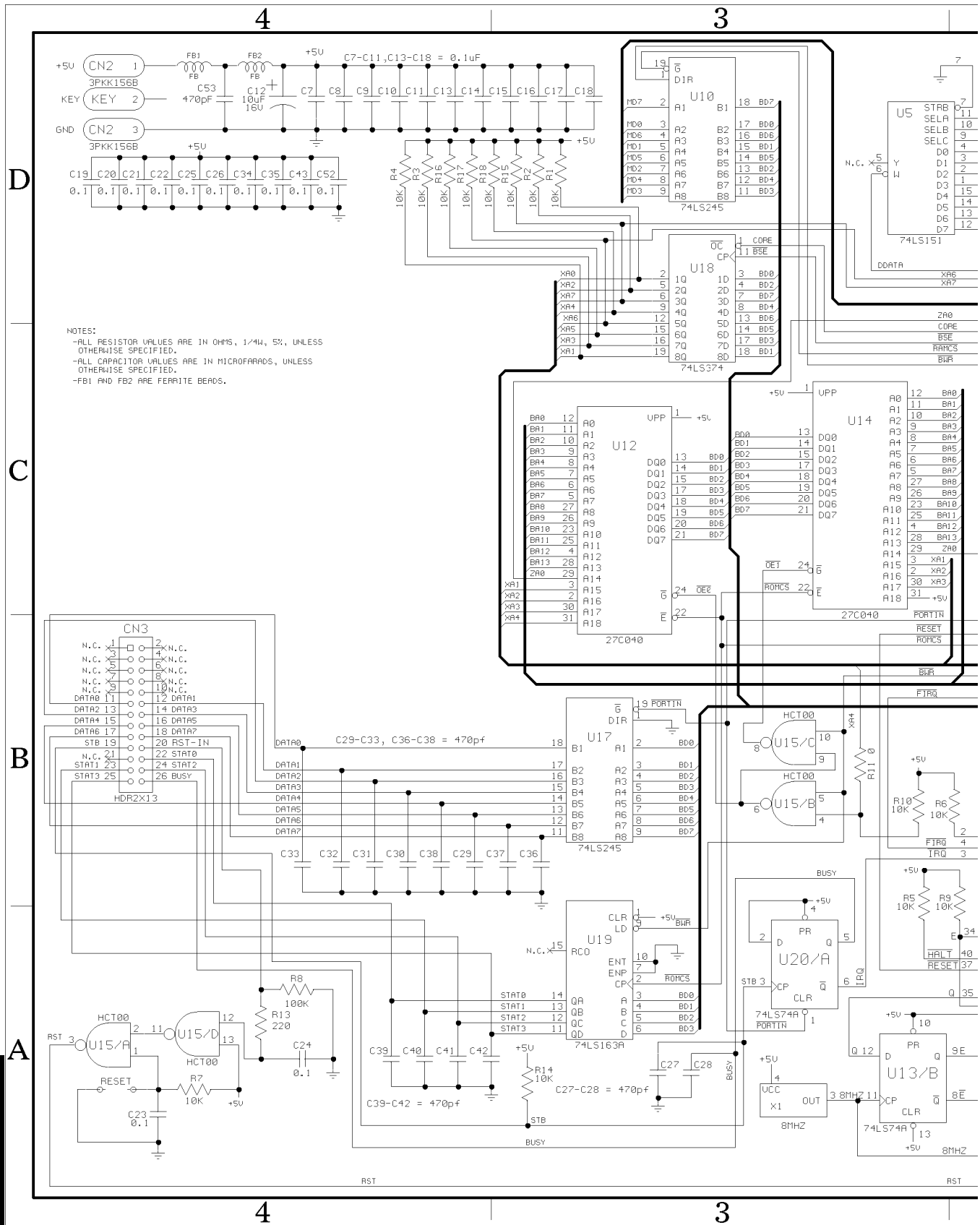


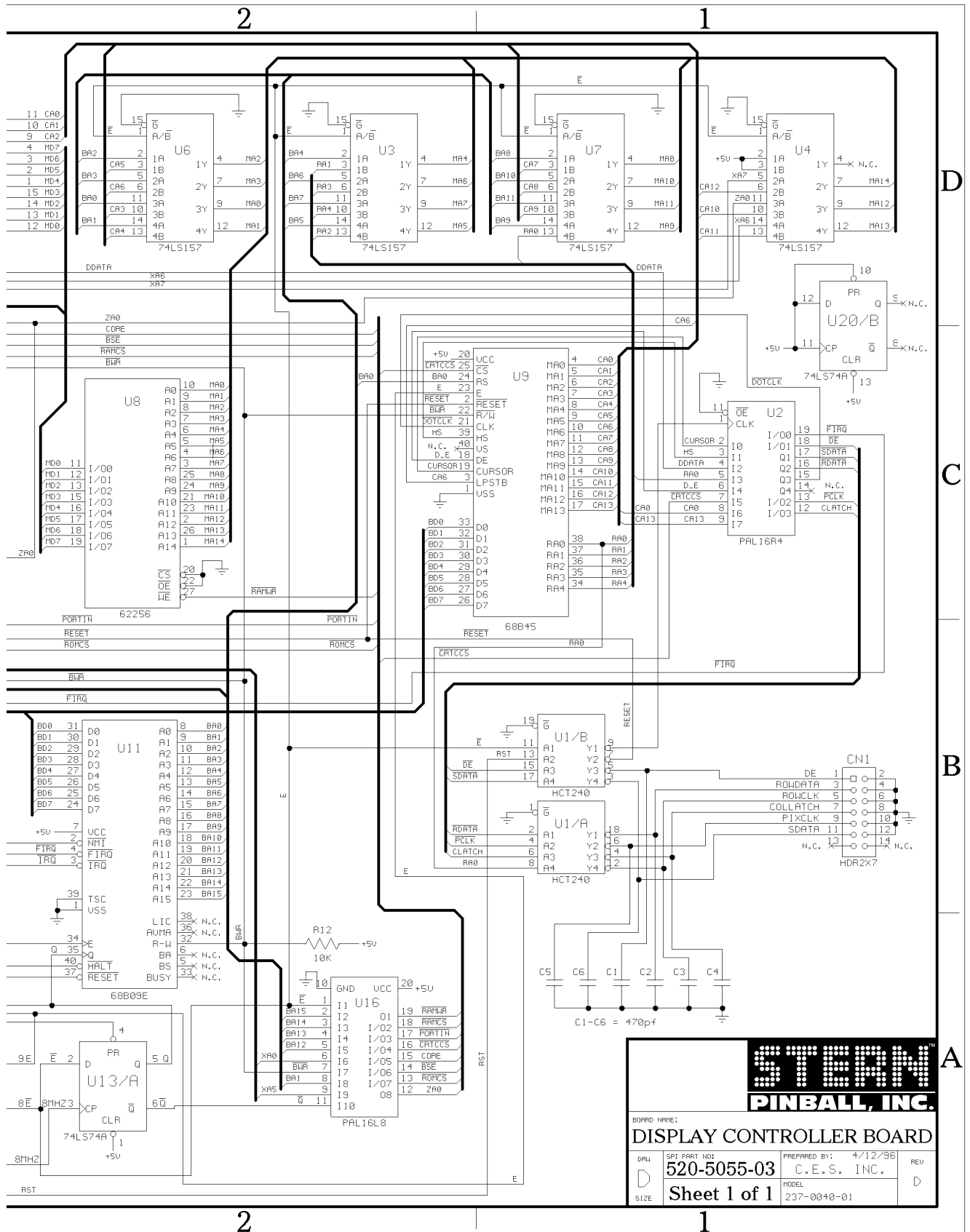
**THIS DOCUMENT IS BEST  
VIEWED AS  
CONTINUOUS - FACING PAGES  
(CLICK ON THE SMALL ICON  
BELOW [8.5 x 11 in]).  
or CHOOSE THE "VIEW" OPTION  
ABOVE.**


**SELECT THE "ZOOM-IN" TOOL  
TO ENLARGE SCHEMATIC. USE  
THE "HAND" TOOL TO  
MANUEVER THE PAGE.**

# Display Controller Board Schematic



# Display Controller Board Schematic

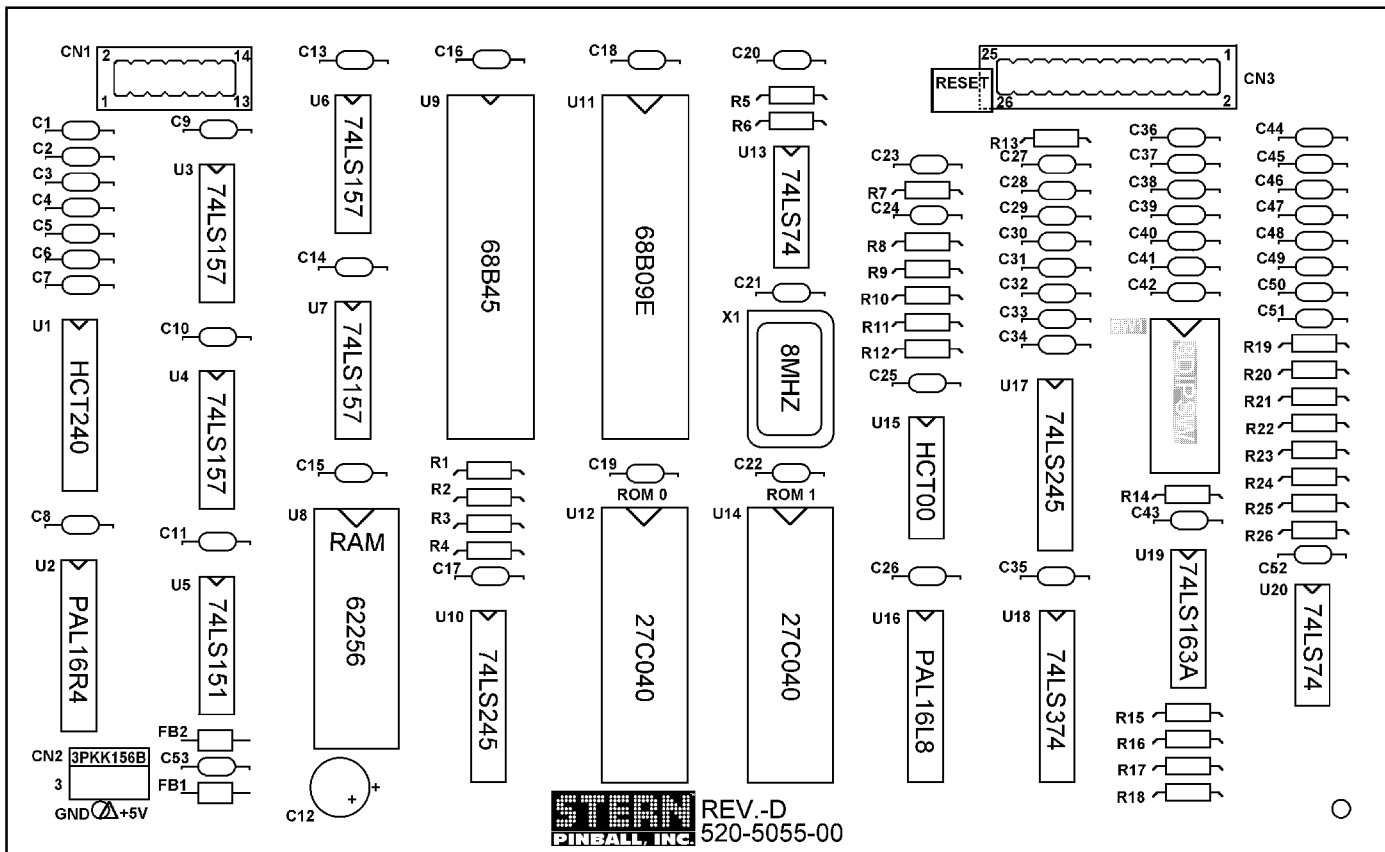




**PINBALL, INC.**

BOARD NAME:			
<b>DISPLAY CONTROLLER BOARD</b>			
DRN	SPT PART NO:	PREPARED BY:	REV
	<b>520-5055-03</b>	C.E.S. INC.	D
Sheet 1 of 1		MODEL	237-004B-01

# Display Controller Board Component Layout & Parts



Section 5 | PCBs

ITEM	QTY	PART NUMBER	REF-DESIGNATOR	DESCRIPTION (NS = Not Stuffed)
1	1	520-5055-03	Display Controller Board (FCC FEB98)	Complete PCB Assembly
2	2	077-5217-00	U12, U14	32-Pin, IC Dip Socket
3	1	100-0397-00	U8	32K X 8 Static RAM (62256L-10PC)
4	1	100-0189-01	U11	68B09E
5	1	100-0233-00	U9	68B45
6	1	100-0351-00	U15	74HCT00
7	1	100-5001-00	U1	74HCT240
8	1	100-5000-00	U5	74LS151
9	4	100-0046-00	U3, U4, U6, U7	74LS157
10	1	100-0049-00	U19	74LS163A
11	2	100-0058-00	U7, U10	74LS245
12	1	100-0064-00	U18	74LS374
13	2	100-0037-00	U13, U20	74LS74
14	1	965-0107-00	U16 - ORANGE DOT	PAL16L8 (15CN), (Programmed)
15	1	965-0108-00	U2 - ORANGE DOT	PAL16R4 (25CN), (Programmed)
16	23	125-5031-00	C7>C11, C13>C26, C34, C35, C43, C52	- ORANGE DOT
17	1	121-5051-00	R8	.1 uF, (104), Axial Cer. Cap
18	15	121-5011-00	R1>R7, R9, R10, R12, R14>R18	100K Ω 1/4W C.F. Res. 5%
19	1	121-5014-00	R13	10K Ω 1/4W Res. 5%
20	0	n/a	R19>R26	220 Ω 1/4W C.F. Res. 5%
21	21	125-5028-00	C1>C6, C27>C33, C36>C42, C44>C51, C53	(R19>R26: NS)
22	2	n/a	FB1, FB2	470pF, (471), Axl. Cap (C44>C51: NS)
23	1	125-5015-00	C12	Ferrite Bead (2743001182)
24	1	045-5015-26	CN3	100uF, 25v, Cap. (Radial Elec.)
25	1	045-5015-03	CN2	13-Pin, Dual Row .1" HDR Conn.
26	1	045-5015-02	CN1	3-Pin, KK-156 Conn. (540445-3)
27	1	140-0013-00	X1	7-Pin, Dual Row .1" Hdr. Conn.
28	0	Not Used	SW1	8Mhz Clock Oscillator
29	1	(See Pg. DR. Table)	U12 U14 (ROM 0)	(SW1: NS)
30	1	n/a	U1 (@ Pins 9 & 10)	4MB ROM (U14: NS)
				100pF, Cap.