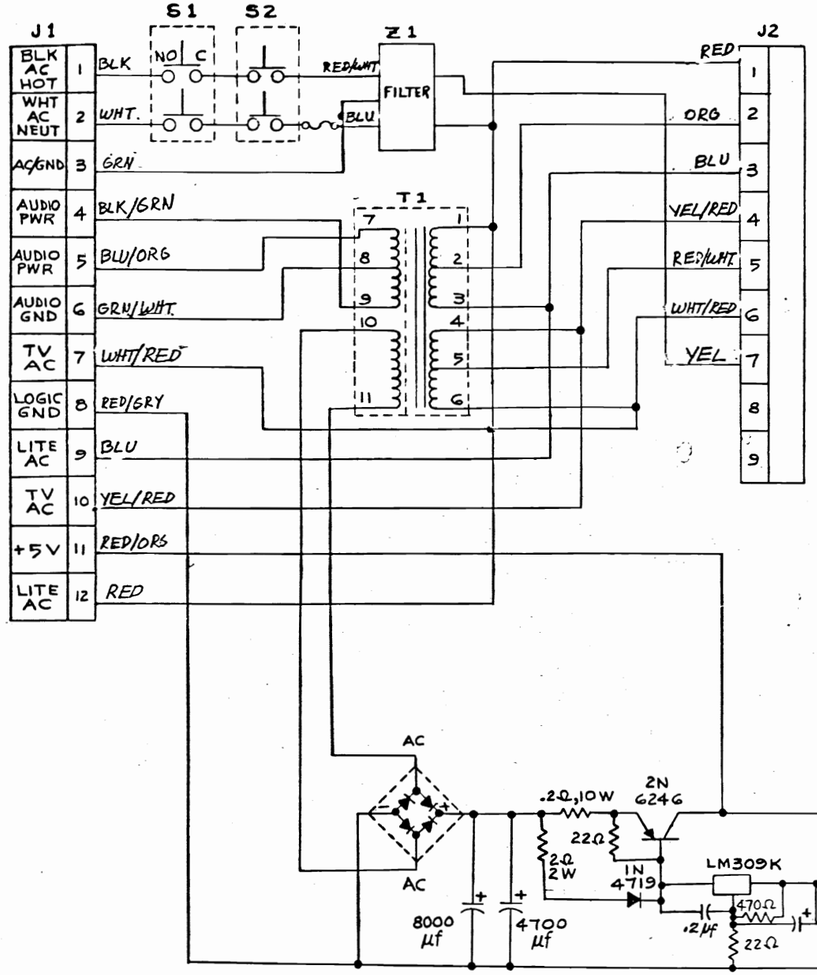
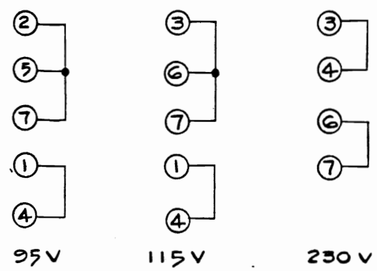
REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



P2 POWER OPTIONS



8-11-76 RK

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN RK	10-21-75
CHECKED RK	11/1/75

FUN GAMES INC
OAKLAND CALIF

SCHEMATIC
POWER SUPPLY

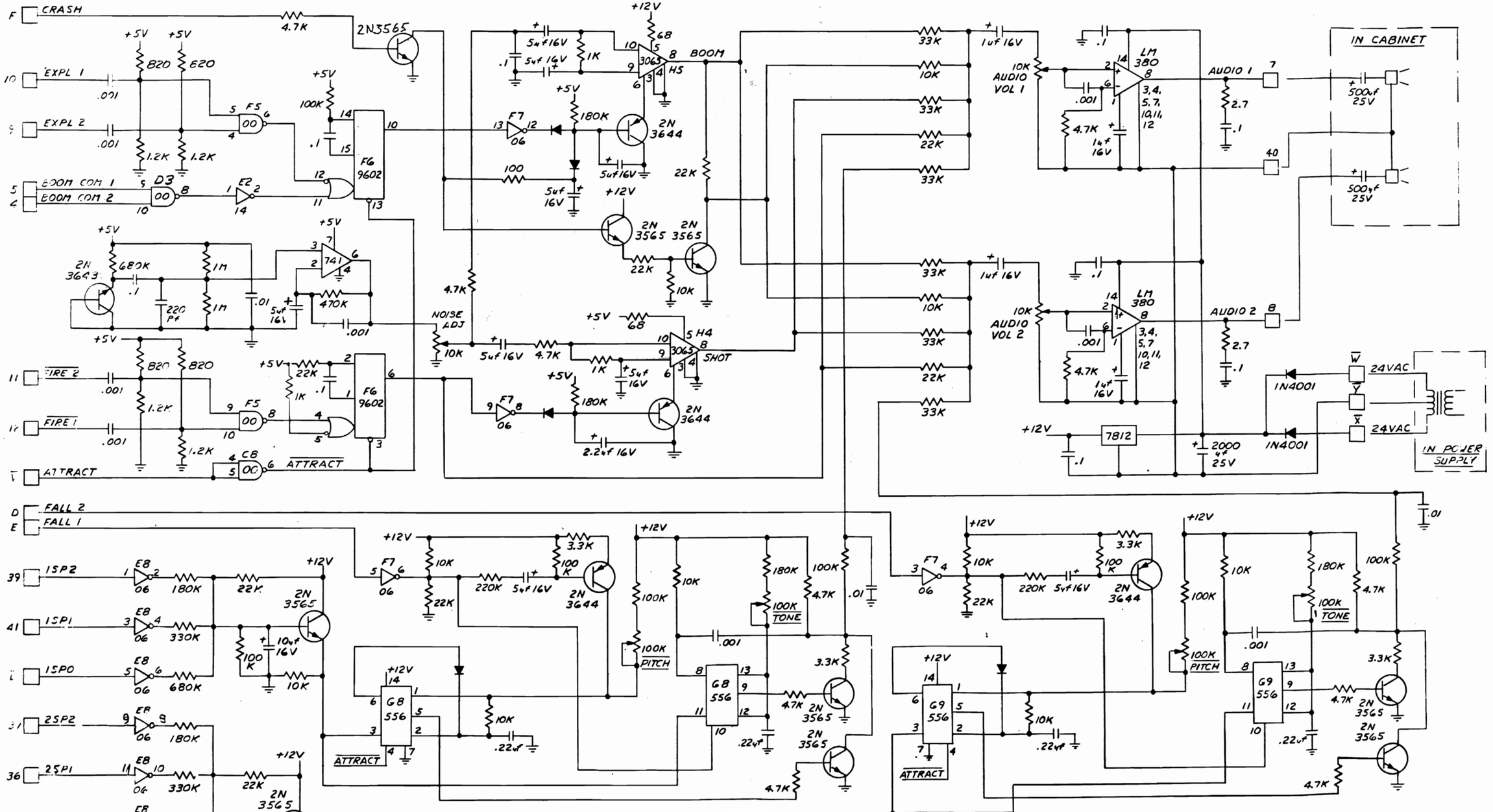
NEXT ASSY	USED ON
APPLICATION	

SIZE	CODE IDENT NO.	DRAWING NO.
D		

SCALE

SHEET / OF /

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



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.	NOMENCLATURE OR DESCRIPTION

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

NEXT ASSY | USED ON

APPLICATION

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN	10-1-75
CHECKED RK	10-22-75

FUN GAMES INC
OAKLAND CALIF

SCHEMATIC
SYNC BOARD
BI-PLANE

SIZE D | CODE IDENT NO. | DRAWING NO. 202 | A

SCALE — | SHEET 1 OF 3

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

16H 1 A6 3
16V 2

8H 4 A3 6
4V 5

RV 10 A3 8
1H 9

+5V
FLASH 4 A6 6
5

2V 12 A3 11
2H 13

128H 1 E5 3
2

32H 4 E5 6
32V 5

12EV 9 E5 8
64V 10

1 12 9 11 E6
7493
14
2 3

8 B6 10
9

12 A6 11
13

10 A6 8
9

11 B6 13
12

220pf

10 E4
12
13 20 8
9

3 E2 4
14

PLAYFIELD

11 C4
10 10 8
9

8 D5 10
9 02

13 C4
1 10 12
2

11 C6 13
02
12

BLACK BURSTS

WHITE BURSTS

2
1
4 E4 20 6
5

11
00 F5
12 13

1 F5
00 3
2

256V 13 E7
64V 2 10 12
VINFO 1

11 E7
10 10 8
9

5 E7
4 10 6
3

256V 1 D8
HSYNC 5
64V 4 20 6
128V 2

SKY

9
10 B8
512V 12 25 8
13

13 C8 11
12 00

452H 6 D5 4
5 02

9 D6 8
10 00

VINFO

+5V

560 560 560

.1

VINFO 1
32V 13 D7 12
256H 2 10

100pf

5 D7
4 10 6
3

100pf

32H 5 D10
4 08 6

+5V
820
1.2K 820
1.2K

10 D7
11 10 8
9

HINFO

5 4
00 D6
6

13 D8
12
10 20 8
9

12 D6
00 11
13

COMP SYNC

1K

1 D4
2
4 20 6
5

VIDEO OUT 5

1K

10uf 16V

VIDEO PROBE INPUT
TO THIS POINT

1K

1 D3 3
00
2

5
2 T3
1 25 6
4 B8

2 D5
3 02 1

PLAYFIELD 26

42 GNE
43 FLASH

P PLANE 1

R SHELL 2
B BLAST 2
35 PLANE 2

24 SHELL 1
25 BLAST 1

7 9
31 2⁰ 11
32 2¹ 12
33 2² 13
34 2³ 14
N 2⁴ 3
M 2⁵ 4
L 2⁶ 5
K 2⁷ 6

A8
74165
1
2 4H
10
15

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

NEXT ASSY | USED ON

APPLICATION

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN	9-29-25
CHECKED RE	10-22-26

FUN GAMES INC
OAKLAND CALIF

SCHEMATIC
SYNC BOARD
BI-PLANE

SIZE	CODE IDENT NO.	DRAWING NO.	
D		202	A

SCALE | SHEET 2 OF 3

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

60Hz ØLCK

+5V

10K

2.2µf 20V

E2 E3 107

D3 00

F3 4016

270

100

180

F2 4024

100 pf

14.3 MHz

100µf 16V

E2

MOT CLK 14

VLDEN

A1 A2 161 CET CEP TC PE

B2 20

B3 74

HRST B

B1 107

256H

452H

D4 20

D5 02

C4 ,0

C5 00

C3 74

B2 20

4H

8H

C2 107

COUNT INIT 22

1H 16
2H K
4H L
8H 18
16H 19
32H H
64H J
128H 20
256H 17
452H 6
452H

HCOUNT 15
HINFO 21

512V

CB

D10 08

S1

D1 10

D2 02

C1 00

C7 00

VINFO 6

B7 02

VLD2 D
VLD2 C
LDH2B 29
LDH2A J
LDH1A 30
LDH1B H
VLD1 B
VLD1 F

E A0 A1 AB 9321

100pf

220pf

820

F7 06

1K S1 50

1.2K

B5 02

C6 02

VLDEN

COMP SYNC

RES DIS X
OOB 23
VLDEN F
VRESET Y
VINFO A

1V T
2V N
4V M
8V W
16V Z
32V 27
64V V
128V 28
256V S

512V U

A4 A5 93

B4 107 256V 512V

1V 2V 4V 8V 16V 32V 64V 128V 256V 512V

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

NEXT ASSY | USED ON

APPLICATION

CONTRACT NO.

APPROVALS	DATE
DRAWN	10-2-75
CHECKED RE	10-22-75

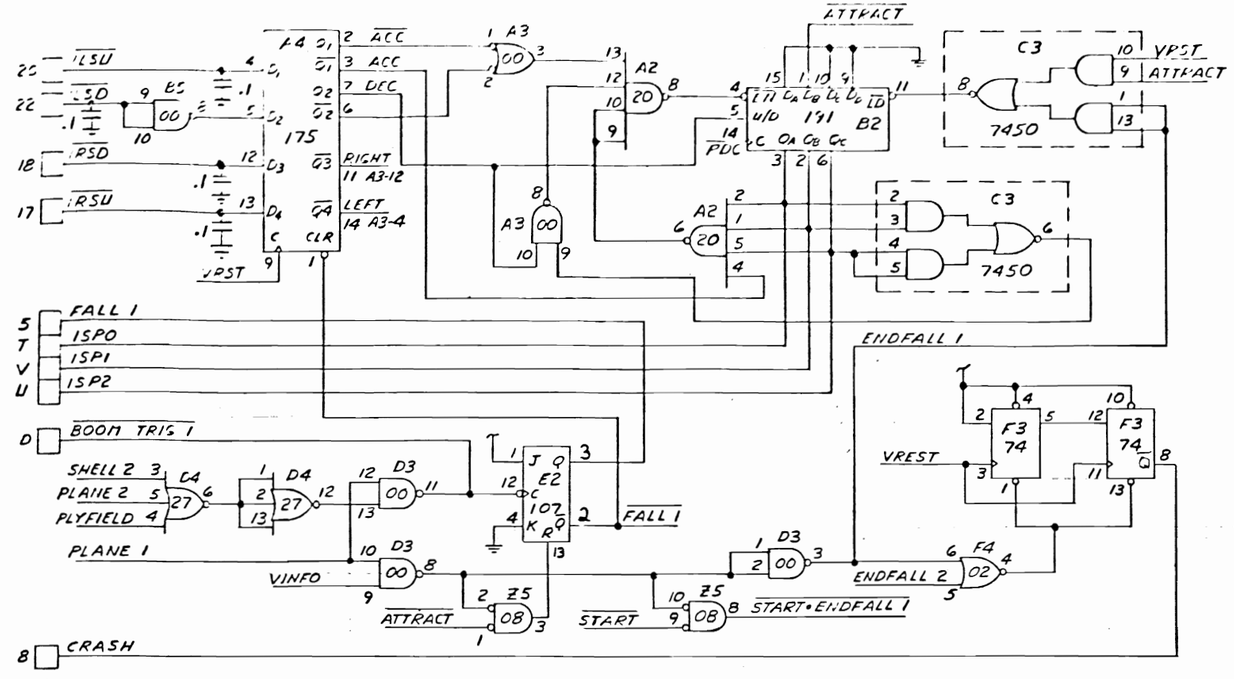
FUN GAMES INC
OAKLAND CALIF

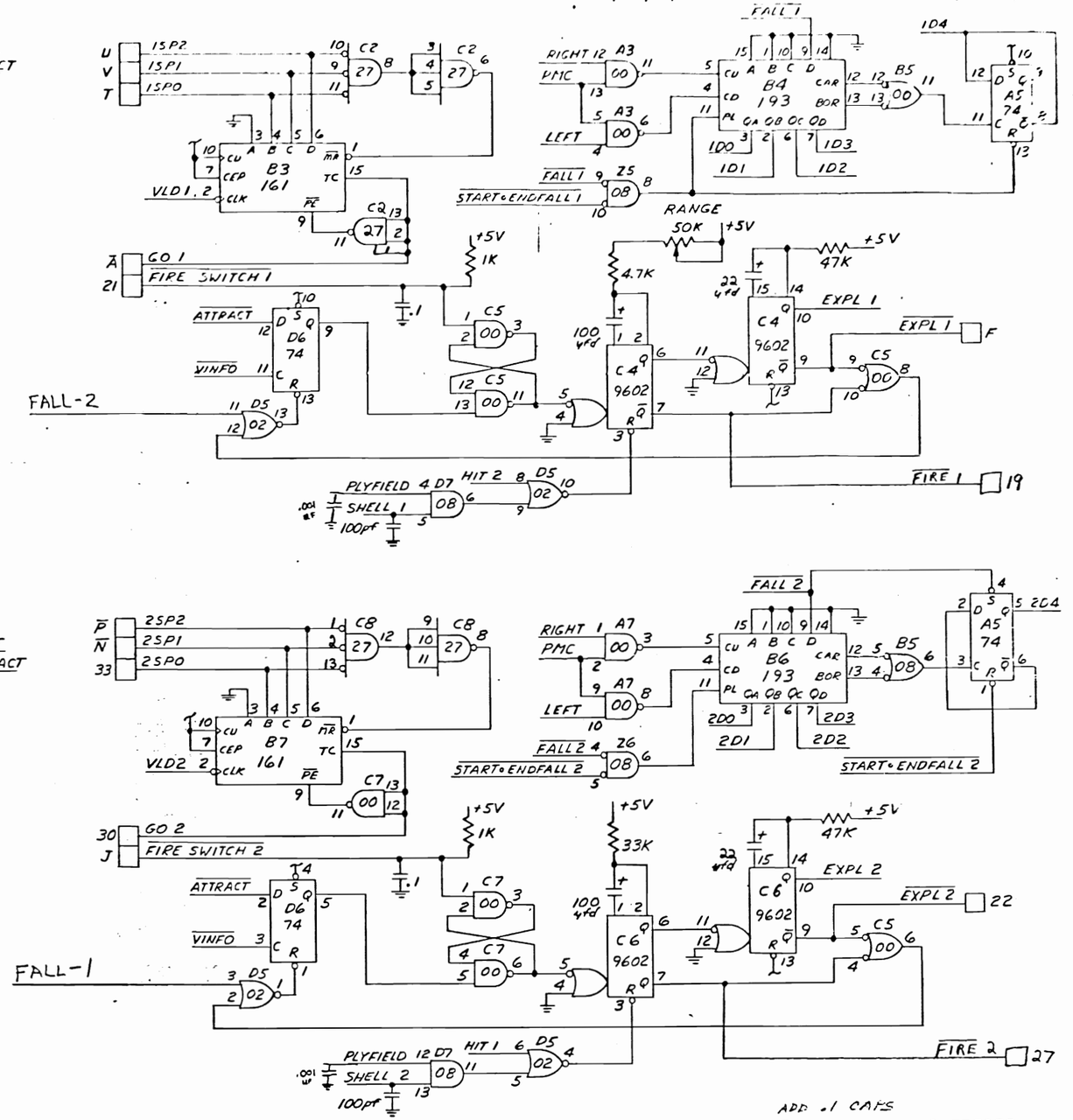
SCHEMATIC
SYNC BOARD
BI-PLANE

SIZE D | CODE IDENT NO. | DRAWING NO. 202 | 1

SCALE | SHEET 3 OF 3

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED





ADD .1 CAPS
UPDATE SCHEMATIC ERRORS

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

NEXT ASSY | USED ON
APPLICATION

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN TB	10-8-75
CHECKED RK	10-22-75

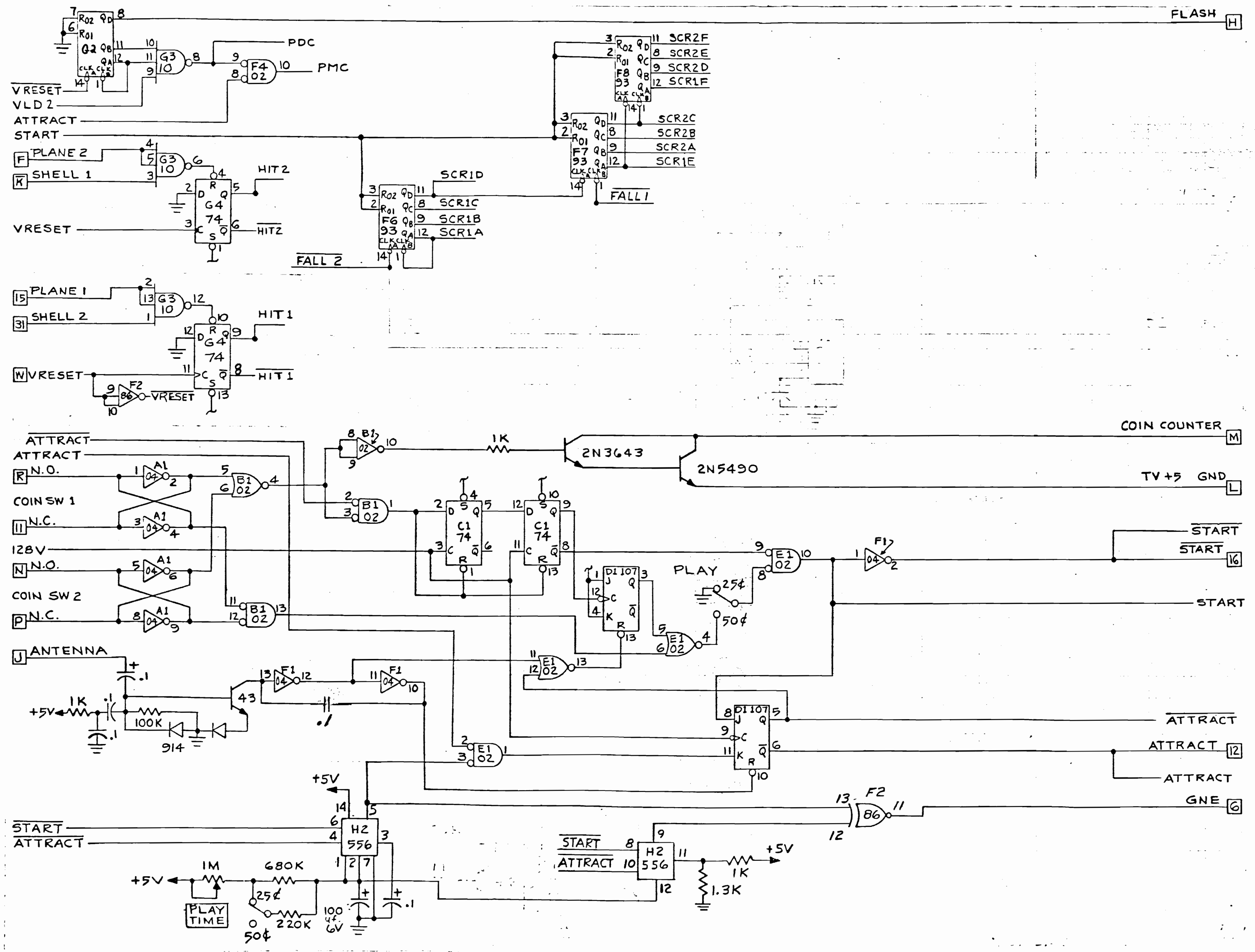
FUN GAMES INC
OAKLAND CALIF

SCHEMATIC
MEMORY BOARD
BI PLANE

SIZE D | CODE IDENT NO. | DRAWING NO. 204 | A

SCALE — | SHEET 1 OF 3

ZONE	LTR	REVISIONS DESCRIPTION	DATE	APPROVED



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

CONTRACT NO.

APPROVALS	DATE
DRAWN JB	10-8-75
CHECKED RK	10-?-75

FUJI GAMES INC
OAKLAND CALIF

SCHEMATIC
MEMORY BOARD
BI-PLANE

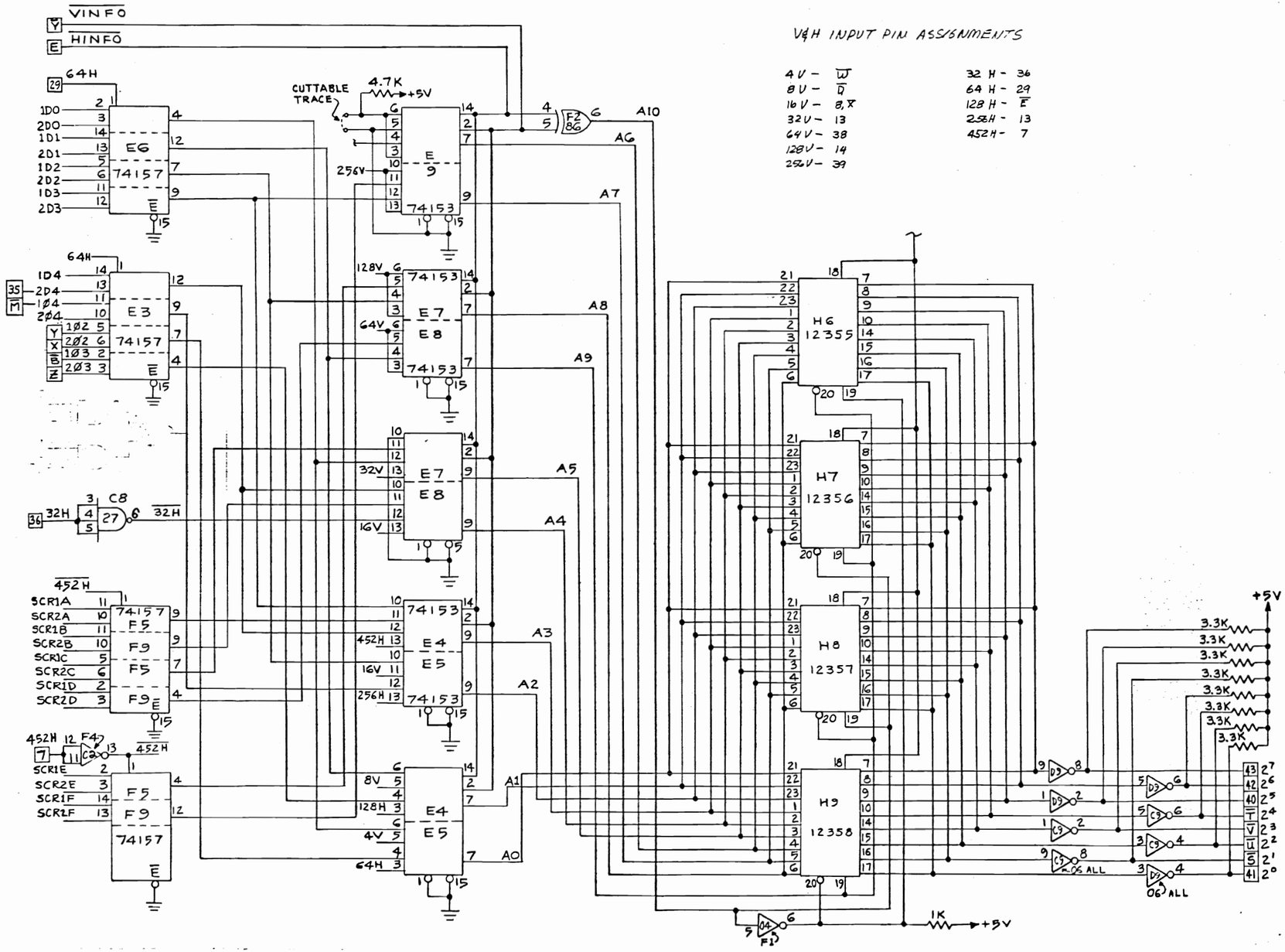
SIZE D | CODE IDENT NO. | DRAWING NO. 204 | A

SCALE | SHEET 2 OF 3

NEXT ASSY | USED ON
APPLICATION

DO NOT SCALE DRAWING

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

CONTRACT NO.

APPROVALS	DATE
DRAWN	
CHECKED RF	10-11-71

MATERIAL

FINISH

NEXT ASSY | USED ON

APPLICATION

DO NOT SCALE DRAWING

FUN GAMES INC
OAKLAND CALIF

SCHEMATIC
MEMORY BOARD
BI-PLANE

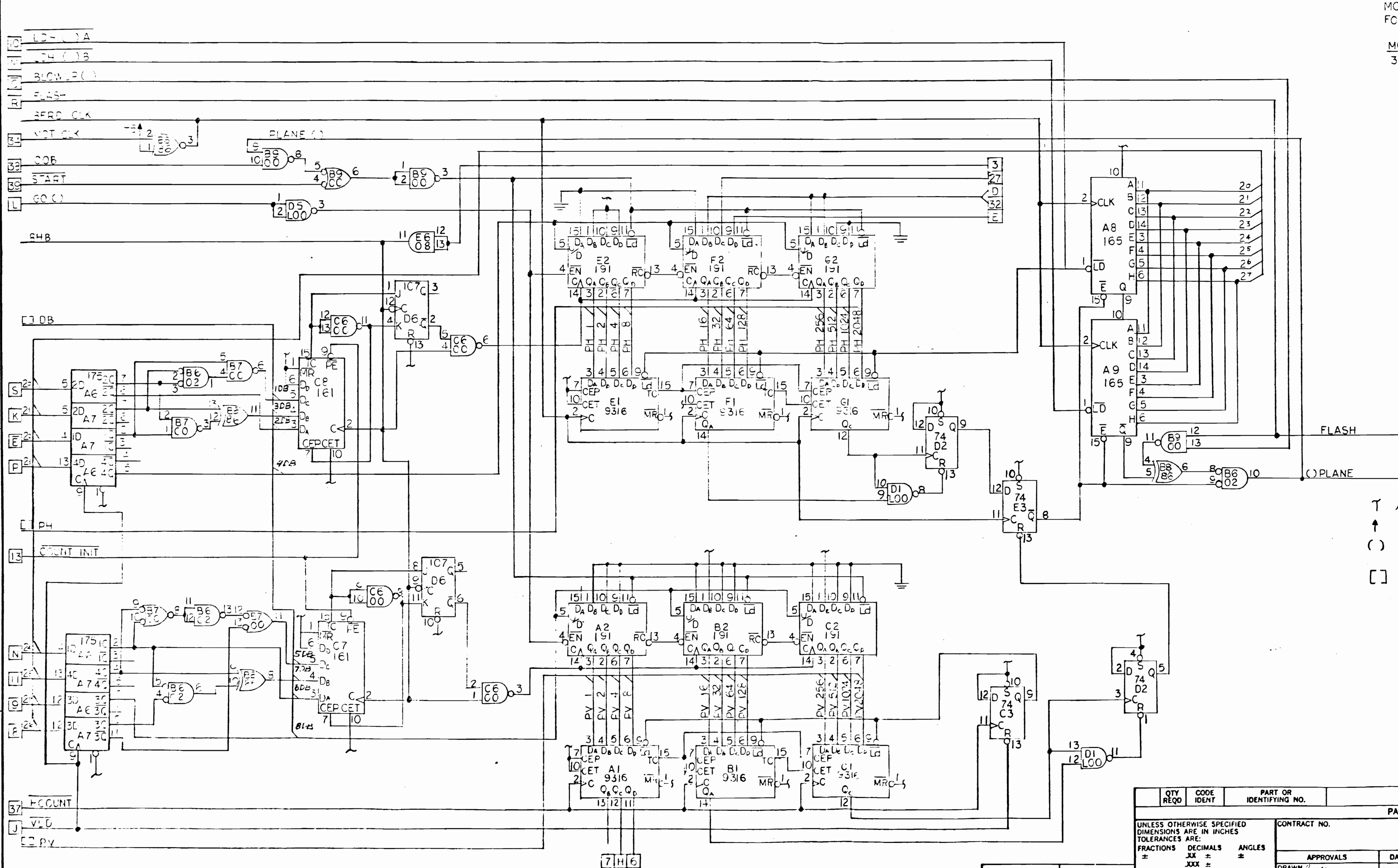
SIZE	CODE IDENT NO.	DRAWING NO.	
D		204	A

SCALE | SHEET 3 OF 3

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED

MOTHER BOARD CONNECTIONS FOR MOTION 1 / MOTION 2

MOTION 1	MOTION 2
32 — GND	27 — GND



SYMBOLS

⊤	INDICATES	PULL UP TO +5 THRU 1K RES
↑	"	+5
( )	"	1 FOR BOARD ONE 2 FOR BOARD TWO
[ ]	"	ALL SIGNALS OF SIMILAR NAME

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

CONTRACT NO.

APPROVALS	DATE
DRAWN Patty	9-11-76
CHECKED	

FUN GAMES INC. OAKLAND CALIF

SCHEMATIC MOTION BOARD BI-PLANE

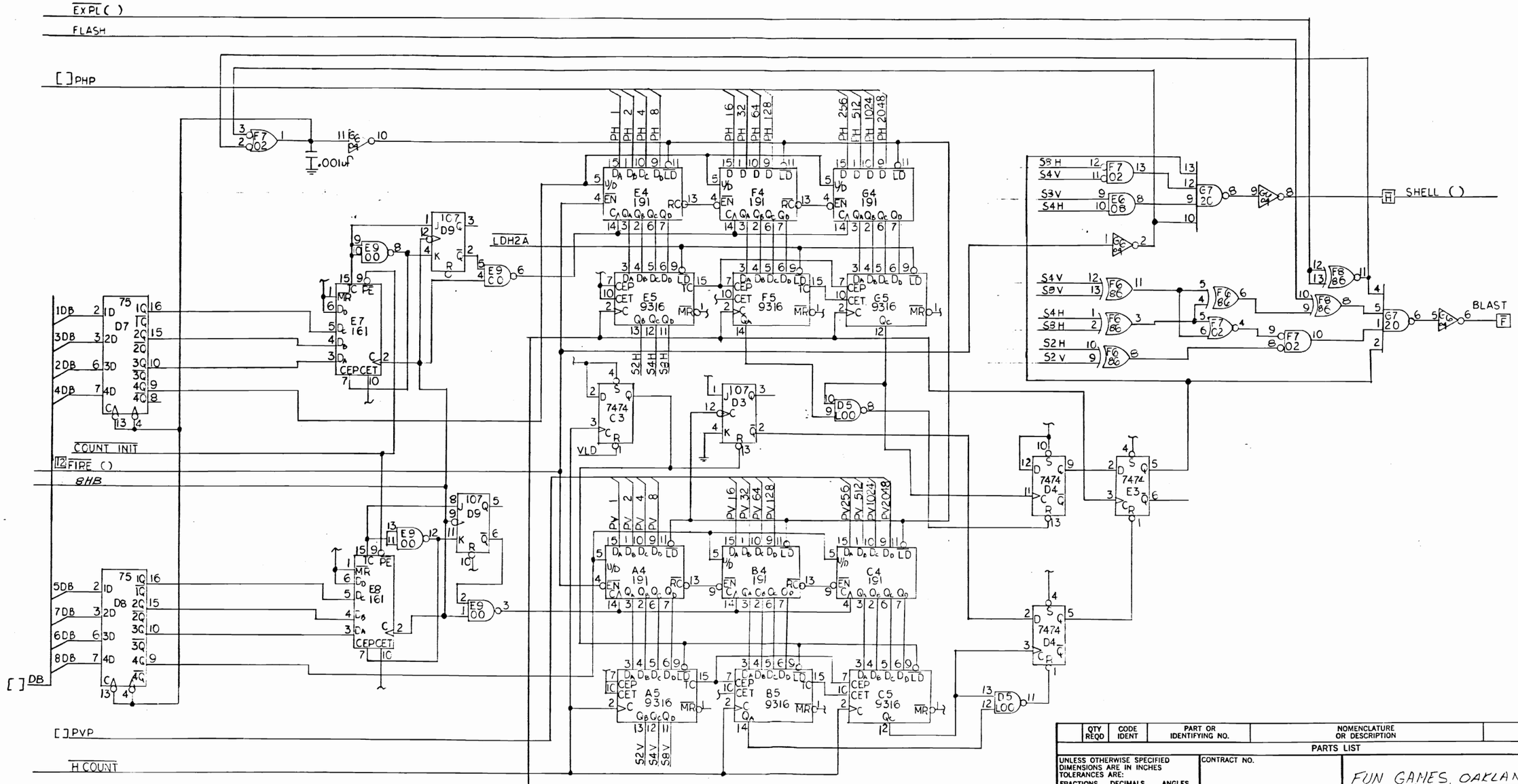
SIZE D | CODE IDENT NO. | DRAWING NO. 205

SCALE | SHEET 1 OF

NEXT ASSY	USED ON
APPLICATION	

DO NOT SCALE DRAWING

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
			PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN Sally	2-11-76
CHECKED	

FUN GAMES, OAKLAND CALIF
SCHEMATIC
MOTION BOARD
BI- PLANE

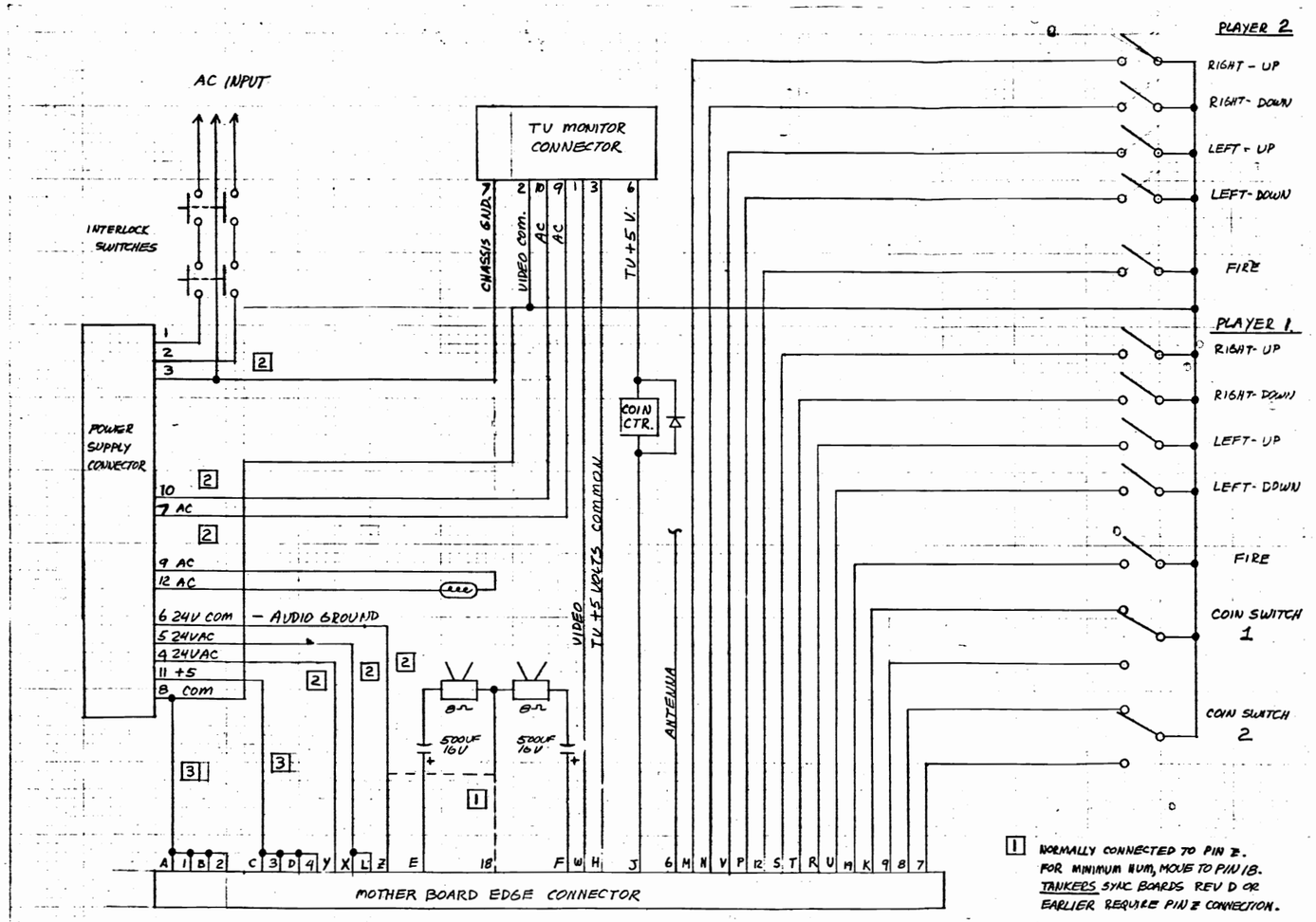
SIZE D | CODE IDENT NO. | DRAWING NO. 205

SCALE | SHEET 2 OF 2

NEXT ASSY	USED ON
APPLICATION	

BISHOP GRAPHICS / ACCUPRESS RECORDER NO. 20306

REVISIONS				
ZONE	LTR	DESCRIPTION	DATE	APPROVED



1 NORMALLY CONNECTED TO PIN Z.
FOR MINIMUM HUM, MOVE TO PIN 18.
TANKERS SYNC BOARDS REV D OR EARLIER REQUIRE PIN Z CONNECTION.

2 18 GAUGE WIRE

3 14 GAUGE WIRE

2-11-76 RK

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± .XXX ± ANGLES ±

CONTRACT NO.

APPROVALS	DATE
DRAWN	
CHECKED	

MATERIAL

FINISH

DO NOT SCALE DRAWING

NEXT ASSY	USED ON
APPLICATION	

FUN GAMES INC
OAKLAND CALIF

CABINET INTERCONNECTIONS

SIZE	CODE IDENT NO.	DRAWING NO.
D		

SCALE

SHEET 1 OF 1

SIGNAL NAME	I/O CONN.	MEM	SYNC	MOT 1 ⚠	MOT 2 ⚠
GND	A, B, 1, 2 *	1, A	1, A	1, A	1 A
+5V	C, D, 3, 4 *	2, B	2, B	2, B	2, B
FALL 1		5 *	E	$\overline{C}$	
FALL 2		4 *	D		$\overline{C}$
GNE		6 *	42		
452H		7	6 *	20	20
CRASH		8	F		
256H		9	17 *	X	X
ATTRACT		12 *	$\overline{V}$		
COINSW1NC	K *	11			
32V		13	27 *	17	17
128V		14	28 *	16	16
TANK 1		15 *	P	$\overline{D}$ *	
$\overline{\text{START}}$		16 *	R	39	39
$\overline{\text{1RSU}}$	M *	17			
$\overline{\text{FIRE 1}}$		19 *	12	12	
$\overline{\text{1RSD}}$	N *	18			
$\overline{\text{1LSD}}$	P *	22			
$\overline{\text{FIRESW1}}$	12 *	21			
$\overline{\text{EXPL 2}}$		23	9 *		14
$\overline{\text{2LSU}}$	R *	28			
$\overline{\text{2RSU}}$	S *	26			
$\overline{\text{FIRE 2}}$		27 *	11		12
$\overline{\text{2RSD}}$	T *	$\overline{H}$			
$\overline{\text{2LSD}}$	U *	24			
GO 2		30 *			L
SHELL 2		31	$\overline{R}$		$\overline{H}$ *
VLD 2		32	$\overline{C}$ *		
2SPO		33 *	$\overline{T}$		
101		35		6 *	
32H		36	H *	22	22
64V		38	V *	T	T
256V		39	S *	15	15

* SIGNAL ORIGIN

⚠ ADDITIONAL M.B. CONNECTIONS TO MOTION BDS.

MOTION 1	MOTION 2
$\overline{N}$ - $\overline{R}$	$\overline{N}$ - 29
$\overline{P}$ - 36	$\overline{P}$ - $\overline{U}$
32 - GND	32 - $\overline{M}$
27 - $\overline{M}$	27 - GND

BIPLANE MOTHER BOARD INTERCONNECTIONS
FUN GAMES INC
OAKLAND CALIF
SH 1 of 3

SIGNAL NAME	I/O CONN	MEM	SYNC	MOT 1	MOT 2
2^5		40 *	$\overline{M}$	11	11
2^0		41 *	31	S	S
2^6		42 *	$\overline{L}$	8	8
2^7		43 *	$\overline{K}$	9	9
2H			K *	24	24
4H			L *	$\overline{A}$	$\overline{A}$
2V			N *	19	19
1V			T *	W	W
$\overline{RESDIS}$			X *	30	30
$\overline{VLD2}$			$\overline{D}$ *		J
BOOM COM 2		C	4 *		
BOOM COM 1		D	5 *		
$\overline{HINFO}$		E	21 *		
TANK 2		F	35		$\overline{D}$ *
FLASH		H *	43	R	R
TV+SGND	H	L *			
CNCTR	J *	M			
CNSW2ND	7 *	N			
CNSW2NC	8 *	P			
CNSW1NO	9 *	R			
1SP0		T *	$\overline{U}$		
1SP2		U *	39		
1SP1		V *	41		
VRESET		W	Y *		
2Ø2		X *			7
1Ø2		Y *		7	
2Ø3		Z *			H
GO1		$\overline{A}$ *		L	
1Ø3		$\overline{B}$		H	
VLD1		$\overline{C}$	$\overline{B}$ *		
8Y		$\overline{D}$ *	W	18	18
128H		$\overline{E}$ *	20	21	21
$\overline{EXPL1}$		$\overline{F}$	10 *	14	
$\overline{1LSU}$	V *	20			
$\overline{FIRESW2}$	19 *	$\overline{J}$			
SHELL 1		$\overline{K}$	24	$\overline{H}$ *	
2Ø4		$\overline{M}$			6 *

BIRANE

SIGNAL NAME	I/O CONN	MBM	SYNC	MOT 1	MOT 2
2SP1		$\overline{N}$ *	36		
2SP2		$\overline{P}$ *	37		
PLAYFIELD		$\overline{R}$	26 *		
2^1		$\overline{S}$ *	32	K	K
2^4		$\overline{T}$ *	$\overline{N}$	N	N
2^2		$\overline{U}$ *	33	$\overline{E}$	$\overline{E}$
2^3		$\overline{V}$ *	34	P	P
4V		$\overline{W}$ *	M *	V	V
16V		$\overline{X}$	$\overline{Z}$ *	U	U
$\overline{\text{VINFO}}$		$\overline{Y}$	$\overline{A}$ *		
$\overline{\text{VLD1}}$			$\overline{E}$ *	J	
$\overline{\text{VLDEN}}$			$\overline{F}$ *	$\overline{T}$	$\overline{T}$
$\overline{\text{LDH1B}}$			$\overline{H}$ *	M	
$\overline{\text{LDH2A}}$			$\overline{J}$ *		10
BLAST 2			$\overline{P}$ *		$\overline{F}$
VIDEO OUT	W		$\overline{S}$ *		
24VAC	X *		$\overline{W}$		
24VAC	Y *		$\overline{X}$		
24V CENTER TAP	Z		$\overline{Y}$ *		
AUDIO 1	F		7 *		
AUDIO 2	E		8 *		
60HZ Φ LCK	L *		13		
MOTION CLK			14 *	34, 35	34, 35
$\overline{\text{H COUNT}}$			15 *	37	37
1H			16 *	$\overline{B}$	$\overline{B}$
8H			18 *	23	23
16H			19 *	Z	Z
$\overline{\text{COUNTINIT}}$			22 *	13	13
OOB			23 *	38	38
BLAST 1			25 *	F	
$\overline{\text{LDH2B}}$			29 *		M
$\overline{\text{LDH1A}}$			30 *	10	
64H		29	J *	Y	Y
ANTENNA	6 *	J			
AUDIO GROUND	18 *		40		
512V			U	$\overline{K}$	$\overline{K}$

BIPLANE