

FUN GAMES INC.

**INSTRUCTION
MANUAL**

JANUARY 1976

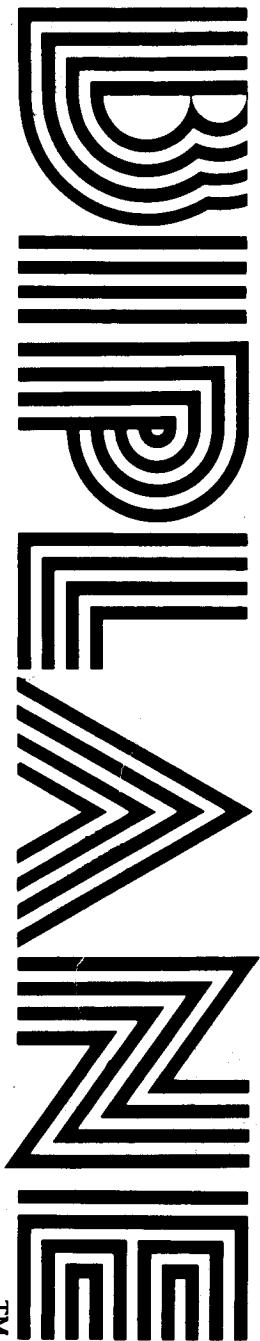


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GENERAL INSTRUCTIONS

INSTALLATION:

Open back of cabinet and MAKE SURE ALL BOARDS ARE PROPERLY SEATED INTO CARD CAGE. Plug into AC Power.

PRICE PER GAME SWITCH:

Located at the top of the memory board is the price per game switch. Up is one coin per game and down is two coins per game.

GAME TIME POT:

Directly below the price per game switch is the game time pot.

WHITE PLANE SHOT RANGE POT:

Directly below the game time pot is the white plane shot range pot. Turning clockwise increases shot range. Range should be adjusted to be equal to black plane range.

VOLUME 2 POT (Location "2"):

Volume for white plane is controlled by the top pot on the *sync* board. Clockwise increases volume.

VOLUME 1 POT (Location "1"):

Directly below the volume 2 pot is the black plane volume. Operates same as volume 2 pot.

NOTE: FOLLOWING CONTROLS ARE FACTORY SET. QUALIFIED TECHNICAL PERSONNEL ONLY SHOULD ADJUST.

NOISE VOLUME:

Location #4 controls shot and boom plane relative volume.

PITCH 2:

Controls pitch of black plane motor.

TONE 2:

Controls tone of black plane motor.

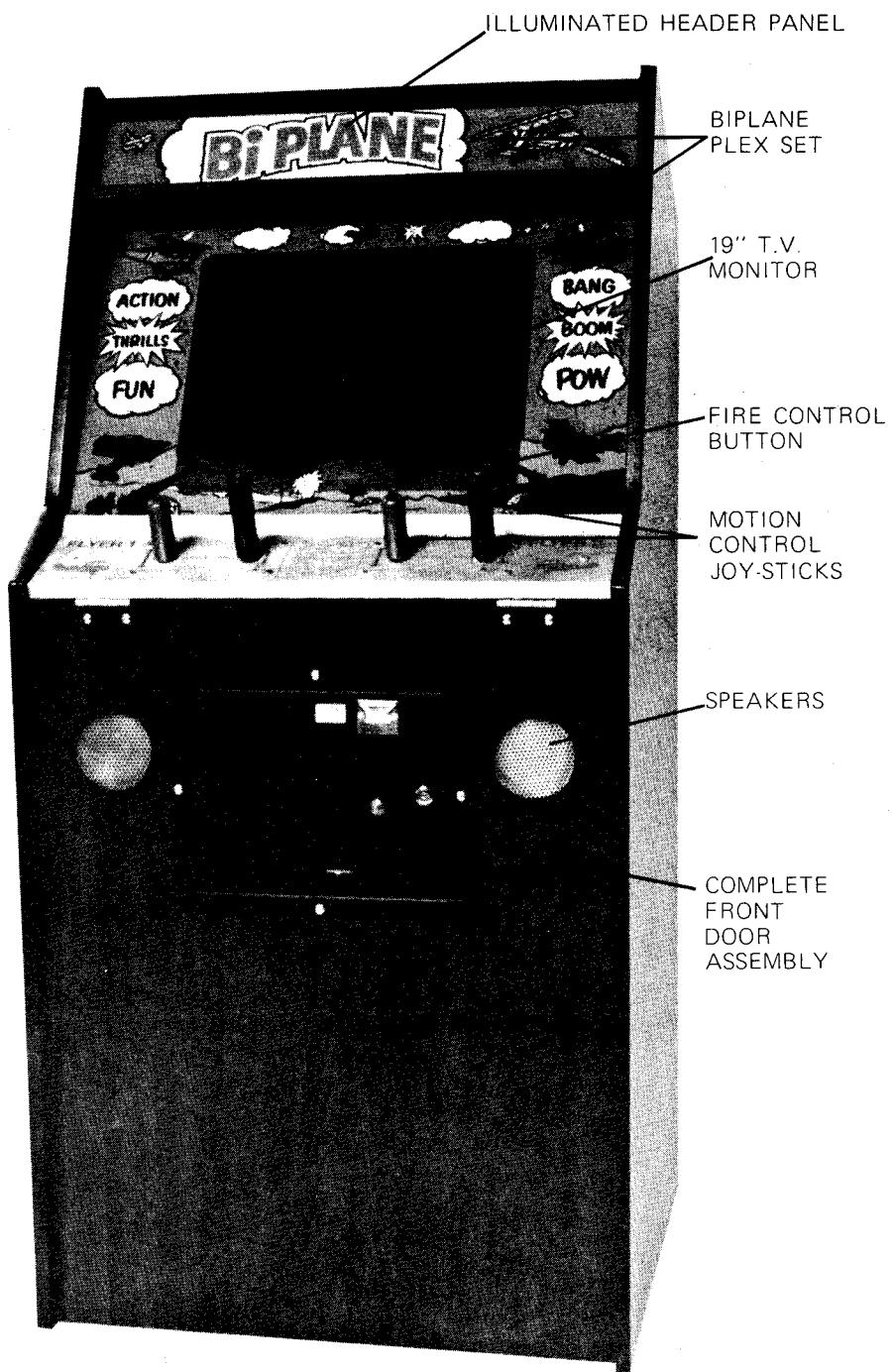
PITCH 1:

Same as pitch 2 for white plane.

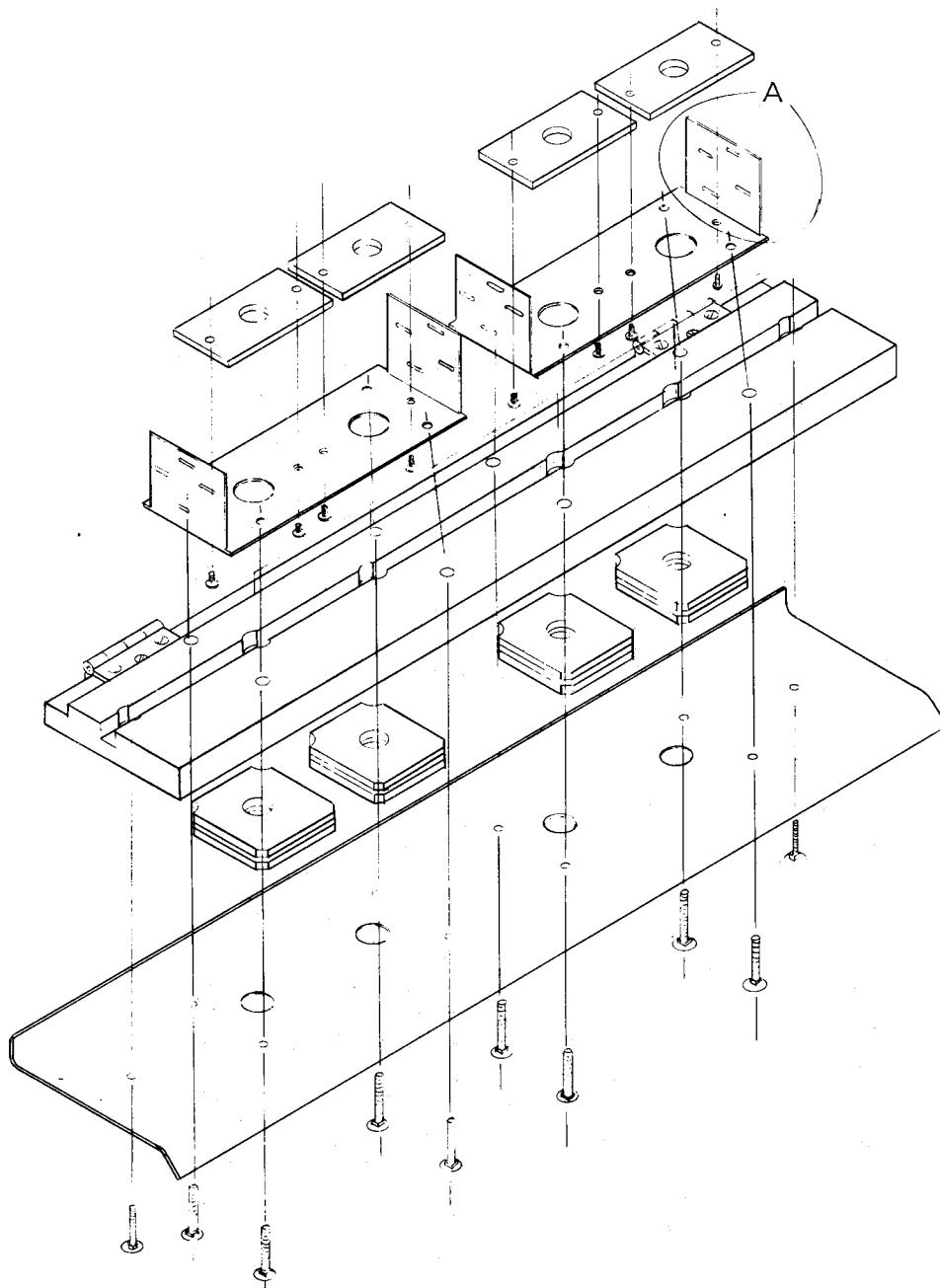
TONE 1:

Same as tone 2 for white plane.

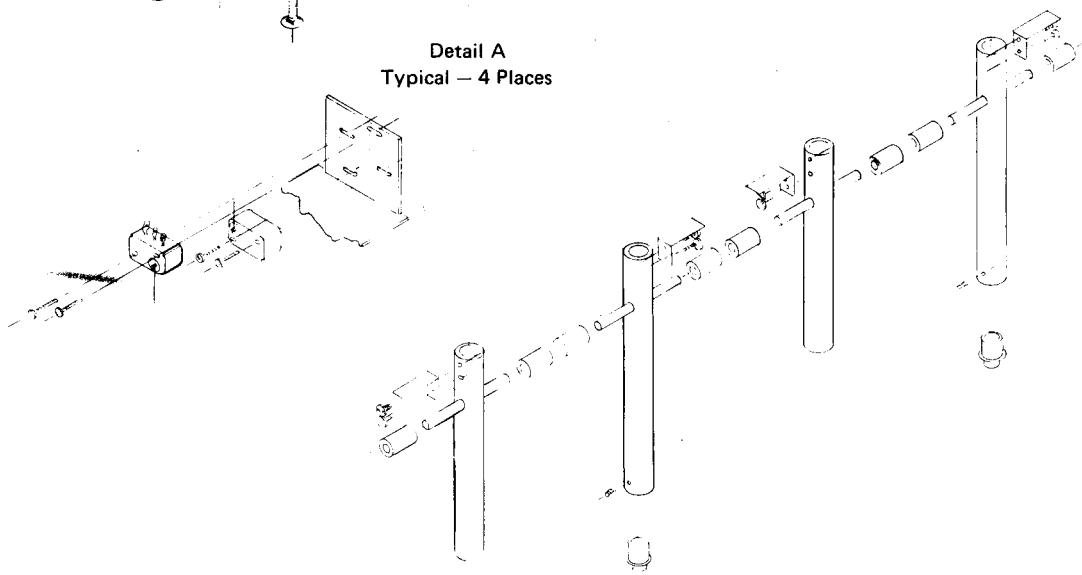
NOTE: BE SURE ALL BOARDS ARE PROPERLY SEATED, INCLUDING INTERCONNECT BOARDS IN HARNESS CONNECTOR.

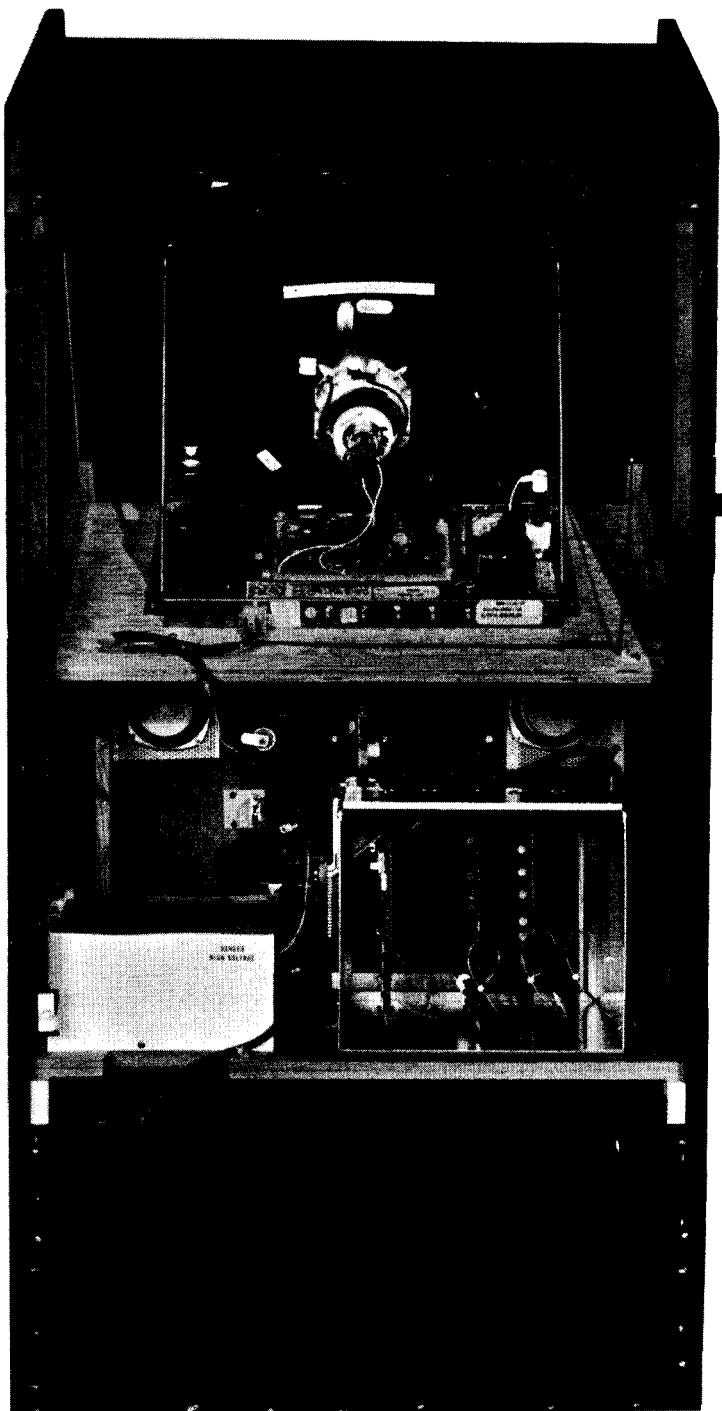


AND DESCRIPTION

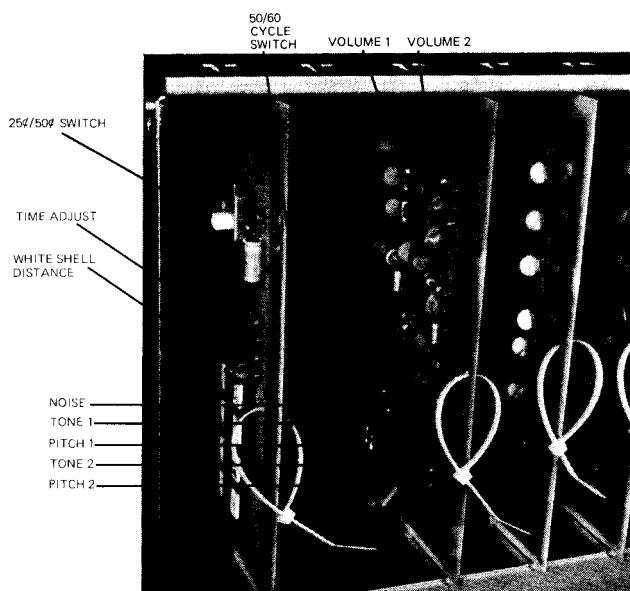
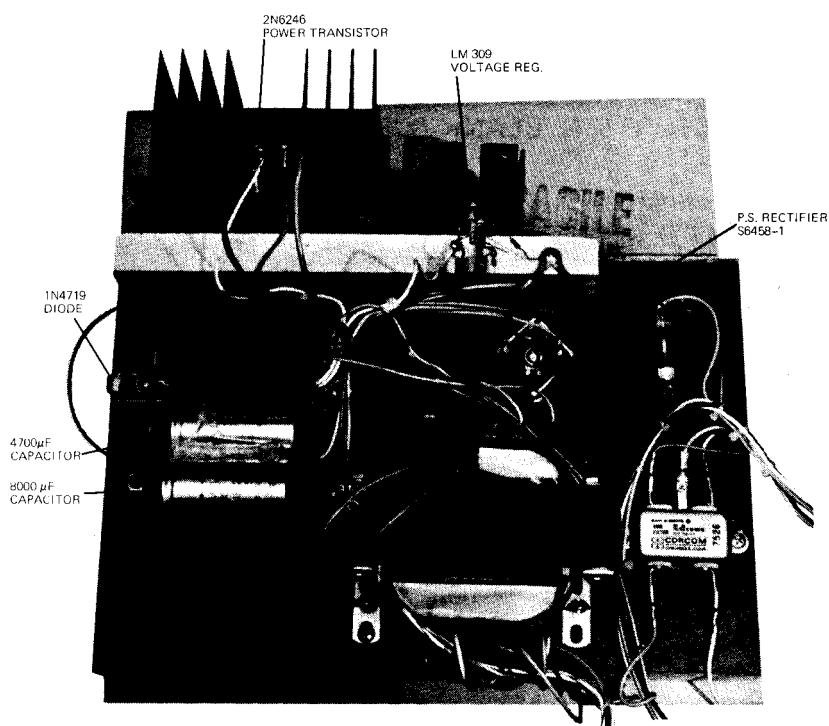


Detail A
Typical — 4 Places





COMPONENTS AND DESCRIPTION



TROUBLESHOOTING

TROUBLESHOOTING GUIDE

AUDIO

1. Check speakers and connections
2. Adjust audio controls on synch board
3. Change synch board

VIDEO (RIPPLE, DISTORTION, BLANK SCREEN)

1. Measure +5V
2. Check interlock switches
3. Shorted diode in P.S. rectifier
4. Change synch board

VIDEO (SHAKE)

1. Adjust T.V. controls
2. Change crystal/4024 I.C. on synch board

MOTION

1. Check control panel switches
2. Switch motion boards – if problem persists on same side (ie. black or white plane)
change memory board

SCORING

1. Change memory board

Important: Severe damage will occur if any board but the synch board is inserted in synch board socket.

1. Check control panel switches
2. Switch motion boards – if problem persists on same side (i.e., black or white plane) change memory board

PARTS LIST

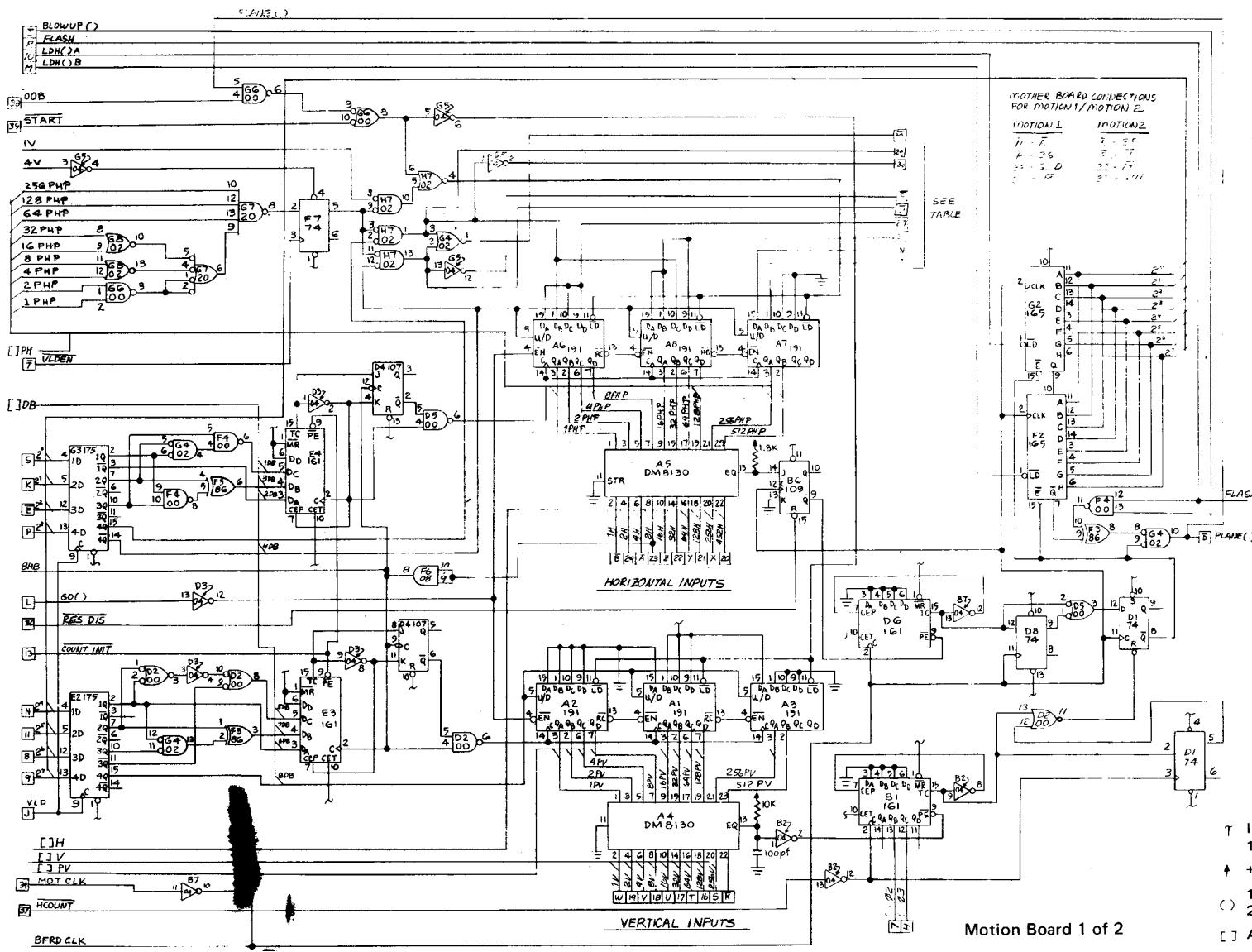
PART #	DESCRIPTION	UNIT PRICE
300-200	Power Supply	75.00
500-206	Mother Board	75.00
500-201	Motion Board	250.00
500-202	Synch Board	250.00
500-204	Memory Board	250.00
500-200	Set of PC Boards w/Cage	750.00
600-200	Control Panel	75.00
400-100	Coin Door Assembly	55.00
34-64581	P.S. Rectifier	10.29
36-LM309	P.S. Voltage Regulator	3.54
42-0019	19" Monitor, Motorola	295.00
41-5006	Speakers	5.70
46-0051	Switch, Cherry, E51	2.82
46-0903	Fire Button, Switch	1.59
47-0001	Coin Counter	9.72
82-0001	P.S. Transformer	42.75
35-14318	Crystal 14.318 MHZ	5.04
37-4024	4024 I.C.	6.69
32-2N6246	2N6246 Power Transistor	3.69

PRICE LIST

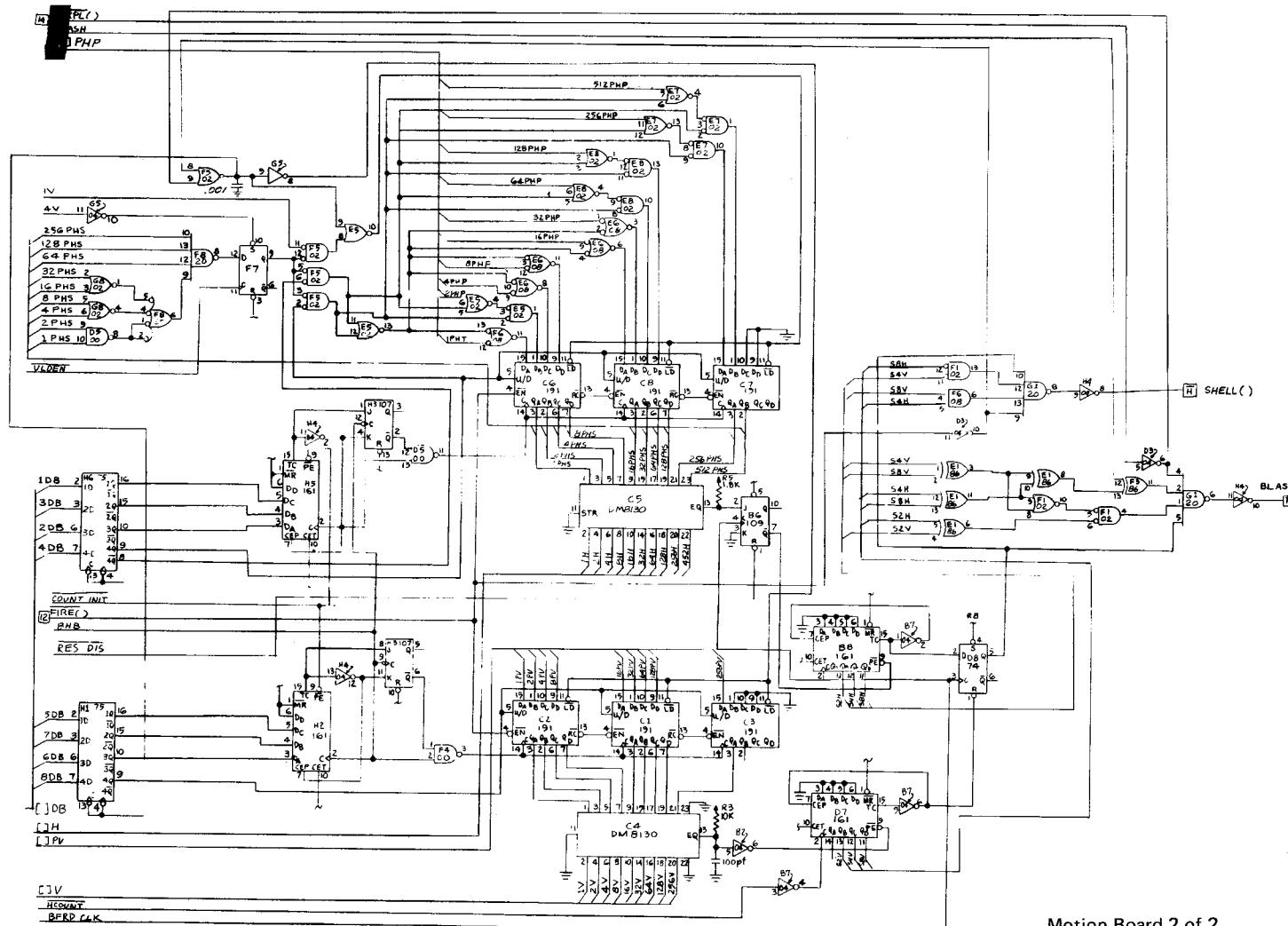
Minimum Order - \$25.00

SCHEMATICS

10



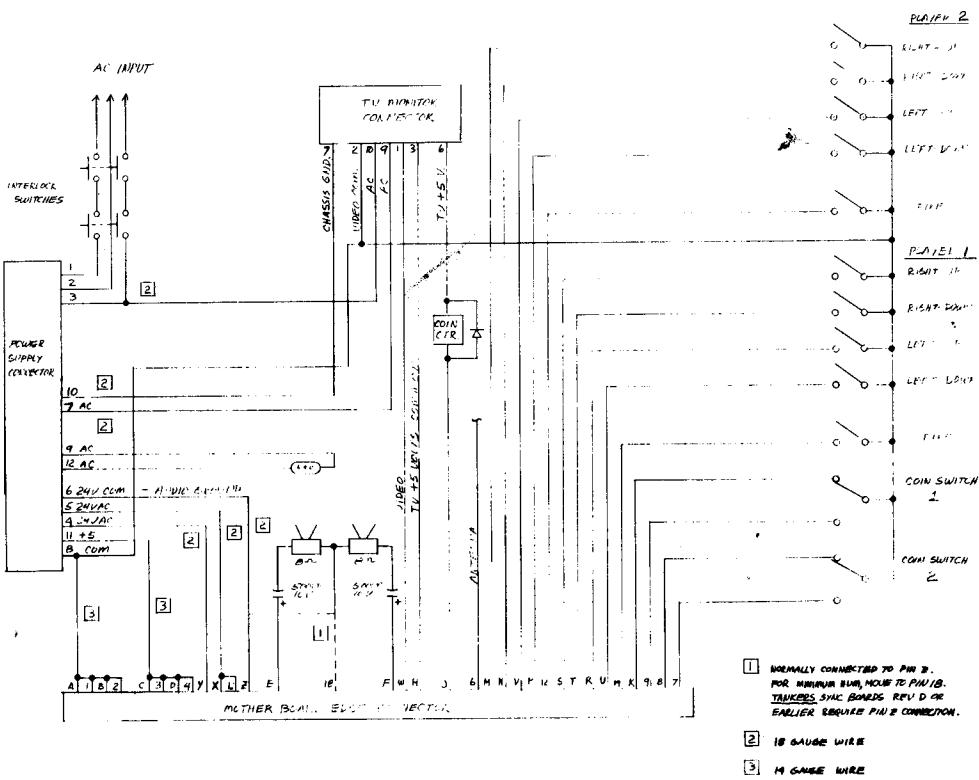
Motion Board 1 of 2



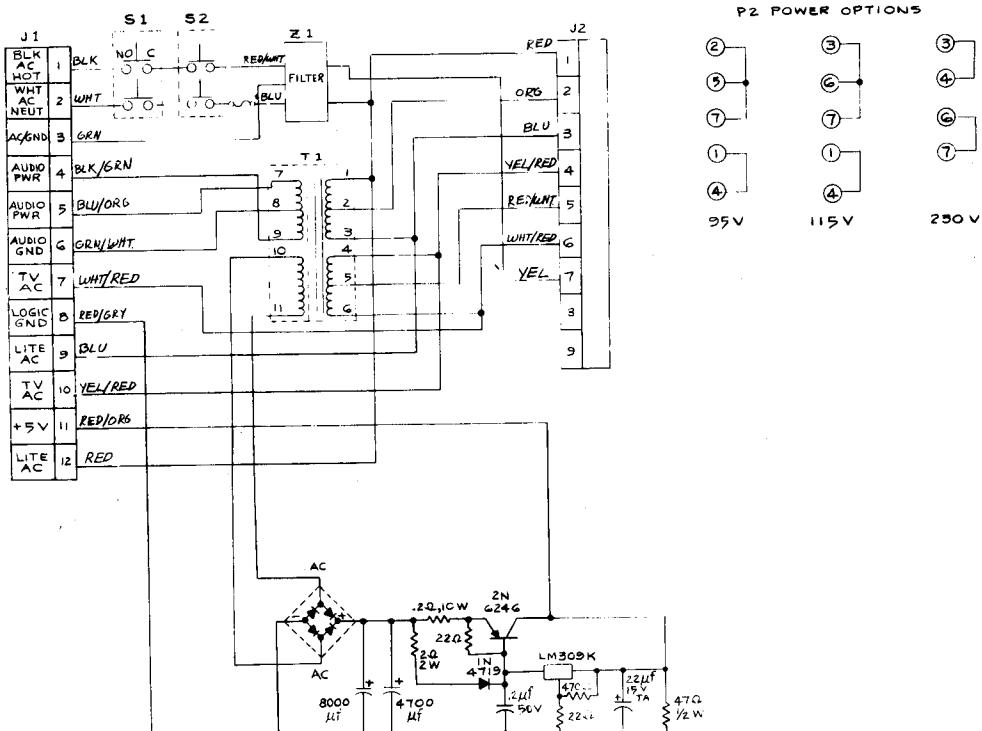
Motion Board 2 of 2

SCHEMATICS

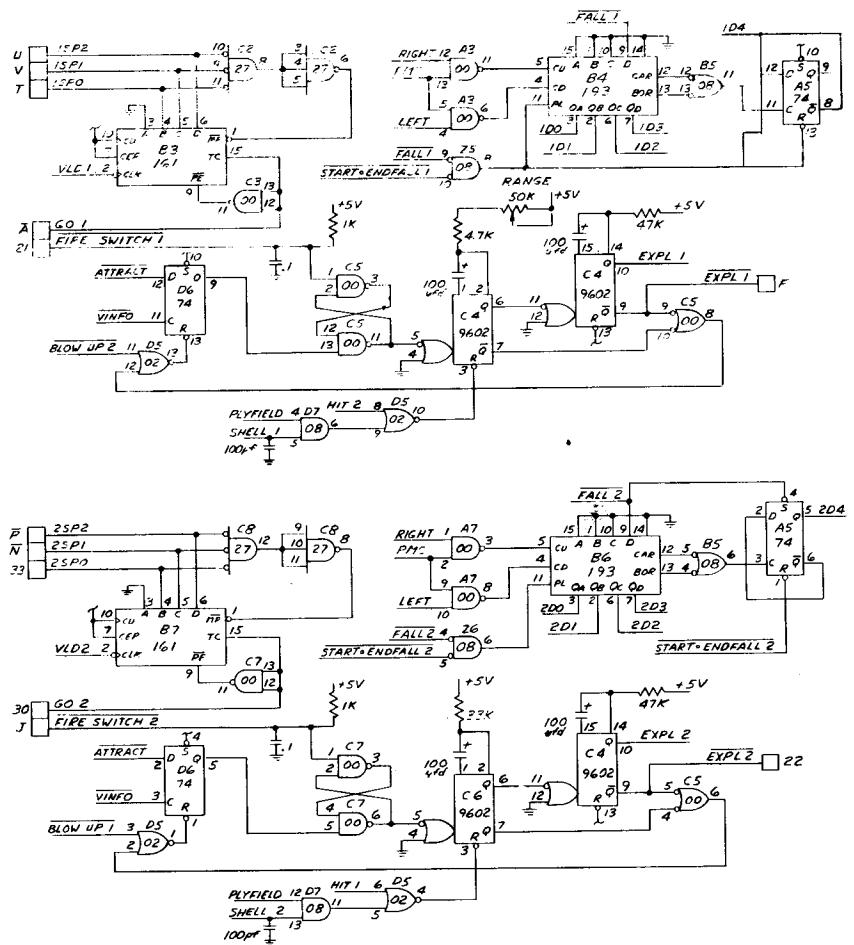
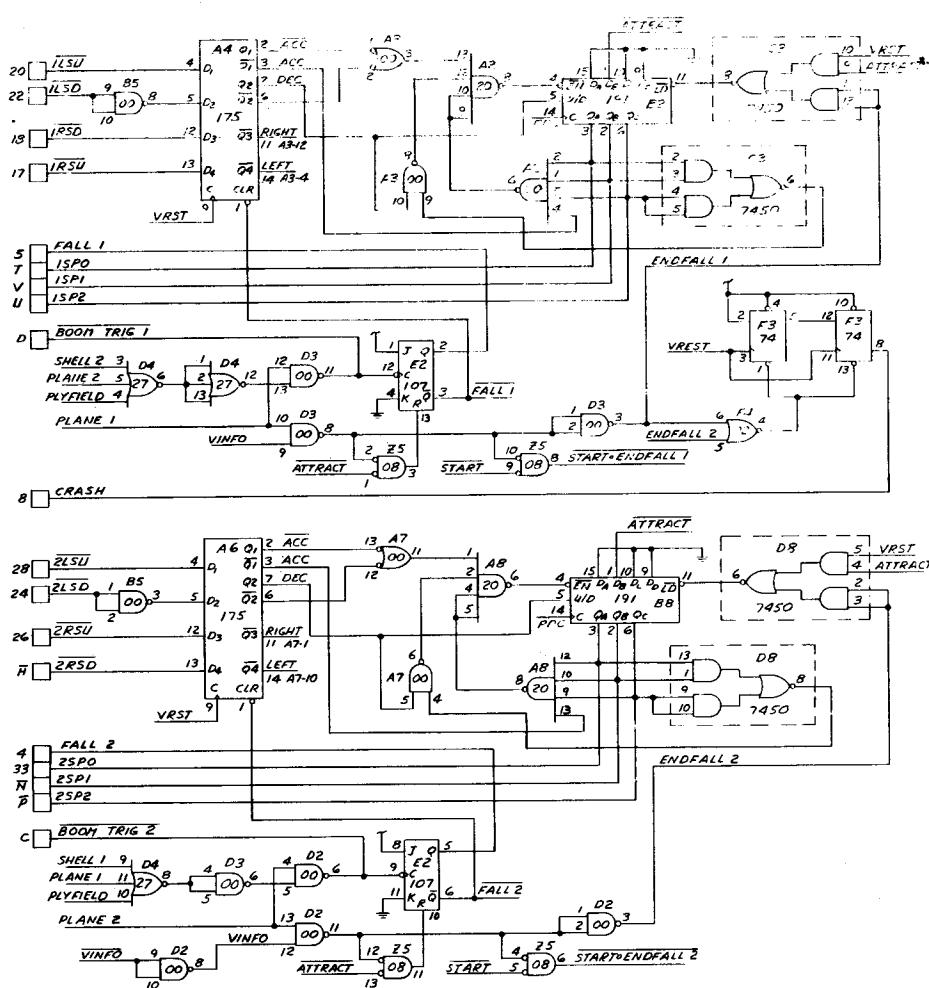
SCHHEMATICS



Cabinet Interconnections



Power Supply

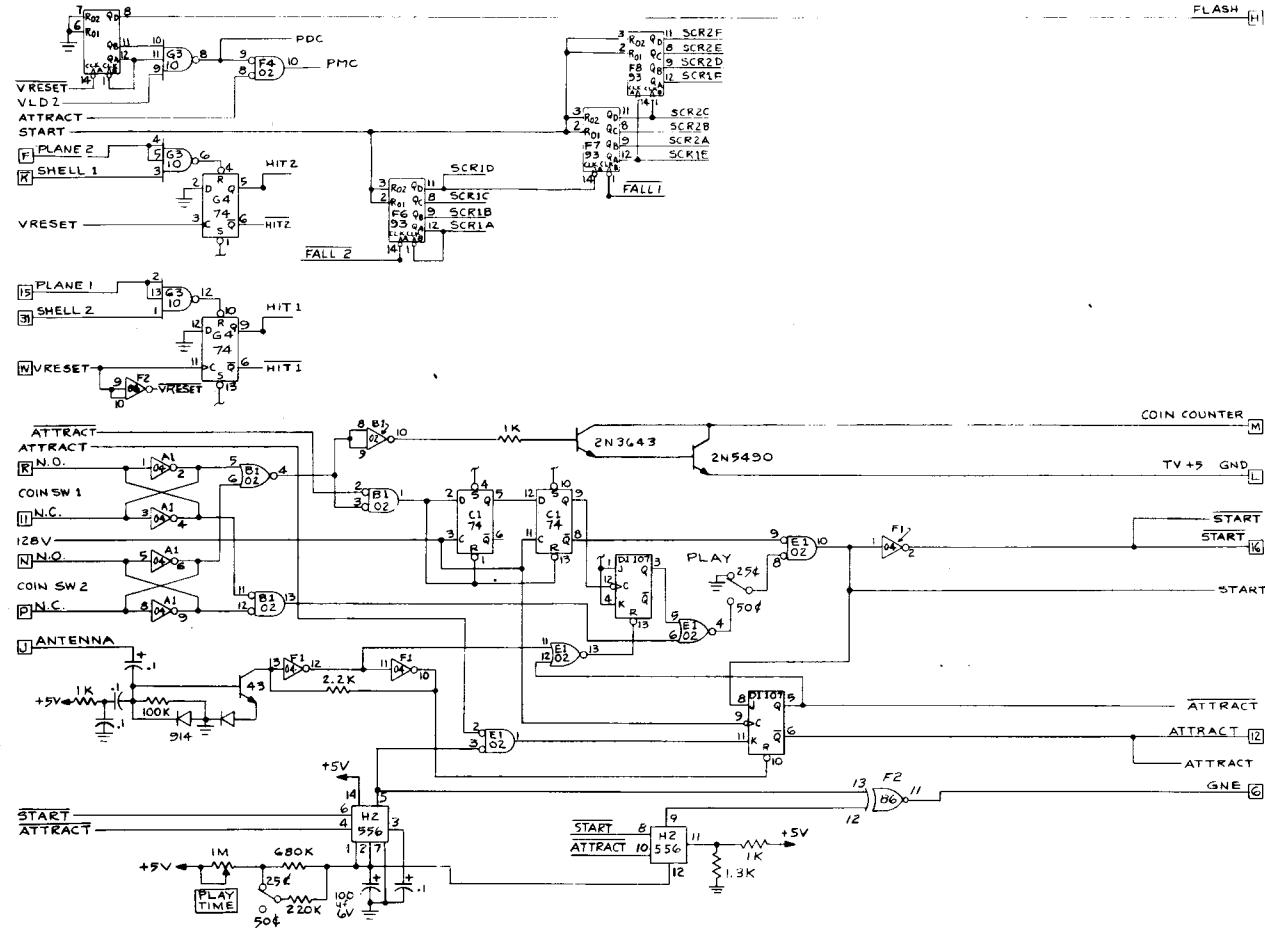


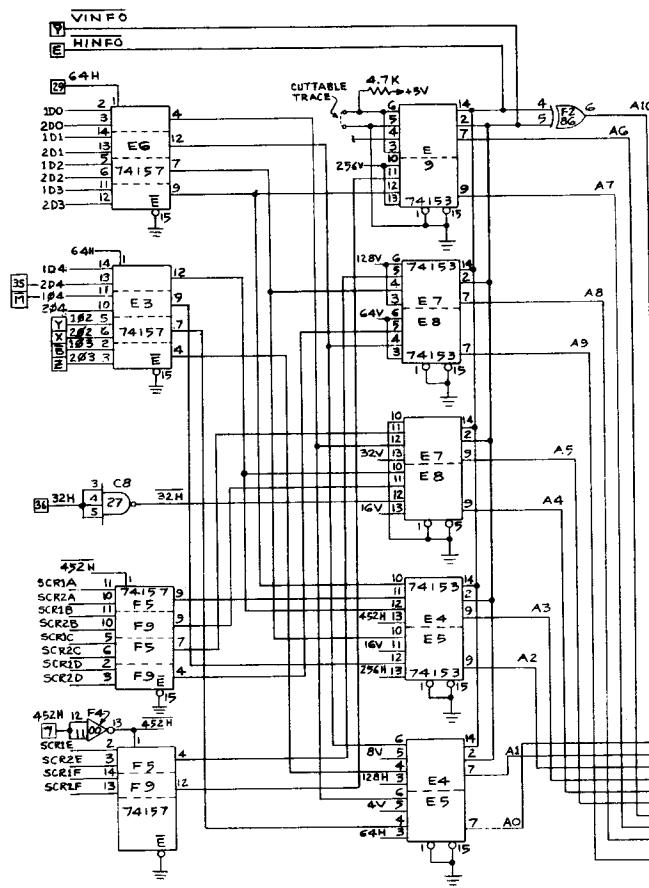
Memory Board 1 of 3

SCHEMATICS

SCHEMATICS

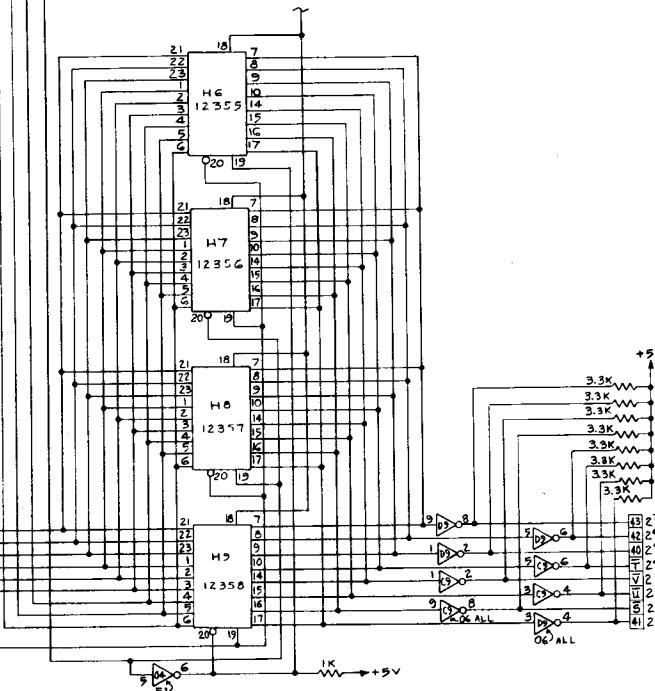
14





V And H Input Pin Assignments

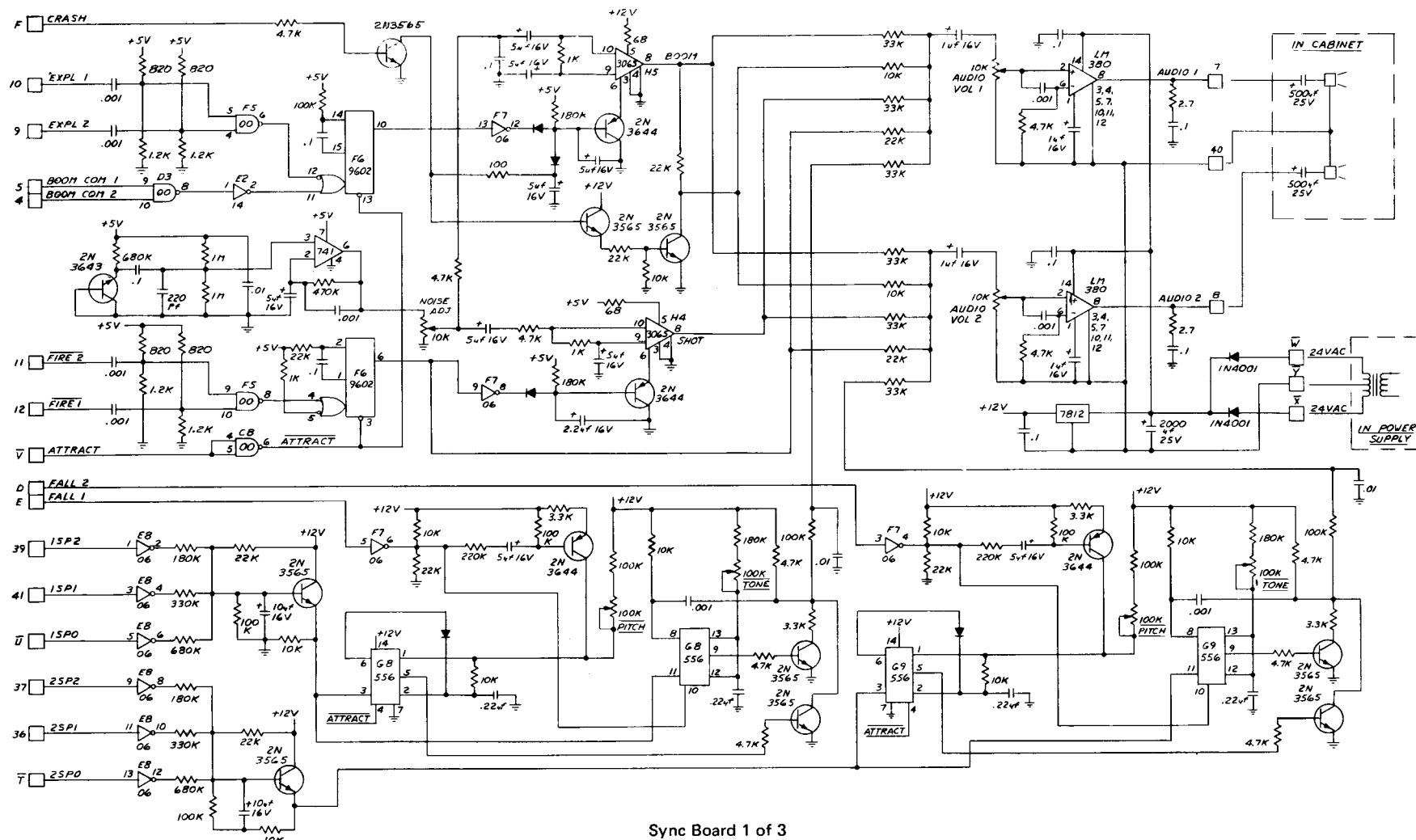
4V - W	32H - 36
8V - D	64H - 29
16V - 8, X	128H - E
32V - 13	256H - 13
64V - 38	452H - 7
128V - 14	
256V - 39	

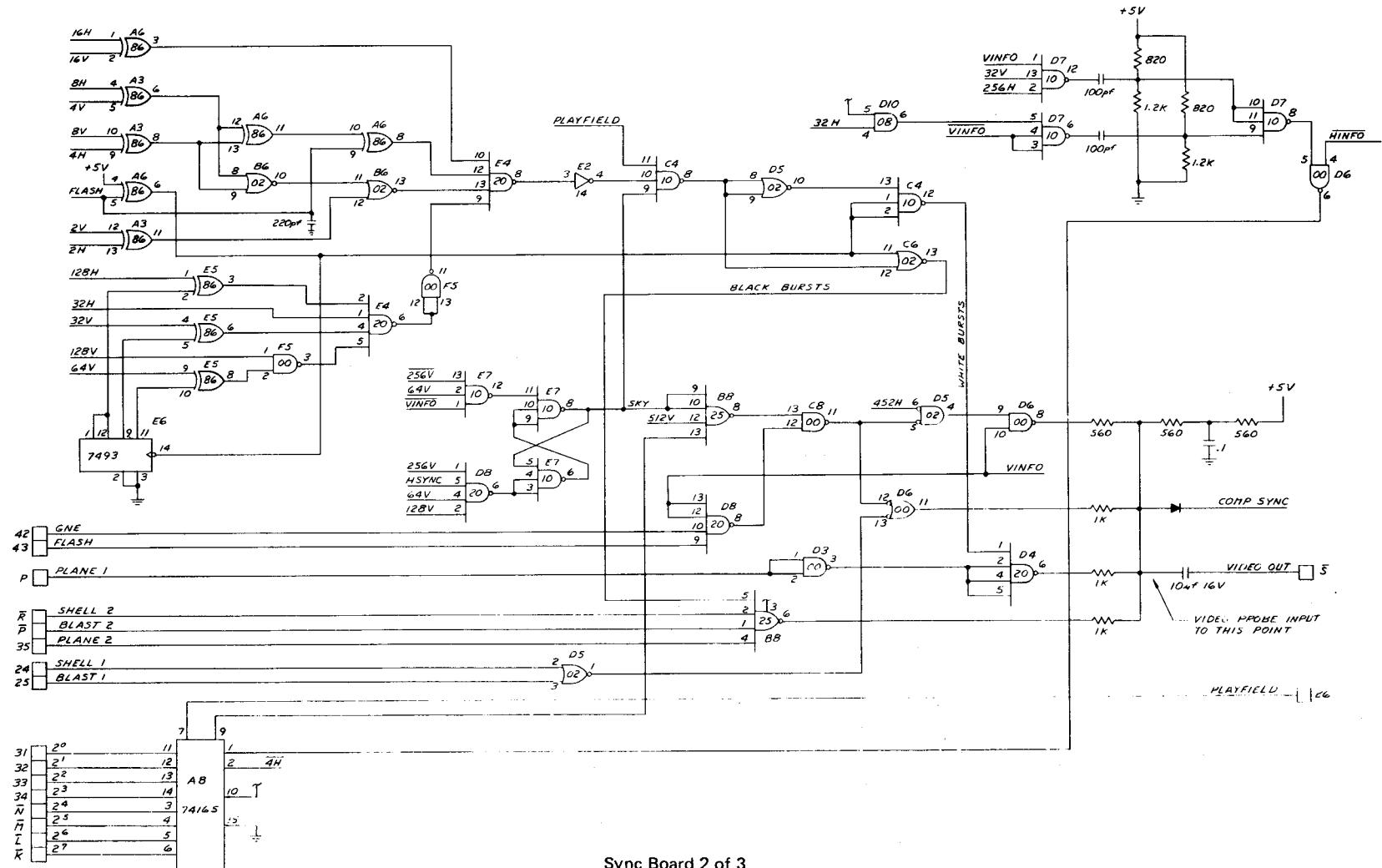


Memory Board 3 of 3

SCHEMATICS

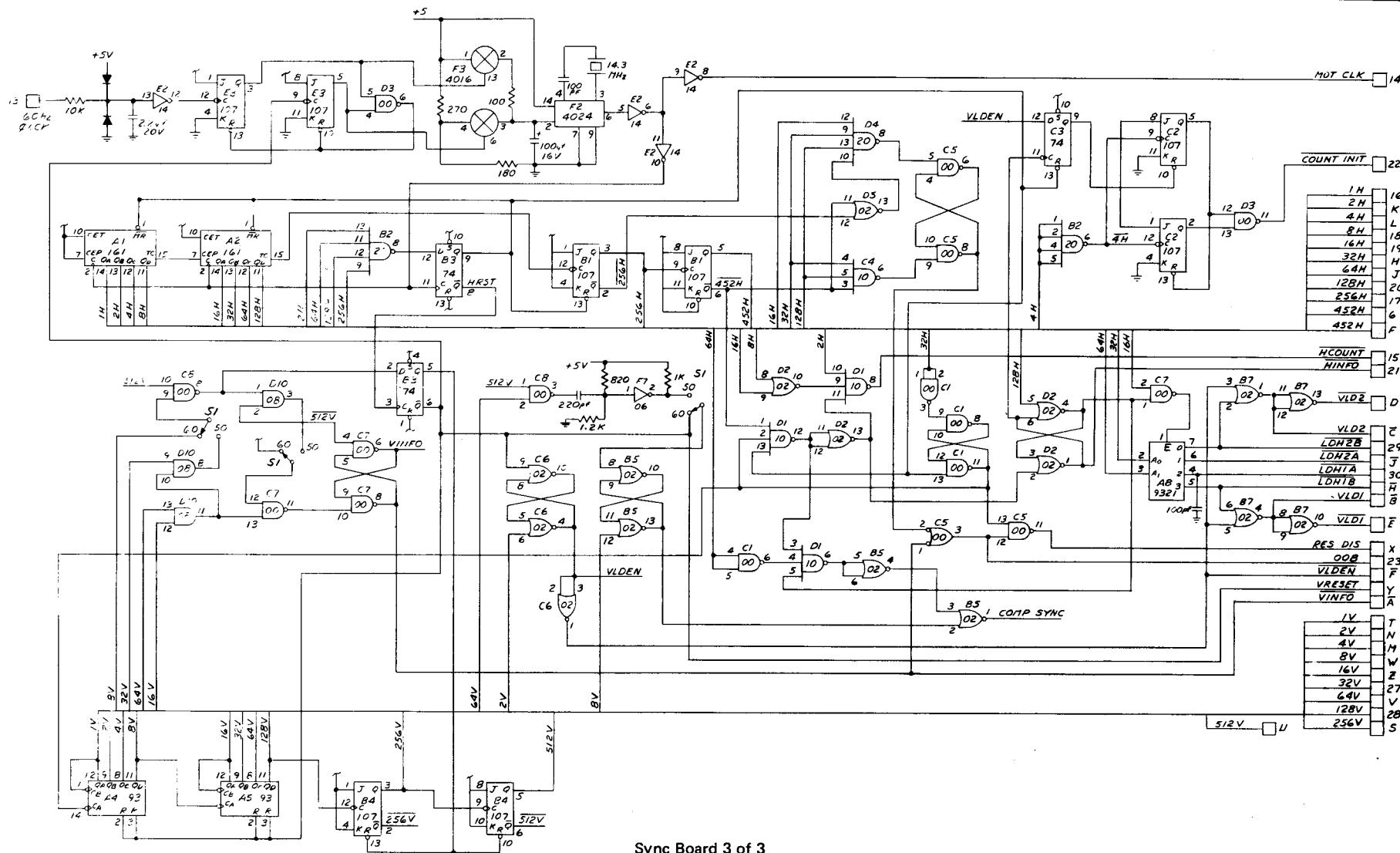
SCHEMATICS





SCHEMATICS

SCHEMATICS

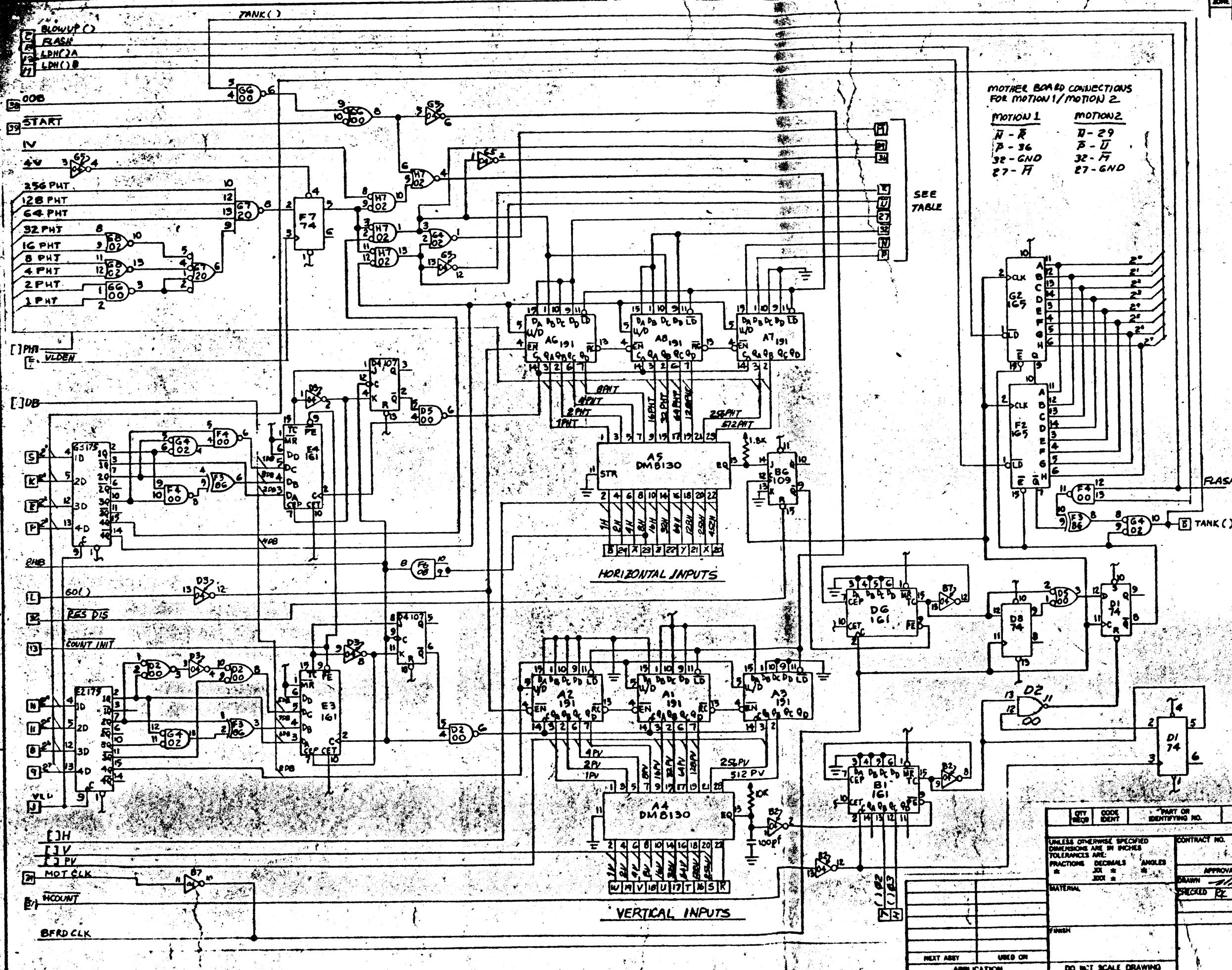


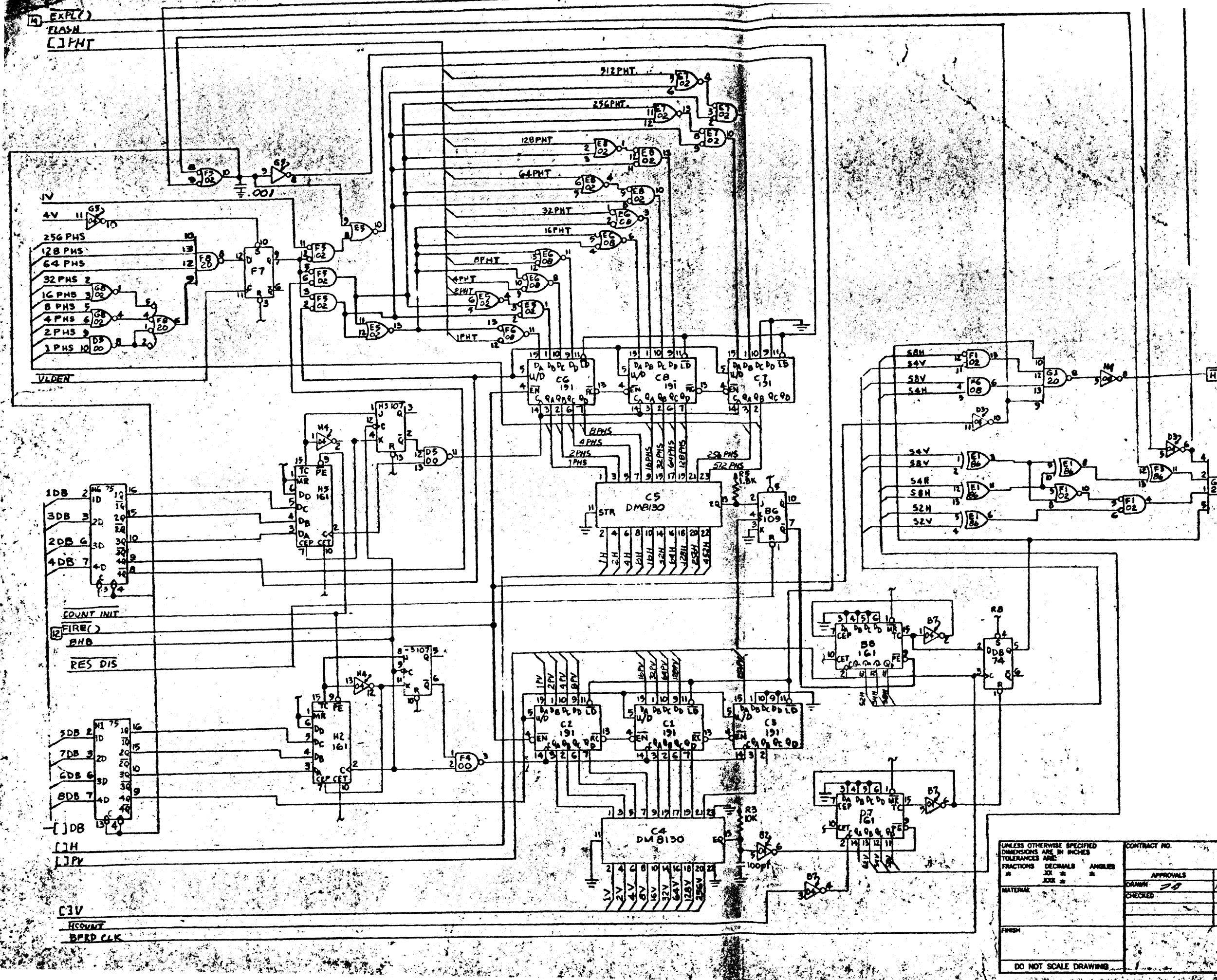
Sync Board 3 of 3

FUN GAMES INC.

8410 AMELIA ST., OAKLAND, CA 94621 (415) 568-5225

ZONE	LTR	DESCRIPTION	NAME	APPROVED
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UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ARE
 FRACTIONS DECIMALS ANGLES
 XXX .XXX °
 MATERIAL APPROVALS DATE
 DRAWN: CHECKED: 10-8-25
 FINISH DO NOT SCALE DRAWING
 DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS

DRAWN:

CHECKED:

DATE:

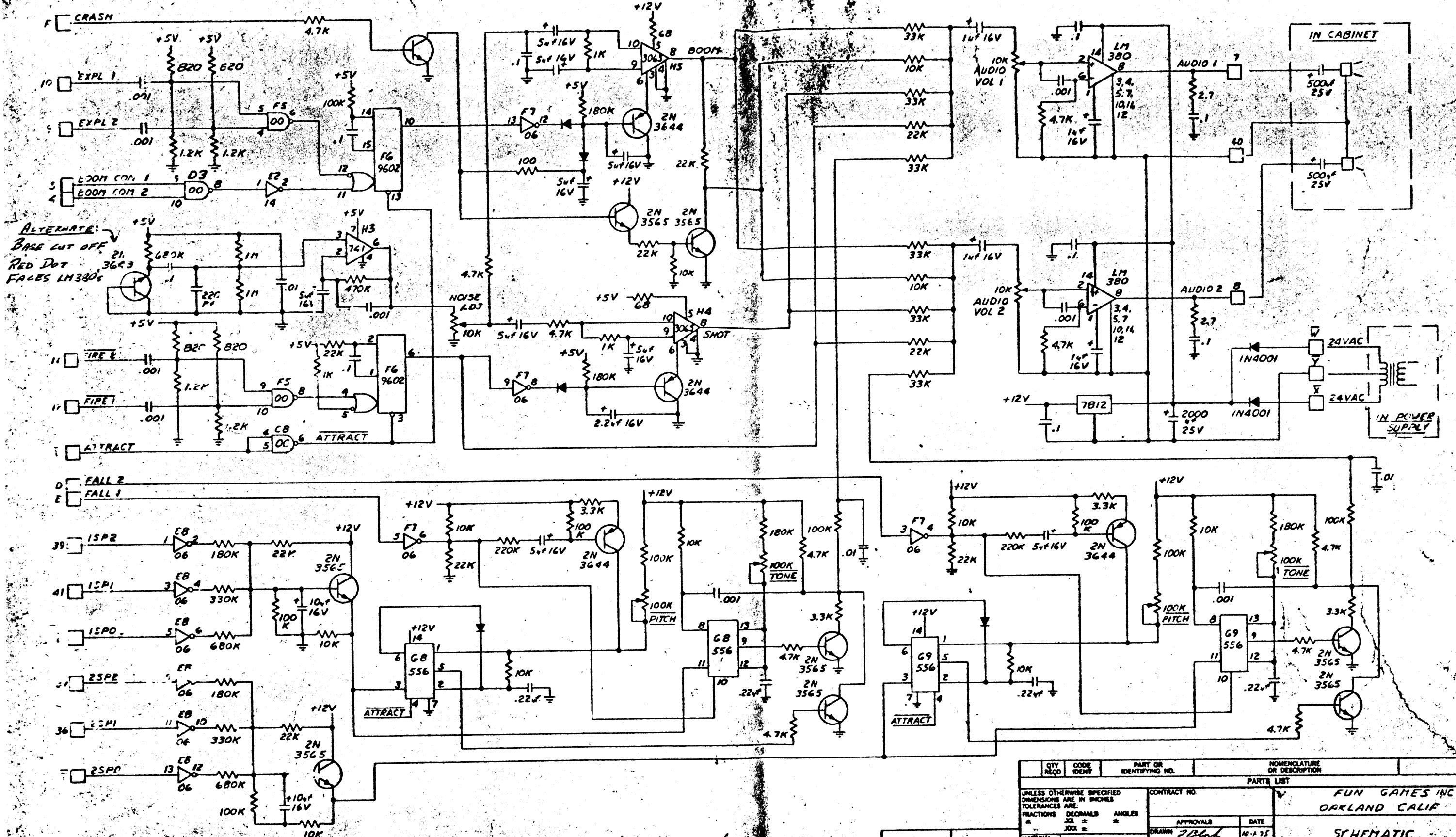
10-8-25

FUN G'S INC
OAKLAND, CALIF

SCHEMATIC
MOTION BOARD
B1- PLANE

SIDE CODE IDENT. NO. DRAWING NO.
 D 201 A
 DRAWN: CHECKED: DATE:
 SWEET 2 OF 2

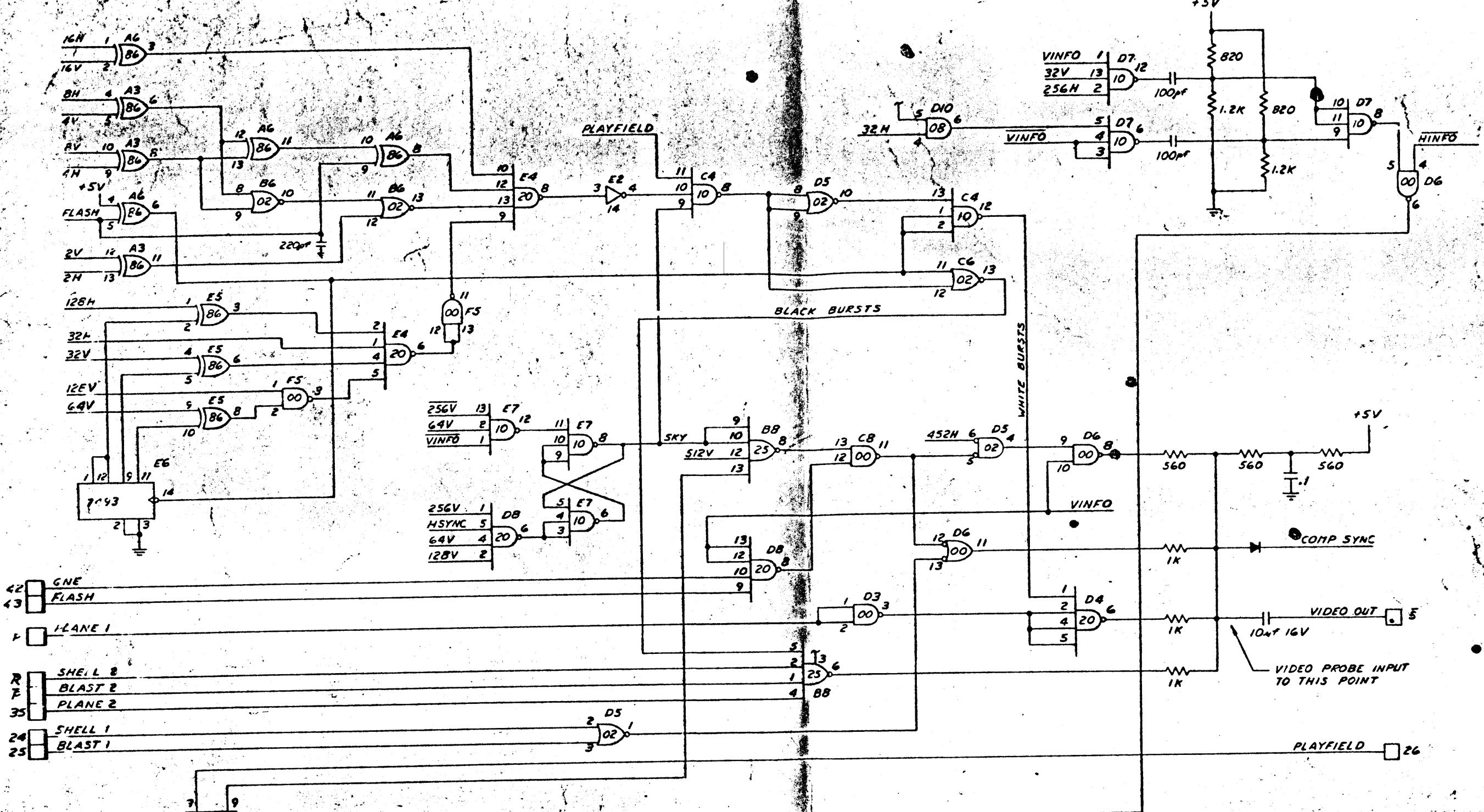
ZONE	LTR	DESCRIPTION	DATE	APPROVED
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QTY REQ'D	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
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		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES $\pm .001$ $\pm .001$ $\pm 1^\circ$ $\pm .001$ $\pm .001$ $\pm .001$		
		CONTRACT NO. APPROVALS DATE DRAWN J. Black 10-1-75 CHECKED R.K. 10-20-75 MATERIAL		
		FUN GAMES INC OAKLAND CALIF		
		SCHEMATIC SYNC BOARD BI-PLANE		
		SIZE CODE IDENT NO. DRAWING NO. D 202 A SCALE SHEET 1 OF 3		

2. ALL RESISTORS ARE IN OHMS
 1/4 W, 5% CC
 1. ALL DIODES ARE IN914

NOTE: UNLESS OTHERWISE NOTED

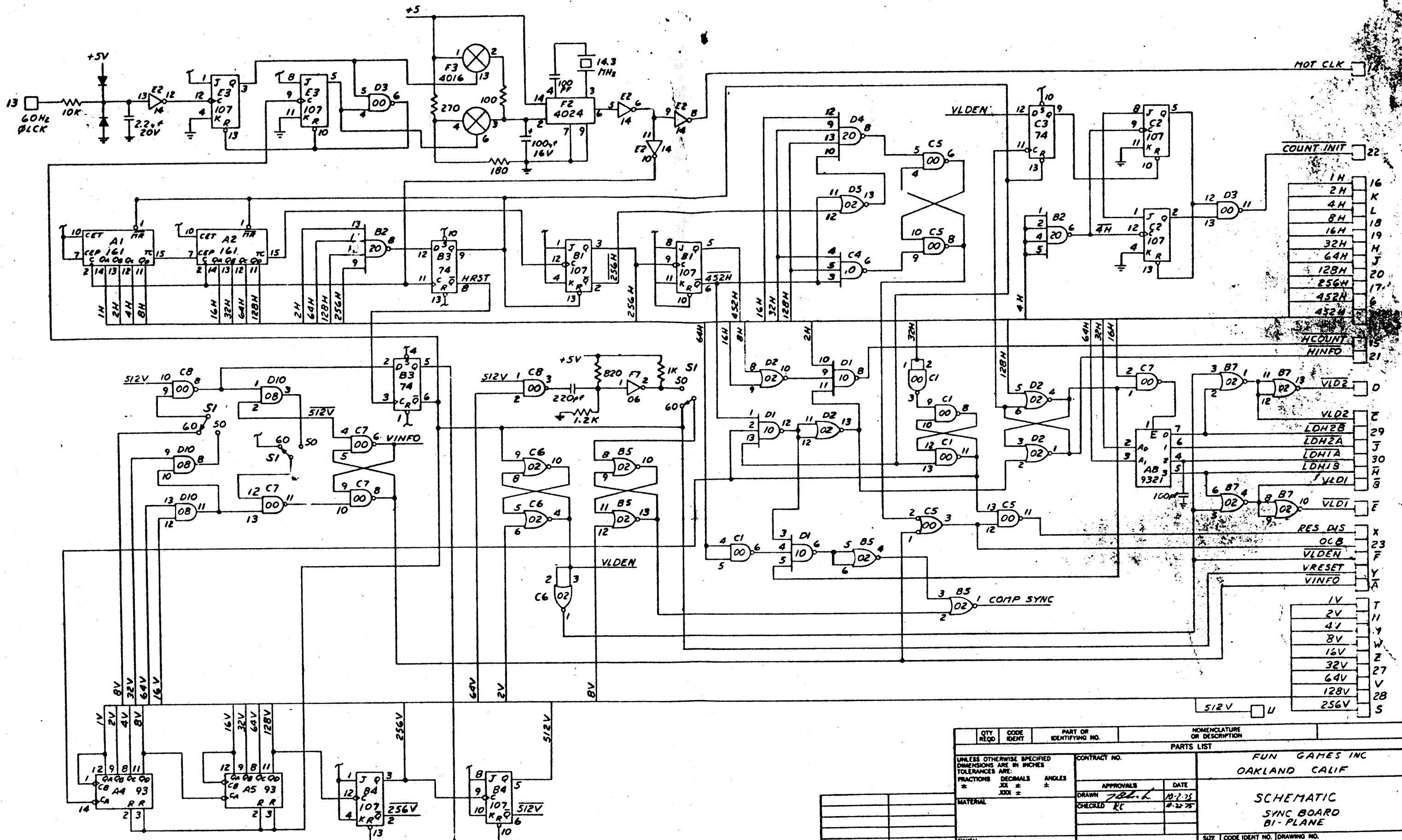


QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	DESCRIPTION
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .001 ± .001 ± .001			CONTRACT NO.
MATERIAL:			APPROVALS DATE
DRAWN 9-25-25 CHECKED 10-22-26 REVISED 10-22-26 APPLIED 10-22-26			
FINISH: AS DRAWN MATERIAL: 100% ALUMINUM APPLICATION: 100% ALUMINUM DO NOT SCALE DRAWING			
SIZE	CODE IDENT NO.	DRAWING NO.	REVISIONS
D	202	2	2
DATE 10-22-26 SHEET 2 of 3			

RUN - GAMES INC
OAKLAND CALIF

SCHEMATIC
SYNC BOARD
BI-PLANE

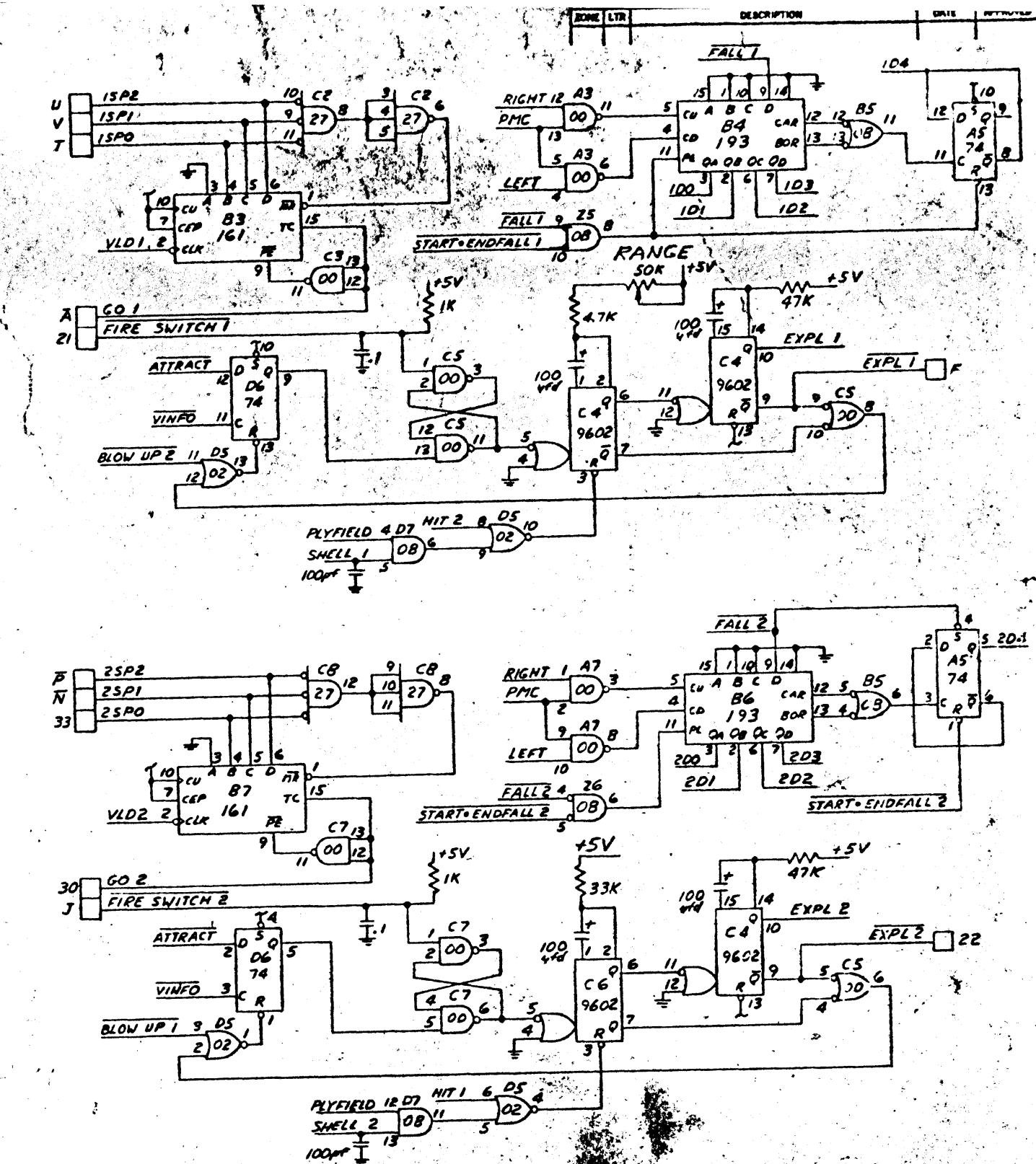
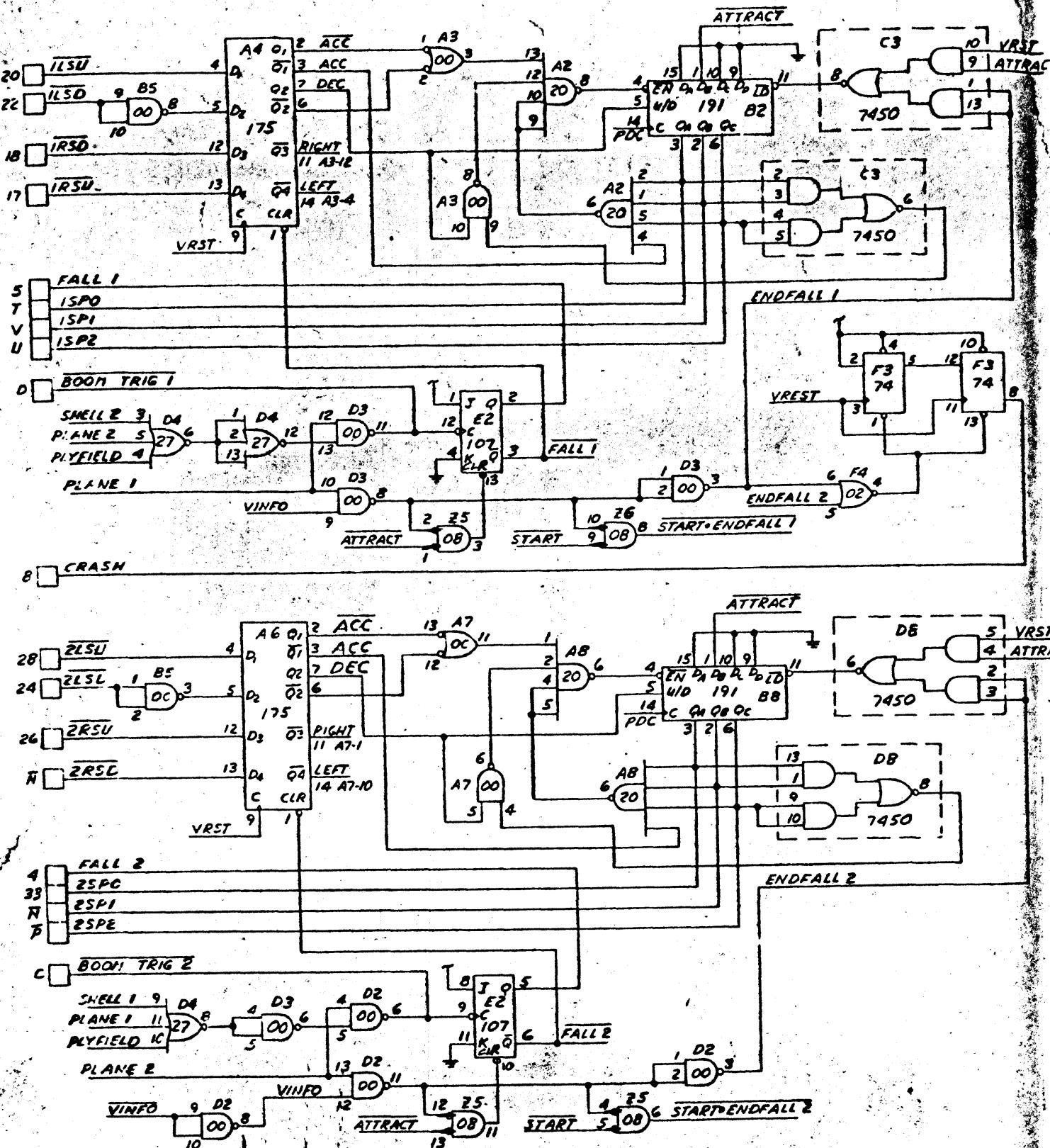
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QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
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MATERIAL		CONTRACT NO.		
FINISH		APPROVALS DATE		
NEXT ASSY		DRAWN 702-L 10-2-75		
USED ON		CHECKED RC 10-2-75		
APPLICATION		DO NOT SCALE DRAWING		
SIZE		CODE IDENT NO.	DRAWING NO.	
D			202	
SCALE				
				SHEET 3 OF 3

FUN GAMES INC
OAKLAND CALIF
SCHEMATIC
SYNC BOARD
BI-PLANE

202



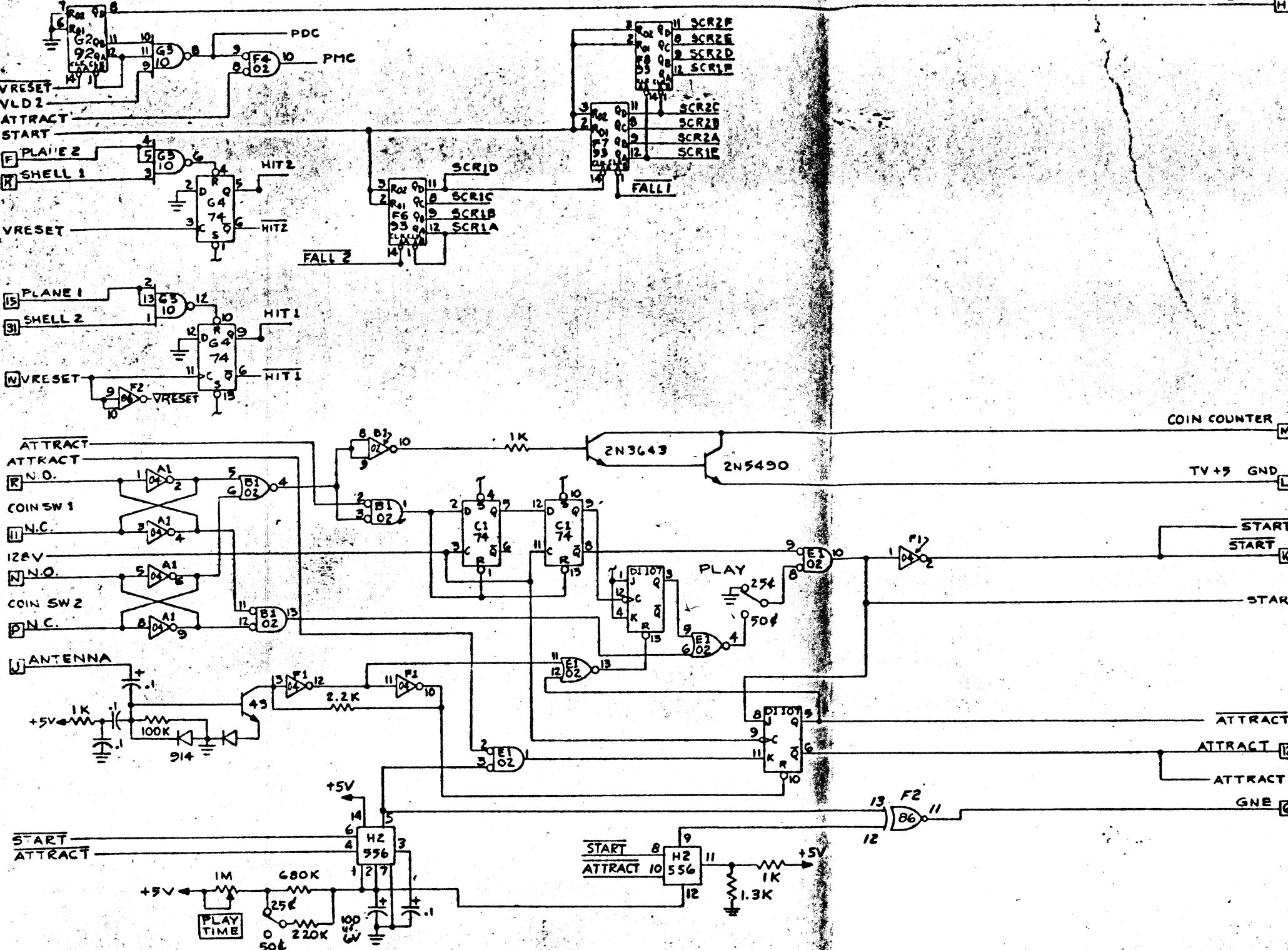
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			APPROVALS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES; TOLERANCES ARE: FRACTIONS DECIMALS ANGLES \pm JOL \pm XXX \pm				
CONTRACT NO. _____ DATE _____				
DRAWN BY _____ 10-8-75				
CHECKED BY _____				
MATERIAL _____				
FINISH _____				
NEXT ACTY		USED ON	APPROVALS	
APPLICATION		DO NOT SCALE DRAWING	APPROVALS	
D 7 204 DRAWING NO. 7 204				
SCALE: 1:1 SHEET 1 OF 3				

**FUN GAMES INC.
OAKLAND CALIF**

**SCHEMATIC
MEMORY BOARD
BI PLANE**

ZONE	LTR	DESCRIPTION	DATE	APPROVED
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FLASH H



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	
PARTS LIST			CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS DECIMALS ANGLES ± JX = ± JXX =			APPROVALS DATE	
MATERIAL			DRAWN 7-22	14-8-75
FINISH			CHECKED RZ	ROUTE
NEXT ASSY			USED ON	
APPLICATION			DO NOT SCALE DRAWING	

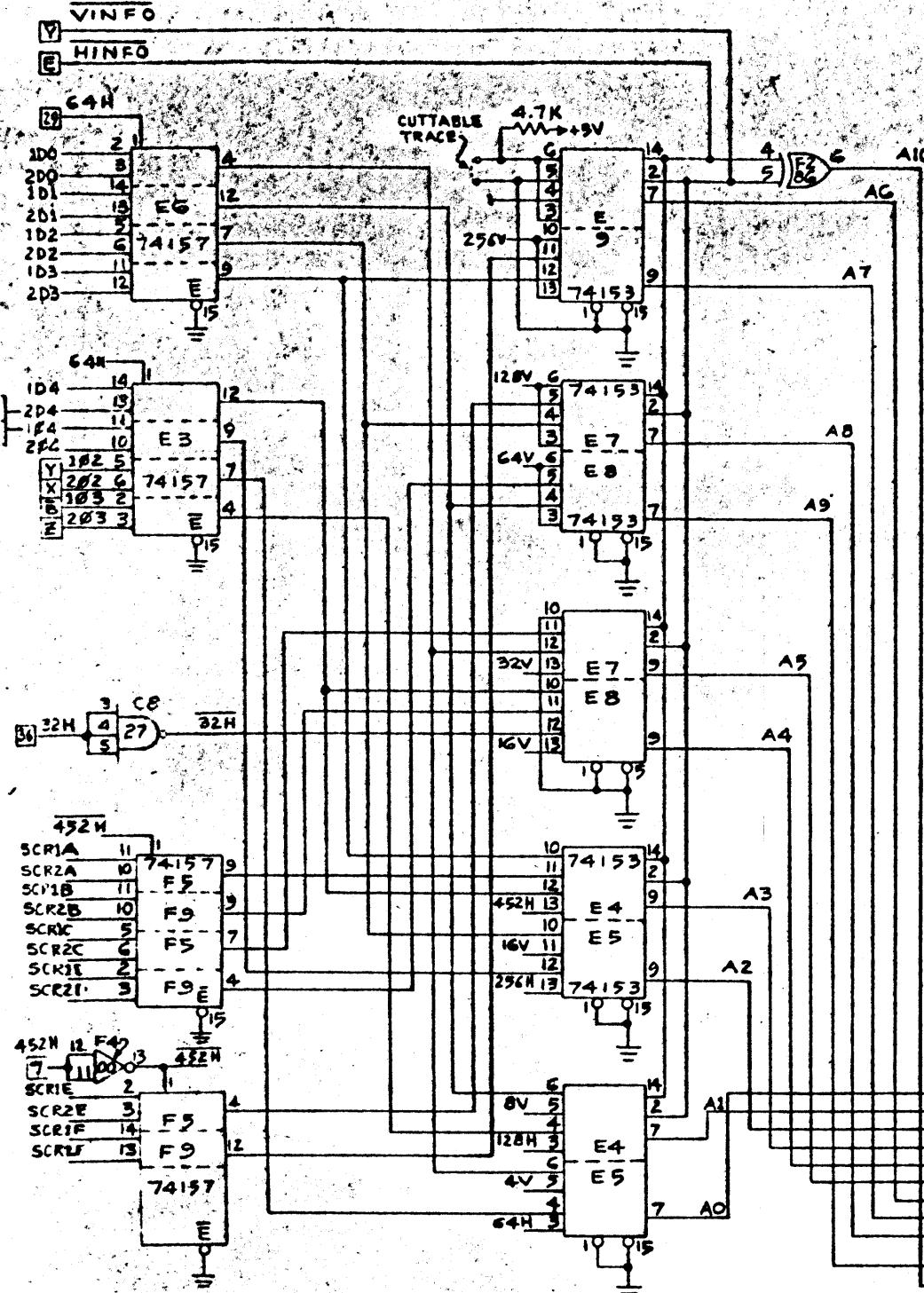
FUN GAMES INC.
OAKLAND CALIF.

SCHEMATIC
MEMORY BOARD
BI-PLANE

SIZE CODE IDENT NO. DRAWING NO.
D 204 A

SCALE SHEET 2 of 3

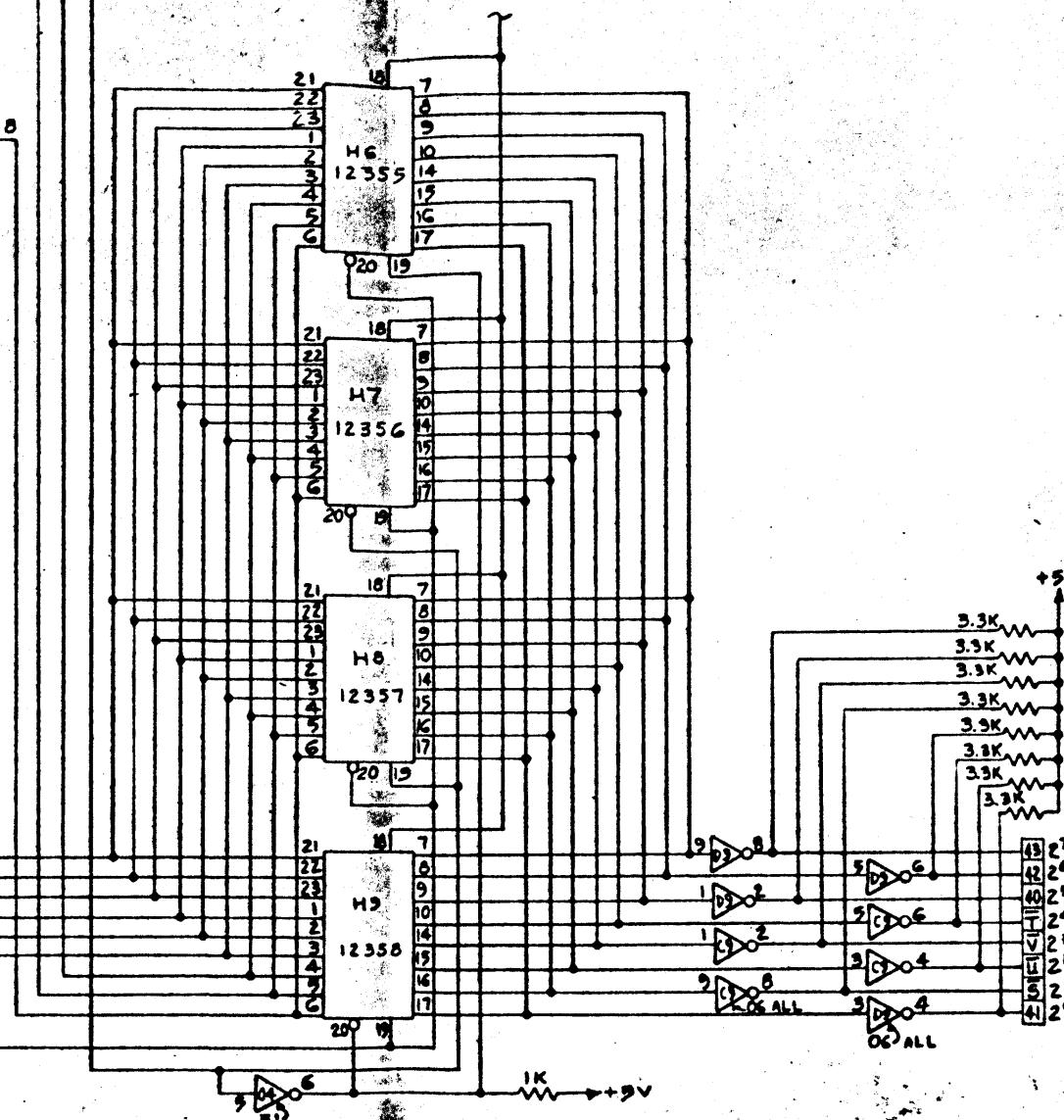
ZONE	LTR	DESCRIPTION	DATE	APPROVED
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VH INPUT PIN ASSIGNMENTS

4V - W
8V - 5
12V - 2
32U - 13
69V - 30
120V - 14
256V - 39

32 H - 36
64 H - 29
128 H - 1
256 H - 13
452 H - 7



QTY REF ID	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES XX XX-XX XX-XX		CONTRACT NO.	
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NEXT ASBY		CHECKED <input checked="" type="checkbox"/>	2025
USED ON APPLICATION		DO NOT SCALE DRAWING	
SIZE		CODE IDENT NO.	DRAWING NO.
D			204
SCALE		A	

FUN GAMES INC
OAKLAND CALIF

SCHEMATIC
MEMORY BOARD
BI-PLANE

SHEET 3 OF 3