

CONVERSION KIT

installation & service manual



DE DATA EAST USA, INC.
470 Needles Drive
San Jose, CA 95112

780-0033-00

WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instructions manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Thank you for purchasing this Data East Conversion Kit. Your kit includes the following:

1	-----	PCB ASSEMBLY, RING KING II
1	-----	PCB ASSEMBLY, EMI FILTER
2	450-0002-00	JOYSTICK, 4 WAY, CC.
2	455-0032-00	FLAT PLATE ADAPTOR
6	185-0001-00	PUSHBUTTON HOLDER WITH SWITCH
6	240-0001-00	PAL NUT
2	350-0001-02	PUSHBUTTON, SHORT, RED
2	350-0001-06	PUSHBUTTON, SHORT, BLUE
2	350-0001-09	PUSHBUTTON, SHORT, WHITE
1	830-0015-00	MARQUEE PLEX, RING KING
1	800-0016-00	CONTROL PANEL OVERLAY, RING KING KIT
2	820-0014-00	SIDE DECAL, RING KING
1	810-0009-00	UNDERLAY CARD, MONITOR, RING KING II
1	780-0033-00	INSTALLATION & SERVICE MANUAL
1	036-0080-00	MAIN HARNESS, GENERIC, PLYR VS PLYR
1	406-0003-00	LABEL, FCC WARNING

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DATA EAST USA INC.
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1. ADJUSTMENTS & OPTIONS

A. VOLUME CONTROL. The audio volume is adjustable via a trimpot (VR1) on the CPU PCB.

B. OPERATOR SELECTABLE OPTIONS. The Operator Selectable Options can be altered by changing the settings of the Dip Switches found on the CPU PCB. Table 1 and Table 2 outline the available options.

DIP SWITCH 1			8	7	6	5	4	3	2	1
REPLAY	NONE								OFF	OFF
	70,000								ON	OFF
	100,000								OFF	ON
	150,000								ON	ON
ATTRACT MODE	SOUND								OFF	
	NO SOUND								ON	
DIFFICULTY LEVEL 1 PLAYER	EASY					OFF	OFF			
	NORMAL					OFF	ON			
	DIFFICULT					ON	OFF			
	VERY DIFFICULT					ON	ON			
CABINET	TABLE									OFF
	UPRIGHT									ON
MODE	GAME MODE									OFF
	TEST MODE									ON

DIP SWITCH 2			8	7	6	5	4	3	2	1
COIN VS CREDIT COIN 1	1 COIN	1 CREDIT							OFF	OFF
	1 COIN	2 CREDIT							OFF	ON
	1 COIN	3 CREDIT							ON	OFF
	2 COIN	1 CREDIT							ON	ON
COIN VS CREDIT COIN 2	1 COIN	1 CREDIT					OFF	OFF		
	1 COIN	2 CREDIT					OFF	ON		
	1 COIN	3 CREDIT					ON	OFF		
	2 COIN	1 CREDIT					ON	ON		
DIFFICULTY LEVEL PLYR VS PLYR	EASY				OFF	OFF				
	NORMAL				OFF	ON				
	DIFFICULT				ON	OFF				
	VERY DIFFICULT				ON	ON				
MODE	GAME MODE									OFF
	FREEZE MODE									ON

2. CONVERSION SUMMARY

One of the most important considerations determining the success of your conversion will be the condition of the machine you are converting. Obviously, if the monitor is dull in the original game, it will be no better with the conversion installed. If you have a choice, select a machine that has an instruction manual and/or good primary wiring diagrams. Try to select a machine that has previously been certified as conforming to Part 15, Subpart J, of the FCC regulations. It is important that the primary wiring contain a good noise filter in order to prevent conducted radio frequency interference.

Since it is extremely important that all visible graphics, original manufacturer's name (other than the Serial Number tag), logo's, etc., are to be removed or covered by new graphics, a proper choice of cabinet in this phase of the conversion will save you much time.

Make sure that the integrity of the cabinet is such that the converted game will not be a vandals dream. Review the control panel to identify what changes will be required so that you will be prepared. It may be necessary to drill holes in the control panel for pushbuttons, etc. before applying the new overlay. See figure 1 for suggested control layout.

The RING KING game is designed to operate with a COLOR RASTER MONITOR, mounted in a VERTICAL position. The RING KING PCB generates NEGATIVE COMPOSITE SYNC. The POWER SUPPLY requirements are: +5 volts @ 7 Amperes, +12 volts @ 1 Ampere, and -5 volts @ 1 ampere.

It is strongly recommended that the cabinet be wired to conform with all National and Local Electrical Code requirements before the conversion is attempted. The system must have adequate noise filtering on the AC line to prevent unwanted conducted radio frequency radiation, which could be in violation of FCC regulations.

According to the FCC and various other agencies, every video game must be clearly and permanently LABELED with the name and address of the Original Manufacturer, Date of Manufacture (or serial number), Voltage rating, Current rating, Suitability for indoor or outdoor use, and unit model number. In addition, the FCC requires that, after conversion, the unit must be labeled with a suitable warning stating that radio frequency interference may result from use in a residential area. An acceptable warning sticker is enclosed in your kit.

IT IS THE RESPONSIBILITY OF THE INDIVIDUAL PERFORMING THE CONVERSION TO INSURE THAT ALL LABELING REQUIREMENTS ARE CONFORMED WITH!



4. SPECIAL INSTRUCTIONS

Your conversion kit has been supplied with a main harness which connects the EMI Filter/Adaptor PCB to the various places in the game in which you are converting. Each wire has been labeled as to its function. If in doubt, refer to the generic main harness diagram on page 5.

1. Follow all instructions in this manual relating to selecting a game to install this conversion into. NOTE: You will need to retain the original player start buttons as they are not included in this kit.
2. Mount the new Logic PCB set in a convenient location. An EMI cage is not necessary for this conversion, but the use of the EMI Filter/Adaptor PCB is MANDATORY!
3. Plug the EMI Filter/Adaptor PCB onto the RING KING PCB as shown in figure 2.
4. Plug the generic main harness onto the EMI Filter/Adaptor PCB.
5. Neatly route all of various main harnessing around the cabinet to the proper destination points and terminate as required.
6. When you are certain that you have made all the connections properly, turn on the main power and wait for the monitor to warm up. Watch for any signs of smoke or cracking noises indicating a problem. You may have to adjust your monitor to center the picture or enhance the colors. MEASURE AND ADJUST THE +5 VOLT POWER SUPPLY AT THIS TIME!

When you have finished converting your game, be sure to attach the FCC WARNING label to the rear of the cabinet. Failure to do so is a violation of the FCC regulations.

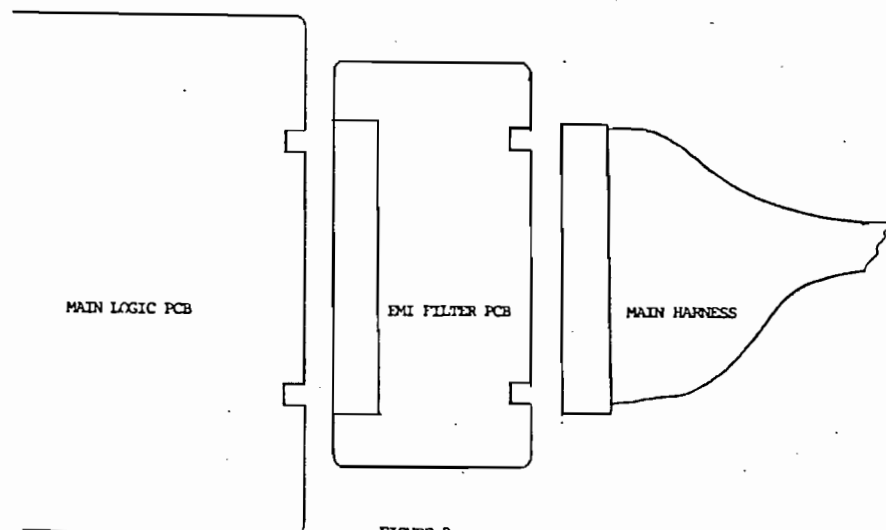
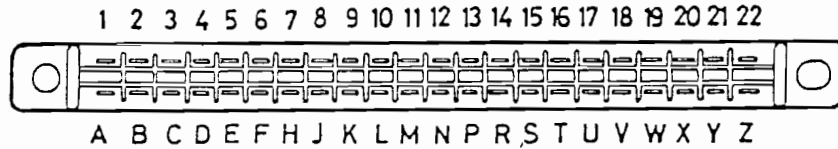


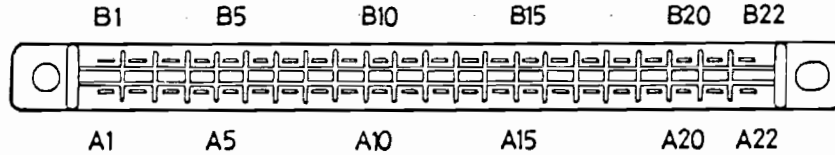
FIGURE 2

5. MAIN HARNESS WIRING DIAGRAM

a) CONNECTOR CR7E-44DA-3.96E (HIROSE) 3.96mm



b) CONNECTOR 1168-044-009 (KEL) 3.96mm

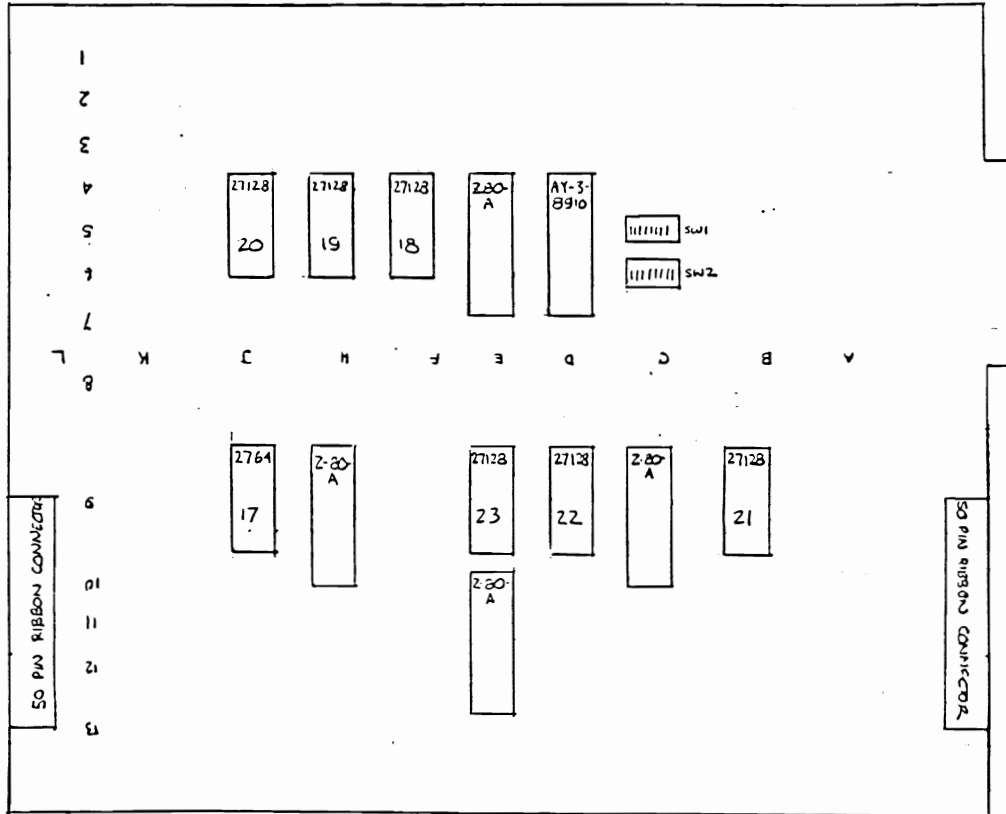


MAIN HARNESS CONNECTIONS

COMPONENT SIDE			SOLDER SIDE				
Pin Nos		Signal	Pin Nos		Signal		
	KEL			KEL			
GRN	1	B1	1P DOWN	A	A1	2P DOWN	GRN/WH
YEL	2	B2	1P UP	B	A2	2P UP	YEL/WH
ORG	3	B3	1P LEFT	C	A3	2P LEFT	ORG/WH
RED	4	B4	1P RIGHT	D	A4	2P RIGHT	RED/WH
GRN	5	B5	1P SHOOT 3	E	A5	2P SHOOT 3	GRN PNK/WH
	6	B6		F	A6		
	7	B7		H	A7		
	8	B8		J	A8		
BLU	9	B9	1P SHOOT 1 (Red)	K	A9	2P SHOOT 1 (Red)	BLU/WH
VIO	10	B10	1P SHOOT 2 (Blue)	L	A10	2P SHOOT 2 (Blue)	VIO/WH
BRN	11	B11	1P GAME SELECT	M	A11	2P GAME SELECT	RED/WH
GRN	12	B12	COIN 1	N	A12	COIN 2	RED
VIO	13	B13	COIN COUNTER 1	P	A13	COIN COUNTER 2	GRY
BL/WH	14	B14	TV.B	R	A14	TV.G	GRN/WH
WH/BL	15	B15	SYNC.	S	A15	TV.R	RED/WH
	16	B16		T	A16		
WHT	17	B17	SPEAKER +	U	A17	SPEAKER -	BLK/WH
ORG	18	B18	+12V	V	A18	-5V	Blue
RED	19	B19	+5V	W	A19	+5V	RED
RED	20	B20	+5V	X	A20	+5V	RED
BL/WH	21	B21	TV.GND	Y	A21	GND	BLK
BLK	22	B22	GND	Z	A22	GND	BLK

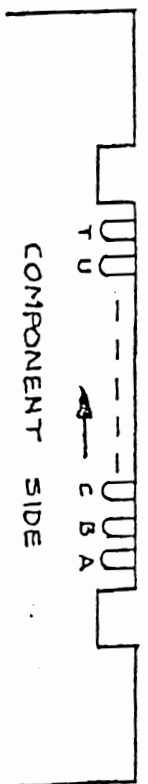
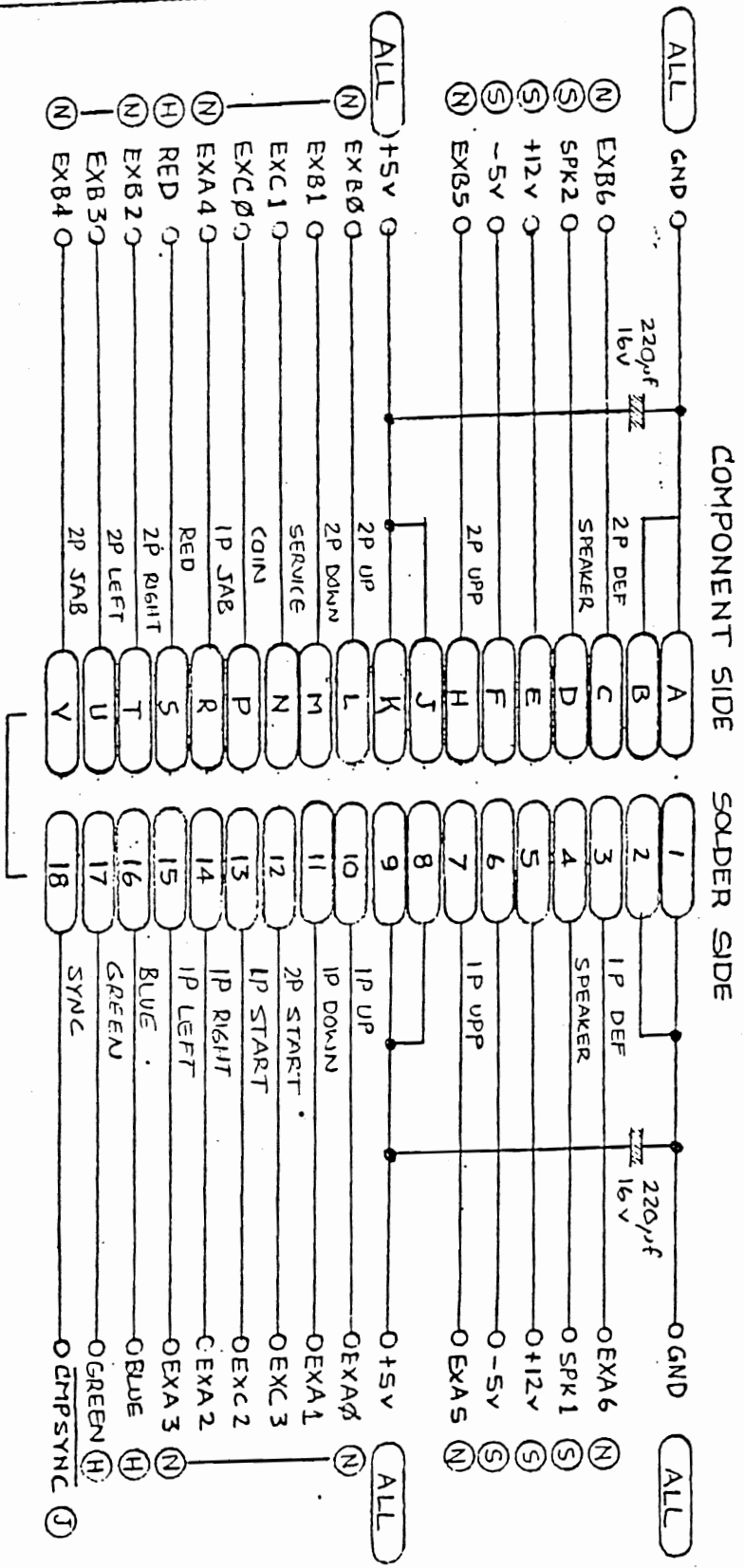
6. WOODPLACE PCB SET

A. CPU PCB

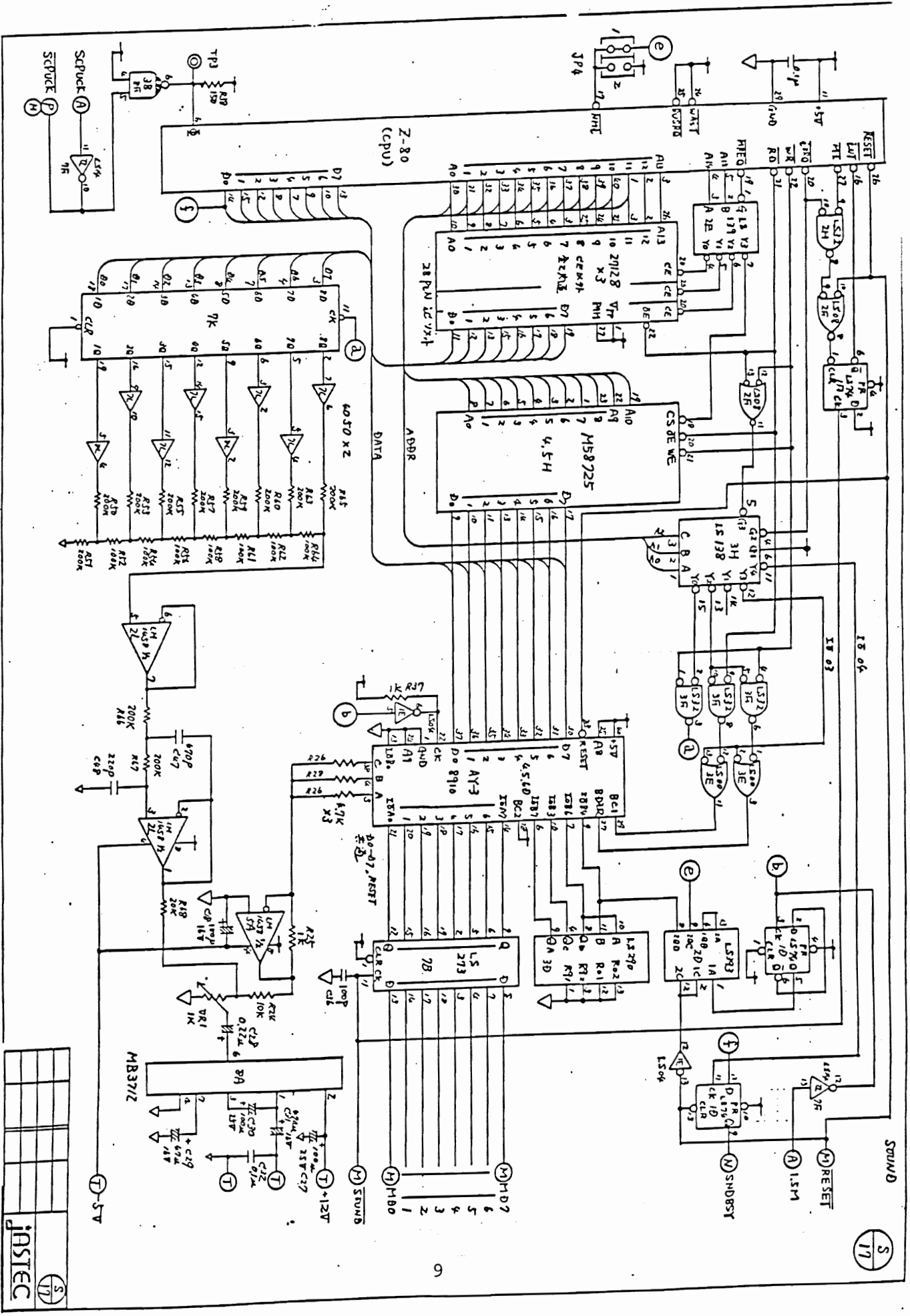


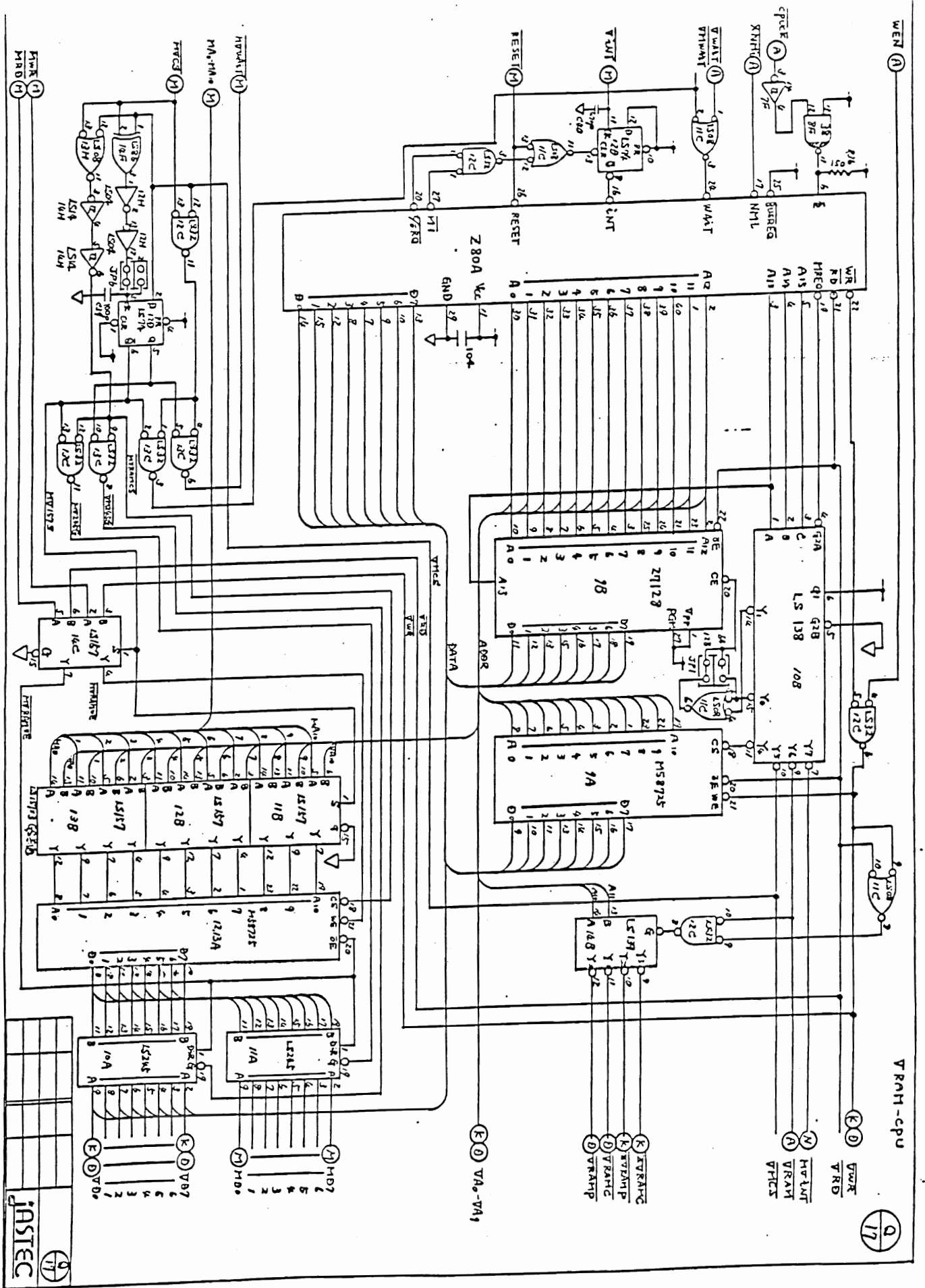
KEL 1150-036-009

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17



T
17





Q 17

TRAM-cpu

WREN (N)
VWR (E)
VRD (D)
HWT (N)
VRAM (N)
PHCS (N)

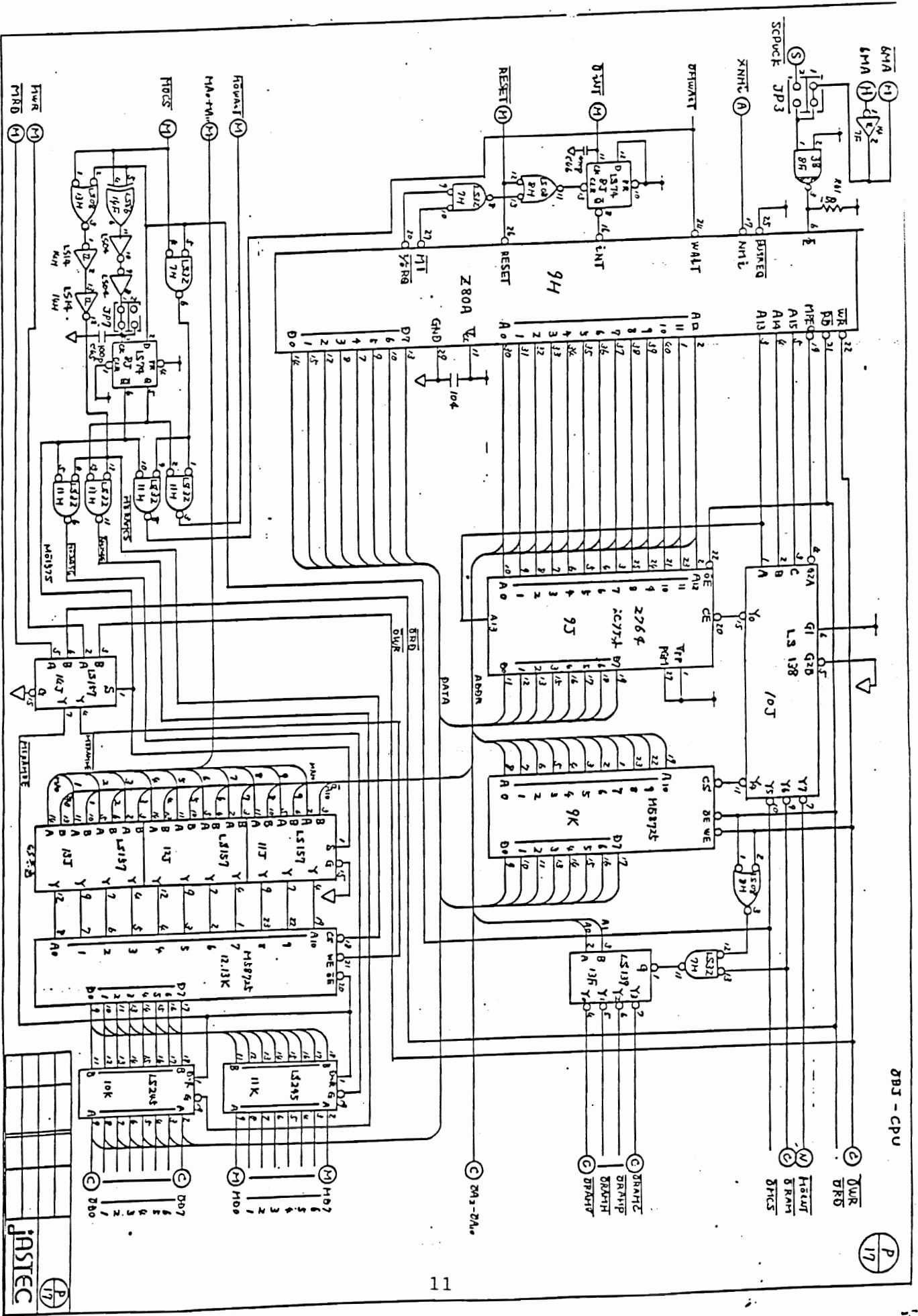
K1 VRANG
K2 VRAMP
D1 VRAMP
D2 VRAMP

E D VA-VB

A1 HD7
A2 HD7
A3 HD7
A4 HD7
A5 HD7
A6 HD7
A7 HD7
A8 HD7
A9 HD7
A10 HD7
A11 HD7
A12 HD7
A13 HD7
A14 HD7
A15 HD7

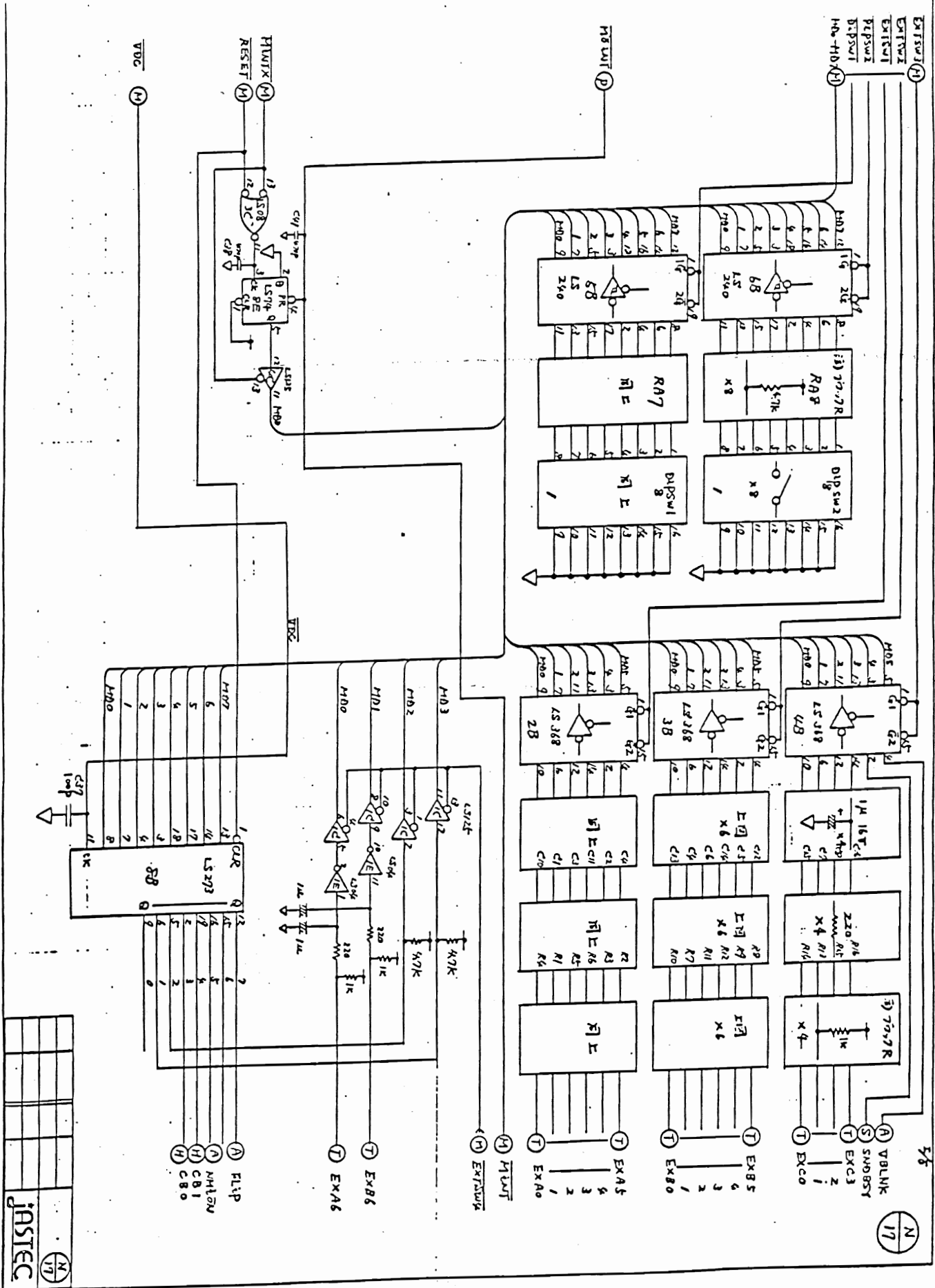
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INSTEC

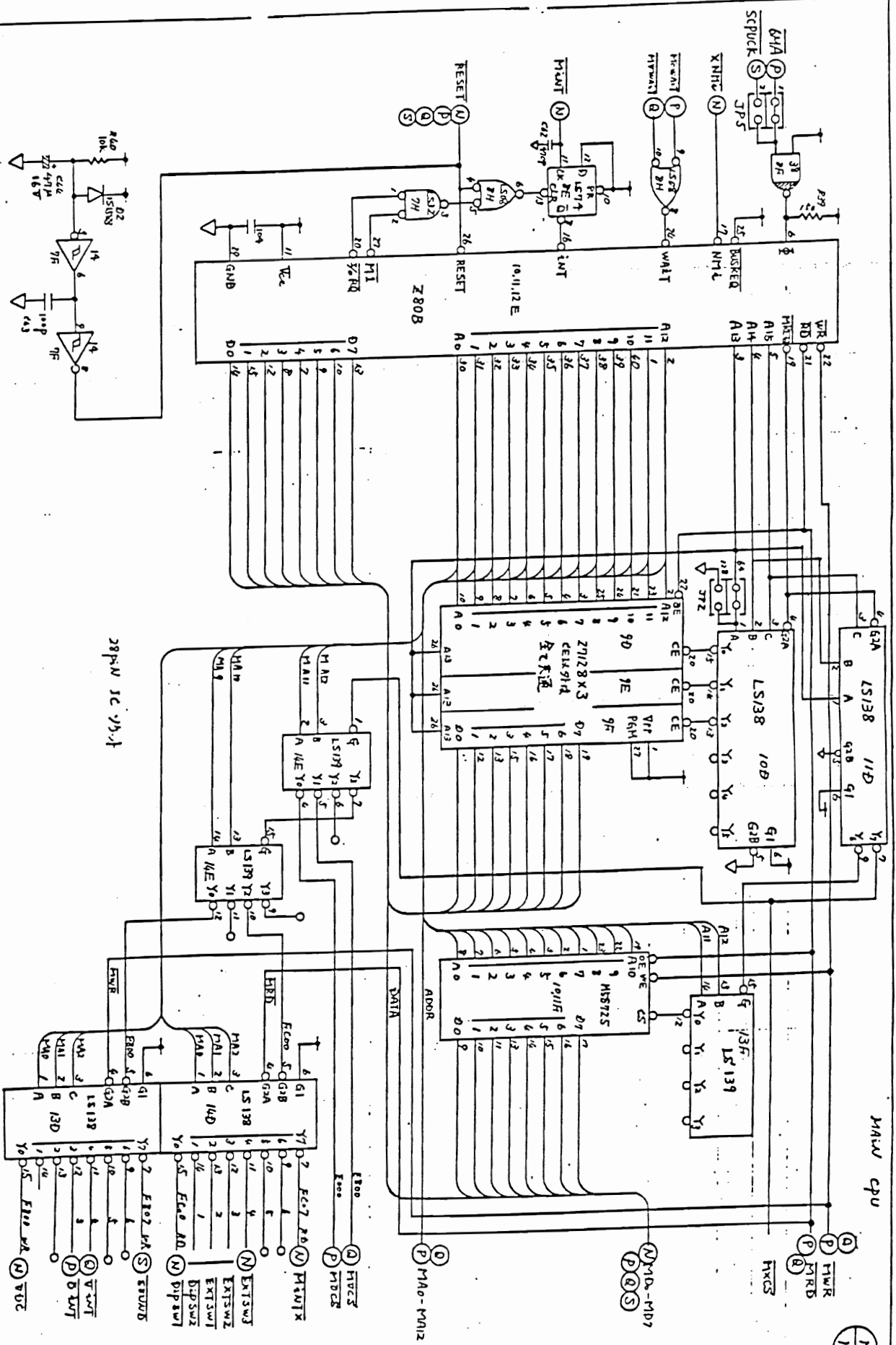


DBJ - CPU





(M) 17
JINSTEK

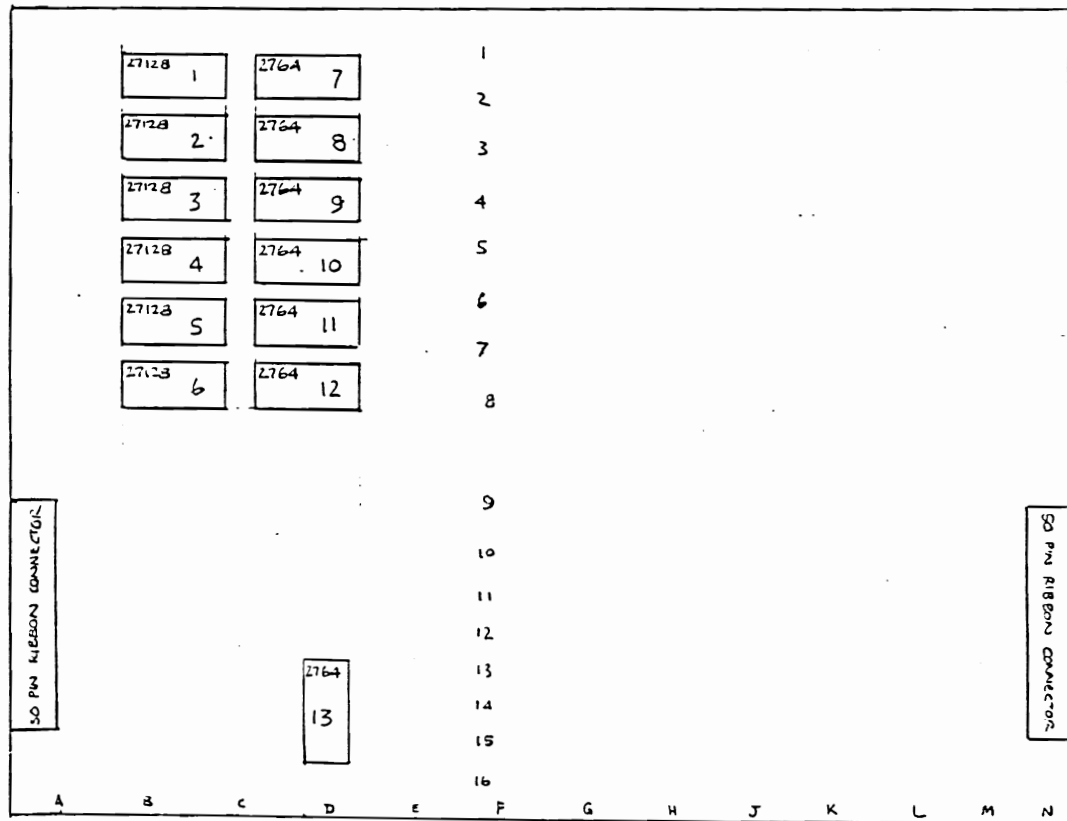


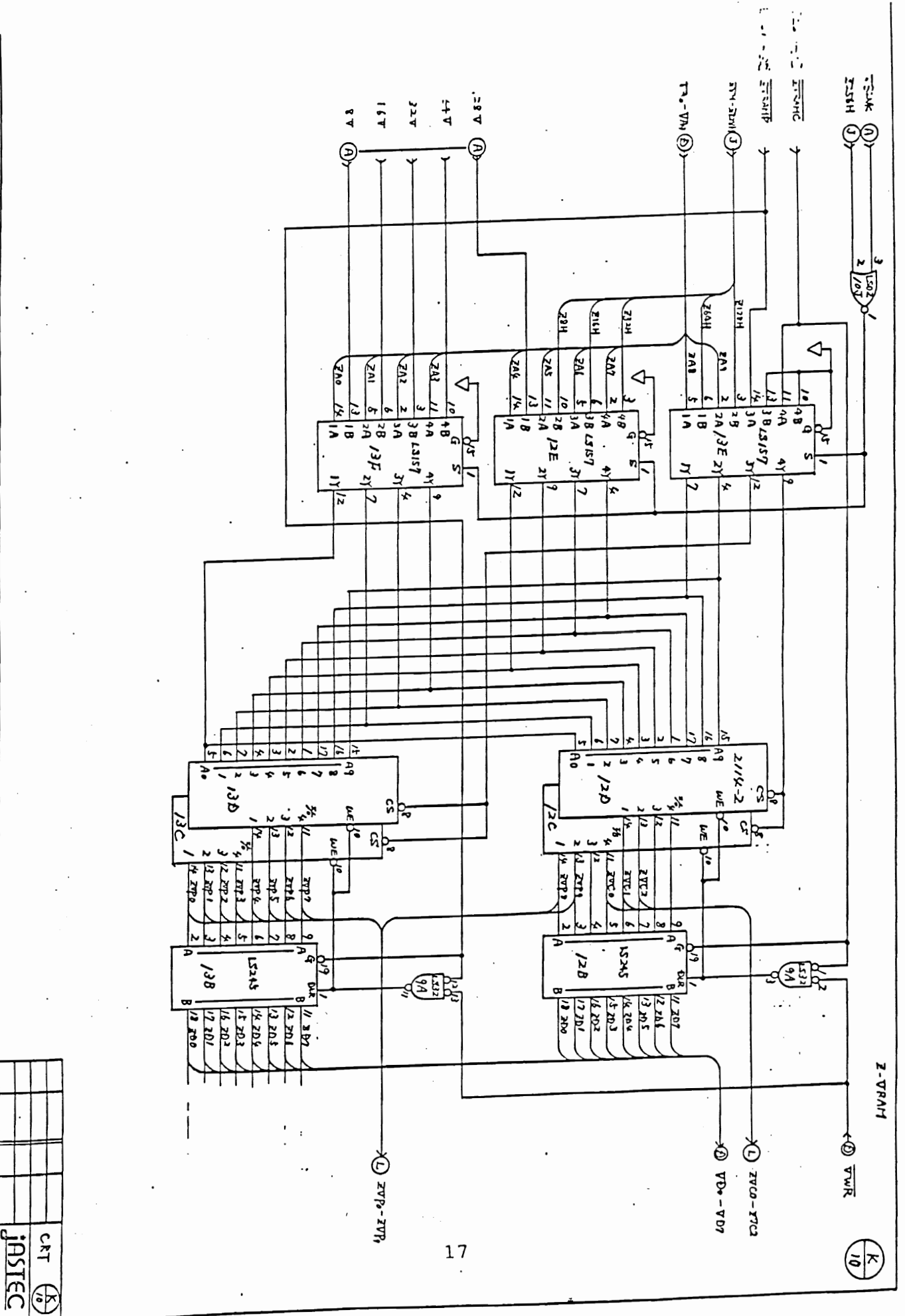
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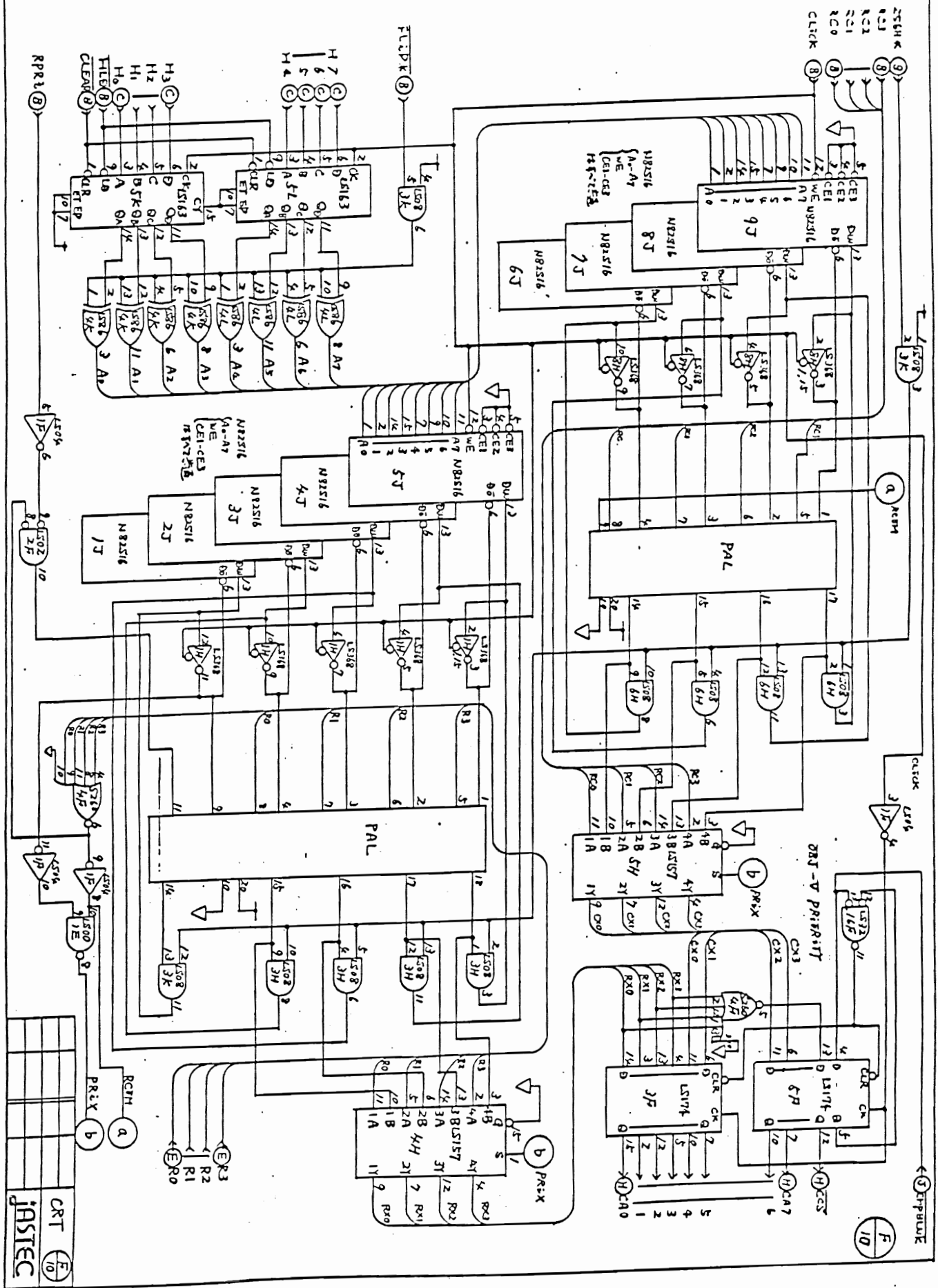
M170 CPU

6. WOODPLACE PCB SET

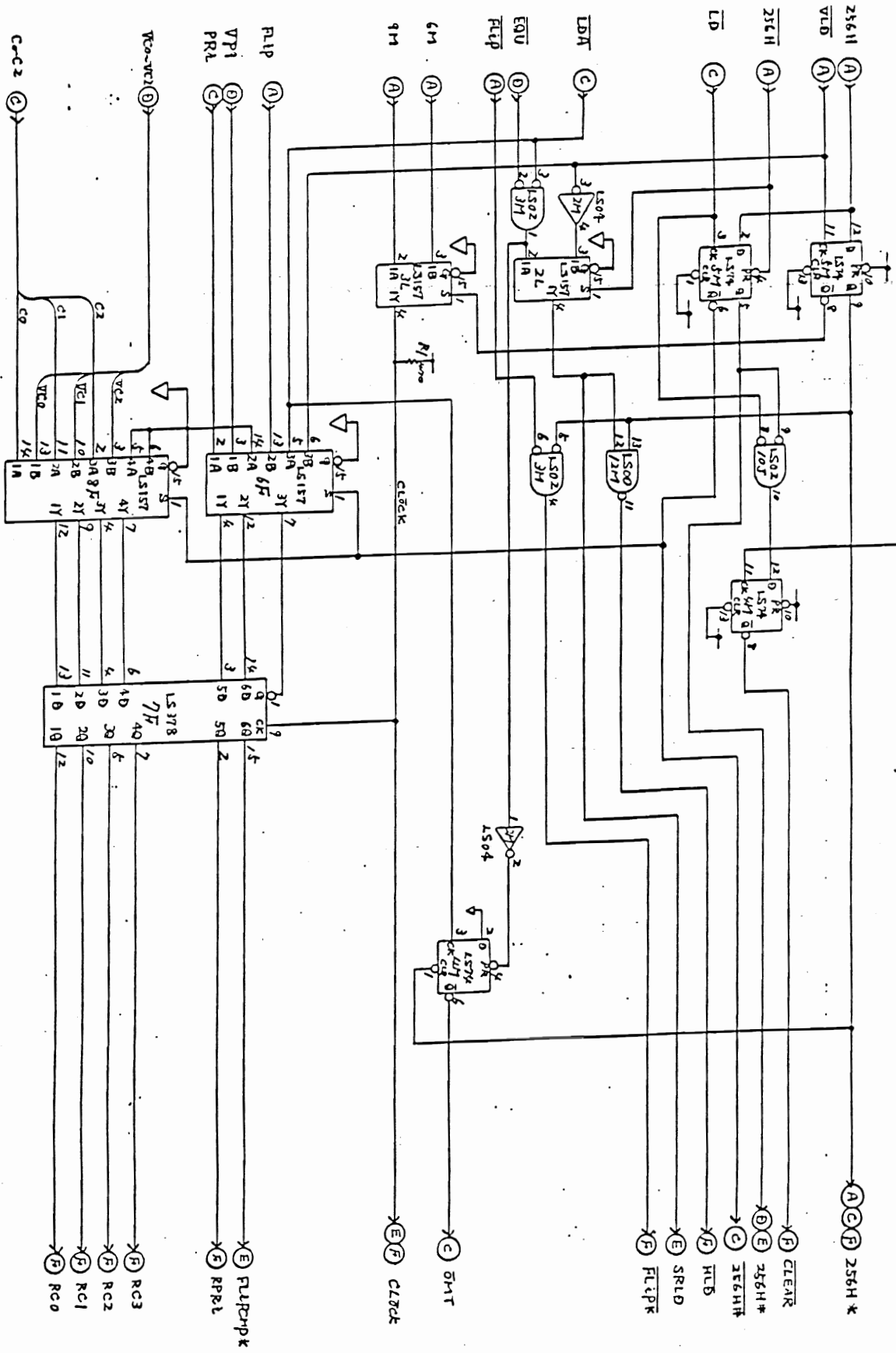
B. GRAPHICS PCB







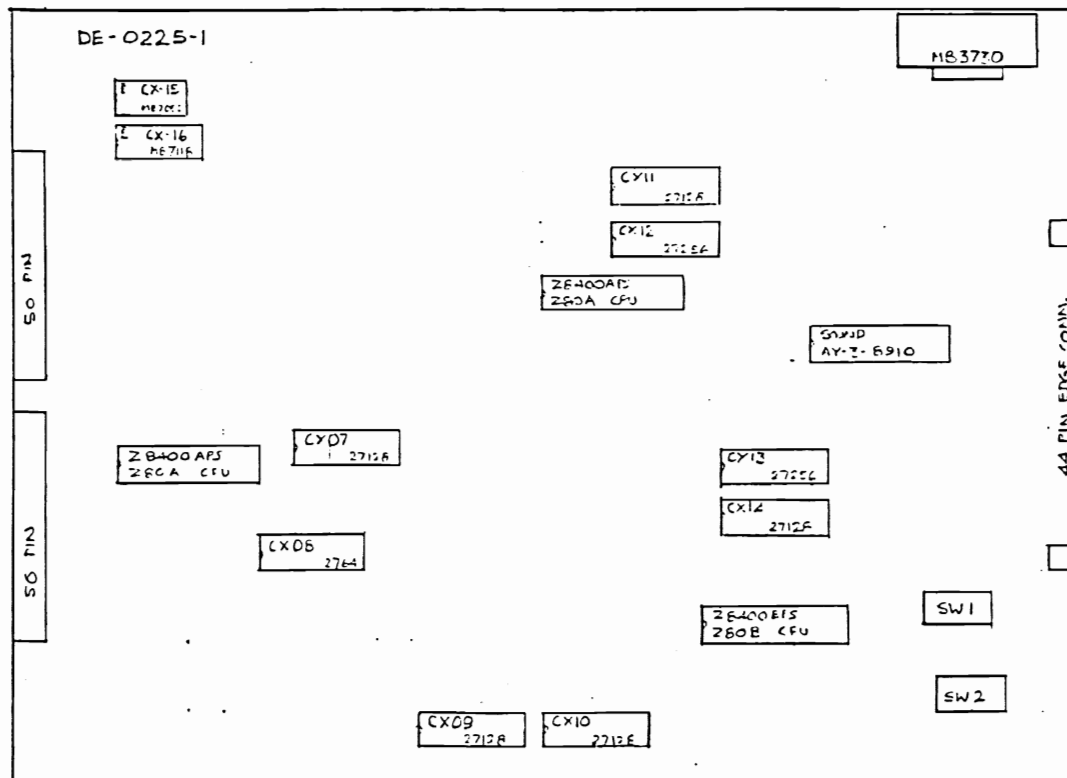
9M (A) VIDEO CONTROL (B) 10

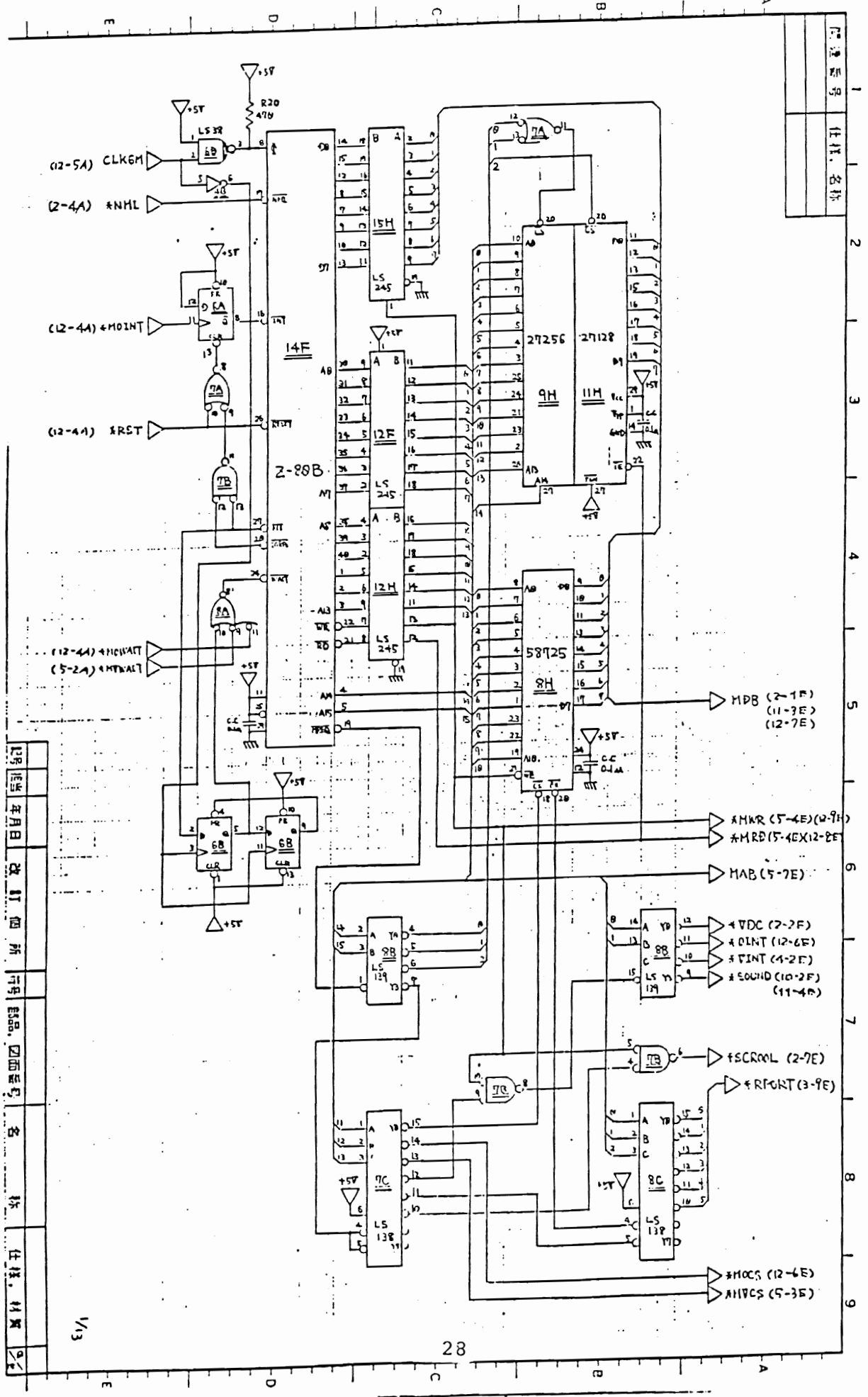


6.03	700Y	CRT	8
		JASTEC	10

7. DATA EAST PCB SET

A. BOTTOM PCB, DE-0225-1



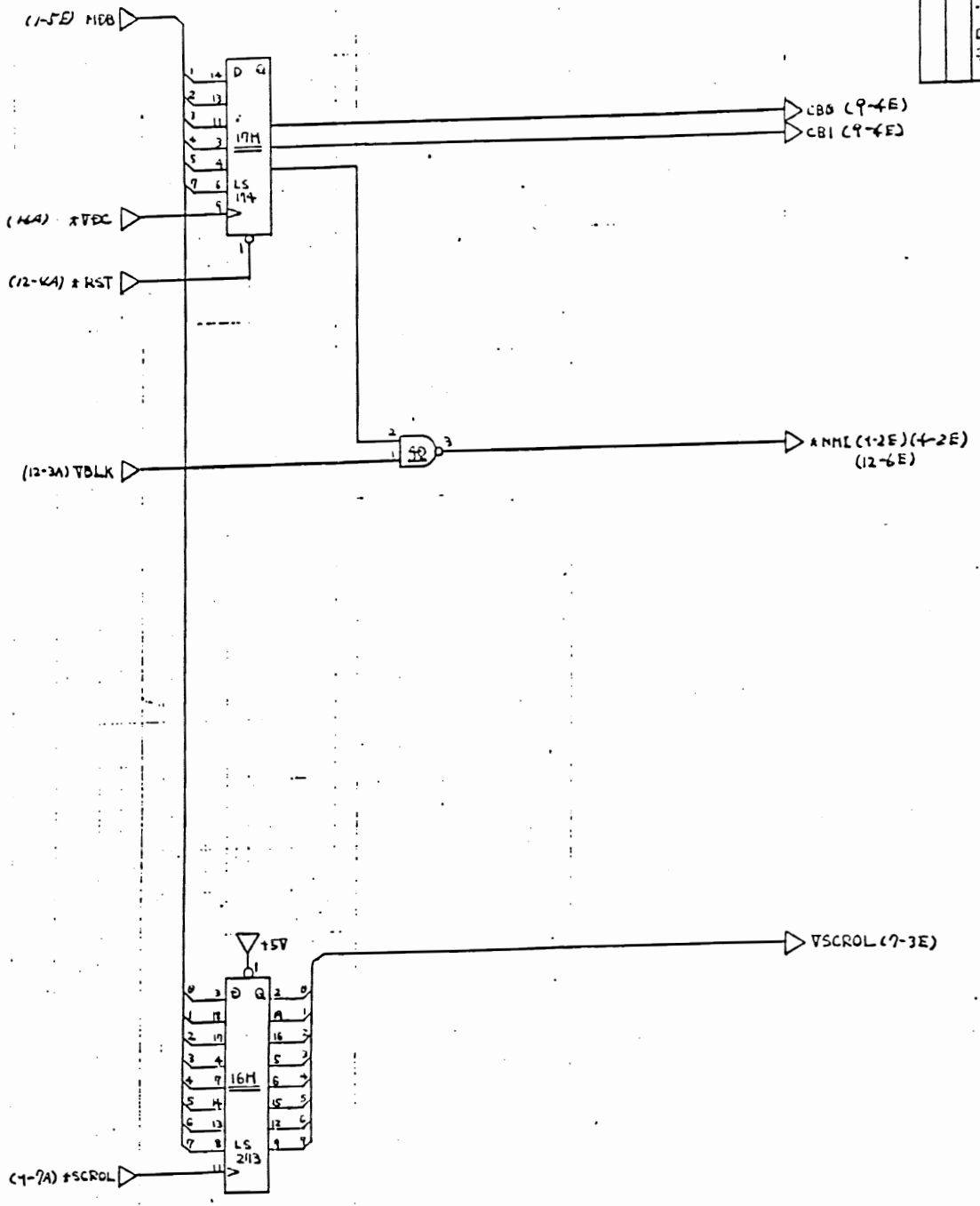


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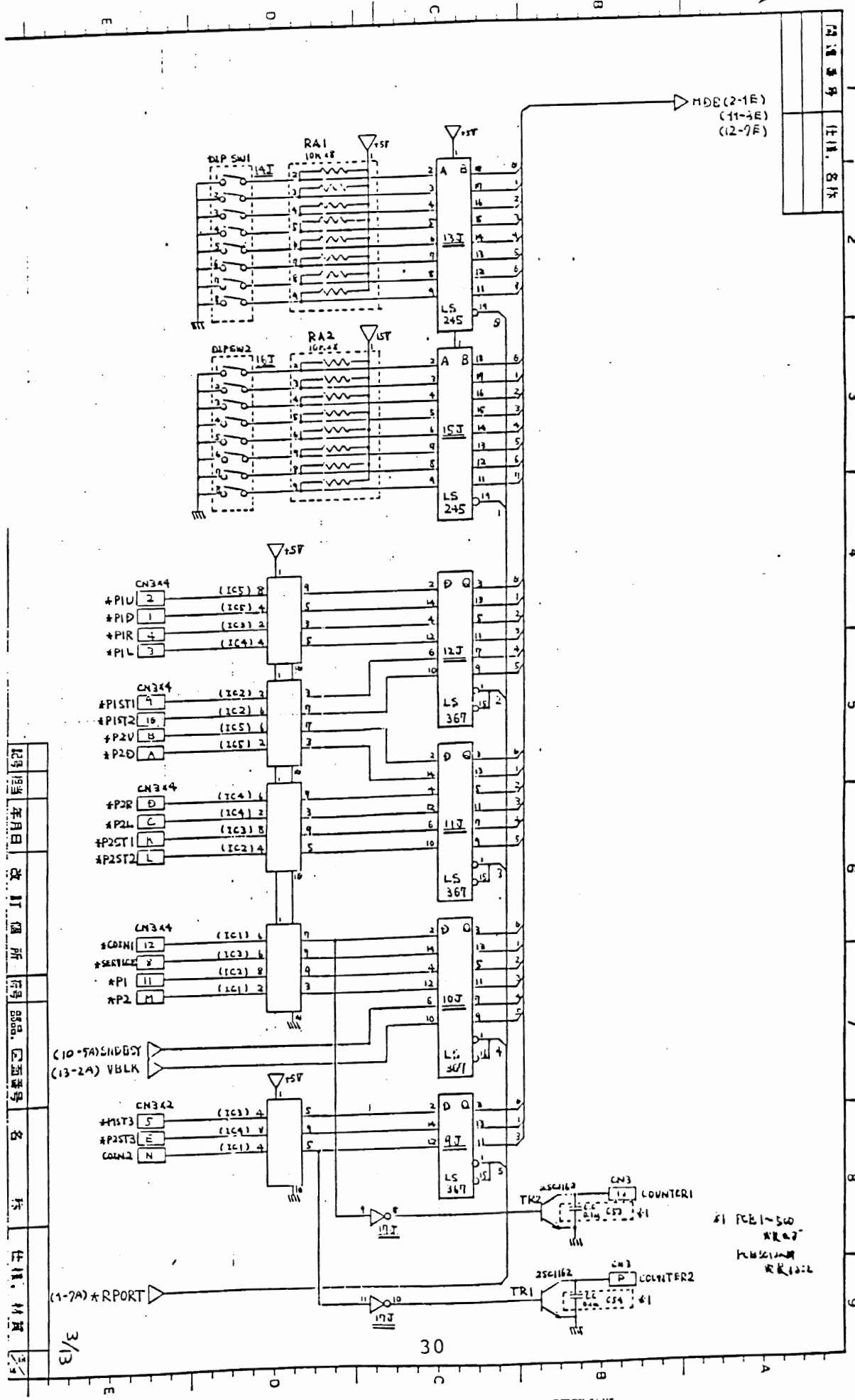
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圖樣號	任務、名稱



設計日期	年月日	改訂圖所	行號	原圖、圖面號	名	稱	任務、材料

2/13

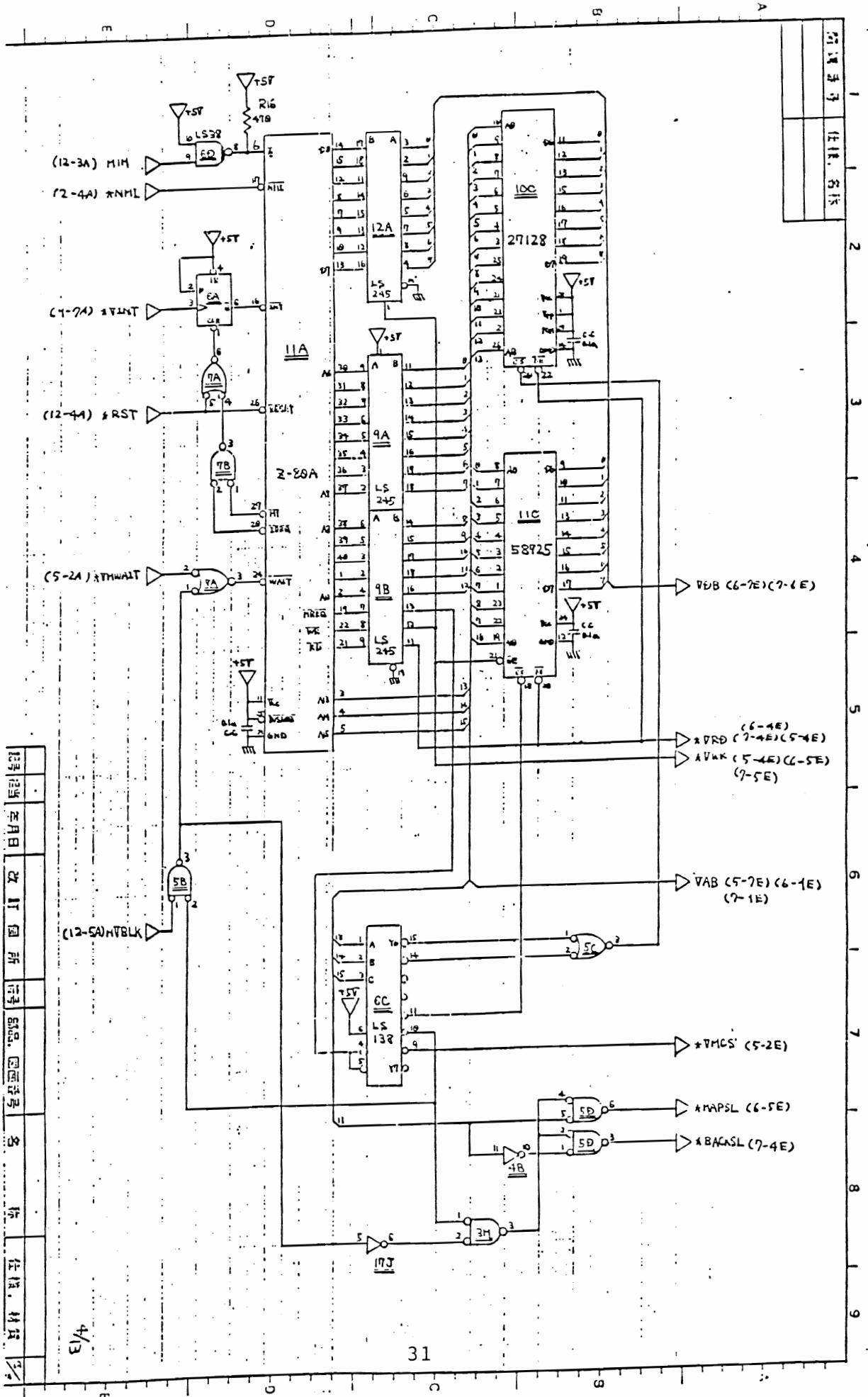


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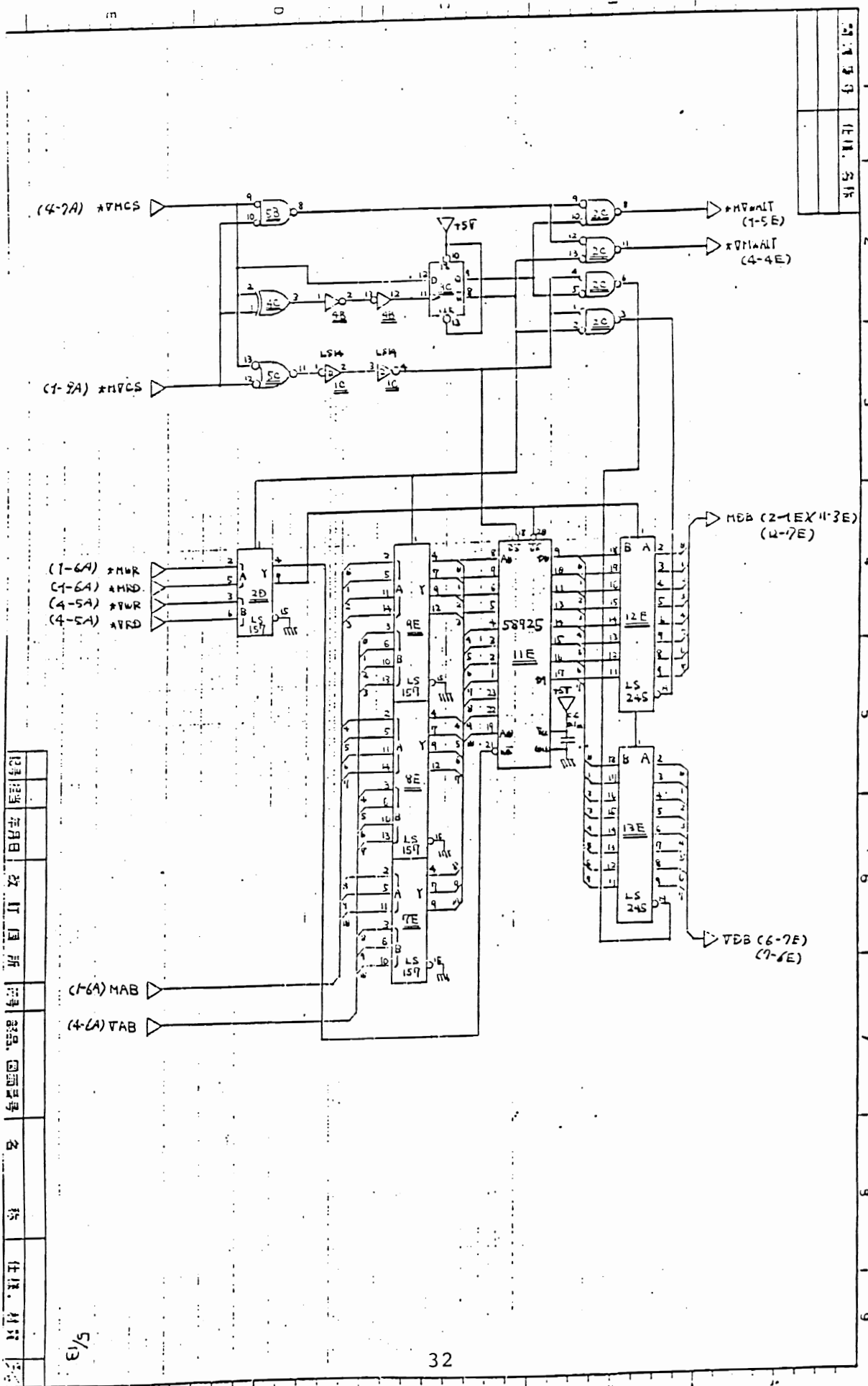
3/13

#1 PCB1-500
#2 PCB1-500
#3 PCB1-500
#4 PCB1-500



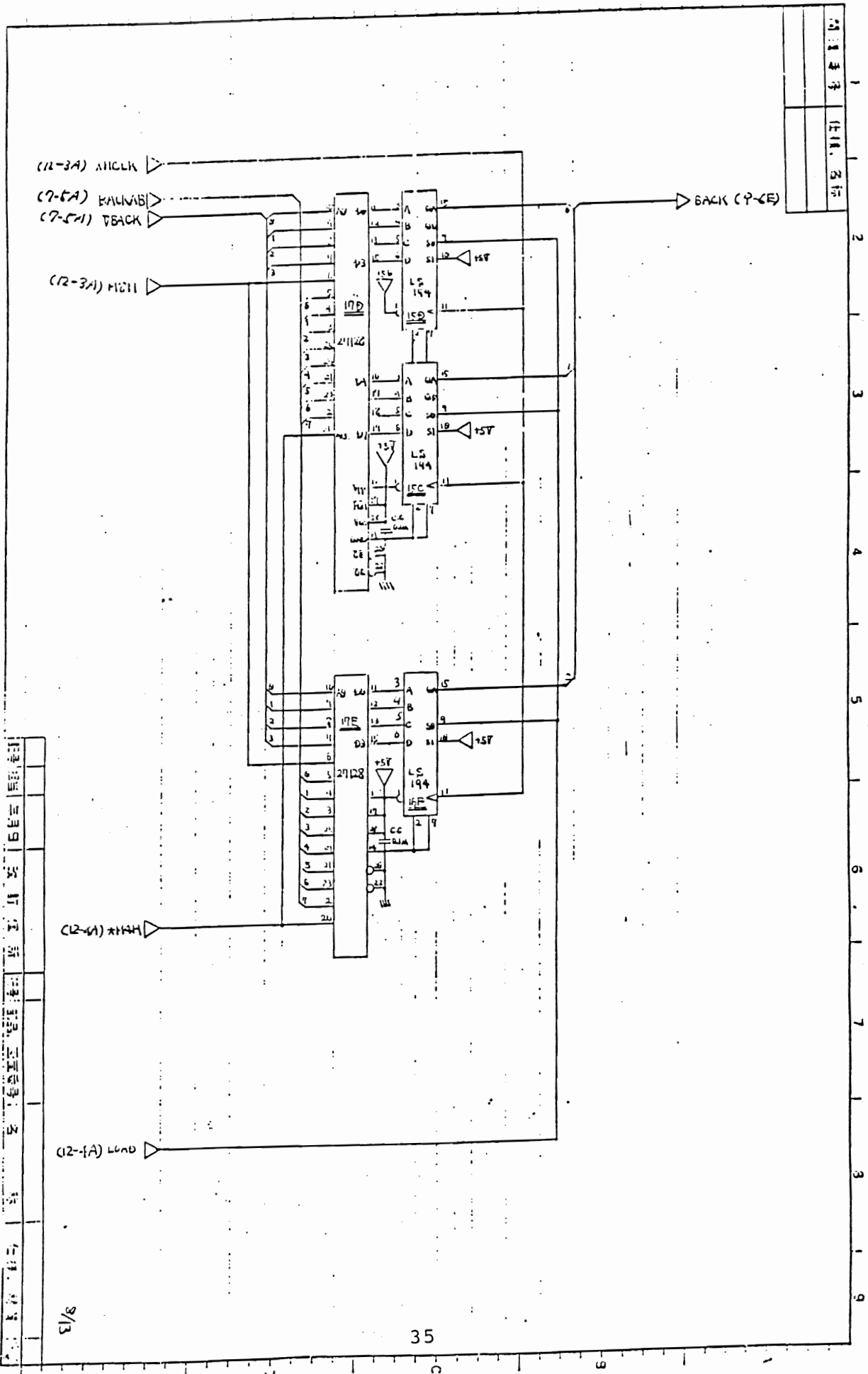
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4/3



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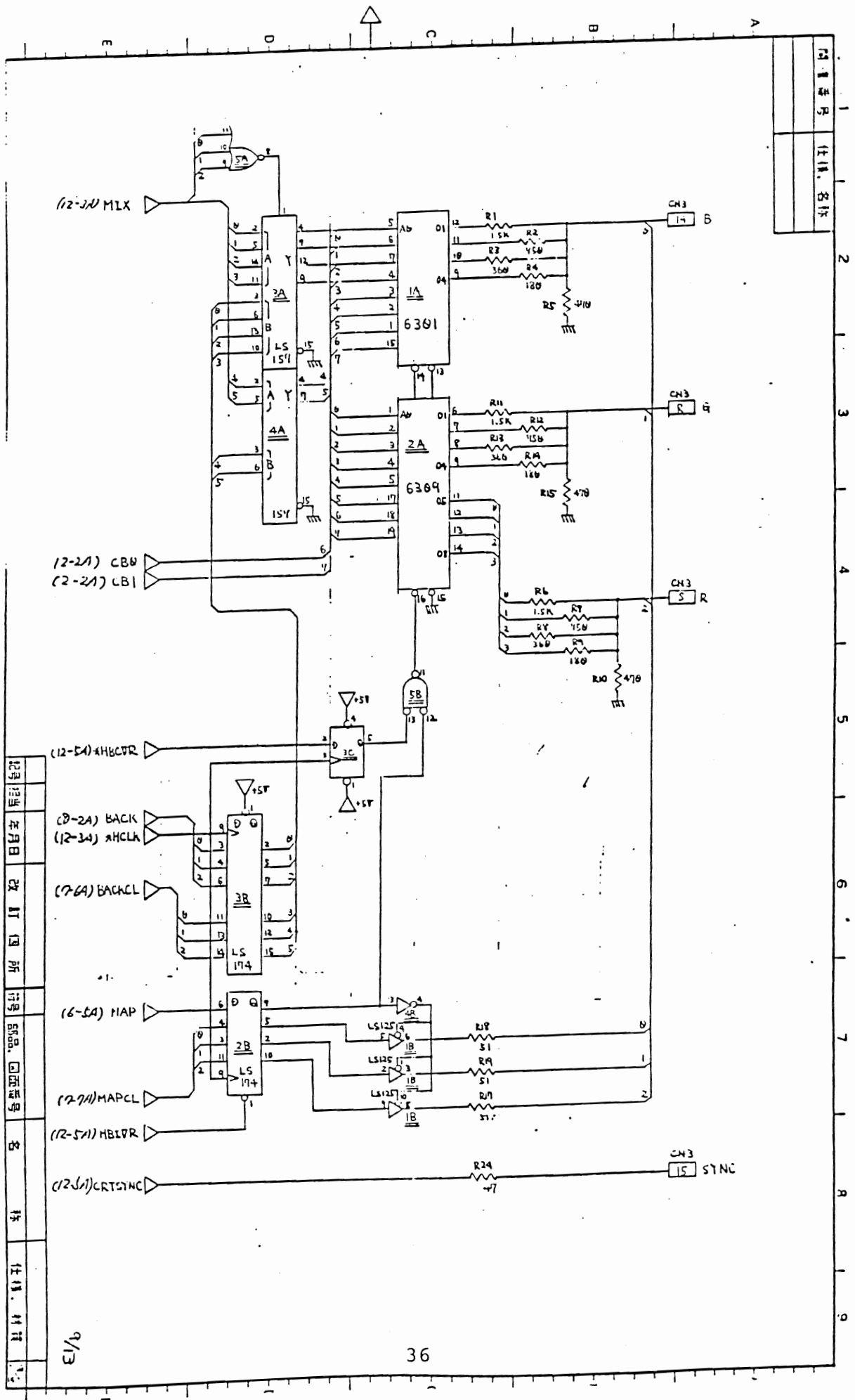
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8/13

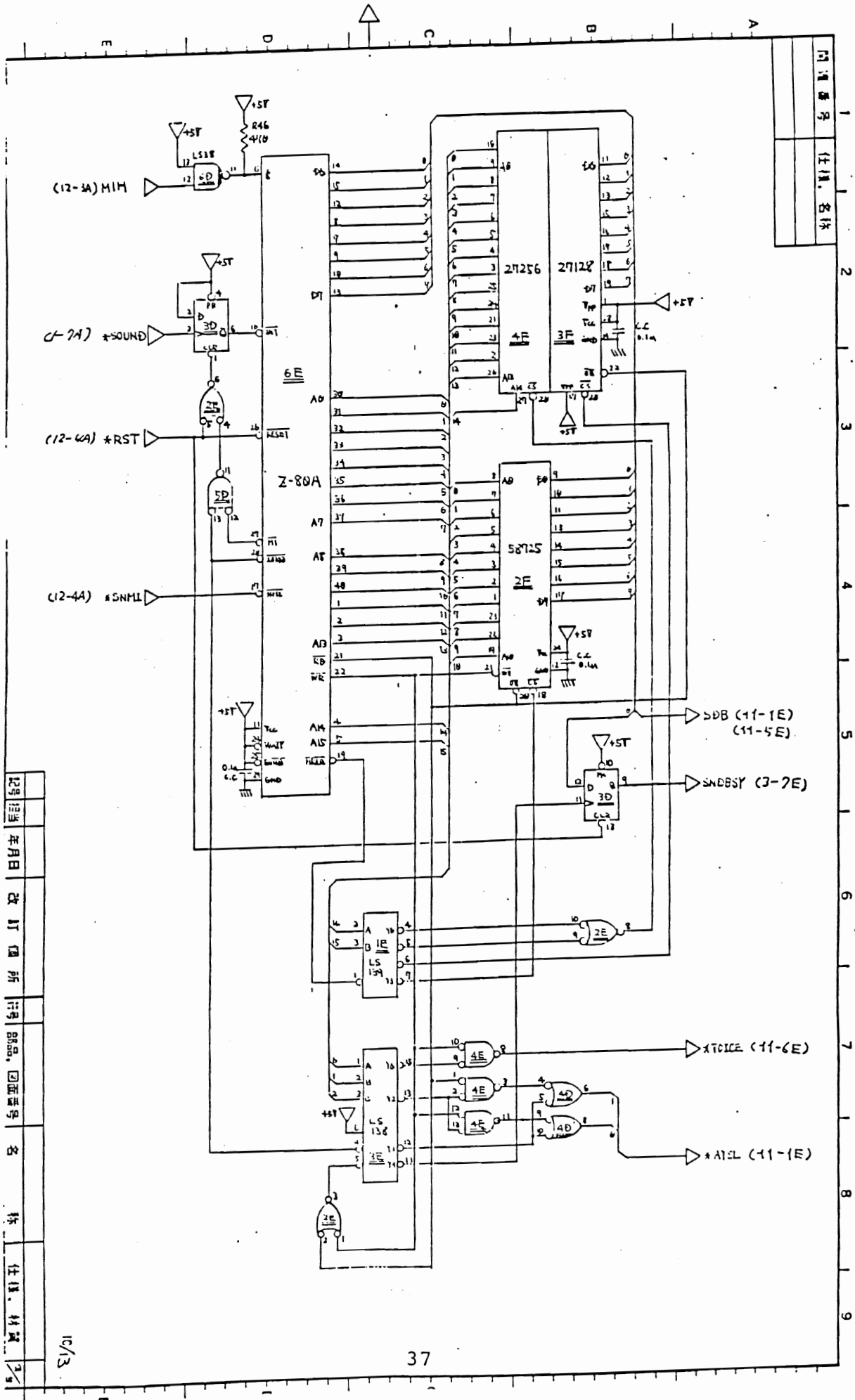


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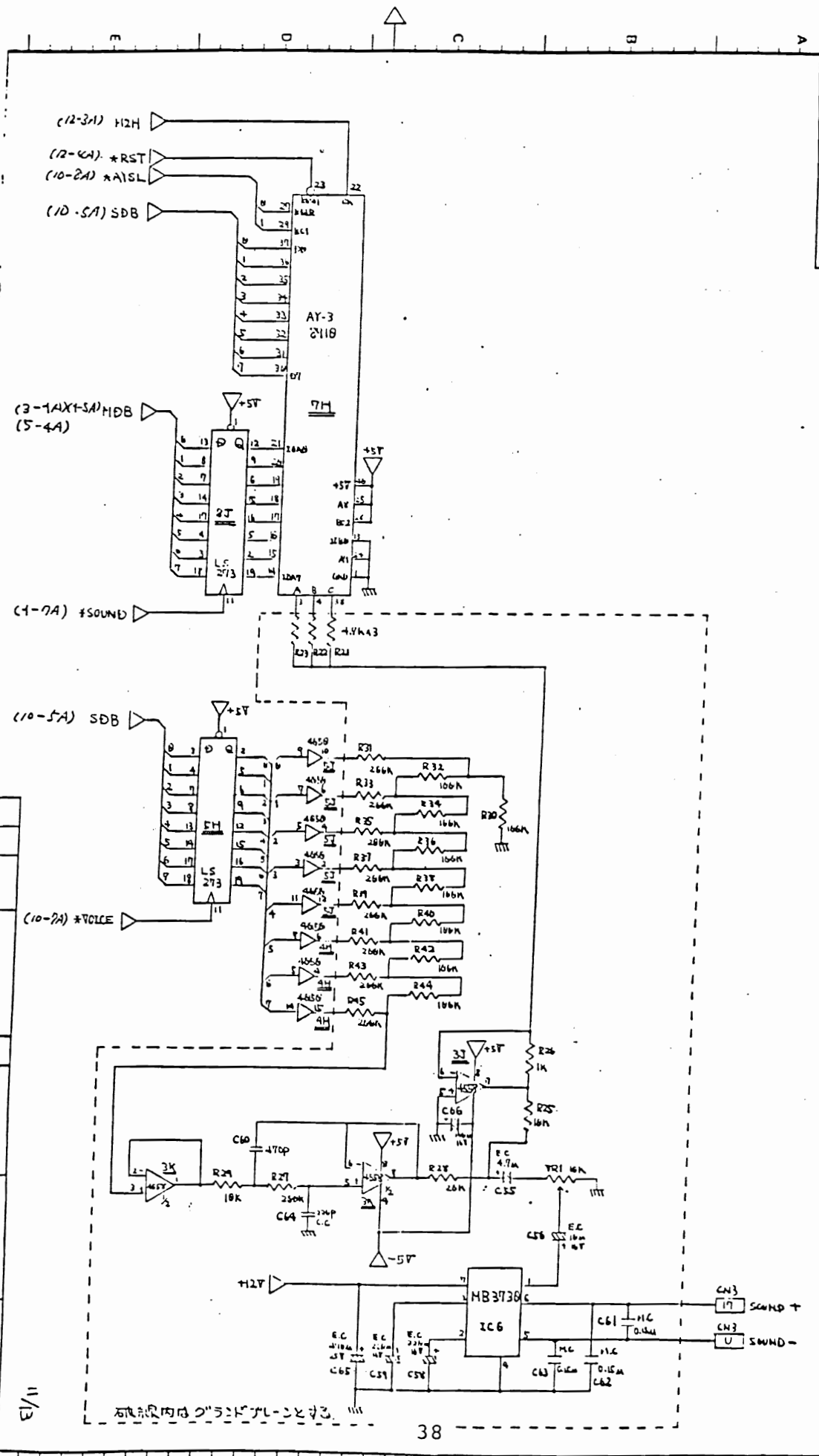


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任務、名称	

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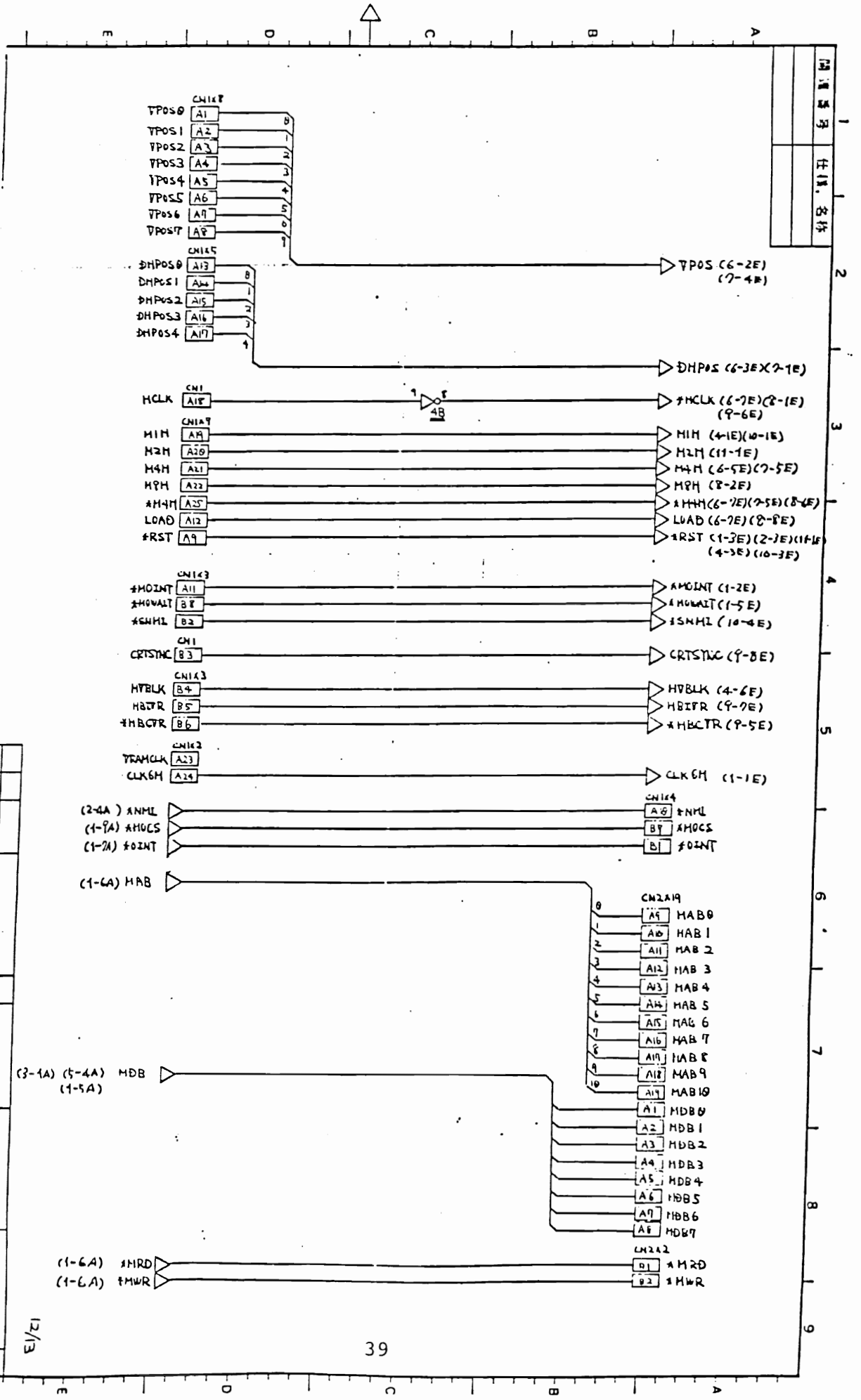
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11/3

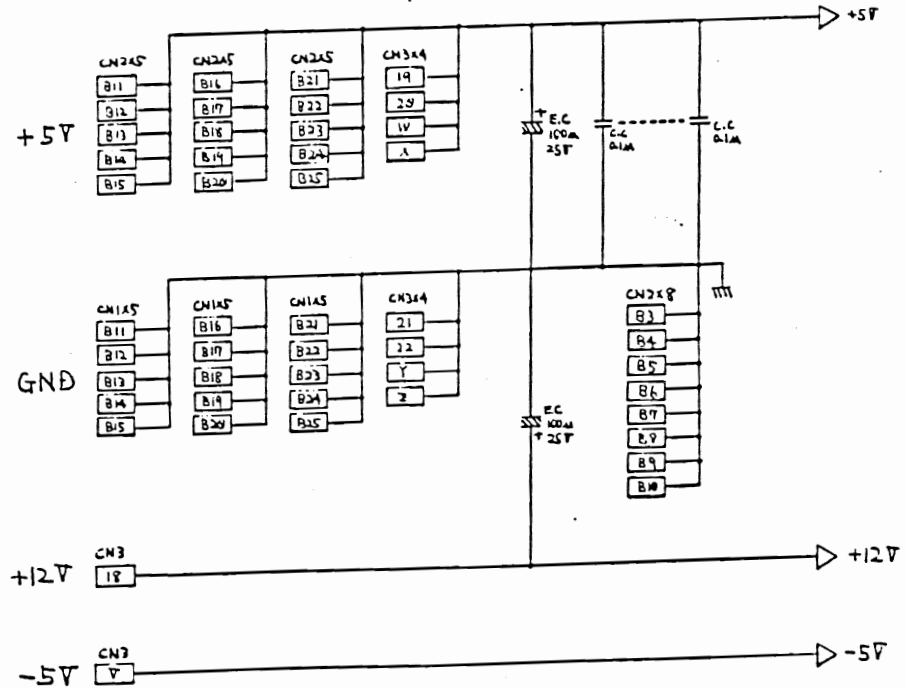
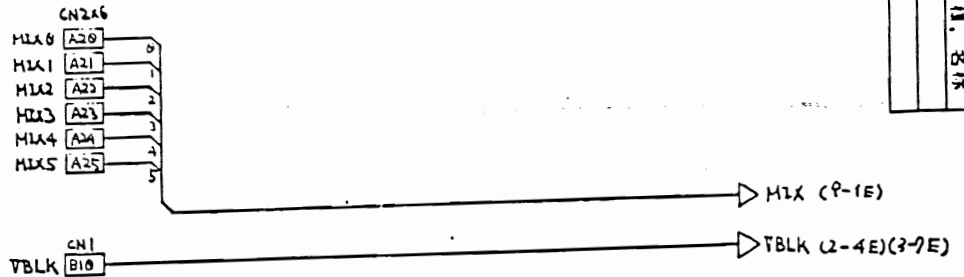
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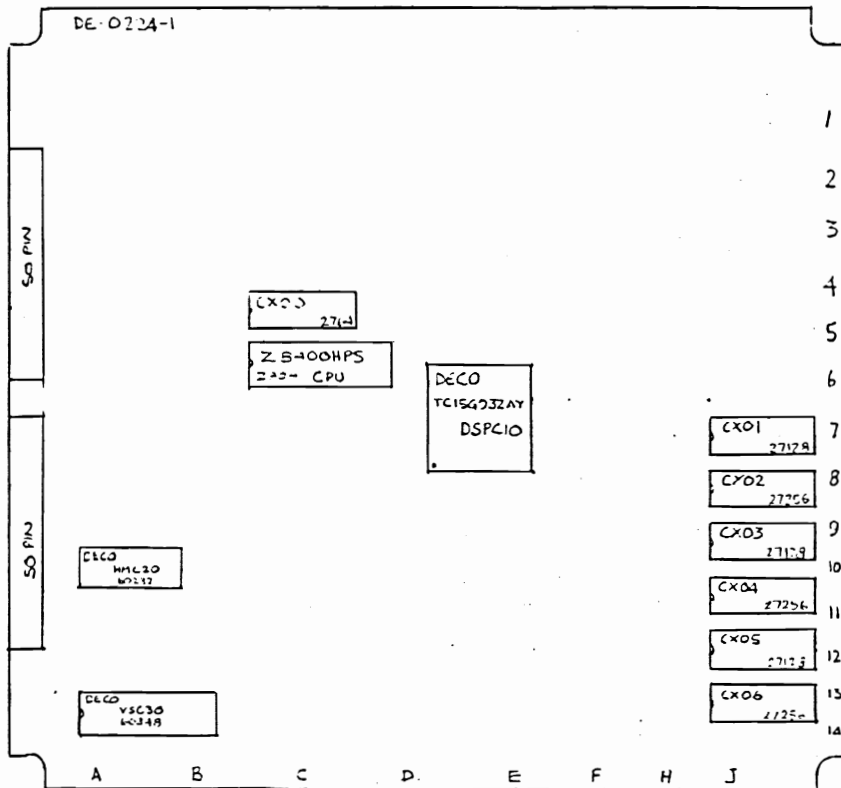


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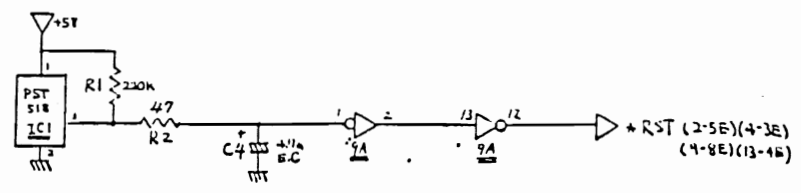
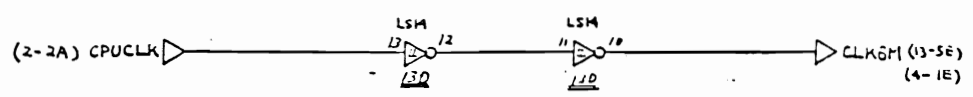
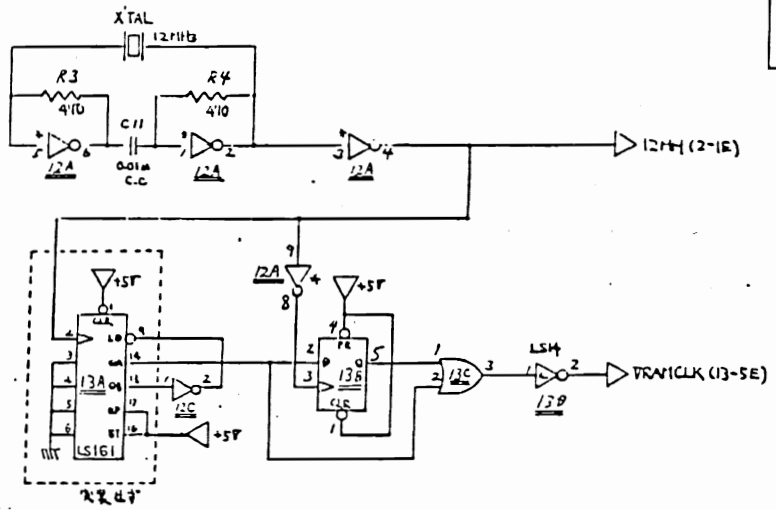
7. DATA EAST PCB SET

B. TOP PCB, DE-0224-1

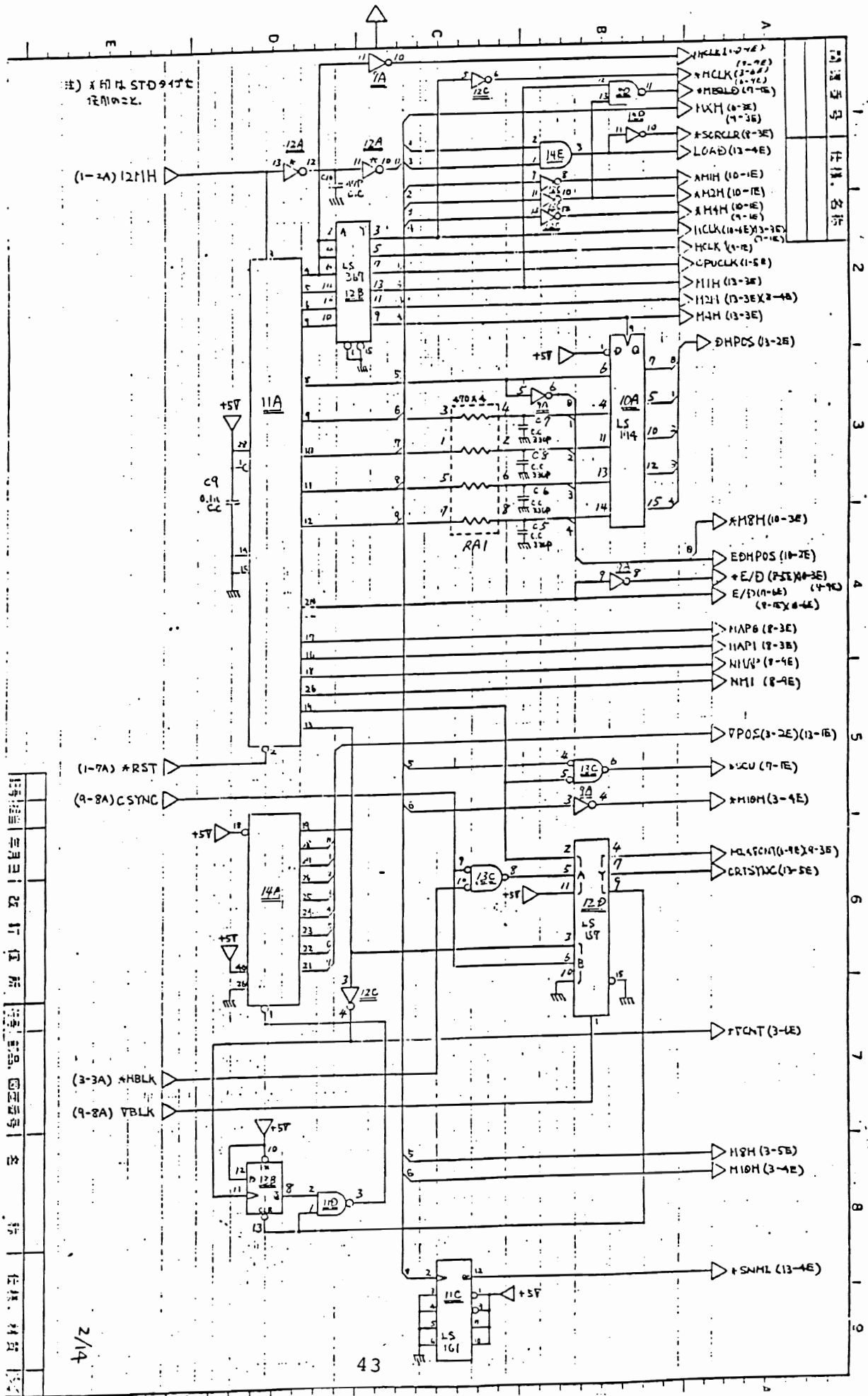


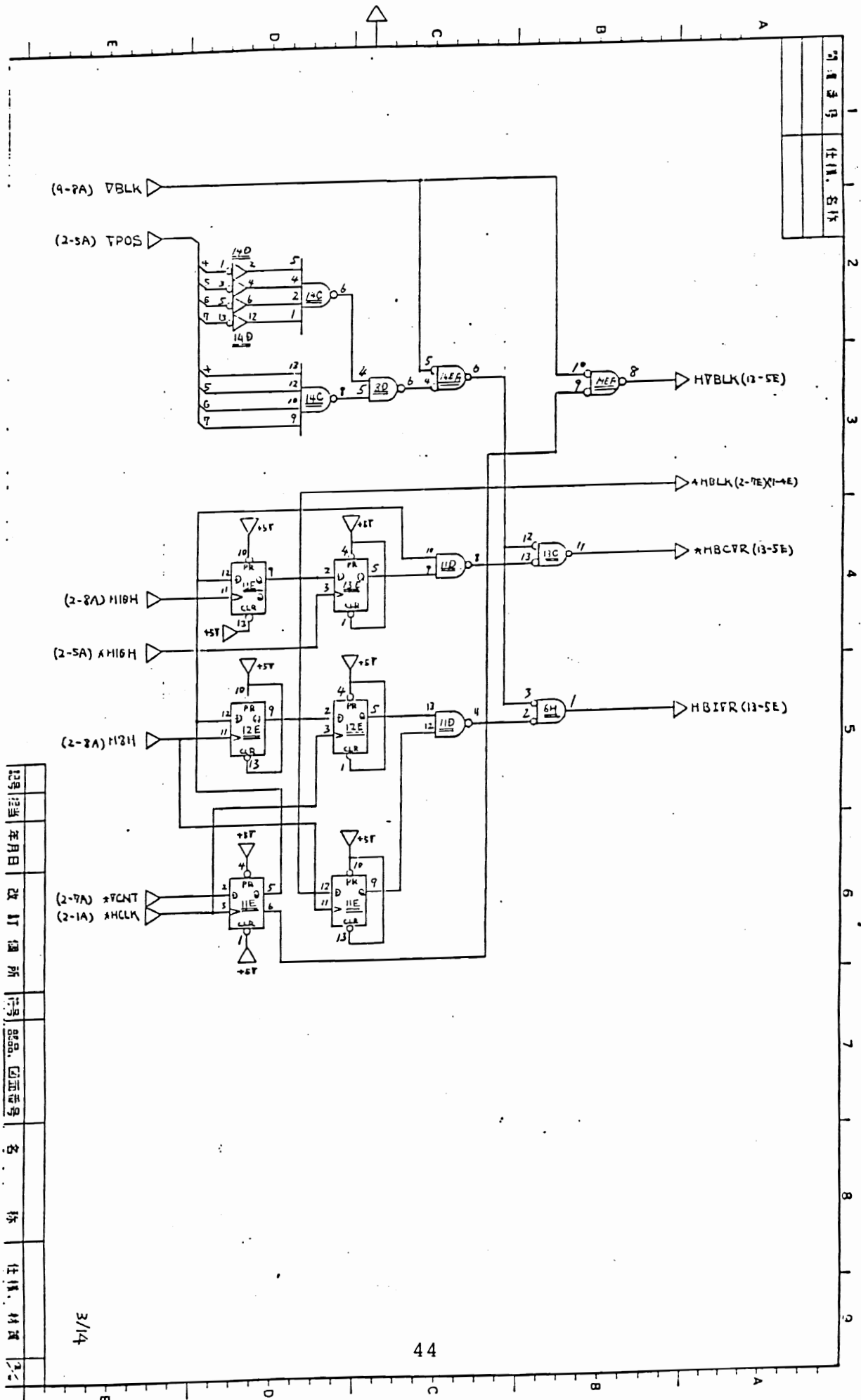
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(2) +5VSTO247E 使用原理



图号	1
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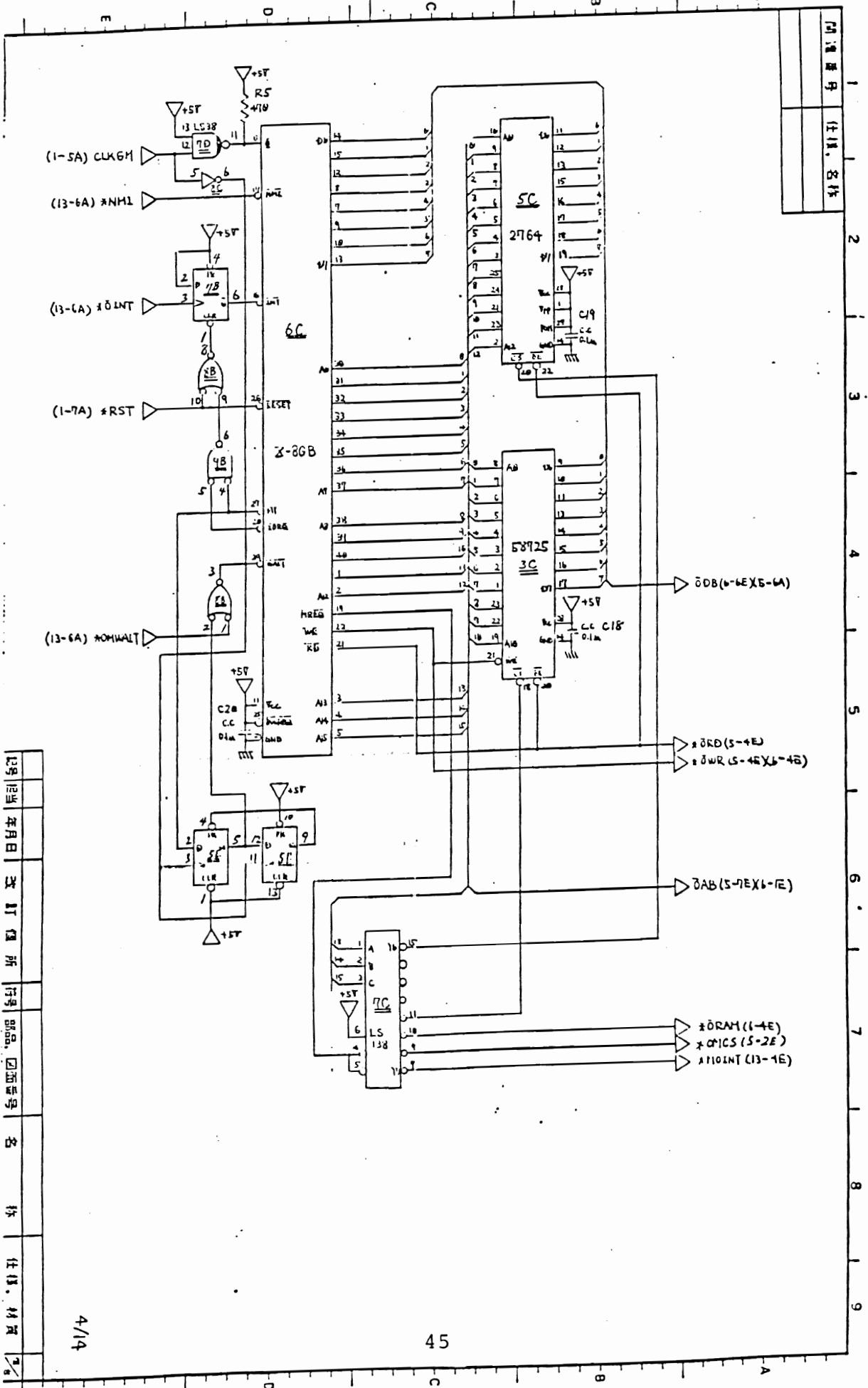




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年月日	
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审核	
零件	
材料	

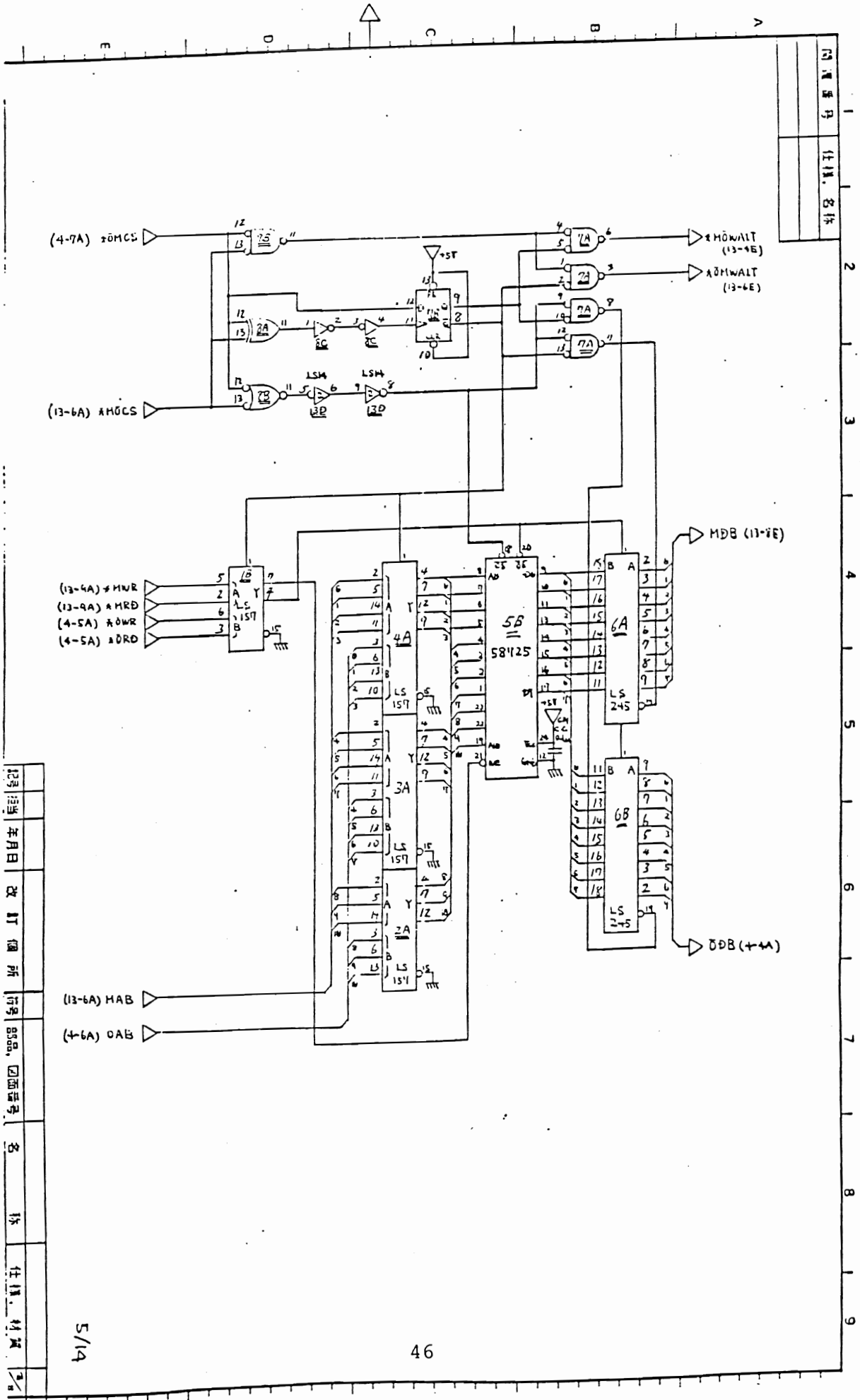
3/14



图例编号	任务名称

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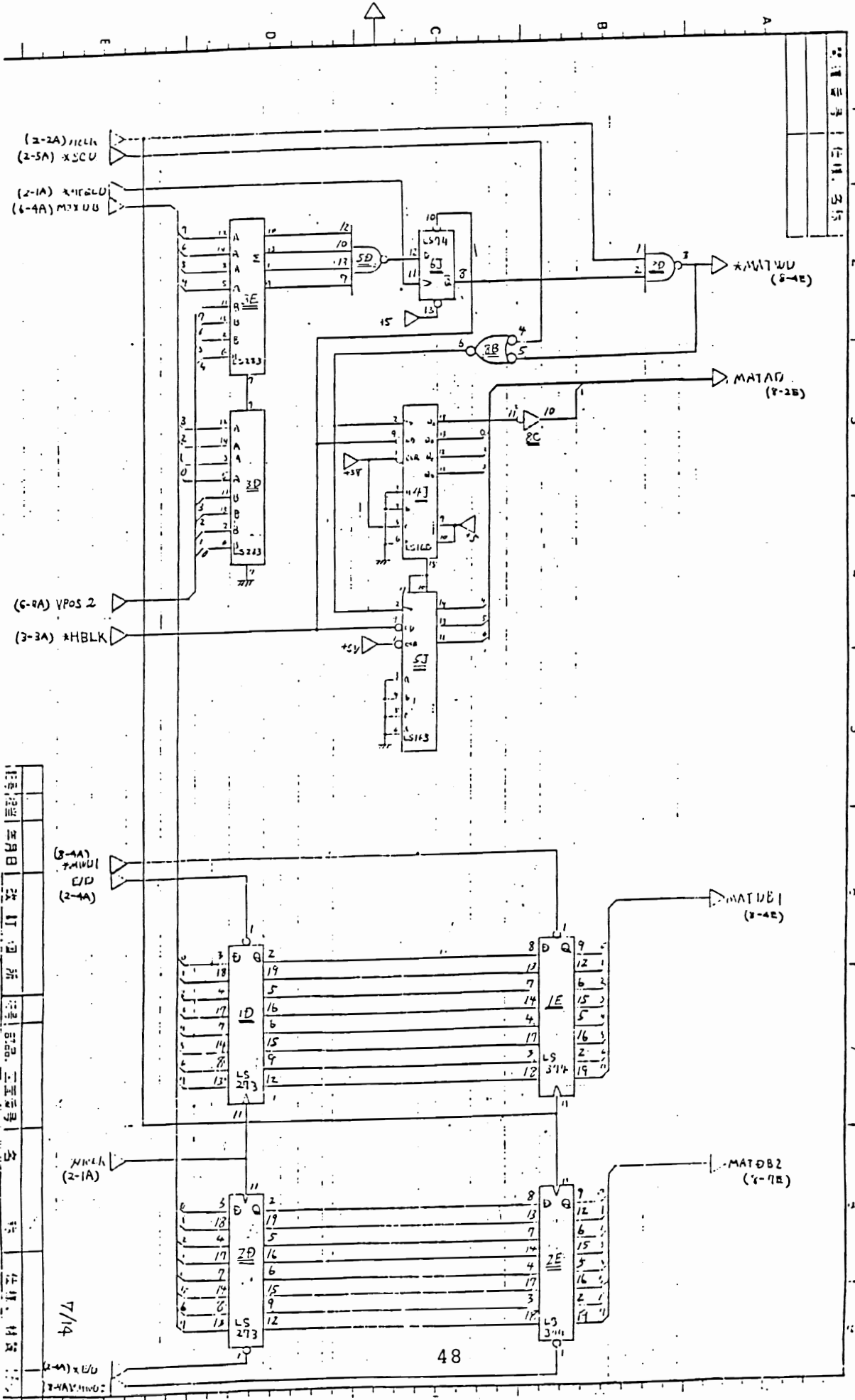
4/14



圖號	任務名稱

日期	年月日	改訂	價所	品名	圖號	名	務	任	材

5/14



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(2-2A) *HCLK
 (2-5A) *XSCU
 (2-1A) *XVCLKD
 (6-4A) *M3XUB

(6-9A) *VPOS 2
 (3-3A) *HBLK

(8-4A) *XVCLKD
 E/D
 (2-4A)

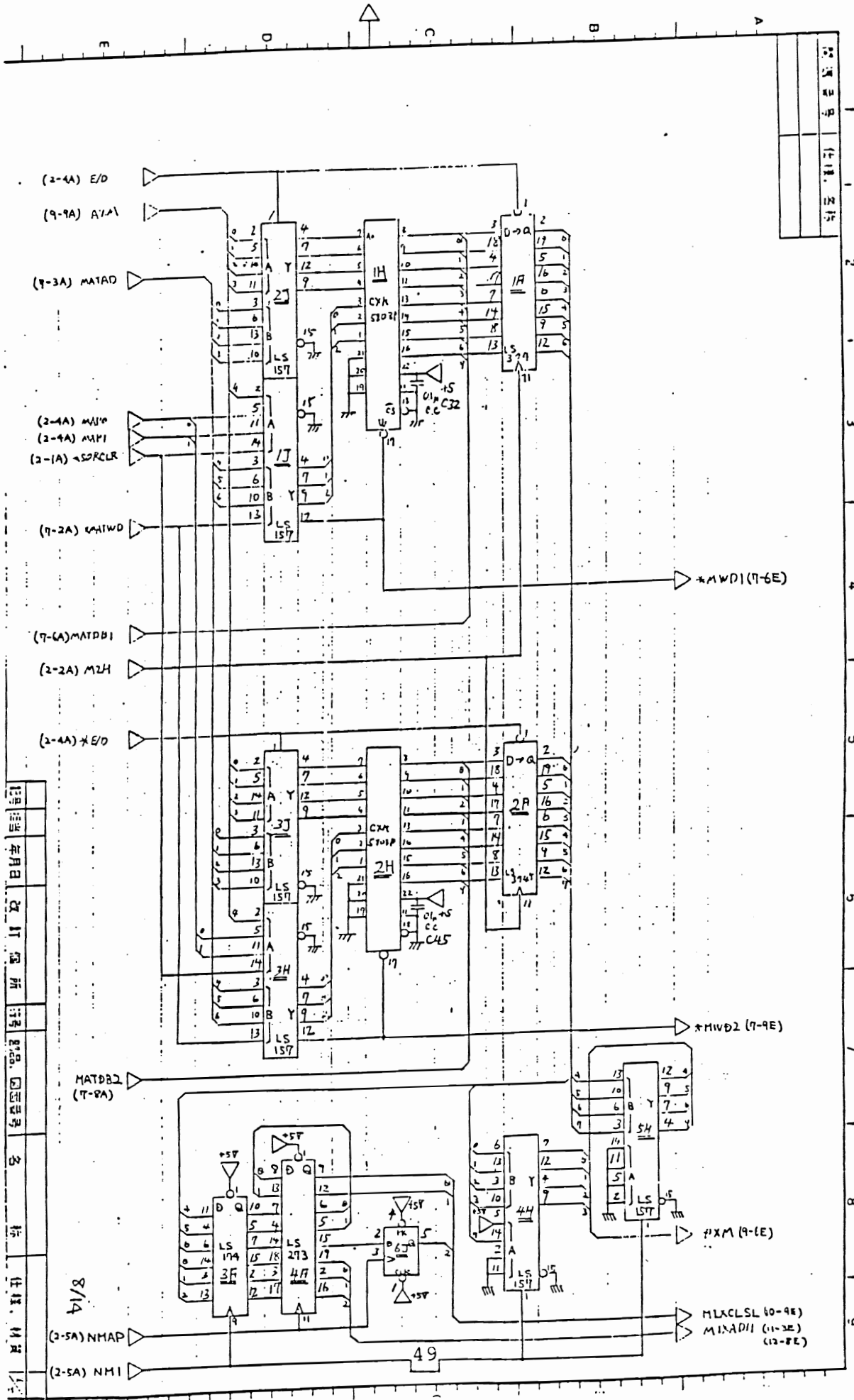
*HCLK
 (2-1A)

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(2-4A) *XVCLKD
 *XAVHUB

MATAD1
 (8-2E)

MATAD2
 (8-7B)

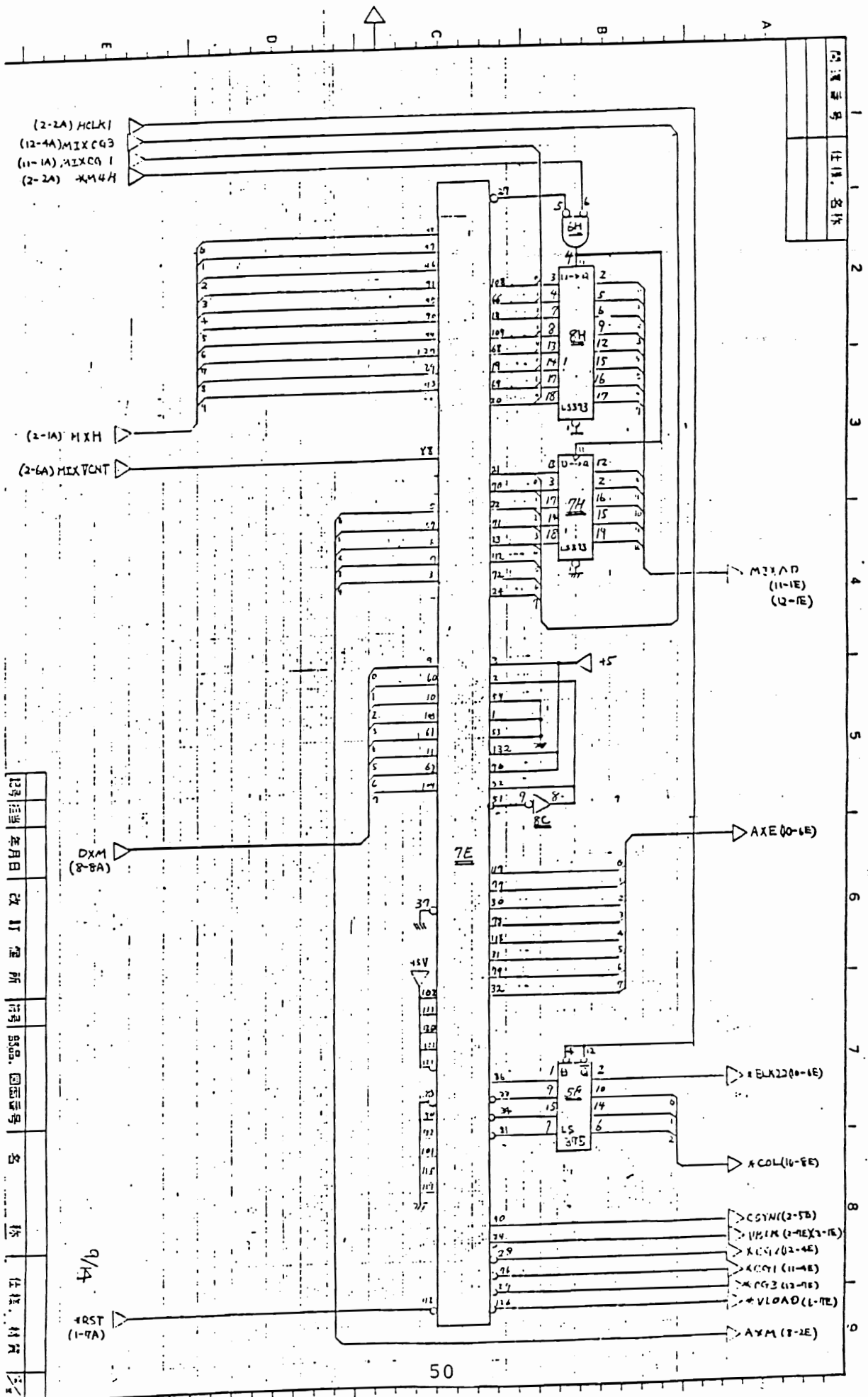


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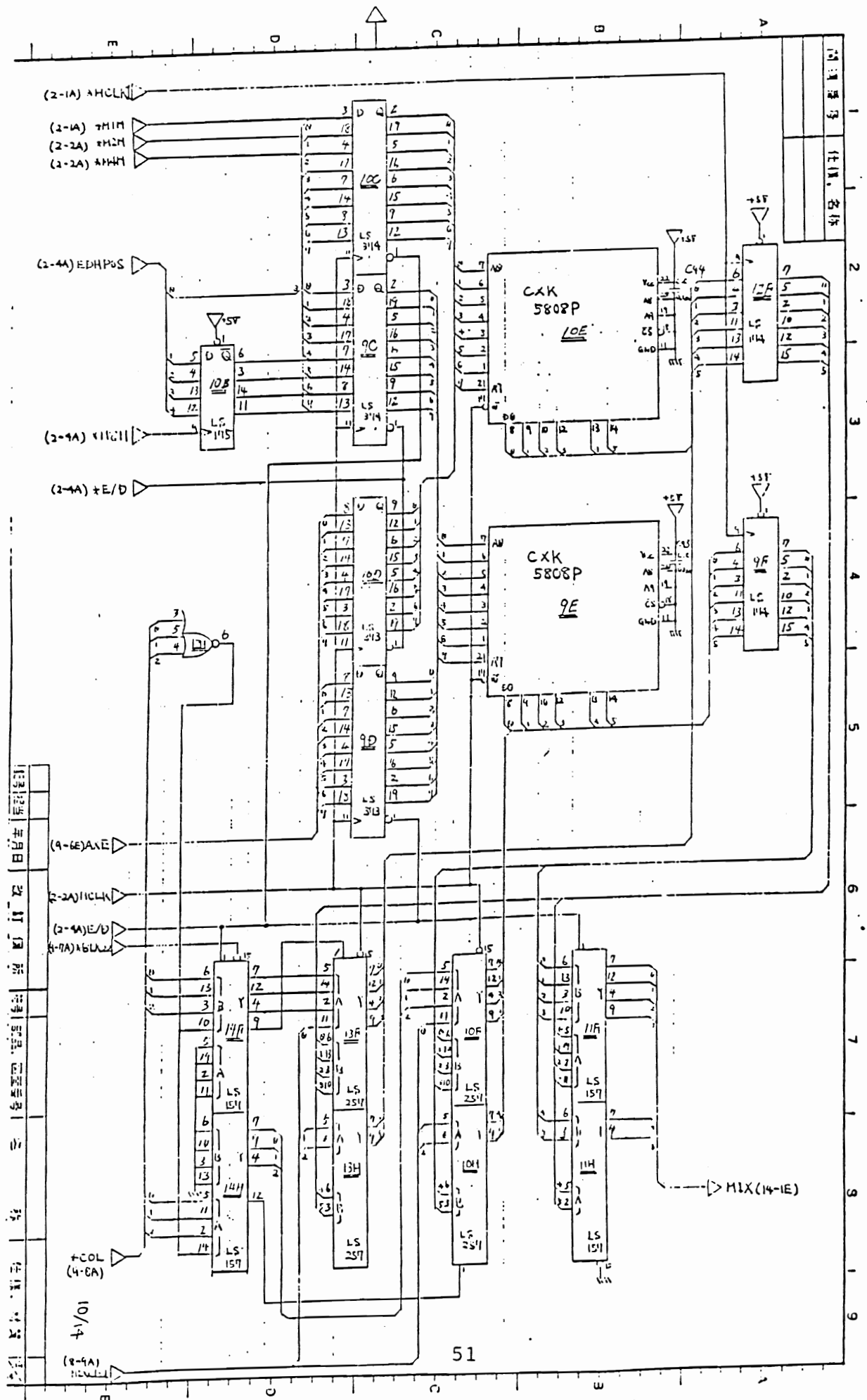
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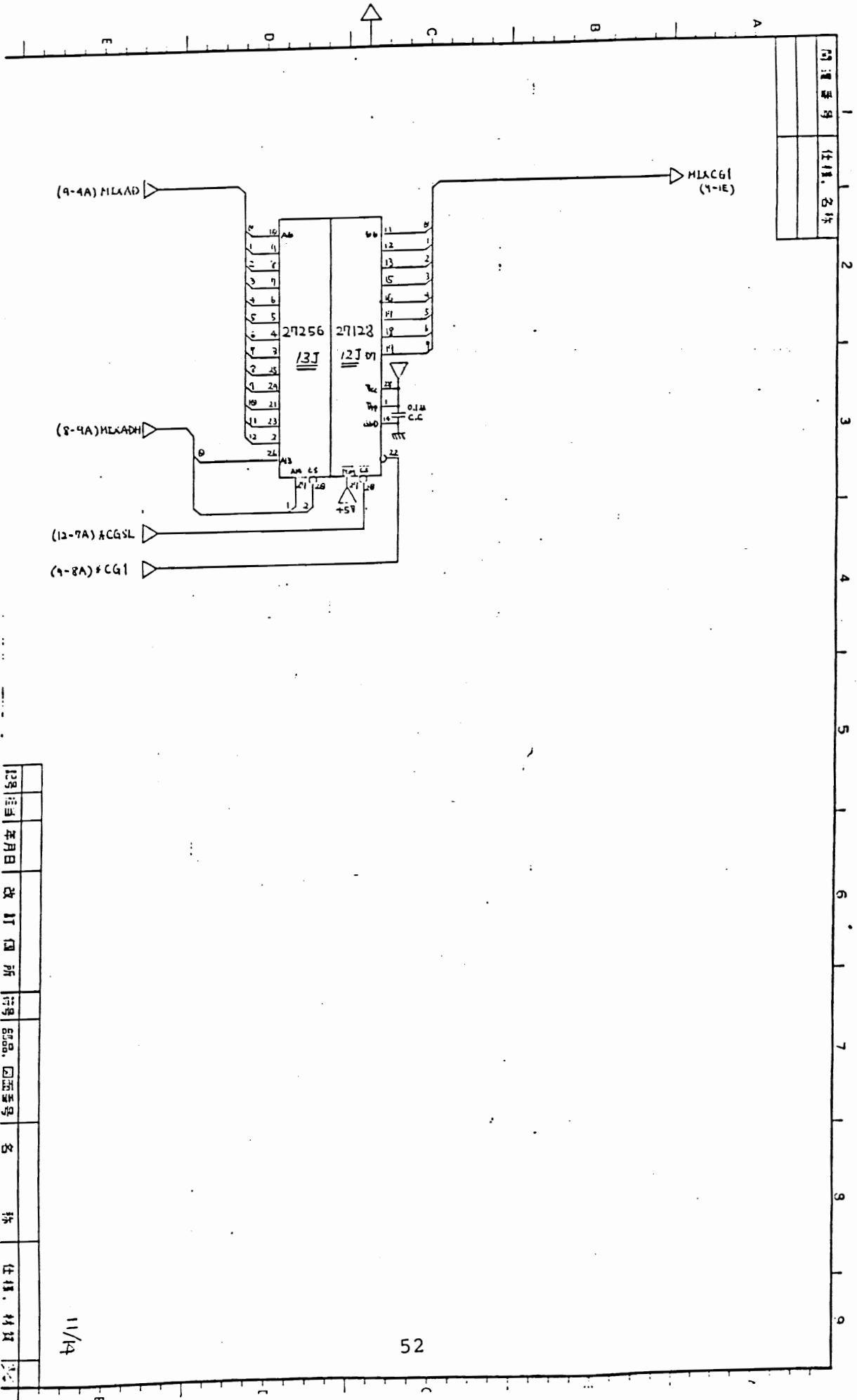
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图号	任务名称

记录	日期	修改	姓名	职位





1	图号	11/A
2	任务名称	
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1	日期	
2	年月日	
3	改订图所	
4	符号	
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7	名	
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9	任务	
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11/A

1	图号	任务、名称
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(9-4A) MILAD

(9-8A) ACG2

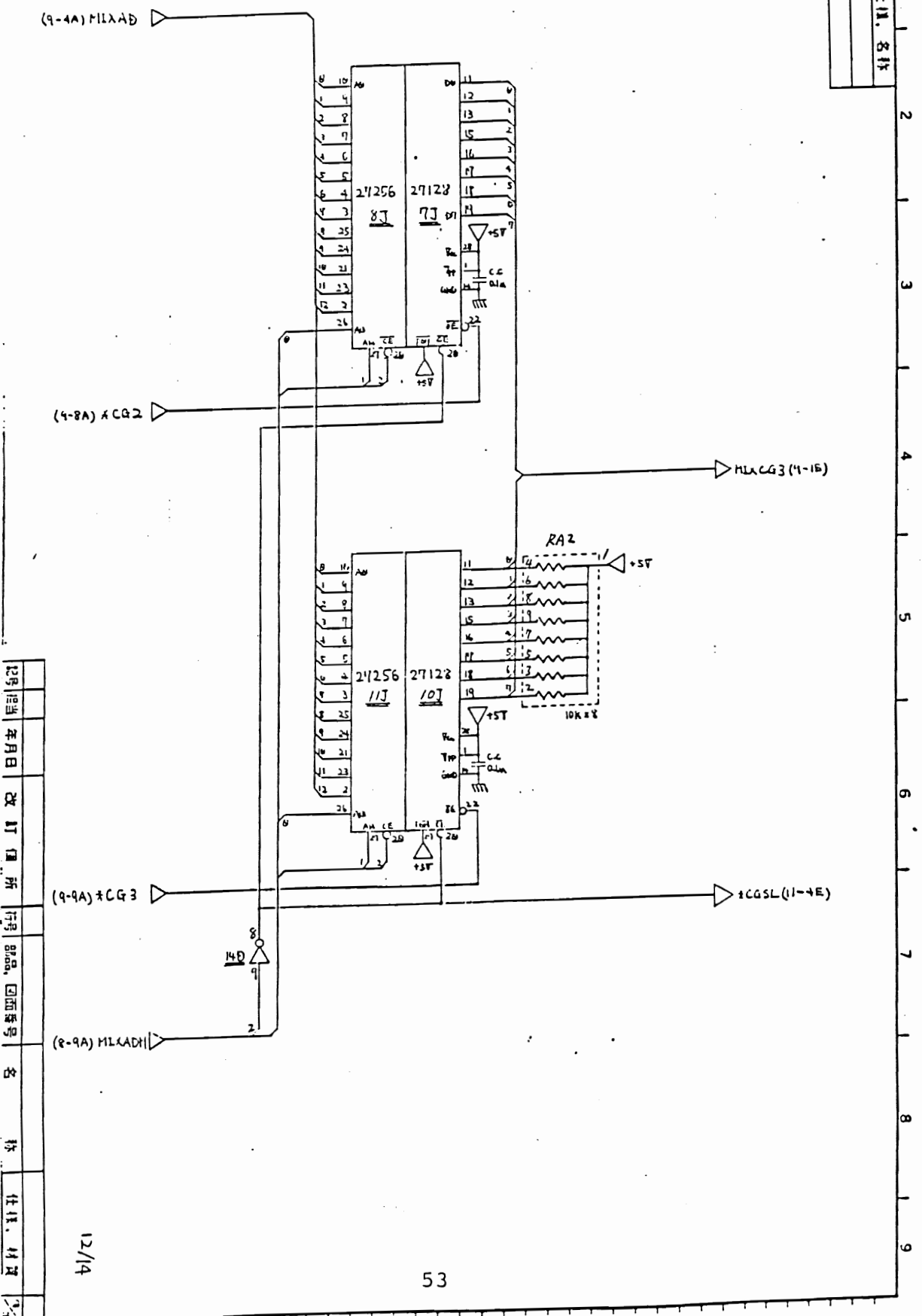
MILCG3 (4-1B)

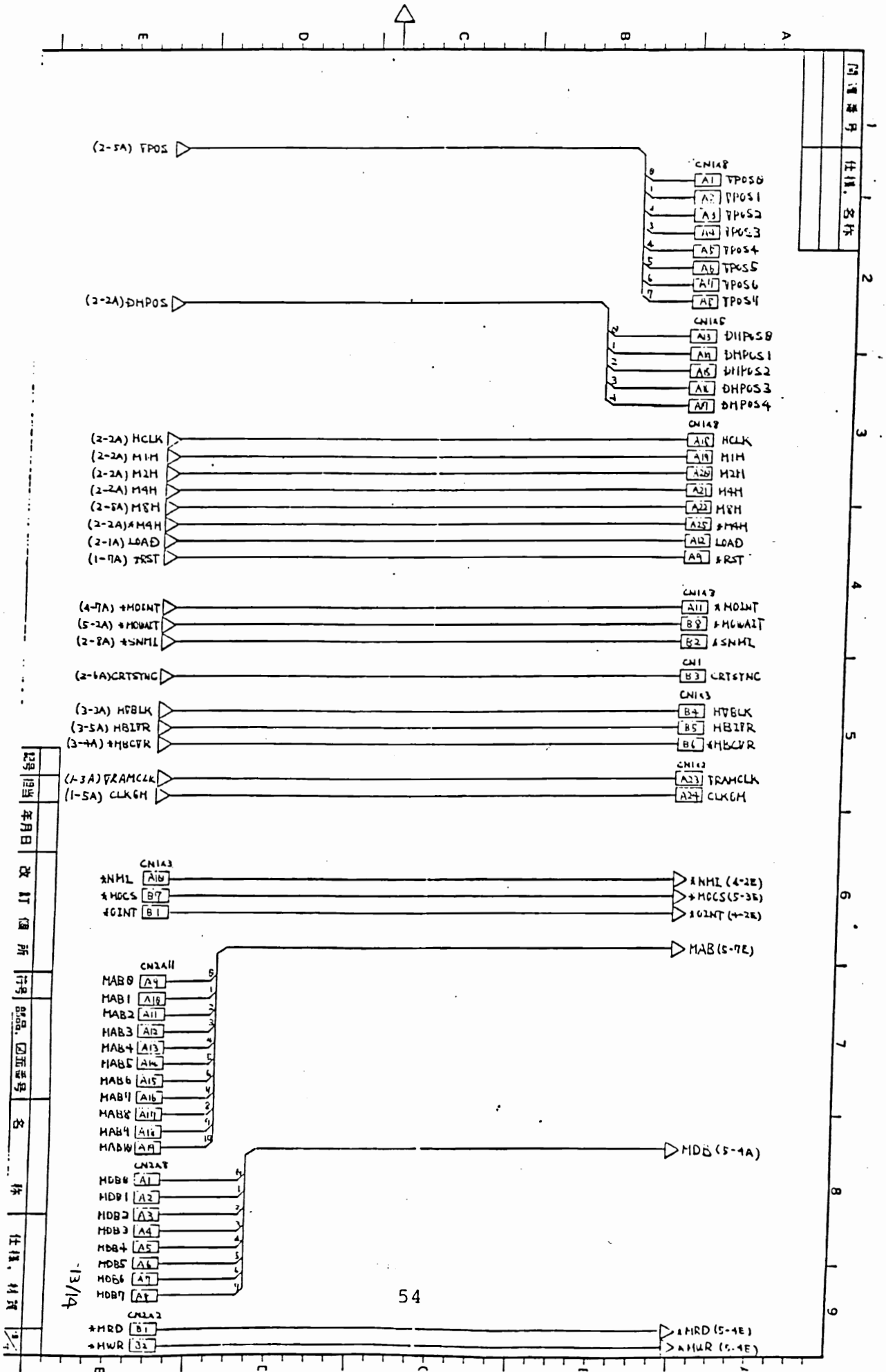
(9-9A) ACG3

(9-9A) MILADII

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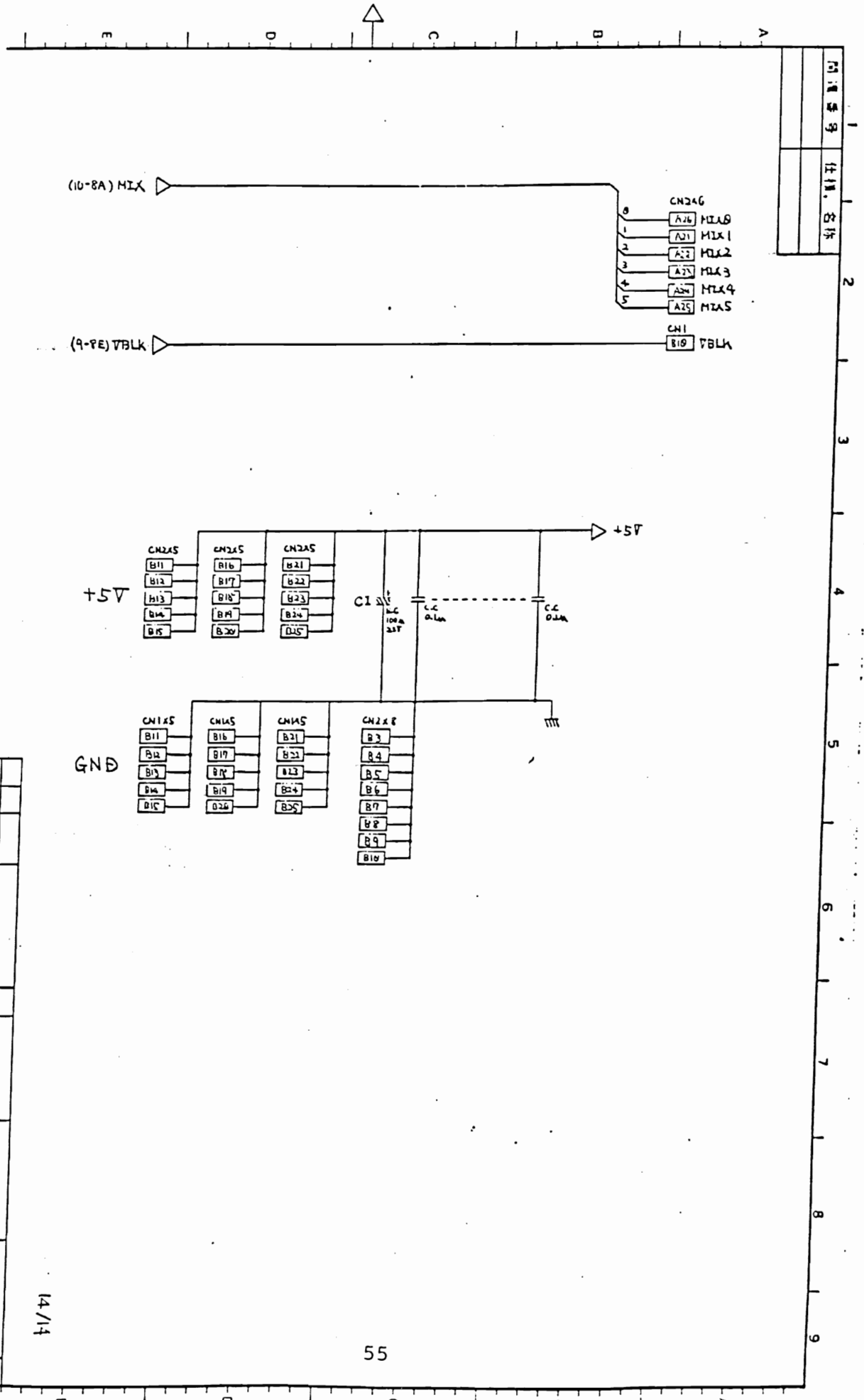
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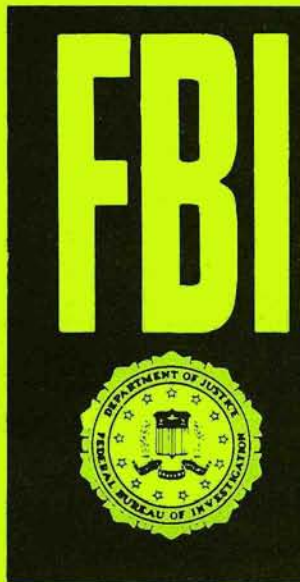
图号	日期	年月日	改订处	序号	部品	位置号	名	作	仕组	材質

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記号	年月日	改訂箇所	品番	図面番号	名	住棟, 名称

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