VIDEO

VIFICO S.A.

Exidy inc.

Gottlieb

Premier Technology

TATSUMI

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Polígono Industrial Villa Rosa
Tel.: (952) 35 17 07
29006 - M A L A G A

A J U S T E S

1- AJUSTES E INFORMACION D LA FUENTE DE ALIMENTACION

Todas las tensiones de continua que necesita el juego son suministradas por el módulo de fuente de alimentación y sus salidas son:

+ 5V	9A
+18V	3A
-18V	3A

PRECAUCION: Sólo técnicos cualificados deberían hacer ajustes en todos los módulos del juego.
Sólo los +5V son ajustables.
Se debe ajustar a +4'95V medidos en la tarjeta de lógica junto al microprocesador (localización J2) (Ver fig.4)

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2- AJUSTES DE TARJETA AUDIO

Ajustar R15 para control de volumen en posición T2 de la tarjeta audio, que está sobre la tarjeta de lógica que está en un lateral del mueble.

3- OPCIONES SELECCIONABLES POR EL OPERADOR

El paquete de microswitches (B1) de la tarjeta de audio y los microswitches (J19) de la tarjeta de lógica.

4- AJUSTES DEL SENSOR OPTICO

El juego utiliza una tarjeta con sensor óptico para detectar el barrido del haz de electrones del tubo.
la tarjeta de lógica se sirve de ella para saber la posición del fusil.
Este ajuste permite regular, para una intensidad de monitor, una distancia entre el fusil y tubo, teniendo en cuenta las toleraciones de los componentes electrónicos.

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Durante el juego,cada vez que se diapara, debería aparecer un flash blanco y un pequeño punto donde el fusíl apuntaba.
Si la circuitería optica no detecta el barnizo de la pantalla, cuando se dispara el gatillo no sale el pequeño punto y suena una alarma.
Cuando ésto ocurra la sensibilidad debería ser ajustada.

1- Quitar los 2 tornillos delanteros, y el tornillo trasero del fusil y sacar la parte superior.
2- Seleccionar modo diagnóstico manuel.
(Encender máquina teniendo pulsado pulsador de START)
3- Seleccionar en el menú CHECK INTERRUPTS TEST y apriete el gatillo. Cuando test se ha completado retorna a diagnóstico manual.
4- Seleccionar OPTICAL ADJUSTMENT y disparar, una pantalla blanca debería aparecer.
5- Si en la pantalla aparecen lineas, apaguen la máquina y volver al menú diagnóstico manual.
Realizar CHECK INTERRUPTS (COMPROBAR INTERRUPCIONES) y luego a OPTICAL - ADJUSTMENT (Ajustes ópticos).
6- Apuntar el fusíl al centro de la pantalla, un rectángulo naranja con una raya marrón debería aparecer.
7- Gire el control de sensibilidad en sentido contrario a las agujas del reloj hasta que aparezca un rectángulo naranja en oscilación.
Ahora gire el control de sensibilidad en sentido contrario a las agujas del reloj hasta que la oscilacion disminuya (6B). Guiar en sentido de agujas del reloj 1/4 de vuelta más. Este debería ser el ajuste óptimo.
8- El rectángulo debería aparecer en pantalla, se apunte donde se apunte, con la excepción de aproximadamente 2" al extremo izquierdo de la pantalla.
9- Reinstalar el conjunto del fusil.

5- ALINEAMIENTO DE TIRO

1- Abrir la puerta de monedas y desconectar el interruptor de A.C. interior.
2- Presionando pulsador START se conecta A.C. y entramos en modo diagnóstico manual.

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3- Asegurarse de que se selecciona GUN SIGHT ALIGN MI presionando el pulsador START.

4- Apretar gatillo y una cruz aparece, soltar el gatillo.

5- Dirigir el punto de mira al centro de la cruz (+) apretar el gatillo una vez más y el punto de mira estará alineado con la última referencia.

COMBINACIONES PARA MONEDEROS:

A	-	1	Moneda	25	-	1	Partida
		1	"	100	-	4	"
B	-	1	Moneda	25	-	1	Partida
		1	"	100	-	5	"
C	-	2	Monedas	25	-	1	Partida
		1	"	100	-	2	"

AJUSTE DE MICROSWITCHES PARA JUEGO:

CRACKSHOT

	8	7	6	5	4	3	2	1
A -	*	*	*	*	ON	ON	*	*
B -	*	*	*	*	*	*	ON	*
C -	*	*	ON	*	ON	ON	*	*

COMBAT

A	-	*	*	*	*	*	*	ON	*
B	-	*	*	*	*	ON	*	ON	*
C	-	*	*	ON	*	*	*	ON	*

CHILLER

A	-	*	*	*	*	ON	*	*	*
B	-	*	*	*	*	*	ON	*	*
C	-	*	*	ON	*	ON	*	*	*

N.B. (* = OFF)

ADJUSTMENTS

I. POWER SUPPLY INFORMATION AND ADJUSTMENTS

ALL DC Power required to operate **Crossbow™** is supplied by the Exidy Power Supply Module. These supply outputs are as follows:

- +5V .....@ 9 AMPS
- +18V .....@ 3 AMPS
- −18V .....@ 3 AMPS

CAUTION: Only certified technicians should make adjustments on all components of ***Crossbow™****. Only the +5v DC is adjustable. This must be adjusted to: +4.95 VDC as measured on the PCB near the microprocessor (location J2) (See Fig. 4).*

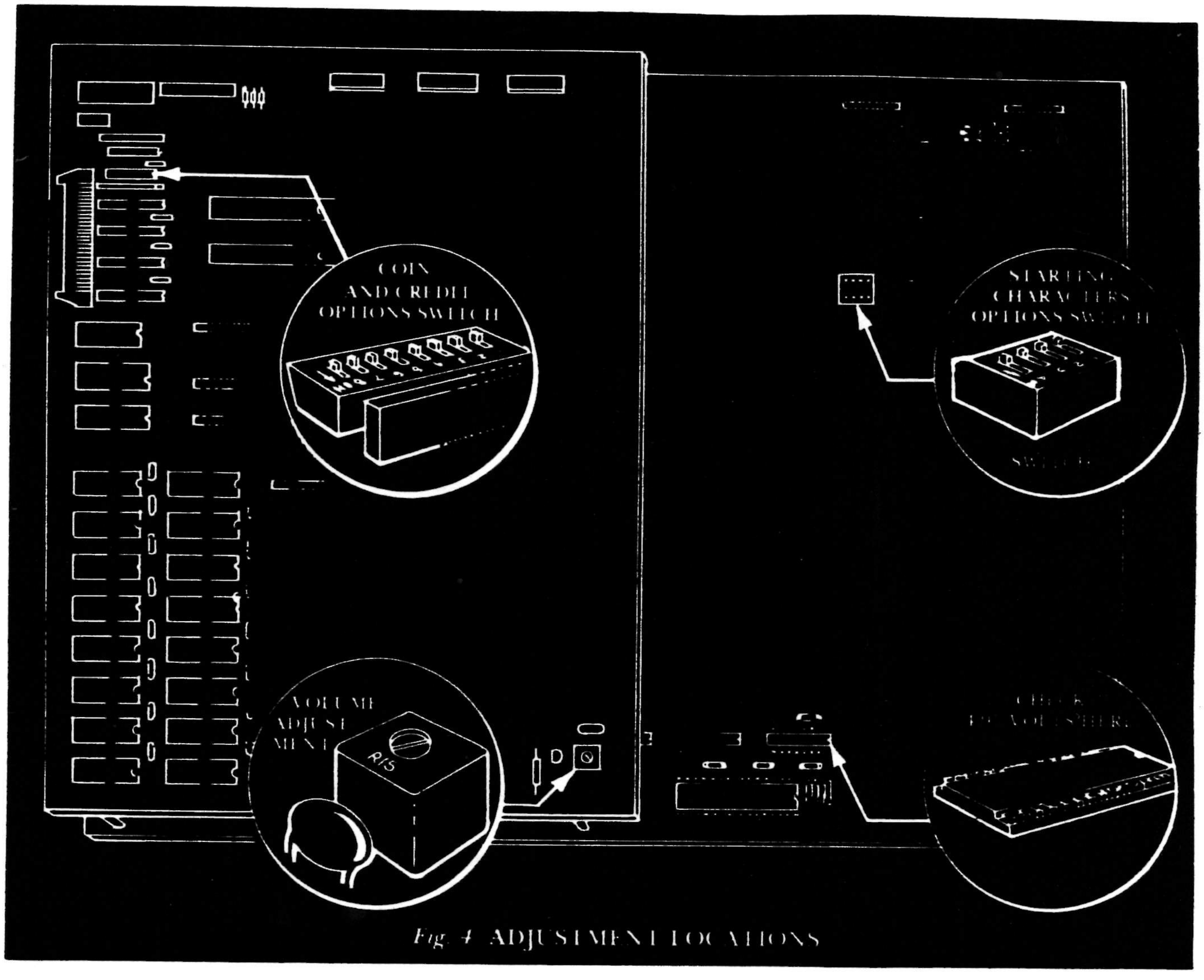


Fig. 4 ADJUSTMENT LOCATIONS

II. AUDIO BOARD ADJUSTMENTS

Adjust R15 master audio volume control located at position T2 on the Audio Logic Board (See Fig. 4) and adjust audio level while game is in progress. This audio board rides piggyback on the logic board, mounted inside of the cabinet on the side wall (See Fig. 1).

III. OPERATOR SELECTABLE OPTIONS

Crossbow™ has several selectable switch options controlled by an 8 position DIP SWITCH located at B1 of the AUDIO BOARD and a 4 position DIP SWITCH located at J19 of the LOGIC BOARD. Both switches are accessible through the rear door of the game.

SWITCH OPTION SETTINGS
8 POSITION SWITCH LOCATION B1

@ = FACTORY SETTINGS

COINAGE	SWITCH 5	SWITCH 6	SWITCH 7	SWITCH 8
1 COIN — 1 CREDIT	OFF	OFF	OFF	OFF
@ 2 COINS — 1 CREDIT	OFF	ON	OFF	OFF
3 COINS — 1 CREDIT	ON	OFF	OFF	OFF
4 COINS — 1 CREDIT	ON	ON	OFF	OFF
1 COIN — 2 CREDITS	OFF	OFF	OFF	ON
2 COINS — 2 CREDITS	OFF	ON	OFF	ON
3 COINS — 2 CREDITS	ON	OFF	OFF	ON
4 COINS — 2 CREDITS	ON	ON	OFF	ON
1 COIN — 3 CREDITS	OFF	OFF	ON	OFF
2 COINS — 3 CREDITS	OFF	ON	ON	OFF
3 COINS — 3 CREDITS	ON	OFF	ON	OFF
4 COINS — 3 CREDITS	ON	ON	ON	OFF
1 COIN — 4 CREDITS	OFF	OFF	ON	ON
2 COINS — 4 CREDITS	OFF	ON	ON	ON
3 COINS — 4 CREDITS	ON	OFF	ON	ON
4 COINS — 4 CREDITS	ON	ON	ON	ON

SWITCH OPTION SETTINGS
4 POSITION SWITCH LOCATION J19

GAME PLAY DIFFICULTY	SWITCH 1	SWITCH 2	SWITCH 3	SWITCH 4
1 EASY	ON	ON		
@ 2 NORMAL	OFF	OFF		
3 HARD	OFF	ON		
5 MOST DIFFICULT	ON	OFF		
STARTING CHARACTERS				
2 CHARACTERS			OFF	ON
@ 3 CHARACTERS			OFF	OFF
4 CHARACTERS			ON	OFF
5 CHARACTERS			ON	ON

IV. OPTICAL SENSITIVITY ADJUSTMENT

The **Crossbow** uses an Optical Sensor PCB to monitor the scanning electron beam of the CRT. Gun positioning information from this Optical Sensor PCB is monitored by the Logic PCB. The Optic PCB sensitivity adjustment allows for monitor intensity, distance between gun and monitor and the electronic circuitry tolerance.

During game play each time the trigger is pulled there will be a white flash and a small dot is displayed wherever the gun is aimed. If for any reason the optic circuitry is not sensing the screen when the trigger is pulled the dot will not be displayed, an audio warning sound will be heard. Whenver this occurs, the optical sensor sensitivity should be readjusted.

1. To access the optical electronics, remove the (2) button head screws and the (1) cap screw and gently lift the Gun Stock from the Forestock (See Fig. 5).
2. Select the MANUAL DIAGNOSTIC MODE. To enter this mode, hold down the Start Button while applying power.
3. Index the pointer to the CHECK INTERRUPTS test, pull gun trigger and execute. When test is complete it will return to the ANUAL DIAGNOSTIC MENU MODE.
4. Index the pointer to the OPTICAL ADJUSTMENT and pull Gun Trigger. a white screen should appear.
5. If the screen should come up with wavering lines. repower the game and return to MANUAL DIAGNOSTIC MENU. Perform the CHECK INTERRUPTS, then index to the OPTICAL ADJUSTMENT.

(continued)

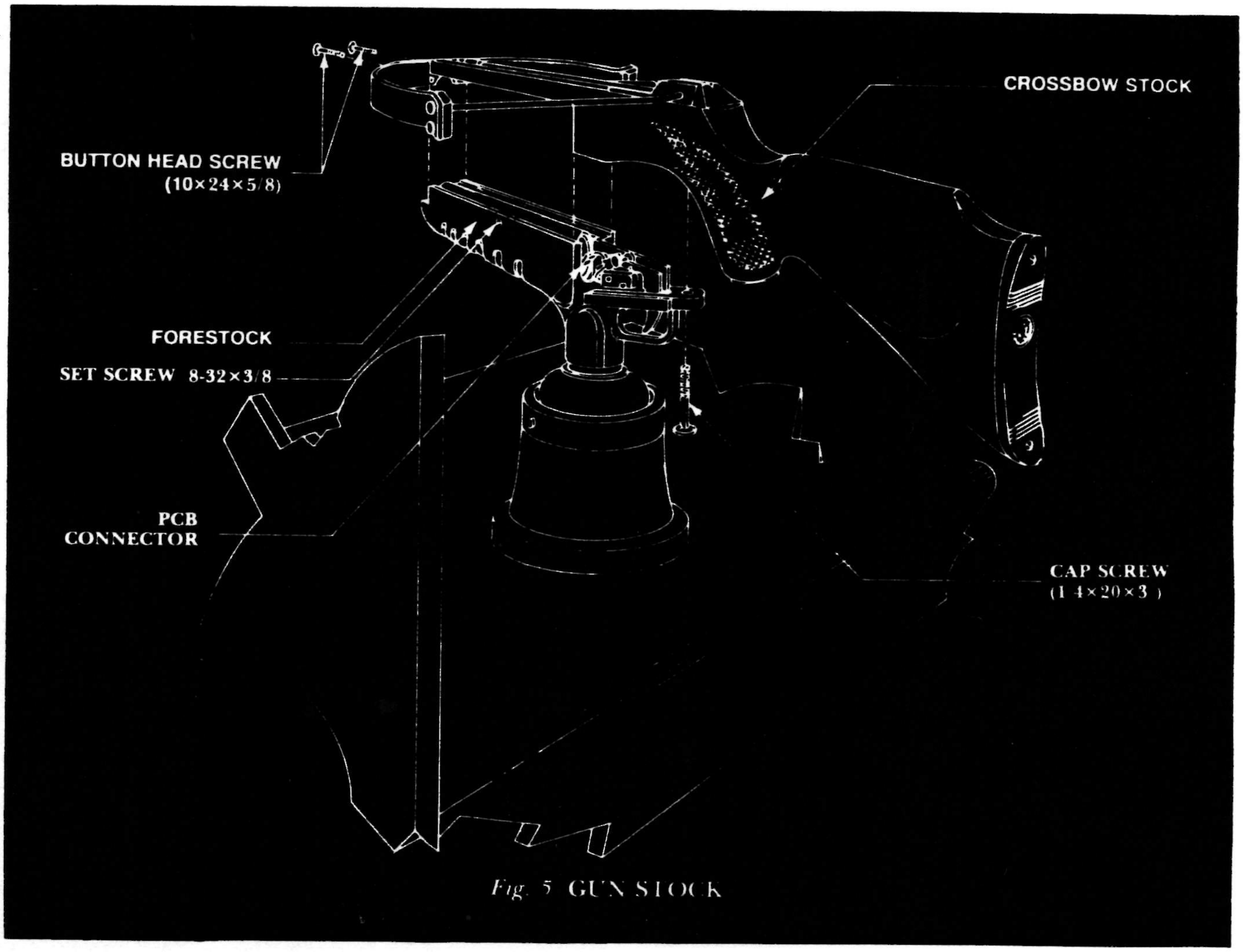


Fig. 5 GUN STOCK

6. Aim the Gun to the enter of the screen, an orange rectangular pattern with a brown leading edge should be displayed (See Fig. 6-C).

7. Turn sensitivity control CCW until oscillation and an orange rectangular pattern are displayed (See Fig. 6-A). Now turn sensitivity control CW until oscillation diminishes just beyond this oscillation point (See Fig. 6-B), from this point turn sensitivity control CW approx. ¼ turn more. This should be the optimum setting.

8. The rectangular pattern should appear on the screen wherever you aim the Forestock (Optic), with the exception of approx. 2" to the extreme left of screen.

9. Reinstall the Gun Stock Assembly. Refer to **Crossbow**™ Stock Installation procedure (Page 4 Steps 2 & 3). This completes the gun sight and optical check.

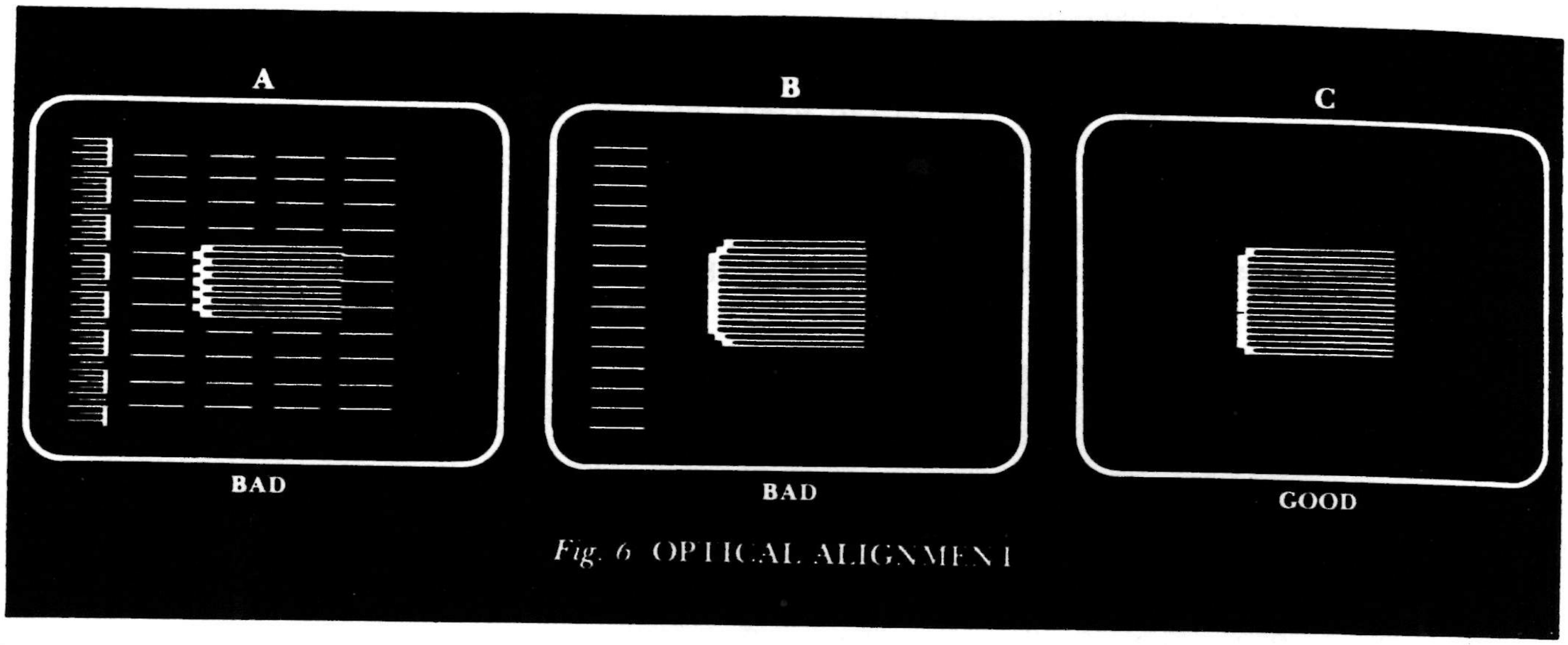


Fig. 6 OPTICAL ALIGNMENT

V. GUN SIGHT ALIGNMENT

1. Open the Coin Door to access the AC interlock switch, game will power down (See Fig. 1).

2. While holding down the START BUTTON pull out the interlock switch to restore power. After a burst of sound the screen should display the ANUAL DIAGNOSTIC MENU MODE.

3. Be sure the index is pointing to GUN SIGHT ALIGNMENT, use the Start Button to index if not.

4. Pull Gun Trigger and a crosshair (+) will be displayed, release gun trigger.

5. Aim the Gun Sight to center of crosshair, pull Gun Trigger once and Gun Sight will be aligned to the last burst (See Fig. 7).

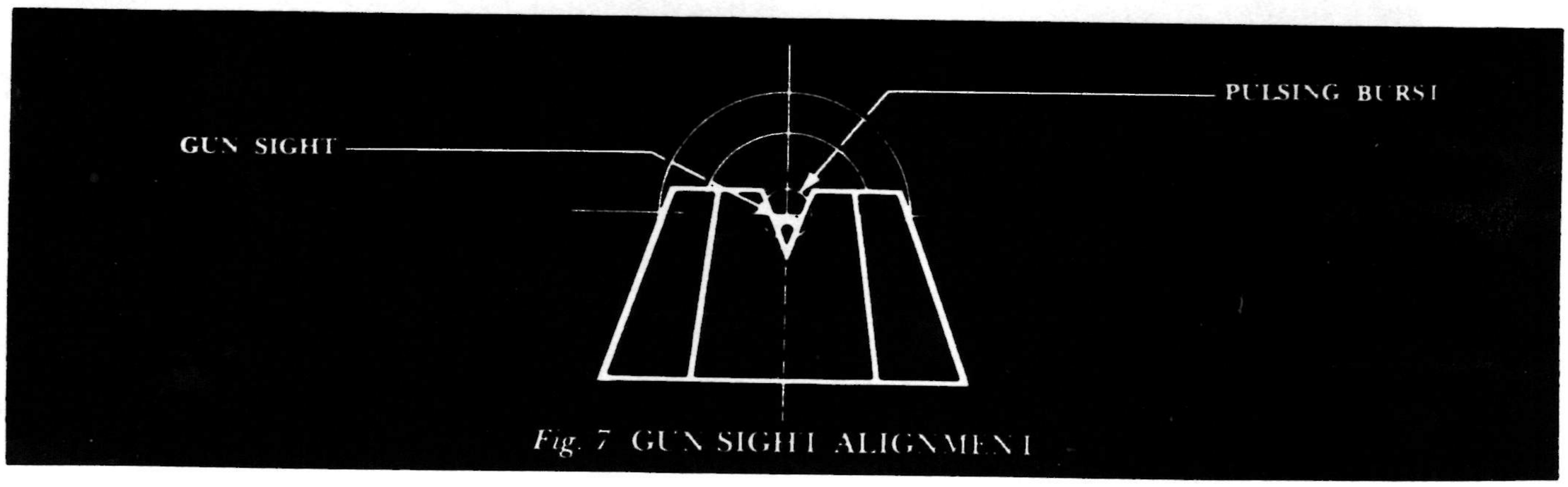


Fig. 7 GUN SIGHT ALIGNMENT

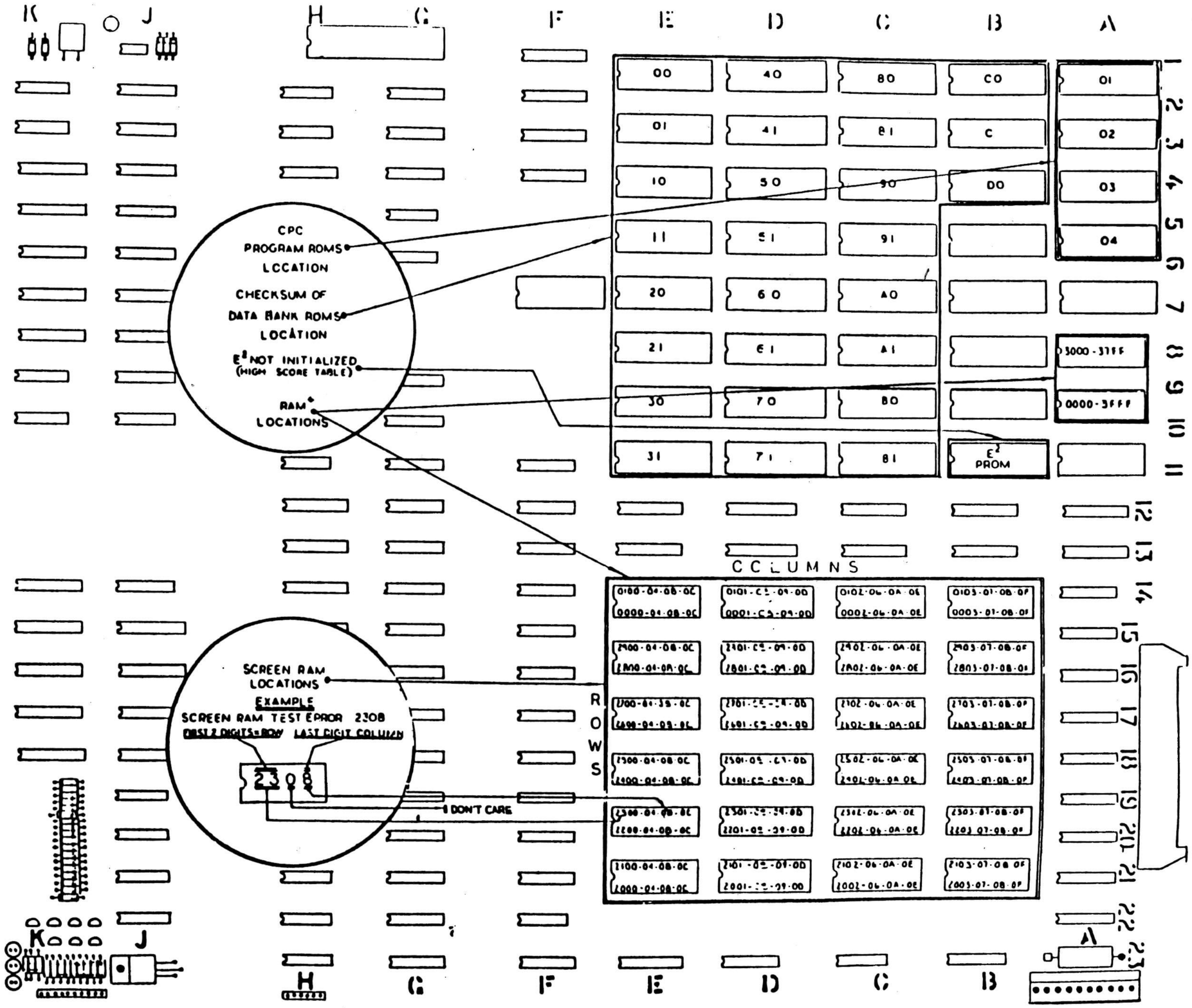


Fig. 8 RAM AND ROM ERROR CODE LOCATIONS

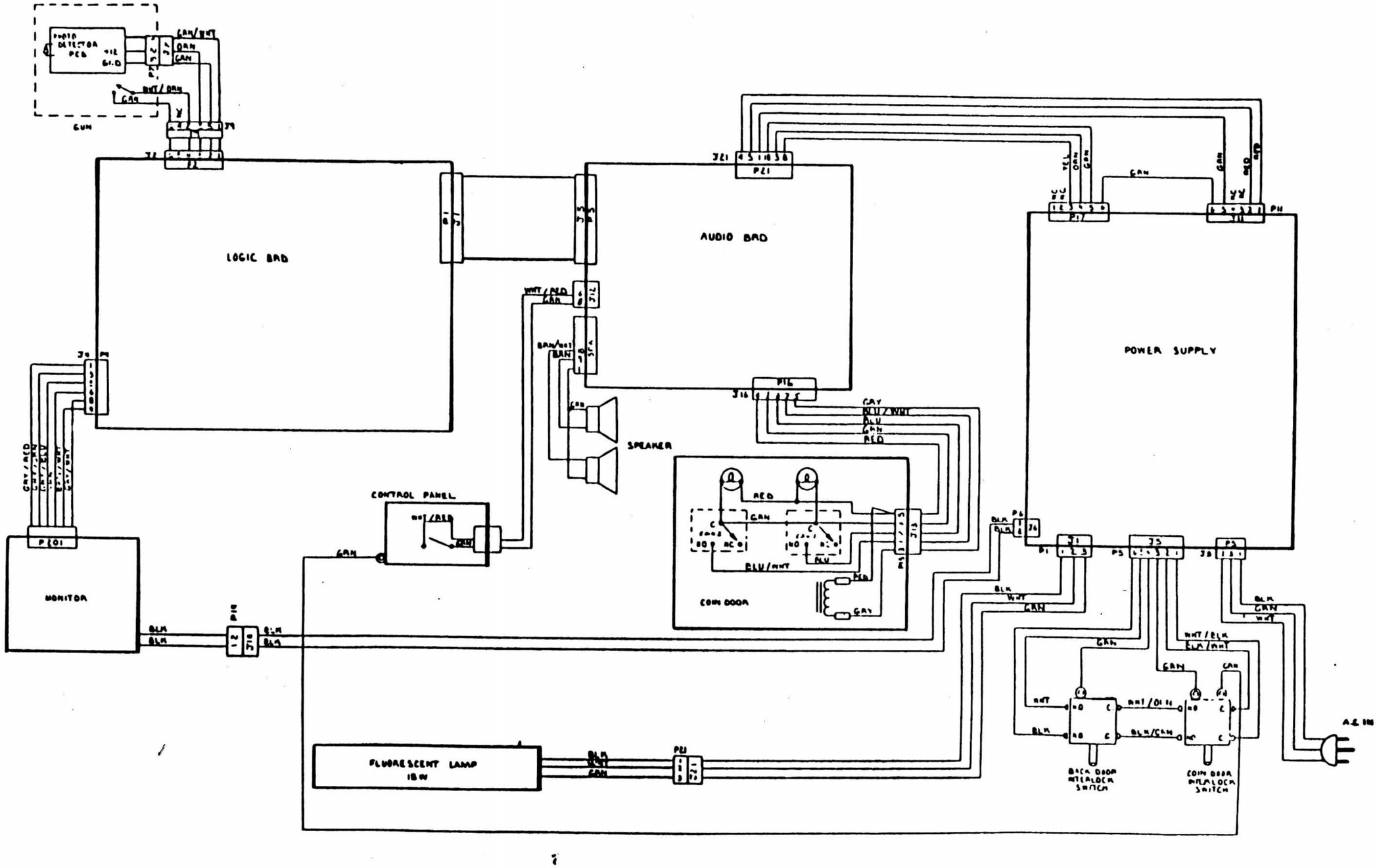
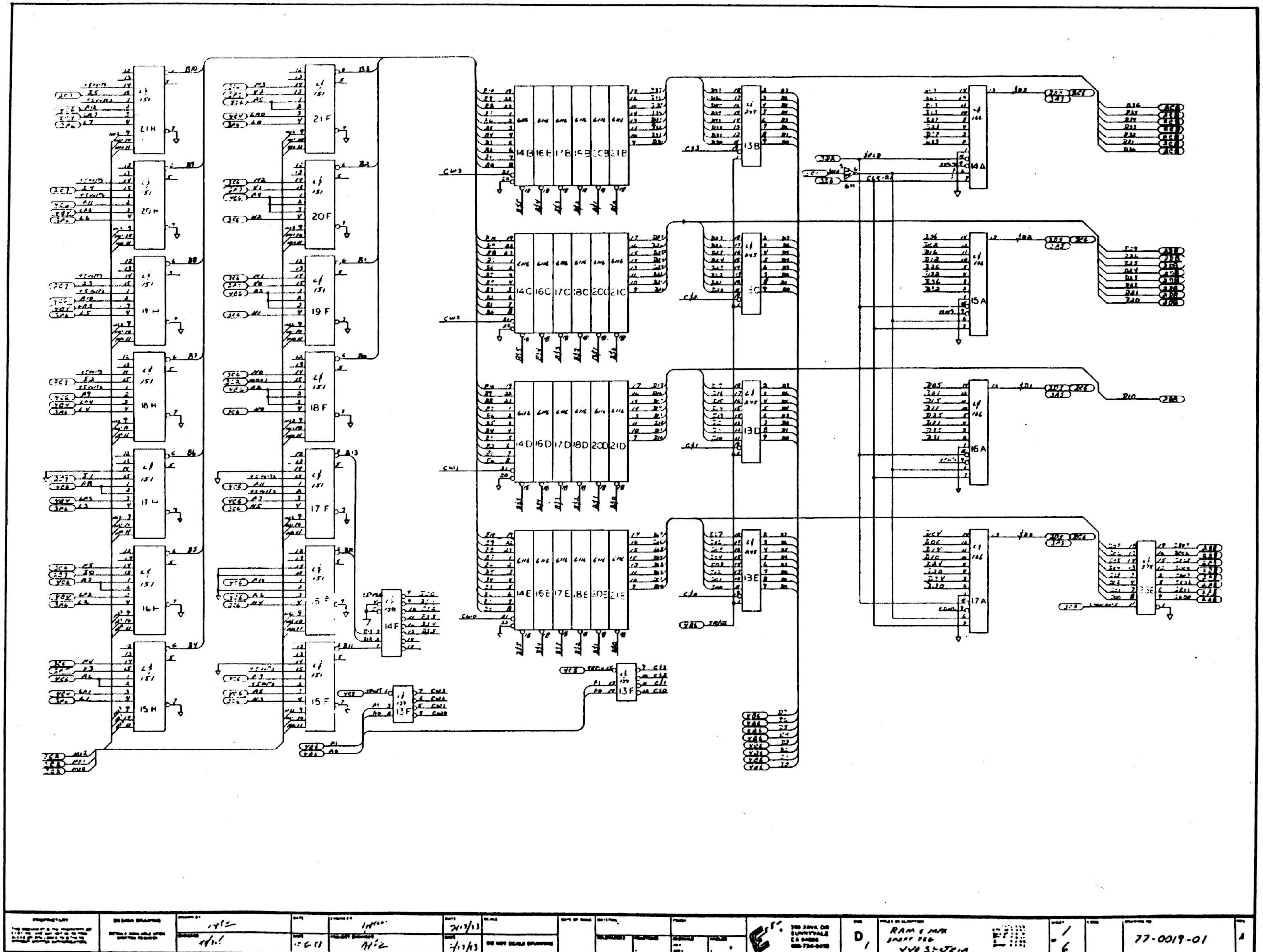


Fig. 10 **WIRING DIAGRAM**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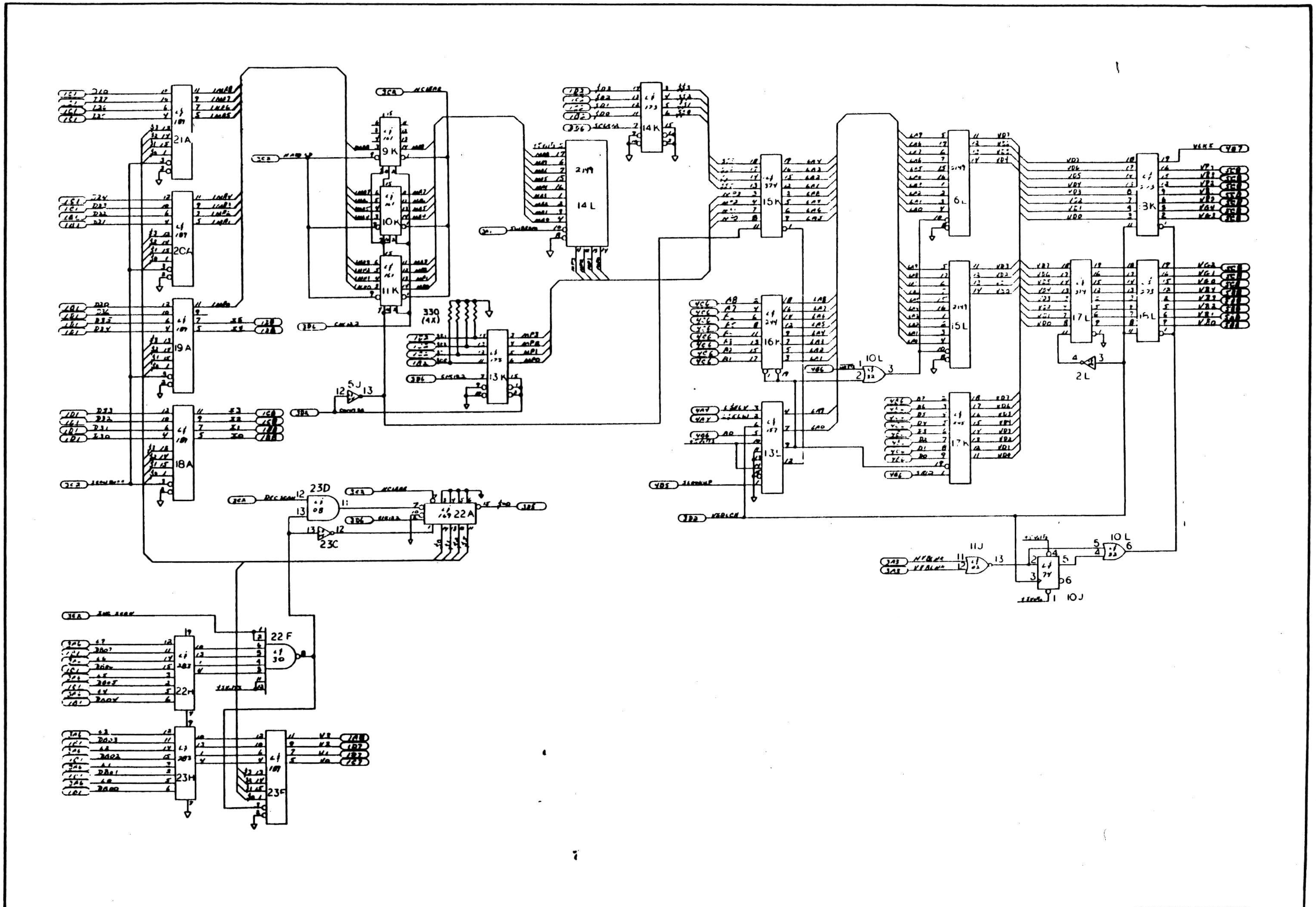
19H
18H
17H
16H
15H
21F
20F
19F
18F
17F
15F
14F
13F
14B 16B 17B 18B 20B 21B
14C 16C 17C 18C 20C 21C
14D 16D 17D 18D 20D 21D
14E 16E 17E 18E 20E 21E
13B
13D
13E
14A
15A
16A
17A
RAM & MPX
D
1
6
77-0019-01
A



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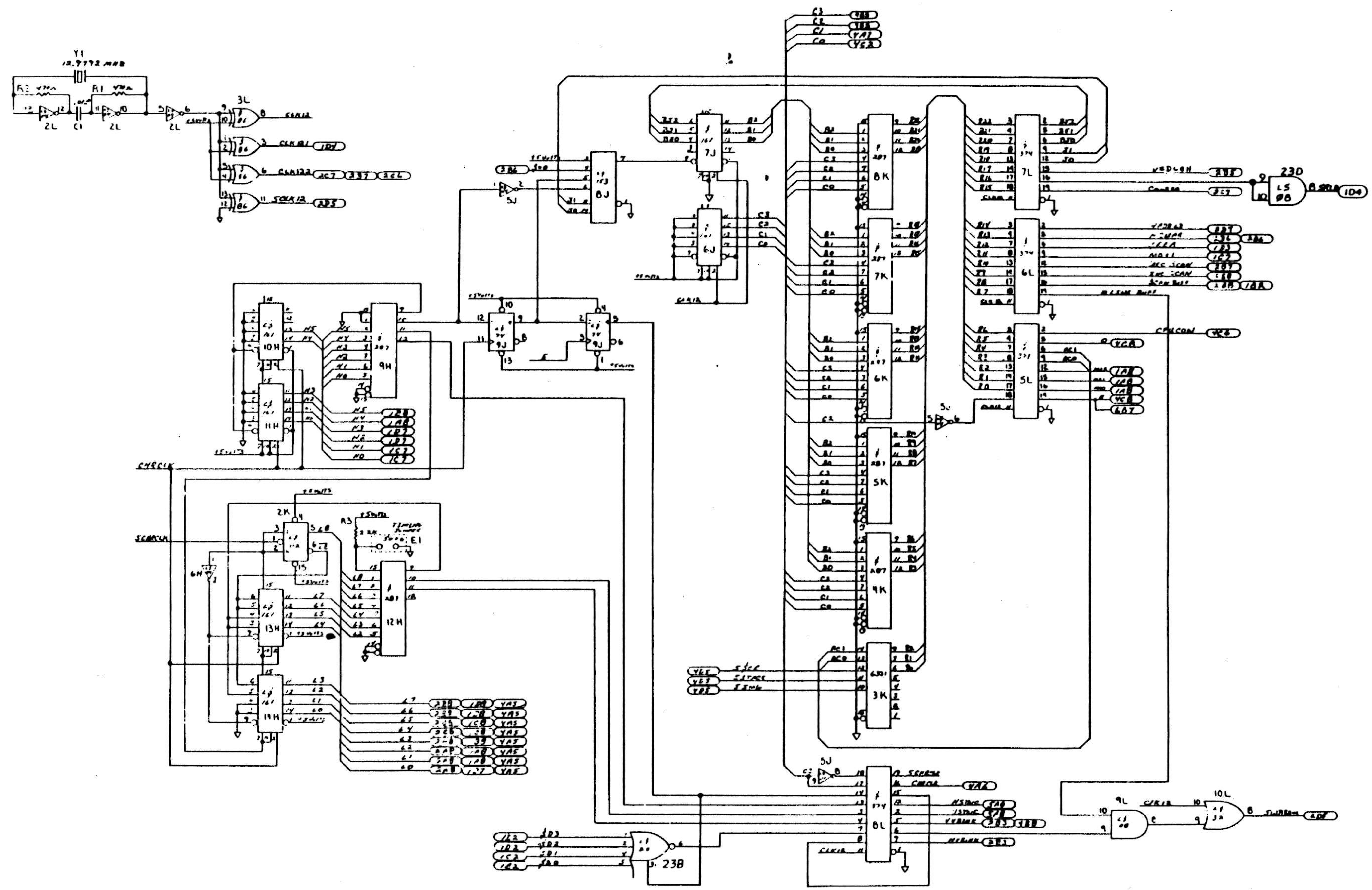
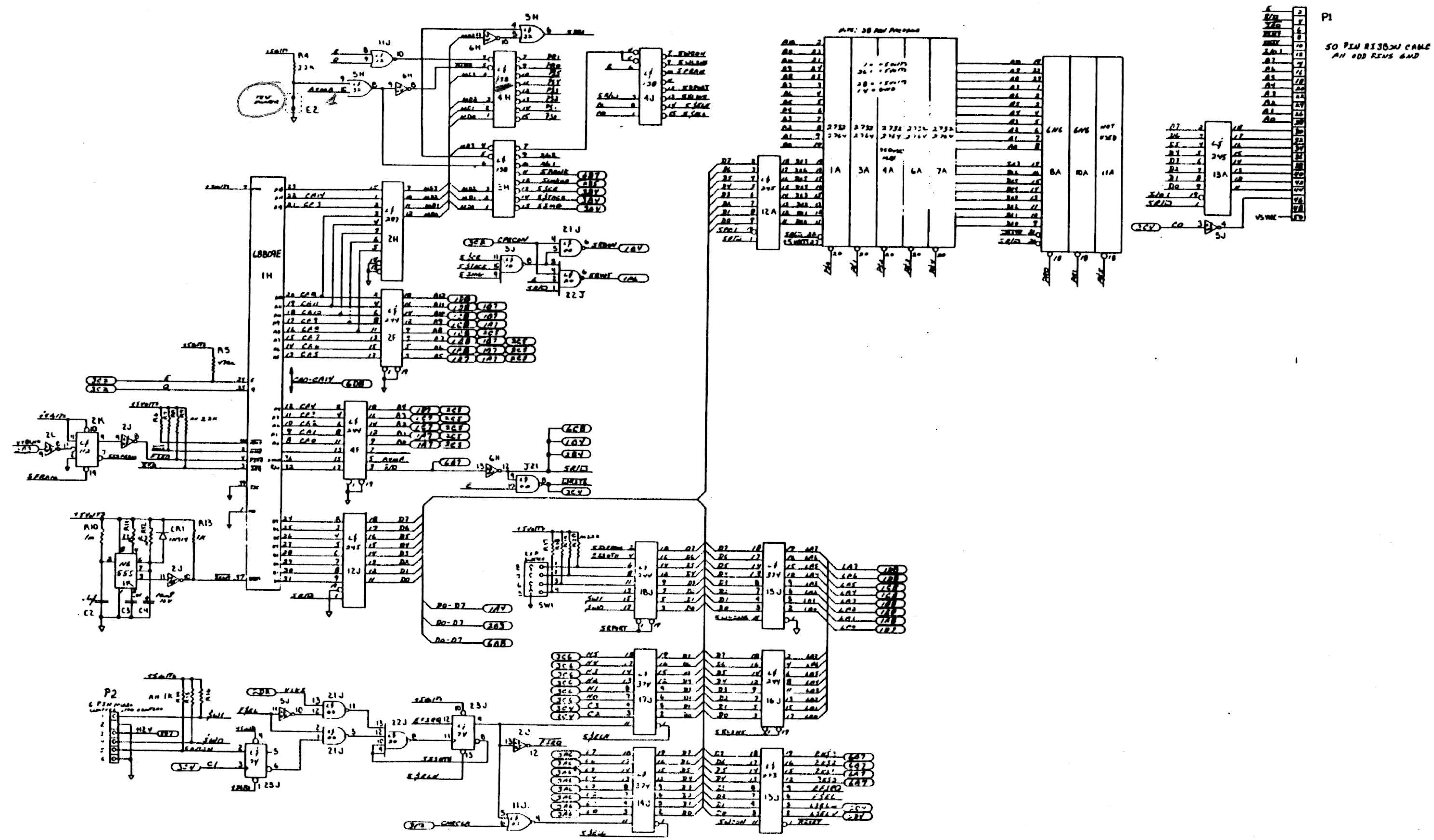


D	MASTER CONTROL 440 SYSTEM	3 of 6	77-0319-



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Date	3/17/83
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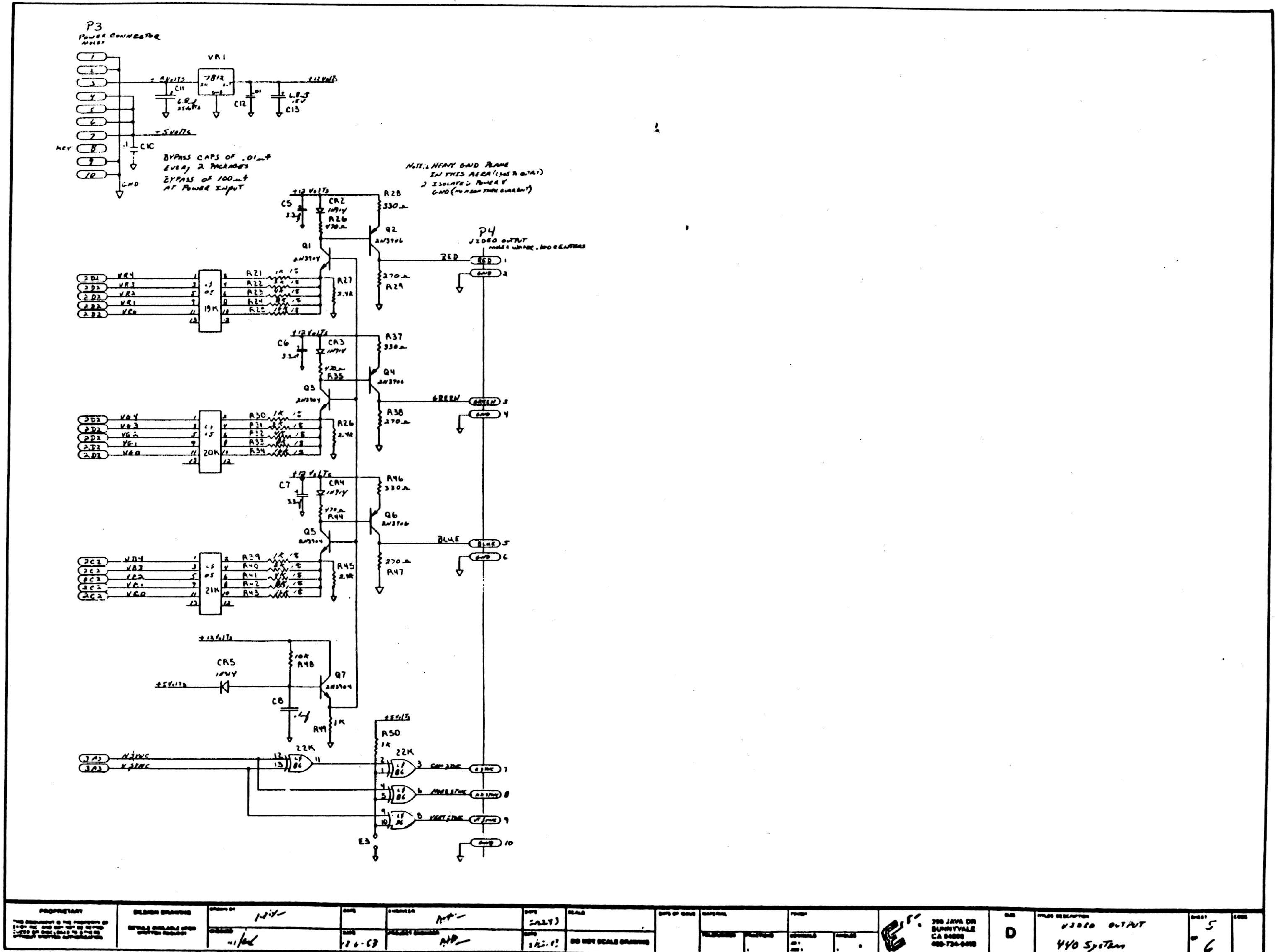
Size	D
Title	CPU & MEMORY 440 System
Sheet	4 of 6
Drawing No.	77-0319-01
Rev	A

300 JAVA DR
SUNNYVALE
CA 94089
408-734-9410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POWER CONNECTOR
VR1
7812
C11
C12
C13
CIC
KEY
GND
+12 VOLTS
CR2
CR3
CR4
CR5
C5
C6
C7
C8
Q1
Q2
Q3
Q4
Q5
Q6
Q7
P4
VIDEO OUTPUT
RED
GREEN
BLUE
GND
19K
20K
21K
22K
R21
R22
R23
R24
R26
R27
R28
R29
R30
R31
R32
R33
R34
R35
R37
R38
R39
R40
R41
R43
R44
R45
R46
R47
R48
R49
R50
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PROPRIETARY
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390 JAVA DR
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CA
D
VIDEO OUTPUT
440 System
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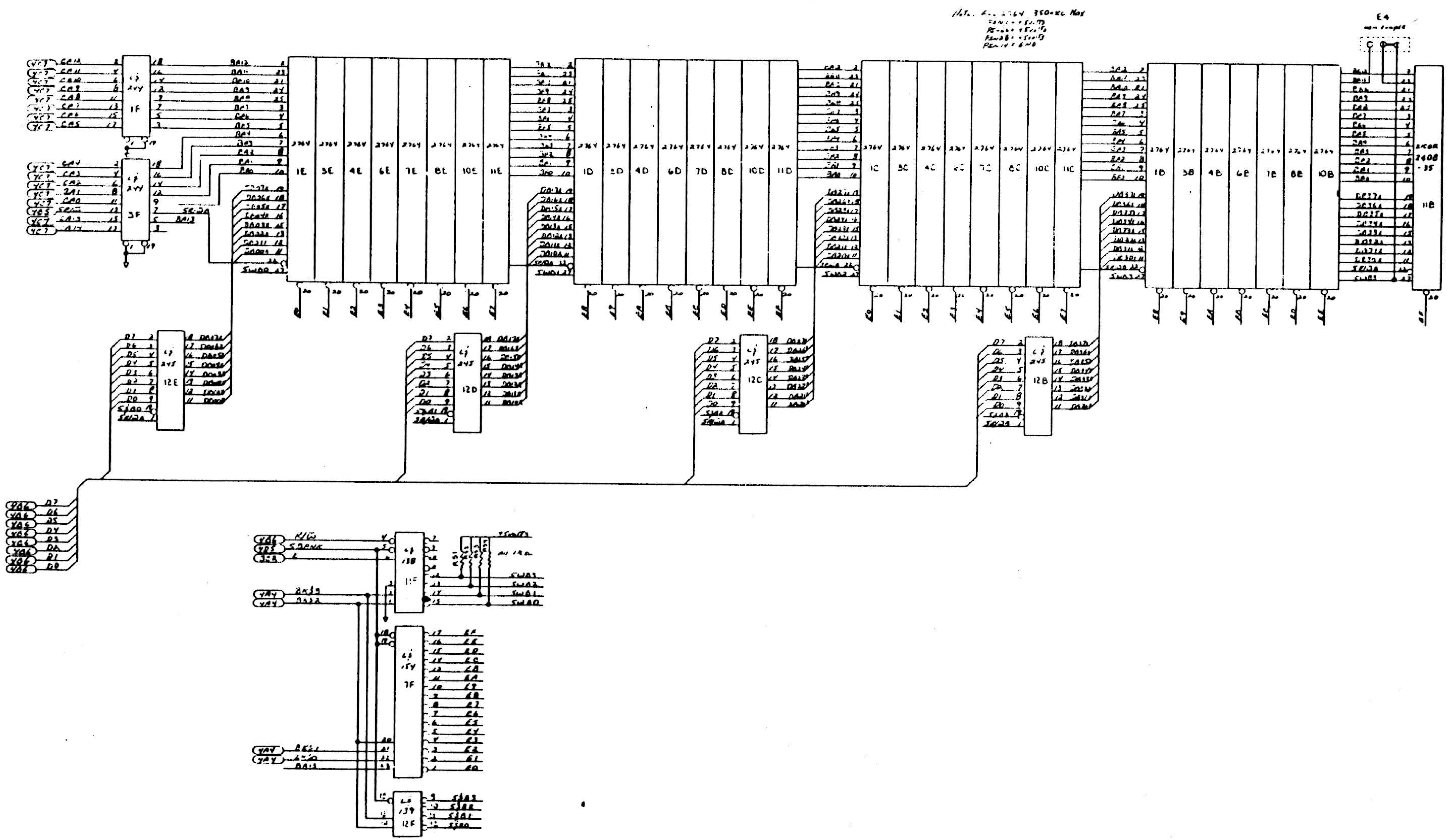

DO NOT SCALE DRAWING

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SUNNYVALE
CA 94086
408-734-9410

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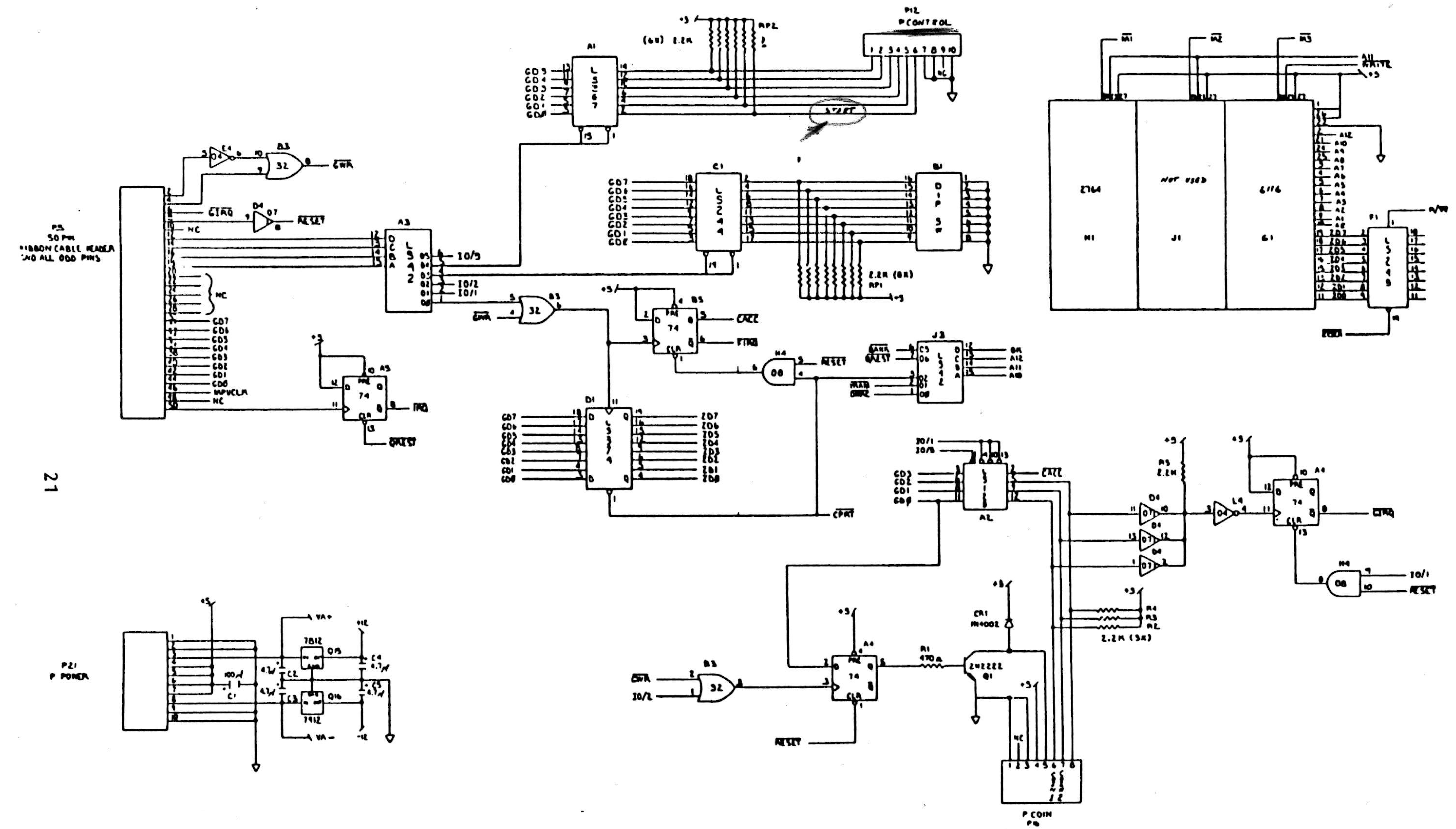

4 CHANNEL DELTA MOD
IO/ AUDIO PCB

77-0022-01

D

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Mark Van Streve

390 Java Dr
Sunnyvale
CA 94089

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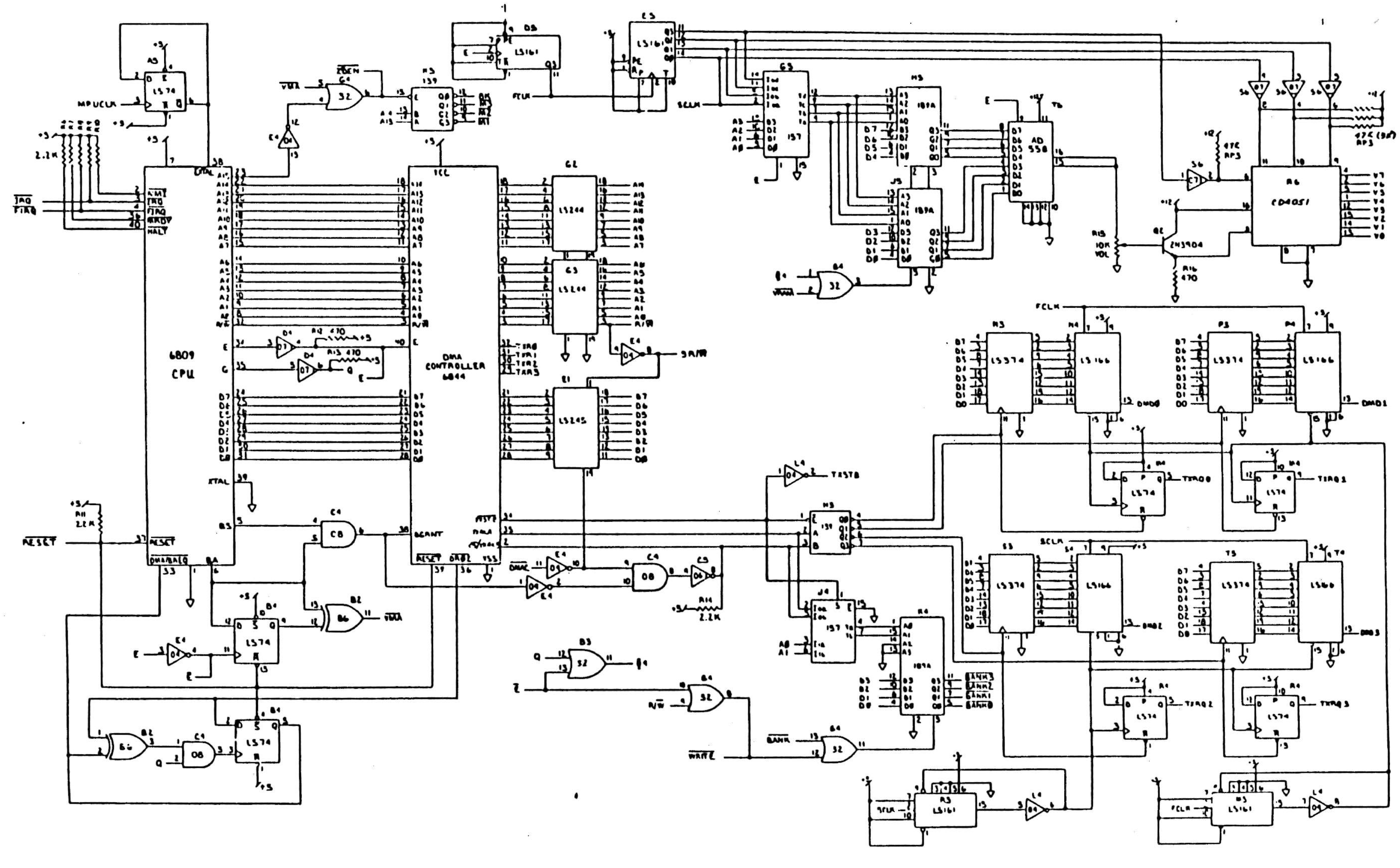

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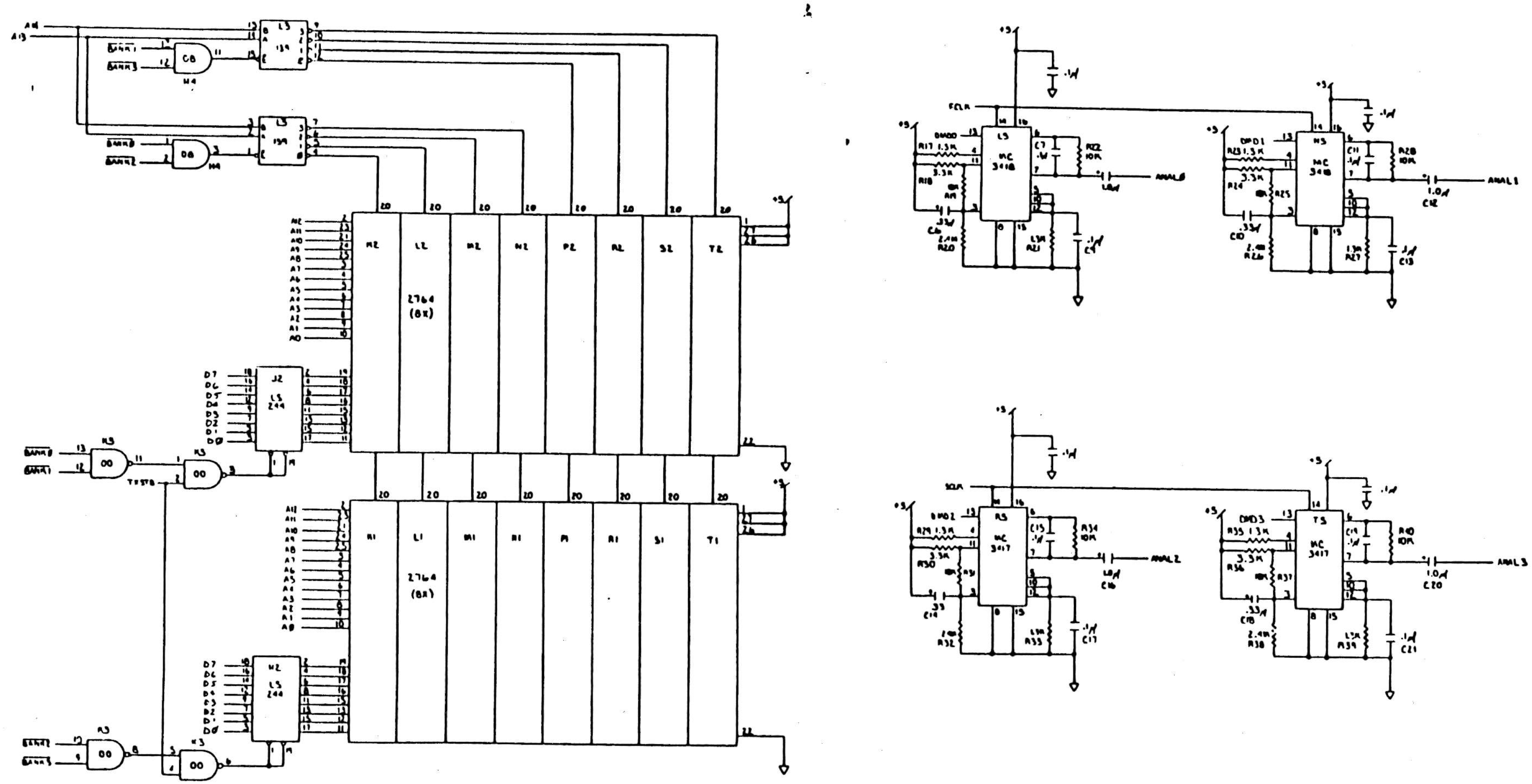

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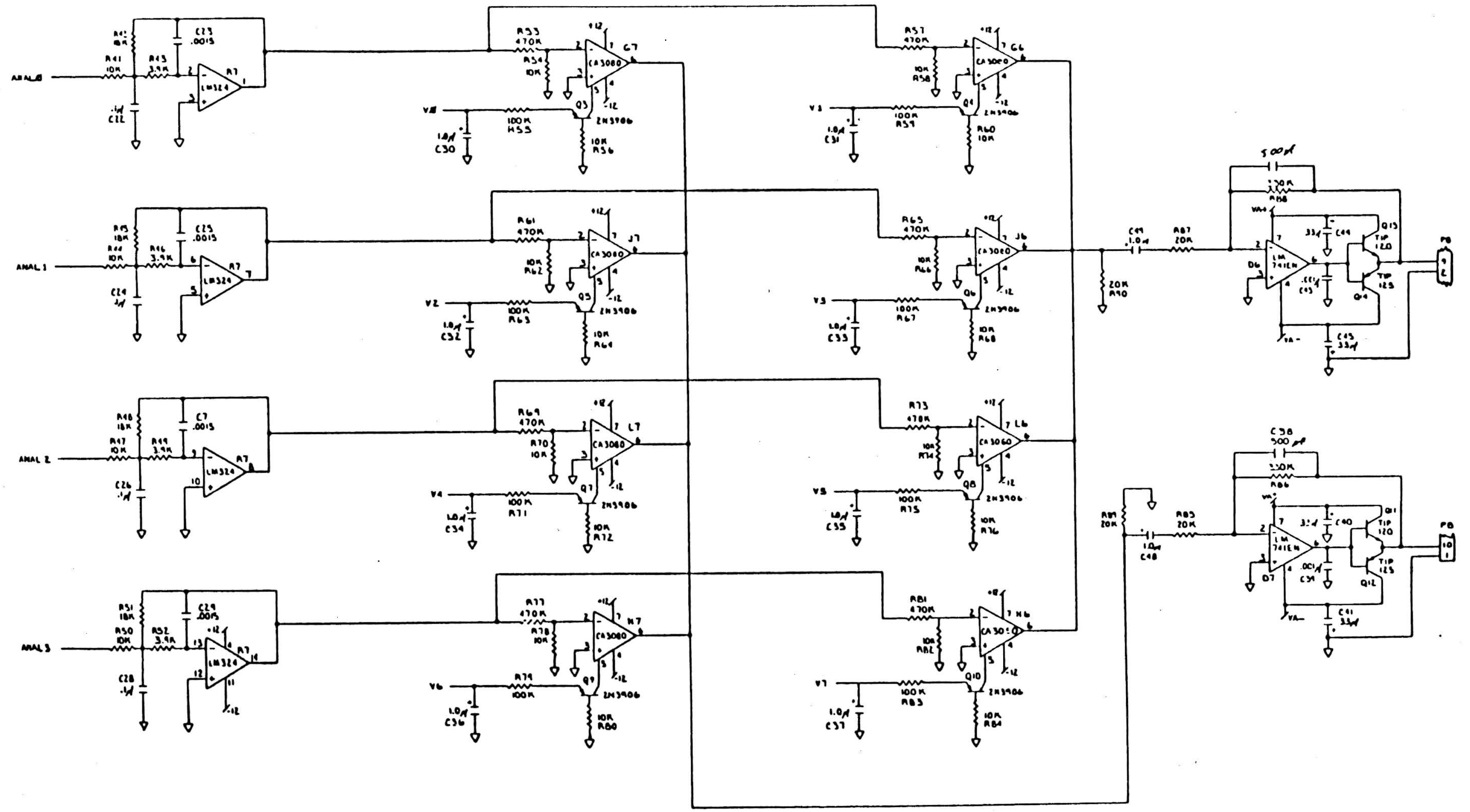

4 CHANNEL DELTA MOD
IO/ AUDIO PCB

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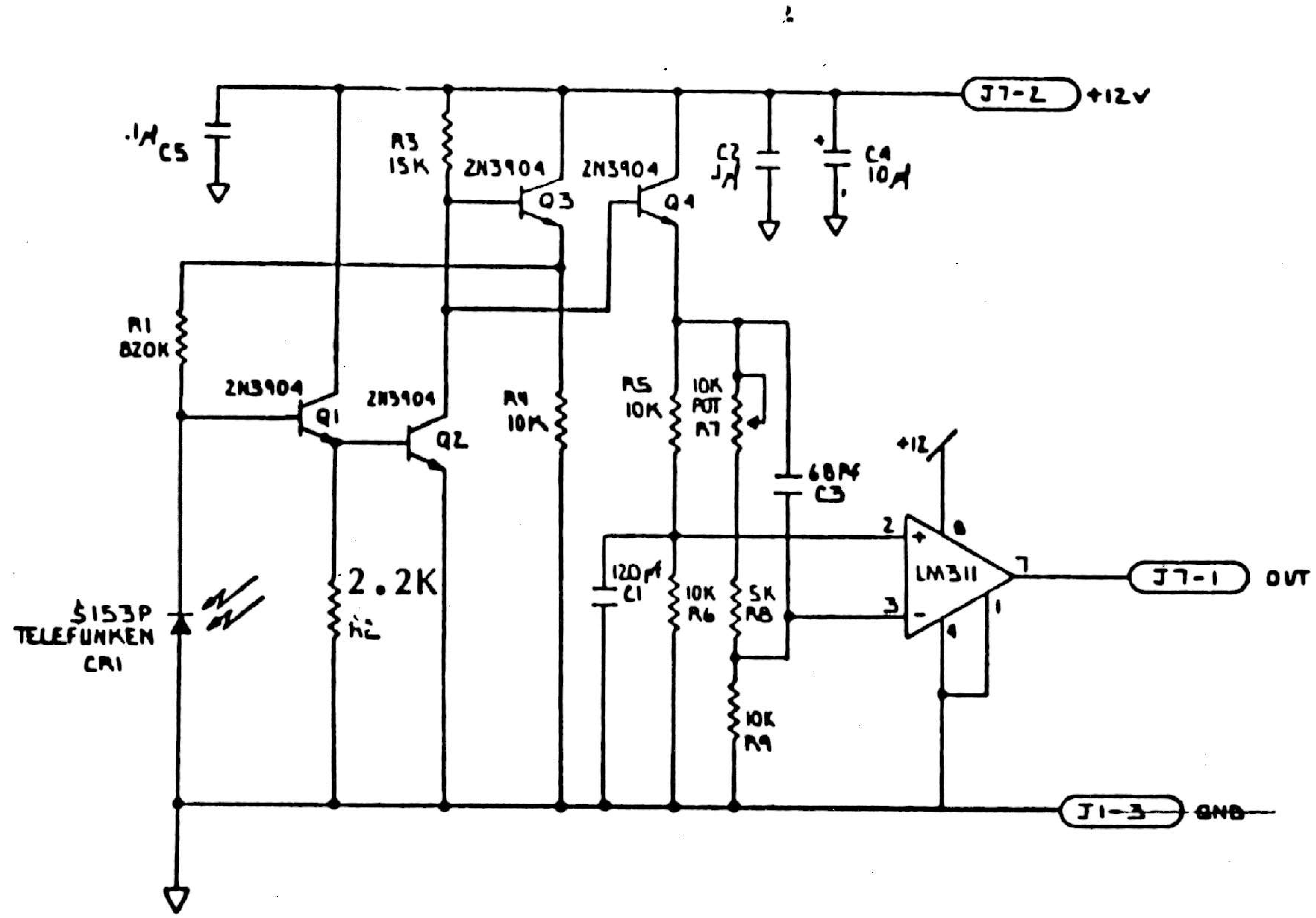


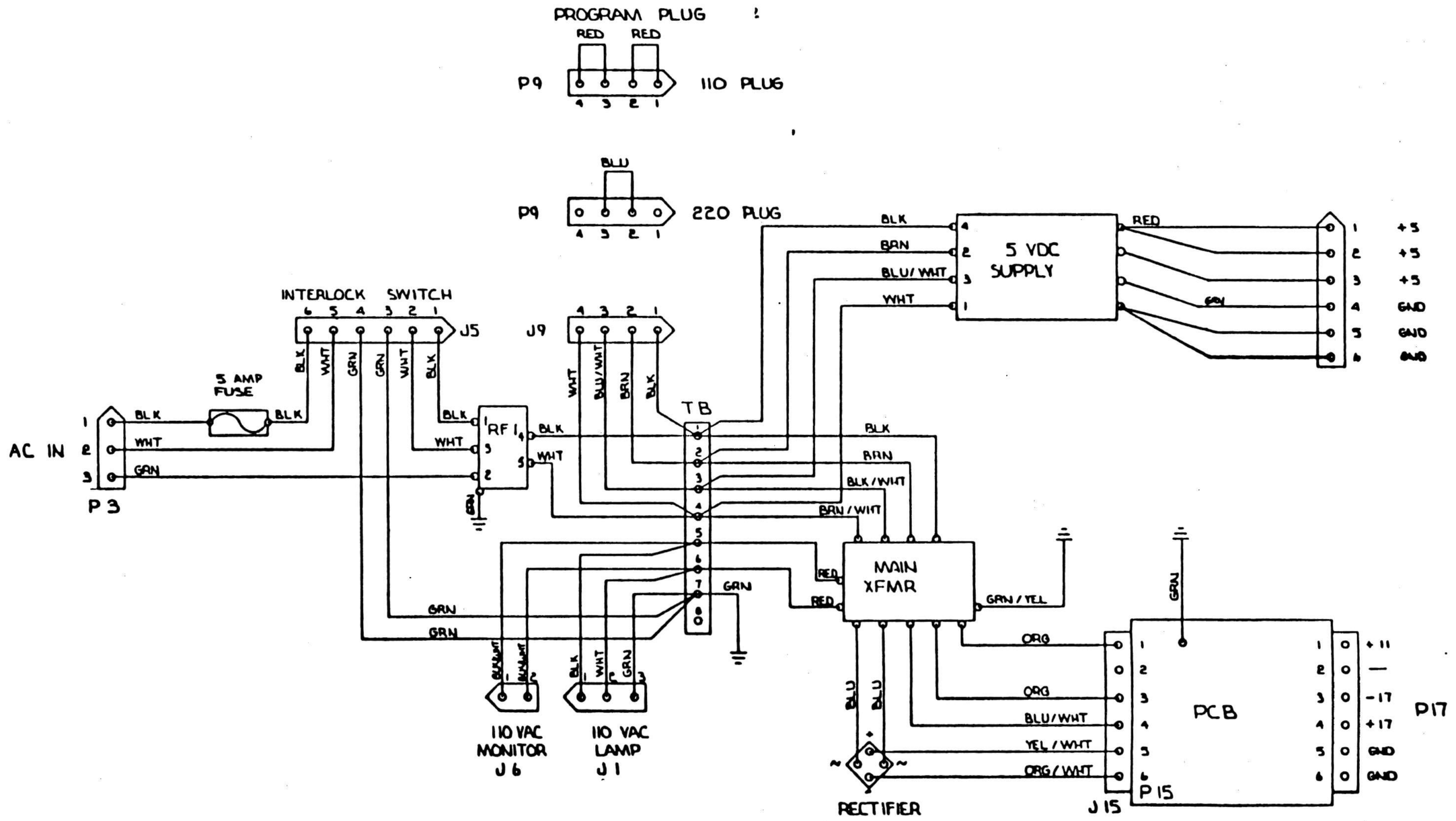
ITEM	PART NUMBER	DESCRIPTION	QTY

390 JAVA DR
SUNNYVALE, CA 94086
408-734-9418

TITLE: PHOTO DETECTOR PCB

C | B | 77-0020-01

THIRD ANGLE PROJECTION



HSC POWER SUPPLY WIRING DIAGRAM