

WPC SCHEMATIC MANUAL

WILLIAMS ELECTRONICS GAMES, INC.
MIDWAY MANUFACTURING COMPANY
3401 North California Ave.
Chicago, Illinois 60618

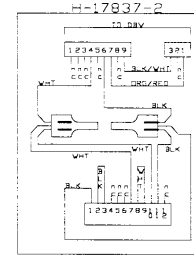
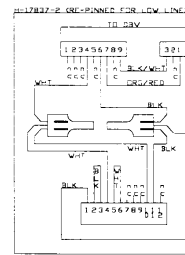
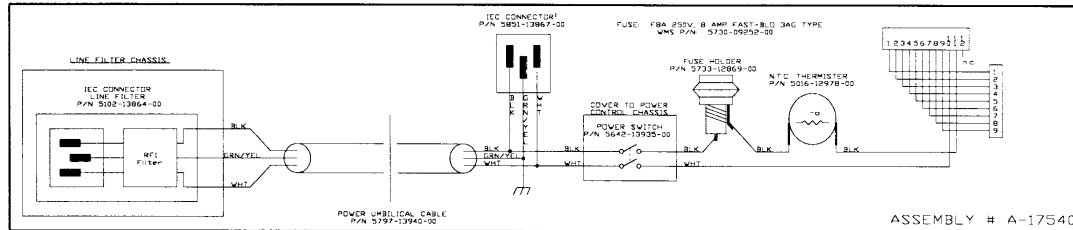
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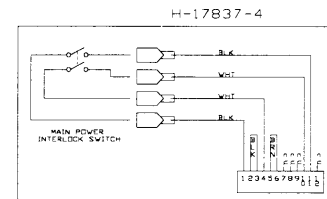
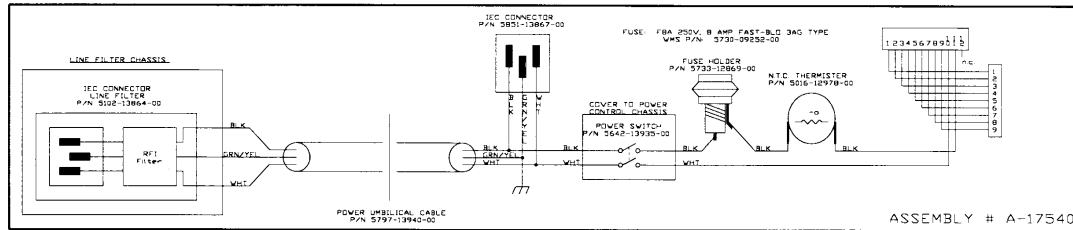
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The specifications and parts identified in this manual are subject to change without notice.

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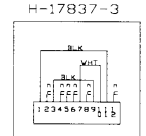
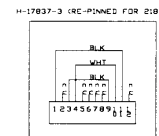
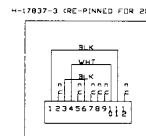
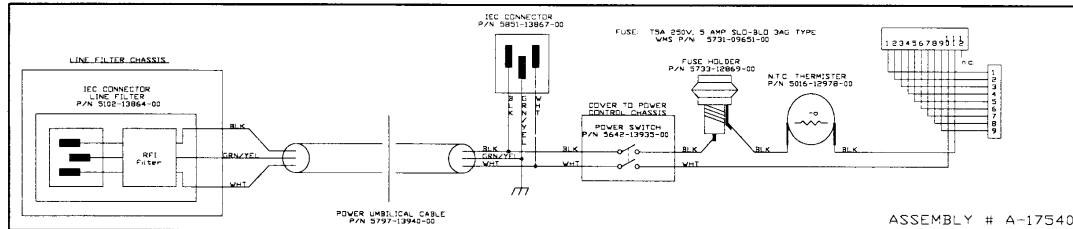
120 VAC USAGE -- USA



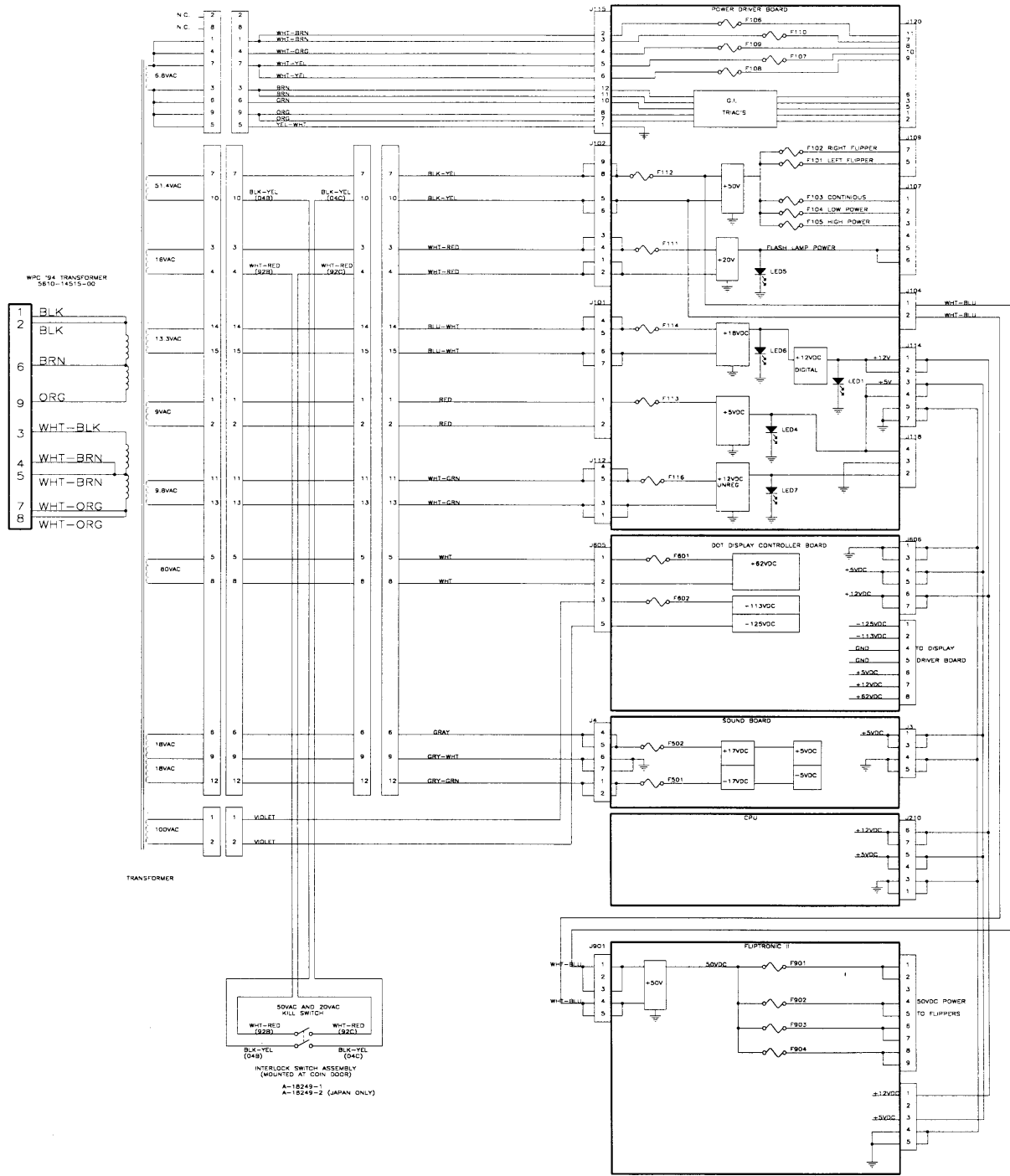
105 VAC USAGE -- JAPAN



230 VAC USAGE



SECONDARY CABLE

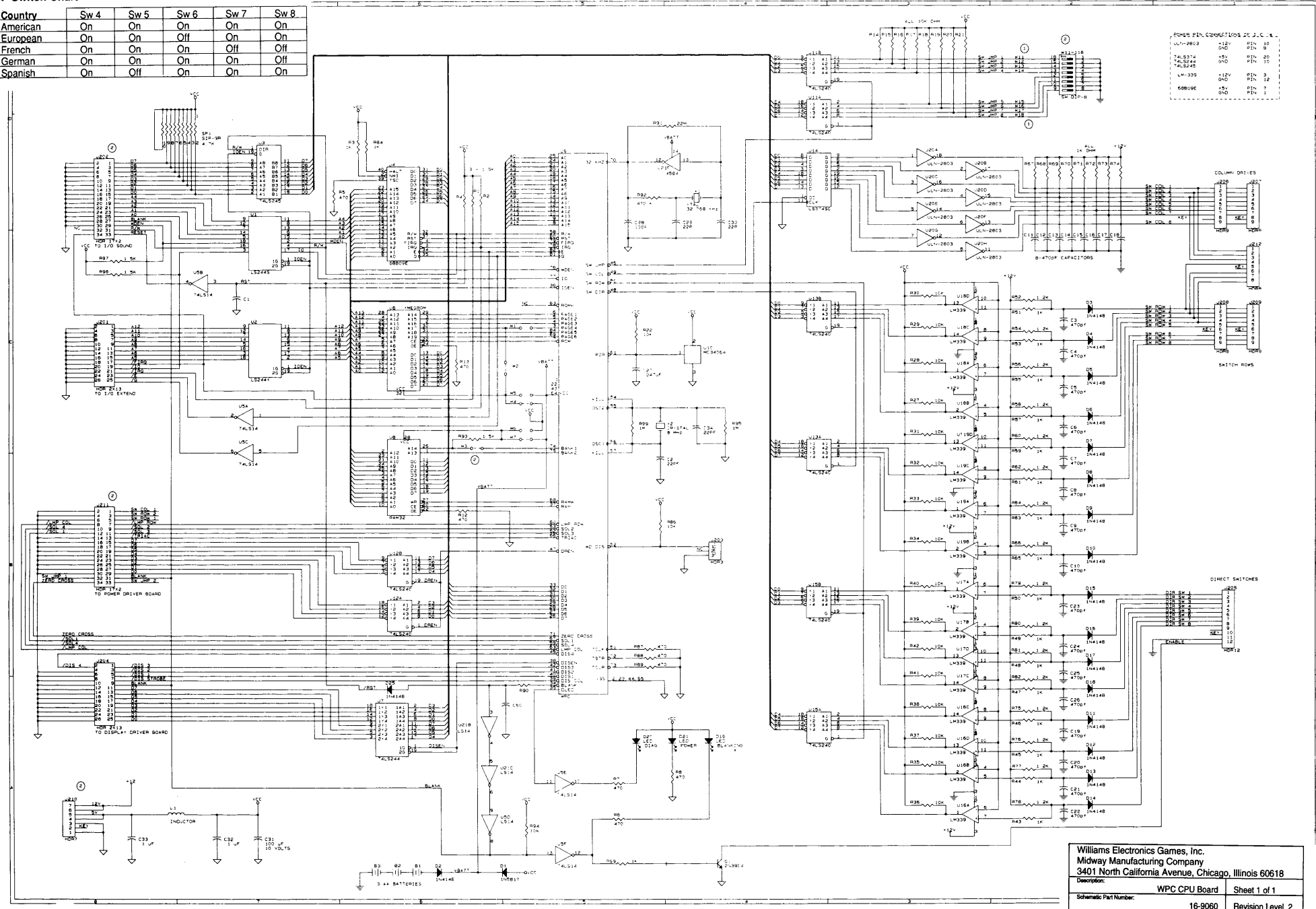


Jumper Chart

| Display | W1 | W2 |
|--------------|-----|-----|
| 1M/2M/4M ROM | In | Out |
| 512K/1M ROM | Out | In |

DIP Switch Chart

| Country | Sw 4 | Sw 5 | Sw 6 | Sw 7 | Sw 8 |
|----------|------|------|------|------|------|
| American | On | On | On | On | On |
| European | On | On | Off | On | On |
| French | On | On | On | Off | Off |
| German | On | On | On | On | Off |
| Spanish | On | Off | On | On | On |



Williams Electronics Games, Inc.
 Midway Manufacturing Company
 3401 North California Avenue, Chicago, Illinois 60618

Description: WPC CPU Board

Schematic Part Number: 16-9060

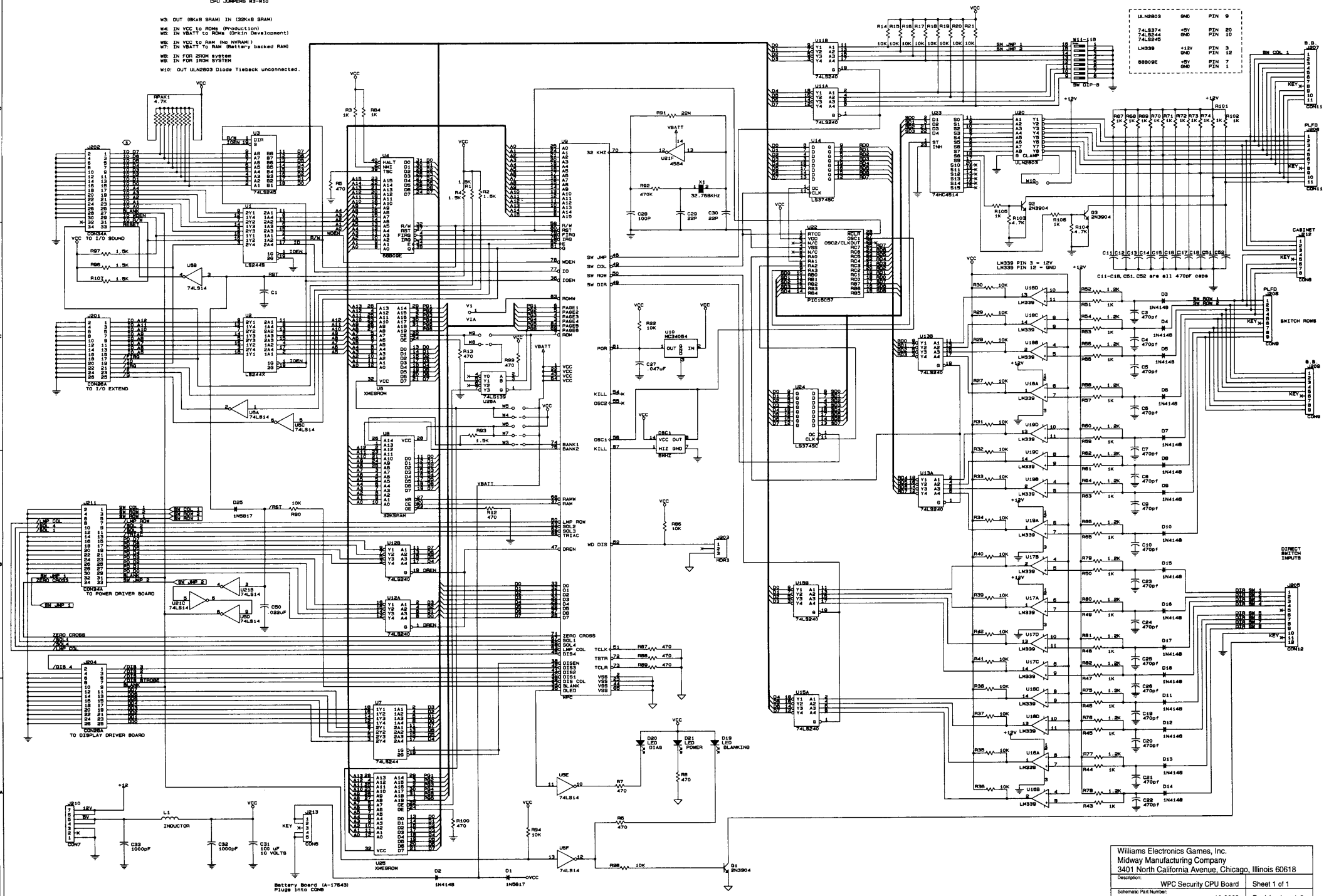
Sheet 1 of 1

Revision LEVEL 2

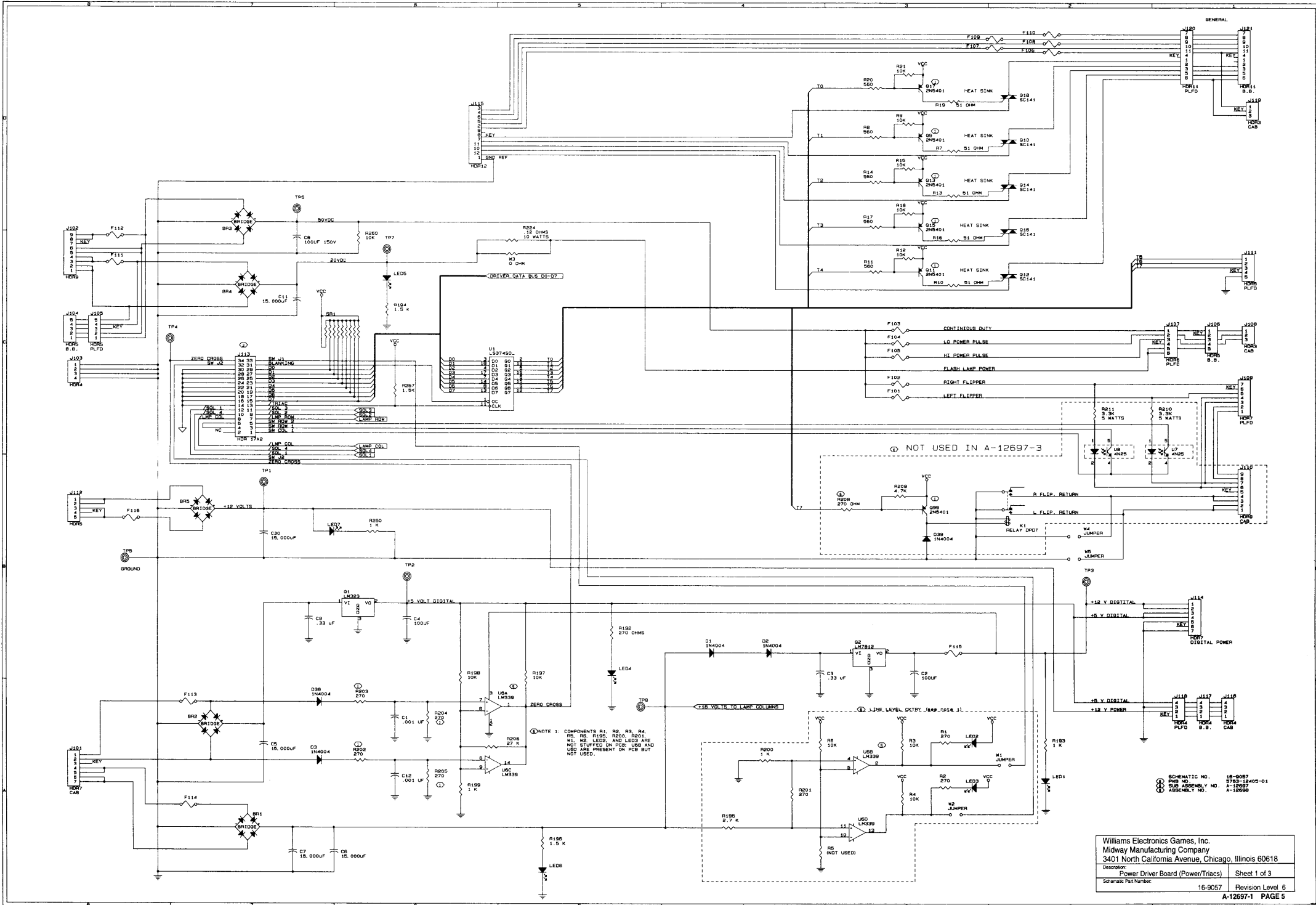
A-12742-XXXXX PAGE 3

CPU JUMPERS W3-W10

- W3: OUT (8Kx8 BRAM IN (32Kx8 BRAM)
- W4: IN VCC TO ROMS (PRODUCTION)
- W5: IN VBAT1 TO ROMS (OPTIONAL Development)
- W6: IN VCC TO RAM (NO HVYRAM)
- W7: IN VBAT1 TO RAM (BATTERY BACKED RAM)
- W8: IN FOR ZHON SYSTEMS
- W9: IN FOR IRON SYSTEM
- W10: OUT ULN2803 DIODE TIEBACK UNCONNECTED.



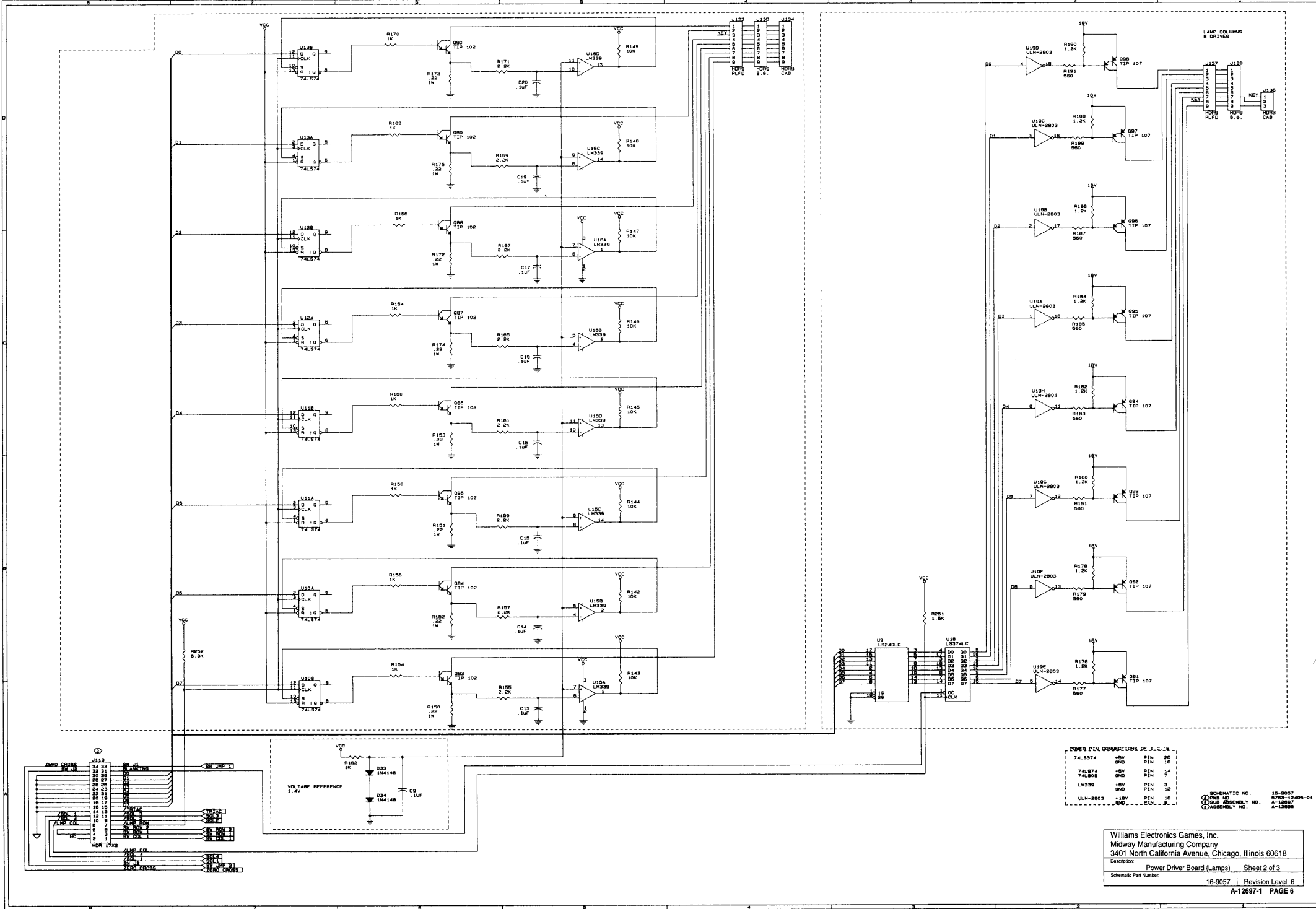
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 Midway Manufacturing Company
 3401 North California Avenue, Chicago, Illinois 60618
 Description: WPC Security CPU Board Sheet 1 of 1
 Schematic Part Number: 16-9663 Revision Level 3
 A-17651-XXXXX PAGE 4



NOTE 1: COMPONENTS R1, R2, R3, R4, R5, R6, R16B, R20, R20L, W1, W2, LED2, AND LED3 ARE NOT STUFFED ON PCB. USE AND USE ARE PRESENT ON PCB BUT NOT USED.

SCHEMATIC NO. 16-9057
 PCB NO. 3783-12405-01
 SUB ASSEMBLY NO. A-12697
 ASSEMBLY NO. A-12698

| | |
|---|-----------------------------------|
| Williams Electronics Games, Inc. Midway Manufacturing Company 3401 North California Avenue, Chicago, Illinois 60618 | |
| Description: | Power Driver Board (Power/Triacs) |
| Schematic Part Number: | 16-9057 |
| Revision: | Revision Level 6 |
| Page: | Page 5 |



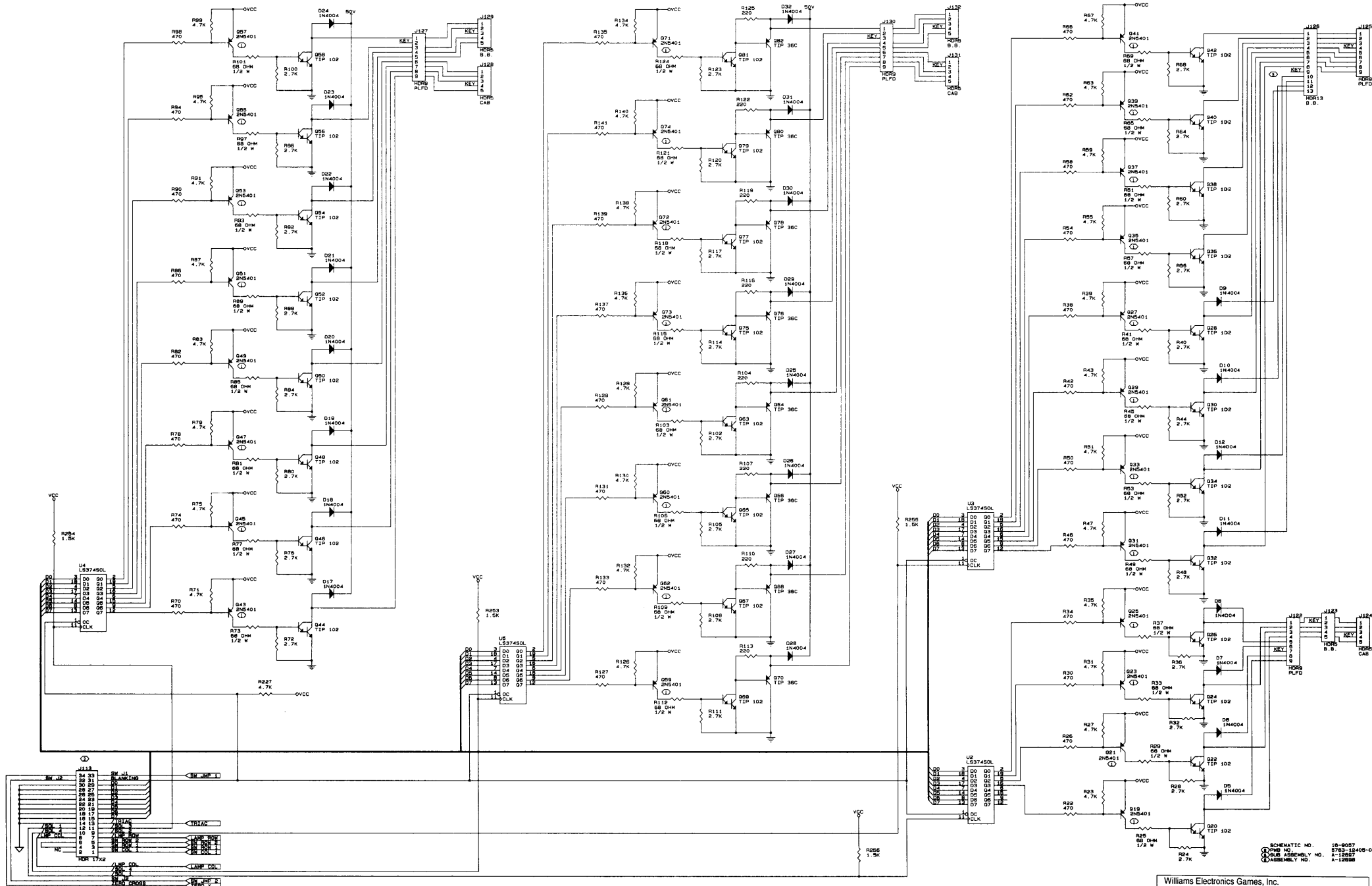
POWER PIN CONNECTIONS OF J.C.C.B.

| | | |
|----------|-----|--------|
| 74LS74 | +5V | PIN 20 |
| | GND | PIN 10 |
| 74LS74 | +5V | PIN 14 |
| 74LS08 | GND | PIN 7 |
| LM339 | +5V | PIN 3 |
| | GND | PIN 18 |
| ULN-2803 | +5V | PIN 10 |
| | GND | PIN 9 |

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Description: Power Driver Board (Lamps) Sheet 2 of 3
 Schematic Part Number: 16-9057 Revision Level: 6
 A-12897-1 PAGE 6

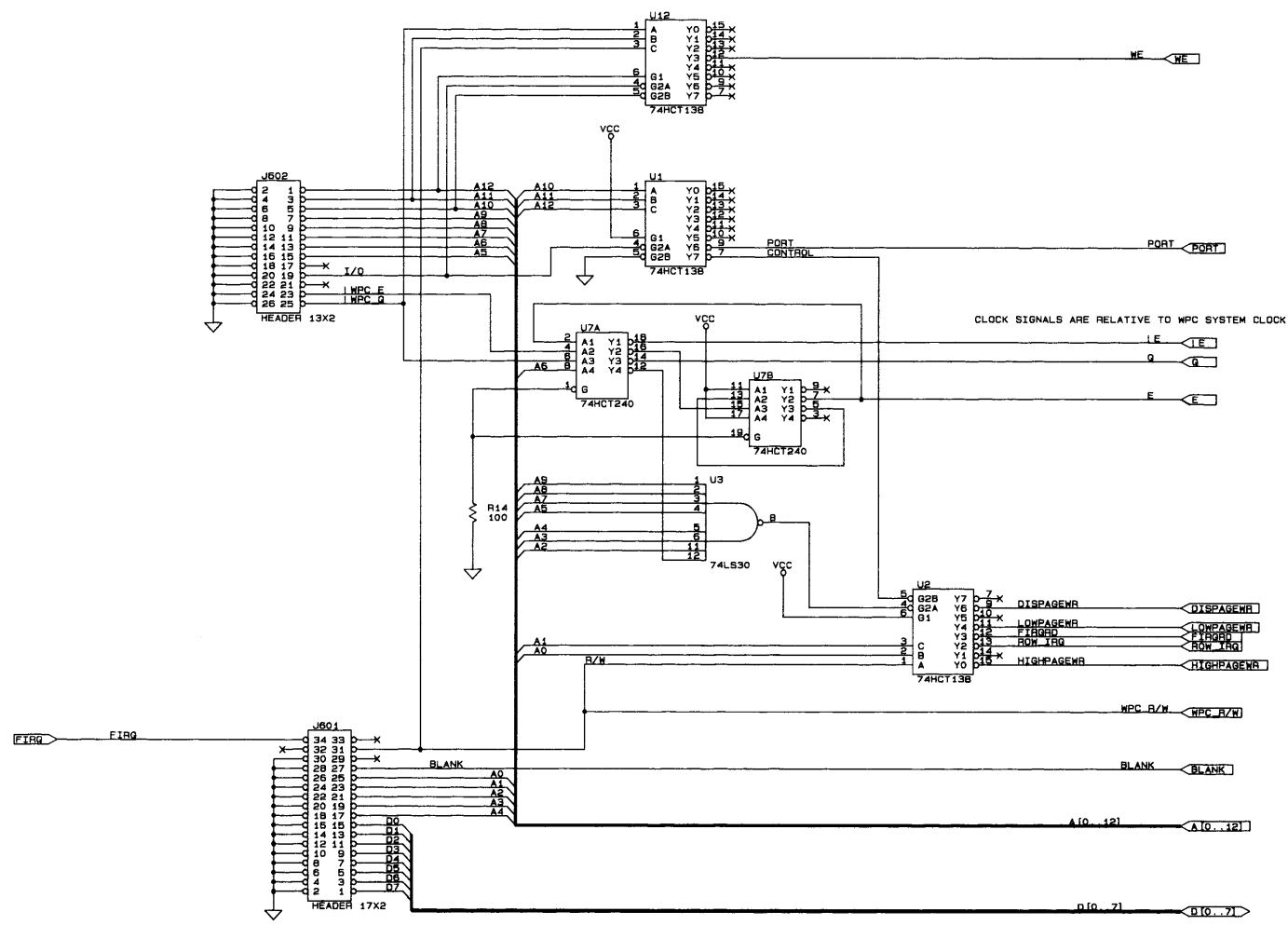
SCHEMATIC NO. 16-9057
 DRAWING NO. 6763-12409-01
 ASSEMBLY NO. A-12897
 CHECKED BY NO. A-12898



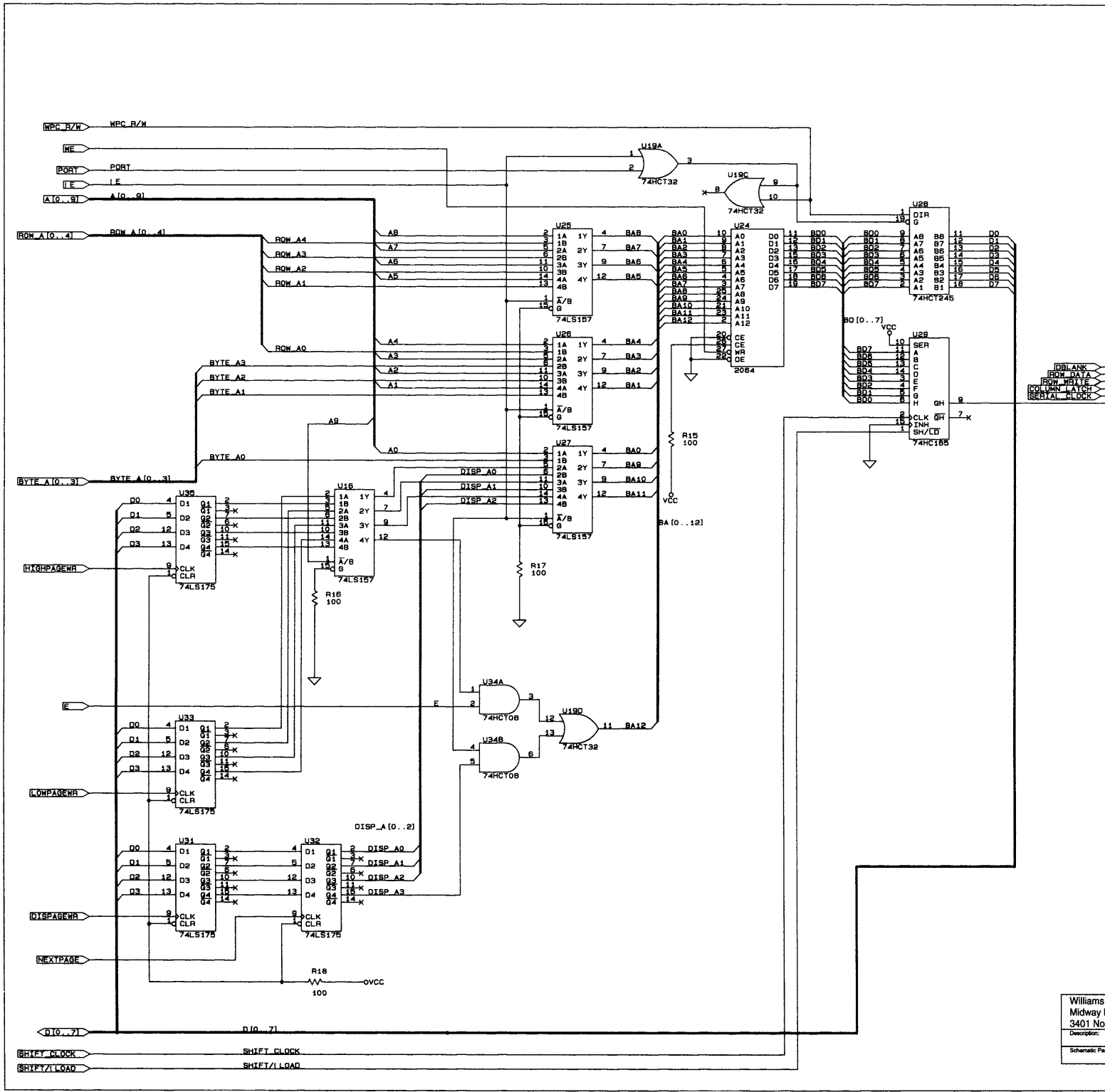
SCHEMATIC NO. 16-9057
 DRAWING NO. 0785-1640B-01
 ASSEMBLY NO. A-12897
 ASSEMBLY NO. A-12898

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 3401 North California Avenue, Chicago, Illinois 60618

Description: Power Driver Board (Solenoids) Sheet 3 of 3
 Schematic Part Number: 16-9057 Revision Level 6
 A-12897-1 PAGE 7



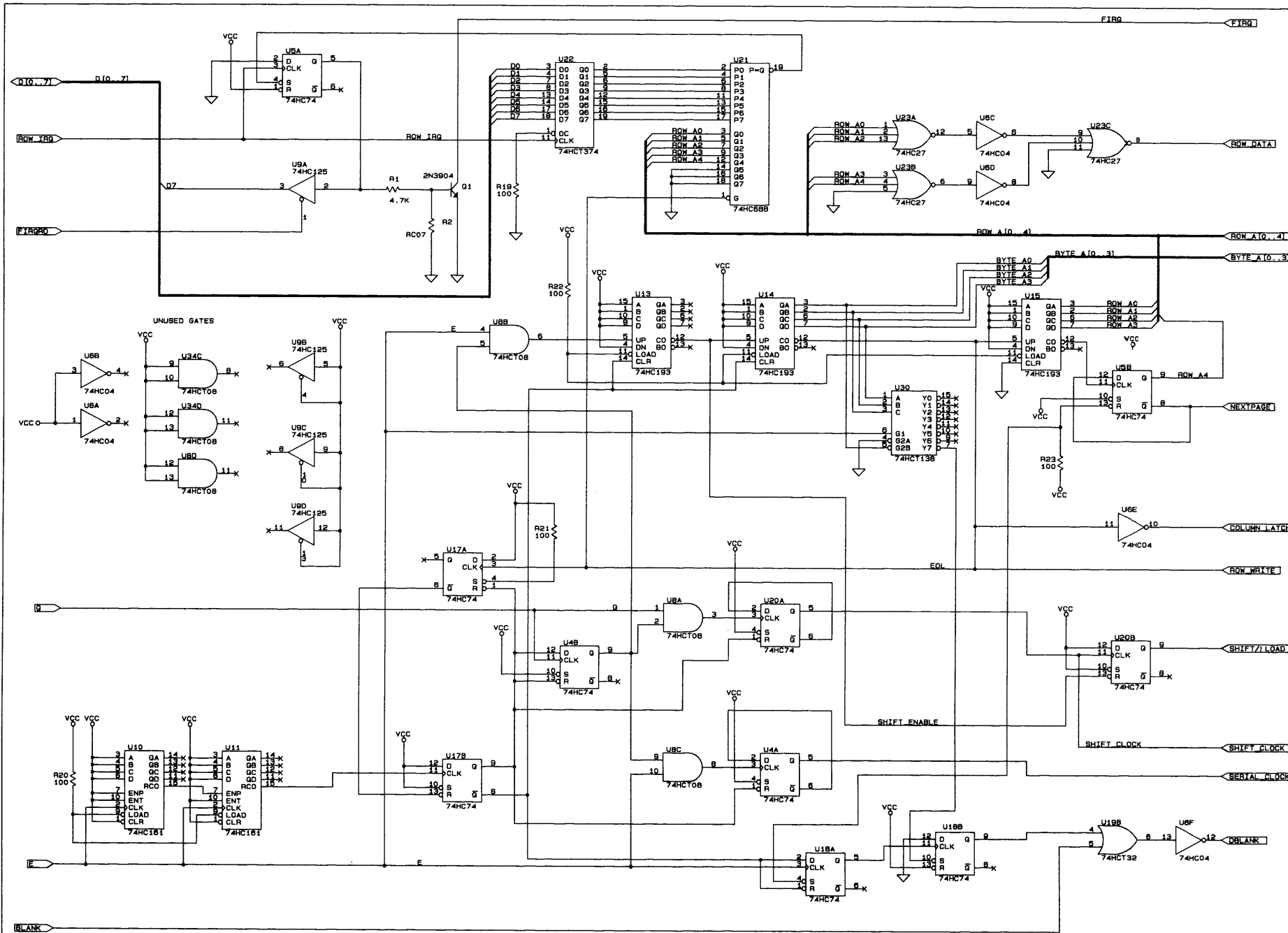
| REV | DESCRIPTION OF CHANGE | ECN NO. |
|-----|---|--------------|
| 1.0 | Added U12 to create new WE signal to RAM. | DATE 3/18/94 |



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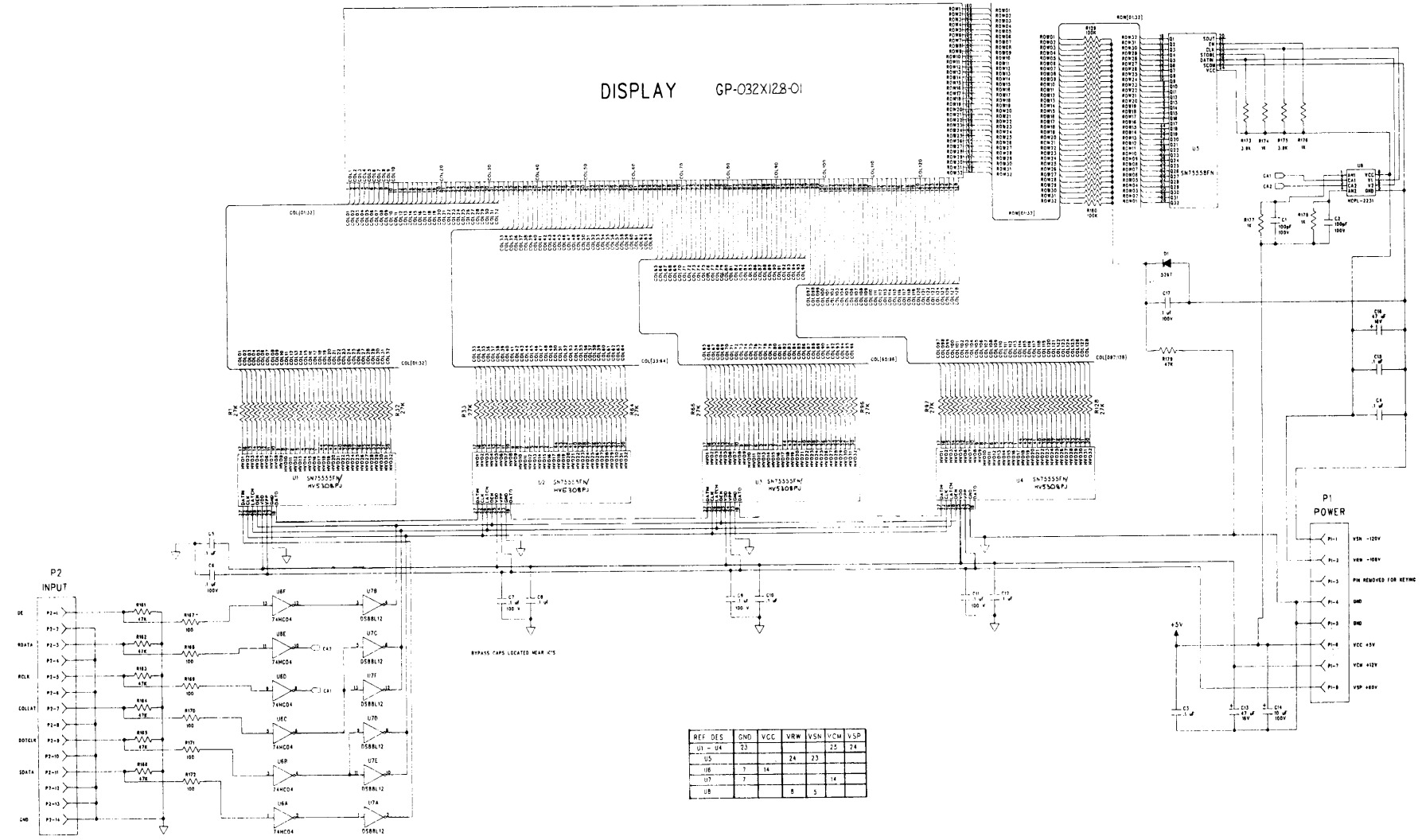
Description: Dot Matrix Controller Board
 Schematic Part Number: 16-9148.1

Sheet 3 of 4
 Revision Level 1
 A-14039.1 PAGE 10



| REV | DESCRIPTION OF CHANGE | DATE |
|-----|--|--------------|
| 1.0 | Added U12 to create new WE signal to RAM | 4/18/94 |
| | | ECN NO. DATE |

DISPLAY GP-032X128-01



2. RESISTOR VALUES ARE IN OHMS, 1/8 WATT, 5%.
 1. CAPACITOR VOLTAGES ARE 50V, 20%.
 NOTES: UNLESS OTHERWISE SPECIFIED

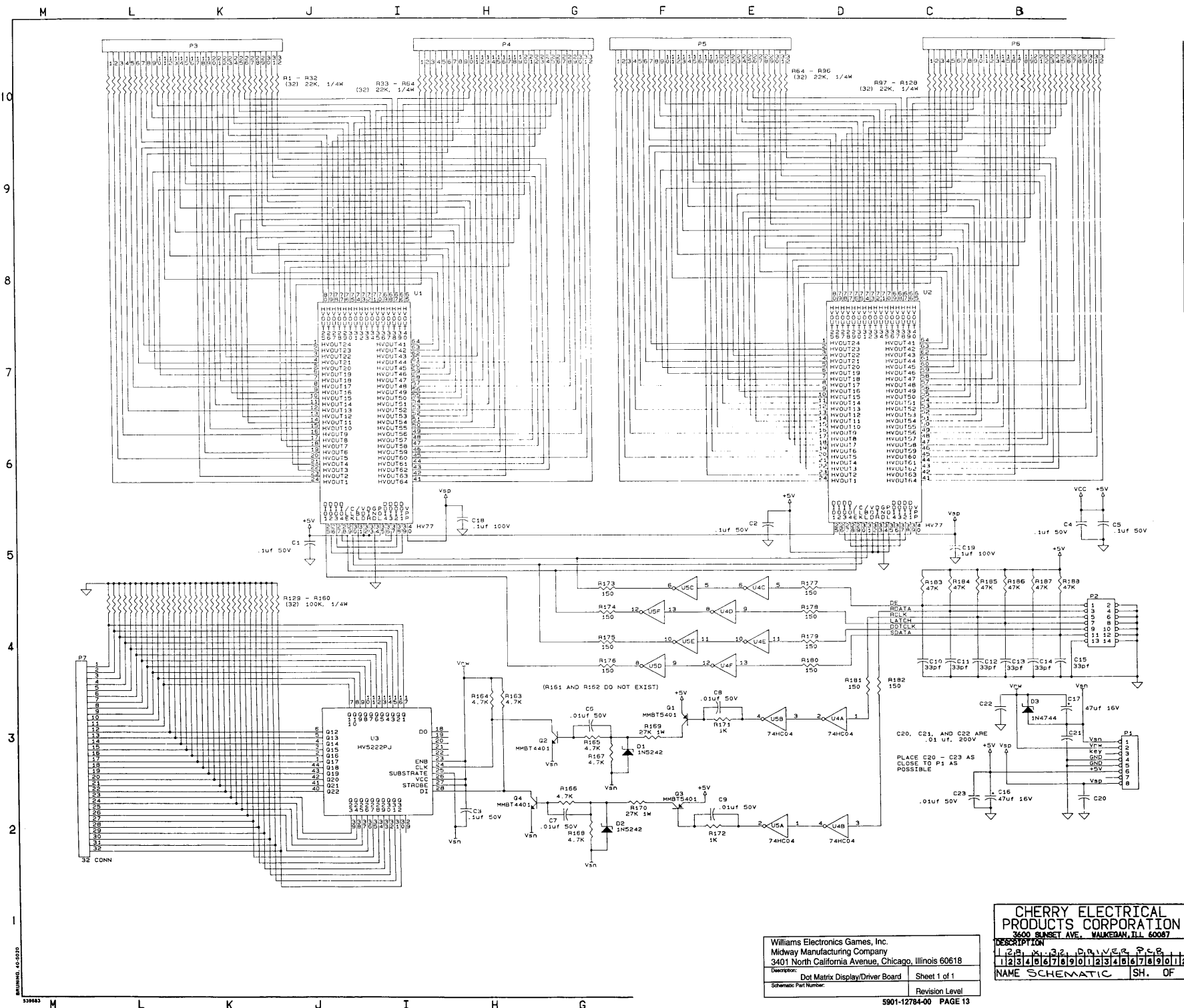
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 Midway Manufacturing Company
 3401 North California Avenue, Chicago, Illinois 60618

Description: Dot Matrix Display/Driver Board Sheet 1 of 1
 Schematic Part Number: Revision Level

5901-12784-00 PAGE 12

BABCOCK
 DISPLAY PRODUCTS, INC.
 1051 S. EAST STREET ANAHEIM, CALIFORNIA 92805

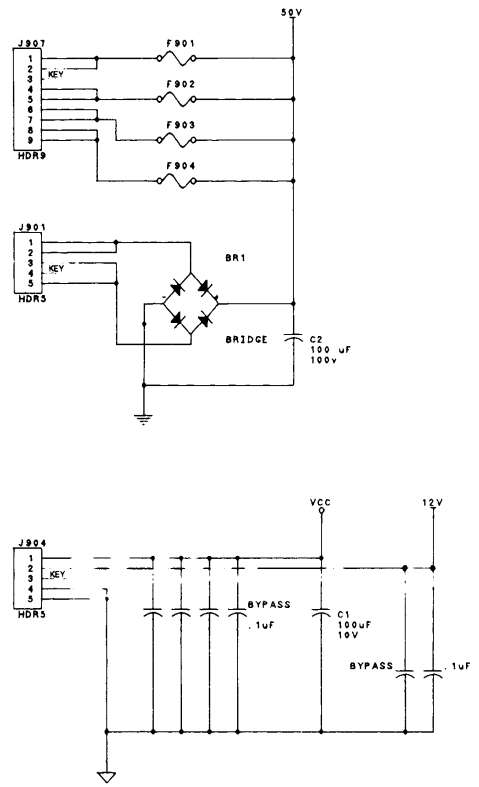
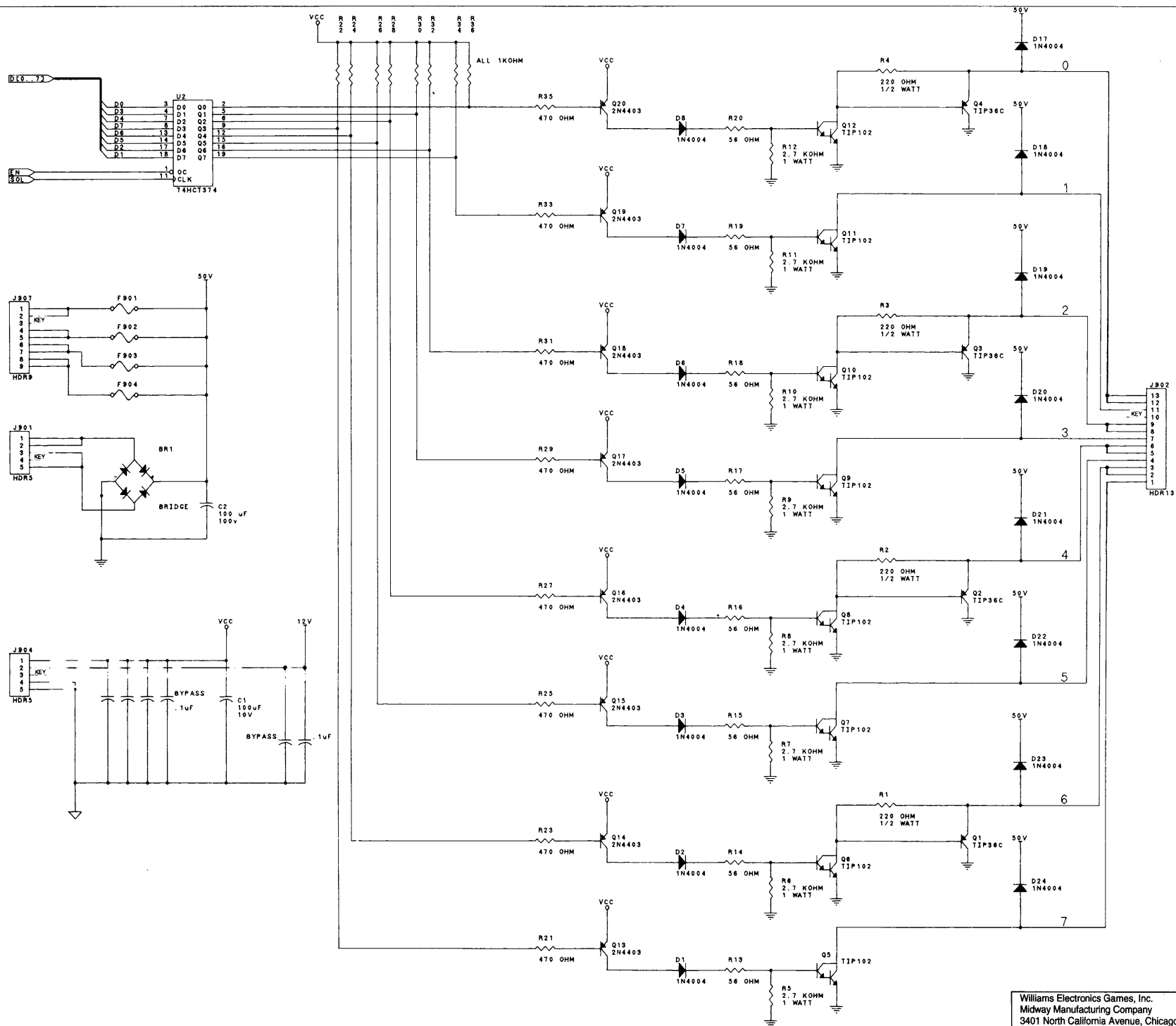
SCHEMATIC

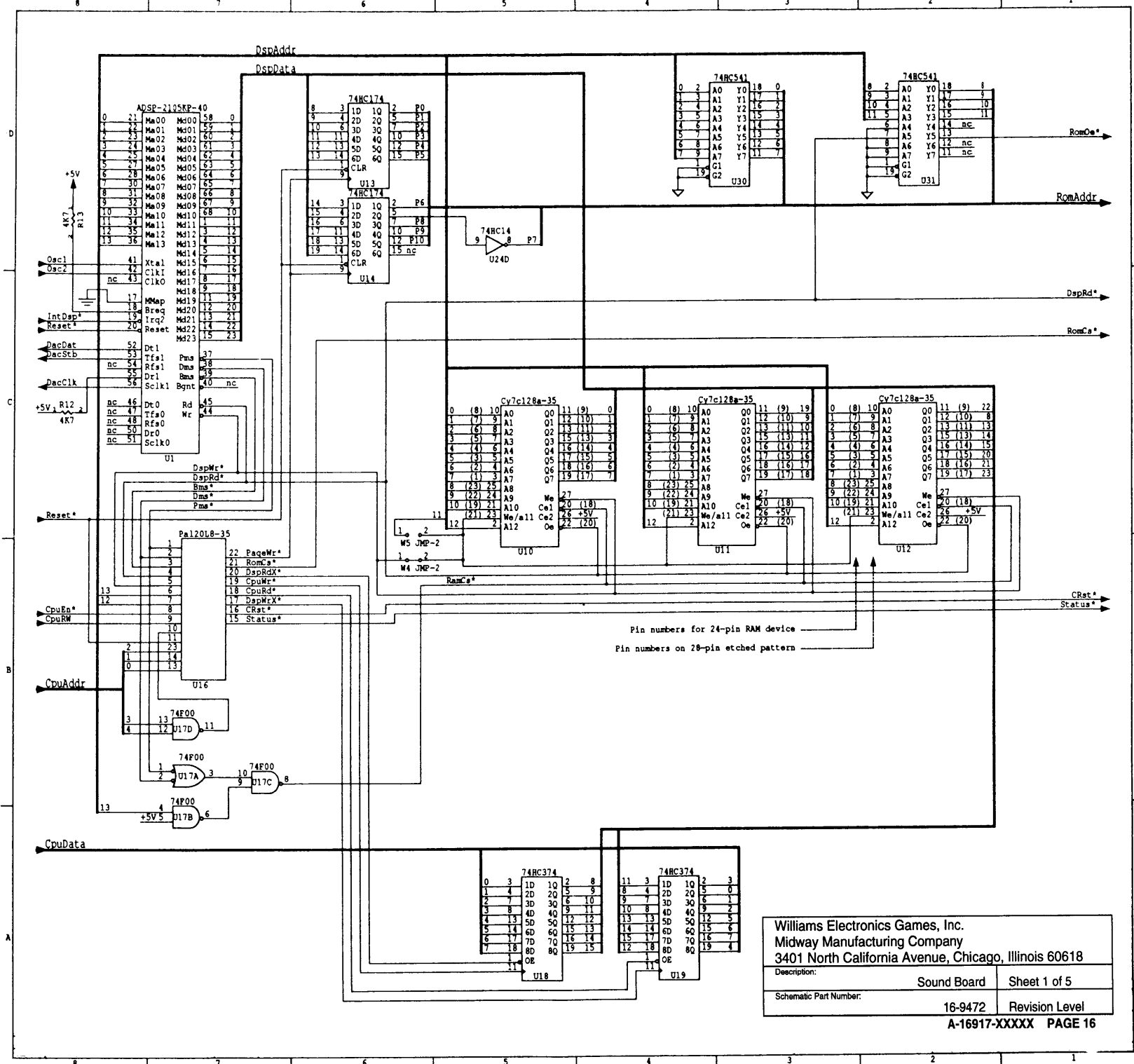


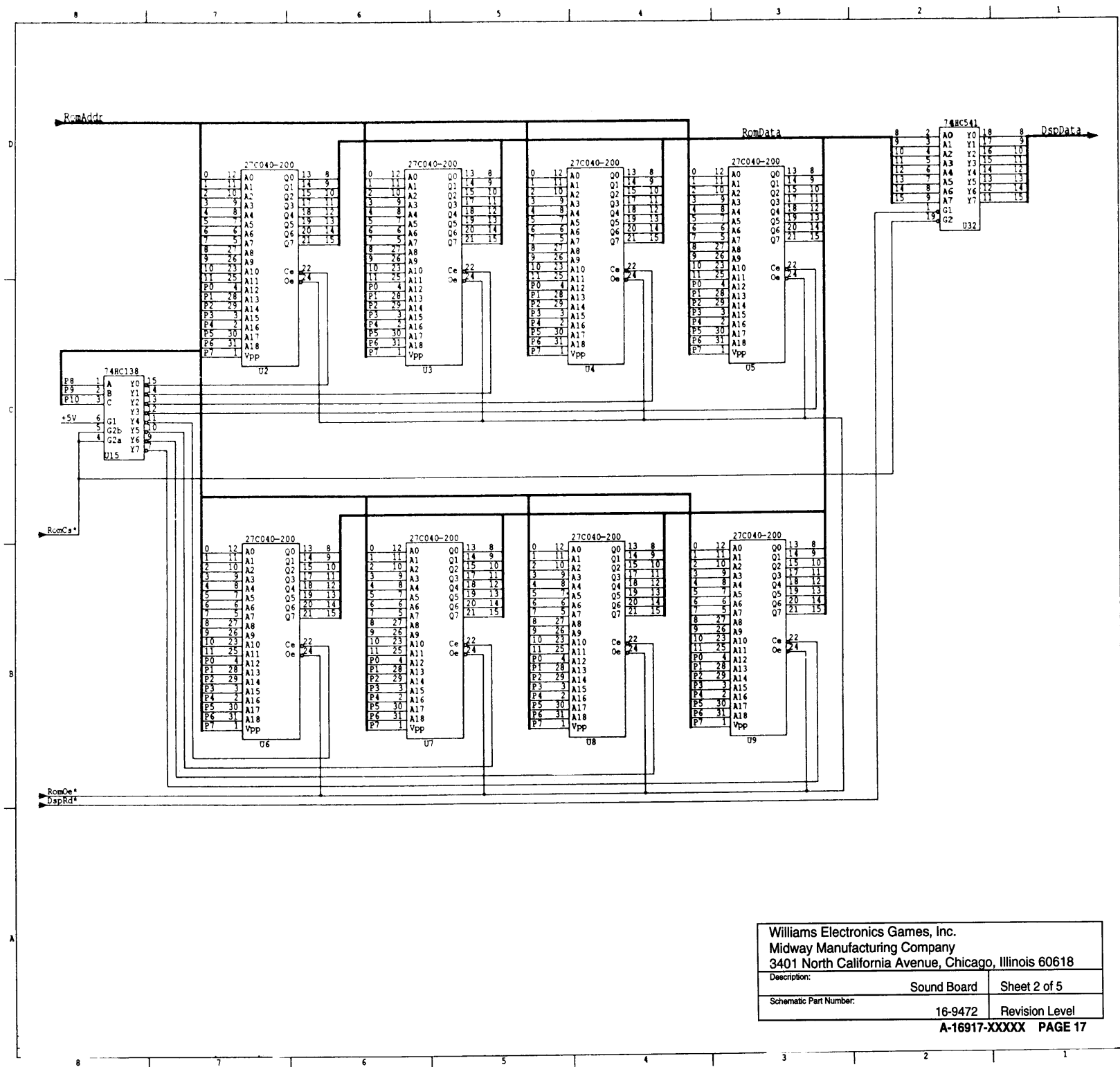
12784-00-0010
 12784-00-0010

Williams Electronics Games, Inc.
 Midway Manufacturing Company
 3401 North California Avenue, Chicago, Illinois 60618
 Description: Dot Matrix Display/Driver Board
 Schematic Part Number: 5901-12784-00
 Revision Level: PAGE 13

| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|
| CHERRY ELECTRICAL PRODUCTS CORPORATION 3600 SUNSET AVE., WILKESBAR, ILL. 60087 | | | | | | | | | | | |
| DESCRIPTION 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 | | | | | | | | | | | |
| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 | | | | | | | | | | | |
| NAME SCHEMATIC SH. OF | | | | | | | | | | | |



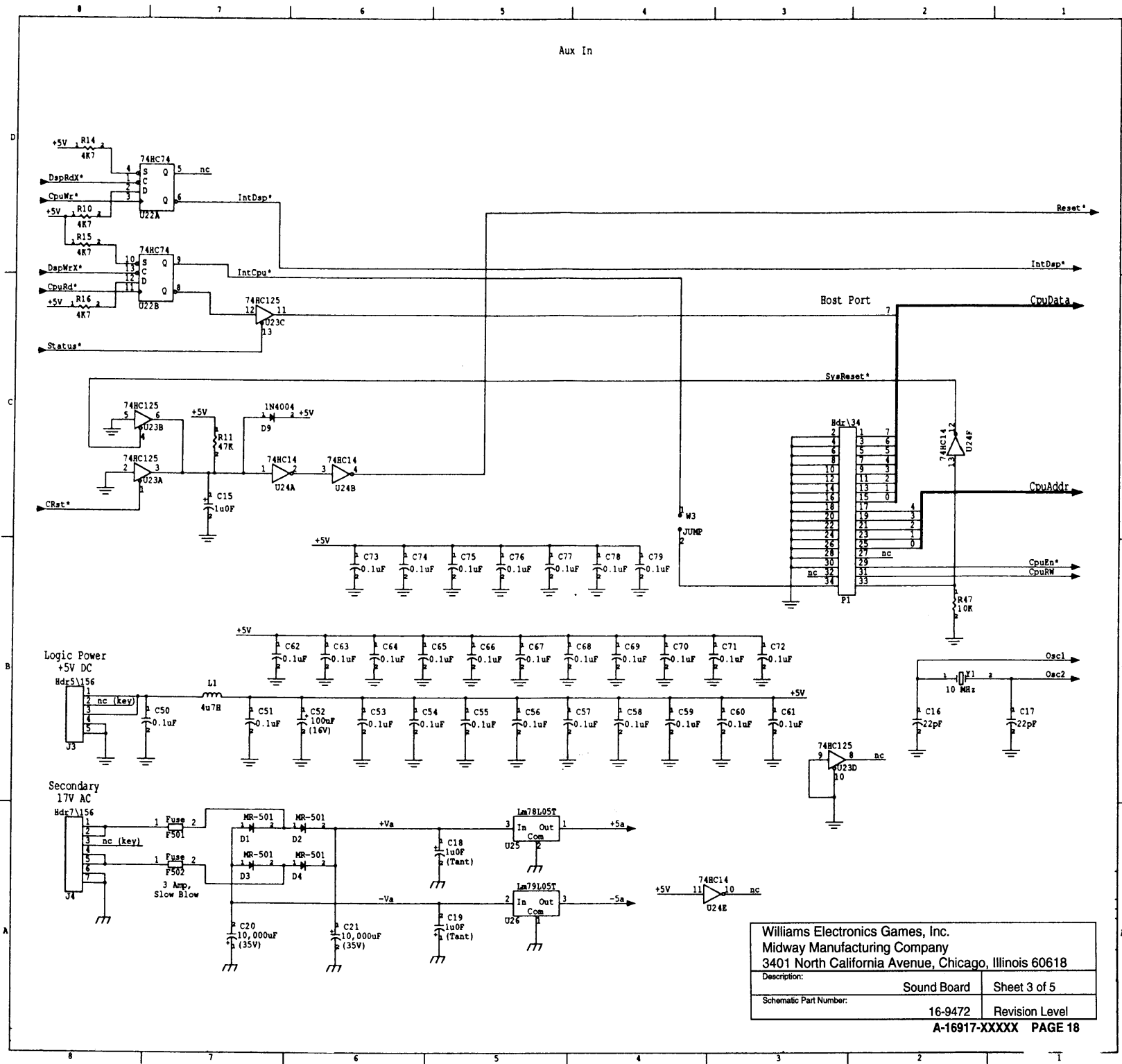




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| | | |
|------------------------|-------------|----------------|
| Description: | Sound Board | Sheet 2 of 5 |
| Schematic Part Number: | 16-9472 | Revision Level |

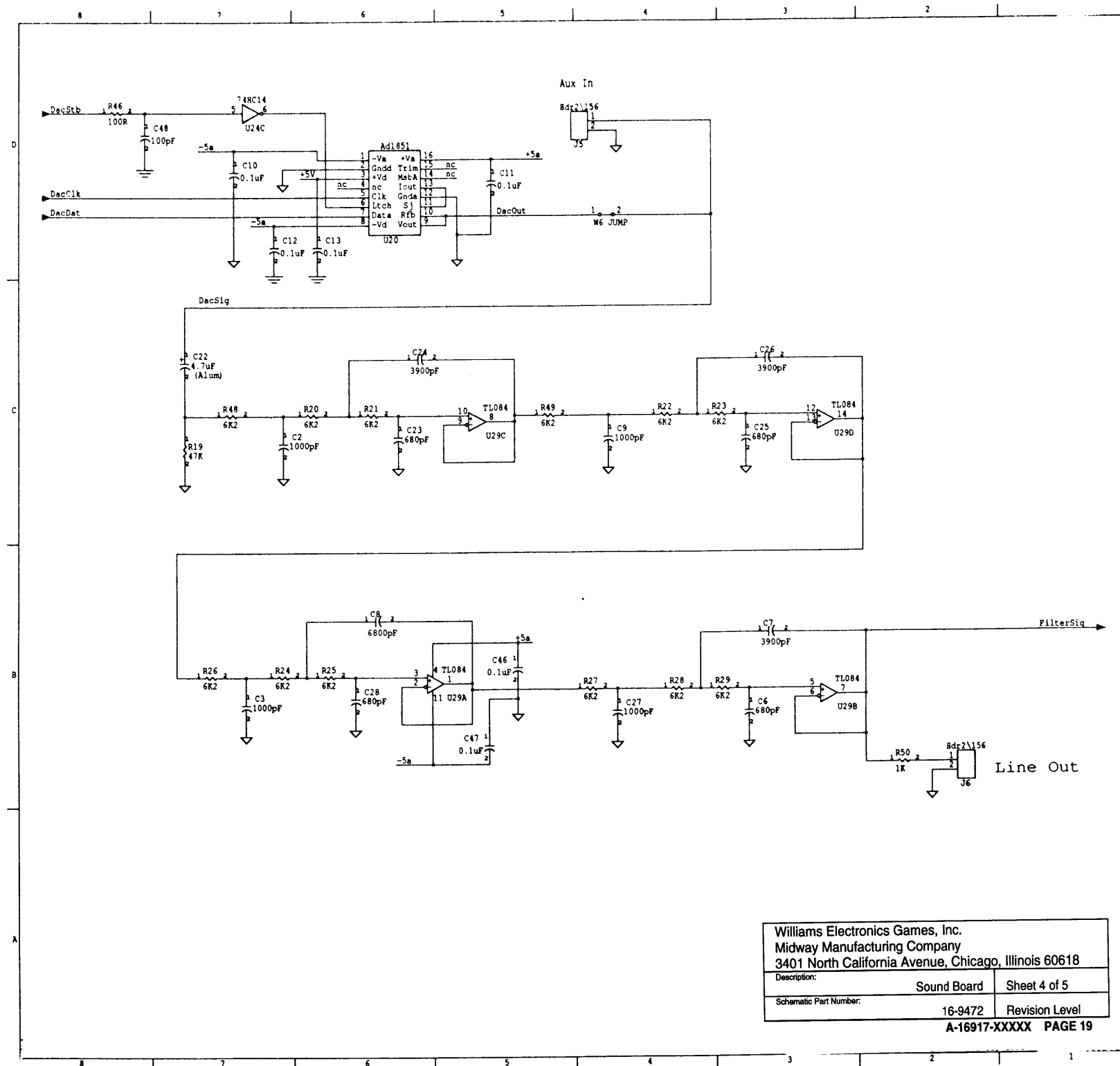
A-16917-XXXXX PAGE 17



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| | |
|------------------------|----------------|
| Description: | |
| Sound Board | Sheet 3 of 5 |
| Schematic Part Number: | Revision Level |
| 16-9472 | A-16917-XXXXX |

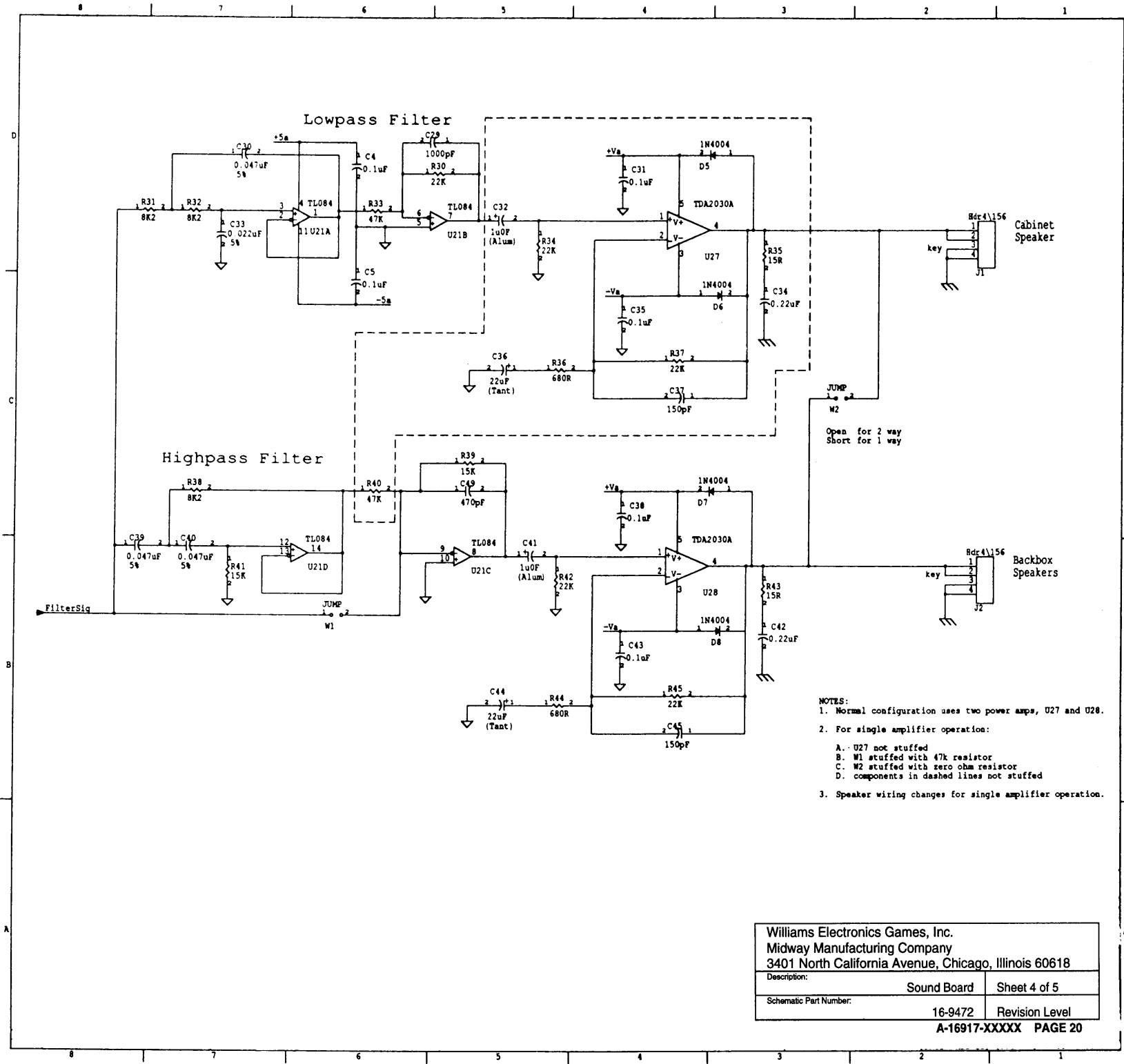
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| | | |
|------------------------|-------------|----------------|
| Description: | Sound Board | Sheet 4 of 5 |
| Schematic Part Number: | 16-9472 | Revision Level |

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- NOTES:
1. Normal configuration uses two power amps, U27 and U28.
 2. For single amplifier operation:
 - A. U27 not stuffed
 - B. W1 stuffed with 47k resistor
 - C. W2 stuffed with zero ohm resistor
 - D. components in dashed lines not stuffed
 3. Speaker wiring changes for single amplifier operation.

| | | |
|---|-------------|----------------|
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| Description: | Sound Board | Sheet 4 of 5 |
| Schematic Part Number: | 16-9472 | Revision Level |
| A-16917-XXXXX PAGE 20 | | |