

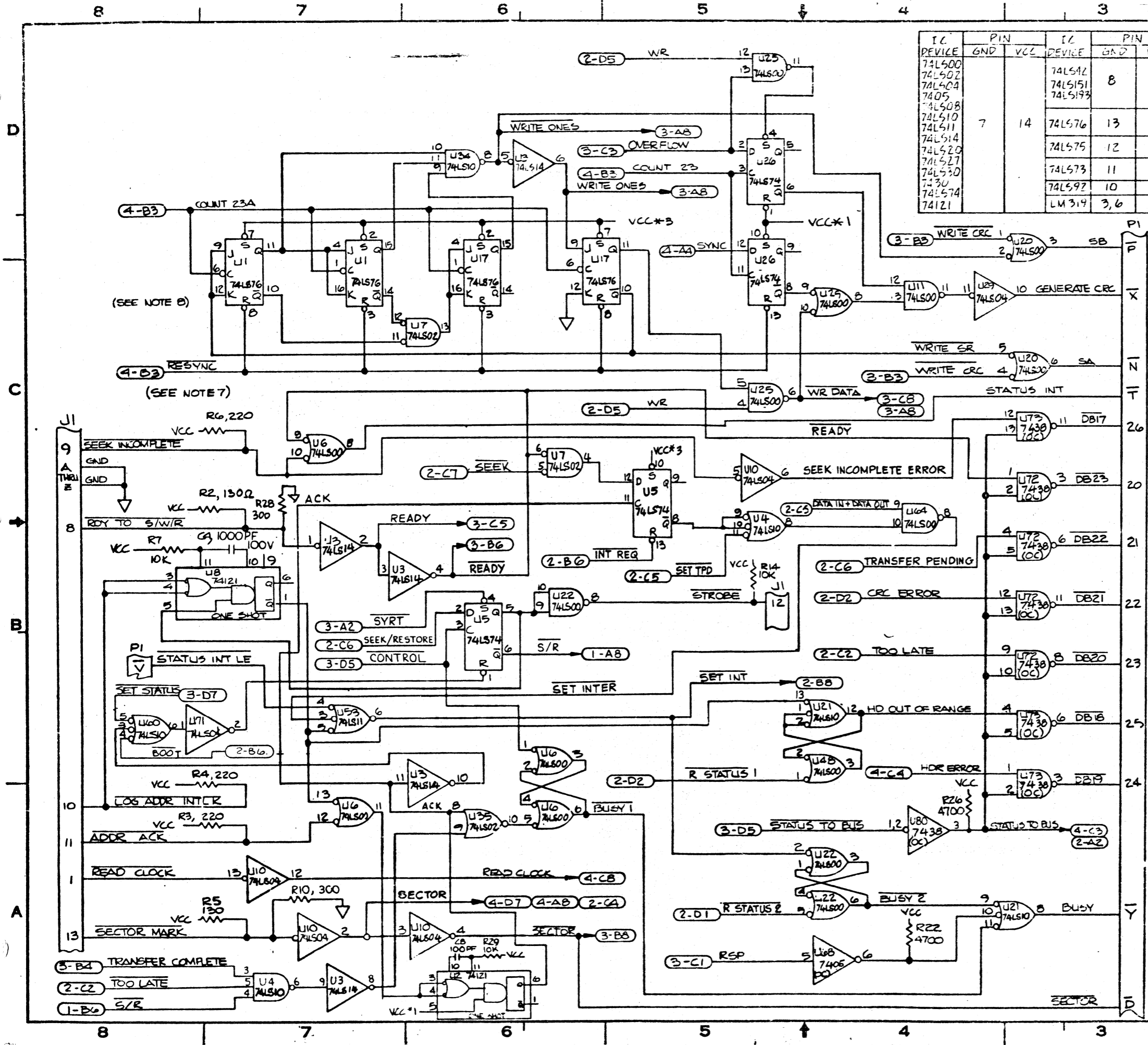
REVISIONS				
REV.	DATE	DESCRIPTION	BY	APPROVAL
A		REL TO PROD. FLOW #5037	HW	

I.C. DEVICE	PIN		I.C. DEVICE	PIN	
	GND	VCC		GND	VCC
74LS00			74LS12	8	16
74LS02			74LS151		
74LS04			74LS193		
7405					
74LS08			74LS76	13	5
74LS10					
74LS11			74LS75	12	5
74LS14					
74LS20			74LS75	12	5
74LS27			74LS73	11	4
74LS30					
7430			74LS97	10	5
74LS74					
74121			LM319	3,6	

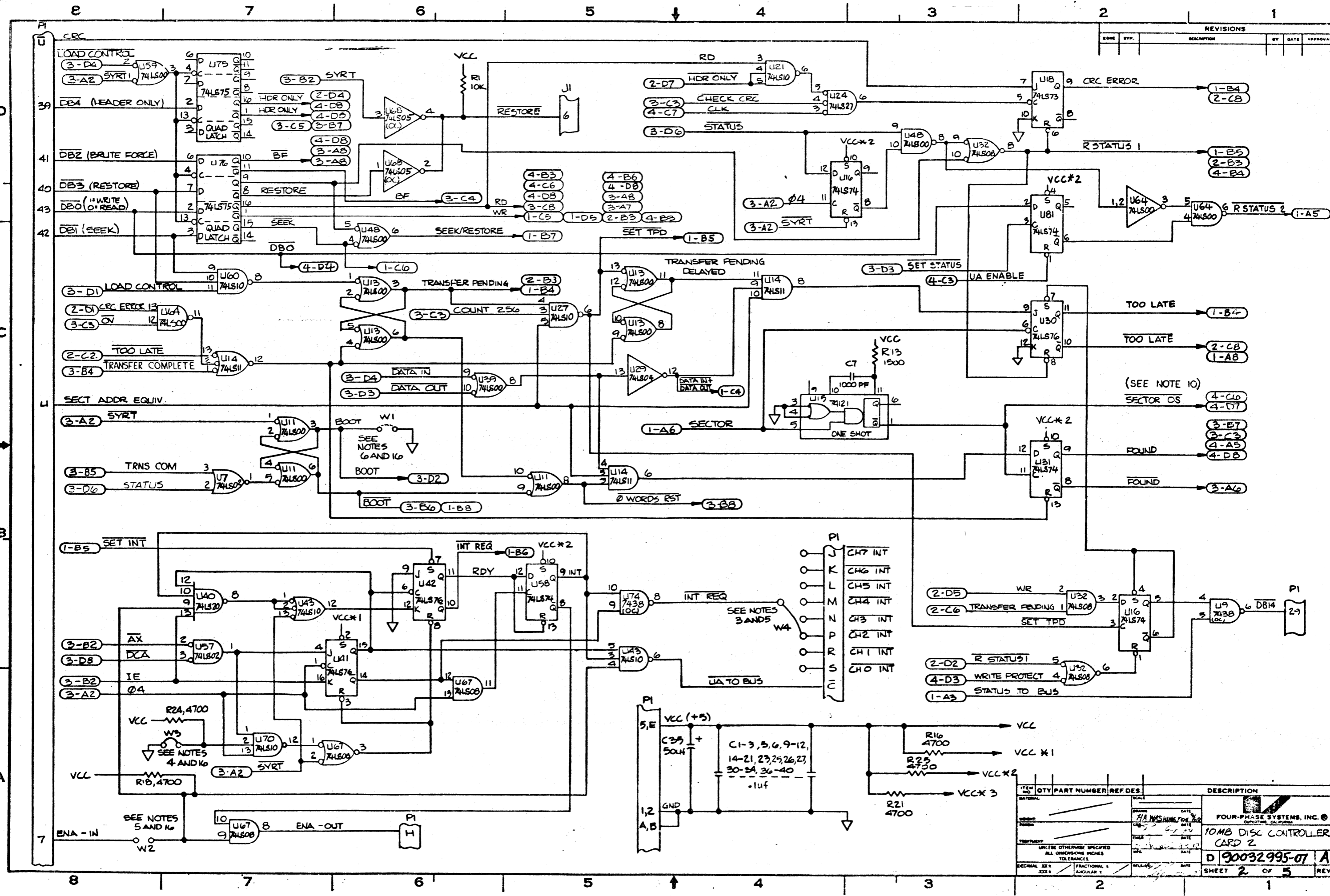
NOTES:

- ALL INTEGRATED CIRCUITS (U) REFERENCE DESIGNATORS ARE TO BE PREFIXED BY SN AND SUFFIXED BY N.
- ALL RESISTOR VALUES ARE IN OHMS, 1/4 WATT, ±5% AND ALL CAPACITORS ARE RATED AT 50V.
- THE INTREQ OUTPUT IS TO BE JUMPED TO THE APPROPRIATE INTERRUPT CHANNEL (JUMPER W4).
- JUMPER TO BE INSERTED ONLY IF THE CONTROLLER IS REQUIRED TO GENERATE A UNIT ADDRESS (JUMPER W3).
- JUMPER TO BE OMITTED IF THE CONTROLLER CARD IS USED AS A SINGLE CONTROLLER PER CHANNEL OR IF THE CONTROLLER CARD HAS THE HIGHEST PRIORITY OF ALL CONTROLLERS IN A MULTIPLE CONTROLLER CHANNEL (JUMPER W2).
- A JUMPER MUST BE INSERTED IF THE DEVICE IS NEVER TO BE USED FOR THE BOOTSTRAP OPERATION. THIS JUMPER TO GROUND WILL CONTINUOUSLY RESET THE BOOT-FLIP-FLOP (JUMPER W1).
- RESYNC SIGNAL OCCURS AT THE SECTOR MARK AND ALSO WHEN THE HEADER WORD IS COMPLETED.
- THE FOUR-BIT COUNTER COMPOSED OF U1 AND U17 GENERATES SEVEN WORDS OF ZEROS FOLLOWED BY ONE WORD OF ONES PRIOR TO WRITING DATA OR A HEADER WORD ON THE DISC.
- THE EIGHT-BIT COUNTER COMPOSED OF U65 AND U66 COUNTS 256 DATA WORDS IN ONE SECTOR. THIS COUNTER IS ENABLED AFTER READING OR WRITING THE WORD OF ALL ONES DESCRIBED IN NOTE 8.
- THE SECTOR PULSE IS APPROX. 5μSEC. IN WIDTH. THE SECTOR OS PULSE IS APPROX. 1μSEC. IN WIDTH WITH THE LEADING EDGES OCCURRING SIMULTANEOUSLY.
- THE 2-BIT HEADER COUNTER NORMALLY IS RESET TO THE 00 STATE. WHEN THE SYNC DLYD FLIP-FLOP IS SET AND THE COUNTER IS STILL 00, THE HEADER WORD IS BEING SHIFTED OUT OF THE DISC. WHEN THE COUNTER CHANGES TO THE 01 STATE, A WORD OF ALL ZEROS IS READ FROM THE DISC WHILE THE HEADER WORD IS BEING CHECKED FOR ERRORS. THE COUNTER THEN CHANGES TO THE 10 STATE AND LATCHES IN THAT STATE AT THIS TIME, THE RD GATE SIGNAL IS REPLACED BY THE WR GATE SIGNAL (IF IN THE WRITE MODE), AND THE RESYNC PULSE IS GENERATED.
- THE OUTPUT OF THE U46 SELECTOR IS THE READ CLOCK ONLY WHEN THE RD GATE SIGNAL IS TRUE (GROUND). AT ALL OTHER TIMES THE OUTPUT IS THE WRITE CLOCK GENERATED ON CARD 1. THE READ CLOCK IS INHIBITED FOR 165μSEC. AFTER THE SECTOR MARK IS DETECTED AT THE START OF A DATA TRANSFER. THIS IS NECESSARY TO COMPENSATE FOR MISALIGNMENT OF THE HEAD WHEN READING DIFFERENT DISC PACKS. THE WRITE CLOCK IS NOT INHIBITED BY THIS SECTOR MARK ONE-SHOT, SINCE THE OUTPUT IS SWITCHED BETWEEN INPUT E1 AND INPUT E3.
- THE 4-BIT COUNTER (U61) IS LOADED WITH ALL ZEROS AT EACH RESYNC PULSE AND IS RESET BY A "ONE" BIT IN THE DATA BEING READ FROM THE DISC. WHEN 16 CONSECUTIVE "ZERO" BITS ARE DETECTED, THE FIRST "ONE" BIT THERE-AFTER WILL SET THE SYNC FLIP-FLOP. THE SYNC FLIP-FLOP IS ONLY SET WHEN READING DATA OR HEADERS.
- (X-Y) SYMBOL INDICATES (X) SHEET NUMBER AND (Y) LOCATION ON SHEET.
- COUNTER U78 AND FLIP-FLOP U30 FORM A DIVIDE BY 24 COUNTER WHICH COUNTS THE NUMBER OF BITS PER WORD TO MAINTAIN SYNC WHEN READING OR WRITING.
- SEE SHEET 5.
- S1 CLOSED FOR 8230; OPEN FOR 8270.

QTY	PART NUMBER	REF DES	DESCRIPTION
			FOUR-PHASE SYSTEMS, INC. ©
			10MB DISC CONT. CARD 2
			D 90032995-01 A
			SHEET 1 OF 5 REV

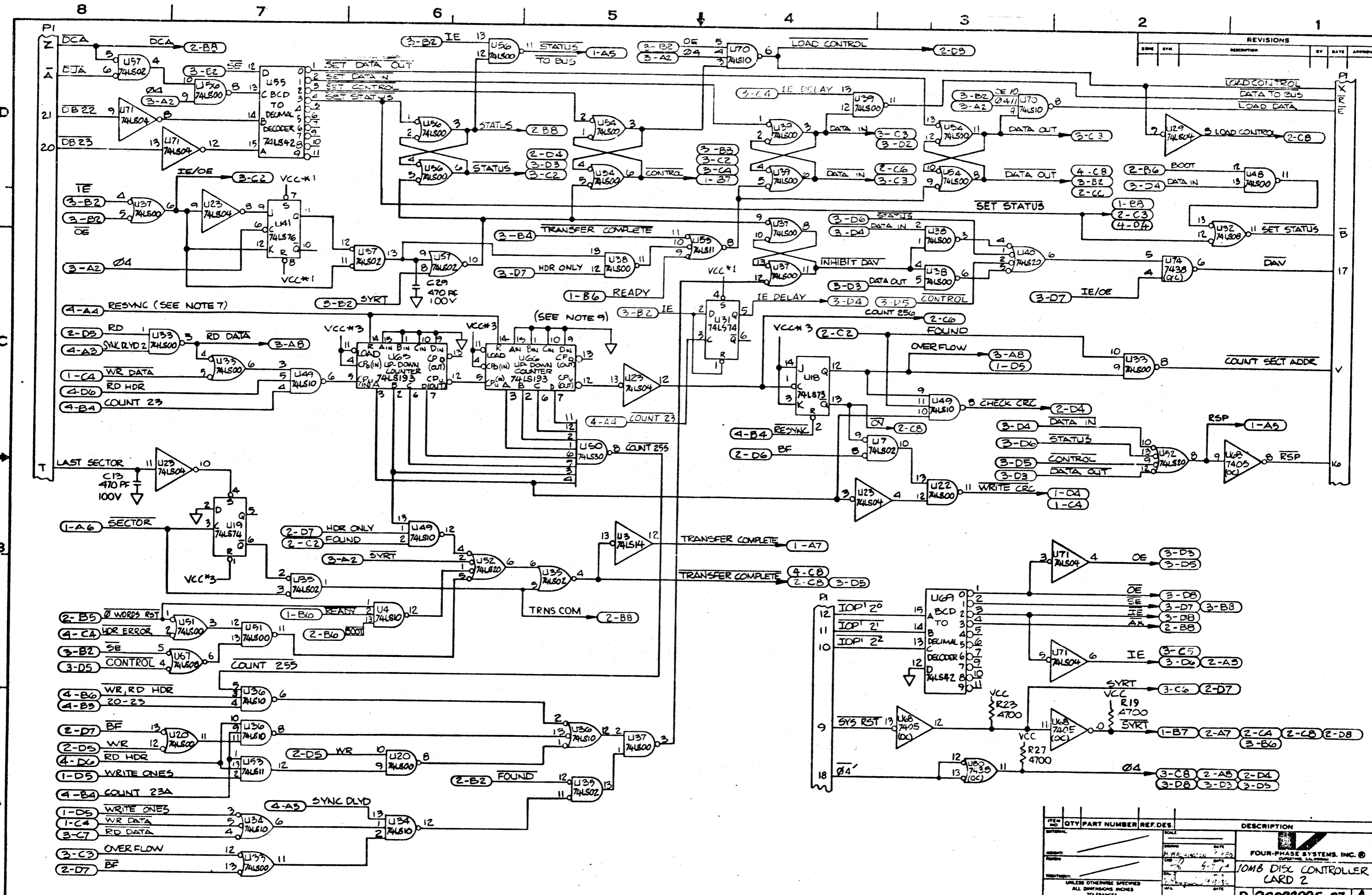


REVISIONS				
EDM	BY	DESCRIPTION	BY	DATE



ITEM NO	QTY	PART NUMBER	REF DES	DESCRIPTION

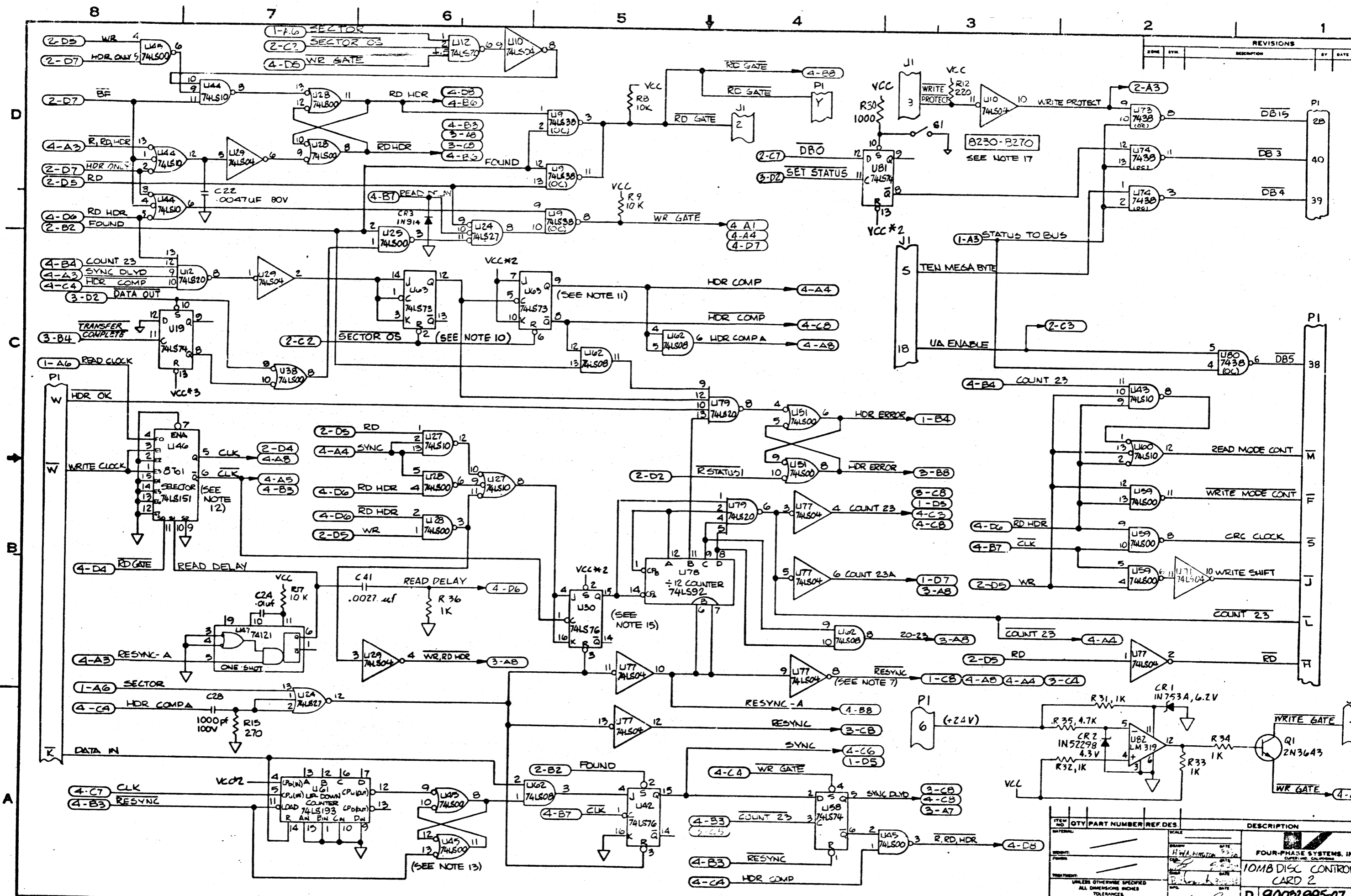
DRAWN: H.A. WASHINGTON CHECKED: [] DATE: [] SCALE: []	DATE: [] FOUR-PHASE SYSTEMS, INC. CUPERTINO, CALIFORNIA 10MB DISC CONTROLLER CARD 2 D 90032995-07 A
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN INCHES TOLERANCES: DECIMAL: SEE 2 FRACTIONAL: SEE 2 ANGULAR: SEE 2	SHEET 2 OF 5 REV. []



REVISIONS				
REV.	BY	DESCRIPTION	DATE	APPROVAL

ITEM NO.	QTY	PART NUMBER	REF. DES.	DESCRIPTION

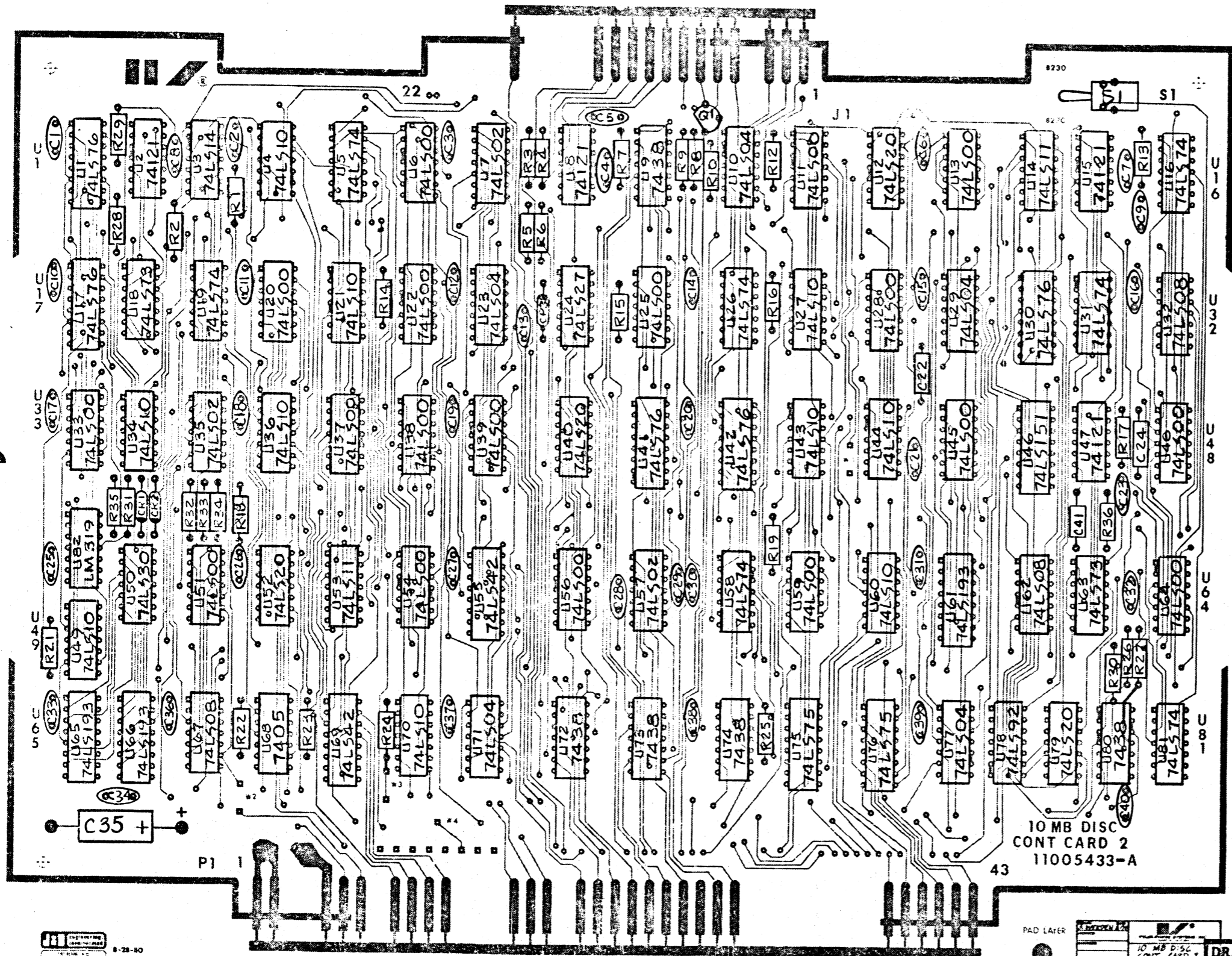
FOUR-PHASE SYSTEMS, INC.
 10MB DISC CONTROLLER CARD 2
 0 90032995 07 A
 SHEET 3 OF 5 REV



REVISIONS				
REV	BY	DATE	DESCRIPTION	APPROVAL

ITEM NO.	QTY	PART NUMBER	REF. DES.	DESCRIPTION

FOUR-PHASE SYSTEMS, INC. ©
 10MB DISC CONTROLLER
 CARD 2
 D 9002995-07 A
 SHEET 4 OF 5 REV.



8-28-80

COMPONENT SIDE

PAD LAYER

10 MB DISC CONT CARD 2 11005433-02

DRAWN	DATE
SUNNY	9/3/80
CHECKED	
R. LEONG	9.8.80
ENGINEER	
MFG	
RELEASED	

FOUR-PHASE SYSTEMS, INC.
CUPERTINO, CALIFORNIA

10 MB DISC CONTROLLER CARD 2

90032995-07 A

SHEET 5 OF 5

RFV

REDUCE TO 11500 : 005