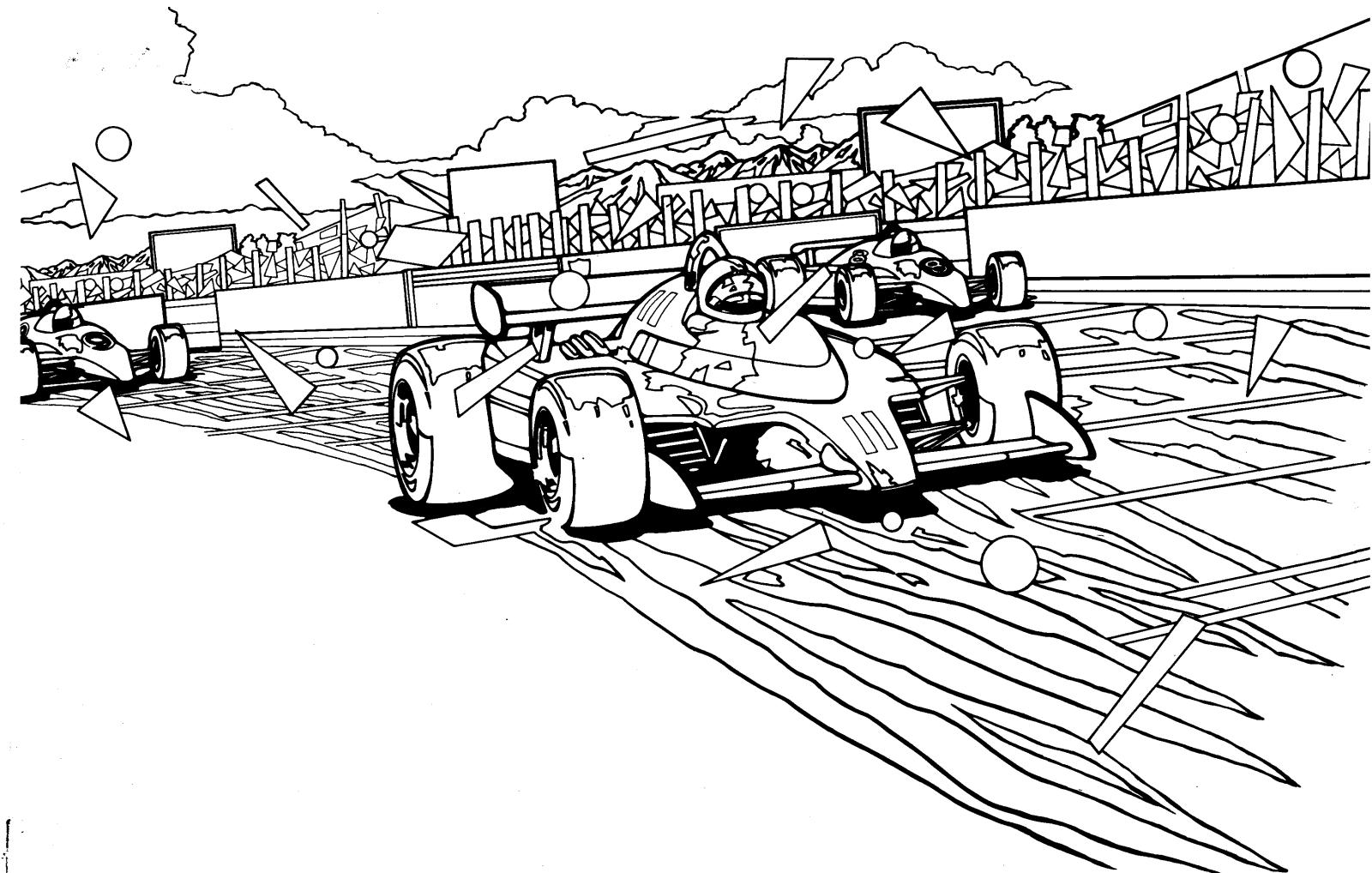


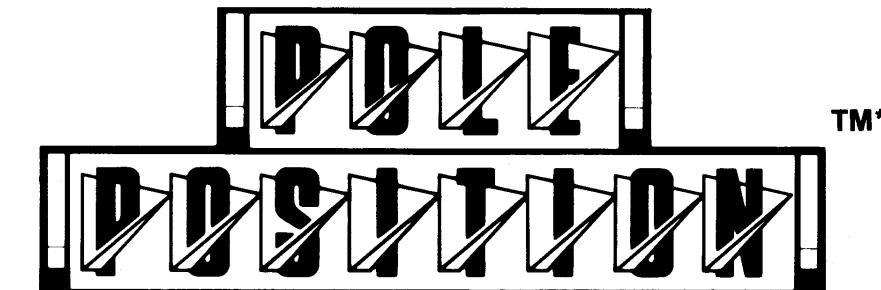
Table of Contents

- Sheet 1A Table of Contents
 Sheet 1B Pole Position Upright Main Wiring Diagram (039458-01 C)
 Sheet 2A Pole Position Sit-Down Main Wiring Diagram (039464-01 B)
 Sheet 2B EMI Shield PCB Wiring Diagram (037667-01 A), EMI End PCB Wiring Diagram (A039431-01 A), Coin Option Interconnect Wiring Diagram (A039576-01 A)
 Sheet 3A Coin-Door Wiring Diagram (A037542-01 D), Upright Utility-Panel Wiring Diagram (A039254-01 A), Sit-Down Utility-Panel Wiring Diagram (A038004-01 E), Upright-Only Fluorescent Light Wiring Diagram (035833-01 A), Steering Coupler PCB Schematic (A035220-01 C)
 Sheet 3B Regulator/Audio II PCB Schematic Diagram (035435-01 G), Color Raster Power Supply Wiring Diagram (037669-01 C)
 Sheet 4A Memory Map and Schematic Notes
Game CPU PCB Schematics (039185-01 A), Sheets 4B—10A
 Sheet 4B CPU PCB Edge Connector, CPU PCB Power Input, RAM Battery Back-Up Power
 Sheet 5A Microprocessor A
 Sheet 5B Microprocessor B
 Sheet 6A Sound Microprocessor
 Sheet 6B Sound Memory, Sound and I/O Address Decoders
 Sheet 7A CPU PCB Sync Chain
 Sheet 7B Sound Buffers and Multiplexer
 Sheet 8A Brake and Gas Pedal Input, System Bus Interface
 Sheet 8B Option Switch Input and I/O Interface
 Sheet 9A Speech Processor and Memory, Miscellaneous Sound Generators
 Sheet 9B Engine Sound Generator
 Sheet 10A Sound Output
Game Video PCB Schematics (039187-01 A), Sheets 10B—15B
 Sheet 10B Video PCB Edge Connector, Video PCB Power Input, Clock
 Sheet 11A Video PCB Sync Chain, Control Signal Inverter
 Sheet 11B Vertical Position Modifiers, Vertical Position Buffers and Adders, Address Bus Interface
 Sheet 12A Video RAM Address Decoders, Playfield Video Memory
 Sheet 12B Picture Data Memory Address Modifiers, Roadway Memory and Adders
 Sheet 13A Alphanumeric and Background PROM
 Sheet 13B Motion Object Video Memory
 Sheet 14A Match Circuit, Size Clock-Rate Generator
 Sheet 14B Picture Memory (Signs and Cars)
 Sheet 15A Horizontal Address Counters, Motion Object Line Buffers
 Sheet 15B Color Memory and Output
Display Schematics, Sheets 16A—16B
 Sheet 16A Electrohome Display Schematic Diagram (92-049)
 Sheet 16B Matsushita Display Schematic Diagram (139003-1004)

NOTE
 This staple temporarily holds the
 schematic package together. Re-
 move the staple before using these
 schematics.



Schematic Package Supplement to



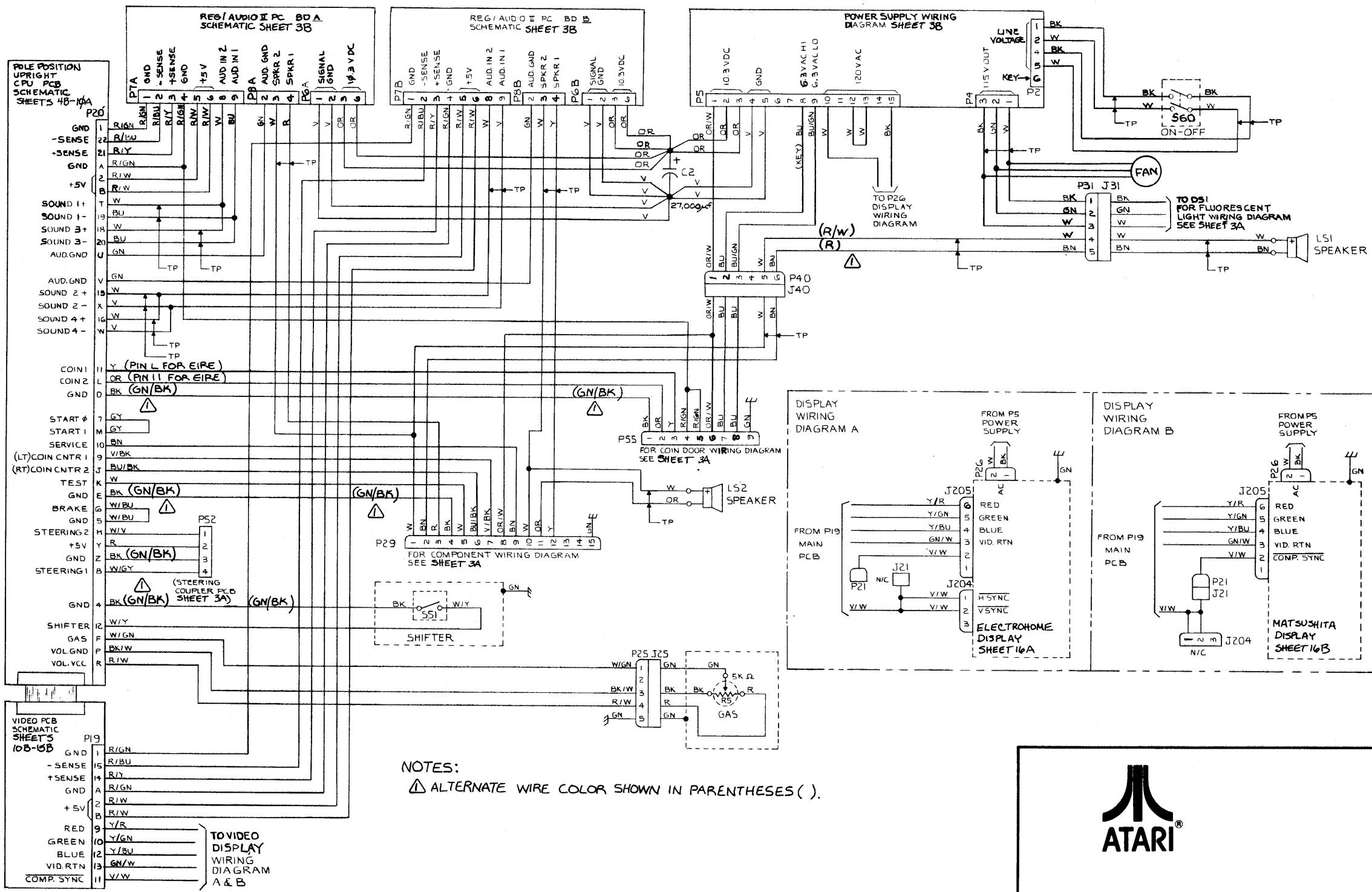
TM*

Operation, Maintenance, and Service Manual

*Pole Position is engineered and designed by Namco Ltd. Manufactured under license by Atari, Inc.

2M

©ATARI INC., 1982



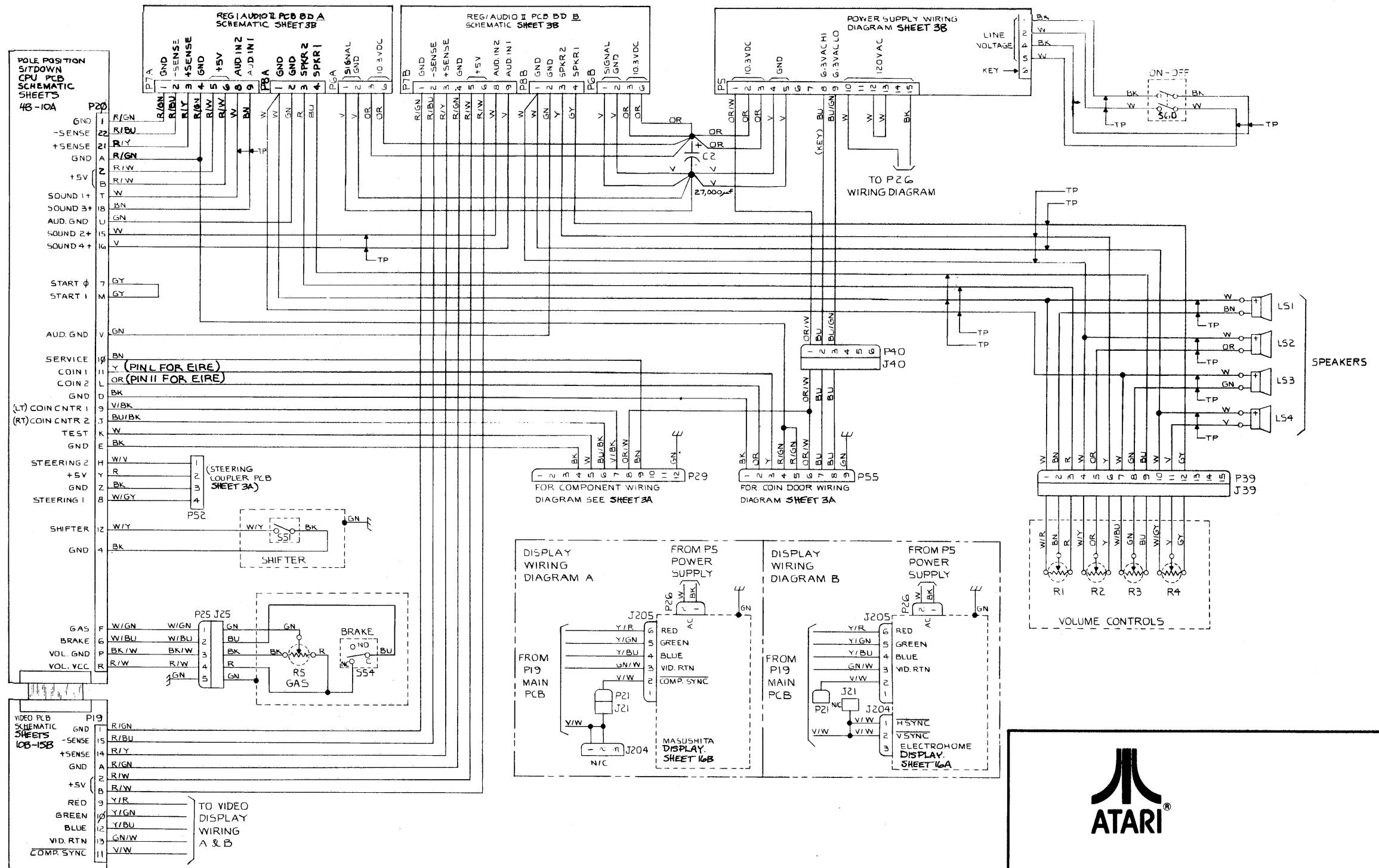
Pole Position Upright Main Wiring Diagram

© ATARI INC., 1982

A Warner Communications Company

SP-218 Sheet 1B

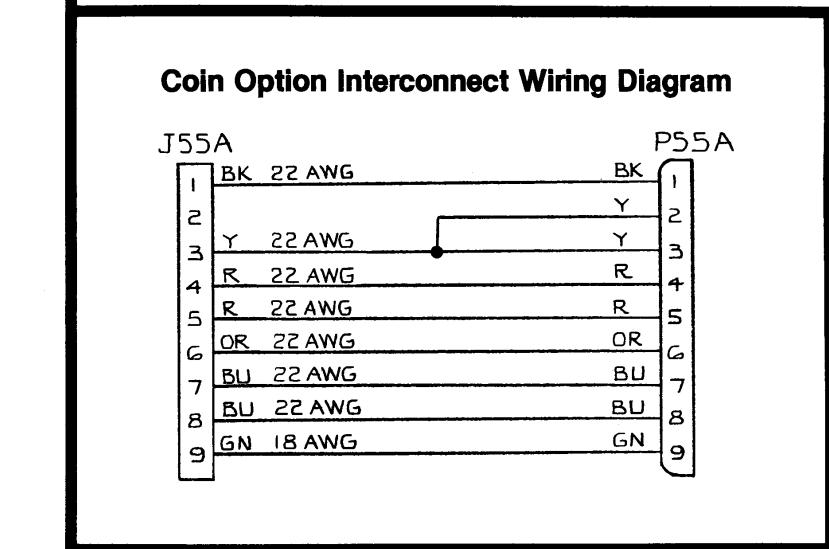
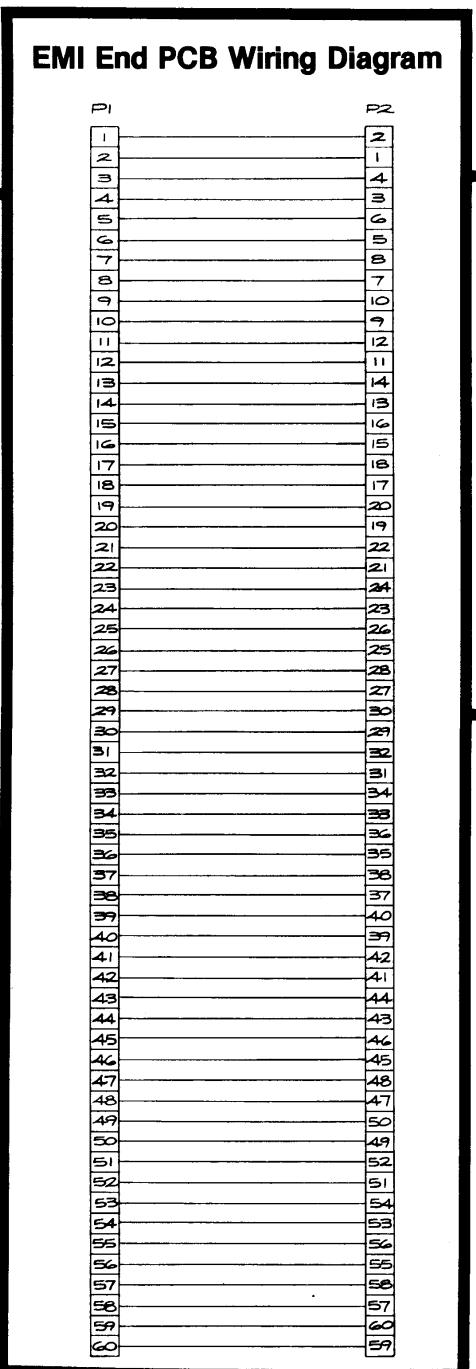
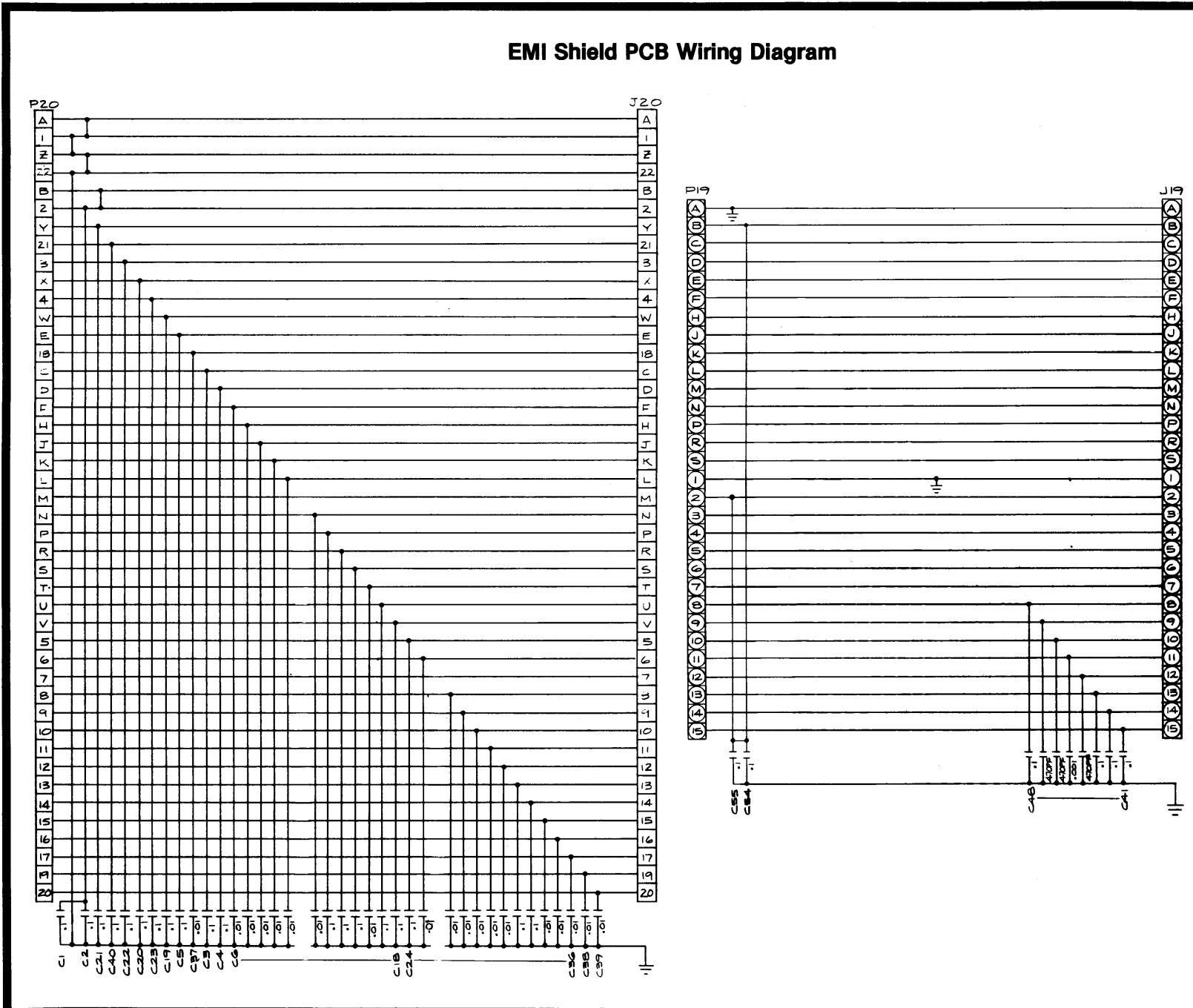
8th printing



Pole Position Sit-Down Main Wiring Diagram

© ATARI INC., 1982

A Warner Communications Company



Pole Position Game Wiring Interfaces

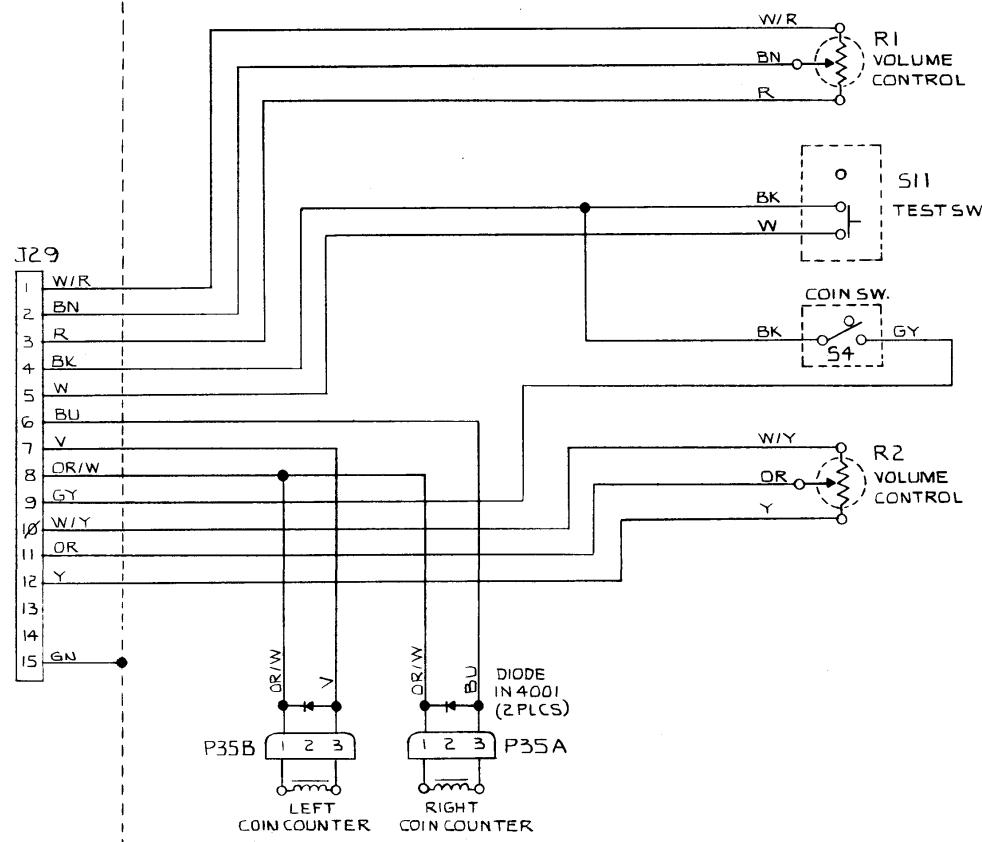
© ATARI INC., 1982

A Warner Communications Company

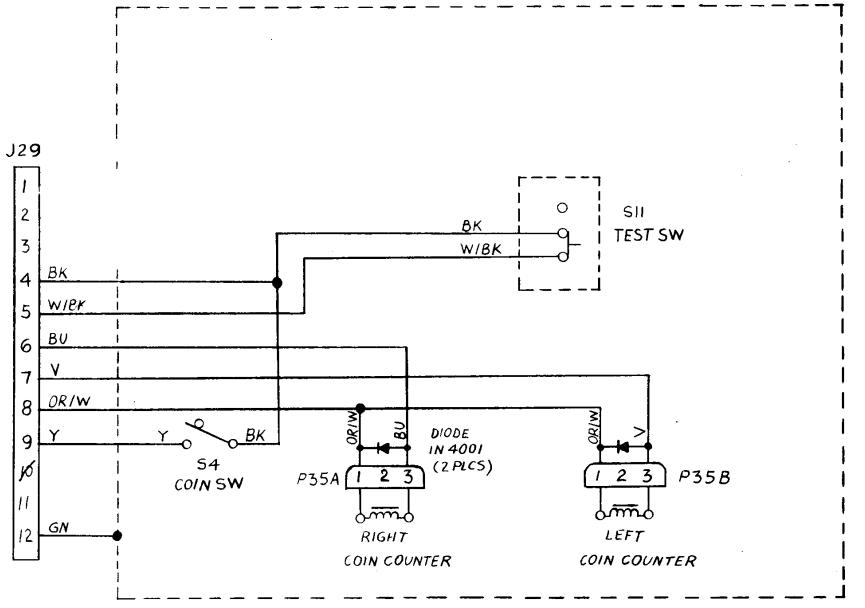
SP-218 Sheet 2B
8th printing

Upright Utility-Panel Wiring Diagram

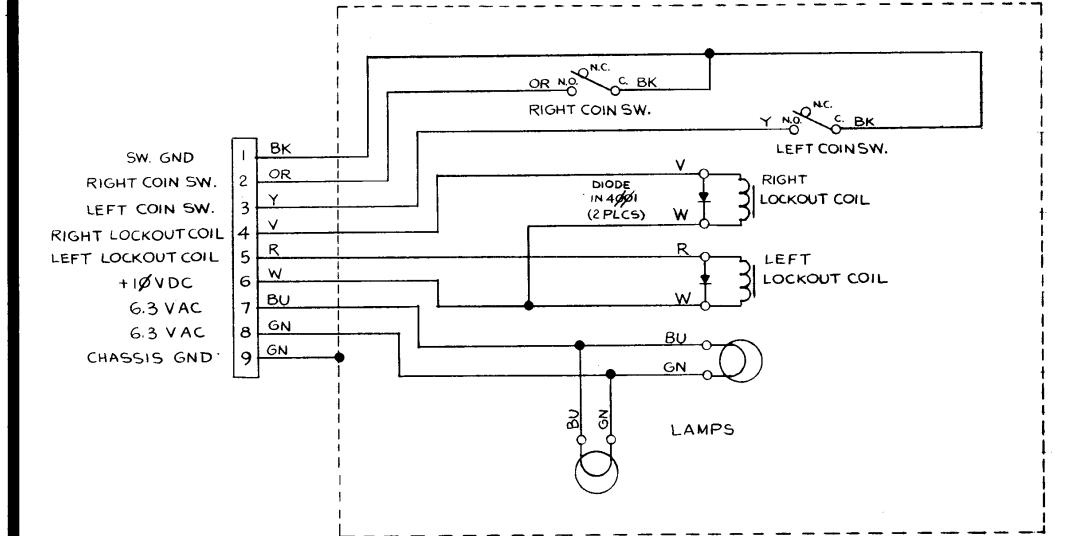
WIRING DIAGRAM



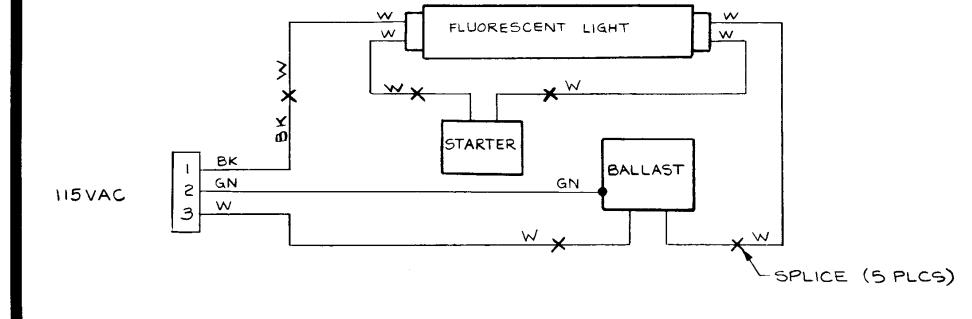
Sit-Down Utility-Panel Wiring Diagram



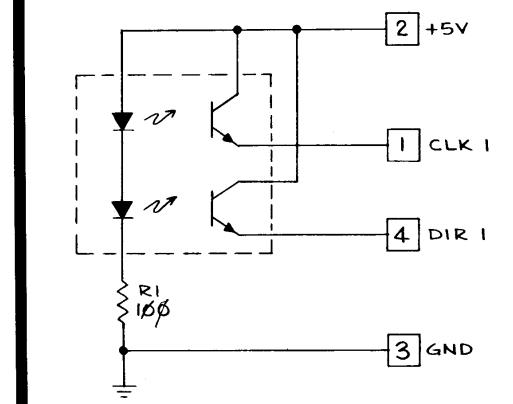
Coin-Door Wiring Diagram



Upright-Only Fluorescent Light Wiring Diagram



Steering Coupler PCB Schematic

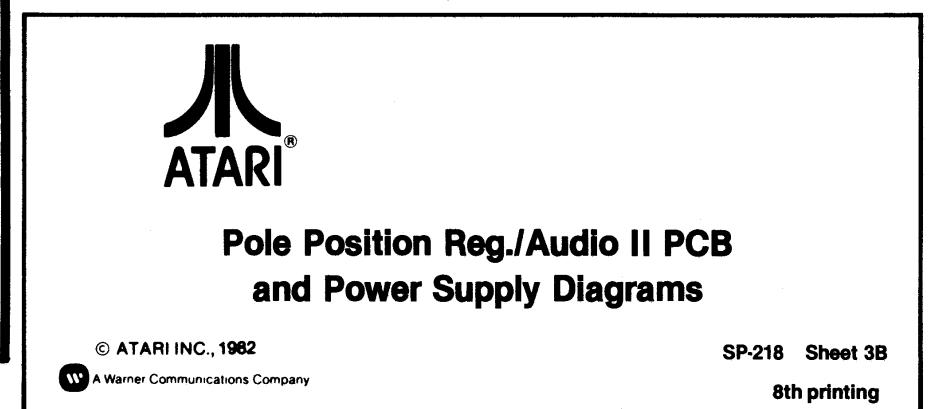
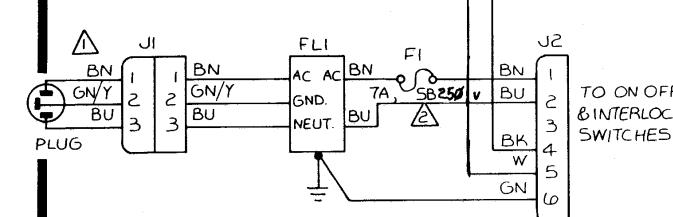
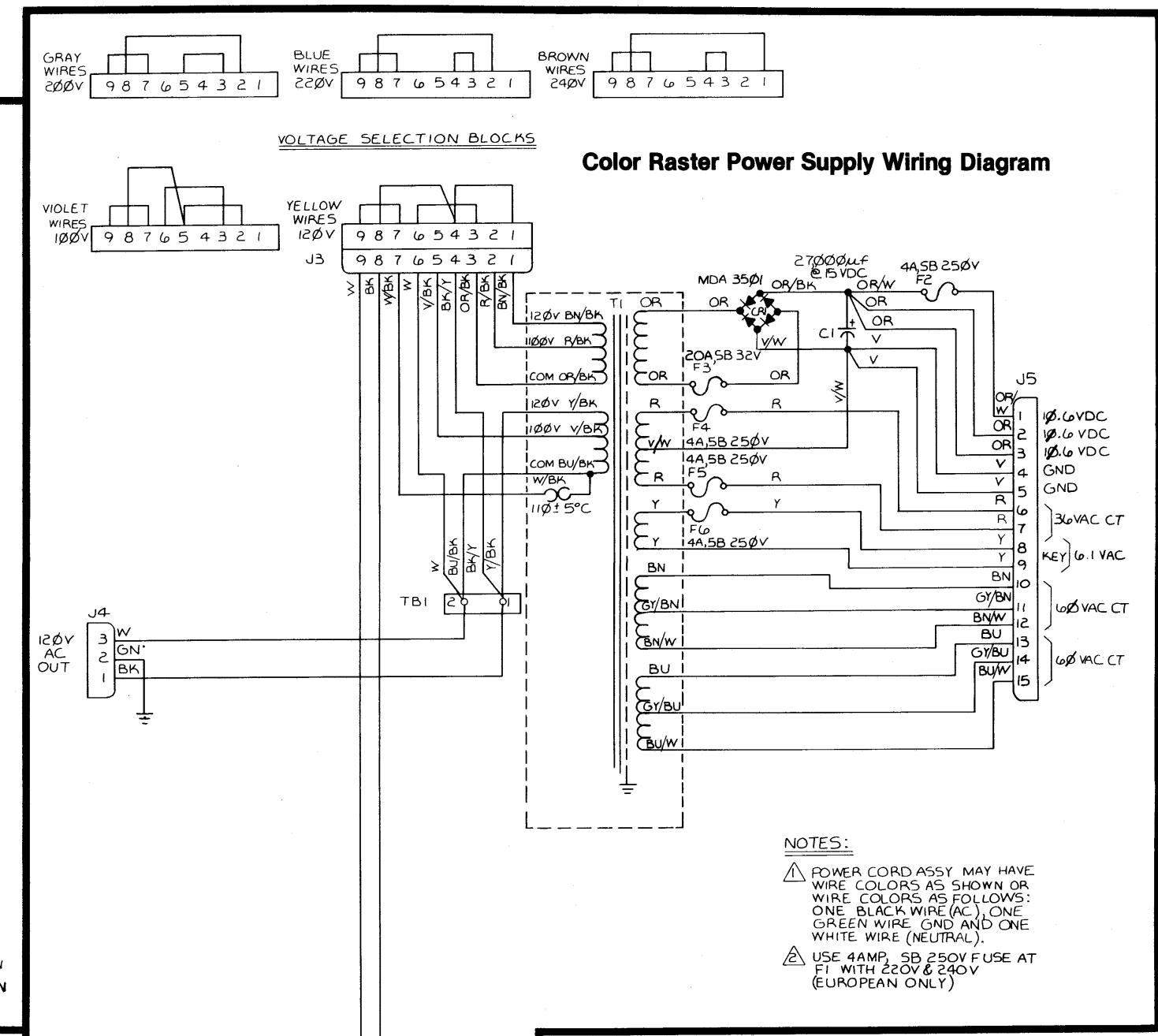
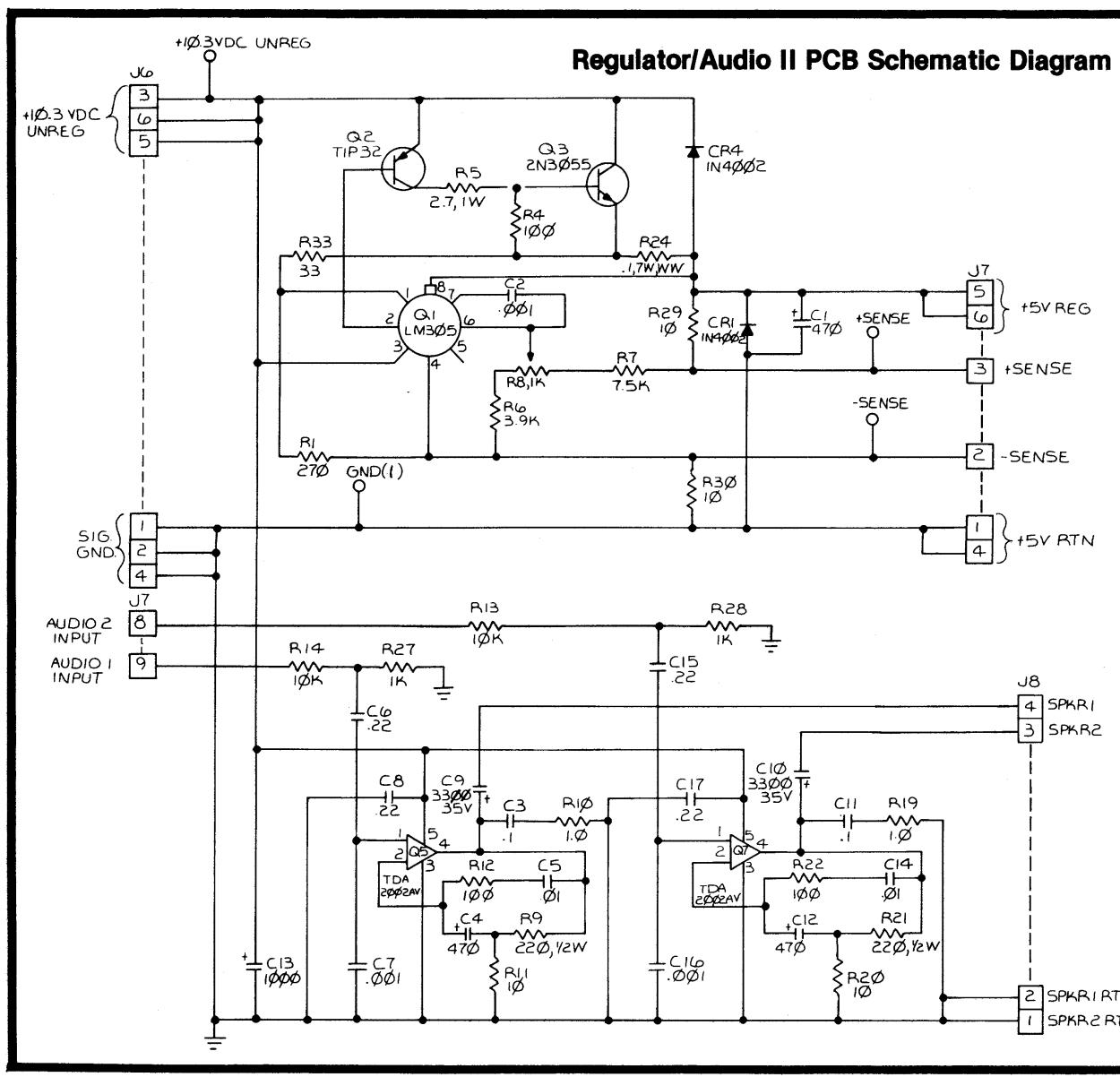


Pole Position Game Wiring Interfaces

© ATARI INC., 1982

A Warner Communications Company

SP-218 Sheet 3A
8th printing



Pole Position Reg./Audio II PCB and Power Supply Diagrams

© ATARI INC., 1982
A Warner Communications Company

MEMORY MAP

CPU 1 AND 2

HEXADECIMAL ADDRESS	READ/ WRITE	FUNCTION
0000-37FF	R	Program Memory
4000-7FFF	R	Program Memory
8000-8FFF (8700-87FF) (8F00-8FFF)	R/W	Motion Object Memory Vertical and Horizontal Position Character, Color, Vertical Size, Horizontal Size
9000-97FF (9000-93FF) (9700-97FF)	R/W	Road Memory Character Horizontal Scroll
9800-9FFF A000-AFFF	R/W R/W	Alphanumeric Memory View Character Memory
C000	W	View Horizontal Position
C100	W	Road Vertical Position

CPU 3

HEXADECIMAL ADDRESS	READ/ WRITE	FUNCTION
0000-1FFF	R	Program Memory
2000-2FFF	R	Program Memory
3000-37FF	R/W	Battery Back-Up RAM
4000-43FF (4380-43FF)	R/W	Motion Object Memory Vertical and Horizontal Position
4400-47FF (4780-47FF)	R/W	Motion Object Memory Character, Color, Vertical Size, Horizontal Size
4800-48FF (4800-49FF) (4B80-4BFF)	R/W	Road Memory Character Horizontal Scroll
4C00-57FF (4C00-4FFF) (5000-53FF)	R/W	Alphanumeric Memory Alphanumeric View Character
8000-83FF (83C0-83FF)	R/W	Sound Memory Sound
9000	R/W	4-Bit CPU Controller
A000	R/W	Input/Output
A000	W R	IRQ Enable (1 = enable, 0 = disable) Bit 0: Not Used Bit 1: 128 V Bit 2: Power-Line Sense Bit 3: ADC End Flag
A001	W	4-Bit CPU Enable
A002	W	Sound Enable
A003	W	ADC Input Select
A004	W	CPU 1 Enable
A005	W	CPU 2 Enable
A006	W	Start Switch
S007	W	Color Enable
A100	W	Watchdog Reset
A200	W	Car Sound (Lower Nibble)
A300	W	Car Sound (Upper Nibble)

Schematic Reference Designators and Symbols

Logic symbols depict the logic function performed by that particular device and may differ from the manufacturer's data.

REFERENCE DESIGNATORS:

C	Capacitor
CR	Diode, signal or rectifier
F	Fuse
J	Connector
L	Inductor, fixed or variable
LS	Speaker
P	Connector
Q	Transistor or silicon-controlled rectifier

R	Resistor, fixed or variable
S	Switch
T	Transformer
TP	Twisted wire pair
VR	Voltage regulator
Y	Crystal

WIRE COLORS:

R	Red
GN	Green
Y	Yellow
W	White
BU	Blue
BN	Brown
BK	Black
OR	Orange
V	Violet
GY	Gray

Electrical components shown on the schematic diagrams are in the following units unless otherwise noted:

Capacitors = microfarads (μ F)
Resistors = ohms (Ω)
Inductors = microhenrys (μ H)

SYMBOLS:



Ground



Test Point



PCB edge connector pad



Pole Position Memory Map and Schematic Notes

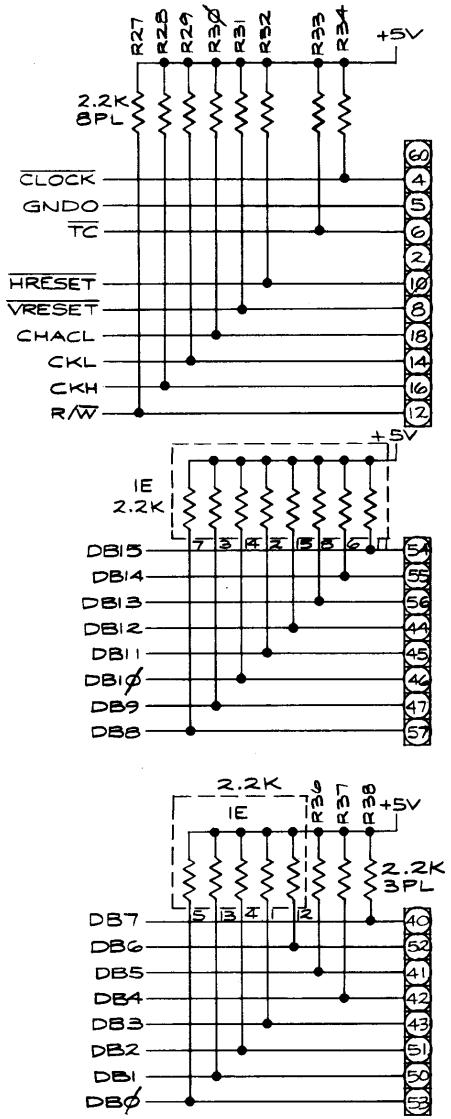
© ATARI INC., 1982

A Warner Communications Company

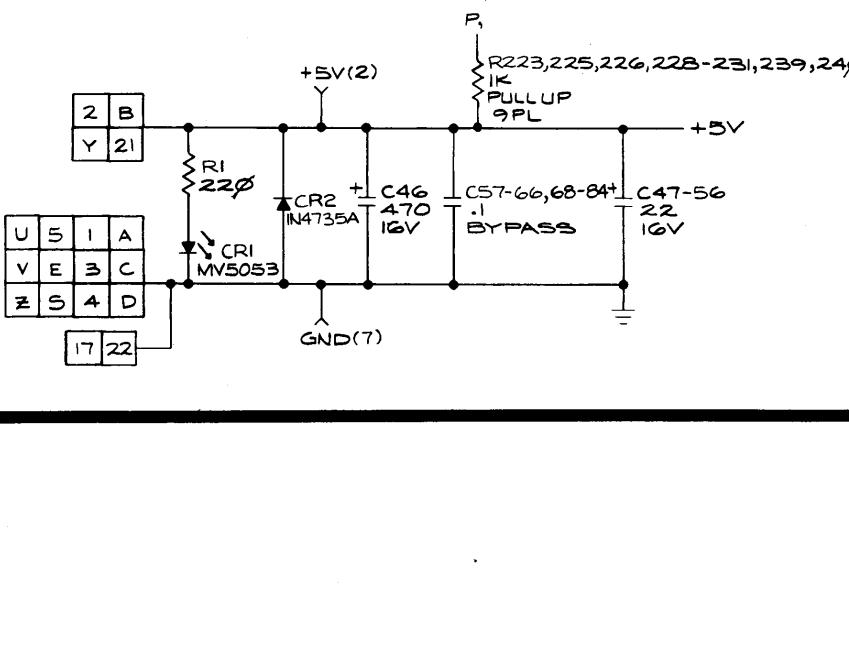
SP-218 Sheet 4A

8th printing

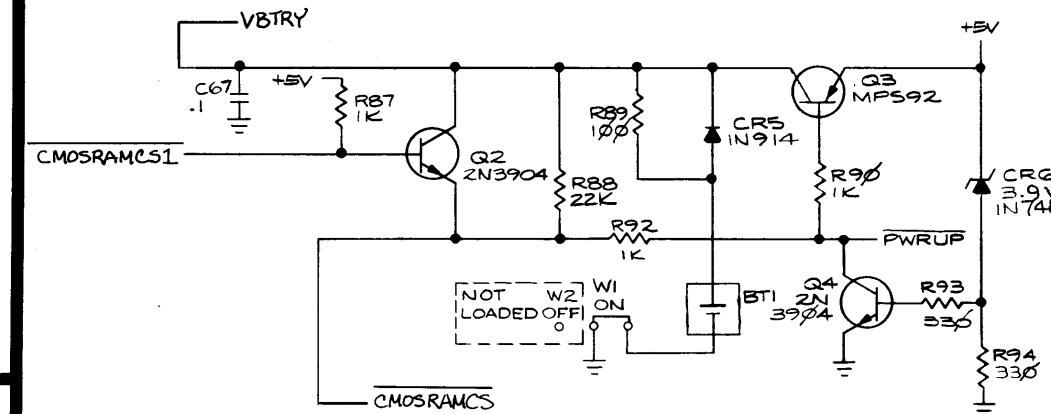
CPU PCB Edge Connector



CPU PCB Power Input



RAM Battery Back-Up Power

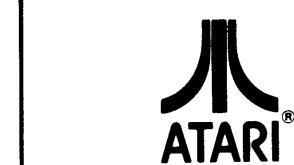
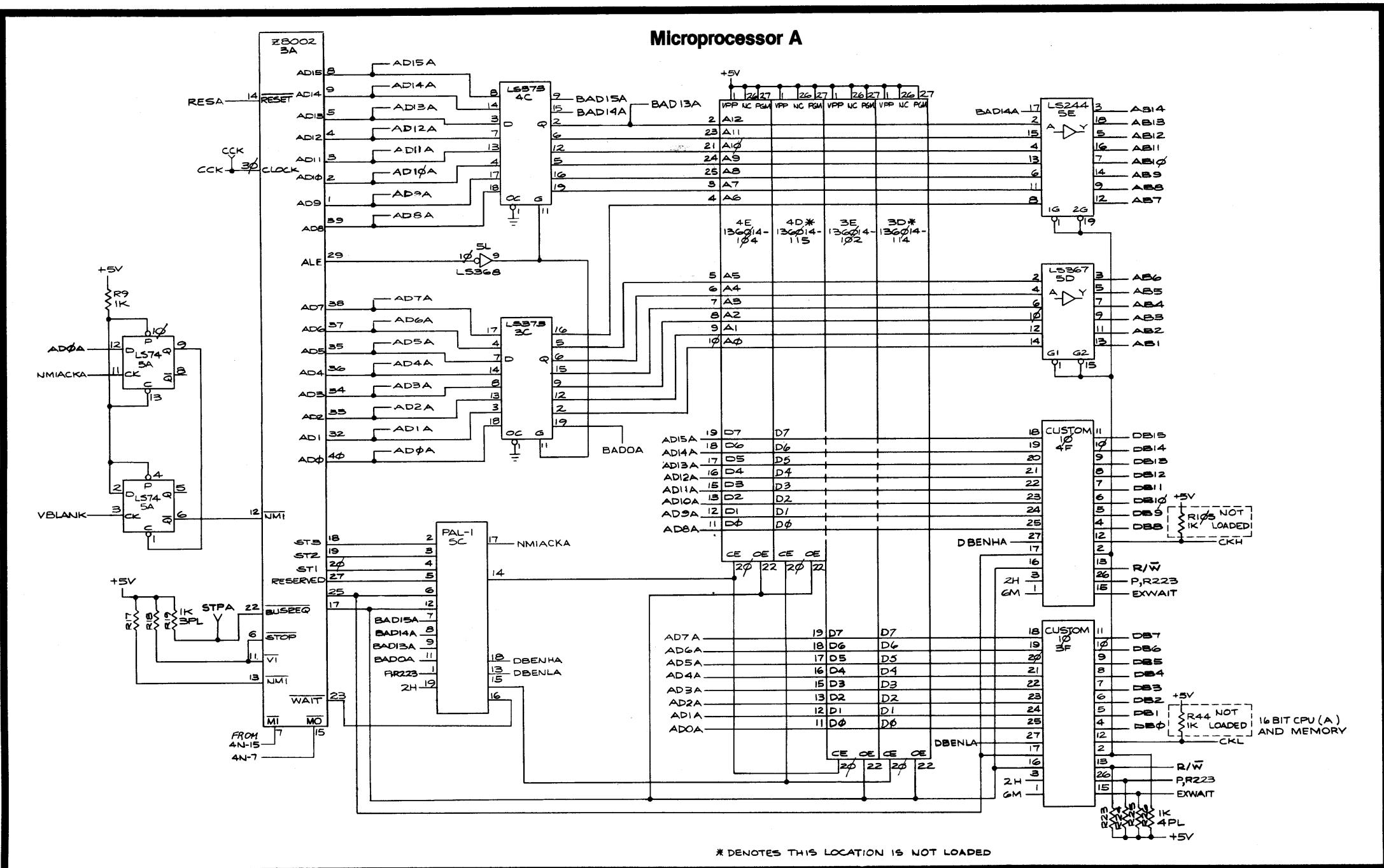


Pole Position CPU PCB Schematic Diagram

© ATARI INC., 1982

A Warner Communications Company

SP-218 Sheet 4B
8th printing

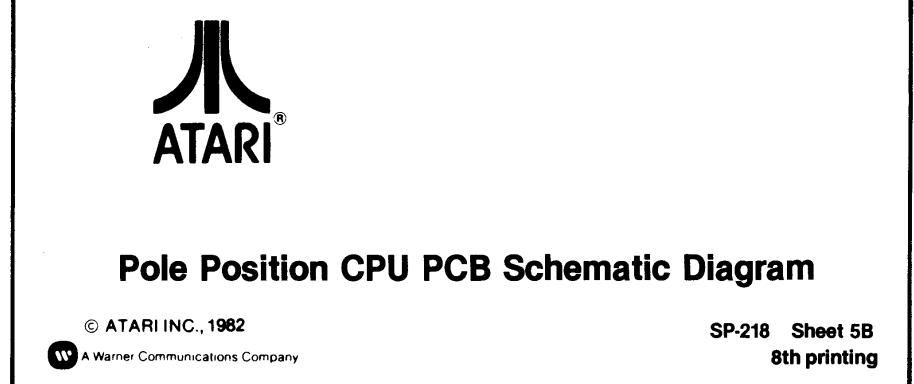
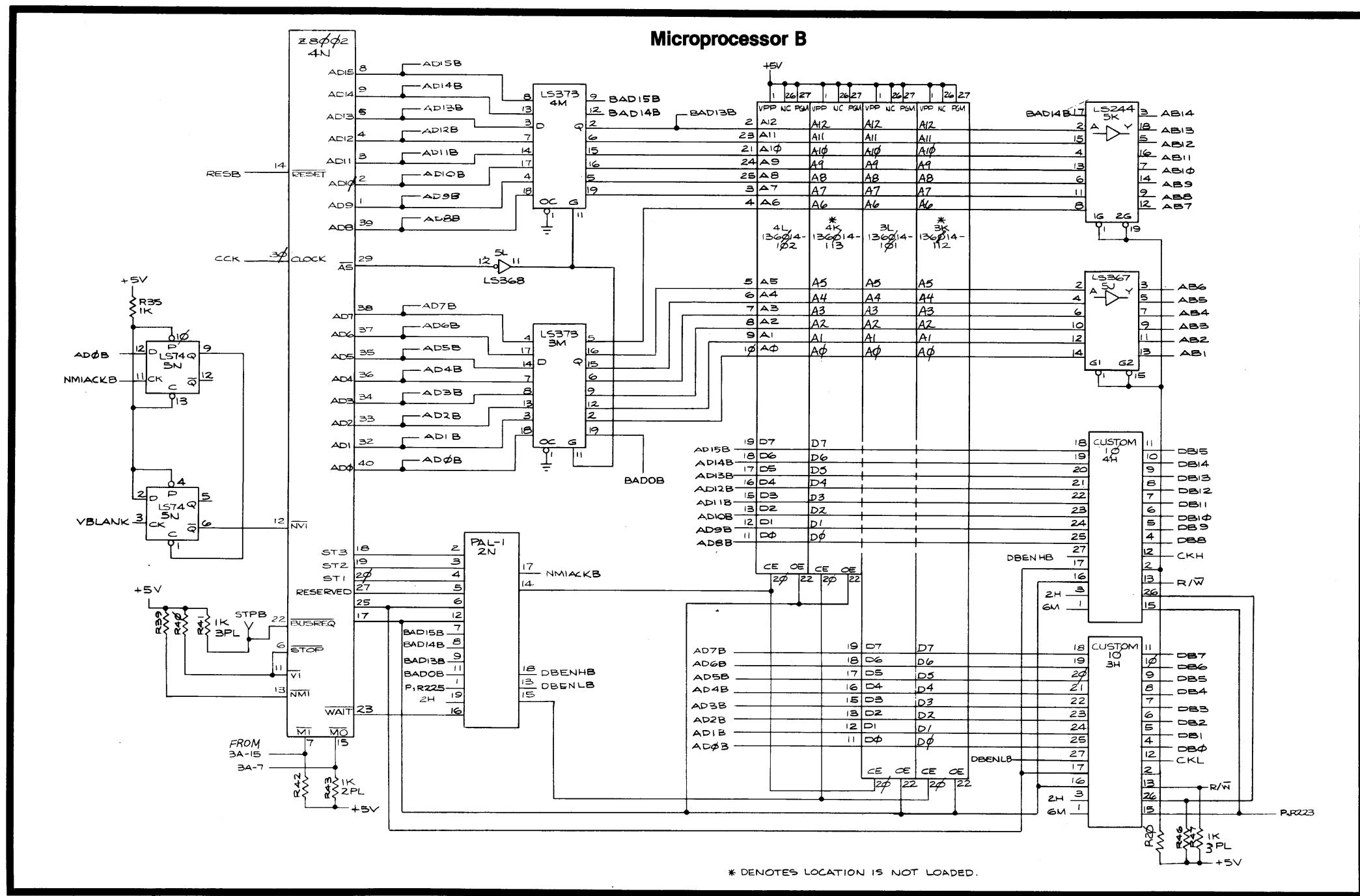


Pole Position CPU PCB Schematic Diagram

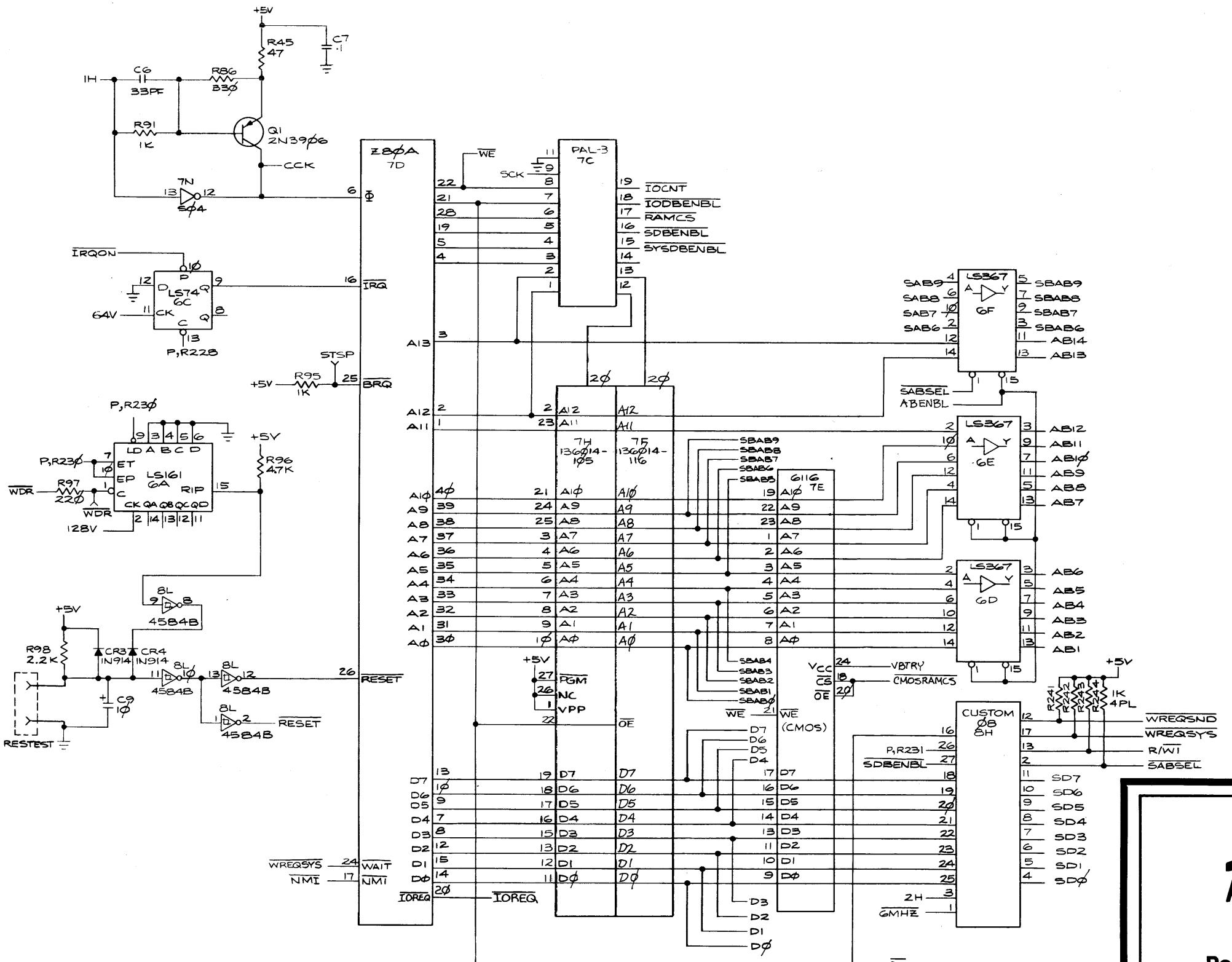
© ATARI INC., 1982

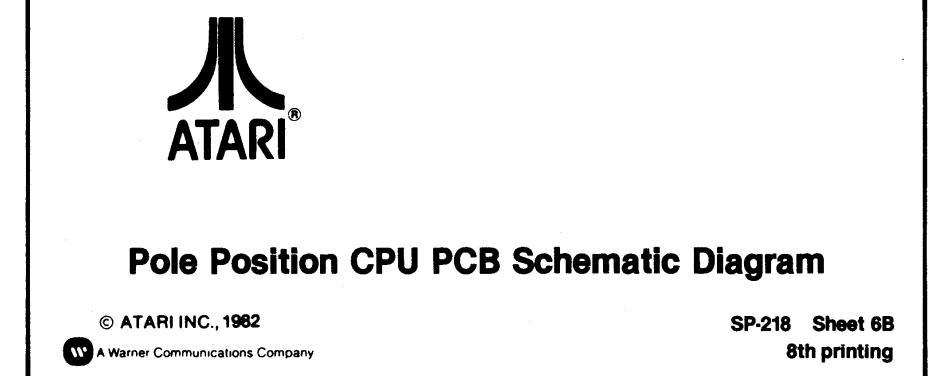
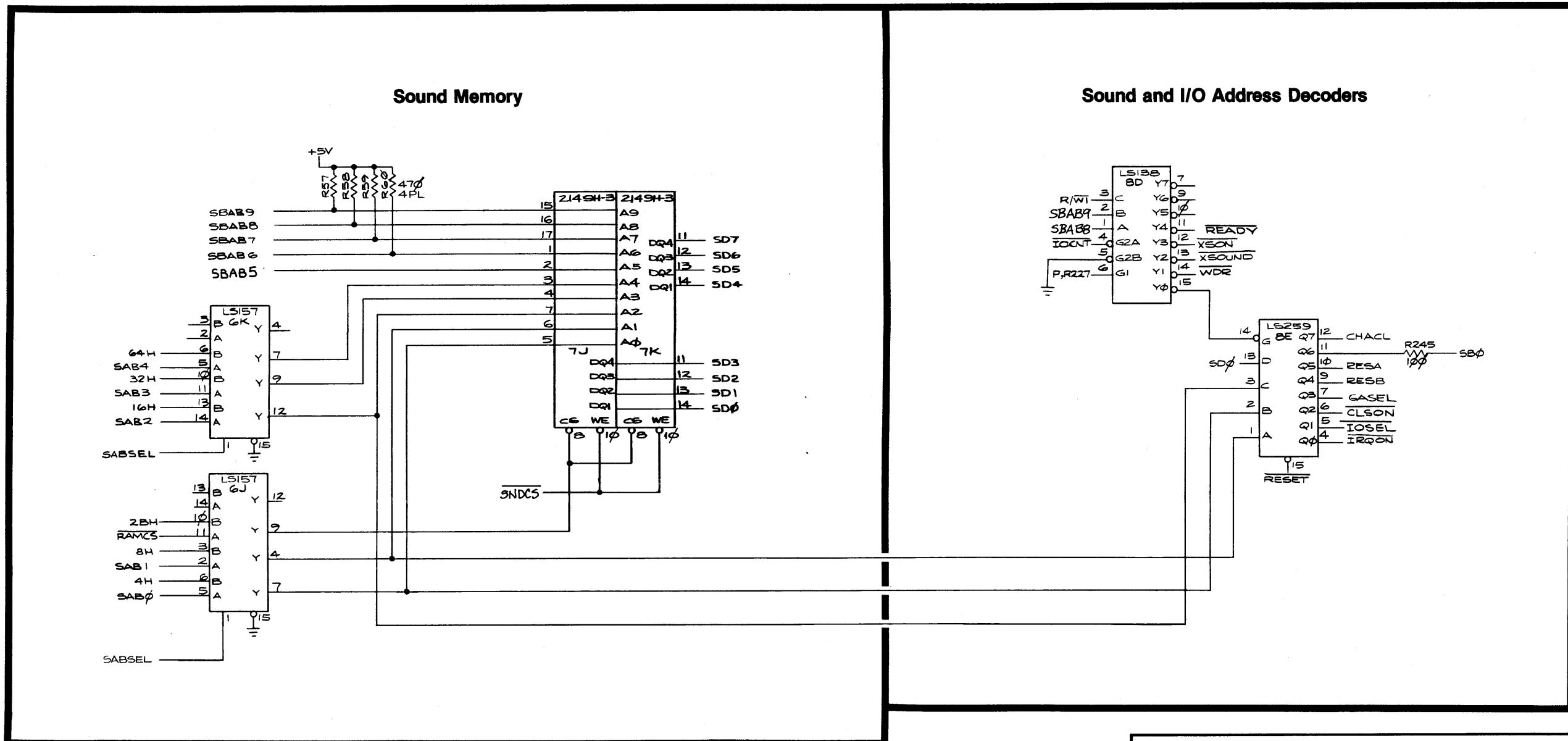
A Warner Communications Company

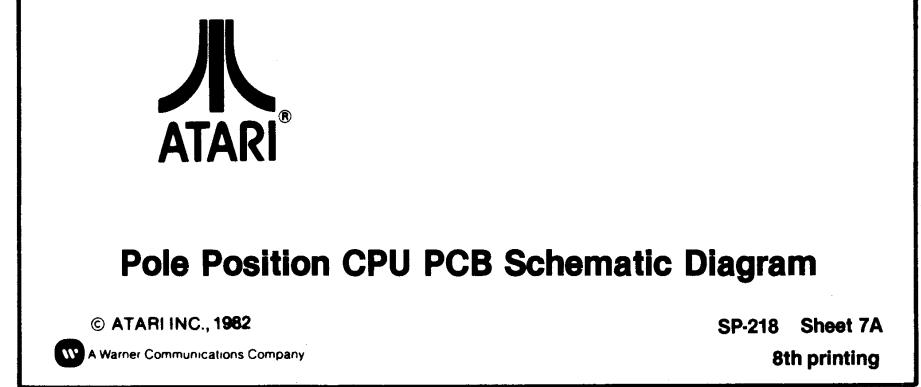
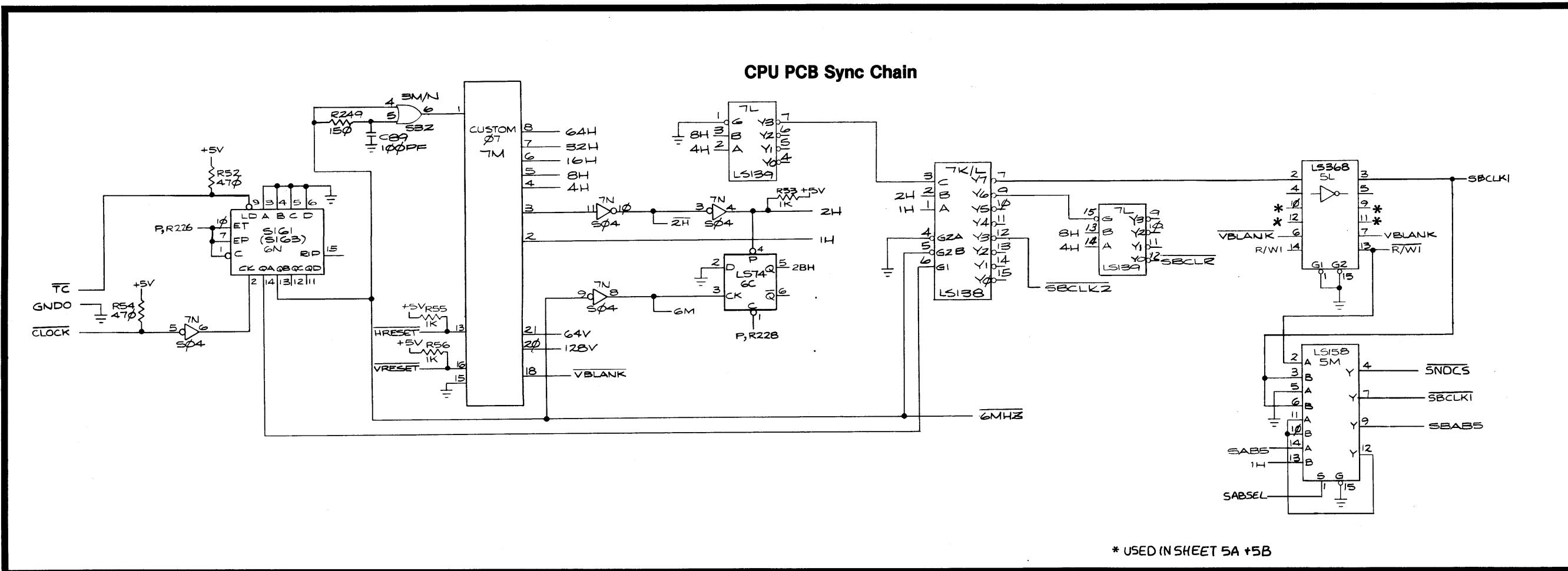
SP-218 Sheet 5A
8th printing



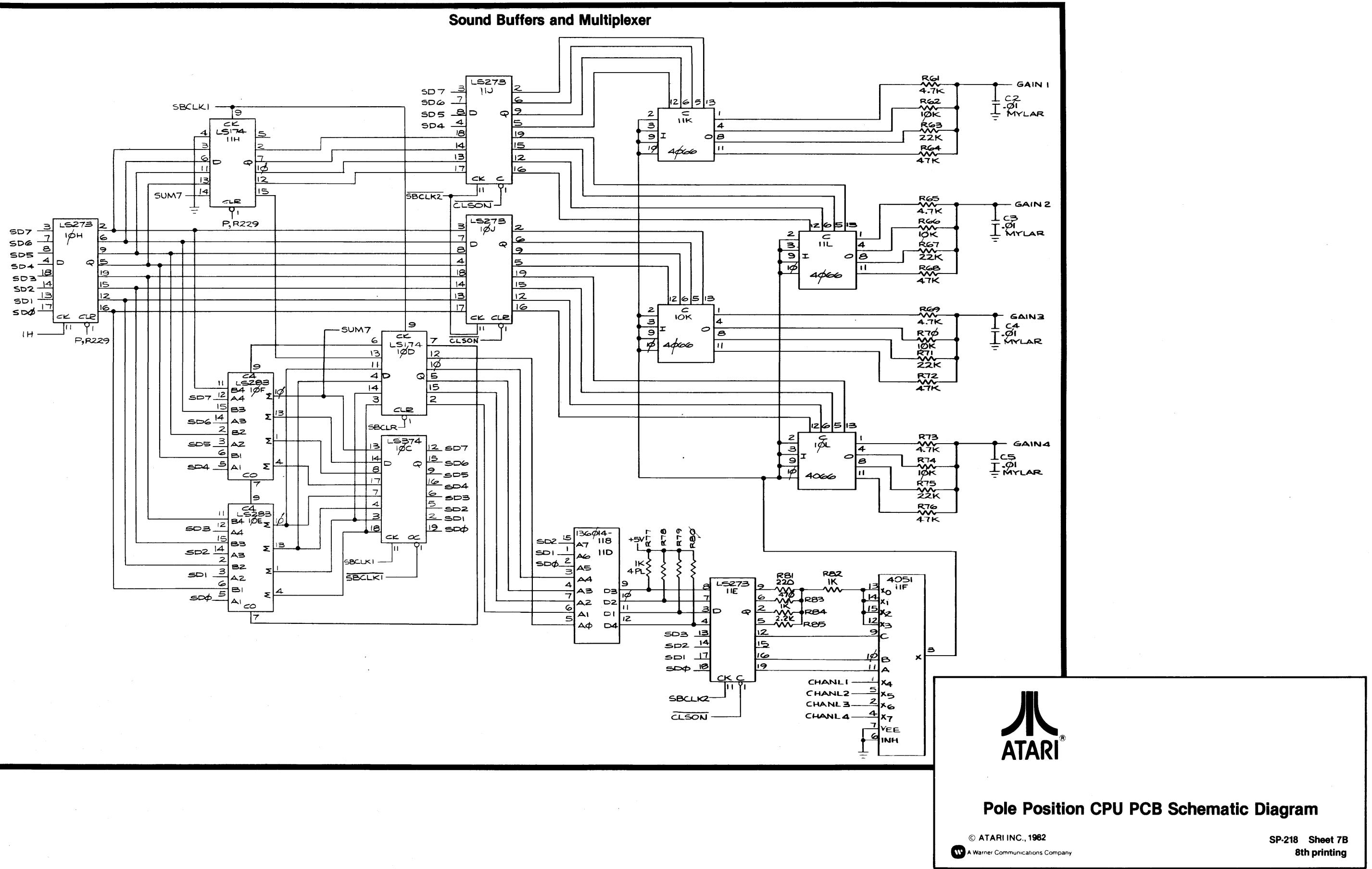
Sound Microprocessor

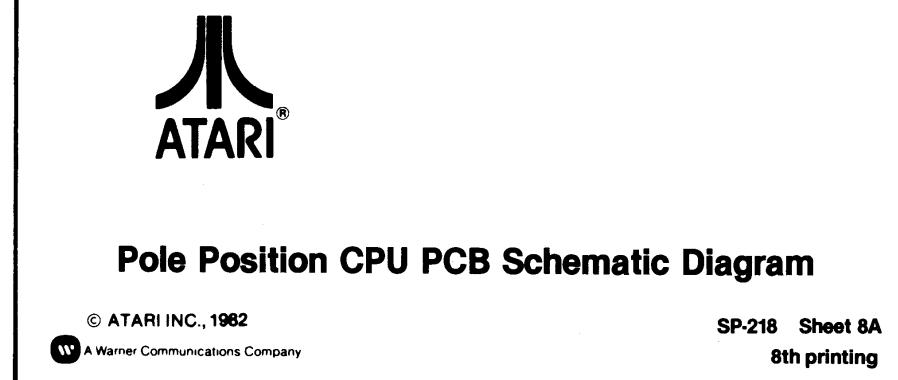
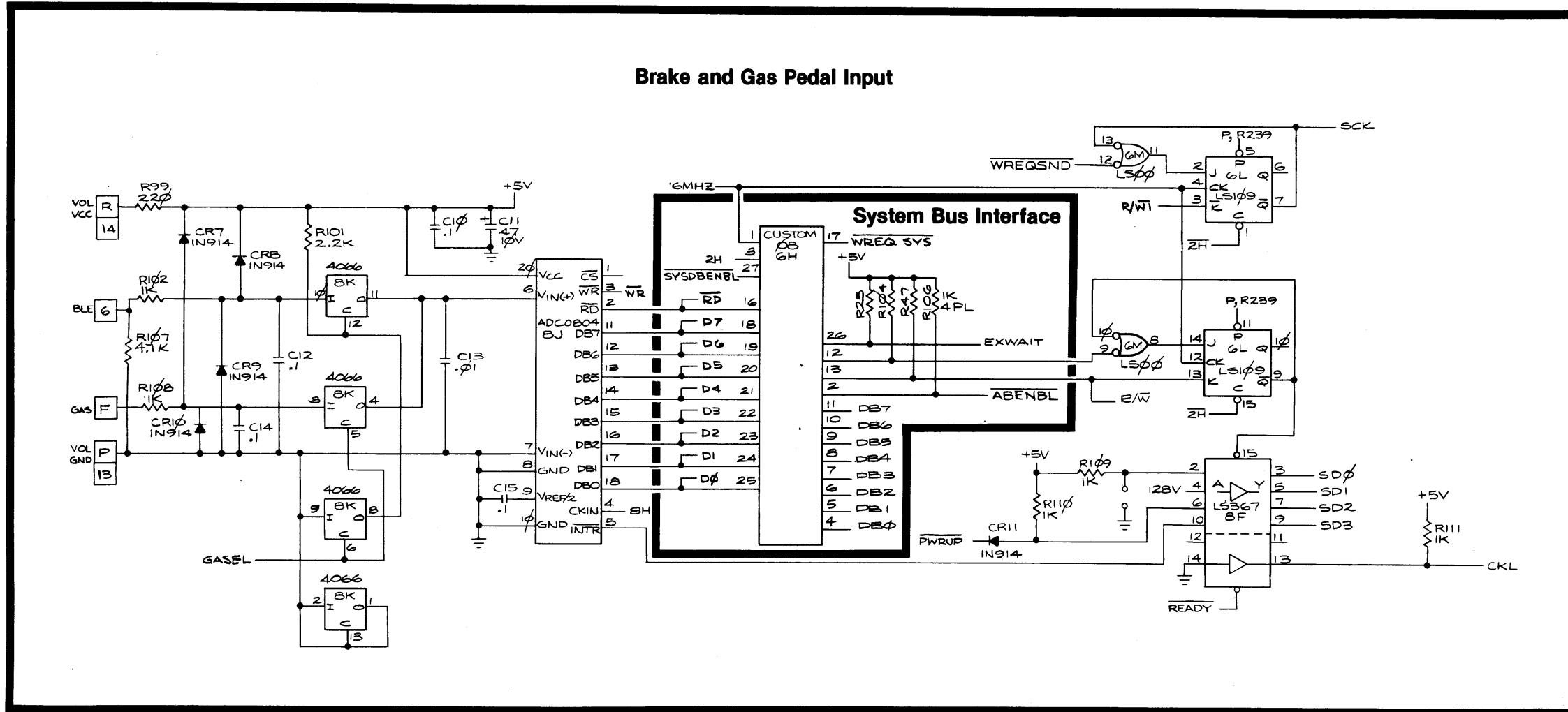




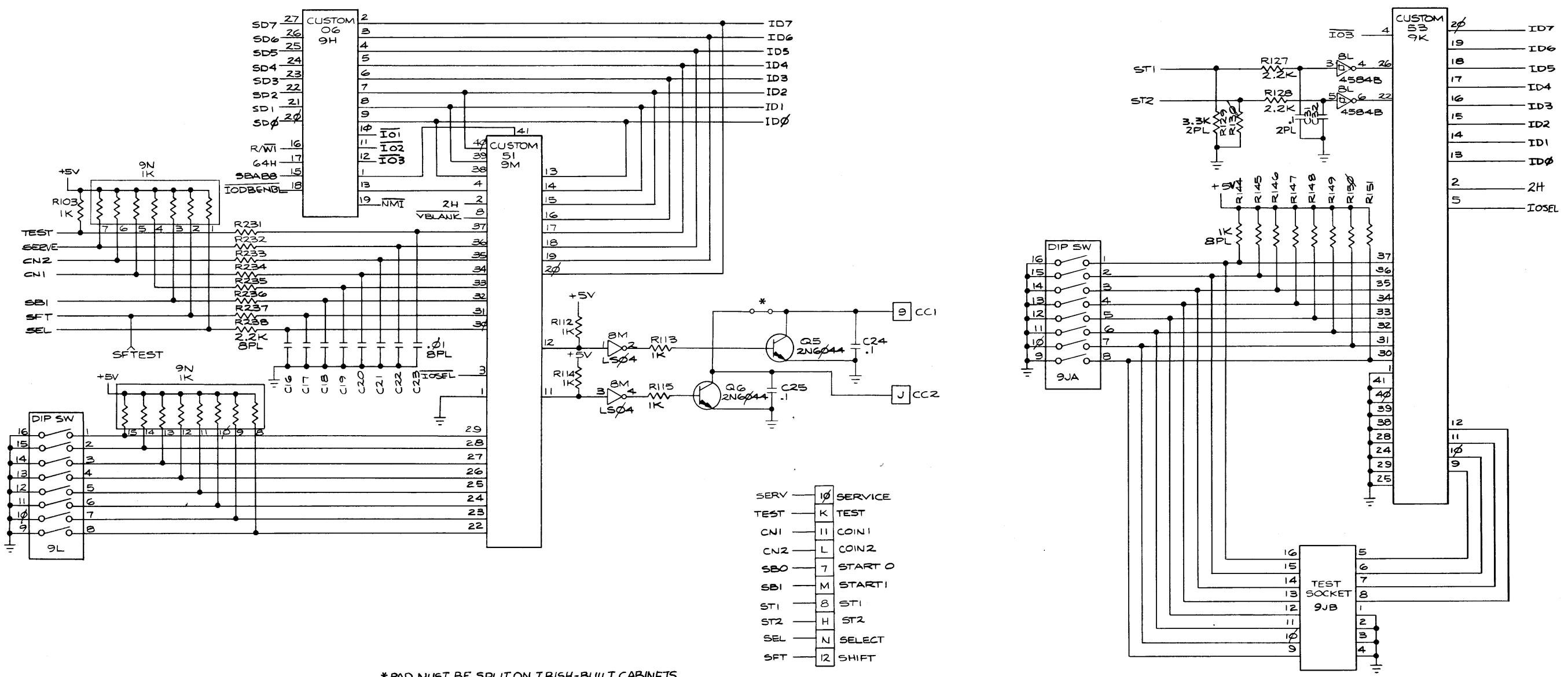


Sound Buffers and Multiplexer





Option Switch Input and I/O Interface



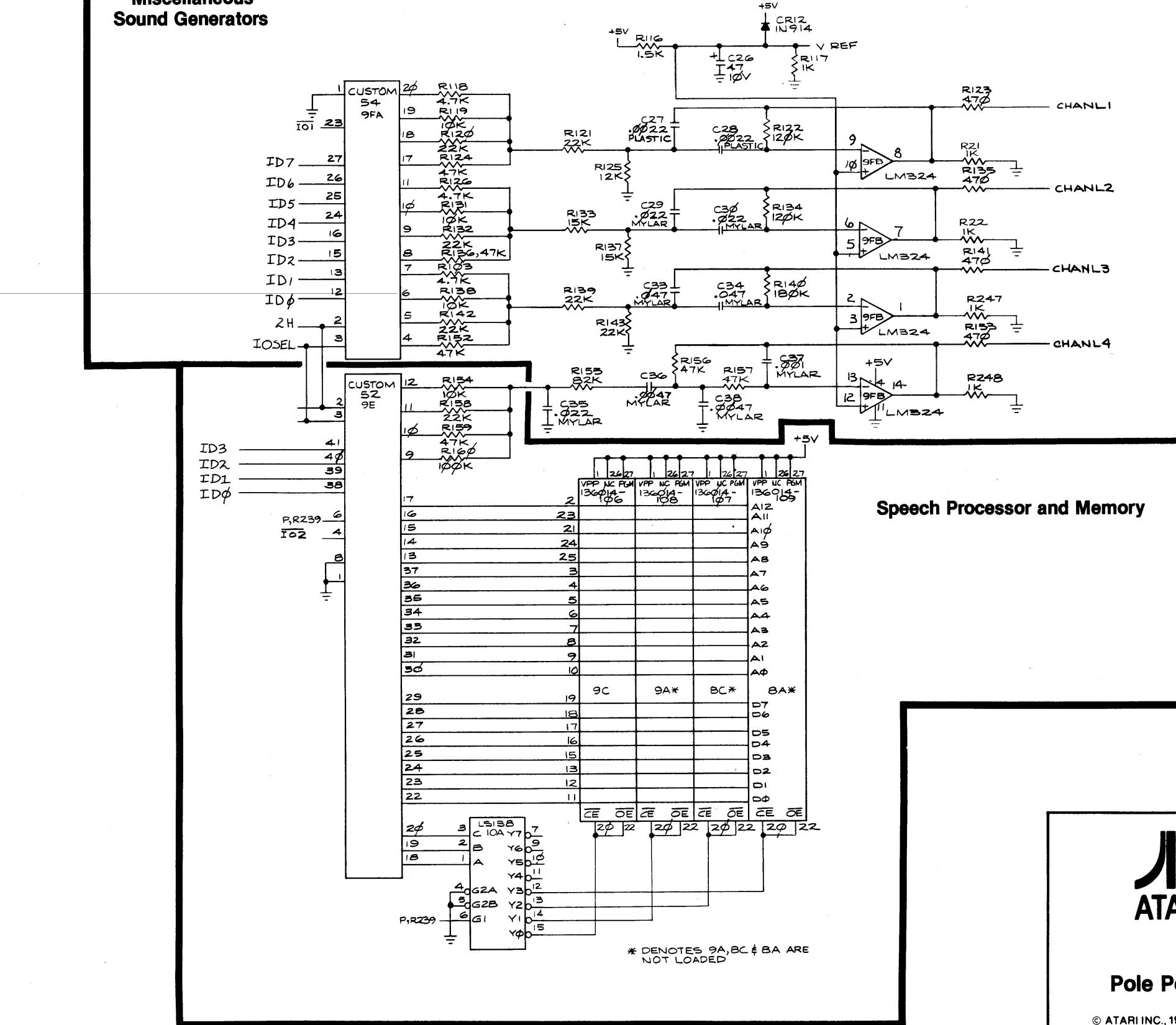
Pole Position CPU PCB Schematic Diagram

© ATARI INC., 1982

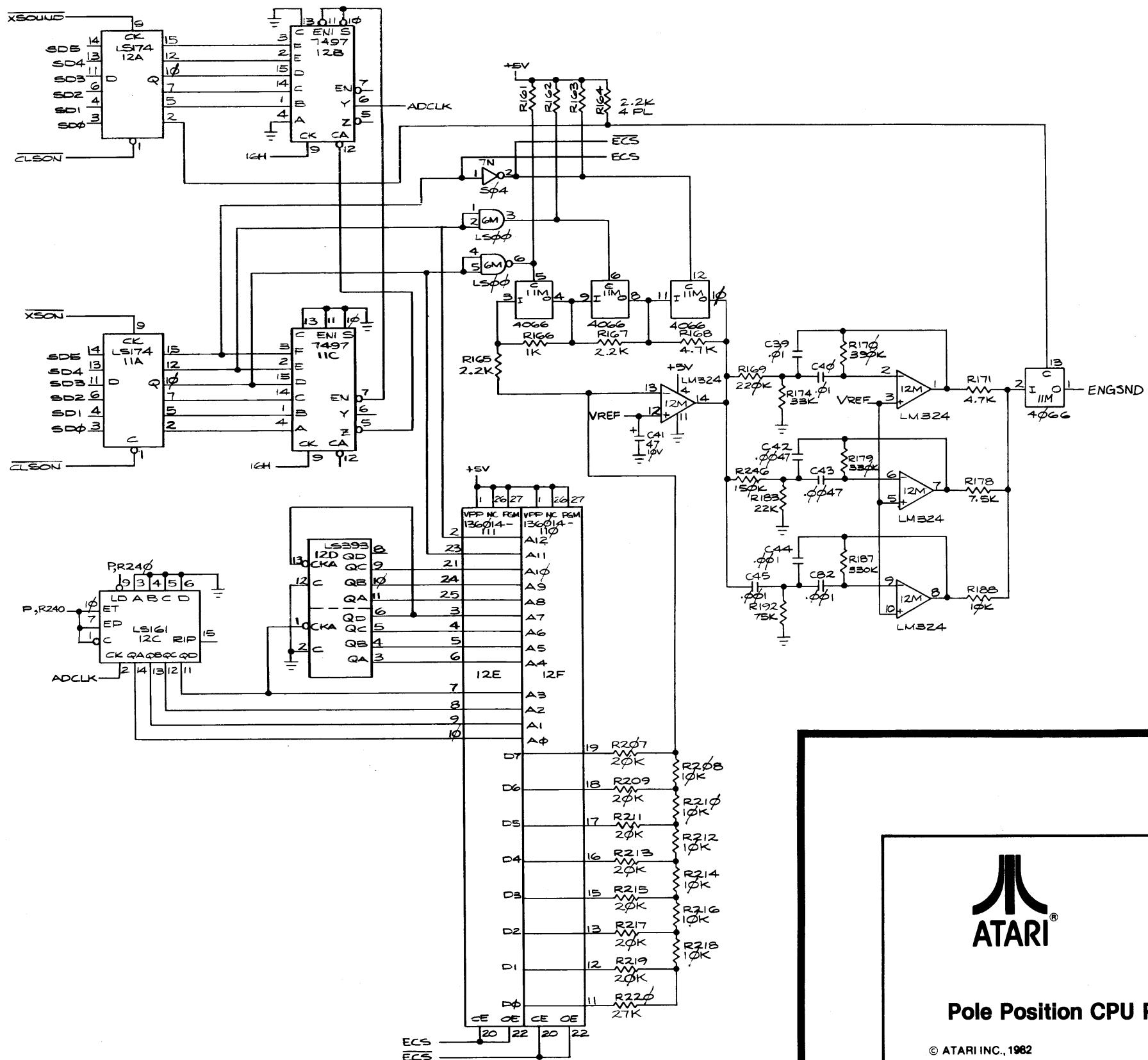
A Warner Communications Company

SP-218 Sheet 8B
8th printing

**Miscellaneous
Sound Generators**



Engine Sound Generator

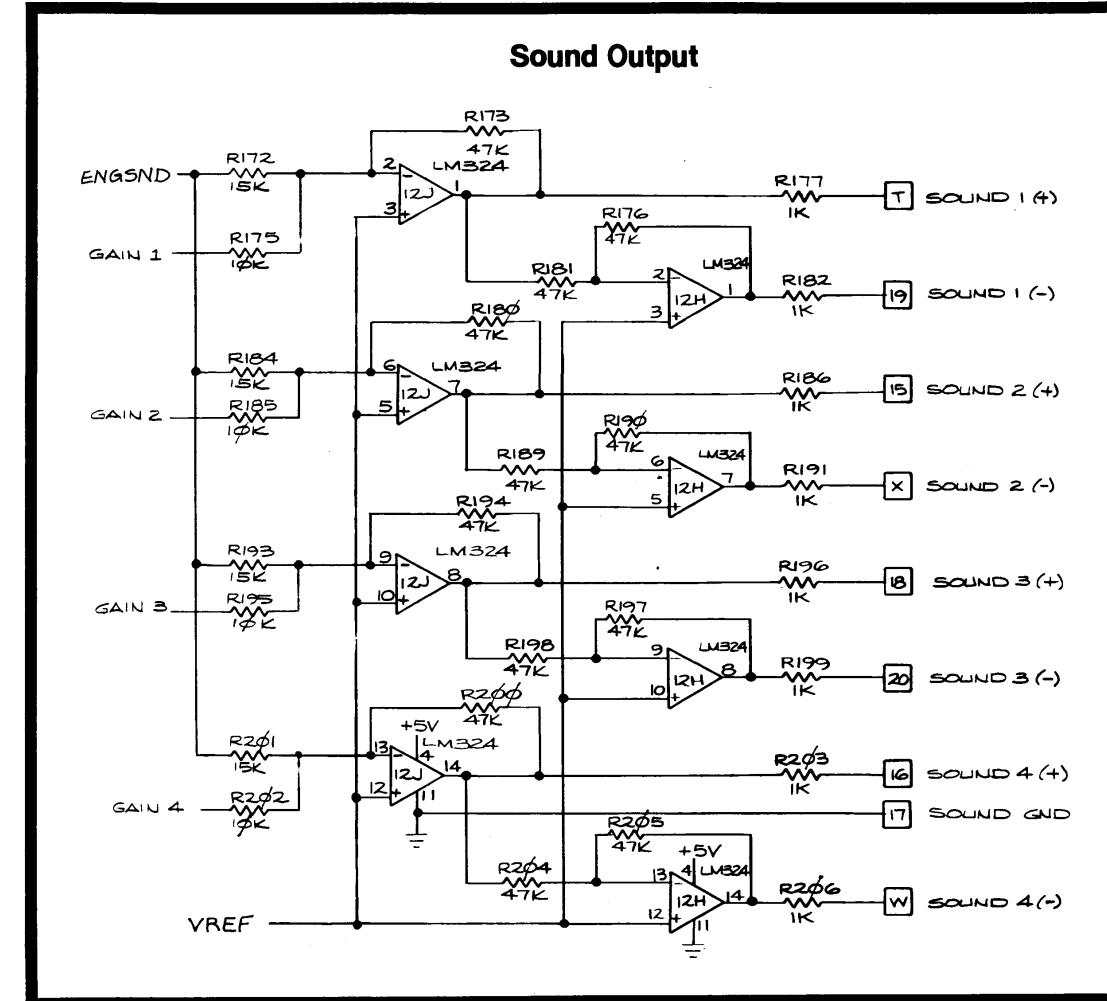


Pole Position CPU PCB Schematic Diagram

© ATARI INC., 1982

A Warner Communications Company

SP-218 Sheet 9B
8th printing



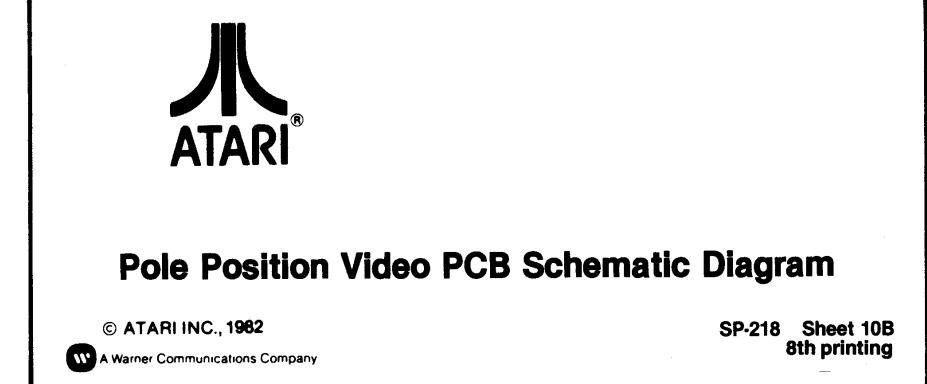
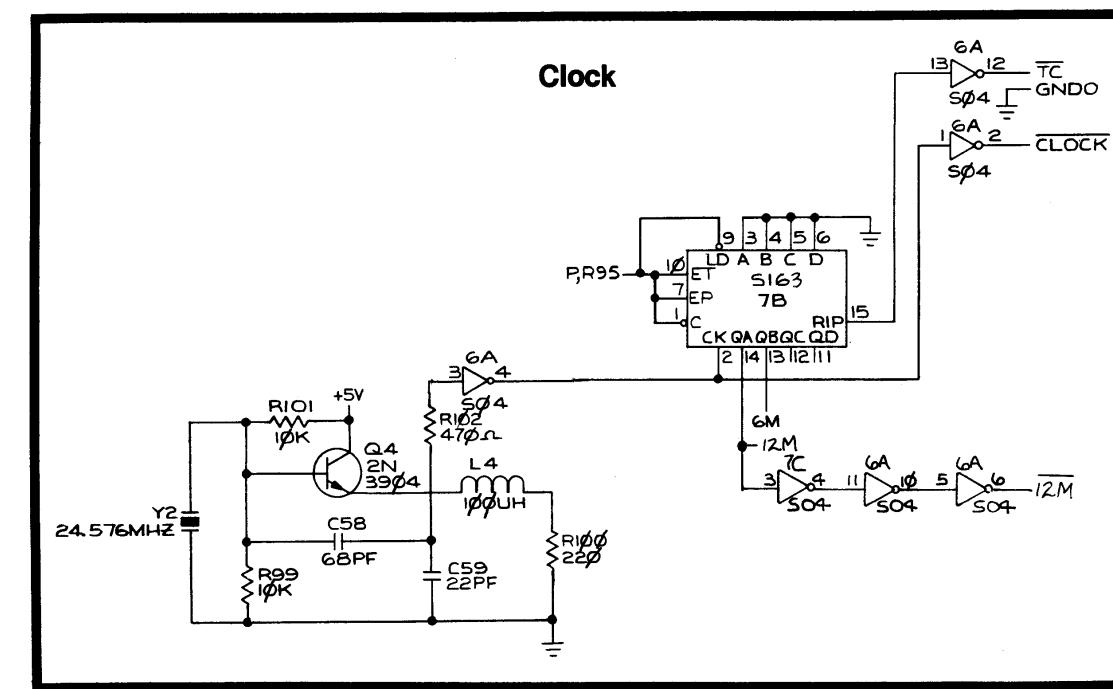
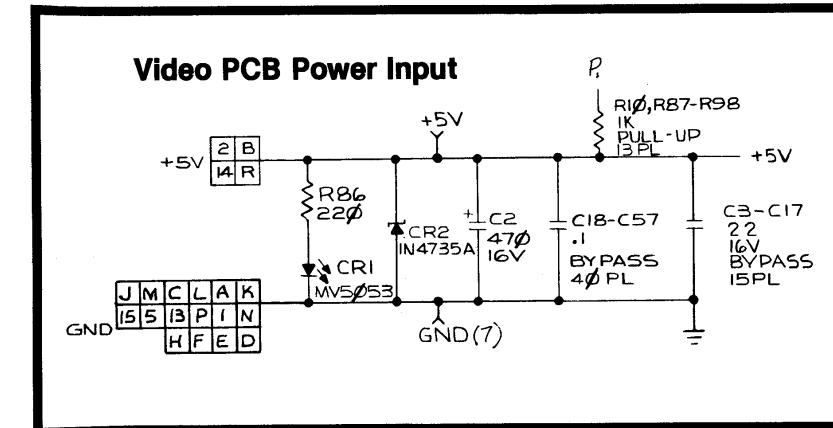
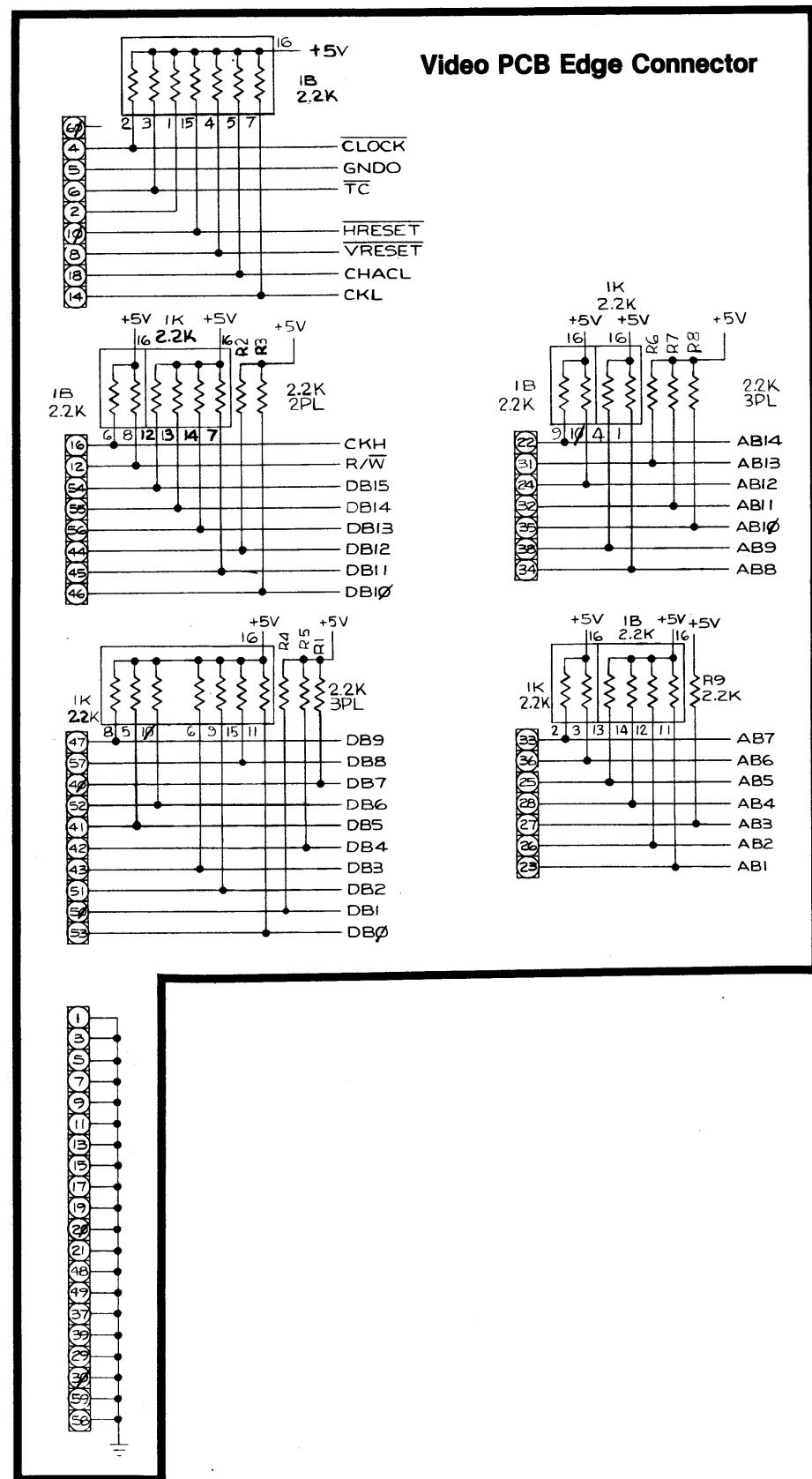
Pole Position CPU PCB Schematic Diagram

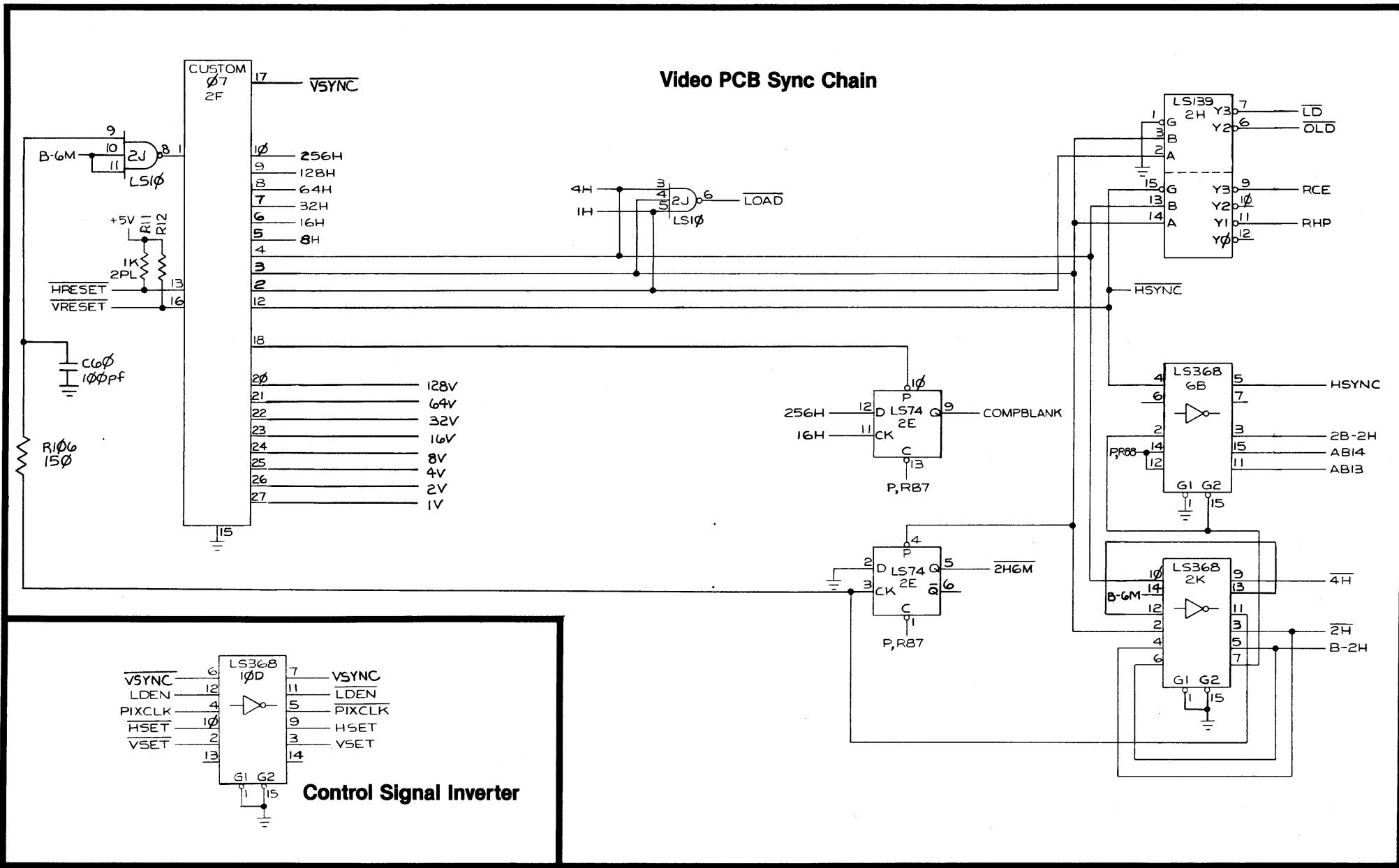
© ATARI INC., 1982

A Warner Communications Company

SP-218 Sheet 10A

8th printing





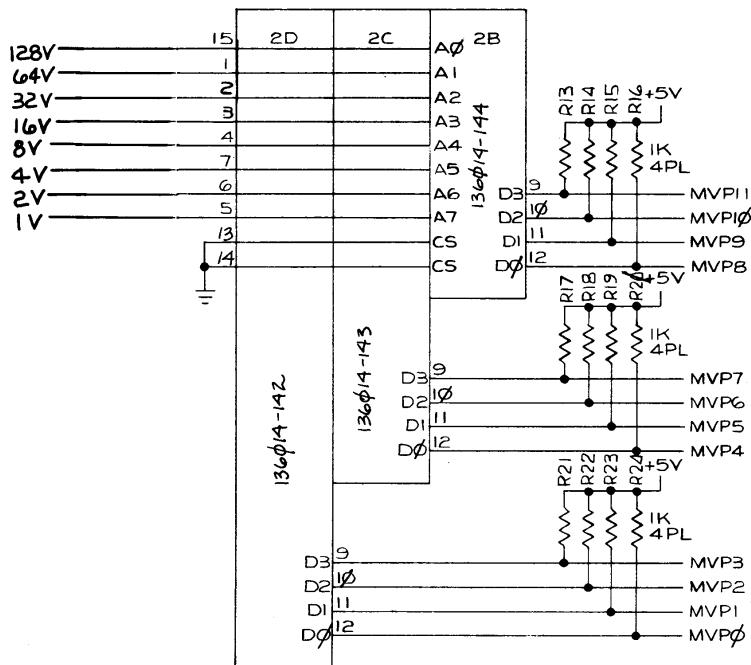
Pole Position Video PCB Schematic Diagram

© ATARI INC., 1982

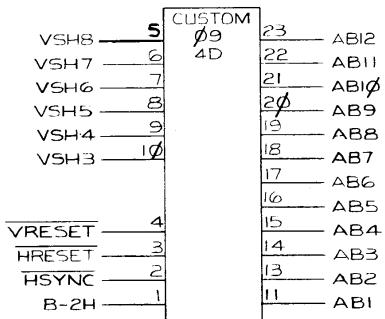
A Warner Communications Company

SP-218 Sheet 11A
8th printing

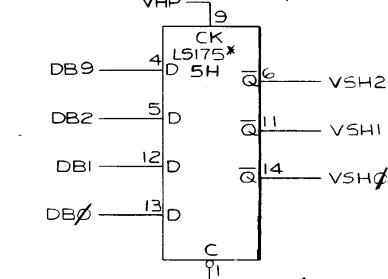
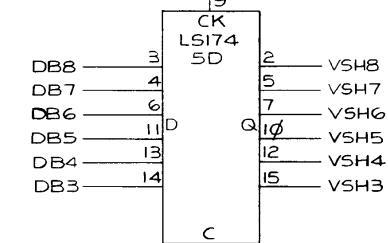
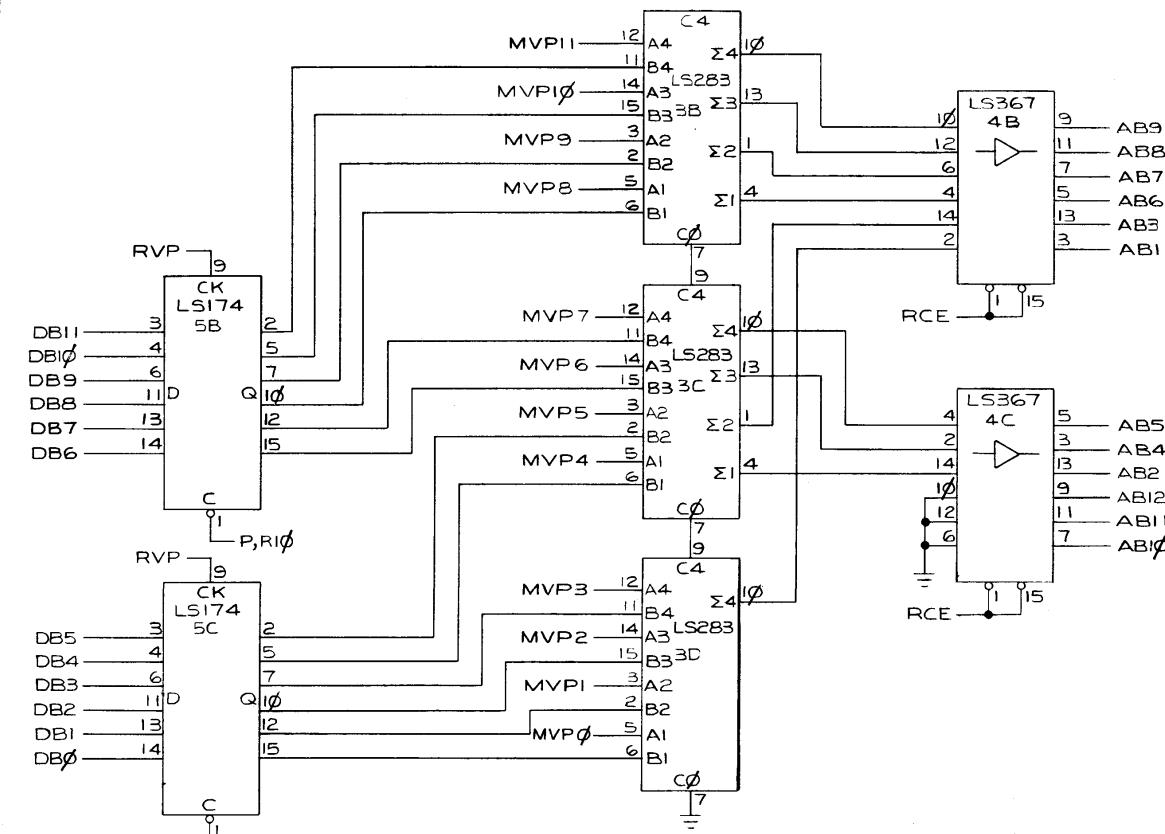
Vertical Position Modifiers



Address Bus Interface



Vertical Position Buffers and Adders



*MANUFACTURER MUST BE
TEXAS INSTRUMENTS

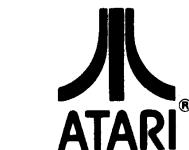
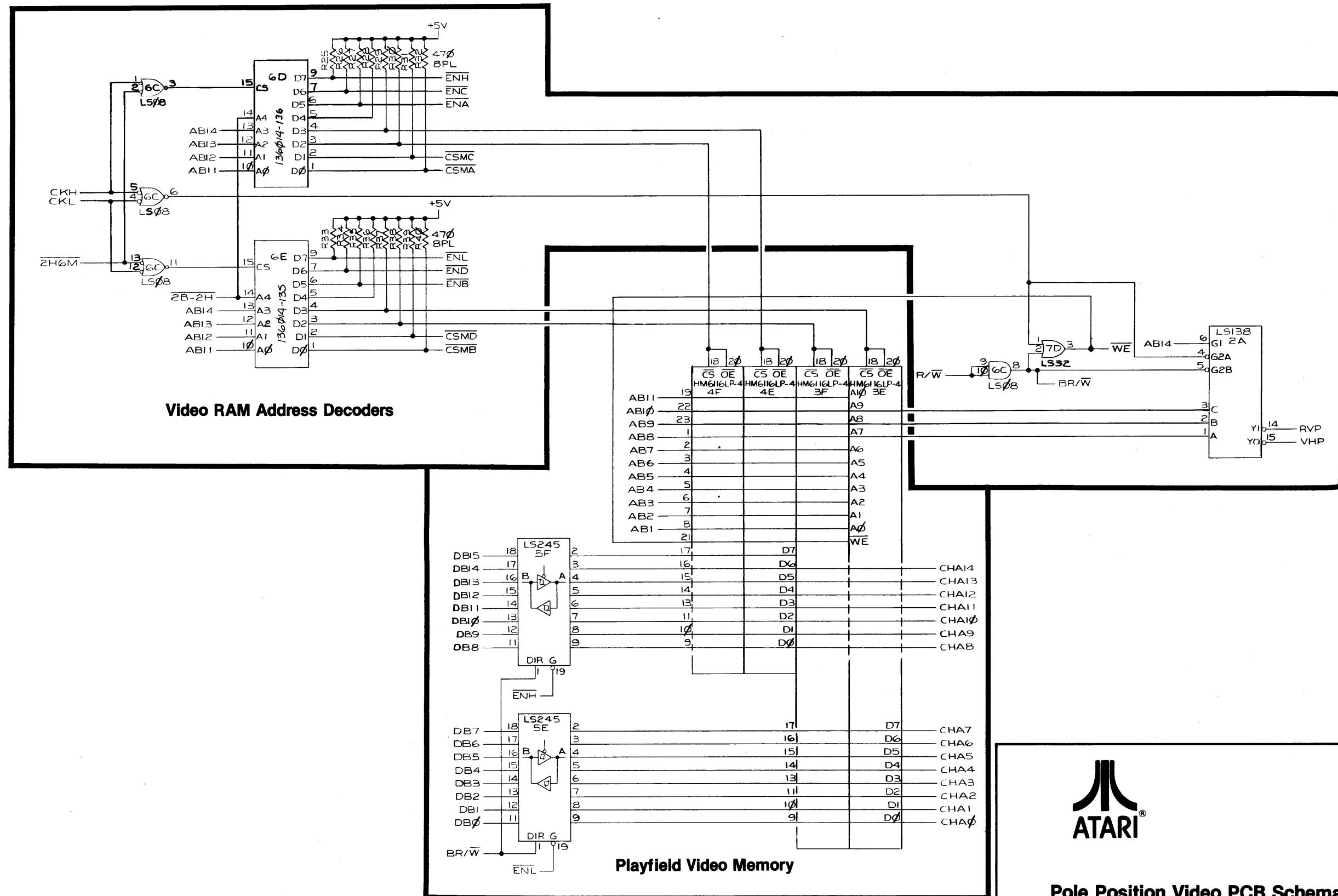


Pole Position Video PCB Schematic Diagram

© ATARI INC., 1982

A Warner Communications Company

SP-218 Sheet 11B
8th printing



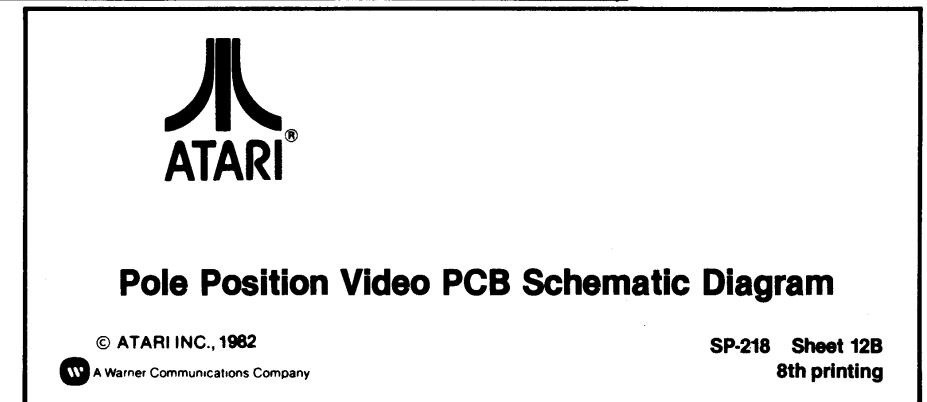
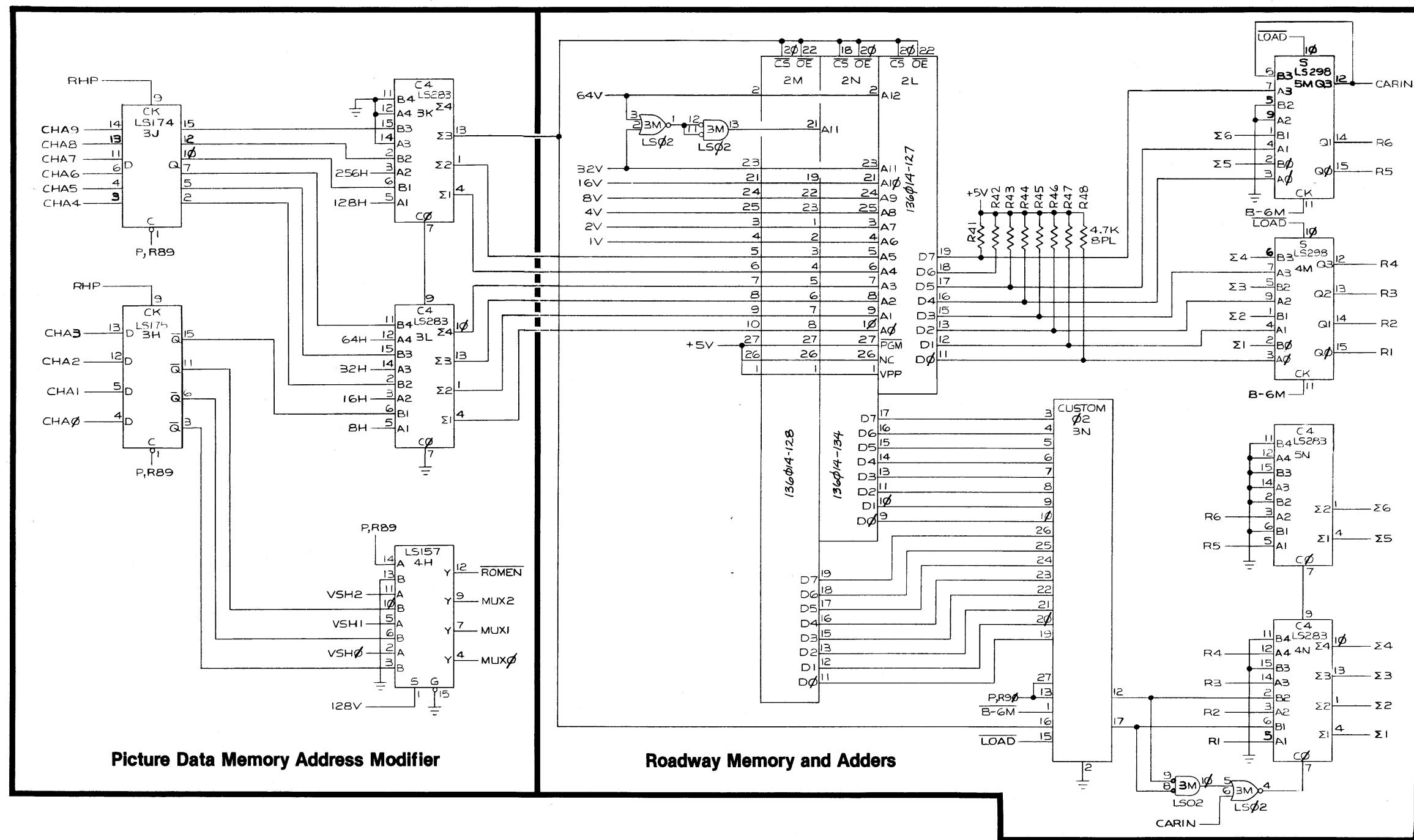
Pole Position Video PCB Schematic Diagram

© ATARI INC., 1982

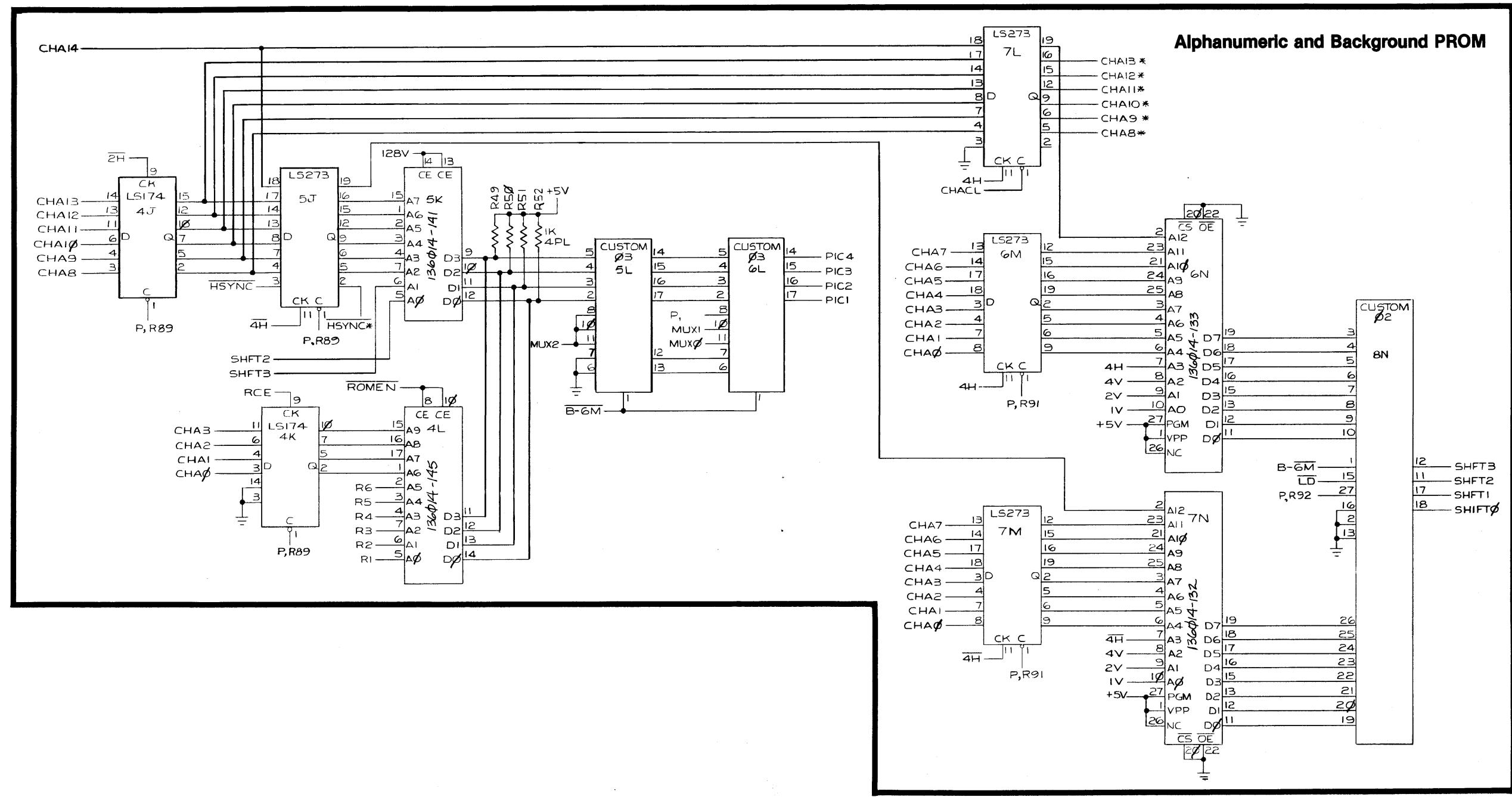
A Warner Communications Company

SP-218 Sheet 12A

8th printing



Pole Position Video PCB Schematic Diagram



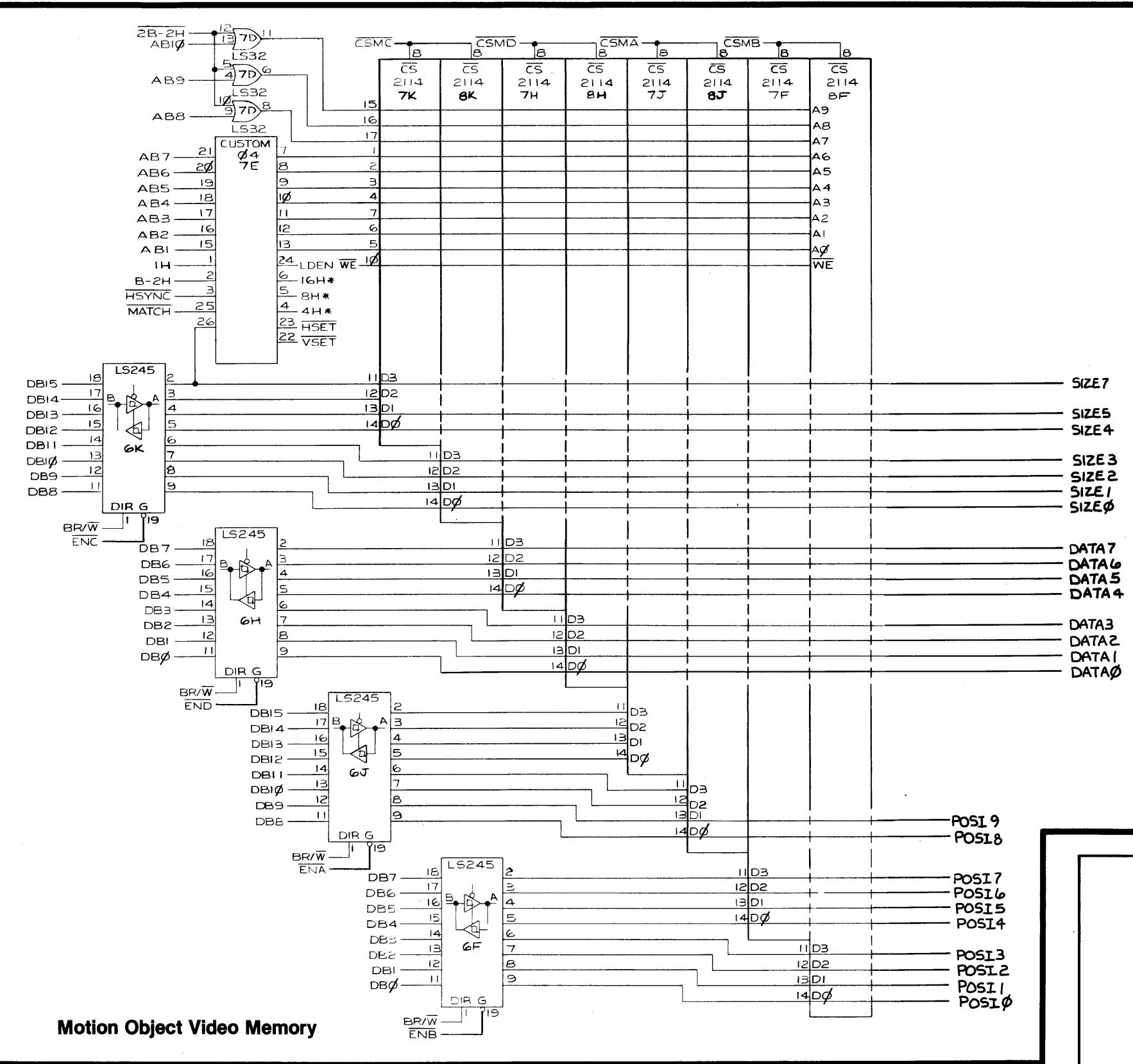
Pole Position Video PCB Schematic Diagram

© ATARI INC., 1982

A Warner Communications Company

SP-218 Sheet 13A

8th printing



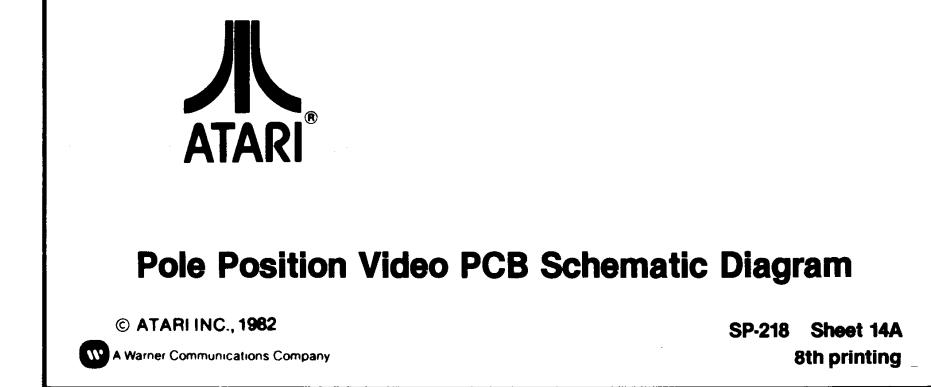
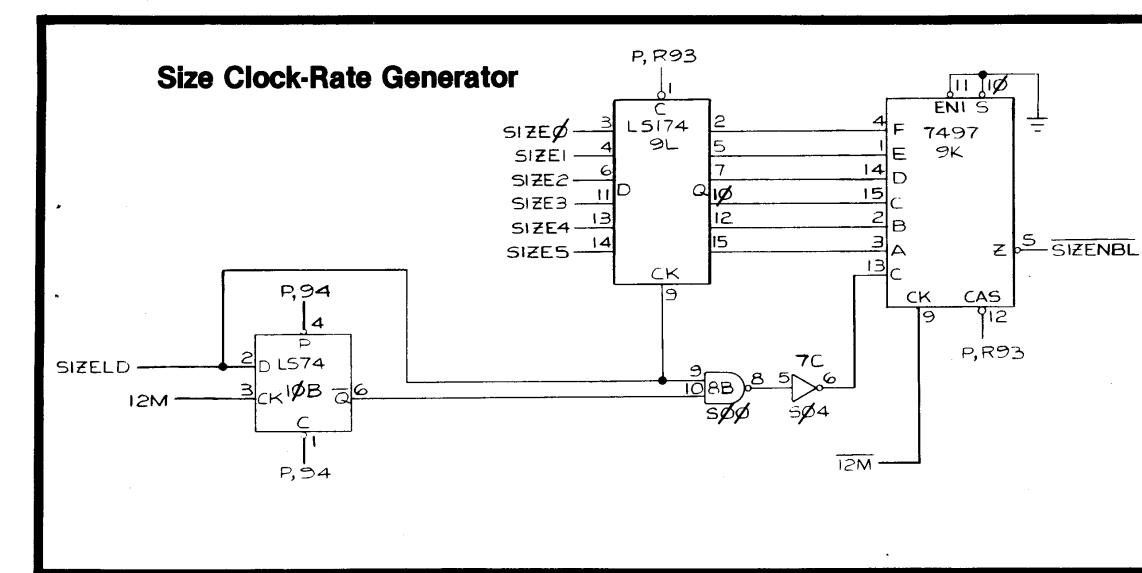
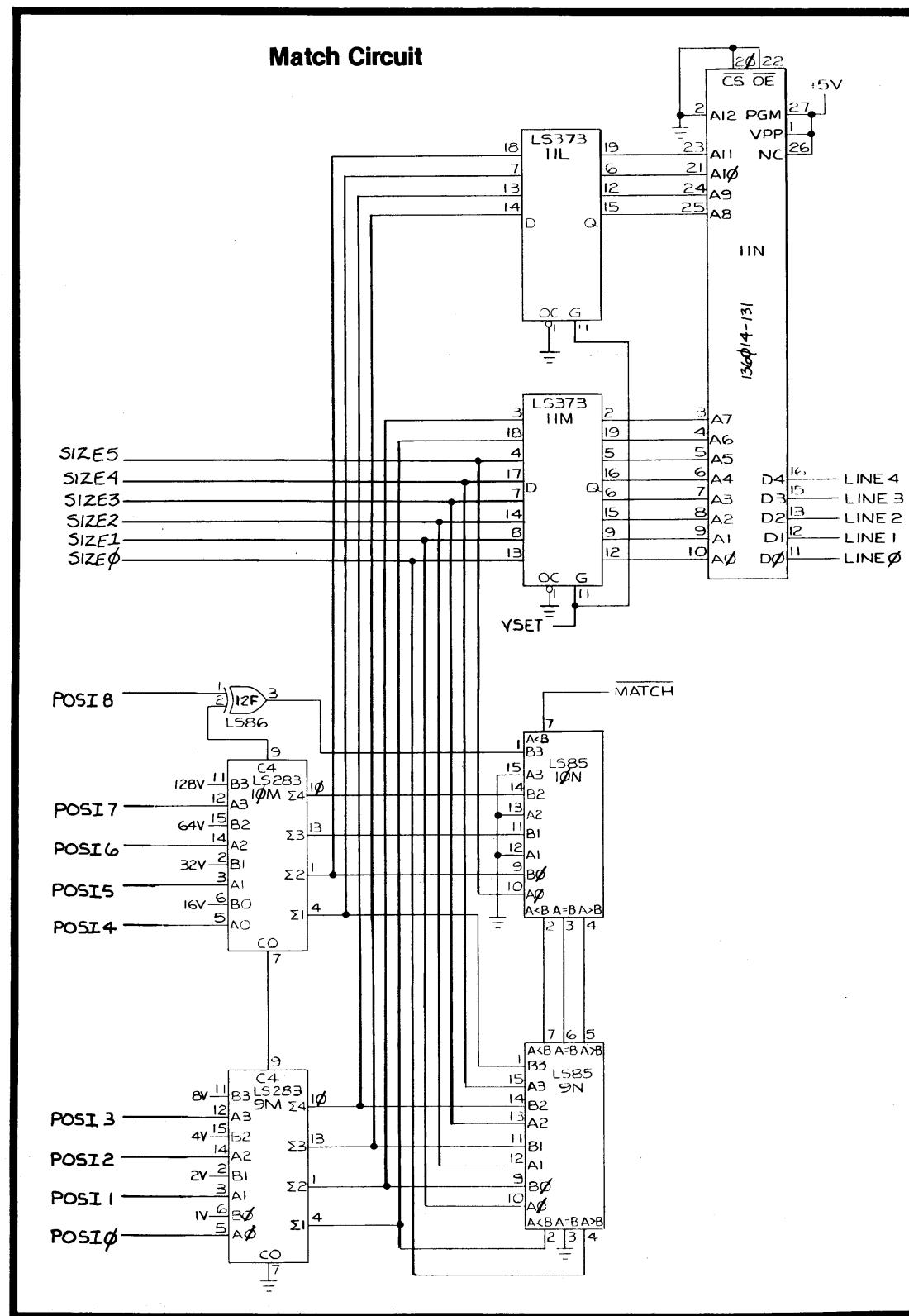
Pole Position Video PCB Schematic Diagram

© ATARI INC., 1982

A Warner Communications Company

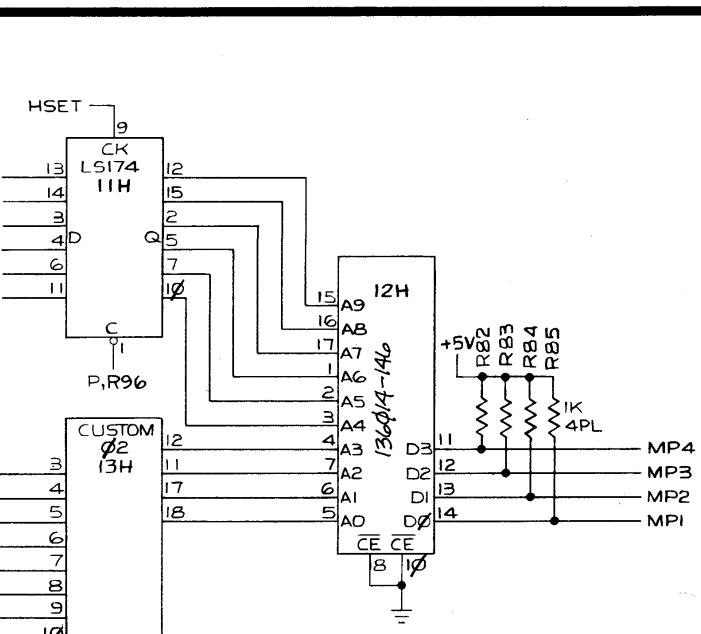
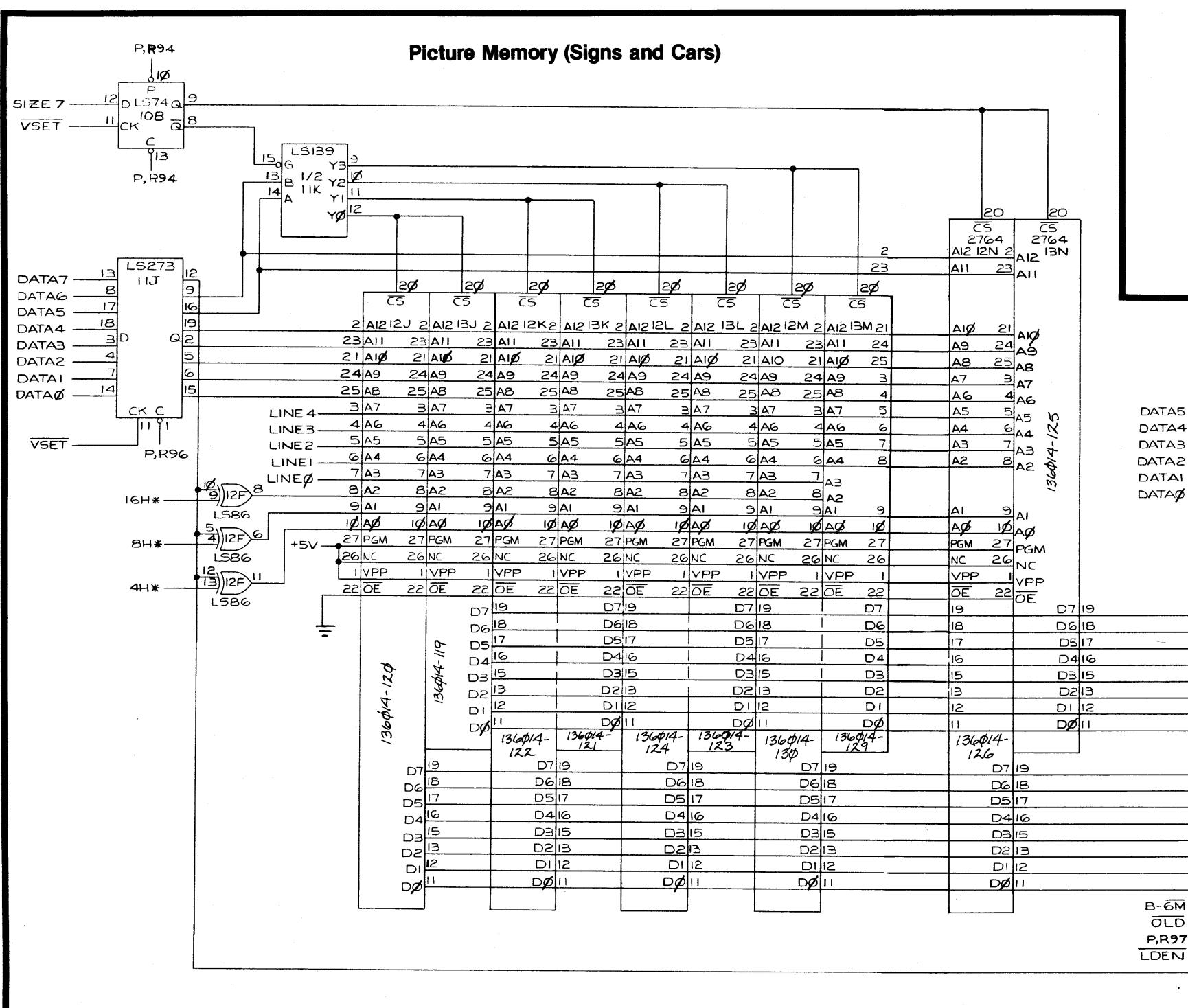
SP-218 Sheet 13B
8th printing





Pole Position Video PCB Schematic Diagram

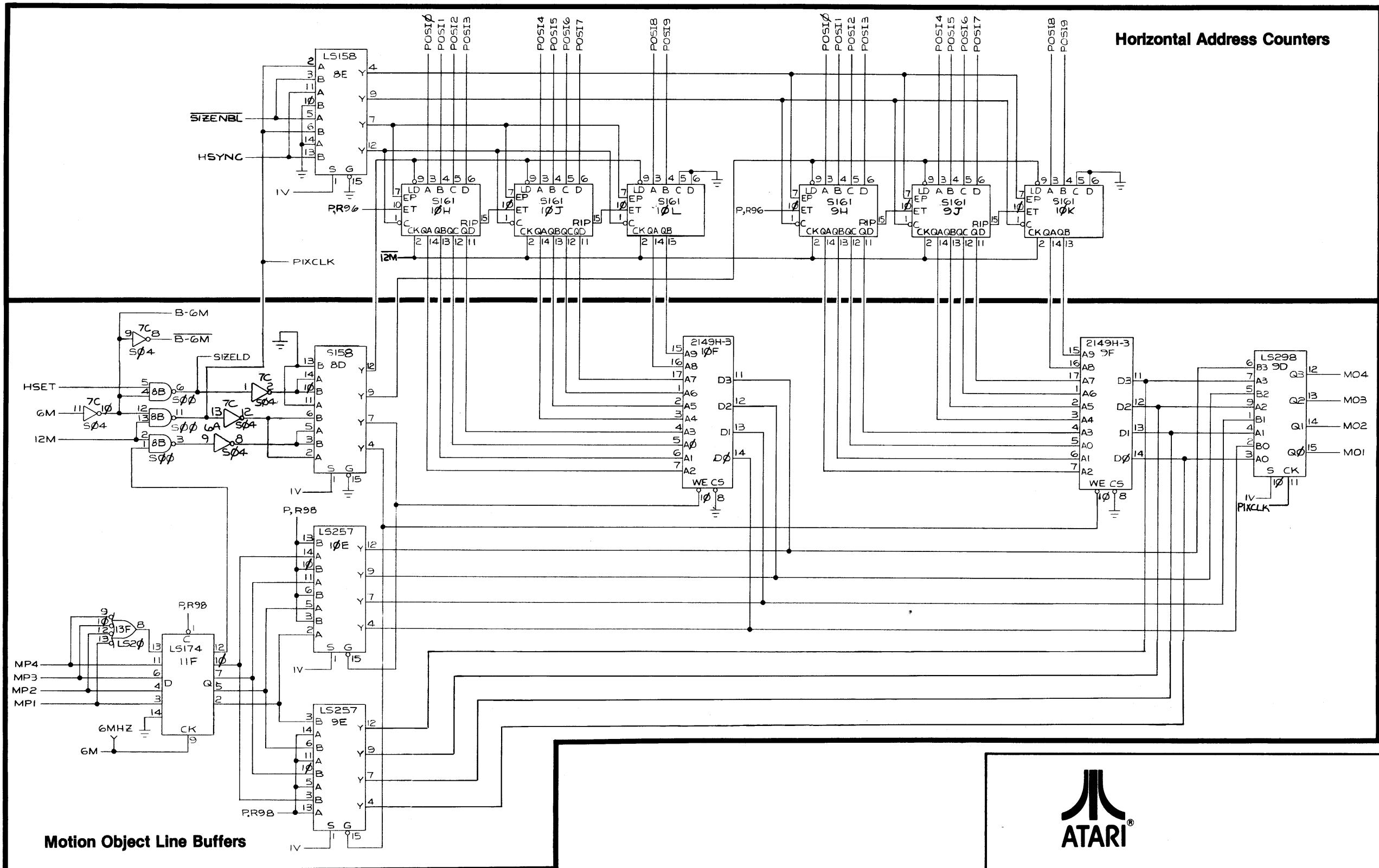
Picture Memory (Signs and Cars)



Pole Position Video PCB Schematic Diagram

© ATARI INC., 1982
A Warner Communications Company

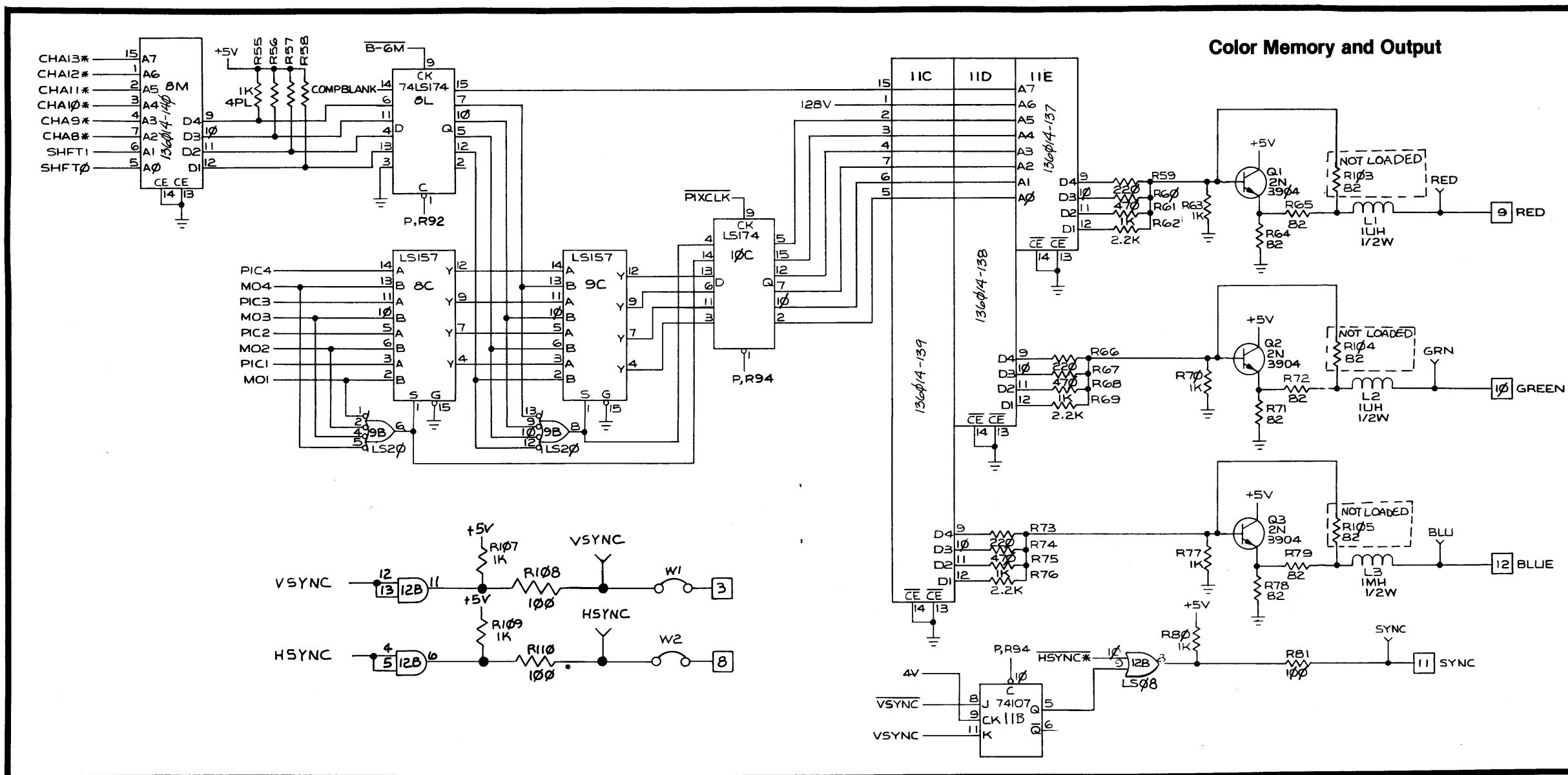
SP-218 Sheet 14B
8th printing



Pole Position Video PCB Schematic Diagram

© ATARI INC., 1982
A Warner Communications Company

SP-218 Sheet 15A
8th printing



Pole Position Video PCB Schematic Diagram

© ATARI INC., 1982
A Warner Communications Company

SP-218 Sheet 15B
8th printing

Schematic Notes

Unless otherwise specified

Resistance: (Ω) ($K \rightarrow K\Omega$, $M \rightarrow M\Omega$), 1/4 (W) carbon resistor

Capacitance: 1 or higher → (pF), less than 1 → (μF)

working voltage → 50 (V)
ceramic capacitor

Inductance: (μH)

Electrolytic Cap: Capacitance Value (μF)/working voltage (V),
NP → non-polar (or bipolar) electrolytic cap.
Refer to the parts list for additional component information.

○ indicates test point connection

— indicates chassis ground unless otherwise specified

Hz indicates cycles per second

For safety purposes (and continuing reliability)

⚠ replace all components marked with safety symbol with
identical type.

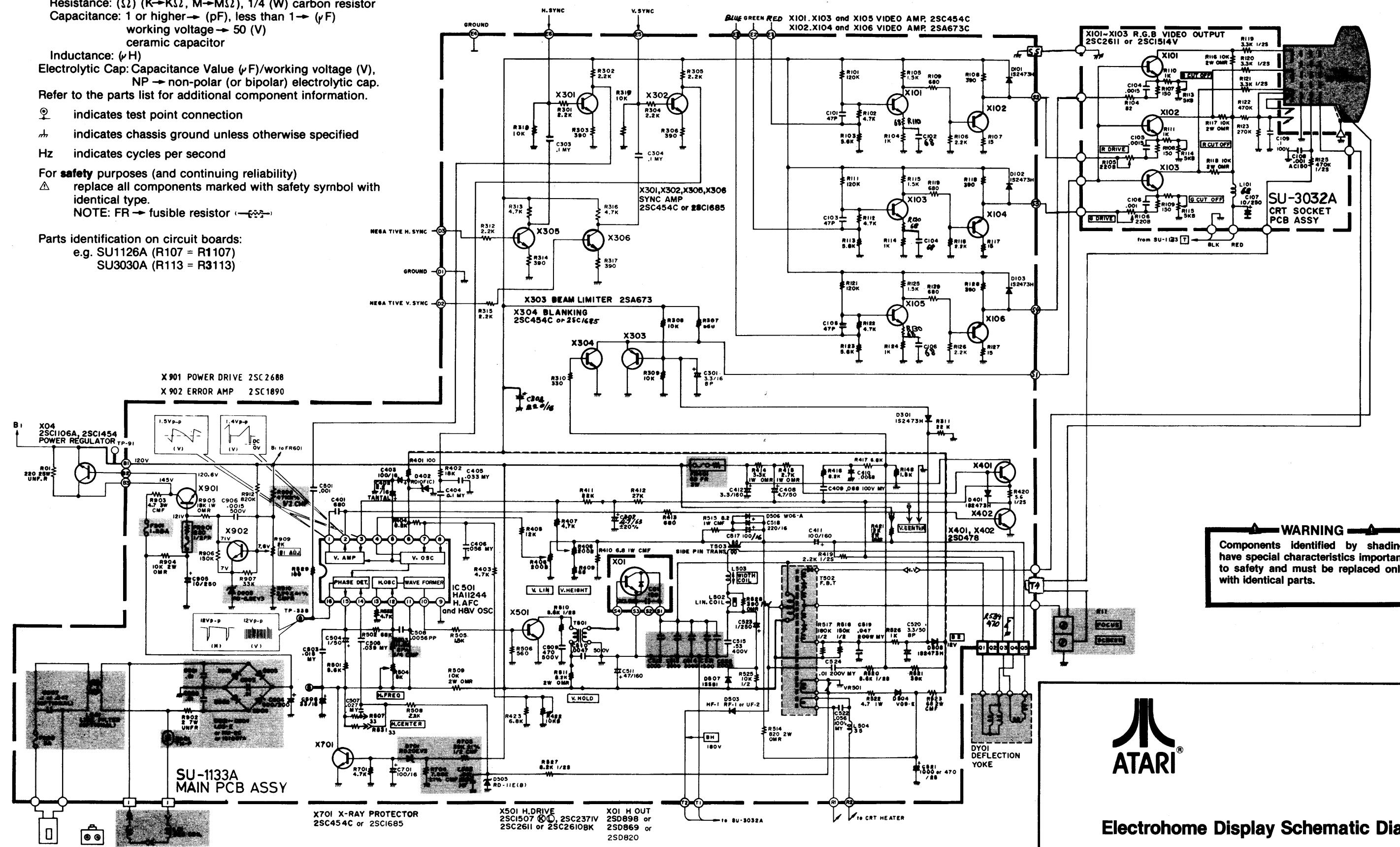
NOTE: FR → fusible resistor (—)

Parts identification on circuit boards:

e.g. SU1126A (R107 = R1107)

SU3030A (R113 = R3113)

Electrohome 19-Inch Color Raster-Scan Video Display Schematic Diagram

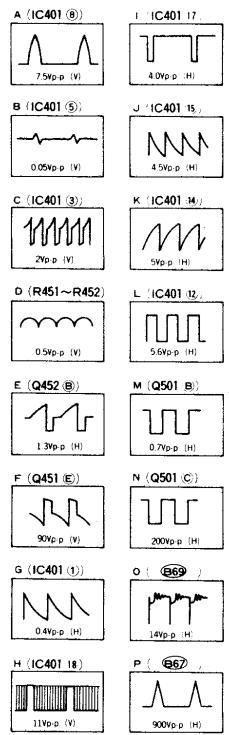


Electrohome Display Schematic Diagram

© ATARI INC., 1982

A Warner Communications Company

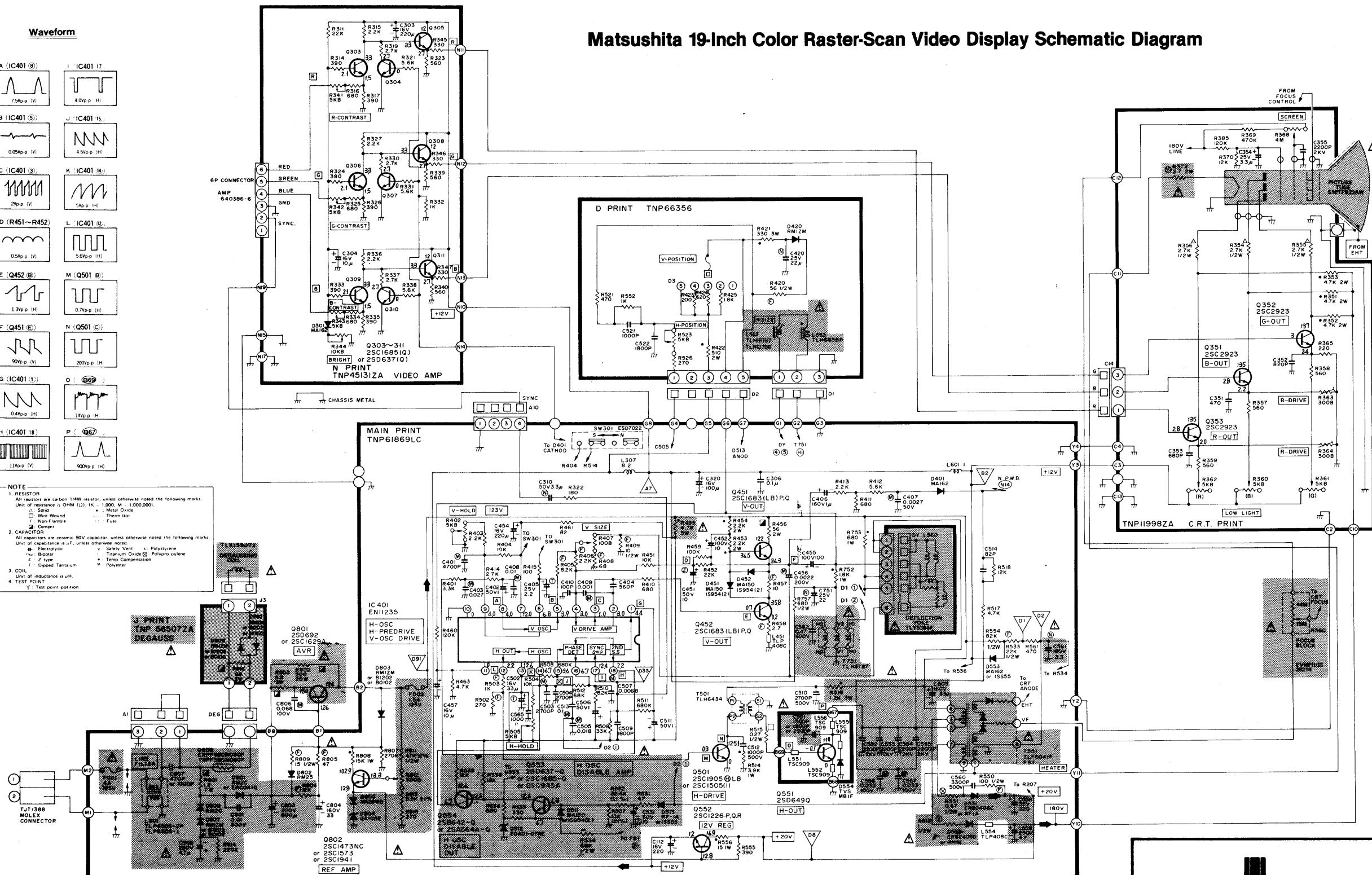
Waveform



NOTE

1. RESISTOR
All resistors are carbon 1/4W resistor, unless otherwise noted. The unit of resistance is OHM (Ω). 1K = 1,000Ω, M = 1,000,000Ω.
• Metal Oxide
□ Wire Wound
△ Thermistor
† Non Flammable
○ Dipped
2. CAPACITOR
All capacitors are ceramic 50V capacitor, unless otherwise noted. The unit of capacitance is μF, unless otherwise noted.
■ Electrolytic
□ Ceramic
○ Paper
△ Dipped Tantalum
3. COIL
Unit of inductance is μH.
4. TEST POINT
Y = Test point position

Matsushita 19-Inch Color Raster-Scan Video Display Schematic Diagram



Matsushita Display Schematic Diagram