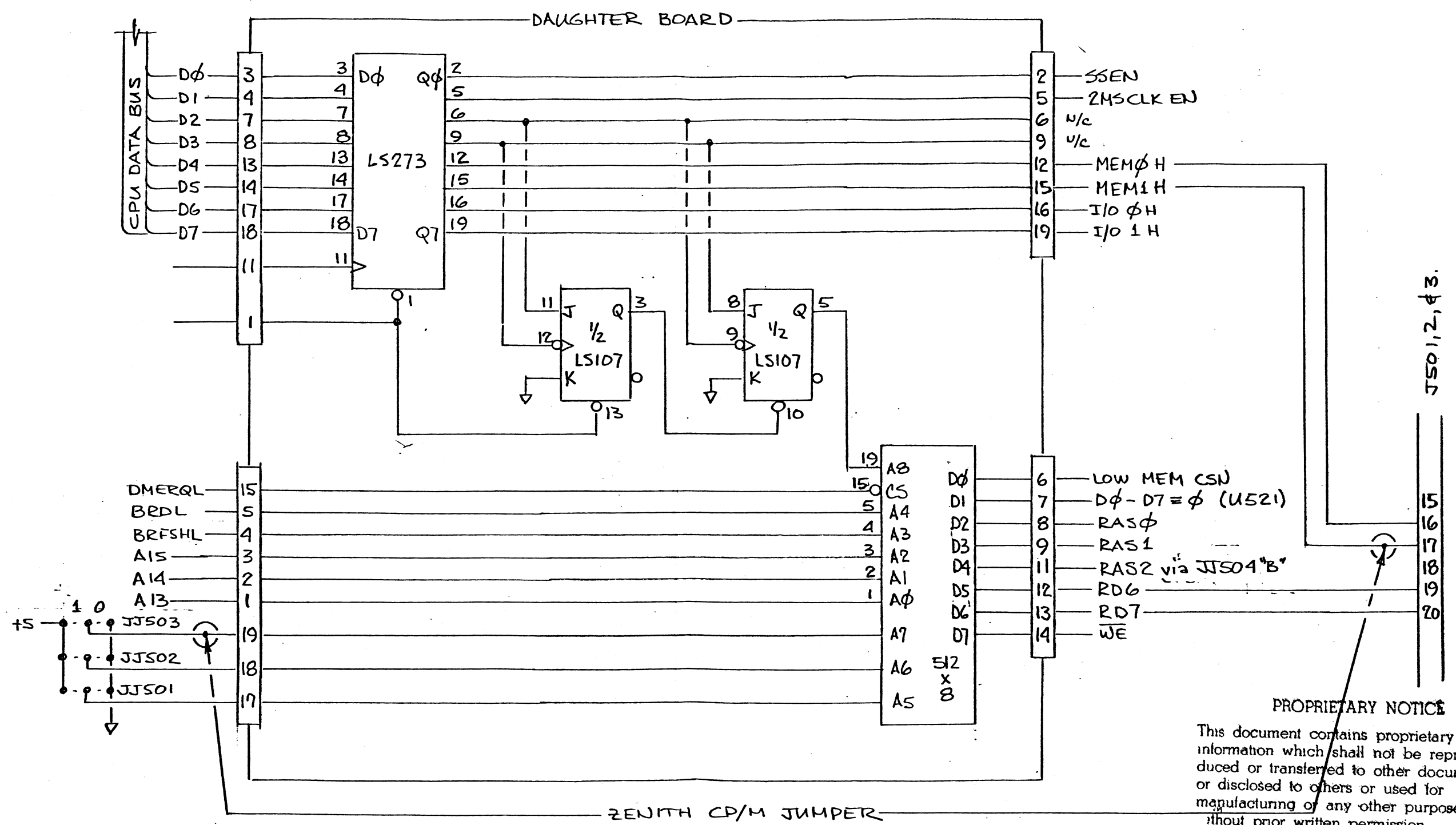


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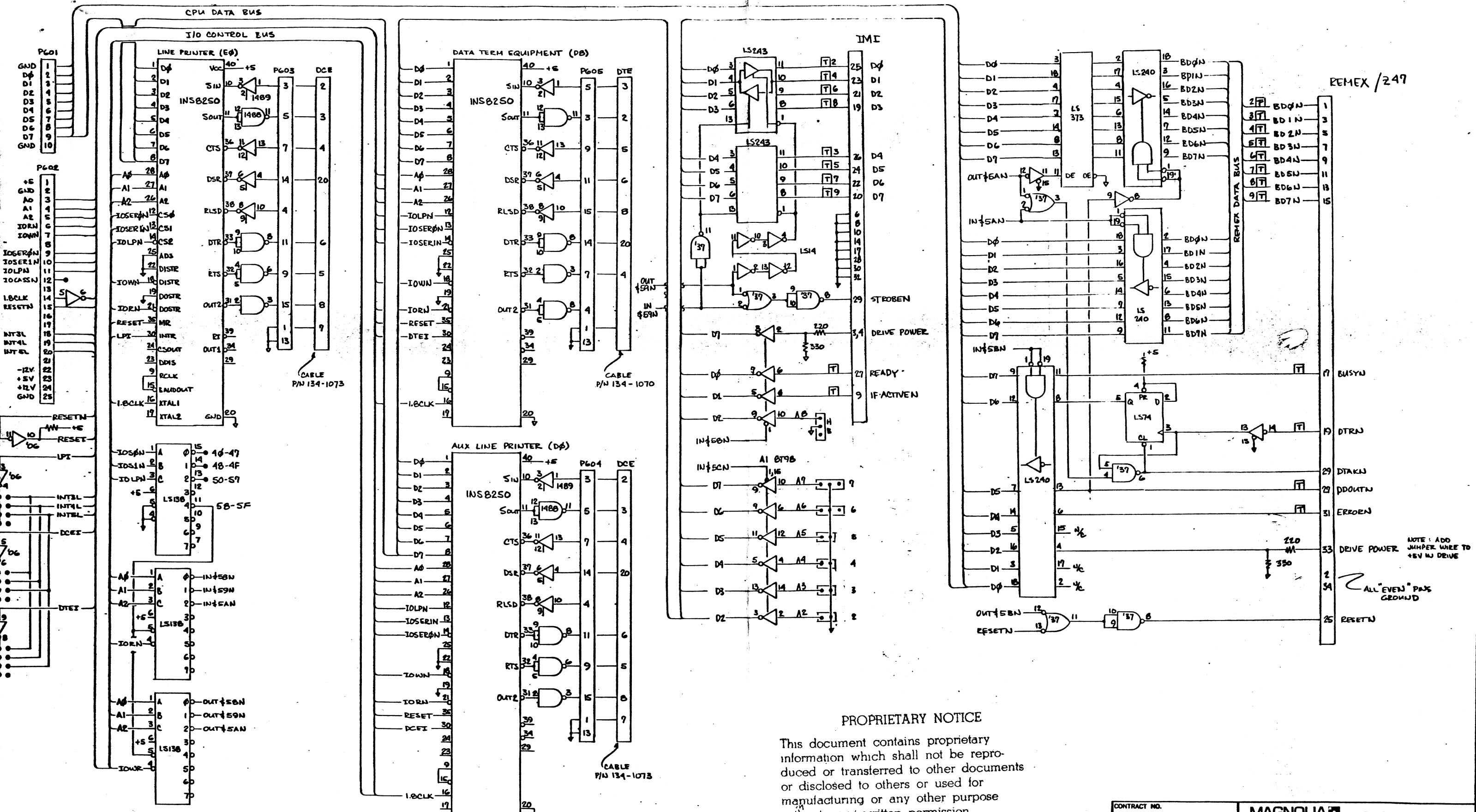
PROPRIETARY NOTICE
 16K ADD-ON RAM BOARD
 10-77311 © MMS 1981
 BKG 1/30/82 CHECKED 2/2/82 D/S

MAGNOLIA
MICROSYSTEMS
 2264 - 15th Ave. W. • Seattle, WA 98119
 (206) 285-7266 (800) 426-2841



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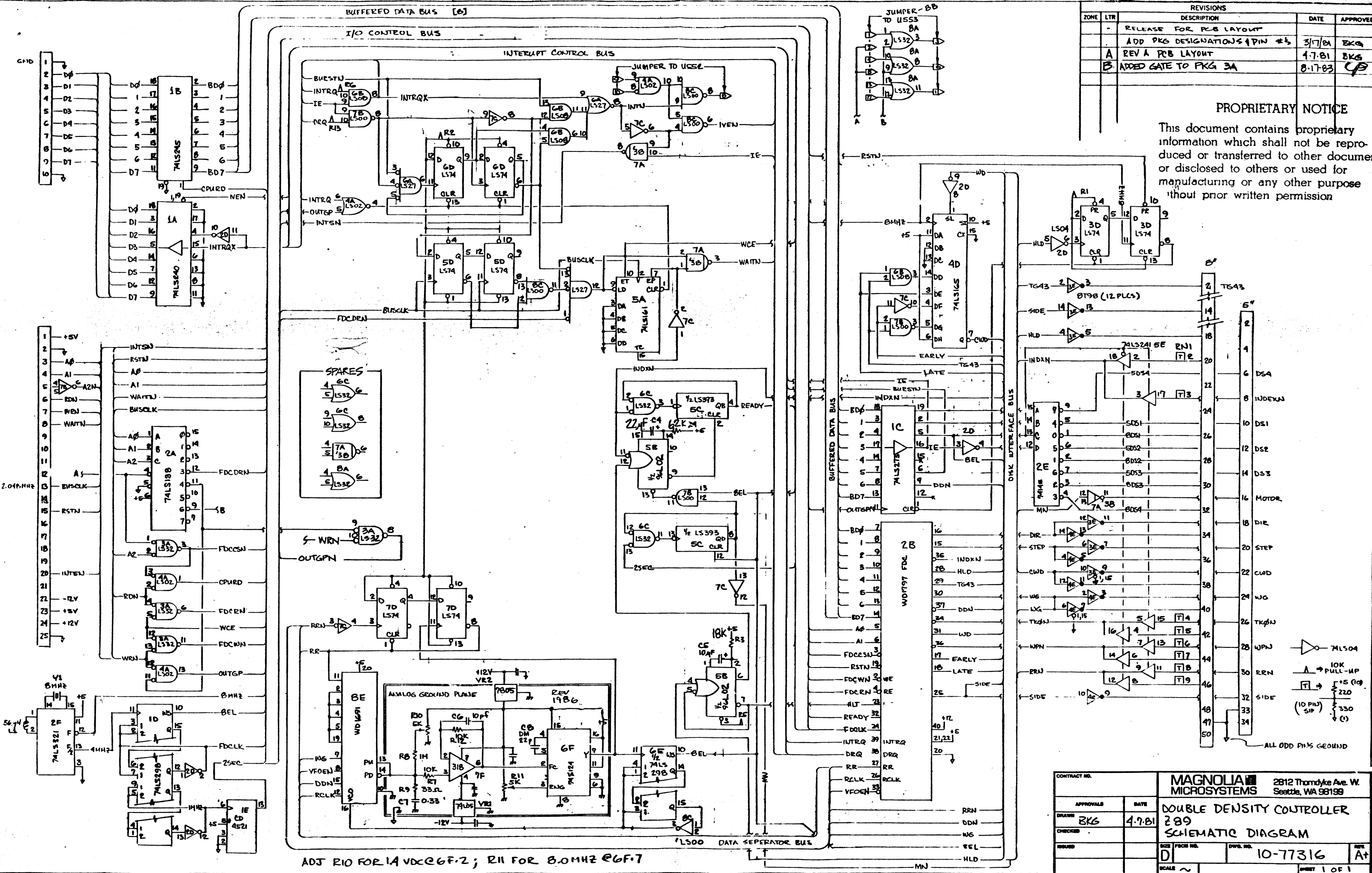
P/N 10-77312 BKG 1/15/82
 ORG φ CP/M MODIFICATION



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CONTRACT NO.		MAGNOLIA MICROSYSTEMS		2812 Thornhyla Avenue West Seattle, Washington 98199	
APPROVALS	DATE	Z89 I/O: (S) RS232 + IMI + REMEX/247			
DRAWN BKG	5-13-81				
CHECKED					
SIZE	CODE IDENT NO.	DRAWING NO.			
D		20-77314 REV A			
SCALE		SHEET		1 OF 1	



ZONE		REVISIONS		DATE	APPROVED
		DESCRIPTION			
		RELEASE FOR PCB LAYOUT			
		ADD PKG DESIGNATIONS & PIN #s		3/17/81	BKG
A		REV A PCB LAYOUT		4.7.81	BKG
B		ADDED GATE TO PKG 3A		8.17.83	CP

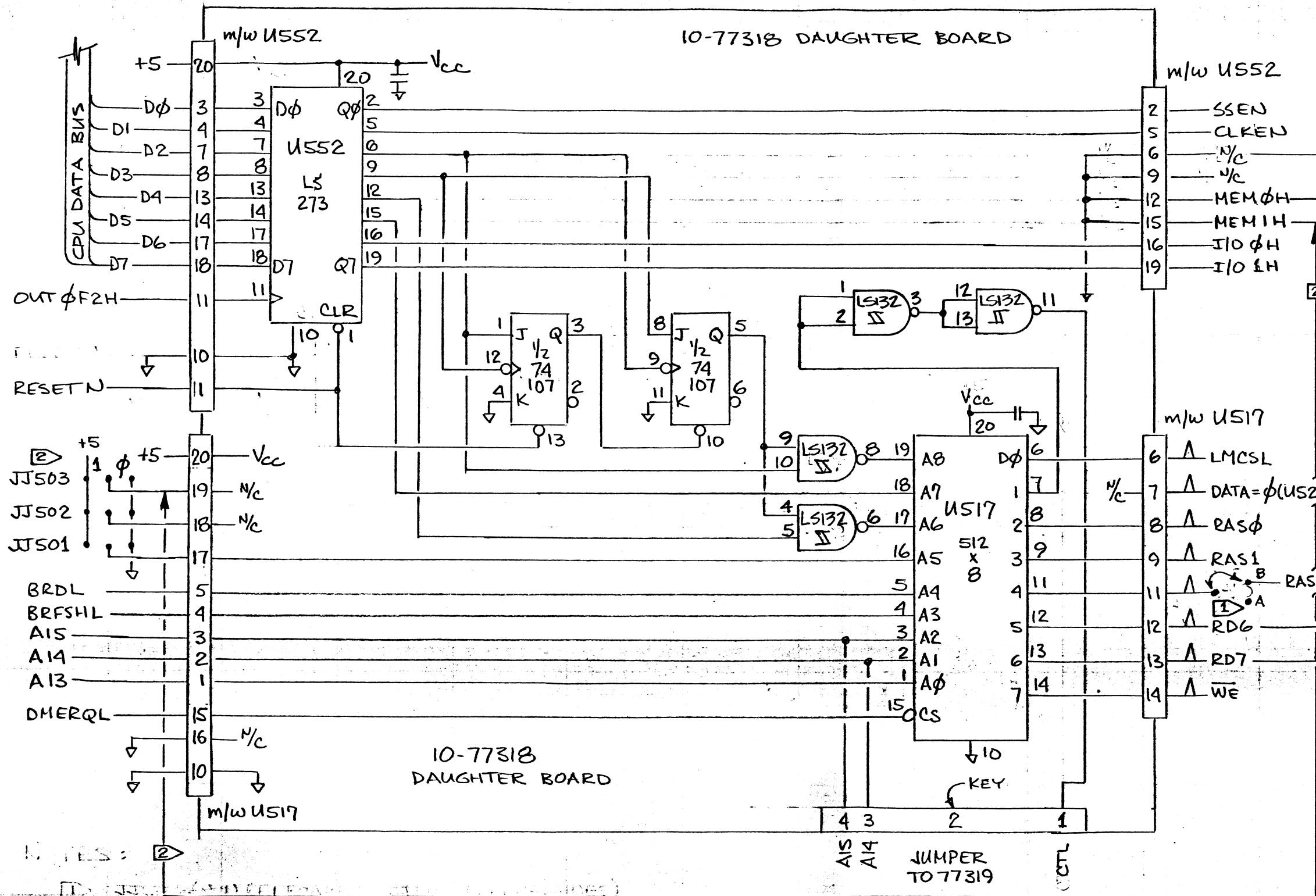
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ADJ R10 FOR 14 VDC @ 6F.2; R11 FOR 8.0MHZ @ 6F.7

CONTRACT NO.		MAGNOLIA MICROSYSTEMS		2812 Thornhyke Ave. W. Seattle, WA 98199	
APPROVALS	DATE	DOUBLE DENSITY CONTROLLER			
DRAWN BKG	4.7.81	289			
CHECKED		SCHEMATIC DIAGRAM			
ISSUED	SIZE	FIGURE NO.	DRAWING NO.	REV.	
	D		10-77316	A+	
SCALE					SHEET 1 OF 1

← PARTIAL CPU BOARD SCHEMATIC →



PROPRIETARY NOTICE

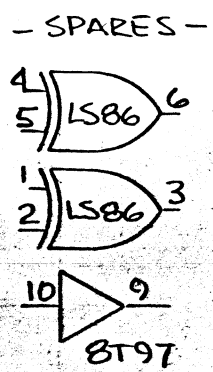
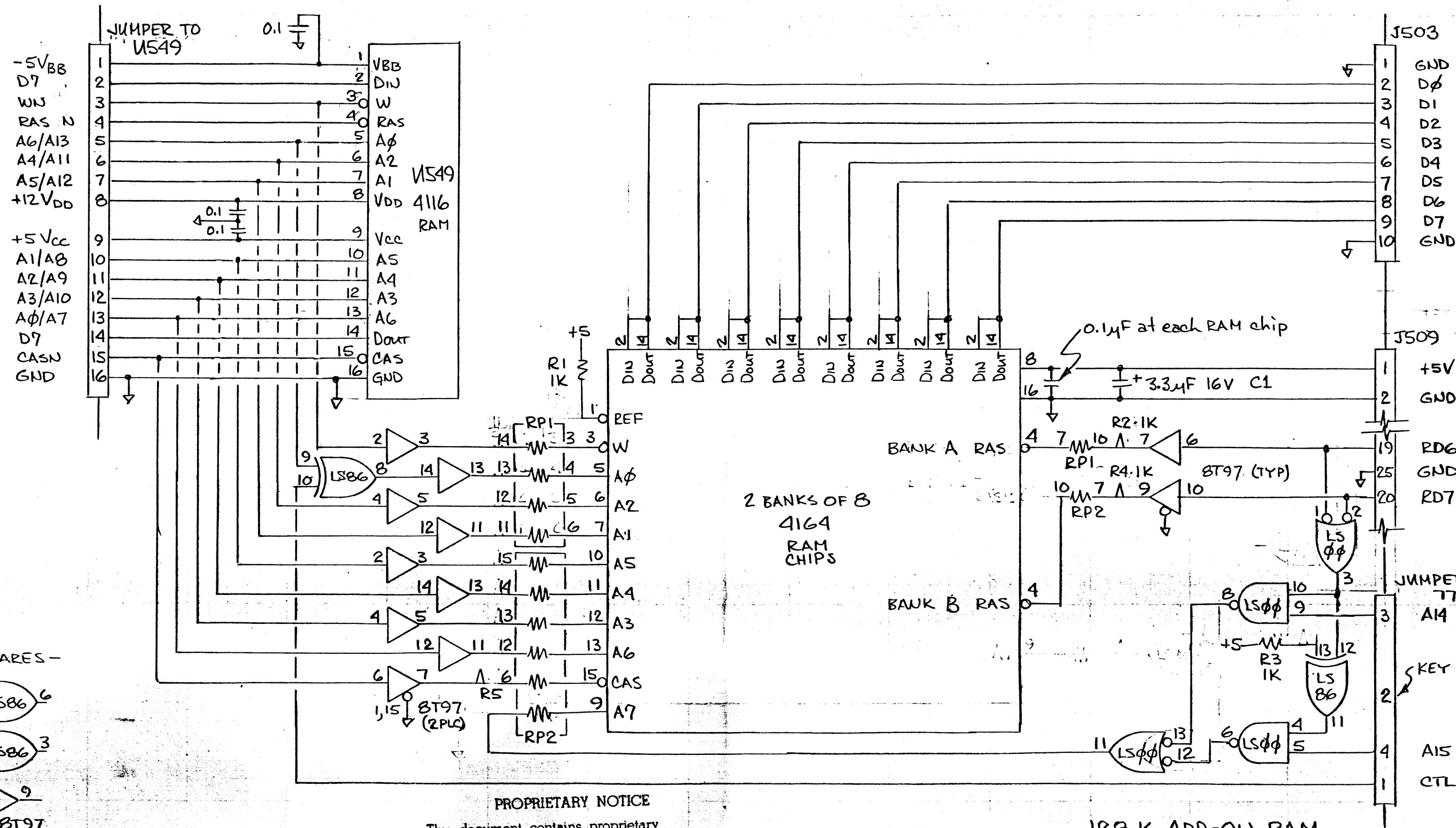
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PE07, 508, 509 for reference only

- NOTES:
- ① JJ504 (NON RFI) OR JJ503 (RFI)
 - ② ZENITH CP/M MODIFICATION JUMPER (NON RFI) OR TRACE (RFI) JJ503 NOT PRESENT ON RFI
 - ③ ON RFI PCB, PE07 → U552-6, NOT .15
 - ④ PLUS JUMPER FOR ZENITH CP/M

BANK SELECT RAM CONTROL BD.
 10-77318-1 REV A 15XG 11-14-83
 BKG 1/30/82 CHECKED 2/1/82 DJS
 PIN NOS ADDED 2/15/82



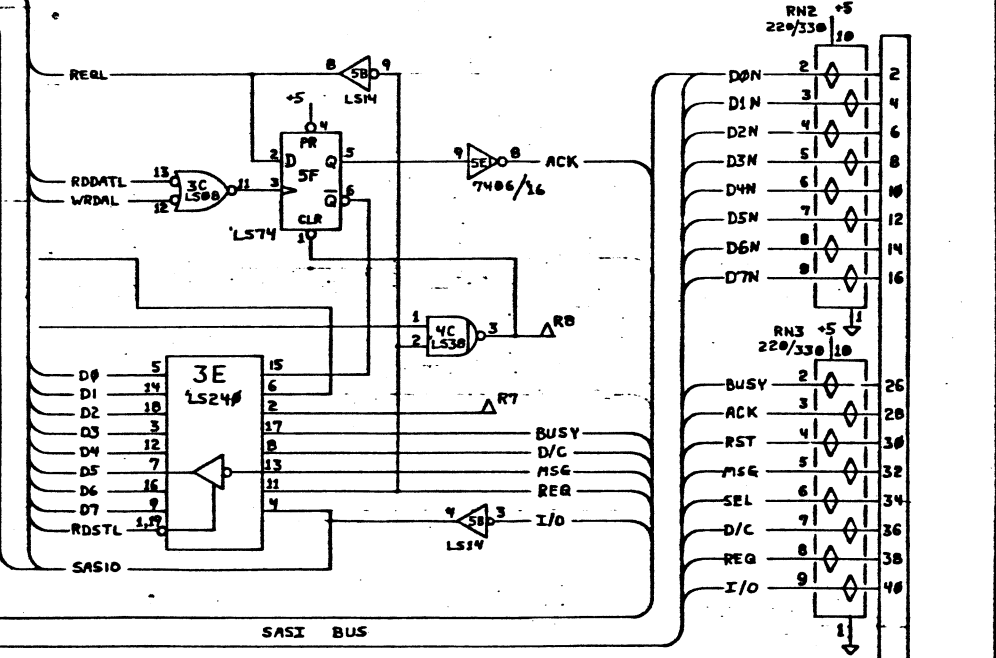
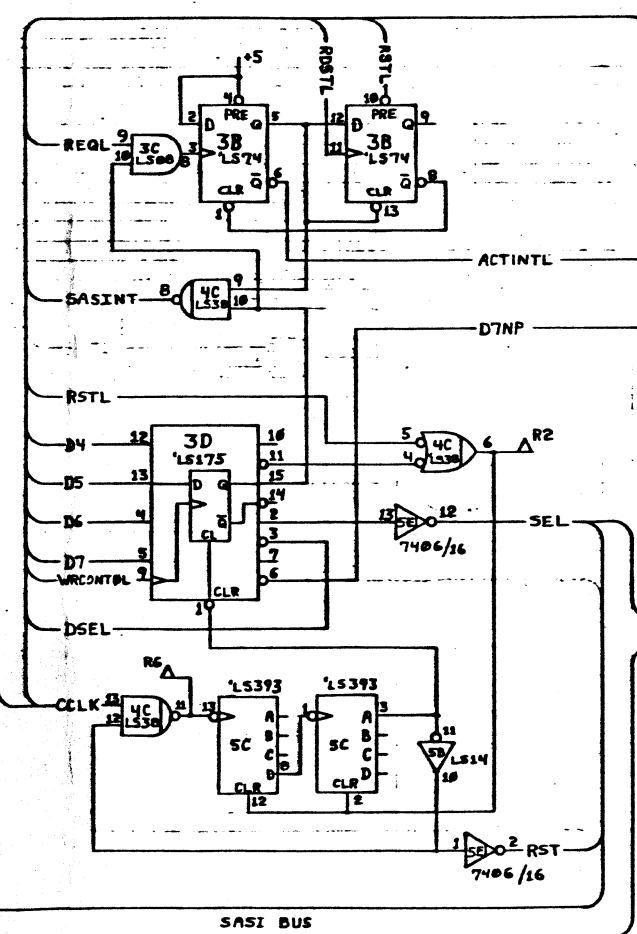
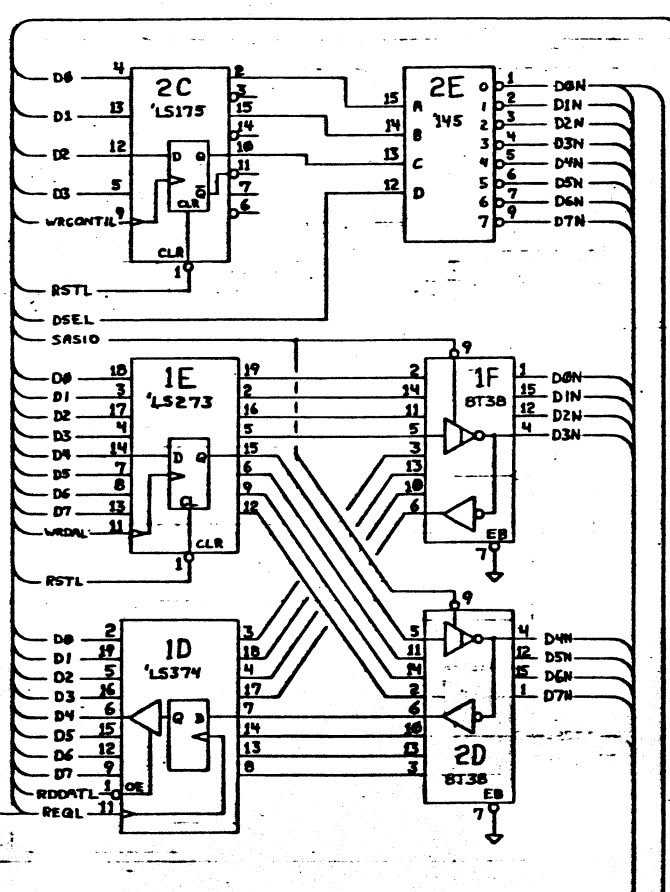
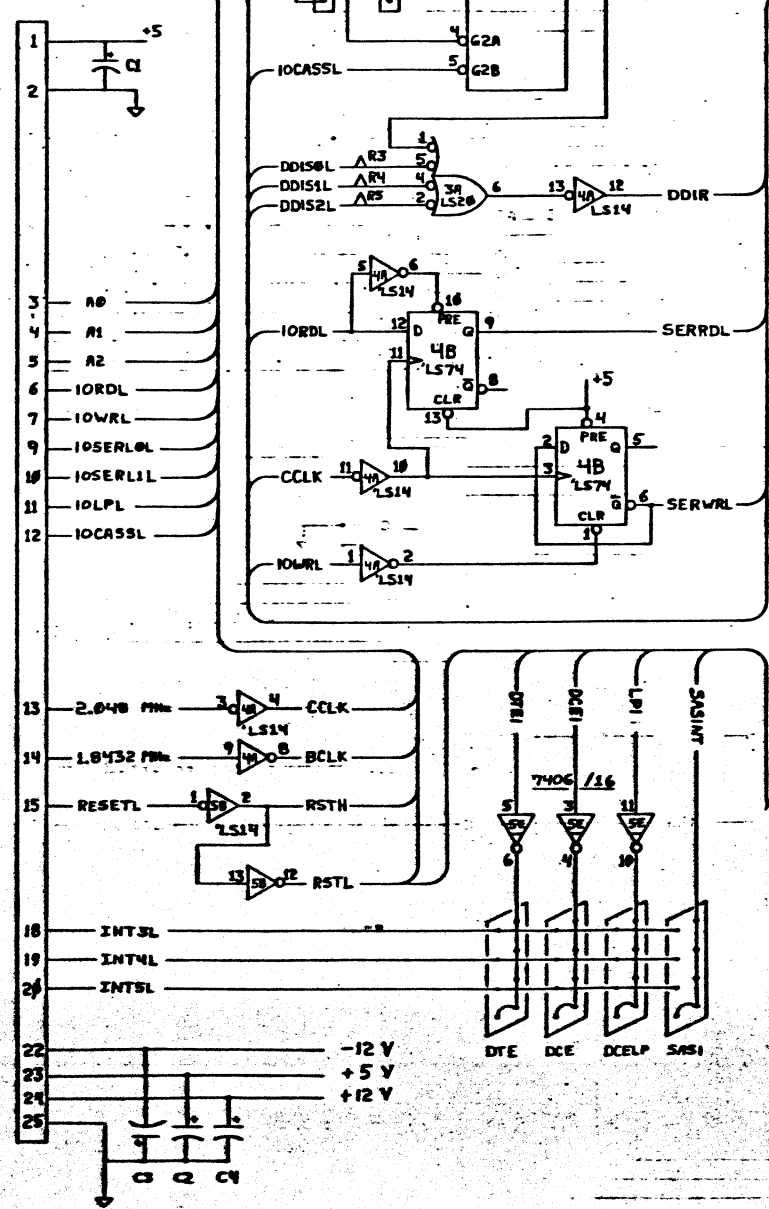
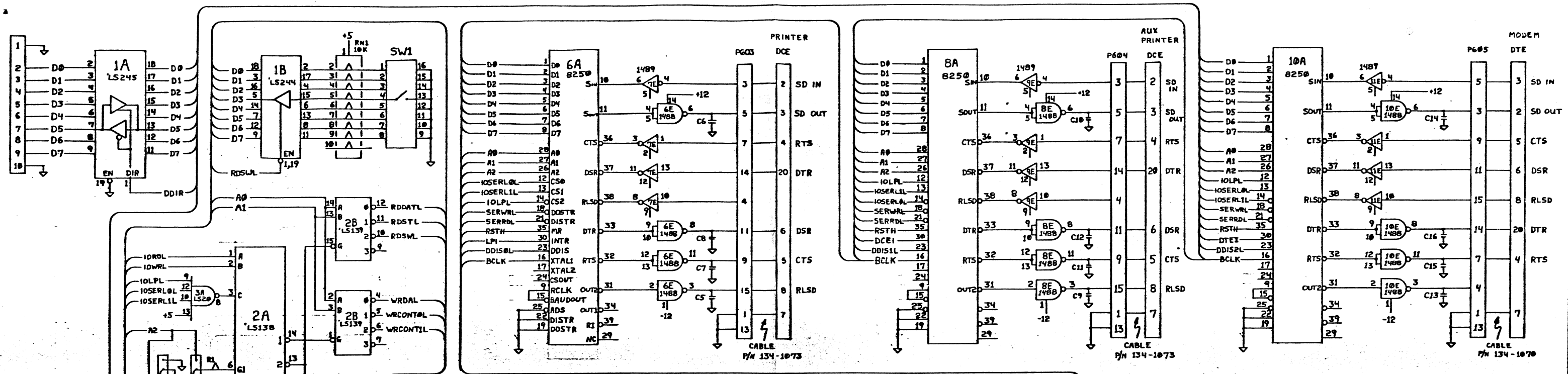


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128K ADD-ON RAM
 10-77318-2 © MMS 1982
 BKS 1/30/82 CHECKED 2/1/82 D/S
 PIN NOS ADDED 2/15/82



NOTES:

- 1) Δ INDICATES A RESISTOR PULL UP TO +5V
- 2) \diamond INDICATES BOTH: A) PULL UP TO +5V B) PULL DOWN TO GROUND
- 3) ALL BYPASS CAPS = .01 μ F UNLESS OTHERWISE SPECIFIED

RESISTOR VALUES:	CAP VALUES:
R1 - 4.7K	C1 - 3.3 μ F
R2 - 4.7K	C2 - 3.3 μ F
R3 - 10K	C3 - 3.3 μ F
R4 - 10K	C4 - 3.3 μ F
R5 - 10K	C5 TO C16 - 330 μ F
R6 - 4.7K	
R7 - 4.7K	
R8 - 4.7K	

- SPARES:
- 1 74LS14
 - 1 74LS00
 - 2 74LS00
 - 4 74LS00

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CONTRACT NO.		MAGNOLIA MICROSYSTEMS	
APPROVALS	DATE	SASI BUS INTERFACE CARD	
5 McCUTCHEN	7-06-82	WITH (3) RS232 PORTS	
CHESTER	7-13-82	SIZE	FORM NO.
		D	77320
		SCALE	N/F

MAGNOLIA MICROSYSTEMS

16K-Byte Add-on RAM Card for the '89

NOTE

Use of this 16K RAM extension requires the use of either:

- 1) Magnolia Microsystems' CP/M Modification v2.2 with a memory mapping prom (U517) not marked "42A" or "42B"
- 2) A Z-89-FA, Z-89-GA, or Z-89-81 model, or
- 3) A '89 with the Z88-7 upgrade kit installed.

If you have Magnolia Microsystems' CP/M 2.2 with an earlier version PROM, contact your dealer or Magnolia Microsystems for a replacement. Your CP/M Serial Number will be required.

If you have Magnolia Microsystems' CP/M v1.42 or 1.44 you must update to CP/M 2.2 before using this board. Order the update (and new PROM if needed) directly from Magnolia Microsystems. Again, you must be a registered CP/M 1.4 user and your serial number must be furnished.

INSTALLATION INSTRUCTIONS

Tilt back the cabinet shell of your '89. (Instructions for cabinet removal can be found on page 3-2 of your Heathkit Manual.)








Read the "caution" in your Heathkit (Zenith) Operations/Service Manual on page 4-2 in regards to handling RAM chips.

Use of the RAM board requires that the chip at U562 on your CPU card be a 74S132. If your CPU board uses an LS part, replace it with the enclosed 74S132.

Carefully remove RAM chip U549 from the CPU card (the upper left RAM chip) and save it in the black conductive foam.

Plug the add-on RAM board onto P503 and P509 of the CPU board, then plug the ribbon cable into the U549 IC socket.

Reconfigure your programming straps as follows:

<u>Z-89</u>			<u>Z-89-1 (FCC model)</u>		
<u>Jumper</u>	<u>Position</u>	<u>Pictorial</u>	<u>Jumper</u>	<u>Position</u>	<u>Pictorial</u>
JJ504	B		JJ503	B	
JJ503	0	 *	JJ502	1	
JJ502	1		JJ501	1	
JJ501	1				

*The JJ503 strap is replaced with a jumper wire to P508-17 with the 89-7 upgrade kit, and is missing on -FA and -GA machines.

Installation is now complete. Turn the unit on and verify that it is working properly by running the Memory Test on page 3-3 of the Operations/Service Manual. The Result should be LWA=377377 (FFFF hex). HDOS should now sign on as "56K."

USE "MOVCPM 64 *" to generate a 64K CP/M system and "SYSGEN" disks to be used in the 64K machine.