
Commodore Business Computer

Technical Manual

Model 8032



 **commodore**
COMPUTER

PART NO.	DESCRIPTION
8032030-01	80 COLUMN CPU, DYNAMIC PET, 32K, 60HZ

REVISIONS				
LTR	ZONE	DESCRIPTION	DATE	APPROVED
L		REV PER ECO 1919	12/1/80	<i>[Signature]</i>
M		REVISED PER ECO 1932	1/7/81	<i>[Signature]</i>
N		REV PER ECO 2002	1/27/81	<i>[Signature]</i>
P		REV PER ECO 2107	5/24/81	N.P.
R		REV PER ECO 2130	7/9/81	H. H.
S		REV PER ECO 2695	5/1/82	<i>[Signature]</i>
T		REV PER ECO 2645	5/5/82	<i>[Signature]</i>

10 CUT TRACE OF CLK 1 FROM UC3 PIN 13. USE SPARE NOR GATE. SOLDER JUMPER UD2 PIN 6 TO UD1 PIN 5. SOLDER JUMPER UD2 PIN 9 TO UD1 PIN 6. SOLDER JUMPER UD1 PIN 4 TO UC3 PIN 13.

9 FOR SUBSTITUTES SEE PART SUBSTITUTION INDEX P/N 321233.

8 FOR ITEMS 36 AND 37, ALL ASSEMBLIES MUST HAVE SAME VENDOR (DASH NO. MAY VARY.

7 SOLDER JUMPER, ITEM 109 FROM E1 TO SILVER CONTACT ON MT1, ITEM 80; TAKE CARE TO ALLOW NO MORE THAN ONE SECOND DURATION FOR APPLICATION OF HEAT DURING SOLDERING.

6 SOLDER AT 3 PLACES, EQUALLY SPACED AROUND THE BRASS BASE MT1 (ITEM 80)

5 RUBBER STAMP APPROPRIATE DASH NO. APPROX. WHERE INDICATED.

4 FOR ACCEPTABLE SUBSTITUTE, REFER TO PARTS LIST.

3 SOLDER TO XTAL AND PCB.

2 ITEMS 42 AND 43 ARE USED AS SPARES.

1. SHEET 5 OF 6 SIZE C, SHEET 6 OF 6 SIZE D ASSY DWG

NOTES- UNLESS OTHERWISE SPECIFIED:

commodore	TITLE PCB ASSEMBLY - 80 COLUMN CPU, DYNAMIC PET	DRAWN BY <i>[Signature]</i>	DATE 3/25/80	ENGR <i>[Signature]</i>	3/6/80	SIZE B	DRAWING NUMBER 8032030
		CHKD <i>[Signature]</i>	3/3/80	APPR <i>[Signature]</i>	3/6/80		

QUANTITY REQD PER PART / DASH NO.				QTY	REV	G	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
			06050403								
				01							
				1	D	B032029-01	LOGIC DIAGRAM-80 COL CPU, DYNAMIC PET				
				2							
				1	D	B032031-01	PCB FAB-80 COL CPU, DYNAMIC PET				
				4							
				1	B	901435-01	IC, 6502 MPU	UB14			
				2	B	901436-01	6520 PIA	UB16, UB12			
				1	B	901437-01	6522 VIA	UB15			
				1	B	901479-01	CRT CONTROLLER	UB13			
				9							
				3	B	901521-01	74LS00 NAND GATE	UE11, UDS, UE5			
				1	B	901521-32	74LS86 EX-OR GATE	UC2	SEE NOTE [9]		
				1	B	901521-21	74LS02 NOR GATE	UDI			
				1	B	901521-02	74LS04 HEX INV.	UE15			
				2	B	901525-01	74504 HEX INV, SCHOTTKY	UD2, UE4			
				11	B	901521-13	74LS244 OCTAL BUFFERS	UB4-UB7, UB9, UB10, UDI3, UDI4, UE8, UE9, UE10			
				2	B	901521-24	74LS10 NAND GATE	UD4, UE13			
				1	B	901522-01	7417 HEX BUFFER	UD15			
				1	B	901522-20	7425 NOR GATE	UE14			
				1	B	901521-11	74LS157 DATA SELECTOR	UCB, UC10, UE2	SEE NOTE [9]		
				1	B	901521-17	74LS42 BCD DECODER	UC3			
				2	B	901521-06	74LS74 FLIP-FLOP	UB1, UB2			
				2	B	901525-09	74574 FLIP-FLOP, SCHOTTKY	UC1, UE1			
				23							
				2	B	901521-29	74LS373 OCTAL D-TYPE LATCH	UB3, UB8			
				1	B	901521-09	74LS145 BCD TO DECIMAL DECODER	UC11			
				1	B	901522-13	74154 4-16 LINE DECODER	UE12			
				27							
				1	B	901521-28	74LS164 8-BIT PARALLEL OUTPUT	UE3	SEE NOTE [9]		
				3	B	901522-03	74177 4-BIT CTR	UD3, UE6, UE7			
				30							
				1	B	901522-28	IC 74166 8-BIT REGISTER	UA2			
				32	B						
				33	B						
				34	B						
				4	B	901453-02	IC, 2114 4K STATIC RAM	UC4-UC7			
				16	B	901470-01	IC, 4116 RAM DYNAMIC	UA4-UA19			
				37							

commodore

TITLE: PCB ASSEMBLY -
80 COLUMN CPU, DYNAMIC PET

DRAWN BY:

CHKD: M.P.

DATE

ENGR:

APPR: 10/15/80

DATE

SIZE

B

8032030

REV

1

SHEET

2/6

QUANTITY REQD PER PART / DASH NO.				QTY	REF	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
			06050403	1	38	B	901465-22	IC, 2332 ROM (F000-FFFF)		
				1	39	B	901465-21	2332 ROM (D000-DFFF)	UD6	
				1	40	B	901465-20	2332 ROM (C000-CFFF)	UD8	
				1	41	B	901465-23	2332 ROM (B000-BFFF)	UD9	
					42			2332 ROM (A000-AFFF)	UD10	
					43			2332 ROM (9000-9FFF)	UD11	SPARE
				1	44	B	901474-03	2316 ROM (E000-EFFF) 60HZ	UD12	SPARE
				1	45	B	901447-10	2316 ROM	UD7	
				-	46	B	901474-04	2316 ROM (E000-EFFF) 50HZ	UA3	
				1	47	B	901523-01	LM555 TIMER	UD7	
				3	48	B	901524-01	IC, MC3446 INTERFACE BUS	UD16	
				1	49	B	900462-21	CAP, CERAMIC AXIAL 22 pF 50V	UA20, UB17, UC12	
				5	50	B	900109-03	CAP, LOW LEAK. ELECTROLYTIC, 10 uF 25V	C54	SEE NOTE 9
				1	51	B	900100-44	CAP, ELECTROLYTIC 470 uF 16V	C1, 16, 17, 23, 24	SEE NOTE 9
				1	52	B	900100-45	CAP, ELECTROLYTIC 4700 uF 25V	C2	
				3	53	B	900101-37	CAP, ELECTROLYTIC 47 uF 16V	C5	
				4	54	B	900110-07	CAP, LOW LEAK., ELECT. 1 uF 50V	C7, 9, 11	
					55				C6, 8, 10, 51	SEE NOTE 9
				3	56	B	900461-16	CAP, CERAMIC AXIAL .01 uF 50V		
				2	57	B	900461-20	CAP, CERAMIC AXIAL .022 uF 50V	C52, 60, 61	
				41	58	B	900461-28	CAP, CERAMIC AXIAL .1 uF 50V	C3, 4	
					59				C12-15, 18-22, 25-50, 53, 55-59	
				19	60	B	901550-01	RESISTOR, CARBON 1/4 W ± 5% 1K Ω		
				1	61	B	901550-02	3.3K Ω	R1-6, 9, 12, 15, 22, 26, 28, 31, 39, 41-45	
				2	62	B	901550-03	5.1K Ω	R14	
				2	63	B	901550-20	10 K Ω	R19, 21	
				1	64	B	901550-49	100 Ω	R23, 27	
				5	65	B	901550-58	470 Ω	R40	
				1	66	B	901550-64	10 Ω	R13, 16, 17, 30, 29	
				2	67	B	901550-69	1.5 K Ω	R6	
				2	68	B	901550-84	1 M Ω	R47, 48	
				2	69	B	901550-85	2.4 K Ω	R25, 24	
				2	70	B	901550-90	27 Ω	R18, 20	
				1	71	B	901550-93	39 Ω	R10, 11	
				9	72	B	901550-94	RESISTOR, CARBON 1/4 W ± 5% 68 Ω	R7	
					73				R32-38, 46, 49	
					74					

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TITLE PCB ASSEMBLY -
80 COLUMN CPU, DYNAMIC PET

DRAWN BY: J. Alorun
CHKD: M.L.

DATE ENGR: APPR: *[Signature]*

SIZE B

8032030

REV 3
SHT 6

QUANTITY REQD PER PART / DASH NO.				ITEM	QTY	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
				01						
				1	75	B 902419-66	RES NETWORK, DIP 14 PIN 10 K Ω	UB11		
					76					
				2	77	B 902653-01	TRANSISTOR, NPN TIP29	Q1,2		
					78					
				1	79	B 902550-01	TRANSISTOR PACK Q2T2222	UE16		
				1	80	B 907300-02	TRANSDUCER-PIEZO ACOUSTIC	MT 1		
				2	81	B 900941-01	DIODE, ZENER 7.5 V	VR5,6		
				4	82	B 900750-01	DIODE, IN4001	CR1,5-7		
				1	83	B 900753-01	DIODE, IN5402 3 A/200 V	CR3		
				2	84	B 900757-01	DIODE BRIDGE 4 A/50 V	CR2,4		SEE NOTE [9]
					85					
				1	86	B 901527-03	VOLTAGE REGULATOR, 7905, -5V/1A	VR1		TO-220
				2	87	B 901528-03	VOLTAGE REGULATOR, LM340-5, +5 V/1.5 A	VR3,4		TO-3, SEE NOTE [9]
				1	88	B 901528-04	VOLTAGE REGULATOR, 7812, +12V/1A	VR2		TO-3
					89					
				1	90	B 90055-0	CRYSTAL 16 MHz	Y1		
					91					
				2	92	B 904777-06	DIP SHUNT 6 PIN			
					93					
				4	94	B 904150-04	SOCKET, IC LOW PROFILE 24 PIN	UD7 UD11, UD12, UA3		
				1	95	B 904150-06	SOCKET, IC LOW PROFILE 40 PIN	UB14		
				5	96	B 900757-02	DIODE, BRIDGE 4 A/50 V			CR2,4
				1	97	B 903326-07	HEADER ASSY .100 CENTER	J10		7 PIN, REMOVE PIN 3 AT ASSEMBLY
				2	98	B 903345-25	HEADER ASSY, DUAL ROW, .100 CENTER	J4,9		50 PIN
				1	99	B 903316-09	HEADER ASSY .156 CENTER	J8		9 PIN, REMOVE PIN 7 AT ASSEMBLY
				1	100	B 903331-07	HEADER ASSY, POLARIZED, .100 CENTER	J11		7 PIN, REMOVE PIN 3 AT ASSEMBLY
				1	101	B 903331-07	HEADER ASSY, POLARIZED, .100 CENTER	J7		7 PIN, ORIENT OMITTED PIN TO PIN 6 POSIT
				1	102	B 903331-20	HEADER ASSY, POLARIZED, .100 CENTER	J5		20 PIN, ORIENT OMITTED PIN TO PIN 19 POSIT
					103					
				1	104	B 320268-01	HEAT SINK	VR2,3,4		UNDER VR2,3 & 4
				1	105	B 904907-01	HEAT SINK, COMPOUND THERMAL			
				6	106	B 906403-19	RIVET, DOME HEAD, OPEN END			
				2	107	B 906404-04	RIVET, DOME HEAD, CLOSED END			
				1	108	B 903780-02	#30 WIRE WRAP WIRE, RED			
				2	109	B 903780-01	#30 WIRE WRAP WIRE, RED			
				1	110	B 320086-01	BUS WIRE			SEE NOTE [9]
				1	111	B 903780-04	#30 WIRE WRAP WIRE			

commodore

TITLE: PCB ASSEMBLY -
80 COLUMN CPU, DYNAMIC PET

DRAWN BY: *J. H. ...*
CHKD: *M. K.*

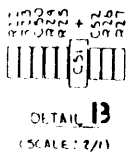
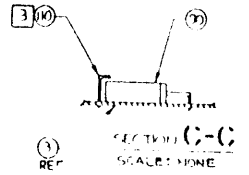
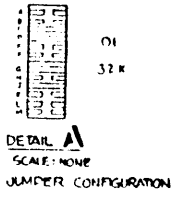
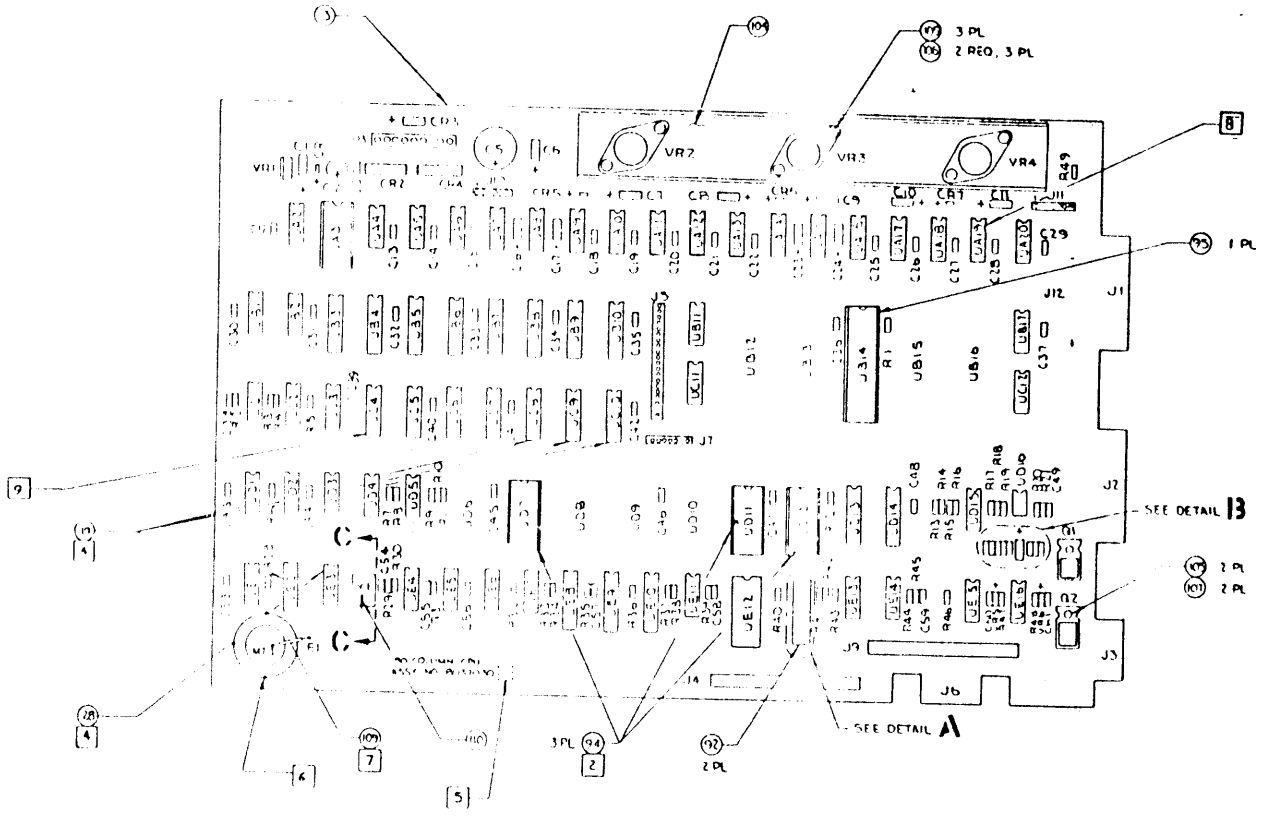
DATE: _____ ENGR: _____
APPR: _____

DATE: _____ SIZE: B

8032030

REV: *T*

REVISIONS			
LINE	DATE	DESCRIPTION	APPROVED
1		SEE SHEET 1	

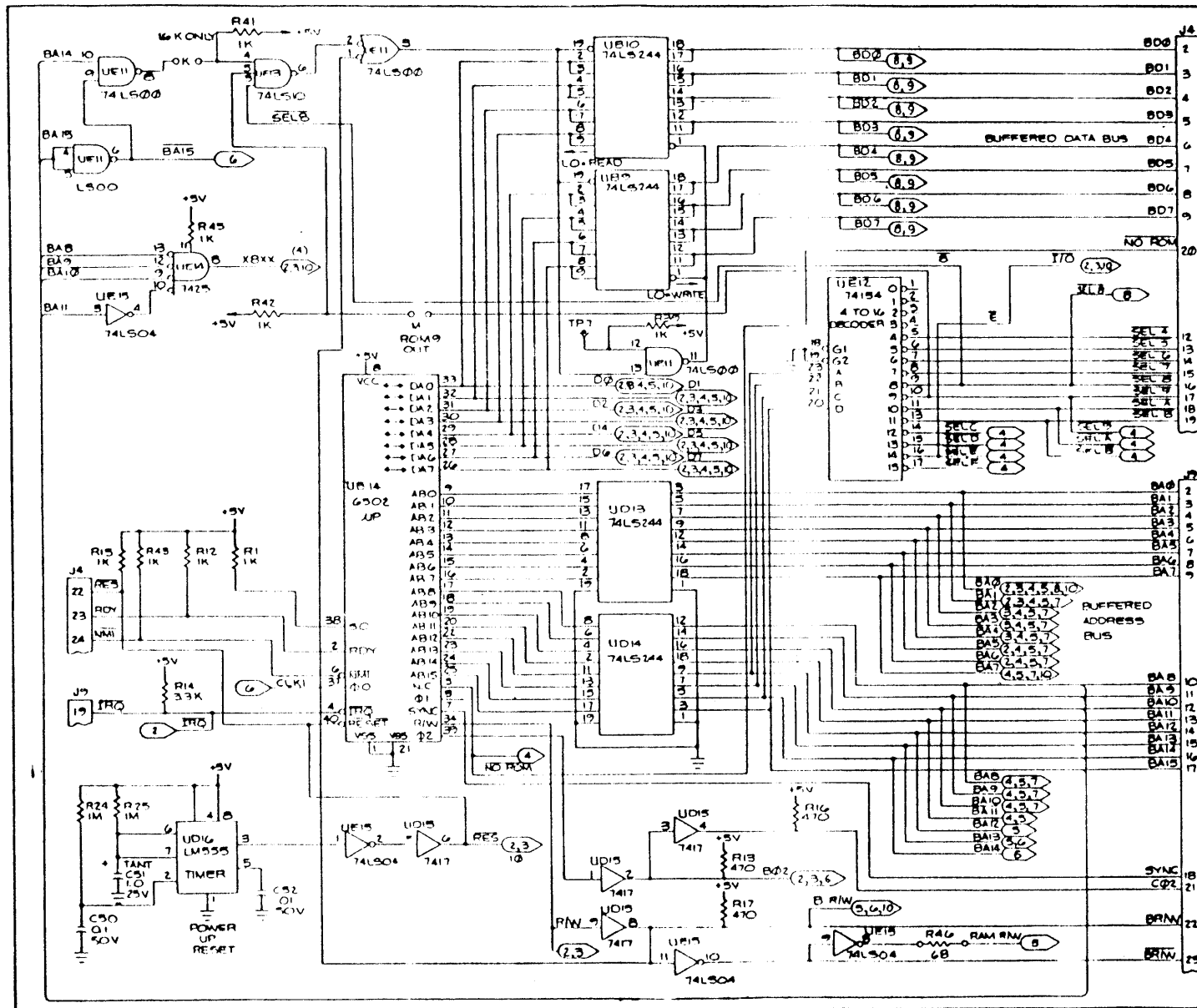


SEE DETAIL B
2 PL
2 PL

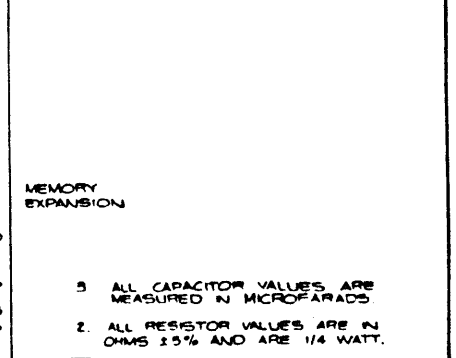
SEE DETAIL A

-01 & -02 SHOWN

commodore	
P.B. ASSEMBLY - 40 COLUMN CPU DYNAMIC PET	
DATE	9032030
SCALE	1/1



REVISIONS			
REV	DATE	DESCRIPTION	BY
A		PRODUCTION RELEASE	
B		REV PER ECO 1609	
C		REV PER ECO 1681	
D		REV PER ECO 1855	
E		REV PER ECO 1976	
F		REV PER ECO 2025	

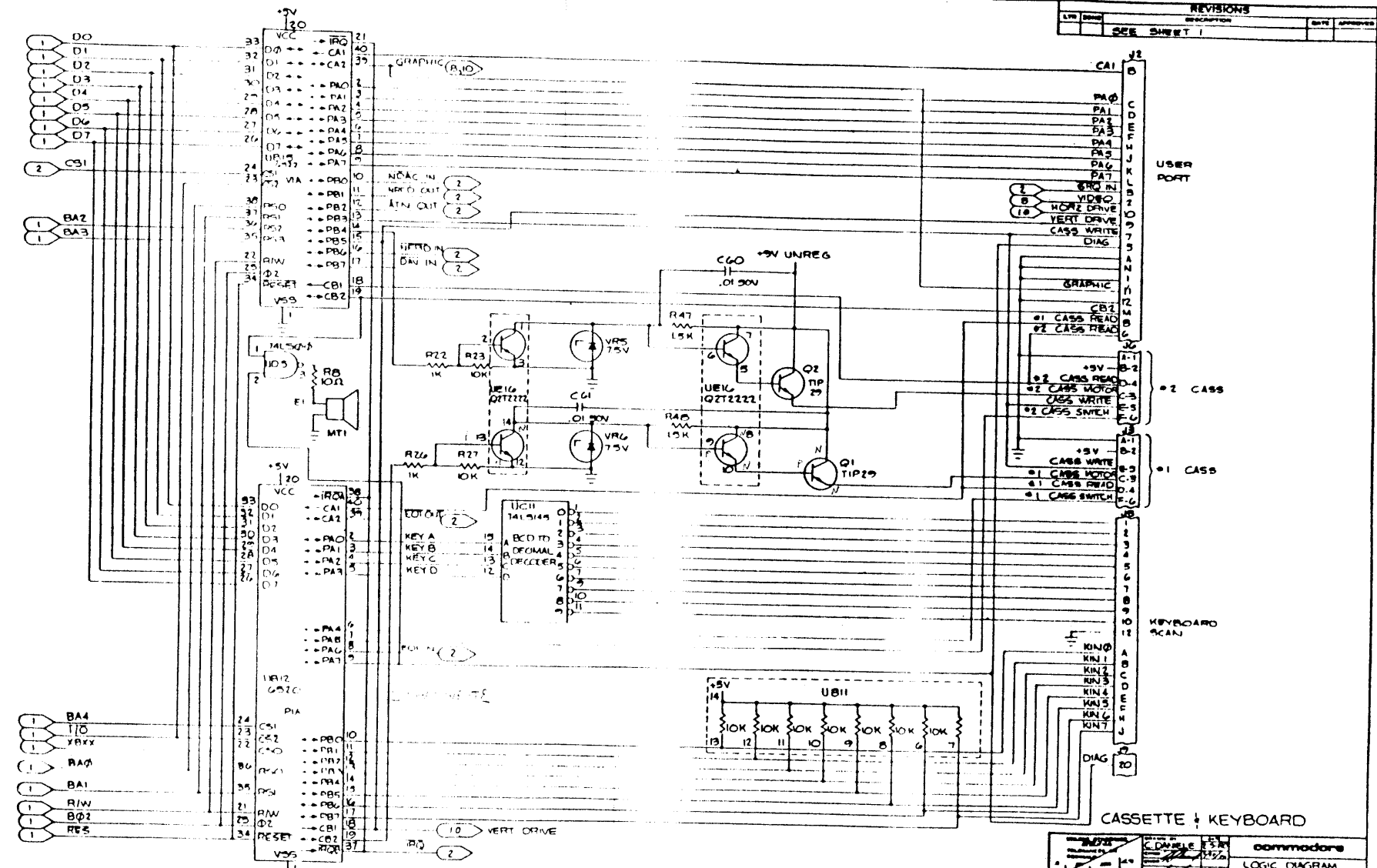


- ALL CAPACITOR VALUES ARE MEASURED IN MICROFARADS.
 - ALL RESISTOR VALUES ARE IN OHMS 5% AND ARE 1/4 WATT.
 - REFER TO ASSEMBLY DRAWING NUMBER 8032030.
- NOTES-UNLESS OTHERWISE SPECIFIED

CPU & MEMORY EXPANSION

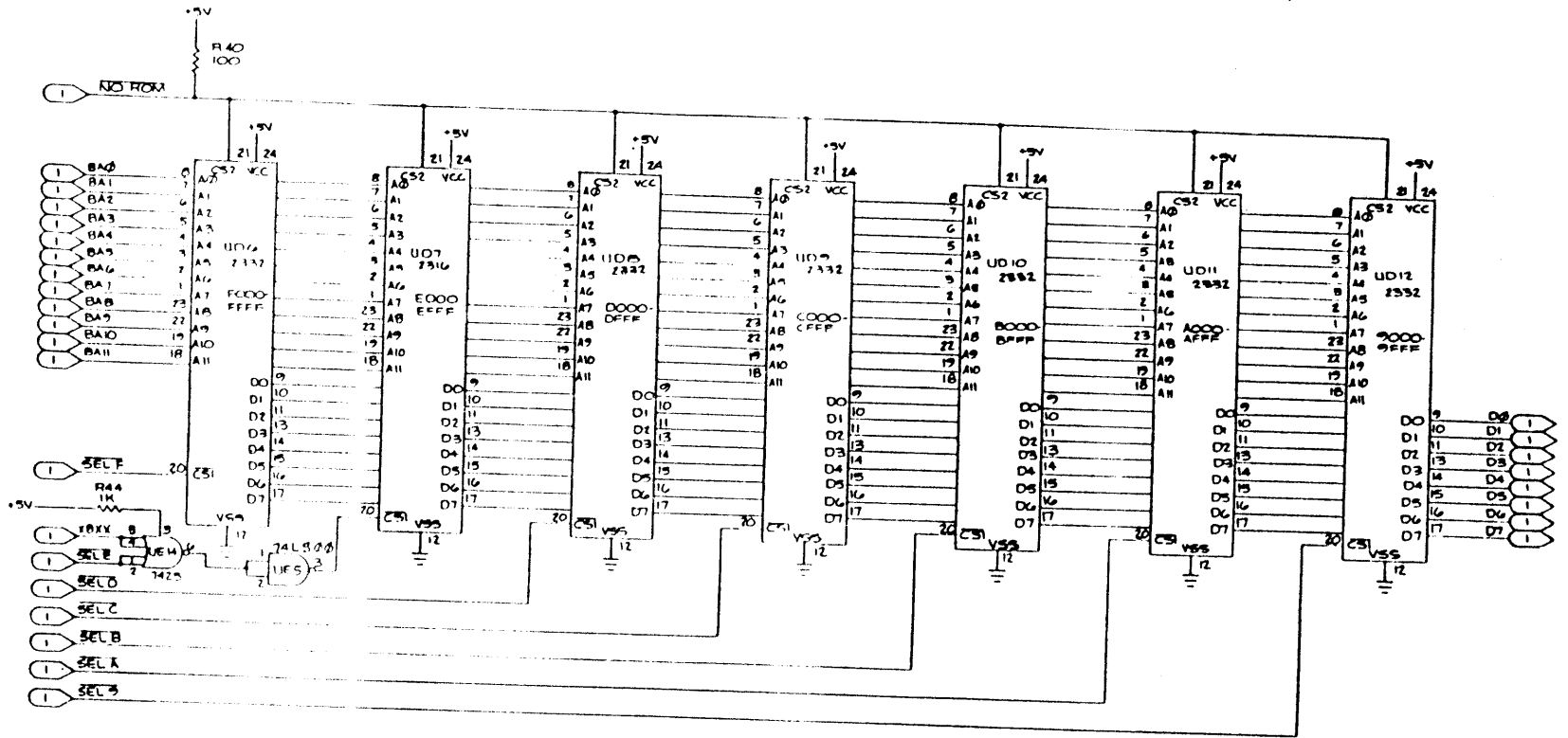
	<p>COMMADORE</p> <p>LOGIC DIAGRAM</p> <p>80 COLUMN CPU</p> <p>DYNAMIC PET</p> <p>REV 1</p> <p>8032 8032030</p> <p>REV D 8032029 F</p> <p>SCALE 10:10 (SHEET 1 OF 11)</p>
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REVISIONS			
REV	DATE	DESCRIPTION	BY
1		SEE SHEET 1	



		commodore LOGIC DIAGRAM 640 COLUMN CPU DYNAMIC DET
DATE: 8/30/79 BY: [Signature] CHECKED: [Signature]		PART NO: 8032029 SCALE: NONE SHEET 3 OF 11

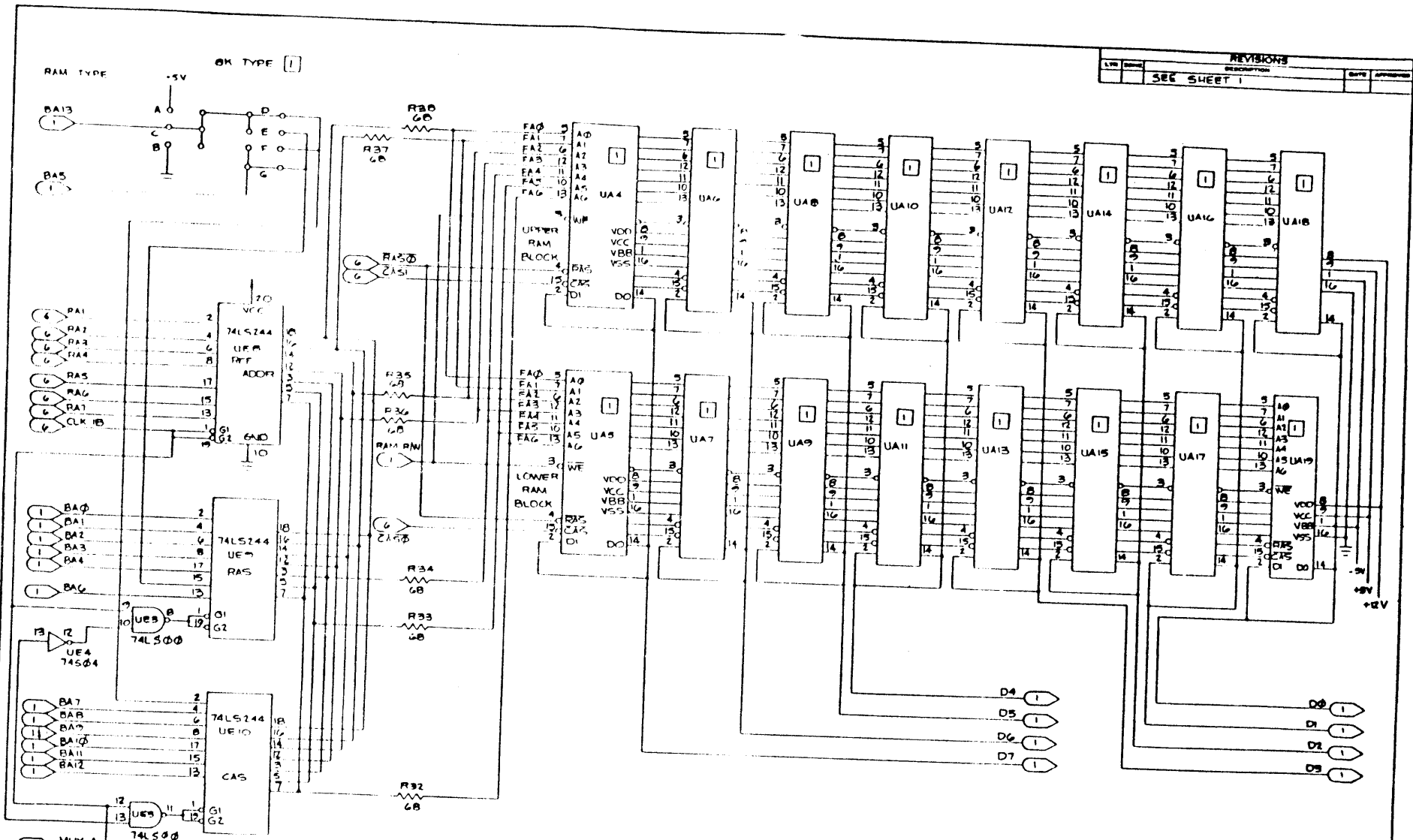
REVISIONS			
REV	DATE	BY	APPROVED
1			
SEE SHEET 1			



ROMS

<p>DATE: _____</p> <p>DESIGNED BY: _____</p> <p>CHECKED BY: _____</p> <p>APPROVED BY: _____</p>	<p>commodore</p> <p>LOGIC DIAGRAM</p> <p>80 COLUMN CPU</p> <p>DYNAMIC PET</p> <p>REV D 8032029</p> <p>REAR PANEL SHEET 4 OF 11</p>
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REVISIONS			
REV	DATE	DESCRIPTION	BY
1		SEE SHEET 1	

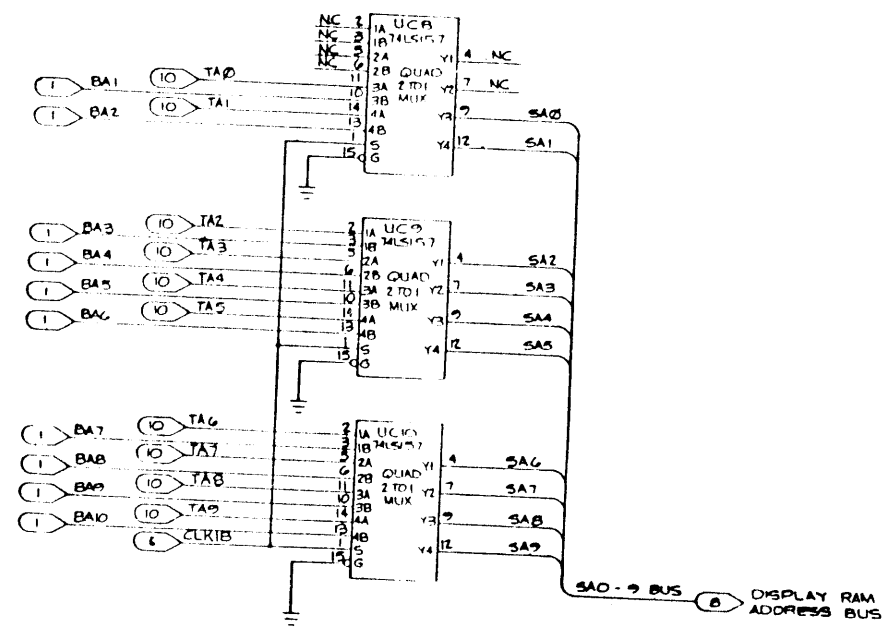


MAIN RAM

COMMADORE LOGIC DIAGRAM 80 COLUMN CPU DYNAMIC PET D 8032029 F REV. 10/80 SHEET 5 OF 11			

01

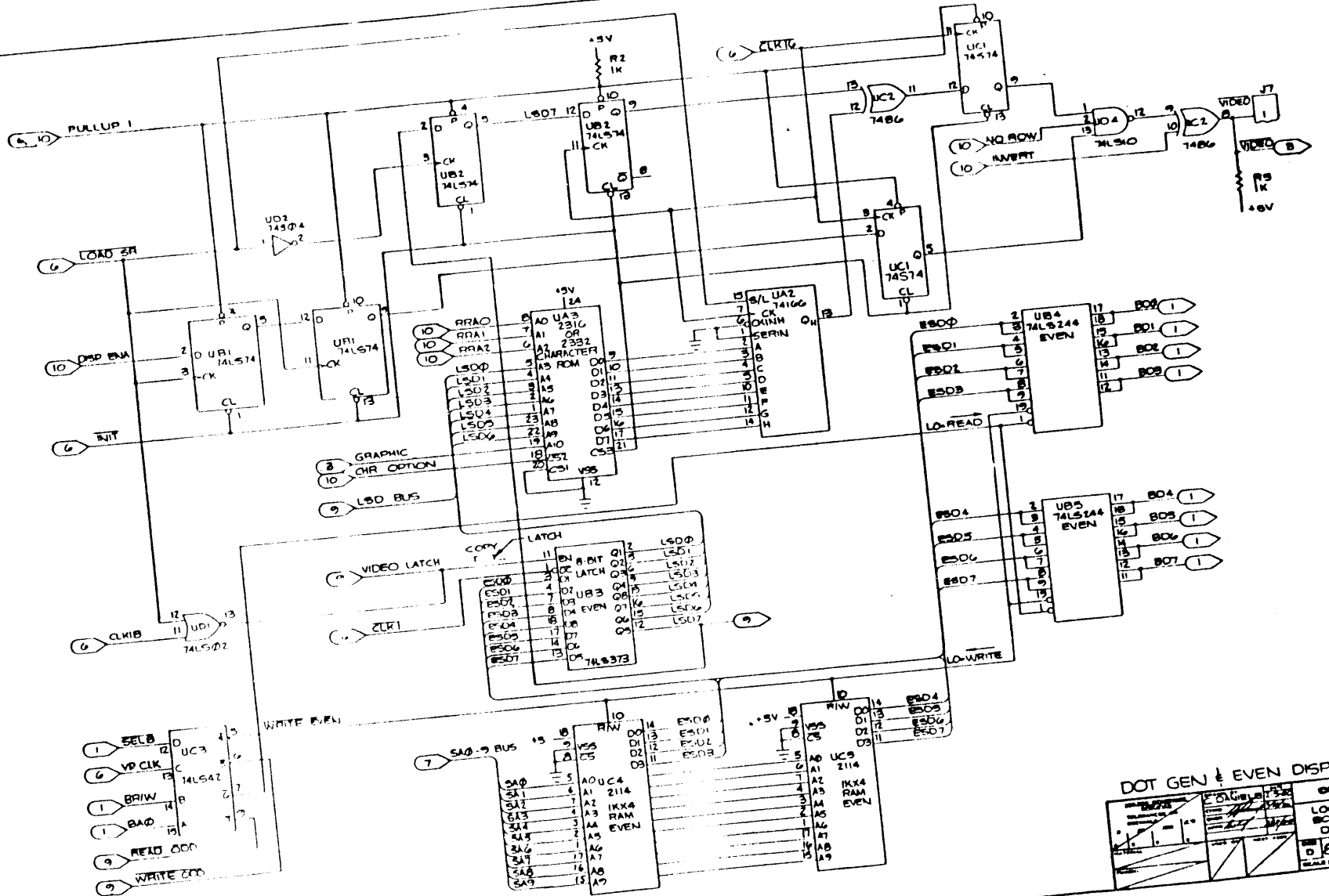
REVISIONS			
NO.	DATE	DESCRIPTION	BY
002		SHEET 1	



DISPLAY ADDRESS MUX

DESIGNED BY	C. DANIEL	DATE	7/25/81
CHECKED BY		DATE	
APPROVED BY		DATE	
COMMODORE			
LOGIC DIAGRAM			
80 COLUMN CPU			
DYNAMIC PET			
REV	0	8032029	F
REAL MODE (SHEET 1 OF 11)			

REVISIONS		
Rev	Description	Date
1	SEE SHEET 1	

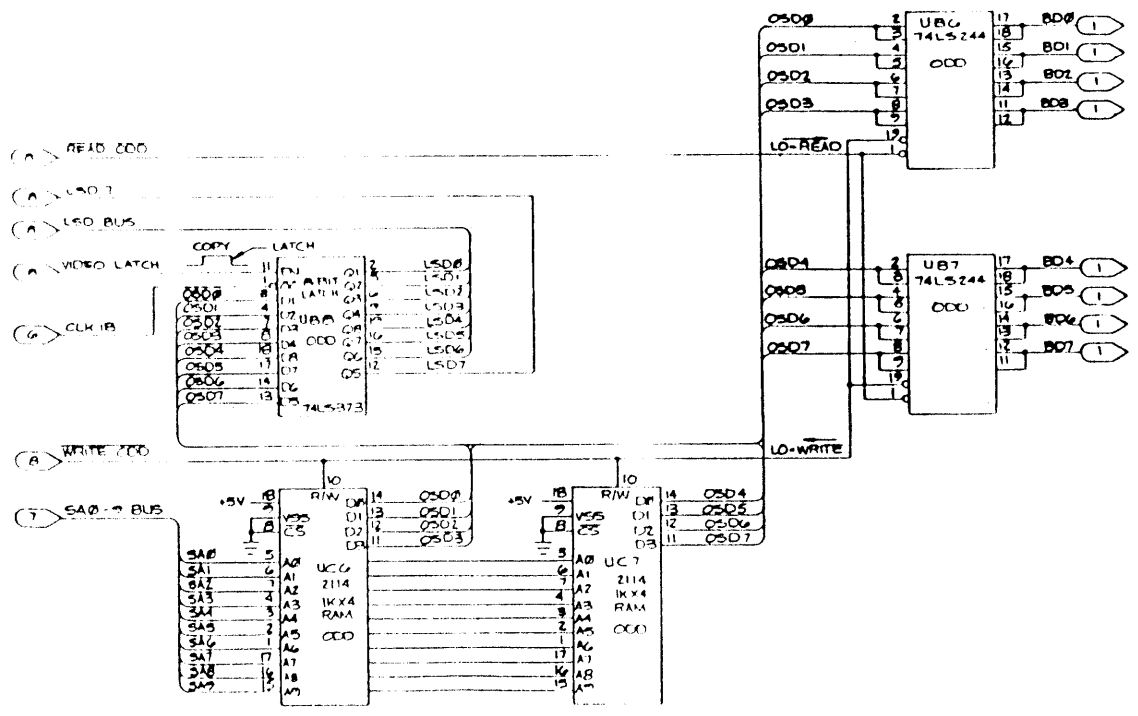


DOT GEN & EVEN DISPLAY RAMS

SELB	D	UC3	1	5
VP CLK	C	74LS47	6	6
BRIW	H	B	7	7
BA0	A	1A	7	7
RELD 000				
WRITE 000				

Commodore
 LOGIC DIAGRAM
 60 COLUMN CPU
 DYNAMIC PET
 D 8032029 F
 1982

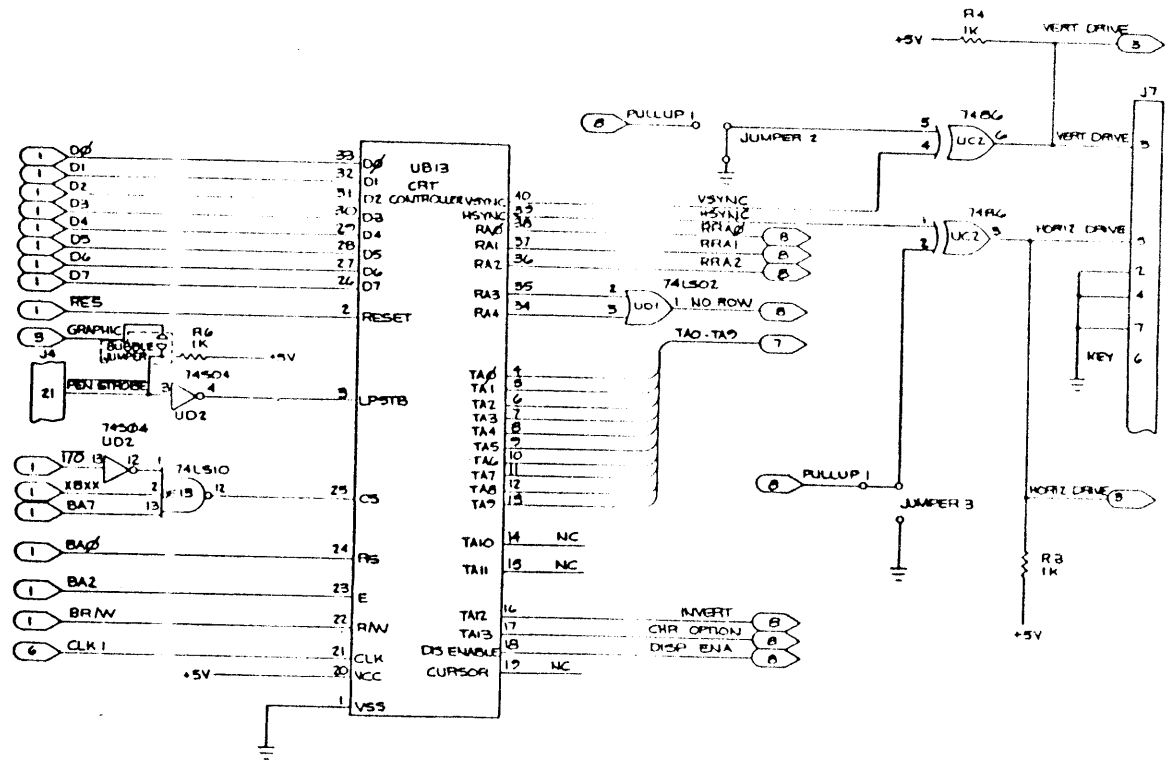
REVISIONS			
LT#	DATE	DESCRIPTION	APPROVED
		SEE SHEET 1	



ODD DISPLAY RAMS

	DESIGNED BY	D. DANIEL	DATE	11/13/80
	DESIGNED AT	COMMODORE	DATE	11/13/80
	DESIGNED FOR	COMMODORE	DATE	11/13/80
	DESIGNED BY	D. DANIEL	DATE	11/13/80
COMMODORE LOGIC DIAGRAM 80 COLUMN CPU DYNAMIC PET				
D 8032029 F				

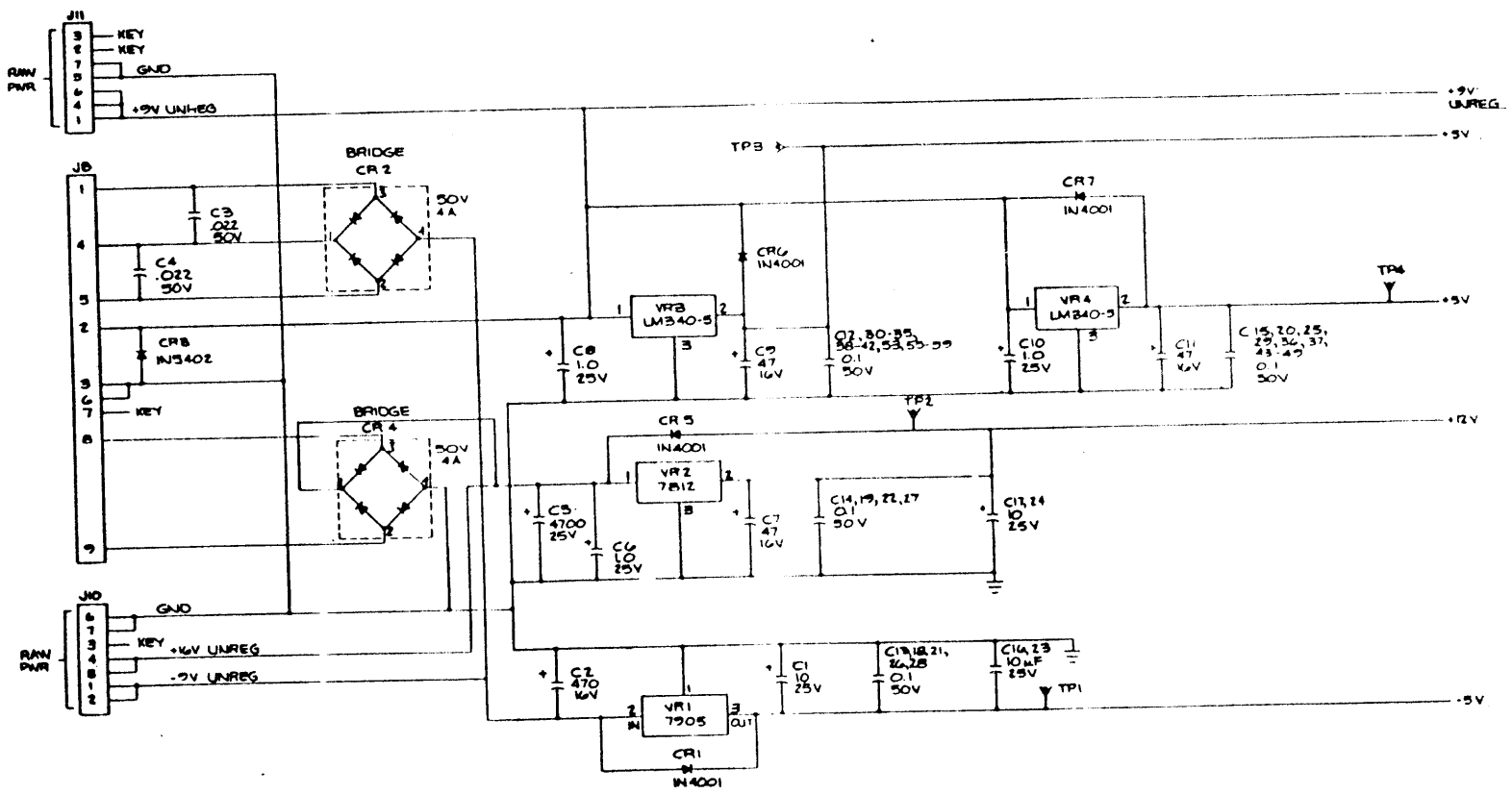
REVISIONS			
REV	DATE	DESCRIPTION	BY
1		SEE SHEET 1	



CRTC AND SYNC BUFFERS

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REV	DATE	DESCRIPTION	BY						
1									
LOGIC DIAGRAM 80 COLUMN CPU DYNAMIC PAT									
D 8032022									

REVISIONS			
LR#	DATE	DESCRIPTION	BY
		SEE SHEET 1	



VOLTAGE REGULATOR

	<p>COMMODORE</p> <p>LOGIC DIAGRAM</p> <p>80 COLUMN CPU</p> <p>DYNAMIC PET</p> <p>8032029</p>
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PART NO.	DESCRIPTION
8032090-01	UNIV. DYNAMIC PET 8032-60HZ
-03	4032-60HZ (12")
-05	4016-60HZ
-07	UNIV. SUPER PET 9000 - 60HZ
-09	UNIV. SUPERPET, COMBO-BRD 9000 - 60HZ
8032090-11	UNIV. DYNAMIC PET, 4032-9" - 60HZ

9 REWORK INSTRUCTIONS FOR FCC: JUMPER WIRE FROM UD3 PIN 1 TO UB14 PIN 35. USE 22 AWG (IT. 108). THIS CONFIGURATION IS FOR -09 & -10 ONLY.

8 UD11 & 12 NOT FOR -07, -08, -09 & -10

7 IDENTIFY WITH APPLICABLE DASH NO.

6 SOLDER TO XTAL AND PCB.

5 FOR ITEMS 118 & 119, ALL ASSEMBLIES MUST HAVE SAME VENDOR.

4 SOLDER JUMPER, ITEM 106 FROM E1 TO SILVER CONTACT ON MT1, ITEM 73; TAKE CARE TO ALLOW NO MORE THAN ONE SECOND DURATION FOR APPLICATION OF HEAT DURING SOLDERING.

		REVISIONS	
LTR	ZONE	DESCRIPTION	DATE APPROVED
A		PRODUCTION RELEASE	6/23/81 <i>Al Green</i>
B		REV PER ECO 2157	7/16/81 <i>Al Green</i>
C		REV PER ECO 2172	8/6/81 <i>Al Green</i>
D		REV PER ECO 2237	7/21/81 <i>Al Green</i>
D		REV PER ECO 2308	11/2/81 <i>Al Green</i>
E		REV PER ECO 2368	11/4/81 <i>Al Green</i>
E		PER ECO 2414	12/7/81 <i>Al Green</i>
F		REV PER ECO 2565 & 2555	3/14/82 <i>Al Green</i>
G		REVISED PER ECO 2887	
H		REVISED PER ECO 3027	

11 CUT PINS 9 & 10 AT UET. CONNECT PIN 9 TO GND.

10 CONNECT ITEM 43 FROM PIN 15 OF UA19 TO VCC (+5V).

4 REFER TO PART SUBSTITUTION INDEX, P/N 321233.

3 SOLDER AT 3 PLACES, EQUALLY SPACED AROUND THE BRASS BASE MT1 (ITEM 73)

2 IDENTIFY WITH APPLICABLE DASH NO.

1 SHEET 6 OF 7 SIZE C, SHEET 7 OF 7 SIZE D.

NOTES: UNLESS OTHERWISE SPECIFIED:

commodore

TITLE

PCB ASSY - UNIV. DYNAMIC PET

DRAWN BY <i>Al Green</i>	DATE 7-11-81	ENGR <i>Al Green</i>	APPR <i>Al Green</i>	SIZE B	DRAWING NUMBER 8032090
CHECKED <i>Al Green</i>	6-17-81				SHEET OF 7

QUANTITY REQD PER PART / DASH NO.										ITEM	8	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES	
11	10	09	08	07	06	05	04	03	02								01
1	1	1	1	1	1	1	1	1	1	1	1	D	8032088-01	FABRICATION-UNIV. DYNAMIC PET			
											2	D	8032087-01	LOGIC DIAGRAM-UNIV. DYNAMIC PET			
											3	B	901640-01	IC 2332			
3	3	3	3	3	3	3	3	3	3	3	4	B	901521-01	, 74LS00	UA3		
3	3	3	3	3	3	3	3	3	3	3	5	B	901521-24	, 74LS10	UD5,UE5,UE11		
1	1	1	1	1	1	1	1	1	1	1	6	B	901522-20	, 7425	UD4,UE7,UEB		
1	1	1	1	1	1	1	1	1	1	1	7	B	901521-02	, 74LS04	UE14		
1	1	1	1	1	1	1	1	1	1	1	8	B	901523-01	, LM555	UE15		
1	1	1	1	1	1	1	1	1	1	1	9	B	901522-01	, 7417	UD16		
1	1	1	1	1	1	1	1	1	1	1	10	B	901435-01	, 6502	UD15		
1	1	1	1	1	1	1	1	1	1	1	11	B	901479-01	, CRT CONTROLLER	UB14		
2	2	2	2	2	2	2	2	2	2	2	12	B	901522-13	, 74154	UB13		
3	3	3	3	3	3	3	3	3	3	3	13	B	901436-01	, 6520	UE12		
1	1	1	1	1	1	1	1	1	1	1	14	B	901524-01	, MC3446	UB12,UB16		
1	1	1	1	1	1	1	1	1	1	1	15	B	901437-01	, 6522	UA20,UB17,UC12		
2	2	2	2	2	2	2	2	2	2	2	16	B	901521-09	, 74LS145	UB15		
1	1	1	1	1	1	1	1	1	1	1	17	B	901521-45	, 74LS393	UC11		
2	2	2	2	2	2	2	2	2	2	2	18	B	901521-21	, 74LS02	UD3,UE6		
2	2	2	2	2	2	2	2	2	2	2	19	B	901525-09	, 74S74	UD1		
2	2	2	2	2	2	2	2	2	2	2	20	B	901525-01	, 74S04	, UC1,UE1		
1	1	1	1	1	1	1	1	1	1	1	21	B	901521-06	, 74LS74	UD2,UE4		
1	1	1	1	1	1	1	1	1	1	1	22	B	901522-28	, 74166	UB2,UB1		
1	1	1	1	1	1	1	1	1	1	1	23	B	901447-10	, 2316	UA2		
1	1	1	1	1	1	1	1	1	1	1	24	B	901521-32	, 74LS86	UA3		
1	1	1	1	1	1	1	1	1	1	1	25	B	901521-28	, 74LS164	UC2	SEE NOTE 4	
1	1	1	1	1	1	1	1	1	1	1	26	B	901521-16	, 74LS138	UE3	SEE NOTE 4	
4	4	4	4	4	4	4	4	4	4	4	27	B	901521-11	, 74LS157	UC3		
											28				UC8-UC10,UE2	SEE NOTE 4	
											29						
1	1	1	1	1	1	1	1	1	1	1	30	B	901465-22	, 2332			
1	1	1	1	1	1	1	1	1	1	1	31	B	901465-21	, 2332	UD6		
1	1	1	1	1	1	1	1	1	1	1	32	B	901465-20	, 2332	UD8		
1	1	1	1	1	1	1	1	1	1	1	33	B	901465-23	, 2332	UD9		
1	1	1	1	1	1	1	1	1	1	1	34			, 2332	UD10		
1	1	1	1	1	1	1	1	1	1	1	35	B	901522-04	IC , 7400			
1	1	1	1	1	1	1	1	1	1	1	36	B	900110-07	CAP. LOW LEAK. ELECT. 14F 50V	UE1		
58	58	58	58	58	58	58	58	58	58	58	37	B	900461-28	CAP. CERAMIC AXIAL .14F 50V	UC10		

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TITLE: PCB ASSY-UNIV. DYNAMIC PET

DRAWN BY: *[Signature]* DATE: 3-11-87 ENGR: *[Signature]* DATE: *[Blank]* SIZE: B
 CHKD: *[Signature]* 6/78 APPR: *[Signature]*

REV: H 2/7

8032090

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11	10	09	08	07	06	05	04	03	02	01							
3	3	3	3	3	3	3	3	3	3	3	338	B	90046-16	CAP, CERAMIC AXIAL .01 μ F 50V	C52, 60, 61		
2	2	2	2	2	2	2	2	2	2	2	239	B	90046-20	CERAMIC AXIAL .022 μ F 50V	C3, 4		
1	1	1	1	1	1	1	1	1	1	1	140	B	900100-45	ELECTROLYTIC 4700 μ F 25V	C5		
1	1	1	1	1	1	1	1	1	1	1	141	B	900100-44	ELECTROLYTIC 470 μ F 16V	C2		
5	5	5	5	5	5	5	5	5	5	5	542	B	900109-03	LOW LEAK. ELECT. 10 μ F 25V	C1, 16, 17, 23, 24	SEE NOTE	4
1	1	1	1	1	1	1	1	1	1	1	143	B	900050-21	DIPPED MICA, RADIAL, 82PF, 500V	C97	SEE NOTE	10
2	2	2	2	2	2	2	2	2	2	2	244	B	900402-13	TANTALUM 1 μ F 35V	C6, 51		
2	2	2	2	2	2	2	2	2	2	2	245	B	900101-37	ELECTROLYTIC 47 μ F 16V	C7, 11		
1	1	1	1	1	1	1	1	1	1	1	146	B	900463-08	CERAMIC AXIAL 220 PF	C92		
14	14	14	14	14	14	14	14	14	14	14	147	B	900462-29	CAP, CERAMIC AXIAL 47PF	C74-C86, C88		
2	2	2	2	2	2	2	2	2	2	2	249	B	901550-84	RES, CARBON 1/4W 5%	1M R24, 25		
3	3	3	3	3	3	3	3	3	3	3	350	B	901550-58		470 Ω R13, 16, 17		
4	4	4	4	4	4	4	4	4	4	4	451	B	901550-94		68 Ω R10, 11, 46, 49		
2	2	2	2	2	2	2	2	2	2	2	252	B	901550-03		5.1K R19, 21		
2	2	2	2	2	2	2	2	2	2	2	253	B	901550-85		2.4K R18, 20		
1	1	1	1	1	1	1	1	1	1	1	154	B	901550-64		10 Ω R8		
2	2	2	2	2	2	2	2	2	2	2	255	B	901550-20		10K R23, 27		
2	2	2	2	2	2	2	2	2	2	2	256	B	901550-69		1.5K R47, 48		
8	8	8	8	8	8	8	8	8	8	8	857	B	901550-49		100 Ω R32-38, 40		
1	1	1	1	1	1	1	1	1	1	1	158	B	901550-19		4.7K R51...		
1	1	1	1	1	1	1	1	1	1	1	159	B	901550-18		2.2K R53		
2	2	2	2	2	2	2	2	2	2	2	260	B	901550-56		47 Ω R50, 52		
											62	B					
											63	B					
1	1	1	1	1	1	1	1	1	1	1	164	B	901550-93				
16	16	16	16	16	16	16	16	16	16	16	1665	B	901550-01		39 Ω R7		
1	1	1	1	1	1	1	1	1	1	1	166	B	901550-02	CARBON 1/4W 5%	1K R1-6, 12, 15, 22, 26, 28, 39, 42-45.		
1	1	1	1	1	1	1	1	1	1	1	167	B	902419-66	RES, NETWORK, DIP 14PIN	3.3K R14		
											68				10K UB11		
2	2	2	2	2	2	2	2	2	2	2	269	B	902653-01	TRANSISTOR, TIP 29			
1	1	1	1	1	1	1	1	1	1	1	170	B	902550-01	TRANSISTOR, PACK Q2T222	Q1, Q2		
											71				UE16		
											72						
1	1	1	1	1	1	1	1	1	1	1	173	B	907300-02	TRANSDUCER-PIEZO ACOUSTIC	MT1		
											74						

commodore

TITLE: PCB ASSY-DYNIV. DYNAMIC PET

CHKD: <i>[Signature]</i>	DATE: 7-11-81	ENGR: <i>[Signature]</i>	DATE: <i>[Blank]</i>	SIZE: <i>[Blank]</i>
APPR: <i>[Signature]</i>	DATE: 6-17-81	APPR: <i>[Signature]</i>	DATE: <i>[Blank]</i>	REV: <i>[Blank]</i>
B 8032090			H	3/7

QUANTITY REQD PER PART / DASH NO.						ITEM	8	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
11	10	09	08	07	06							
								75				
3	3	3	3	3				376 B 900750-05	DIODE, IN4005	CR1,5,7		
2	2	2	2	2				277 B 900757-01	.BRIDGE 4A/50V	CR2,4	SEE NOTE 4	
1	1	1	1	1				178 B 900753-01	.IN5402 3A/200V	CR3		
								79				
								80				
2	2	2	2	2				281 B 900941-01	DIODE, ZENER 7.5V	VR5,6		
								82				
1	1	1	1	1				183 B 901527-03	VOLTAGE REGULATOR, 7905, -5V/1.5A	VR1	TO-220	
								84				
1	1	1	1	1				185 B 901528-04	VOLTAGE REGULATOR, 7812, +12V/1A	VR2	TO-3	
1	1	1	1	1				186 B 901528-01	VOLTAGE REGULATOR, LM323	VR4		
								87				
1	1	1	1	1				188 B 900556-02	CRYSTAL 16MHZ	Y1		
								89				
1	1	1	1	1				190 B 903326-07	HEADER ASSY .100 CENTER	J10	7 PIN; REMOVE PIN 3 AT ASSEMBLY	
2	2	2	2	2				291 B 903345-25	HEADER ASSY, DUAL ROW .100 CENTER	J4,9	50 PIN	
1	1	1	1	1				192 B 903316-09	HEADER ASSY .156 CENTER	J8	9 PIN; REMOVE PIN 7 AT ASSEMBLY	
1	1	1	1	1				193 B 903331-07	HEADER ASSY, POLARIZED .100 CENTER	J11	7 PIN; REMOVE PIN 3 AT ASSEMBLY	
1	1	1	1	1				194 B 903331-07	HEADER ASSY, POLARIZED .100 CENTER	J7	7 PIN; ORIENT OMITTED PIN TO PIN 6 POSITION	
1	1	1	1	1				195 B 903331-20	HEADER ASSY, POLARIZED .100 CENTER	J5	20 PIN; ORIENT OMITTED PIN TO PIN 19 POSITION	
								96				
4	2	2	4	4				497 B 904150-04	SOCKET, IC LOW PROFILE 24 PIN	UA3, UD7, UD11, UD12	SEE NOTE 8	
1	1	1	1	1				198 B 904150-06	SOCKET, IC LOW PROFILE 40 PIN	UB14		
1	1	1	1	1				199 904150-01	SOCKET, IC LOW PROFILE 14 PIN	UF1		
2	2	2	2	2				2100 B 901151-17	COIL, INDUCTOR 2.2uh	L1, L2		
1	1	1	1	1				1101 B 320086-02	BUS WIRE			
								102				
4	4	4	4	4				4103 B 906403-19	RIVET, DOME HEAD, OPEN END			
2	2	2	2	2				2104 B 906404-04	RIVET, DOME HEAD, CLOSED END			
								105				
1	1	1	1	1				1106 B 903780-01	#30 WIRE WRAP WIRE, RED			
20	20	20	19	20				20107 B 903781-01	22 AWG BARE WIRE ON TAPE & REEL			
-	1/2	1/2	-	-				-108 B 903755-03	WIRE, INSULATED, 22 AWG, 12.5 LG			
1	1	1	1	1				1109 B 320268-01	HEATSINK			
1/2	1/2	1/2	1/2	1/2				1110 B 904907-01	HEATSINK, COMPOUND THERMAL			
								111				

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TITLE: PCB ASSY-UNIV. DYNAMIC PET

Drawn by: *[Signature]*
Checked by: *[Signature]*

DATE: 7-11-87
6-11-87

ENGR: *[Signature]*
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DATE: *[Blank]*

SIZE: B

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REV: H

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QUANTITY READ PER PART / DASH NO.											ITEM	Q	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
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-	-	-	-	-	-	-	-	-	-	-	11	112	B	901521-13	IC, 74LS244		
9	-	-	-	-	-	-	-	-	-	-	-	113	B	901521-13	, 74LS244	UB4-UB7, UB9, UB10, UD13, UD14, UE8-UE10	
-	2	-	-	-	-	-	-	-	-	-	2	114	B	901521-29	, 74LS373	UB4, UB5, UB9, UB10, UD13, UD14, UE8-UE10	
1	-	-	-	-	-	-	-	-	-	-	-	115	B	901521-29	, 74LS373	UB3, UB8	
-	4	-	-	-	-	-	-	-	-	-	4	116	B	901453-02	, 2114	UB3	
2	-	-	-	-	-	-	-	-	-	-	-	117	B	901453-02	, 2114	UC4-UC7	
16	16	-	-	-	-	-	-	-	-	-	16	118	B	901470-01	, 4116	UC4, UC5	
-	-	-	-	-	-	-	-	-	-	-	-	119	B	901470-01	, 4116	UA4-UA19	
-	-	-	-	-	-	-	-	-	-	-	1	120	B	901474-03	, 2316	UA5, UA7, UA9, UA11, UA13, UA15, UA17, UA19	
-	-	-	-	-	-	-	-	-	-	-	-	121	B	901499-01	, 2316	UD7	
-	-	-	-	-	-	-	-	-	-	-	-	122	B	901499-01	, 2316	UD7	
-	-	-	-	-	-	-	-	-	-	-	-	123	B	970150-07	IC, 2516 EPROM	UD7	
-	-	-	-	-	-	-	-	-	-	-	-	124	B	970150-07	IC, 2516 EPROM	UD7	
28	28	-	-	-	-	-	-	-	-	-	28	125	B	903025-01	FERRITE BEAD	UD7	
1	1	-	-	-	-	-	-	-	-	-	1	126	B	4022048-01	SHIELD BOX	FBI-26, 28, 29	
1	1	-	-	-	-	-	-	-	-	-	1	127	B	4022048-01	SHIELD BOX		
1	1	-	-	-	-	-	-	-	-	-	1	128	B	4022047-01	SHIELD CAP		
1	1	-	-	-	-	-	-	-	-	-	1	129	B	900461-22	CAP CERAMIC AXIAL, 0.33uF, 50V		
1	1	-	-	-	-	-	-	-	-	-	1	130	B	900461-22	CAP CERAMIC AXIAL, 0.33uF, 50V	C94	
1	1	-	-	-	-	-	-	-	-	-	1	131	B	900461-24	CAP CERAMIC AXIAL, 0.47uF, 50V	C93	
1	1	-	-	-	-	-	-	-	-	-	1	132	B	900463-04	CAP CERAMIC AXIAL, 100 PF, 50V	C91	
												133					
												134					
												135					
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TITLE: PCB ASSY-DYNAMIC PET

DESIGN BY: *M.A.*
CHKD: *167*

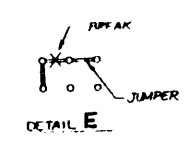
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DATE: 6-17-81
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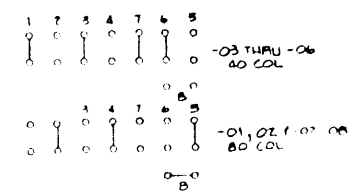
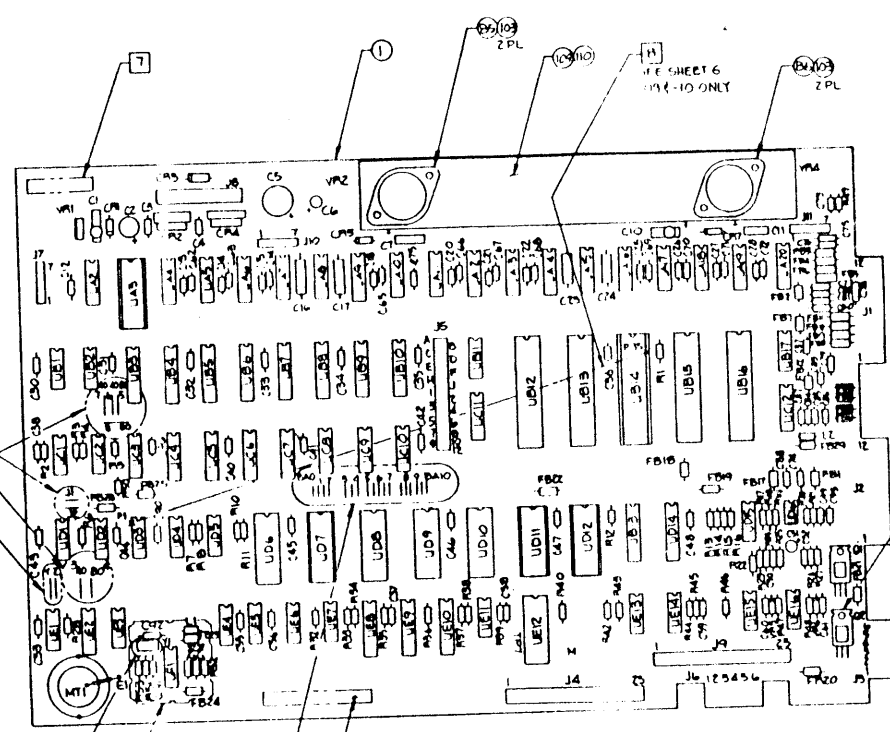
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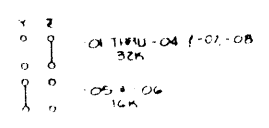
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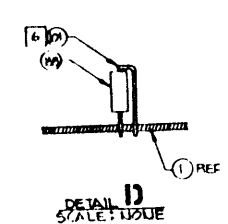
SEE DETAIL E
SEE DETAIL A
SEE DETAIL B



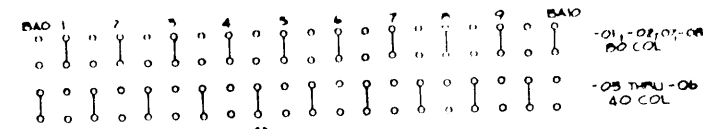
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JUMPER CONFIGURATIONS



DETAIL B
SCALE: NONE



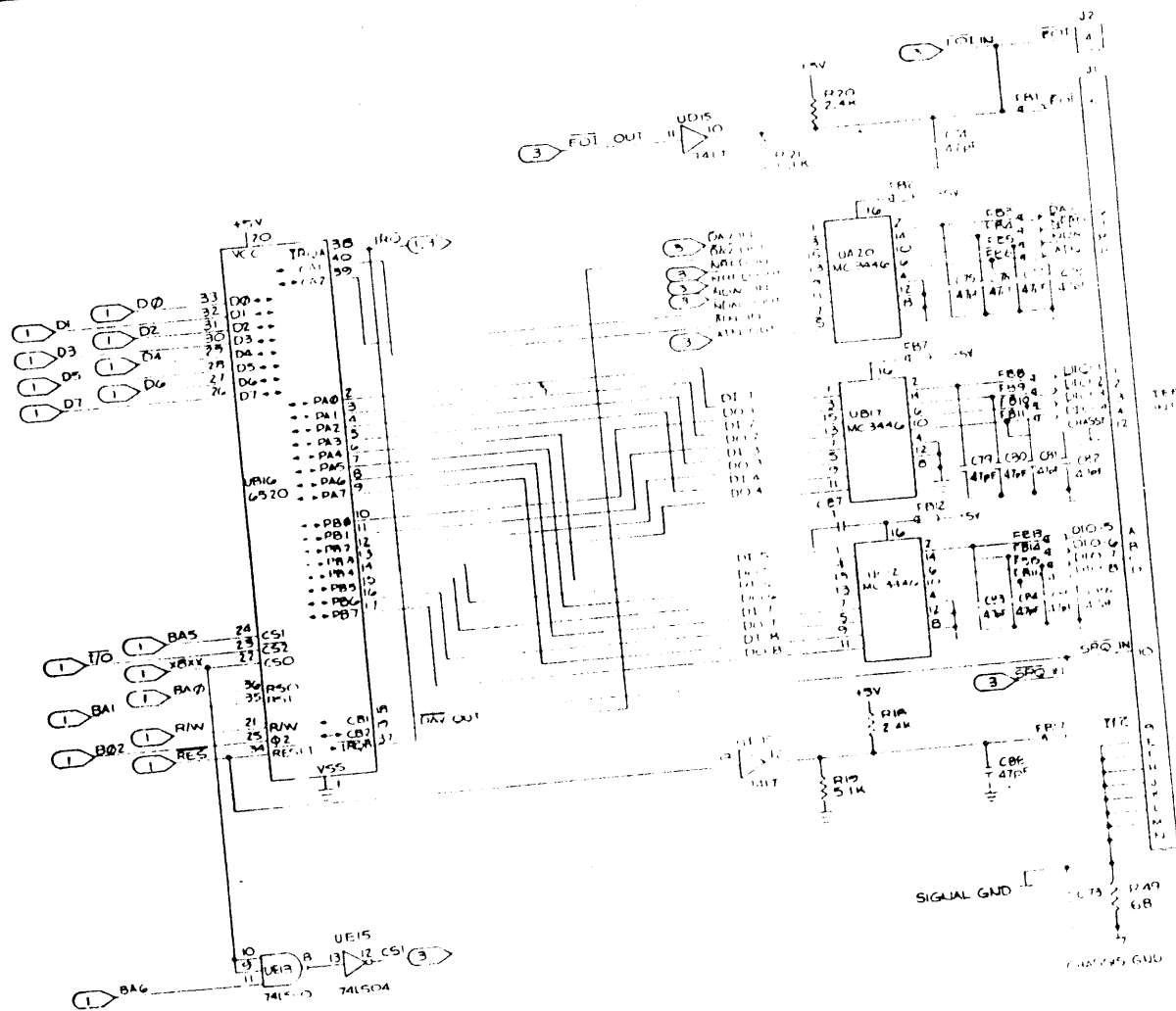
SEE DETAIL D
SEE DETAIL C



DETAIL C
SCALE: NONE
JUMPER CONFIGURATIONS

OF THRU 10 SHOWN			
REV	DATE	APPROVED	DESCRIPTION
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			UNIV. DYNAMIC
			PET
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			REV 11

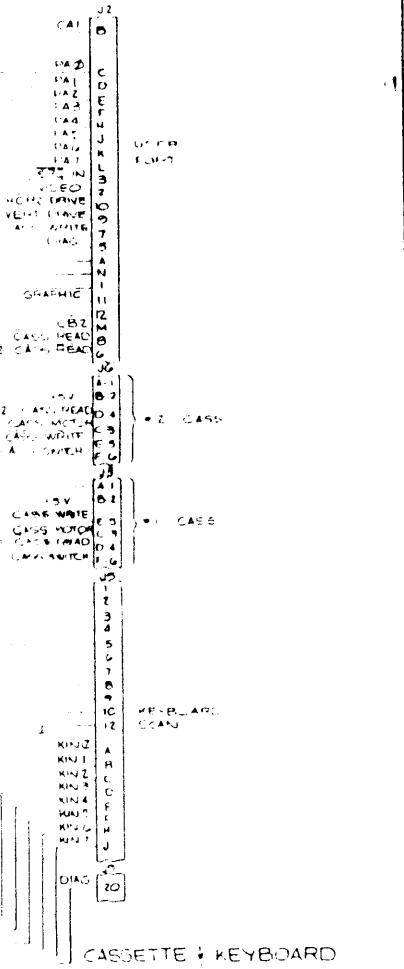
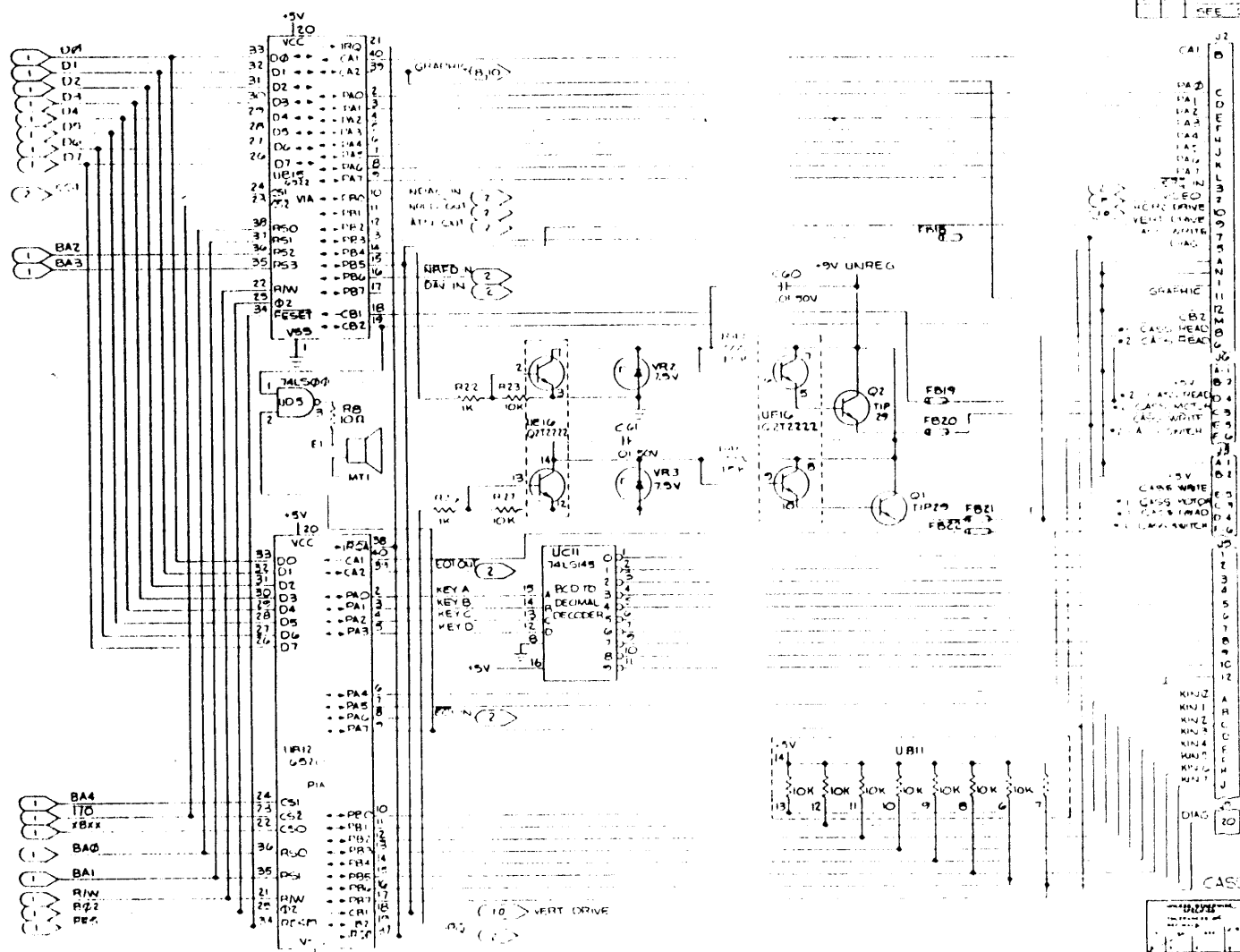
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IEEE 488 INTERFACE

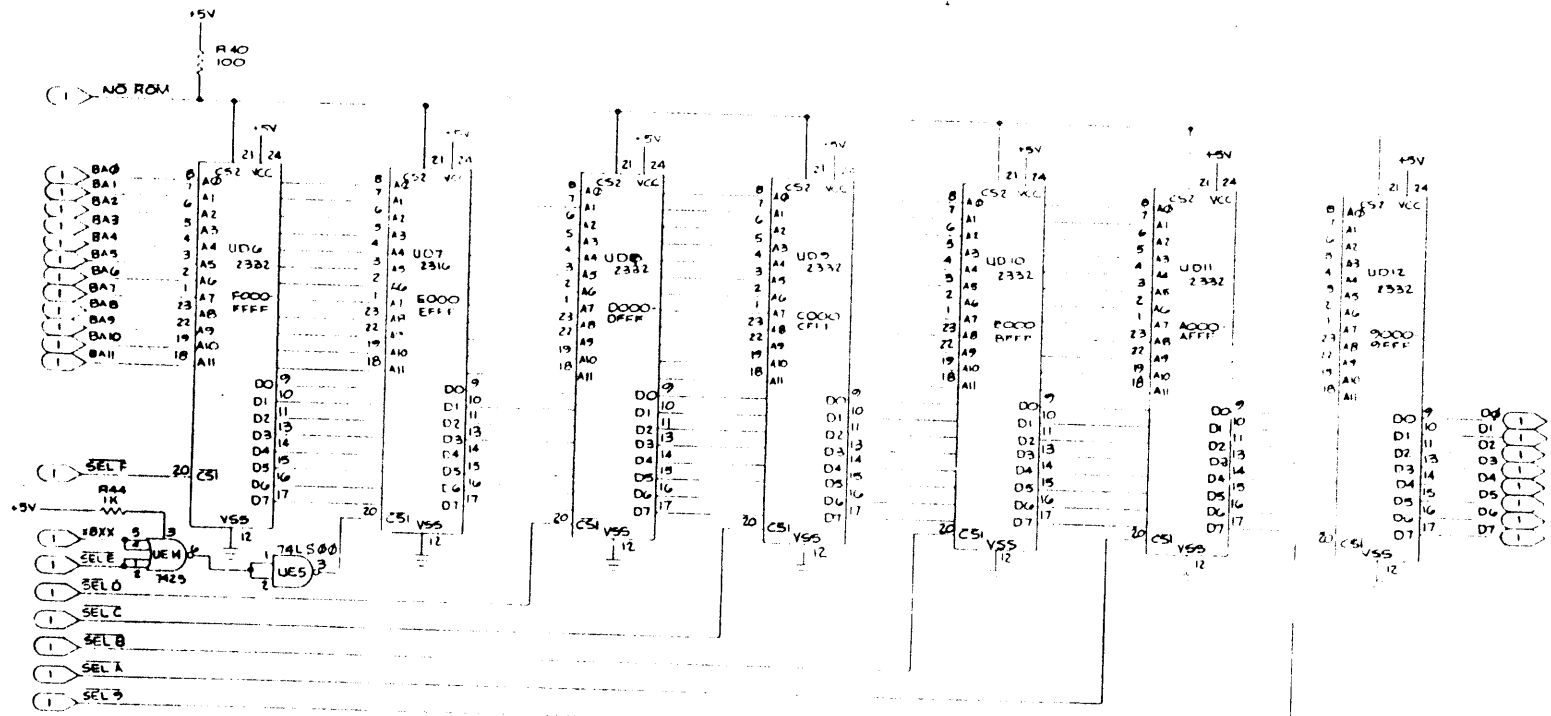
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MODEL	6801	6801
DESCRIPTION	COMMERCIAL	
DATE	UNIVERSAL	
REVISION	DYNAMIC DET	
TESTED BY	BOZORZI	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
1	SEE SHEET 1		



DESIGNED BY	C DANIEL	DATE	
CHECKED BY		DATE	
COMMODORE			
LOWE CHAPMAN UNIVERSAL DYNAMIC 111			
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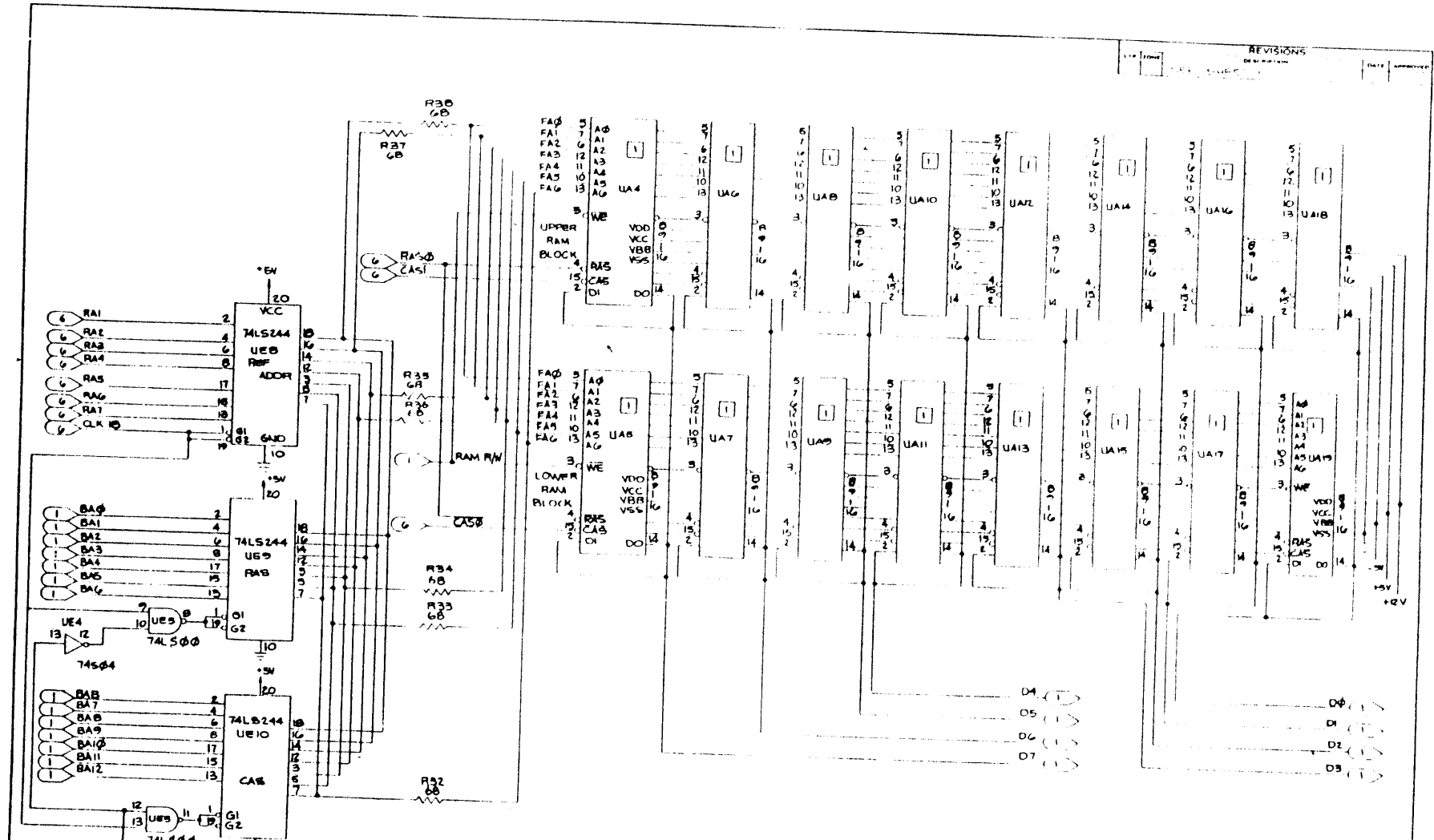
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ROMS

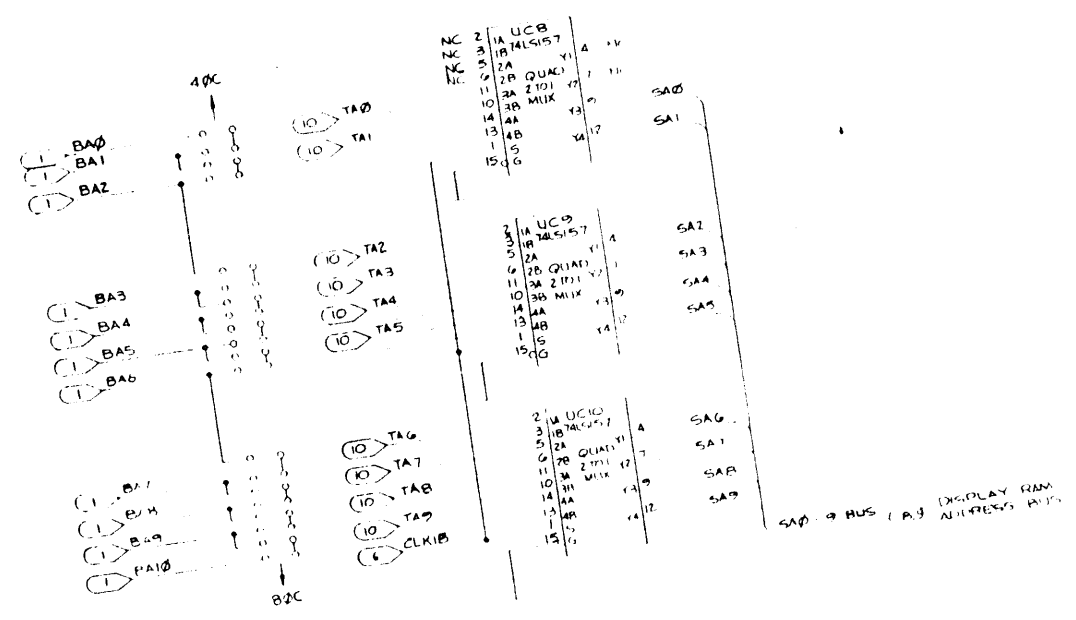
UNIVERSAL	C DANIELE	commodore
LOGIC DIAGRAM		
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REV. NO.	REVISIONS	DATE	APPROVED
1	INITIAL DESIGN		



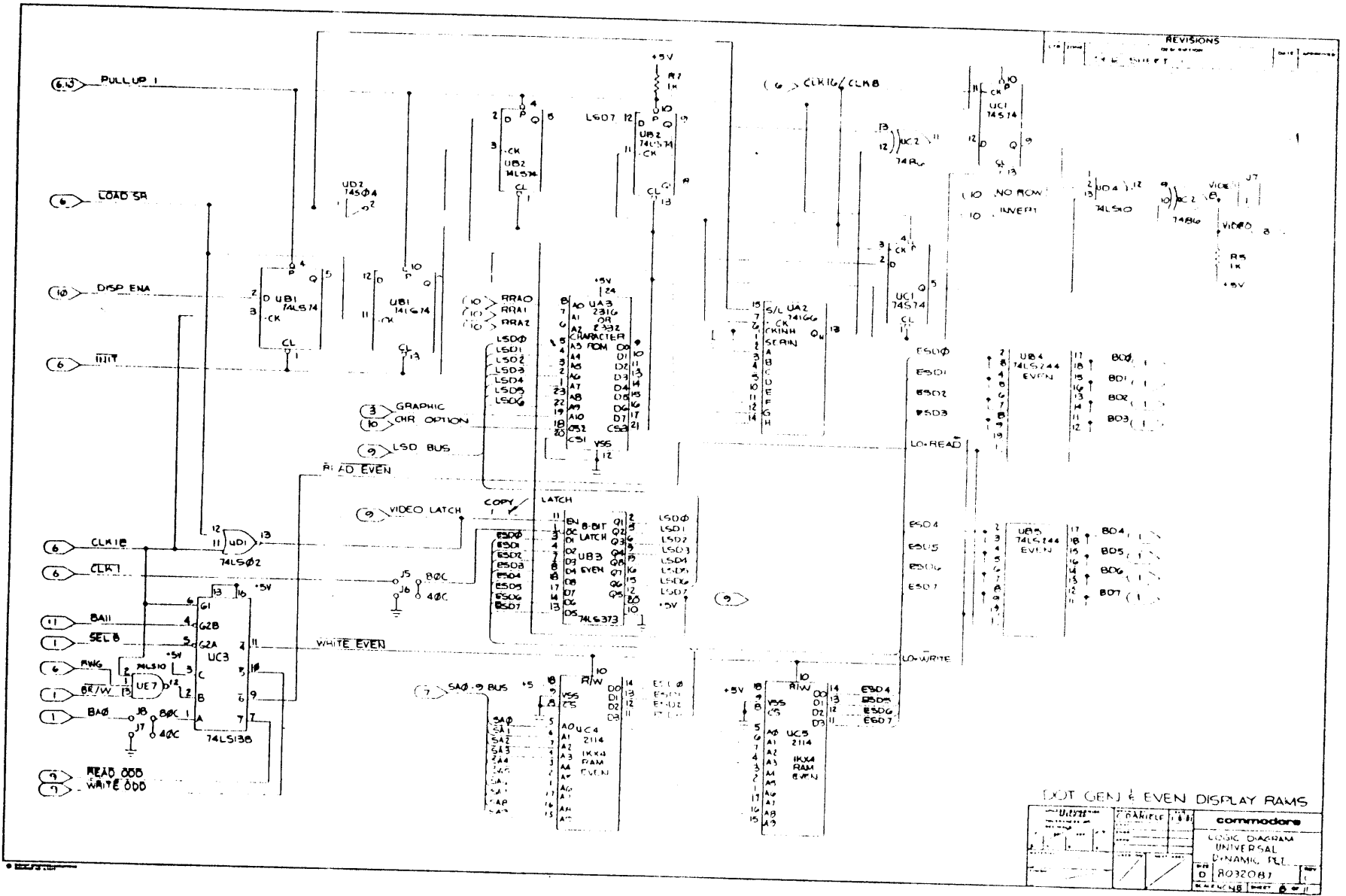
MAIN RAM

COMMODORE LOGIC DIAGRAM UNIVERSAL DYNAMIC PET			
PART NO. D18032087			
MACHINE			



DISPLAY ADDRESS MUX

DESIGNED BY	E DANIELE
CHECKED BY	
DATE	
REV	
COMMODORE	
LOGIC DIAGRAM	
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DYNAMIC DET	
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REVISIONS

NO	DESCRIPTION	DATE
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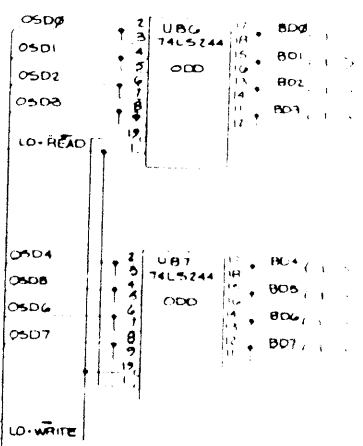
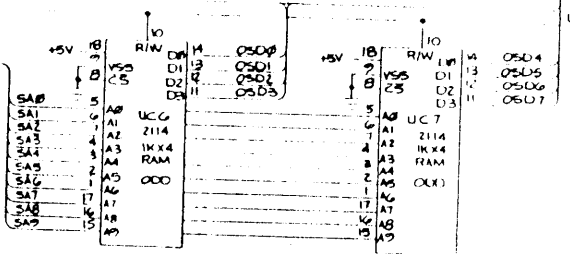
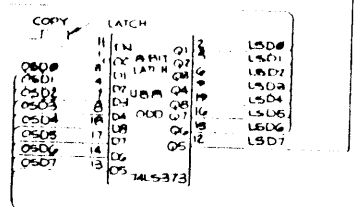
EXT GEN & EVEN DISPLAY RAMS

Part	Value	Part	Value
UC1	74LS74	UC5	74LS10
UC2	74LS10	UC6	74LS10
UC3	74LS13	UC7	74LS10
UC4	74LS16	UC8	74LS10

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 LOGIC DIAGRAM
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 DYNAMIC TEL
 R032087
 14 L SHEET

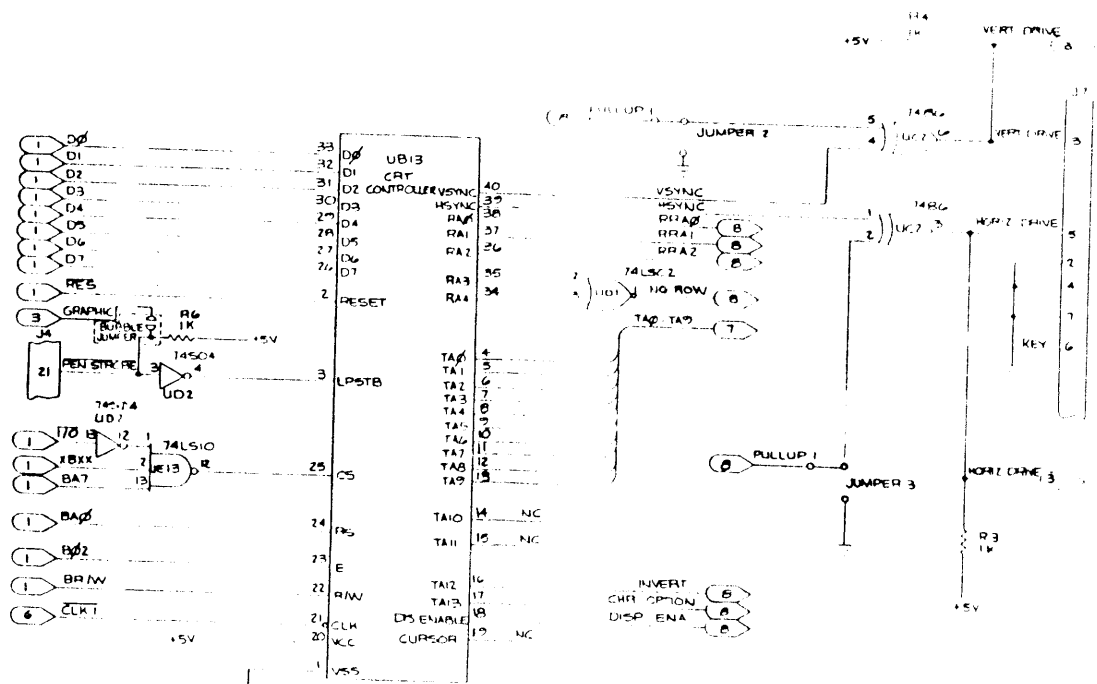
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- (a) READ_ODD
- (b) LSD_I
- (c) LSD_BUS
- (d) WORD LATCH
- (e) CLK_IB
- (f) WRITE_ODD
- (g) SA0 -> BUS



ODD DISPLAY RAMS

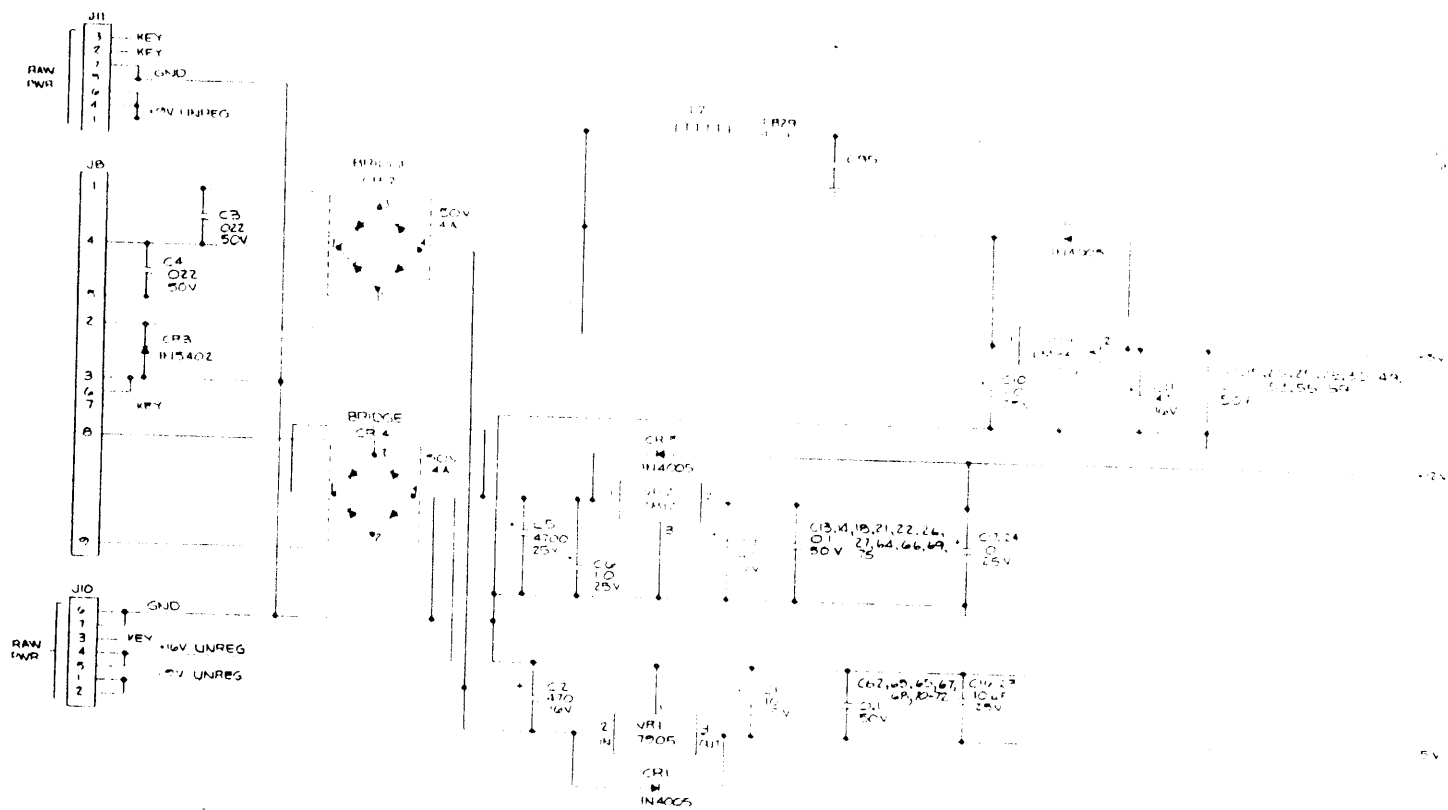
	C. DANIELE & S. A. COMMODORE LOGIC DIAGRAM UNIVERSAL DYNAMIC DEL D RO32087 MADE IN U.S.A.
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CRT AND SYNC BUFFERS

DESIGNED BY	C. DANIEL	DATE	1/77
CHECKED BY			
COMMODORE			
LOGIC DIAGRAM UNIVERSAL DYNAMIC DEL.			
REV	D	8032087	25
SCALE	MOVIE	DATE	0 0 77

REV	DATE	REVISIONS	BY	APP'D
1		SEE SHEET 1		



VOLTAGE REGULATOR		
DATE	DESIGNED BY	COMMODORE
	DANIEL C. BARN	
REV	DATE	DESCRIPTION
1		INITIAL DESIGN
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3		REVISION
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95		REVISION
96		REVISION
97		REVISION
98		REVISION
99		REVISION
100		REVISION

PART NO.	DESCRIPTION
8032080-01	UNIV. DYNAMIC PET 8032-60HZ
-03	4032-60HZ
-05	4016-60HZ
↓ -07	↓ 9000-60HZ

REVISIONS				
LTR	ZONE	DESCRIPTION	DATE	APPROVED
A		PRODUCTION RELEASE	3/5/91	CLL
B		REVISED PER ECO 2062	3/15/91	[Signature]
C		REVISED PER ECO 2066	3/15/91	[Signature]
D		REVISED PER ECO 2068	3/15/91	[Signature]
E		REVISED PER ECO 2087	3/15/91	[Signature]
F		REV PER ECO 2564 & 2556	3/15/91	[Signature]
G		REV PER ECO 2596	3/15/91	[Signature]
H		REV PER ECO 2700	3/15/91	[Signature]
J		REVISED PER ECO 2720	4/8/91	[Signature]

- 10 IDENTIFY WITH APPLICABLE DASH NO.
- 9 COMPONENT SIDE: SOLDER JUMPER WIRE TO IC PIN 21 UB13 TO PIN 8 OF UEG. SOLDER JUMPER WIRE TO IC PIN 3 UB1 TO PIN 6 OF UC3.
- 8 COMPONENT SIDE: CUT PIN 21 OF UB13
CUT PIN 3 OF UB1
- 7 SOLDER SIDE: BRIDGE SHORT PINS 10 & 11 OF UD2 PRIOR TO SOLDER WAVE.
COMPONENT SIDE: CUT PINS 10 & 11 OF UD2
- 6 SOLDER TO XTAL AND PCB.
- 5 FOR ITEMS 116 AND 117 ALL ASSEMBLIES MUST HAVE SAME VENDOR.
- 4 SOLDER JUMPER, ITEM 107 FROM E1 TO SILVER CONTACT ON MT 1, ITEM 69;
TAKE CARE TO ALLOW NO MORE THAN ONE SECOND DURATION FOR APPLICATION OF HEAT DURING SOLDERING.

- 14 CUT TRACE FROM UIC3/3 TO +5 ON COMP. SIDE: INSTALL JUMPER FROM UC3/3 TO UD3/2 ON SOLDER SIDE.
- 13 FOR SUBSTITUTE PART SEE PART SUBSTITUTION INDEX, PART NO. 321233.
- 12 REWORK INSTRUCTIONS FOR -07 & -08.
JUMPER WIRE FROM UE5 PIN 6 TO UB14 PIN 35. USE 22 AWG.
- 11 ADD JUMPER FROM CATHODE OF VR5 TO NEAREST LEAD OF R47.
- 3 SOLDER AT 3 PLACES, EQUALLY SPACED AROUND THE BRASS BASE MT (ITEM 69).
- 2 IDENTIFY WITH COMMODORE PART NO.

1. SHEET 6 OF 7 SIZE C, SHEET 7 OF 7 SIZE D.

NOTES: UNLESS OTHERWISE SPECIFIED:

commodore	PCB ASSY, UNIV. DYNAMIC PET	DRAWN BY M. AMES	DATE 3-15-91	ENGR [Signature]	3/15/91	SIZE B	DRAWING NUMBER 8032080
		CHKD. [Signature]	APPR. [Signature]			SHEET OF 7	

QUANTITY REQD PER PART / DASH NO.				ITEM	8	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
08	07	06	05	03	01	1 D 8032079	PCB FAB, UNIV. DYNAMIC PET			
						2 D 8032081	LOGIC DIAGRAM, UNIV. DYNAMIC PET			
						3				
1	1	1	1	1	1	4 B 901435-01	IC, 6502			
2	2	2	2	2	2	5 B 901436-01	, 6520	UB14		
1	1	1	1	1	1	6 B 901437-01	, 6522	UB16, UB12		
1	1	1	1	1	1	7 B 901479-01	, CRT CONTROLLER	UB15		
3	3	3	3	3	3	8 B 901521-01	, 74LS00	UB13		
1	1	1	1	1	1	9 B 901521-32	, 74LS86	UD5, UE5, UE11		
1	1	1	1	1	1	10 B 901521-21	, 74LS02	UC2	SEE NOTE 13	
1	1	1	1	1	1	11 B 901521-02	, 74LS04	UD1		
2	2	2	2	2	2	12 B 901525-01	, 74S04	UE15		
2	2	2	2	2	2	13 B 901521-24	, 74LS10	UD2, UE4		
1	1	1	1	1	1	14 B 901522-01	, 7417	UD4, UE13		
1	1	1	1	1	1	15 B 901522-20	, 7425	UD15		
4	4	4	4	4	4	16 B 901521-11	, 74LS157	UE14		
1	1	1	1	1	1	17 B 901521-16	, 74LS138	UC8-UC10, UE2	SEE NOTE 13	
2	2	2	2	2	2	18 B 901521-06	, 74LS74	UC3		
2	2	2	2	2	2	19 B 901525-09	, 74S74	UB1, UB2		
						20		UC1, UE1		
1	1	1	1	1	1	21 B 901521-09	, 74LS145			
1	1	1	1	1	1	22 B 901522-13	, 74154	UC11		
						23		UE12		
1	1	1	1	1	1	24 B 901521-28	, 74LS164			
3	3	3	3	3	3	25 B 901522-03	, 74177	UE3	SEE NOTE 13	
						26		UD3, UE6, UE7		
1	1	1	1	1	1	27 B 901522-28	, 74166			
1	1	1	1	1	1	28 B 901465-22	, 2332	UA2		
1	1	1	1	1	1	29 B 901465-21	, 2332	UD6		
1	1	1	1	1	1	30 B 901465-20	, 2332	UD8		
1	1	1	1	1	1	31 B 901465-23	, 2332	UD9		
1	1	1	1	1	1	32 B 901447-10	, 2316	UD10		
1	1	1	1	1	1	33 B 901523-01	, LM555	UA3		
3	3	3	3	3	3	34 B 901524-01	IC, MC3446	UD16		
						35		UA20, UB17, UC12		
1	1	1	1	1	1	36 B 900462-21	CAP, CERAMIC AXIAL 22PF 50V	C54		
3	3	3	3	3	3	37 B 900461-16	CAP, CERAMIC AXIAL .014F 50V	C52, 60, 61	SEE NOTE 13	

commodore

TITLE: PCB ASSY,
UNIV. DYNAMIC PET

DRWN BY: M-AMES
CHKD: [Signature]

DATE: 1-30-81

ENGR: [Signature]

DATE:

SIZE:

B 8032080

REV J

SHEET 27

QUANTITY REQD PER PART / DASH NO.								ITEM	8	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
								58	B	900461-20	CAP, CERAMIC AXIAL .022 μ F 50V	C3,4		
								59	B	900461-28	, CERAMIC AXIAL .1 μ F 50V	C12-15, 18-22		25-50, 53, 55-59, 62-72
								40	B	900109-03	, LOW LEAK. ELECT. 10 μ F 25V	C1, 16, 17, 23, 24		SEE NOTE 13
								41	B	900110-07	, LOW LEAK. ELECT. 1 μ F 50V	C6, 8, 10, 51		SEE NOTE 13
								42						
								43						
								44	B	900100-44	, ELECTROLYTIC 470 μ F 16V	C2		
								45	B	900100-45	, ELECTROLYTIC 4700 μ F 25V	C5		
								46	B	900101-37	CAP, ELECTROLYTIC 47 μ F 16V	C7, 9, 11		
								47						
								48						
								49						
								50	B	901550-01	RES, CARBON 1/4W \pm 5% 1K	R1-6, 12, 15, 22, 26, 28, 31, 39, 42-45		
								51	B	901550-02		3.3K R14		
								52	B	901550-03		5.1K R19, 21		
								53	B	901550-20		10K R23, 27		
								54	B	901550-49		100 Ω R40		
								55	B	901550-58		470 Ω R13, 16, 17, 29, 30		
								56	B	901550-64		10 Ω R8		
								57	B	901550-69		1.5K R47, 48		
								58	B	901550-84		1M R24, 25		
								59	B	901550-85		2.4K R18, 20		
								60	B	901550-90		27 Ω R10, 11		
								61	B	901550-93		39 Ω R7		
								62	B	901550-94	RES, CARBON 1/4W \pm 5% 68 Ω	R32-38, 46, 49		
								63						
								64	B	902419-66	RES NETWORK, DIP 14PIN 10K	UB11		
								65						
								66	B	902653-01	TRANSISTOR, NPN TIP 29	Q1, 2		
								67	B	902550-01	TRANSISTOR PACK Q2T2222	UE1b		
								68						
								69	B	907300-02	TRANSDUCER-PIEZO ACOUSTIC	MT 1		
								70						
								71	B	900941-01	DIODE, ZENER 7.5V	VR5, 6		
								72	B	900750-01	DIODE, IN4001	CR1, 5-7		
								73	B	900753-01	DIODE, IN5402 3A/200V	CR3		
								74	B	900757-01	DIODE, BRIDGE 4A/50V	CR2, 4		SEE NOTE 13

commodore

TITLE: PCB ASSY,
UNIV. DYNAMIC PET

DESIGN BY:
M. AMES
CHKD: *[Signature]*

DATE
1-30-81

ENGR:

APPR:

DATE

SIZE

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8032080

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37

QUANTITY REQD PER PART / DASH NO.										ITEM	8	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES	
08	07	06	05	04	03	02	01			75							
										76							
										77							
										78	B	901527-03	VOLTAGE REGULATOR, 7905, -5V/1.5A VR1				
2	2	2	2	2	2	2	2			79	B	901528-03	VOLTAGE REGULATOR, LM340-5, +5V/1.5A VR3,4				TO-220
										80	B	901528-04	VOLTAGE REGULATOR, 7812, +12V/1A VR2				TO-3; SEE NOTE 13
										81							TO-3
										82							
										83							
										84	B	900556-02	CRYSTAL 16MHZ				
										85							
										86							
2	2									87	B	904150-04	SOCKET, IC LOW PROFILE -24 PIN UA3, UD7				
		4	4	4	4	4				88	B	904150-04	SOCKET, IC LOW PROFILE 24 PIN UA3, UD7, UD11, UD12				
										89	B	904150-06	SOCKET, IC LOW PROFILE 40 PIN UB14				
										90							
										91	B	903326-07	HEADER ASSY .100 CENTER J10				
2	2	2	2	2	2	2	2			92	B	903345-25	HEADER ASSY, DUAL ROW .100 CENTER J4, 9				7 PIN; REMOVE PIN 3 AT ASSEMBLY
										93	B	903316-09	HEADER ASSY .156 CENTER J8				50 PIN
										94	B	903331-07	HEADER ASSY, POLARIZED .100 CENTER J11				9 PIN; REMOVE PIN 7 AT ASSEMBLY
										95	B	903331-07	HEADER ASSY, POLARIZED .100 CENTER J7				7 PIN; REMOVE PIN 3 AT ASSEMBLY
										96	B	903331-20	HEADER ASSY, POLARIZED .100 CENTER J5				7 PIN; ORIENT OMITTED PIN TO PIN 6 POSITION
										97							20 PIN; ORIENT OMITTED PIN TO PIN 19 POSITION
										98	B	320268-01	HEAT SINK				
										99	B	904907-01	HEAT SINK, COMPOUND THERMAL				
										100							
6	6	6	6	6	6	6	6			101	B	906403-19	RIVET, DOME HEAD, OPEN END				
2	2	2	2	2	2	2	2			102	B	906404-04	RIVET, DOME HEAD, CLOSED END				
										103							
20	20	20	20	20	20	20	20			104	B	903781-01	22 AWG BARE WIRE ON TAPE & REEL				
										105							
1/2	1/2									106	B	903755-03	WIRE, INSULATED, #22 AWG				
										107	B	903780-01	#30 WIRE WRAP WIRE, RED				
										108	B	320086-02	BUS WIRE				
										109							
										110	B	901521-13	IC, 74LS244				
										111	B	901521-13	IC, 74LS244				

commodore

TITLE PCB ASSY,
UNIV. DYNAMIC PET

DRAWN BY: M. AMES
CHKD: [Signature]

DATE: 11-30-81
ENGR: [Signature]
APPR: [Signature]

DATE: []
SIZE: B

REV: J
SHT: 4/7

8032080

QUANTITY REQD PER PART / DASH NO.							ITEM	8	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
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2	2	/	/	/	/	2	2	112	B 901521-29	IC, 74LS373			
		1	1	1	1			113	B 901521-29	, 74LS373	UB3, UB8		
4	4	/	/	/	/	4	4	114	B 901453-02	, 2114	UB3		
		2	2	2	2			115	B 901453-02	, 2114	UC4-UC7		
16	16	/	/	16	16	16	16	116	B 901470-01	, 4116	UC4, UC5		
		8	8	/	/			117	B 901470-01	, 4116	UA4-UA19		
		/	/	/	/	1	1	118	B 901474-03	, 2316	UA5, UA7, UA9, UA11, UA13, UA15, UA17, UA19		
1	1	/	/	/	/			119	B 901474-04	, 2316	UD7		
		1	1	/	/			120	B 901499-01	, 2316	UD7		
		1	1	/	/			121	B 901498-01	IC, 2316	UD7		
								122			UD7		
								123					
								124					
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commodore

FILE: PCB ASSY,
UNIV. DYNAMIC PET

DRAWN BY:
M. AMES
CHKD:

DATE
1-30-81

ENGR:
APPR:

DATE

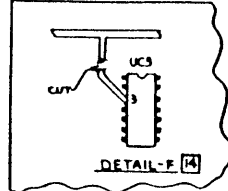
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8032080

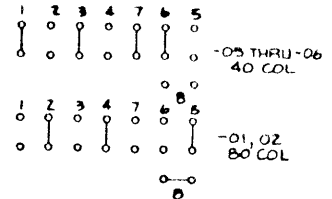
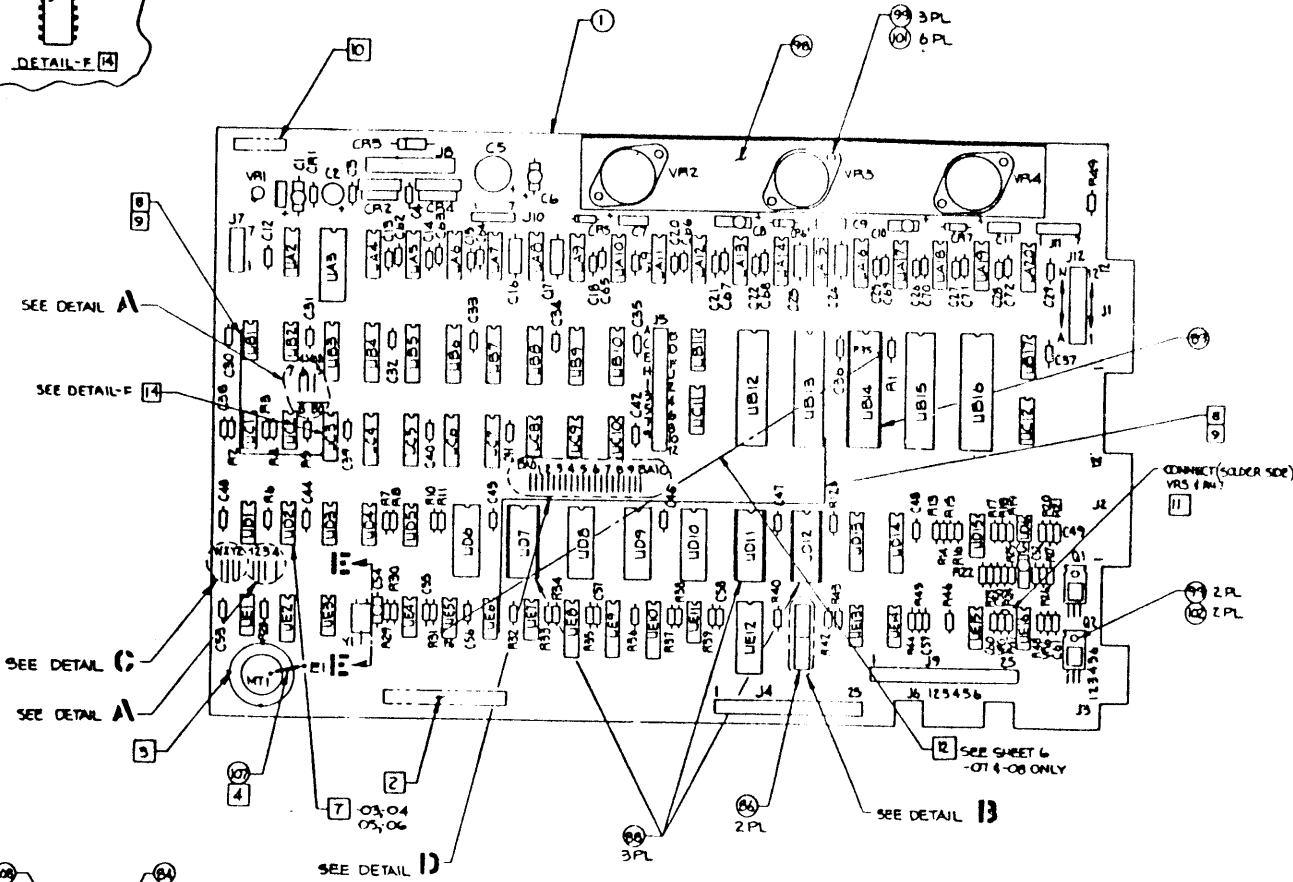
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57

REV	DESCRIPTION	DATE	APPROVED
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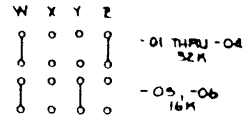
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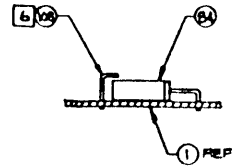
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SCALE: NONE
JUMPER CONFIGURATIONS



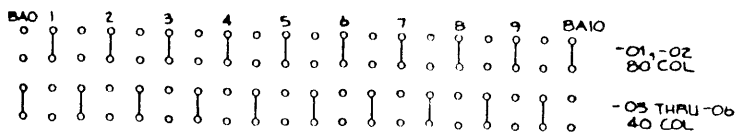
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SCALE: NONE
JUMPER CONFIGURATIONS



DETAIL C
SCALE: NONE
JUMPER CONFIGURATIONS



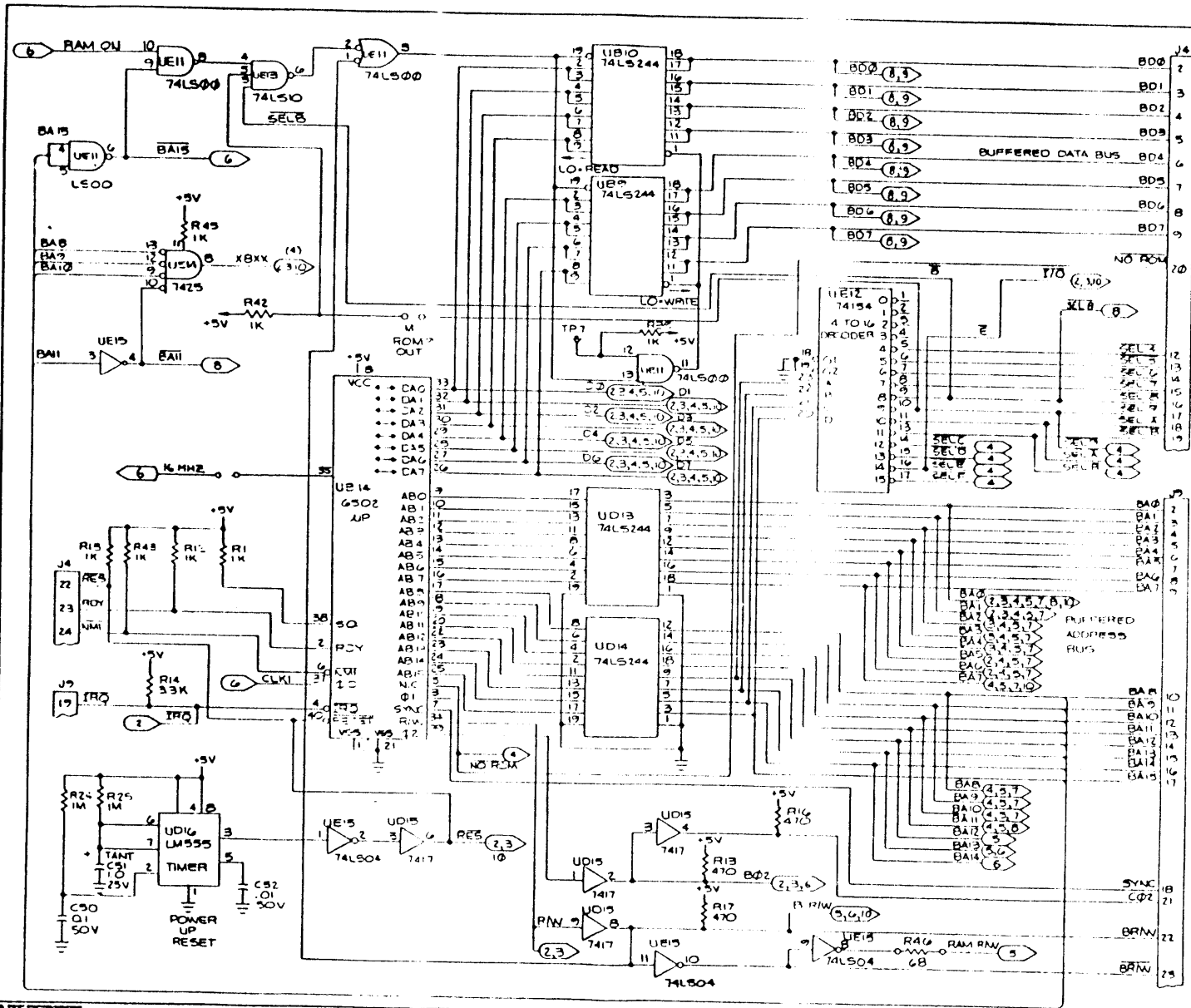
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DETAIL D
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JUMPER CONFIGURATIONS

REV	DESCRIPTION	DATE	APPROVED
1	SEE SHEET 1		

COMMODORE	
PCB ASSY-	
DYN. DYNAMIC PET	
8032080	
1/1	1 of 7



REVISIONS			
REV	DESCRIPTION	DATE	BY
A	PRODUCTION RELEASE		
B	REVISED PER ECO 2091		
C	REV PER ECO 2574		
D	REVISED PER ECO 2607		
E	REV PER ECO 2596		

MEMORY EXPANSION

MEMORY EXPANSION

3 ALL CAPACITOR VALUES ARE MEASURED IN MICROFARADS

2 ALL RESISTOR VALUES ARE IN OHMS 1% AND ARE 1/4 WATT.

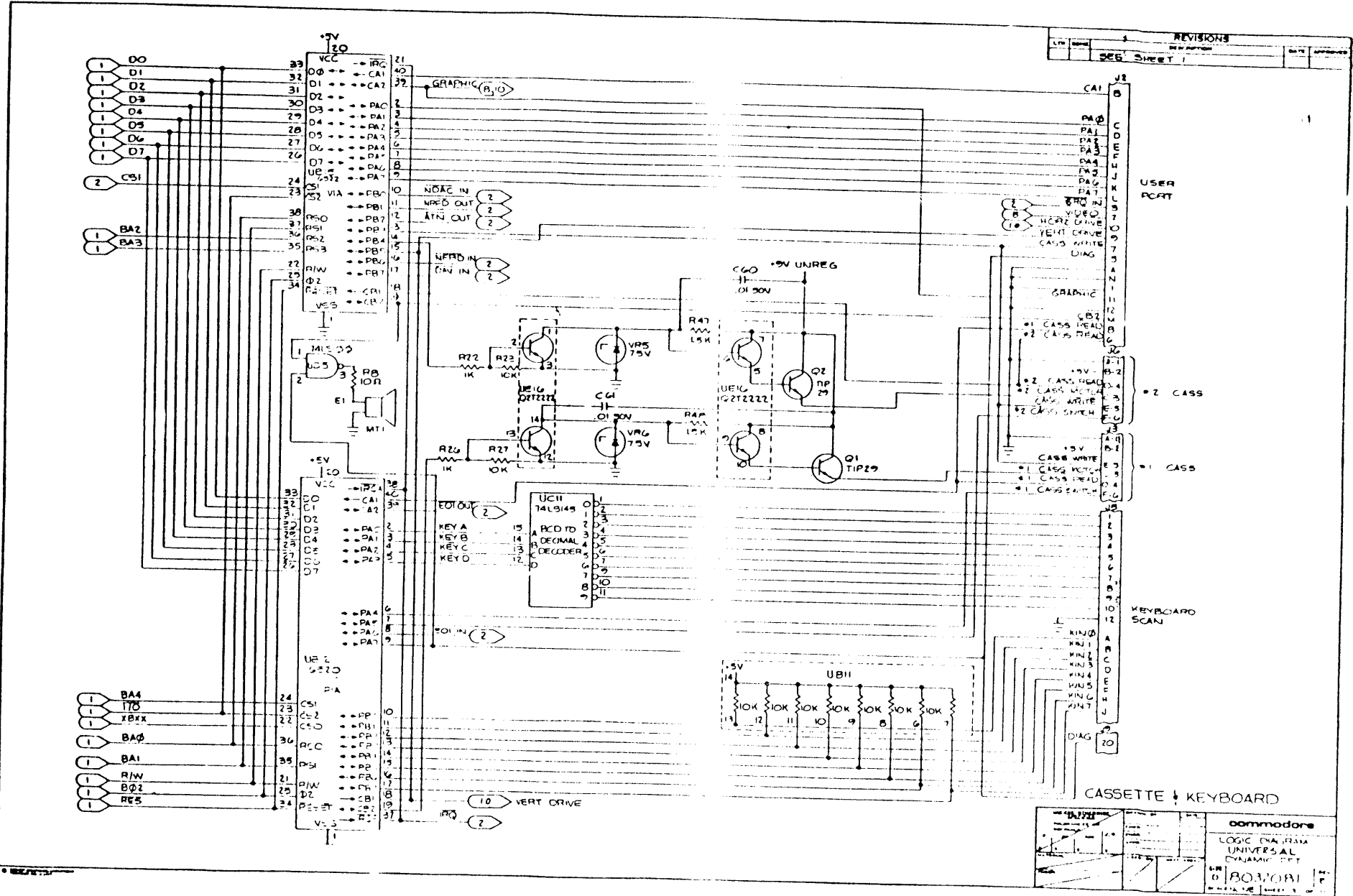
1 REFER TO ASSEMBLY DRAWING NUMBER #032020.

NOTES UNLESS OTHERWISE SPECIFIED

CPU & MEMORY EXPANSION

DATE	DESIGNED BY	COMMODORE
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		UNIVERSAL
		DYNAMIC DET
REV	DRAWN BY	
D	D	8032081

REVISIONS			
REV	DATE	BY	APPROVED
1			

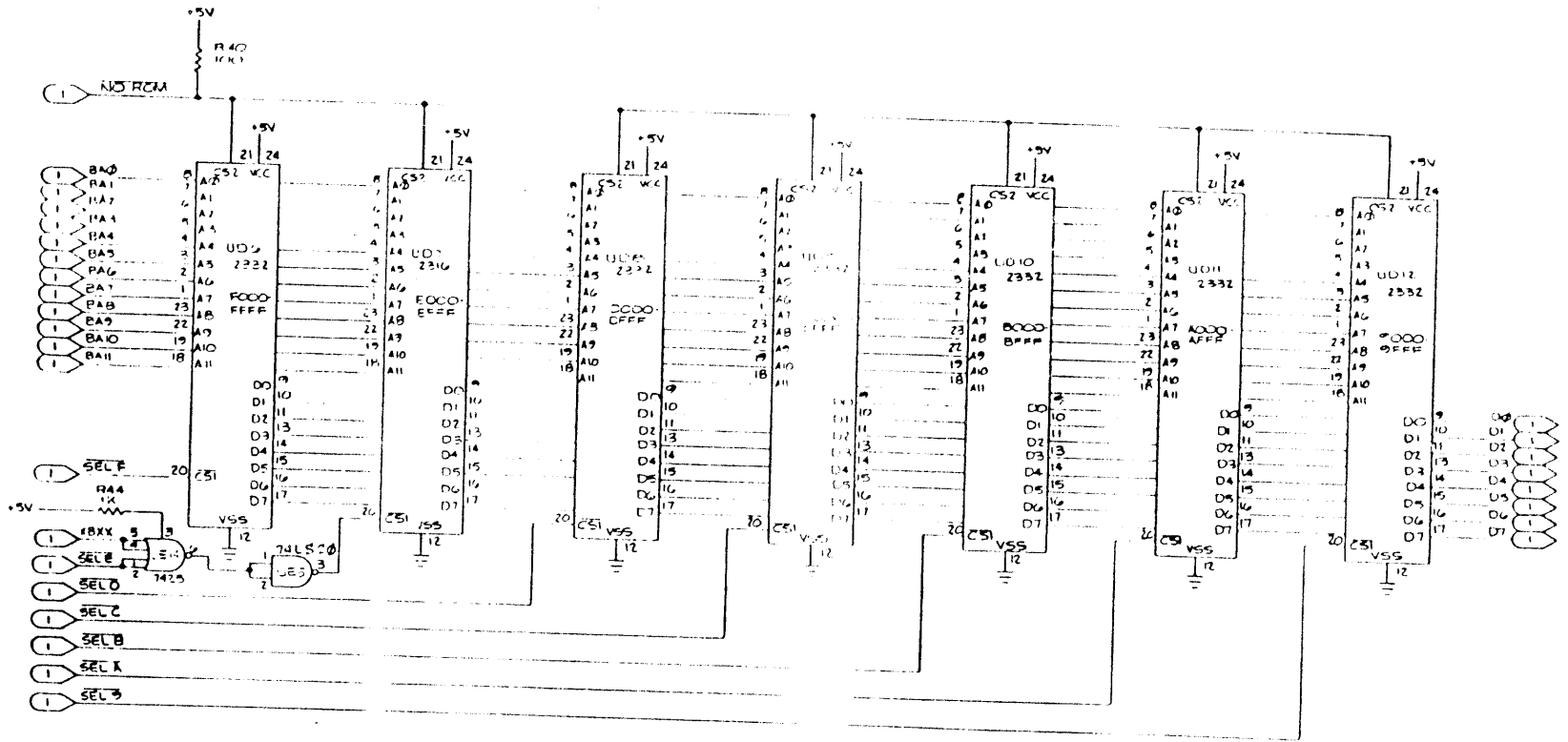


commodore
LOGIC DIAGRAM
UNIVERSAL
DYNAMIC SET

U11
U5
U2

BOBONI

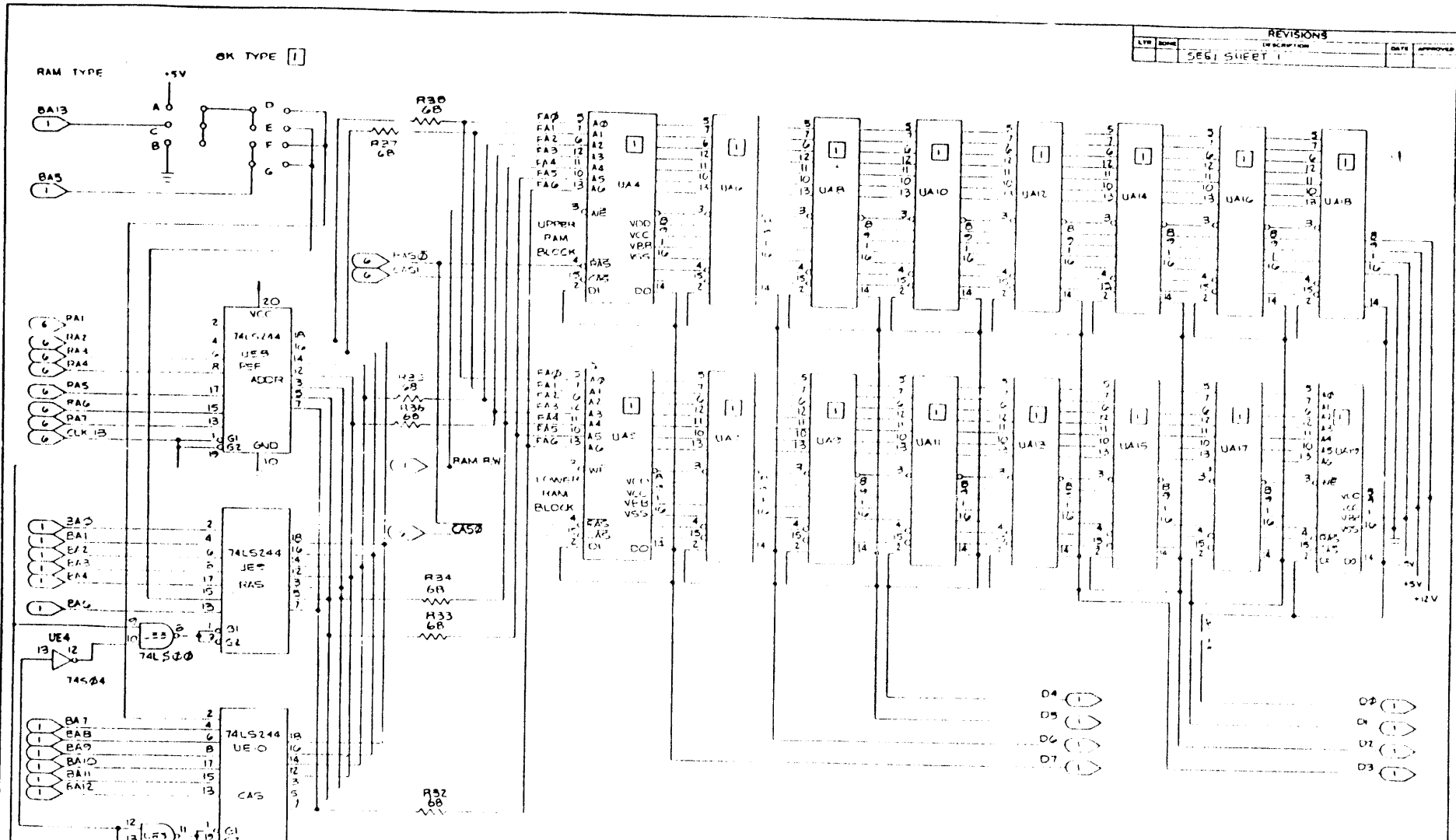
REVISIONS			
REV	DATE	DESCRIPTION	APPROVED
1		SEE SHEET 1	



ROMS

		commodore LOGIC DIAGRAM UNIVERSAL DYNAMIC RAM 18032081
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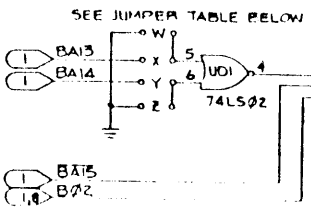
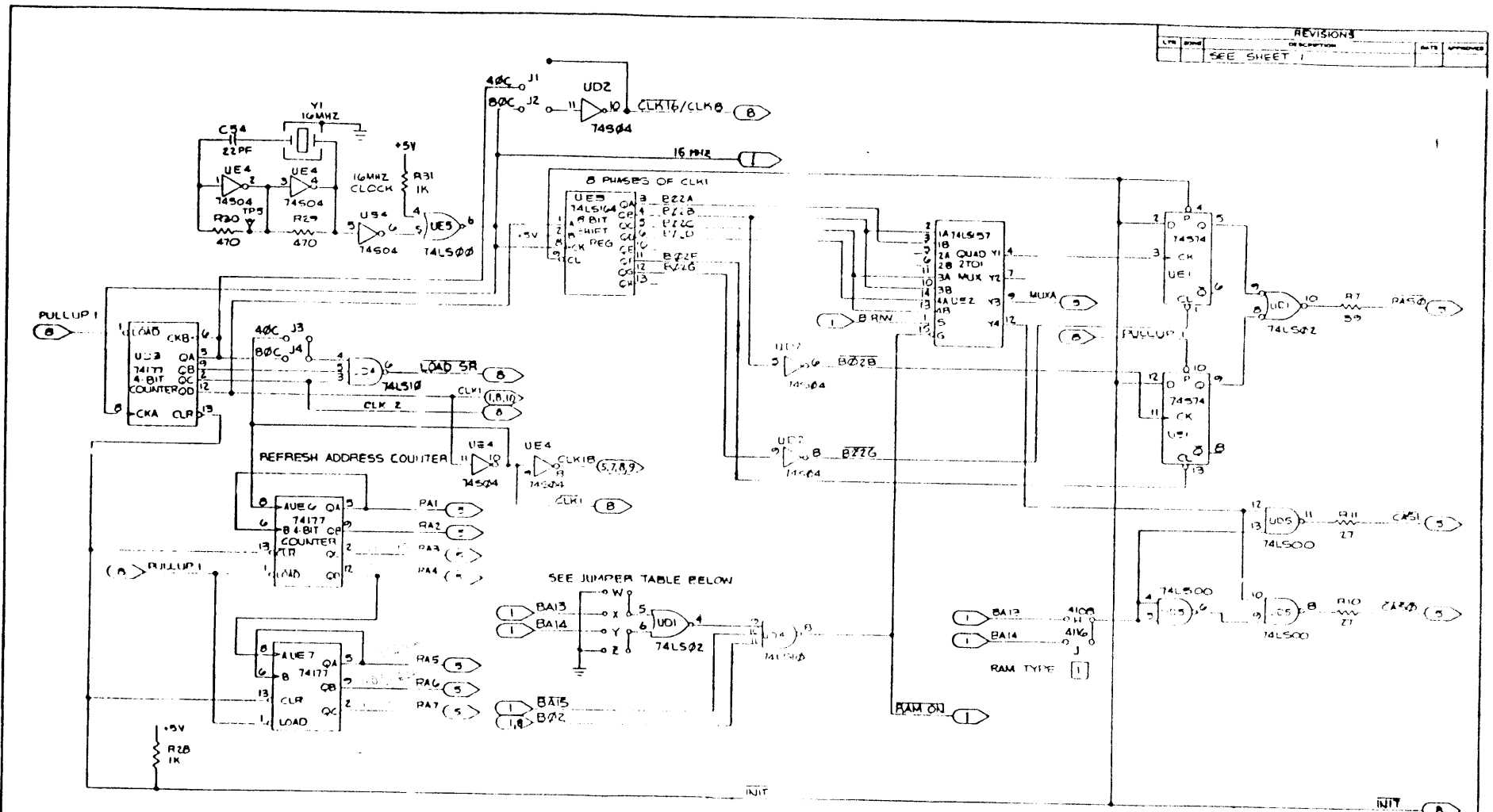
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REV	DATE	DESCRIPTION	APPROVED
1		SEG1 SHEET 1	



MAIN RAM

		commodore COMM. PROGRAM UNIVERSAL 2032081
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REVISIONS			DATE	APPROVED
DATE	DESCRIPTION			
	SEE SHEET 1			



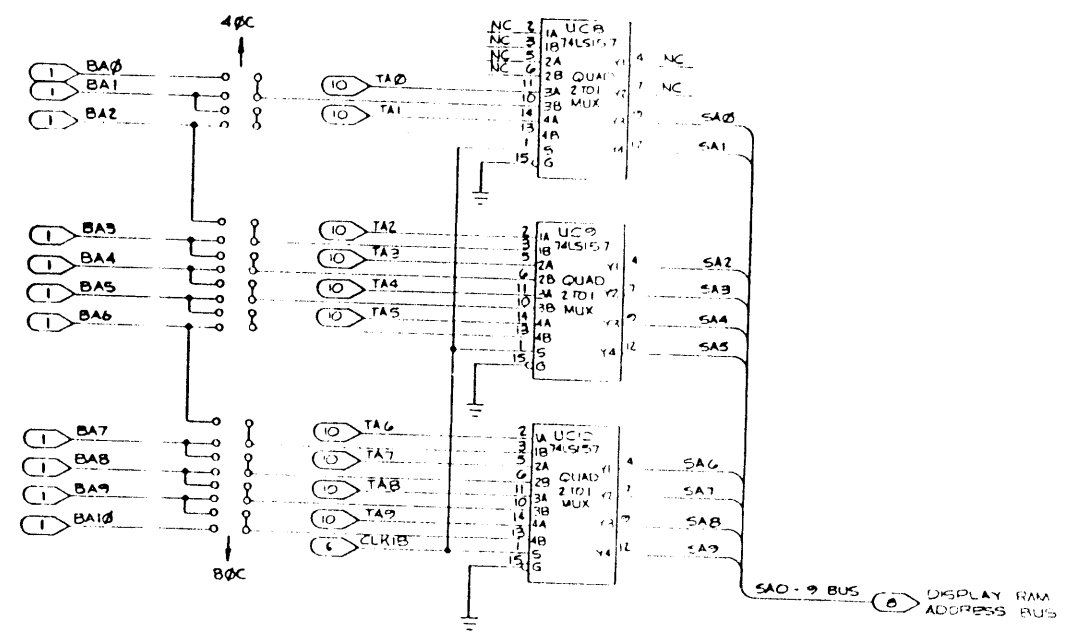
JUMPER TABLE

MEMORY JUMPERS			
	32K	16K	8K
W	0-0	0-0	0-0
X	0-0	0-0	0-0
Y	0-0	0-0	0-0
Z	0-0	0-0	0-0

MASTER TIMING

commodore
LOGIC DIAGRAM
UNIVERSAL
DYNAMIC RAM
D 8032081

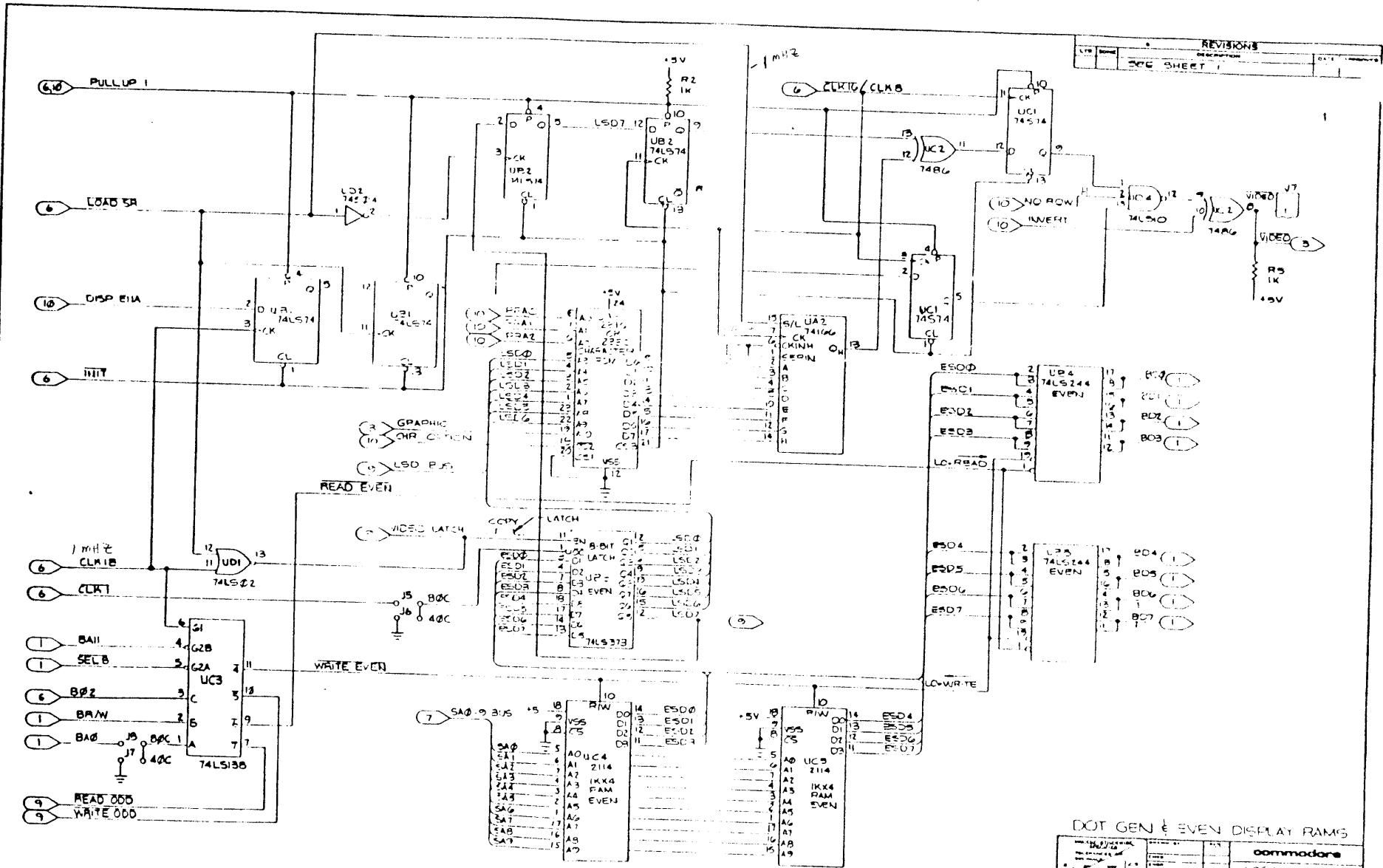
REVISIONS			
REV	DATE	DESCRIPTION	APPROVED
1		SEE SHEET 1	



DISPLAY ADDRESS MUX

commodore LOGIC DIAGRAM UNIVERSAL DYNAMIC TEST 8032031 MADE IN U.S.A.			

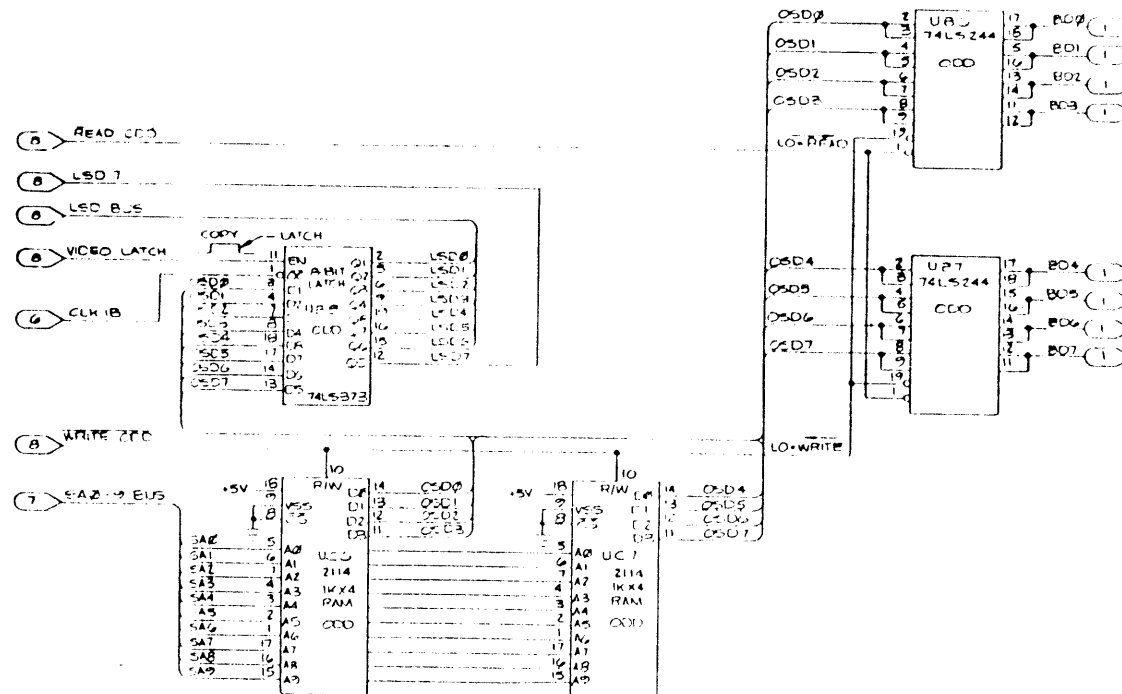
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DOT GEN & EVEN DISPLAY RAMS

		commodore LOGIC DIAGRAM UNIVERSAL DYNAMICS 8032081
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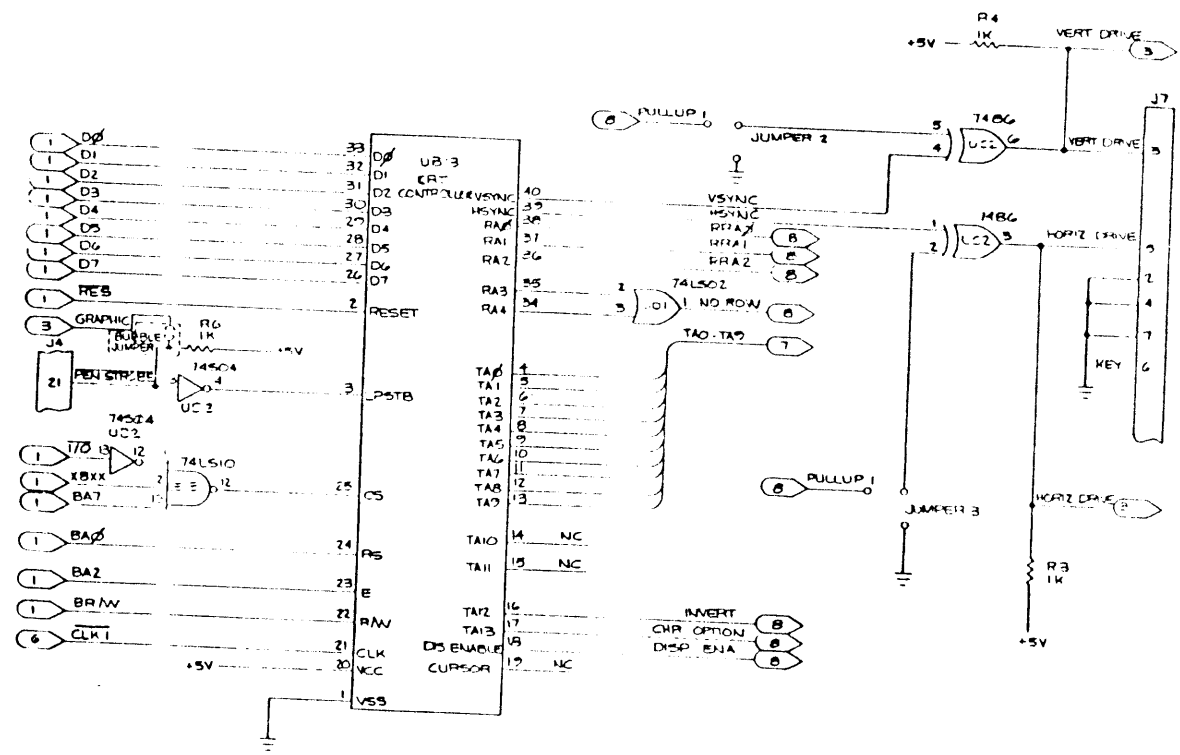
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SEE SHEET 1							



ODD DISPLAY RAMS

		COMMODORE LOGIC DESIGN/AMA UNIVERSAL DYNAMIC TEST 6032081
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REVISIONS			
REV	DATE	DESCRIPTION	APPROVED
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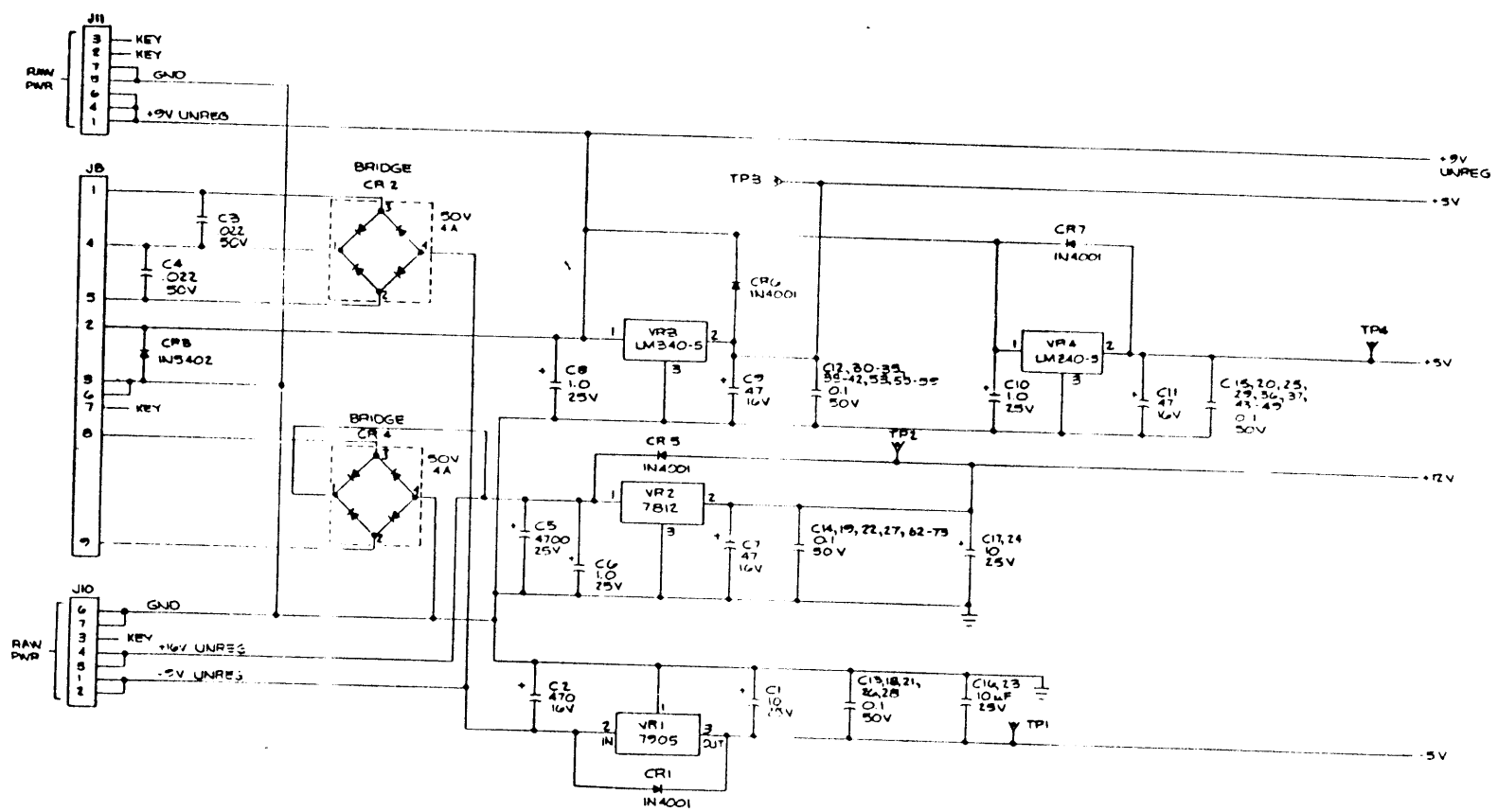


CRTC AND SYNC BUFFERS

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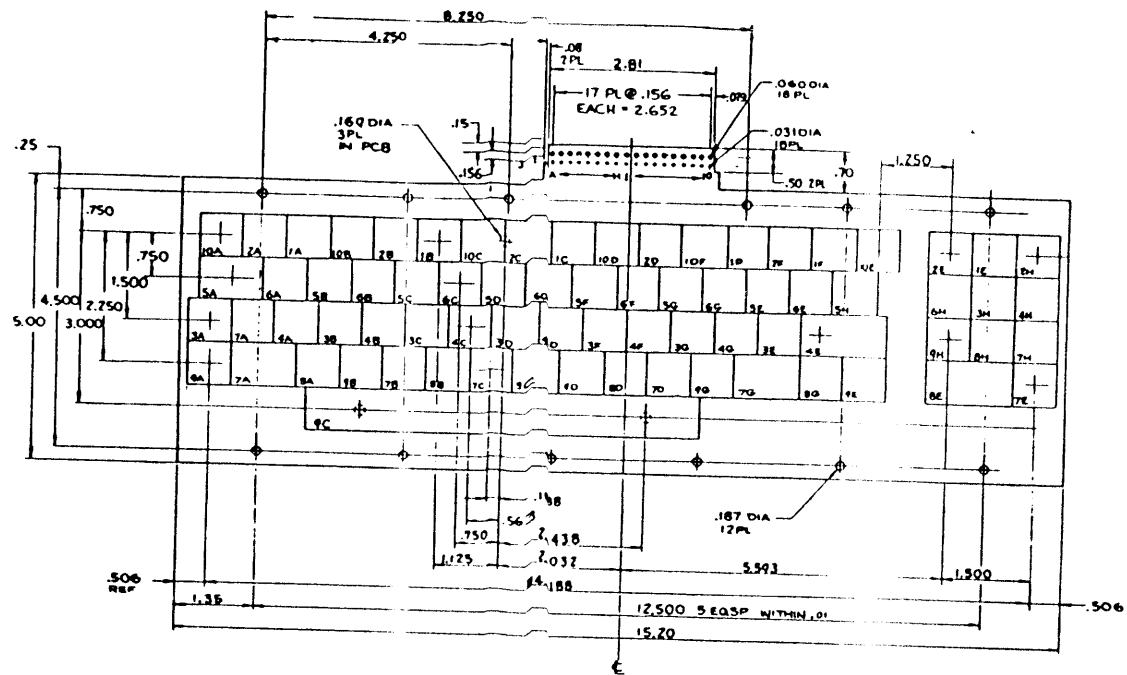
commodore
 LOGIC DIAGRAM
 UNIVERSAL
 DRAWING SET
 D 8032081
 16

REVISIONS			
REV	DATE	DESCRIPTION	APPROVED
1		SEE SHEET 1	

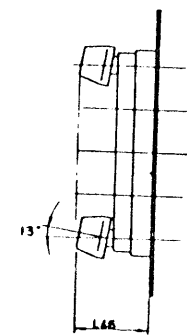


VOLTAGE REGULATOR

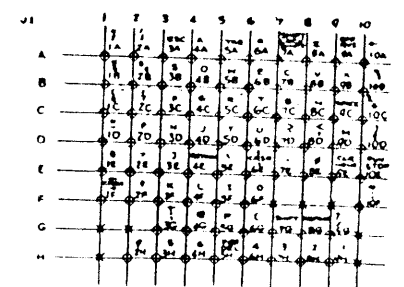
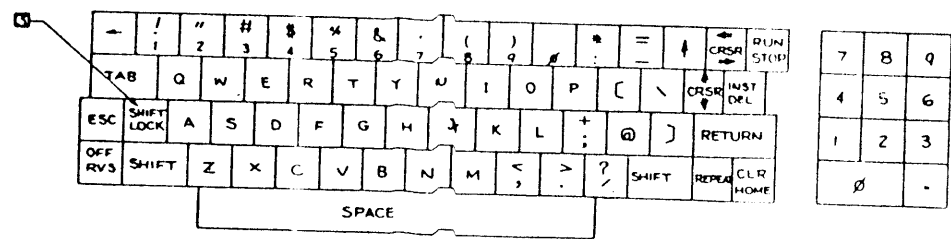
acommodare LOGIC DIAGRAM UNIVERSAL DYNAMIC CRT			
8032081 E		SHEET 11 OF 11	



REV	DATE	DESCRIPTION	BY	CHKD
A		INITIAL RELEASE		
B		PER ESN 825		
C		PER ECO 1041		
D		REV PER ECO 1874		



- 1 CONTACT RESISTANCE SHALL NOT EXCEED 1K Ω OVER LIFE OF CONTACT (NO MAJOR OPERATIONS)
 - 2 CONTACT TO BE PROTECTED FROM CONTAMINATION OVER LIFE OF CONTACT
 - 3 KEYCAPS ARE TWO SHOT MOLDED
 - 4 KEYCAP COLOR : DARK GRAY WITH WHITE LETTERS
 - 5 ALL KEYS ARE MOMENTARY ACTION EXCEPT FOR SHIFT LOCK KEY WHICH IS ALTERNATE ACTION
 - 6 KEYTAB ARTWORK TO BE APPROVED BY COMMODORE
 - 7 PCB MATL : .062 \pm .007 FRZ PAPER (FR4 GLASS EPOXY) 1OZ COPPER CLAD ON 1 SIDE
- NOTES : UNLESS OTHERWISE SPECIFIED



O = CONNECT
X = NO CONNECT

COMMODORE	KEYBOARD, BUSINESS STATIONS
320ZB4	

PART NO.	DESCRIPTION
8032051-01	POWER SUPPLY ASSY, 8032 117V UL

REVISIONS				
LTR	ZONE	DESCRIPTION	DATE	APPROVED
A		PRODUCTION RELEASE		
B		REV PER ECO 1935	8/21/80	[Signature]
C		REV PER ECO 2028	11/17/80	[Signature]
D		REV PER ECO 2284	10/16/80	[Signature]
E		REV. PER ECO 2177	11-18-80	[Signature]

- 6 REFER TO PART SUBSTITUTE INDEX P/N 321233.
- 5 SWITCH SHOWN IN 'OFF' POSITION.
- 4. ALL LEADS WILL HAVE A MINIMUM OF ONE WRAP AROUND TERMINALS PRIOR TO SOLDERING.
- 3 IDENTIFY WITH COMMODORE PART NO. 8032051 AND APPLICABLE DASH NO. LOCATE APPROX AS SHOWN.
- 2 DASH 04 CONFIGURATION SHALL BE USED FOR VDE, SEV 1 SEMKO.

1. SHEET 3 OF 3 SIZE D
ASSY DWG

NOTES - UNLESS OTHERWISE SPECIFIED:

commodore	TITLE POWER SUPPLY ASSY, 8032	DRAWN BY R. CHRISTENSEN	DATE 9-22-80	ENGR APPR.	SIZE B	DRAWING NUMBER 8032051
		UNID FORMAT N.P. SKK ONLY	DATE 8-19-80	SHEET OF 3		

QUANTITY REQD PER
PART / DASH NO.

ITEM	QTY	PART NUMBER	DESCRIPTION	REF DES	RENO	NOTES
1						
2	D	8032043-02	CHASSIS, POWER, UNIVERSAL			
3	C	320902-01	TRANSFORMER	TI		SEE NOTE 6 FOR SUBSTITUTE
4						
6						
7	B	900102-01	CAPACITOR 23,000 MFD	CI		
8						
9	B	903467-03	FILTER POWER CONNECTOR			
11						
12						
13						
14	B	320289-01	DYNAMIC PET POWER HARNESS			
15						
16	B	903557-04	FUSE, 125V SLO-BLO 1.6A	F1		
18						
19						
20	B	903611-03	FUSE HOLDER			
21	B	904507-01	SWITCH, ROCKER	XE1 SW1		FOR SUBSTITUTE SEE NOTE 6
22						
23						
24						
25	B	320479-02	TUBE, SHRINKABLE			
26	B	320478-01	TUBE, SHRINKABLE			
27	B	320059-01	LEAD WIRE (BLACK)			
28						
30	B	903612-02	FUSE CARRIER			FOR SUBSTITUTE SEE NOTE 6
31	B	906630-03	SCREW, PAN HEAD, *10-32 X .250 LG			
32	B	905650-03	WASHER, LOCK, INT TOOTH *10			
33						
34	C	320925-05	GROUND CABLE ASSY			
35	B	906600-06	SCREW PAN HEAD *4-40 X .438 LG			
36	B	905970-05	NUT KEPS *4-40			
37						

commodore

TITLE: POWER SUPPLY ASSY, 8032

DRAWN BY: K. CHRISTENSEN
CHKD: N.P.
DATE: 4-22-80
8-19-A

ENGR: APR:

DATE

SIZE

B

8032051

REV E

SHT 2/3

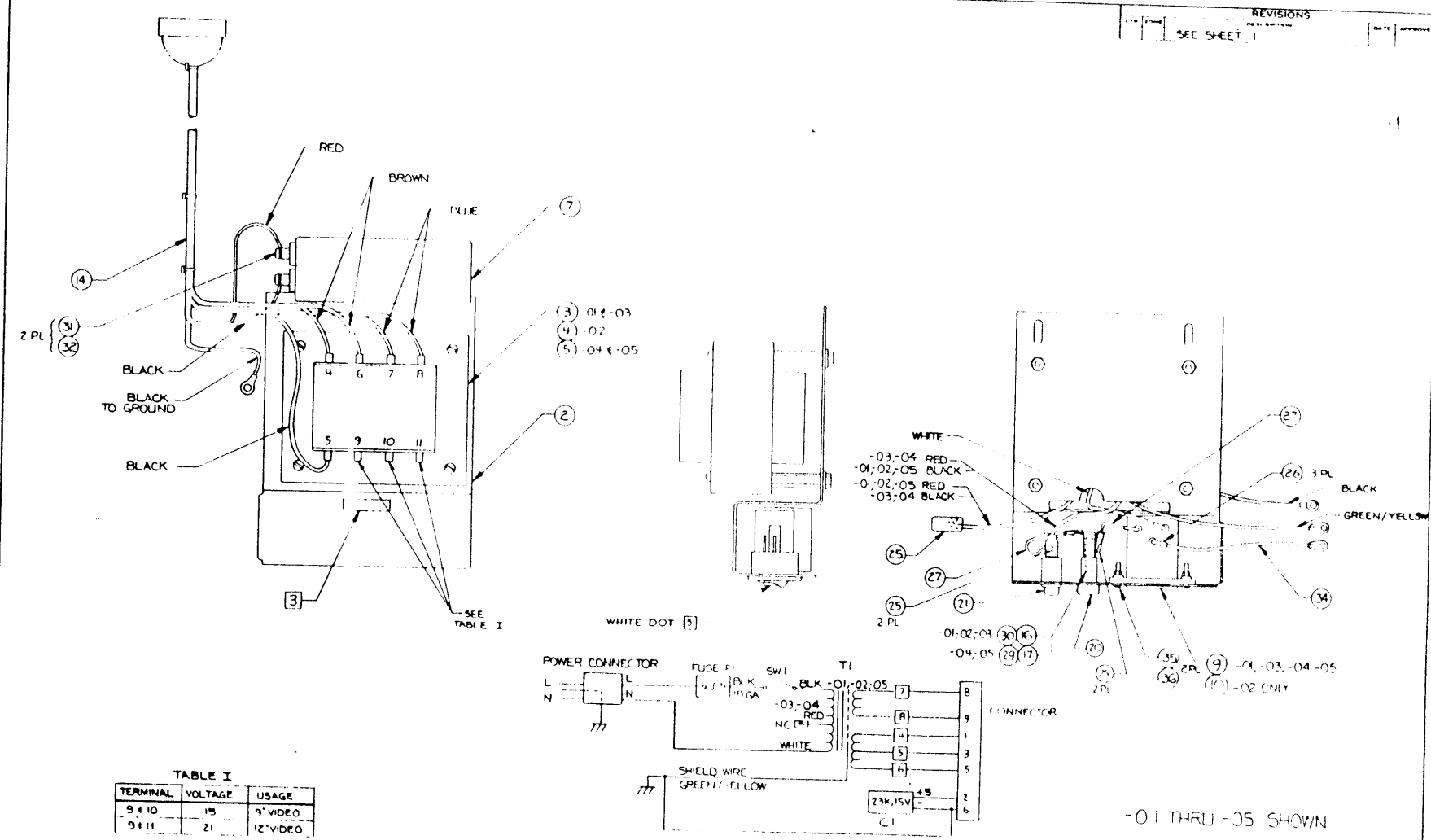


TABLE I

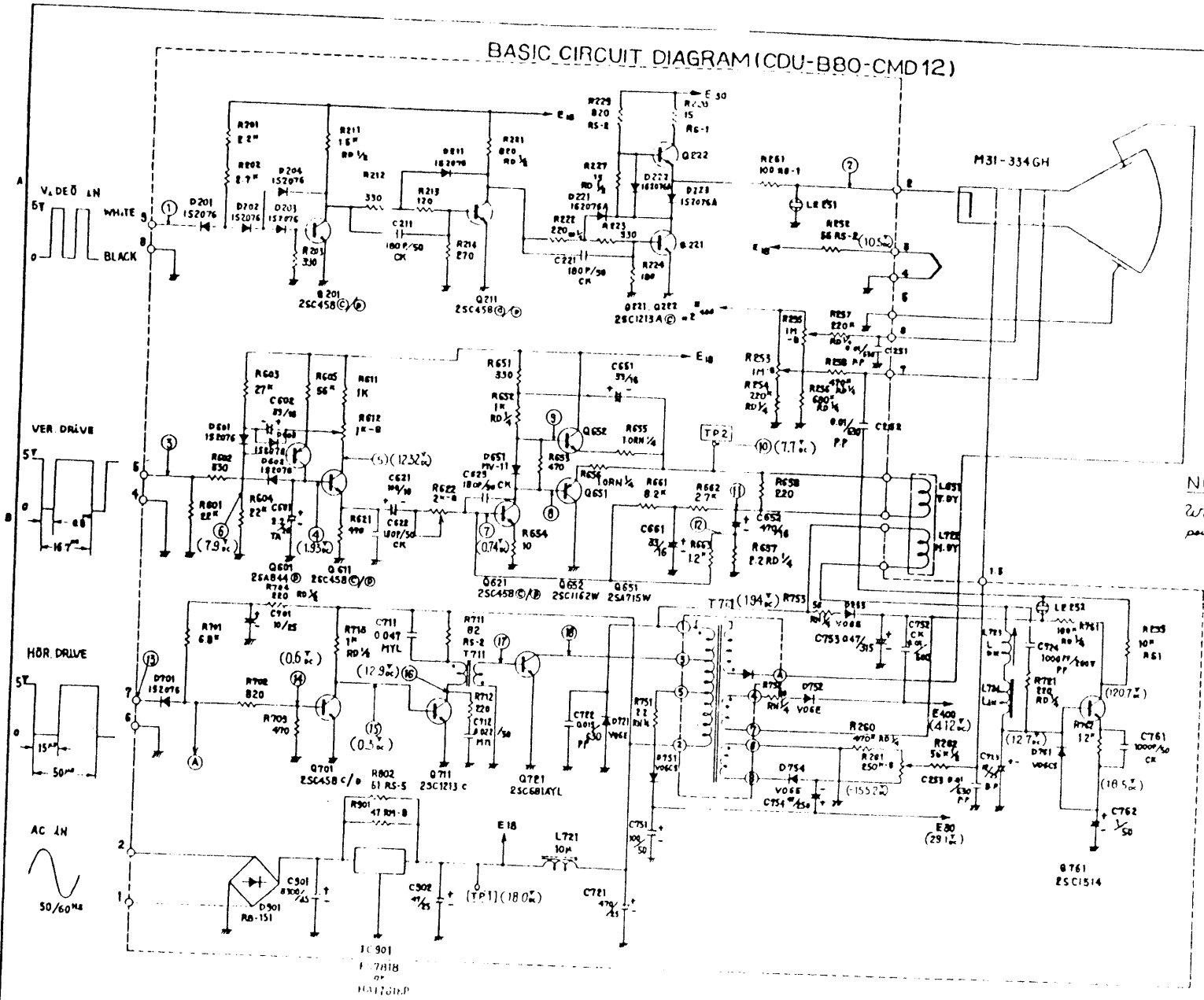
TERMINAL	VOLTAGE	USAGE
9 & 10	15	9" VIDEO
9 & 11	21	12" VIDEO

WIRING DIAGRAM

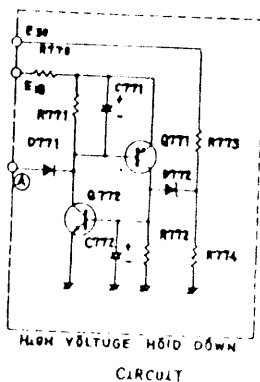
DATE	BY	CHKD	APP'D	COMMODORE
				POWER SUPPLY
				ASSY. 8032
				REV. 0
				8032001
				9016

BASIC CIRCUIT DIAGRAM (CDU-B80-CMD12)

commodore		PCB SCHEMATIC		REV
		12" CRT DISPLAY		1
SIZE	B	321478	SHEET	1 OF 1

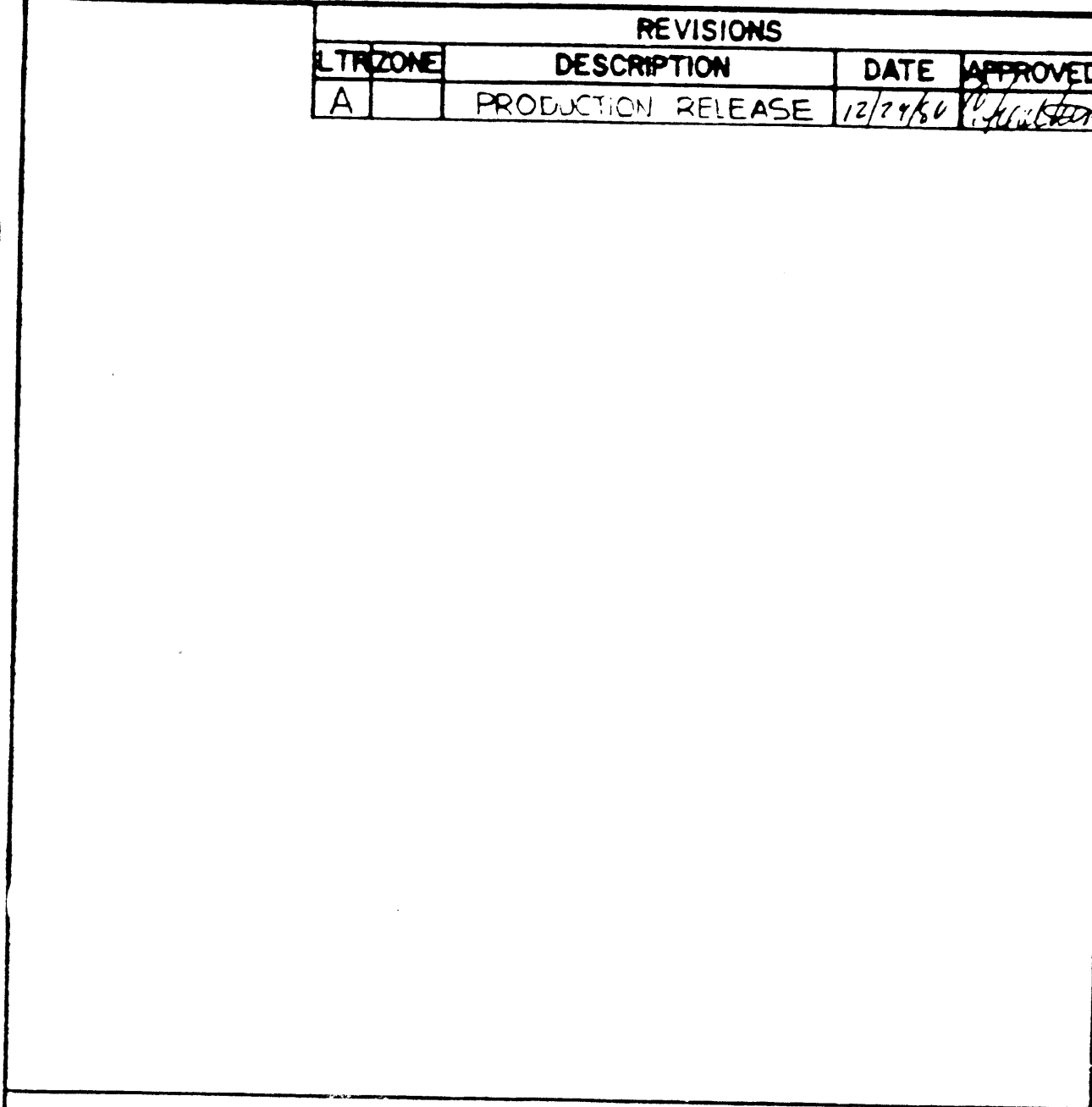


NOTES
Waveforms are measured at the points indicated with (X)




321450

REVISIONS			
LT/ZONE	DESCRIPTION	DATE	APPROVED
A	PRODUCTION RELEASE	12/29/80	<i>[Signature]</i>



THE INFORMATION AND DATA CONTAINED HEREIN IS PROPRIETARY AND SHALL NOT BE USED OR DUPLICATED WITHOUT PERMISSION OF COMMODORE BUSINESS MACHINES, INC.

DRAWN BY: <i>Martin</i>	DATE: 12-5-80
CHECKED: <i>[Signature]</i>	12/9/80
ENGR: <i>[Signature]</i>	12/29/80
PROD:	
APPD:	
REV:	

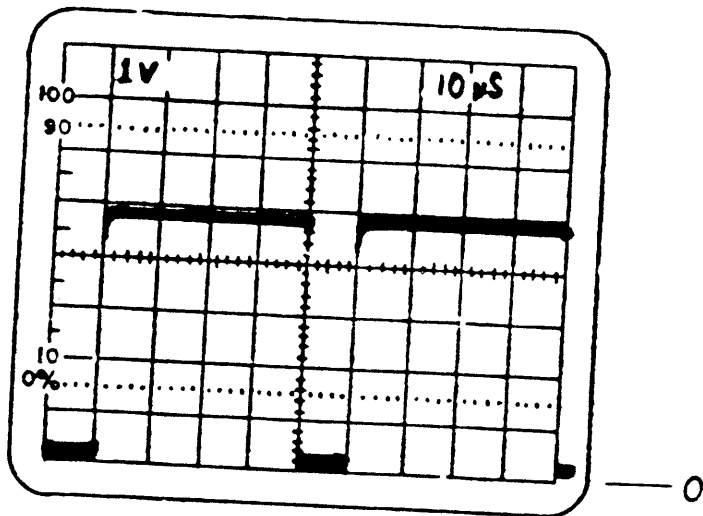
 **commodore**

TITLE: PCB WAVEFORMS
12" CRT DISPLAY

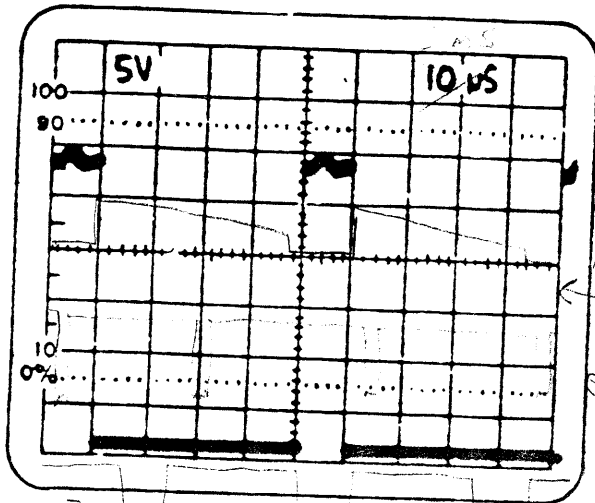
SIZE: A	DWG NO. 321450	REV: A
RELEASE DATE:	SHEET 1 OF 10	

VIDEO (1/1)

1



2

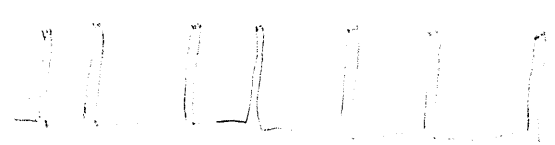


15µs
10µs
402 (5ms
pin 9)

APERTURE & BLANKING
ON .5ms OF HORIZONTAL
VIDEO TAKES UP
A 1/4 HALL OF SCREEN
(WITH LAST 1/5 BLANKING)

5ms { P11
13
C11D4

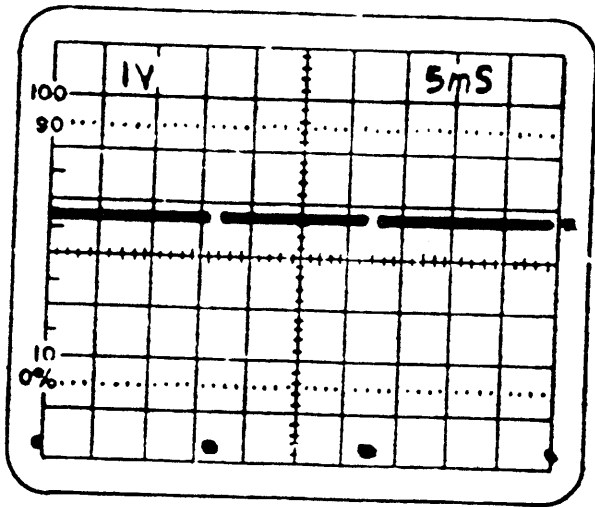
5ms { P11
1
C11D4



commodore		
PCB WAVEFORMS 12" CRT DISPLAY		
SIZE A	321450	REV A
SCALE NONE	SHEET 2	OF 10

VERTICAL (1/3)

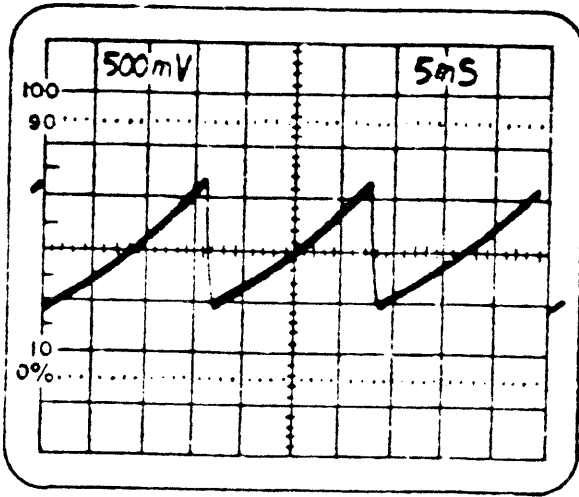
3



16-01-100-7

— 0

4

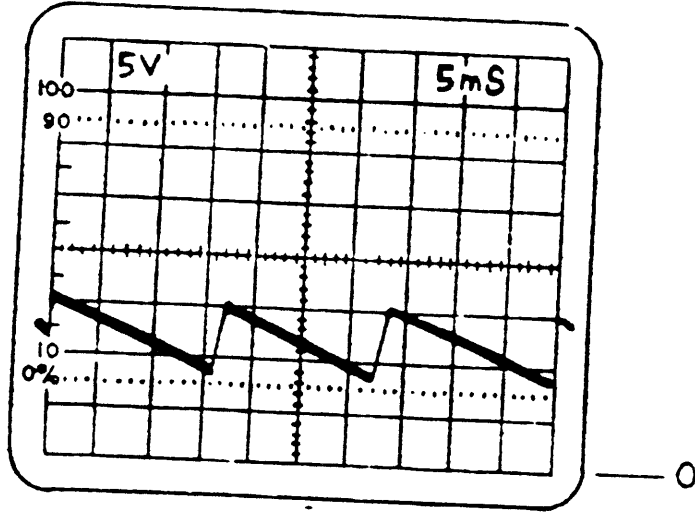


— 0

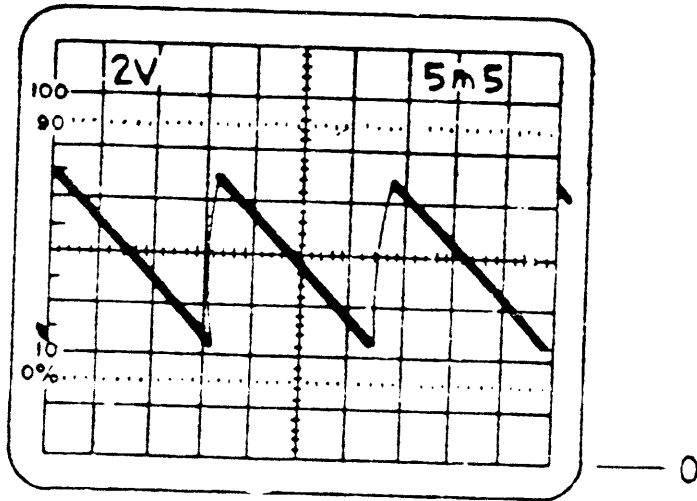
commodore		
PCB WAVEFORMS 12" CRT DISPLAY		
SIZE	321450	REV
A		A
SCALE	NONE	SHEET 3 OF 10

VERTICAL (1/3)

5



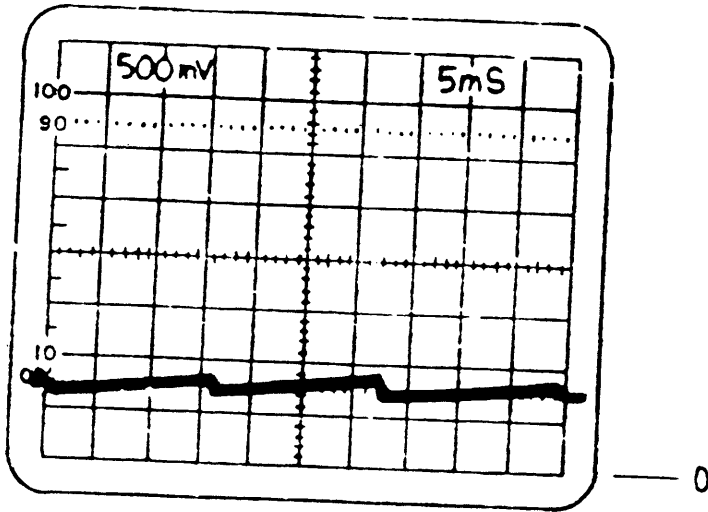
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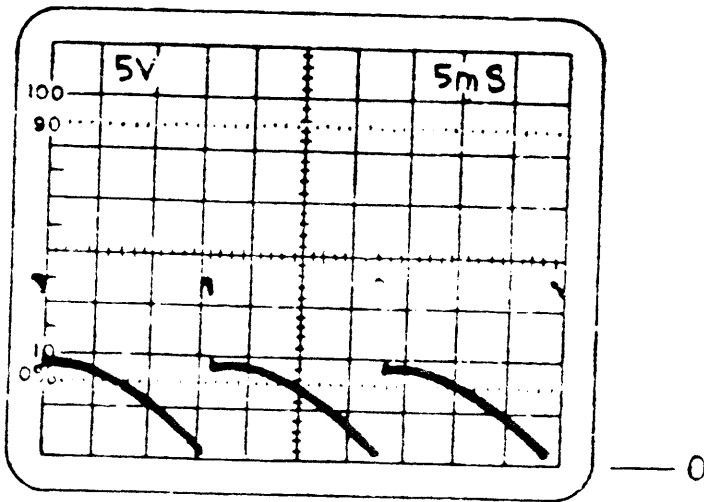
commodore		
PCB WAVEFORMS 12" CRT DISPLAY		
SIZE A	321450	REV A
SCALE NONE	SHEET 4	OF 10

VERTICAL (2/3)

7



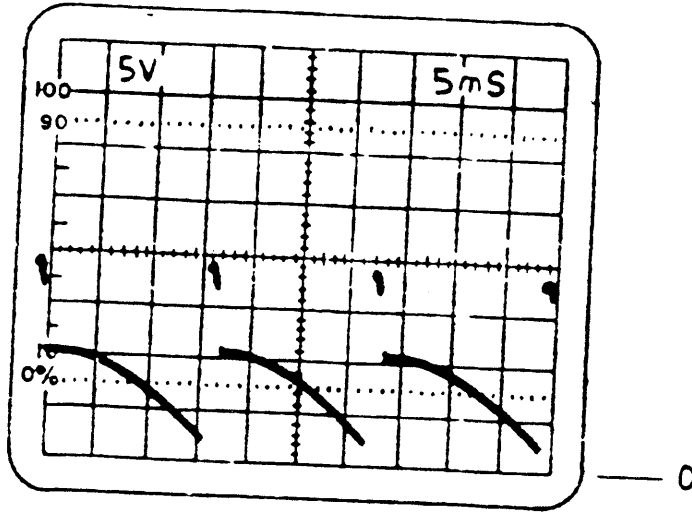
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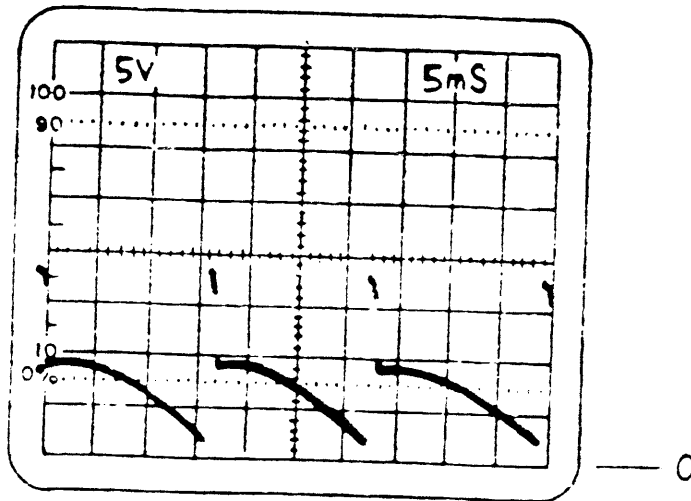
commodore		
PCB WAVEFORMS 12" CRT DISPLAY		
SIZE	321450	REV
A		A
SCALE NONE	SHEET 5	OF 10

VERTICAL (2/3)

9



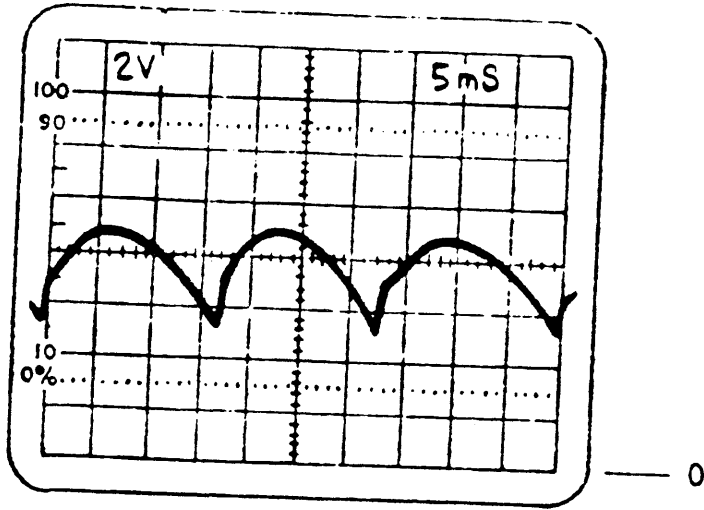
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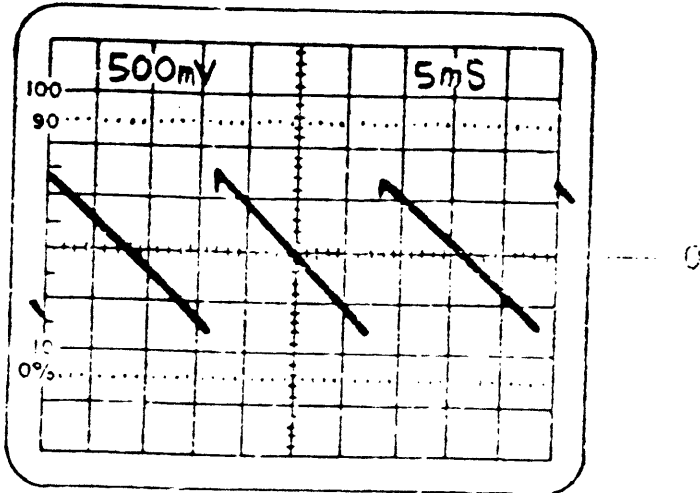
commodore		
PCB WAVEFORMS 12" CRT DISPLAY		
SIZE	321450	REV
A		A
SCALE NONE	SHEET 6	OF 10

VERTICAL (3/3)

11



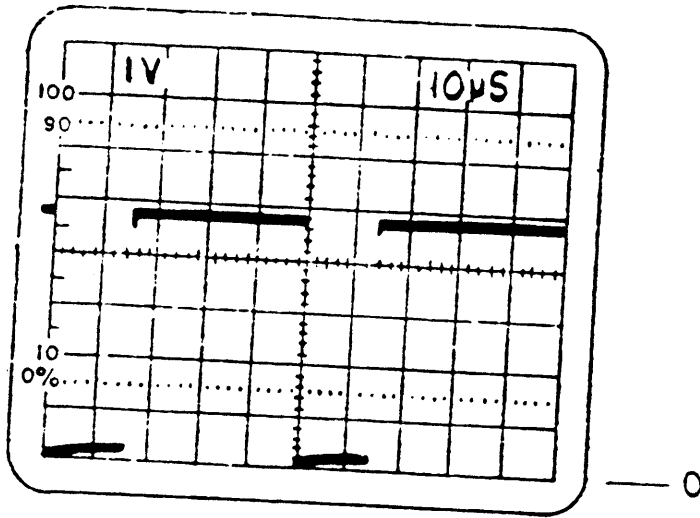
12



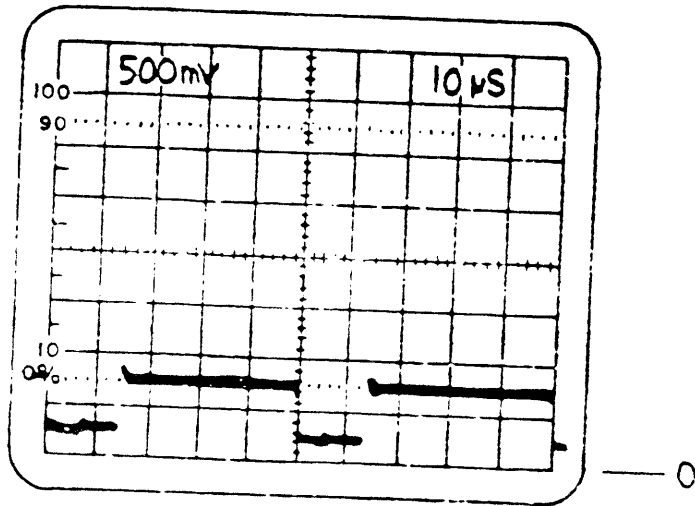
commodore		
PCB WAVEFORMS 12" CRT DISPLAY		
SIZE	321450	REV
		A
SCALE NONE	SHEET 7	OF 10

HORIZONTAL (1/2)

13



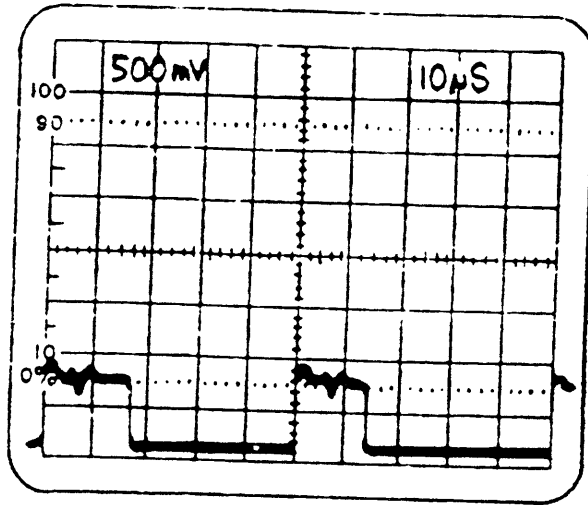
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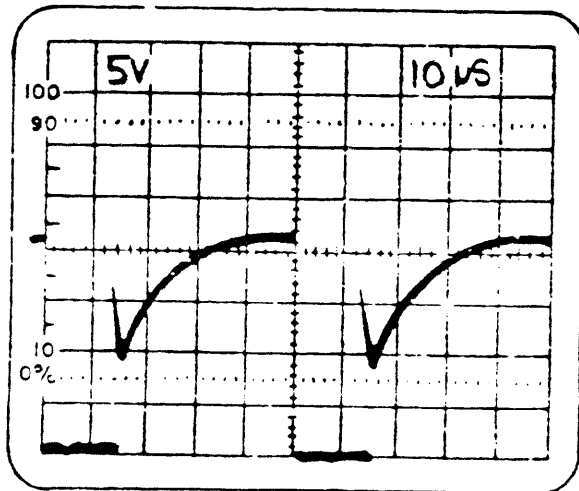
commodore		
PCB WAVEFORMS 12" CRT DISPLAY		
SIZE	321450	REV
A		A
SCALE	NONE	SHEET 8 OF 10

HORIZONTAL (1/2)

15



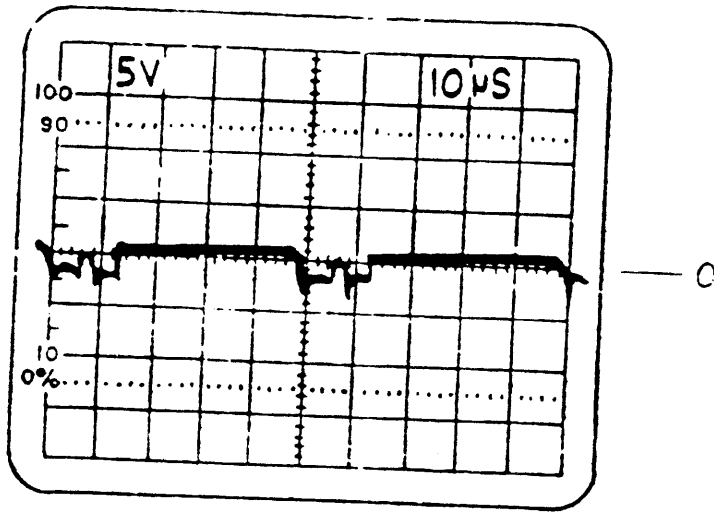
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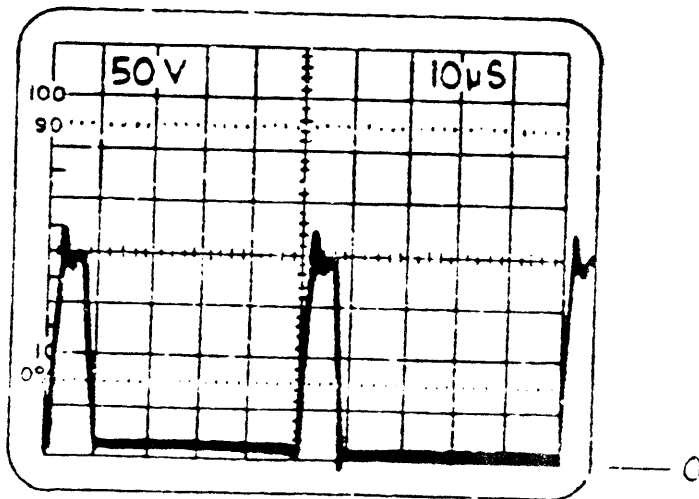
commodore		
PCB WAVEFORMS 12" CRT DISPLAY		
SIZE	321450	REV
A	A	A
SCALE NONE	SHEET 9	OF 10

HORIZONTAL (2/2)

17



18



commodore		
PCB WAVEFORMS 12" CRT DISPLAY		
SIZE A	321450	REV A
SCALE NONE		SHEET 10 OF 10