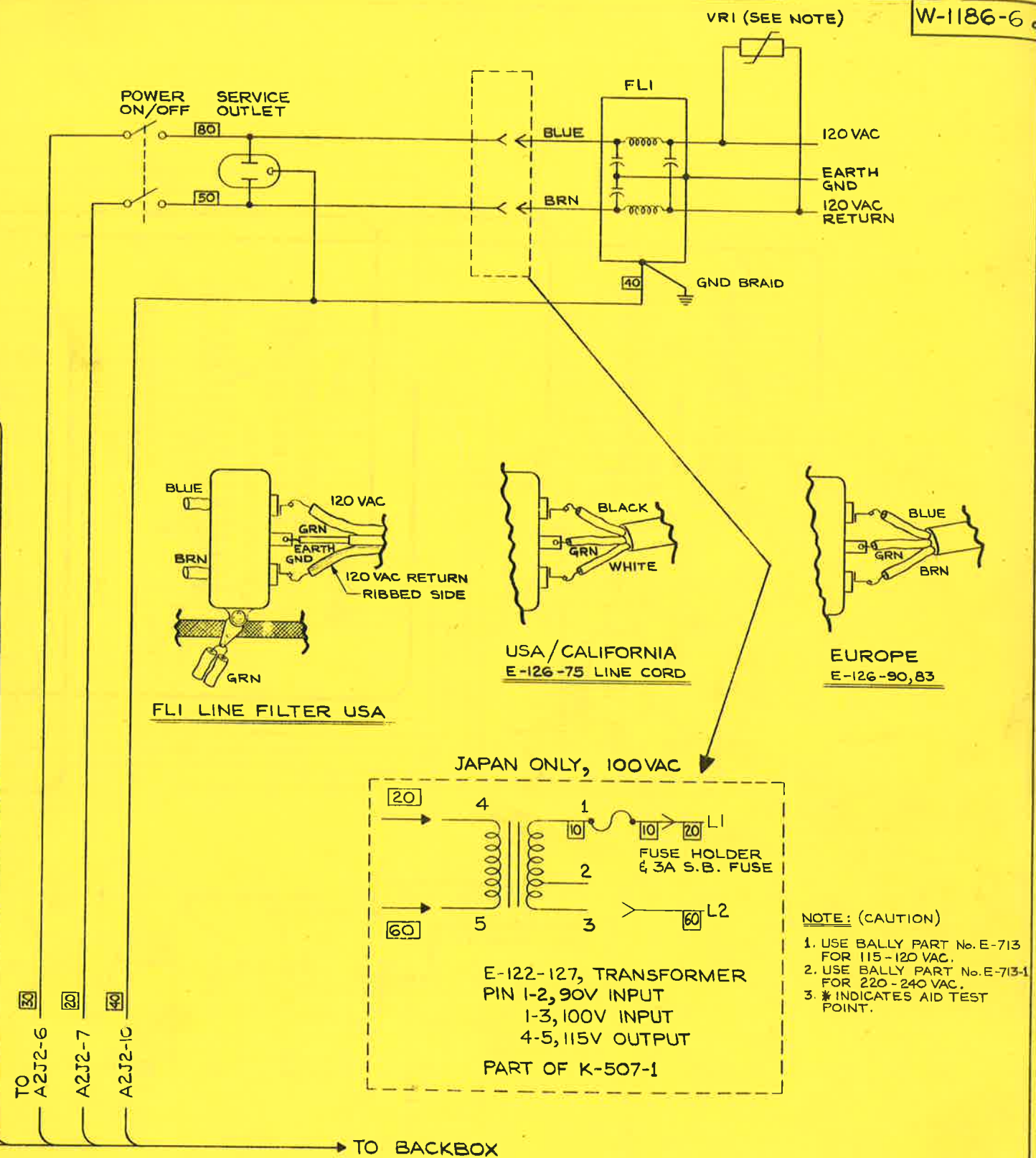
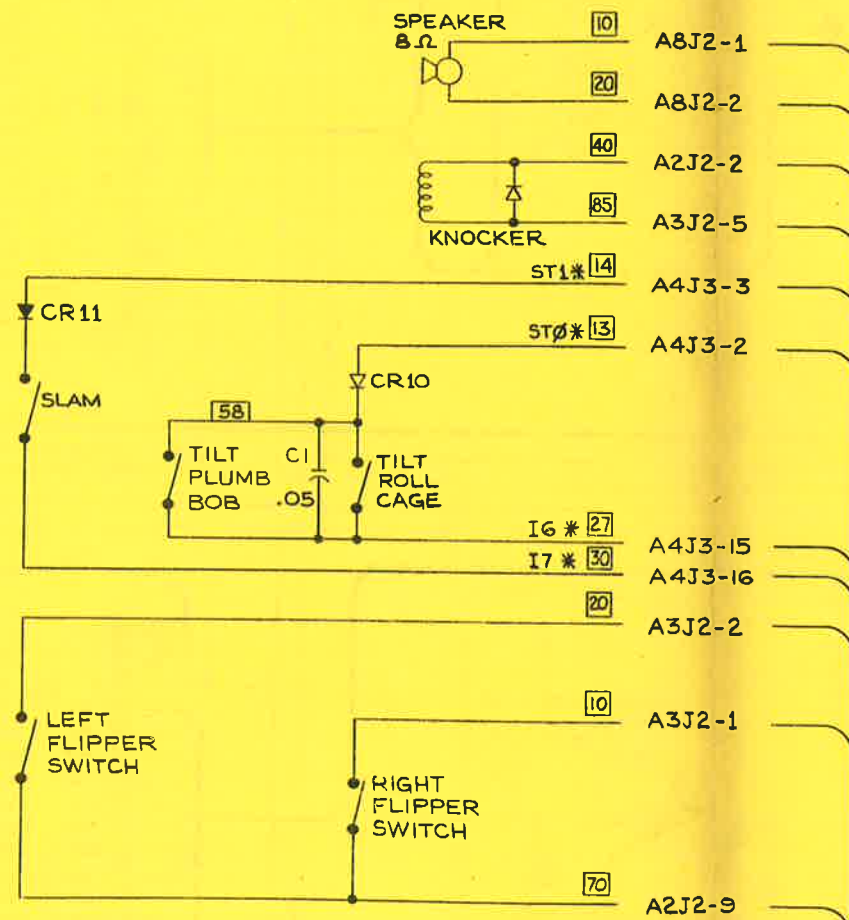
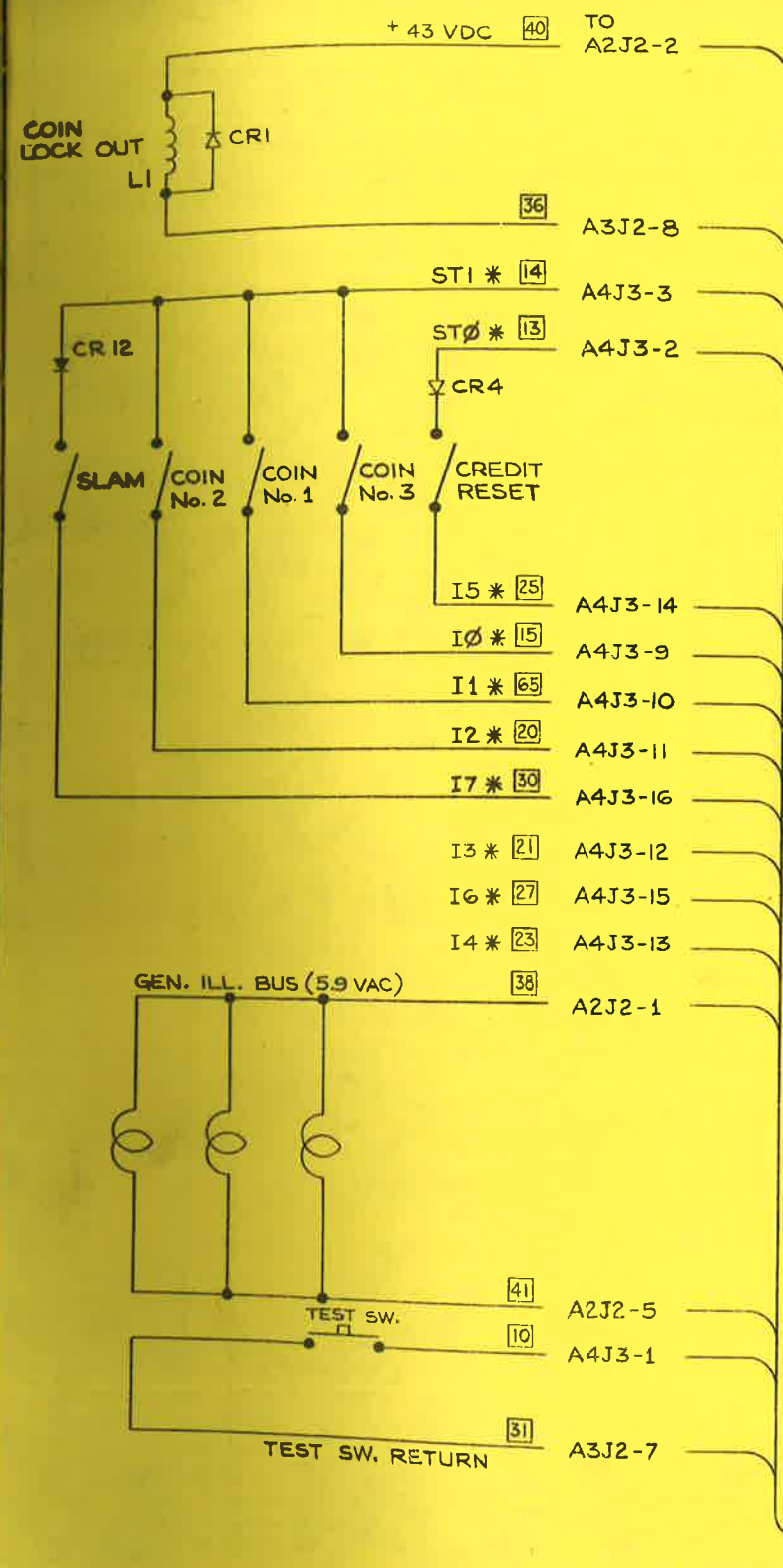




TO	J1 PIN	TO	J1 PIN
A4J3-9	1	A4J3-3	11
A4J3-10	2	A2J2-2	15
A4J3-11	3	A3J2-8	16
A4J3-12	4	A2J2-1	17
A4J3-13	5	A2J2-5	18
A4J3-14	6	A4J3-1	19
A4J3-15	7	A3J2-7	20
A4J3-16	8		
A4J3-22	10		

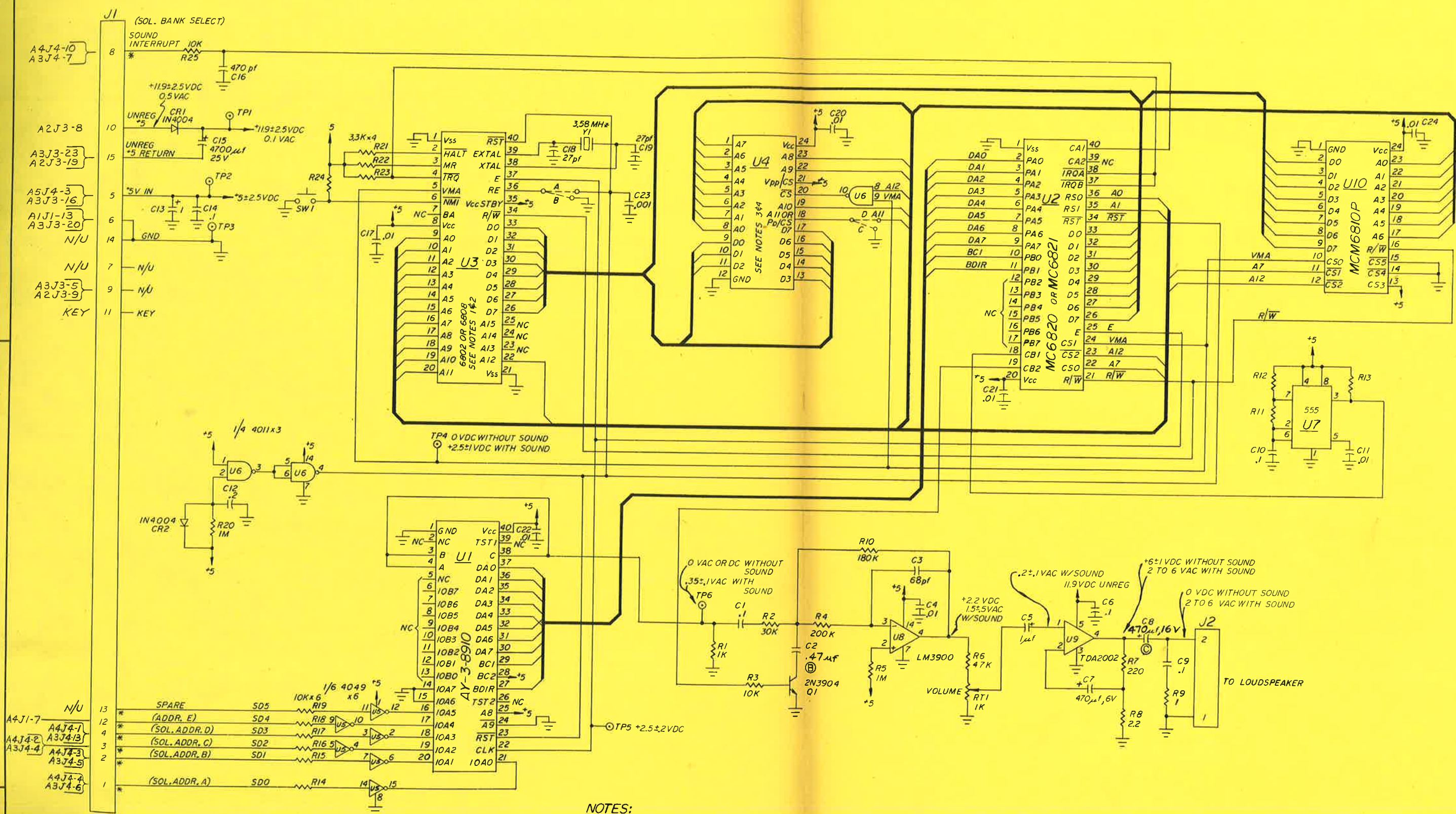
DOOR PLUG

A7 CABINET ASS'Y. WIRING

NOTE :- DIODES ARE IN4004, (E-587-6)

6		
5		
4		
3		
2		
1		
OPER.	DESCRIPTION	TOOL No.

DR. BY CR. BY		DATE 3-28-79		REMOVE ALL BURRS TOLERANCES ON DIMENSIONS UNLESS OTHERWISE SPECIFIED FRACTIONS : DECIMALS : ANGLES : DO NOT SCALE DRAWING Bally MANUFACTURING CORP. 2640 BELMONT AVENUE CHICAGO, ILLINOIS 1161-E															
		DATE _____																	
		AP'D BY J D		DATE 4-5-79		PRINT CONTROL		PROD. CONT.		FOR. ERS. T.D.		T.O. INC.		CORR. VERB.		TOTAL		SCALE ~~~~~	
		AP'D BY E G M		DATE 4-3-79		1 1		1 1		1 1		1 1		1 1		1 1		1 1	
		FINISH		NAME WIRING DIAGRAM ELECTRONIC		ASSEM. NO. W-1186-6													
LET. CHANGE DATE BY CK				MATERIAL		PART NO. W-1186-6													



NOTES:

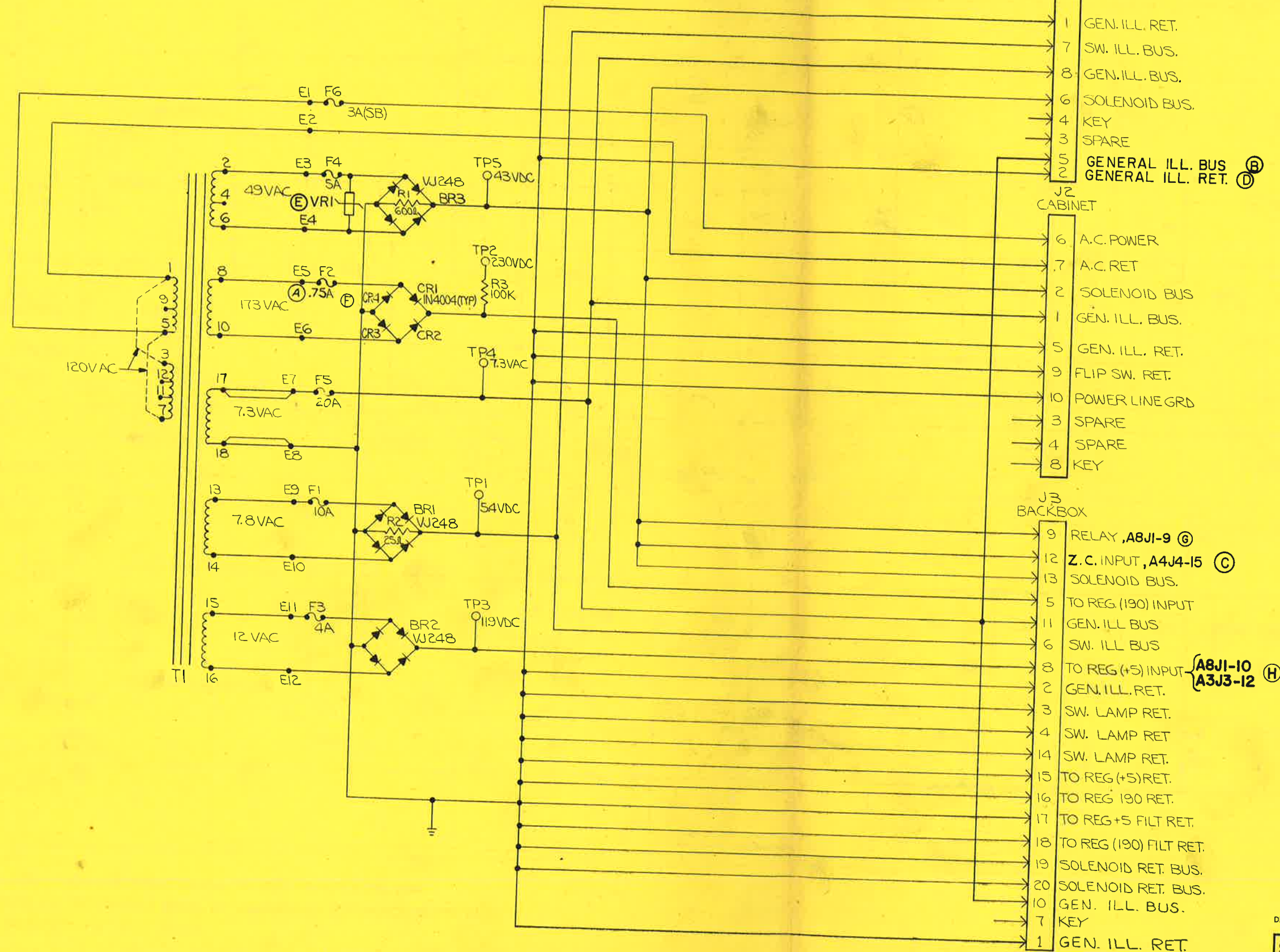
1. USE JUMPER A IF INTERNAL RAM IS USED (6802 WITHOUT U10).
2. " " B " EXTERNAL " " (6808/6810, U10).
3. " " C " 2K ROM (EPROM) " (G1936B INTEL 2716 OR EQUIV.).
4. " " D " 4K " " (T1 TMS 2532 TMS 4732 OR EQUIV.).
5. U7, R12, R11, R13, C10, C11 NOT USED ON THIS ASSEMBLY.
6. UNLESS OTHERWISE INDICATED, ALL RESISTOR VALUES ARE IN OHMS, ALL CAPACITOR VALUES ARE IN MMFD'S.
7. PREFIX ALL REFERENCE DESIGNATIONS WITH A8.
8. * INDICATES "AID" TEST POINT.

ALL DESIGN, OPERATIVE AND PROCESS DATA PERTAINING TO THE ARTICLE SHOWN ON THIS SHEET IS THE PROPERTY OF BALLY MFG. CORP. CHICAGO, ILL. THIS INFORMATION IS DISCLOSED IN CONFIDENCE AND IS NOT TO BE COPIED, REPRODUCED, REVEALED TO OR APPROPRIATED BY OTHERS, IN PART OR IN WHOLE, WITHOUT THE EXPRESS CONSENT OF THE OWNERS. THE PRINT IS LOANED AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF THE OWNERS, AND MUST BE RETURNED ON DEMAND.		DR. BY NRW DATE 9-3-79		Bally MANUFACTURING CORP. 2640 BELMONT AVENUE CHICAGO, ILLINOIS #1173	
CK. BY SM DATE 9-19-79	DATE 9-19-79	PRINT CONTROL	DIE SIZE	C.C.	FT. PER M.
APPROV. SM DATE 9-19-79	DATE 9-19-79	NAME COMPUTER SOUND MODULE	ASSEM. NO. USED 45-2518-51	SCALE	
FINISH: 1	MATERIAL	PART NO. W-1211			

OPER.	DEPT.	DESCRIPTION	TOOL NO.

TRANSFORMER ASSEMBLY A2

PART NO.
W-1185-1c



NOTES:

1. WIRE A.C. POWER AND TERMINALS PER TABLE 1.
2. VOLTAGES SHOWN ARE FOR GAME IN POWER-UP CONDITION.
3. PREFIX ALL REFERENCE DESIGNATIONS WITH A2.

LINE VOLTAGE VRMS A.C.	STRAP TERMINALS	APPLY POWER TO TERMINALS
115	1 TO 3 AND 5 TO 11	1 AND 9
120	1 TO 3 AND 5 TO 7	1 AND 5
220	3 TO 5	1 AND 12
240	3 TO 5	1 AND 7

DIE SIZE — C.C. — FT. PER M — LBS. PER M —

ALL DESIGN, OPERATIVE AND PROCESS DATA PERTAINING TO THE ARTICLE SHOWN ON THIS SHEET IS THE PROPERTY OF BALLY MFG. CORP., CHICAGO, ILL. THIS INFORMATION IS DISCLOSED IN CONFIDENCE AND IS NOT TO BE COPIED, REPRODUCED, REVEALED TO OR APPROPRIATED BY OTHERS, IN PART OR IN WHOLE, WITHOUT THE EXPRESS CONSENT OF THE OWNERS. THE PRINT IS LOANED AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF THE OWNERS, AND MUST BE RETURNED ON DEMAND.

6	H	ADDED A8J1-10, A3J3-12	10-179	E.V.	TD
5	G	ADDED A8J1-9	9-1279	E.V.	TD
4	F	ERASED (SB)	12-478	TD	
3	E	VR1 READ R3	11-278	NR	SB
2	D	J1-2 READ "GND"			
2	C	J3-12 READ "Z.C. INPUT"			
1	B	Added Jumper J1-5 to J3-1			

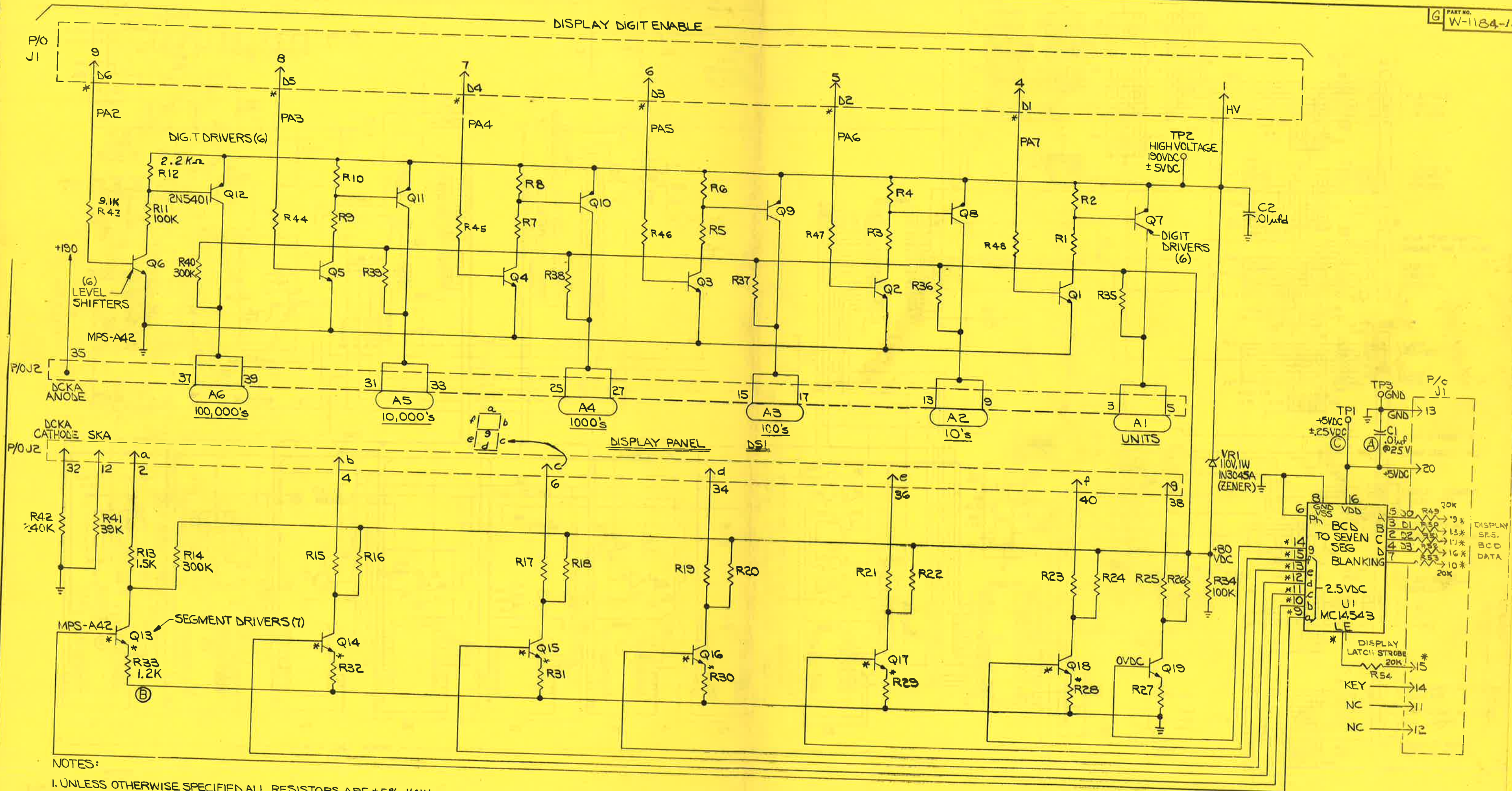
REMOVE ALL BURRS

TOLERANCES ON
DIMENSIONS UNLESS
OTHERWISE SPECIFIED
FRACTIONS ±
DECIMALS ±
ANGLES ±

DATE
BY
DATE
BY
DATE
BY
DATE
BY

Bally MANUFACTURING CORP.
2640 BELMONT AVENUE
CHICAGO, ILLINOIS
FEB 21 1977
1074 -E
POWER TRANSFORMER
ASSEMBLY NO. USED ON/W

OPER.	DEPT.	DESCRIPTION	TOOL No.
-------	-------	-------------	----------



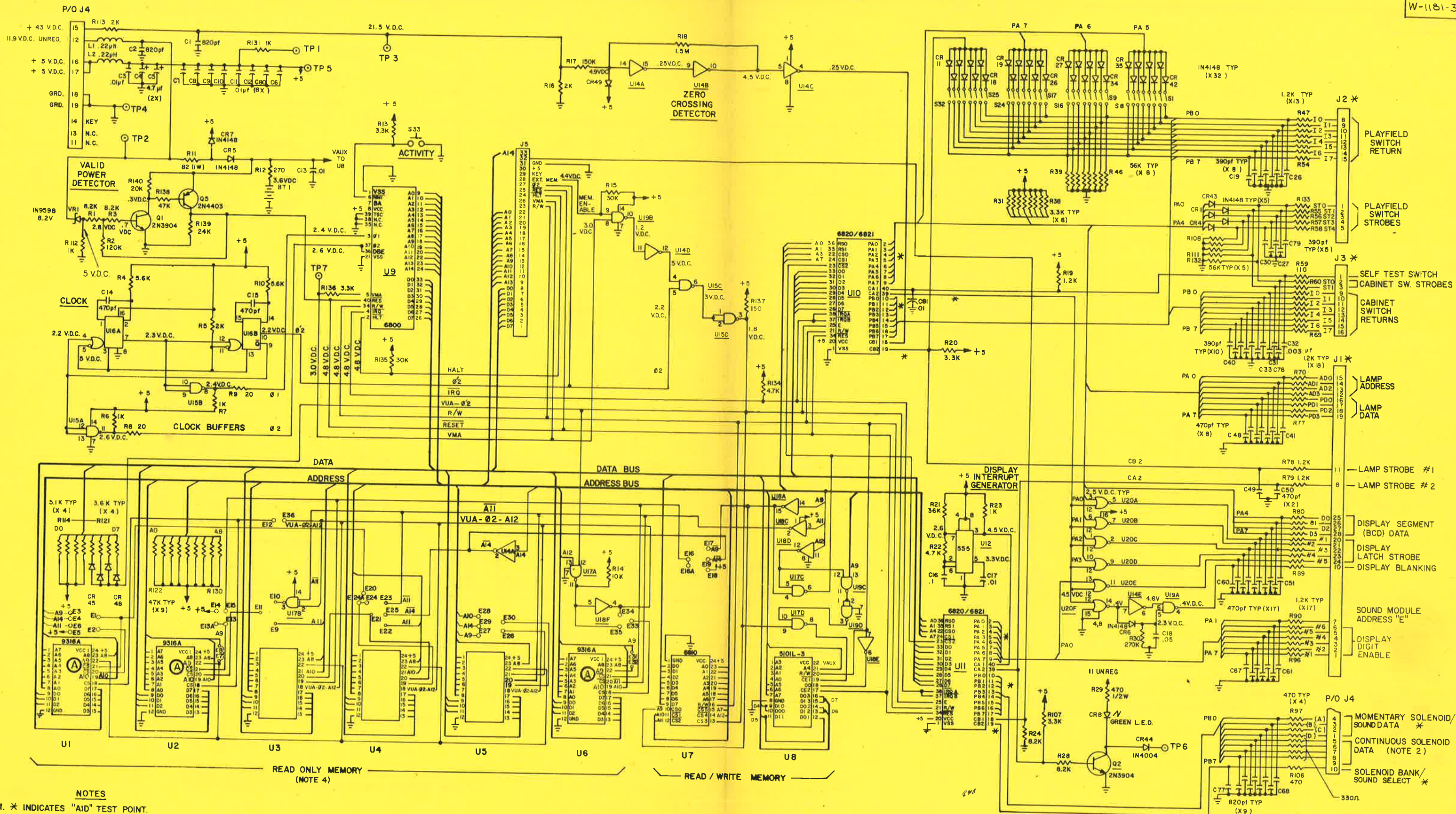
NOTES:

1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE $\pm 5\%$, $1/4W$.
2. PREFIX ALL REFERENCE DESIG. WITH ASSEMBLY REFERENCE DESIG. "A1"
3. * INDICATES 'A1D' TEST POINT.

DIE SIZE — C.C. — FT. PER M — LBS. PER M —

ALL DESIGN, OPERATIVE AND PROCESS DATA PERTAINING TO THE ARTICLE SHOWN ON THIS SHEET IS THE PROPERTY OF BALLY MFG. CORP., CHICAGO, ILL. THIS INFORMATION IS DISCLOSED IN CONFIDENCE AND IS NOT TO BE COPIED, REPRODUCED, REVEALED TO OR APPROPRIATED BY OTHERS, IN PART OR IN WHOLE, WITHOUT THE EXPRESS CONSENT OF THE ORIGNAL. THE PRINT IS LOANED AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF THE OWNERS, AND MUST BE RETURNED ON DEMAND.

REMOVE ALL BURRS		DR. BY DATE		Bally MANUFACTURING CORP. #1120-5		2640 BELMONT AVENUE		CHICAGO, ILLINOIS		M. VESTER'S	
TOLERANCES ON DIMENSIONS UNLESS		BY DATE		NOV 10 1971							
		PRINT		PUNCH		PLAN		TRAC		TAP	



ALL DESIGN, OPERATING AND PROCESS DATA PERTAINING TO THE ARTICLE SHOWN ON THIS SHEET IS THE PROPERTY OF BALLY MFG. CORP., CHICAGO, ILL. THIS INFORMATION IS DISCLOSED IN CONFIDENCE AND IS NOT TO BE COPIED, REPRODUCED, REVEALED TO OR APPROPRIATED BY OTHERS IN PART OR IN WHOLE, WITHOUT THE EXPRESS WRITTEN CONSENT OF THE OWNER. THE PRINT IS LOANED AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF THE OWNER, AND MUST BE RETURNED ON DEMAND.

Bally MANUFACTURING CORP.		2640 BELMONT AVENUE CHICAGO, ILLINOIS 60618		1119-E	
DATE	5-11-78	BY	EV	DATE	5-11-78
CHK BY	EV	DATE	5-11-78	PRINT	CONTROL
APP BY	EV	DATE	5-11-78	APP BY	EV
FINISH	EV	DATE	5-11-78	NAME	M.P.U. CONTROL BOARD SCHEMATIC
REMOVE ALL BURRS		TOLERANCES ON DIMENSIONS UNLESS OTHERWISE SPECIFIED		FRACTIONS: 1/64	
DECIMALS: .005		ANGLES: 1°		DO NOT SCALE DRAWING	
MATERIAL		PART NO.		ASSEMBLY NO. USED ON	



NOTES :

1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE $\pm 5\%$, $1/4$ W.
2. PREFIX ALL REFERENCE DESIG. WITH ASSEMBLY REFERENCE DESIG. "A 1".

ALL DESIGN, OPERATIVE AND PROCESS DATA PERTAINING TO THE ARTICLE SHOWN ON THIS SHEET IS THE PROPERTY OF BALLY WFG CORP. CHICAGO, ILL. THIS INFORMATION IS DISCLOSED IN CONFIDENCE AND IS NOT TO BE COPIED, REPRODUCED, REVEALED TO OR APPROPRIATED BY (THIRD PARTY) IN PART OR IN WHOLE, WITHOUT THE EXPRESS CONSENT OF THE OWNERS. THE PRINT IS LOANED AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF THE OWNERS AND MUST BE RETURNED ON DEMAND.

Bally MANUFACTURING CORP.
2640 BELMONT AVENUE
CHICAGO, ILLINOIS

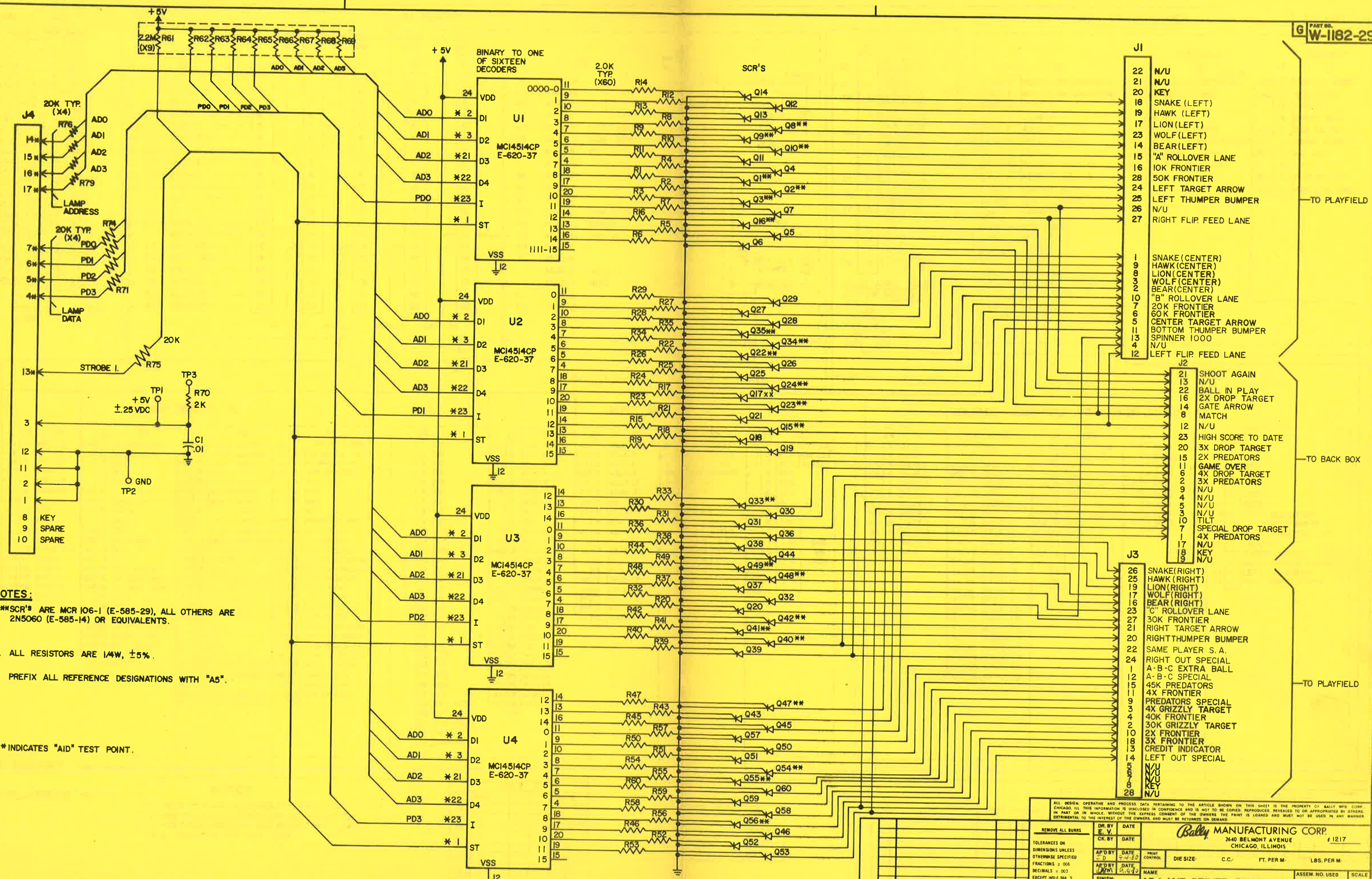
1210

REMOVE ALL BURNS	DR. BY FFC	DATE 6-18-0	 MANUFACTURING CORP. #1210 2640 BELMONT AVENUE CHICAGO, ILLINOIS				
TOLERANCES ON DIMENSIONS UNLESS OTHERWISE SPECIFIED	C.K. BY AMC	DATE 6-18-00	PRINT CONTROL	DIE SIZE.	C.C.	FT. PER M.	LBS. PER M.
FRACTIONS ± .008 DECIMALS ± .003 EXCEPT HOLE DIA S ANGLES ± 1/2°	AP'D BY	DATE	NAME	7 DIGIT DISPLAY BOARD SCHEMATIC "A1"		ASSEM. NO. USED AS-2518-58	SCALE ✓
DO NOT SCALE DRAWING	AP'D BY 	DATE	MATERIAL			PART NO.	
	FINISH:						
	HARDENING:						

7 DIGIT DISPLAY BOARD
SCHEMATIC "A1"

ASSEM. NO. USED
AS-2518-58

PART NO.



- NOTES:**
1. *SCR'S ARE MCR 106-1 (E-585-29), ALL OTHERS ARE 2N5060 (E-585-14) OR EQUIVALENTS.
 2. ALL RESISTORS ARE 1/4W, $\pm 5\%$.
 3. PREFIX ALL REFERENCE DESIGNATIONS WITH "A5".
 4. * INDICATES "AID" TEST POINT.

ALL DESIGN, OPERATIVE AND PROCESS DATA PERTAINING TO THE ARTICLE SHOWN ON THIS SHEET IS THE PROPERTY OF BALLY MANUFACTURING CORP. CHICAGO, ILL. THIS INFORMATION IS DISCLOSED IN CONFIDENCE AND IS NOT TO BE COPIED, REPRODUCED, REVEALED TO OR APPROPRIATED BY OTHERS, IN PART OR IN WHOLE, WITHOUT THE EXPRESS CONSENT OF THE OWNERS. THE PRINT IS LOANED AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF THE OWNERS AND MUST BE RETURNED ON DEMAND.

Bally MANUFACTURING CORP.
2640 BELMONT AVENUE
CHICAGO, ILLINOIS 60647

PRINTED IN U.S.A.

DATE: 1-1-80
BY: [Signature]
CHECKED: [Signature]
DATE: 1-1-80
BY: [Signature]
DATE: 1-1-80
BY: [Signature]

REMOVE ALL BURRS

TOLERANCES ON DIMENSIONS UNLESS OTHERWISE SPECIFIED
FRACTIONS $\pm .005$
DECIMALS $\pm .003$
EXCEPT HOLE DIA'S
ANGLES $\pm 1/2^\circ$

DO NOT SCALE DRAWING

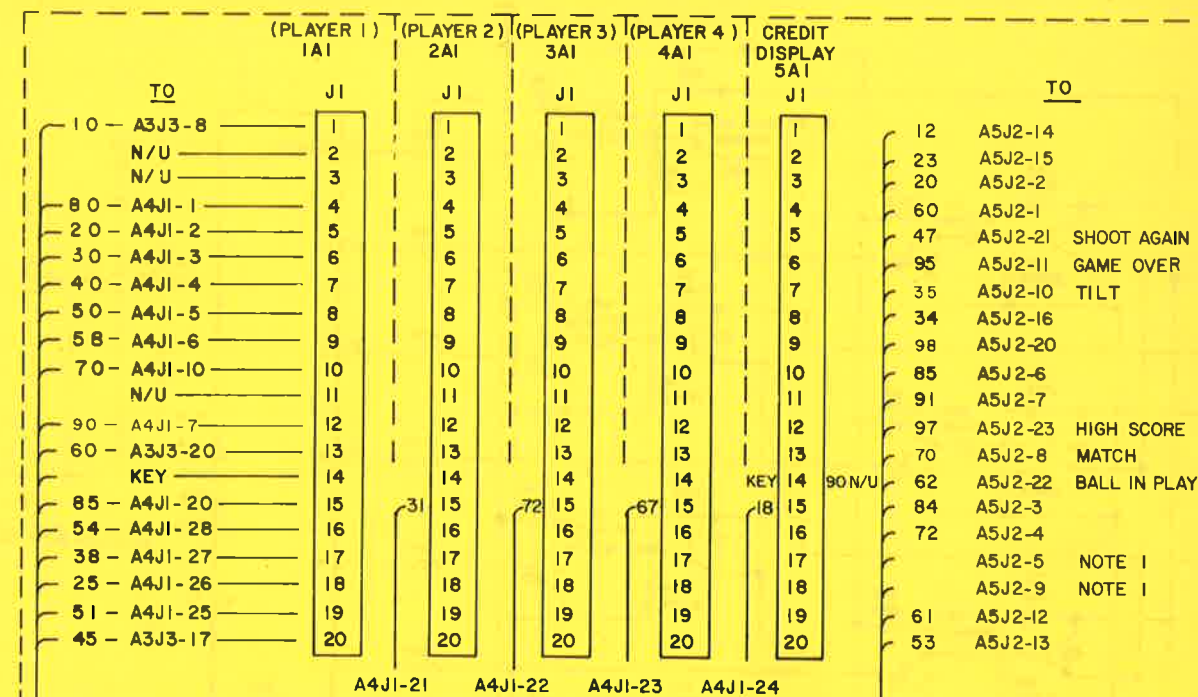
NAME: A5 LAMP DRIVER SCHEMATIC
MATERIAL: [Blank]
ASSEMBLY NO. USED: [Blank]
SCALE: [Blank]

TABLE A AIJ2

FROM	PIN	WIRE
A2J3-6	1	20
A5J2-14	2	12
A2J3-2	3	50
A2J3-11	4	10
A5J2-23	5	97
A5J2-15	6	23
A5J2-22	7	62
A5J2-8	8	70
A5J2-1	9	60
A5J2-2	10	20
A5J2-11	11	95
A5J2-21	12	47
A5J2-10	13	35
A5J2-7	14	91
A5J2-6	15	85
A5J2-20	16	98
A5J2-16	17	34
A2J3-1	18	40
A2J3-10	19	70
A5J2-13	20	53
A5J2-12	21	61
A5J2-4	22	72
A5J2-3	23	84
	24	

INSERT TO BACK CAB.
PLUG

AI INSERT



SWITCHED ILL. BUS

5.4V.D.C.

TO A2J3-11

5.9V.A.C.

GEN ILL. LAMPS

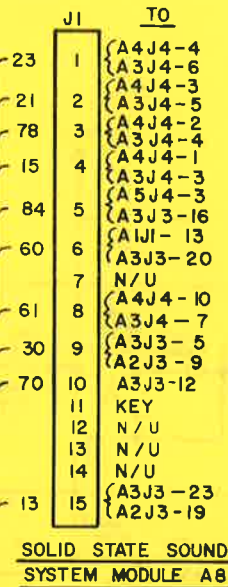
TO A2J3-2

TO A2J3-10

GEN ILL. LAMPS

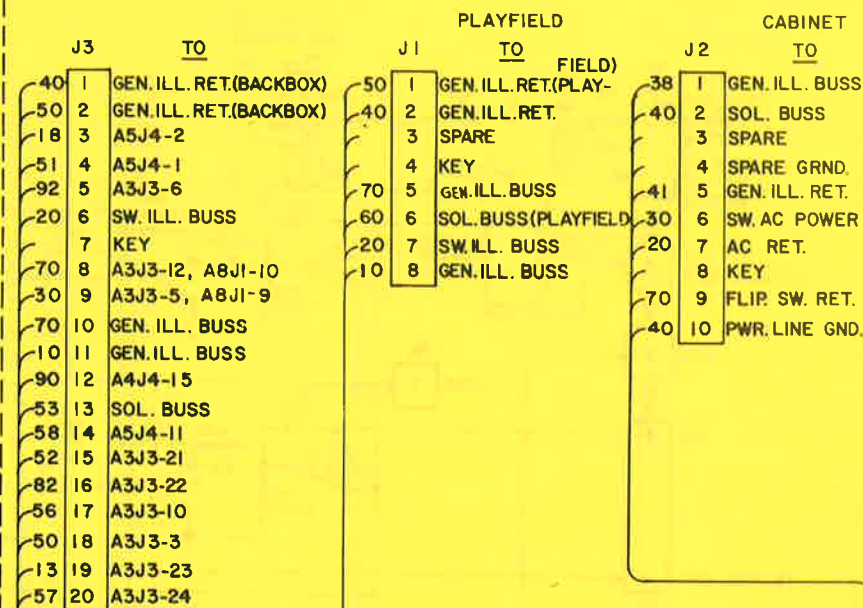
TO A2J3-1

TO A2J3-6

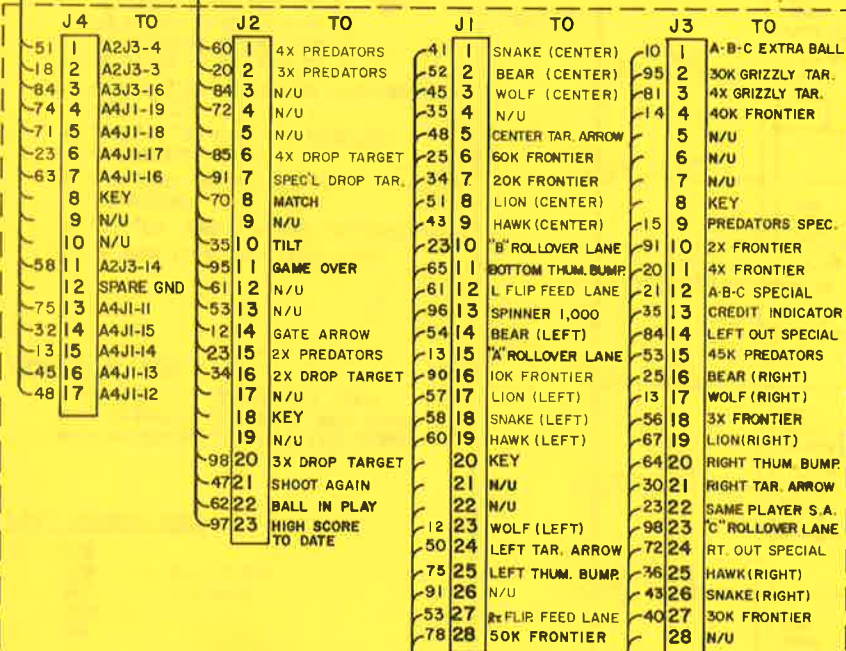


A2 TRANSFORMER

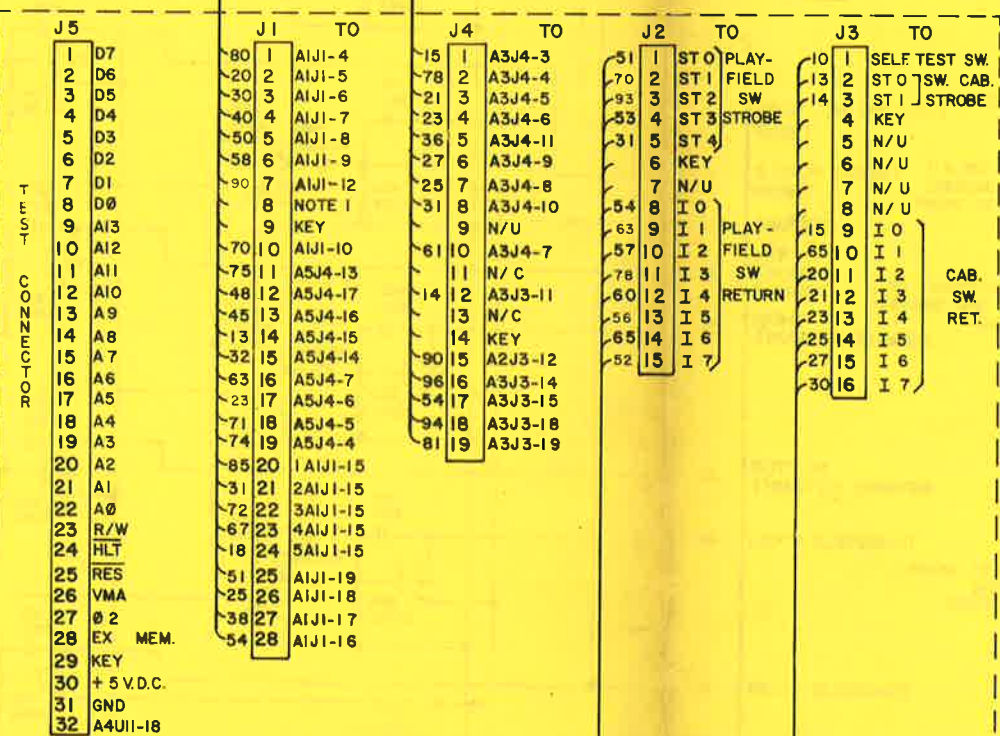
W-1187-25 c



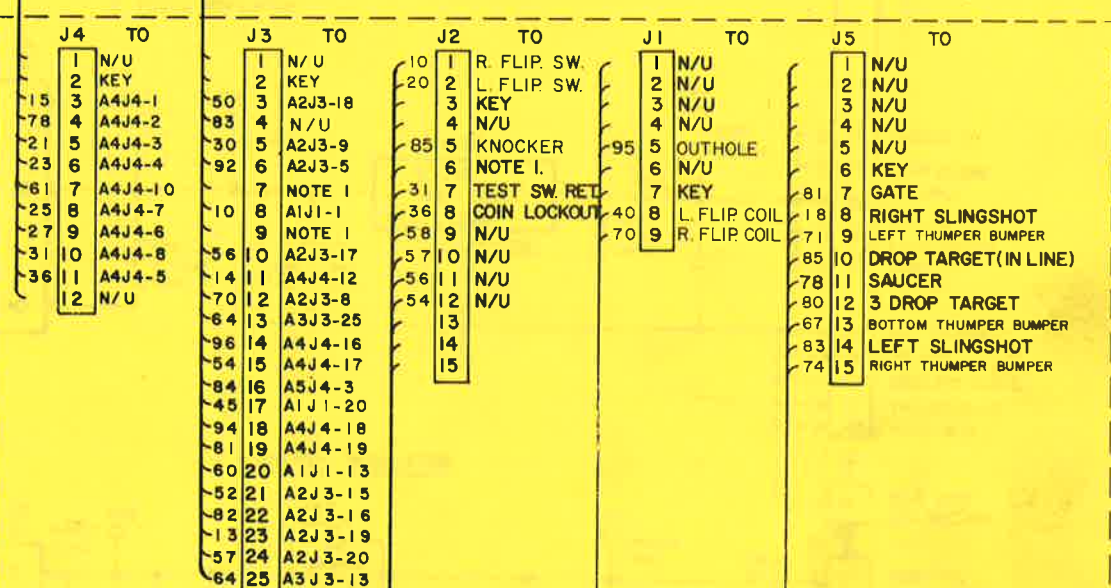
LAMP DRIVER A5



MPU A4



VOLTAGE REGULATOR / SOLENOID DRIVER A3



NOTES

1. THESE PINS ARE RESERVED FOR FUTURE USE.
2. WIRE COLORS ARE SHOWN FOR ALL CONNECTOR PINS, SOME WIRES MAY NOT BE USED IN ALL GAMES.
- 3 * INDICATES AID TEST POINT.

TABLE "B"

FROM	TO	WIRE
A5J2-14	1	12
A5J2-2	2	20
A5J2-15	3	23
A5J2-16	4	34
A5J2-20	5	35
A5J2-1	6	60
A5J2-6	7	85
A5J2-7	8	91

PANEL TO BACK CAB. PLUG

WIRE COLOR CODE

1-RED	6-BROWN
2-BLUE	7-ORANGE
3-YELLOW	8-BLACK
4-GREEN	9-GRAY
5-WHITE	0-NO TRACE

ALL DESIGN, OPERATING AND PROCESS DATA PERTAINING TO THE ARTICLE SHOWN ON THIS SHEET IS THE PROPERTY OF BALLY MANUFACTURING CORP., CHICAGO, ILL. THIS INFORMATION IS DISCLOSED IN CONFIDENCE AND IS NOT TO BE COPIED, REPRODUCED, REVEALED TO OR APPROPRIATED BY OTHERS, IN PART OR IN WHOLE, WITHOUT THE EXPRESS CONSENT OF THE ORIGINAL. THE PRINT IS LOANED AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THE INTERESTS OF THE OWNERS, AND MUST BE RETURNED ON DEMAND.

REMOVE ALL BURS

TOLERANCES ON DIMENSIONS UNLESS OTHERWISE SPECIFIED

FRACTIONS: 1/64

DECIMALS: .005

ANGLES: 1°

DO NOT SCALE DRAWING

DR. BY

E.V.

DATE

CK. BY

DATE

APD BY

DATE

APD BY

DATE

FINISH

HARDENING

Bally MANUFACTURING CORP.

2640 BELMONT AVENUE

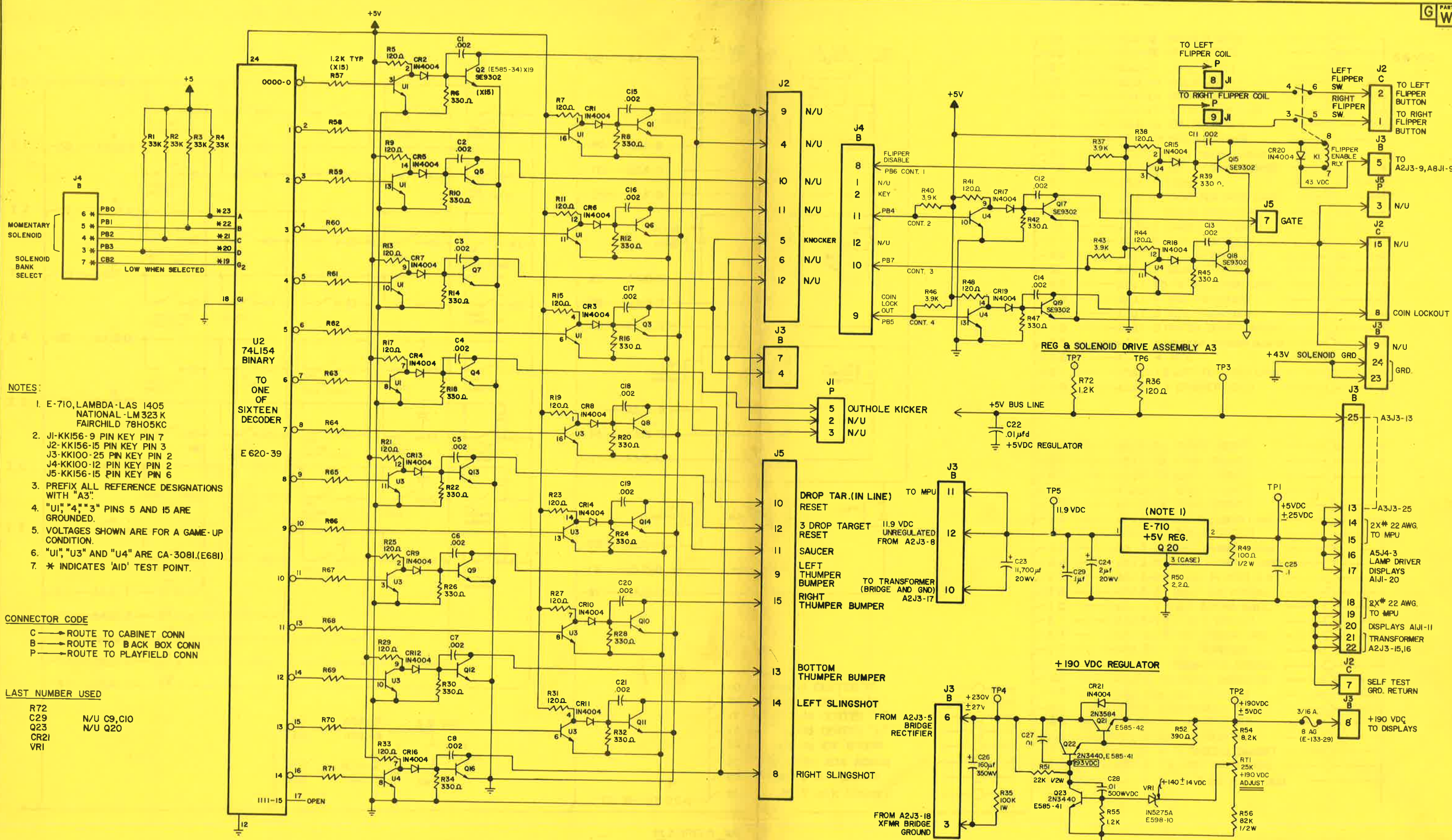
CHICAGO, ILLINOIS 1217

TOTAL SCALE

PART NO.

W-1187-25 c

FRONTIER

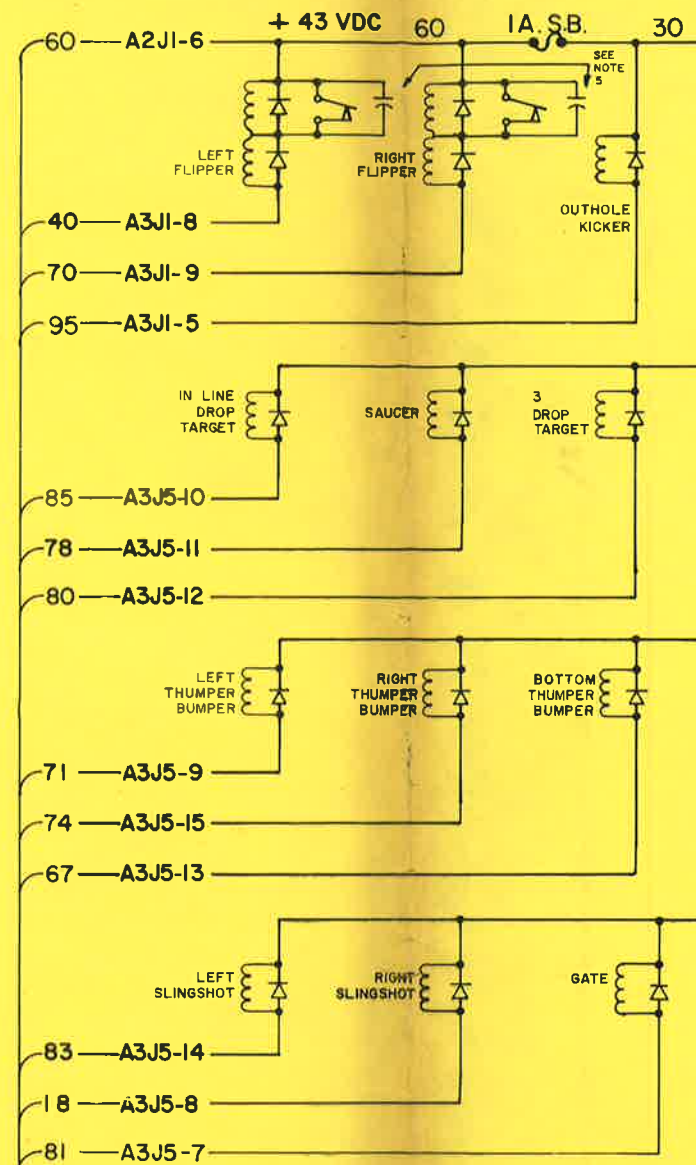
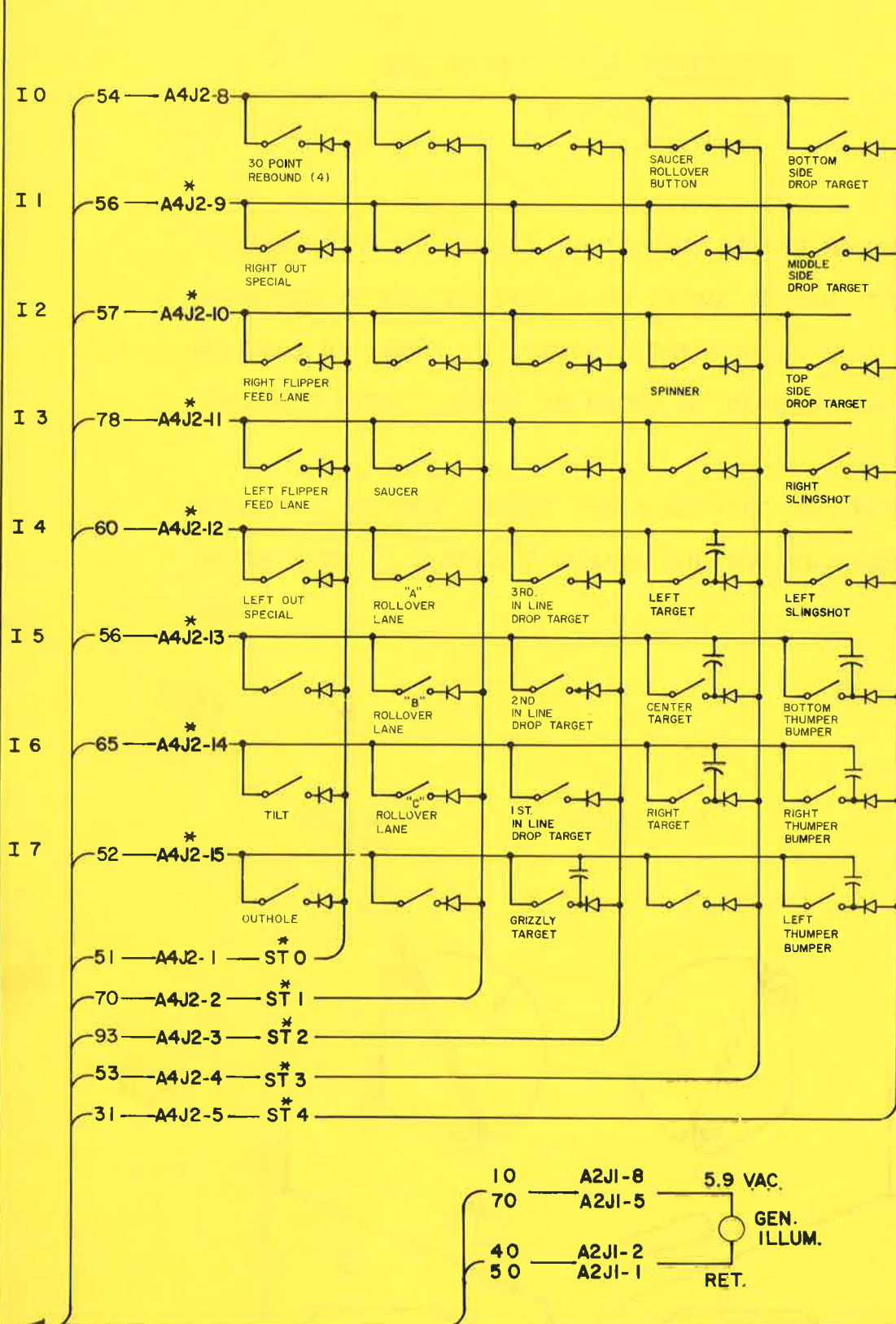


ALL DESIGN, OPERATIVE AND PROCESS DATA PERTAINING TO THE ARTICLE SHOWN ON THIS SHEET IS THE PROPERTY OF BALLY MFG. CORP. CHICAGO, ILL. THIS INFORMATION IS DISCLOSED IN CONFIDENCE AND IS NOT TO BE COPIED, REPRODUCED, REVEALED TO OR APPROPRIATED BY OTHERS IN PART OR IN WHOLE, WITHOUT THE EXPRESS CONSENT OF THE OWNERS. THE PRINT IS LOANED AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF THE OWNERS, AND MUST BE RETURNED ON DEMAND.

Bally MANUFACTURING CORP. 2440 BELMONT AVENUE CHICAGO, ILLINOIS		# 1217	
DR. BY	DATE	PRINT	CONTROL
CK. BY	DATE	DIE SIZE	C.C.
APD BY	DATE	FINISH	SCALE
APD BY	DATE	MATERIAL	ASSEM. NO. USED
NAME		LBS. PER M.	
HARDENING		SCALE	
DO NOT SCALE DRAWING		PART NO.	

SOLENOID DRIVER VOLTAGE REGULATOR SCHEMATIC

FRONTIER



- 60 — A5J2-1 CENTER "B"
 20 — A5J2-2 CENTER "O"
 12 — A5J2-14 CENTER "G"
 23 — A5J2-15 CENTER "L"
 34 — A5J2-16 10K BONUS
 35 — A5J2-20 20K BONUS
 85 — A5J2-6 30K BONUS
 91 — A5J2-7 40K BONUS

TO W-1187-25

PLAYFIELD A6

NOTES

1. INDICATES NOT USED
2. N/U = NOT USED ON PLAYFIELD
3. * INDICATES AID TEST POINT
4. COIL DIODES ARE IN4004 (E-587-6) SWITCH DIODES ARE IN 4148 (E-587-14)
ALL CAPACITORS ARE .05 MFD. (E-586-80)
5. GERMANY ONLY-CAPACITOR .01 MFD. @ 500V. (E-586-65)

- 58 — A5J1-18 SNAKE (LEFT)
 60 — A5J1-19 HAWK (LEFT)
 57 — A5J1-17 LION (LEFT)
 12 — A5J1-23 WOLF (LEFT)
 54 — A5J1-14 BEAR (LEFT)
 13 — A5J1-15 "A" ROLLOVER LANE
 90 — A5J1-16 10K FRONTIER
 78 — A5J1-28 50K FRONTIER
 50 — A5J1-24 LEFT TARGET ARROW
 75 — A5J1-25 LEFT THUMPER BUMPER
 91 — A5J1-26 N/U
 53 — A5J1-27 RIGHT FLIP. FEED LANE
 41 — A5J1-1 SNAKE (CENTER)
 43 — A5J1-9 HAWK (CENTER)
 51 — A5J1-8 LION (CENTER)
 45 — A5J1-3 WOLF (CENTER)
 52 — A5J1-2 BEAR (CENTER)
 23 — A5J1-10 "B" ROLLOVER LANE
 34 — A5J1-7 20K FRONTIER
 25 — A5J1-6 60K FRONTIER
 48 — A5J1-5 CENTER TARGET ARROW
 65 — A5J1-11 BOTTOM THUMPER BUMPER
 35 — A5J1-4 N/U
 61 — A5J1-12 LEFT FLIP. FEED LANE
 96 — A5J1-13 SPINNER 1000
- 43 — A5J3-26 SNAKE (RIGHT)
 36 — A5J3-25 HAWK (RIGHT)
 67 — A5J3-19 LION (RIGHT)
 13 — A5J3-17 WOLF (RIGHT)
 25 — A5J3-16 BEAR (RIGHT)
 98 — A5J3-23 "C" ROLLOVER LANE
 40 — A5J3-27 30K FRONTIER
 30 — A5J3-21 RIGHT TARGET ARROW
 64 — A5J3-20 RIGHT THUMPER BUMPER
 23 — A5J3-22 SAME PLAYER S.A.
 72 — A5J3-24 RIGHT OUT SPECIAL
 10 — A5J3-1 A-B-C EXTRA BALL
 21 — A5J3-12 A-B-C SPECIAL
 53 — A5J3-15 45K PREDATORS
 20 — A5J3-11 4X FRONTIER
 15 — A5J3-9 PREDATORS SPECIAL
 35 — A5J3-13 CREDIT INDICATOR
 14 — A5J3-4 40K FRONTIER
 95 — A5J3-2 30K GRIZZLY TARGET
 91 — A5J3-10 2X FRONTIER
 56 — A5J3-18 3X FRONTIER
 81 — A5J3-3 4X GRIZZLY TARGET
 84 — A5J3-14 LEFT OUT SPECIAL
 20 — A2J1-7 FEATURE LAMP BUS

5.4 VDC

ALL DESIGN, OPERATIVE AND PROCESS DATA PERTAINING TO THE ARTICLE SHOWN ON THIS SHEET IS THE PROPERTY OF BALLY MFG. CORP. CHICAGO, ILL. THIS INFORMATION IS DISCLOSED IN CONFIDENCE AND IS NOT TO BE COPIED, REPRODUCED, REVEALED TO OR APPROPRIATED BY OTHERS, IN PART OR IN WHOLE, WITHOUT THE EXPRESS CONSENT OF THE OWNERS. THE PRINT IS LOANED AND MUST NOT BE USED IN ANY MANNER DETRIMENTAL TO THE INTEREST OF THE OWNERS, AND MUST BE RETURNED ON DEMAND.

REMOVE ALL BURRS		DR. BY DATE		Bally MANUFACTURING CORP. 2640 BELMONT AVENUE CHICAGO, ILLINOIS 1217	
TOLERANCES ON DIMENSIONS UNLESS OTHERWISE SPECIFIED FRACTIONS - 1/64 DECIMALS - .005 ANGLES - 1°		CR. BY DATE		PRINT CONTROL	
DO NOT SCALE DRAWING		APD BY DATE		DATE	
HARDENING:		FINISH:		MATERIAL	
LET. CHANGE DATE BY CK.		DATE		SCALE	
				SWITCH MATRIX	
				FRONTIER	
				PART NO. W-1192-25c	