

VIATRON



VERADA 214 DIV. LOLAR

MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013



Multimedia terminals produce tape, cartridge, card and on-line input.



Microprocessors let you perform many computer functions off-line.



Zero-defect computer tape input system lets you record data anywhere—without environmental controls.



Video displays provide fill-in-the-blanks formatting so anyone can prepare and verify computer input.



Desk-top printing robots prepare formatted hard copies from tape, card, cartridge or computer input.



Batch-transmission and unattended operation features allow automatic polling of remote locations.



Addition and Subtraction lets you develop total information.

TERMINAL 21 DRAWINGS

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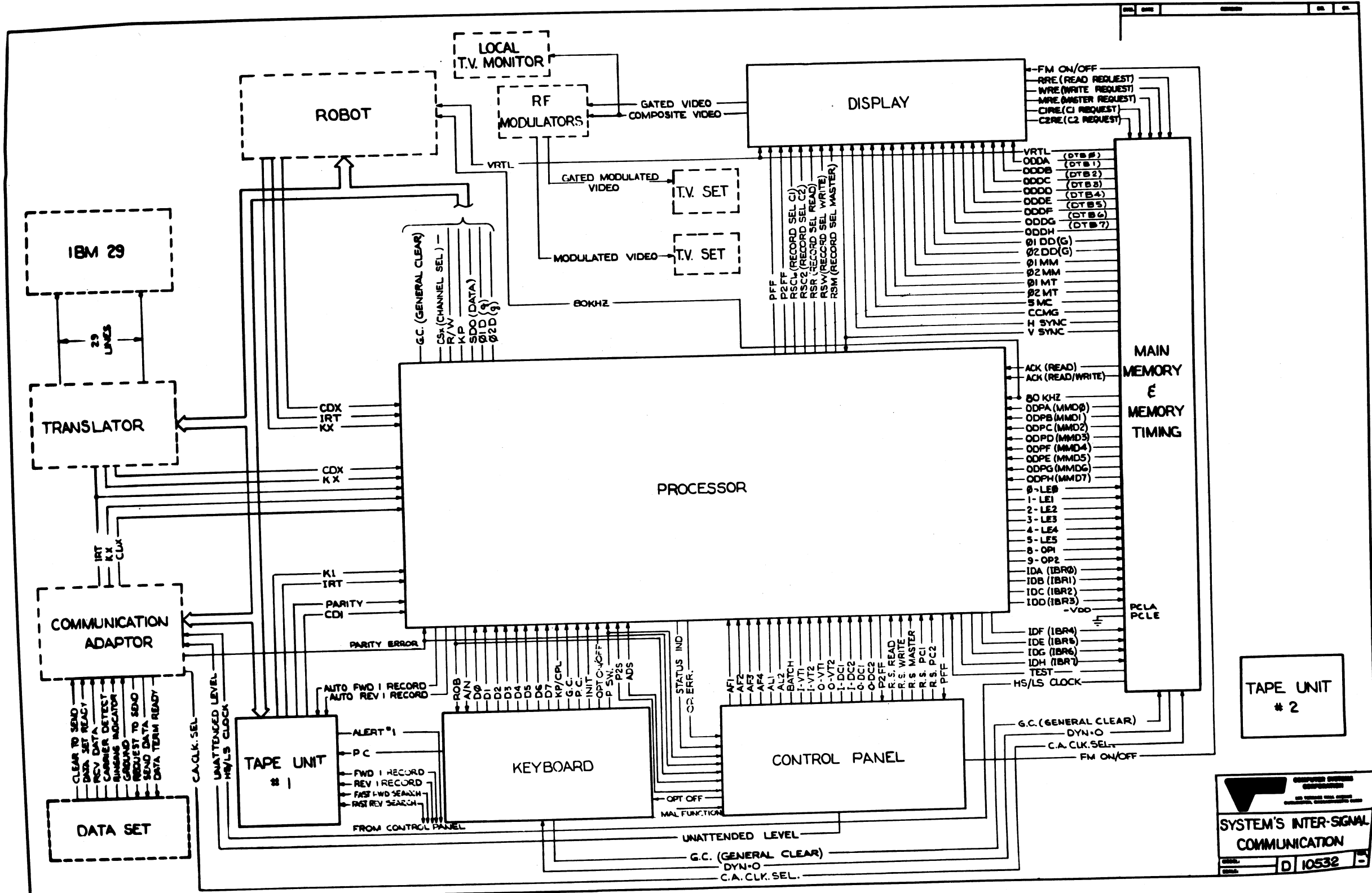
V Keyboard KB

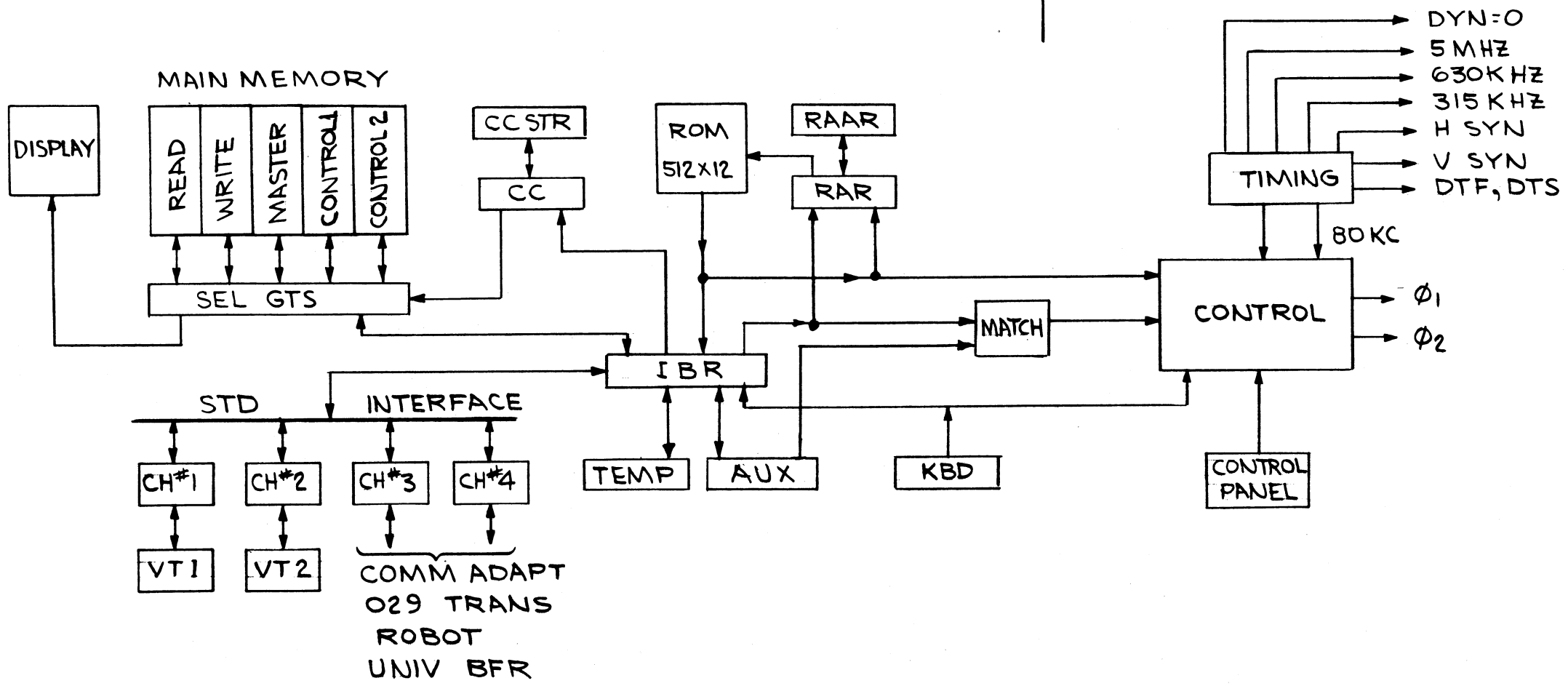
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VI Power Supply PS

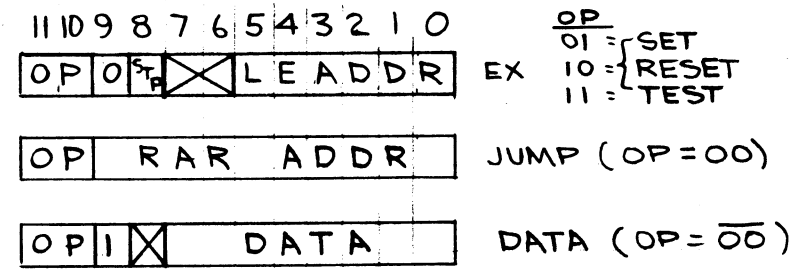
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ROM WORD FORMAT



ITEM	DESCRIPTION	CODE	REQ.
MATERIAL:	TOLERANCES (EXCEPT AS NOTED) DECIMALS ±.005 FRACTIONS ±1/64 ANGULAR ±1/2°	 COMPUTER SYSTEMS CORPORATION 105 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803	
FINISH:	DRAWN BY: RA Japouch DATE: 28 MAR 69		
	CHECKER:		
	ENGINEER:		
	APPROVED:		
	ISSUED:	MODEL:	REV.
REMOVE ALL BURRS	SCALE:	B 10540	-



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

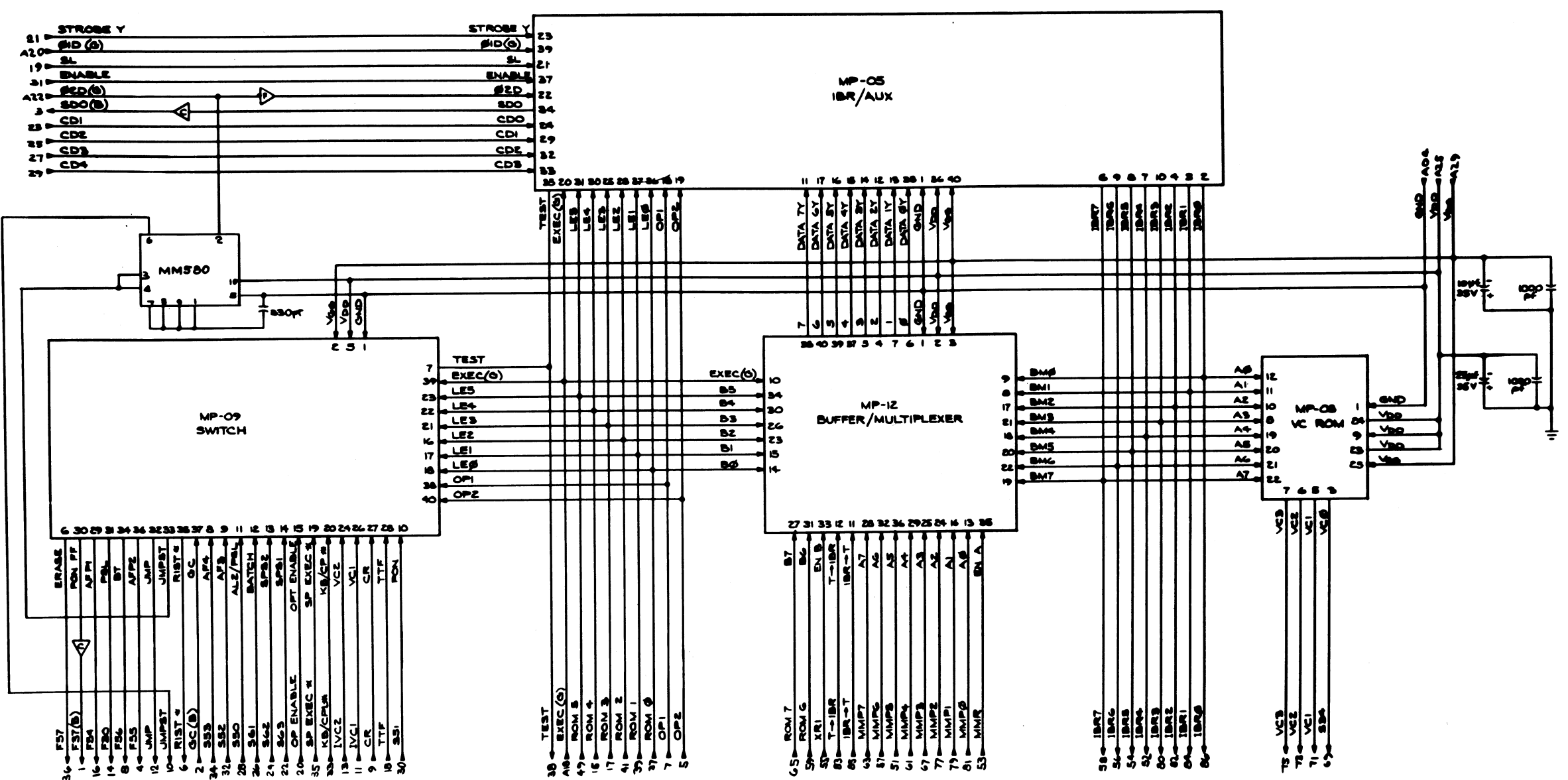
VERADA 214 DIV. LOLAR

MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

Drawing Number	Title	Page	Drawing Number	Title	Page	Drawing Number	Title	Page
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140003	SCHEMATIC PWB MICROPROCESSOR BOARD 3 Sh. 2 of 2	MP-18	10524	MODIFIED 2101 512 MICROPROGRAM FLOW FS, BKS, PSL, FT & LOAD ROUTINES ERR, AF, MDUP & SCC SUBROUTINES	MP-43	100028	PWB MICROPROCESSOR BOARD 2 VER. 3 Sh. 4 of 4	MP-65
10320	FLAG MP01	MP-19	10536	MODIFIED 2101 512 MICROPROGRAM FLOW BT, ERASE, CTRL1, CTRL2, MDUP KEY ROUTINES	MP-44	100029	PWB MICROPROCESSOR BOARD 2 VER. 4 Sh. 3 of 4	MP-66
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10327	VALID CODE ROM MP08	MP-25						

MICROPROCESSOR

II



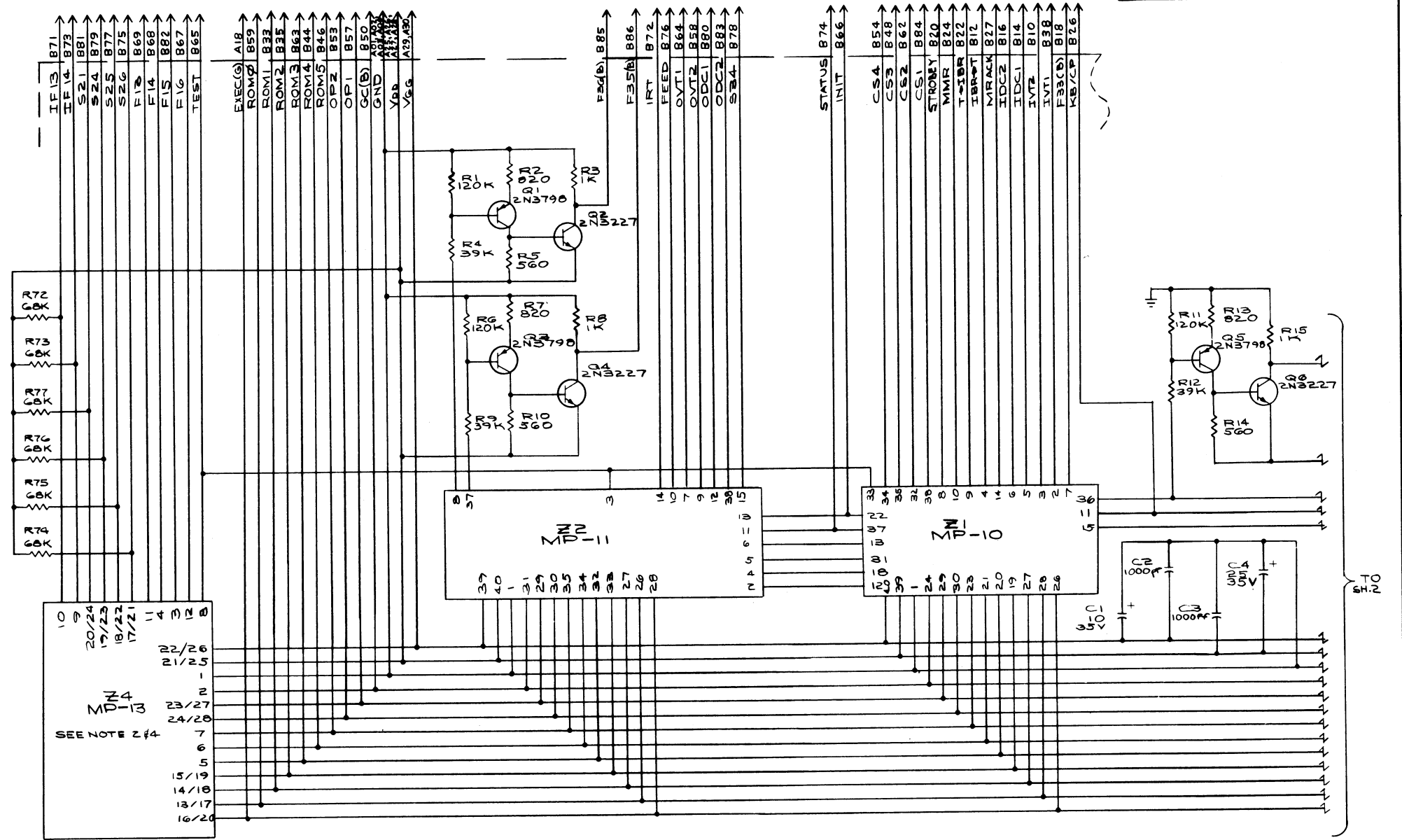
NOTES:

- 4 SPARE FUNCTION
- | | |
|----|--------------------------------|
| 15 | } INDICATES PACKAGE PIN NUMBER |
| 41 | |
| 9 | |
- ALL RESISTORS ARE 1/2W, ±10% UNLESS OTHERWISE SPECIFIED

- TYPE F RECEIVER (DWG NO. 10867) 1 PLACE
- CABLE DRIVER CKT TYPE C (DWG NO. 10863) 2 PLACES

MICROPROCESSOR BOARD NO. 3

10848



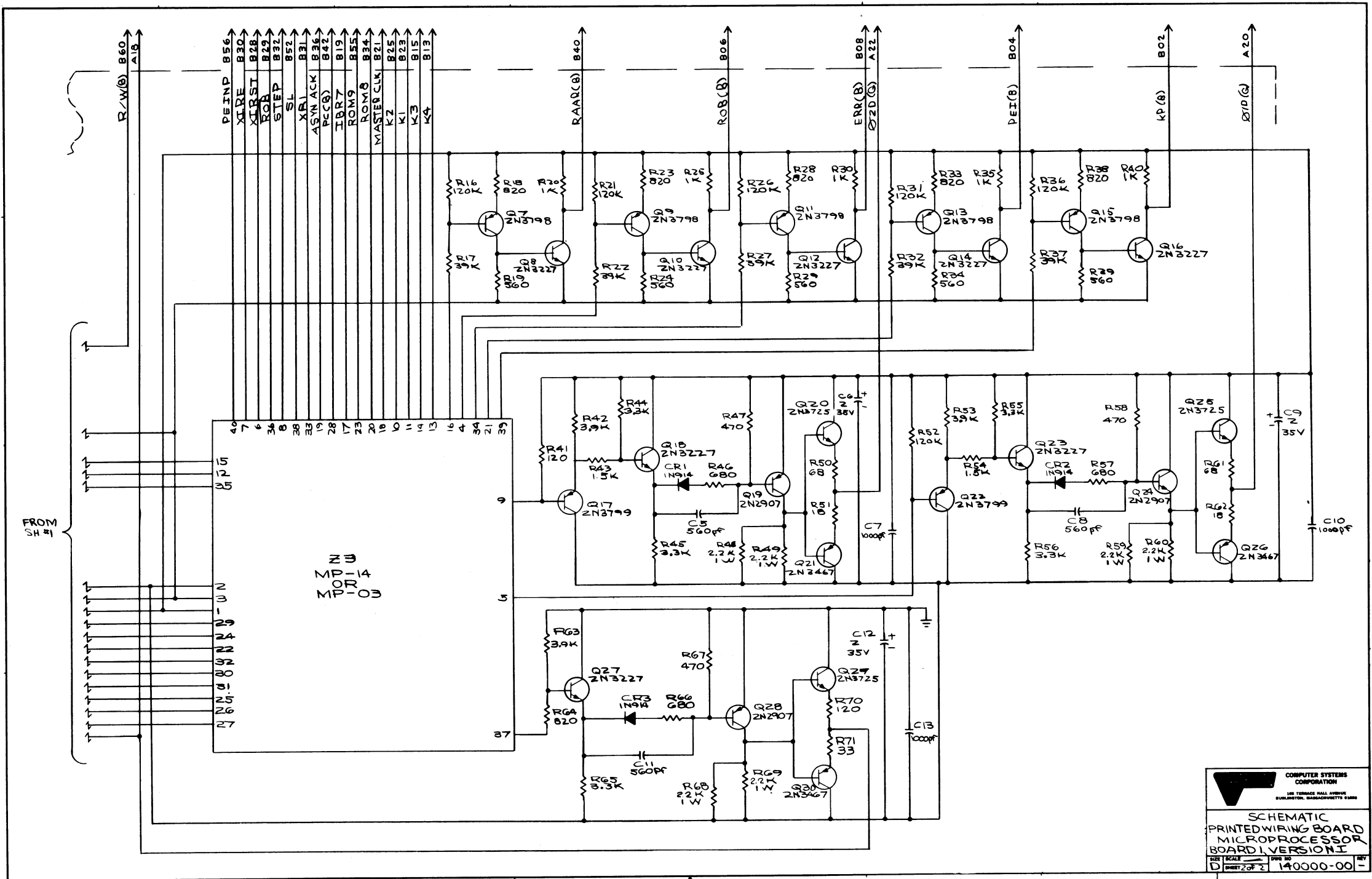
- NOTES**
1. ALL RESISTORS ARE 1/2W ±5% UNLESS OTHERWISE SPECIFIED.
 2. THE PIN NUMBER DESIGNATION 16/20 ETC. DENOTES PIN 16 FOR 24 PIN PACKAGES OR PIN 20 FOR 28 PIN PACKAGES.
 3. ALL CAPACITOR VALUES ARE IN nF UNLESS OTHERWISE SPECIFIED.
 4. USED ONLY IN I1102 MICROPROCESSOR.
 5. 5-DIGIT ARRAY NO REFERENCE TO LOGIC DIAGRAM.


Q30 Z4 C13
CR3 R71
HIGHEST REFERENCE DESIGNATION

COMPUTER SYSTEMS CORPORATION
100 TERRACE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

SCHMATIC PRINTED WIRING BOARD MICROPROCESSOR BOARD NO. I/VERSION I

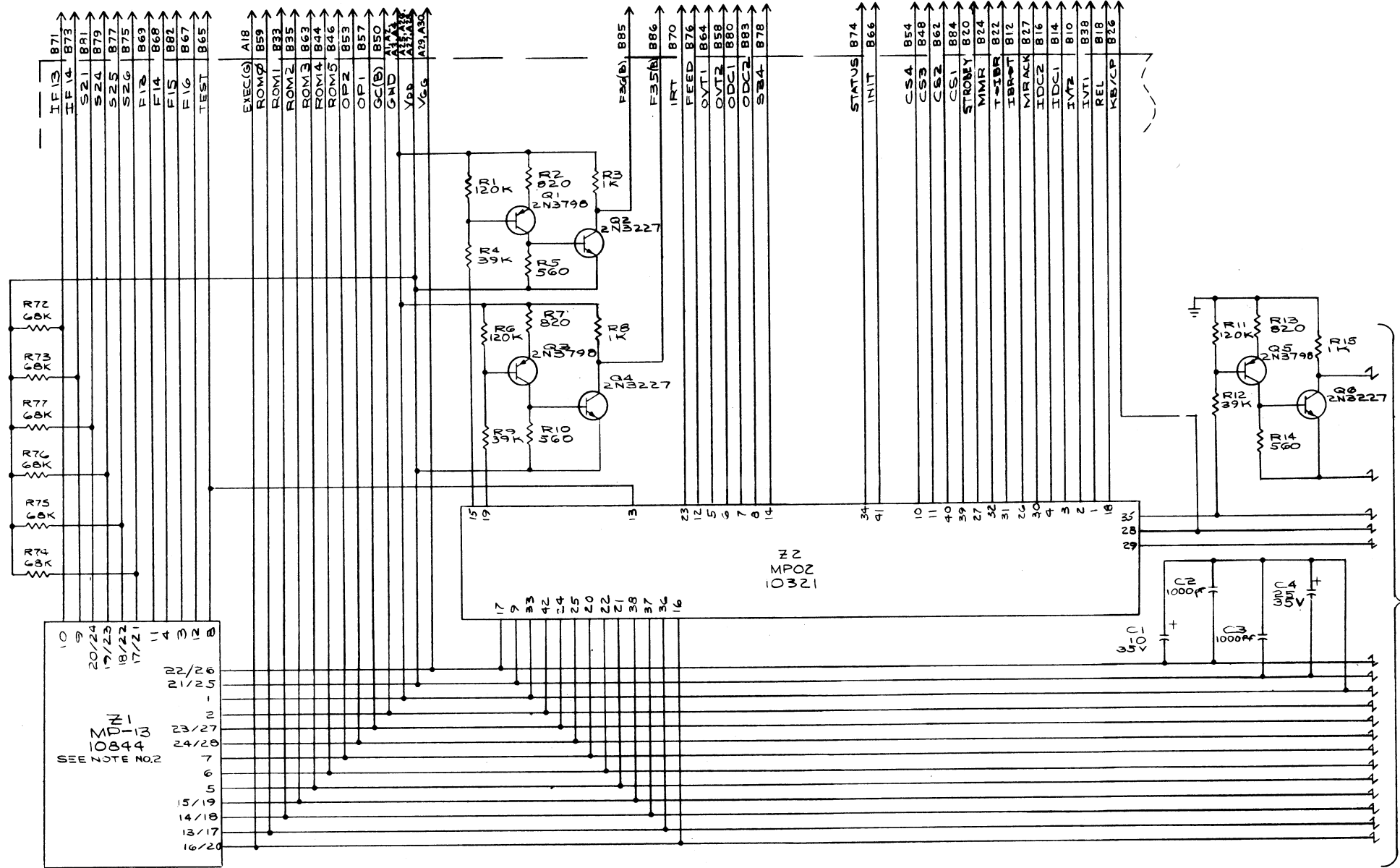
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COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

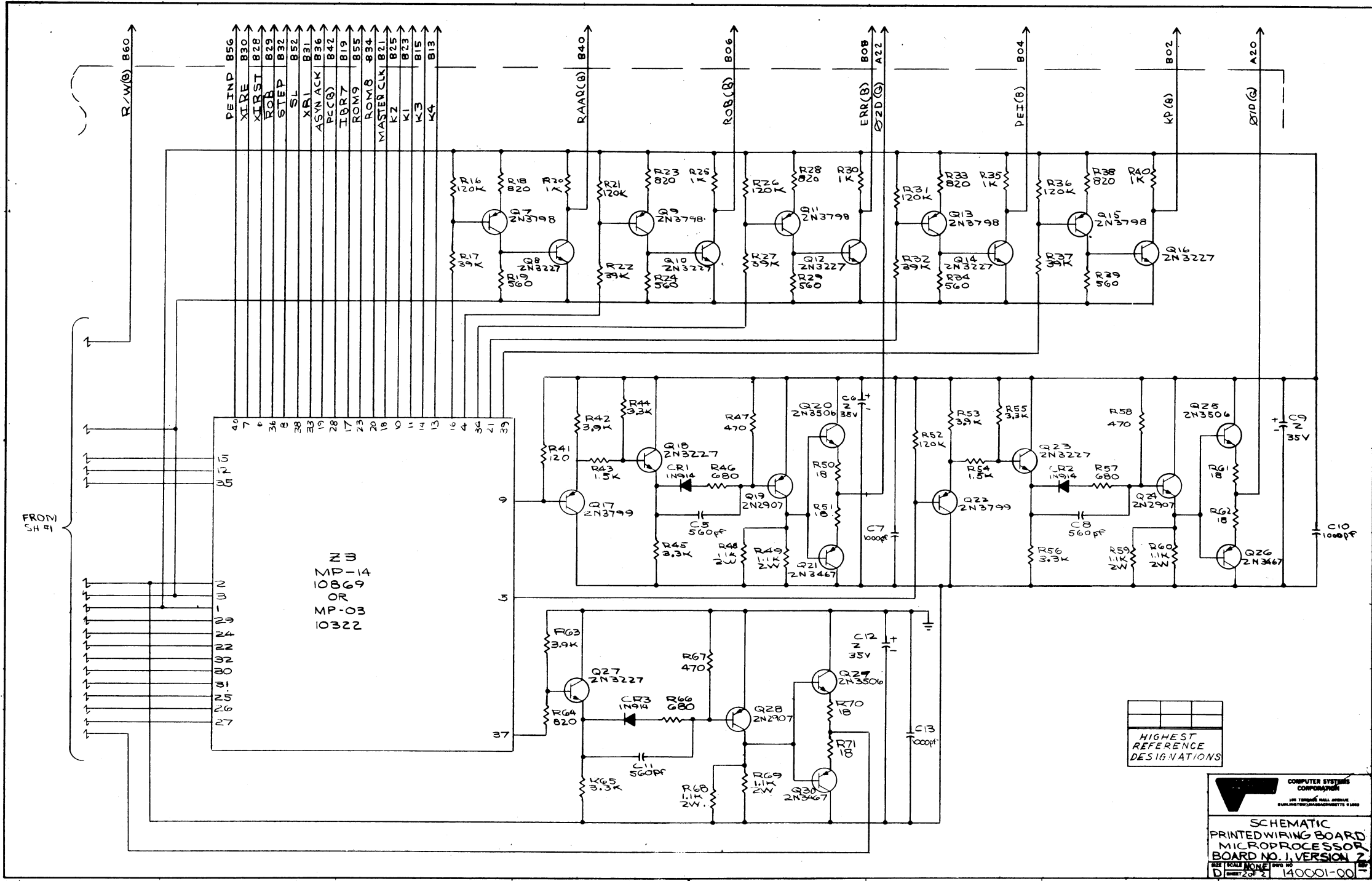
SCHEMATIC
 PRINTED WIRING BOARD
 MICROPROCESSOR
 BOARD, VERSION I

SHEET NO. 2 OF 2 Dwg No. 140000-00-1



NOTES
 1. ALL RESISTORS ARE 1/2W ± 5% UNLESS OTHERWISE SPECIFIED.
 2. THE PIN NUMBER DESIGNATION 16/20 ETC. DENOTES PIN 16 FOR 24 PIN PACKAGES OR PIN 20 FOR 28 PIN PACKAGES.
 3. ALL CAPACITOR VALUES ARE IN P.F. UNLESS OTHERWISE SPECIFIED.
 4. 5-DIGIT ARRAY NO. REFERENCE TO LOGIC DIAGRAM.

COMPUTER SYSTEMS CORPORATION
 140001-00
 SCHEMATIC PRINTED WIRING BOARD MICROPROCESSOR BOARD NO. 1 VERSION 2
 D 11/25 140001-00



HIGHEST REFERENCE DESIGNATIONS

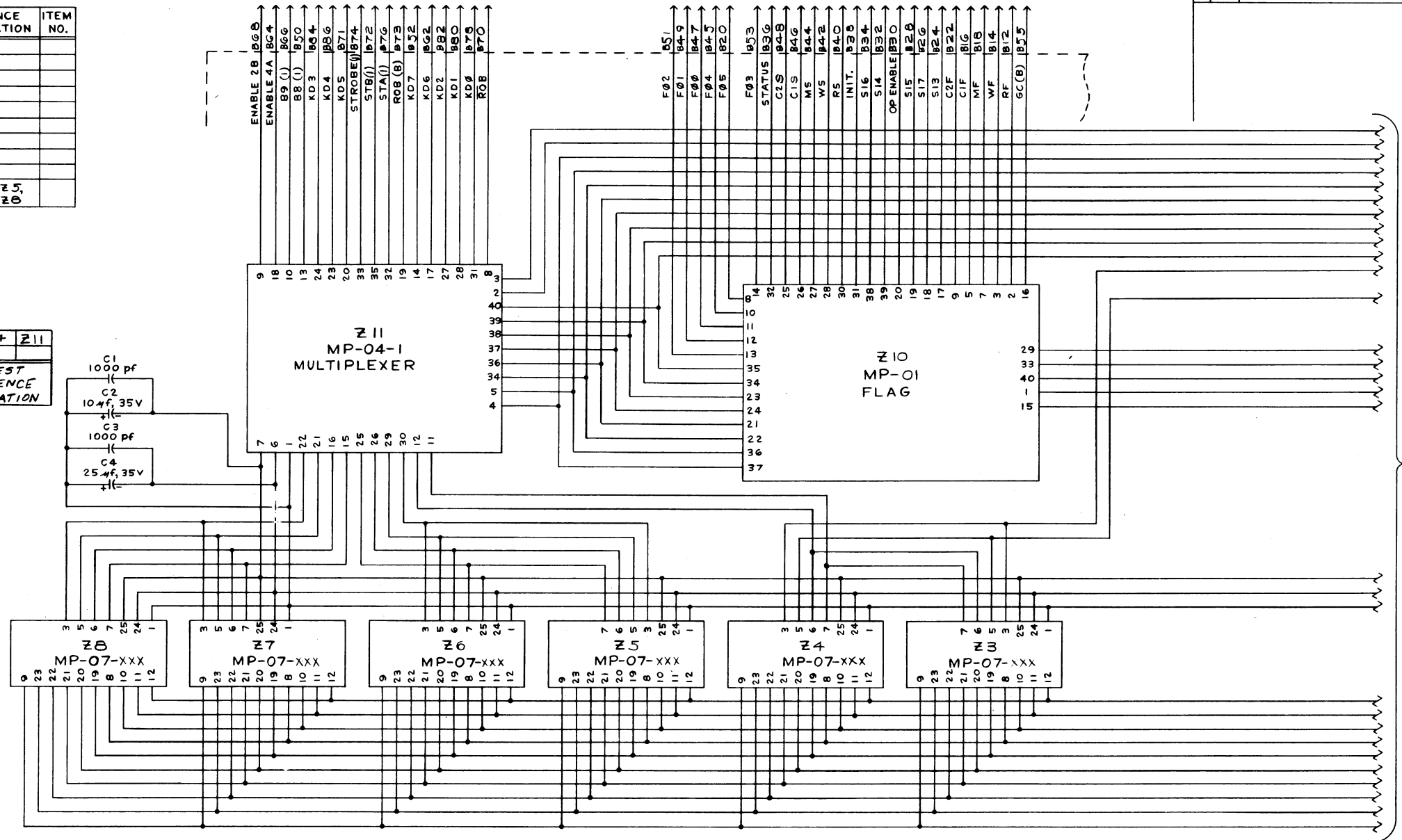
COMPUTER SYSTEMS
CORPORATION
100 TOWN SQUARE DRIVE
DUNELSON, NORTH CAROLINA 27829

SCHMATIC
PRINTED WIRING BOARD
MICROPROCESSOR
BOARD NO. 1, VERSION 2

DATE SCALE: NONE FILE: 140001-00-1
D: 08/77 2 OF 2 140001-00

REFERENCE DESIGNATION	ITEM NO.
C1, C3	
C2	
C4	
RI	
Z1, Z2	
Z9, Z11	
Z10	
*Z3, Z4, Z5, Z6, Z7, Z8	

RI	C4	Z11
HIGHEST REFERENCE DESIGNATION		

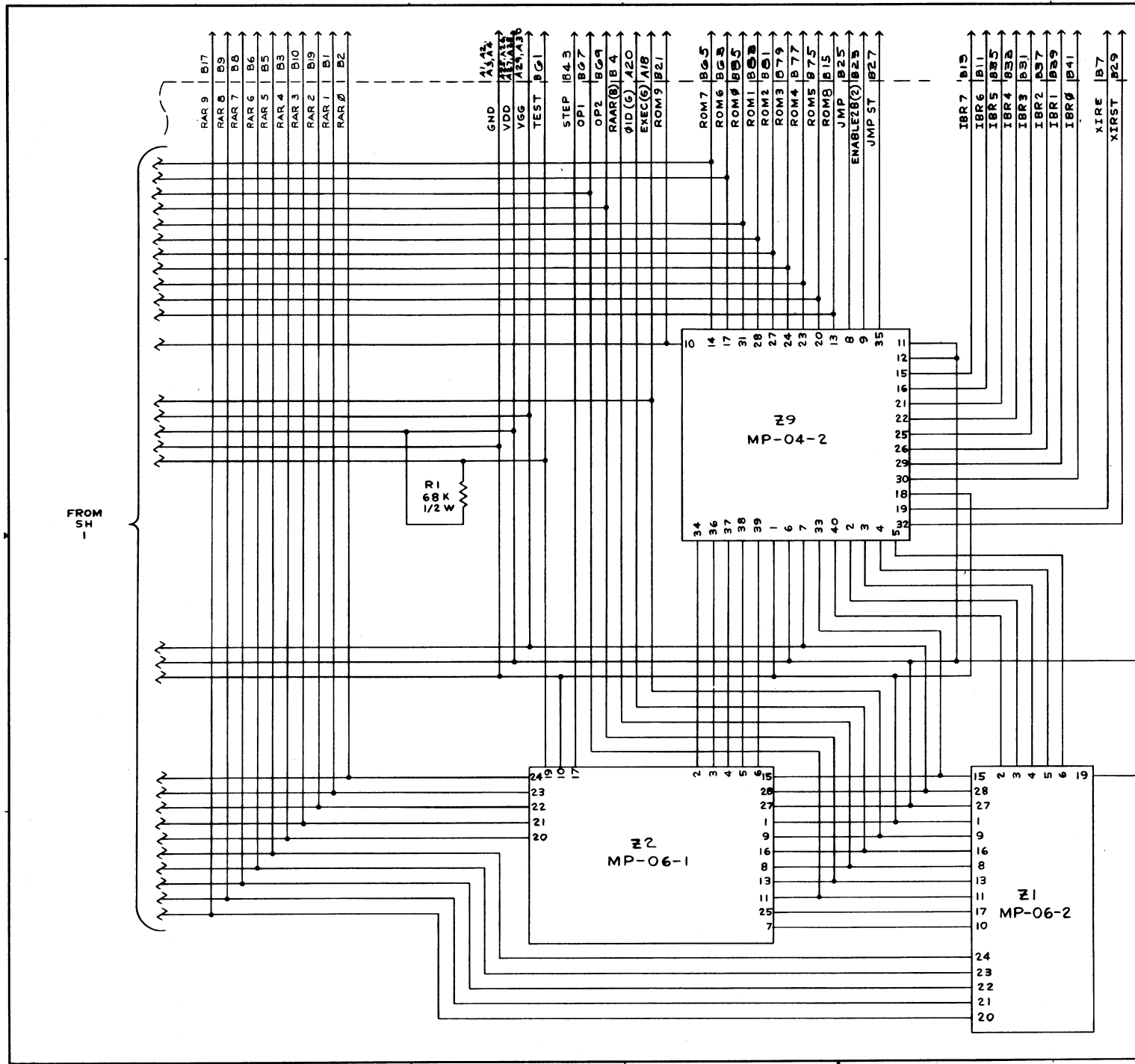


* NOTE:
 1. Z4, Z6, Z8 USED IN 1101 MICROPROCESSOR
 2. Z3, Z4, Z5, Z6, Z7, Z8 USED IN 1102 MICROPROCESSOR
 3. 5 DIGIT ALKAY NO. REFERENCE TO LOGIC DIAGRAM

COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

SCHEMATIC PRINTED WIRING BOARD
 MPBD 2-1

SIZE: SCALE: DWG NO: 140002-00
 SHEET 1 OF 2



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

COMPUTER SYSTEMS CORPORATION
100 THURGOOD HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

SCHEMATIC
PRINTED WIRING BOARD
MPBD 2-1

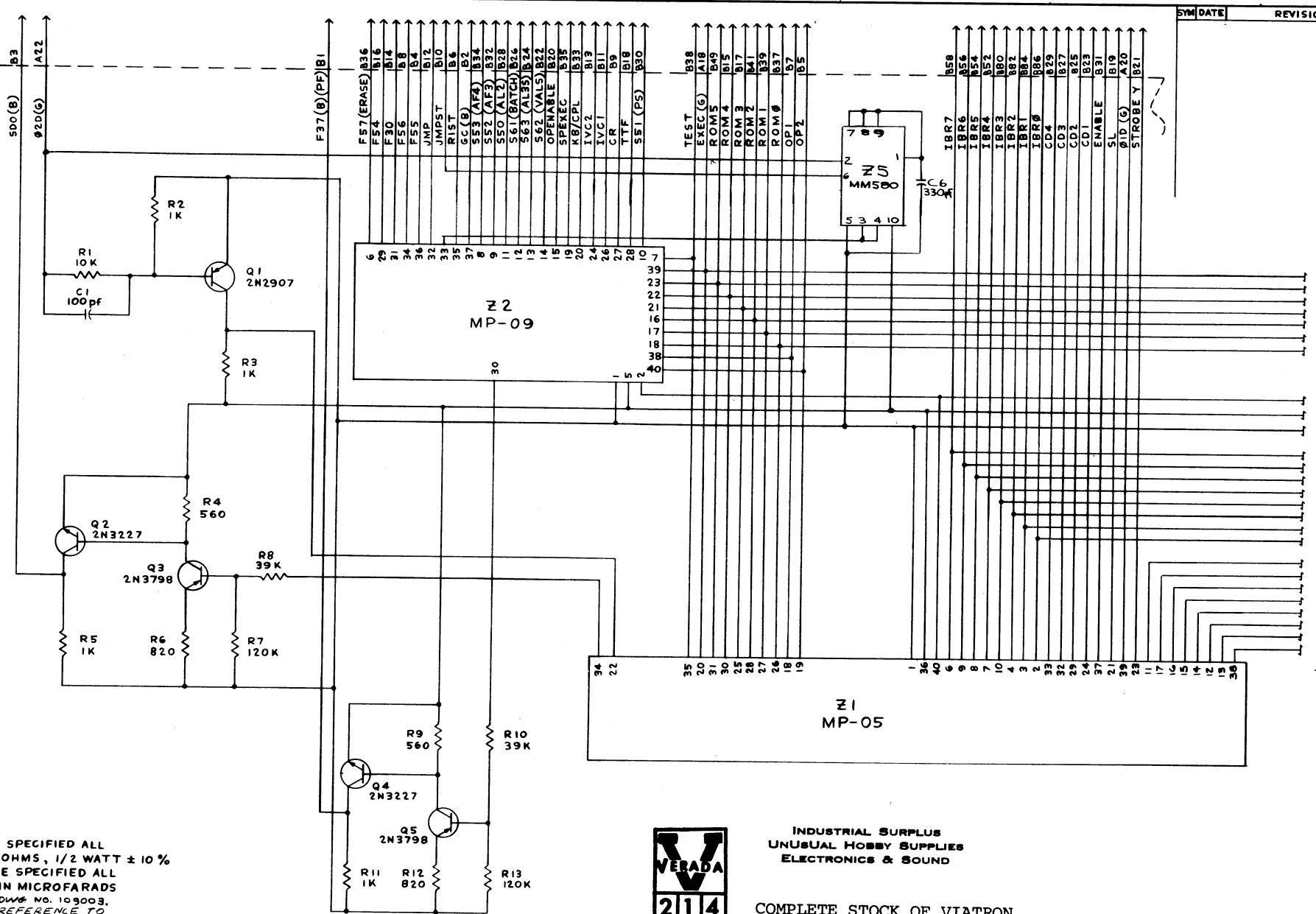
SIZE: D SCALE: 20X REV: 140002-00

REFERENCE DESIGNATION	ITEM NO.
C1	9
C2	10
C3, C5	11
C4	12
C6	13
Q1	14
Q2, Q4	15
Q3, Q5	16
R1	17
R2, R3, R5, R11	18
R4, R9	19
R6, R12	20
R7, R13	21
R8, R10	22
Z1	23
Z2	24
Z3	25
Z4	26
Z5	27

R13	Q5	Z5
C6		

HIGHEST REFERENCE DESIGNATION

- NOTES:
- UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE IN OHMS, 1/2 WATT ± 10 %
 - UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE IN MICROFARADS
 - FOR ASSEMBLY, SEE DWG NO. 109003.
 - 5-DIGIT ARRAY NO REFERENCE TO LOGIC DIAGRAM.



SYM	DATE	REVISION	DR.	CK.

TO SHEET 2



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

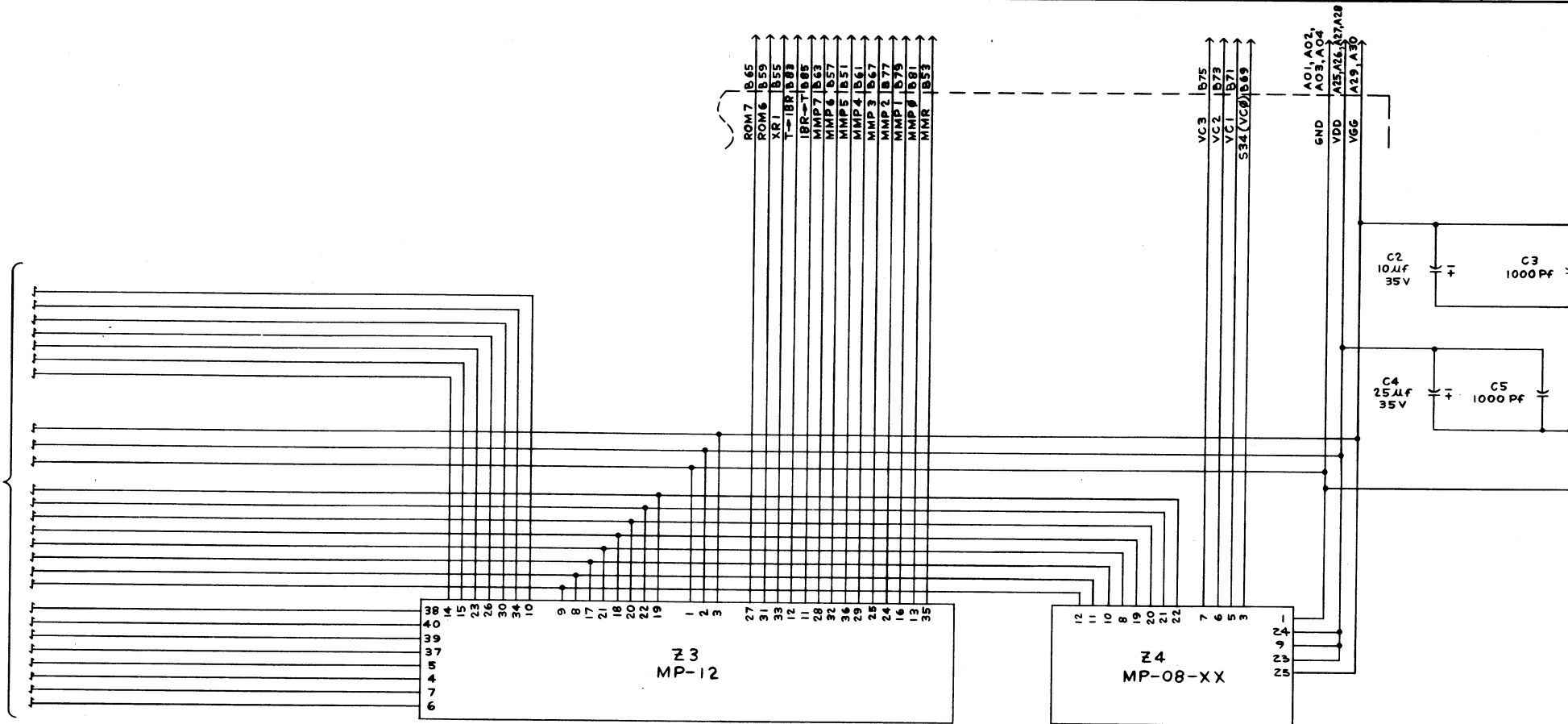
VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

COMPUTER SYSTEMS CORPORATION
100 TERRACE HALL AVENUE
MILFORD, MASSACHUSETTS 01850

**SCHEMATIC
PRINTED WIRING BOARD
MICROPROCESSOR BOARD[®]3**

REV. SCALE: 1:1
REV. DATE: 10/72
REV. NO: 140003-00

FROM SHEET 1



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
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STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013



COMPUTER SYSTEMS CORPORATION
140 YERRACE HALL AVENUE
DANVER, MASSACHUSETTS 01923

**SCHEMATIC
PRINTED WIRING BOARD
MICROPROCESSOR BOARD**

DATE: 10/80
SCALE: D
SHEET: 2 OF 2
PART NO: 140003-00

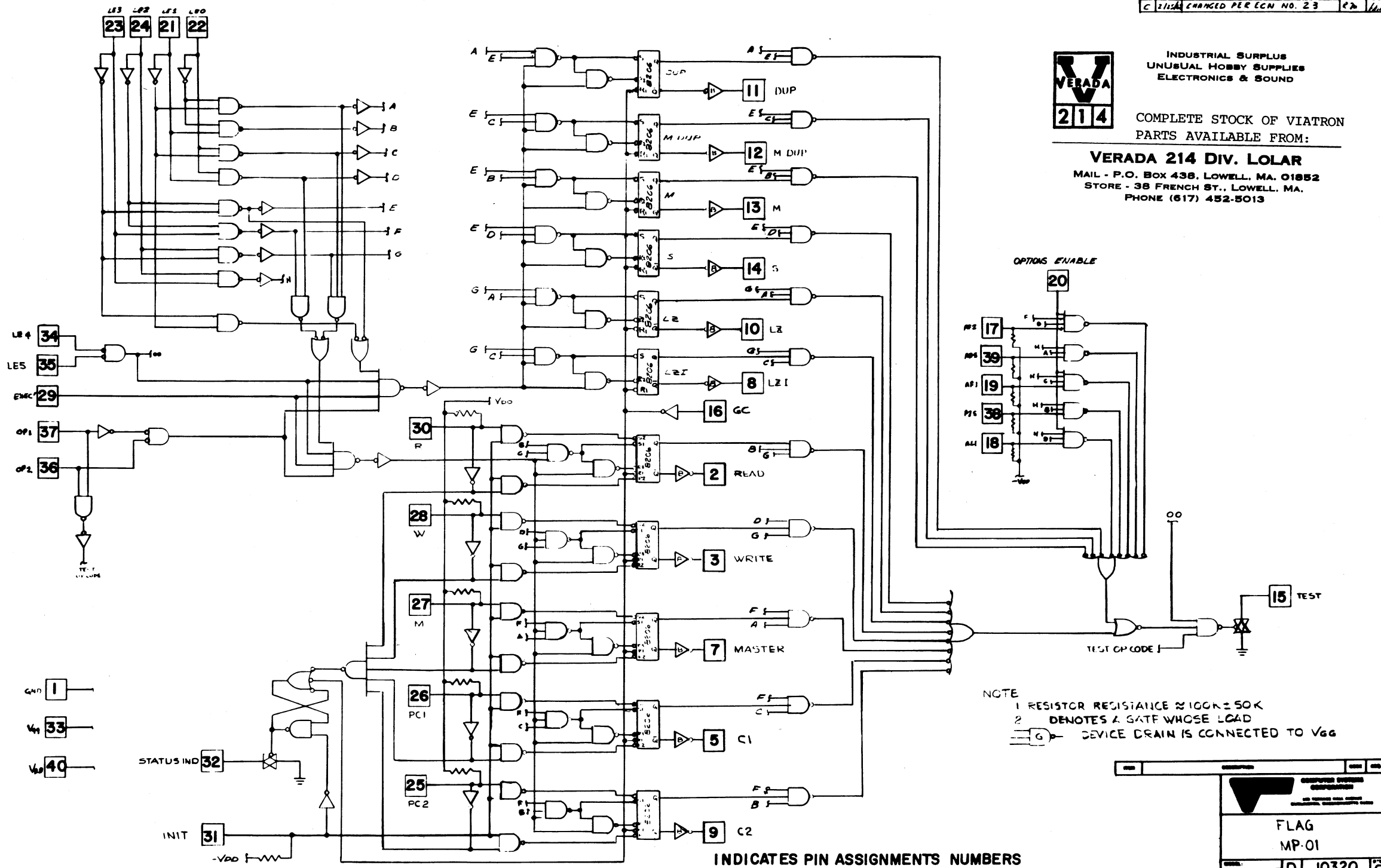
REV	DATE	REVISION	BY	CHK
A	2/10/64	CHANGED PER ECN NO. 8	EA	...
B	2-15-64	CHANGED PER ECN NO. 13	EA	...
C	2/15/64	CHANGED PER ECN NO. 23	EA	...



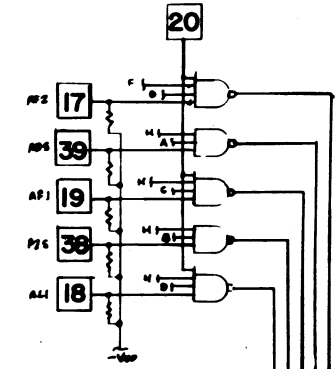
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013



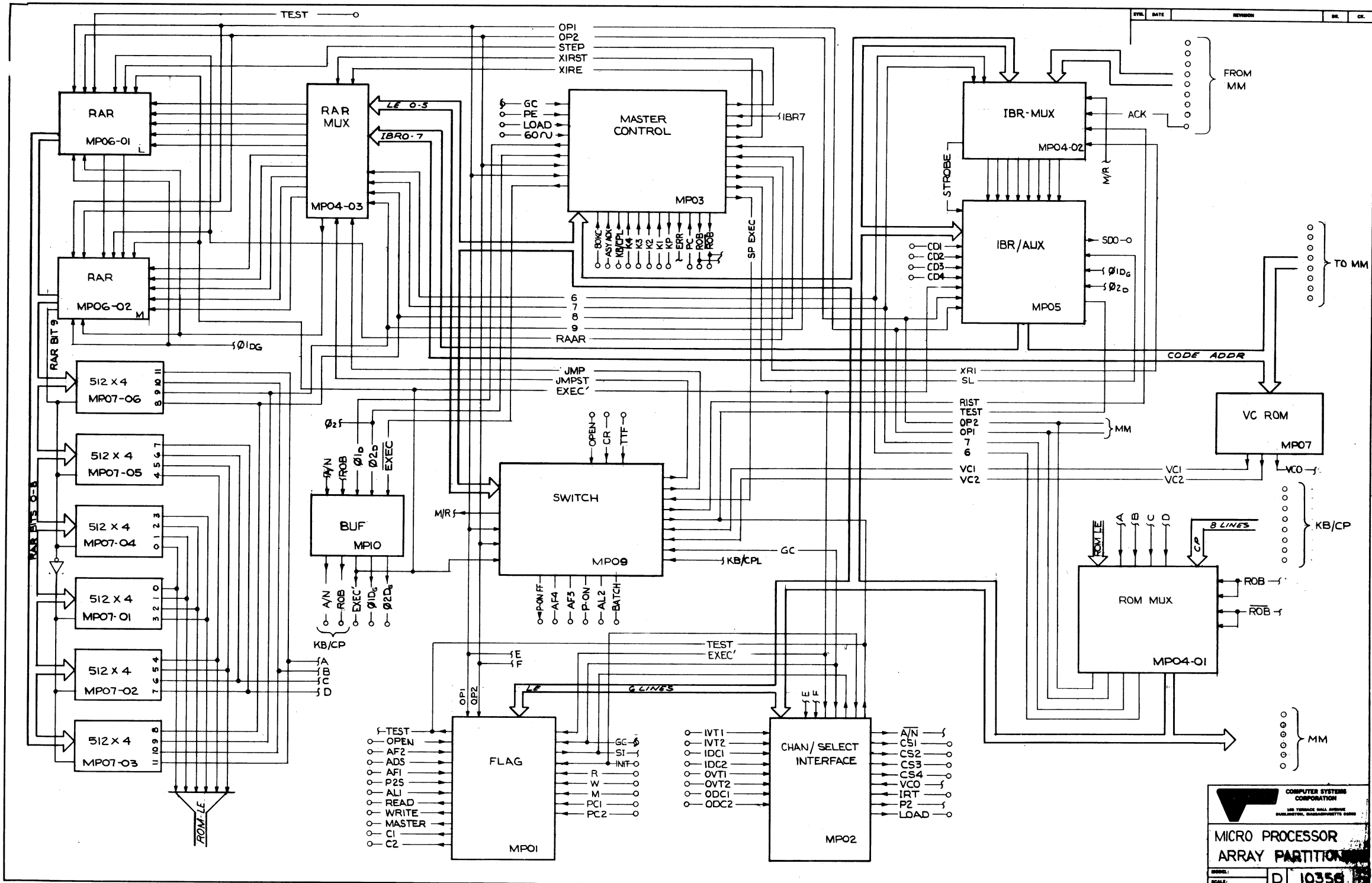
OPTIONS ENABLE



NOTE
1 RESISTOR RESISTANCE $\approx 100k \pm 50k$
2 DENOTES A GATE WHOSE LOAD
DEVICE DRAIN IS CONNECTED TO Vcc

INDICATES PIN ASSIGNMENTS NUMBERS

REV	DATE	REVISION	BY	CHK
FLAG MP-01				
REV	DATE	REVISION	BY	CHK
D	10320	C		

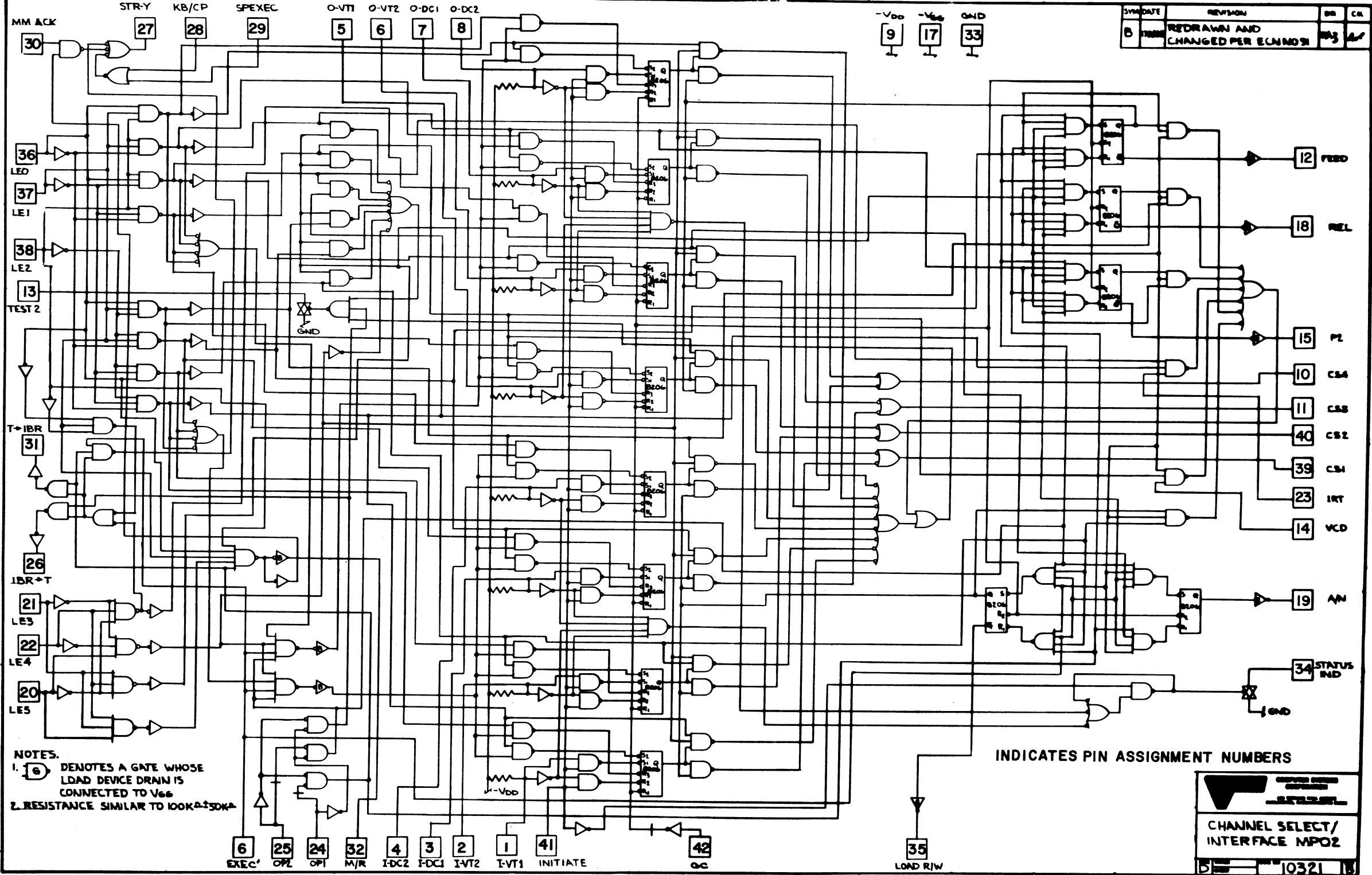


COMPUTER SYSTEMS CORPORATION
100 YERGEN HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

**MICRO PROCESSOR
ARRAY PARTITION**

MODEL: D 10356

SCALE:



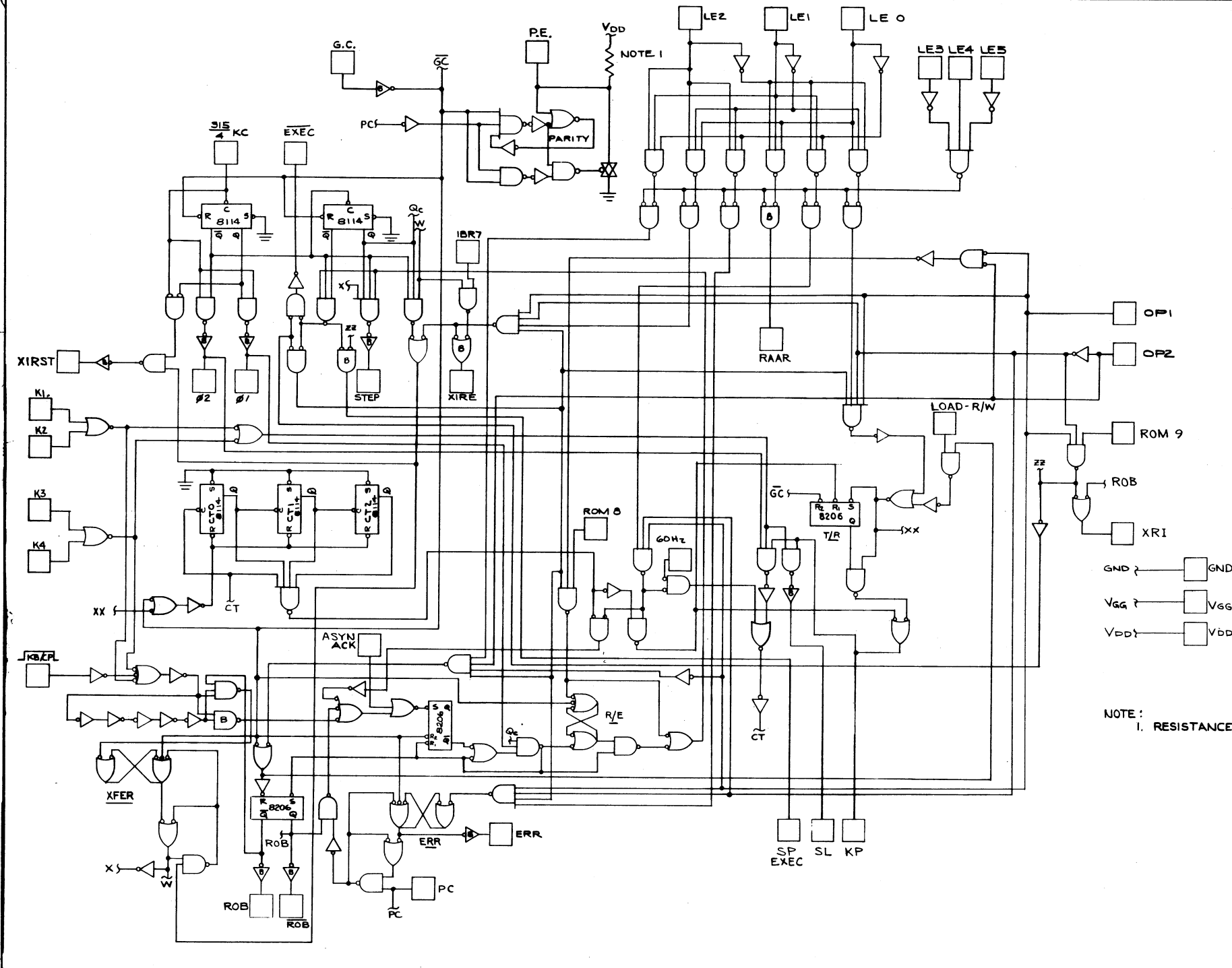
SYSDATE	REVISION	DR	CA
B	REDRAWN AND CHANGED PER ELMOS		

NOTES.
 1. DENOTES A GATE WHOSE LOAD DEVICE DRAIN IS CONNECTED TO V_{ee}
 2. RESISTANCE SIMILAR TO 100K-150K

INDICATES PIN ASSIGNMENT NUMBERS

CHANNEL SELECT/ INTERFACE MPO2
 10321

REV.	DATE	REVISION	BY	CHK
A	2/11/69	CHANGED PER ECN NO. 9	K.P.	
B	3/5/69	CHANGED PER ECN NO. 37	WJ	
C	5/5/69	CHANGED PER ECN NO. 82	WJ	



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-8013

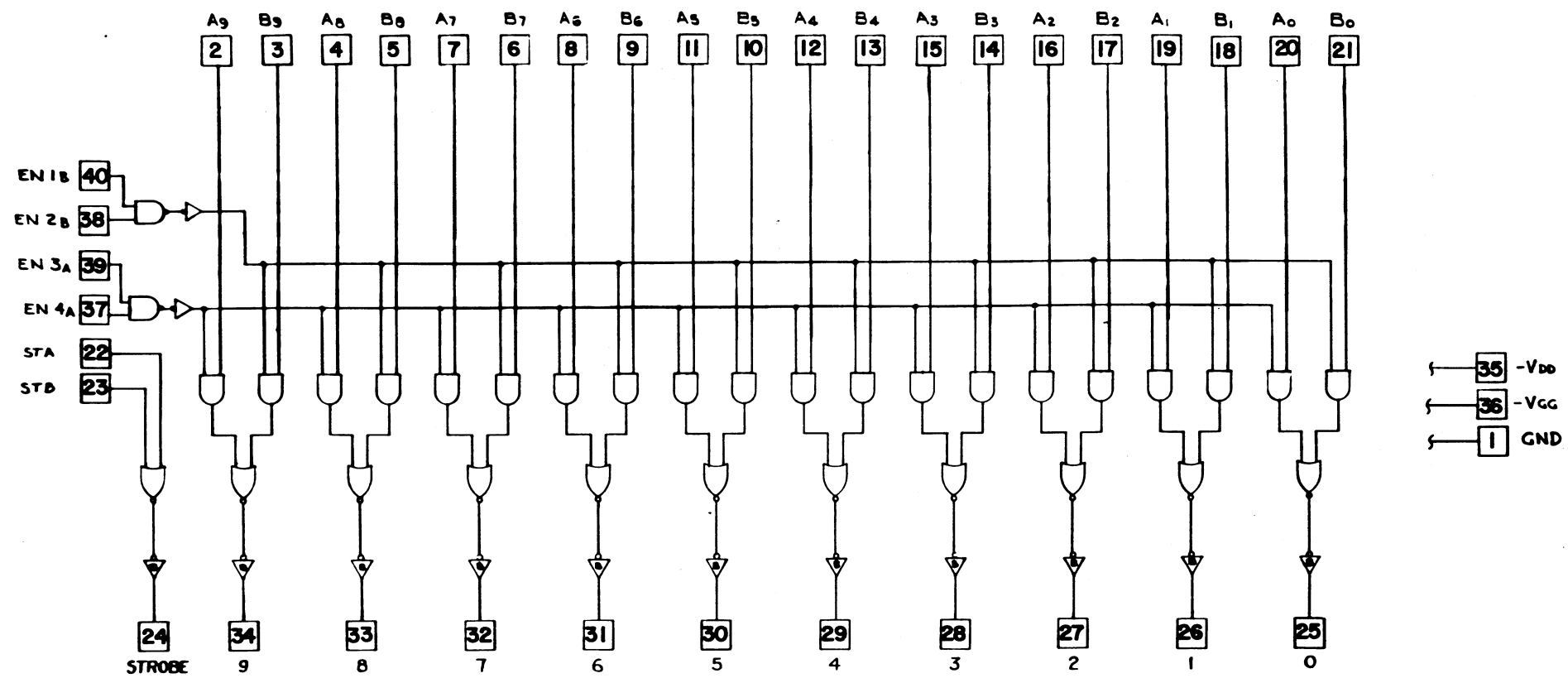
NOTE:
1. RESISTANCE OF DEVICE = 100K +50K -25K

COMPUTER SYSTEMS CORPORATION
140 YERRIDGE HALL AVENUE
MILFORD, MASSACHUSETTS 01860

**MPO3
MASTER CONTROL**

MODEL: D **10322**

SCALE:



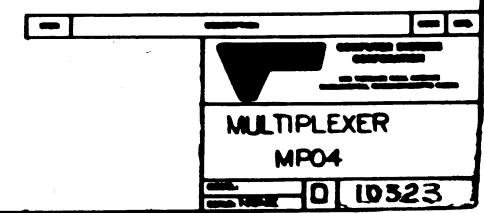
INDICATES PIN ASSIGNMENT NOS. 40 LEAD (G1)

PIN ASSIGNMENT NOS. 40 LEAD (AMI)			
GND	1	5	40
6	2	4	39
7	3	3	38
8	4	2	37
9	5	1	36
VDD	6	STB	35
VGG	7	0	34
EN1B	8	STROBE	33
EN2B	9	STA	32
B9	10	B0	31
A9	11	A0	30
A8	12	A1	29
B8	13	B1	28
B7	14	B2	27
A7	15	A2	26
A6	16	A3	25
B6	17	B3	24
EN4A	18	B4	23
EN3A	19	A4	22
B5	20	A5	21

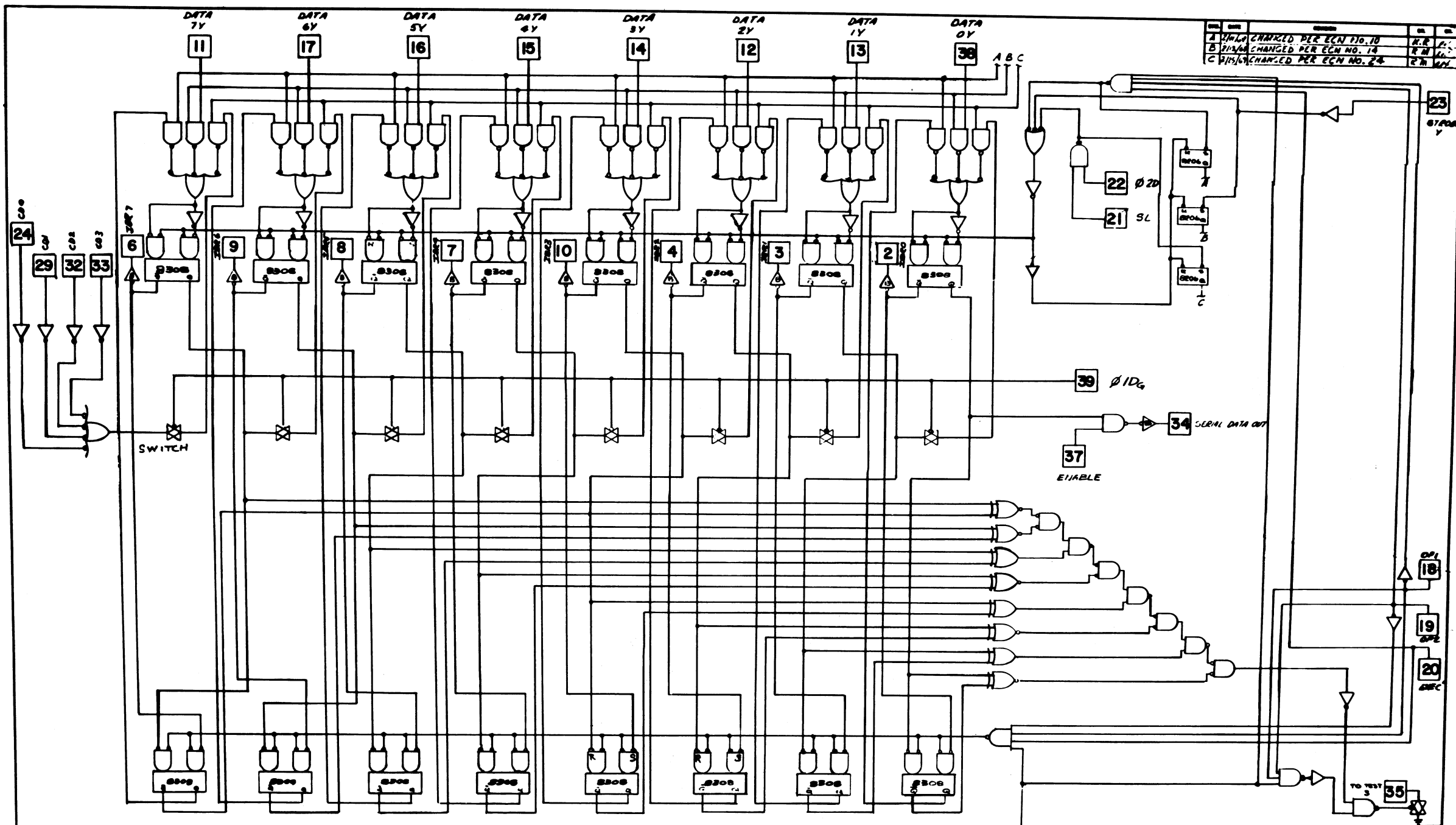


INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

 COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:
VERADA 214 DIV. LOLAR
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 PHONE (617) 452-5013

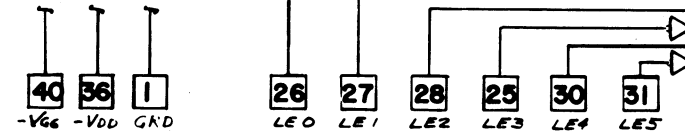


REV	DATE	DESCRIPTION	BY	CHK
A		SH160 CHANGED PER ECN NO. 10	R.R.	
B		SH154 CHANGED PER ECN NO. 14	R.H.	
C		SH156 CHANGED PER ECN NO. 24	R.H.	



INDICATES PIN ASSIGNMENT NUMBERS

NOTE:
 1. DENOTES A GATE WHOSE LEAD DEVICE DRAIN IS CONNECTED TO V_{GG}



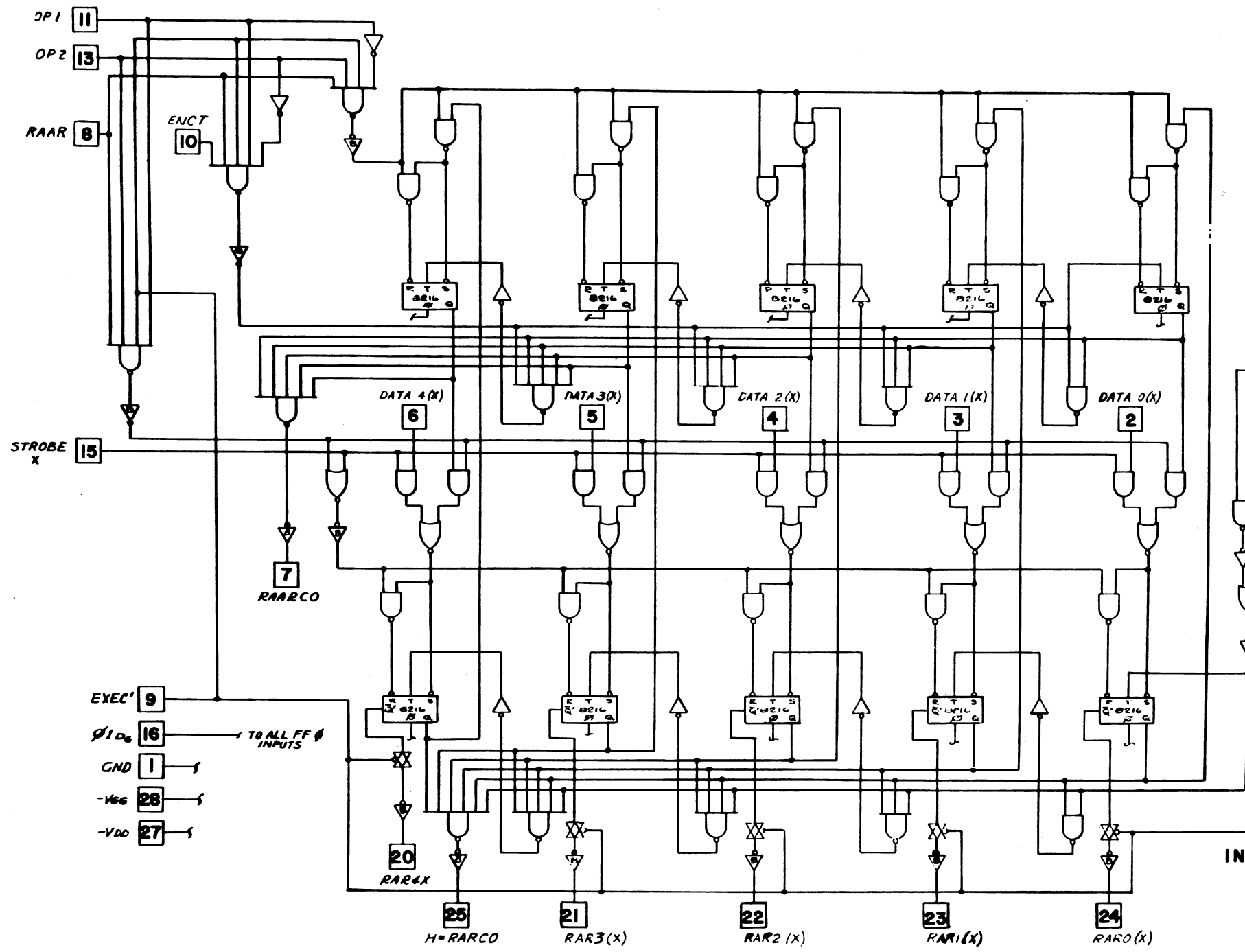
COMPUTER SYSTEM CORPORATION
 10000 WILSON BLVD
 BOSTON, MASSACHUSETTS 02116

IBR/AUX MP05

REV. 10/74

10324

REV	DATE	DESCRIPTION	BY
A	7/76	CHANGED PER ECN NO. 72	WJ
B	8/84	CHANGED PER ECN NO. 16	WJ
C	10/84	CHANGED PER ECN NO. 23	WJ



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

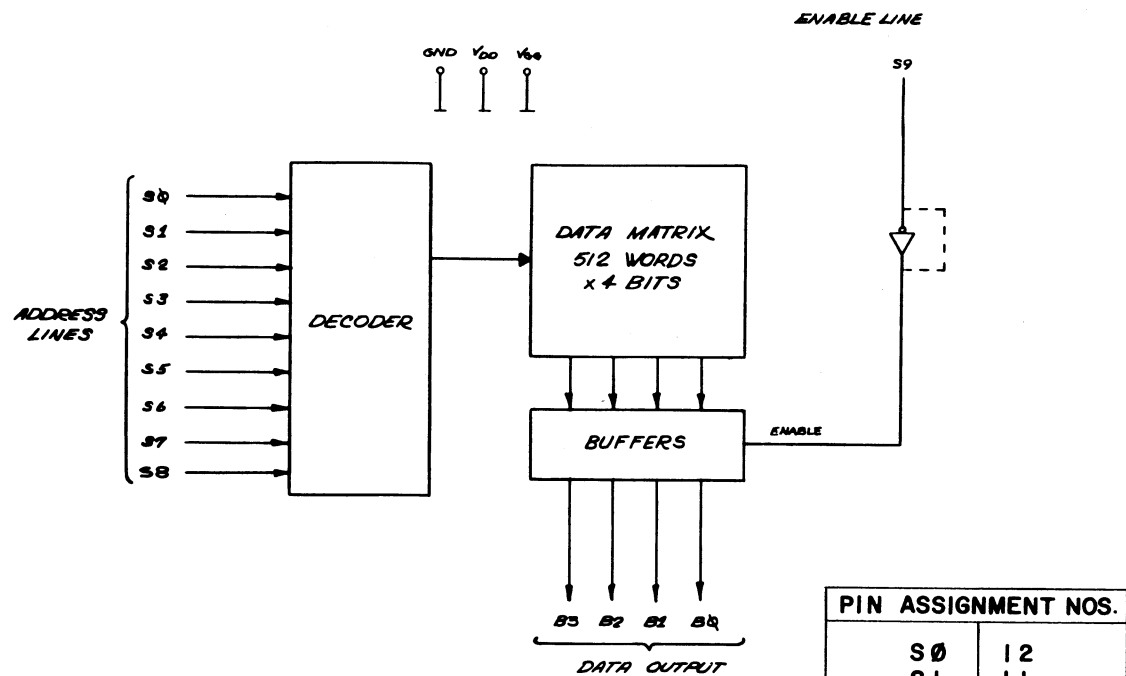
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

NOTE: DENOTES A GATE WHOSE LOAD DEVICE DRAIN IS CONNECTED TO VCC

INDICATES PIN ASSIGNMENTS NUMBERS

COMPUTER SYSTEM	
RAR/RAAR	
MP06	
0	10325



PIN ASSIGNMENT NOS.	
S0	12
S1	11
S2	10
S3	8
S4	19
S5	20
S6	21
S7	22
S8	23
B0	3
B1	5
B2	6
B3	7
S9	9
GND	1
Vdd	24
Vgg	25

NOTES:

1. CHIP DESIGN MUST INCLUDE THE ENABLING CIRCUITRY
2. CHIPS MUST HAVE THE CAPABILITY OF HAVING THE OUTPUTS PARALLELED WITH OTHER CHIPS OF SAME TYPE.
3. t ACCESS < 5.0 μ SEC

COMPUTER SYSTEMS CORPORATION
 1000 UNIVERSITY AVENUE
 LOWELL, MASSACHUSETTS 01852

**R.O.M. DETAIL
 MPO7**

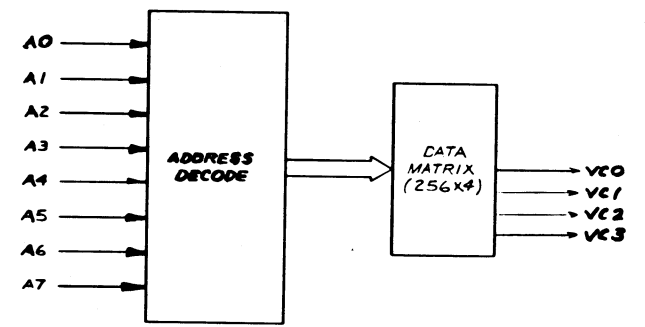
Q 10326



INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013



PIN ASSIGNMENT NOS.	
A0	12
A1	11
A2	10
A3	8
A4	19
A5	20
A6	21
A7	22
VC0	3
VC1	5
VC2	6
VC3	7

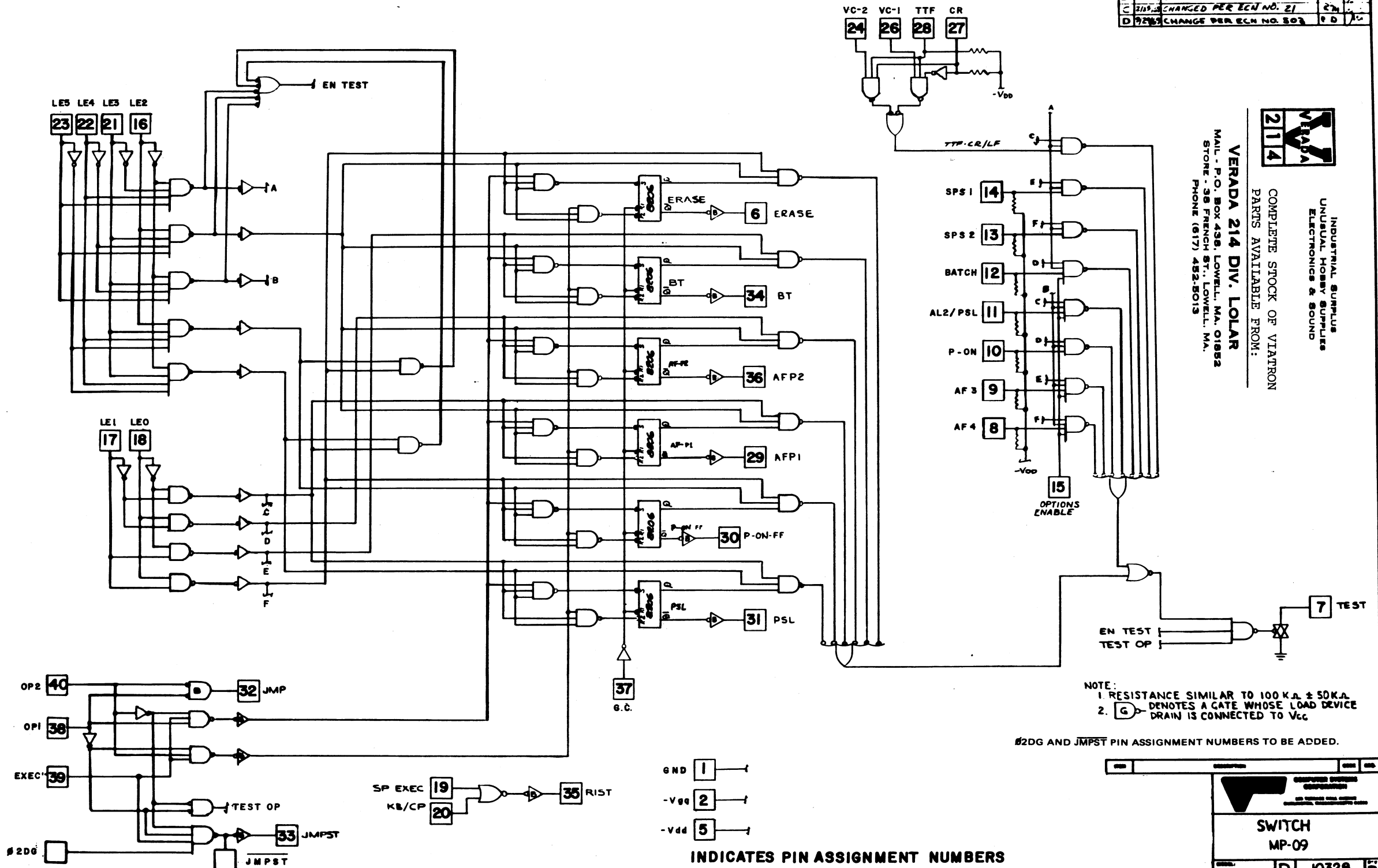
- 1 GND
- 9 Vdd
- 25 Vgg

COMPUTER SYSTEMS CORPORATION
 1000 UNIVERSITY AVENUE
 LOWELL, MASSACHUSETTS 01852

VALID CODE ROM-MPOB

Q 10327

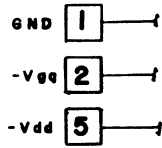
A	2114	CHANGED PER ECN NO. 11	1	1
B	219	CHANGED PER ECN NO. 18	1	1
C	219	CHANGED PER ECN NO. 21	1	1
D	219	CHANGE PER ECN NO. 507	1	1



VERADA 2114 DIV. LOLAR
 COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:
 INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

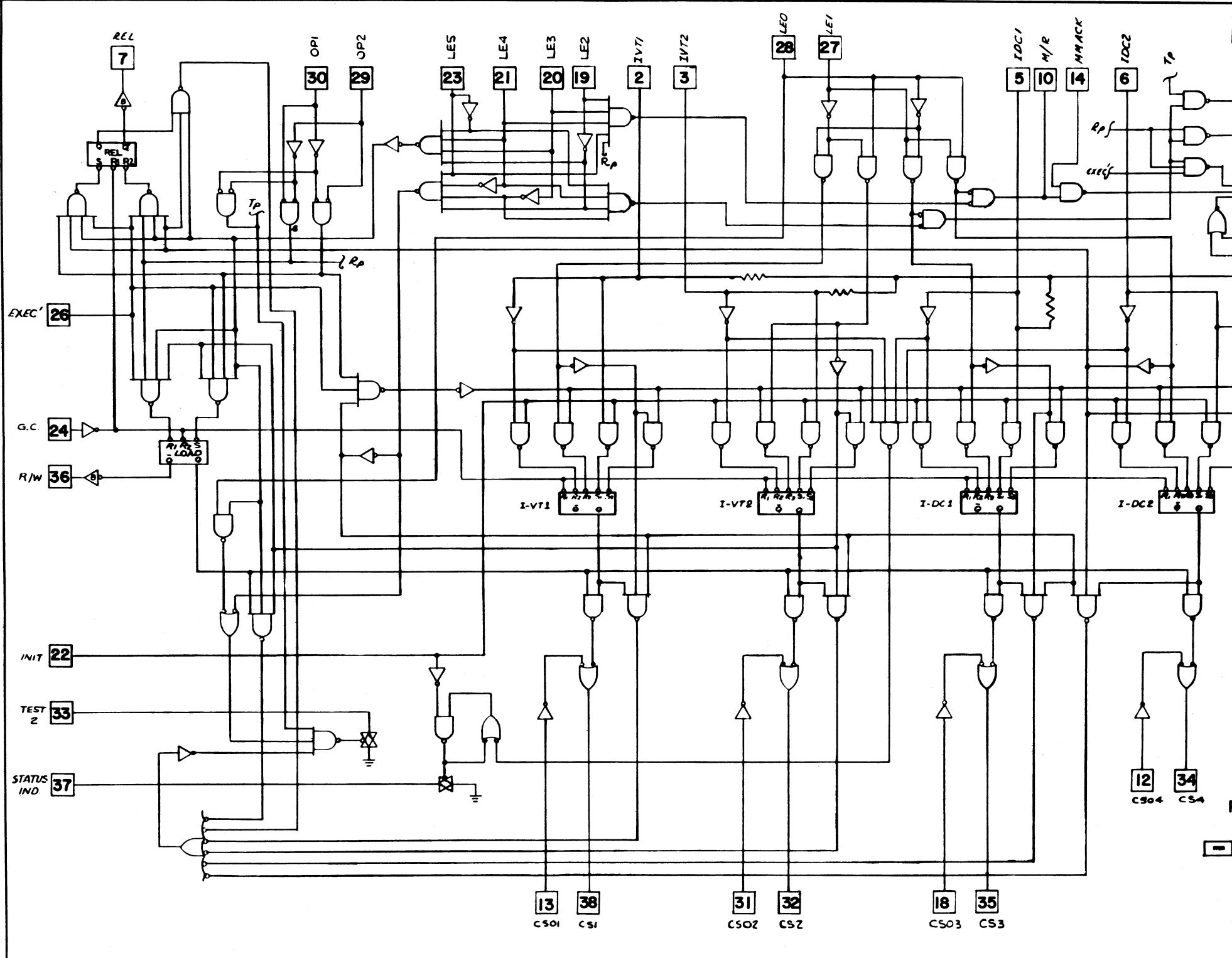
NOTE:
 1. RESISTANCE SIMILAR TO 100 KΩ ± 50KΩ
 DENOTES A GATE WHOSE LOAD DEVICE
 DRAIN IS CONNECTED TO V_{CC}
 2. DENOTES A GATE WHOSE LOAD DEVICE
 DRAIN IS CONNECTED TO V_{CC}

#2DG AND JUMPST PIN ASSIGNMENT NUMBERS TO BE ADDED.



INDICATES PIN ASSIGNMENT NUMBERS

COMPUTER SYSTEM CORPORATION	
VERADA 2114 DIV. LOLAR	
SWITCH MP-09	
D	10328 6

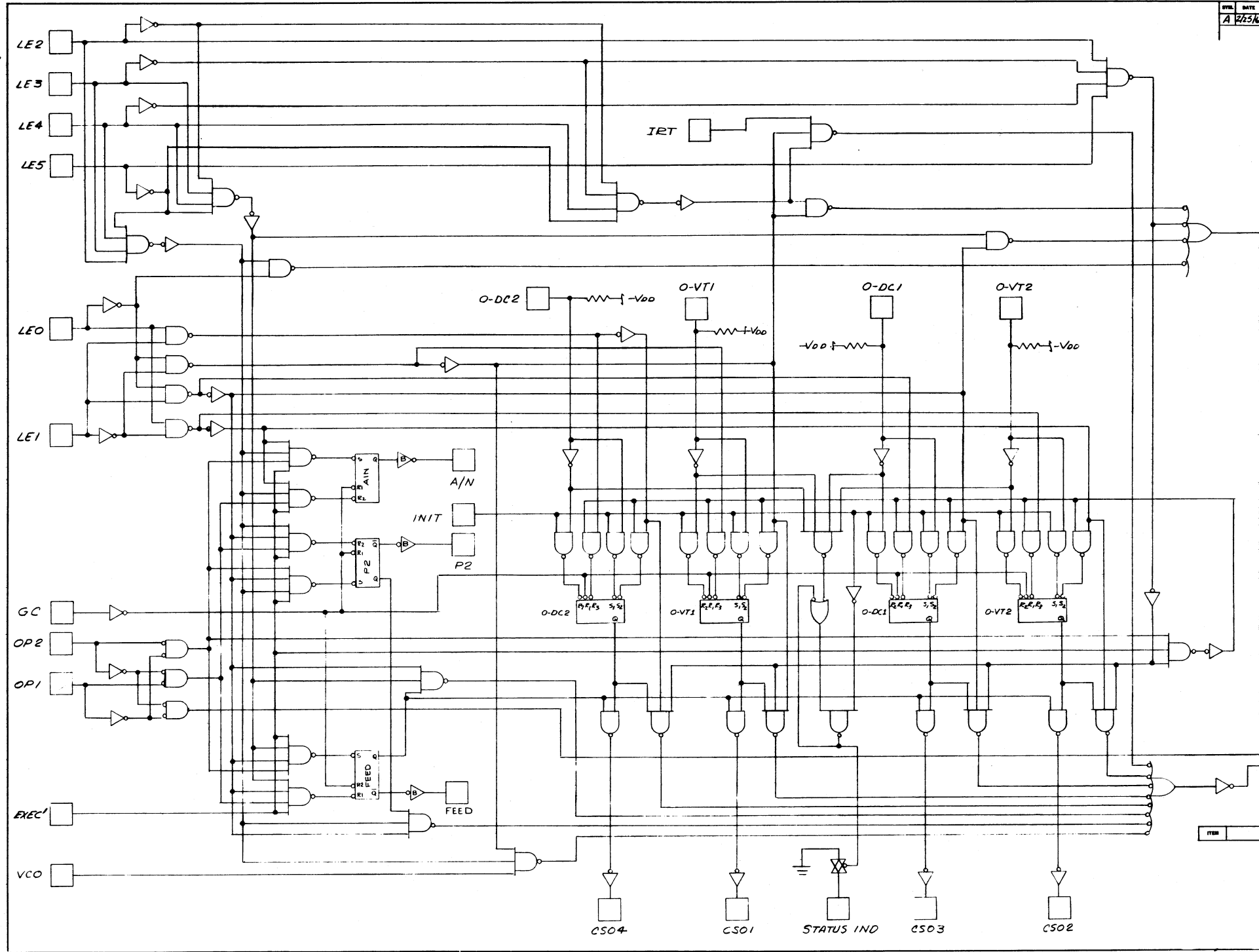


NOTES:
 1. DENOTES A GATE WHOSE LOAD DEVICE DRAIN IS CONNECTED TO V_{GG}.
 2. RESISTOR RESISTANCE IS 100KΩ ± 50KΩ.

← 39 -V_{CC}
 ← 40 -V_{GG}
 ← 1 -GND

INDICATES PIN ASSIGNMENT NUMBERS

COMPUTER SYSTEM CORPORATION	
INPUT CHANNEL SELECT INTERFACE MPIO	
D	10459



NOTE:
 RESISTANCE 100 KΩ
 ± 50 KΩ
 DENOTES A GATE
 WHOSE LOAD DEVICE
 DRAIN IS CONNECTED
 TO VGG.

-VDD
 -VGG
 GND

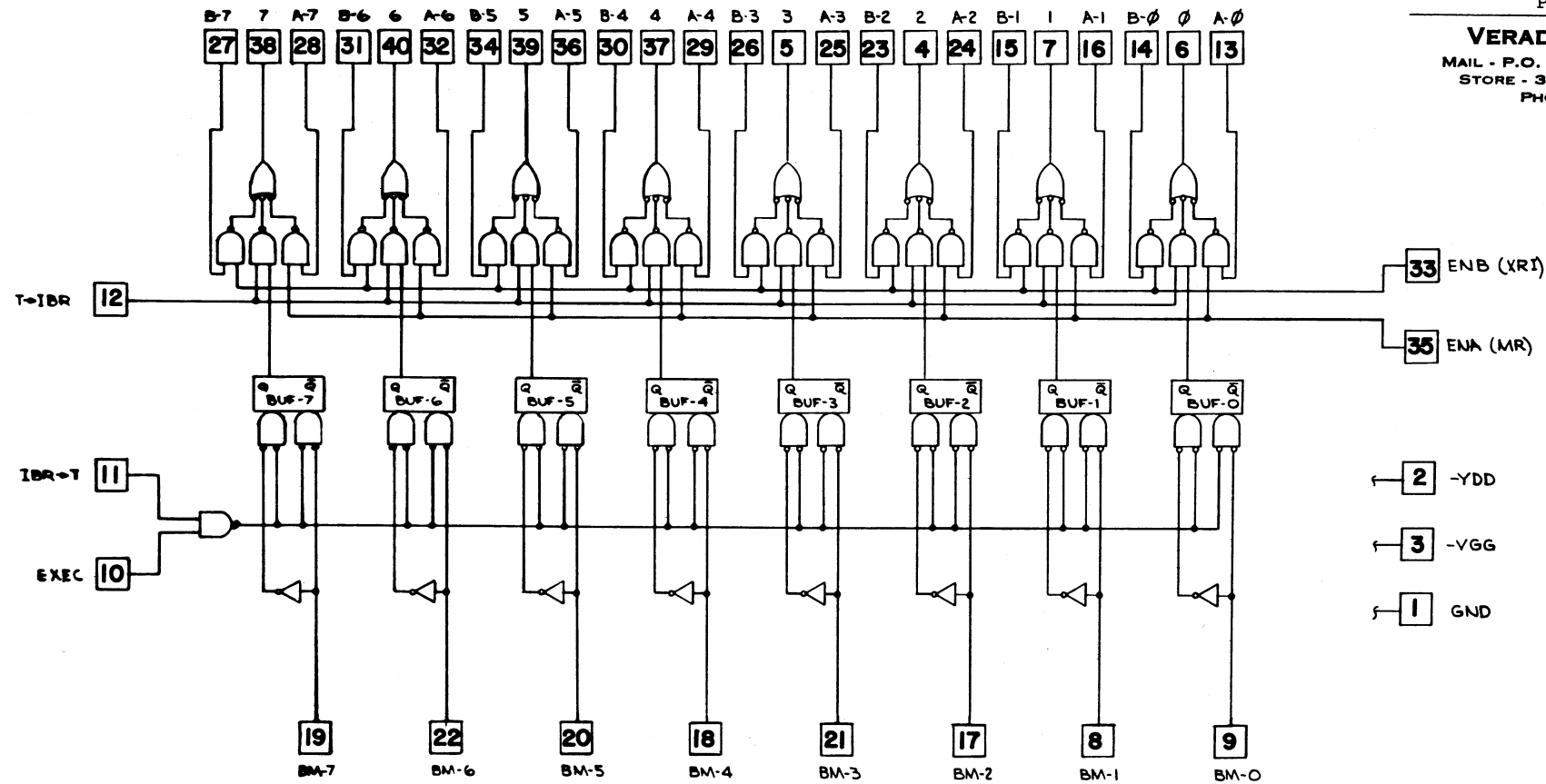
ITEM	DESCRIPTION	CHK	REQ.
 COMPUTER SYSTEMS CORPORATION 200 YERGENE HALL AVENUE DUBLIN, MASSACHUSETTS 01930			
OUTPUT CHANNEL SELECT INTERFACE MP 11			
MODEL:	D 10458	REV.	A
SCALE:			



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

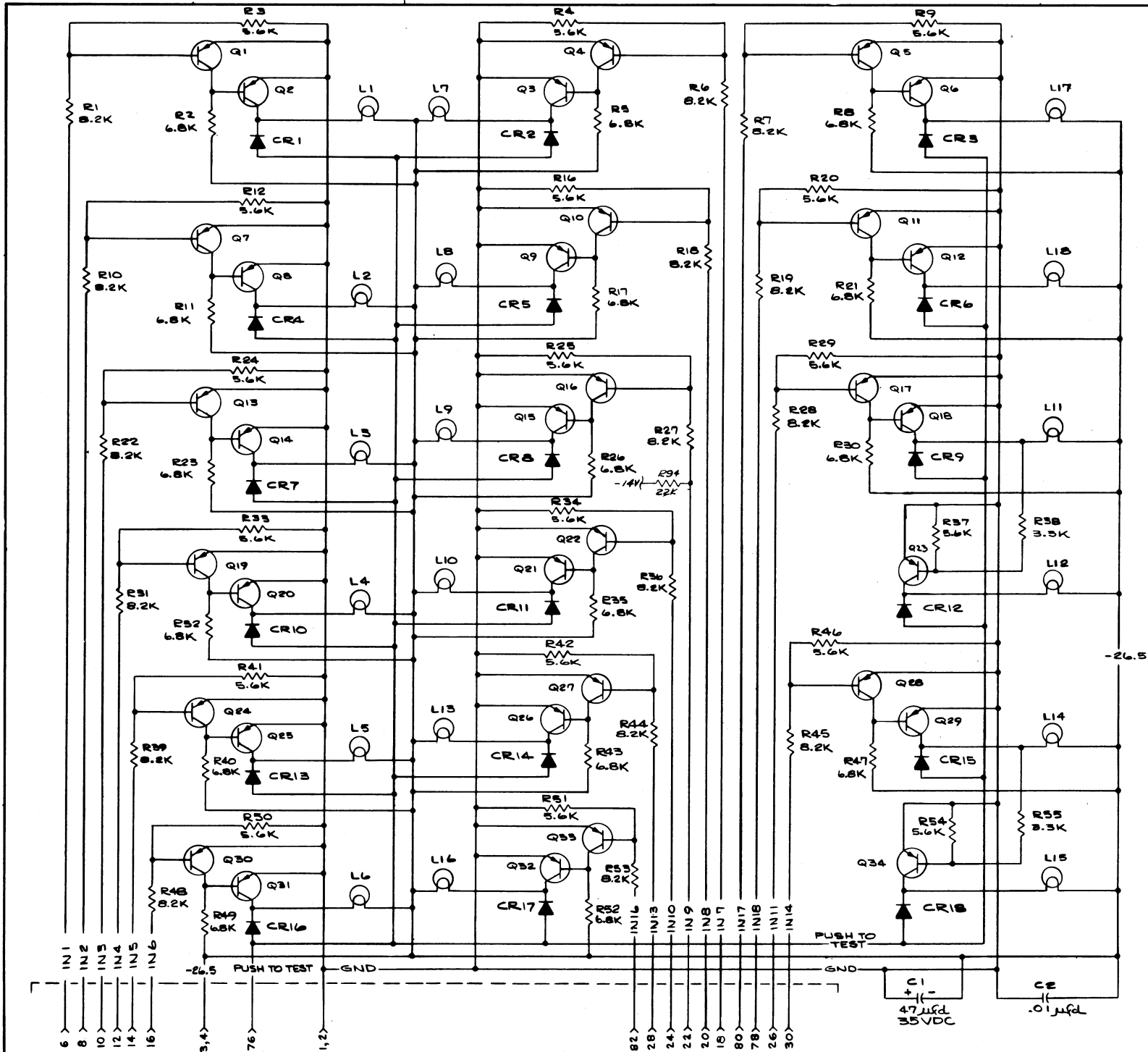
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
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PHONE (617) 452-5013



INDICATES PIN ASSIGNMENT NUMBERS

REV	DESCRIPTION	DATE	ENG.
 COMPUTER SYSTEMS CORPORATION 200 VERMONT HALL AVENUE LOWELL, MASSACHUSETTS 01852			
BUFFER MULTIPLEXER MP 12			
QTY:	D	10471	
QTY:	NONE		



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
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VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

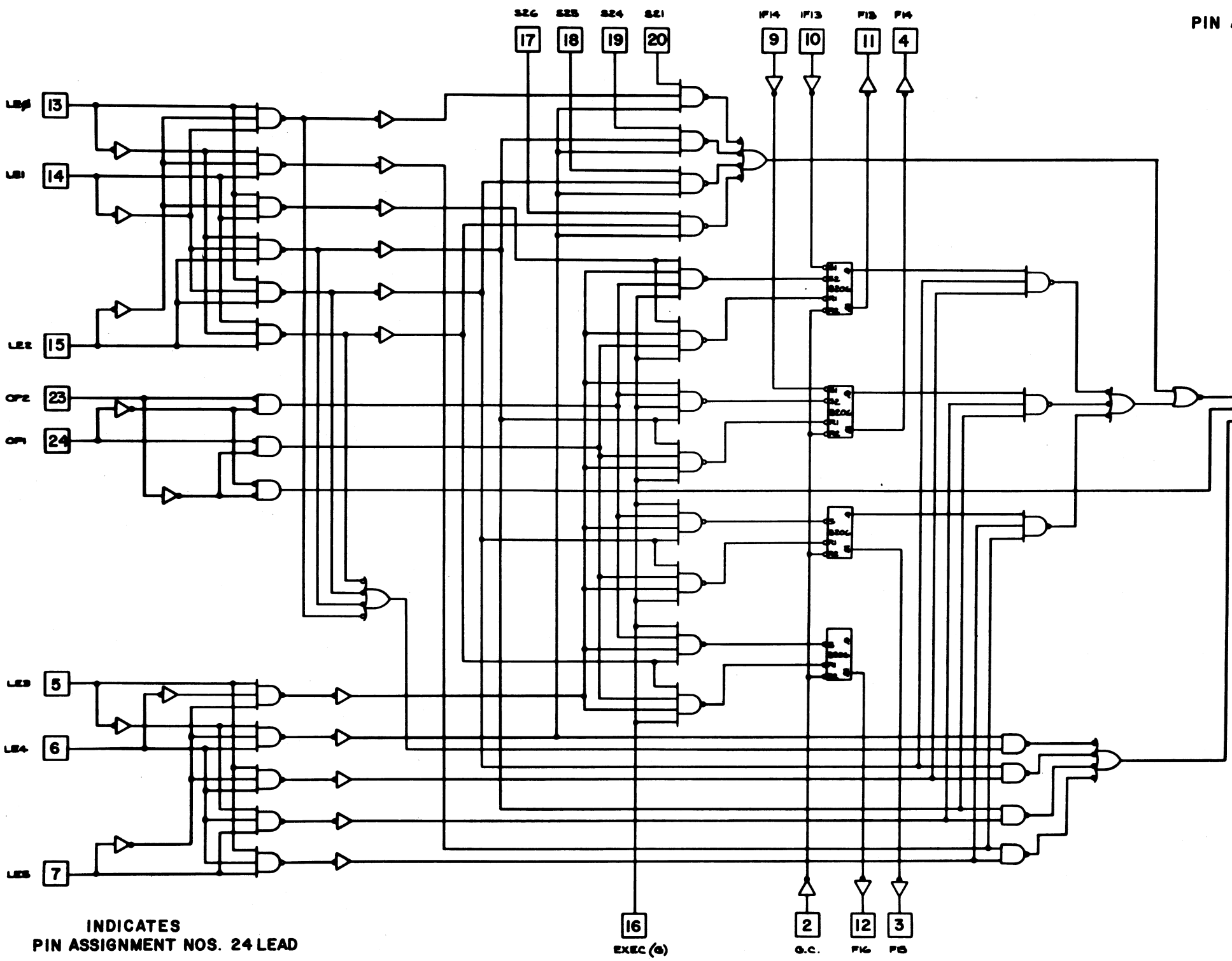
- NOTES:
- 1 ALL RESISTORS ARE $\pm 10\%$ 1/2W CARBON EXCEPT WHERE NOTED
 - 2 ALL Q's ARE 2N2907 EXCEPT WHERE NOTED
 - 3 ALL DIODES ARE 1N4001G
 4. ALL LAMPS ARE VIATRON PART NO. 188300 OR EQUIV.

COMPUTER SYSTEMS CORPORATION
100 TERRACE HALL AVENUE
DARLINGTON, MASSACHUSETTS 01928

**MP CONTROL
PANEL
VERSION 1**

PIN ASSIGNMENT NOS. 28 LEAD

GND	1
GC	2
F15	3
F14	4
LE3	5
LE4	6
LE5	7
TEST	8
IF-14	9
IF-13	10
F-13	11
F-16	12
N/C	13
N/C	14
N/C	15
N/C	16
LE0	17
LE1	18
LE2	19



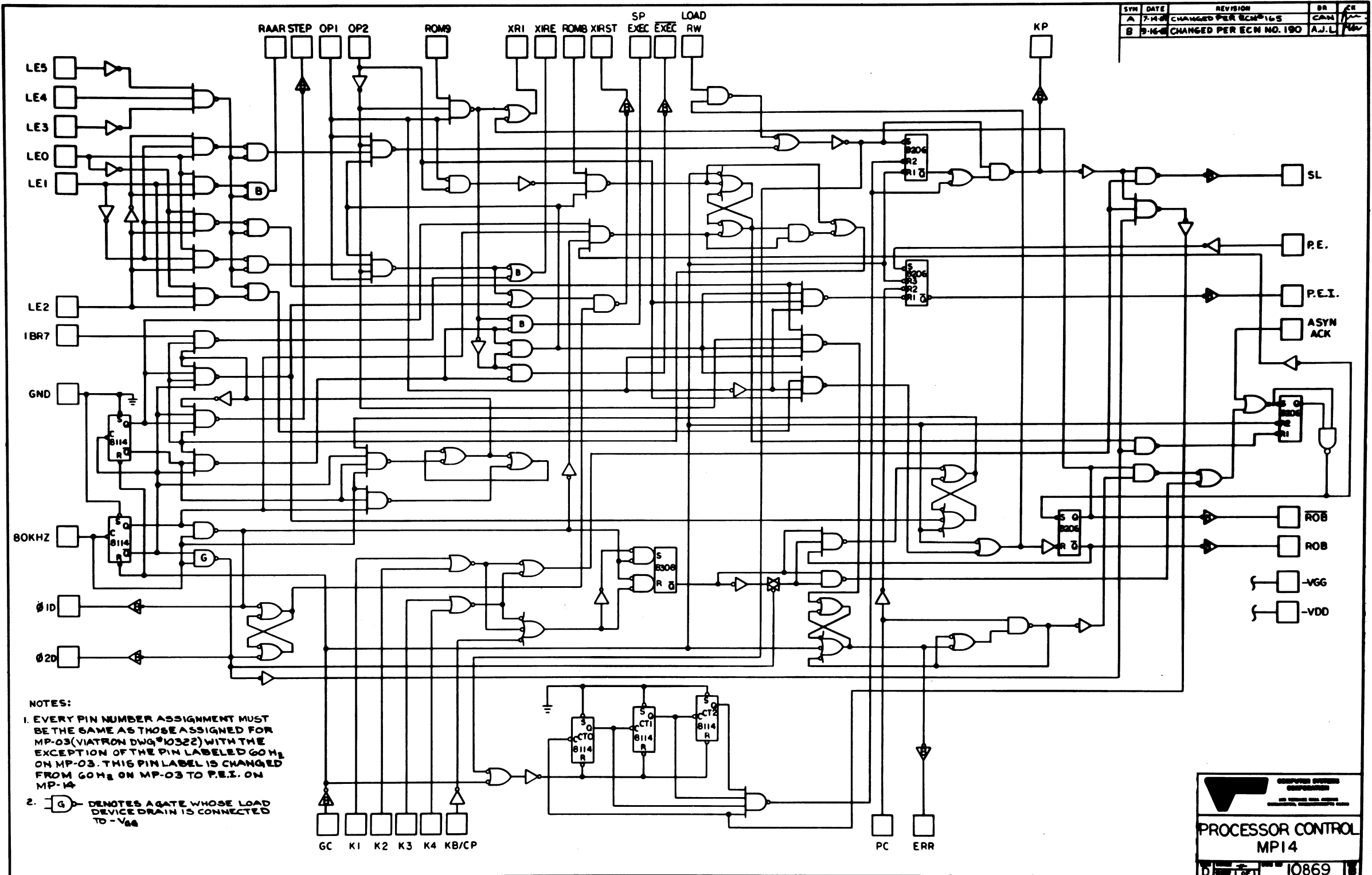
INDICATES
PIN ASSIGNMENT NOS. 24 LEAD

PIN (CON'T)

EXEC	20
S26	21
S25	22
S24	23
S21	24
VDD	25
VGG	26
OP2	27
OP1	28

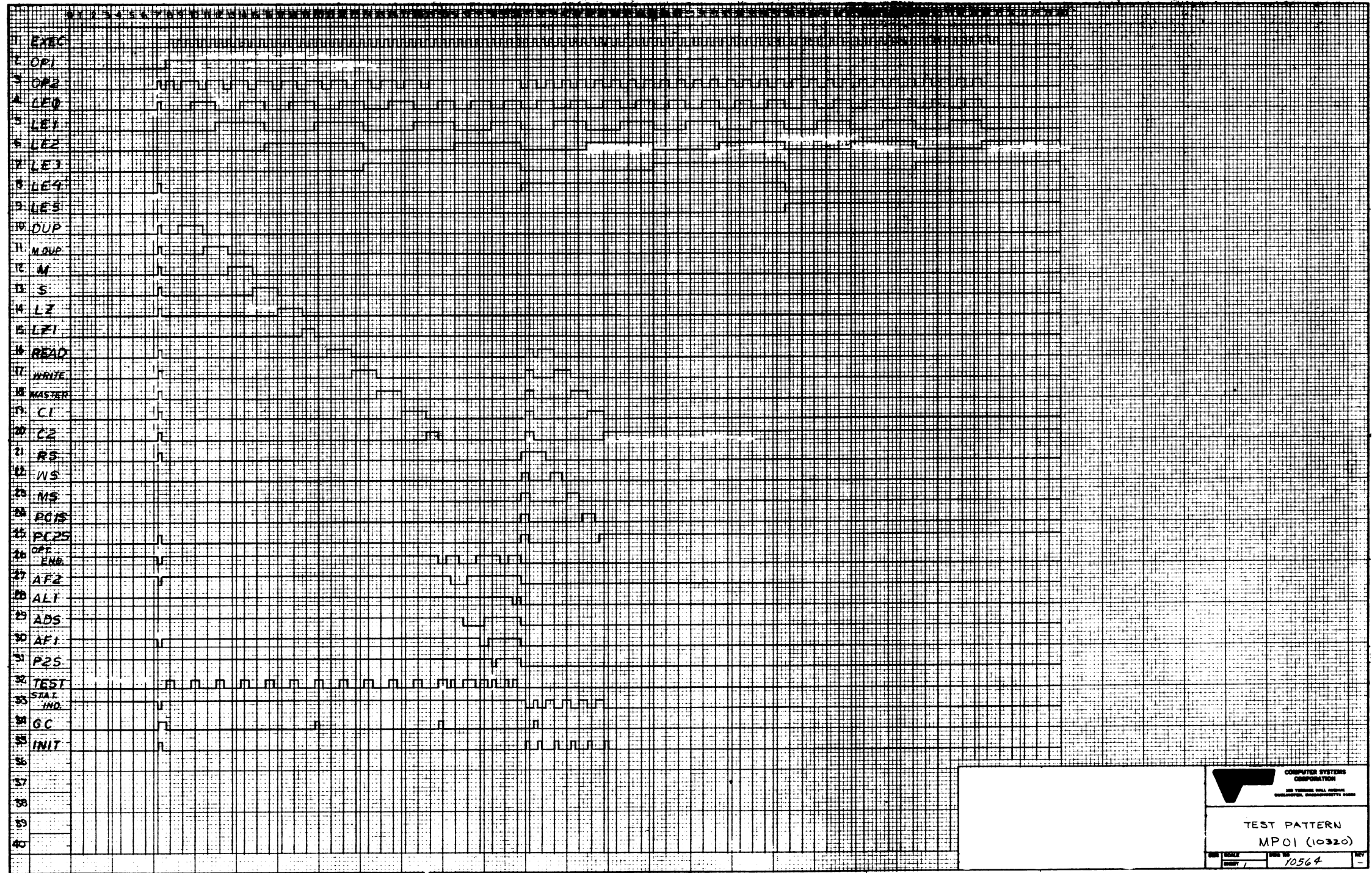
MP-13
FLAG/SENSE
10844

SYN	DATE	REVISION	DR	CE
A	7-14-68	CHANGED PER ECN#165	CAN	
B	9-16-68	CHANGED PER ECN NO. 190	A.J.L	



- NOTES:
1. EVERY PIN NUMBER ASSIGNMENT MUST BE THE SAME AS THOSE ASSIGNED FOR MP-03 (VIATRON DWG#10322) WITH THE EXCEPTION OF THE PIN LABELED 60KHz ON MP-03. THIS PIN LABEL IS CHANGED FROM 60KHz ON MP-03 TO P.E.I. ON MP-14
 2. DENOTES A GATE WHOSE LOAD DEVICE DRAIN IS CONNECTED TO -VGG

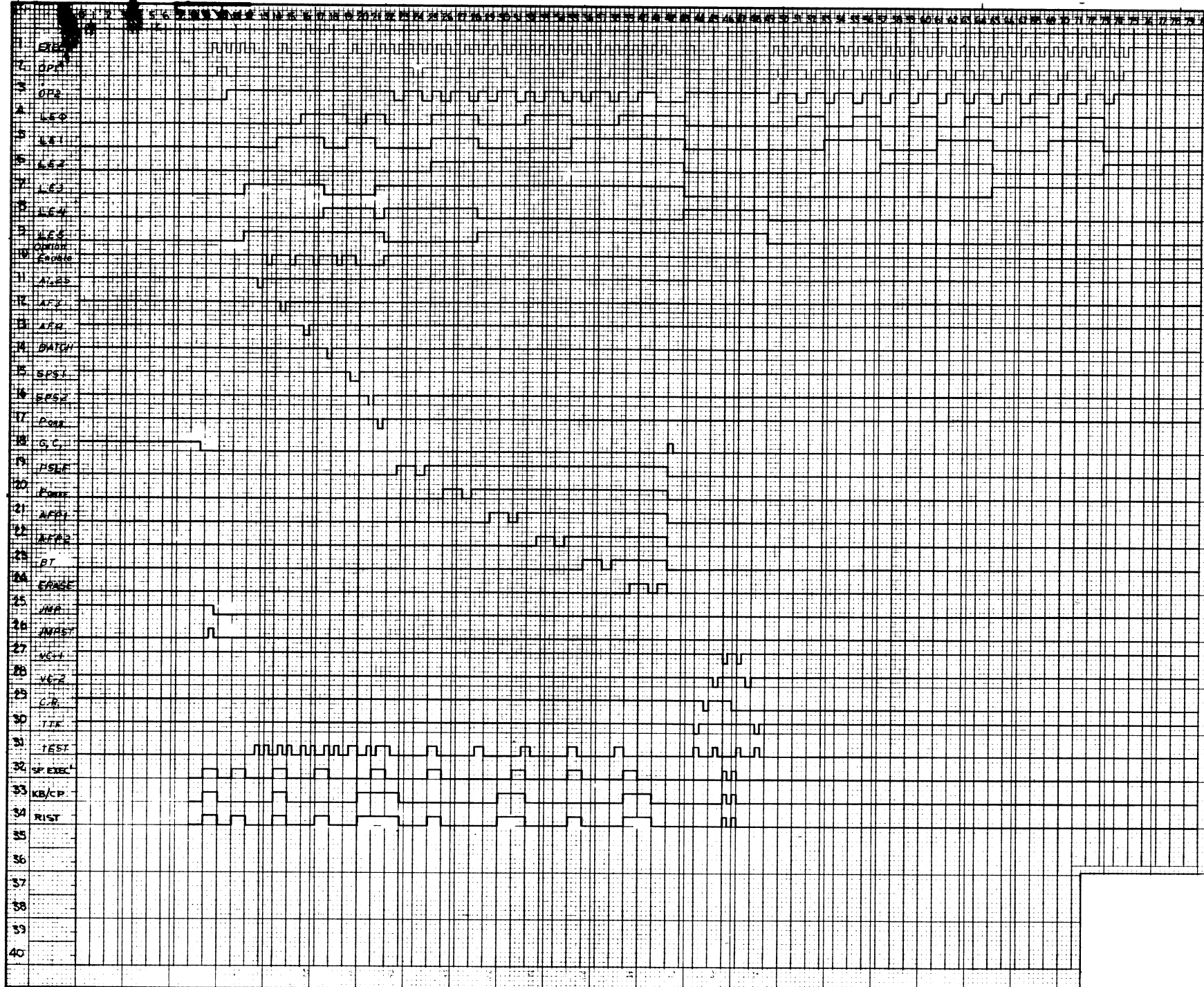
PROCESSOR CONTROL
MP14
 10869




COMPUTER SYSTEMS CORPORATION
 300 TOWN HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

TEST PATTERN
 MPO1 (10320)

DATE: 10564

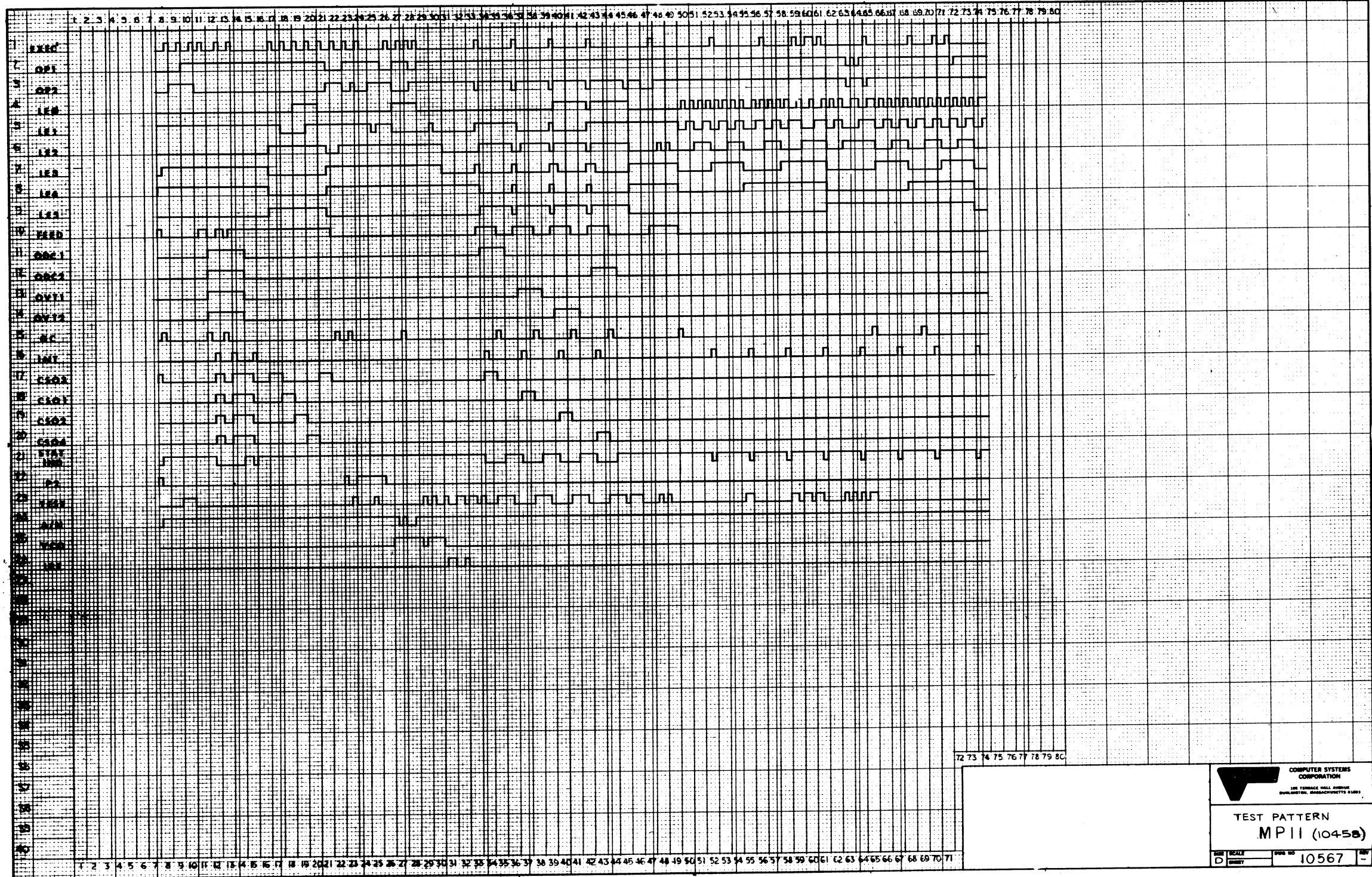


SYM	DATE	REVISION	DR.	CK.
A	4/25/67	CHANGED PER ECH NO. 77.	R.M.	AC


COMPUTER SYSTEMS CORPORATION
 185 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

TEST PATTERN
MP09 (10328)

SIZE	SCALE	DWG NO.	REV.
D	SMRT	10565	A



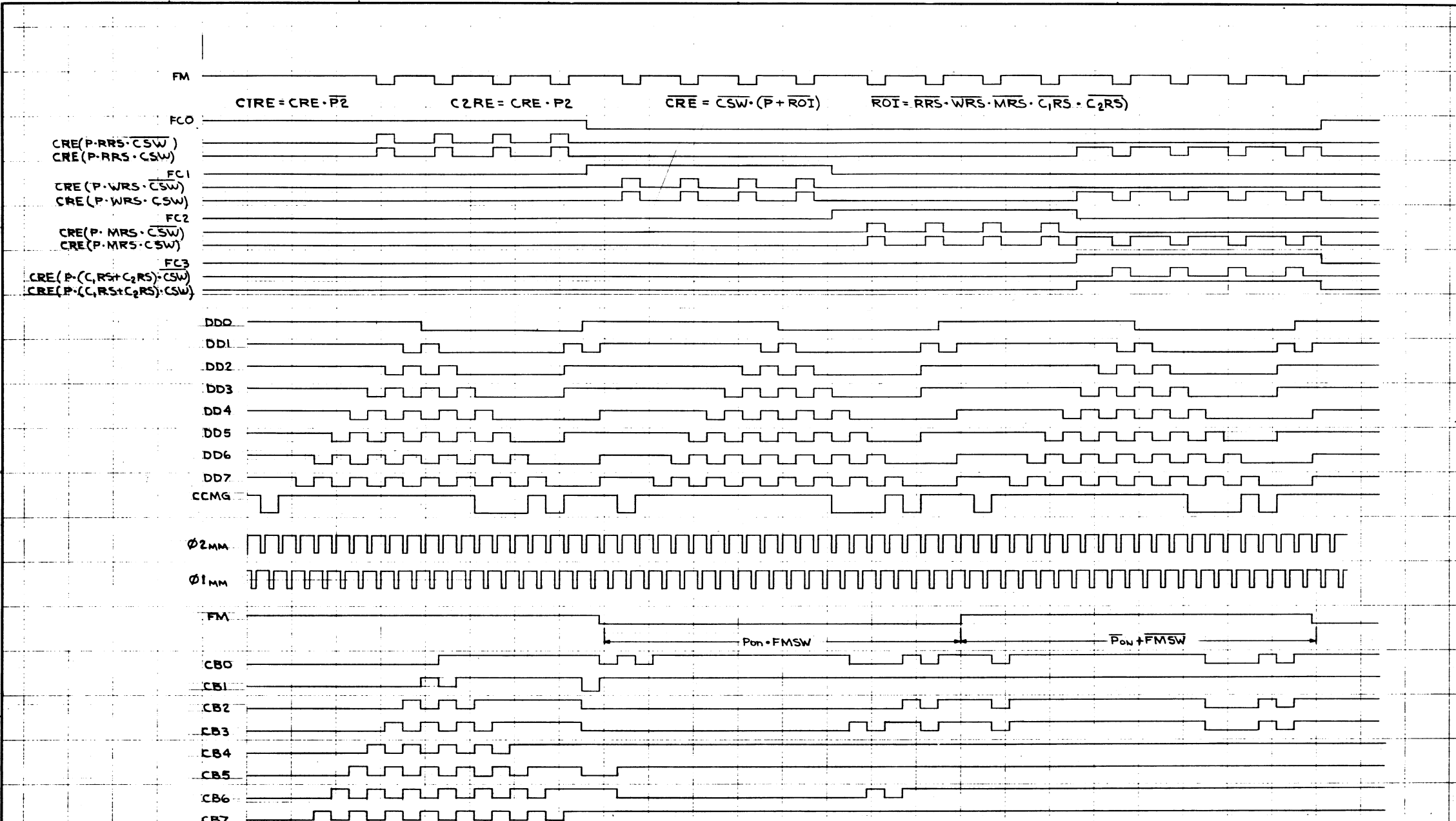
72 73 74 75 76 77 78 79 80



COMPUTER SYSTEMS CORPORATION
100 VERMONT HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

TEST PATTERN
MP11 (10458)

DATE: _____ SCALE: _____ PART NO: 10567

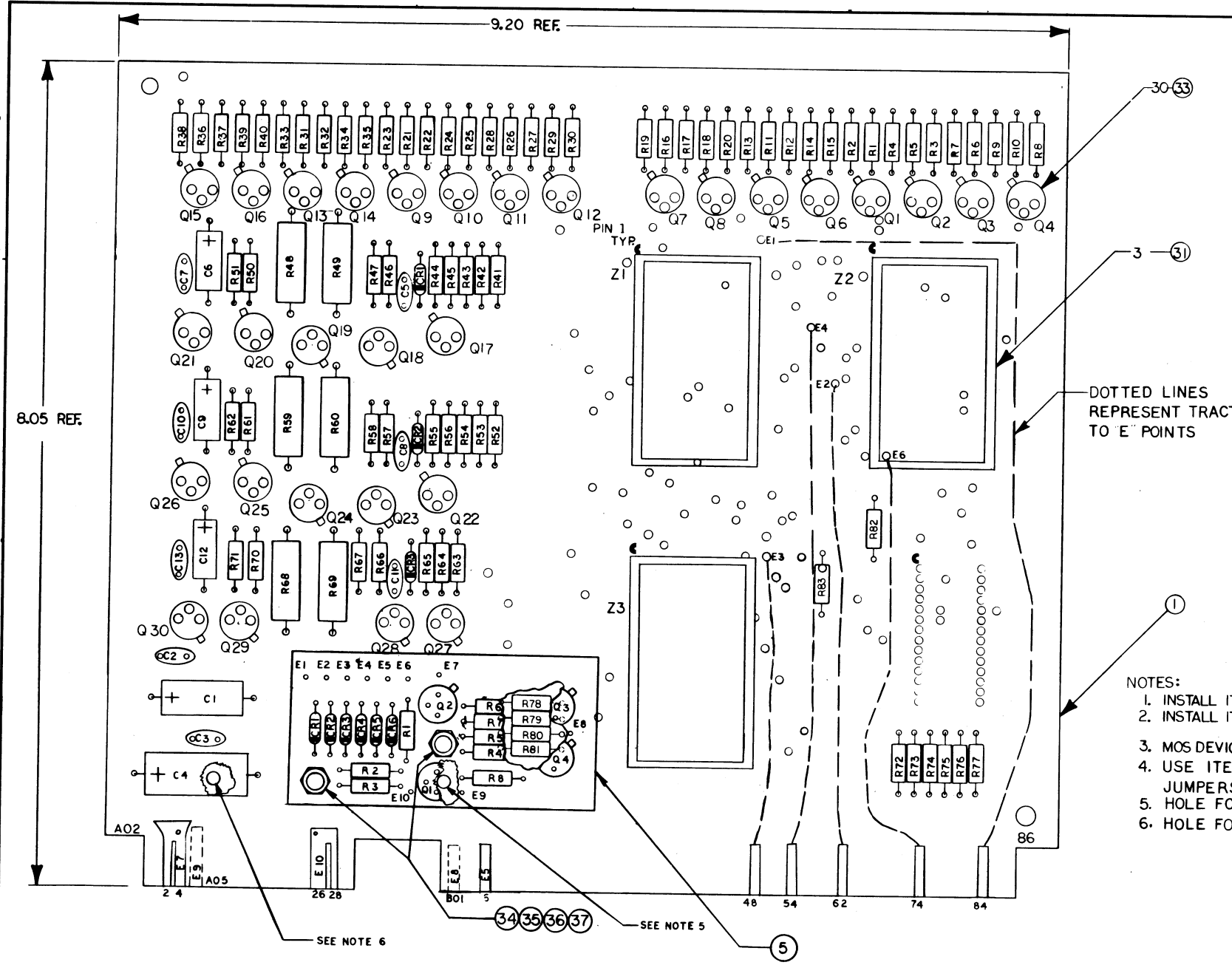


NOTE:
 $1. CBX = FM \cdot ROI$ (ALL CB OUTPUTS WILL BE HIGH WHEN BOTH FM & ROI ARE LDW)

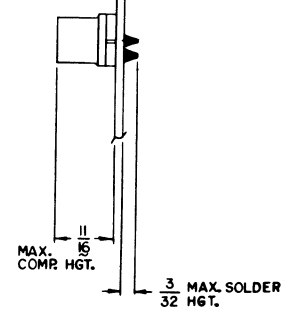
COMPUTER SYSTEMS CORPORATION
 100 VANDERBILT HALL AVENUE
 BELLINGHAM, WASHINGTON 98225

TIMING DIAGRAM
DATA CONTROL
 MPD07 (10344)

D TCF 10572



REV.	DATE	DESCRIPTION	BY	CHK.
B	9-22-68	REVISED PER ECN 417	MF	
C	10-20-68	REVISED PER ECN 473	EDC	
D	11-7-69	REVISED PER ECN 671	VEB	AD
E	12-20-69	REVISED PER ECN N0867	VEB	AD
F	1-12-70	REVISED PER ECN N0874	VEB	AD
G	1-30-70	REVISED PER ECN N0,959	EDM	AD



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

VERADA
214

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

DOTTED LINES
REPRESENT TRACTS
TO "E" POINTS

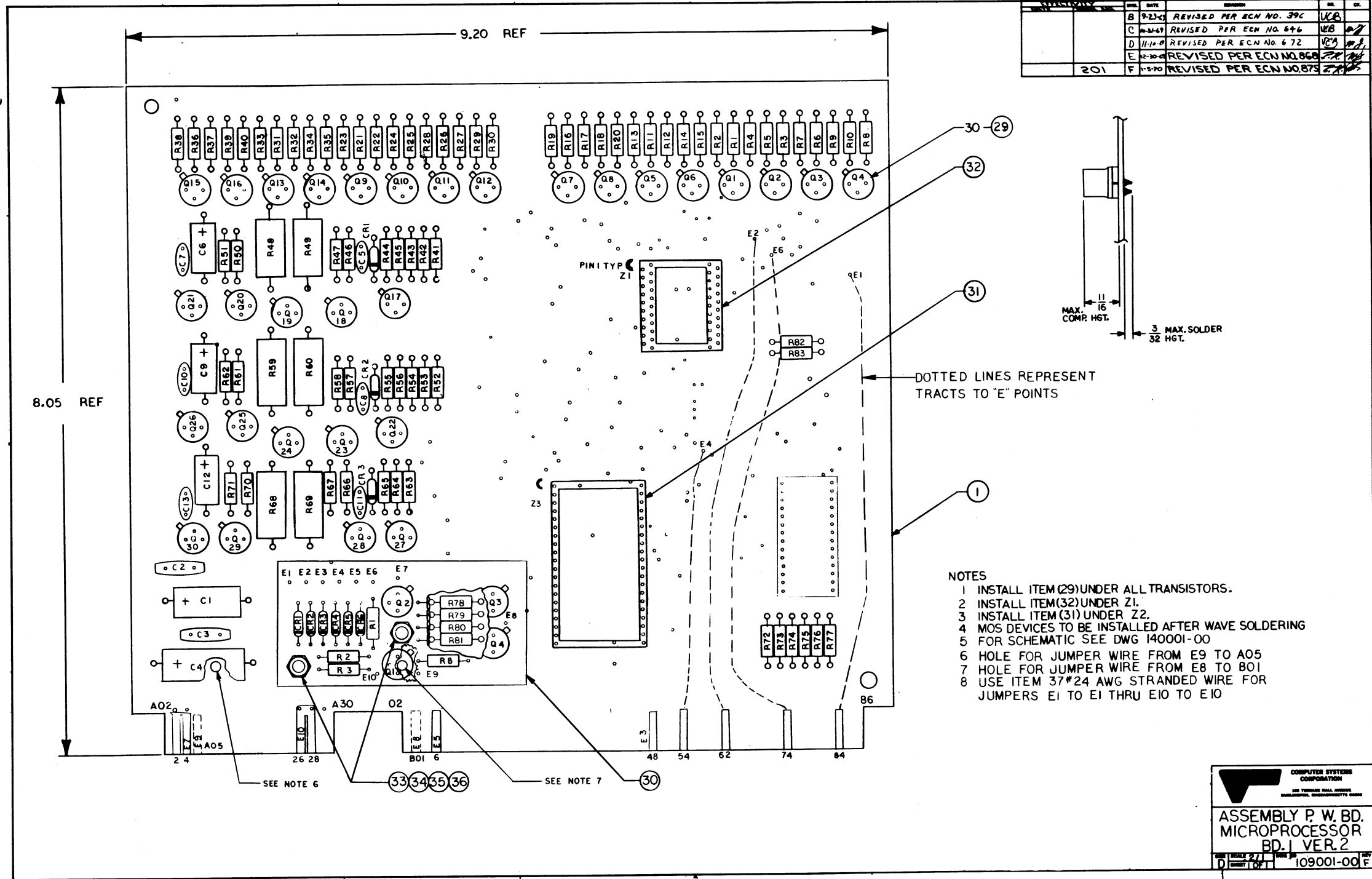
- NOTES:
1. INSTALL ITEM (33) UNDER ALL TRANSISTORS.
 2. INSTALL ITEM (31) UNDER Z1, Z2, + Z3.
 3. MOS DEVICES TO BE INSTALLED AFTER WAVE SOLDERING.
 4. USE ITEM 32 #24 AWG STRANDED WIRE FOR JUMPERS E1 TO E1 THRU E10 TO E10
 5. HOLE FOR JUMPER WIRE FROM E8 TO B01
 6. HOLE FOR JUMPER WIRE FROM E9 TO A05

COMPUTER SYSTEMS CORPORATION
400 YERGEN HALL AVENUE
BOSTON, MASSACHUSETTS 02128

ASSEMBLY P. W. BD.
MICROPROCESSOR BD.
VER. 1

REV. 10/71 109000-00 6

REV.	DATE	DESCRIPTION	BY	CHK.
B	9-23-69	REVISED PER ECN NO. 396	UCB	
C	10-24-69	REVISED PER ECN NO. 646	UCB	
D	11-10-69	REVISED PER ECN NO. 672	UCB	
E	12-30-69	REVISED PER ECN NO. 868	UCB	
F	1-5-70	REVISED PER ECN NO. 873	UCB	



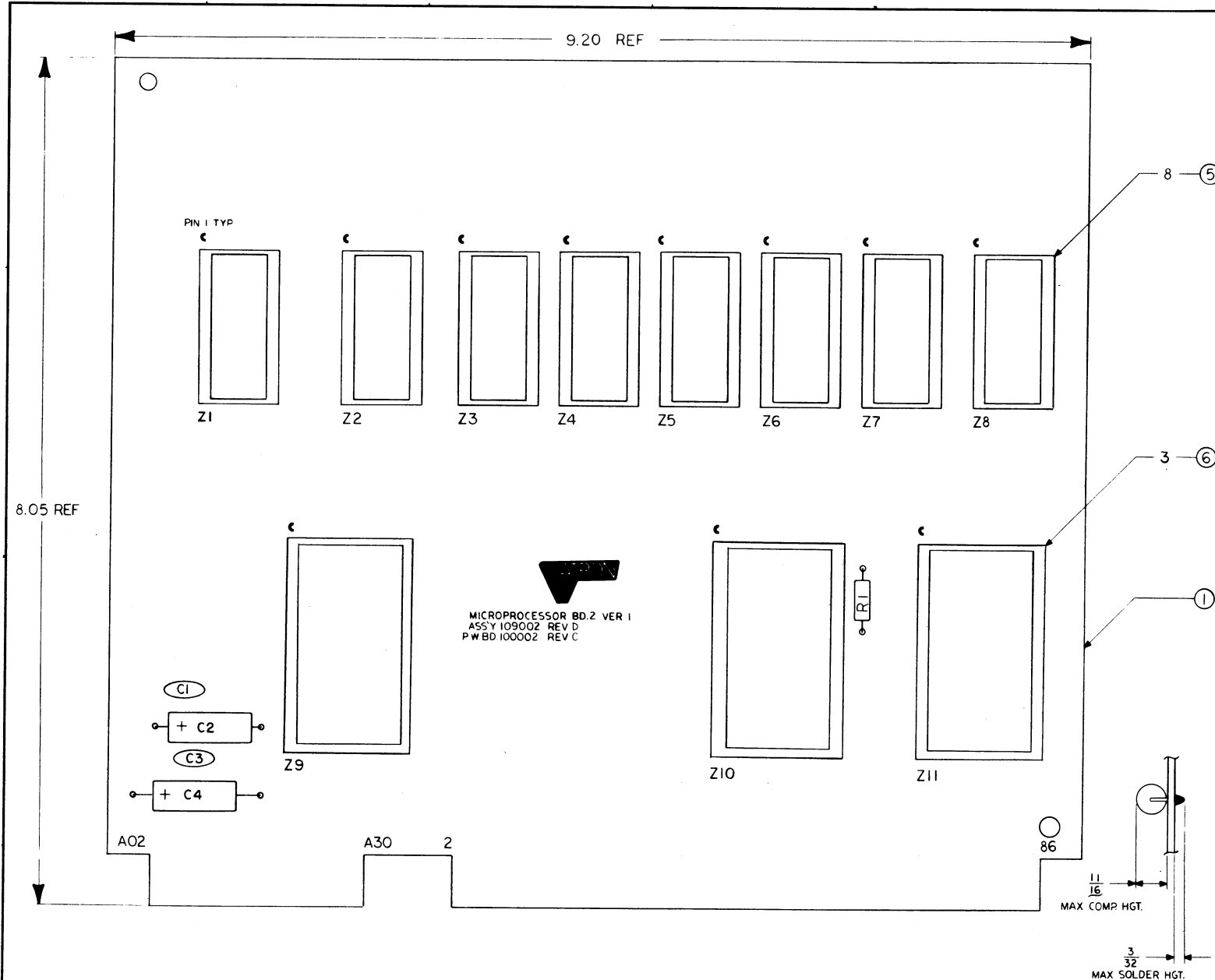
- NOTES
- 1 INSTALL ITEM (29) UNDER ALL TRANSISTORS.
 - 2 INSTALL ITEM (32) UNDER Z1.
 - 3 INSTALL ITEM (31) UNDER Z2.
 - 4 MOS DEVICES TO BE INSTALLED AFTER WAVE SOLDERING
 - 5 FOR SCHEMATIC SEE DWG 140001-00
 - 6 HOLE FOR JUMPER WIRE FROM E9 TO A05
 - 7 HOLE FOR JUMPER WIRE FROM E8 TO B01
 - 8 USE ITEM 37#24 AWG STRANDED WIRE FOR JUMPERS E1 TO E1 THRU E10 TO E10

COMPUTER SYSTEMS CORPORATION
 200 TOWNSHALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

**ASSEMBLY P. W. B.D.
 MICROPROCESSOR
 BD.1 VER.2**

SCALE: 2 1/2" = 1" PART NO. 109001-00 F

REV.	DATE	REVISION	DR.	CHK.
C	9-23-69	REV PER ECN 413	M.F.	
D	10-22-69	REV PER FCN 479 (REDRAWN)		#0
E	12-1-69	REVISED PER ECN NO 829		



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 Div. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

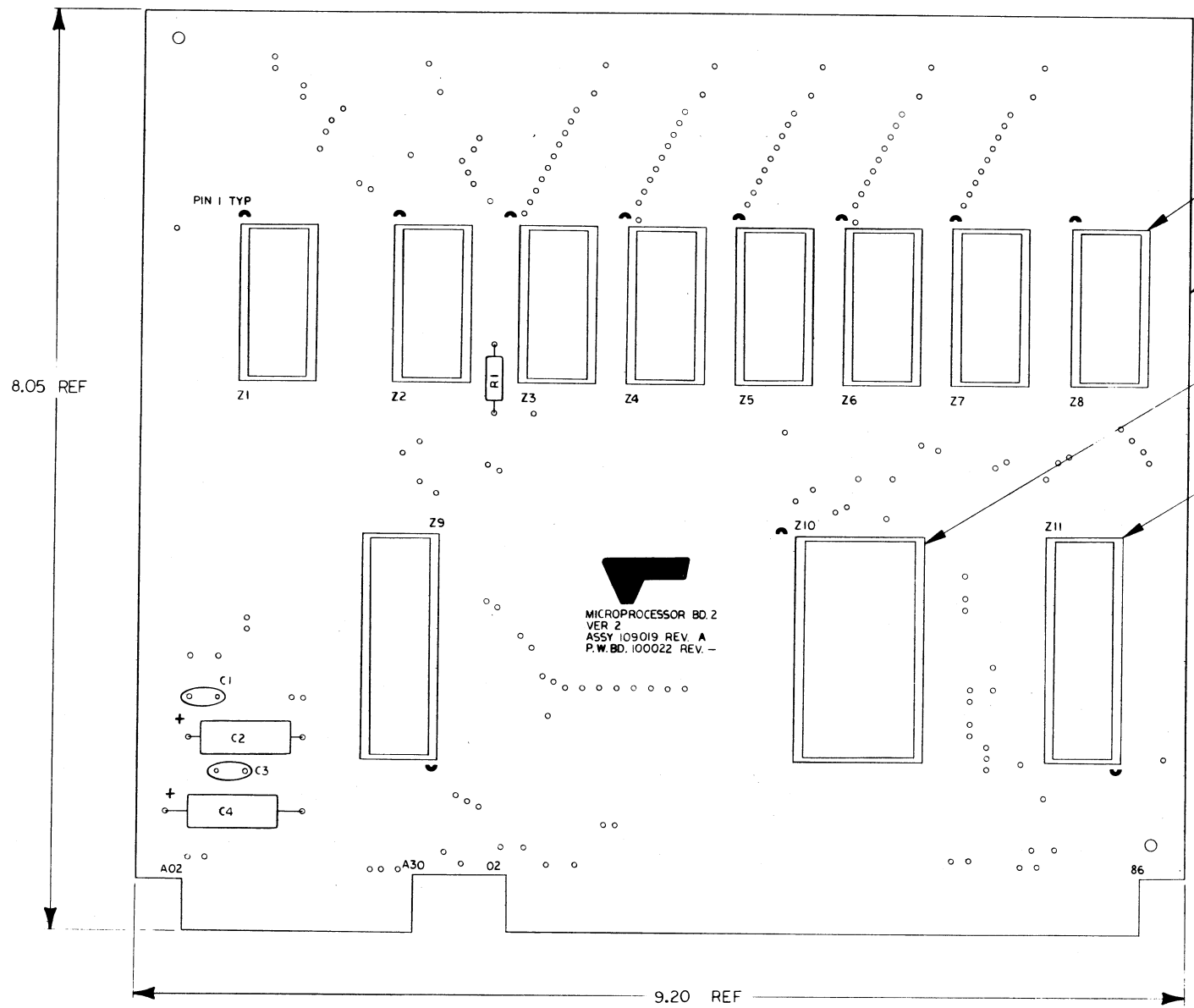
- NOTES:
1. INSTALL ITEM (5) UNDER Z1 THRU Z8.
 2. INSTALL ITEM (6) UNDER Z9, 10 AND 11.
 3. MOS DEVICES TO BE INSTALLED AFTER WAVE SOLDERING.

COMPUTER SYSTEMS CORPORATION
ROUTE 62
BEDFORD, MASSACHUSETTS 01730

ASSEMBLY P.W.BD.
MICROPROCESSOR BD.2
VER. 1

MAX SCALE 2:1	DWG NO. 109002-00	REV E
D	109002-00	

SYL	DATE	REVISION	BY	CL
A	12-11-89	REVISED PER ECN - 830		



VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-8013

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:
 INDUSTRIAL SUPPLIES
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

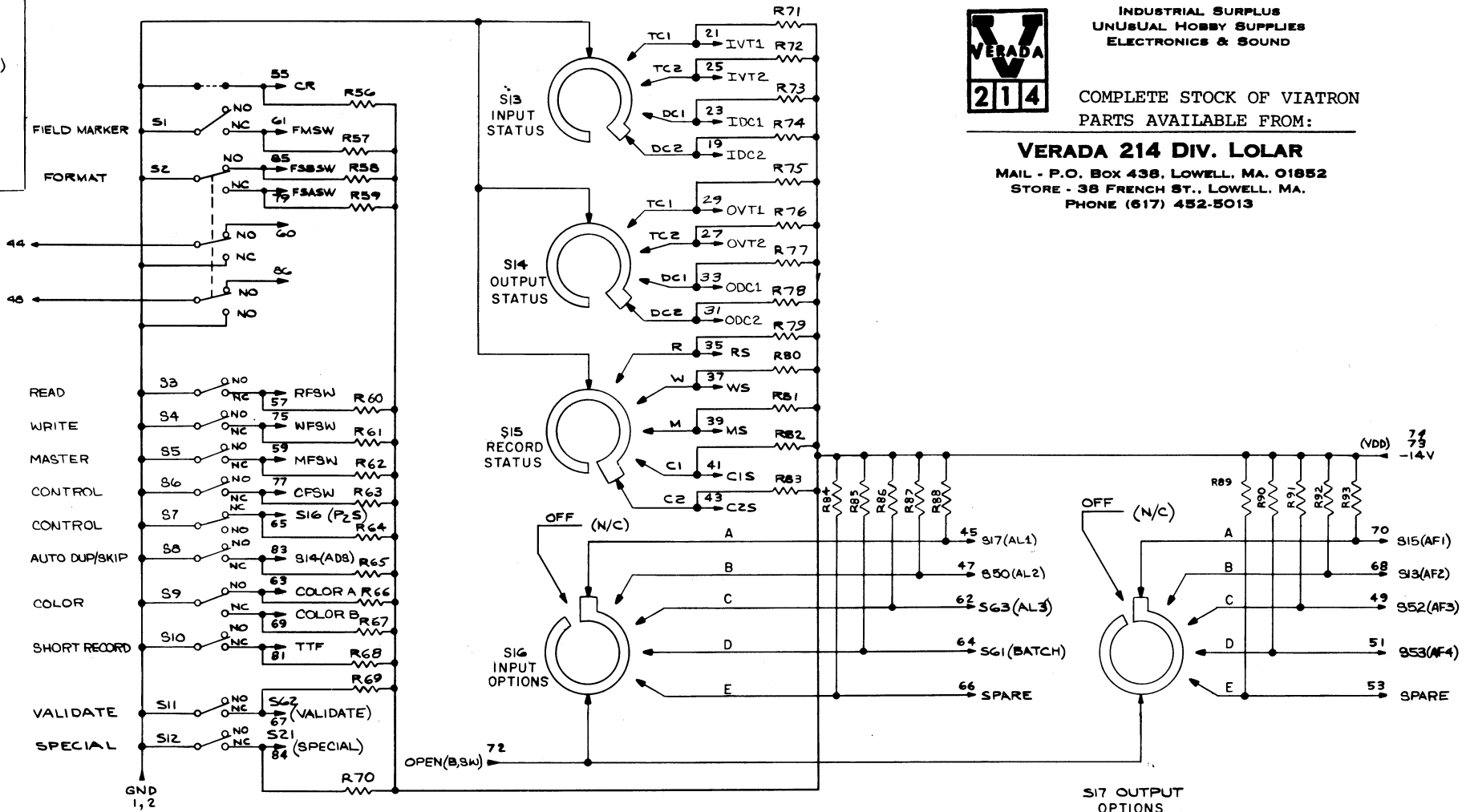
- NOTES:
1. INSTALL ITEM (1) UNDER Z1 THRU Z8.
 2. INSTALL ITEM (3) UNDER Z9, Z11.
 3. INSTALL ITEM (2) UNDER Z10.
 4. MOS DEVICES TO BE INSTALLED AFTER WAVE SOLDERING.
 5. MAX. COMP. HGT. 11/16.
 6. FOR SCHEMATIC SEE 140017.

COMPUTER SYSTEMS CORPORATION
 ROUTE 82
 BEDFORD, MASSACHUSETTS 01730

ASSEMBLY P.W. BD.
 MICROPROCESSOR BD. #2
 VER 2

REV D SCALE 2:1 DWG NO 109019-00 REV A
 SHEET 1 OF 1

TABLE FOR MP CONTROL PANEL VER.1			
INPUT	SIGNAL NAME	LAMP	LAMP NAME
1	ALERT 1	L1	ALERT (TC1)
2	READY 1	L2	READY (TC1)
3	DE 1	L3	DATA ERROR (TC1)
4	ALERT 2	L4	ALERT (TC2)
5	READY 2	L5	READY (TC2)
6	DE 2	L6	DATA ERROR (TC2)
7	RAAR(B)	L7	END OF VIATAPE
8	PEI(B)	L8	CHANNEL ERROR
9	STATUS	L9	SET STATUS
10	F37B(P,F)	L10	CONTROL ON (PROC)
11	F36B(P,F)	L11	CONTROL ONE
13	ROB(B)	L13	BUSY
14	F35B(A,N)	L14	SHIFT UPPER
16	S51B(F,S)	L16	CONTROL ON (OP)
17	OPEN(B,IND)	L17	OPTIONS ON
18	ERR(B)	L18	ERROR
-	-	L12	CONTROL TWO
-	-	L15	SHIFT LOWER



INDUSTRIAL SURPLUS
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STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

NOTES:
1. ALL RESISTORS ARE 100K/1/4W. ±10%
2. THIS PRINT IS FOR USE ON
SYSTEMS NO. 221 AND ABOVE

COMPUTER SYSTEMS
CORPORATION
300 VERMONT HALL AVENUE
SOUTH BRIDGE, MASSACHUSETTS 01963

MP CONTROL PANEL,
VERSION 1
(SERIAL NO. 221 & UP)

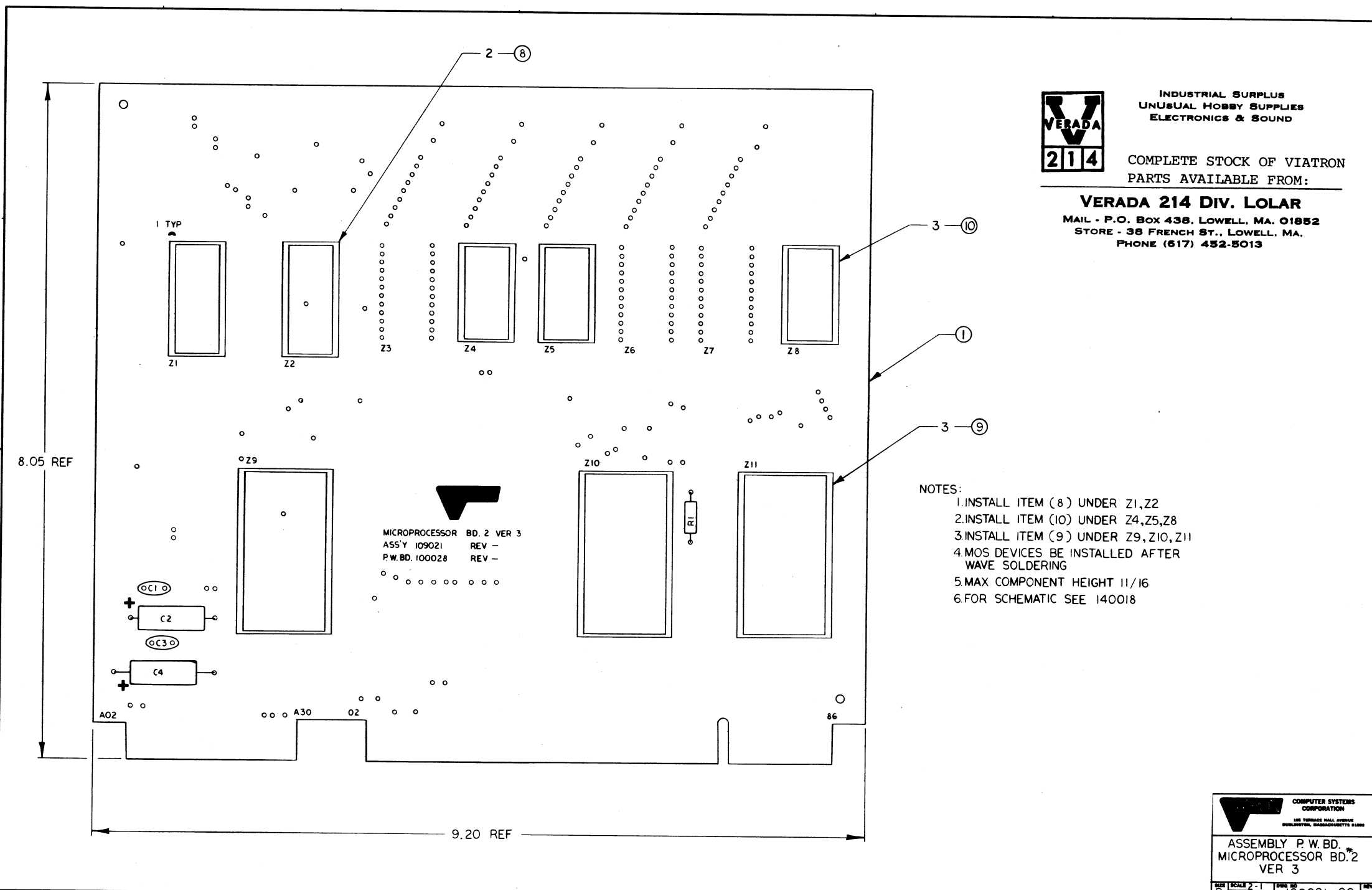
FORM NO. 100-100-100
D 140010-00.



INDUSTRIAL SURPLUS
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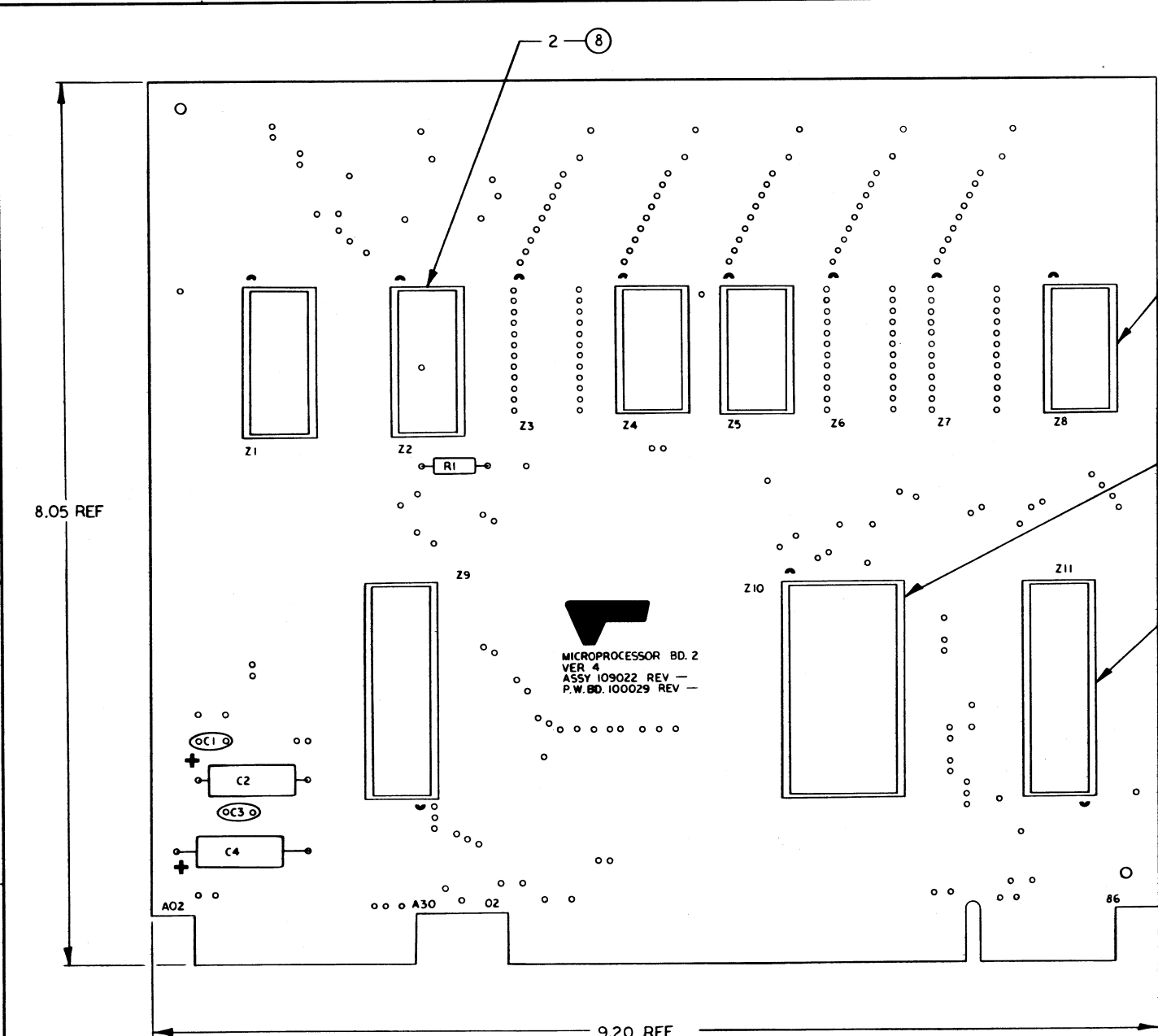
MICROPROCESSOR BD. 2 VER 3
ASS'Y 109021 REV -
P.W.BD. 100028 REV -

- NOTES:
1. INSTALL ITEM (8) UNDER Z1, Z2
 2. INSTALL ITEM (10) UNDER Z4, Z5, Z8
 3. INSTALL ITEM (9) UNDER Z9, Z10, Z11
 4. MOS DEVICES BE INSTALLED AFTER WAVE SOLDERING
 5. MAX COMPONENT HEIGHT 11/16
 6. FOR SCHEMATIC SEE 140018

COMPUTER SYSTEMS CORPORATION
186 TERRACE HALL AVENUE
DUNSTON, MASSACHUSETTS 01852

ASSEMBLY P.W.BD. #2
MICROPROCESSOR BD.2
VER 3

REV 1
D 109021-00



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

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MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
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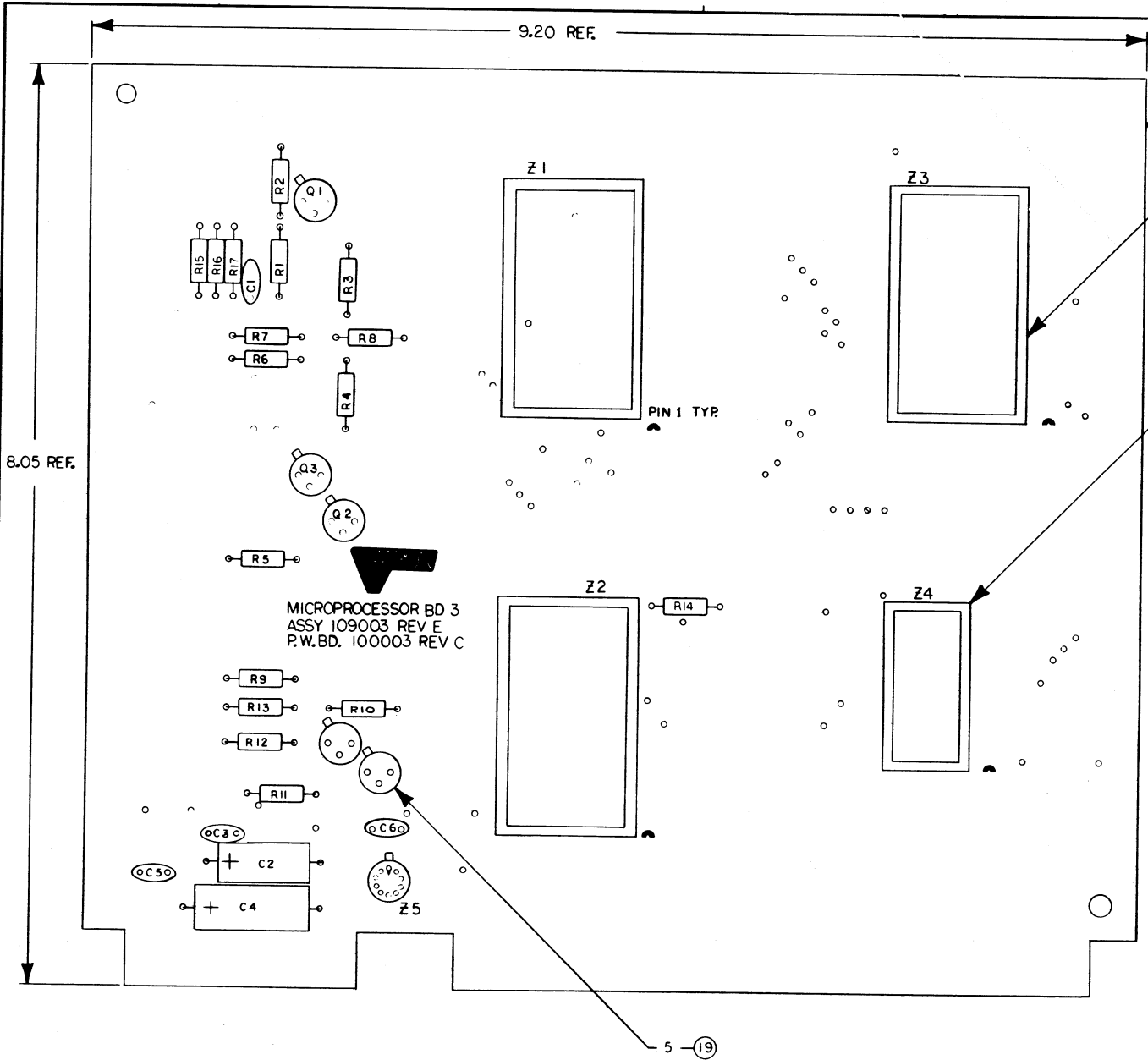
NOTES:

1. INSTALL ITEM (8) UNDER Z1, Z2
2. INSTALL ITEM (11) UNDER Z4, Z5, Z8
3. INSTALL ITEM (10) UNDER Z9, Z11
4. INSTALL ITEM (9) UNDER Z10
5. MOS DEVICES TO BE INSTALLED AFTER WAVE SOLDERING.
6. MAX COMPONENT HEIGHT 11/16
7. FOR SCHEMATIC SEE 140019

COMPUTER SYSTEMS CORPORATION
380 VERMONT ST. ANDOVER, MASS. 01810
TELEPHONE (603) 452-5013

ASSEMBLY P.W. BD.
MICROPROCESSOR BD. *2
VER 4

REV 10/81 109022-00

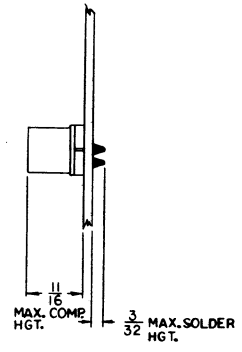


REV.	DATE	REVISION	BY	CHK.
A	12-16-87	REVISED PER ECN 389		
B	03-27-87	REVISED PER ECN 444		
C	10-27-87	REDRAWN & REVISED PER ECN 480		
D	07-21-88	REVISED PER ECN 614	EDC	J.P.
E	12-30-88	REVISED PER ECN NO. 869		



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COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:
 INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND



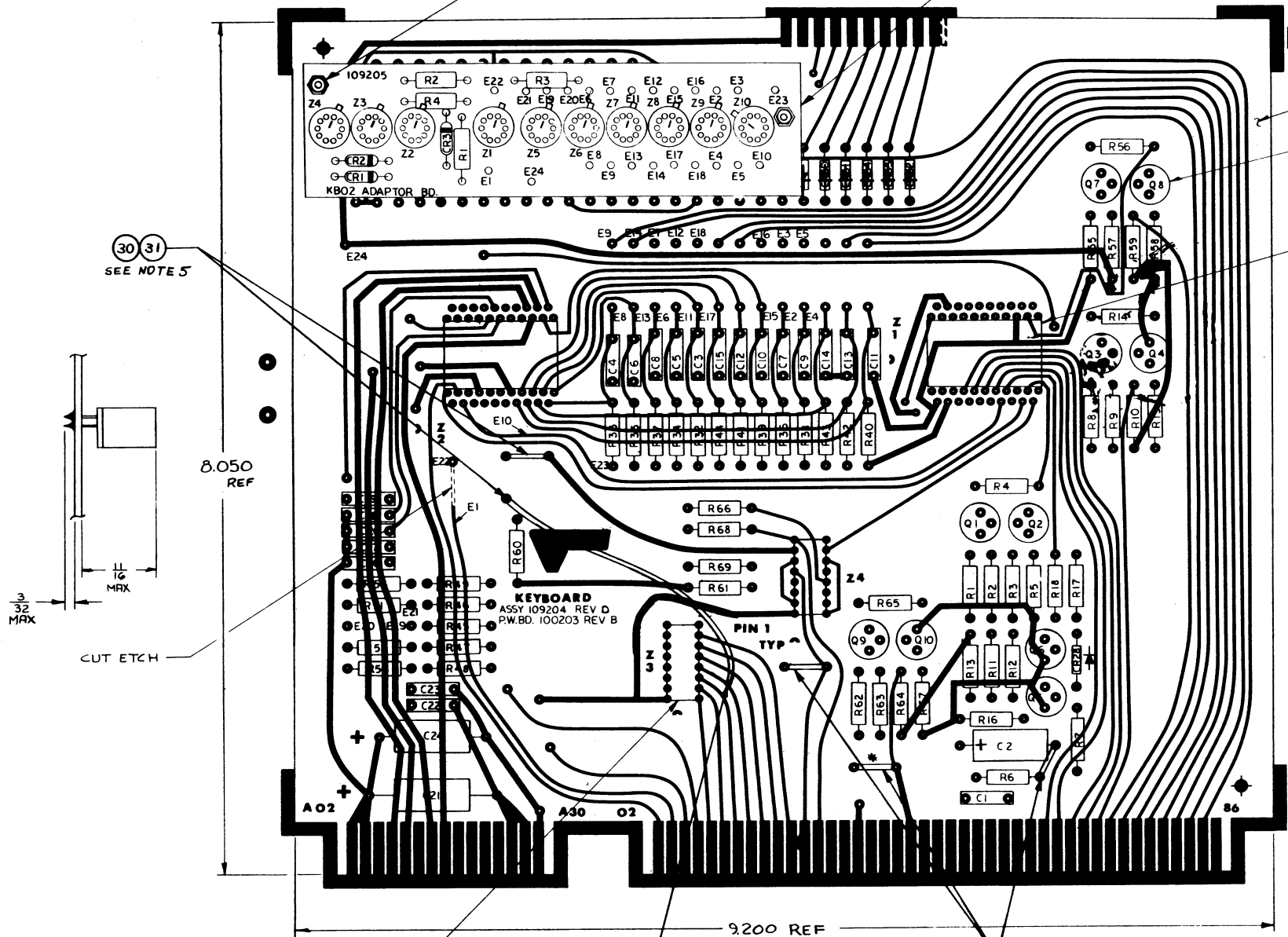
- NOTES:
1. INSTALL ITEM (19) UNDER ALL TRANSISTORS.
 2. INSTALL ITEM (20) UNDER Z1, Z2, & Z3.
 3. INSTALL ITEM (21) UNDER Z4.
 4. MOS DEVICES TO BE INSTALLED AFTER WAVE SOLDERING.

COMPUTER SYSTEMS CORPORATION
 ROUTE 92
 BEDFORD, MASSACHUSETTS 01730

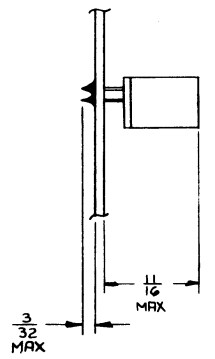
ASSEMBLY P.W.B.D.
 MICROPROCESSOR BD.3

SIZE SCALE 2:1 DWS NO 109003-00 REV D SHEET OF 1

DATE	REVISION	DR.	CK.
7-23-64	REVISED PER ECN 377	UBS	
11-13-64	REV PER ECN 683	CS	
12-17-64	REVISED PER ECN NO.840	VER	
12-11-64	OBSOLETE PER ECN 856	VER	
1-5-65	REVISED PER ECN NO.871	VER	



30 31
SEE NOTE 5



CUT ETCH

8.050
REF

9.200 REF

SOLDER JUMPER WIRE TO ETCH AS SHOWN

30 31
SEE NOTES 5 & 7

1
10 27
2 5

NOTE: REV-D: USE EXISTING STOCK UNTIL 109207 IS AVAILABLE



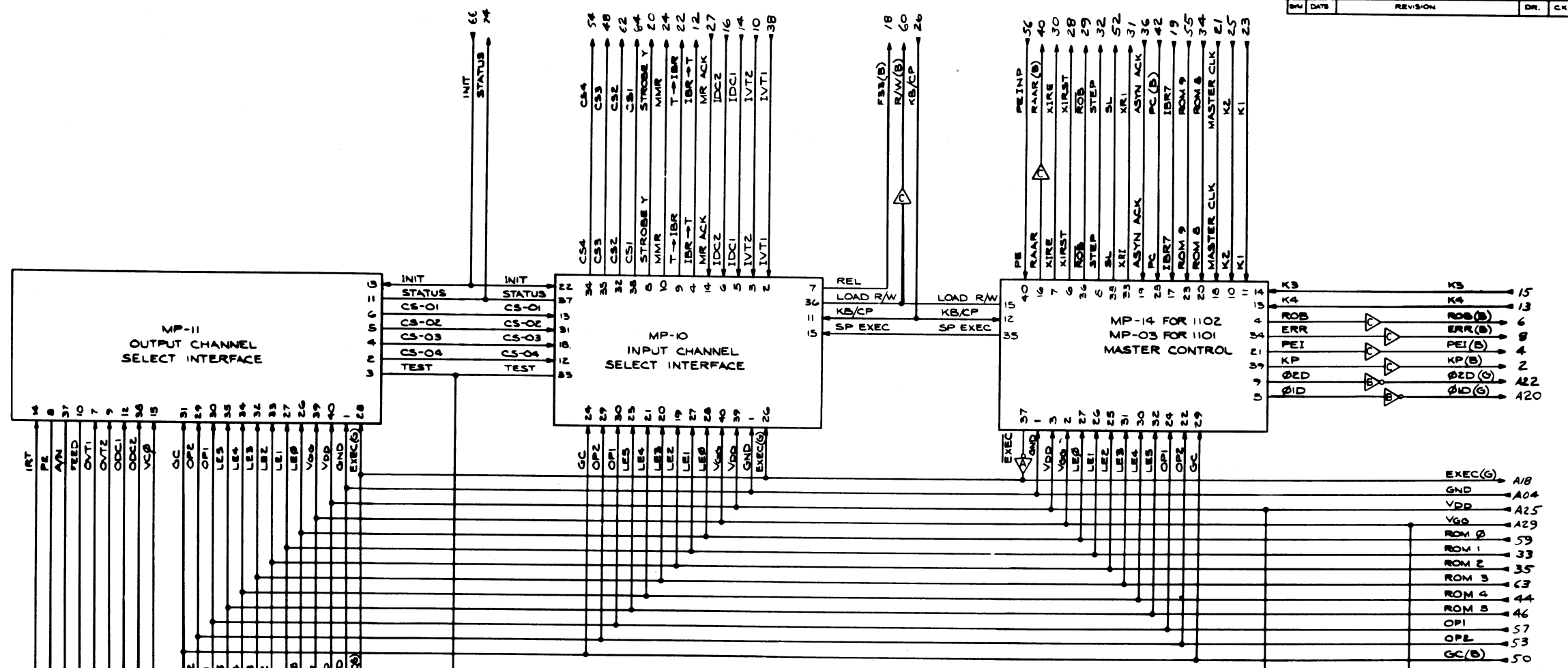
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

 COMPUTER SYSTEMS CORPORATION 100 VERANDA HALL AVENUE MILWAUKEE, WISCONSIN 53219	
PRINTED WIRING BD ASSY. KEYBOARD	
DATE: 7/71 DRAWN BY: D	PART NO: 109204 REV: E



NOTES

1. INDICATES PACKAGE NUMBER
2. ALL RESISTORS ARE 1/2W, 210% UNLESS OTHERWISE SPECIFIED

3. DRIVER(CLOCK) 1 PLACE
 TYPE A (DWG NO. 10865)
4. DRIVER(CLOCK) 2 PLACES
 TYPE B (DWG NO. 10864)
5. DRIVER(CLOCK) 8 PLACES
 TYPE C (DWG NO. 10863)
6. THE PIN NUMBER DESIGNATION 16/20 ETC DENOTES PIN 16 FOR 24 PIN PACKAGES OR PIN 20 FOR 28 PIN PACKAGES



INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

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COMPUTER SYSTEMS
 CORPORATION

**MICROPROCESSOR
 BOARD NO. 1
 (ALTERNATE #1)**

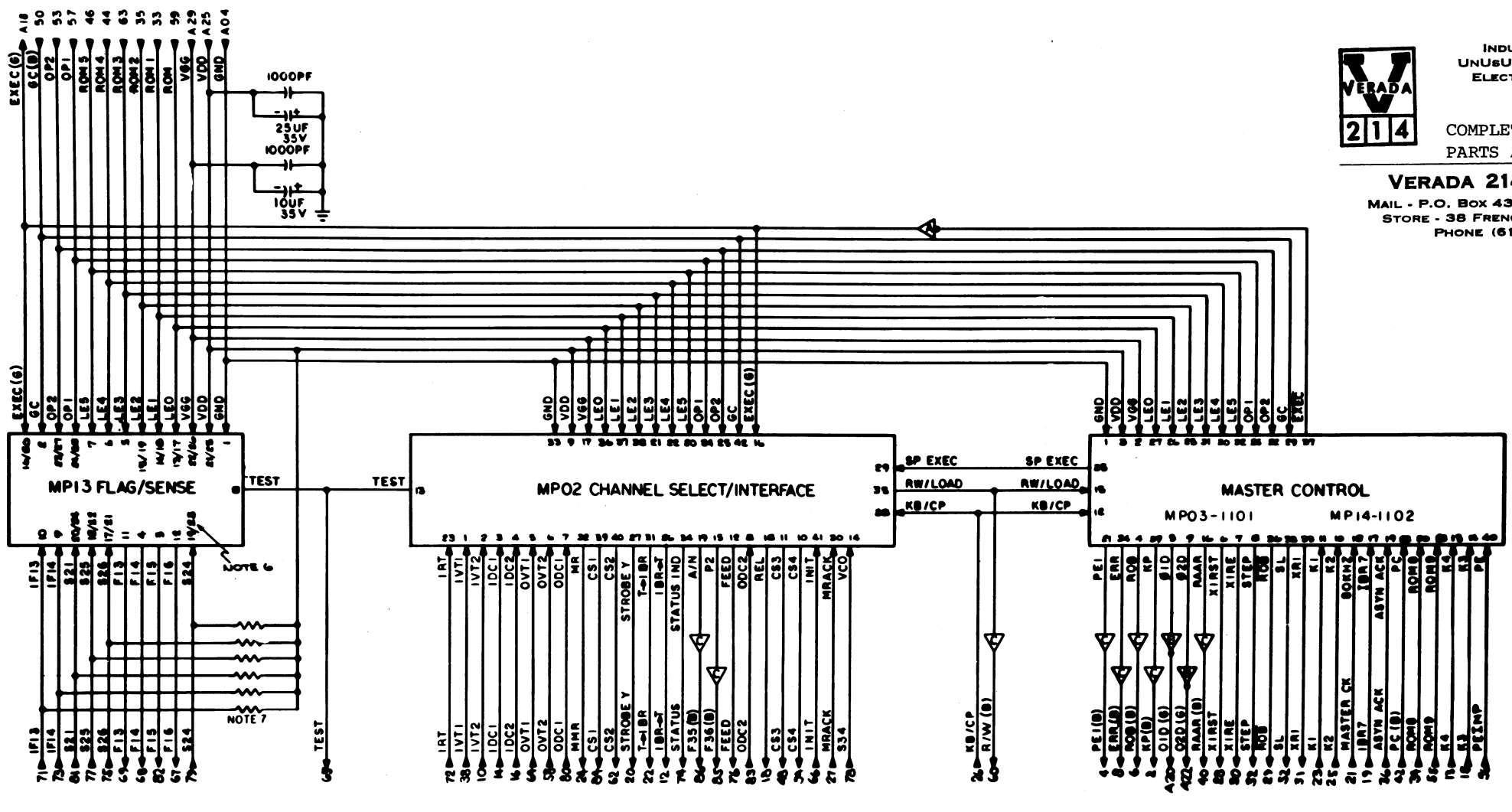
10857



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

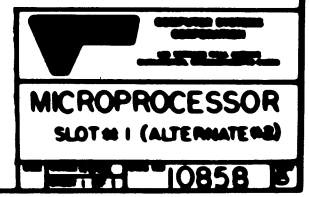
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

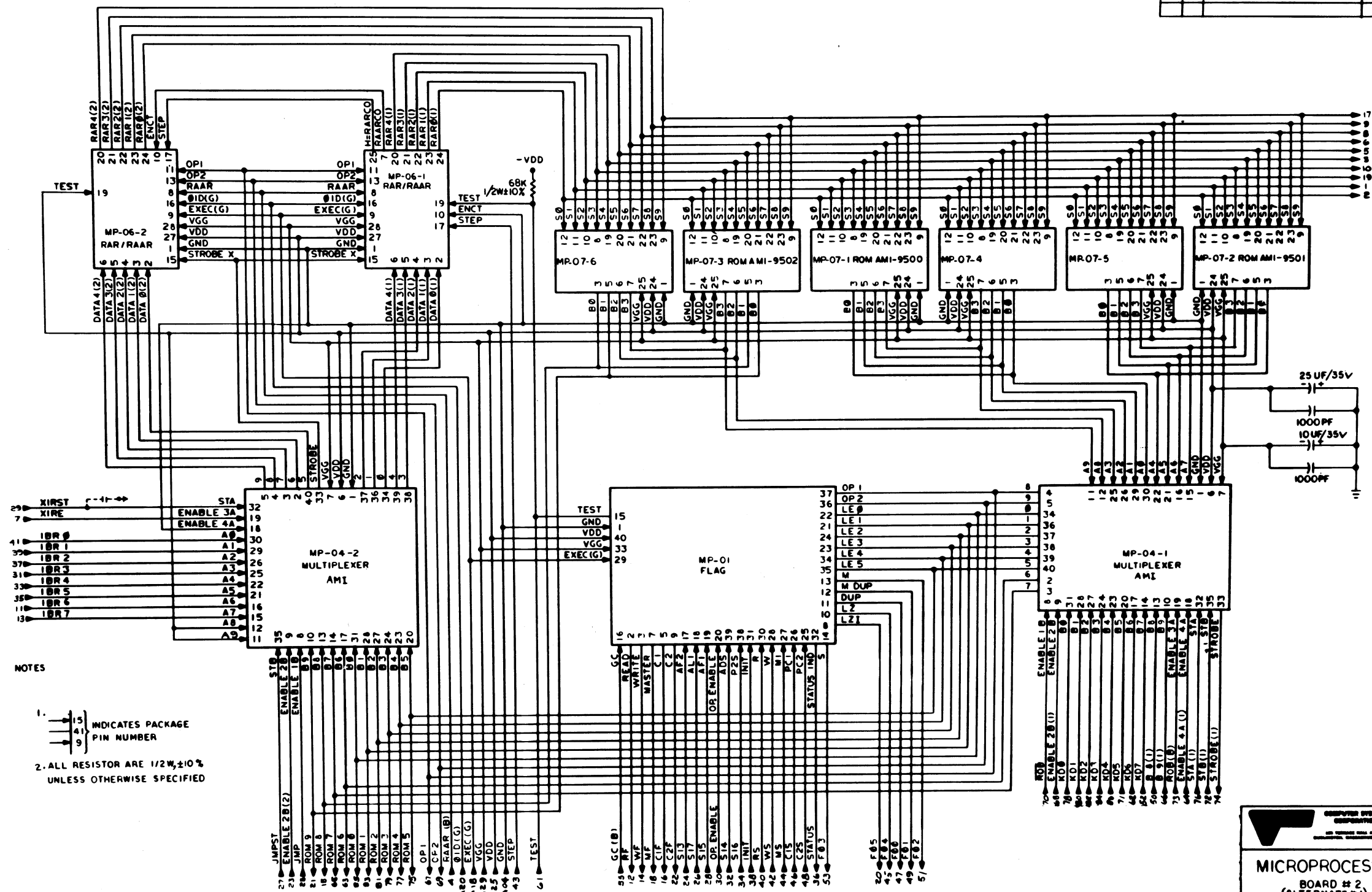
VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013



- INDICATES PACKAGE PIN NUMBER
- DRIVER(CLOCK) 1 PLACES
TYPE A (DWG NO. 10865)
- DRIVER(CABLE) 8 PLACES
TYPE C (DWG NO. 10863)
- ALL RESISTORS ARE 1/2W, ±10% UNLESS OTHERWISE SPECIFIED
- DRIVER(CLOCK) 2 PLACES
TYPE B (DWG NO. 10864)

- THE PIN NUMBER DESIGNATION 19/23 ETC. DENOTES PIN 19 FOR 24 PIN PACKAGES OR PIN 23 FOR 28 PIN PACKAGES.
- RESISTOR VALUE: 68K 1/2W





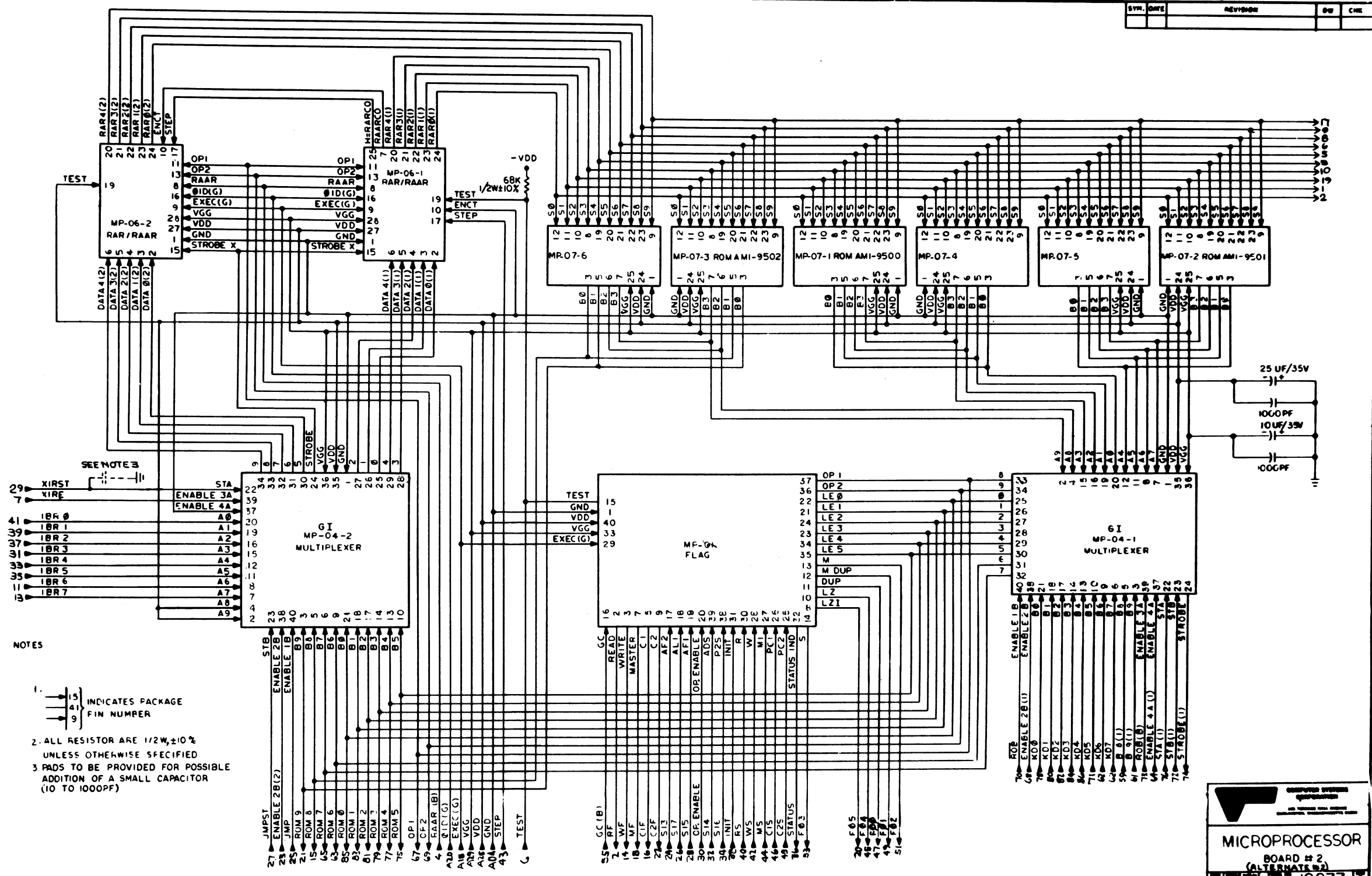
NOTES

- INDICATES PACKAGE PIN NUMBER
- ALL RESISTOR ARE 1/2W ±10% UNLESS OTHERWISE SPECIFIED

- 27 JMPST
- 28 ENABLE 2B(I)
- 29 ENABLE 1B
- 30 JMP
- 31 ROM 8
- 32 ROM 7
- 33 ROM 6
- 34 ROM 5
- 35 ROM 4
- 36 ROM 3
- 37 ROM 2
- 38 ROM 1
- 39 OP1
- 40 CF2
- 41 RAR (B)
- 42 ID(G)
- 43 EXEC(G)
- 44 VGG
- 45 VDD
- 46 GND
- 47 STEP
- 48 TEST
- 49
- 50
- 51
- 52 GC (B)
- 53 RF
- 54 WF
- 55 MF
- 56 CF
- 57 ZF
- 58 SF
- 59 OF
- 60 AF
- 61 OR ENABLE
- 62 ADS
- 63 P2S
- 64 INIT
- 65 RS
- 66 WS
- 67 MS
- 68 CS
- 69 STATUS
- 70 IND
- 71 F0
- 72 F1
- 73 F2
- 74 F3

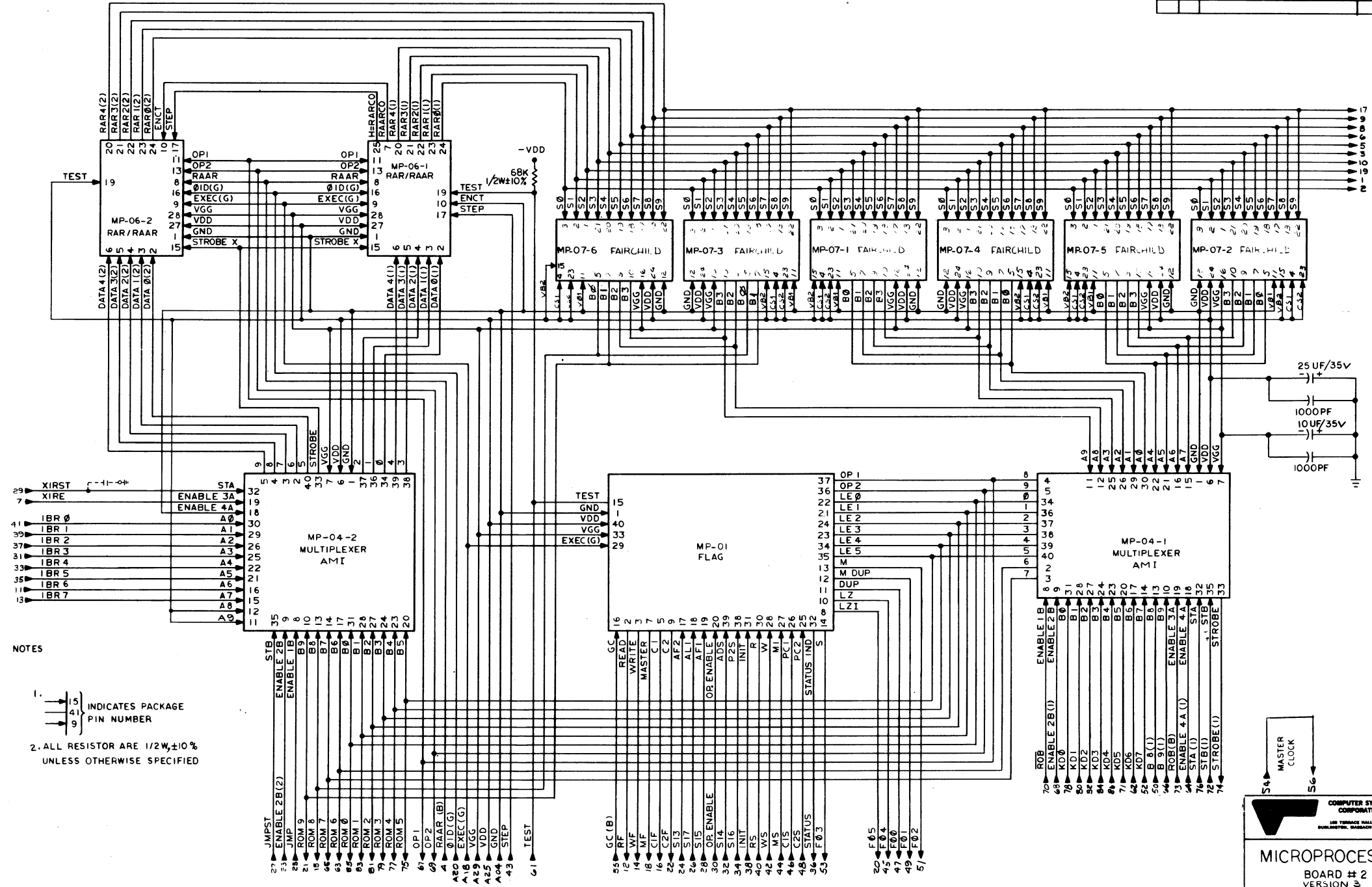
- 45 F05
- 46 F04
- 47 F03
- 48 F02
- 49
- 50
- 51

COMPUTER SYSTEMS CORPORATION
 MICROPROCESSOR BOARD # 2 (ALTERNATE #1)
 10847



- NOTES
- INDICATES PACKAGE FIN NUMBER
 - ALL RESISTOR ARE 1/2W ±10% UNLESS OTHERWISE SPECIFIED
 - PADS TO BE PROVIDED FOR POSSIBLE ADDITION OF A SMALL CAPACITOR (10 TO 1000PF)

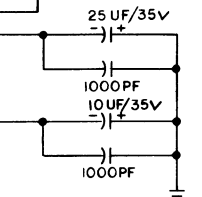
MICROPROCESSOR
 BOARD # 2
 (ALTERNATE #2)
 10877



NOTES

1. INDICATES PACKAGE PIN NUMBER

2. ALL RESISTOR ARE 1/2W±10% UNLESS OTHERWISE SPECIFIED

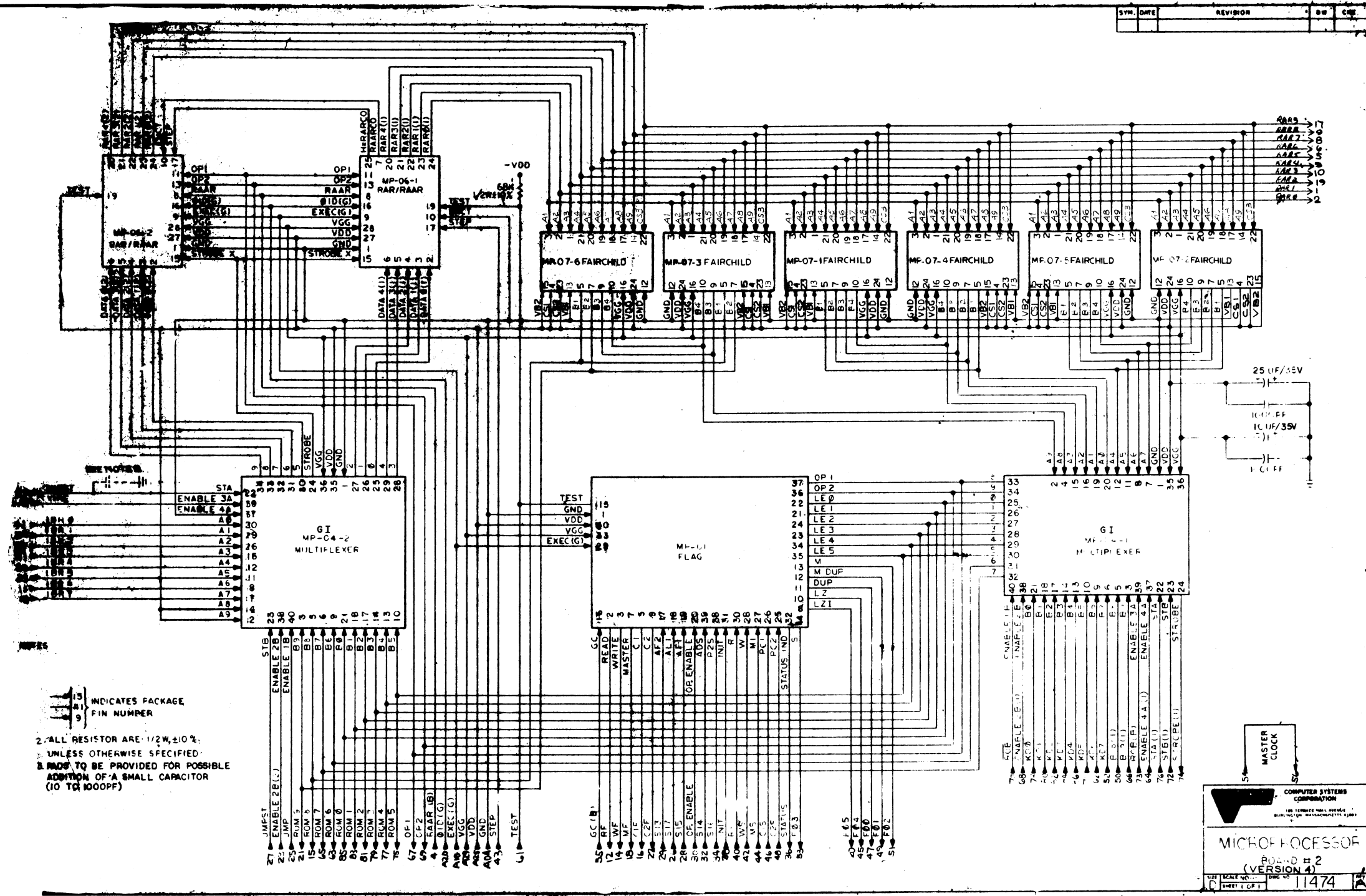


COMPUTER SYSTEMS CORPORATION
100 TORRANCE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

MICROPROCESSOR
BOARD # 2
VERSION 3

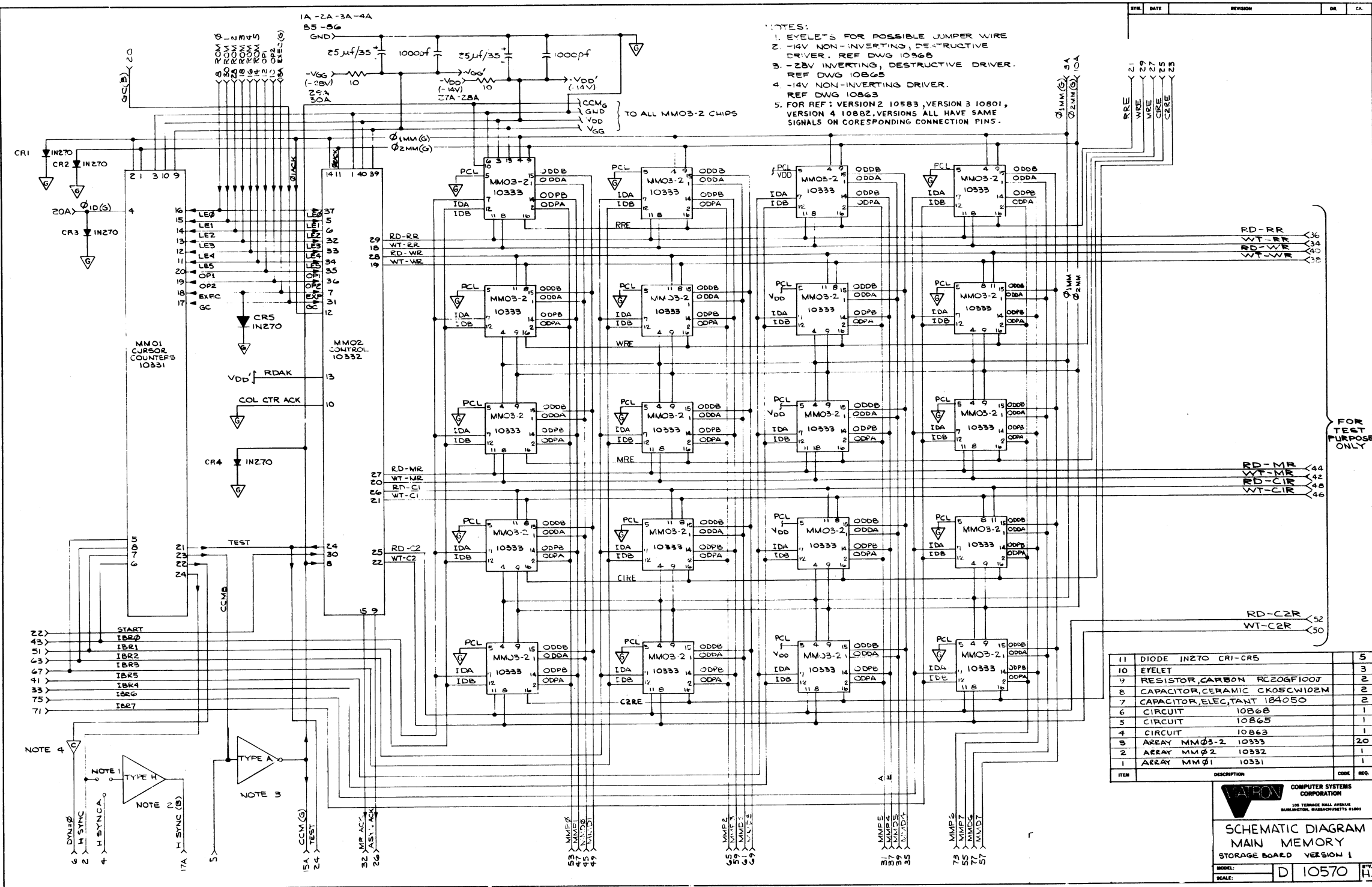
DATE: 11/4/73
SCALE: NONE
SHEET: 1 OF 1

SYM.	DATE	REVISION	BY	CHK



13
 11
 9 } INDICATES PACKAGE PIN NUMBER
 2. ALL RESISTOR ARE 1/2W, ±10%
 3. UNLESS OTHERWISE SPECIFIED
 4. PADS TO BE PROVIDED FOR POSSIBLE ADDITION OF A SMALL CAPACITOR (10 TO 1000PF)

COMPUTER SYSTEMS CORPORATION
 MICROPROCESSOR
 BOARD #2
 (VERSION 4)
 THE MAIN NO. OF THIS BOARD IS 11474
 THREE OF 1



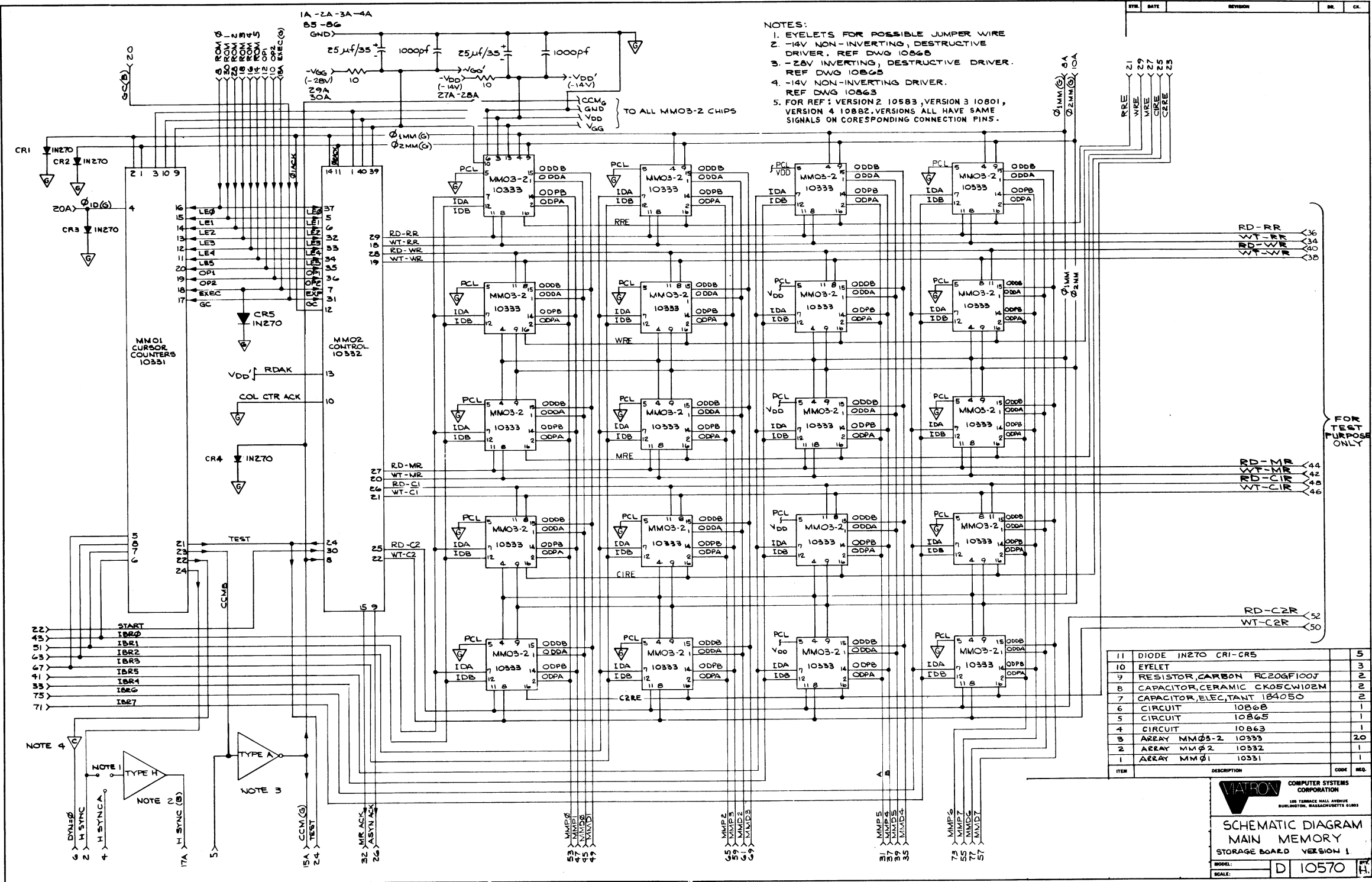
- NOTES:
1. EYELET'S FOR POSSIBLE JUMPER WIRE
 2. -14V NON-INVERTING, DESTRUCTIVE DRIVER. REF DWG 10868
 3. -28V INVERTING, DESTRUCTIVE DRIVER. REF DWG 10865
 4. -14V NON-INVERTING DRIVER. REF DWG 10863
 5. FOR REF: VERSION 2 10583, VERSION 3 10801, VERSION 4 10882. VERSIONS ALL HAVE SAME SIGNALS ON CORRESPONDING CONNECTION PINS.

ITEM	DESCRIPTION	CODE	REQ.
11	DIODE IN270 CRI-CR5		5
10	EYELET		3
9	RESISTOR, CARBON RC20GF100J		2
8	CAPACITOR, CERAMIC CK05CW102M		2
7	CAPACITOR, ELECTANT 184050		2
6	CIRCUIT 10868		1
5	CIRCUIT 10865		1
4	CIRCUIT 10863		1
3	ARRAY MM03-2 10333		20
2	ARRAY MM01 10332		1
1	ARRAY MM01 10331		1

VARON COMPUTER SYSTEMS CORPORATION
 100 TORRANCE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

SCHEMATIC DIAGRAM
MAIN MEMORY
 STORAGE BOARD VERSION 1

MODEL: **D 10570** REV. **H**
 SCALE: _____



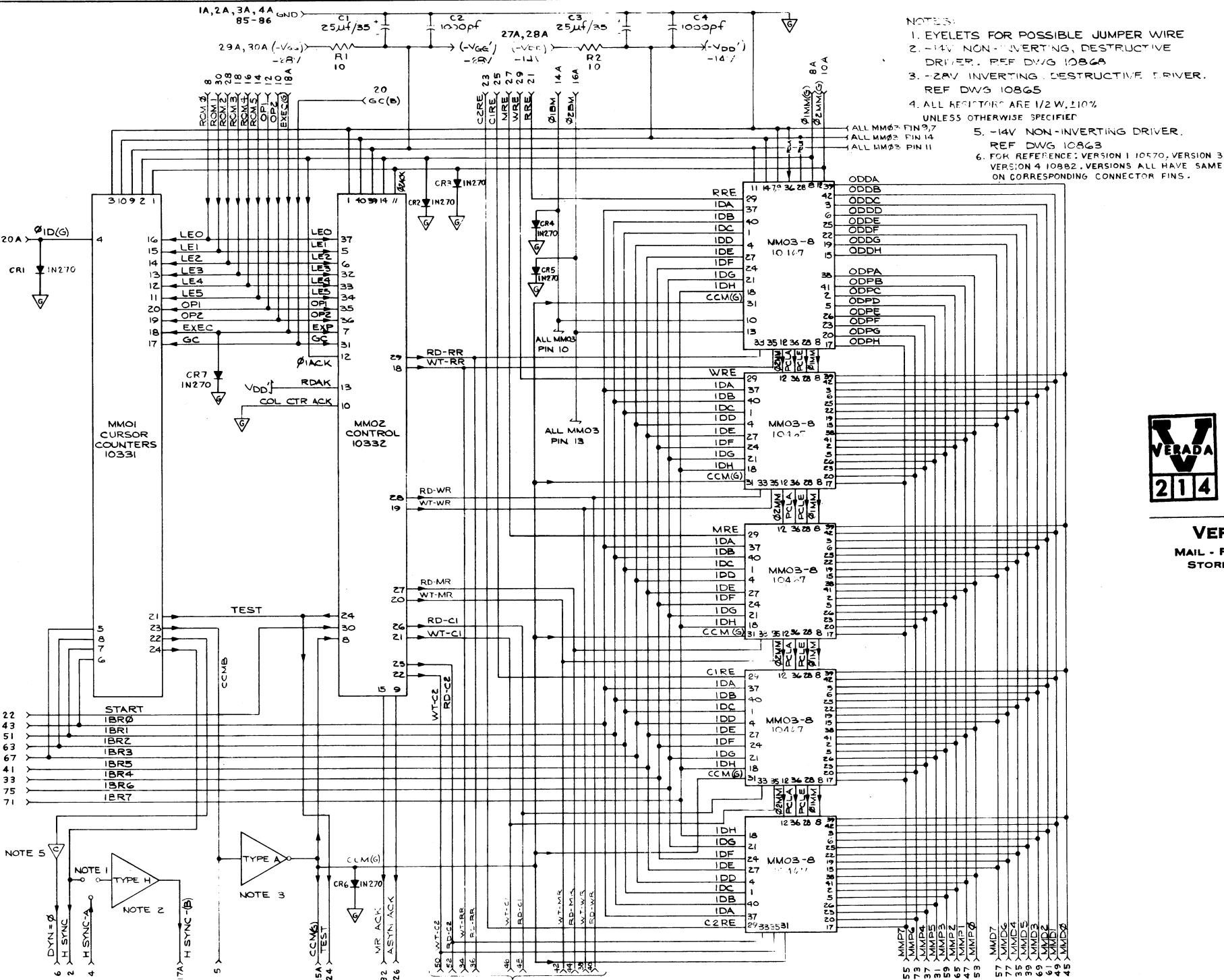
NOTES:
 1. EYELETS FOR POSSIBLE JUMPER WIRE
 2. -14V NON-INVERTING, DESTRUCTIVE DRIVER. REF DWG 10868
 3. -28V INVERTING, DESTRUCTIVE DRIVER. REF DWG 10865
 4. -14V NON-INVERTING DRIVER. REF DWG 10863
 5. FOR REF: VERSION 2 10583, VERSION 3 10801, VERSION 4 10882. VERSIONS ALL HAVE SAME SIGNALS ON CORRESPONDING CONNECTION PINS.

ITEM	DESCRIPTION	CODE	REQ.
11	DIODE INZ70 CRI-CR5		5
10	EYELET		3
9	RESISTOR, CARBON RC20GF100F		2
8	CAPACITOR, CERAMIC CK05CW102M		2
7	CAPACITOR, ELEC, TANT 184050		2
6	CIRCUIT 10868		1
5	CIRCUIT 10865		1
4	CIRCUIT 10863		1
3	ARRAY MM03-2 10333		20
2	ARRAY MM02 10332		1
1	ARRAY MM01 10331		1

VATRON COMPUTER SYSTEMS CORPORATION
 100 FERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

**SCHEMATIC DIAGRAM
 MAIN MEMORY
 STORAGE BOARD VERSION 1**

MODEL: **D 10570** REV. **H**
 SCALE: _____



- NOTES:
1. EYELETS FOR POSSIBLE JUMPER WIRE
 2. -14V NON-INVERTING, DESTRUCTIVE DRIVER. REF DWG 1086A
 3. -28V INVERTING, DESTRUCTIVE DRIVER. REF DWG 10865
 4. ALL RESISTORS ARE 1/2 W, 10% UNLESS OTHERWISE SPECIFIED
 5. -14V NON-INVERTING DRIVER. REF DWG 10863
 6. FOR REFERENCE: VERSION 1 10570, VERSION 3 10801, VERSION 4 10882. VERSIONS ALL HAVE SAME SIGNALS ON CORRESPONDING CONNECTOR PINS.



INDUSTRIAL SURPLUS
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COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

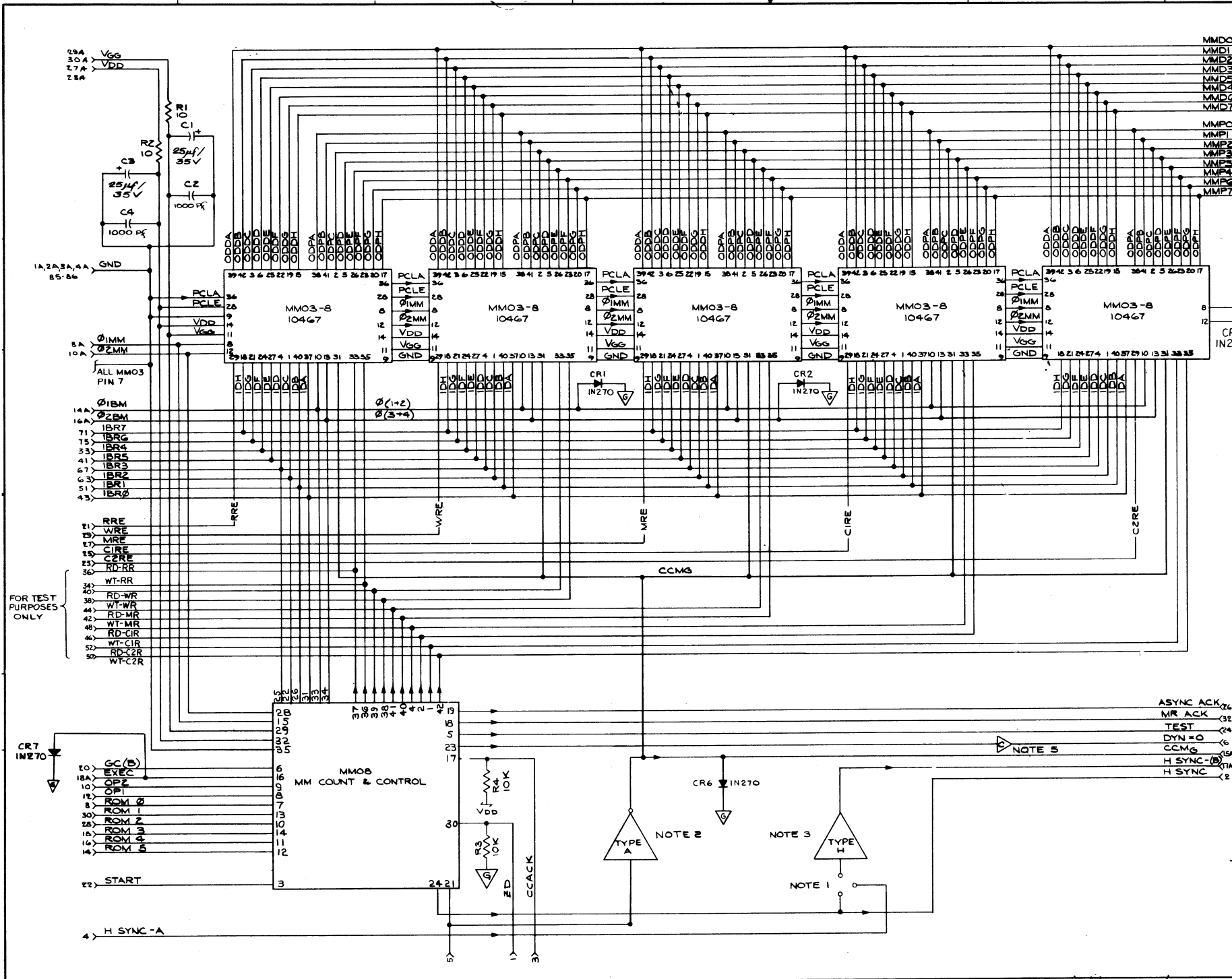
11	DIODE IN270	CR1-CR7	7
10	EYELET		3
9	RESISTOR, CARBON	RC20GF1005	2
8	CAPACITOR, CERAMIC	CK05CW102M	2
7	CAPACITOR, ELEC. TANT	1840E0	2
6	CIRCUIT	10868	1
5	CIRCUIT	10865	1
4	CIRCUIT	10863	1
3	ARRAY	MM03-B 10467	5
2	ARRAY	MM02 10332	1
1	ARRAY	MM01 10331	1
ITEM	DESCRIPTION	CODE	REQ.

VIATRON COMPUTER SYSTEMS CORPORATION
190 TERRACE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

**SCHEMATIC DIAGRAM
MAIN MEMORY
STORAGE BOARD VERSION 2**

MODEL: **D 10583** REV: **F**

SCALE:



- MMD0 45
- MMD1 49
- MMD2 61
- MMD3 69
- MMD4 35
- MMD5 17
- MMD6 57
- MMD7 57
- MMPO 53
- MMPI 47
- MMF2 65
- MMF3 69
- MMF4 57
- MMF5 73
- MMF6 55
- MMF7 55

NOTES:

1. EYELETS FOR POSSIBLE JUMPER WIRE.
2. -28V INVERTING, DESTRUCTIVE DRIVER. REF DWG 10865.
3. -14V NON-INVERTING, DESTRUCTIVE DRIVER. REF DWG. 10868.
4. ALL RESISTORS ARE 1/2W ±10% UNLESS OTHERWISE SPECIFIED.
5. -14V NON-INVERTING DRIVER. REF DWG 10863
6. FOR REFERENCE: VERSION 1 10570, VERSION 2 10583, VERSION 4 108B2. VERSIONS ALL HAVE SAME SIGNALS ON CORRESPONDING CONNECTOR PINS

FOR TEST PURPOSES ONLY

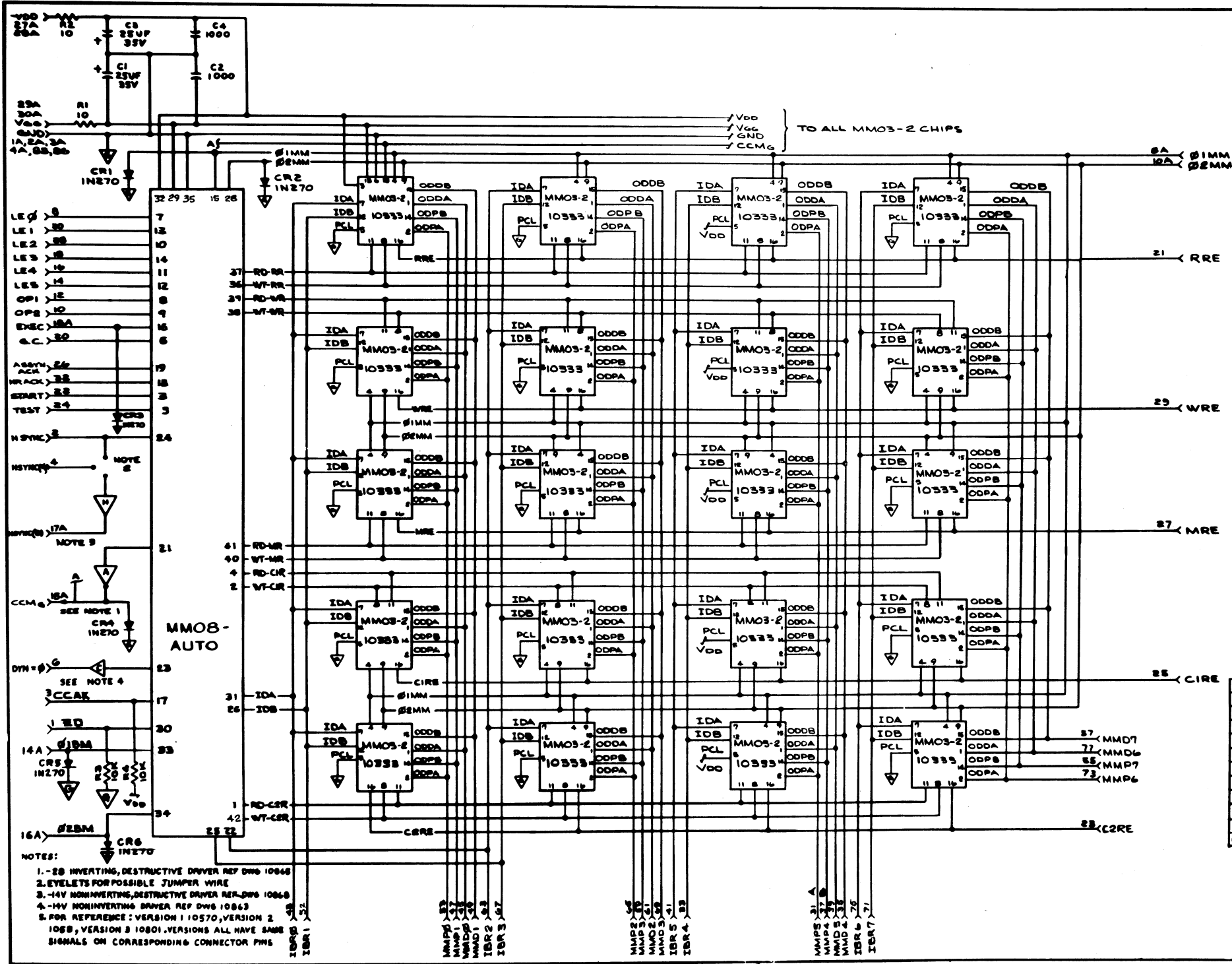
ITEM	DESCRIPTION	CODE	QTY
10	DIODE IN270 CR1-CR7		7
9	EYELET		3
8	CIRCUIT 10868		1
7	CIRCUIT 10865		1
6	CIRCUIT 10863		1
5	RESISTOR 1/2W, ±10%, 10Ω (R1, R2)		2
4	CAPACITOR, CERAMIC .01 50V (C2, C4)		2
3	CAPACITOR, ELEC 25μf 35V (C1, C3)		3
2	ARRAY MM03-8 10467		5
1	ARRAY MM08		1



COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

SCHEMATIC DIAGRAM
 MAIN MEMORY
 STORAGE BOARD VERSION 3
 (AUTONETICS)

SIZE SCALE 1 OF 1 DRAW NO 10801 REV G



DATE	REVISION	DR	CK
------	----------	----	----



VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01882
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:
 INDUSTRIAL SUPPLIES
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 ELECTRONICS & SOUND

11	RESISTOR, 10K	2
10	DIODE, 1N270, CR1, CR2, CR3, CR4	6
9	EYELET	3
8	CAPACITOR, 1000PF, 50V	2
7	CAPACITOR, ELEC 1084050	2
6	RESISTOR, 102L, 1/2W, 210% (R1, R2)	2
5	CIRCUIT 10860	1
4	CIRCUIT 10865	1
3	CIRCUIT 10863	1
2	ARRAY MM03-AUTO	1
1	ARRAY MM03-2 10333	80
ITEM	DESCRIPTION	QTY

- NOTES:
1. -28 INVERTING, DESTRUCTIVE DRIVER REF DWG 10868
 2. EYELETS FOR POSSIBLE JUMPER WIRE
 3. -14V NONINVERTING, DESTRUCTIVE DRIVER REF DWG 10868
 4. -14V NONINVERTING DRIVER REF DWG 10863
 5. FOR REFERENCE: VERSION 1 10570, VERSION 2 1058, VERSION 3 10801. VERSIONS ALL HAVE SAME SIGNALS ON CORRESPONDING CONNECTOR PINS

COMPUTER SYSTEMS CORPORATION
 1000 WASHINGTON STREET
 BOSTON, MASSACHUSETTS 02111

**SCHEMATIC DIAGRAM
 MAIN MEMORY
 STORAGE BOARD VERSION 4**

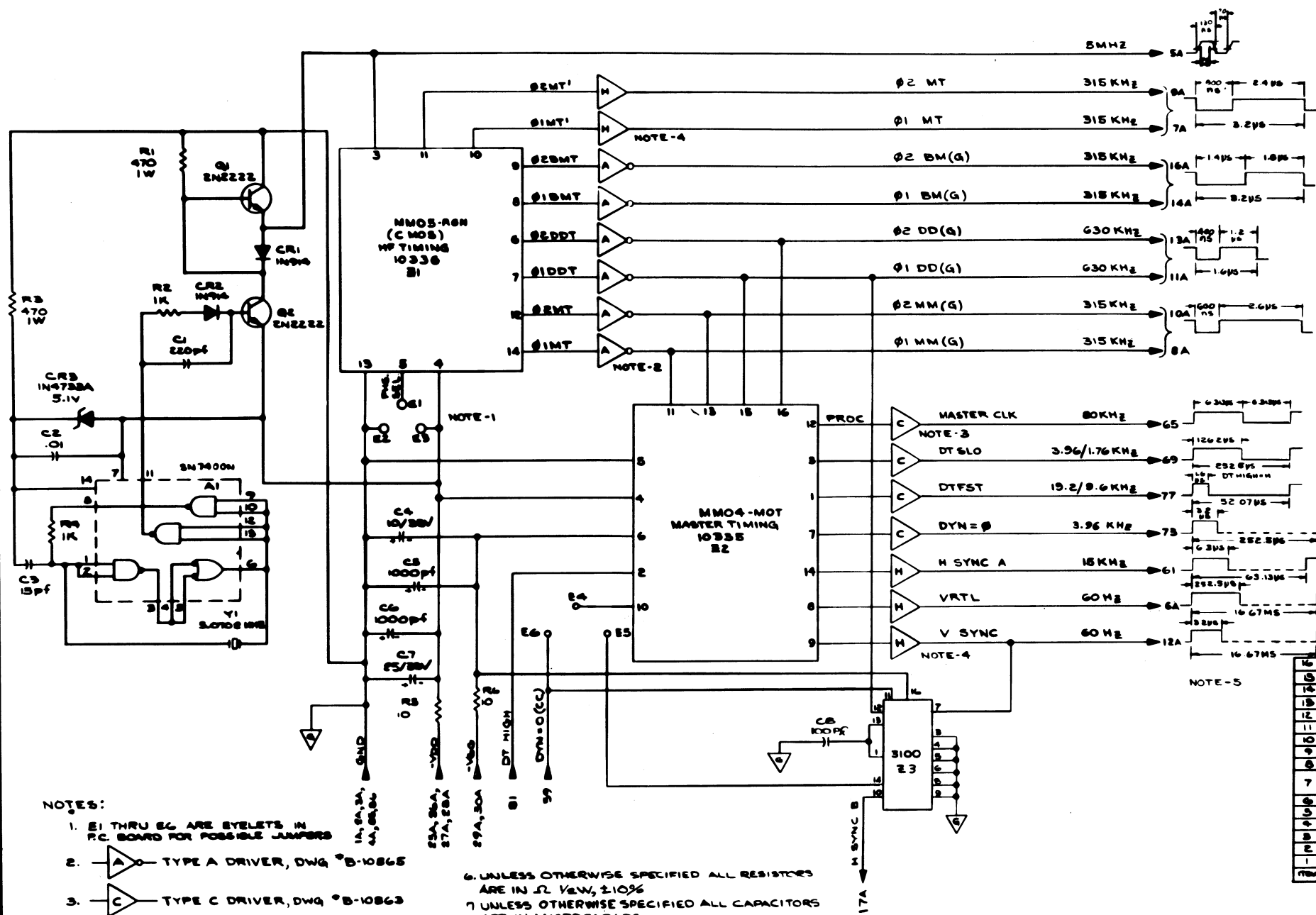
DWG NO. 10882 E

REV	DATE	REVISIONS	DR.	CK.



VERADA 2114 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:
 INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND



18	CAPACITOR, 100P, C8	1
17	I.C. FAIRCHILD 3100A, E3	1
16	CAPACITOR, 25/25V, C7	1
15	CAPACITOR, 1000P, C3, C6	2
14	CAPACITOR, 10/25V, C4	1
13	RESISTOR, 10, R3, R6	2
12	CAPACITOR, DISK CER, 220P, C1	1
11	CAPACITOR, DISK CER, 50P, C5	1
10	CAPACITOR, DISK CER, .01, C2	1
9	RESISTOR, 1K, R2, R4	2
8	RESISTOR, 470, R1, R5	2
7	CRYSTAL, 5.0700MHZ, .000% 40°C, MC-18/U, Y1	1
6	DIODE, ZENER, 1N4733A, CR3	1
5	DIODE, 1N914, CR1, CR2	2
4	TRANSISTOR, 2N2222, Q1, Q2	2
3	INTEGRATED CIRCUIT, SN7400N, A1	1
2	ARRAY, MM04, E2	1
1	ARRAY, MMOS, E1	1

NOTES:

- E1 THRU E4 ARE EYELETS IN P.C. BOARD FOR POSSIBLE JAMPERS
- A - TYPE A DRIVER, DWG #B-10865
- C - TYPE C DRIVER, DWG #B-10863
- H - TYPE H DRIVER, DWG #B-10868
- WAVE FORMS SHOW DUTY CYCLE ONLY, NOT PHASE RELATION, (NOT TO SCALE)

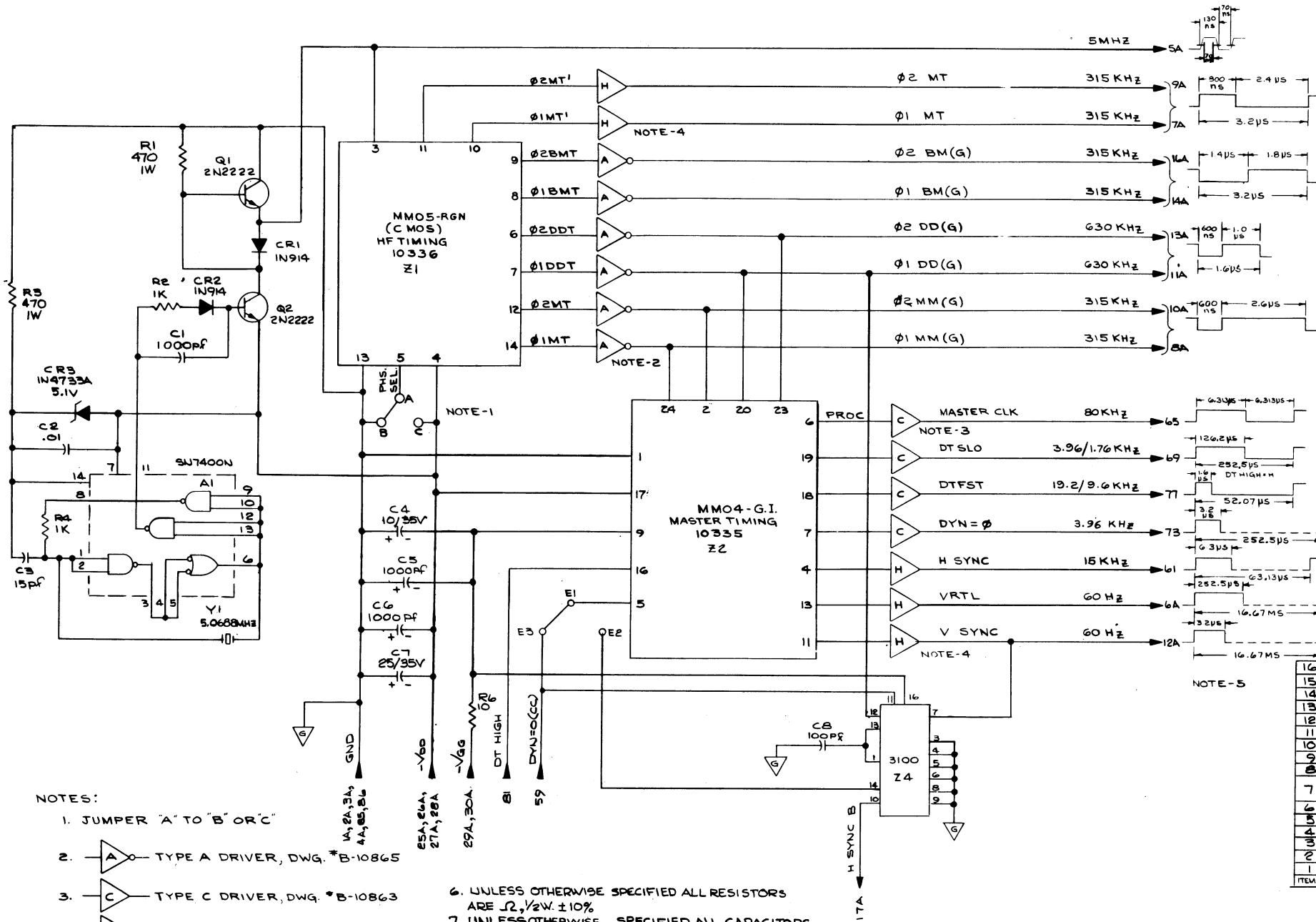
6. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE IN Ω V&W, $\pm 10\%$
 7. UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE IN MICROFARADS

INTERCONNECTION DIAGRAM
 TIMING AND
 CLOCK DRIVERS
 VERSION 1



COMPLETE STOCK OF VIATRON PARTS AVAILABLE FROM:
VERADA 214 DIV. LOLAR
 MAIL - P. O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND



ITEM	DESCRIPTION	CODE	QTY
18	CAPACITOR, 100PF, C8		1
17	I.C. FAIRCHILD, 31004, A2		1
16	CAPACITOR, 25/35V C7		1
15	CAPACITOR, 1000PF C5, C6		2
14	CAPACITOR, 10/35V C4		1
13	RESISTOR, 10 R6		1
12	CAPACITOR, DISK CER. 1000PF C1		1
11	CAPACITOR, DISK CER. 15PF C3		1
10	CAPACITOR, DISK CER. .01 C2		1
9	RESISTOR, 1K R2, R4		2
8	RESISTOR, 470 R1, R3		2
7	CRYSTAL, 5.0688MHZ, .002% 40°C, HC-18/U, Y1		1
6	DIODE, ZENER, IN4733A, CR3		1
5	DIODE, IN914, CR1, CR2		2
4	TRANSISTOR, 2N2222, Q1, Q2		2
3	INTEGRATED CIRCUIT, SN7400N A1		1
2	ARRAY, MM04, Z2		1
1	ARRAY, MM05, Z1		1

NOTES:

- JUMPER "A" TO "B" OR "C"
- TYPE A DRIVER, DWG. *B-10865
- TYPE C DRIVER, DWG. *B-10863
- TYPE H DRIVER, DWG. *B-10868
- WAVE FORMS SHOW DUTY CYCLE ONLY, NOT PHASE RELATION, (NOT TO SCALE)
- UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE 1/2, 1/2W. ±10%
- UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE IN MICROFARADS

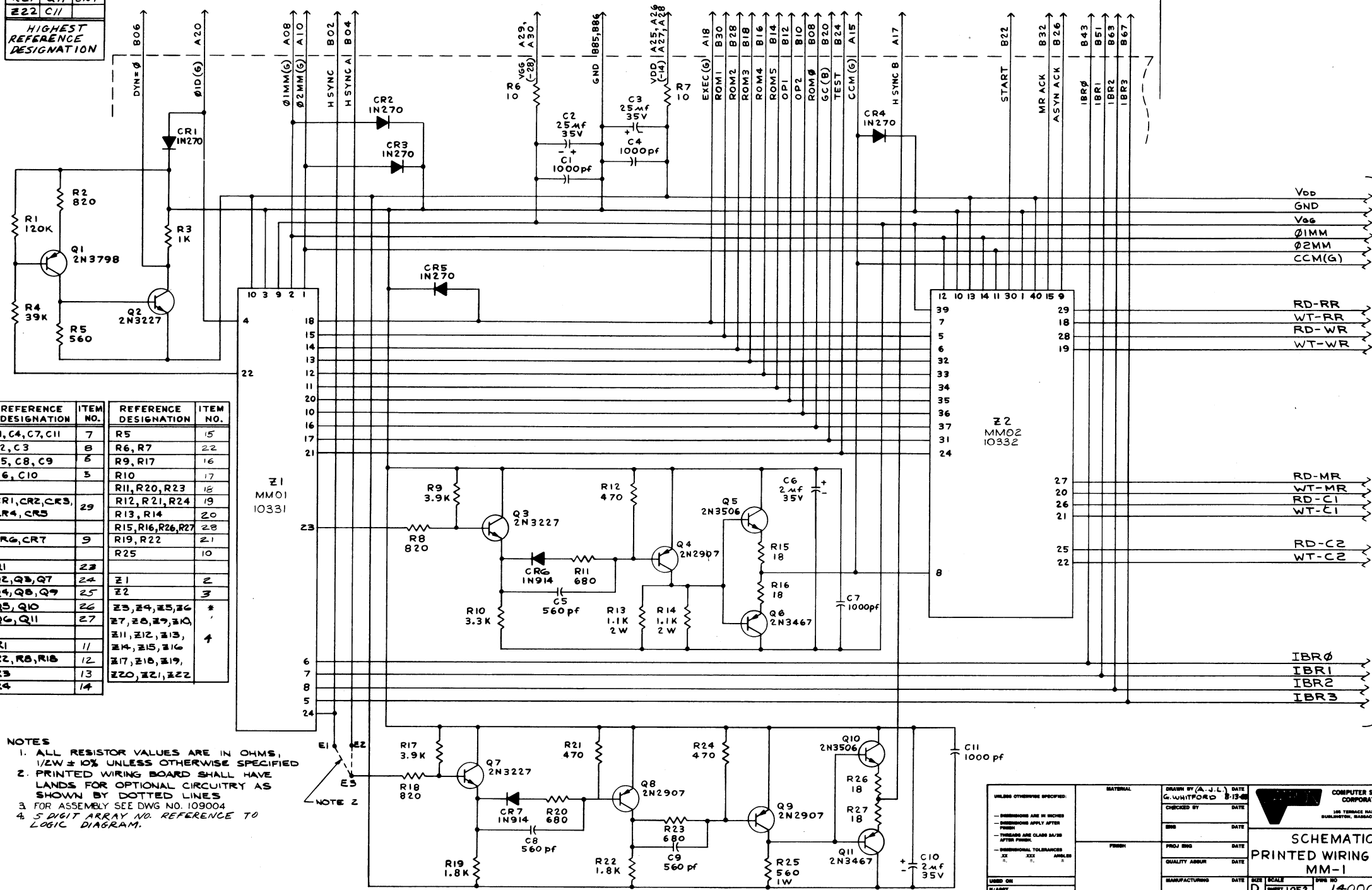
COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

INTERCONNECTION DIAGRAM
 TIMING AND
 CLOCK DRIVERS
 VERSION 2

R27	Q11	CR7
Z22	C11	

HIGHEST REFERENCE DESIGNATION

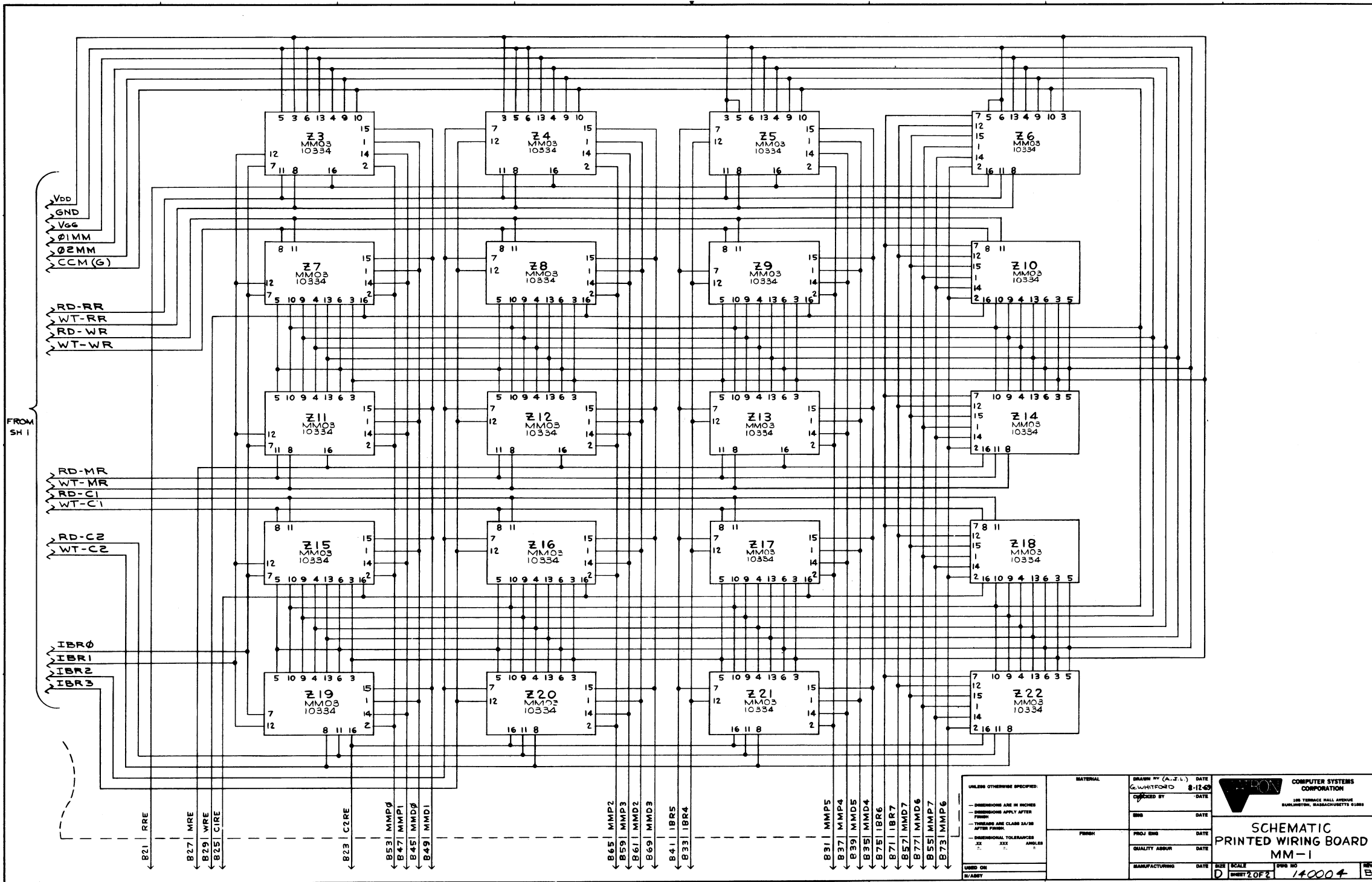
SYM DATE REVISION DR. CK.




REFERENCE DESIGNATION	ITEM NO.	REFERENCE DESIGNATION	ITEM NO.
C1, C4, C7, C11	7	R5	15
C2, C3	8	R6, R7	22
C5, C8, C9	6	R9, R17	16
C6, C10	5	R10	17
CR1, CR2, CR3, CR4, CR5	29	R11, R20, R23	18
		R12, R21, R24	19
		R13, R14	20
CR6, CR7	9	R15, R16, R26, R27	28
		R19, R22	21
		R25	10
Q1	23	Z1	2
Q2, Q3, Q7	24	Z2	3
Q4, Q8, Q9	25	Z3, Z4, Z5, Z6	*
Q5, Q10	26	Z7, Z8, Z9, Z10	
Q6, Q11	27	Z11, Z12, Z13	4
R1	11	Z14, Z15, Z16	
R2, R8, R18	12	Z17, Z18, Z19	
R3	13	Z20, Z21, Z22	
R4	14		

NOTES
 1. ALL RESISTOR VALUES ARE IN OHMS, 1/2W ± 10% UNLESS OTHERWISE SPECIFIED
 2. PRINTED WIRING BOARD SHALL HAVE LANDS FOR OPTIONAL CIRCUITRY AS SHOWN BY DOTTED LINES
 3. FOR ASSEMBLY SEE DWG NO. 109004
 4. 5-DIGIT ARRAY NO. REFERENCE TO LOGIC DIAGRAM.

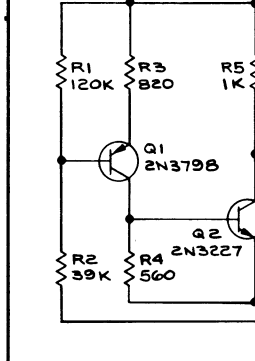
UNLESS OTHERWISE SPECIFIED: - DIMENSIONS ARE IN INCHES - DIMENSIONS APPLY AFTER FINISH - TOLERANCES ARE CLASS 19/28 AFTER FINISH - DIMENSIONAL TOLERANCES: XX .XX X .X X .X	MATERIAL	DRAWN BY (A.J.L.) DATE G. WHITFORD 8-19-68	COMPUTER SYSTEMS CORPORATION 100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803
USED ON	FINISH	CHECKED BY DATE	SCHEMATIC PRINTED WIRING BOARD MM-1
IN/ASBY	PROJ ENG DATE	DATE	
	QUALITY ASSUR DATE	DATE	
	MANUFACTURING DATE	DATE	
		SIZE SCALE SHEET NO.	14000 4



UNLESS OTHERWISE SPECIFIED: - DIMENSIONS ARE IN INCHES - DIMENSIONS APPLY AFTER FINISH - TOLERANCES ARE CLASS 2A/3B AFTER FINISH - DIMENSIONAL TOLERANCES .01 .02 .05 .10 .15 .20 .30 .50 .75 .100	MATERIAL	DRAWN BY (A.Z.L.) DATE G.W.HITFOORD 8-12-69 CHECKED BY DATE	 COMPUTER SYSTEMS CORPORATION 180 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803
	FINISH	PROJ. ENG. DATE QUALITY ASSUR. DATE MANUFACTURING DATE	
USED ON B/ABY	SCHEMATIC PRINTED WIRING BOARD MM-1		SHEET 2 OF 2 14004

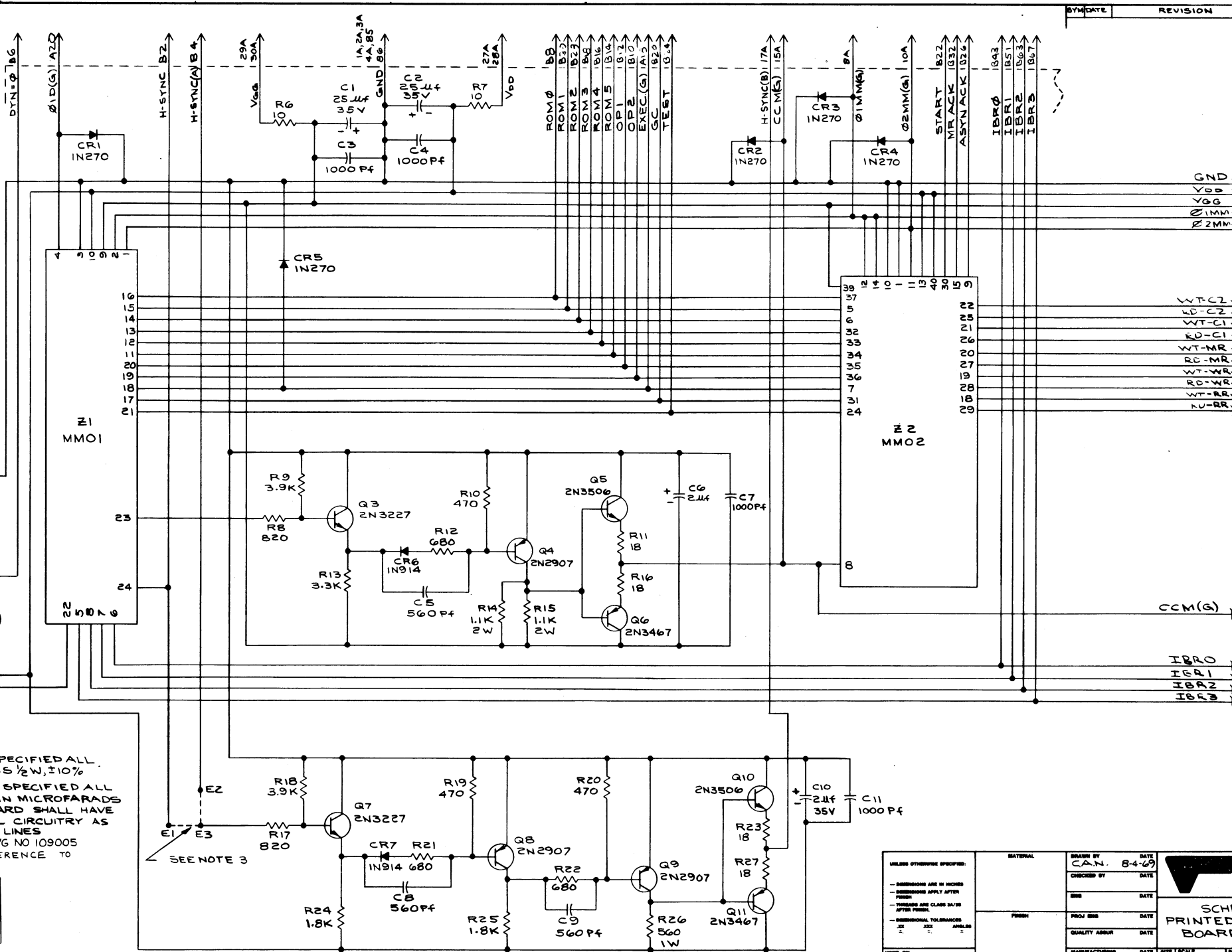
REFERENCE DESIGNATION	ITEM NO
C1, C2	
C3, C4, C7, C11	
C5, C8, C9	
C6, C10	
Q1	
Q2, Q3, Q7	
Q4, Q8, Q9	
Q5, Q10	
Q6, Q11	
R1	
R2	
R3, R8, R17	
R4	
R5	
R6, R7	
R9, R18	
R10, R19, R20	
R11, R16, R23, R27	
R12, R21, R22	
R13	
R14, R15	
R24, R25	
R26	
Z1	
Z2	
Z3, Z4, Z5, Z6, Z7	
CR1, CR2, CR3, CR4	
CR5, CR6, CR9	
CR7, CR8	

Z3, Z4, Z5, Z6, Z7
 Z1 10331
 Z2 10332



- NOTES:
 1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE IN OHMS 1/2W, ±10%
 2. UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE IN MICROFARADS
 3. PRINTED CIRCUIT BOARD SHALL HAVE LANDS FOR OPTIONAL CIRCUITRY AS SHOWN BY DOTTED LINES
 4. FOR ASSEMBLY SEE DWG NO 109005
 5. 5 DIGITARY NO. REFERENCE TO LOGIC DIAGRAM.

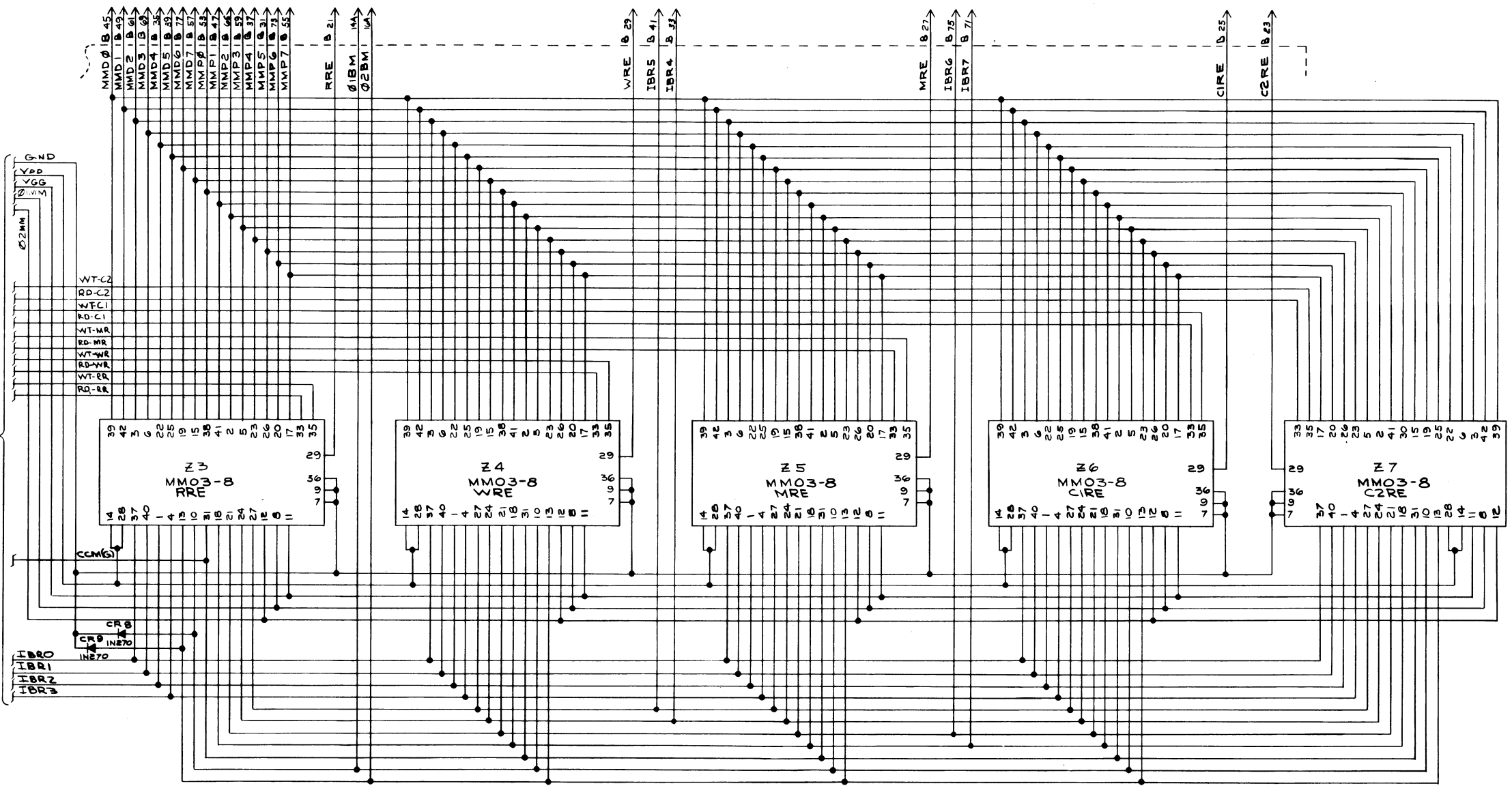
R27	C11	CR9
Q11	Z7	
HIGHEST REFERENCE DESIGNATIONS		




GND
 Vcc
 VGG
 Ø1MM
 Ø2MM
 WT-C2
 LD-C2
 WT-C1
 ED-C1
 WT-MR
 RD-MR
 WT-WR
 RD-WR
 WT-RR
 RD-RR
 TO SHEET 2 DWG. NO.

UNLESS OTHERWISE SPECIFIED: - DIMENSIONS ARE IN INCHES - DIMENSIONS APPLY AFTER FINISH - TOLERANCES ARE CLASS 14/18 AFTER FINISH - DIMENSIONAL TOLERANCES: IN .015 XX .010 XXX .005 ANGLES .125	MATERIAL	DRAWN BY CAN. 8-4-69	DATE	COMPUTER SYSTEMS CORPORATION 100 TOWN HALL AVENUE DUBLIN, MASSACHUSETTS 01930
		CHECKED BY	DATE	
		PROJ ENG	DATE	SCHEMATIC PRINTED WIRING BOARD MM-2
		QUALITY ASSUR	DATE	
USED ON SI/ARMY		MANUFACTURER	DATE	REV D
		SCALE	DATE	140005

FROM SHEET No. 1
DWG. No.



UNLESS OTHERWISE SPECIFIED: - DIMENSIONS ARE IN INCHES - DIMENSIONS APPLY AFTER FINISH - TOLERANCES ARE CLASS SA/30 AFTER FINISH - DIMENSIONAL TOLERANCES: XX .XX .XX .XX X .X .X .X X .X .X .X	MATERIAL	DATE DRAWN BY CAN 8-4-69	 COMPUTER SYSTEMS CORPORATION 100 TERRACE HALL AVENUE WILMINGTON, MASSACHUSETTS 01890	
		CHECKED BY DATE		
	FINISH	PROJ. ENG. DATE	SCHEMATIC PRINTED WIRING BOARD MM-2	
		QUALITY ASSUR. DATE	MANUFACTURING DATE	REV. 1
USED ON	DATE	REV. 1	DATE	
BY ARMY		DATE	DATE	

SYM	DATE	REVISION	DR.	CK.
A	12-14-63	REVISED PER ECN NO. 841		

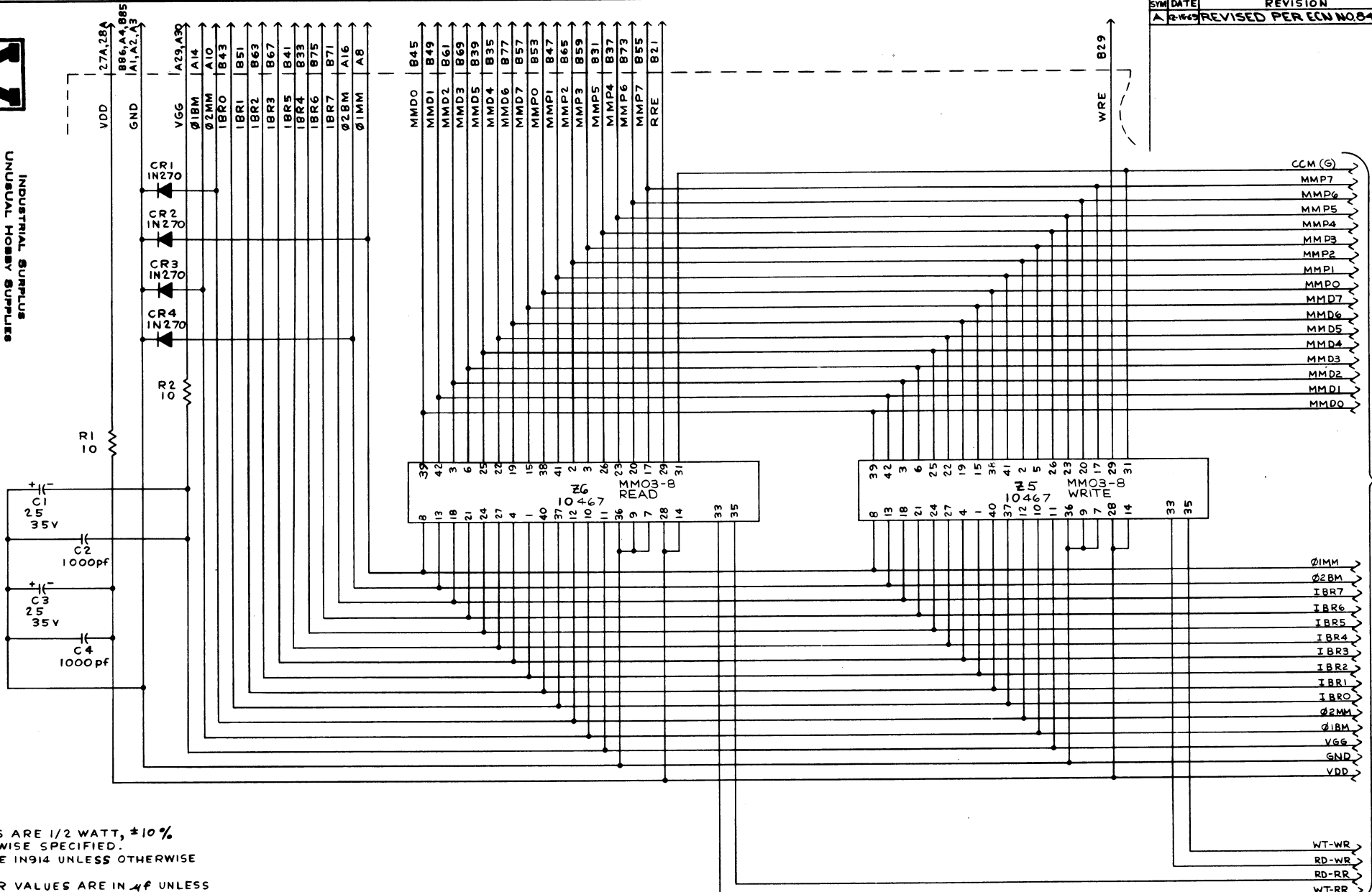


INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

MAIL - P.O. Box 498, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013



TO SH. 2

WT-WR
RD-WR
RD-RR
WT-RR

R29	C11	Q11
CRB	Z6	

HIGHEST REFERENCE DESIGNATIONS

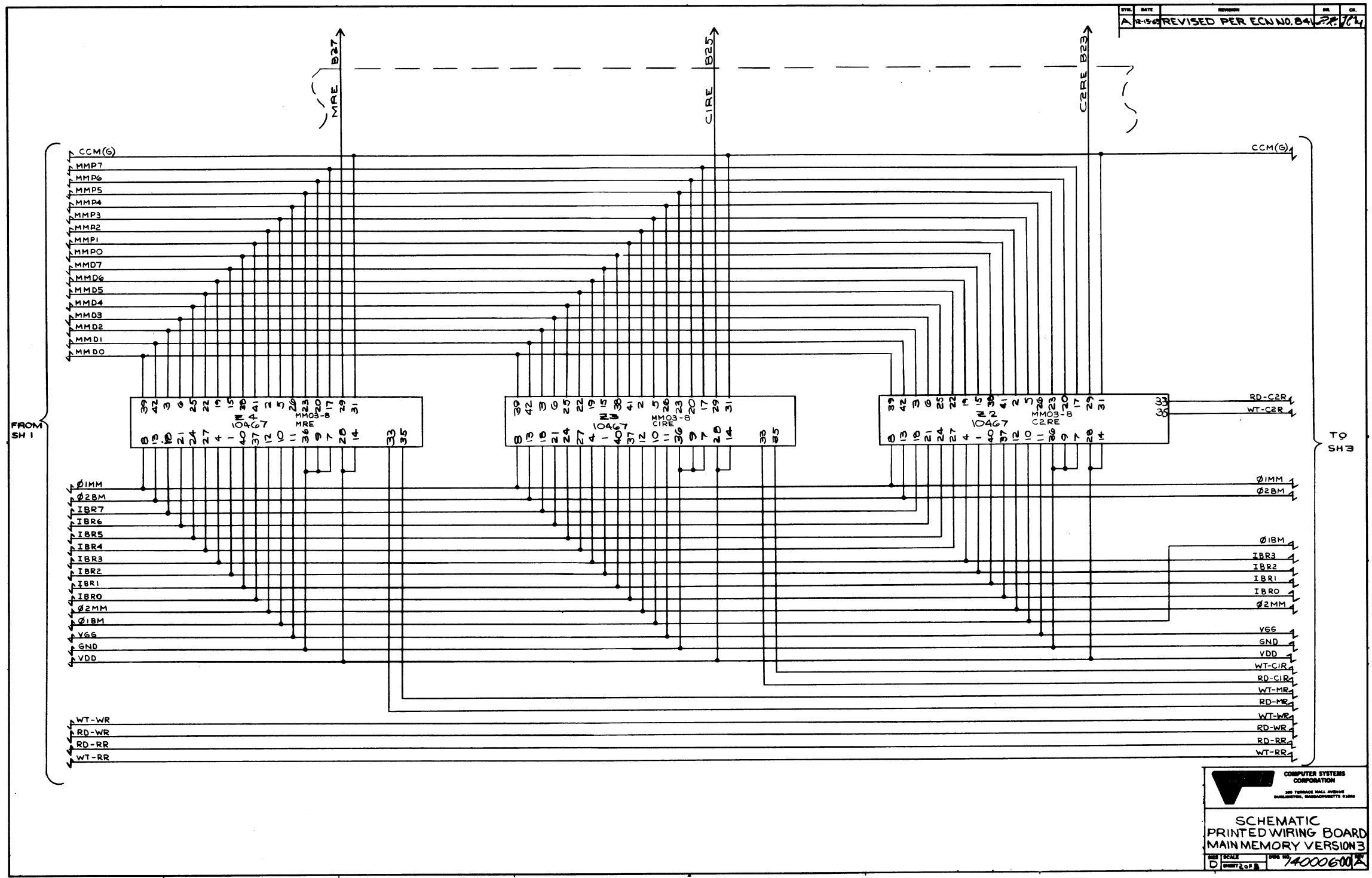
- NOTES:
1. ALL RESISTORS ARE 1/2 WATT, ±10% UNLESS OTHERWISE SPECIFIED.
 2. ALL DIODES ARE IN914 UNLESS OTHERWISE SPECIFIED.
 3. ALL CAPACITOR VALUES ARE IN μF UNLESS OTHERWISE SPECIFIED.
 4. PRINTED CIRCUIT BOARD SHALL HAVE LANDS FOR OPTIONAL CIRCUITRY AS SHOWN BY DOTTED LINES.
 5. FOR ASSEMBLY SEE DWG NO. 109006
 6. 5-DIGIT ARRAY NO. REFERENCE TO LOGIC DIAGRAM.

COMPUTER SYSTEMS CORPORATION
100 VERMONT HALL AVENUE
DUBLIN, MASSACHUSETTS 01930

**SCHEMATIC
PRINTED WIRING BOARD
MAIN MEMORY, VERSION 3**

SCALE: 1 OF 3
PART NO: 140006-00

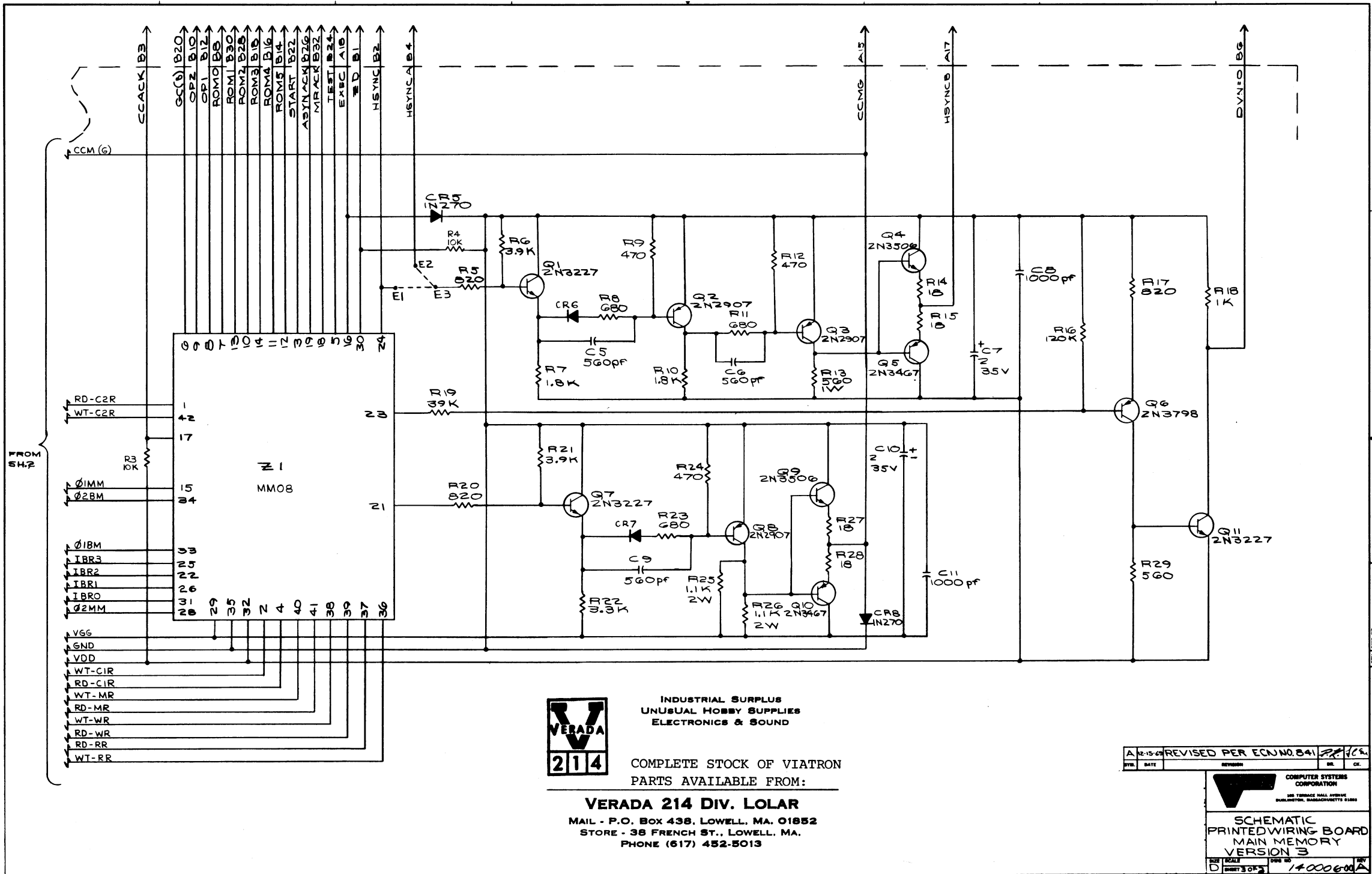
SYL.	DATE	REVISION	BY	CR.
A	12-15-66	REVISED PER ECN NO. 841



COMPUTER SYSTEMS CORPORATION
 400 TERRACE HALL AVENUE
 WASHINGTON, MASSACHUSETTS 01901

**SCHEMATIC
 PRINTED WIRING BOARD
 MAIN MEMORY VERSION 3**

REV. D SCALE: 1:1 DATE: 12-15-66



FROM SH.2



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

A 12-15-64 REVISED PER ECN NO. 841		REVISED	
DATE	BY	DATE	BY

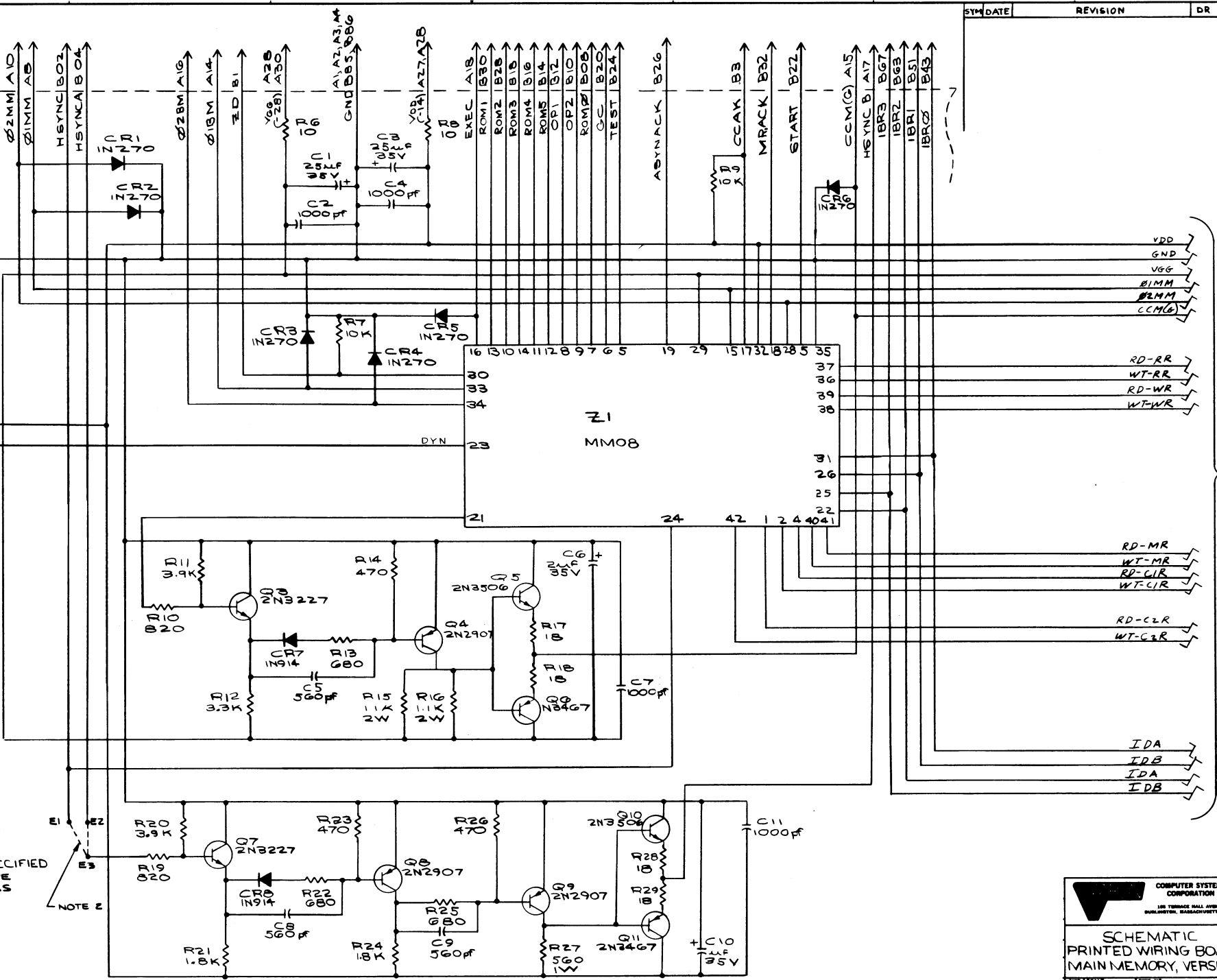
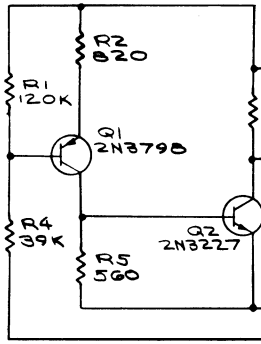
COMPUTER SYSTEMS CORPORATION
100 TRENCH HALL AVENUE
DUNSTON, MASSACHUSETTS 01850

**SCHMATIC
PRINTED WIRING BOARD
MAIN MEMORY
VERSION 3**

SCALE: 1:1
DRAWING NO: 140006-00A

Q11	C10	C11
R29	R21	
R HIGH PRECISION DESIGNATIONS		

REFERENCE DESIGNATIONS NOT USED		
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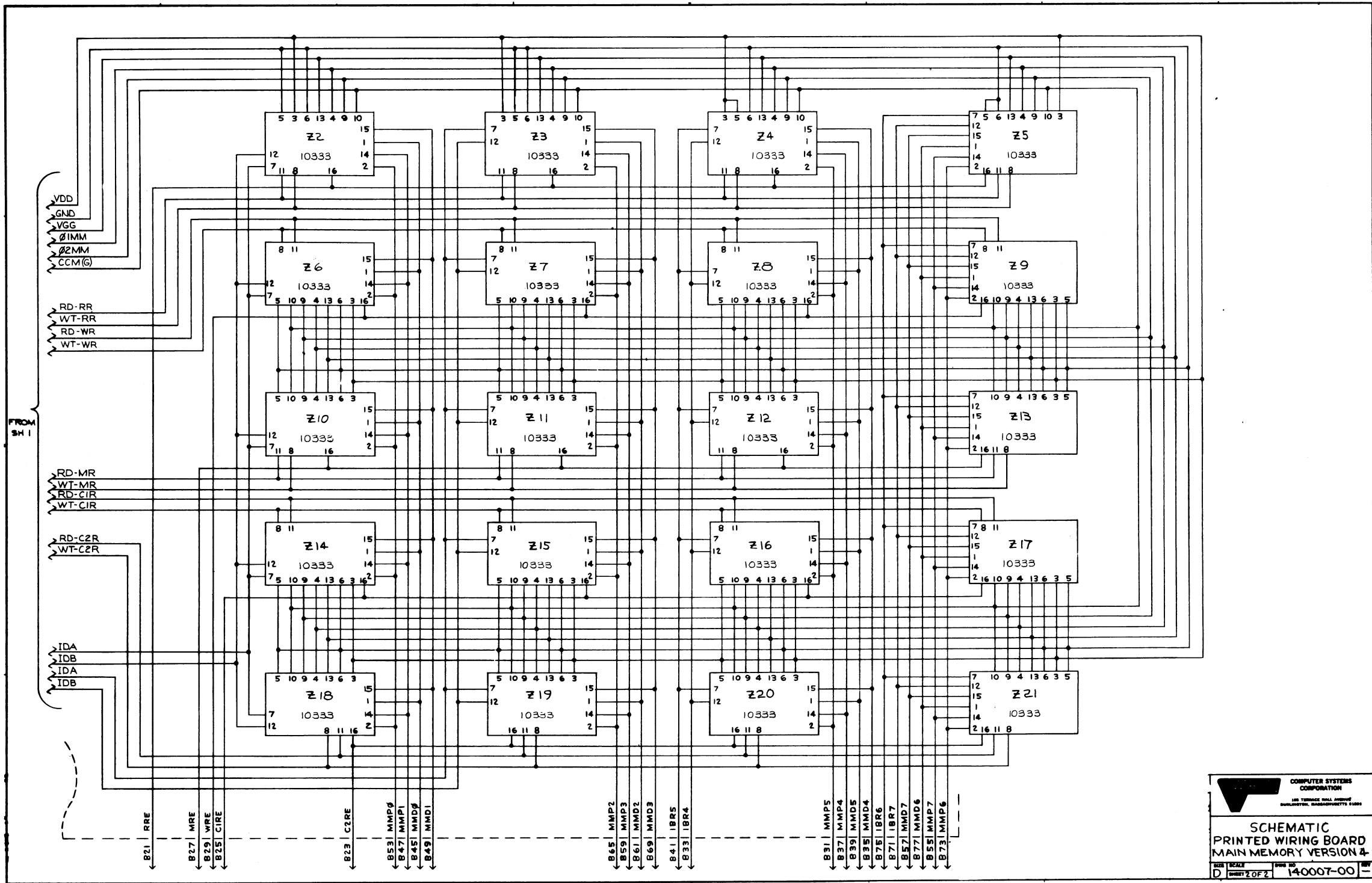
- NOTES:
1. ALL RESISTOR VALUES ARE IN OHMS 1/2W ±10% UNLESS OTHERWISE SPECIFIED
 2. PRINTED WIRING BOARD SHALL HAVE LANDS FOR OPTIONAL CIRCUITRY AS SHOWN BY DOTTED LINES
 3. FOR ASSEMBLY SEE DWG NO. 109007
 4. 5 DIGIT ARRAY NO REFERENCE TO LOGIC DIAGRAM.


SYM DATE	REVISION	DR	CK.
----------	----------	----	-----

COMPUTER SYSTEMS CORPORATION
 100 TRINITY HALL AVENUE
 DUBLIN, MASSACHUSETTS 01930

**SCHEMATIC
 PRINTED WIRING BOARD
 MAIN MEMORY, VERSION 4.**

SCALE: 100%
 PART NO: 140007-00




COMPUTER SYSTEMS CORPORATION
 185 YERGENE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

SCHEMATIC PRINTED WIRING BOARD MAIN MEMORY VERSION 4-

SIZE: SCALE: PART NO: 140007-00
 SHEET: 2 OF 2

SYM	DATE	REVISION	DR.	CK.
A	10/3/64	REVISED PER ECN NO. 653	MM	MM



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

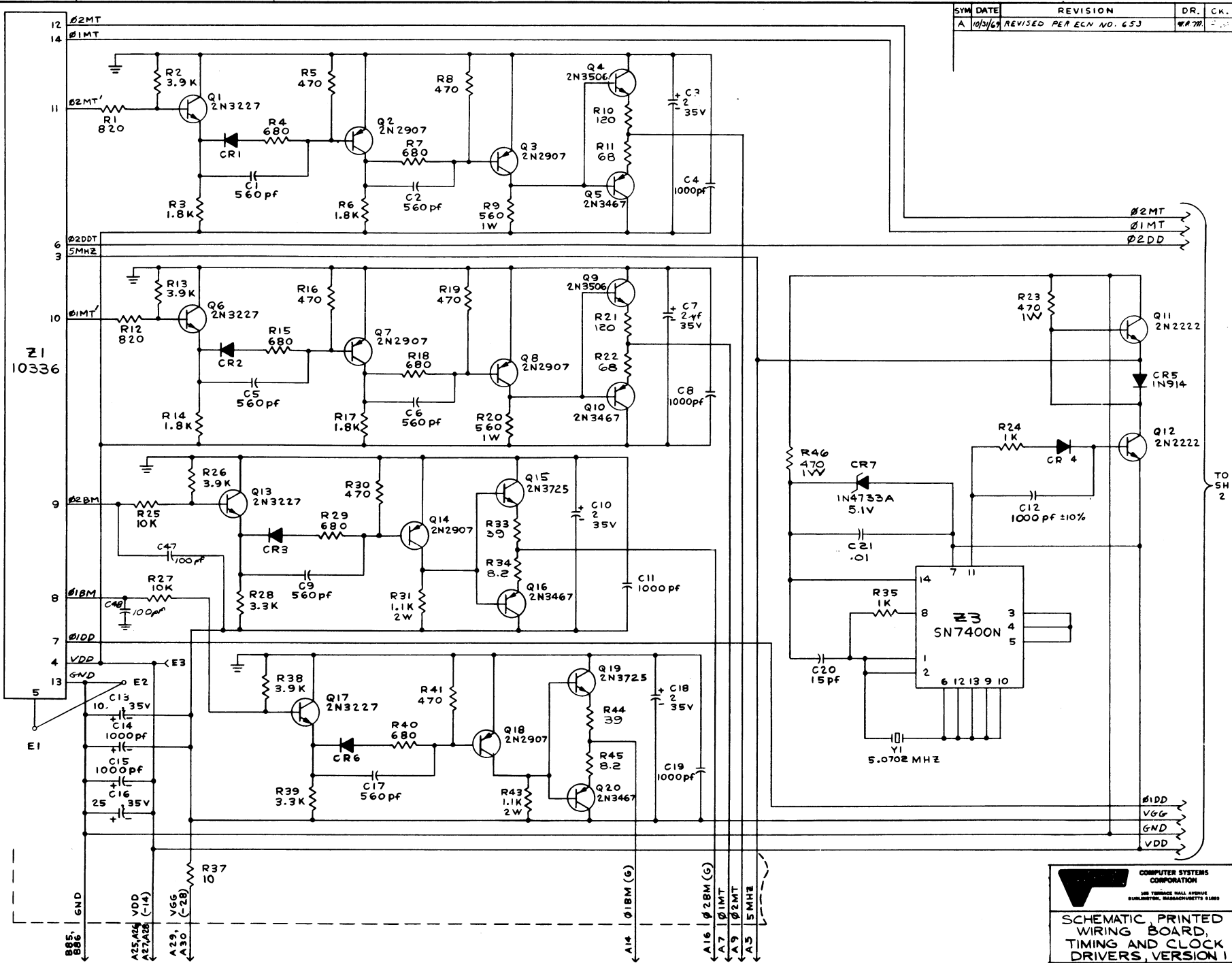
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-8013

R135	Q59	CR14
C48		

HIGHEST
REFERENCE
DESIGNATIONS

NOTES:

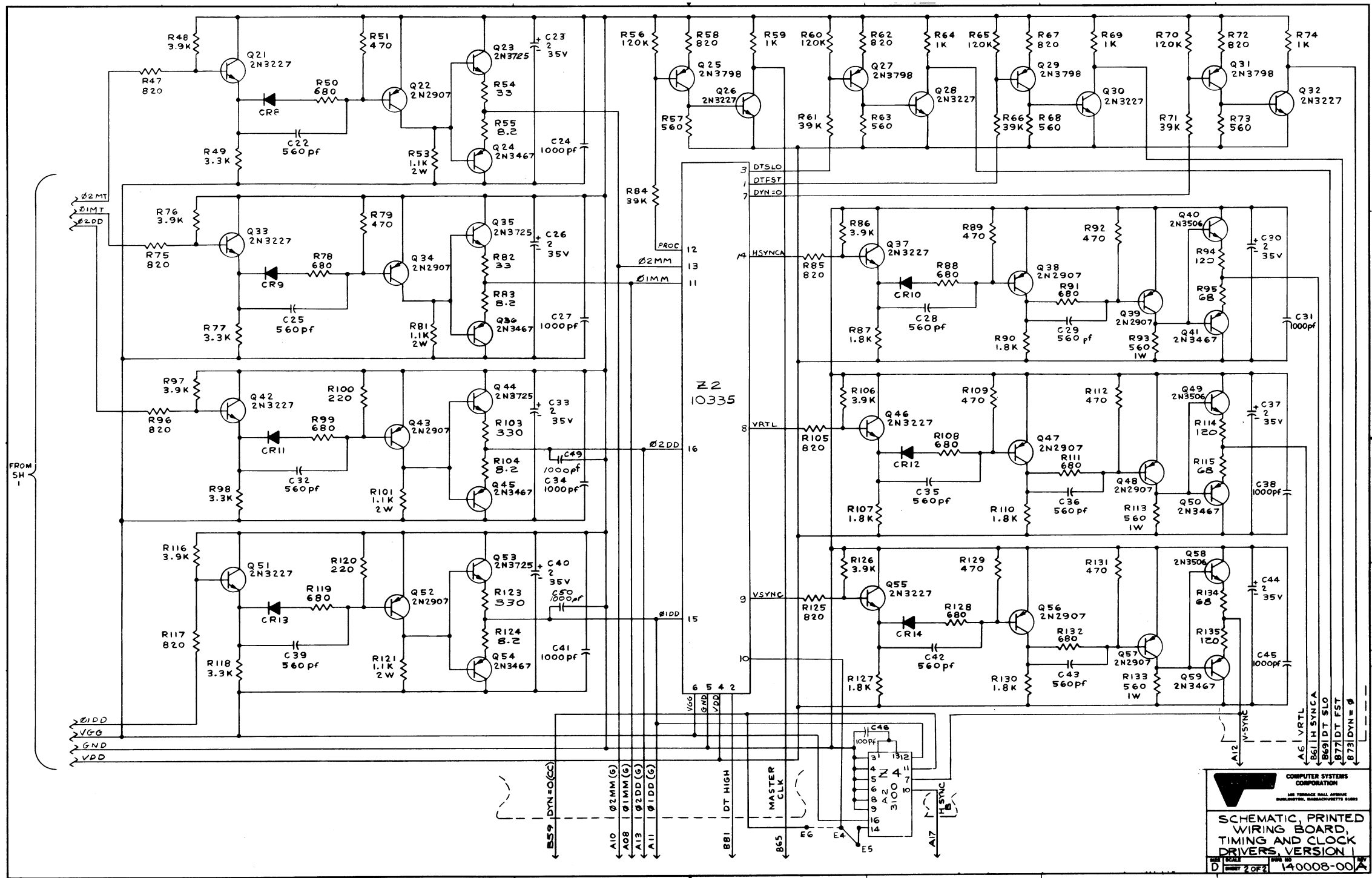
1. ALL DIODES ARE IN914 UNLESS OTHERWISE SPECIFIED.
2. ALL RESISTORS ARE 1/2 W, ±10% UNLESS OTHERWISE SPECIFIED AND VALUES ARE GIVEN IN OHMS.
3. E1 THRU E6 ARE EYELETS FOR POSSIBLE JUMPER WIRES.
4. ALL CAPACITOR VALUES ARE IN P.F. UNLESS OTHERWISE SPECIFIED.
5. FOR ASSEMBLY SEE DWG NO. 10900B 5 DIGIT ARRAY NO. REFERENCE TO LOGIC DIAGRAM.
- 6.



COMPUTER SYSTEMS CORPORATION
100 TORRANCE HALL AVENUE
DUNSTON, MASSACHUSETTS 01828

SCHMATIC PRINTED WIRING BOARD, TIMING AND CLOCK DRIVERS, VERSION 1

REV	DATE	DESIGN
D	10/3/64	140008-001A

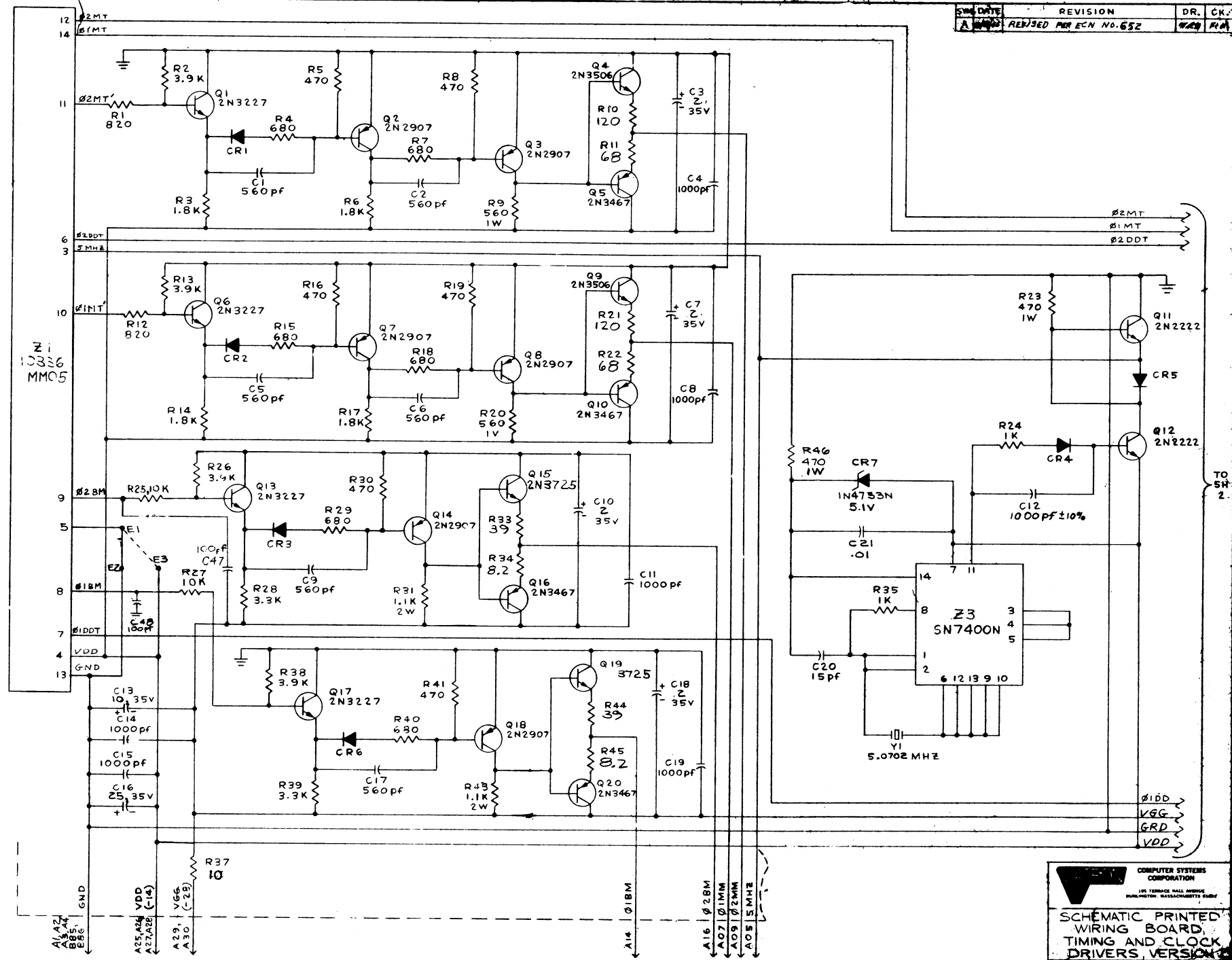


COMPUTER SYSTEMS CORPORATION
 140 TOWNSEND HALL AVENUE
 BOSTON, MASSACHUSETTS 02114
SCHEMATIC, PRINTED WIRING BOARD, TIMING AND CLOCK DRIVERS, VERSION 1
 140008-00A
 SHEET 2 OF 2



VERADA 214 DIV. LOMAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:
 INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

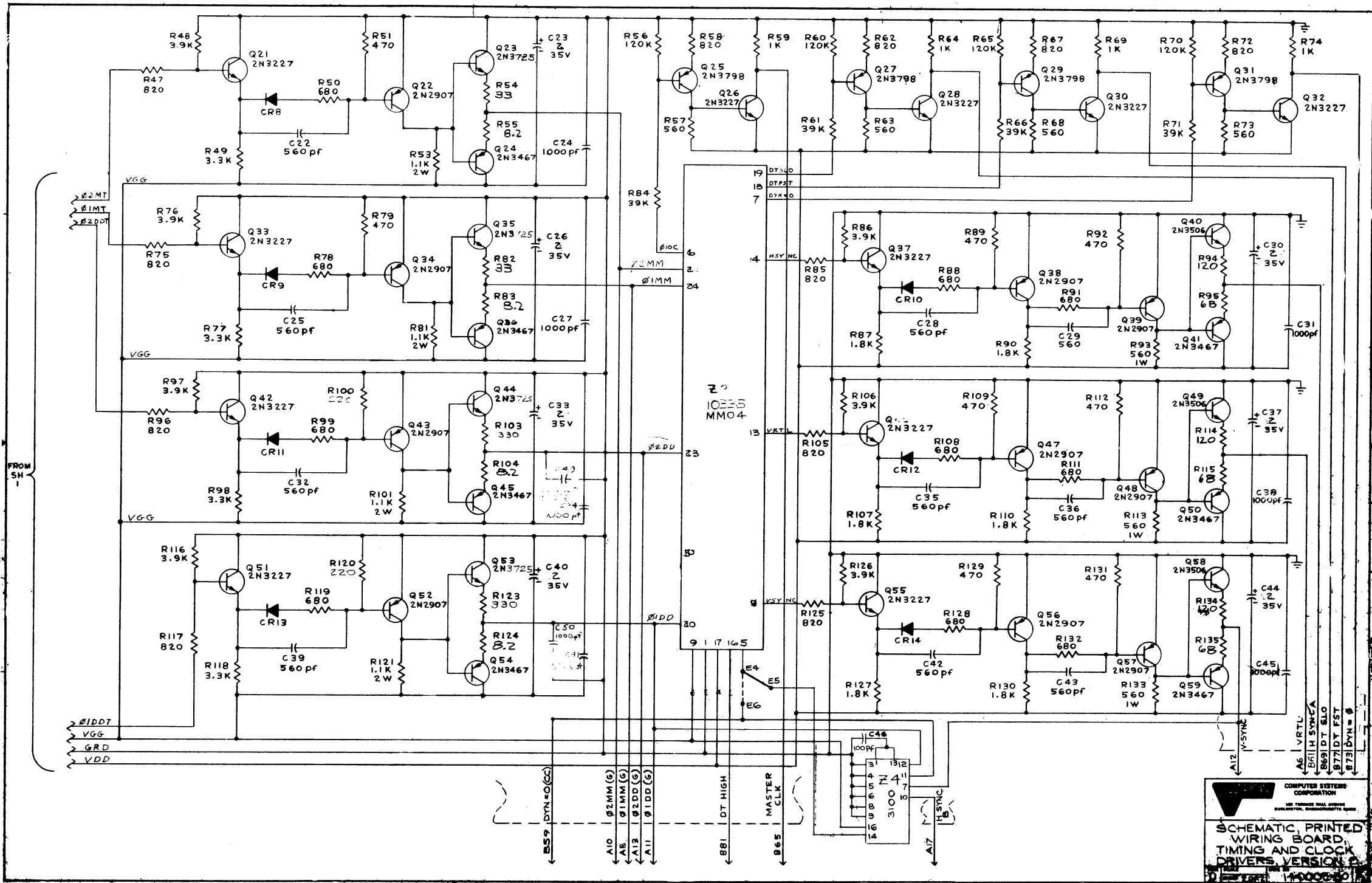


- NOTES:
1. ALL DIODES ARE 1N914 UNLESS OTHERWISE SPECIFIED.
 2. ALL RESISTORS ARE 1/2 W, ± 5% UNLESS OTHERWISE SPECIFIED AND VALUES ARE GIVEN IN OHMS.
 3. PRINTED WIRING BOARD SHALL HAVE LANDS FOR OPTIONAL CIRCUITRY AS SHOWN BY DOTTED LINES.
 4. ALL CAPACITOR VALUES ARE IN μ F UNLESS OTHERWISE SPECIFIED.
 5. FOR ASSEMBLY SEE DWG NO. 109009.
 6. 5 DIGIT ARRAY NO. REFERENCE TO LOGIC DIAGRAM.

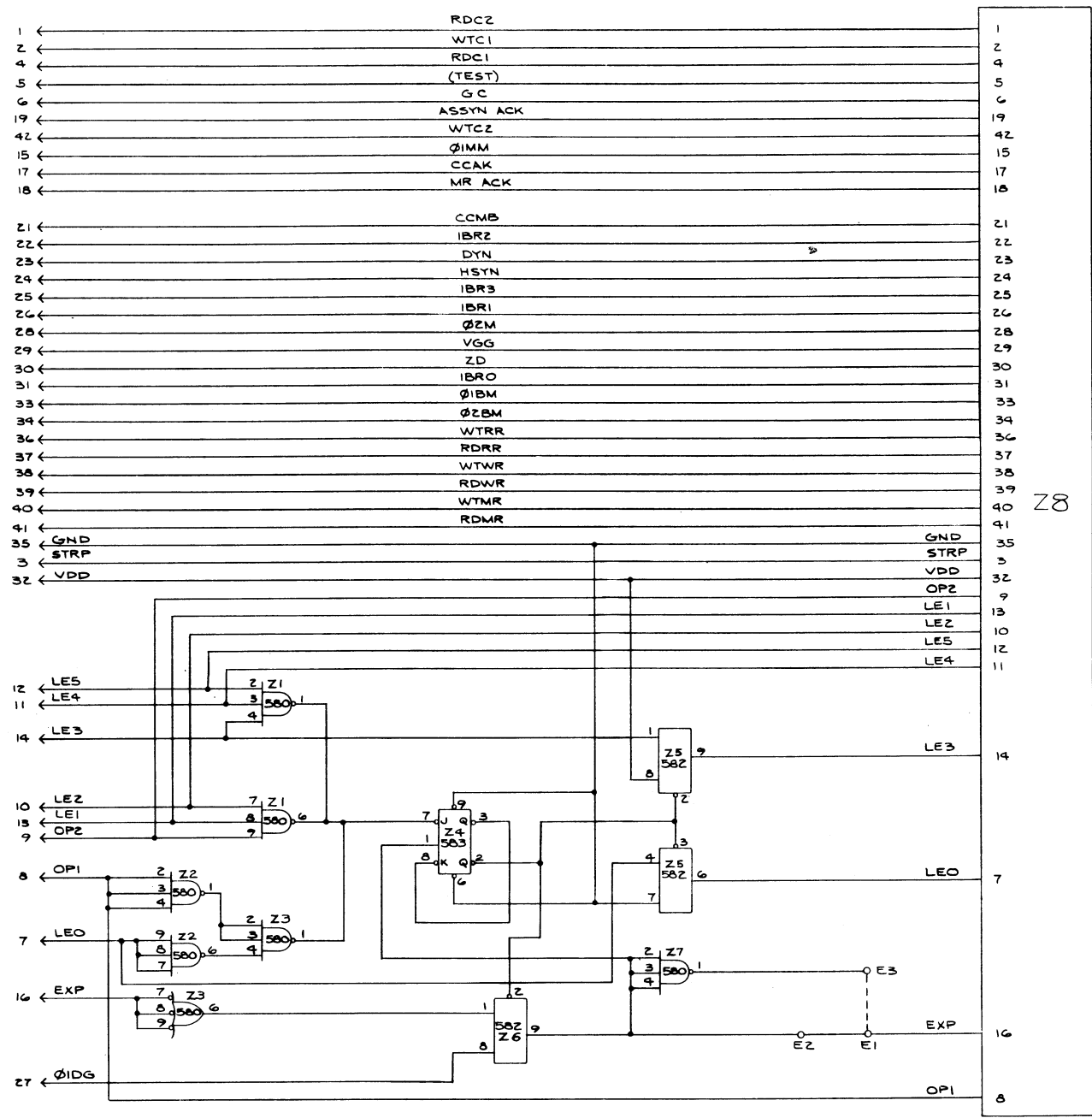
COMPUTER SYSTEMS CORPORATION
 175 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

SCHEMATIC PRINTED WIRING BOARD, TIMING AND CLOCK DRIVERS, VERSION 1

DATE: 1/15/62



SYM.	DATE	REVISION	DR.	CK.



Z8

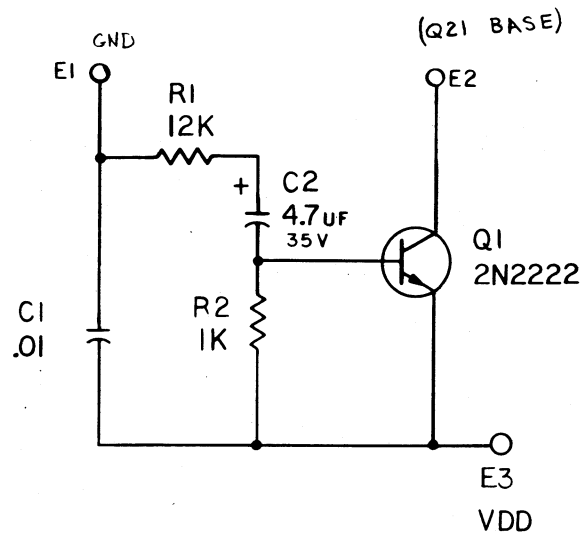


INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

USED ON 139000 REV 109 015	ITEM	DESCRIPTION	CODE	REA.
COMPUTER SYSTEMS CORPORATION <small>188 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</small>				
SCHEMATIC PRINTED WIRING BOARD MAIN MEMORY 3 & 4 ADAPTER BOARD VER 1				
MODEL:	D 14001100			REV:
SCALE: NONE				



NOTES:
 1. ALL RESISTORS ARE IN OHMS 1/2W ±10%

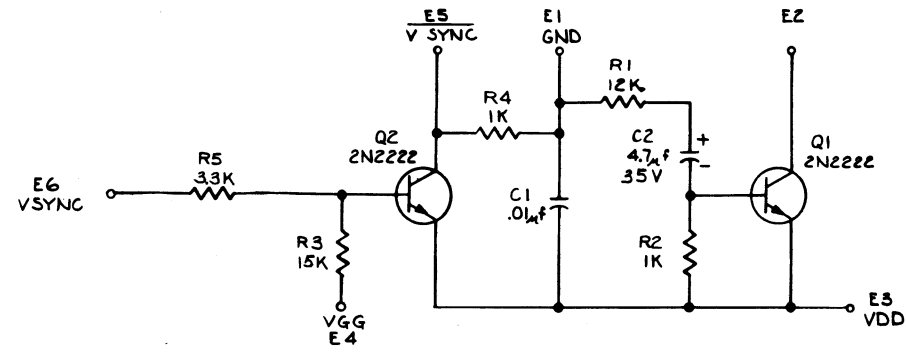


INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

		COMPUTER SYSTEMS CORPORATION	
ROUTE 62		BEDFORD, MASSACHUSETTS 01730	
SCHEMATIC			
CLOCK INHIBIT CKT			
SIZE	SCALE	DWG NO	REV
C	NONE	140016	-
SHEET		1 of 1	



NOTES:
 1. ALL RESISTORS ARE IN OHMS $\frac{1}{2}W \pm 10\%$



INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

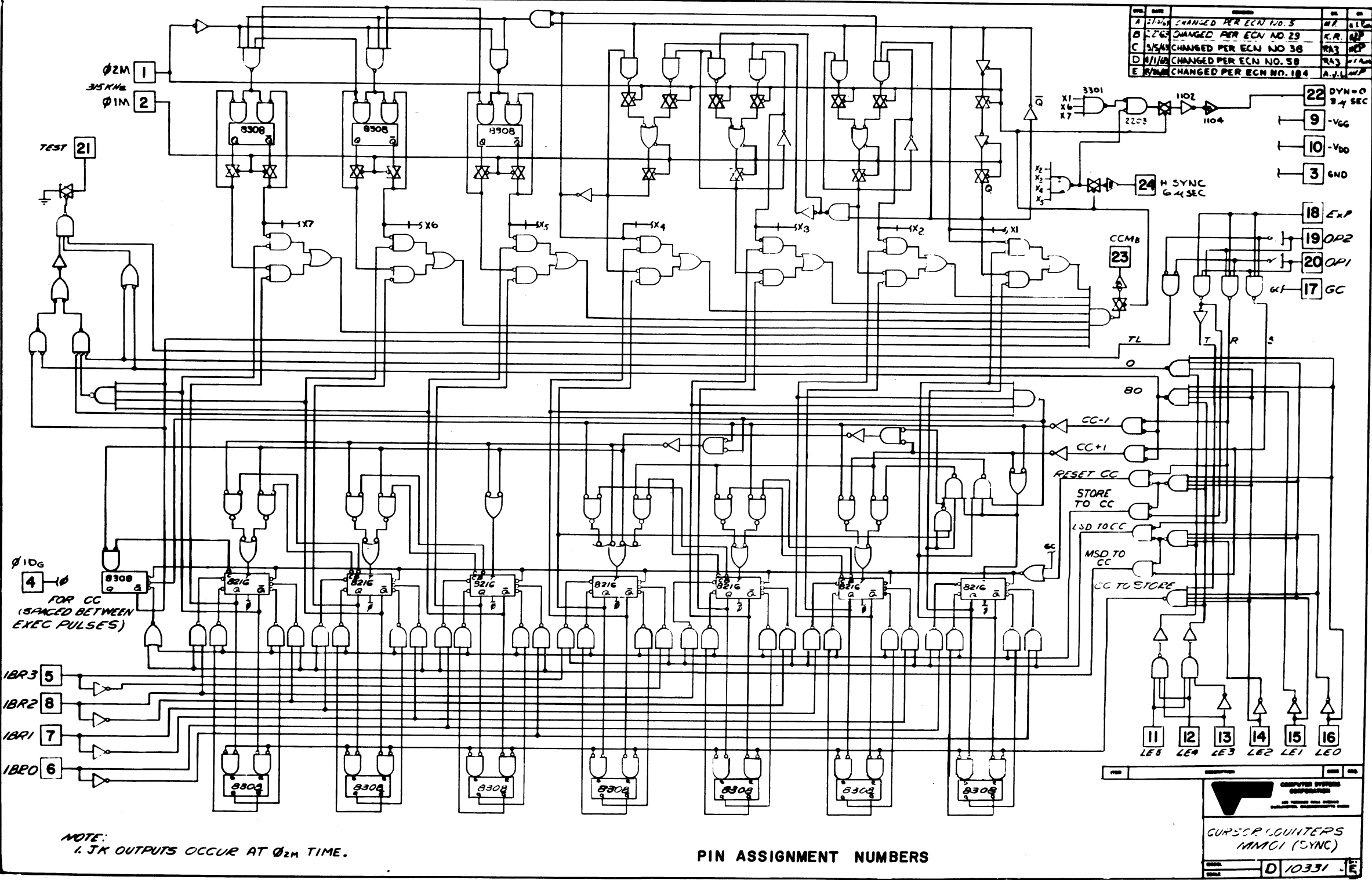
VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013



SCHEMATIC
TIMING ADAPT. BOARD

SIZE	SCALE	DWG NO	REV
C		140020-00	
SHEET 1 OF 1			

A	2/26	CHANGED PER ECN NO. 3	WT	0.1
B	2/63	CHANGED PER ECN NO. 29	K.R.	0.1
C	3/53	CHANGED PER ECN NO. 38	WAT	0.1
D	4/1/64	CHANGED PER ECN NO. 58	WAT	0.1
E	6/1/64	CHANGED PER ECN NO. 104	A.J.L.	0.1



- 22 DYN = 0 3.4 SEC
- 9 -V_{CC}
- 10 -V_{DD}
- 3 GND

- 18 EXP
- 19 OP2
- 20 OP1
- 17 GC

- BO
- CC-1
- CC+1
- RESET CC
- STORE TO CC
- LSD TO CC
- MSD TO CC
- CC TO STORE
- 11 LE8
- 12 LE4
- 13 LE3
- 14 LE2
- 15 LE1
- 16 LE0

φ10G
4 FOR CC
(SPACED BETWEEN
EXEC PULSES)

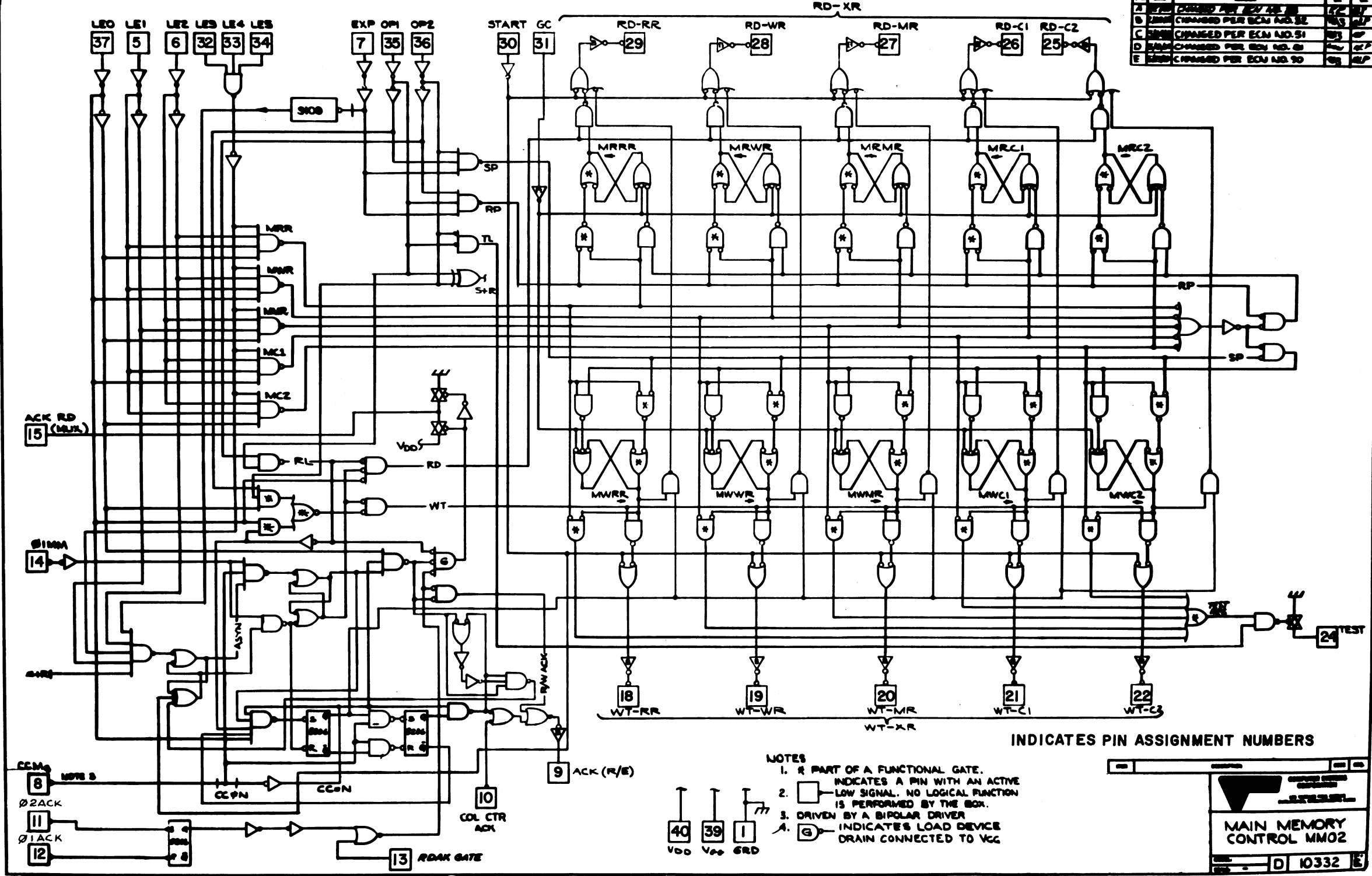
- IBR3 5
- IBR2 8
- IBR1 7
- IBR0 6

NOTE:
1. JK OUTPUTS OCCUR AT φ_{2M} TIME.

PIN ASSIGNMENT NUMBERS

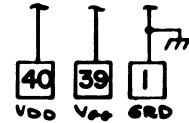
COMPUTER SYSTEM CORPORATION
CURSOR COUNTERS
MM01 (SYNC)
D 10331

A	REV	CHANGED PER ECU NO. 28	12/27/70
B	REV	CHANGED PER ECU NO. 32	1/23/71
C	REV	CHANGED PER ECU NO. 51	1/23/71
D	REV	CHANGED PER ECU NO. 89	1/23/71
E	REV	CHANGED PER ECU NO. 90	1/23/71



INDICATES PIN ASSIGNMENT NUMBERS

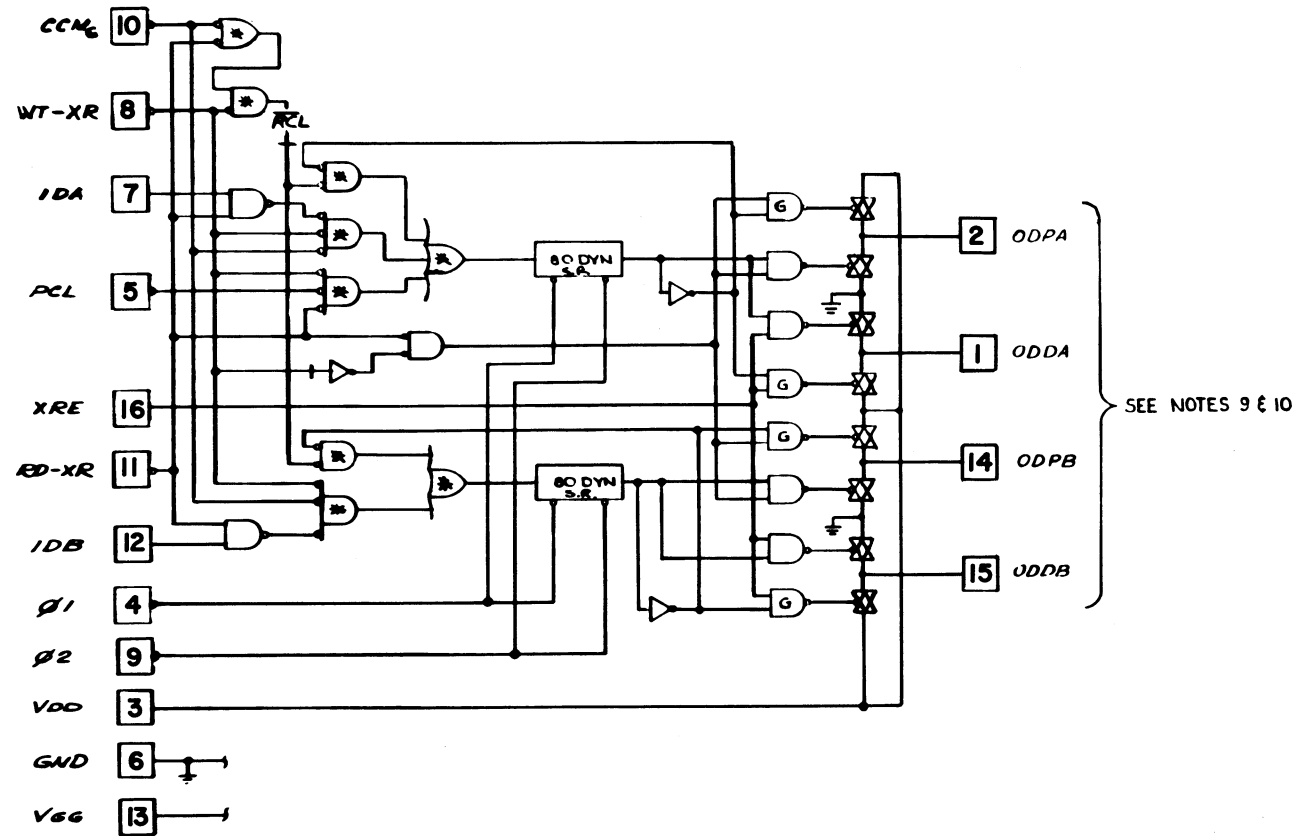
- NOTES
1. R PART OF A FUNCTIONAL GATE. INDICATES A PIN WITH AN ACTIVE LOW SIGNAL. NO LOGICAL FUNCTION IS PERFORMED BY THE BOX.
 2. DRIVEN BY A BIPOLAR DRIVER
 3. INDICATES A LOAD DEVICE DRAIN CONNECTED TO VCC



MAIN MEMORY CONTROL MM02

D 10332

REV	DATE	DESCRIPTION	BY	CHK
A	2/1/69	CHANGED PER ECN NO. 6	KP	6/1
B	2/2/69	CHANGED PER ECN NO. 30	KP	6/1



PIN ASSIGNMENT NOS. (TI)	
GND	1
ODDA	2
ODPA	3
VDD	4
Ø1	5
PCL	6
IDA	7
WT-XR	8
Ø2	9
CCMG	10
RD-XR	11
IDB	12
VGG	13
ODPB	14
ODDB	15
XRE	16

SEE NOTES 9 & 10

NOTES:

- SHIFT RATE 315 KHZ EACH Ø IS ACTIVE FOR ¼ µSEC
- PCL PIN PRESETS ALL I'S OR ALL Ø'S INTO SR
- 'CCM' STARTS FALLING AT Ø2 FALLING EDGE & ENDS AT NEXT Ø2 FALLING EDGE
- DATA IS GATED INTO SR DURING Ø1 TIME
- MIL-STD-806C APPLIES. (ACTIVE HIGH = GND)
- INDICATES A PIN WITH AN ACTIVE LOW SIGNAL NO LOGICAL FUNCTION IS PERFORMED BY THE BOX.
- * MEANS PART OF A FUNCTIONAL GATE
- DENOTES A GATE WHOSE LOAD DEVICE DRAIN IS CONNECTED TO VGG
- DELAY SHALL BE MEASURED FROM THE 2 VOLT LEVEL OF THE NEGATIVE GOING TRANSITION (FALL TIME 100µs) OF Ø2, WITH OUTPUT LOADED WITH 100PF, A POSITIVE GOING OUTPUT SHALL RISE ABOVE -2 VOLTS IN 1.4 µSEC, A NEGATIVE GOING OUTPUT SHALL FALL BELOW -9 VOLTS IN 1.4 µSEC.
- OUTPUT PIN CAPACITANCE SHALL NOT EXCEED 8PF



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

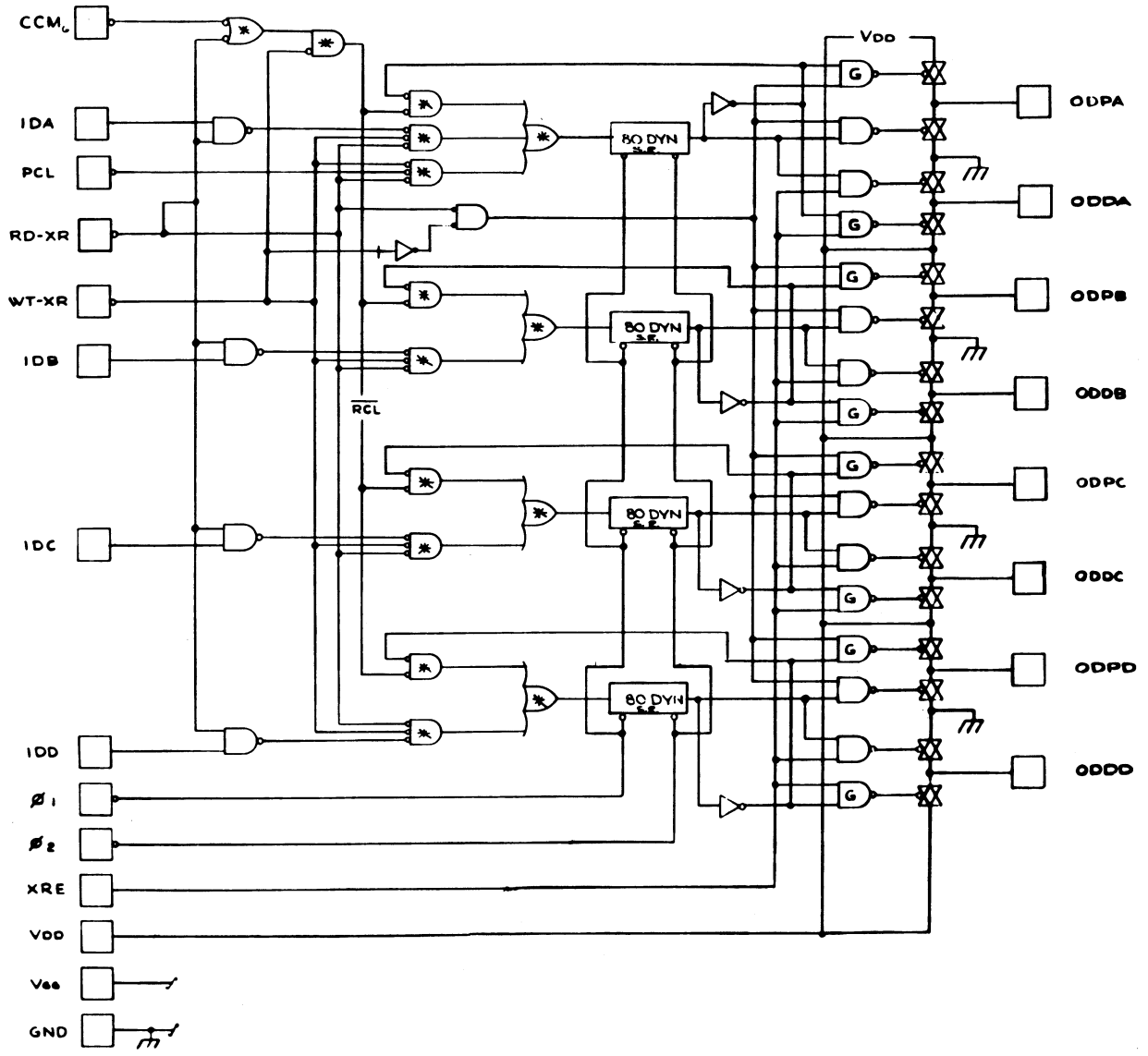
VERADA 214 DIV. LOLAR

MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

PIN ASSIGNMENT NUMBERS

REV	DATE	DESCRIPTION	BY	CHK
MAIN MEMORY STORAGE MM03 (2 BIT VERSION)				
REV	DATE	DESCRIPTION	BY	CHK
			D	10333

1	CHANGED PER ECN NO. 7	ALL	11.2
2	CHANGED PER ECN NO. 21	KE	11/78



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

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STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

SEE NOTES 8 & 9

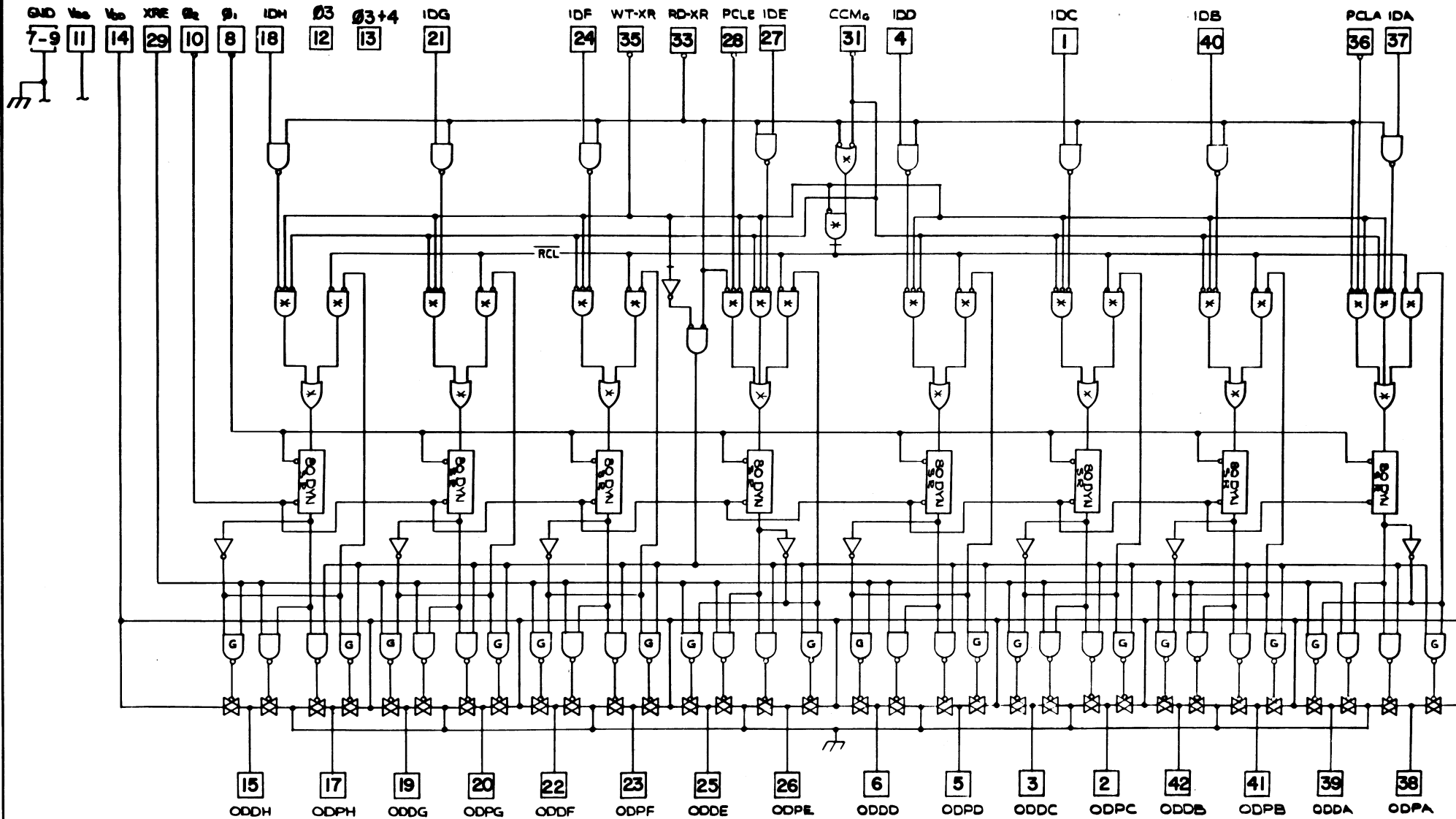
NOTES:

- * PART OF A FUNCTIONAL GATE
- SHIFT RATE 315 KHZ EACH 0 IS ACTIVE FOR 1/2 μSEC.
- DATA INPUTTED DURING 02 ACTIVE LOW TIME
- CCM STARTS FALLING AT 02 FALLING EDGE STAYS ACTIVE UNTIL NEXT 02 FALLING EDGE
- MIL-STD-806C APPLIES
- INDICATES A PIN WITH AN ACTIVE LOW SIGNAL. NO LOGICAL FUNCTION IS PERFORMED BY THE BOX.
- ⊖ DENOTES A GATE WHOSE LOAD DEVICE DRAIN IS CONNECTED TO Vgg.
- DELAY SHALL BE MEASURED FROM THE 2 VOLT LEVEL OF THE NEGATIVE GOING TRANSITION (FALL TIME = 100μs) OF 02, WITH OUTPUT LOADED WITH 100PF. A POSITIVE GOING OUTPUT SHALL RISE ABOVE -2V IN 1.4 μSEC; A NEGATIVE GOING OUTPUT SHALL FALL BELOW -9V IN 1.4 μSEC.
- OUTPUT PIN CAPACITANCE SHALL NOT EXCEED 8PF.

VERADA	
214	
MAIN MEMORY STORAGE MM03 (4 BIT VERSION)	
10334	5

INDICATES
PIN ASSIGNMENT NUMBERS 42 LEAD

REV. 10/67
A 10/67 CHANGED PER ECU NO. 70



PIN ASSIGNMENT
NOS. 40 LEAD

GND	1
IDC	2
ODPC	3
ODDC	4
IDD	5
ODPD	6
ODDD	7
GND	8
Ø1	9
GND	10
Ø1+2	11
VGG	12
Ø3	13
Ø3+4	14
VDD	15
ODDH	16
ODPH	17
IDH	18
ODDG	19
ODPG	20
IDG	21
ODDF	22
ODPF	23
IDF	24
ODDE	25
ODPE	26
IDE	27
PCLE	28
XRE	29
N/C	30
CCMG	31
RDXR	32
WTXR	33
PCLA	34
IDA	35
ODPA	36
ODDA	37
IDB	38
ODPB	39
ODDB	40

NOTES:

- INDICATES A PIN WITH AN ACTIVE LOW SIGNAL. NO LOGICAL FUNCTION IS PERFORMED BY THE BOX.
- DENOTES A GATE WHOSE LOAD DEVICE DRAIN IS CONNECTED TO VGG.
- * PART OF A FUNCTIONAL GATE.
- SHIFT RATE 315 KHz. EACH Ø IS ACTIVE FOR ¼ USEC.
- DATA INPUTTED DURING Ø1 ACTIVE LOW TIME.
- CCM STARTS FALLING AT Ø2 FALLING EDGE. STAYS ACTIVE UNTIL NEXT Ø2 FALLING EDGE.
- MIL-STD-806C APPLIES.

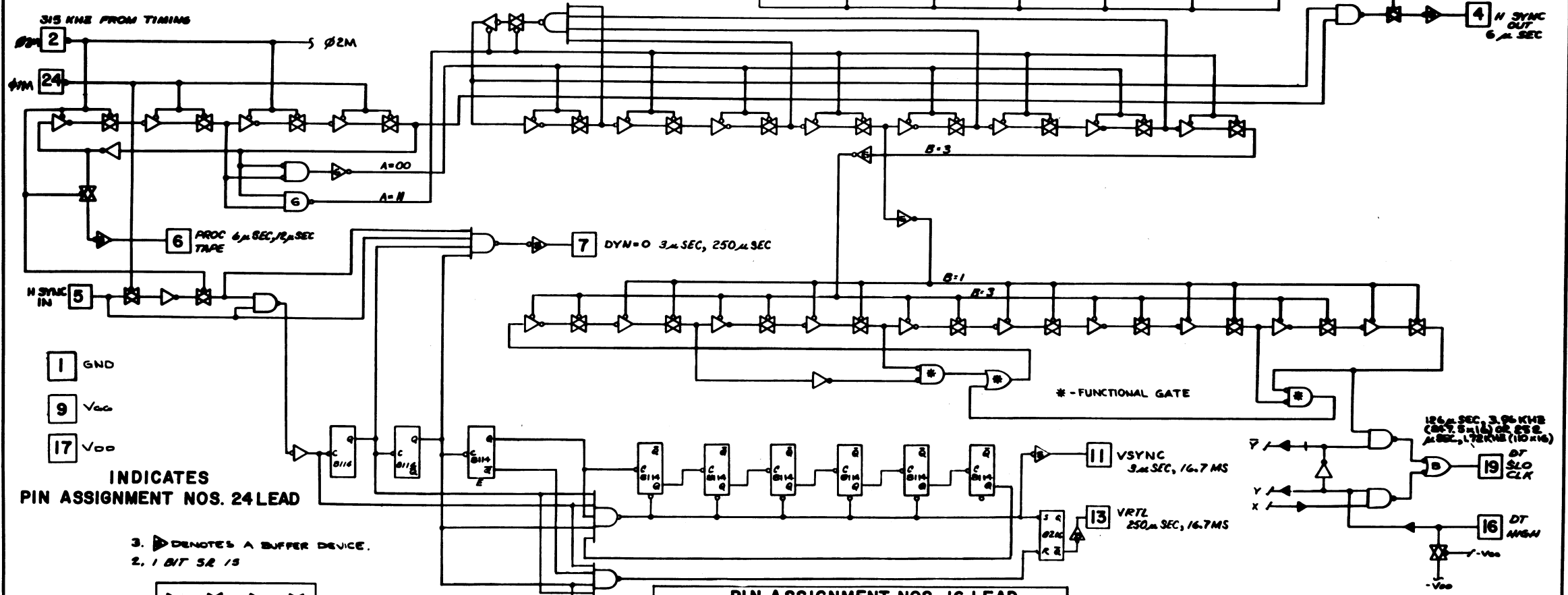
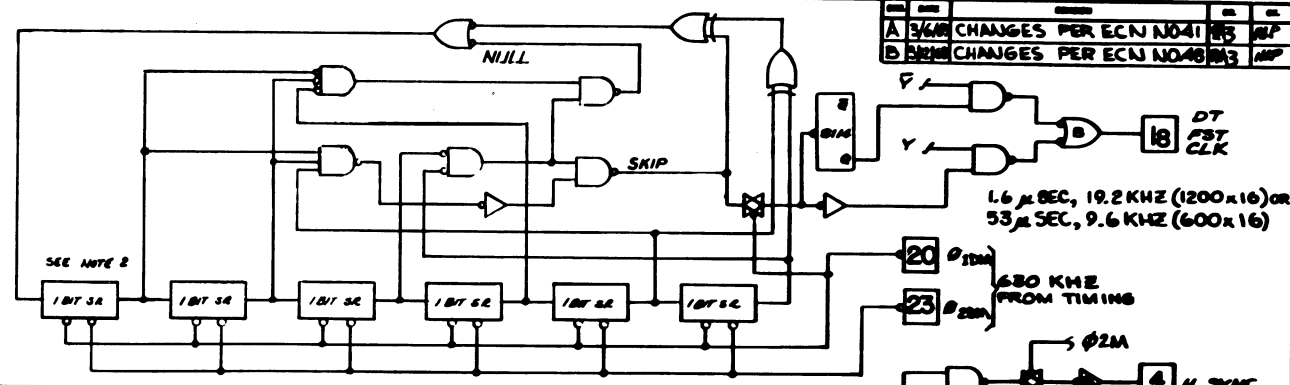
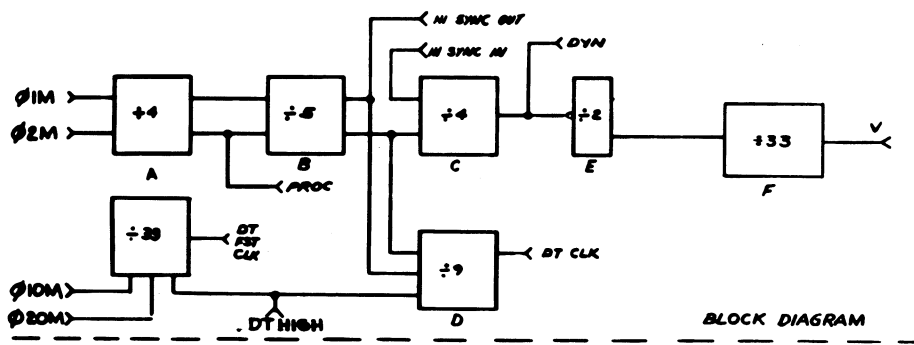
- DELAY SHALL BE MEASURED FROM THE -2 VOLT LEVEL OF THE NEGATIVE GOING TRANSITION (FALL TIME = 100NS) OF Ø2, WITH OUTPUT LOADED WITH 100PF.
A POSITIVE GOING OUTPUT SHALL RISE ABOVE -2 VOLTS IN 1.4µSEC;
A NEGATIVE GOING OUTPUT SHALL FALL BELOW -9 VOLTS IN 1.4 µSEC
- OUTPUT PIN CAPACITANCE SHALL NOT EXCEED 8 pf.

COMPUTER SYSTEMS CORPORATION
1000 UNIVERSITY AVENUE
BERKELEY, CALIFORNIA 94702

MAIN MEMORY STORAGE
MM03 (8 BIT VERSION)

REV. 10/67
D 10467 A

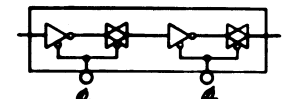
A	34M	CHANGES PER ECN NO41	83	83P
B	34M	CHANGES PER ECN NO48	83	83P



- 1 GND
- 9 V_{cc}
- 17 V_{DD}

INDICATES
PIN ASSIGNMENT NOS. 24 LEAD

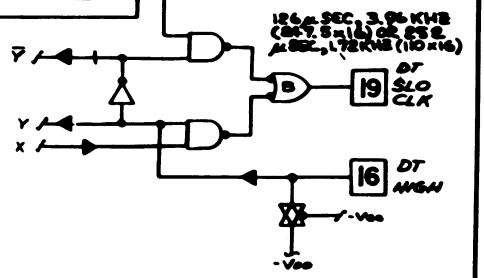
- 3. DENOTES A BUFFER DEVICE.
- 2. 1 BIT SR IS



- 1. DENOTES A GATE WHOSE LOAD DEVICE DRAIN IS CONNECTED TO V66

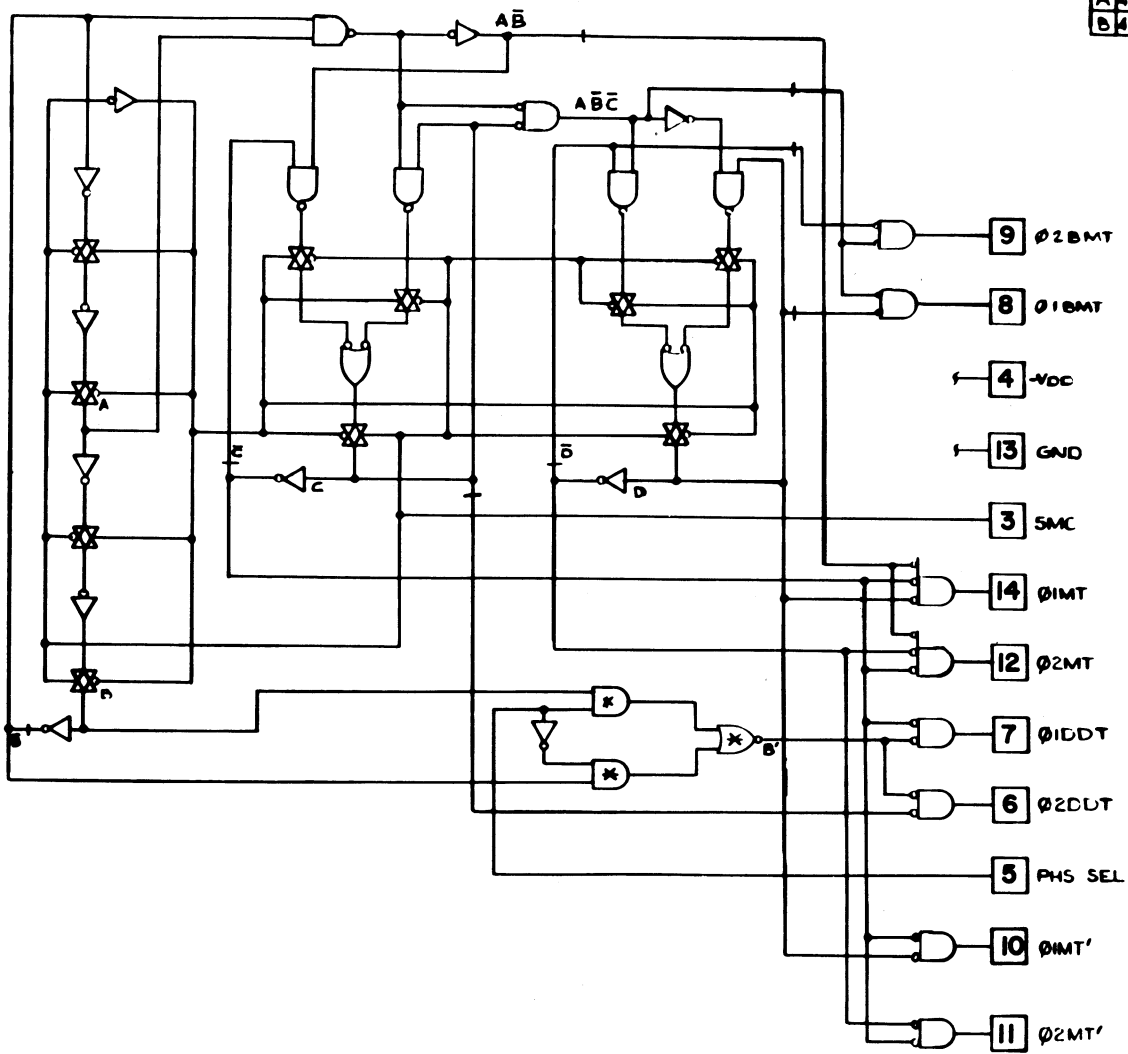
NOTES:

PIN ASSIGNMENT NOS. 16 LEAD			
DT-FAST CLK	1	Ø 2 DM	16
DT-HIGH	2	Ø 1 DM	15
DT-SLOW CLK	3	H SYNC OUT	14
VDD	4	Ø 2M	13
GND	5	PROC TAPE	12
VGG	6	Ø 1M	11
DYN=0	7	H SYNC IN	10
VRTL	8	V SYNC	9



COMPONENTS	
MASTER TIMING-MMV04	
D	10335

REV	DATE	DESCRIPTION	BY	CHK
A	4/11/64	CHANGED PER ECN NO 61	RA3	WJP
B	4/19/64	CHANGED PER ECN NO 64	RA3	WJP



NOTES 1. * DENOTES FUNCTIONAL GATE.
2. TIMING DIAGRAM D10325



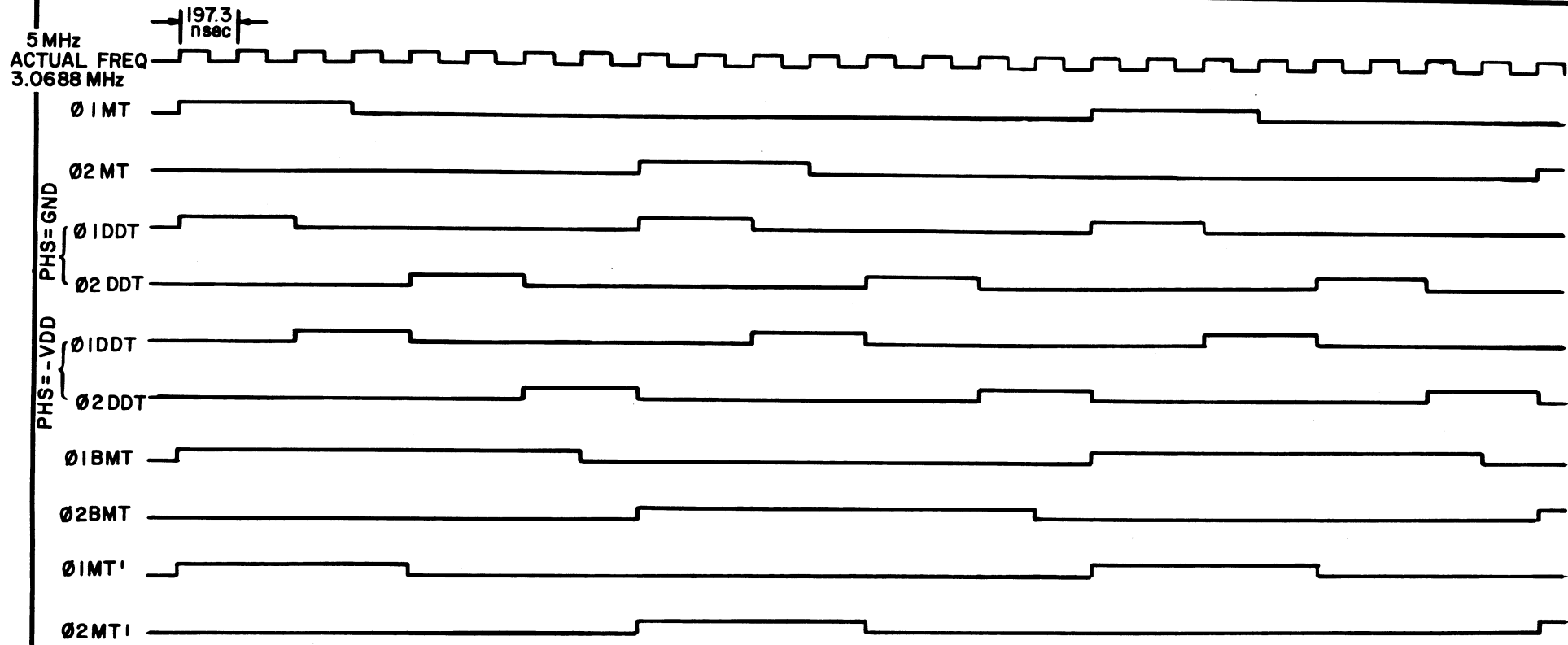
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

INDICATES PIN ASSIGNMENT NUMBERS

REV	DATE	DESCRIPTION	BY	CHK
CMOS HIGH FREQUENCY TIMING MM05				
REV	DATE	DESCRIPTION	BY	CHK
			C	10336



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

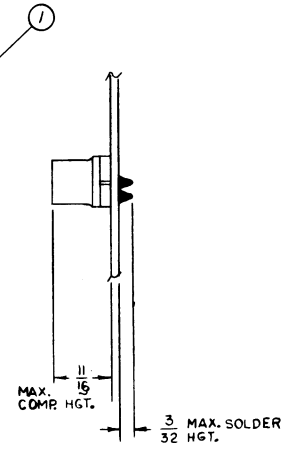
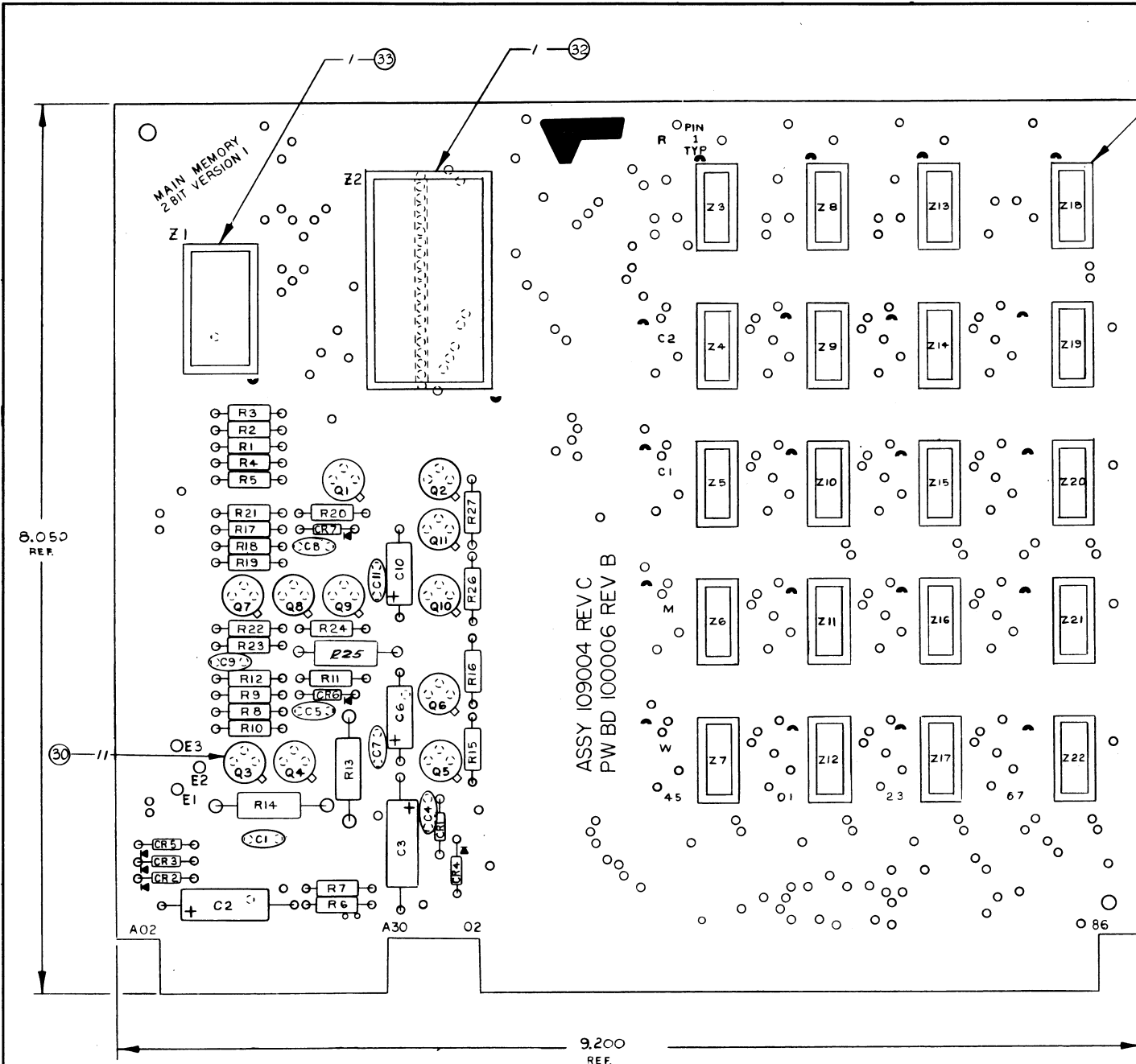
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TIMING DIAGRAM	
MM05 (10336)	
10525	

REV.	DATE	REVISION	BY	APP.
A				
B	9/23/64	REVISED PER ECN 380	NEB	
C	10-30-64	REVISED PER ECN 641	STP	



- NOTES:
1. M.O.S. DEVICES TO BE INSTALLED AFTER FLOW SOLDERING.
 2. INSTALL ITEM 30 UNDER ALL TRANSISTORS.
 3. INSTALL ITEM 31 UNDER Z3-Z22.
 4. INSTALL ITEM 32 UNDER Z2.
 5. INSTALL ITEM 33 UNDER Z1.
 6. FOR SCHEMATIC SEE DWG 140304.

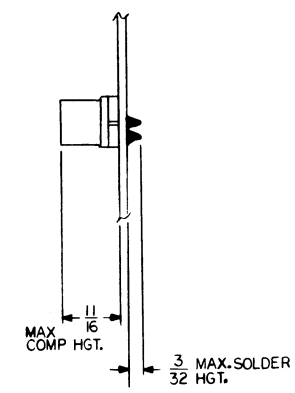
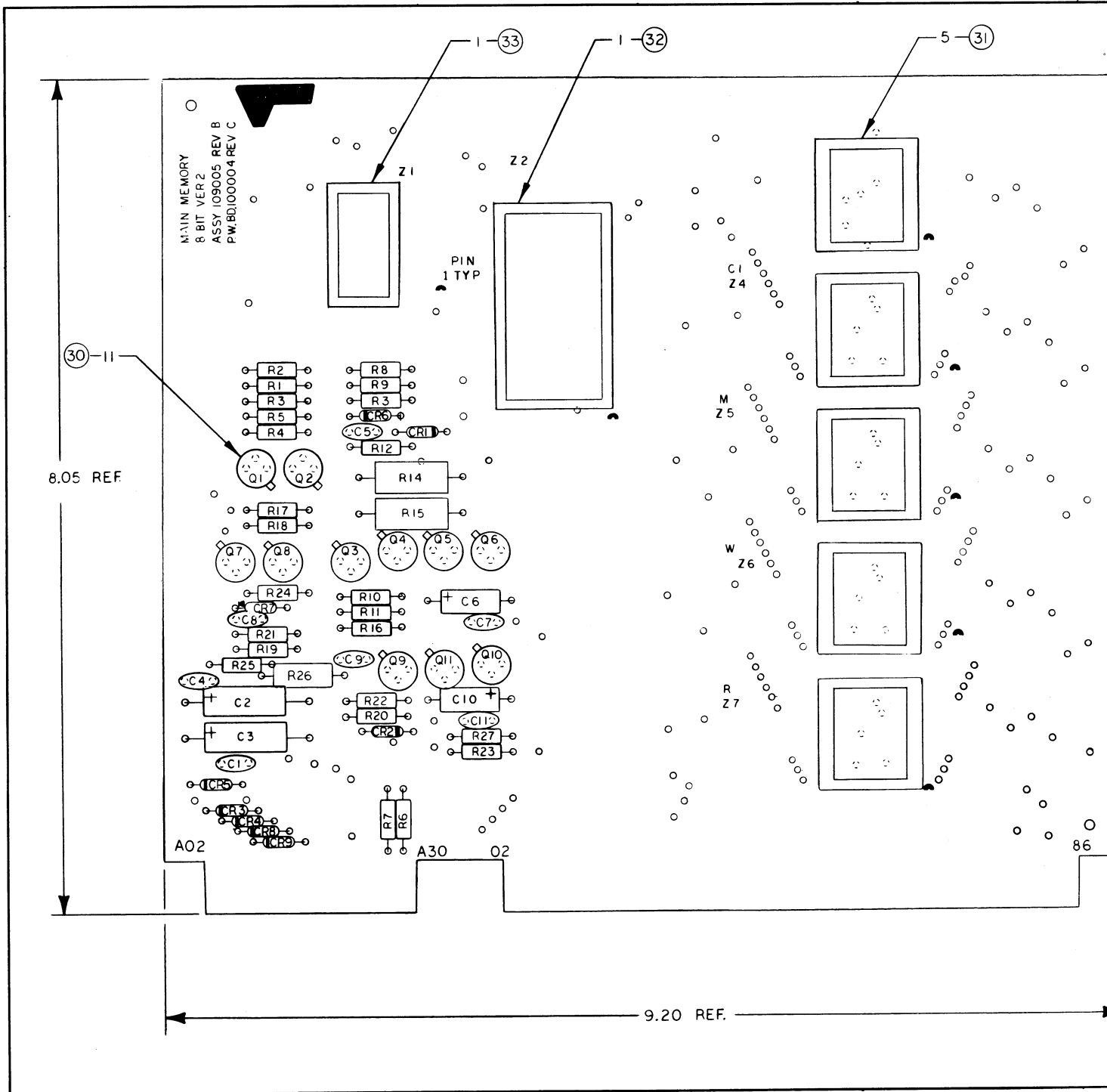


COMPLETE STOCK OF VIATRON PARTS AVAILABLE FROM:
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 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

INDUSTRIAL SUPPLIES
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

		COMPUTER SYSTEMS CORPORATION	
		ROUTE #2 BEDFORD, MASSACHUSETTS 01730	
DATE	ASSEMBLY P.W. BD.		
DWG NO.	MAIN MEMORY 2 BIT		
REV.	VERSION 1		
SIZE	SCALE	DWG NO.	REV.
D	1:1	109004	C

REV.	DATE	REVISION	BY	CHK.
A		REVISED PER ECN 381	CU	
B		REVISED PER ECN 645	SY	



- NOTES:
1. INSTALL ITEM(33) UNDER Z1.
 2. INSTALL ITEM(32) UNDER Z2.
 3. INSTALL ITEM(31) UNDER Z3 THRU Z7.
 4. INSTALL ITEM(30) UNDER ALL TRANSISTORS.
 5. INSTALL MOS DEVICES AFTER FLOW SOLDERING.
 6. FOR SCHEMATIC SEE 140005



COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:
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MAIL . P.O. BOX 438, LOWELL, MA. 01852
STORE . 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

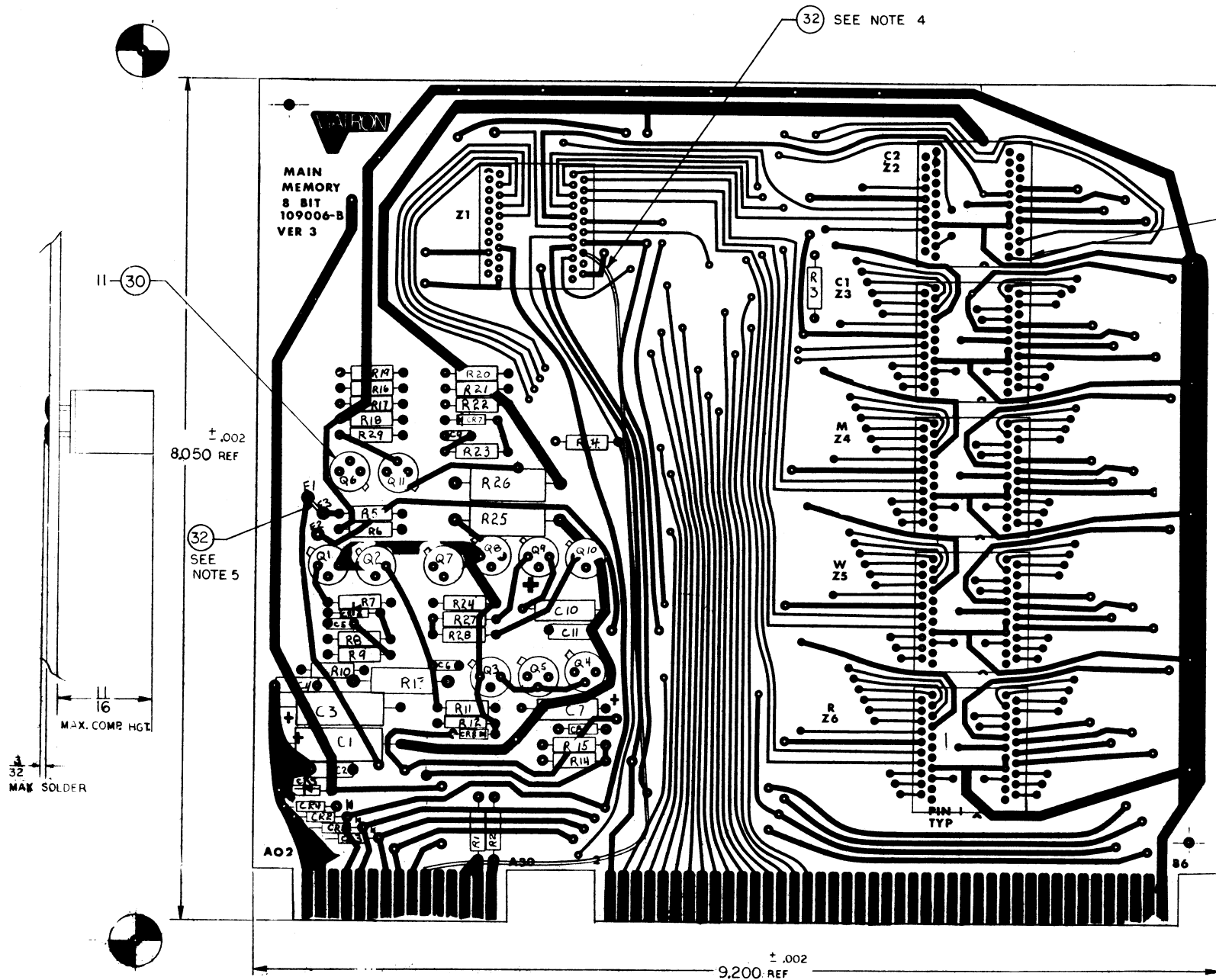
INDUSTRIAL SUPPLIES
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPUTER SYSTEMS CORPORATION
ROUTE 62
BEDFORD, MASSACHUSETTS 01730

ASSEMBLY P.W.BD.
MAIN MEMORY 8 BIT VER 2

SCALE: 2" = 1" DRAWING NO: 109005 REV: B

SN DATE	REVISION	DR	CE
B 7/23/69	REVISED PER ECN 282	UCB	
C 4/1/69	REVISED PER ECN 457	RZD	
D 10/1/67	REVISED PER ECN 461	A71	



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

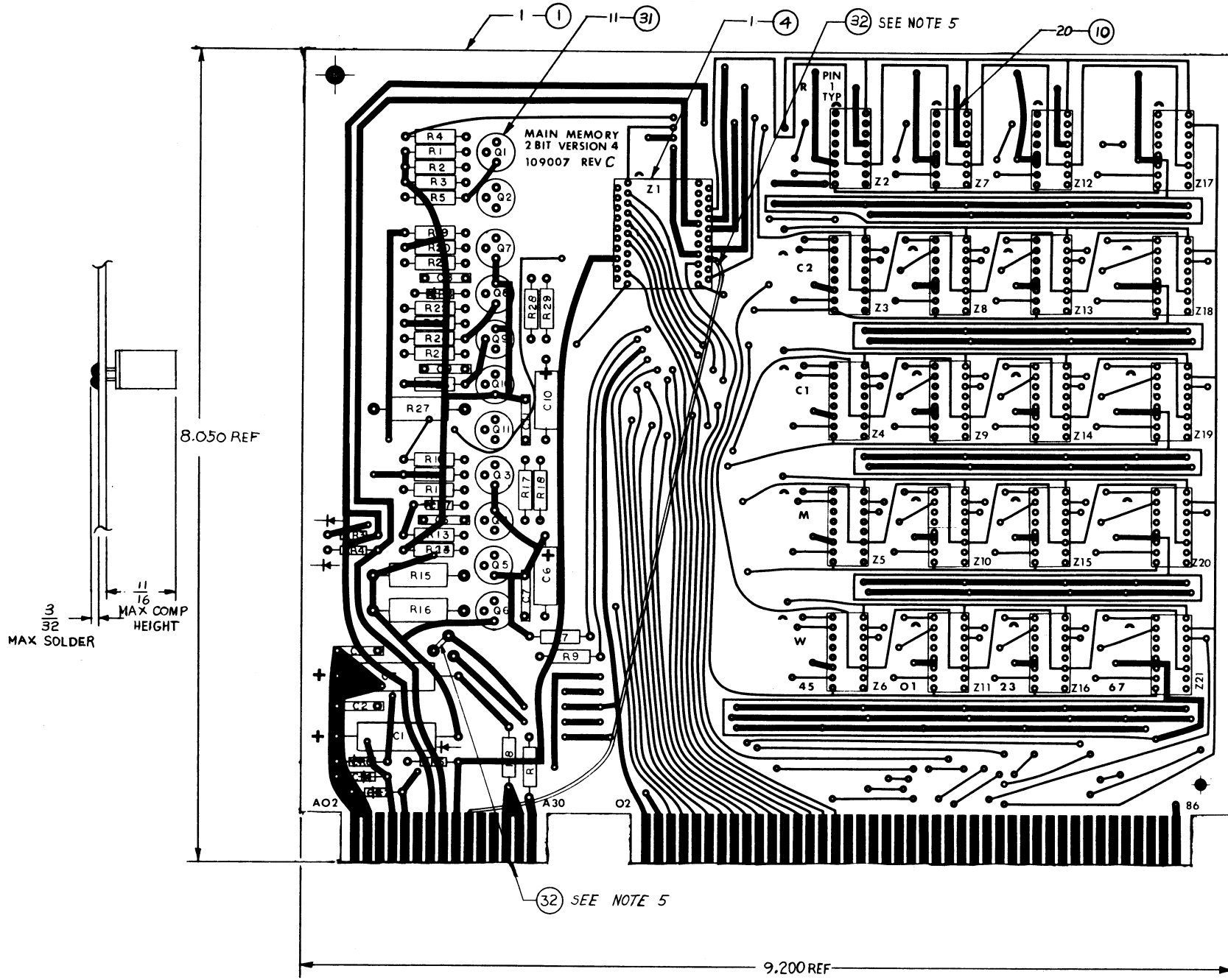
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

NOTES:

1. INSTALL ITEM 30 UNDER ALL TRANSISTORS
2. INSTALL MOS DEVICES AFTER FLOW SOLDERING
3. INSTALL ITEM 31 UNDER ALL MOS DEVICES
4. INSTALL JUMPER WIRE (ITEM 32) TO BOARDS USING FIXED BOARDS ONLY
5. INSTALL JUMPER WIRE AS SHOWN

		COMPUTER SYSTEMS CORPORATION <small>108 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</small>	
PRINTED WIRING BOARD MAIN MEMORY 8-BIT VER 3 ASSEMBLY DRAWING			
SIZE	SCALE	DWG NO	REV
SHRBT		109006	01



A 9/19/69 CHANGED PER ECN 383 VCB
 B 10/1/69 REVISED PER ECN NO. 458 R7
 C 11/1/69 REVISED PER ECN NO. 670 A.78 pmj.

- NOTES:
 1. INSTALL ITEM (4) UNDER Z1
 2. INSTALL ITEM (10) UNDER Z2 THRU Z21
 3. INSTALL ITEM (31) UNDER ALL TRANSISTORS
 4. INSTALL MOS DEVICES "AFTER" FLOW SOLDERING
 5. INSTALL JUMPER WIRE (ITEM 32) ON BOARDS USING FIX BOARDS ONLY



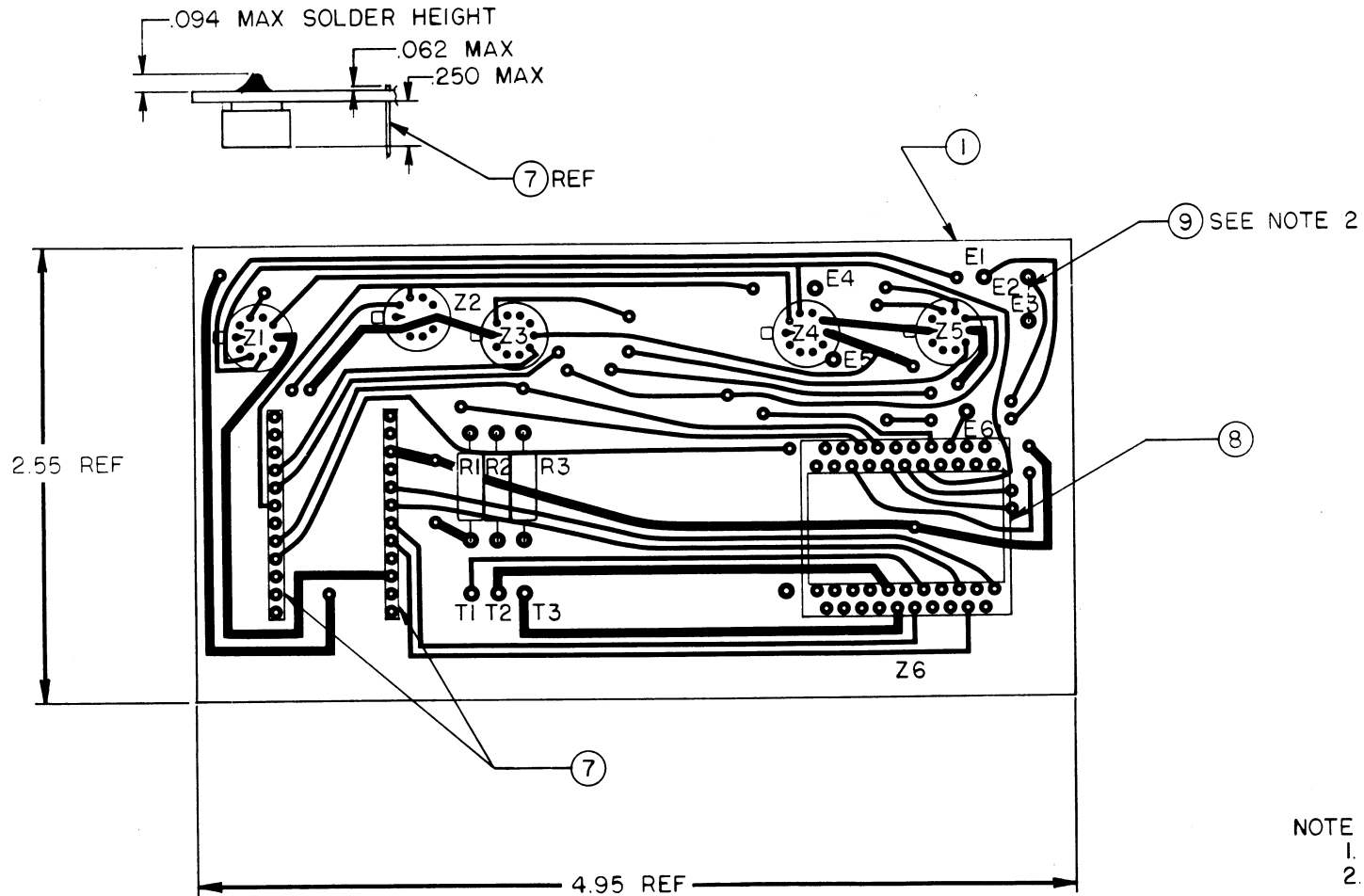
INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

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 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

VIATRON		COMPUTER SYSTEMS CORPORATION
105 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803		
PRINTED WIRING BOARD MAIN MEMORY 2 BIT VERSION 4		
SIZE D	SCALE 2/1	DWG NO. 109007
SHEET 1	TOTAL 1	REV 6



NOTE
 1. INSTALL ITEM (8) UNDER ITEM (2)
 2. ITEM(9) POSITIONS TO BE DETERMINED

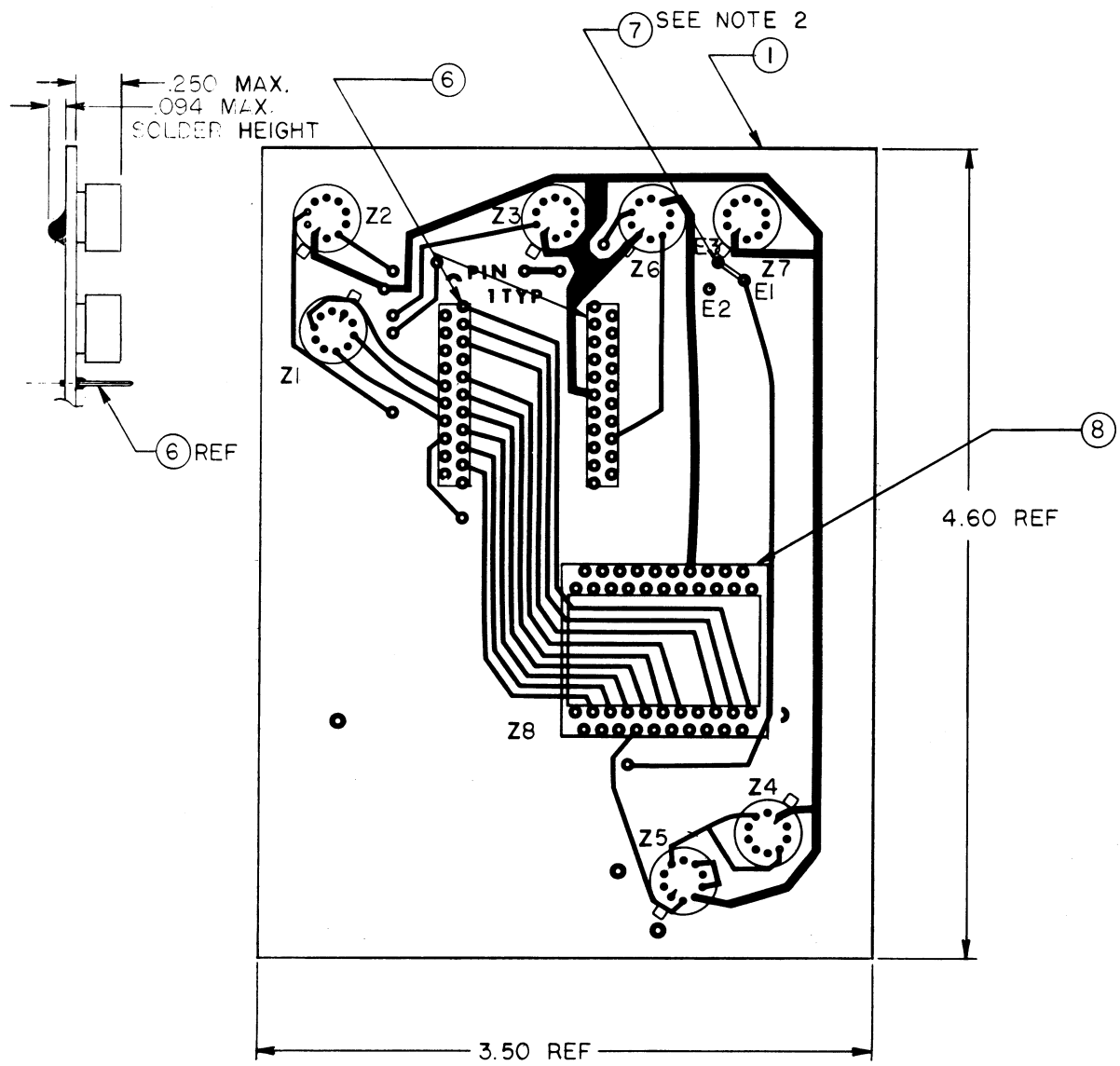


INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
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VIATRON		COMPUTER SYSTEMS CORPORATION	
108 TERRACE HALL AVENUE		BURLINGTON, MASSACHUSETTS 01803	
PRINTED WIRING BOARD MAIN MEMORY VER 1+2 ADAPTER BD. ASSEMBLY			
SIZE	SCALE 2-1	DWG NO	REV
C	SHEET 1 OF 1	109014-00	-



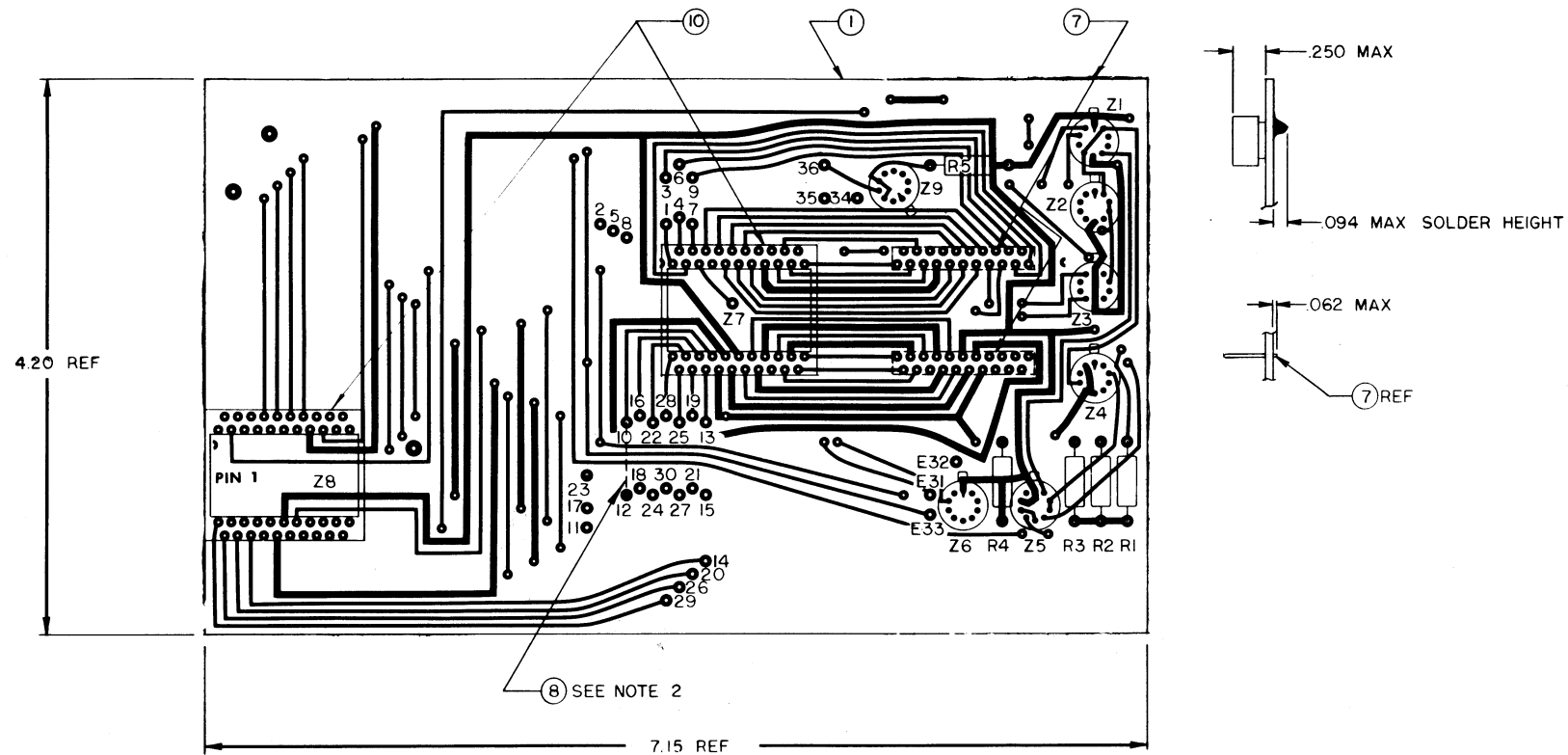
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

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PHONE (617) 452-5013

NOTE
1. INSTALL ITEM (8) UNDER ITEM (4)
2. ITEM (7) POSITION TO BE BETWEEN
E1 & E3

		COMPUTER SYSTEMS CORPORATION 108 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803	
		PRINTED WIRING BD. MAIN MEMORY VER3,4 Bd.1 ADAPTER BD. ASSEMBLY	
SIZE D SHEET 1 OF 1	SCALE 2/1	DWG NO. 109015-00	REV —



- NOTE
1. INSTALL ITEM (10) UNDER ITEM (2)
 2. ITEM (8) POSITIONS TO BE DETERMINED



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

ITEM	DESCRIPTION	CODE	REQ.
	VIATRON COMPUTER SYSTEMS CORPORATION <small>105 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</small>		
	PRINTED WIRING BOARD MAIN MEMORY 3 & 4 ADAPTOR BD. NO. 2 ASSY		
SHT 1 OF 1	D	109016-00	REV
SCALE 2-1			

PRINT NO. 109016R

MM-41

REV.	DATE	REVISION	DR.	CK.
E	9-23-64	REVISED PER ECN 409	DW	
G	9-27-64	REVISED PER ECN 442	MJ	
H	10-30-64	REVISED PER ECN 654	BL	
I	1-8-70	REVISED PER ECN NO. 691	JHP	
J	2-3-70	REVISED PER ECN NO. 877	ZAM	JHP



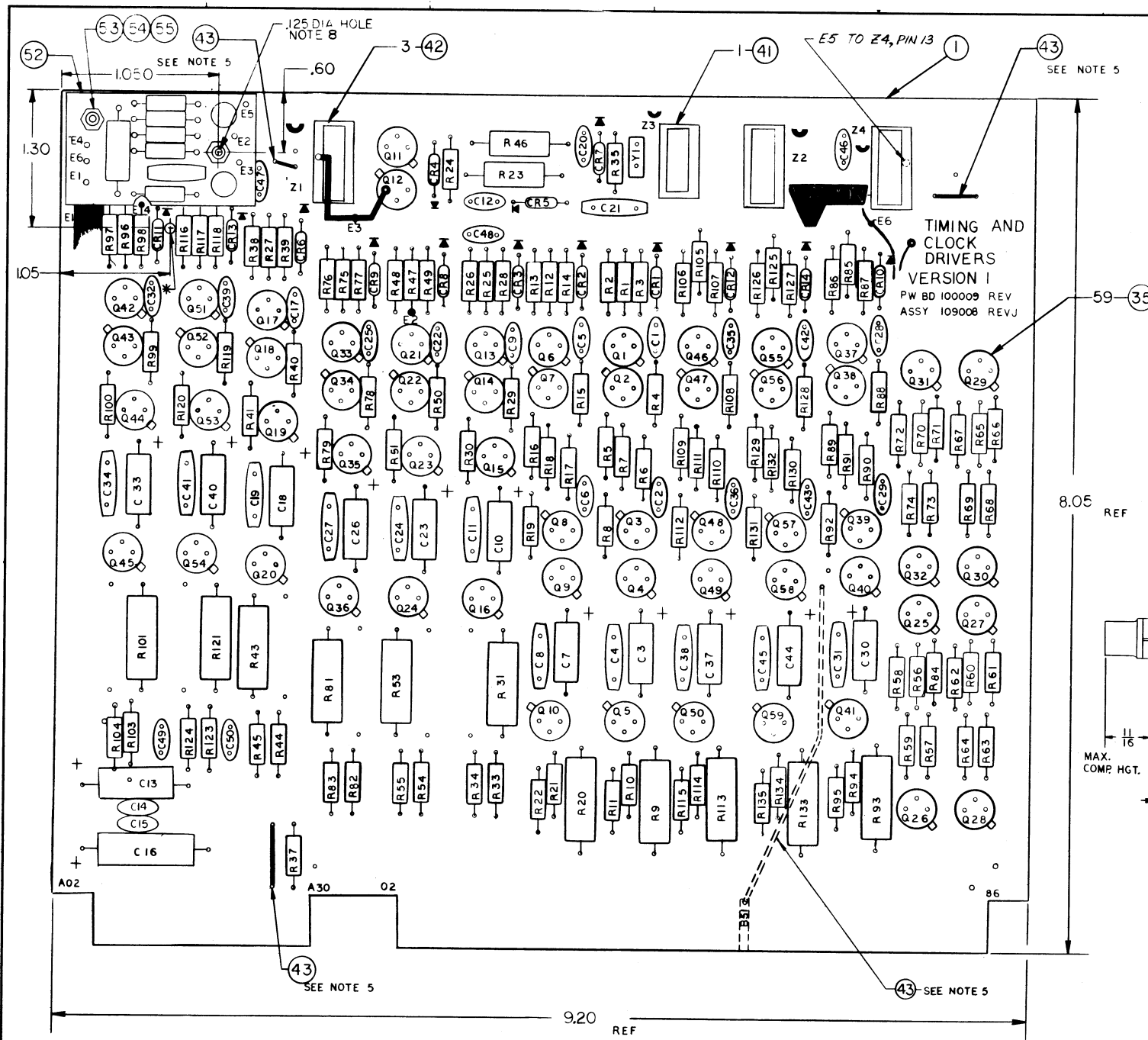
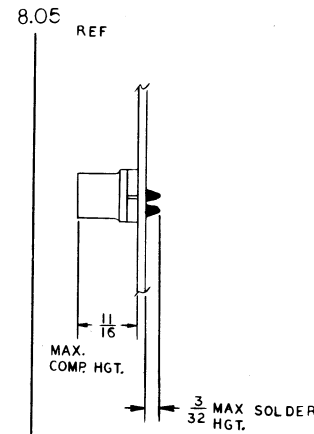
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
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STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

NOTES:

- 1 INSTALL MOS DEVICES AFTER FLOW SOLDERING
 - 2 INSTALL ITEM (35) UNDER ALL TRANSISTORS
 - 3 INSTALL ITEM (42) UNDER Z1, Z2, Z4
 - 4 INSTALL ITEM (41) UNDER Z3
 - 5 INSTALL ITEM (43) AS SHOWN
 - 6 FOR SCHEMATIC SEE DWG. 140009.
 - 7 USE ITEM (43) FOR JUMPERS E1 TO E1 THRU E6 TO E6
 - 8 DRILL AT ASSY FOR MTG OF ITEM (52)
- * 125 DIA HOLE FOR JUMPERS E4 TO R98 TOP LEAD E5 TO Z4 PIN 13

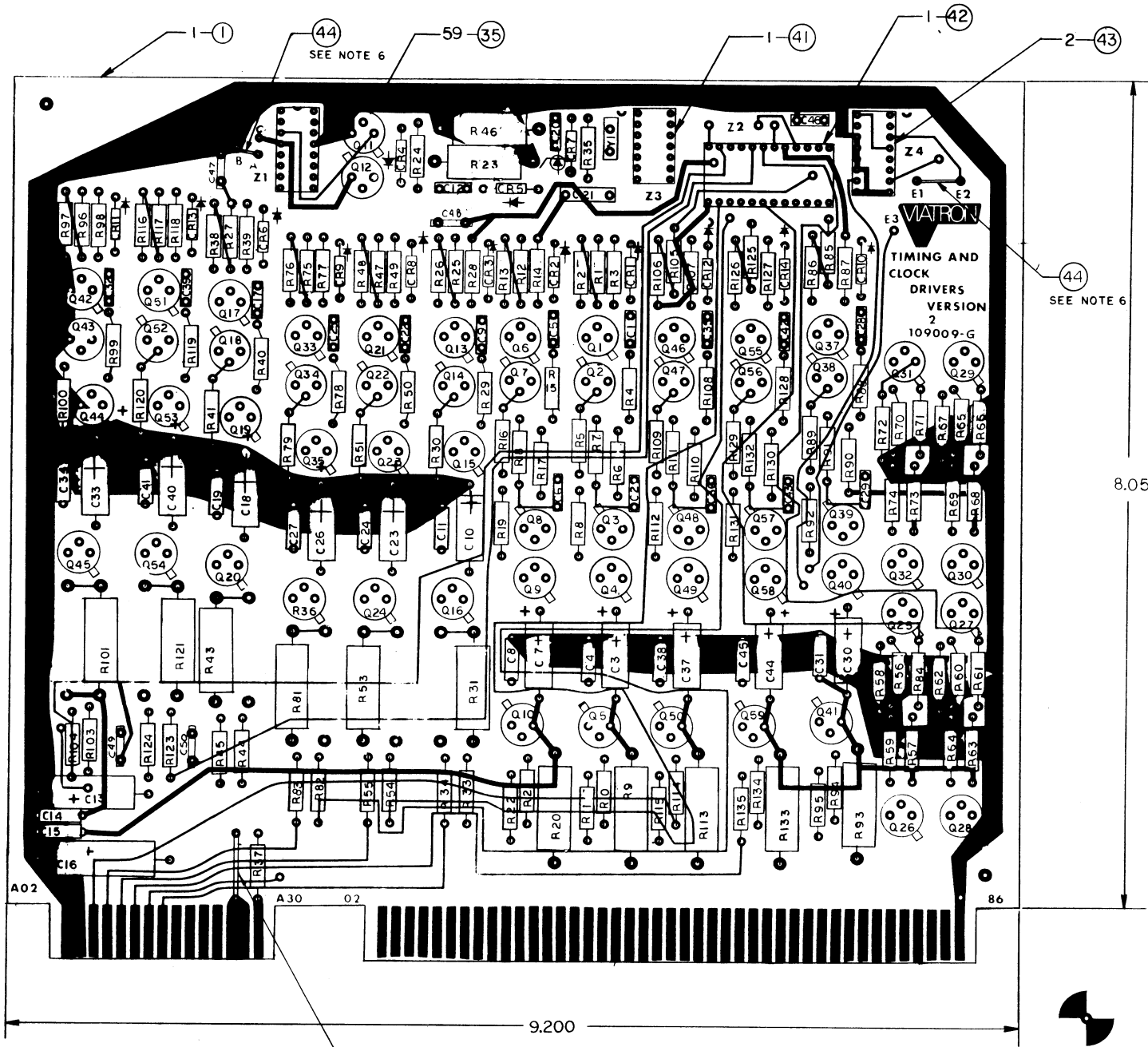


COMPUTER SYSTEMS CORPORATION
ROUTE 82
BEDFORD, MASSACHUSETTS 01730

ASSEMBLY PW BOARD
TIMING & CLOCK DRIVERS
VERSION I

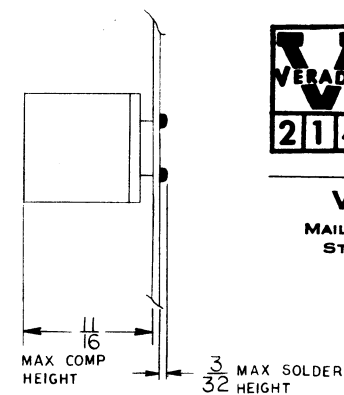
SIZE D SCALE 2/11 DWG NO 109008-00 REV J

SY#	DATE	REVISION	DR	CK
E	9/23/69	REVISED PER ECN-410	SM	
F	9/29/69	REVISED PER ECN-443	MM	
G	10/30/69	ECN 655	MM	MM



NOTES:

1. FLOW SOLDER BEFORE MOUNTING MOS DEVICES
2. INSTALL ITEM 35 UNDER ALL TRANSISTORS
3. INSTALL ITEM 41 UNDER Z3
4. INSTALL ITEM 42 UNDER Z2
5. INSTALL ITEM 43 UNDER Z1+Z4
6. INSTALL ITEM 44 AS SHOWN

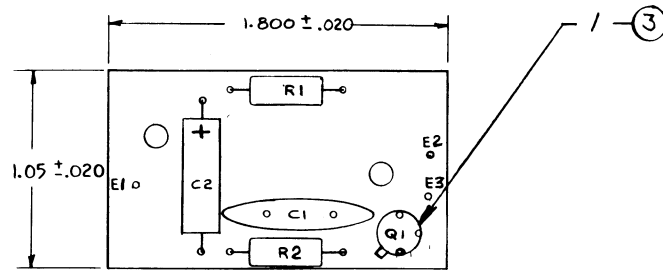


INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
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STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

	COMPUTER SYSTEMS CORPORATION
	127 FRANKLIN AVENUE MILFORD, MASSACHUSETTS 01860
TIMING AND CLOCK DRIVERS VERSION 2	
ASSEMBLY DRAWING	
DATE	REV
10/30/69	6



- NOTES:
1. INSTALL ITEM (3) UNDER Q1
 2. FOR SCHEMATIC SEE DWG C-140016.



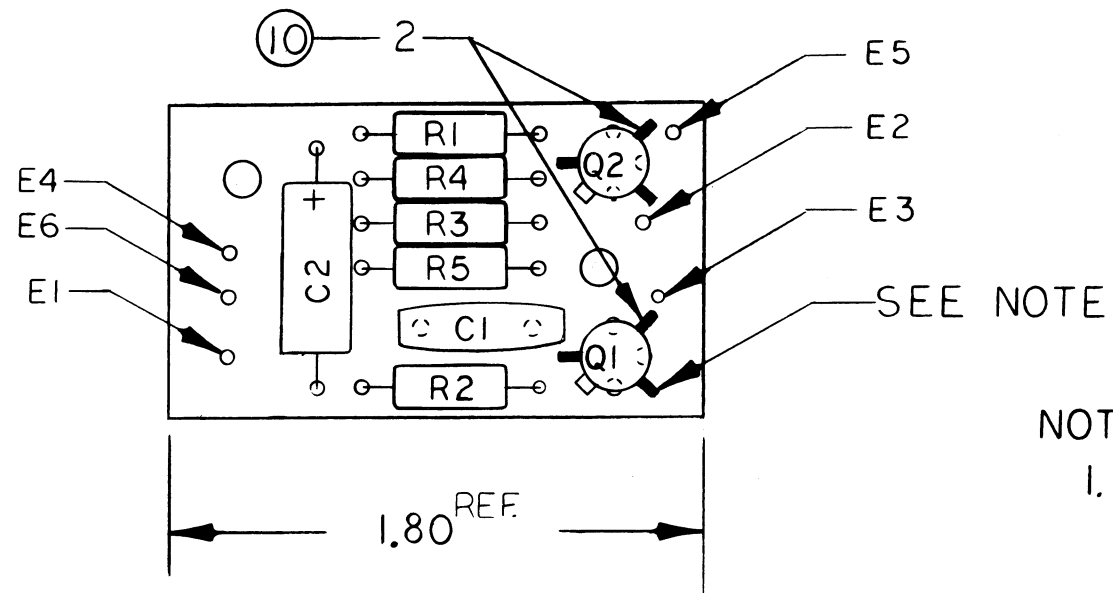
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
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STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

		COMPUTER SYSTEMS CORPORATION ROUTE 62 BEDFORD, MASSACHUSETTS 01730
ASSEMBLY P.W. BD. CLOCK INHIBIT CKT.		
SIZE SCALE C 2/1 SHEET 1 OF 1	DWG NO 109020	-

SYM.	DATE	REVISION	DR.	CK.
------	------	----------	-----	-----



NOTES:
 1. INSTALL ITEM (10) UNDER ITEM (9).



INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
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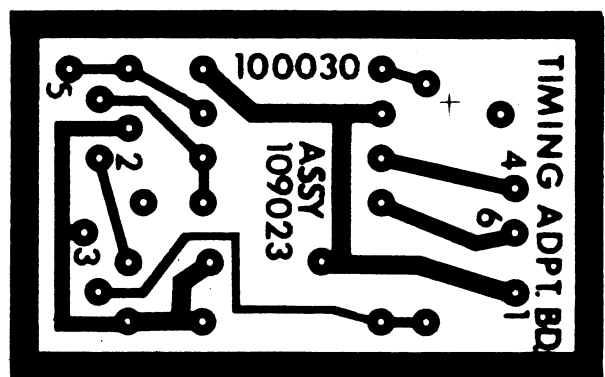
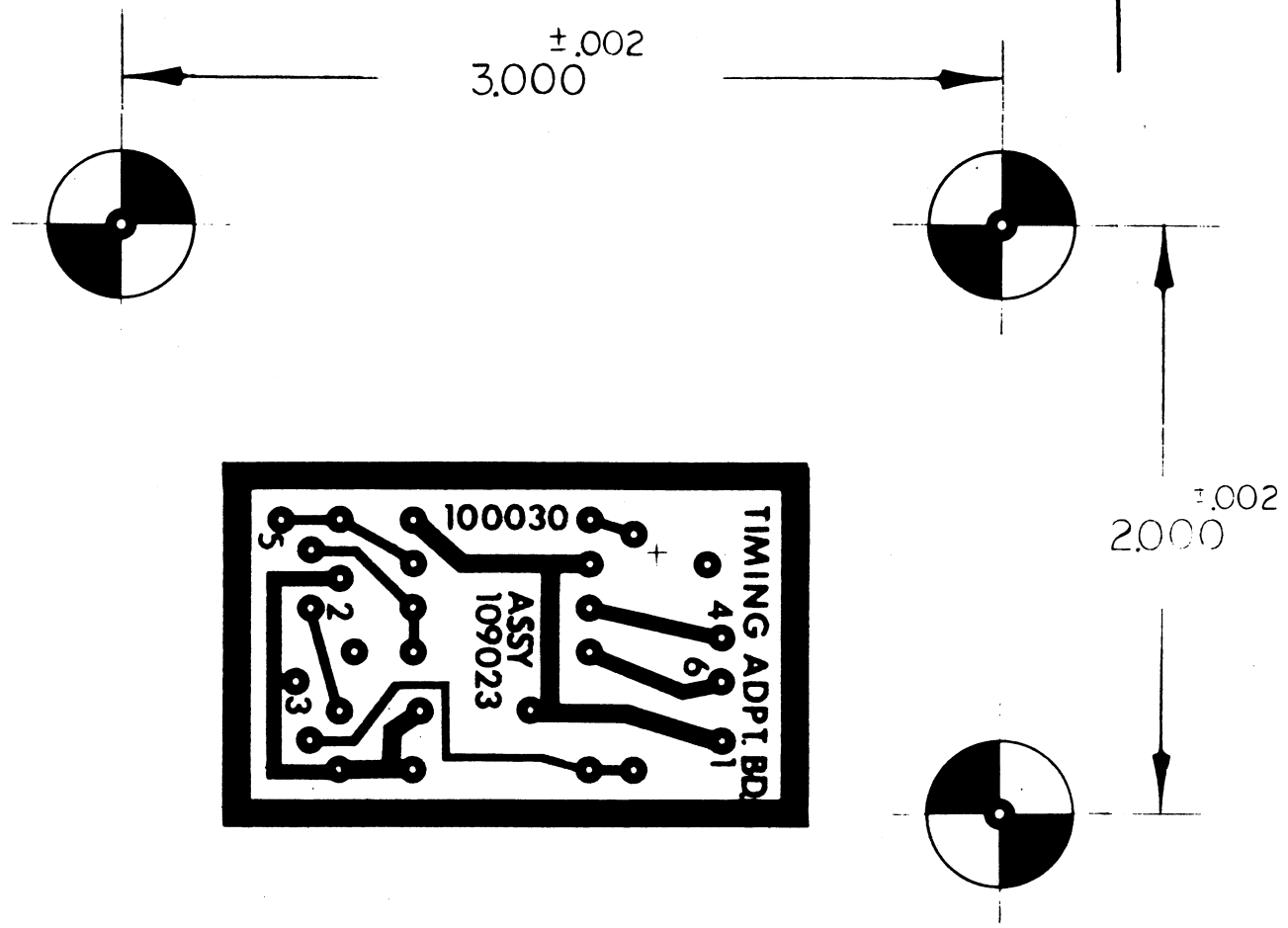
**COMPUTER SYSTEMS
 CORPORATION**

ROUTE 62
 BEDFORD, MASSACHUSETTS 01730

ASSEMBLY DRAWING
 TIMING ADAPTOR BOARD

SIZE B	SCALE 2:1 SHEET 1 OF 1	DWG NO 109023-00	REV -
-----------	------------------------------	---------------------	----------

SYM.	DATE	REVISION	DR.	CK.
------	------	----------	-----	-----



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

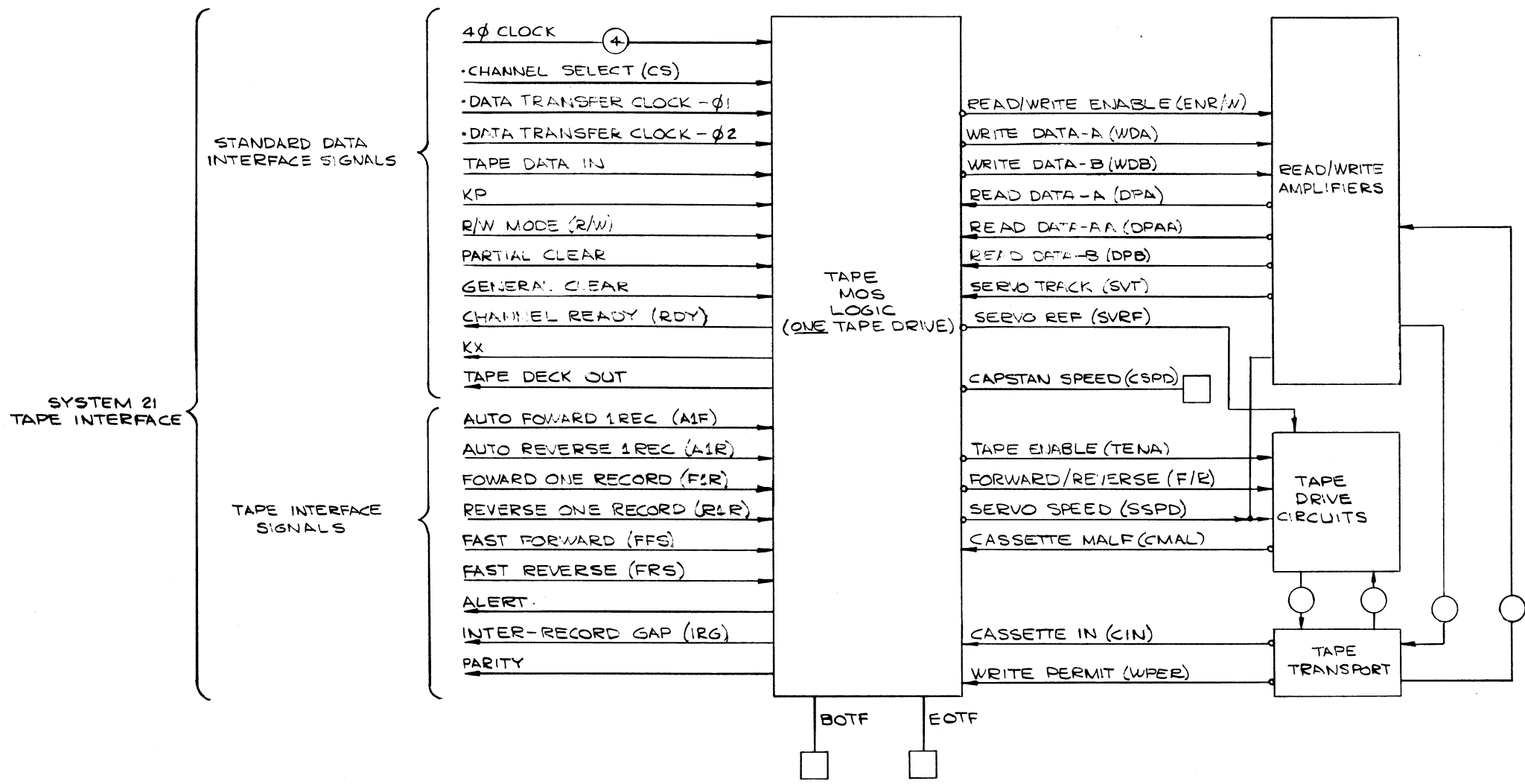
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:


VERADA 214 DIV. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

VIATRON	COMPUTER SYSTEMS CORPORATION
	ROUTE 62 BEDFORD, MASSACHUSETTS 01730

P.W. BOARD
TIMING ADAPTOR BOARD

SIZE B	SCALE 2:1 SHEET 2 OF 2	DWG NO VTA100030-00	REV -
------------------	------------------------------	------------------------	----------

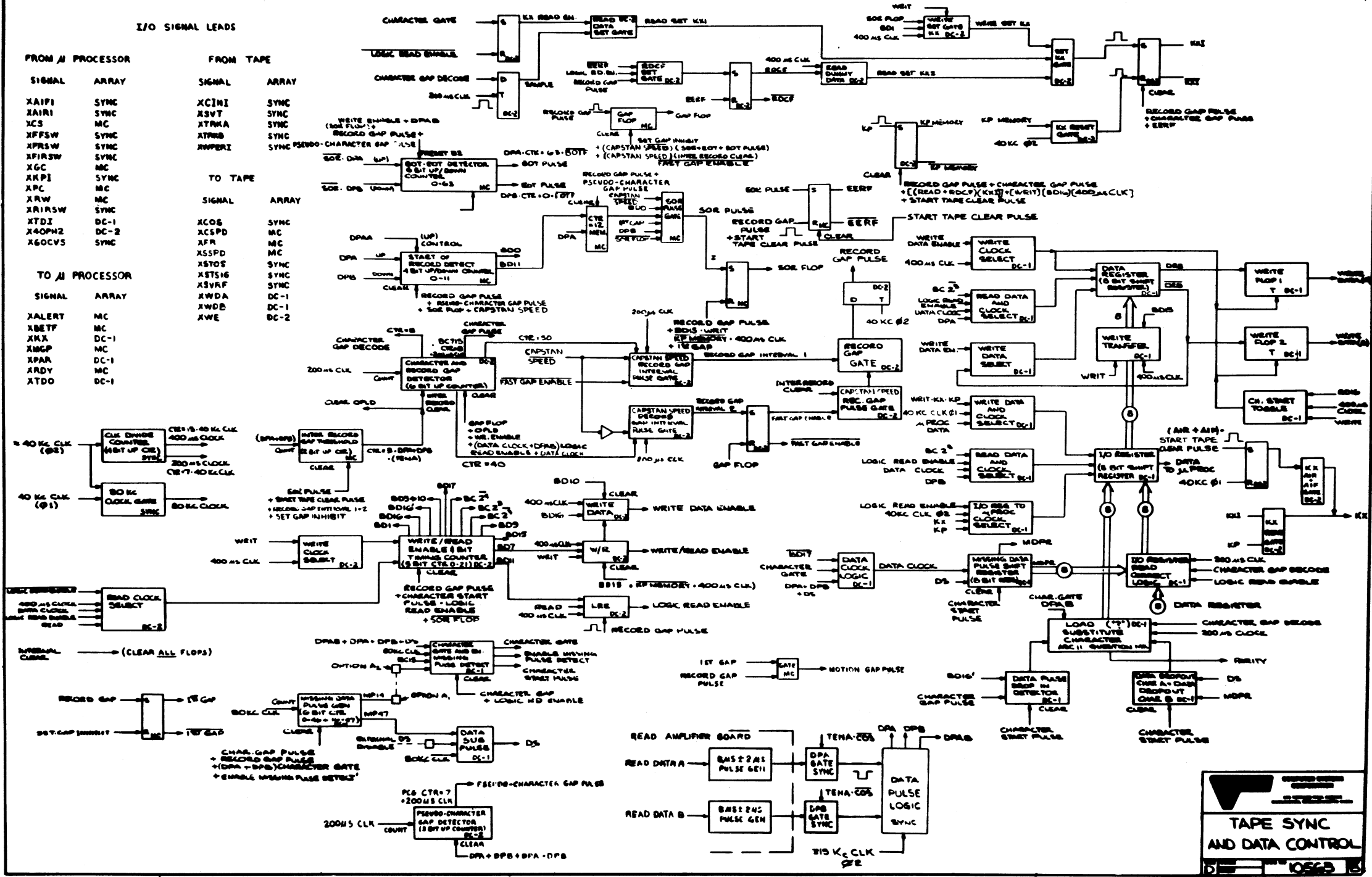


ITEM	DESCRIPTION	CODE	REV.
 COMPUTER SYSTEMS CORPORATION 100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
INTERFACE SIGNALS VIATAPE RECORDER			
MODEL:	D 10800		
SCALE:	NONE		

I/O SIGNAL LEADS

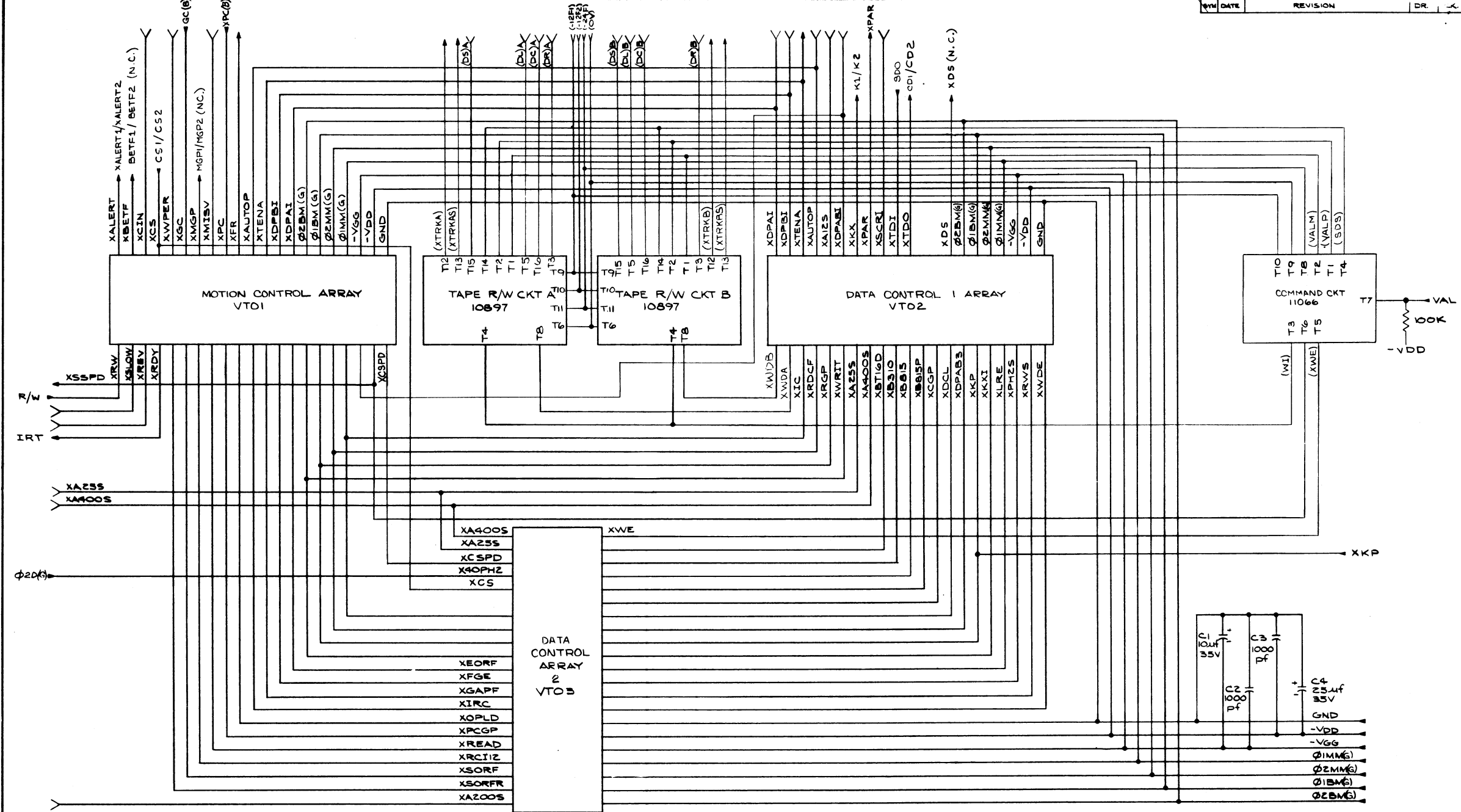
FROM /I PROCESSOR		FROM TAPE	
SIGNAL	ARRAY	SIGNAL	ARRAY
XAIFI	SYNC	XCINI	SYNC
XAIRI	SYNC	XSVT	SYNC
XCS	MC	XTRKA	SYNC
XFFSW	SYNC	XTRPB	SYNC
XPRSW	SYNC	XWPERI	SYNC
XFIRSW	SYNC		
XGC	MC		
XKPI	SYNC		
XPC	MC		
XRW	MC		
XRIRSW	SYNC		
XTDI	DC-1		
X40PH2	DC-2		
X60CV5	SYNC		

TO /I PROCESSOR		TO TAPE	
SIGNAL	ARRAY	SIGNAL	ARRAY
XALERT	MC	XCOS	SYNC
XBTF	MC	ACSPD	MC
XXA	DC-1	XFR	MC
XNGP	MC	XSSPD	MC
XPAR	DC-1	XSTOS	SYNC
XRDY	MC	XSTSIG	SYNC
XTD0	DC-1	XSVRF	SYNC
		XWDA	DC-1
		XWDB	DC-1
		XWE	DC-2



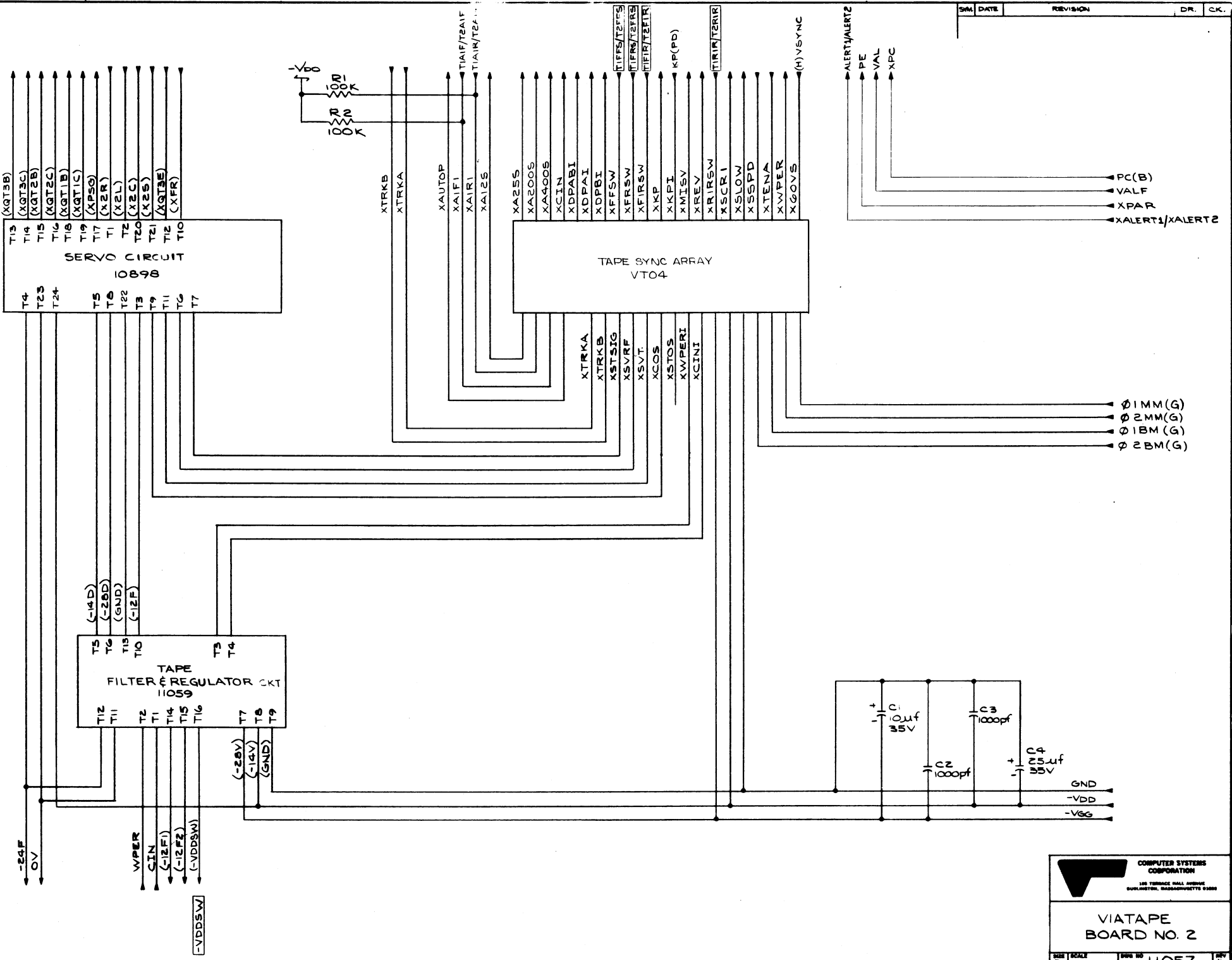
TAPE SYNC AND DATA CONTROL

10563 B



VIATAPE BOARD NO. 1

REV SCALE FIG NO 11056



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

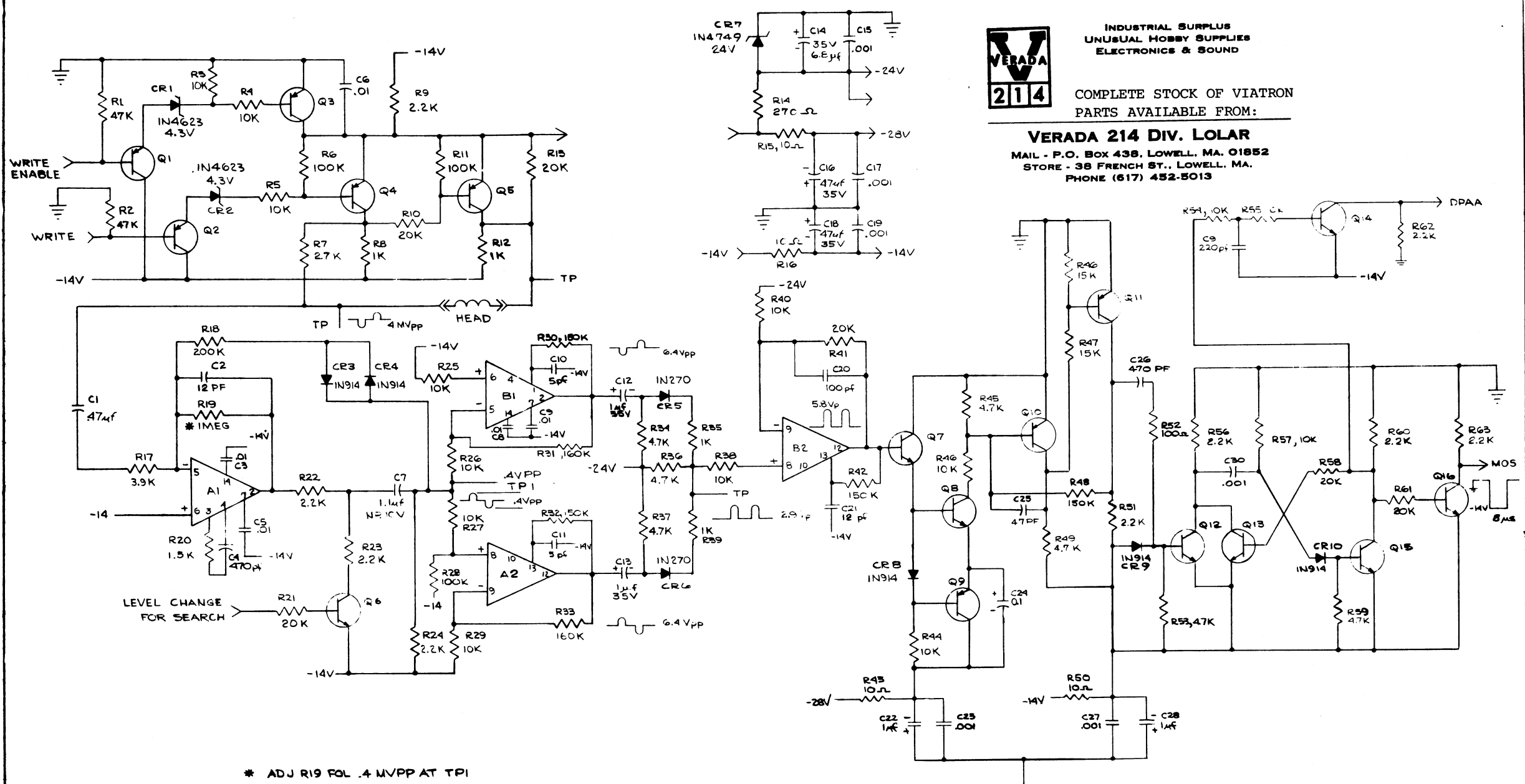
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01882
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-8013

COMPUTER SYSTEMS CORPORATION
180 YERGENE HALL AVENUE
SHELTON, MASSACHUSETTS 01905

VIATAPE BOARD NO. 2

REV	SCALE	REV NO	REV
D		11057	



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

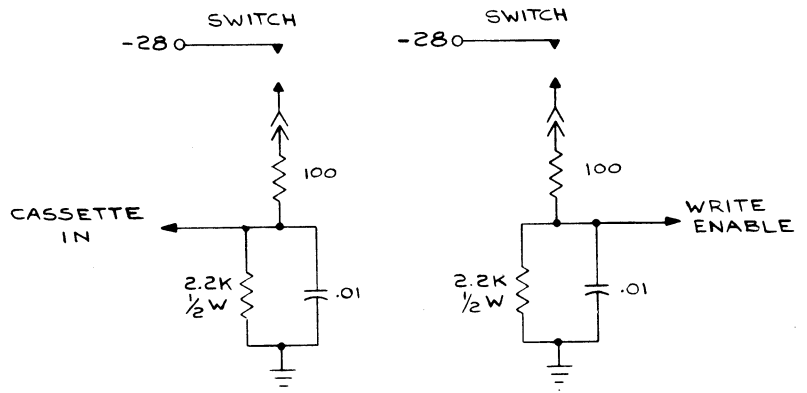
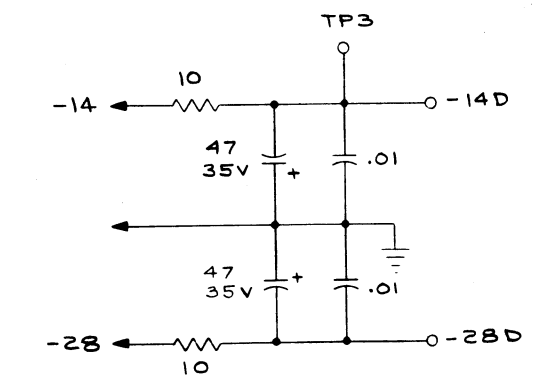
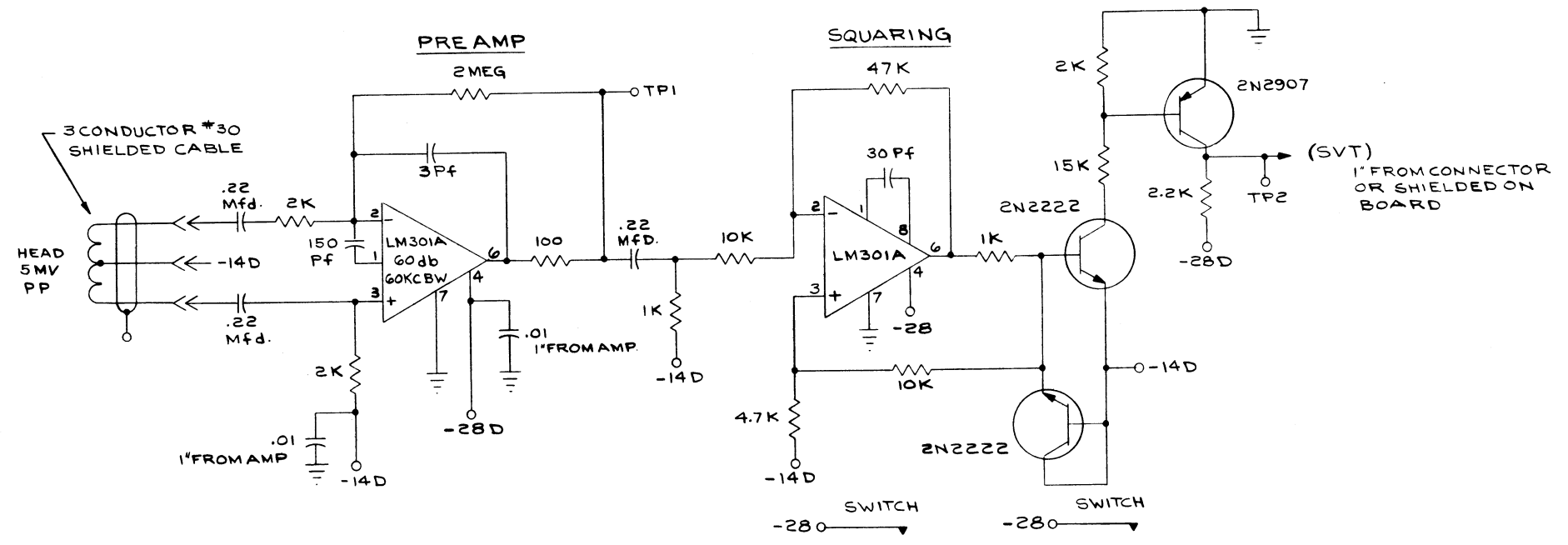
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

* ADJ R19 FOR .4 MVPP AT TP1

- NOTES:
1. NPN TRANSISTORS ARE 2N3903
PNP TRANSISTORS ARE 2N3905
 2. FOR ALL IC'S: PIN 14 = GND
PIN 7 = -28V
 3. ALL RESISTORS ARE 1/4W ± 5%
UNLESS OTHERWISE NOTED

ITEM	DESCRIPTION	CORE	REV.
<p>COMPUTER SYSTEMS CORPORATION 100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</p>			
READ WRITE AMPLIFIER			
MODEL:	D 10543		
SIGNAL:			



NOTES:
 1. ALL RESISTORS 1/4 W ± 5% CARBON COMP.
 2. ALL SWITCHING WIRES RUNNING NEAR PREAMP MUST BE SHIELDED.



INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

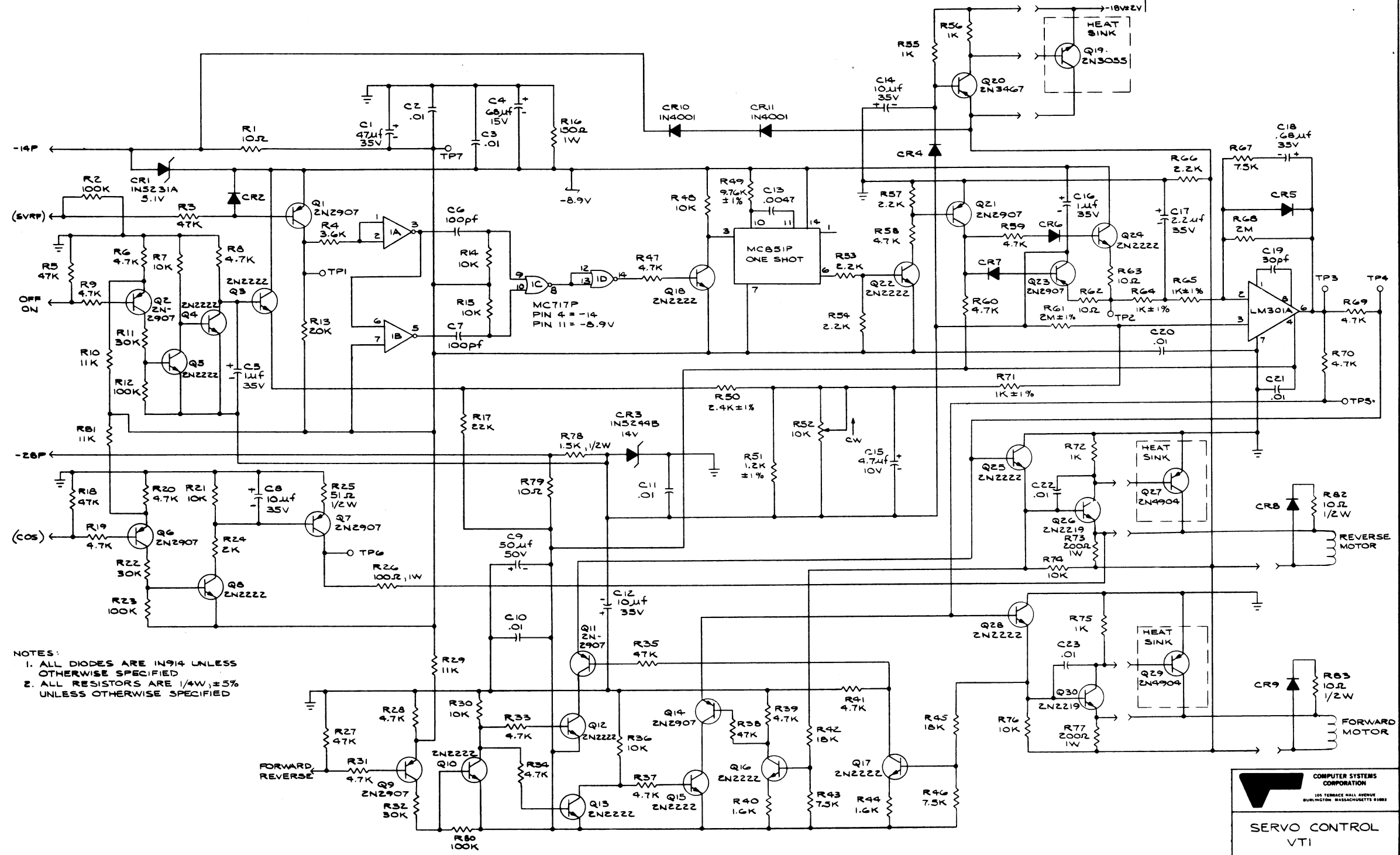
COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013



VT 1.2
 SERVO BOARD

SIZE	SCALE	DWG NO	REV
C	1/8"	10874	



- NOTES:
1. ALL DIODES ARE IN914 UNLESS OTHERWISE SPECIFIED
 2. ALL RESISTORS ARE 1/4W, ±5% UNLESS OTHERWISE SPECIFIED

COMPUTER SYSTEMS CORPORATION
 105 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

SERVO CONTROL
 VTI

SIZE SCALE NONE DWG NO 10879 REV D SHEET

REFERENCE DESIGNATION	ITEM NO.

REFERENCE DESIGNATION	ITEM NO.

SYM	DATE	REVISION	BY	CHK
A	2-10-69	REVISED PER ECN-763		
B	1-1-70	REVISED PER ECN NO.776		
C	11-9-70	REVISED PER ECN NO.851		
D	2-2-71	REVISED PER ECN NO.909		



VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-8013

**INDUSTRIAL SUPPLIES
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND**
 COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

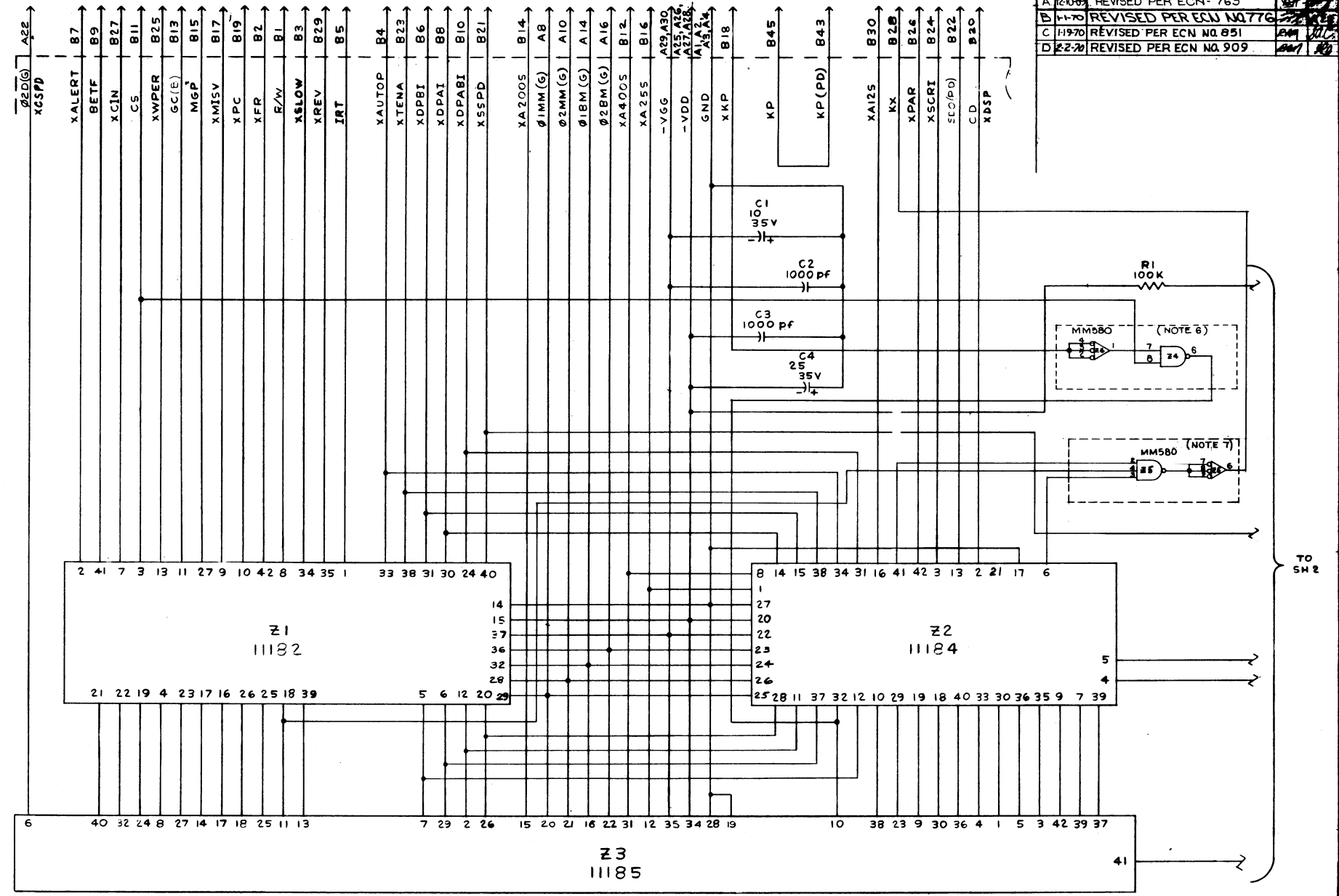
R127	C52	Q40
CR30	Z 5	

HIGHEST REFERENCE DESIGNATION

CT,16,26,37

REFERENCE DESIGNATIONS NOT USED

- NOTES:
- UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE IN OHMS, 1/2W, 15%.
 - UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE IN MICROFARADS.
 - ALL 1% RESISTORS ARE 1/4 W.
 - R26, R27, R28 & R29 TO BE INSTALLED AT BOARD TEST STATION IF REQUIRED.
 - 5 DIGIT ARRAY NO. REFERENCE TO LOGIC DIAGRAM.
 - Z4 - VDD - PIN 10, GND - PIN 5. CUT ETCH FROM VT-02 PIN 32 TO CONNECTOR PIN B18.
 - REMOVE JUMPER WIRE FROM VT02 PIN 41 TO B28.
 - Z5-VDD-PIN 10, GND-PIN 5.

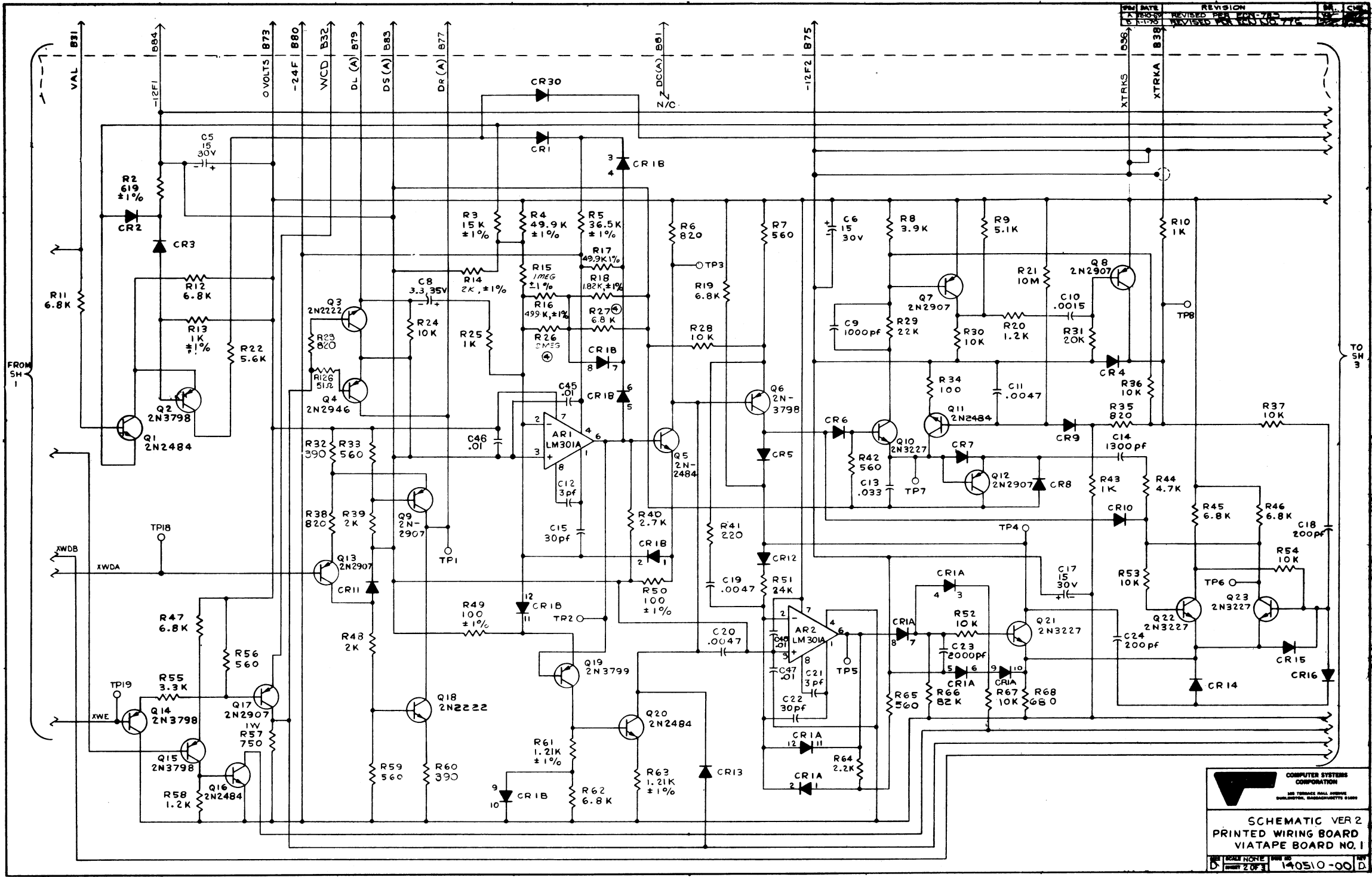



COMPUTER SYSTEMS CORPORATION
 100 TOWN SQUARE DRIVE
 BELLINGHAM, WASHINGTON 98225

**SCHEMATIC VER 2
 PRINTED WIRING BOARD
 VIATAPE BOARD NO. 1**

SCALE: 100%
 DATE: 1-1-70
 14-0510-000

REV	DATE	REVISION
1	11-20-68	REVISED PER 140510-001
2	1-15-69	REVISED PER 140510-002

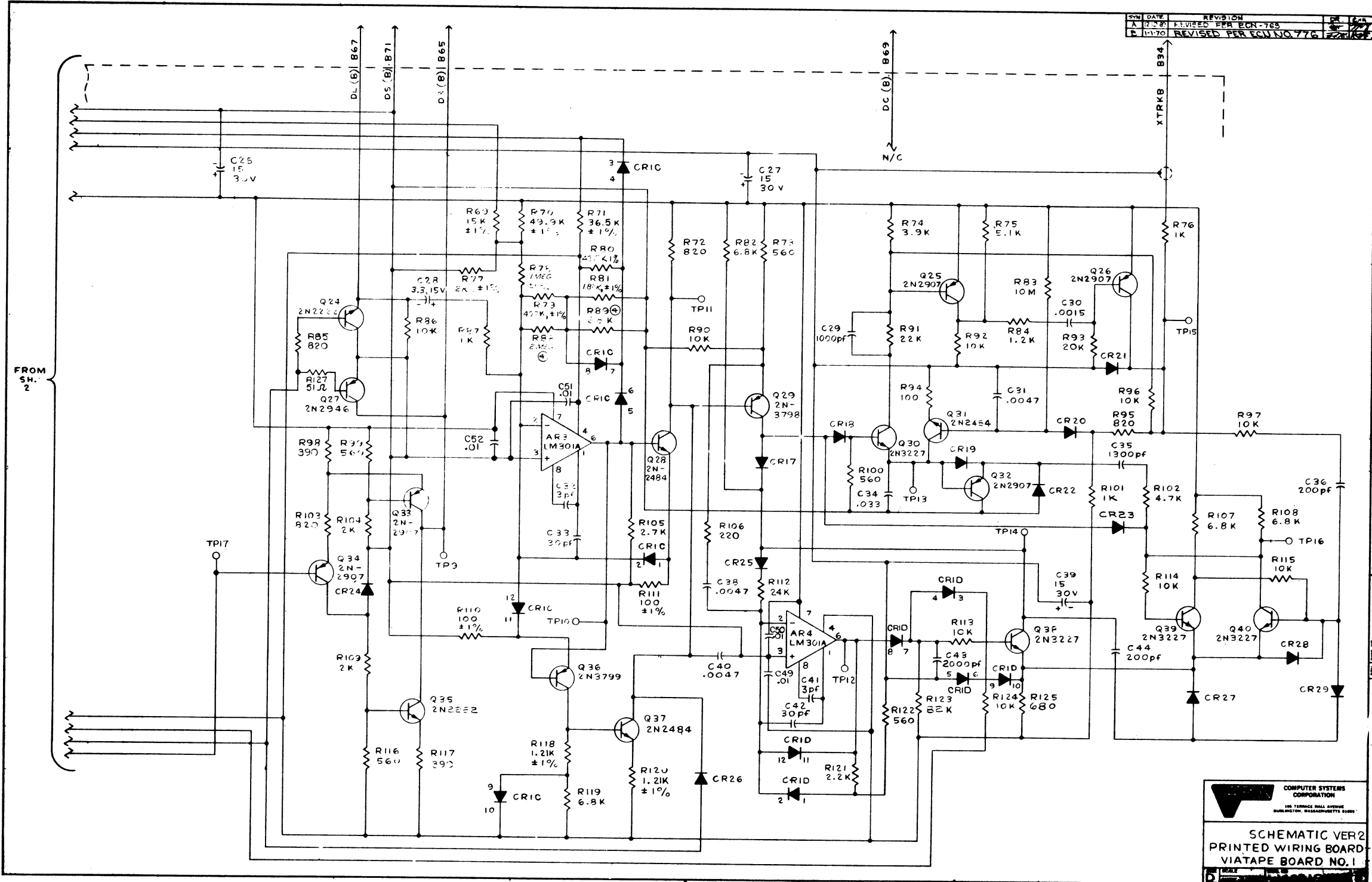



COMPUTER SYSTEMS CORPORATION
 100 WASHINGTON SQUARE
 DUBLIN, MASSACHUSETTS 01930

SCHEMATIC VER 2
PRINTED WIRING BOARD
VIATAPE BOARD NO. 1

DATE: 11-20-68
 DRAWN: J. M. NOLAN
 CHECKED: J. M. NOLAN
 PART NO: 140510-001

REV	DATE	REVISION
A	12-29-70	REVISED PER ECN-765
B	11-17-71	REVISED PER ECN NO. 776

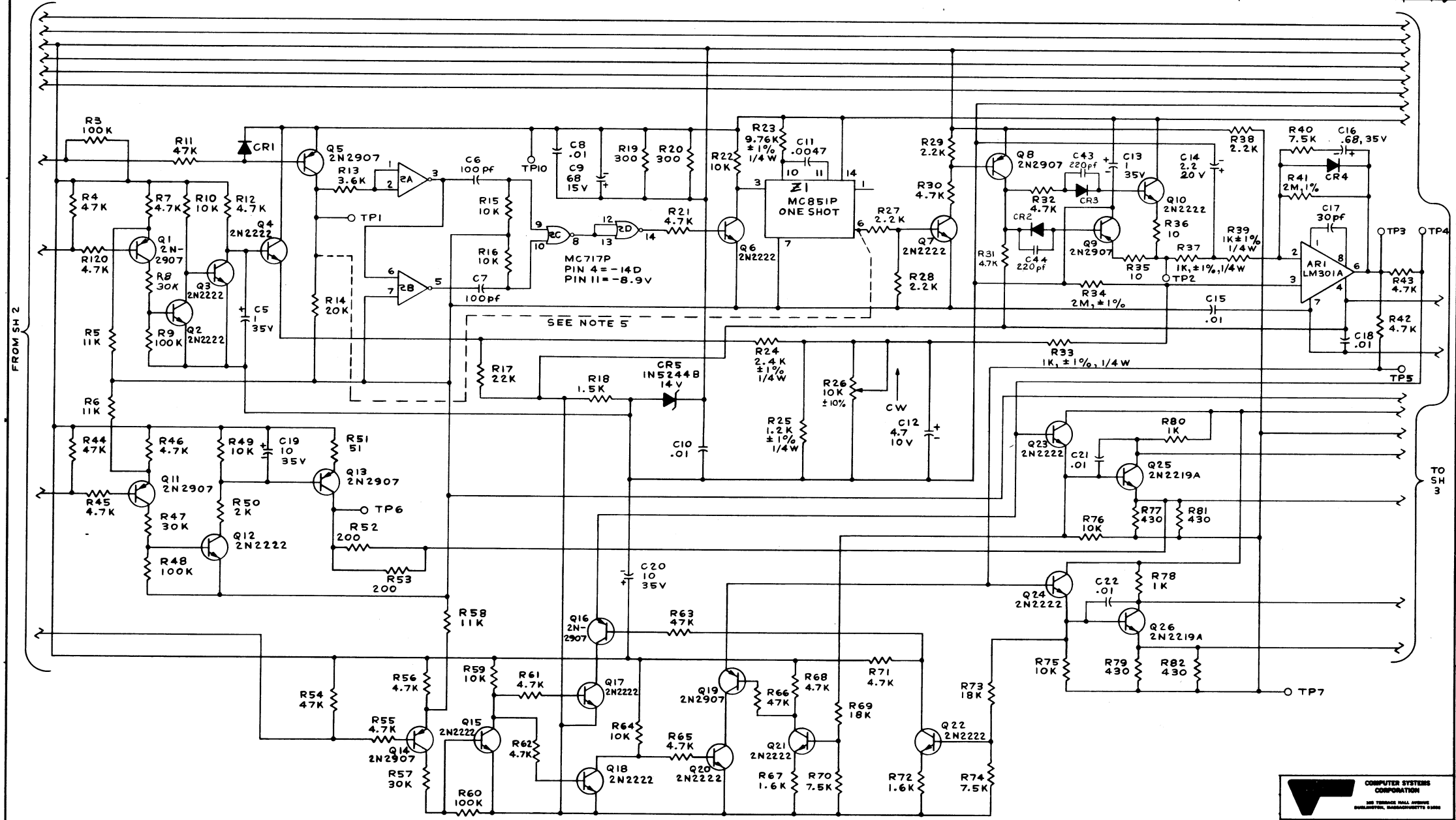


FROM SH. 2



SCHEMATIC VER2
PRINTED WIRING BOARD
VIATAPE BOARD NO. 1

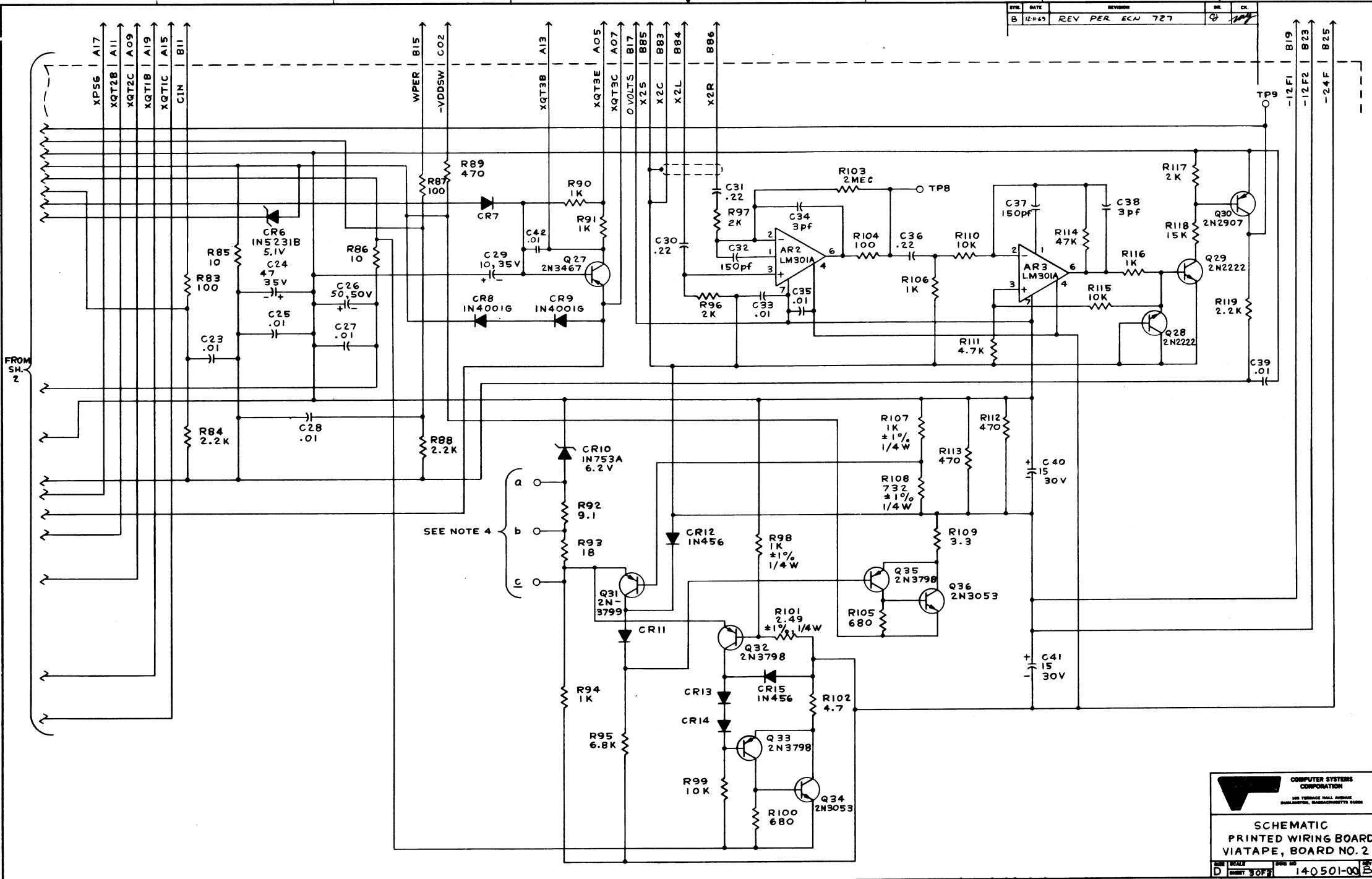
REV	DATE	REVISION	BY	CHK
A	12-8-69	REVISED PER ECN NO. 757	JJ	AD
B	12-14-69	REV PER ECN 727	CL	AD



SCHEMATIC
PRINTED WIRING BOARD
VIATAPE BOARD NO. 2

SCALE: 1:1 SHEET NO. 1 OF 3 DATE: 14-0501-008

SYL.	DATE	REVISION	DR.	CK.
B	12-4-65	REV PER ECN 727		

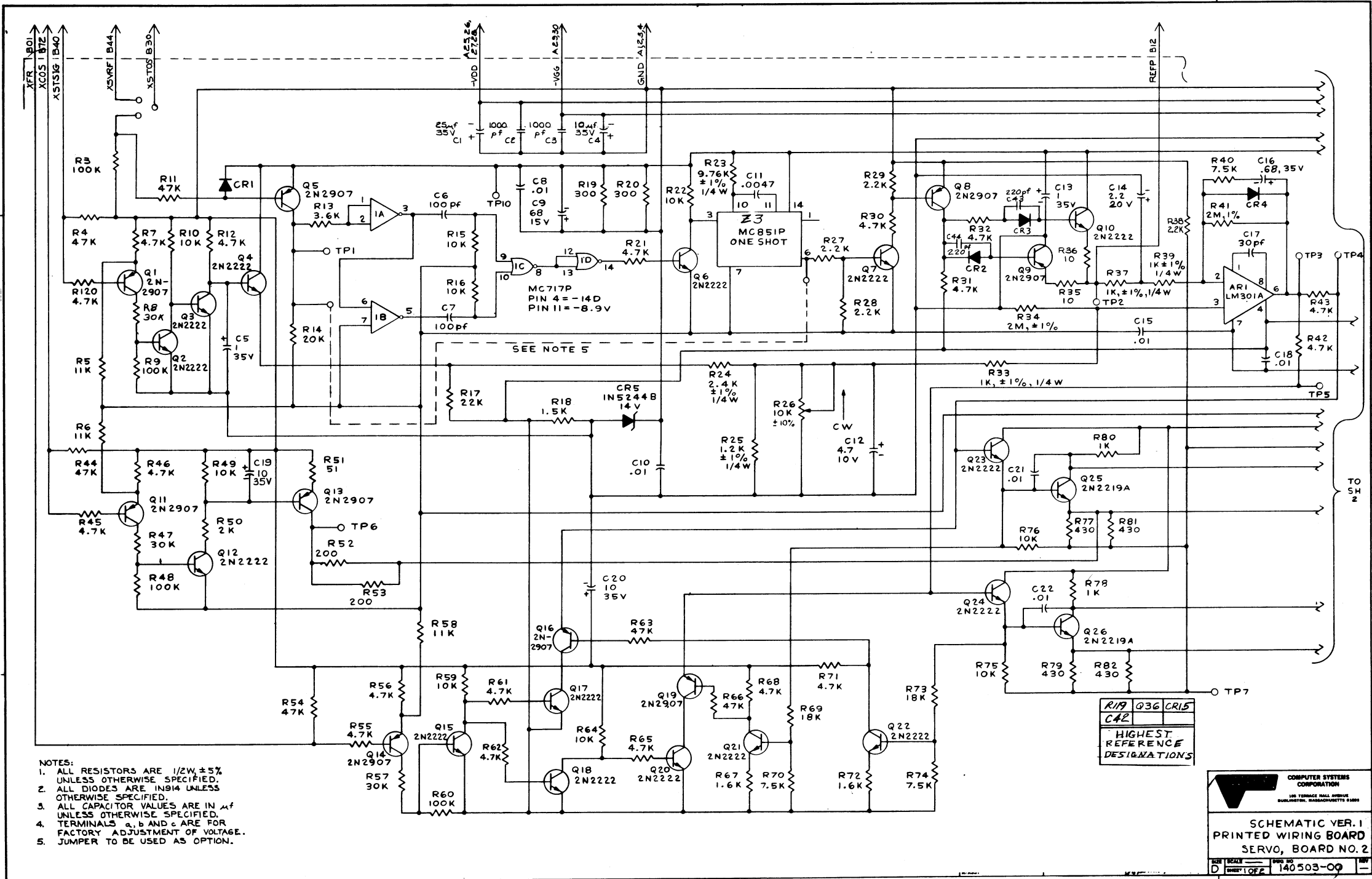


SEE NOTE 4

COMPUTER SYSTEMS CORPORATION
 100 TOWNSEND HALL AVENUE
 BOSTON, MASSACHUSETTS 02114

**SCHEMATIC
 PRINTED WIRING BOARD
 VIATAPE, BOARD NO. 2**

DATE: 12-4-65
 SCALE: 300%
 DRAWN BY: JEF
 CHECKED BY: B



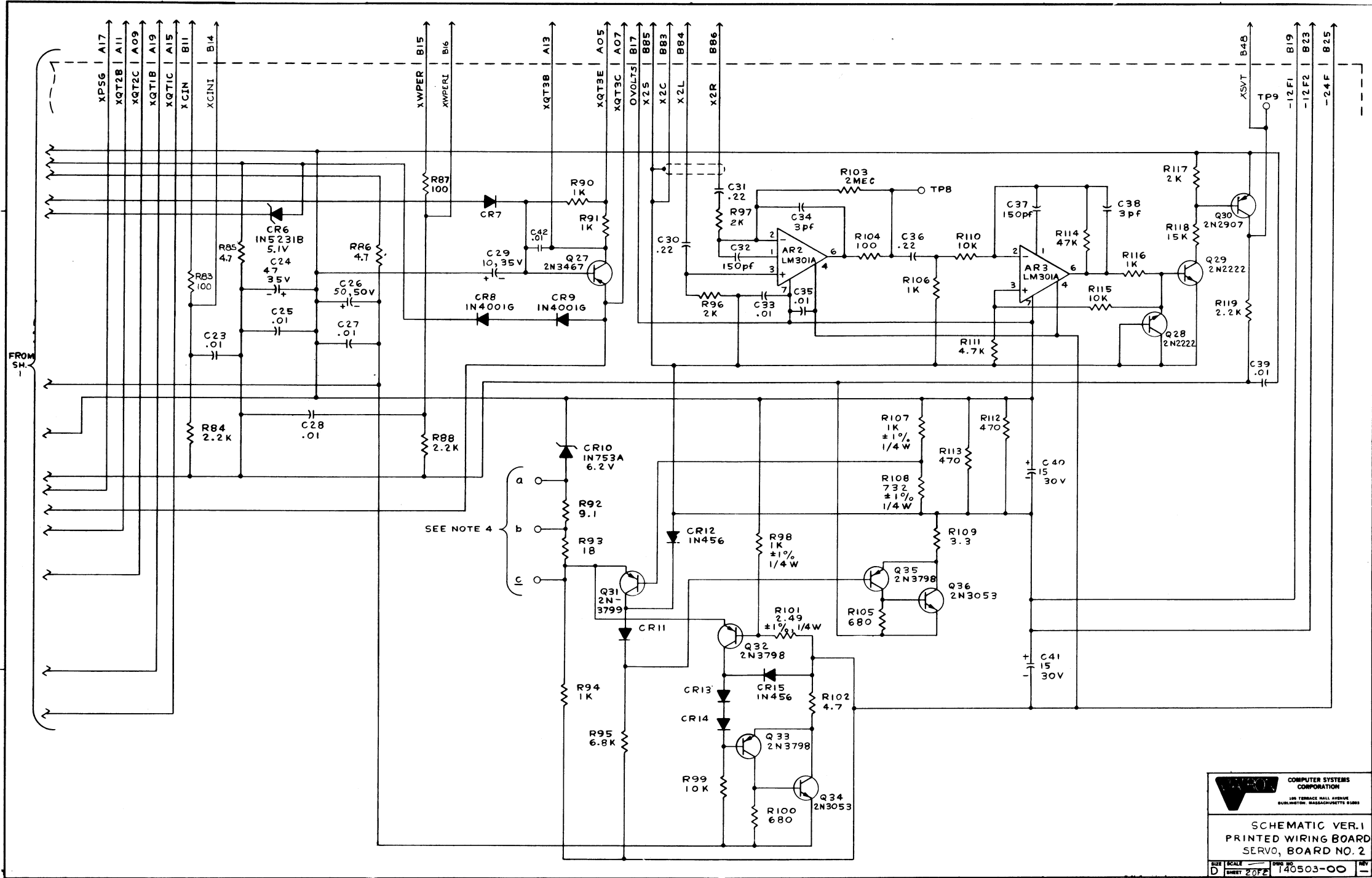
- NOTES:
1. ALL RESISTORS ARE 1/2W ±5% UNLESS OTHERWISE SPECIFIED.
 2. ALL DIODES ARE IN514 UNLESS OTHERWISE SPECIFIED.
 3. ALL CAPACITOR VALUES ARE IN μf UNLESS OTHERWISE SPECIFIED.
 4. TERMINALS a, b AND c ARE FOR FACTORY ADJUSTMENT OF VOLTAGE.
 5. JUMPER TO BE USED AS OPTION.


R19	Q36	CR15
CA2		
HIGHEST REFERENCE DESIGNATIONS		

COMPUTER SYSTEMS CORPORATION
100 TERRACE HALL AVENUE
DUBLINGTON, MASSACHUSETTS 01930

SCHEMATIC VER. 1
PRINTED WIRING BOARD
SERVO, BOARD NO. 2

SIZE: SCALE: 1:1
 D 140503-00

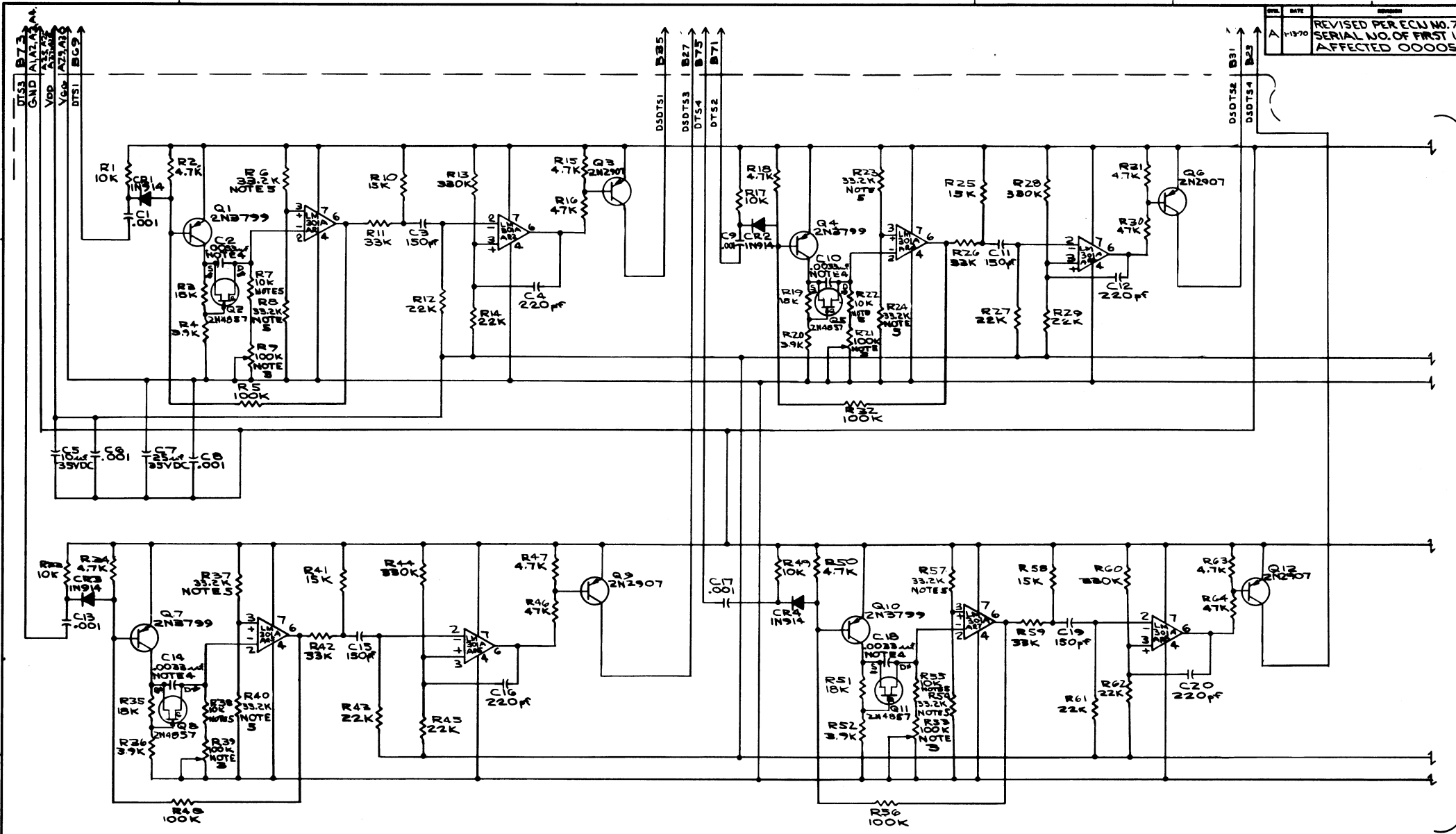



COMPUTER SYSTEMS CORPORATION
 100 FERRAGE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

SCHEMATIC VER.1
PRINTED WIRING BOARD
SERVO, BOARD NO. 2

SHEET 2 OF 2 DWG NO. 140503-00 REV.

REV.	DATE	DESCRIPTION	BY	CHK.
A	1-19-70	REVISED PER FCN NO. 779 SERIAL NO. OF FIRST UNIT AFFECTED 000051	J. B. ...	J. B. ...



TO SHEET 2

- NOTES:
1. ALL RESISTORS $\pm 10\%$, 1/2W UNLESS OTHERWISE SPECIFIED.
 2. ALL CAPACITORS $\pm 10\%$, 100V UNLESS OTHERWISE SPECIFIED.
 3. R5, R21, R37, R53, R70, R84, R100, R118, R113, ARE 100K $\pm 5\%$; RESOLUTION .09% MAX @ 3.3M.A. AT 70°C. END RESIST 500 Ω . 25TURNS, 1W AT 70°C.
 4. ERIC 8131-100COG-0-332 (T.C. ± 70 PPM/°C)
-C2, C10, C14, C16, C22, C26, C30, C34, C38.
 5. TEMP. COEFF. ± 100 PPM/°C. -R4, R6, R7, R20, R21, R22, R36, R38, R39, R52, R54, R55, R69, R71, R72, R83, R85, R87, R99, R101, R102, R114, R116, R117, R131, R132, R134, R118, 4W $\pm 1\%$.
 6. DELAY ADJUSTABLE FROM ~ 30 SEC TO ~ 225 SEC.

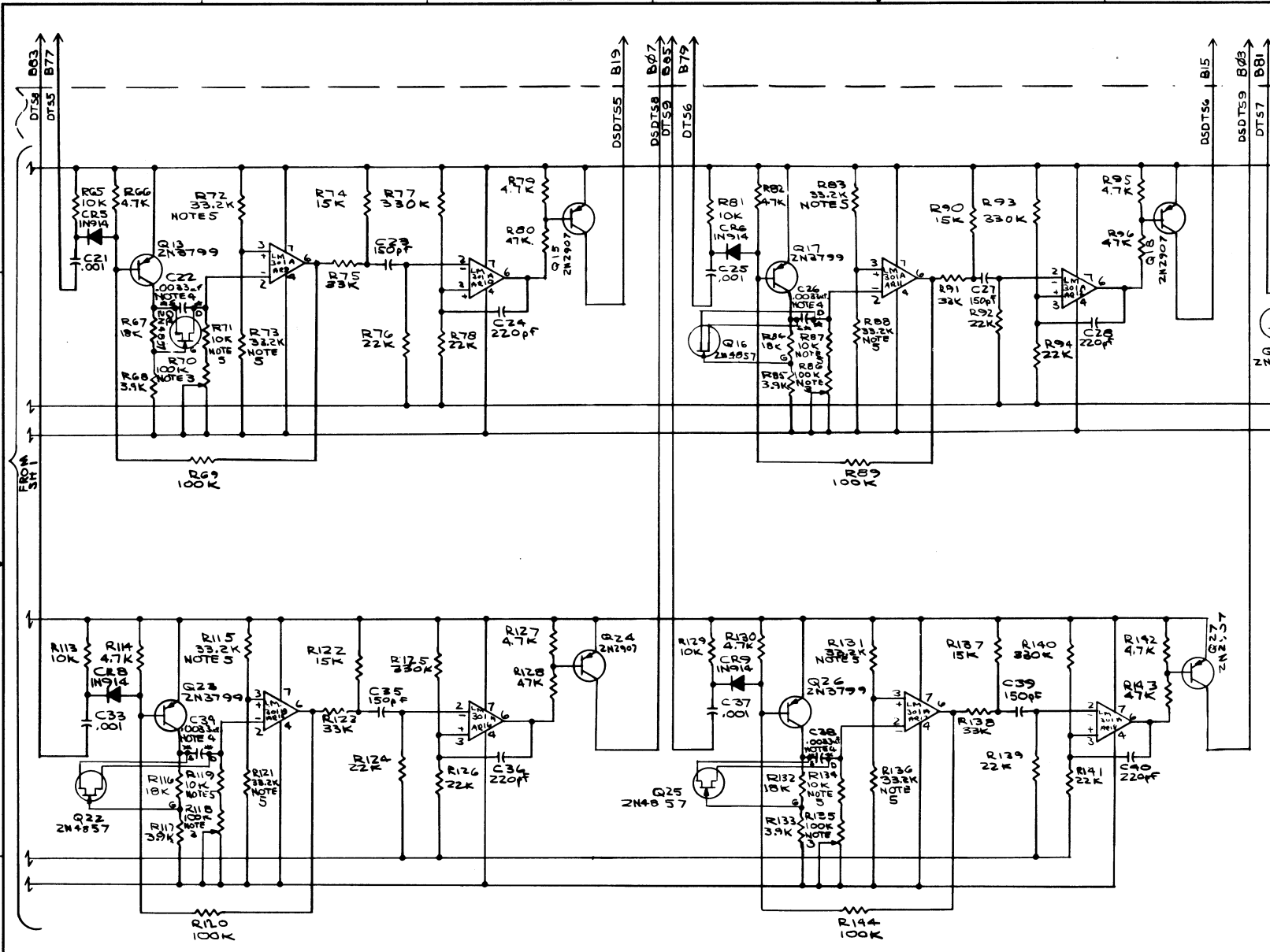
7, D'S ARE INTERCHANGEABLE

COMPUTER SYSTEMS CORPORATION
ROUTE 62
BOSTON, MASSACHUSETTS 01708

**SCHEMATIC
PRINTED WIRING BOARD
DESKEW CIRCUIT**

140506-001A

REV.	DATE	REVISION
000051	A	1-18-70 REVISED PER ECN NO. 779



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

COMPUTER SYSTEMS CORPORATION
ROUTE 62
BEDFORD, MASSACHUSETTS 01730

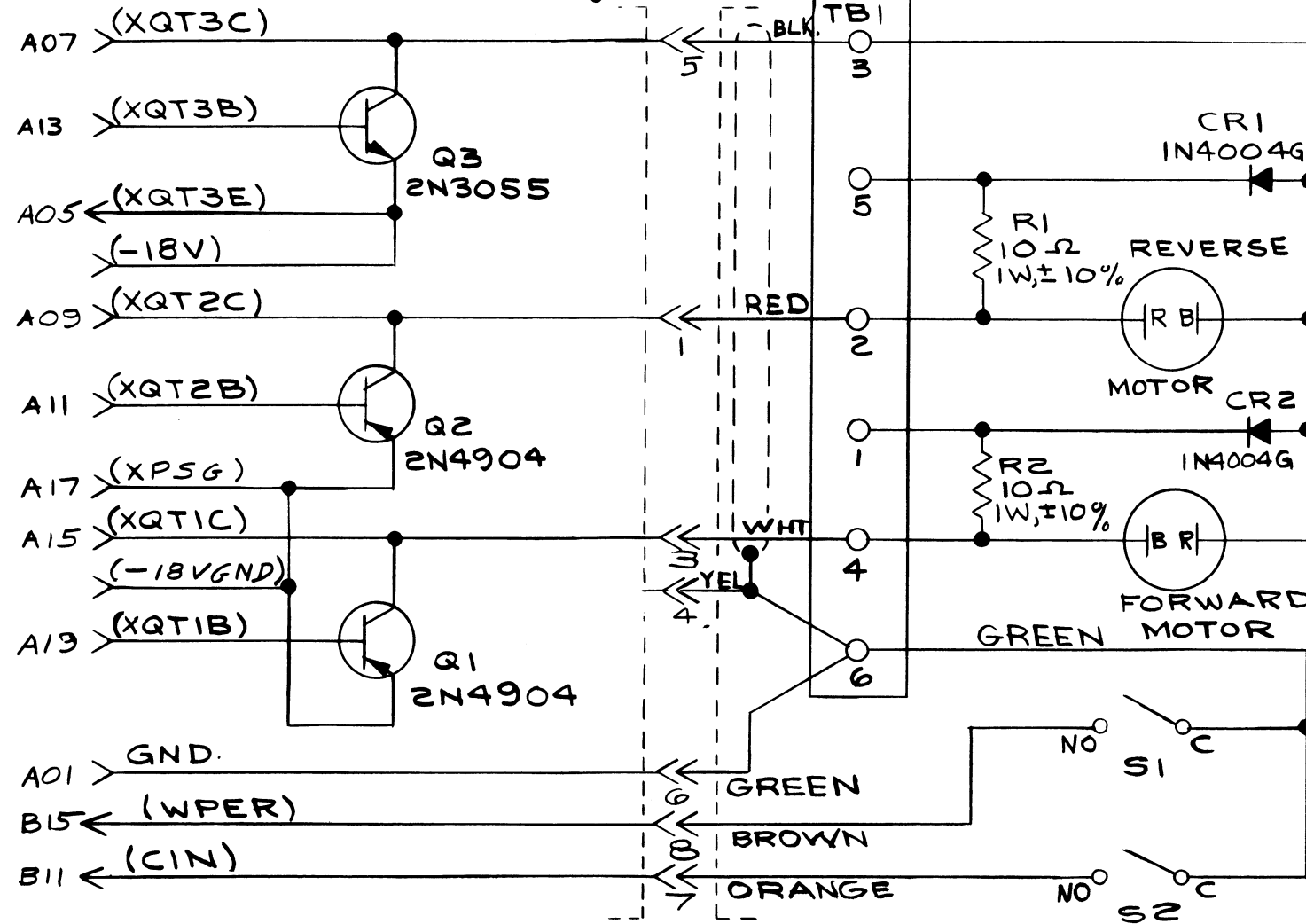
**SCHEMATIC
PRINTED WIRING BOARD
DESKEW CIRCUIT**

DATE: 1-18-70
DRAWN BY: [unintelligible]
CHECKED BY: [unintelligible]
PART NO: 140506-001A

FROM
J10,12

J31,
J32

P31,
P32



NOTE:
J31 + J12 REFER TO CHANNEL 1
J32 + J10 REFER TO CHANNEL 2

SYM	DATE	REVISION	DR.	CK



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

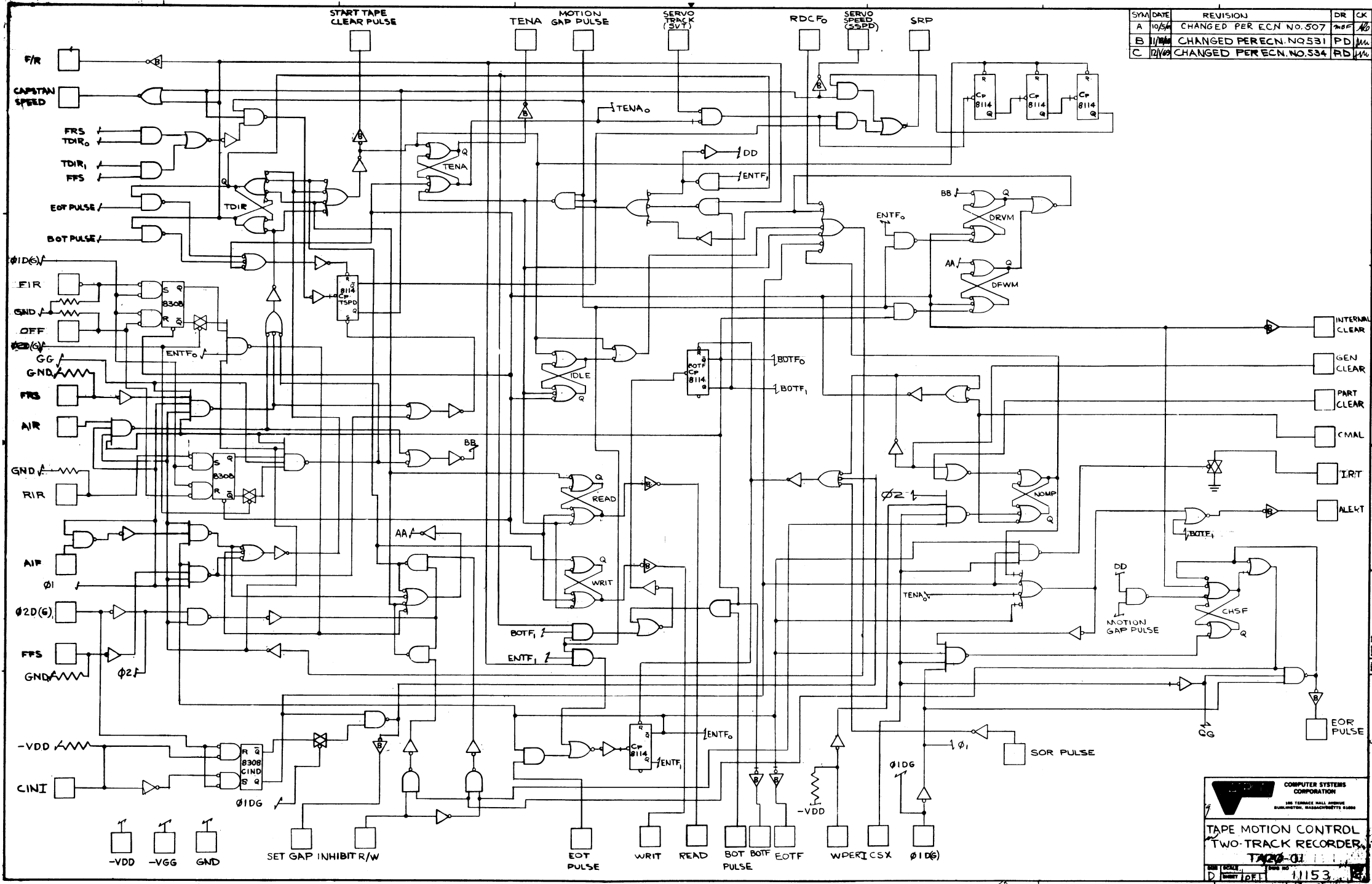
VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013


VIATRON COMPUTER SYSTEMS CORPORATION
105 TERRACE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

**SCHEMATIC
MOTOR DRIVER
CIRCUIT**

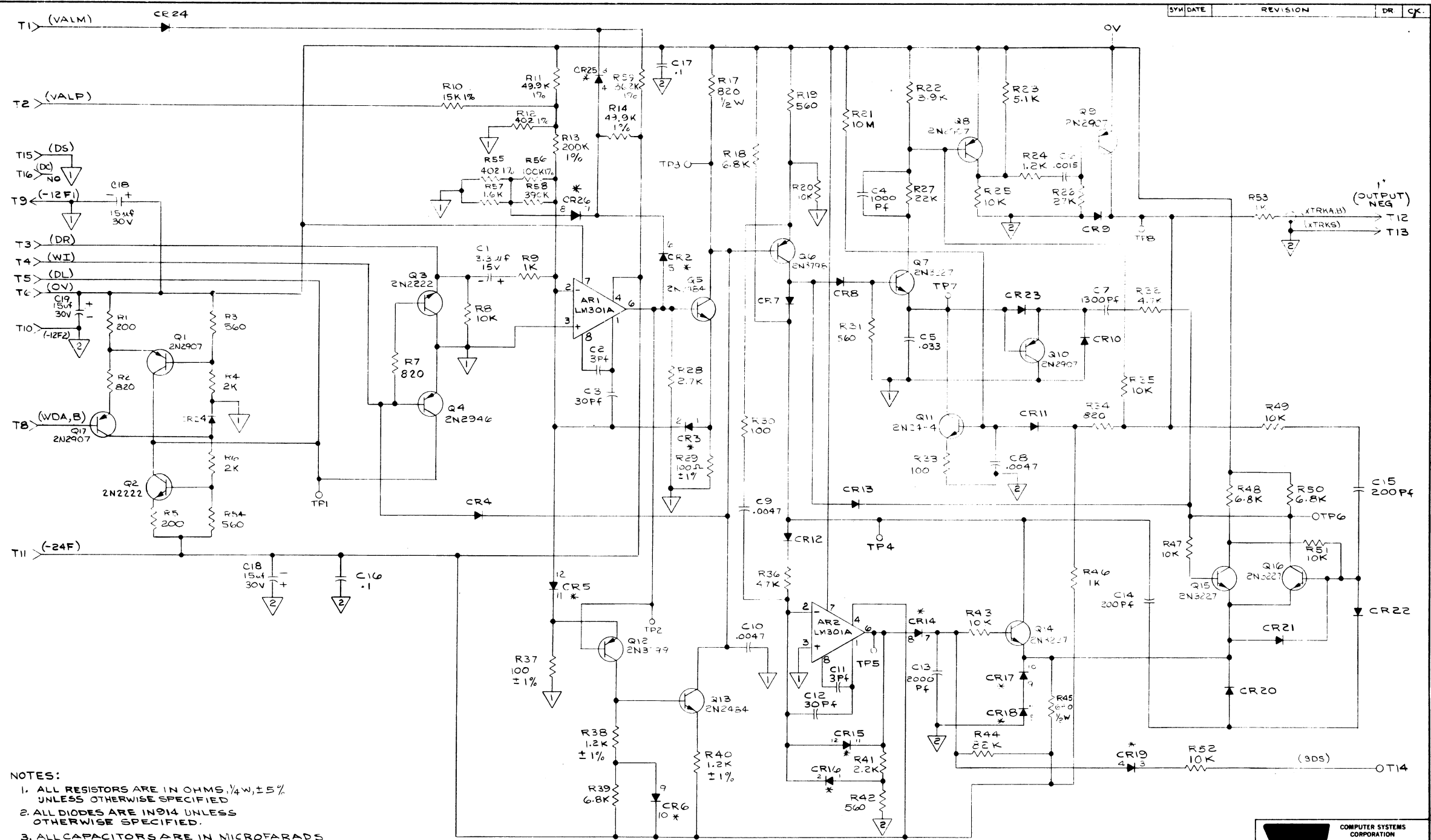
SIZE	SCALE	DWG NO	E-F-V
B	SHEET 1 OF 1	140505-00	-

SYM	DATE	REVISION	DR	CK
A	10/5/64	CHANGED PER ECN NO. 507	MBF	AB
B	11/1/64	CHANGED PER ECN NO. 531	PD	MLL
C	12/1/64	CHANGED PER ECN NO. 534	RD	MLL




COMPUTER SYSTEMS CORPORATION
 100 VERMONT AVENUE
 BURLINGTON, MASSACHUSETTS 01803

TAPE MOTION CONTROL TWO-TRACK RECORDER
TAP-01
 PART NO. 11153

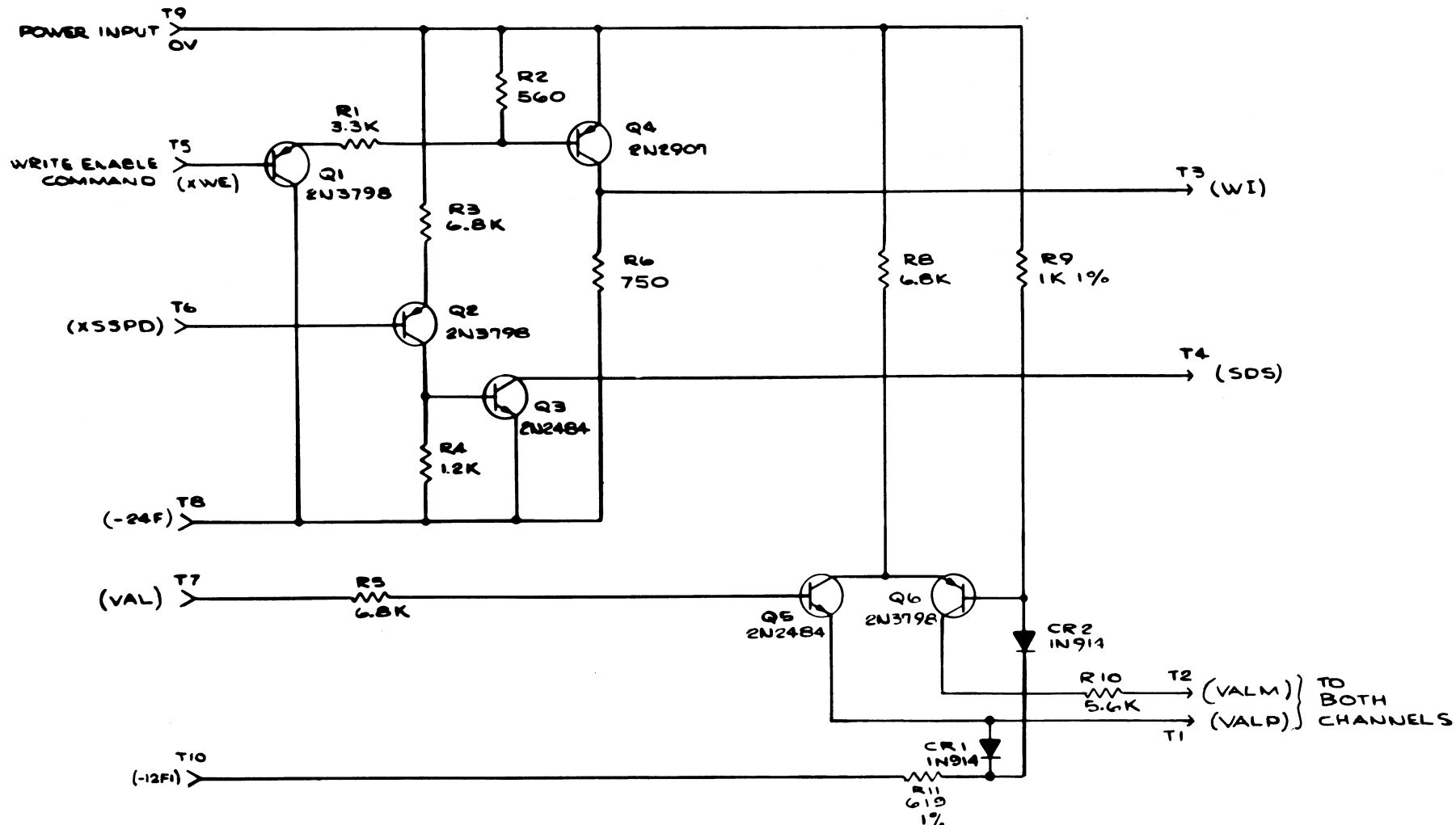


- NOTES:
1. ALL RESISTORS ARE IN OHMS, 1/4W, ±5% UNLESS OTHERWISE SPECIFIED
 2. ALL DIODES ARE IN914 UNLESS OTHERWISE SPECIFIED.
 3. ALL CAPACITORS ARE IN MICROFARADS UNLESS OTHERWISE SPECIFIED.
 4. * INDICATES PART OF RCA 3039

COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

**SCHMATIC
 TAPE READ/WRITE
 CIRCUIT**

SIZE	SCALE	DWG NO	REV
D	SHEET	10897	H



NOTES:
 1. UNLESS OTHERWISE SPECIFIED
 ALL RESISTORS ARE IN OHMS $\frac{1}{4}W, \pm 5\%$



INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

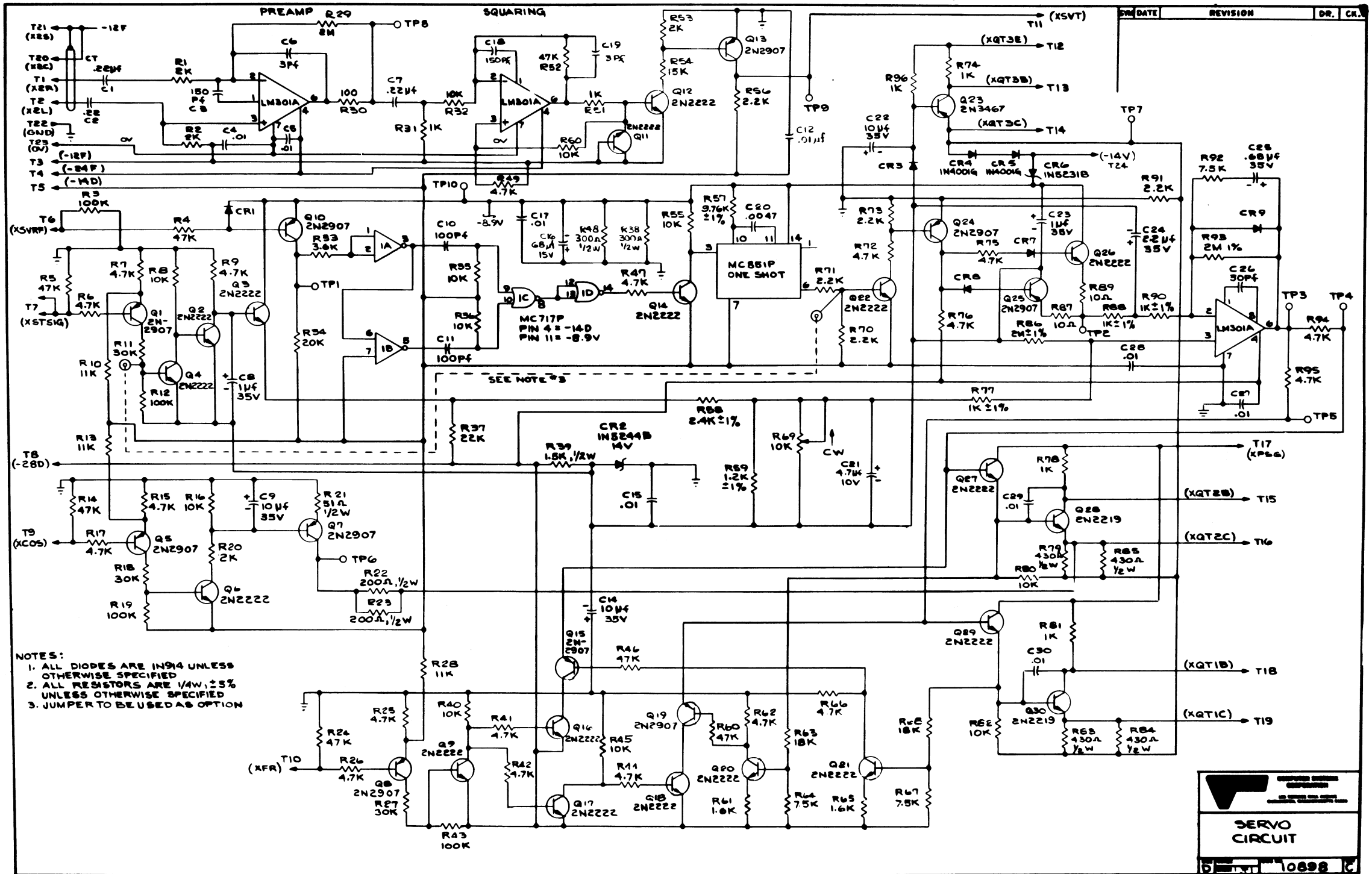
VERADA 214 DIV. LOLAR

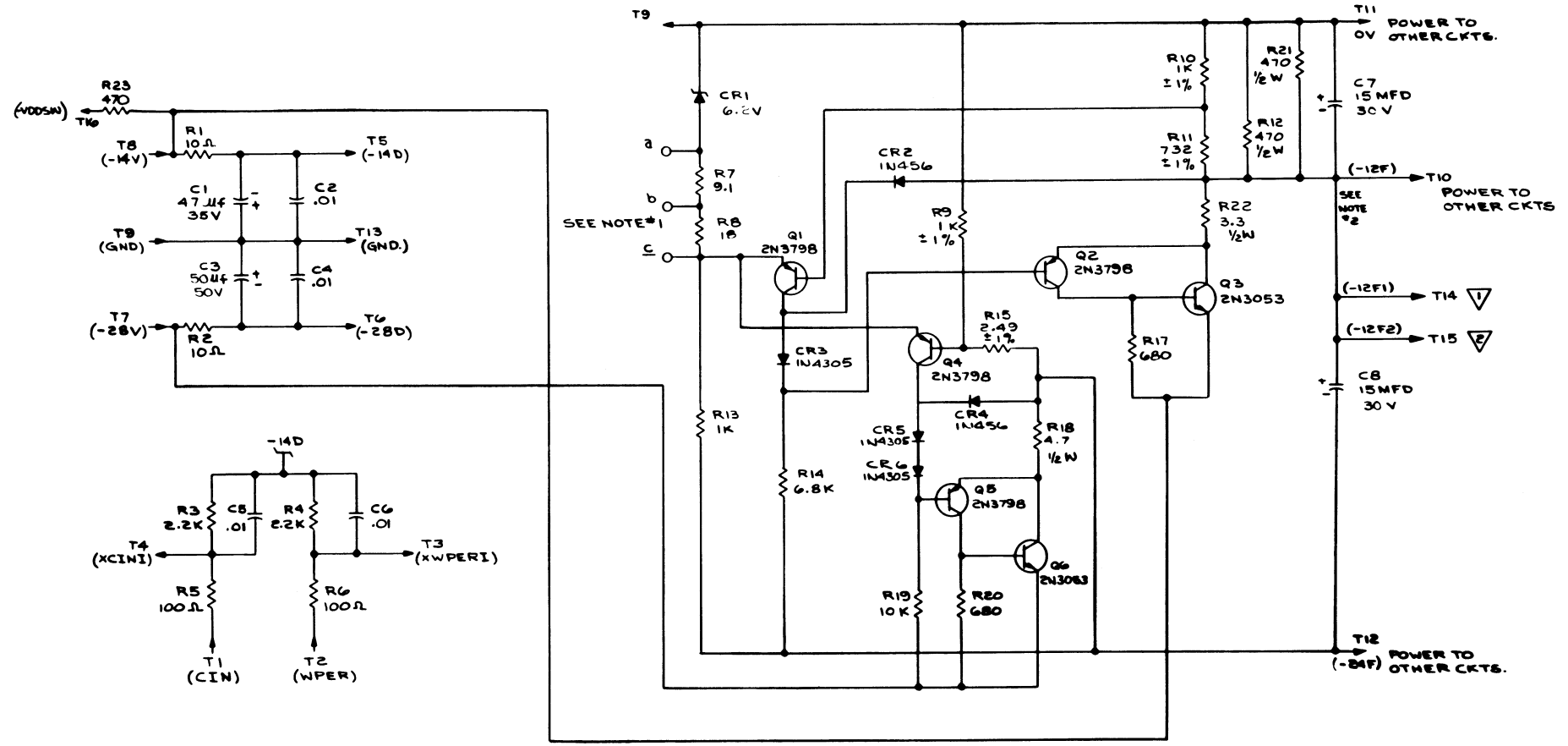
MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-8013

COMPUTER SYSTEMS CORPORATION
 100 TERRYVILLE HALL, AVERETT, MASSACHUSETTS 01901

COMMAND CIRCUIT

REV 11066





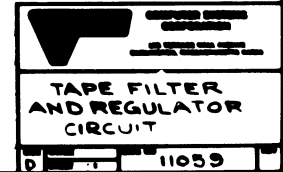
- NOTES:
1. TERMINALS 2, b, AND c ARE FOR FACTORY ADJUSTMENTS OF VOLTAGES.
 2. THE JUNCTION OF C7, AND C8 WITH THE -12V SHOULD BE MADE AS SHOWN BY ∇
 3. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE IN OHMS, 1/2W, 2%,
 4. UNLESS OTHERWISE SPECIFIED ALL CAPACITORS ARE IN MICROFARADS



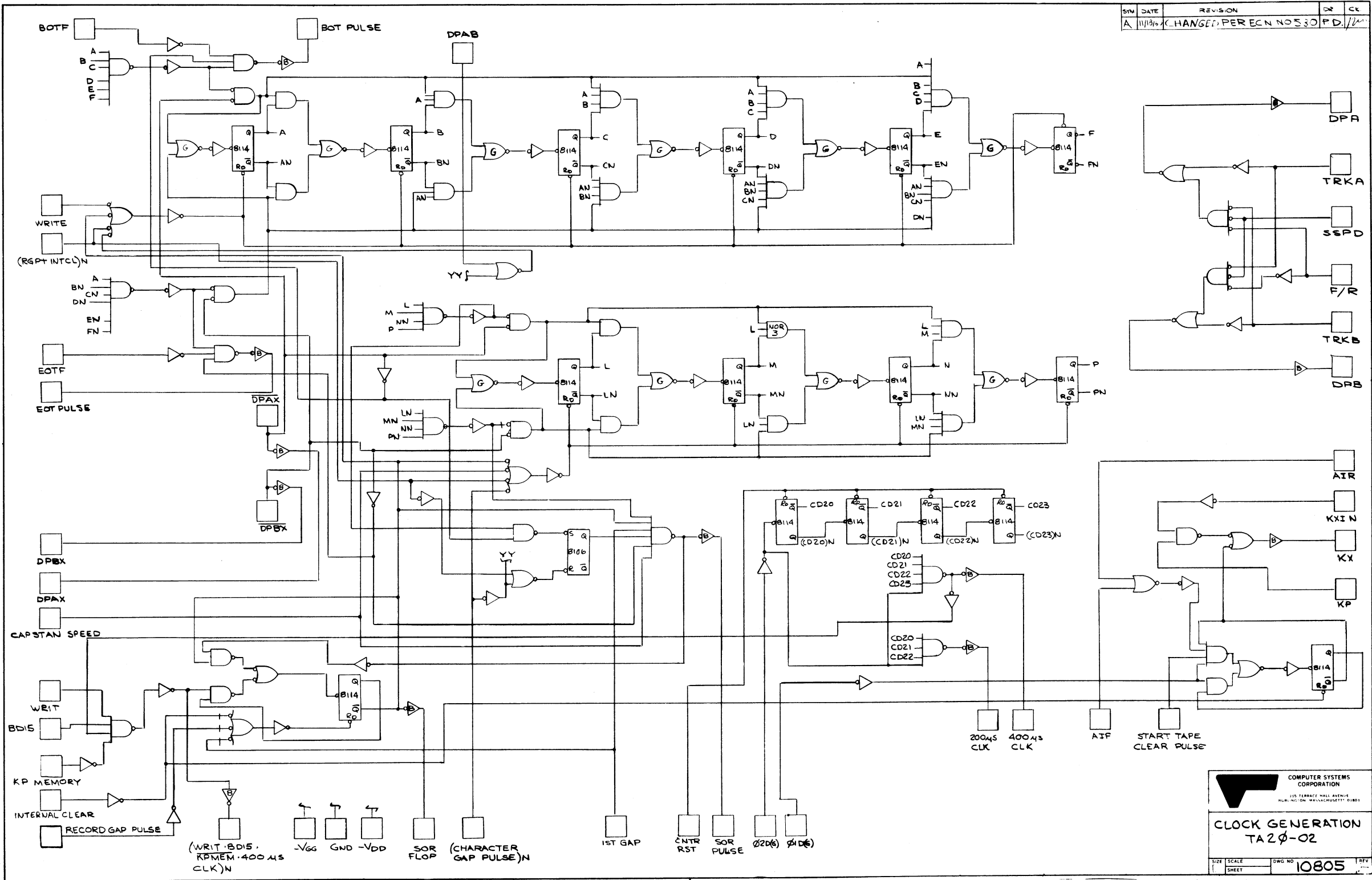
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013



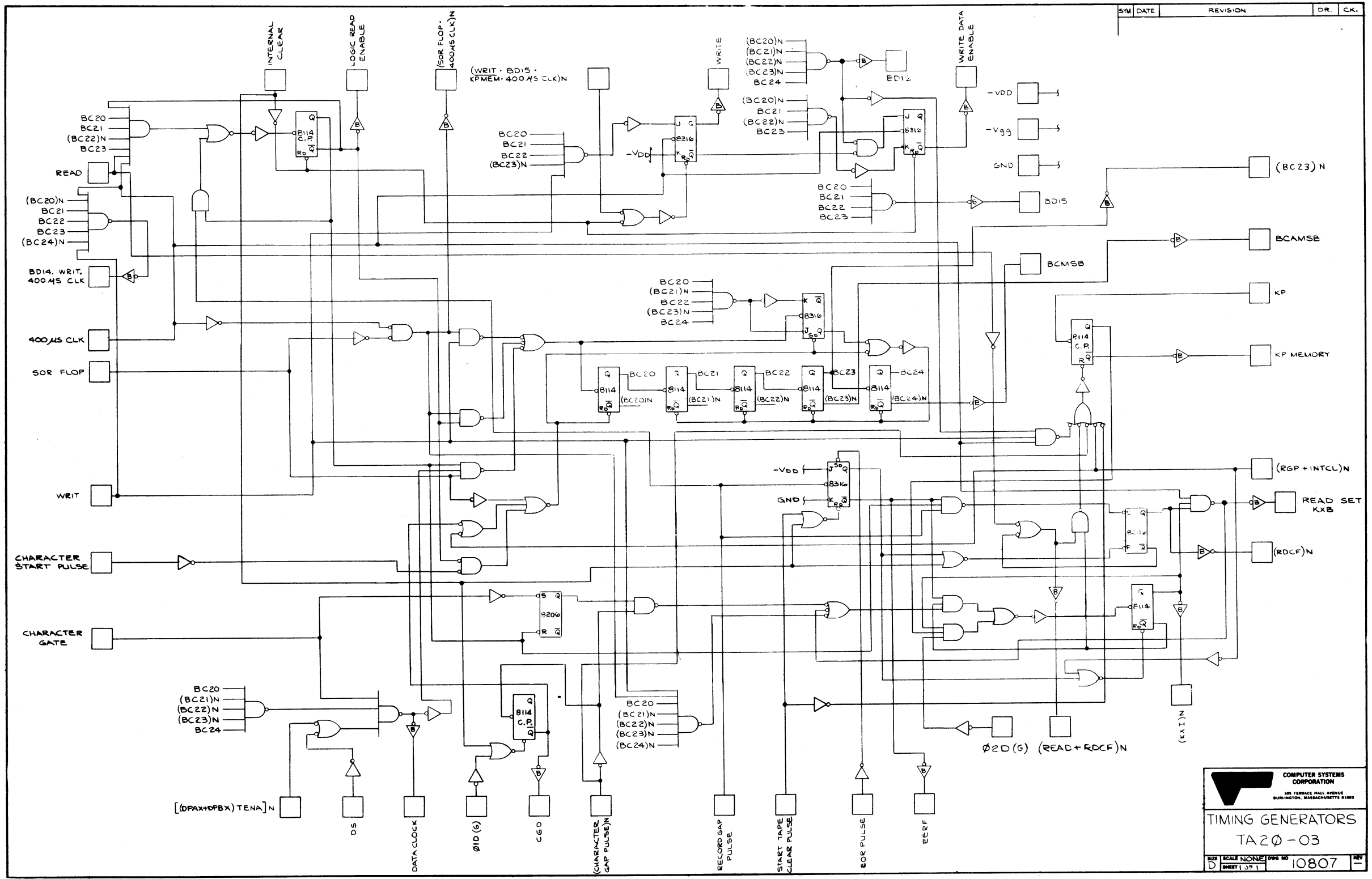
SYM	DATE	REVISION	DR	CK
A	11/19/64	CHANGED PER ECN NO 530	PD	W




COMPUTER SYSTEMS CORPORATION
 105 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

CLOCK GENERATION
 TA 20-02

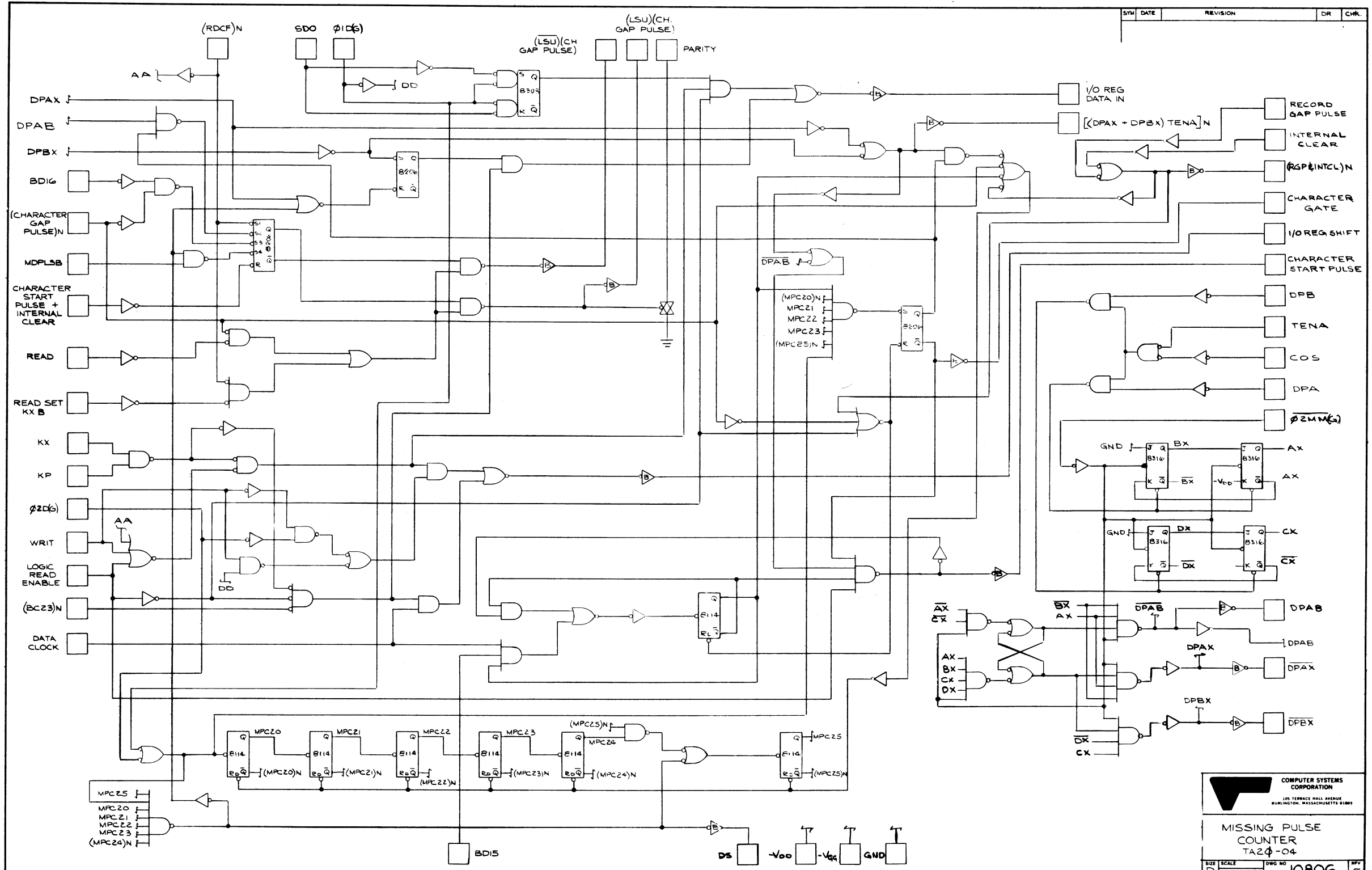
SIZE	SCALE	DWG NO	REV
		10805	




COMPUTER SYSTEMS CORPORATION
 105 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

TIMING GENERATORS
 TA2Ø-03

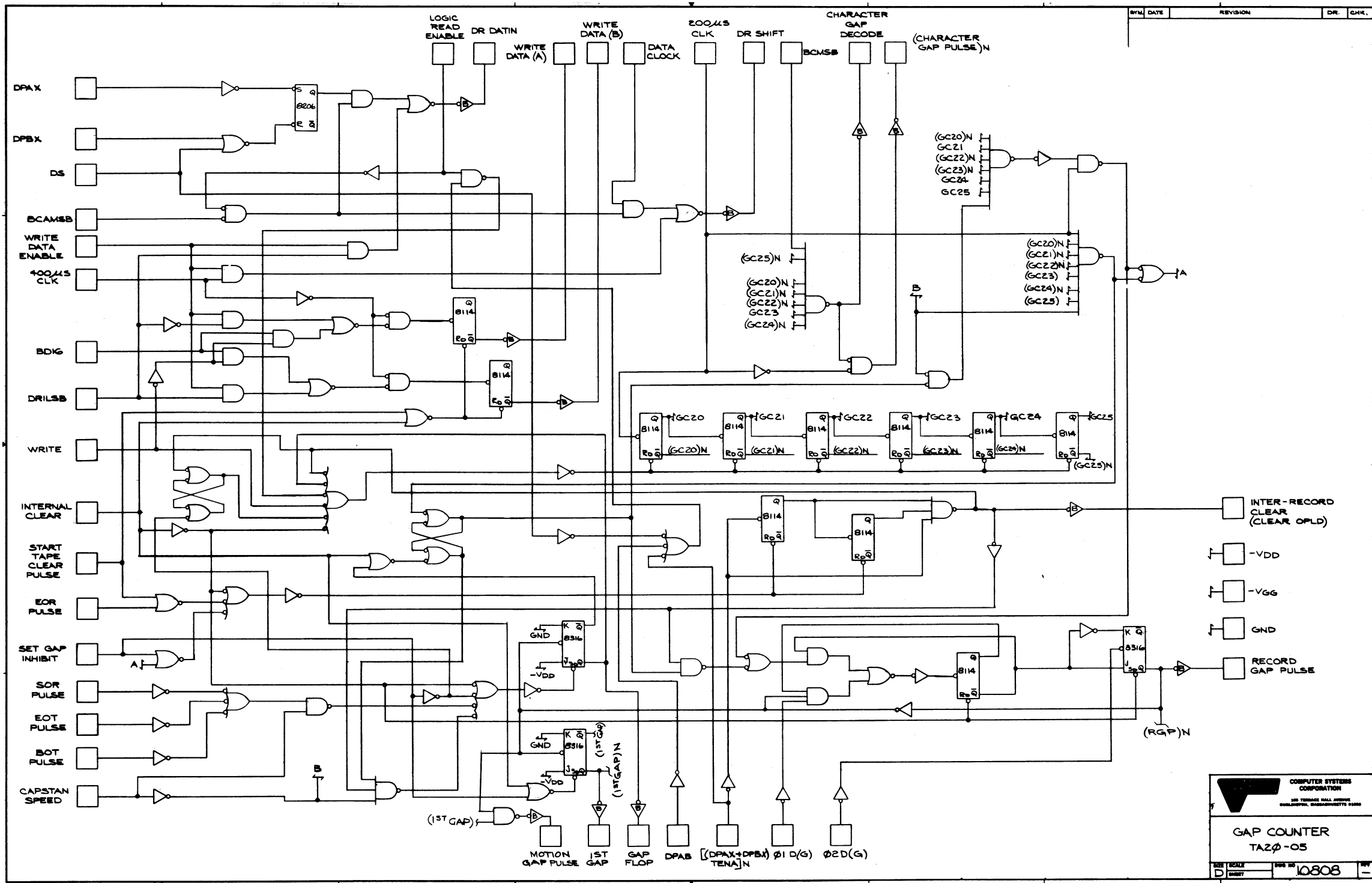
SIZE SCALE NONE DWG NO 10807
 SHEET 1 OF 1




COMPUTER SYSTEMS CORPORATION
 105 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

MISSING PULSE COUNTER
 TA2φ-04

SIZE	SCALE	DWG NO	REV
D		10806	-

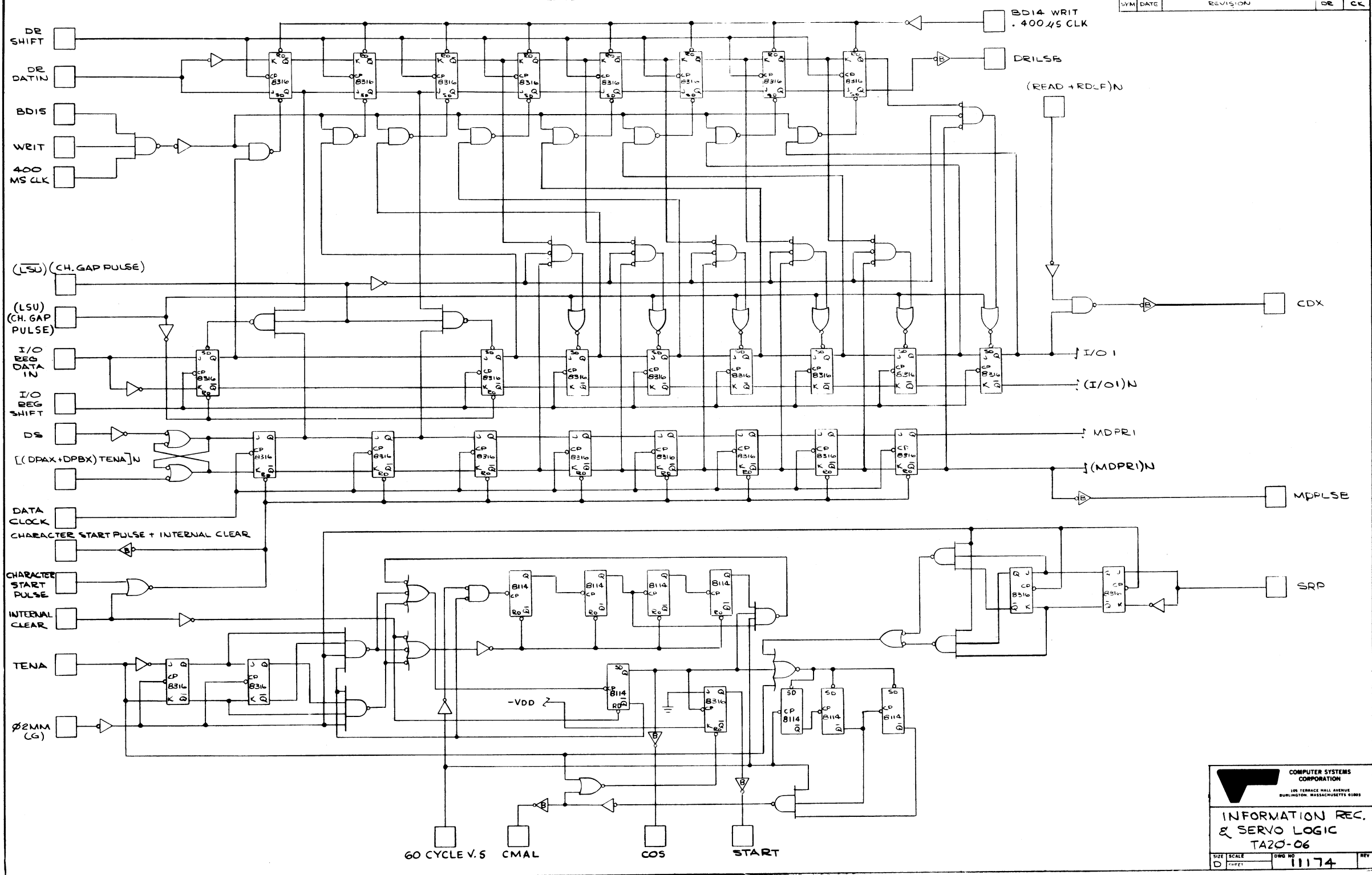


SYM. DATE	REVISION	DR.	CHK.
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COMPUTER SYSTEMS CORPORATION
100 TOWN SQUARE DRIVE
 BURLINGTON, MASSACHUSETTS 01803

GAP COUNTER
TAZ0-05

REV. NO.	REV. DATE	REV. BY
D	10808	



SYM	DATE	REVISION	DR	CC
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COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

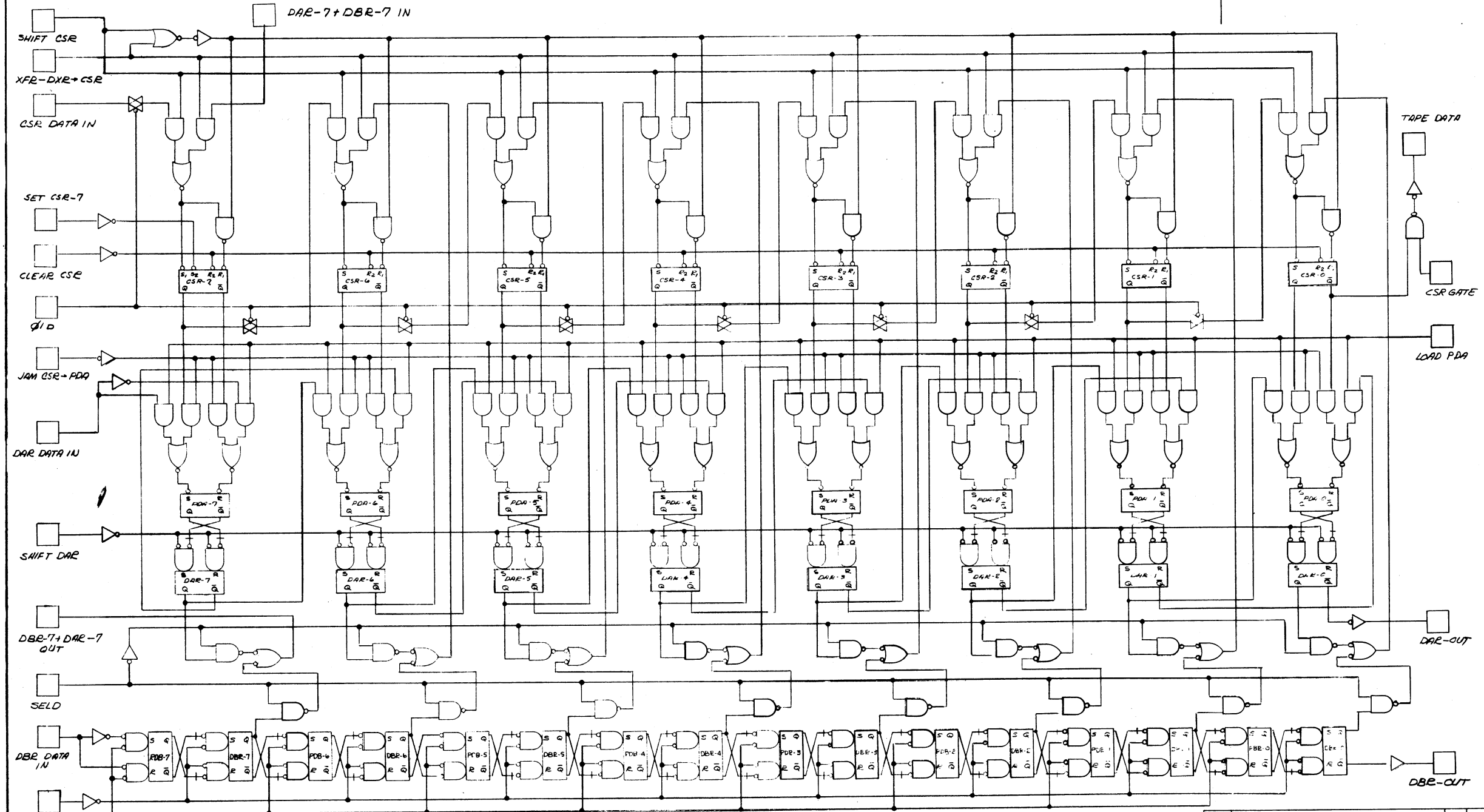
INFORMATION REC. & SERVO LOGIC
 TA20-06

SIZE	SCALE	DWG NO	REV
D	1:1	11174	

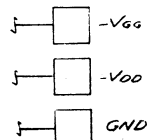
THE FOLLOWING 4 PAGES (VT-31, 32, 33, AND 34) HAVE BEEN RELOCATED TO THE COMM ADAPTER SECTION (X).

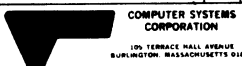
PRINT NO. 11174 R

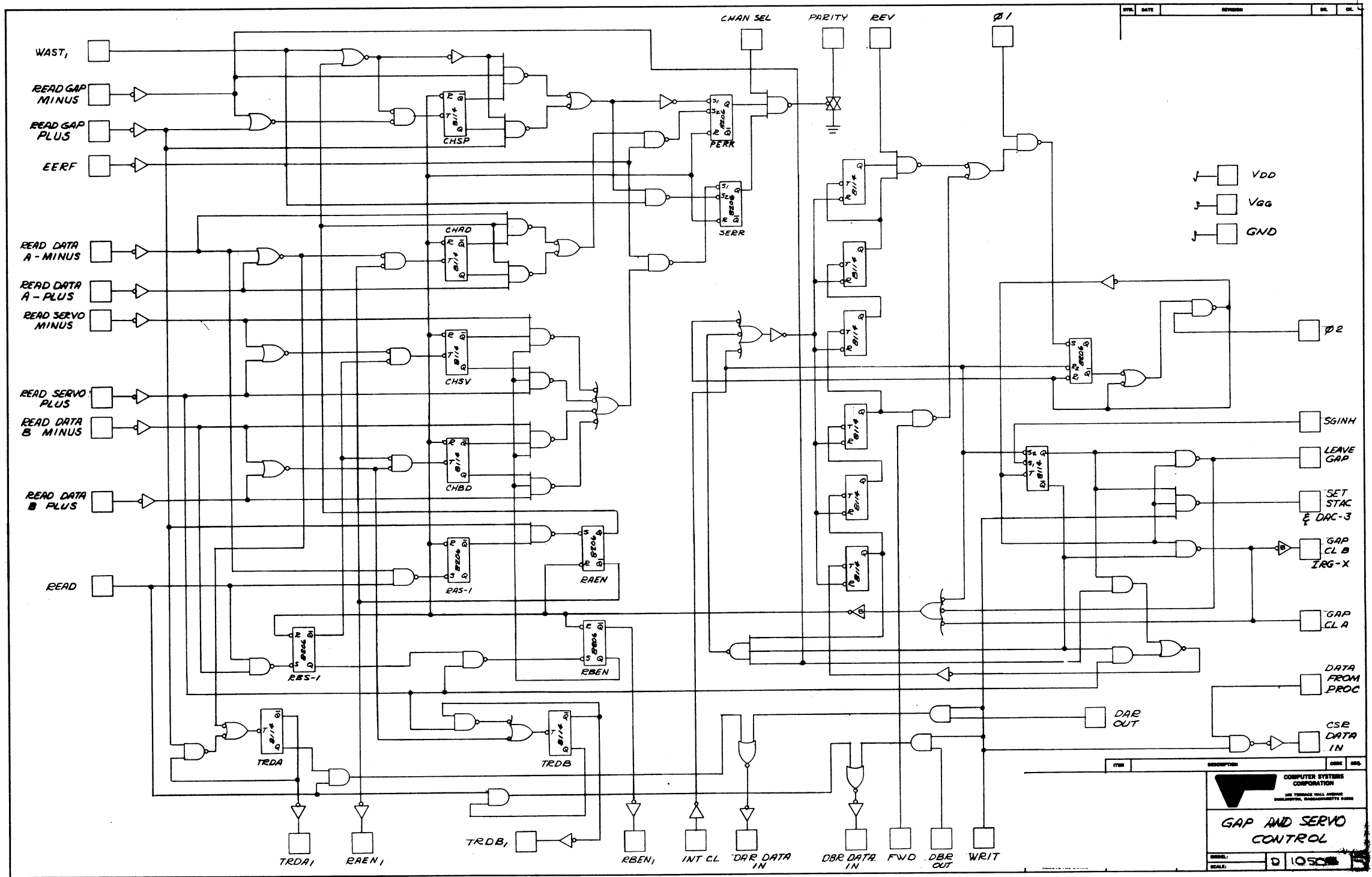
VT - 3

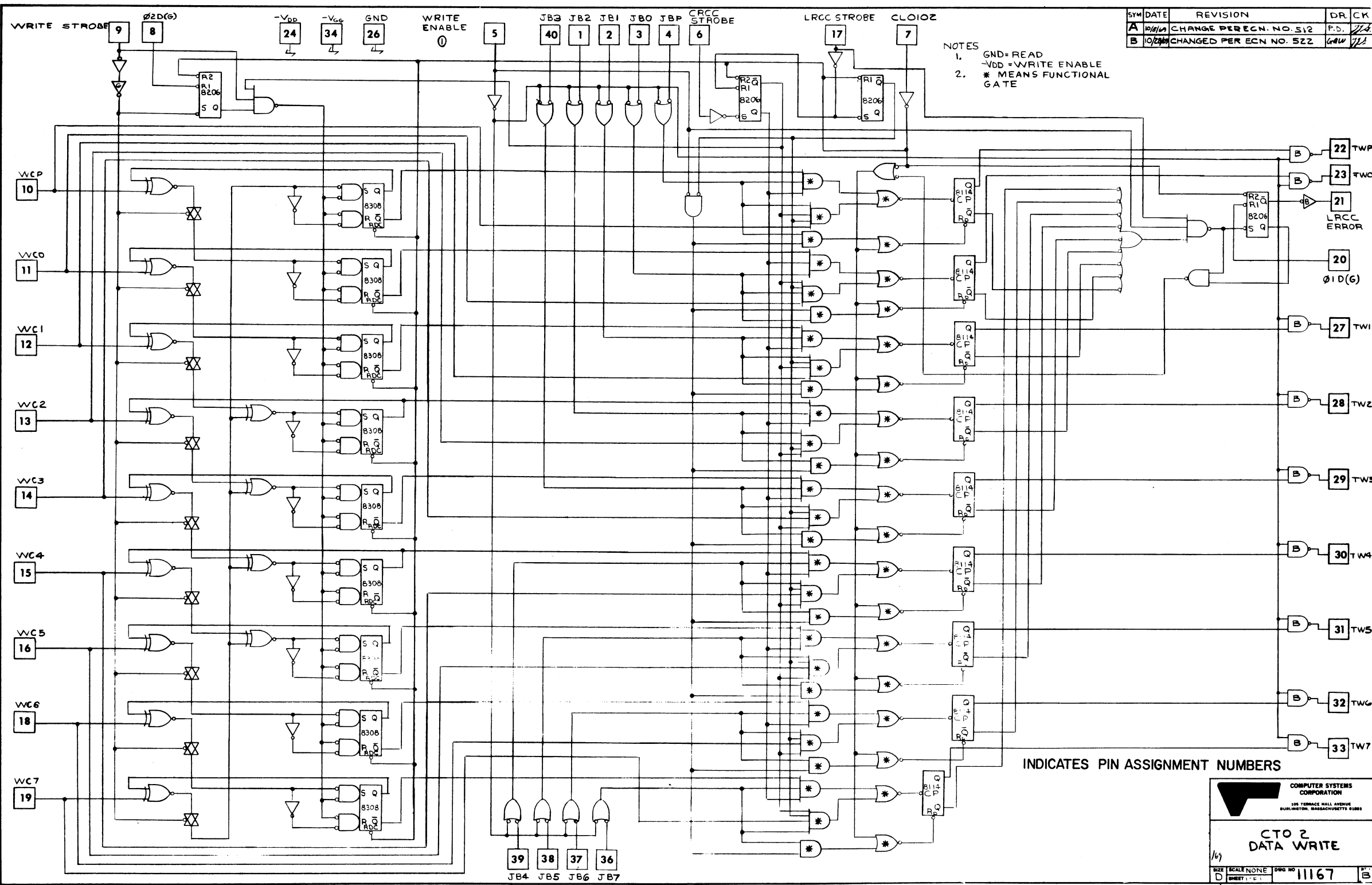


JAM IN PDB LOAD PDB



ITEM	DESCRIPTION	QTY	LOC	REQ.
 COMPUTER SYSTEMS CORPORATION <small>101 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</small>				
TAPE DATA REGISTER				
FORM:	D 10504			
REVISION:				





SYM	DATE	REVISION	DR	CK
A	10/11/69	CHANGE PER ECN NO. 512	P.D.	
B	10/22/69	CHANGED PER ECN NO. 522	GAW	JLJ

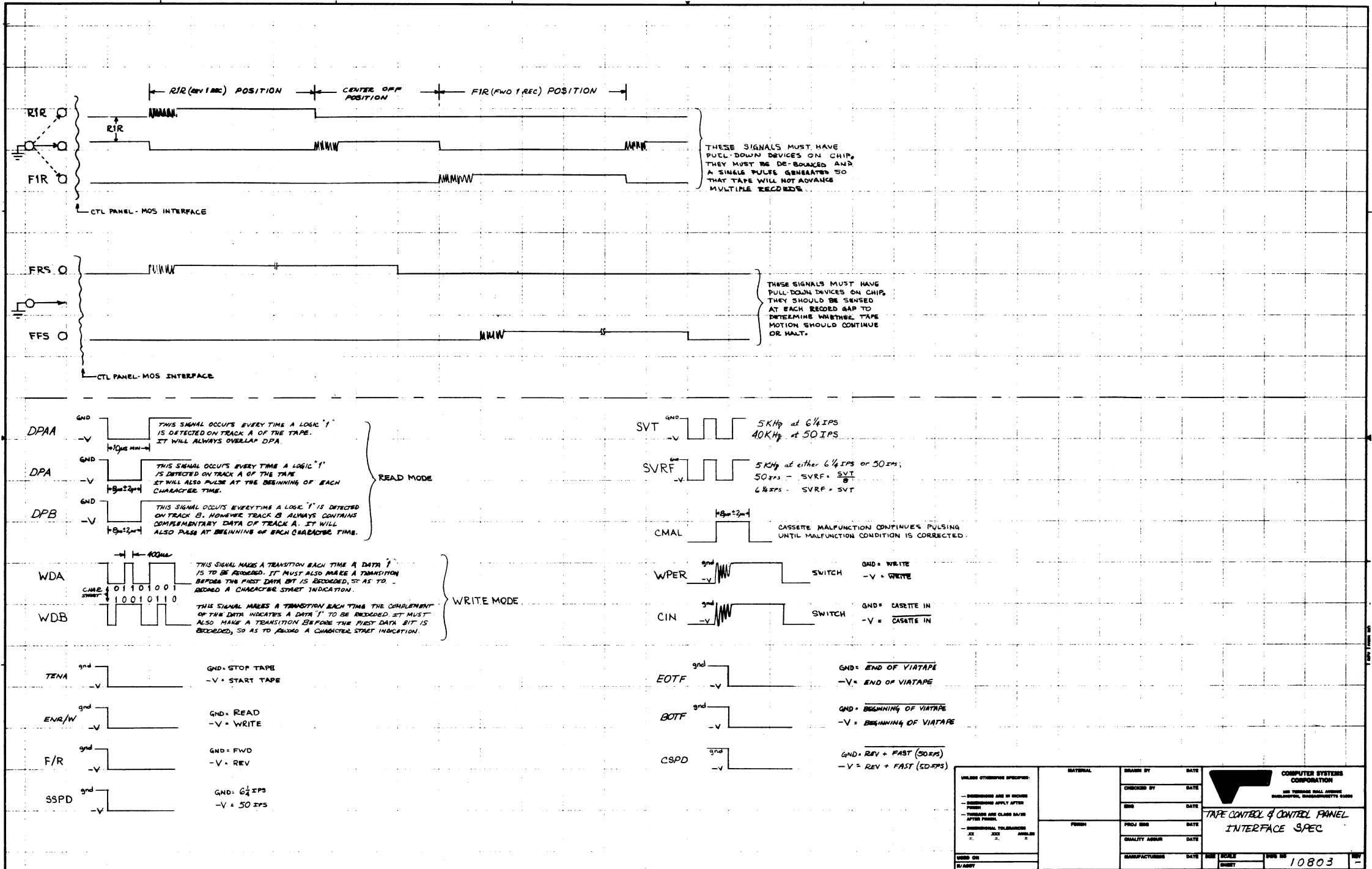
NOTES
 1. GND=READ
 -VDD =WRITE ENABLE
 * MEANS FUNCTIONAL GATE

INDICATES PIN ASSIGNMENT NUMBERS

COMPUTER SYSTEMS CORPORATION
 100 TORRANCE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

**CTO 2
 DATA WRITE**

SIZE D SCALE NONE DWG NO 11167



UNLESS OTHERWISE SPECIFIED:
 - DIMENSIONS ARE IN INCHES
 - DIMENSIONS APPLY AFTER FINISH
 - TOLERANCES ARE CLASS B/MS AFTER FINISH
 - DIMENSIONAL TOLERANCES:
 .125 .150 .1875 .250 .3125 .375 .4375 .500 .625 .750 .875 1.000 1.250 1.500 1.750 2.000 2.500 3.000 3.500 4.000 5.000 6.000 7.000 8.000 10.000 12.000 15.000 20.000 25.000 30.000 35.000 40.000 50.000 60.000 70.000 80.000 100.000 125.000 150.000 200.000 250.000 300.000 400.000 500.000 600.000 800.000 1000.000

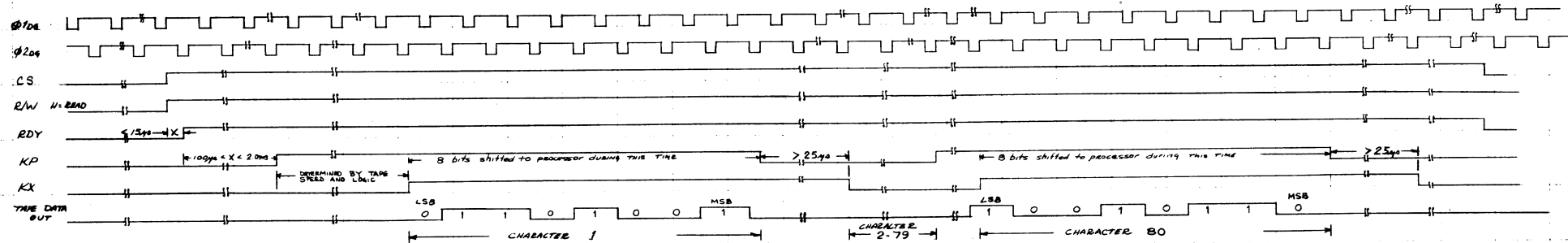
DATE	DRAWN BY	DATE
	CHECKED BY	DATE
DATE	ENG	DATE
	PROJ ENG	DATE
DATE	QUALITY ASSUR	DATE
	MANUFACTURING	DATE

COMPUTER SYSTEMS CORPORATION
 300 YONGE ST. 11TH FLOOR
 TORONTO, ONTARIO M5E 1B5

TAPE CONTROL & CONTROL PANEL INTERFACE SPEC

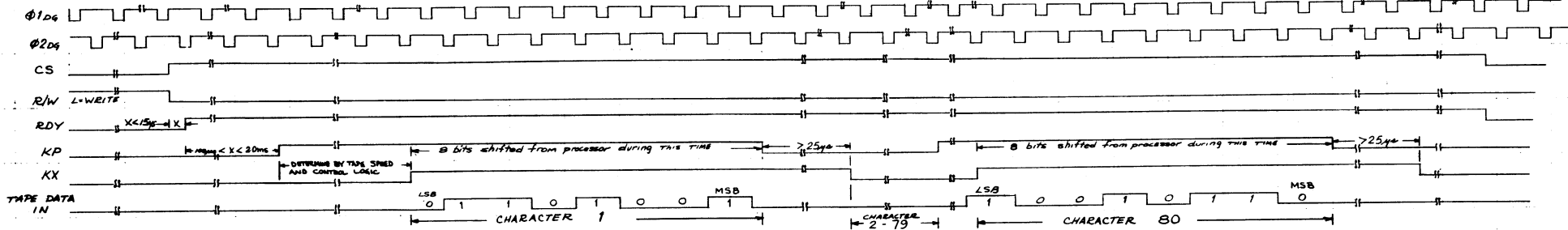
REV 10803

READ MODE

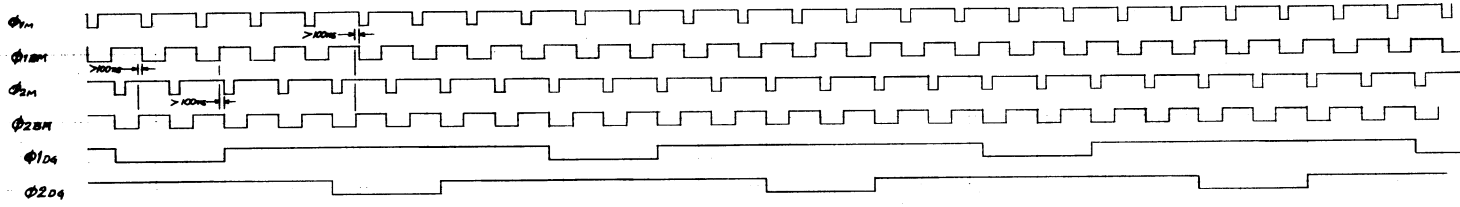


1 block = 3.2 μs

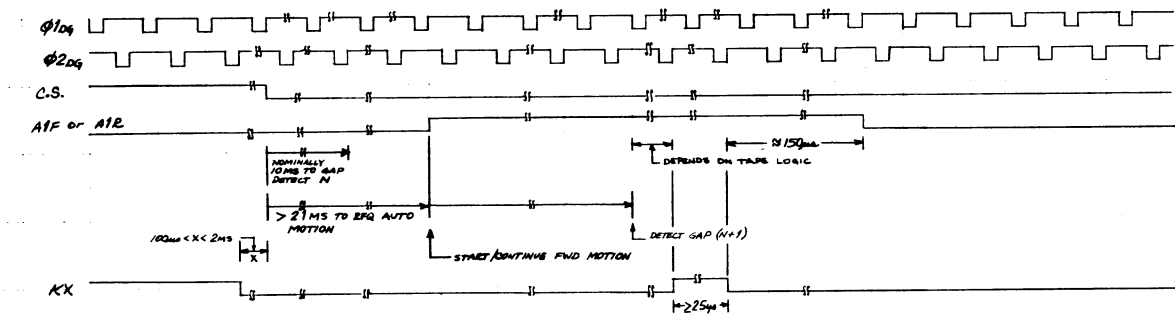
WRITE MODE



1 block = 3.2 μs



1 block = 400 ns



TIMING PERTAINS TO A1F (AUTO FWD 1 REC) OR A1R (AUTO REV 1 REC)

COMPUTER SYSTEMS CORPORATION
 180 TOWNSEND HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

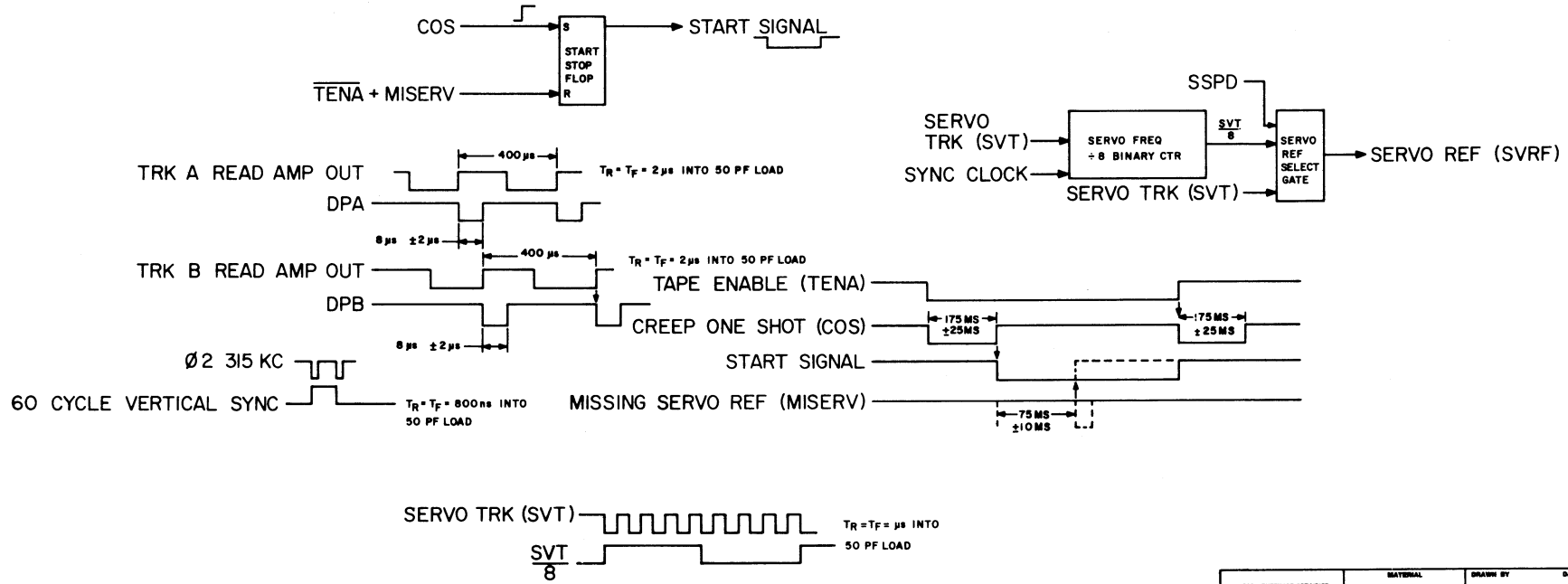
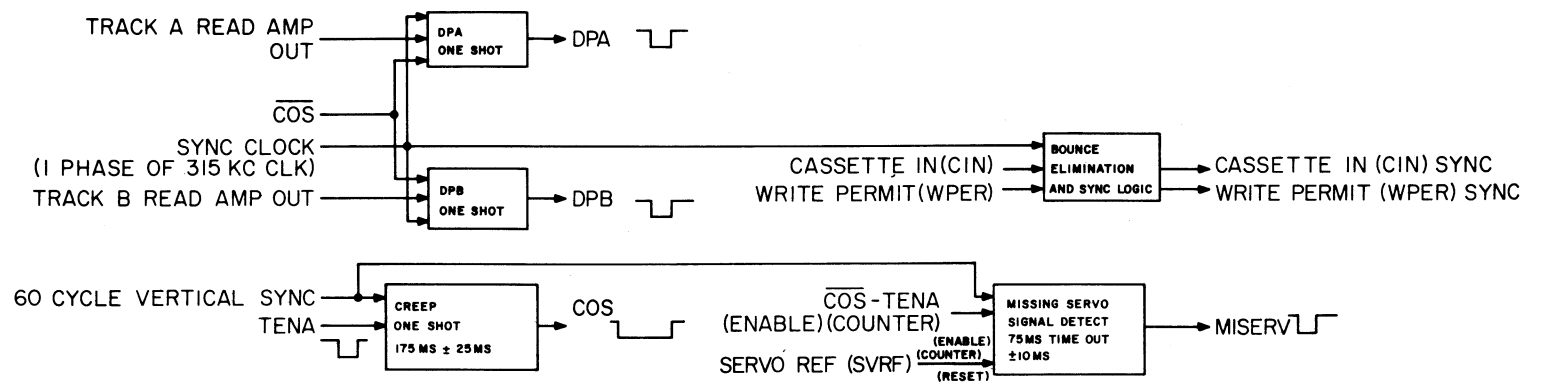
TAPE MICROPROCESSOR INTERFACE SPEC

DATE: _____ DRAW NO: 10804 REV: _____



VERADA 214 DIV. LOLAR
 MAIL - P.O. Box 438, Lowell, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:
 INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND



FOR FIELD ENGINEERING PURPOSES ONLY

UNLESS OTHERWISE SPECIFIED: - DIMENSIONS ARE IN INCHES - DIMENSIONS APPLY AFTER FINISH - TOLERANCES ARE CLASS SA/AS AFTER FINISH - DIMENSIONAL TOLERANCES .XX .XX .XX ANGLES .2 .2 .2	MATERIAL	DRAWN BY	DATE	COMPUTER SYSTEMS CORPORATION ROUTE 62 BEDFORD, MASSACHUSETTS 01730
		CHECKED BY	DATE	
		ENG	DATE	
		PROJ/ENG	DATE	
	FINISH	QUALITY ASSUR	DATE	TAPE CONTROL LOGIC
USED ON		MANUFACTURING	DATE	SIZE SCALE D INCHES
BY/APPV				REV NO SK 100

SYM	DATE	REVISION	D.R.	CK.
A	1-23-69	REVISED PER ECN 328	UHO	
B	12/20/79	REVISED PER ECN 463	MMJ	



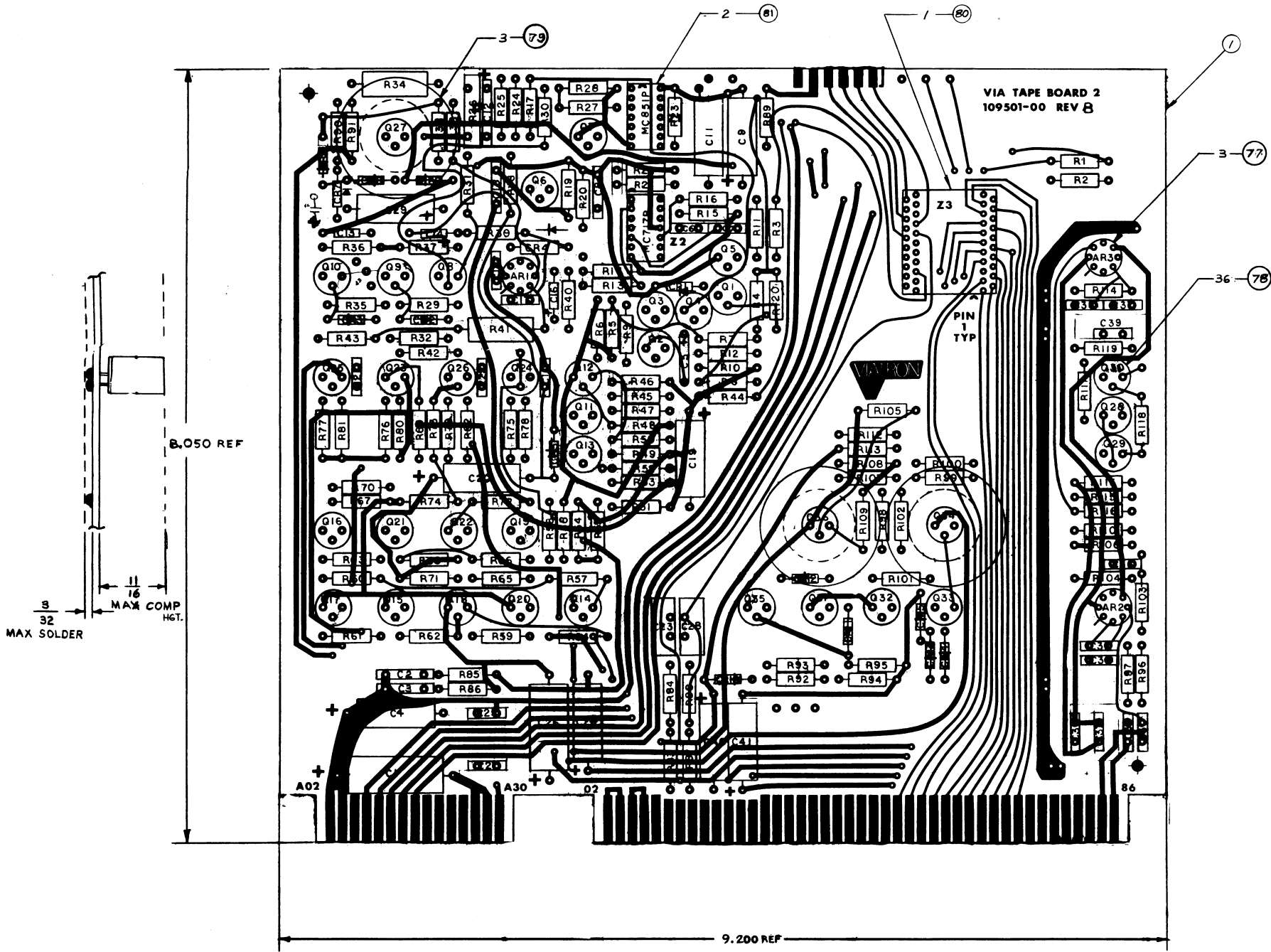
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
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PHONE (617) 452-5013

NOTES

- ITEM 77 TO BE INSTALLED UNDER TRANSISTORS
- ITEM 78 TO BE INSTALLED UNDER ITEM 5
- ITEM 79 TO BE INSTALLED ON Q27, Q34, Q36
- FLOW SOLDER BEFORE MOUNTING MOS DEVICES
- INSTALL ITEM 80 UNDER Z3
- INSTALL ITEM 81 UNDER Z1 & Z2



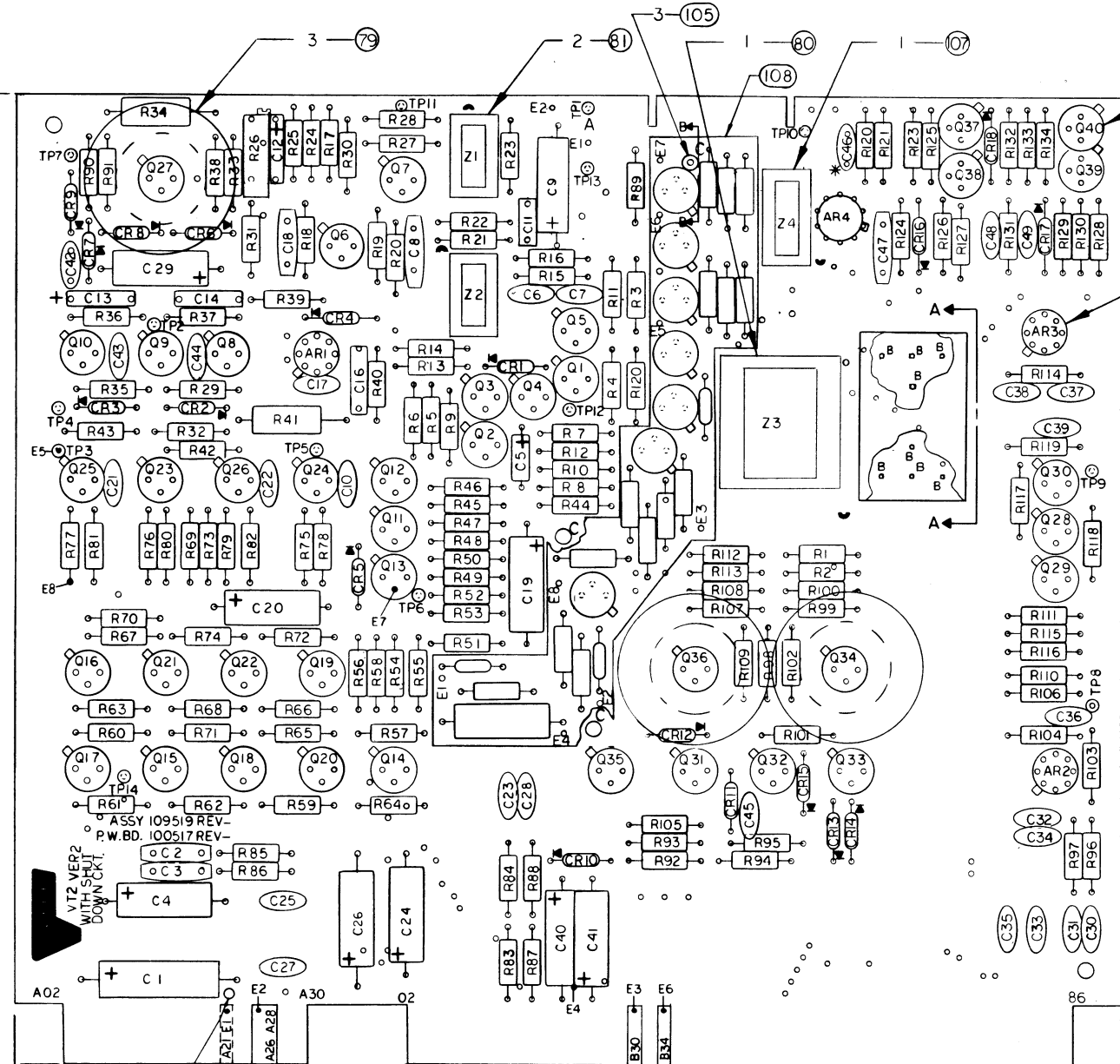
COMPUTER SYSTEMS CORPORATION
385 TERRACE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

PRINTED WIRING BOARD
VIA TAPE BOARD 2
ASSEMBLY DRAWING

SCALE: 1:1
109501-00

EFFECTIVITY		REV.	DATE	REVISION	BY	CHK.
SERIAL NO.	DISPOSITION OF PARTS	A	8-23-79	REVISED PER ECN NO. 845	EMM	JBL
ALL	IN PROCESS	B	2-2-79	REVISED PER ECN NO. 932	EMM	JBL

8.05 REF.



*50 (.070) DIA. HOLE FOR JUMPER E1 TO E1

9.02 REF.

40-78

1

3-77

103

8-104 SEE NOTE 8

MAX. COMP. HGT.

VIEW A-A SCALE: NONE

3/32 MAX. SOLDER HGT.

SECTION B-B SCALE: NONE

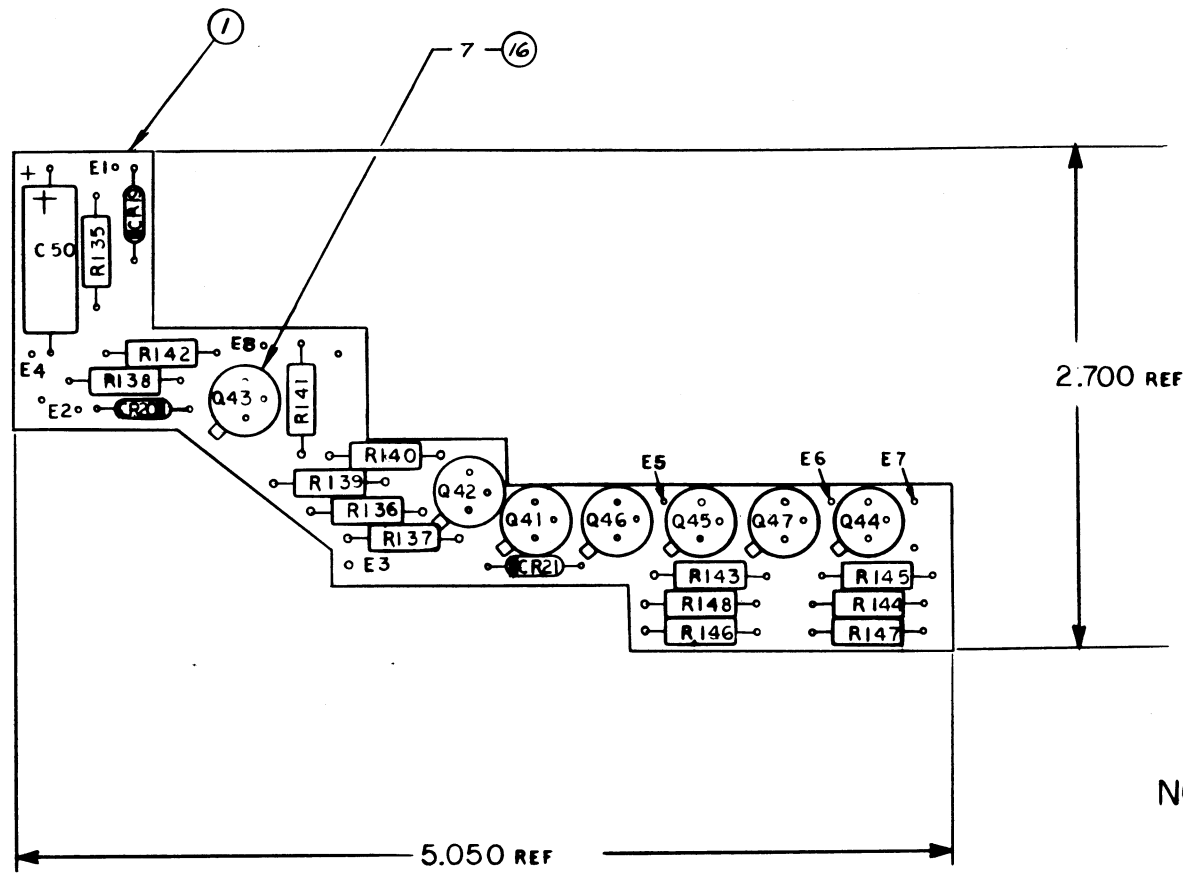
NOTES:

1. INSTALL ITEM(107) UNDER ITEM Z 4.
2. INSTALL ITEM(80) UNDER ITEM Z 3.
3. INSTALL ITEM(81) UNDER ITEM Z1, Z 2.
4. INSTALL ITEM(77) UNDER AR1, AR2, AR3.
5. INSTALL ITEM(78) UNDER TRANSISTORS
6. INSTALL MOS DEVICES AFTER FLOW SOLDERING
7. * DENOTES COMPONENT OPTIONAL.
8. INSTALL WITH SIDES OF SQUARE POST PARALLEL (TOL ± 5°) TO EDGE OF BOARD, AND CUTOFF POST ON SOLDER SIDE TO WITHIN .06 / .09 OF BOARD
9. INSTALL ITEM(105) 3 PLACES MARKED 'C'.
10. FOR SCHEMATIC SEE DWG. 140514.
11. USE ITEM(106) FOR JUMPERS, E1 TO E1 THRU E8 TO E8 E1 & E2 ON ITEM(108) WIRE TO E1 & E2 AT THE 'A' CONNECTOR.

COMPUTER SYSTEMS CORPORATION
ROUTE 62
BEDFORD, MASSACHUSETTS 01730

ASSEMBLY P.W. BD.
VIA TAPE BD.2 VER 2
WITH SHUT DOWN CKT.

REV. 109519-00



NOTES:


1. INSTALL ITEM 16 UNDER ALL TRANSISTORS
2. SEE DWG. NO. 140514 FOR SCHEMATIC.

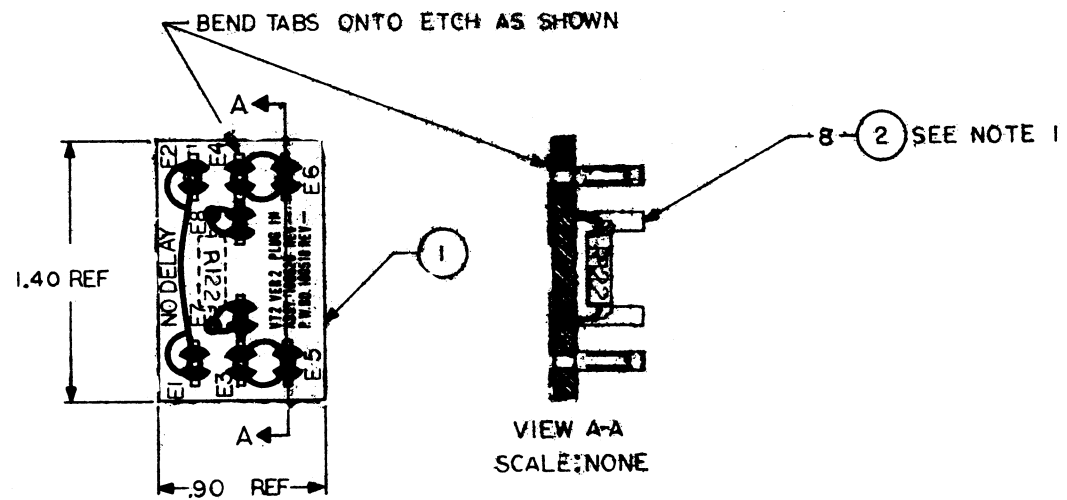


INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
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COMPLETE STOCK OF VIATRON
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 COMPUTER SYSTEMS CORPORATION ROUTE 62 BEDFORD, MASSACHUSETTS 01730	
ASSEMBLY P.W. BD. MAG TAPE SHUTDOWN/ START CIRCUIT	
DRAWN BY: 2/1 CHECKED BY: 1/2/1	PART NO: 109523



NOTES

1. INSTALL ITEM 2 WITH SIDES OF SQUARE RECEPTACLE PARALLEL (TOL. $\pm 5^\circ$) TO EDGE OF BOARD

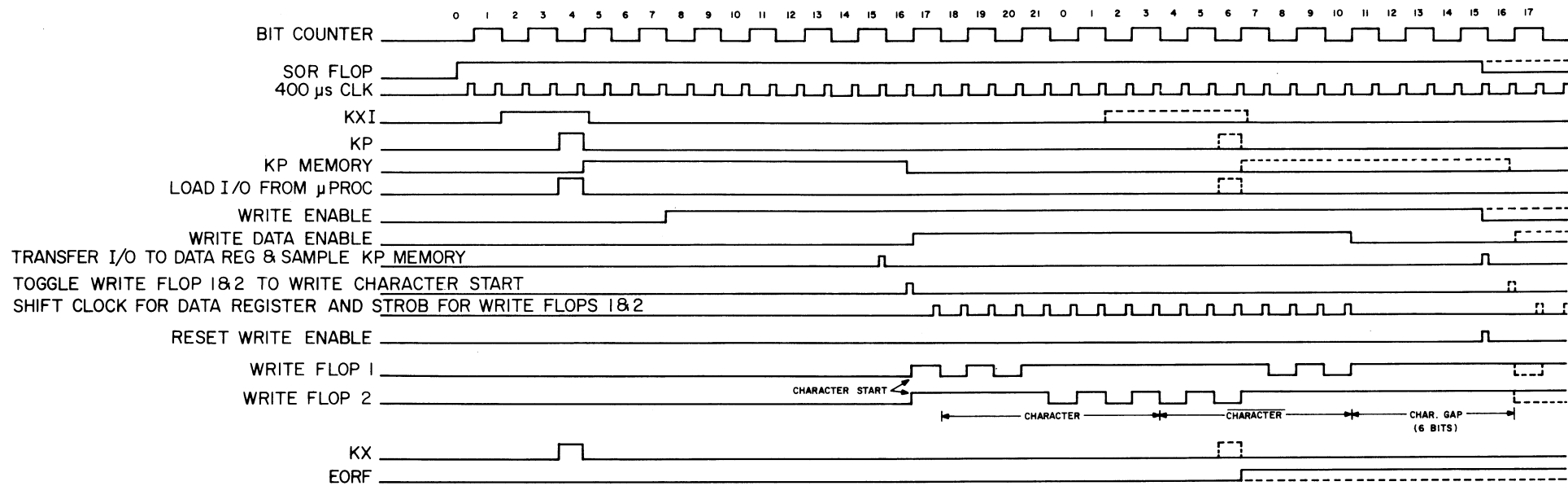


INDUSTRIAL SURPLUS
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PHONE (617) 452-5013

		COMPUTER SYSTEMS CORPORATION
		ROUTE 62 NEEDHAM, MASSACHUSETTS 01747
ASSEMBLY DRAWING VIATAPE BOARD 2 VER 2 PLUG-IN		
SIZE C	SCALE 2-1	FIG. NO. 109520-00



2 TRK NRZ
WRITE TIMING



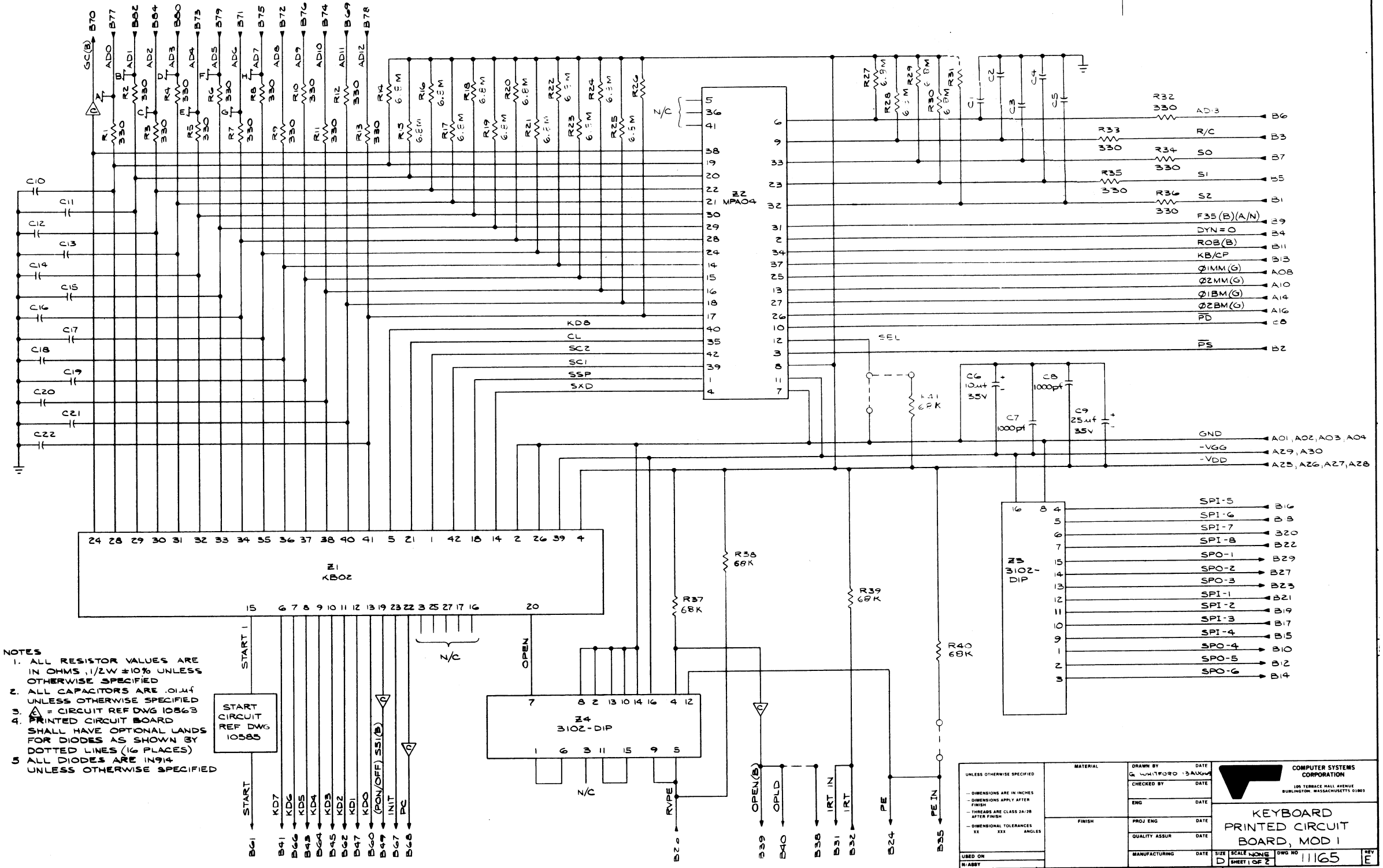
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
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PHONE (617) 452-5013

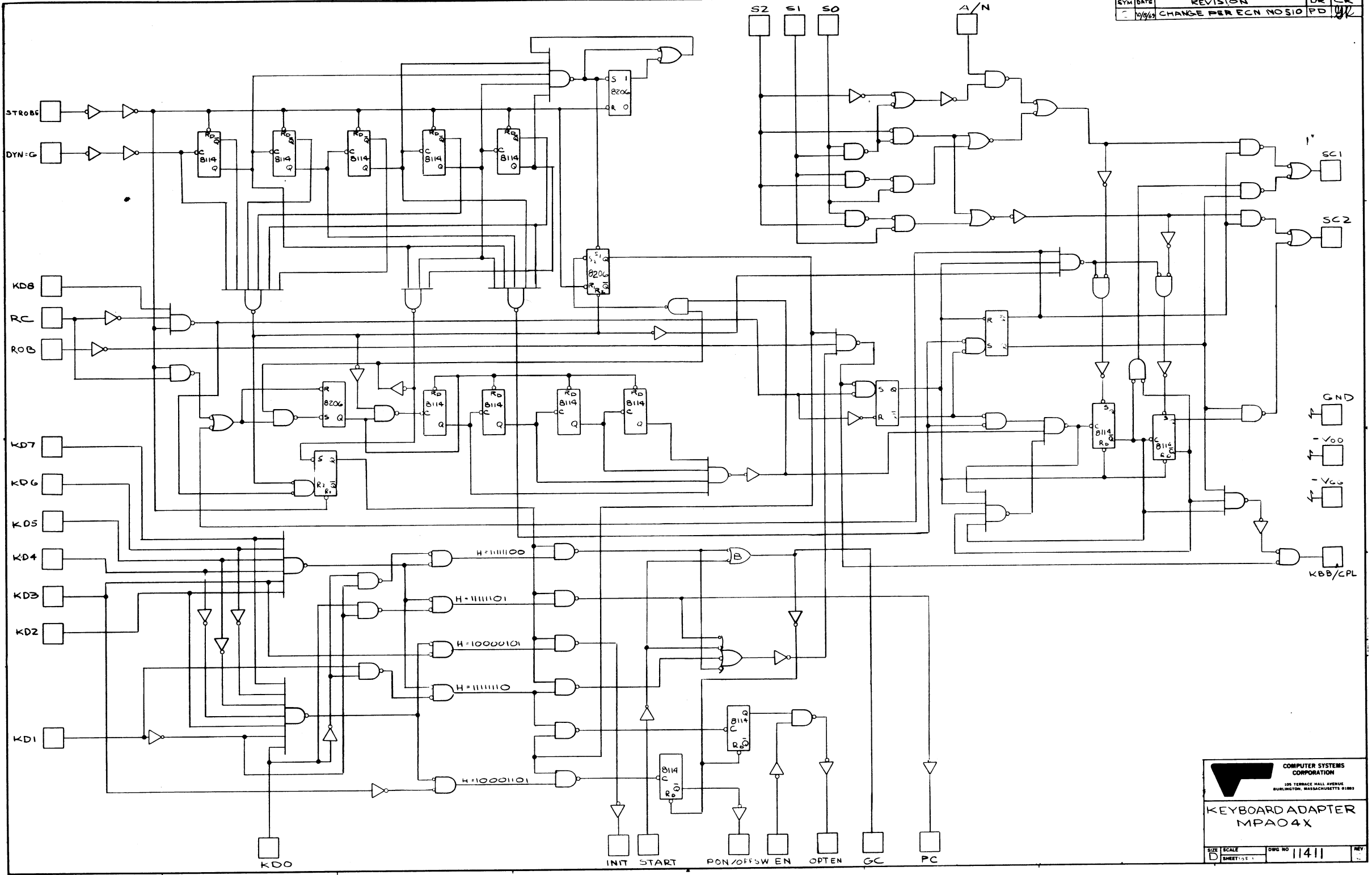
FOR FIELD ENGINEERING PURPOSES ONLY

UNLESS OTHERWISE SPECIFIED: — DIMENSIONS ARE IN INCHES — DIMENSIONS APPLY AFTER FINISH — THREADS ARE CLASS 2A/2B AFTER FINISH — DIMENSIONAL TOLERANCES: XX .XX ANGLES	MATERIAL	DRAWN BY	DATE	COMPUTER SYSTEMS CORPORATION ROUTE 62 BEDFORD, MASSACHUSETTS 01730
		CHECKED BY	DATE	
		ENG	DATE	BIT COUNTER WRITE COMMAND TIMING
	FINISH	PROJ ENG	DATE	
		QUALITY ASSUR	DATE	
USED ON		MANUFACTURING	DATE	SIZE D SCALE SHEET
W/ASBY				DWG NO REV



- NOTES**
1. ALL RESISTOR VALUES ARE IN OHMS, 1/2W ±10% UNLESS OTHERWISE SPECIFIED
 2. ALL CAPACITORS ARE .01µF UNLESS OTHERWISE SPECIFIED
 3. Δ = CIRCUIT REF DWG 10863
 4. PRINTED CIRCUIT BOARD SHALL HAVE OPTIONAL LANDS FOR DIODES AS SHOWN BY DOTTED LINES (16 PLACES)
 5. ALL DIODES ARE IN914 UNLESS OTHERWISE SPECIFIED

UNLESS OTHERWISE SPECIFIED		MATERIAL		DRAWN BY G. WILFORD BAUGHN		DATE		COMPUTER SYSTEMS CORPORATION 128 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
DIMENSIONS ARE IN INCHES		FINISH		CHECKED BY		DATE					
DIMENSIONS APPLY AFTER FINISH		THREADS ARE CLASS 2A/2B AFTER FINISH		ENG		DATE		KEYBOARD PRINTED CIRCUIT BOARD, MOD 1			
DIMENSIONAL TOLERANCES		XX XX ANGLE		PROJ ENG		DATE					
USED ON		MANUFACTURING		QUALITY ASSUR		DATE				SIZE SCALE NONE DWG NO 11165 REV E SHEET 1 OF 2	
N.ABBY		DATE		DATE		DATE					



COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

**KEYBOARD ADAPTER
 MPA04X**

SIZE	SCALE	DWG NO	REV
D		11411	
SHEET			

SYL.	DATE	REVISION	DR.	DC.
------	------	----------	-----	-----

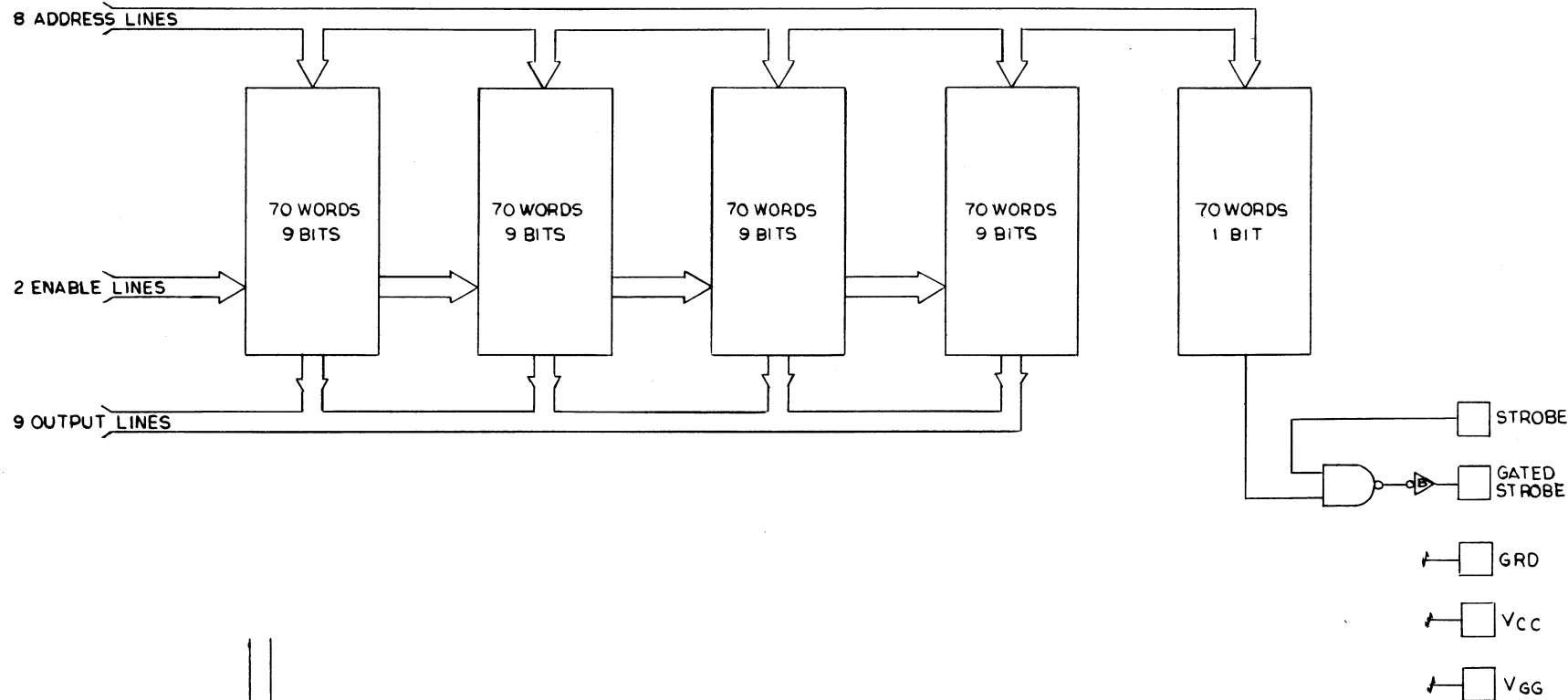


INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

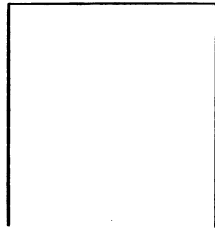
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013



NOTES

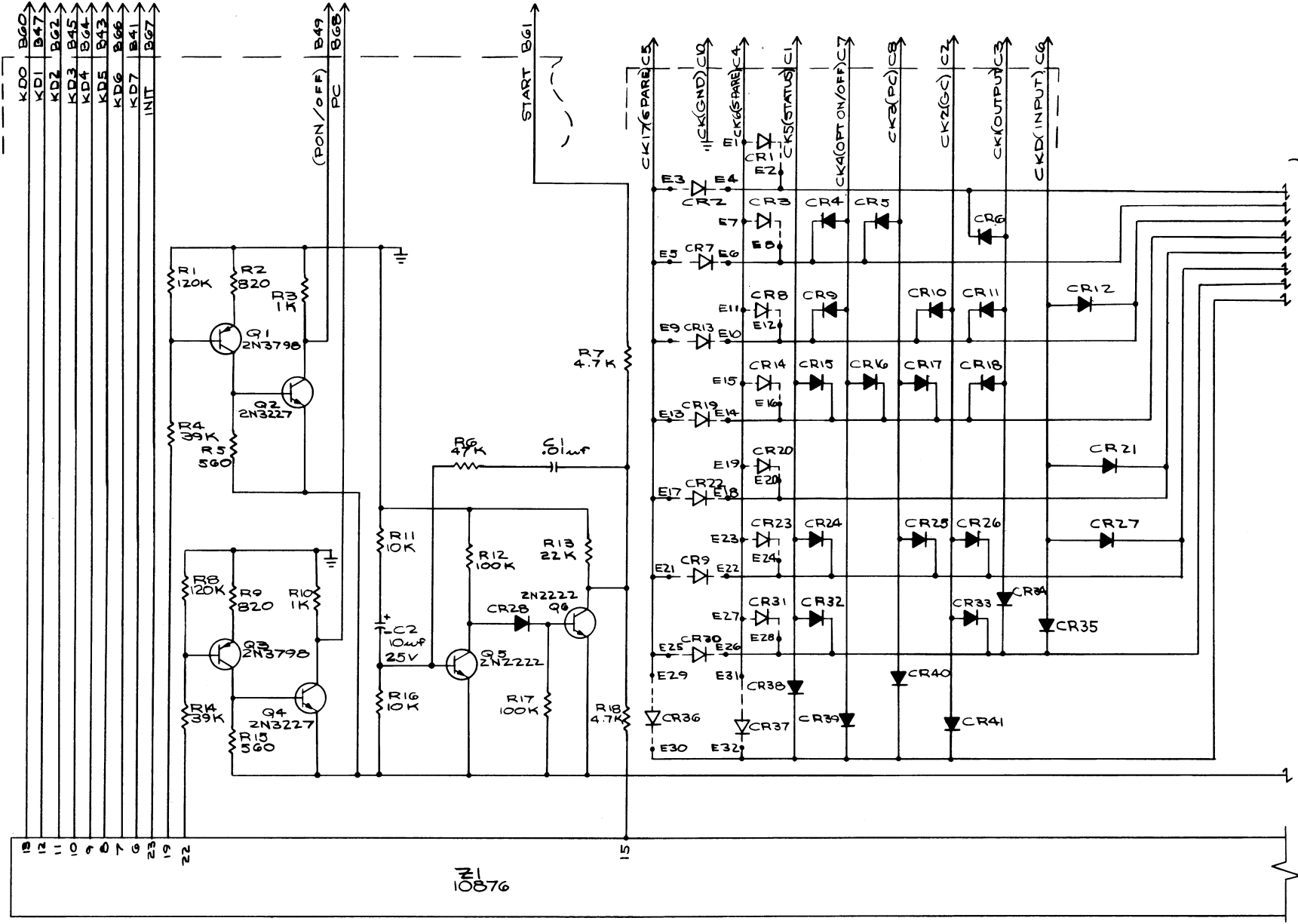
- 2 THE OUTPUT SIGNALS SHALL BE DERIVED FROM A BUFFER SIMILAR TO VIACELL NO. 1104
- 1 A TRUE ADDRESS HAS 4 '1'S AND 4 '0'S

ITEM	DESCRIPTION	CODE	REQ.
 COMPUTER SYSTEMS CORPORATION 105 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
BLOCK DIAGRAM PDS / ROM KB02			
MODEL	D	10463	B
SCALE			



22

R69 CR41 Z4
Q10 C24
HIGHEST REFERENCE DESIGNATION



- NOTES:
1. ALL RESISTOR VALUES ARE IN OHMS, 1/2W ±10% UNLESS OTHERWISE SPECIFIED.
 2. ALL CAPACITOR VALUES ARE IN μF, UNLESS OTHERWISE SPECIFIED.
 3. PRINTED CIRCUIT BOARD SHALL HAVE LANDS FOR OPTIONAL CIRCUITRY AS SHOWN BY DOTTED LINES.
 4. CR1-CR41 (EXCEPT CR28) USED ONLY ON 109204-05, -06
 5. CONNECT E35-E33, 21=10876 (109204-01, -03, -05)
 6. CONNECT E33-E34, 21=10875 (109204-02, -04, -06)
 7. CONNECT E36-E37 ON 109204-04(2)-05, 06)
 8. CONNECT E38-E39 ON 109204-01, -02, -03, -04, -05, -06

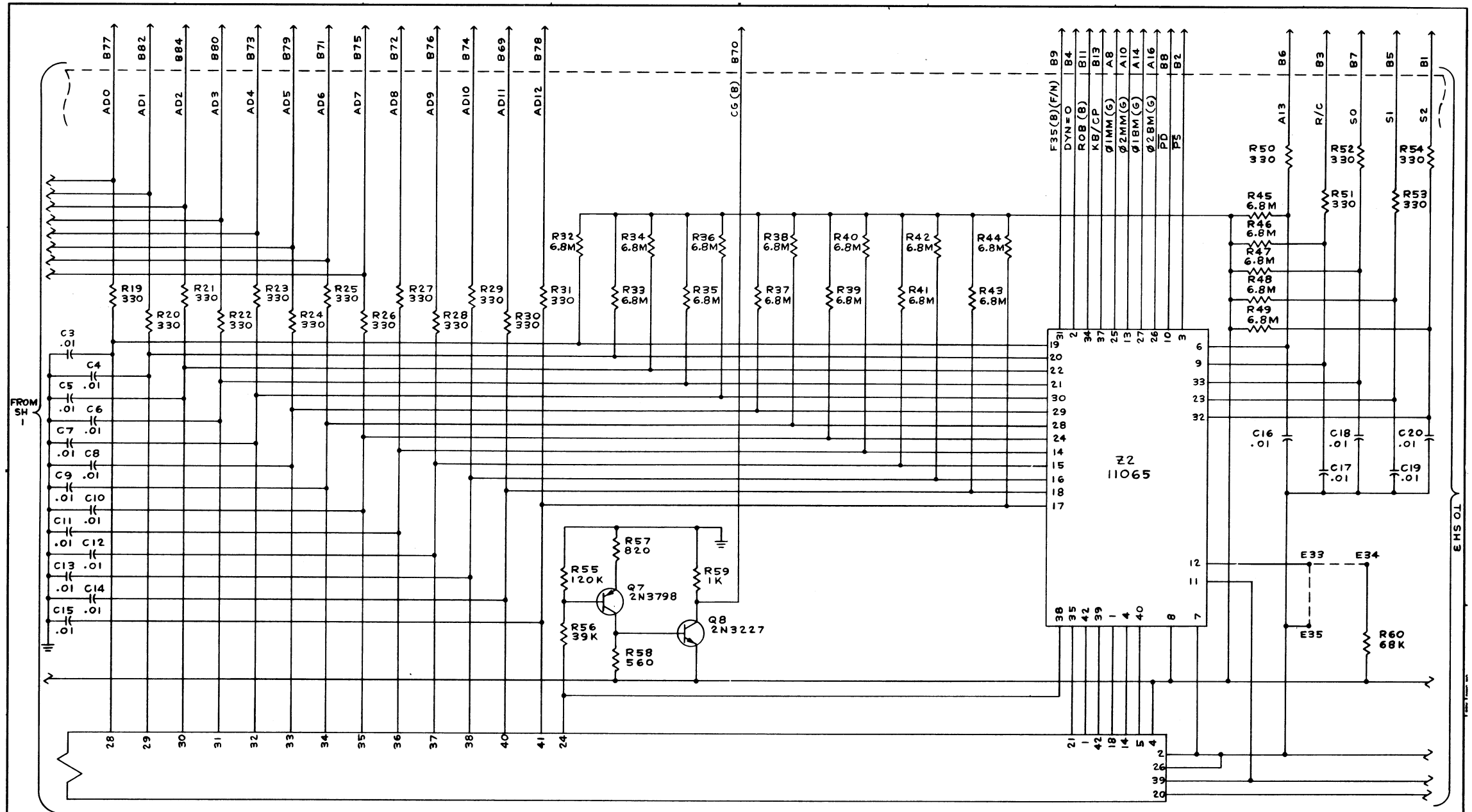
9. 5-DIGIT ARRAY NO. REFERENCE TO LOGIC DIAGRAM.

10876

COMPUTER SYSTEMS CORPORATION
100 TERRACE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

SCHEMATIC
PRINTED WIRING BOARD
KEYBOARD, MOD1

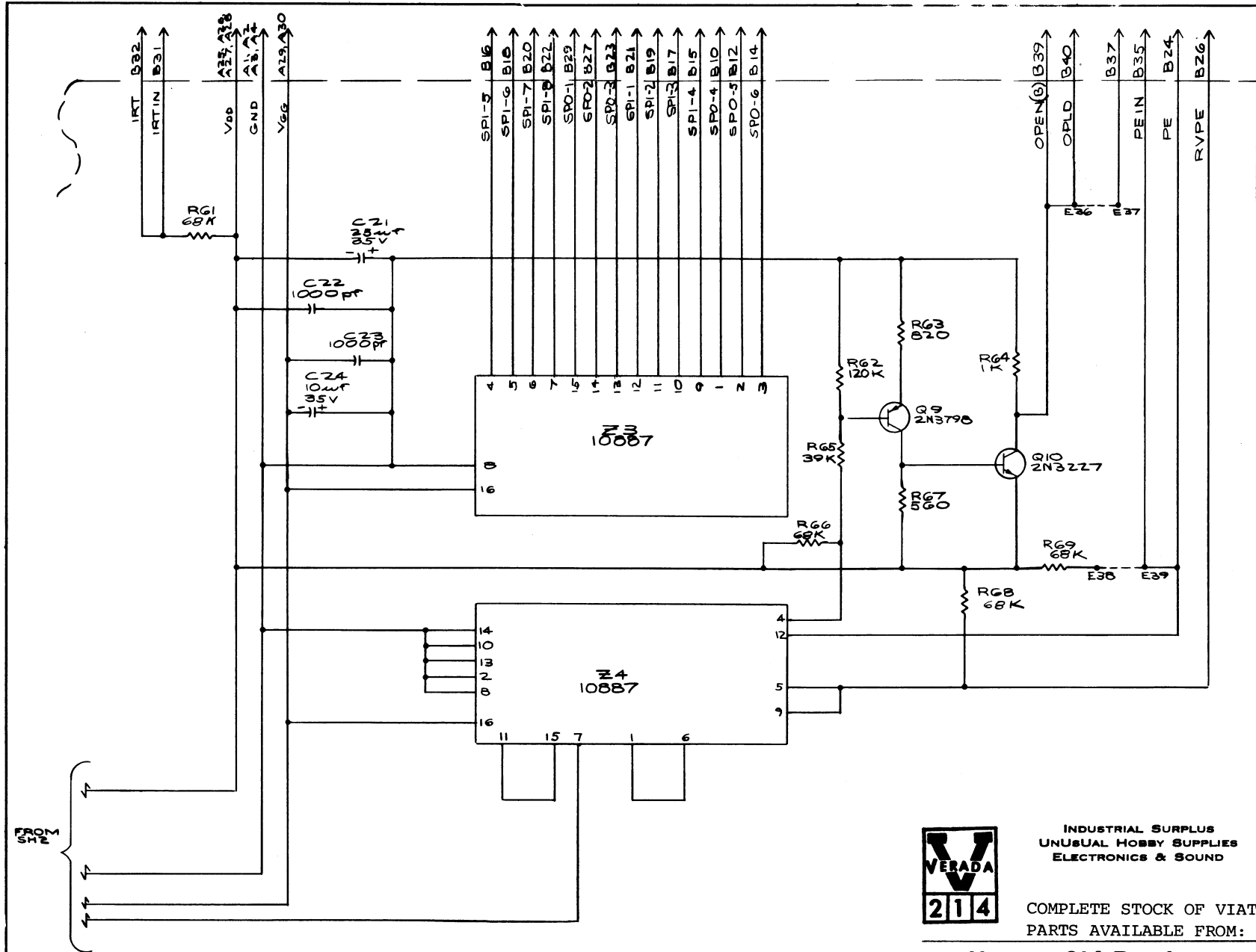
DATE SCALE PART NO. REV
D 140203-00



COMPUTER SYSTEMS CORPORATION
100 YERGEN HALL AVENUE
BELLINGHAM, WASHINGTON 98226

**SCHEMATIC
PRINTED WIRING BOARD
KEYBOARD, MOD I**

DATE SCALE: D UNIT 2 OF 3
DATE: 140203-00



FRONT VIEW



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

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PHONE (617) 452-5013

COMPUTER SYSTEMS CORPORATION
125 YERRIDGE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

**SCHEMATIC
PRINTED WIRING BOARD
KEYBOARD, MOD I**

REV 00
140203-00

SYM	DATE	REVISION	DR.	CK.
A	7-23-67	REVISED PER ECN 377	UJG	
B	11-13-67	REV PER ECN 683	CS	
C	12-17-67	REVISED PER ECN NO. 840	UJG	
D	12-11-67	OBSOLETE PER ECN 855	UJG	
E	1-5-68	REVISED PER ECN NO. 871	UJG	

SEE NOTE

NOTE: REV-D: USE EXISTING STOCK UNTIL 109207 IS AVAILABLE



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

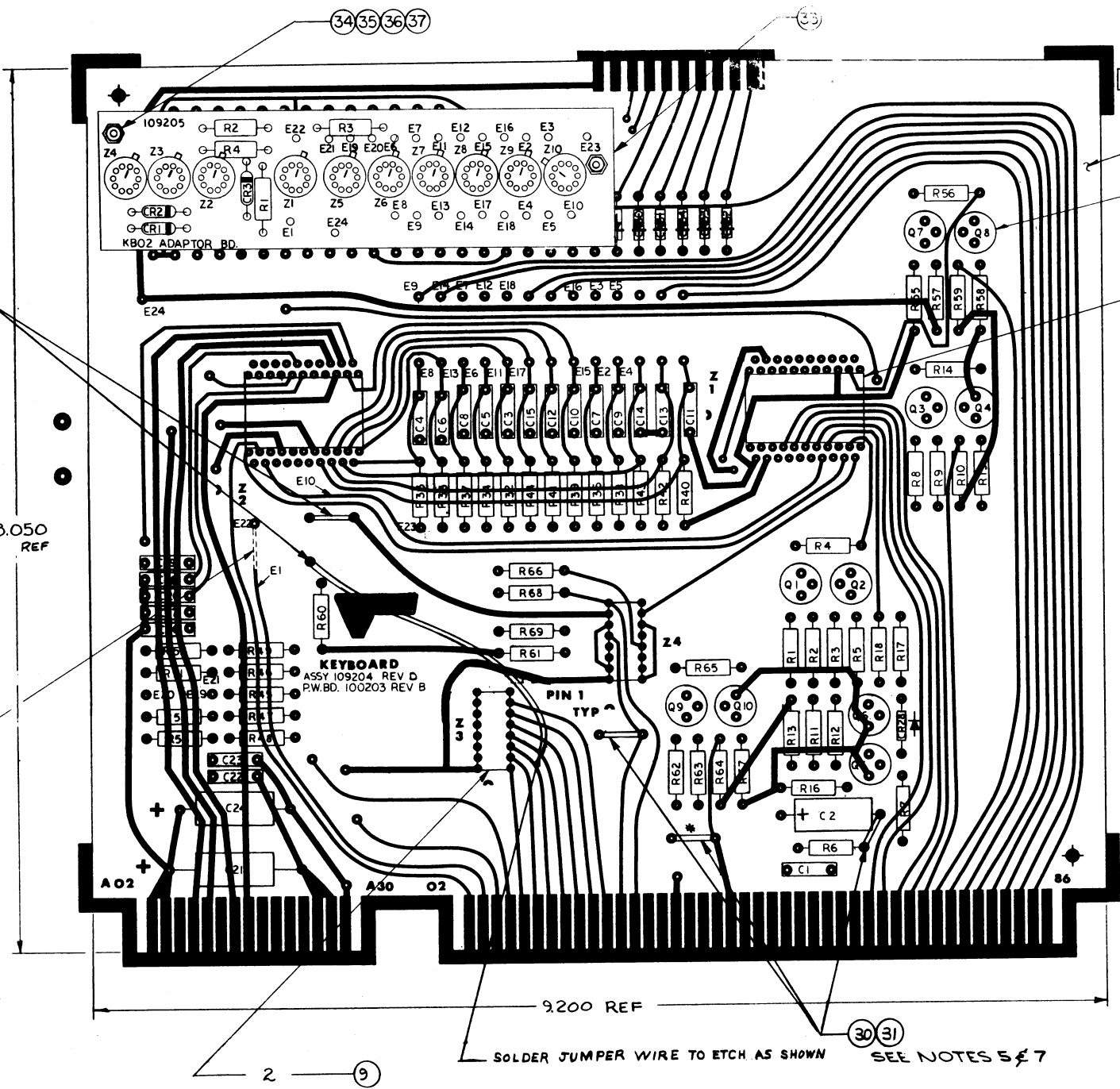
VERADA 214 DIV. LOLAR

MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

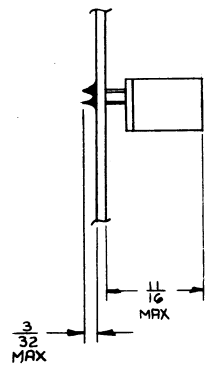
COMPUTER SYSTEMS CORPORATION
100 CHURCH HALL AVENUE
BOSTON, MASSACHUSETTS 02110

PRINTED WIRING BD. ASSY.
KEYBOARD

REV. 109204



30 31
SEE NOTE 5



CUT ETCH

- NOTES:
1. INSTALL ITEM 27 UNDER ALL TRANSISTORS.
 2. INSTALL ITEM 5 UNDER Z1 & Z2.
 3. INSTALL ITEM 9 UNDER Z3 & Z4.
 4. INSTALL MOS DEVICES AFTER FLOW SOLDERING.
 5. INSTALL ITEMS 30 & 31 AS SHOWN
 6. USE ITEM 38, 24 AWG STRANDED WIRE FOR JUMPERS E1 TO E1 THRU E24 TO E24
 7. ASTERISK (*) DENOTES JUMPER TO BE INSTALLED ON A REQUEST BASIS ONLY.

SOLDER JUMPER WIRE TO ETCH AS SHOWN SEE NOTES 5 & 7



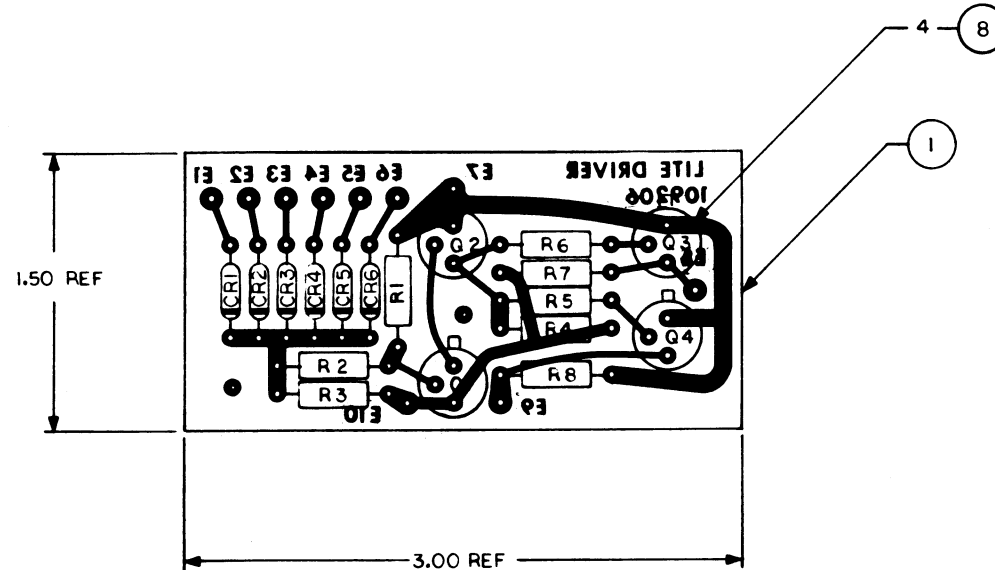
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

MAIL - P.O. BOX 438, LOWELL, MA. 01852
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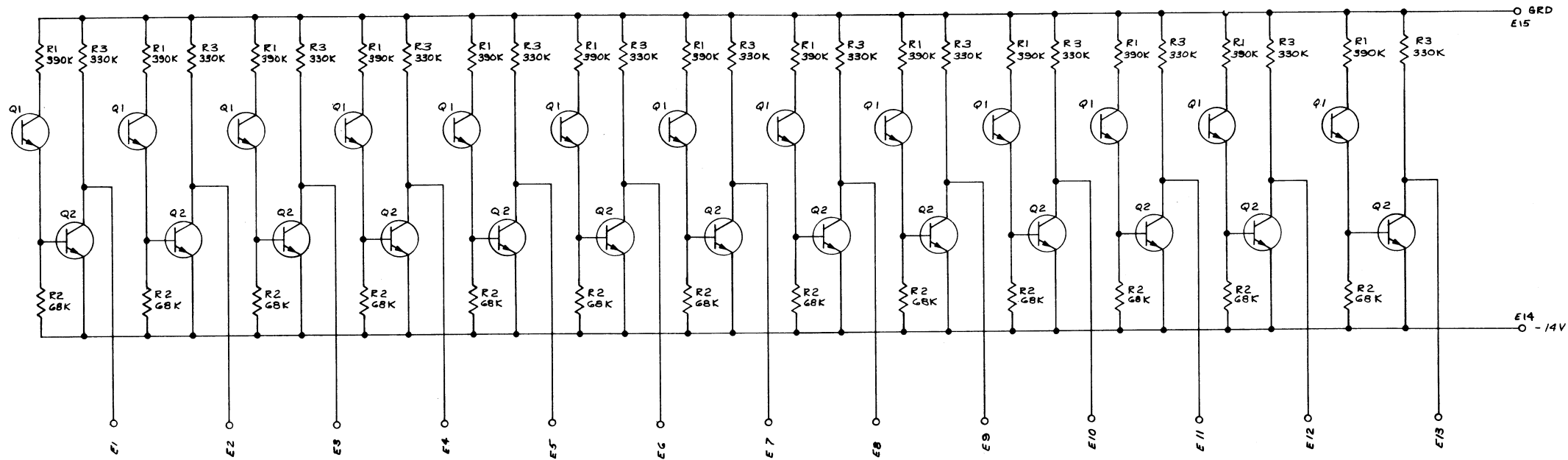
SYM.	DATE	REVISION	DR.	CK.
A	11-6-69	REVISED PER ECN 671	REB	MS



- NOTES
1. ETCH FAR SIDE.
 2. INSTALL ITEM 8 UNDER ALL TRANSISTORS

ITEM	DESCRIPTION	CODE	REQ
	COMPUTER SYSTEMS CORPORATION 104 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803		
	ASSEMBLY P. W. BD. KEYBOARD LOCK OUT LITE DRIVER		
	MODEL	C	REV
	SCALE 2/1		109206 A

REV.	DATE	REVISION	BY	CHK.



NOTES:
 1. Q1 - 181003
 Q2 - 181004
 2. ALL RESISTORS ARE IN OHMS 1/4 W ± 10%



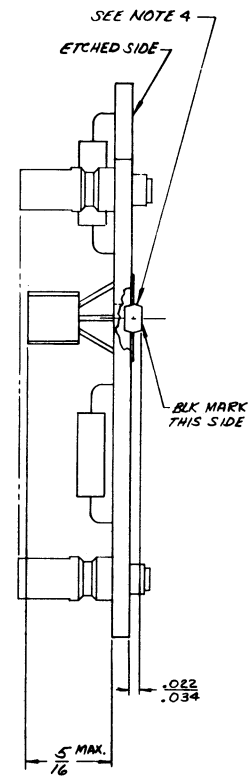
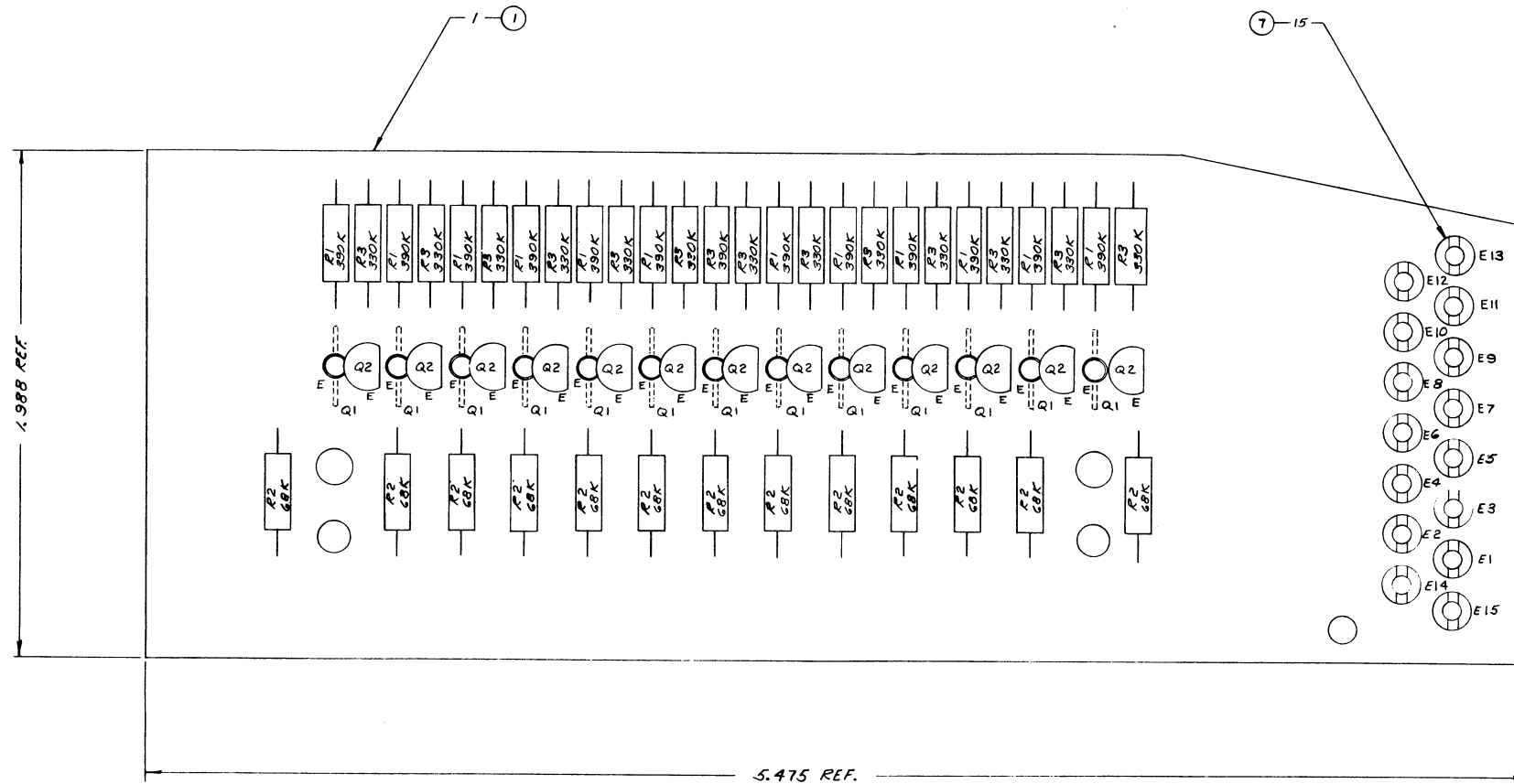
INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

ITEM	DESCRIPTION	QTY	REQ.
	COMPUTER SYSTEMS CORPORATION 300 VERMONT HALL AVENUE DORCHESTER, MASSACHUSETTS 01920		
	SCHEMATIC DIAG. OPTICS BOARD (KEYBOARD)		
		D 140200	

REV.	DATE	REVISION	BY	CHK.
A	6/3/67	OBSOLETE PER ECN 124	BCZ	FCM
B	11/1/67	REACTIVATE PER ECN 250	BCZ	FCM
C	1/1/67	ECN 315	BCZ	FCM



NOTES:

1. Q1 - 181003
Q2 - 181004
2. ALL RESISTORS ARE IN OHMS 1/4W ±10%
3. INSTALL ITEM(D)ICAL COMPONENT BEFORE SOLDERING.
USE RECOMMENDED CAMBION SWAGING TOOLS G451, G401, OR G663.
4. INSTALL PHOTO XSTR ON ETCHED SIDE AFTER SOLDERING.
INSTALL WITH BLACK MARK IN TRANSISTOR BODY FACING AWAY FROM ETCH.
FOR DETAILS & SPECS ON PHOTO XSTR SEE VIATRON DWG. NO. B181003.



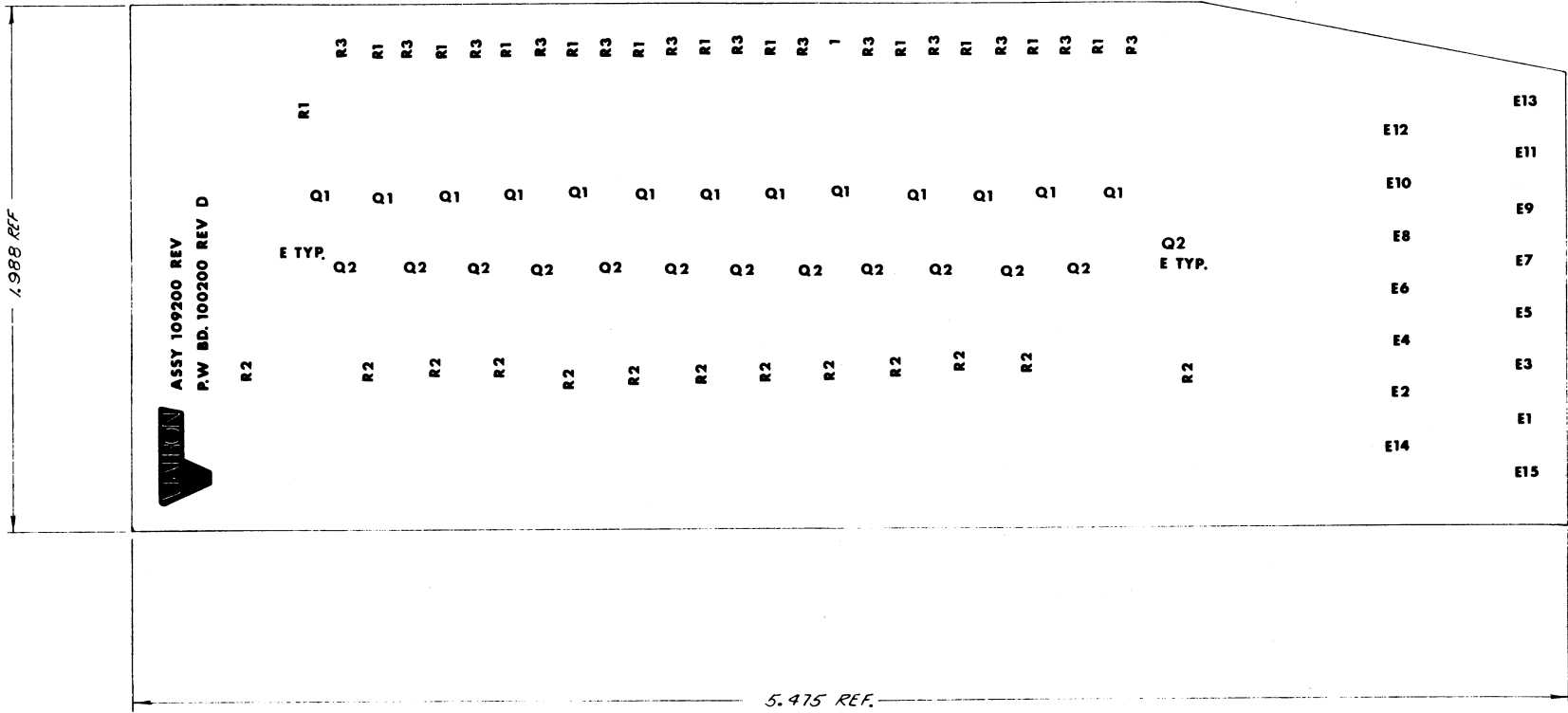
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

ITEM	DESCRIPTION	QTY	REQ.
<p>COMPUTER SYSTEMS CORPORATION 380 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</p>			
<p>ASSEMBLY OPTICS BOARD (KEYBOARD)</p>			
DRWNG:	D 109200	REV:	C
SCALE:	1/1		

REV.	DATE	REVISION	DR.	CR.
A	6-3-69	OBSOLETE PER ECN-124	SCZ	FCM
B	6-11-69	REACTIVATE PER ECN-250	SCZ	FCM
D	11-14-69	REVISED PER ECN NO. 668	WAT	



- NOTES:
1. ALL SYMBOLIZATION TO BE WHITE, LEGIBLE, & SMEAR PROOF.
 2. VIATRON LOGO TO BE IN APPROX. POSITION & 1/2 THE SIZE SHOWN.
 3. BOARD NAME, NUMBER, & REV TO BE 1/4 IN. HIGH AND IN APPROX. POSITION SHOWN.
 4. ALL OTHER MARKING TO BE 1/8 IN. HIGH AND IN APPROX. POSITION SHOWN.
 5. CHARACTER STYLE TO BE FUTURA MEDIUM.



INDUSTRIAL SURPLUS
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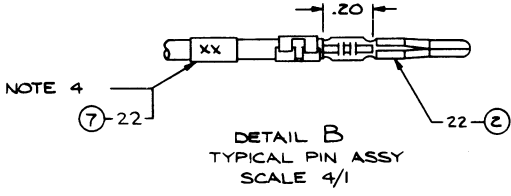
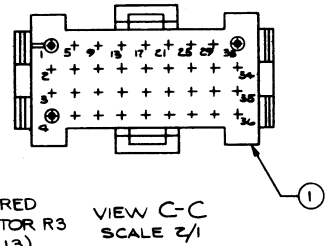
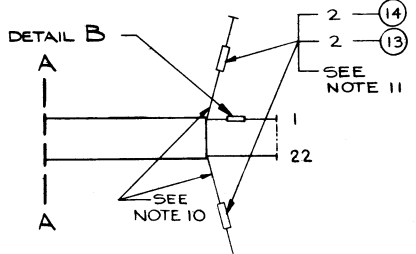
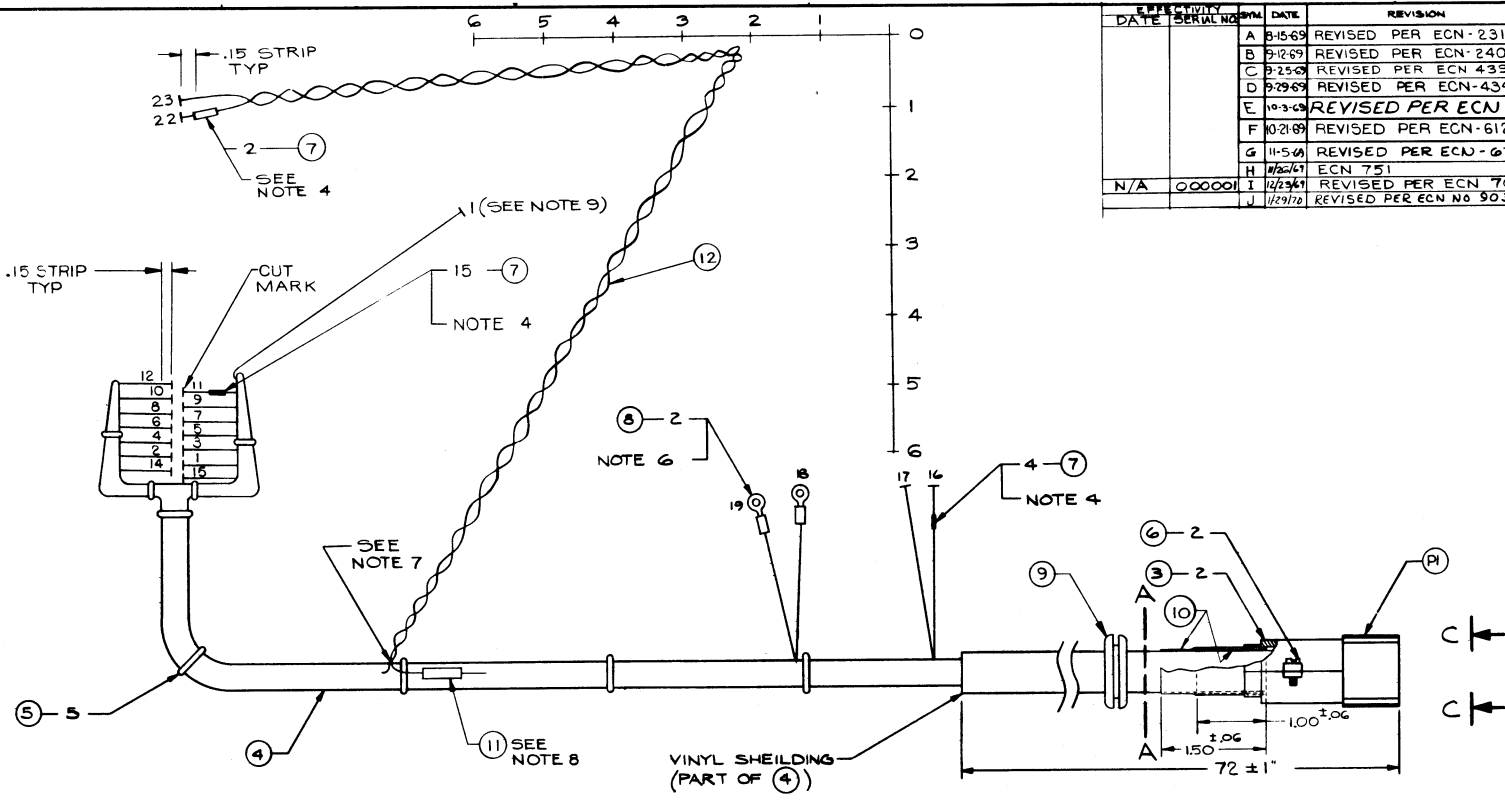
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

ITEM	DESCRIPTION	QTY	REQ.
	COMPUTER SYSTEMS CORPORATION 131 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803		
MARKING DWG. OPTICS BOARD (KEYBOARD)			
MODEL:	D 100200	REV:	D
SCALE:	1/1		

REV. NO.	DATE	SYMBOL	REVISION	DR.	CHK.
A	8-15-69		REVISED PER ECN-231	D.H.	
B	9-12-69		REVISED PER ECN-240	FCM	
C	9-25-69		REVISED PER ECN-439	FCM	
D	9-29-69		REVISED PER ECN-434	FCM	
E	10-3-69		REVISED PER ECN NO. 455	FCM	
F	10-21-69		REVISED PER ECN-612	FCM	
G	11-5-69		REVISED PER ECN-677	FCM	
H	11/22/69		ECN 751	FCM	
I	12/23/69		REVISED PER ECN 706	FCM	
J	1/27/72		REVISED PER ECN No 903	FCM	

WIRE LIST						
LEAD IDENT.	FROM	WIRE ROUTE	TO	AWG	COLOR	ITEM NO.
1	SEE NOTE 9		PI-1	24	WHT	4
2	E12		PI-2			
3	E11		PI-3			
4	E10		PI-4			
5	E9		PI-5			
6	E8		PI-6			
7	E7		PI-7			
8	E6		PI-8			
9	E5		PI-9			
10	E4		PI-10			
11	E3		PI-11			
12	E2		PI-12			
13	E1		PI-13	24		
14	E14		PI-14	24		
15	E15		PI-15	24	WHT	
16	XMFR-T1		PI-16	18	WHT	
17	XMFR-T2		PI-17		BLK	
18	E17		PI-18		GRN/YEL	
19	E17		PI-19	18	GRN/YEL	
20	INNER SHIELD		PI-20			
21	OUTER SHIELD		PI-21			4
22	LAMP		PI-23	24	WHITE	10
23	LAMP		E14	24		10



- NOTES:
1. CRIMP ITEM 2 AS SHOWN IN DETAIL B WITH CRIMPING TOOL
 2. ALL CHANGES MUST BE MADE TO SCALE
 3. WIRE LENGTHS SHOWN ARE MINIMUM
 4. MARK BOTH ENDS OF WIRES AS SHOWN USING NUMBERED ADHESIVE TAPE WRAP-AROUND MARKERS (ITEM 7)
 5. ATTACH TIE STRAPS (ITEM 5) APPROX 3 IN. APART AS SHOWN
 6. CRIMP ITEM 8 WITH CRIMPING TOOL
 7. WIRE RUNS 22 & 23 TO BE TWISTED FROM POINT WHERE THEY BREAK OUT FROM HARNESS LEG.
 8. AN 18" PIECE OF #24 AWG WHITE WIRE (RUN #22) IS TO BE SPliced TO THE HARNESS LEAD COMING FROM PI-23 APPROX. AT THE POINT SHOWN AND THEN SOLDERED & SHRINK SLEEVING APPLIED OVER SLICED JOINT.
 9. THIS LEAD TO BE SOLDERED TO TOP LEAD OF RESISTOR R3 (NEAREST TO TERMINAL E13).
 10. OPEN SHIELD BRAID AND TWIST TO FIT INTO ITEM 13. CRIMP USING TOOL (AMP) 49935.
 11. HEAT SHRINK ITEM 14 OVER ITEM 13 (1/2" LG. PIECE).

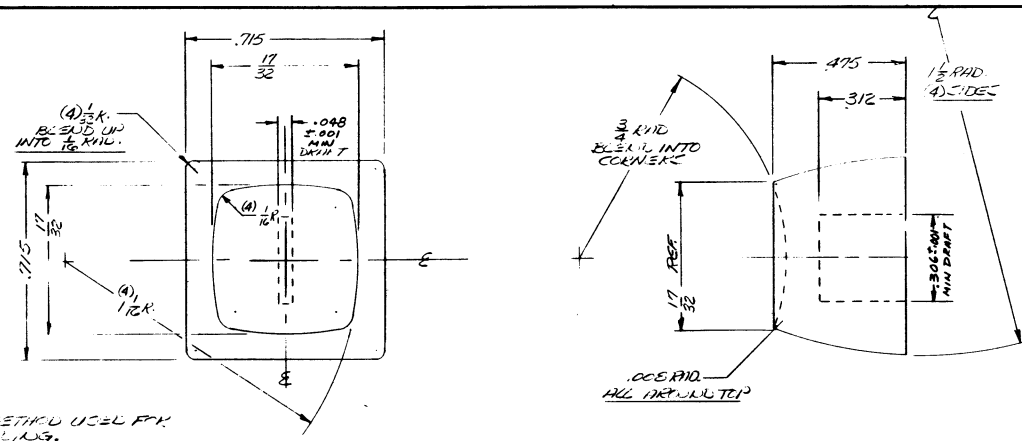
FOR PARTS LIST SEE PL129201-00

COMPUTER SYSTEMS CORPORATION
 200 TOWNSEND HALL AVENUE
 DUBLIN, MASSACHUSETTS 01930

WIRE HARNESS OPTICS BOARD KEYBOARD

SCALE 1/4 SHEET 1 OF 1 PART NO. 129201-00

SYM	DATE	DESCRIPTION	DR	CK
A	11-20-69	REVISED PER ECN-713	SM	MM
B	12-3-69	REVISED PER ECN NO 783	SM	FCM
C	12-5-69	NOTE ADDED PER ECN-747	SM	FCM
D	12-11-69	REVISED PER ECN-825	SM	ML
E	12-18-69	REVISED PER ECN-831	SM	GR



NOTE:
 CONE TO SUIT METHOD USED FOR
 FINISH COLOR INDICATED.
 APPROX. 1/45 WAVE LENGTH IN
 FOR EACH 1/100 INCH CHANGE
 IN WAVELENGTH. WAVELENGTH
 IN MICRONS. WAVELENGTH TO SUPPORT
 KEYSCOT METHOD.
 FOR INFO. SEE
 # L-111111



INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

KEY No.	LEGEND	COLOR BACK FROM D.L.	COLOR SHELL
1	L1	WH	D
3	L2	WH	D
16	1	BLK	L
18	+ °	WH	L
19	(HYPHEN) A °	WH	L
20	#	BLK	L
21	(SLANT) Z °	WH	L
22	(UNDER LINE) W °	RD	L
24	S °	RD	L
25	(COMMA) 3	BLK	L
26	? °	WH	L
27	J °	YEL	L
28	(TREN) D °	YEL	L
30	\$ 4	BLK	L
31	(QUOTE) C °	BLK	L
32	RC °	SK	L
33	(PERCENT) F °	GR	-

KEY No.	LEGEND	COLOR BACK FROM D.L.	COLOR SHELL
34	(PERIOD) S	BLK	L
35	(EQUAL) = °	BLK	L
36	T °	HR	L
37	G °	AR	L
38	C °	BLK	L
39	B	BLK	L
40	(VERT LINE) Y °	BLU	L
42	(A POS) H °	BLU	L
43	V 7	BLK	L
44	(N	BLK	L
45	U	WH	L
46	J	WH	L
47	* 8	BLK	L
48	= 7 M	WH	L
49	2 I	WH	L
51	5 K	WH	L
52	0 (EXACT) 9	WH	L

KEY No.	LEGEND	COLOR BACK FROM D.L.	COLOR SHELL
53	5 (COMMA)	WH	L
54	3 0 (CATCH)	WH	L
55	6 L	WH	L
56	0 (EGR)	BLK	L
57	9 (PERIOD)	WH	L
58	& P	BLK	L
60	:	BLK	L
61	(UNDER LINE) (HYPHEN)	BLK	L
62	? /	BLK	L
65	(QUOTE) (A POS)	BLK	L
66	CTRL 1	WH	L
68	CTRL ON/OFF	WH	D
69	CTRL 2	WH	D
73	(PERIOD) ON/OFF	WH	D
74	ERASE	RD	D
75	R2	WH	D
79	R1	WH	D

MINIMUM COLOR CHART

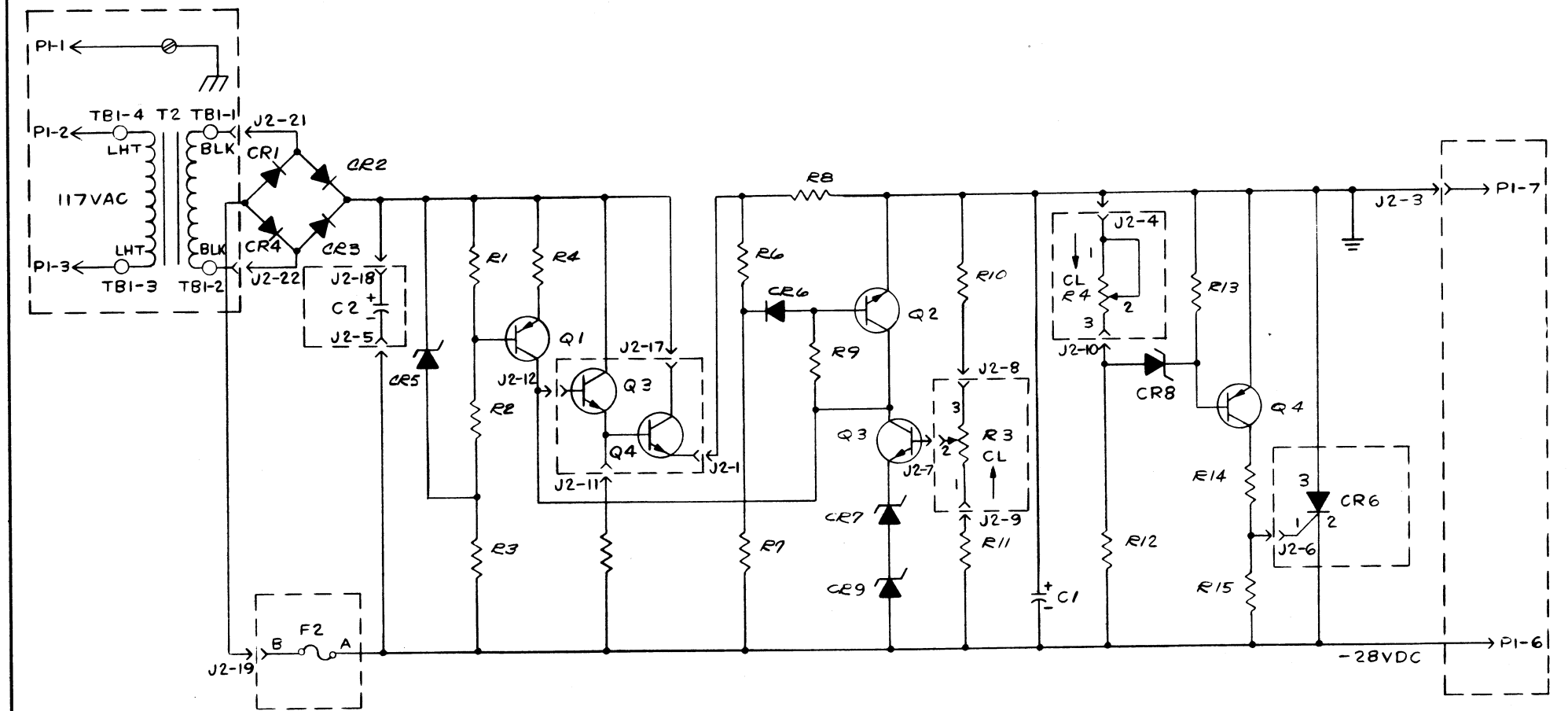
SYMBOL	TENN. CHESTNUT BUTYRATE COLOR No.
L = LIGHT	OR-530
D = DARK	17-603
WH = WHITE	5R-003
RD = RED	47410
BLK = BLACK	49402
GR = GREEN	35291
YEL = YELLOW	49374
PR = PURPLE	2E-770
AG = AQUA	72-207
BLU = BLUE	45282

SHEET 1 OF 4



KEYTOP (LEGEND)

REV	SCALE	DATE	DR	CK
D	1/24	11/23/69	SM	MM



NOTES:

1. COMPONENTS LOCATED WITHIN DOTTED AREAS ARE MOUNTED ON CHASSIS OR FRAME.
2. COMPONENTS OUTSIDE DOTTED AREAS ARE MOUNTED ON A PRINTED CIRCUIT BOARD.



INDUSTRIAL SURPLUS
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ELECTRONICS & SOUND

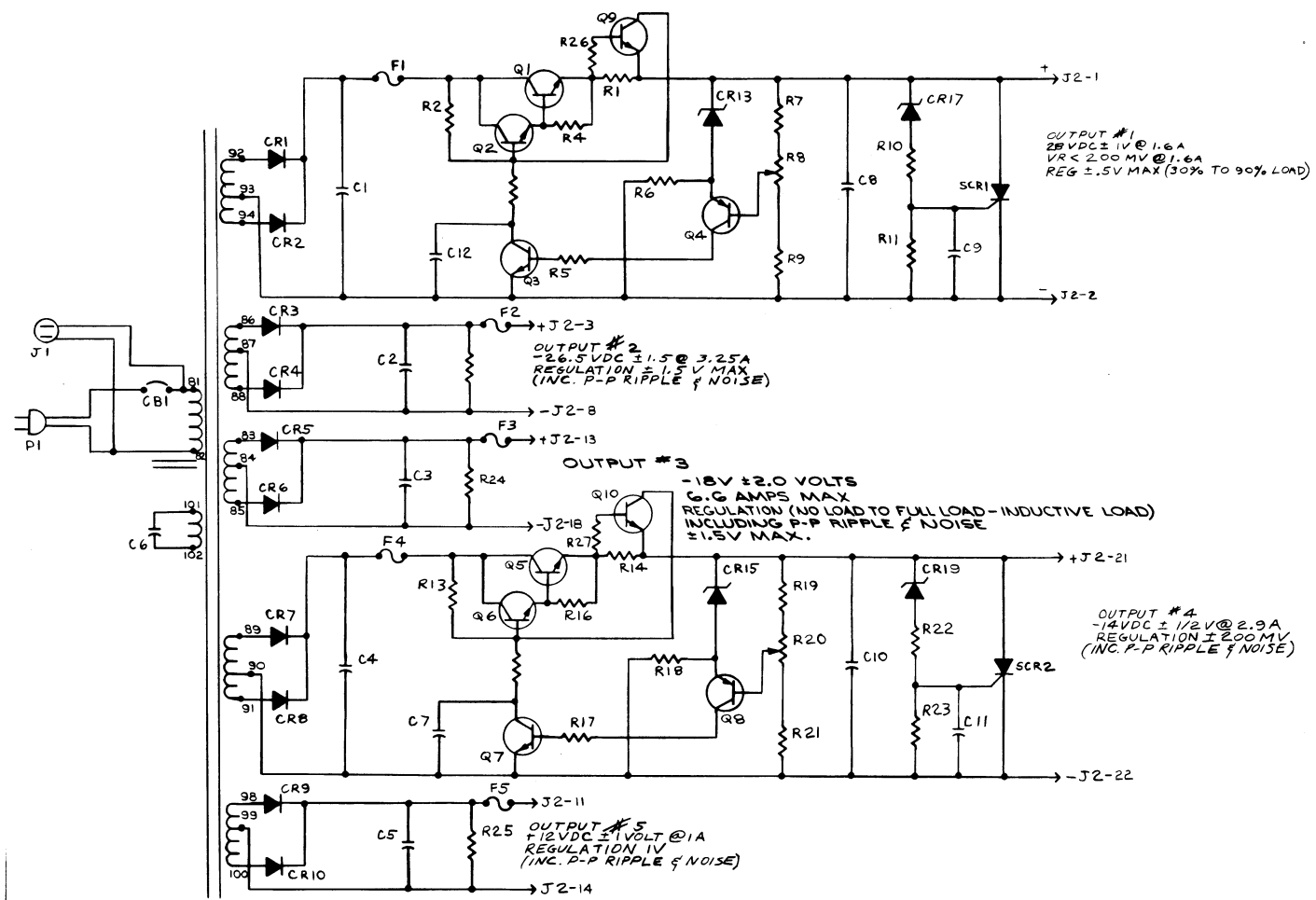
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

COMPUTER SYSTEMS CORPORATION
105 TERRACE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

POWER SUPPLY
-28V, 1.6 AMP

SIZE C	SCALE SHEET 1 OF 1	DWG NO 11091	REV A
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QTY	DESCRIPTION	CODE IDENT.	PART OR IDENT NO	MATL. NOTES OR REF DES	SPECIFICATION
1	LINE CORD ASSY				
1	PCB CONN 09-02-2221	RIGHT			
22	" TERM. 179631	"	GOLD PLATED		
12	CONN. PIN 1189				
3	" " (TO FIT 1/8" R)				
3	FUSE HOLDER 357002				LITTLEFUSE
1	1/2 A - 3AG			F5	LITTLEFUSE
1	3A - 3AG			F4	"
1	8A - 3AG			F3	"
1	4A - 3AG			F2	"
2	2A - 3AG			F1, F6	"
2	RESISTOR 1KΩ 1/2 W			R26, R27	CARBON COMP
1	" 100Ω 5W			R25	WIRE WOUND
1	" 50Ω 50W		ANY EQUIV.	R24	" OHMITE 270-50
1	" 10Ω 1/2 W			R22	CARBON COMP.
1	" 1.5KΩ 1/2 W			R19	"
1	" 330Ω 1/2 W			R15	"
1	" 220Ω 1/2 W			R13	"
1	" 25Ω 25W		"	R12	WIRE WOUND OHMITE 270-25
1	" 39Ω 1/2 W			R11	CARBON COMP
2	" 22Ω 1/2 W			R10, R23	"
1	" 2KΩ 1/2 W			R9	"
1	" 1.1KΩ 1/2 W			R7	"
2	" 2.2KΩ 1/2 W			R6, R21	"
2	" 100Ω 1/2 W			R4, R18	"
5	" 910Ω 1/2 W			R2, R3, R5, R18	"
2	RESISTOR VARIABLE 250Ω			R8, R20	IRC-CTS TYPE 115
1	" .15Ω 3W		3-5W	R14	"
1	" .18Ω 3W 10%		3-5W	R1	"
2	SCR 2N4441			SCR1-2	MOT
1	ZENER 1N5244B			CR18	"
1	" 1N5256B			CR17	"
2	DND 806 DIODE		1N914A ANY	CR14, 16	GE
1	ZENER 1N5231B			CR15	MOT
1	" 1N5240B			CR13	"
2	MPS3702	CDC3702, PET3702		Q4, Q8	MOT TO-18 PIN CONN.
4	MPS3704	CDC3704, PET3704		Q3, Q7, Q9, Q10	MOT
2	40389			Q2, Q6	RCA
2	2N3055			Q1, Q5	MOT, WEST, RCA
2	MR1121			CR3, 4, 7, 8	MOT
4	MR1120			CR5, CR6	"
4	1N5400		W 398A	CR9, 10, 11, 12	WESTINGHOUSE
2	1N5401		W 398B	CR1, CR2	"
1	CAP 100MF 25VDC			C10	SPRAGUE TE1211
2	" 4.7MF 12VDC			C9, C11	FURNESS 0005F0474ND130
1	" 100MF 50VDC			C8	SPRAGUE TE1309
2	" .05MF 50VDC			C7, C12	CAL C1503 DISC.
1	" 7.5MF 370VAC			C6	45F275 GE
2	" 10,000MF 20VDC 85°			C5, C4	B6F130M "
1	CAP 17,000MF 30VDC 85°C			C3	B6F150M GE
1	" 21,500MF 40VDC "			C2	B6F160M "
1	" 4,000MF 40VDC "			C1	B6F156M "
1	CONNECTOR		202275-3	J2	AMP
1	125VAC 15AMP RECP 3WIRE		5258	J1	HUBBELL
1	VAR OF OR MER			V F1	
					SUBSTITUTE



INDUSTRIAL SURPLUS
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ELECTRONICS & SOUND

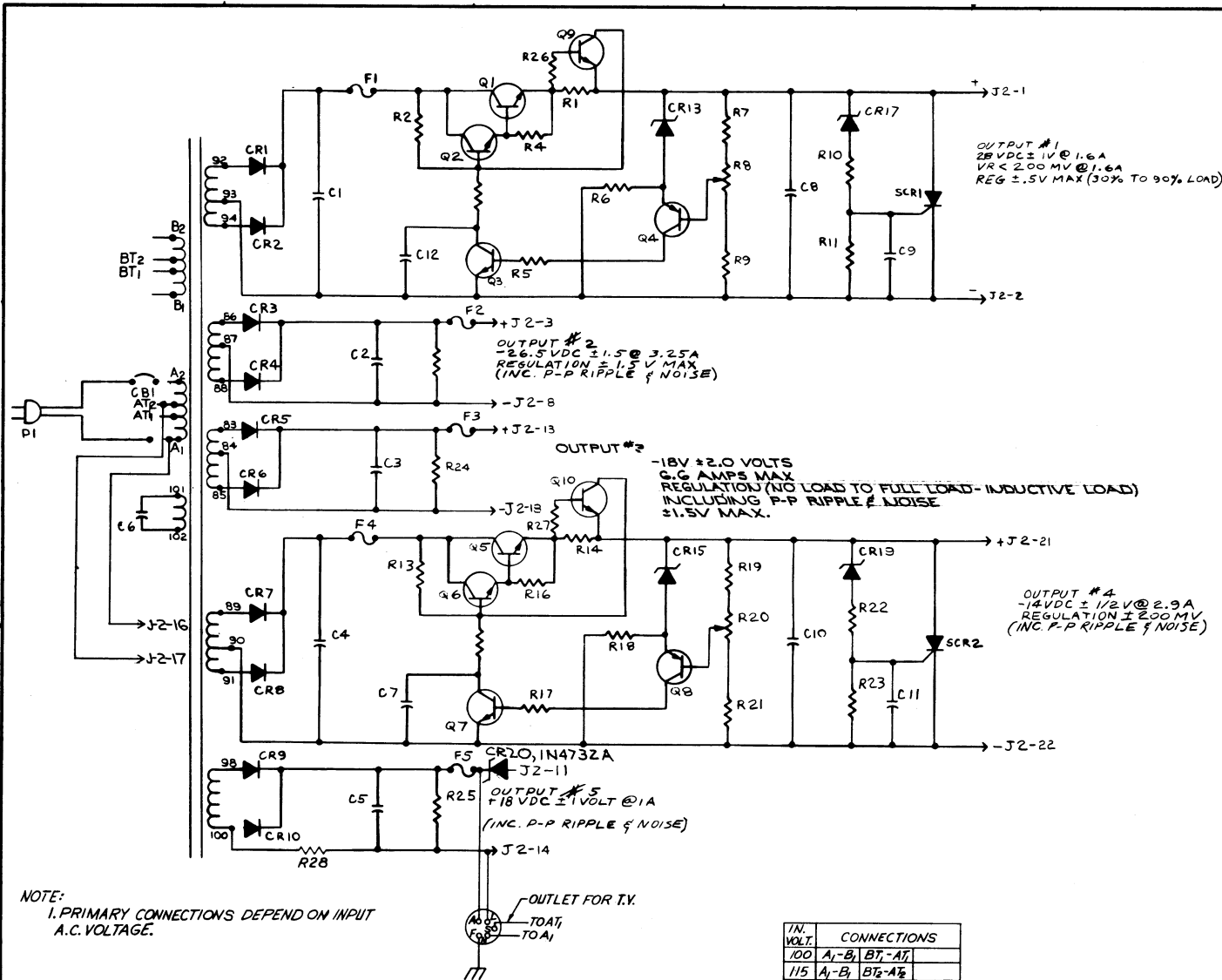
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

COMPUTER SYSTEMS CORPORATION
ROUTE 88
BEDFORD, MASSACHUSETTS 01730

VIATRON POWER SUPPLY

SCALE 1/4" = 1" DRAWING NO. 140015-00



OUTPUT #1
28VDC ± 1V @ 1.6A
VR < 2.00 MV @ 1.6A
REG ± 1.5V MAX (30% TO 90% LOAD)

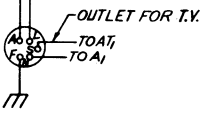
OUTPUT #2
-26.5VDC ± 1.5V @ 3.25A
REGULATION ± 1.5V MAX
(INC. P-P RIPPLE & NOISE)

OUTPUT #3
-18V ± 2.0 VOLTS
0.6 AMPS MAX
REGULATION (NO LOAD TO FULL LOAD - INDUCTIVE LOAD)
INCLUDING P-P RIPPLE & NOISE
± 1.5V MAX.

OUTPUT #4
-14VDC ± 1/2V @ 2.9A
REGULATION ± 200 MV
(INC. P-P RIPPLE & NOISE)

OUTPUT #5
18VDC ± 1V @ 1A
(INC. P-P RIPPLE & NOISE)

NOTE:
1. PRIMARY CONNECTIONS DEPEND ON INPUT
A.C. VOLTAGE.



IN. VOLT.	CONNECTIONS
100	A ₁ -B ₁ BT ₁ -AT ₁
115	A ₁ -B ₁ BT ₂ -AT ₂
127	A ₁ -B ₁ A ₂ -B ₂
200	A ₁ AT ₁ -B ₁ BT ₁
230	A ₁ AT ₂ -B ₁ BT ₂
254	A ₁ A ₂ -B ₁ B ₂

QTY	DESCRIPTION	CODE IDENT.	PART OR IDENT NO	MATL. NOTES OR REF DES	SPECIFICATION
1	IN 4732A			CR20	MOT
1	LINE CORD ASSY			BM-1G5	BEIDEN
1	PCB COMM 09-02-2221				MOLEX
22	" " TERM. 1794631			GOLD PLATED	"
12	CONN. PIN 1189				"
3	" " (TO FIT 1189)				"
3	FUSEHOLDER 357002				LITTLEFUSE
1	1/2 A - 3AG			F5	LITTLEFUSE
1	3A - 3AG			F4	"
1	8A - 3AG			F3	"
1	4A - 3AG			F2	"
2	2A - 3AG			F1, F6	"
2	RESISTOR 1KR 1/2 W			R26, R27	CARBON COMP
1	" " 100R 5W			R25	WIRE WOUND
1	" " 50R 50W			R24	" OHMITE 270-50
1	" " 10R 1/2 W			R22	CARBON COMP.
1	" " 1.5KR 1/2 W			R19	"
1	" " 330R 1/2 W			R15	"
1	" " 220R 1/2 W			R13	"
1	" " 25R 2.5 W			R12	WIRE WOUND OHMITE 270-25
1	" " 39R 1/2 W			R11	CARBON COMP.
2	" " 22R 1/2 W			R10, R23	"
1	" " 2KR 1/2 W			R9	"
1	" " 1.1KR 1/2 W			R7	"
2	" " 2.2KR 1/2 W			R6, R21	"
2	" " 100R 1/2 W			R4, R16	"
3	" " 910R 1/2 W			R2, R3, R5, R18	"
2	RESISTOR VARIABLE 2500			R8, R20	IRC-GTS TYPE 115
1	" " .15R 3W			R14	"
1	" " .182R 3W 10%			R1	"
2	SCR 2N4441			SCR1-2	MOT
1	ZENER 1N5244B			CR10	"
1	" " 1N5256B			CR17	"
2	DND 806 DIODE			CR14, 16	GE
1	ZENER 1N5231B			CR15	MOT
1	" " 1N5240B			CR13	"
2	MPS3702	CD3702 PET 370		Q4, Q8	MOT TO-18 PIN CONN.
4	MP33704	CD3704 PET 3704		Q3, Q7, Q9, Q10	MOT
2	40389			Q2, Q6	RCA
2	2N3055			Q1, Q5	MOT, WEST, RCA
2	MR1121			CR3, 4, 7, 8	MOT
4	MR1120			CR5, 6, 9	"
4	1N5400			CR1, 10, 11, 12	WESTINGHOUSE
2	1N5401			CR1, CR2	"
1	CAP 100MF 25VDC			C10	SPRAGUE TE1811
2	" " .47MF 12VDC			C9, C11	ELIUM 568 0005F047ND5C
1	" " 100MF 50VDC			C8	SPRAGUE TE1309
2	" " .05MF 50VDC			C7, C12	CR1 CK503 DISC.
1	" " 75MF 370VAC			C6	45E235 GE
2	" " 10,000MF 20VDC 85%			C5, C4	86F130M "
1	CAP 17,000MF 30VDC 85%			C3	86F150M GE
1	" " 21,500MF 40VDC "			C2	86F160M "
1	" " 4,200MF 40VDC "			C1	86F156M "
1	CONNECTOR - AMP			J2	AMP
1	25 VAC 15 AMP RECP 3 WIRE			J1	HUBBELL
1	VAR OF FORMER			VF1	"
1	RES. 1.52. 5W. ± 5%			R28	"

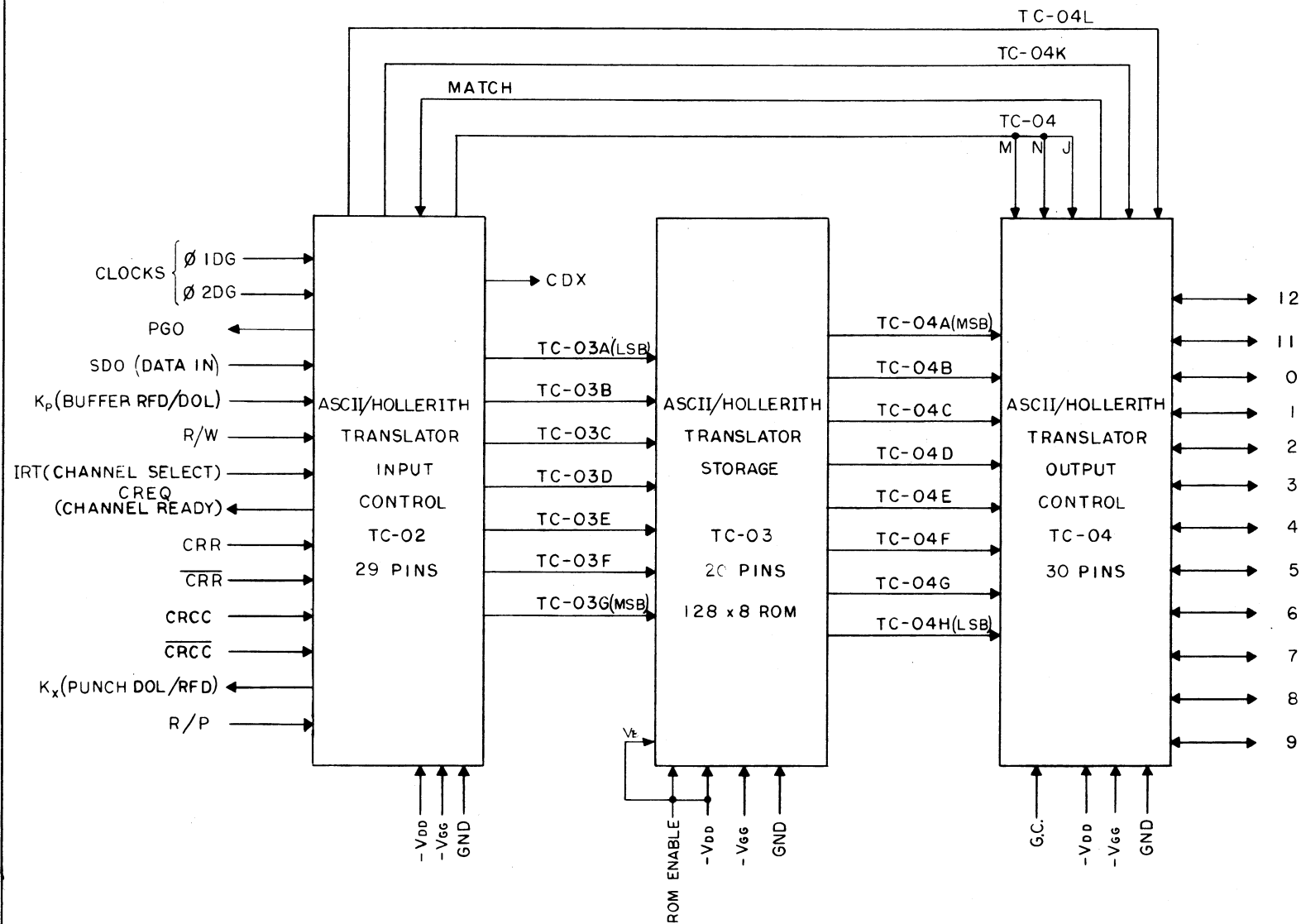
LIST OF MATERIAL

COMPUTER SYSTEMS CORPORATION
ROUTE 66
BOSTON, MASSACHUSETTS 02108

VIA TRON POWER
50HZ SUPPLY

11701

REV.	DATE	REVISION
B	3-4-69	CHANGED PER ECO # 2
C	8-25-68	CHANGED PER ECN NO. 1
D	1/10/69	CHANGED PER ECN NO. 1
E	4/15/69	CHANGED PER ECN #



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

ITEM	DESCRIPTION	CODE	REV.
	COMPUTER SYSTEMS CORPORATION 140 TERNACE HALL AVENUE ROSLINDEN, MASSACHUSETTS 01868		
	ASCII/HOLLERITH TRANSLATOR PARTITIONING		
	MODEL: D 10359		REV. E

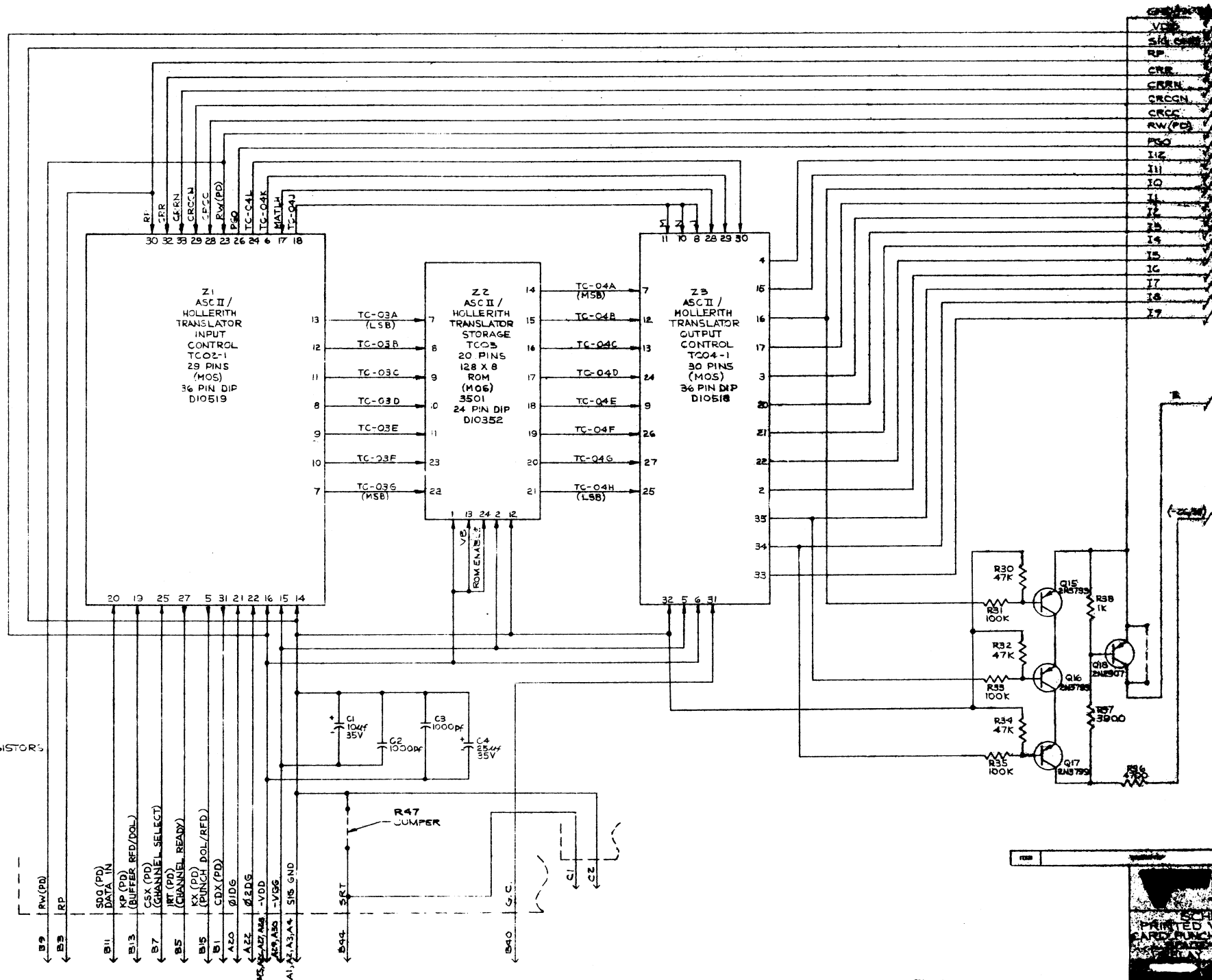


INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

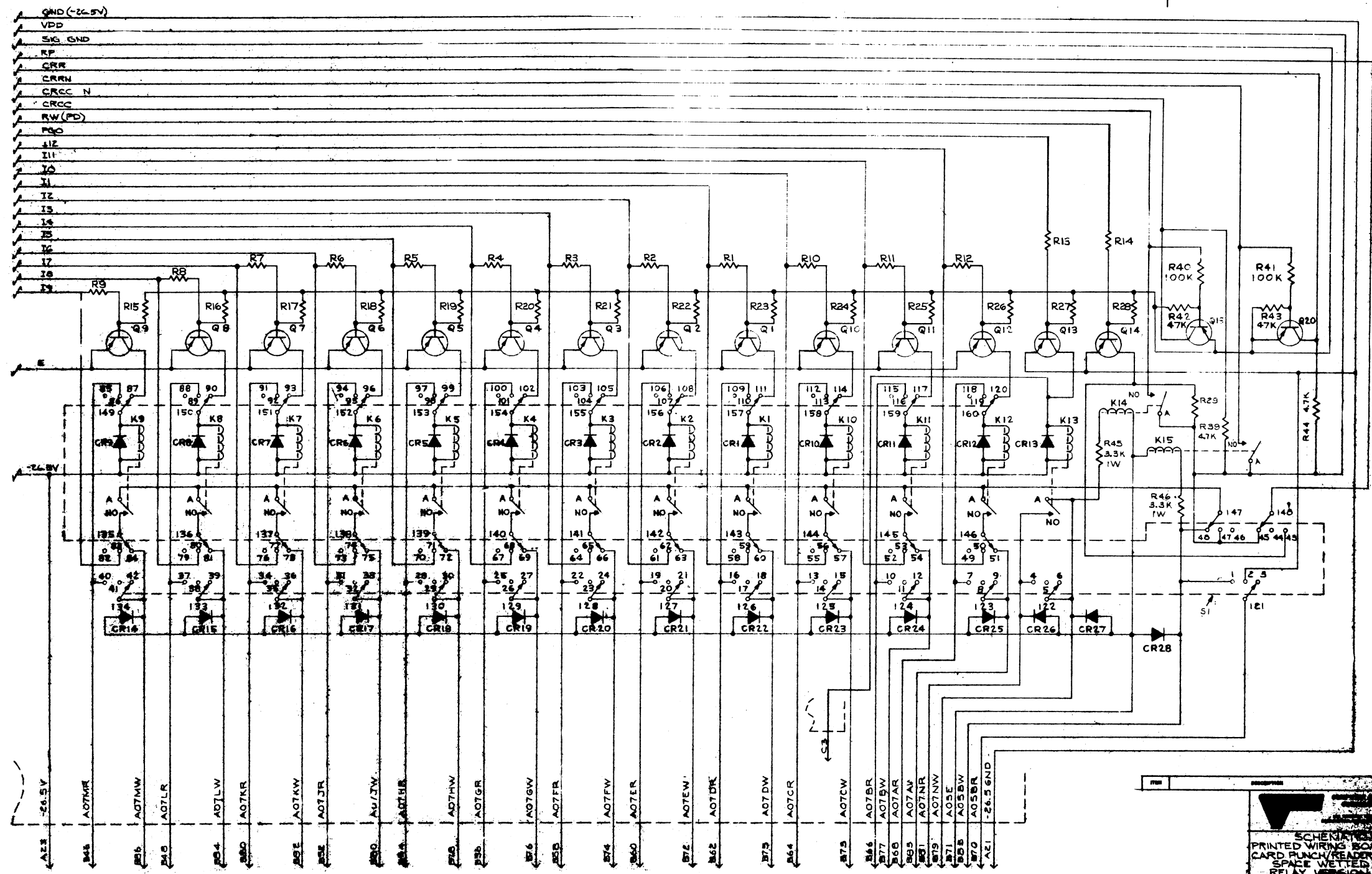
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

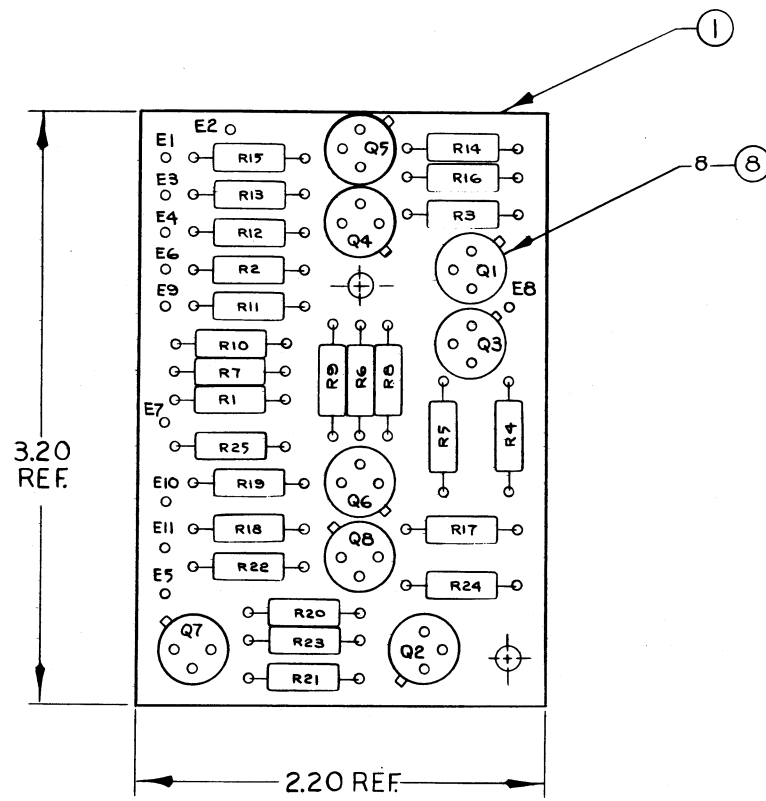
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013



- NOTES:
- Q1 THRU Q14, Q19, Q20 ARE 2N3798
 - R1 THRU R14 ARE 15K, 1/2 W, ±10%
 - R15 THRU R28 ARE 3900, 1/2 W, ±10%
 - R29 IS 56K, 1/2 W, ±10%
 - CR1 THRU CR13 ARE 1N914G
 - CR14 THRU CR28 ARE 1N4002G
 - UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE IN OHMS, 1/2 WATT, ±10%



SCHEMATIC
PRINTED WIRING BOARD
CARD PUNCH/READER
SPACE WITTER
RELAY



- NOTES:
1. INSTALL ITEM 8 UNDER ALL TRANSISTORS
 2. FOR SCHEMATIC SEE 140704



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
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VERADA 214 Div. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
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PHONE (617) 452-5013



COMPUTER SYSTEMS
CORPORATION
ROUTE 82
BEDFORD, MASSACHUSETTS 01730

ASSEMBLY P.W. BD.
END OF BATCH & KP WAIT

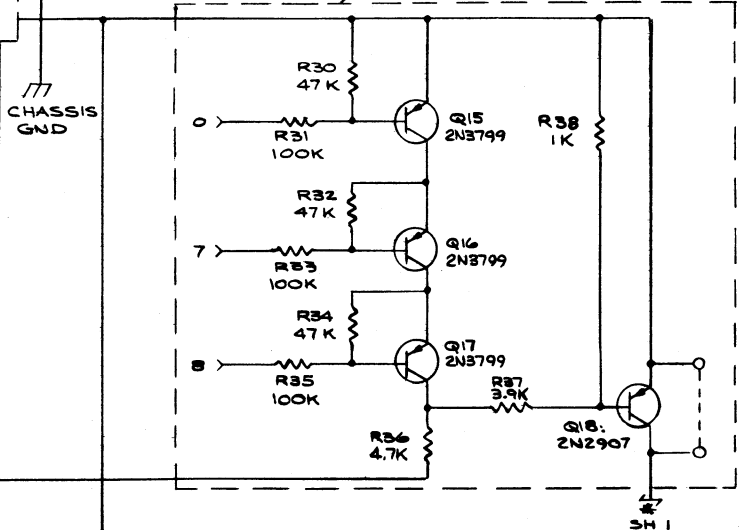
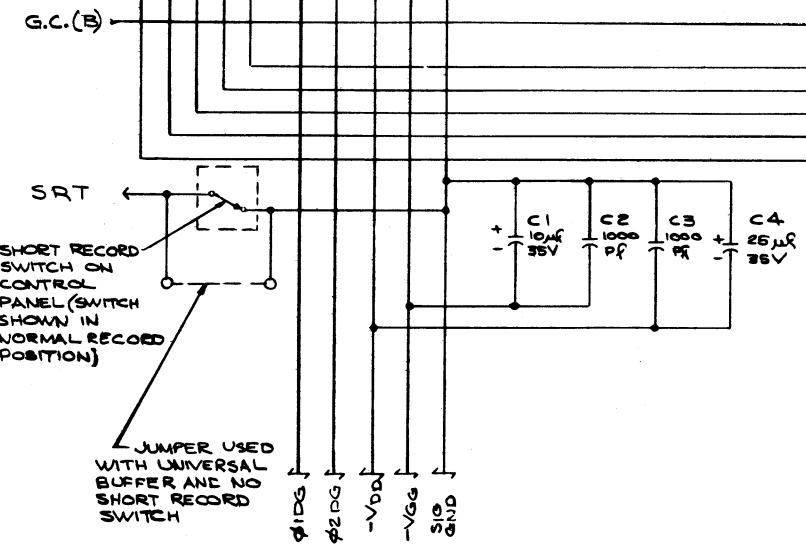
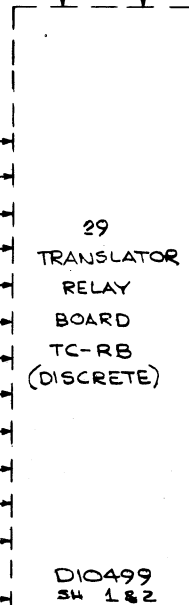
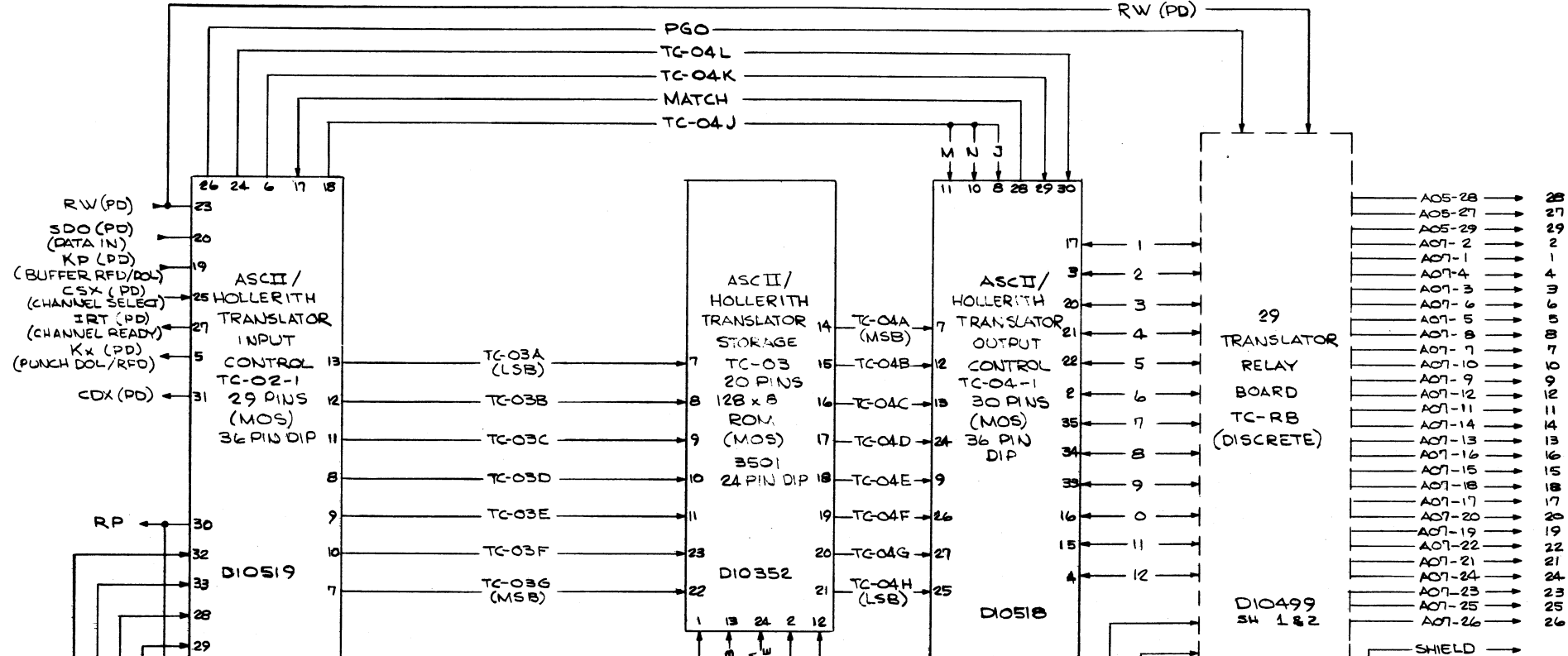
SIZE	SCALE	DWG NO	REV
C	2/1	109711	-



INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

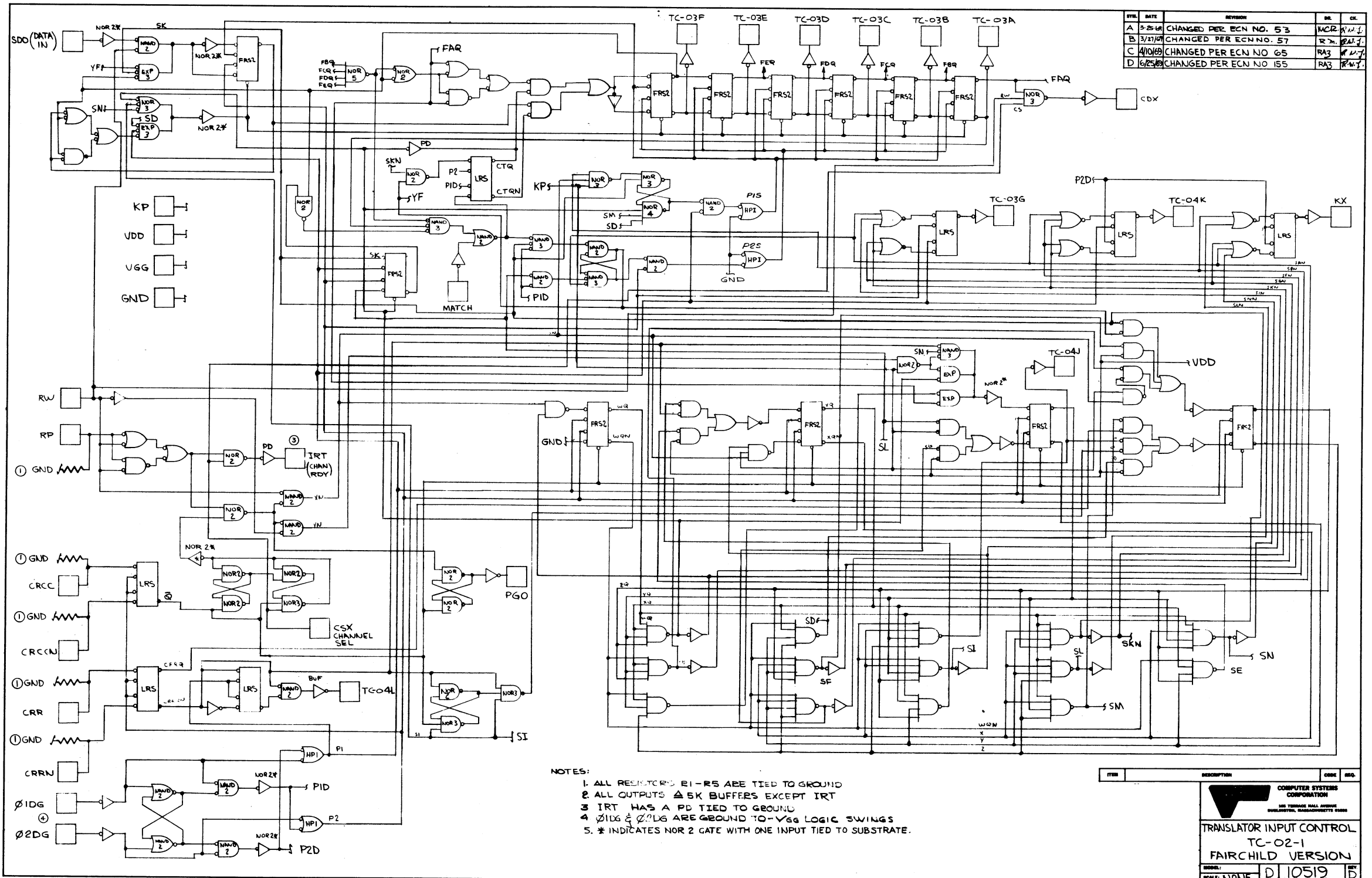
VERADA 214 DIV. LOLAR
 MAIL - P.O. Box 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013



ITEM	DESCRIPTION	QTY	REF.
34 20 2	D 10499		


COMPUTER SYSTEMS CORPORATION
 100 VERMONT HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

29 TRANSLATOR ADAPTER BOARD

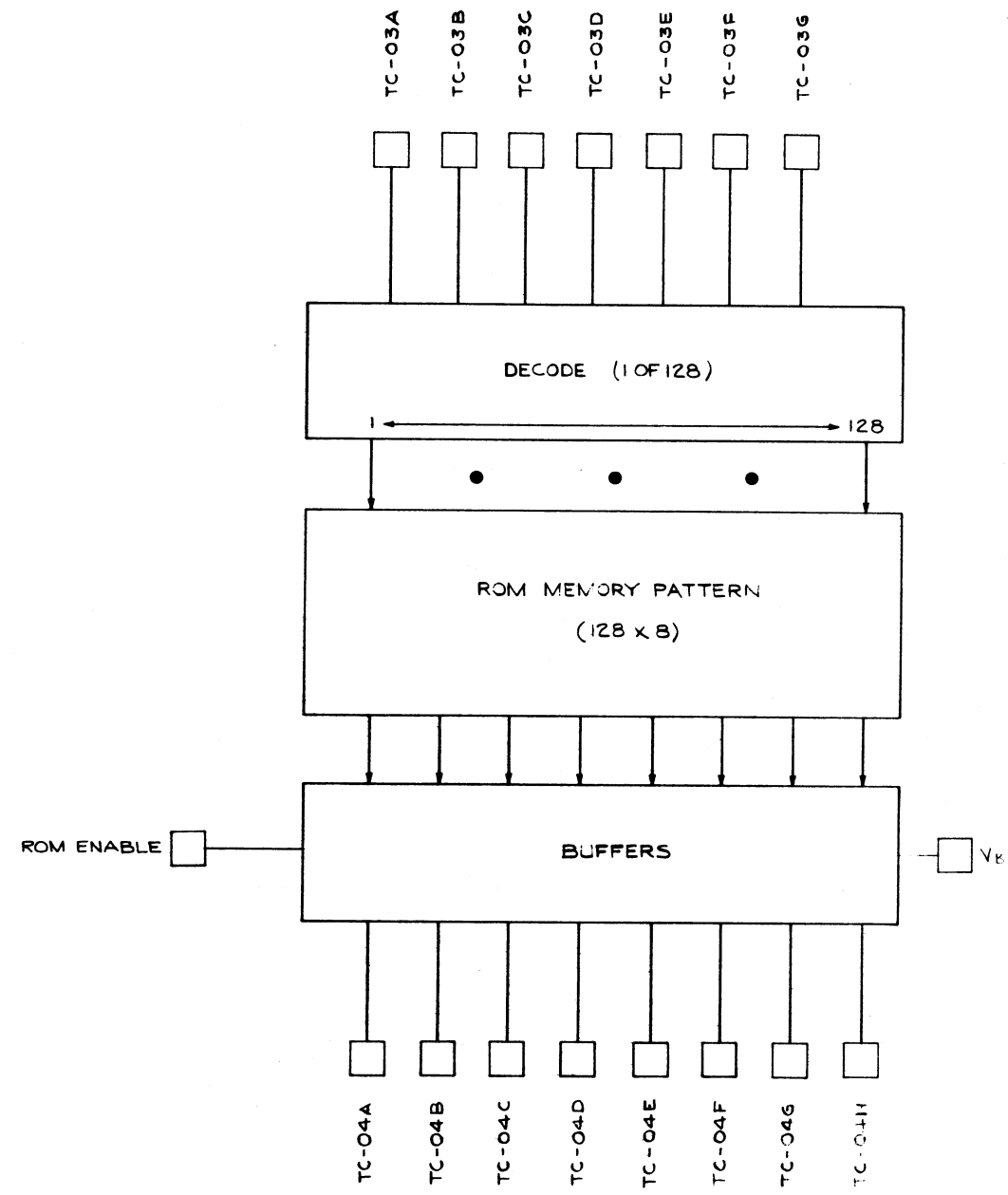


REV.	DATE	REVISION	DR.	CHK.
A	2-28-64	CHANGED PER ECN NO. 53	MCR	R.W.J.
B	3-27-64	CHANGED PER ECN NO. 57	R.M.	R.W.J.
C	4-10-64	CHANGED PER ECN NO. 65	RA3	R.W.J.
D	6-25-64	CHANGED PER ECN NO. 155	RA3	R.W.J.

- NOTES:
1. ALL RESISTORS R1-R5 ARE TIED TO GROUND
 2. ALL OUTPUTS Δ SK BUFFERS EXCEPT IRT
 3. IRT HAS A PD TIED TO GROUND
 4. Ø1DG & Ø2DG ARE GROUND TO -VGG LOGIC SWINGS
 5. * INDICATES NOR 2 GATE WITH ONE INPUT TIED TO SUBSTRATE.

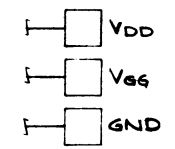
ITEM	DESCRIPTION	CODE	REV.
 COMPUTER SYSTEMS CORPORATION <small>305 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</small>			
TRANSLATOR INPUT CONTROL TC-02-1 FAIRCHILD VERSION			
MODEL:			
SCALE: NONE	D 10519		D

REV.	DATE	REVISION	BY	CHK.
A	9-25-61	CHANGED PER ECN NO. 54	MCD	WJF
B	4/15/61	CHANGED PER ECN NO. 71	FTM	RW?



NOTE

MEMORY MUST HAVE
4 μSEC CYCLE TIME
MAXIMUM.

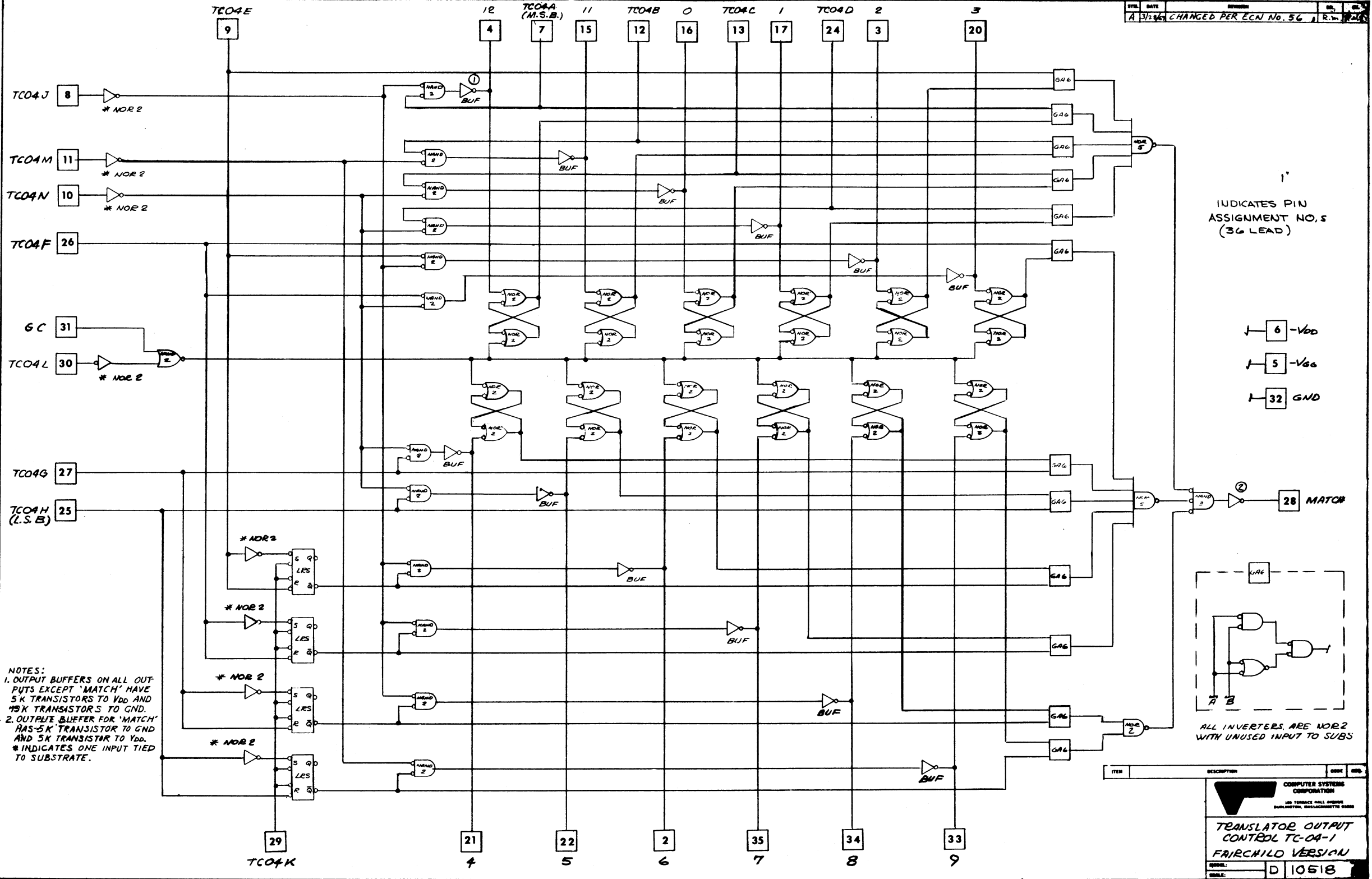


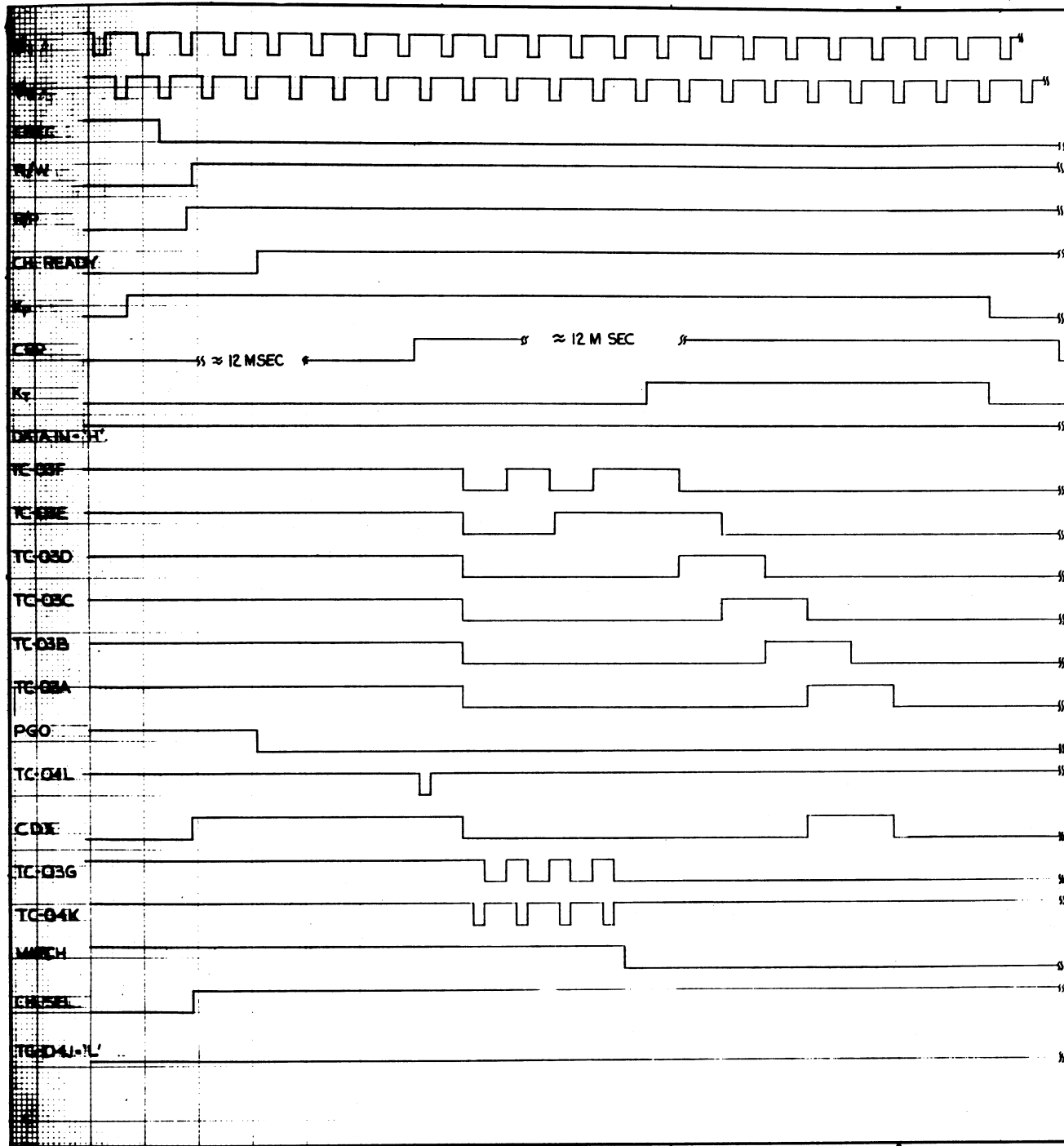
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

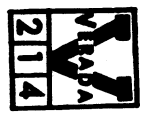
ITEM	DESCRIPTION	QTY	UNIT
	COMPUTER SYSTEMS CORPORATION 100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803		
	ASCII/HOLLERITH TRANSLATOR STORAGE TC-03		
MODEL:			
QTY:	D	10352	





(79 CHARACTERS)


50M SEC



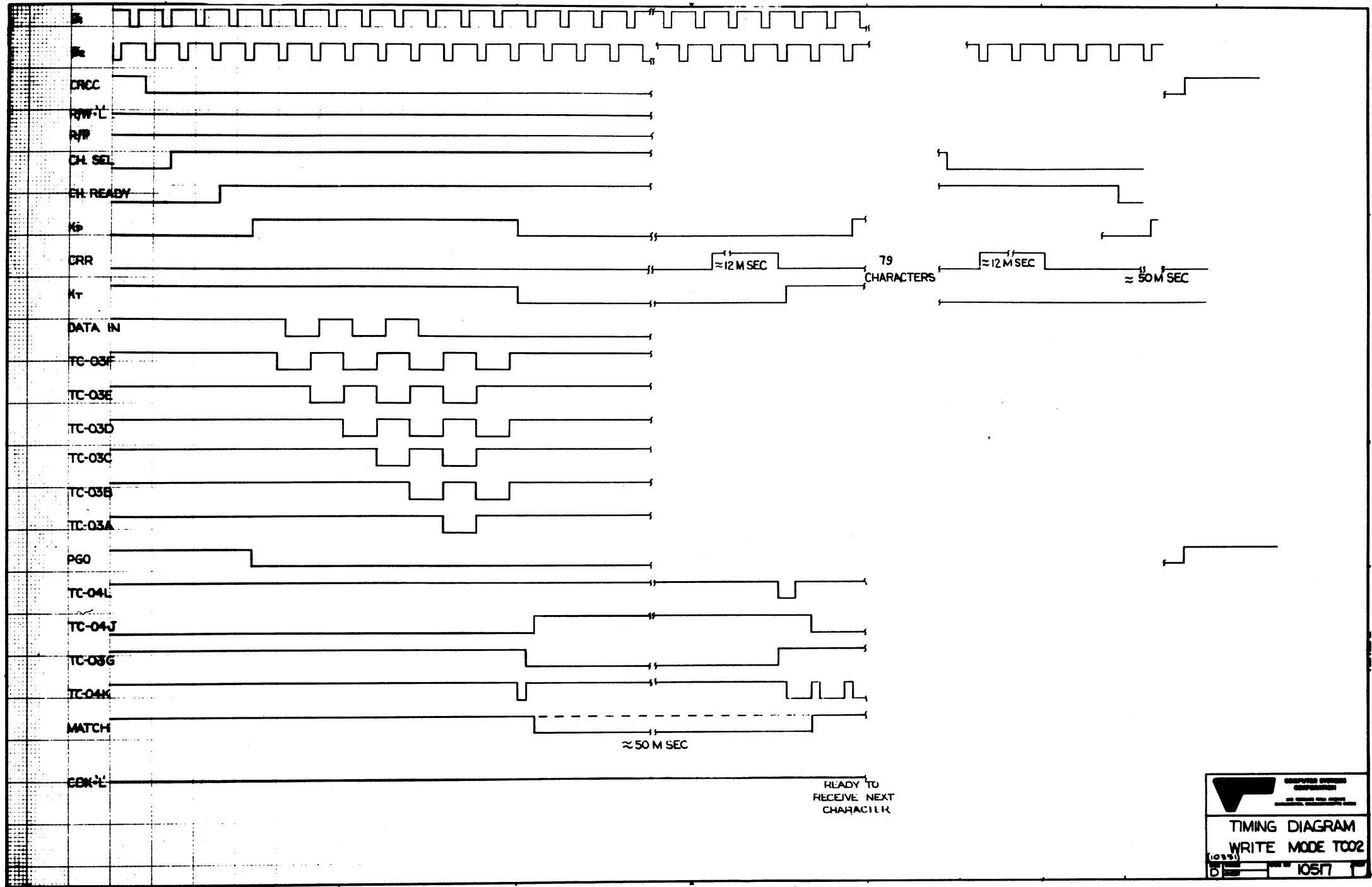
INDUSTRIAL SUPPLIES
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND


COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOKAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-8013

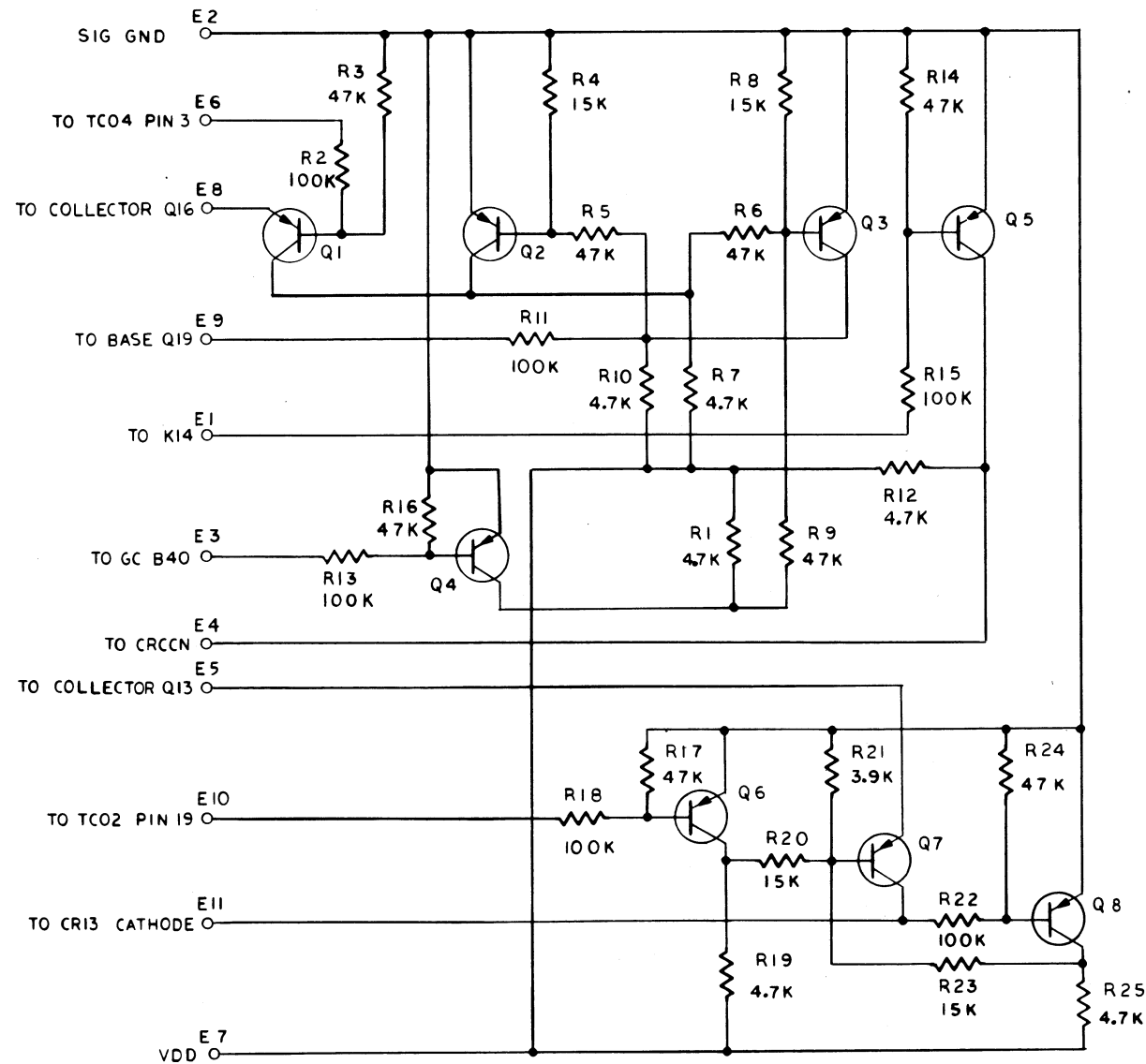


 TIMING DIAGRAM
 READ MODE TC02
 10516




COMPUTER SYSTEM CORPORATION
 AN INSTRUMENTAL DIVISION OF
 THE GENERAL ELECTRIC COMPANY

TIMING DIAGRAM
WRITE MODE TC02
 (10517)



NOTES:

1. UNLESS OTHERWISE SPECIFIED
RESISTOR VALUES ARE IN OHMS
1/2W ± 10%
2. FOR ASSEMBLY DWG SEE 109711
3. ALL TRANSISTORS 2N3798



VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-8015

COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

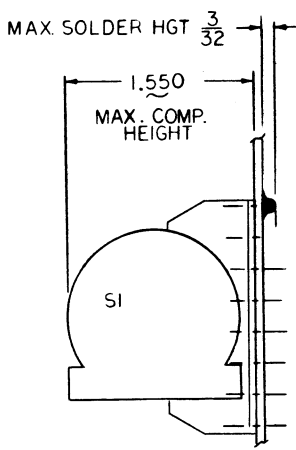
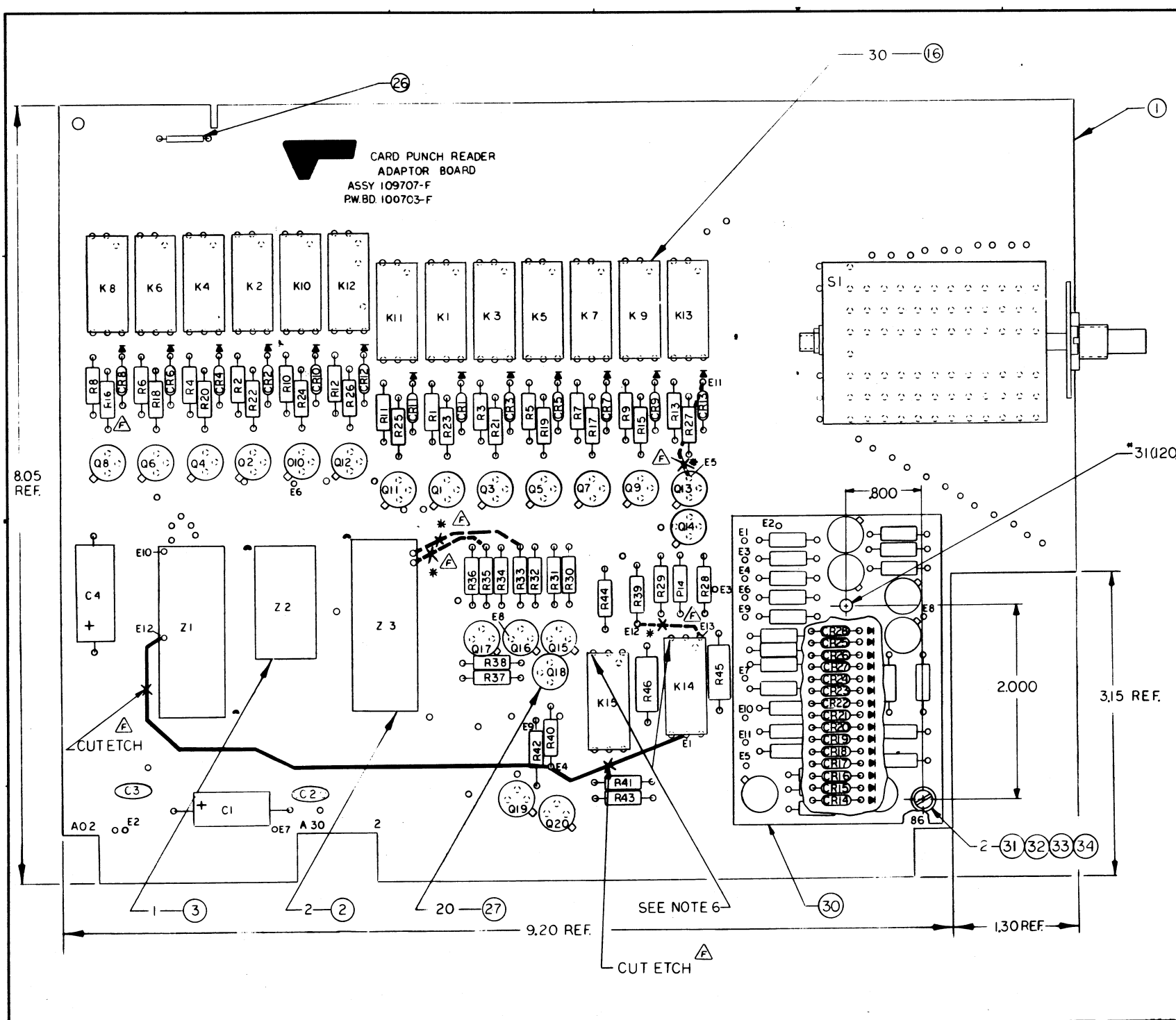
COMPUTER SYSTEMS
 CORPORATION
 ROUTE 62
 BEDFORD, MASSACHUSETTS 01730

SCHEMATIC
 END OF BATCH & KP WAIT

SIZE	SCALE	DWG NO	REV
C	10FT	140704	-

REV.	DATE	REVISION	BY	CHK.
A		REV PER ECN 314		
B		REV PER ECN 386		
C	7-23-69	REV PER ECN 411	VEP	C
D	7-29-69	REV PER ECN 435	VEP	C
E	11-3-69	REV PER ECN 649	VEP	MD
F	2-2-70	REV PER ECN 964	MD	MD

CARD PUNCH READER
ADAPTOR BOARD
ASSY 109707-F
PW.BD. 100703-F

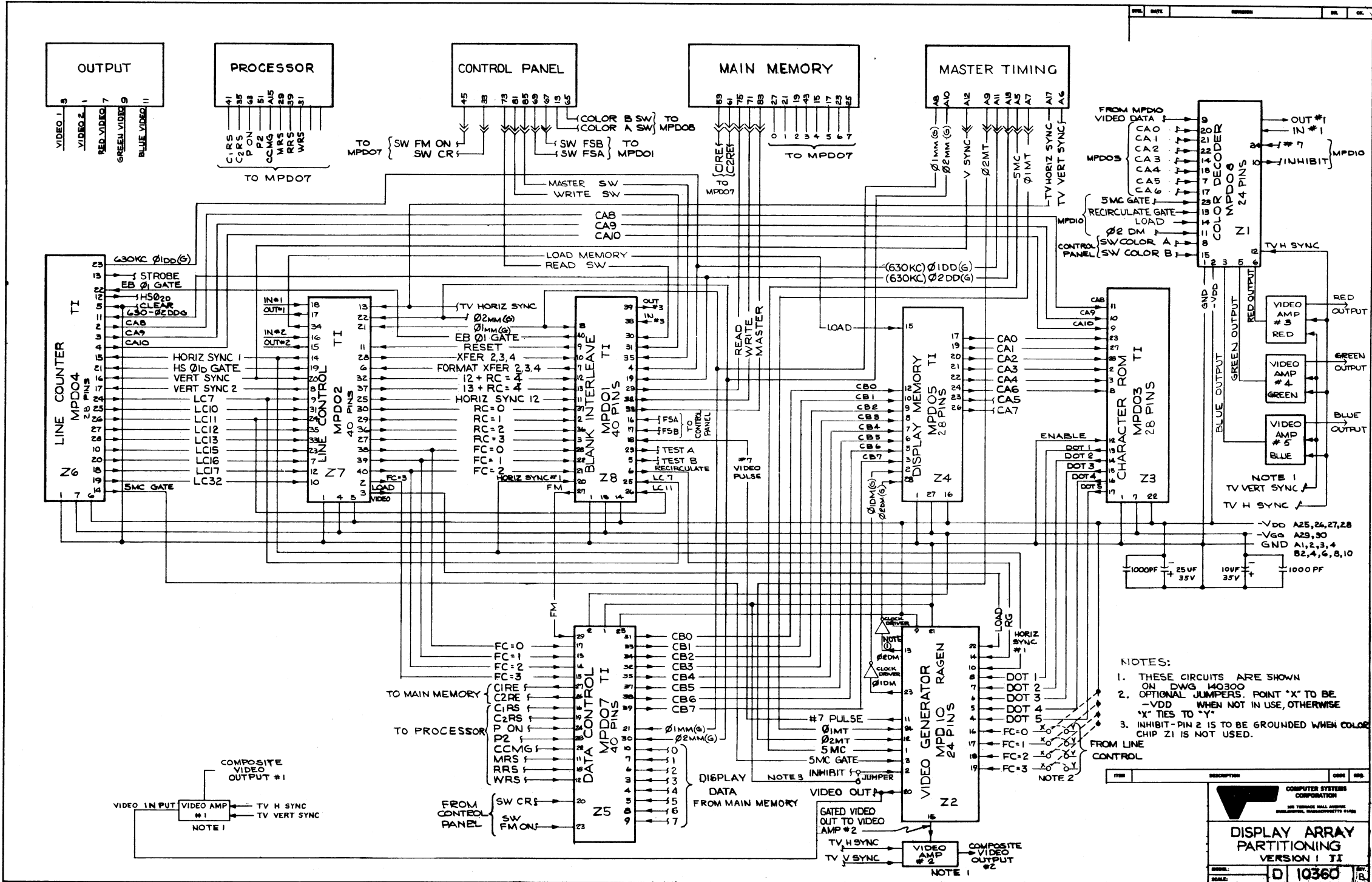


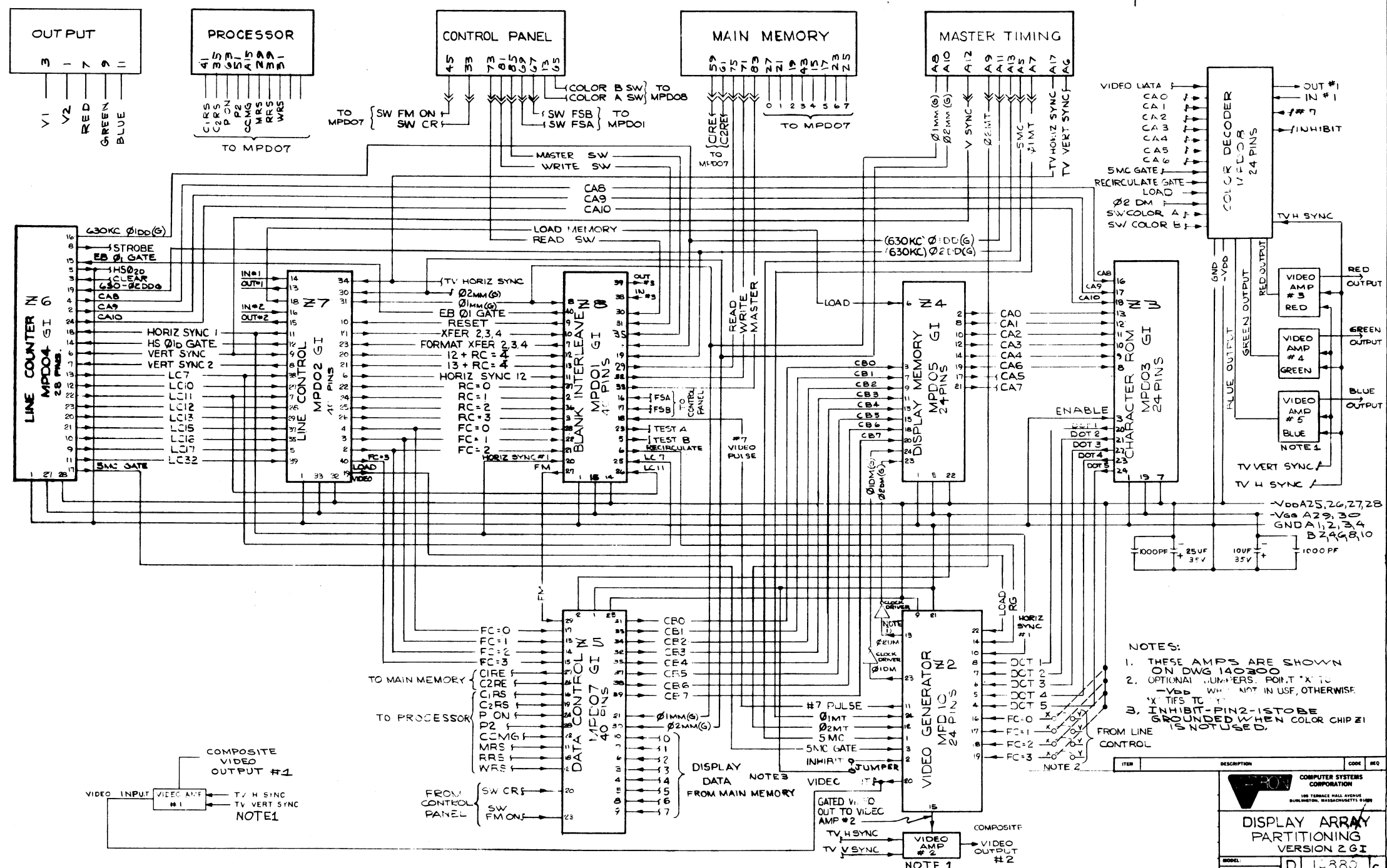
- NOTES:
1. INSTALL ITEM (2) UNDER Z1 & Z3
 2. INSTALL ITEM (3) UNDER Z2.
 3. ~~INSTALL ITEM (16) UNDER ALL RELAYS.~~
 4. INSTALL ITEM (27) UNDER ALL TRANSISTORS.
 5. INSTALL MOS DEVICES AFTER FLOW SOLDERING.
 6. DO NOT INSERT ONE BERG PIN IN UPPER LEFT PORTION OF K14 & K15
 7. FOR SCHEMATIC SEE 140702
 8. INSTALL ITEM (35) FROM E1 TO E1 THRU E12 TO E12
- △ * CUT ETCH FAR SIDE

COMPUTER SYSTEMS CORPORATION
ROUTE 66
BEDFORD, MASSACHUSETTS 01730


ASSEMBLY PW.BD. CARD/
PUNCH READER ADAPTOR
SPACE WETTED RELAY
VERSION

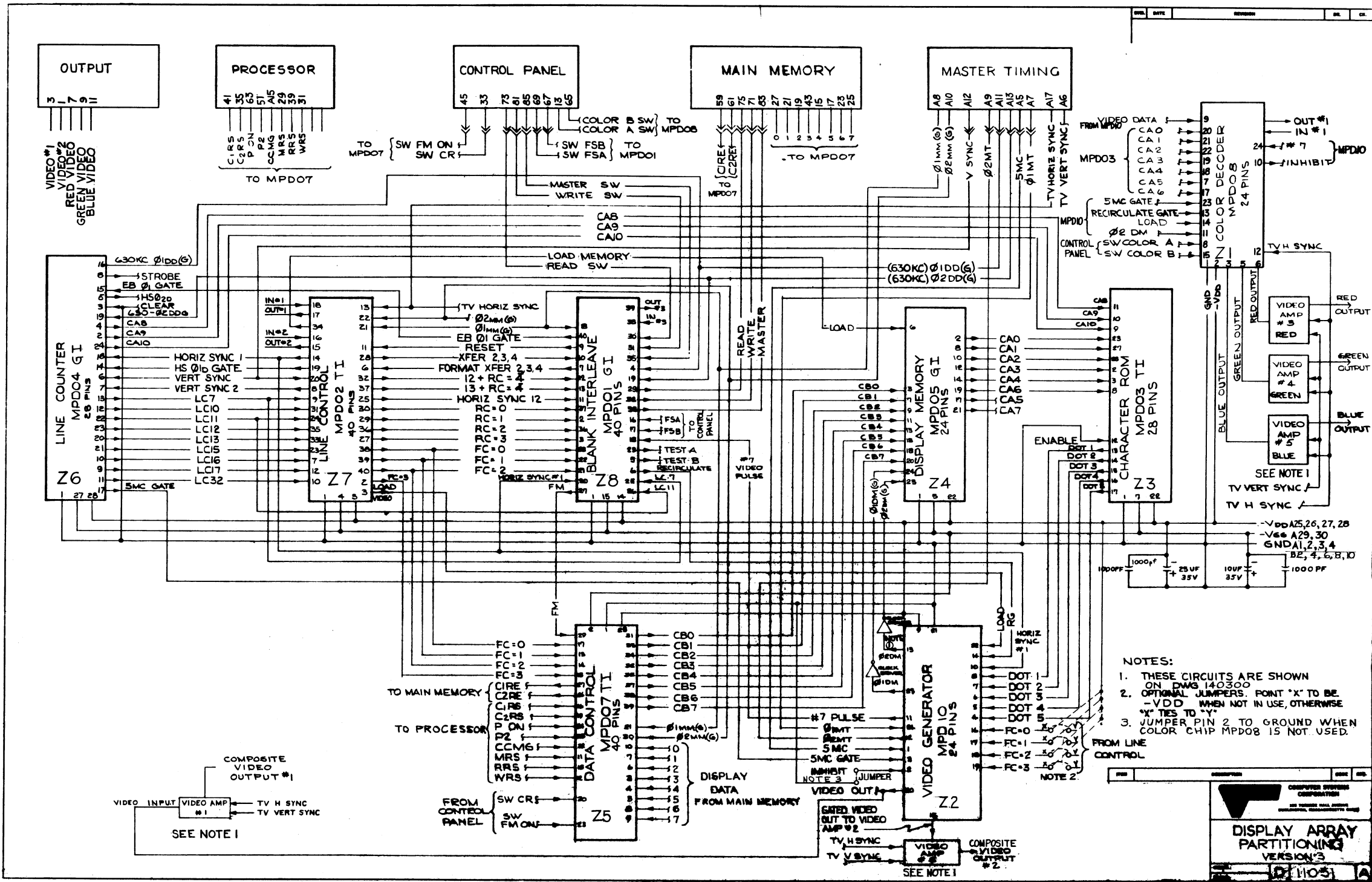
D 109707 F



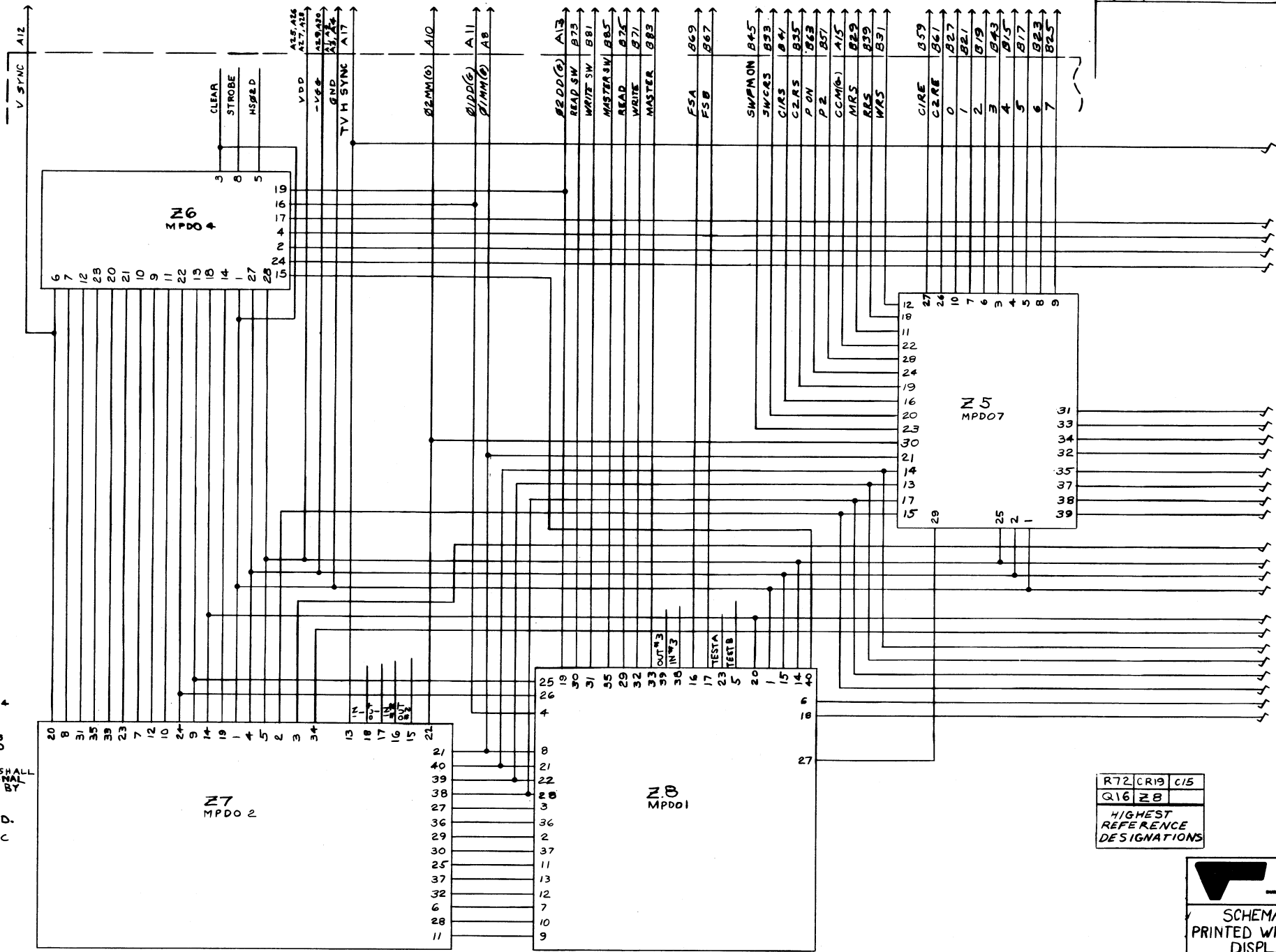


NOTES:
 1. THESE AMPS ARE SHOWN ON DWG 140200
 2. OPTIONAL JUMBERS: POINT 'X' TO -VDD WHEN NOT IN USE, OTHERWISE 'X' TIES GROUND WHEN COLOR CHIP Z1 IS NOT USED.
 3. INHIBIT-PIN-1-STROBE GROUND WHEN COLOR CHIP Z1 IS NOT USED.

ITEM	DESCRIPTION	CODE	REQ
 COMPUTER SYSTEMS CORPORATION 100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
DISPLAY ARRAY PARTITIONING			
VERSION 2.61			
MODEL:	D 13880 c		
SCALE:			



REFERENCE DESIGNATION	ITEM NO.



- NOTES:
1. ALL DIODES ARE 1N514 UNLESS OTHERWISE SPECIFIED.
 2. ALL RESISTORS ARE 1/2 W, 10% UNLESS OTHERWISE SPECIFIED AND VALUES ARE GIVEN IN OHMS.
 3. PRINTED WIRING BOARDS SHALL HAVE LANDS FOR OPTIONAL CIRCUITRY AS SHOWN BY DOTTED LINES.
 4. ALL CAPACITOR VALUES ARE IN μF UNLESS OTHERWISE SPECIFIED.
 5. S-DIGIT ARRAY NO. REFERENCE TO LOGIC DIAGRAM.

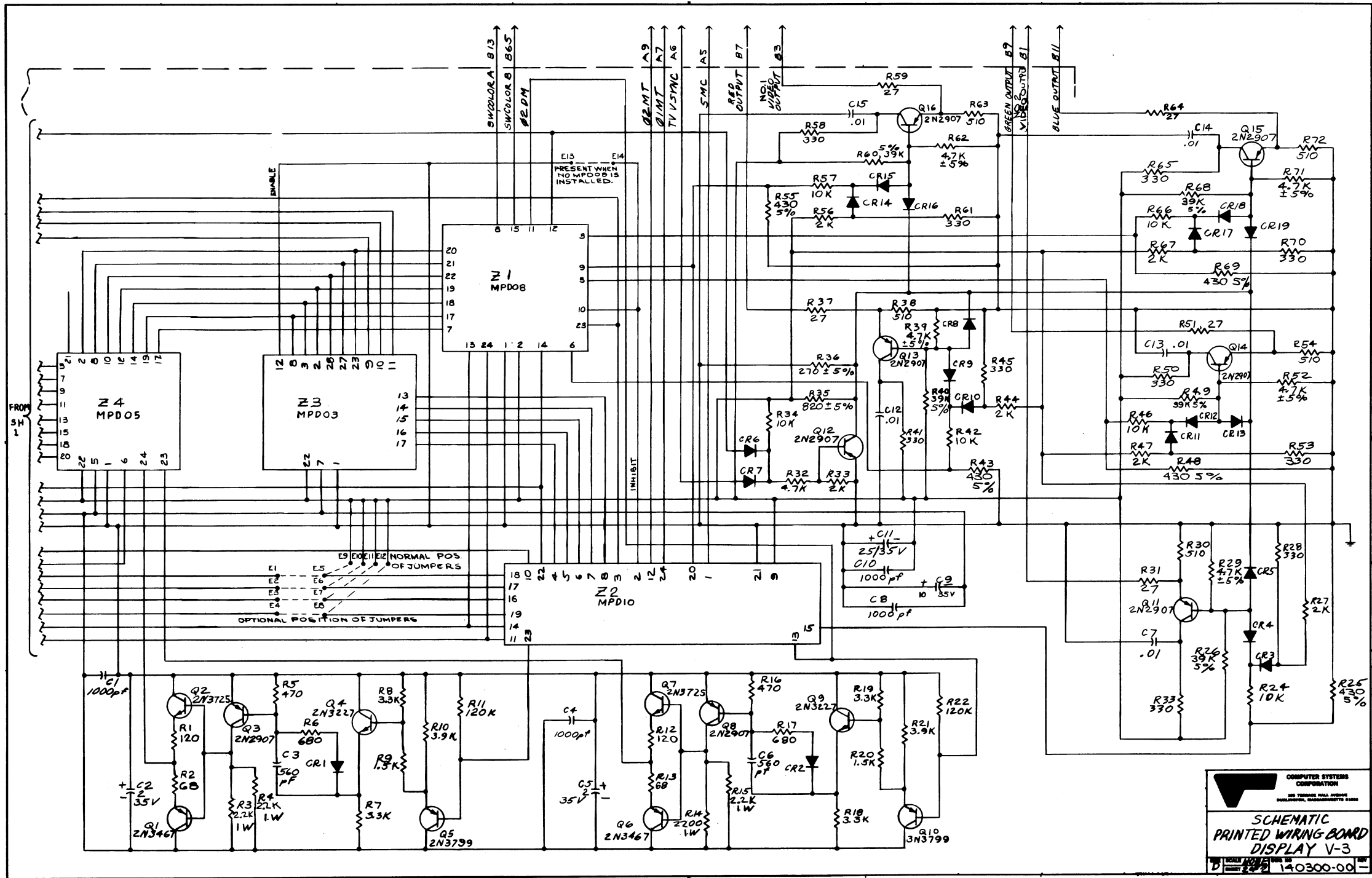
SEE SHEET 2

R72	CR19	C15
Q16	ZB	
HIGHEST REFERENCE DESIGNATIONS		

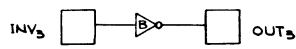
COMPUTER SYSTEMS CORPORATION
 300 YERGEN HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

SCHEMATIC PRINTED WIRING BOARD DISPLAY V-3

SCALE: NONE
 DATE: 10/72
 DRAWING NO: 140300-00
 REV: -



REV.	DATE	REVISION	BY	CHK.
A	5/28/67	CHANGED PER ECN NO. 3	R.A.	W.J.
B	5/29/67	CHANGED PER ECN NO. 17	W.R.	W.J.
C	5/29/67	CHANGED PER ECN NO. 42	W.R.	W.J.
D	4/11/68	CHANGED PER ECN NO. 53	R.E.	W.J.



OUTPUT	CHIP LOAD
FM	MPD07-3
RESET	MPD02-1
XFER 2,3,4	MPD02-1
RECIR	MPD06-3
EBØ1 GATE	MPD04-1
READ	MM03-4
WRITE	MM03-4
MASTER	MM03-4

HORIZ SYNC #1 FROM LINE CONTROL

HORIZ SYNC #12 FROM LINE COUNTER

LC 11 FROM LINE COUNTER

FM TO DATA CONTROL

LC7 FROM LINE COUNTER

13+RC=7

12+RC=7

TRANSFER 2,3,4 FROM LINE CONTROL

Ø1DD(G) FROM TIMING (630KC)

RESET TO LINE CONTROL

FORMAT TRANSFER 2,3,4 TO LINE CONTROL

Ø2DD(G) FROM TIMING (630KC)

#7 VIDEO PULSE

RC0

RC2

RC1

RC3

FC=1

FC=2

TEST A

TEST B

RECIRCULATE GATE TO VIDEO GENERATOR

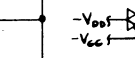
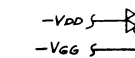
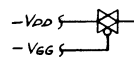
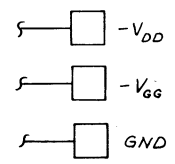
FC=0

READ REC COMM

ON/OFF SW READ FIELD OFF = OPEN ON = GND

WRITE REC COMM

MASTER REC COMM



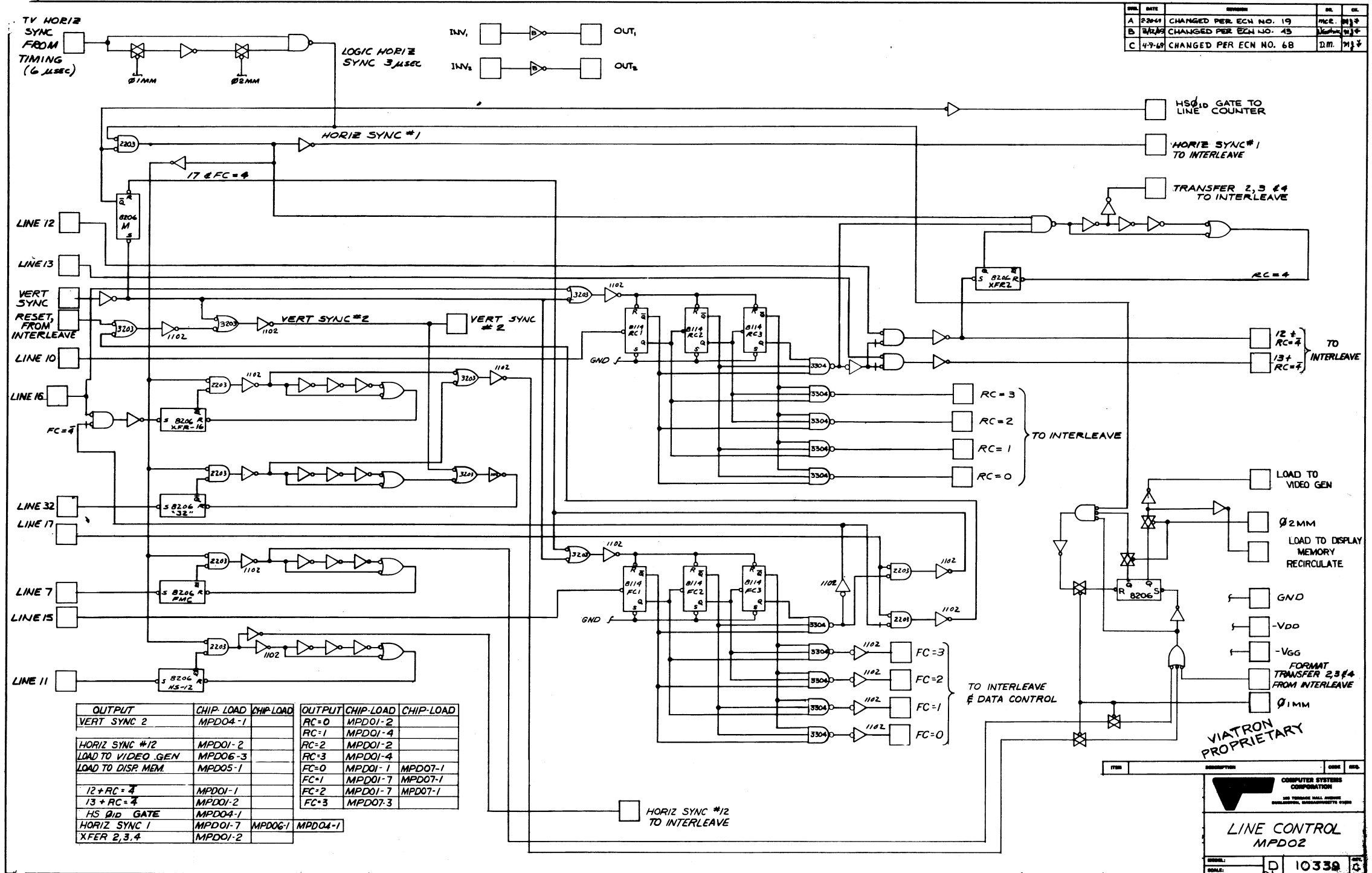
ON/OFF SW MASTER FIELD OFF = OPEN ON = GND

ON/OFF SW WRITE COMM OFF = OPEN ON = GND

VIATRON PROPRIETARY

ITEM	DESCRIPTION	QTY	END
 COMPUTER SYSTEMS CORPORATION 300 VANDERBILT HALL SUITE 200 BIRMINGHAM, ALABAMA 35202			
BLANK / INTERLEAVE MPD01			
MODEL:	D 10338		
SCALE:			

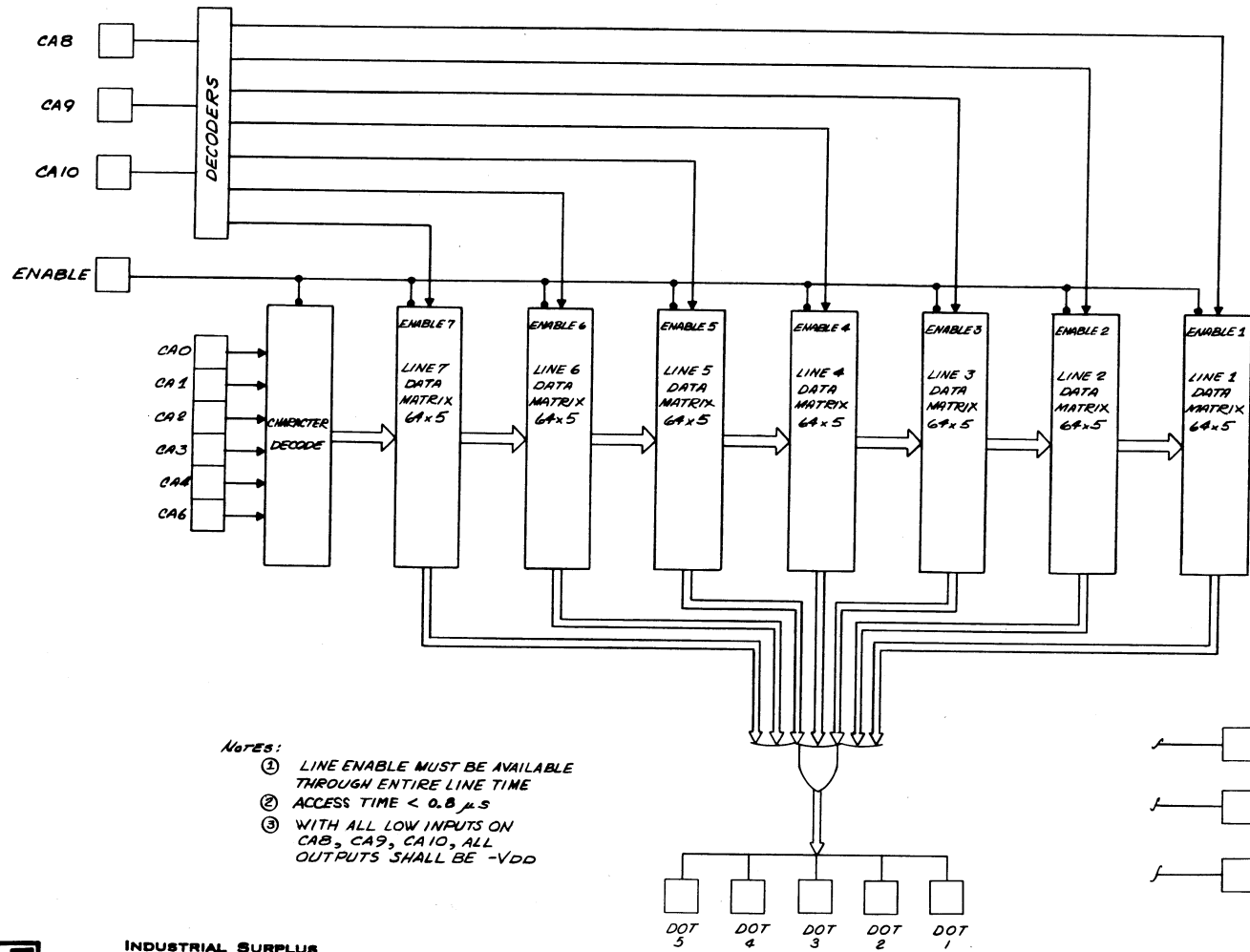
REV	DATE	REVISION	BY	CHK
A	2-20-69	CHANGED PER ECN NO. 19	M.C.E.	M.J.S.
B	3-22-69	CHANGED PER ECN NO. 45	M.C.E.	M.J.S.
C	4-9-69	CHANGED PER ECN NO. 68	D.M.	M.J.S.



OUTPUT	CHIP LOAD	CHIP-LOAD	OUTPUT	CHIP-LOAD	CHIP-LOAD
VERT SYNC #2	MPD04-1		RC=0	MPD01-2	
HORIZ SYNC #12	MPD01-2		RC=1	MPD01-4	
LOAD TO VIDEO GEN	MPD06-3		RC=2	MPD01-2	
LOAD TO DISP. MEM.	MPD05-1		RC=3	MPD01-4	
12 + RC = 4	MPD01-1		FC=0	MPD01-1	MPD07-1
13 + RC = 4	MPD01-2		FC=1	MPD01-7	MPD07-1
HS 010 GATE	MPD04-1		FC=2	MPD01-7	MPD07-1
HORIZ SYNC #1	MPD01-7	MPD06-1	FC=3	MPD07-3	
XFER 2,3,4	MPD01-2				

VIATRON PROPRIETARY

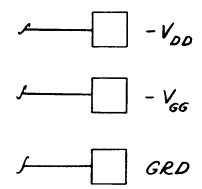
ITEM	DESCRIPTION	QTY	REV.
	COMPUTER SYSTEMS CORPORATION 300 VERNON HALL DRIVE MILWAUKEE, WISCONSIN 53222		
LINE CONTROL MPD02			
REV:		QTY:	
DATE:		NO:	10339



- Notes:
- ① LINE ENABLE MUST BE AVAILABLE THROUGH ENTIRE LINE TIME
 - ② ACCESS TIME < 0.8 μs
 - ③ WITH ALL LOW INPUTS ON CA8, CA9, CA10, ALL OUTPUTS SHALL BE -VDD

LOADING:

OUTPUT	CHIP-LOADS
DOT 1	MP-DO6-1
DOT 2	MP-DO6-1
DOT 3	MP-DO6-1
DOT 4	MP-DO6-1
DOT 5	MP-DO6-1



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

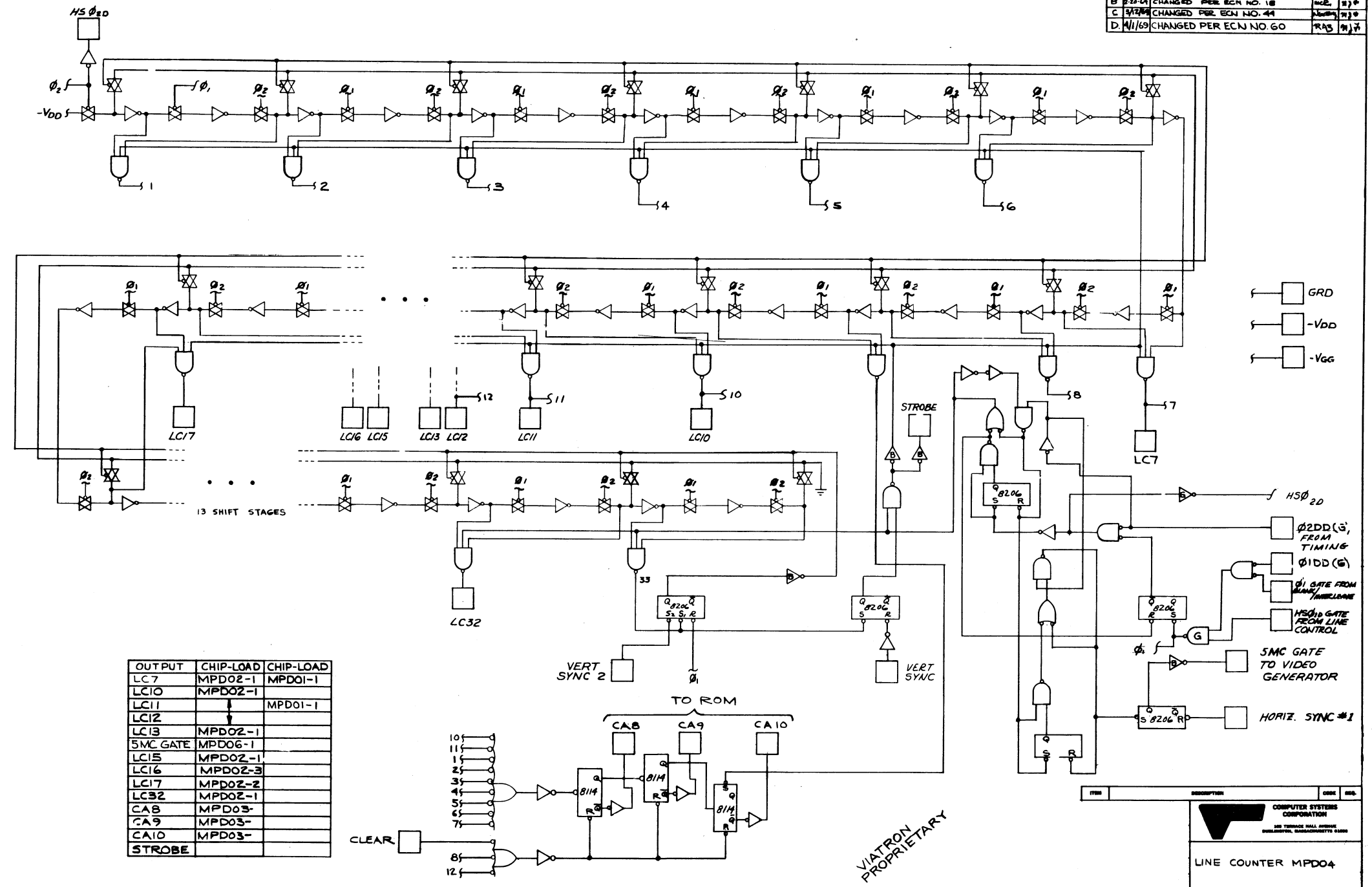
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

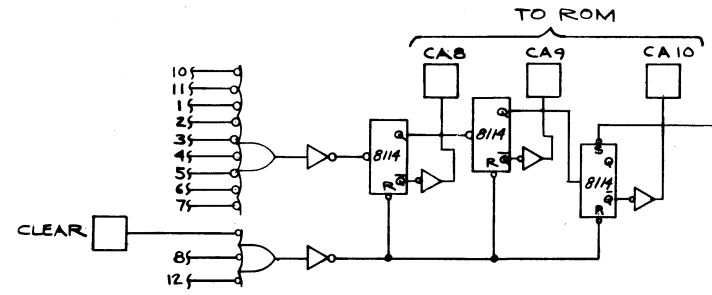
VIATRON
PROPRIETARY

ITEM	DESCRIPTION	QTY	REQ.
	COMPUTER SYSTEMS CORPORATION 380 TUNBRIDGE HALL AVENUE SHELLEXTON, MASSACHUSETTS 01888		
CHARACTER ROM MP003			
MODEL:			
SCALE:	D	10340	A

REV.	DATE	DESCRIPTION	BY	CHK.
A	2/23/69	CHANGED PER ECN NO. 2	R21	
B	2-24-69	CHANGED PER ECN NO. 18	MAC	
C	5/12/69	CHANGED PER ECN NO. 44	MAC	
D	11/69	CHANGED PER ECN NO. 60	RAB	



OUTPUT	CHIP-LOAD	CHIP-LOAD
LC7	MPD02-1	MPD01-1
LC10	MPD02-1	
LC11		MPD01-1
LC12		
LC13	MPD02-1	
SMC GATE	MPD06-1	
LC15	MPD02-1	
LC16	MPD02-3	
LC17	MPD02-2	
LC32	MPD02-1	
CAB	MPD03-	
CA9	MPD03-	
CA10	MPD03-	
STROBE		



VIA TRON
PROPRIETARY

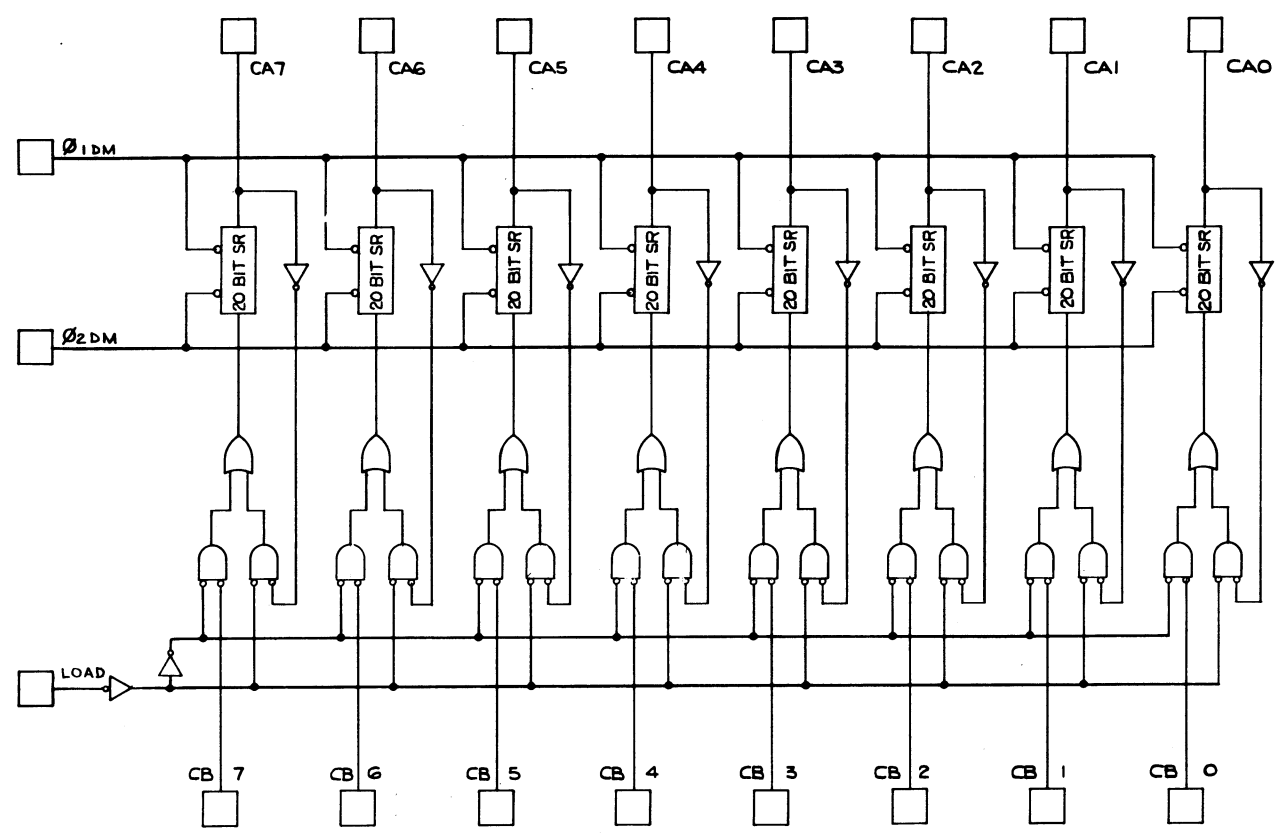
ITEM	DESCRIPTION	QTY	REV.
 COMPUTER SYSTEMS CORPORATION 100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
LINE COUNTER MPD04			
FORM:	D	10341	5



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

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- VDD
- VGG
- GND

OUTPUT	CHIP - LOADS	CHIP - LOADS
CA0	MPD03-1	MPD09-1
CA1	MPD03-1	MPD09-1
CA2	MPD03-1	MPD09-1
CA3	MPD03-1	MPD09-1
CA4	MPD03-1	MPD09-1
CA5		MPD09-1
CA6	MPD03-1	MPD09-1
CA7		MPD09-1

VIATRON
PROPRIETARY

ITEM	DESCRIPTION	QTY	REV.
 COMPUTER SYSTEMS CORPORATION 300 YERRIDGE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
DISPLAY MEMORY MPD05			
MODEL:			
SCALE: NONE	D	10342	



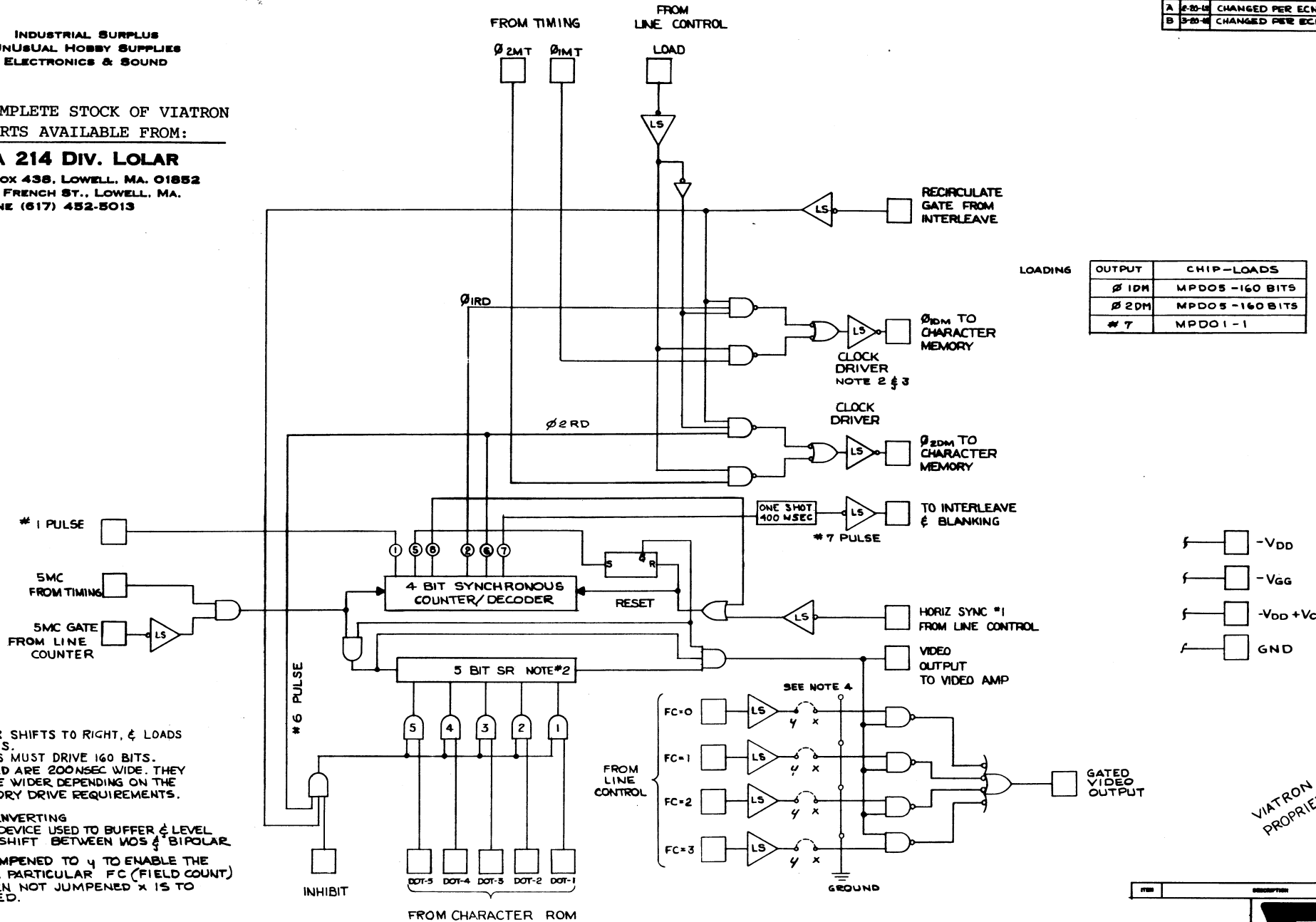
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

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PHONE (617) 452-5013

REV.	DATE	DESCRIPTION	BY	CHK.
A	4-20-74	CHANGED PER ECN NO. 20	ACE	7/2/74
B	3-20-74	CHANGED PER ECN NO. 50	ACE	7/2/74



LOADING

OUTPUT	CHIP-LOADS
$\phi 1DM$	MPD05 -160 BITS
$\phi 2DM$	MPD05 -160 BITS
# 7	MPD01-1

- NOTES:
1. SHIFT REGISTER SHIFTS TO RIGHT, & LOADS '0's AS IT SHIFTS.
 2. CLOCK DRIVERS MUST DRIVE 160 BITS.
 3. $\phi 1RD$ AND $\phi 2RD$ ARE 200NSEC WIDE. THEY MAY HAVE TO BE WIDER DEPENDING ON THE DISPLAY MEMORY DRIVE REQUIREMENTS.
- INVERTING DEVICE USED TO BUFFER & LEVEL SHIFT BETWEEN VOS & BIPOLAR
4. X IS TO BE JUMPENED TO ϕ TO ENABLE THE OUTPUT FOR A PARTICULAR FC (FIELD COUNT) SIGNAL. WHEN NOT JUMPENED X IS TO BE GROUND.

VIATRON
PROPRIETARY

ITEM	DESCRIPTION	QTY	REV.
 COMPUTER SYSTEMS CORPORATION 300 TOWN HALL AVENUE MIDDLESEX, MASSACHUSETTS 01948			
BIPOLAR VIDEO GENERATOR MPD06			
REV:	D 10343		
QTY:	NONE		

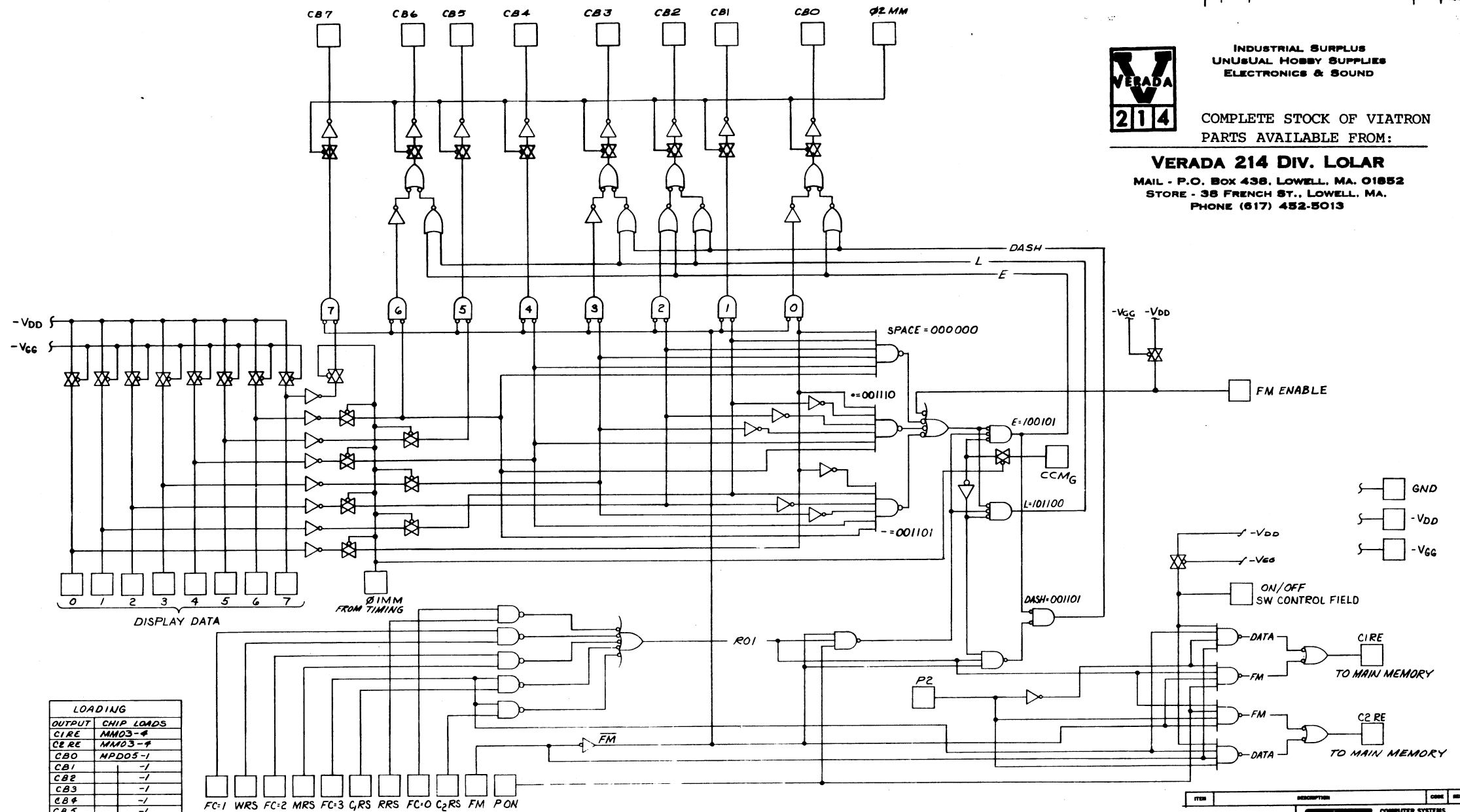
REV.	DATE	DESCRIPTION	BY	CHK
1		DESIGN CHANGED PER ECM NO. 1	R.P.	R.L.C.
2		DESIGN CHANGED PER ECM NO. 2		



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

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PHONE (617) 452-5013



OUTPUT	CHIP LOADS
C1 RE	MM03-4
C2 RE	MM03-4
C30	MPD05-1
C31	-1
C32	-1
C33	-1
C34	-1
C35	-1
C36	-1
C37	MPD05-1

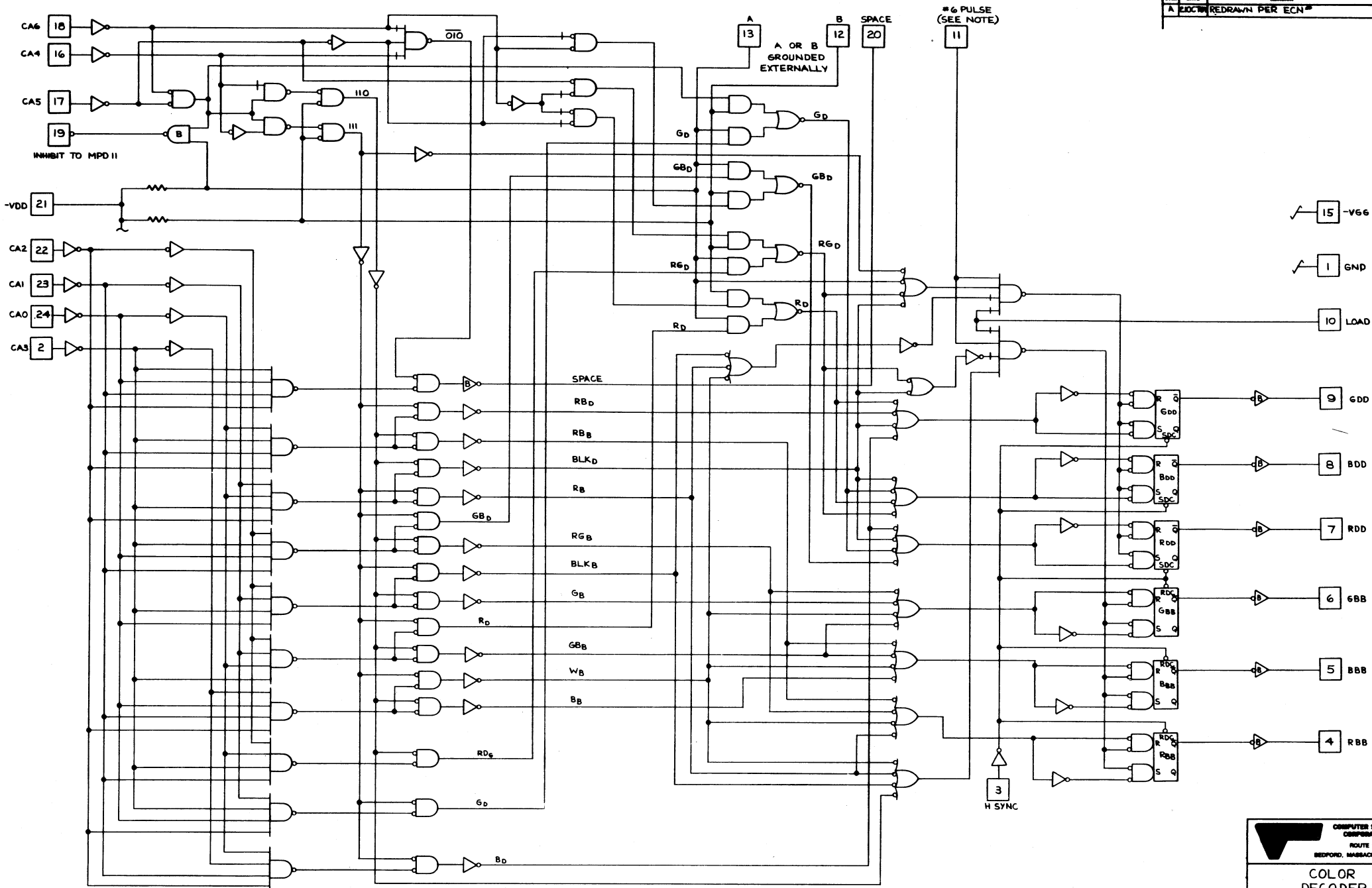
FC:1 WRS FC:2 MRS FC:3 C₁RS RRS FC:0 C₂RS FM PON

- GND
- V_{DD}
- V_{CC}

ITEM	DESCRIPTION	QTY	REQ.
 COMPUTER SYSTEMS CORPORATION 100 VERMONT HALL AVENUE MILFORD, MASSACHUSETTS 01830			
DATA CONTROL MPD07			
ISSUE:			
DATE:	D	10344	

VIATRON
PROPRIETARY

REV	DATE	BY	CHK
A	11/01/68	REDRAWN PER ECN #	T.D.



NOTES:
 1. THIS PULSE WILL BE 4200 NSEC PULSE & MUST SET ALL 6 FLIPFLOPS SHOWN

COMPUTER SYSTEMS CORPORATION
 ROUTE 62
 BEDFORD, MASSACHUSETTS 01730

COLOR DECODER
MPD09

REV D 11/01/68 1 OF 1 11068 A



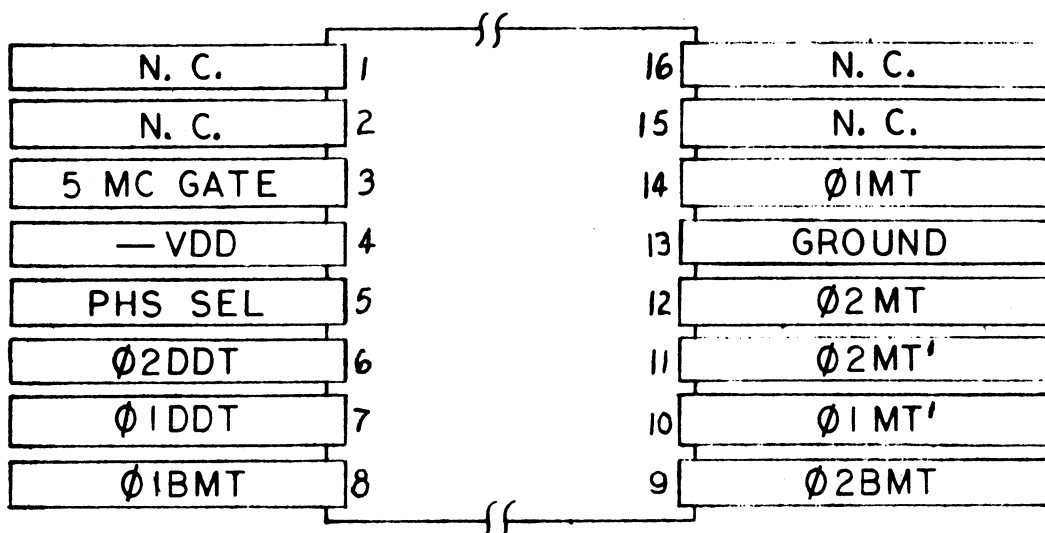
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013


DATE	REVISION	DR.	CK.
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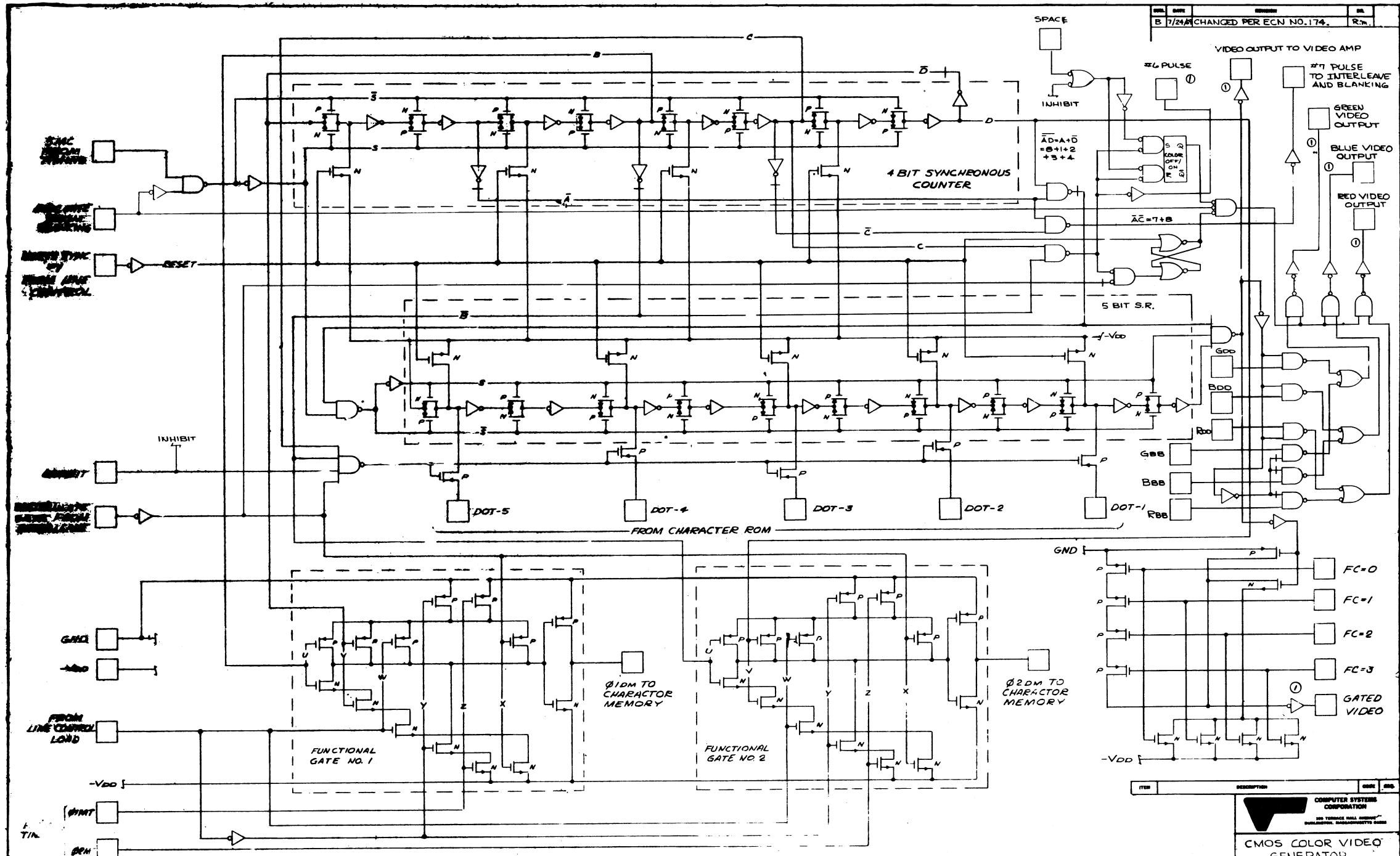


MM05-RS

NOTE:

IN THIS PACKAGE PIN 1 IS TIED TO THE SUBSTRATE THROUGH THE MOUNTING EPOXY.

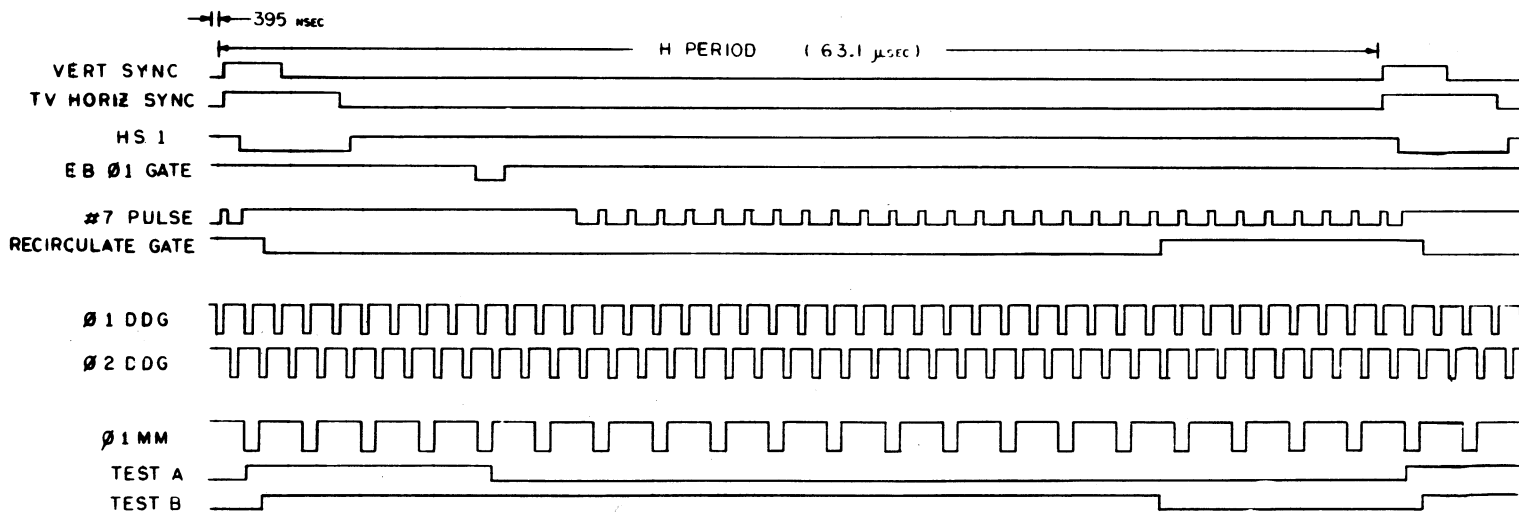
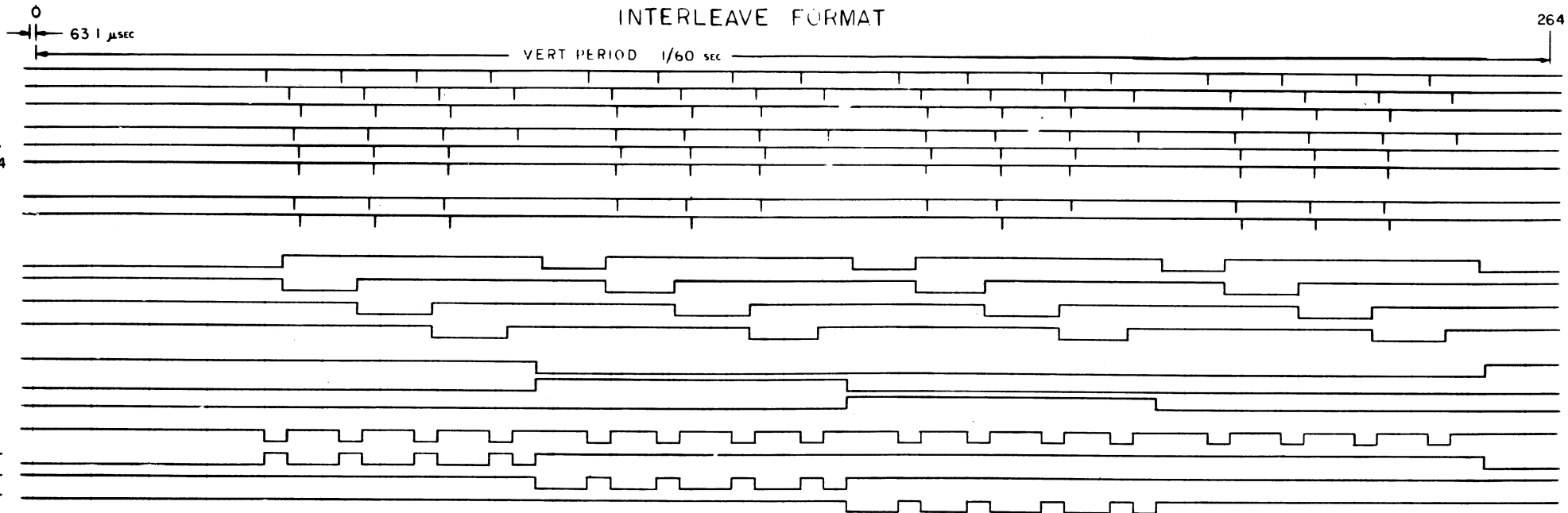
ITEM	DESCRIPTION	CODE	REQ.
	 COMPUTER SYSTEMS CORPORATION 105 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803		
	16 LEAD UNIVERSAL CERAMIC PACKAGE PIN ASSIGNMENTS		
	MODEL:	B	10833
	SCALE: NONE		REV. -



NOTE 1. IF THE DRIVER IS IN THE LOGIC "1" STATE, CONNECTING A 1K Ω LOAD RESISTOR BETWEEN ITS OUTPUT AND -VDD SHALL NOT CAUSE THE OUTPUT VOLTAGE TO CHANGE MORE THAN HALFWAY TOWARDS -VDD. IF THE DRIVER IS IN THE LOGIC "0" STATE CONNECTING A 1K Ω LOAD RESISTOR BETWEEN ITS OUTPUT AND GND SHALL NOT CAUSE THE OUTPUT VOLTAGE TO CHANGE MORE THAN HALFWAY TOWARDS GND.

ITEM	DESCRIPTION	DATE	REV.
COMPUTER SYSTEMS CORPORATION <small>300 TORRENCE HALL AVENUE BOSTON, MASSACHUSETTS 02118</small>			
CMOS COLOR VIDEO GENERATOR MPD 11			
REV.	D	11067	1

INTERLEAVE FORMAT



NOTE : CONNECT RSW, WSW, AND MSW TO GROUND



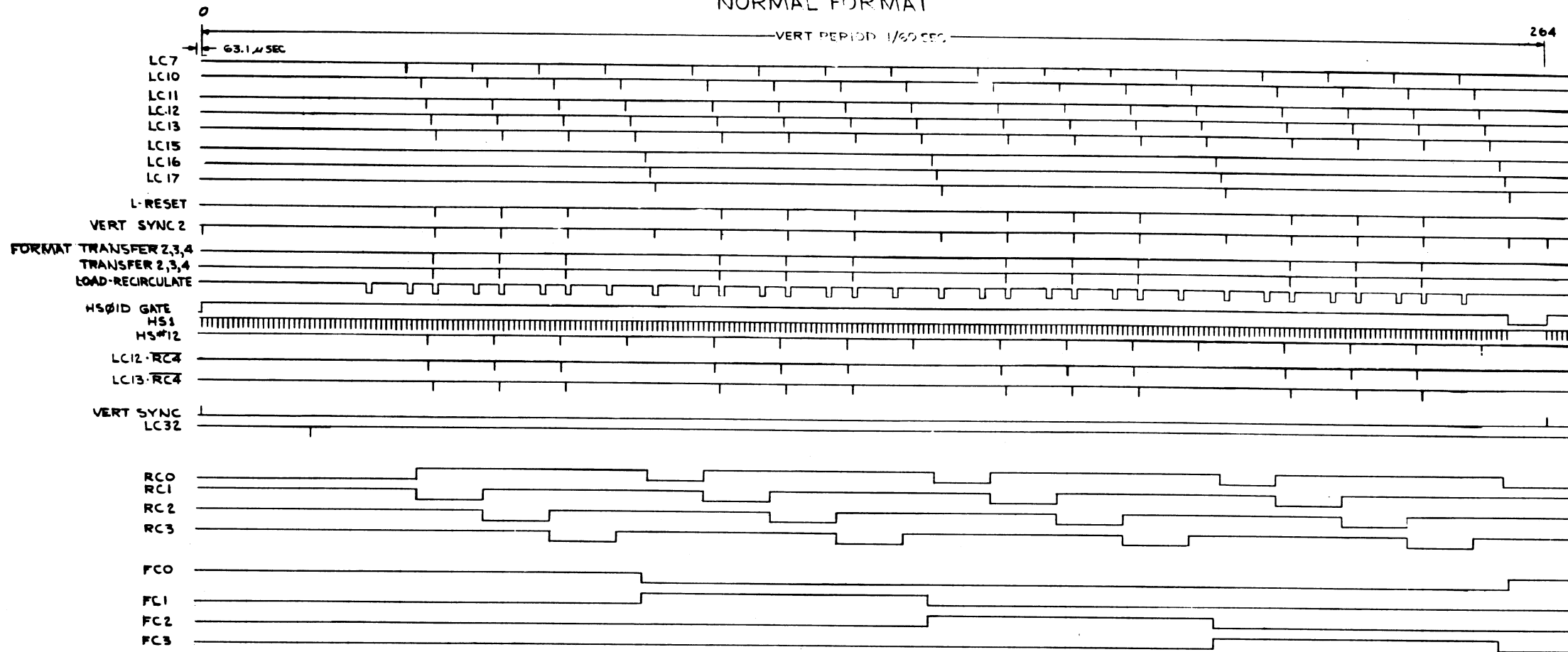
INDUSTRIAL SUPPLIES
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:
VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 498, LOWELL, MA. 01852
STORE - 58 FRENCH ST., LOWELL, MA.
PHONE (617) 452-8013

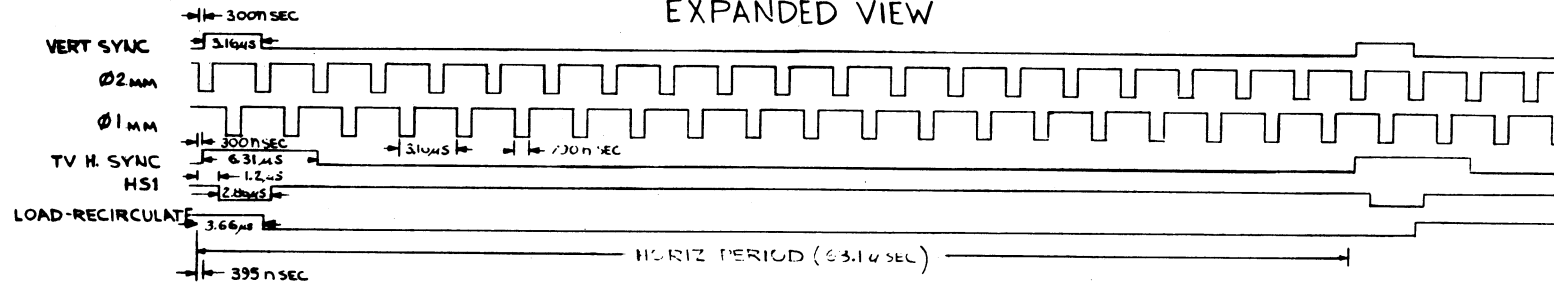
TIMING DIAGRAM
BLANKING / INTERLEAVE
MPDO I (10338)

10559

NORMAL FORMAT



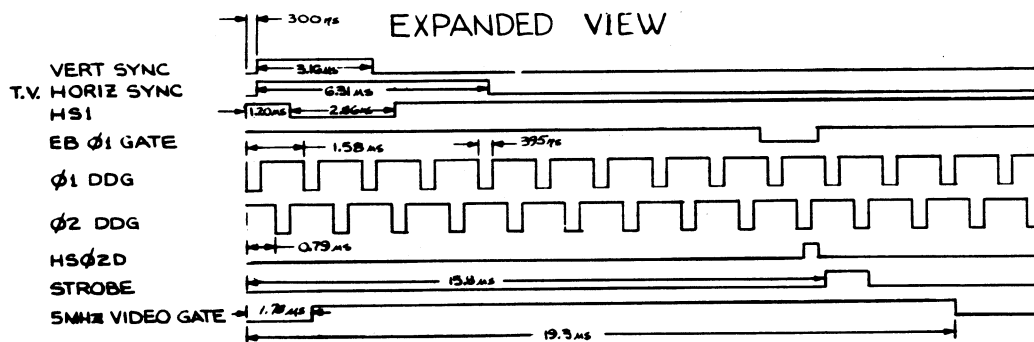
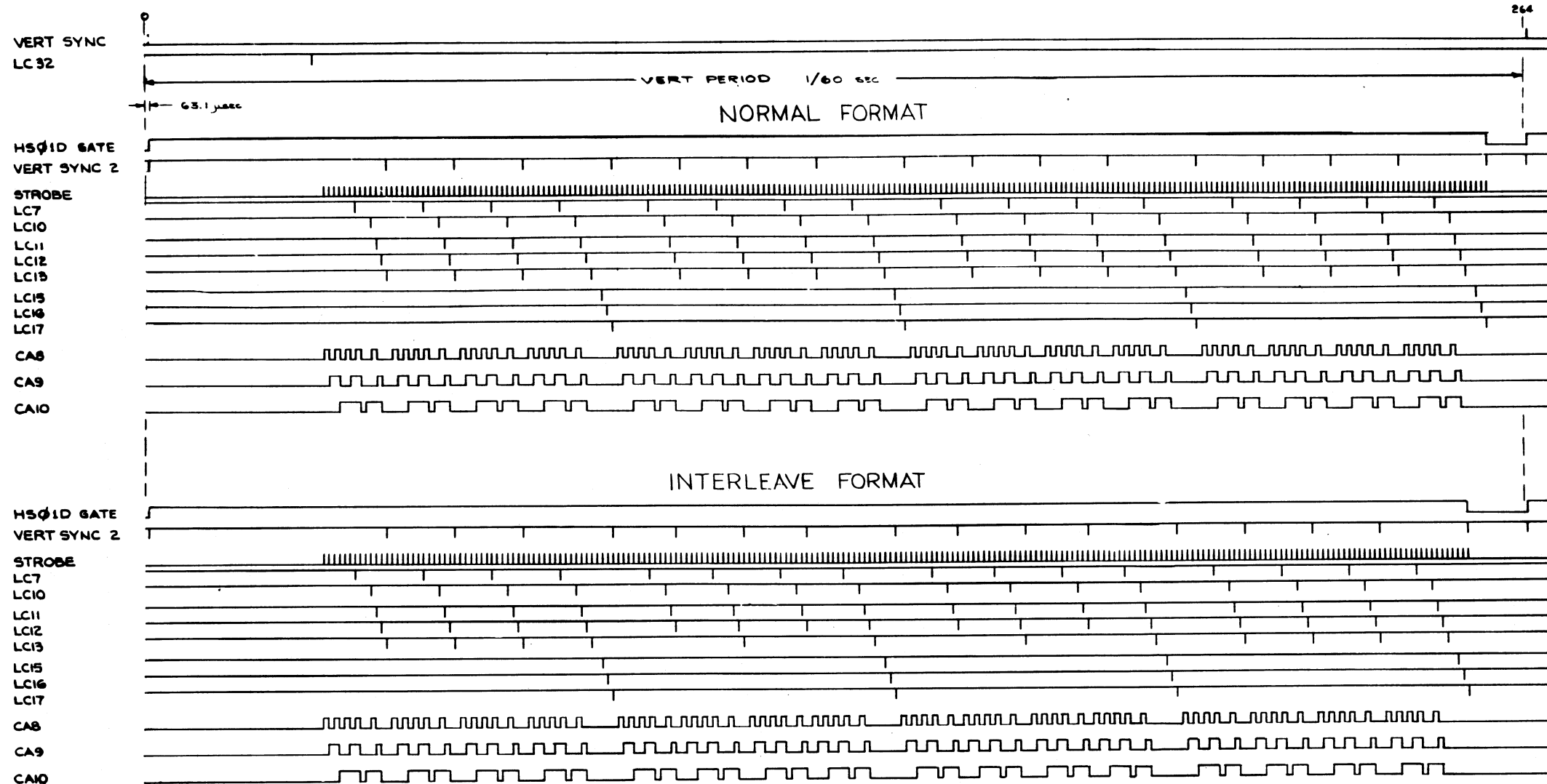
EXPANDED VIEW



COMPUTER SYSTEMS CORPORATION
AN IRVING-CLOUD COMPANY
IRVING-CLOUD BUILDING
IRVING, TEXAS 75039

TIMING DIAGRAM
LINE CONTROL
MPDC2 (10339)

D. 10/73 C553



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

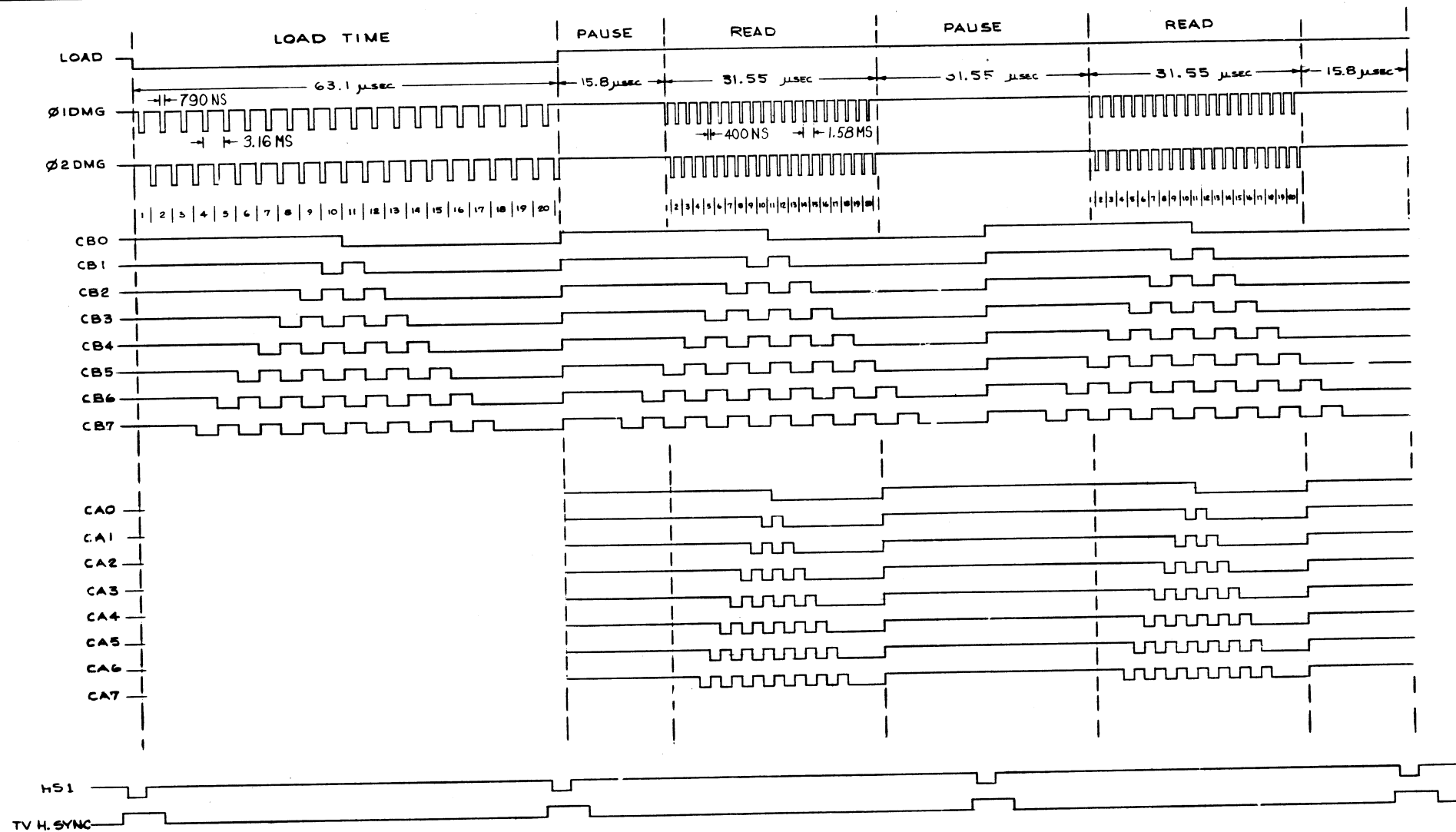
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

COMPUTER SYSTEMS
CORPORATION
AN INSTRUMENT DIVISION
OF VERADA ELECTRONICS, INC.

TIMING DIAGRAM
LINE COUNTER
MPD04 (1034)

10554



NOTE: 1. H51 AND TV H SYNC. ARE FOR SYSTEM REFERENCE ONLY. THEY ARE NOT INVOLVED FOR ARRAY TESTS.
 2. CAx MUST BE AVAILABLE IN 500 NSEC OR LESS AFTER Ø2 DMG



INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

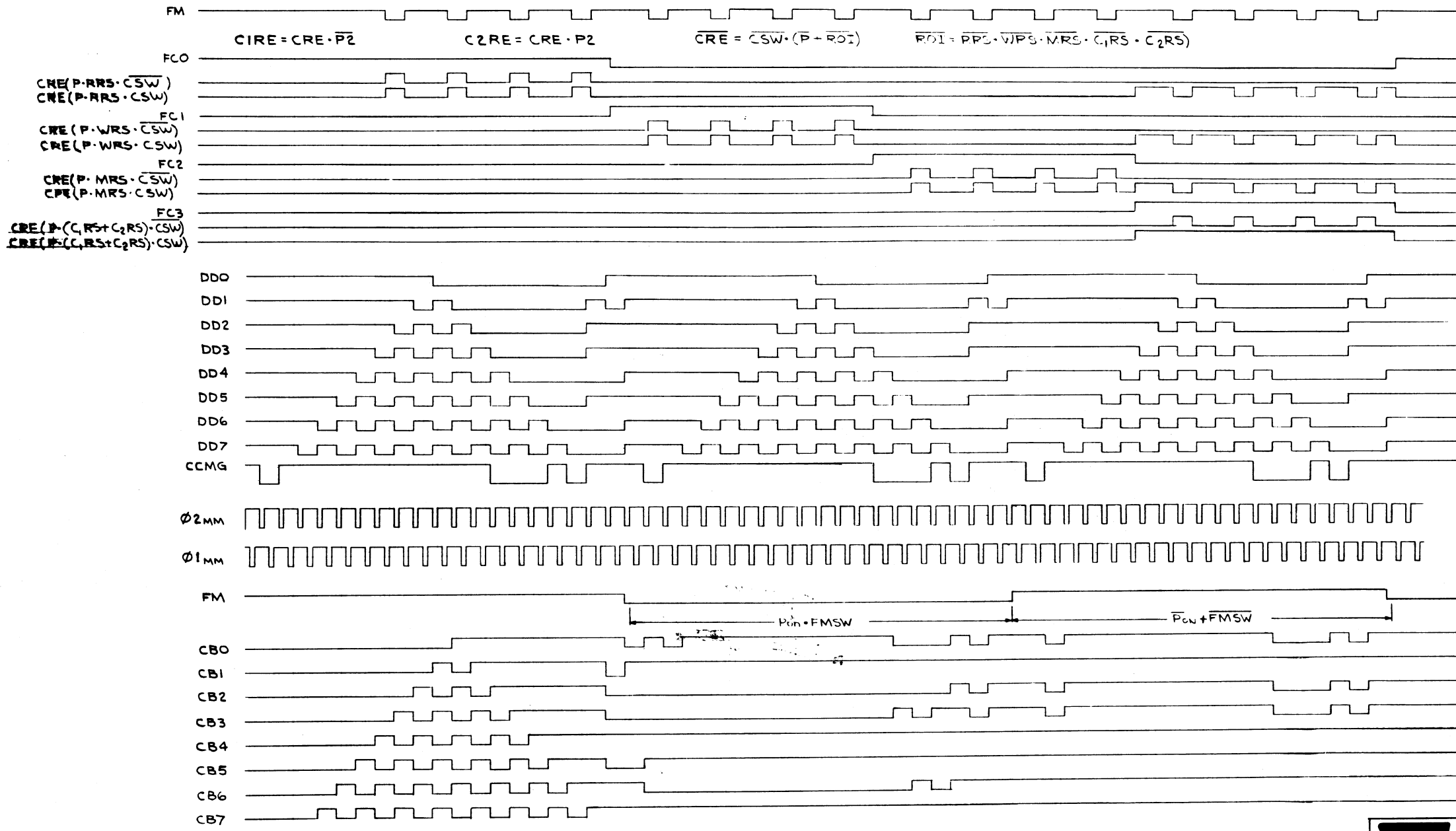
COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013


COMPUTER SYSTEMS CORPORATION
 100 VERMONT HILL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

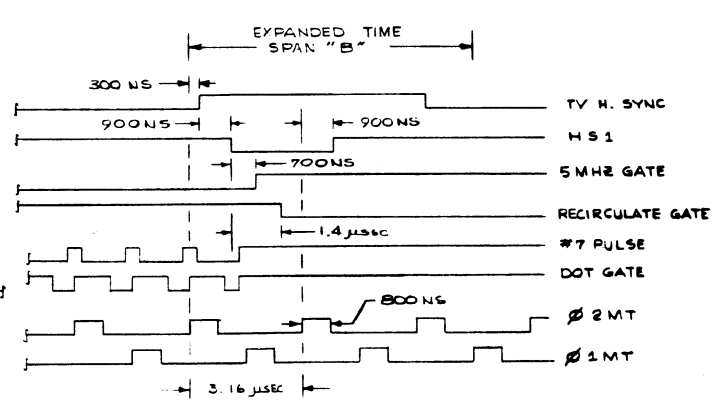
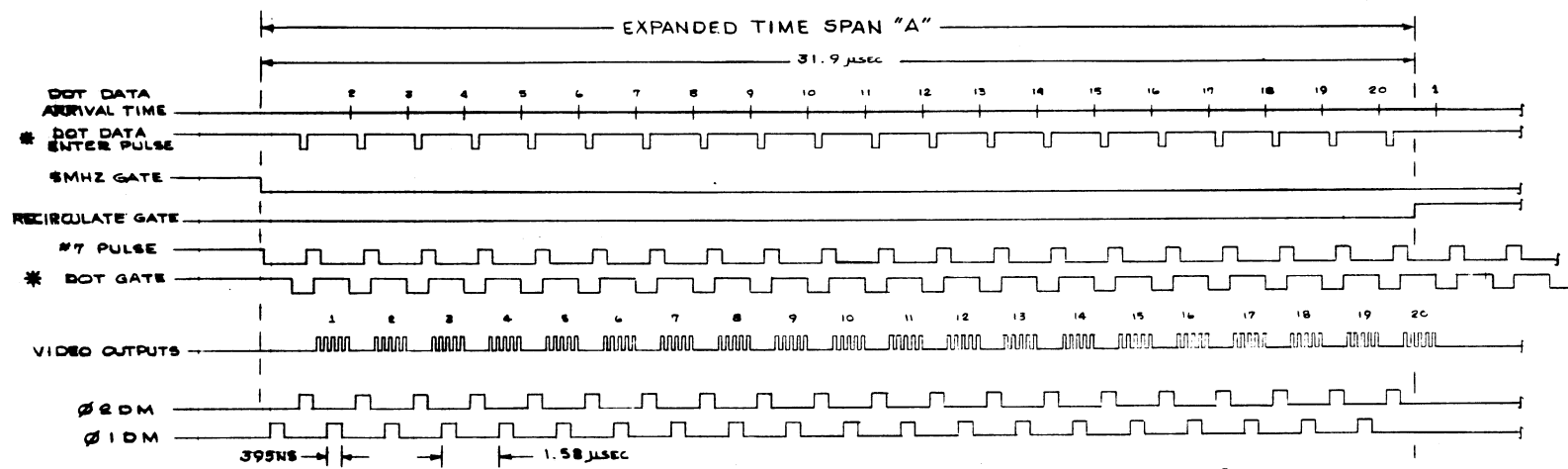
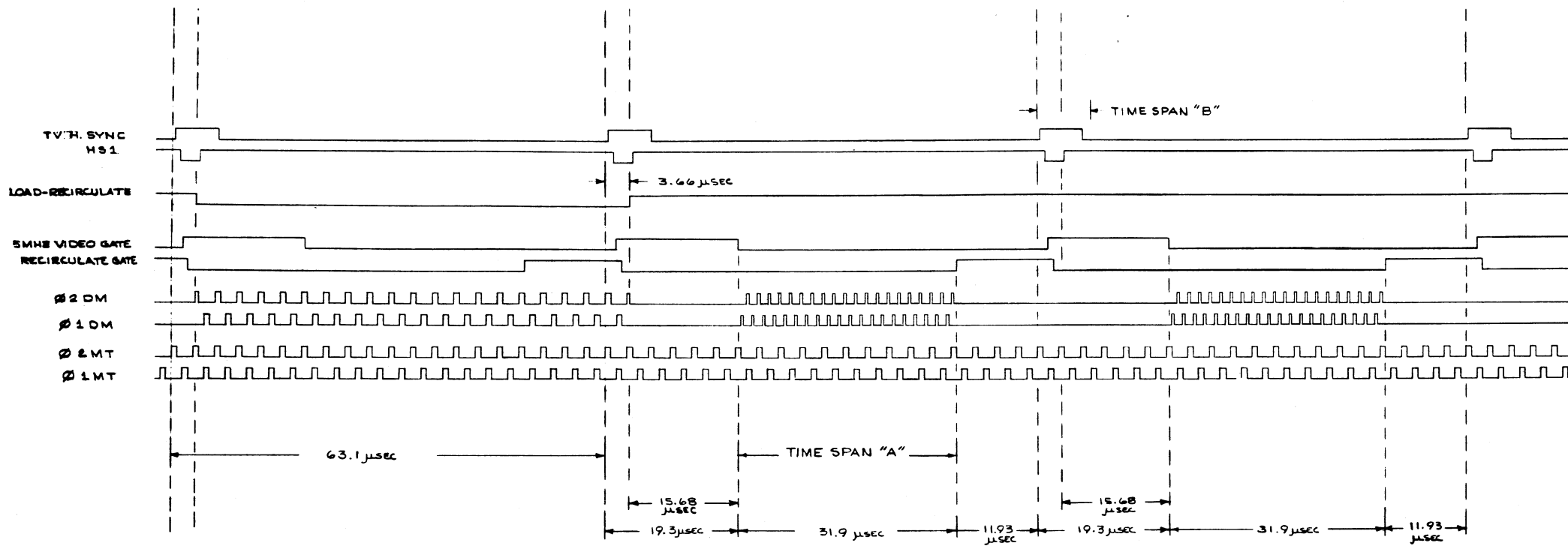
**TIMING DIAGRAM
 DISPLAY MEMORY
 MPD05 (10342)**

REV. 0 10535



NOTE:
 1. $CBX = \overline{FM} \cdot \overline{ROI}$ (ALL CB OUTPUTS WILL BE HIGH WHEN BOTH FM & ROI ARE LOW)

 COMPUTER SYSTEM CORPORATION <small>100 TORRANCE HALL AVENUE BURLINGAME, CALIFORNIA 94010</small>	
TIMING DIAGRAM DATA CONTROL MPD07 (10344)	
<small>REV. 10/61</small> D	<small>REV. 10/61</small> 10572



NOTE: SOME OF THE ABOVE SIGNALS DO NOT END ON THE FOLLOWING INPUTS BEING CONNECTED TO GROUND.

- 1) INHIBIT
- 2) DOT -1 THRU DOT-5
- 3) FC=0 THRU FC=3

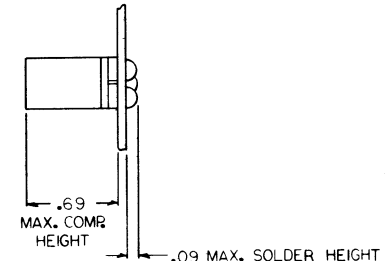
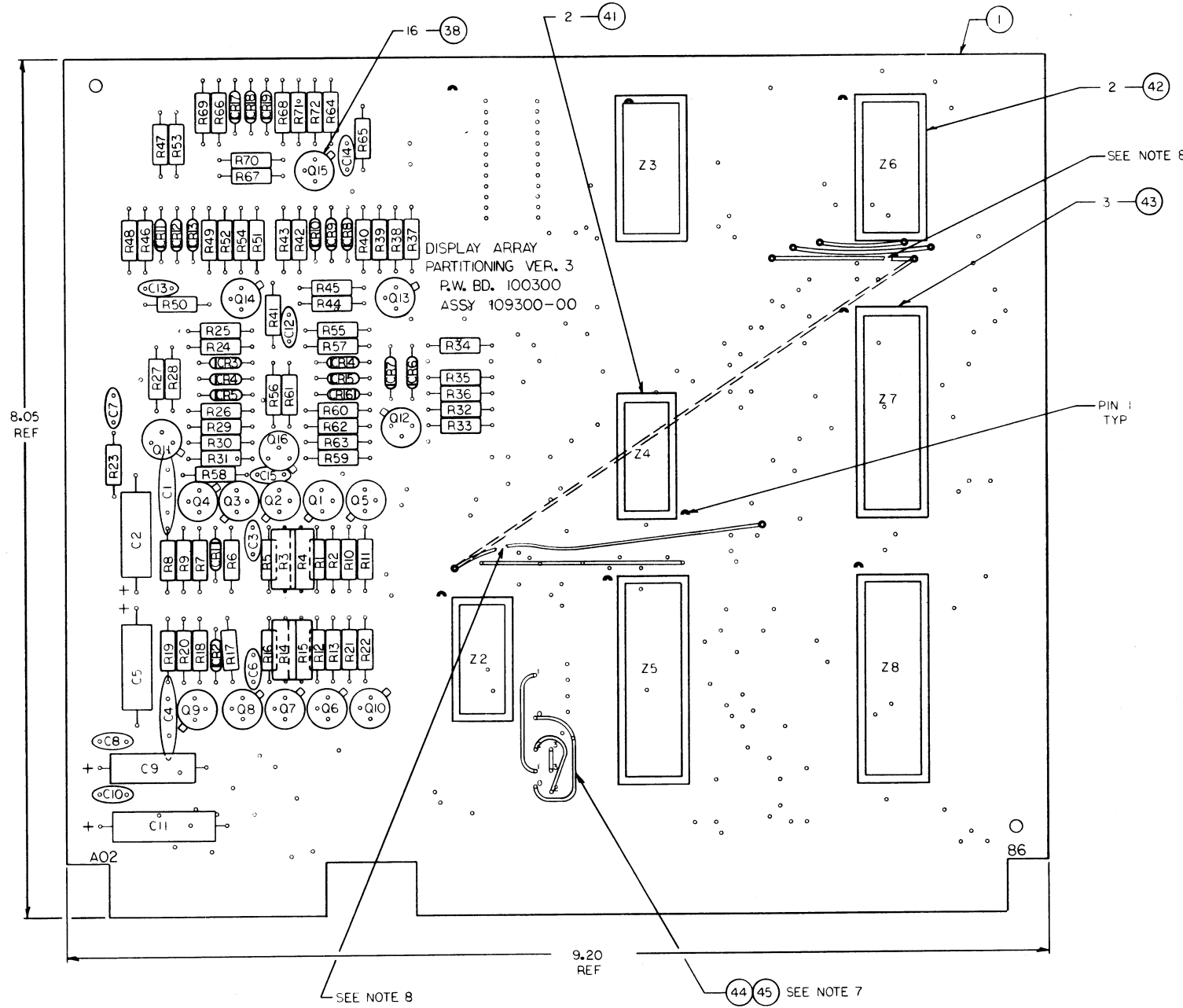
* THIS SIGNAL IS INTERNAL ONLY

COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

TIMING DIAGRAM
 CMOS VIDEO GEN
 MPD 10 (10345)

DATE: _____ DRAW NO: 10542
 BY: _____

REV.	DATE	REVISION	DR.	CK.
A		REVISED PER ECN NO 384*		
B	5-18-69	REVISED PER ECN NO 431		
C	12-23-69	REVISED & REDESIGNED PER ECN 824	PP	WJ
N/A	000201			



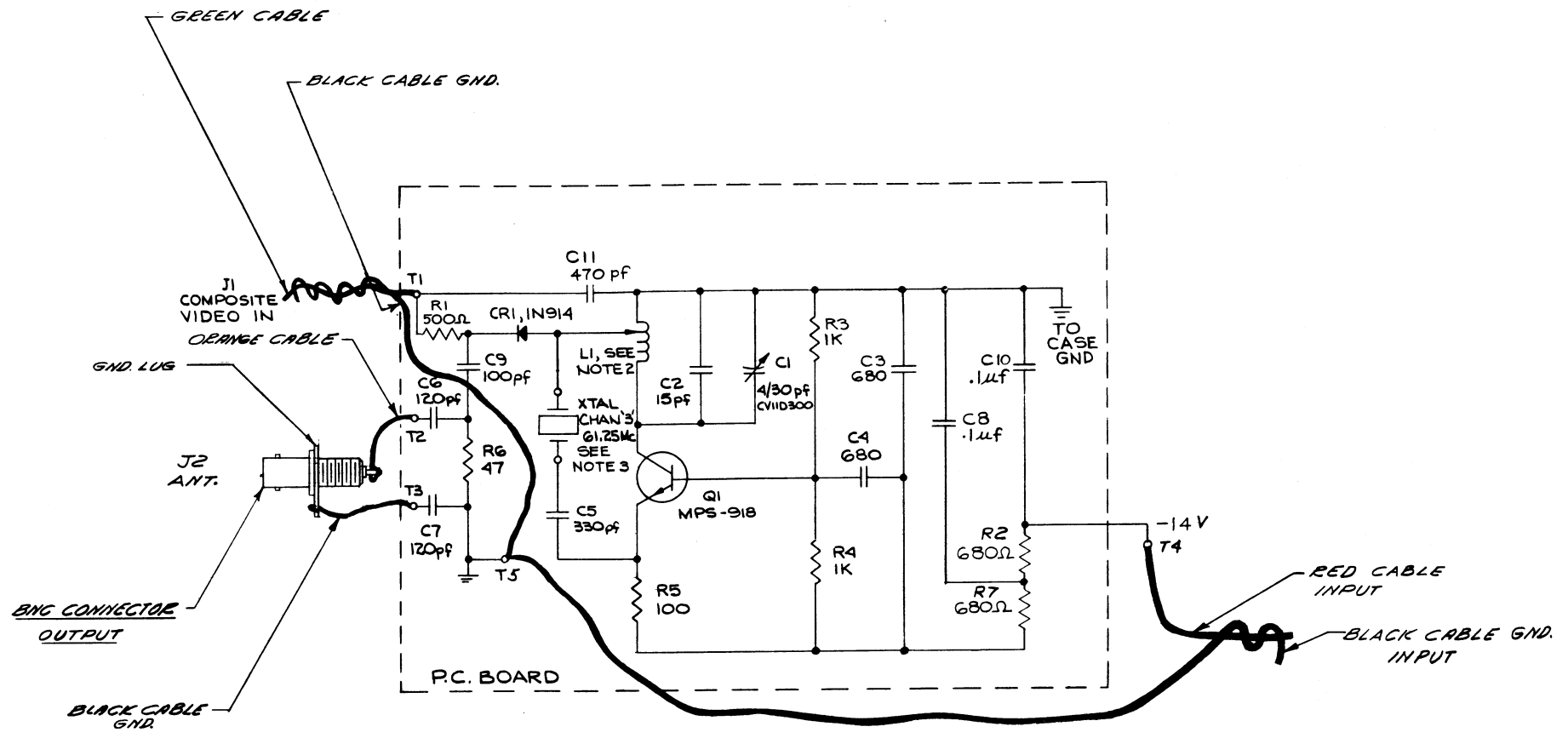
- NOTES:
1. INSTALL ITEM 38 UNDER ALL TRANSISTORS.
 2. INSTALL MOS DEVICES AFTER FLOW SOLDERING.
 3. INSTALL ITEM 41 UNDER Z2,Z4.
 4. INSTALL ITEM 42 UNDER Z3,Z6.
 5. INSTALL ITEM 43 UNDER Z5,Z7,Z8.
 - 6.
 7. ADD JUMPER WIRES COMPONENT SIDE AS SHOWN 5 PLACES.
 8. CUT LANDS AS SHOWN, ADD INSULATED WIRE ON REAR OF BOARD.

VIAVON COMPUTER SYSTEMS CORPORATION
 120 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803


ASSY R.W. BOARD
 DISPLAY ARRAY
 VERSION 3

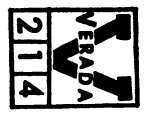
SIZE	SCALE	DWG NO	REV
D	1:1	109300-00	C
SHEET		OF	

SYM.	DATE	REVISION	BY	CHK.
A	10-15-69	REVISED PER ECN-499	B. J.	3
B	12/1/69	ECN 781	B. J.	1



- NOTES:
1. UNLESS OTHERWISE NOTED ALL RESISTORS ARE IN OHMS, 1/4 W ±10%.
 2. L1 - 5T *14, TAP AT 1 TURN.
 3. CHAN "3" NORMALLY USED. CHAN "4", "5", OR "6" CAN ALSO BE USED.

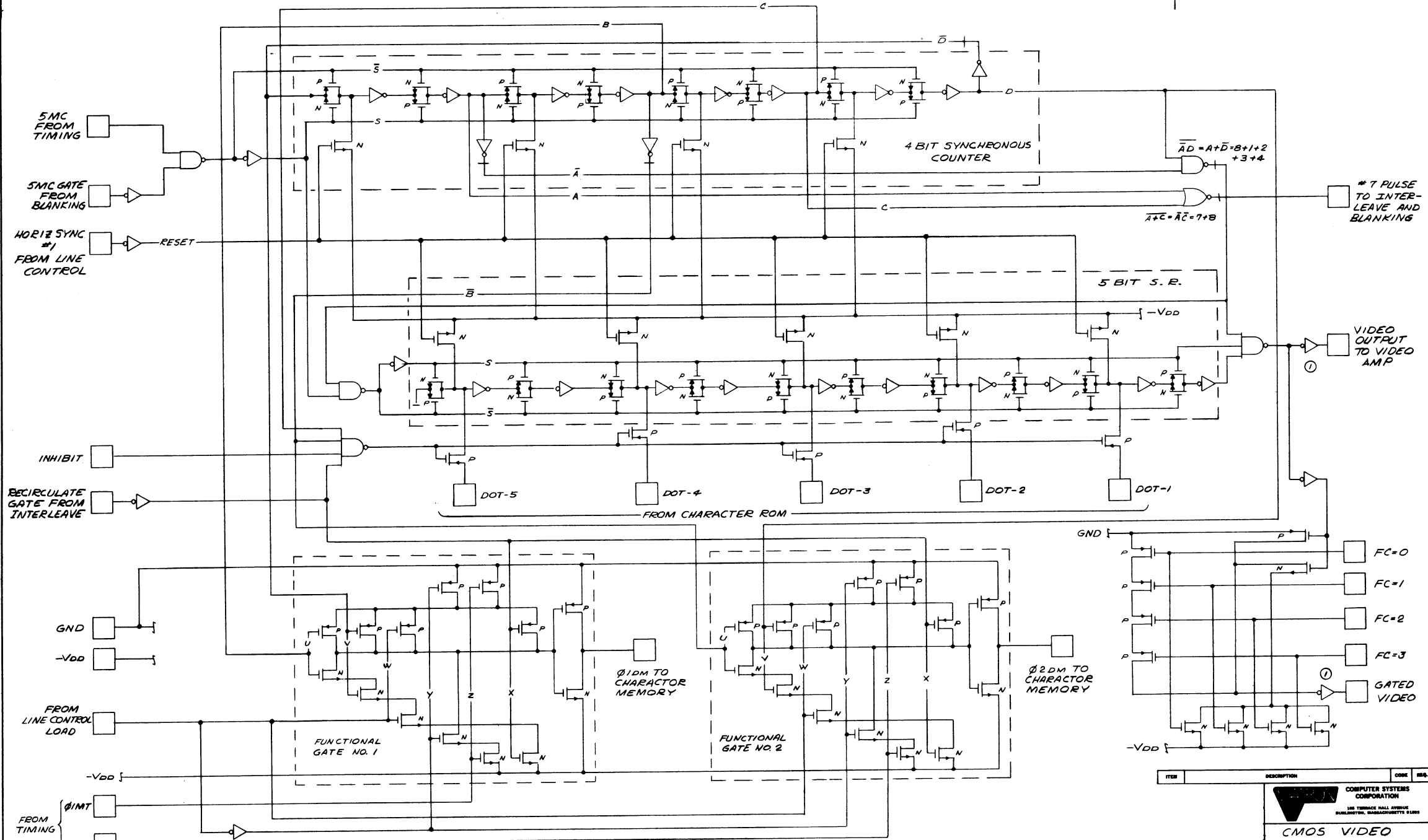
ITEM	DESCRIPTION	CODE	REQ.
 COMPUTER SYSTEMS CORPORATION 108 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
RF MODULATOR SCHEMATIC DIAGRAM			
MODEL:	C 140400-00	REV.:	B
SCALE:	NONE		




INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

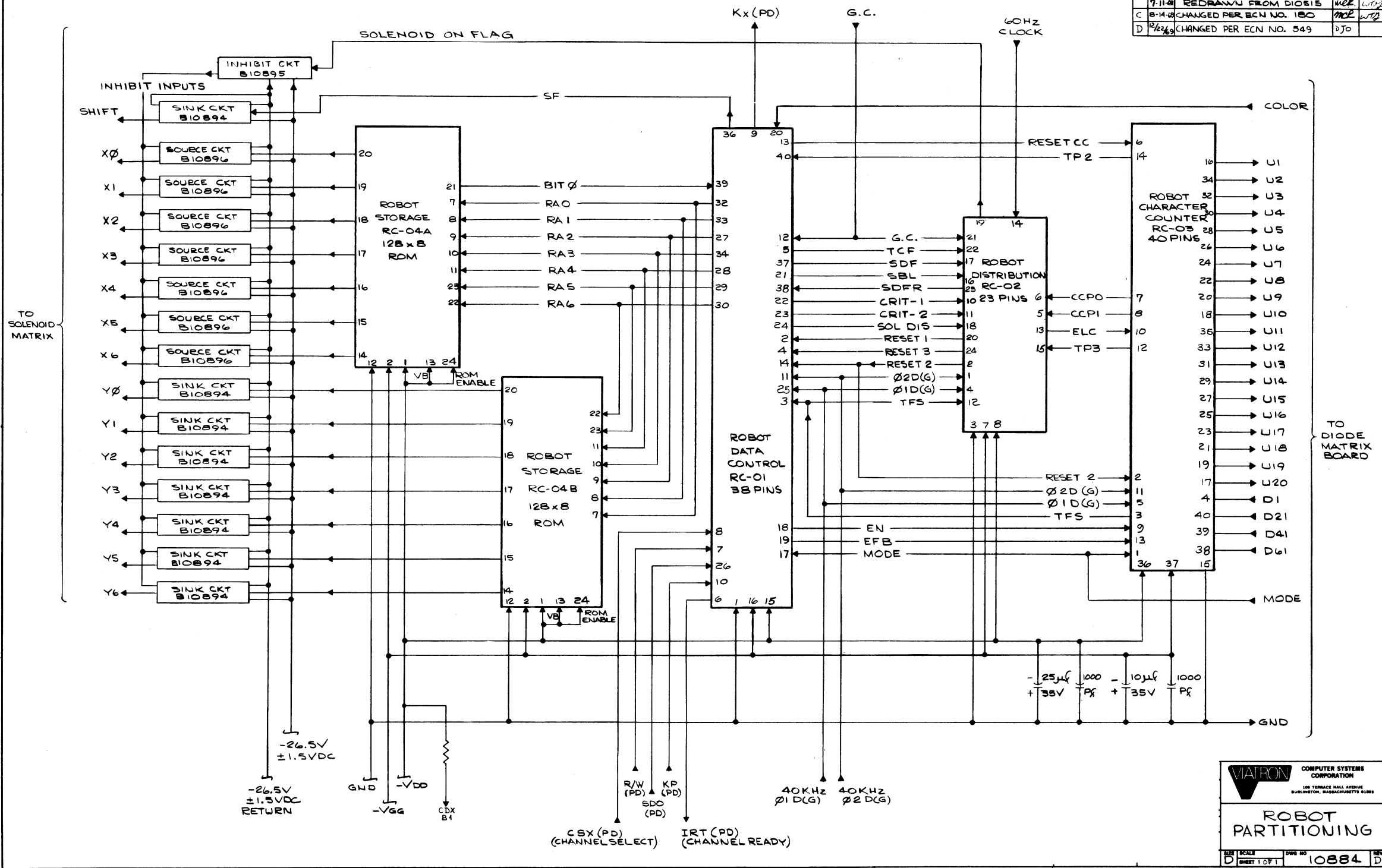
VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013



NOTE 1. IF THE DRIVER IS IN THE LOGIC "1" STATE, CONNECTING A 1K Ω LOAD RESISTOR BETWEEN ITS OUTPUT AND -V_{DD} SHALL NOT CAUSE THE OUTPUT VOLTAGE TO CHANGE MORE THAN HALF WAY TOWARDS -V_{DD}.
 IF THE DRIVER IS IN THE LOGIC "0" STATE CONNECTING A 1K Ω LOAD RESISTOR BETWEEN ITS OUTPUT AND GND SHALL NOT CAUSE THE OUTPUT VOLTAGE TO CHANGE MORE THAN HALF WAY TOWARDS GND.

ITEM	DESCRIPTION	CHK	REV.
 COMPUTER SYSTEMS CORPORATION 100 YERGENE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
CMOS VIDEO GENERATOR MPD10			
MODEL:			
SCALE:			
			D 10345

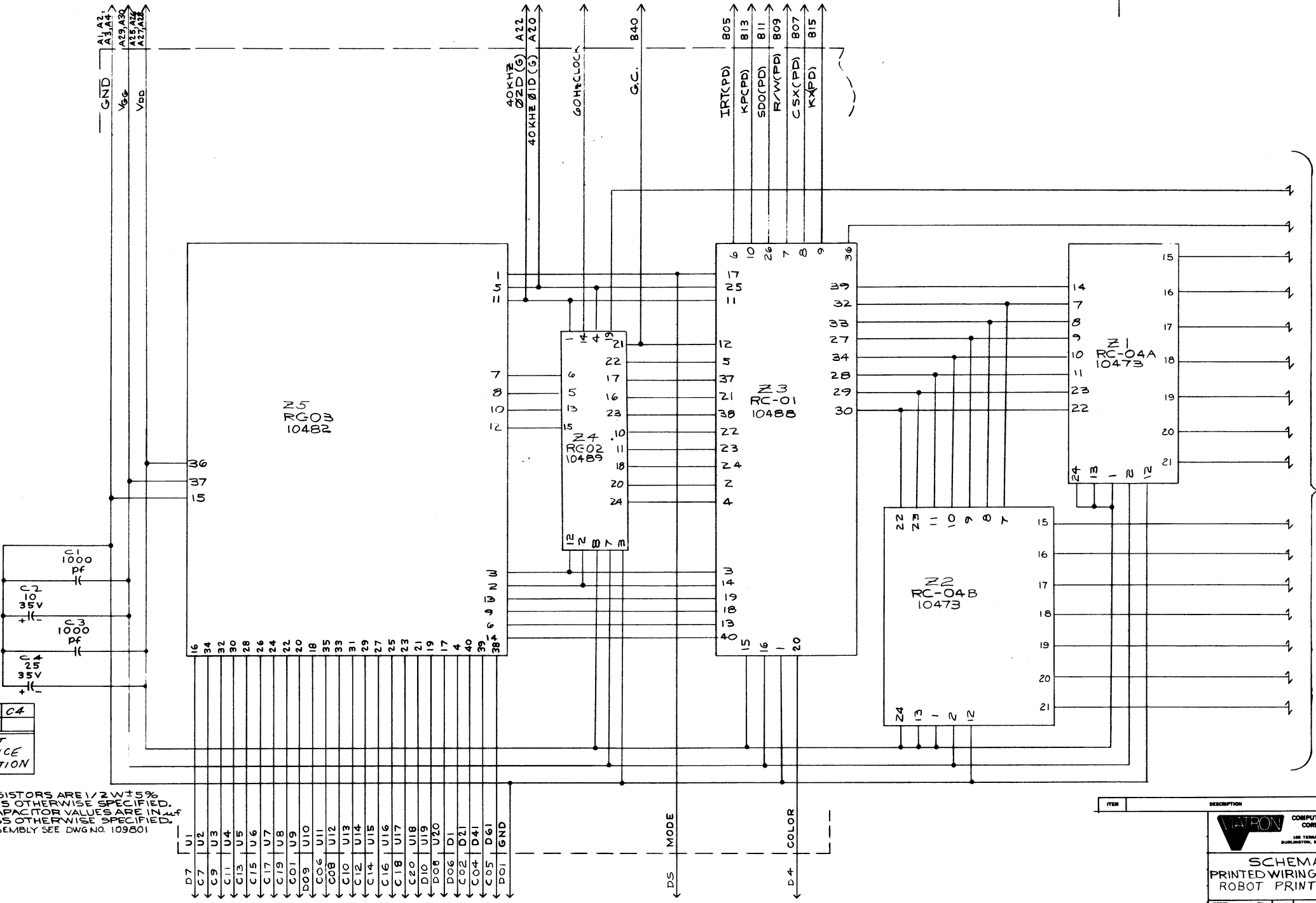
SYM	DATE	REVISION	DR	CK
	7-11-68	REDRAWN FROM DISIS	WEL	WTF
C	8-14-68	CHANGED PER ECN NO. 180	MCE	WTF
D	12-22-69	CHANGED PER ECN NO. 349	DJO	



VIAIRON COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

ROBOT PARTITIONING


REV D
 SCALE: INCHES TO FEET
 DWG NO: 10884

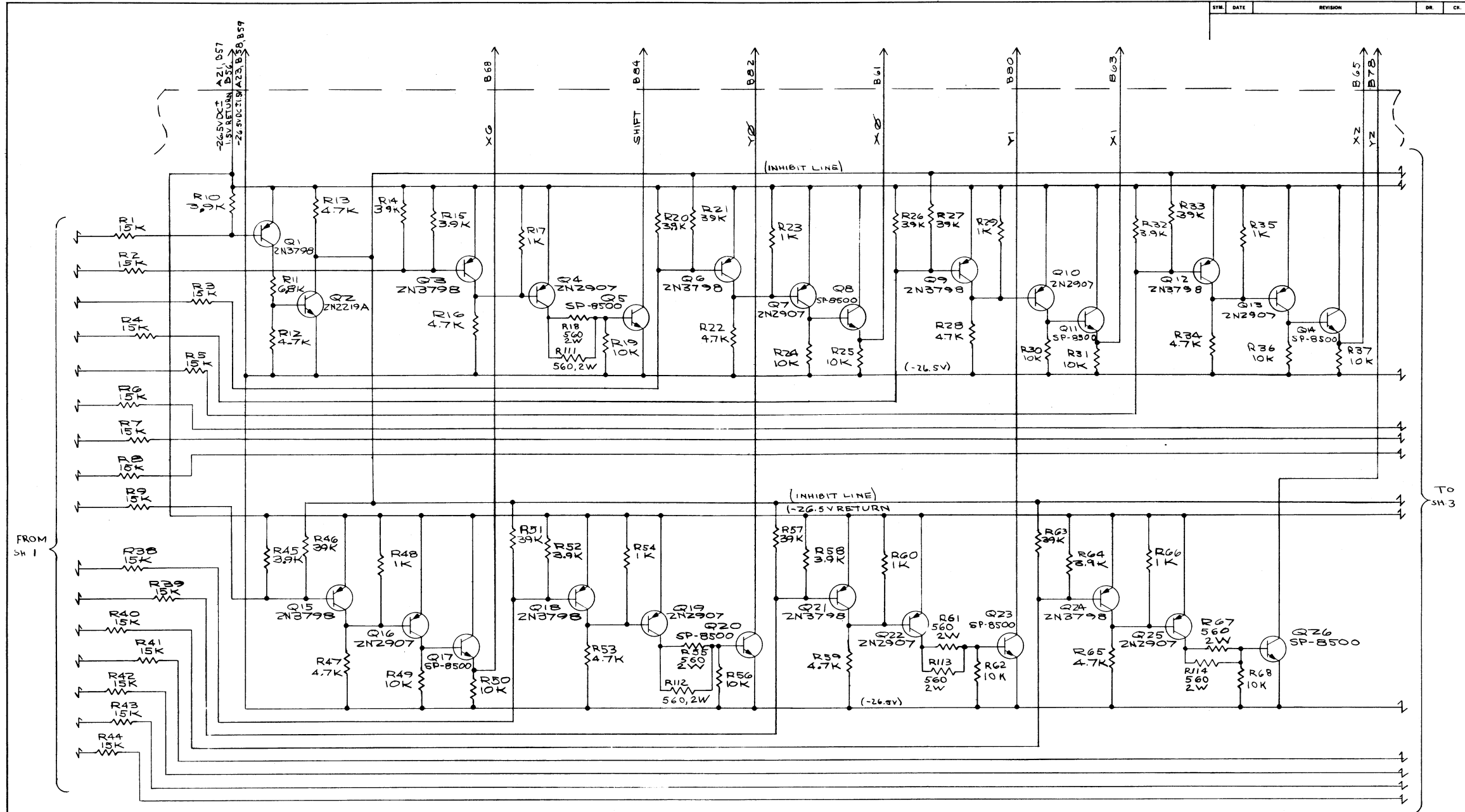


R/18	047	CA
HIGHEST REFERENCE DESIGNATION		

- NOTES:
1. ALL RESISTORS ARE 1/2 W ±5% UNLESS OTHERWISE SPECIFIED.
 2. ALL CAPACITOR VALUES ARE IN μf UNLESS OTHERWISE SPECIFIED.
 3. FOR ASSEMBLY SEE DWG NO. 109801


TO SH.2

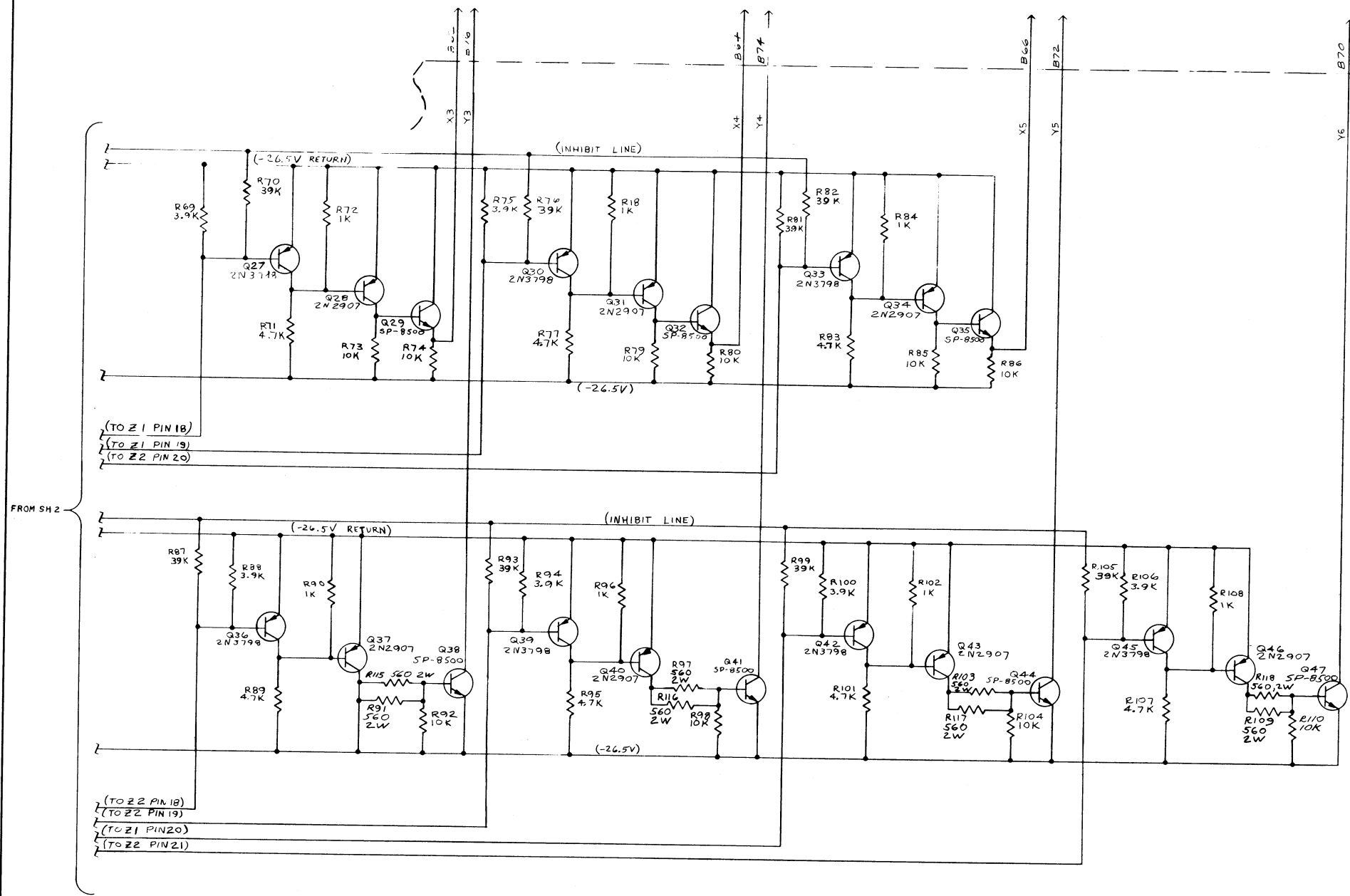
ITEM	DESCRIPTION	CODE	REQ.
 WATRON COMPUTER SYSTEMS CORPORATION 100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
SCHEMATIC PRINTED WIRING BOARD ROBOT PRINTER			
SCALE: 10E3	D/140801	REV.	



FROM
SH 1

To
SH 3

ITEM	DESCRIPTION	CODE	REQ.
 COMPUTER SYSTEMS CORPORATION 100 TORRANCE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
SCHEMATIC PRINTED WIRING BOARD ROBOT PRINTER			
MODEL: 20F3 SCALE:		D/40801	REV.

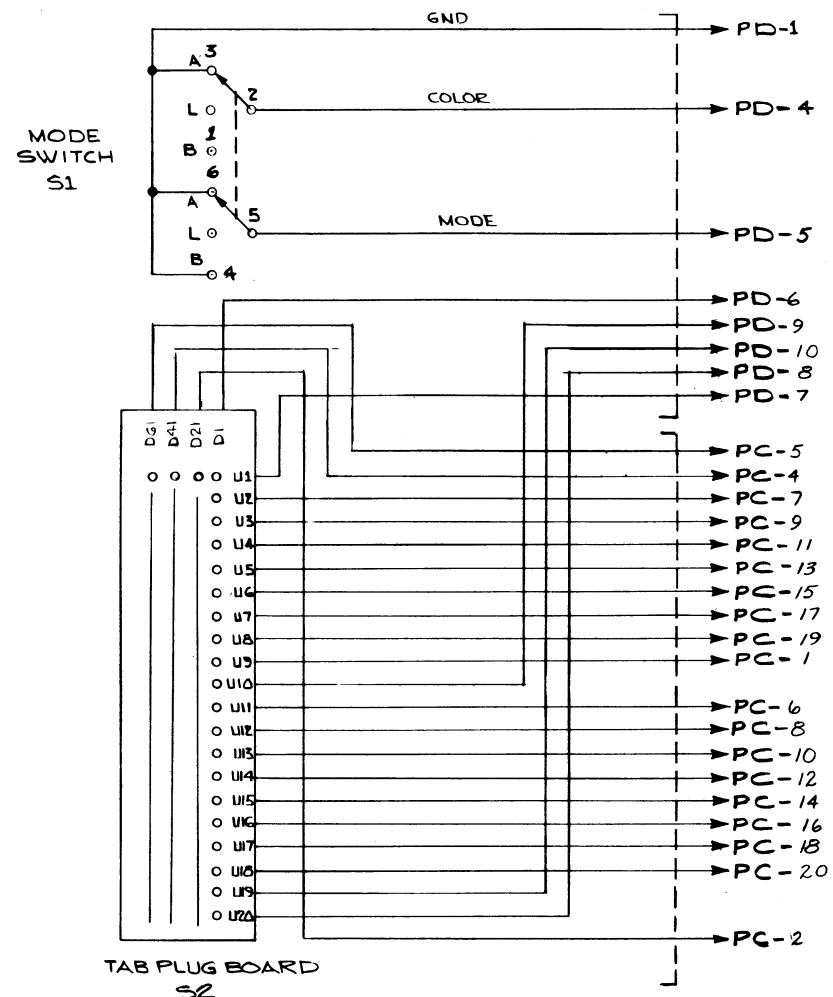


INDUSTRIAL SUPPLIES
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:


VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-8013

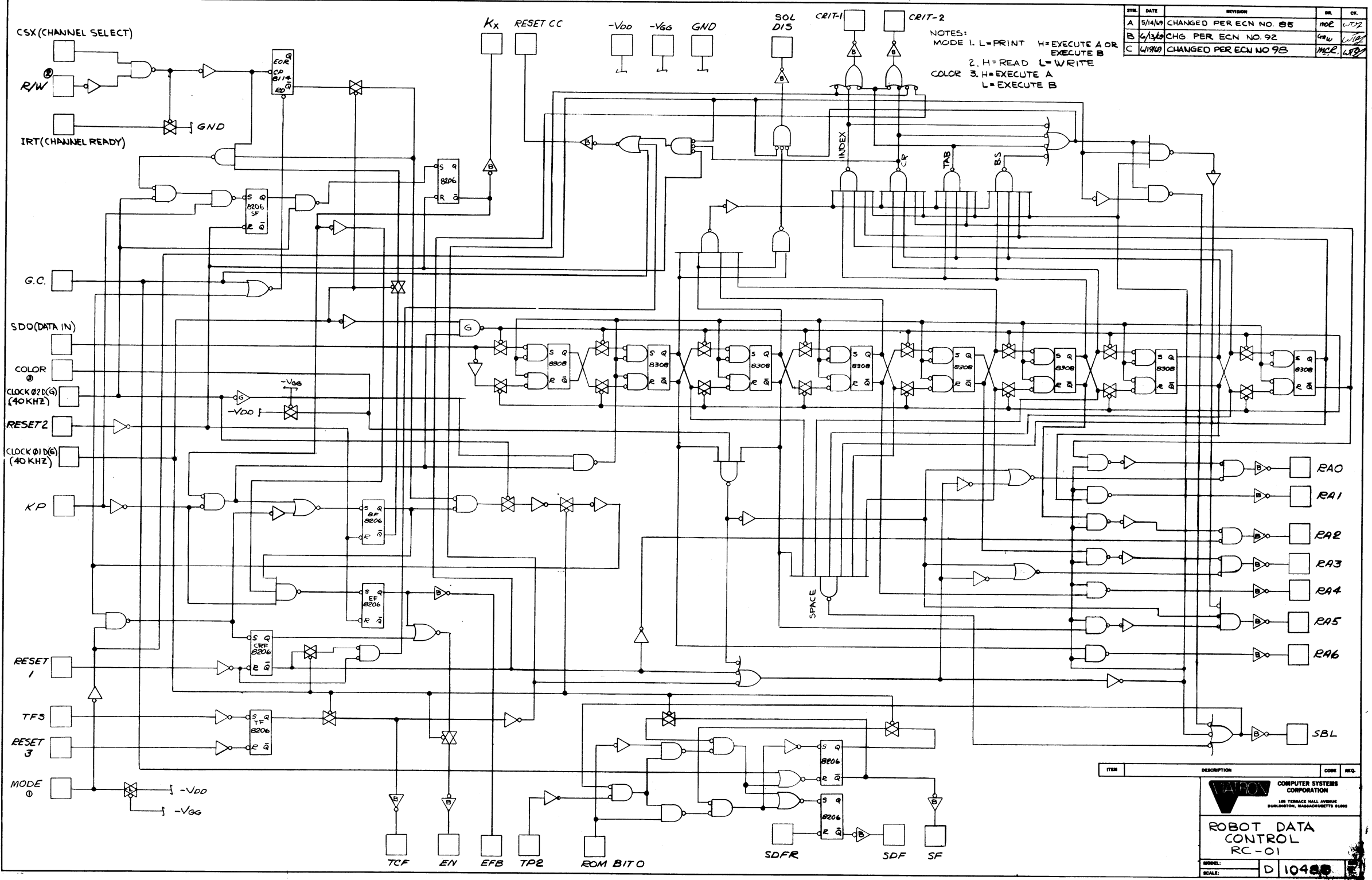
ITEM	DESCRIPTION	CODE	REQ.
VIATRON COMPUTER SYSTEMS CORPORATION 180 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
SCHEMATIC PRINTED WIRING BOARD ROBOT PRINTER			
DRAWING NO: 30F3		REV:	
SCALE:		D 140801	



SWITCH POSITION	FUNCTION
A	EXECUTE A
L	LIST
B	EXECUTE B



**INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND**
 COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:
VERADA 214 DIV. LOLAR
 MAIL - P.O. BOX 438, LOWELL, MA. 01852
 STORE - 38 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013

ITEM	DESCRIPTION	CODE	REQ.
	 COMPUTER SYSTEMS CORPORATION <small>100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</small>		
	SCHEMATIC DATA STREAM CONTROL ADAPTOR		
MODEL:			
REV:	1001	C	140800

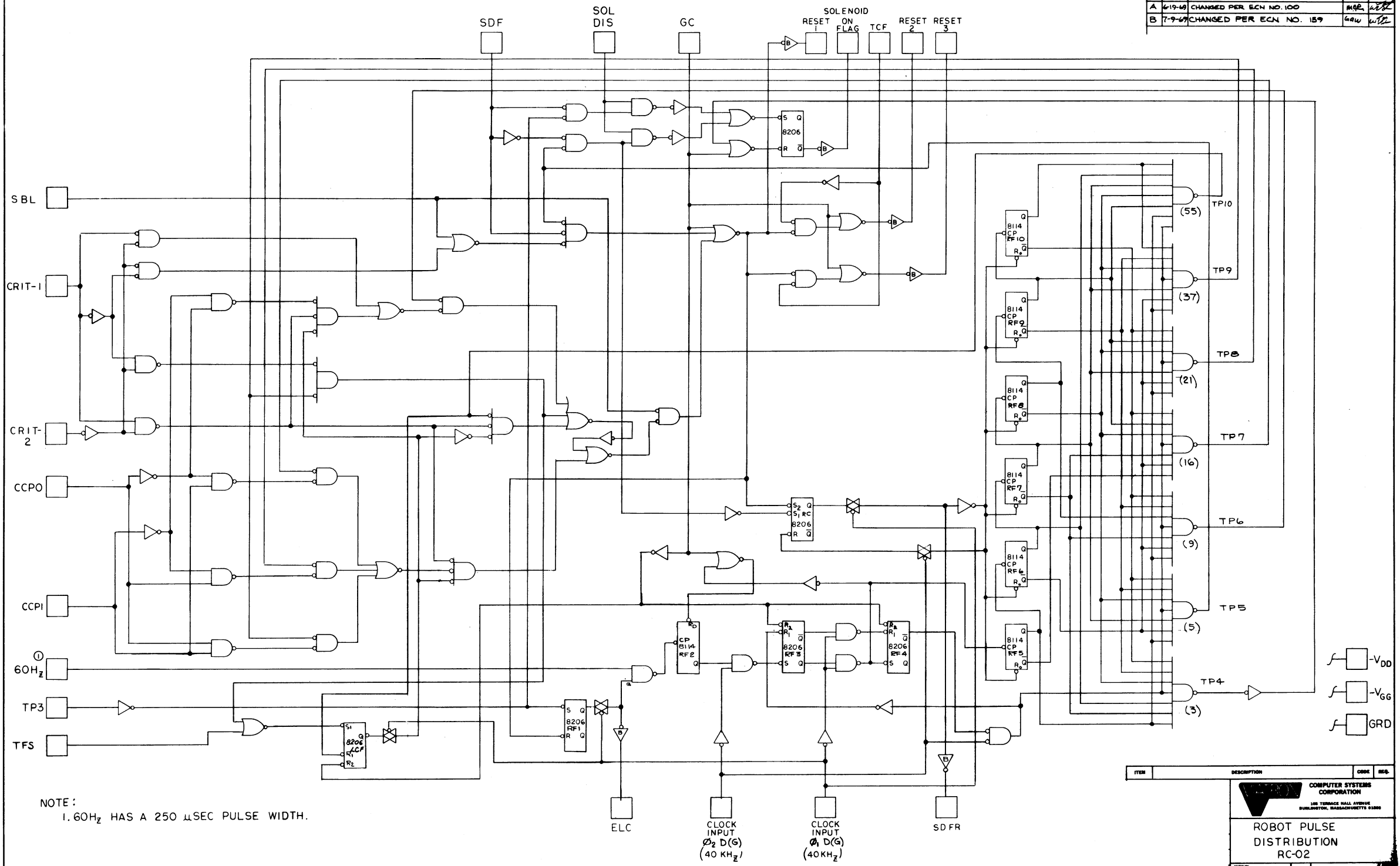


REV.	DATE	REVISION	DR.	CR.
A	5/14/69	CHANGED PER ECN NO. 85	MOE	W.D.Z
B	6/13/69	CHG PER ECN NO. 92	GW	W.D.Z
C	4/19/69	CHANGED PER ECN NO 98	MCL	W.D.Z

NOTES:
 MODE 1. L=PRINT H=EXECUTE A OR EXECUTE B
 2. H=READ L=WRITE
 COLOR 3. H=EXECUTE A L=EXECUTE B

ITEM	DESCRIPTION	CODE	REQ.
 VATRON COMPUTER SYSTEMS CORPORATION 100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
ROBOT DATA CONTROL RC-01			
MODEL:		D 10488	
SCALE:			

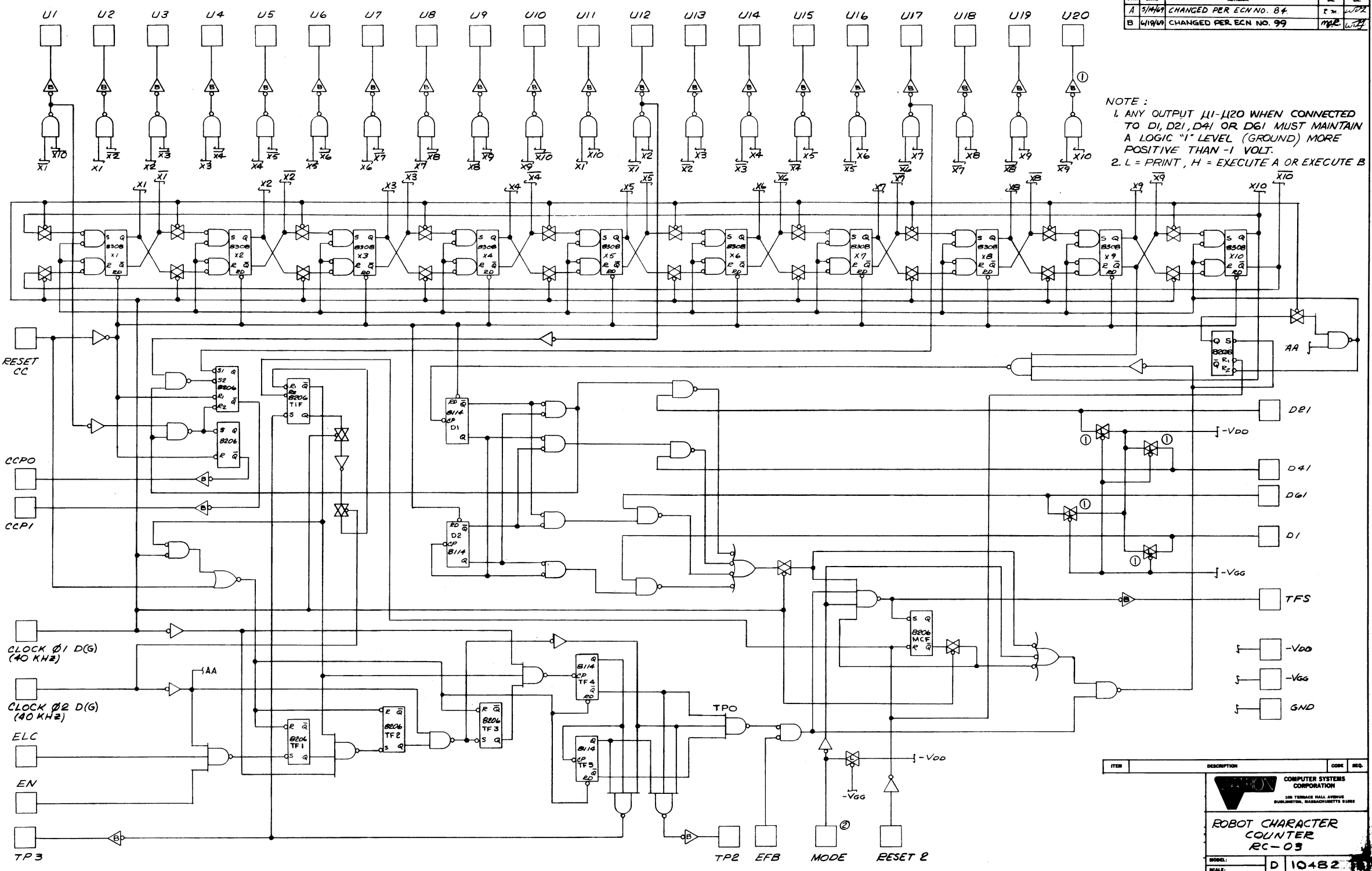
SYB.	DATE	REVISION	DR.	CK.
A	6-19-69	CHANGED PER ECN NO. 100	MGR	WBL
B	7-9-69	CHANGED PER ECN NO. 159	GAU	WBL



NOTE:
1. 60Hz HAS A 250 μSEC PULSE WIDTH.

ITEM	DESCRIPTION	QTY	REQ.
COMPUTER SYSTEMS CORPORATION <small>100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</small>			
ROBOT PULSE DISTRIBUTION RC-02			
MODEL:	D 10489		
SCALE:	B		

SYL.	DATE	REVISION	DR.	CHK.
A	3/14/69	CHANGED PER ECN NO. 84	R 7M	W 22
B	4/19/69	CHANGED PER ECN NO. 99	mye	W 22



NOTE:
 1. ANY OUTPUT U1-U20 WHEN CONNECTED TO D1, D21, D41 OR D61 MUST MAINTAIN A LOGIC "1" LEVEL (GROUND) MORE POSITIVE THAN -1 VOLT.
 2. L = PRINT, H = EXECUTE A OR EXECUTE B

ITEM	DESCRIPTION	CODE	REQ.
COMPUTER SYSTEMS CORPORATION <small>100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</small>			
ROBOT CHARACTER COUNTER RC-03			
MODEL:	D 10482		
SCALE:			

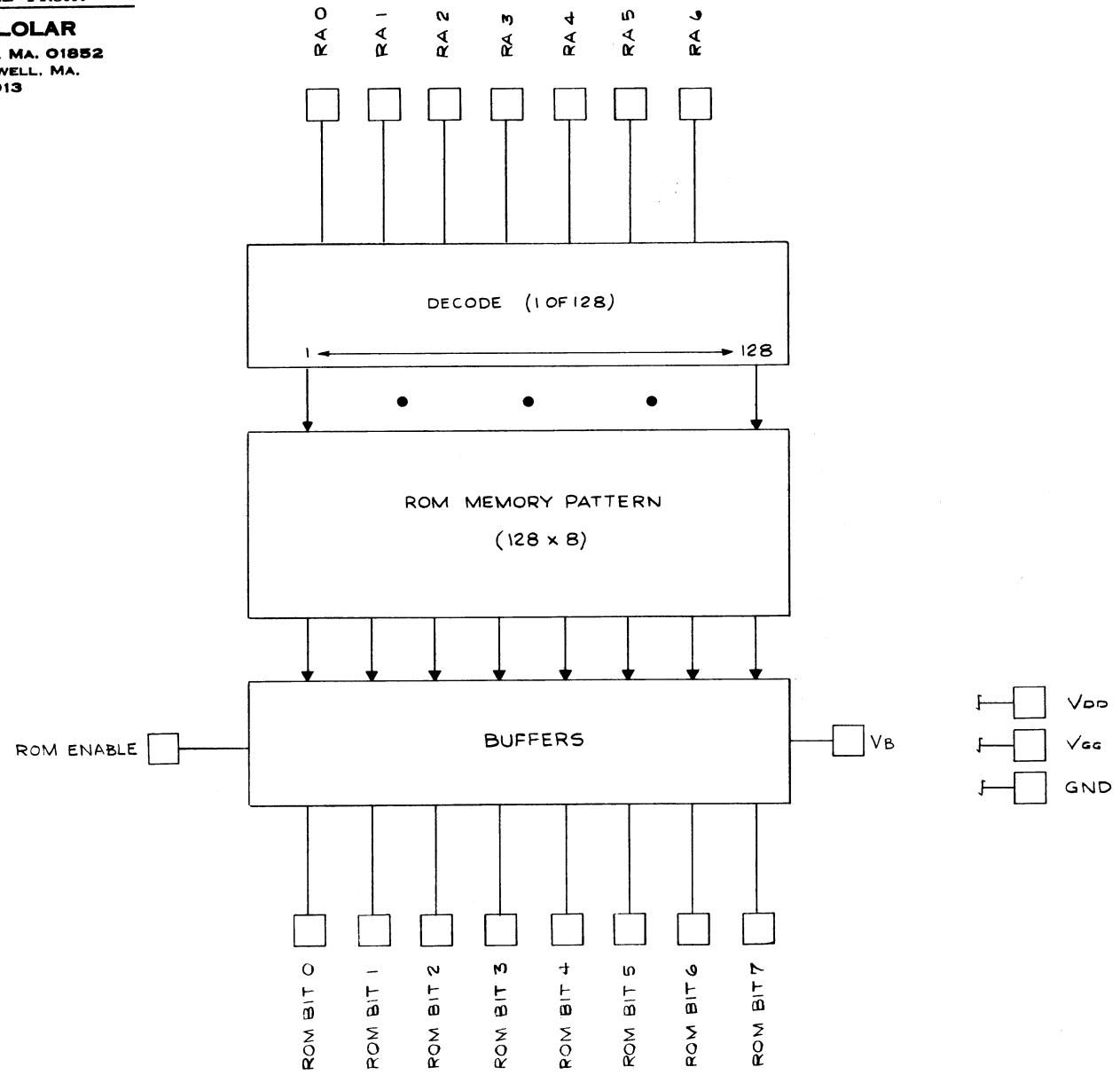


INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

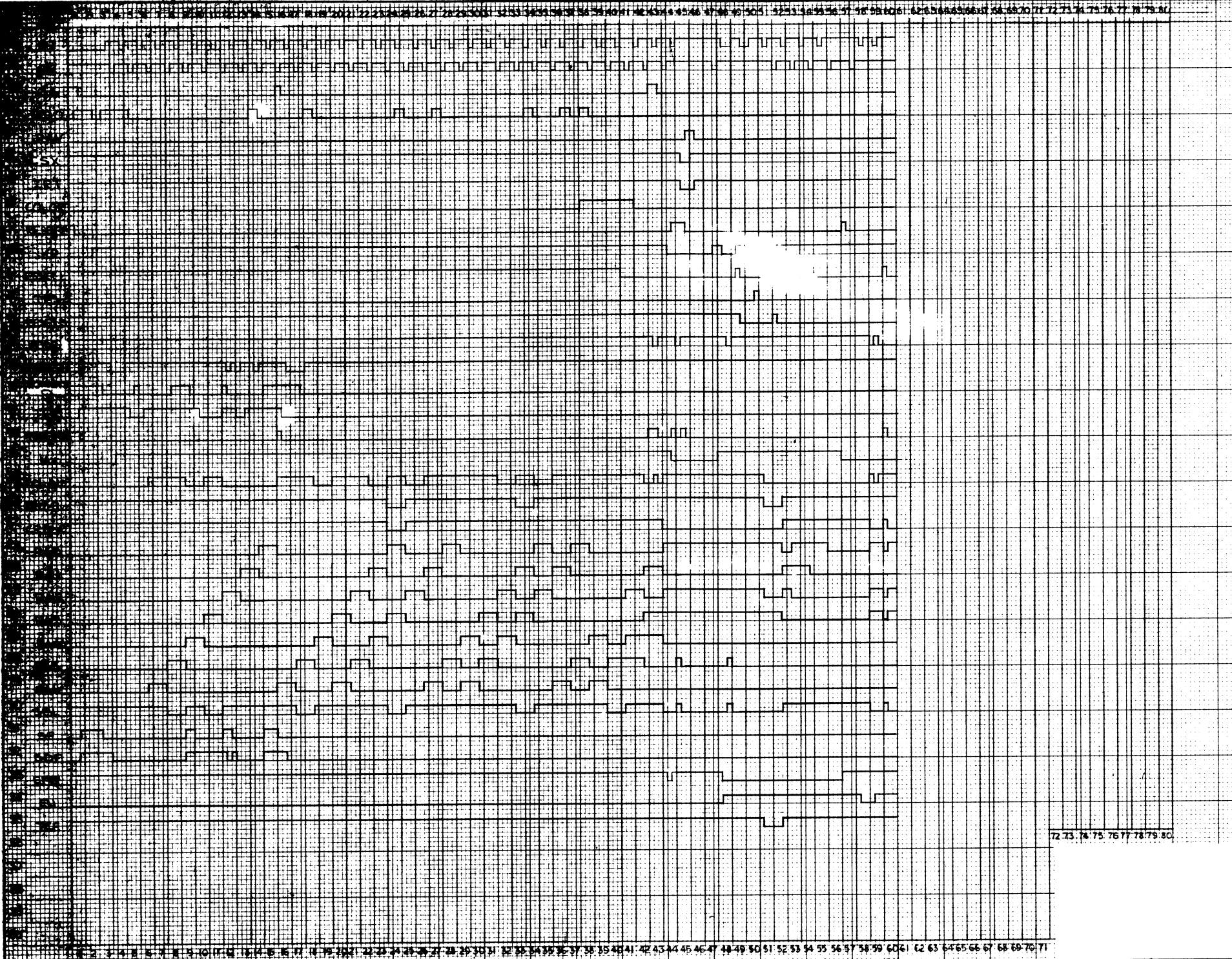
VERADA 214 DIV. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

SYL.	DATE	REVISION	DR.	CL.
A	4/15/73	CHANGED PER ECN NO. 73	R.W.	W.H.




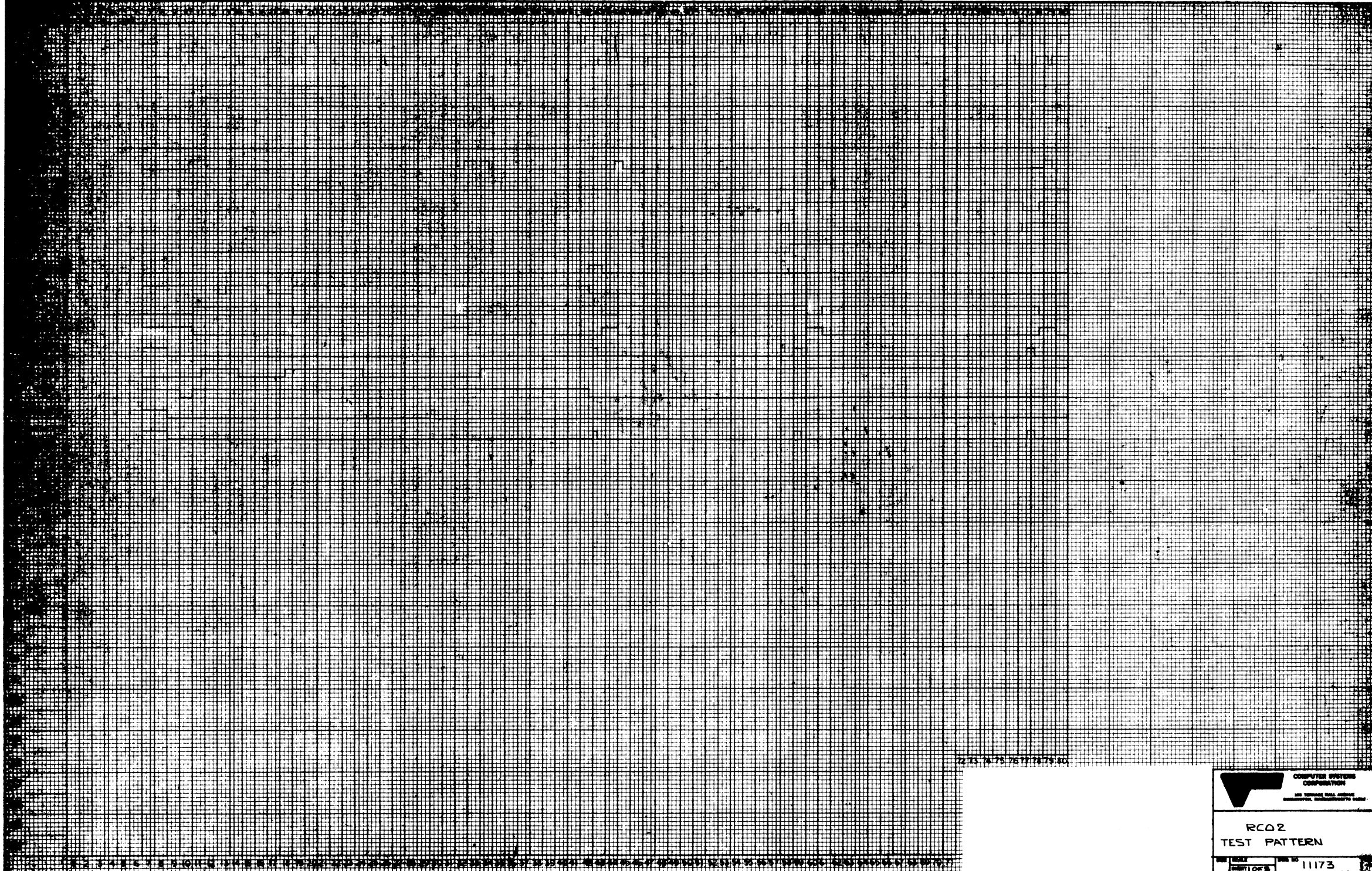
NOTE:
1. ROM OUTPUTS MUST SOURCE
OR SINK ONE MILLIAMP.

ITEM	DESCRIPTION	CODE	REQ.
 COMPUTER SYSTEMS CORPORATION 100 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
ROBOT STORAGE RC-04			
MODEL:	D 10473	REV.	A
SCALE:			




72 73 74 75 76 77 78 79 80

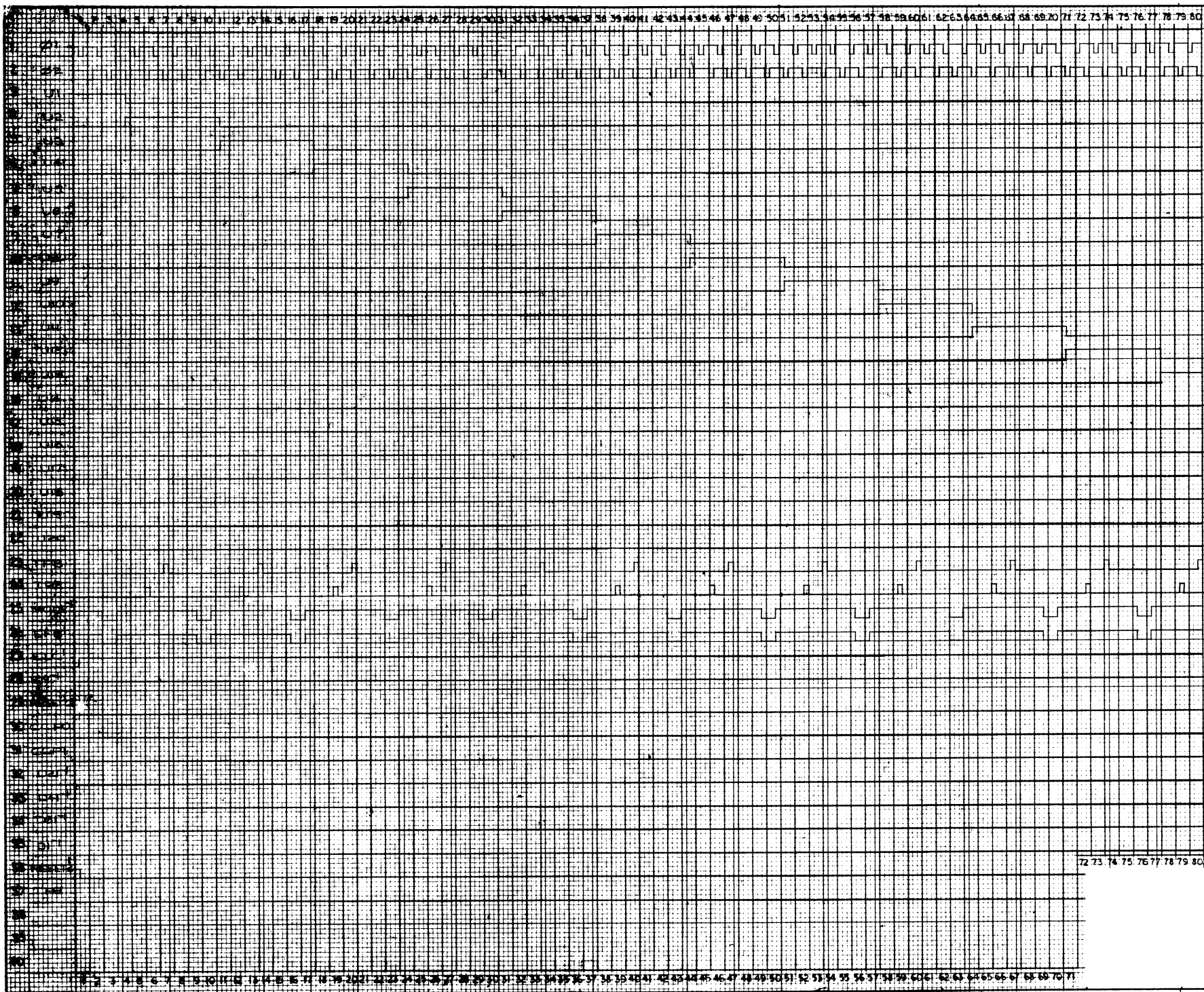
DRAWN BY <i>M.C.B.</i>	DATE <i>8-18-49</i>	 COMPUTER SYSTEMS CORPORATION 185 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803
CHECKED BY <i>R.H. King</i>	DATE	
DATE	DATE	TEST PATTERN-RC01
PRICE ENG	DATE	
QUALITY CONTROL	DATE	
MANUFACTURING	DATE	
SIZE D	SCALE	DWG NO 11169
SHEET 1 of 1		



72 73 74 75 76 77 78 79 80

 COMPUTER SYSTEMS CORPORATION <small>300 VILLAGE HILL AVENUE BOSTON, MASSACHUSETTS 02128</small>	
RC02 TEST PATTERN	
<small>FORM NO.</small>	<small>FORM NO.</small> 11173
<small>REV. 10/73</small>	<small>PRINTED IN U.S.A.</small>

SYM	DATE	VISION	DR.	CR.
A	10/14/69	CHANGED PER ECN NO. 514	MB	77A
B	11/19/69	CHANGED PER ECN NO. 533	97	99A
C	12/16/69	CHANGED PER ECN NO. 546	17	77B
D	1/29/70	CHANGED PER ECN NO. 559	BR	77C

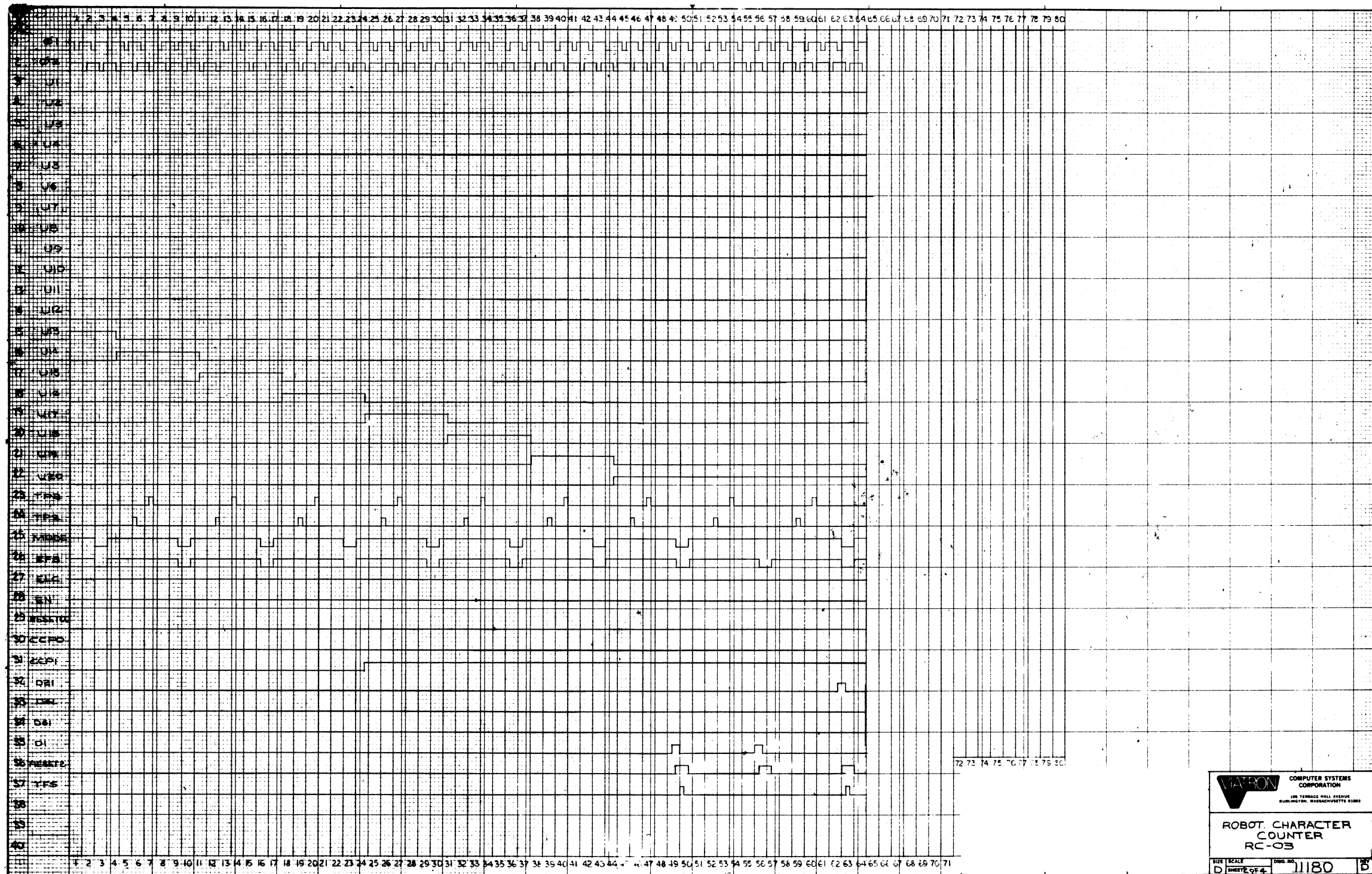


72 73 74 75 76 77 78 79 80

AVON COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

**ROBOT CHARACTER COUNTER
 RC-03**

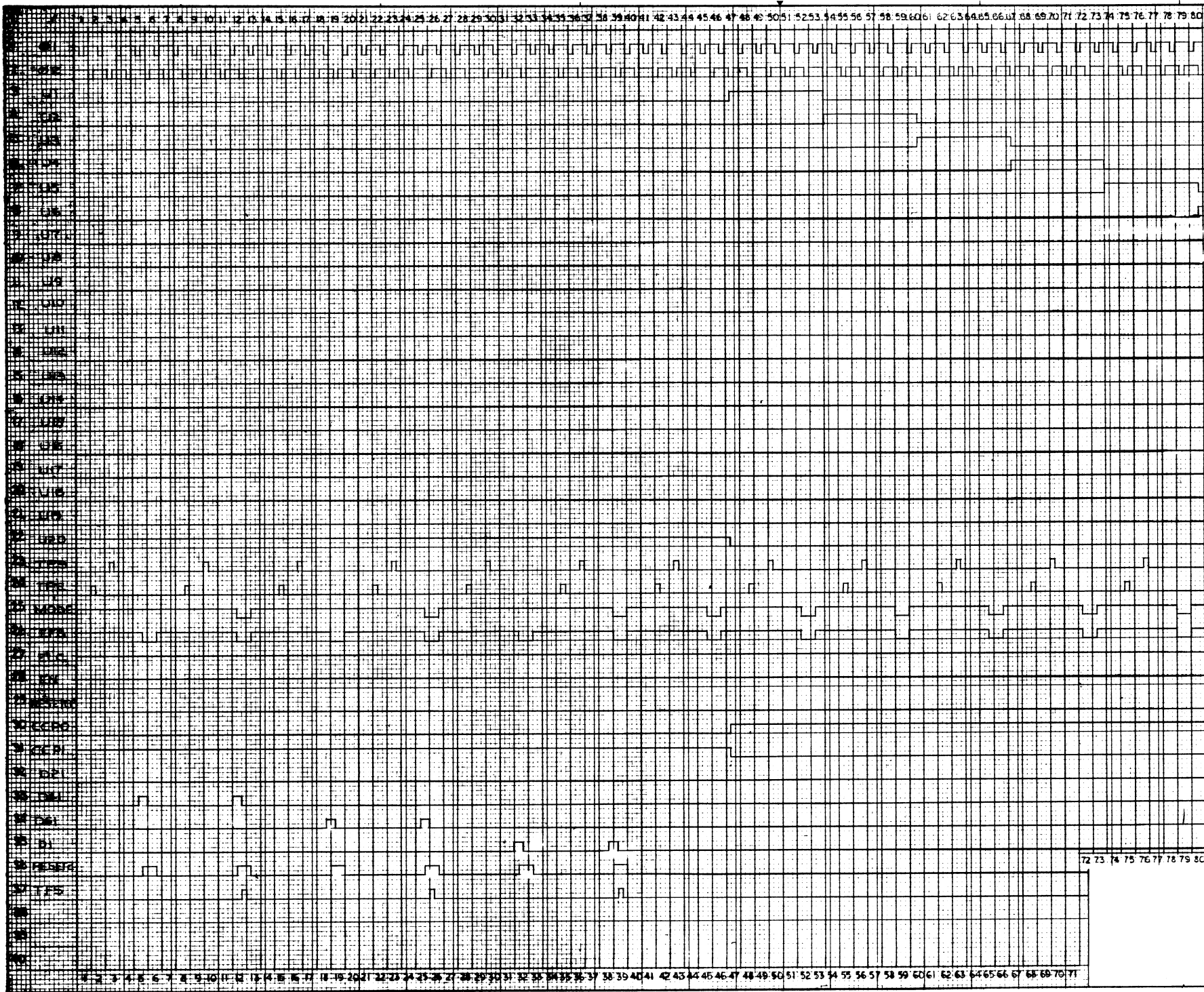
FORM NO. 11180
 1 OF 4



WATRON COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

ROBOT CHARACTER COUNTER RC-03

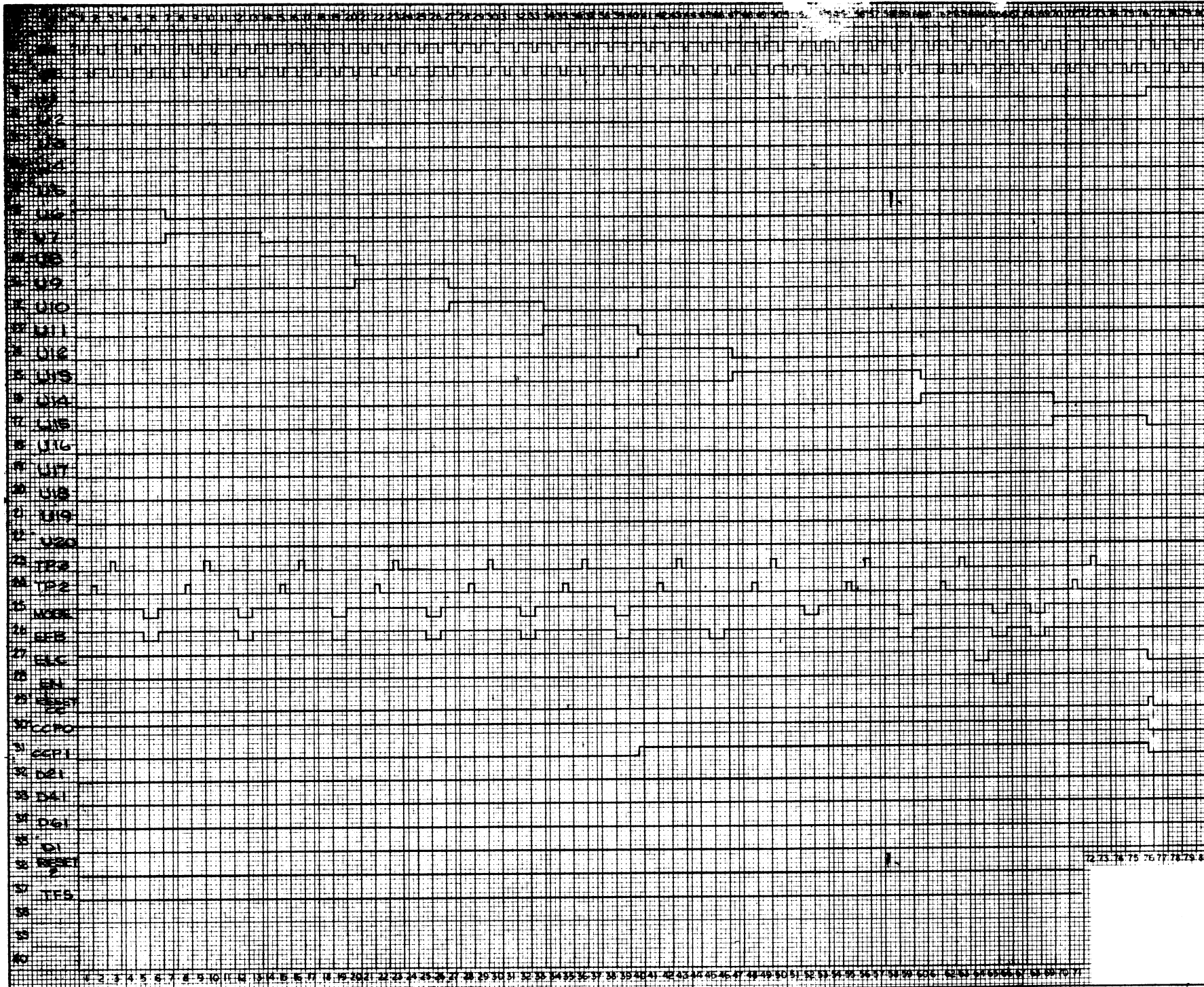
SIZE: SCALE: Dwg. No. 11180
 SHEETS OF 4 8



COMPUTER SYSTEMS CORPORATION
 100 YERGENE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

ROBOT CHARACTER COUNTER
 RG03

REV. SCALE: 1:1
 PART: 3 OF 4
 11180
 10



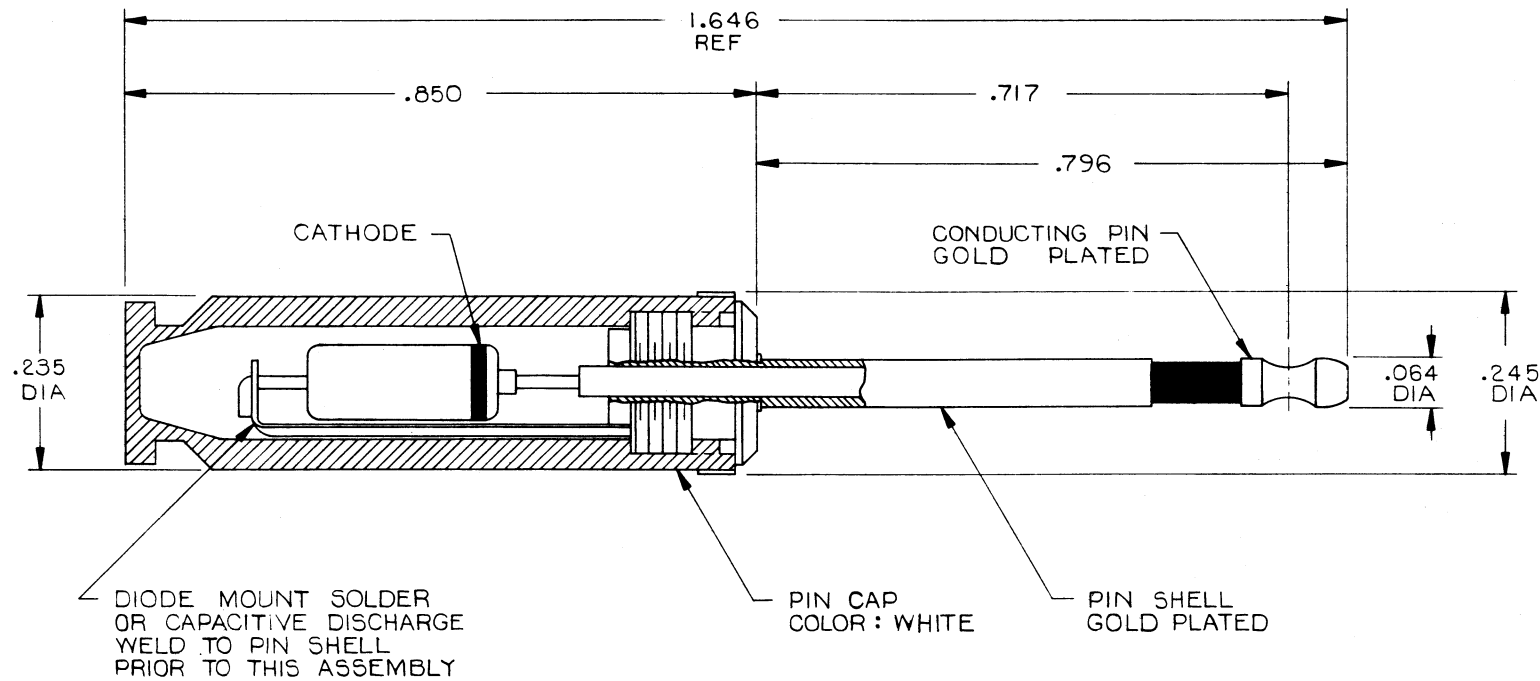
72 73 74 75 76 77 78 79 80

COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

ROBOT CHARACTER COUNTER RC-03

UNIT NO. 11180

SYN.	DATE	REVISION	DR.	CK.
A	8-28-69	REDRAWN PER ECN-305	DR	
B	9-16-69	REVISED PER ECN-402	DR	



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 Div. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

ITEM	DESCRIPTION	CODE	REQ.
	VIATRON COMPUTER SYSTEMS CORPORATION 106 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803		
	PROGRAMMING PIN ASSEMBLY		
	MODEL:	C	129812-00
	SCALE: 8/1		REV. B


TILT MOTION	UPPER CASE											LOWER CASE											
0	TO	<										>											
	FROM	[#	&	*	\$	Z	@	%	ç)	(]	3	7	8	4	Z	2	5	6	0	9
1	TO																						
	FROM	B	H	K	E	N	T	L	C	D	U	X	b	h	k	e	n	t	L	C	D	U	X
2	TO					ı	◻																
	FROM	W	S	I	"	.	°	O	A	R	V	M	w	s	i	'	!	O	a	r	v	m	
3	TO																						
	FROM	—	Y	Q	P	+	J	?	,	:	F	G	-	y	q	p	=	j	/	,	;	f	g
		-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
ROTATE MOTION																							



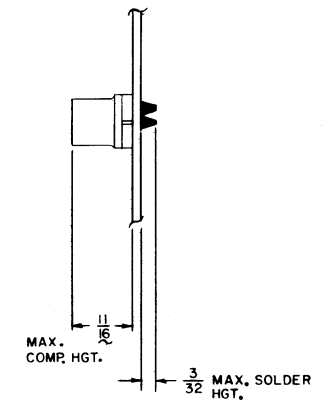
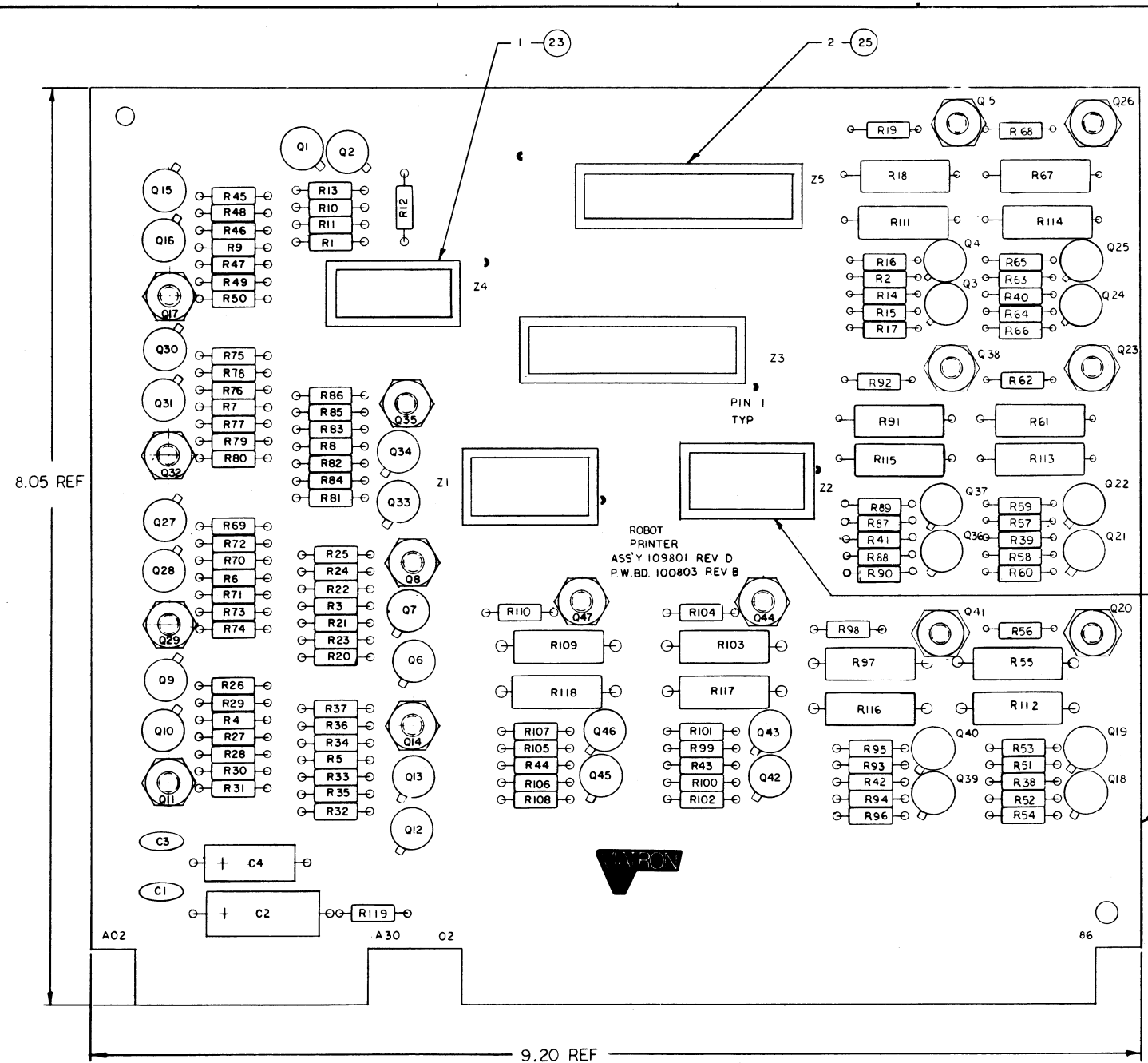
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:


VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

ITEM	DESCRIPTION	CODE	REQ.
	 COMPUTER SYSTEMS CORPORATION <small>188 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</small>		
VIATRON SELECTRIC ELEMENT CHART <small>(CORRESPONDENCE)</small>			
MODEL:		C 150802	REV.
SCALE:			

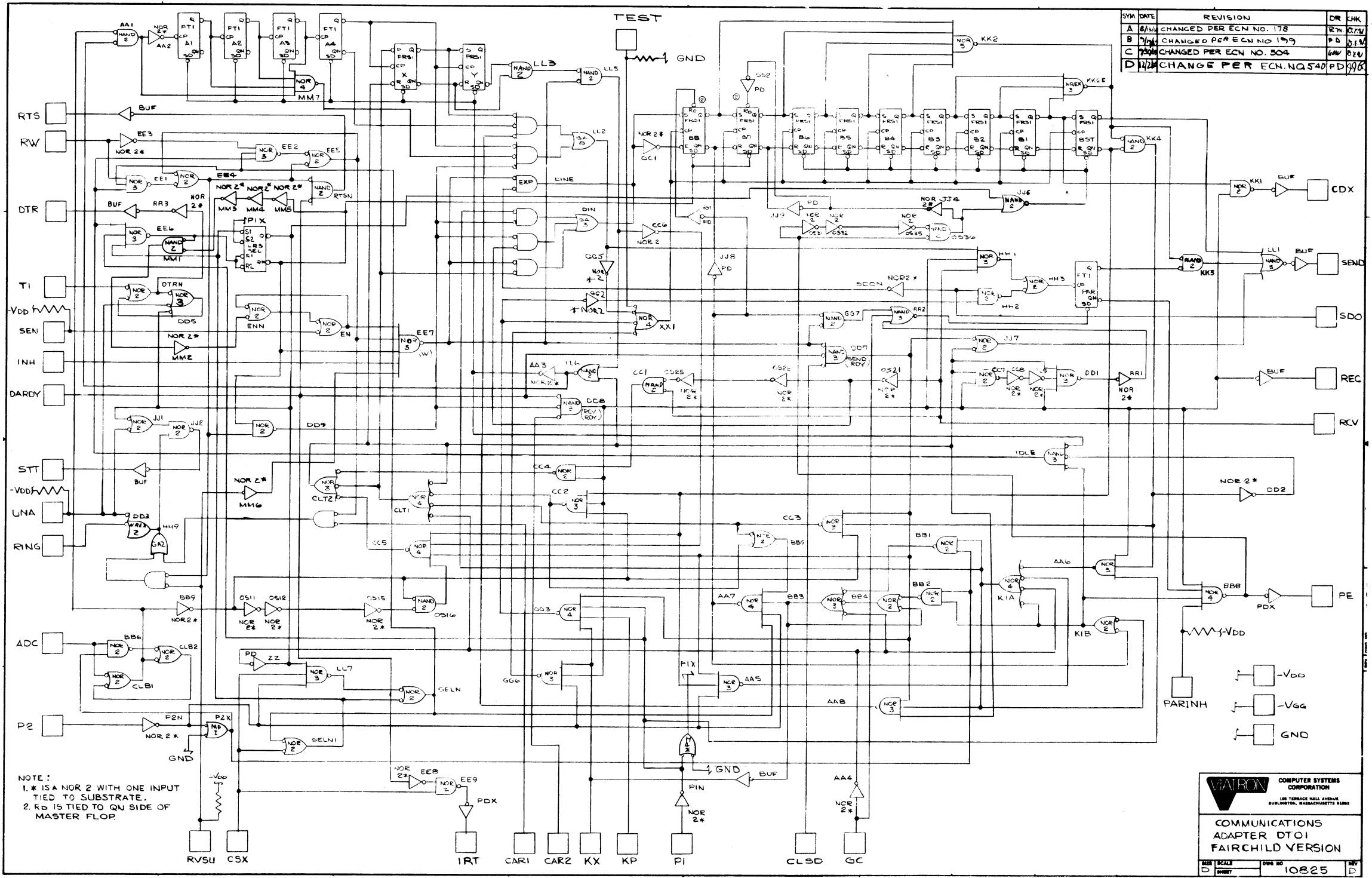
REV. NO.	DATE	REVISION	DR.	CL.
A	10-1-69	REV PER ECN 462	CS	
B	10-17-69	REV PER ECN 481	CS	MD
C	10-24-69	REV PER ECN 619	CS	MD
D	12-19-69	REV PER ECN 828	CS	MD
N/A	000001			



- NOTES:
1. INSTALL ITEM (22) UNDER ALL TRANSISTORS.
 2. INSTALL ITEM (23) UNDER Z4.
 3. INSTALL ITEM (25) UNDER Z3, Z5.
 4. INSTALL ITEM (24) UNDER Z1, Z2.
 5. ALL MOS DEVICES TO BE INSTALLED AFTER WAVE SOLDERING.
 6. REMOVE NUT FROM STUD ON ITEM (9) BEFORE ASSY.


COMPUTER SYSTEMS CORPORATION
 ROUTE 62
 BEDFORD, MASSACHUSETTS 01730
 ASS'Y P.W. BD.
 ROBOT PRINTER
 SCALE 2:1
 SHEET 1 OF 1
 109801-001

SYM	DATE	REVISION	DR	CHK
A	8/1/64	CHANGED PER ECN NO. 178	R7H	D7M
B	7/1/64	CHANGED PER ECN NO. 199	PD	D7M
C	7/1/64	CHANGED PER ECN NO. 304	MM	D7M
D	1/2/64	CHANGE PER ECN NO. 540	PD	D7M

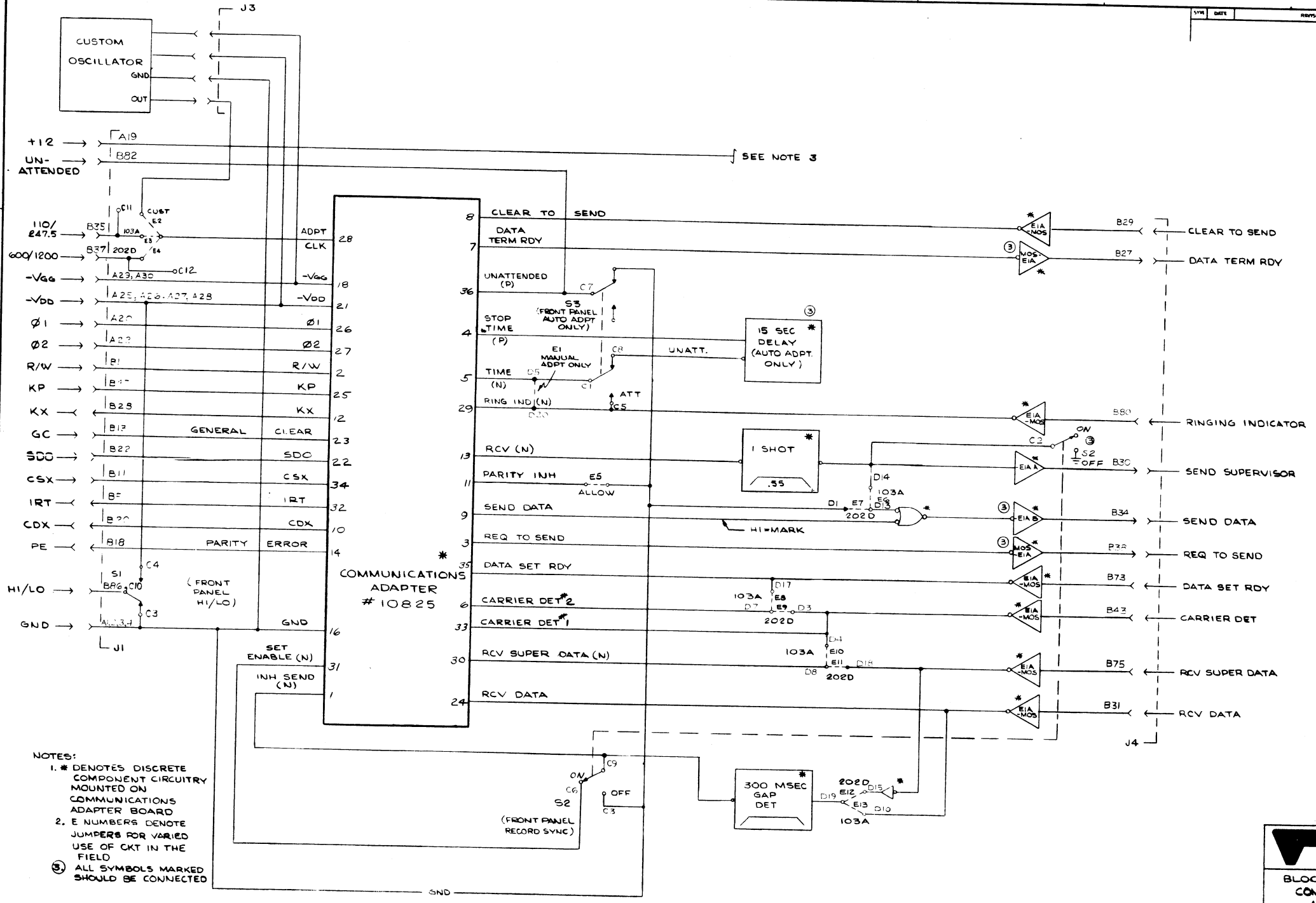


NOTE:
 1. * IS A NOR 2 WITH ONE INPUT TIED TO SUBSTRATE.
 2. R_D IS TIED TO QN SIDE OF MASTER FLOP.

VIATRON COMPUTER SYSTEMS CORPORATION
 108 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

COMMUNICATIONS ADAPTER D701 FAIRCHILD VERSION

REV: B2431 Dwg No: 10825

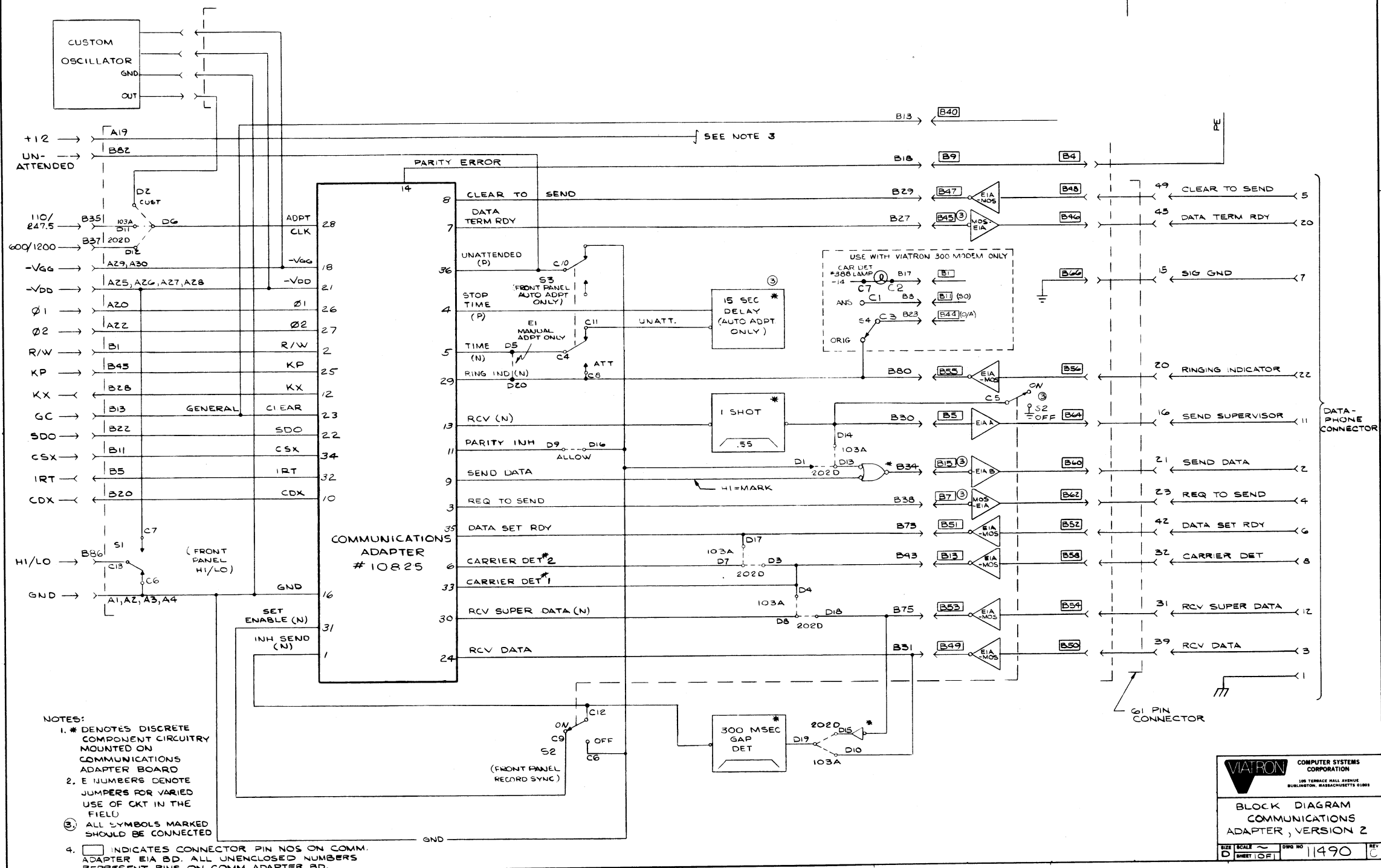


- NOTES:
- * DENOTES DISCRETE COMPONENT CIRCUITRY MOUNTED ON COMMUNICATIONS ADAPTER BOARD
 - E NUMBERS DENOTE JUMPERS FOR VARIED USE OF CKT IN THE FIELD
 - Ⓢ ALL SYMBOLS MARKED SHOULD BE CONNECTED

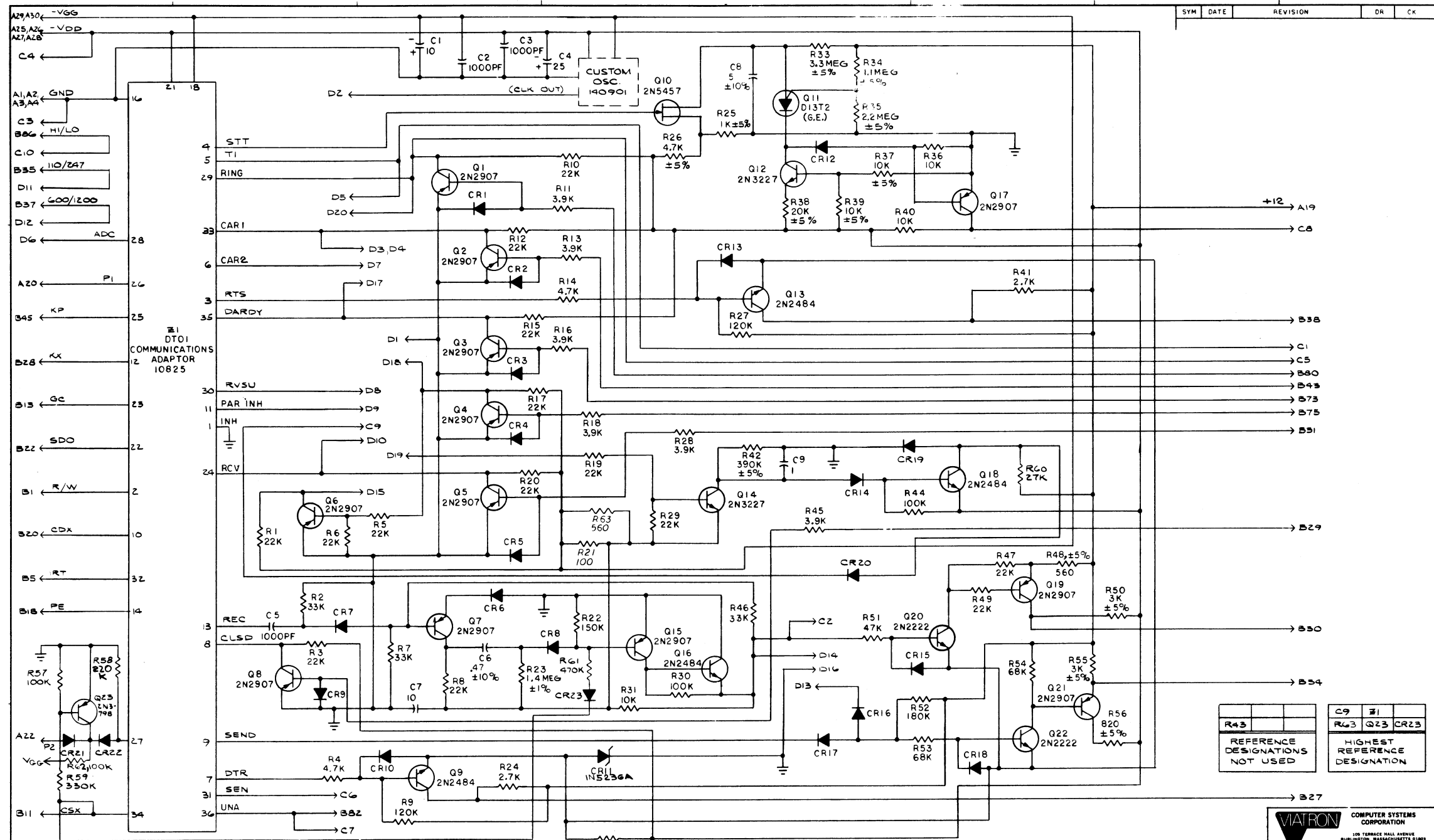
COMPUTER SYSTEMS CORPORATION
 100 TORRANCE HALL AVENUE
 BURLINGAME, CALIFORNIA 94010

**BLOCK DIAGRAM
 COMMUNICATIONS
 ADAPTER**

10838R



- NOTES:
- * DENOTES DISCRETE COMPONENT CIRCUITRY MOUNTED ON COMMUNICATIONS ADAPTER BOARD
 - E NUMBERS DENOTE JUMPERS FOR VARIED USE OF CKT IN THE FIELD
 - Ⓢ ALL SYMBOLS MARKED SHOULD BE CONNECTED
 - INDICATES CONNECTOR PIN NOS ON COMM. ADAPTER EIA BD. ALL UNENCLOSED NUMBERS REPRESENT PINS ON COMM. ADAPTER BD.



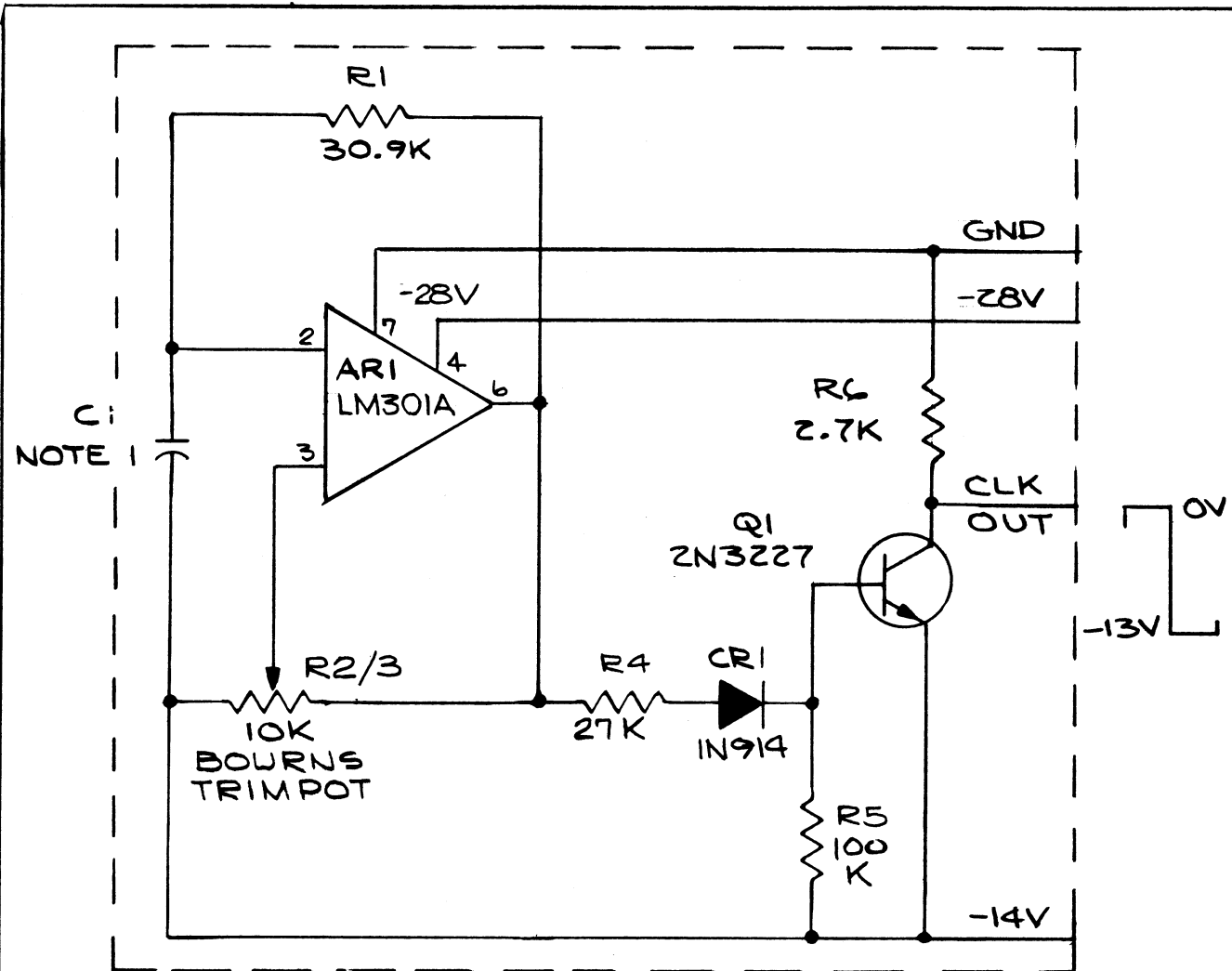
R43			
C9	Z1		
R63	Q23	CR23	
REFERENCE DESIGNATIONS NOT USED			
HIGHEST REFERENCE DESIGNATION			

- NOTES
1. ALL RESISTORS ARE 1/2W ±10% UNLESS OTHERWISE SPECIFIED
 2. ALL DIODES ARE IN914 UNLESS OTHERWISE SPECIFIED
 3. DESIGNATION "C" INDICATES FRONT PANEL CONNECTOR. DESIGNATION "D" INDICATES PROGRAM CONNECTOR
 4. ALL CAPACITOR VALUES ARE IN UF, UNLESS OTHERWISE SPECIFIED.

VIATRON COMPUTER SYSTEMS CORPORATION
 100 TERRACE HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

SCHEMATIC PRINTED WIRING BOARD COMMUNICATIONS ADAPTER

SIZE	SCALE	DWG NO.	REV.
D	1/8" = 1"	140900	
SHEET 1 OF 1			



C1
NOTE 1

NOTES

1. C1 VALUE IS : .01 μ f FOR NEXT ASSY 109902-00
 .0033 μ f FOR NEXT ASSY 109902-01
 .001 μ f FOR NEXT ASSY 109902-02




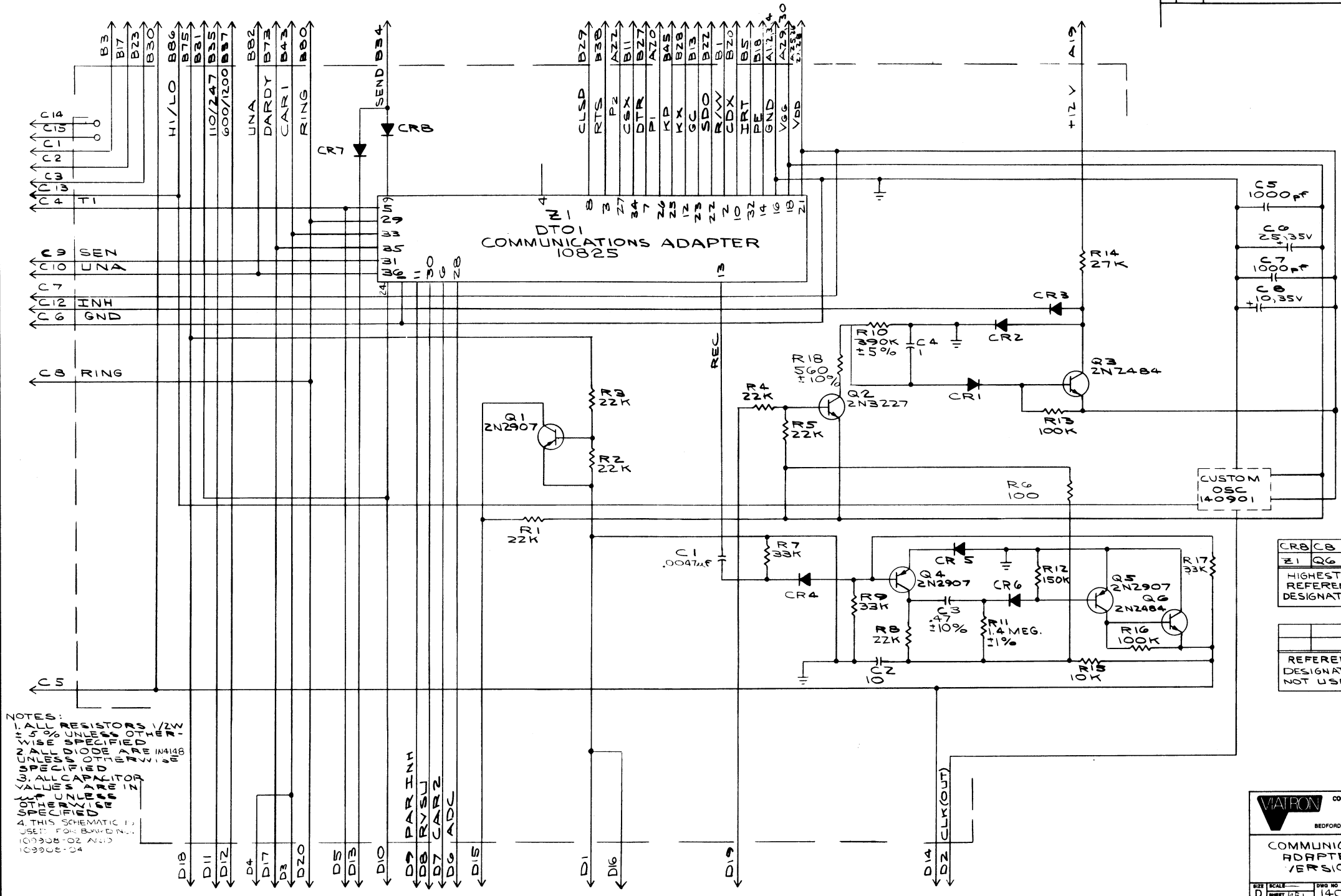
INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR

MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

DESCRIPTION	CODE	REQ.
 COMPUTER SYSTEMS CORPORATION 105 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803		
1KHz TO 20KHz CUSTOM OSCILLATOR		
MODEL:	A	140901
SCALE:		REV. -



20T
 19T
 18T
 17T
 16T
 15T
 14T
 13T
 12T
 11T
 10T
 9T
 8T
 7T
 6T
 5T
 4T
 3T
 2T
 1T
 0T
 A: THIS SCHEMATIC IS
 1039308 FOR X30 D Z:
 1039306 FOR X30 C Z:
 1039304

CRB	CB
ZI	QG
RIB	

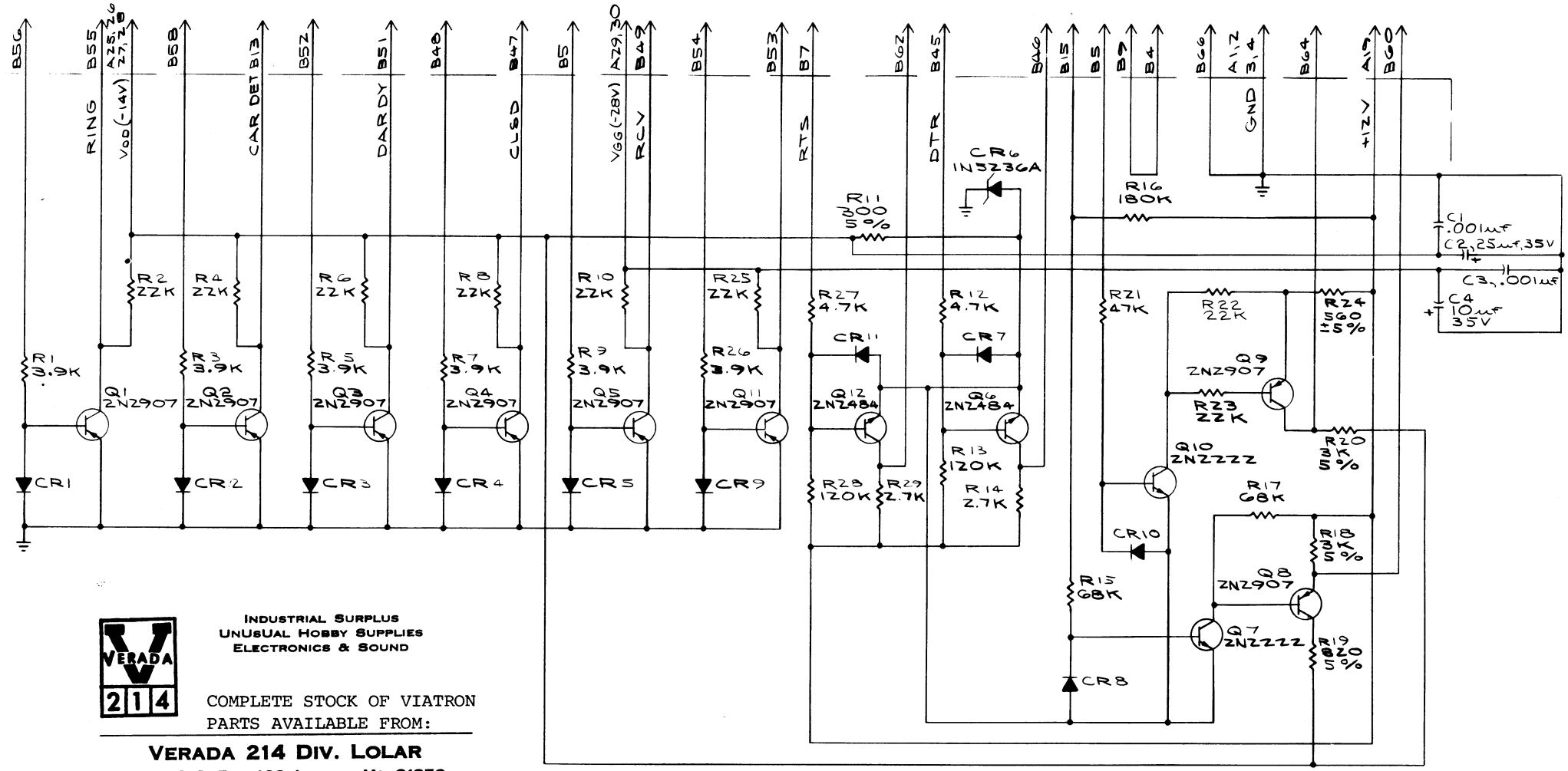
HIGHEST REFERENCE DESIGNATIONS

REFERENCE DESIGNATIONS NOT USED

VIATRON COMPUTER SYSTEMS CORPORATION
 ROUTE 62
 BEDFORD, MASSACHUSETTS 01730

**COMMUNICATIONS ADAPTER
 VERSION 2**

SIZE SCALE: D 1:12
 DWG NO: 140903-00
 REV:



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

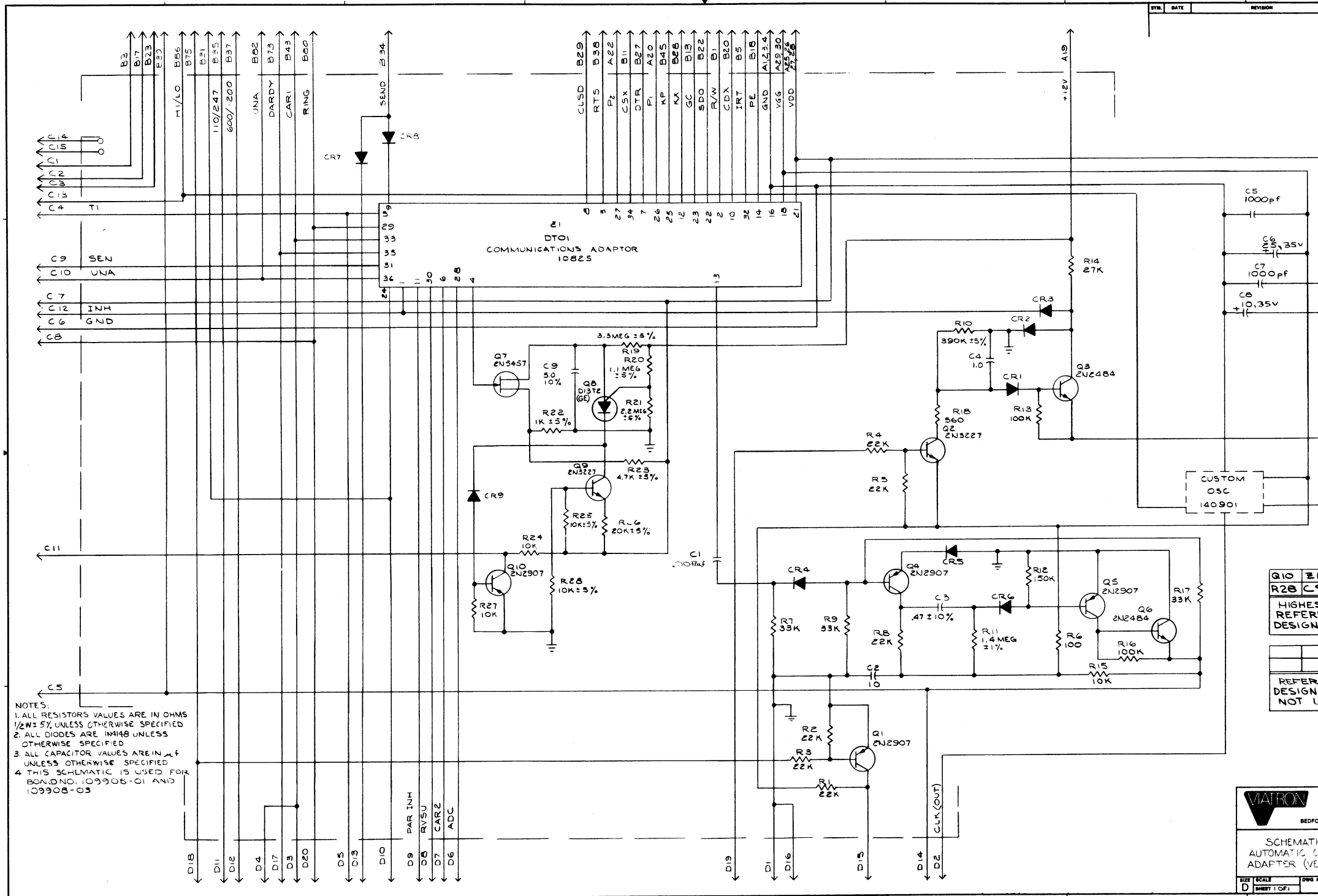
NOTES:
1. ALL PARTS ARE TO BE OBTAINED FROM VERADA 214 DIV. LOLAR
2. ALL PARTS ARE TO BE OBTAINED FROM VERADA 214 DIV. LOLAR
3. ALL PARTS ARE TO BE OBTAINED FROM VERADA 214 DIV. LOLAR
4. ALL PARTS ARE TO BE OBTAINED FROM VERADA 214 DIV. LOLAR
5. ALL PARTS ARE TO BE OBTAINED FROM VERADA 214 DIV. LOLAR
6. ALL PARTS ARE TO BE OBTAINED FROM VERADA 214 DIV. LOLAR
7. ALL PARTS ARE TO BE OBTAINED FROM VERADA 214 DIV. LOLAR
8. ALL PARTS ARE TO BE OBTAINED FROM VERADA 214 DIV. LOLAR
9. ALL PARTS ARE TO BE OBTAINED FROM VERADA 214 DIV. LOLAR
10. ALL PARTS ARE TO BE OBTAINED FROM VERADA 214 DIV. LOLAR

C4			
R24	CR11	Q12	
HIGHEST REFERENCE DESIGNATIONS			
REFERENCE DESIGNATIONS NOT USED			

VIATRON COMPUTER SYSTEMS CORPORATION
ROUTE 62
BEDFORD, MASSACHUSETTS 01730

COMMUNICATIONS ADAPTER EIA BOARD

SIZE D SCALE 1:1 DRAWING NO. 140904-00 REV. 1



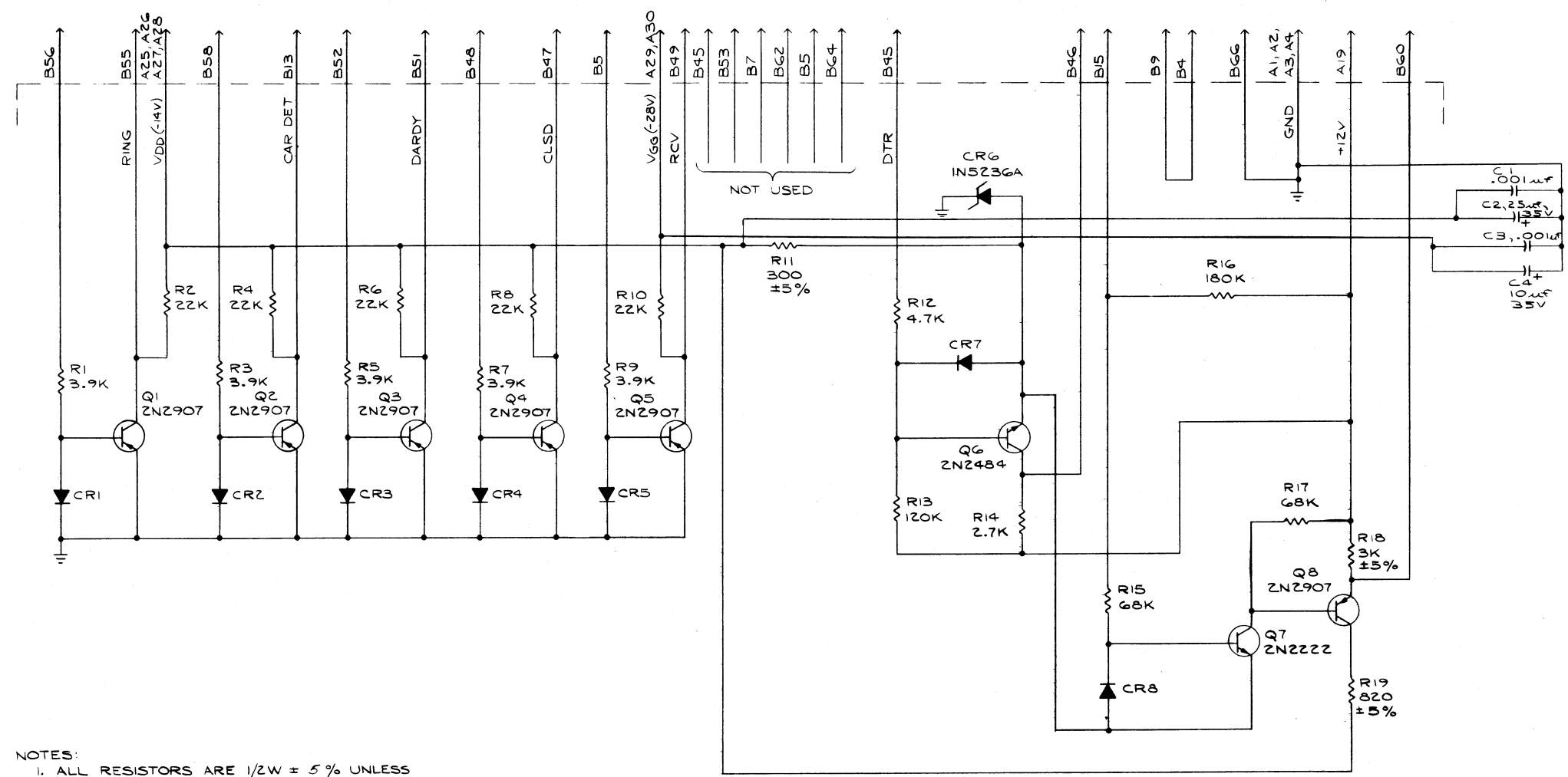
NOTES:
 1. ALL RESISTORS VALUES ARE IN OHMS
 1/2W ± 5% UNLESS OTHERWISE SPECIFIED
 2. ALL DIODES ARE 1M4148 UNLESS
 OTHERWISE SPECIFIED
 3. ALL CAPACITOR VALUES ARE IN μF
 UNLESS OTHERWISE SPECIFIED
 4. THIS SCHEMATIC IS USED FOR
 BOARD NO. 109906-01 AND
 109908-03

Q10	Z1		
R28	C9	CR9	
HIGHEST REFERENCE DESIGNATIONS			
REFERENCE DESIGNATIONS NOT USED			

VIATRON COMPUTER SYSTEMS CORPORATION
 ROUTE 62
 BEDFORD, MASSACHUSETTS 01730

SCHEMATIC R.W.B.
 AUTOMATIC COMMUNICATIONS
 ADAPTER (VERSION 2)

SIZE: SCALE: DWG NO: 140905-00 REV: D SHEET 1 OF 1



- NOTES:
1. ALL RESISTORS ARE 1/2W ± 5% UNLESS OTHERWISE SPECIFIED
 2. ALL DIODES ARE 1N4148 UNLESS OTHERWISE SPECIFIED

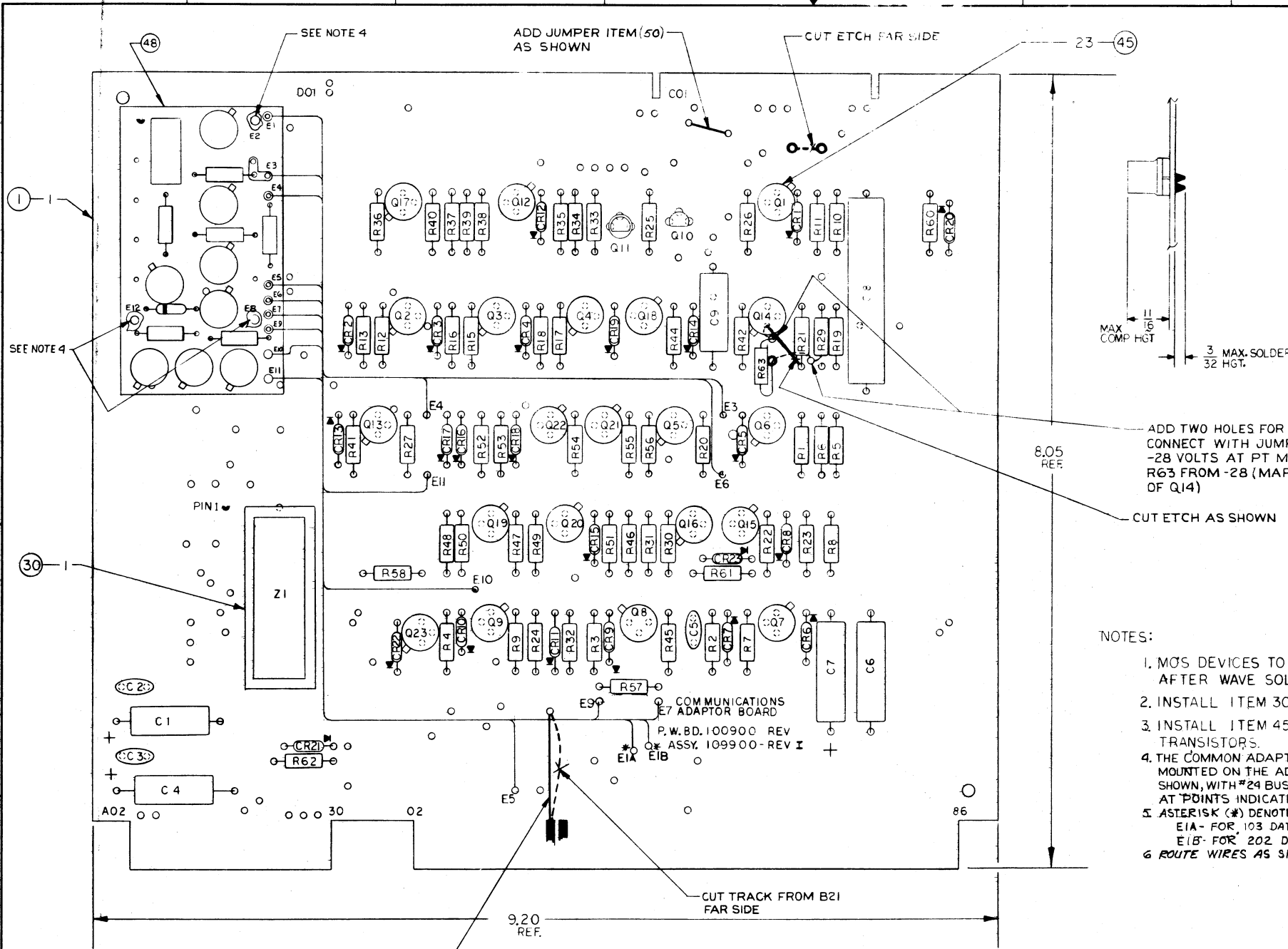
C4			
Q8	CR8	R19	
HIGHEST REFERENCE DESIGNATIONS			
REFERENCE DESIGNATIONS NOT USED			

VIATRON COMPUTER SYSTEMS CORPORATION
 ROUTE 62
 BEDFORD, MASSACHUSETTS 01730

SCHMATIC
 PRINTED WIRING BOARD,
 COMMUNICATIONS ADAPTER
 SLOW EIA BOARD

SIZE	SCALE	DWG. NO.	REV.
D		140906-001	

REV.	DATE	REVISION	DR.	CK.
A				
B				
C	10-21-67	REVISED PER ECN. 453	VEB	
D	10-21-67	REVISED PER ECN. 601	KR	
E	10-21-67	REVISED PER ECN. 605		
F	10-21-67	REVISED PER ECN. 621		
G	10-27-69	REVISED PER ECN. NO. 634		
H	11-29-70	REVISED PER ECN. NO. 900	RHM	PH
I	11-29-70	REVISED PER ECN. NO. 935	RHM	PH



ADD TWO HOLES FOR LEADS OF R29 & R63
CONNECT WITH JUMPER FROM R29 TO
-28 VOLTS AT PT MARKED CONNECT
R63 FROM -28 (MARKED TO EMITTER
OF Q14)

CUT ETCH AS SHOWN

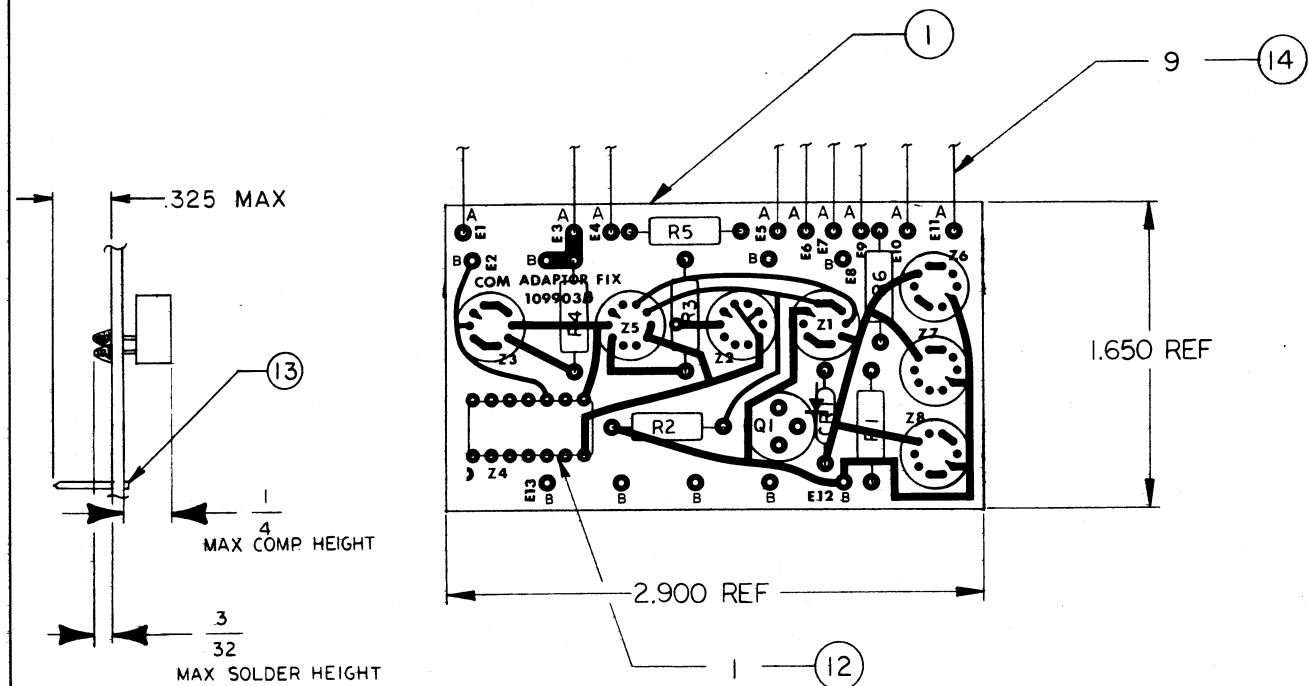
- NOTES:
1. MOS DEVICES TO BE INSTALLED AFTER WAVE SOLDERING
 2. INSTALL ITEM 30 UNDER Z1.
 3. INSTALL ITEM 45 UNDER ALL TRANSISTORS.
 4. THE COMMON ADAPTER FIX BOARD, TO BE MOUNTED ON THE ADAPTER BOARD AS SHOWN, WITH #24 BUSS WIRE AND SLEEVING, AT POINTS INDICATED. (E2, E8 & E12)
 5. ASTERISK (*) DENOTES USE ONLY ONE E1:
E1A - FOR 103 DATASET 110/247.5
E1B - FOR 202 DATASET 600/1200.
 6. ROUTE WIRES AS SHOWN

VIAIRON COMPUTER SYSTEMS CORPORATION
ROUTE 42
BEDFORD, MASSACHUSETTS 01730

ASSEMBLY P.W.BD.
COMMUNICATIONS ADAPTOR

SIZE SCALE 2:1 DWG NO. T09900-00 REV D SHEET 1 OF 1

SYM.	DATE	REVISION	DR.	CK.
A	10/11/69	REVISED PER ECN 469	M.D.	
B	10-21-69	REVISED PER ECN-633	EDL	F.M.



- NOTES :
1. INSTALL ITEM 12 UNDER ITEM 11.
 2. INSTALL ITEM 14 (9) PLACES MARKED 'A'.
 3. FLOW SOLDER BEFORE INSTALLING Z4.
 4. INSTALL ITEM 13 (9) PLACES MARKED 'B'.



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

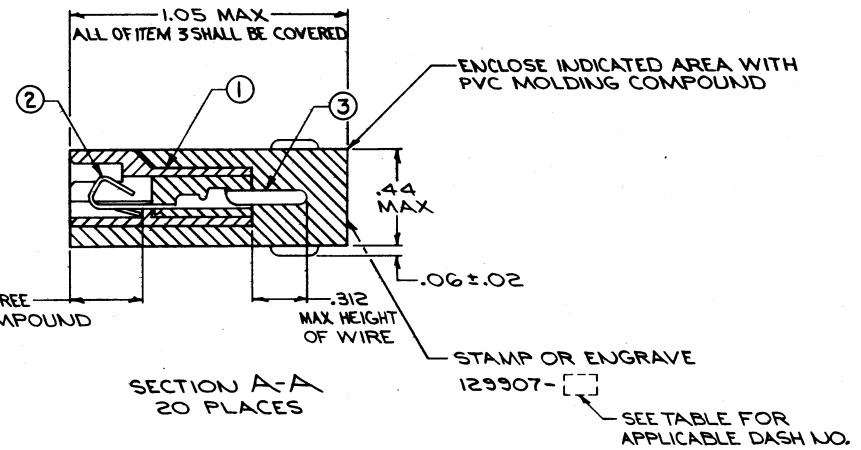
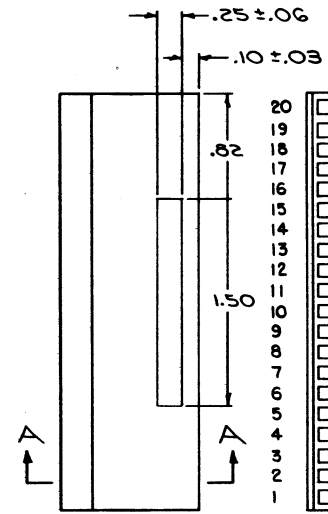
VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

VIATRON		COMPUTER SYSTEMS CORPORATION	
108 TERRACE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803			
ASSEMBLY DRAWING COM ADAPTOR FIX			
SIZE C	SCALE 2/1	DWG NO 109903-00	SHEET 5


JUMPER LIST			
DASH NO.	FROM	TO	LENGTH
-01	20	5	3.50
	19	10	2.60
	17	7	2.70
	14	13	1.40
	11	6	2.00
8	4	1.80	
-02	20	5	3.50
	19	10	2.60
	17	7	2.70
	14	13	1.40
	11	6	2.00
9	1	2.40	
8	4	1.80	
-03	19	10	2.60
	17	7	2.70
	14	13	1.40
	11	6	2.00
8	4	1.80	
-04	19	10	2.60
	17	7	2.70
	14	13	1.40
	11	6	2.00
9	1	2.40	
8	4	1.80	
-05	20	5	3.50
	19	15	1.80
	18	8	2.70
	16	13	1.70
	12	6	2.10
7	3	1.80	
-06	20	5	3.50
	19	15	1.80
	18	8	2.70
	16	13	1.70
	12	6	2.10
9	1	2.40	
7	3	1.80	
-07	19	15	1.80
	18	8	2.70
	16	13	1.70
	12	6	2.10
7	3	1.80	
-08	19	15	1.80
	18	8	2.70
	16	13	1.70
	12	6	2.10
	9	1	2.40
7	3	1.80	


JUMPER LIST			
DASH NO.	FROM	TO	LENGTH
-09	20	5	3.50
	19	10	2.60
	17	7	2.70
	14	13	1.40
	8	4	1.80
-10	20	5	3.50
	19	10	2.60
	17	7	2.70
	14	13	1.40
	9	1	2.40
8	4	1.80	
-11	20	5	3.50
	19	13	1.80
	18	8	2.70
	16	13	1.70
7	3	1.80	
-12	20	5	3.50
	19	15	1.80
	18	8	2.70
	16	13	1.70
9	1	2.40	
7	3	1.80	
-13	19	10	2.60
	17	7	2.70
	14	13	1.40
	8	4	1.80
-14	19	10	2.60
	17	7	2.70
	14	13	1.40
	9	1	2.40
	8	4	1.80
-15	19	15	1.80
	18	8	2.70
	16	13	1.70
	7	3	1.80
	19	15	1.80
-16	18	8	2.70
	16	13	1.70
	9	1	2.40
	7	3	1.80
-17	20	5	3.50
	19	10	2.60
	17	7	2.70
	14	13	1.40
	8	4	1.80
6	2	1.80	

JUMPER LIST			
DASH NO.	FROM	TO	LENGTH
-18	20	5	3.50
	19	10	2.60
	17	7	2.70
	14	13	1.40
	9	1	2.40
	8	4	1.80
6	2	1.80	
-19	20	5	3.50
	19	15	1.80
	18	8	2.70
	16	13	1.70
	7	3	1.80
	6	2	1.80
-20	20	5	3.50
	19	15	1.80
	18	8	2.70
	16	13	1.70
	9	1	2.40
	7	3	1.80
6	2	1.80	
-21	19	10	2.60
	17	7	2.70
	14	13	1.40
	8	4	1.80
	6	2	1.80
	-22	19	10
17		7	2.70
14		13	1.40
9		1	2.40
8		4	1.80
6		2	1.80
-23	19	15	1.80
	18	8	2.70
	16	13	1.70
	7	3	1.80
	6	2	1.80
	-24	19	15
18		8	2.70
16		13	1.70
9		1	2.40
7		3	1.80
6		2	1.80

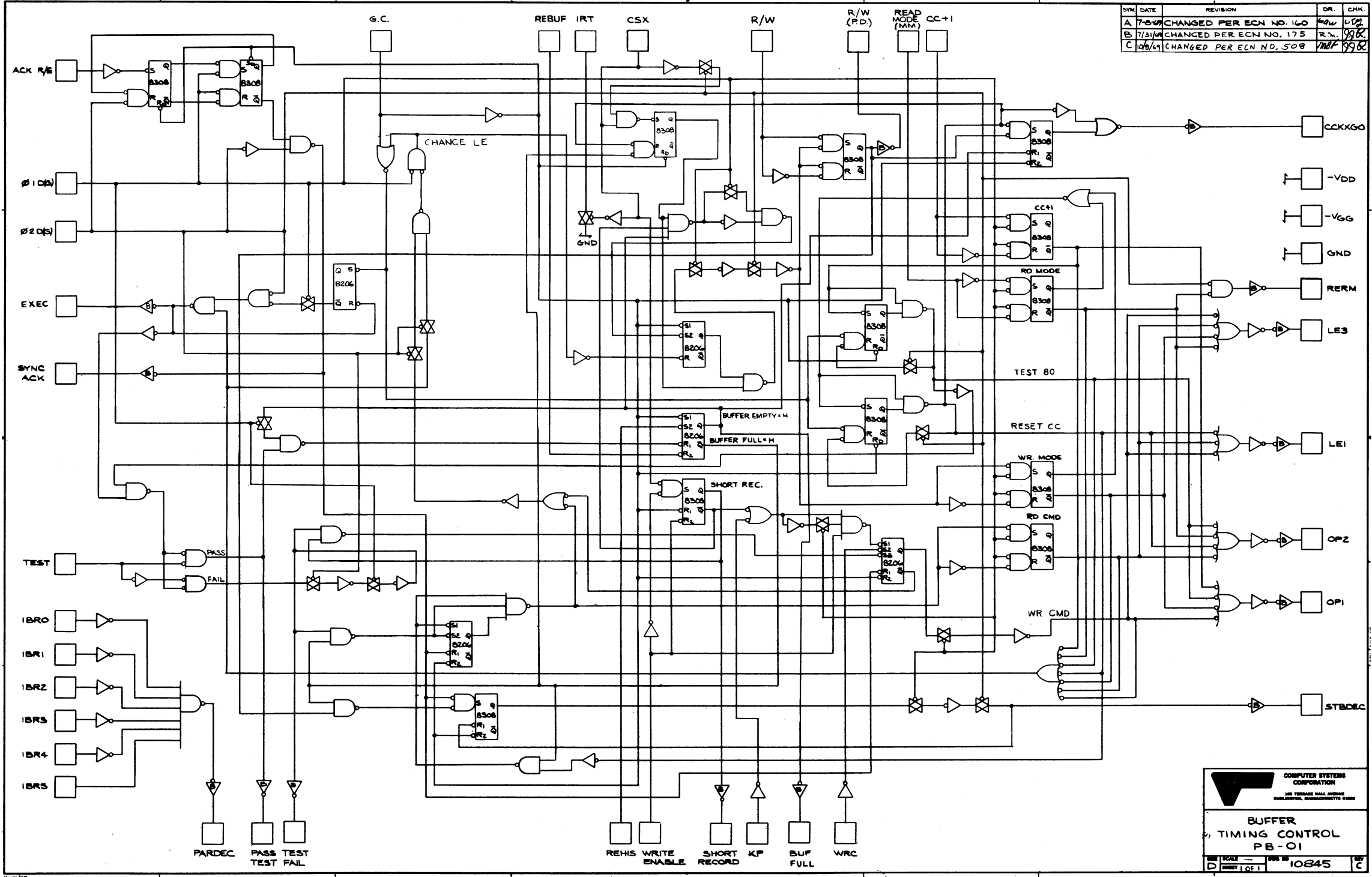



FOR PARTS LIST SEE PL129907-00


VERADA 2114 DIV. LOLAR
 MAIL - P.O. BOX 458, LOWELL, MA. 01852
 STORE - 36 FRENCH ST., LOWELL, MA.
 PHONE (617) 452-5013
 COMPLETE STOCK OF VIATRON
 PARTS AVAILABLE FROM:
 INDUSTRIAL SURPLUS
 UNUSUAL HOBBY SUPPLIES
 ELECTRONICS & SOUND

 COMPUTER SYSTEMS CORPORATION <small>100 YERRIDGE HALL AVENUE BURLINGTON, MASSACHUSETTS 01803</small>	JUMPER PLUG ASSY
	<small>SEE SCALE NONE FROM 100</small> <small>1 OF 1</small>

SYM	DATE	REVISION	DR.	CHK.
A	7-8-68	CHANGED PER ECN NO. 160	AWW	UJL
B	7/31/68	CHANGED PER ECN NO. 175	R.W.	JJL
C	10/6/69	CHANGED PER ECN NO. 508	MMF	JJL

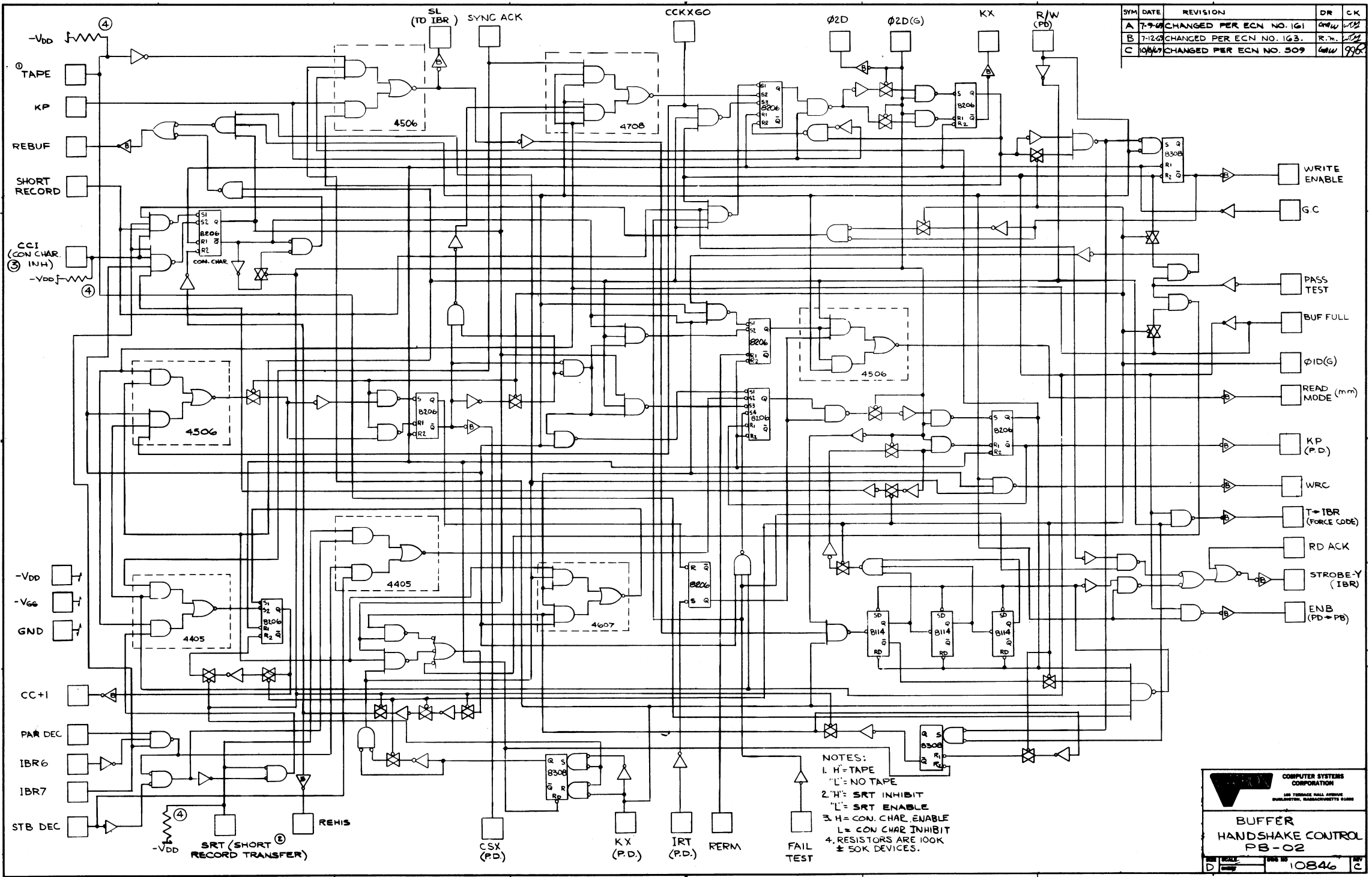



COMPUTER SYSTEMS CORPORATION
 180 TRENCH HALL AVENUE
 BURLINGAME, CALIFORNIA 94010

BUFFER TIMING CONTROL PB-01

PART NO. 10845
 REV. 1 OF 1

SYM	DATE	REVISION	DR	CK
A	7-9-68	CHANGED PER ECN NO. 161	AWW	WJZ
B	7-12-68	CHANGED PER ECN NO. 163.	R.M.	WJZ
C	10/6/69	CHANGED PER ECN NO. 509	AWW	996



NOTES:
 1. H = TAPE
 "L" = NO TAPE
 2. H = SRT INHIBIT
 "L" = SRT ENABLE
 3. H = CON. CHAR. ENABLE
 "L" = CON. CHAR. INHIBIT
 4. RESISTORS ARE 100K
 ± 50K DEVICES.

COMPUTER SYSTEMS CORPORATION
 100 TRENCH HALL AVENUE
 BURLINGTON, MASSACHUSETTS 01803

**BUFFER
 HANDSHAKE CONTROL
 PB-02**

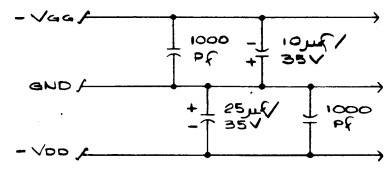
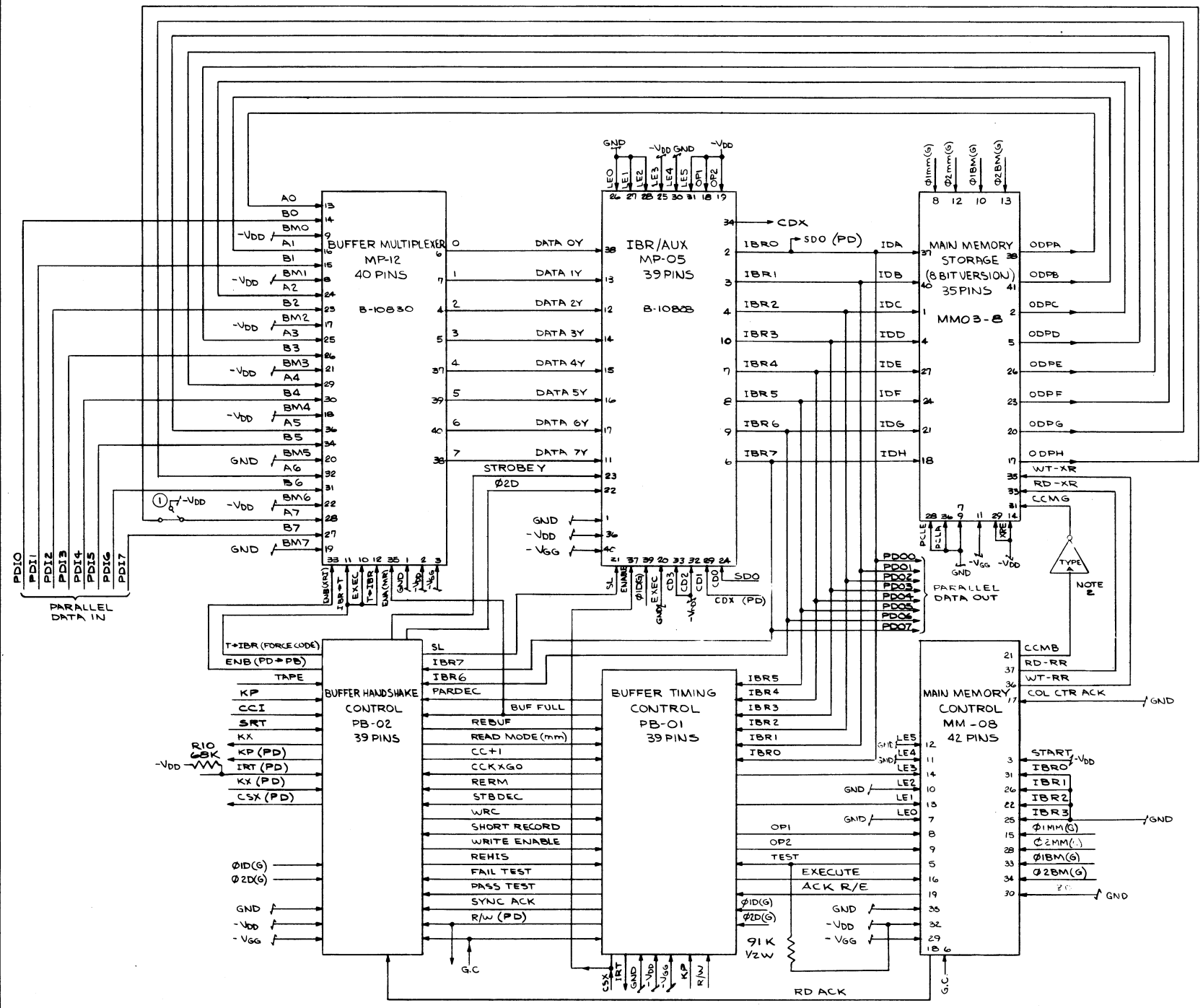
PART NO. 10846



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5015

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

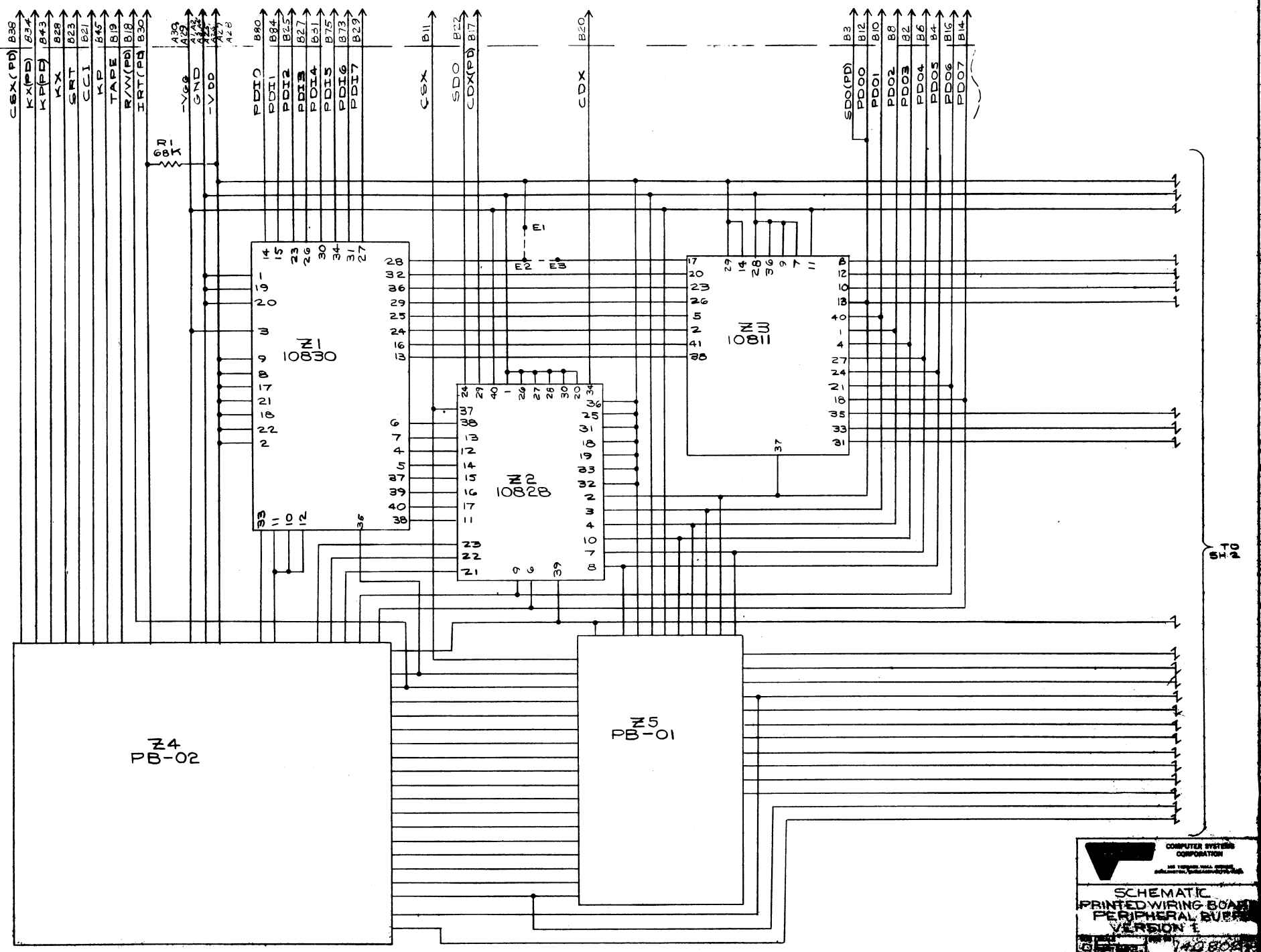


- NOTES:
1. OPTION SHOWN IN ASCII-B MODE.
2. TYPE A CLOCK DRIVER REF DWG 10865

COMPUTER SYSTEMS CORPORATION
188 TERRACE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

PERIPHERAL BUFFER
PARTITIONING
VERSION 1

REV 1 SCALE: 1:1 PART NO: 10859



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

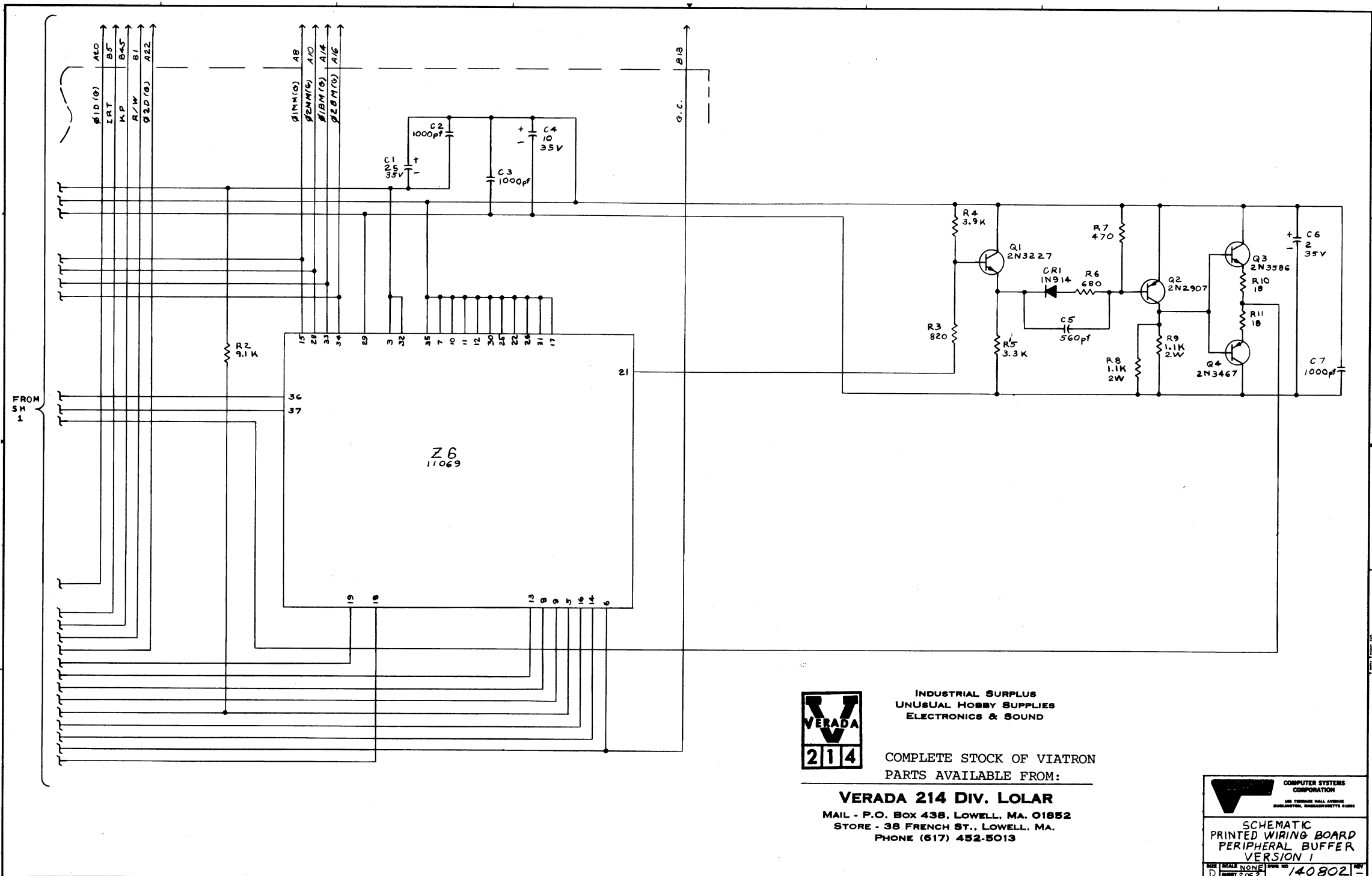
VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-8015

R11	Q4	C7
CRI	76	

HIGHEST REFERENCE DESIGNATIONS

- NOTES:
1. ALL RESISTORS ARE 1/2W 15% UNLESS OTHERWISE SPECIFIED
 2. PRINTED WIRING BOARD SHALL HAVE LANDS FOR OPTIONAL CIRCUITS AS SHOWN BY DOTTED LINES.

COMPUTER SYSTEMS CORPORATION
SHEPARD AVE. LOWELL, MASS. 01852
SCHEMATIC
PRINTED WIRING BOARD
PERIPHERAL BUS
VERSION 1



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

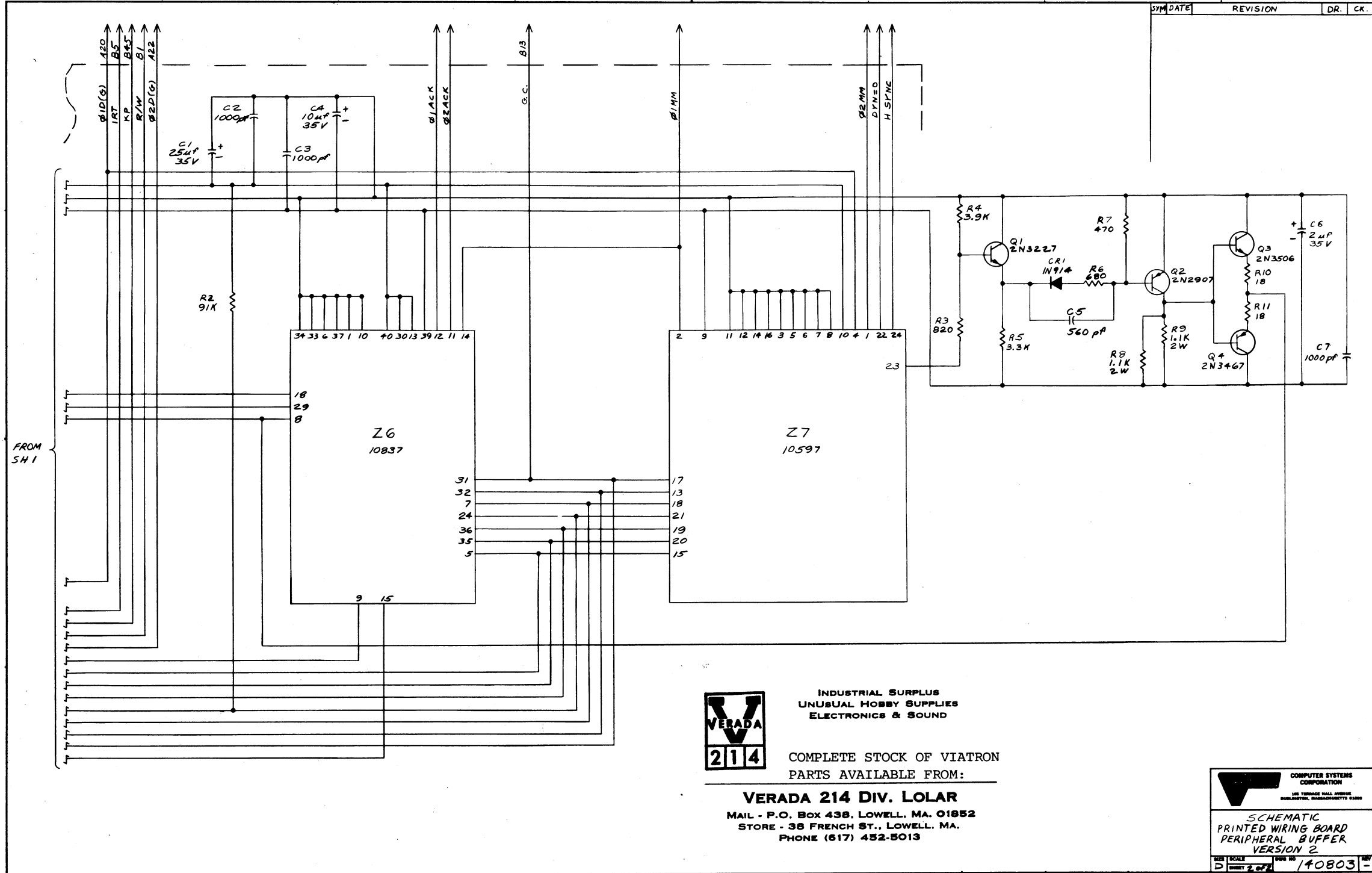
COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. BOX 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

COMPUTER SYSTEMS
CORPORATION
100 TERRACE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

SCHMATIC
PRINTED WIRING BOARD
PERIPHERAL BUFFER
VERSION 1

SCALE NONE
D QUANTITY 2 OF 2
REV NO 140802



INDUSTRIAL SURPLUS
UNUSUAL HOBBY SUPPLIES
ELECTRONICS & SOUND

COMPLETE STOCK OF VIATRON
PARTS AVAILABLE FROM:

VERADA 214 DIV. LOLAR
MAIL - P.O. Box 438, LOWELL, MA. 01852
STORE - 38 FRENCH ST., LOWELL, MA.
PHONE (617) 452-5013

COMPUTER SYSTEMS CORPORATION
100 TERRACE HALL AVENUE
BURLINGTON, MASSACHUSETTS 01803

**SCHEMATIC
PRINTED WIRING BOARD
PERIPHERAL BUFFER
VERSION 2**

REV 2 OF 2
140803