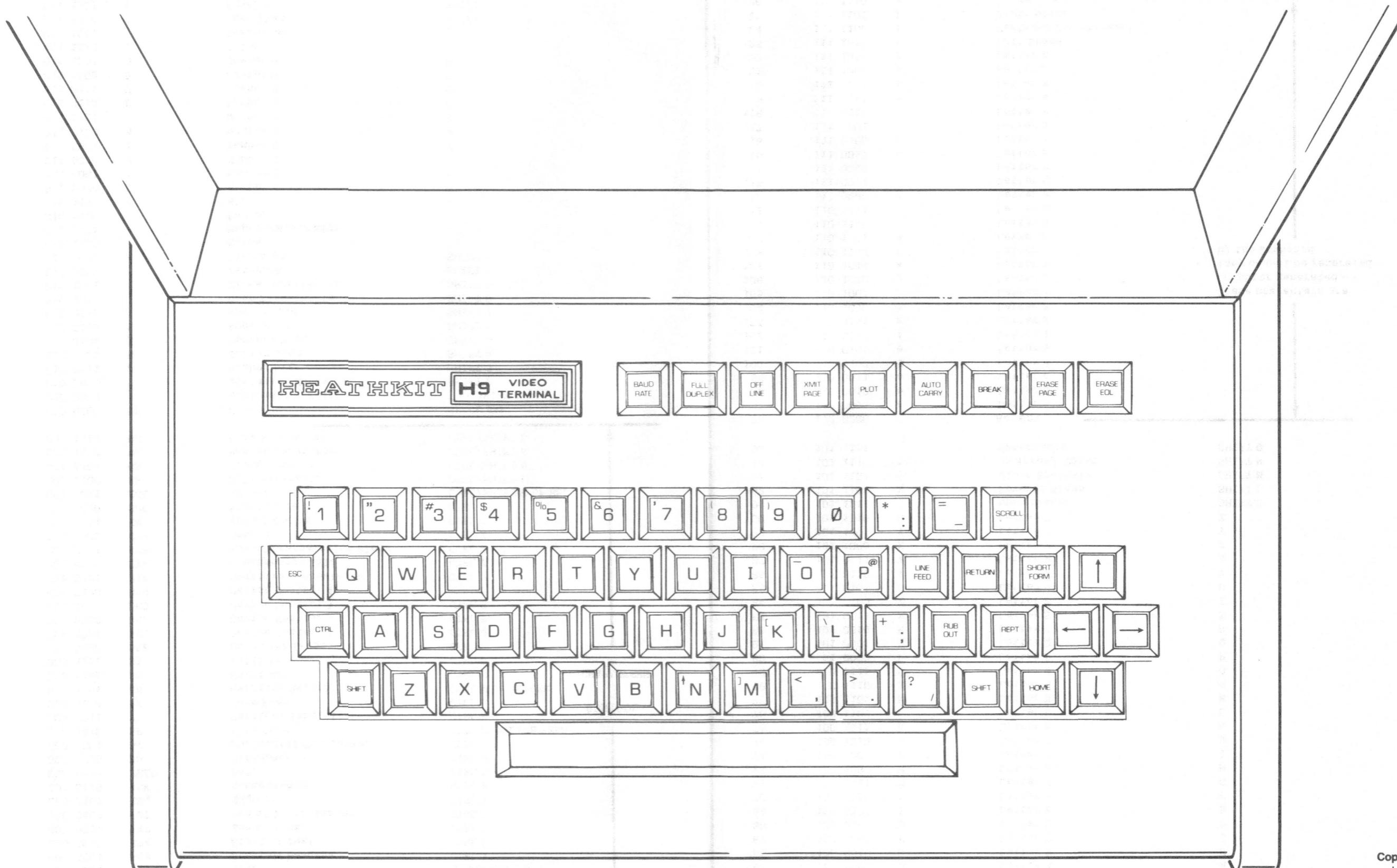


ILLUSTRATION BOOKLET

Part of 595-2017-03



PICTORIAL 1-1

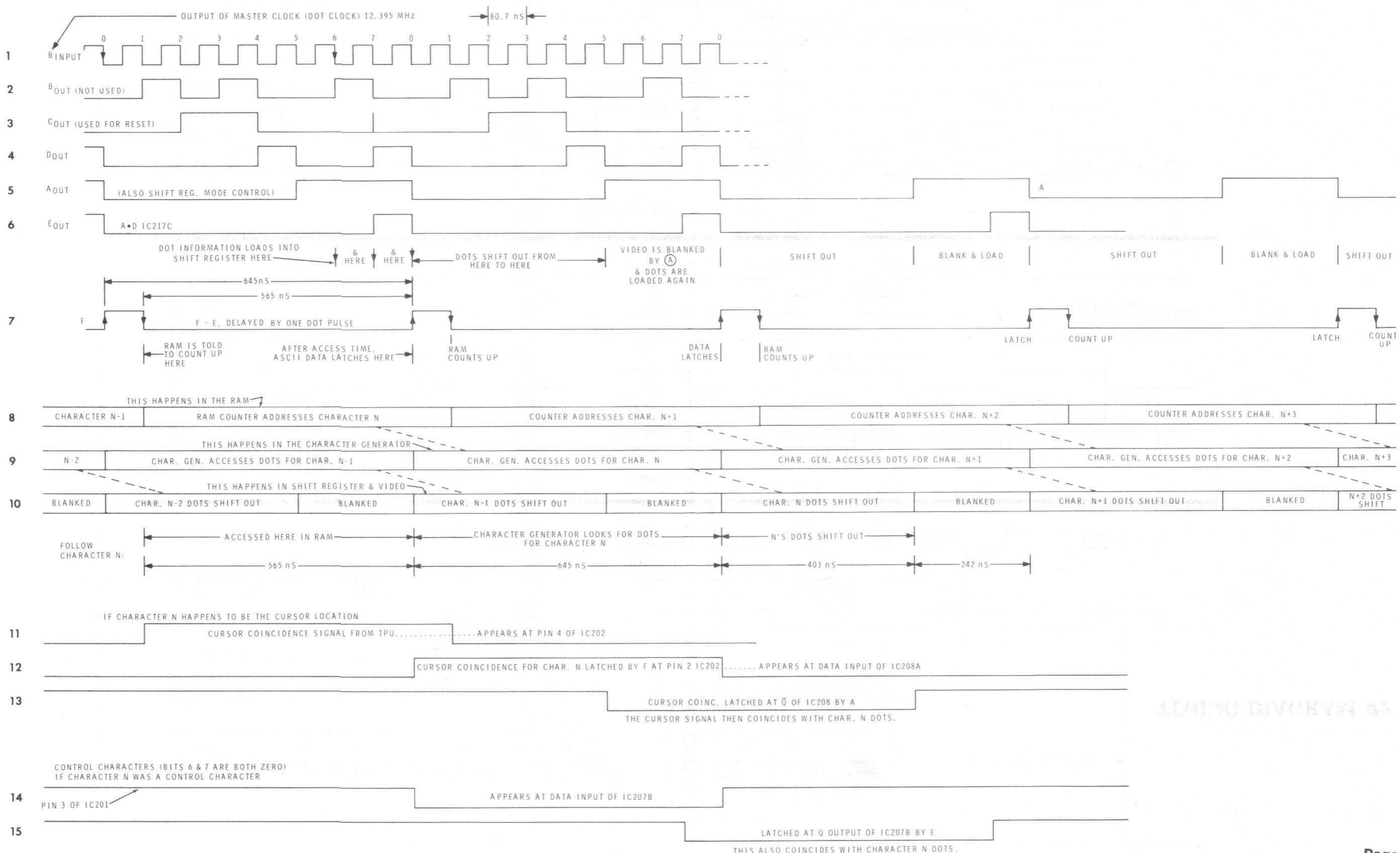
Model H9 Operation

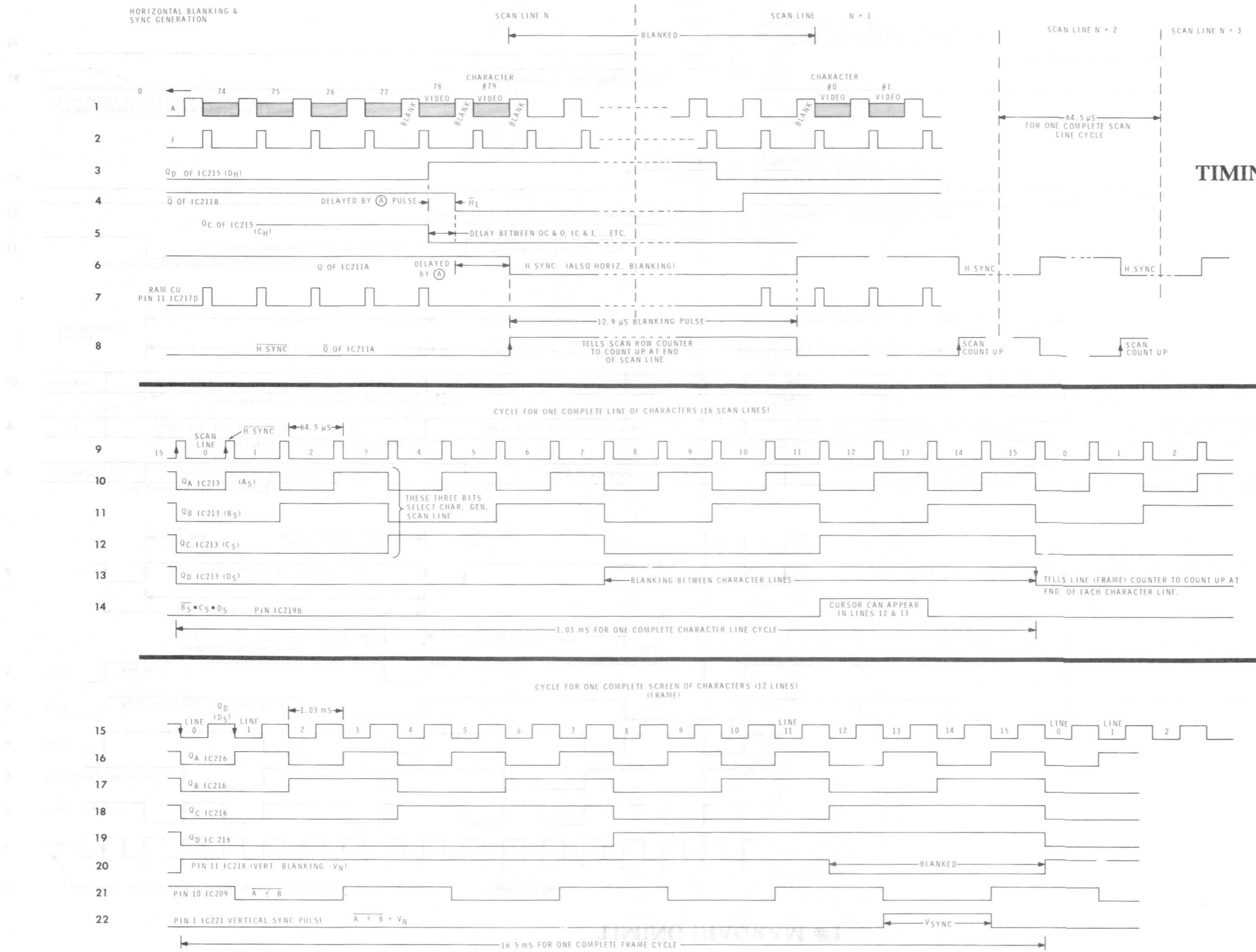
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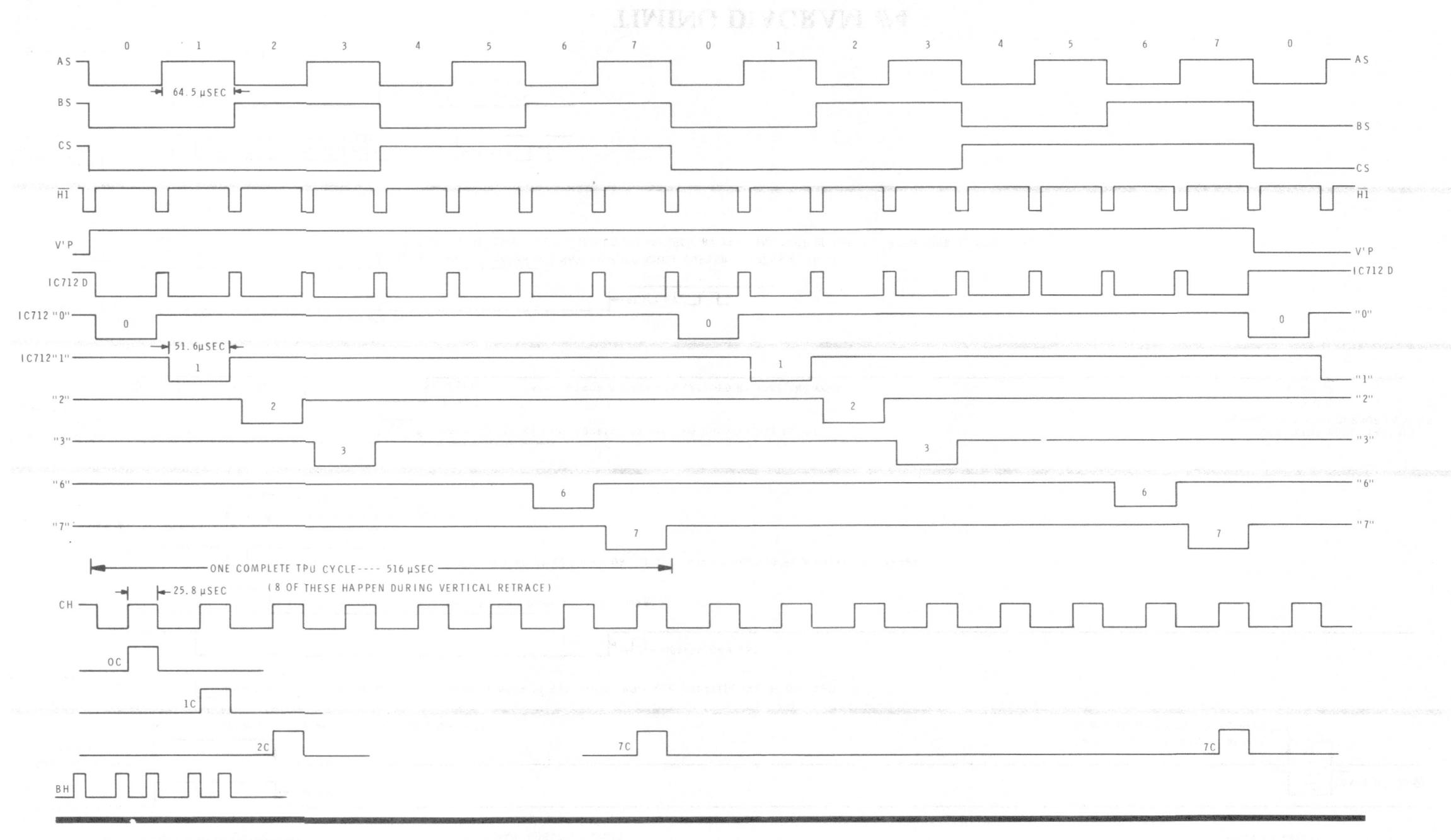
Printed in the United States of America

PLOT LINE No.	ASCII WORD	MNEMONIC	DESCRIPTION	KEY ENTRY	PLOT LINE No.	ASCII WORD	MNEMONIC	DESCRIPTION	KEY ENTRY
0	000 0000	NUL	Null	CTRL/SHIFT P	65	100 0001	A	Letter A	A
1	000 0001	SOH	Start of Heading	CTRL A	66	100 0010	B	Letter B	B
2	000 0010	STX	Start of Text	CTRL B	67	100 0011	C	Letter C	C
3	000 0011	EXT	End of Text	CTRL C	68	100 0100	D	Letter D	D
4	000 0100	EOT	End of Transmission	CTRL D	69	100 0101	E	Letter E	E
5	000 0101	EMQ	Enquiry	CTRL E	70	100 0110	F	Letter F	F
6	000 0110	ACK	Acknowledge	CTRL F	71	100 0111	G	Letter G	G
7	000 0111	BEEP	Bell	CTRL G	72	100 1000	H	Letter H	H
8	000 1000	BS	Backspace	CTRL H	73	100 1001	I	Letter I	I
9	000 1001	HT	Horizontal Tabulation	CTRL I	74	100 1010	J	Letter J	J
10	000 1010	LF	Line Feed	CTRL J or LINE FEED	75	100 1011	K	Letter K	K
11	000 1011	VT	Vertical Tabulation	CTRL K	76	100 1100	L	Letter L	L
12	000 1100	FF	Form Feed	CTRL L	77	100 1101	M	Letter M	M
13	000 1101	CR	Carriage Return	CTRL M or RETURN	78	100 1110	N	Letter N	N
14	000 1110	SO	Shift Out	CTRL N	79	100 1111	O	Letter O	O
15	000 1111	SI	Shift In	CTRL O	80	101 0000	P	Letter P	P
16	001 0000	DLE	Data Link Escape	CTRL P	81	101 0001	Q	Letter Q	Q
17	001 0001	DC1	Device Control 1	CTRL Q	82	101 0010	R	Letter R	R
18	001 0010	DC2	Device Control 2	CTRL R	83	101 0011	S	Letter S	S
19	001 0011	DC3	Device Control 3	CTRL S	84	101 0100	T	Letter T	T
20	001 0100	DC4	Device Control 4	CTRL T	85	101 0101	U	Letter U	U
21	001 0101	NAK	Negative Acknowledge	CTRL U	86	101 0110	V	Letter V	V
22	001 0110	SYN	Synchronous Idle	CTRL V	87	101 0111	W	Letter W	W
23	001 0111	ETB	End of Transmission Block	CTRL W	88	101 1000	X	Letter X	X
24	001 1000	CAN	Cancel	CTRL X	89	101 1001	Y	Letter Y	Y
25	001 1001	EM	End of Medium	CTRL Y	90	101 1010	Z	Letter Z	Z
26	001 1010	SUB	Substitute	CTRL Z	91	101 1011	[Open Brackets	SHIFT K
27	001 1011	ESC	Escape	CTRL/SHIFT K or ESC	92	101 1100	\	Reverse Slash	SHIFT L
28	001 1100	FS	File Separator	CTRL/SHIFT L	93	101 1101]	Close Brackets	SHIFT M
29	001 1101	GS	Group Separator	CTRL/SHIFT M	94	101 1110	↑	Up Arrow/ Caret	SHIFT N
30	001 1110	RS	Record Separator	CTRL/SHIFT N	95	101 1111	-	Underscore	SHIFT O
31	001 1111	US	Unit Separator	CTRL/SHIFT O	96	110 0000	,	Accent	
32	010 0000	SP	Space	SPACE BAR	97	110 0001	a	Letter a	
33	010 0001	!	Exclamation Point	! or SHIFT 1	98	110 0010	b	Letter b	
34	010 0010	"	Quotation Marks	SHIFT 2	99	110 0011	c	Letter c	
35	010 0011	#	Number Sign	SHIFT 3	100	110 0100	d	Letter d	
36	010 0100	\$	Dollar Sign	SHIFT 4	101	110 0101	e	Letter e	
37	010 0101	%	Percent Sign	SHIFT 5	102	110 0110	f	Letter f	
38	010 0110	&	Ampersand	SHIFT 6	103	110 0111	g	Letter g	
39	010 0111	'	Apostrophe	SHIFT 7	104	110 1000	h	Letter h	
40	010 1000	(Open Parenthesis	SHIFT 8	105	110 1001	i	Letter i	
41	010 1001)	Close Parenthesis	SHIFT 9	106	110 1010	j	Letter j	
42	010 1010	*	Asterisk	SHIFT :	107	110 1011	k	Letter k	
43	010 1011	+	Plus Sign	SHIFT ;	108	110 1100	l	Letter l	
44	010 1100	,	Comma	,	109	110 1101	m	Letter m	
45	010 1101	-	Hyphen/Minus Sign	-	110	110 1110	n	Letter n	
46	010 1110	.	Period	.	111	110 1111	o	Letter o	
47	010 1111	/	Slash	/	112	111 0000	p	Letter p	
48	011 0000	0	Number 0	0	113	111 0001	q	Letter q	
49	011 0001	1	Number 1	1	114	111 0010	r	Letter r	
50	011 0010	2	Number 2	2	115	111 0011	s	Letter s	
51	011 0011	3	Number 3	3	116	111 0100	t	Letter t	
52	011 0100	4	Number 4	4	117	111 0101	u	Letter u	
53	011 0101	5	Number 5	5	118	111 0110	v	Letter v	
54	011 0110	6	Number 6	6	119	111 0111	w	Letter w	
55	011 0111	7	Number 7	7	120	111 1000	x	Letter x	
56	011 1000	8	Number 8	8	121	111 1001	y	Letter y	
57	011 1001	9	Number 9	9	122	111 1010	z	Letter z	
58	011 1010	:	Colon	:	123	111 1011	{	Left Brace	
59	011 1011	;	Semicolon	;	124	111 1100		Vertical Bar (broken)	
60	011 1100	<	Less Than	SHIFT ,	125	111 1101	}	Right Brace	
61	011 1101	=	Equal Sign	SHIFT -	126	111 1110	=	Tilde	
62	011 1110	>	Greater Than	SHIFT .	127	111 1111	DEL	Delete (rub out)	RUB OUT
63	011 1111	?	Question Mark	SHIFT /					
64	100 0000	@	At Sign	SHIFT P					

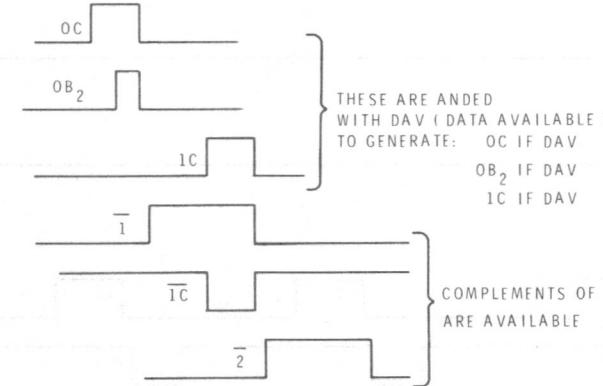
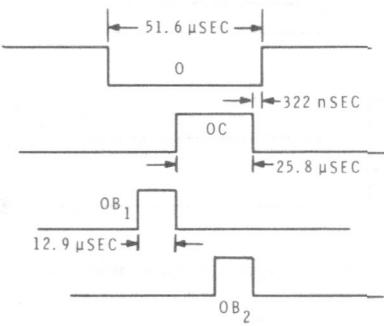
TIMING DIAGRAM #1



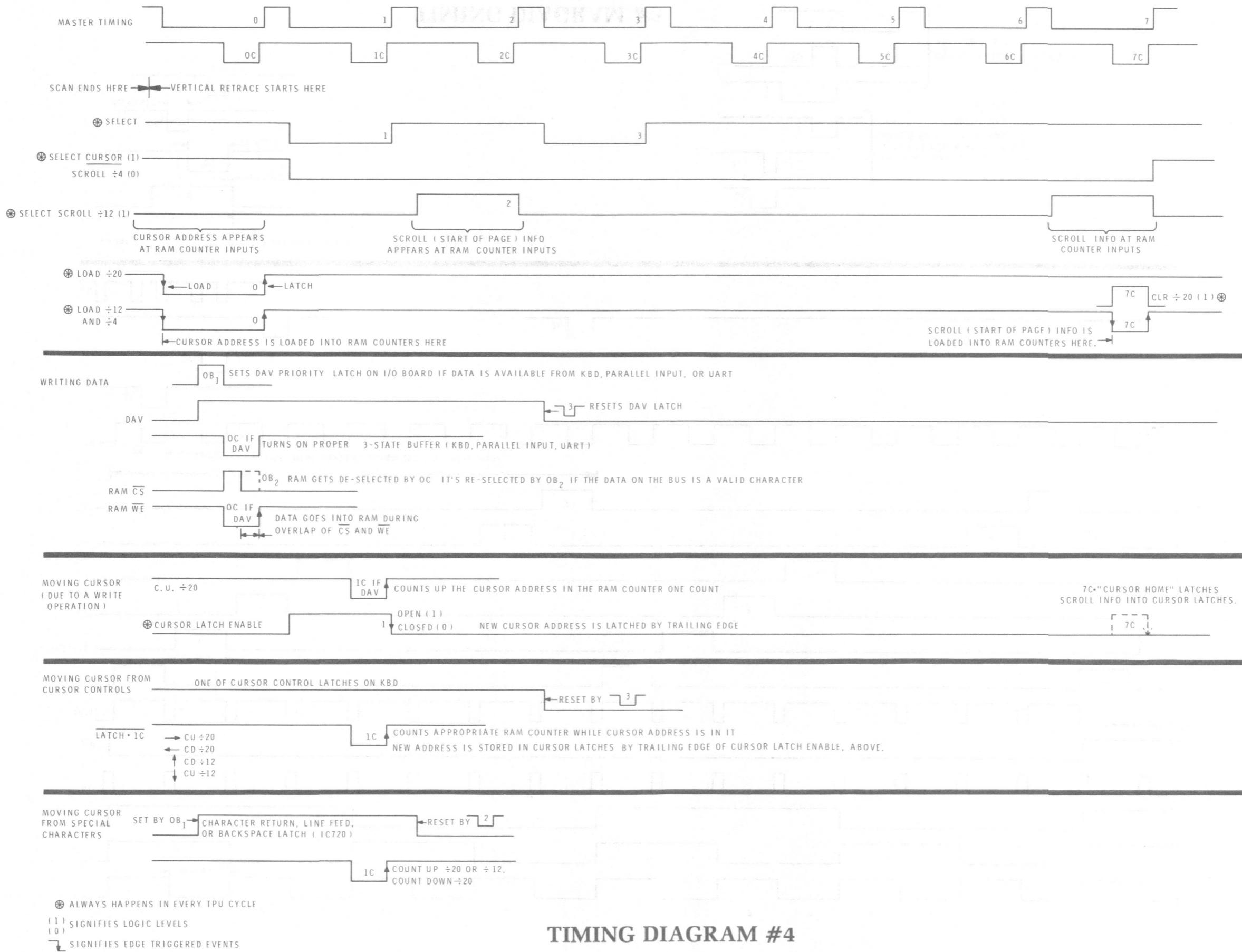




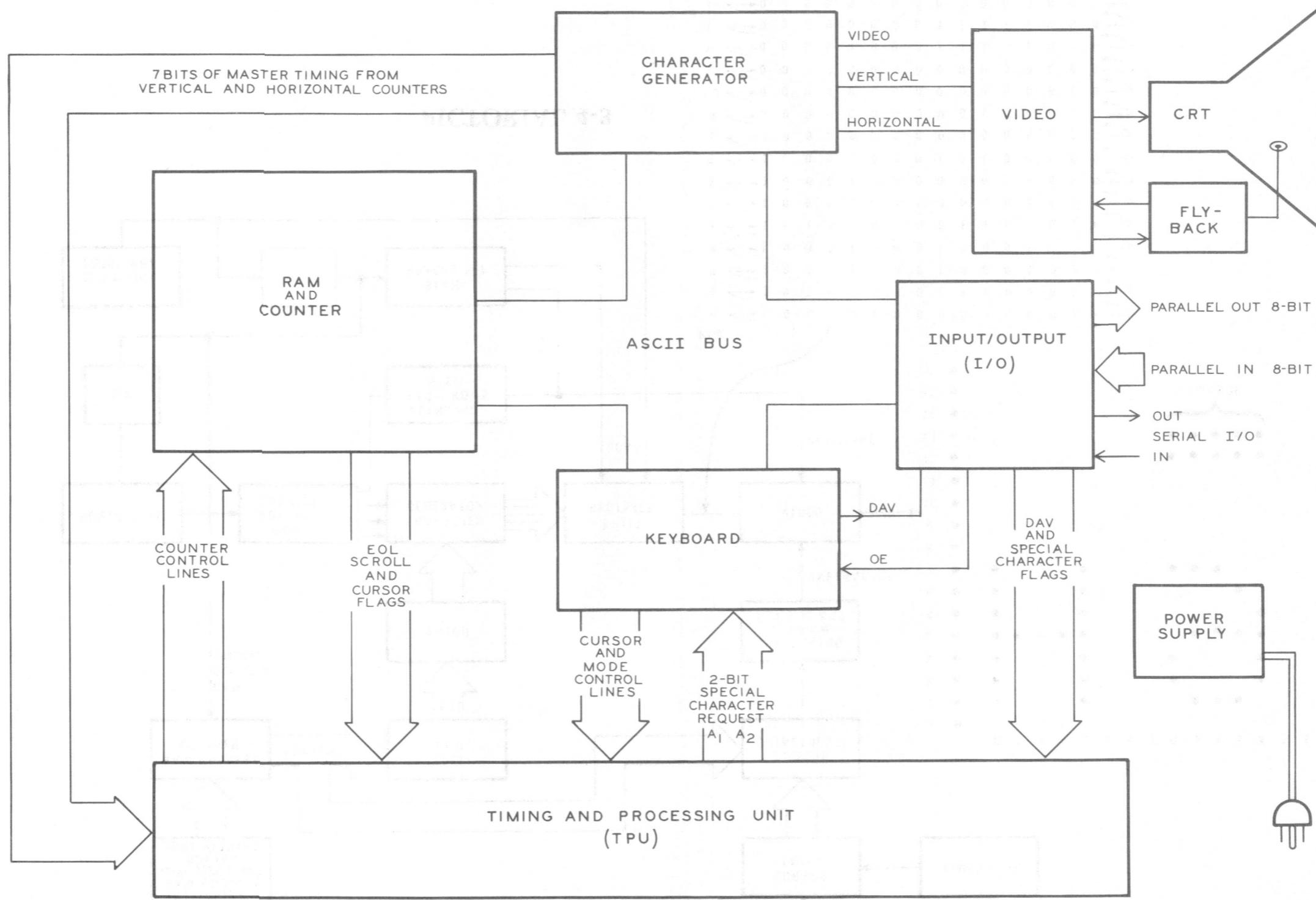
EXPANSION OF "0" CYCLE TO SHOW ALL SUB-CYCLES



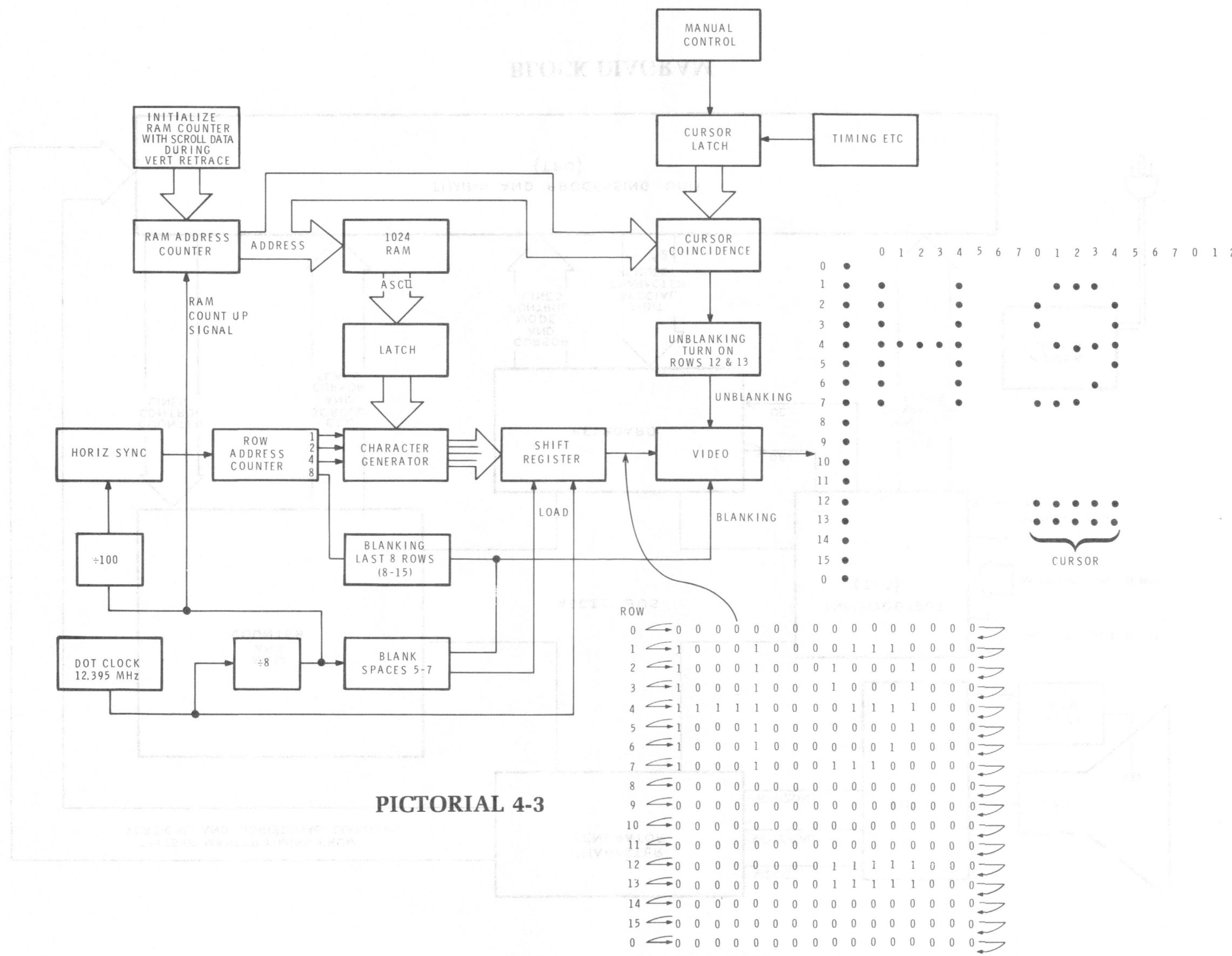
TIMING DIAGRAM #3



TIMING DIAGRAM #4



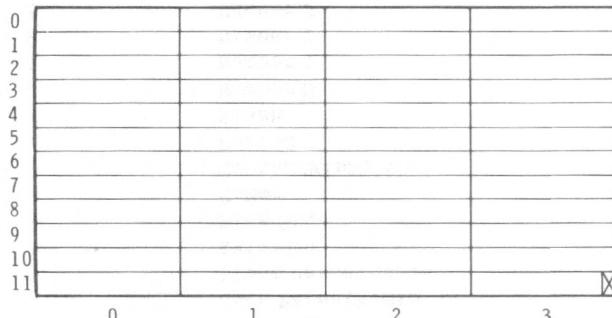
BLOCK DIAGRAM



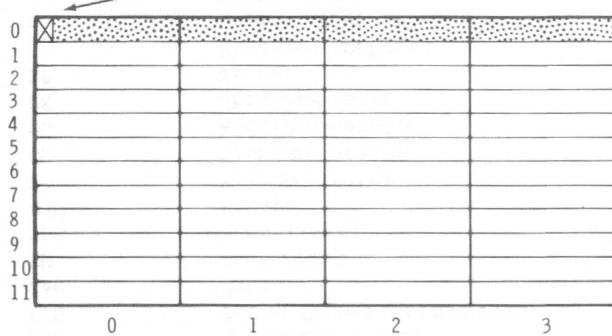
ASCII WORD	MNEMONIC	DESCRIPTION	KEY ENTRY	ASCII WORD	MNEMONIC	DESCRIPTION	KEY ENTRY
000 0000	NUL	Null	CTRL/SHIFT P	011 0101	5	Number 5	5
000 0001	SOH	Start of Heading	CTRL A	011 0110	6	Number 6	6
000 0010	STX	Start of Text	CTRL B	011 0111	7	Number 7	7
000 0011	EXT	End of Text	CTRL C	011 1000	8	Number 8	8
000 0100	EOT	End of Transmission	CTRL D	011 1001	9	Number 9	9
000 0101	ENQ	Enquiry	CTRL E	011 1010	:	Colon	:
000 0110	ACK	Acknowledge	CTRL F	011 1011	;	Semicolon	:
000 0111	BEEP	Bell	CTRL G	011 1100	<	Less Than	SHIFT ,
000 1000	BS	Backspace	CTRL H	011 1101	=	Equal Sign	SHIFT -
000 1001	HT	Horizontal Tabulation	CTRL I	011 1110	>	Greater Than	SHIFT .
000 1010	LF	Line Feed	CTRL J or LINE FEED	011 1111	?	Question Mark	SHIFT /
000 1011	VT	Vertical Tabulation	CTRL K	100 0000	@	At Sign	SHIFT P
000 1100	FF	Form Feed	CTRL L	100 0001	A	Letter A	A
000 1101	CR	Carriage Return	CTRL M or RETURN	100 0010	B	Letter B	B
000 1110	SO	Shift Out	CTRL N	100 0011	C	Letter C	C
000 1111	SI	Shift In	CTRL O	100 0100	D	Letter D	D
001 0000	DLE	Data Link Escape	CTRL P	100 0101	E	Letter E	E
001 0001	DC1	Device Control 1	CTRL Q	100 0110	F	Letter F	F
001 0010	DC2	Device Control 2	CTRL R	100 0111	G	Letter G	G
001 0011	DC3	Device Control 3	CTRL S	100 1000	H	Letter H	H
001 0100	DC4	Device Control 4	CTRL T	100 1001	I	Letter I	I
001 0101	NAK	Negative Acknowledge	CTRL U	100 1010	J	Letter J	J
001 0110	SYN	Synchronous Idle	CTRL V	100 1011	K	Letter K	K
001 0111	ETB	End of Transmission Block	CTRL W	100 1100	L	Letter L	L
001 1000	CAN	Cancel	CTRL X	100 1101	M	Letter M	M
001 1001	EM	End of Medium	CTRL Y	100 1110	N	Letter N	N
001 1010	SUB	Substitute	CTRL Z	100 1111	O	Letter O	O
001 1011	ESC	Escape	CTRL/SHIFT K or ESC	101 0000	P	Letter P	P
001 1100	FS	File Separator	CTRL/SHIFT L	101 0001	Q	Letter Q	Q
001 1101	GS	Group Separator	CTRL/SHIFT M	101 0010	R	Letter R	R
001 1110	RS	Record Separator	CTRL/SHIFT N	101 0011	S	Letter S	S
001 1111	US	Unit Separator	CTRL/SHIFT O	101 0100	T	Letter T	T
010 0000	SP	Space	SPACE BAR	101 0101	U	Letter U	U
010 0001	!	Exclamation Point	! or SHIFT 1	101 0110	V	Letter V	V
010 0010	"	Quotation Marks	SHIFT 2	101 0111	W	Letter W	W
010 0011	#	Number Sign	SHIFT 3	101 1000	X	Letter X	X
010 0100	\$	Dollar Sign	SHIFT 4	101 1001	Y	Letter Y	Y
010 0101	%	Percent Sign	SHIFT 5	101 1010	Z	Letter Z	Z
010 0110	&	Ampersand	SHIFT 6	101 1011	[Open Brackets	SHIFT K
010 0111	'	Apostrophe	SHIFT 7	101 1100	\	Reverse Slash	SHIFT L
010 1000	(Open Parenthesis	SHIFT 8	101 1101]	Close Brackets	SHIFT M
010 1001)	Close Parenthesis	SHIFT 9	101 1110	↑	Up Arrow/ Caret	SHIFT N
010 1010	*	Asterisk	SHIFT :	101 1111	—	Underscore	SHIFT O
010 1011	+	Plus Sign	SHIFT ;	111 1111	DEL	Delete	RUB OUT
010 1100	,	Comma	,				
010 1101	-	Hyphen/Minus Sign	-				
010 1110	.	Period	.				
010 1111	/	Slash	/				
011 0000	0	Number 0	0				
011 0001	1	Number 1	1				
011 0010	2	Number 2	2				
011 0011	3	Number 3	3				
011 0100	4	Number 4	4				

PICTORIAL 4-6

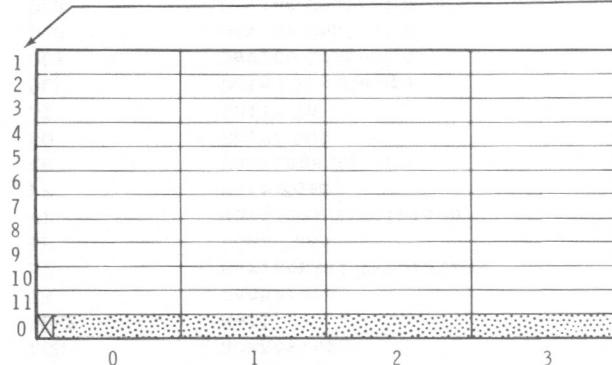
PICTORIAL 4-12

**SCROLL
(LONG FORM)**

A CHARACTER IS WRITTEN INTO THE LAST LOCATION, AND THE CURSOR COUNTS UP TO THE NEXT RAM LOCATION.

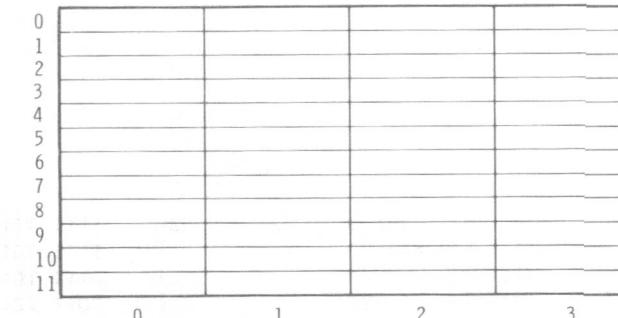


THE TPU DETECTS THAT A SCROLL SHOULD OCCUR, AND ERASES THE LINE THAT THE CURSOR IS IN.

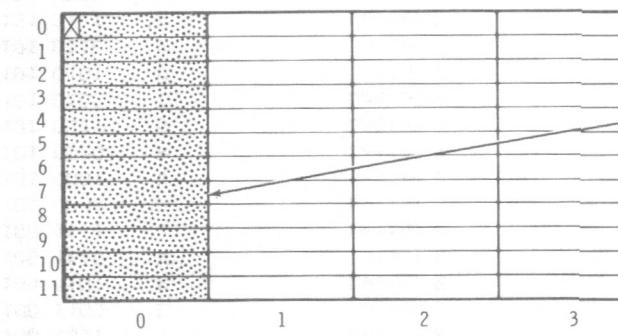


THE TPU COUNTS UP THE $\div 12$ SCROLL COUNTER AND THE SCREEN REFRESH STARTS WITH LINE ONE, INSTEAD OF LINE 0.

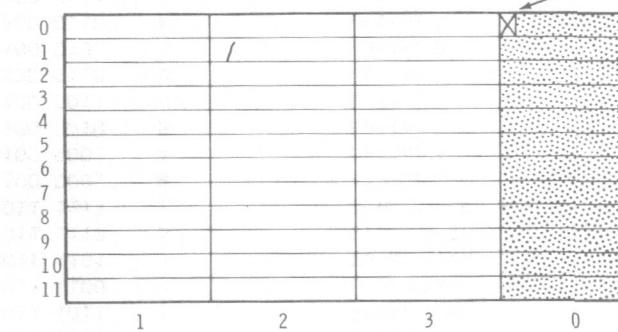
THIS PUTS THE CURSOR AND THE BLANK LINE ON THE BOTTOM CHARACTER LINE OF THE SCREEN.

PICTORIAL 4-12**SCROLL
(SHORT FORM)**

CHARACTER WRITES IN LAST LOCATION, AND THE CURSOR COUNTS UP TO NEXT RAM LOCATION.



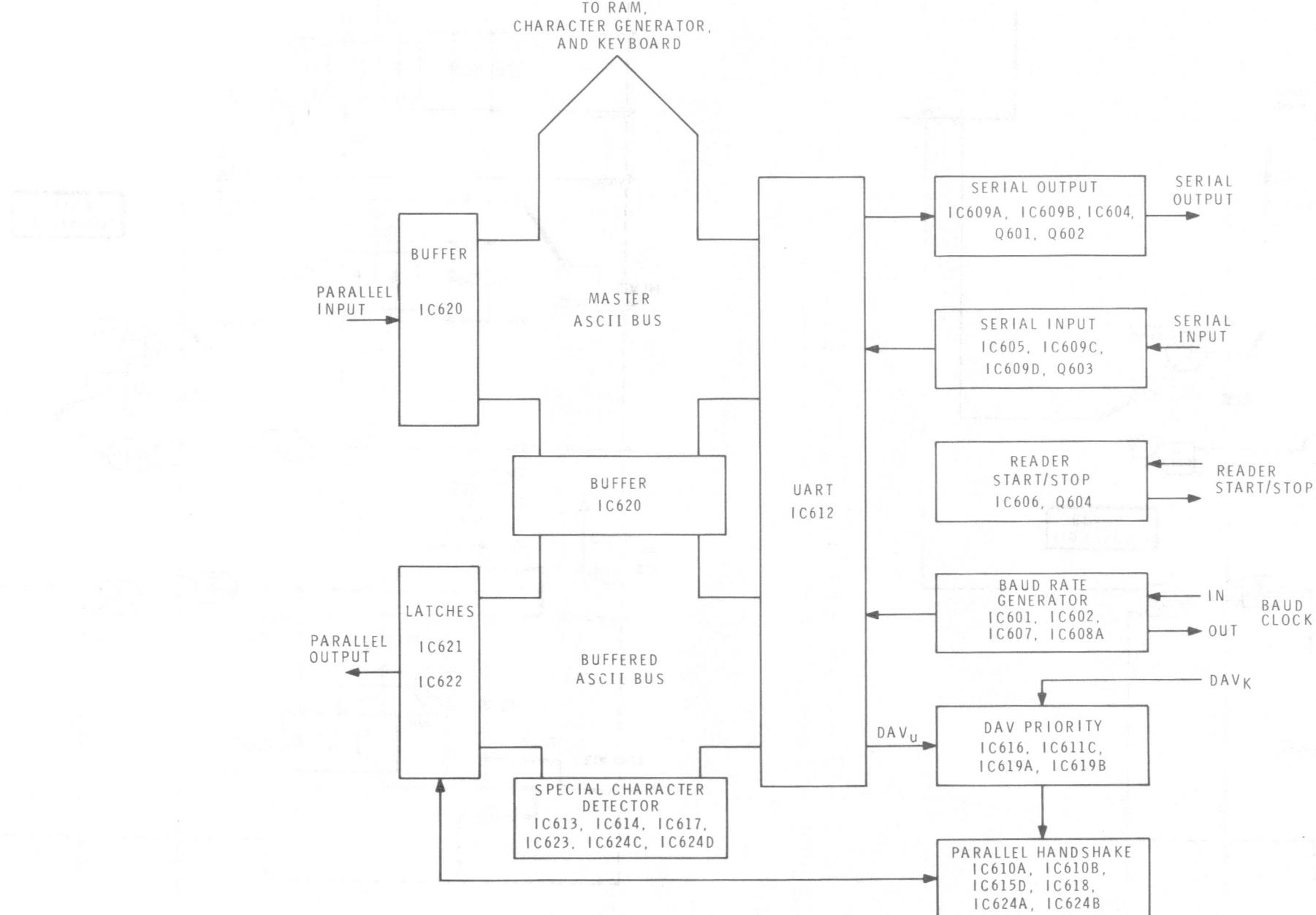
THE TPU DETECTS THE SCROLL CONDITION AND ERASES THE BLOCK OF CHARACTERS CONTAINING THE CURSOR.



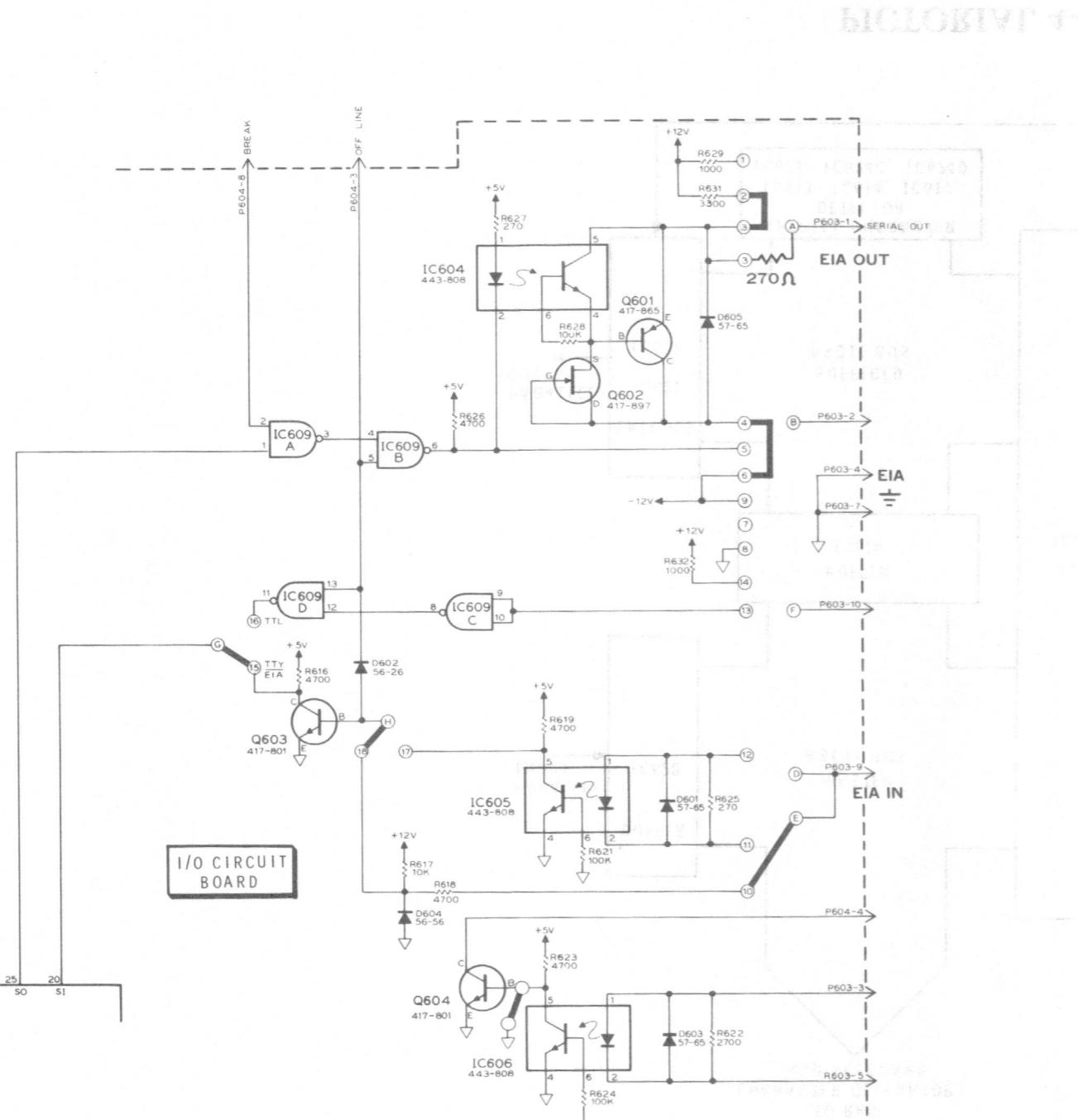
THE TPU COUNTS UP THE $\div 4$ SCROLL COUNTER AND THE SCREEN REFRESH STARTS WITH BLOCK #1 INSTEAD OF BLOCK 0.

THIS PUTS THE CURSOR AND THE BLANK BLOCK AT THE RIGHT BLOCK LOCATION OF THE SCREEN.

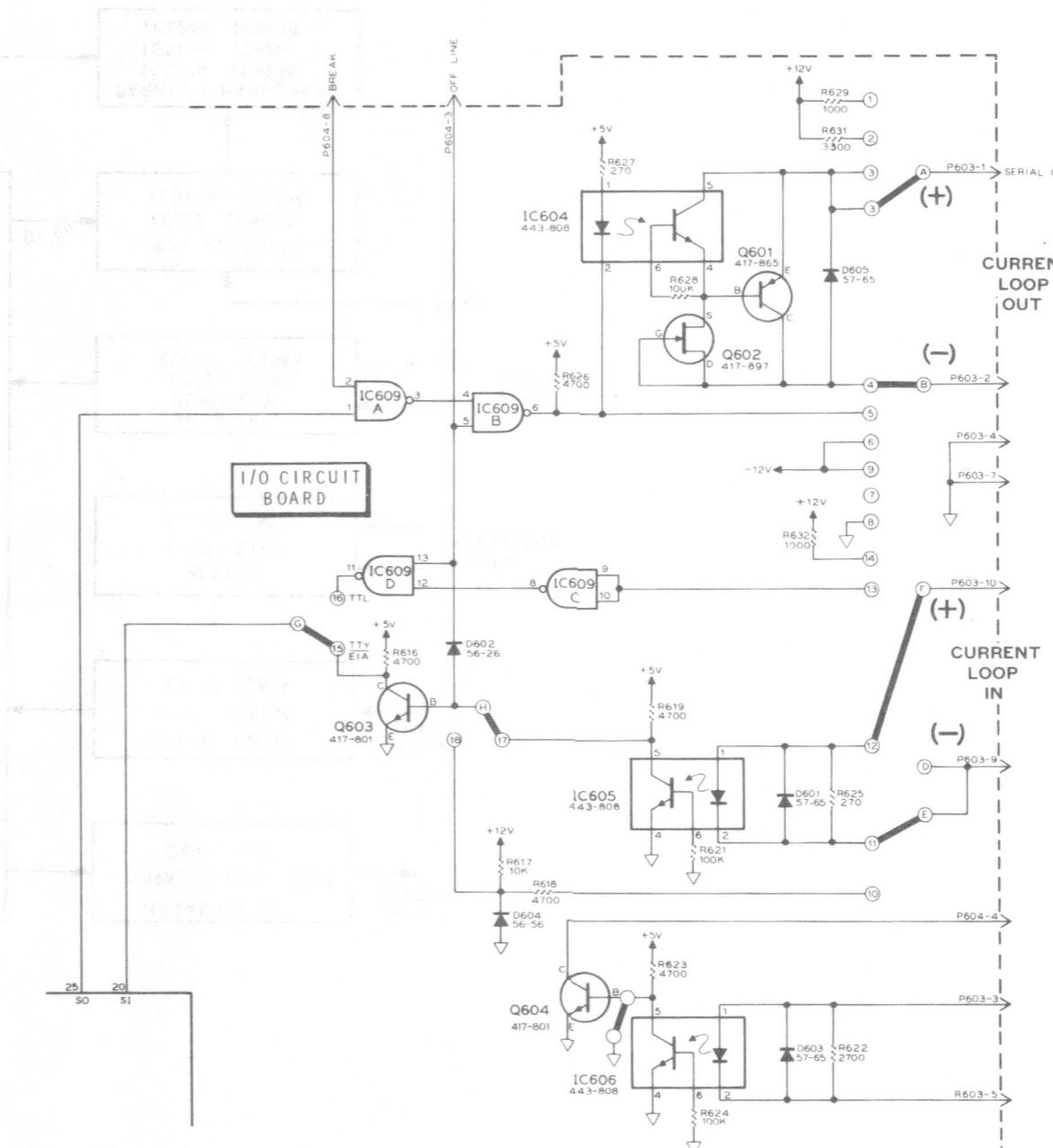
PICTORIAL 4-13



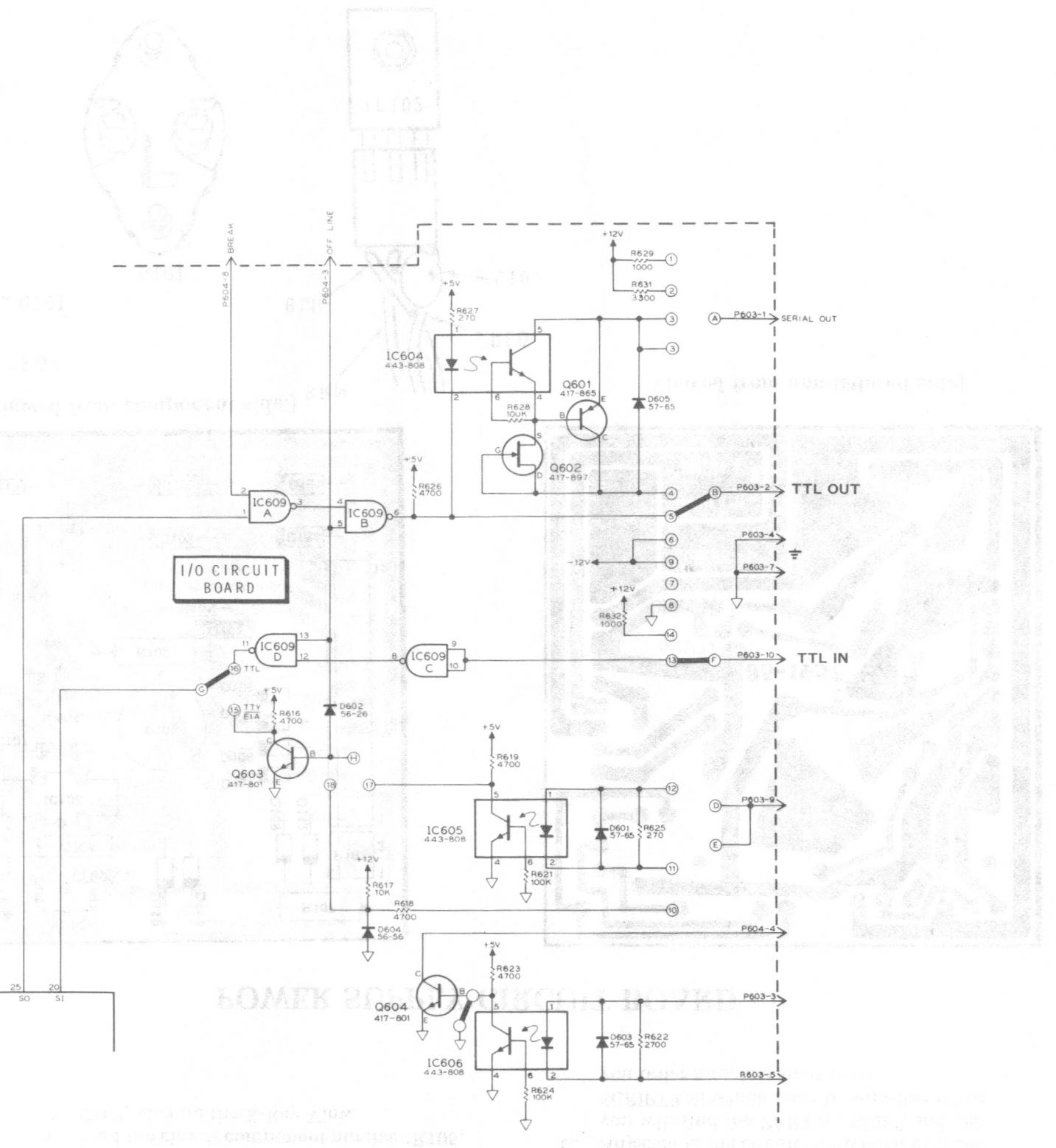
PICTORIAL 4-16



PICTORIAL 4-17



PICTORIAL 4-18



PICTORIAL 4-19

4.19. Drawing a pictorial representation of a component or assembly.

CHARGE COVBD X-EVA AND 10

CIRCUIT BOARD X-RAY VIEWS

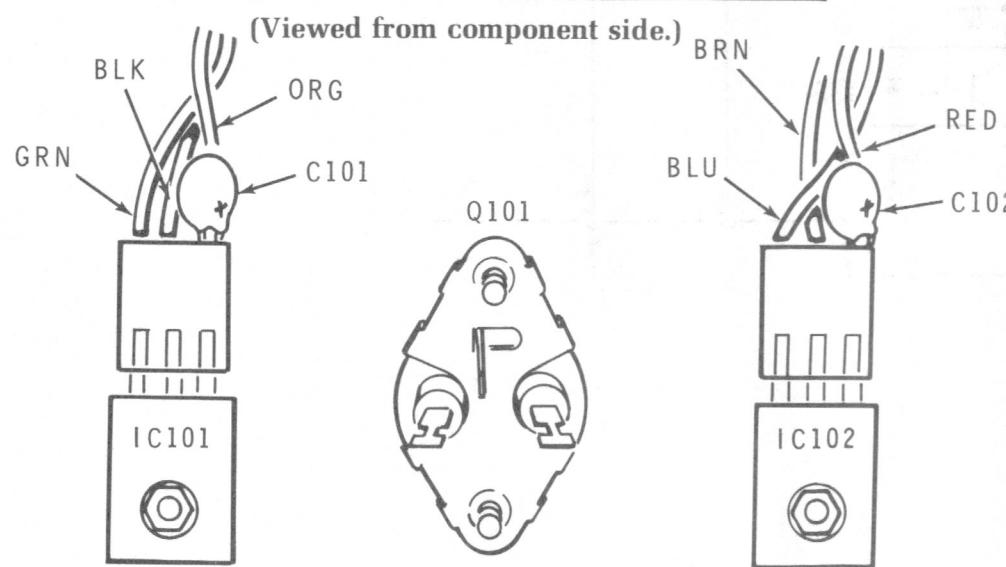
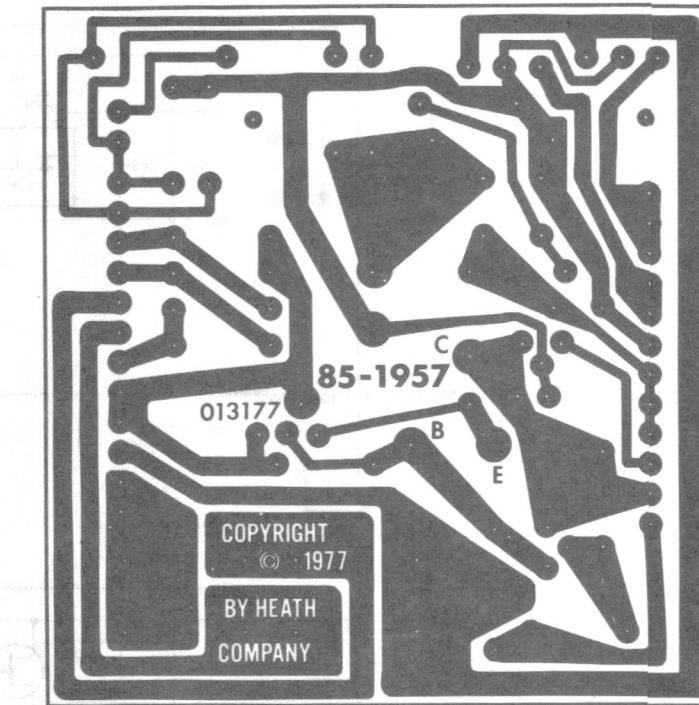
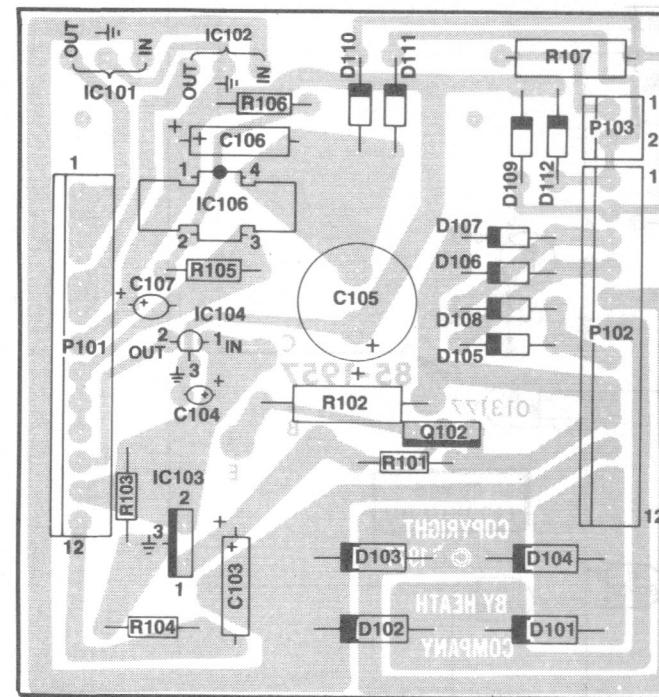
NOTE: To find the PART NUMBER of a component for the purpose of ordering a replacement part:

B. Locate this same number in the "Circuit Component Number" column of the "Parts List" in your Manual.

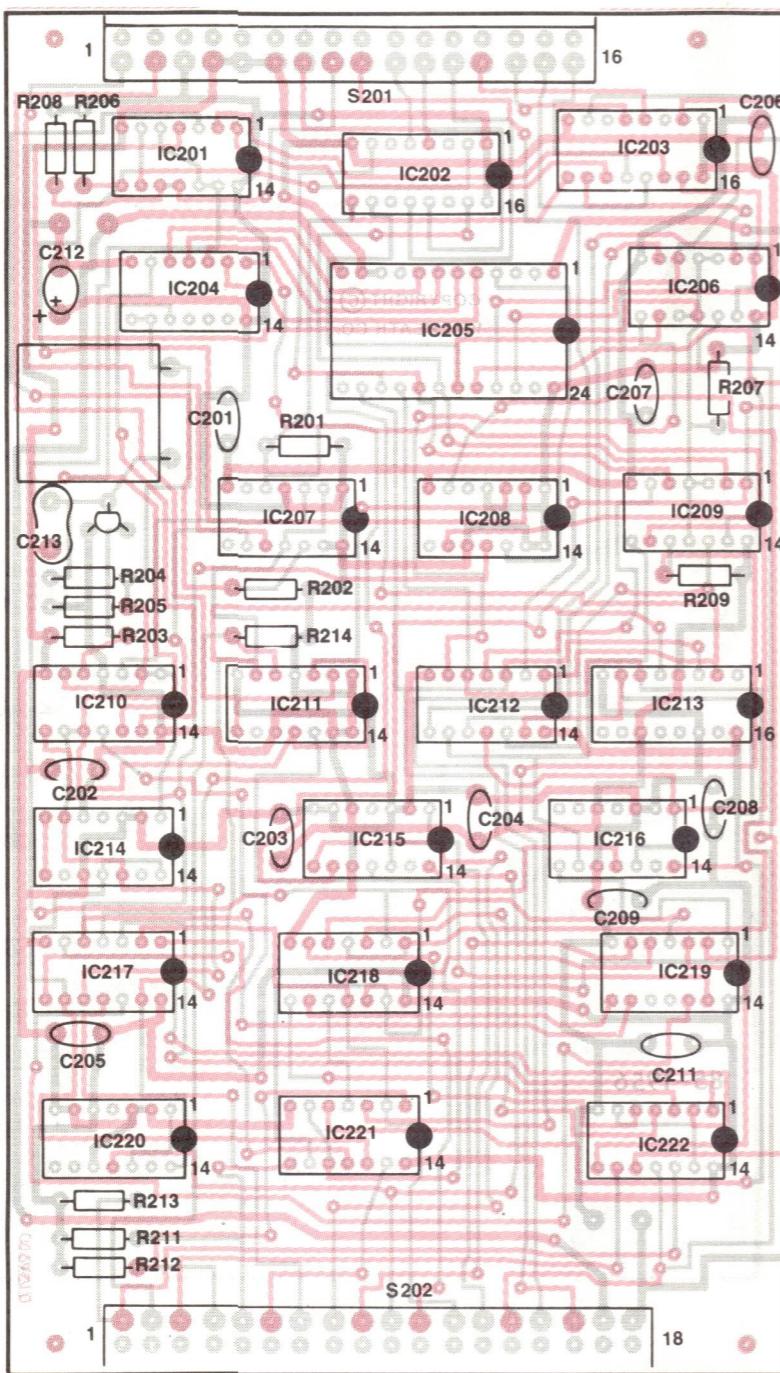
A. Find the circuit component number (R105, C103, etc.) on the X-Ray View.

C. Adjacent to the circuit component number, you will find the PART NUMBER and DESCRIPTION which must be supplied when you order a replacement part.

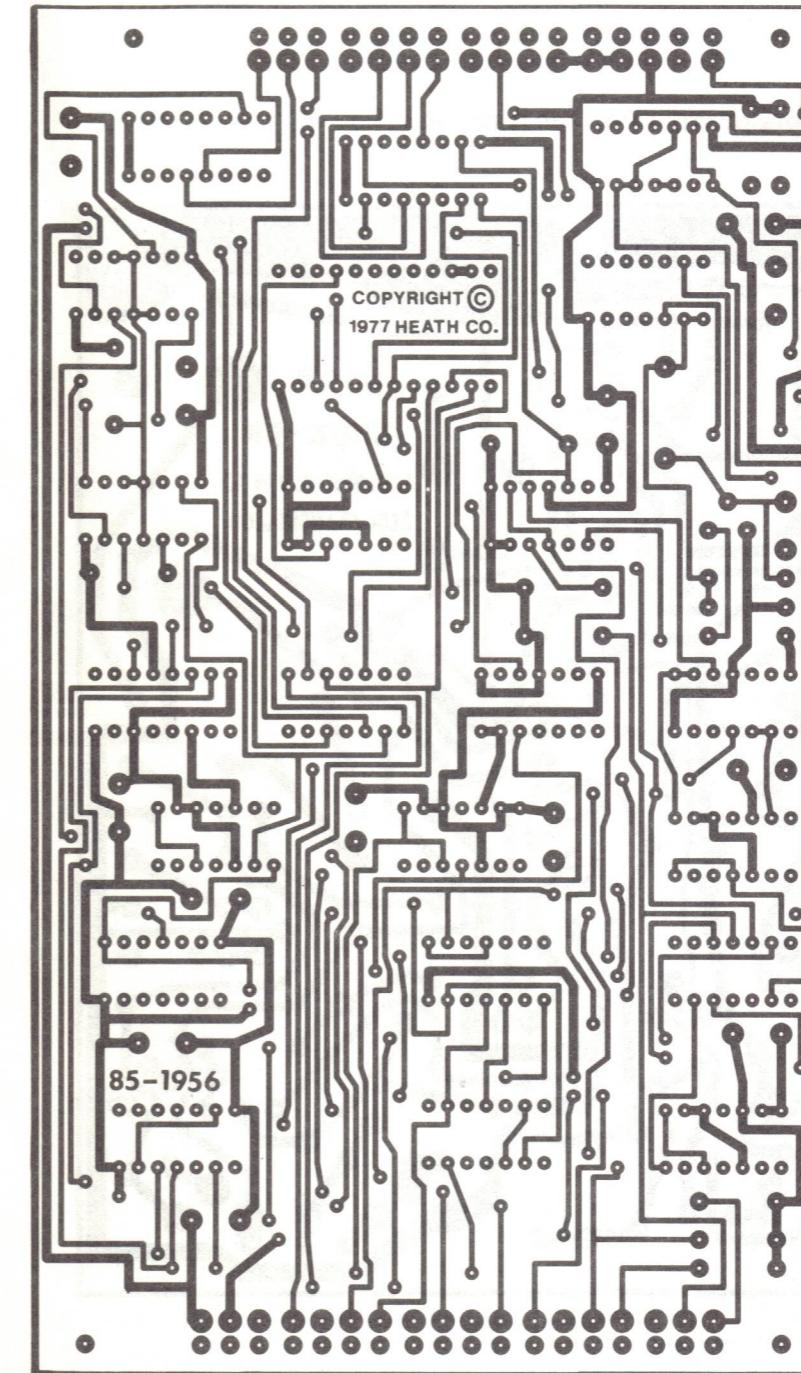
POWER SUPPLY CIRCUIT BOARD



CHARACTER GENERATOR CIRCUIT BOARD

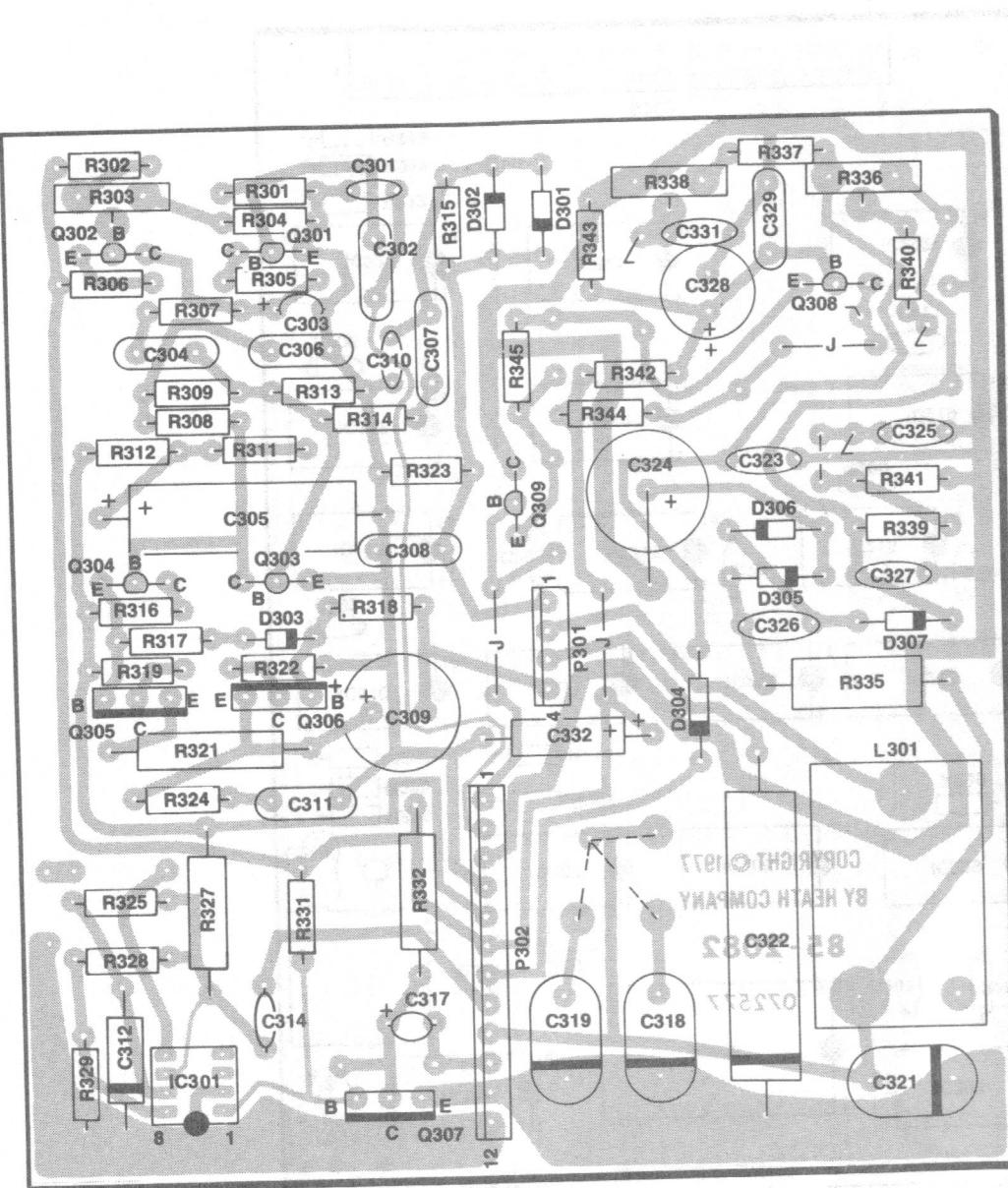


(Viewed from component side.
Foil on component side is shown in red.)

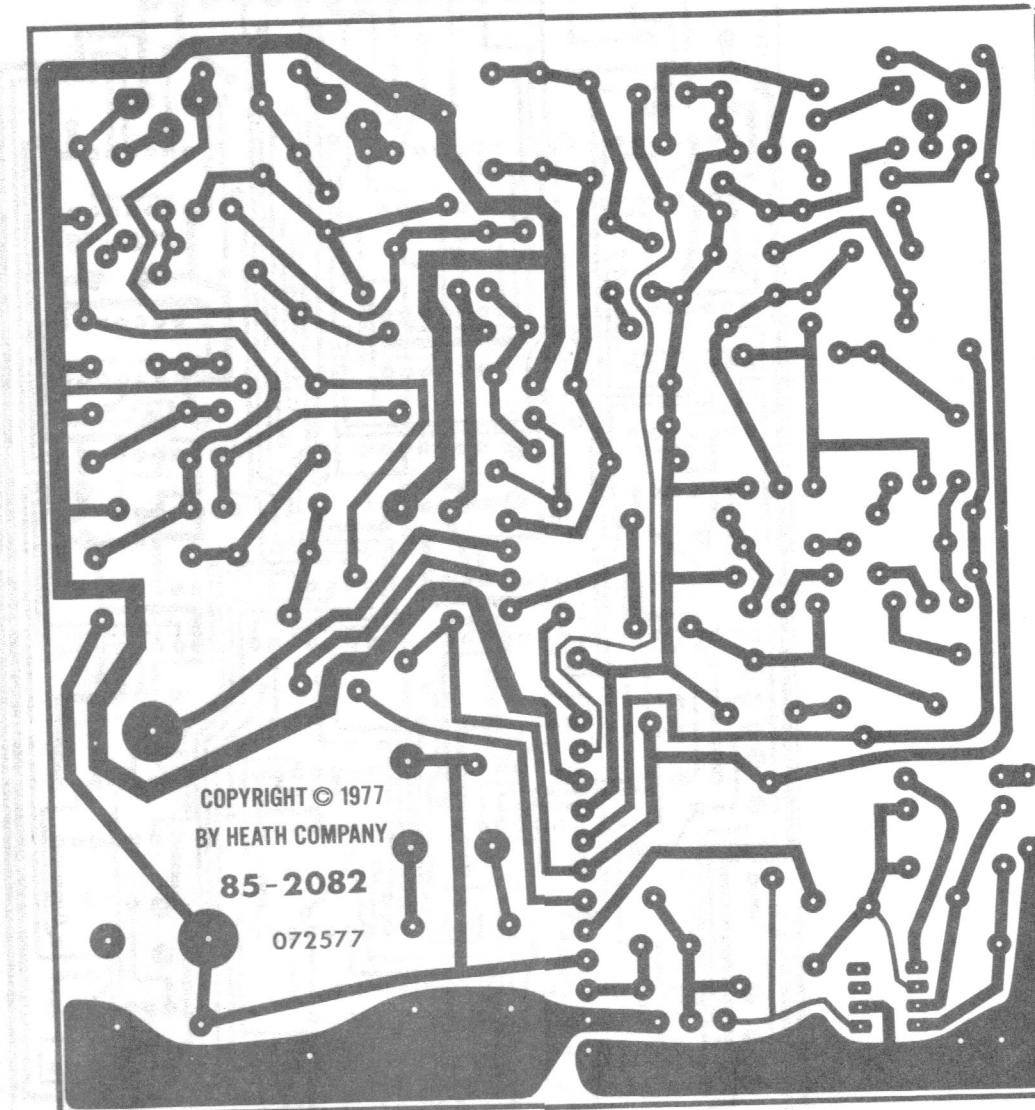


(Viewed from non-lettered side)

VIDEO CIRCUIT BOARD

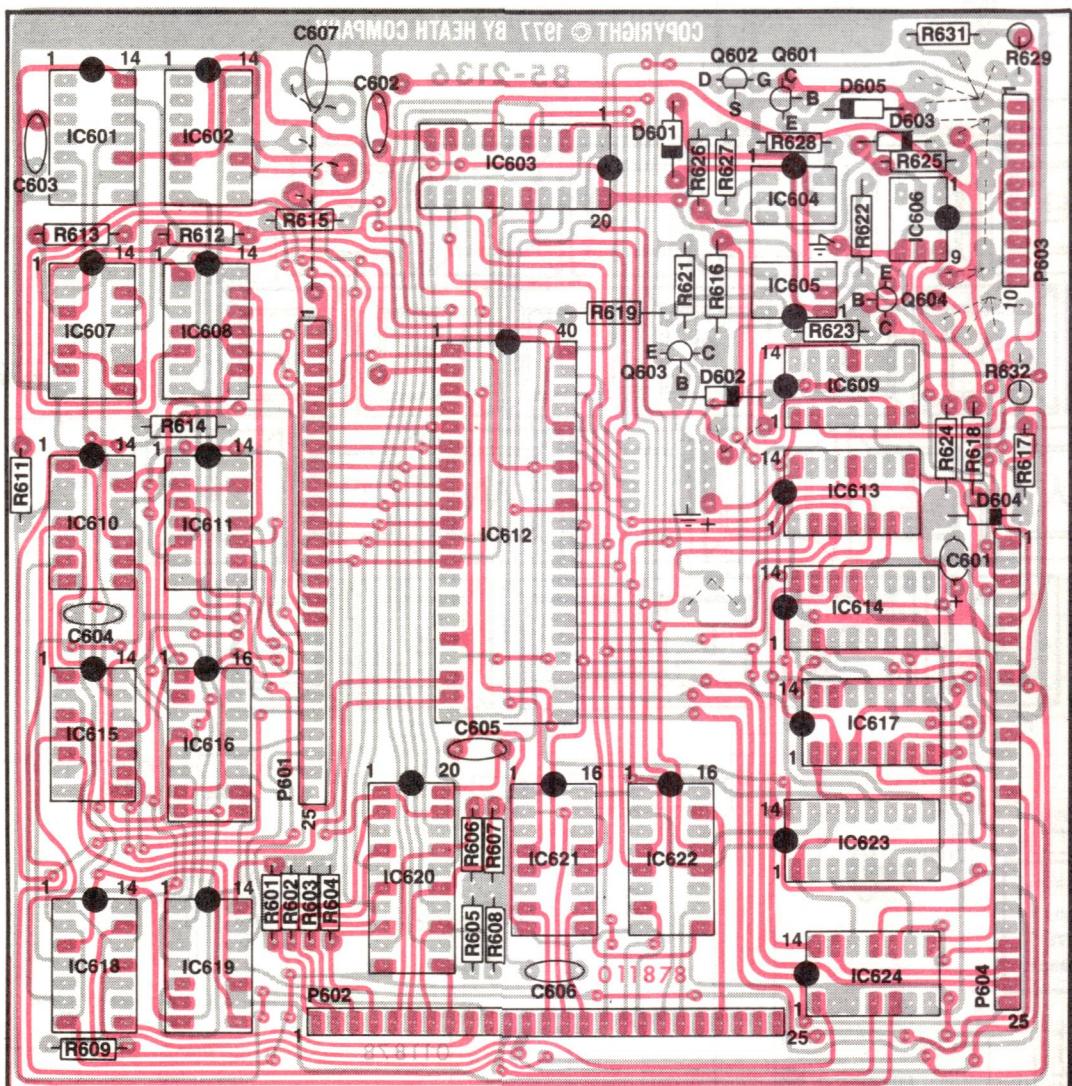


(Viewed from component side)

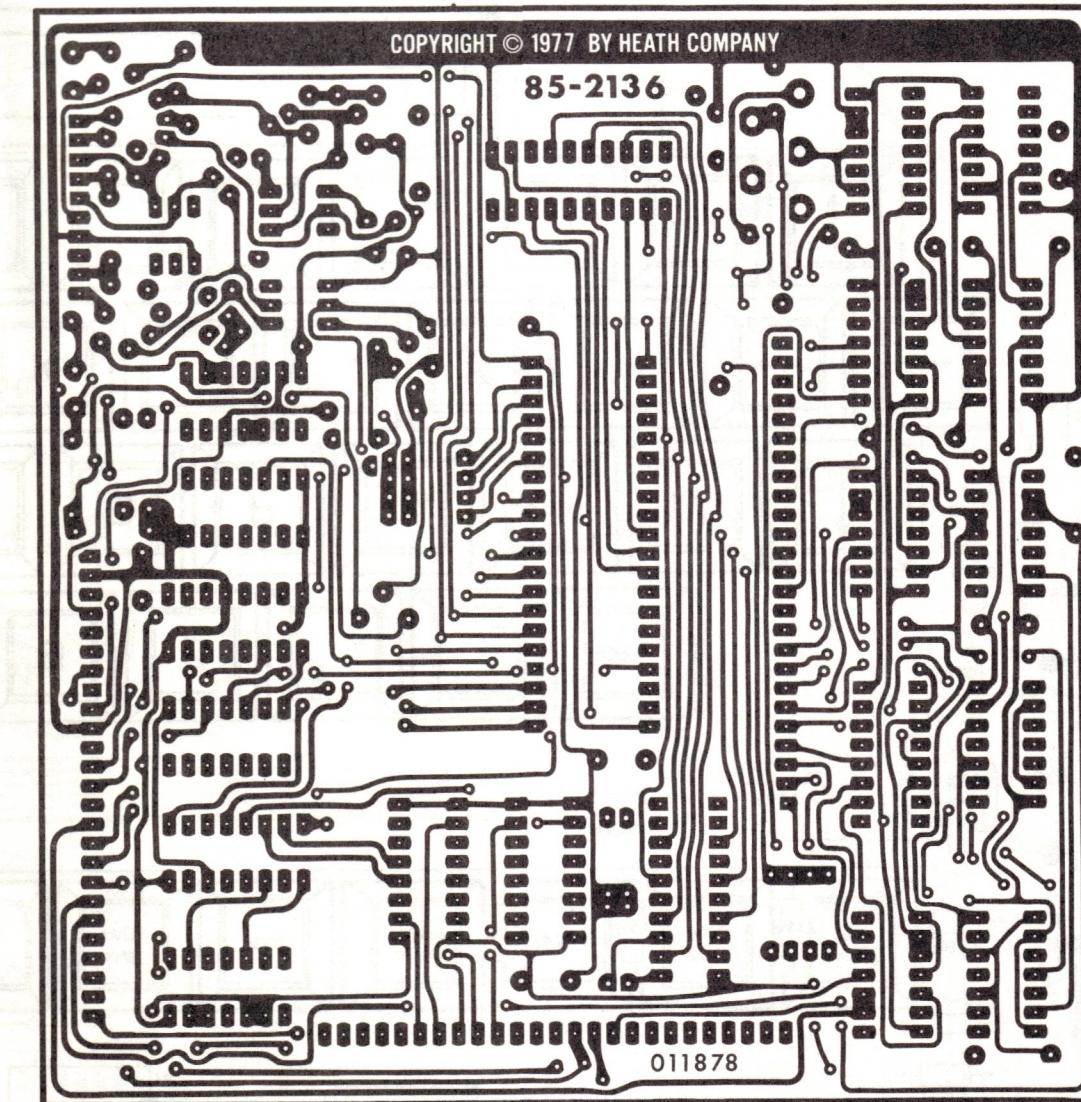


(Viewed from non-lettered side)

INPUT/OUTPUT CIRCUIT BOARD



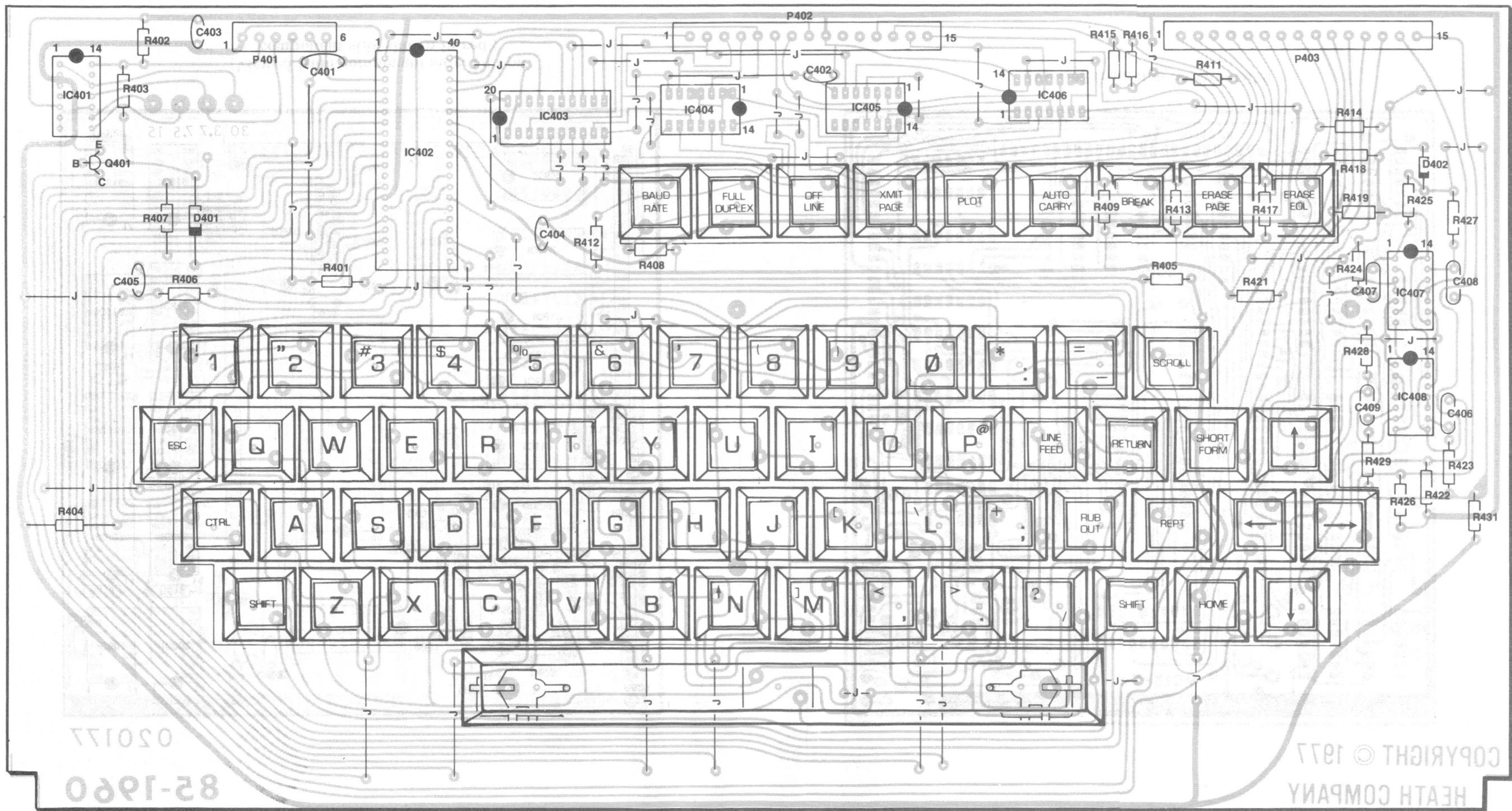
(Viewed from component side. Foil on
component side shown in red.)



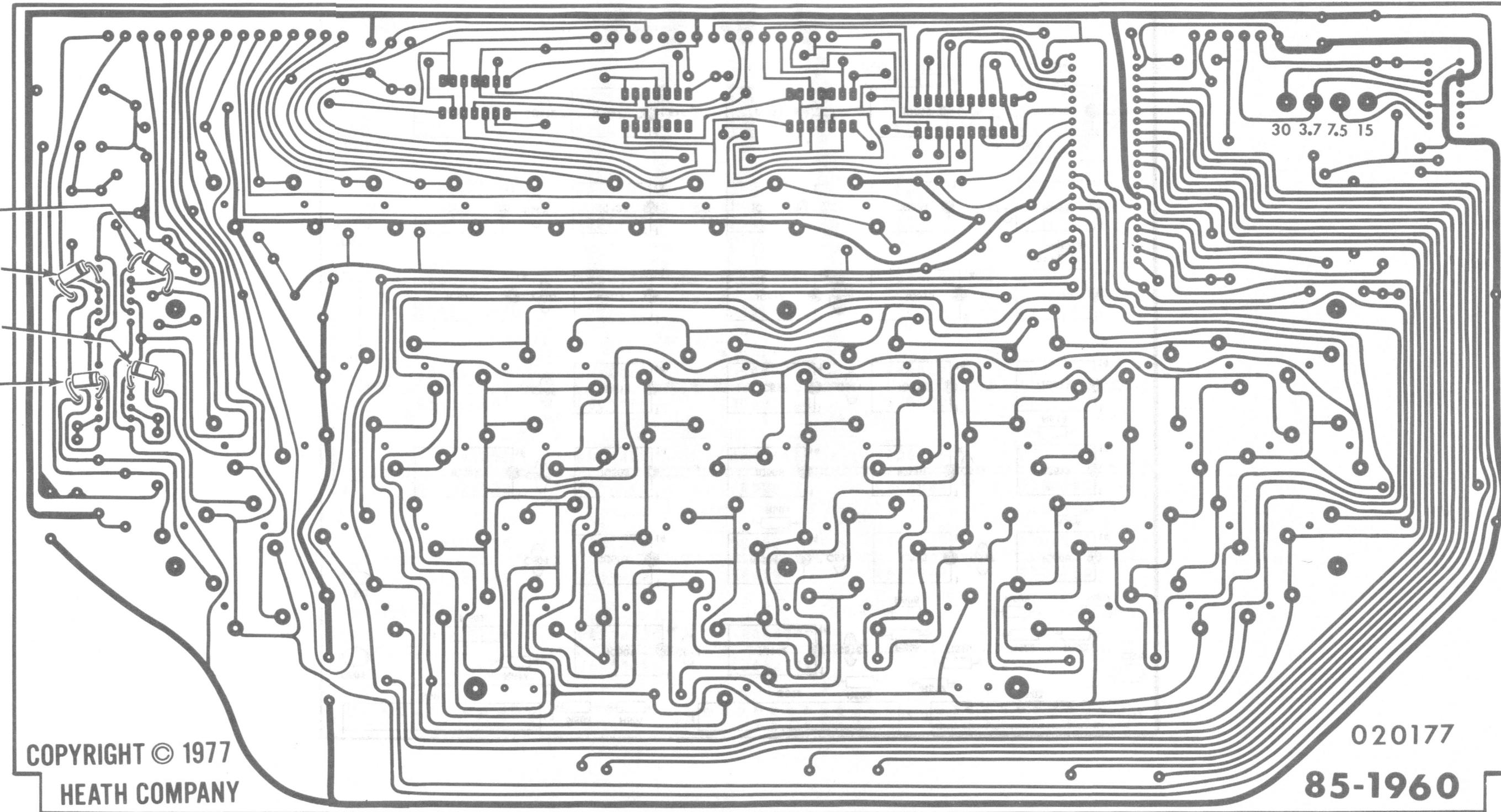
(Viewed from non-lettered side)

PRINTED CIRCUIT BOARD

KEYBOARD CIRCUIT BOARD



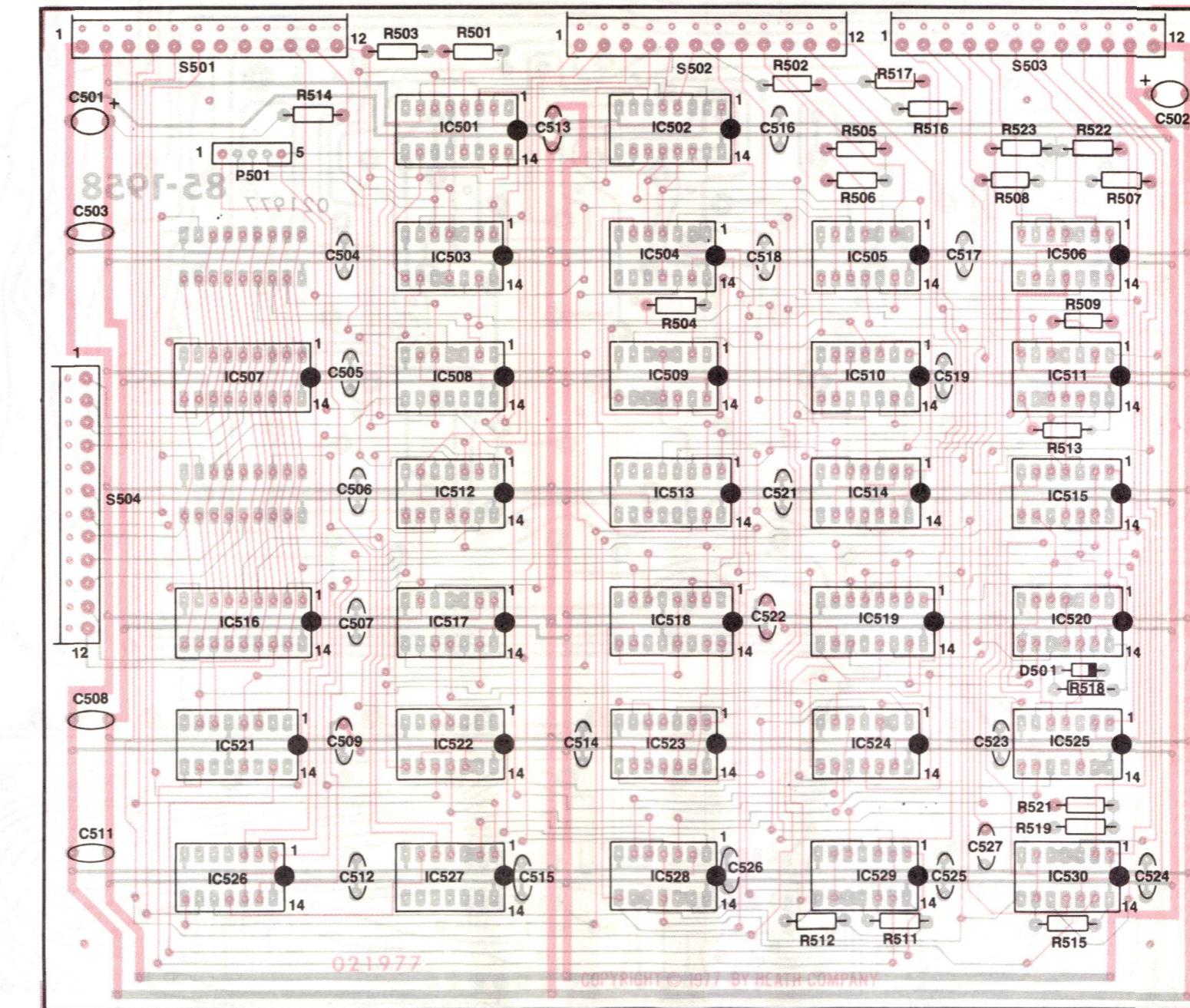
(Viewed from component side)



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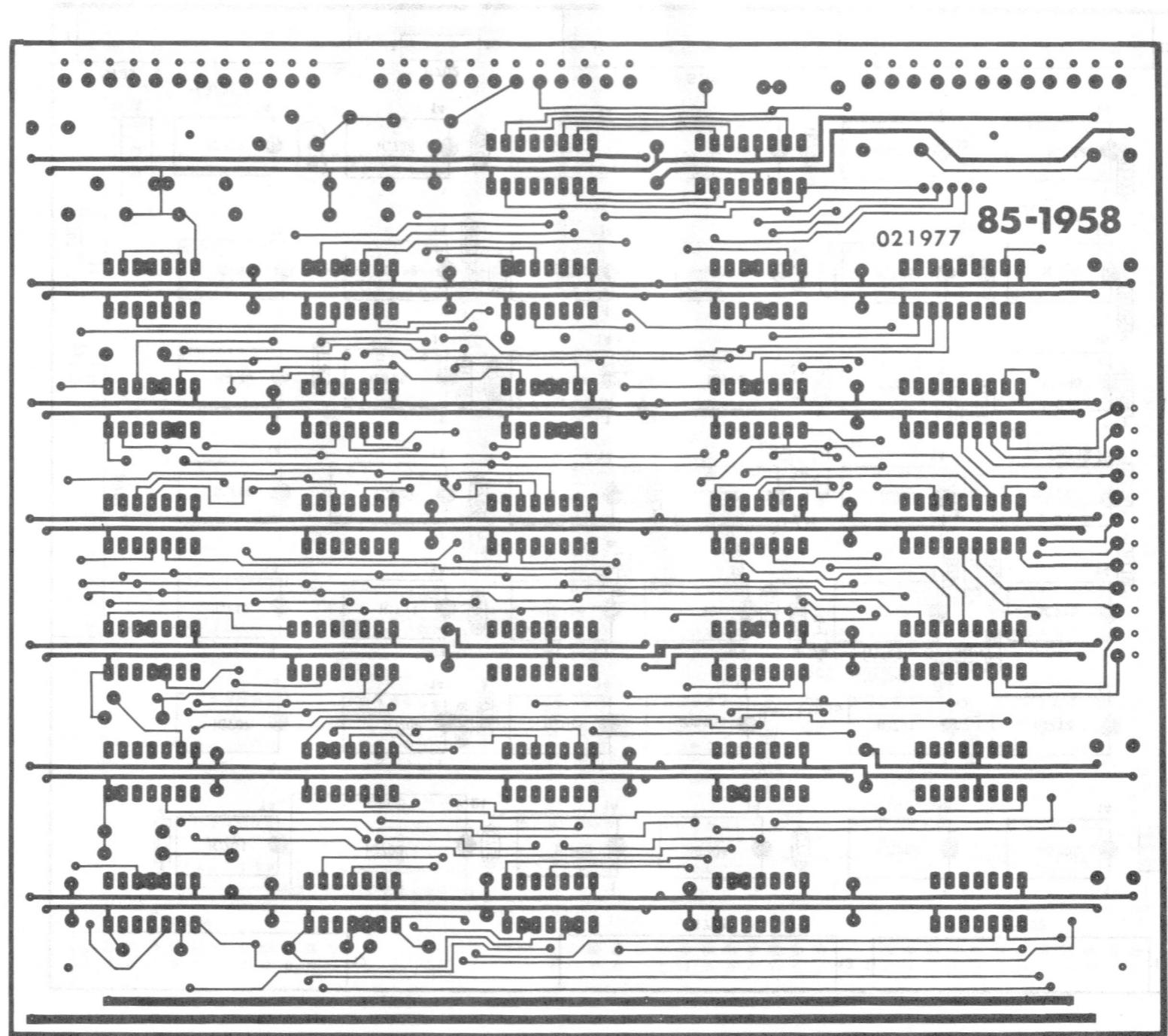
KV4P CONTAINS CIRCUITS OWNED
(Viewed from non-lettered side)

RAM & COUNTER CIRCUIT BOARD



(Viewed from component side.
Foil on component side is shown in red.)

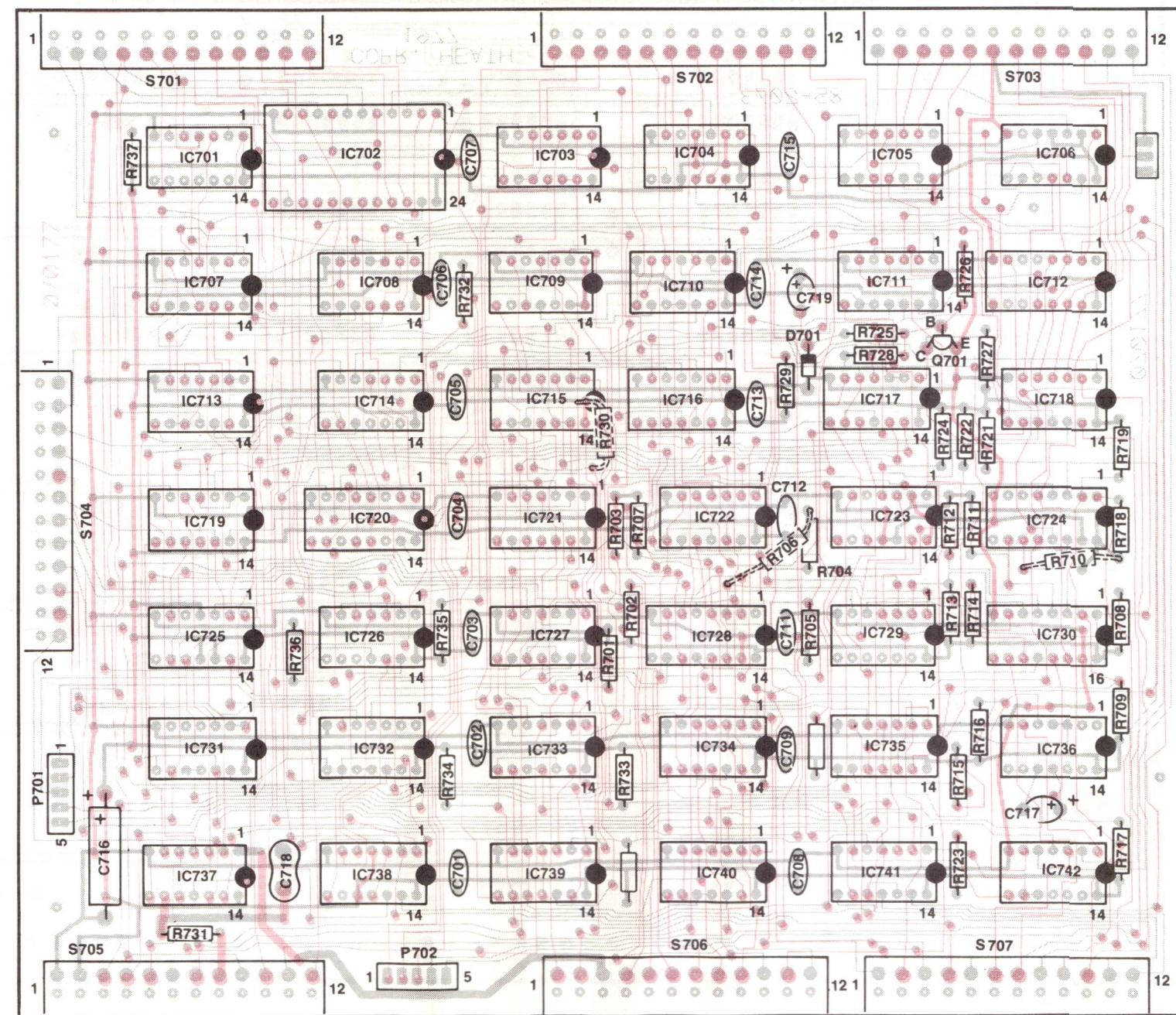
DO NOT TURN OVER. KEEP IN THIS POSITION
BY PLACING IN A CONVENTIONAL ENVELOPE



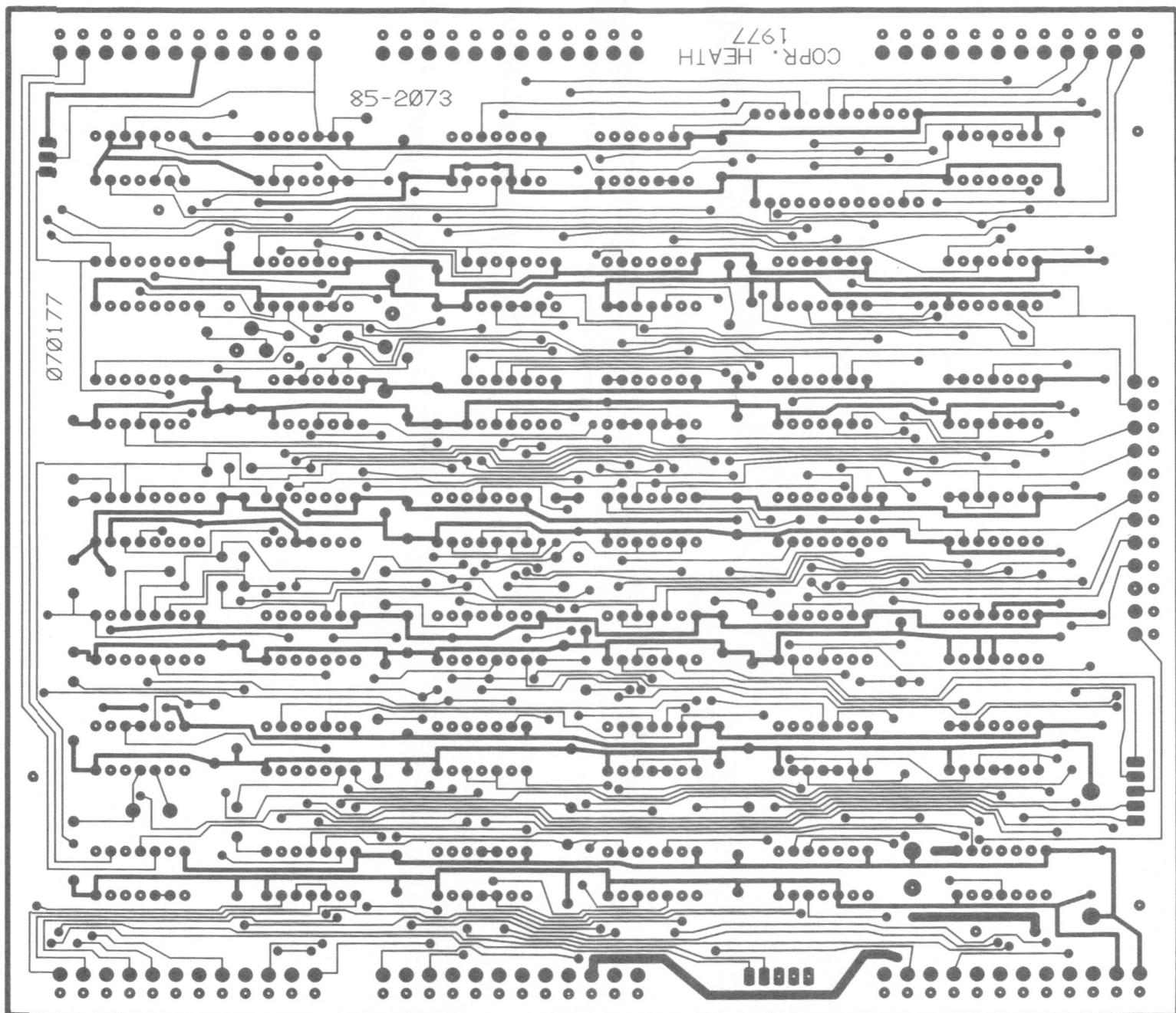
(Viewed from non-lettered side)

DO NOT TURN OVER. KEEP IN THIS POSITION
BY PLACING IN A CONVENTIONAL ENVELOPE

TIMING & PROCESSING UNIT CIRCUIT BOARD



(Viewed from component side.
Foil on component side is shown in red.)



(Viewed from non-lettered side)

