

REVISIONS					
ZONE	APP.	DESCRIPTION	BY	DATE	APPROVAL
D		REV PER PLO # 1397	LP	2-13-74	DRZ
E		REV PER PLO # 1489	LP	3-25-74	DRZ
F		REV PER PLO # 1804	RL	8-24-74	DRZ
G		ARTWK CHG PER LITO INSERT DESIGN. PLO # 3950	VL	6-13-78	SS
H		CUT CLOSE PADS AWAY FROM TRACES ON ARTWK. PLO # 4523	AW	6-14-78	RJ //
J		REV CHG ONLY PLO # 4773	GK	6-15-80	SS
K		DELE UNUSED FINGERS #410	GK	7-16-80	BS

NOTES:

- ALL INTEGRATED CIRCUITS (U) REFERENCE DESIGNATIONS ARE TO BE PREFIXED SN AND SUFFIXED N, EXCEPT DM8200 COMPARATORS.
- ALL RESISTOR VALUES ARE IN OHMS, 1/4 WATT, 5%. ALL CAPACITORS ARE 50V.
- THE FOUR MOST SIGNIFICANT BITS OF THE 6-BIT DEVICE UNIT ADDRESS ARE GENERATED BY INSERTION OR OMISSION OF THE FOUR JUMPER WIRES SHOWN. IF THE JUMPER IS OMITTED, THAT PARTICULAR BIT OF THE ADDRESS IS A ZERO. IF THE JUMPER IS INSERTED, THAT BIT IS A ONE. THE DEVICE UNIT ADDRESS FOR A SINGLE DISC UNIT MUST BE DIVISIBLE BY FOUR (OCTAL). IF SEVERAL DISC UNITS (UP TO FOUR) ARE OPERATED FROM ONE CONTROLLER CARD, THE FOUR DEVICE ADDRESSES CHOSEN MUST BE SEQUENTIAL WITH THE LOWEST ADDRESS DIVISIBLE BY FOUR (OCTAL). SEE SHEET 4.
- THE 3-BIT DEVICE CHANNEL ADDRESS IS GENERATED BY INSERTION OR OMISSION OF THREE JUMPER WIRES AS DESCRIBED IN NOTE #3, SEE SHEET 4.
- THE DATA FORMAT TO AND FROM THE DISC CONSISTS OF A CLOCK PULSE EVERY 0.7 SECS. IF THE DATA BIT IS A "ONE" THERE IS A DATA PULSE MIDWAY BETWEEN THE CLOCK PULSES. IF THE DATA BIT IS A "ZERO" THERE IS NO DATA PULSE BETWEEN THE CLOCK PULSES. THE WRITE DATA TO THE DISC IS A COMPOSITE CLOCK/DATA SIGNAL. THE READ DATA FROM THE DISC IS SEPARATED INTO SEPARATE SIGNALS WITHIN THE DISC. FLIP-FLOP U8 IS SYNCHRONOUSLY SET BY EVERY READ CLOCK SIGNAL. THIS FLIP-FLOP IS ASYNCHRONOUSLY RESET. IF A "ONE" (GROUND) OCCURS ON THE READ DATA LINE BETWEEN THE CLOCK PULSES.
- ALL SIGNALS TO AND FROM THE DISC ARE GROUND TRUE.
- STATUS INT LE OCCURS WHENEVER ONE OF THE DISCS BEING POLLED GOES FROM A NOT READY CONDITION (ZERO) AT THE PREVIOUS POLLING TIME TO A READY CONDITION (ONE) AT THE PRESENT POLLING TIME. THIS OCCURS AT THE SUCCESSFUL COMPLETION OF A SEEK OPERATION, OR WHEN A DISC DRIVE BECOMES READY AFTER TURN ON, OR WHEN A "SEEK INCOMPLETE" STATUS IS SENT FROM THE DISC.
- THE ORIGIN OF THE WRITE DATA SIGNAL IS DEPENDENT UPON THE CODING OF THE TWO INPUT LINES, SA AND SB, AS FOLLOWS:

SA	SB	WRITE DATA CONTENT
0	0	ALL ZEROS
0	1	ALL ONES
1	0	DATA REGISTER OUTPUT
1	1	CRC REGISTER OUTPUT

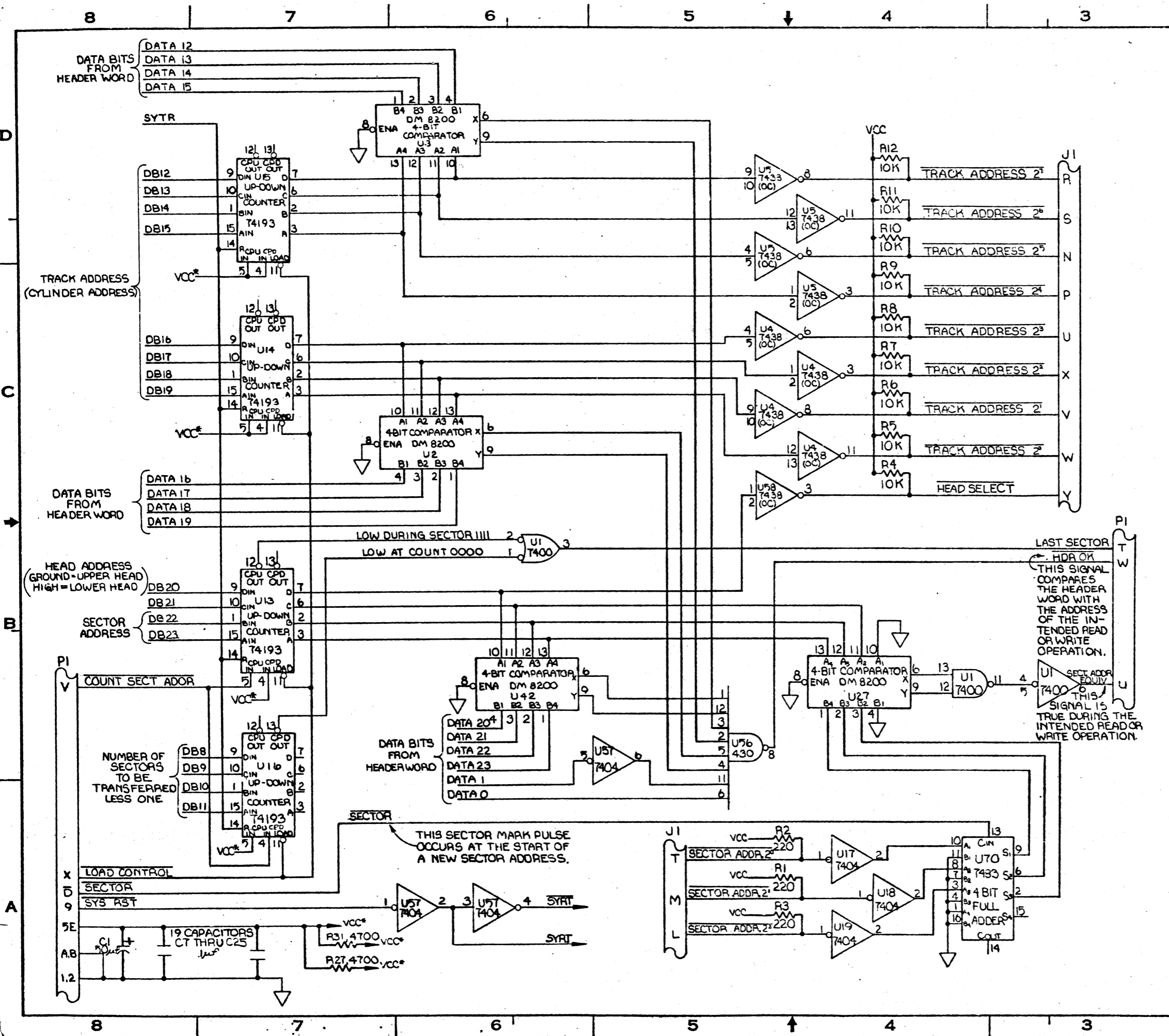
- THE CRC REGISTER OPERATES IN THE FOLLOWING SEQUENCE:
 - FOR WRITING DATA ONTO DISC
 - MODE CONTROL AT 0 TO LOAD ALL ZEROS ONTO CRC REGISTER.
 - MODE CONTROL AT 1 WHILE WRITING 256 DATA WORDS. THIS GENERATES CRC WORD.
 - MODE CONTROL AT 0 TO WRITE CRC WORD ON DISC IN 257TH LOCATION.
 - FOR READING DATA FROM DISC.
 - MODE CONTROL AT 0 TO LOAD ALL ZEROS INTO CRC REGISTER.
 - MODE CONTROL AT 1 WHILE READING ALL 257 WORDS THROUGH CRC REGISTER.
 - MODE CONTROL AT 0. IF DATA TRANSFER WAS O.K., THEN OUTPUT OF CRC REGISTER SHOULD BE ALL ZEROS.
- THIS CARD IS NORMALLY SUPPLIED WITH TRACES INSTEAD OF JUMPER WIRES AT THE FOLLOWING LOCATIONS:

JUMPER COLOR	JUMPERED WITH TRACE	FUNCTION PERFORMED
RED WIRE JUMPER	C-E	GENERATE DEVICE UNIT ADDRESS 24 THRU 27
	K	GENERATE CHANNEL ADDRESS 2

- IF REQUIRED, ADD LINE FILTER CAPACITORS AS SHOWN ON REWORK INSTRUCTION PER PCO 1220.

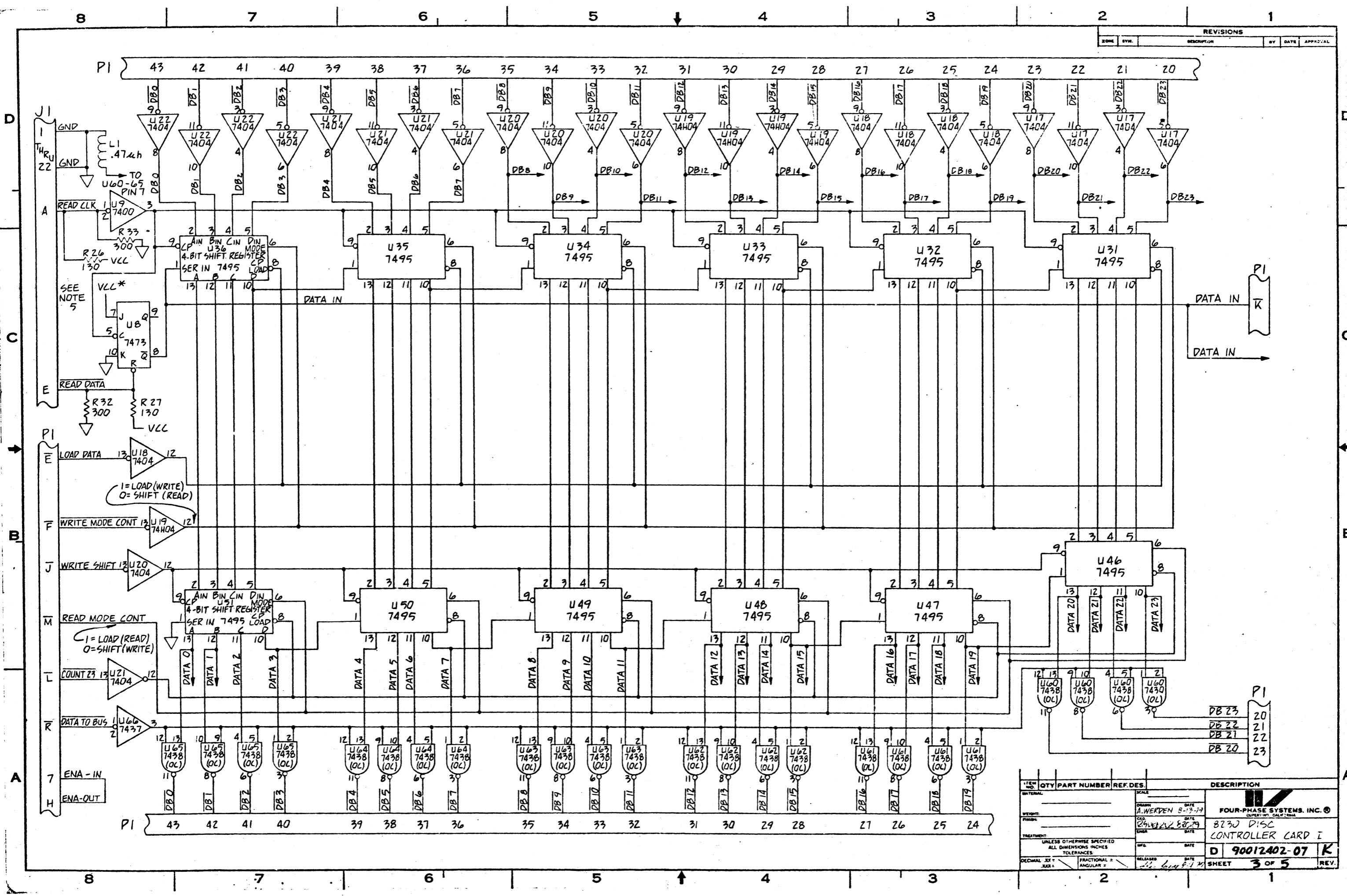
REDRAWN (ALL SHEETS)			
ITEM NO.	QTY	PART NUMBER	REF. DES.
MATERIAL:		SCALE:	DESCRIPTION:
DRAWN:		DATE:	DATE:
ENGR:		DATE:	DATE:
TREATMENT:		DATE:	DATE:
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCHES TOLERANCES:		DATE:	DATE:
DECIMAL XX ±	ANGULAR =	DATE:	DATE:
XX ±	ANGULAR =	DATE:	DATE:
RELEASED:		DATE:	DATE:
SHEET		1 OF 5	REV

REVISIONS				
ZONE	SYM.	DESCRIPTION	BY	DATE



ITEM NO.	QTY	PART NUMBER	REF. DES.	DESCRIPTION

DATE: GAIL K. 8-2-79	SCALE: _____	
DATE: _____	DATE: _____	
		6230 DISK
		CONTROLLER CARD 1
		D 90012402-07
		SHEET 2 OF 5
		REV. K

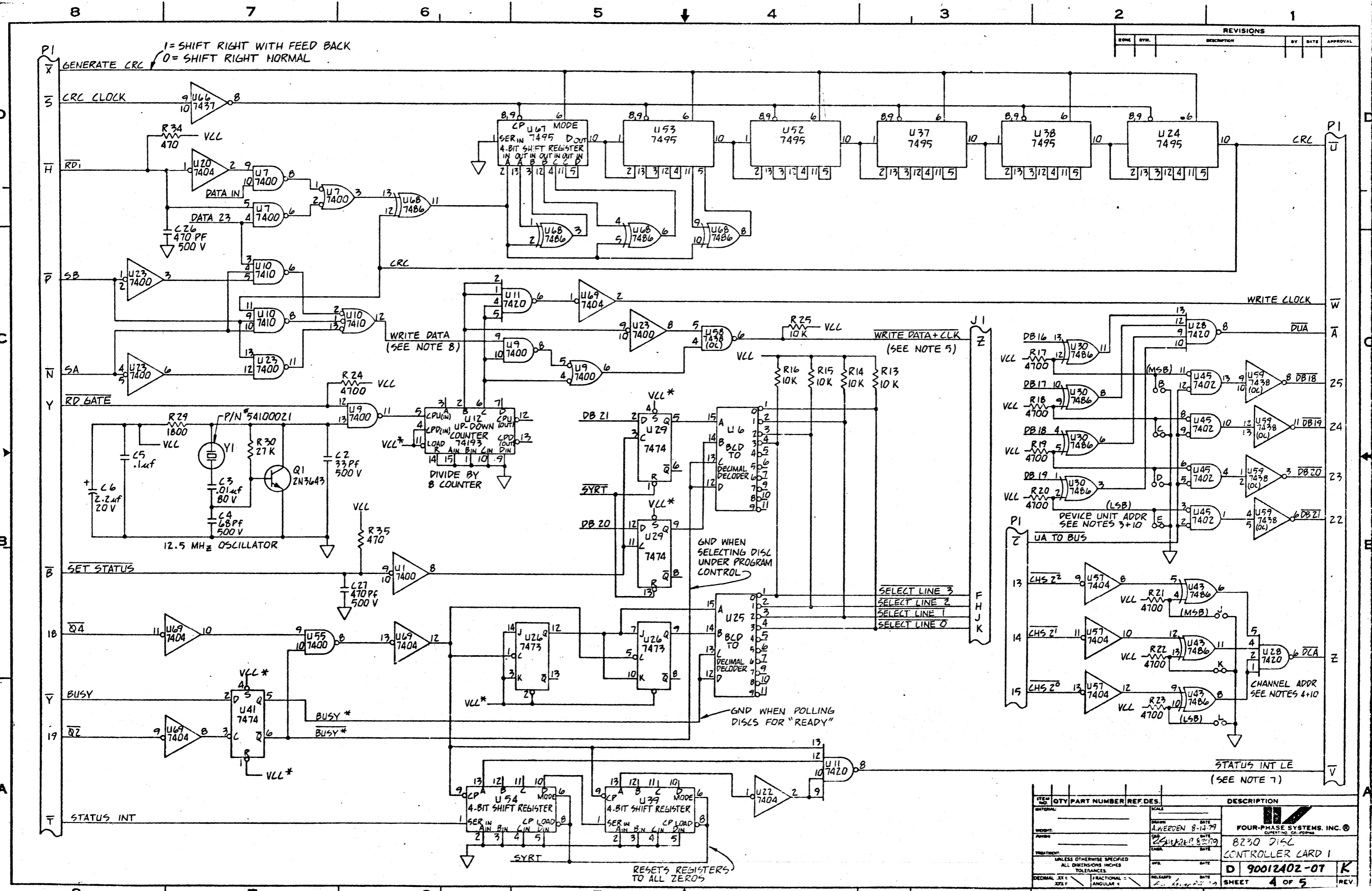


REVISIONS				
ZONE	BY	DESCRIPTION	BY	DATE

ITEM NO.	QTY	PART NUMBER	REF. DES.	DESCRIPTION

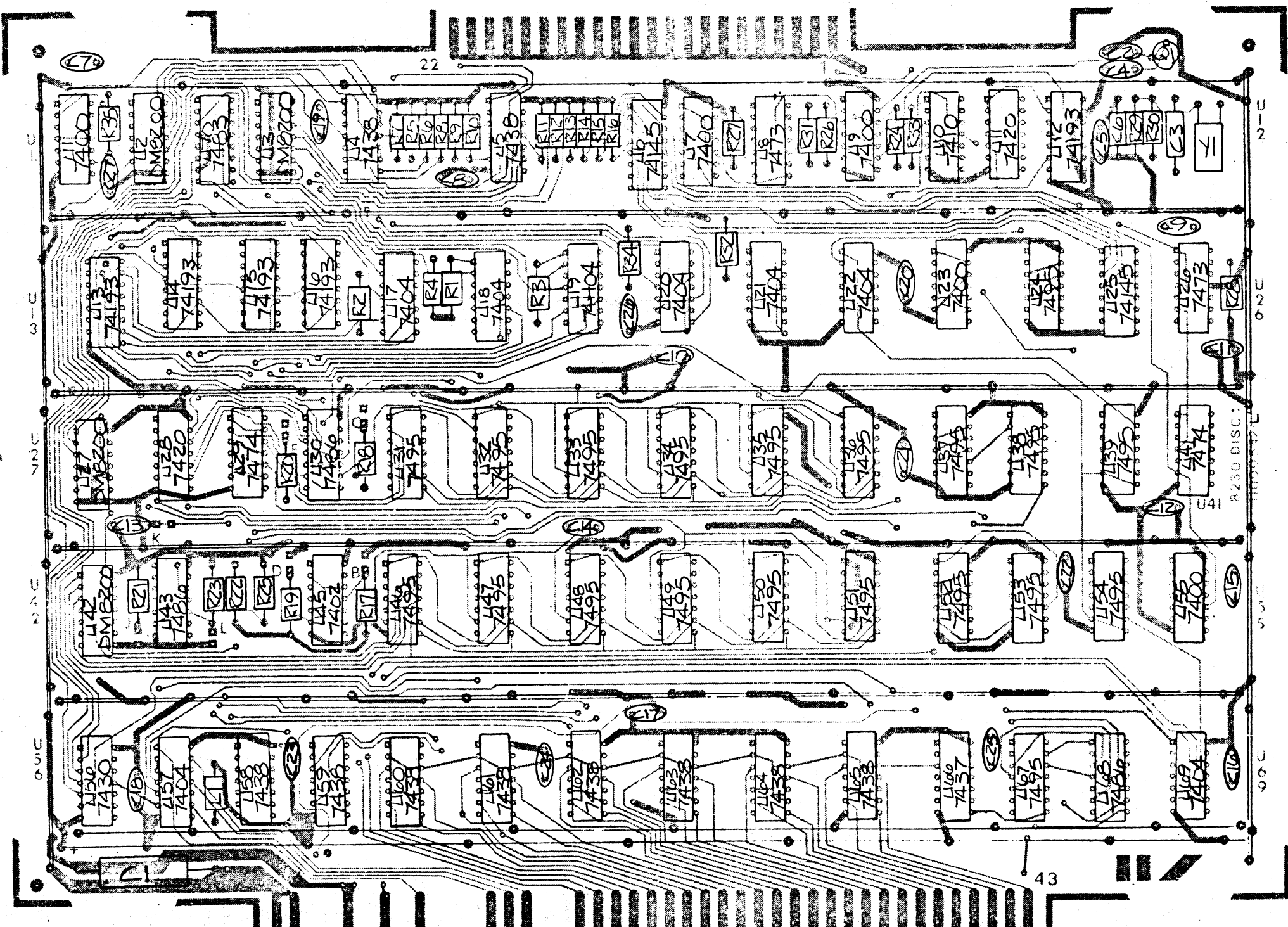
DRAWN: A. WERDEN 8-13-79
 DATE: 8-13-79
 CHECKED: R. W. WILSON 8-20-79
 DATE: 8-20-79
 FOUR-PHASE SYSTEMS, INC.
 8230 DISC CONTROLLER CARD I
 D 90012402-07 K
 SHEET 3 OF 5 REV.

REVISIONS					
ZONE	SYM.	DESCRIPTION	BY	DATE	APPROVAL



ITEM NO	QTY	PART NUMBER	REF. DES.	DESCRIPTION

DRAWN: A. WEEDEN 8-14-79 CHECKED: J. H. HARRIS 8-21-79 DATE: 8-21-79	SCALE: FOUR-PHASE SYSTEMS, INC. 8230 DISC CONTROLLER CARD 1 D 90012402-07 SHEET 4 OF 5
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SCALE _____		 FOUR-PHASE SYSTEMS, INC. ® CUPERTINO, CALIFORNIA	
DRAWN VIKKI	DATE 9-8-78		
CKD <i>Shaw</i>	DATE 10-18-78	90012402-07	
ENGR <i>Shaw</i>	DATE 10-19-78		
MFR <i>Shaw</i>	DATE 10-19-78	SHEET 5 OF 5	