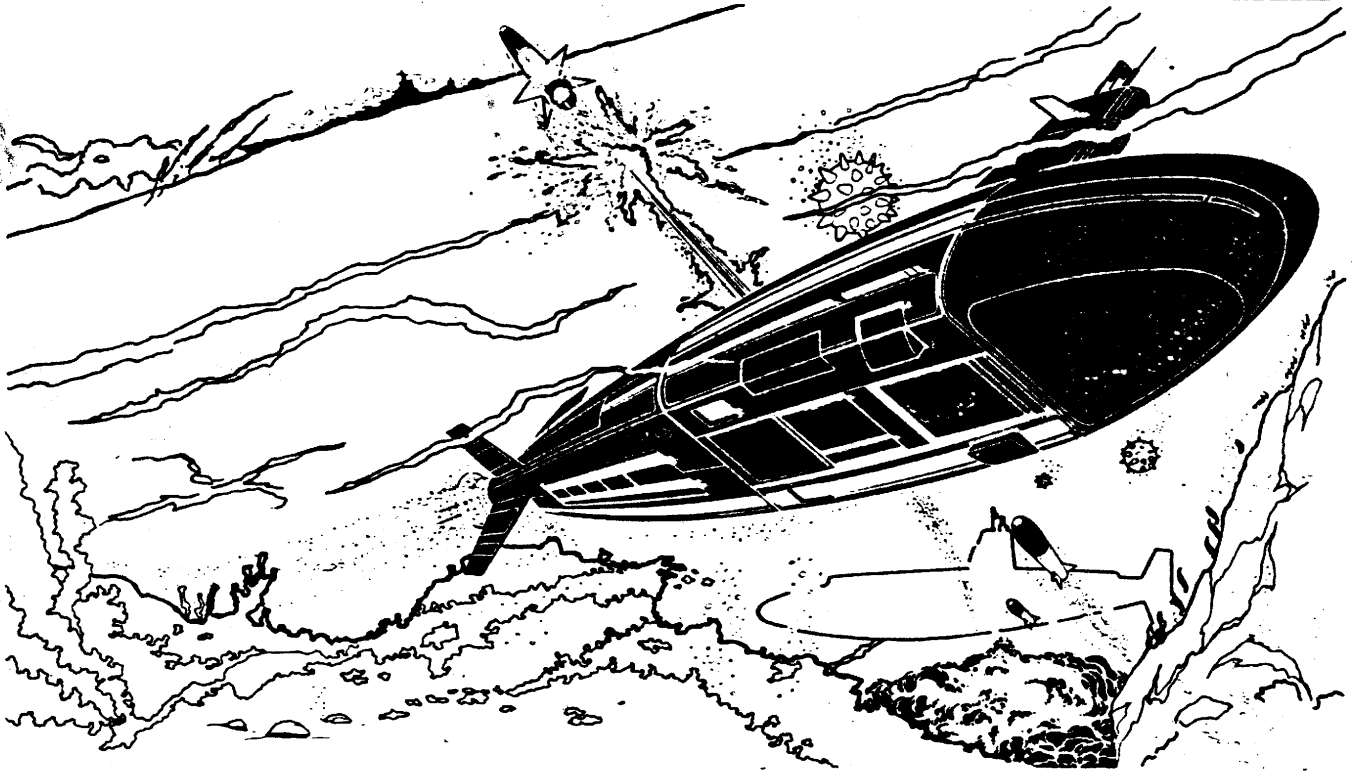


# POLARIS™

## COLOR







### SERVICE INSTRUCTIONS AND PARTS CATALOG



### TAITO CORPORATION

## 5. Play Instructions

- o Insert coin(s).
- o Select game 1 or 2 players.
- o Shoot jet planes  , frigates  , enemy subs  , and airplanes  for points, while avoiding enemy attack.
- o Scoring:



??? Pts.



??? Pts.



100 Pts.



50 Pts.



30 Pts.



10 Pts.

- o In a two player game, play alternates between the two after each missing.

### Additional Information:

- o Homing missiles and mines cannot be destroyed.
- o When a anti-sub airplane is hit, some mystery points (500, 1000, 1500, or 2000 points) are scored.
- o When an enemy sub is hit, some mystery points (300, 500, 700, or 900 points) are scored.
- o When score exceeds 5,000 points, one sub is added with music.
- o As the frame progresses, the bonus points increase from 1,000 to 9,000 points.
- o Game is over when all of player8s subs have been destroyed.

## 6. Adjustments on Switching Regulator PC Board

(See Fig. 3)

Caution: The line voltages should be set within the limit.

Failure to do so may result in destruction of the IC's.

o To check the output voltage, measure them on the G-connector or the T-connector.

(See the cable block diagram, in this manual.)

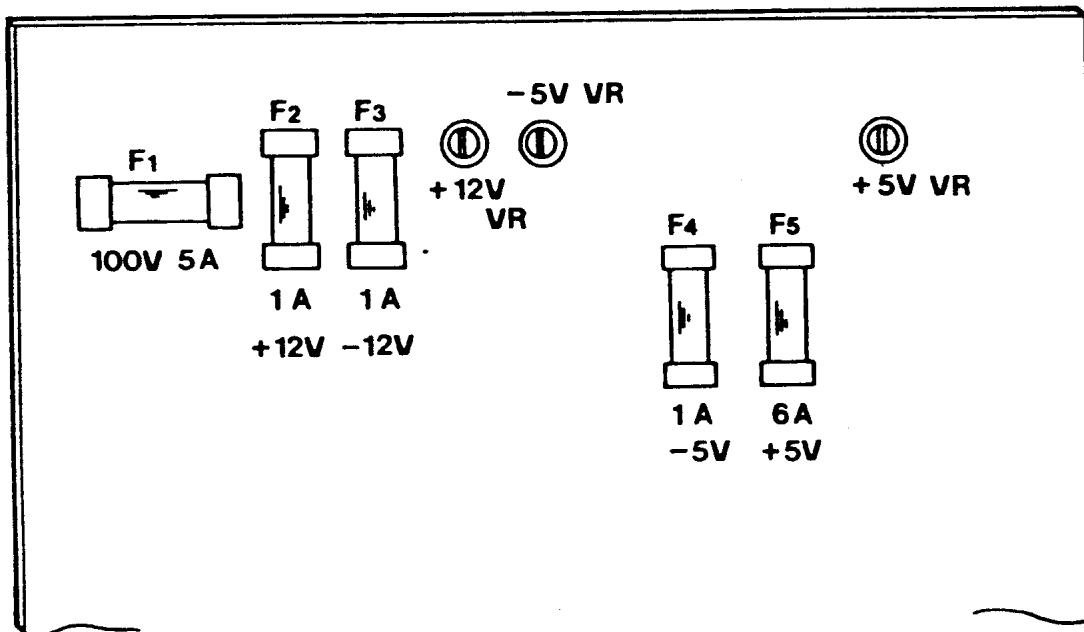


Fig. 3

- o +5V VR ... Pot for adjusting +5V DC line voltage  
(Adjustable range: +4.5V to +5.5V DC)  
Set approx. +5V.
- o -5V VR ... Pot for adjusting -5V DC line voltage  
(Adjustable range: -5.5V to -4.5V DC.)  
Set approx. -5V.  
When the +5V line has no load, this -5V  
voltage is not present on the line.
- o +12V VR .. Pot for adjusting +12V DC line voltage  
(Adjustable range: +10.3V to +13.2V DC)  
Set approx. +12V.

7. Adjustments on Game PCB (See Fig. 4 and Table 1 - 3)

- o To decrease the sounds turn each pot as shown by the arrowhead.

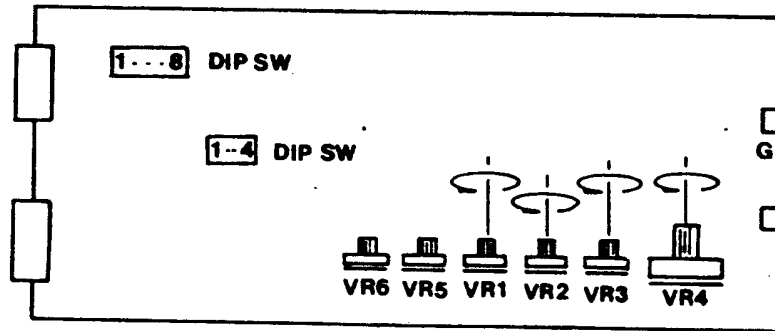


Fig. 4

- \* VR1 ... Pot for adjusting the effective sounds; firing sounds, anti-sub airplane nose diving sounds, bomb hit sounds, jet plane hit sounds, and frigate hit sounds.
- \* VR2 ... Pot for adjusting frigate appearing sounds and enemy sub hit sounds.
- \* VR3 ... Pot for adjusting the music produced when bonus points are scored or an extended play is awarded.
- \* VR4 ... Pot for adjusting the total sounds.
- \* VR5, VR6 ... These pots are for adjusting the solid-state modules, which are for factory adjustments.

Setting of DIP Switches:

DIP SW1

- \* SW1, SW2 ... Switches for changing the number of player's subs (POLARIS)

Polaris	3	4	5	6
SW 1	ON	OFF	ON	OFF
SW 2	ON	ON	OFF	OFF

Table 1

This number is preset at "3" at the factory.

- o SW3 ... Switch for Game Style

SW 3	ON	Upright Version
	OFF	T T Version

Table 2

As this game is an upright version, this switch should be set at "ON" position.

- o SW4 ... Switch for checking game features

When this switch is set at "OFF" position, no hits are made if bombs hit player's sub.

Normally, this switch should be set at "ON" position.

- o SW5 ... Switch for demonstration sounds

Effective sounds for appealing to the customers can be produced. (Polaris sounds)

SW 5	ON	No sounds are produced.
	OFF	Sounds are produced.

Table 3

- o SW6,SW7 ... These switches are not used in this game, and should be set at "OFF" positions.

- o SW8 ... Switch for Preset Mode

When this switch is set at "OFF" position, the check can be mode. When checking, each switch should be set first. Normally this switch should be set at "ON" position.

1 PLAYER START SW ... 1P's points are increased by 50 points.

2 PLAYER START SW ... 2P'S points are increased by 50 points.

1 PLAYER UP SW ..... The levele becomes high.

1 PLAYER FIRE SW .... The game starts.

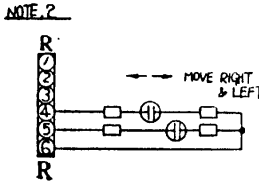
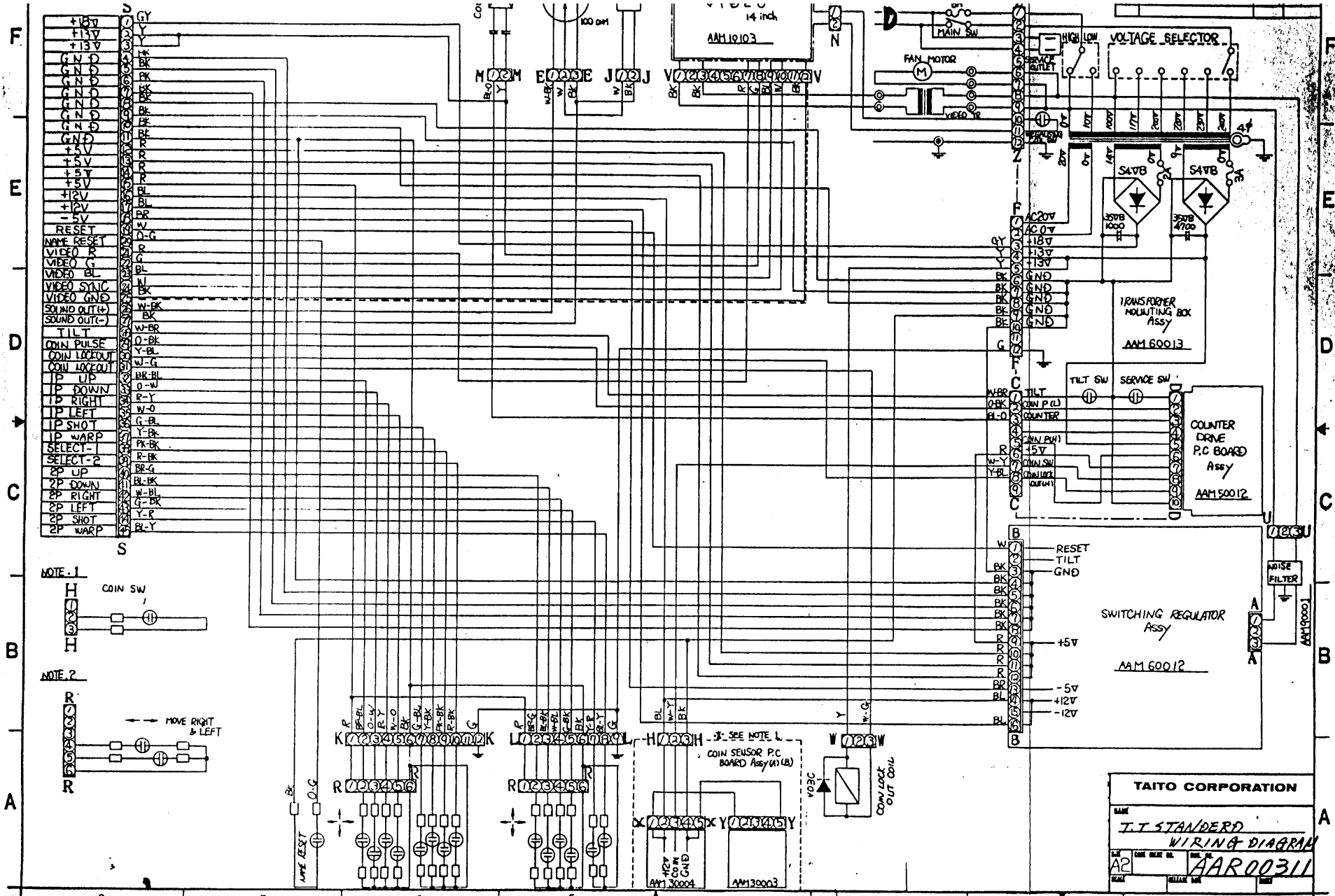
#### DIP SW2

- o SW1-SW3 ... These switches are not used and ahold be set "OFF" positions.

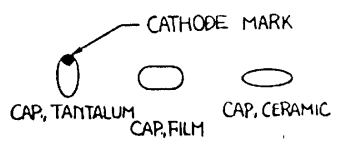
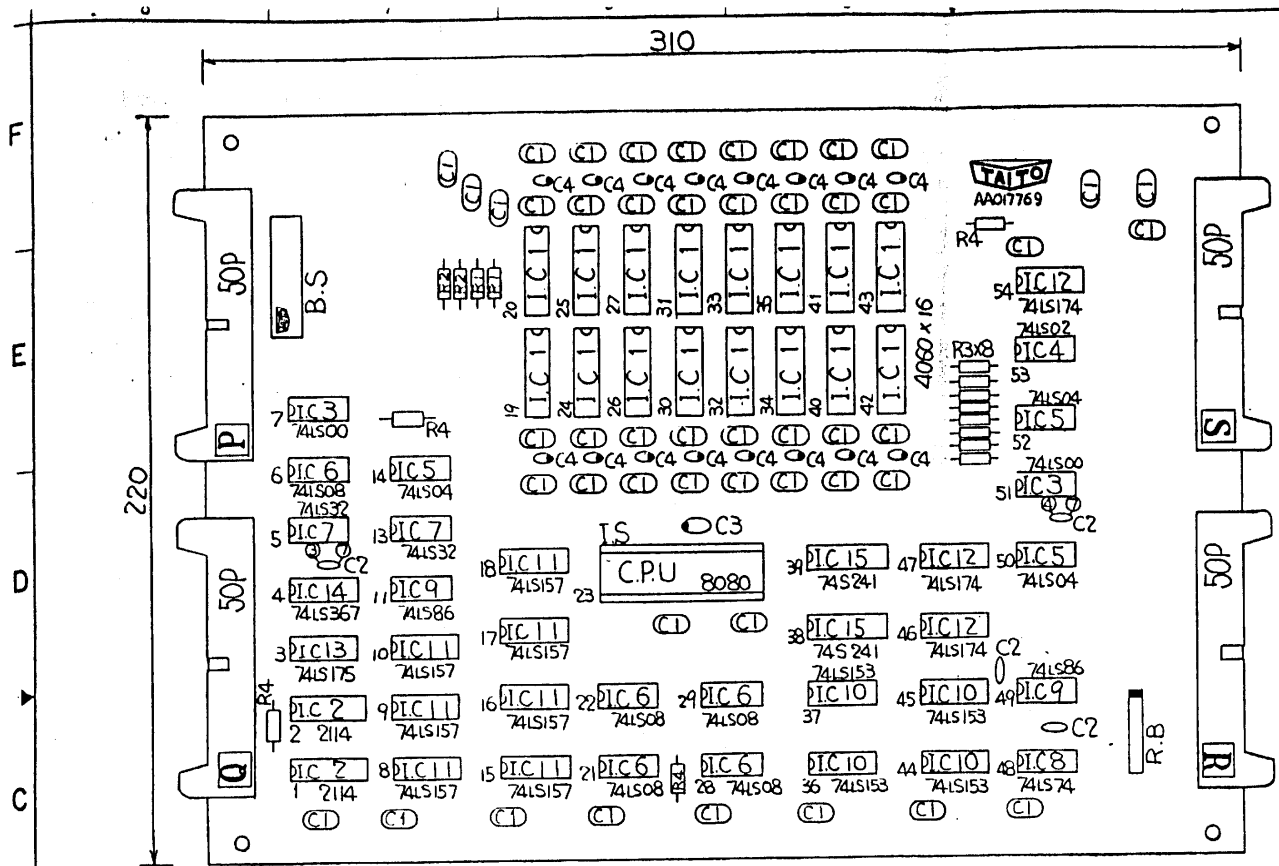
- o SW4 ... Switch for Screen Inversion

"ON" ... Inversion "OFF" ... No Inversion

Normally, this switch should be set at "OFF" position.



TAITO CORPORATION			
NAME	I.T. STANDARD		
	WIRING DIAGRAM		
REV.	CASE REVISION NO.	REV. NO.	DATE
A2		AAR00311	
SCALE	DRAWN BY	HECKED BY	



NOTE - 1. CAP.

NOTE - 2. RESISTOR BLOCK

REVISIONS			
LTG	DESCRIPTION	DATE	APPROVED

47						
46						
45						
44						
43						
42						
41						
40						
39						
38						
37						
36						
35						
34						
33	RB	AAT 55041	RESISTOR BLOCK	470ohm	8elements	1
32	R4	51765	RES. CARBON	1Kohm	1/4W 15%	4
31	R3	51763		330		8
30	R2	51745		150		2
29	R1	51729	RES. CARBON	330ohm	1/4W 15%	2
28	C4	41425	CAP. TANTALUM	SSG25	-1F	16
27	C3	41424	CAP. TANTALUM	SSG16	-22F	1
26	C2	41318	CAP. CERAMIC	50V	100PF	4
25	C1	41244	CAP. FILM	TDY-IH-104		49
24	IC5	35001	BUS DRIVER	74S241		2
23	CPU	34001	C.P.U.	TMS8080		1
22	IC4	33203	L.S. I.C.	74LS367		1
21	IC3	33128		74LS175		1
20	IC2	33127		74LS174		3
19	IC1	33112		74LS157		7
18	IC0	33108		74LS153		4
17	IC9	33062		74LS86		2
16	IC8	33051		74LS74		1
15	IC7	33027		74LS32		2
14	IC6	33009		74LS08		5
13	IC5	33005		74LS04		3
12	IC4	33003		74LS02		1
11	IC3	33001	L.S. I.C.	74LS00		2
10	IC2	32156	STATIC RAM	2114-4		2
9	IC1	32091	DYNAMIC RAM	TMS4060M		16
8	IS	AAO 55812	I.C. SOCKET	40P		1
7	SOP	55154	ANGLE PIN HEADER	PS-50PA		4
6	S	17652	CONNECTOR STICKER	S		1
5	R	17659		R		1
4	Q	17656		Q		1
3	P	AAO 17653	CONNECTOR STICKER	P		1
2	BS	RT0	P.C BOARD STICKER			1
1		AAO 17769	C.P.U. PC BOARD (B)			1

PARTS LIST

**TAITO CORPORATION**

NAME: T. T. SPACE CHASER

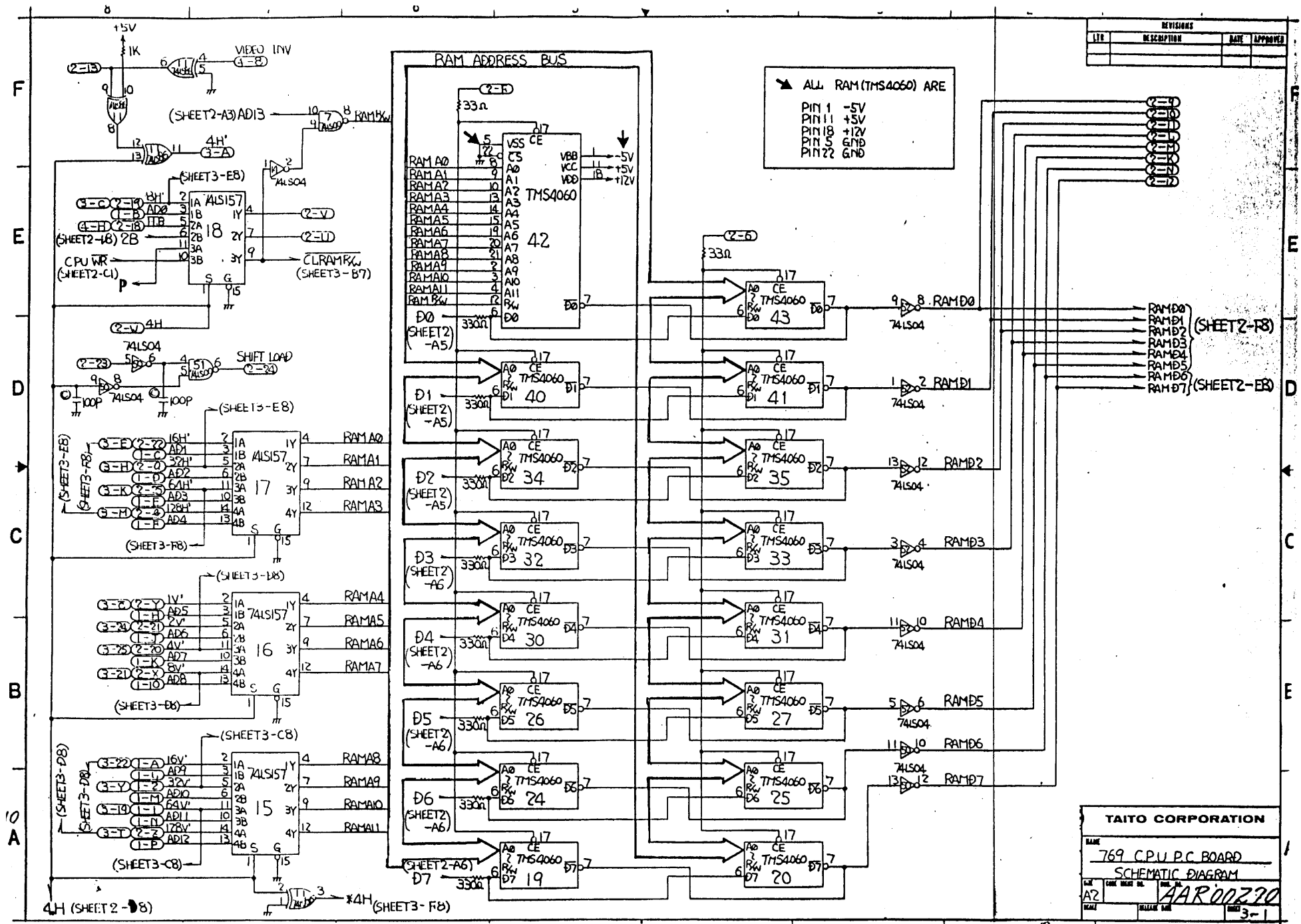
769-C.P.U. PC BOARD ASSY

REV. NO. RTN00005

DATE:    /    /

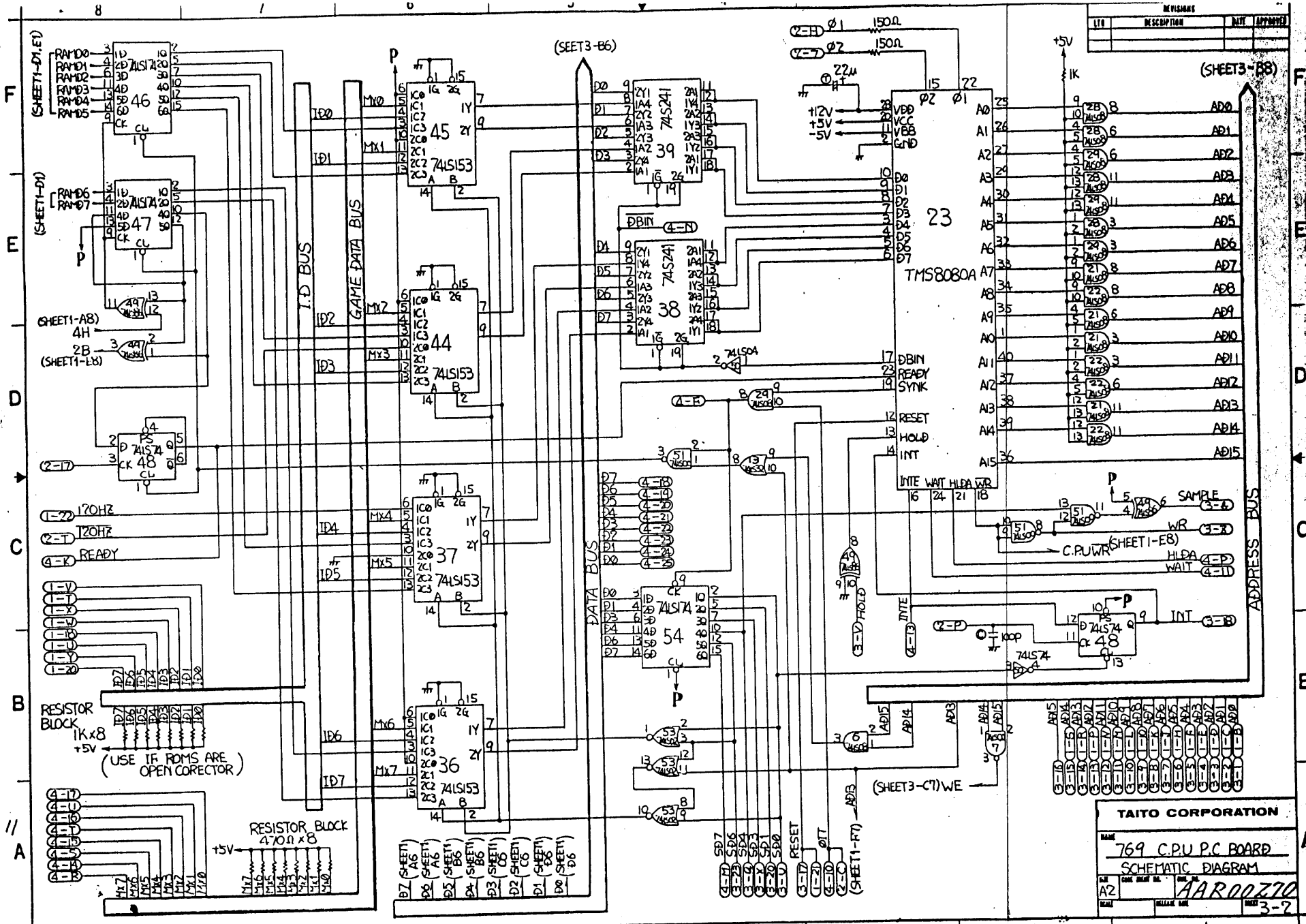
BY:    /    /

REVISIONS			
NO.	DESCRIPTION	DATE	APPROVED

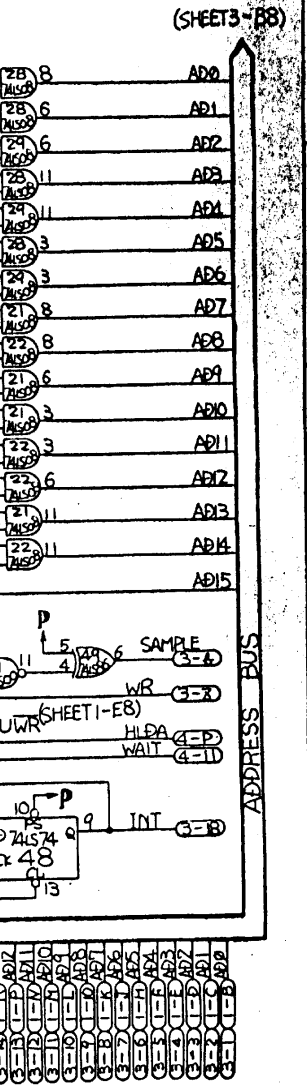


TAITO CORPORATION			
NAME	769 CPU P.C BOARD		
	SCHEMATIC DIAGRAM		
DATE	DATE	NO.	NO.
A2			AAR00220
SCALE	SCALE	NO.	NO.
		3-1	





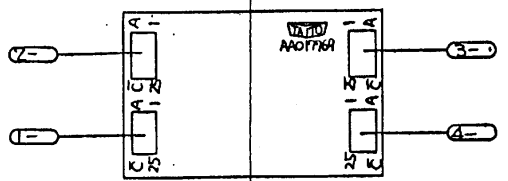
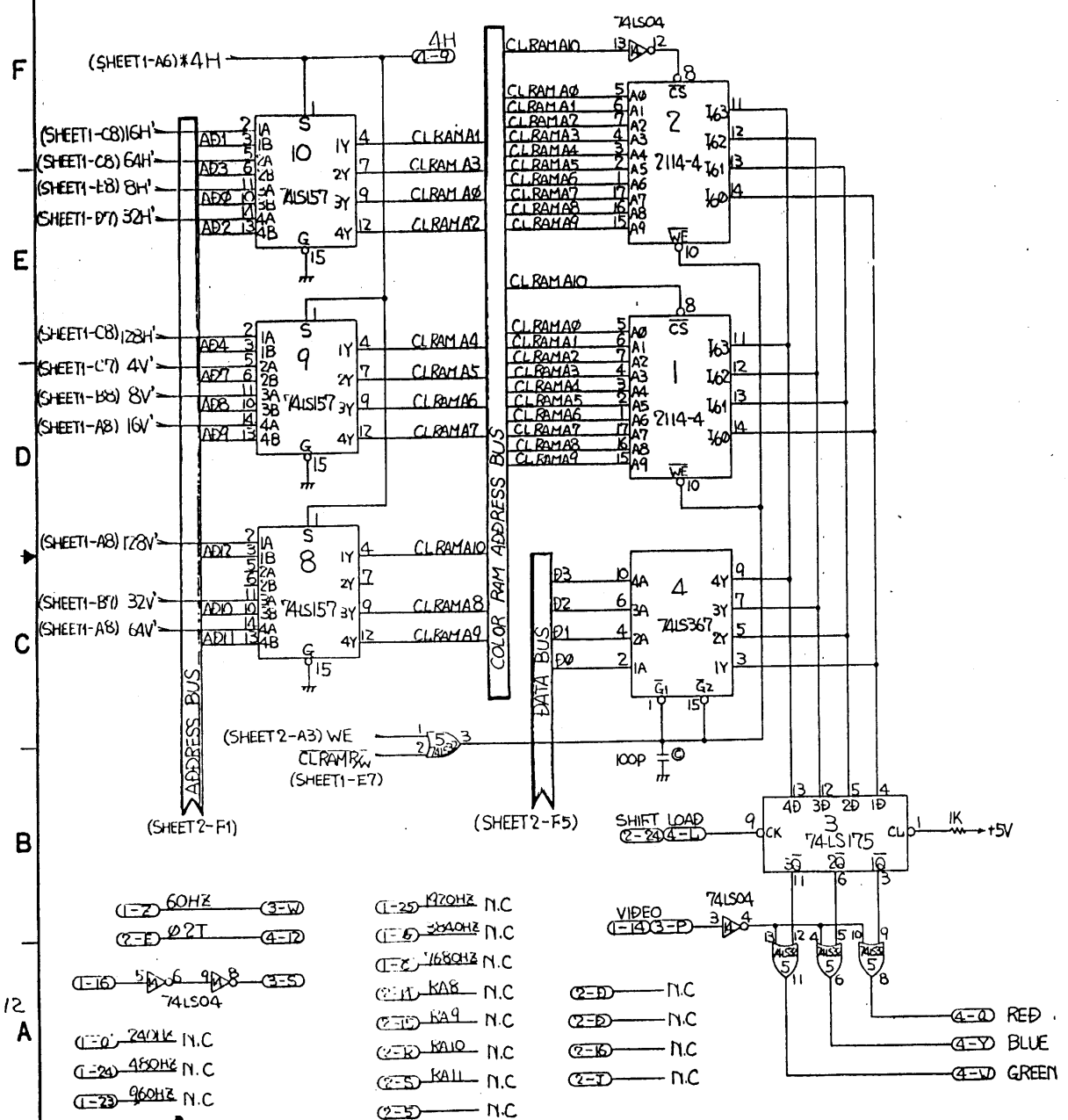
REVISIONS			
LT#	DESCRIPTION	DATE	APPROVED



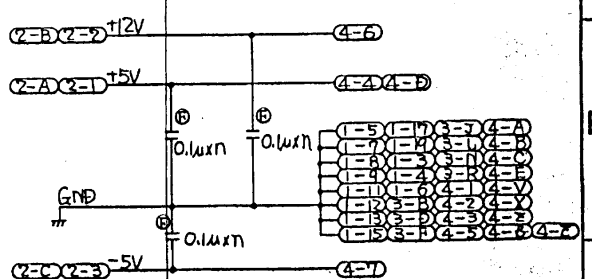
**TAITO CORPORATION**

DATE: 1982.08.14  
 769 CPU PC BOARD  
 SCHEMATIC DIAGRAM  
 A2  
 FILE NO. AAR00770  
 SHEET 3-7

REVISIONS			
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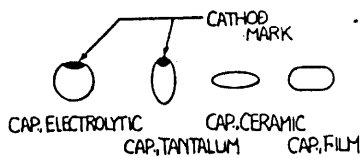
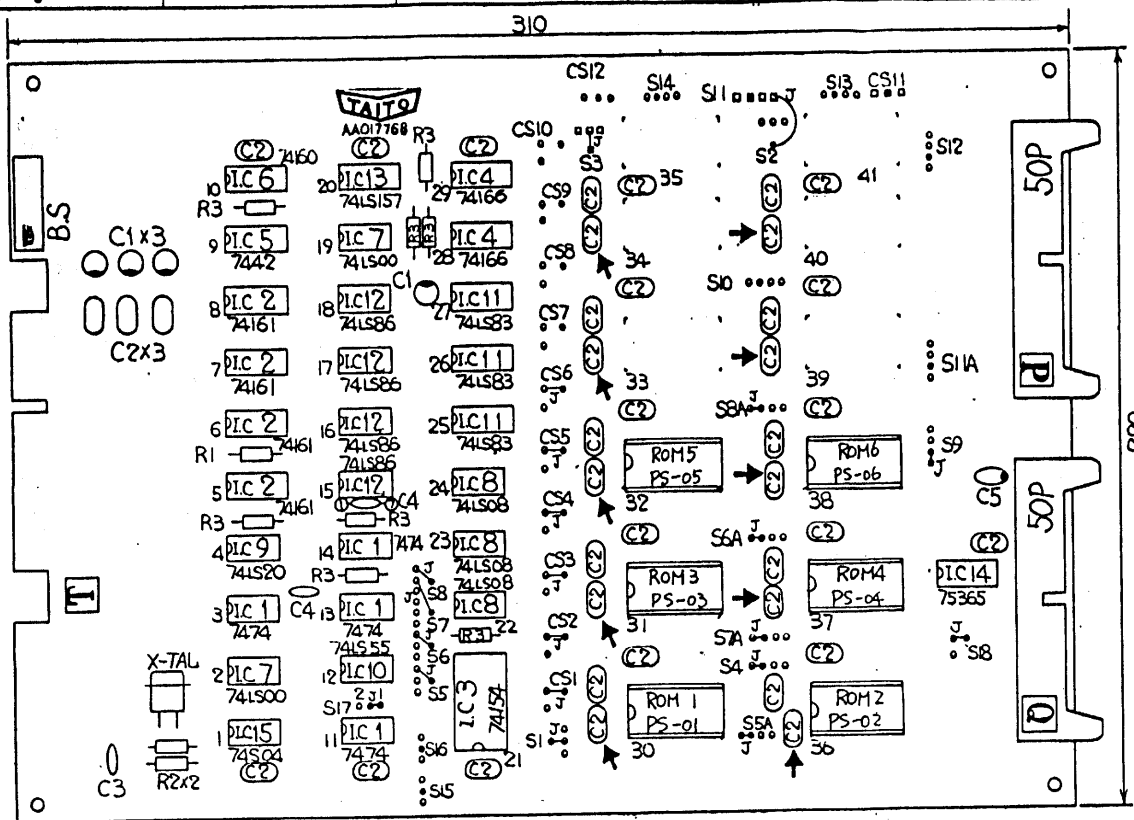


- ⊙ : CAP. TANTALUM
- ⊕ : CAP. FILM
- ⊙ : CAP. CERAMIC



TAITO CORPORATION			
NAME	769 - CPU PC BOARD		
DATE	SCHEMATIC DIAGRAM		
REV	DATE	BLK. NO.	REV.
A2			
DATE	REV.	REV.	REV.
			3-3

12  
A



NOTE-1. CAP.

NOTE-2. NOT USE THIS MARKED (X) CAPACITOR FOR 2716 & 2316B

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

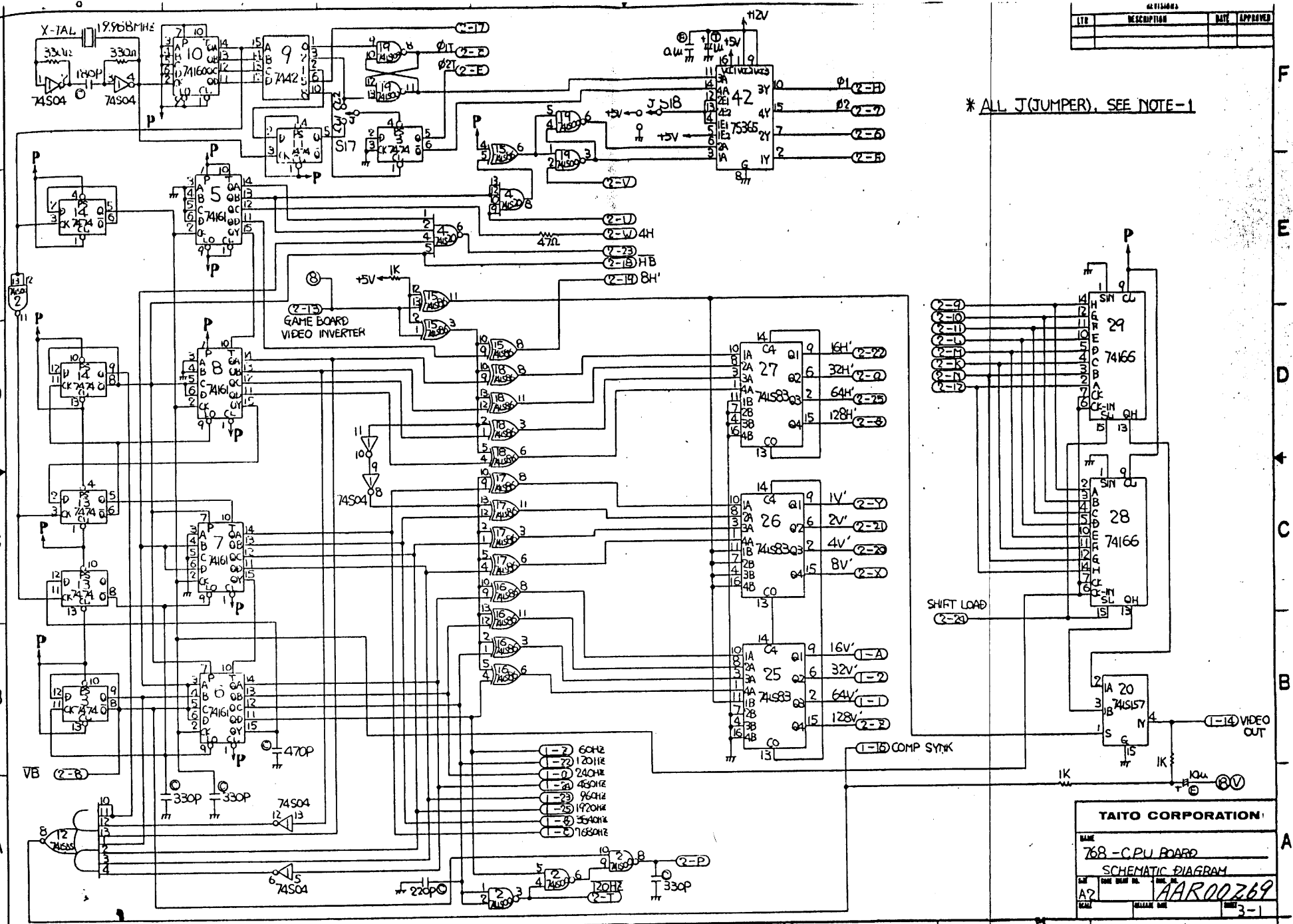
47					
46					
45					
44					
43					
42					
41					
40					
39					
38	ROM6	PS0 90006	P-ROM	PS-06 (2716)	1
37	ROM5	90005		PS-05	1
36	ROM4	90004		PS-04	1
35	ROM3	90003		PS-03	1
34	ROM2	90002		PS-02	1
33	ROM1	PS0 90001	P-ROM	PS-01 (2716)	1
32	R3	AAT 51765	RES. CARBON	1KOH 1/4W 5%	8
31	R2	51755		330	2
30	R1	51733	RES. CARBON	47OHM 1/4W 5%	1
29	C5	41436	CAP. TANTALUM	SSG 35-1F	1
28	C4	41334	CAP. CERAMIC	470PF	2
27	C3	41324	CAP. CERAMIC	180PF	1
26	C2	41244	CAP. FILM	TDY-1H-104	30
25	C1	41037	CAP. ELECTROLYTIC	25V-10uF	4
24	IC15	38003	S	I.C 74S04	1
23	IC14	35007	MOS DRIVER	75365	1
22	IC13	33112	L.S	I.C 74LS157	1
21	IC12	33067		74LS86	4
20	IC11	33059		74LS83	3
19	IC10	33043		74LS55	1
18	IC9	33019		74LS20	1
17	IC8	33009		74LS08	3
16	IC7	33001	L.S	I.C 74LS00	2
15	IC6	32086	TTL	I.C 74160	1
14	IC5	32039		7447	1
13	IC4	32028		74166	2
12	IC3	32027		74154	1
11	IC2	32018		74161	4
10	IC1	AAT 32011	TTL	I.C 7474	4
9	X-TAL	AAO 69539	X-TAL	19.968MHZ	1
8	J	62639	TINNED COPPER WIRE	0.5φ	250
7	IS1	55787	I.C SOCKET	24P	6
6	SOP	55134	ANGLE PIN HEADER	PS-50PA	2
5	T	17665	CONNECTOR STICKER	T	1
4	Q	17656		Q	1
3	P	AAO 17653	CONNECTOR STICKER	P	1
2	B.S	PS0 70004	P.C. BOARD STICKER		1
1		AAO 17768	C.P.U -P.C BOARD(A)		1

PARTS LIST

**TAITO CORPORATION**

NAME: T.T. POLARIS  
P.S. -CPU P.C BOARD ASSY

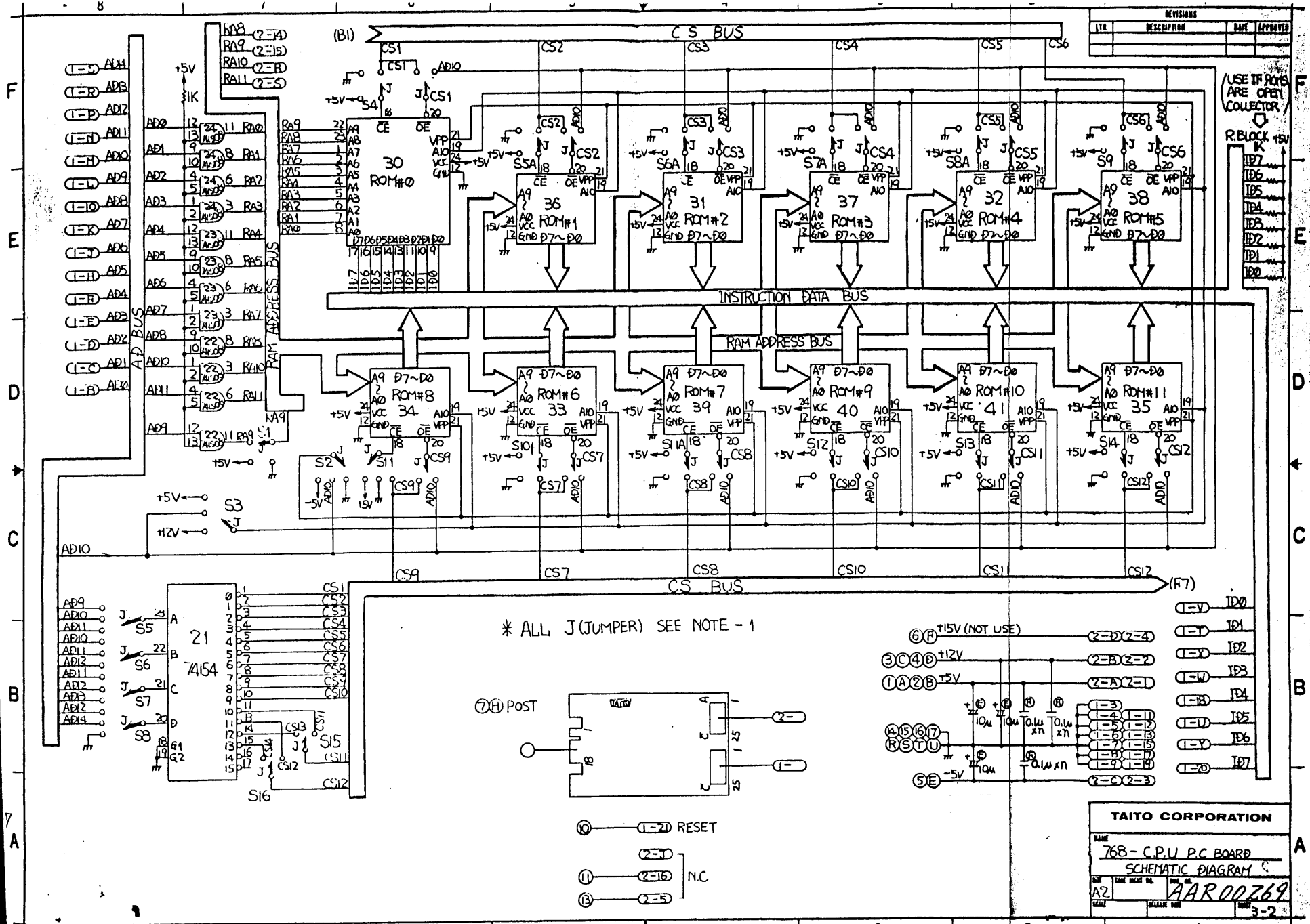
REV: A2  
DATE: PSN00002



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LT#	DESCRIPTION	DATE	APPROVED

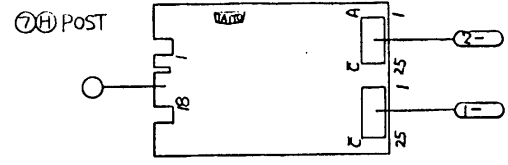
\* ALL J(JUMPER). SEE NOTE-1

<b>TAITO CORPORATION</b>			
NAME	768-CPU BOARD		
	SCHEMATIC DIAGRAM		
DATE	REV. NO.	REV. DATE	REV. BY
A2			AAR00269
SCALE	SHEET NO.	TOTAL SHEETS	3-1

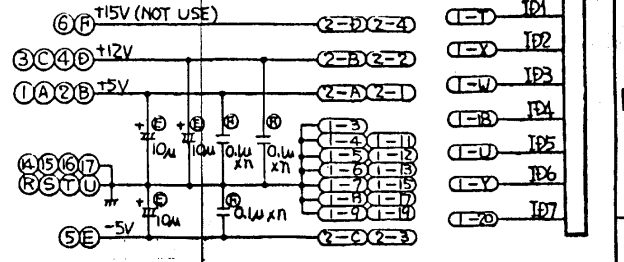


(USE IF PINS ARE OPEN COLLECTOR)

\* ALL J (JUMPER) SEE NOTE - 1



- ⓐ (1-2) RESET
- ⓑ (2-3) } N.C.
- ⓒ (2-16) } N.C.
- ⓓ (2-5) }



REVISIONS			
LT#	DESCRIPTION	DATE	APPROVED

MACHINE NAME	JUMPER SWICH																																			
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23													
LUPIN the III	RA9	+5V	AD0	CS1	AD1	AD2	AD3	GND	CS6	CS7														CL1	+5V	CS2	CS3	CS4	CS5	CS1	CS2	CS3	CS4	CS5	CS6	CS7
ASTRO ZONE	RA9	+5V	AD0	CS1	AD1	AD2	AD3	GND																CL1	+5V	CS2	CS3	CS4	CS5	CS1	CS2	CS3	CS4	CS5		
POLARIS	RA9	+5V	AD0	CS1	AD1	AD2	AD3	GND	CS6															CL1	+5V	CS2	CS3	CS4	CS5	CS1	CS2	CS3	CS4	CS5	CS6	

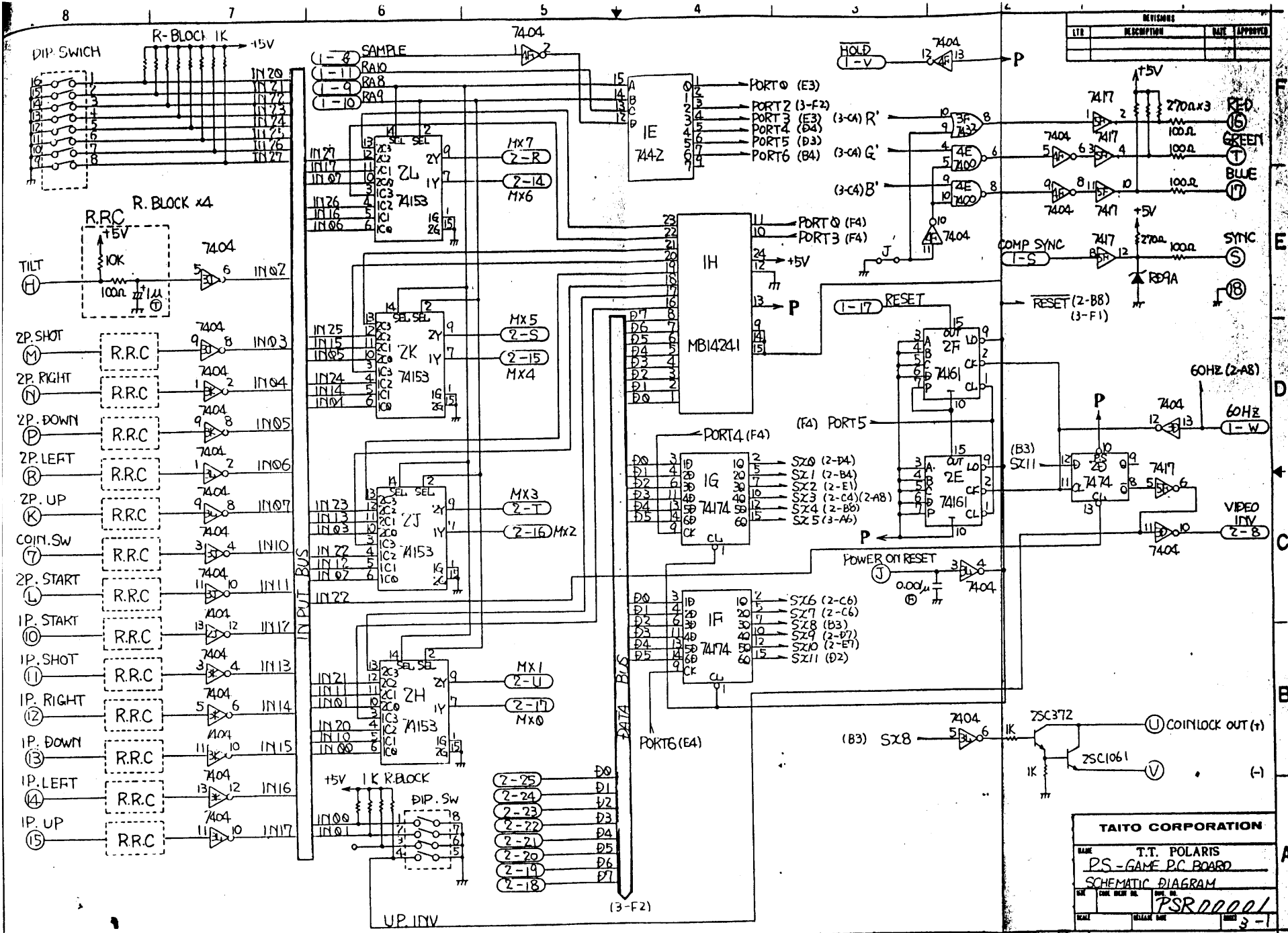
NOTE - JUMPE WIREING

MACHINE NAME	ROM											DESCRIPTION											
	ROM#0	ROM#1	ROM#2	ROM#3	ROM#4	ROM#5	ROM#6	ROM#7	ROM#8	ROM#9	ROM#10		ROM#11										
LUPIN the III	LP-12	LP-13	LP-14	LP-15	LP-16	LP-17	LP-18																2716
ASTRO ZONE	GE-01	GE-02	GE-03	GE-04	GE-05																		2716
POLARIS	PS-01	PS-02	PS-03	PS-04	PS-05	PS-06																	2716

NOTE - 2 P-ROM

TAITO CORPORATION	
NAME 768-CPU P.C BOARD	
SCHEMATIC DIAGRAM	
DATE AZ	NO. 00769
SCALE	3-3



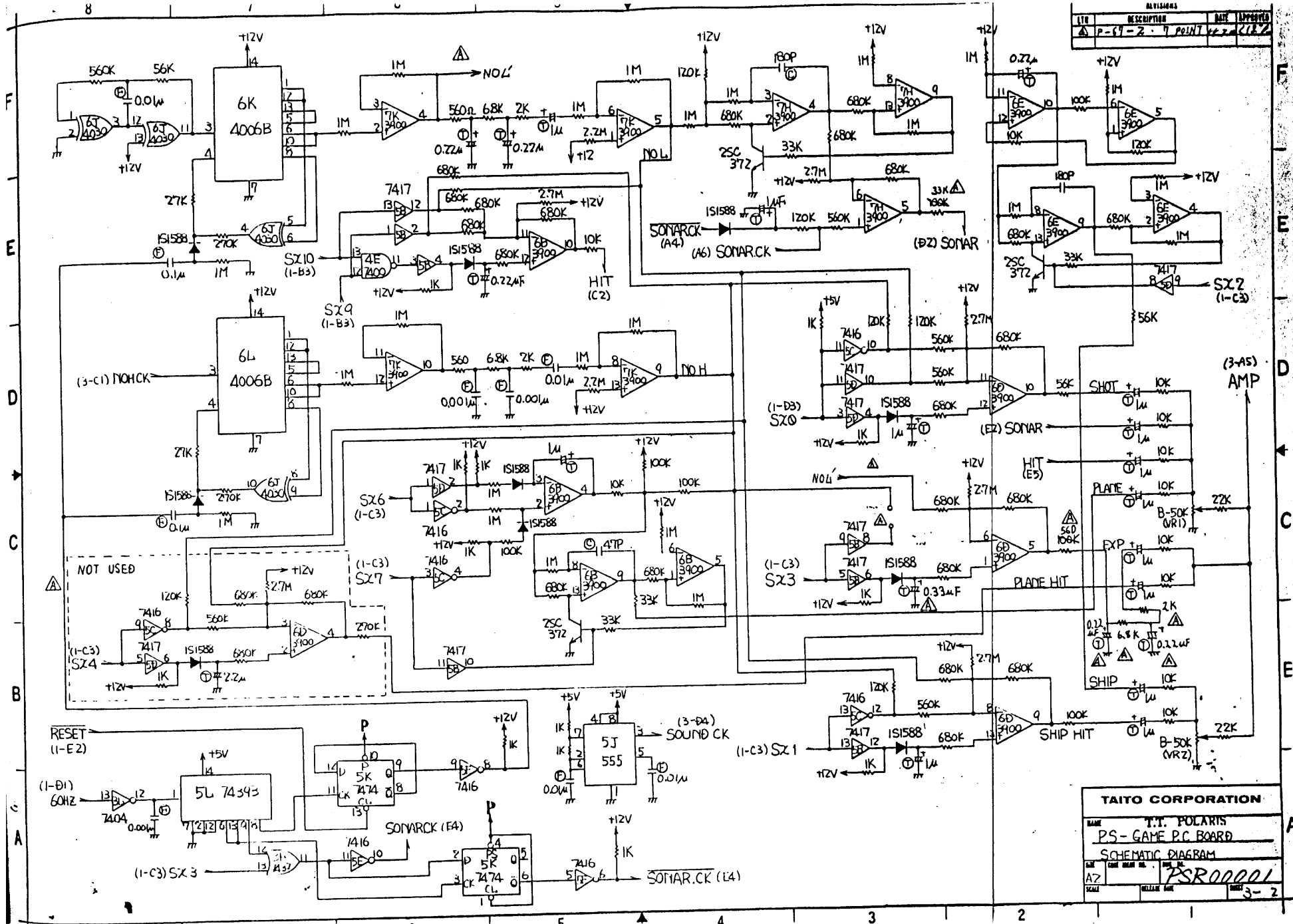


REVISIONS		
LTB	DESCRIPTION	DATE APPROVED

<b>TAITO CORPORATION</b>	
NAME	T.T. POLARIS
	PS-GAME PC BOARD
	SCHEMATIC DIAGRAM
	PSR00001
	3-1

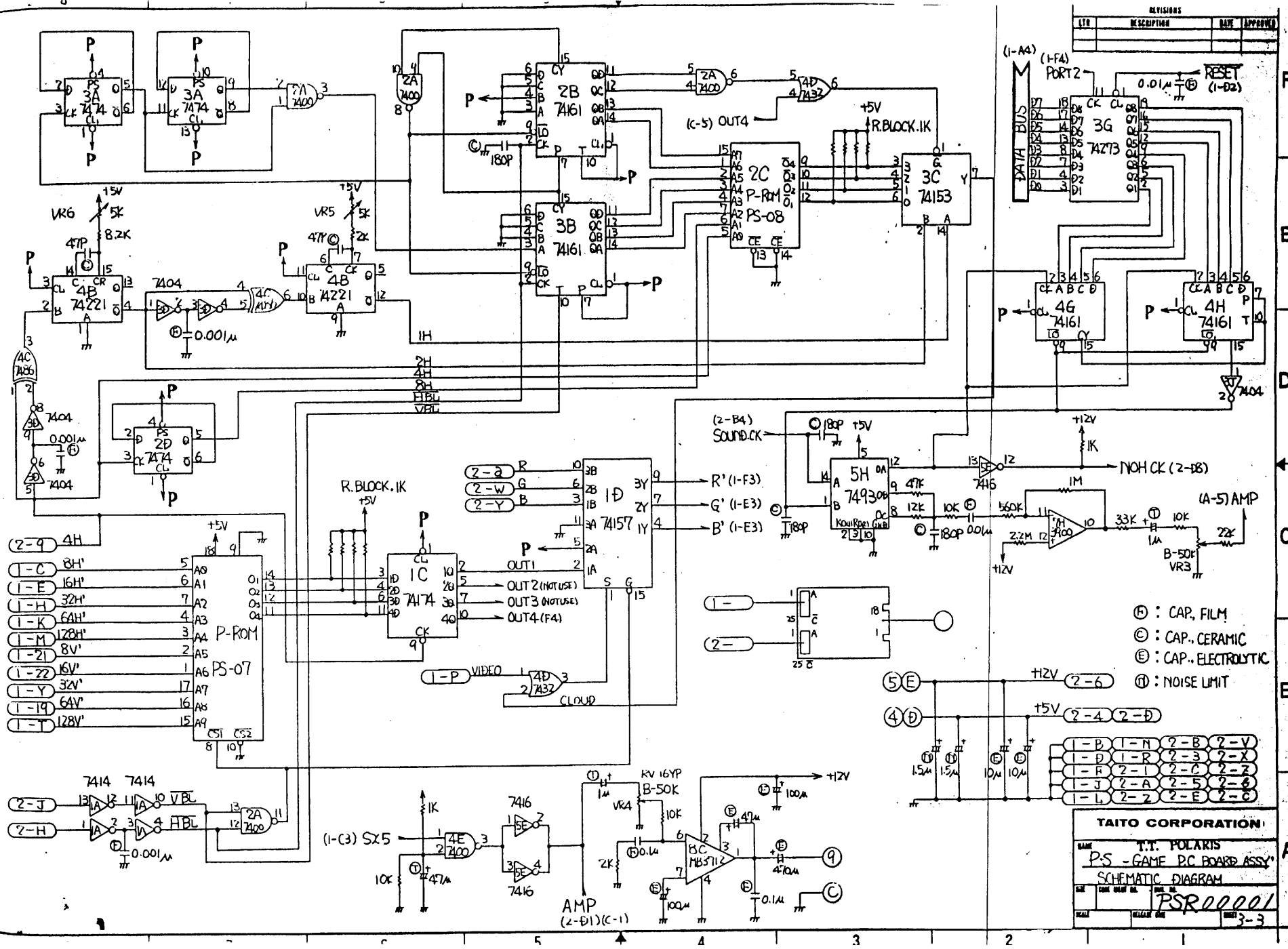


REV	DESCRIPTION	DATE	APPROVED
P-61-2	7 POINT	12-78	CLB



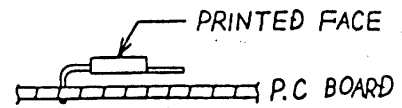
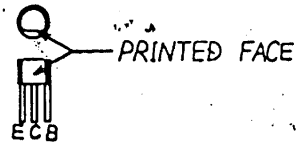
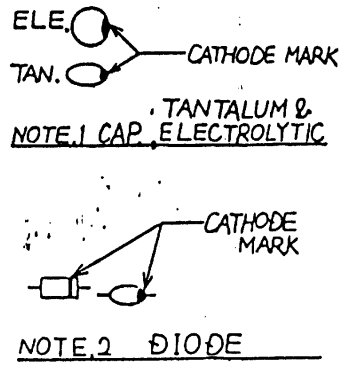
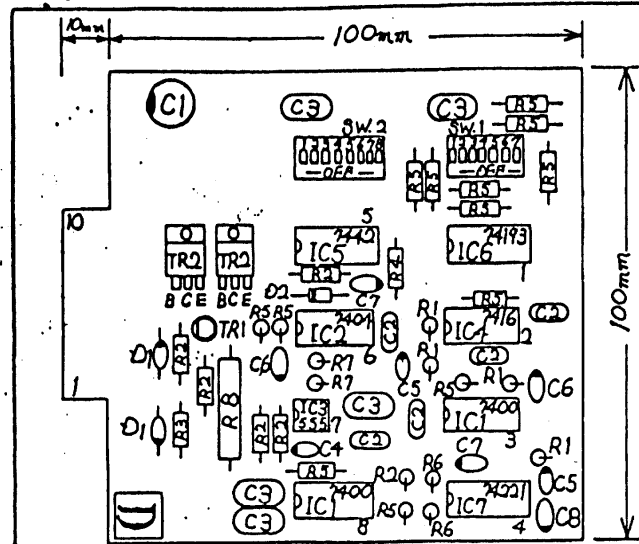
**TAITO CORPORATION**

NAME: T.T. POLARIS  
 PS-GAME P.C. BOARD  
 SCHEMATIC DIAGRAM  
 PS000001  
 3-2



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

<b>TAITO CORPORATION</b>			
NAME	T.T. POLARIS		
	PS-GAME PC BOARD ASSY		
	SCHEMATIC DIAGRAM		
NO.	DATE REP. IN	REV.	PSR00001
REV. NO.	ISSUED DATE	REV.	3-3



NOTE.3 TRANSISTOR(2SC458)

NOTE.4 TRANSISTOR(2SC1061)

NOTE.5 THE RELATION BETWEEN COIN AND CREDIT

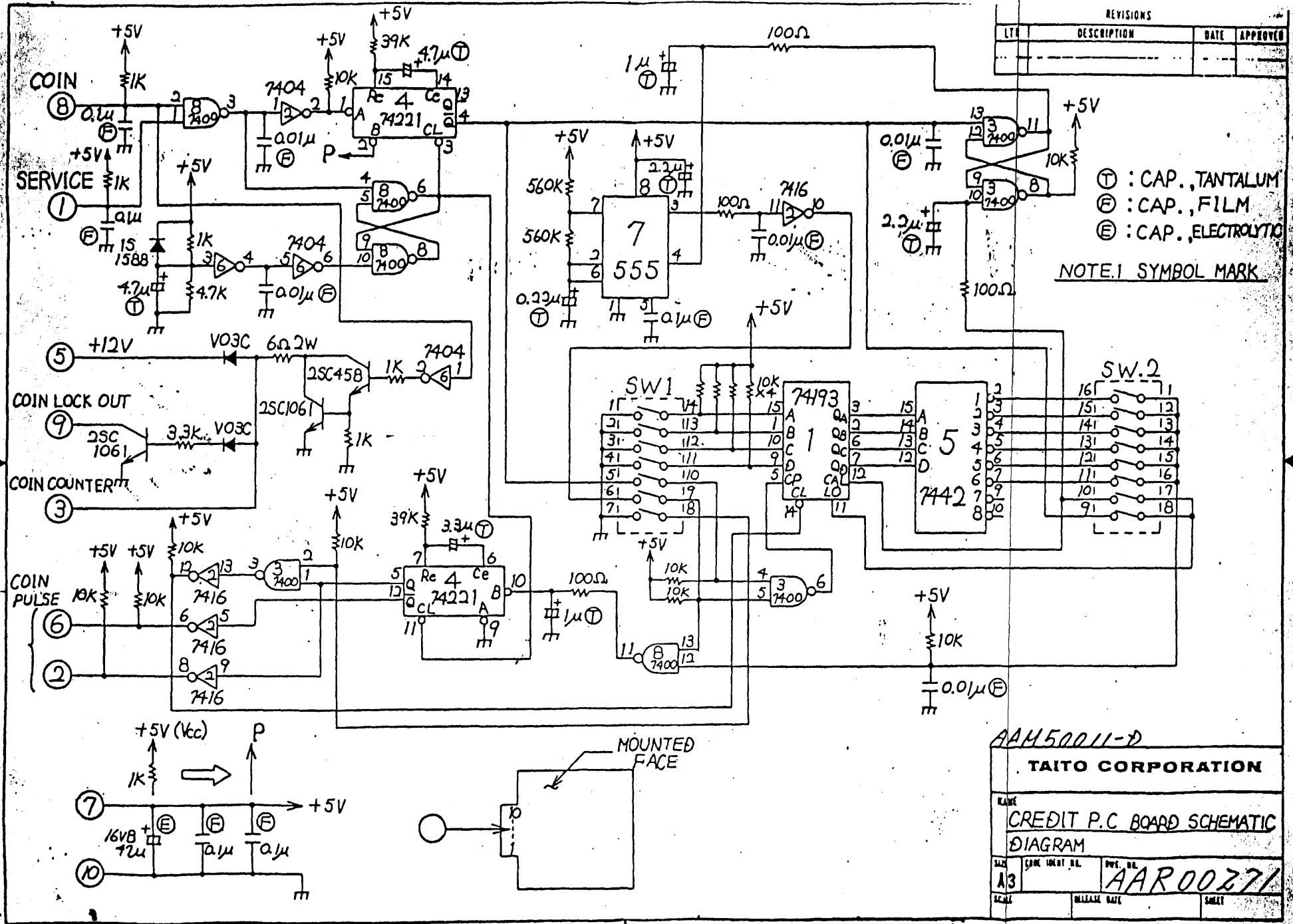
	SW1							SW2							
	1	2	3	4	5	6	7	1	2	3	4	5	6	7	8
1COIN 1PLAY	ON	ON	ON	ON	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
3COIN 1PLAY	ON	ON	ON	ON	ON	ON	ON	OFF	ON	OFF	ON	ON	ON	ON	ON
3COIN 1PLAY	ON	ON	ON	ON	ON	ON	ON	ON	OFF	ON	ON	ON	ON	ON	ON
4COIN 1PLAY	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	ON	ON	ON	ON	ON
1COIN 3PLAY	ON	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
3COIN 3PLAY	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
4COIN 4PLAY	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

REVISIONS			
LT#	DESCRIPTION	DATE	APPROVED

31	R8	AAT55033	WINDING RESISTOR 60HM 2W±10%	1
30	R7	51831	RES. CARBON 560KOHM 1/4W±5%	2
29	R6	51803	39K	2
28	R5	51789	10K	13
27	R4	51781	4.7K	1
26	R3	51777	3.3K	1
25	R2	51765	1K	6
24	R1	51741	RES. CARBON 100OHM 1/4W±5%	4
23	C8	41438	CAP. TANTALUM SSG35-3R3F	1
22	C7	41421	SSG16-4R7F	2
21	C6	41419	SSG16-2R2F	2
20	C5	41418	SSG16-1F	2
19	C4	41414	CAP. TANTALUM SSG16-OR22F	1
18	C3	41244	CAP. FILM TDY-1H-104	5
17	C2	41238	CAP. FILM TDY-1H-103	5
16	C1	41021	CAP. ELECTROLYTIC 16VB47μ	1
15	IC.7	32077	TTL IC 74221	1
14	IC.6	32044	74193	1
13	IC.5	32033	7442	1
12	IC.4	32033	7416	1
11	IC.3	32019	NE555V	1
10	IC.2	32003	7404	1
9	IC.1	32001	TTL IC 7400	2
8	D2	12025	DIODE 1S1588	1
7	D1	12002	DIODE V03C	2
6	TR2	V11030	TRANSISTOR 2SC1061-B	2
5	TR1	AAT11005	TRANSISTOR 2SC458-C	1
4	SW.2	AAO52566	DIP SWITCH DSS-8	1
3	SW.1	52560	DIP SWITCH DSS-7	1
2	D	17623	CONNECTOR STICKER D	1
1		AAO1766D	CREDIT P.C BOARD	1

ITEM NO	SYM	PART NO IDENTIFICATION NO	NOMENCLATURE OR DESCRIPTION	QTY
PARTS LIST				
<b>TAITO CORPORATION</b>				
NAME CREDIT P.C BOARD ASSY.				
SIZE	DRAWING NO.		PWC. NO.	
A3			AAM50011-D	
SCALE	RELEASE DATE		SHEET	
1/1				

REVISIONS			
LT#	DESCRIPTION	DATE	APPROVED



⊕ : CAP., TANTALUM  
 ⊖ : CAP., FILM  
 ⊕ : CAP., ELECTROLYTIC

NOTE.1 SYMBOL MARK

AAM50011-D			
TAITO CORPORATION			
NAME	CREDIT P.C. BOARD SCHEMATIC DIAGRAM		
SIZE	DATE	REV. NO.	AAR00271
SCALE	RELEASE DATE	SHEET	