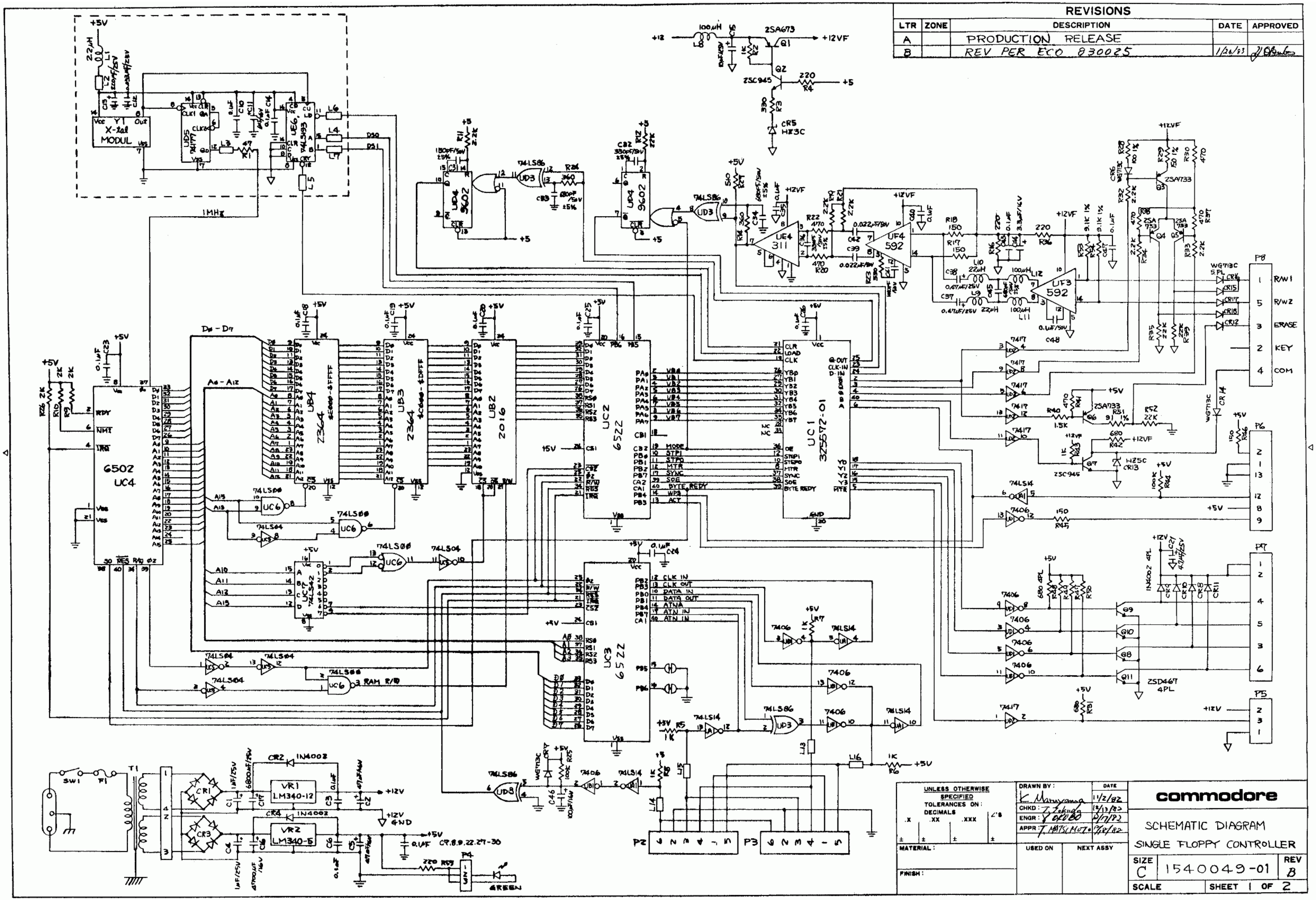
CBM FLOPPY DRIVE 1541

Model	System	Board-Description
VIC 1541	1540001-01	Very early version, long board.
	1540001-03	As above, only the ROMs are different.
	1540008-01	
1541	1540048-01	Shorter board with a 40 pin gate array, Alps mech.
	1540048-03	As above, but Newtronics mech.
	1540049	Similar to above
	1540050	Similar to above, Alps mechanism.
SX 64	250410-01	Design most similar to 1540048-01, Alps mechanism.
1541	251777	Function of bridge rects. reversed, Newtronics mech.
	251830	Same as above
1541 A	250442-01	Alps or Newtronics drive selected by a jumper.
1541 A2	250446-01	A 74LS123 replaces the 9602 at UD4.
1541 B	250448-01	Same as the 1541C, but in a case like the 1541.
1541 C	250448-01	Short board, new 40/42 pin gate array, 20 pin gate array and a R/W hybrid chip replace many components. Uses a Newtronics drive with optical trk 0 sensor.
1541C	251854	As above, single DOS ROM IC, trk 0 sensor, 30 pin IC for R/W ampl & stepper motor control (like 1571).
1541-II	A complete redesign using the 40 pin gate array from the 1451C and a Sony R/W hybrid, but not the 20 pin gate array, single DOS ROM IC.	
NOTE:	These system boards are the 60 Hz versions. The -02 and -04 boards are probably the 50 Hz versions.	

The ROMs appear to be completely interchangeable. For instance, the first version of ROM for the 1541-II contained the same code as the last version of the 1541. I copy the last version of the 1541-II ROM into two 68764 EPROMs and use them in my original 1541 (long board). Not only do they work, but they work better than the originals.

REVISIONS

LTR	ZONE	DESCRIPTION	DATE	APPROVED
A		PRODUCTION RELEASE		
B		REV PER ECO 830025	1/26/83	[illegible]

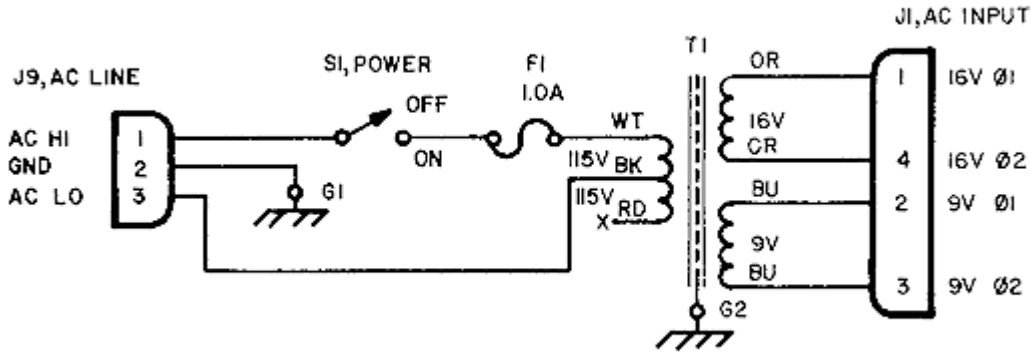


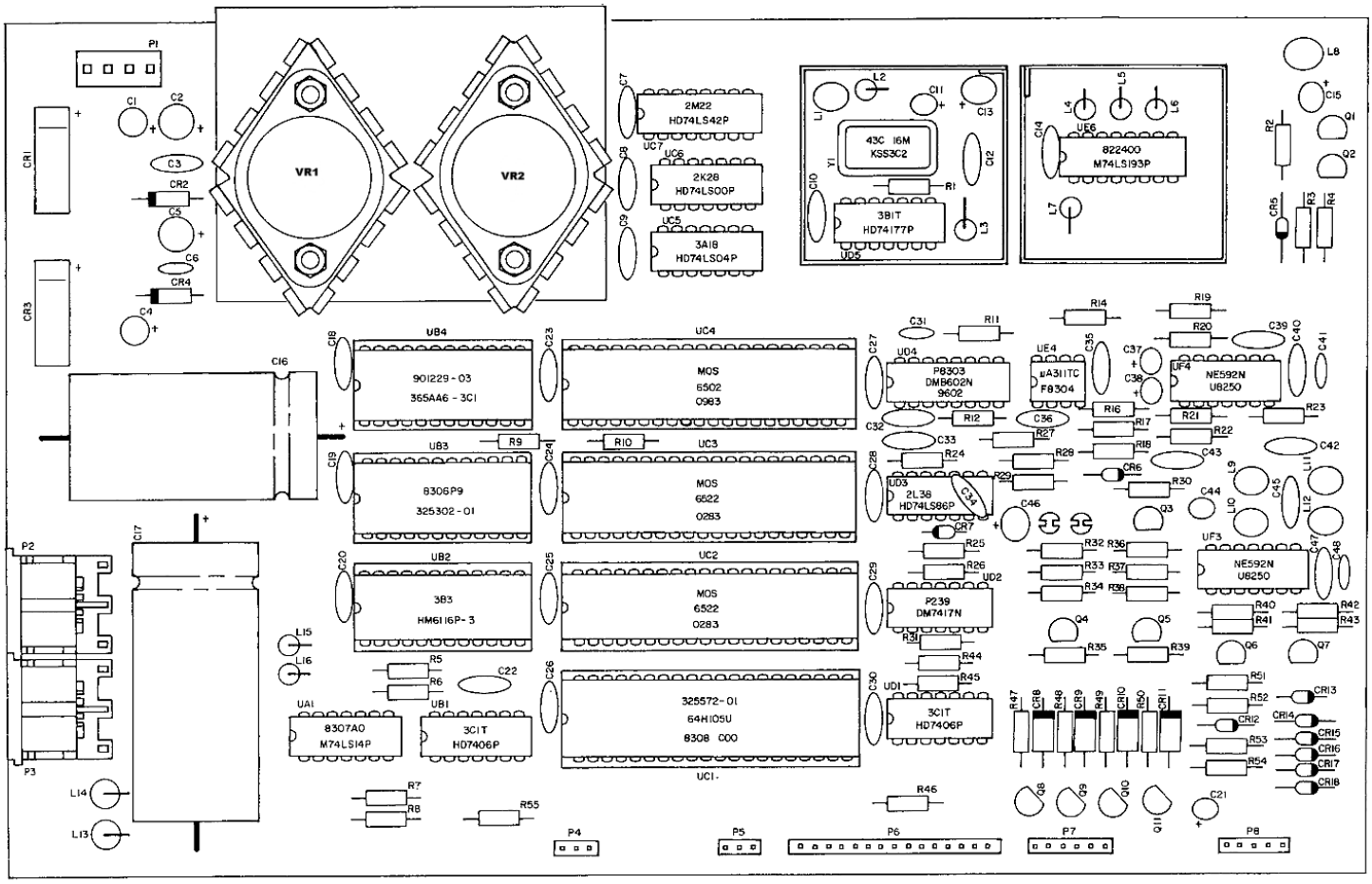
UNLESS OTHERWISE SPECIFIED TOLERANCES ON:	DRAWN BY: K. Maruyama	DATE 11/2/82
DECIMALS .X .XX .XXX ∠'s	CHKD: T. Tokuda	11/13/82
	ENGR: Y. OKUBO	11/17/82
	APPR: T. MATSUMOTO	11/18/82
MATERIAL:	USED ON	NEXT ASSY
FINISH:		

commodore

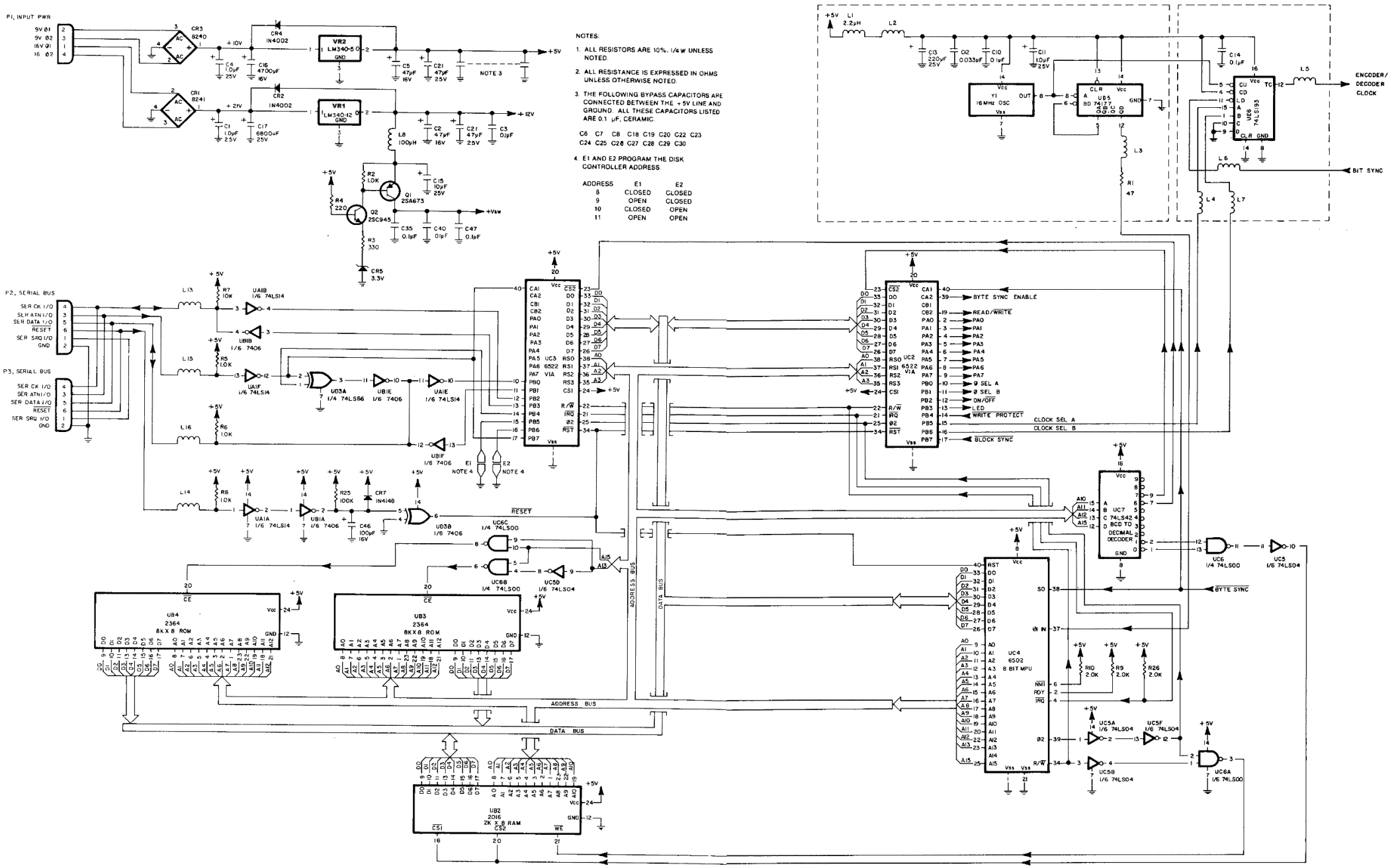
SCHEMATIC DIAGRAM
SINGLE FLOPPY CONTROLLER

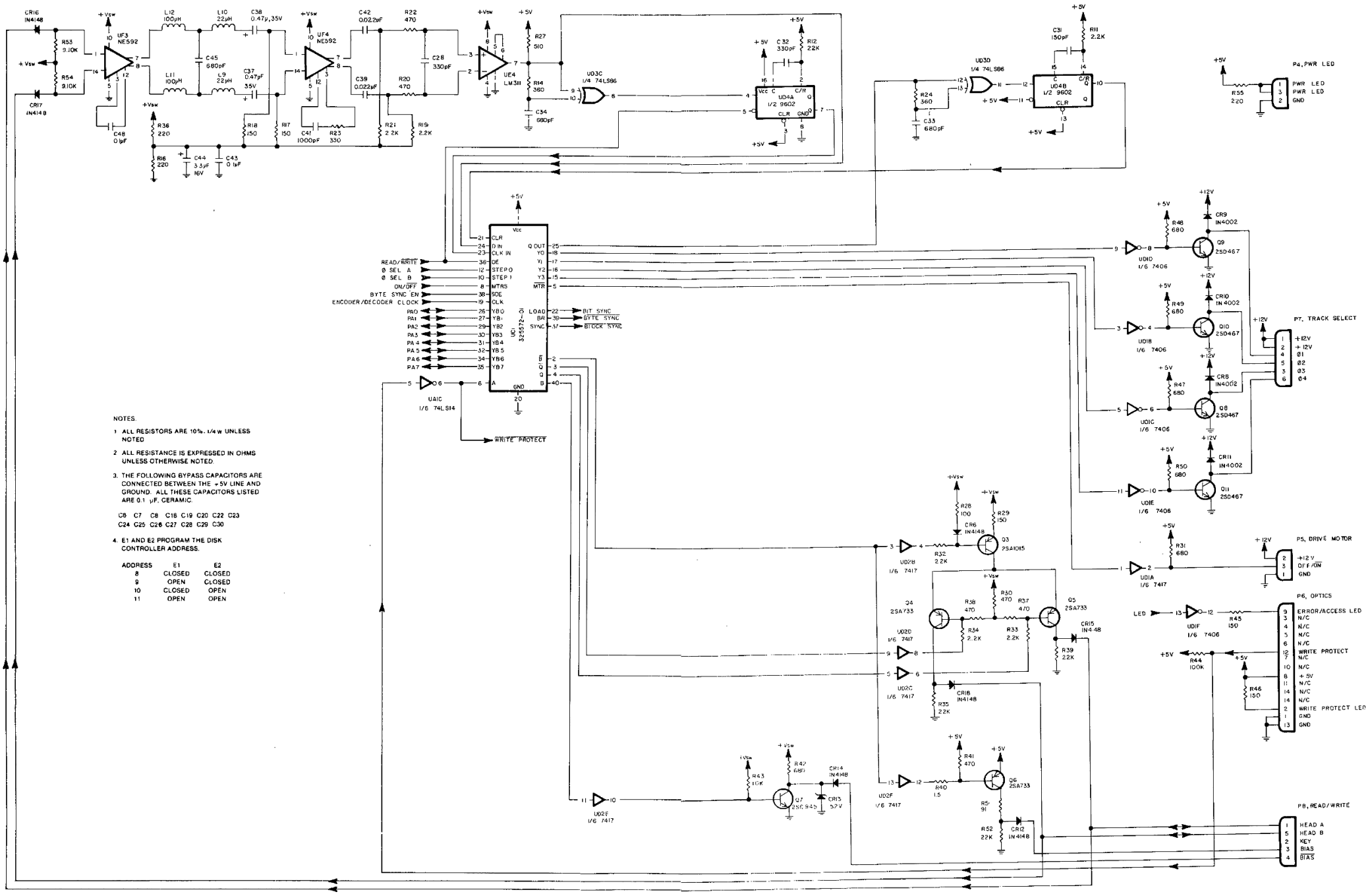
SIZE		REV
C	1540049-01	B
SCALE	SHEET 1 OF 2	





Disk controller parts layout, Model 1541.


P1, INPUT PWR
9V Ø1
9V Ø2
16V Ø1
16 Ø2
CR3 8240
CR1 8241
CR4 IN4002
CR2 IN4002
+10V
+21V
VR2 LM340-5.0
VR1 LM340-12
GND
+5V
+12V
C4 1.0µF 25V
C16 4700µF 16V
C1 1.0µF 25V
C17 6800µF 25V
C5 47µF 16V
C21 47µF 25V
C2 47µF 16V
C3 0.1µF
NOTE 3
L8 100µH
R2 1.0K
R4 220
Q1 2SA673
Q2 2SC945
R3 330
CR5 3.3V
C15 10µF 25V
C35 0.1µF
C40 0.1µF
C47 0.1µF
+Vaw
NOTES:
1. ALL RESISTORS ARE 10%, 1/4 W UNLESS NOTED.
2. ALL RESISTANCE IS EXPRESSED IN OHMS UNLESS OTHERWISE NOTED.
3. THE FOLLOWING BYPASS CAPACITORS ARE CONNECTED BETWEEN THE +5V LINE AND GROUND. ALL THESE CAPACITORS LISTED ARE 0.1 µF, CERAMIC.
C6 C7 C8 C18 C19 C20 C22 C23
C24 C25 C26 C27 C28 C29 C30
4. E1 AND E2 PROGRAM THE DISK CONTROLLER ADDRESS.
ADDRESS E1 E2
8 CLOSED CLOSED
9 OPEN CLOSED
10 CLOSED OPEN
11 OPEN OPEN
+5V L1 2.2µH
L2
C13 220µF 25V
C2 0.033µF
C10 0.1µF
C11 10µF 25V
C14 0.1µF
Y1 16 MHz OSC
UD5 BD 74177
UE6 74LS193
L5
ENCODER/ DECODER CLOCK
BIT SYNC
L3
R1 47
L6
L4
L7
P2, SERIAL BUS
SER CK I/O
SER ATN I/O
SER DATA I/O
RESET
SER SRQ I/O
GND
P3, SERIAL BUS
L13
L15
L16
L14
R7 10K
R5 1.0K
R6 1.0K
R8 1.0K
R25 100K
C46 100pF 16V
CR7 IN4148
UA1B 1/6 74LS14
UB1B 1/6 7406
UA1F 1/6 74LS14
UD3A 1/4 74LS86
UB1E 1/6 7406
UA1E 1/6 74LS14
UB1F 1/6 7406
E1 NOTE 4
E2 NOTE 4
UA1A 1/6 74LS14
UB1A 1/6 7406
UD3B 1/6 7406
UC6C 1/4 74LS00
UC6B 1/4 74LS00
UC5D 1/6 74LS04
UC1 6522 VIA
BYTE SYNC ENABLE
READ/WRITE
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
Ø SEL A
Ø SEL B
ON/OFF
LED
WRITE PROTECT
CLOCK SEL A
CLOCK SEL B
BLOCK SYNC
UC7 74LS42 BCD TO DECIMAL DECODER
UC6 1/4 74LS00
UC5 1/6 74LS04
UB4 2364 8K X 8 ROM
UB3 2364 8K X 8 ROM
UB2 2016 2K X 8 RAM
ADDRESS BUS
DATA BUS
UC4 6502 8 BIT MPU
BYTE SYNC
R10 2.0K
R9 2.0K
R26 2.0K
UC5A 1/6 74LS04
UC5F 1/6 74LS04
UC5B 1/6 74LS04
UC6A 1/6 74LS00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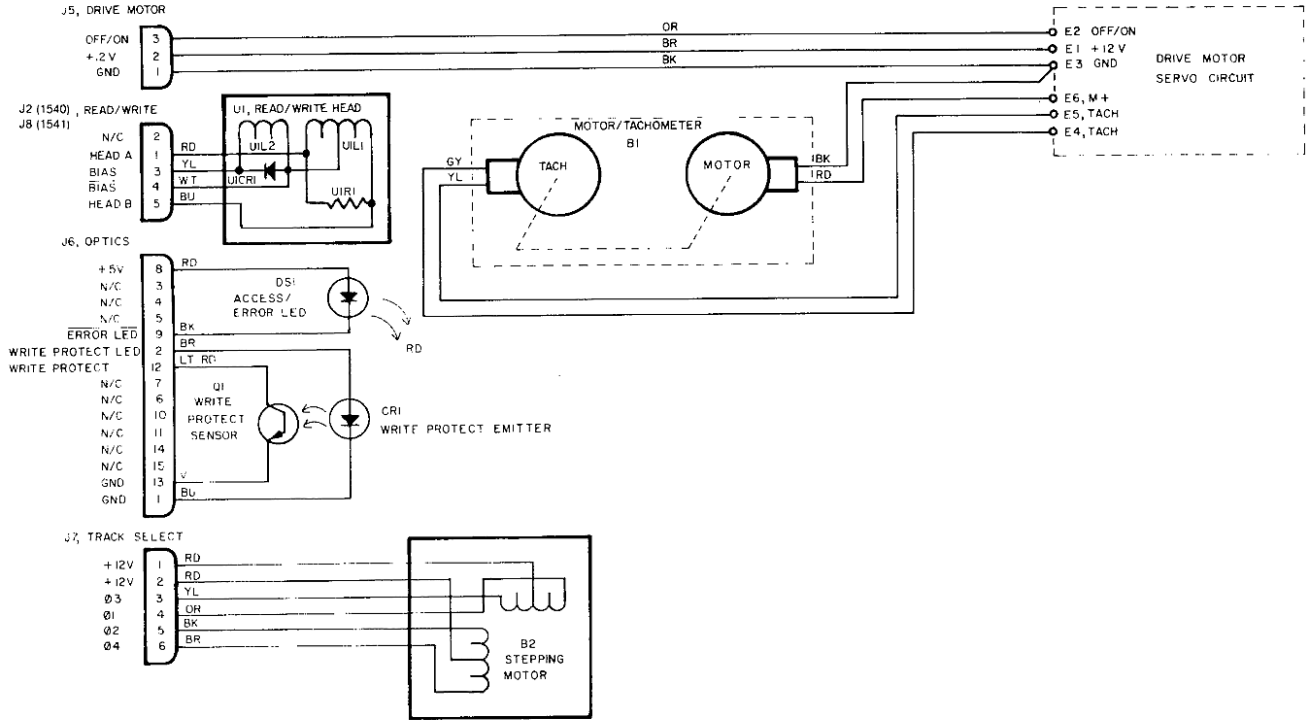
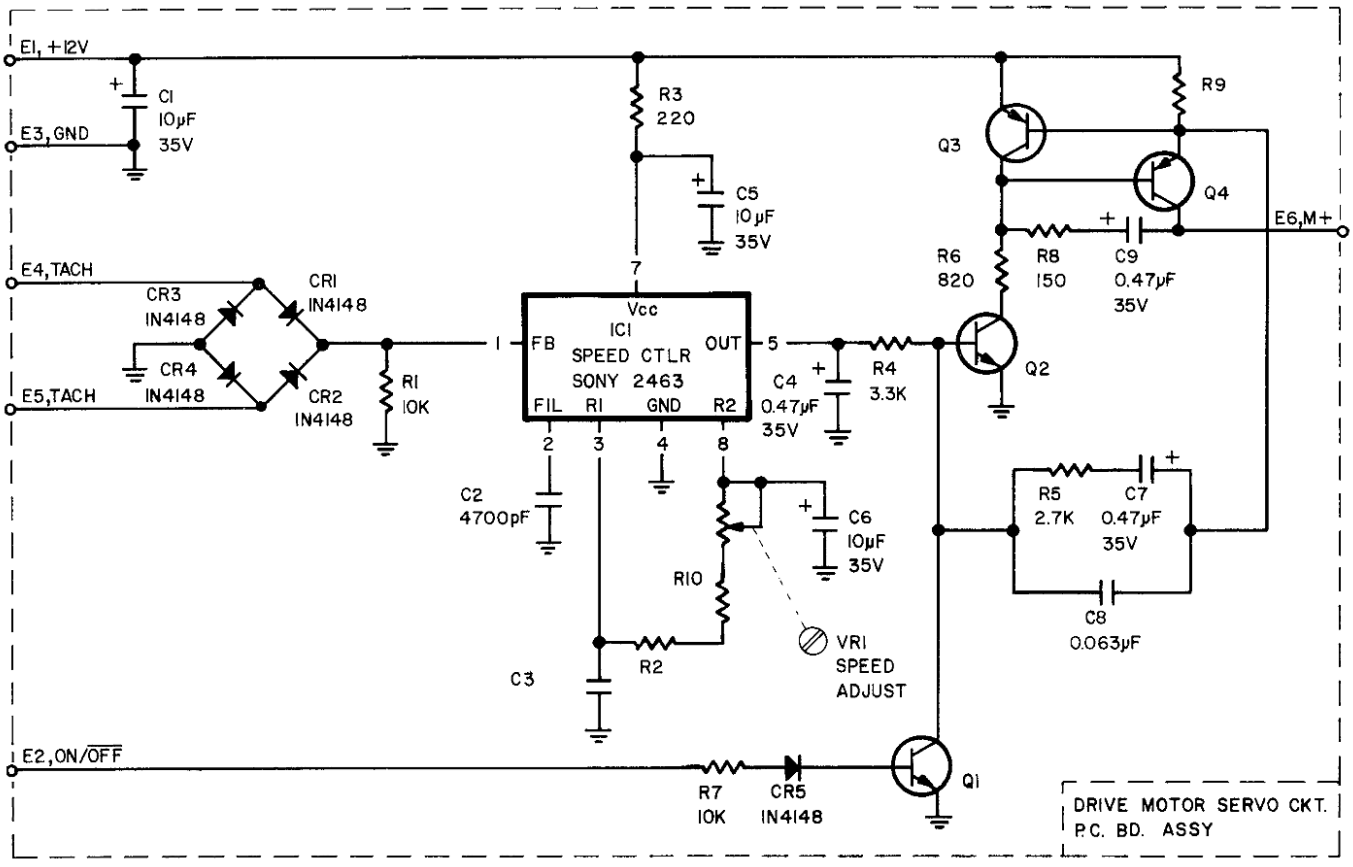
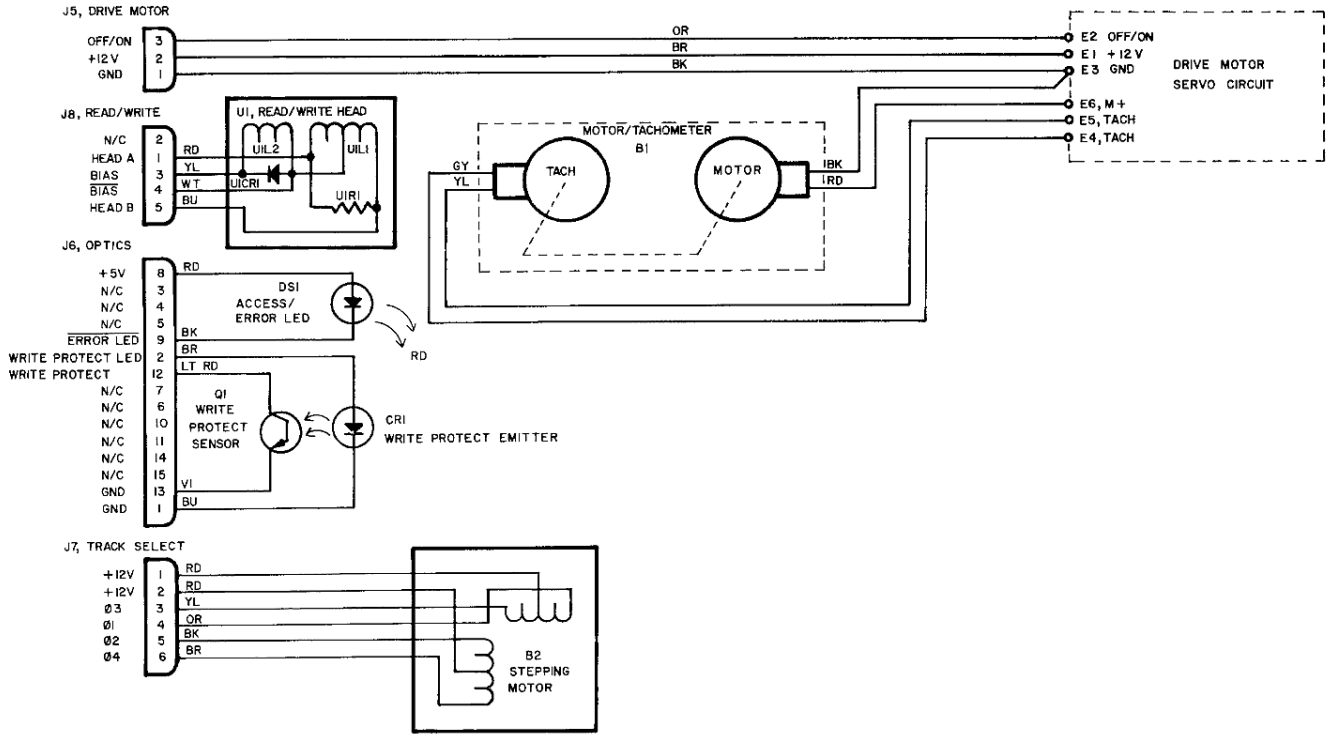
C24 C25 C26 C27 C28 C29 C30
4. E1 AND E2 PROGRAM THE DISK CONTROLLER ADDRESS.
ADDRESS E1 E2
8 CLOSED CLOSED
9 OPEN CLOSED
10 CLOSED OPEN
11 OPEN OPEN
P4, PWR LED
PWR LED
PWR LED
GND
P7, TRACK SELECT
+12V
+12V
Ø1
Ø2
Ø3
Ø4
P5, DRIVE MOTOR
+12V
OFF/ON
GND
P6, OPTICS
ERROR/ACCESS LED
N/C
WRITE PROTECT
+5V
WRITE PROTECT LED
GND
P8, READ/WRITE
HEAD A
HEAD B
KEY
BIAS
BIAS
WRITE PROTECT
BIT SYNC
BYTE SYNC
BLOCK SYNC
READ/WRITE
Ø SEL A
Ø SEL B
ON/OFF
BYTE SYNC EN
ENCODER/DECODER CLOCK



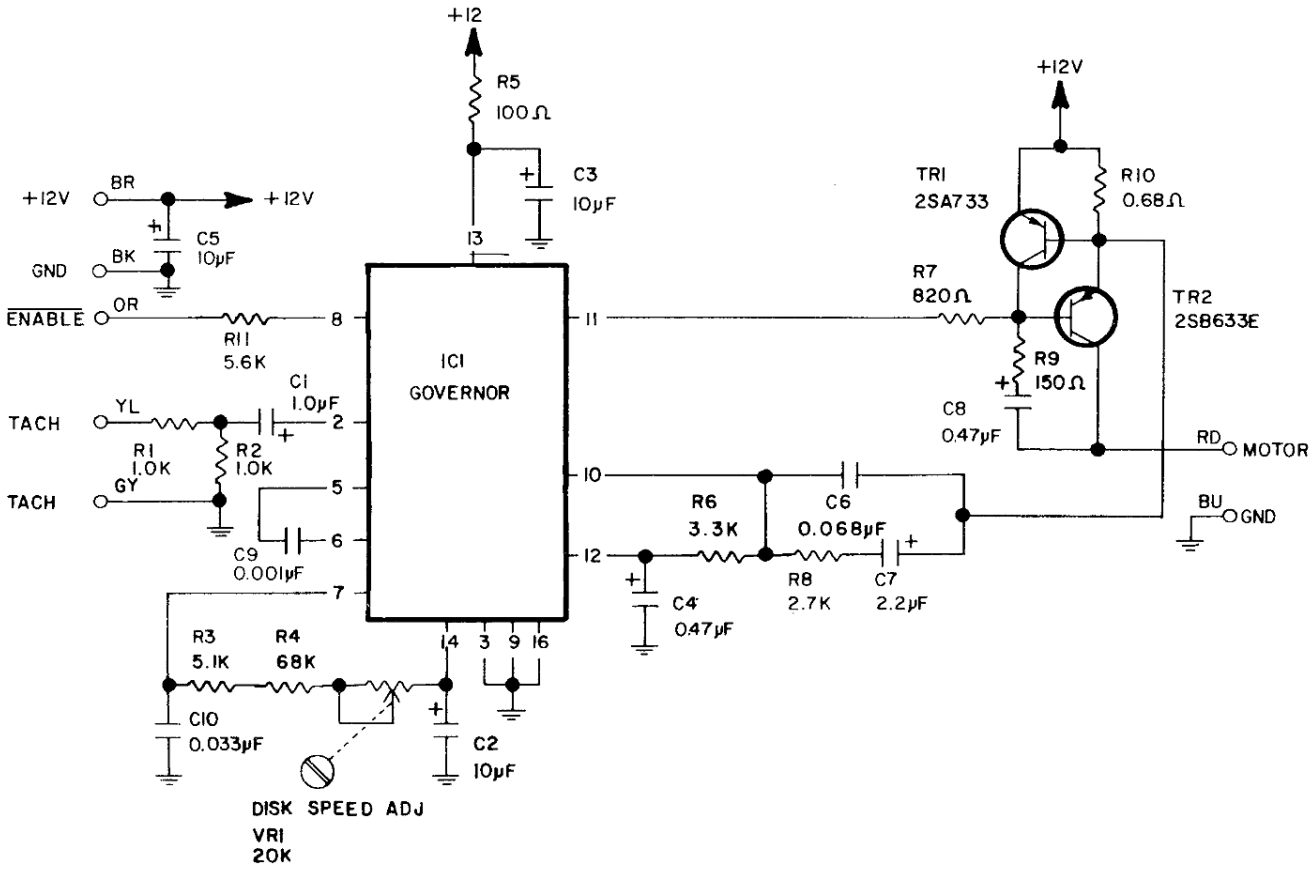
Drive unit schematic, Models 1540 and 1541.



Drive motor servo circuit, Models 1540 and 1541.



Drive unit schematic, Model 1542.



Drive motor servo circuit, Model 1542.