

PDP-11/45, 11/70
HARDWARE INTRODUCTION
COURSE DRAWINGS

SECTION I
ASYNCHRONOUS LINE INTERFACE

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY D. HEALY	CHECKED D. HEALY	SECTION
DATE 25 MAR 76	DATE 25 MAR 76	1
ENG R.E. BRATT	PROD K. MACDONALD	ISSUED SECT.
DATE 1 APR 76	DATE 7-APR-76	1

QUANTITY / VARIATION

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION																	
			DL11-W	DL11-WA	DL11-WB	DL11-WC														
1	D-CS-M7856-0=1	SLU/RTC OPTION	1	1	1	1														
2	D-1A-7008360-1-0	CABLE ASSY (KL8-E)	-	1	-	-														
3	D-UA-BC05C-25-0	CABLE MODEM BC05C	-	-	1	-														
4	D-UA-BC03L-10-0	CABLE ASSY	-	-	-	1														
5	23760A9 *	BOOTSTRAP ROM	1	1	-	1														
6	9906228 *	BOX ROM	1	1	-	1														
7	D-CS-H315-0-1	MODEM TEST CONNECTOR (SEE NOTE 3.)	-	-	1	1														
		* 1. THE ROM AND ROM BOX WILL BE ADDED AT FA+T.																		
		2. THE ROM AND ROM BOX ARE TO BE SHIPPED ONLY IF AN LT33 OPTION IS SHIPPED WITH A UNIBUS 11 SYSTEM.																		
		3. ONE H315 PER PDP-11 SYS. OR ONE PER DL-11/WB OR WC LOOSE PIECE/ADD ON.																		

TITLE SERIAL LINE/LINE CLOCK DL11-W	ASSY NO. NONE	SIZE CODE A PL	NUMBER DL11-W-0	REV D	ECO NO. D11W MK005
SHEET 1 OF 1		DIST			

NK

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS
PARTS LIST

MADE BY D. HEALY	CHECKED D. HEALY	SECTION
DATE 25 MAR 76	DATE 25 MAR 76	1
ENG R. B. Pratt	PROD K. J. MacDonald	ISSUED SECT.
DATE 1-APR-76	DATE 7 APR 76	1

QUANTITY / VARIATION

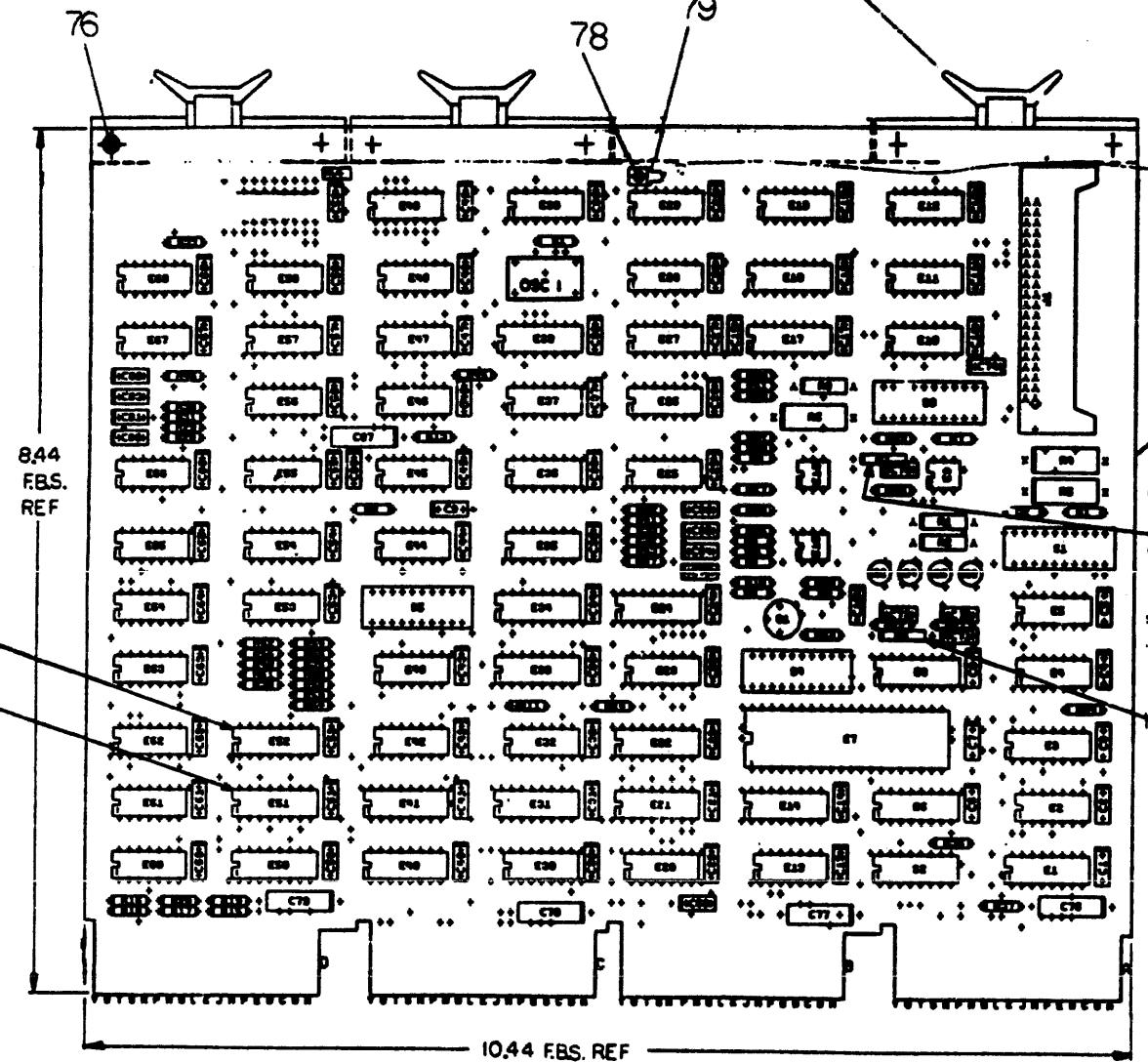
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	DL11-W	DL11-WA	DL11-WB	DL11-WC									
1	D-CS-M7856-Ø-1	SLU/RTC OPTION	1	1	1	1									
2	D-IA-7008360-1-0	CABLE ASSY (KL8-E)	-	1	-	-									
3	D-UA-BCØ5C-25-0	CABLE MODEM BCØ5C	-	-	1	-									
4	D-UA-BC03L-10-0	CABLE ASSY	-	-	-	1									

TITLE SERIAL LINE/LINE CLOCK DL11-W	ASSY NO. NONE	SIZE A	CODE PL	NUMBER DL11-W-Ø	REV. A	ECO NO. DL11W 00001
	SHEET 1 OF 1	DIST.				

DEC FORM DEC 16 (325) 1031-N870
DRA 110



NOTES:



ENGINEER OPTION
DO NOT INSERT

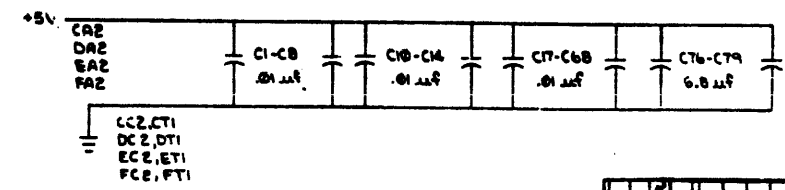
RETROFIT D7
AS SHOWN

RETROFIT D6
AS SHOWN

IC 584	1	8
IC 8837	8	16
IC 91AA	1	8
IC 74123	8	16
IC 74157	8	16
IC 74153	8	16
IC 7493	10	8
IC 7492	10	8
IC 74151	8	16
IC 74175	8	16
IC UART	1	3
IC 8047	8	16
IC 8641	8	16
IC TYPE	8ND	+5V

QND AND BY ARE USUALLY PIN 7 AND 24
RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS



REF	X-Y COORDINATE HOLE LOCATION	Q-CO-M7856-8-4	1	
REF	ASSY/DRILLING HOLE LAYOUT	0-AH-M7856-8-5	2	
REF	MODULE ECO HISTORY	0-MH-M7856-8-6	3	
1	ETCHED CIRCUIT BOARD	9811484	4	
67	C1 THRU C8, C10 THRU C15, C17 THRU C20, C26	CAPACITOR, .01uf, 100V, 20%	1001810-01	5
7	C9, C26 THRU C74	CAPACITOR, 470pf, 100V, 5%	1000024	6
1	C75	CAPACITOR, 330pf, 100V, 5%	1000023	7
8	C80 THRU C89	CAPACITOR, 82pf, 100V, 5%	1000015	8
1	C90	CAPACITOR, 150pf, 100V, 5%	1000019	9
1	C97	CAPACITOR, 2.2uf, 20V, 10%	1002027	10
4	C70, C77, C78, C79	CAPACITOR, 8.2uf, 35V, 10%	1005306	11
1	C10	CAPACITOR, 5000pf, 100V, 20%	1001705	12
3	D1, D2, D3	DIODE, 1N4004	1105796	13
1	D4	DIODE, ZENER 1N4742	1109502	14
2	D6, D7	DIODE, CURRENT LIMITER MCL1301	1109610	15
1	D8	DIODE, 0084	1100114	16
4	S1, S3, S4, S5	SWITCH, 10 POSITION	121184-08	17
1	S2	SWITCH, 6 POSITION	121184-04	18
				19
				20
1	J1	CONNECTOR, 40 PIN	1209941	21
1	R03	RESISTOR, 330, 1/4W, 5%	1300295	22
3	R1, R2, R3	RESISTOR, 100 OHM, 1/2W, 5%	1300268	23
3	R4, R5, R6	RESISTOR, 560 OHM, 1W, 5%	1303048	24
2	R7, R8	RESISTOR, 80K, 1/4W, 5%	1301327	25
1	R9	RESISTOR, 33 OHM, 1/4W, 5%	1300197	26
1	R10	RESISTOR, 120K, 1/4W, 5%	1300539	27
1	R12	RESISTOR, 6.6K, 1/4W, 5%	1304224	28
1	R25	RESISTOR, 88 OHM, 1/4W, 5%	1300219	29
2	R13, R14	RESISTOR, 100 OHM, 1/4W, 5%	1300229	30
4	R19, R10, R17, R18	RESISTOR, 100 OHM, 1/4W, 5%	1301322	31
4	R16, R20, R21, R22	RESISTOR, 390 OHM, 1/4W, 5%	1300309	32
1	R23	RESISTOR, 7.5K, 1/4W, 5%	1301422	33
2	R27, R28	RESISTOR, 150 OHM, 1/4W, 5%	1300250	34
8	R28 THRU R33	RESISTOR, 270 OHM, 1/4W, 5%	1301872	35
27	R35, R36, R37, R38 THRU R62	RESISTOR, 10K, 1/4W, 5%	1300479	36
3	R11, R64, R30	RESISTOR, 1K, 1/4W, 5%	1300305	37
1	R34	RESISTOR, 220 OHM, 1/4W, 5%	1300271	38
1	Q1	TRANSISTOR, DEC 65310	1509338	39
2	Q3, Q4	TRANSISTOR, A05	1510705	40
2	Q2, Q5	TRANSISTOR, A55	1510706	41
2	E9, E10	OPTICALLY COUPLED ISOLATOR	1510727-1	42
1	OSC 1	OSCILLATOR 50688 MHZ	1011860-02	43
1	E15	I.C. DEC 4N26	1911959	44
3	E1, E8, E14	I.C. DEC 8641	1911579	45
6	E2, E19, E20, E60, E61, E49	I.C. DEC 8001	1909705	46
1	E3	I.C. DEC 8097	1911527	47
3	E4, E44, E84	I.C. DEC 7408	1910155	48
7	E5, E35, E37, E55, E57, E63, E68	I.C. DEC 7474	1909547	49
1	E7	I.C. DEC UART (808)	1910450-01	50
1	E8	I.C. DEC 74175	1910651	51
1	E10	I.C. DEC 1489L	1910323	52
1	E11	I.C. DEC 1488L	1910322	53
2	E17, E18	I.C. DEC 74151	1909936	54

PARTS LIST

ETCH BOARD REV. D

DATE 9/17/75

DATE 9-9-75

DATE 11-20-75

DATE 11-24-75

DATE 11/25/75

digital

SLU/REF 0011 N

SIZE CODE D

NUMBER M7856-2-1

REV E

SCALE 1 OF 3

SHEET 1 OF 3

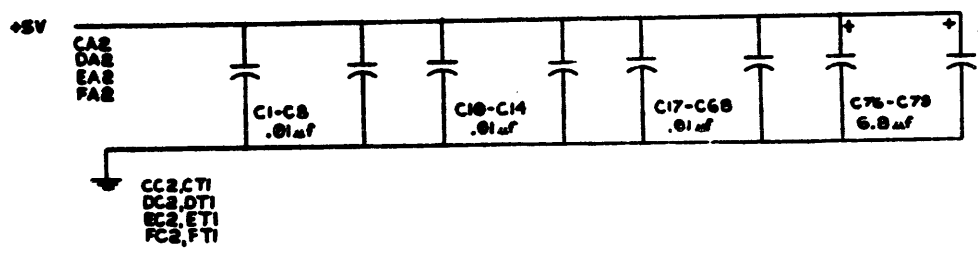
DEC NO.	EIA NO.	DEC NO.	EIA NO.

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NOTES:

D
C
B
A

D
C
B
A



IC 8641	8	16
IC 894	1	8
IC 89:7	8	16
IC 14A	1	8
IC 74123	8	16
IC 74157	8	16
IC 74153	8	16
IC 7493	10	5
IC 7492	10	5
IC 74151	8	16
IC 74175	8	16
IC UART	1	3
IC 8057	8	16
IC TYPE	080	+5V

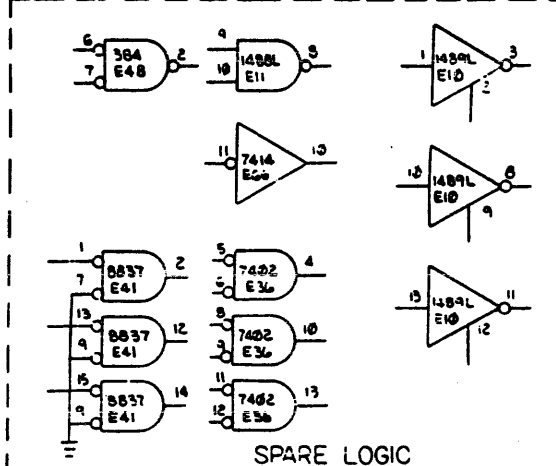
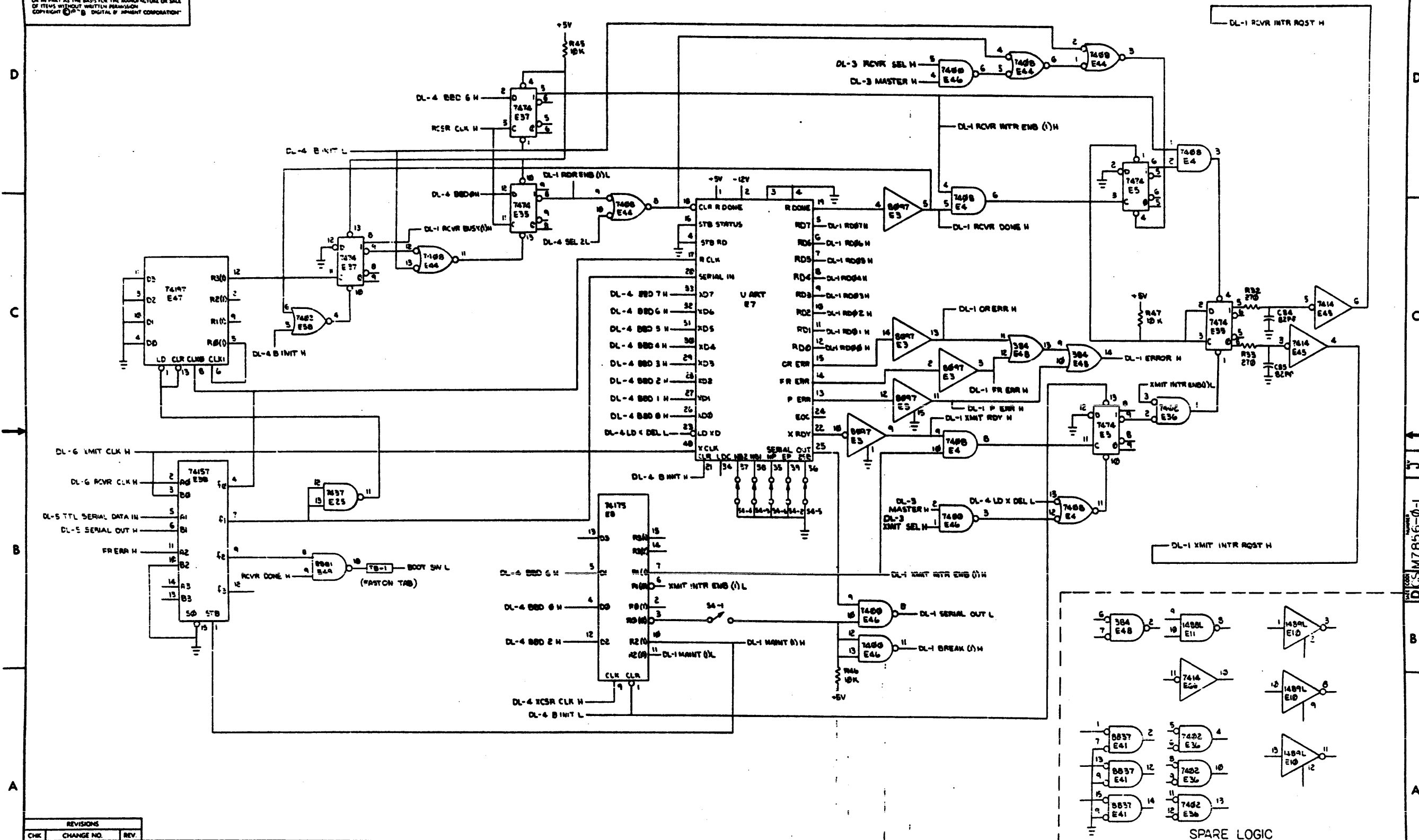
080 AND 5V ARE USUALLY PIN 7 AND 34 RESPECTIVELY EXCEPT WHERE SHOWN ABOVE

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL		QTY	REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST						
ETCH BOARD REV.		E				
DRN	D. Dunsen	DATE	2.23.75			
CHK'D		DATE	3.1.75			
ENG.		DATE				
PROJ. ENG.		DATE				
NEXT HIGHER ASSY				TITLE		
				SLU/RTC OPTION		
DEC NO.	EIA NO.	DEC NO.	EIA NO.	SCALE	SHEET 1 of 3	REV. J
SEMICONDUCTOR CONVERSION CHART				SIZE CODE NUMBER		
				DCS M7856-0-1		

J
M7856-0-1

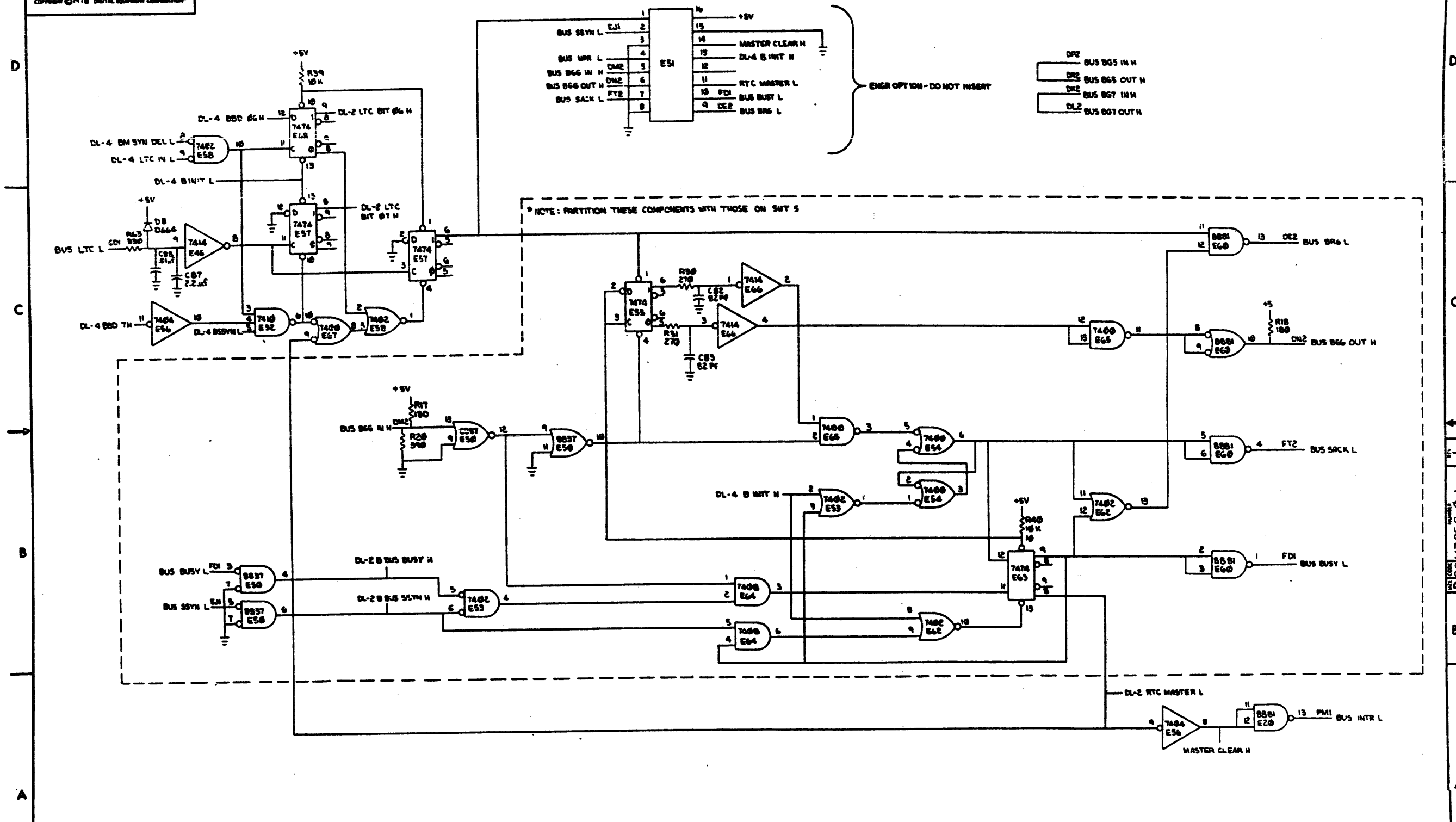
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REVISIONS		
CHK	CHANGE NO.	REV.

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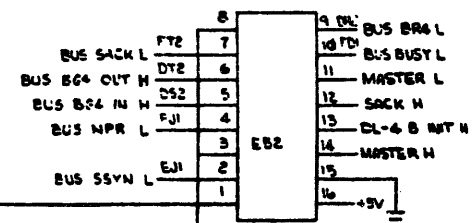
1-0-359274 G 2



REVISIONS			TITLE		SIZE/CODE		NUMBER		REV.
CHK	CHANGE NO.	REV.	SLU/RTC OPTION (DL-2)		DCS M7856-0-1				J
			SCALE		SHEET 3 OF 3				
									mkl

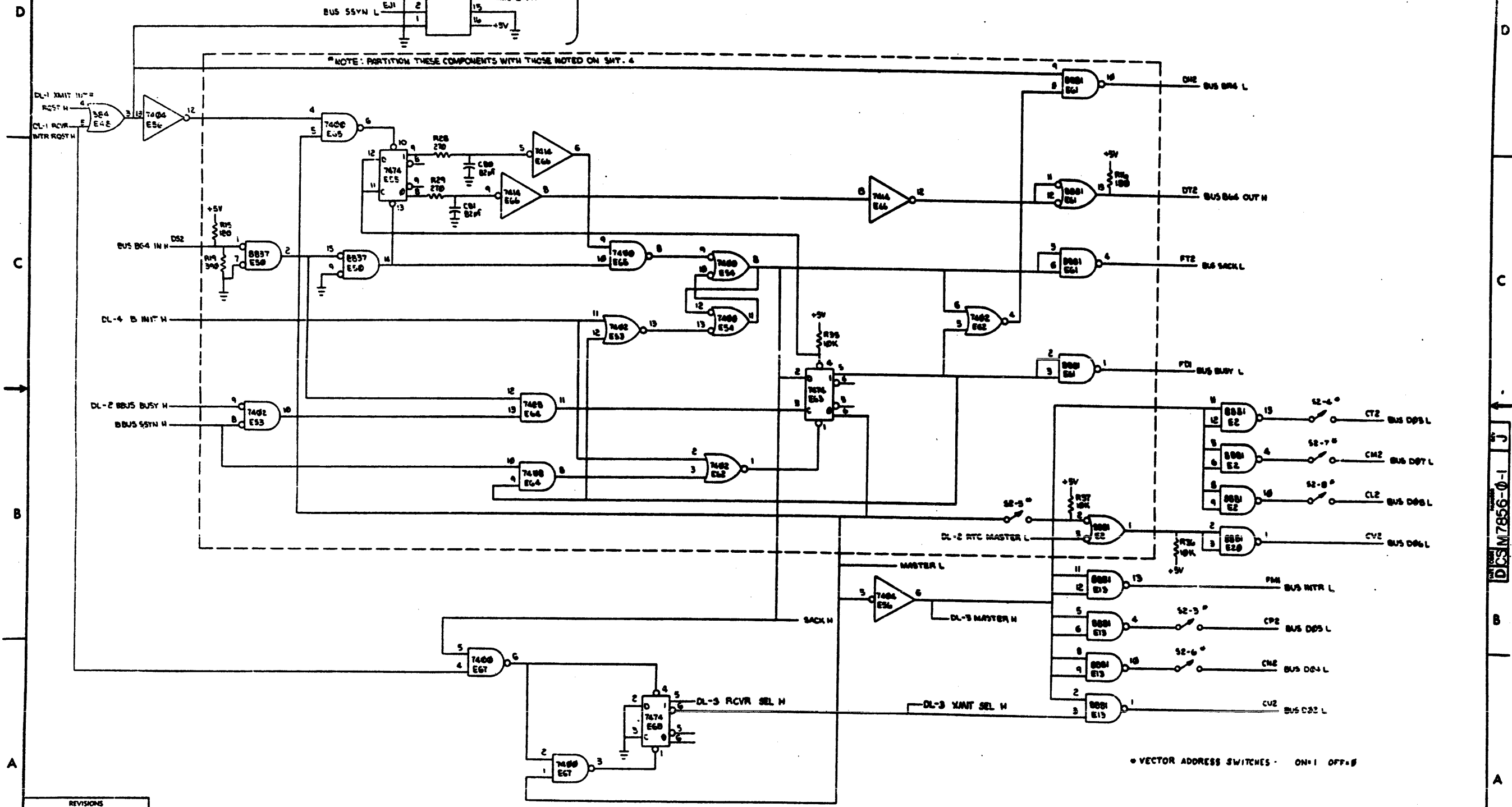
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1-0-999Z W 2



ENGR OPTION DO NOT INSERT

NOTE: PARTITION THESE COMPONENTS WITH THOSE NOTED ON SWT. 4



VECTOR ADDRESS SWITCHES - ON=1 OFF=0

REVISIONS		
CHK	CHANGE NO	REV

DEC FORM NO. 000 120

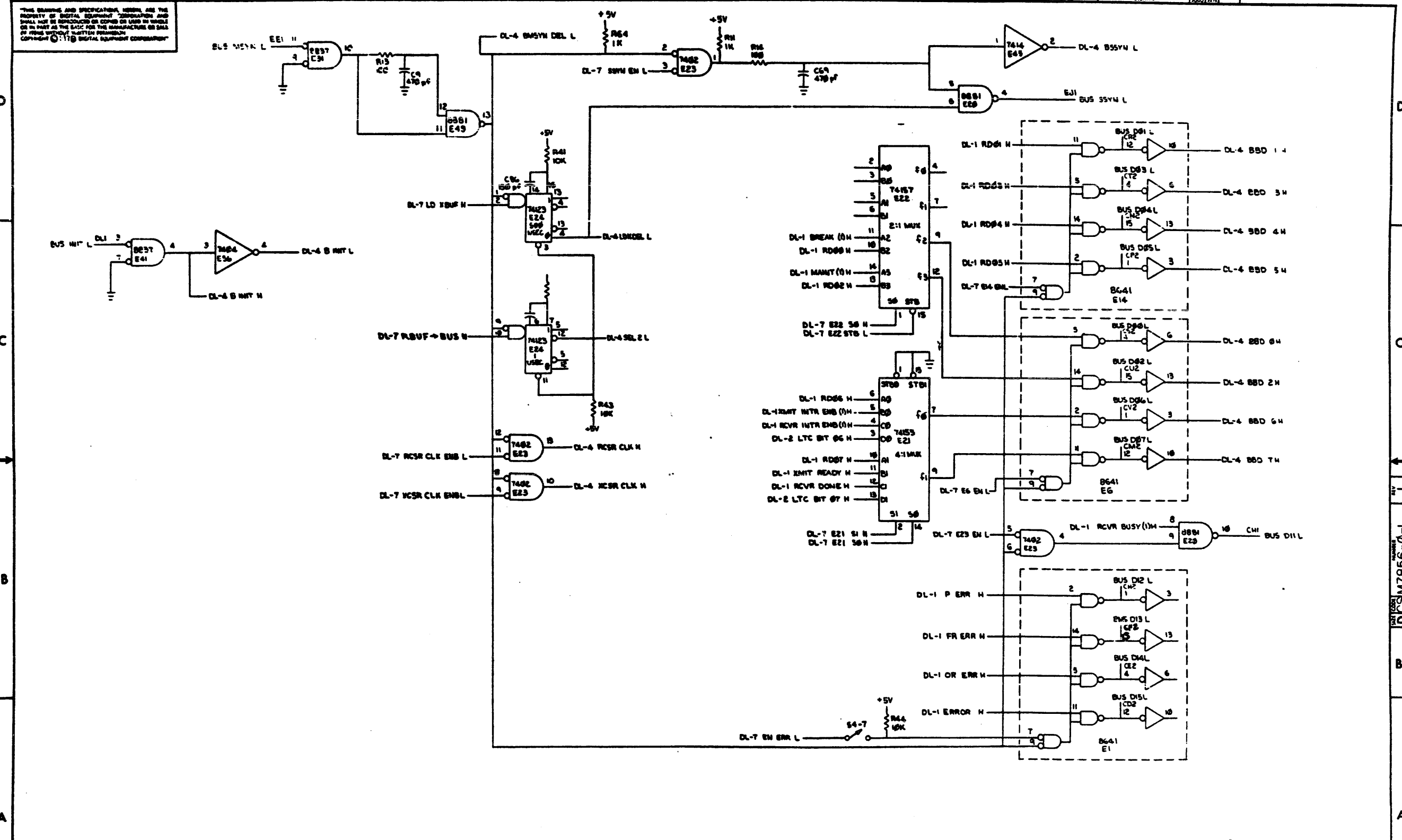
TITLE	SIZE CODE	NUMBER	REV.
SLU/RTC OPTION (DL-3)	DCS M7856-0-1	J	J
SCALE	SHEET	OF	DIST.

DCS M7856-0-1

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D
C
B
A

D
C
B
A

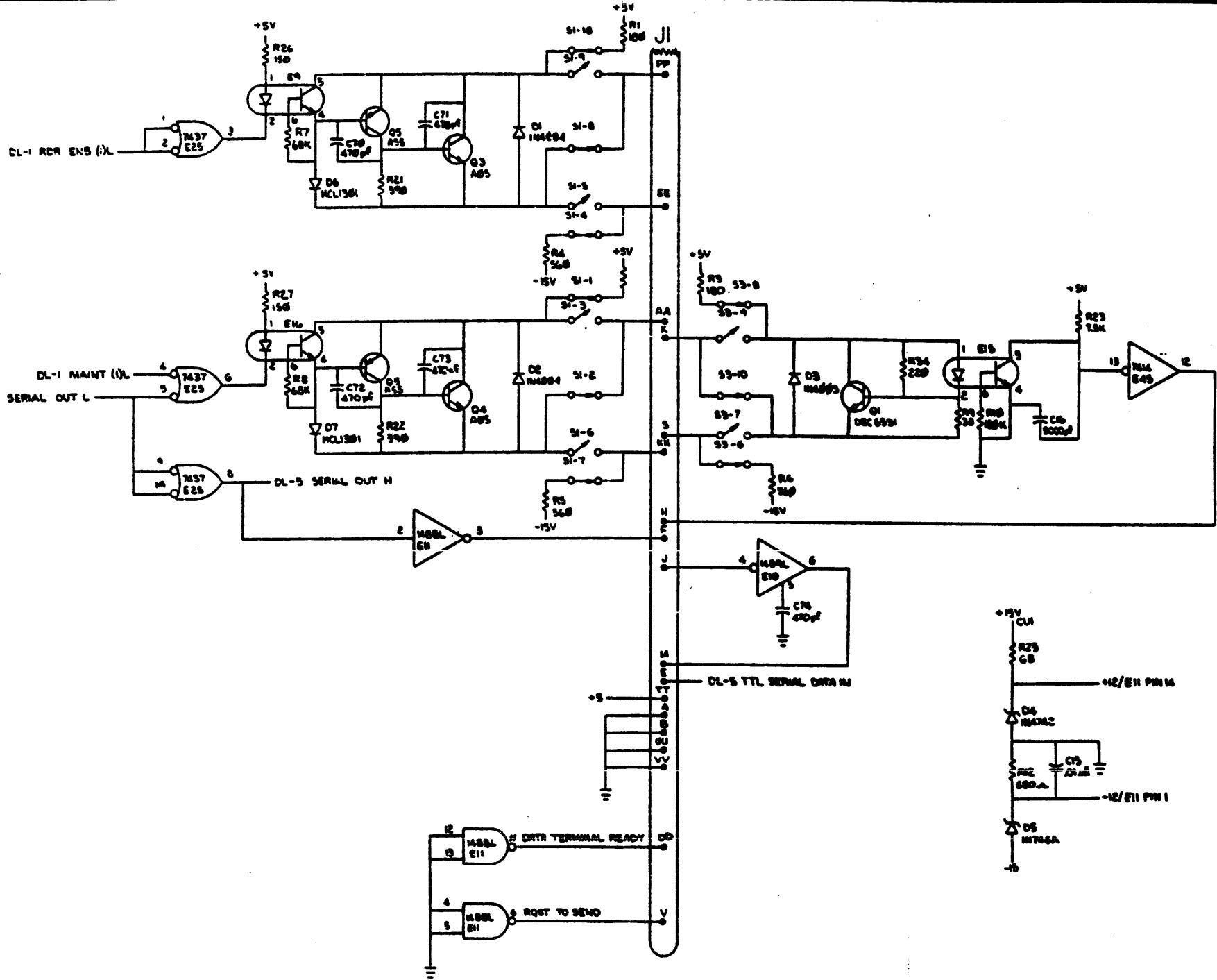


REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SLU/RTC OPTION (DL-4)	SIZE CODE	DCS M7856-0-1	NUMBER		REV.	J
SCALE	1:1	SHEET	5 OF 8	DIST.			

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NOTE:
 1. SWITCHES ARE SHOWN IN ACTIVE MODE.
 2. D6, D8 ARE MCL1361 1 MA CONSTANT CURRENT DIODES.



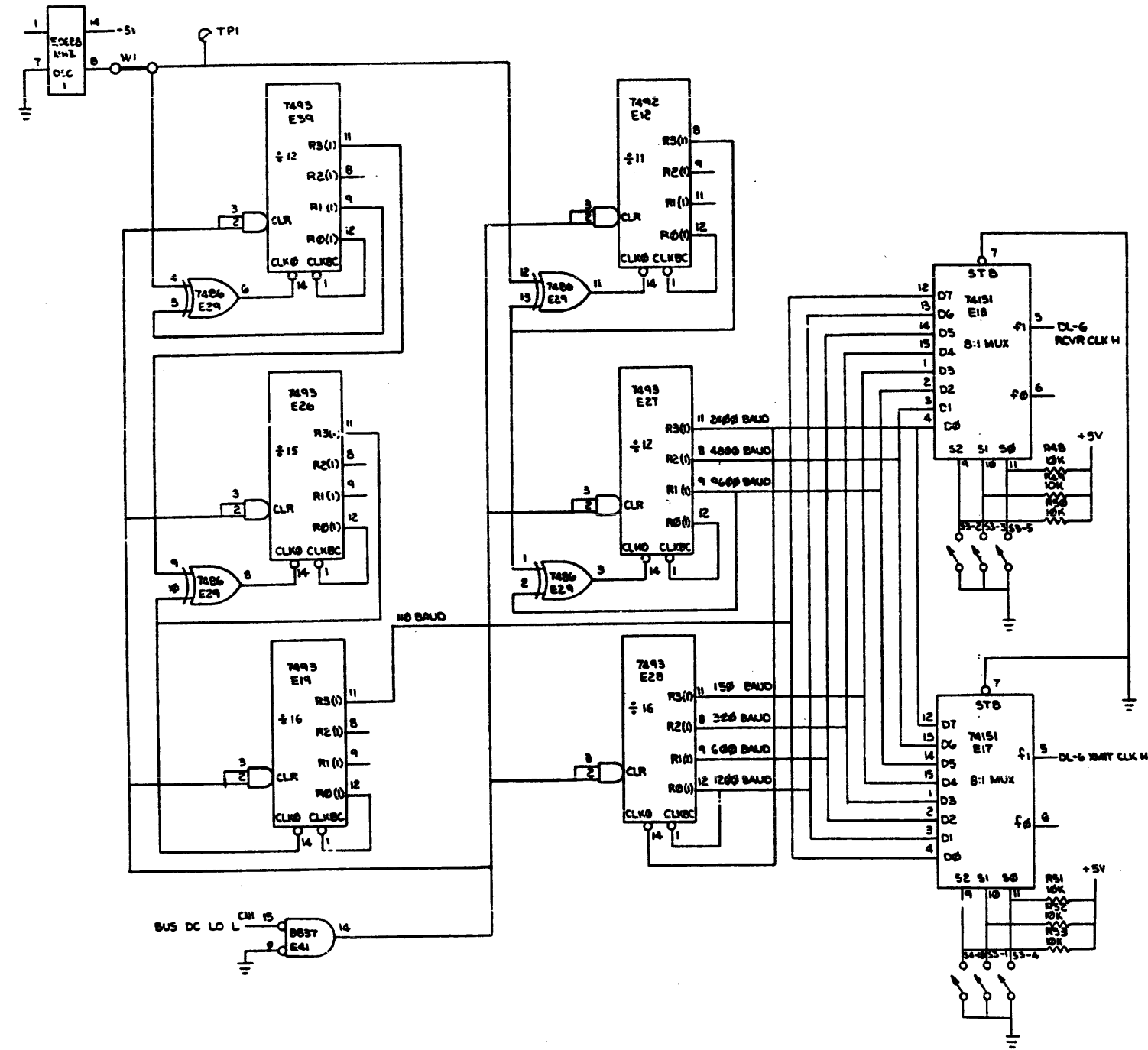
DCS M7856-0-1

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SLU/RTC OPTION (DL-5)	NUMBER	DCS M7856-0-1	REV.	J
SCALE	1:1	SHEET	6 OF 6	DIST.	

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1-0-95824 2



BAUD RATE	RCVR			XMIT		
	S3-2	S3-3	S3-5	S4-10	S3-1	S3-4
110	OFF	OFF	OFF	ON	ON	ON
150	ON	OFF	OFF	OFF	ON	ON
300	OFF	ON	ON	ON	OFF	OFF
600	OFF	ON	OFF	ON	OFF	ON
1200	OFF	OFF	ON	ON	ON	OFF
2400	ON	ON	ON	OFF	OFF	OFF
4800	ON	ON	OFF	OFF	OFF	ON
9600	ON	OFF	ON	OFF	ON	OFF

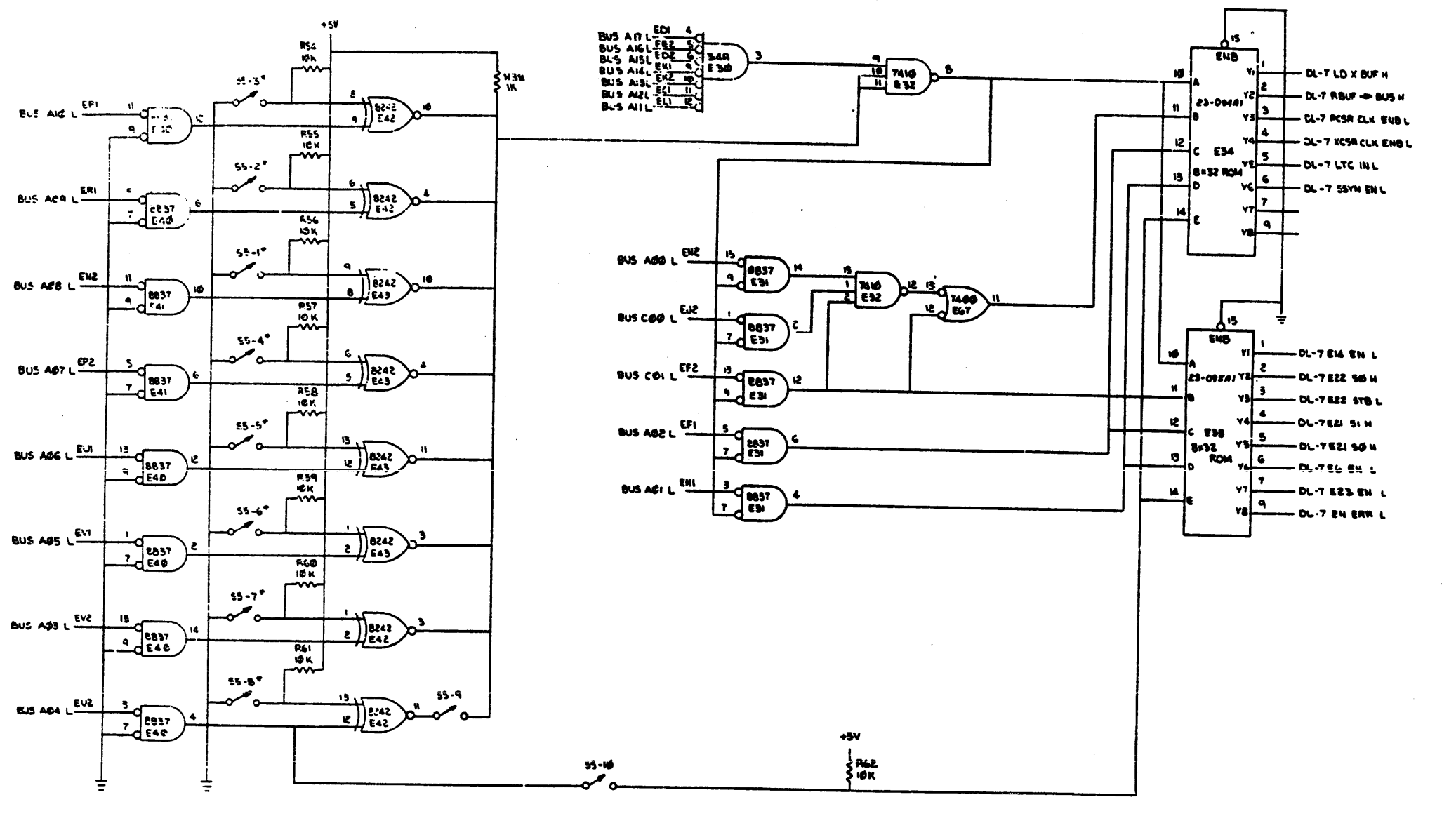
REVISIONS		
CHK	CHANGE NO	REV

TITLE: SLU/RTC OPTION (DL-6) SIZE CODE: DCS NUMBER: M7856-0-1 REV: J
 SCALE: + SHEET 7 OF 8 DIST. MK 1

DEC FORM NO. 570 138

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1-0-998/W/S7 2



* ADDRESS SELECTION SWITCHES * OFF=1 ON=0

REVISIONS		
CHK	CHANGE NO	REV

TITLE	DL-7	SIZE CODE	NUMBER	REV.
SLU/RTC OPTION (DL-7)	DCS	M7856-0-1	J	
SCALE	SHEET	OF	DIST.	
	8	8		

DEC FORM NO. 010 128

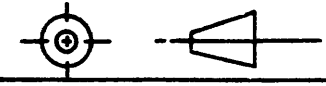

8 7 6 5 4 3 2 1

REV. 6-0-9982W SKK 2

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(FOR 23094A1-A07 & 23095A1-A07)

REV. CHANGE NO.

<table border="1"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>													DESCRIPTION	DWG./PART NO.	ITEM NO.						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES																					
ANGLES $\pm 0^{\circ} 30'$ SURFACE QUALITY IN <input checked="" type="checkbox"/> MICROINCHES	CLASS OF ACCURACY (CHECK ONE) MEDIUM <input type="checkbox"/> PREFERRED <input type="checkbox"/>	NOMINAL DIMENSION RANGE INCHES <table border="1"> <tr> <td>OVER 0 TO 0.2</td> <td>OVER 0.2 TO 1.2</td> <td>OVER 1.2 TO 4.0</td> <td>OVER 4.0 TO 12.0</td> <td>OVER 12.0 TO 40.0</td> <td>OVER 40.0 TO 80.0</td> </tr> <tr> <td>± 0.004</td> <td>± 0.008</td> <td>± 0.012</td> <td>± 0.016</td> <td>± 0.024</td> <td>± 0.04</td> </tr> <tr> <td>± 0.012</td> <td>± 0.016</td> <td>± 0.025</td> <td>± 0.04</td> <td>± 0.053</td> <td>± 0.1</td> </tr> </table>		OVER 0 TO 0.2	OVER 0.2 TO 1.2	OVER 1.2 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 80.0	± 0.004	± 0.008	± 0.012	± 0.016	± 0.024	± 0.04	± 0.012	± 0.016	± 0.025	± 0.04	± 0.053	± 0.1
OVER 0 TO 0.2	OVER 0.2 TO 1.2	OVER 1.2 TO 4.0	OVER 4.0 TO 12.0	OVER 12.0 TO 40.0	OVER 40.0 TO 80.0																
± 0.004	± 0.008	± 0.012	± 0.016	± 0.024	± 0.04																
± 0.012	± 0.016	± 0.025	± 0.04	± 0.053	± 0.1																
QUANTITY & VARIATION	DRN. <i>DLII-W</i>	FIRST USED ON																			
THIRD ANGLE PROJECTION  REMOVE BURRS AND BREAK SHARP CORNERS DO NOT SCALE DWG	CHK'D ENG. PROJ. ENG. PROD. <i>DLII-W</i>	DLII-W  TITLE ROM LISTING																			
MATERIAL <i>+</i>	D-CS-M7856-0-1	SIZE CODE	NUMBER																		
FINISH <i>+</i>	SCALE <i>+</i>	K CS	M7856-0-9																		
	SHEET 1 OF 3	DIST.	REV.																		

1
DEC PART NUMB: 23094A1-A07
ORIGINATOR: BOB PRATT
DATE OF ORIGIN: 2/28/75

ROM PATTERN SPEC

PAGE 2 OF 3

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	00	00111100	074
1	01	00111100	074
2	02	00111100	074
3	03	00111100	074
4	04	00111100	074
5	05	00111100	074
6	06	00111100	074
7	07	00111100	074
8	10	00111100	074
9	11	00111100	074
10	12	00111100	074
11	13	00111100	074
12	14	00001100	014
13	15	00111100	074
14	16	00011100	034
15	17	00111100	074
16	20	00011000	030
17	21	00111100	074
18	22	00011100	034
19	23	00111100	074
20	24	00010100	024
21	25	00111100	074
22	26	00011100	034
23	27	00111100	074
24	30	00011100	034
25	31	00111100	074
26	32	00011110	036
27	33	00111100	074
28	34	00011101	035
29	35	00111100	074
30	36	00011100	034
31	37	00111100	074

1
DEC PART NUMB: 23-095A1-A07
ORIGINATOR: BOB PRATT
DATE OF ORIGIN: 2/28/75

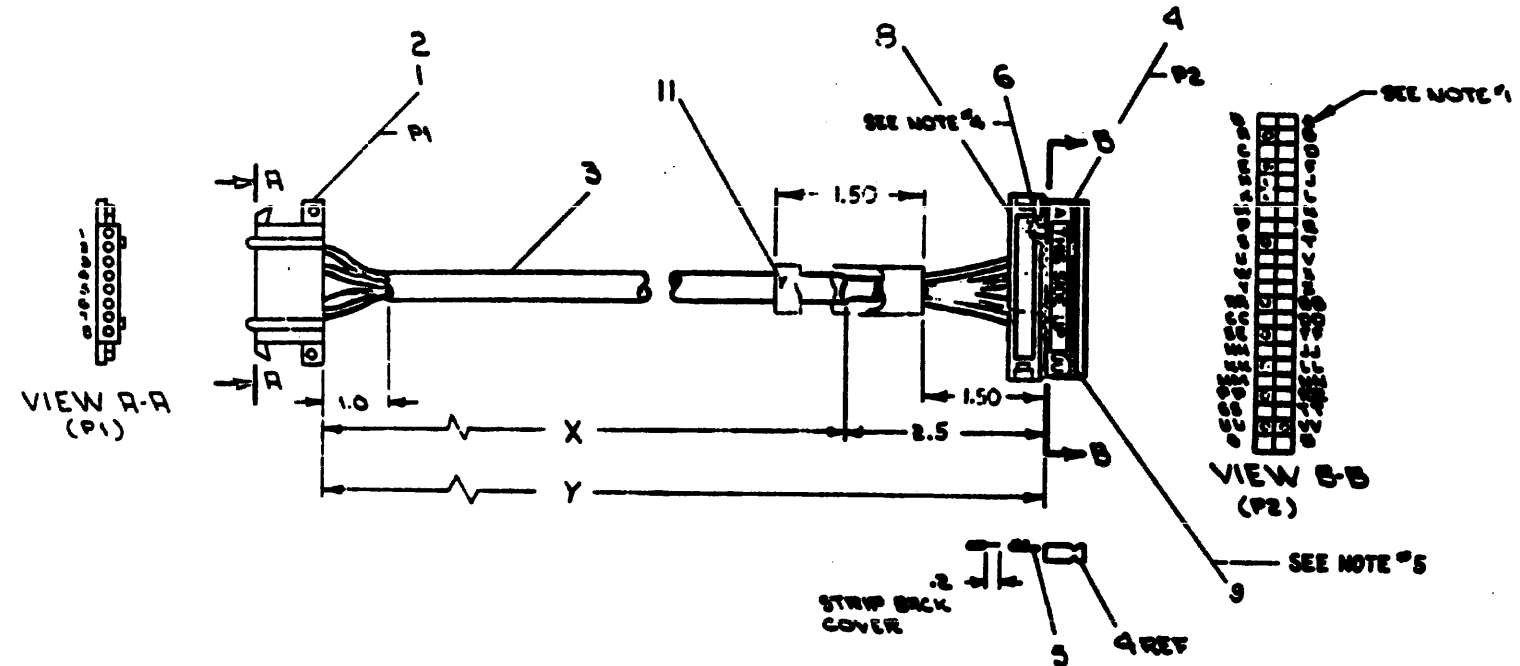
ROM PATTERN SPEC

PAGE 3 OF 3

DECIMAL LOC	OCTAL LOC	BINARY DATA	OCTAL DATA
0	00	11111111	377
1	01	11111111	377
2	02	11111111	377
3	03	11111111	377
4	04	11111111	377
5	05	11111111	377
6	06	11111111	377
7	07	11111111	377
8	10	11111111	377
9	11	11111111	377
10	12	11111111	377
11	13	11111111	377
12	14	11011111	337
13	15	11111111	377
14	16	11111111	377
15	17	11111111	377
16	20	10001111	217
17	21	11111111	377
18	22	11111111	377
19	23	11111111	377
20	24	11010001	321
21	25	11111111	377
22	26	11111111	377
23	27	11111111	377
24	30	01000010	102
25	31	11111111	377
26	32	11111111	377
27	33	11111111	377
28	34	11111111	377
29	35	11111111	377
30	36	11111111	377
31	37	11111111	377

WIRE TABLE				LEGEND			
ITEM NO.	DESCRIPTION	PAIR NO.	CONNECTION WITH	CONNECTOR WITH	VARIATION	LENGTH	
						FROM	TO
1	BLK	1	P1-2	P2-KK	7008360-0	45 IN (10)	27 IN (7.10)
2	WHT	1	P1-3	P2-5	7008360-1	45 IN (10)	48 IN (12.10)
3,7	SHLD	1	SEE NOTE #2	P2-1E (NOTE #3)	7008360-9	FT 11.50	IN (2.93) FT 2.25
3	BLK	2	P1-4	P2-EE			
4	WHT	2	P1-5	P2-RR			
5,7	SHLD	2	SEE NOTE #2	P2-1K (NOTE #3)			
3	BLK	2	P1-6	P2-1P			
4	GRN	2	P1-7	P2-1C			
3,7	SHLD	2	SEE NOTE #2	P2-1V (NOTE #3)			
6	BLK	-	P2-8	P2-11			

- NOTES:**
- * ASTERISKS INDICATE CAVITIES NOT USED OR DESIGNATED BY LETTERS.
 - DRAIN WIRES TO BE CUT BACK TO OUTER INSULATION ON P1 END OF CABLE ONLY. SHIELDS TO BE CUT BACK TO OUTER INSULATION ON BOTH ENDS OF CABLES.
 - DRAIN WIRES ON P2 END OF CABLE TO BE EACH ENCLOSED WITH ITEM #7 (TUBING) FROM END OF CABLE JACKET TO POINT WHERE THEY ENTER P2 CONNECTOR.
 - ITEM #6 (WIRE) TO BE APPROXIMATELY ONE (1) INCH LONG.
 - PLACE ITEM #9 (THIS SIDE UP STICKER) ON LETTERED SIDE OF ITEM #4 (BERG HOUSING) AS SHOWN.



QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	LABEL, CABLE IDENT	3616073	11
	AIR TUBING, SHRINK	9107252-00	10
1	LABEL, THIS SIDE UP	3611567	9
1	STRAIN RELIEF	1211166	8
	AIR TUB. THINWALL, NAT	910267-11	7
	WIRE, #22 AWG STRD TEF BLK	9107550-00	6
11	SOCKET, CRIMP #47216	1810589-07	5
1	HOUSING, BERG #45043-015	1210312-15	4
	AIR CABLE BELDYN (JTTT) SHLD	9107725-0	3
6	CONTACT MATE-LOCK (FEMALE)	1209379-03	2
1	CONN. MATE-LOCK (FEMALE)	1209340-00	1

REV.	CHANGE NO.	DATE	BY	DESCRIPTION
A				
B				
C				
D				

FIRST USED ON OPTION/MODEL: PDP-8E

UNLESS OTHERWISE SPECIFIED, DIMENSIONS IN INCHES.

DATE: 10-27-71

SCALE: NONE

SEE PARTS LIST

NEXT HIGHER ASSY: A ML-KL8-E-0

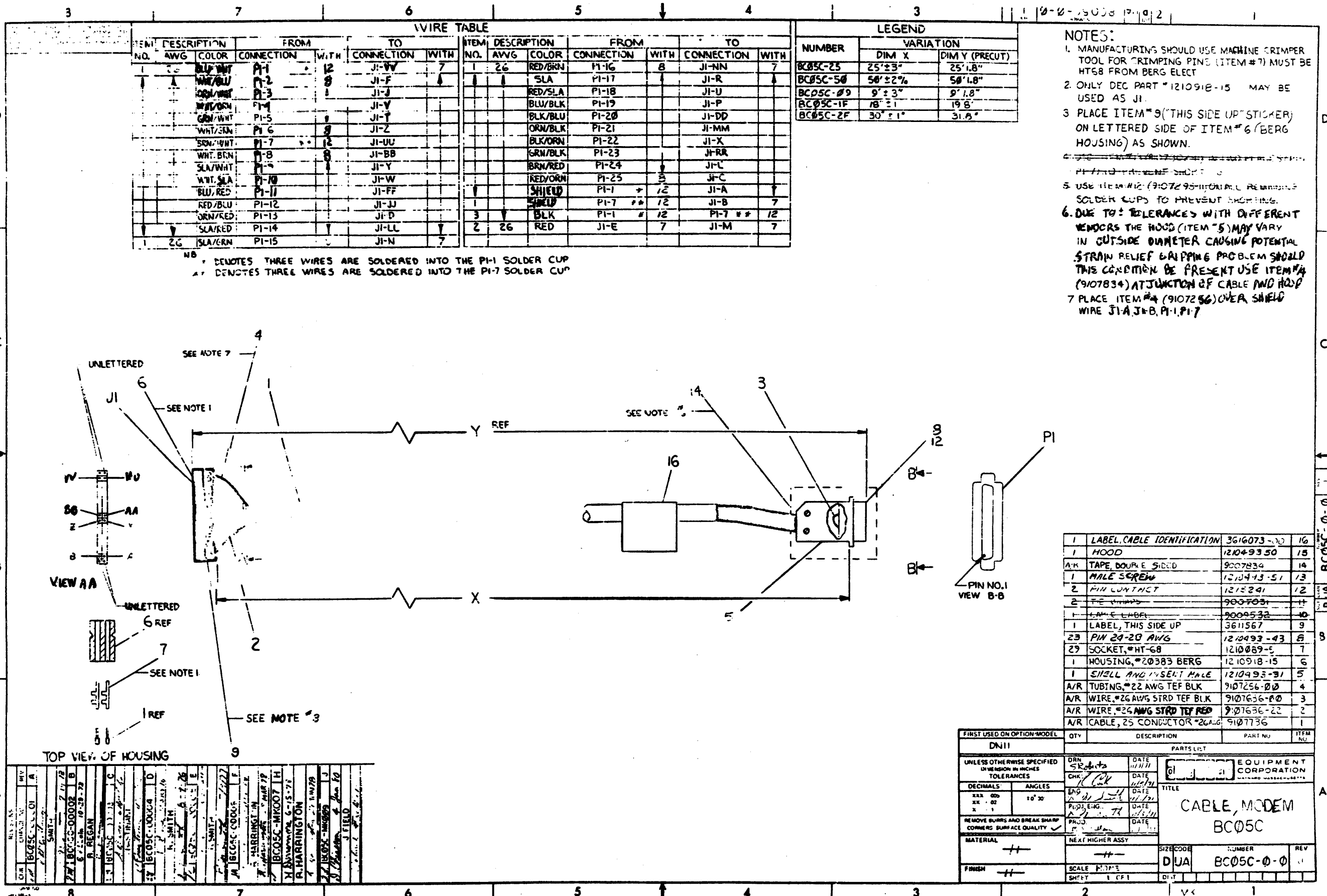
EQUIPMENT CORPORATION

TITLE: CABLE ASSEMBLY (KL8E)

NUMBER: DIA7008360-0-0

SHEET: 1 OF 1

DIA 7008360-0-0



THE DRAWING AND SPECIFICATIONS HEREIN ARE THE PROPERTY OF THE AIR FORCE AND ARE TO BE RETURNED TO THE OFFICE OF ORIGIN AS SOON AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS IS EXHAUSTED. WRITTEN PERMISSION OF THE AIR FORCE IS REQUIRED FOR REPRODUCTION.

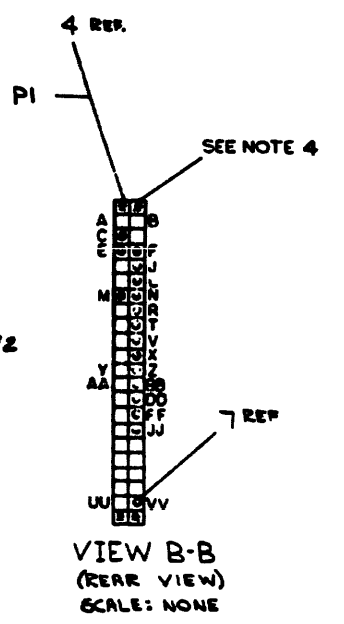
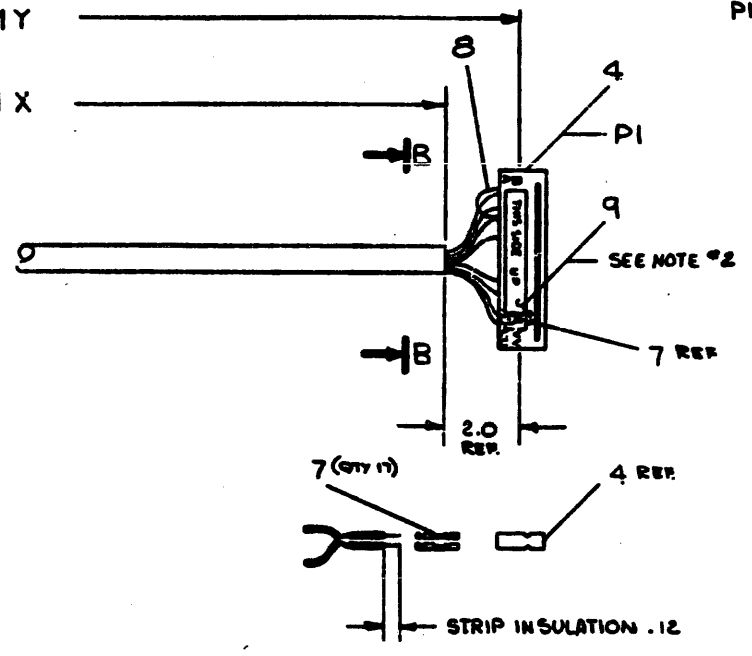
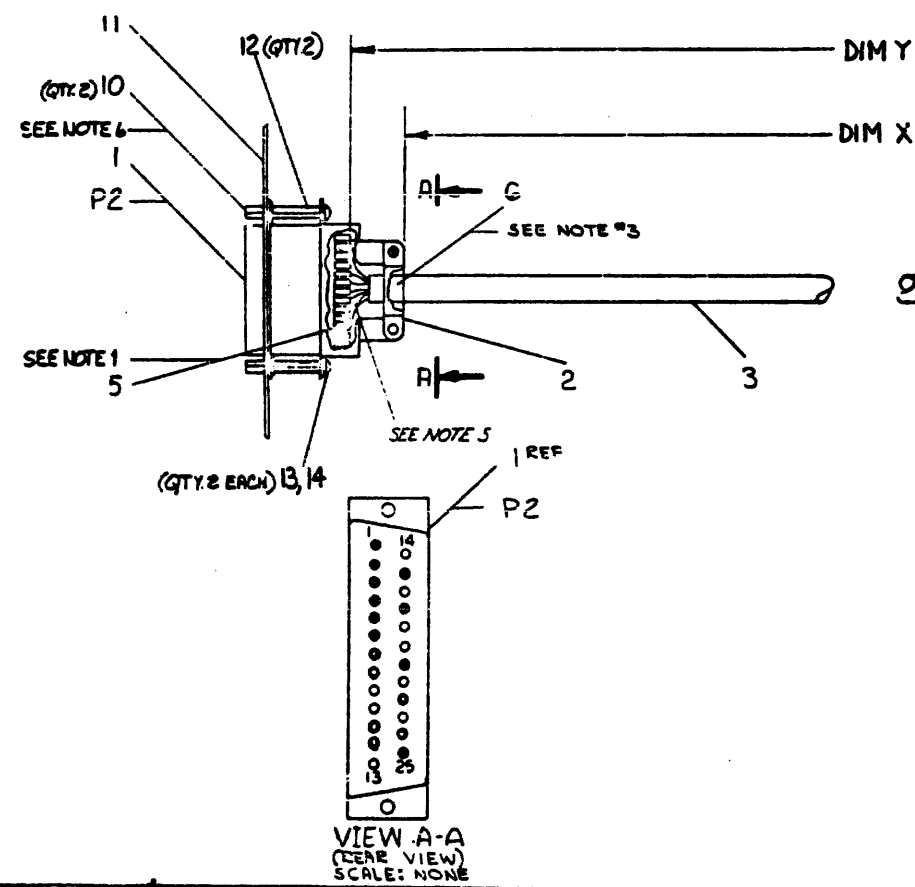
WIRE TABLE

ITEM NO	DESCRIPTION	FROM		TO		
		AWG	COLOR	CONNECTION	WITH	CONNECTION
3	22	BLK	PI-VV	7	P2-7	SOLDER
		GRN/WHT	PI-C		P2-25	
		GRN/BLK	PI-JJ		P2-12	
		GRN/BLK	PI-FF		P2-11	
		RED	PI-DD		P2-20	
		GRN	PI-BB		P2-8	
		FLY/WHT	PI-E		P2-6	
		ORA	PI-X		P2-22	
		BLU	PI-V		P2-4	
		WHT	PI-T		P2-5	
		BLU/BLK	PI-R		P2-17	
		BLK/WHT	PI-N		P2-15	
		RED/WHT	PI-L		P2-24	
		WHT/BLK	PI-J		P2-3	
3		RED/BLK	PI-F		P2-2	SOLDER
8		BLK	PI-E	7	PI-M	7
8	22	BLK	P2-1	SOLDER	P2-7	SOLDER

LEGEND

NUMBER	VARIATION	
	DIM "X"	DIM "Y" PRECUT
BC03L-10	1 FT ± 2 IN	10 FT, 5 IN
BC03L-5	5 FT ± 2 IN	5 FT, 5 IN
BC03L-1K	1 FT 9 IN ± 1 IN	2 FT
BC03L-01	1 FT 2 IN	1 FT 3 IN

- NOTES**
- EACH SOLDERED CONN ON P2 SHALL BE INSULATED WITH A .25 PIECE OF SHRINK TUBING (ITEM #5)
 - PLACE ITEM #9 (THIS SIDE UP STICKER) ON LETTERED SIDE OF ITEM #4 (CONN HOUSING) AS SHOWN.
 - FOR STRAIN RELIEF WRAP 2 TURNS OF TAPE (ITEM #6) AROUND CABLE (ITEM #3) AS SHOWN.
 - PINS MARKED * IN VIEW B-B ARE NOT USEABLE
 - WIRES COMING FROM CENTER OF PLUG CONN SHOULD BE SIB LG. ALL OTHERS SHOULD BE CONFINED INTO HOOD OF CONN SO THAT THEY'RE NOT BUNCHED.
 - PLACE LOCK WASHER (SUPPLIED WITH ITEM #10) BETWEEN SPACER AND CONNECTOR FLANGE. DISCARD NUT (QTY 2) SUPPLIED WITH ITEM #10.



QTY	DESCRIPTION	QTY	DESCRIPTION	QTY	DESCRIPTION
2	WASHER, LOCK #4	1006688	14		
2	SCR. PH. PAN HD #4-40 X .25	9008301-1	13		
2	SPACER, THREADED, HEX	9008333	12		
1	PLATE, CONN. MTG.	8-MU-111-72-0011	11		
2	SCREW LOCK ASSY	9008451-00	10		
1	LABEL (THIS SIDE UP)	3611567	9		
30	WIRE, STRANDED #22 AWG IPVC (BLK)	9107350-00	8		
17	SOCKET, CRIMP	1210089-07	7		
1	TAPE, DOUBLE SIDED .50 W.D.	9007834	6		
16	TUBING, HEAT SHRINK .12	9107255-09	5		
1	CONN, 44 POS, HSG.	1210918-15	4		
1	CABLE, 15 COND, 22 AWG.	9107672-00	3		
1	HOOD, CONN.	1212516-00	2		
1	CONNECTOR, PLUG, FILTERED	1214031-00	1		

REV	DESCRIPTION	DATE
1	INITIAL DESIGN	10/1/57
2	REVISED TO SHOW CHANGES	10/1/57
3	REVISED TO SHOW CHANGES	10/1/57
4	REVISED TO SHOW CHANGES	10/1/57
5	REVISED TO SHOW CHANGES	10/1/57
6	REVISED TO SHOW CHANGES	10/1/57
7	REVISED TO SHOW CHANGES	10/1/57
8	REVISED TO SHOW CHANGES	10/1/57
9	REVISED TO SHOW CHANGES	10/1/57
10	REVISED TO SHOW CHANGES	10/1/57
11	REVISED TO SHOW CHANGES	10/1/57
12	REVISED TO SHOW CHANGES	10/1/57
13	REVISED TO SHOW CHANGES	10/1/57
14	REVISED TO SHOW CHANGES	10/1/57
15	REVISED TO SHOW CHANGES	10/1/57
16	REVISED TO SHOW CHANGES	10/1/57
17	REVISED TO SHOW CHANGES	10/1/57
18	REVISED TO SHOW CHANGES	10/1/57
19	REVISED TO SHOW CHANGES	10/1/57
20	REVISED TO SHOW CHANGES	10/1/57

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DIMS

SEE PARTS LIST

QUANTITY & VARIATION

CLASS OF ACCURACY (CHECK ONE)

PRECISION

PREFERRED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES

SURFACE QUALITY

FINISH USED ON

TITLE: FILTERED CABLE ASSY BC03L

SIZE: D UA

SCALE: 1/1

SHEET: 1 OF 1

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		DATE 2-28-77			
ENGINEERING SPECIFICATION					
TITLE DL11-W Installation Procedure					
REVISIONS					
REV	DESCRIPTION	CHG NO	DATE	APPD BY	DATE
A	ECO CHANGE	00002	B. CRAMM 8-77	B. CRAMM	8-77
ENG Bob Pratt		APPD L.V. Pratt	SIZE CODE A SP	NUMBER DL11-W-2	REV A
DEC FORM NO 10-1 (REV. 10-77) 10-70 ORA 108		SHEET 1 OF 8			

ENGINEERING SPECIFICATION		CONTINUATION SHEET																																																						
TITLE DL11-W Installation Procedure																																																								
DL11-W Installation Procedure																																																								
Installation of the W7856 module consists of the following preparations:																																																								
<ol style="list-style-type: none"> 1) Switch selection of the address mode and register addresses. 2) Switch selection of vector address. 3) Switch selection of data format. 4) Switch selection of receiver and transmitter baud rates. 5) Switch selection of operation mode for the current loops. 6) Additional switch selections for compatibility. 7) Installation of G9900 in systems where +15V is not available. 																																																								
<p>NOTE: The notation used to indicate a particular switch is as follows: SX-Y where X denotes the particular switch in pack and Y denotes the individual switch in the pack. The switch pack is labeled on the P. C. board with an SX (eS2) and the individual switches are labeled on the switch pack as are the on-off positions.</p>																																																								
<p>A. Register Address Assignments:</p> <p>The DL11-W can respond to addresses with the following format:</p> <table border="1" style="margin-left: 20px;"> <tr> <td>17</td><td>16</td><td>15</td><td>14</td><td>13</td><td>12</td><td>11</td><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td><td>0</td> </tr> <tr> <td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td> </tr> <tr> <td colspan="17" style="text-align: center;">SWITCHES</td> </tr> </table> <p style="margin-left: 20px;">Selects 1 of 4 Registers</p> <p style="margin-left: 20px;">Byte Control</p>				17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	SWITCHES																
17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0																																							
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0																																							
SWITCHES																																																								
<p>The DL11-W can be operated in one of three different address selection modes. Normally, a DL11-W used as console terminal control would operate in the first mode, whereas additional DL11-W's would be operated in the second mode. The third mode is not normally used, but is included here for completeness.</p>																																																								
DEC FORM NO 10-1 (REV. 10-77) 10-70 ORA 108		SHEET 2 OF 8																																																						

ENGINEERING SPECIFICATION		CONTINUATION SHEET									
TITLE DL11-W Installation Procedure											
<p>Mode 1: Both the serial line unit and the real-time clock sections can be addressed. Due to common address selection logic, operation in this mode requires that the serial line unit addresses be restricted to 77756X. The line clock address is 777546.</p> <p>Mode 2: Only the serial line unit section can be addressed. Address selection ranges from 74000 to 77777. Line clock is disabled and does not respond to address 777546.</p> <p>Mode 3: Only the line clock section can be addressed at 777546. The serial line unit section does not respond to any address.</p>											
ADDRESS AND MODE SELECTION											
Address Bit	A10	A09	A08	A07	A06	A05	A04	A03	N/A	N/A	
Switch	S5-3	S5-2	S5-1	S5-4	S5-5	S5-6	S5-8	S5-7	S5-9	S5-10	
Mode 1	Off	Off	Off	On	Off	Off	Off	On	Off	On	
Mode 2*	Off	Off	Off	On	Off	Off	Off	On	On	Off	
Mode 3	Off	Off	Off	On	Off	Off	Off	On	On	On	
*Address 77756X selected for serial line interface. Other addresses may be selected using SWITCH-OFF = 1 and SWITCH-ON = 0.											
Note: Remove R63 from DL11-W's operated in Mode 2 to allow proper operation of a line frequency clock or DL11-W operated in Mode 1 or Mode 3.											
Address assignments for serial lines are normally made in the ranges from 77650X to 77667X and from 77561X to 77617X.											
b. Vector Address Assignments:											
The line clock, if enabled, has a fixed vector address of 100 and cannot be changed. The serial line assignments are to floating vectors produced in the form XX0 (Receiver) and XX4 (Transmitter) where XX ranges from 00 to 77.											
For a DL11-W used as the console device, the vector is 060/06A. Additional DL11-W's vector addresses are floating.											
DEC FORM NO 10-1 (REV. 10-77) 10-70 ORA 108		SHEET 3 OF 8									

ENGINEERING SPECIFICATION		CONTINUATION SHEET																															
TITLE DL11-W Installation Procedure																																	
<table border="1" style="margin-left: 20px;"> <tr> <td>V8</td><td>V7</td><td>V6</td><td>V5</td><td>V4</td><td>V3</td><td>V2</td><td>V1</td><td>V0</td> </tr> <tr> <td></td><td></td><td></td><td>0/1</td><td>0</td><td>0</td><td></td><td></td><td></td> </tr> </table> <p style="margin-left: 20px;">Switch Selectable for Serial Line</p>				V8	V7	V6	V5	V4	V3	V2	V1	V0				0/1	0	0															
V8	V7	V6	V5	V4	V3	V2	V1	V0																									
			0/1	0	0																												
<p>Vector Bit V8 V7 V6 V5 V4 V3</p> <p>Switch S2-8 S2-7 S2-5 S2-3 S2-6 S2-4</p> <p>060/06A Off Off Off On On Off</p> <p>On = 1, Off = 0</p>																																	
<p>C. Selection of Data Format:</p> <p>1. Data Bits</p> <p>Switches S4-3 and S4-4 control the number of data bits in the serial character as follows:</p> <table border="1" style="margin-left: 20px;"> <tr> <td>S4-4</td><td>S4-3</td><td># of Data Bits</td> </tr> <tr> <td>On</td><td>On</td><td>5</td> </tr> <tr> <td>On</td><td>Off</td><td>6</td> </tr> <tr> <td>Off</td><td>On</td><td>7</td> </tr> <tr> <td>Off</td><td>Off</td><td>8</td> </tr> </table> <p>2. Parity</p> <p>Parity is controlled by switches S4-2 and S4-6 as follows:</p> <table border="1" style="margin-left: 20px;"> <tr> <td>S4-2</td><td>S4-6</td><td>Parity</td> </tr> <tr> <td>Off</td><td>Off</td><td>Off</td> </tr> <tr> <td>On</td><td>Off</td><td>Off</td> </tr> <tr> <td>Off</td><td>On</td><td>Even</td> </tr> <tr> <td>On</td><td>On</td><td>Odd</td> </tr> </table> <p>3. Stop Bits</p> <p>Switch S4-5 controls the number of stop bits selected in the serial character as follows:</p>				S4-4	S4-3	# of Data Bits	On	On	5	On	Off	6	Off	On	7	Off	Off	8	S4-2	S4-6	Parity	Off	Off	Off	On	Off	Off	Off	On	Even	On	On	Odd
S4-4	S4-3	# of Data Bits																															
On	On	5																															
On	Off	6																															
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S4-2	S4-6	Parity																															
Off	Off	Off																															
On	Off	Off																															
Off	On	Even																															
On	On	Odd																															
DEC FORM NO 10-1 (REV. 10-77) 10-70 ORA 108		SHEET 4 OF 8																															

ENGINEERING SPECIFICATION		CONTINUATION SHEET																																																					
TITLE DL11-W Installation Procedure																																																							
<p>D. <u>Baud Rate Selection:</u></p> <p>Receiver and Transmitter baud rates are independent, so any combination may be selected.</p> <table border="1"> <thead> <tr> <th colspan="2">Baud Rate Switch Selections</th> </tr> <tr> <th>Baud Rate</th> <th>Receiver</th> <th>Transmitter</th> </tr> <tr> <th></th> <th>S3-2 S3-3 S3-5</th> <th>S4-10 S3-1 S3-4</th> </tr> </thead> <tbody> <tr> <td>110</td> <td>Off Off Off</td> <td>On On On</td> </tr> <tr> <td>150</td> <td>On Off Off</td> <td>On On On</td> </tr> <tr> <td>300</td> <td>On On On</td> <td>On Off Off</td> </tr> <tr> <td>600</td> <td>Off On Off</td> <td>On Off On</td> </tr> <tr> <td>1200</td> <td>Off Off On</td> <td>On On Off</td> </tr> <tr> <td>2400</td> <td>On On On</td> <td>On Off Off</td> </tr> <tr> <td>4800</td> <td>On Off On</td> <td>Off Off On</td> </tr> <tr> <td>9600</td> <td>On Off On</td> <td>Off On Off</td> </tr> </tbody> </table> <p>E. <u>Current Loop Operation Mode:</u></p> <p>Normally, current loops should be in active mode, unless interfaced to another active loop, such as to another DL11.</p> <table border="1"> <thead> <tr> <th colspan="2">Active - Passive Mode Selection</th> </tr> <tr> <th>Transmitter</th> <th>S1-1 S1-2 S1-3 S1-6 S1-7</th> </tr> <tr> <th>Active</th> <td>On On Off Off On</td> </tr> <tr> <th>Passive</th> <td>Off Off On On Off</td> </tr> <tr> <th>Receiver</th> <th>S3-6 S3-7 S3-8 S3-9 S3-10</th> </tr> <tr> <th>Active</th> <td>On Off On On Off</td> </tr> <tr> <th>Passive</th> <td>Off On Off On Off</td> </tr> <tr> <th>Reader Enable</th> <th>S1-4 S1-5 S1-8 S1-9 S1-10</th> </tr> <tr> <th>Active</th> <td>On Off On On Off</td> </tr> <tr> <th>Passive</th> <td>Off On Off On Off</td> </tr> </thead></table>				Baud Rate Switch Selections		Baud Rate	Receiver	Transmitter		S3-2 S3-3 S3-5	S4-10 S3-1 S3-4	110	Off Off Off	On On On	150	On Off Off	On On On	300	On On On	On Off Off	600	Off On Off	On Off On	1200	Off Off On	On On Off	2400	On On On	On Off Off	4800	On Off On	Off Off On	9600	On Off On	Off On Off	Active - Passive Mode Selection		Transmitter	S1-1 S1-2 S1-3 S1-6 S1-7	Active	On On Off Off On	Passive	Off Off On On Off	Receiver	S3-6 S3-7 S3-8 S3-9 S3-10	Active	On Off On On Off	Passive	Off On Off On Off	Reader Enable	S1-4 S1-5 S1-8 S1-9 S1-10	Active	On Off On On Off	Passive	Off On Off On Off
Baud Rate Switch Selections																																																							
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Passive	Off On Off On Off																																																						

DEC FORM NO DEC 16-10011-1022-N-10		SIZE CODE	NUMBER
DMA 100		A SP	DL11-W-2
			SHEET 5 OF 8

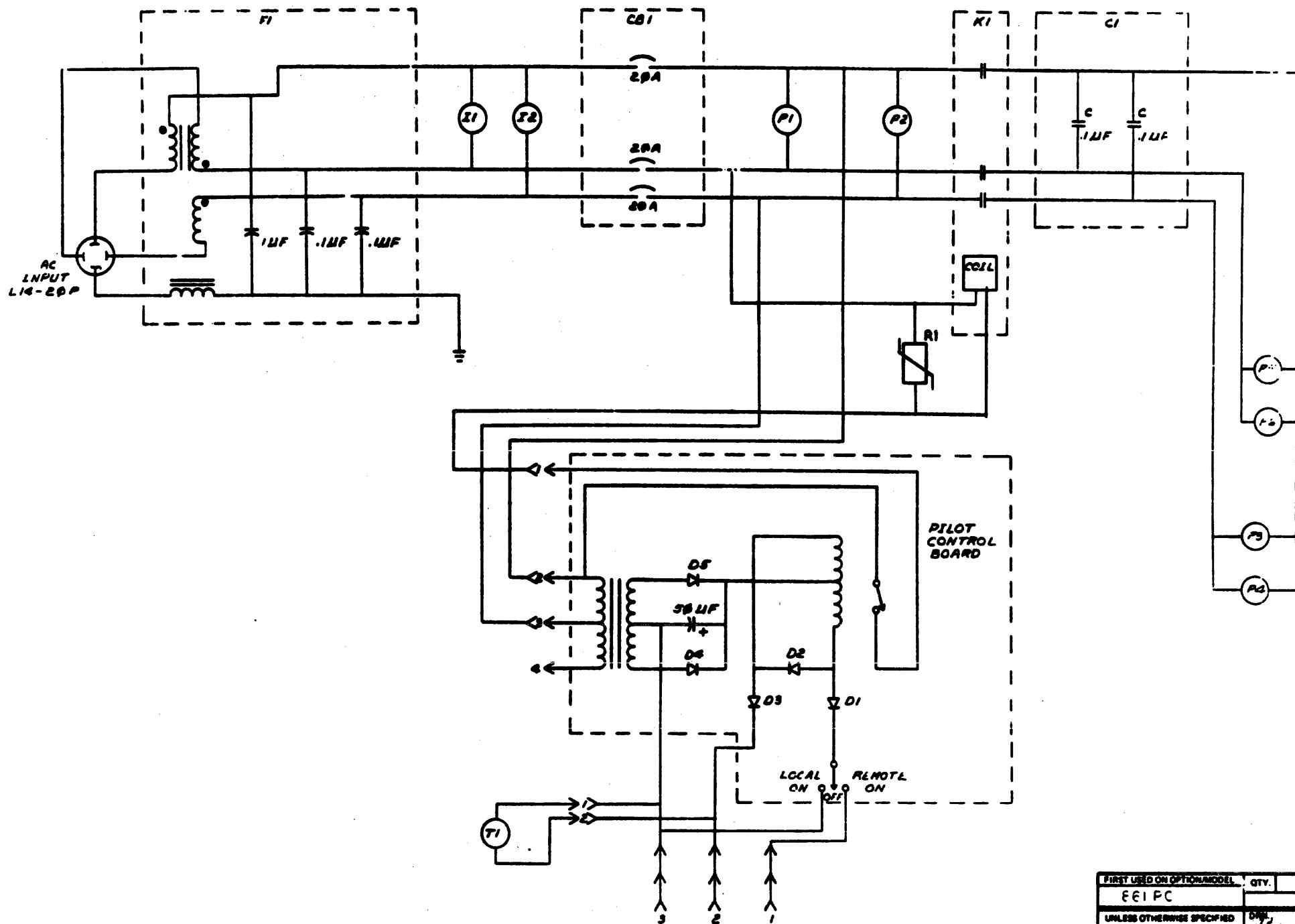
ENGINEERING SPECIFICATION		CONTINUATION SHEET												
TITLE DL11-W Installation Procedure														
<p>F. <u>Compatibility Selection:</u></p> <p>Switches S4-1 and S4-7 allow the DL11-W to be configured to replace DL11-A, B, C, and D options in most applications.</p> <table border="1"> <thead> <tr> <th colspan="2">DL11-W Compatibility Switches</th> </tr> <tr> <th>Selectable</th> <th>Switch</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Break Bit</td> <td>S4-1</td> <td>Enabled in the ON position. Should be disabled (switch OFF) if replacing a DL11-A, or DL11-B. Should be enabled (switch ON) if replacing a DL11-C or DL11-D.</td> </tr> <tr> <td>Error Bits</td> <td>S4-7</td> <td>Error bit reporting is enabled in the ON position. Should be disabled if replacing DL11-A or DL11-B, and should be enabled if replacing DL11-C or DL11-D.</td> </tr> </tbody> </table> <p>Note: Both EIA level and current loop signals are available at the berg connector on the module. No selection is necessary. The proper cable will pick up the correct signals.</p> <p>G. <u>G8000 Installation:</u></p> <p>For DL11-W EIA operation, a positive voltage is required between 9 and 15 volts to operate the FIA drivers. For PDP-11/20 and PDP-11/15 systems with the H720 power supply, a G8000 module must be installed to provide this voltage. Using a filter network, this module converts the full-wave rectified "+8V" signal to a positive DC voltage.</p> <ol style="list-style-type: none"> Install G8000 into slot A02 or DD11-A. Wire A02V2 to A02V2. Wire A02W2 to CKXU1 where XX is the slot location of the M7856. 				DL11-W Compatibility Switches		Selectable	Switch	Description	Break Bit	S4-1	Enabled in the ON position. Should be disabled (switch OFF) if replacing a DL11-A, or DL11-B. Should be enabled (switch ON) if replacing a DL11-C or DL11-D.	Error Bits	S4-7	Error bit reporting is enabled in the ON position. Should be disabled if replacing DL11-A or DL11-B, and should be enabled if replacing DL11-C or DL11-D.
DL11-W Compatibility Switches														
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Error Bits	S4-7	Error bit reporting is enabled in the ON position. Should be disabled if replacing DL11-A or DL11-B, and should be enabled if replacing DL11-C or DL11-D.												
DEC FORM NO DEC 16-10011-1022-N-10		SIZE CODE	NUMBER											
DMA 100		A SP	DL11-W-2											
			SHEET 6 OF 8											

ENGINEERING SPECIFICATION		CONTINUATION SHEET																																																			
TITLE DL11-W Installation Procedure																																																					
<p>H. <u>DL11-W Systems with +15V Available Using DD11-A</u></p> <p>There is a special situation of using a DD11-A to mount a DL11-W in systems with +15V available. These systems have +15V available, and it appears at pin A03V2 of the DD11-A when using power harness such as 7009177, 7008855, or 7008909. In this situation, no G8000 is necessary, and +15V can be wired directly from A03V2 to CKXU1, where XX is the slot number of the DL11.</p> <p>I. When using the DL11-W in an 11/05 processor pin CKXU1 has +15V available on it so no G8000 or no jumpers are required.</p> <p>J. <u>INSTALLATION</u></p> <p>The DL11-W module plugs into an SPC slot. A wire must be installed to pick up the LTC L signal from the power supply and apply it to the line frequency input of the DL11-W.</p> <p>When installed, the LTC L input to the DL11-W is located on pin CD1. Connect a length of 30 AWG wire from pin CD1 on the backplane to the pin on the backplane, as designated in Table 1-1, for each application.</p> <table border="1"> <thead> <tr> <th colspan="2">Table 1-1 LTC L Connection</th> </tr> <tr> <th>PDP Computer</th> <th>Processor</th> <th>Pin Number</th> </tr> </thead> <tbody> <tr> <td>11/04</td> <td>DL11-D (4 slot)</td> <td>C02D1, C03D1, C04D1</td> </tr> <tr> <td>11/04</td> <td>DL11-D (9 slot)</td> <td>C02D1, C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, or C09D1</td> </tr> <tr> <td>11/05</td> <td>KA11-A w/8K memory</td> <td>C01D1, C02D1, C03D1, C04D1, or F08V2</td> </tr> <tr> <td>11/05</td> <td>DL11-A w/16K memory</td> <td>C01D1 or F08V2</td> </tr> <tr> <td>11/20</td> <td>KA11</td> <td>A13P2 or B12R1</td> </tr> <tr> <td>11/34</td> <td>KA11-E</td> <td>C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, or C09D1</td> </tr> <tr> <td>11/35</td> <td>DL11-A</td> <td>F03R1 or C09D1</td> </tr> <tr> <td>11/40</td> <td>DL11-A</td> <td>F03R1 or C09D1</td> </tr> <tr> <td>11/45</td> <td>KB11-A</td> <td>C26D1, C27D1, or C28D1</td> </tr> <tr> <td>11/55</td> <td>KB11-A</td> <td>C26D1, C27D1, or C28D1</td> </tr> <tr> <td>11/70</td> <td>KB11-B</td> <td>C40D1, C41D1, C42D1, C43D1, or C44D1</td> </tr> <tr> <td>11/70</td> <td>KB11-C</td> <td>C40D1, C41D1, C42D1, C43D1, or C44D1</td> </tr> <tr> <td>DL11-B Peripheral Mounting Panel</td> <td></td> <td>C01D1, C02D1, C03D1, or C04D1</td> </tr> <tr> <td>DL11-D Peripheral Mounting Panel</td> <td></td> <td>C01D1, C02D1, C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, C09D1, A03P2</td> </tr> <tr> <td>DL11-A Peripheral Mounting Panel</td> <td></td> <td></td> </tr> </tbody> </table> <p>NOTE: A wire connection is not necessary for backplane pin numbers ending in DL. LTC L is already connected to the line frequency input of the DL11-W.</p>				Table 1-1 LTC L Connection		PDP Computer	Processor	Pin Number	11/04	DL11-D (4 slot)	C02D1, C03D1, C04D1	11/04	DL11-D (9 slot)	C02D1, C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, or C09D1	11/05	KA11-A w/8K memory	C01D1, C02D1, C03D1, C04D1, or F08V2	11/05	DL11-A w/16K memory	C01D1 or F08V2	11/20	KA11	A13P2 or B12R1	11/34	KA11-E	C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, or C09D1	11/35	DL11-A	F03R1 or C09D1	11/40	DL11-A	F03R1 or C09D1	11/45	KB11-A	C26D1, C27D1, or C28D1	11/55	KB11-A	C26D1, C27D1, or C28D1	11/70	KB11-B	C40D1, C41D1, C42D1, C43D1, or C44D1	11/70	KB11-C	C40D1, C41D1, C42D1, C43D1, or C44D1	DL11-B Peripheral Mounting Panel		C01D1, C02D1, C03D1, or C04D1	DL11-D Peripheral Mounting Panel		C01D1, C02D1, C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, C09D1, A03P2	DL11-A Peripheral Mounting Panel		
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11/05	KA11-A w/8K memory	C01D1, C02D1, C03D1, C04D1, or F08V2																																																			
11/05	DL11-A w/16K memory	C01D1 or F08V2																																																			
11/20	KA11	A13P2 or B12R1																																																			
11/34	KA11-E	C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, or C09D1																																																			
11/35	DL11-A	F03R1 or C09D1																																																			
11/40	DL11-A	F03R1 or C09D1																																																			
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11/70	KB11-B	C40D1, C41D1, C42D1, C43D1, or C44D1																																																			
11/70	KB11-C	C40D1, C41D1, C42D1, C43D1, or C44D1																																																			
DL11-B Peripheral Mounting Panel		C01D1, C02D1, C03D1, or C04D1																																																			
DL11-D Peripheral Mounting Panel		C01D1, C02D1, C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, C09D1, A03P2																																																			
DL11-A Peripheral Mounting Panel																																																					
DEC FORM NO DEC 16-10022-10-270-1001		SIZE CODE	NUMBER																																																		
DMA 100		A SP	DL11-W-2																																																		
			SHEET 7 OF 8																																																		

ENGINEERING SPECIFICATION		CONTINUATION SHEET																																																			
TITLE DL11-W Installation Procedure																																																					
<p>K. <u>Installation</u></p> <p>The DL11-W module plugs into an SPC slot. A wire must be installed to pick up the DC10L signal from the power supply and apply it to the DC1C input of the DL11-W.</p> <p>When installed, the DC10L input to the DL11-W is located on pin CM1. Connect a length of 30 AWG wire from pin CM1 on the backplane to the pin on the backplane, as designated in Table 1-2 for each application.</p> <table border="1"> <thead> <tr> <th colspan="2">Table 1-2 DC10L Connection</th> </tr> <tr> <th>PDP Computer</th> <th>Processor</th> <th>Pin Number</th> </tr> </thead> <tbody> <tr> <td>11/04*</td> <td>DL11-D (4 slot)</td> <td>C03N1, C04N1</td> </tr> <tr> <td>11/04*</td> <td>DL11-D (9 slot)</td> <td>C03N1 thru C09N1</td> </tr> <tr> <td>11/05*</td> <td>KA11-A w/8K Memory</td> <td>C01N1, C02N1, C03N1, C04N1</td> </tr> <tr> <td>11/05*</td> <td>DL11-A w/16K Memory</td> <td>C01N1</td> </tr> <tr> <td>11/20</td> <td>KA11</td> <td>B11F2, B14F2, A13S2, A08S2, A03S2, B04D2, F08B2</td> </tr> <tr> <td>11/34*</td> <td>DL11-E</td> <td>C03N1 thru C09N1</td> </tr> <tr> <td>11/35</td> <td>DL11-A</td> <td>C09S2</td> </tr> <tr> <td>11/40</td> <td>DL11-A</td> <td>C09S2</td> </tr> <tr> <td>11/45*</td> <td>KB11-A</td> <td>C26N1, C26N1, C28N1</td> </tr> <tr> <td>11/55*</td> <td>KB11-D</td> <td>C26N1, C26N1, C28N1</td> </tr> <tr> <td>11/70*</td> <td>KB11-B</td> <td>C40N1, C41N1, C42N1, C43N1, C44N1</td> </tr> <tr> <td>11/70*</td> <td>KB11-C</td> <td>C40N1, C41N1, C42N1, C43N1, C44N1</td> </tr> <tr> <td>DL11-B Peripheral Mounting Panel</td> <td></td> <td>C01N1 thru C04N1</td> </tr> <tr> <td>DL11-D Peripheral Mounting Panel</td> <td></td> <td>C01N1 thru C09N1</td> </tr> <tr> <td>DL11-A Peripheral Mounting Panel</td> <td></td> <td>B01F2, B04F2, A03S2</td> </tr> </tbody> </table> <p>*NOTE: A wire connection is not necessary for backplane pin numbers ending in N1 DC10L. Is already connected to the input of the DL11-W.</p>				Table 1-2 DC10L Connection		PDP Computer	Processor	Pin Number	11/04*	DL11-D (4 slot)	C03N1, C04N1	11/04*	DL11-D (9 slot)	C03N1 thru C09N1	11/05*	KA11-A w/8K Memory	C01N1, C02N1, C03N1, C04N1	11/05*	DL11-A w/16K Memory	C01N1	11/20	KA11	B11F2, B14F2, A13S2, A08S2, A03S2, B04D2, F08B2	11/34*	DL11-E	C03N1 thru C09N1	11/35	DL11-A	C09S2	11/40	DL11-A	C09S2	11/45*	KB11-A	C26N1, C26N1, C28N1	11/55*	KB11-D	C26N1, C26N1, C28N1	11/70*	KB11-B	C40N1, C41N1, C42N1, C43N1, C44N1	11/70*	KB11-C	C40N1, C41N1, C42N1, C43N1, C44N1	DL11-B Peripheral Mounting Panel		C01N1 thru C04N1	DL11-D Peripheral Mounting Panel		C01N1 thru C09N1	DL11-A Peripheral Mounting Panel		B01F2, B04F2, A03S2
Table 1-2 DC10L Connection																																																					
PDP Computer	Processor	Pin Number																																																			
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11/04*	DL11-D (9 slot)	C03N1 thru C09N1																																																			
11/05*	KA11-A w/8K Memory	C01N1, C02N1, C03N1, C04N1																																																			
11/05*	DL11-A w/16K Memory	C01N1																																																			
11/20	KA11	B11F2, B14F2, A13S2, A08S2, A03S2, B04D2, F08B2																																																			
11/34*	DL11-E	C03N1 thru C09N1																																																			
11/35	DL11-A	C09S2																																																			
11/40	DL11-A	C09S2																																																			
11/45*	KB11-A	C26N1, C26N1, C28N1																																																			
11/55*	KB11-D	C26N1, C26N1, C28N1																																																			
11/70*	KB11-B	C40N1, C41N1, C42N1, C43N1, C44N1																																																			
11/70*	KB11-C	C40N1, C41N1, C42N1, C43N1, C44N1																																																			
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DL11-A Peripheral Mounting Panel		B01F2, B04F2, A03S2																																																			
DEC FORM NO DEC 16-10022-10-270-1001		SIZE CODE	NUMBER																																																		
DMA 100		A SP	DL11-W-2																																																		
			SHEET 8 OF 8																																																		

SECTION II
POWER SYSTEM ENGINEERING DRAWINGS

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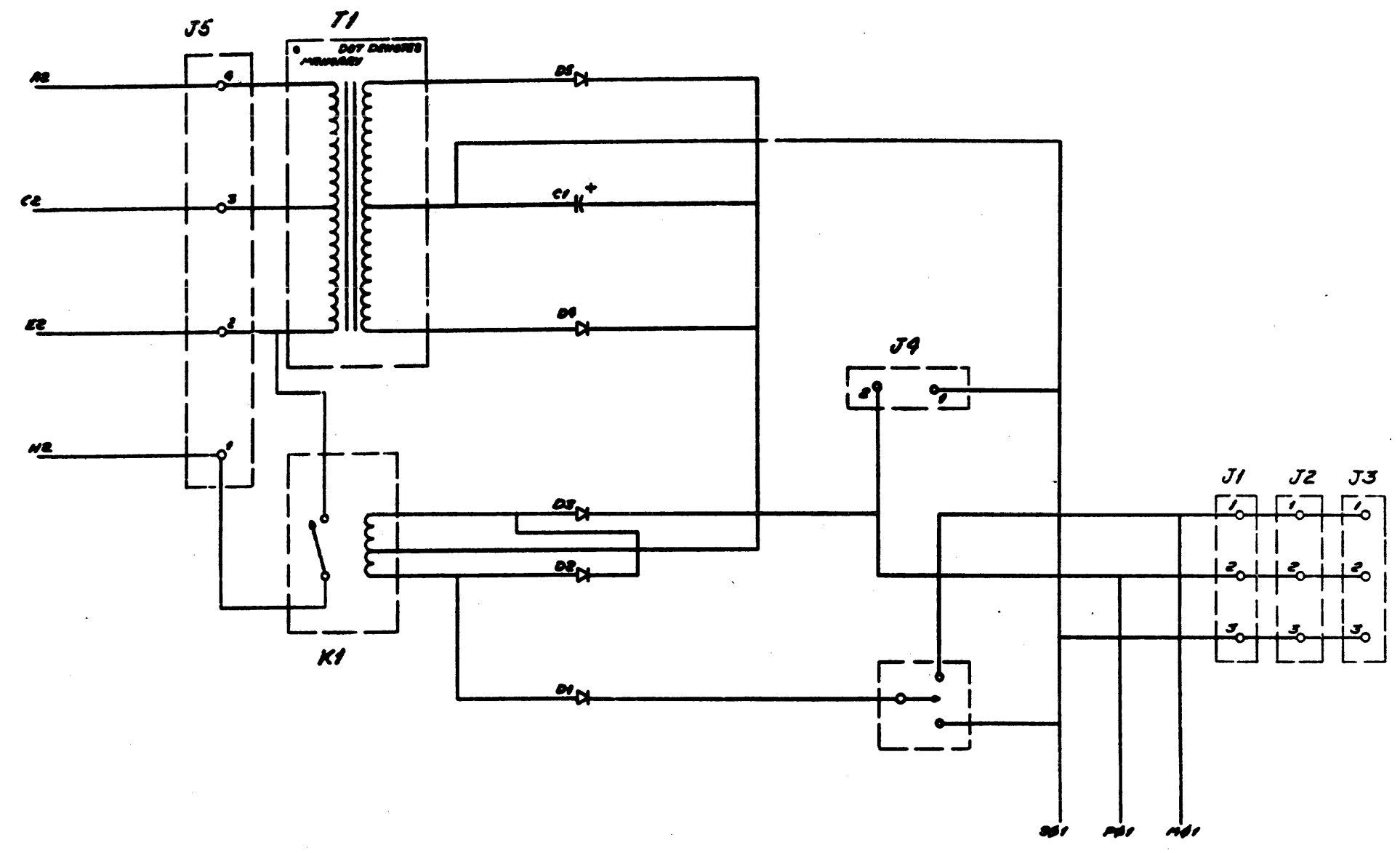


FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	TYPED NO.
EEIPC				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES	DATE 8-11-72	DATE 8-11-72	EQUIPMENT CORPORATION MILITARY DIVISION	
TOLERANCES	DATE 8-6-72	DATE 8-6-72		
DECIMALS			TITLE CIRCUIT SCHEMATIC (861-A PC)	
ANGLES				
3/32 - 6/32			MATERIAL NEXT HIGHER ASSY. B-DD-861-C	
XX - 02				
X - 1			FINISH SCALE SHEET 1 OF 1	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE 8-11-72	DATE 8-11-72	PARTS LIST D CS 861-A-1	
REVISIONS				
REV. A	DATE 8-11-72	BY P. J. KELLY		
REV. B	DATE 8-11-72	BY P. J. KELLY		

REV.	DATE	BY	DESCRIPTION
A	8-11-72	P. J. KELLY	REVISED
B	8-11-72	P. J. KELLY	REVISED

D CS 861-A-1

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REV	DATE	BY

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
861 PC.				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES.		DRN <i>Ballant</i>	DATE 5-25-70	DIGITAL EQUIPMENT CORPORATION
TOLERANCES		CHK'D <i>J. Dwyer</i>	DATE 7-17-70	
DECIMALS	ANGLES	ENR <i>J. Dwyer</i>	DATE 7-17-70	TITLE PILOT CONTROL
.XX - .000	10° 30'	PROJ. ENR <i>J. Dwyer</i>	DATE 7-17-70	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		PRD <i>Ballant</i>	DATE 7-2-70	DRAWING NUMBER DCS 5410206-0-1
MATERIAL		FINISH	SCALE NONE	
NEXT HIGHER ASSY.		FRST 2 OF 2	SHEET 2 OF 2	REV. NO. A

WIRE TABLE 861-A

ITEM NO.	DESCRIPTION	FROM	TO	REMARKS						
NO.	COLOR	AWG	CONN	POINT	WITH	CONN	POINT	WITH	SEE DETAIL	N°
29	BLK	14	PI-B2	37	KI-A3	37	12.0			
29	BLK	14	PI-B1	37	KI-B3	37	4.0			
28	WHT	14	PI-S1	37	PI-S1	37	4.0			
28	WHT	14	PI-S2	37	PI-A2	37	12.0			
32	WHT	18	P2-S2	36	PI-2	15	10.0			
37	RED	18	PI-B2	36	PI-3	15	10.0			
27	RED	14	P2-B1	37	CI-A3	37	12.0			
28	WHT	14	P2-S1	37	PI-S2	37	6.0			
28	WHT	14	P2-S2	37	CI-A3	37	6.0			
27	RED	14	P3-B1	37	PI-A1	37	6.0			
27	RED	14	P3-B2	37	PI-B1	37	4.0			
28	WHT	14	P4-S1	37	PI-S2	37	4.0			
28	WHT	14	P5-S1	37	PI-S2	37	6.0			
29	BLK	14	P5-B1	37	PI-A2	37	6.0			
29	BLK	14	P5-B2	37	PI-B1	37	4.0			
29	BLK	14	PI-B3	37	CI-B2	37	4.0			
28	WHT	14	KI-B2	37	CI-B3	37	4.0			
27	RED	14	KI-B1	37	CI-B1	37	4.0			
5	BLK	14	Z1-A	38	CB1-B1	LINE*	38			
5	BLK	14	Z1-B	38	CB1-A1	LINE*	38			
5	BLK	14	Z2-A	38	CB1-B1	LINE*	38			
5	BLK	14	Z2-B	38	CB1-C1	LINE*	38			
29	BLK	14	FI-C	37	CB1-A1	LINE*	37	6.0		
28	WHT	14	FI-B	37	CB1-B1	LINE*	37	6.0		
27	RED	14	FI-A	37	CB1-C1	LINE*	37	6.0		
27	RED	14	KI-A1	37	CB1-C2	LOAD-	37	6.0		
28	WHT	14	KI-A2	37	CB1-B2	LOAD-	37	6.0		
29	BLK	14	KI-A3	37	CB1-A2	LOAD-	37	6.0		
60	GRN	12	PI-G	49	GND		65	6.0		
35	DRN	18	PI-1	17	TI		36	10.0		
35	DRN	18	PI-2	17	TI		36	10.0		
11	BLK	12	PI-Y		FI-C	INPUT	49			
11	RED	12	PI-X		FI-A	INPUT	49			
11	WHT	12	PI-S		FI-B	INPUT	49			
11	GRN	12	PI-G		FI-G	INPUT	49			
33	BLK	18	PI-B1	36	KI-3		37	12.0		
34	BLK	18	PI-1	36	KI-4		37	10.0		
71			RI-1		KI-4					
71			RI-2		KI-5					

WIRE TABLE 861-B

ITEM NO.	DESCRIPTION	FROM	TO	REMARKS						
NO.	COLOR	AWG	CONN	POINT	WITH	CONN	POINT	WITH	SEE DETAIL	N°
29	BLK	14	PI-B2	37	KI-A3	37	12.0			
29	BLK	14	PI-B1	37	PI-B2	37	4.0			
28	WHT	14	PI-S1	37	PI-S1	37	4.0			
28	WHT	14	PI-S2	37	KI-A2	37	12.0			
32	WHT	18	P2-S2	36	PI-2	15	10.0			
28	WHT	14	P2-S1	37	PI-S2	37	6.0			
29	BLK	14	P2-B2	37	PI-B1	37	6.0			
28	WHT	14	P2-S1	37	PI-S2	37	6.0			
29	BLK	14	P3-B2	37	PI-B1	37	6.0			
28	WHT	14	P3-S1	37	PI-S2	37	6.0			
28	WHT	14	P3-S2	37	PI-B2	37	6.0			
29	BLK	14	P4-B1	37	PI-B1	37	6.0			
29	BLK	14	P4-B2	37	PI-B1	37	6.0			
29	BLK	14	P4-B3	37	PI-B1	37	6.0			
29	BLK	14	P5-B1	37	PI-S2	37	6.0			
28	WHT	14	PI-B2	37	PI-B2	37	6.0			
5	BLK	14	Z1-A	38	CB1-B1	LINE*	38			
5	BLK	14	Z1-B	38	CB1-A1	LINE*	38			
5	BLK	14	Z2-A	38	CB1-B1	LINE*	38			
5	BLK	14	Z2-B	38	CB1-C1	LINE*	38			
29	BLK	14	FI-C	37	CB1-A1	LINE*	37	6.0		
28	WHT	14	FI-B	37	CB1-B1	LINE*	37	6.0		
27	RED	14	FI-A	37	CB1-C1	LINE*	37	6.0		
27	RED	14	KI-A1	37	CB1-C2	LOAD-	37	6.0		
28	WHT	14	KI-A2	37	CB1-B2	LOAD-	37	6.0		
29	BLK	14	KI-A3	37	CB1-A2	LOAD-	37	6.0		
60	GRN	12	PI-G	49	GND		65	6.0		
35	DRN	18	PI-1	17	TI		36	10.0		
35	DRN	18	PI-2	17	TI		36	10.0		
49	GRN	18	PI-G		FI-G	INPUT	49			
49	BLK	14	PI-Y		FI-C	INPUT	49			
49	WHT	14	PI-S		FI-B	INPUT	49			
29	BLK	14	PI-B2	37	PI-B2		37	6.0		
33	BLK	18	PI-B1	36	KI-3		37	12.0		
33	BLK	18	PI-1	36	KI-4		37	10.0		
71			RI-1		KI-4					
71			RI-2		KI-5					

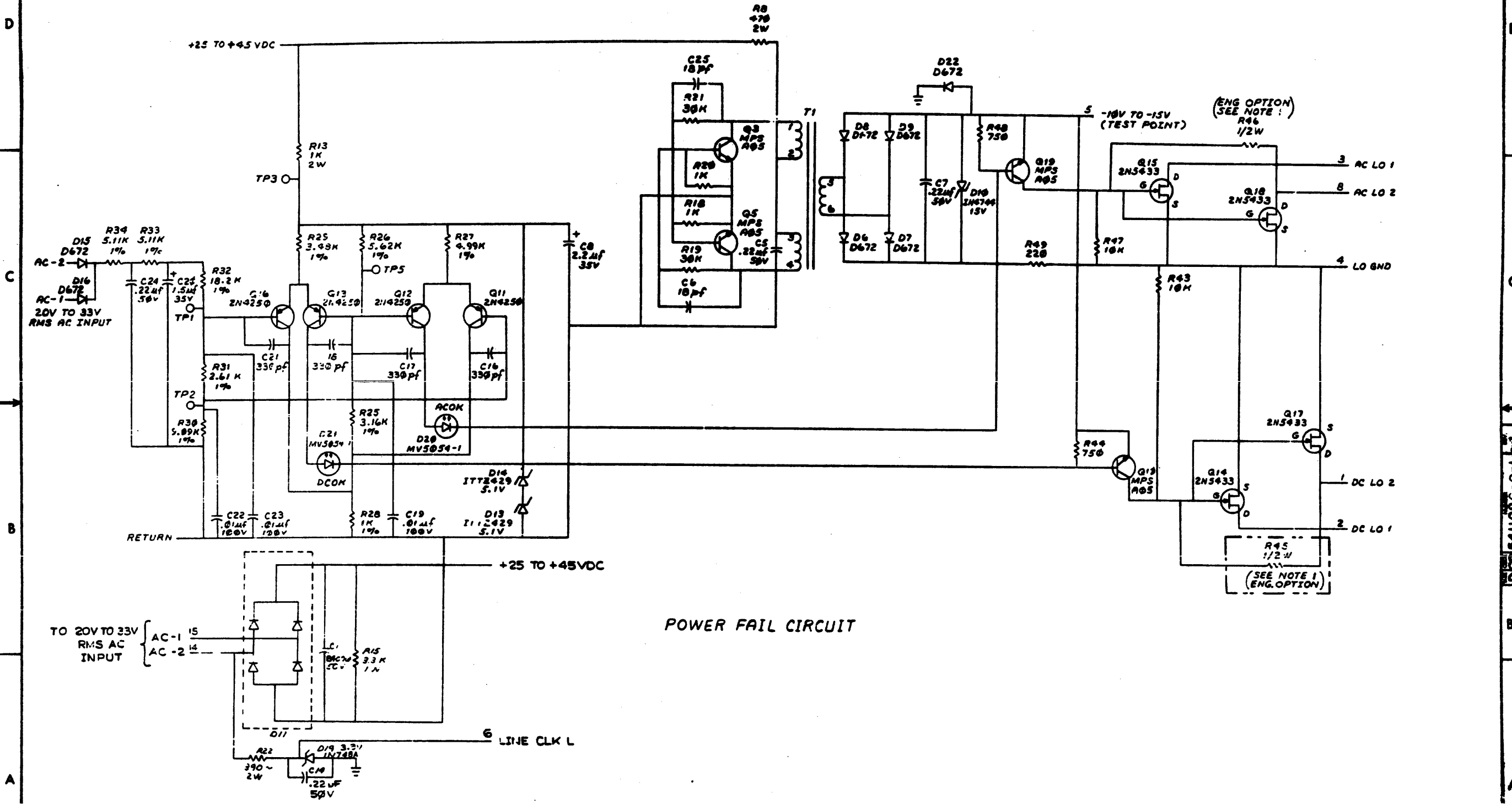
WIRE TABLE 861-C, 861-F

ITEM NO.	DESCRIPTION	FROM	TO	REMARKS						
NO.	COLOR	AWG	CONN	POINT	WITH	CONN	POINT	WITH	SEE DETAIL	N°
29	BLK	14	PI-B2	37	KI-A3	37	12.0			
29	BLK	14	PI-B1	37	PI-B2	37	4.0			
54	WHT	10	PI-S1	65	PI-S1	65	4.0			
54	WHT	10	PI-S2	65	KI-A2	65	12.0			
32	WHT	18	P2-S2	36	PI-2	15	10.0			
31	RED	18	P2-B2	36	PI-3	15	10.0			
27	RED	14	P2-B1	37	KI-A1	37	12.0			
54	WHT	10	P2-S1	65	PI-S2	65	6.0			
54	WHT	10	P3-S2	65	CI-A3	65	6.0			
27	RED	14	P3-B1	37	CI-A1	37	6.0			
27	RED	14	P3-B2	37	PI-B1	37	6.0			
54	WHT	10	P4-S1	65	PI-S2	65	6.0			
54	WHT	10	P5-S1	65	PI-S2	65	6.0			
29	BLK	14	P5-B1	37	CI-A2	37	6.0			
29	BLK	14	P5-B2	37	PI-B1	37	6.0			
29	BLK	14	PI-B3	37	CI-B2	37	6.0			
28	WHT	14	KI-B2	37	CI-B3	37	6.0			
27	RED	14	KI-B1	37	CI-B1	37	6.0			
5	BLK	14	Z1-A	38	CB1-B1	LINE*	38			
5	BLK	14	Z1-B	38	CB1-A1	LINE*	38			
5	BLK	14	Z2-A	38	CB1-B1	LINE*	38			
5	BLK	14	Z2-B	38	CB1-C1	LINE*	38			
29	BLK	14	FI-C	37	CB1-A1	LINE*	37	6.0		
28	WHT	14	FI-B	37	CB1-B1	LINE*	37	6.0		
27	RED	14	FI-A	37	CB1-C1	LINE*	37	6.0		
27	RED	14	KI-A1	37	CB1-C2	LOAD-	37	6.0		
28	WHT	14	KI-A2	37	CB1-B2	LOAD-	37	6.0		
29	BLK	14	KI-A3	37	CB1-A2	LOAD-	37	6.0		
60	GRN	12	PI-G	49	GND		65	6.0		
35	DRN	18	PI-1	17	TI		36	10.0		
35	DRN	18	PI-2	17	TI		36	10.0		
49	GRN	18	PI-G		FI-G	INPUT	49			
49	BLK	14	PI-Y		FI-C	INPUT	49			
49	WHT	14	PI-S		FI-B	INPUT	49			
29	BLK	14	PI-B2	37	PI-B2		37	6.0		
33	BLK	18	PI-B1	36	KI-3		37	12.0		
33	BLK	18	PI-1	36	KI-4		37	10.0		
71			RI-1		KI-4					
71			RI-2		KI-5					

WIRE TABLE 861-F

ITEM NO.	DESCRIPTION	FROM	TO	REMARKS						
NO.	COLOR	AWG	CONN	POINT	WITH	CONN	POINT	WITH	SEE DETAIL	N°
29	BLK	14	PI-B2	37	KI-A3	37	12.0			
28	WHT	14	PI-S1	37	PI-S1	37	4.0			
28	WHT	14	PI-S2	37	KI-A2	37	12.0			
32	WHT	18	P2-S2	36	PI-2	15	10.0			
37	RED	18	P2-B2	36	PI-3	15	10.0			
27	RED	14	P2-B1	37	KI-A1	37	10.0			
28	WHT	14	P2-S1	37	PI-S2	37	6.0			
28	WHT	14	P2-S2	37	CI-A3	37	6.0			
27	RED	14	P3-B1	37	CI-A1	37	6.0			
27	RED	14	P3-B2	37	PI-B1	37	4.0			
28	WHT	14	P4-S1	37	PI-S2	37	4.0			
28	WHT	14	P5-S1	37	PI-S2	37	6.0			
29	BLK	14	P5-B1	37	PI-A2	37	6.0			
29	BLK	14	P5-B2	37	PI-B1	37	4.0			
29	BLK	14	PI-B3	37	CI-B2	37	4.0			
28	WHT	14	KI-B2	37	CI-B3	37	4.0			
27	RED	14	KI-B1	37	CI-B1	37	4.0			
5	BLK	14	Z1-A	38	CB1-B1	LINE*	38			
5	BLK	14	Z1-B	38	CB1-A1	LINE*	38			
5	BLK	14	Z2-A	38	CB1-B1	LINE*	38			
5	BLK	14	Z2-B	38	CB1-C1	LINE*	38			
29	BLK	14	FI-C	37	CB1-A1	LINE*	37	6.0		
28	WHT	14	FI-B	37	CB1-B1	LINE*	37	6.0		
27	RED	14	FI-A	37	CB1-C1	LINE*	37	6.0		
5	BLK	14	Z1-A	38	CB1-A1	LINE*	38			
5	BLK	14	Z1-B	38	CB1-B1	LINE*	38			
5	BLK	14	Z2-A	38	CB1-A1	LINE*	38			
5	BLK	14	Z2-B	38	CB1-C1	LINE*	38			
29	BLK	14	FI-C	37	CB1-C2	LOAD-	37	6.0		
28	WHT	14	KI-A2	37	CB1-A2	LOAD-	37	6.0		
29	BLK	14	KI-A3	37	CB1-B2	LOAD-	37	6.0		
60	GRN	12	PI-G	49	GND		65	6.0		
35	DRN	18	PI-1	17	TI		36	10.0		
35	DRN	18	PI-2	17	TI		36	10.0		
49	GRN	18	PI-G		FI-G	INPUT	49			
49	BLK	14	PI-Y		FI-C	INPUT	49			
49	WHT	14	PI-S		FI-B	INPUT	49			
49	BLK	14	PI-B2	37	PI-B2		37	6.0		
33	BLK	18	PI-B1	36	KI-3		37	12.0		
33	BLK	18	PI-1	36	KI-4		37	10.0		
71										

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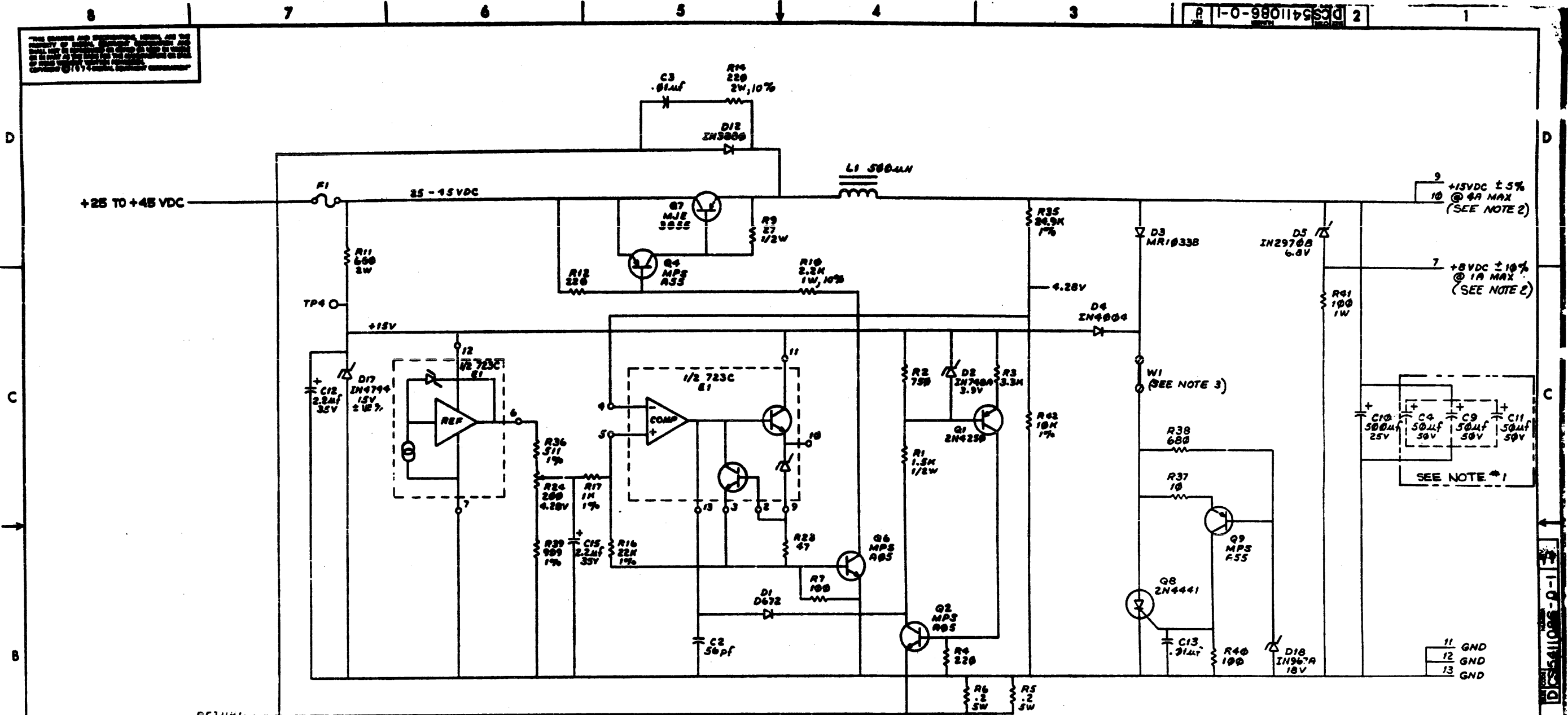


POWER FAIL CIRCUIT

REVISED		
CHK	CHANGE NO	REV.

DCS 5411086-0-1

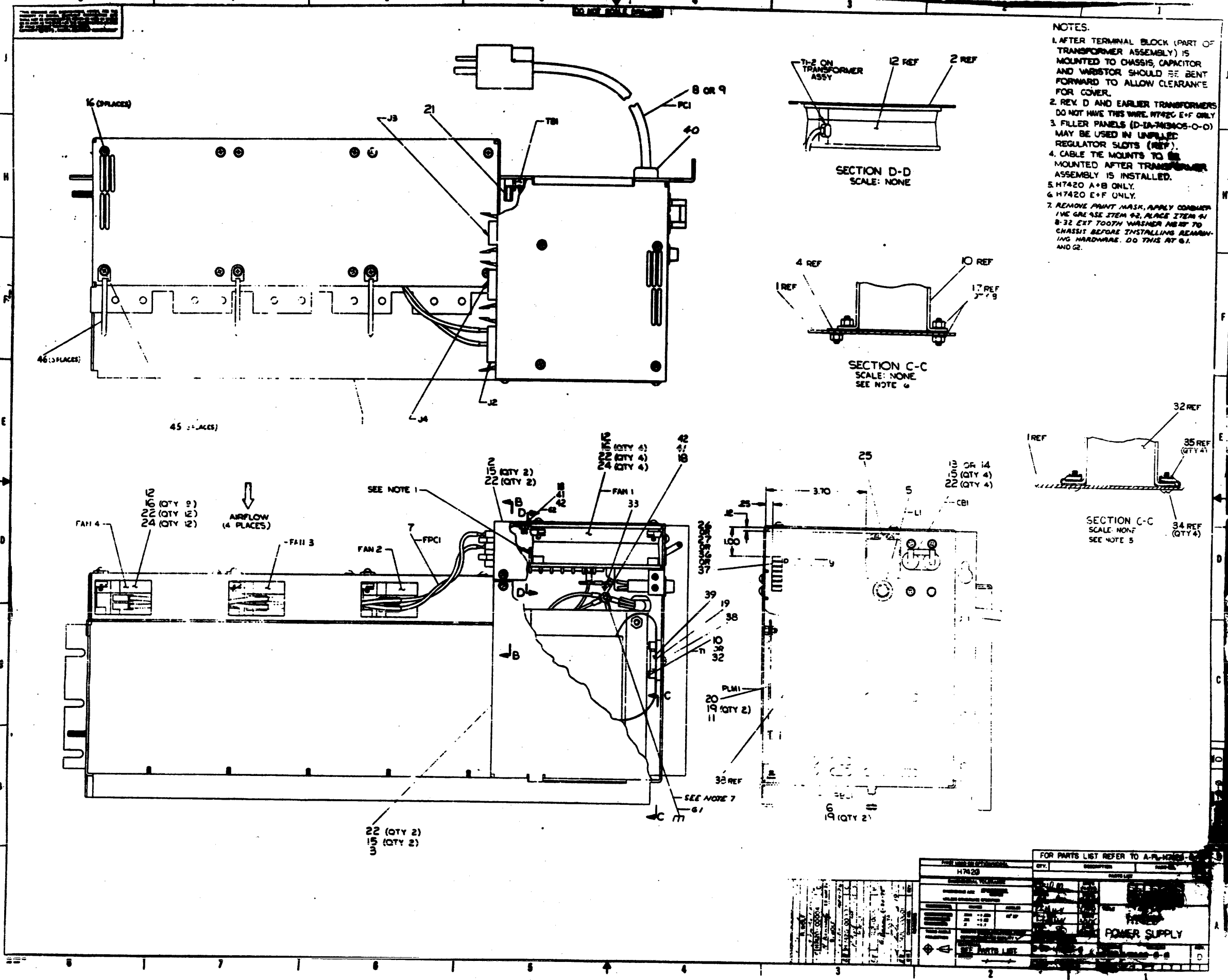
THE DESIGN AND CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE USER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE WORKMANSHIP AND THE PROTECTION OF THE WORKMANSHIP ON THE CONTRACTOR'S WORK.



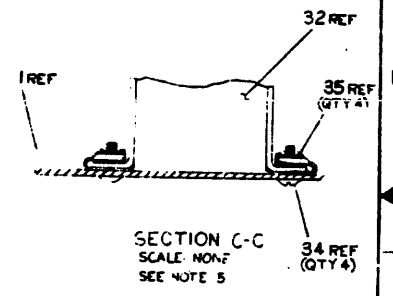
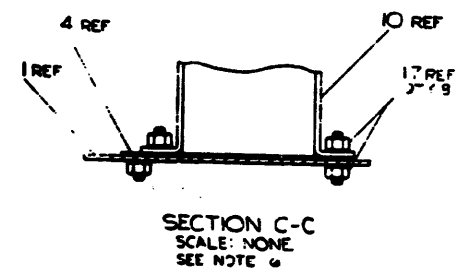
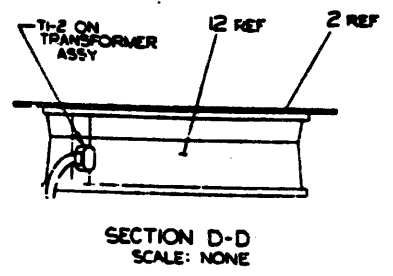
15V REGULATOR
(SEE NOTE #4)

REVISIONS		
CHK	CHANGE NO.	REV.

DCS5411086-0-1



- NOTES.
1. AFTER TERMINAL BLOCK (PART OF TRANSFORMER ASSEMBLY) IS MOUNTED TO CHASSIS, CAPACITOR AND VARISTOR SHOULD BE BENT FORWARD TO ALLOW CLEARANCE FOR COVER.
 2. REV. D AND EARLIER TRANSFORMERS DO NOT HAVE THIS WIRE. H7420 E+F ONLY.
 3. FILLER PANELS (D-1A-F15A05-O-O) MAY BE USED IN UNFILLED REGULATOR SLOTS (REF).
 4. CABLE TIE MOUNTS TO BE MOUNTED AFTER TRANSFORMER ASSEMBLY IS INSTALLED.
 5. H7420 A+B ONLY.
 6. H7420 E+F ONLY.
 7. REMOVE PAINT MASK, APPLY CONDUCTIVE GREASE ITEM 92, PLACE ITEM 91 8-32 EXT TOOTH WASHER ASSET TO CHASSIS BEFORE INSTALLING REMAINING HARDWARE. DO THIS AT 6.1 AND 6.2.



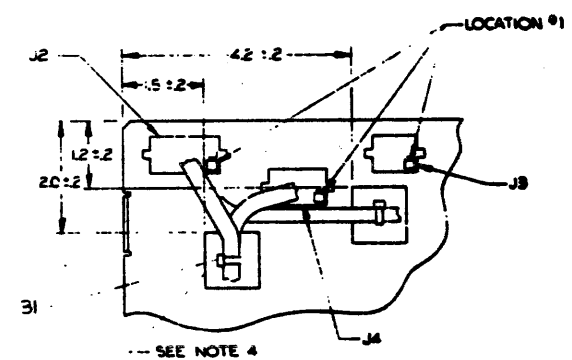
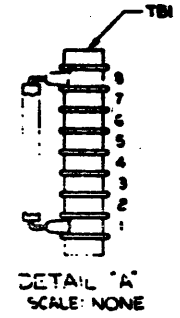
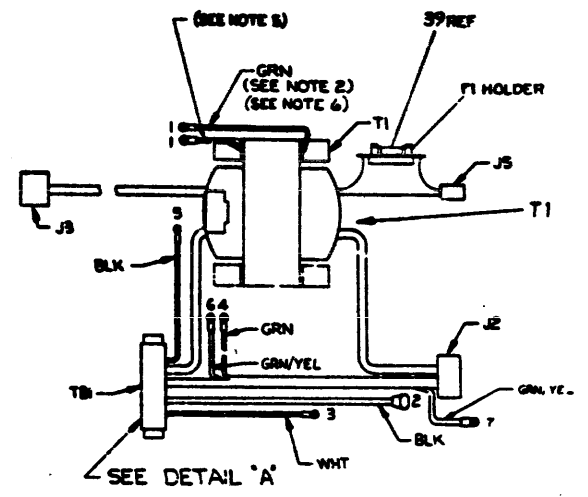
FOR PARTS LIST REFER TO A-P-XXXX-XXXX

ITEM NO.	DESCRIPTION	QTY.	REVISION
1	CHASSIS	1	
2	TRANSFORMER	1	
3	FAN	4	
4	CONNECTOR	4	
5	WASHER	4	
6	SCREW	4	
7	WASHER	4	
8	SCREW	4	
9	WASHER	4	
10	SCREW	4	
11	WASHER	4	
12	SCREW	4	
13	WASHER	4	
14	SCREW	4	
15	WASHER	4	
16	SCREW	4	
17	WASHER	4	
18	SCREW	4	
19	WASHER	4	
20	SCREW	4	
21	WASHER	4	
22	SCREW	4	
23	WASHER	4	
24	SCREW	4	
25	WASHER	4	
26	SCREW	4	
27	WASHER	4	
28	SCREW	4	
29	WASHER	4	
30	SCREW	4	
31	WASHER	4	
32	SCREW	4	
33	WASHER	4	
34	SCREW	4	
35	WASHER	4	
36	SCREW	4	
37	WASHER	4	
38	SCREW	4	
39	WASHER	4	
40	SCREW	4	
41	WASHER	4	
42	SCREW	4	
43	WASHER	4	
44	SCREW	4	
45	WASHER	4	
46	SCREW	4	

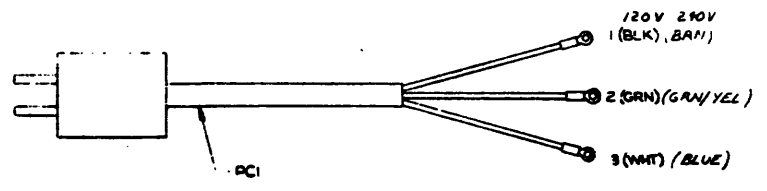
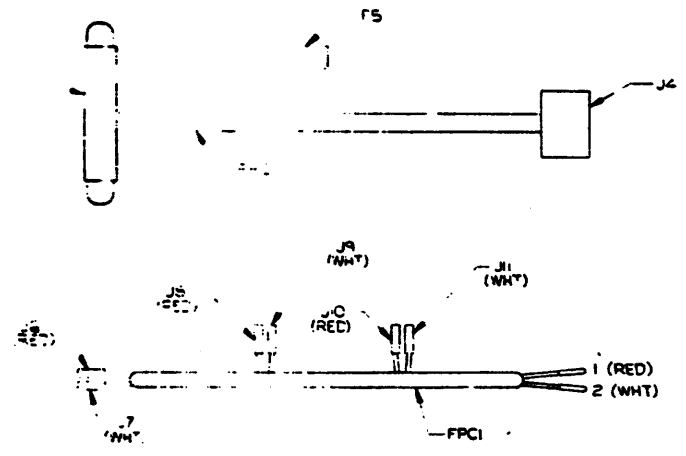
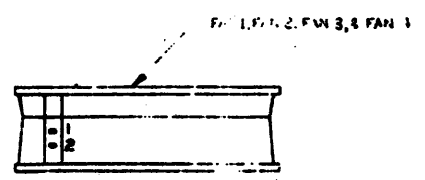
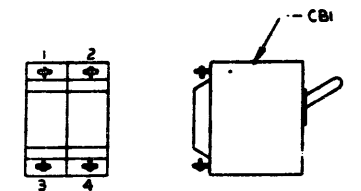
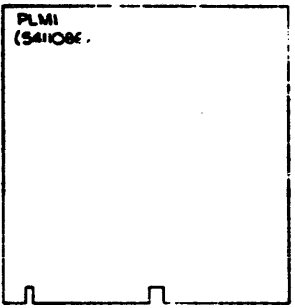
POWER SUPPLY

WIRE TABLE					
ITEM NO	DESCRIPTION	FROM	TO	REMARKS	
10	14	GRN	T1-1	RBI-PS	SEE NOTE 23
1	14	BLK	T1-2	FAN-1 E 2	
1	14	WHT	T1-3	CB1-1	
1	14	GRN	T1-4	6/	SEE NOTE 7
10	14	BLK	T1-5	CB1-2	
5	22	BLK	L1-1	TBI-5	
5	22	BLK	L1-2	TBI-7	
7	18	RED	FPC1-16	FAN 4-1	
1	1	WHT	FPC1-17	FA 1-2-2	
1	1	RED	FPC1-18	FA 1-2-1	
1	1	WHT	FPC1-19	FA 3-2	
1	1	RED	FPC1-20	FA 1-2-1	
1	1	WHT	FPC1-21	FA 1-2-2	
7	18	RED	FPC1-1	2-3	
7	18	WHT	FPC1-2	2-1	
8/9	14	BLK	PCI-1	CB1-4	SEE NOTE
8/9	14	GRN	PCI-2		
8/9	14	WHT	PCI-3	CB1-5	
11	14	GRN/YEL	T1-6	RE 1	SEE NOTE 7
10	14	GRN/YEL	T1-7	22	SEE NOTE 7

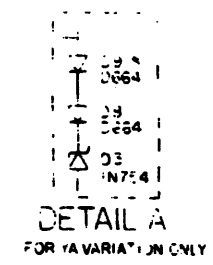
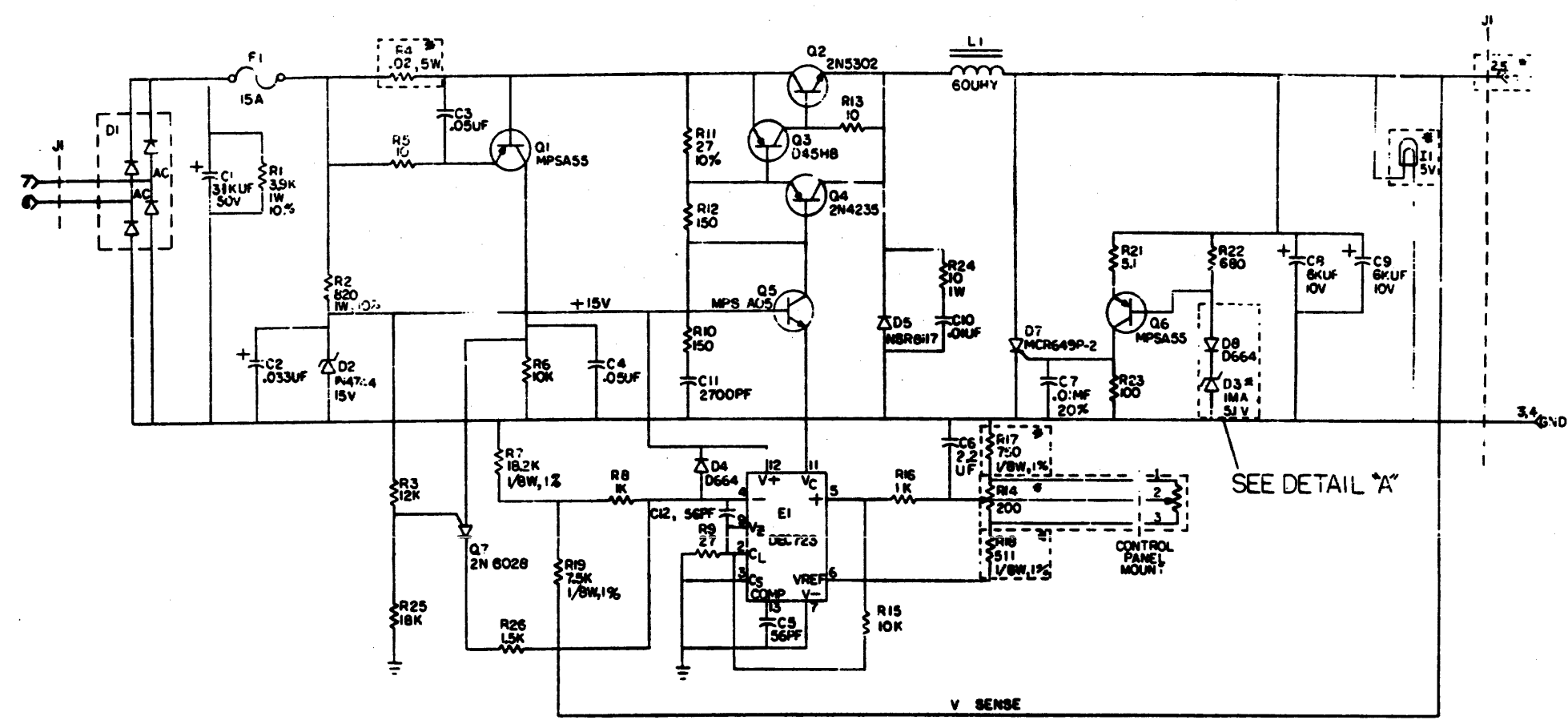
JUMPER TABLE								
ITEM NO	DESCRIPTION	FROM	TO	PRECUT LENGTH	VARIATION			
23	14	BLK	TBI-2	ITEM 28	TBI-5	ITEM 28	3.0	H7422E(A)
24	14	BLK	TBI-4	ITEM 28	TBI-5	ITEM 28	3.0	H7422E(B)
25	14	BLK	TBI-4	ITEM 28	TBI-5	ITEM 28	3.0	H7422E(B)



SECTION E-2
SCALE: NONE



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- FOR YA VARIATION COMPONENT VALUES ARE AS FOLLOWS:
- R4 - 06 SW
 - R14 - 1K 10 TURN
 - R17 - 300 1/8W 1%
 - R18 - 150 1/4W 5%
 - D3 - IN754
 - I1 - 15V
 - J1-2.5 - +2.0-8.0V
- D9 - D664 ADDED FOR YA VARIATION ONLY

UNLESS OTHERWISE INDICATED:
RESISTORS ARE 1/4W, 5%

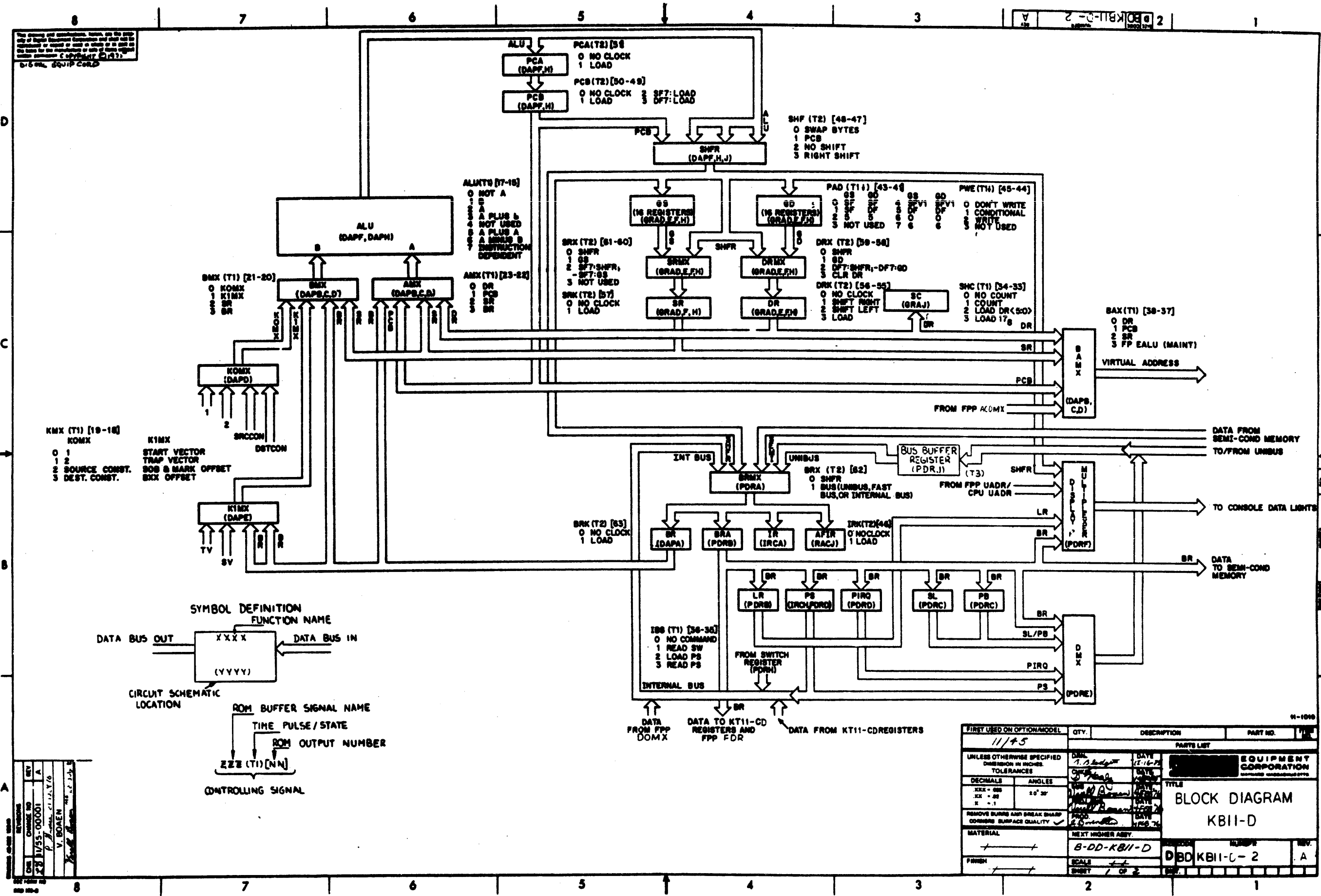
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
	ETCH BOARD REV	F	H	
	IN664A	SAME	MPSA55	
	D004	IN3605	2N5302	
	MCR649P-2		D45H5	
	IN75A	SAME	MPSA05	
	IN4744	SAME		
	NSR8117			
	2N6005			
DEC NO.	EIA NO.	DEC NO.	EIA NO.	
SEMICONDUCTOR CONVERSION CHART				
SCALE	DCS		H744-0-1	VT
SHEET	OF	DIST.		

6. BARON	7. BARON	8. BARON	9. BARON	10. BARON	11. BARON	12. BARON	13. BARON	14. BARON	15. BARON	16. BARON	17. BARON	18. BARON	19. BARON	20. BARON	21. BARON	22. BARON	23. BARON	24. BARON	25. BARON	26. BARON	27. BARON	28. BARON	29. BARON	30. BARON	31. BARON	32. BARON	33. BARON	34. BARON	35. BARON	36. BARON	37. BARON	38. BARON	39. BARON	40. BARON	41. BARON	42. BARON	43. BARON	44. BARON	45. BARON	46. BARON	47. BARON	48. BARON	49. BARON	50. BARON
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DCS H744-0-1

5V REGULATOR

SECTION III
KB11-C/D BLOCK DIAGRAMS

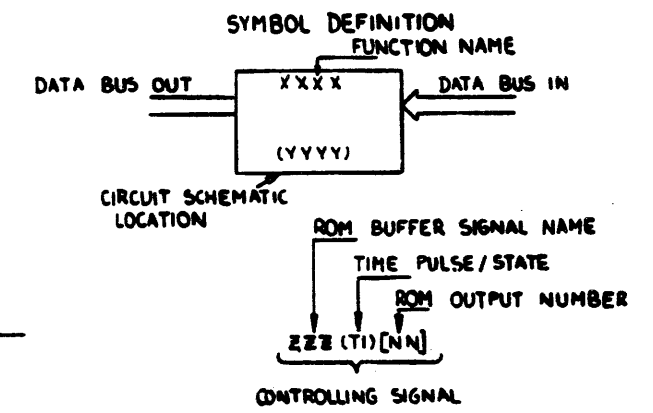


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6-5 MIL. EQUIP CORP.

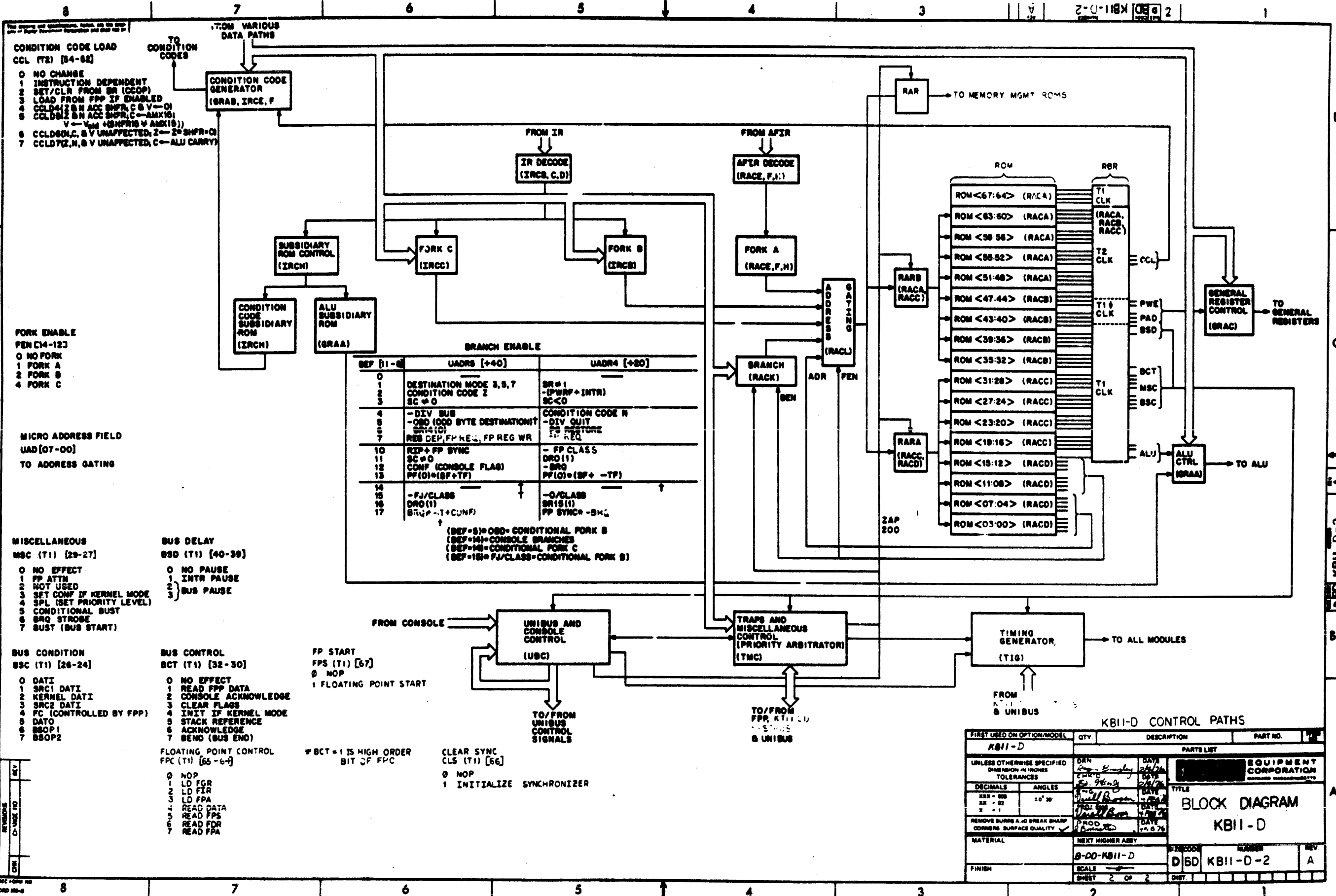
KMX (T1) [19-18]
 0 KMX
 1 K1MX
 2 SOURCE CONST.
 3 DEST. CONST.

K1MX
 START VECTOR
 TRAP VECTOR
 SOB & MARK OFFSET
 SBX OFFSET



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
11/45			
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES			
DECIMALS	ANGLES	TITLE	
XX - .005	20' 30"	BLOCK DIAGRAM	
XX - .01		KBII-D	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASSY.	SCALE	REV.
	B-DD-KBII-D	1/2"	A
FINISH		SHEET	
		1 OF 2	

REV	DATE	BY
1	11-16-72	...
2
3



- TO CONDITION CODES**
- 0 NO CHANGE
 - 1 INSTRUCTION DEPENDENT
 - 2 SET/CLR FROM BR (CCOP)
 - 3 LOAD FROM FPP IF ENABLED
 - 4 CCLD4 (Z, N, ACC, SHPR, C, S, V = 0)
 - 5 CCLD5 (Z, N, ACC, SHPR, C = AMXIS)
 - 6 CCLD6 (N, C, S, V UNAFFECTED; Z = 2nd SHPR = 0)
 - 7 CCLD7 (Z, N, S, V UNAFFECTED; C = ALU CARRY)

- FORK ENABLE**
FEN C14-123
- 0 NO FORK
 - 1 FORK A
 - 2 FORK B
 - 4 FORK C

MICRO ADDRESS FIELD
UAD [07-00]
TO ADDRESS GATING

- MISCELLANEOUS**
MSC (T1) [29-27]
- 0 NO EFFECT
 - 1 FPP ATTN
 - 2 NOT USED
 - 3 SET CONF IF KERNEL MODE
 - 4 SPL (SET PRIORITY LEVEL)
 - 5 CONDITIONAL BUST
 - 6 BRO STROBE
 - 7 BUST (BUS START)

- BUS DELAY**
BSD (T1) [40-39]
- 0 NO PAUSE
 - 1 INTR PAUSE
 - 2
 - 3 BUS PAUSE

- BUS CONDITION**
BSC (T1) [26-24]
- 0 DATI
 - 1 SRC1 DATI
 - 2 KERNEL DATI
 - 3 SRC2 DATI
 - 4 PC (CONTROLLED BY FPP)
 - 5 DATO
 - 6 BSOP1
 - 7 BSOP2

- BUS CONTROL**
BCT (T1) [32-30]
- 0 NO EFFECT
 - 1 READ FPP DATA
 - 2 CONSOLE ACKNOWLEDGE
 - 3 CLEAR FLAG
 - 4 INIT IF KERNEL MODE
 - 5 STACK REFERENCE
 - 6 ACKNOWLEDGE
 - 7 BEND (BUS END)

FP START
FPS (T1) [67]

- 0 NOP
- 1 FLOATING POINT START

CLEAR SYNC
CLS (T1) [66]

- 0 NOP
- 1 INITIALIZE SYNCHRONIZER

REV	DATE	BY	CHK	APP

KB11-D CONTROL PATHS

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.
KB11-D			
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES			
DECIMALS	ANGLES		
X.XX	± 0° 30'		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASSY	FINISH	SCALE
	B-DD-KB11-D	D/SD	2 OF 2
EQUIPMENT CORPORATION		TITLE	
BLOCK DIAGRAM		KB11-D	
PARTS LIST		REV	
D/SD		A	

- CONDITION CODE LOAD**
CCL (T2) [54-52]
- 0 NO CHANGE
 - 1 INSTRUCTION DEPENDENT
 - 2 SET/CLR FROM BR (CCOP)
 - 3 LOAD FROM FPP IF ENABLED
 - 4 CCLD4(Z & N ACC SHFR; C & V → 0)
 - 5 CCLD5(Z & N ACC SHFR; C → AMX15; V → V_{old} + (SHFRIS V AMX15))
 - 6 CCLD6(N, C, & V UNAFFECTED; Z → Z * SHFR = 0)
 - 7 CCLD7(Z, N, & V UNAFFECTED; C → ALU CARRY)

- FORK ENABLE**
FEN [14-123]
- 0 NO FORK
 - 1 FORK A
 - 2 FORK B
 - 4 FORK C

MICRO ADDRESS FIELD
UAD [07-00]
TO ADDRESS GATING

- MISCELLANEOUS**
MSC (T1) [29-27]
- 0 NO EFFECT
 - 1 FP ATTN
 - 2 NOT USED
 - 3 SET CONF IF KERNEL MODE
 - 4 SPL (SET PRIORITY LEVEL)
 - 5 CONDITIONAL BUST
 - 6 BRQ STROBE
 - 7 BUST (BUS START)

- BUS CONDITION**
BSC (T1) [26-24]
- 0 DATI
 - 1 SRC1 DATI
 - 2 KERNEL DATI
 - 3 SRC2 DATI
 - 4 FC (CONTROLLED BY FPP)
 - 5 DATO
 - 6 BSOP1
 - 7 BSOP2

- BUS DELAY**
BSD (T1) [40-39]
- 0 NO PAUSE
 - 1 INTR PAUSE
 - 2 BUS PAUSE
 - 3

- BUS CONTROL**
BCT (T1) [32-30]
- 0 NO EFFECT
 - 1 READ FPP DATA
 - 2 CONSOLE ACKNOWLEDGE
 - 3 CLEAR FLAGS
 - 4 INIT IF KERNEL MODE
 - 5 STACK REFERENCE
 - 6 ACKNOWLEDGE
 - 7 BEND (BUS END)

- FLOATING POINT CONTROL**
FPC (T1) [64-65]
- 0 NOP
 - 1 LD FGR
 - 2 LD FIR
 - 3 LD FPA
 - 4 READ DATA
 - 5 READ FPS
 - 6 READ FDR
 - 7 READ FPA

- FP START**
FPS (T1) [67]
- 0 NOP
 - 1 FLOATING POINT START

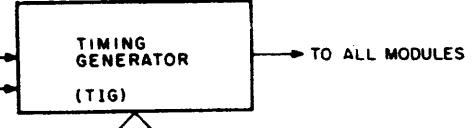
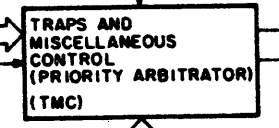
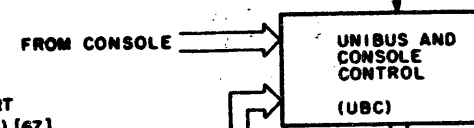
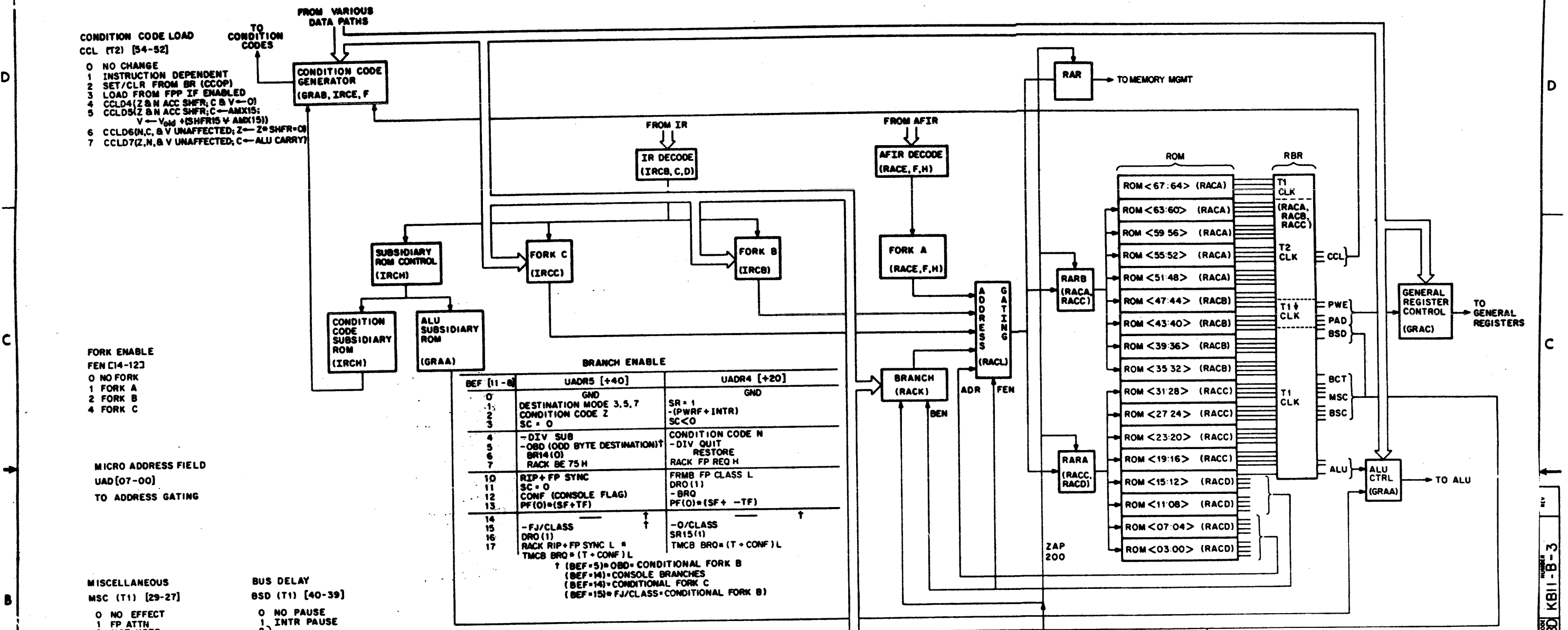
* BCT = 1 IS HIGH ORDER OF FPC

- CLEAR SYNC**
CLS (T1) [66]
- 0 NOP
 - 1 INITIALIZE SYNCHRONIZER

BRANCH ENABLE

BEF [11-0]	UADR5 [+40]	UADR4 [+20]
0	GND	GND
1	DESTINATION MODE 3, 5, 7	SR = 1
2	CONDITION CODE Z	-(PWR + INTR)
3	SC = 0	SC < 0
4	-DIV SUB	CONDITION CODE N
5	-OBD (ODD BYTE DESTINATION)†	-DIV QUIT
6	BR14 (O)	RESTORE
7	RACK BE 75 H	RACK FP REQ H
10	RIP + FP SYNC	FRMB FP CLASS L
11	SC = 0	DRO (1)
12	CONF (CONSOLE FLAG)	-BRQ
13	PF(O) = (SF + TF)	PF(O) = (SF + -TF)
14		
15	-FJ/CLASS	-O/CLASS
16	DRO (1)	SR15(1)
17	RACK RIP + FP SYNC L * TMCB BRQ = (T + CONF) L	TMCB BRQ = (T + CONF) L

† (BEF=5) = OBD = CONDITIONAL FORK B
(BEF=14) = CONSOLE BRANCHES
(BEF=14) = CONDITIONAL FORK C
(BEF=15) = FJ/CLASS = CONDITIONAL FORK B



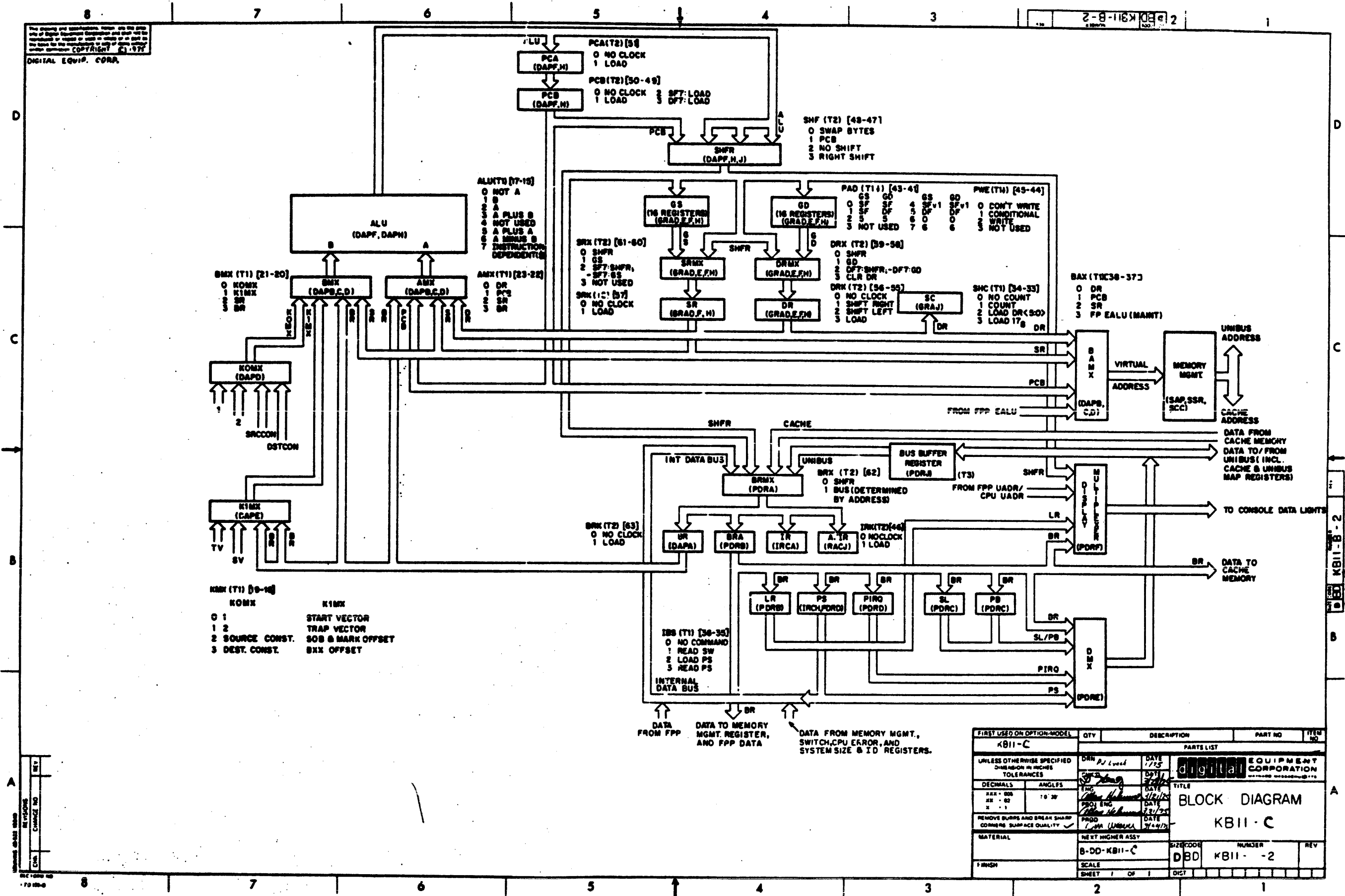
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	DESN NO.
KB11-C				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
XXX = 008	XX = 02	TITLE		
X = 1		BLOCK DIAGRAM		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY				
FINISH				
SCALE		SIZE CODE	NUMBER	REV
SHEET 1 OF 1		D BD	KB11-C-3	1

Figure 1-1 Block Diagram

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DIGITAL EQUIP. CORP.

2-B-118X (REV 2)



BMX (T1) [21-20]
0 KOMX
1 KIMX
2 SR
3 BR

KIMX (CAPE)
TV
SV

KIMX (T1) [0-16]
KOMX
0 1
1 2
2 SOURCE CONST.
3 DEST. CONST.

KIMX
START VECTOR
TRAP VECTOR
SOB & MARK OFFSET
BRX OFFSET

ALU(T1) [17-15]
0 NOT A
1 B
2 A PLUS B
3 NOT USED
4 A PLUS A
5 A MINUS B
6 A MINUS A
7 INSTRUCTION DEPENDENT

AMX (T1) [23-22]
0 DR
1 PC
2 SR
3 BR

PCA (T2) [5]
0 NO CLOCK
1 LOAD

PCB (T2) [30-49]
0 NO CLOCK
1 LOAD
2 SFT: LOAD
3 DFT: LOAD

SRX (T2) [61-60]
0 SHFR
1 GS
2 SFT: SHFR, -SFT: GS
3 NOT USED

SRX (I:1) [57]
0 NO CLOCK
1 LOAD

SR (I:RA, F, H)

DR (I:RA, F, H)

BRX (T2) [63]
0 NO CLOCK
1 LOAD

BR (I:DA, PA)

LR (I:DA, PA)

PS (I:IR, CA, PDR)

PIRO (I:DA, PA)

SL (I:DA, PA)

PB (I:DA, PA)

PIRQ

PS

SHF (T2) [48-47]
0 SWAP BYTES
1 PCB
2 NO SHIFT
3 RIGHT SHIFT

PAD (T1) [43-42]
0 GS
1 SF
2 S
3 NOT USED

GD (I:RA, F, H)

DRX (T2) [59-58]
0 SHFR
1 GS
2 SFT: SHFR, -DFT: GD
3 CLR DR

DRX (T2) [56-55]
0 NO CLOCK
1 SHIFT RIGHT
2 SHIFT LEFT
3 LOAD

SC (I:RA, J)

SHC (T1) [34-33]
0 NO COUNT
1 COUNT
2 LOAD DR<SO>
3 LOAD IT

BAX (T1) [36-37]
0 DR
1 PCB
2 SR
3 FP EALU (MAINT)

BRX (T2) [62]
0 SHFR
1 BUS (DETERMINED BY ADDRESS)

BR (I:DA, PA)

LR (I:DA, PA)

PS (I:IR, CA, PDR)

PIRO (I:DA, PA)

SL (I:DA, PA)

PB (I:DA, PA)

PIRQ

PS

FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
KB11-C				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
±.000	±0.30	BLOCK DIAGRAM		
±.001		KB11-C		
REMOVES BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
FINISH	B-00-KB11-C	D8D	KB11-2	
SCALE				
SHEET 1 OF 1	DIST			

REVISIONS
REV 1
REV 2
REV 3

KB11-B-2

SECTION IV
KB11-C FLOW DIAGRAMS

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NOTE:
 1. t₁ BUS PAUSE =
 t₂ FOR UNIBUS CYCLES
 t₃ FOR CACHE CYCLES

FET.00 (217)
 FET.01 (231)
 FET.02 (252)
 FET.03 (294)
 FET.04 (164)
 FET.05 (126)
 FET.06 (378)

START FETCH NEXT INSTR.
 CLEAR INSTR. REG.
 t₁ BA+PCB; BC+DATZ
 t₂ SHFB+SR+SR
 t₃ BUST; CLEAR FLAGS
 t₄ ITR+SNPR

GET INSTR. STEP PC
 BEYOND
 t₁ BA+PCB; BC+DATZ
 t₂ SHFB+SR+SR
 t₃ BUST STROBE
 t₄ BUS PAUSE
 t₅ PC+PC+2
 t₆ ITR+BUS; BR+BUS
 t₇ PC+PC
 t₈ PRA+BA

DECODE THIS INSTR. STEP
 FOR BEYOND C-ADDR SECC
 DST FIELD; GEN BSS
 t₁ BA+PCB; BC+DATZ
 t₂ SHFB+SR
 t₃ CONDITIONAL BUST
 t₄ FIRA+BR
 t₅ PC+PC+2
 t₆ -SFT: SR+GSECFJ
 t₇ SFT: SR+SNPR
 t₈ -DFT: DR+GDCDFJ
 t₉ DFT: DR+SNPR

BINX SMIB (281) SM1
 (282) SM2B
 S/3.00
 S/3.01
 FETCH SRC & STEP
 REGISTER UP
 t₁ BA+PCB; BC+SR+DATZ
 t₂ SHFB+SR+SRCON
 t₃ BUST
 t₄ PC+SR+SRCON
 t₅ SRCFJ+SNPR
 t₆ SFT: PC+PC

S/3.10
 S/3.20
 GET SECC ADDR & DST REG
 t₁ BA+SR; BC+SR+DATZ
 t₂ SHFB+PCB
 t₃ BUST STROBE
 t₄ BUS PAUSE
 t₅ BA+BUS
 t₆ -DFT: DR+GDCDFJ
 t₇ DFT: DR+SNPR

BIN & SNPR (289)
 S/3.00
 STEP REGISTER DOWN
 t₁ BA+PCB
 t₂ SHFB+SR+SRCON
 t₃ BUST
 t₄ PC+SR+SRCON
 t₅ SRCFJ+SNPR
 t₆ SFT: PC+PC

S/3.10
 S/3.20
 FETCH SRC
 t₁ BA+SR; BC+SR+DATZ
 t₂ SHFB+PCB
 t₃ BUST; GDCDFJ

MTP (295)
 MTR.00
 REG IN SR (CPR INCR
 CODE); POP TOP OF STACK
 t₁ BA+PCB
 t₂ SHFB+SR+2
 t₃ BUST
 t₄ SRCFJ+SNPR

MTR.10
 MTR.20
 CORRECT DE IN CASE DST
 FIELD G; GET TOP OF STACK
 t₁ BA+SR; BC+SR+DATZ
 t₂ SHFB+PCB
 t₃ BUST
 t₄ -DFT: DR+GDCDFJ
 t₅ DFT: DR+SNPR

BXX*BCOK (306)
 BXX.00
 BXX.01
 BXX.02
 BXX.03
 BXX.04
 BXX.05
 SUCCESSFUL BRANCH,
 FIX PC
 t₁ BA+PCB
 t₂ SHFB+PCB+BXI DTSP
 t₃ BUST; BUST STROBE
 t₄ PC+PC+BXX DISA
 t₅ PC+PC

BXX.06
 BXX.07
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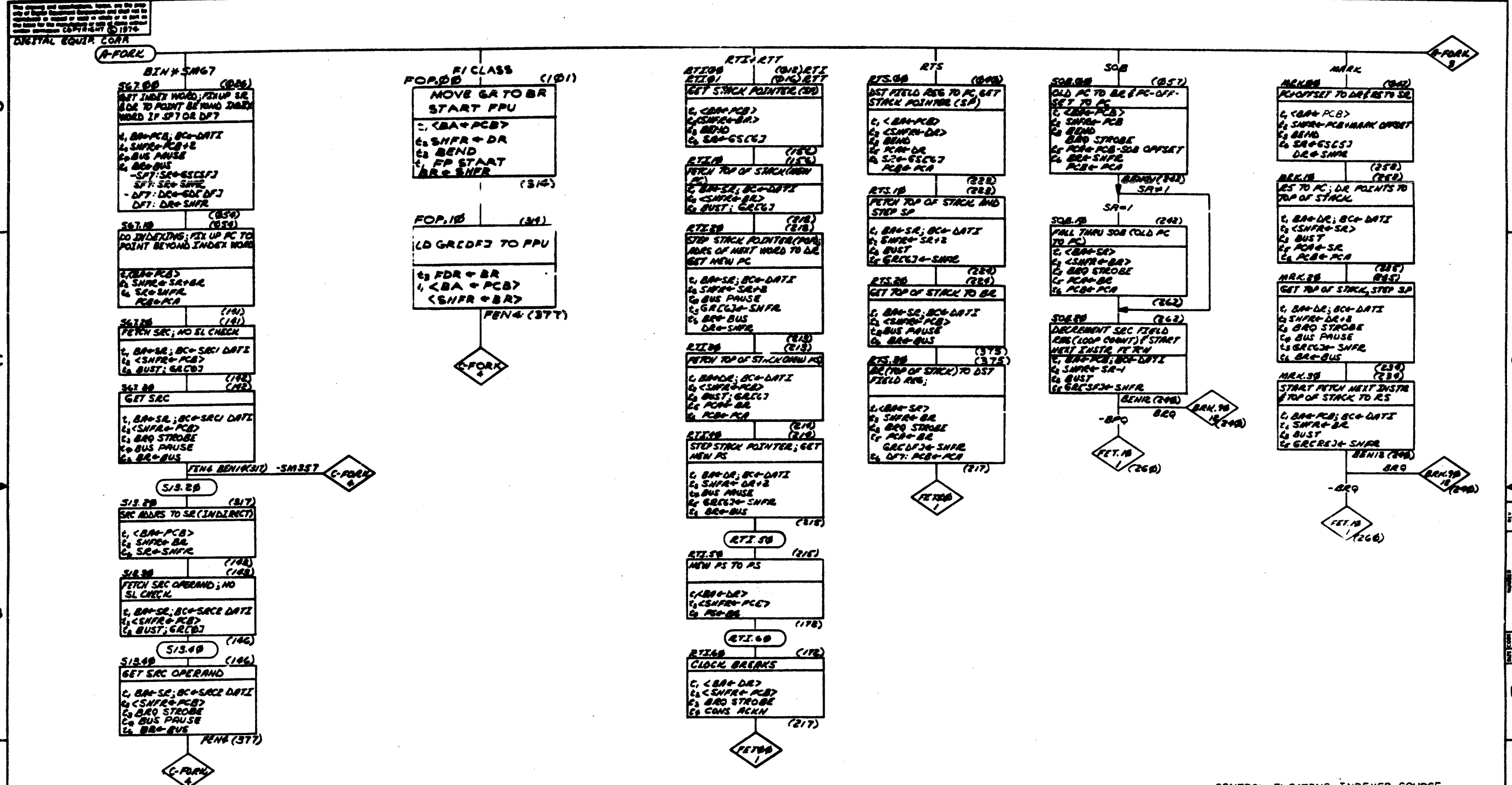
BXX*BCOK (321)
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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	DATE		
XXX - .00	XX - .01	EQUIPMENT CORPORATION		
X - .01	0° - 30'	TITLE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
FINISH				
B-B-D-KBII-8		SITE CODE		
SCALE		NUMBER		
SHEET 2 OF 15		REV		

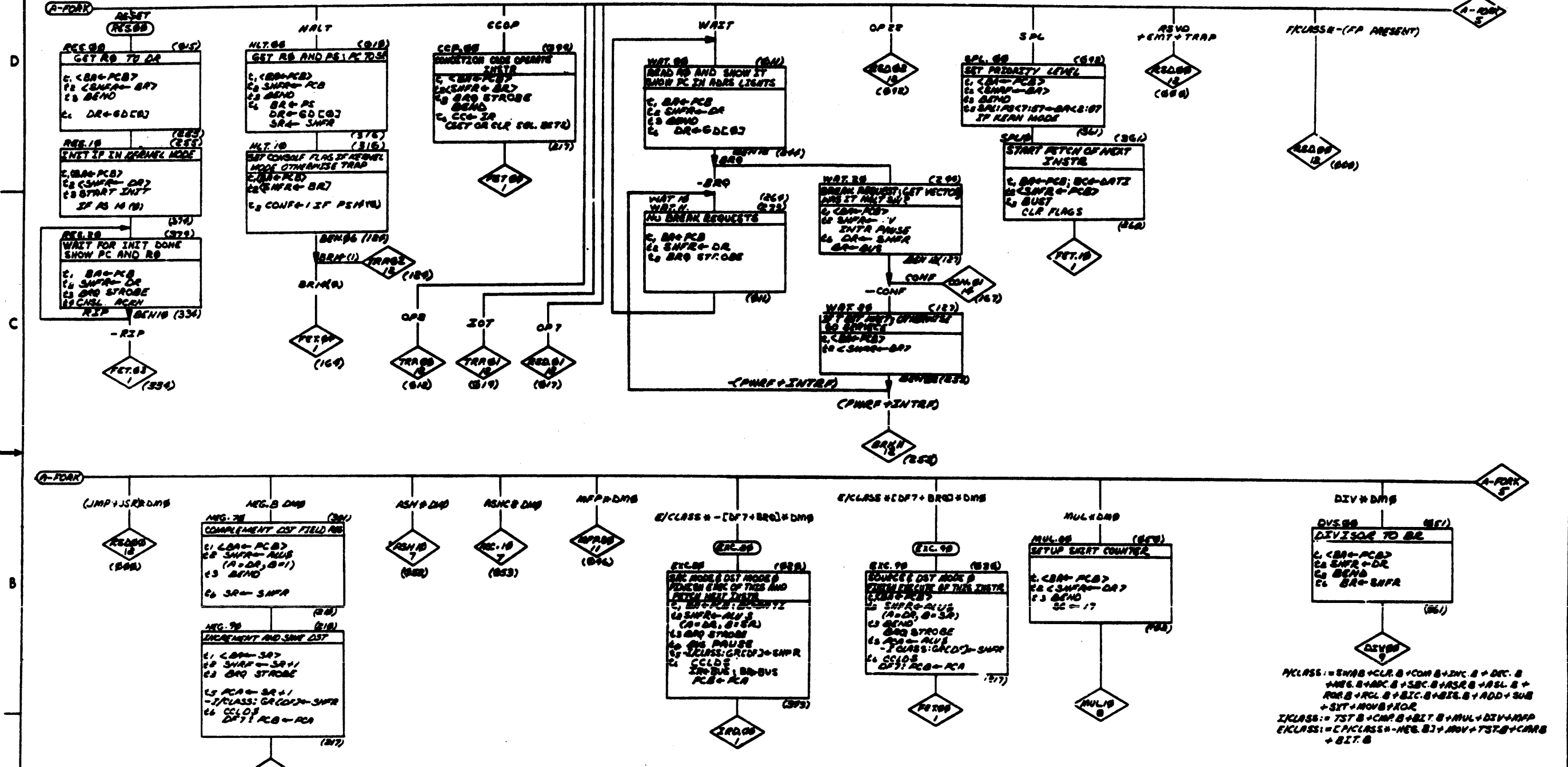
REVISIONS
 CHANGE NO.
 DATE



REV	DATE
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CONTROL; FLOATING; INDEXED SOURCE			
QTY	DESCRIPTION	PART NO.	ITEM NO.
1170			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED	DATE	EQUIPMENT CORPORATION	
TOLERANCES	DATE	KBII-C	
DECIMALS	DATE	FLOW DIAGRAMS	
ANGLES	DATE	(FLOWS 2)	
XXX - 000	DATE		
XX - 00	DATE		
X - 0	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER
FINISH	B-DD-KBII-E	DFD	KBII-C-1
	SCALE	SHEET	3 OF 15
	DIST		

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PCCLASS = 8WAB + CLR.B + COM.B + INC.B + DEC.B +
ARB.B + ADC.B + SBC.B + ASR.B + LSL.B +
ARR.B + RCL.B + BIC.B + BIR.B + ADD + SUB
+ STP + MOV + POP
ICLASS = TST.B + CMP.B + BIT.B + MUL + DIV + MFP
ECLASS = E.PCLASS + NEG.B + AND + TST.B + ORR.B
+ BIT.B

EXECUTE NO MEM REF

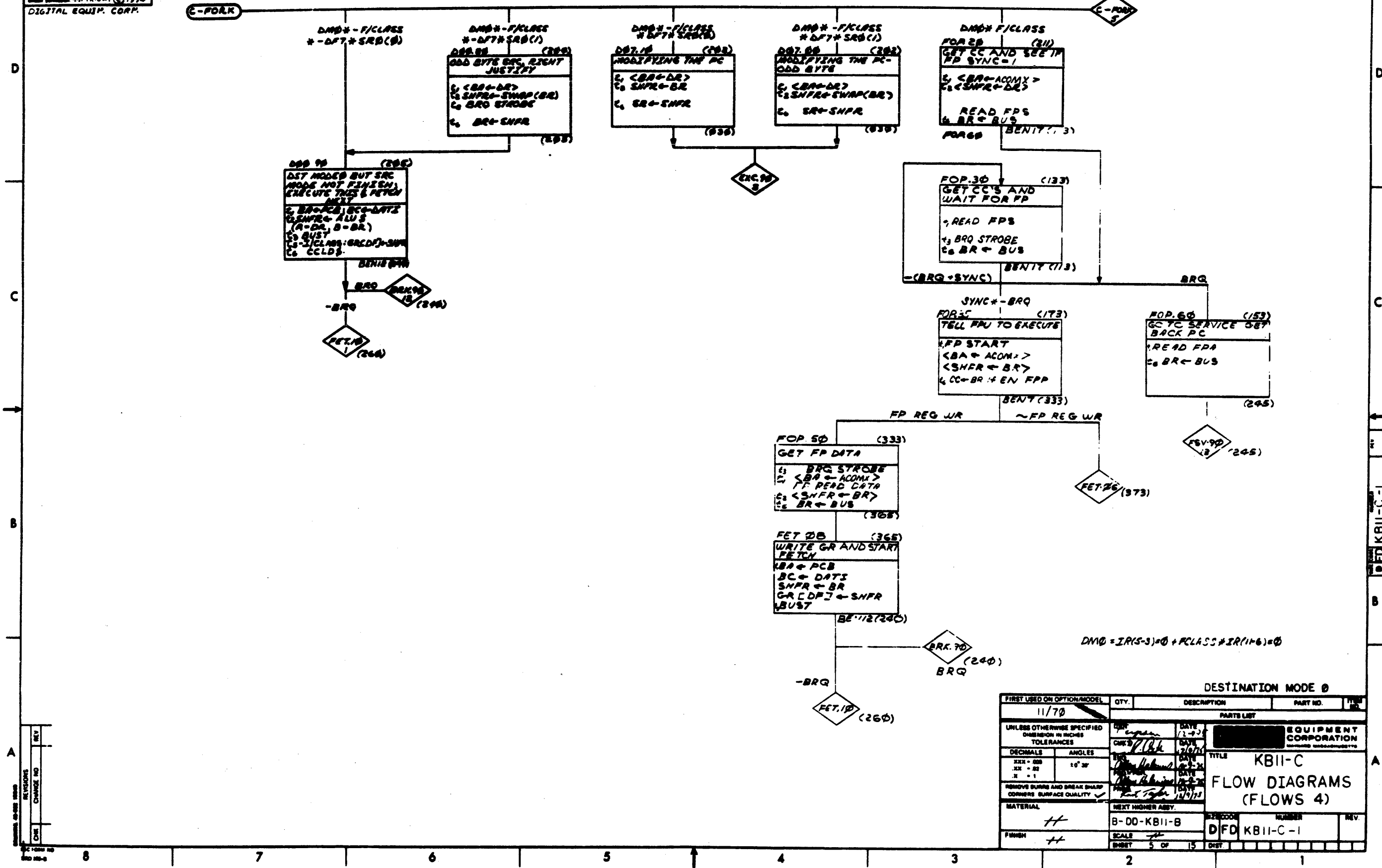
Table with columns: QTY, DESCRIPTION, PART NO., ITEM NO. Includes a parts list for 'KBII-C FLOW DIAGRAMS (FLOWS 3)'. Includes fields for DATE, TIME, and SIGNATURE.

REV
DATE
DESCRIPTION

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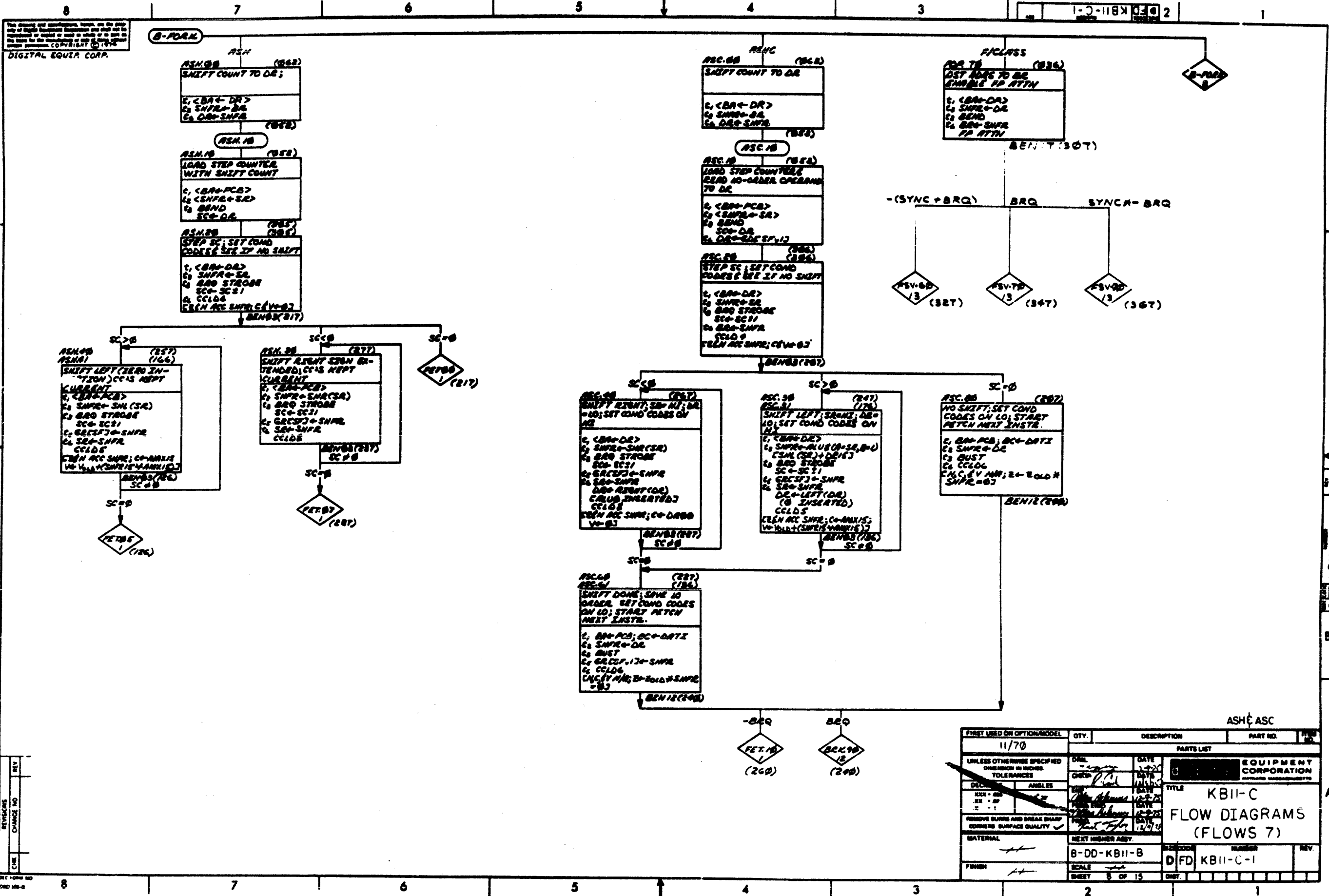
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1-0-118X 2



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	REV.
11/70				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
.XX - .00	± 0° 30'	KBII-C		
.XX - .01		FLOW DIAGRAMS		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		(FLOWS 4)		
MATERIAL	NEXT HIGHER ASSY.	REV. CODE	NUMBER	REV.
FINISH		DFO	KBII-C-1	
	SCALE	SHEET 5 OF 15		

DFO KBII-C-1

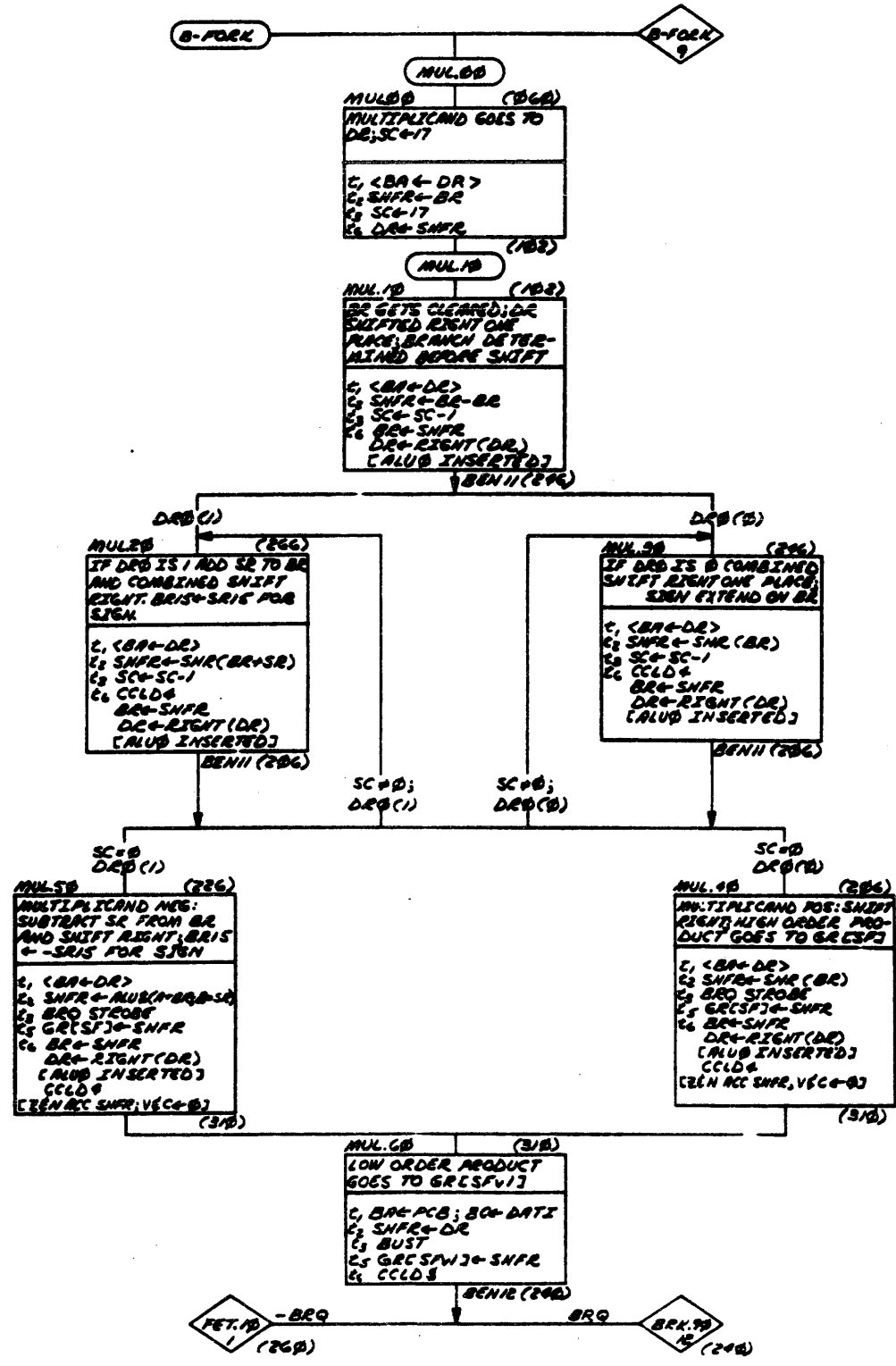


FIRST USED ON OPTION/MODEL		QTY.	DESCRIPTION	PART NO.	REV. NO.
11/70					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED	DATE	DATE	EQUIPMENT CORPORATION		
DIMENSIONS IN INCHES	11/70	11/70	TITLE		
TOLERANCES	ANGLES	DATE	KBII-C		
DECIMALS	ANGLES	DATE	FLOW DIAGRAMS		
XXX - .00	XXX - .01	DATE	(FLOWS 7)		
.XX - .01	.XX - .01	DATE			
.X - .01	.X - .01	DATE			
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY					
MATERIAL	NEXT HIGHER REV.				
FINISH	B-DD-KBII-B	REV. CODE	NUMBER	REV.	
	SHEET 8 OF 15	DATE	REV.		

REV. NO. CHANGE NO. DATE

KBII-C-1

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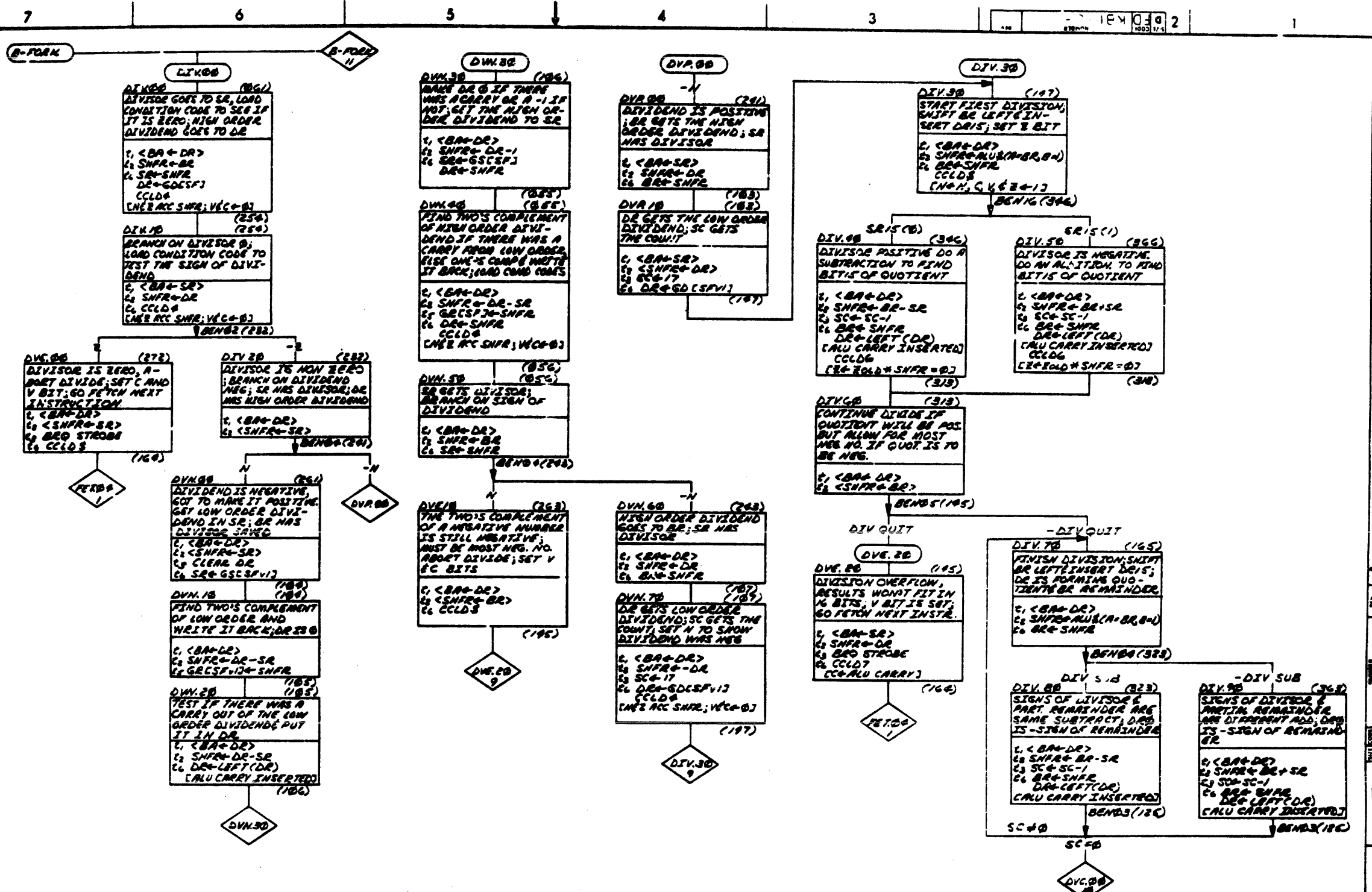
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
XXX - 000	10' 30"	KBII-C		
XX - 00		FLOW DIAGRAMS		
X - 0		(FLOWS 8)		
REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY				
FINISH		SCALE		REV
		SHEET 9 OF 15		1

REVISIONS
NO. CHANGE NO. REV.

MULTIPLY
B DD KBII-C-1

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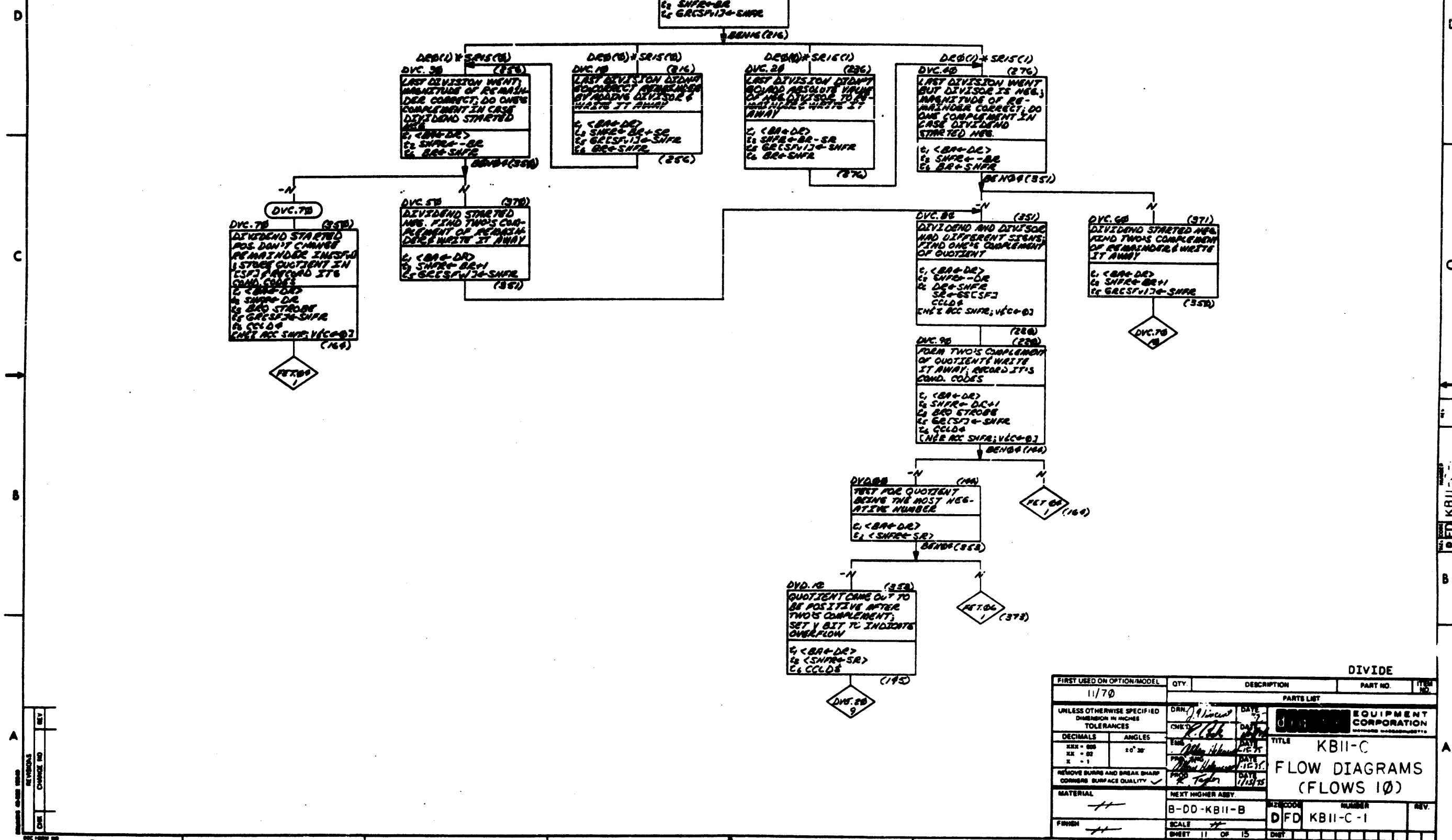
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES		DRILL DATE 7-9-75 CHK'D DATE 11/11/75	 EQUIPMENT CORPORATION MAY 1965	
DECIMALS	ANGLES	ENG DATE 7-9-75 MKTG DATE 7-9-75 PROJ DATE 11/11/75		
XXX - 000	± 0° 30'	Wm. Helms	TITLE KBI-C FLOW DIAGRAMS (FLOWS 9)	
XX - 00		Wm. Helms		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE 11/11/75	NUMBER DFD KBI-C-1	
MATERIAL	NEXT HIGHER ASSY			
FINISH	SCALE		REV DIST	
	SHEET 10 OF 15			

REC FORM NO 000 100-0

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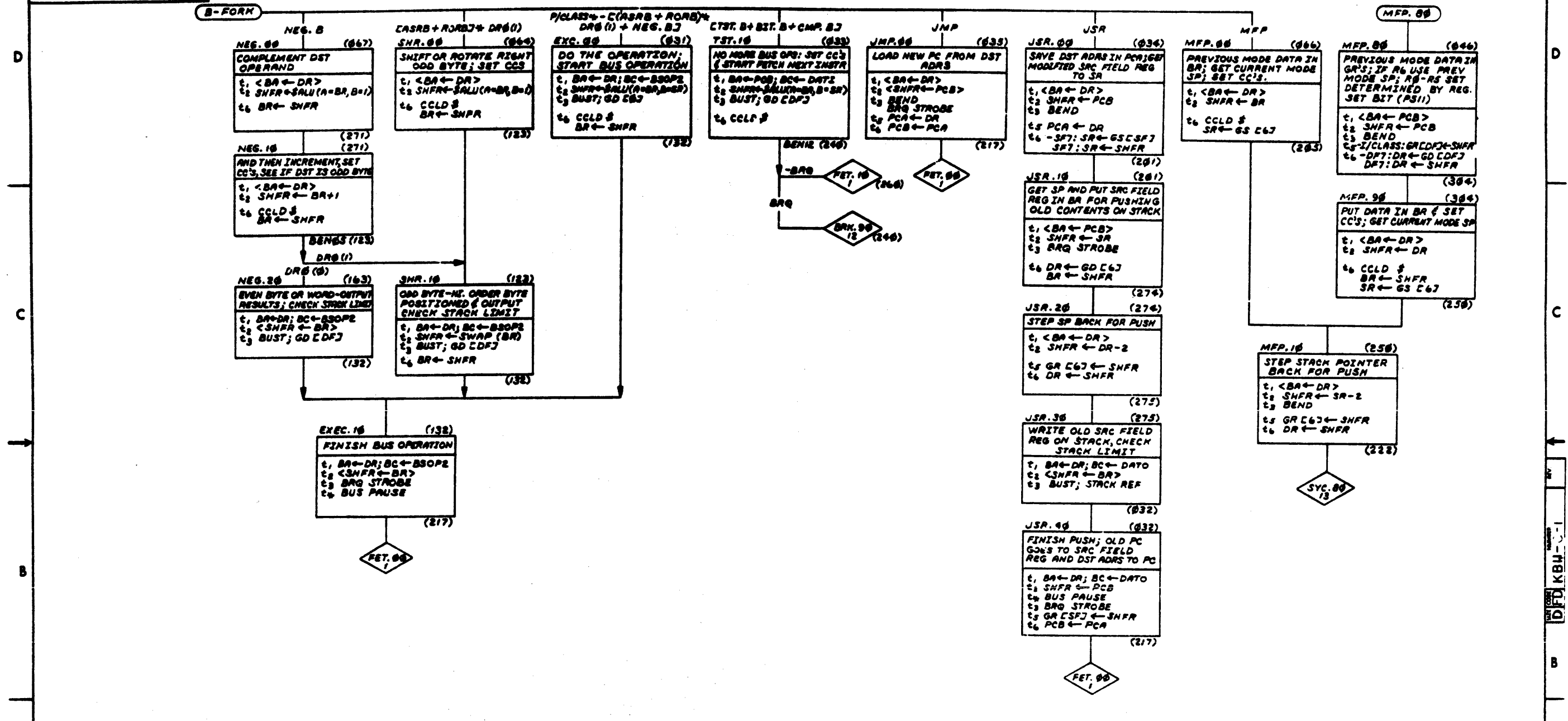
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118X 03 2



FIRST USED ON OPTION/MODEL		QTY	DESCRIPTION	PART NO.	ITEM NO.					
11/70										
PARTS LIST										
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES		<table border="1"> <tr> <td>DRAWN</td> <td>DATE</td> <td rowspan="2"> DIGITAL EQUIPMENT CORPORATION TITLE KBII-C FLOW DIAGRAMS (FLOWS 10) </td> </tr> <tr> <td>CHECKED</td> <td>DATE</td> </tr> </table>				DRAWN	DATE	DIGITAL EQUIPMENT CORPORATION TITLE KBII-C FLOW DIAGRAMS (FLOWS 10)	CHECKED	DATE
DRAWN	DATE					DIGITAL EQUIPMENT CORPORATION TITLE KBII-C FLOW DIAGRAMS (FLOWS 10)				
CHECKED	DATE									
DECIMALS	ANGLES									
X.XX - .000	± 0° 30'									
X.X - .01										
X - .1										
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY										
MATERIAL		NEXT HIGHER ASSY.								
FINISH		SCALE		NUMBER						
		B-DD-KBII-B		D/FD KBII-C-1						
		SHEET 11 OF 15		REV.						

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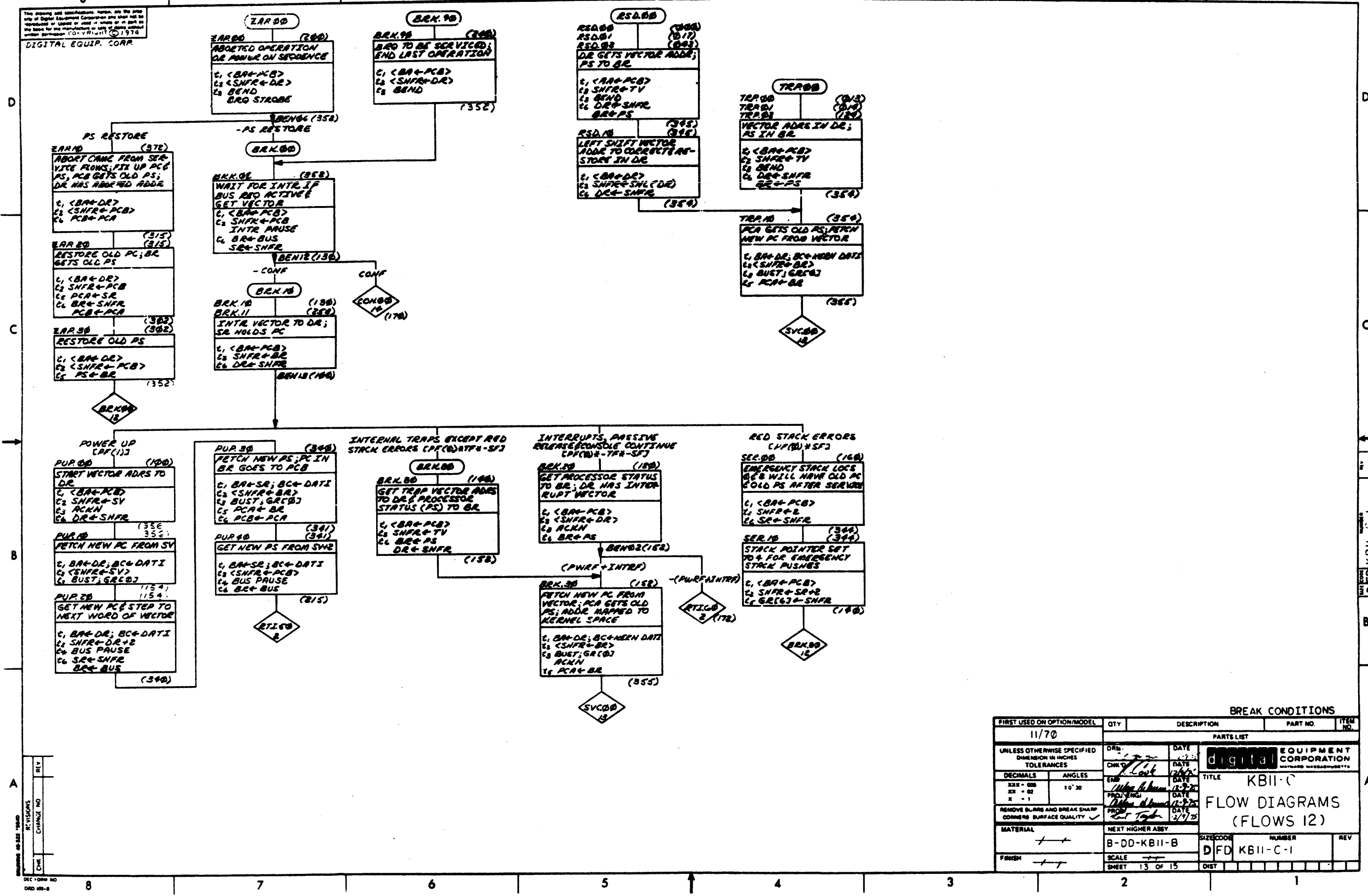


EXECUTE - MEM REF

FIRST USED ON OPTION/MODEL 11/70	QTY.	DESCRIPTION	PART NO.	REV.
PARTS LIST				
DIGITAL				
TITLE KBII-C FLOW DIAGRAMS (FLOWS II)				
MATERIAL H				
FINISH H				
B-00-KBII-B				
SCALE NONE				
SHEET 12 OF 15				
D/FD KBII-C-1				

REVISIONS
 CHANGE NO. REV.

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BREAK CONDITIONS				
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/70				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
SIZE - 000	10' 30"	digital EQUIPMENT CORPORATION		
REMOVE BLURS AND BREAK SHARP CORNERS SURFACE QUALITY		TITLE KBII-C FLOW DIAGRAMS (FLOWS 12)		
MATERIAL	FINISH	NEXT HIGHER ASSY.		
		B-DD-KBII-B	SIZE CODE	NUMBER
			DFD	KBII-C-1
		SHEET 13 OF 15	DIST	

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DIGITAL EQUIP. CORP.

D

C

B

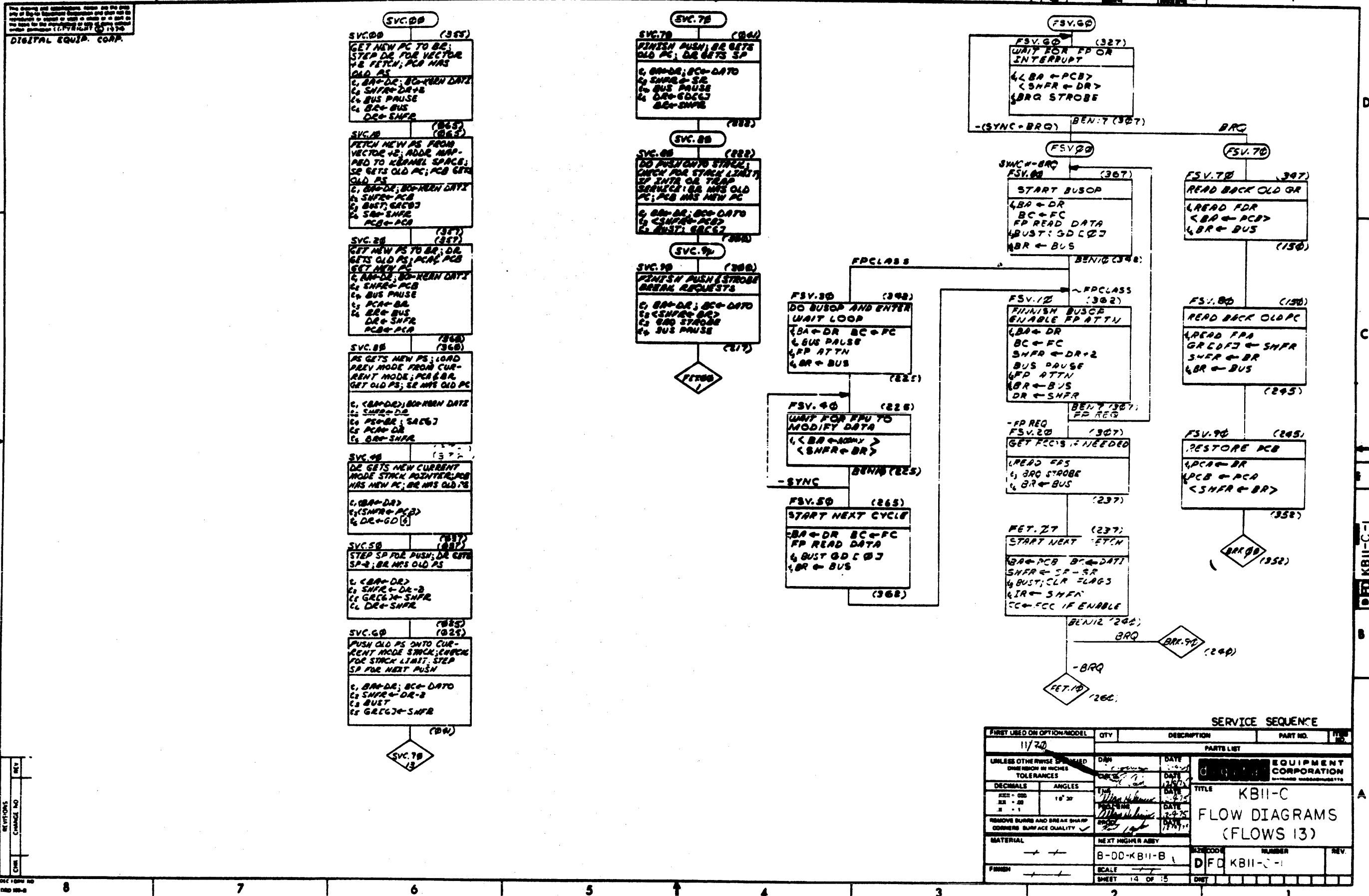
A

D

C

B

A



REV	NO
CHG	NO
REV	NO
CHG	NO

SERVICE SEQUENCE			
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.
11/70			
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES			
DECIMALS	ANGLES	DATE	
±.000	±.00	DATE	
±.001	±.01	DATE	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASBY	SCALE	NUMBER
FINISH	B-DD-KBII-B	D	KBII-C-1
SHEET 14 OF 15		REV.	

SERVICE SEQUENCE

PARTS LIST

TITLE

KBII-C

FLOW DIAGRAMS

(FLOWS 13)

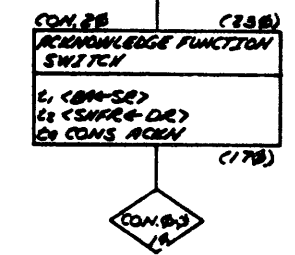
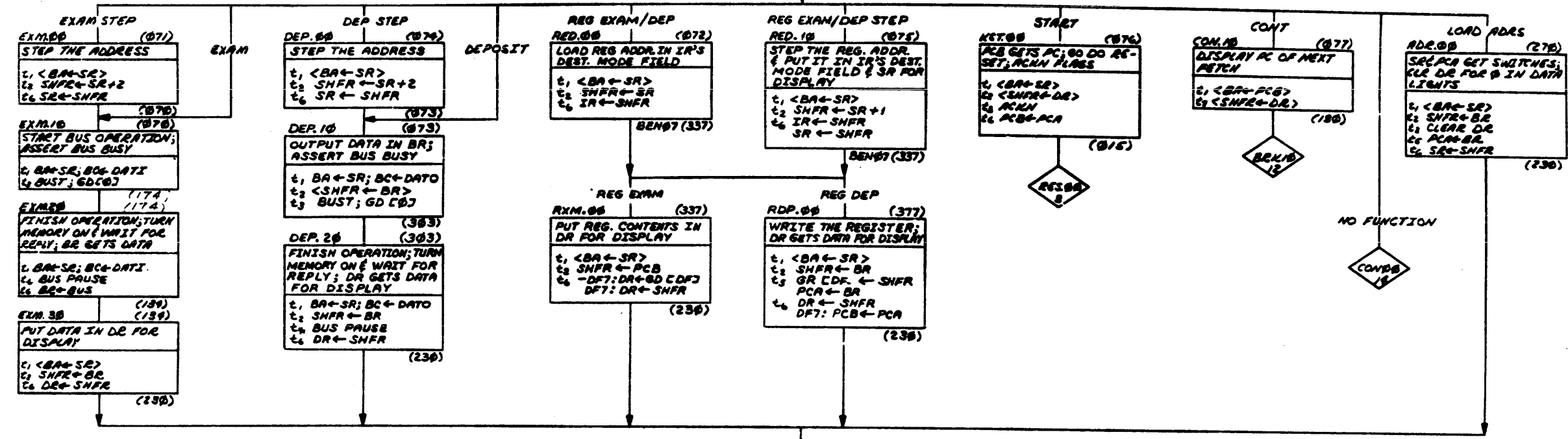
NUMBER

REV.

D F D KBII-C-1

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1-2-118X 2



REV	NO
CHG	NO
REV	NO
CHG	NO

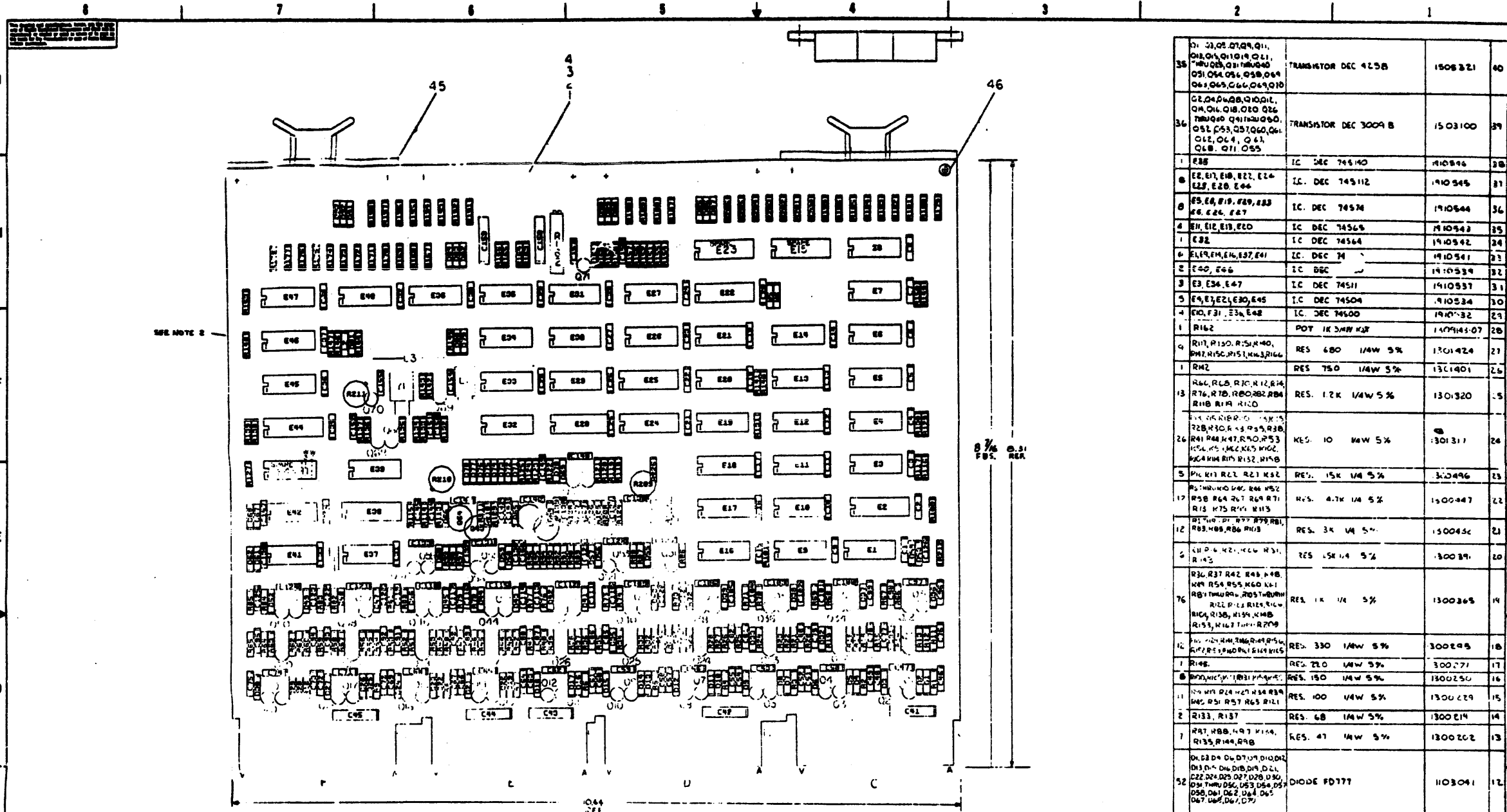
CONSOLE			
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.
11/70			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DBL	DATE	11/70
DECIMALS	ANGLES	DATE	11/70
XXX - 000	° 0' 30"	DATE	11/70
XX - 00		DATE	11/70
X - 0		DATE	11/70
REMOVES BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	✓	DATE	11/70
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER
FINISH	SCALE	REV	
	SHEET 15 OF 15	DIST	

TITLE
KBII-C
FLOW DIAGRAMS
(FLOWS 14)

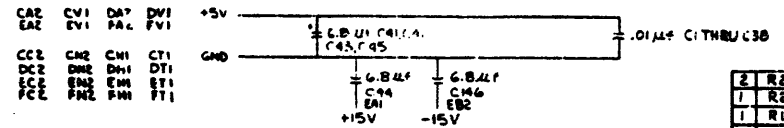
DEC 1970 NO 8

DFD KBII-C-1

SECTION V
KB11-D TIMING LOGIC



NOTES:
 1. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS, CAPACITANCE IS IN PICOFARADS. CAPS WITHOUT VALUE NOTED ARE .22 MFD 50V. DIODES ARE TYPE PD777 & REL. NPN TRANSISTORS ARE DEC 3009 B PNP TRANSISTORS ARE DEC 425 B.
 2. BOND LI TO ETCHED BOARD.



QTY	REF DESIGNATION	DESCRIPTION	PLAT NO.	REV	REF DESIGNATION	DESCRIPTION	PLAT NO.	REV
38	Q1, Q2, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q46, Q47, Q48, Q49, Q50, Q51, Q52, Q53, Q54, Q55, Q56, Q57, Q58, Q59, Q60, Q61, Q62, Q63, Q64, Q65, Q66, Q67, Q68, Q69, Q70, Q71, Q72, Q73, Q74, Q75, Q76, Q77, Q78, Q79, Q80, Q81, Q82, Q83, Q84, Q85, Q86, Q87, Q88, Q89, Q90, Q91, Q92, Q93, Q94, Q95, Q96, Q97, Q98, Q99, Q100	TRANSISTOR DEC 425 B	1508321	40				
36	Q1, Q2, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q46, Q47, Q48, Q49, Q50, Q51, Q52, Q53, Q54, Q55, Q56, Q57, Q58, Q59, Q60, Q61, Q62, Q63, Q64, Q65, Q66, Q67, Q68, Q69, Q70, Q71, Q72, Q73, Q74, Q75, Q76, Q77, Q78, Q79, Q80, Q81, Q82, Q83, Q84, Q85, Q86, Q87, Q88, Q89, Q90, Q91, Q92, Q93, Q94, Q95, Q96, Q97, Q98, Q99, Q100	TRANSISTOR DEC 3009 B	1503100	39				
1	R88	IC DEC 74540	140846	38				
8	E1, E10, E22, E24, E27, E28, E44	IC DEC 745112	140546	37				
8	E5, E6, E19, E29, E33, E4, E24, E27	IC DEC 74574	140644	36				
4	E1, E12, E13, E20	IC DEC 74564	140542	35				
1	E82	IC DEC 74564	140542	34				
6	E19, E14, E16, E37, E41	IC DEC 74	140541	33				
2	E40, E46	IC DEC	140539	32				
3	E3, E34, E47	IC DEC 74511	140537	31				
5	E9, E12, E21, E30, E45	IC DEC 74504	140534	30				
4	E10, E31, E34, E42	IC DEC 74500	140532	29				
1	R162	POT 1K 5W 5%	1409141-07	28				
9	R17, R120, R152, R160, R17, R152, R151, R163, R166	RES 480 1/4W 5%	1301424	27				
1	R162	RES 750 1/4W 5%	1301401	26				
13	R46, R76, R102, R124, R176, R178, R200, R210, R214, R110, R114, R110	RES. 12K 1/4W 5%	1301320	15				
26	R41, R44, R47, R49, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 10 1/4W 5%	1301311	24				
5	R1, R11, R21, R21, R32	RES. 15K 1/4 5%	1300496	23				
17	R1, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 4.7K 1/4 5%	1300447	22				
12	R1, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 3K 1/4 5%	1300450	21				
5	R1, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 15K 1/4 5%	1300391	20				
76	R1, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 1K 1/4 5%	1300365	19				
12	R1, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 330 1/4W 5%	300295	18				
1	R1, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 22.0 1/4W 5%	300271	17				
8	R1, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 150 1/4W 5%	1300250	16				
11	R1, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 100 1/4W 5%	1300229	15				
2	R1, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 68 1/4W 5%	1300219	14				
7	R1, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100	RES. 47 1/4W 5%	1300202	13				
52	D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, D30, D31, D32, D33, D34, D35, D36, D37, D38, D39, D40, D41, D42, D43, D44, D45, D46, D47, D48, D49, D50, D51, D52, D53, D54, D55, D56, D57, D58, D59, D60, D61, D62, D63, D64, D65, D66, D67, D68, D69, D70, D71, D72, D73, D74, D75, D76, D77, D78, D79, D80, D81, D82, D83, D84, D85, D86, D87, D88, D89, D90, D91, D92, D93, D94, D95, D96, D97, D98, D99, D100	DIODE PD777	1103041	12				
29	D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, D19, D20, D21, D22, D23, D24, D25, D26, D27, D28, D29, D30, D31, D32, D33, D34, D35, D36, D37, D38, D39, D40, D41, D42, D43, D44, D45, D46, D47, D48, D49, D50, D51, D52, D53, D54, D55, D56, D57, D58, D59, D60, D61, D62, D63, D64, D65, D66, D67, D68, D69, D70, D71, D72, D73, D74, D75, D76, D77, D78, D79, D80, D81, D82, D83, D84, D85, D86, D87, D88, D89, D90, D91, D92, D93, D94, D95, D96, D97, D98, D99, D100	DIODE D462	1100113	11				
96	C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50	CAP. 22.4UF 50V MOND.	1010274-1	10				

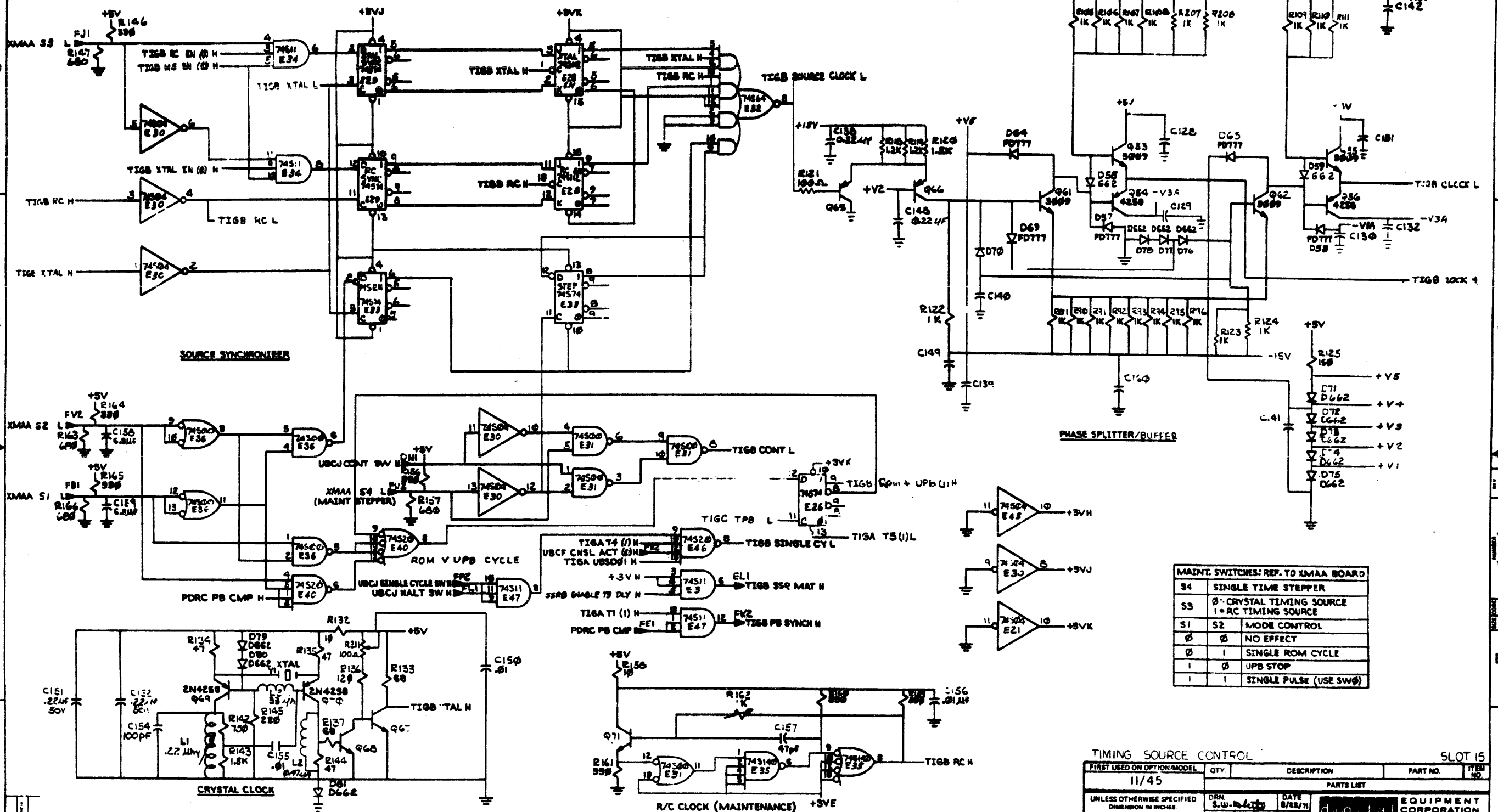
REV	DATE	BY	CHKD	APP'D	DESCRIPTION
1	DEC 745112	16			

REV	DATE	BY	CHKD	APP'D	DESCRIPTION
1	DEC 745112	16			

REV	DATE	BY	CHKD	APP'D	DESCRIPTION
1	DEC 745112	16			

TIMING GENERATOR

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MAINT. SWITCHES: REF. TO XMAA BOARD

S4	SINGLE TIME STEPPER	
S3	0 - CRYSTAL TIMING SOURCE 1 - RC TIMING SOURCE	
S1	S2	MODE CONTROL
0	0	NO EFFECT
1	0	SINGLE ROM CYCLE
1	1	UPB STOP
1	1	SINGLE PULSE (USE SW0)

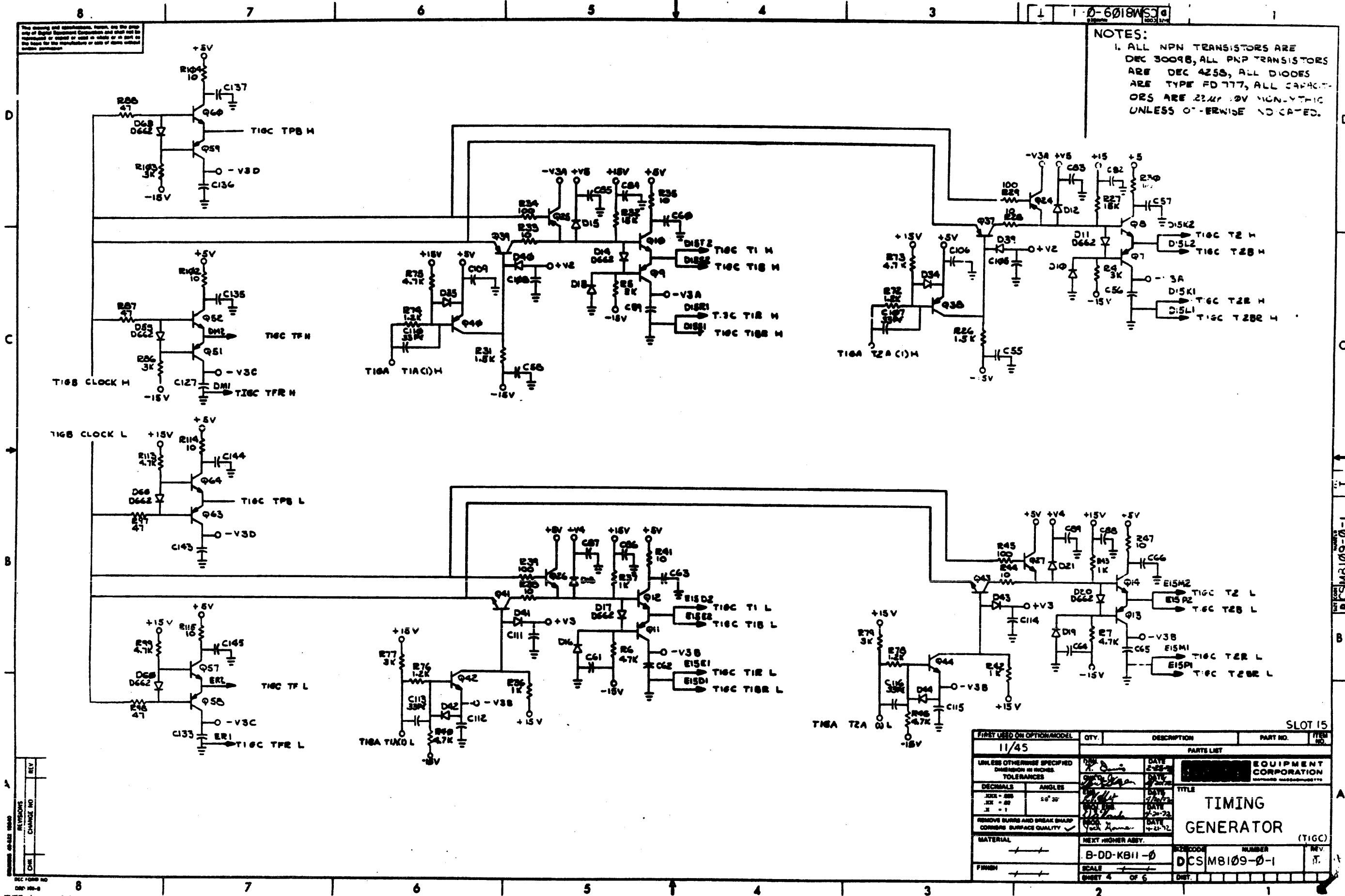
TIMING SOURCE CONTROL SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRN. S.W. R. 1/2	DATE 8/28/71	DIGITAL EQUIPMENT CORPORATION	
DECIMALS ANGLES	CHKD. S.W. R. 1/2	DATE 1/2/72		
.XX - .02	10' 30"	DATE 7/20/72	TIMING GENERATOR	
X - .1		DATE 7-21-72		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	PROD. DATE			
MATERIAL	NEXT HIGHER ASSY.			
FINISH	B-DD-KB11-0	SIZE CODE	NUMBER	REV
	SCALE	DCS	M8109-0-1	T
	SHEET	3 OF 6	DIST.	

REVISIONS
DATE
BY

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NOTES:
 1. ALL NPN TRANSISTORS ARE DEC 3009B, ALL PNP TRANSISTORS ARE DEC 425B, ALL DIODES ARE TYPE FD 777, ALL CAPACITORS ARE 22UF 10V NON-POLAR UNLESS OTHERWISE NOTED.



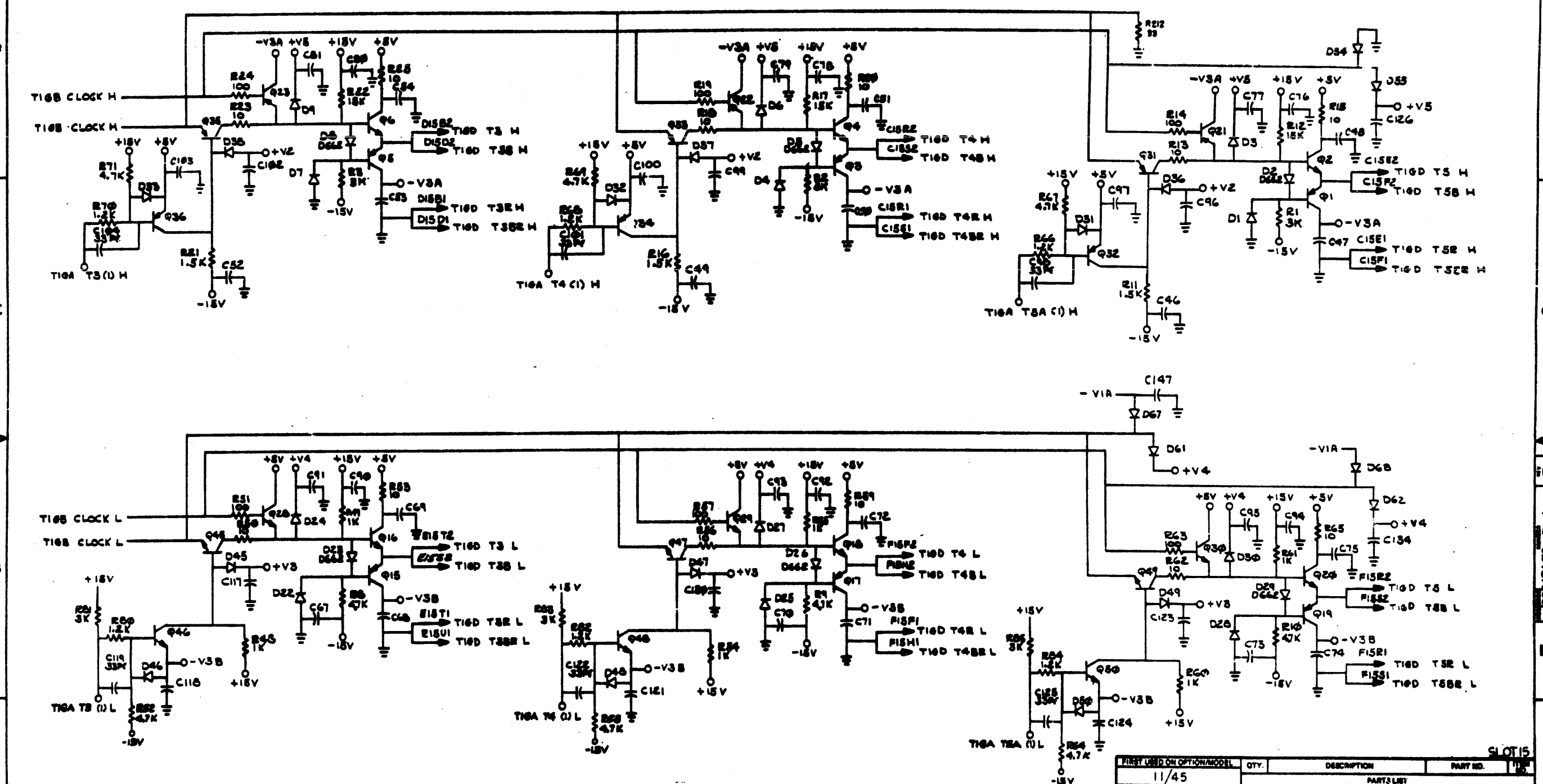
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES		DATE	EQUIPMENT CORPORATION	
DECIMALS	ANGLES	DATE	TITLE	
1/16 - .001	30° ±	DATE	TIMING GENERATOR (TIGC)	
1/32 - .002		DATE	NUMBER	
1/64 - .005		DATE	DCS M8109-0-1	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	REV.	
MATERIAL	NEXT HIGHER ASSY.	DATE	T.	
FINISH	SCALE	DATE	SHEET 4 OF 6	
		DATE	DWT.	

REV.	DESCRIPTION
1	CHANGE INO
2	CHANGE INO
3	CHANGE INO
4	CHANGE INO
5	CHANGE INO
6	CHANGE INO
7	CHANGE INO
8	CHANGE INO

DCS M8109-0-1

SLOT 15

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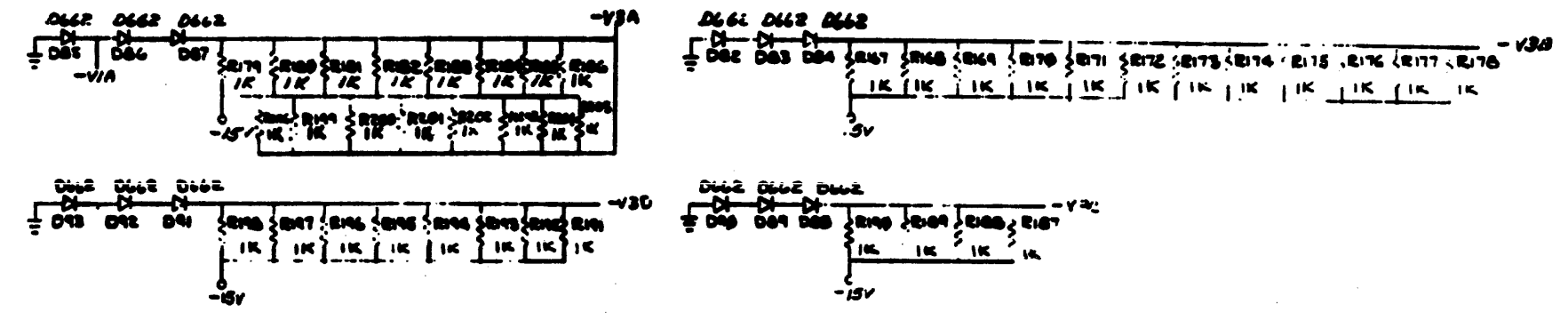
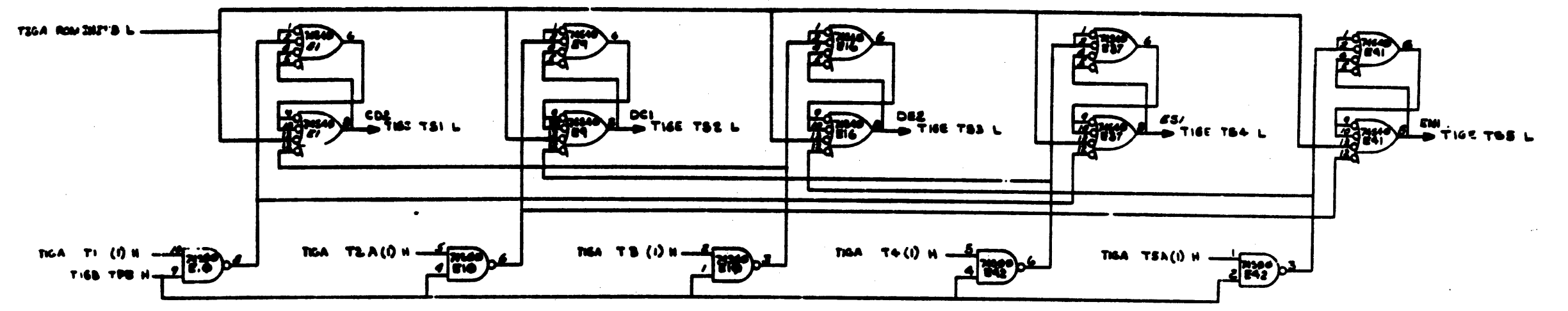
NOTE:
 ALL NPN TRANSISTORS ARE DEC 3009B,
 ALL PNP TRANSISTORS ARE DEC 425B,
 ALL DIODES ARE TYPE POT17 ALL CAPACITORS
 ARE .82 UF NONLYTHIC UNLESS OTHERWISE
 INDICATED.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
11/45			
PART 2 LIST			
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES			
DECIMALS	ANGLES	EQUIPMENT CORPORATION	
.XX - .005	± 30°	TIMING GENERATOR (TIGD)	
.XX - .00	± .1		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASSY.		
FINISH	B-DD-KB11-0		
	DCSMB109-0-1		

SLOT 15

REV. 1
 11/45

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REV	
CHANGE NO	
DATE	

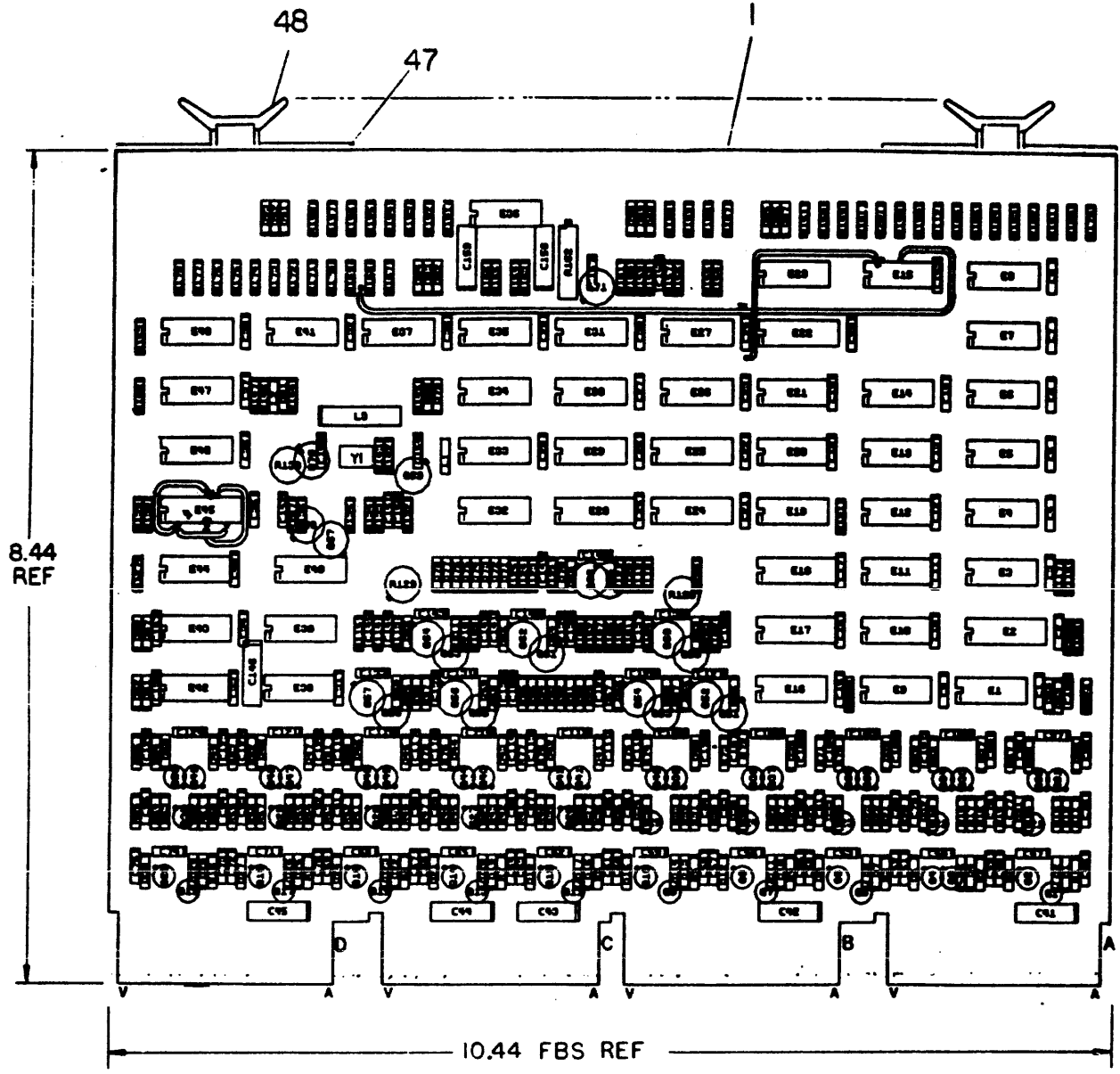
TIMING STATE DRIVERS		SLOT 15	
PART NO	QTY	DESCRIPTION	PART NO
11/45			
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES		EQUIPMENT CORPORATION	
DECIMALS	ANGLES	TITLE	
.015	±.02	TIMING GENERATOR	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		(TYPE)	
MATERIAL	FINISH	REV	
--	--	B-DD-KB11-0	DCS M009-0-1
		SCALE	REV
		1:1	

SECTION VII
KB11-C TIMING LOGIC

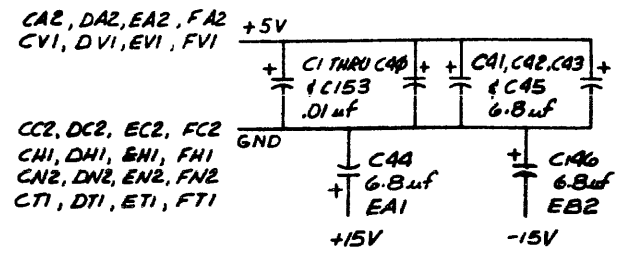
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NOTES:

- E3, E27, E36, E40, E44, AND E49 ARE SPARE I.C. LOCATIONS.
- R20B IS A SPARE RESISTOR LOCATION.
- PIN DESIGNATIONS ON CIRCUIT SCHEMATICS REFER TO MODULE POSITION IN 11/70 BACKPLANE.



PIN NOMENCLATURE
 MODULE BACKPLANE
 PIN PIN
 A C
 B D
 C E
 D F



IC DEC 749112	B	16
IC TYPE	GND	+5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE.		
IC PIN LOCATIONS		

REF	X Y COORDINATE HOLE LOCATION	K-CO-00139-0-4	1
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-00139-0-5	2
REF	MODULE ECO HISTORY	B-WH-00139-0-0	3
1	ETCHED CIRCUIT BOARD	5011344	4
44	C1 THRU C40, C155, C156	CAP, .01uf, 100V	5
8	C41, C42, C43, C44, C45, C146, C150, C159	CAP, 6.8uf, 35V, 10%	6
96	C46 THRU C97, C99, C100, C102, C103, C105, C108, C109, C111, C114, C115, C117, C118, C120, C121, C123, C124, C128, THRU C145, C147, C148, C149, C151, C152, C180, C112	CAP, .22uf, 50V, 80-20%	7
10	C98, C101, C104, C107, C110, C113, C116, C119, C122, C125	CAP, 33pf, 100V, 5%	8
1	C157	CAP, 47pf, 100V, 5%	9
1	C154	CAP, 100pf, 100V, 5%	10
52	D1, D3, D4, D6, D7, D9, D10, D12, D13, D15, D19, D18, D19, D21, D22, D24, D25, D27, D28, D30 THRU D50, D57, D58, D61, D62, D64, D65, D67, D68, D69, D70, D53, D54	DIODE DEC 777	11
39	D2, D5, D8, D11, D14, D17, D20, D23, D26, D29, D33, D36, D39, D40, D43, D45, D71 THRU D93	DIODE D662	12
17	R6 THRU R10, R40, R46, R52, R56, R64, R67, R71, R73, R75, R99, R113, R69	RESISTOR, 4.7K, 1/4W, 5%	13
8	R11, R16, R21, R26, R31, R143	RESISTOR, 1.5K, 1/4W, 5%	14
5	R12, R17, R22, R27, R32	RESISTOR, 15K, 1/4W, 5%	15
20	R13, R15, R16, R20, R23, R25, R26, R30, R33, R35, R36, R41, R47, R50, R53, R56, R59, R62, R65, R102, R104, R114, R115, R132, R150, R44	RESISTOR, 10 OHM, 1/4W, 5%	16
11	R14, R19, R24, R29, R34, R39, R45, R51, R57, R63, R121	RESISTOR, 100 OHM, 1/4W, 5%	17
76	R20, R27, R42, R43, R46, R49, R54, R55, R60, R61, R69 THRU R90, R101, R105 THRU R112, R123, R124, R126, R130, R136, R140, R141, R148 THRU R153, R167 THRU R200, R122, R201	RESISTOR, 1K, 1/4W, 5%	18
13	R66, R68, R70, R72, R76, R74, R76, R80, R82, R84, R116, R119, R120	RESISTOR, 1.2K, 1/4W, 5%	19
12	R77, R78, R81, R83, R85, R86, R103, R1 THRU R5	RESISTOR, 3K, 1/4W, 5%	20
7	R87, R88, R97, R98, R134, R135, R144	RESISTOR, 47 OHM, 1/4W, 5%	21
8	R100, R125, R127, R131, R154, R155	RESISTOR, 150 OHM, 1/4W, 5%	22
8	R116, R140, R156, R159, R160, R161, R164, R165	RESISTOR, 330 OHM, 1/4W, 5%	23
5	R117, R147, R157, R163, R166	RESISTOR, 680 OHM, 1/4W, 5%	24
2	R128, R129	RESISTOR, 2K, 1/2W, 10%, POT	25
1	R130	RESISTOR, 100 OHM, 1/2W, 10%, POT	26
2	R133, R137	RESISTOR, 68 OHM, 1/4W, 5%	27
1	R142	RESISTOR, 750 OHM, 1/4W, 5%	28
1	R145	RESISTOR, 220 OHM, 1/4W, 5%	29
1	R162	RESISTOR, 1K, 3/4W, POT	30
35	Q1, Q3, Q5, Q7, Q9, Q11, Q13, Q17, Q19, Q21 THRU Q25, Q31 THRU Q40, Q51, Q54, Q56, Q58, Q59, Q63, Q65, Q66, Q69, Q70, Q15	TRANSISTOR DEC 4250	31

FIRST USED ON OPTION MODEL 11/70

ETCH BOARD REV B

DATE 12/9/74
 DATE 1-2-75
 DATE 1-15-75
 DATE 1/15/75

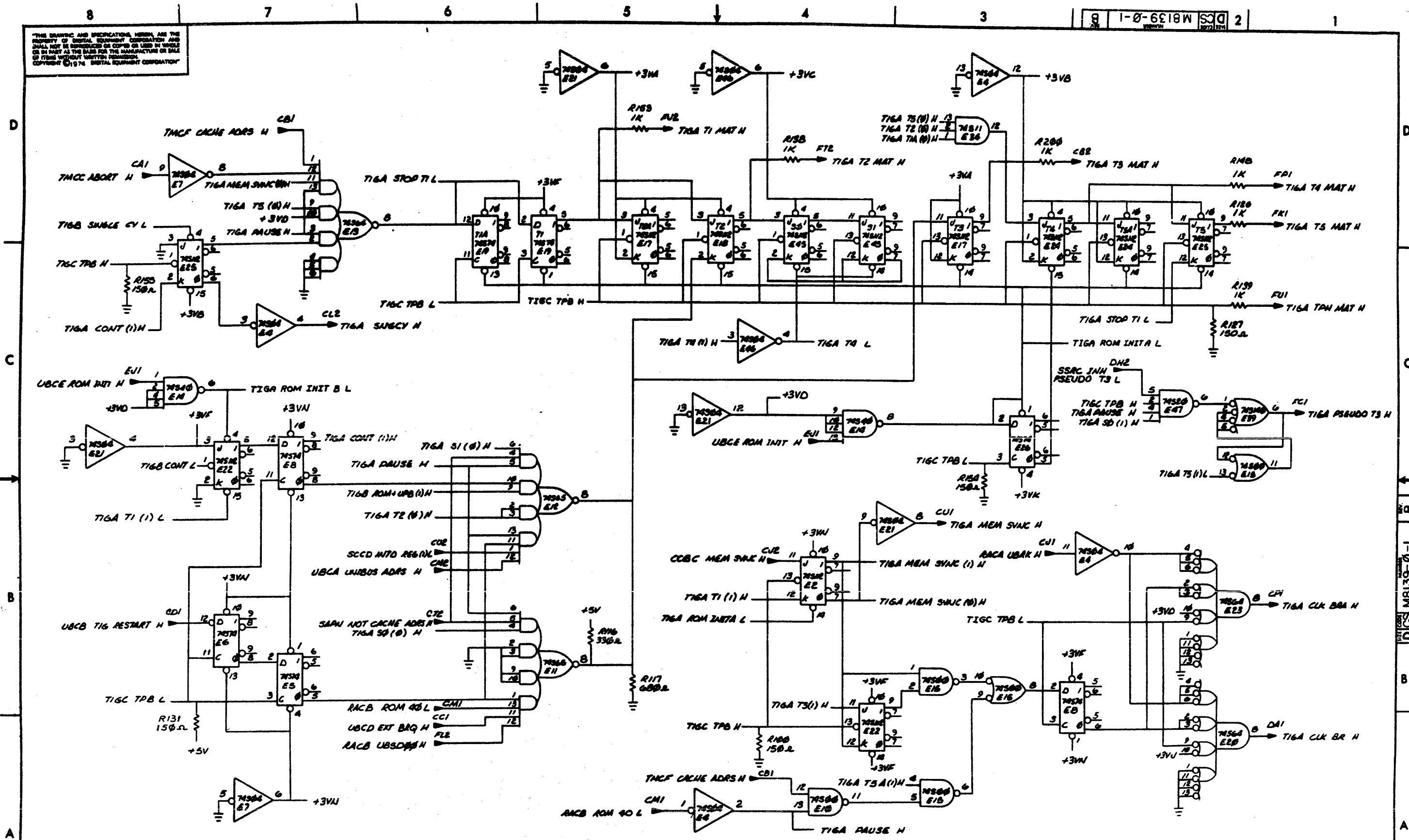
digital EQUIPMENT CORPORATION

TITLE TIMING GENERATOR

SIZE CODE DCS NUMBER M8139-0-1 REV. B

SEMICONDUCTOR CONVERSION CHART

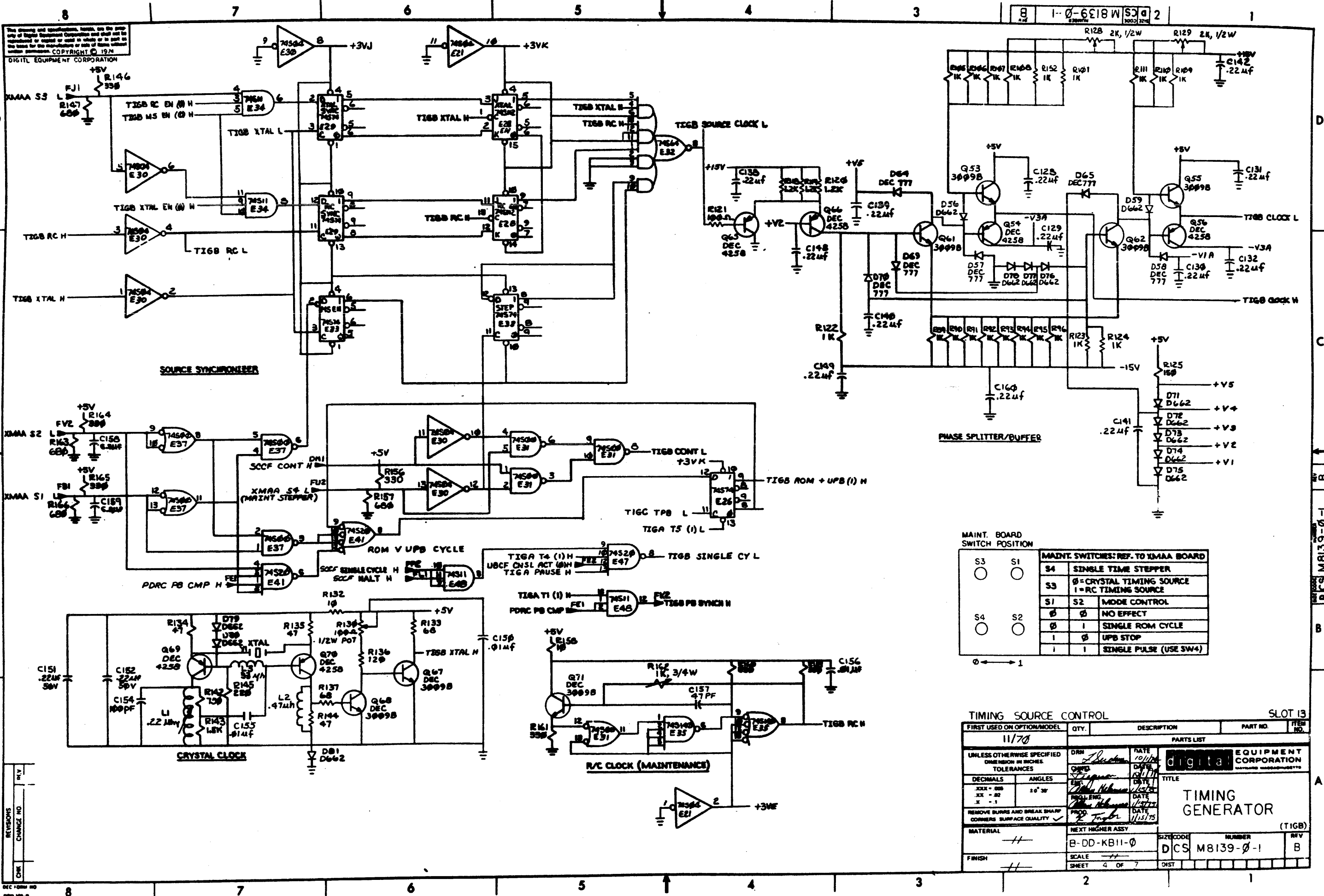
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TIMING CONTROL SLOT 13

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	TIMING GENERATOR (T16A)	SIZE CODE	DCS	NUMBER	M8139-0-1	REV.	B
SCALE	1/1	SHEET	3	OF	7	DIST	



MAINT. BOARD SWITCH POSITION

MAINT. SWITCHES: REF. TO X1AAA BOARD	
S3	S1
<input type="radio"/>	<input type="radio"/>
S4	S2
<input type="radio"/>	<input type="radio"/>

SW4	SW3	SW2	SW1	DESCRIPTION
0	0	0	0	NO EFFECT
0	0	1	0	SINGLE ROM CYCLE
1	0	0	0	UPB STOP
1	1	0	0	SINGLE PULSE (USE SW4)

TIMING SOURCE CONTROL

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				

DRN	DATE	TITLE
DRN	10/11/70	TIMING GENERATOR
CHKD	10/11/70	
ENG	11/11/70	
PROG	11/11/70	
APP	11/11/70	

MATERIAL	FINISH	SCALE	SHEET	OF	TOTAL SHEETS	DIST
---	---	---	4	OF	7	

REVISIONS

NO.	DESCRIPTION
1	CHANGE NO.

DEC 1970

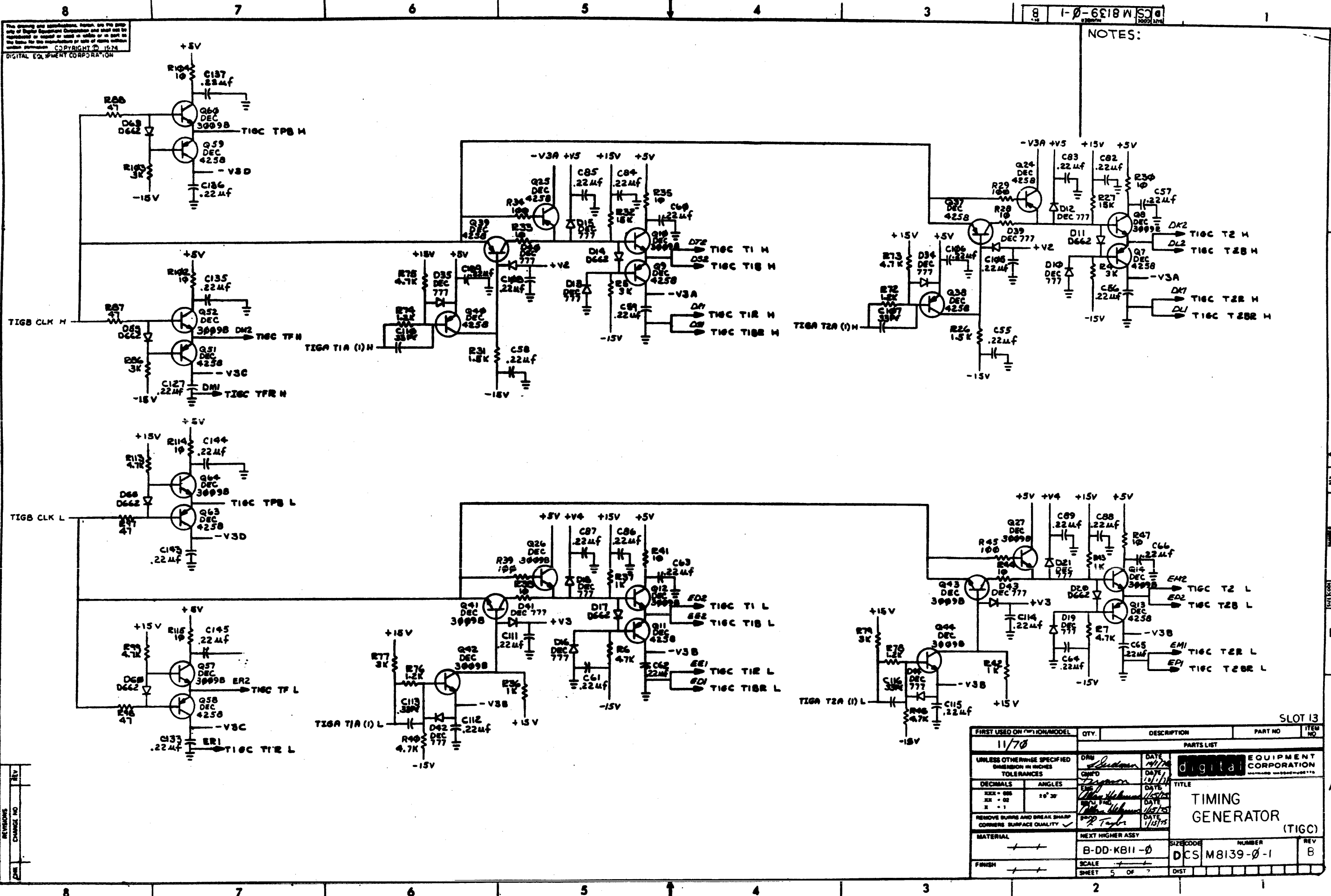
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REVISIONS
CHANGE NO.

MB139-0-1

A

B



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1-0-6818W SCS

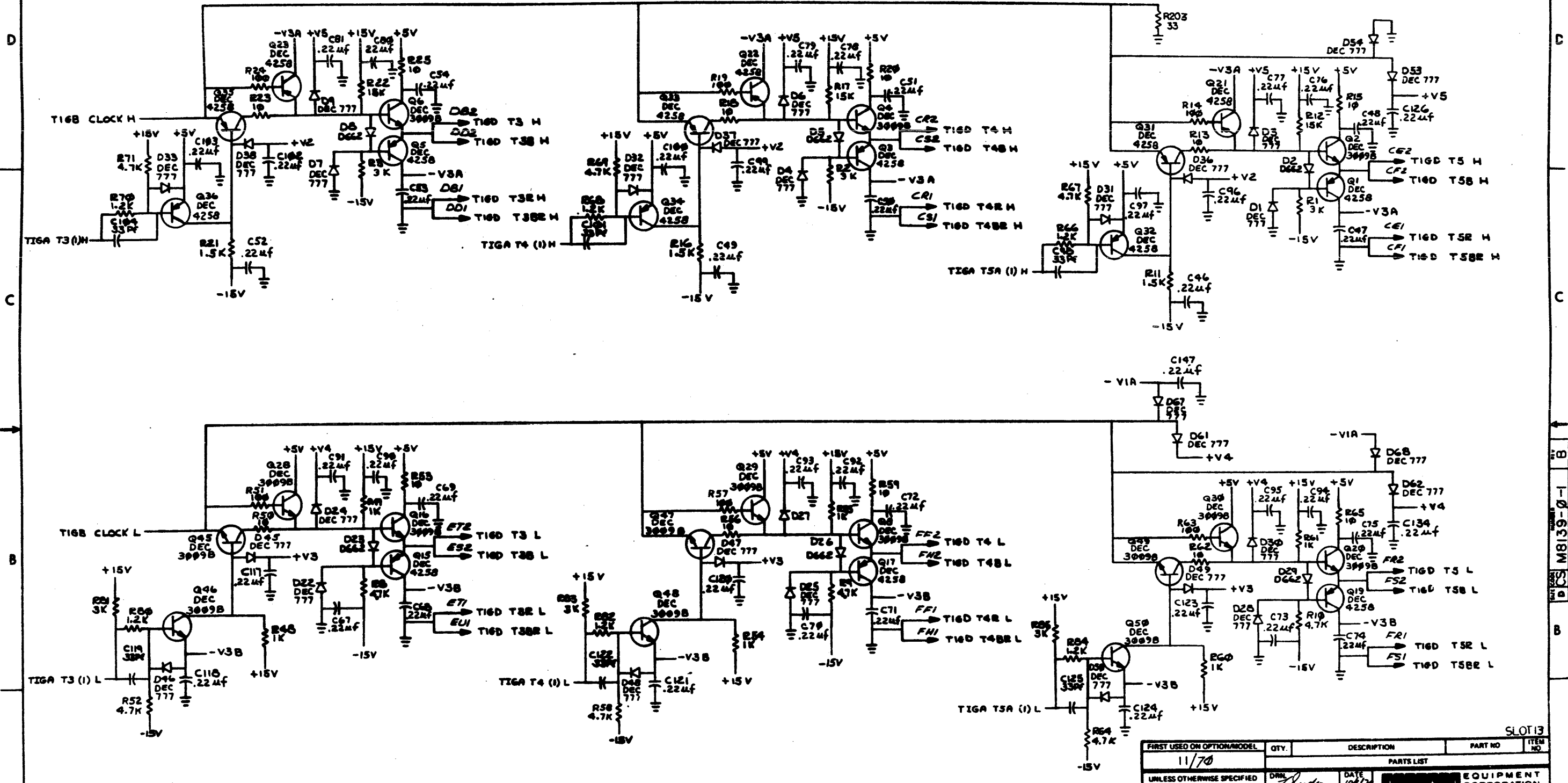
D E S M 8139-0-1

SLOT 13

FIRST USED ON (OPTIONAL) MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES	DRW <i>[Signature]</i>	DATE 1/11/75		
DECIMALS	ENG <i>[Signature]</i>	DATE 10/1/74		
ANGLES	CHK <i>[Signature]</i>	DATE 1/15/75	TIMING GENERATOR (TIGC)	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	APP <i>[Signature]</i>	DATE 1/15/75		
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
FINISH	B-DD-KB11-0	DCS	M8139-0-1	B
SCALE	SHEET 5 OF 7	DIST		

REVISIONS
CHANGE NO. REV

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FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES		DATE 1/17/70		
TOLERANCES		DATE 1/17/70		
DECIMALS	ANGLES	DATE 1/17/70		
.XXX - .000	10° 30'	DATE 1/17/70		
.XX - .00		DATE 1/17/70		
.X - .0		DATE 1/17/70		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE 1/17/70		
MATERIAL		NEXT HIGHER ASSY		
FINISH		SCALE		
		SHEET 6 OF 7		
		DIST		
		SIZE CODE		
		NUMBER		
		REV		
		B-DD-KB11-0		
		DCS M8139-0-1		
		B		

REVISIONS
 CHANGE NO. REV.
 1
 2
 3

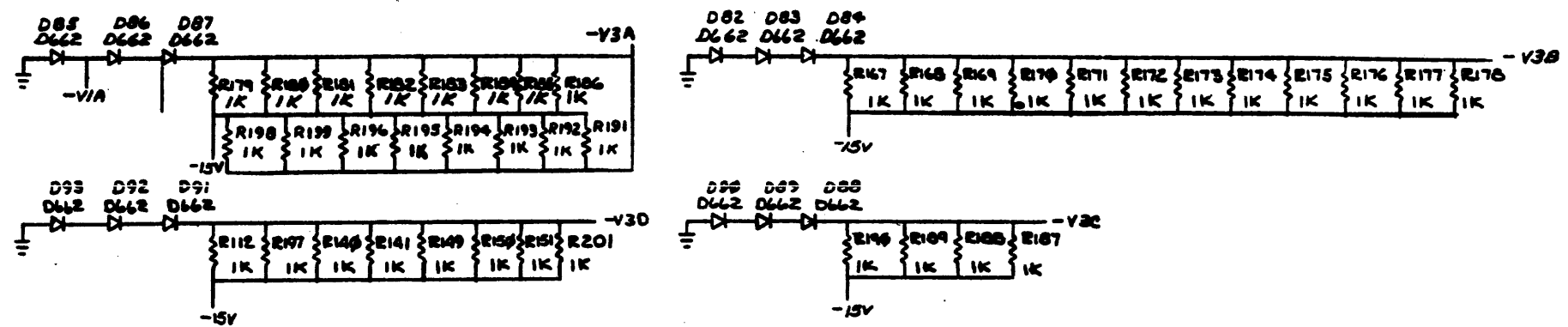
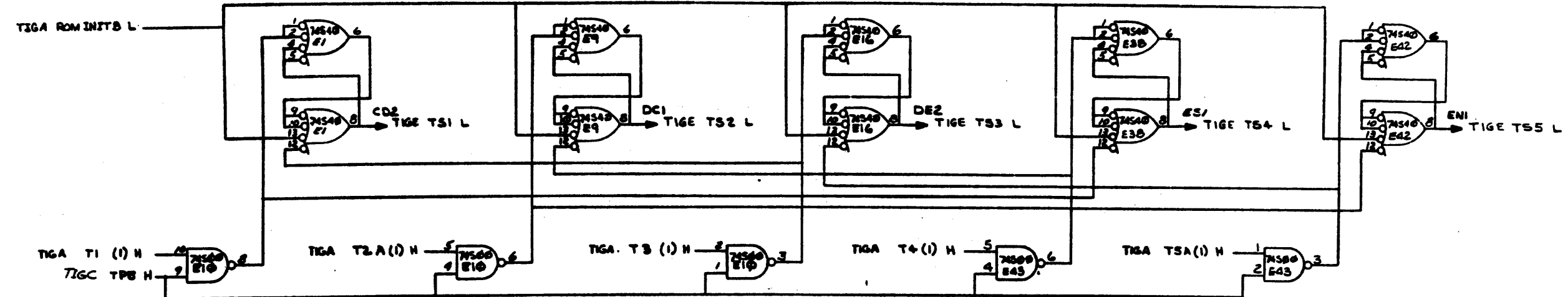
CS M8139-0-1

SLOT 13

TIMING GENERATOR

(TIGD)

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TIMING STATE DRIVERS		SLOT 13									
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.								
11170											
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES		PARTS LIST									
TOLERANCES		<table border="1"> <tr> <td>DATE</td> <td>10/1/75</td> </tr> <tr> <td>DATE</td> <td>11/1/75</td> </tr> <tr> <td>DATE</td> <td>11/1/75</td> </tr> <tr> <td>DATE</td> <td>11/1/75</td> </tr> </table>		DATE	10/1/75	DATE	11/1/75	DATE	11/1/75	DATE	11/1/75
DATE	10/1/75										
DATE	11/1/75										
DATE	11/1/75										
DATE	11/1/75										
DECIMALS	ANGLES	TITLE									
.XXX - .005	±0° 30'	TIMING GENERATOR (TIGE)									
.XX - .02		EQUIPMENT CORPORATION									
.X - 1		MAYFORD MASSACHUSETTS									
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		REV									
MATERIAL	NEXT HIGHER ASSY.	SIZE/CODE	NUMBER								
FINISH	B-DD-KB11-0	DCS	M 8139-0-1								
	SCALE										
	SHEET 7 OF 7	DIST.									

REVISEMENTS
CHANGE NO. REV.
DATE

REV. B
DCS MB139-0-1