

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

SECTION I
ASYNCHRONOUS LINE INTERFACE

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FIELD MAINTENANCE PRINT SET

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TABLE OF CONTENTS

FIELD MAINTENANCE PRINT SET DL11-W
 SERIAL LINE/LINE CLOCK
 SLU/RTC OPTION
 SLU/RTC OPTION
 CABLE ASSY (KL8-E)
 CABLE MODEM BC05C
 CABLE ASSY
 INSTALLATION PROCEDURE

B-TC-DL11-W-1
 A-PL-DL11-W-0
 D-CS-M7856-0-1
 K-CS-M7856-0-9
 D-IA-7008360-0-0
 D-UA-BC05C-0-0
 D-UA-BC03L-0-0
 A-SP-DL11-W-2

UNIT VARIATIONS COVERED BY THIS PRINT SET
DL11-W
DL11-WA
DL11-WB
DL11-WC

**DL11-W
 Field Maintenance
 Print Set**

**Digital Equipment
 Corporation**

PRINT SET ORDER NO.
 MP00106

REVISEMENTS		USED ON OPTION/MODEL	DRN.	DATE	digital
REV.	CHG. NO.		<i>D. Neagy</i>	26 MAR 76	
	A		CHK'D	DATE	
	DL11W-1		<i>D. Neagy</i>	26 MAR 76	
	B		PROJ. ENG.	DATE	
	DL11-W-2		<i>R. Biatt</i>	29 MAR 1976	
DATE	NOV 76 8-77		FIELD SERV.	DATE	
			<i>M. Williams</i>	14 APR 1976	
		SHEET I OF 1			TITLE: FIELD MAINTENANCE PRINT SET DL11-W
SIZE	CODE	NUMBER	REV.		
B	TC	DL11-W-1	B		
DIST.					

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS				QUANTITY/VARIATION														
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														
ITEM NO.	DWG NO. / PART NO.	DESCRIPTION			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														

DIGITAL EQUIPMENT CORPORATION
 MAYNARD, MASSACHUSETTS
PARTS LIST

QUANTITY / VARIATION

MADE BY D. HEALY	CHECKED D. HEALY	SECTION
DATE 25 MAR 76	DATE 25 MAR 76	1
ENG <i>R.B. Pratt</i>	PROD <i>K. J. Mac Donald</i>	ISSUED SECT.
DATE 1-APR-76	DATE 7 APR 76	1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION																
			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 0C001
	SHEET 1 OF 1	DIST.				



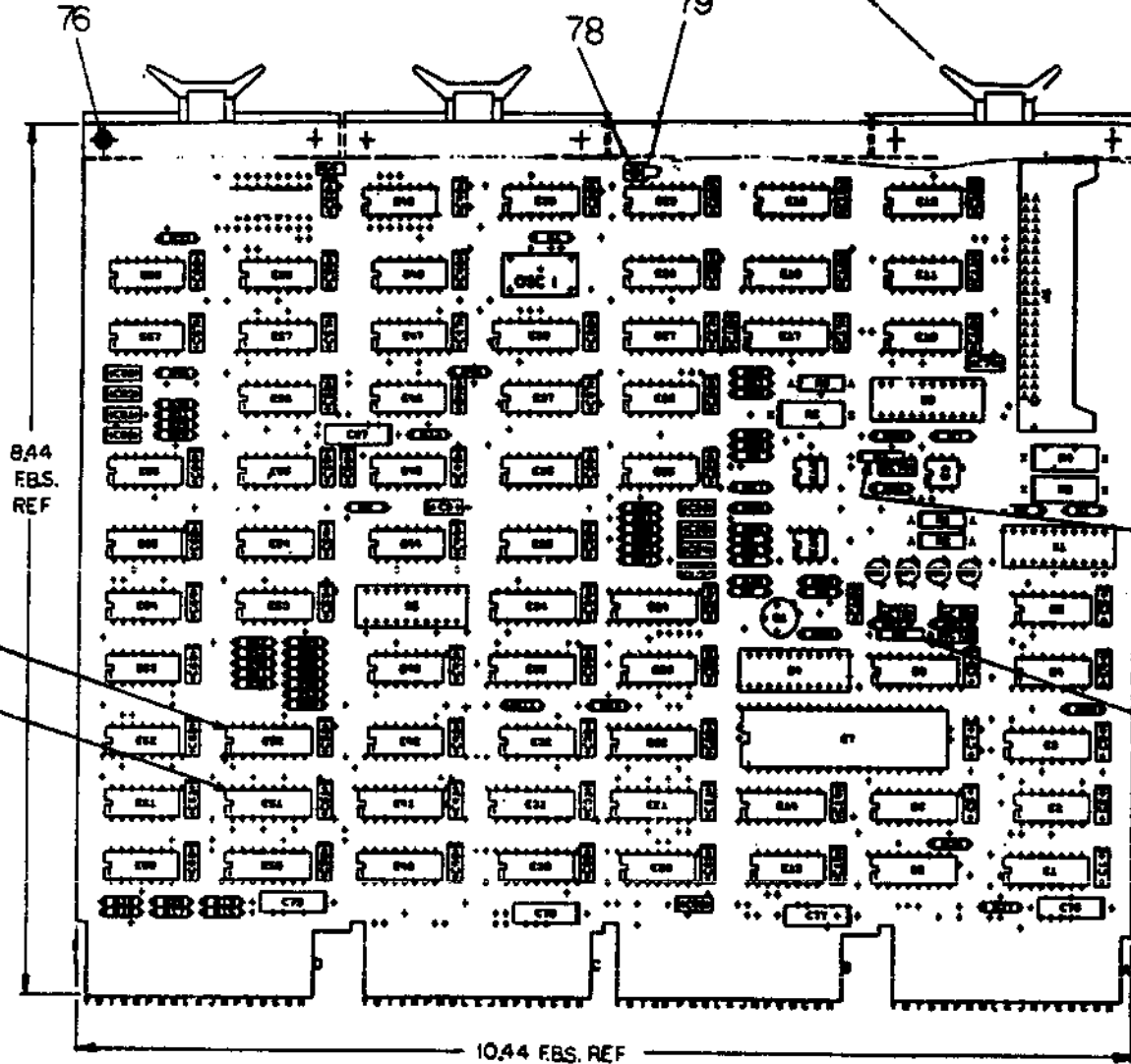
NOTES:

D

C

B

A



ENGINEER OPTION
DO NOT INSERT

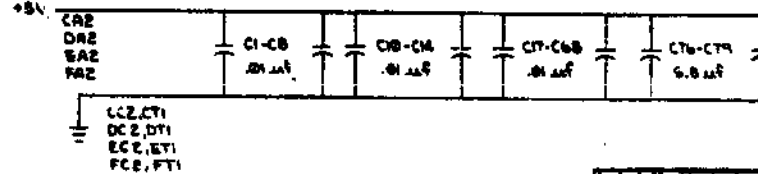
ENGINEER OPTION
DO NOT INSERT

RETROFIT D7
AS SHOWN

RETROFIT D6
AS SHOWN

REF	X-Y COORDINATE HOLE LOCATION	PART NO.	QTY
REF	ASSY/DRILLING HOLE LAYOUT	D-AH-W7856-B-5	1
REF	MODULE ECO HISTORY	D-MH-W7856-B-6	1
1	ETCHED CIRCUIT BOARD	5011484	1
67	C1 THRU C8, C10 THRU C19, C17 THRU C20, C20	CAPACITOR, .01uf, 100V, 20%	1001810-01
7	C9, C20 THRU C24	CAPACITOR, 470pf, 100V, 5%	1000024
1	C25	CAPACITOR, 330pf, 100V, 5%	1000023
8	C20 THRU C20	CAPACITOR, 82pf, 100V, 5%	1000015
1	C20	CAPACITOR, 150pf, 100V, 5%	1000019
1	C27	CAPACITOR, 2.2uf, 30V, 10%	1002027
4	C70, C71, C70, C79	CAPACITOR, 8.2uf, 35V, 10%	1003300
1	C10	CAPACITOR, 5000pf, 100V, 20%	1001785
3	D1, D2, D3	DIODE, 1N4004	1105796
1	D4	DIODE, ZENER 1N4742	1109502
2	D6, D7	DIODE, CURRENT LIMITER MC1301	1109510
1	D8	DIODE, 0064	1100114
4	S1, S2, S4, S3	SWITCH, 10 POSITION	121164-06
1	S2	SWITCH, 8 POSITION	121164-04
1	20		
1	J1	CONNECTOR, 40 PIN	1209441
1	R23	RESISTOR, 330, 1/4W, 5%	1300295
3	R1, R2, R3	RESISTOR, 100 OHM, 1/2W, 5%	1300300
3	R4, R5, R6	RESISTOR, 560 OHM, 1/4W, 5%	1303040
2	R7, R8	RESISTOR, 80K, 1/4W, 5%	1301327
1	R9	RESISTOR, 33 OHM, 1/4W, 5%	1300197
1	R10	RESISTOR, 120K, 1/4W, 5%	1300539
1	R12	RESISTOR, 600, 1/4W, 5%	1304424
1	R25	RESISTOR, 68 OHM, 1/4W, 5%	1300219
2	R13, R14	RESISTOR, 100 OHM, 1/4W, 5%	1300229
4	R19, R10, R17, R10	RESISTOR, 100 OHM, 1/4W, 5%	1301322
4	R10, R20, R21, R22	RESISTOR, 390 OHM, 1/4W, 5%	1300309
1	R23	RESISTOR, 1.5K, 1/4W, 5%	1301422
2	R27, R29	RESISTOR, 190 OHM, 1/4W, 5%	1300192
4	R20 THRU R23	RESISTOR, 270 OHM, 1/4W, 5%	1301072
27	R25, R26, R27, R20 THRU R22	RESISTOR, 10K, 1/4W, 5%	1300479
3	R11, R4, R30	RESISTOR, 1K, 1/4W, 5%	1300305
1	R34	RESISTOR, 220 OHM, 1/4W, 5%	1300271
1	D7	TRANSISTOR, DEC 85310	1509330
2	D3, D4	TRANSISTOR, A95	1510705
2	D2, D5	TRANSISTOR, A55	1510706
2	D9, D10	OPTICALLY COUPLED ISOLATOR	1510727-1
1	DSC 1	OSCILLATOR 50600 MAZ	1011000-02
1	E15	I.C. DEC 4N26	1911958
3	E1, E8, E14	I.C. DEC 0641	1911599
6	E2, E19, E20, E20, E21, E49	I.C. DEC 8001	1909705
1	E3	I.C. DEC 8097	1911527
3	E4, E44, E64	I.C. DEC 7404	1910159
1	E5, E35, E37, E59, E57, E63, E60	I.C. DEC 7474	1909547
1	E7	I.C. DEC LART(808)	1910450-01
1	E8	I.C. DEC 74115	1910051
1	E10	I.C. DEC 1489L	1910323
1	E11	I.C. DEC 1486L	1910322
2	E17, E18	I.C. DEC 74151	1909426

IC TYPE	QTY	LOC.
IC 384	1	B
IC 8837	8	16
IC 814A	1	6
IC 74123	8	16
IC 74157	8	16
IC 74153	8	16
IC 7493	10	8
IC 7492	10	3
IC 74151	8	16
IC 74175	8	16
IC U ART	1	3
IC 8047	8	16
IC 8141	8	16



REV.	DESCRIPTION	DATE
1	ORIGINAL	10-10-76
2	CHANGE NO. 00002	10-10-76
3	CHANGE NO. 00003	10-10-76
4	CHANGE NO. 00004	10-10-76

SEMICONDUCTOR CONVERSION CHART

ETCH BOARD REV. 0

DEC. NO.	DATE	BY

digital

SLU/RTD 0011 N

SIZE CODE D NUMBER REV

SHEET 1 OF 3

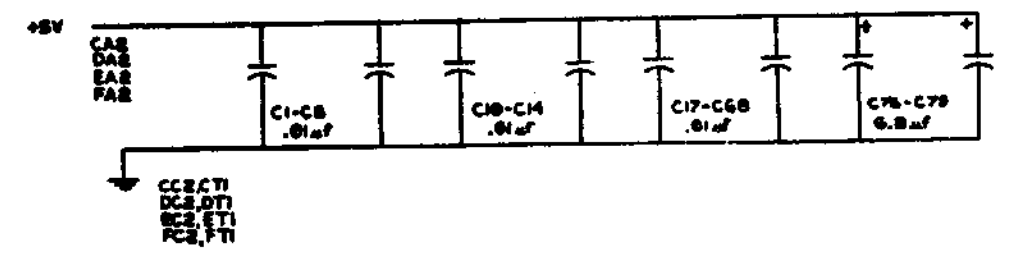
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NOTES:

IC 8641	8	16
IC 894	1	8
IC 89-7	8	16
IC 214A	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	QND	+5V

QND AND 5V ARE USUALLY PIN 7 AND 20 RESPECTIVELY EXCEPT WHERE SHOWN ABOVE

IC PIN LOCATIONS



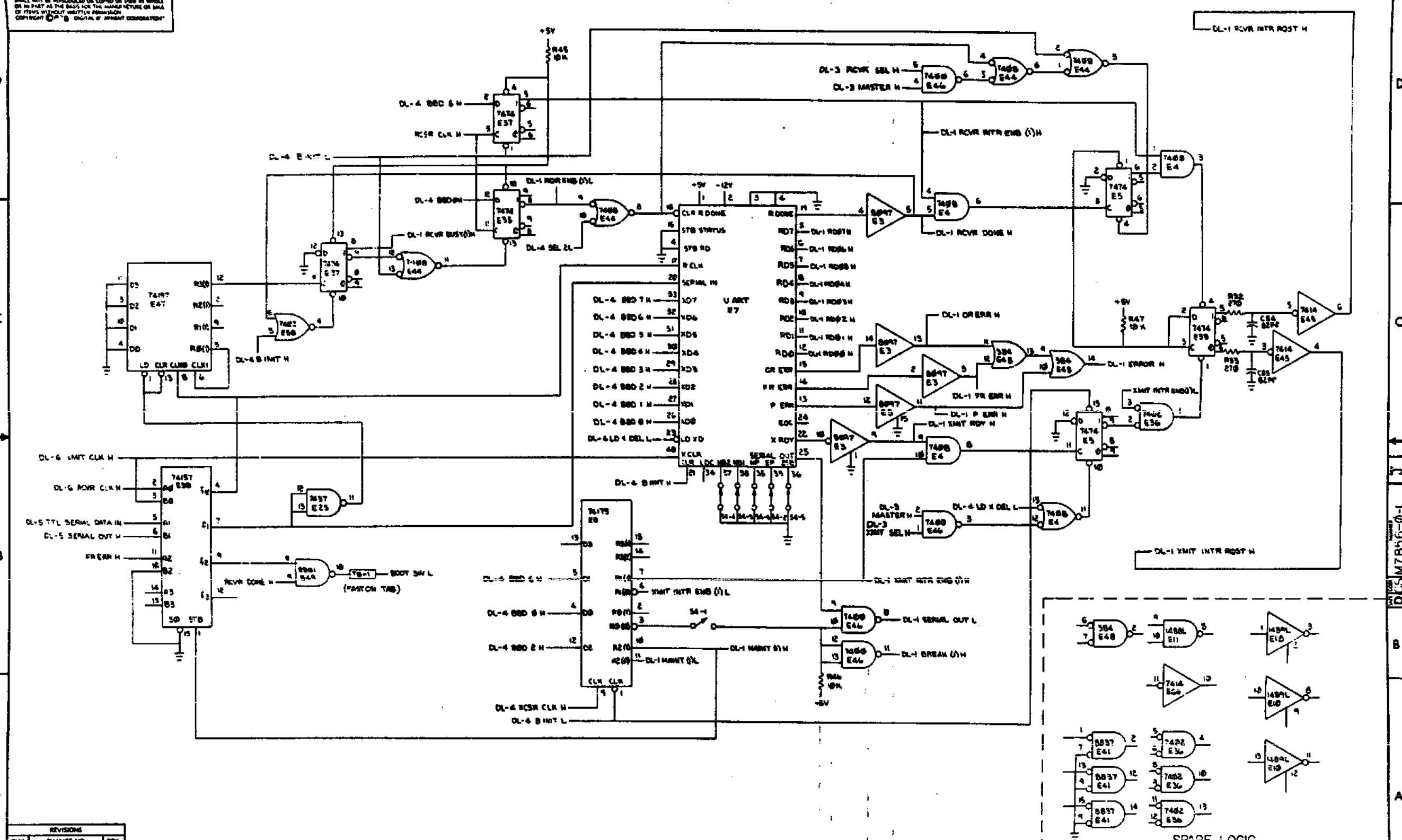
QTY		REF. DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST					
ETCH BOARD REV. E					
DRG. <i>D. Dumble</i> DATE 2-23-78 DWG. <i>[Signature]</i> DATE 2-23-78 ENG. <i>[Signature]</i> DATE 2-23-78 PROJ. ENG. <i>[Signature]</i> DATE 1-17-78 PART. ENG. <i>[Signature]</i> DATE 2-17-78			 TITLE: SLU/RTC OPTION		
DEC NO. EA NO. DSC NO. EA NO.			SCALE: SHEET 1 of 5		

SEMI-CONDUCTOR CONVERSION CHART

R. MARRINGTON
 74-23-000001 IC-ARM-80
 OF M7856-0-1
 2/23/78
 SCS, INC.
 1000 W. 10th St.
 Berkeley, CA 94704
 (415) 841-1000

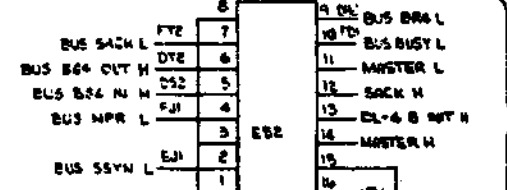
DCS M7856-0-1
 J

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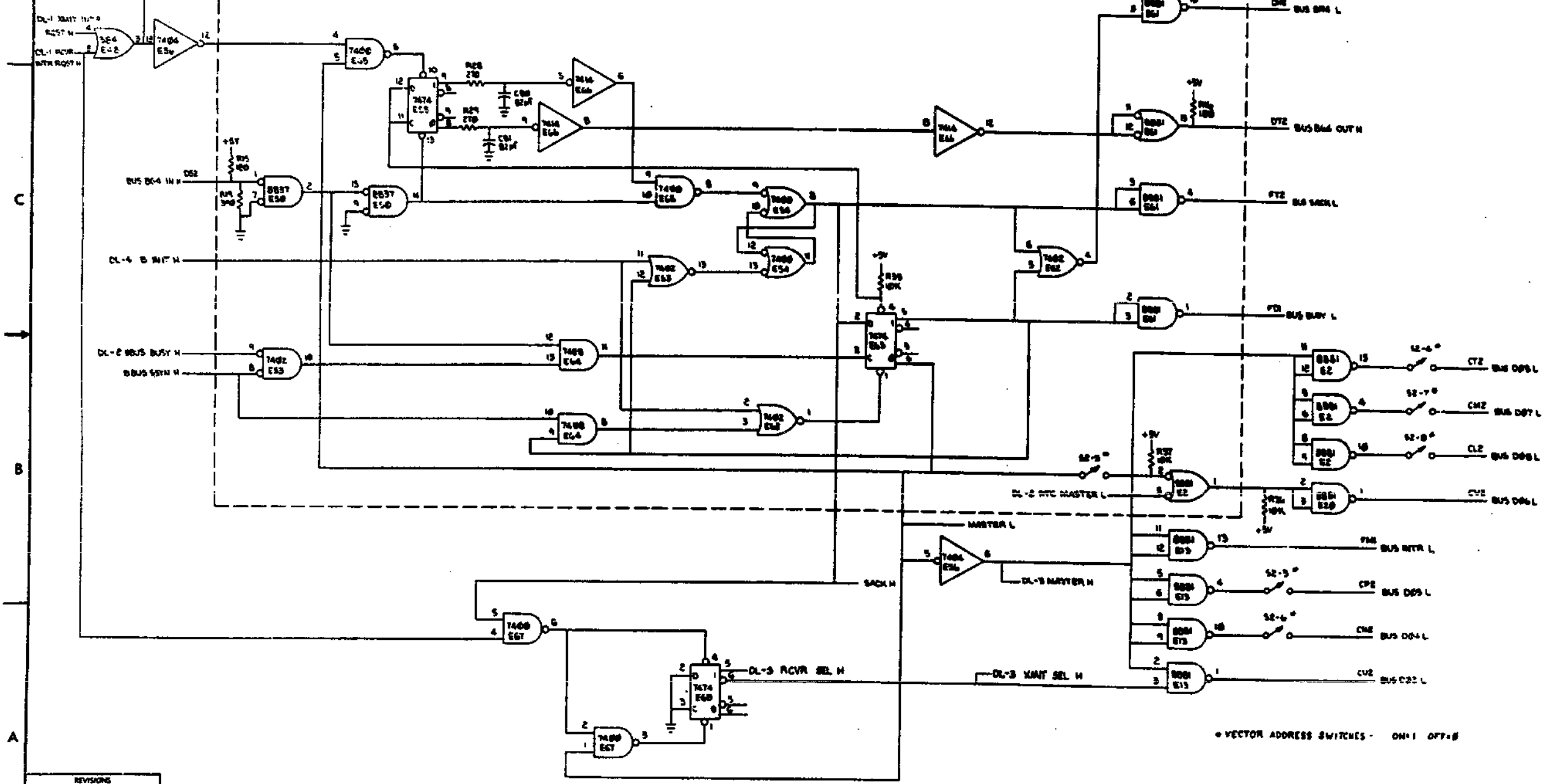
REVISIONS		
CHK	CHANGE NO.	REV.

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ENGR OPTION DO NOT INSERT

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



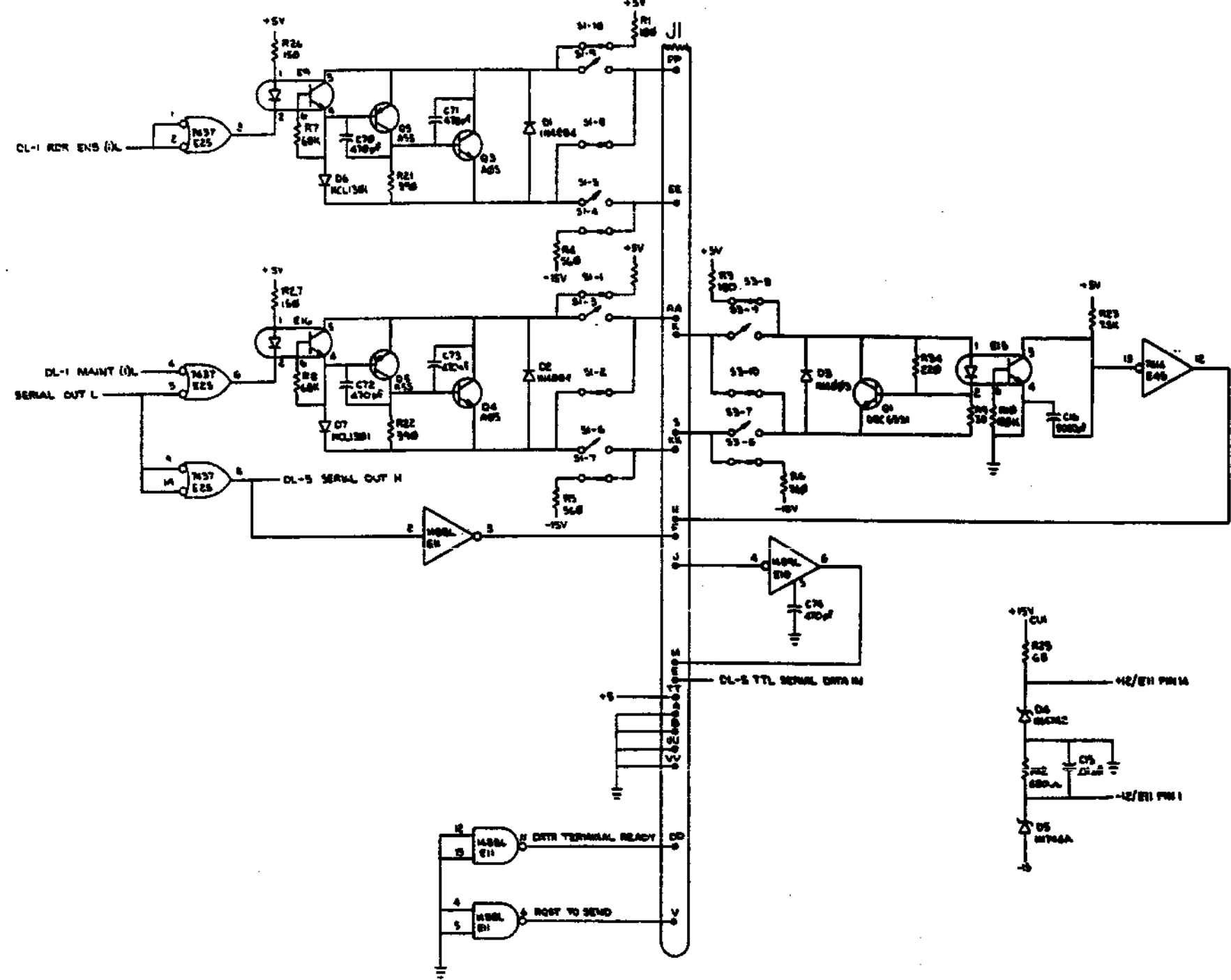
VECTOR ADDRESS SWITCHES - ON=1 OFF=0

REVISIONS		
CHK	CHANGE NO	REV

DCS M7856-0-1

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NOTE:
1. SWITCHES ARE SHOWN IN ACTIVE MODE.
2. D7, D6 ARE MCL3E1 1 MA CONSTANT CURRENT DIODES.

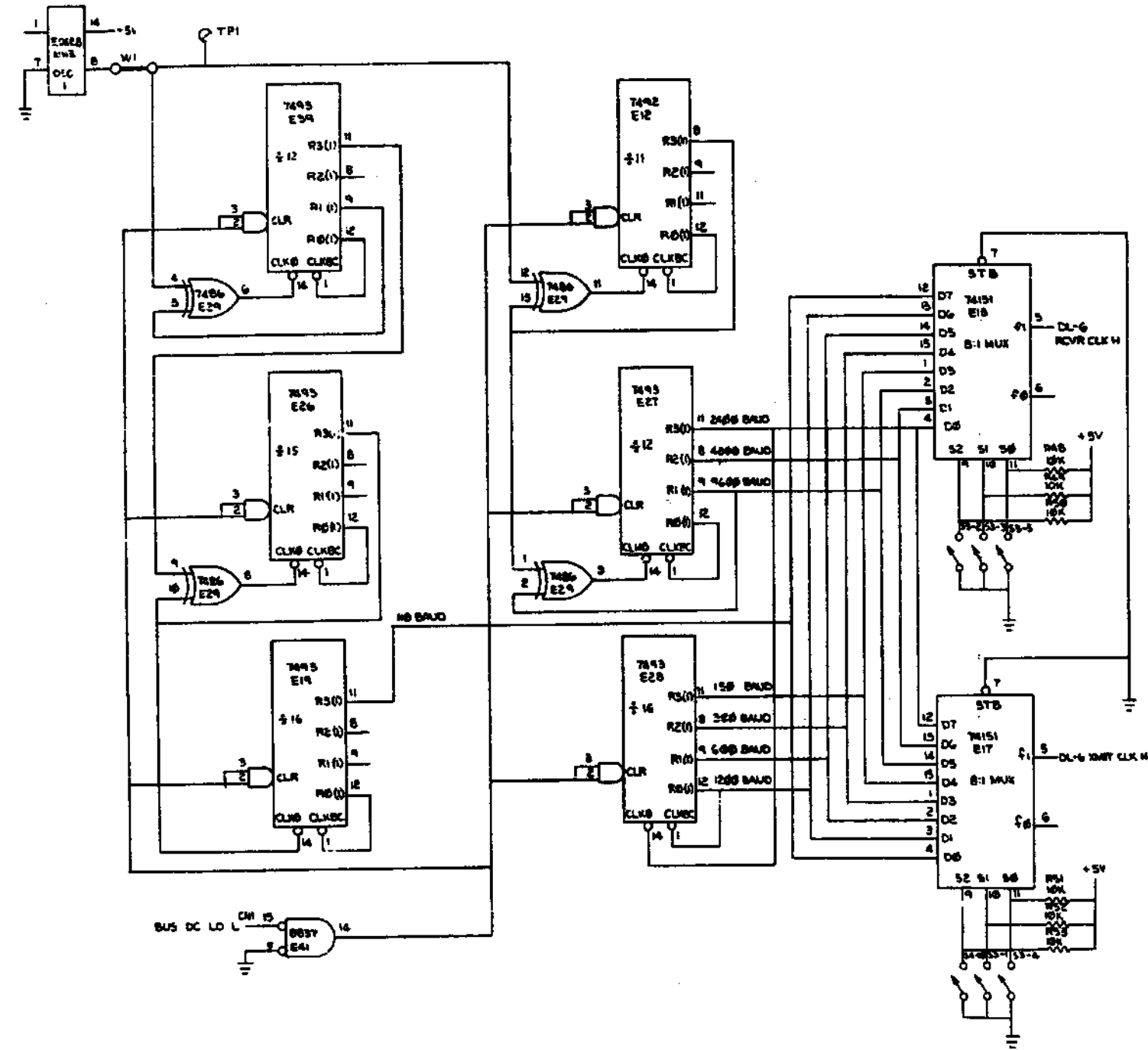


REVISIONS		
CHK	CHANGE NO	REV

TITLE	SLU/RTC OPTION (DL-5)	NUMBER	DCS M7856-0-1	REV.	J
SCALE	1:1	SHEET	6 OF 8	DIST.	

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D
C
B
A



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	ON	OFF
4800	ON	ON	OFF	OFF	OFF	ON
9600	ON	OFF	ON	OFF	ON	OFF

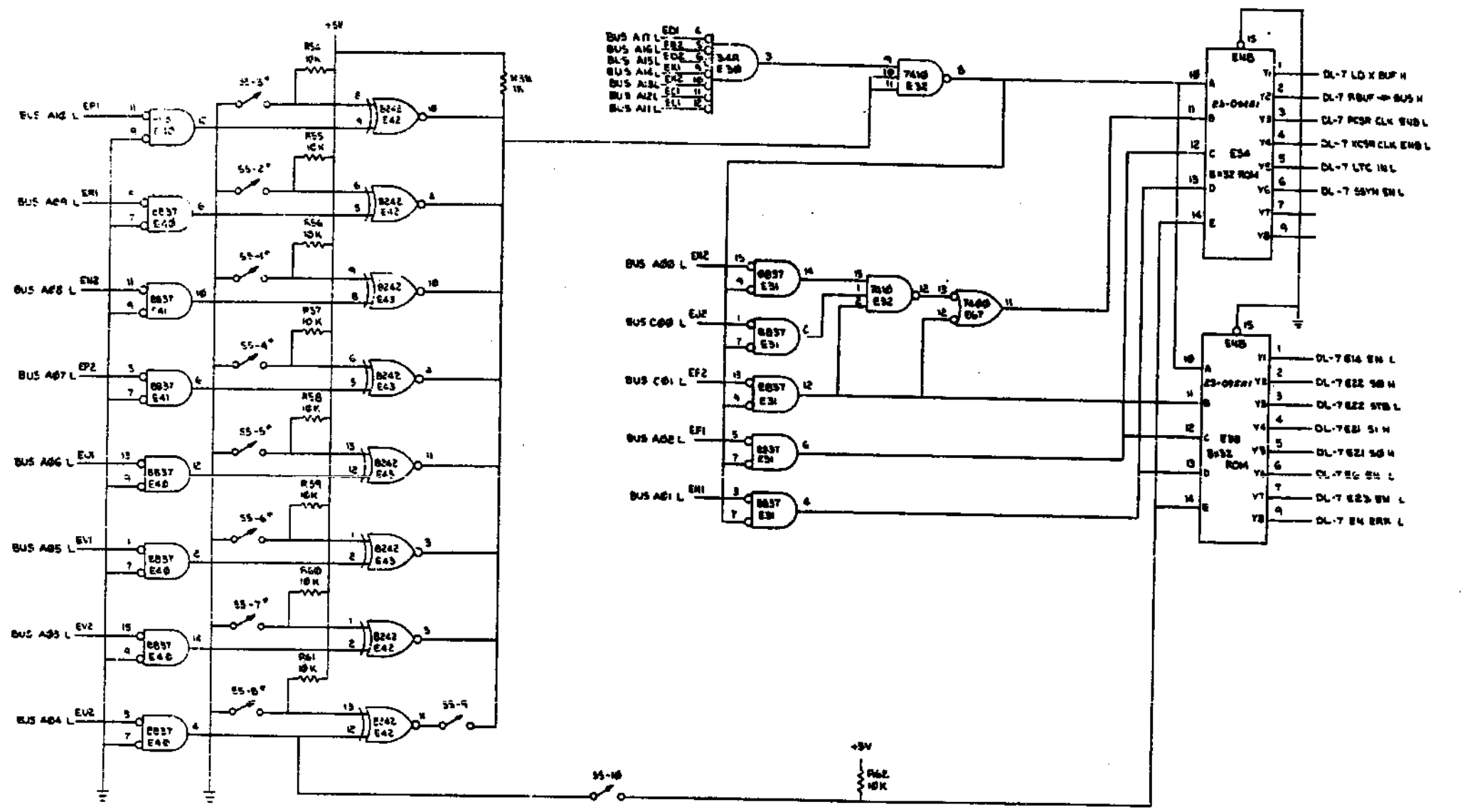
REVISIONS		
CHK	CHANGE NO	REV

DCSM7856-0-1

Mk 1

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 CORP. DIV. 718 DIGITAL EQUIPMENT CORPORATION

1-0-948/WST 2



* ADDRESS SELECTION SWITCHES * OFF=1 ON=0

REVISIONS		
CHK	CHANGE NO	REV

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

DCS M7856-0-1

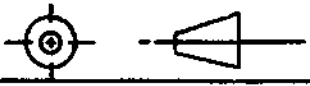

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A38	6-0-9682W	KCS	2
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(FOR 23094A1-A07 & 23095A1-A07)

REVISIONS	REV.
CHANGE NO.	

	DESCRIPTION	DWG./PART NO.	ITEM NO.				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES							
ANGLES ±0° 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					
		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
		±.004	±.008	±.012	±.016	±.024	±.04
		±.012	±.016	±.025	±.04	±.063	±.1
THIRD ANGLE PROJECTION 	DRN. <i>[Signature]</i>	FIRST USED ON DL11-W 					
REMOVE BURRS AND BREAK SHARP CORNERS	CHK'D <i>[Signature]</i>	TITLE ROM LISTING					
DO NOT SCALE DWG	ENG. <i>[Signature]</i>						
	PROJ. ENG. <i>[Signature]</i>						
	PROD. <i>[Signature]</i>						
	NEXT HIGHER ASSY.						
MATERIAL <i>[Symbol]</i>	D-CS-M7856-0-1	SIZE	CODE	NUMBER	REV.		
FINISH <i>[Symbol]</i>	SCALE <i>[Symbol]</i>	K	CS	M7856-0-9			
	SHEET 1 OF 3	DIST.					

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

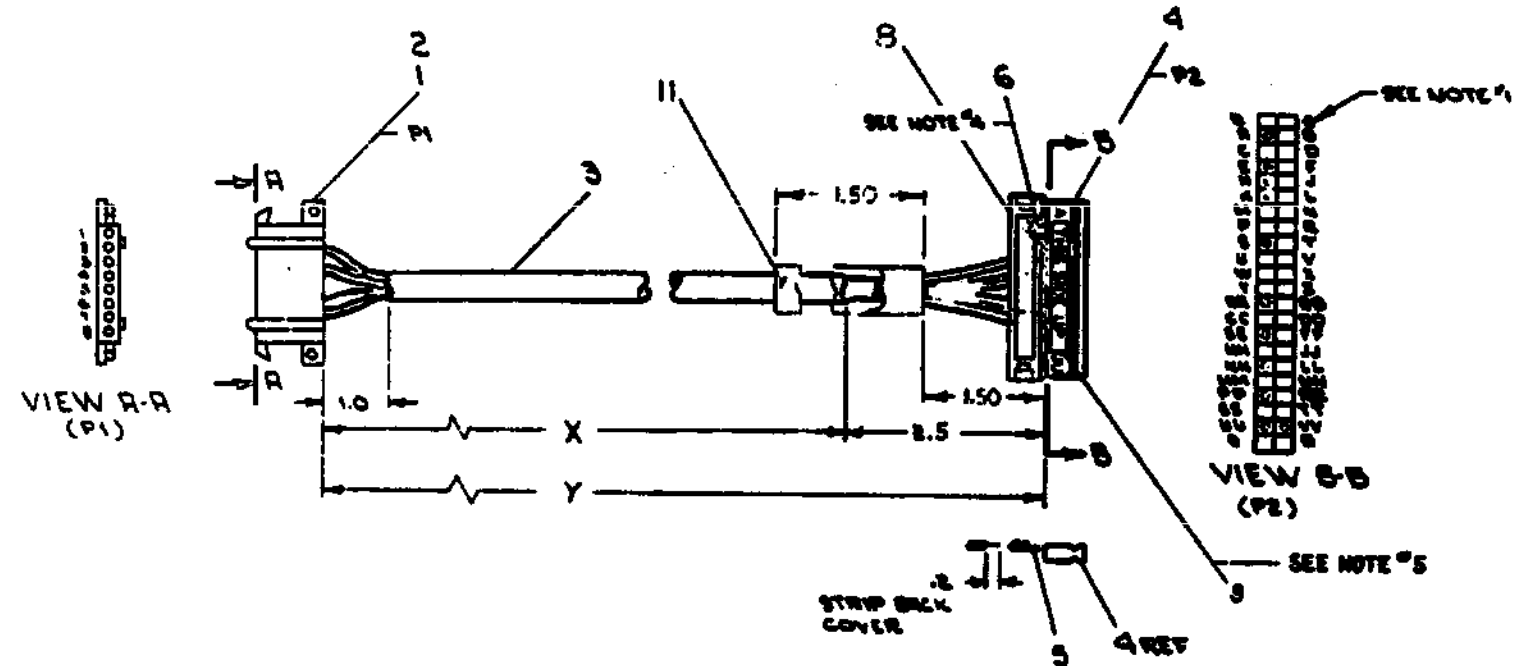
PAGE 3 OF 3

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.	QUANTITY	DESCRIPTION	PAIR NO.	FROM CONNECTION WITH	TO CONNECTION WITH	VARIATION
1	1	SHLD	1	P1-2	P2-KK	7008360-0
2	1	SHLD	1	P1-5	P2-5	7008360-7
3,7	1	SHLD	1	SEE NOTE #2	P2-UNDEF	7008360-8
3	2	BLK	2	P1-4	P2-EE	
5	2	WHT	2	P1-5	P2-RR	
7,7	2	SHLD	2	SEE NOTE #2	P2-UNDEF	
3	2	BLK	2	P1-6	P2-UV	
3	2	GRN	2	P1-7	P2-IC	
3,7	2	SHLD	2	SEE NOTE #2	P2-UNDEF	
6	22	DLK	-	P2-2	P2-11	

LENGTH	
X	Y
5 IN/10 22 IN/10	
45 IN/10 48 IN/10	
11 IN/10 12 IN/10	

- 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 #8 (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
	RTUBS, THINWALL, NAT	910267-11	7
	WR/WIRE #22 RWG STRD TEF BLK	9107350-00	6
11	SOCKET, CRIMP #47216	1810089-07	5
1	HOUSING, BERG #45043-05	1210918-15	4
	WR/CABLE BELTCH/UTTY-WRL SHLD	9107225-0	3
6	CONTACT WREN-LOCK (FEMALE)	1209979-03	2
1	CONN. WREN-LOCK (FEMALE)	1209940-00	1

REV	DATE	BY	CHKD	DESCRIPTION
1	10/1/74	...	...	...
2
3
4
5
6
7
8

POP-BE

SEE PARTS LIST

EQUIPMENT CORPORATION

CABLE ASSEMBLY (KLBE)

SCALE NONE

DIA 7008360-0-0

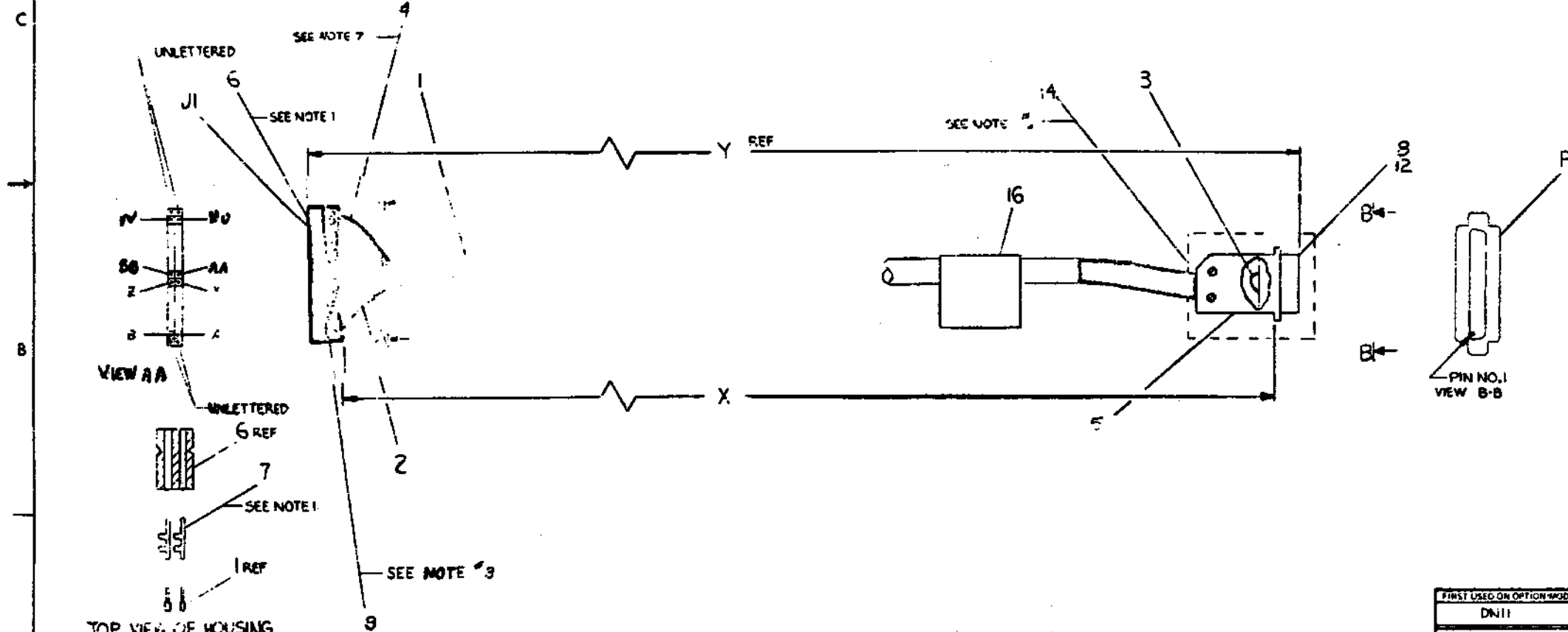
SHEET 1 OF 1

WIRE TABLE											
ITEM NO.	DESCRIPTION	FROM	WITH	TO	WITH	ITEM NO.	DESCRIPTION	FROM	TO	WITH	
1	26 BLU/WH	PI-1	12	J1-VV	7	1	26 RED/BRN	PI-16	8	J1-NN	7
1	26 WHT/BLU	PI-2	8	J1-F	4	1	26 SLA	PI-17	8	J1-R	4
1	26 ORN/WH	PI-3	1	J1-J		1	26 RED/SLA	PI-18	8	J1-U	
1	26 WHT/ORN	PI-4		J1-Y		1	26 BLU/BLK	PI-19	8	J1-P	
1	26 GRN/WHT	PI-5		J1-T		1	26 BLK/BLU	PI-20	8	J1-DD	
1	26 WHT/GRN	PI-6	8	J1-Z		1	26 ORN/BLK	PI-21	8	J1-MM	
1	26 BRN/WHT	PI-7	12	J1-UU		1	26 BLK/ORN	PI-22	8	J1-X	
1	26 WHT/BRN	PI-8	8	J1-BB		1	26 GRN/BLK	PI-23	8	J1-RR	
1	26 SLA/WHT	PI-9	8	J1-Y		1	26 BRN/RED	PI-24	8	J1-L	
1	26 WHT/SLA	PI-10	1	J1-W		1	26 RED/ORN	PI-25	8	J1-C	
1	26 BLU/RED	PI-11	1	J1-FF		1	26 SHIELD	PI-1	12	J1-A	7
1	26 RED/BLU	PI-12	1	J1-JJ		1	26 SHIELD	PI-7	12	J1-B	7
1	26 ORN/RED	PI-13	1	J1-D		3	26 BLK	PI-1	12	PI-7	12
1	26 SLA/RED	PI-14	1	J1-LL		2	26 RED	PI-1	7	J1-M	7
1	26 BLA/GRN	PI-15	1	J1-N							

NUMBER	VARIATION	
	DIM X	DIM Y (PRE CUT)
BC05C-25	25 ± .3"	25 ± .8"
BC05C-50	50 ± .2%	50 ± .8"
BC05C-09	9 ± .3"	9 ± .8"
BC05C-1F	18 ± .1"	19.8"
BC05C-2F	30 ± .1"	31.8"

- NOTES:**
1. MANUFACTURING SHOULD USE MACHINE CRIMPER TOOL FOR CRIMPING PINS (ITEM #7) MUST BE HT58 FROM BERG ELECT
 2. ONLY DEC PART # 1210918-15 MAY BE USED AS J1
 3. PLACE ITEM #9 (THIS SIDE UP) STICKER ON LETTERED SIDE OF ITEM #6 (BERG HOUSING) AS SHOWN.
 4. USE ITEM #12 (9107295) FOR ALL REMAINING SOLDER CUPS TO PREVENT SHORTING.
 5. DUE TO TOLERANCES WITH DIFFERENT VENDORS THE HOOD (ITEM #5) MAY VARY IN OUTSIDE DIAMETER CAUSING POTENTIAL STRAIN RELIEF WRAPPING PROBLEM SHOULD THIS CONDITION BE PRESENT USE ITEM #4 (9107834) AT JUNCTION OF CABLE AND HOOD
 6. PLACE ITEM #4 (9107296) OVER SHIELD WIRE J1-A, J1-B, PI-1, PI-7

* DENOTES THREE WIRES ARE SOLDERED INTO THE PI-1 SOLDER CUP
 ** DENOTES THREE WIRES ARE SOLDERED INTO THE PI-7 SOLDER CUP



QTY	DESCRIPTION	PART NO.	ITEM NO.
1	LABEL, CABLE IDENTIFICATION	3616073-00	16
1	HOOD	1210493-50	18
1	TAPE, DOUBLE SIDED	9007834	14
1	MALE SCREW	1210473-51	13
2	PIN CONTACT	1215201	12
2	TEF TUBING	9007031	11
1	TAPLE LABEL	9009532	10
1	LABEL, THIS SIDE UP	3611567	9
23	PIN 20-20 AWG	1210493-43	8
29	SOCKET, #HT-68	1210089-5	7
1	HOUSING, #20383 BERG	1210918-15	6
1	SHELL AND INSERT MALE	1210493-31	5
A/R	TUBING, #22 AWG TEF BLK	9107256-00	4
A/R	WIRE, #26 AWG STRD TEF BLK	9107636-00	3
A/R	WIRE, #26 AWG STRD TEF RED	9107636-22	2
A/R	CABLE, 25 CONDUCTOR #26 AWG	9107736	1

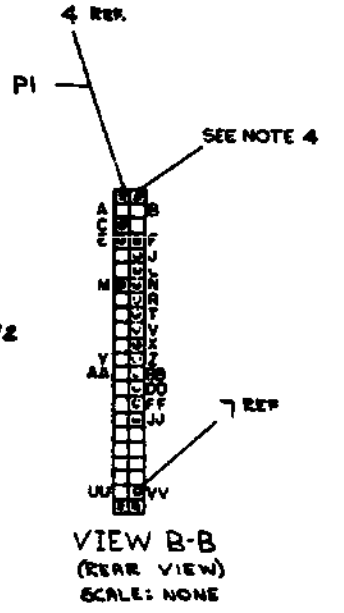
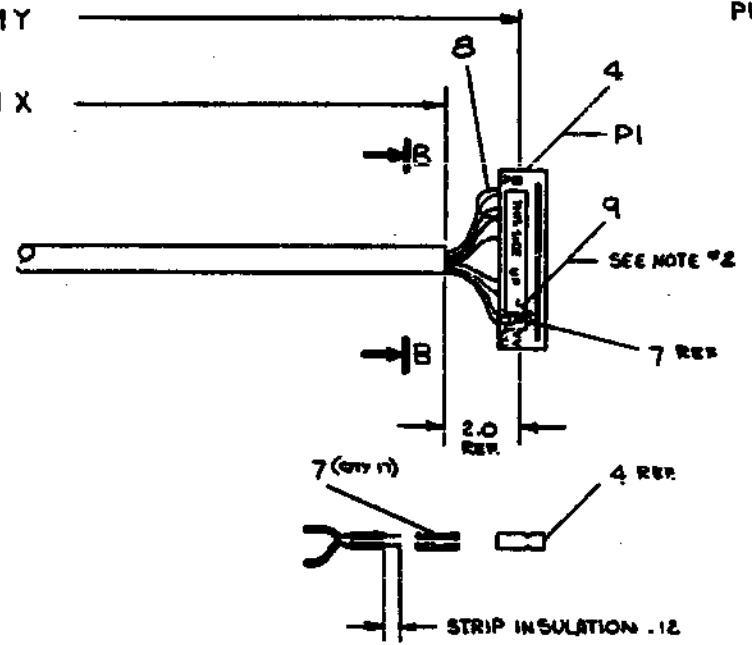
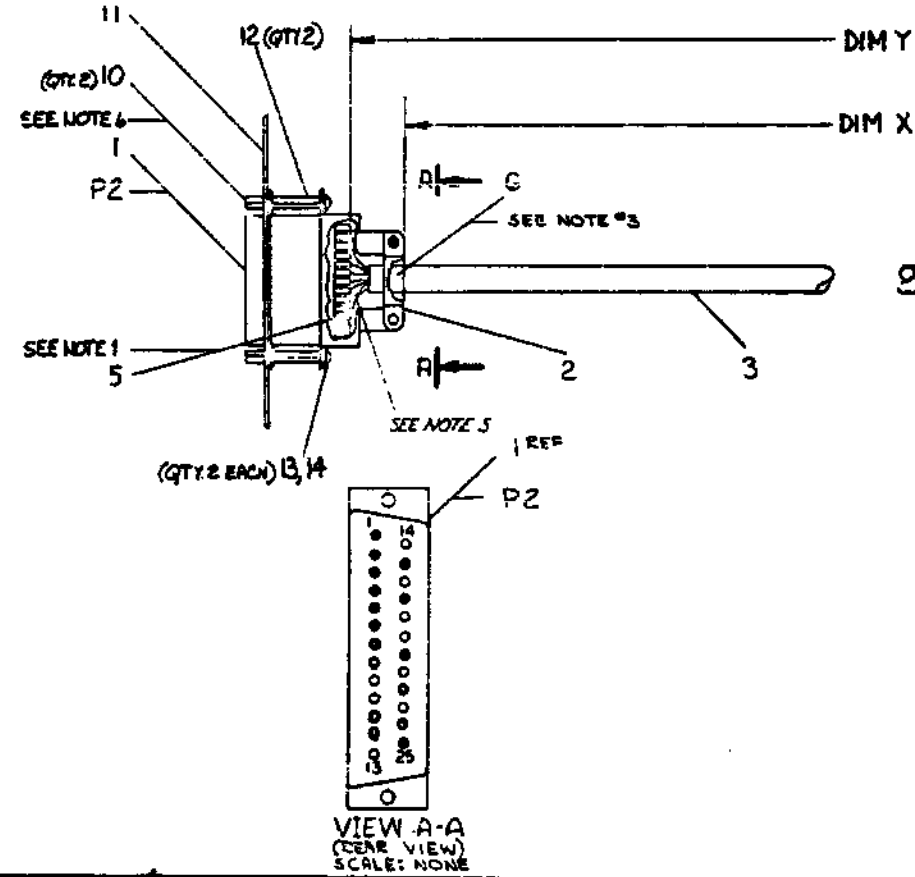
REV	DATE	BY	CHKD	DESCRIPTION
1	7/17/78	SMITH		REVISED TO ADD PART 16
2	7/17/78	SMITH		REVISED TO ADD PART 17
3	7/17/78	SMITH		REVISED TO ADD PART 18
4	7/17/78	SMITH		REVISED TO ADD PART 19
5	7/17/78	SMITH		REVISED TO ADD PART 20
6	7/17/78	SMITH		REVISED TO ADD PART 21
7	7/17/78	SMITH		REVISED TO ADD PART 22
8	7/17/78	SMITH		REVISED TO ADD PART 23
9	7/17/78	SMITH		REVISED TO ADD PART 24
10	7/17/78	SMITH		REVISED TO ADD PART 25

FIRST USED ON OPTION MODEL		QTY	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST					
UNLESS OTHERWISE SPECIFIED IN DIMENSION IN INCHES		DATE	EQUIPMENT CORPORATION		
DECIMALS	ANGLES	DATE	TITLE		
1/16	10° 30'	11/17/78	CABLE, MODEM		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	BC05C		
MATERIAL	NEXT HIGHER ASSY	DATE	SIZE CODE	NUMBER	REV
++	++		DUA	BC05C-0-0	1
FINISH	SCALE	DATE	REV		
++	1" = 1"		REV		

WIRE TABLE						
ITEM NO	DESCRIPTION	FROM	TO	WITH	CONNECTION	WITH
3	22	BLK	P1-VV	7	P2-7	SOLDER
4	1	GRN/WHT	P1-C		P2-25	
		GRN/BLK	P1-JJ		P2-12	
		GRN/BLK	P1-FF		P2-11	
		RED	P1-DD		P2-20	
		GRN	P1-BB		P2-9	
		FLU/WHT	P1-E		P2-6	
		ORN	P1-X		P2-22	
		BLU	P1-V		P2-4	
		WHT	P1-T		P2-5	
		BLU/BLK	P1-R		P2-17	
		BLK/WHT	P1-N		P2-15	
		RED/WHT	P1-L		P2-24	
		WHT/BLK	P1-J		P2-3	
3		RED/BLK	P1-F		P2-8	SOLDER
8		BLK	P1-E	7	P1-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 3 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 USABLE.
 - WIRES COMING FROM CENTER OF PLUG CONN SHOULD BE 5/8 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 PLATE. DISCARD NUT (QTY 2) SUPPLIED WITH ITEM #10.



QTY	DESCRIPTION	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DWG PART NO	ITEM NO.
2	WASHER, LOCK #4		1006688	14
2	SCR. PH. PAN HD #4-40 X .25		9008501-1	13
2	SPACER, THREADED, HEX		9008833	12
1	PLATE, CONN. MTG.		8-M10-3/16-20-011	
2	SCREW LOCK ASSY		9008451-00	10
1	LABEL (THIS SIDE UP)		3611567	9
30	WIRE, STRANDED #22 AWG TPVC (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	DATE	BY	CHKD	DESCRIPTION
1	11/15/77	J. WOODRUFF	A	INITIAL DESIGN
2	11/15/77	B. SAMPSON		REVISED FOR MANUFACTURE
3	11/15/77	J. WOODRUFF	B	REVISED FOR MANUFACTURE
4	11/15/77	J. WOODRUFF	C	REVISED FOR MANUFACTURE
5	11/15/77	J. WOODRUFF	D	REVISED FOR MANUFACTURE
6	11/15/77	J. WOODRUFF	E	REVISED FOR MANUFACTURE
7	11/15/77	J. WOODRUFF	F	REVISED FOR MANUFACTURE
8	11/15/77	J. WOODRUFF	G	REVISED FOR MANUFACTURE
9	11/15/77	J. WOODRUFF	H	REVISED FOR MANUFACTURE
10	11/15/77	J. WOODRUFF	I	REVISED FOR MANUFACTURE
11	11/15/77	J. WOODRUFF	J	REVISED FOR MANUFACTURE
12	11/15/77	J. WOODRUFF	K	REVISED FOR MANUFACTURE
13	11/15/77	J. WOODRUFF	L	REVISED FOR MANUFACTURE
14	11/15/77	J. WOODRUFF	M	REVISED FOR MANUFACTURE
15	11/15/77	J. WOODRUFF	N	REVISED FOR MANUFACTURE
16	11/15/77	J. WOODRUFF	O	REVISED FOR MANUFACTURE
17	11/15/77	J. WOODRUFF	P	REVISED FOR MANUFACTURE
18	11/15/77	J. WOODRUFF	Q	REVISED FOR MANUFACTURE
19	11/15/77	J. WOODRUFF	R	REVISED FOR MANUFACTURE
20	11/15/77	J. WOODRUFF	S	REVISED FOR MANUFACTURE
21	11/15/77	J. WOODRUFF	T	REVISED FOR MANUFACTURE
22	11/15/77	J. WOODRUFF	U	REVISED FOR MANUFACTURE
23	11/15/77	J. WOODRUFF	V	REVISED FOR MANUFACTURE
24	11/15/77	J. WOODRUFF	W	REVISED FOR MANUFACTURE
25	11/15/77	J. WOODRUFF	X	REVISED FOR MANUFACTURE
26	11/15/77	J. WOODRUFF	Y	REVISED FOR MANUFACTURE
27	11/15/77	J. WOODRUFF	Z	REVISED FOR MANUFACTURE

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE SHARP CORNERS AND BREAK SHARP CORNERS

DO NOT SCALE DIMS

NEAREST HIGHER ACCY.

PREPARED BY: [Signature]

CHECKED BY: [Signature]

DATE: 11/15/77

SCALE: 1/1

SHEET: 1 OF 1

TITLE: FILTERED CABLE ASSY BC03L

SIZE: D UA

REVISION: BC03L-00

DIST: [Blank]

DIGITAL EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS		DATE 2-28-77	
ENGINEERING SPECIFICATION			
TITLE DL11-W Installation Procedure			
REVISIONS			
REV	DESCRIPTION	CHG NO	DATE
A	ECO CHANGE	00002 B.CRAMM	8-77

ENG Bob Pratt	APPD L.V. Pratt	SIZE CODE A SP	NUMBER DL11-W-2	REV A
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DEC FORM NO 14-C-16 (REV 10-77) 1016
DRA 100 SHEET 1 OF 8

ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE DL11-W Installation Procedure			

DL11-W Installation Procedure
Installation of the 7856 module consists of the following preparations:

- 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.

NOTE: The notation used to indicate a particular switch is as follows: SX-Y where X denotes the particular switch pack and Y denotes the individual switch in the pack. The switch pack is labeled on the P. C. board with an SK(S2) and the individual switches are labeled on the switch pack as are the on-off positions.

A. Register Address Assignments:
The DL11-W can respond to addresses with the following format:

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

Selects 1 of 4 Registers

Byte Control

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.

DEC FORM NO 14-C-16 (REV 10-77) 1016
DRA 100 SHEET 2 OF 8

ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE DL11-W Installation Procedure			

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 7756X. The line clock address is 77546.

Mode 2: Only the serial line unit section can be addressed. Address selection ranges from 74090 to 77777. Line clock is disabled and does not respond to address 77546.

Mode 3: Only the line clock section can be addressed at 77546. The serial line unit section does not respond to any address.

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	Off	On	Off
Mode 2*	Off	Off	Off	On	Off	Off	Off	Off	On	Off
Mode 3	Off	Off	Off	On	Off	Off	Off	Off	On	On

*Address 7756X selected for serial line interface. Other addresses n.y 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 14-C-16 (REV 10-77) 1016
DRA 100 SHEET 3 OF 8

ENGINEERING SPECIFICATION		CONTINUATION SHEET	
TITLE DL11-W Installation Procedure			

VR	V7	V6	V5	V4	V3	V2	V1	V0
						0/1	0	0

Switch Selectable for Serial Line

Vector Bit V8 V7 V6 V5 V4 V3
Switch S2-8 S2-7 S2-5 S2-3 S2-6 S2-4
060/064 Off Off Off On On Off
On = 1, Off = 0

C. Selection of Data Format:

1. Data Bits
Switches S4-3 and S4-4 control the number of data bits in the serial character as follows:
S4-4 S4-3 # of Data Bits
On On 5
On Off 6
Off On 7
Off Off 8
2. Parity
Parity is controlled by switches S4-2 and S4-6 as follows:
S4-2 S4-6 Parity
Off Off Off
On Off Off
Off On Even
On On Odd
3. Stop Bits
Switch S4-5 controls the number of stop bits selected in the serial character as follows:

DEC FORM NO 14-C-16 (REV 10-77) 1016
DRA 100 SHEET 4 OF 8

ENGINEERING SPECIFICATION		CONTINUATION SHEET																																																																																																						
TITLE DLI1-W Installation Procedure																																																																																																								
<p>D. Baud Rate Selection:</p> <p>Receiver and Transmitter baud rates are independent, so any combination may be selected.</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">Baud Rate Switch Selections</th> </tr> <tr> <th>Baud Rate</th> <th>Receiver</th> <th>Transmitter</th> <th></th> </tr> <tr> <td></td> <td>S3-2 S3-3 S3-5</td> <td>S4-10 S3-1 S3-4</td> <td></td> </tr> </thead> <tbody> <tr> <td>110</td> <td>Off Off Off</td> <td>On On On</td> <td></td> </tr> <tr> <td>150</td> <td>On Off Off</td> <td>On On On</td> <td></td> </tr> <tr> <td>300</td> <td>On On On</td> <td>On Off Off</td> <td></td> </tr> <tr> <td>600</td> <td>Off On Off</td> <td>On Off On</td> <td></td> </tr> <tr> <td>1200</td> <td>Off Off On</td> <td>On On Off</td> <td></td> </tr> <tr> <td>2400</td> <td>On On On</td> <td>On Off Off</td> <td></td> </tr> <tr> <td>4800</td> <td>On On Off</td> <td>Off Off On</td> <td></td> </tr> <tr> <td>9600</td> <td>On Off On</td> <td>Off On Off</td> <td></td> </tr> </tbody> </table> <p>E. Current Loop Operation Mode:</p> <p>Normally, current loops should be in active mode, unless interfaced to another active loop, such as to another DLI1.</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">Active - Passive Mode Selection</th> </tr> <tr> <th>Transmitter</th> <th>S1-1</th> <th>S1-2</th> <th>S1-3</th> <th>S1-6</th> <th>S1-7</th> </tr> </thead> <tbody> <tr> <td>Active</td> <td>On</td> <td>On</td> <td>Off</td> <td>Off</td> <td>On</td> </tr> <tr> <td>Passive</td> <td>Off</td> <td>Off</td> <td>On</td> <td>On</td> <td>Off</td> </tr> <tr> <th>Receiver</th> <th>S3-6</th> <th>S3-7</th> <th>S3-8</th> <th>S3-9</th> <th>S3-10</th> </tr> <tr> <td>Active</td> <td>On</td> <td>Off</td> <td>On</td> <td>Off</td> <td>On</td> </tr> <tr> <td>Passive</td> <td>Off</td> <td>On</td> <td>Off</td> <td>On</td> <td>Off</td> </tr> <tr> <th>Header Enable</th> <th>S1-4</th> <th>S1-5</th> <th>S1-8</th> <th>S1-9</th> <th>S1-10</th> </tr> <tr> <td>Active</td> <td>On</td> <td>Off</td> <td>On</td> <td>Off</td> <td>On</td> </tr> <tr> <td>Passive</td> <td>Off</td> <td>On</td> <td>Off</td> <td>On</td> <td>Off</td> </tr> </tbody> </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 On Off	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	Off	On	Passive	Off	On	Off	On	Off	Header Enable	S1-4	S1-5	S1-8	S1-9	S1-10	Active	On	Off	On	Off	On	Passive	Off	On	Off	On	Off
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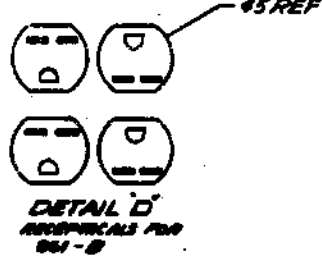
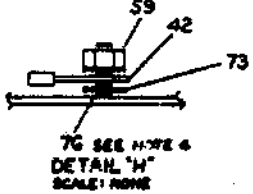
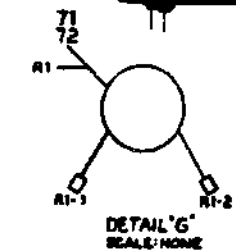
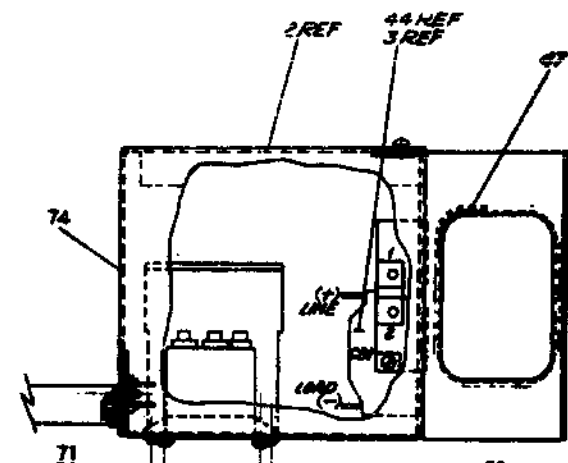
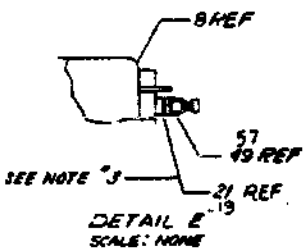
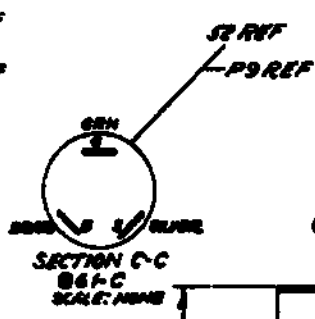
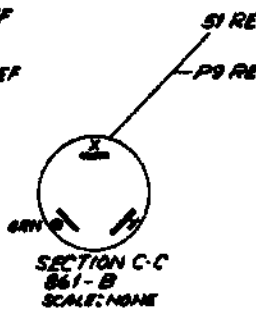
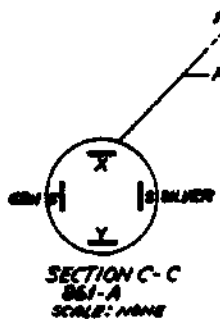
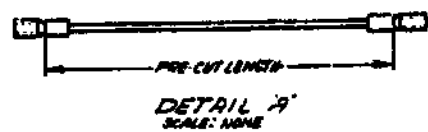
ENGINEERING SPECIFICATION		CONTINUATION SHEET								
TITLE DLI1-W Installation Procedure										
<p>F. Competability Selection:</p> <p>Switches S4-1 and S1-7 allow the DLI1-W to be configured to replace DLI1-A, B, C, and D options in most applications.</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">DLI1-W Compatibility Switches</th> </tr> <tr> <th>Selectable</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Break Bit</td> <td>S4-1</td> </tr> <tr> <td>Error Bits</td> <td>S1-7</td> </tr> </tbody> </table> <p>Note: Both FIA level and current loop signals are available at the berg connector on the module. To selection is necessary. The proper cable will pick up the correct signals.</p> <p>G. G8000 Installation:</p> <p>For DLI1-W FIA 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 1172C 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"> 1. Install G8000 into slot A02 or DD1-A. 2. Wire A02V2 to A02V2. 3. Wire A02V2 to CKXU1 where XX is the slot location of the N7856. 			DLI1-W Compatibility Switches		Selectable	Description	Break Bit	S4-1	Error Bits	S1-7
DLI1-W Compatibility Switches										
Selectable	Description									
Break Bit	S4-1									
Error Bits	S1-7									
DEC FORM NO. DEC 18-1001-102-1070 DIA 118										
SIZE	CODE	NUMBER	REV							
A	SP	DLI1-W-2	A							
SHEET 6 OF 8										

ENGINEERING SPECIFICATION		CONTINUATION SHEET																																		
TITLE DLI1-W Installation Procedure																																				
<p>H. DLI1-W Systems with +15V Available Using DD11-A</p> <p>There is a special situation of using a DD11-A to mount a DLI1-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 DLI1.</p> <p>I. When using the DLI1-W in an 11/05 processor pin CKXU1 has +15V available on it so no G8000 or no jumpers are required.</p> <p>J. INSTALLATION</p> <p>The DLI1-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 DLI1-W.</p> <p>When installed, the LTC L input to the DLI1-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" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Table 1-1 LTC L Connection</th> </tr> <tr> <th>PDP Computer</th> <th>Pin Number</th> </tr> </thead> <tbody> <tr> <td>11/04</td> <td>C02D1, C03D1, C04D1</td> </tr> <tr> <td>11/04</td> <td>C02D1, C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, or C09D1</td> </tr> <tr> <td>11/05</td> <td>C01D1, C02D1, C03D1, C04D1, or F06V2</td> </tr> <tr> <td>11/05</td> <td>C01D1 or F06V2</td> </tr> <tr> <td>11/20</td> <td>A13F2 or B12R1</td> </tr> <tr> <td>11/34</td> <td>C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, or C09D1</td> </tr> <tr> <td>11/35</td> <td>F03R1 or C09D1</td> </tr> <tr> <td>11/40</td> <td>F03R1 or C09D1</td> </tr> <tr> <td>11/45</td> <td>KB11-A</td> </tr> <tr> <td>11/55</td> <td>C26D1, C27D1, or C28D1</td> </tr> <tr> <td>11/70</td> <td>C40D1, C41D1, C42D1, C43D1, or C44D1</td> </tr> <tr> <td>11/70</td> <td>C40D1, C41D1, C42D1, C43D1, or C44D1</td> </tr> <tr> <td>DD11-B Peripheral Mounting Panel</td> <td>C01D1, C02D1, C03D1, or C04D1</td> </tr> <tr> <td>DD11-D Peripheral Mounting Panel</td> <td>C01D1, C02D1, C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, C09D1, or A03P2</td> </tr> <tr> <td>DD11-A Peripheral Mounting Panel</td> <td></td> </tr> </tbody> </table> <p>NOTE: A wire connection is not necessary for backplane pin numbers ending in D1. LTC L is already connected to the line frequency input of the DLI1-W.</p>			Table 1-1 LTC L Connection		PDP Computer	Pin Number	11/04	C02D1, C03D1, C04D1	11/04	C02D1, C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, or C09D1	11/05	C01D1, C02D1, C03D1, C04D1, or F06V2	11/05	C01D1 or F06V2	11/20	A13F2 or B12R1	11/34	C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, or C09D1	11/35	F03R1 or C09D1	11/40	F03R1 or C09D1	11/45	KB11-A	11/55	C26D1, C27D1, or C28D1	11/70	C40D1, C41D1, C42D1, C43D1, or C44D1	11/70	C40D1, C41D1, C42D1, C43D1, or C44D1	DD11-B Peripheral Mounting Panel	C01D1, C02D1, C03D1, or C04D1	DD11-D Peripheral Mounting Panel	C01D1, C02D1, C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, C09D1, or A03P2	DD11-A Peripheral Mounting Panel	
Table 1-1 LTC L Connection																																				
PDP Computer	Pin Number																																			
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11/05	C01D1, C02D1, C03D1, C04D1, or F06V2																																			
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DD11-B Peripheral Mounting Panel	C01D1, C02D1, C03D1, or C04D1																																			
DD11-D Peripheral Mounting Panel	C01D1, C02D1, C03D1, C04D1, C05D1, C06D1, C07D1, C08D1, C09D1, or A03P2																																			
DD11-A Peripheral Mounting Panel																																				
DEC FORM NO. DEC 18-1001-102-1070 DIA 118																																				
SIZE	CODE	NUMBER	REV																																	
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SHEET 7 OF 8																																				

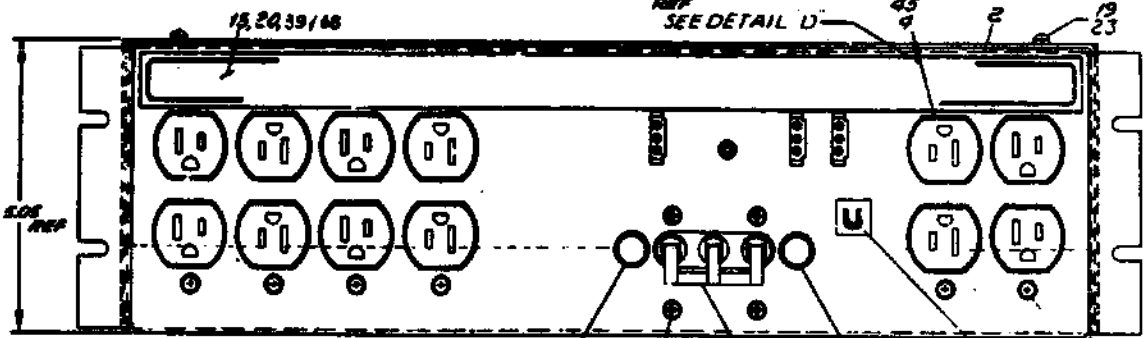
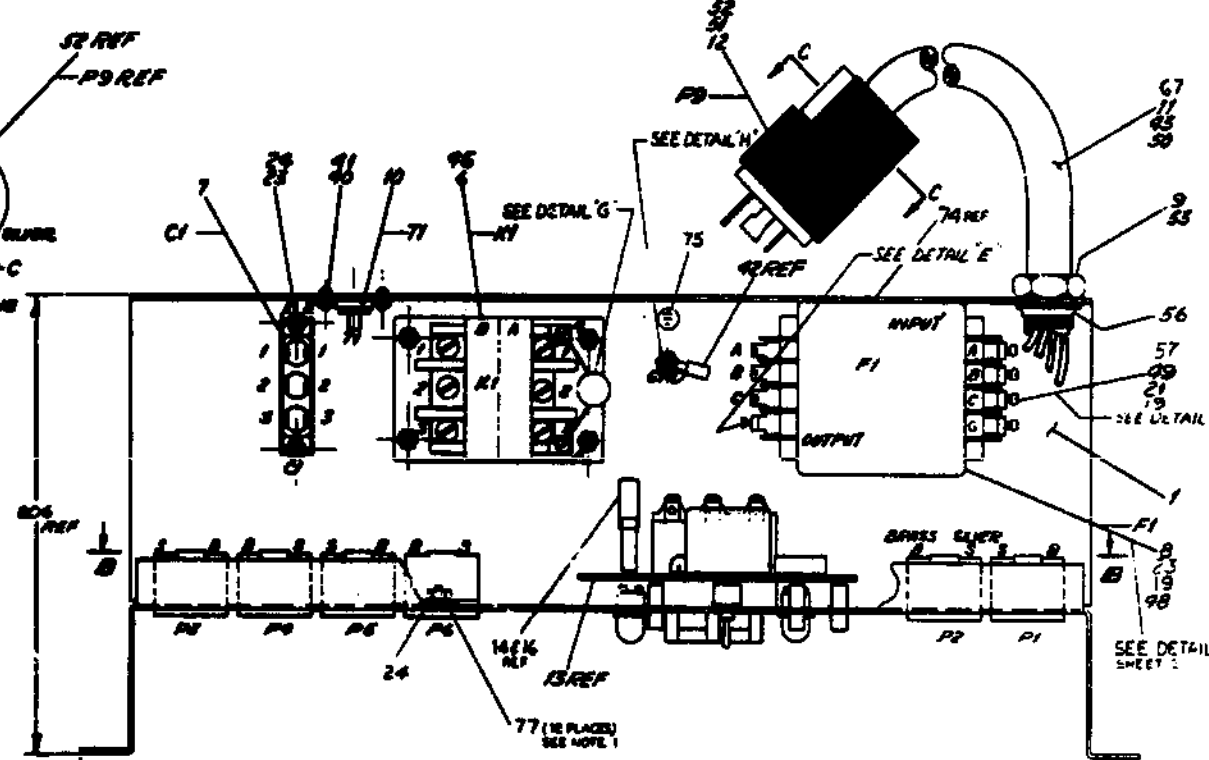
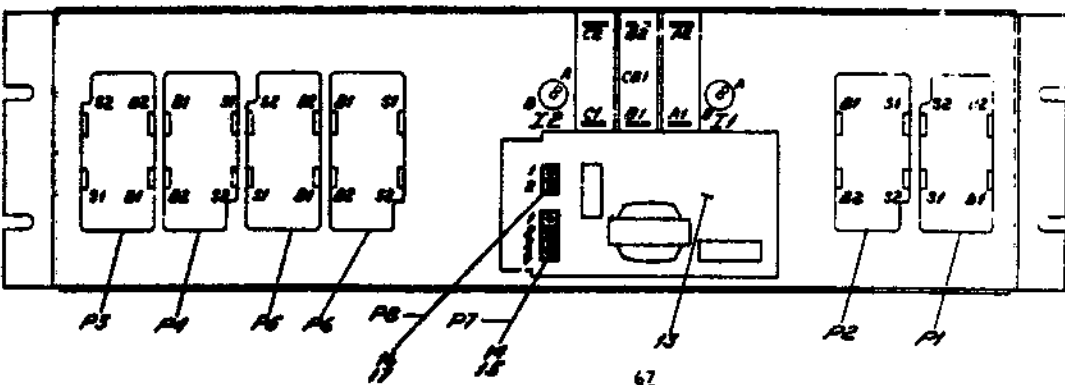
ENGINEERING SPECIFICATION		CONTINUATION SHEET																																		
TITLE DLI1-W Installation Procedure																																				
<p>K. Installation</p> <p>The DLI1-W module plugs into an SPC slot. A wire must be installed to pick up the DCIOL signal from the power supply and apply it to the DCIOL input of the DLI1-W.</p> <p>When installed, the DCIOL input to the DLI1-W is located on pin CW1. Connect a length of 30 AWG wire from pin CW1 on the backplane to the pin on the backplane, as designated in Table 1-2 for each application.</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Table 1-2 DCIOL Connection</th> </tr> <tr> <th>PDP Computer</th> <th>Pin Number</th> </tr> </thead> <tbody> <tr> <td>11/04*</td> <td>C03M1, C04M1</td> </tr> <tr> <td>11/04*</td> <td>C03M1 thru C09M1</td> </tr> <tr> <td>11/05*</td> <td>C04M1, C07M1, C03M1, C04M1</td> </tr> <tr> <td>11/05*</td> <td>C04M1, C07M1, C03M1, C04M1</td> </tr> <tr> <td>11/20</td> <td>B11F2, B14F2, A13E2, A08E2, A03E2, B04D2, F06E2</td> </tr> <tr> <td>11/34*</td> <td>C03M1 thru C09M1</td> </tr> <tr> <td>11/35</td> <td>C06E2</td> </tr> <tr> <td>11/40</td> <td>C06E2</td> </tr> <tr> <td>11/45*</td> <td>C26M1, C26M1, C28M1</td> </tr> <tr> <td>11/55*</td> <td>C26M1, C26M1, C28M1</td> </tr> <tr> <td>11/70*</td> <td>C40M1, C41M1, C42M1, C43M1, C44M1</td> </tr> <tr> <td>11/70*</td> <td>C40M1, C41M1, C42M1, C43M1, C44M1</td> </tr> <tr> <td>DD11-B Peripheral Mounting Panel</td> <td>C01M1 thru C04M1</td> </tr> <tr> <td>DD11-D Peripheral Mounting Panel</td> <td>C01M1 thru C09M1</td> </tr> <tr> <td>DD11-A Peripheral Mounting Panel</td> <td>B01F2, B04F2, A03E2</td> </tr> </tbody> </table> <p>*NOTE: A wire connection is not necessary for backplane pin numbers ending in M1 DCIOL. Is already connected to the input of the DLI1-W.</p>			Table 1-2 DCIOL Connection		PDP Computer	Pin Number	11/04*	C03M1, C04M1	11/04*	C03M1 thru C09M1	11/05*	C04M1, C07M1, C03M1, C04M1	11/05*	C04M1, C07M1, C03M1, C04M1	11/20	B11F2, B14F2, A13E2, A08E2, A03E2, B04D2, F06E2	11/34*	C03M1 thru C09M1	11/35	C06E2	11/40	C06E2	11/45*	C26M1, C26M1, C28M1	11/55*	C26M1, C26M1, C28M1	11/70*	C40M1, C41M1, C42M1, C43M1, C44M1	11/70*	C40M1, C41M1, C42M1, C43M1, C44M1	DD11-B Peripheral Mounting Panel	C01M1 thru C04M1	DD11-D Peripheral Mounting Panel	C01M1 thru C09M1	DD11-A Peripheral Mounting Panel	B01F2, B04F2, A03E2
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11/20	B11F2, B14F2, A13E2, A08E2, A03E2, B04D2, F06E2																																			
11/34*	C03M1 thru C09M1																																			
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DD11-A Peripheral Mounting Panel	B01F2, B04F2, A03E2																																			
DEC FORM NO. DEC 18-1001-102-1070 DIA 118																																				
SIZE	CODE	NUMBER	REV																																	
A	SP	DLI1-W-2	A																																	
SHEET 8 OF 8																																				

SECTION II
POWER SYSTEM ENGINEERING DRAWINGS

LEGEND			
DWG. NO.	VARIATION	APPROVED	DATE
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861-B	200	1	12
861-C	120	1	28
861-F	120	1	72



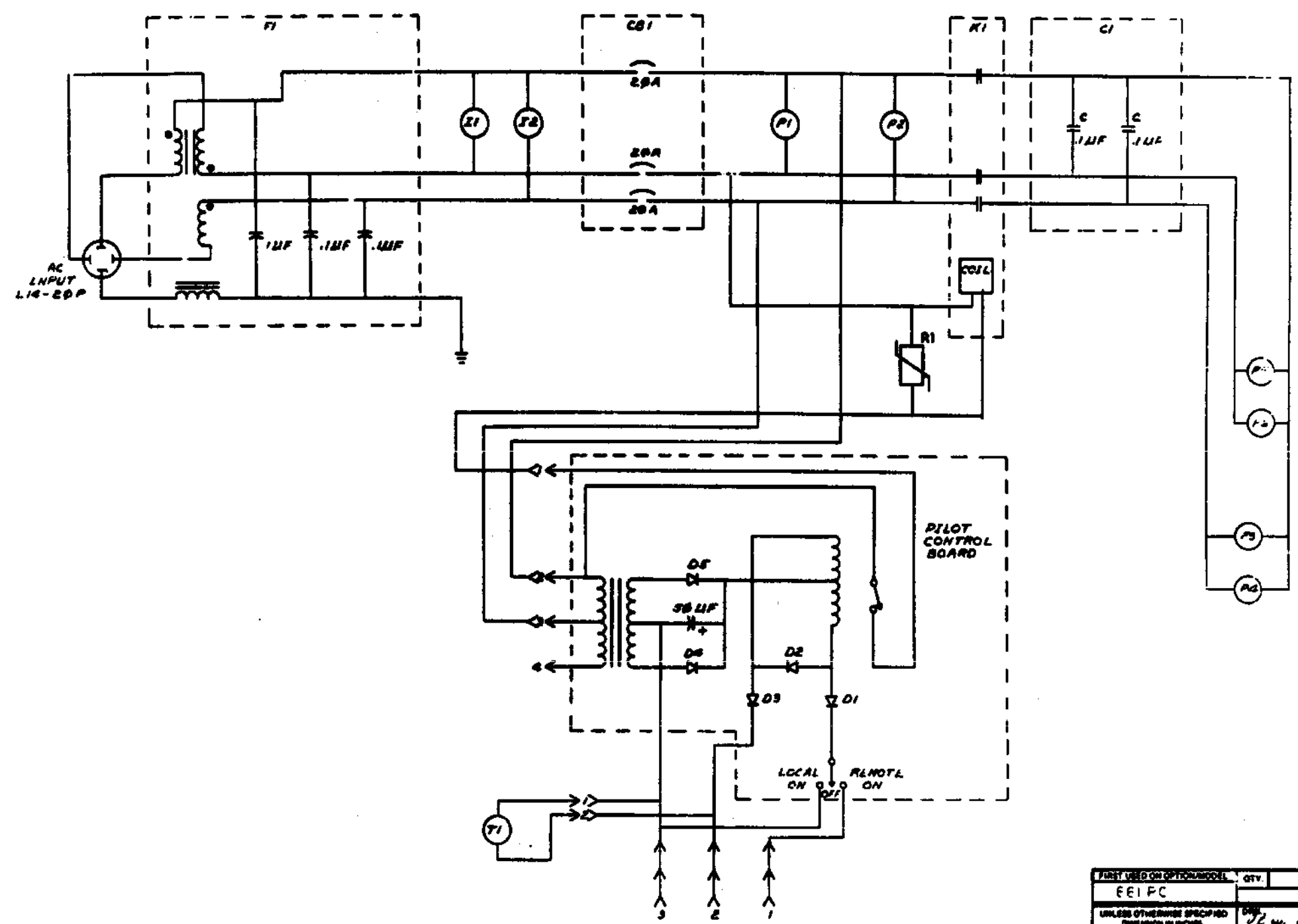
VIEW B-B



NOTES			
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EQUIPMENT CONFIGURATION	
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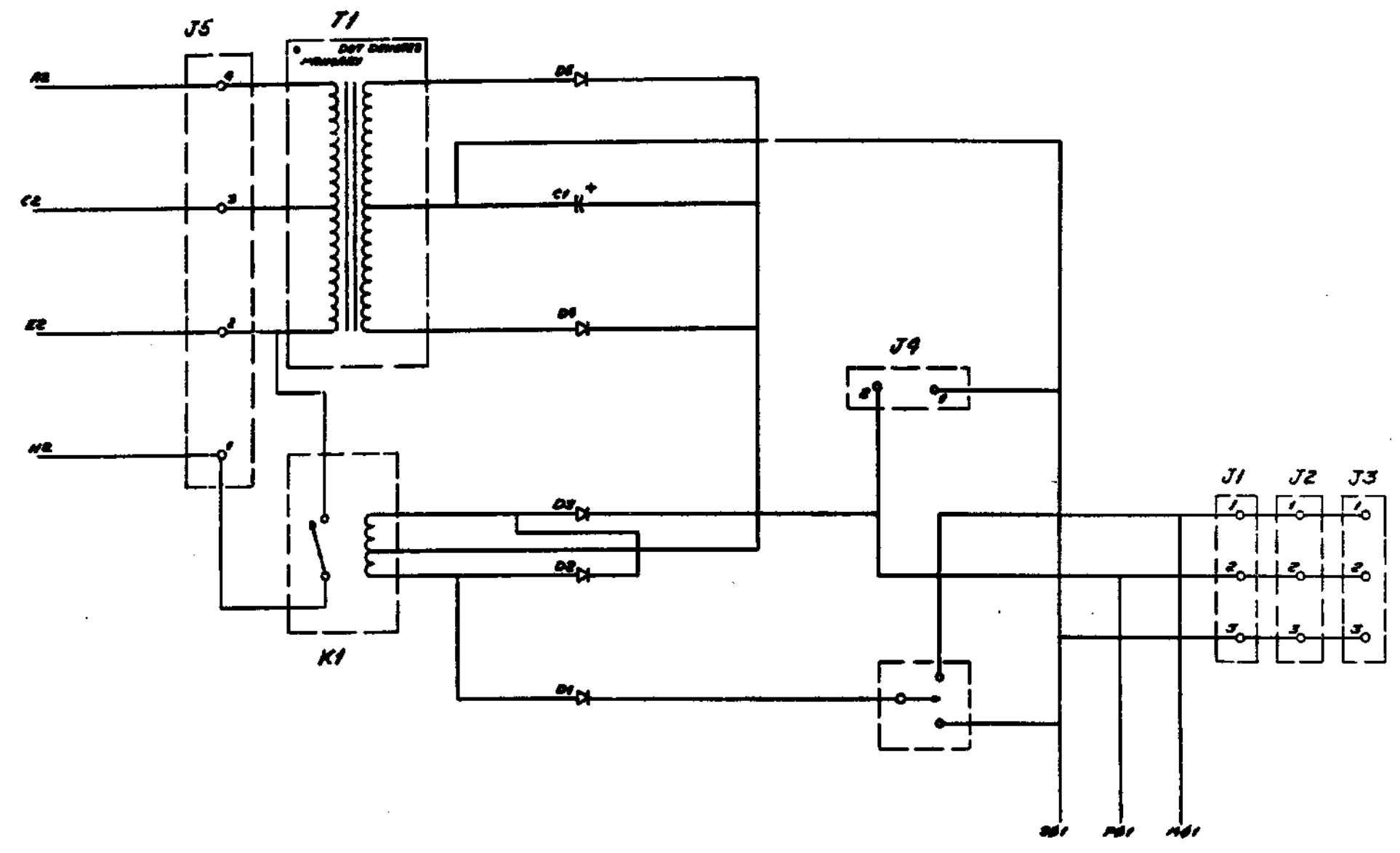


REV.	DATE	BY	CHKD.	DESCRIPTION
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4	11-1-57
5	11-1-57
6	11-1-57
7	11-1-57
8	11-1-57
9	11-1-57
10	11-1-57

FIRST USED ON OPTIMUM MODEL	QTY.	DESCRIPTION	PART NO.	REV.
EE1PC				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DECIMALS	ANGLES	DATE		
± .005	± 30'	DATE	EQUIPMENT CORPORATION	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	TITLE	
MATERIAL	NEXT HIGHER ASBY.	DATE	CIRCUIT SCHEMATIC (661-7A PC)	
FINISH	SCALE	DATE	NUMBER	
		DATE	D CS 861-A-1	
		DATE	REV. B	

CS 861-A-1

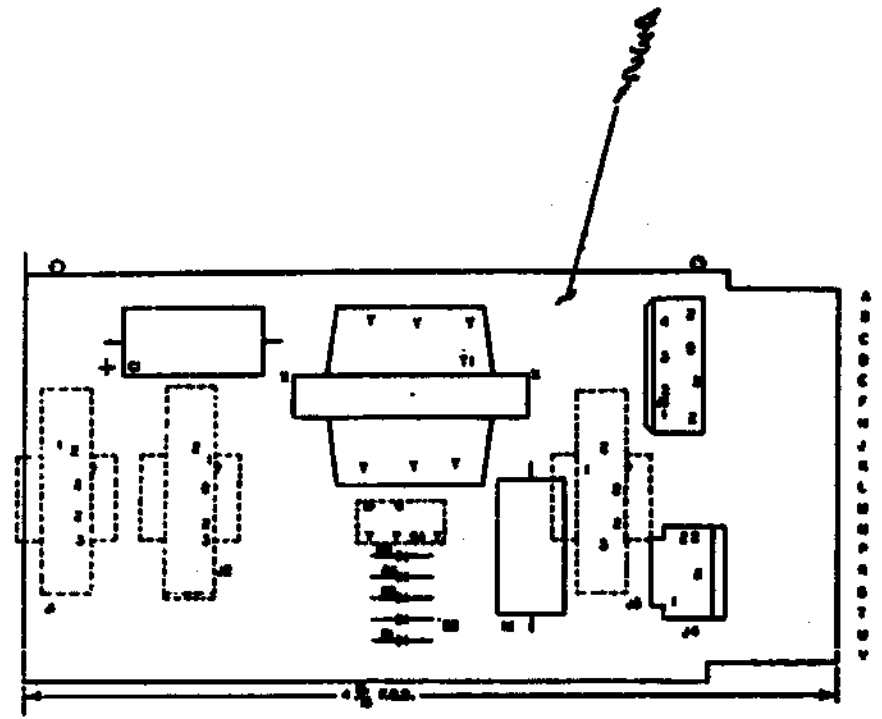
See drawing and specifications sheets for the full and complete description and details of construction of this or other drawings in this set.



1	2	3	4	5	6	7	8
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FIRST USED OR OPTION MODEL	QTY.	DESCRIPTION	PART NO.	FILE NO.
861 P.C.				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES	CHK'D	DATE	EQUIPMENT CORPORATION	
TOLERANCES	DATE	TITLE PILOT CONTROL		
DECIMALS	ANGLES			
XXX - .00	16° 30'			
XX - .01				
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE	DCS 5410206-0-1		
MATERIAL	NEXT HIGHER ASSY.	REV. B		
FINISH	SCALE NONE	PART 2 OF 2		

NOTES:



QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
		PACKAGING INSTRUCTION	AM-3700143-0-15	
1	S1	SWITCH, 5-POS.	12-11190	19
1	K1	RELAY, REED	12-11179	13
1	T1	PC TRANSFORMER	16-11173	18
9	FOR USE ON J5	PIN, PC MALE MATE-N-LOCK	1210823	11
1	J9	SOCKET, 2 PIN MATE-N-LOCK	1213824-02	10
11	FOR USE ON J1-J6	PIN, PC FE 7-1E MATE-N-LOCK	1209356	9
1	J5	PLUG, 4 PIN MATE-N-LOCK	1209351-04	8
3	J1, J2, J3	SOCKET, 7 PIN MATE-N-LOCK	1209350-03	7
5	D1-D5	DIODE 1N4004	1105796	6
1	C1	CAP, 50UF, 50V 1/2 IN SL	1000380	5
REF		MODULE ECO HISTORY	PKM-5410206-0-6	4
REF		WIRE MILLING HOLE LAYOUT	DWM-5410206-0-5	3
REF		X-Y COORDINATE MOUNT LOC	MCO-5410206-0-2	2
1		ETC CKT BOARD	5010205	1

IC TYPE	QTY	REF. NO.	LOCATIONS

861 EC

ETCH BOARD REV B

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

SCALE 2/1

SHEET 1 OF 2

SEMICONDUCTOR CONVERSION CHART

EQUIPMENT CORPORATION

PILOT CONTROL

CS5410206-0-1

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NOTES:

IC TYPE QRD +5V

QRD AND 5V ARE SIGNALS PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

DCS 5411086-0-1 J

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
1	R20	RESISTOR 3.40K 1/4W 1%	1305114	55
1	R26	RESISTOR 5.62K 1/4W 1%	1305120	56
1	R27	RESISTOR 4.90K 1/4W 1%	1305324	57
0	R28	RESISTOR 24.0K 1/4W 1%	1305405	58
0	R24	RESISTOR 200 305 02PR	1302150-10	59
1	R32	RESISTOR 12 7K 1/4W 1%	1302412	60
0	R6, R9	RESISTOR 2 0H 55 00	1308804	61
0	R7	TRANSISTOR 2N3870	1310555	62
4	Q2, Q3, Q5, Q8, Q10, Q19	TRANSISTOR MPS405	1510705	63
0	Q4, Q6	TRANSISTOR MPS 455	1510706	64
0	Q1	TRANSISTOR 2N 4441	1505887	65
4	Q8	TRANSISTOR 2N 4296	1509142	66
4	Q14, Q15, Q17, Q18	TRANSISTOR 2N 3433	1511600	67
0	L1	INDUCTOR, 500 uH	1611890	68
1	T1	TRANSFORMER	1612026	69
0	E1	I. C. DEC 723	1910415	70
0	1	SCREW, PHW #4-40 X 7/16 LG.	9006012-1	71
0	1	SCREW, PHW #6-32 X 1/4 LG.	9006020-1	72
0	1	SCREW, PHW #6-32 X 7/8 LG.	9006027-1	73
0	1	KEP NUT #4-40	9006557	74
0	2	KEP NUT #10-32	9006566	75
2	2	WASHER, 111LWR #10	9006835	76
0	2	WASHER, FLAT	9006840	77
0	2 (W1)	SPLIT LUG	3007-5	78
0	1	SPACER, 1/4AF X 1/2	9006844	79
4	4	CABLE TIE	9007880	80
2	2	TERMINAL	9007930	81
2	2	SCREW, PHW #10-32 X 1/4 LG.	9008007-1	82
0	2	TERMINAL	9008150	83
0	1	KEP NUT #6-32	9008185	84
0	R/R	COMPOUND, THERMAL JOINT	9008268	85
0	5	WASHER, NICA	9008424	86
0	2	WASHER, RING	9008440	87
0	1	FUSE HOLDER	9008141	88
1	R22	RESISTOR, 390, 2W 10%	1307880	89
0	R1	JUMPER	9009195	90
2	T2	WIRE #18 STRANDED BLK	9107290-0-0	91
REF	REF	MODULE TEST PROCEDURE	A-SP-1143-3A-2	92
1	1	WASHER, RING	9006773	93
1	1	.00 INCH SHIM	7413721-0-0	94
REF	REF	ENG. SPEC AND TEST PROC.	A-SP-5411086-0-3	95

REVISED	DATE	BY

ETCH BOARD REV D

SEMICONDUCTOR CONVERSION CHART

SCALE SHEET 2 OF 4

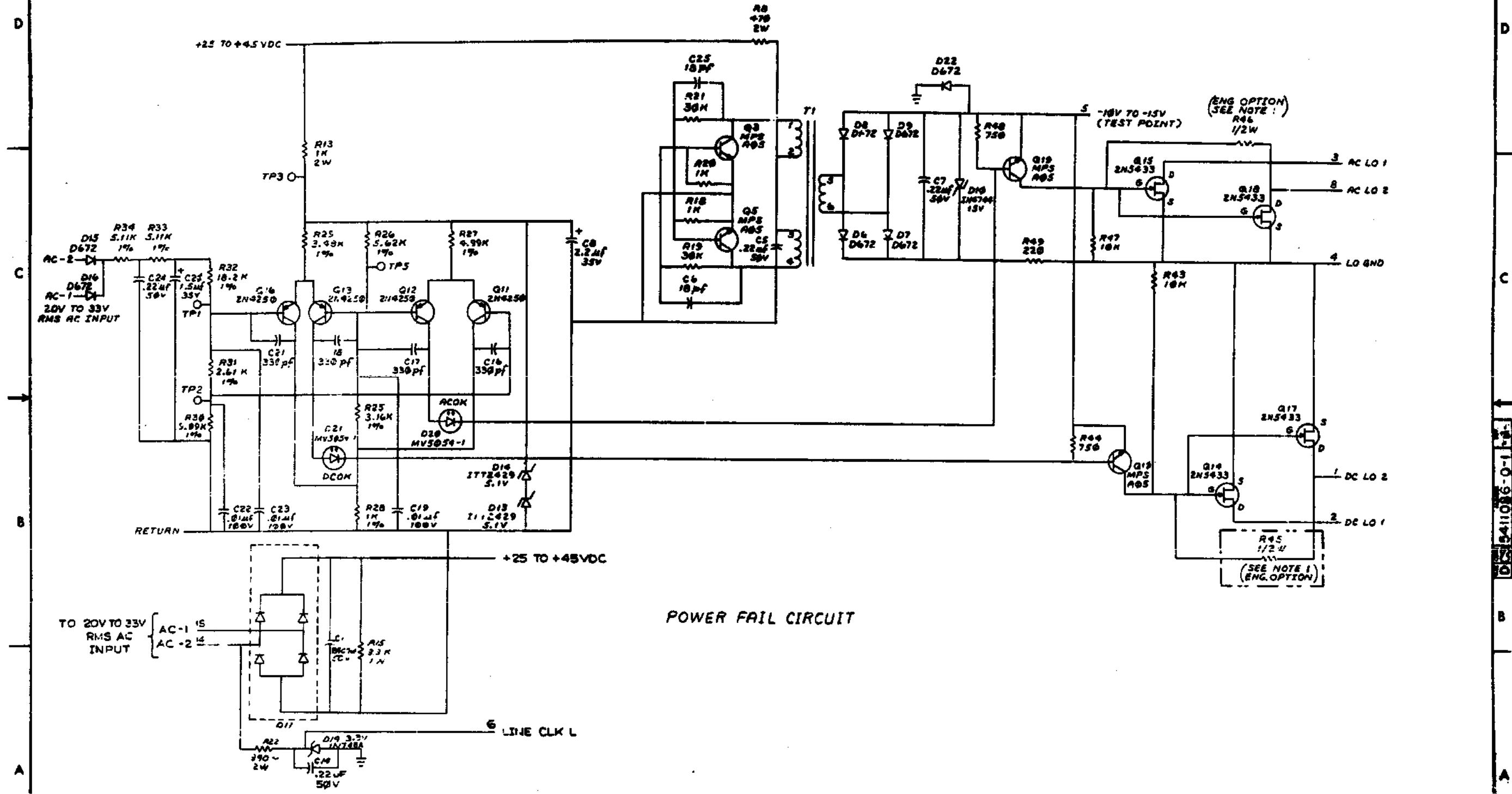
DEC NO EIA NO DEC NO EIA NO

DCS 5411086-0-1 J

digital EQUIPMENT CORPORATION

PWR. LINE MONITOR/15V REG.

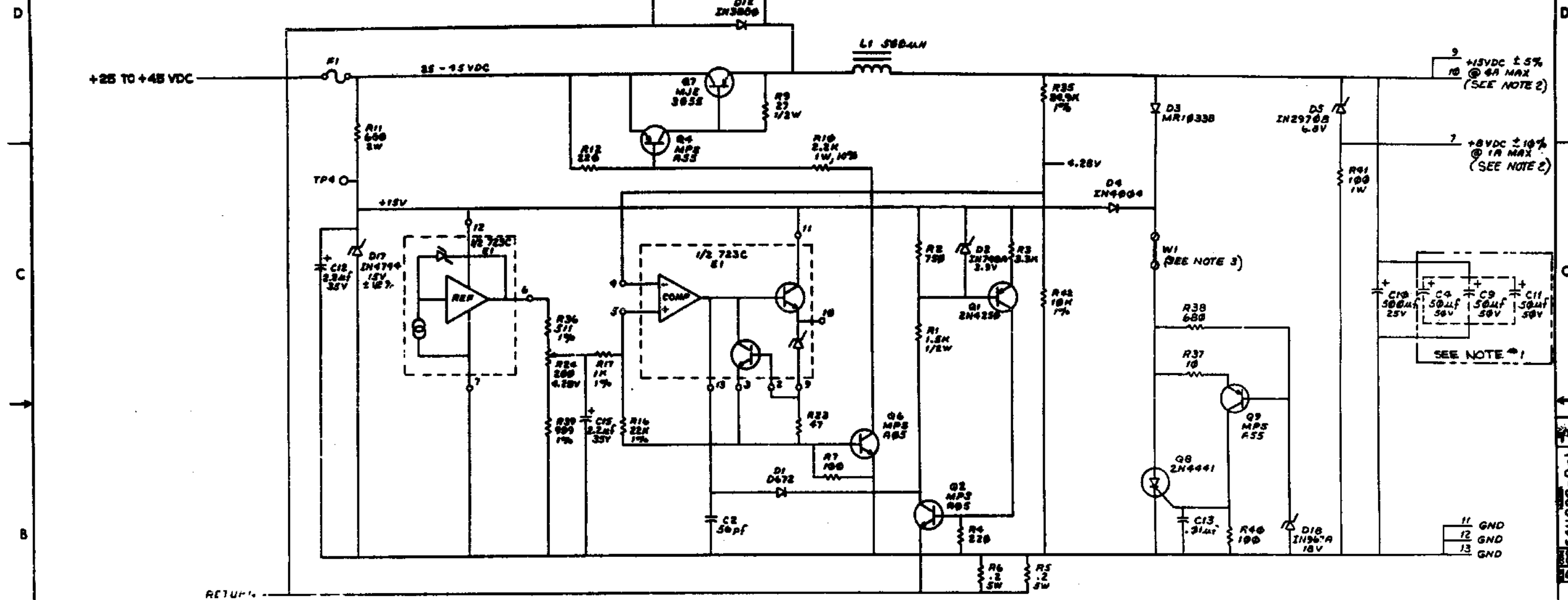
THIS CIRCUIT AND MECHANICAL DETAILS ARE THE PROPERTY OF GENERAL ELECTRIC COMPANY AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.



POWER FAIL CIRCUIT

REV.	CHG. NO.	REV.

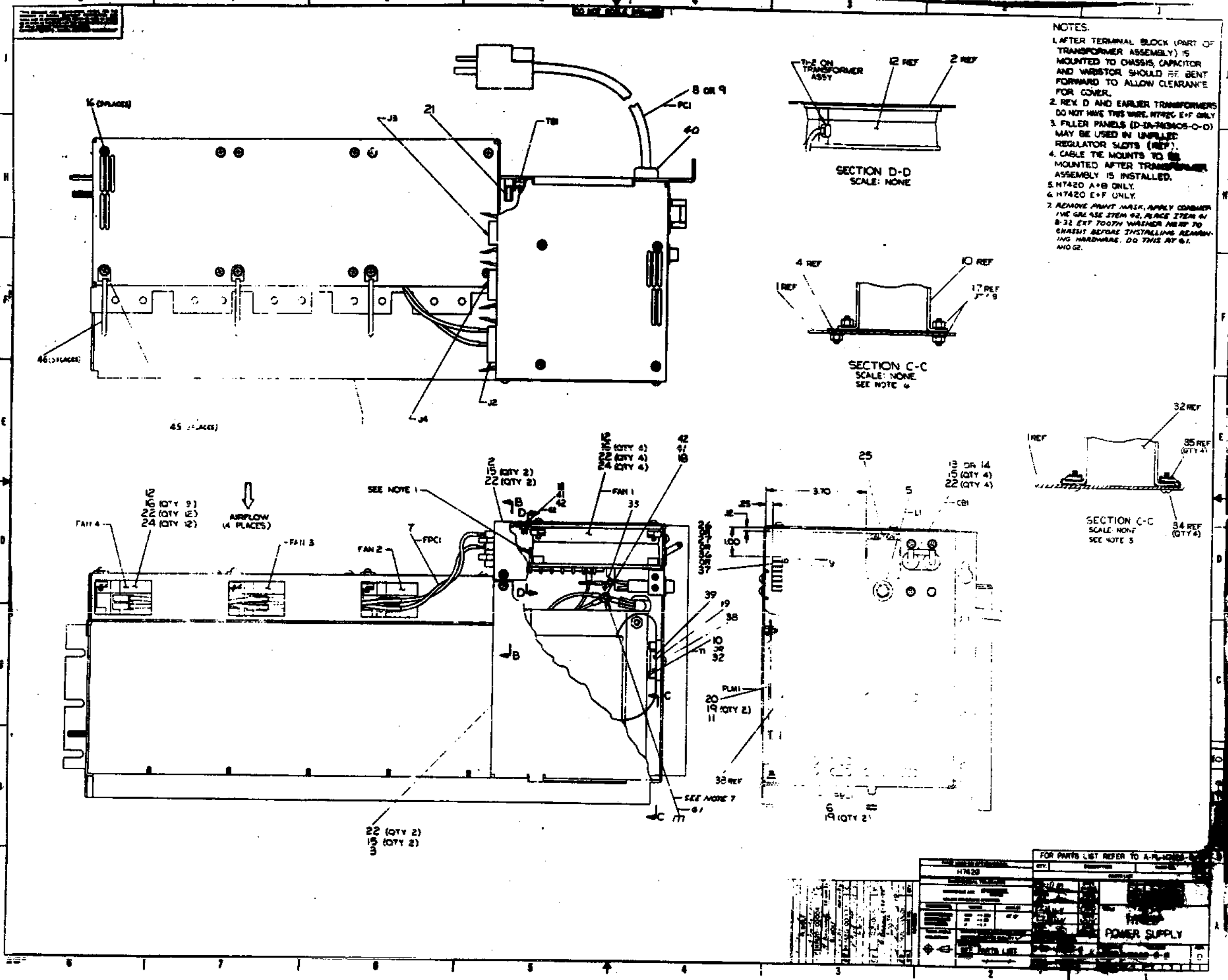
THE DESIGN AND CONSTRUCTION OF THIS MONITOR IS SUBJECT TO THE DESIGN AND CONSTRUCTION OF THE MONITOR AS A WHOLE. THE MONITOR IS NOT TO BE USED AS A STAND-ALONE UNIT.



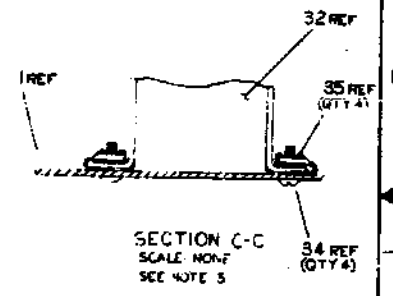
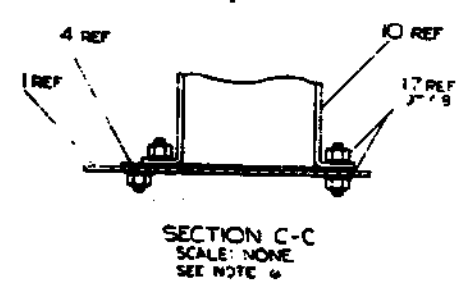
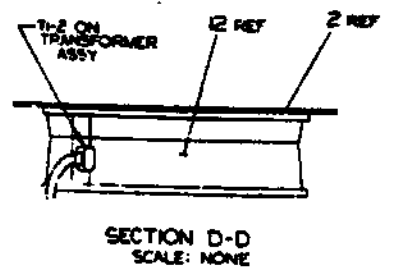
15V REGULATOR
(SEE NOTE #4)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	PWR. LINE MONITOR/15V REG.	NUMBER	DCS 5411086-0-1
SCALE		SHEET	4 OF 4



- NOTES:
1. LATER TERMINAL BLOCK (PART OF TRANSFORMER ASSEMBLY) IS MOUNTED TO CHASSIS, CAPACITOR AND RESISTOR 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. FILER PANELS (D-IN-FRAMES-O-D) 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 MARK, APPLY CONDENSIVE GREASE ITEM 42, PLACE ITEM 41 B-32 EXT TOOTH WASHER NEAR TO CHASSIS BEFORE INSTALLING REMAINING HARDWARE. DO THIS AT 6.1 AND 6.2.



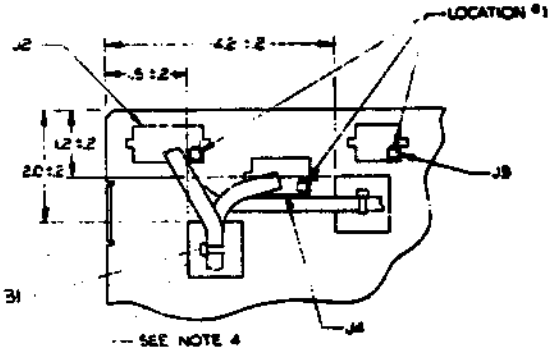
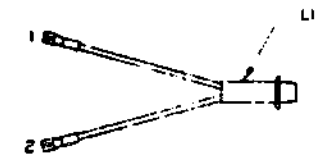
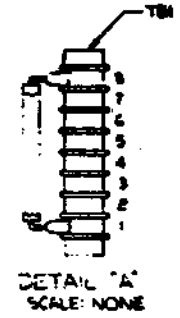
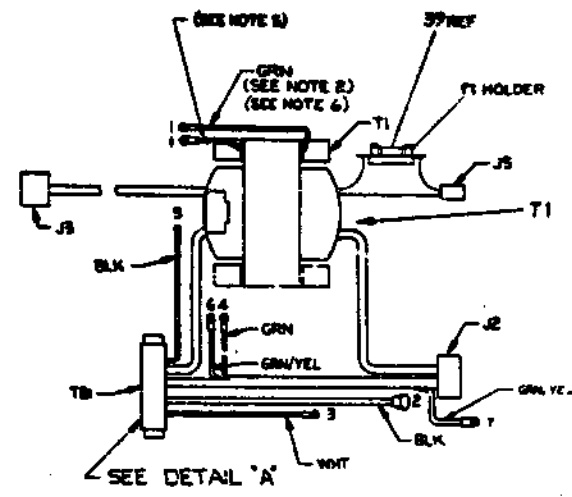
FOR PARTS LIST REFER TO A-PL-10000-1

ITEM NO.	DESCRIPTION	QTY	REVISION
1
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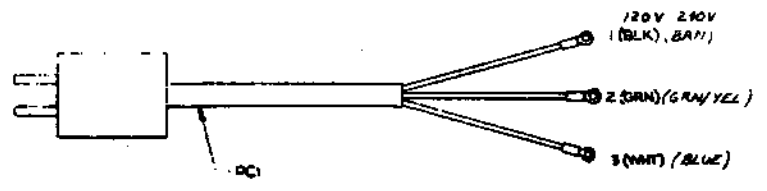
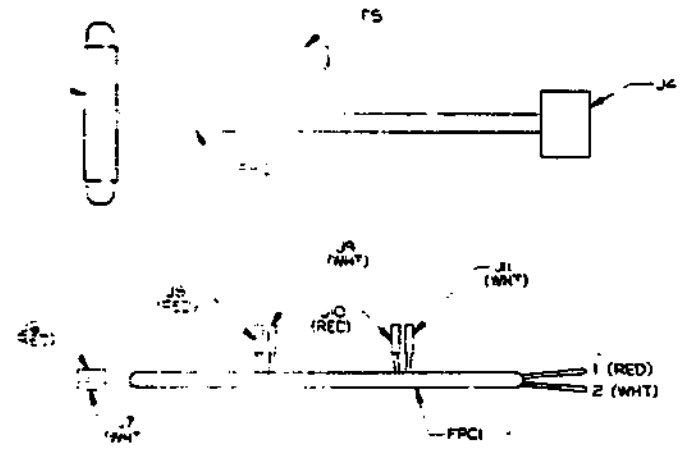
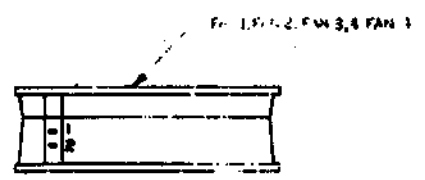
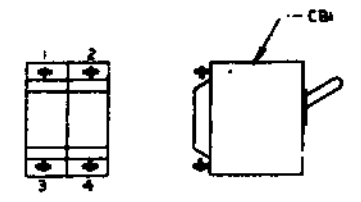
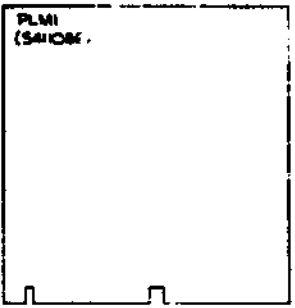
POWER SUPPLY

WIRE TABLE				
ITEM NO	DESCRIPTION	FROM	TO	REMARKS
1	14 GRN	TI-3	RSC1-P5	SEE NOTE 2
2	14 BLK	TI-2	WMI-1E-2	
3	14 WHT	TI-3	CB1-1	
4	14 GRN	TI-4	6/	SEE NOTE 7
5	14 BLK	TI-5	CB1-2	
6	22 BLK	LI-1	TB1-5	
7	22 BLK	LI-2	TB1-7	
8	RED	FPC1-5	FAN 4-1	
9	WHT	FPC1-1	FA 2-2	
10	RED	FPC1-3	FA 2-1	
11	WHT	FPC1-3	FA 3-2	
12	RED	FPC1-3	FA 3-1	
13	WHT	FPC1-3	FA 2-2	
14	RED	FPC1-1	2-3	
15	WHT	FPC1-2	2-4	
16	14 BLK	PC1-1	CB1-4	SEE NOTE 4
17	14 GRN	PC1-2	CB1-5	
18	14 WHT	PC1-3	CB1-6	
19	14 GRN/YEL	TI-6	SEE NOTE 7	
20	14 GRN/YEL	TI-7	SEE NOTE 7	

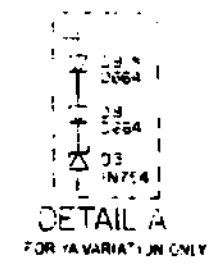
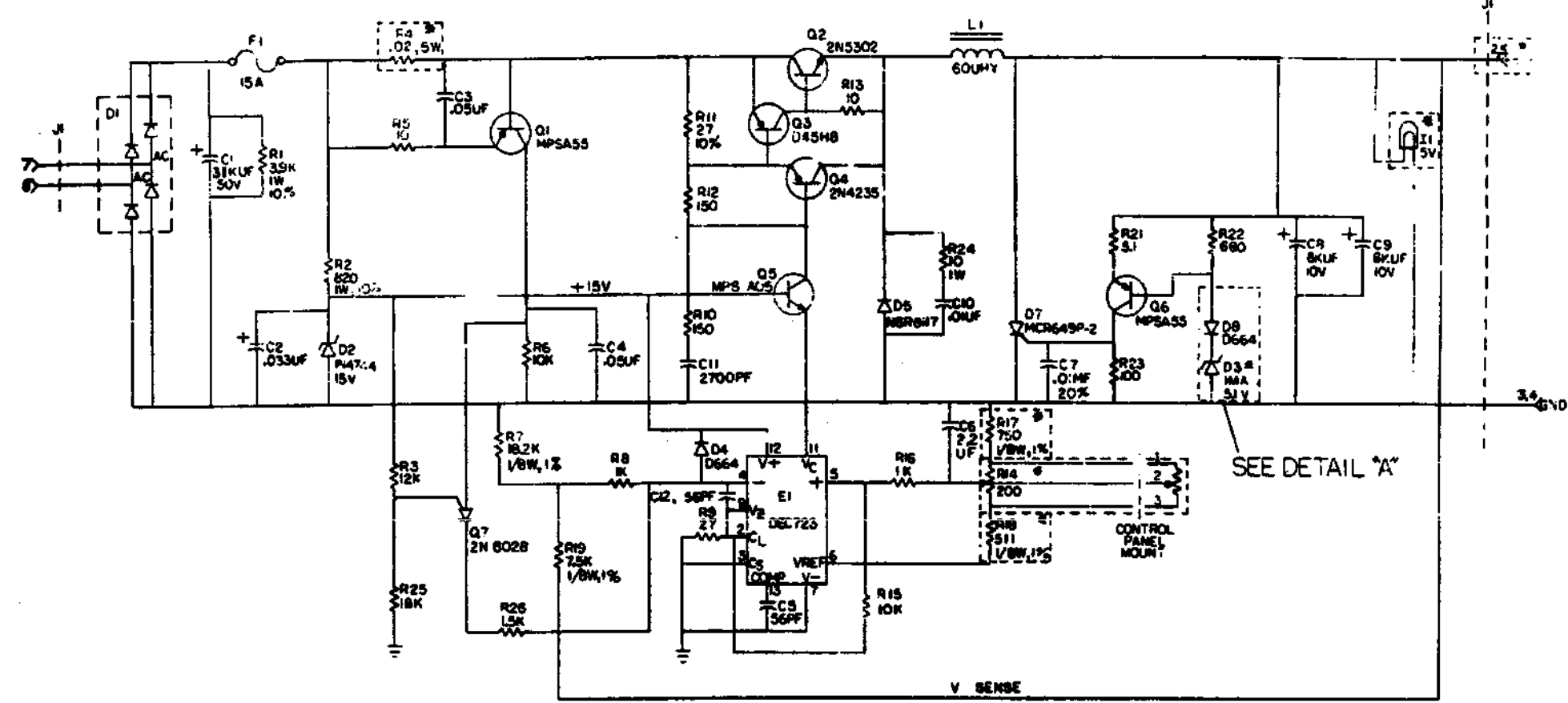
JUMPER TABLE					
ITEM NO	DESCRIPTION	FROM	TO	RESIST LENGTH	VARIATION
21	14 BLK	TI-2	TI-3	3.0	W/ASIDE(A)
22	14 BLK	TI-4	TI-5	3.0	W/ASIDE(B)
23	14 BLK	TI-4	TI-5	3.0	W/ASIDE(B)



SECTION E-2
SCALE: NONE



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FOR YA VARIATION COMPONENT VALUES ARE AS FOLLOWS:
 R4 - 0.6 SW
 R14 - 1K 10 TURN
 R17 - 300 1/8W 1%
 R18 - 150 1/4W 5%
 C3 - IN754
 I1 - 15V
 J1 - 2.5 +2D-8.0V
 # D9 - D664 ADDED FOR YA VARIATION ONLY

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

6. A. BARON	7. H744-00013	8. H744-00014	9. H744-00015	10. H744-00016	11. H744-00017	12. H744-00018	13. H744-00019	14. H744-00020	15. H744-00021	16. H744-00022	17. H744-00023	18. H744-00024	19. H744-00025	20. H744-00026	21. H744-00027	22. H744-00028	23. H744-00029	24. H744-00030	25. H744-00031	26. H744-00032	27. H744-00033	28. H744-00034	29. H744-00035	30. H744-00036	31. H744-00037	32. H744-00038	33. H744-00039	34. H744-00040	35. H744-00041	36. H744-00042	37. H744-00043	38. H744-00044	39. H744-00045	40. H744-00046	41. H744-00047	42. H744-00048	43. H744-00049	44. H744-00050	45. H744-00051	46. H744-00052	47. H744-00053	48. H744-00054	49. H744-00055	50. H744-00056	51. H744-00057	52. H744-00058	53. H744-00059	54. H744-00060	55. H744-00061	56. H744-00062	57. H744-00063	58. H744-00064	59. H744-00065	60. H744-00066	61. H744-00067	62. H744-00068	63. H744-00069	64. H744-00070	65. H744-00071	66. H744-00072	67. H744-00073	68. H744-00074	69. H744-00075	70. H744-00076	71. H744-00077	72. H744-00078	73. H744-00079	74. H744-00080	75. H744-00081	76. H744-00082	77. H744-00083	78. H744-00084	79. H744-00085	80. H744-00086	81. H744-00087	82. H744-00088	83. H744-00089	84. H744-00090	85. H744-00091	86. H744-00092	87. H744-00093	88. H744-00094	89. H744-00095	90. H744-00096	91. H744-00097	92. H744-00098	93. H744-00099	94. H744-00100
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QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST				
ETCH BOARD REV F H				
	IN64A	SAME	MPSA55	
	D004	IN605	2N5302	
	11549P-2		D45H5	
	IN75A	SAME	MPSA05	
	IN4744	SAME		
	NSR8117			
	2N5305			
DEC NO.	EIA NO.	DEC NO.	EIA NO.	
SEMICONDUCTOR CONVERSION CHART				
SCALE	DATE	DCS H744-0-1		REV
INSET	OF			

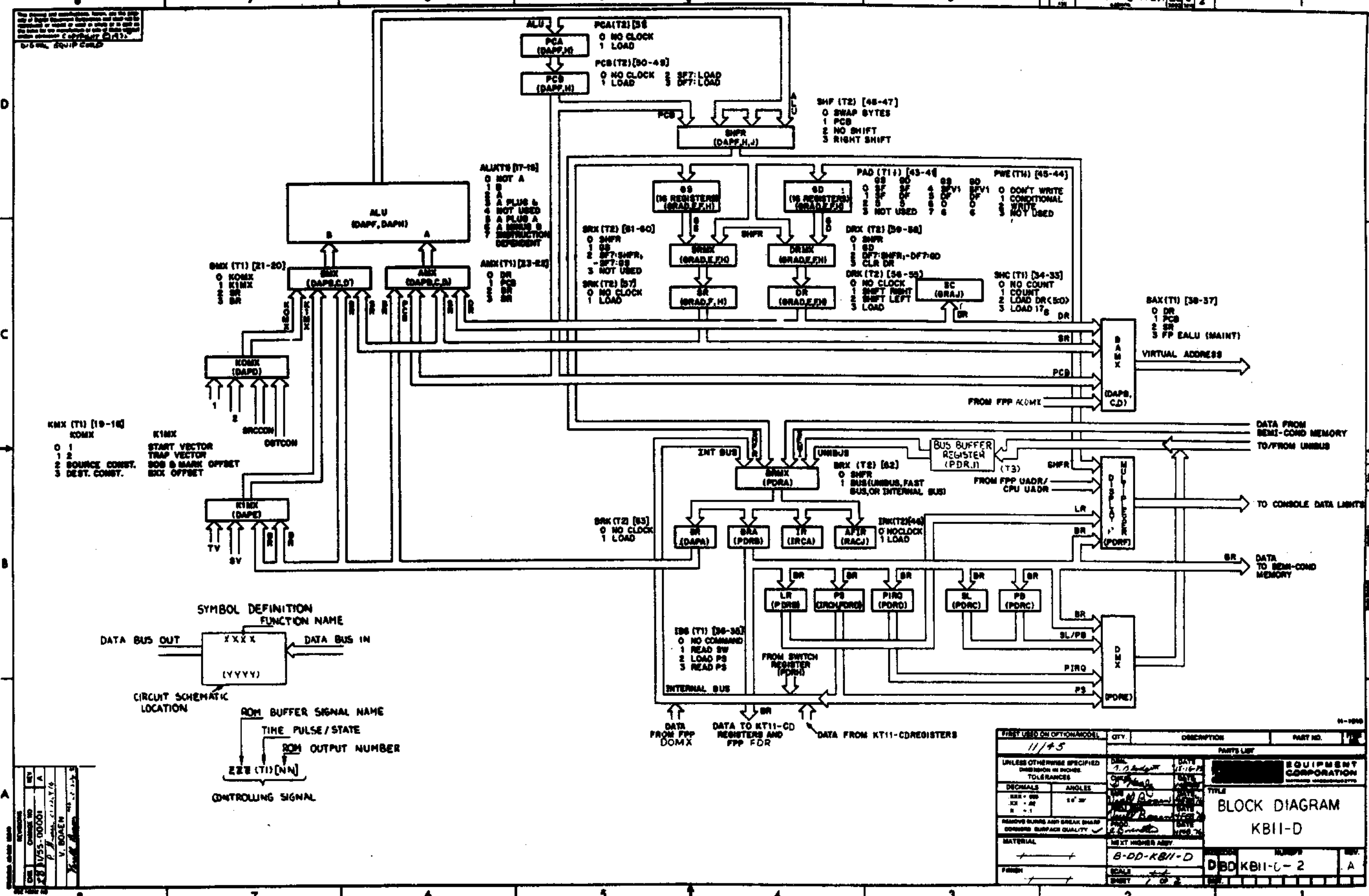
DCS H744-0-1

EQUIPMENT CORPORATION

SV REGULATOR

DCS H744-0-1

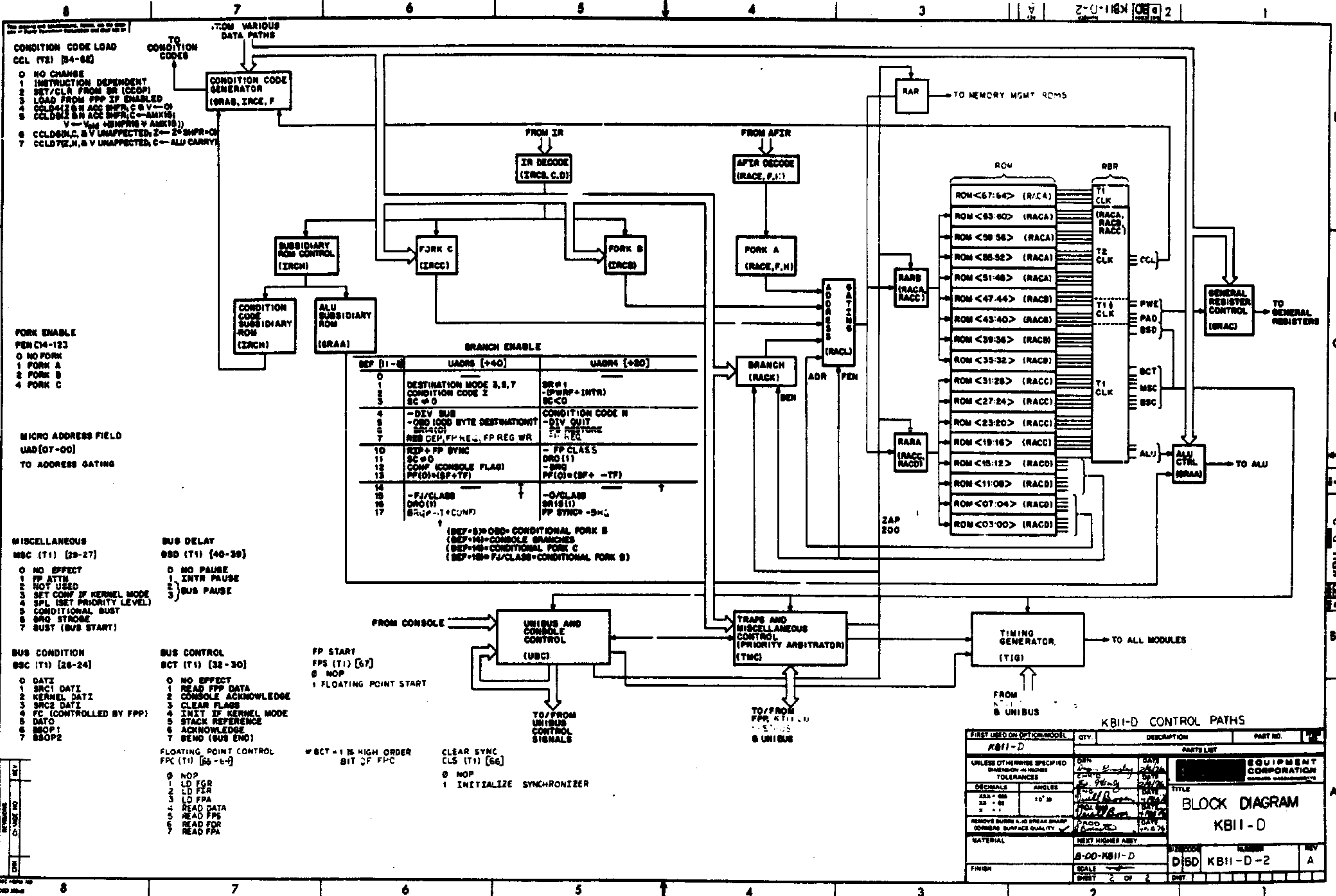
SECTION III
KB11-C/D BLOCK DIAGRAMS



11-1966

**BLOCK DIAGRAM
KBII-D**

DBD KBII-C-2



CONDITION CODE LOAD
CCL (T2) [34-32]

- 0 NO CHANGE
- 1 INSTRUCTION DEPENDENT
- 2 SET/CLR FROM SR (CCOP)
- 3 LOAD FROM FPP IF ENABLED
- 4 CCLD (Z,N,ACC,BNPR,C,B,V=0)
- 5 CCLD (Z,N,ACC,BNPR,C=AMXIS)
- 6 CCLD (Z,N,C,B,V UNAPPECTED; Z=2nd BNPR=0)
- 7 CCLD (Z,N,C,B,V UNAPPECTED; C=ALU CARRY)

FORK ENABLE
FEN (C4-123)

- 0 NO FORK
- 1 FORK A
- 2 FORK B
- 4 FORK C

MICRO ADDRESS FIELD
UAD (07-00)
TO ADDRESS GATING

MISCELLANEOUS
MSC (T1) [23-27]

- 0 NO EFFECT
- 1 FP ATTN
- 2 NOT USED
- 3 SET CONF IF KERNEL MODE
- 4 SPL (SET PRIORITY LEVEL)
- 5 CONDITIONAL BUST
- 6 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) [28-24]

- 0 DATI
- 1 SRC1 DATI
- 2 KERNEL DATI
- 3 SRC2 DATI
- 4 FC (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 FLAGS
- 4 INET IF KERNEL MODE
- 5 STACK REFERENCE
- 6 ACKNOWLEDGE
- 7 SEND (BUS END)

FP START
FPS (T1) [67]

- 0 NOP
- 1 FLOATING POINT START

CLEAR SYNC
CLS (T1) [66]

- 0 NOP
- 1 INITIALIZE SYNCHRONIZER

FLOATING POINT CONTROL
FPC (T1) [65-64]

- 0 NOP
- 1 LD FGR
- 2 LD FIR
- 3 LD FPA
- 4 READ DATA
- 5 READ FPS
- 6 READ FOR
- 7 READ FPA

KB11-D CONTROL PATHS

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
KB11-D			
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES			
DECIMALS	ANGLES	EQUIPMENT CORPORATION CORPORATION	
23 ± .01	10' 30"		
REMOVE BURRS & .01 BREAK SHARP CORNERS SURFACE QUALITY			
MATERIAL	NEXT HIGHER ASSEMBLY		
FINISH	SCALE	DWG NO.	REV.
	1:1	D15D KB11-D-2	A
BLOCK DIAGRAM KB11-D			
SHEET 2 OF 2			

- CONDITION CODE LOAD**
CCL (T2) [54-92]
- 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 ← Vold + (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 (I4-123)
- 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 DAT1
 - 1 SRC1 DAT1
 - 2 KERNEL DAT1
 - 3 SRC2 DAT1
 - 4 FC (CONTROLLED BY FPP)
 - 5 DAT0
 - 6 BSOP1
 - 7 BSOP2

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

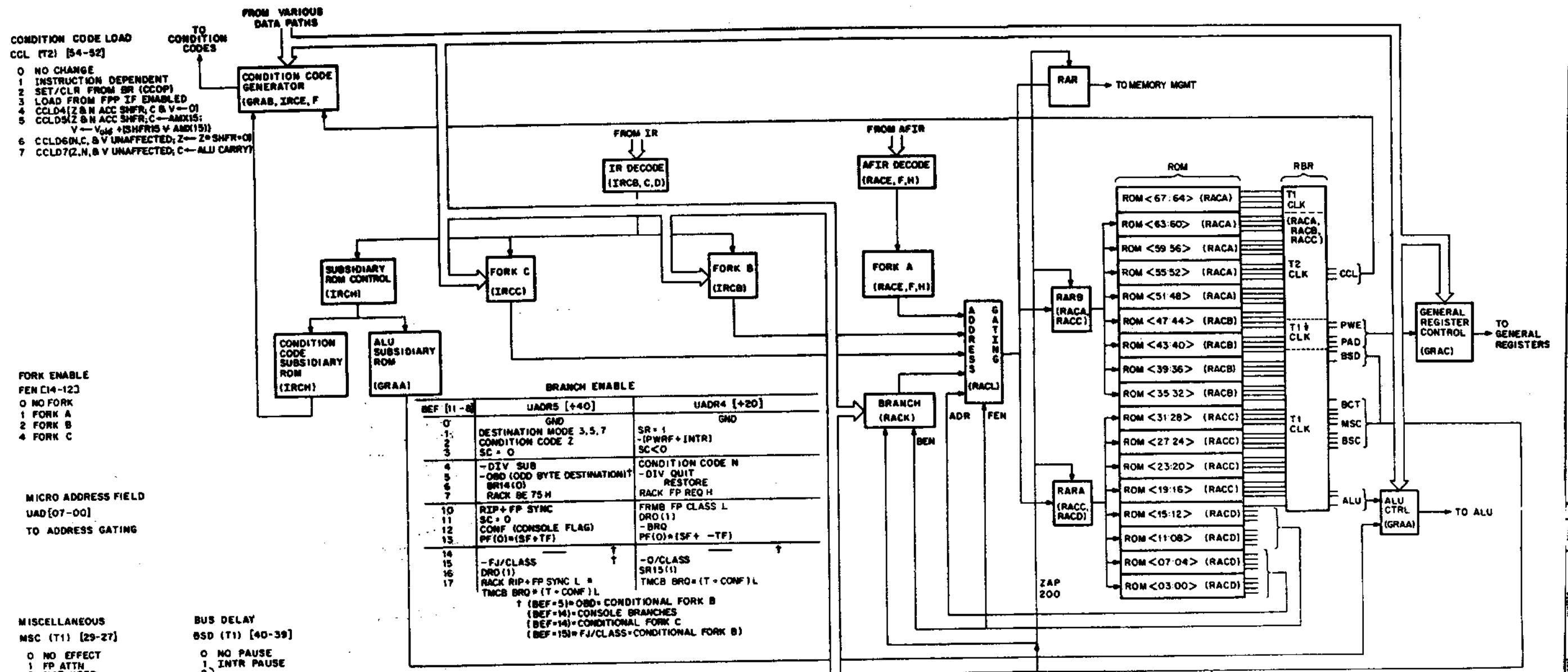
- BUS CONTROL**
BCT (T1) [32-30]
- 0 NO EFFECT
 - 1 READ FPP DATA
 - 2 CONSOLE ACKNOWLEDGE
 - 3 CLEAR FLAGS
 - 4 INIT IF KERNEL MODE
 - 5 STACK REFERENCE
 - 6 ACKNOWLEDGE
 - 7 SEND (BUS END)

- 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]	UADR3 [+40]	UADR4 [+20]
0	GND	GND
1	DESTINATION MODE 3, 5, 7	SR = 1
2	CONDITION CODE Z	- (PWRP + INTR)
3	SC = 0	SC < 0
4	- DIV SUB	CONDITION CODE N
5	- OBD (ODD BYTE DESTINATION)†	- DIV QUIT
6	BR14(0)	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(0) = (SF + TF)	PF(0) = (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

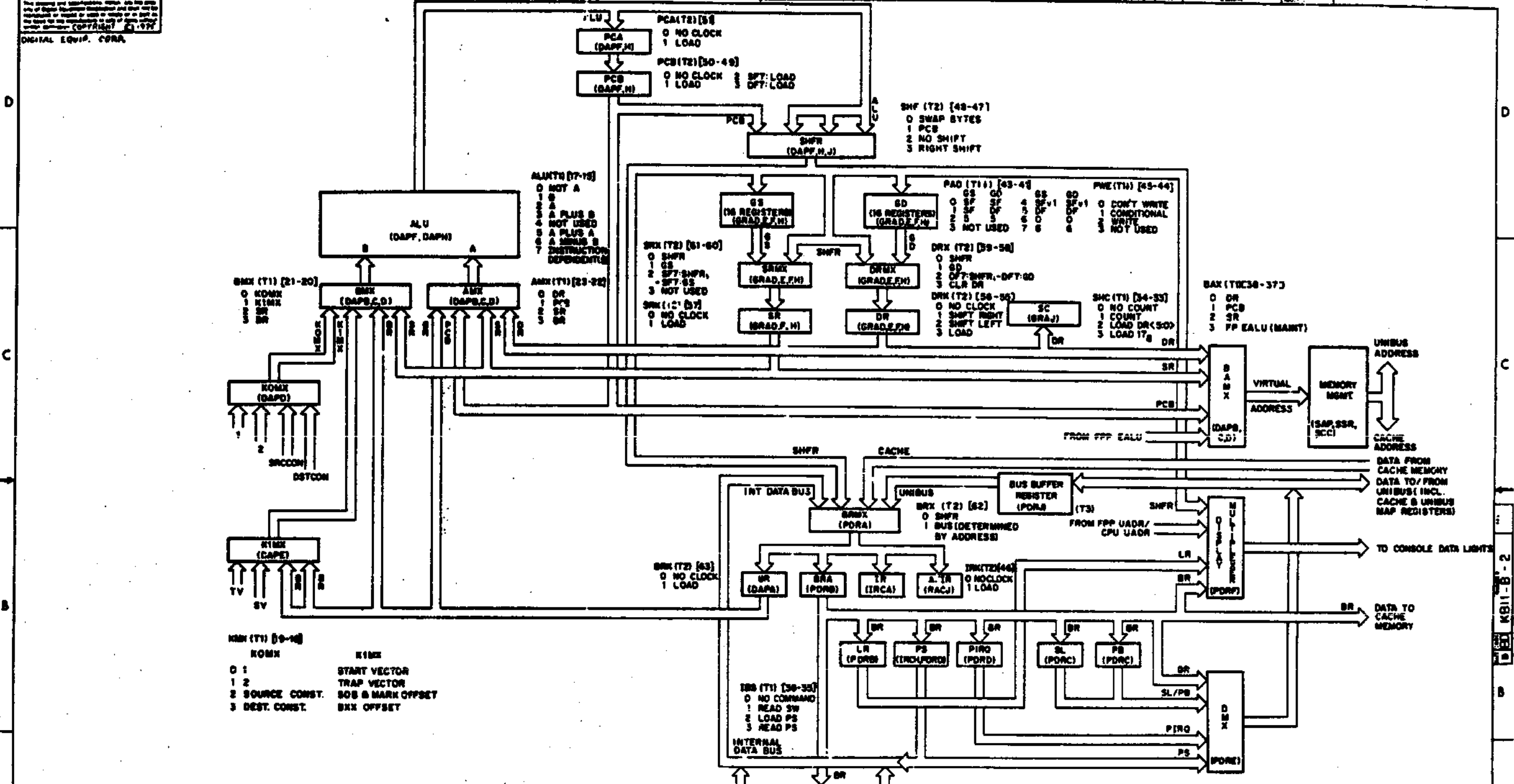
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	DRN
KB11-C				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
XXX - 008	10' 30'	DRN	D NAMEL	DATE 8/8/75
REMOVE BURNS AND BREAK SHARP CORNERS SURFACE QUALITY		ENG	DATE 3/2/75	
		PROD ENG	DATE 3/2/75	
		PROD	DATE 3/2/75	
MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
FINISH	B-DD-KB11-	D BD	KB11-C-3	
	SCALE	SHEET	DF	DIST
		1		

Figure 1-1 Block Diagram

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DIGITAL EQUIP. CORP.

2-B-118X (REV) 2



REV. 1
REV. 2
REV. 3
REV. 4
REV. 5
REV. 6
REV. 7
REV. 8

FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO.	REV. NO.
KB11-C		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DECIMALS	ANGLES	TITLE		
±.000	±.030	BLOCK DIAGRAM		
±.001	±.030	KB11-C		
REMOVE BURRS AND DEBUR SHARP CORNERS SURFACE QUALITY				
MATERIAL	NET WEIGHT ASSEMBLY	SIZE CODE	NUMBER	REV.
1 INCH	B-D-KB11-C	D8D	KB11-C-2	
SCALE		SHEET	OF	DIST.
		1	1	

B-D-KB11-C-2

SECTION IV
KB11-C FLOW DIAGRAMS

NOTE:
 1. BUS PAUSE =
 1. FOR UNIBUS CYCLES
 2. FOR CACHE CYCLES

DIGITAL EQUIP CORR
 05/17/87 (174)

FET.00 (217)
FET.01 (237)
FET.02 (252)
FET.03 (294)
FET.04 (164)
FET.05 (126)
FET.06 (378)

START FETX NEXT INSTR.
CLEAR INSTR. REG
 1. BR+PC; BC+ARTZ
 2. SHR+SR+SR
 3. BUST; CLEAR FLAGS
 4. IAR+SR

FET.10 (266)
FET.11 (281)
FET.12 (282)
FET.13 (283)
GET INSTR & STEP PC
BEYOND
 1. BR+PC; BC+ARTZ
 2. SHR+SR+SR
 3. BUST
 4. BUS PAUSE
 5. PC+PC+2
 6. IAR+BUS; BR+BUS
 7. PC+PC
 8. PRA+BA

FET.20 (290)
DECODE THIS INSTR & STEP
PC BEYOND C END SECC
GET FIELD GEN BSS
 1. BR+PC; BC+ARTZ
 2. SHR+SR
 3. CONDITIONAL BUST
 4. FIRA+BR
 5. PC+PC+2
 6. -SPT: SR+SR+PC
 7. -DPT: DR+DR+PC
 8. -DPT: DR+SR

BINK SMIB (281) SM1
 (282) SM2
S/S.00
FETCH SRC & STEP
REGISTER UP
 1. BR+PC; BC+ARTZ
 2. SHR+SR+SR
 3. BUST
 4. PC+PC+2
 5. IAR+BUS; BR+BUS
 6. PC+PC
 7. -SPT: SR+SR+PC
 8. -DPT: DR+DR+PC

S/S.10 (287)
GET SECC ADDR INSTR
 1. BR+PC; BC+ARTZ
 2. SHR+SR
 3. BUST
 4. BUS PAUSE
 5. PC+PC+2
 6. IAR+BUS; BR+BUS
 7. -DPT: DR+DR+PC
 8. -DPT: DR+SR

BIN+SNPE (289)
S/S.00 (289)
STEP REGISTER DOWN
 1. BR+PC; BC+ARTZ
 2. SHR+SR+SR
 3. BUST
 4. PC+PC+2
 5. IAR+BUS; BR+BUS
 6. PC+PC
 7. -SPT: SR+SR+PC
 8. -DPT: DR+DR+PC

S/S.10 (289)
FETCH SRC
 1. BR+PC; BC+ARTZ
 2. SHR+SR
 3. BUST
 4. PC+PC+2
 5. IAR+BUS; BR+BUS
 6. PC+PC
 7. -SPT: SR+SR+PC
 8. -DPT: DR+DR+PC

MTP (285)
RTA.00 (151)
RTA.10 (151)
CORRECT LR IN CASE DIST
FIELD G, GET TOP OF STACK
 1. BR+PC; BC+ARTZ
 2. SHR+SR
 3. BUST
 4. -DPT: DR+DR+PC
 5. -DPT: DR+SR

BXX+BCOK (286)
BXX.00 (286)
BXX.01 (286)
BXX.02 (286)
BXX.03 (286)
BXX.04 (286)
BXX.05 (286)
SUCCESSFUL BRANCH,
FIX PC
 1. BR+PC
 2. SHR+SR+SR
 3. BUST
 4. PC+PC+2
 5. IAR+BUS; BR+BUS
 6. PC+PC

BXX+BCOK (286)
BXX.00 (286)
BXX.01 (286)
BXX.02 (286)
BXX.03 (286)
BXX.04 (286)
BXX.05 (286)
SUCCESSFUL BRANCH,
FIX PC
 1. BR+PC
 2. SHR+SR+SR
 3. BUST
 4. PC+PC+2
 5. IAR+BUS; BR+BUS
 6. PC+PC

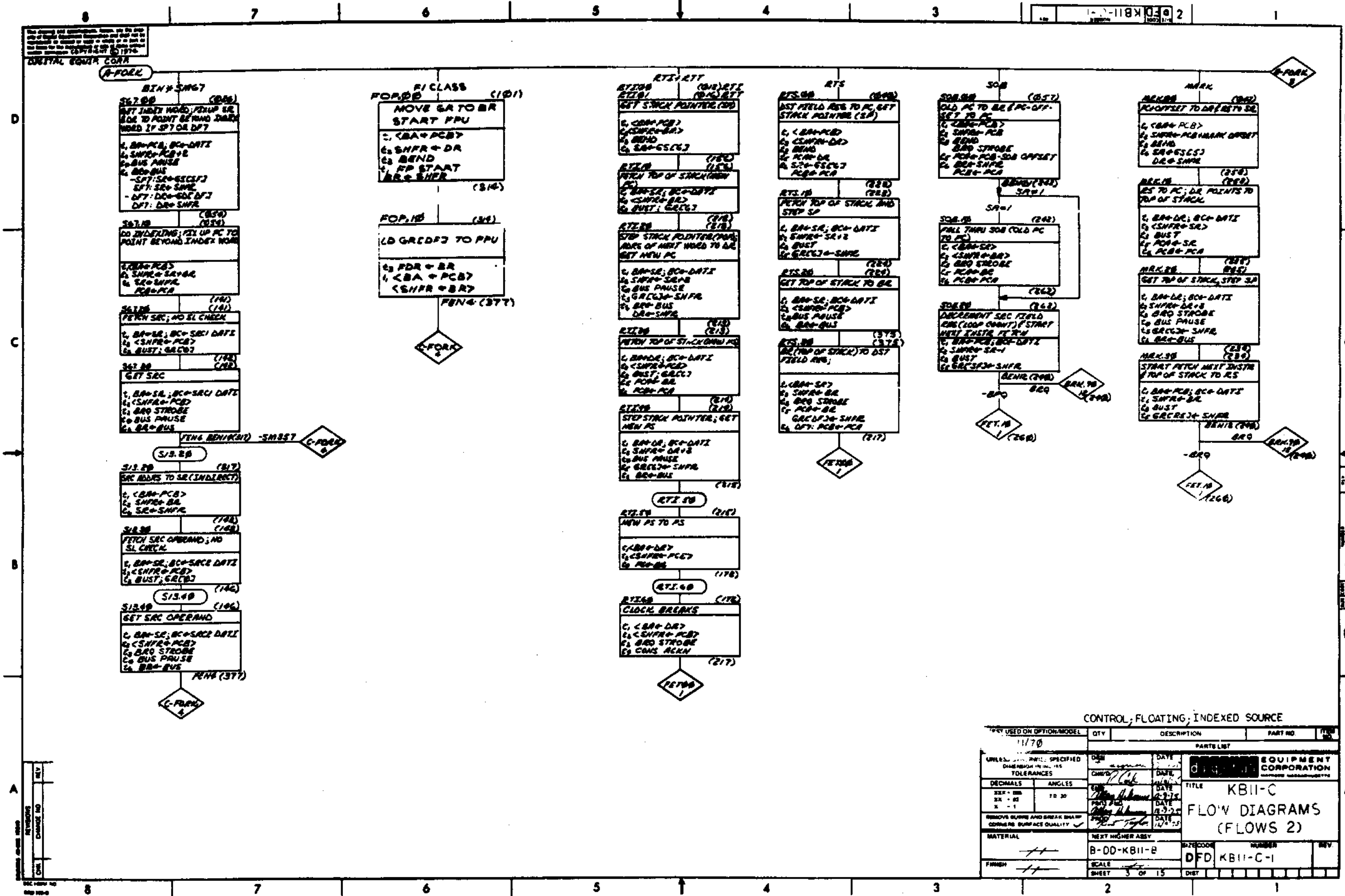
BXX+BCOK (286)
BXX.00 (286)
BXX.01 (286)
BXX.02 (286)
BXX.03 (286)
BXX.04 (286)
BXX.05 (286)
SUCCESSFUL BRANCH,
FIX PC
 1. BR+PC
 2. SHR+SR+SR
 3. BUST
 4. PC+PC+2
 5. IAR+BUS; BR+BUS
 6. PC+PC

BXX+BCOK (286)
BXX.00 (286)
BXX.01 (286)
BXX.02 (286)
BXX.03 (286)
BXX.04 (286)
BXX.05 (286)
SUCCESSFUL BRANCH,
FIX PC
 1. BR+PC
 2. SHR+SR+SR
 3. BUST
 4. PC+PC+2
 5. IAR+BUS; BR+BUS
 6. PC+PC

FIRST USED ON OPTION(S)		QTY.	DESCRIPTION	PART NO.	TRD NO.
11/70					
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES					
TOLERANCES					
DECIMALS	ANGLES				
.001 - .005	± .005				
.005 - .010	± .010				
.010 - .015	± .015				
REMOVE BURRS AND BREAK SHARP CORNER SURFACE QUALITY					
MATERIAL					
NEXT HIGHER Assy					
FRSH		B-DD-KB11-B	DFD KB11-C-1		
		SCALE			
		SHEET	2 OF 15		

REV
 CHANGE NO
 DATE

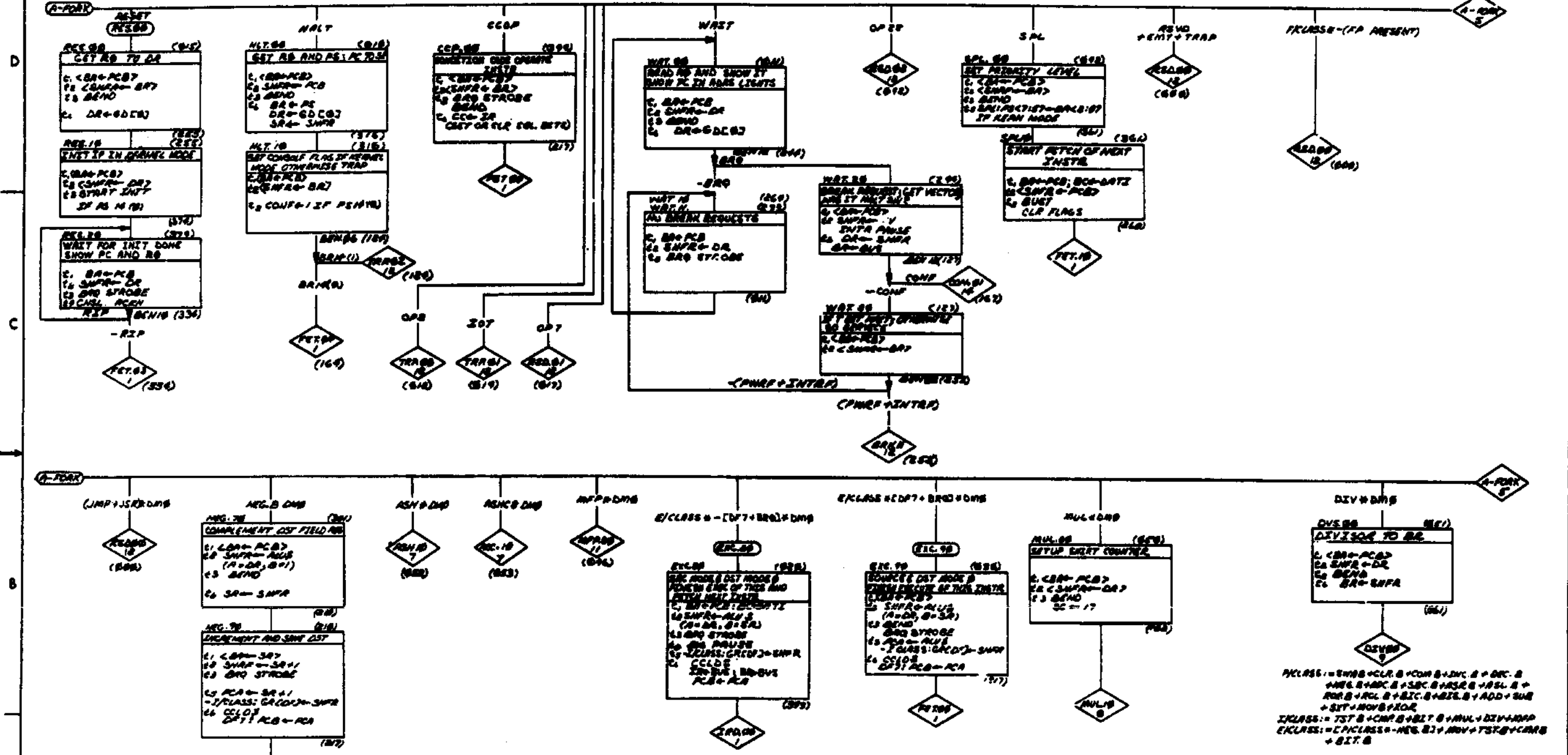
INSTRUCTION FETCH
EQUIPMENT CORPORATION
KB11-C
FLOW DIAGRAMS
(FLOWS 1)



CONTROL; FLOATING; INDEXED SOURCE

QTY	DESCRIPTION	PART NO.	REV.
1170			
PARTS LIST			
UNLESS OTHERWISE SPECIFIED	DATE	EQUIPMENT CORPORATION	
TOLERANCES	DATE	TITLE	
DECIMALS	DATE	KBII-C	
ANGLES	DATE	FLOW DIAGRAMS	
3/16 - 1/8	DATE	(FLOWS 2)	
1/8 - 3/16	DATE		
3/16 - 1/2	DATE		
1/2 - 1	DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY	DATE		
MATERIAL	NEXT HIGHER ASSY	SIZE/COOD	NUMBER
	B-00-KBII-E	DFD	KBII-C-1
FINISH	SCALE	SHEET	REV.
		3 OF 15	

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 1974

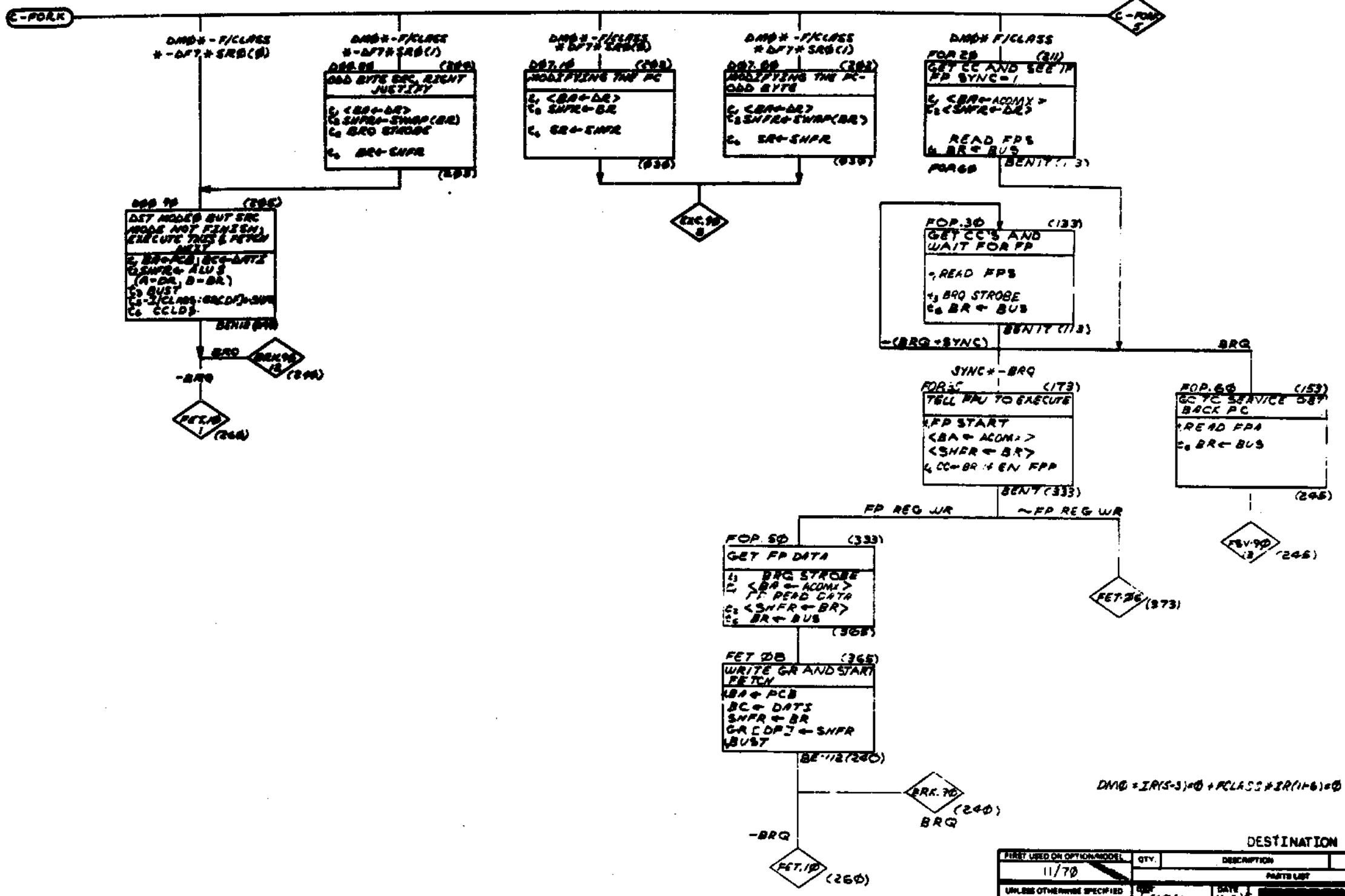


EXECUTE NO MEM REF

QTY	DESCRIPTION	PART NO.	REV
11/70			
EQUIPMENT CORPORATION			
KBII-C FLOW DIAGRAMS (FLOWS 3)			
B-00-KBII-B			
DFD KBII-C-1			

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DIGITAL EQUIP. CORP.

1-0-118XCE2



$DNIO = I(15-3) \oplus P(14) \oplus SR(14) \oplus 0$

DESTINATION MODE 0

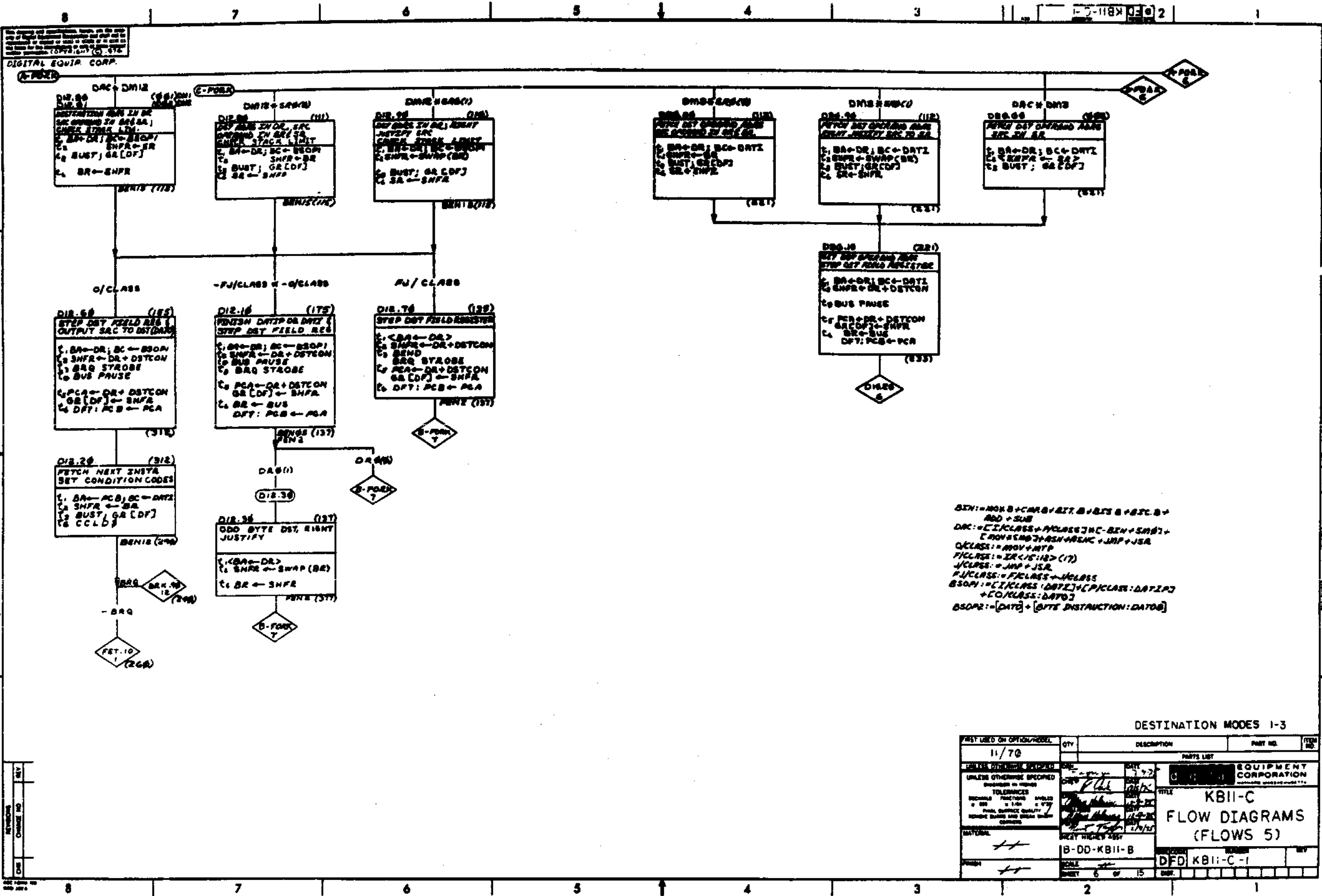
FIRST USED OR OPTION/MODEL	QTY	DESCRIPTION	PART NO.	REV.
11/70		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DECIMALS	ANGLES			
X.XX - .001	±.01°			
REMOVE BURRS AND BREAK SHARP EDGES. SURFACE QUALITY				
MATERIAL	NEXT HIGHER Assy.			
FINISH				

EQUIPMENT CORPORATION
TITLE
KBII-C FLOW DIAGRAMS (FLOWS 4)

REVISION
B-00-KBII-B
SCALE
D/FD KBII-C-1

D/FD KBII-C-1

REVISIONS
NO. 1
DATE 11/70
BY 118X

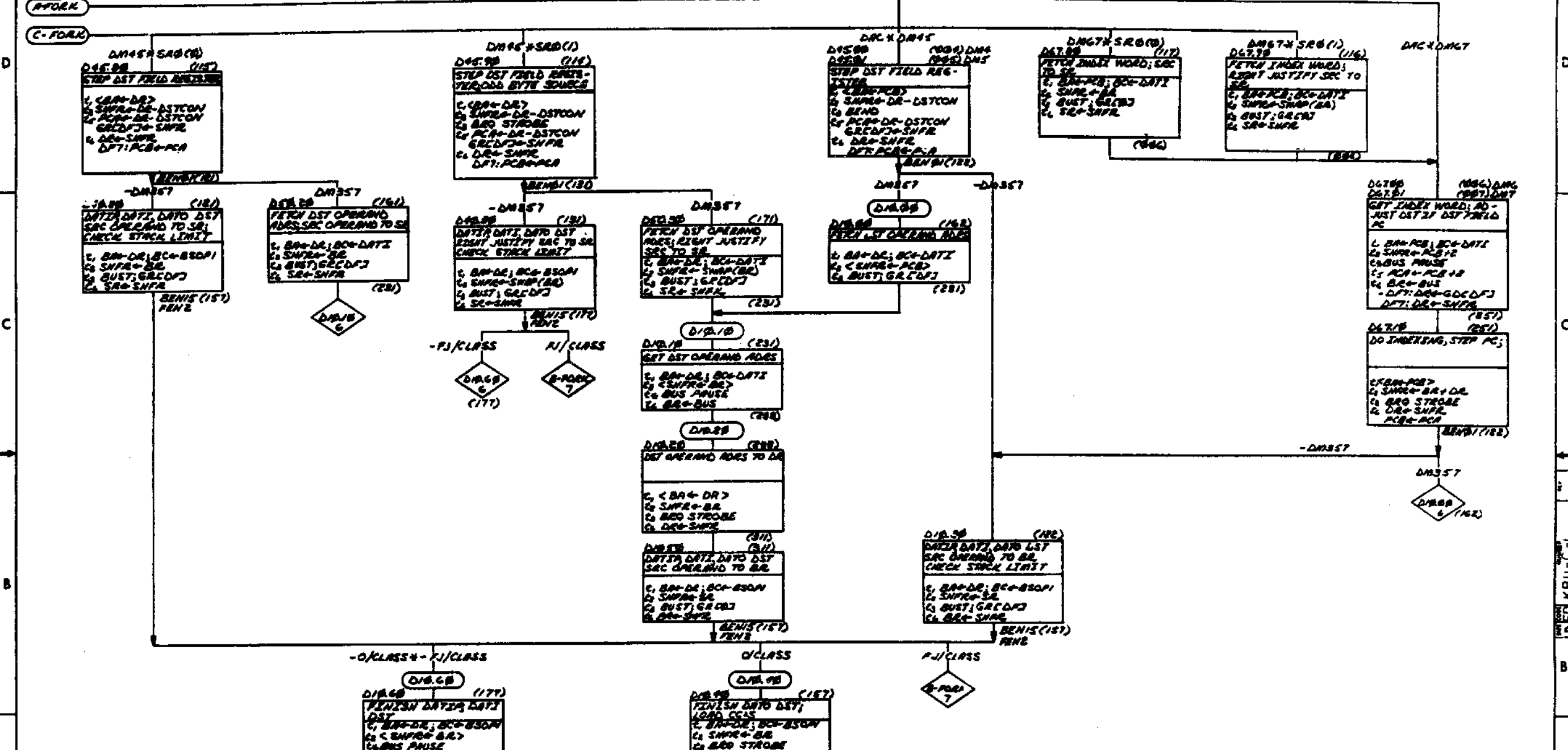


$BSO1 = [DATA] + [BYTE INSTRUCTION: DATO]$
 $BSO2 = [DATA] + [BYTE INSTRUCTION: DATO]$
 $BSO3 = [DATA] + [BYTE INSTRUCTION: DATO]$
 $BSO4 = [DATA] + [BYTE INSTRUCTION: DATO]$
 $BSO5 = [DATA] + [BYTE INSTRUCTION: DATO]$
 $BSO6 = [DATA] + [BYTE INSTRUCTION: DATO]$
 $BSO7 = [DATA] + [BYTE INSTRUCTION: DATO]$
 $BSO8 = [DATA] + [BYTE INSTRUCTION: DATO]$
 $BSO9 = [DATA] + [BYTE INSTRUCTION: DATO]$
 $BSO10 = [DATA] + [BYTE INSTRUCTION: DATO]$

DESTINATION MODES 1-3

FIRST USED ON OPTI/OPTIONAL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
EQUIPMENT CORPORATION				
TITLE				
KBII-C				
FLOW DIAGRAMS				
(FLOWS 5)				
DRAWN BY				
B-DD-KBII-B				
CHECKED BY				
DFD KBII-C-1				
SCALE				
SHEET 6 OF 15				

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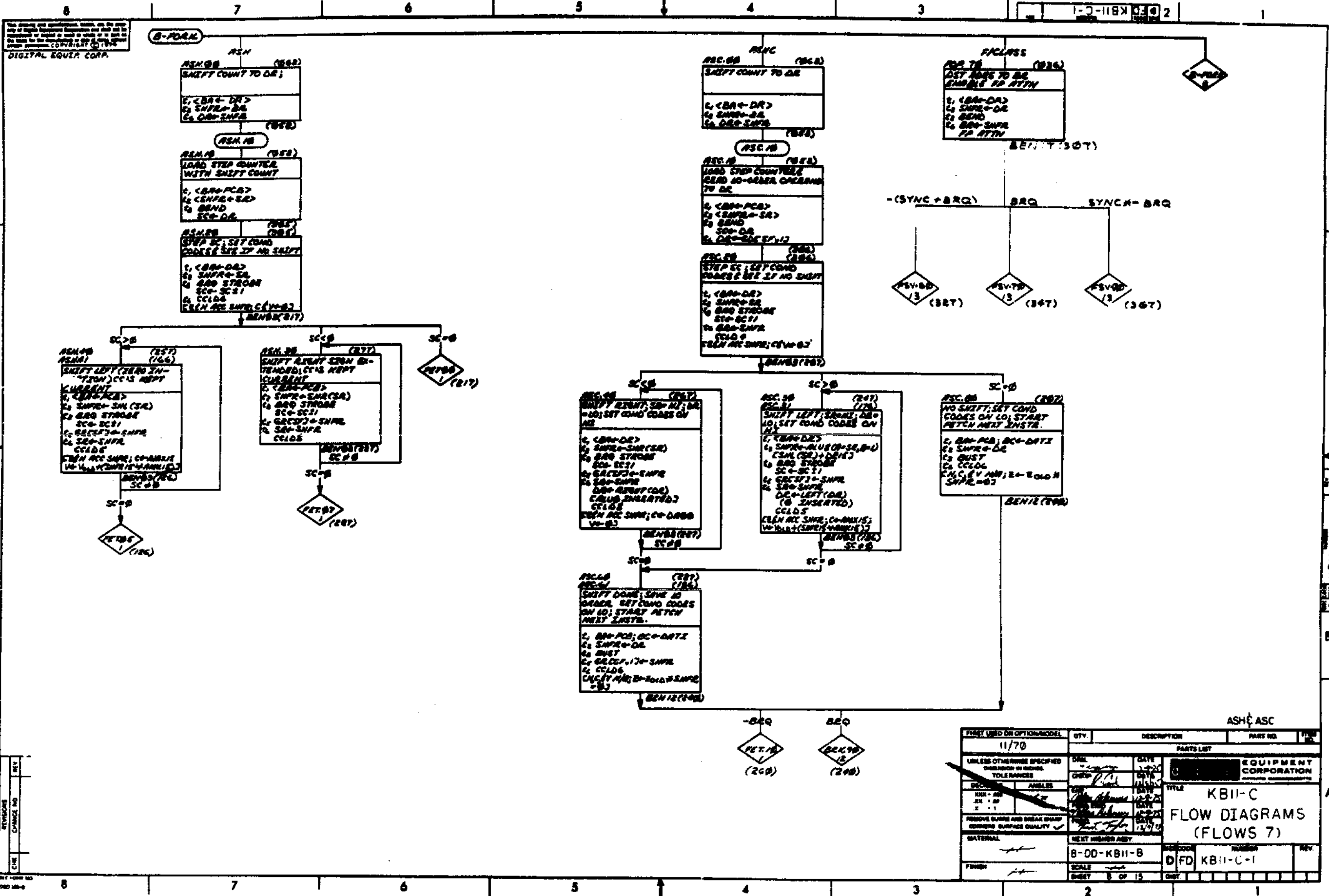


DESTINATION MODES 4-7

FIRST USED OR OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	REV.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED				
FINISH	DATE	EQUIPMENT CORPORATION		
TOLERANCES	DATE	TITLE		
DECIMALS	12/11/70	KBIIC		
ANGLES	DATE	FLOW DIAGRAMS		
FINISH	DATE	(FLOWS 6)		
MIN - .005	DATE	MATERIAL		
MAX + .005	DATE	NEXT HIGHER Assy		
REMOVE BURRS AND GREAT BURR	DATE	B-DD-KBIIC-B		
EDGING SURFACE QUALITY	DATE	SCALE		
	DATE	D/FD		
	DATE	SHEET 7 OF 15		
	DATE	DST		

REVISIONS
 CHANGE NO.
 DATE

KBIIC-1

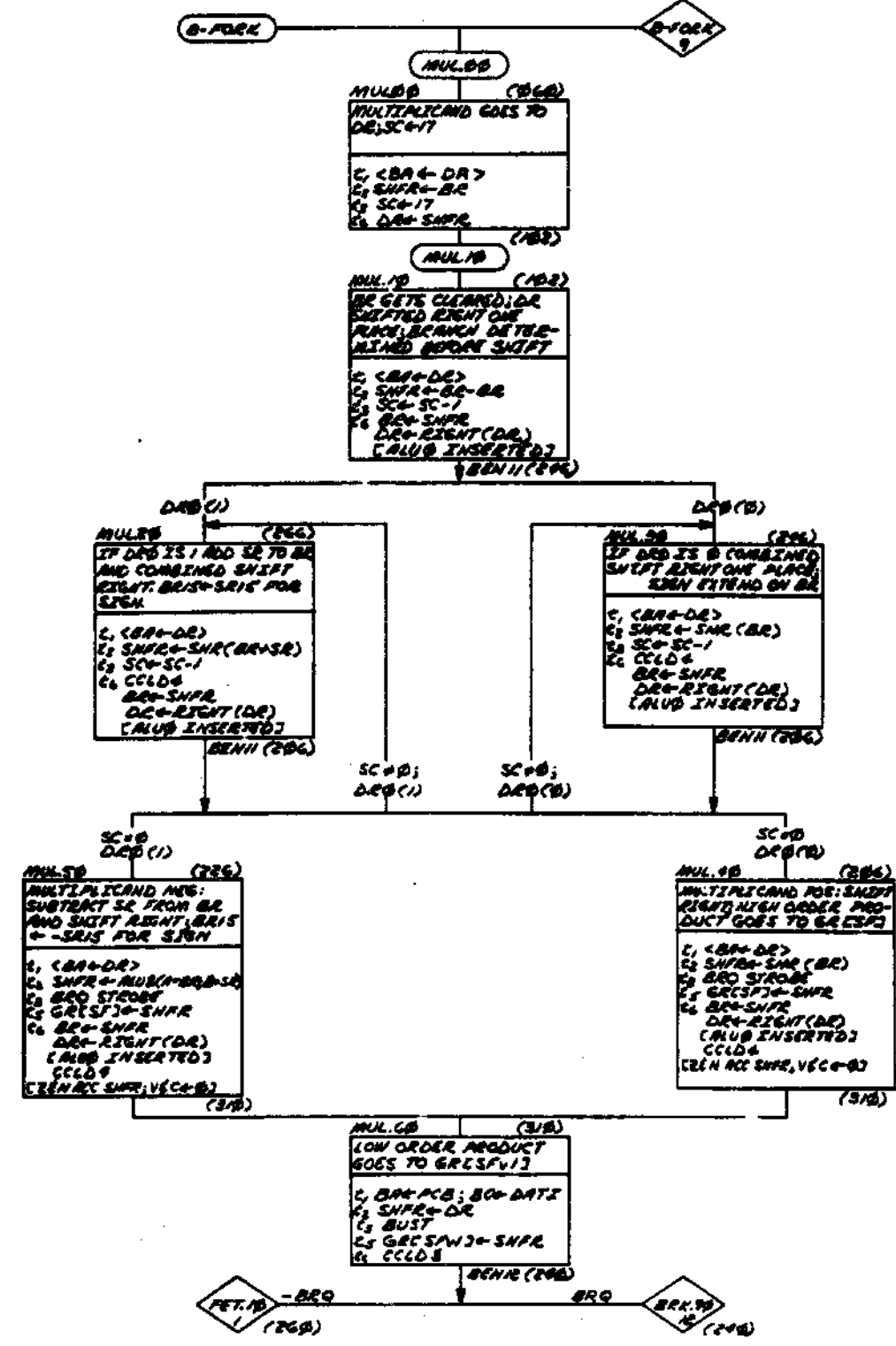


FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	FILE NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DESCRIPTION	AMOUNT	DATE	EQUIPMENT CORPORATION	
DATE	DATE	DATE	TITLE	
11/70	11/70	11/70	KBII-C	
11/70	11/70	11/70	FLOW DIAGRAMS	
11/70	11/70	11/70	(FLOWS 7)	
MATERIAL				
NEXT NUMBER ADV.				
B-00-KBII-B		REV. NO.	REV.	
D FD KBII-C-1				
SCALE				
SHEET 8 OF 15				

REVISIONS
 REV. NO.
 DATE
 BY
 CHECKED
 DATE

KBII-C-1

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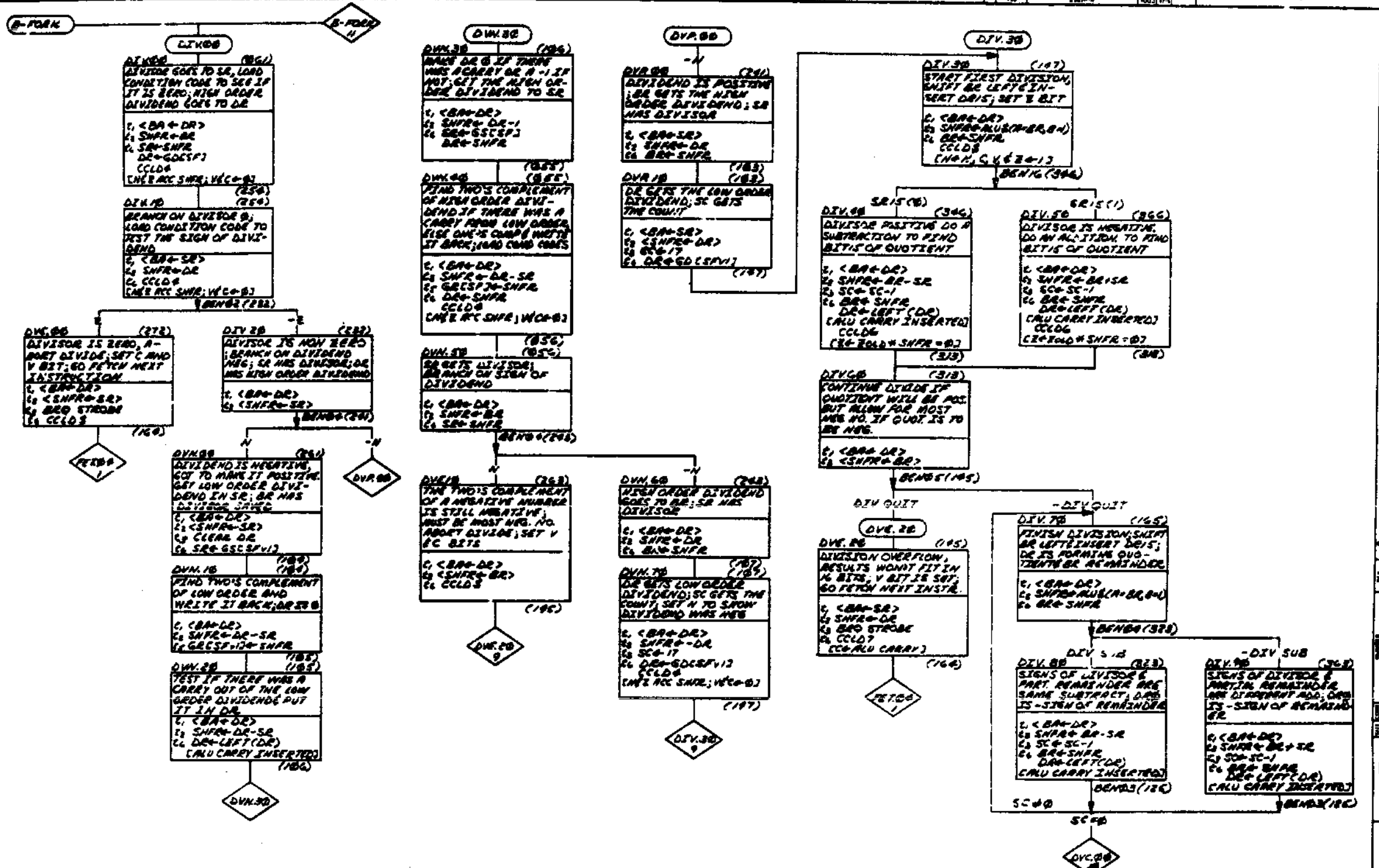
FIRST USED ON OPTION MODEL		QTY	DESCRIPTION	PART NO	ITEM NO
11/70					
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES					
DECIMALS	ANGLES	PARTS LIST			
0.001	10' 30"	EQUIPMENT CORPORATION			
REMOVE DIMS AND BREAK DIMS TO SHOW SURFACE QUALITY		TITLE			
		KBII-C			
		FLOW DIAGRAMS (FLOWS 8)			
MATERIAL		NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
		B-DD-KBII-B	D	FD KBII-C-1	
FINISH		SCALE	SHEET	9 OF 15	DIST

REVISIONS
REV. NO. CHANGE NO. REV.

REV. NO. CHANGE NO. REV.
D F D KBII-C-1

This drawing and specifications shall be the basis for the purchase of the equipment described and shall not be used for the construction of any other equipment without the approval of the manufacturer.

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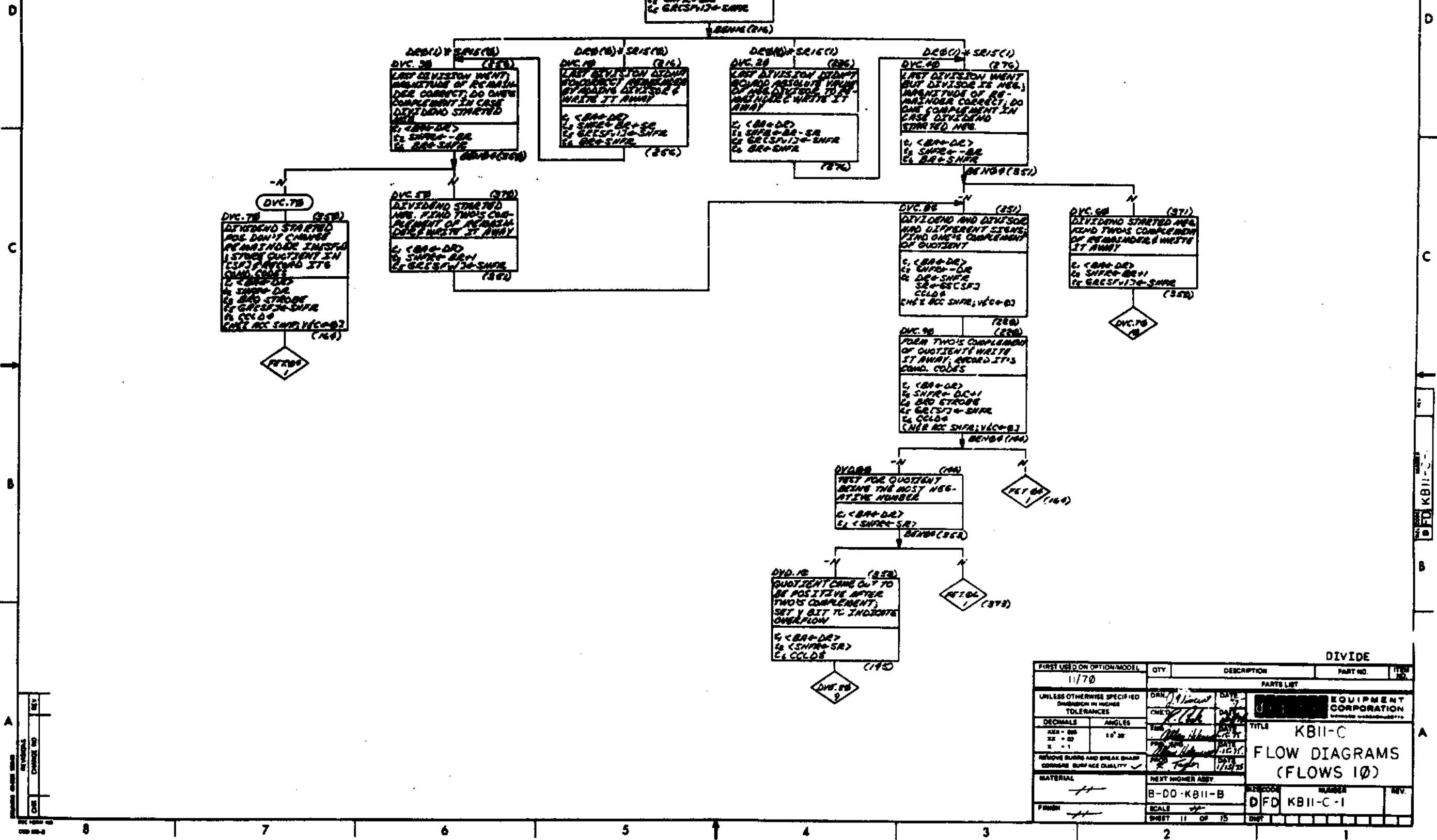


FIRST USED ON OPTION MODEL	QTY	DESCRIPTION	PART NO	REV
11/70				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
XXX - 000	10"	EQUIPMENT CORPORATION		
XX - 00		TITLE		
X - 0		KBI-C FLOW DIAGRAMS (FLOWS 9)		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		MATERIAL		
		NEXT HIGHER ASSY		
		B-00-KBI-B		
		SCALE		
		SHEET 10 OF 15		
		D/FD KBI-C-1		

This drawing and specifications shall be the basis for the manufacture of the equipment described hereon and shall be the basis for the construction of any of the equipment described hereon.

DIGITAL EQUIP. COMP.

118X 030 2

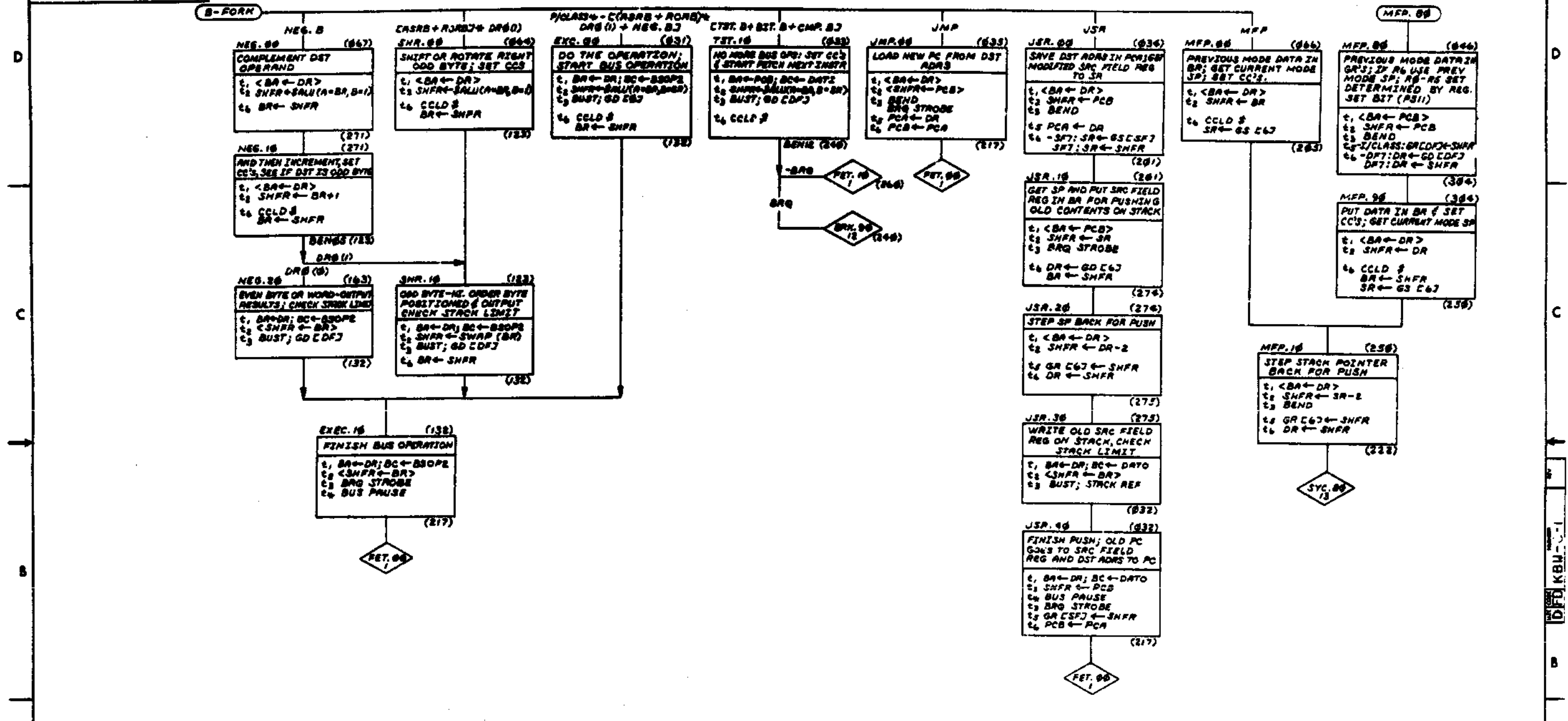


FIRST USED ON OPTION/MODEL		QTY	DESCRIPTION	PART NO.	ITEM NO.
11/70					
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES					
TOLERANCES					
DECIMALS	ANGLES	PARTS LIST			
XEN - .005	10' 30"	EQUIPMENT CORPORATION			
XZ - .02		TITLE KBII-C			
REMOVE BURRS AND BREAK SHARP EDGES TO SURFACE QUALITY					
MATERIAL					
NEXT NUMBER ASSY.					
FINISH					
SCALE					
SHEET 11 OF 15					

FLOW DIAGRAMS (FLOWS 10)

D/FD KBII-C-1

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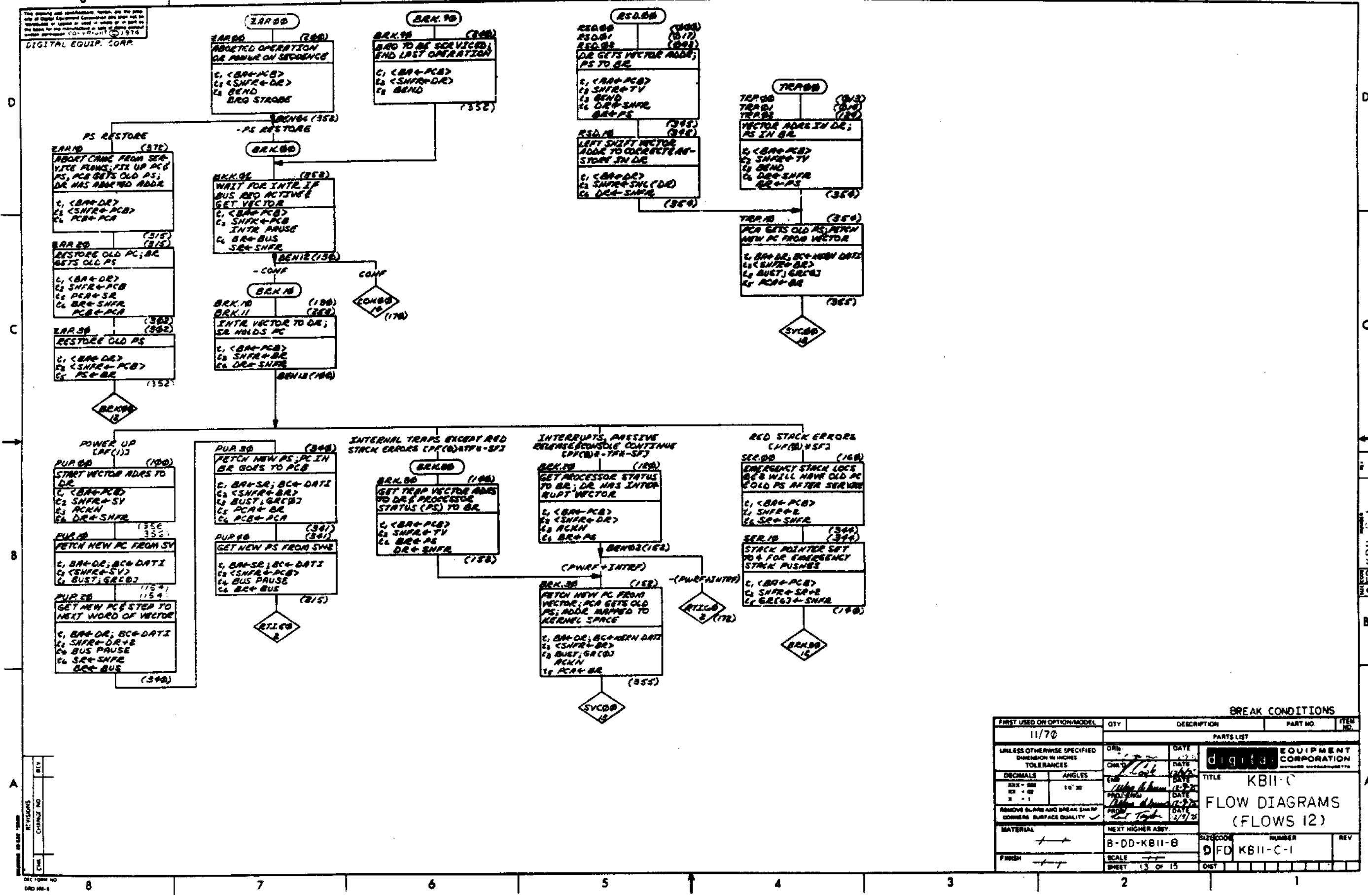


REV. 1
 CHG. CHANNEL 100

EXECUTE - MEM REF

FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
DIMENSIONAL TOLERANCE		DATE		
OVERSHAPE AND UNLESS OTHERWISE SPECIFIED		DATE		
UNLESS OTHERWISE SPECIFIED		DATE		
MATERIAL		DATE		
FINISH		DATE		
THIRD ANGLE PROJECTION		DATE		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE		
NEXT HIGHER ASSY.		DATE		
TITLE		KBII-C FLOW DIAGRAMS (FLOWS II)		
MATERIAL		SCALE	NUMBER	REV.
FINISH		SCALE NONE	D/FD KBII-C-1	
SHEET 12 OF 15		DIST		

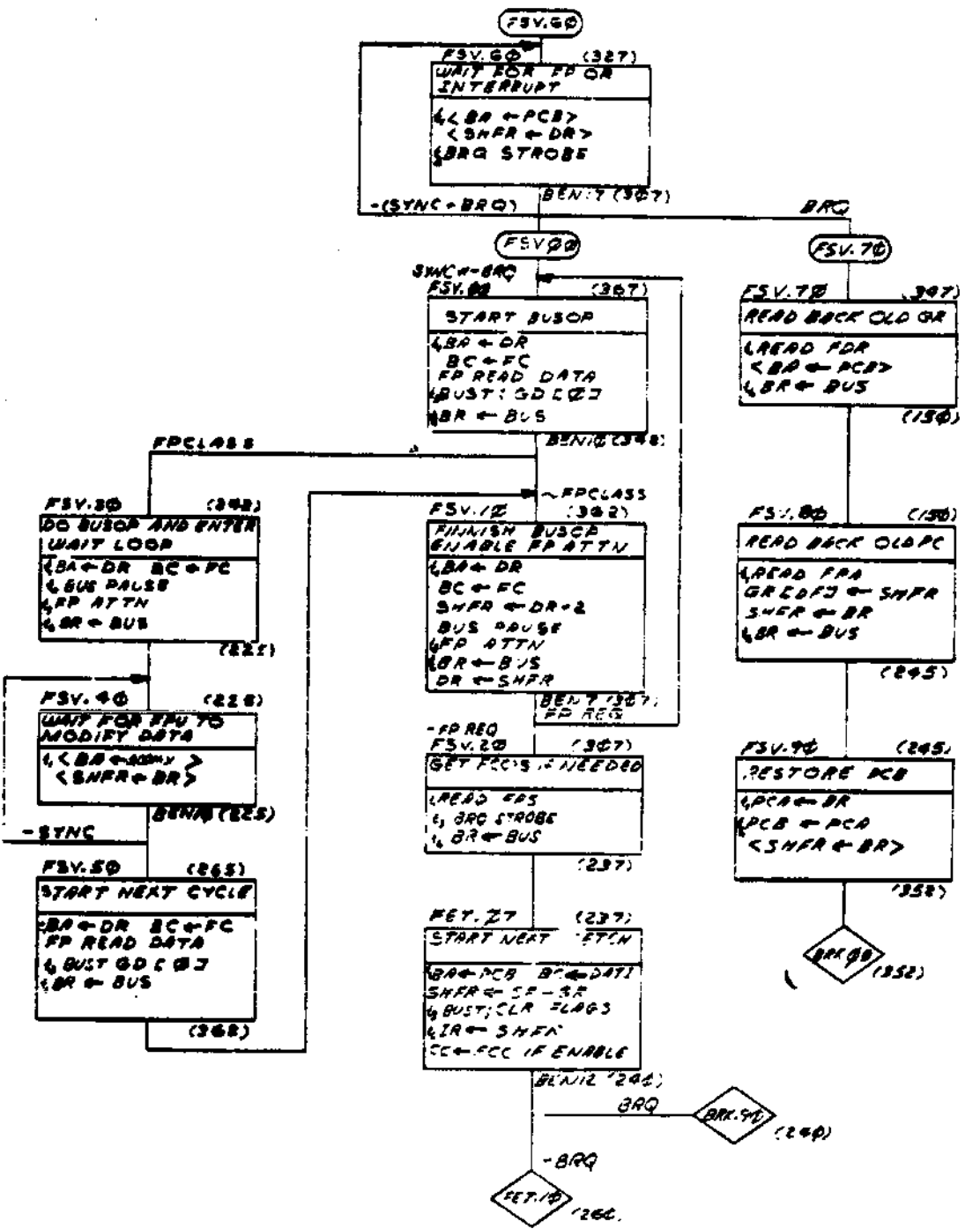
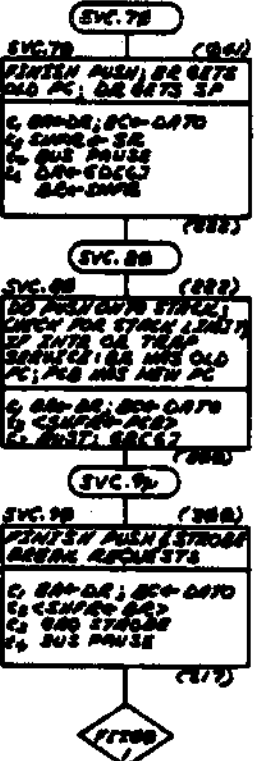
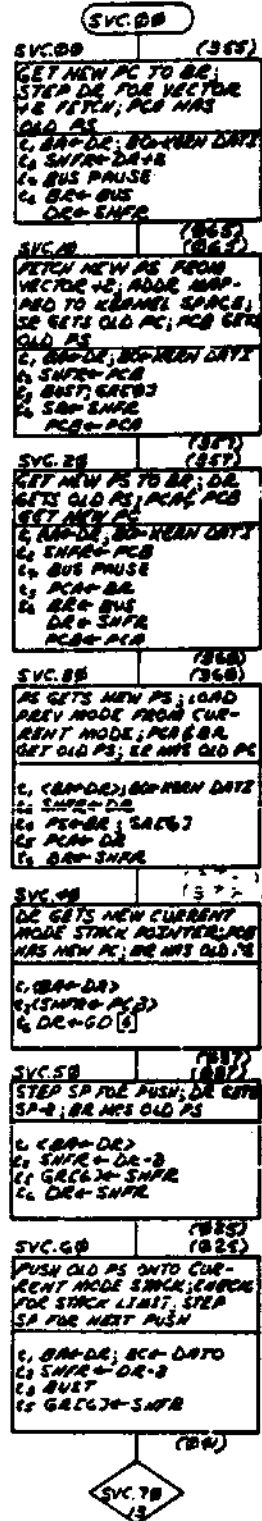
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BREAK CONDITIONS				
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	ITEM NO.
11/70				
UNLESS OTHERWISE SPECIFIED DIMENSION IN INCHES TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
SIZE - 000	10' 30"	DIGITAL EQUIPMENT CORPORATION		
3 - 1		TITLE KB11-C		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY				
MATERIAL	NEXT HIGHER ASSY.	FLOW DIAGRAMS (FLOWS 12)		
FINISH	B-DD-KB11-B	SIZE/COD	NUMBER	REV
		DFO	KB11-C-1	
SCALE		SHEET 13 OF 15		

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DIGITAL EQUIP. COMP.



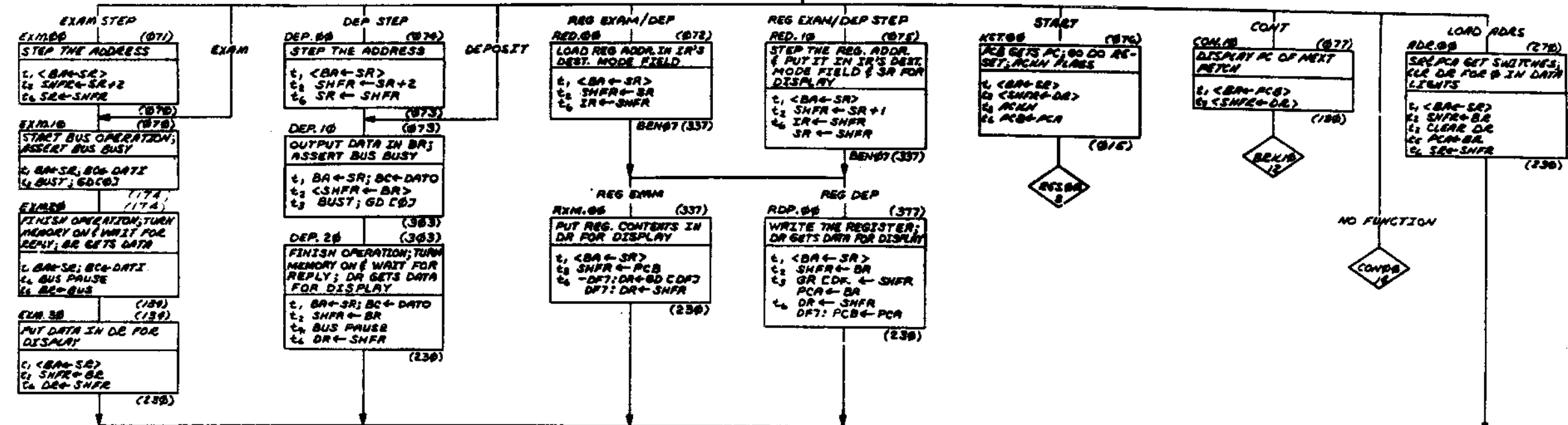
SERVICE SEQUENCE				
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO.	FIG.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES				
DECIMALS	ANGLES	DATE		
± .00	± 10'	EQUIPMENT CORPORATION		
REASONABLE BURRS AND BREAK SHARP CONSERVE SURFACE QUALITY				
MATERIAL	NEXT HIGH R ASET	TITLE		
FINISH	SCALE	KBII-C		
	SHEET 13 OF 15	FLOW DIAGRAMS		
		(FLOWS 13)		
		REVISION	NUMBER	REV.
		D 10	KBII-C-1	

REVISIONS
NO. CHANGE NO. REV.

D 10 KBII-C-1

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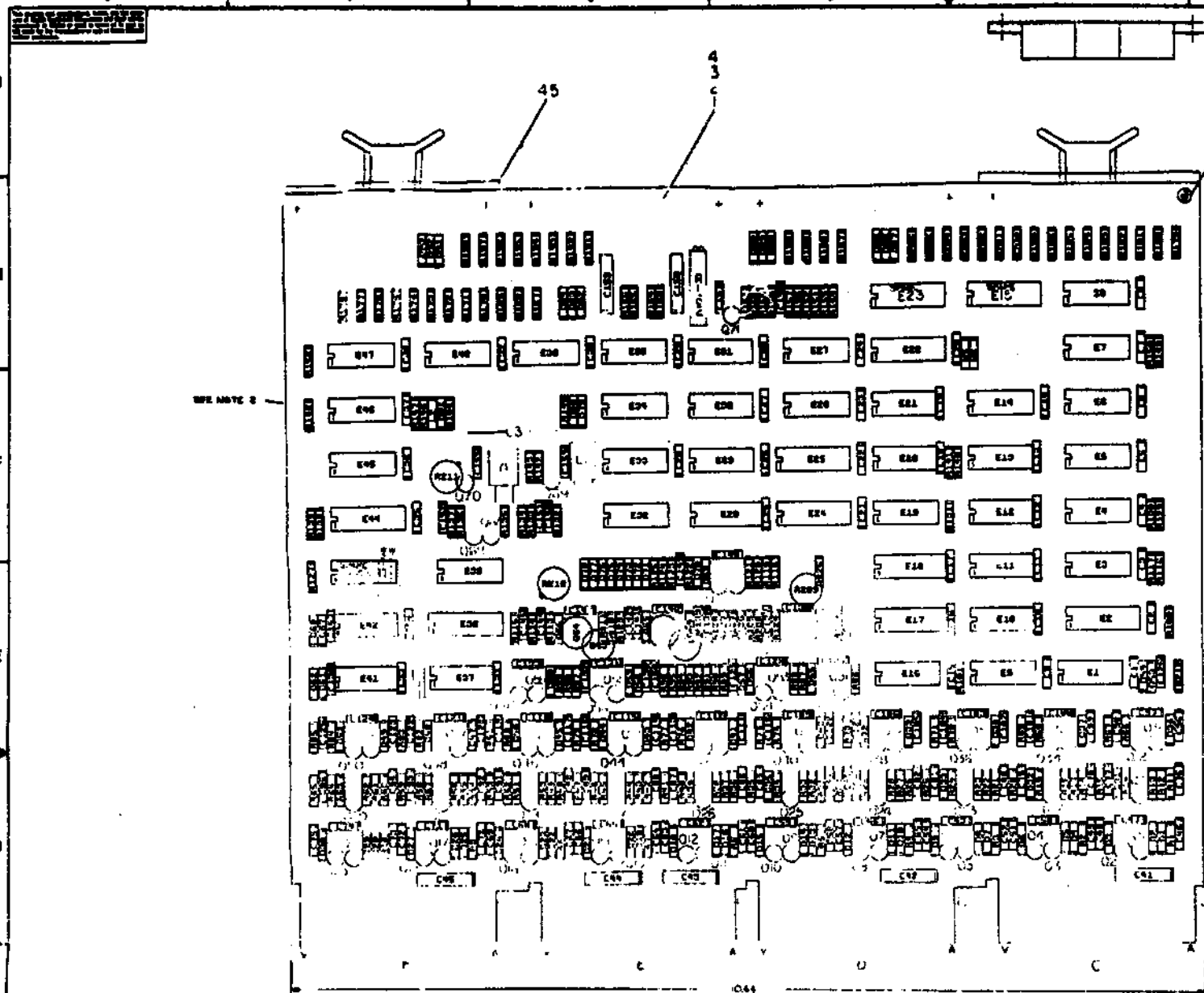
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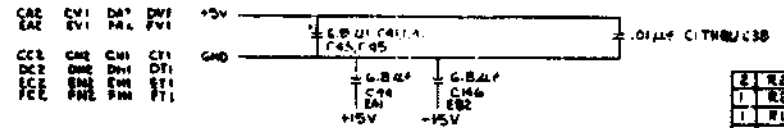
REV	CHG	NO

CONSOLE			
FIRST USED ON OPTION/MODEL	QTY	DESCRIPTION	PART NO
11/70			
UNLESS OTHERWISE SPECIFIED: DIMENSION IN INCHES; TOLERANCES: DECIMALS: ANGLES: 10° 30'			
MATERIAL: FINISH: NEXT HIGHER ASSY: SCALE: SHEET 15 OF 15			
PARTS LIST		TITLE: KBII-C FLOW DIAGRAMS (FLOWS 14)	
DATE: 11/15/70		DATE: 11/15/70	
DRAWN: [Signature]		DATE: 11/15/70	
CHECKED: [Signature]		DATE: 11/15/70	
APPROVED: [Signature]		DATE: 11/15/70	
SIZE CODE: B 00-KBII-B		NUMBER: DFD KBII-C-1	
REV:		REV:	

SECTION V
KB11-D TIMING LOGIC



NOTES:
 1. UNLESS OTHERWISE NOTED: RESISTANCE IS IN OHMS, CAPACITANCE IS IN MICROFARADS.
 CAPS WITHOUT VALUE NOTED ARE .01 MFD 50V.
 DIODES ARE TYPE 1N4148 & ALL OTHER TRANSISTORS ARE DEC 300A B PNP TRANSISTORS ARE DEC 300A B.



DEC 745112	16		
REV	DATE	BY	CHKD

1	RES	100	1/4W 5%	13-08150-05	50
2	RES	100	1/4W 5%	13-08150-05	50
3	RES	100	1/4W 5%	13-08150-05	50
4	RES	100	1/4W 5%	13-08150-05	50
5	RES	100	1/4W 5%	13-08150-05	50
6	RES	100	1/4W 5%	13-08150-05	50
7	RES	100	1/4W 5%	13-08150-05	50
8	RES	100	1/4W 5%	13-08150-05	50
9	RES	100	1/4W 5%	13-08150-05	50
10	RES	100	1/4W 5%	13-08150-05	50
11	RES	100	1/4W 5%	13-08150-05	50
12	RES	100	1/4W 5%	13-08150-05	50
13	RES	100	1/4W 5%	13-08150-05	50
14	RES	100	1/4W 5%	13-08150-05	50
15	RES	100	1/4W 5%	13-08150-05	50
16	RES	100	1/4W 5%	13-08150-05	50
17	RES	100	1/4W 5%	13-08150-05	50
18	RES	100	1/4W 5%	13-08150-05	50
19	RES	100	1/4W 5%	13-08150-05	50
20	RES	100	1/4W 5%	13-08150-05	50
21	RES	100	1/4W 5%	13-08150-05	50
22	RES	100	1/4W 5%	13-08150-05	50
23	RES	100	1/4W 5%	13-08150-05	50
24	RES	100	1/4W 5%	13-08150-05	50
25	RES	100	1/4W 5%	13-08150-05	50
26	RES	100	1/4W 5%	13-08150-05	50
27	RES	100	1/4W 5%	13-08150-05	50
28	RES	100	1/4W 5%	13-08150-05	50
29	RES	100	1/4W 5%	13-08150-05	50
30	RES	100	1/4W 5%	13-08150-05	50
31	RES	100	1/4W 5%	13-08150-05	50
32	RES	100	1/4W 5%	13-08150-05	50
33	RES	100	1/4W 5%	13-08150-05	50
34	RES	100	1/4W 5%	13-08150-05	50
35	RES	100	1/4W 5%	13-08150-05	50
36	RES	100	1/4W 5%	13-08150-05	50
37	RES	100	1/4W 5%	13-08150-05	50
38	RES	100	1/4W 5%	13-08150-05	50
39	RES	100	1/4W 5%	13-08150-05	50
40	RES	100	1/4W 5%	13-08150-05	50
41	RES	100	1/4W 5%	13-08150-05	50
42	RES	100	1/4W 5%	13-08150-05	50
43	RES	100	1/4W 5%	13-08150-05	50
44	RES	100	1/4W 5%	13-08150-05	50
45	RES	100	1/4W 5%	13-08150-05	50
46	RES	100	1/4W 5%	13-08150-05	50
47	RES	100	1/4W 5%	13-08150-05	50
48	RES	100	1/4W 5%	13-08150-05	50
49	RES	100	1/4W 5%	13-08150-05	50
50	RES	100	1/4W 5%	13-08150-05	50

35	TRANSISTOR DEC 300A B	1508321	40
36	TRANSISTOR DEC 300A B	1501100	39
1	IC DEC 745112	140846	38
2	IC DEC 745112	140846	37
3	IC DEC 745112	140846	36
4	IC DEC 745112	140846	35
5	IC DEC 745112	140846	34
6	IC DEC 745112	140846	33
7	IC DEC 745112	140846	32
8	IC DEC 745112	140846	31
9	IC DEC 745112	140846	30
10	IC DEC 745112	140846	29
11	IC DEC 745112	140846	28
12	IC DEC 745112	140846	27
13	IC DEC 745112	140846	26
14	IC DEC 745112	140846	25
15	IC DEC 745112	140846	24
16	IC DEC 745112	140846	23
17	IC DEC 745112	140846	22
18	IC DEC 745112	140846	21
19	IC DEC 745112	140846	20
20	IC DEC 745112	140846	19
21	IC DEC 745112	140846	18
22	IC DEC 745112	140846	17
23	IC DEC 745112	140846	16
24	IC DEC 745112	140846	15
25	IC DEC 745112	140846	14
26	IC DEC 745112	140846	13
27	IC DEC 745112	140846	12
28	IC DEC 745112	140846	11
29	IC DEC 745112	140846	10
30	IC DEC 745112	140846	9
31	IC DEC 745112	140846	8
32	IC DEC 745112	140846	7
33	IC DEC 745112	140846	6
34	IC DEC 745112	140846	5
35	IC DEC 745112	140846	4
36	IC DEC 745112	140846	3
37	IC DEC 745112	140846	2
38	IC DEC 745112	140846	1

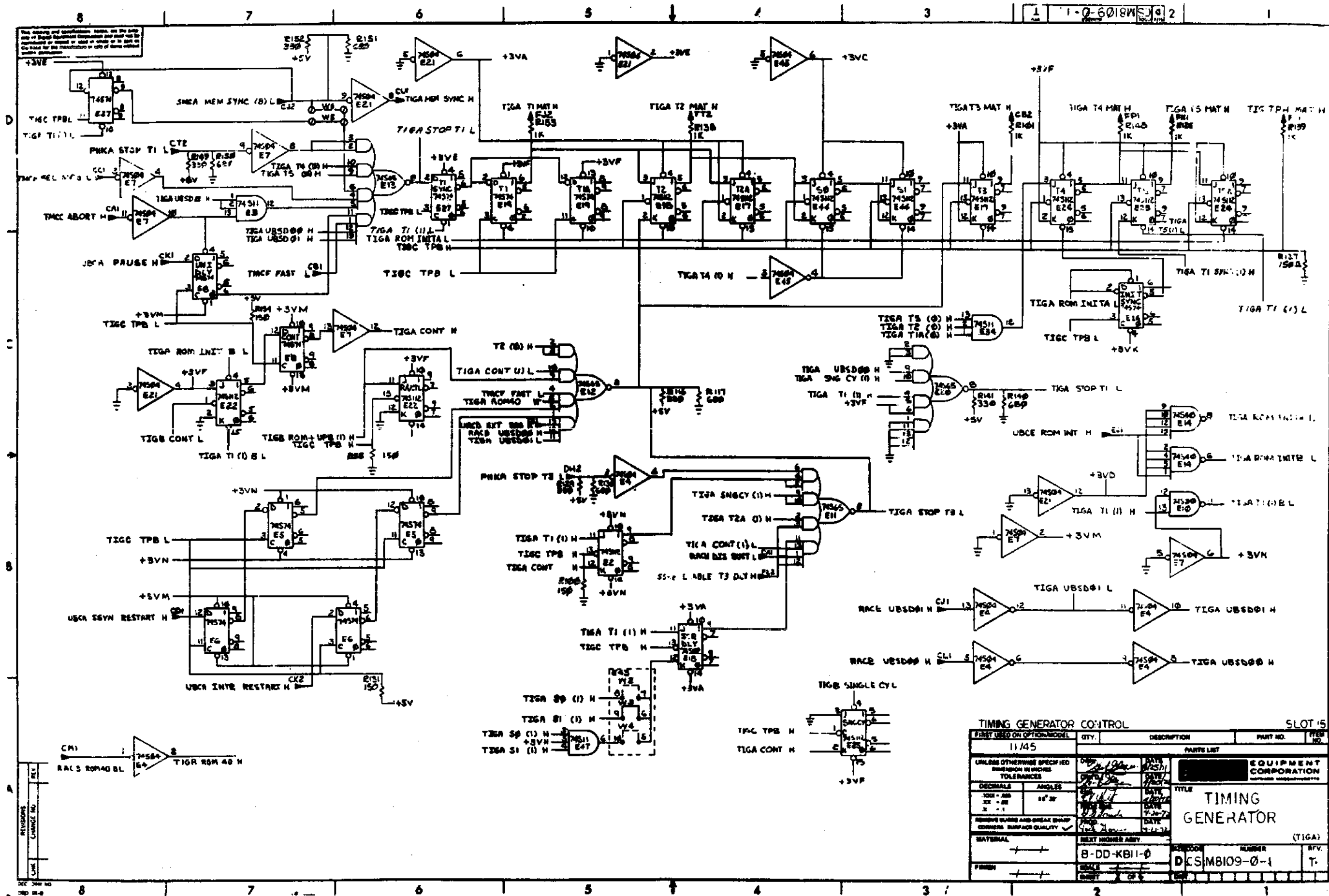
ETCH BOARD BY: [Signature]

REVISIONS:

REV	DATE	BY	DESCRIPTION
1	11/10/66	...	...
2	11/10/66	...	...
3	11/10/66	...	...
4	11/10/66	...	...
5	11/10/66	...	...
6	11/10/66	...	...
7	11/10/66	...	...
8	11/10/66	...	...
9	11/10/66	...	...
10	11/10/66	...	...

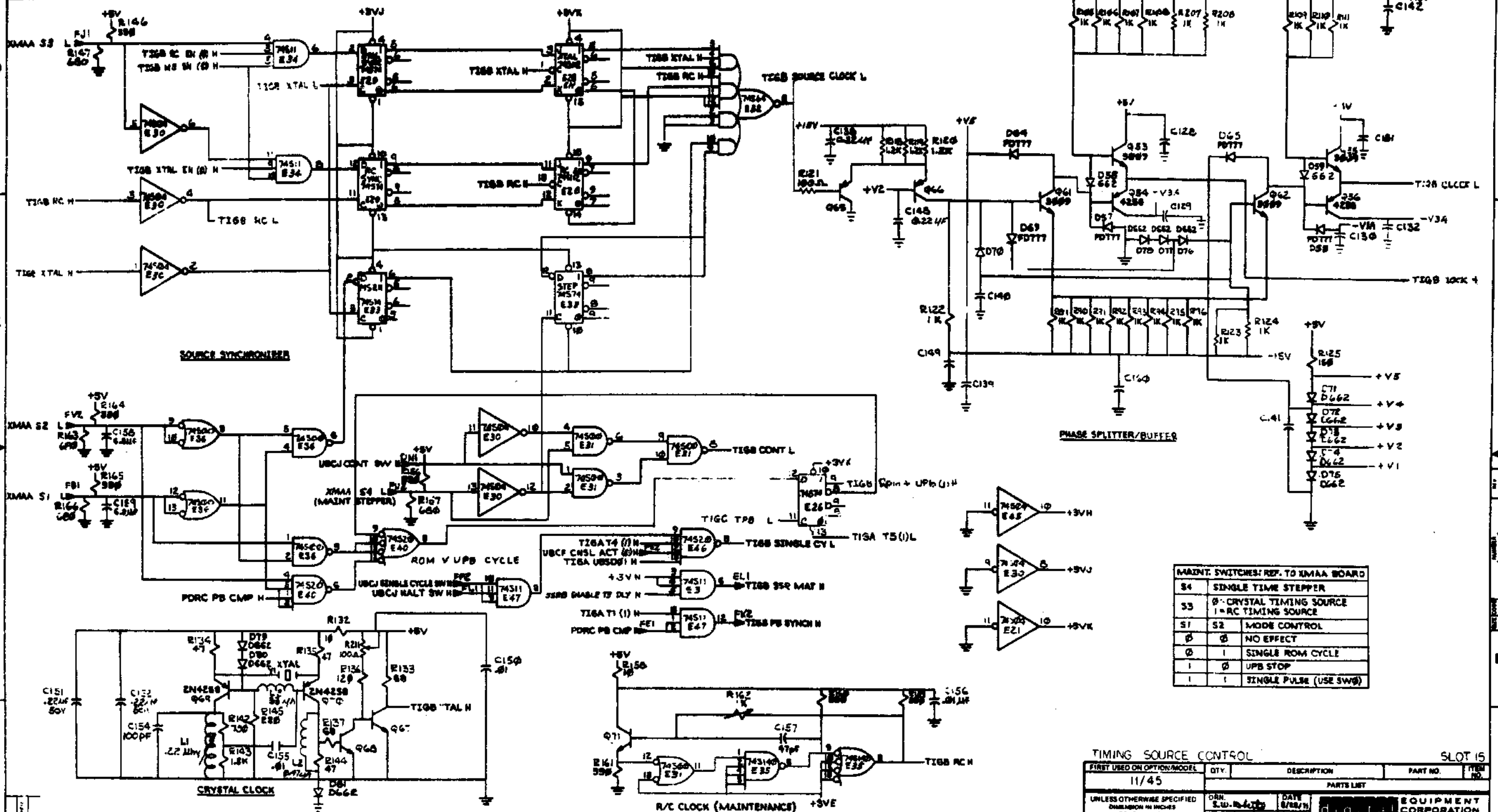
SEMICONDUCTOR CORPORATION

TIMING GENERATOR



TIMING GENERATOR CONTROL				SLOT 15	
FIRST USED OR OPTION MODEL	QTY.	DESCRIPTION	PART NO.	REV. NO.	
11/45					
PARTS LIST					
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES			EQUIPMENT CORPORATION		
TOLERANCES					
DECIMALS	ANGLES		TITLE		
±0.005	±0.005		TIMING GENERATOR		
±0.01	±0.01				
REMOVE BURRS AND BREAK SHARP EDGES. SURFACE QUALITY					
MATERIAL					
FINISH					
NEXT HIGHER REV.			REV. NO.	REV.	
			B-DD-KB11-0		T
			DCS MB109-0-1		

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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
0	1	SINGLE ROM CYCLE
1	0	UPB STOP
1	1	SINGLE PULSE (USE SWB)

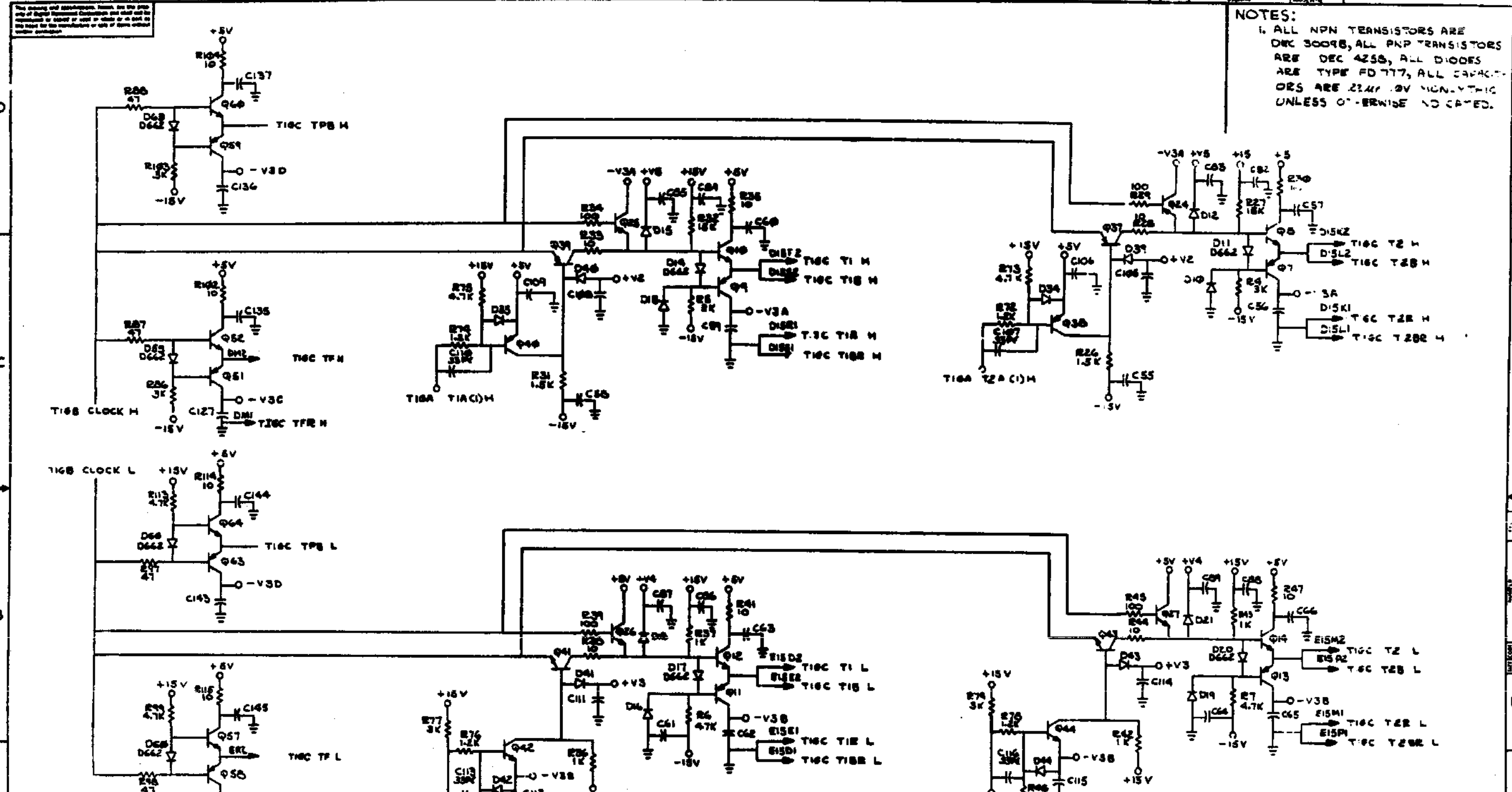
TIMING SOURCE CONTROL SLOT 15

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DECIMALS	ANGLES	PARTS LIST		
.010 - .012	±0.005	DATE	EQUIPMENT CORPORATION	
.015 - .020	±0.010	DATE	TIMING GENERATOR (T1GB)	
.025 - .030	±0.015	DATE	DCS M8109-0-1	
.035 - .040	±0.020	DATE	B-DD-KB11-0	
.045 - .050	±0.025	DATE	B-SET 3 OF 6	
MATERIAL NEXT HIGHER ASSY.				
FINISH SCALE				
DST.				

REVISED

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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 22MF .05V NON-POLAR UNLESS OTHERWISE NOTED.



SLOT 15

PRIMARY USED OR OPTIONAL MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/45		PARTS LIST		
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN PARENTHESES				
TOLERANCES				
DECIMALS	ANGLES			
.100 - .250	±.010			
.250 - .500	±.015			
.500 - 1.000	±.020			
1.000 - 2.000	±.030			
2.000 - 5.000	±.050			
5.000 - 10.000	±.075			
10.000 - 25.000	±.100			
25.000 - 50.000	±.150			
50.000 - 100.000	±.200			
100.000 - 250.000	±.300			
250.000 - 500.000	±.400			
500.000 - 1000.000	±.500			
MATERIAL	NEXT HIGHER ASSY.			
FINISH	SCALE			
	SHEET 4 OF 6			

EQUIPMENT CORPORATION

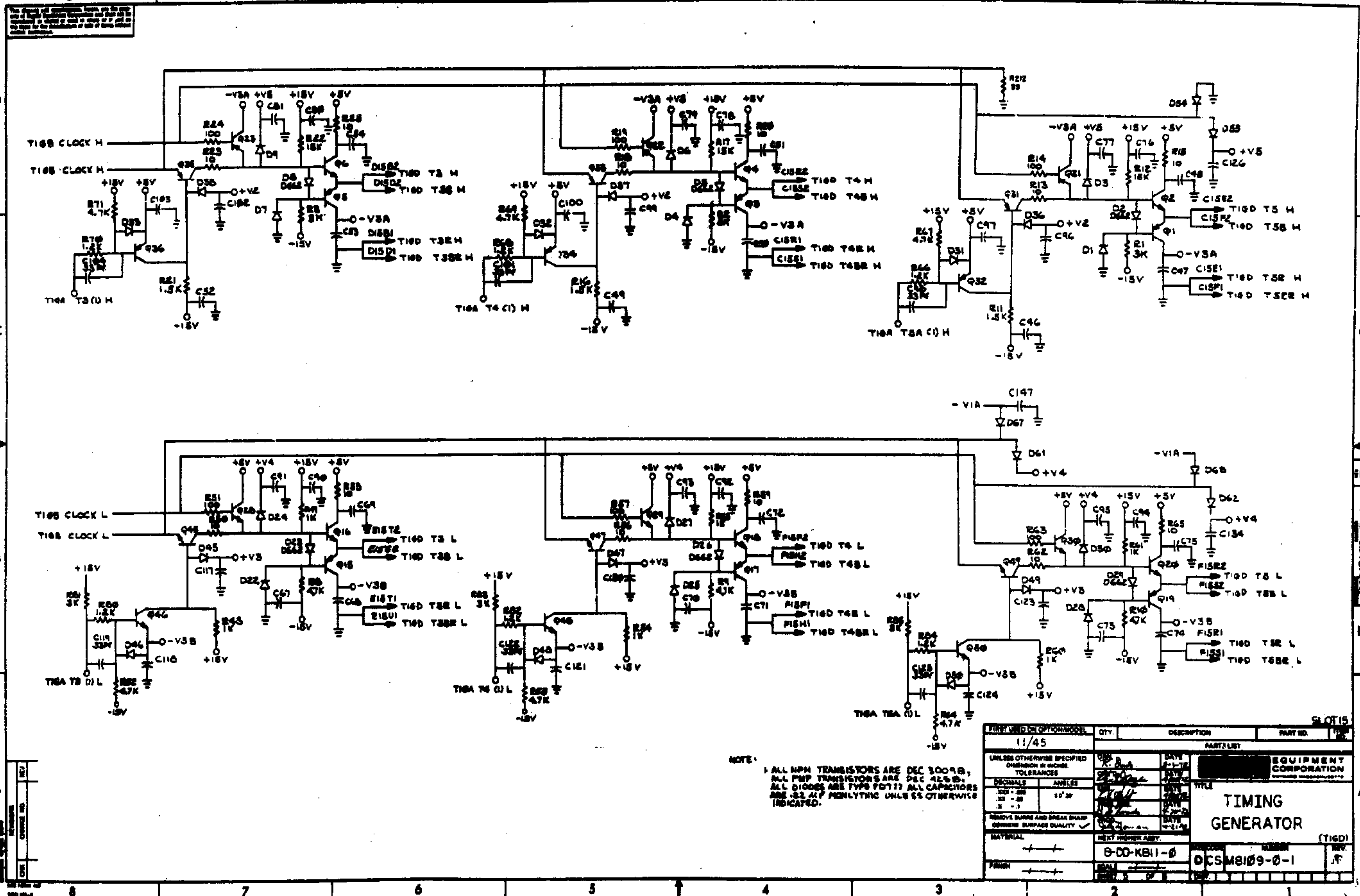
TIMING GENERATOR (T10C)

DCSMB109-0-1

REVISIONS
REV. NO. DATE BY
1 11/45 JWB

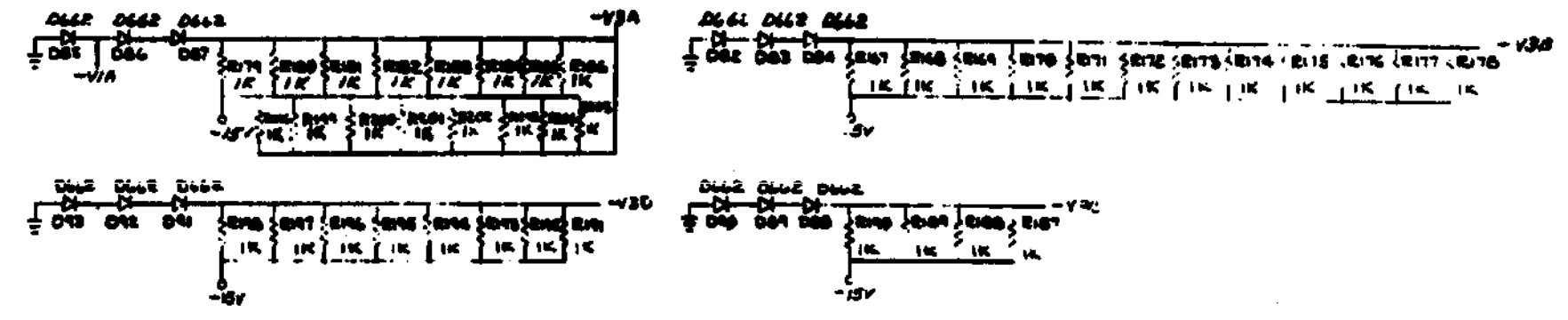
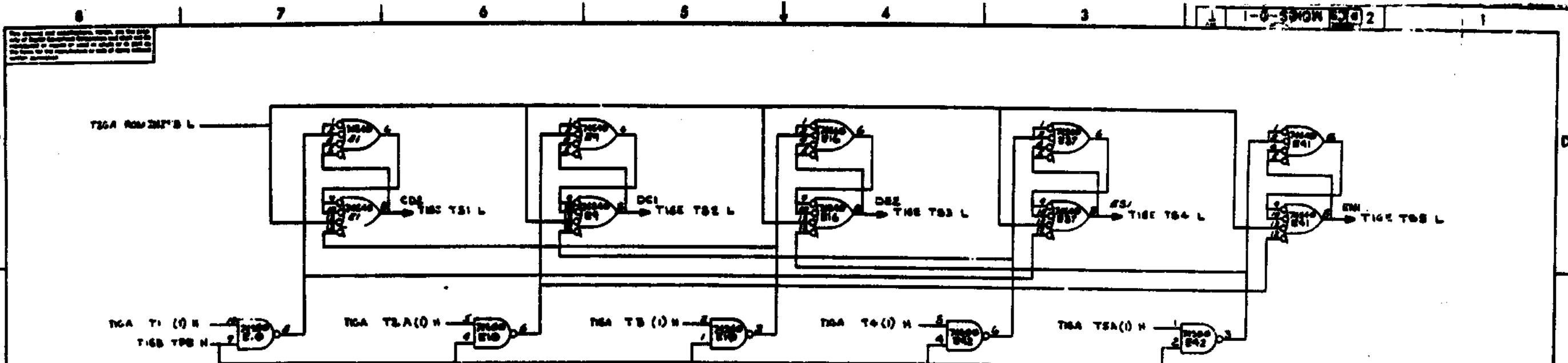
CSMB109-0-1

A



NOTE:
 ALL NPN TRANSISTORS ARE DEC 3009B;
 ALL PNP TRANSISTORS ARE DEC 425B;
 ALL DIODES ARE TYPE 1N717; ALL CAPACITORS
 ARE .02 μF POLYETHYLENE UNLESS OTHERWISE
 INDICATED.

PARTS LIST		QTY.	DESCRIPTION	PART NO.
11/45				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES				
DECIMALS	ANGLES			
.001 - .009	± .001			
.010 - .049	± .002			
.050 - .999	± .005			
1.000 - 99.999	± .010			
REMOVE BURRS AND BREAK SHARP EDGES TO IMPROVE SURFACE QUALITY				
MATERIAL				
NEXT HIGHER ASSY.				
B-DD-KB11-0				
DCSMB109-0-1				
EQUIPMENT CORPORATION				
TIMING GENERATOR (T100)				
REV. J.F.				



TIMING STATE DRIVERS SLOT 15

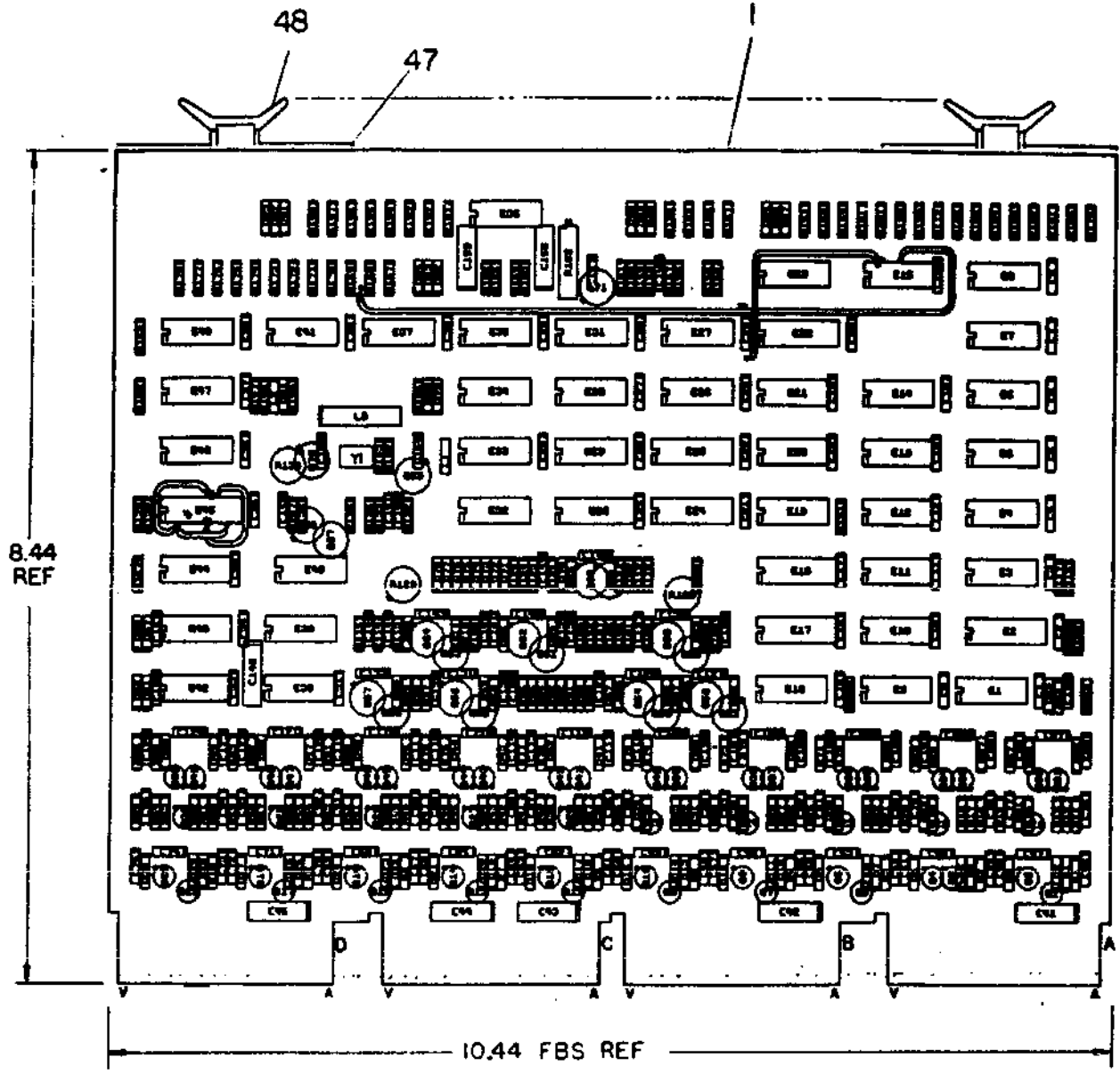
REV	QTY	DESCRIPTION	PART NO.	REV
11/45				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED TOLERANCES:				
RESISTORS				
CAPACITORS				
EQUIPMENT CORPORATION				
TIMING GENERATOR				
(TIME)				
MATERIAL: --				
PART NUMBER: 8-00-KB11-4				
FORM: --				
DCS M889-0-1				

SECTION VII
KB11-C TIMING LOGIC

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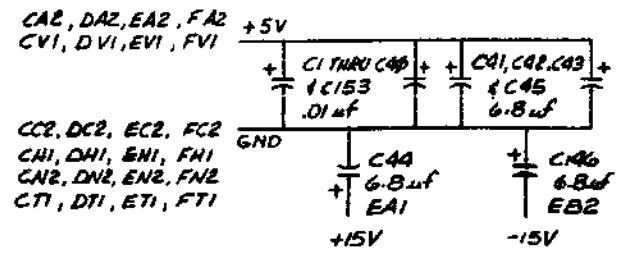
NOTES:

- 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 1170 BACKPLANE.



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

IC DEC 74S112	B	16
IC TYPE	GND	+5V
GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE.		
IC PIN LOCATIONS		



REF	DESCRIPTION	QTY	PART NO	ITEM NO
REF	X Y COORDINATE HOLE LOCATION		K-02-00124-0-4	1
REF	ASSY/DRILLING HOLE LAYOUT		D-34-00129-0-5	2
REF	MODULE EEO HISTORY		D-34-00129-0-0	3
1	ETCHED CIRCUIT BOARD		5011244	4
44	C1 THRU C45, C153, C154	CAP, 0.1uF, 100V	1001010-01	5
6	C41, C42, C43, C44, C45, C146, C158, C159	CAP, 0.0uF, 35V, 10%	1005300	6
98	C46 THRU C97, C99, C100, C102, C103, C105, C106, C108, C109, C111, C114, C115, C117, C118, C120, C121, C123, C124, C128, THRU C145, C147, C148, C149, C151, C152, C188, C112	CAP, 22uF, 50V, 80-20%	1810274-01	7
10	C80, C101, C104, C107, C110, C113, C116, C119, C122, C125	CAP, 33pF, 100V, 5%	1000000	8
1	C157	CAP, 47pF, 100V, 5%	1000011	9
1	C154	CAP, 100uF, 100V, 5%	1000010	10
52	Q1, Q3, Q4, Q6, Q7, Q9, Q10, Q13, Q15, Q19, Q18, Q21, Q22, Q24, Q25, Q27, Q28, Q30, THRU Q36, Q37, Q38, Q41, Q42, Q44, Q45, Q47, Q48, Q49, Q50, Q51, Q52, Q54	DIODE DEC 777	1103041	11
39	Q2, Q5, Q8, Q11, Q14, Q17, Q20, Q23, Q26, Q29, Q31, Q34, Q35, Q39, Q40, Q43, Q46, Q71, THRU Q93	DIODE D662	1100112	12
17	R5 THRU R10, R40, R46, R52, R54, R64, R67, R71, R73, R75, R91, R113, R69	RESISTOR, 4.7K, 1/4W, 5%	1300447	13
6	R11, R16, R21, R24, R31, R143	RESISTOR, 1.5K, 1/4W, 5%	1300391	14
9	R12, R17, R22, R27, R32	RESISTOR, 15K, 1/4W, 5%	1300400	15
28	R13, R15, R18, R20, R23, R25, R26, R28, R32, R35, R36, R41, R47, R56, R53, R56, R59, R62, R65, R68, R104, R114, R115, R122, R156, R44	RESISTOR, 10 OHM, 1/4W, 5%	1301317	16
11	R14, R19, R24, R28, R34, R36, R45, R51, R57, R63, R121	RESISTOR, 100 OHM, 1/4W, 5%	1300220	17
70	R22, R27, R42, R43, R48, R49, R54, R55, R60, R61, R69, THRU R90, R101, R105, THRU R112, R123, R124, R126, R138, R139, R140, R141, R148, THRU R153, R187, THRU R200, R122, R201	RESISTOR, 1K, 1/4W, 5%	1300365	18
13	R66, R69, R70, R72, R76, R74, R78, R80, R82, R84, R118, R119, R128	RESISTOR, 1.2K, 1/4W, 5%	1301320	19
12	R17, R19, R61, R63, R65, R66, R103, R1 THRU R5	RESISTOR, 3K, 1/4W, 5%	1300432	20
7	R67, R68, R97, R98, R134, R135, R144	RESISTOR, 47 OHM, 1/4W, 5%	1300282	21
8	R100, R125, R127, R131, R154, R155	RESISTOR, 150 OHM, 1/4W, 5%	1300256	22
0	R110, R140, R150, R159, R160, R161, R164, R165	RESISTOR, 330 OHM, 1/4W, 5%	1300299	23
5	R117, R147, R157, R163, R166	RESISTOR, 800 OHM, 1/4W, 5%	1301424	24
2	R120, R129	RESISTOR, 2K, 1/2W, 10%, POT	1300150-07	25
1	R130	RESISTOR, 100 OHM, 1/2W, 10%, POT	1300150-05	26
2	R133, R137	RESISTOR, 80 OHM, 1/4W, 5%	1300219	27
1	R142	RESISTOR, 150 OHM, 1/4W, 5%	1301401	28
1	R145	RESISTOR, 220 OHM, 1/4W, 5%	1300271	29
1	R162	RESISTOR, 1K, 3/4W, POT	1300143-07	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	1305321	31

FIRST USED ON OPTION MODEL 1170

ETCH BOARD REV B

DATE: 12/7/70
 BY: [Signature]
 CHECKED: [Signature]
 APPROVED: [Signature]

digital EQUIPMENT CORPORATION

TITLE: TIMING GENERATOR

SIZE CODE: DCS M8139-0-1

REV: B

SCALE: 1/8"

GENCOMPONENT CONVERSION CHART

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NOTES:

36	Q2, Q4, Q6, Q8, Q10, Q12, Q14, Q16, Q18, Q20, Q22 THRU Q30, Q41 THRU Q50, Q52, Q53, Q55, Q57, Q60, Q61, Q62, Q64, Q67, Q69, Q71	TRANSISTOR DEC 30090	1503100	32
1	L1	INDUCTOR .22 MH	1811000	33
1	L2	INDUCTOR .47 MH	1810990	34
1	L3	INDUCTOR 33 MH	1801759	35
8	E1, E9, E14, E16, E30, E42	IC 74S40	1910541	36
8	E2, E17, E18, E22, E24, E25, E28, E45	IC DEC 74S112	1910545	37
5	E4, E7, E21, E40, E30	IC 74S04	1910536	38
7	E5, E9, E10, E20, E29, E33, E01	IC 74S74	1910544	39
5	E10, E15, E31, E37, E43	IC 74S00	1910532	40
2	E11, E12	IC 74S65	1910543	41
4	E20, E23, E32, E13	IC 74S64	1910542	42
2	E34, E40	IC 74S11	1910537	43
2	E35, E39	IC 74S140	1910546	44
2	E41, E47	IC 74S20	1910539	45
1	T1	CRYSTAL 33.333 KHZ	1810694-01	46
8		EYELET	9006732	47
4		HANDLE FLIP CHIP MAGENTA	9008337-06	48
A/R		TAPE, 2 SIDED	9007834	49
12		WIRE, #30 AWG BUSS (RETROFIT)	9105740-55	50
A/R		PERMA-BOND	9009157	51
1	R136	RESISTOR 120 OHM 1/4W 5%	1300247	52
1	R203	RESISTOR 33 OHM 1/4W 5%	1300137	53

D

C

B

A

DCS M8139-0-1

B

A

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
PARTS LIST				
FIRST USED ON OPTION MODEL 11/70				
ETCH BOARD REV B				
DRN	DATE	digital EQUIPMENT CORPORATION		
CHKD	DATE	TITLE		
APP	DATE	TIMING GENERATOR		
PROJ ENG	DATE	NEXT HIGHER ASSY		
DATE	DATE	B-00-KB11-0		
DEC NO	EIA NO	DEC NO	EIA NO	SCALE 1:1
SEMICONDUCTOR CONVERSION CHART				
SHEET 2 OF 7				
SITE CODE NUMBER REV DCS M8139-0-1 B				

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

8

7

6

5

4

3

1

8

7

6

5

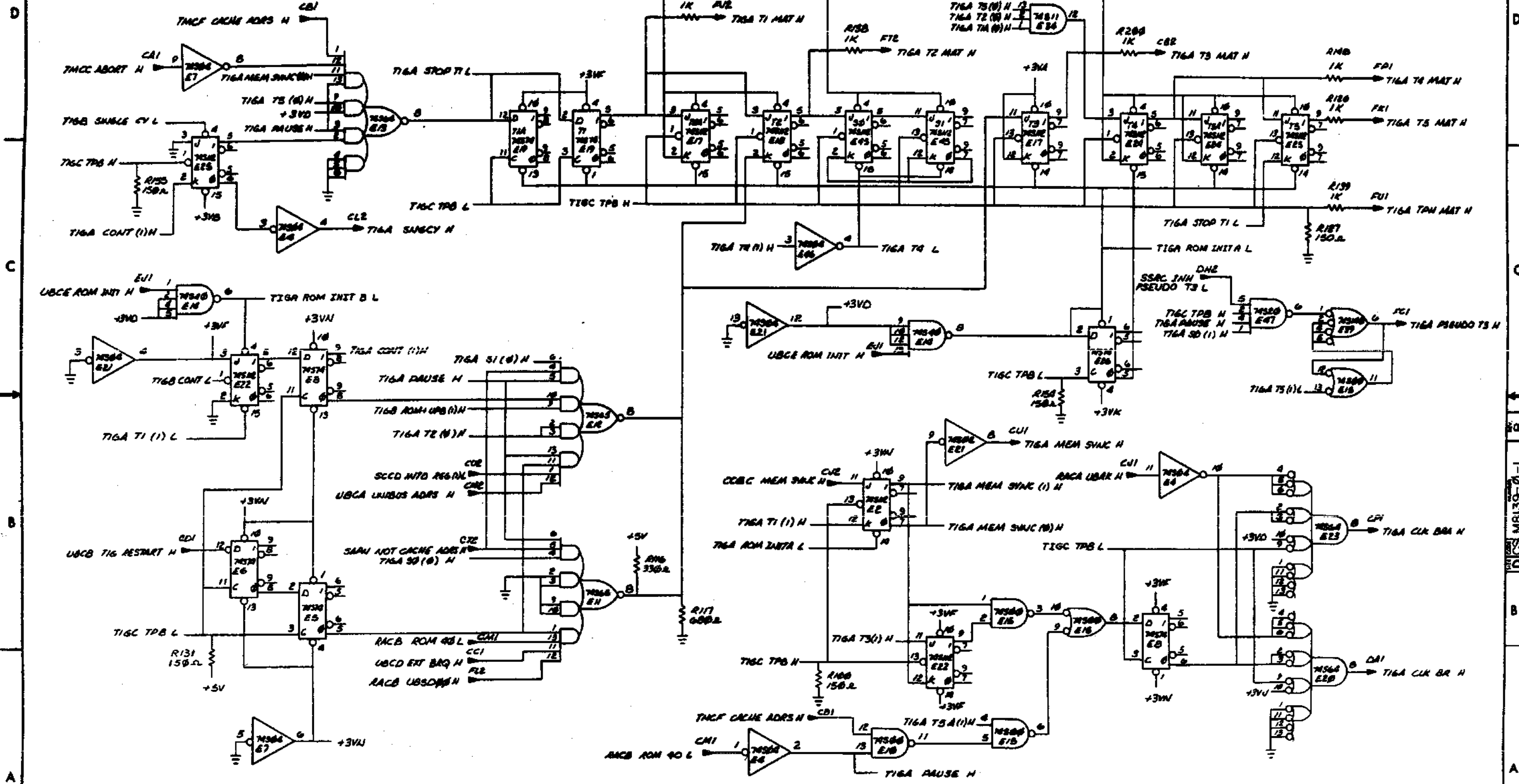
4

3

2

1

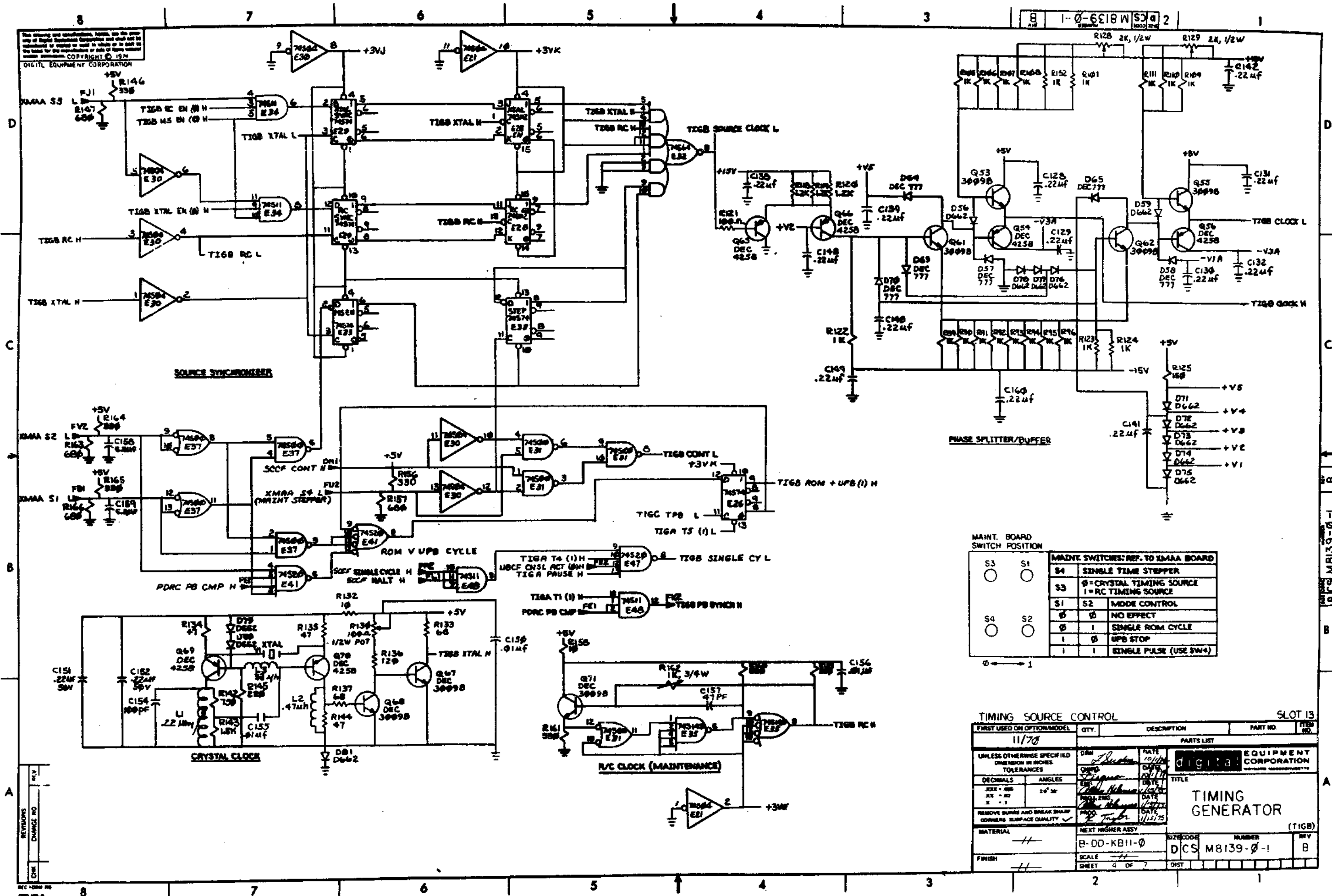
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TIMING CONTROL SLOT 13

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE CODE	NUMBER	REV.
TIMING GENERATOR (TIGA)	DCS	M8139-0-1	B
SCALE		SHEET 3 OF 9	



MAINT. BOARD SWITCH POSITION

SWITCH	POSITION	MAINT. SWITCHES: REF. TO X1AAA BOARD
S3	S1	S4 SINGLE TIME STEPPER
		0 = CRYSTAL TIMING SOURCE
		1 = RC TIMING SOURCE
S4	S2	S1 MODE CONTROL
		0 NO EFFECT
		1 SINGLE ROM CYCLE
		1 UPB STOP
		1 SINGLE PULSE (USE SW4)

TIMING SOURCE CONTROL

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

DATE	BY	DATE	BY	DATE	BY
10/1/70	J. S. [Signature]	10/1/70	J. S. [Signature]	10/1/70	J. S. [Signature]

TIMING GENERATOR (T1GB)

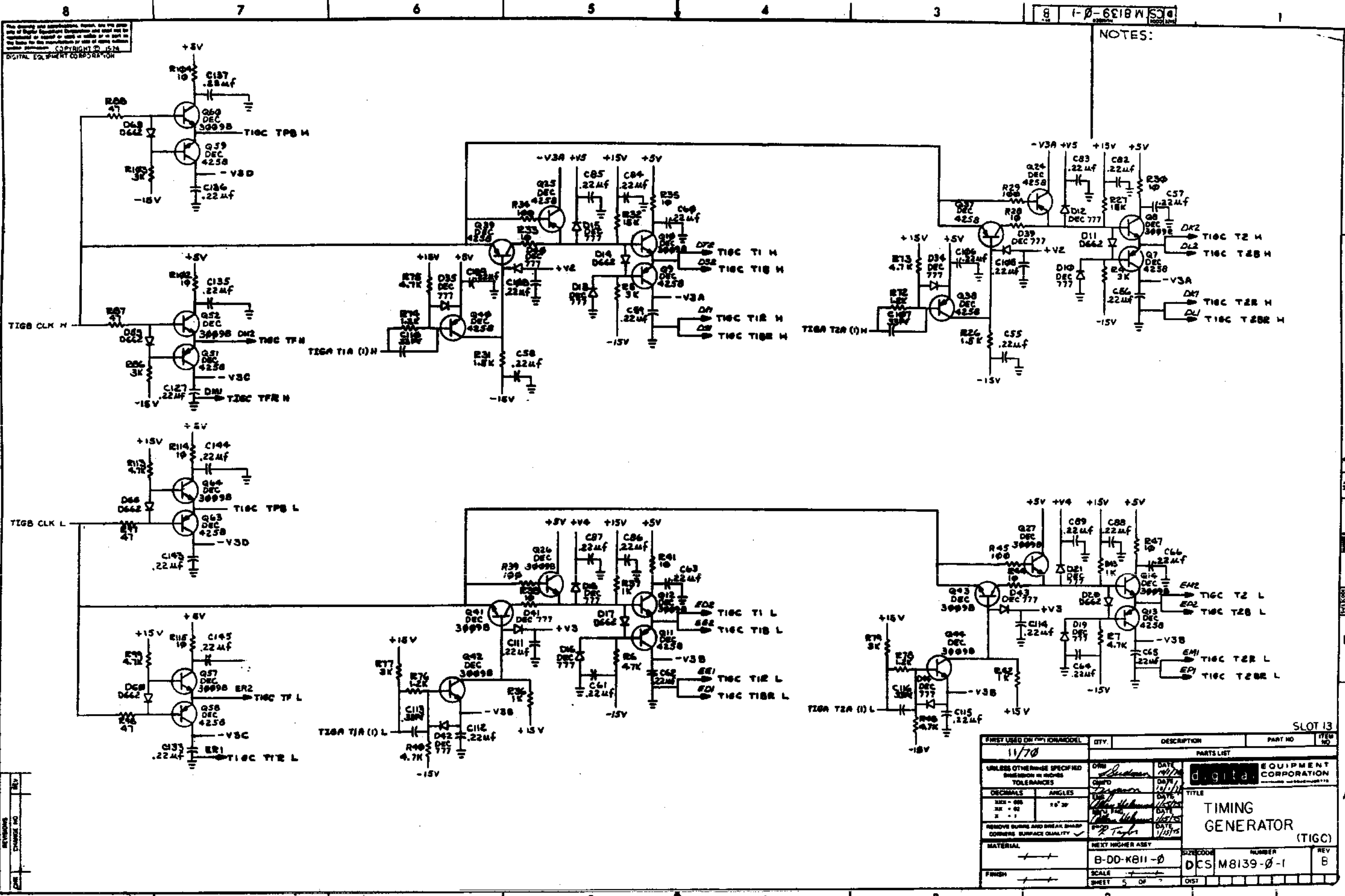
MATERIAL	FINISH	SCALE	SHEET	4 OF 7	DIST	
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DATE	11/15/75
BY	P. Taylor
DATE	11/15/75
BY	P. Taylor

DATE	11/15/75
BY	P. Taylor
DATE	11/15/75
BY	P. Taylor

DATE	11/15/75
BY	P. Taylor
DATE	11/15/75
BY	P. Taylor

DATE	11/15/75
BY	P. Taylor
DATE	11/15/75
BY	P. Taylor



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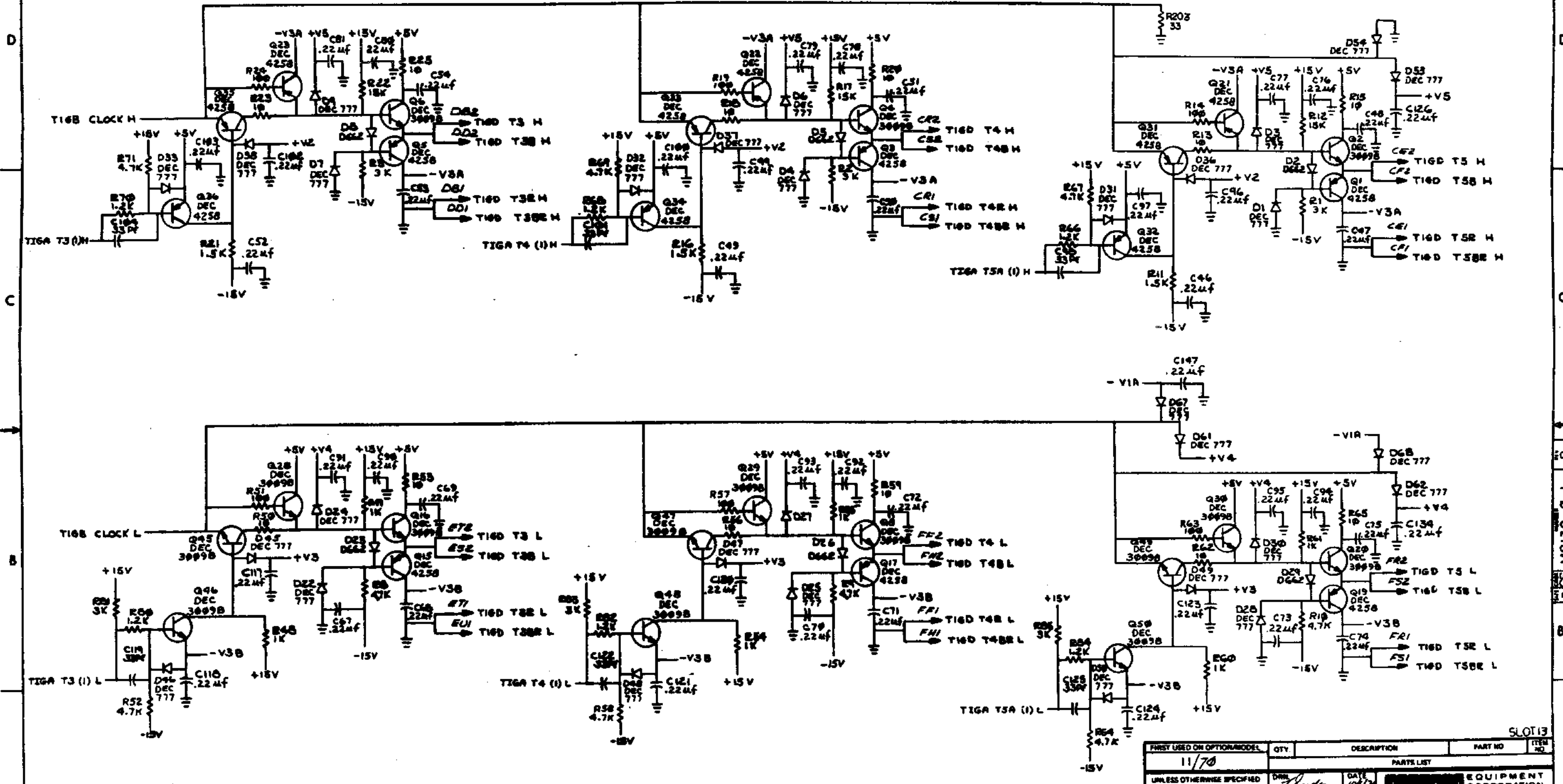
FIRST USED ON (P/N) OR MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
11/70				
PARTS LIST				
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES TOLERANCES		DATE	EQUIPMENT CORPORATION	
DECIMALS	ANGLES	11/70	TIMING GENERATOR (TIGC)	
SIX - 60	20° 30'	12/1/70		
XX - 02		1/15/71		
X - 1		1/15/75		
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		DATE	NUMBER	
		1/15/75	DCS M8139-0-1	
MATERIAL	NEXT HIGHER ASSY	SCALE	SIZE CODE	REV
	B-DD-K011-0	1:1		B
FINISH	SHEET 5 OF 7	DATE	REV	
			DCS M8139-0-1	

REVISIONS
 CHANGE NO. REV.

DCS M8139-0-1

SLOT 13

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REV	DATE	DESCRIPTION	BY	CHECKED
1	11/70	11/70		

DECIMALS	ANGLES	TOLERANCES
XXX - .00	10° 30'	
XX - .01		
X - .1		

MATERIAL	NEXT HIGHER ASSY	SIZE CODE	NUMBER	REV
	B-DD-KB11-0	DCS	M8139-0-1	B

REV	DATE	TITLE	ITEM NO
1	11/70	TIMING GENERATOR	1

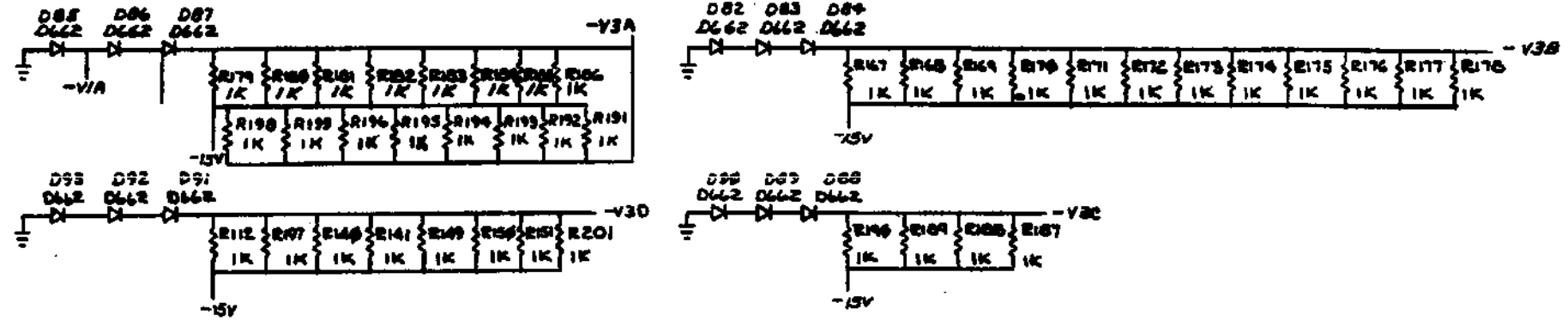
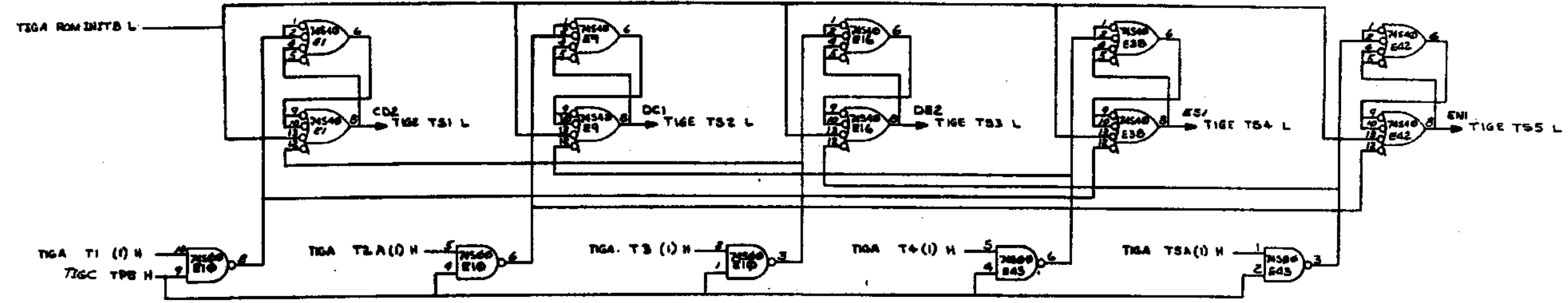
REV	DATE	TITLE	ITEM NO
1	11/70	TIMING GENERATOR	1

REVISIONS
 CHANGE NO. REV. DATE

CS M8139-0-1

SLOT 13

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TIMING STATE DRIVERS		SLOT 13	
FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.
11/70			
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN MILLIMETERS		PARTS LIST	
TOLERANCES			
DECIMALS	ANGLES	TITLE	
.XX - .XX	± 30°	TIMING GENERATOR	
.XX - .XX		(TIGE)	
.XX - .XX		REV	
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY		MATERIAL	
		NEXT HIGHER ASSY.	
		B-DD-KB11-0	
		SIZE CODE	
		NUMBER	
		DCS M 8139-0-1	
		REV	
		E	
FINISH		SCALE	
--		--	
		SHEET 7 OF 7	
		DST	

REVISIONS
DATE
CHANGE NO.
REV

CS M8139-0-1