

LTR	ZONE	DESCRIPTION	DATE	APPROVED
A		PRODUCTION RELEASE	6/21/16	H. S. Green

3. ALL CAPACITOR VALUES ARE
MEASURED IN MICROFARADS.

2. ALL RESISTOR VALUES ARE IN CHMS $\pm 5\%$ AND ARE 1/4 WATT.

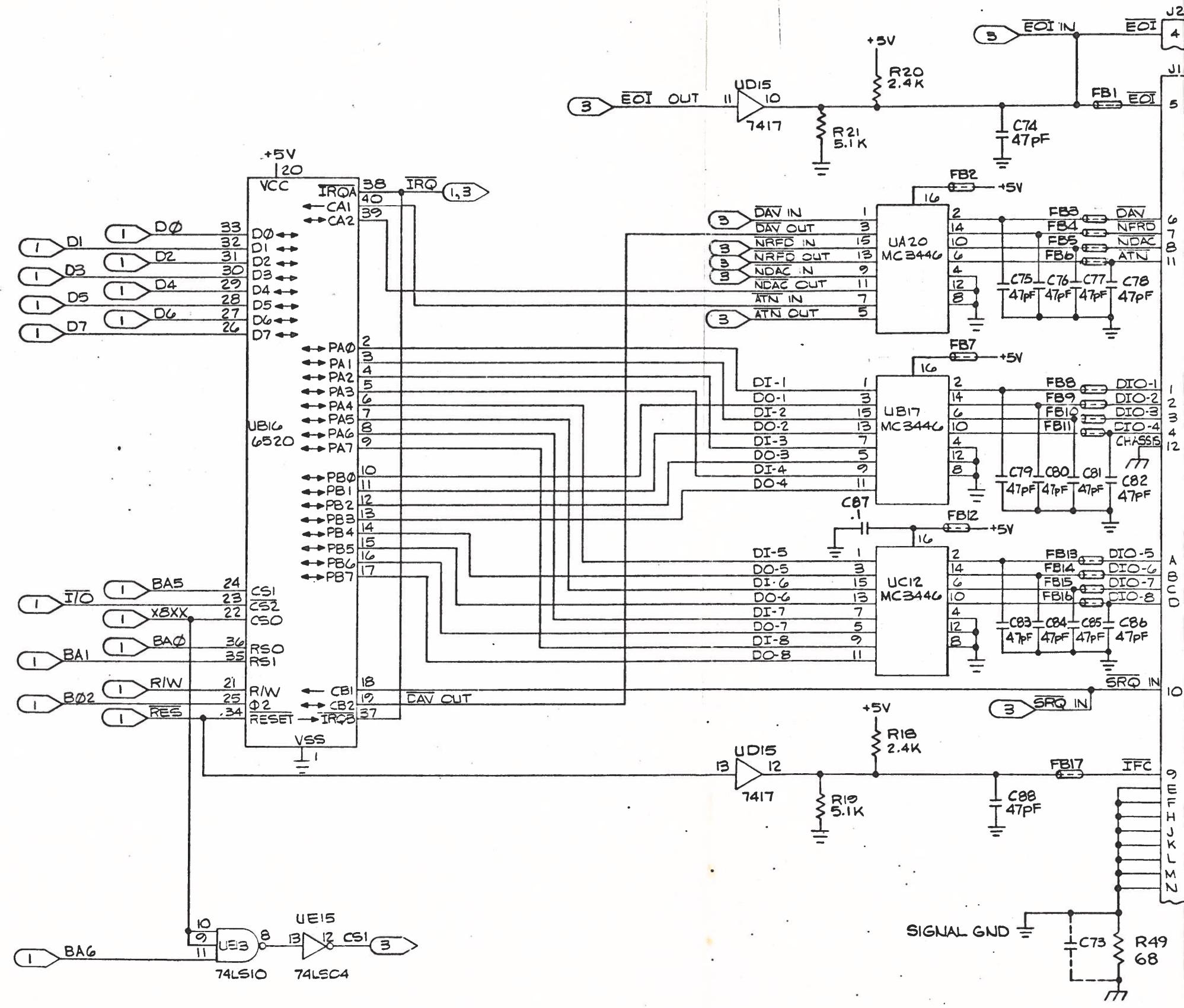
REFER TO ASSEMBLY DRAWINGS
NUMBER 8032C9C.

NOTES-UNLESS OTHERWISE SPECIFIED:

CPU & MEMORY EXPANSION

UNLESS OTHERWISE SPECIFIED		DRAWN BY C. CALE	DATE 1-31	commodore	
TOLERANCES ON DECIMALS		CHKC	ENGR	LOGIC DIAGRAM UNIVERSAL DYNAMIC PET	
X	X	XXX	<i>Jan 1987</i>		
2	2	2	APPR		
MATERIAL		USED ON	NEXT ASSY	SIZE	REV
		PET	8032	8032087	A
FINISH:		8032	8032089	SCALE NONE	1 OF

LTR	ZONE	DESCRIPTION	DATE	APPROVED
SEE SHEET 1				

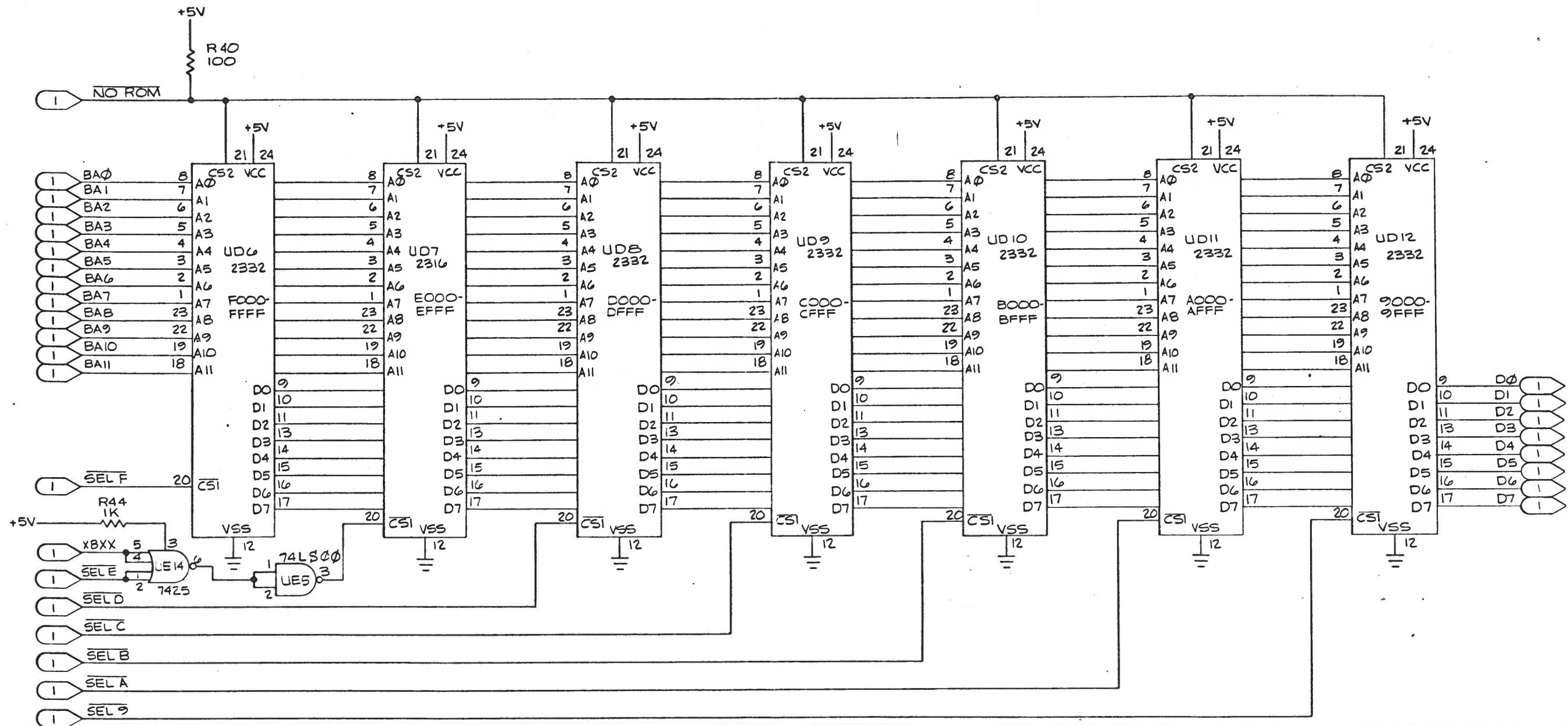


unless otherwise specified		drawn by	date
tolerances on		chk	
decimals		engr	
material		appd	
finish		used on	next assy
size		rev	
d 8032087		a	
scale none		sheet 2 of 11	

commodore

LOGIC DIAGRAM
UNIVERSAL
DYNAMIC PET

LTR	ZONE	DESCRIPTION	DATE	APPROVED
SEE SHEET 1				



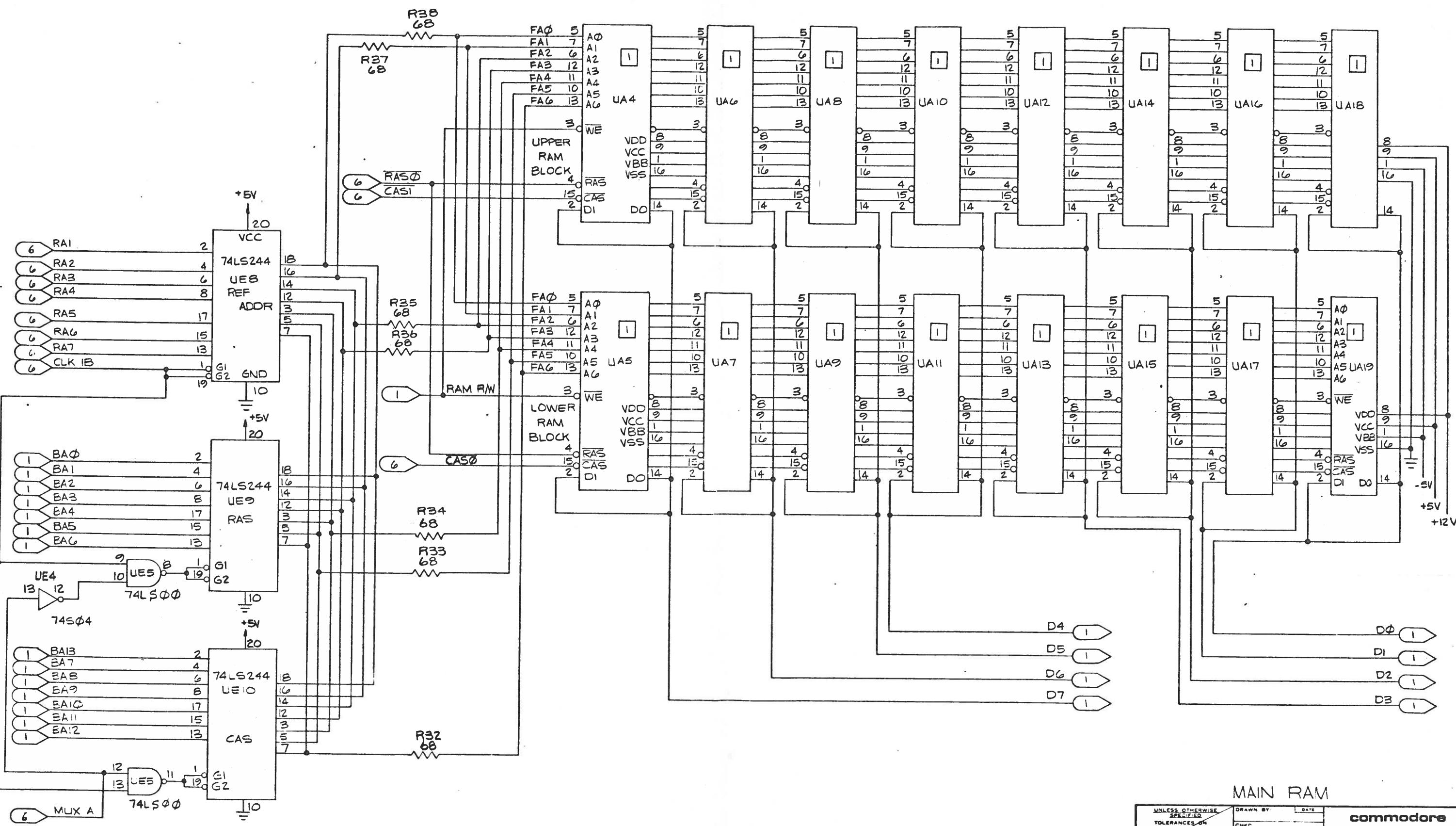
ROMS

UNLESS OTHERWISE SPECIFIED		DRAWN BY	DATE
TOLERANCES ON DECIMALS		CHKD	
.1 .2 .3 .4 .5 .6 .7 .8 .9		ENGR	
.1 .2 .3 .4 .5 .6 .7 .8 .9		APPR	
MATERIAL:		USED ON	NEXT ASSY
FINISH:			
SIZE	D 3032087	REV	A
SCALE	1:1	SHEET	4 OF

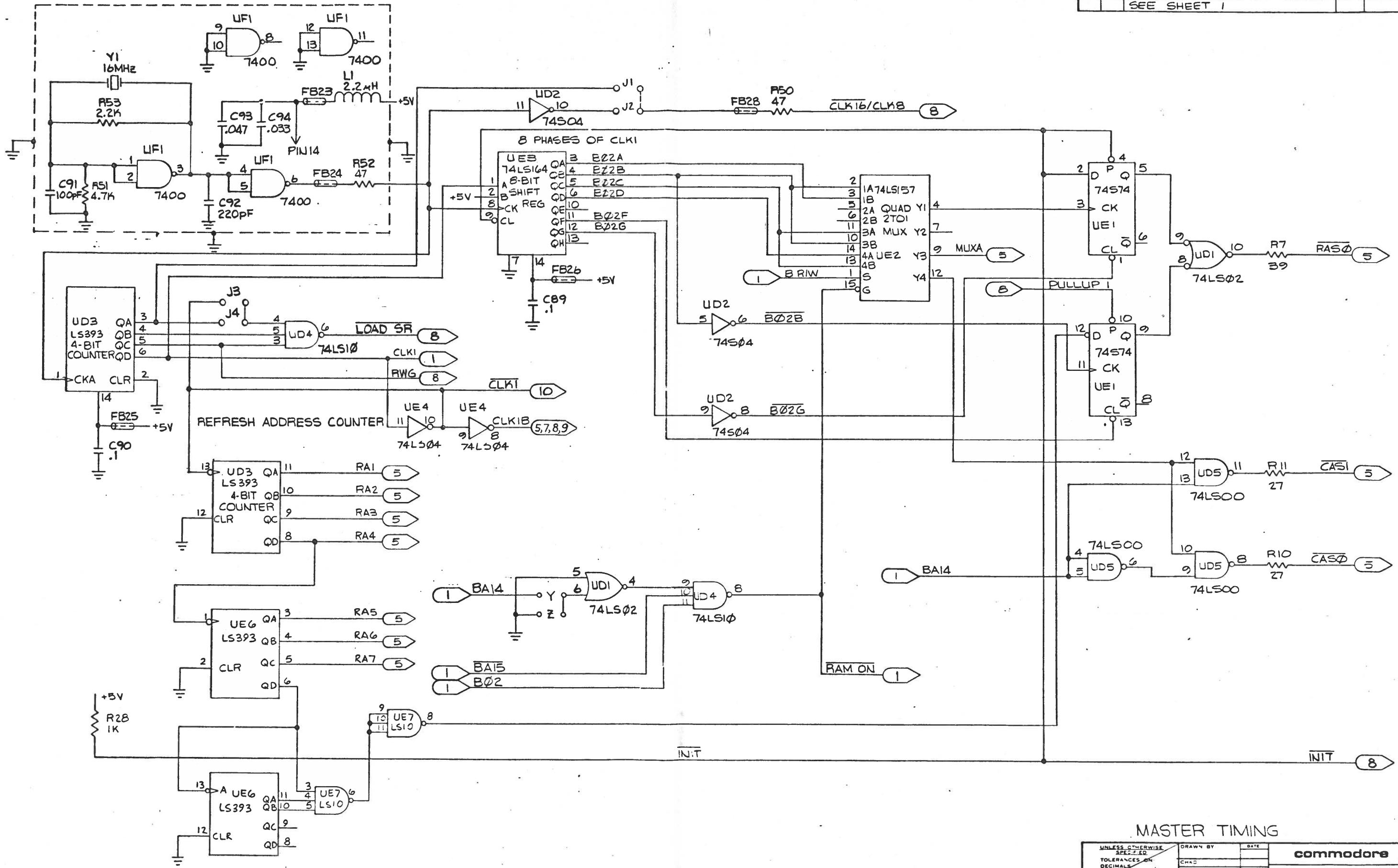
commodore

LOGIC DIAGRAM
UNIVERSAL
DYNAMIC PET

REVISIONS		DRAWN BY		DATE			
LTR	ZONE	SPECIFIED		APPROVED			
		SEE SHEET 1					



REVISIONS				
LTR	ZONE	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1		



MASTER TIMING

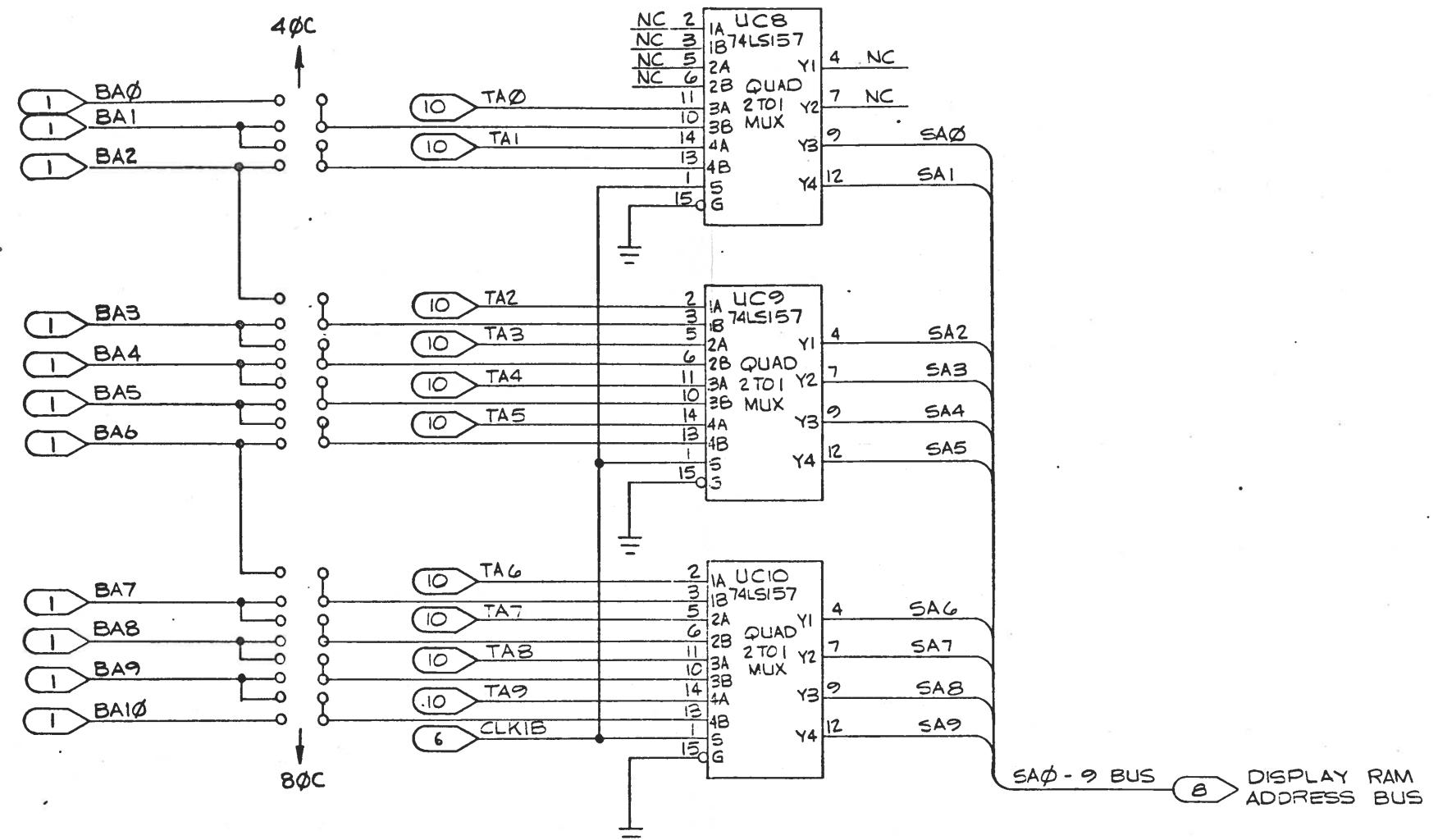
UNLESS OTHERWISE SPECIFIED		DRAWN BY	DATE
TOLERANCES ON DECIMALS		CHAD	
X	XX	XXX	<3
±	±	±	±
MATERIAL		USED ON	NEXT ASSY
FINISH:			

commodore

LOGIC DIAGRAM
UNIVERSAL
DYNAMIC PET

SIZE	REV A	
D	8032087	
SCALE	ONE	SHEET 6 OF 11

LTR	ZONE	DESCRIPTION	DATE	APPROVED
SEE SHEET 1				



DISPLAY ADDRESS MUX

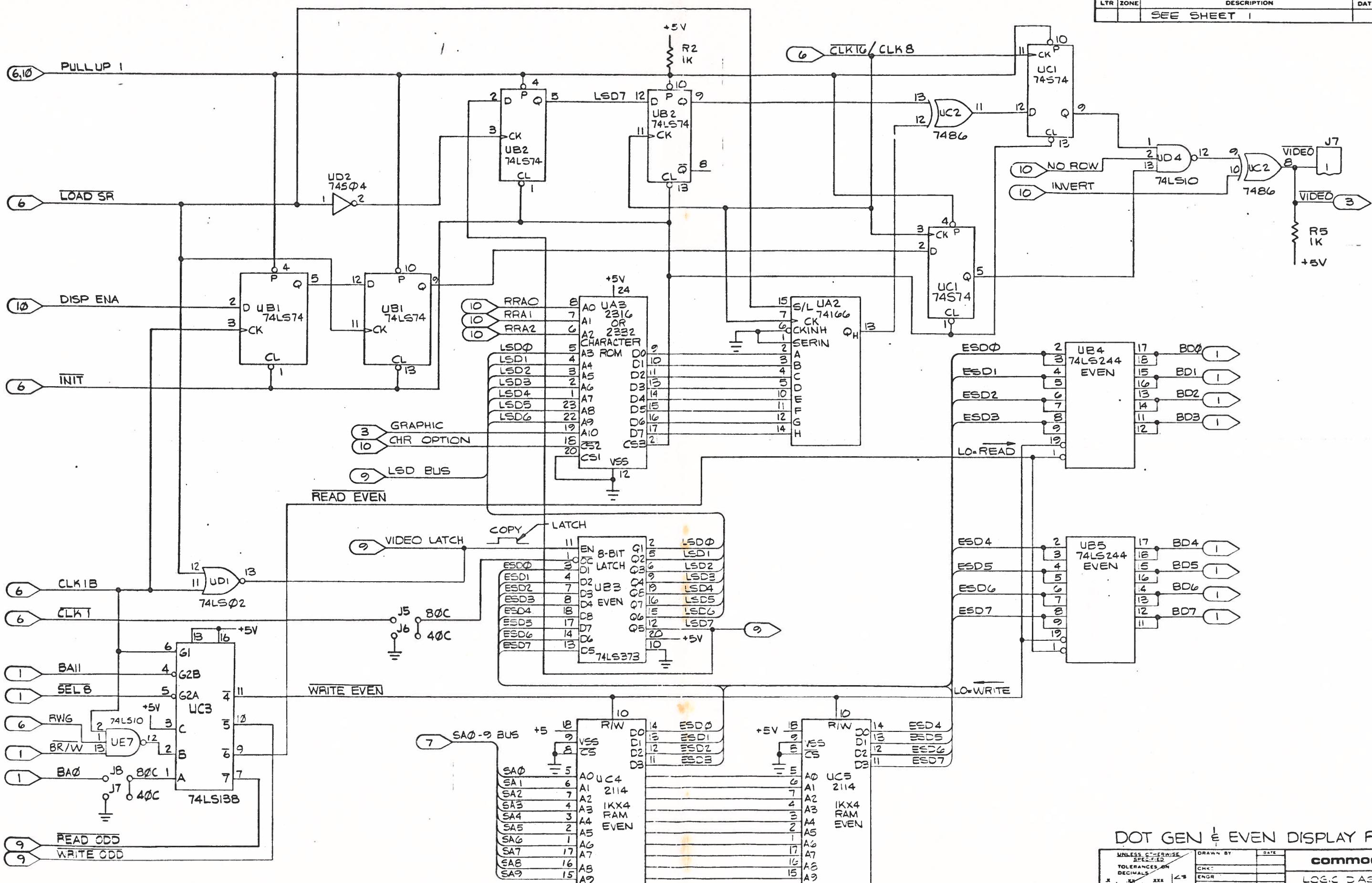
UNLESS OTHERWISE SPECIFIED	DRAWN BY	DATE
TOLERANCES IN DECIMALS	CHKD	ENGR
X XXX XXX	APPR	
Z Z Z	MATERIAL	USED ON
FINISH		NEXT ASSY

commodore

LOGIC DIAGRAM
UNIVERSAL
DYNAMIC PET

SIZE D 8032087 REV A

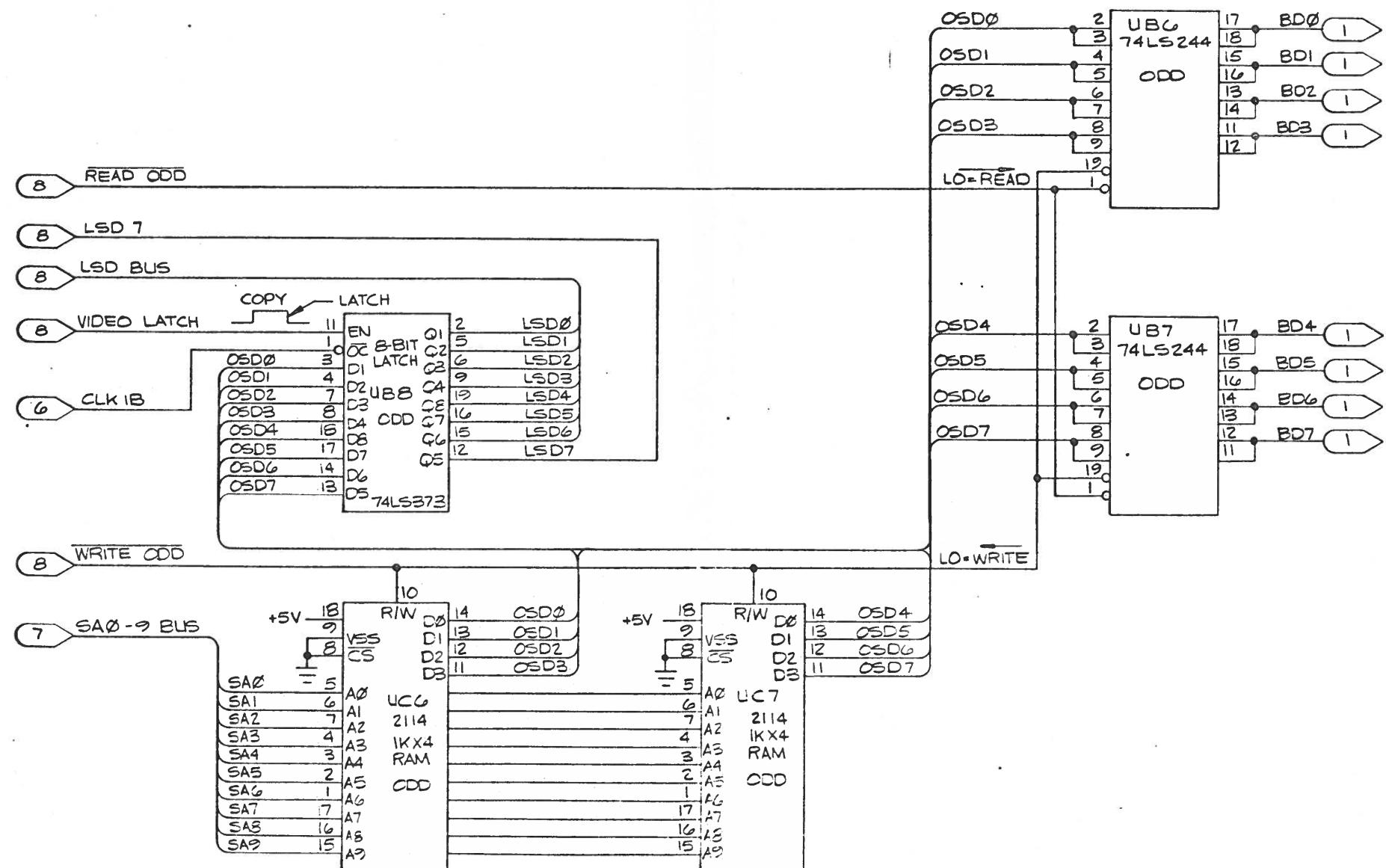
SCALE NONE SHEET 7 OF 11



DOT GEN & EVEN DISPLAY RAMS

UNLESS OTHERWISE SPECIFIED		DRAWN BY	DATE	commodore	
TOLERANCES ON DECIMALS		CHK:		LOGIC DYNAMICS UNIVERSAL DYNAMIC PET	
X	±	XXX	±	APPR.	
±	±	±	±		
MATERIAL		USED ON	NEXT ASSY.	REV	
FINISH:				D 8032087 A	
				SCALE 1:1	SHEET 8 OF 11

LTR	ZONE	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1		



ODD DISPLAY RAMS

UNLESS OTHERWISE SPECIFIED	DRAWN BY	DATE
TOLERANCES ON DECIMALS	CHD	
X . X X . X X X . X X X	ENGR	
	APPR	
MATERIAL	USED ON	NEXT ASSY
FINISH		

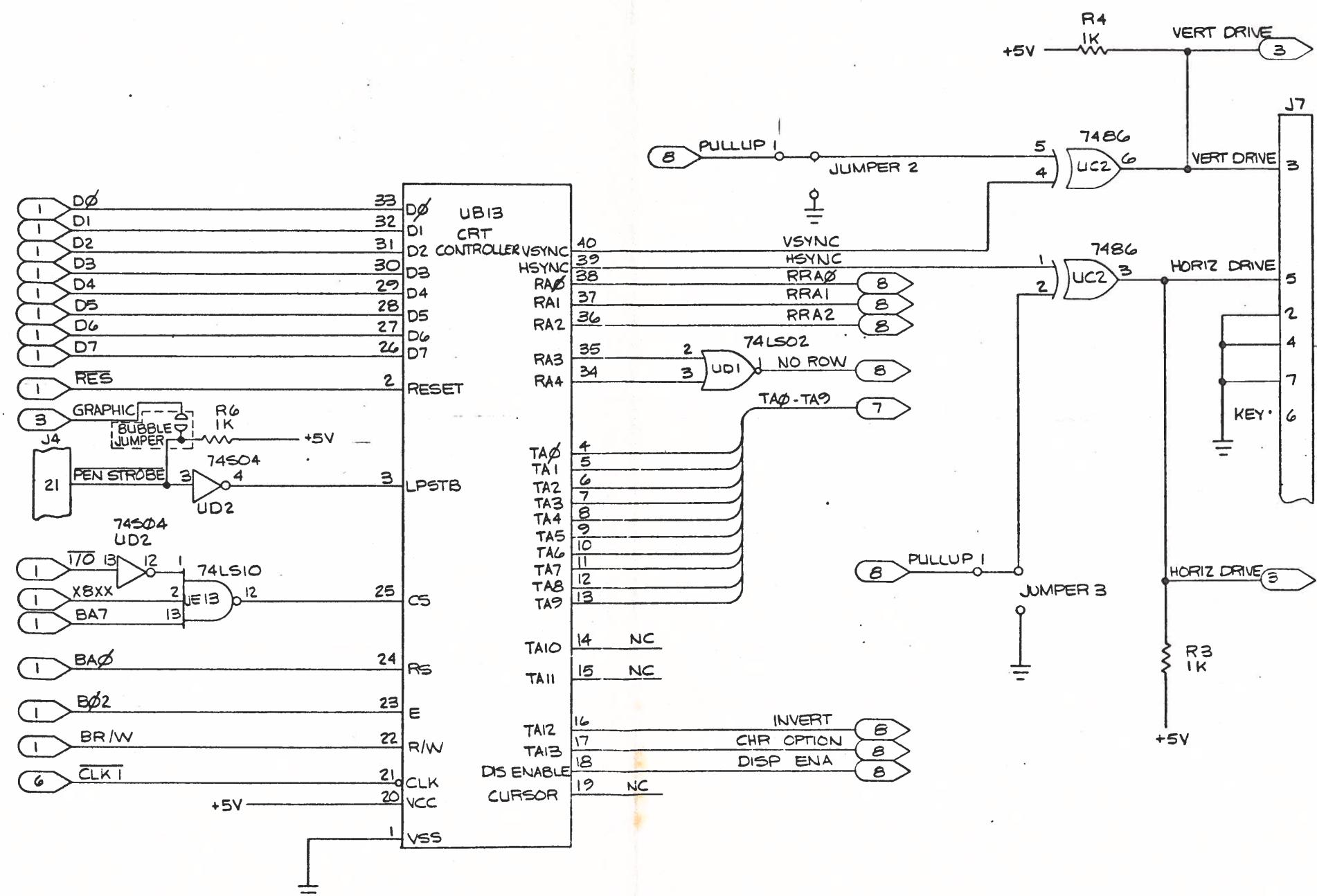
commodore

LOGIC DIAGRAM
UNIVERSAL
DYNAMIC PET

SIZE D 8032087 A

SCALE NONE SHEET 1 OF 1

LTR	ZONE	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1		



CRTC AND SYNC BUFFERS

UNLESS OTHERWISE SPECIFIED	DRAWN BY	DATE
TOLERANCES ON DECIMALS	CHKD	
X XXX	ENGR	
S S	APPR	
MATERIAL	USED ON	NEXT ASSY
FINISH		

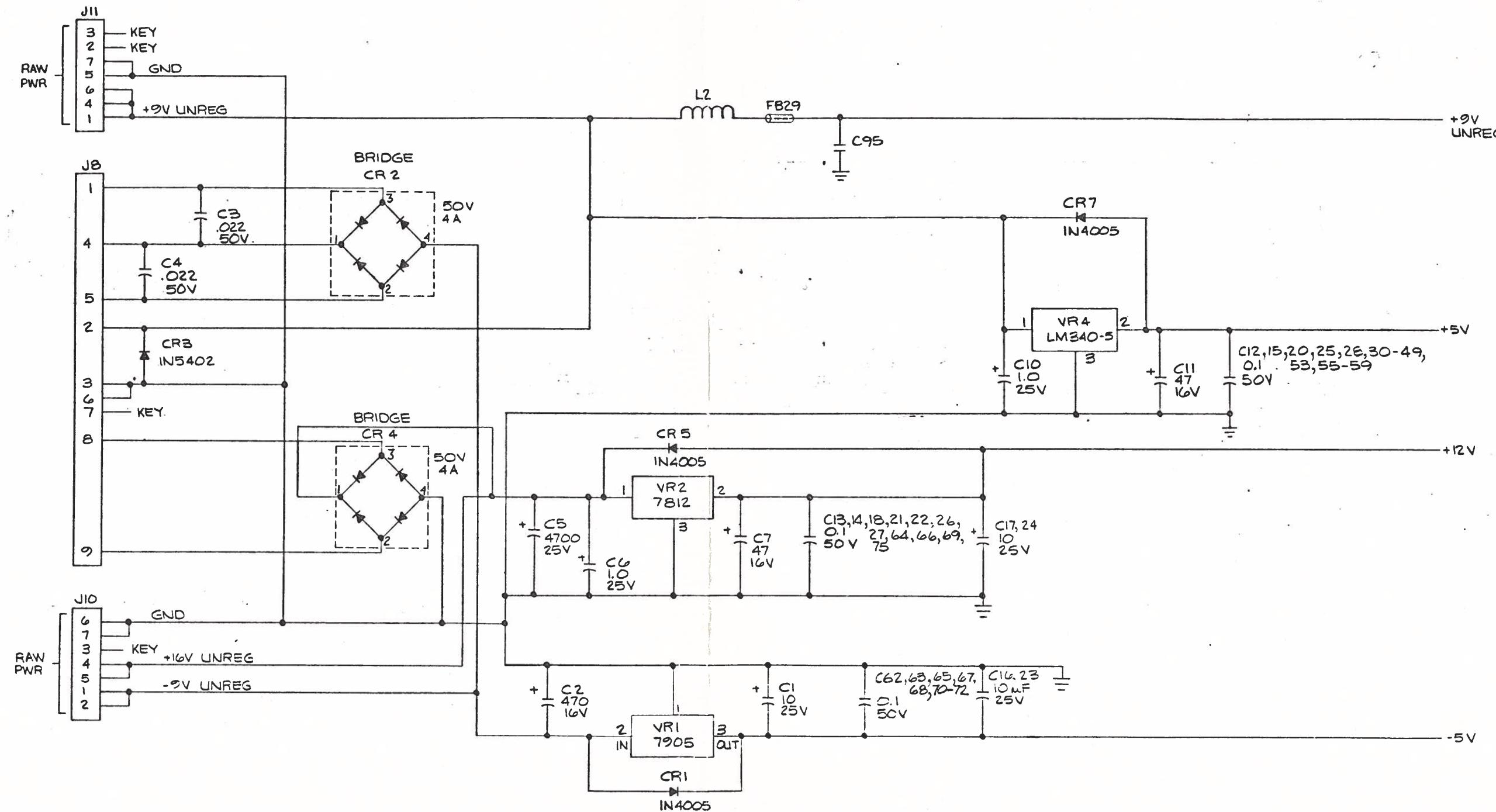
commodore

LOGIC DIAGRAM
UNIVERSAL
DYNAMIC PET

SIZE D 8032087 REV A

SCALE 1:1 SHEET 1 OF

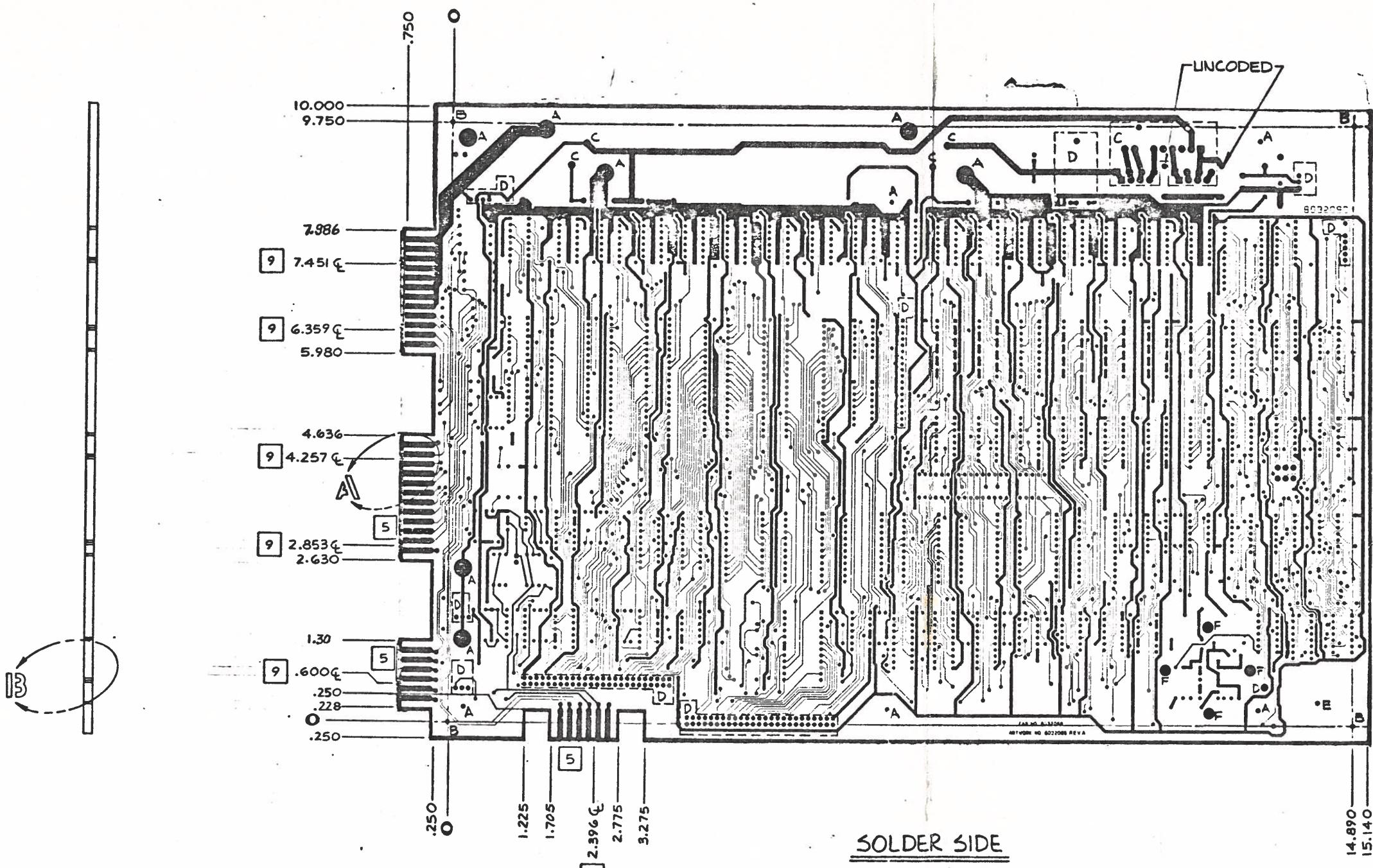
REVISIONS				
LTR	ZONE	DESCRIPTION	DATE	APPROVED
		SEE SHEET 1		



VOLTAGE REGULATOR

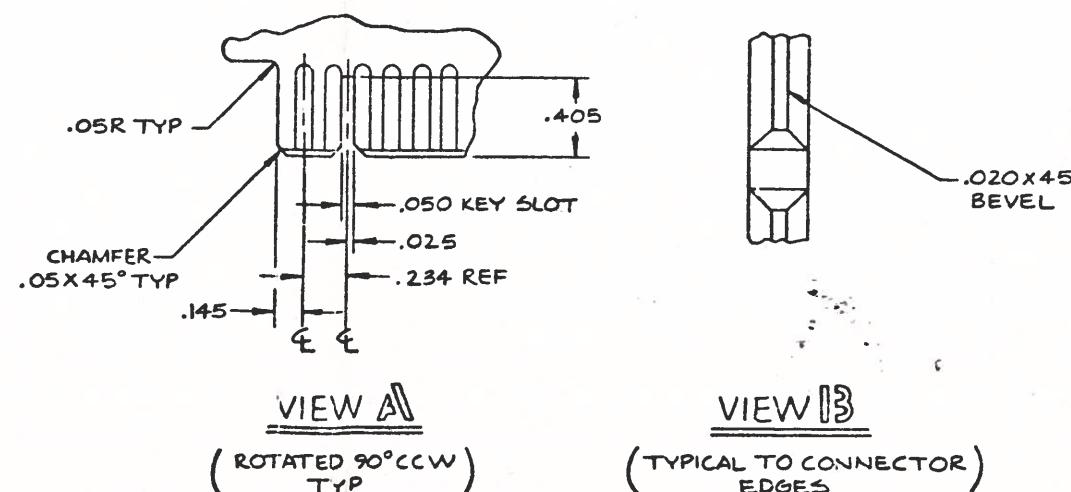
UNLESS OTHERWISE SPECIFIED TOLERANCES ON DECIMALS 	DRAWN BY	DATE	commodore LOGIC DIAGRAM UNIVERSAL DYNAMIC PET
	C-101		
	E-101		
	A-101		
MATERIAL	USED ON	NEXT ASSY	SIZE D 8032037 A SCALE <input checked="" type="checkbox"/> NONE <input type="checkbox"/> SHEET <input type="checkbox"/> OF <input type="checkbox"/>
FINISH:			

REVISIONS			
LTR	ZONE	DESCRIPTION	DATE APPROVED
A		PRODUCTION RELEASE	6/2/81 /Pshen



SOLDER SIDE

- II TOOLING HOLES TO BE NON-PLATED THRU AND NOT DRILLED AS A SECONDARY OPERATION.
 - 10. SOLDERMASK SHALL BE .010 MAX GREATER IN DIA THAN PAD DIA.
 - 9 FOR SLOT DIMENSIONS, SEE VIEW A.
 - 8 HOLE TOLERANCES APPLY AFTER PLATING.
 - 7. SILKSCREEN COMPONENT SIDE USING 8032086 ARTWORK PROVIDED PER COMMODORE SPEC NO. 320423 SECT. 4.4.5.
 - 6. SOLDERMASK BOTH SIDES.
 - 5 CONNECTORS NOT TO BE GOLD PLATED.
 - 4. CONNECTOR FINGERS PLATED .0001 THICK LOW STRESS NICKEL UNDER GOLD. GOLD PLATE TO BE .000020 THICK.
 - 3. PLATED THRU HOLES: PLATING IN HOLES TO BE .001 MIN.
 - 2. SOLDER PLATE TO BE 60% TIN, 40% LEAD $\pm 10\%$, SOLDER PLATING TO BE .00025 THICK. COPPER SURFACE TO BE REFLOWED FRONT AND BACK.
 - 1 MATERIAL: .062 THICK -1 OZ COPPER-CLAD EPOXY FR-4 GRADE OR EQUIV.
- NOTES: UNLESS OTHERWISE SPECIFIED:



HOLE SCHEDULE 8			
CODE	HOLE SIZE	QTY	HOLE TYPE
A	.156 $\pm .005$	12	PLATED THRU
B	.094 $\pm .002$	4	NON-PLATED II
C	.070 $\pm .003$	30	PLATED THRU
D	.047 $\pm .002$	146	PLATED THRU
E	.850 $\pm .005$	1	NON-PLATED
UNCODED	.041 $\pm .002$	A/R	PLATED THRU
F	.093 $\pm .003$	4	PLATED THRU

-01 SHOWN

UNLESS OTHERWISE SPECIFIED	DRAWN BY	DATE
TOLERANCES ON DECIMALS	P.C. 100	7/4/81
X XX XXX L/S	CHKD	
Z = .005	ENGR	
MATERIAL 1	APPR	
FINISH	USED ON	NEXT ASSY
	8032	8032090
SEE NOTES	REV A	
SIZE D	8032088	
SCALE 1/1	SHEET 1	OF 1

commodore
PCB FABRICATION-UNIVERSIAL DYNAMIC PET

PART NO.	DESCRIPTION	
8032090-01	UNIV.DYNAMIC PET	8032-60Hz
- 02		8032-50Hz
- 03		4032-60Hz
- 04		4032-50Hz
↓ - 05	↓	4016 - 60Hz
8032090-06	UNIV.DYNAMIC PET	4016 - 50Hz

REVISIONS		
LTR	ZONE	DESCRIPTION
A		PRODUCTION RELEASE

6/23/81 JLG

- 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 EI TO SILVER CONTACT ON MT1, ITEM 73; TAKE CARE TO ALLOW NO MOVE THAN ONE SECOND DURATION FOR APPLICATION OF HEAT DURING SOLDERING.

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

2 IDENTIFY WITH APPLICABLE DASH NO.

1. SHEET 6 OF 6 SIZE D
ASSY DWG

NOTES: UNLESS OTHERWISE SPECIFIED:

commodore	TITLE: PCB ASSY - UNIV. DYNAMIC PET	DRAWN BY: JLG	DATE: 3-18-81	ENGR: 111	APPR: 111	SIZE: 111	DRAWING NUMBER: 8032090
		CHKD JLG	5-17-81				B SHEET 1 OF 6

QUANTITY REQD PER PART / DASH NO.			ITEM	S	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES	
-06	-05	-04	-13	-02	-01					
1	1	1	1	1	1	1 D 8032088-01	FABRICATION-UNIV. DYNAMIC PET			
REF	REF	REF	REF	REF	2	2 D 8032087-01	LOGIC DIAGRAM-UNIV. DYNAMIC PET			
					3					
3	3	3	3	3	4	3 B 901521-01	IC, 74LS00	UD5,UE5,UE11		
3	3	3	3	3	5	3 B 901521-24	, 74LS10	UD4,UE7,UE13		
1	1	1	1	1	6	1 B 901522-20	, 7425	UE14		
1	1	1	1	1	7	1 B 901521-02	, 74LS04	UE15		
1	1	1	1	1	8	1 B 901523-01	, LM555	UD16		
1	1	1	1	1	9	1 B 901522-01	, 7417	UD15		
1	1	1	1	1	10	1 B 901435-01	, 6502	UB14		
1	1	1	1	1	11	1 B 901479-01	, CRT CONTROLLER	UB13		
1	1	1	1	1	12	1 B 901522-13	, 74154	UE12		
2	2	2	2	2	13	2 B 901436-01	, 6520	UB12,UB16		
3	3	3	3	3	14	3 B 901524-01	, MC3446	UA20,UB17,UC12		
1	1	1	1	1	15	1 B 901437-01	, 6522	UB15		
1	1	1	1	1	16	1 B 901521-09	, 74LS145	UC11		
2	2	2	2	2	17	2 B 901521-40	, 74LS393	UD3,UE6		
1	1	1	1	1	18	1 B 901521-21	, 74LS02	UD1		
2	2	2	2	2	19	2 B 901525-09	. 74S74	.UC1,UE1		
2	2	2	2	2	20	2 B 901525-01	, 74S04	UD2,UE4		
2	2	2	2	2	21	2 B 901521-06	, 74LS74	UB2,UB1		
1	1	1	1	1	22	1 B 901522-28	, 74166	UA2		
1	1	1	1	1	23	1 B 901447-10	.2316	UA3		
1	1	1	1	1	24	1 B 901521-32	, 74LS86	UC2	SEE ITEM 34 FOR SUBSTITUTION	
1	1	1	1	1	25	1 B 901521-28	, 74LS164	UE3	SEE ITEM 29 FOR SUBSTITUTION	
1	1	1	1	1	26	1 B 901521-16	, 74LS138	UC3		
4	4	4	4	4	27	E 901521-11	, 74LS157	UC8-UC10,UE2	SEE ITEM 28 FOR SUBSTITUTION	
S	S	S	S	S	28	B 901522-23	, 74157	UC8-UC10,UE2	SUBSTITUTION FOR ITEM 27	
S	S	S	S	S	29	B 901522-27	, 74164	UE3	SUBSTITUTION FOR ITEM 25	
1	1	1	1	1	30	E 901465-22	, 2332	UD6		
1	1	1	1	1	31	B 901465-21	, 2332	UD8		
1	1	1	1	1	32	B 901465-20	, 2332	UD9		
1	1	1	1	1	33	B 901465-25	, 2332	UD10		
S	S	S	S	S	34	B 901522-18	IC , 7486	UC2	SUBSTITUTION FOR ITEM 24	
1	1	1	1	1	35	B 901522-04	IC , 7400	UF1		
1	1	1	1	1	36	E 900110-07	CAP. LOW LEAK. ELECT. 1MF 50V	C10		
56	56	56	56	56	37	B 900461-28	CAP. CERAMIC ANAL. .1MF 50V	C12-15,I3,20-22,25-26,30-50,55,55-59,62-72,75,87,39,40,95,96		

QUANTITY REQD PER PART / DASH NO.				ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
				-06-05-04-03-02-01						
3	3	3	3	3	3	38B	900461-16	CAP, CERAMIC AXIAL .01uF 50V	C52,60,61	
2	2	2	2	2	2	39B	900461-20	, CERAMIC AXIAL .022uF 50V	C3,4	
1	1	1	1	1	1	40B	900100-45	, ELECTROLYTIC 4700uF 25V	C5	
1	1	1	1	1	1	41B	900100-44	, ELECTROLYTIC 470uF 16V	C2	
5	5	5	5	5	5	42B	900109-03	, LOW LEAK.ELECT. 10uF 25V	C1,16,17,23,24	SEE ITEM 43 FOR SUBSTITUTION
S	S	S	S	S	S	43B	900402-15	, TANTALUM 10uF 25V	C1,16,17,23,24	SUBSTITUTION FOR ITEM 43
2	2	2	2	2	2	44B	900402-13	, TANTALUM 1uF 35V	C6, ,51	
2	2	2	2	2	2	45B	900101-37	, ELECTROLYTIC 47uF 16V	C7,11	
1	1	1	1	1	1	46B	900463-08	↓, CERAMIC AXIAL 220PF	C92	
14	14	14	14	14	14	47B	900462-29	CAP, CERAMIC AXIAL 47PF	C74-C86, C88	
						48				
2	2	2	2	2	2	49B	901550-84	RES, CARBON 1/4W 5%	1M R24,25	
3	3	3	3	3	3	50B	901550-58		470 ₂ R13,16,17	
9	9	9	9	9	9	51B	901550-94		68 ₂ R32-38,46,49	
2	2	2	2	2	2	52B	901550-03		5.1K R19,21	
2	2	2	2	2	2	53B	901550-85		2.4K R18,20	
1	1	1	1	1	1	54B	901550-64		10 ₂ R8	
2	2	2	2	2	2	55B	901550-20		10K R23,27	
2	2	2	2	2	2	56B	901550-69		1.5K R47,48	
1	1	1	1	1	1	57B	901550-49		100 ₂ R40	
1	1	1	1	1	1	58B	901550-19		4.7K R51	
1	1	1	1	1	1	59B	901550-18		2.2K R53	
2	2	2	2	2	2	60B	901550-56		47 ₂ R50,52	
2	2	2	2	2	2	61B	901550-90		27 ₂ R10,11	
						62B				
						63B				
1	1	1	1	1	1	64B	901550-93		39 ₂ R7	
16	16	16	16	16	16	65B	901550-01	↓, CARBON 1/4W 5%	1K R1-6,12,15,22,26,28,39,42-45.	
1	1	1	1	1	1	66B	901550-02	↓, CARBON 1/4W 5%	3.3K R14	
1	1	1	1	1	1	67B	902419-66	RES, NETWORK, DIP 14 PIN	10K U511	
						68				
2	2	2	2	2	2	69B	902653-01	TRANSISTOR. TIP 29	Q1, Q2	
1	1	1	1	1	1	70B	902550-01	TRANSISTOR. PACK Q2T2222	UE16	
						71				
						72				
1	1	1	1	1	1	73B	903700-01	TRANSDUCER-PIEZO ACOUSTIC MTI		
						74				

commodore

TITLE:
PCB ASSY-UNIV. DYNAMIC PACKDRAWN BY:
W.H.
DATE: 3-11-81
CHKD: *White* APPR: 5-17-81ENGR: DATE: SIZE: REV: SHT:
B 8032090 A 3/6

QUANTITY REQD PER
PART/DASH NO.

-06-05-04-03-02-01

ITEM	QTY	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
	75					
3 3 3 3 3 3	76	B 900750-05	DIODE, IN4005	CR1,5,7		
2 2 2 2 2 2	77	B 900757-01	, BRIDGE	4A/50V	CR2,4	SEE ITEMS 79 & 80 FOR SUBSTITUTION
1 1 1 1 1 1	78	B 900753-01	, IN5402	3A/200V	CR3	
S S S S S S	79	B 900756-01	, BRIDGE	1.5A/50V	CR4	SUBSTITUTION FOR ITEM 77 (CR4)
S S S S S S	80	B 900757-02	, BRIDGE	4A/50V	CR2,4	SUBSTITUTION FOR ITEM 77
2 2 2 2 2 2	81	B 900941-01	DIODE, ZENER	7.5V	VR5,6	
	82					
1 1 1 1 1 1	83	B 901527-03	VOLTAGE REGULATOR, 7905, -5V/1.5A	VR1		TO-220
	84					
1 1 1 1 1 1	85	B 901528-04	VOLTAGE REGULATOR, 7812, +12V/1A	VR2		TO-3
1 1 1 1 1 1	86	B 901528-01	VOLTAGE REGULATOR, LM323	VR4		
	87					
1 1 1 1 1 1	88	B 900556-02	CRYSTAL 16MHZ	Y1		
	89					
1 1 1 1 1 1	90	B 903326-07	HEADER ASSY .100 CENTER	J10		7 PIN; REMOVE PIN 3 AT ASSEMBLY
2 2 2 2 2 2	91	B 903345-25	HEADER ASSY, DUAL ROW.100 CENTER	J4,9		50 PIN
1 1 1 1 1 1	92	B 903316-09	HEADER ASSY .156 CENTER	J8		9 PIN; REMOVE PIN 7 AT ASSEMBLY
1 1 1 1 1 1	93	B 903331-07	HEADER ASSY, POLARIZED.100 CENTER	J11		7 PIN; REMOVE PIN 3 AT ASSEMBLY
1 1 1 1 1 1	94	B 903331-07	HEADER ASSY, POLARIZED.100 CENTER	J7		7 PIN; ORIENT OMITTED PIN TO PIN 6 POSITION
1 1 1 1 1 1	95	B 903331-20	HEADER ASSY, POLARIZED.100 CENTER	J5		20 PIN; ORIENT OMITTED PIN TO PIN 19 POSITION
	96					
4 4 4 4 4 4	97	B 904150-04	SOCKET, IC LOW PROFILE 24 PIN	UA3,UD7,UD11,UD12		
1 1 1 1 1 1	98	B 904150-06	SOCKET, IC LOW PROFILE 40 PIN	UB14		
	99					
2 2 2 2 2 2	100	B 901151-17	COIL, INDUCTOR	2.2uH	L1,L2	
1 1 1 1 1 1	101	B 320086-02	BUS WIRE			
	102					
4 4 4 4 4 4	103	B 906403-19	RIVET, DOME HEAD, OPEN END			
2 2 2 2 2 2	104	B 906404-04	RIVET, DOME HEAD, CLOSED END			
	105					
1 1 1 1 1 1	106	B 903780-01	#30 WIRE WRAP WIRE, RED			
19 19 20 20 20	107	B 903781-01	22 AWG BARE WIRE ON TAPE & REEL			
	108					
1 1 1 1 1 1	109	B 320268-01	HEAT SINK			
A A A A A A A A	110	B 904907-01	HEAT SINK, COMPOUND THERMAL			
	111					

commodore

TITLE:
PCB ASSY-UNIV. DYNAMIC PACKDRAWN BY:
1/1
CHKD:DATE:
3-11-81
5-11-81ENGR:
APPR:DATE:
APPR:SIZE:
B

8032090

REV:
A
SHT:
4/6

QUANTITY REQD PER PART / DASH NO.			ITEM	DS	PART NUMBER	DESCRIPTION	REF DES	BEND	NOTES
-06-05-04-03-02-01									
	/	/	111	B	901521-13	IC, 74LS244	UB4-UB7, UB9, UB10, UD13, UD14, UE8-UE10		
9999	/	/	113	B	901521-13	, 74LS244	UB4, UB5, UB9, UB10, UD13, UD14, UE8-UE10		
	22	/	114	B	901521-29	, 74LS373	UB3, UB8		
1111	/	/	115	B	901521-29	, 74LS373	UB3		
	44	/	116	B	901453-02	, 2114	UC4-UC7		
2222	/	/	117	B	901453-02	, 2114	UC4, UC5		
16161616	/	/	118	B	901470-01	, 4116	UA4-UA19		
88	/	/	119	B	901470-01	, 4116	UA5, UA7, UA9, UA11, UA13, UA15, UA17, UA19		
	1	120	B	901474-03	, 2316		UD7		
	1	121	B	901474-04	, 2316		UD7		
	1	122	B	901499-01	▼ , 2316		UD7		
1	1	123	B	901498-01	IC, 2316		UD7		
		124							
		125							
28	28	28	28	28	28	126 B 903025-01 FERRITE BEAD	FBI-26, 28, 29		
11111111	127	B	4022048-01	shield Box					
11111111	128	B	4022047-01	shield CAP					
	129								
11111111	130	B	900461-22	CAP, CERAMIC AXIAL .033μF, 50V	C94				
11111111	131	B	900461-24	CAP, CERAMIC AXIAL .047μF, 50V	C93				
11111111	132	B	900463-04	CAP, CERAMIC AXIAL 100 PF, 50V	C91				
	133								
	134								
	135								
	136								
	137								
	138								
	139								
	140								
	141								
	142								
	143								
	144								
	145								
	146								
	147								
	148								

commodore

TITLE:
PCB ASSY-UNIV. DYNAMIC PACK

DRWN BY: <i>Man</i>	DATE: 3-11-81	ENGR: 	DATE: 	SIZE: 	REV: A	SHT: 5/6
CHKD: 	APPR: 					

8032090