
ARTWORK NO -94049



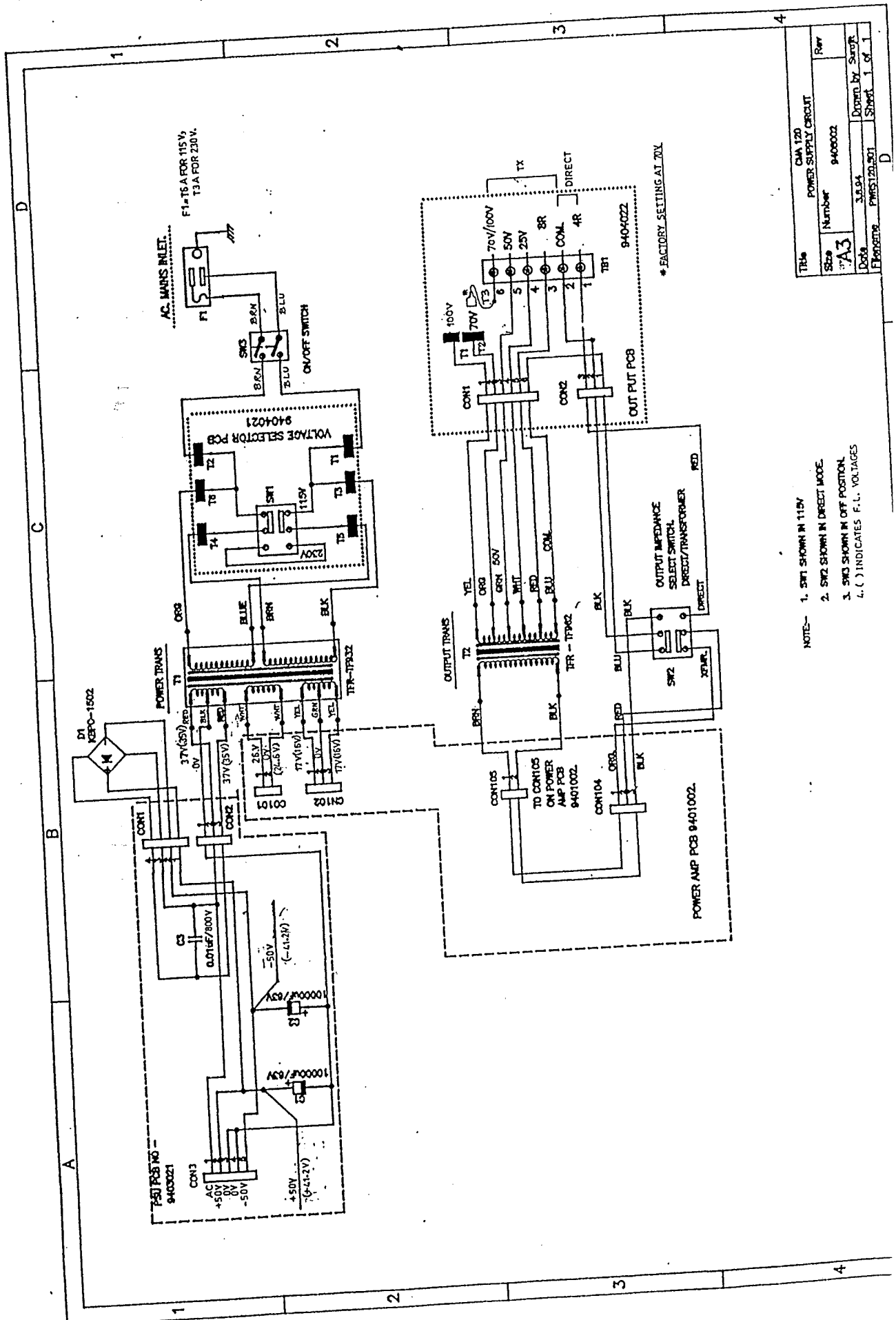
- NOTE--
1. SW1 SHOWN IN 115V
  2. SW2 SHOWN IN DIRECT MODE.
  3. SW3 SHOWN IN OFF POSITION.
  4. ( ) INDICATES F.L. VOLTAGES

Title	CUA 30
Size	POWER SUPPLY CIRCUIT
Number	9403024
Rev	
Date	3.6.94
Drawn by	Swoff
Checked by	PWFSS0301
Sheet	1 of 1



- NOTES--
1. SW1 SHOWN IN 115V
  2. SW2 SHOWN IN DIRECT MODE.
  3. SW3 SHOWN IN OFF POSITION.
  4. ( ) INDICATES F.L.VOLTAGES

Title	CMA 00 POWER SUPPLY CIRCUIT		
Size	Number	9400003	
Drawn by	S.S.P.4		
Checked by	P.R.S.S.0.501		
Sheet	1	of	1



- NOTE--
1. SW1 SHOWN IN 115V
  2. SW2 SHOWN IN DIRECT MODE
  3. SW3 SHOWN IN OFF POSITION
  4. ( ) INDICATES F.L. VOLTAGES

Title	CH 120
Number	POWER SUPPLY CIRCUIT
Size	9408002
Rev	
Date	3.6.94
Drawn by	Suroj
Checked by	
Sheet	1 of 1

