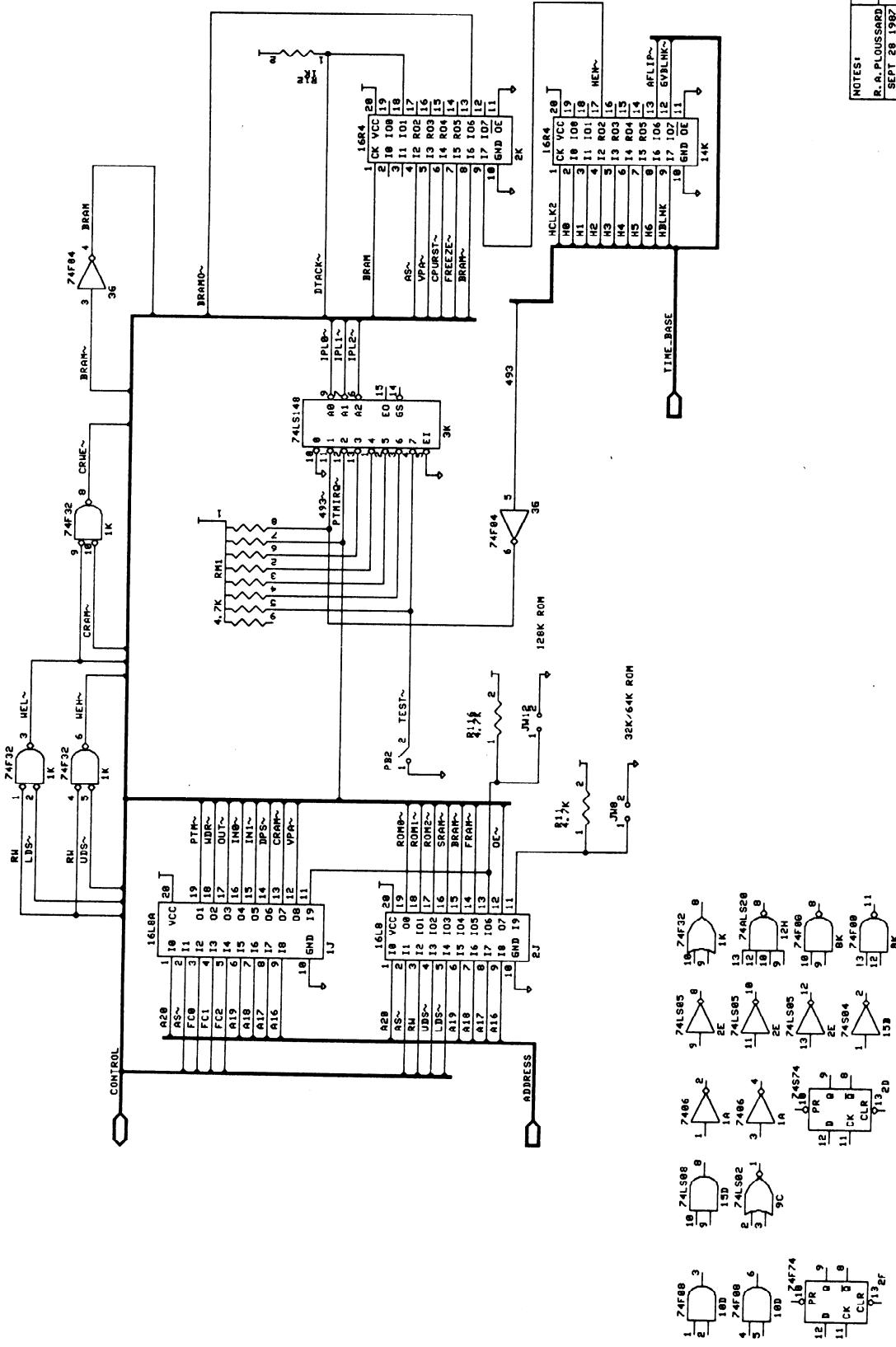
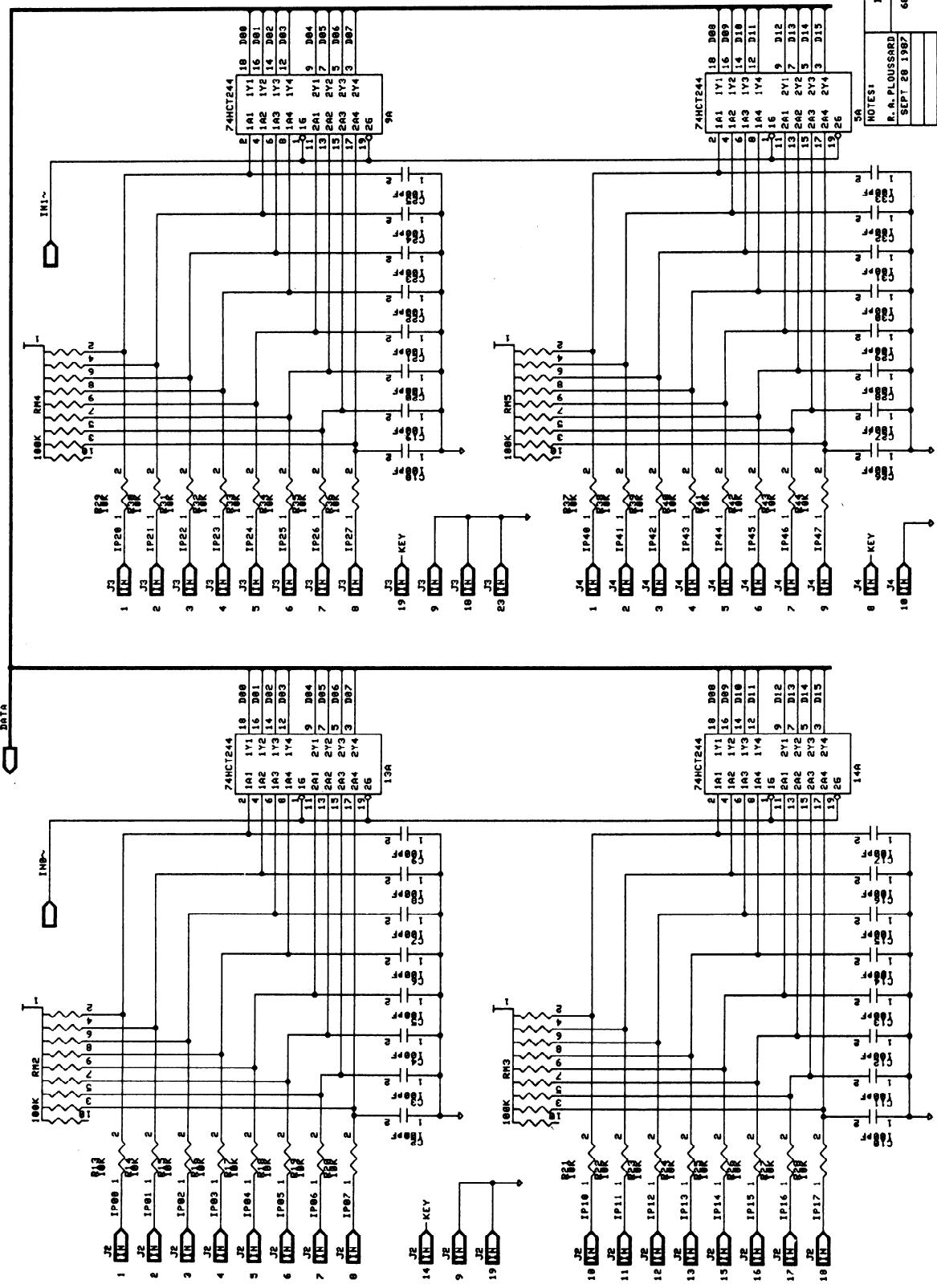


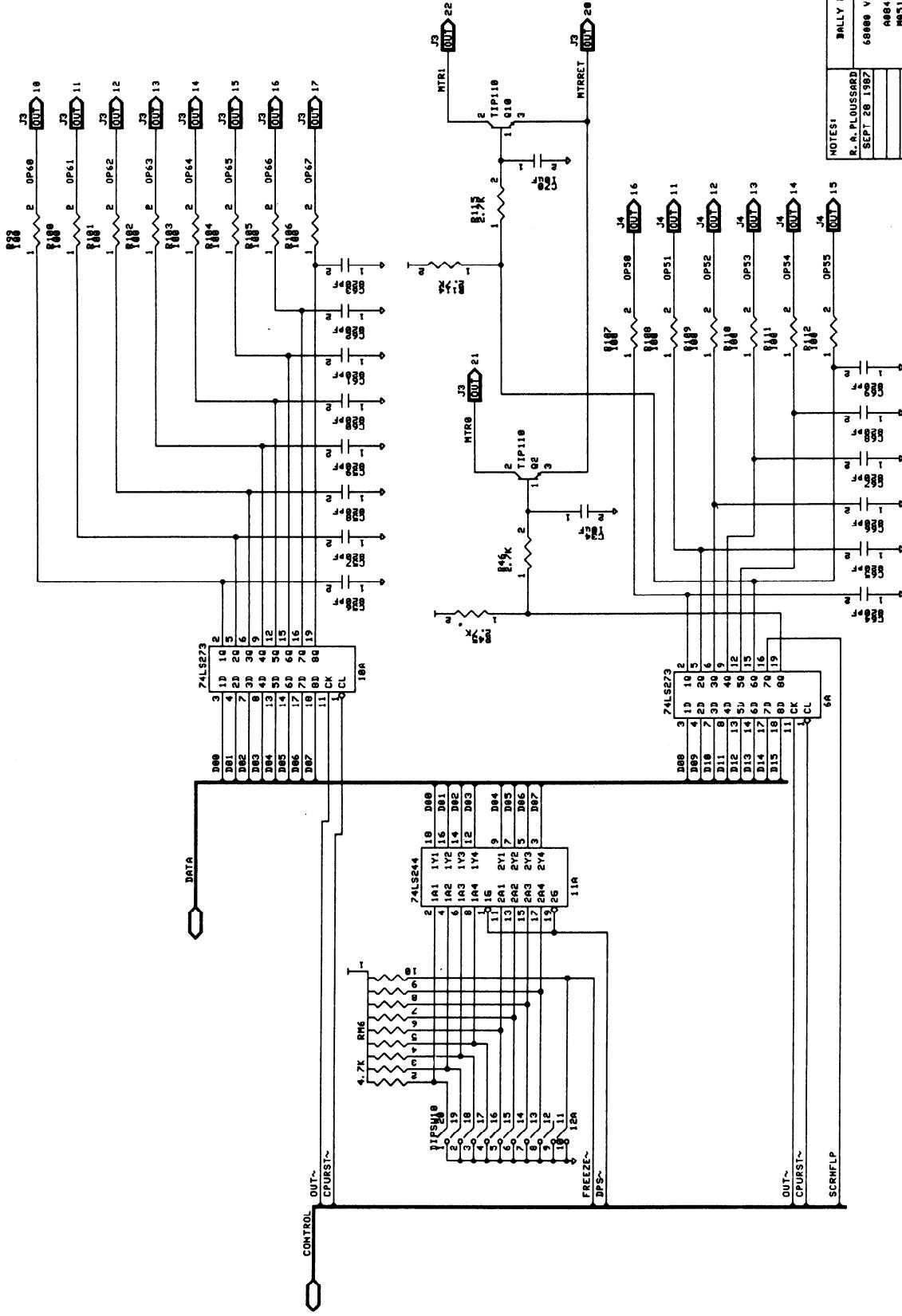
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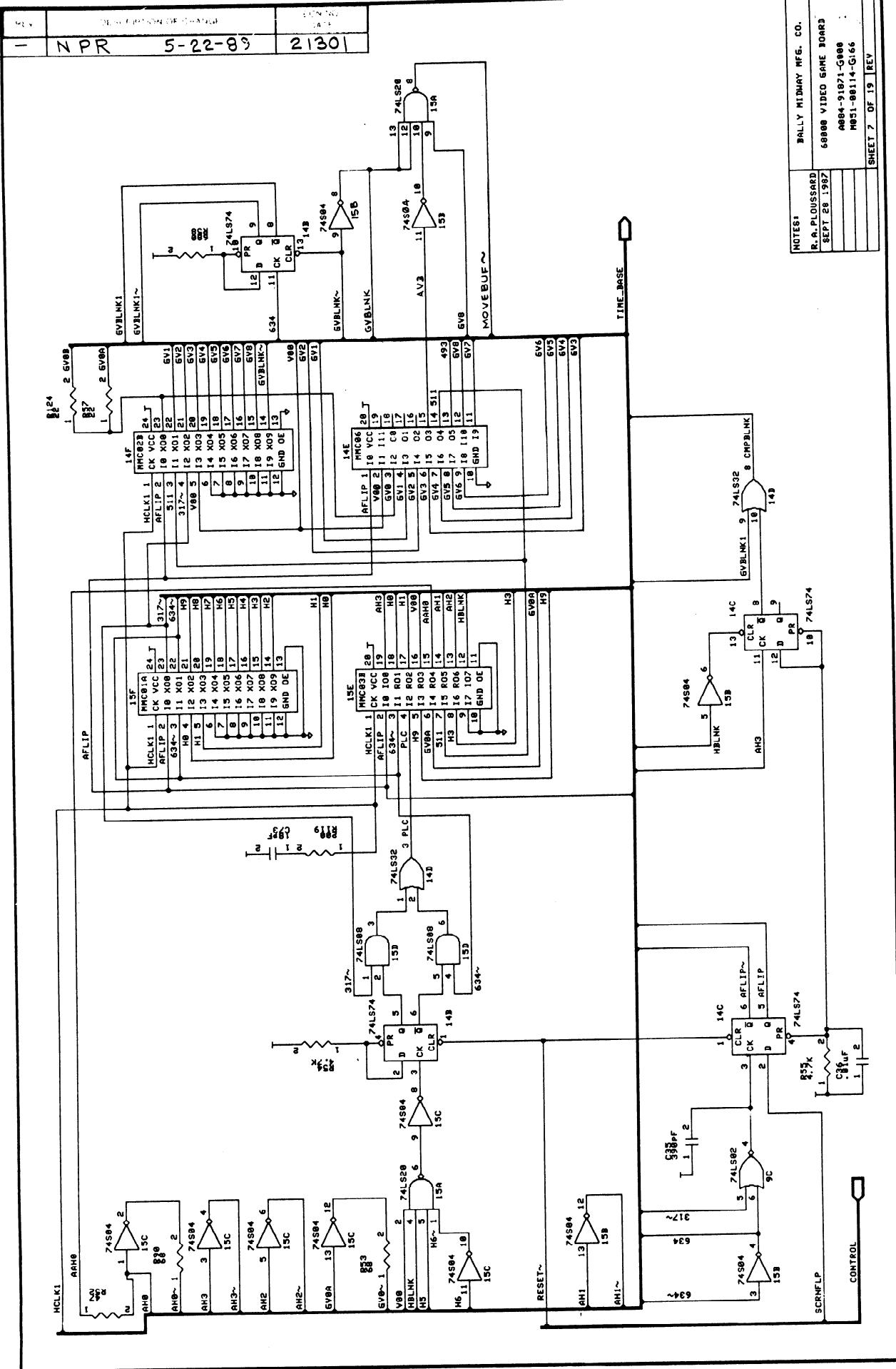


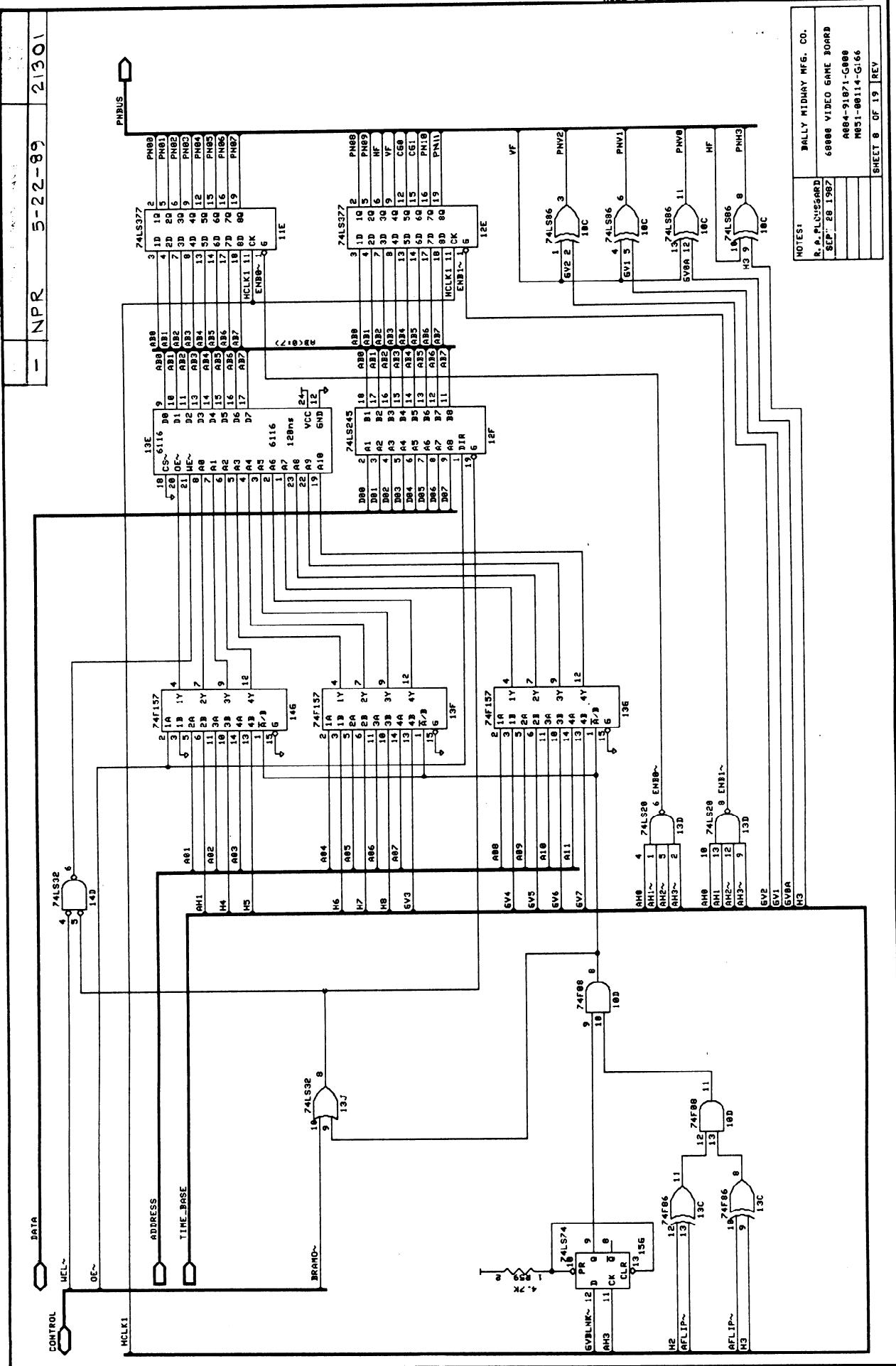
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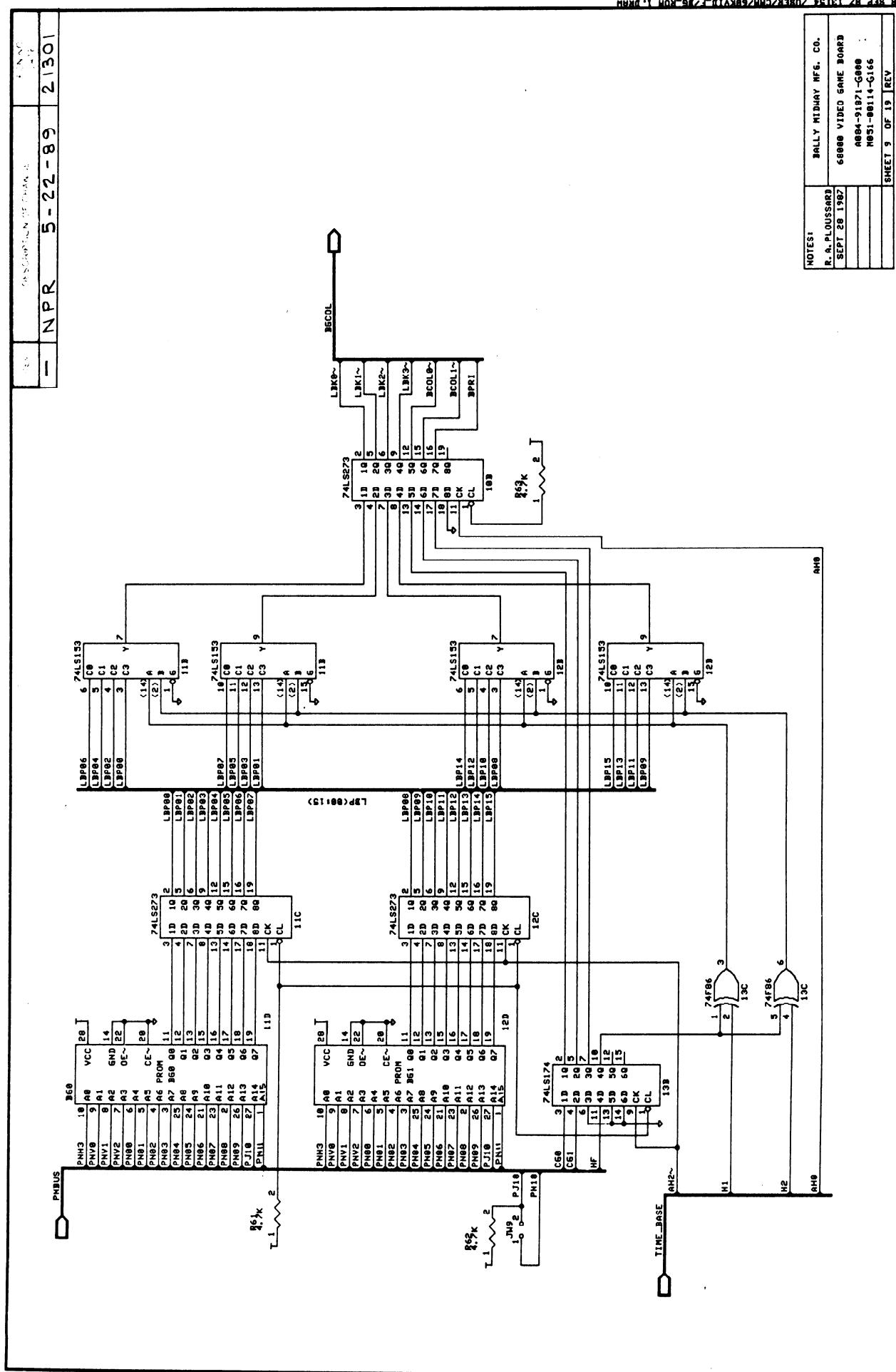


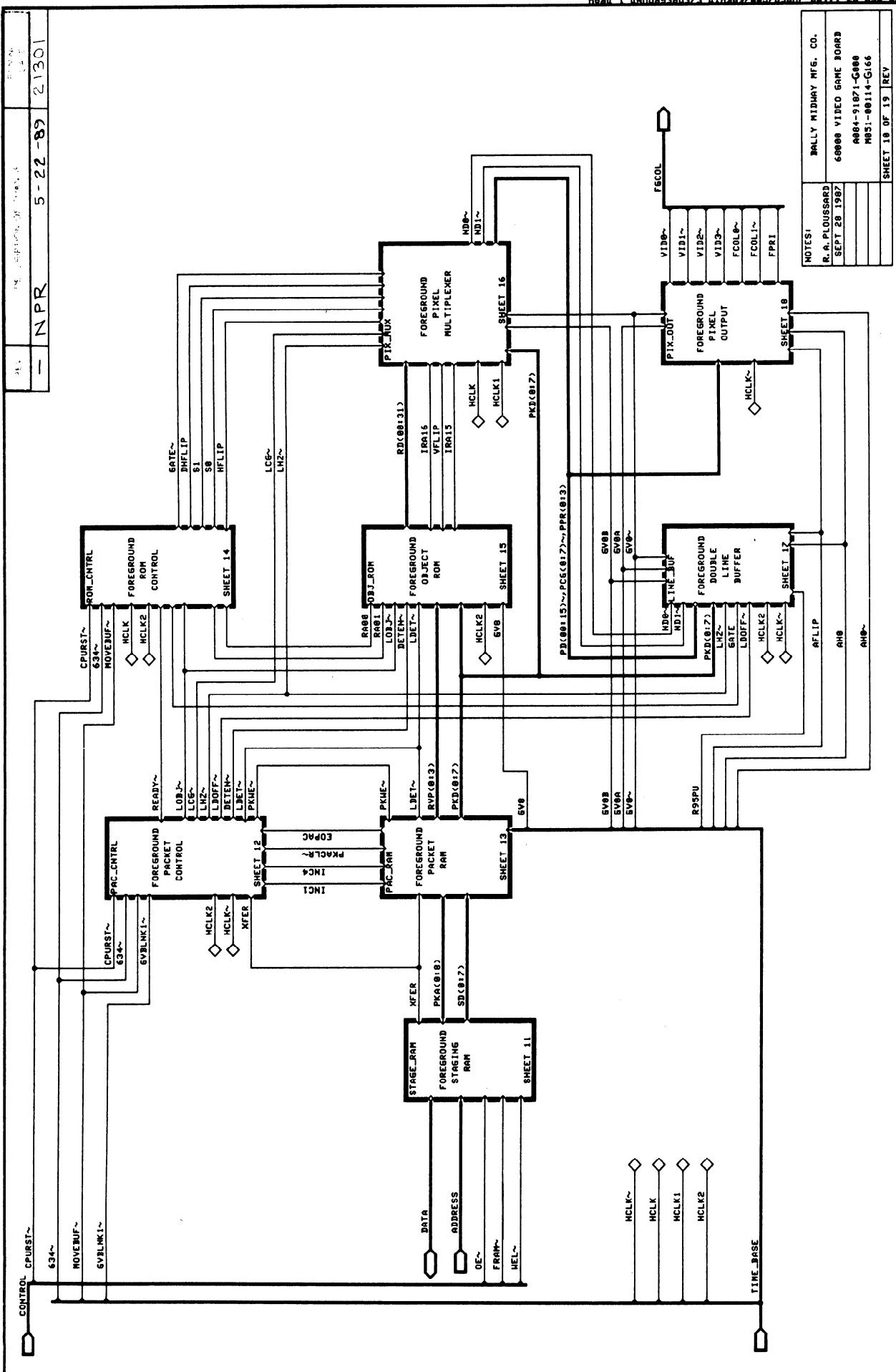
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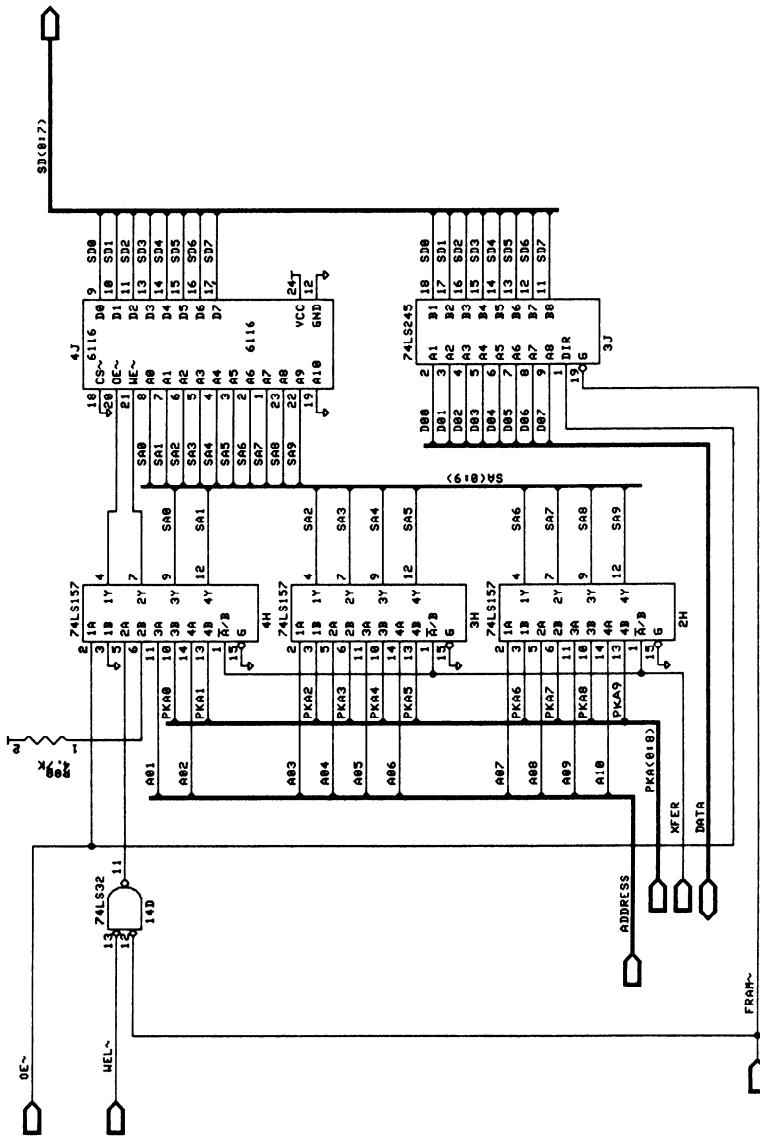






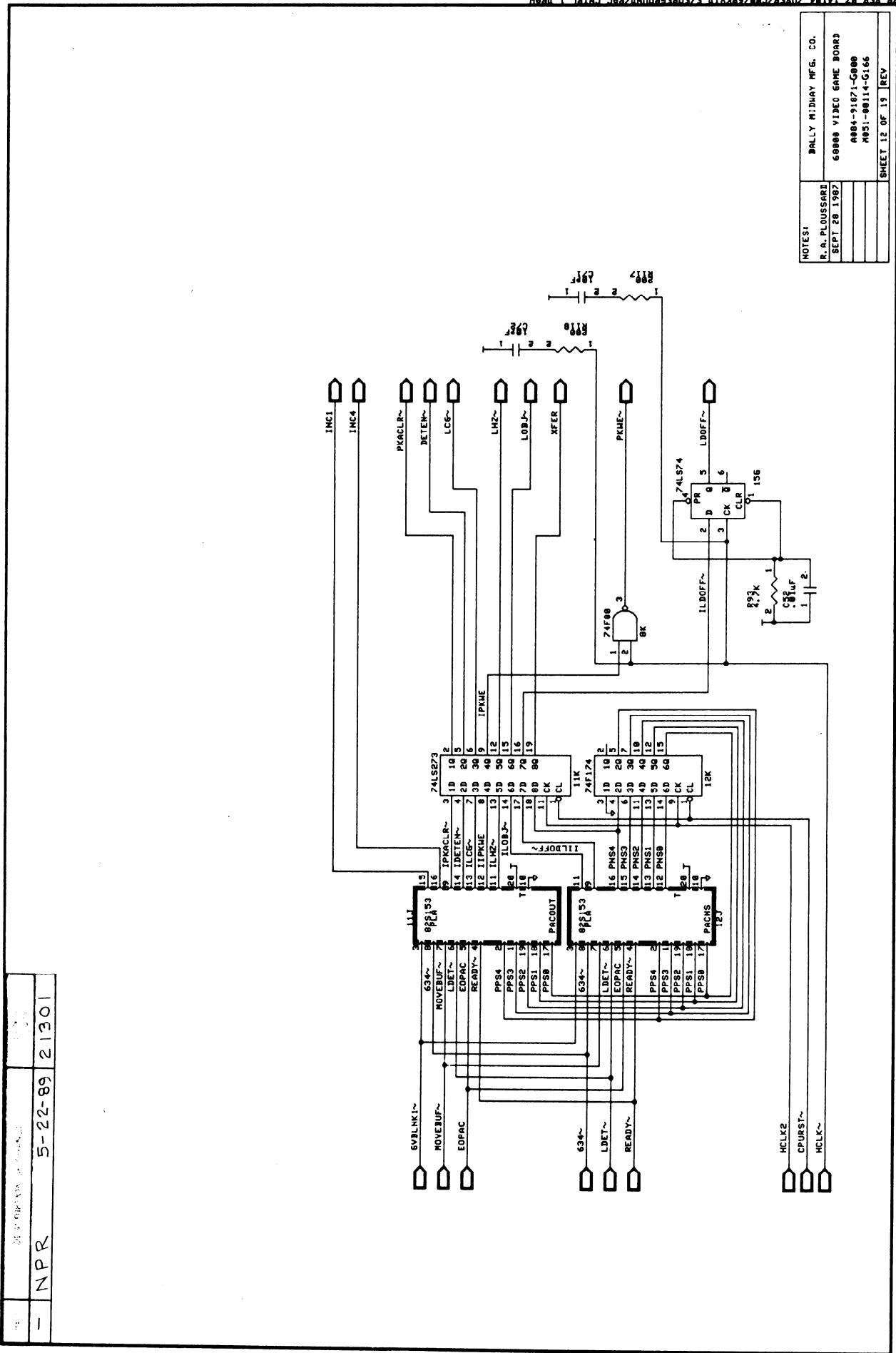


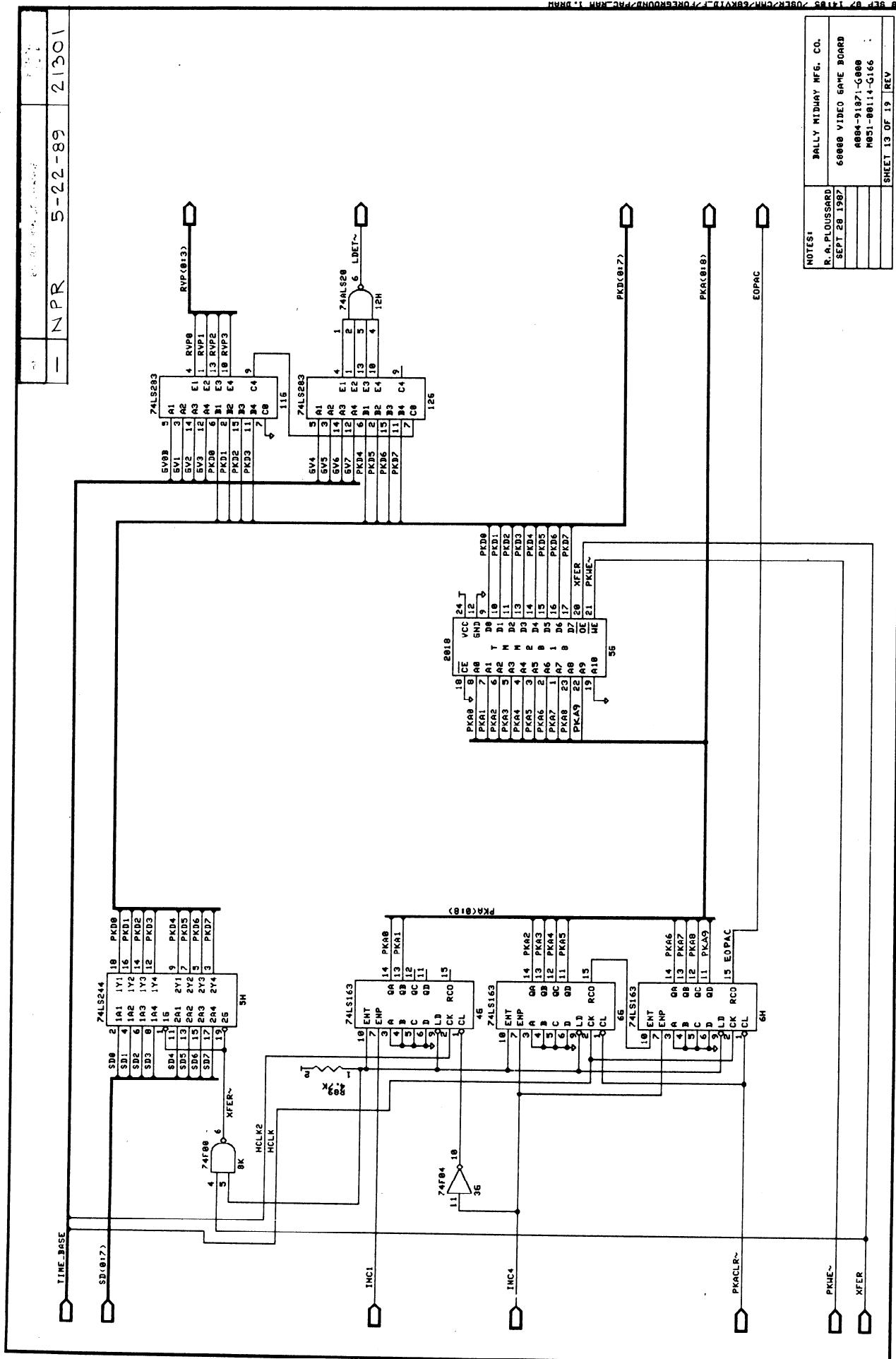
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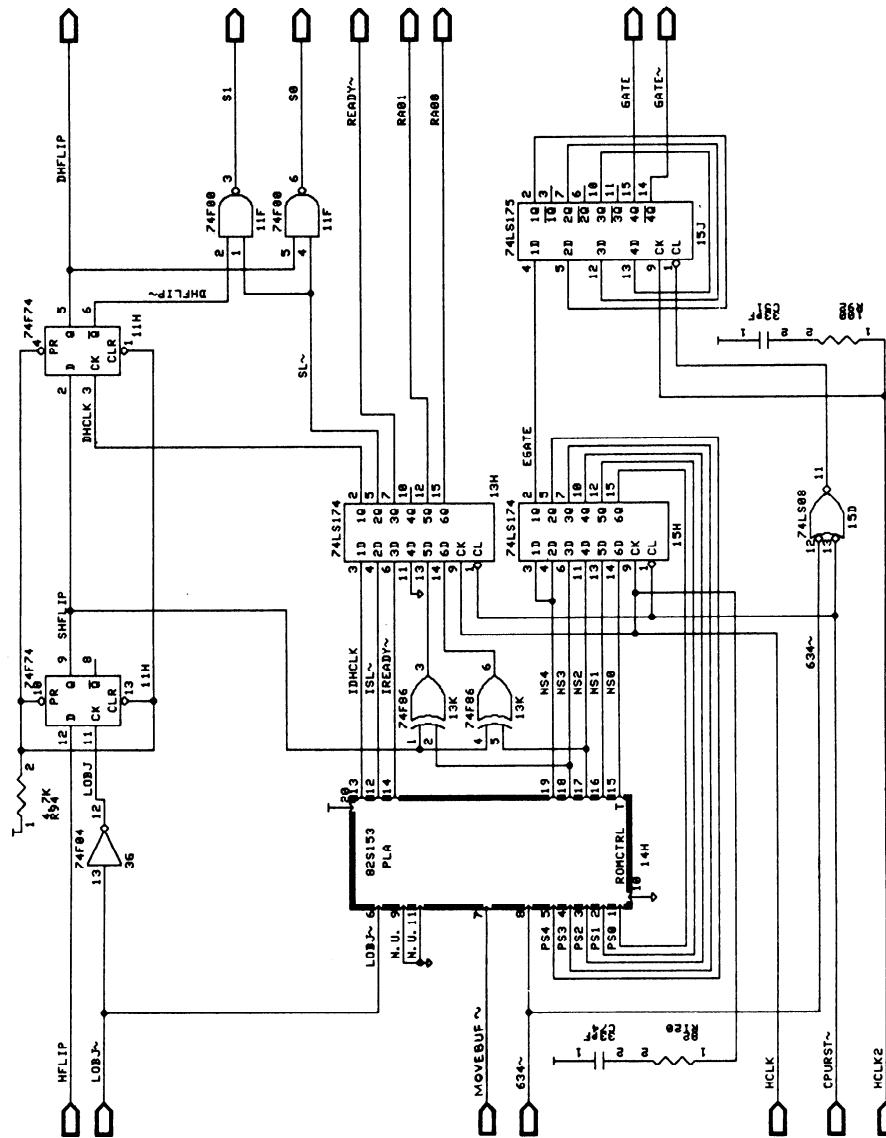
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R. A. PLUSSARD	68888 VIDEO GAME BOARD
SEPT 28 1987	A88-91871-C888
	H051-88114-C166
	SHEET 11 OF 19 REV

-	NPR	5-22-89	21301
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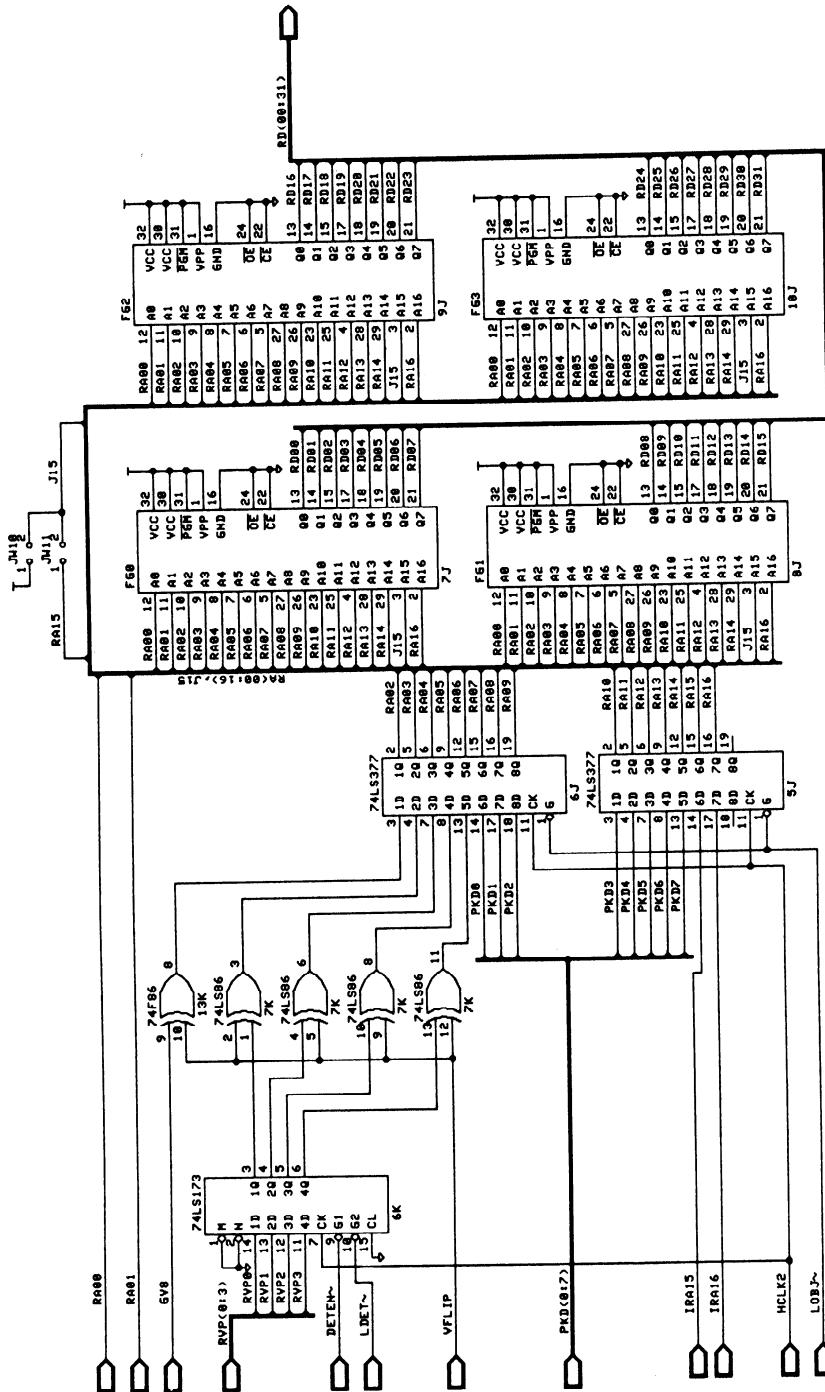
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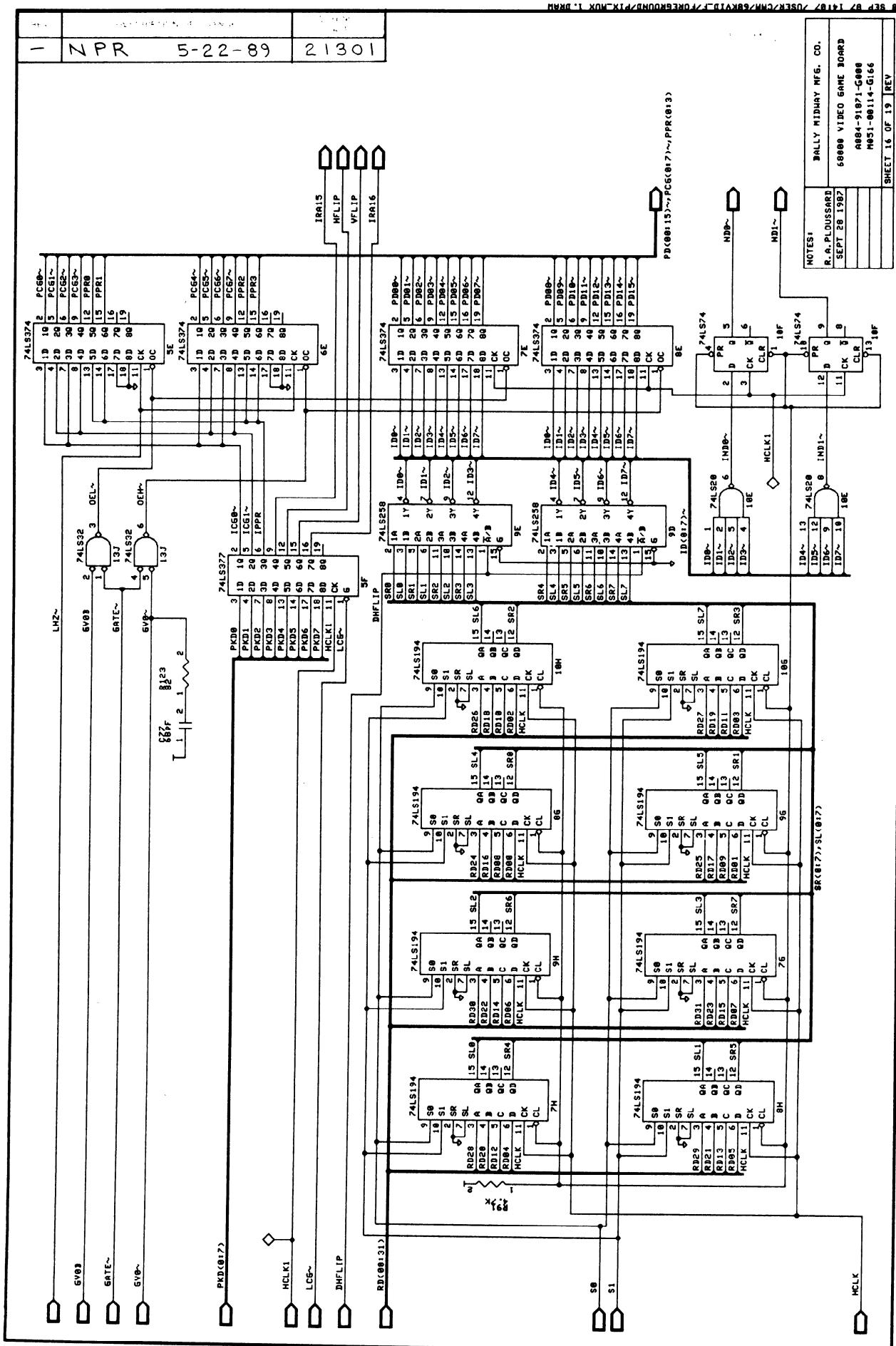
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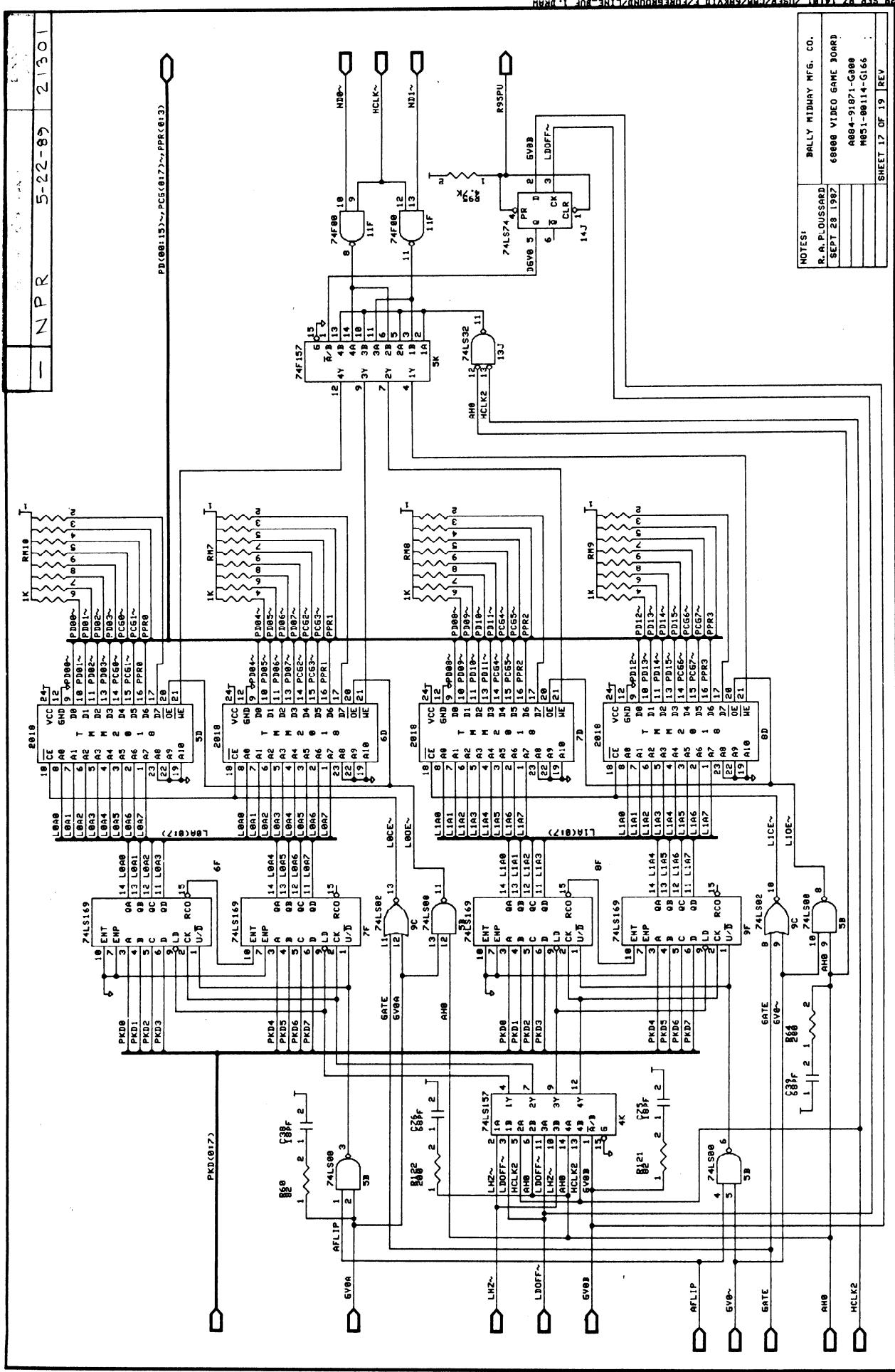
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68000 VIDEO GAME BOARD	AB84-91871-0000
	MB51-00114-G166
	SHEET 14 OF 19 REV

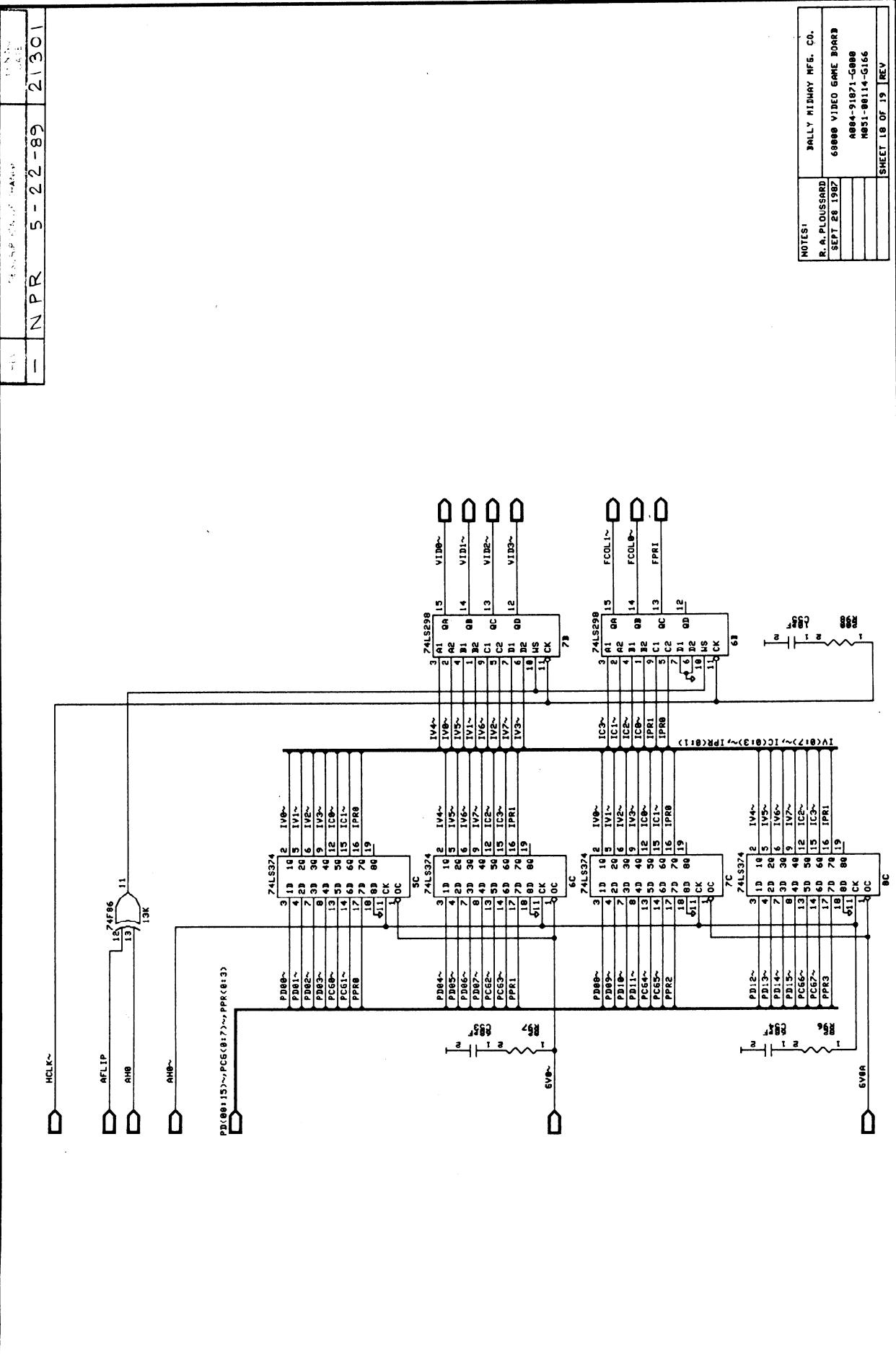
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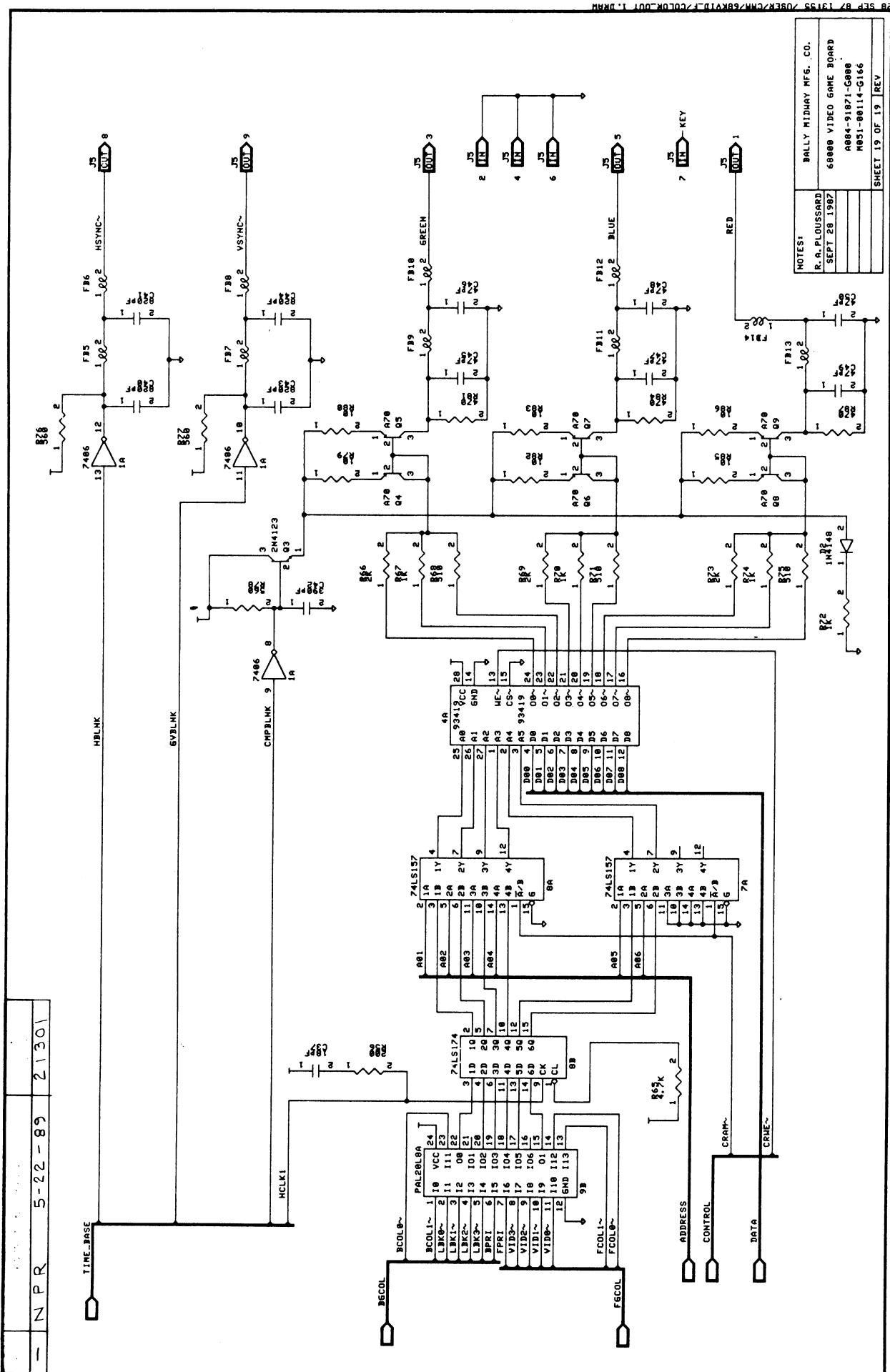


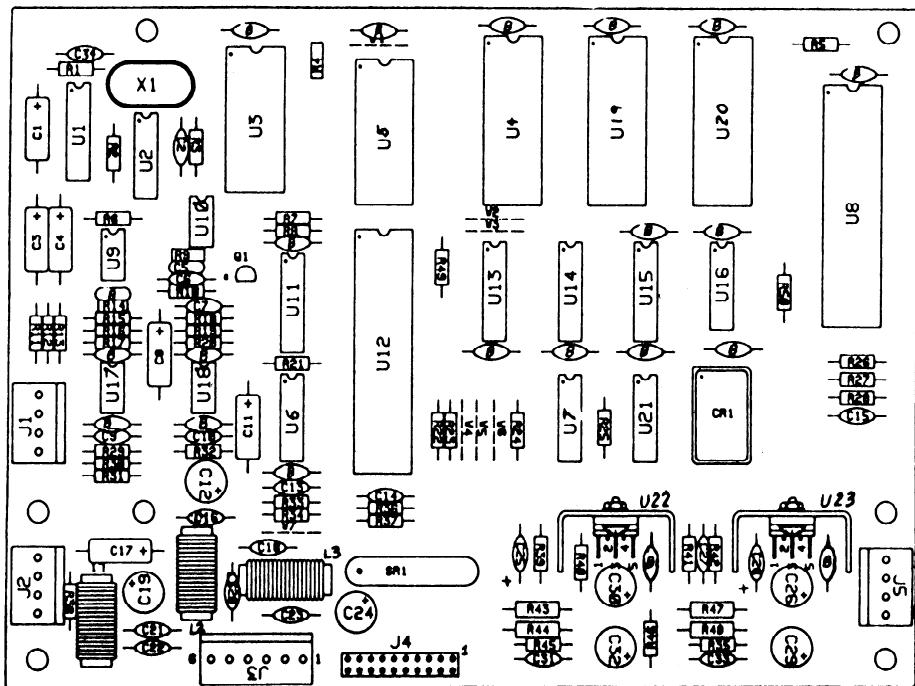
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R. A. PLOUSSARD	68000 VIDEO GAME BOARD
SEPT 28 1987	A884-3157-1-C166
	MS3-80114-C166
	SHEET 15 OF 19 REV









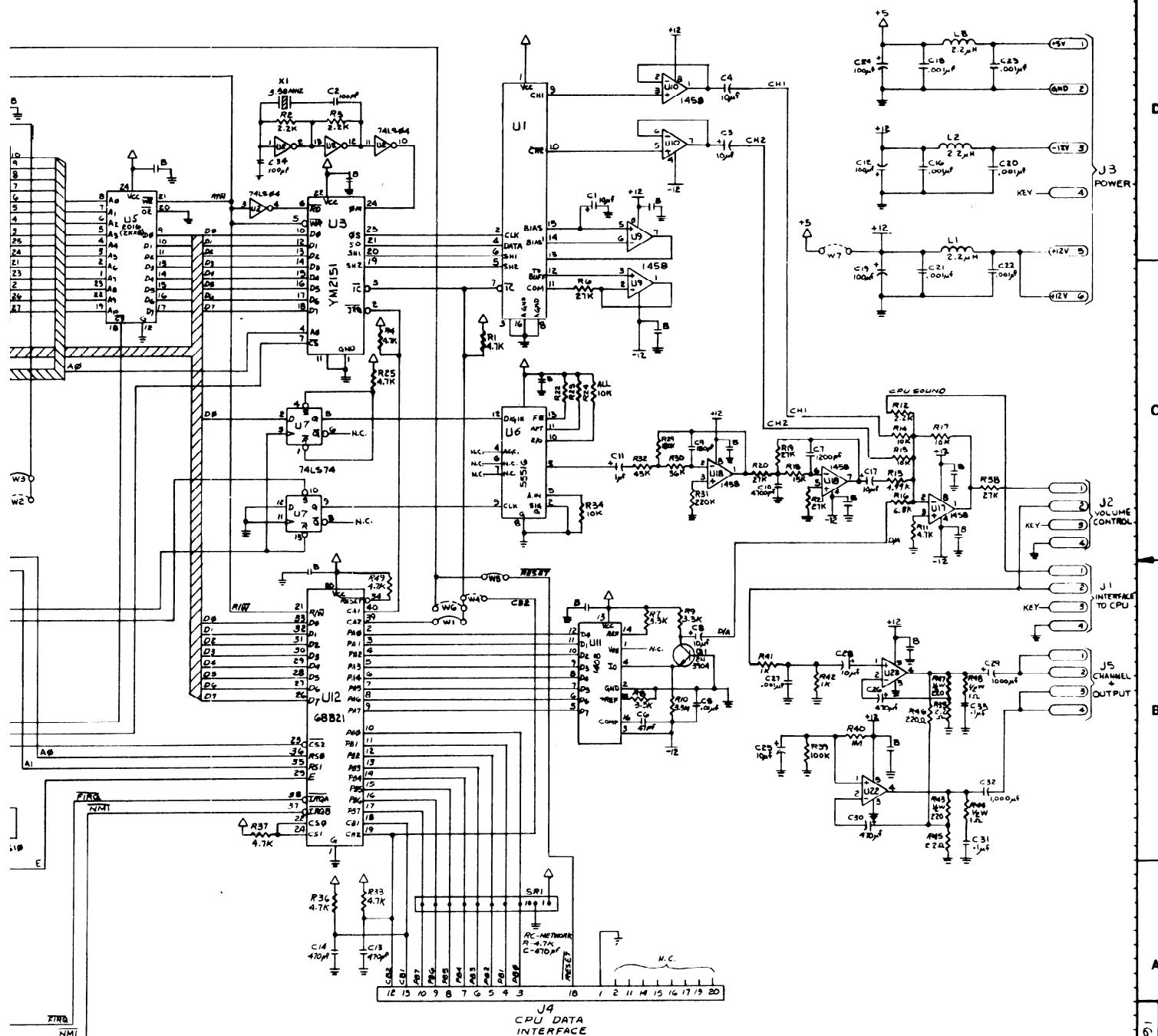


Audio Board Assembly

p/n D-11581-4001

Part No.	Ckt Designator	Description	Part No.	Ckt Designator	Description
5766-12130-00		Bare P. C. Board	5010-08991-00	R1, R4, R5, R11,	Resistor, 4.7K, 1/4w, 5%
5731-11087-00	U1	IC, D/A Conv, YM3012		R25 - R28, R33,	
a) 5700-09006-00		Socket, IC, 16-pin (U1)		R36, R37, R49, R50	
5730-11086-00	U3	IC, Sound Processor, YM2151	5010-09034-00	R14 - R17	Resistor, 10K, 1/4w, 5%
a) 5700-09004-00		Socket, IC, 24-pin (U3)	5010-09324-00	R6, R38	Resistor, 27K, 1/4w, 5%
5400-10320-00	U8	IC, μProcessor, MC68B09E	5010-09162-00	R39	Resistor, 100K, 1/4w, 5%
a) 5700-09895-00		Socket, IC, 40-pin (U8)	5010-10258-00	R40	Resistor, 1M, 1/4w, 5%
A-5343-4001-1	U4	IC, Audio ROM 1	5010-09179-00	R10	Resistor, 3.3M, 1/4w, 5%
A-5343-4001-2	U19	IC, Audio ROM 2	5010-09534-00	W9	Resistor, 0Ω, 1/4w, 5%
A-5343-4001-3	U20	IC, Audio ROM 3	5040-09343-00	C1, C3, C4, C8	Capacitor, 10μFd, 20v, ±20%
a) 5700-10176-00		Socket, IC, 28-pin (U4, U19, U20)	5040-10974-00	C12, C19, C24	Capacitor, 100μFd, 35v
5371-09152-00	U11	IC, D/A Conv, MC1408	5040-09776-00	C26, C30	Capacitor, 470μFd, 16v; +50, -10%
5430-10322-00	U12	IC, PIA, MC68B21	5040-12006-00	C29, C32	Capacitor, 1000μFd, 16v, 20%
5340-09878-00	U5	IC, RAM, 2016	5041-09243-00	C25, C28	Capacitor, 10μFd, 10v, ±10%
5281-09487-00	U16	IC, Dual D Flipflop, 74LS74	5043-08980-00	C5, B (17)*	Capacitor, 0.01μFd, 50v, +80, -20%
5281-10043-00	U13	IC, 74LS175	5043-08996-00	C31, C33	Capacitor, 0.1μFd, 50v, ±20%
5281-09235-00	U21	IC, Triple NAND, 74LS10	5043-09065-00	C13 - C15	Capacitor, 470 pfd, 50v, ±20%
5370-09321-00	U9, U10, U17	IC, Op Amp, MC1458	5043-09492-00	C2, C34	Capacitor, 100 pfd, 50v, ±10%
5281-09215-00	U2	IC, Hex Inv, 74LS04	5043-09844-00	C6	Capacitor, 47 pfd, 50v, ±20%
5281-09246-00	U14	IC, 2-4 Dec, 74LS139	5043-09845-00	C16, C18, C20 - C23, C27	Capacitor, 1000 pfd, 50v, ±20%
5281-09745-00	U15	IC, Dual Mux, 74LS138	5520-09020-00	X1	Crystal, 3.58 MHz
5370-09156-00	U22, U23	IC, Audio Amp, TDA2002	5521-10931-00	CR1	Oscillator, 8 MHz
a) 5705-09199-00		Heatsink, #6030B	5551-09822-00	L1 - L3	Inductor, 4.7 μH, 3A
b) 20-9229		Thermal Compound	5791-09437-00	J4	Connector, 20 pin, (Hdr), Rib. Cbl
c) 4006-01003-06		6-32 x 3/8 P-PH-S	5791-10862-04	J1, J2, J5	Connector, 4 pin (Hdr)
d) 4406-01117-00		6-32 Hexnut	5791-10862-06	J3	Connector, 6 pin (Hdr)
e) 4703-00007-00		#6 Ext. Lockwasher			
5370-09691-00	U6	IC, CVSD, 55536			
5160-10269-00	O1	Transistor, 2N3904, NPN			
5060-10396-00	SR1	SIP 4.7K & 470pfd, 8R8C			
5010-09181-00	R44, R48	Resistor, 1.0Ω, 1/2w, 5%			
5010-09161-00	R35, R45	Resistor, 2.2Ω, 1/4w, 5%			
5010-09361-00	R43, R46, R47	Resistor, 220Ω, 1/2w, 5%			
5010-09358-00	R41, R42	Resistor, 1K, 1/4w, 5%			
5010-08998-00	R2, R3, R12	Resistor, 2.2K, 1/4w, 5%			
5010-08983-00	R7 - R9	Resistor, 3.3K, 1/4w, 5%			

Notes: * 17 capacitors (shown on diagram with "B" symbol) provide +5VDC filtering for ICs.
All capacitors are ceramic, 50v, axial, unless otherwise noted.
All resistors are 5%, 1/4w, Carbon Film, unless otherwise noted.

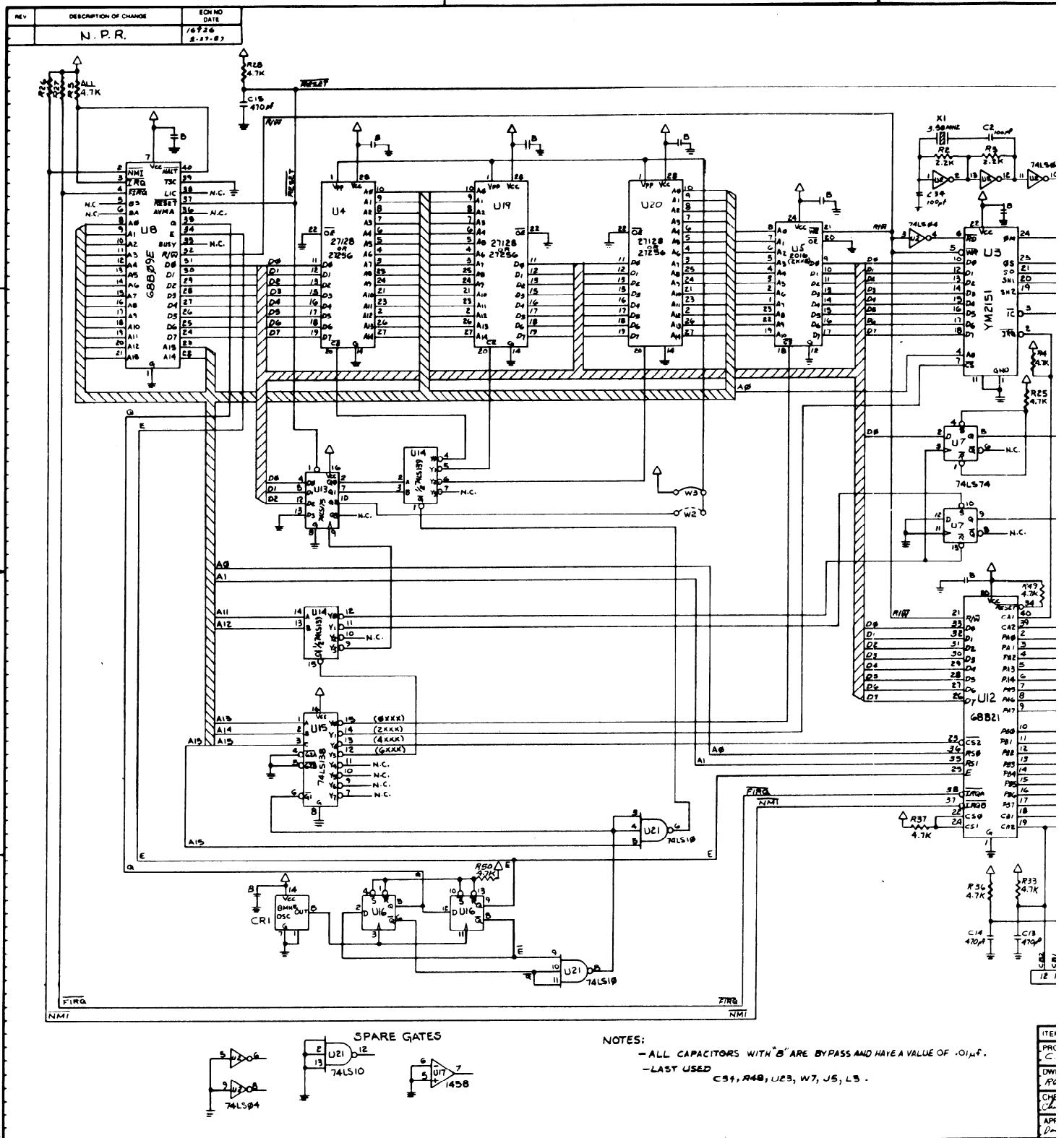


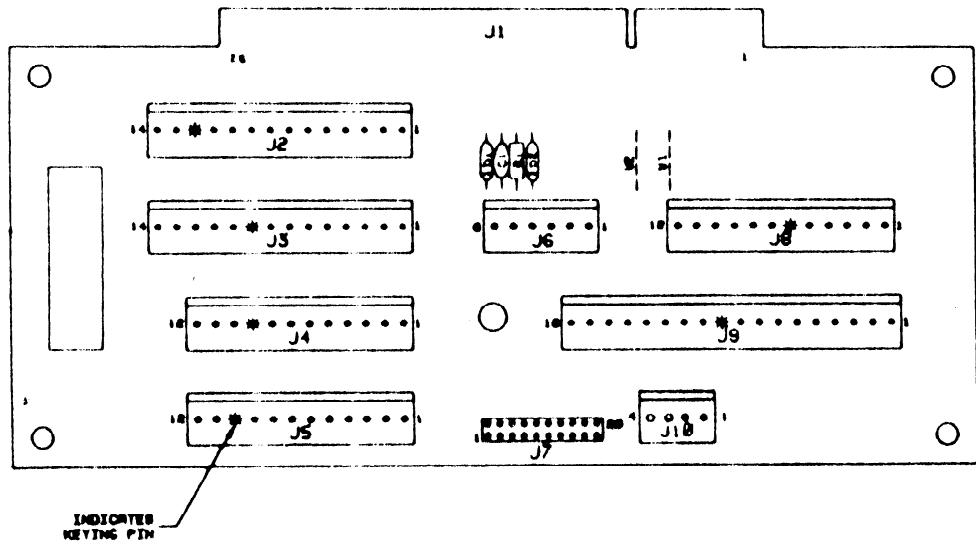
CAPACITORS WITH "B" ARE BYPASS AND HAVE A VALUE OF .01 μ F.
USED
C54, R48, U23, W7, J5, L5.

ITEM	PART NUMBER	DESCRIPTION	QTY	ITEM	PART NUMBER	DESCRIPTION	QTY
PROJ ENGH C. BLEICH		DO NOT SCALE WORK TO DIMENSIONS SHOWN		ITEM	PART NUMBER	DESCRIPTION	QTY
DRAWN BY DATE POSS 1/22/87		REMOVE BURRS-BREAK SHARP CORNERS & EDGES					
		TOLERANCES UNLESS OTHERWISE SPECIFIED					
CHECKED BY DATE Chas. M. H. H. 1/27/87		DECIMAL X ± 030 ANGULAR ± 1/2° XX ± 015 XXX ± 003 FRACTIONAL ± 1/64					
FIRST PROJECT NO 554		MATERIAL	11				
APPROVAL DATE Drew V. K. K. 1/27/87		FIRST USAGE DATE D-11579	1				
		SCALE N/S		SHT 1 OF 1		PART NO	16-8999
						REV	-

WILLIAMS ELECTRONICS, INC.

3401 N CALIFORNIA AVE CHICAGO IL 60618

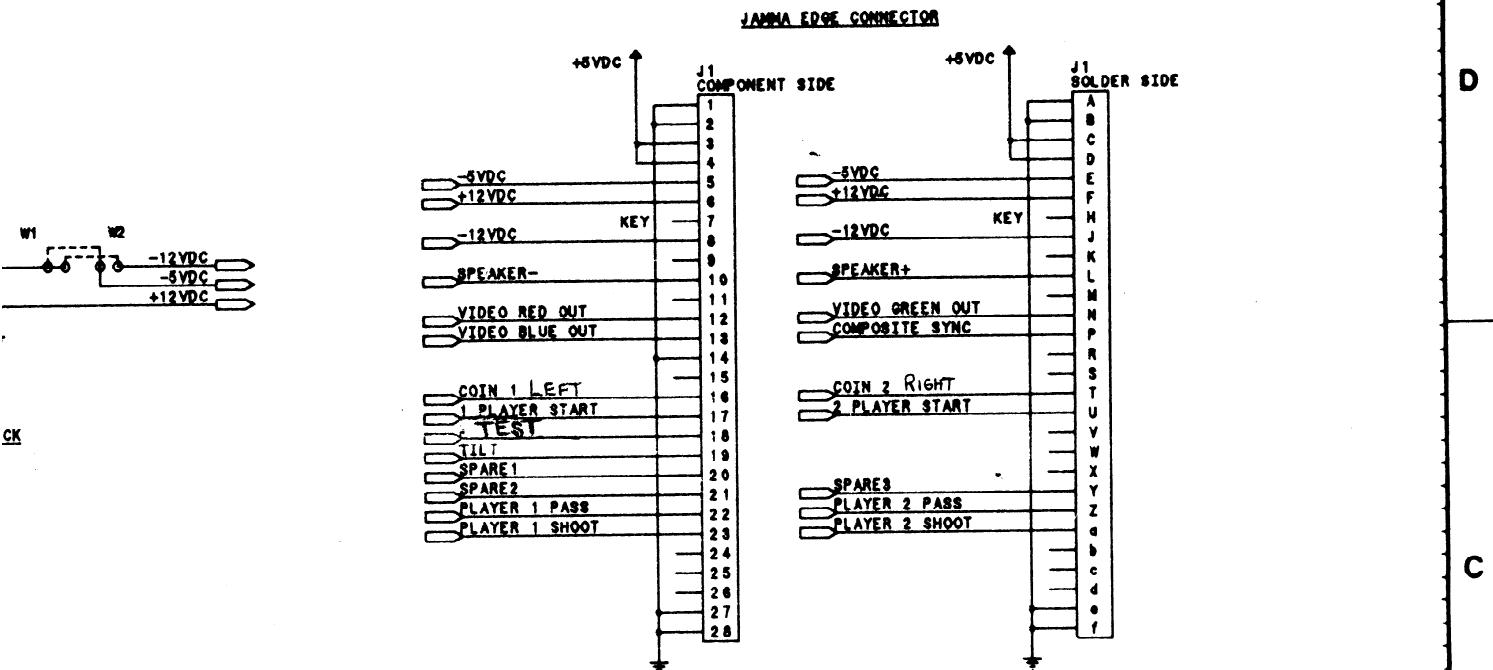




JAMMA INTERFACE BOARD ASSEMBLY

p/n C-12284

Part no.	Ckt. Designator	Description
5678-12455-00		Bare P. C. Board
16-8587-975		Lable, PCB Indent.
5010-09358-00	R1	Resistor, 1KΩ 5% 1/4W
5070-08919-00	D1, D2	Diode, 1N4148
5010-09534-00	W1	Resistor, 0Ω
5043-08996-00	C1	Capacitor, Axial, .1MFD
5791-10862-04	J10	Connector, 4 Pin
5791-10862-06	J6	Connector, 6 Pin
5791-10862-12	J4, J5, J8	Connector, 12 Pin
5791-10862-14	J2, J3	Connector, 14 Pin
5791-10862-18	J9	Connector, 18 Pin
5791-09437-00	J7	Connector, 20 Pin Ribbon



COMPOSITE SYNC

ITEM PART NUMBER DESCRIPTION QTY ITEM PART NUMBER DESCRIPTION QTY

THE INFO CONTAINED ON THIS DRAWING IS CONFIDENTIAL PROPERTY OF WILLIAMS ELECTRONICS GAMES, INC., IT MAY NOT BE USED OR DISCLOSED TO OTHERS WITHOUT WRITTEN PERMISSION

PROJ. ENGR G. SHIPP	DO NOT SCALE WORK TO DIMENSIONS SHOWN	REMOVE BURRS - BREAK SHARP CORNERS & EDGES	TOLERANCES UNLESS OTHERWISE SPECIFIED		WILLIAMS ELECTRONICS, INC.	
DWN. BY G. SHIPP	DATE		DECIMAL — X ± 0.00 ANGULAR — ± 1/2°	3401 N CALIFORNIA AVE	CHICAGO IL	60618
CHECKED BY G. SHIPP	DATE	FIRST PROJECT NO 4001-K	XXX ± 0.05 FRACTIONAL — ± 1/64	NAME		
APPROVAL DATE	FIRST USAGE	QTY 1	MATERIAL	SCALE — / —	SHT 1 OF 1	PART NO 16-9066 REV -
11/12 5/14/94	C-12884		(initials)			

A

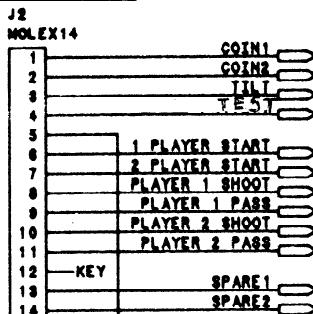
W

3

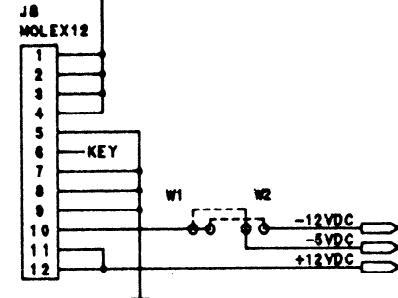
REV	DESCRIPTION OF CHANGE	ERT NO DATE
-	NEW PART RELEASE	21215 5-11-89

D

FROM VIDEO BOARD J2

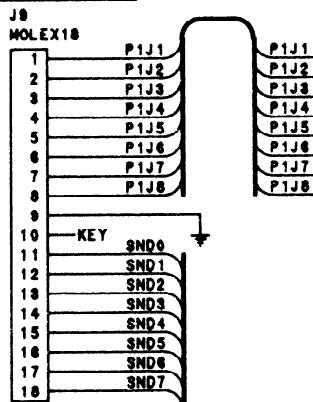


POWER OUTPUT

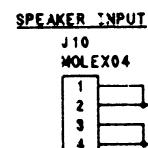
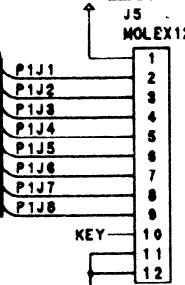


C

FROM VIDEO BOARD J3

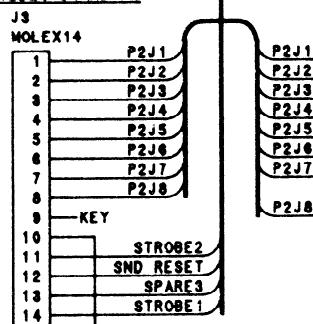


PLAYER 1 JOYSTICK

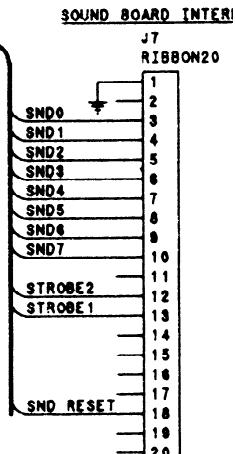
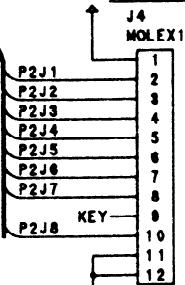


B

FROM VIDEO BOARD J4

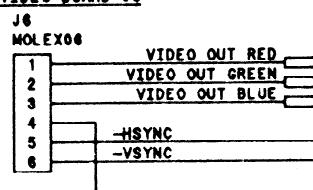


PLAYER 2 JOYSTICK



A

FROM VIDEO BOARD J5



D2 1N4148

D1 1N4148

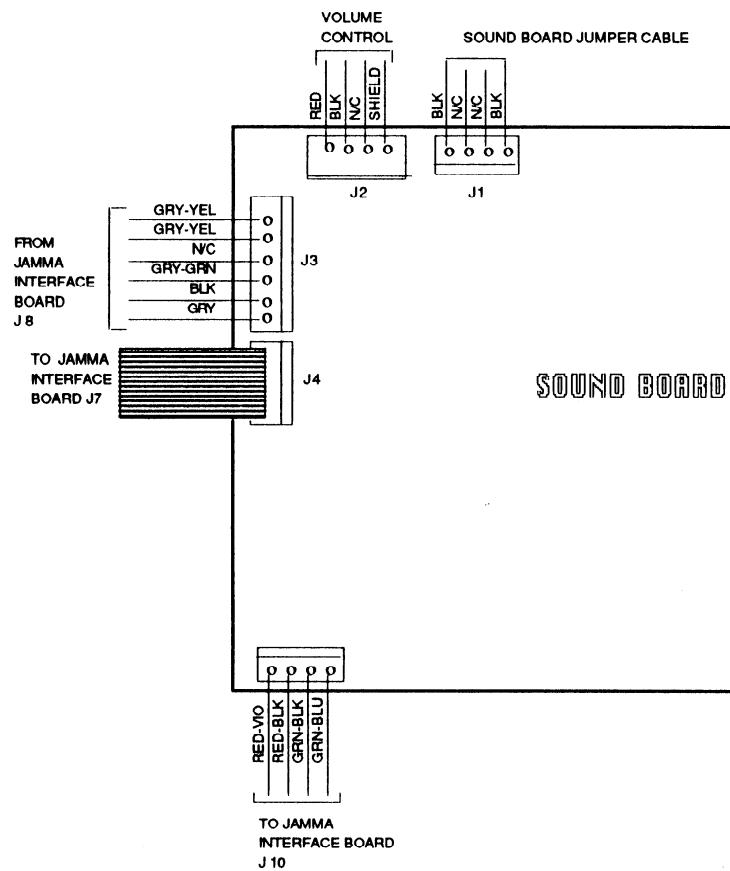
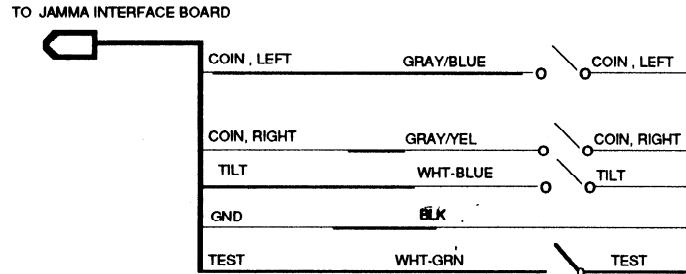
R1 1K

C1 .1MF

COMPOSITE SYNC

JAMMA INTERFACE BOARD SCHEMATIC

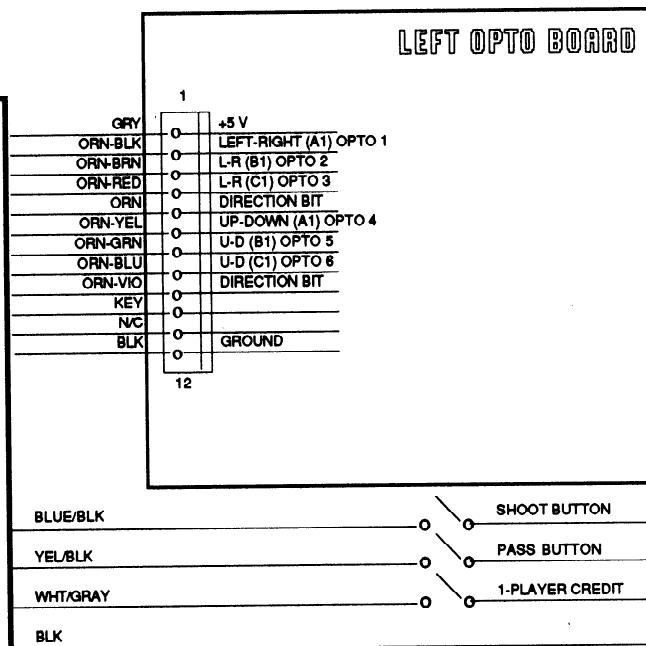
COIN DOOR WIRING



CONTROL PANEL WIRING

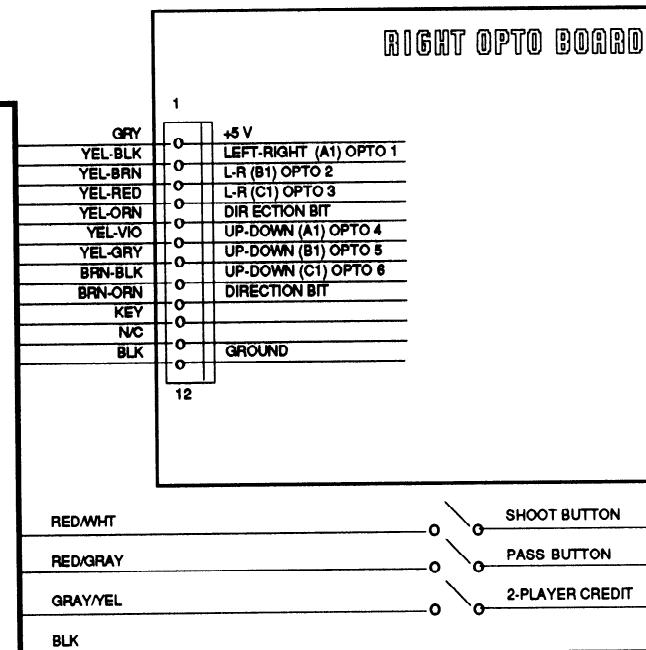
TO JAMMA
INTERFACE
BOARD
J5

PLAYER ONE CONTROLS



TO JAMMA
INTERFACE
BOARD
J4

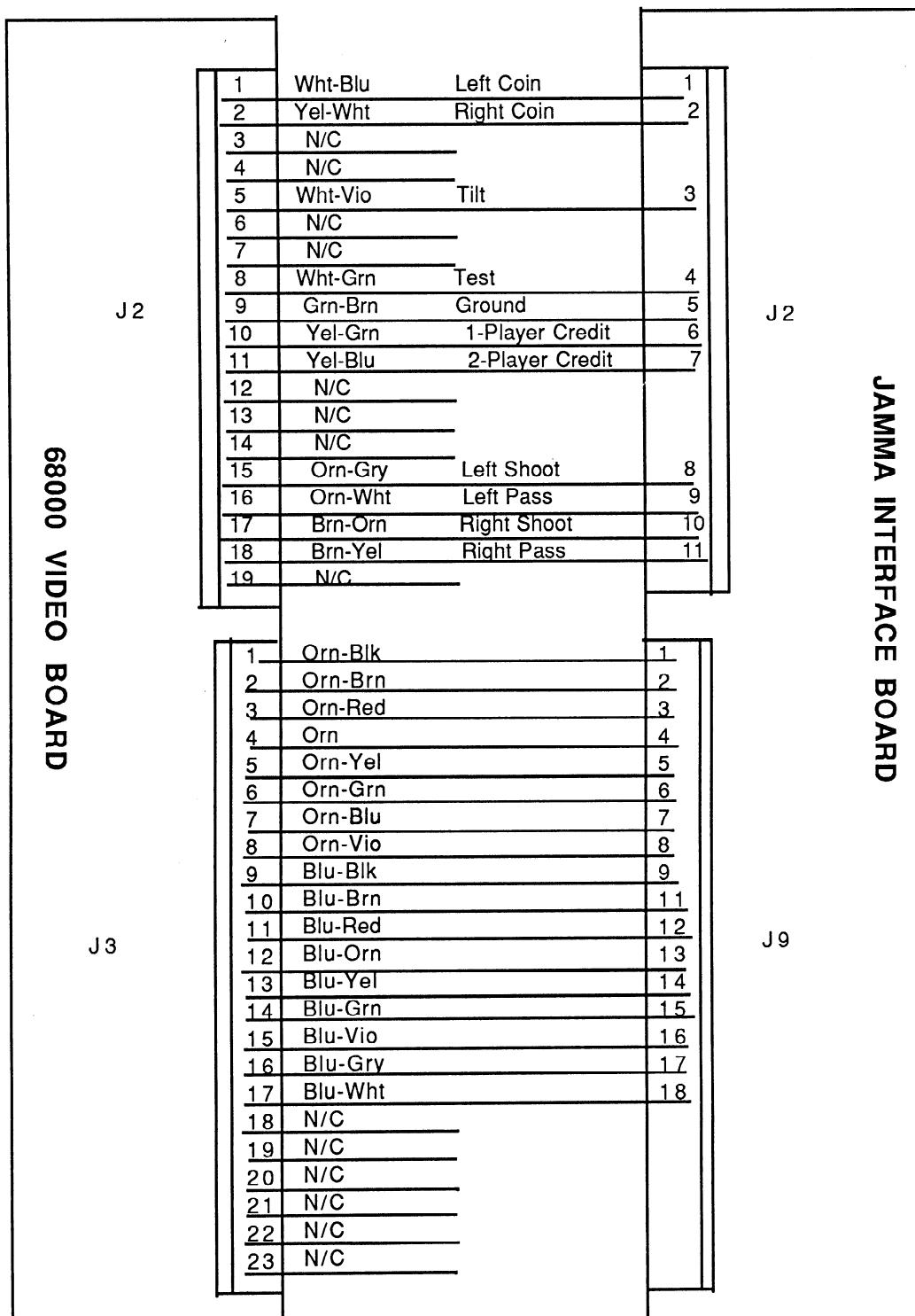
PLAYER TWO CONTROLS



Arch Rivals Interboard Wiring

68000 Video Board to Jamma Interface Board

Note: Pin location is shown for reference only, actual location on the board may be different.



JAMMA INTERFACE BOARD CONTINUED

J3

1	Yel-Blk	1
2	Yel-Blk	2
3	Yel-Red	3
4	Yel-Orn	4
5	Yel-Vio	5
6	Yel-Gry	6
7	Brn-Blk	7
8	Key	
9	Brn-Red	8
10	Blk	Ground
11	Grn-Red	10
12	Grn-Yel	11
13	N/C	12
14	N/C	
15	N/C	
16	Grn-Orn	14

68000 VIDEO BOARD CONTINUED

J4

1	Red	6
2	N/C	5
3	Grn	
4	N/C	4
5	Brn	3
6	Shield	
7	Key	2
8	Wht	
9	Blk	1

J5

1	Blk	9
2	Blk	8
3	Gry	4
4	Gry	3
5	N/C	
6	N/C	
7	N/C	
8	N/C	
9	Gry	2
10	Gry	1
11	Blk	7
12	Blk	5

J1

J6

J8

J6

1	
2	
3	
4	
5	
6	
7	

NOT USED

Arch Rivals Interboard Wiring

68000 Video Board to Jamma Interface
Board Continued.

Parts List

Major Assemblies And Subassemblies Included With Your Kit

Boards:

FCC Card Rack Assembly	C-12892
68000 CPU Board	C-12610
Sound Board	D-11581-4001
Jamma Interface Board	C-12884

Mechanical:

Button Assembly, S-Red	C-9214-4
Button Assembly, S-White	C-9214-5
Analog Joystick, Orange	C-9477-15
Wood Spacer	11-909
Switch: White Diagnostic Bracket	5643-09556-00 01-9180

Cables:

Main Harness	H-12894
Volume Control	H-8866
Video Signal	H-12936-1
Power Interconnect	H-12933
Jamma Joystick Cable	H-12934
Sound Board Jumper	H-12758

Decals and Overlays:

Marquee, Screened	31-1480-4001-K
Center Shelf Overlay	31-1481-4001
Decal Set	31-1482-4001
CRT Shelf Overlay	31-1483-4001
Hole Spotting Decal	31-1494
4003-K Control Panel Cover	03-6250

ROM Summary

68000 Video Board

7J Foreground Image ROM	A-5343-4001-10
8J Foreground Image ROM	A-5343-4001-11
9J Foerground Image ROM	A-5343-4001-12
10J Foreground Image ROM	A-5343-4001-13
11D Background Image ROM	A-5343-4001-8
12D Background Image ROM	A-5343-4001-9
2B Game Program ROM	A-5343-4001-4
3B Game Program ROM	A-5343-4001-5
2C Game Program ROM	A-5343-4001-6
3C Game Program ROM	A-5343-4001-7

Sound Board

U4 Sound ROM	A-5343-4001-1
U19 Sound ROM	A-5343-4001-2
U20 Sound ROM	A-5343-4001-3

Jumper List

<u>Jumpers</u>	<u>In</u>	<u>Out</u>
JW1		**
JW2		**
JW3	**	
JW4		**
JW5	**	
JW6		**
JW7	**	
JW8	**	
JW9	**	
JW10		**
JW11	**	
JW12		**

WARNINGS & NOTICES

WARNING

This game must be grounded. Failure to do so may result in destruction to electronic components.

WARNING

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a CLASS A computing device pursuant to SUBPART J of PART 15 of FCC RULES, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

ELECTRICAL BULLETIN:

FOR ALL APPARATUS COVERED BY THE CANADIAN STANDARDS ASSOCIATION (CSA) STANDARD C22.2 NO. 1, WHICH EMPLOYS A SUPPLY CORD TERMINATED WITH A POLARIZED 2-PRONG ATTACHMENT PLUG.

CAUTION

To prevent electrical shock, do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

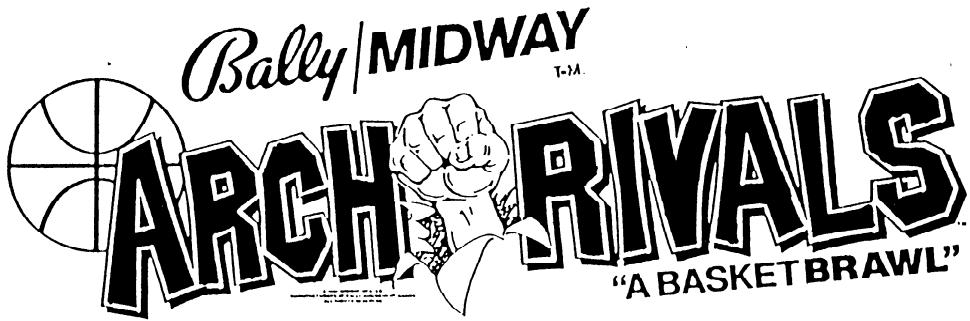
ATTENTION

Pour prevenir chocs electriques ne pas utiliser cette fiche polarisee avec un prolongateur. Une prise de courant ou une autre sortie de courant, sauf si les lames peuvent etre inserees a fond sans en laisser aucune partie a decouvert.

USE ONLY GENUINE BALLY MIDWAY APPROVED REPLACEMENT PARTS.

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YES! I'VE TAKEN ADVANTAGE OF THE ARCH RIVALS HOMETOWN HEROES OPTION TO CUSTOMIZE MY GAME! PLEASE RUSH ME MY FREE TEAM JERSEYS AND PROMO KIT AND SEND PRESS RELEASES AND GLOSSIES TO MY HOMETOWN NEWSPAPERS!

FOR BEST RESULTS, PLEASE FILL OUT THE FOLLOWING COMPLETELY!

SEND MY FREE TEAM JERSEYS AND PROMO KIT TO:

Name _____

Address _____

City _____ State _____ Zip _____

Jersey #1 Size: S M L XL Jersey #2 Size: S M L XL

Note: Sizes subject to availability.

INFORMATION ABOUT MY ARCH RIVALS GAME:

Location _____

Address _____

City _____ State _____ Zip _____

Serial Number _____

I HAVE ADDED THE FOLLOWING "HOMETOWN HEROES" TO MY GAME:

Team Name (as it appears in my game) _____ *

Full Team Name _____

Team's Home Town: City _____ State _____

Type of Team (high school, college, other) _____

*Always obtain written permission before using ANY copyrighted or similarly protected name. When in doubt, identify the team by the name of its "home town" or place of origin. To list additional teams/information, please use reverse side.



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POSTAGE WILL BE PAID BY ADDRESSEE

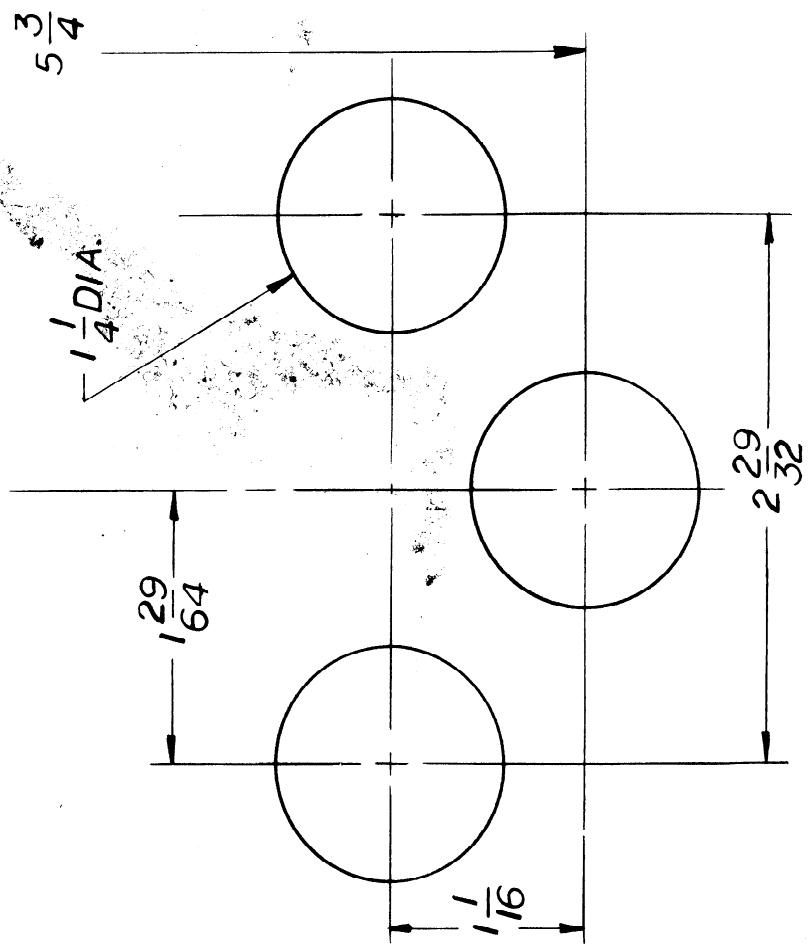
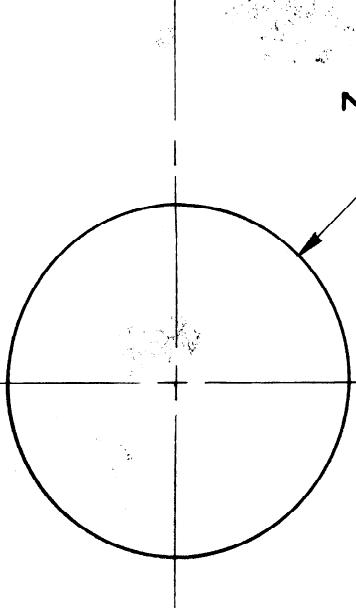
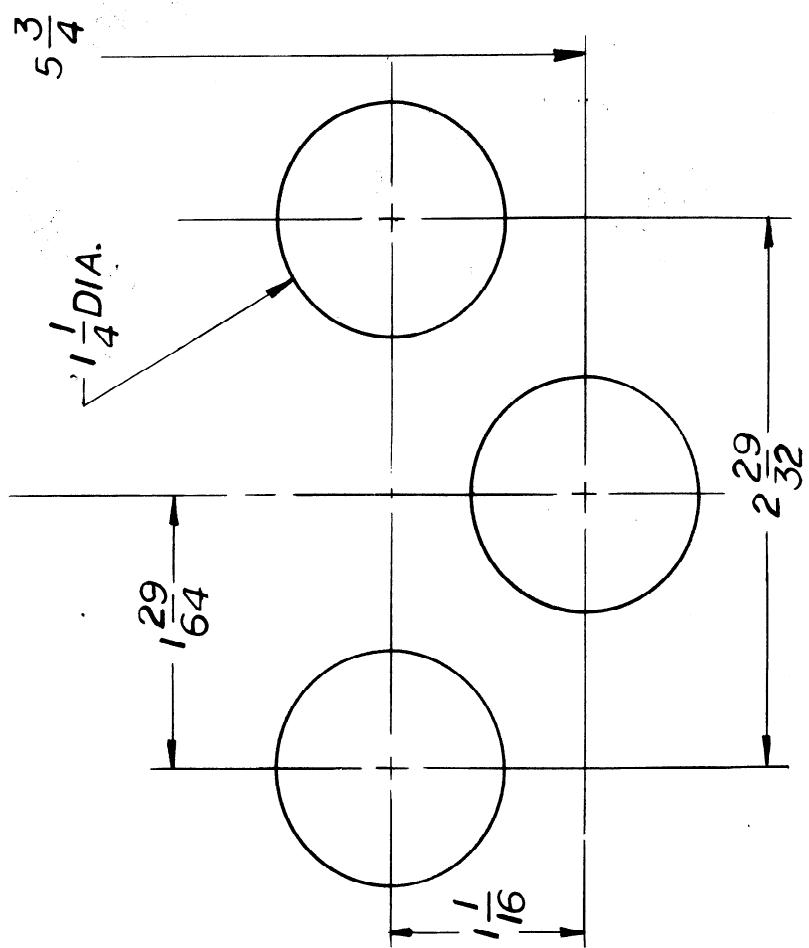
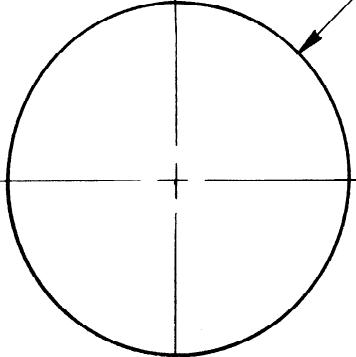


3401 N. California Ave.
Chicago, Illinois 60618

ATTN: MARKETING

To expose adhesive, remove liner. To expose adhesive, remove liner.

ADDITIONAL COMMENTS: _____



IF DESIRED, SPOT AND
DRILL HOLES WITH THIS
DECAL BEFORE APPLYING
CONTROL PANEL DECAL

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HOMETOWN HEROES OPTION - HOW TO CUSTOMIZE YOUR GAME!

1. PUT GAME IN TEST MODE
 - a. Pull out switch inside door
 - b. Activate TILT switch
2. SELECT "Hometown Heroes" OPTIONS
 - a. Use left player control button
 - b. Move cursor (ball) to "Hometown Heroes"
 - c. Press 1 or 2 PLAYER button
3. Turn on SWITCH 6 on game board
4. Select item to update
 - a. Use left player control button
 - b. Move cursor (ball) to item to update
 - c. Press 1/2 PLAYER or ANY left player buttons
5. Team Updates (SELECT "NEW COLORS/NEW NAMES")
 - a. 1 player button for "NEW COLORS"
 - b. 2 player button for "NEW NAME"
6. NEW COLORS
 - a. Move left player joystick to change colors
 - b. Press any left player button to save
 - c. TILT to abort
7. NEW TEAM NAME
 - a. Move left player joystick to change LETTER
 - b. Press any left player button to save LETTER
 - c. Use (<---->) to ERASE
 - d. Clear out all unwanted letters
 - e. Move to "DONE" and press button to save
 - f. TILT to abort
8. TO CHANGE "PRESENTS" SCREEN
 - a. ENTER NAME AS YOU WOULD LIKE IT TO APPEAR
 1. CENTER NAME OVER "PRESENTS"
USE SPACE or (<--->)
 - b. Move left player joystick to change LETTER
 - c. Press any left player button to save LETTER
 - d. Use (<--->) to ERASE
 - e. Clear out all unwanted letters
 - f. Move to "DONE" and press button to save
 - g. TILT to abort



"Hometown Heroes"
Operator Options Kit.

FREE