

DE DATA
EAST

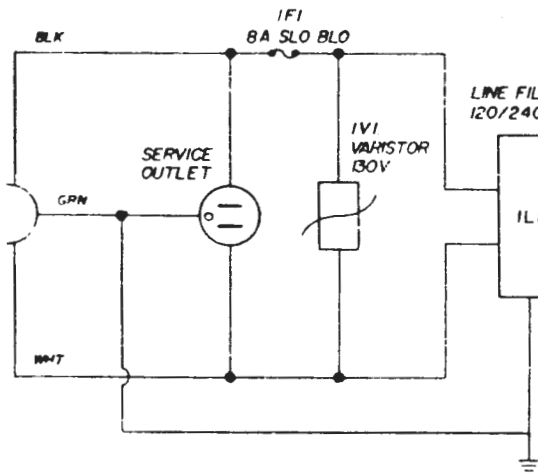
STAR WARS

TM



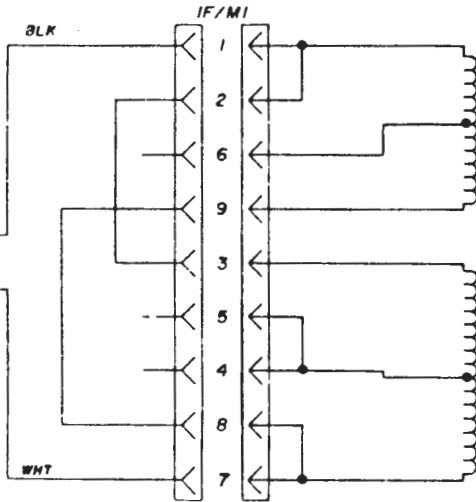
DATA EAST PINBALL ®

1990 Janice Avenue
Melrose Park, IL 60160
708-345-7700
FAX 708-345-7718
1-800-KICKERS



THIS CONFIGURATION FOR 115 V

FOR LOWER LINE VOLTAGES
OR 230 VOLT OPERATION
SEE SAMPLES BELOW



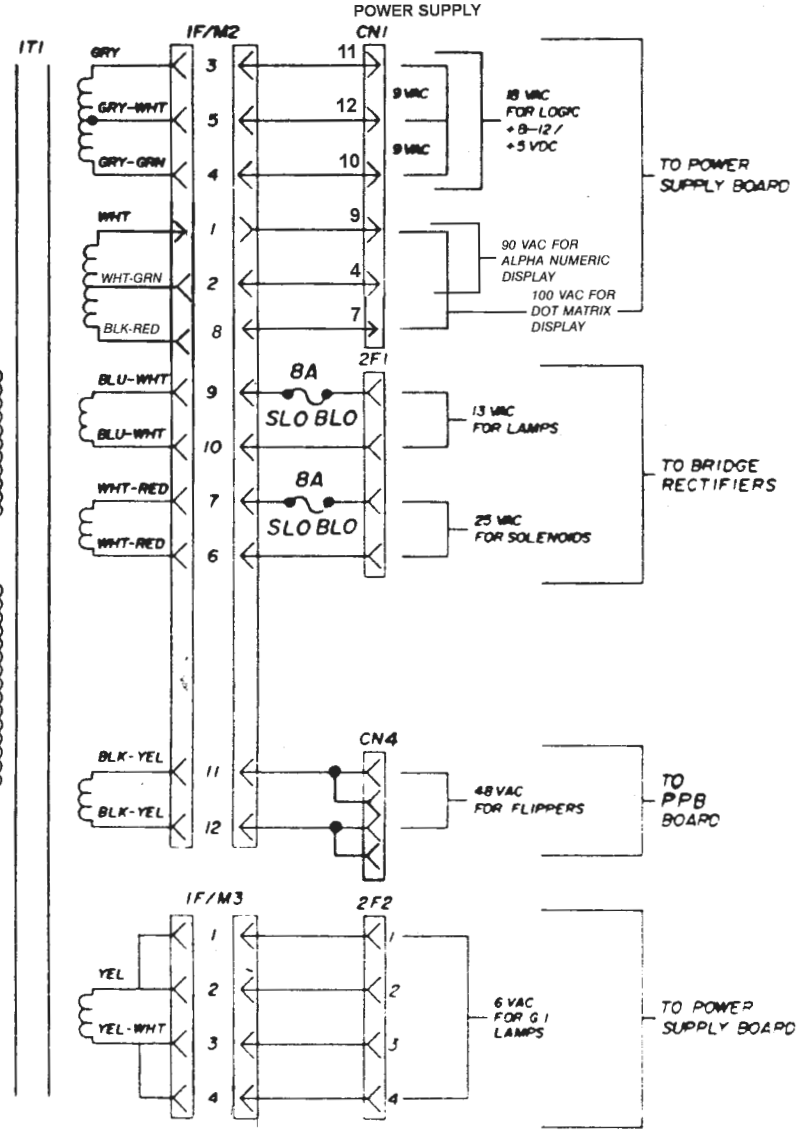
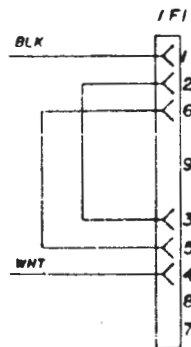
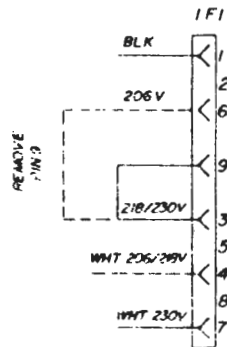
JUMPERS FOR VOLTAGE VARIATION

230/218/206 VOLTS

IF1 - 4A SLO BLO
IV1 - 275V VARISTOR

100/105 VOLTS

IF1 - 8A SLO BLO
IV1 - 130V VARISTOR

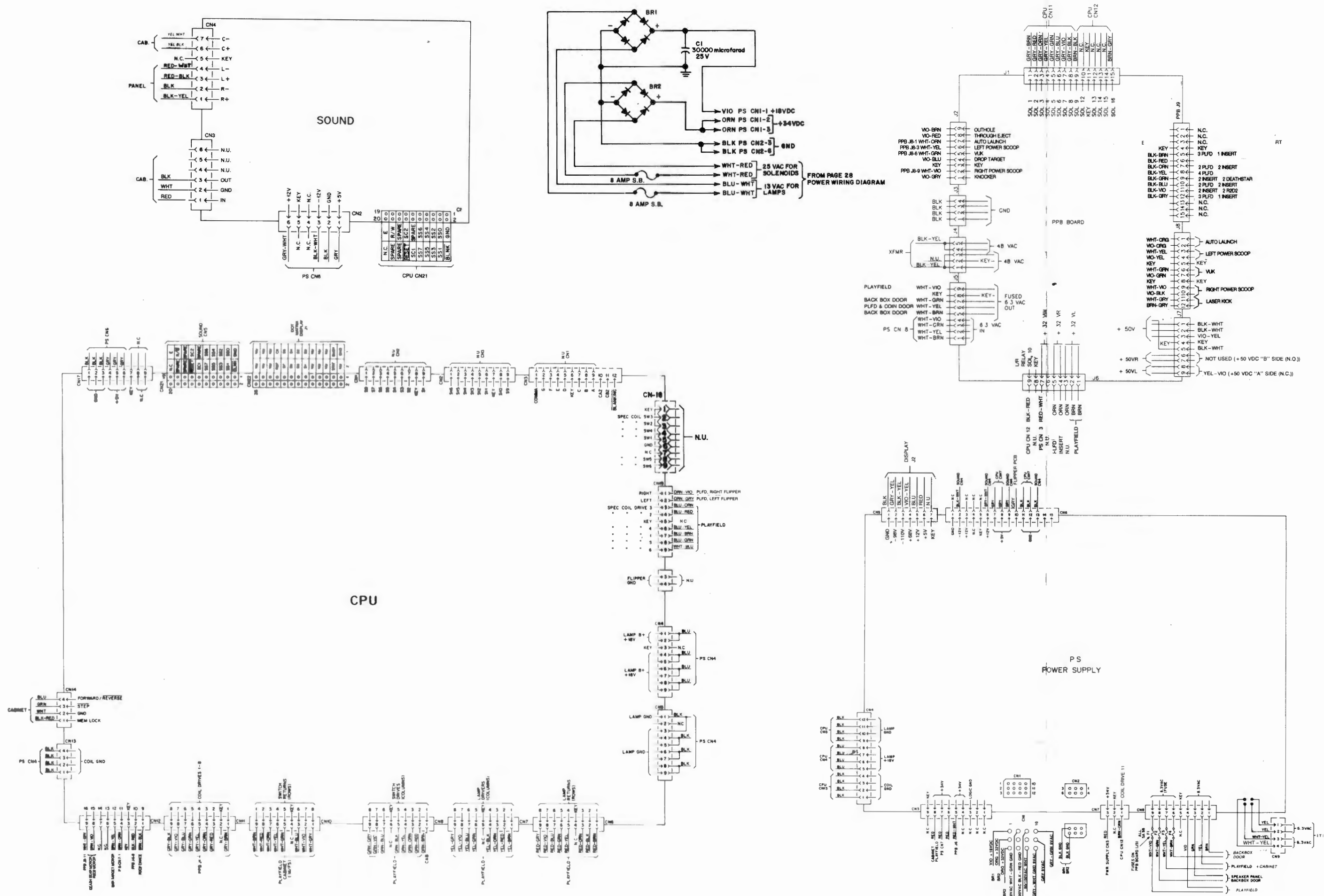


TO POWER SUPPLY BOARD

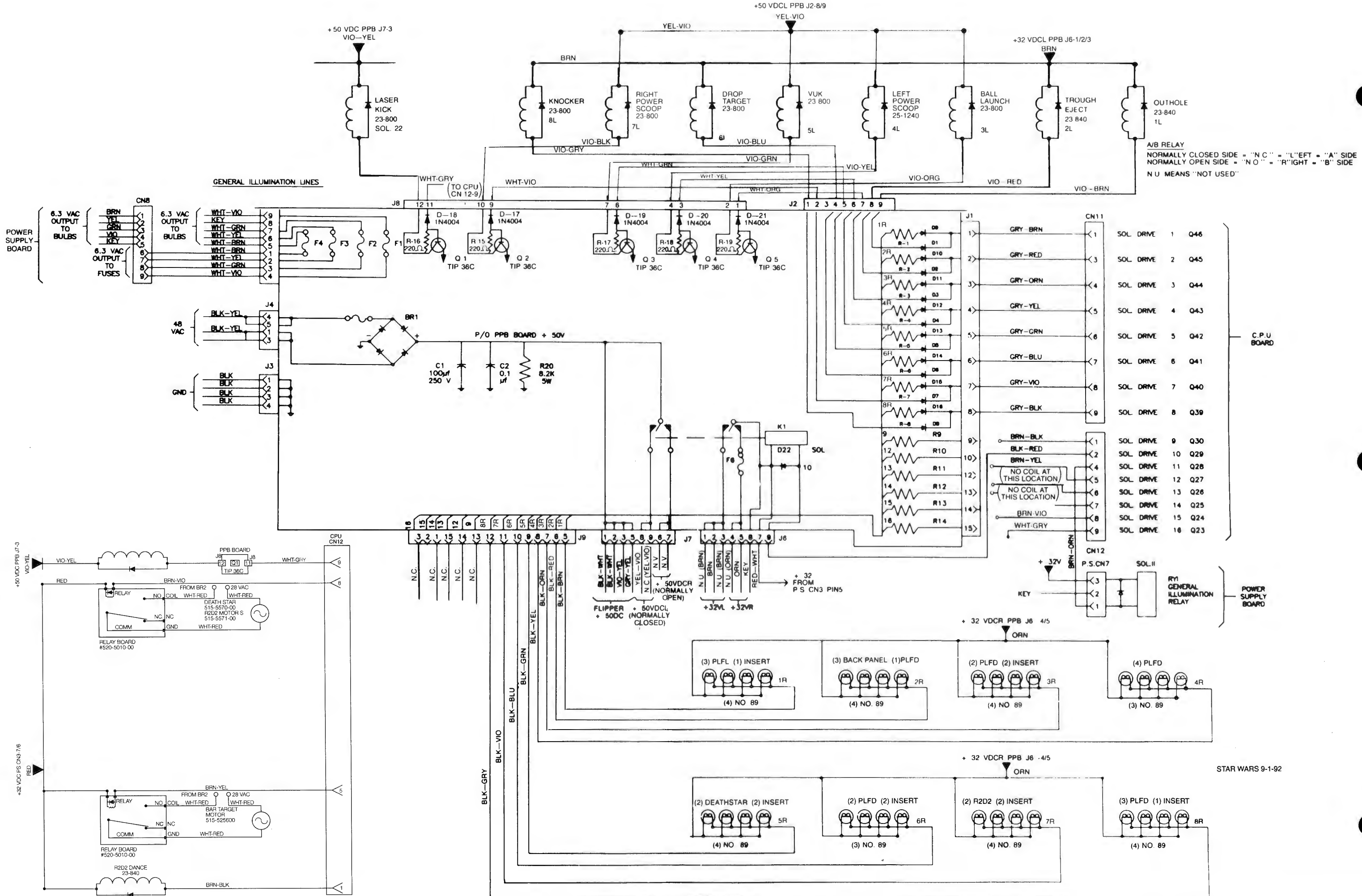
TO BRIDGE RECTIFIERS

TO PPB BOARD

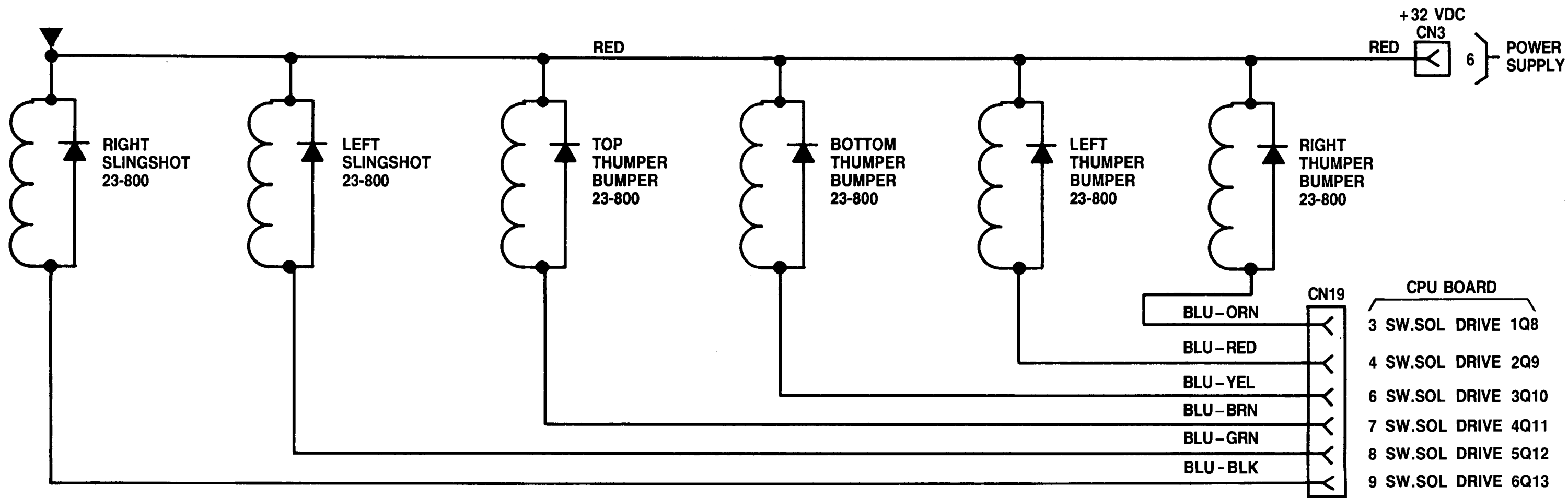
TO POWER SUPPLY BOARD



Backbox Wiring Diagram 47

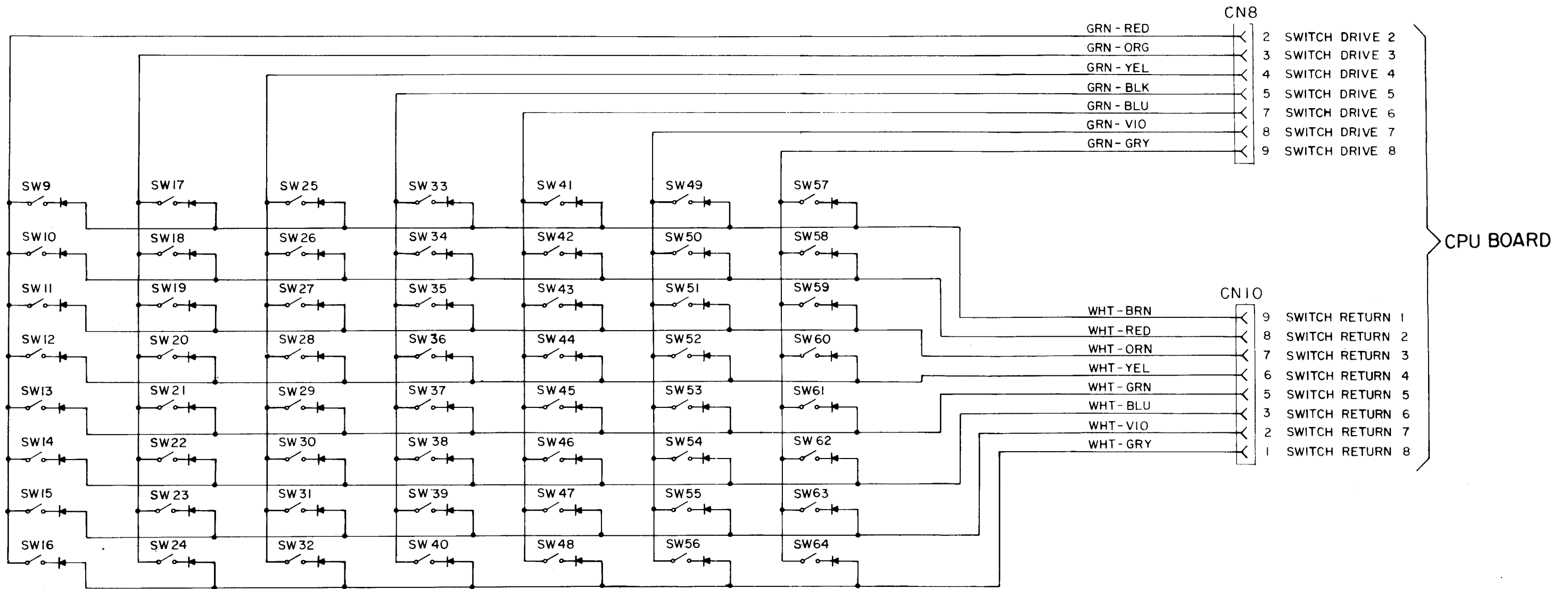


48 Playfield Coil / Flash Lamp Wiring Diagram



Switch Number	Description	Part No.
01*	Plumb Tilt	See Cabinet
02*	4th Coin	-
03*	Credit Button	500-5097-02
04*	Right Coin	180-5024-00
05*	Center Coin	180-5024-00
06*	Left Coin	180-5024-00
07*	Slam Tilt	180-5022-00
08	Not Used	-
09	Not Used	-
10	Outhole	180-5011-00
11	Left Trough	180-5009-00
12	Center Trough	180-5009-00
13	Right Trough	180-5010-00
14	Shooter Lane	180-5100-01
15*	Left Flip. Cab	180-5048-01
16*	Right Flip. Cab.	180-5048-01
17	Right Loop	500-5142-00
18	Not Used	-
19	Left Loop	180-5087-00
20	Ramp Entrance	180-5087-00
21	Right Outlane	515-5138-00
22	Right Return	515-5138-00
23	Left Return	500-5142-00
24	Left Outlane	500-5142-00
25	X-Wing Target 1 (Left)	180-5082-06
26	X-Wing Target 2	180-5082-06
27	X-Wing Target 3	180-5082-06
28	X-Wing Target 4	180-5082-06
29	X-Wing Target 5 (Right)	180-5082-06
30	Top Drop Target	180-5092-00
31	Mid.Drop Target	180-5092-00
32	Bot. Drop Target	180-5092-00
33	Right Scoop	180-5057-00
34	Death Star Trough	180-5057-00
35	Obi-Wan Trough	180-5057-00
36	Left Vertical Up Kicker	180-6064-00
37	Left Scoop	180-5057-00
38	R2D2 Entrance	500-5142-00
39	Ramp Exit	180-5093-00
40	Bar Target	515-5630-00
41	Bar Motor Up	180-5052-00
42	Bar Motor Down	180-5052-00
43	Left Slingshot	180-5054-00
44	Right Slingshot	180-5054-00
45	Top Turbo Bumper	180-5015-00
46	Left Turbo Bumper	180-5015-00
47	Right Turbo Bumper	180-5015-00
48	Bottom Turbo Bumper	180-5015-00
49	Not Used	-
50	Shift Button	180-5110-00
51	Shift Down	180-5111-00
52	Not Used Through 64	-

*Indicates Cabinet Switches.



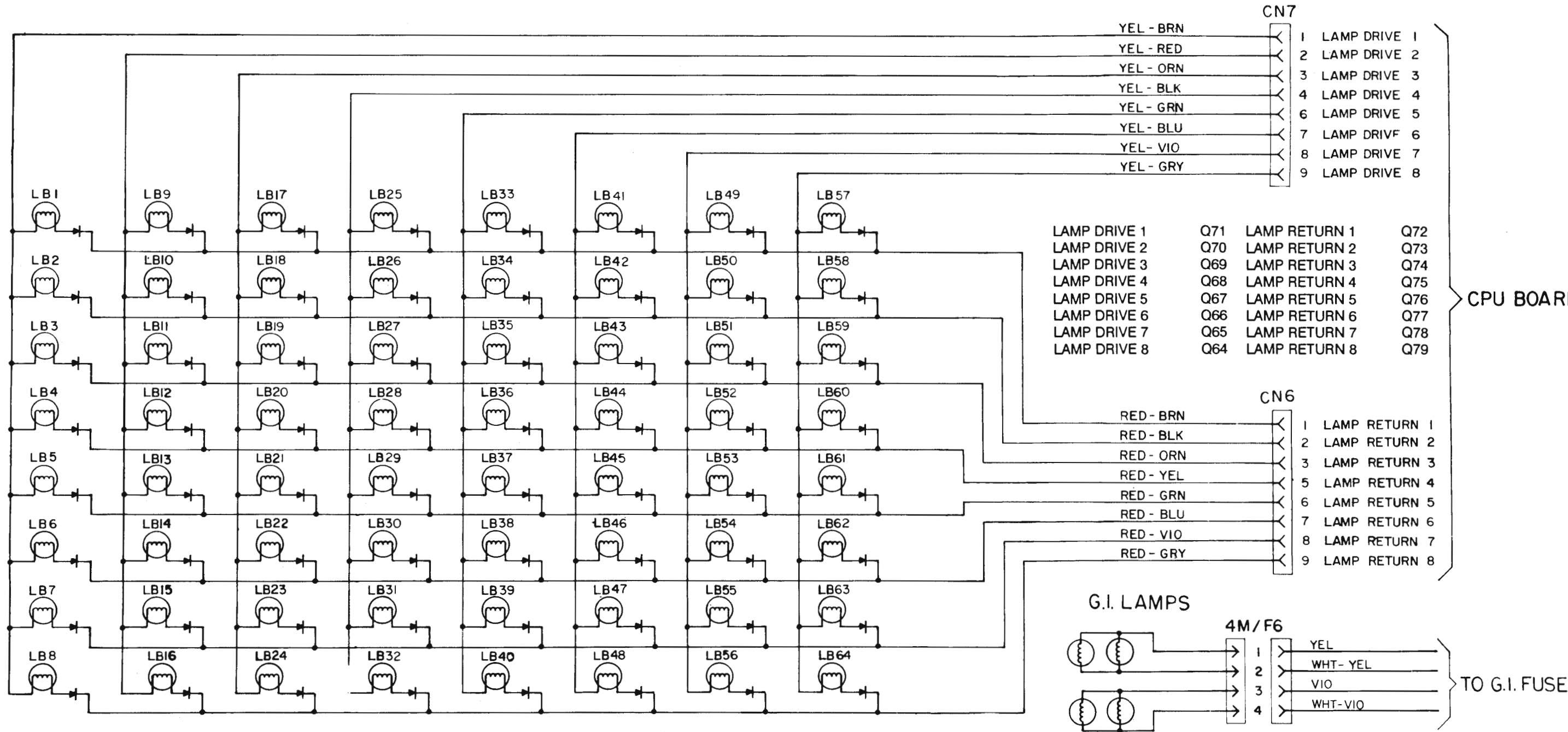
Lamp Number	Description
01	STAR WARS
02	STAR WARS
03	STAR WARS
04	STAR WARS
05	STAR WARS
06	STAR WARS
07	STAR WARS
08	STAR WARS
09	D.S. Moon 1 Left
10	D.S. Moon 2
11	D.S. Moon 3
12	D.S. Moon 4
13	D.S. Moon 5
14	D.S. Moon 6
15	D.S. Moon 7
16	D.S. Moon 8 Right

17	Not Used
18	Extra Ball
19	Lite C3PO Eyes
20	Lite the Force
21	Yoda
22	D.S. X Wing Mult.
23	D.S. Tie Fighter
24	Death Star Insert
25	Credit Button
26	C3PO Left Eye
27	C3PO Mouth
28	C3PO Right Eye
29	Death Star Sphere 1
30	Death Star Sphere 2
31	Launch (Shooter Lane)
32	Upper Left Outlane

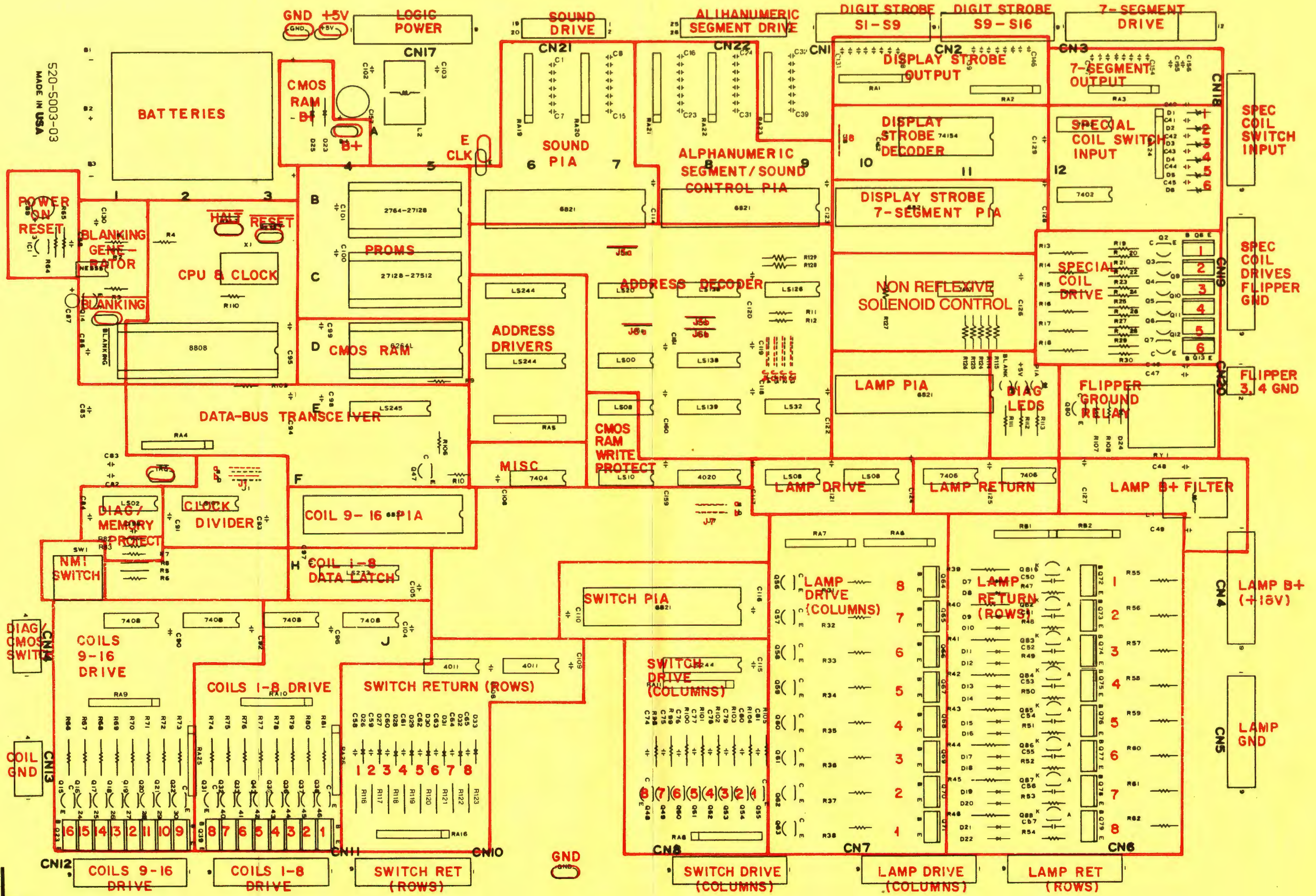
33	X-Wing Target 1 Left
34	X-Wing Target 2
35	X-Wing Target 3
36	X-Wing Target 4
37	X-Wing Target 5 (Right)
38	Drop Target Top
39	Drop Target Center
40	Drop Target Bottom
41	10 Million Left
42	10 Million Center
43	Large Tie Fighter
44	10 Million Right
45	R2D2 When Lit
46	Lite Laser Kick
47	Power Scoop Left
48	Power Scoop Right

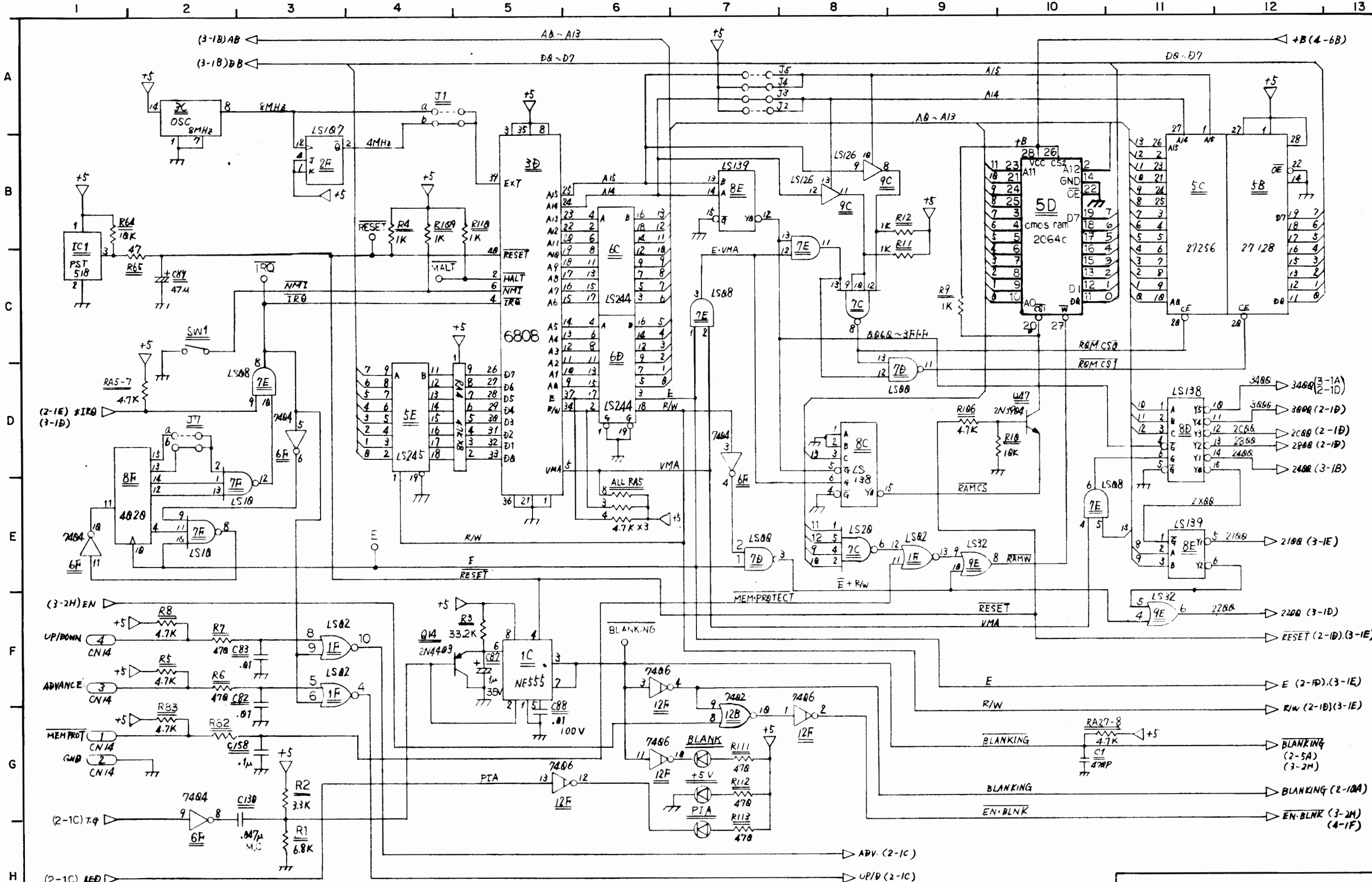
49	Ramp Hyper Space
50	Ramp Jackpot
51	Ramp Empire
52	Light Saber Arc
53	Right Outlane
54	Right Return Lane
55	Left Return Lane
56	Laser Kick
57	R2D2 Dome Left
58	R2D2 Dome Right
59	Victory
60	Special
61	Top Turbo Bumper
62	Left Turbo Bumper
63	Right Turbo Bumper
64	Bottom Turbo Bumper

*Indicates Speaker or Backbox Lamp

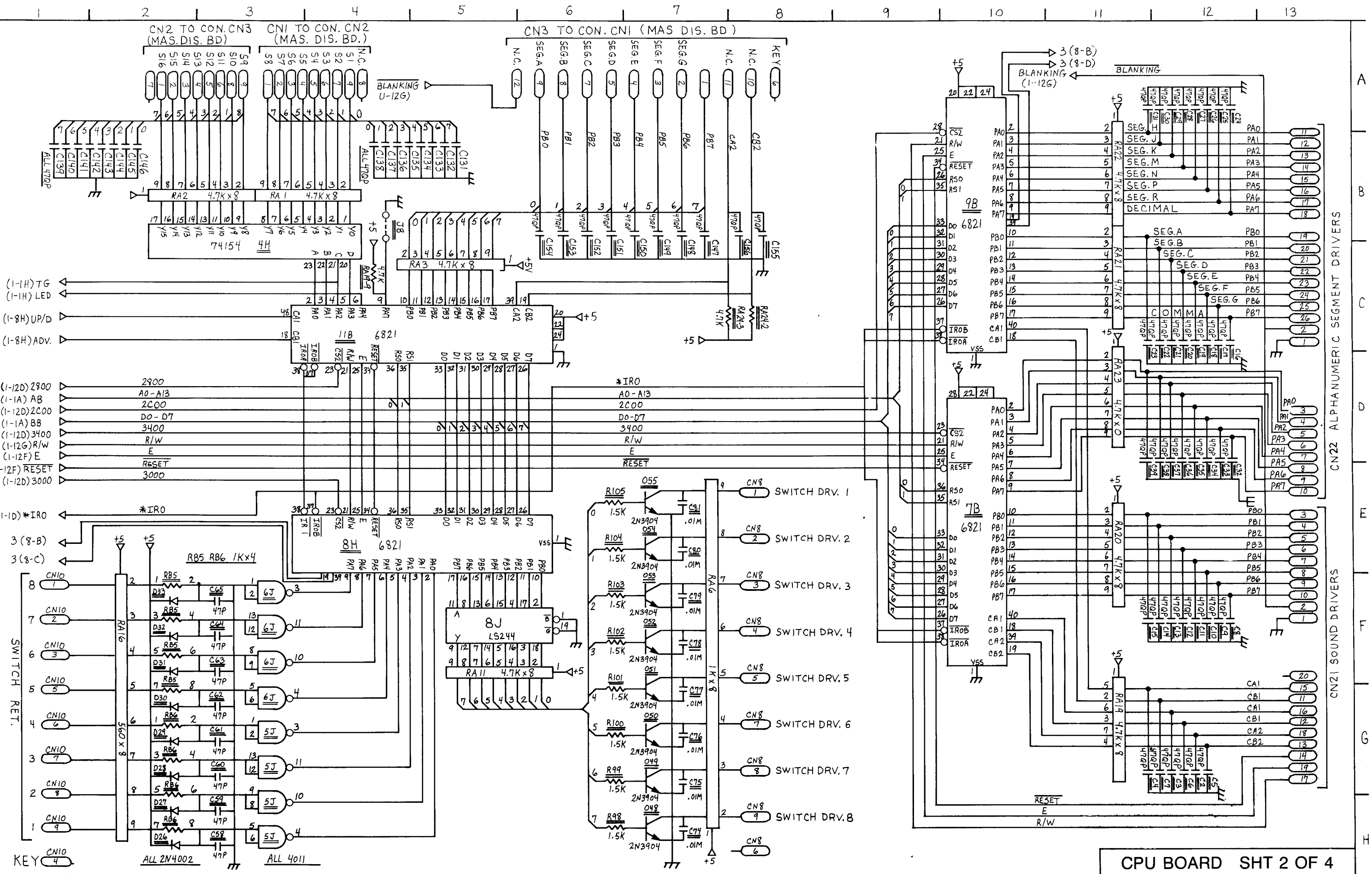


520-5003-03
MADE IN USA

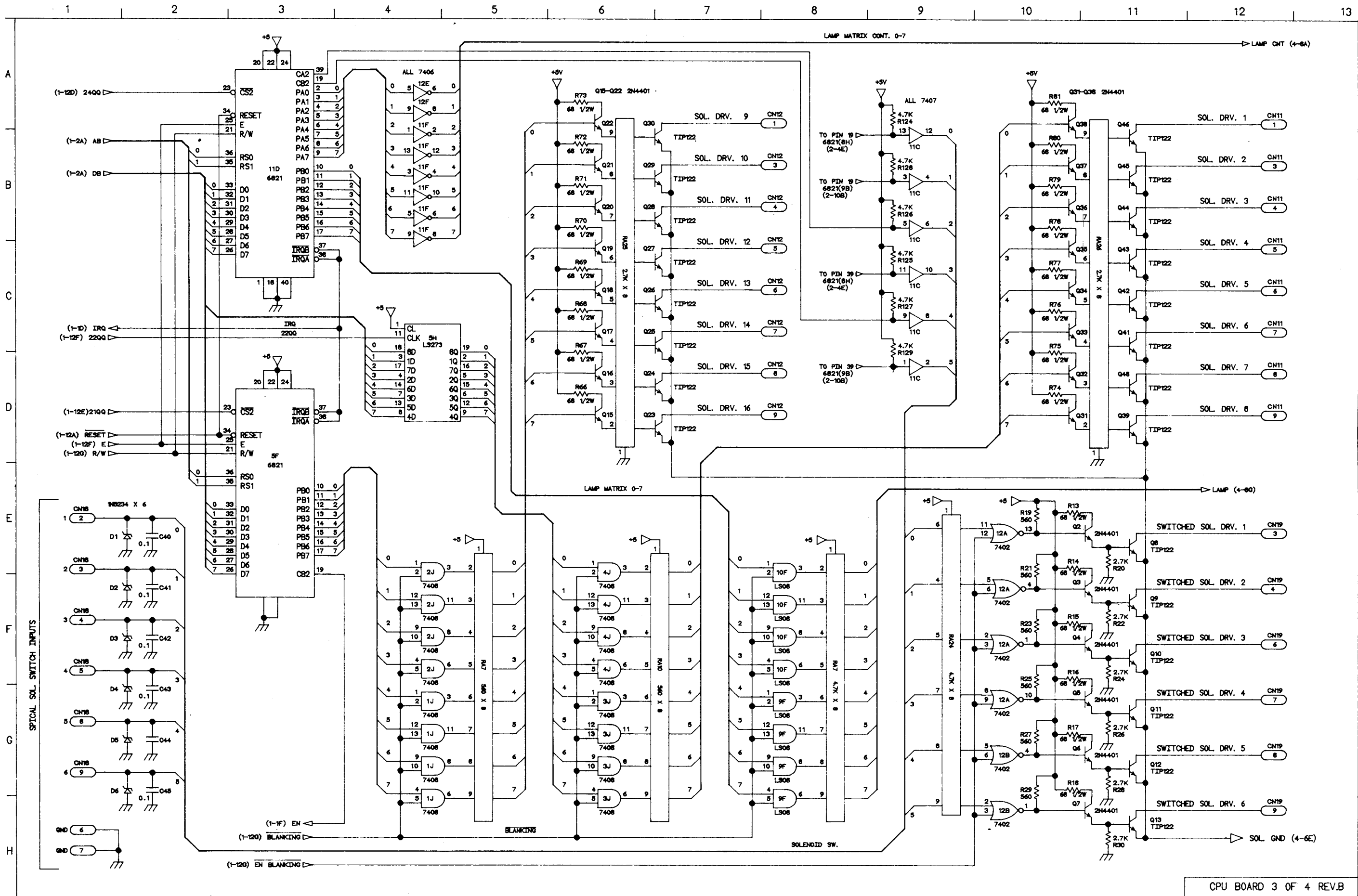


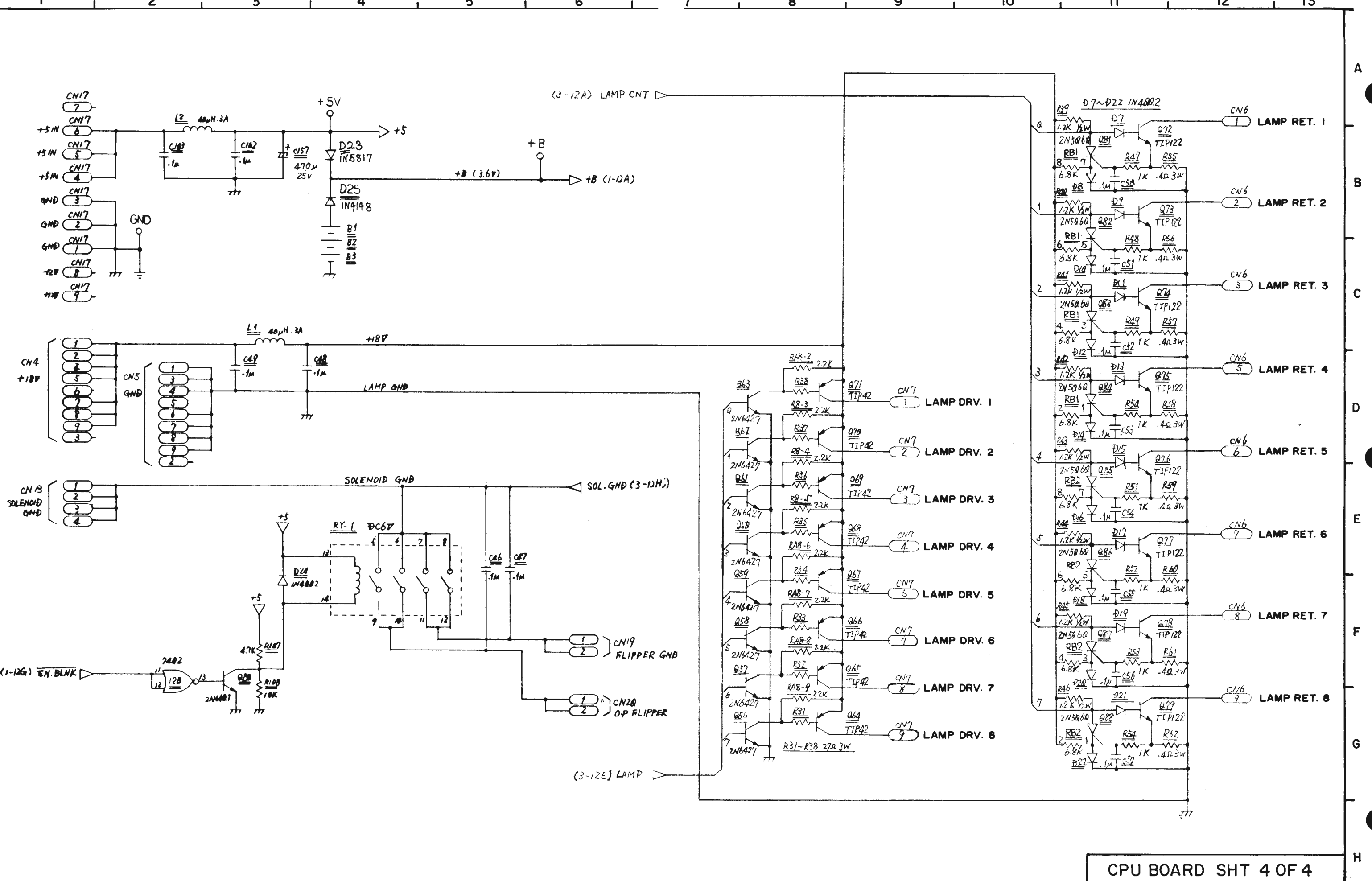


CPU BOARD 1 OF 4

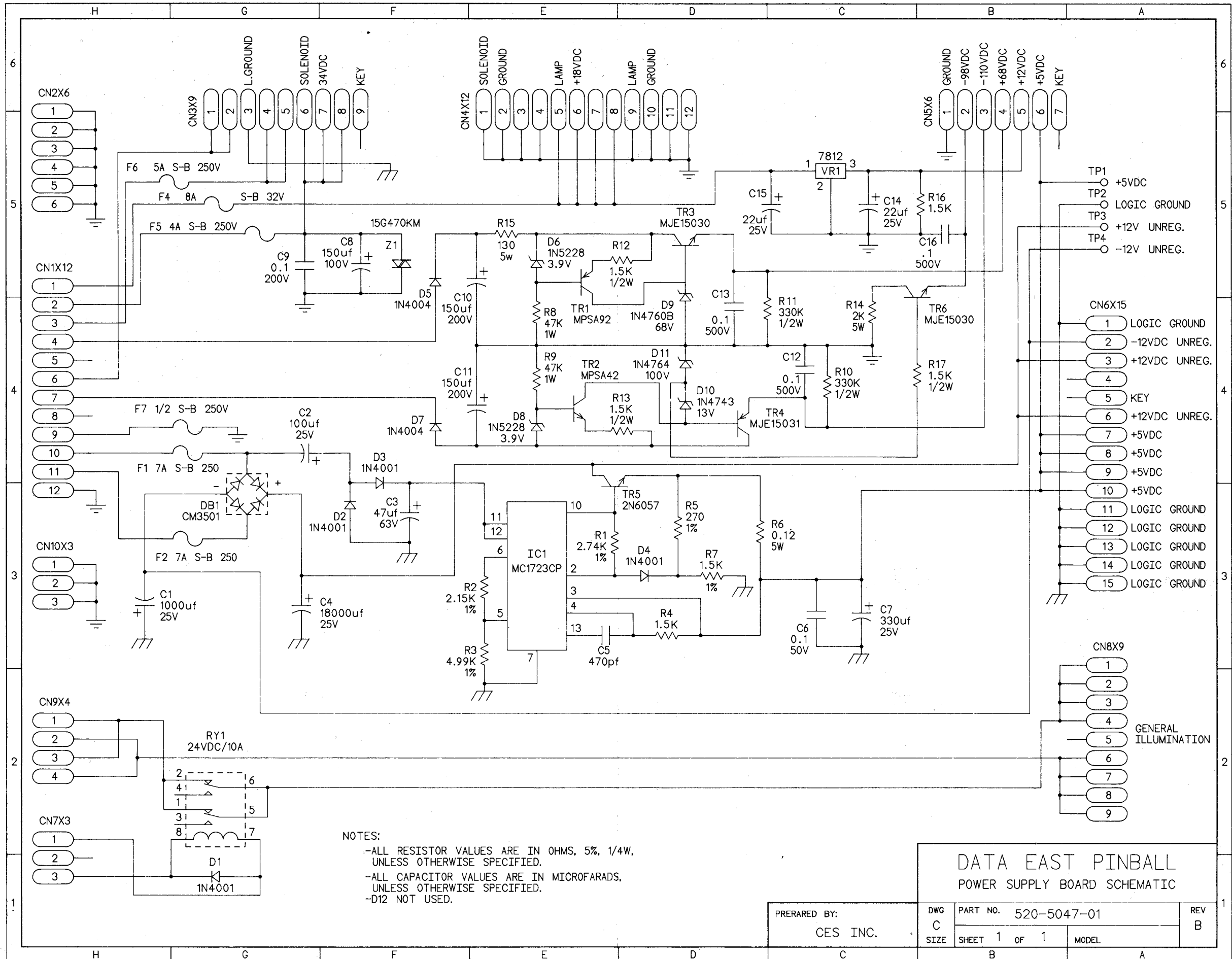


54 CPU Board Logic Diagram (Sheet 2 of 4)





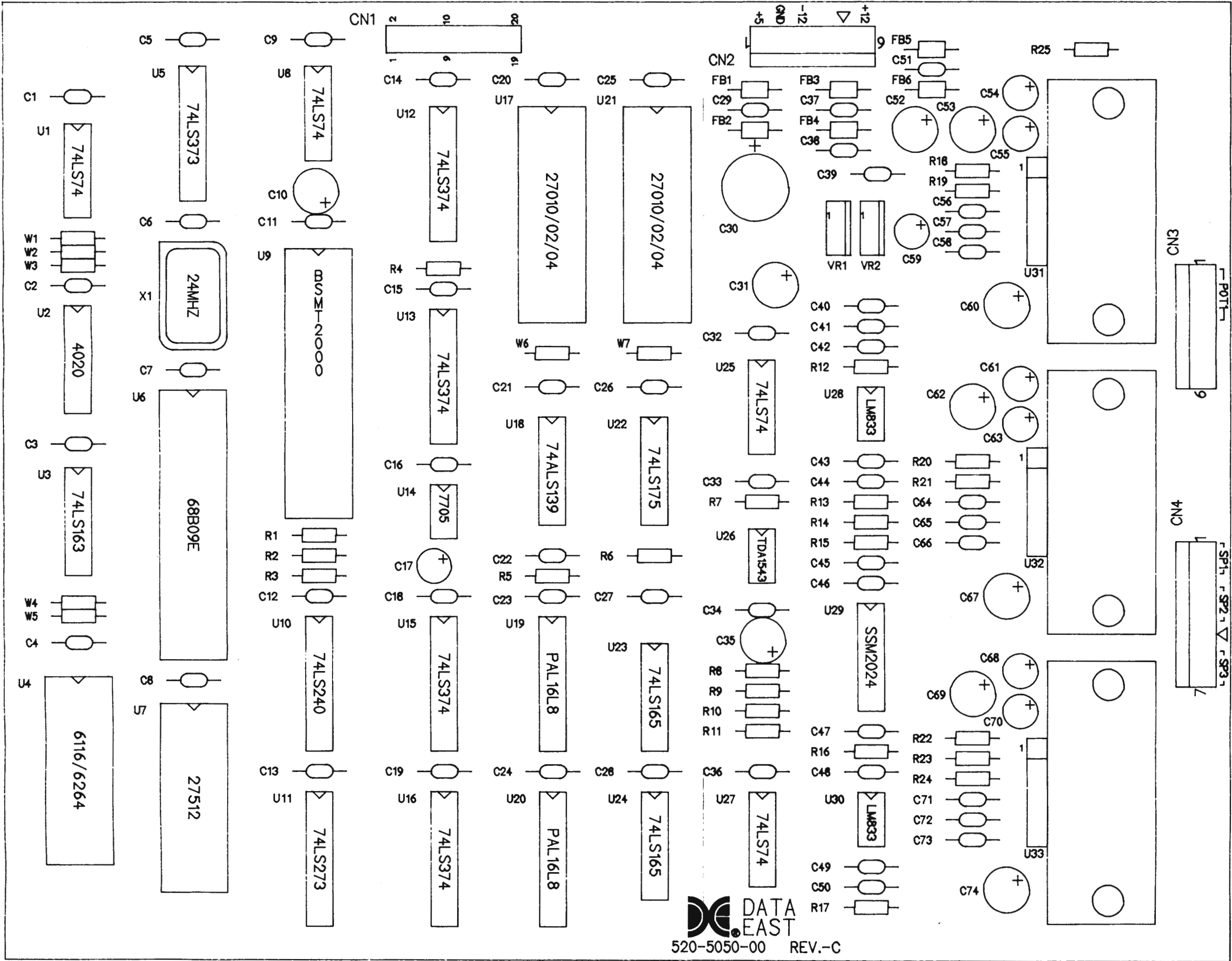
CPU BOARD SHT 4 OF 4



NOTES:
 -ALL RESISTOR VALUES ARE IN OHMS, 5%, 1/4W, UNLESS OTHERWISE SPECIFIED.
 -ALL CAPACITOR VALUES ARE IN MICROFARADS, UNLESS OTHERWISE SPECIFIED.
 -D12 NOT USED.

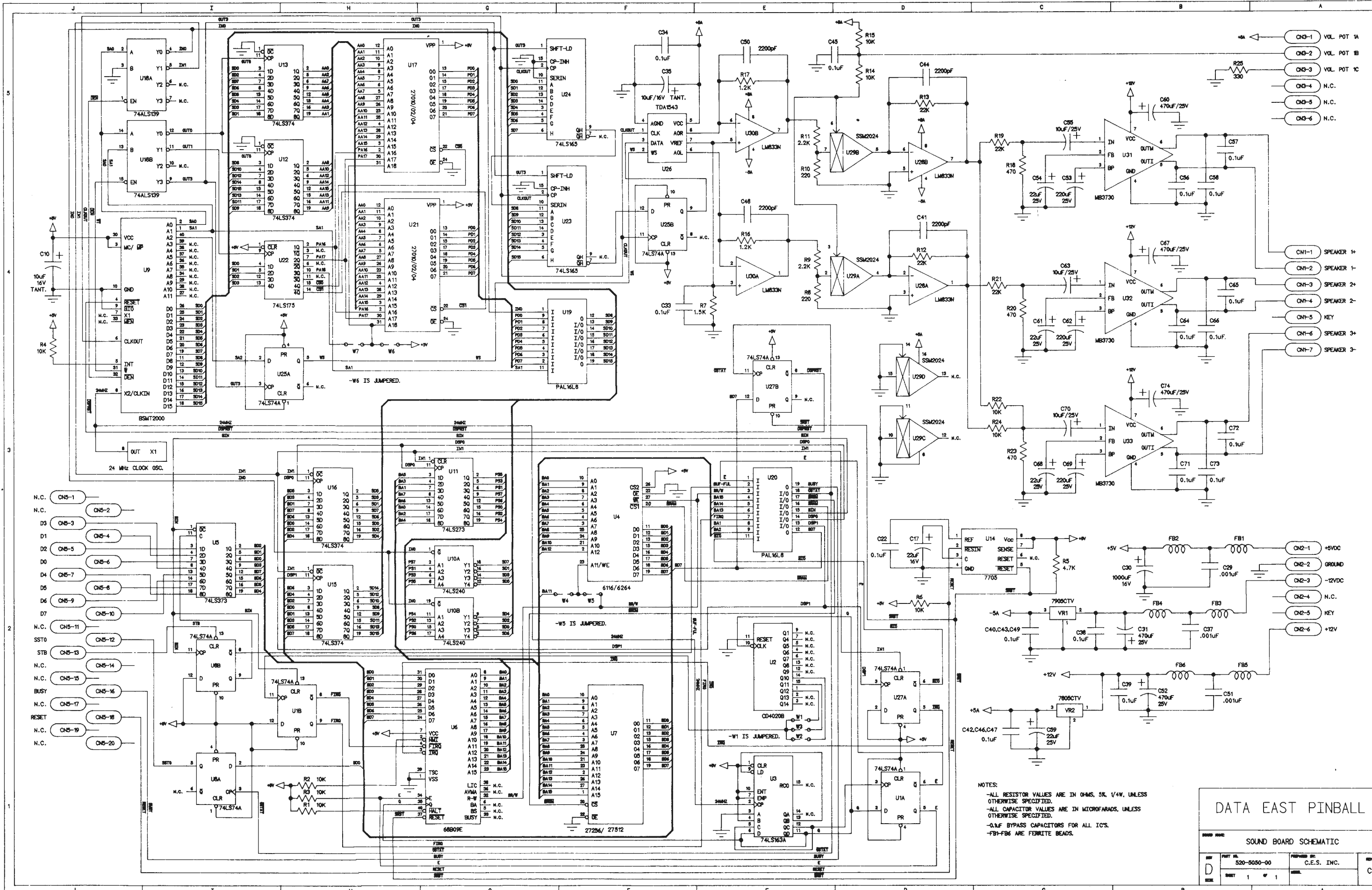
DATA EAST PINBALL
 POWER SUPPLY BOARD SCHEMATIC

PREPARED BY: CES INC.	DWG C	PART NO. 520-5047-01	REV B
	SIZE	SHEET 1 OF 1	MODEL




DATA EAST
 520-5050-00 REV.-C

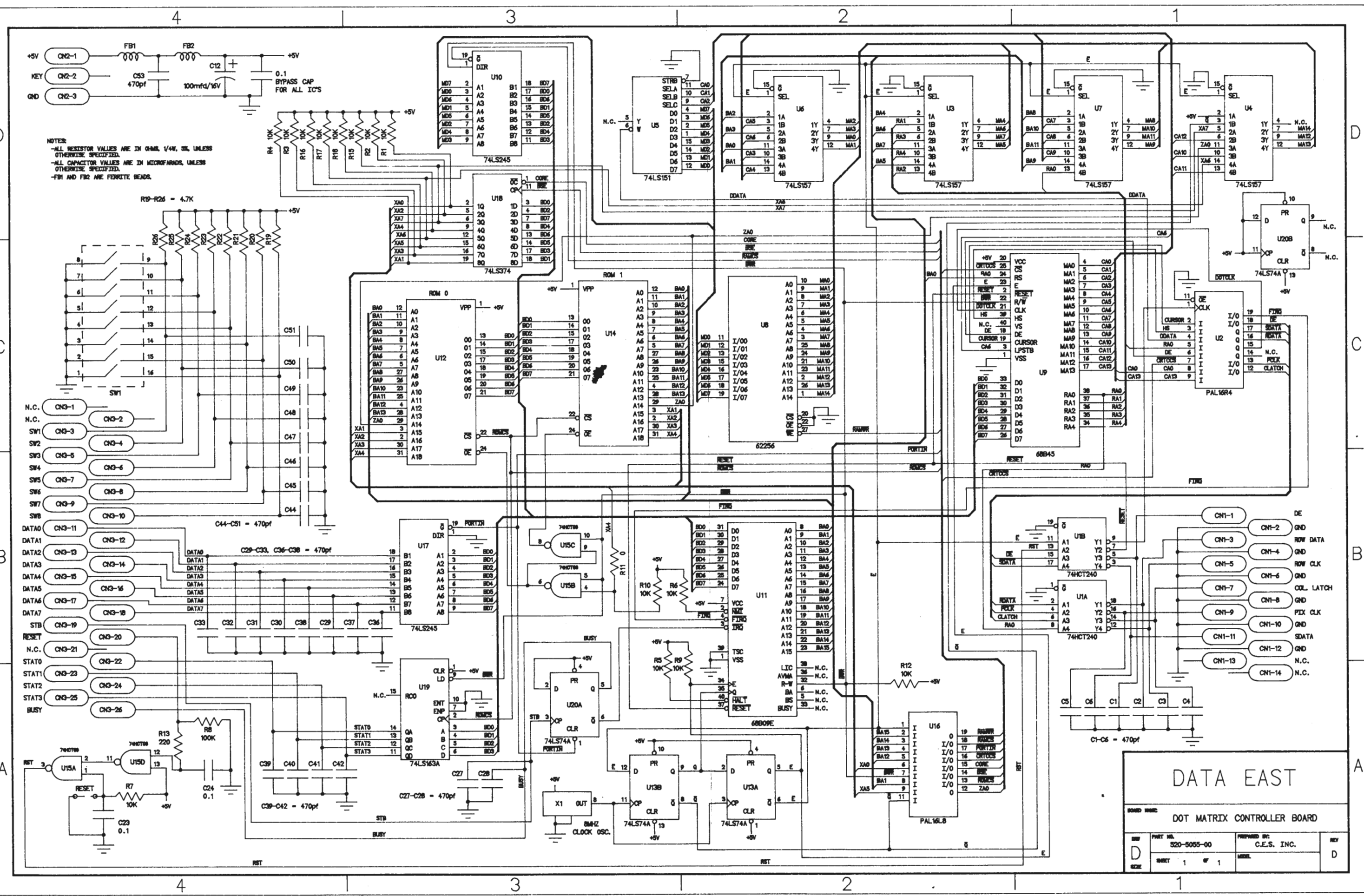
Sound Board Assembly Drawing



NOTES:
 -ALL RESISTOR VALUES ARE IN OHMS, 5% 1/4W, UNLESS OTHERWISE SPECIFIED.
 -ALL CAPACITOR VALUES ARE IN MICROFARADS, UNLESS OTHERWISE SPECIFIED.
 -0.1UF BYPASS CAPACITORS FOR ALL IC'S.
 -FB1-FB6 ARE FERRITE BEADS.

DATA EAST PINBALL

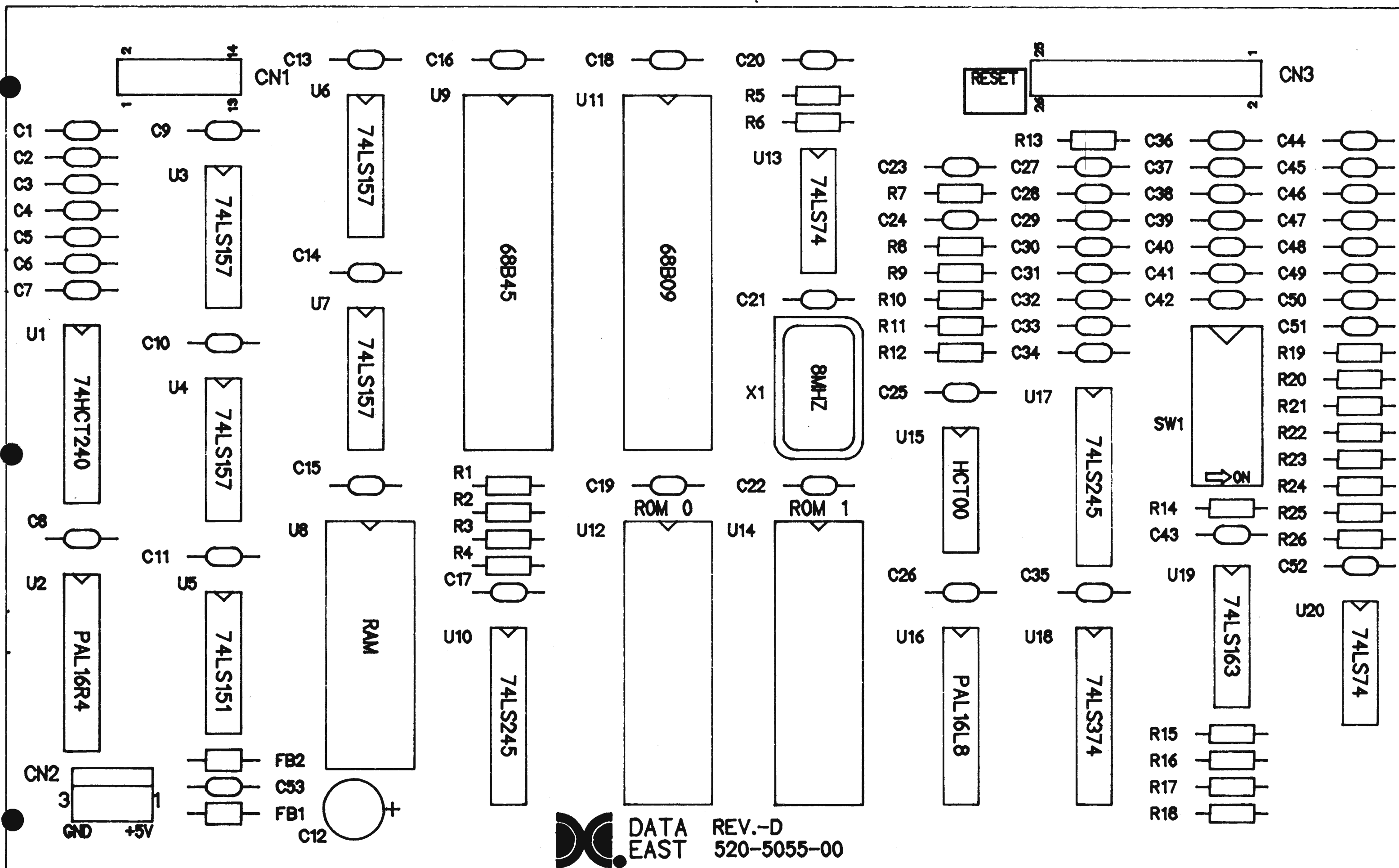
SOUND BOARD SCHEMATIC		
REV	PART NO.	REVISED BY
D	520-5050-00	C.E.S. INC.
DATE	1 of 1	



DATA EAST

BOARD NAME: **DOT MATRIX CONTROLLER BOARD**

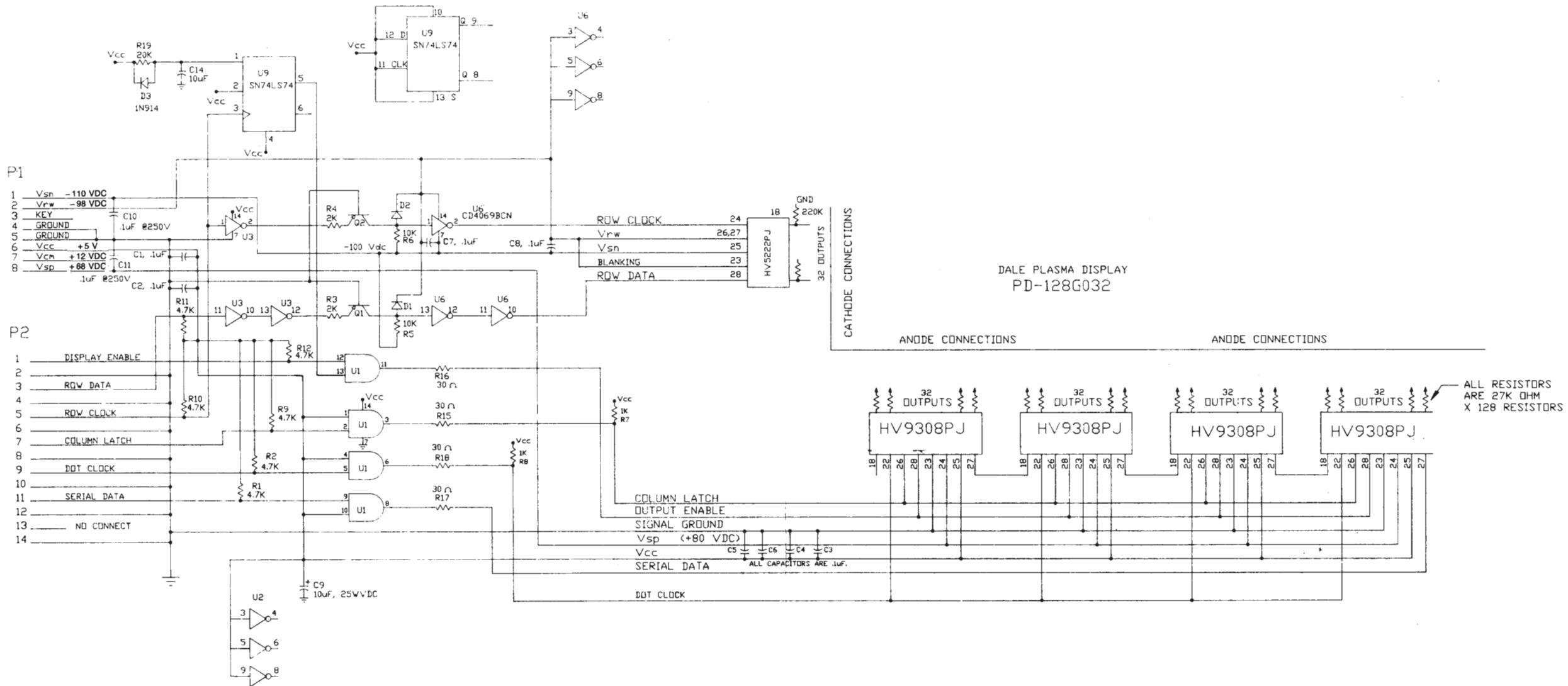
REV	PART NO.	PREPARED BY	REV
D	320-5055-00	C.E.S. INC.	D
SIZE	SHEET 1 OF 1	MODEL	




DATA EAST REV.-D
 520-5055-00

PART NO.	INTL CODE
281103-01	S

REVISIONS				
ZONE	SYM	DESCRIPTION	DATE	APPROVED

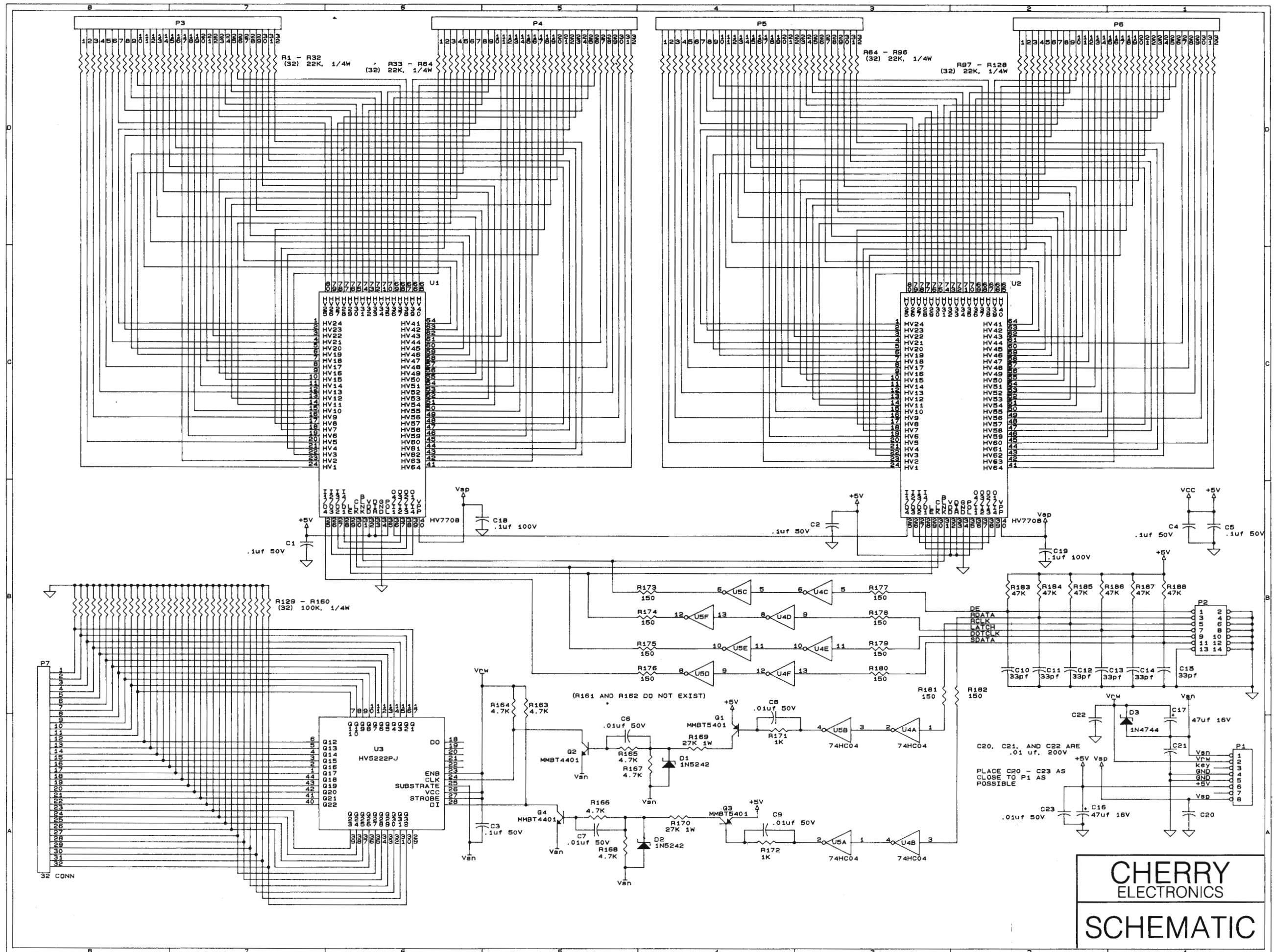


281103

CLASS 2

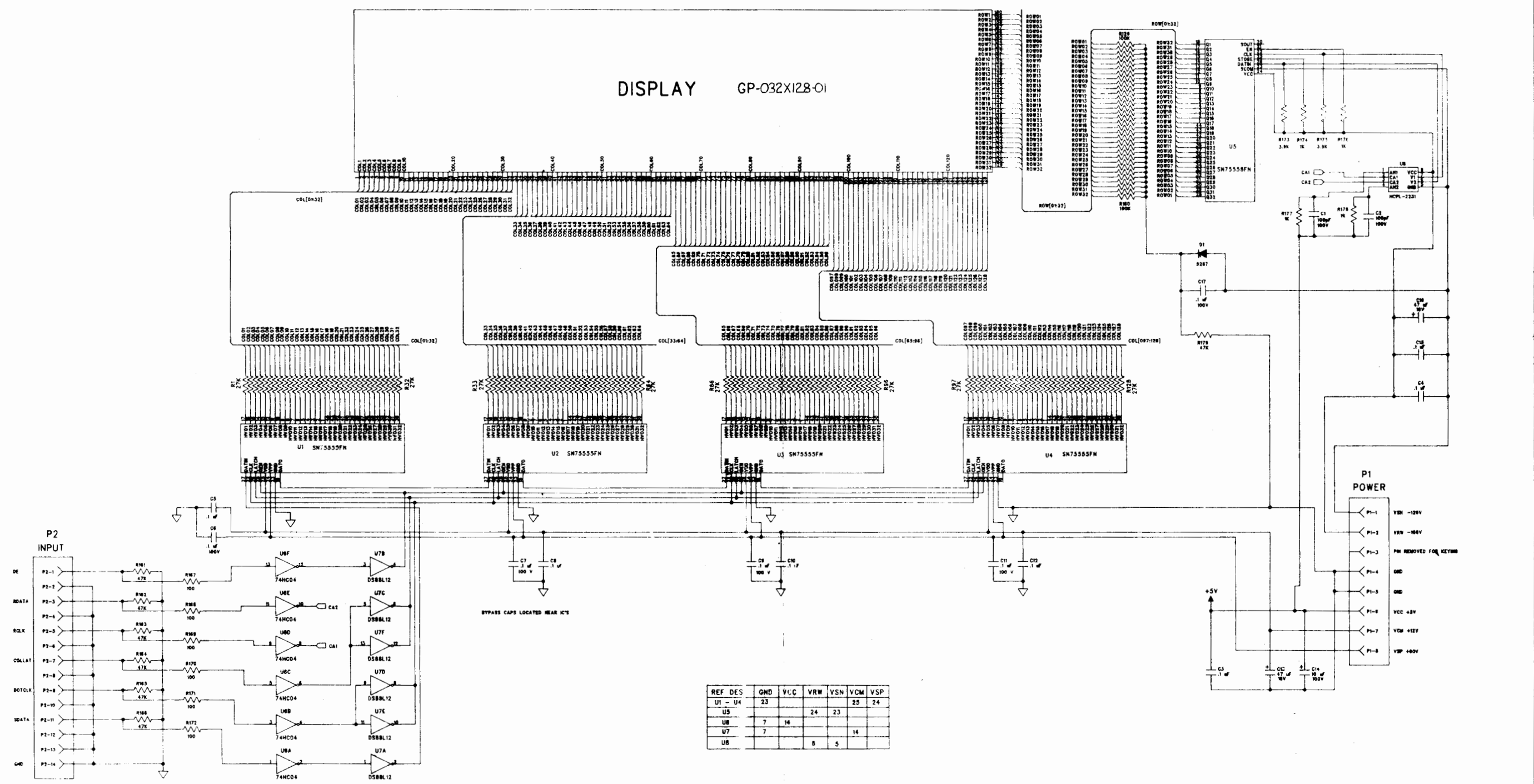
NOTES

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES DIMENSIONAL UNITS 21/64 XXX 1/64S 0/30 XXXXXXS	SIGNATURES DR <i>Paul Matyska</i> 92-02-21 CHKD <i>Vera Anderson</i> 92-03-06 DSGN <i>Z. SHANK</i> 92-03-06 APPD <i>KEITH RAYSBY</i> 92-03-07	DATE	DALE ELECTRONICS, INC. A COMPANY OF VISHAY COLUMBUS, NEBRASKA
MATERIAL	FINISH	TITLE ELECTRICAL SCHEMATIC APD-128G032	SIZE CODE IDENT NO. DRAWING NO. D 91637 281103
SCALE NONE	SHEET 1 OF 1		



CHERRY
ELECTRONICS
SCHEMATIC

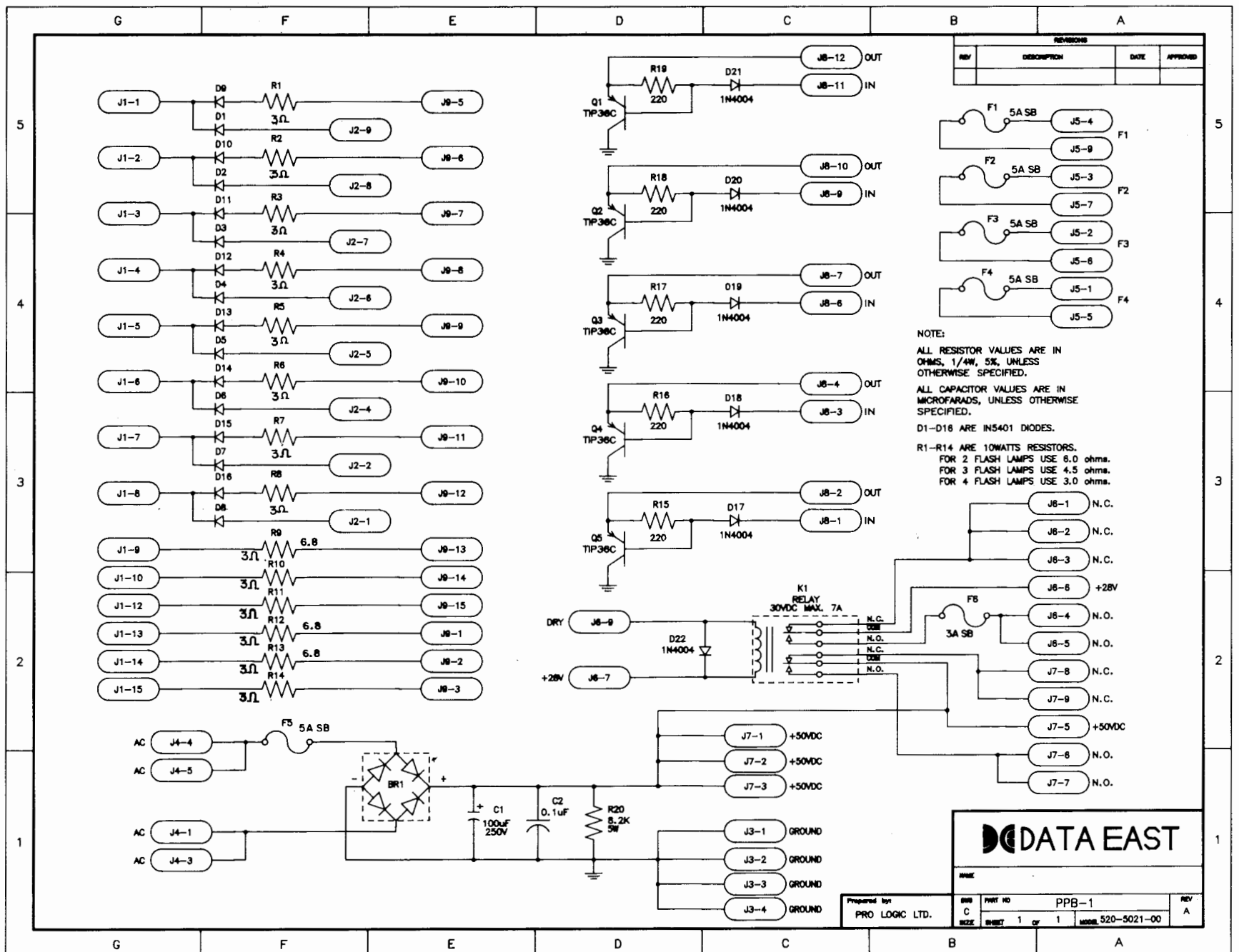
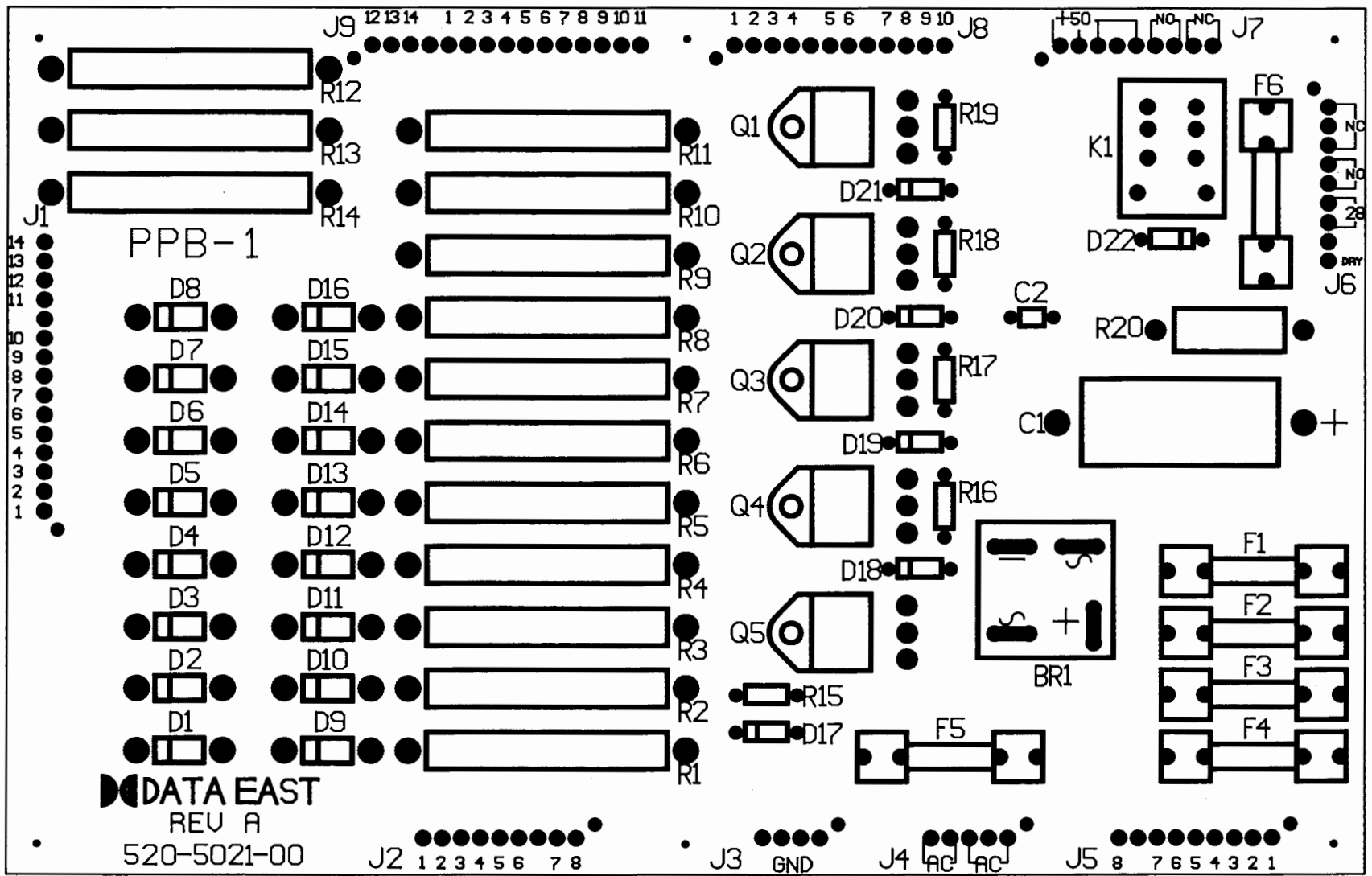
DISPLAY GP-032X128-01

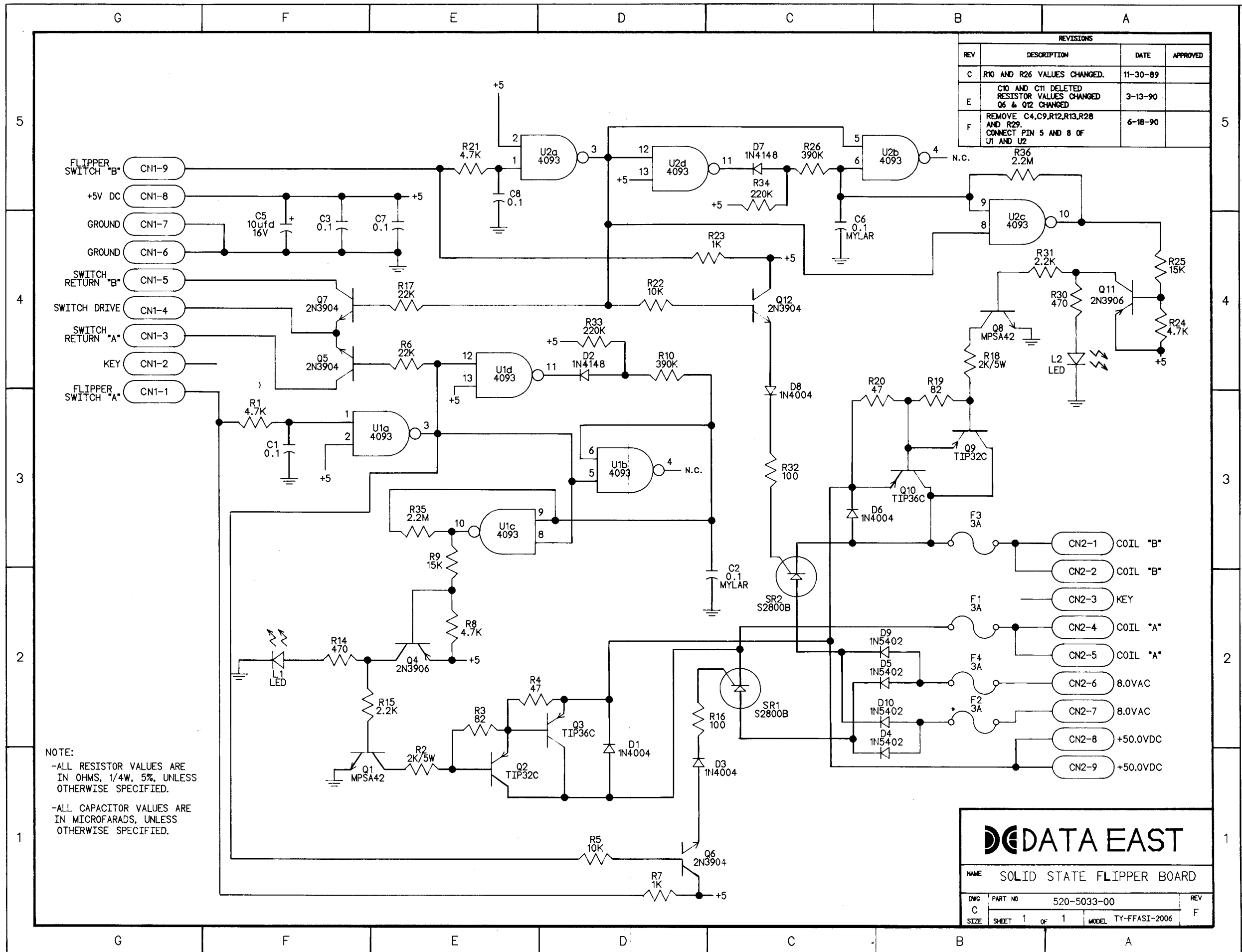


REF DES	QND	YLC	VRW	VSN	VCM	VSP
U1 - U4	23			24	23	25 24
U5						
U6	7	14				14
U7	7					
U8			8	5		

2. RESISTOR VALUES ARE IN OHMS, 1/8 WATT, 5%.
 1. CAPACITOR VOLTAGES ARE 50V, 20%.
 NOTES: UNLESS OTHERWISE SPECIFIED.

PADS LOGIC VER. 2.03 FILE: DM32128.SCH		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES: XX ±.005 XX ±.020 ANGLES: 2		CONTR. NO.	
DRAWN BY: RAY DEESE		DATE: 10-16-91		BABCOCK DISPLAY PRODUCTS, INC. 1051 S. EAST STREET ANAHEIM, CALIFORNIA 92805	
CHECK BY:		DATE:		SCHEMATIC	
APPR BY:		DATE:		CODE IDENT: 1510-0106	
DO NOT SCALE PRINT				REV: A	
NEXT ASSY USED ON		APPLICATION		SCALE: SIZE D SHEET 1 OF 1	





REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
C	R10 AND R26 VALUES CHANGED.	11-30-89	
E	C10 AND C11 DELETED RESISTOR VALUES CHANGED Q6 & Q12 CHANGED	3-13-90	
F	REMOVE C4,C9,R12,R13,R28 AND R29, CONNECT PIN 5 AND 8 OF U1 AND U2	6-18-90	

NOTE:
 -ALL RESISTOR VALUES ARE IN OHMS, 1/4W, 5%, UNLESS OTHERWISE SPECIFIED.
 -ALL CAPACITOR VALUES ARE IN MICROFARADS, UNLESS OTHERWISE SPECIFIED.

DATA EAST

NAME: SOLID STATE FLIPPER BOARD

DWG	PART NO	520-5033-00	REV
C			F
SIZE	SHEET	1 of 1	MODEL
			TY-FFASI-2006



Theory of Operation for the Solid State Flippers

- The solid state flipper board is a dual flipper solenoid driver circuit. Each solenoid driver circuit contains a one shot timer, a 50V driver, and an 8V driver.

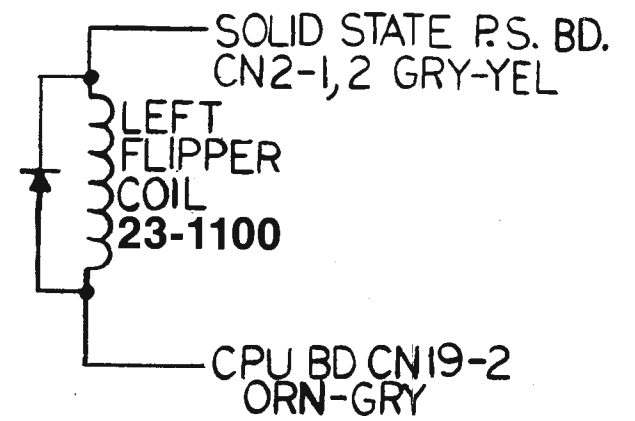
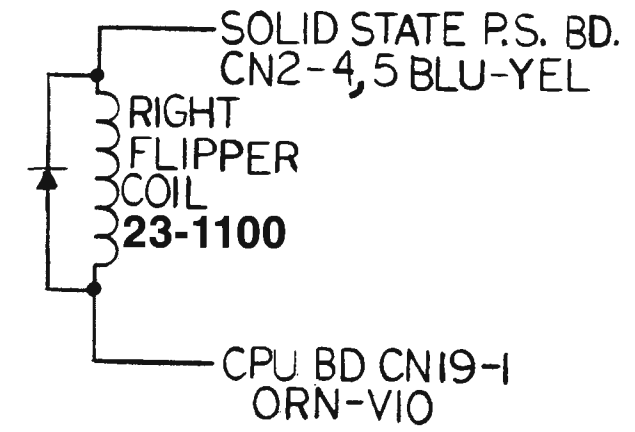
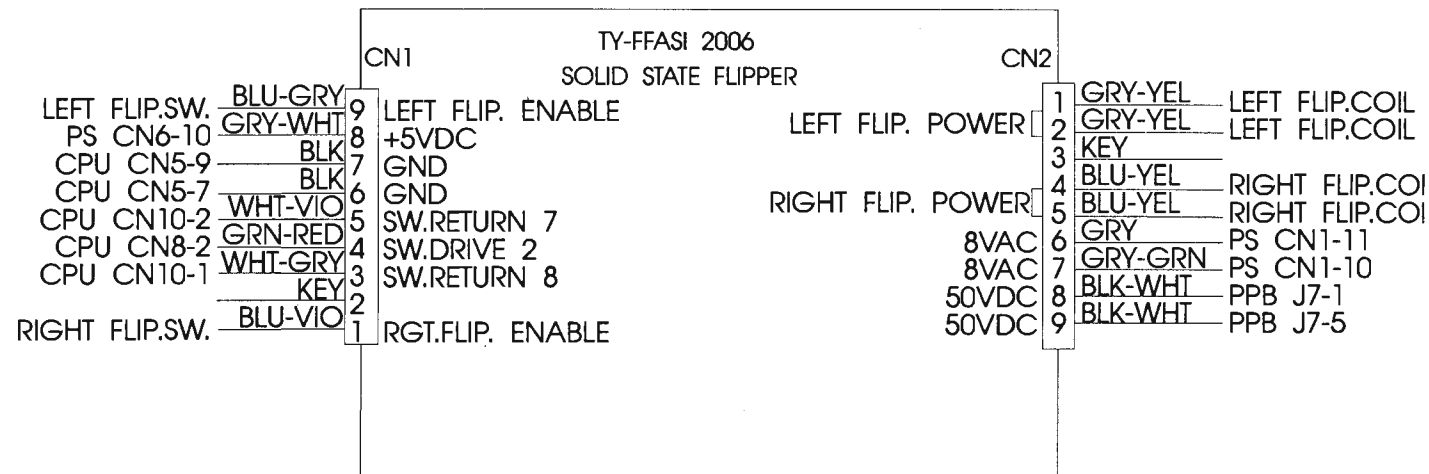
Looking at one circuit, Schmidt NAND gates U1A, U1B, and U1D make up the one shot timer. The timer length is controlled by R10, R33 and C2. The output of the timer is gated at U1C with the buffered switch input from Q6. The output of U1C controls the 50V driver circuit consisting of Q4, Q1, Q2, Q3, and D1. As long as the flipper button is activated, Q6 will keep the 8V driver circuit, SR1, on.

The 50V provides the actuation power to the flipper solenoid while the 8V provides the holding power.

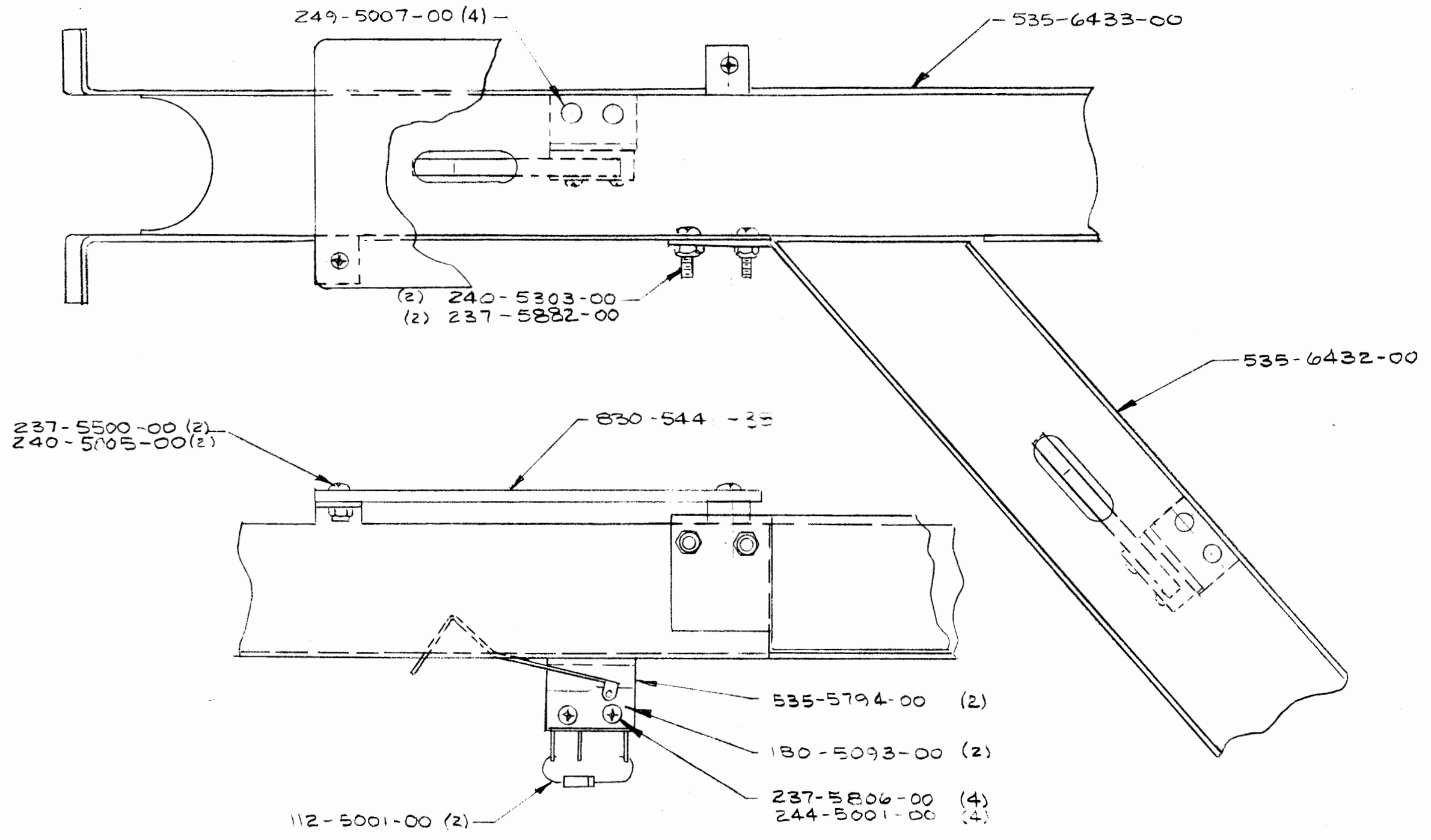
Solid State Flippers
PCB Wiring Diagram

Connector CN 1			
Pin #	Goes To	Wire Color	It Is
1	Rgt. Flipper Sw.	BLU-VIO	RGT. FLIP ENABLE
2			KEY
3	CPU CN10-1	WHT-GRY	SW. RET 8
4	CPU CN8-2	GRN-RED	SW. DRV 2
5	CPU CN10-2	WHT-VIO	SW. RET 7
6	CPU CN5-7	BLK	GND
7	CPU CN5-9	BLK	GND
8	PS CN6-10	GRY-WHT	+5VDC
9	Lft. Flipper Sw.	BLU-GRY	LFT. FLIP ENABLE

Connector CN 2			
Pin #	Goes To	Wire Color	It Is
1	Lft. Flip Coil	GRY-YEL	LFT. FLIP POWER
2	"" "" "" ""	"" "" "" ""	"" "" "" ""
3			KEY
4	Rgt. Flip Coil	BLU-YEL	RGT. FLIP POWER
5	"" "" "" ""	"" "" "" ""	"" "" "" ""
6	PS CN1-11	GRY	9 VAC
7	PS CN1-10	GRY-GRN	9 VAC
8	PPB J7-1	BLK-WHT	50 VDC
9	PPB J7-5	BLK-WHT	50 VDC



ECN	REV	DESCRIPTION	BY	DATE	APP
6293	A	ORIGINAL CAP NUMBER WAS 535-6441-35	JC	8-1-92	JB

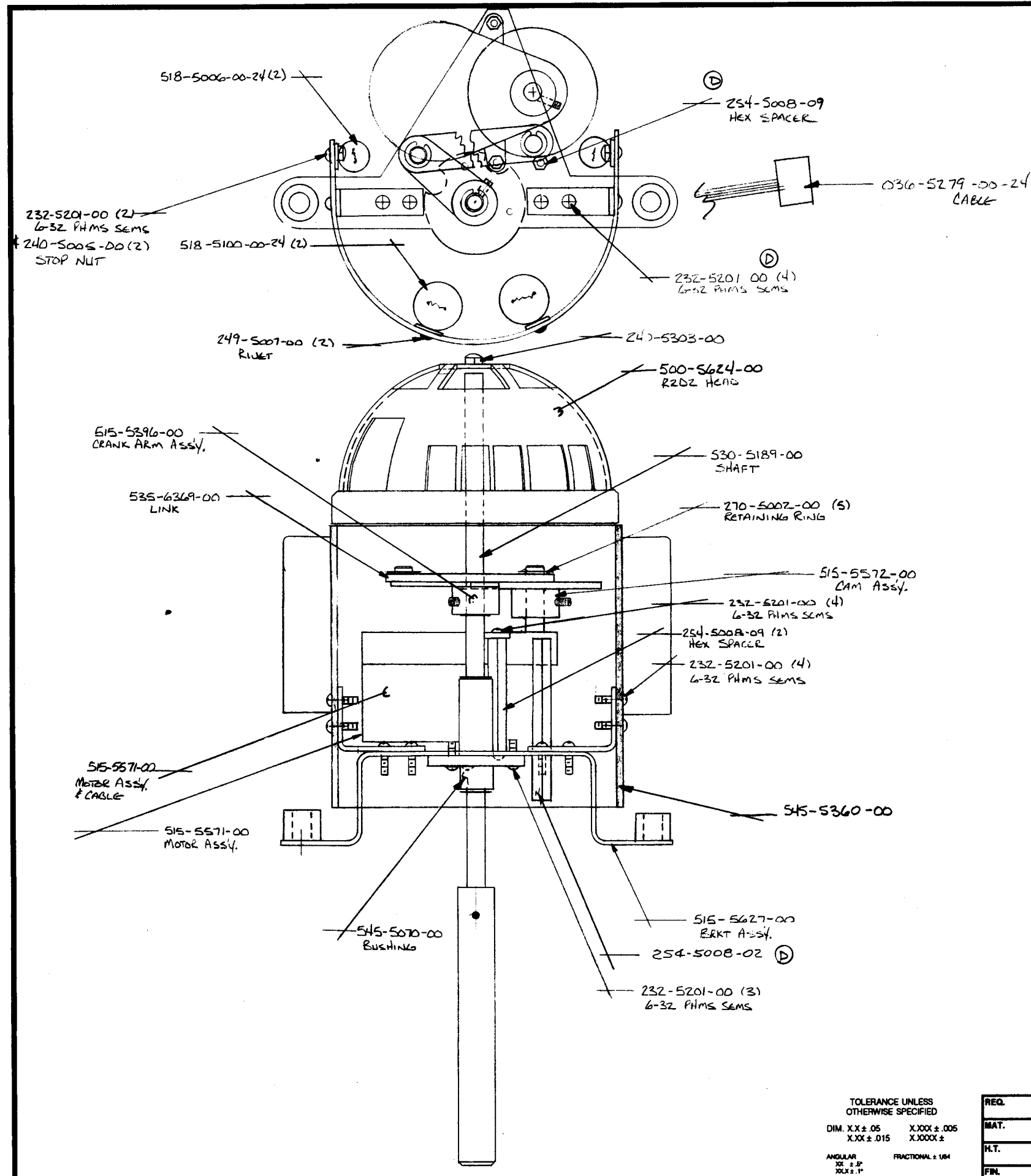


TOLERANCE UNLESS OTHERWISE SPECIFIED

DIM. X.X ± .05 X.XXX ± .005
 X.XX ± .015 X.XXXX ±

ANGULAR FRACTIONAL ± 1/64
 XX ± 5°
 XXX ± .1°

REQ. 1	NEXT ASSEM.	DWN. JL	DATE 7.2.92	TITLE TROUGH RAMP ASS'Y
MAT.		CH'KD.	SCALE 1:1	
H.T.		DE DATA EAST PINBALL, INC.		PART NO. 500-5612-00
FIN.		1990 JANICE AVE., MELROSE PARK, IL. 60160		



ECN #	REV	DESCRIPTION	BY	DATE	APP
6283	A	ADDED (1) 254-500B-09 (1) 232-5201-00	JB	8-2-92	JB
	B	ADDED 240-5303-00 DELETED SCREWS IN ASSEMBLY	JB	8/24/92	JB
	C	DELETED (2) 249-5007-00 ADDED (2) 232-5201-00 (2) 240-5005-00 R2DZ HEAD PART # CORRECTED	JB	9/22/92	JB
	D	254-500B-09 WAS 254-500B-07 232-5201-00 WAS 232-5200-00 254-500B-02 ADDED	EDC	10/5/92	

NOTE: LOCTITE THREADED FASTENERS PER ENG.

TOLERANCE UNLESS OTHERWISE SPECIFIED
 DIM. X.X ± .05 X.XXX ± .005
 X.XX ± .015 X.XXXX ±
 ANGULAR XX ± 5° FRACTIONAL ± 1/64
 XXX ± .1°

REQ.	NEXT ASSEM.	DWN. <i>JB</i>	DATE 8-2-92	TITLE R2D2 Assy
MAT.		CHKD. <i>JB</i>	SCALE FULL	
H.T.		DATA EAST PINBALL, INC.		PART NO. 500-5484-00
FIN.		1890 JANICE AVE., MELROSE PARK, IL. 60160		

DATA EAST LIMITED WARRANTY

Data East USA, Inc., ("Seller") warrants only to the initial purchaser of its products that the items listed below are free from defects in material and workmanship under normal use and service for the warranty period specified:

PRINTED CIRCUIT BOARDS (GAME LOGIC) 60 DAYS

No other parts of Seller's product are warranted.

Warranty periods are effective from the initial date of shipment from Seller to its authorized distributors.

Seller's sole liability shall be, at its option, to repair or replace products which are returned to Seller during the warranty periods specified, provided:

1. Seller is notified promptly upon discovery by purchaser that stated products are defective.
2. Such products are properly packaged and then returned freight prepaid, to Seller's plant.

This warranty does not apply to any parts damaged during shipment and/or due to improper handling, or due to improper installation or usage, or alteration. In no event shall the Seller be liable for any anticipated profits, loss of profits, loss of use, accidental or consequential damages or any other losses incurred by the customer in connection with the purchase of a Data East USA., product.

WARRANTY DISCLAIMER

EXCEPT AS SPECIFICALLY PROVIDED IN A WRITTEN CONTRACT BETWEEN SELLER AND PURCHASER, THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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