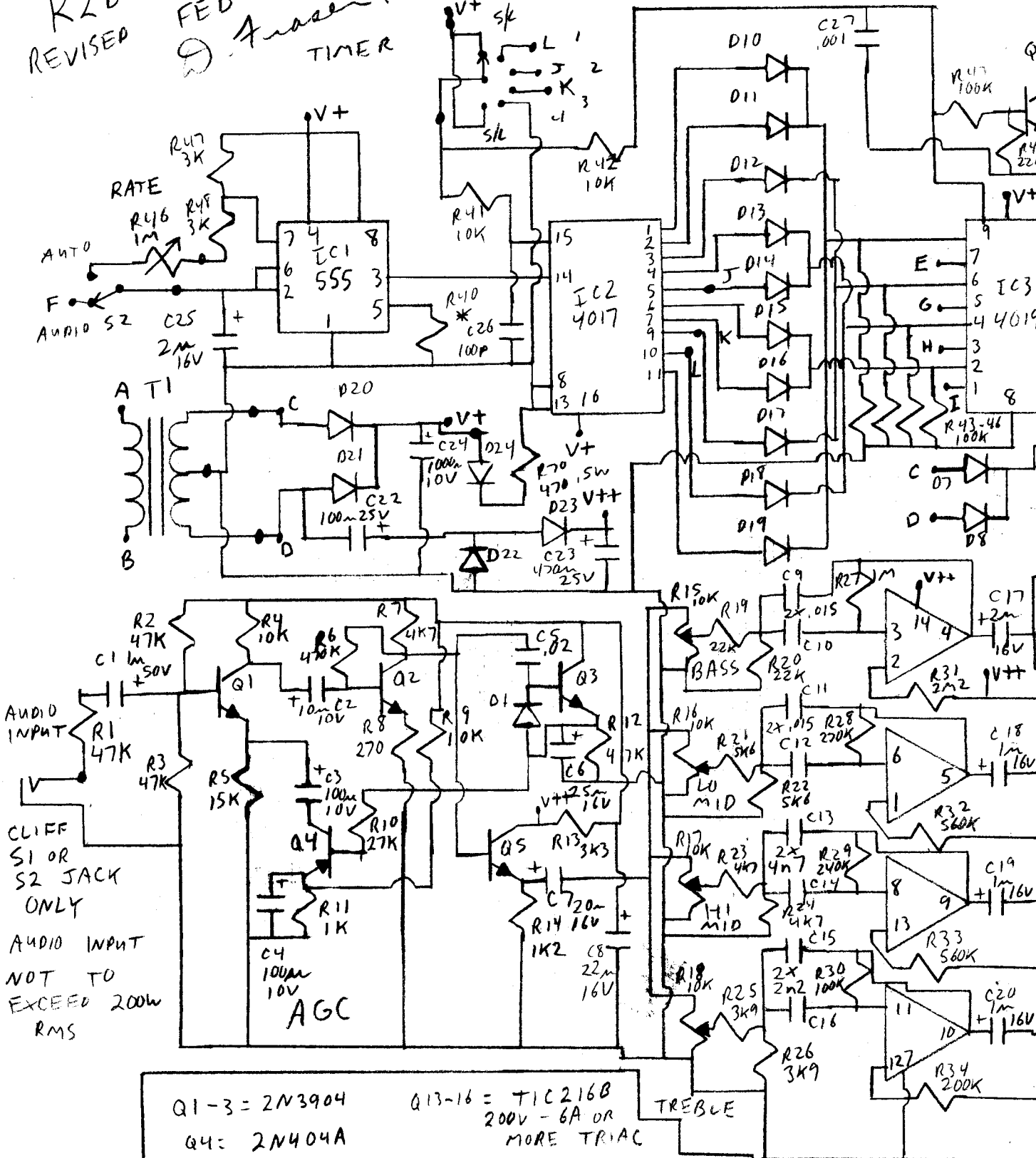


R2B
REVISED

FEB 25, 1980
A. Arzen
TIMER

ON FRONT
PANEL
COUNTER

SELEC



CLIFF
S1 OR
S2 JACK
ONLY
AUDIO INPUT
NOT TO
EXCEED 200mW
RMS

- Q1-3 = 2N3904
- Q4 = 2N404A
- Q5-12 = 2N3904
- D1-19 = 1N914
- D20-23 = 1N4001
- D24-28 = TIL 220 LED
- Q13-16 = TIC 216B
200V - 6A OR
MORE TRIAC
- R40 * NOT ON ALL UNITS
4K7 & 22K ON SOME
- O1-O4 PINS 4 AND 6
ARE REVERSIBLE

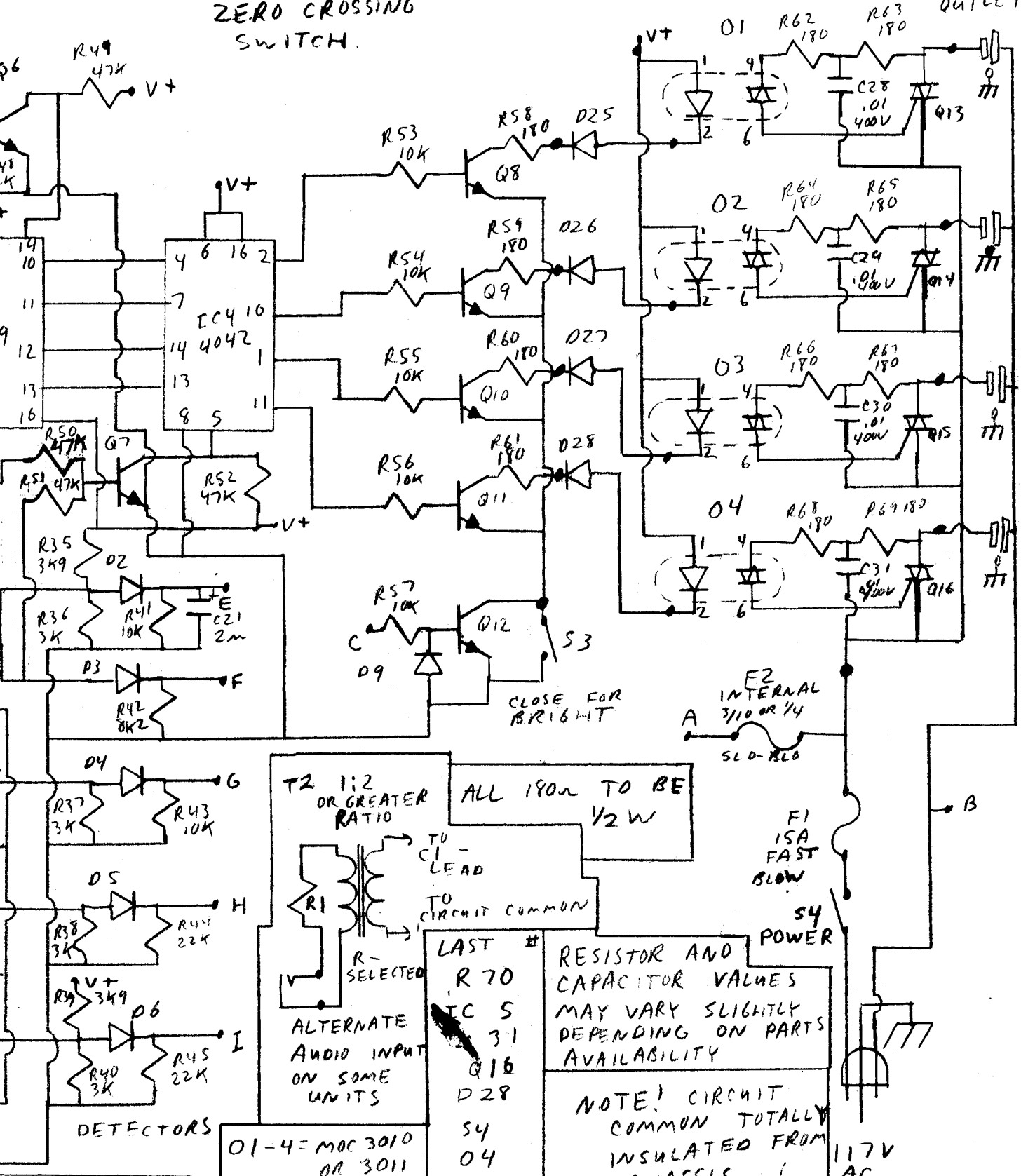
IC3
3900
FILTERS

A
S
A
B

CTOR

ZERO CROSSING SWITCH.

AC OUTLETS.



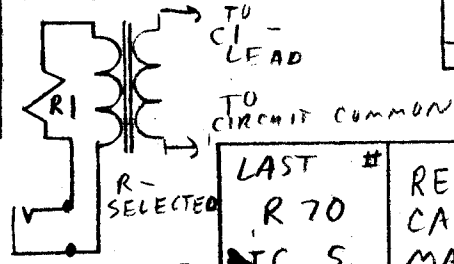
ALL PARTS SPECIFIED ON AN "OR EQUAL" BASIS

O1-4 = MOC 3010 OR 3011

T1 = 12VCT @ 1/2AMP

HAMMOND 166J12 OR EQUIVALENT

T2 1:2 OR GREATER RATIO
ALL 180Ω TO BE 1/2W



ALTERNATE AUDIO INPUT ON SOME UNITS

- LAST #
- R 70
- IC 5
- Q 31
- Q 16
- D 28
- S 4
- O 4
- T 1

RESISTOR AND CAPACITOR VALUES MAY VARY SLIGHTLY DEPENDING ON PARTS AVAILABILITY

NOTE! CIRCUIT COMMON TOTALLY INSULATED FROM CHASSIS

F1 15A FAST SLOW

54 POWER

117V AC



DF

81

R2B

CANADA

R2B PARTS

RESISTORS

- 8-47K Ω
- 10-10K
- 1-15K
- 1-470K
- 3-4K7
- 1-270 Ω
- 1-1K
- 6-3K3
- 1-1K2
- 4-22K
- ① 3-02 Ω
- 2-546
- 6-349
- 1-1M
- 1-270K
- 1-240K
- 6-100K
- 1-6K8
- 1-2M2
- 2-560K
- 1-200K

- 6-3K
- 12-~~180~~ 180 Ω 1/2W * ②
- 1-470 Ω 1/2W

ALL R'S = 1/4W EXCEPT THE 180 Ω & 470 Ω SUPPLIER CODE

- ① - INTEK
- ② - FRASER ELEC.
- ③ - ELECTROVALVE
- ④ - CAROMAL
- ⑤ - BOLT SUPPLY

CAPACITORS ①

- 4-1 μ /50V RADIAL LEAD .15
- 3-10 μ /10V RADIAL LEAD .10
- 2-100 μ /10V " " .20
- 1-.02 μ /10V DISC .20
- 2-2 μ F/16V RADIAL LEAD .17
- 1-1000 μ F/10V RADIAL LEAD .70
- 1-100p DISC .20
- 4-.01 μ F 250V DISC .20
- 3-22 μ F/16V RADIAL LEAD .20
- 4-.015 μ F .20
- 2-4 μ 7 DISC .20
- 2-2 μ 2 DISC .20
- 1-100 μ F/25V RADIAL LEAD .45
- 1-470 μ F/25V RADIAL LEAD .65
- 1-1 μ F DISC .20

DIODES

- 4-1N4001 ① .92
- 20-1N914/1N4148 ① .05

TRANSISTORS

- 1-2N404A * ② .20
- 12-2N3904 .16

I.C.'S ①

- 1-555 .65
- 1-4017 1.40
- 1-4019 1.50
- 1-4042 1.50
- 1-3900 OR 3401 1.40

POTS

- 4-10K LIN. - RADIOHM ③ 1.00
- 1-470K OR 1M LOC TAPER ③ 1.00

OTHER SEMI'S

- 4-MOC3010 * ① ② 1.80
- 5 LEDS * ② .20
- 4-IT-28 TRIAC * ① ② .73

FUSES

- 1- 15A FAST BLOW (1) .25
- 1- .3A FAST BLOW (4) .25
- (OPTIONAL - 4x 4A FAST BLOW) (4) .25

TRANSFORMER

- 1- 166 F12 (HAMMOND) (4) 5.50

TOTAL COST

80.41 NOT INC. CASE,
STICKERS, WIRE, PAINTING, PRINTING,
SCHEMATIC, LABOR, DESIGN CHARGE,
LITTLE FUSE (4) 1.59 OVERHEAD,

FUSE HOLDERS

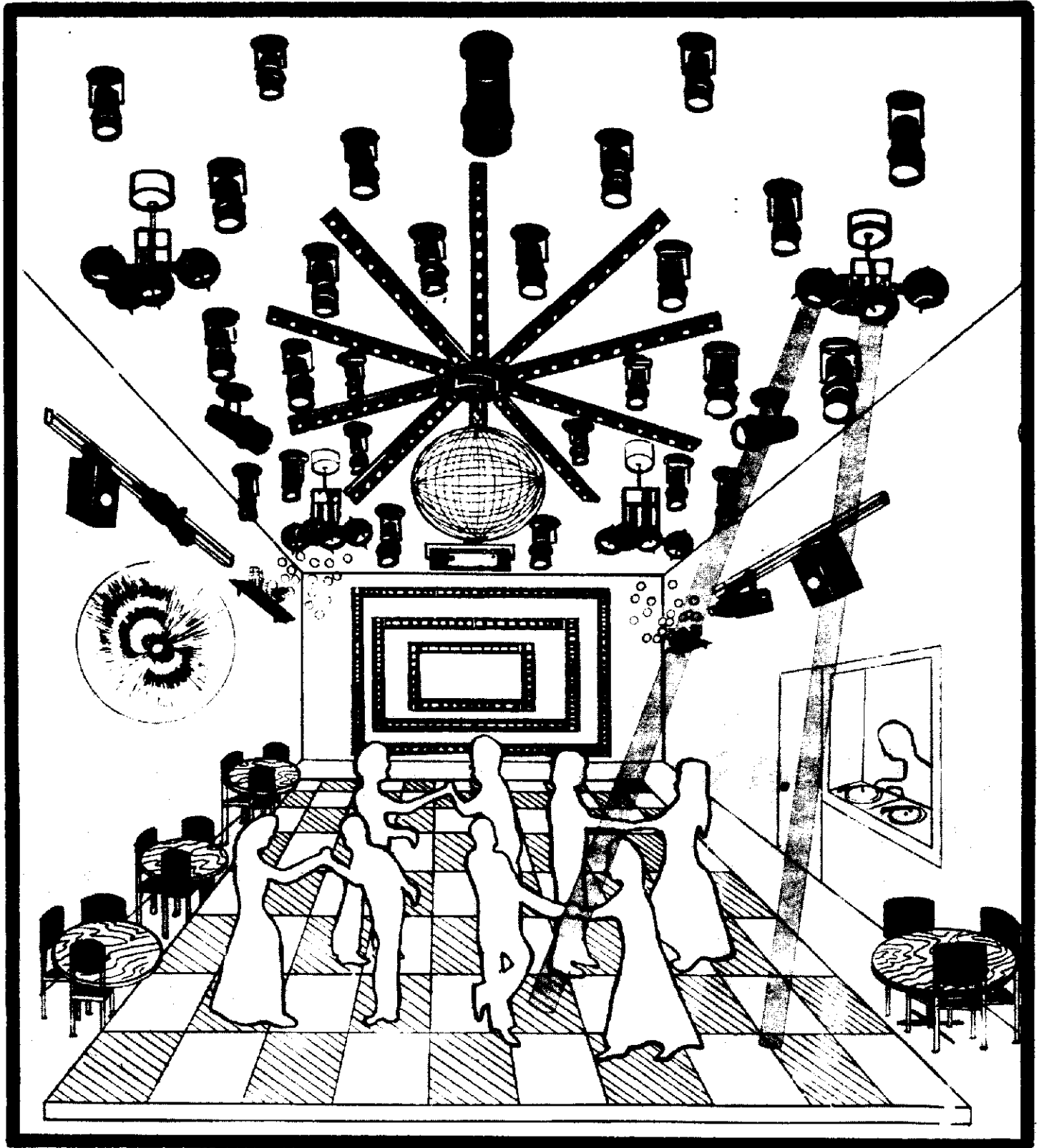
- 1- CHASSIS MOUNT HXP BASS
- 2- CLIPS 10206E (1) (4) .11
- (OPTIONAL - 8 CLIPS) (4) (1)

HARDWARE

- 2 - 3/4" CLIFF SPACERS * (2) .10
- 2 - 1/4" GRIP POP RIVETS 1/8" (5) .02
- 15 - 1/8" " " " 1/8" (3) .02
- 2 - 1/4" " " " 3/16" (5) .02
- ✓ POWER SWITCH * (2) (4) 1.50
- ✓ ~~2~~ 2 SWITCHES - SPDT * (6) .29
- 1- ~~SP6T~~ SP6T ROTARY SWITCH (4) (5) 2.00 (COULD BE TOGGLE)
- 6 - KNOBS (ARMACO OR COSRAD) .65
- LED P.C.B.'S 1 LARGE (2) 1 SMALL * 1.00
- LOGIC P.C.B. * (4) 7.00
- TRIAC P.C.B. * (2) 5.00
- FLANGE FOR TRIAC P.C.B. (ATLAS ALLOY OR WILKINSON) 2.50
- 3 - 3/4" 6-32 M.S. C/W L.W. & NUTS. (3) .05
- 2 - 1/2" 6-32 M.S. .05 (5)
- 1- CABLE CLAMP (BRISKE) .26
- 6' - 14/3 RUBBER LAMP CORD (BRE) 2.40
- ✓ 1- HUBBEL PLUG. (BRE) 3.05
- 1- CLIFF S1/S5 OR S2/SNS JACK * (2) .55
- 2 - SLATER AC. DUPLEX RECEPTACLES * (2) .80
- 1 - #6 SOLDER LUG. (4) .05
- 6 - #6 SHEET METAL SCREWS - 1/2" (3) .02
- 4 - 1" 4/40 FLATHEAD M.S. C/W L.W. & NUTS (UNIVERSAL) .10
- 3 - 1/2" 4/40 " " " (UNIVERSAL) .10
- 4 - SWITCH SPACERS * (2) .10
- ✓ 2 - LED SPACERS * (2) .05
- ✓ 3 - 6PIN AMP CONNECTOR SETS AMP. 60
- ✓ 2 - 3PIN " " " " .50
- ✓ 1 - 2PIN " " " " .40
- ✓ 6 - AMP P.C. LUGS * (2) .10
- ✓ 6 - PUSH CONNECTORS 1/4" AMP .15
- 4 - 4/40 x 1/2" M.S. C/W L.W. & NUTS (3) .02
- THERMAL GREASE (CON TIRE) .02
- FRONT PANEL
- INT. FRONT PANEL
- CHASSIS
- REAR PANEL
- LID.
- AEPB STICKER * (2) .25
- WARNING STICKER * (2) .20
- S/N STICKER
- 3' 14GA WHITE WIRE
- 6' 14GA NON WHITE WIRE (XED. TEL) *
- 20' 24GA SOLID WIRE *
- 2' 18GA WIRE 1' WHITE 1' NOT WHITE
- SOLDER (4) * .50

VALA

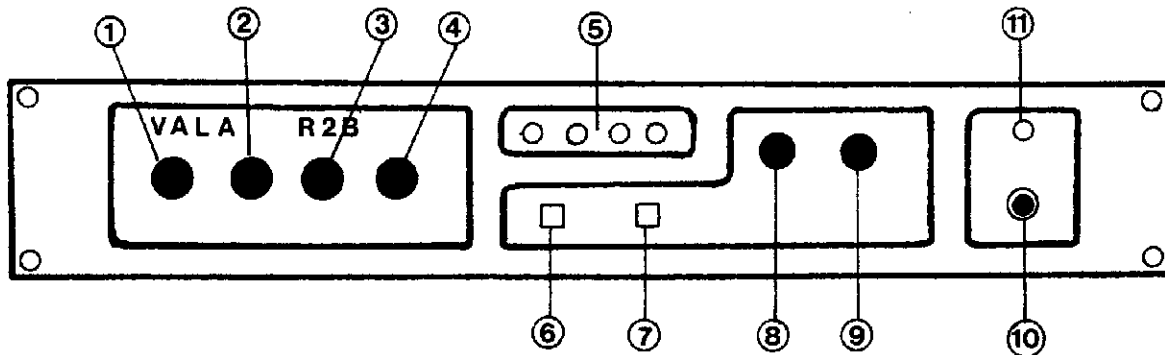
Professional Lighting Equipment



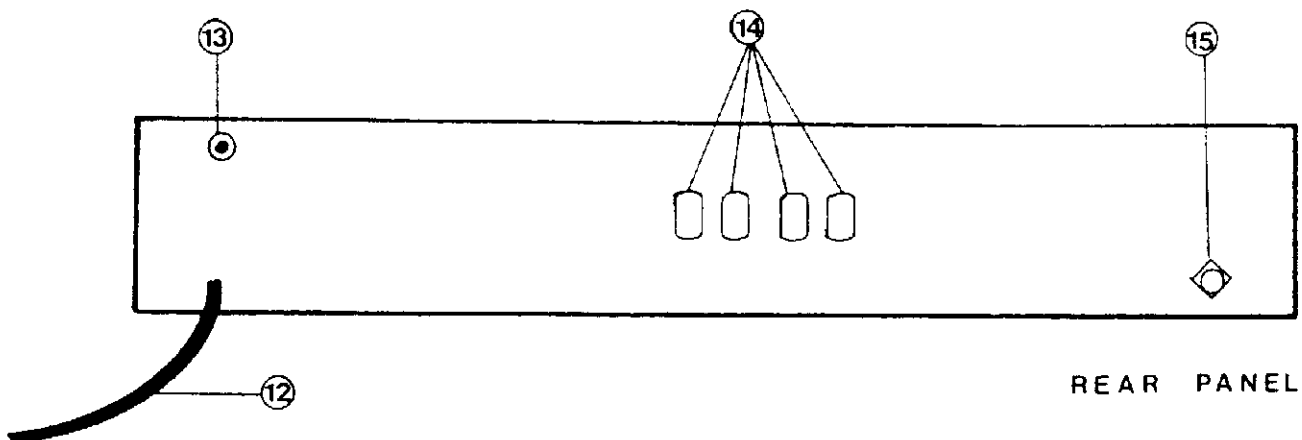
VALA

R2B

Lighting Controller



1. **BASS CONTROL :** This control sets the sensitivity of the bass channel of the sound to light (S/L). It also sets the sensitivity of the audio trigger when in chase mode.
- 2,3&4. These controls set the sensitivity of the lo-mid,high-mid and treble channels of the S/L section.
5. Output indicators.
6. Bright-dim switch. Allows the operator to dim the lights to 50% brightness. Not to be used with transformer equipped lighting such as pin spots or neon.
7. Trigger selector. Selects between auto and audio triggering of the chase patterns. Audio sensitivity is set by the bass control.
8. **RATE CONTROL:** Sets the chase speed when the trigger switch is in the auto position.
9. **SELECTOR SWITCH:** Selects between sound to light (S/L). and any four chase patterns.
10. Power off / on switch.
11. Pilot Lamp.
12. AC Power cord. Connect to 110/120 VAC 60Hz source capable of handling load connected to output. 15 amp circuit is recommended.



13. FUSE. Use AGC 15 - 15 amp fast blow type only. Use of any other type may void warranty.
14. OUTPUT OUTLETS: Standard AC receptacles. Total load between all four channels (outlets) not to exceed 1800 watts on standard unit. More output power available on request.
15. AUDIO INPUT: Connect to full range output of amplifier. Requires minimum of 1 volt RMS for drive to a maximum of 40 volts RMS. May be connected to output of a 250 watt amplifier. Input imp. is over 47 K ohms and is purely resistive. A $\frac{1}{2}$ " phone plug is required for connection. In bi-amp or tri-amp systems it may be driven from a high level output from the mixer or equalizer. input is completely isolated from ground.

OTHER FEATURES :

All channels switched on zero crossing of AC line to prevent interference in the sound. Standard $3\frac{1}{2}$ " tall by 19" wide rack mount by $8\frac{1}{2}$ " deep behind the front panel. Approved by the Alberta Electrical Protection Branch. Automatic Gain Control (AGC) is used in S/L master section for operator convenience.

FRASER ELECTRONICS R2B CONTROLLER USER'S GUIDE

The R2B controller is a versatile, easy to use multi-function lighting controller. While designed primarily for the mobile operator it is equally at home in night clubs and other permanent installations.

It combines a quality four channel light chaser with a four channel sound to light unit. The output is normally through four 3 conductor AC outlets on the rear panel though the purchaser may order other output connectors as an option. The most common option is an 8 pin female Cinch-Jones connector, type S308CCT.

CONTROLS

SELECT - This allows the user to select either Sound to Light (S/L) or any of the four chase patterns.

BASS, etc. - On the left are the four Sound to Light controls, BASS, LO-MID, HI-MID and TREBLE, corresponding to the four ranges in the music.

DIM - The dim position reduces the lights to half brightness. **NOTE!!** If using transformer operated lights such as pin spots or neon, the dim function must not be used. If engaged, the transformers in the lamps may be damaged. If you are not sure what type of lamps you have, please consult us. If you are using transformer operated lights, please inform us when ordering and we will defeat this function at no extra charge. Defeat of the dim function is recommended to prevent its accidental actuation. However, the dim function is perfectly safe with standard incandescent lamp loads.

TRIGGER - The second switch is the AUTO/AUDIO switch. This switch controls the source of trigger pulses for the chaser. In the AUTO position, the chase speed is set by the RATE control. In the AUDIO position, the chase is triggered by the bass in the music. The BASS control in the S/L section should be adjusted for the desired triggering.

POWER - The power switch on the right switches the unit on and off.

REAR PANEL

AUDIO INPUT - The audio input jack is a standard 1/4" jack. The input impedance is over 47K ohms and levels up to 40 Volts RMS may be applied to the input. This corresponds to an amplifier of 200 Watts RMS per channel. The input jack is a special insulated ground type. Therefore, the input lines, both hot and ground are fully isolated from the chassis. Replacement of this jack with a conventional phone jack will result in a ground loop causing a hum in your sound. Note: these jacks are available from FRASER ELECTRONICS at reasonable cost. Please write for prices.

OUTPUT - The output is via 4 grounded AC receptacles. They go in the same order as the S/L controls on the front panel. If an optional Cinch-Jones 8 pin connector is on the controller, the pin-out is as follows: Bass - 8, Lo-Mid - 6, Hi-Mid - 4, Treble - 2, AC Neutral - 1, 3 & 5 and AC Case Ground - 7.

LOAD - The maximum normal load is 1800 Watts as this is all you can draw from a normal AC outlet. The loads need not be the same on each channel and the maximum per any one channel is 600 Watts. Higher power capabilities are available on request.

FUSE - Use only the size fuse specified on the name plate. This is usually a 15 Amp fast blow type, AGC15. Also, there are 5 internal fuses. Four are AGC5 5 Amp fast blow, on each individual triac. The

fifth is for the internal logic. This may be replaced by a 0.25 Amp low blow type. All fuses used must be rated for 125 Volts or higher.

CORD - The cord must be connected to a grounded three wire receptacle. Do NOT attempt to defeat the ground prong on the cord. If this is done, an unsafe condition may be created.

SAFETY WARNING

The R2B is a line operated device and operated with hazardous voltages inside. Do NOT open the unit with power connected. Refer servicing to qualified personnel only. Please note that any short circuits in the load will damage the power switching circuitry inside the unit. There are fuses provided but these will seldom blow fast enough to save the triacs. They are provided so that an unsafe condition or fire will not occur if there is a short in the lamp wiring. Do NOT attempt to defeat the fuses in any manner. If you have any questions concerning the safe operation of this unit, contact us.

CONCLUSION

The R2B is a useful addition to any light show and is built of high quality parts. It should give you years of trouble free service. About the only way to damage it is with poorly wired lights or by driving a truck over it. Even then, it can be repaired economically. There is no routine maintenance required. If your unit requires repairs, send it to us and we will repair it promptly and economically. Also, contact us if you have any further questions, want to get on our mailing list or if you need any other lighting or audio product for mobile or installed disc jockey systems.

FRASER ELECTRONICS - P.O. Box 4265 - Vancouver, B.C. V6B 3Z7
(604) 251-7044

LIGHT CONTROLER MATERIAL
SHEARING LIST

ALL METEL SPECIFIED AS .040" SATIN COAT IRON

R2-B5 SERIES

R3 SERIES

$23\frac{5}{8}" \times 8"$

CHASSIS

$20\frac{13}{16}" \times 11"$

$17\frac{13}{16}" \times 3\frac{13}{16}"$

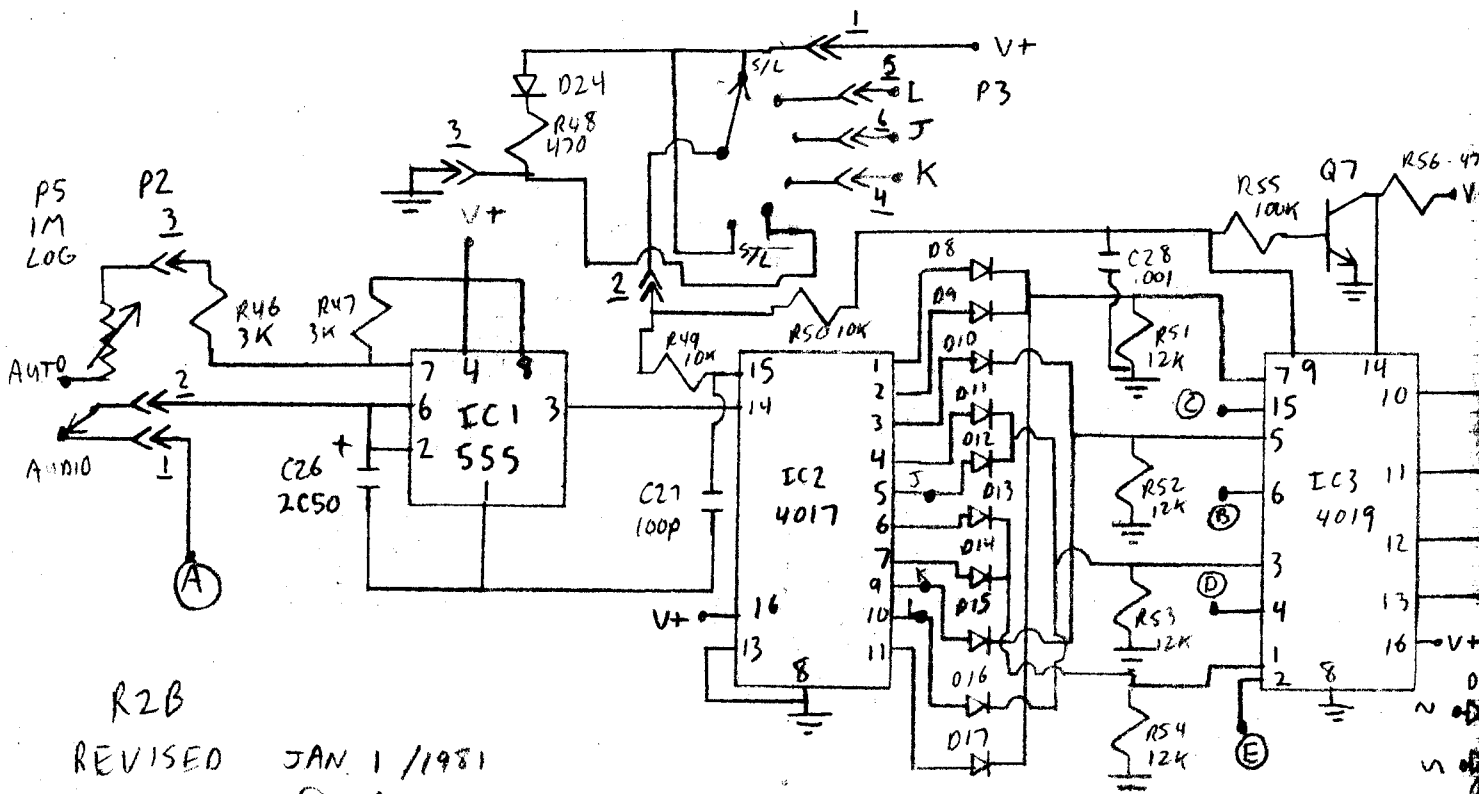
{ SUB FRONT }
{ REAR. }

$14\frac{13}{16}" \times 3\frac{7}{8}"$

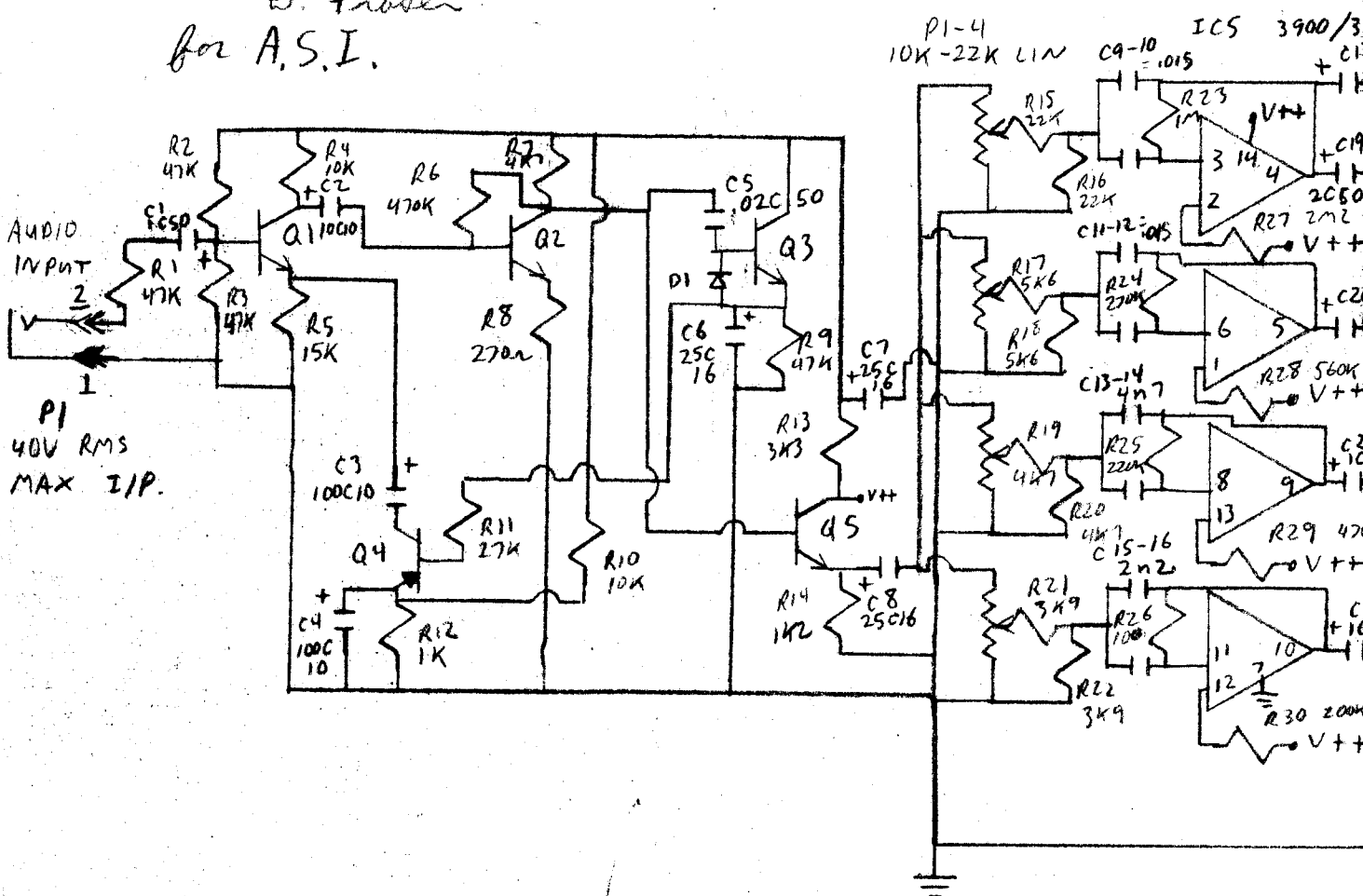
$16\frac{7}{8}" \times 7\frac{7}{8}"$

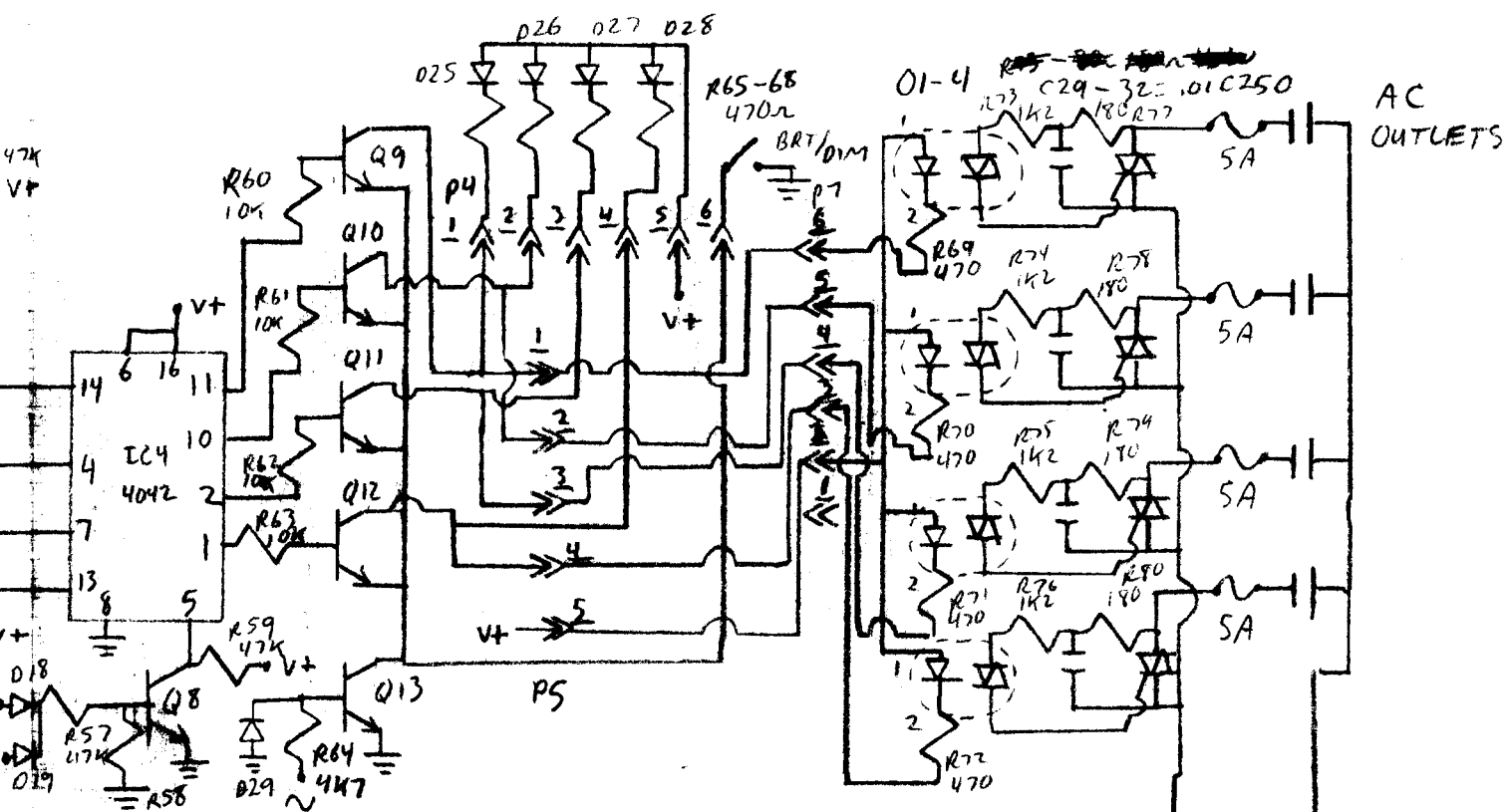
LID

$13\frac{7}{8}" \times 10\frac{7}{8}"$



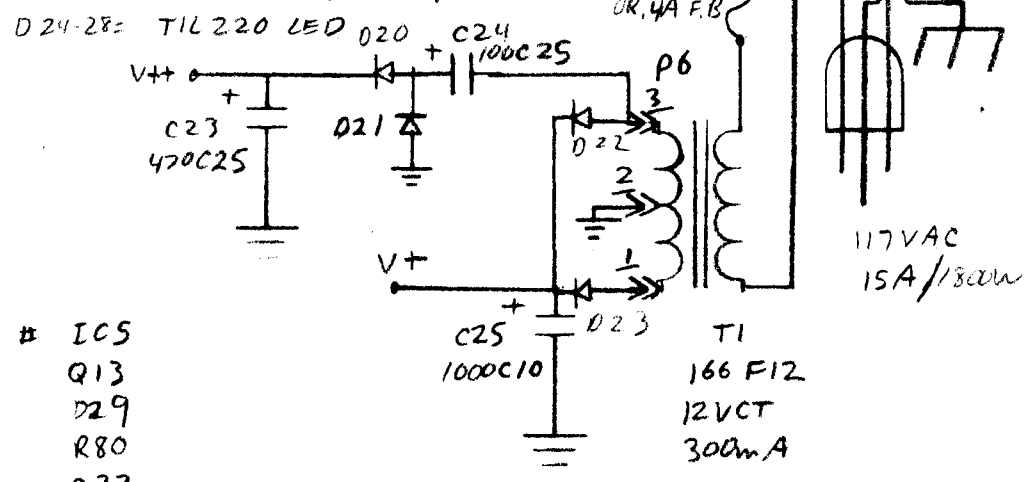
R2B
 REVISED JAN 1 / 1981
 D. Ansen
 for A.S.I.





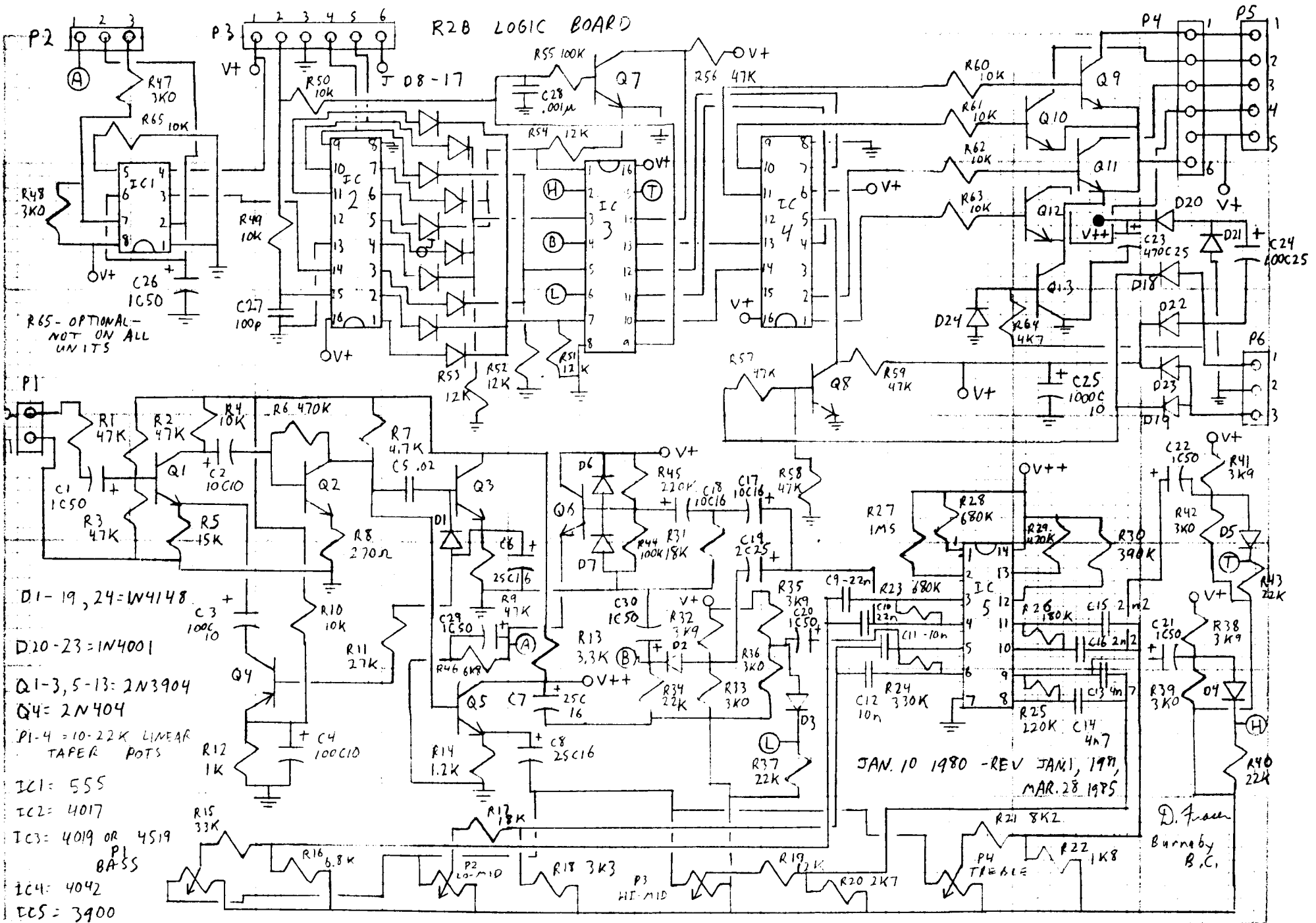
01-4 = MOC3010
 OR MOC3011
 MOTOROLA
 TRIACS = HUTSON
 IT-28 OR
 EQUAL

ALL NPN = 2N3904
 ALL PNP = 2N404A
 D1-19, 29 = 1N914
 D20-23 = 1N4001
 D24-28 = TIL220 LED



- LAST #
- IC5
 - Q13
 - D29
 - R80
 - C33
 - T1
 - P7

R2B LOGIC BOARD



R65 - OPTIONAL - NOT ON ALL UNITS

- D1-19, 24 = 1N4148
- D20-23 = 1N4001
- Q1-3, 5-13 = 2N3904
- Q4 = 2N404
- P1-4 = 10-22K LINEAR TAPER POTS
- IC1 = 555
- IC2 = 4017
- IC3 = 4019 OR 4519
- IC4 = 4042
- IC5 = 3900

JAN. 10 1980 - REV JAN. 1, 1979, MAR. 28 1975

D. Frazer
Burnaby B.C.



Bass



Lo-mid



Hi-mid



Treble



Bright

Dim



Audio

Trigger

Auto



Rate



Select



Fraser
Electronics
Model
R2B

