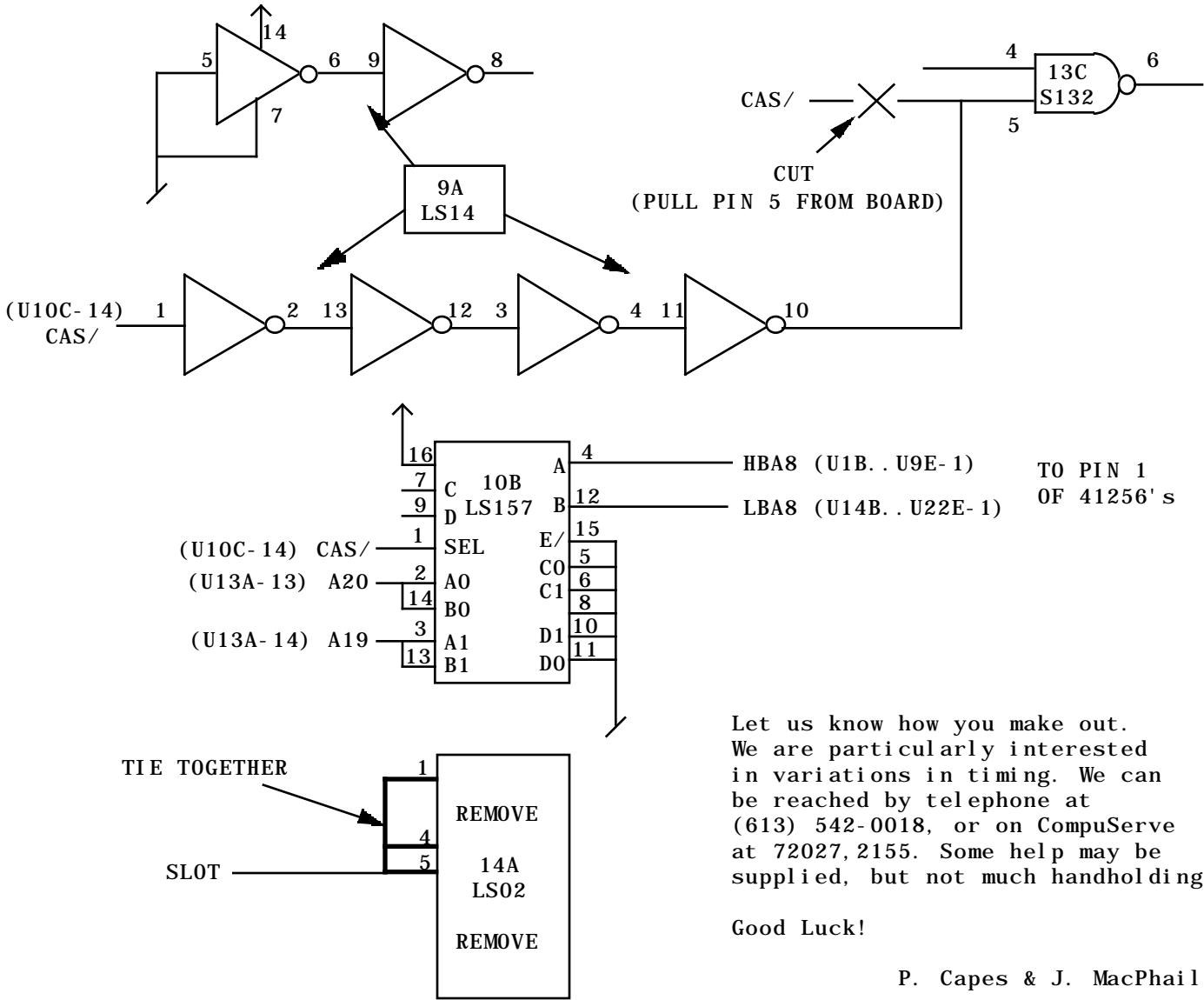
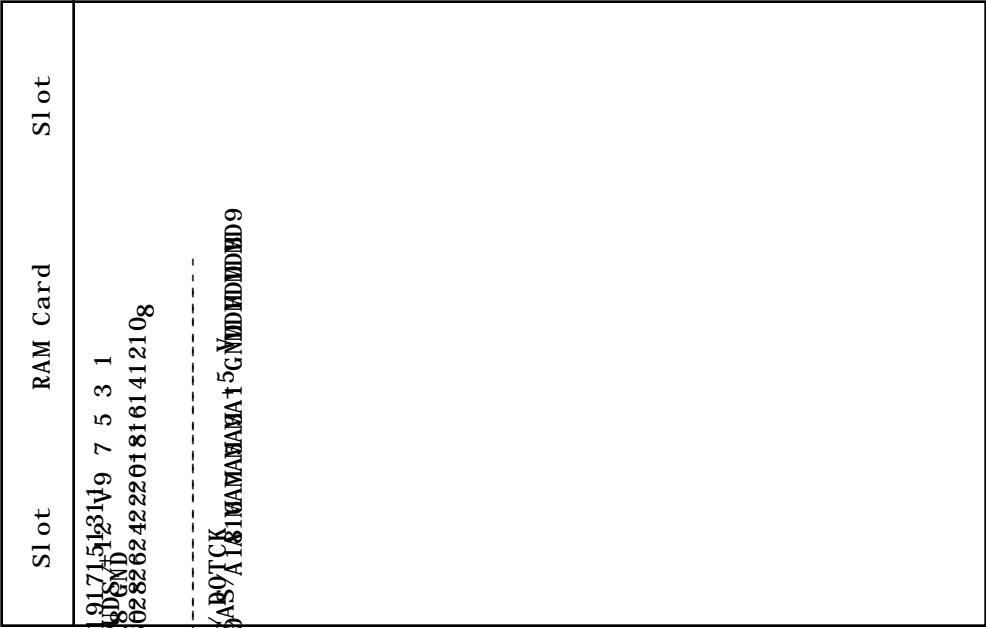


Lisa 512K Ram board - Upgrading to 2M.

- Desolder 72 4564 Ram chips. Board is easily damaged by pointy instruments. You will need LOTS of heat for the power supply pins. Find someone with a desoldering station.
- Desolder U14A - 74LS02 and pin 5 of U13C - 74S132.
- Solder in 72 41256 Ram Chips. Use sockets if you care to. Only 150ns chips have been tried. 200ns will probably work. Solder in a 74LS14 as U9A, and a 74LS157 as U10B.
- Wire all the High Byte pin 1's together, all the Low Byte Pin 1's together.
- Connect the rest of the circuitry as shown below. Pull pin 5 of U13C out of the board so you can connect to the chip only. The hole is a feedthrough, so hacking the traces is inadvisable.
- Jumper pins 1,4, and 5 of the missing U14A. This enables BDSL (Board select) always when in the Mem1 slot, never in the Mem2 slot, hence the board only works in Mem1.
- It will probably be useful to know that pulling pin 118 of the I/O board low generates a level 7 interrupt, and there is a service mode which is entered with Control-S from the boot-error mode. (Where you are after you try to boot a floppy with none in the drive)
- (JDM 90/01/10) Note that you can save some ram chips by disabling the parity. This would require 64 chips to give 2Mb.



Lisa Memory Card Connector Assignment



NOTES	
Example	Meaning
+	Indicates no connection. There are <u>NO FOUR WAY CONNECTIONS</u> on these dwgs.
↑	Indicates connection to Vcc (+5 V).
↓	Indicates connection to logic ground.
RESET/	Trailing slash indicates signal is active low.
	Power supply connections and decoupling not shown.
!	Nothing is ever what it seems. Use these drawings at your own risk!

Lisa 512K Dynamic RAM Board	
Notes	
NTS	Dwg. 3 of 3
pc/jdm	June 23, 1986