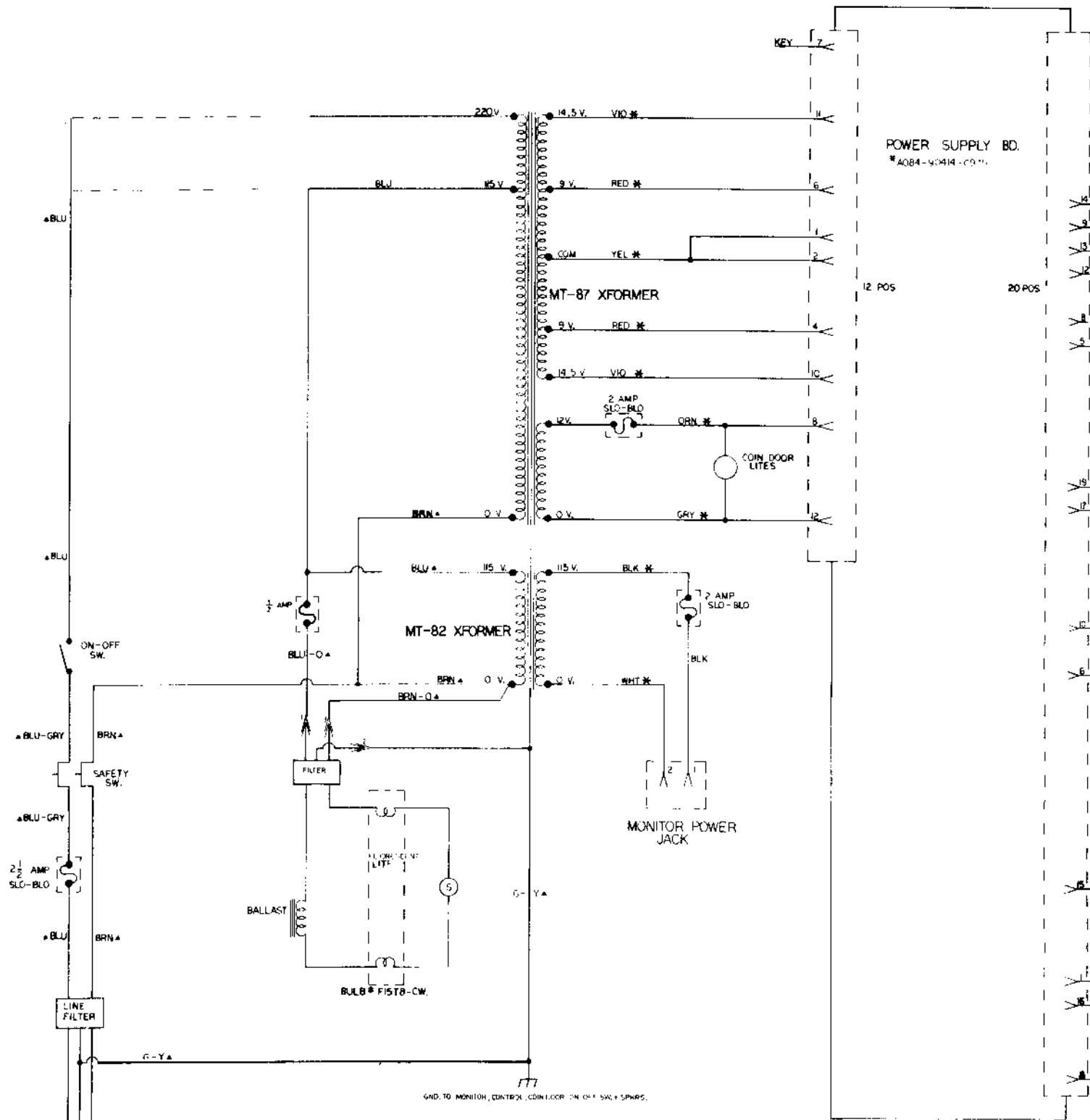


DISPLAY**DESCRIPTION**

RAM	OK	All RAMs are good
RAM	OL	RAM located on Video PC board at position 1K is bad.
RAM	OH	RAM located on Video PC board at position 1K is bad.
RAM	1L	RAM located on Video PC board at position 1K is bad.
RAM	1H	RAM located on Video PC board at position 1K is bad.
RAM	2L	RAM located on Video PC board at position 3E is bad.
RAM	2H	RAM located on Video PC board at position 3F is bad.
RAM	3L	RAM located on Video PC board at position 3K is bad.
RAM	3H	RAM located on Video PC board at position 3L is bad.
RAM	4L	RAM located on Video PC board at position 3H is bad.
RAM	4H	RAM located on Video PC board at position 3J is bad.
ROM	OK	All ROMs are good.
ROM	01	ROM located on CPU PC board at position 3N is bad.
ROM	02	ROM located on CPU PC board at position 3M is bad.
ROM	03	ROM located on CPU PC board at position 3L is bad.
ROM	04	ROM located on CPU PC board at position 3K is bad.
ROM	11	ROM located on CPU PC board at position 3J is bad.
ROM	21	ROM located on CPU PC board at position 3E is bad.

Figure 4b. Board location coordinates (Self test display)

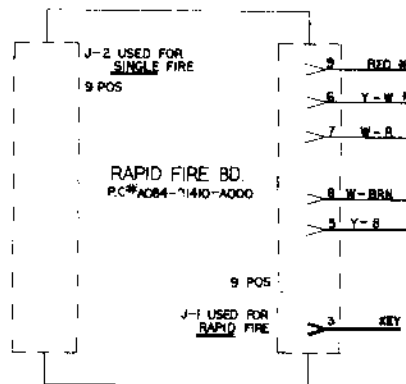
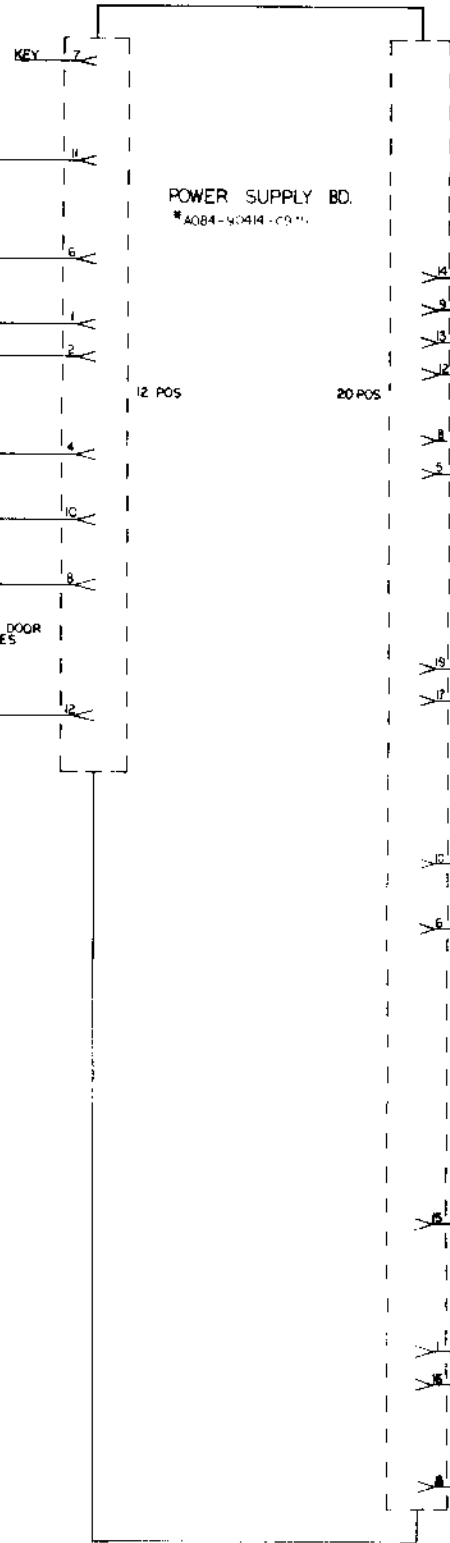


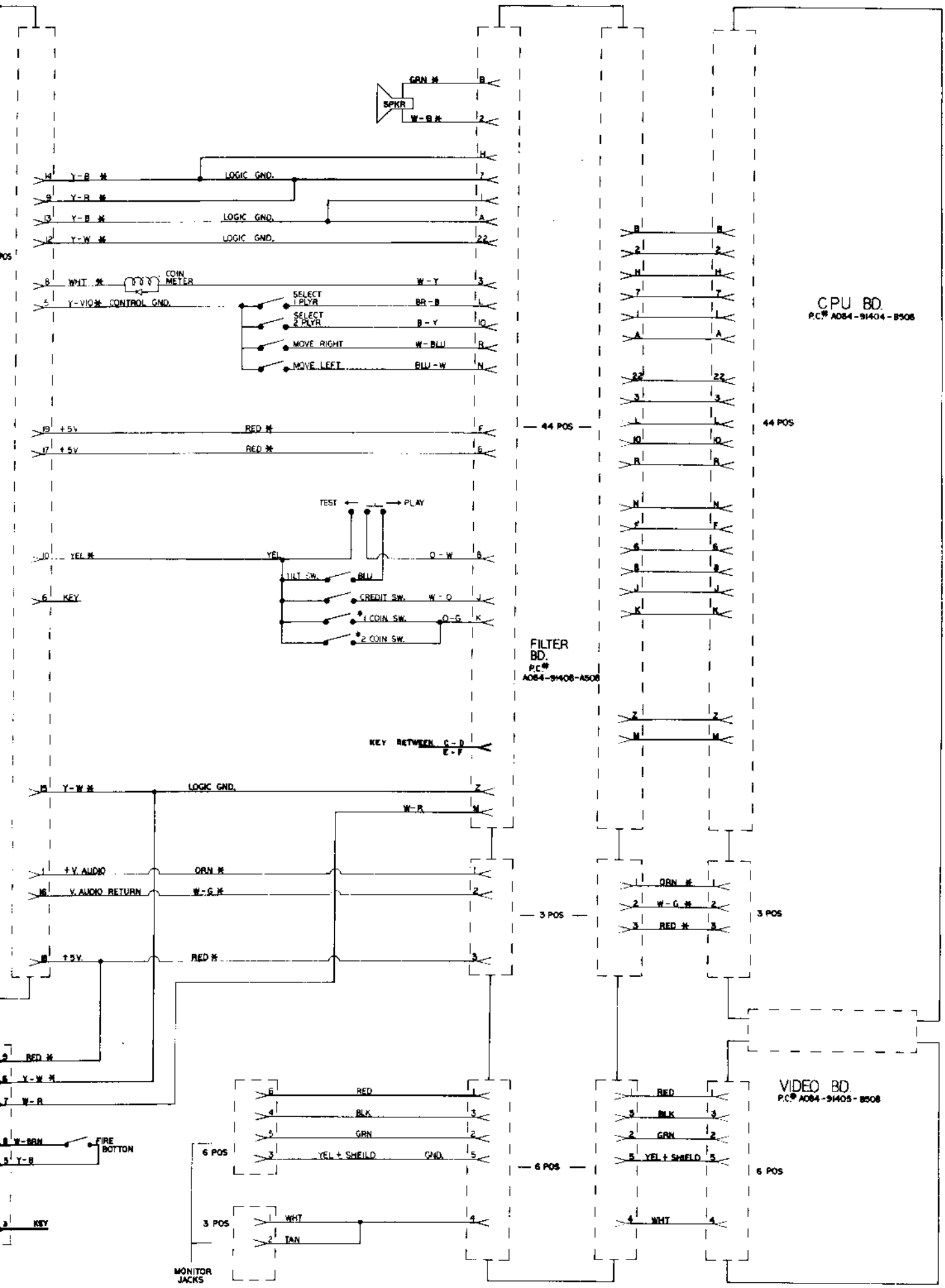
GALAGA U.R.
SCHEMATIC # MOS1-00500-A003

REVISIONS

REVISIONS	DATE	BY	NAME
ADDED 14.5V. HI + RAPID FIRE. (J-1)	8-29-81	W. Koenig	

NOTES: 1. * = P.W.S.
2. ▲ = P.W.S. MODIFIED.

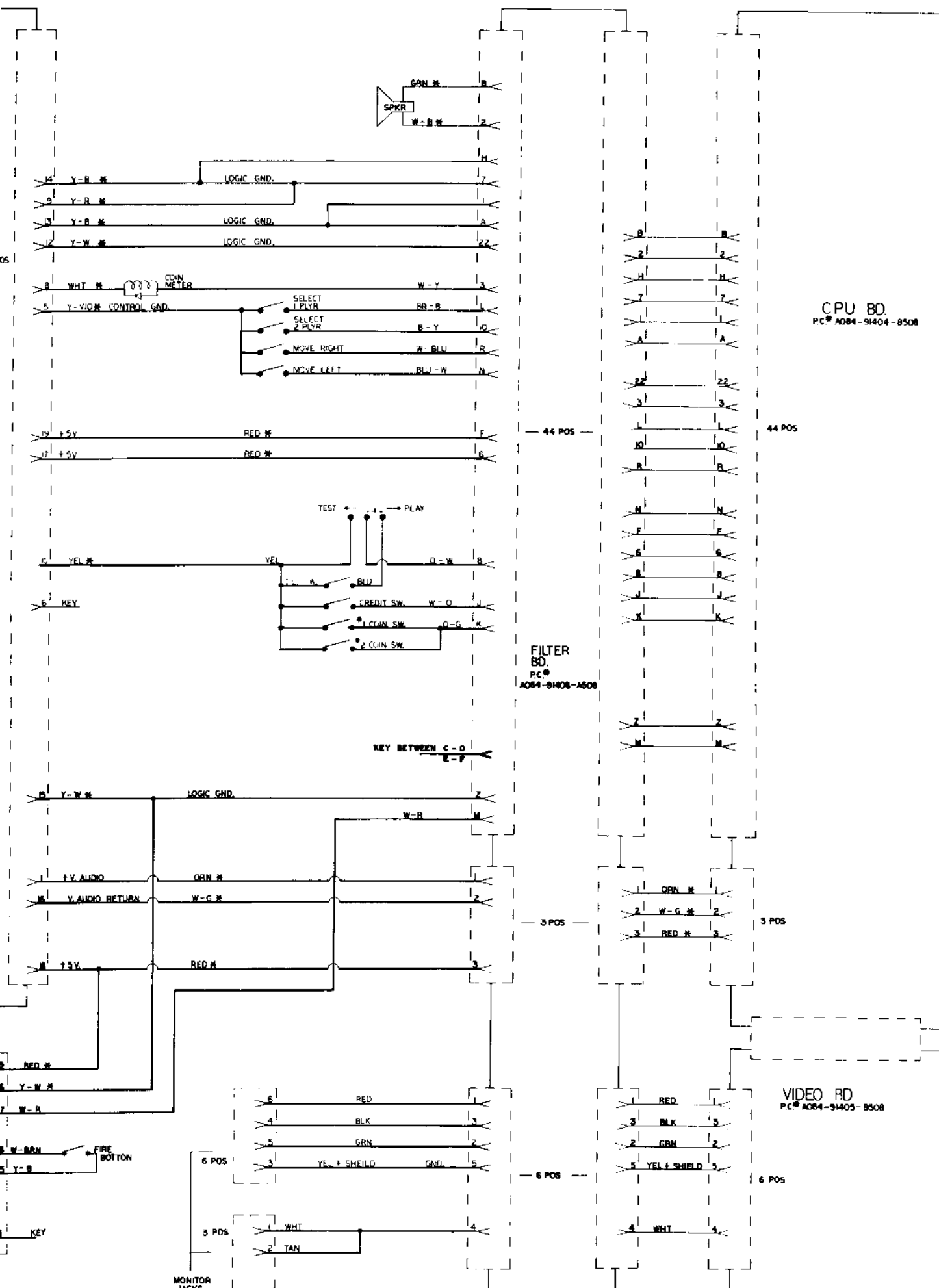


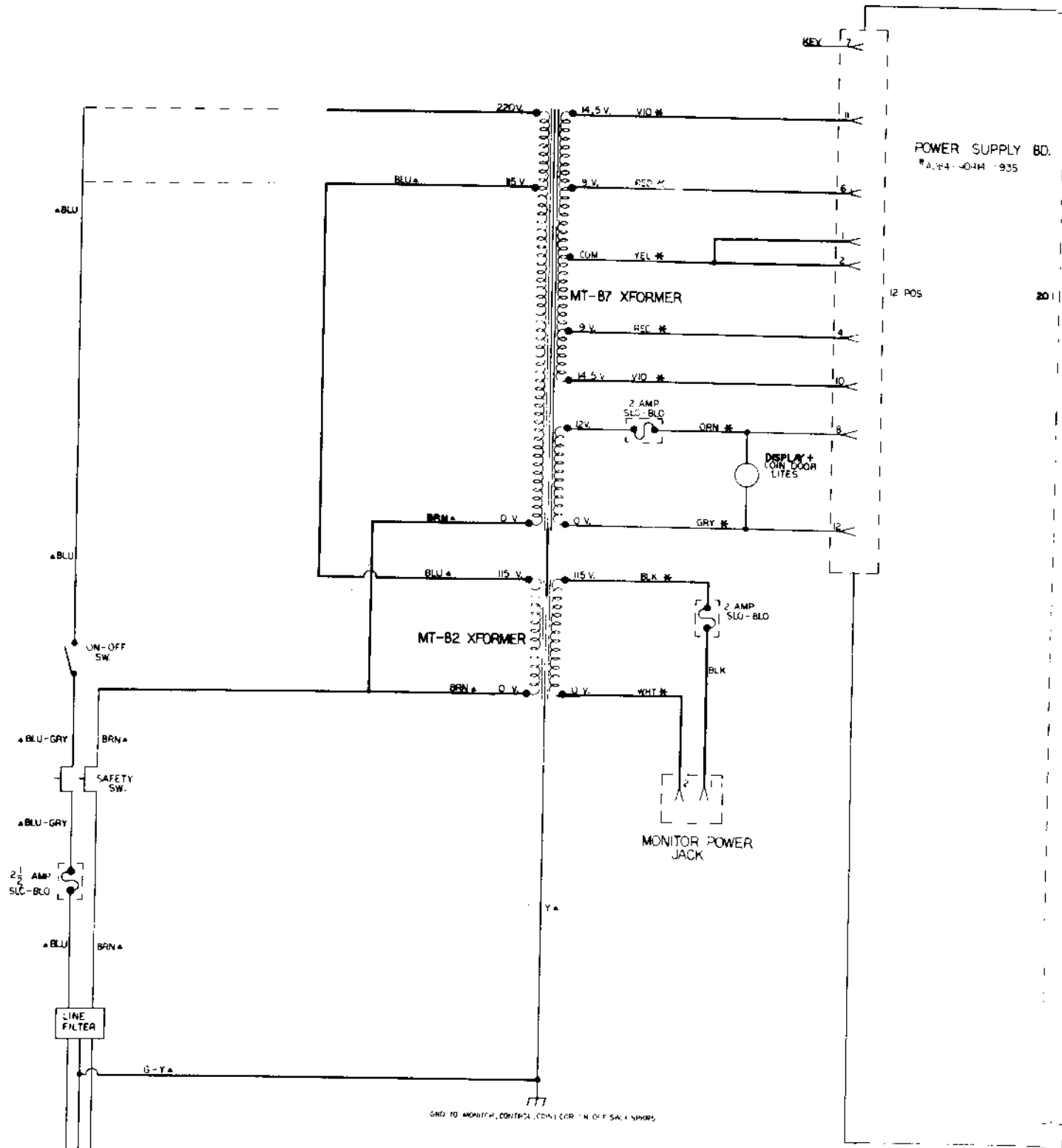


CPU BD.
P.C.# A084-91404-B508

FILTER BD.
P.C.# A084-91408-A508

VIDEO BD.
P.C.# A084-91405-B508





GALAGA MINI

WIRING SCHEMATIC NOS1-00514 -A003

REVISIONS

REVISIONS	DATE	DESIGNED	NAME
ADDED 1 J-1 FOR 1 RAPID FIRE BD.	10-29-61		B. MANZONI

NOTES: 1. SEE DRAWING
2. SEE DRAWING FOR DETAILS

POWER SUPPLY BD.
P.C.# A-104-1041-1935

12 POS

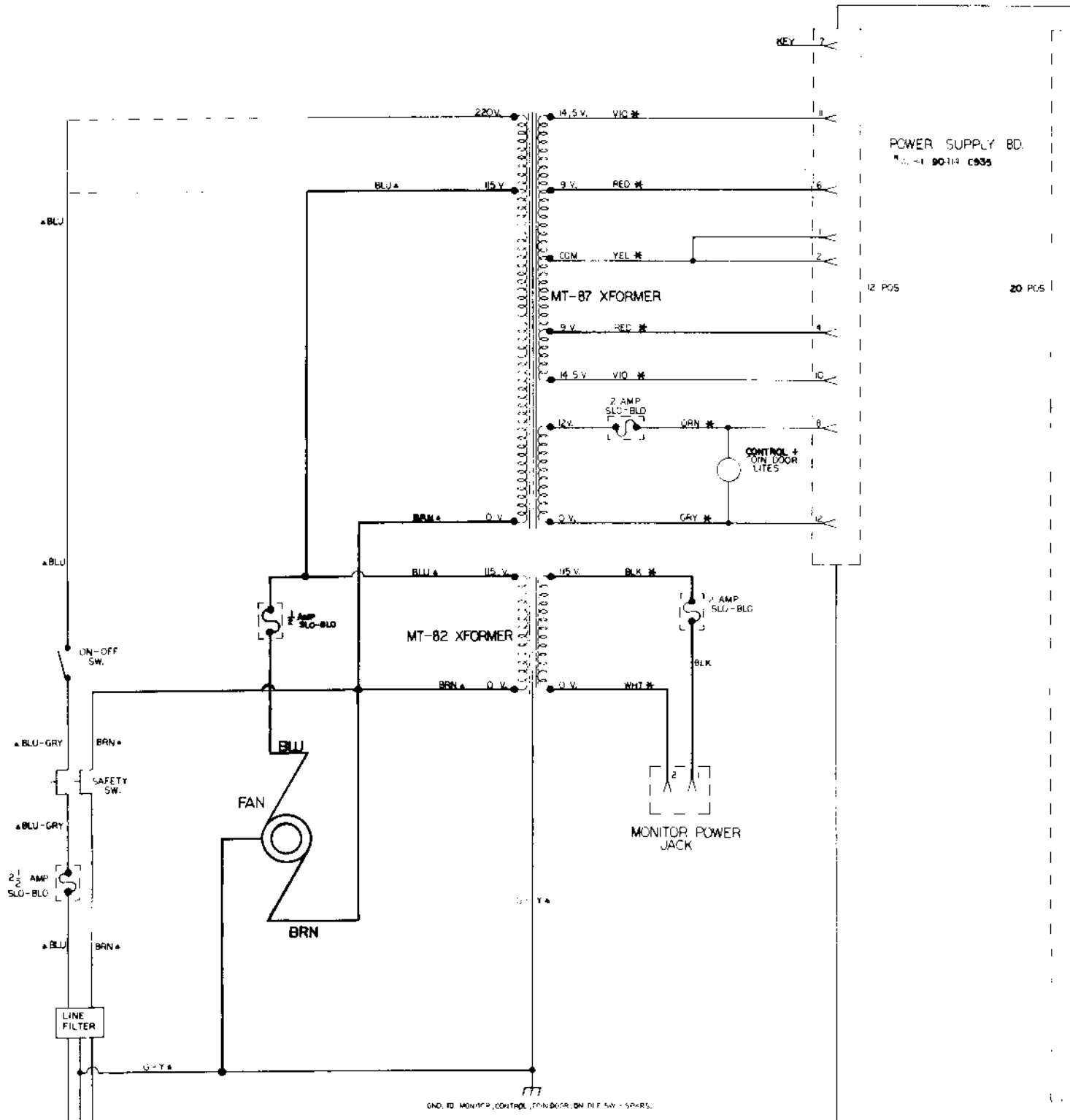
20

J-2 USED FOR SINGLE FIRE
9 POS

RAPID FIRE BD.
P.C.# A084-31410-A000

9 POS

J-1 USED FOR RAPID FIRE



POWER SUPPLY BD.
P.C.# 90-119 C935

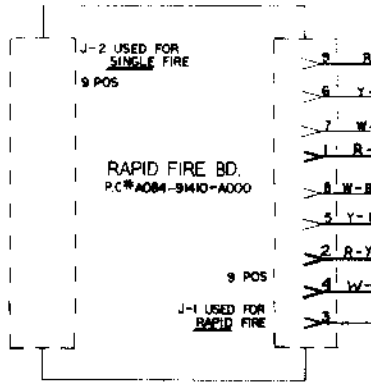
12 POS 20 POS

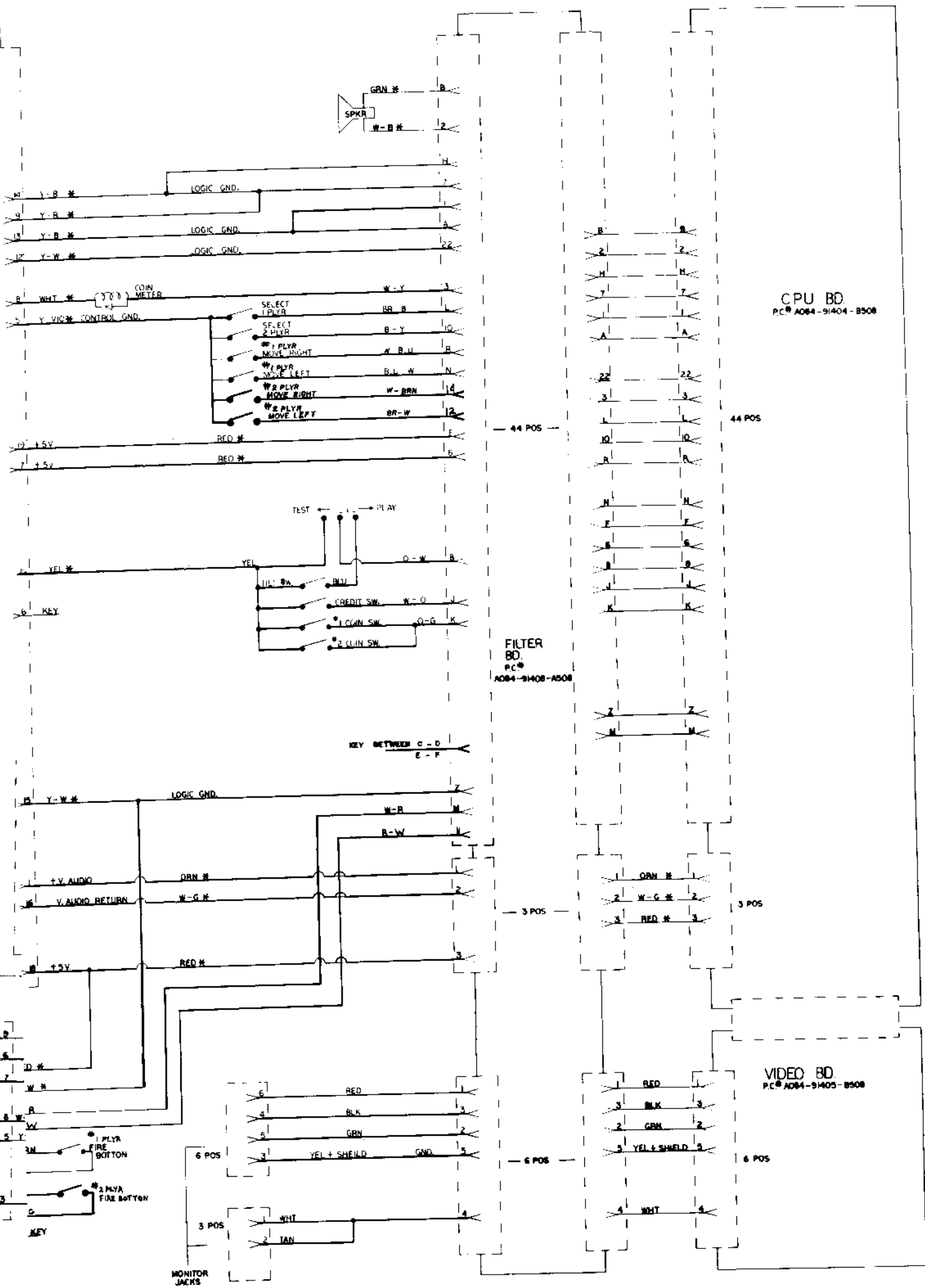
GALAGA C.T.
SCHEMATIC # MOSI-00910-A003

REVISIONS

NO.	DATE	BY	REASON
1	9-29-61	J. SCHMIDT	ADDED LINE FILTER & RAPID FIRE BD.

NOTES: 1. #1 IS BRN.
2. #2 IS BRN. BODY INCL.





CPU BD.
P.C. # A064-91404-B508

FILTER
BD.
P.C. #
A064-91408-A508

VIDEO BD.
P.C. # A064-91405-B508

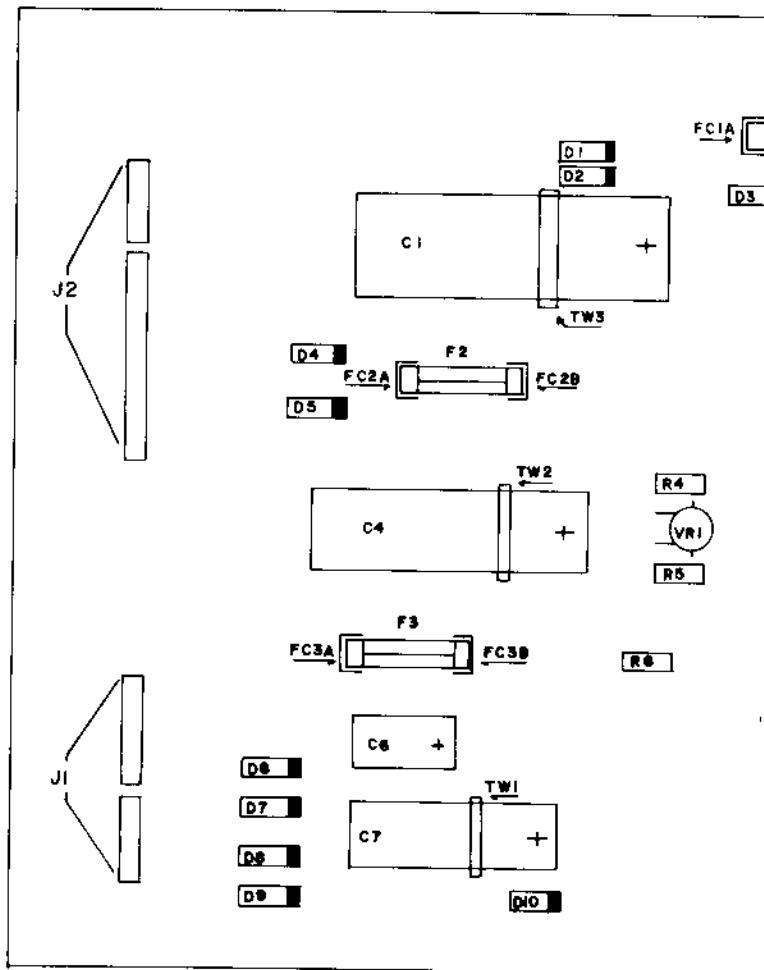
KEY BETWEEN C-D
E-F

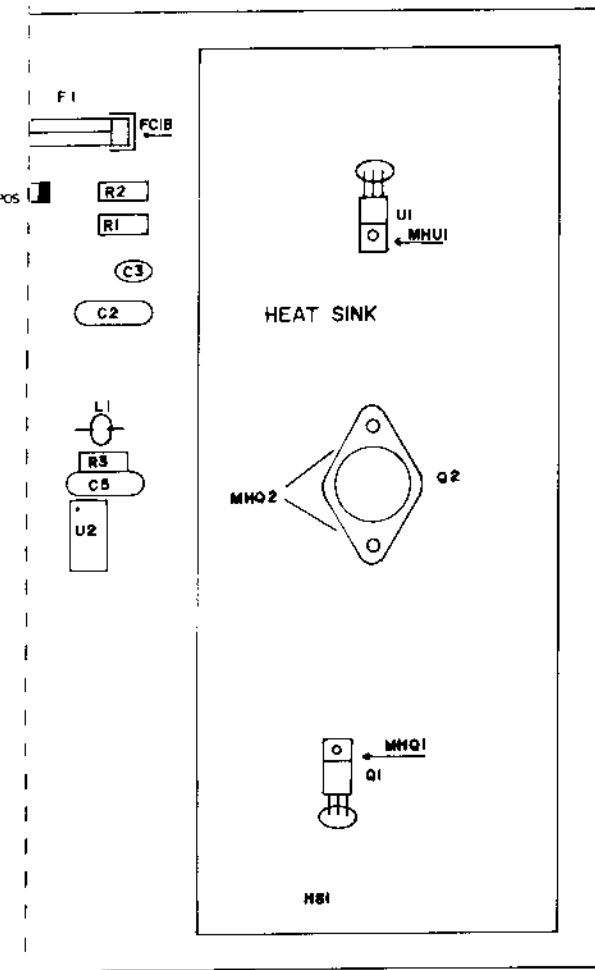
MONITOR JACKS

DESIGNATION

DESCRIPTION

C1	10000 MF 35V AX. ELEC.
C2	.01MF 50V AX. CER.
C3	1MF 25V TANT.
C4	20000 MF 16V AX. ELEC.
C5	100PF 50V AX. CER.
C6	470 MF 16V AX. ELEC.
C7	4700 MF 25V " "
R1	470 OHM 1/4W 5% CRBN
R2	100 " " " "
R3	2.7K " " " "
R4	560 " " " "
R5	510 " " " "
R6	10 " " " "
VR1	100 OHM 1/4W CRBN. FLM.
D1, D2	A14F
D3	IN4004
D4, D5	MR750
D6-D9	A15F
D10	A14F
Q1	TIP31
Q2	2N3055
U1	LM317
U2	3652
L1	FERROXCUBE BEAD
HS1	HEAT SNK
F1	FUSE 2A
F2	" 5A
F3	" 5A
FC1A, FC1B, FC2A	FUSECLIP W/ STOP
FC2B, FC3A, FC3B	" "
J1	CONN. KK.156 (RA)(5-PIN) (6-PIN)
J2	" " (RA)(5-PIN) (13-PIN)
MHQ1	MOUNTING HARDWARE Q1 (1) SCREW 4-40X10 SLT RND (1) WSH.4 120-.250-018 (1) HEXNUT 4-40 (1) SHOULDER WSH. 974-302 THERMAL COMPOUND AS REQ. (1) TO-220 INSULATOR RT-3.5 MICA
MHQ2	MOUNTING HARDWARE Q2 (2) SCREW 4-40X10 SLT RND (2) WSH.4 120-.250-018 (2) HEXNUT 4-40 (2) SHOULDER WSH. 974-302 THERMAL COMPOUND AS REQ. (1) TO-3 RT-1.5 FILM
MHU1	MOUNTING HARDWARE U1 (1) SCREW 4-40X10 SLT RND (1) WSH.4 120-.250-018 (1) HEXNUT 4-40 (1) SHOULDER WSH. 974-302 THERMAL COMPOUND AS REQ. (1) TO-220 INSULATOR RT-3.5 MICA
TW1-TW3	TIE WRAPS



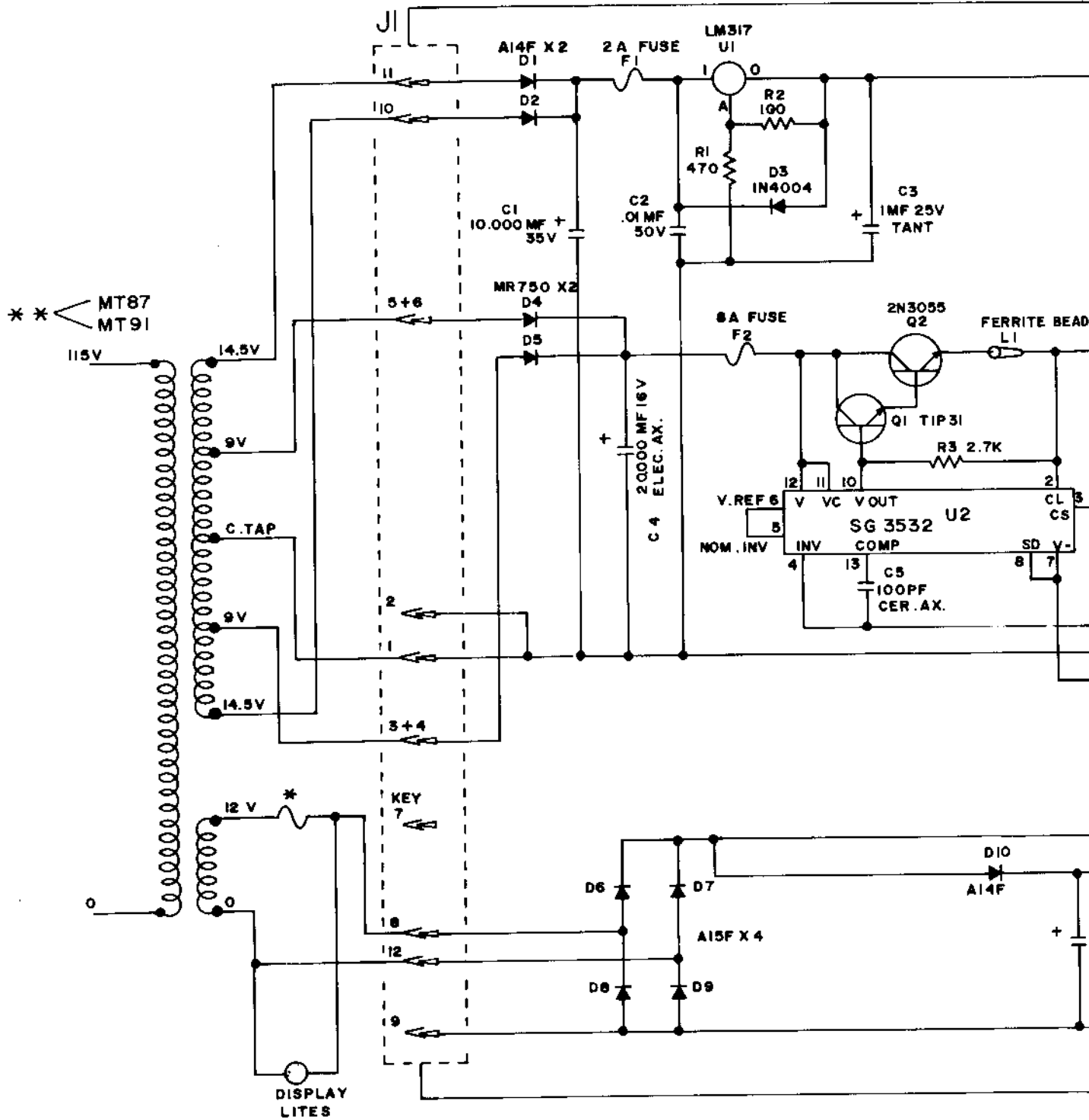


DESCRIPTION	QTY	DESIGNATION	PART NUMBER
100 PF 50v AX.CER.	1	C5	0171-043H6-JXXV
.01MF " " "	1	C2	0171-097H2-JXXX
1MF 25v TANT.	1	C3	0935-00814-0100
470MF " AX.ELEC.	1	C6	0175-271EX-EXXX
4700MF " " "	1	C7	0175-314EX-EXBX
10000MF 35v AX.ELEC.	1	C1	0175-322GX-EXBX
20000 16v MF " "	1	C4	0935-00814-0800
10 OHM 1/4w 5% CBN	1	R6	0062-051B3-1XXX
100 " " " "	1	R2	0062-110B3-1XXX
470 " " " "	1	R1	0062-156B3-1XXX
510 " " " "	1	R5	0062-159B3-1XXX
560 " " " "	1	R4	0062-162B3-1XXX
2.7K " " " "	1	R3	0062-199B3-1XXX
100 " " CBN FLM	1	VR1	0063-025AX-1DEX
1N4004	1	D3	0508-00801-0200
A14F	3	D1,D2,D10	0064-168XX-XXGX
A15F	4	D6-D9	0064-169XX-XXGX
MR750	2	D4,D5	0064-303XX-XXJX
T1P31	1	Q1	0065-485XX-XXXX
2N3055	1	Q2	0935-00800-0000
3532	1	U2	0066-044BX-XXXX
LM317	1	U1	0935-00804-3600
FERROXCUBE BEAD	1	L1	0017-00009-0225
HEAT SINK	1	HS1	0068-045XX-ABDX
FUSE 2A	1	F1	0017-00003-0005
FUSE 6A	1	F3	0017-00003-0008
FUSE 8A	1	F2	0017-00003-0184
FUSECLIP	6	FC1A,FC1B,FC2A, FC2B,FC3A,FC3B	0017-00003-0214
KK 156 (RA) (5)	2	J1,J2	3000-16387-0500
KK 156 (RA) (6)	1	J1	3000-16387-0600
KK 156 (RA) (13)	1	J2	3000-16387-1300
SCREW 4-40x10	4	MHU1,MHQ1,MHQ2	0017-00101-0727
WSH 4 120-250-018	4	" " "	0017-00104-0071
HEXNUT 4-40	4	" " "	0017-00103-0002
SHOULDER WSH	4	" " "	0017-00042-0109
THERMAL COMPOUND	AS REQ.	" " "	0017-00009-0204
TO-220,INSULATOR	2	MHU1,MHQ1	0017-00003-0205
TO-3 INSULATOR	1	MHQ2	0017-00042-0108
TIE WRAPS	3	TW1-TW3	0017-00042-0105

MOSI-00935-C028

THIS DWG IS CONFIDENTIAL & PROPERTY OF MIDWAY MFG. CO.

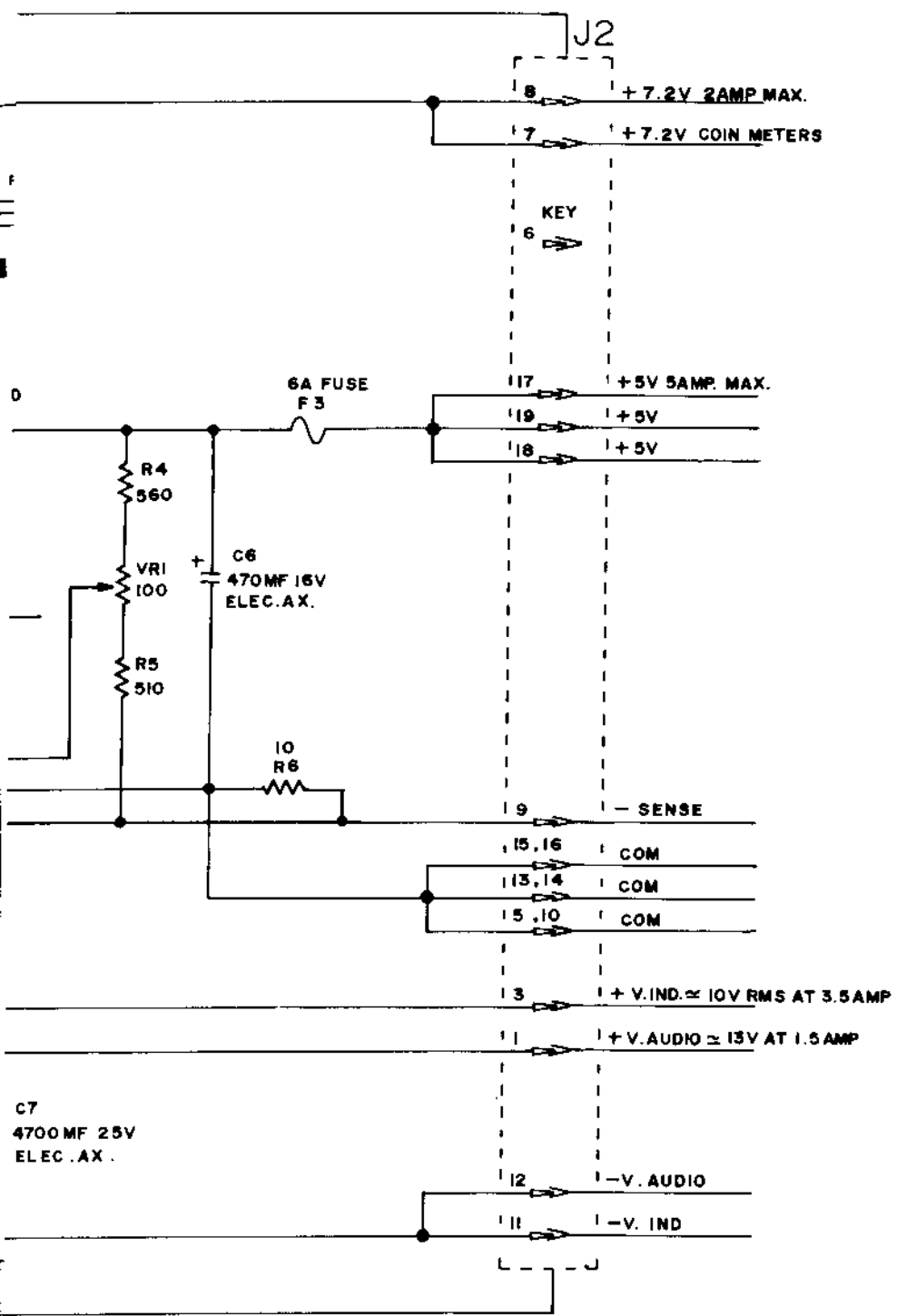
DIM TOLERANCES UNLESS OTHERWISE SPEC CONCENTRICITY ± .002 FRACTIONAL ± .004 DECIMAL ± .005 HOLE DIA ± .002 000 ANGLE ± .02° DO NOT SCALE DWG	DESIGNED BY GALAGA DRAWN BY MM DATE 10-10-81 FULL	MIDWAY MFG. CO. FRANKLIN PK., IL 60131 A BAILLY CO	REVISIONS PART NO A084-964-14 C935
	CHECKED BY FINISH		



NOTES:

- * 2AMP FUSE W/O DISPLAY LITES
- ** MT87 FOR UR.
- MT91 FOR C.T.

DIM. TOLERANCES UNLESS SPECIFIED		DR
CONCENTRICITY T/R	.005	CK
FRACTIONAL	.1/64	CK
DECIMAL	.005	DA
HOLE DIA	+.002 .000	DA



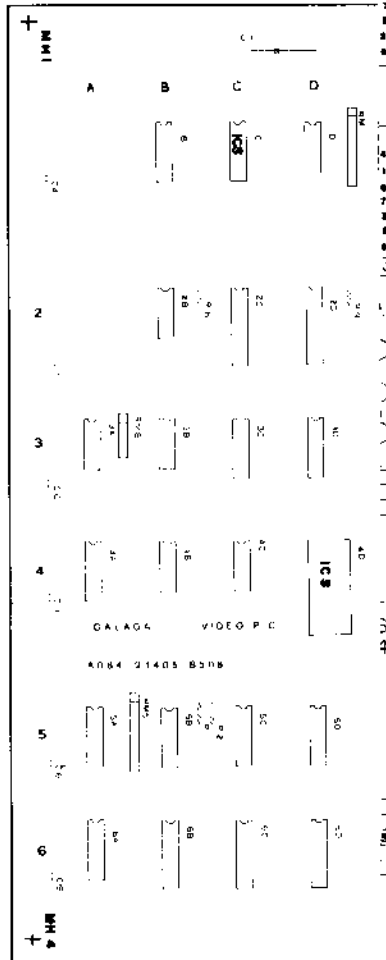
SCHEMATIC: M051-00935-C025

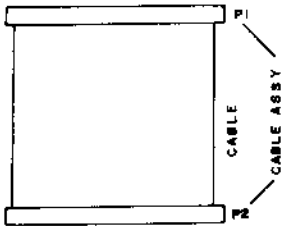
REVISIONS	

DWG <i>M.M.</i>	HEAT TREAT MAT'L	SCALE FULL	USED ON GALAGA NO REQ'D I PER	MIDWAY MFG. CO. FRANKLIN PK ILL PART NO A084-90414-C935
10-1-81	FINISH	POWER SUPPLY		

DESIGNATION LIST

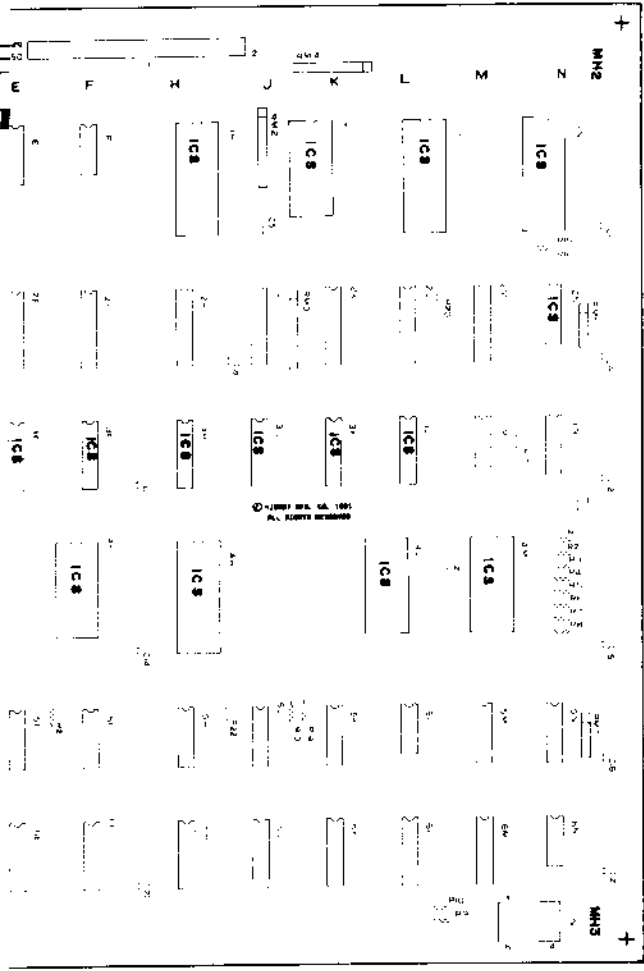
DESIGNATION	DESCRIPTION	DESIGNATION	DESCRIPTION
C1	470 MF 16V AX ELEC.	IC	5C, 5D, 5E, 5F, 5H, 5J
C2	.001 MF 50V CER	"	5K
C3	220 PF 500V 5% MICA	"	5L
C4-C21	1 MF 50V CER.	"	5M
		"	5N
		"	5A
		"	5B
		"	5C, 5D, 5E, 5F
		"	5H
		"	5J, 5K, 5L, 5M
		"	5N
R1	220 OHM 1/4W 5% CRBN.	ICS IC	16-PIN IC SOCKET
R2	470 " " " "	"	1H
R3	220 " " " "	"	1K
R4	470 " " " "	"	1L, 1N
R5	1K " " " "	"	2N
R6	220 " " " "	"	3E, 3F, 3H, 3J, 3K, 3L
R7	470 " " " "	"	4D, 4F
RB, RD	1K " " " "	"	4H
R10	100 " " " "	"	4L, 4M
RE-R14	470 " " " "	"	5N
R15, R16	1K " " " "		
R17	330 " " " "		
R18-R22	1K " " " "		
		J1	CONN- R.A. HEADER 50-PIN
RMI-RM4	2.2K OHM 6-UNIT 9-PIN SIP	J2	CONN- PCB HEADER 6-PIN
RMS	1K " " " "	MNI-MN4	DUAL LKG PCB SPACER
RMG-RM6	1K OHM 4-UNIT 5-PIN SIP	PCB	A080-91405-8508
IC 18	74LS155		
" IC	90-3 PROM (256 X 4)		
" ID	74LS08		
" IE	74LS158		
" IF	74LS32		
" IH	04XX CUSTOM IC		
" IK	STATIC RAM (2K X 8)		
" IL	00XX CUSTOM IC		
" IN	07XX " "		
" 2B	74LS20		
" 2C	74LS275		
" 2D	74LS377		
" 2E	74LS275		
" 2F, 2H, 2J, 2K	74LS245		
" 2L	74LS275		
" 2M	74LS377		
" 2N	90-4 PROM (256 X 4)		
" 3A	74LS20		
" 3B	74LS86		
" 3C, 3D	74LS203		
" 3E, 3F, 3H, 3J, 3K, 3L	2114-2 RAM (1K X 4)		
" 3M	74LS00		
" 3N	74LS366		
" 4A	74LS157		
" 4B, 4C	74LS86		
" 4D	90-L EPROM (4096 X 8)		
" 4F	90-K " "		
" 4H	02XX CUSTOM IC		
" 4L	90-J EPROM (4096 X 8)		
" 4M	05XX CUSTOM IC		
" 5A	74LS365		
" 5B	74LS298		





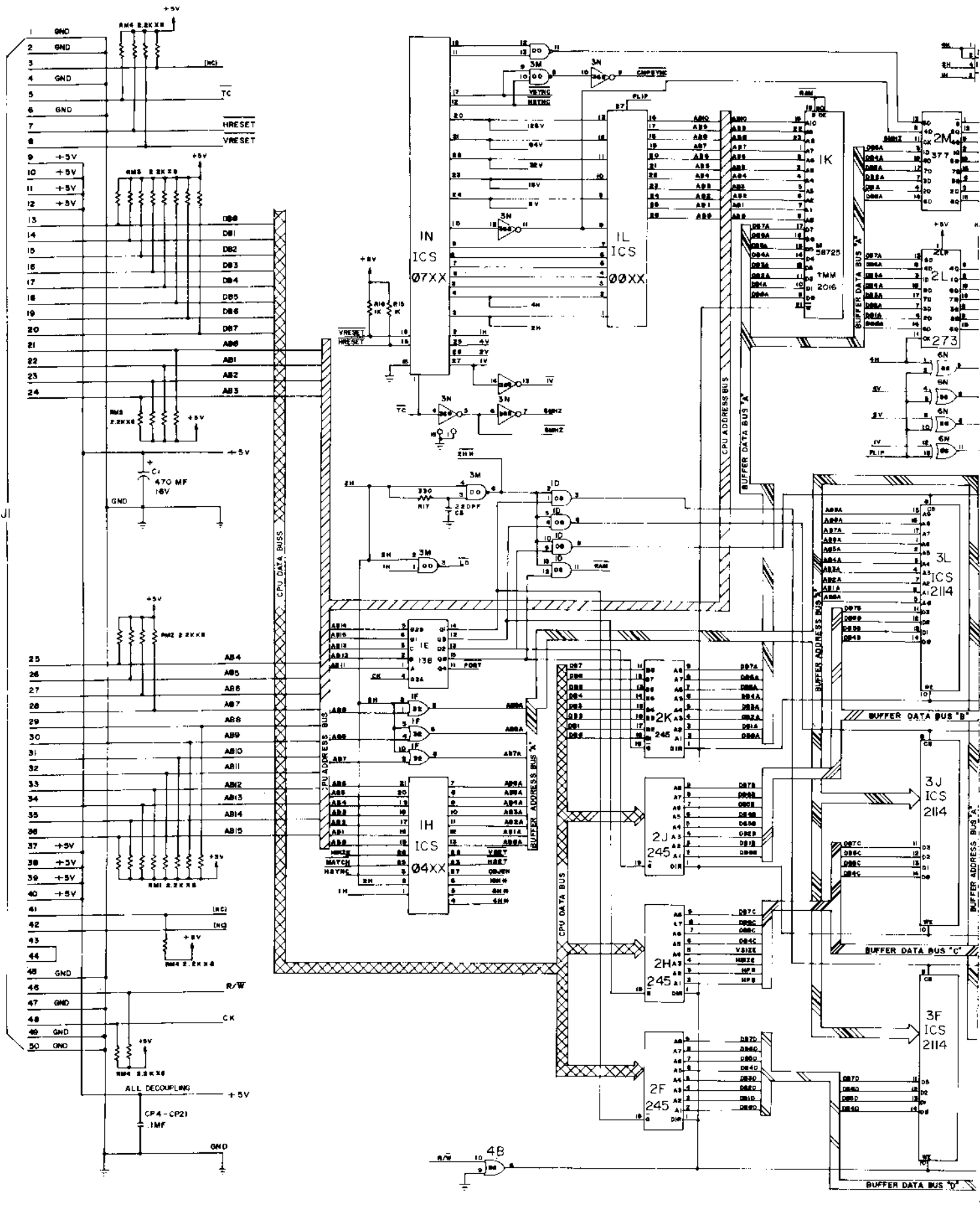
CROSS REFERENCE LIST

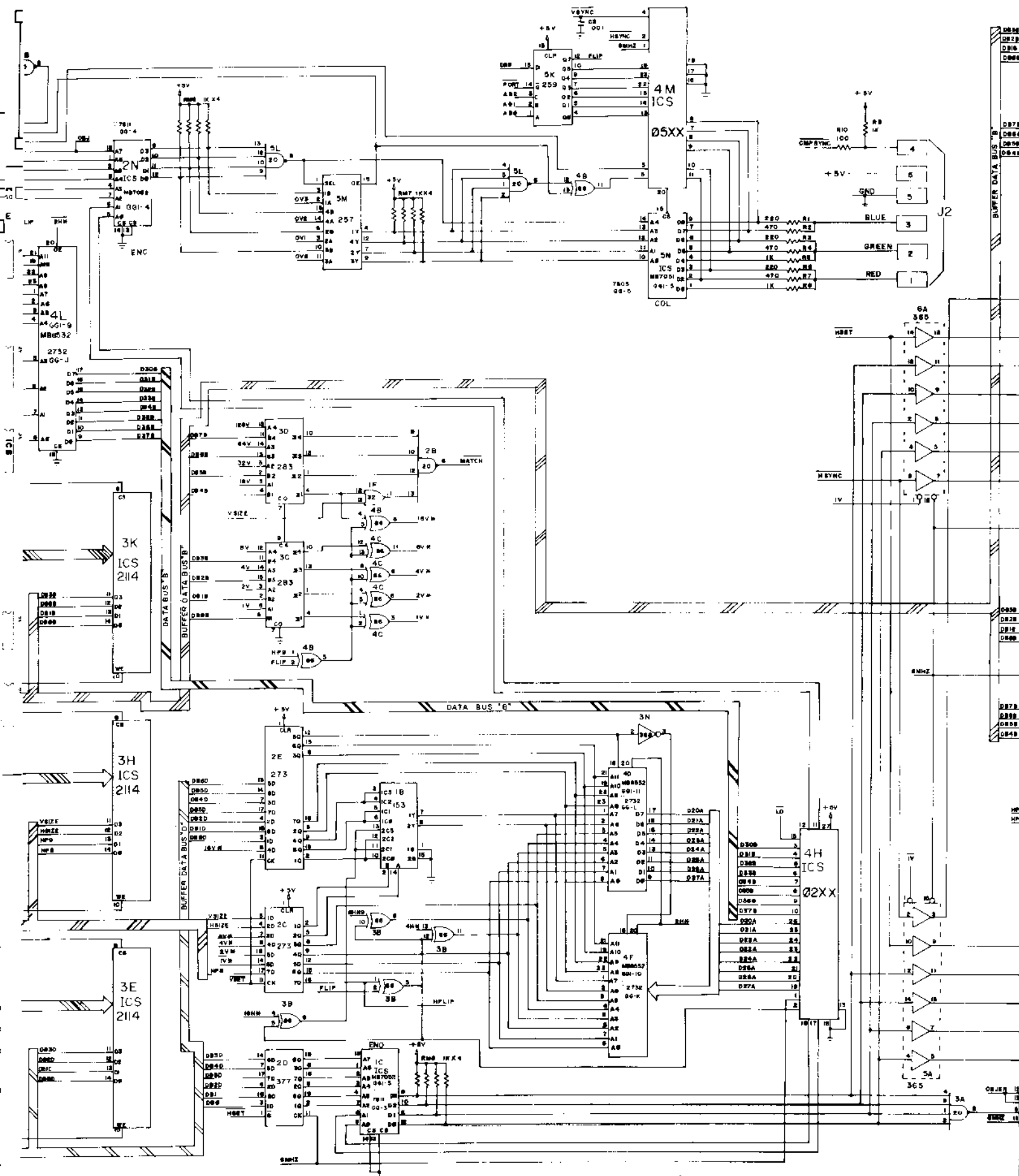
DESCRIPTION	QUANTITY	DESIGNATION	PART #
220PF 500V 15% MCA CAP	1	C3	0508-00607-0100
.001MF 50V CER CAP	1	C2	0508-00800-0200
.1 MF	16	C4-C21	0508-00800-0300
470MF 16V AX. ELEC	1	C1	0508-00800-0400
100 OHM 1/4W 5% CRBN. RES.	1	R10	0062-11085-1XXXX
220 " " " " " " " "	3	R1, R5, R6	0062-13383-1XXXX
330 " " " " " " " "	1	R7	0062-14483-1XXXX
470 " " " " " " " "	7	R2, R4, R7, R11- R14	0062-15683-1XXXX
1K " " " " " " " "	10	R5, R8, R9, R15, R16, R18- R22	0062-17883-1XXXX
1K 8P (4-UNIT) 5- PIN	3	RM6- RM8	0508-00804-0100
1K 8P (8-UNIT) 9- PIN	1	RM5	0508-00804-0200
2.2K	4	RM1- RM4	0508-00804-0300
00XX CUSTOM IC	1	IC1L	0066-001CX- XAPX
02XX " " " "	1	IC4H	0066-002CX- XAPX
04XX " " " "	1	IC1H	0066-003CX- XAPX
08XX " " " "	1	IC4M	0066-004CX- XAPX
07XX " " " "	1	IC1N	0066-006CX- XAPX
2114-2 ST. RAM 200NS. (1024X4)	6	IC3E, 3F, 3H, 3J, 3K, 3L	0508-00803-0300
74LS00	1	IC3M	0508-00803-0400
74LS00	1	IC1D	0508-00803-0500
74LS20	3	IC2B, 3A, 5L	0508-00803-0600
74LS32	1	IC1F	0508-00803-0700
74LS86	4	IC3B, 4B, 4C, 6N	0508-00803-0800
74LS138	1	IC1E	0508-00803-0900
74LS155	1	IC1B	0508-00803-1000
74LS157	1	IC4A	0508-00803-1100
74LS161	6	IC5C, 5D, 5E, 5F, 5H, 5J	0508-00803-1200
74LS245	4	IC2F, 2H, 2J, 2K	0508-00803-1300
74LS257	1	IC5M	0508-00803-1400
74LS259	1	IC5K	0508-00803-1500
74LS273	3	IC2C, 2E, 2L	0508-00803-1600
74LS283	2	IC3C, 3D	0508-00803-1700
74LS298	1	IC5B	0508-00803-1800
74LS365	2	IC5A, 6A	0508-00803-1900
74LS368	1	IC3N	0508-00803-2000
74LS377	2	IC2D, 2M	0508-00803-2100
GG-3 PROM (256X4)	1	IC1C	0508-00803-2200
GG-4 " " " "	1	IC2N	0508-00803-3000
GG-5 PROM (32X8)	1	IC5N	0508-00803-3100
GG-J EPROM (4096X8)	1	IC4L	0508-00803-2600
GG-K " " " "	1	IC4F	0508-00803-2700
GG-L " " " "	1	IC4D	0508-00803-2800
STATC RAM (2KX8)	1	IC1K	0508-00803-2500
* " VIDEO RAM KIT "	1	MAIN PHATOM	0508-00803-4000
* OPTION1 "	1	SUB PHATOM	NOT RELEASED
- 2148 RAM (1KX4)	2	IC6B, 6H	(IN ABOVE NUMBER)
* OPTION2 "	1	SUB PHATOM	0508-00803-2200
- 2147 RAM (4KX1)	8	IC6C, 6D, 6E, 6F, IC6J, 6K, 6L, 6M	(IN ABOVE NUMBER)
* NOTE: ASSEMBLY TO INCLUDE EITHER "OPTION1" OR "OPTION2" AS PER LATEST RELEASED B.O.M.			
16- PIN IC SOCKET	3	IC3K, 2N, 3N	0508-00804-0700
18- PIN " " " "	6	IC3E, 3F, 3H, 3J, 3K, 3L	0508-00804-0800
24- PIN " " " "	5	IC3K, 4D, 4F, 4L, 4M	0508-00804-0500
28- PIN " " " "	4	IC3H, 1L, 1N, 4H	0508-00804-0400
CONNECTOR - R.A. HEADER 50-PIN	1	J1	0308-00804-0800
CONNECTOR - PCB HEADER 6-PIN	1	J2	0017-00021-0424
MOUNTING HARDWARE - DUAL LKG. PCB SPACER	4	MH1-MH4	0017-00042-0233
PCB	1	" GALAGA" VIDEO P.C.B	A084-91405-B508
CABLE ASSEMBLY	1	CABLE ASSY	A508-00027-0000
50-PIN PLUG - SOCKET CONNECTOR	2	PI, P2	0508-00804-0900
RIBBON CABLE - .33 FT	1	CABLE	0017-00033-0348
90- CONDUCTOR 28GA STRND. AND CONDUCTOR			

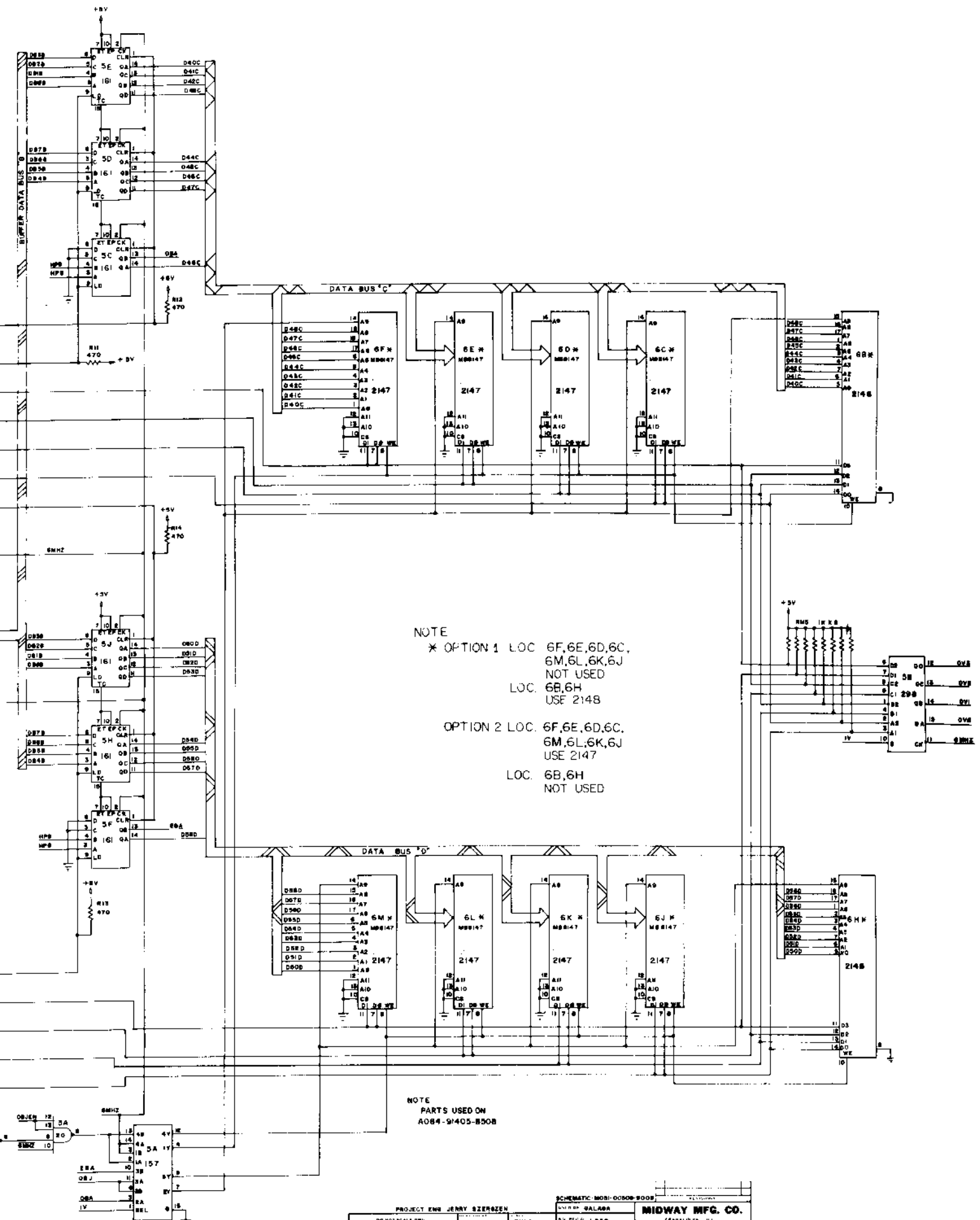


ASSEMBLY M051-00508-0007

PROJECT ENG. JERRY SZERSZEN		DESIGNER GALAGA		MIDWAY MFG. CO.	
DO NOT SCALE DWG		FULL		FRANKLIN PK. ILL.	
DIM. TOLERANCES UNLESS SPECIFIED		NO REQ. IPER		PART NO.	
DATE 08-22-81		GALAGA VIDEO P.C		A084-91405-B508	







NOTE
 * OPTION 1 LOC 6F,6E,6D,6C,
 6M,6L,6K,6J
 NOT USED
 LOC 6B,6H
 USE 2148

OPTION 2 LOC 6F,6E,6D,6C,
 6M,6L,6K,6J
 USE 2147

LOC 6B,6H
 NOT USED

NOTE
 PARTS USED ON
 A084-SI405-B508

DESIGNATION LIST

DESIGNATION	DESCRIPTION	DESIGNATION	DESCRIPTION
C1	470MF 16V AX. ELEC	RM1-RM3	1K OHM 4-UNIT 5-PIN SIP
C2-C17	.01MF 50V CER	RM4	1K OHM 8-UNIT 9-PIN SIP
C18	.1MF " "	RM5	1K OHM 4-UNIT 5-PIN SIP
C19	.01MF " "	RM6, RM7	1K OHM 8-UNIT 9-PIN SIP
C20	22MF 35V AX. ELEC	RM8	NOT USED
C21	220MF 16V AX. ELEC	RM9	1K OHM 4-UNIT 5-PIN SIP
C22	100MF " "	RM10-RM13	2.2K OHM 4-UNIT 8-PIN SIP
C23, C24	.15MF 25V 10% RD. TANT	RM14, RM15	NOT USED
C25	10MF 16V AX. ELEC	RM16	220 OHM 4-UNIT 8-PIN SIP
C26-C29	.01MF 100V 10% MYLAR	RM17-RM20	2.2K OHM 8-UNIT 9-PIN SIP
C30-C42	NOT USED	RM21, RM22	4.7K OHM 8-UNIT 9-PIN SIP
C43	.0022MF 50V 10% CER		
C44	10MF 16V AX. ELEC	VR 1	1K OHM 1/4w CRBN. POT UP W/O KNOB ALPS HIOSIA-1KOHM
C45	100PF 50V CER		
C46-C63	.1MF 50V CER		
R1, R2	330 OHM 1/4w 5% CRBN	D1	1N914B
R3, R4	NOT USED	D2-D4	NOT USED
R5	100 OHM 1/4 5% CRBN	Q1	2N3391A
R6	1K " " " "	Q2	2N4403
R7, R8	10K " " " "	Q3, Q4	NOT USED
R9	NOT USED	Q5	TIP 110
R10	10K OHM 1/4w 5% CRBN	Q6-Q8	NOT USED
R11	22K " " " "		
R12	47K " " " "	IC 1A	74LS107
R13	100K " " " "	" 1B	74LS283
R14	NOT USED	" 1C	74LS174
R15	470 OHM 1/4w 5% CRBN	" 1D	GG-1 PROM (256 X 4)
R16	1K " " " "	" 1E, 1F, 1H, 1J, 1K, 1L	74LS367
R17	2.2K " " " "	" 1M, 1N	74LS367
R18	4.7K " " " "	" 1P	74LS138
R19	10K " " " "	" 2A, 2B	7489
R20	3.3K " " " "	" 2C	74LS157
R21-R29	NOT USED	" 2D	74LS156
R29	4.7K OHM 1/4w 5% CRBN	" 2E, 2H, 2J	06XX CUSTOM IC
R30	10K " " " "	" 2L	06XX " "
R31	22K " " " "	" 2M, 2N	NOT USED
R32, R33	47K " " " "	" 2P	74LS156
R34	10K " " " "	" 3A	4066 CMOS
R35	150K " " " "	" 3B	74LS273
R36	33K " " " "	" 3C	74LS259
R37	10K " " " "	" 3D	NOT USED
R38	3.3K " " " "	" 3E	GG-0 EPROM (4K X 8)
R39	2.2K " " " "	" 3H	NOT USED
R40	470K " " " "	" 3J	GG-E EPROM (4K X 8)
R41	2.2K " " " "	" 3K	GG-D " " "
R42	150K " " " "	" 3L	GG-C " " "
R43	4.7K " " " "	" 3M	GG-B " " "
R44	10K " " " "	" 3N	GG-A " " "
R45	22K " " " "	" 3P	74LS32
R46	47K " " " "	" 4B	74LS139
R47, R48	470 " " " "	" 4C	74LS32
R49, R50	NOT USED	" 4D	07XX CUSTOM IC
R51	10K OHM 1/4w 5% CRBN	" 4E	Z80 MICROPROCESSOR 2.5MHZ
R52-R54	1K " " " "	" 4H	51XX CUSTOM IC
R55	NOT USED	" 4J	Z80 MICROPROCESSOR 2.5MHZ
R56-R63	1K OHM 1/4w 5% CRBN	" 4K	74LS151
R64, R65	4.7K " " " "	" 4L	NOT USED
		" 4M	Z80A MICROPROCESSOR 4.0MHZ
CX1	33PF 50V CER		
CX2	100PF " "		
RX1	1K OHM 1/4w 5% CRBN		

DESIGNATION LIST

ION

AX. ELEC
 Y CER
 AX. ELEC
 Y AX. ELEC
 10% RD.TANT
 AX. ELEC
 10% MYLAR
 10% CER
 X. ELEC
 CER
 CER

4w 5% CRBN

4 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

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4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

4w 5% CRBN

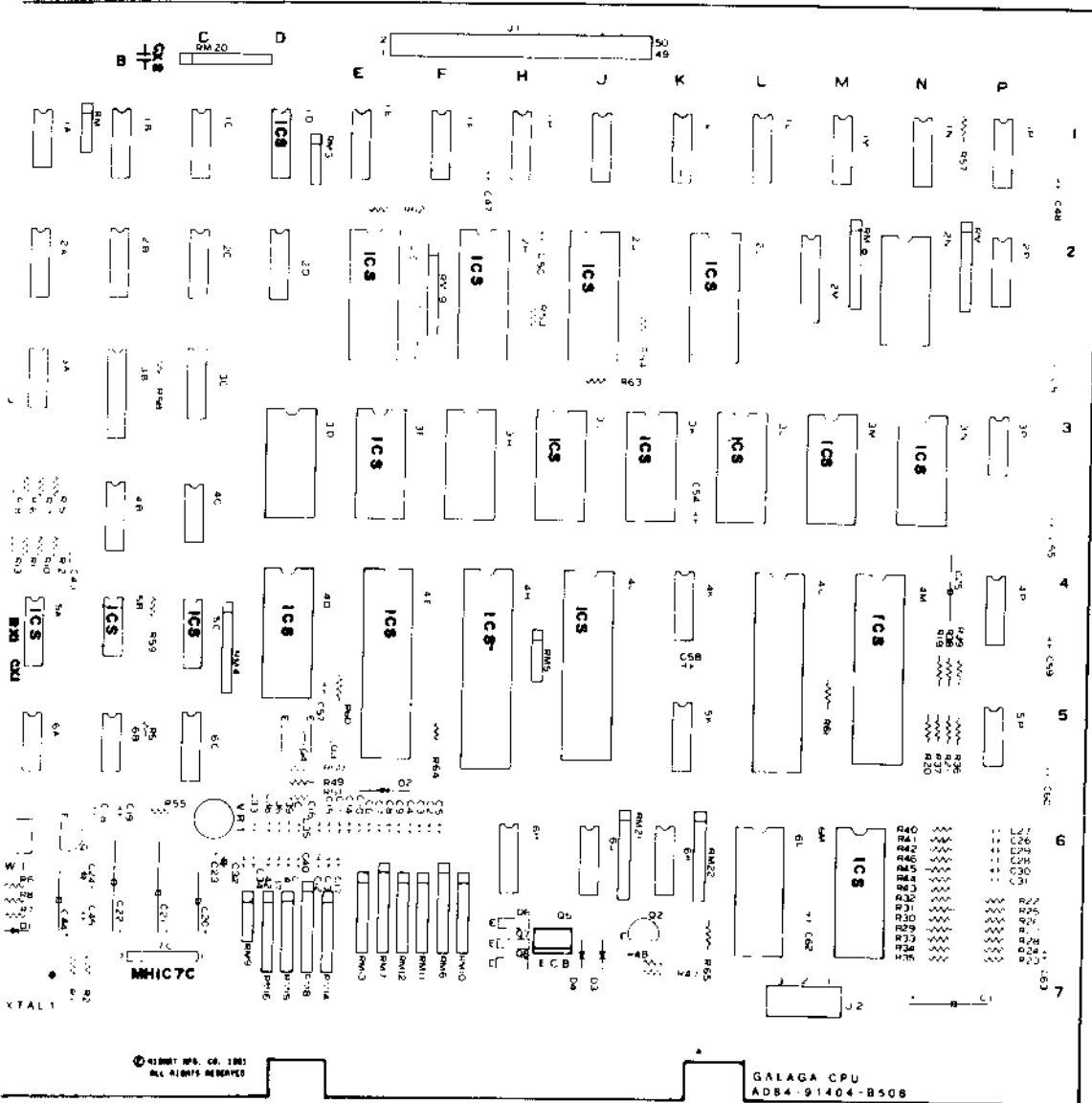
4w 5% CRBN

DESIGNATION	DESCRIPTION
RM1-RM3	1K OHM 4-UNIT 5-PIN SIP
RM4	1K OHM 8-UNIT 9-PIN SIP
RM5	1K OHM 4-UNIT 5-PIN SIP
RM6, RM7	1K OHM 8-UNIT 9-PIN SIP
RM8	NOT USED
RM9	1K OHM 4-UNIT 5-PIN SIP
RM10-KM13	2.2K OHM 4-UNIT 6-PIN SIP
RM14, RM15	NOT USED
RM16	220 OHM 4-UNIT 6-PIN SIP
RM17-RM20	2.2K OHM 8-UNIT 9-PIN SIP
RM21, RM22	4.7K OHM 8-UNIT 9-PIN SIP
VR 1	1K OHM 1/4w CRBN. PDT UP W/O KNOB ALPS "HIO31A-1KOHM"
DI	IN914B
D2-D4	NOT USED
Q1	2N3391A
Q2	2N4403
Q3, Q4	NOT USED
Q5	TIP 110
Q6-Q8	NOT USED
IC 1A	74LS107
" 1B	74LS283
" 1C	74LS174
" 1D	GG-1 PROM (256 X 4)
" 1E, 1F, 1H, 1J, 1K, 1L,	74LS387
" 1M, 1N	74LS387
" 1P	74LS138
" 2A, 2B	7499
" 2C	74LS157
" 2D	74LS158
" 2E, 2H, 2J	08XX CUSTOM IC
" 2L	08XX "
" 2M, 2N	NOT USED
" 2P	74LS158
" 3A	4066 CMOS
" 3B	74LS273
" 3C	74LS259
" 3D	NOT USED
" 3E	GG-G EPROM (4K X 8)
" 3H	NOT USED
" 3J	GG-E EPROM (4K X 8)
" 3K	GG-D " "
" 3L	GG-C " "
" 3M	GG-B " "
" 3N	GG-A " "
" 3P	74LS32
" 4B	74LS139
" 4C	74LS32
" 4D	07XX CUSTOM IC
" 4E	Z80 MICROPROCESSOR 2.5MHZ
" 4H	51XX CUSTOM IC
" 4J	Z80 MICROPROCESSOR 2.5MHZ
" 4K	74LS151
" 4L	NOT USED
" 4M	Z80A MICROPROCESSOR 4.0MHZ

DESIGNATION	DESCRIPTION
IC 4P	74LS139
" 5A	74LS368
" 5B	74LS107
" 5C	GG-2 PROM (256 X 4)
" 5K	74LS151
" 5P	LM324
" 6A	74LS393
" 6B	74128
" 6C	74LS139
" 6H	NOT USED
" 6L	" "
" 6M	54XX CUSTOM IC
" 7C	MB3730

ICS ID	16-PIN	IC SOCKET
" 2E, 2H, 2J, 2L	28-PIN	" "
" 3E, 3J, 3K, 3L, 3M, 3N	24-PIN	" "
" 5A	16-PIN	" "
" 5B	14-PIN	" "
" 5C	18-PIN	" "
" 4D	28-PIN	" "
" 4E	40-PIN	" "
" 4H	42-PIN	" "
" 4J, 4M	40-PIN	" "
" 6M	28-PIN	" "
XTAL1	18.432 MHZ CRYSTAL	
SW1	AKC-6 P.B SWITCH	
DIP SW 6J, 6K	8-POS DIP SWITCH	
J1	CONN.- R.A. HEADER 50-PIN	
J2	CONN.- PCB HEADER 3-PIN	
MH1CTC	MOUNTING HARDWARE	
	-(2) 4-40 HEX NUT	
	-(2) 4-40 X 8 SLT. PAN M.S	
	-(2) WSH. 4 .125-.250-.052 FLT. ST.	
	-(2) WSH. 4 .120-.250-.018 EXT. ST.	

A080-91404-C508 GALAGA "CPU P.C.B"



DESCRIPTION **QUA**

33PF 50V CER	
100PF "	
.0022MF "	
.01MF 25V CER	
.01MF 100V MYLAR	
.1MF 50V CER	
.15MF 25V R.D TANT	
10MF 16V AX. ELEC	
22MF 35V "	
100MF 16V "	
220 MF 16V "	
470MF16V "	
100 OHM 1/4w CRBN RESIS	
330 "	
470 "	
1K "	
2.2K "	
3.3K "	
4.7K "	
10K "	
22K "	
33K "	
47K "	
100K "	
150K "	
470K "	
220 OHM 8IP (4-UNIT) 8-P	
1K " " " 5-P	
1K " " (8-UNIT) 9-P	
2.2K " (4-UNIT) 8-P	
2.2K " (8-UNIT) 9-P	
4.7K " " " "	
1K OHM POTENTIOMETER	
IN914B	
2N3391A	
2N4403	
TIP 110	
06XX CUSTOM IC	
07XX " " " "	
08XX " " " "	
51XX " " " "	
54XX " " " "	
4066 CMOS	
74LS32	
7489	
74LS107	
74128	
74LS136	
74LS139	
74LS139	
74LS151	
74LS157	
74LS158	
74LS174	
74LS259	

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GALAGA CPU
ADB4-91404-B508

DIP SW

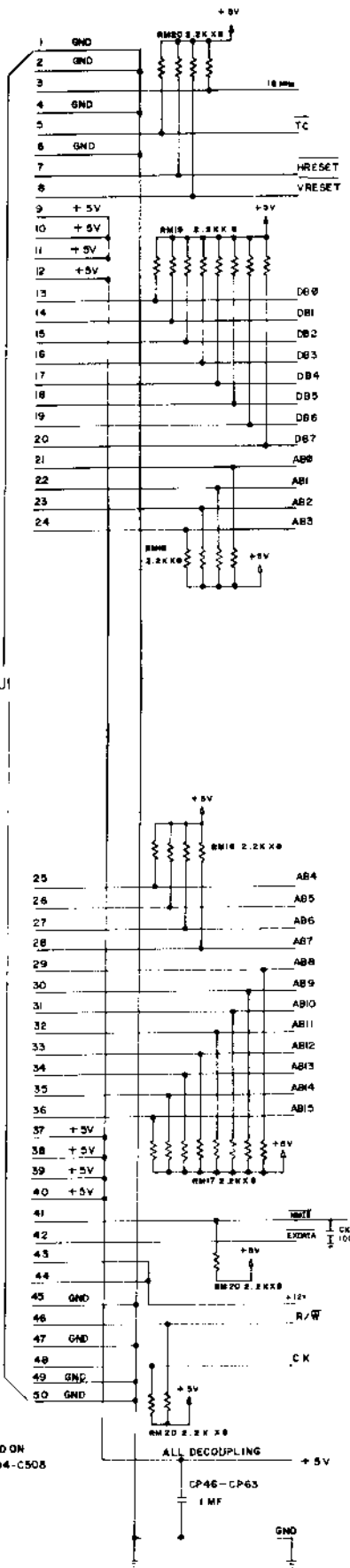
CROSS REFERENCE LIST

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	CX1 X	0508-00800-2000	74LS273	1	IC3B	0508-00803-1600
	C46, CX2 X	0508-00800-0500	74LS285	1	IC1B	0508-00803-1700
	C43	0508-00800-0600	74LS367	8	IC1E, 1F, 1H, 1J, 1K, 1L	0508-00803-4800
	C2-C17, C19	0508-00800-0800			IM, IN	
	C26-C29	0508-00800-0700	74LS368	1	IC5A	0508-00803-2000
	C18, C46-C63	0508-00800-0900	74LS393	1	IC6A	0508-00803-4900
	C23, C24	0508-00800-1000	GG-1 PROM (256X4)	1	IC1D	0508-00803-3800
	C25, C44	0508-00800-1100	GG-2 "	1	IC5C	0508-00803-3900
	C20	0508-00800-1200	GG-A EPROM 2732	1	IC3N	0508-00803-3200
	C22	0508-00800-1300	GG-B " "	1	IC3M	0508-00803-3300
	C21	0508-00800-1400	GG-C " "	1	IC3L	0508-00803-3400
	C1	0508-00800-1500	GG-D " "	1	IC3K	0508-00803-3500
			GG-E " "	1	IC3J	0508-00803-3600
			GG-G " "	1	IC3E	0508-00803-3700
	R5	0062-110B3-1XXX	LM324	1	IC5P	0508-00803-5400
	R1, R2	0062-144B3-1XXX	MB3750	1	IC7C	0066-188XX-XX4X
	R15, R47, R48	0062-158B3-1XXX	Z-80 (2.5MHZ)	2	IC4E #J	0508-00803-5000
	R6, R16, R52-R54	0062-179B3-1XXX	Z-80A (4.0MHZ)	1	IC4M	0508-00803-5200
	R56-R63, RX1 X					
	R17, R39	0062-195B3-1XXX	14-PIN IC SOCKET	1	IC55B	0508-00804-1700
	R20, R38	0062-203B3-1XXX	16-PIN " "	3	IC5 1D, 5A, 5C	0508-00804-0700
	R18, R29, R43, R64, R65	0062-211B3-1XXX	24-PIN " "	6	IC5 3E, 3J, 3K, 3L, 3M, 3N	0508-00804-0900
	R7, R8, R10, R19, R30	0062-227B3-1XXX	28-PIN " "	6	IC5 2E, 2H, 2J, 2L, 4D, 6M	0508-00804-0400
	R34, R37, R44, R51		40-PIN " "	3	IC5 4E, 4J, 4M	0508-00804-1800
	R11, R31, R41, R46	0062-243B3-1XXX	42-PIN " "	1	IC5 4H	0508-00804-1900
	R36	0062-251B3-1XXX	16.432 MHZ CRYSTAL	1	XTAL 1	0508-00804-1400
	R12, R32, R33, R48	0062-259B3-1XXX	P.B SWITCH AKC-8	1	SW1	0508-00804-1800
	R13	0062-275B3-1XXX	8-POS DIP SWITCH	2	6J, 6K	0508-00804-1600
	R35, R42	0062-283B3-1XXX	CONN.-R.A. HEADER 50-PIN	1	J1	0508-00804-0800
	R40	0062-307B3-1XXX	CONN. PCB HEADER 3-PIN	1	J2	0017-00021-0443
	RM16	0508-00804-1100	MOUNTING HARDWARE IC7C		MHC17C	
	RMI-RM5, RM5, RM9	0508-00804-0100	-4-40 HEX NUT	2	-	0017-00103-0002
	RM4, RM6, RM7	0508-00804-0200	-4-40 X 8 PAN M 5	2	-	0017-00101-0510
	RM10-RM13	0508-00804-1200	-WASHER #4 FLT. ST.	2	-	0017-00104-0015
	RM17-RM20	0508-00804-0300	-WASHER #4 EXT. ST	2	-	0017-00104-0071
	RM21, RM22	0508-00804-1000				
	VRI	0508-00804-1500	GALAGA CPU PCB	1	A080-91404-C508	A080-91404-8508
	DI	0508-00801-0100				
	Q1	0508-00802-0200				
	Q2	0508-00802-0100				
	Q5	0508-00802-0300				
	IC2L	0066-005CX-XAPX				
	IC4D	0066-006CX-XAPX				
	IC2E, 2H, 2J	0066-007CX-XAPX				
	IC4H	0066-008CX-XAPX				
	IC6M	0066-009CX-XAPX				
	IC3A	0508-00803-5300				
	IC3P, 4C	0508-00803-0700				
	IC2A, 2B	0508-00803-4100				
	IC1A, 5B	0508-00803-4200				
	IC6B	0508-00803-4300				
	IC1P, 2P	0508-00803-0900				
	IC 3, 6C	0508-00803-4400				
	IC 4, 3	0508-00803-5100				
	IC4K, 5K	0508-00803-4500				
	IC2C	0508-00803-1100				
	IC2D	0508-00803-4600				
	IC1C	0508-00803-4700				
	IC3C	0508-00803-1500				

ASSEMBLY MOSI-00808-C005

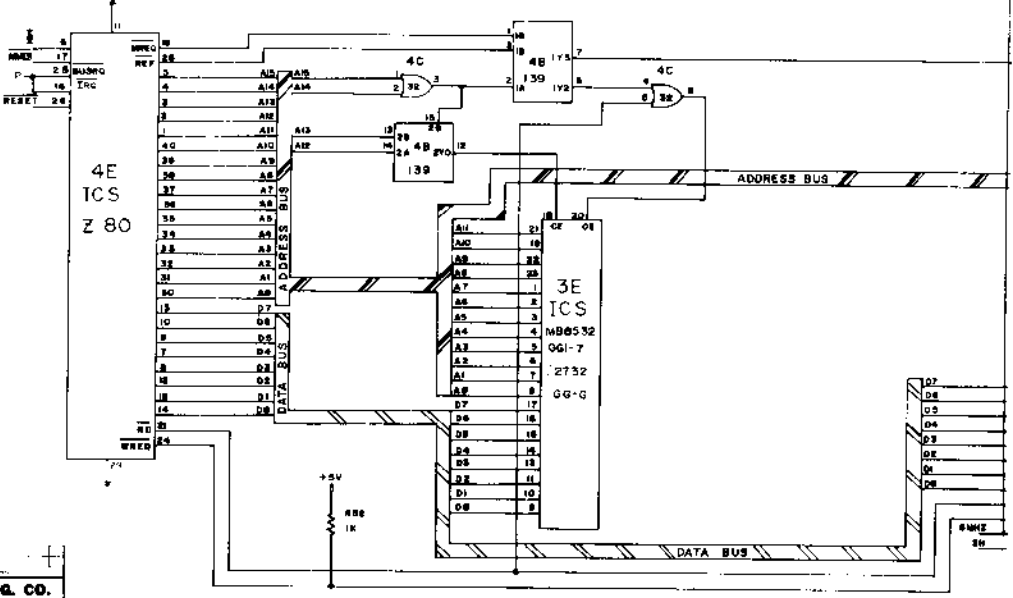
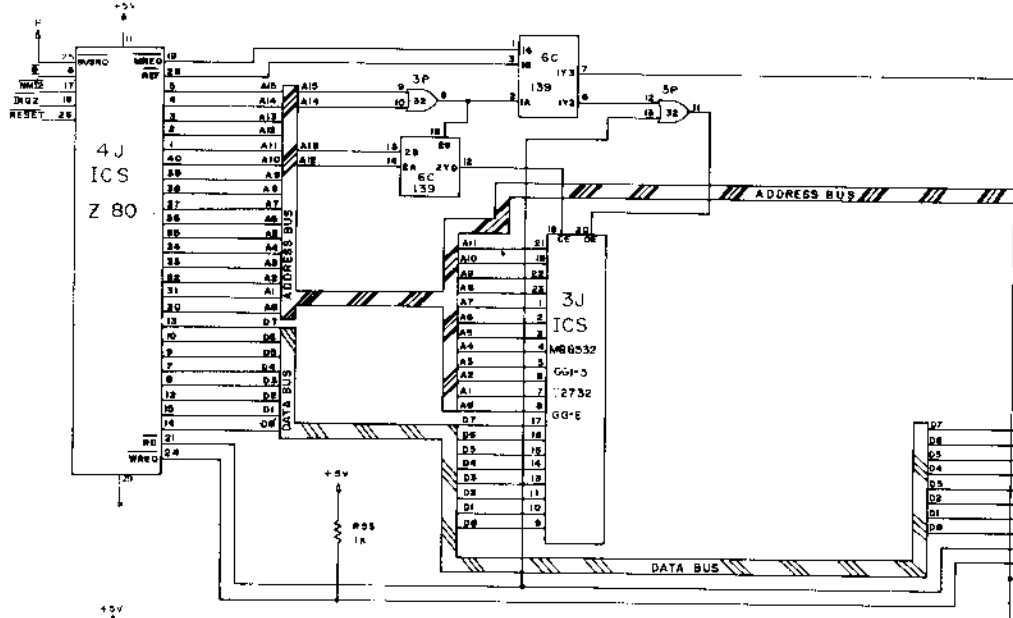
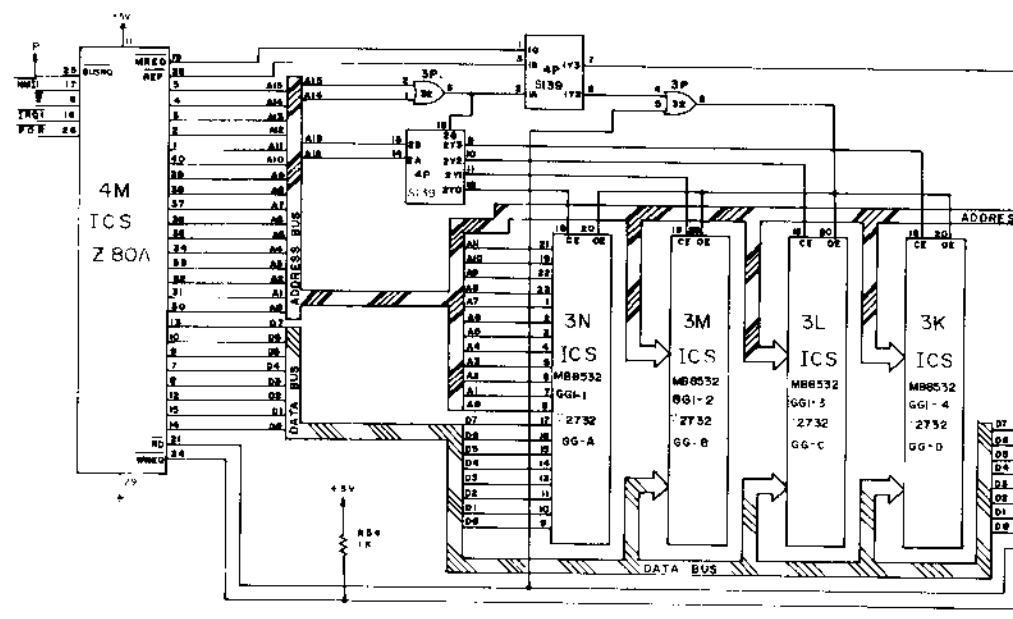
PROJECT ENG: JERRY SZERSZEN

DO NOT SCALE DWG	HEAT TREAT	SCALE	USED ON GALAGA	NO REGO I PER	REVISIONS
DIM TOLERANCES UNLESS SPECIFIED	MAYL	FULL	MIDWAY MFG. CO.		
NON-FUNCTIONAL FOR 003	FINISH	GALAGA CPU P.C.			PART NO
FRACTIONAL 1/16	UNF	A084-91404-C508			FRANKLIN PK ILL
DECIMAL 0.005	UNF	10-1-81			ILL
HOLE DIA +.002 0.000					



NOTE:
PARTS USED ON
AG84-91404-C508
P.C.B.S

ALL DECOUPLING
+5V
GND



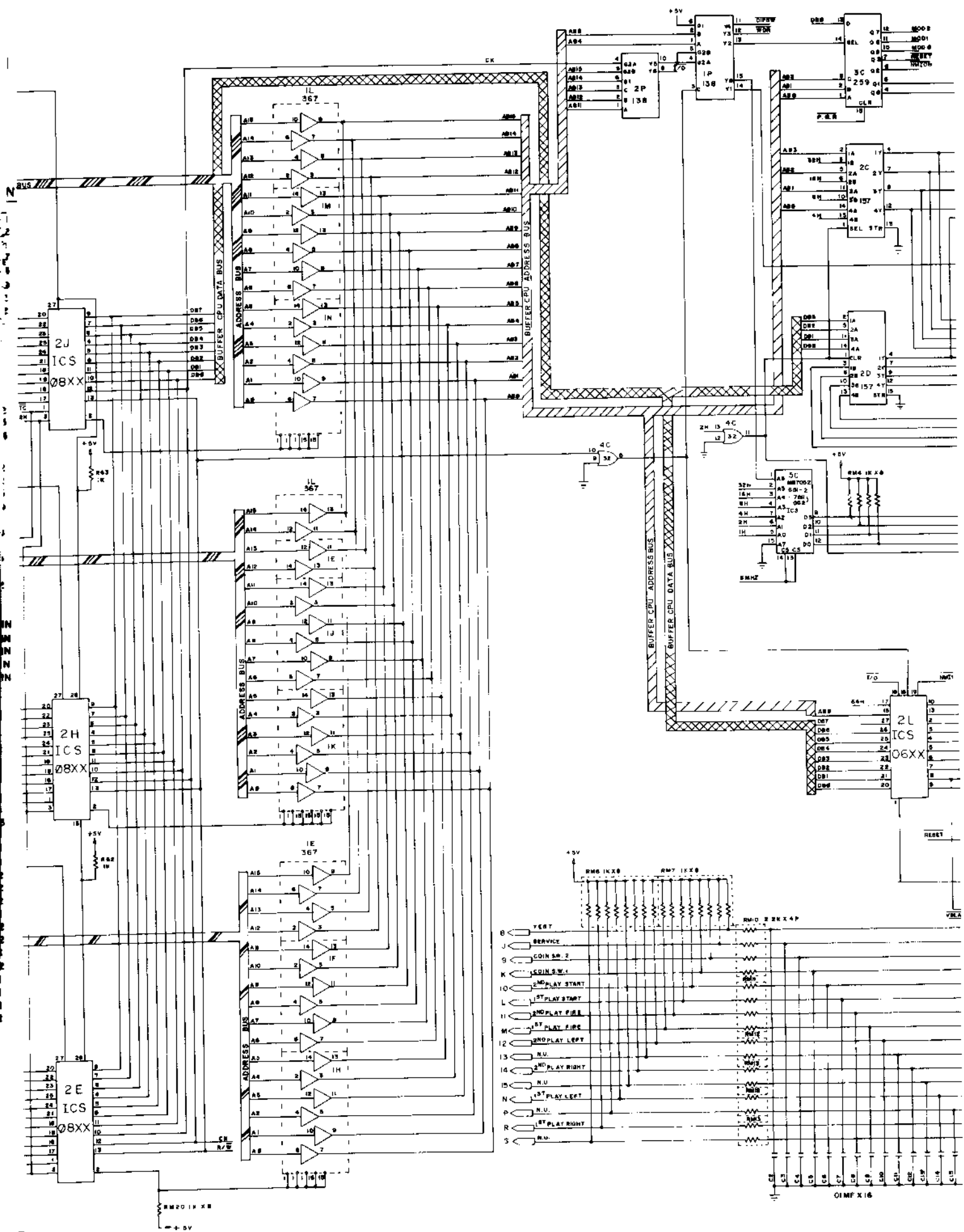
PROJECT ENG: JERRY BIERZEN

SCHMATIC NOS: 00808-0008

FULL IPER

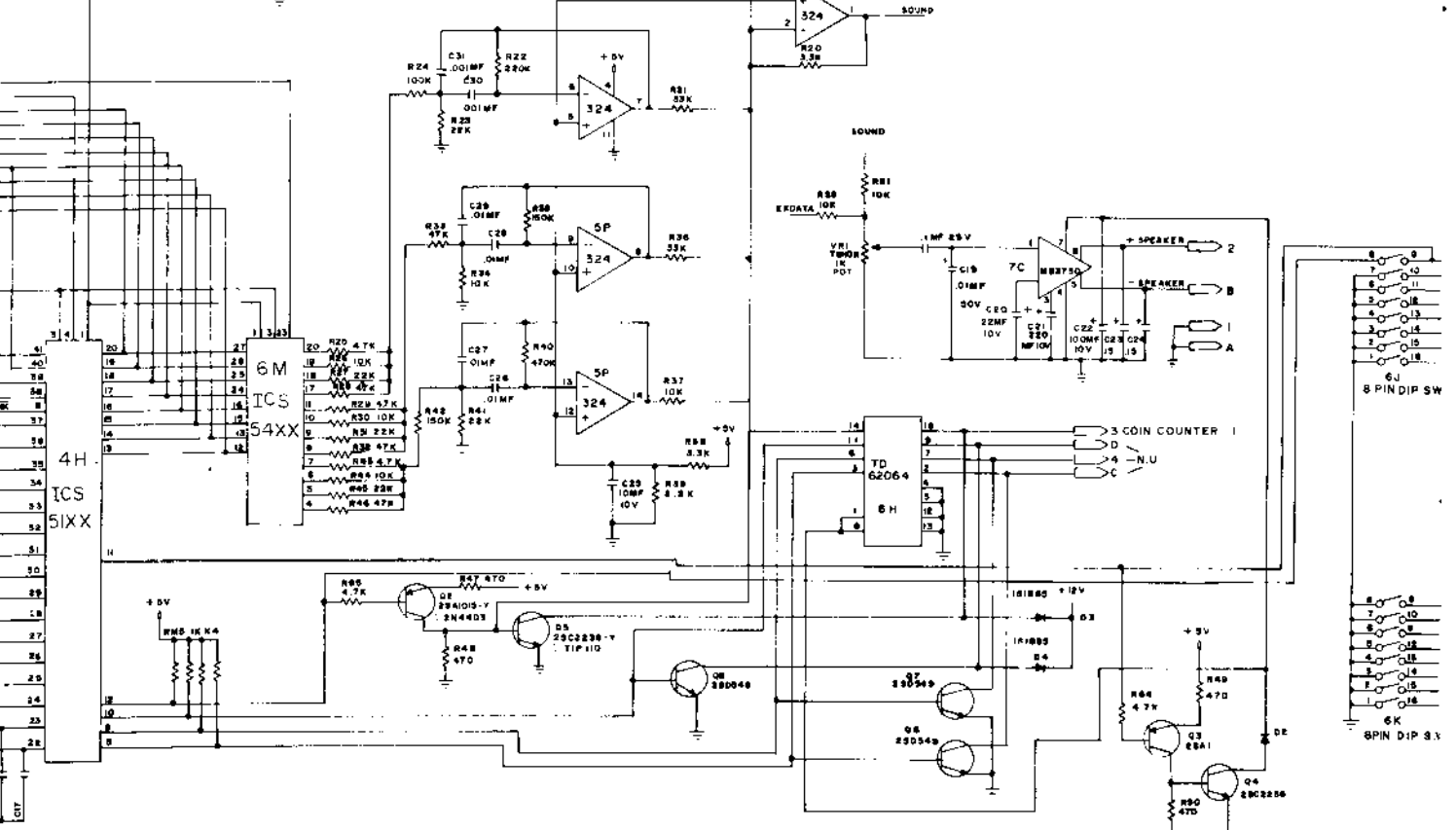
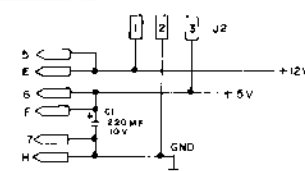
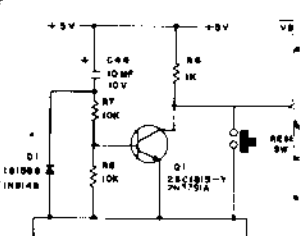
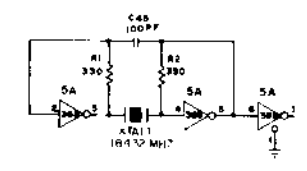
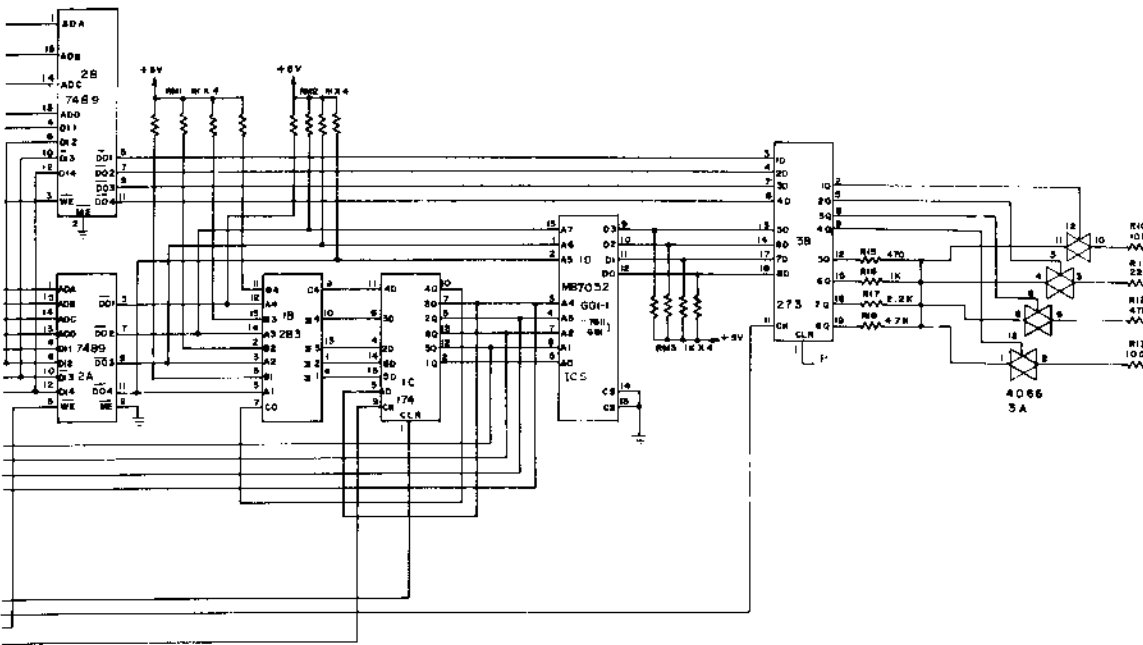
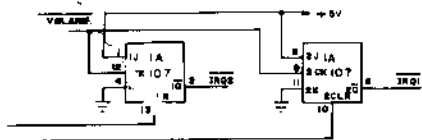
MIDWAY MFG. CO.

GALAGA CPU PC. A084 91404 C508

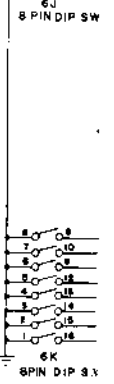


- B TEST
 J SERVICE
 9 COIN SW. 2
 K COIN SW. 1
 L 2ND PLAY START
 M 1ST PLAY START
 N 2ND PLAY FIRE
 O 1ST PLAY FIRE
 P 2ND PLAY LEFT
 Q N.U.
 R 2ND PLAY RIGHT
 S 1ST PLAY LEFT
 T N.U.
 U 1ST PLAY RIGHT
 V MAX

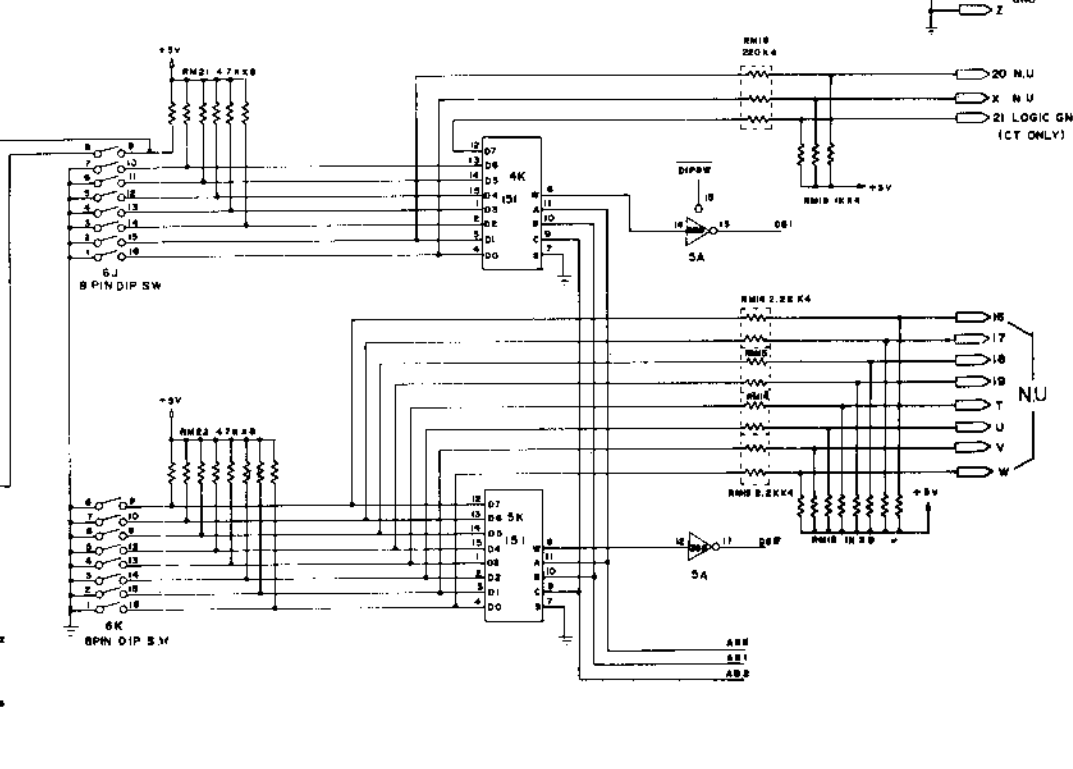
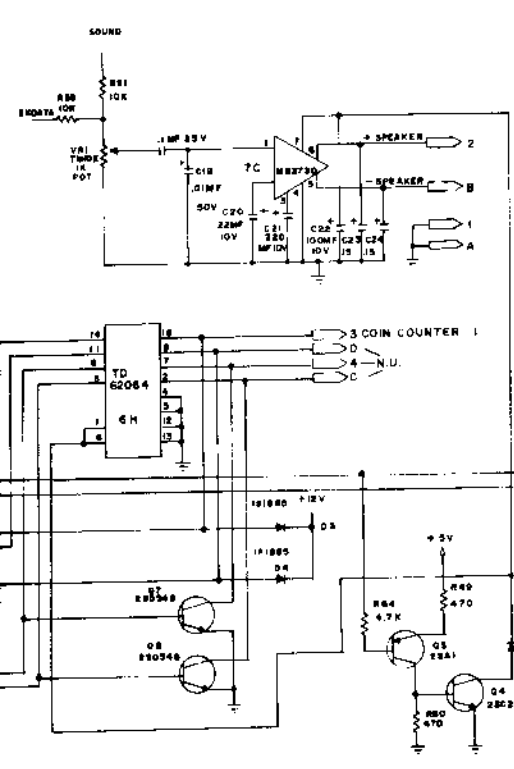
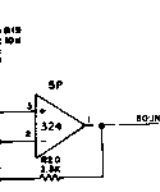
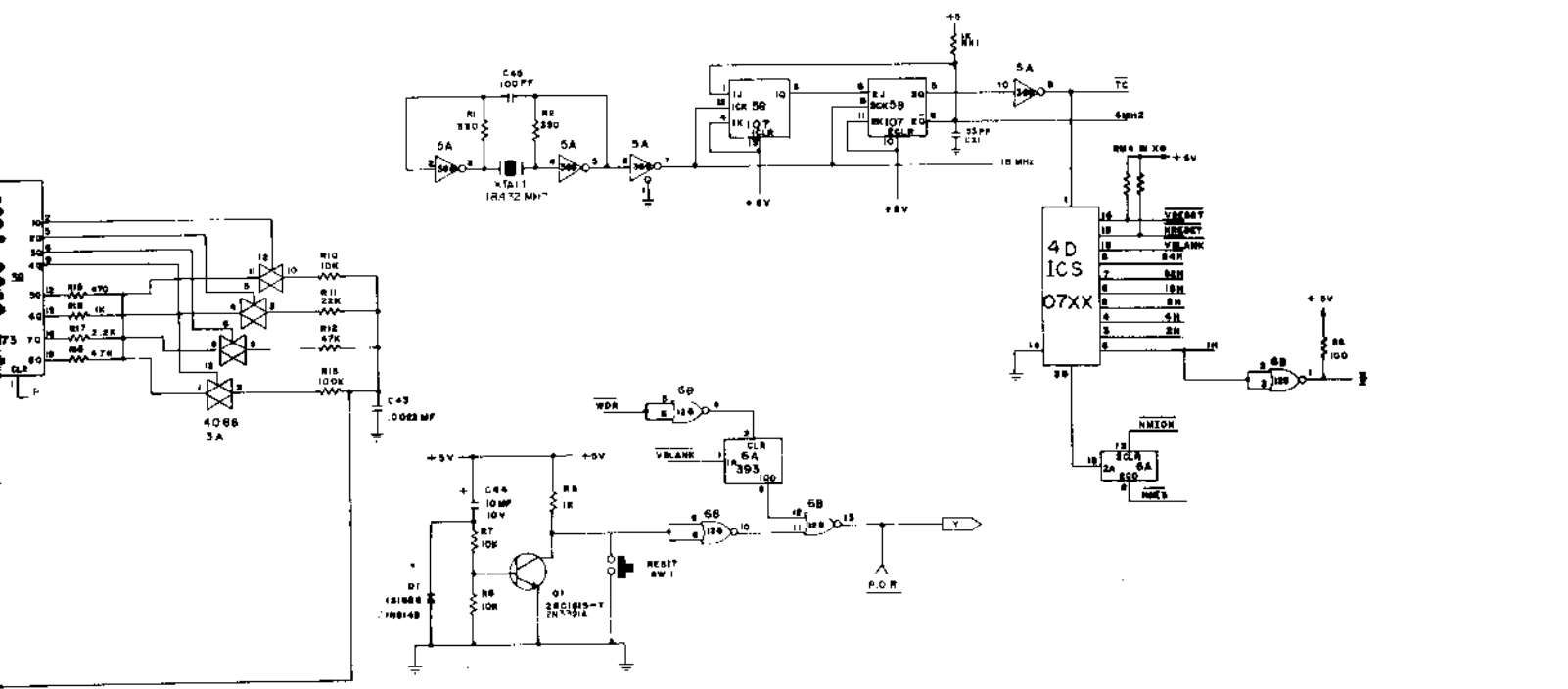
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NOTE
PARTS
A084-Y
P C B3

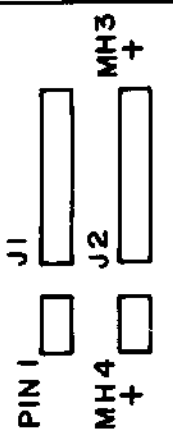


DATE
BY
CHECKED
BY



CROSS REFERENCE LIST

<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>DESIGNATION</u>	<u>PART #</u>
.01MF 25VAX CER	5	C3-C7	0508-00800-0800
.1MF 100V 10% MYLAR	2	C1, C2	0508-00800-2300
68 OHM 1/4w 5% CRBN RES.	2	R6, R8	0062-098B3-1XXX
1K " " " " "	2	R5, R7	0062-179B3-1XXX
1MEG " " " " "	4	R1-R4	0062-323B3-1XXX
LM556	1	U1	0508-00803-5500
7400	1	U2	0508-00803-5600
KK.156 CON. (2-PIN)	2	J1, J2	3000-16335-0200
(6-PIN)	2	J1, J2	3000-16335-0600
MOUNTING HARDWARD SNAP BUSHING 1/4"	4	MH1-MH4	0017-00042-0014
RAPID FIRE P.C	1	A080-91410-A000	A080-91410-A000



ASSY M051-00114-A001

THIS DWG. IS CONFIDENTIAL & PROPERTY OF MIDWAY MFG CO

AGA

09-30-81

FULL



MIDWAY MFG. CO.

FRANKLIN PK., IL. 60131 A BALLY CO

RAPID FIRE P.C.

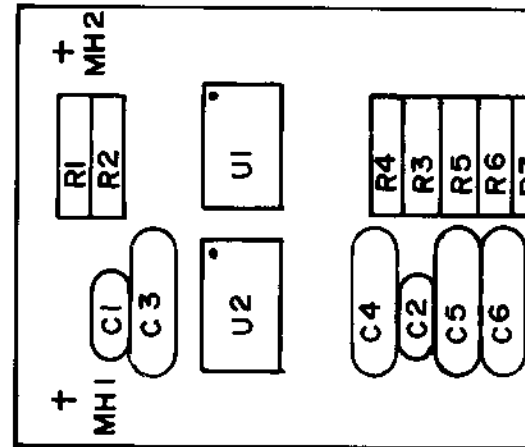
REVISIONS

PART NO

A082-91410-A000

DESIGNATION LIST

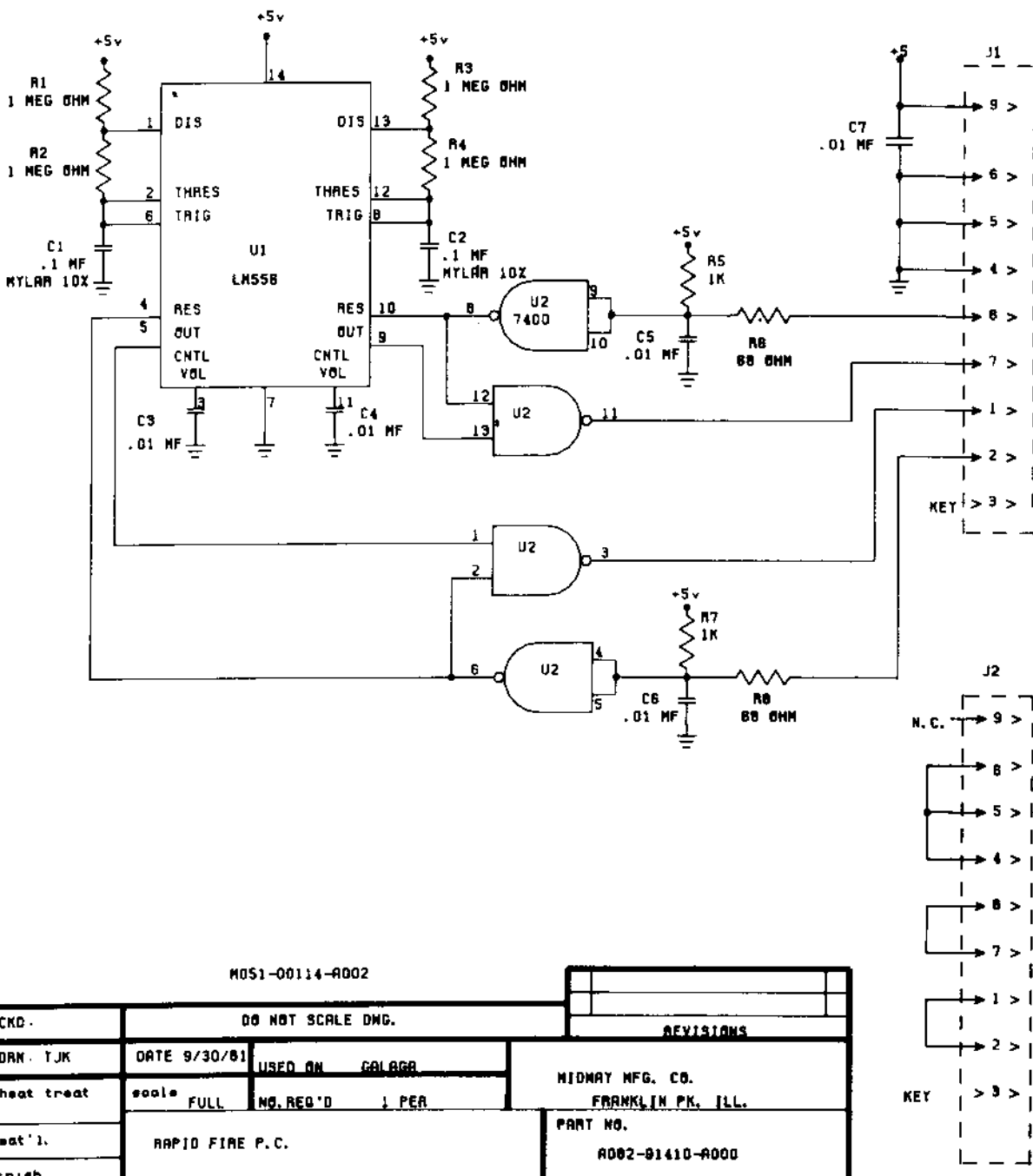
<u>DESIGNATION</u>	<u>DESCRIPTION</u>
C1, C2	.1MF 100V MYLAR
C3-C7	.01MF 25V AX CER
R1-R4	1MEG OHM 1/4w 5% CRBN RES
R5	1K " " " "
R6	68 " " " "
R7	1K " " " "
R8	68 " " " "
U1	LM556
U2	7400
J1, J2	KK.156 VERT 2(6-PIN) 2(2-PIN)
MH1-MH4	SNAP BUSHING 1/4"



PROJECT ENG: JERRY SZERS

DIM. TOLERANCES	
UNLESS OTHERWISE SPEC	
CONCENTRICITY TLR	.002
FRACTIONAL	± .1/64
DECIMAL	± .005
HOLE DIA	+ .002-- .000
ANGLE	± 1/2°
DO NOT SCALE DWG	

Drawn	G
Check	<i>MM</i>
MECH ENGR	
ELECT ENGR	



NOTE: USE J1 FOR RAPID FIRE OPTION

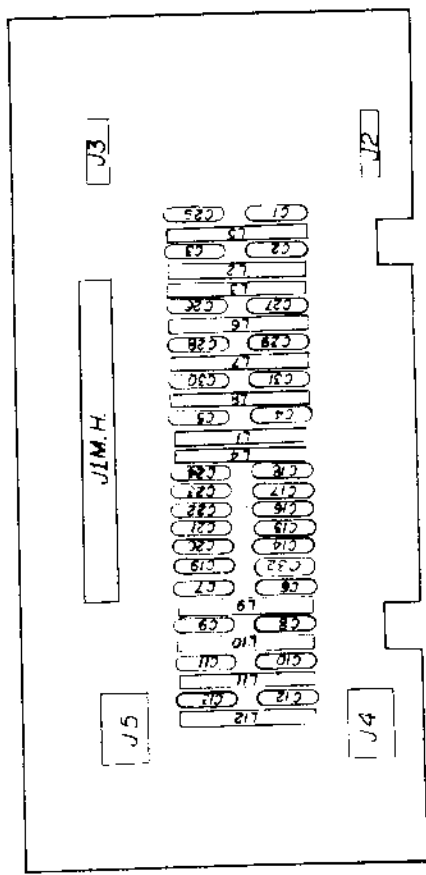
NOTE: USE J2 TO BYPASS RAPID FIRE OPTION

M051-00114-A002

CKD.	DO NOT SCALE DWG.		REVISIONS
DRAWN BY TJK	DATE 9/30/81	USED ON GAL AGG	MIDWAY MFG. CO.
heat treat	scale FULL	NO. REQ'D 1 PER	FRANKLIN PK. ILL.
mat'l.	RAPID FIRE P.C.		PART NO.
finish			A002-01410-A000

KEY 1 BETWEEN CONTACTS 5, E AND 6, F
KEY 2 BETWEEN CONTACTS 3, C AND 4, D

6 5 4 3 2 1
C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12



DESCRIPTION
1 MF AXGER
47 PF AXGER
470 PF AXGER
100 PF AXGER
.01 MF AXGER
CHOKE 10 JH W.W. MILLER
CHOKE 10 JH W.W.
CHOKE ENCAP 10 JH
P.C. EDGE CONN.
3 PIN HEADER
6 PIN HEADER
2 EDGE CONN. KEY
(2) 16-32 x 10 SLOT PAN SCREW
(2) WSH 6 145-250-.032
(1) BRKT.-CONN. FIN.

DESIGNATION
C1
C2-C5
C6, C7
C8-C13
C14-C32
L1-L4
L5-L8
L9-L12
J1
J2, J3
J4, J5
J1 M. H.

DESCRIPTION	QUANTITY	DESIGNATION	PHANTOM NUMBER
3 PIN HEADER AMP 350428-1	2	J2-J3	0017-00021-0443
6 PIN HEADER AMP 350431-1	2	J4-J5	0017-0021-0424
PC EDGE CONN KEY	2	J1MH	0017-00021-0398
6-32 x 10 SLOT PAN SCREW	2	J1MH	0017-00101-0574
WSH 6 145-250-.032	2	J1MH	0017-00104-0002
BRKT- CONN. FIN	1	J1MH	0866-0018-00XF

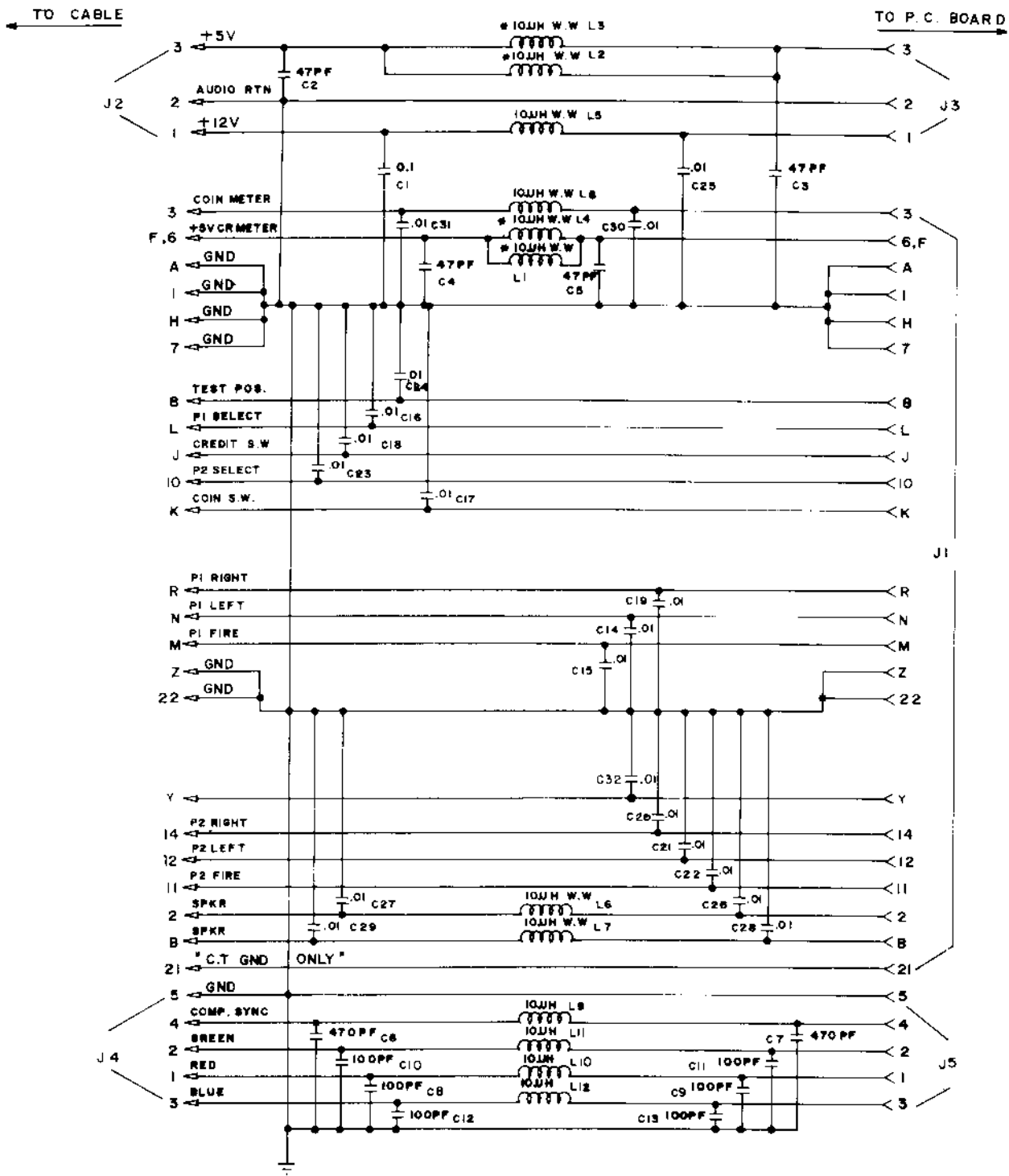
DESCRIPTION	QUANTITY	DESIGNATION	PHANTOM NUMBER
47PF 50V AXGER	4	C2-C5	0508-00800-1800
100PF 50V AXGER	6	C8-C13	0508-00800-1800
470PF 50V AXGER	2	C6, C7	0508-00800-1700
.01MF 25V AXGER	19	C14-C32	0508-00800-1800
.1MF 50V AXGER	1	C1	0508-00800-0900
10 JH W.W. RF CHOKE MILLER	4	L1-L4	0067-021XX-XXAX
10 JH W.W. PF CHOKE	4	L5-L8	0508-00804-2000
10 JH ENCAP PF CHOKE	4	L9-L12	0508-00804-2100
PC EDGE CONN.	1	J1	0017-00021-0418

PROJECT ENGINEER L. DEKKER
ASSY. DWG M051-00508-B014
THIS DWG IS CONFIDENTIAL PROPERTY OF MIDWAY MFG. CO.

MIDWAY MFG. CO.
P.O. BOX 100
MIDWAY, PA. 17031
A. BALY, CO.

DATE: 10-12-61
SCALE: FULL
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
FRACTIONAL DIMENSIONS TO 1/16"
HOLE DIA. ± .005
ANGLE ± 1/2°
DO NOT SCALE DIMS.

REVISIONS
PART NO. 408-4-91-408-B5C8
GALAGA FILTER FC



NOTE:
 ALL 1.0 ARE MF
 ALL CAPS AX CER. UNLESS
 NOTED OTHERWISE
 * 1.5 AMP (MILLER TYPE)
 INDUCTORS

SCHEM: MOBI-00508-3013
 LISTING IS CONFIDENTIAL PROPERTY OF MIDWAY MFG. CO.

PROJECT ENG: L. DEKKER

DATE: 11/22/77

REV: 1

CONCERN: CITY R

FRACTIONAL

HOLE DIA

ANGLE

DO NOT SCALE DIMS

GALAGA

10-12-81 FULL

MIDWAY MFG. CO.
 MANUFACTURING DIV.
 2001 W. 117th St.
 Des Moines, IA 50319

GALAGA FILTER BOARD

PART NO. AO 84-9140 B 850 B

REVISIONS