digital

TUI6

Engineering Drawings

Digital Equipment Corporation

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

	SEQUENCE	
DRAWING DIRECTORY	B-DD-TU16-Ø	SHEET 1 ONLY
LOGIC AND WRITE BOARD	D-CS-M891Ø-Ø-1	
CLOCK AND TEST LOGIC	D-CS-M8911-Ø-1	
SLAVE TEST FUNCTION GEN.	D-CS-M8912-Ø-1	
POWER BOARD	D-CS-H6Ø6-Ø-1	
READ CHAN. AMP/ANA. & DIA	D-CS-GØ56-Ø-1	
D.S. POWER SUPPLY	D-CS-5410451-0-1	
GENERAL PURPOSE CARD (E & F)	D-CS-M9ØØ1-YA-1	
GENERAL PURPOSE CARD (A & B)	D-CS-M9ØØ1-YB-1	
GENERAL PURPOSE CARD (E & F)	D-CS-M9ØØ1-YC-1	
DATA DRIVER	D-CS-M8913-Ø-1	
DATA DRIVER	D-CS-M8913-YA-1	
GENERAL PURPOSE CARD (A & B)	D-CS-M9ØØ1-Ø-1	
CONTROL BOX	D-CS-7009637-0-1	
WIRED ASSY	E-AD-7009635-0-0	
READ BOARD	D-CS-GØ66-0-1	
WIRE LIST	K-WL-TU16-Ø-WL	
MODULE UTILIZATION	D-MU-TU16-Ø-MU	
MASS BUS TRANCIEVER	D-BS-TU16-Ø-2	
TAPE TRANSPORT ASSY	E-AD-7009634-0-0	
MAGTAPE DRIVE	D-UA-TU16-0-0	

UNIT VARIATIONS

VAR	TITLE	PRINT SET 1			
TU16-EE	SLAVE 115V 60 HZ	X			
TU16-EF	SLAVE 230V 60 HZ	X			
TU16-EH	SLAVE 115V 50HZ	X			
TU16-EJ	SLAVE 230V 50 HZ	X			
TU16-EA	TU16-EE & TMØ2-FA				
TU16-EB	TU16-EF & TMØ2-FB				
TU16-EC	TU16-EH & TMØ2-FA				
TU16-ED	TU16-EJ & TMØ2-FB				
TU16-EK	TU16-EE & TMØ2-FC				
TU16-EL	TU16-EF & TMØ2-FD				
TU16-EM	TU16-EH & TMØ2-FC				
TU16-EN	TU16-EJ & TMØ2-FD				
TU16-AE	SLAVE 115V 6Ø HZ				
TU16-AF	SLAVE 23ØV 6Ø HZ				
TU16-AH	SLAVE 115V 5Ø HZ				
TU16-AJ	SLAVE 23ØV 5Ø HZ				
TU16-AA	TU16-AE & TMØ2-FA				
TU16-AB	TU16-AF & TMØ2-FB				
TU16-AC	TU16-AH & TMØ2-FA				
TU16-AD	TU16-AJ & TMØ2-FB				

REV	ECO NO.
A	TU16-3
B	TU16-5
C	TU16-6
D	TU16-9
E	TU16-10
F	TU16-11
H	TU16-12
J	TU16-13
K	TU16-14
L	TU16-15
M	TU16-16
N	TU16-19
P	7005743-2
R	TU16-20
S	TU16-21
T	TU16-22
U	TU16-23
V	TU16-25
W	TU16-28
Y	TU16-29
Z	TU16-30
AA	TU16-31
AB	TU16-32

USED ON OPTION/MODEL

SHEET 1 OF 12

DATE

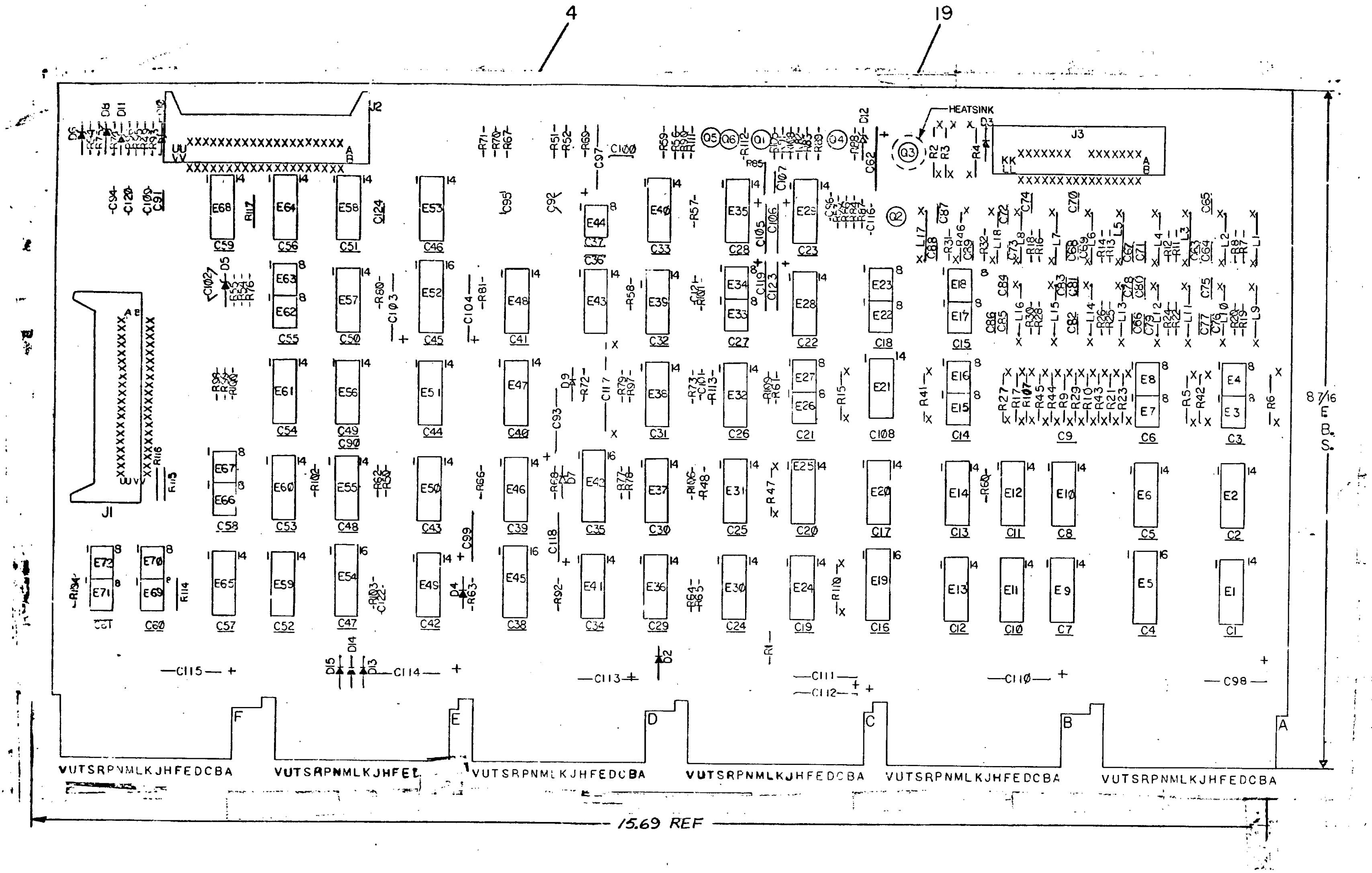
FIELD SERV.

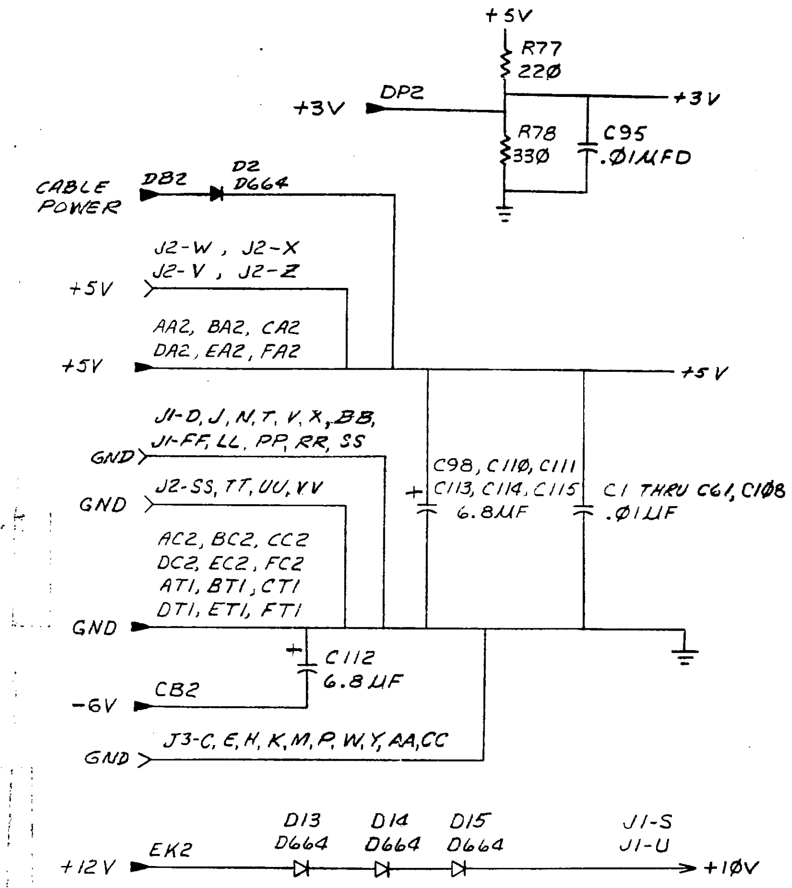
TITLE MAGNETIC TAPE UNIT

SIZE	CODE	NUMBER	REV
D	DD	TU16-Ø	A B

DIST MP-0TU16-00

NOTES:





IC TYPE	GND	+ 5V
8640	1	8
75452	4	8
74123	8	16
8266	8	16
7473	11	4
384	1	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

SEMICONDUCTOR CONVERSION CHART

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

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: E

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: LOGIC AND WRITE BOARD (LAWI)

SIZE: D CODE: CS NUMBER: M8910-0-1 REV: K

SHEET 1 OF 9

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8918-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8918-0-5	2
REF		MODULE ECO HISTORY	B-MH-M8918-0-6	3
1		ETCHED CIRCUIT BOARD	5010470	4
1	C96	CAP 220PF 100V 5% DM	1000021	5
1	C122	CAP 330PF 100V 5% DM	1000023	6
1	C121	CAP 1000PF 250V 20% DISC	1000043	7
6	C99, C105, C106, C123, C119, C118	CAP 3.9UF 10% 10V TANT	1000064	8
3	C97, C93, C104	CAP 39UF 10% 10V TANT	1000076	9
87	C1-C61, C65-C68, C63, C70, C72, C74, C75, C77, C78, C80, C81, C83, C84, C86, C87, C89, C91, C94, C95, C101, C102, C108, C109, C120	CAP .01UF, 100V DISC	1001610-01	10
1	C103	CAP 15UF 20V 10% TANT	1004812	11
2	C100, C124	CAP .05UF, 25V, 20% DISC	1001774	12
1	C62	CAP 22UF, 35V, 20% TANT	1002433	13
1	C117	CAP 330UF 20% TANT	1009808	14
7	C98, C110 THRU C115	CAP 6.8UF 10% 35V TANT	1005306	15
11	C64, C69, C71, C73, C76 C79, C82, C85, C88, 107, 116	CAP .5000 PF 100V 20% DISC	1001765	16
1	C90	CAP 470PF 100V 5% DM	1000024	17
1	C92	CAP 100PF 100V 5% DM	1000016	18
1		HEAT SINK	1210001	19
7	D7, D9, D2, D4, D13, D14, D15	DIODE D664	1100114	20
1	D12	DIODE IN748A 3.9V	1100122	21
1	D3	DIODE D670-1	1102162	22
5	D5, D6, D8, D10, D11	DIODE IN746A 3.3V	1104860	23
2	J1, J2	CONN 40 PIN RT. ANGLE HDR	1209941	24
1	J3	CONN 28 PIN	1210067-2	25
1	R4	RES 220 OHM 1/2W 5%	1300274	26
4	R66, R77, R101 & R112	RES 220 OHM 1/4W 5%	1300271	27
1	R78	RES 330 OHM 1/4W 5%	1300295	28
10	R3, R5, R9, R15, R21, R27, R41, R42, R44 & R46	RES 470 OHM 1/2W 5%	1300315	29
34	R48-R50, R54-R61, R70, R71, R74-R76, R79, R89, R90, R93-R100, R102, R104, R106, R109, R111, R113, R117	RES 1K 1/4W 5%	1300365	30
2	R86, R108	RES 1.8K 1/4W 5%	1300398	31
2	R64, R67	RES 3.9K 1/4W 5%	1300444	32
2	R52, R53	RES 4.7K 1/4W 5%	1300447	33
2	R63, R68	RES 10K 1/4W 5%	1300479	34
2	R69, R92	RES 12K 1/4W 5%	1300488	35
3	R73, R82, R84	RES 1.2K 1/4W 5%	1301320	36
2	R83, R85	RES 6.8K 1/4W 5%	1301423	37
1	R51,	RES 680 OHM 1/4 5%	1301424	38
1	R72	RES 47K 1/4W 5%	1302177	39
18	R7, R8, R11 THRU R14, R16, R18, R19, R20, R22, R24, R25, R26, R28, R30, R31, R32	RES 39 OHM 1/4W 5%	1302377	40
2	R87, R105	RES 27K 1/4W 5%	1305346	41
4	R62, R103, R88, R91	RES 100 OHM 1/4W 5%	1300229	42
1	R2	RES 750 OHM 1/2W 5%	1300354	43
1	R80	RES 20K 1/4W 5%	1302391	44
1	R110	RES 47 OHM 1/2W 5%	1301695	45

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
2	Q1, Q2	TRANSISTOR 3639B	1502762	46
3	Q4, Q5, Q6	TRANSISTOR 6531B	1509338	47
1	Q3	TRANSISTOR 3762	1509649	48
18	L1 THRU L18	INDUCTOR, FIXED, 10UH, 10%	1609477	49
7	E11, E51, E53, E59, E60, E65, E47	I.C. 7474	1905547	50
4	E28, E41, E58, E68	I.C. 7400	1905575	51
1	E55	I.C. 7410	1905576	52
1	E64	I.C. 7420	1905577	53
1	E44	I.C. 75452	1910645-00	54
5	E2, E6, E20, E21, E25	I.C. 7473	1905587	55
1	E61	I.C. 7401	1905590	56
2	E43, E57	I.C. 7402	1909004	57
1	E29	I.C. 384	1909486	58
3	E31, E35, E40	I.C. 7404	1909686	59
1	E39	I.C. 8242	1909712	60
2	E37, E38	I.C. 7405	1909930	61
3	E5, E19, E54	I.C. 8266	1909934	62
3	E1, E10, E24	I.C. 7486	1910011	63
1	E12	I.C. 74164	1910041	64
3	E46, E49, E32	I.C. 7408	1910155	65
3	E42, E45, E52	I.C. 74123	1910436	66
11 (SEE NOTE 1)	(E3, E4)(E7, E8)(E15, E16)(E17, E18)(E22, E23)(E26, E27,) (E33, E34)(E62, E63)(E66, E67)(E69, E70)(E71, E72)	I.C. 75452	1910645-01	67
1	E50	I.C. 7427	1910878	68
6	E9, E14, E30, E36, E48, E56	I.C. 8640	1911469	69
1	E13	I.C. 7450	1905580	70
1		HANDLE ASSY	1210711-02	71
12		EYELET	9006732	72
A/R		WIRE, SOLID, INSULATED	9105740-55	73
A/R		WIRE, SOLID, INSULATED	9107688-55	74
3	R114, R115 & R116	RES. 300 OHM, 1/4W, 5%	1301425	75
1	R65	RES. 68 OHM, 1/4W, 5%	1300219	76
9	R6, R10, R17, R23, R29, R43, R45, R47 & R107	RES 390 OHM, 1/2W, 5%	1300308	77
1	R81	RES 22K 1/4W 5%	1301808	78

NOTES:
1. FOR PART NO. 1910645-01 - QTY 2. 75452S PER CARRIER.

REVISIONS		
SYM	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
LOGIC AND WRITE BOARD (LAW2)	D	CS	M8918-0-1	K
SCALE — / — SHEET 2 OF 3	DIST.			

WRITE VOLTAGE ► CK2 CJ2

7405 E37 — R3 470 1/2 W — R2 750 1/2W — Q3 3762 — C62 22UF 35V

LAW3 WRITE HEAD POWER — R4 220Ω 1/2 W — +12V — D3 D670-1

LAW3 WRITE ENABLE H

PT* CM2 — 7430 E13 — API LAW3 WP

SBUS2 WD P (SB) L AD2 — 8640 E16 — 7404 E31 — LAW3 MOL L — +5V — R106 1K

TFG3 SET TEST WRE L DN1 — 7404 E31 — LAW3 SET TEST WRE H

SK CLK P** BJ2 — 7486 E1 — LAW4 PE+LRC (1)H

SK CLK 7** BL2 — 7486 E1

SK CLK 6** CF1 — 7486 E10

SK CLK 5** BK1 — 7486 E10

SK CLK 4** BF1 — 7486 E10

SBUS1 WD 7 (SB) L AE2 — 8640 E9

7T* BP1 — SBUS1 WD6 (SB) L AF2 — 8640 E9

6T* BR1 — SBUS1 WD5 (SB) L AH2 — 8640 E9

5T* BJ1 — SBUS1 WD4 (SB) L BP2 — 8640 E9

4T* BH1

8266 E5: S1 S0 — B0 A0 B1 A1 B2 A2 B3 A3 — F0 F1 F2 F3

AV1 LAW3 W7 — AV2 LAW3 W6 — AT2 LAW3 W5 — AS1 LAW3 W4

7473 E2 — 7473 E2 — 7473 E21 — 7473 E21 — 7473 E23 — 7473 E23 — 7473 E6 — 7473 E6

75452 E18 — 75452 E4 — 75452 E4 — 75452 E8 — 75452 E8 — 75452 E16 — 75452 E16 — 75452 E23 — 75452 E23 — 75452 E3 — 75452 E3

R5 470 1/2W 5%	R7 39 1/4 W	L1 10 UH	C63 .01	R8 39 1/4 W	C64 5000 PF
R6 390 1/2W 5%					J3-B J3-A J3-D J3-F
R9 470 1/2W 5%	R11 39 1/4 W	L3 10 UH	C66 .01	R12 39 1/4W	C71 5000PF
R10 390 1/2W 5%					J3-J J3-L
R41 470 1/2W 5%	R13 39 1/4 W	L5 10 UH	C68 .01	R14 39 1/4 W	C69 5000PF
R107 390 1/2W 5%					J3-N J3-R
R15 470 1/2W 5%	R16 39 1/4W	L7 10 UH	C72 .01	R18 39 1/4 W	C73 5000 PF
R17 390 1/2W 5%					J3-T J3-V
R42 470 1/2W 5%	R19 39 1/4 W	L9 10 UH	C75 .01	R20 39 1/4W	C76 5000PF
R43 390 1/2W 5%					J3-X J3-Z
		L2 10 UH	C65 .01		
		L4 10 UH	C67 .01		
		L6 10 UH	C70 .01		
		L8 10 UH	C74 .01		
		L10 10 UH	C77 .01		

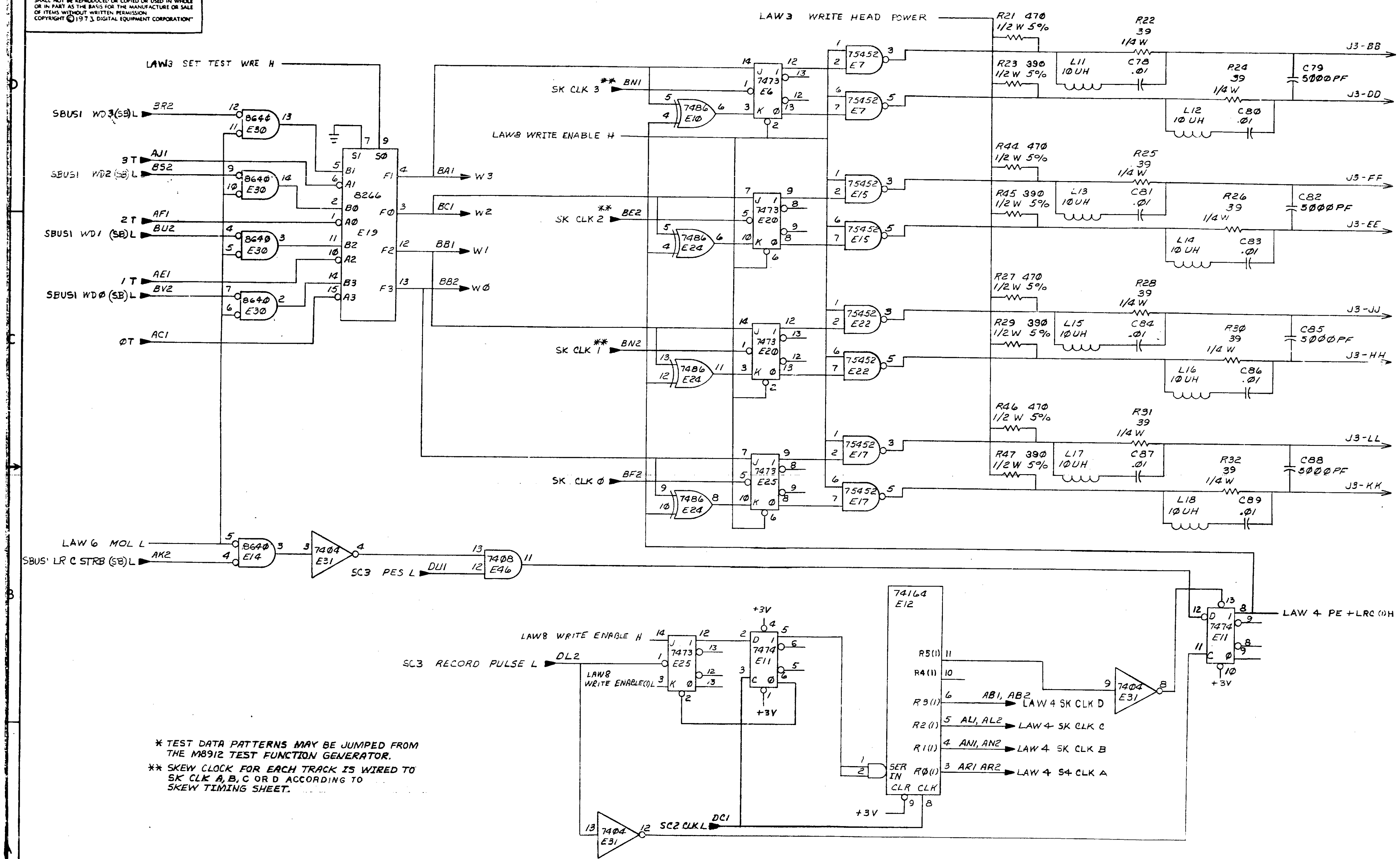
* TEST DATA PATTERNS MAY BE JUMPERED FROM THE M8912 TEST FUNCTION GENERATOR.

** SKEW CLOCK FOR EACH TRACK IS WIRED TO SK CLK A,B,C ORD ACCORDING TO SKEW TIMING SHEET.

REVISIONS		
GHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV
LOGIC AND WRITE BOARD (LAW3)	D	CS	M8910-01	K
SCALE —	SHEET 3 OF 9	DIST.		

DCSM8910-01 K


LAW3 SET TEST WRE H
SBUS1 WD3(SB)L
SBUS1 WD2(SB)L
SBUS1 WD1 (SB)L
SBUS1 WDØ (SB)L
8640 E30
8266 E19
W3
W2
W1
WØ
LAW 3 WRITE HEAD POWER
SK CLK 3 ** BN1
SK CLK 2 ** BE2
SK CLK 1 ** BN2
SK CLK Ø BF2
LAW8 WRITE ENABLE H
7486 E10
7486 E24
7473 E6
7473 E20
7473 E25
75452 E7
75452 E15
75452 E22
75452 E17
R21 470 1/2 W 5%
R23 390 1/2 W 5%
R44 470 1/2 W 5%
R45 390 1/2 W 5%
R27 470 1/2 W 5%
R29 390 1/2 W 5%
R46 470 1/2 W 5%
R47 390 1/2 W 5%
J3-BB
J3-DD
J3-FF
J3-EE
J3-JJ
J3-HH
J3-LL
J3-KK
C79 5000 PF
C82 5000 PF
C85 5000 PF
C88 5000 PF
LAW 6 MOL L
SBUS1 LR C STRB (SB) L
8640 E14
7404 E31
SC3 PES L
7408 E46
LAW 4 PE + LRC (1) H
7474 E11
74164 E12
LAW8 WRITE ENABLE H
SC3 RECORD PULSE L
LAW8 WRITE ENABLE(0)L
+3V
LAW 4 SK CLK D
LAW 4 SK CLK C
LAW 4 SK CLK B
LAW 4 S4 CLK A
SC2 CLK L
DC1

* TEST DATA PATTERNS MAY BE JUMPED FROM THE M8912 TEST FUNCTION GENERATOR.

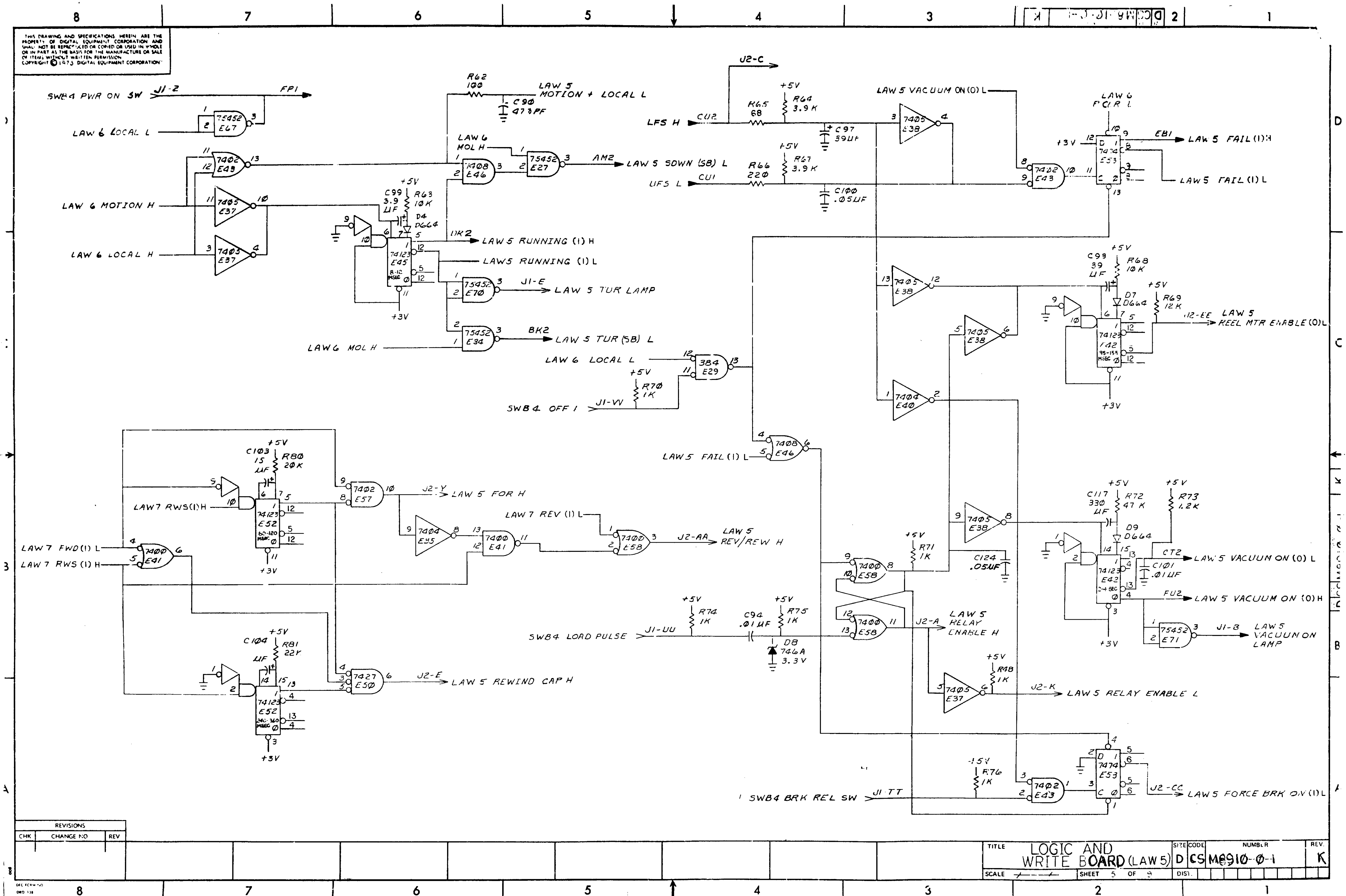
** SKEW CLOCK FOR EACH TRACK IS WIRED TO SK CLK A, B, C OR D ACCORDING TO SKEW TIMING SHEET.

REVISIONS		
CHK	CHANGE NO	REV

TITLE: LOGIC AND WRITE BOARD (LAW4)

SIZE	CODE	NUMBER	REV.
D	CS	M891Ø-Ø-1	K

SCALE — SHEET 4 OF 9 DIST.



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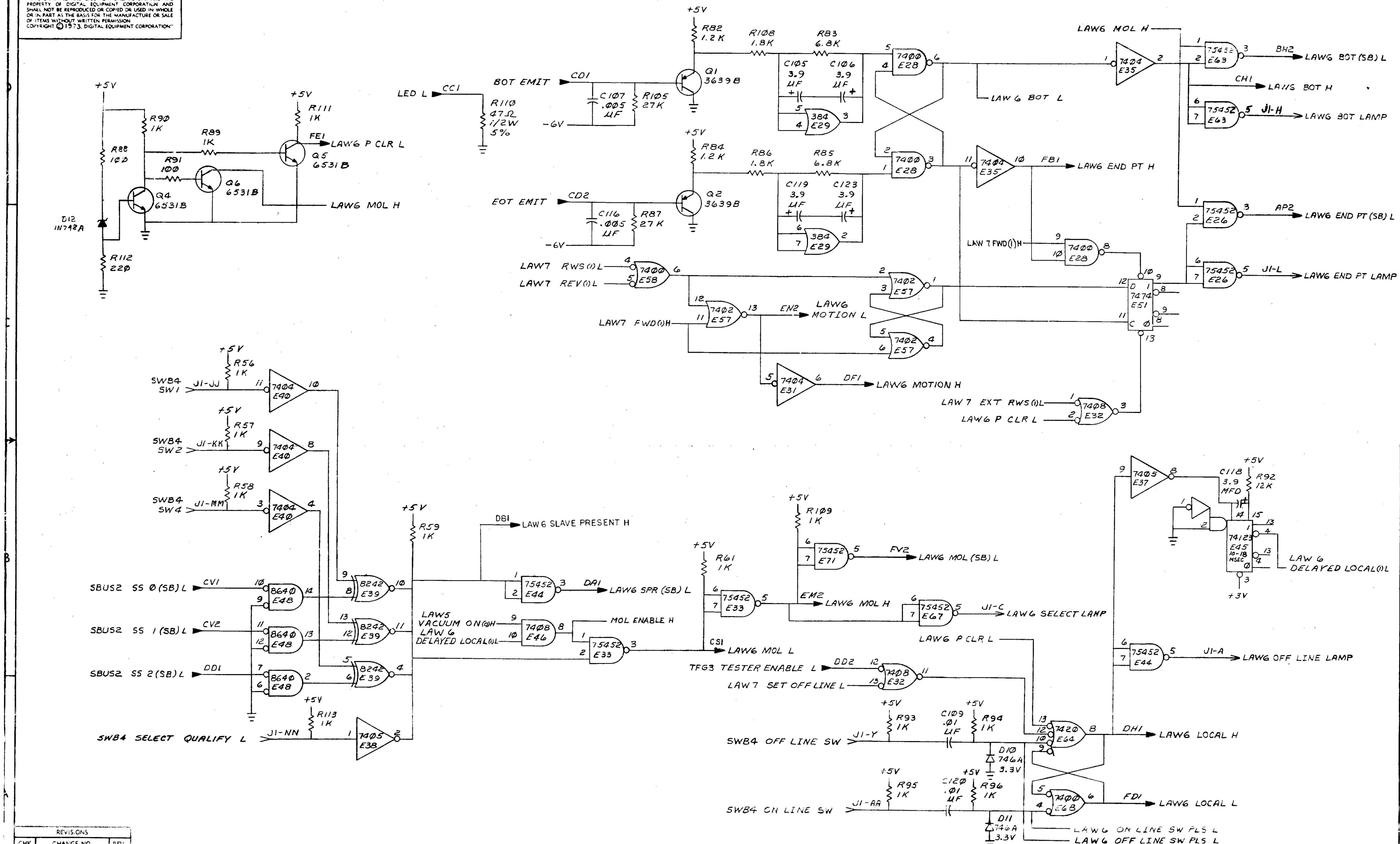
SW84 PWR ON SW
J1-2
FP1
LAW 6 LOCAL L
75452 E67
7402 E43
LAW 6 MOTION H
7405 E37
LAW 6 LOCAL H
7405 E37
R62 100
C90 473PF
LAW 5 MOTION + LOCAL L
LAW 6 MOL H
7408 E46
75452 E27
AM2
LAW 5 SDWN (SB) L
C99 3.9 UF
R63 10K
D4 D664
+5V
74123 E45
DK2
LAW 5 RUNNING (1) H
LAW5 RUNNING (1) L
75452 E70
J1-E
LAW 5 TUR LAMP
75452 E34
BK2
LAW 5 TUR (SB) L
LAW6 MOL H
+3V
J2-C
LFS H
CU2
R65 68
R64 3.9K
C97 39UF
UFS L
CU1
R66 220
R67 3.9K
C100 .05UF
LAW 5 VACUUM ON (0) L
7405 E38
LAW 6 PCIR L
EB1
LAW 5 FAIL (1) H
7474 E53
7402 E43
LAW 5 FAIL (1) L
LAW 6 LOCAL L
384 E29
R70 1K
SW84 OFF 1
J1-VV
7405 E38
7404 E40
C98 39 UF
R68 10K
D7 D664
R69 12K
74123 E42
J2-EE
LAW 5 REEL MTR ENABLE (0) L
7408 E46
LAW 5 FAIL (1) L
C103 15 UF
R80 20K
LAW7 RWS(1)H
74123 E52
LAW 7 FWD (1) L
LAW 7 RWS (1) H
7400 E41
7402 E57
J2-Y
LAW 5 FOR H
7404 E35
7400 E41
LAW 7 REV (1) L
7400 E58
J2-AA
LAW 5 REV/REW H
C104
R81 22K
74123 E52
7427 E50
J2-E
LAW 5 REWIND CAP H
C117 330 UF
R72 47K
R73 1.2K
D9 D664
7405 E38
R71 1K
C124 .05UF
7400 E58
74123 E43
C101 .01UF
CT2
LAW 5 VACUUM ON (0) L
FU2
LAW 5 VACUUM ON (0) H
75452 E71
J1-B
LAW 5 VACUUM ON LAMP
SW84 LOAD PULSE
J1-UU
R74 1K
C94 .01UF
R75 1K
D8 746A 3.3V
J2-A
LAW 5 RELAY ENABLE H
R48 1K
7405 E37
J2-K
LAW 5 RELAY ENABLE L
-15V
R76 1K
7402 E43
7474 E53
J2-CC
LAW 5 FORCE BRK ON (1) L
SW84 BRK REL SW
J1 TT
REVISIONS
CHK
CHANGE NO
REV
TITLE
LOGIC AND WRITE BOARD (LAW5)
SIZE D
CODE CS
NUMBER M8910-0-1
REV. K
SCALE
SHEET 5 OF 9
DIST.



LAW6 P CLR L
LAW6 MOL H
BOT EMIT
EOT EMIT
LED L
LAW 6 BOT L
LAW6 BOT (SB) L
LAW6 BOT H
LAW6 BOT LAMP
LAW6 END PT H
LAW6 END PT (SB) L
LAW6 END PT LAMP
LAW7 RWS(1)L
LAW7 REV(1)L
LAW7 FWD(1)H
LAW6 MOTION L
LAW6 MOTION H
LAW7 EXT RWS(1)L
SWB4 SW1
SWB4 SW2
SWB4 SW4
SBUS2 SS 0 (SB) L
SBUS2 SS 1 (SB) L
SBUS2 SS 2 (SB) L
SWB4 SELECT QUALIFY L
LAW6 SLAVE PRESENT H
LAW6 SPR (SB) L
LAW5 VACUUM ON(1)H
LAW 6 DELAYED LOCAL(1)L
MOL ENABLE H
LAW6 MOL L
LAW6 MOL (SB) L
LAW6 SELECT LAMP
LAW6 OFF LINE LAMP
TFG3 TESTER ENABLE L
LAW7 SET OFF LINE L
SWB4 OFF LINE SW
SWB4 ON LINE SW
LAW6 LOCAL H
LAW6 LOCAL L
LAW6 ON LINE SW PLS L
LAW6 OFF LINE SW PLS L

REVISIONS

CHK	CHANGE NO	REV

TITLE LOGIC AND WRITE BOARD (LAW6)

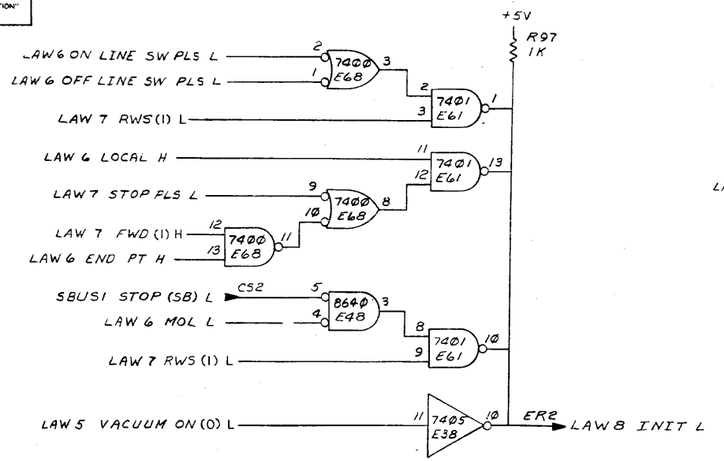
SIZE D | CODE CS | NUMBER M8910-0-1 | REV K

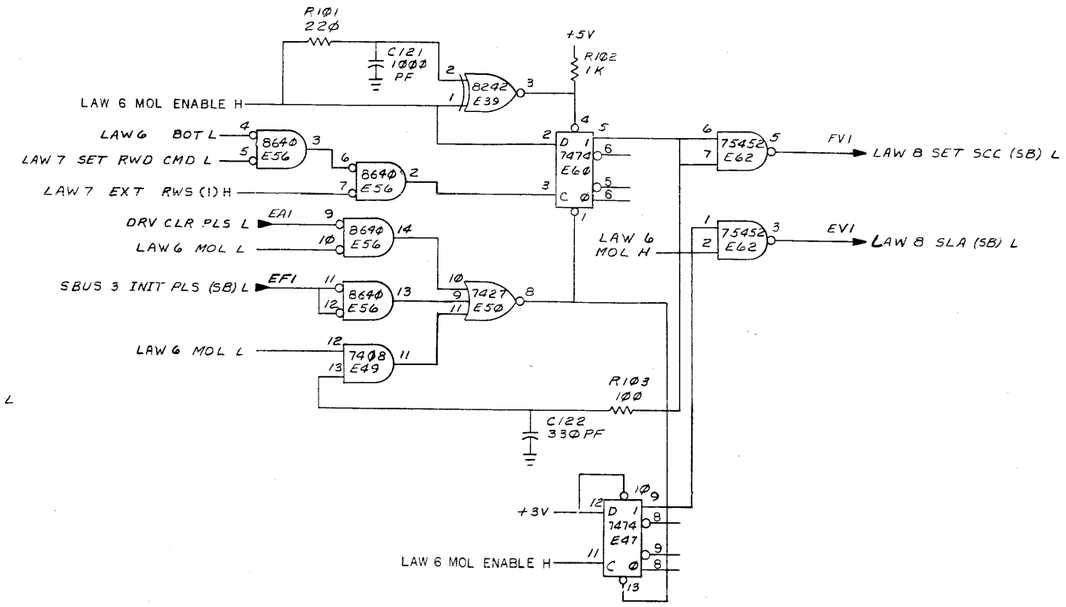
SCALE — | SHEET 6 OF 9

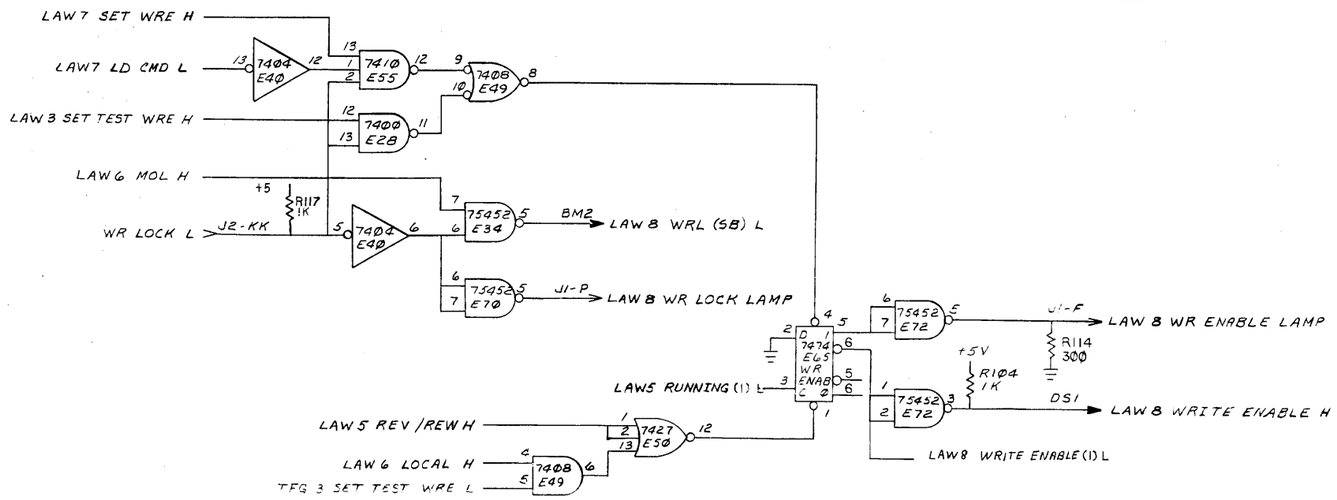
TFG3 1ST ONE SHOT L
TFG3 4TH ONE SHOT(I)H
SWB4 START L
SWB4 STOP L
SLAVE BUS ENABLE
SBUS1 DRV SET PLS (SB) L
SWB4 MANUAL FWD L
SBUS1 FWD (SB) L
SWB4 MANUAL REV L
SBUS1 REV (SB) L
SWB4 MANUAL REW L
SBUS1 RWND (SB) L
SBUS1 DRV SET PLS (SB) L
SBUS1 WRITE (SB) L
LAW6 LOCAL H
LAW6 MOTION L
LAW6 MOL H
LAW5 MOTION + LOCAL L
LAW7 STOP PLS L
LAW7 LD CMD L
LAW7 SET RWD CMD L
LAW6 BOT H
LAW7 SET OFFLINE L
LAW7 FWD LAMP
LAW7 SET WRE H
LAW7 REV LAMP
LAW7 FWD(I)H
LAW7 FWD(I)L
LAW7 RWS(I)H
LAW7 RWS(I)L
LAW7 REV(I)H
LAW7 REV(I)L
LAW6 BOT H
LAW8 INIT L
LAW6 MOL H
LAW7 RWS (SB) L
LAW7 EXT RWS(I)H
LAW7 REW LAMP
LAW5 RUNNING(I)L
LAW6 PCLR L
LAW7 EXT RWS(I)L

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
LOGIC AND WRITE BOARD (LAW7)	D	CS	M8910-0-1	K
SCALE	SHEET 7 OF 9	DIST.		

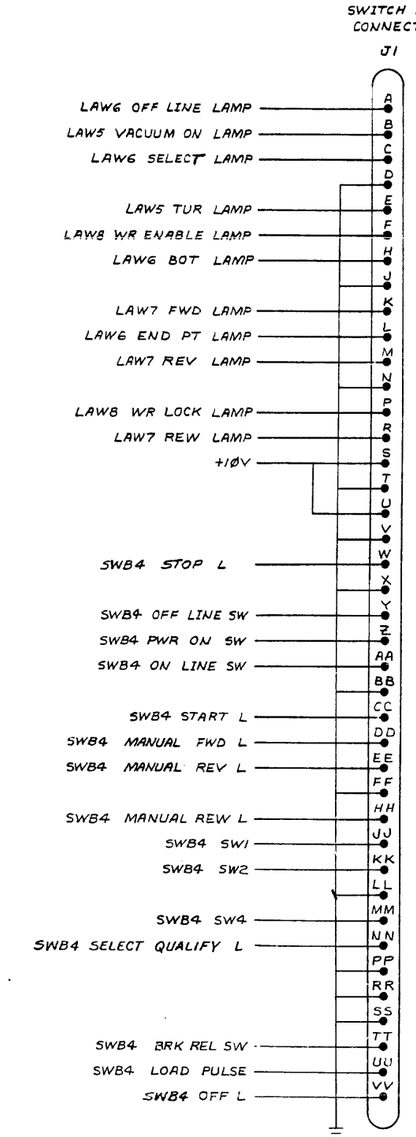


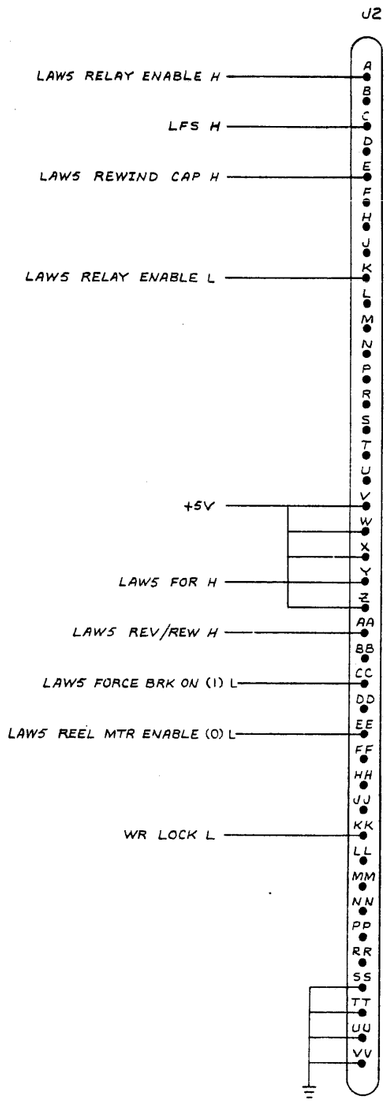




REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
LOGIC AND WRITE BOARD (LAW8)	D	CS	M8910-0-1	K
SCALE	SHEET 8 OF 9	DIST.		

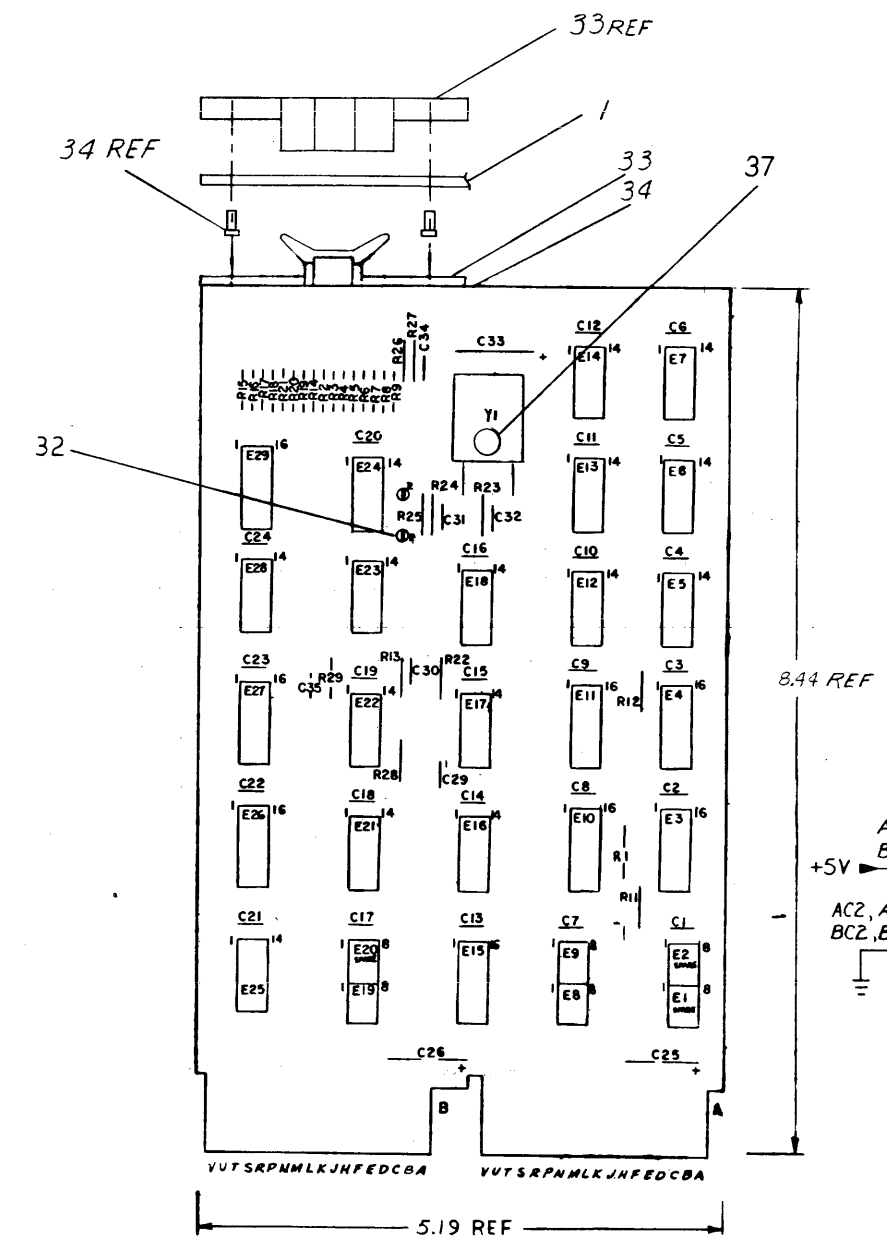


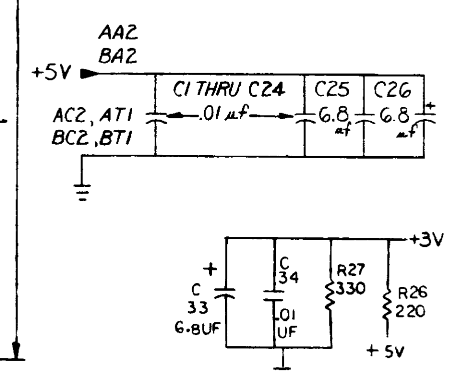


REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
LOGIC AND WRITE BOARD (LAW9)	D	CS	M8910-0-1	K
SCALE	SHEET 9 OF 9		DIST	

NOTES:





PARTS LIST

M8911-YD QTY	M8911-YC QTY	M8911-YB QTY	M8911-YA QTY	M8911 QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF	REF	REF	REF	REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8911-Ø-4	REF
REF	REF	REF	REF	REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8911-Ø-5	REF
REF	REF	REF	REF	REF		MODULE ECO HISTORY	B-MH-M8911-Ø-6	REF
1	1	1	1	1		ETCHED CIRCUIT BOARD	5010471	1
25	25	25	25	25	C1 THRU C24, C34	CAP .01 UF	1001610	2
2	2	2	2	2	C29, C30	CAP 1000PF	1000042	3
2	2	2	2	2	C31, C32	CAP .047UF	1009678	4
3	3	3	3	3	C25, C26, C33	CAP 6.8 UF	1005306	5
								6
3	3	3	3	3	R13, R27, R28	RES 330 1/4W 5%	1300295	7
3	3	3	3	3	R23 THRU R25	RES 10K 1/4W 5%	1300479	8
17	17	17	17	17	R1 THRU R9, R14 THRU R21	RES 2.7K 1/4W 5%	1300426	9
3	3	3	3	3	R11, R12, R22	RES 1K 1/4W 5%	1300365	10
2	2	2	2	2	R26, R29	RES 220 1/4W 5%	1300271	11
1	1	1	1	1	Y1	CRYSTAL 2.304 MHZ	1811110	12
2	2	2	2	2	E23, E28	IC 74197	1910035	13
3	3	3	3	3	E6, E12, E25	IC 7404	1909686	14
3	3	3	3	3	E3, E4, E10	IC 74161	1910650	15
3	3	3	3	3	E5, E13, E18	IC 7402	1909004	16
1	1	1	1	1	E11	IC 7476	1905585	17
2	2	2	2	2	E15, E26	IC 8266	1909934	18
2	2	2	2	2	E7, E14	IC 11380	1911113	19
1	1	1	1	1	E24	IC 380	1912549	20
3	3	3	3	3	E8, E9, E19	IC 75452	1910645	21
1	1	1	1	1	E17	IC 7400	1905575	22
1	1	1	1	1	E16	IC 7408	1910155	23
1	1	1	1	1	E22	IC 7486	1910011	24
1	1	1	1	1	E21	IC 7430	1905578	25
-	-	-	-	1	E27	ROM, MOTION DELAY, 9TRK	23067A1	26
1	1	1	1	1	E29	ROM, SKEW DELAY	23089A1	27
-	-	1	-	-	E27	ROM, MOTION DELAY FOR M8911-YB	23180A1	28
								29
								30
								31
2	2	2	2	2		LUG, SPLIT	9006735	32
2	2	2	2	2		HANDLE, FLIP CHIP, MAGENTA	9008337-6	33
4	4	4	4	4		EYELET	9006732	34
1	1	1	1	1	C35	CAP .005UF, 100V, 20%, DISC	1001765	35
-	-	-	1	-	E27	ROM, MOTION DELAY, 7TRK	23147A1	36
1	1	1	1	1		BUMPER, RUBBER SELF STICK	9009538	37
-	1	-	-	-	E27	PROM, MOTION DELAY, GAPLESS	23220A1-00	38
1	-	-	-	-	E27	PROM, MOTION DELAY, SHORT BOT	23221A1-00	39

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: E

IC PIN LOCATIONS

IC TYPE	GND	+ 5V
5600	8	16
8266	8	16
75452	4	8
7476	13	5
74161	8	16

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

SEMICONDUCTOR CONVERSION CHART

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

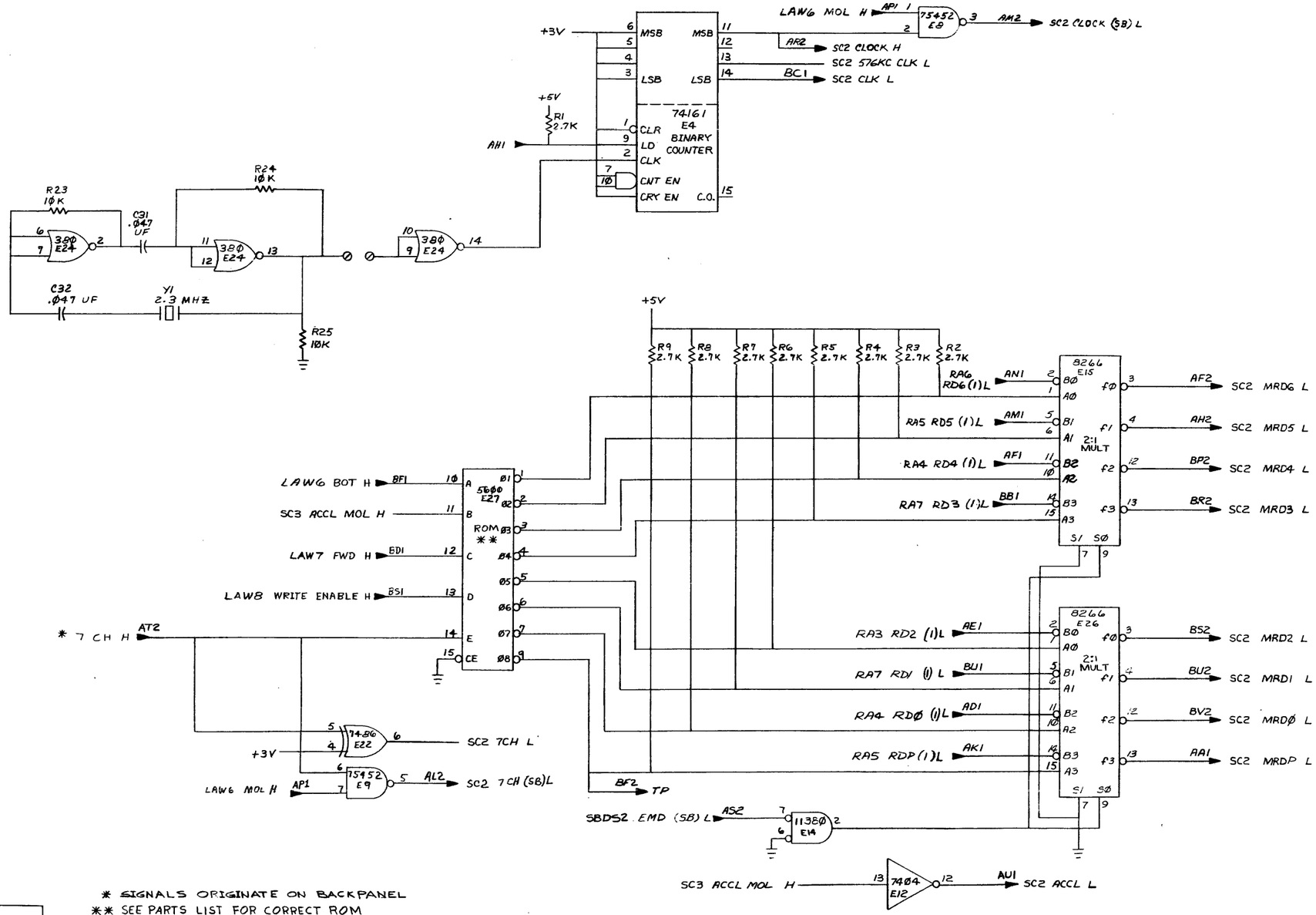
REVISIONS

REV	CHANGE NO.
K	M8911-00007
J	M8911-00006
H	M8911-00005
F	M8911-00004
E	M8911-00003
D	M8911-00002
C	M8911-00001

DIGITAL EQUIPMENT CORPORATION, MAYNARD MASSACHUSETTS

TITLE: SLAVE CLOCK (SC) MOTION DELAY

DRN. V. Buonanotte, DATE 10-17-73
NEXT HIGHER ASSY
SIZE D | CODE CS | NUMBER M8911-Ø-1 | REV. K
SCALE — SHEET 1 OF 3



* SIGNALS ORIGINATE ON BACKPANEL
** SEE PARTS LIST FOR CORRECT ROM PART NUMBER

REVISIONS		
CHK	CHANGE NO.	REV

TITLE: SLAVE CLK MOTION DLY (SC2)			SIZE: D	CODE: CS
SCALE:	SHEET: 2OF3	DIST:	NUMBER: M8911-Ø-1	REV.: K

+5V
R14 2.7K
R15 2.7K
R16 2.7K
R17 2.7K
R18 2.7K
R19 2.7K
R20 2.7K
R21 2.7K
5600 E29 ROM
BP1 SC3 SK DLY 1
BN1 SC3 SK DLY 2
BE2 SC3 SK DLY 4
BM1 SC3 SK DLY 8
BN2 SC3 SK DLY 16
BT2 SC3 SK DLY 32
SC3 WRT+IRD H AV2
74161 E10 BINARY COUNTER
74161 E3 BINARY COUNTER
MSB LSB CLR LD CLK CNT EN CRY EN C.O.
SBUS2 REC (SB) L BK2
SC3 MOL L
11380 E7
7402 E13
7476 E11 WRT CLK K
38Ø E14
BL2 SC3 RECORD PULSE L
BL1 SC3 WRT CLK (Ø) H
75452 E19
BM2 SC3 WRT CLK (SB) L
SC2 576KC CLK L
LAW6 MOL H AP1
7404 E6
SBUS2 ACCL (SB) L AP2
SC3 MOL L
+5V R22 1K
TFG3 WRT CLK TEST ENABLE L BA1
LAW6 LOCAL H BH1
7400 E17
SC3 ACCL MOL H
LAW6 MOL H AP1
SBUS2 DEN 2 (SB) H AU2
LAW6 MOL H AP1
75452 E8
AR1 SC3 PES (SB) L
SC2 7 CH L
7408 E16
BB2 SC3 PES H
+5V R11 1K
TG3 TEST PE H AB2
7404 E25
AK2 SC3 RSDO (SB) L
SBUS2 DEN 1 (SB) H BE1
7486 E22
C35 .005 UF
R13 330Ω
C30 1000 PF
SC3 CLEAR READ BOARD L
+5V R12 1K
AC1 TG3 TEST DEN H
R29 220
SC3 SDØ H AN2
RA3 PACKET H BJ2
SBUS2 DEN Ø (SB) H AJ2
LAW8 WRITE ENABLE H BS1
SBUS3 IRD (SB) L AL1
11380 E1A
7402 E18
BH2 SC3 SET VPE L
AV2 SC3 WRT+IRD H
RA3 RD2 (I) L
RA4 RDØ (I) L
RA4 RD4 (I) L
RA5 RDP (I) L
RA5 RD5 (I) L
RA6 RD6 (I) L
RA7 RD1 (I) L
RA7 RD3 (I) L
7430 E21
SC3 SK DLY 32
SC3 SK DLY 16
R28 330Ω
C29 1000 PF
74197 E23
74197 E28
SC3 SK DLY 8
SC3 SK DLY 4
SC3 SK DLY 2
SC3 SK DLY 1
D2 D1 DØ D3 R3 (I) R2 (I) R1 (I) RØ (I) CLR LD CLK1 CLK2
BR1 SC3 NTZO H
AN2 SC3 SDØ H
RA6 RD7 (Ø) H AS1
AE2 SC3 MRD 7 L
SC2 CLK L BC1
SC3 SK DLY 1
SKEW
SC3 PES L AB1
LAW6 MOL H AP1
SC3 ACCL MOL H
BJ1 SC3 INTERCHG READ L

REVISIONS		
CHK	CHANGE NO.	REV

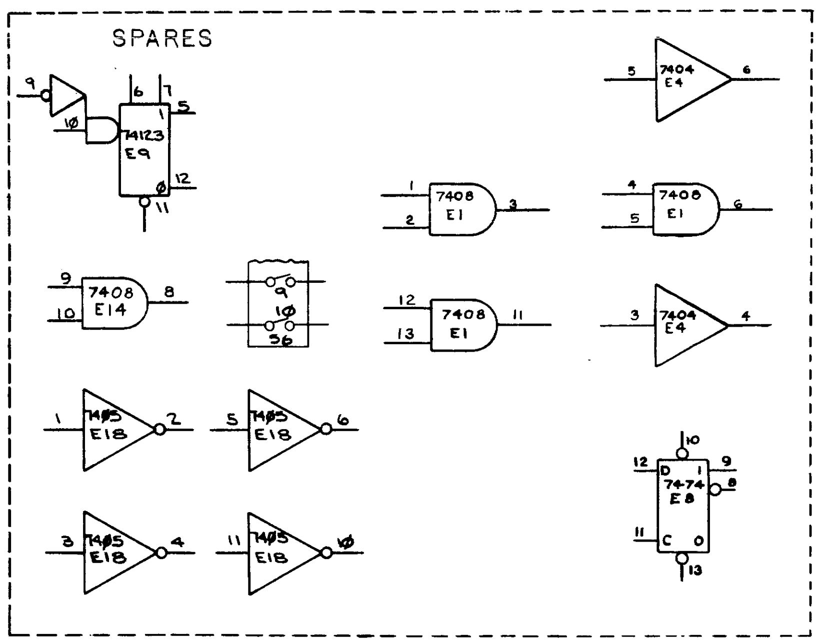
TITLE	SIZE	CODE	NUMBER	REV
SLAVE CLK MOTION DLY (SC3)	D	CS	M8911-Ø-1	K
SCALE	SHEET 30F3	DIST.		

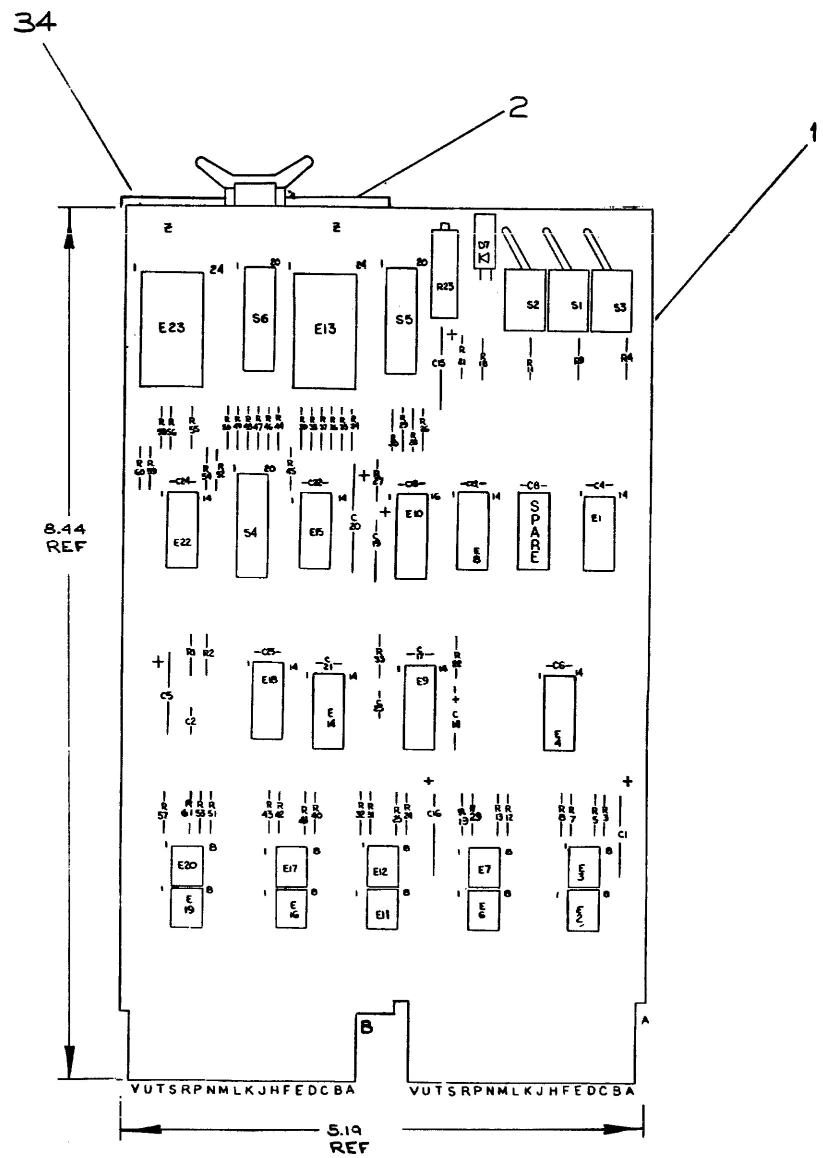
DEC FORM NO 11-136

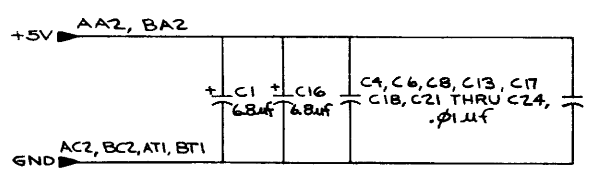
NOTES:

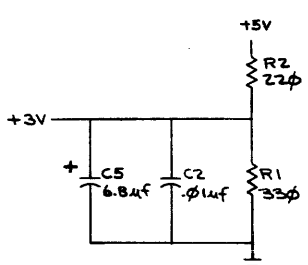
*

DASH VAR	DESCRIPTION
-01	TWO PARTS IN ONE 16 PIN CARRIER









74199	12	24
75452	4	8
74123	8	16
IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8912-Ø-4	REF
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8912-Ø-5	REF
REF		MODULE ECO HISTORY	B-MH-M8912-Ø-6	REF
1		ETCHED CIRCUIT BOARD	5010674	1
1		HANDLE, FLIP-CHIP, MAGENTA	9008337-06	2
				3
1	C25	CAP 47Ø PF 1ØØV 5% D.M.	1000024	4
2	C14, C19	CAP 3.9uf 1ØØV 1Ø% TANT	1000064	5
17	C2, C4, C17, C18, C21-24 C6, C8, C13	CAP .Ø1uf 1ØØV 2Ø% DISC	1001610-01	6
1	C15	CAP 1Ø uf 2ØV 1Ø% TANT	1004813	7
1	C20	CAP 1ØØ uf 2ØV 1Ø% TANT	1004815	8
3	C1, C5, C16	CAP 6.8uf 35V 1Ø% TANT	1005306	9
				10
1	D7	DIODE, LIGHT EMITTING	1110324	11
1	R33	RES 15Ø 1/4 W 5%	1300250	12
1	R2	RES 22Ø 1/4W 5%	1300271	13
1	R1,	RES 33Ø 1/4W 5%	1300295	14
5	R4, R9, R11, R40, R61	RES 1K 1/4W 5%	1300365	15
43	R3, R5, R7, R8, R12, R13, R19 THRU R21, R24, R25, R26 R28 THRU R32, R34 THRU R39, R41 THRU R60	RES 4.7K 1/4W 5%	1300447	16
1	R22	RES 1ØK 1/4W 5%	1300479	17
1	R27	RES 15K 1/4W 5%	1300496	18
1	R18	RES 27Ø 1/4W 5%	1301972	19
1	R23	RES 5ØK 3/4W 1Ø% 76 PR	1309143-13	20
				21
				22
				23
1	E4	IC 74Ø4	1909686	24
2	E15, E22	IC 74197	1910035	25
2	E1, E14	IC 74Ø8	1910155	26
2	E9, E1Ø	IC 74123	1910436	27
5	(E2-E3), (E6-E7), (E11-E12), (E16-E17), (E19-E20)	IC 75452	1910645-01*	28
2	E13, E23	IC 74199	1910842	29
1	E8	IC 7474	1905547	30
1	E18	IC 74Ø5	1909930	31
3	S1, S2, S3	SWITCH, TOGGLE	1210209-00	32
3	S4, S5, S6	SWITCH, DIP OF 10	1211164-06	33
2		EYELET	9006732	34

* NOTE

PARTS LIST

ETCH BOARD REV D

FIRST USED ON OPTION MODEL: TU16

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.		
D	M8912-00004	H. DRAB	15 Jan 76 [illegible]
C	M8912-00002	R. CORNEAU	3-26-75 [illegible]
B	M8912-1	JOHN HESS	7/31/74 [illegible]

REVISIONS

CHK

DRN [illegible] DATE 12-5-73
CHK'D [illegible] DATE 12/20/73
ENG [illegible] DATE 1/2/74
PROJ. ENG [illegible] DATE 1/[illegible]/74
PROD [illegible] DATE 1-[illegible]-76

NEXT HIGHER ASSY —//—
SCALE —//—
SHEET 1 OF 3

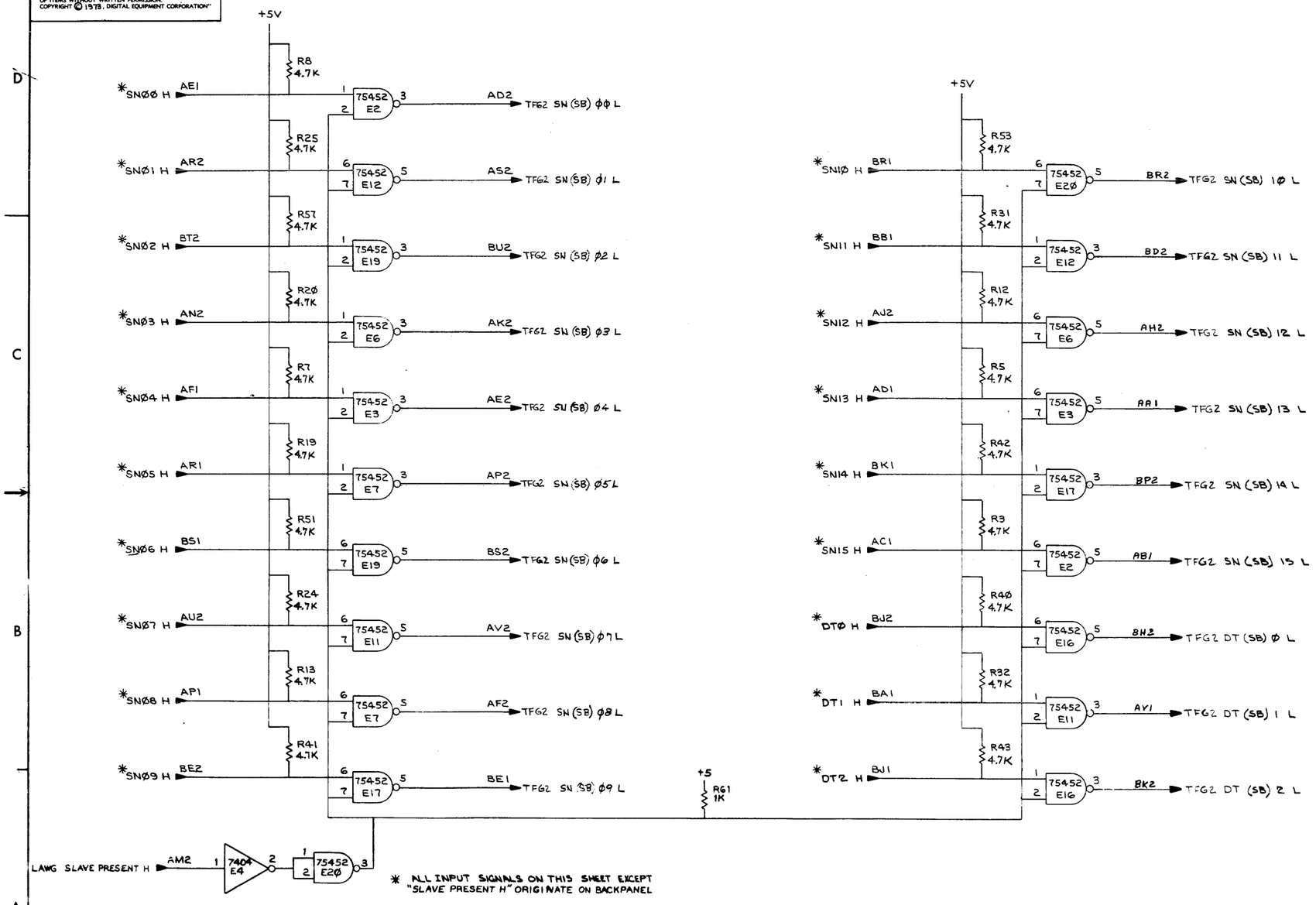
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE SLAVE TEST (TFGI) FUNCTION GENERATOR

SIZE D CODE CS NUMBER M8912-Ø-1 REV. D

DIST.

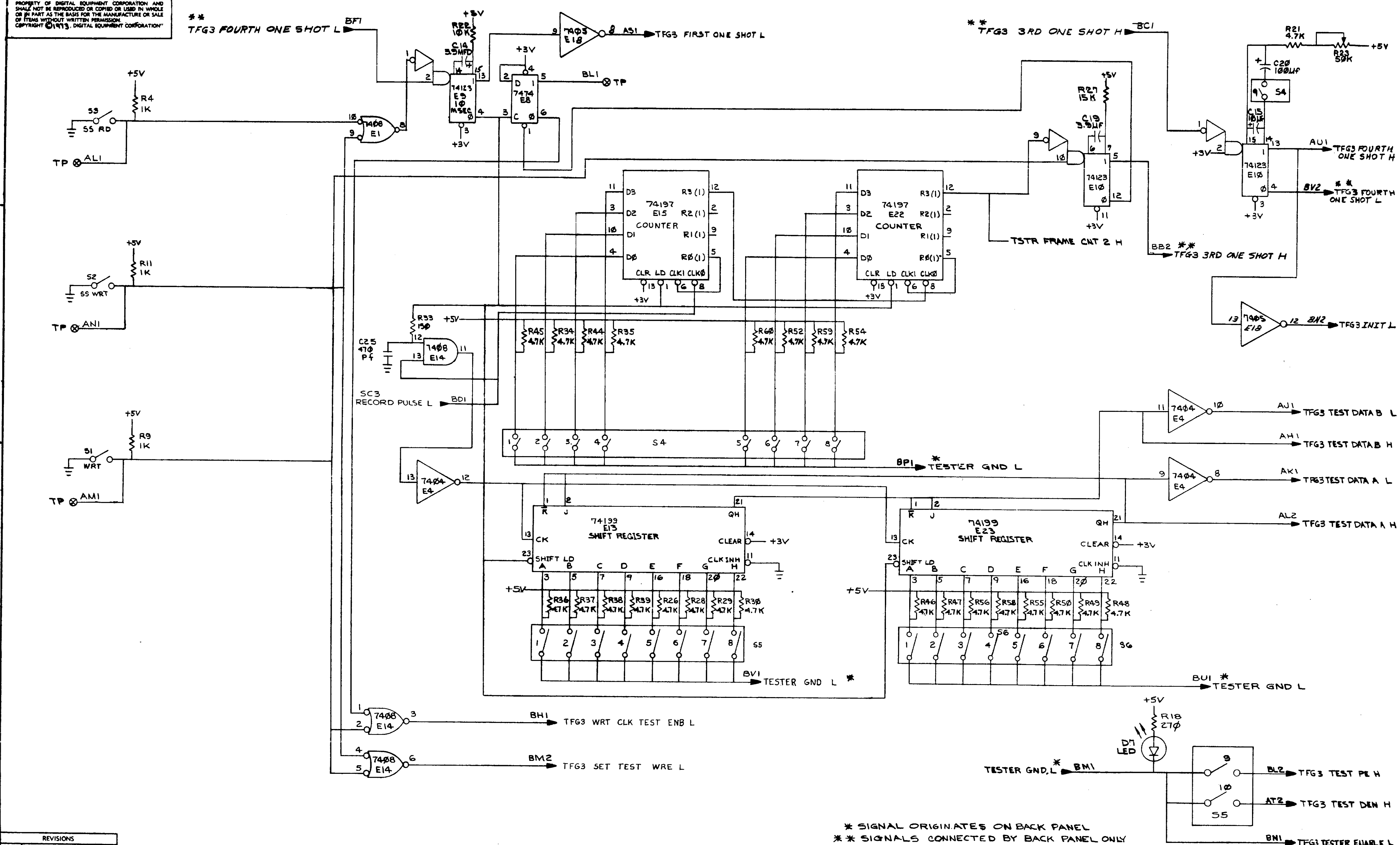
D CS M8912-Ø-1 D



* ALL INPUT SIGNALS ON THIS SHEET EXCEPT "SLAVE PRESENT H" ORIGINATE ON BACKPANEL

REVISIONS		
CHK	CHANGE NO.	REV

TITLE	SIZE	CODE	NUMBER	REV.
SLAVE TEST (TFG2) FUNCTION GENERATOR	D	CS	M8912-Ø-1	D
SCALE —	SHEET 2 OF 3		DIST.	



** TFG3 FOURTH ONE SHOT L
BF1
AS1
TFG3 FIRST ONE SHOT L
** TFG3 3RD ONE SHOT H
BC1
7405 E18
74123 E9 10 MSEC
7474 E8
BL1
TP
R22 10K
C14 .55MFD
S3 SS RD
R4 1K
7408 E1
AL1
S2 SS WRT
R11 1K
AN1
S1 WRT
R9 1K
AM1
74197 E15 COUNTER
74197 E22 COUNTER
74123 E10
R27 15K
C19 3.3µF
TSTR FRAME CNT 2 H
BB2 ** TFG3 3RD ONE SHOT H
R21 4.7K
R23 50K
C20 100µF
S4
C15
AU1 TFG3 FOURTH ONE SHOT H
BV2 ** TFG3 FOURTH ONE SHOT L
BH2 TFG3 INIT L
R33 150
C25 470 PF
7408 E14
SC3 RECORD PULSE L
BD1
S4
7404 E4
AJ1 TFG3 TEST DATA B L
AH1 TFG3 TEST DATA B H
BP1 * TESTER GND L
AK1 TFG3 TEST DATA A L
AL2 TFG3 TEST DATA A H
74199 E13 SHIFT REGISTER
74199 E23 SHIFT REGISTER
S5
S6
BV1 TESTER GND L *
BU1 * TESTER GND L
BH1 TFG3 WRT CLK TEST ENB L
BM2 TFG3 SET TEST WRE L
R18 270
D7 LED
TESTER GND. L * BM1
BL2 TFG3 TEST PE H
AT2 TFG3 TEST DEN H
BN1 TFG3 TESTER ENABLE L
* SIGNAL ORIGINATES ON BACK PANEL
** SIGNALS CONNECTED BY BACK PANEL ONLY

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: SLAVE TEST (TFG3) FUNCTION GENERATOR

SIZE: D | CODE: CS | NUMBER: M8912-Ø-1 | REV: D

SCALE: 1/1 | SHEET 3 OF 3

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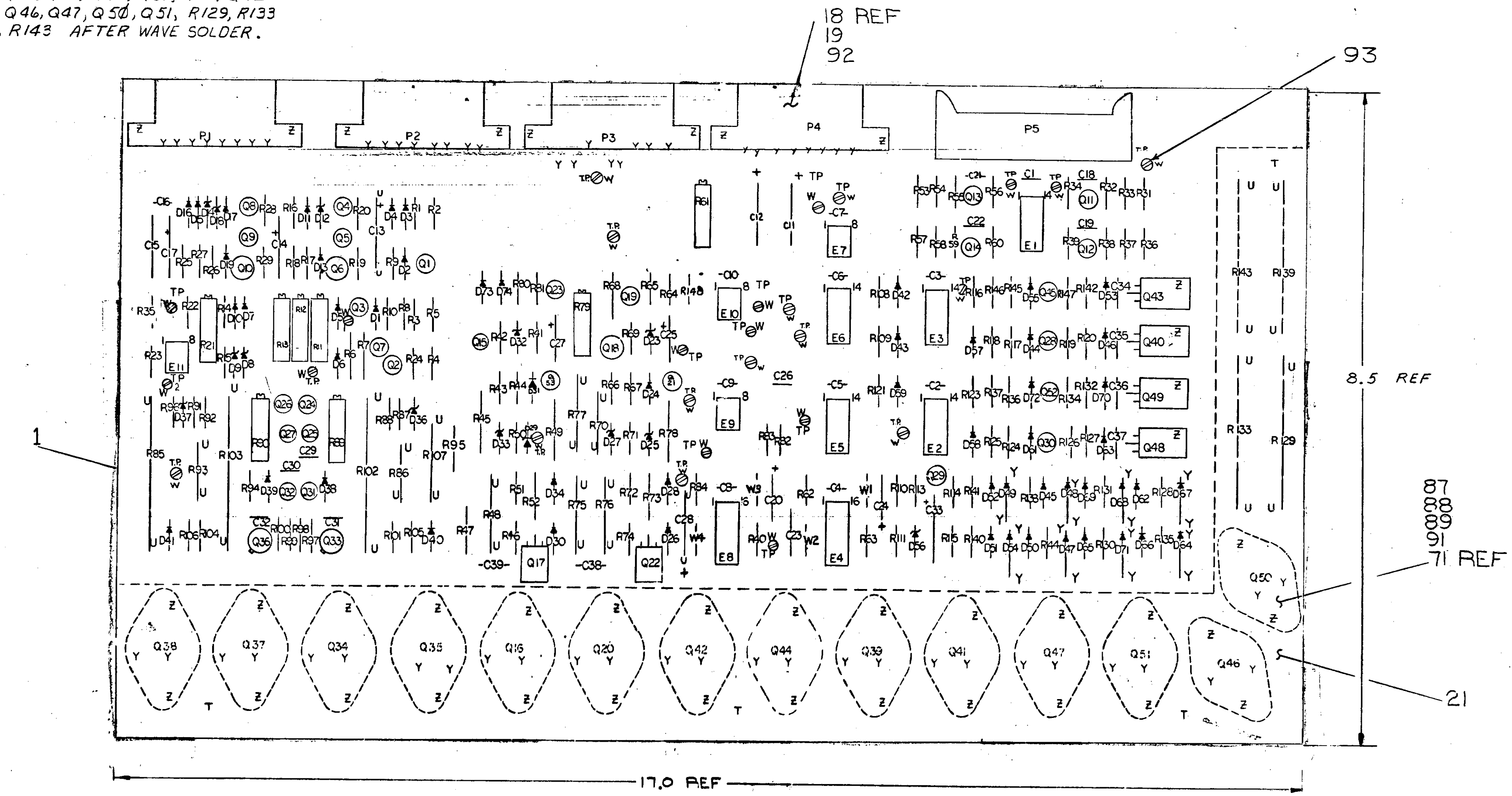
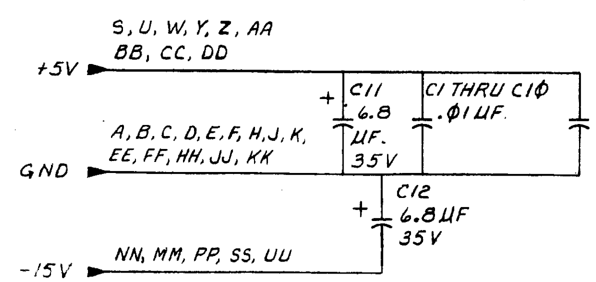
NOTES:

1. UNLESS OTHERWISE SPECIFIED:
   ALL RESISTORS ARE 1/4 W· 5%
   ALL CAPACITORS ARE 100V 20%.
2. MOUNT ITEM # 21 AND Q16, Q20, Q34, Q35, Q37, Q38, Q39, Q41, Q42, Q44, Q46, Q47, Q50, Q51, R129, R133, R139, R143 AFTER WAVE SOLDER.





75452	4	8
75451	4	8
74123	8	16
741	4	7
IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REV	CHANGE NO	CHK
H	H606-ML008	W. J. SMITH 11 MAY 79
F	...-00007	H. DRAB
E		
D		31 DEC '75
C	H606-00001	JOHN HESS 7-29-74

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: TU16

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

ETCH BOARD REV D

DRN. V. Buonnette DATE 10-18-73
CHK'D ... Carberry DATE 12/18/73
ENG. John Ito DATE 1-4-74
PROJ ENG John Ito DATE 1-4-74
PR DATE
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE TU16 POWER BOARD (DRVR 1)

SIZE D CODE CS NUMBER H606-0-1 REV. H

SCALE — SHEET 1 OF 6 DIST.

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
REF		X-Y COORDINATE HOLE LOCATION	K-CO-H606-0-4	REF
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-H606-0-5	REF
REF		MODULE FCO HISTORY	B-MH-H606-0-6	REF
1		ETCHED CIRCUIT BOARD	5010481	1
1	C15	CAP .027UF 100V 10% MYLAR	1000049	2
5	C20,C23,C24,C27,C25	CAP 3.9UF 10V 10% S TANT	1000064	3
2	C13,C28	CAP 180UF 6V 20% S. TANT	1000086	4
				5
18	C1 THRU C10,C16,C18,C19,C21, C22,C26,C29,C30	CAP .01UF 100V 20% DISC	1001610-01	6
4	C11,C12,C14,C17	CAP 6.8UF 35V 10% S.TANT	1005306	7
2	C31,C32	CAP .02UF	1000004	8
1	C33	CAP 68UF 15V 10% S.TANT	1000082	9
23	D1 THRU D7,D10,D11,D13,D17 D19 ,D38,D39 D42,D43,D44,D55,D57,D58 D59,D61,D72	DIODE D664	1100114	10
2	D23,D32	DIODE IN 748A ZENER	1100122	11
7	D8,D9,D12,D14,D18,D36,D37	DIODE IN 750A ZENER	1100124	12
8	D40,D41,D46,D53,D63,D70,D73,74	DIODE IN 4004	1105796	13
2	D27,D33	DIODE IN 4736A ZENER	1103340	14
3	D25,D29,D56	DIODE IN 756A ZENER	1103441	15
16	D50 THRU D52,D62, D65, D66,D69, D15,D16,D24, D26,D28,D30,D31,D34,D45,	DIODE D672	1105275	16
8	D47,D48,D49,D54,D64,D67,D68,D71	DIODE 5624	1110420	17
4	P1,P2,P3,P4	CONN MATE-N-LOK 8 PIN	1209340	18
32		SOCKET TERMINAL CONTACT	1209456	19
1	P5	CONN 40P RT ANG HEADER	1209941	20
1		HEAT SINK	74-11390	21
2	R105,R106	RES 47 ¼W 5%	1300202	22
1	R47	RES 56 ½W 5%	1309995	23
2	R101,R104	RES 100 ¼W 5%	1300229	24
3	R50,R71,R83	RES 220 ¼W 5%	1300271	25
2	R45,R70	RES 220 1W 10%	1300277	26
2	R7,R6	RES 270 ½W 5%	1300285	27
9	R82,R119,R120,R126,R127, R132,R134,R142,R147	RES 330 ¼W 5%	1300295	28
2	R86,R93	RES 330 1W 5%	1300297	29
1	R8	RES 470 ¼W 5%	1300316	30
1	R68	RES 750 ½W 5%	1300354	31
24	R15,R17,R19,R20,R26,R28, R29,R31,R33,R36,R37,R51, R53,R54,R57,R58,R72,R87, R91 R116,R123,R137,R146,R48	RES 1K ¼W 5%	1300365	32
14	R1,R4, ,R24,R42,R65,R69 R80,R81,R97,R100,R110,R111 R118,R125	RES 1.5K ¼W 5%	1300391	33
3	R35,R41,R64	RES 2.2K ¼W 5%	1300417	34
3	R108,R109,R121	RES 3.3K ¼W 5%	1300439	35
3	R2,R5,R96	RES 3.9K ¼W 5%	1300444	36
2	R9,R115	RES 10K ¼W 5%	1300479	37
5	R34,R39,R56,R60,R62	RES 12K ¼W 5%	1300488	38
2	R18,R27	RES 15K ¼W 5%	1300496	39
5	R23,R117,R124,R136,R145	RES 68K ¼W 5%	1301327	40
2	R16,R25	RES 27 ¼W 5%	1301522	41
2	R3,R14	RES 6.8K ¼W 5%	1301423	42
2	R49,R78	RES .82 ½W 10%	1301642	43
1	R95	RES .47 ½W 5%	1301695	44
1	R63	RES 22K ¼W 5%	1301808	45
1	R40	RES 5.6K ¼W 5%	1301874	46

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2	R43,R66	RES 560 ¼W 5%	1301890	47
5	R46,R74,R94,R98,R99	RES 270 ¼W 5%	1301972	48
2	R52,R73	RES 39 ½W 5%	1302336	49
1	R10	RES 20K ¼W 5%	1302391	50
1	R22	RES 470K ¼W 5%	1302398	51
1	R84	RES 33K ¼W 10%	1300510	52
8	R128,R130,R131,R135,R138 R140,R141,R144	RES 56 ¼W 5%	1302602	53
2	R75,R77	RES 56 2W 5%	1302836	54
2	R88,R92	RES 2K ¼W 5%	1302388	55
1	R114	RES 620 ¼W 5%	1303178	56
7	R32,R38,R44,R55,R59, R67,R113	RES 8.2K ¼W 5%	1303179	57
1	R107	RES 120 2W 5%	1305282	58
4	R129,R133,R139,R143	RES 56 10W 1%	1305396	59
2	R102,R103	RES 12 10W 5%	1305400	60
2	R76,R48	RES 27 2W 10%	1305624	61
1	R85	RES .1 10W 1%	1309108	62
1	R79	POT 100 ¾W 10% 76PR	1309143-04	63
2	R89,R90	POT 1K ¾W 10% 76PR	1309143-07	64
1	R11	POT 5K ¾W 10% 76PR	1309143-09	65
2	R12,R13	POT 10K ¾W 10% 76PR	1309143-10	66
2	R21,R61	POT 25K ¾W 10% 76PR	1309143-12	67
2	Q10,Q33	TRANS DEC 2904	1501742	68
2	Q6,Q36	TRANS DEC 2219	1501881	69
1	Q18	TRANS DEC 2904A	1501913	70
5	Q37,Q41,Q44,Q50,Q51	TRANS DEC 3715	1503068	71
12	Q1,Q2,Q3,Q29,Q5,Q8,Q21,Q23 Q26,Q27,Q32,Q53	TRANS DEC 6534D	1503409	72
16	Q4,Q7,Q9,Q11 THRU Q15,Q19 Q24,Q25,Q28,Q30,Q31,Q45,Q52	TRANS DEC 6531B	1509338	73
7	Q16,Q20,Q34,Q39,Q42,Q46,Q47	TRANS DEC 3791	1509581	74
2	Q17,Q22	TRANS DEC 4923	1509604	75
1	Q35	TRANS DEC 4502	1510334	76
1	Q38	TRANS DEC 802	1510335	77
4	Q40,Q43,Q48,Q49	TRANS D 45C8	1510598	78
1	E5	IC DEC 7400	1905575	79
1	E6	IC DEC 7410	1905576	80
1	E1	IC DEC 7402	1909004	81
2	E2,E3	IC DEC 380	1909465	82
1	E11	IC DEC 741	1910298	83
1	E9	IC DEC 75451	1910406	84
2	E4,E8	IC DEC 74123	1910436	85
2	E7,E10	IC DEC 75452	1910645	86
A/R		THERMAL COMPOUND	9008268	87
28		SCREW,BD HD 4-40X7-16 LG	9006012-4	88
32		KEPNUT 4-40	9006557	89
8		WASHER, NYLON	9006706	90
14		WASHER, ANODIZED	9006721	91
8		EYELET	9006745	92
26		CAMBION TERMINAL	9007791	93
6	C34 THRU C39	CAP .1UF 100V 20% DISC	1000030	94
4		EYELET	9006746	95
4		SCREW, BD HD 4-40 X 5-16 LG	9006010-4	96
~~A/R~~		~~TUBING #22 THIN WALL~~	~~9107256~~	97
~~1~~		~~GRIPLET~~	~~1210244~~	98
4	W1 THRU W4	JUMPER,WIRE,WHITE INSULATION	9009185	99

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

REVISIONS		
CHK	CHANGE NO	REV

TITLE: TU16 POWER BOARD (DRVR2)

SIZE: D | CODE: CS | NUMBER: H606 Ø-1 | REV: H

SCALE: — | SHEET 2 OF 6 | DIST.

REVISIONS		
CHK	CHANGE NO.	REV

TITLE (DRVR3)
TU16 POWER BOARD

SIZE	CODE	NUMBER	REV.
D	CS	H606-0-1	H

SCALE
SHEET 3 OF 6
DIST.

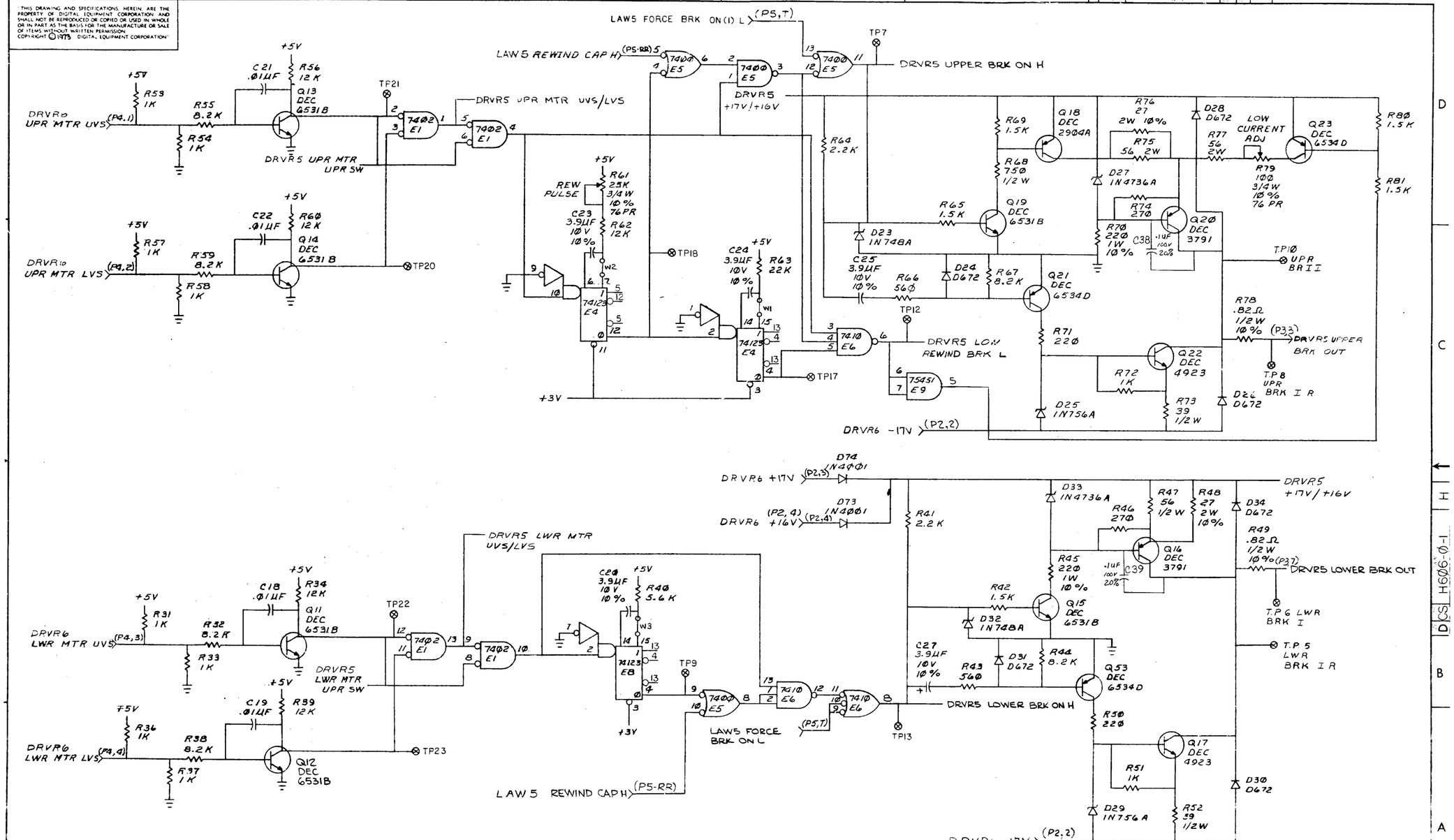
P1
1
2
3
4

DRVR4 MOTOR
DRVR4 MOTOR RETURN
DRVR4 TACH V
DRVR4 PWR COM (TACH GND)

DRVR3 SERVO SIGNAL
(P1,2) DRVR4 MOTOR RETURN
DRVR6 +16V (P2,4)
DRVR6 PWR COM (P2,7)
DRVR6 -16V (P2,5)
DRVR6 PWR COM INT (P2,6)
(P1,1) DRVR4 MOTOR

R84 330 1W
R85 .1Ω 10W 1%
R87 1K
R88 2K
R89 1K 3/4W 10% 76PR CURRENT ADJ
D36 1N750A 4.7V
Q24 DEC 6531B
Q25 DEC 6531B
D38 D664
C29 .01μF
R90 1K 3/4W 10% 76PR - CURRENT ADJ
D37 1N 750A 4.7V
Q26 DEC 6534D
Q27 DEC 6534D
C30 .01μF
D39 D664
R91 1K
R92 2K
R93 330 1W
R94 270Ω
R95 47 1/2W
R94 3.9K
R97 1.5K
R98 270
C31 .02μF -0 +20%
Q31 DEC 6531B
Q32 DEC 6534D
Q33 DEC 2904
Q34 2N 3791
Q35 DEC 4502
R101 100
R105 47
D40 1N4001
R102 12 10W
R107 120 2W
R99 270
C32 .02μF -0 +20%
Q36 DEC 2219
Q37 DEC 3715
Q38 DEC 8002
R103 12 10W
R100 1.5K
R104 100
R106 47
D41 1N4001

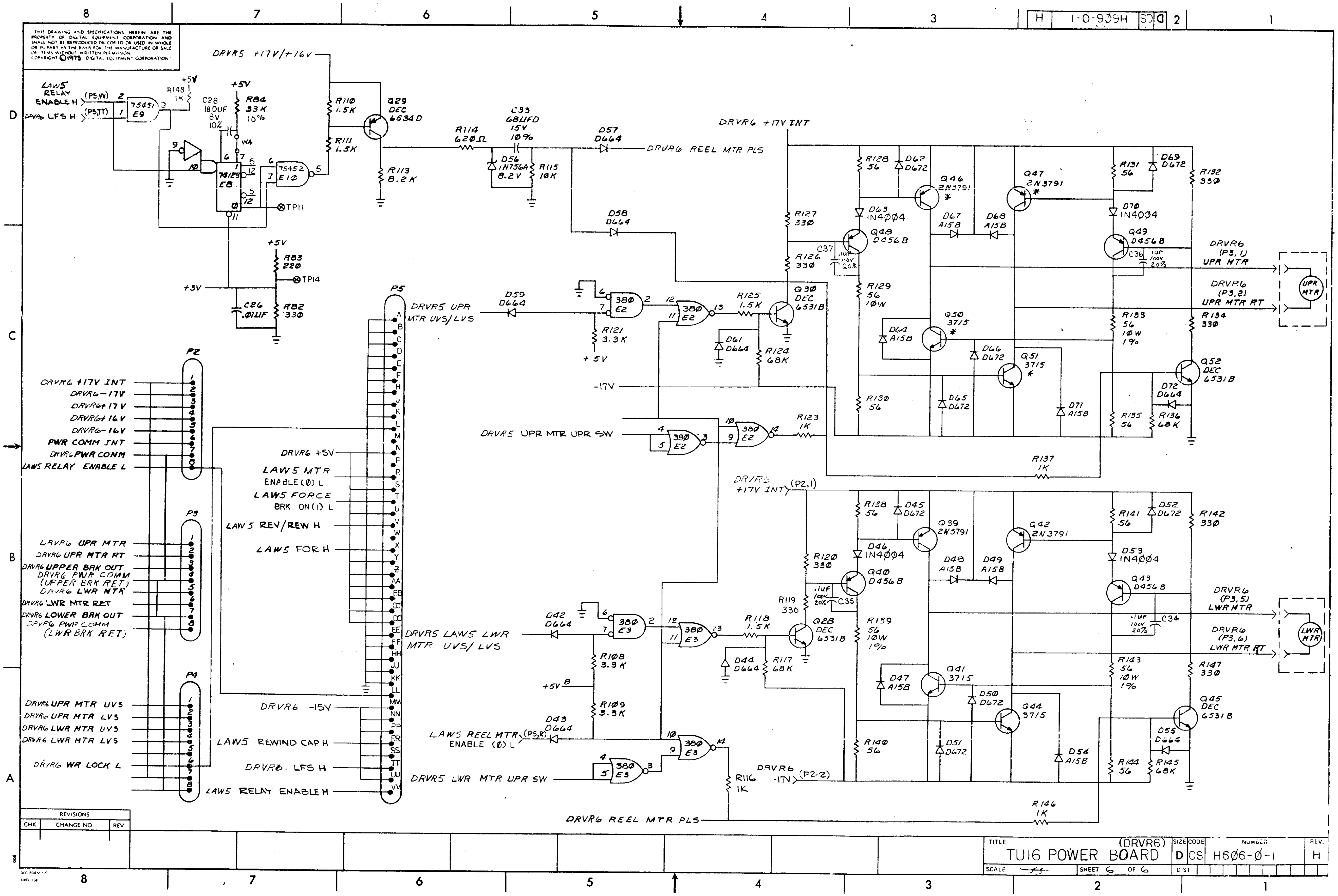
TITLE TU16 POWER BOARD (DRVR4)
SIZE D | CODE CS | NUMBER H606-0-1 | REV. H
SCALE —H— | SHEET 4 OF 6 | DIST.



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
TU16 POWER BOARD (DRVR5)	D	CS	H606-Ø-1	H
SCALE —	SHEET 5 OF 6	DIST.		

DEC FORM NO DEC 138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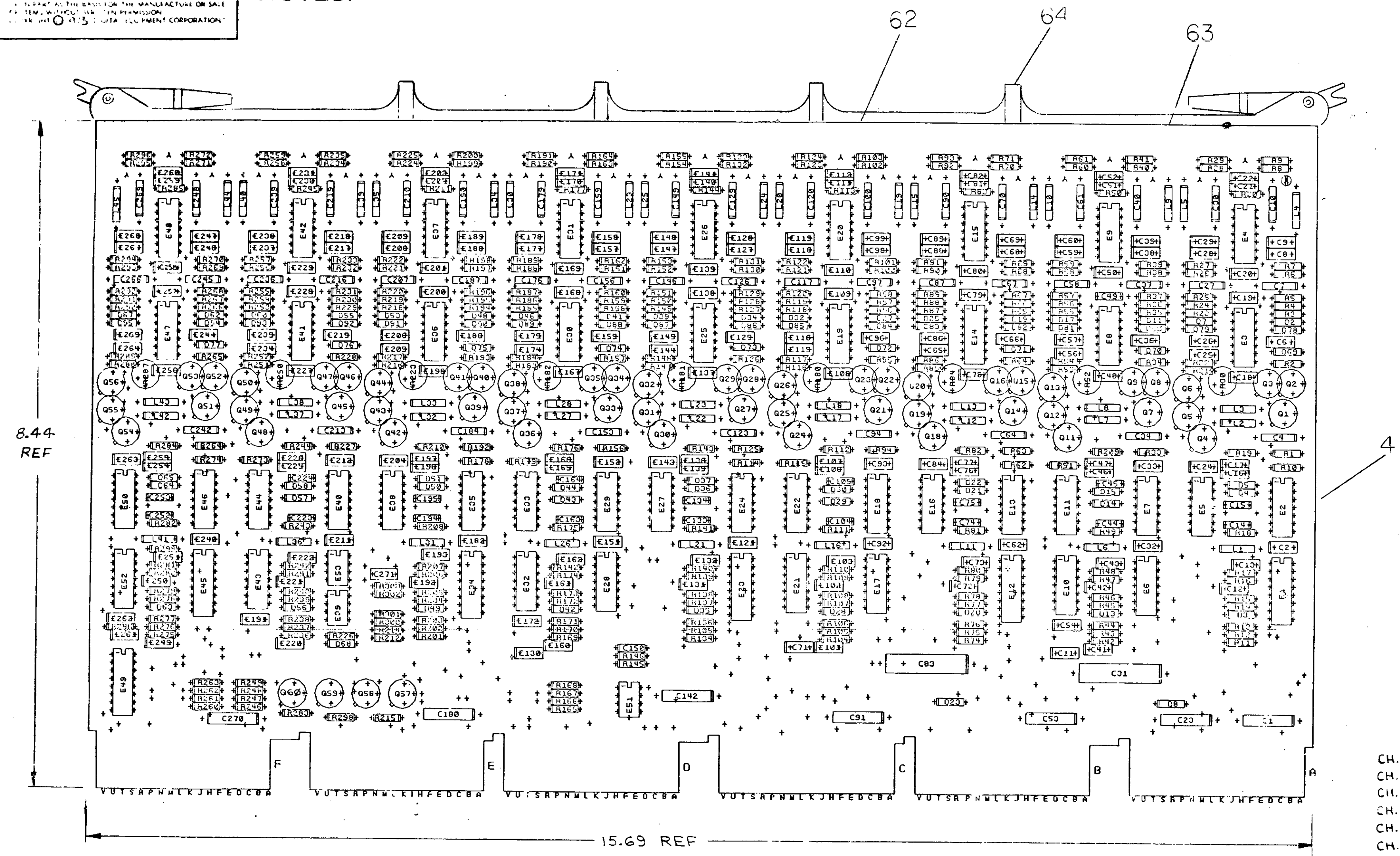
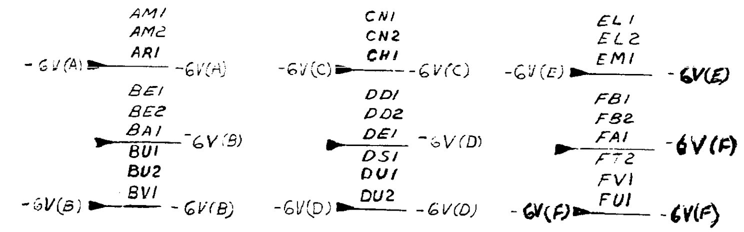
LAWS RELAY ENABLE H
DRVR6 LFS H
DRVR5 +17V/+16V
DRVR6 +17V INT
DRVR6 REEL MTR PLS
DRVR5 UPR MTR UVS/LVS
DRVR5 UPR MTR UPR SW
DRVR6 +17V INT (P2,1)
DRVR5 LAWS LWR MTR UVS/ LVS
LAWS REEL MTR ENABLE (0) L
DRVR5 LWR MTR UPR SW
DRVR6 -17V (P2-2)
DRVR6 (P3,1) UPR MTR
DRVR6 (P3,2) UPR MTR RT
DRVR6 (P3,5) LWR MTR
DRVR6 (P3,6) LWR MTR RT
UPR MTR
LWR MTR
P2
DRVR6 +17V INT
DRVR6 -17V
DRVR6 +17 V
DRVR6 +16 V
DRVR6 -16 V
PWR COMM INT
DRVR6 PWR COMM
LAWS RELAY ENABLE L
P3
DRVR6 UPR MTR
DRVR6 UPR MTR RT
DRVR6 UPPER BRK OUT
DRVR6 PWR COMM (UPPER BRK RET)
DRVR6 LWR MTR
DRVR6 LWR MTR RET
DRVR6 LOWER BRK OUT
DRVR6 PWR COMM (LWR BRK RET)
P4
DRVR6 UPR MTR UVS
DRVR6 UPR MTR LVS
DRVR6 LWR MTR UVS
DRVR6 LWR MTR LVS
DRVR6 WR LOCK L
P5
DRVR6 +5V
LAWS MTR ENABLE (0) L
LAWS FORCE BRK ON (1) L
LAWS REV/REW H
LAWS FOR H
DRVR6 -15V
LAWS REWIND CAP H
DRVR6 LFS H
LAWS RELAY ENABLE H
REVISIONS
CHK
CHANGE NO
REV
TITLE
TU16 POWER BOARD (DRVR6)
SIZE D
CODE CS
NUMBER H606-0-1
REV. H
SCALE
SHEET 6 OF 6
DIST

NOTES:

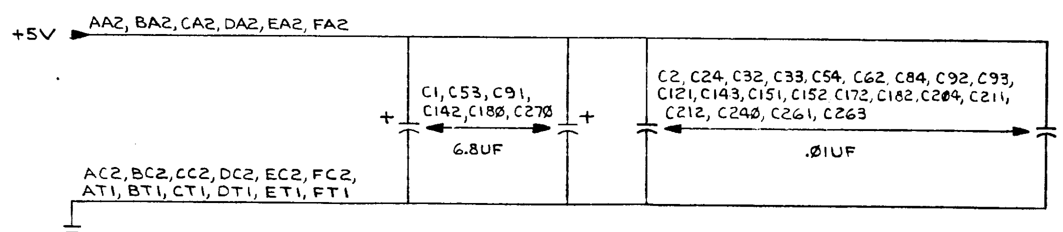




TRACK NUMBER	BINARY REFERENCE
1	RD2
2	RDØ
3	RD4
4	RDP
5	RD5
6	RD6
7	RD7
8	RD1
9	RD3

	WRE H A	PES L B	Y3 PIN 4	Y2 PIN 5	Y1 PIN 6	Y0 PIN 7
PE	0	0	1	1	1	0
PE	1	0	1	1	0	1
NRZ	0	1	1	0	1	1
NRZ	1	1	0	1	1	1

	IN 7486 OUT	75107	IN	7476	OUT	DIGITAL	ANALOG
CH. 1	9,10 (E1Ø) 8	AJ1	1,2	E1	14	AB1	AL1
CH. 2	12,13 (E1Ø) 11	AH1	6,7	E1	10	AF1	BB1
CH. 3	9,10 (E21) 8	BN1	1,2	E12	14	BF1	BM1
CH. 4	12,13 (E21) 11	BL1	6,7	E12	10	BK1	CK1
CH. 5	9,10 (E32) 8	CU1	1,2	E23	14	CP1	CL1
CH. 6	12,13 (E32) 11	CS1	6,7	E23	10	CR1	DP1
CH. 7	9,10 (E43) 8	EH1	1,2	E34	15	DV1	DR1
CH. 8	12,13 (E43) 11	EF1	6,7	E34	10	EE1	FP1
CH. 9	9,10 (E52) 8	FM1	1,2	E45	14	FK1	FR1



IC TYPE	GND	+5V
71Ø	1	8
7476	8	16
74155	8	16

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REVISIONS: ARNOLD KORELITZ 14 Dec 74 — G056-00008 — L; W. SMITH — G056-00001 — K; A. KORELITZ — G056-00003 — H; A. KORELITZ — G056-00002 — D

SEMICONDUCTOR CONVERSION CHART (DEC NO. / EIA NO.)

FIRST USED ON OPTION MODEL: TU16

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO

PARTS LIST

ETCH BOARD REV E

CHK'D DATE 3-13-74; ENG DATE 2-14-74; PROJ ENG DATE 2-14-74

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION

TITLE: READ AMP (RA1)

SIZE D CODE CS NUMBER G056-Ø-1 REV. L

SCALE — SHEET 1 OF 7

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-GØ56-Ø-4	1
REF		ASSY-DRILLINGHOLE LAYOUT	D-AH-GØ56-Ø-5	2
REF		MODULE ECO HISTORY	B-MH-GØ56-Ø-6	3
1		ETCHED CIRCUIT BOARD	5010479	4
9	C20,C50,C80,C110,C139,C169 C201,C229,C258	CAP 680PF,100V,5% DM	1000026	5
6	C1,C53,C91,C142,C180,C270	CAP 6.8UF,35V,10% S.TANT	1005306	6
18	C14,C15,C44,C45,C74,C75,C104 C105,C133,C134,C163,C164, C194,C195,C223,C224,C252 C253	CAP .22UF,50V,10% CER	1010274	7
1	C23	CAP 10UF, 20V, 10% S.TANT	1004813	8
~~9~~	~~C11,C41,C71,C101,C130,C160, C191,C220,C249,~~	~~CAP 820PF,100V,5%~~	~~1000027~~	~~9~~
9	C19,C49,C79,C109,C138,C168 C200,C228,C257	CAP 120PF,100V 5% DM	1000018	10
9	C21,C51,C81,C111,C140,C170 C202,C230,C259	CAP 330PF,100V,5% DM	1000023	11
18	C10,C30,C40,C61,C70,C90,C100 C120,C129,C149,C159,C179, C190,C210,C219,C239,C248C269	CAP 2.2UF,20V,10% S.TANT	1002627	12
9	~~C5~~,C25,~~C35~~,C56,~~C65~~,C85,~~C95~~ C115,~~C124~~,C144,~~C154~~,C174, ~~C185~~,C205,~~C214~~,C234,~~C243,~~ C264	CAP 82PF,100V,5% DM	1000015	13
18	C12,C13,C42,C43,C72,C73,C102 C103,C131,C132,C161,C162, C192,C193,C221,C222,C250,C251	CAP 470PF,100V,5% DM	1000024	14
74	C6,C8,C9,C16,C17,C26,C28,C29 C36,C38,C39,C46,C47,C57,C59 C60,C66,C68,C69,C76,C77,C86 C88,C89,C96,C98,C99,C106, C107,C116,C118,C119,C125, C127,C128,C135,C136,C145,C147 C148,C155,C157,C158,C165,C166 C175,C177,C178,C186,C188,C189 C196,C197,C206,C208,C209,C215 C217,C218,C225,C226,C235,C237 C238,C244,C246,C247,C254,C255 C262,C265,C267,C268,C181	CAP .47UF,25V,20% CER	1010279	15
2	C31,C83	CAP 22UF 35V,20% S.TANT	1002433	16
9	C22,C52,C82,C112,C141,C171 C203,C231,C260	CAP .005UF, 100V, 20% DISC	1001765	17
9	C18,C48,C78,C108,C137,C167, C198,C227,C256,	CAP 1000PF 250V, 20% DISC	1000043	18
27	C4,C7,C27,C34,C37,C58,C64,C67 C87,C94,C97C117,C123,C146,C126 C153,C156,C176,C184,C187,C207 C213,C216,C236,C242,C245,C266	CAP 3.9UF 10V,10% S.TANT	1000064	19
22	C2,C24,C32,C33,C54,C62,C84 C92,C93,~~C113~~,C121,C143,C150, C151,C152,C172,C182,C204,C211 C212,~~C232~~,C240,C261,C263	CAP .01UF 100V,20%, DISC	1001610-01	20
63	D2-5,7,11,13,14,15,17,19,20, 21,22,26,27-30,34-37,39 41,-44,46,48,49-51,53,55- 58,60 62-65,67,32,78-95	DIODE D664	1100114	21
				22
1	D68	DIODE IN747A 3.6V 5%	1110672	23
~~2~~	~~D12,D23~~	~~DIODE IN758A~~	~~1100125~~	~~24~~
10	,R23 R55, R87, R118, ,R149 R185. R218, R253, R290, R214	RES 910 ¼W 5%	1305374	25
1	R145	RES 10 ,¼W 5%	1301317	26
~~2~~	~~R31,R72~~	~~RES 100,¼W 5%~~	~~1301322~~	~~27~~
9	R21,R53,R85,R116,R147,R183 R216,R251,R288	RES 330,¼W 5%	1300295	28
1	R226	RES 47,¼W 5%	1300202	29

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
26	R8,R28,R40,R60,R70,R92,R102 R123,R132,R154,R163,R190, R199,R224,R234 R258,R271,R12,R170,R276, R295,R215,R43,R75,R105,R135,R202,R237	RES 220 1/4W 5%	1300271	30
18	R9,~~R12~~ R29,R41,~~R43~~ R61,R71 ~~R75~~ R93,R103,~~R105~~ R124,R133 ~~R135~~,R155,R164,~~R170~~,R191, R200,~~R202~~,R225,R235,~~R237~~ R259,R272,~~R276~~ R296,	RES 470 ¼W 5%	1300316	31
* 11	R11,R42,R74,R104,R134,R169, R201,R236,R275,R286,R298	RES 680,¼W 5%	1301424	32
* 9	R20,R50,R83,R113,R144, R177,R211,R245,R285	RES 680, 1/4W, 5% NOMINAL		
74	R1,R6,R7,R15,R17,R26,R27,R33 R38,R39,R46,R48,R58,R59,R63,R68 R69,R78,R80,R90,R91,R94,R100 R101,R108,R110,R121,R122,R125 R130,R131,R138,R140,R142,R152 R153,R156,R161,R162,R173,R188 R183,R192,R197 R198,R205,R207 R221,R222,R227,R232,R233,R240 R242,R246,R247,R248,R249 R256 R257 R260 R261,R262,R263 R264,R269,R270,R279,R281 R286,R294,R299,R302,R303	RES 1K ¼W 5%	1300365	33
1	R283	RES 820, 1/4, 5%	1301775	34
18	R18,R19,R49,R81,R82,R111, R112,R284,R141,R143,R175, R176,R244,R208,R209,R282, R210,R243,	RES 120,¼W,5%	1300247	35
3	R166,R146,R168	RES 196,¼W 1%	1302956	36
11	R10,R51,R62,R114,R115,R165 R167,R178,R179,R273,R274	RES 4.7K ¼W 5%	1300447	37
9	,R22, ,R54, R86,R289, R117, ,R148, ,R184 ,R217, ,R252,	RES 3.9K ¼W 5%	1300444	38
9	R2,R34,R64,R126,R157, R193,R228,R265,R95	RES 4.0K 1/4W 1%	1305127	39
18	R14,R16,R45,R47,R77,R79,R107 R109,R137,R139,R172,R174, R204,R206,R239,R241,R278, R280	RES 150K ¼W 5%	1302396	40
9	R13,R44,R76,R106,R136,R171 R203,R238,R277	RES 82,¼W 5%	1301477	41
~~1~~	~~R214~~	~~RES 910 OHM ¼W 5%~~	~~1305374~~	42
9	,R25, R57, R89, R120, ,R151, ,R187, ,R220, ,R255, R292	RES 3.3K ¼W 5%	1300439	43
9	,R24, ,R56, ,R88, R119, ,R150, ,R186, ,R219, ,R254, R291	RES 15K ¼W 5%	1300496	44
9	R30,R52,R84,R180,R181,R223 R250,R287, R182	POT 2K ½W 10%	1309150-07	45
1	R300	RES 47 ¼ 5%	1300202	46
~~1~~	~~R214~~	~~RES 560 OHM ¼ 5%~~	~~1301890~~	~~47~~
4	Q57,Q58,Q59,Q60	TRANSISTOR 6534D	1503409	48
~~2~~	~~Q10,Q17~~	~~TRANSISTOR 2219~~	~~1501281~~	49
18	Q1,Q4,Q7,Q11,Q14,Q18,Q21, Q24,Q27,Q30,Q33,Q36,Q39,Q42 Q45,Q48,Q51,Q54	TRANSISTOR 6531B	1509338	50
36	Q2,Q3,Q5,Q6,Q8,Q9,Q12,Q13, Q15,Q16,Q19,Q20,Q22,Q23,Q25 Q26,Q28,Q29,Q31,Q32,Q34,Q35 Q37,Q38,Q40,Q41,Q43,Q44,Q46 Q47,Q49,Q50,Q52,Q53,Q55,Q56	TRANSISTOR 2N4250	1509142	51

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
				52
45	L1,L6,L11,L16,L21,L26,L31 L36,L41 L2,L3,L4,L5,L7,L8,L9,L10,L12 L13,L14,L15,L17,L18,L19,L20, L22,L23,L24,L25,L27,L28,L29 L30,L32,L33,L34,L35,L37,L38 L39,L40,L42,L43,L44,L45	INDUCTOR 1000 UH	1602723	53
1	E49	I.C. 74156	[illegible]	54
2	E51 E53	I.C. 72741	1910298	55
18	E3,E4,E8,E9,E14,E15,E19,E20 E25,E26,E30,E31,E36,E37,E41 E42,E47,E48	I.C. 72733	1910644	56
5	E1,E12,E23,E34,E45	I.C. 7476	1905585	57
9	E2,E11,E13,E22,E24,E33,E35, E44,E46	I.C. 75107	1910268	58
9	E5,E7,E16,E18,E27,E29,E38, E40,E50	I.C. 710	1905620-01	59
5	E10,E21,E32,E43,E52	I.C. 7486	1910011	60
3	E6,E17,E28,	I.C. 7404	1909686	61
12		EYELET	9006732	62
27		SPLIT LUG	9006735	63
1		HANDLE, HEX	1210711-2	64
				65
1		READ CABLE	7010057-0-0	66
1		CABLE READ BOARD	7009920-0-0	67
* 9	R20,R50,R83,R113,R144 R177,R211,R245,R285	RES 470 1/4W 5% (HIGH GAIN) OR RES 820 1/4W 5% (LOW GAIN) NOTE: TO BE CHANGED AT FINAL SYSTEM TEST IF NECESSARY	1300316 1301775	68
				69
				70
9	C11,C41,C71,C101,C130,C160 C191,C220,C249	CAP 1500 PF	1000054	71
*	NOTE: GAIN ADJUST REFER TO ITEM #20 R50,R93,R113,R144 R177,R211,R245,R285, R20.	RES 470 (MAX GAIN) RES 680 RES 820 RES 1.2K (NORMINAL) RES 1.8K (MIN GAIN)		
1	D8	DIODE D777	1103041	72
~~18~~	~~R300-317~~	~~RES 270 1/4W 5%~~	~~1301972~~	~~73~~
9	D69-D77	ZENER DIODE IN942 11.7V	11-09345	74
9	R5,R37,R67,R98,R160, R196,R268,R231,R129	RES 3.16K 1/4W 1%	13[illegible]3045	75
1	R2[illegible]2	RES 511 1/4W 1%	1302411	76
9	R4,R36,R66,R97,R159, R195,R267,R230,R128	RES 14.7K 1/4W 1%	1302941	77
9	R3,R35,R65,R96,R158, R194,R266,R229,R127	RES 909 1/8W 1%	1302685	78
1	R301	RES 1.5K 1/4W 5%	1300391	79
1	C271	CAP .047 MFD, POLYCARB	1009463	80
1	E39	I.C. 75452	1910645	81

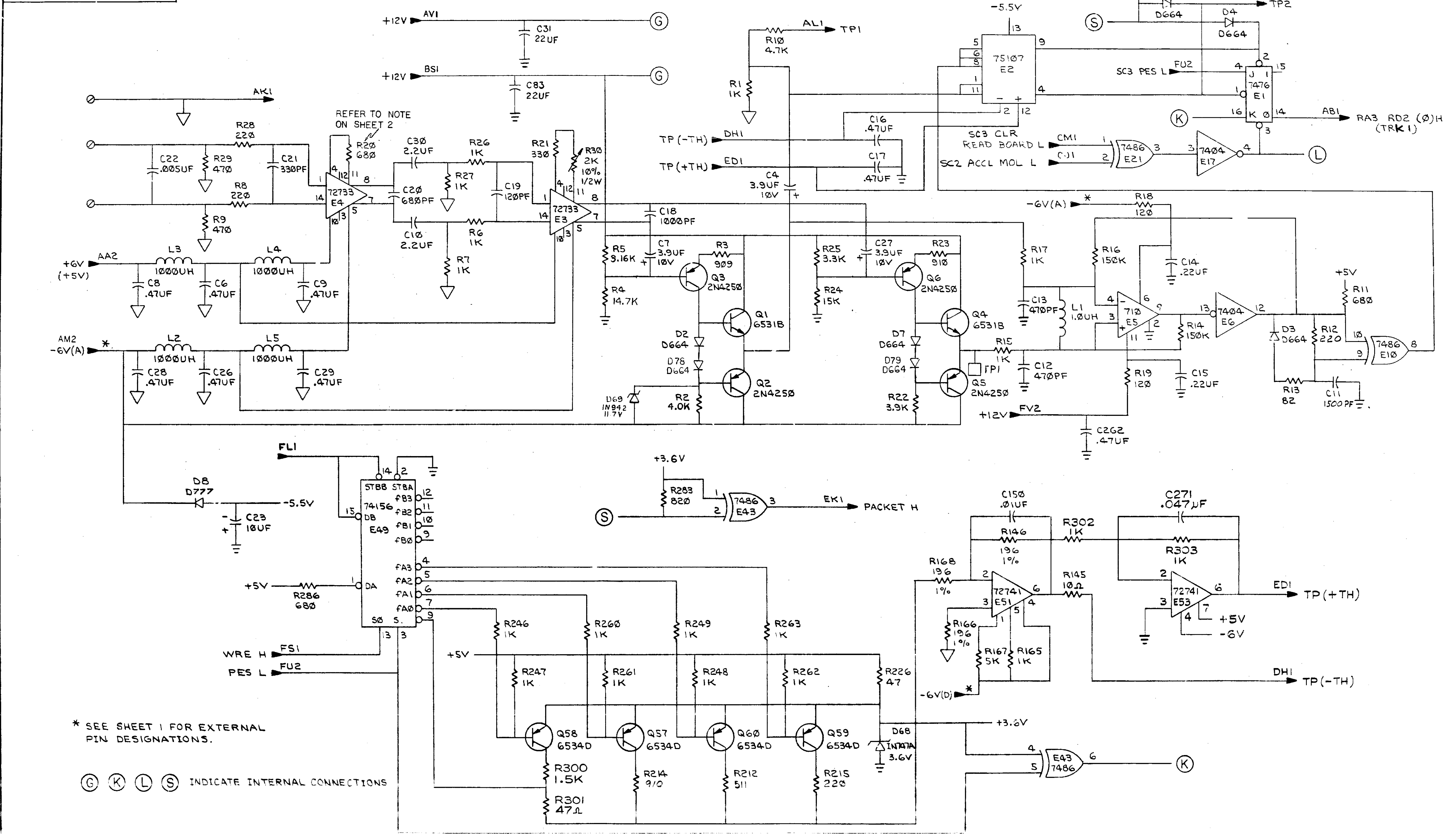
REVISIONS

CHK	CHANGE NO	REV

TITLE READ AMP (RA2)

SIZE D CODE CS NUMBER GØ56-Ø-1 REV L

SCALE — SHEET 2 OF 7 DIST.


+12V AV1
C31 22UF
+12V BS1
C83 22UF
AK1
R28 220
C22 .005UF
R29 470
C21 330PF
R8 220
R9 470
REFER TO NOTE ON SHEET 2
R20 680
72733 E4
C30 2.2UF
C20 680PF
C10 2.2UF
R26 1K
R27 1K
R6 1K
R7 1K
C19 120PF
R21 330
R30 2K 10% 1/2W
72733 E3
+6V (+5V) AA2
L3 1000UH
L4 1000UH
C8 .47UF
C6 .47UF
C9 .47UF
AM2 -6V(A)
L2 1000UH
L5 1000UH
C28 .47UF
C26 .47UF
C29 .47UF
C18 1000PF
R5 9.16K
C7 3.9UF 10V
R3 909
Q3 2N4250
R4 14.7K
Q1 6531B
D2 D664
D76 D664
D69 1N942 11.7V
R2 4.0K
Q2 2N4250
R10 4.7K
AL1 TP1
R1 1K
TP(-TH) DH1
TP(+TH) ED1
C16 .47UF
C17 .47UF
C4 3.9UF 10V
R25 3.3K
C27 3.9UF 10V
R23 910
R24 15K
Q6 2N4250
Q4 6531B
D7 D664
D79 D664
R22 3.9K
Q5 2N4250
R15 1K
TP1
C12 470PF
+12V FV2
C262 .47UF
-5.5V
75107 E2
SC3 CLR READ BOARD L CM1
SC2 ACCL MOL L CJ1
7486 E21
7404 E17
+5V
R298 680
D5 D664
D4 D664
AJ1 TP2
SC3 PES L FU2
7476 E1
AB1 RA3 RD2 (0)H (TRK1)
-6V(A)
R18 120
R17 1K
R16 150K
C14 .22UF
C13 470PF
L1 1.0UH
710 E5
R14 150K
7404 E6
R19 120
C15 .22UF
R11 680
D3 D664
R12 220
7486 E10
R13 82
C11 1500PF
FL1
74156 E49
D8 D777
-5.5V
C23 10UF
+5V R286 680
WRE H FS1
PES L FU2
+3.6V
R283 820
7486 E43
EK1 PACKET H
R246 1K
R260 1K
R249 1K
R263 1K
+5V
R247 1K
R261 1K
R248 1K
R262 1K
R226 47
Q58 6534D
Q57 6534D
Q60 6534D
Q59 6534D
R300 1.5K
R301 47Ω
R214 910
R212 511
R215 220
D68 1N747A 3.6V
+3.6V
E43 7486
C150 .01UF
R146 196 1%
R302 1K
R168 196 1%
72741 E51
R145 10Ω
R166 196 1%
R167 5K
R165 1K
-6V(D)
C271 .047µF
R303 1K
72741 E53
+5V
-6V
ED1 TP(+TH)
DH1 TP(-TH)

* SEE SHEET 1 FOR EXTERNAL PIN DESIGNATIONS.

(G) (K) (L) (S) INDICATE INTERNAL CONNECTIONS

REVISIONS		
CHK	CHANGE NO	REV

TITLE READ AMP (RA3)

SIZE D CODE CS NUMBER G056-0-1 REV L

SCALE — SHEET 3 OF 7

* SEE SHEET 1 FOR EXTERNAL PIN DESIGNATIONS.

Ⓖ Ⓚ Ⓛ Ⓢ INDICATE INTERNAL CONNECTIONS

AT1 R60 220 R61 470 R40 220 R41 470 C52 .005UF C51 330PF

REFER TO NOTE ON SHEET 2

R50 680 C61 2.2UF R58 1K R59 1K C49 120PF R53 330 R52 2K 10% 1/2W C50 680PF C40 2.2UF R38 1K R39 1K

72733 E9 72733 E8

+6V (+5V) BA2 L8 1000UH L9 1000UH C38 .47UF C36 .47UF C39 .47UF

-6V(B) * L7 1000UH L10 1000UH C59 .47UF C57 .47UF C60 .47UF

BE2 BU1 BU2

C48 1000PF

R37 3.16K C37 3.9UF 10V R35 909 Q9 2N4250 R36 14.7K Q7 6531B

D11 D664 D80 D664 D70 IN942 11.7V R34 4.0K Q8 2N4250

R57 3.3K C58 3.9UF 10V R55 910 Q13 2N4250 R56 15K C56 82PF

D17 D664 D81 D664 Q11 6531B R46 1K TP2 Q12 2N4250 R54 3.9K

R48 1K C43 470PF L6 1000UH C42 470PF

-6V(B) * R49 120 R47 150K C44 .22UF R209 120 C45 .22UF

+12V FV2

+5V R42 680 D13 D664 R44 82 C41 1500PF 7404 E6 7410 E7 7486 E10

BB1 TP1 R51 4.7K R33 1K DH1 TP(-TH) EDI TP(+TH) C34 3.9UF 10V C46 .47UF C47 .47UF

-5.5V 75107 E11

D15 D664 D14 D664 AH1 TP2 SC3 PES L FU2 7476 E1 AF1 RA4 RD0 (Ø)H (TRK 2)

BP1 R92 220 R93 470 R70 220 R71 470 C82 .005UF C81 330PF

REFER TO NOTE ON SHEET 2

R83 680 C90 2.2UF R90 1K R91 1K C79 120PF R85 330 RE4 2K 10% 1/2W C80 680PF C70 2.2UF R68 1K R69 1K

72733 E15 72733 E14

+6V (+5V) BA2 L13 1000UH L14 1000UH C68 .47UF C66 .47UF C69 .47UF

-6V(B) * L12 1000UH L15 1000UH C88 .47UF C86 .47UF C89 .47UF

C78 1000PF

R67 3.16K C67 3.9UF 10V R65 909 Q16 2N4250 R66 14.7K Q14 6531B

D19 D664 D82 D664 D71 IN942 11.7V R64 4.0K Q15 2N4250

R89 3.3K C87 3.9UF 10V R87 910 Q20 2N4250 R88 15K C85 82PF

D25 D664 D83 D664 Q18 6531B R78 1K TP3 Q19 2N4250 R86 3.9K

R80 1K C73 470PF L11 1000UH C72 470PF

-6V(B) * R81 120 R79 150K C74 .22UF R82 120 C75 .22UF

+12V FV2

+5V R74 680 D20 D664 R76 82 C71 1500PF 7404 E17 7410 E16 7486 E21

BM1 TP1 R62 4.7K R63 1K DH1 TP(-TH) EDI TP(+TH) C64 3.9UF 10V C76 .47UF C77 .47UF

-5.5V 75107 E12

D22 D664 D21 D664 BN1 TP2 SC3 PES L FU2 7476 E12 BF1 RA4 RD4 (Ø)H (TRK 3)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
READ AMP (RA4)	D	CS	G056-0-1	L
SCALE — / — SHEET 4 OF 7	DIST.			

DEC FORM NO. DRD 138

*SEE SHEET 1 FOR EXTERNAL PIN DESIGNATIONS.

Ⓖ Ⓚ Ⓛ Ⓢ INDICATE INTERNAL CONNECTION

CF1 · R123 220 · R124 470 · C112 .005UF · C111 330PF · R102 220 · R103 470 · R113 680 · REFER TO NOTE ON SHEET 2 · C120 2.2UF · R121 1K · R116 330 · R180 2K 10% 1/2W · R122 1K · C110 680PF · C109 120PF · C100 2.2UF · R100 1K · R101 1K · 72733 E20 · 72733 E19

+6V (+5V) · CA2 · L18 1000UH · L19 1000UH · C98 .47UF · C96 .47UF · C99 .47UF

CN2 -6V(C) * · L17 1000UH · L20 1000UH · C118 .47UF · C116 .47UF · C119 .47UF

CK1 · TP1 · R115 4.7K · R94 1K · TP(-TH) · DH1 · TP(+TH) · ED1 · C106 .47UF · C107 .47UF · C94 3.9UF 10V

-5.5V · 75107 E22 · D30 D664 · BL1 · TP2 · D29 D664 · SC3 PES L · FU2 · 7476 E12 · BK1 · RAS RDP (Ø)H (TRK 4)

R99 3.16K · C97 3.9UF 10V · R96 909 · Q23 2N4250 · Q21 6531B · D27 D664 · D84 D664 · D72 1N942 11.7V · R95 4.0K · Q22 2N4250 · R97 14.7K · C108 1000PF

R120 3.3K · C117 3.9UF 10V · R118 910 · Q26 2N4250 · R119 15K · C115 82PF · D32 D664 · D85 D664 · Q24 6531B · Q25 2N4250 · R117 3.9K · R108 1K · TP4 · C102 470PF · FV2 · +12V

-6V(C) * · R111 120 · R110 1K · R109 150K · C104 .22UF · C103 470PF · L16 1000UH · 710 E18 · 7404 E17 · +5V · R104 680 · D28 D664 · R105 22Ø · 7486 E21 · R107 150K · R112 120 · C105 .22UF · R106 82 · C101 1500PF

CB1 · R154 220 · R155 470 · C141 .005UF · C140 330PF · R132 220 · R133 470 · R144 680 · REFER TO NOTE ON SHEET 2 · C149 2.2UF · R152 1K · R147 330 · R181 2K 10% 1/2W · R153 1K · C139 680PF · C138 120PF · C129 2.2UF · R130 1K · R131 1K · 72733 E26 · 72733 E25

+6V (+5V) · CA2 · L23 1000UH · L24 1000UH · C127 .47UF · C125 .47UF · C128 .47UF

DD2 DU2 -6V(D) * · L22 1000UH · L25 1000UH · C147 .47UF · C145 .47UF · C148 .47UF

CL1 · TP1 · R114 4.7K · R125 1K · TP(-TH) · DH1 · TP(+TH) · ED1 · C135 .47UF · C136 .47UF · C123 3.9UF 10V · 75107 E24 · D37 D664 · CU1 · TP2 · D36 D664 · SC3 PES L · FU2 · 7476 E23 · CP1 · RA5 RD5 (Ø)H (TRK 5)

R129 3.16K · C126 3.9UF 10V · R127 909 · Q29 2N4250 · Q27 6531B · D34 D664 · D86 D664 · D73 1N942 11.7V · R126 4.0K · Q28 2N4250 · R128 14.7K · C137 1000PF

R151 3.3K · C146 3.9UF 10V · R149 910 · Q32 2N4250 · Q30 6531B · D39 D664 · D87 D664 · Q31 2N4250 · R148 3.9K · R138 1K · TP5 · C131 470PF · FV2 · +12V

-6V(D) * · R141 120 · R140 1K · R139 150K · C133 .22UF · C132 470PF · L21 1000UH · 710 E27 · 7404 E28 · +5V · R134 680 · D35 D664 · R135 22Ø · 7486 E32 · R137 150K · R143 120 · C134 .22UF · R136 82 · C130 1500PF

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
READ AMP (RA5)	D	CS	G056-0-1	L
SCALE —	SHEET 5 OF 7	DIST.		

DEC FORM NO DRD 136

*SEE SHEET 1 FOR EXTERNAL PIN DESIGNATIONS.

Ⓖ Ⓚ Ⓛ Ⓢ INDICATE INTERNAL CONNECTIONS

DN1 · R190 220Ω · R191 470Ω · C171 .005UF · C170 330PF · R163 220Ω · R164 470Ω · REFER TO NOTE ON SHEET 2 · R177 680Ω · C179 2.2UF · R188 1K · R183 330Ω · R182 2K 10% 1/2W · C169 680PF · R189 1K · C168 120PF · C159 2.2UF · R161 1K · R162 1K · 72733 E31 · 72733 E30

+6V (+5V) · DA2 · L28 1000UH · L29 1000UH · C157 .47UF · C155 .47UF · C158 .47UF

-6V(D) * · L27 1000UH · L30 1000UH · C177 .47UF · C175 .47UF · C178 .47UF

DP1 · TP1 · R179 4.7K · R156 1K · TP (-TH) · DH1 · TP (+TH) · ED1 · C165 .47UF · C166 .47UF · C153 3.9UF 10V · C167 1000PF

R160 3.16K · C156 3.9UF 10V · R158 909 · R159 14.7K · Q35 2N4250 · Q33 6531B · Q34 2N4250 · D41 D664 · D88 D664 · D74 IN942 11.7V · R157 4.0K

-5.5V · 75107 E33 · S · D44 D664 · CS1 · TP2 · D43 D664 · SC3 PES L · FU2 · 7476 E23 · K · L · RA6 RD6 (Ø)H (TRK 6)

R187 3.3K · C176 3.9UF 10V · R185 910 · R186 15K · C174 82PF · Q38 2N4250 · Q36 6531B · Q37 2N4250 · D46 D664 · D89 D664 · R184 3.9K · TP6 · R173 1K · C161 470PF

-6V(D) * · R175 120Ω · R142 1K · R174 150K · C163 .22UF · C162 470PF · L26 1000UH · 710 E29 · 150K · 7404 E28 · +5V · R169 680 · D42 D664 · R170 220Ω · 7486 E32 · R171 82 · C160 1500PF · R176 120Ω · C164 .22UF · +12V · FV2

G

EJ1 · DR1 · TP1 · R178 4.7K · R192 1K · TP (-TH) · DH1 · TP (+TH) · ED1 · C196 .47UF · C197 .47UF · C184 3.9UF 10V · C198 1000PF

R224 220Ω · R225 470Ω · C203 .005UF · C202 330PF · R199 220Ω · R200 470Ω · REFER TO NOTE ON SHEET 2 · R211 680Ω · C210 2.2UF · R221 1K · R216 330Ω · R223 2K 10% 1/2W · C201 680PF · R222 1K · C200 120PF · C190 2.2UF · R197 1K · R198 1K · 72733 E37 · 72733 E36

+6V (+5V) · EA2 · L33 1000UH · L34 1000UH · C188 .47UF · C186 .47UF · C189 .47UF

EL2 · -6V(E) * · L32 1000UH · L35 1000UH · C208 .47UF · C206 .47UF · C209 .47UF

R196 3.16K · C189 3.9UF 10V · R194 909 · R195 14.7K · Q41 2N4250 · Q39 6531B · Q40 2N4250 · D48 D664 · D90 D664 · D75 IN942 11.7V · R193 4.0K

-5.5V · 75107 E35 · S · D51 D664 · EH1 · TP2 · D50 D664 · SC3 PES L · FU2 · 7476 E34 · K · L · DV1 · RA6 RD7 (Ø)H (TRK 7)

R220 3.3K · C207 3.9UF 10V · R213 910 · R219 15K · C205 82PF · Q44 2N4250 · Q42 6531B · Q43 2N4250 · D53 D664 · D91 D664 · R217 3.9K · TP7 · R205 1K · C192 470PF

-6V(E) * · R208 120Ω · R207 1K · R206 150K · C194 .22UF · C193 470PF · L31 1000UH · 710 E38 · R204 150K · 75452 E39 · +5V · R201 680 · D49 D664 · R202 220Ω · 7486 E43 · R203 82 · C191 1500PF · R210 120Ω · C195 .22UF · +12V · FV2

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
READ AMP (RA6)	D	CS	G056-0-1	L
SCALE —	SHEET 6 OF 7	DIST.		

DEC FORM NO DRD 138

* SEE SHEET 1 FOR EXTERNAL PIN DESIGNATIONS.

Ⓖ Ⓚ Ⓛ Ⓢ INDICATE INTERNAL CONNECTIONS

ET1 R258 220 R259 470 C231 .005UF C230 330PF R234 220 R235 470 R245 680 REFER TO NOTE ON SHEET 2 72733 E42 C239 2.2UF C229 680PF C219 2.2UF R256 1K R257 1K R232 1K R233 1K C228 120PF R251 330 R250 2K 10% 1/2W 72733 E41 C227 1000PF EA2 +6V (+5V) L38 1000UH L39 1000UH C217 .47UF C215 .47UF C218 .47UF FB2 FT2 -6V(F) * L37 1000UH L40 1000UH C237 .47UF C235 .47UF C238 .47UF

FP1 TP1 R273 4.7K R227 1K TP(-TH) DH1 TP(+TH) ED1 C225 .47UF C226 .47UF C213 3.9UF 10V 75107 E44 -5.5V D58 D664 D57 D664 EF1 TP2 S SC3 PES L FU2 J 1 7476 E34 K Ø L K EE1 RA7 RD1 (3)H (TRK 8)

R231 3.16K C216 3.9UF 10V R230 14.7K R229 909 Q47 2N4250 Q45 G531B D55 D664 D02 D664 D76 IN942 11.7V R228 4.0K Q46 2N4250 R255 3.3K C236 3.9UF 10V R254 15K C234 82PF R253 910 Q50 2N4250 Q48 G531B D60 D664 D93 D664 R252 3.9K Q49 2N4250 TP8 R240 1K C221 470PF R242 1K C222 470PF L36 1000UH 710 E40 R241 150K C223 .22UF R239 150K R244 120 C224 .22UF FV2 +12V -6V(F) * 1243 120 75452 E39 +5V R236 680 D56 D664 R237 220 7486 E43 R238 82 C220 1500PF

FN1 R295 220 R296 470 C260 .005UF C259 330PF R271 220 R272 470 R285 680 REFER TO NOTE ON SHEET 2 72733 E48 C269 2.2UF C258 680PF C248 2.2UF R293 1K R294 1K R269 1K R270 1K C257 120PF R288 330 R287 2K 10% 1/2W 72733 E47 C256 1000PF FA2 +6V (+5V) L43 1000UH L44 1000UH C246 .47UF C244 .47UF C247 .47UF -6V(F) * L42 1000UH L45 1000UH C267 .47UF C265 .47UF C268 .47UF

FR1 TP1 R274 4.7K R264 1K TP(-TH) DH1 TP(+TH) ED1 C254 .47UF C255 .47UF C242 3.9UF 10V 75107 E46 -5.5V D65 D664 D64 D664 FM1 TP2 S SC3 PES L FU2 J 1 7476 E45 K Ø L K FK1 RA7 RD3 (Ø)H (TRK 9)

R268 3.16K C245 3.9UF 10V R267 14.7K R266 909 Q53 2N4250 Q51 G531B D62 D664 D94 D664 D77 IN942 11.7V R265 4.0K Q52 2N4250 R292 3.3K C266 3.9UF 10V R291 15K C264 82PF R290 910 Q56 2N4250 Q54 G531B D67 D664 D95 D664 R289 3.9K Q55 2N4250 TP9 R279 1K C250 470PF R281 1K C251 470PF L41 1000UH 710 E50 R280 150K C252 .22UF R278 150K R284 120 C253 .22UF FV2 +12V -6V(F) * R282 120 +5V R299 1K 7486 E52 R275 680 +5V 7486 E52 D63 D664 R276 220 R277 82 C249 1500PF

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
READ AMP (RA7)	D	CS	G056-0-1	L
SCALE —	SHEET 7 OF 7	DIST		

NOTES:

1. DIODES ~~D1 THRU D4, D10~~, D13, D18, ~~D19~~, D24 ~~& D27~~ ARE 1N4004.
* 2. F2 = 6 1/4 AMP SB FOR 125 V/60 CYCLE OPERATION. USE LITTEL FUSE P/N 3136.25.
F2 = 4 AMP SB FOR 250 V/50 CYCLE OPERATION.
3. ALL 4 TRANSISTORS, Q5, Q7, Q8, Q10, ARE TO HAVE #10 AWG TUBING 5/16" LONG ON 4-40 SCREWS THAT HOLD TRANSISTORS TO HEAT-SINK.
4. THERMAL COMPOUND TO BE APPLIED BETWEEN HEAT SINK AND DIODES D9, D11, & D12.

PARTS LIST

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-5410451-0-4	REF
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-5410451-0-5	REF
REF		MODULE ECO HISTORY	B-MH-5410451-0-6	REF
1		ETCHED CIRCUIT BOARD	5010450	1
6		EYELET	9009000	2
20		FUSE CLIP	9009513	3
2		TERMINAL	9007970	4
2		EYELET	9006746	5
3		TRANSIPAD	9007200	6
2		HEAT SINK	1210001	7
3		SPACER ROUND FIBRE	9007614	8
3		NUT, HEX #6-32	9008957	9
3		SCREW PAN HD #6-32 x 7/8	9006027-1	10
3		SCREW PAN, HD #6-32 x 5/8	9006025-1	11
4		WASHER, INSULATOR	9006721	12
AR	(SEE NOTE 4)	COMPOUND, THERMAL	9008268	13
8		KEP NUT #4-40	9006557	14
8		SCREW PAN HD #4-40 x 1/2	9006013-1	15
AR	~~W1, W2, W3~~	WIRE, STRANDED 18 AWG	9107360	16
1		BRACKET	D-IA-7411387-0-0	17
1		HEAT SINK	C-IA-7411389-0-0	18
1		HEAT SINK	C-MD-7411388-0-0	19
1		RELAY SOCKET	1210694	20
52		PIN, PC	1209456-1-	21
3	C10, C17, C19	CAP .01UF 100V 20% DISC	1001610-1	22
.1	C1	CAP .02UF 1000V 20% DUAL DISC	1010767	23
~~1~~	~~C3~~	~~CAP 22 UF 35V 20% TANT~~	~~1002433~~	24
1	[illegible], C5	CAP 1UF 35V 10% TANT	1001776	25
6	C6, C8, C13, C18, C20, C22	CAP 47UF 20V 10% TANT	1004814	26
2	C7, C21	CAP 1000PF 100V 5% DM	1000042	27
1	C9	CAP .22UF 50V -20% +80% CER	1010274	28
2	C11, C15	CAP 10UF 35V 10% TANT	1001476	29
2	C12, C16	CAP 820PF 100V 5% DM	1000027	30
2	D13, D24 ~~D10, D18, D19, D27~~	DIODE 1N4004	1105796	31
~~1~~	~~D5,~~	~~DIODE 1N367A ZENER 18V 10%~~	~~1110068~~	32
5	D8, D14, D17, D21, D25	DIODE D670-1	1102162	33
~~1~~	~~D28~~	~~DIODE 1N746A ZENER 3.3V 5%~~	~~1104880~~	34
2	D9, D11	DIODE NSS 3514	1110714	35
~~1~~	~~C14~~	~~CAP 130UF 6V 20% TANT~~	1000086	36
1	D16	1N469A 5.8V ZENER	1102808	37
1	D23	DIODE 1N964B ZENER 13V 5%	1109988	38
~~2~~	~~K1, K3~~	~~RELAY~~	~~1210101~~	39
1	K2	RELAY	1210683	40
1	J1	CONN, 4PIN	1209350-4	41
2	J4, J5	CONN, 9 PIN	1209350-9	42
2	J2, J3	CONN, 15 PIN	1209350-15	43
1	R1	RES 100 1W 5%	1300232	44
4	R14, R28, R35, R48	RES 100 ¼W 5%	1300229	45
3	R9, R27, R36	RES 1K ¼W 5%	1300365	46
~~1~~	~~R6~~	~~RES 2.2K ¼W 5%~~	~~1300417~~	47
2	R29, R40	RES 470 ¼W 5%	1300316	48
2	R10, R11	RES 390 2W 5%	1301864	49
2	R12, R13	RES 1K 2W 5%	1301952	50
1	R15	RES. 12K, 1/4W, 5%	1300488	51
4	R16, R37, R26, R44	RES 1K POT	1309150-03	52
2	R17, R23	RES 5.6K ¼W 5%	1301374	53
2	R18, R39	RES 56 ¼W 5%	1302602	54
1	R19	RES 330 ¼W 5%	1300295	55
1	R20	RES 0.1 5W 5% WW	1305672	56
4	R21, R42, R46, R52	RES 27 ¼W 5%	1301522	57
4	R22, R43, R53, R56	RES 680 ¼W 5%	1301424	58
1	R54	RES 8.2K ¼W 5%	1303179	59
1	R24	RES 2.7K ¼W 5%	1300426	60
1	R25	RES 220 ¼W 5%	1300271	61
~~1~~	~~R8~~	~~RES 620 ¼W 5%~~	[illegible]	62
1	R30	RES 30K ¼W 5%	1302394	63
2	R31, R55	RES 12K ¼W 5%	1300488	64
2	L1, L2	INDUCTOR 12UH	1603358	65
2	R38, R47	RES 2.4K ¼W 5%	1303177	66
3	R41, R50, R32	RES 1 2W 5% WW	1305428	67
~~1~~	~~R33~~	~~RES 47 ¼W 5%~~	1300202	68
1	R49	RES 750 ¼W 5%	1301401	69
1	R51	RES 10K ¼W 5%	1300479	70
3		SPACER, ROUND FIBRE #6-32	9009556	71
~~1~~		~~LUG, SPLIT~~	~~9006735~~	72
~~2~~	~~Q1, Q9~~	~~TRANSISTOR SAC 58~~	[illegible]	73
~~3~~	~~Q2, Q3, Q4~~	~~TRANSISTOR DEC 6531B~~	~~1509338~~	74
3		SCREW, PAN HD #6-32 X 1/4	9006020-1	75
4	Q5, Q7, Q8, Q10	TRANSISTOR 2N3055	1505819	76
1	Q6	TRANSISTOR 2N4234	1504809	77
2	Q11, Q12	TRANSISTOR 2N2904A	1501913	78
3	D15, D22, D26	SCR 2N4441	1505867	79
~~1~~	~~T1~~	~~TRANSFORMER~~	[illegible]	80
1	E1	IC LM300	1909371	81
2	E2, E3	IC DEC 723	1910415	82
1	E4	IC LM304	1911555	83
1	E5	IC DEC 75451	1910406	84
4	W1-W4	JUMPER INSULATED (.4)	9009185	85
~~1~~	~~F2~~	~~FUSE 4ASB~~	~~[illegible]220~~	86
~~1~~	~~F3~~	~~FUSE 7A SLO BLO~~	~~9007224~~	87
1	F4	FUSE 10ASB	9007225	88
1	F5	FUSE 3.0ASB	9007218	89
2	F6, F7	FUSE 20A	9008835	90
2	F8, F9	FUSE .6A	9007999	91
2	F11, F10	FUSE 3/4A	9007210	92
5	1-4, 6,	TAB FASTON	9006219	93
1	5	TAB FASTON	9007113	94
~~1~~	~~R60~~	~~RES 560 ¼W 5%~~	~~1301690~~	95
1	R57	RES 5K POT	1309150-4	96
~~1~~	~~R59~~	~~RES 1K ¼W 5%~~	[illegible]	97
~~1~~	~~R34~~	~~RES 4 5W 5% WW~~	[illegible]	98
6		WASHER NYLON	9006707	99
~~2~~		~~SCREW, PAN HD #10 X 7/16~~	[illegible]	100
~~1~~		~~HEAT SINK~~	[illegible]	101
1	F12	FUSE 5A (AXIAL LEAD)	1205747	102
1	D20	DIODE 1N756A ZENER 8.2V 5%	1103491	103
1	F1	FUSE 5ASB, BUSS MDX5	9009791	104
1	R45	RES 2.74K ¼W 1%	1304868	105
1	C23	CAP 5000PF, 100V, 20% DISC	1001765	106
2		ROLL PIN	9009368	107
6		SPLIT LUG	9006735	108
3		LOCK WASHER	9007801	109
2	F13, F14	FUSE 15A	1210929	110
1	F2 (SEE NOTE 2 *)	FUSE 6 1/4A SB	9007223	111
1	F2 (SEE NOTE 2 *)	FUSE 4A SB	9007220	112
4	D10, D18, D19, D27	DIODE, A15B	1110420	113
A/R		TUBING, #10 AWG 5/16" LG	9107302-11	114
1	D12	DIODE, HEAVY DUTY (UNITRODE)	11-13889-0	115

IC PIN LOCATIONS

IC TYPE	GND	+5V
75451	4	8

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

REVISIONS

REV	CHANGE NO	
S	5410451-00012	H. DRAB
R	5410451-00011	W. SMITH
P	5410451-00010	H. J. [illegible] 4-28-76
N	5410451-00009	H. DRAB
M	5410451-00001	J. HESS
L	5410451-00007	A. KORELITZ
K	5410451-00006	A. KORELITZ
J	5410451-00005	A. KORELITZ
H	5410451-00004	A. KORELITZ
F	5410451-00003	A. KORELITZ
E	5410451-00002	A. KORELITZ
D	5410451-00001	

SEMICONDUCTOR CONVERSION CHART

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

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: H

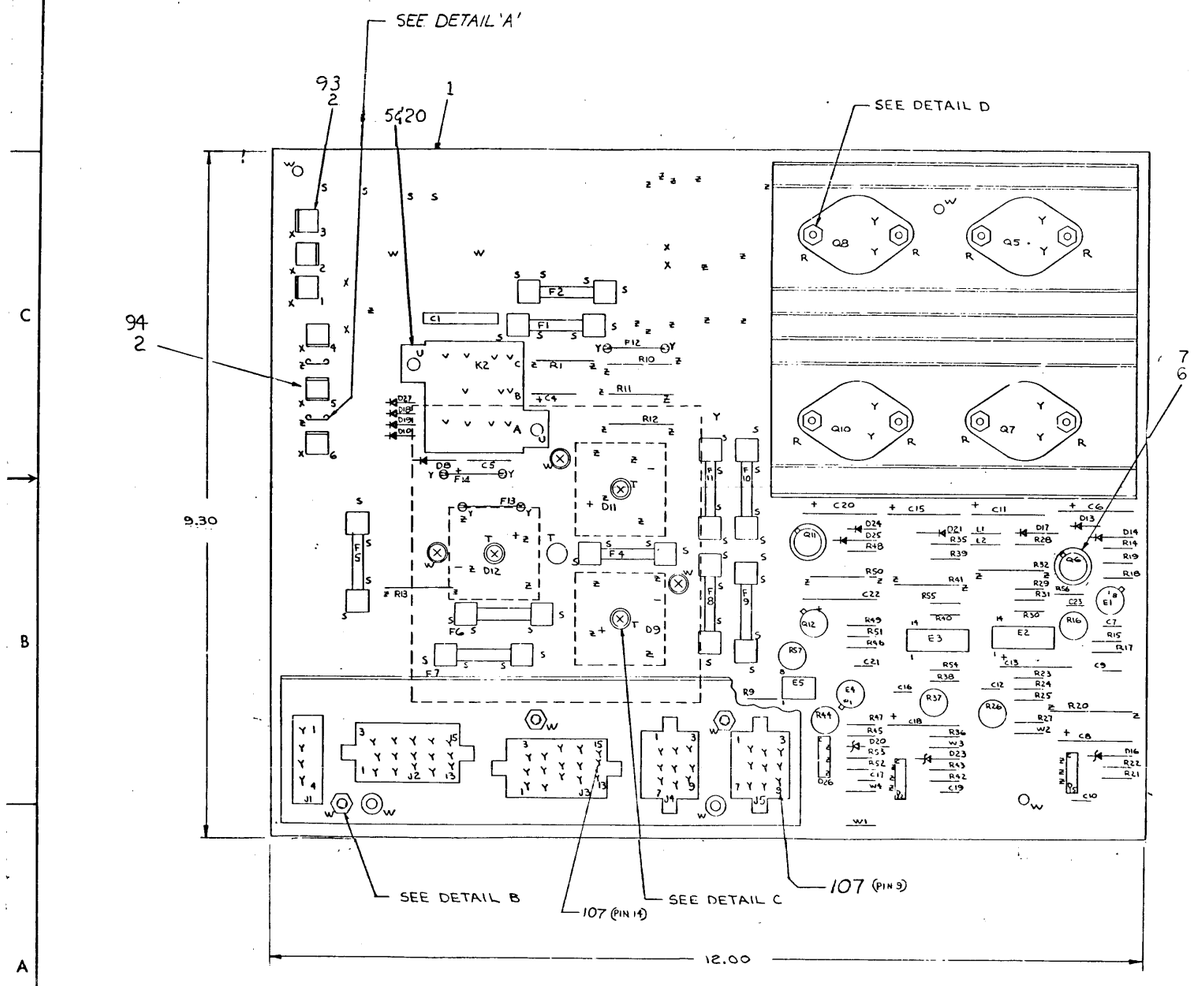
DRN. 11/9/73 — CHK'D. 1/9/74 — PROJ. ENG. — PROD. — NEXT HIGHER ASSY

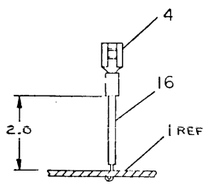
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: TU16 POWER SUPPLY

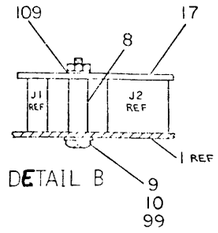
SIZE: C — CODE: CS — NUMBER: 5410451-0-1 — REV: S

SCALE — SHEET 1 OF 4 — DIST.

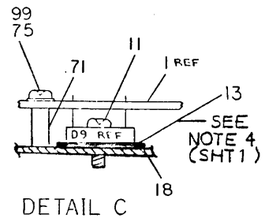




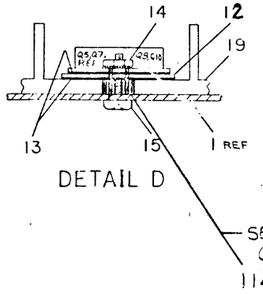
DETAIL A



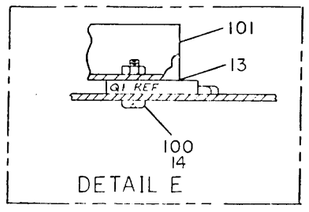
DETAIL B



DETAIL C



DETAIL D



DETAIL E

DO NOT USE

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
TU16 POWER SUPPLY	C	CS	5410451-0-1	S
SCALE —	SHEET 2 OF 4		DIST	

S 5410451-0-1 CS

ALL COMPONENTS ABOVE DOTTED LINE ARE NOT ON THE BOARD

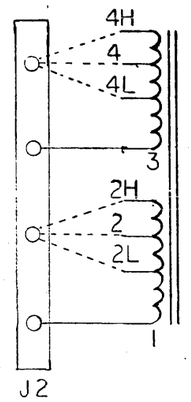
C1 THRU C4 = 35,000UF
C5 = 82,000UF
C5 = 22,000 UF

115 VAC
230 VAC
115 VAC
FAN
VM
AC LO
AC HI
JUMPER GND
LINE CORD GND ON TRANFORMER CHASSIS
DUAL DISK1
F1 5ASB
F2 SEE NOTE 2 SHEET 1
K2C
F4 10 ASB
F5 3.0SB
F14 15A
F13 15A
F7 20A
F8 6A
F9 6A
F6 20A
F12 5A
F10 3/4A
F11 3/4A
NS53514 D9 +5
NS53514 D11 +12
HEAVY DUTY D12
LM380 E1
723 E2
723 E3
LM334 E4
75451 E5
DG670-1 Q5 2N3055
DG670-1 Q6 2N4234
DG670-1 Q7 2N3055
DG670-1 Q8 2N3055
DG670-1 Q9 2N3055
DG670-1 Q10 2N3055
Q11 2N2904A
Q12 2N2904A
D13 IN4004
D15 2N4441
D16 IN469A
D22 2N4441
D23 IN964B
D26 2N4441
D20 IN756A
K2
K2B
K2A
+5.3 VDC
+5.3 VDC
GND
GND
+15/5VDC
PES L
+12VDC
-6.3 VDC
RELAY ENABLE L
GND TO SERVO BOARD GND
PWR COMM INT
-16VDC
+16VDC
+17V INT
-17VDC
+17VDC

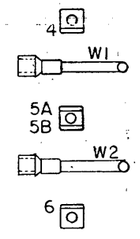
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
TU16 POWER SUPPLY	C	CS	5410451-0-1	S
SCALE	SHEET 3 OF 4	DIST.		

VOLTAGE RANGE 50-60CPS	TRANSFORMER PRIMARY TAPS
95 to 105 190 to 210	1 and 2L ; 3 and 4L
105 to 120 210 to 240	1 and 2 ; 3 and 4
120 to 132 240 to 264	1 and 2H ; 3 and 4H



VOLTAGE (NOMINAL) INPUT	W1 CONN	W2 CONN
115V 50-60 CPS	4	6
230V 50-60 CPS	5A	5B



REVISIONS	CHANGE NO.	CHK	REV.

FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
		PARTS LIST		

DIMENSIONAL TOLERANCE
DIMENSIONS ARE MILLIMETERS / INCHES
UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
X.XX = ±0.10 XX = ±0.5 X = ±2	.XXX = ±.005 .XX = ±.02 .X = ±.1	±0° 30'

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

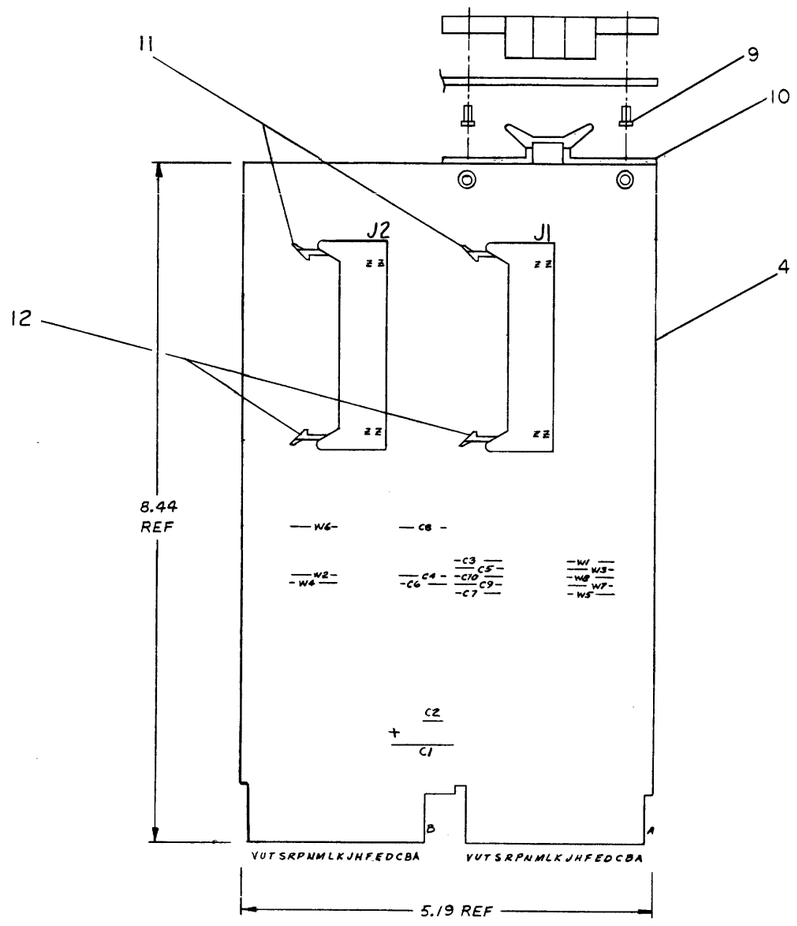
MATERIAL

FINISH

DRN. H.DANALJIAN	DATE 11-9-73	digital
CHK'D. F. CARBERRY	DATE 1-14-74	
ENG. A. KORELITZ	DATE 1-14-74	TITLE
PROJ. ENG. A. KORELITZ	DATE 1-14-74	TU16 POWER SUPPLY
PROD. R.GOGUEN	DATE 1-14-75	
NEXT HIGHER ASSY.		SIZE C · CODE CS · NUMBER 5410451-0-1 · REV. S
SCALE — / —		DIST.
SHEET 4 OF 4		

SIZE C · CODE CS · NUMBER 5410451-0-1 · REV. S

NOTES:



REF		X-Y COORDINATE HOLE LOCATION	K-CO-M9001-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M9001-YA-5	2
REF		MODULE ECO HISTORY *	B-MH-M9001-YA-6	3
1		ETCHED CIRCUIT BOARD	5010465	4
9	C2 THRU C10	CAP .01UF 100V 20% AXIAL	1001610	5
1	C1	CAP 6.8UF 35V 10% TANT	1005306	6
8	W1 THRU W8	JUMPER, INSULATED WIRE	9009185	7
2	J1, J2	CONN, 40 PIN	1209941-2	8
4		EYELET	9006732	9
2		HANDLE, FLIP-CHIP, MAGENTA	9008337-6	10
2		CONNECTOR LATCH, LEFT	1209941-3	11
2		CONNECTOR LATCH, RIGHT	1209941-4	12

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO.

PARTS LIST

IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REV	CHANGE NO.	CHK
C	M9001-YA-00001	

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: C

DRN.		DATE 3/4/74
CHK'D		DATE 3/5/74
ENG.		DATE 3/5/74
PROJ. ENG.		DATE 3-6-74
PROD.		DATE 3-7-74

NEXT HIGHER ASSY

SCALE: 1/1

SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

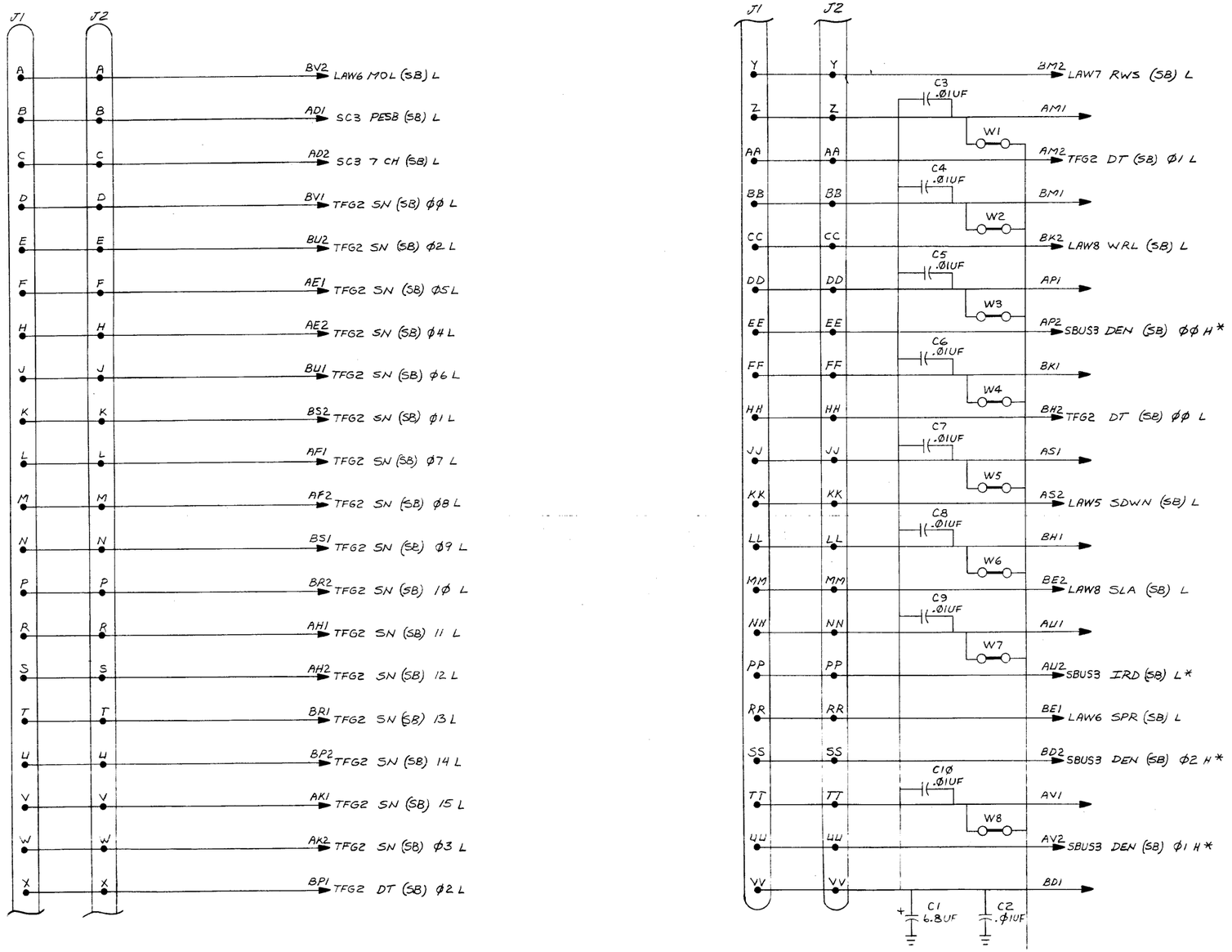
TITLE: GEN PURPOSE CARD (E & F)

SIZE	CODE	NUMBER	REV.
D	CS	M9001-YA-1	C

DIST.

SIZE D CODE CS NUMBER M9001-YA-1 REV C

DEC FORM NO MD 135-8



NOTE: ALL SIGNALS DESIGNATED "SBUS" ORIGINATE IN TMØ2.

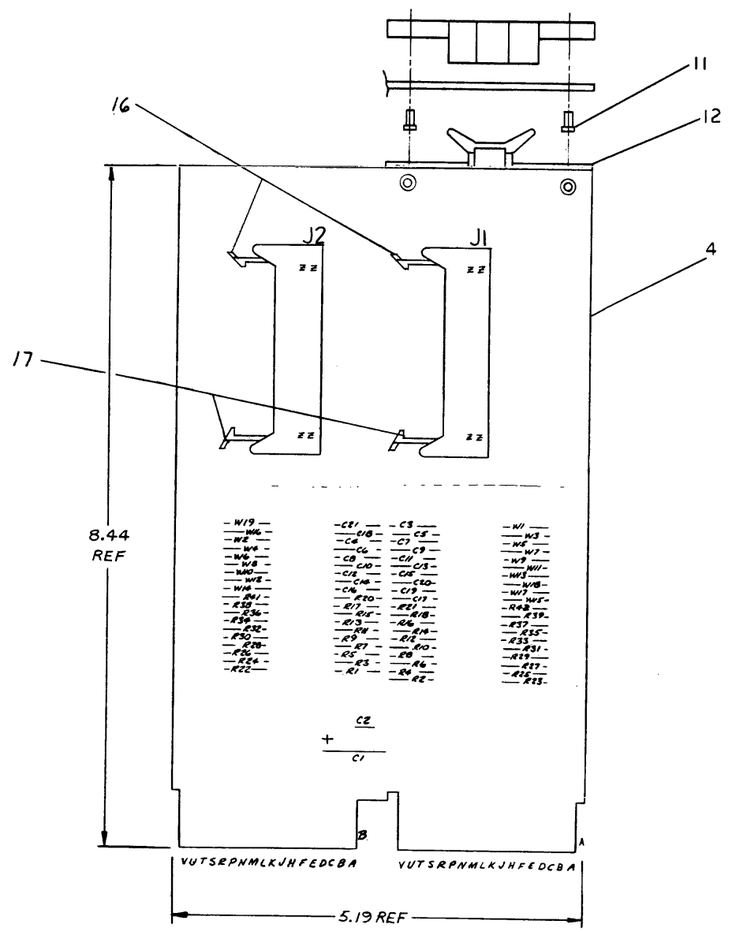
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
GEN PURPOSE CARD (E & F)	D	CS	M9001-YA-1	C
SCALE	SHEET 2 OF 2		DIST.	

DEC FORM NO. SRD 36

M9001-YA-1 REV C

NOTES:



REF		X-Y COORDINATE HOLE LOCATION	K-CO-M9001-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M9001-YB-5	2
REF		MODULE ECO HISTORY	B-MH-M9001-YB-6	3
1		ETCHED CIRCUIT BOARD	5010465	4
20	C2 THRU C21	CAP .01UF 100V AXIAL	1001610	5
1	C1	CAP 6.8UF 35V 10% TANT	1005306	6
5	R7, R16,R17,R18,R20	RES. 12Ω 1/4W 5%	1300247	7
11	R28-R32,R36-R39,R41,R42	RES. 22Ω 1/4W 5%	1300271	8
19	W1 THRU W19	JUMPER, INSULATED WIRE	9009185	9
2	J1, J2	CONN, 40 PIN	120994/-2	10
4		EYELET	9006732	11
2		HANDLE, FLIP-CHIP, MAGENTA	9008337-6	12
6	R8-R11, R15, R21	RES. 150, 1/4 W, 5 %	1300250	13
9	R1-R6, R12-R14	RES. 390, 1/4 W 5%	1300309	14
9	R22-R27,R33-R35	RES. 620, 1/4 W 5%	1303178	15
2		CONNECTOR LATCH, LEFT	120994/-3	16
2		CONNECTOR LATCH, RIGHT	120994/-4	17

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

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

SEMICONDUCTOR CONVERSION CHART

REV	REVISIONS	CHK	DATE
C	CHANGE NO. M9001-YB-00001	H. DRAB	2-26-74

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: C

		DATE
DRN.		3/6/74
CHK'D		3/6/74
ENG.		3-6-74
PROJ. ENG.		3-6-74
PROD.		3-7-74

NEXT HIGHER ASSY

SCALE: — / —

SHEET 1 OF 2

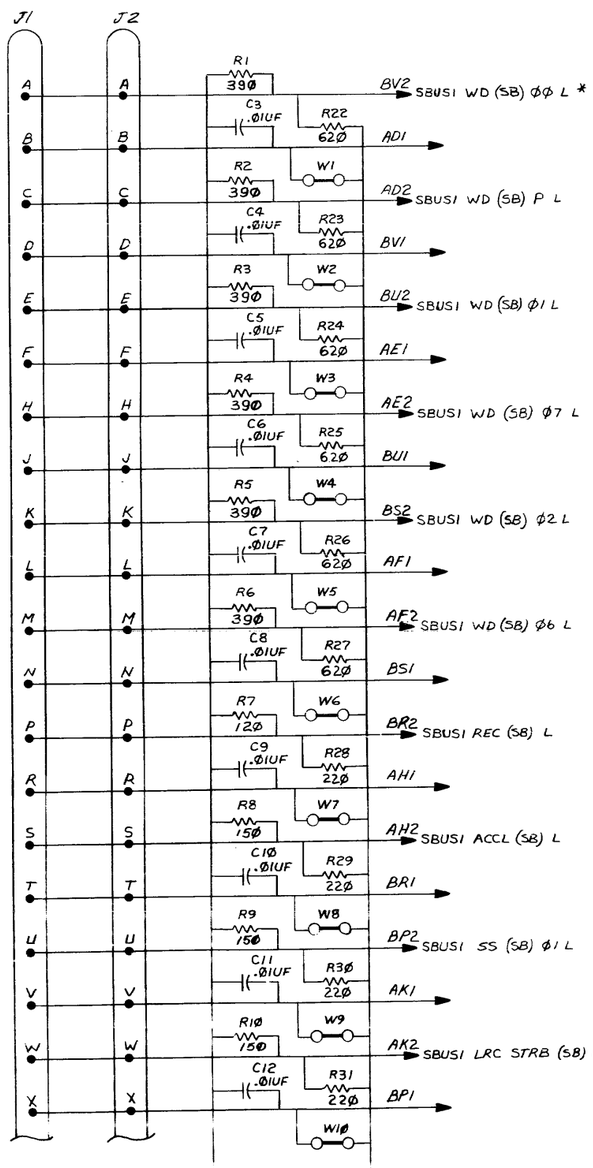
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: GEN PURPOSE CARD (A & B)

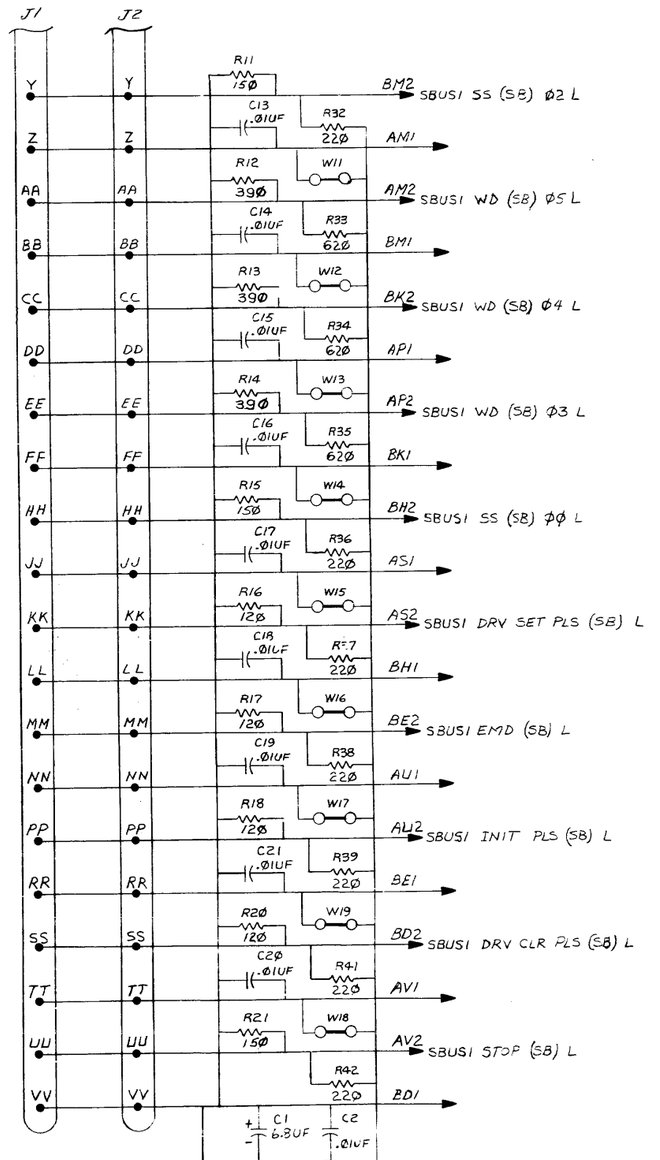
SIZE	CODE	NUMBER	REV.
D	CS	M9001-YB-1	C

DIST.

DEC FORM NO. DRD 125-8



*NOTE: ALL SIGNALS ORIGINATE IN TMØ2



REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
GEN PURPOSE CARD (A & B)	D	CS	M9001-YB-1	C
SCALE —	SHEET 2 OF 2		DIST.	

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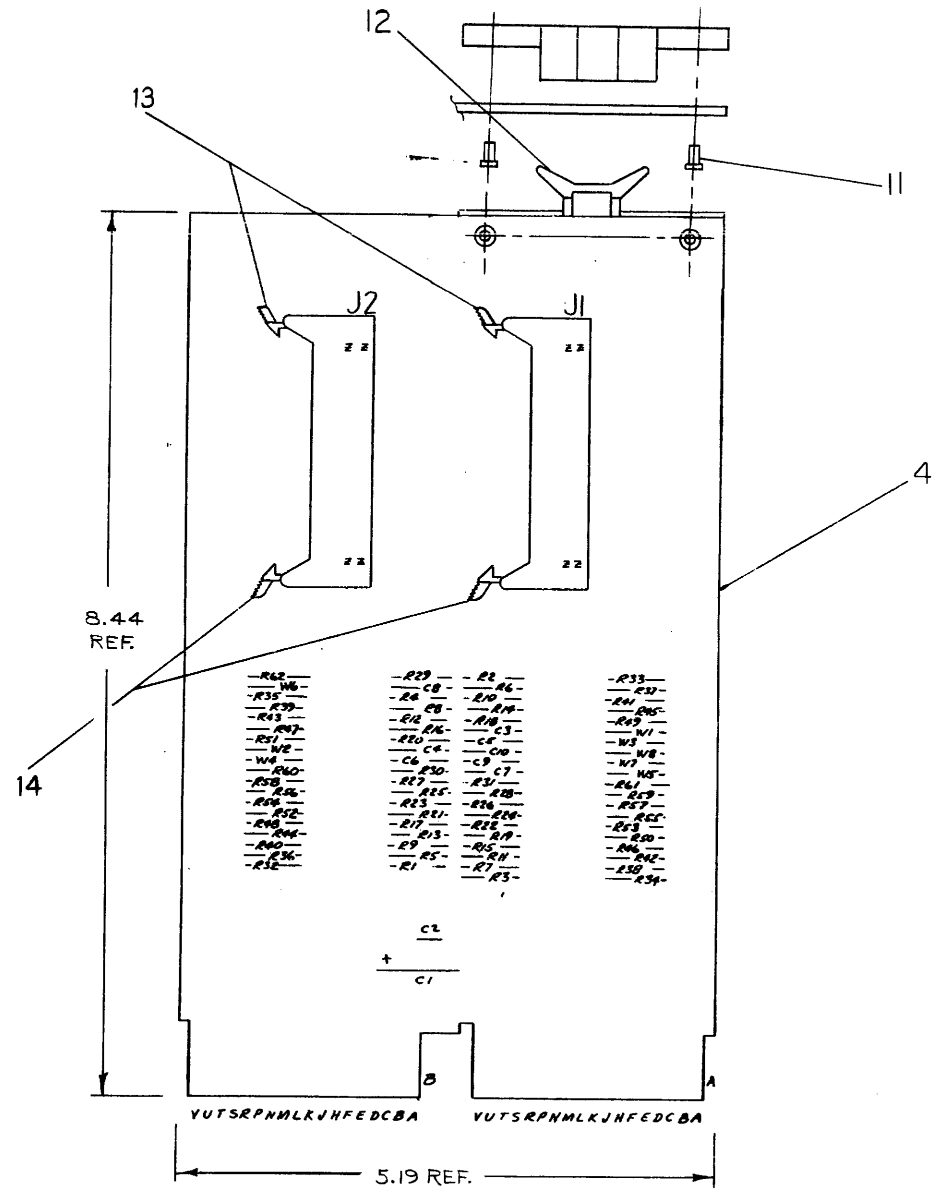
NOTES:



QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M9001-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M9001-YC-5	2
REF		MODULE ECO HISTORY	B-MH-M9001-YC-6	3
1		ETCHED CIRCUIT BOARD	5010465	4
9	C2 THRU C10	CAP .01 µf, 100V AXIAL	1001610	5
1	C1	CAP 6.8 µf, 35V 10% TANT	1005306	6
31	R1 THRU R31	RESISTOR 150 Ω 1/4 W 5% CC	1300250	7
31	R32 THRU R62	RESISTOR 220 Ω 1/4 W 5% CC	1300271	8
8	W1 THRU W8	JUMPER, INSULATED WIRE	9009185	9
2	J1, J2	CONN. 40 PIN, RT. ANGLE HEADER	1209941-2	10
4		EYELET	9006732	11
2		HANDLE, FLIP-CHIP, MAGENTA	9008337-6	12
2		LATCH, CONNECTOR LEFT	1209941-3	13
2		LATCH, CONNECTOR RIGHT	1209941-4	14

PARTS LIST

IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

REV	CHANGE NO.	CHK		
C	M9001-YC-00001	ETC	H. DRAB 13-FEB-76	23 FEB 76

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: C

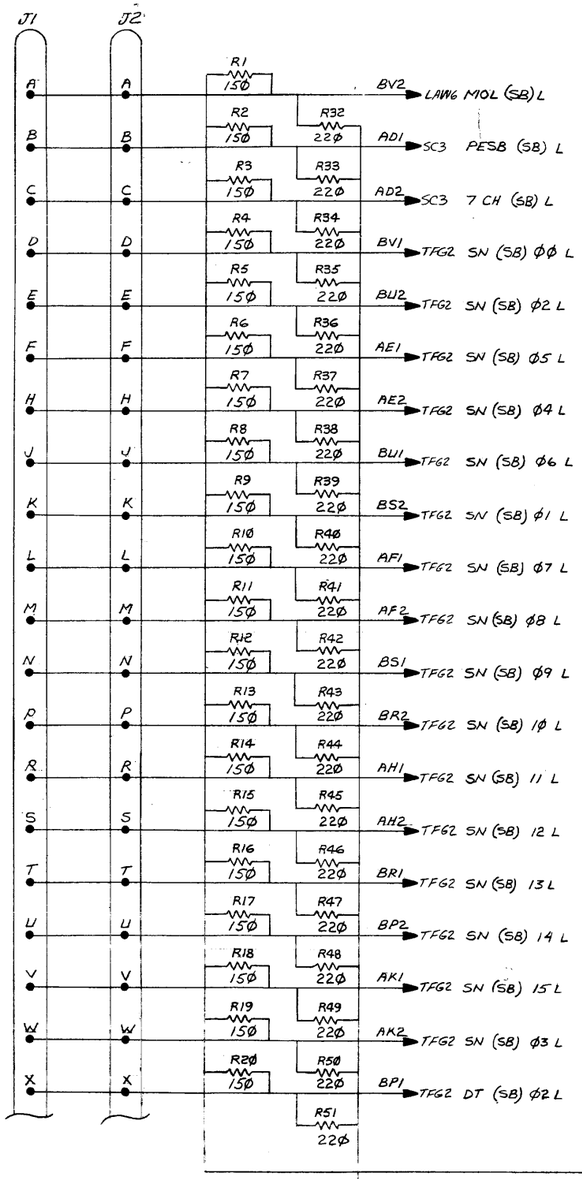
DRN. J. Anderson DATE 3-4-74
CHK'D. L. Carberry DATE 3/5/74
ENG. Barry Swanson DATE 3-6-74
PROJ. ENG. DATE 3-6-74
PROD. DATE
NEXT HIGHER ASSY

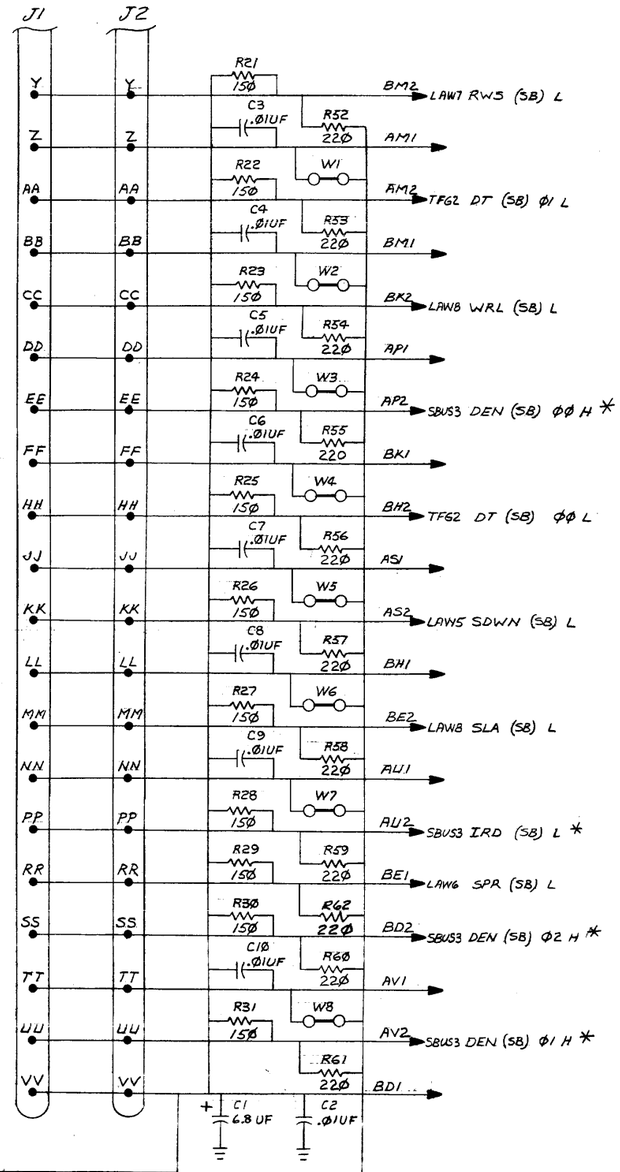
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: GEN PURPOSE CARD (E+F)

SIZE: D CODE: CS NUMBER: M9001-YC-1 REV. C

SCALE
SHEET 1 OF 2
DIST.





* NOTE: ALL SIGNALS DESIGNATED "SBUS" ORIGINATE IN TMØ2.

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
GEN. PURPOSE. CARD (E & F)	D	CS	M9001-YC-1	C
SCALE	SHEET 2 OF 2	DIST.		

DEC FORM NO. DRD 128

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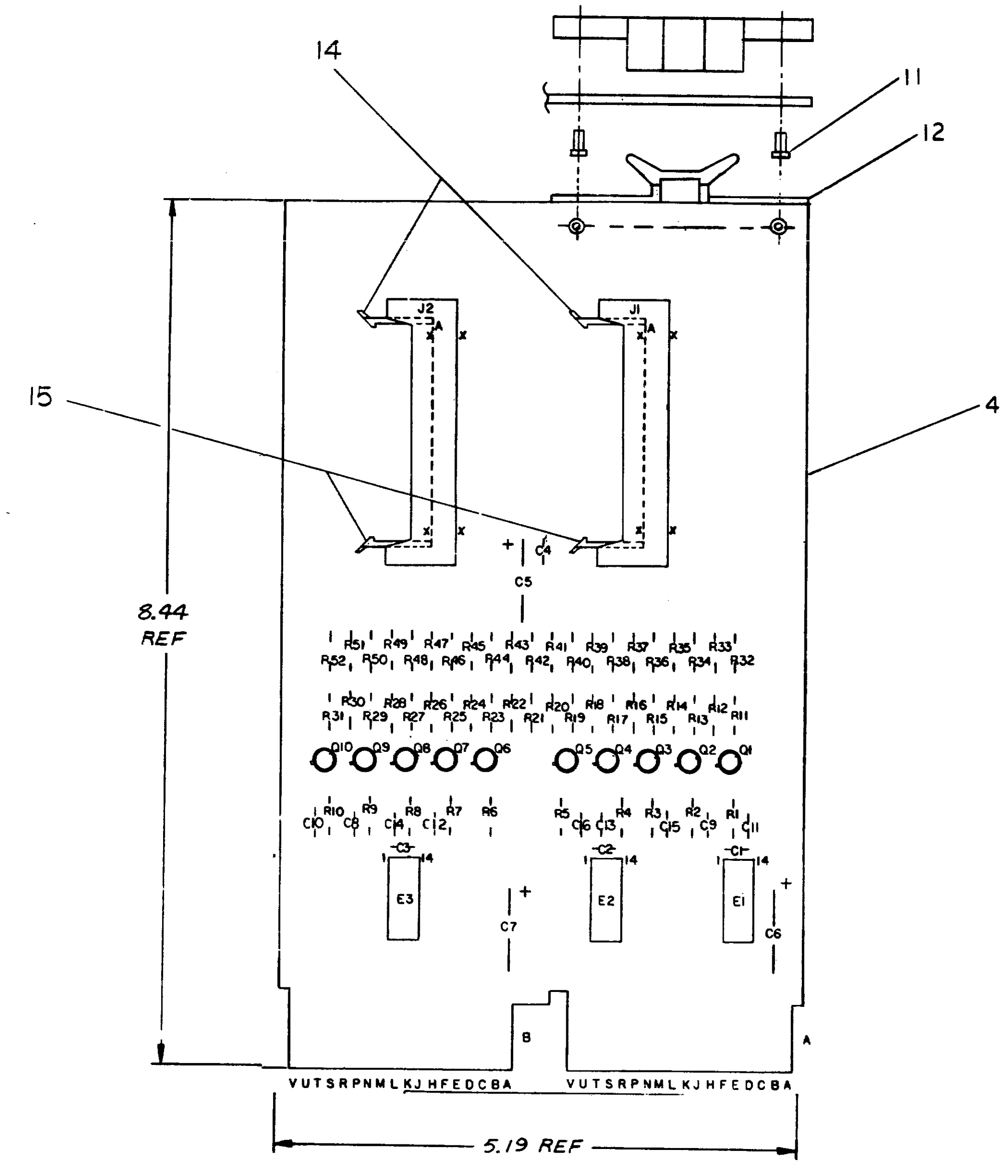
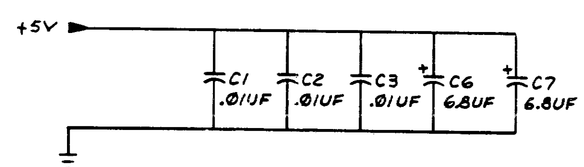
NOTES:





IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY. EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8913-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8913-0-5	2
REF		MODULE ECO HISTORY	B-MH-M8913-0-6	3
1		ETCHED CIRCUIT BOARD	5010980	4
2	J1, J2	CONN 40 PIN	1209941-2	5
4	C1 THRU C4	CAP .01UF 100V 20% DISK	1001610-01	6
3	C5, C6, C7	CAP 6.8UF 35V 10% TANT	1005306	7
3	E1, E2, E3	IC 7402	1909004	8
10	Q1 THRU Q10	TRANSISTOR 3009B	1503100	9
10	R1 THRU R10	RES 270 1/4W 5%	1301972	10
4		EYELET	9006732	11
2		HANDLE, FLIP-CHIP, MAGENTA	9008337-6	12
9	C8 THRU C16	CAP 100PF 100V 5% DM	1000016	13
2		CONNECTOR LATCH, LEFT	1209941-3	14
2		CONNECTOR LATCH, RIGHT	1209941-4	15

PARTS LIST

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: B

REV	CHANGE NO.			CHK
D	M8913-00004	H. DRAB	6-22-76	
C	M8913-00003	H. DRAB	17-FEB-76	
B	M8913-00002	J. HESS	10-16-75	
A	M8913-00001	H. DRAB	5/31/74	

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

DRN. DATE 3/1/74
CHK'D. DATE 3/6/74
ENG. DATE 3-6-74
PROJ. ENG. DATE 3-6-74
PROD. DATE
NEXT HIGHER ASSY
SCALE —
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

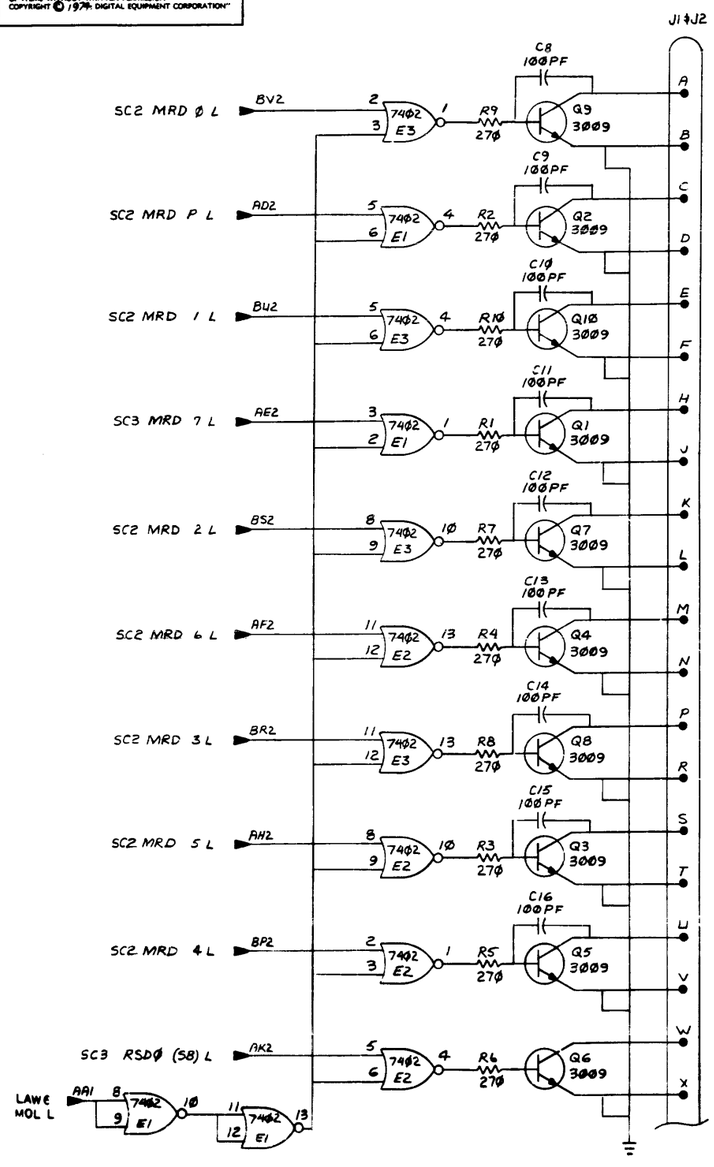
TITLE

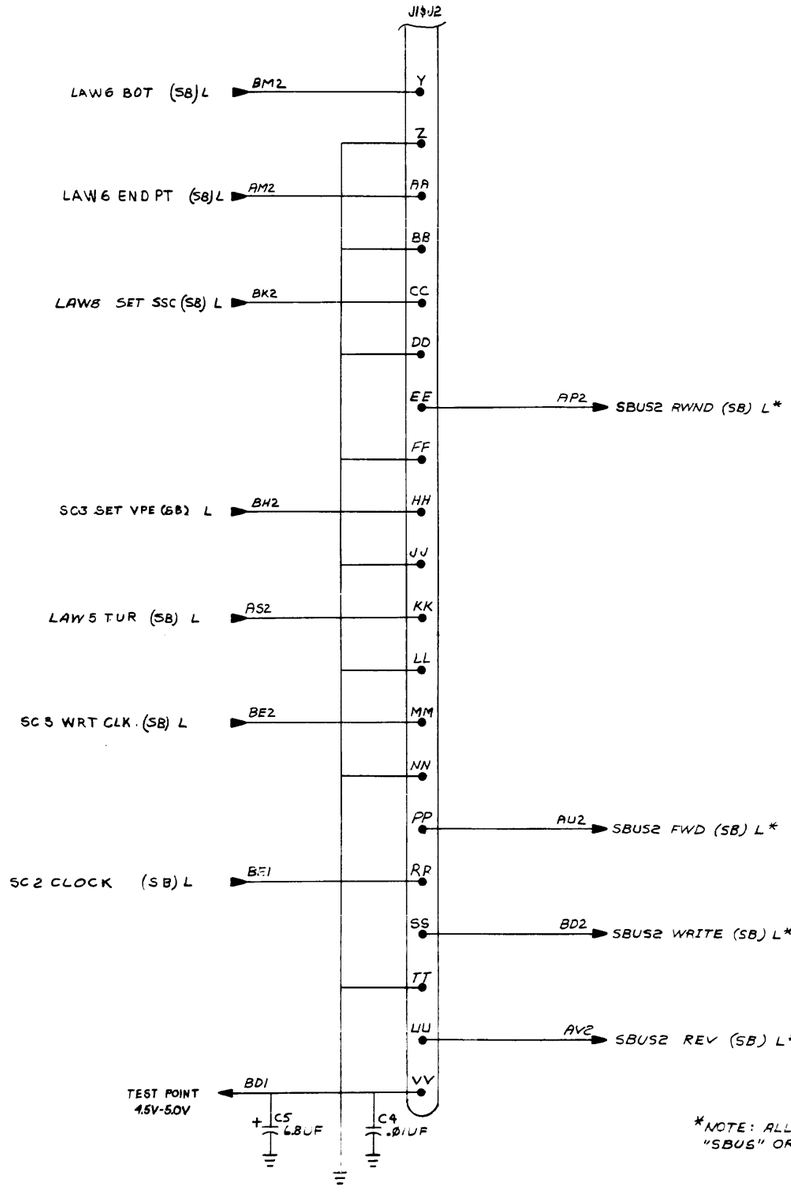
DATA DRIVER (SLOT C/P)

SIZE D CODE CS NUMBER M8913-0-1 REV. D

DIST.

D CS M8913-0-1 D





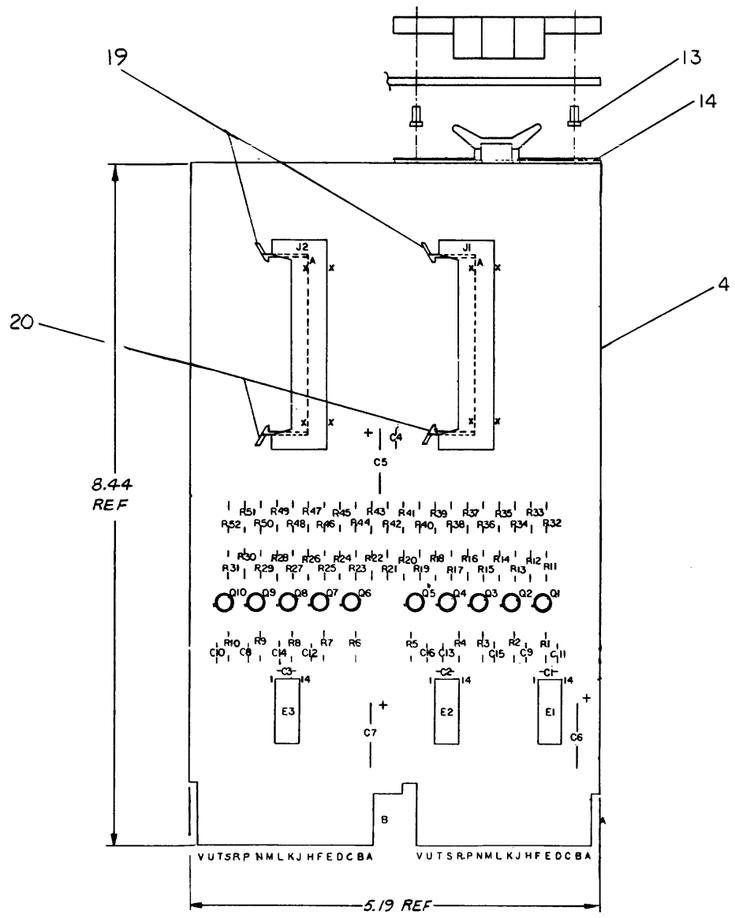
*NOTE: ALL SIGNALS DESIGNATED "SBUS" ORIGINATE IN TMØ2.

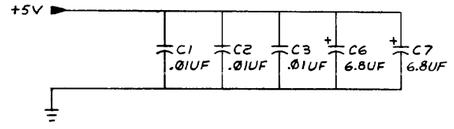
REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
SBUS2 DATA DRIVER (SLOT C/P)	D	CS	M8913-Ø-1	D
SCALE — SHEET 2 OF 2	DIST.			

D | DCS M8913-Ø-1 | 2

NOTES:





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

IC PIN LOCATIONS

DEC FORM NO. GRD 135-8

REF				
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8913-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8913-YA-5	2
REF		MODULE ECO HISTORY	B-MH-M8913-YA-6	3
1		ETCHED CIRCUIT BOARD	5010980	4
2	U1, U2	CONN 40 PIN	1209941-02	5
4	C1 THRU C4	CAP .01UF 100V 20% DISC	1001610-01	6
3	C5, C6, C7	CAP 6.8UF 35V 10% TANT	1005306	7
3	E1, E2, E3	IC 7402	1909004	8
10	Q1 THRU Q10	TRANSISTOR 3009B	1503100	9
9	C8 THRU C16	CAP 100PF 100V 5% DM	1000016	10
21	R32 THRU R52	RES 220 1/4W 5%	1300271	11
10	R1 THRU R10	RES 270 1/4W 5%	1301972	12
4		EYELET	9006732	13
2		HANDLE, FLIP-CHIP, MAGENTA	9008337-6	14
11	R12, R14, R16, R18, R20, R21, R22, R24, R26, R28, R30	RES 150 1/4W 5%	1300250	15
10	R11, R13, R15, R17, R19, R23, R25, R27, R29, R31	RES 120 1/4W 5%	1300247	16
				17
				18
2		CONNECTOR LATCH, LEFT	1209941-3	19
2		CONNECTOR LATCH, RIGHT	1209941-4	20

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: B

REV	REVISIONS	CHANGE NO.	DATE	DRN.	CHK'D
A	M8913-00001		6-21-74	H. DRAB	
B	M8913-00002		5-1-74	H. DRAB	
C	M8913-YA-00003		10 JUNE-76	H. DRAB	

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

SEMICONDUCTOR CONVERSION CHART

DRN.		DATE 3/1/74
CHK'D		DATE 3/6/74
ENG.		DATE 3-6-74
PROJ. ENG.		DATE 3-6-74
PROD.		DATE 3-7-74

NEXT HIGHER ASSY

SCALE: 1/1

SHEET 1 OF 2

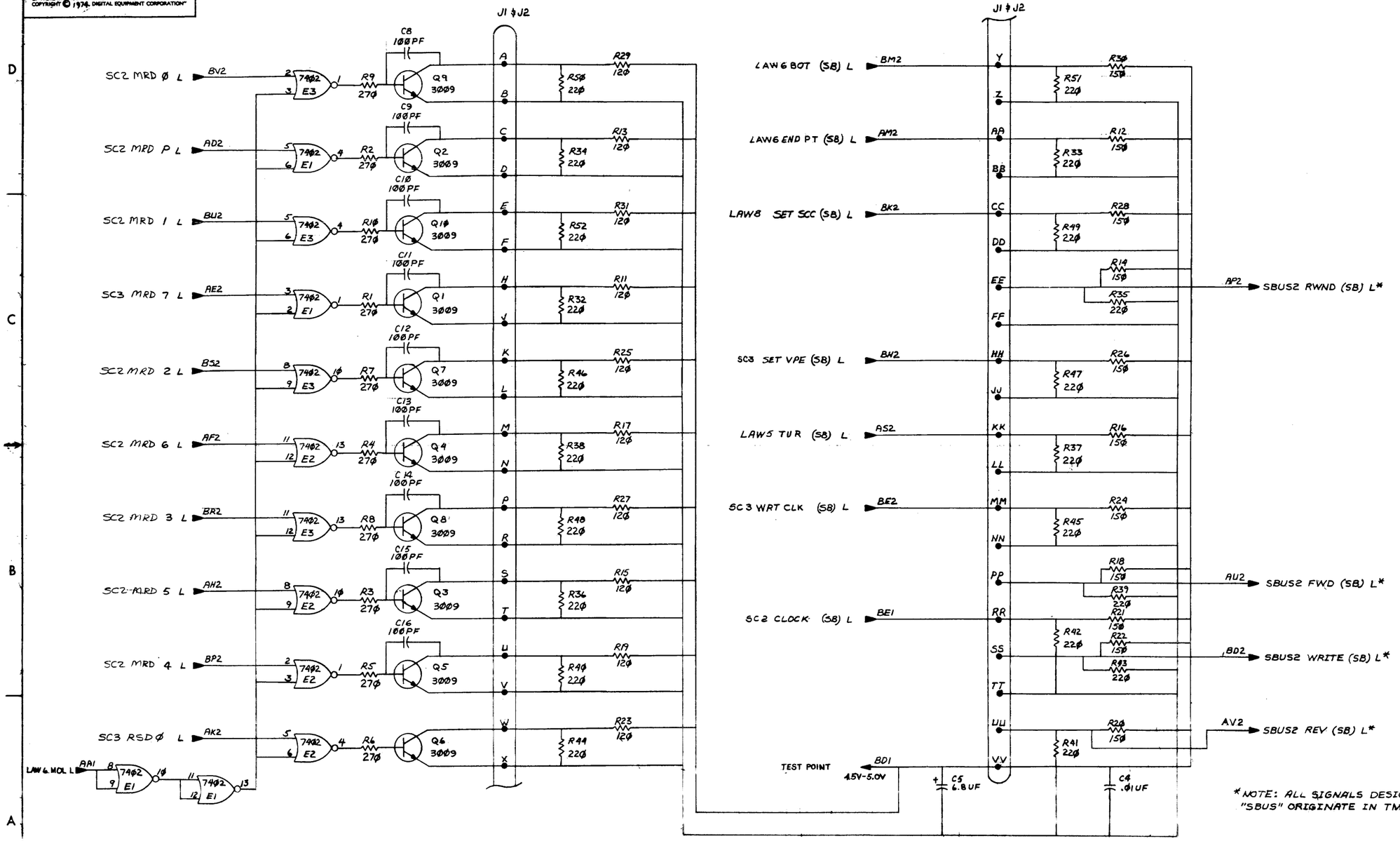
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: DATA DRIVER SBUS 2 (SLOT C/P)

SIZE	CODE	NUMBER	REV.
D	CS	M8913-YA-1	C

DIST.

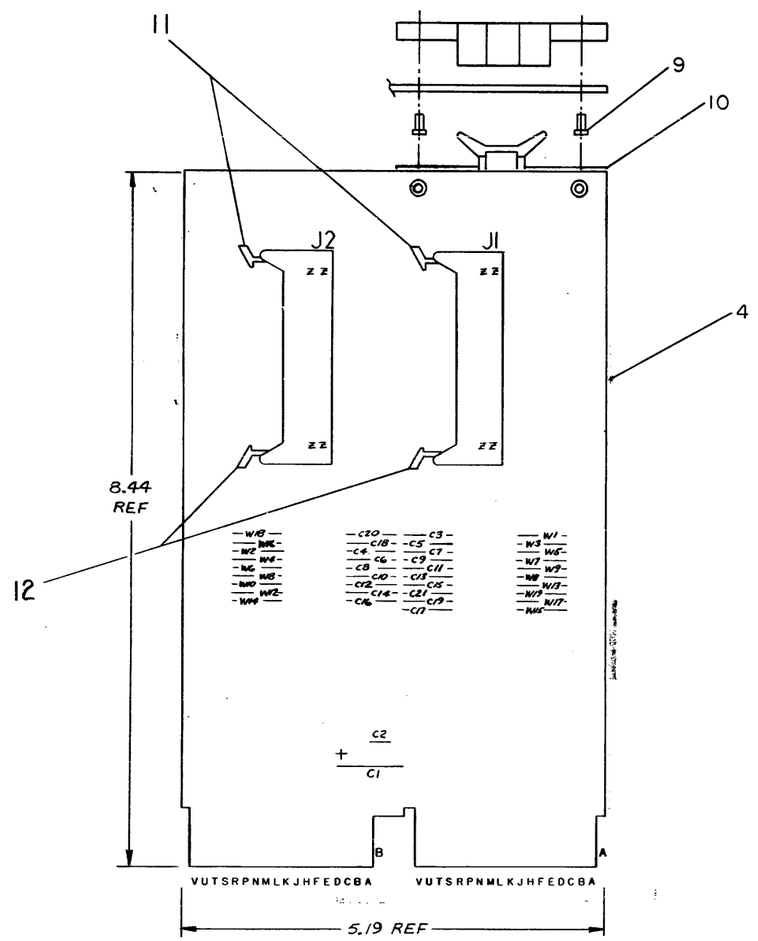
SIZE D CODE CS NUMBER M8913-YA-1 REV C



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
DATA DRIVER SBUS 2 (SLOT C/P)	D	CS	M8913-YA-1	C
SCALE	SHEET 2 OF 2		DIST.	

NOTES:



REF		X-Y COORDINATE HOLE LOCATION	K-CO-M9001-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M9001-0-5	2
REF		MODULE ECO HISTORY	B-MW-M9001-0-6	3
1		ETCHED CIRCUIT BOARD	5010465	4
20	C2 THRU C21	CAP .01UF 100V 20% AXIAL	1001610	5
1	C1	CAP 6.8UF 35V 10% TANT	1005306	6
19	W1 THRU W19	JUMPER, INSULATED WIRE	9009185	7
2	J1, J2	CONN, 40 PIN	1209941-2	8
4		EYELET	9006732	9
2		HANDLE, FLIP-CHIP, MAGENTA	9008337-6	10
2		LATCH, LEFT	1209941-3	11
2		LATCH, RIGHT	1209941-4	12

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

IC TYPE	GND	+ 5V

GND AND 5V ARE USUALLY PIN 7 AND 14 RESPECTIVELY EXCEPTIONS ARE STATED ABOVE

IC PIN LOCATIONS

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.	CHK
C	M9001-00001	H. DRAB 9-JAN-76

REVISIONS

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: C

NEXT HIGHER ASSY

SCALE

SHEET 1 OF 2

DRN. DATE 3/4/74
CHKD. DATE 3/5/74
ENG. DATE 3/5/74
PROJ. ENG. DATE 3-6-74
PROD. DATE

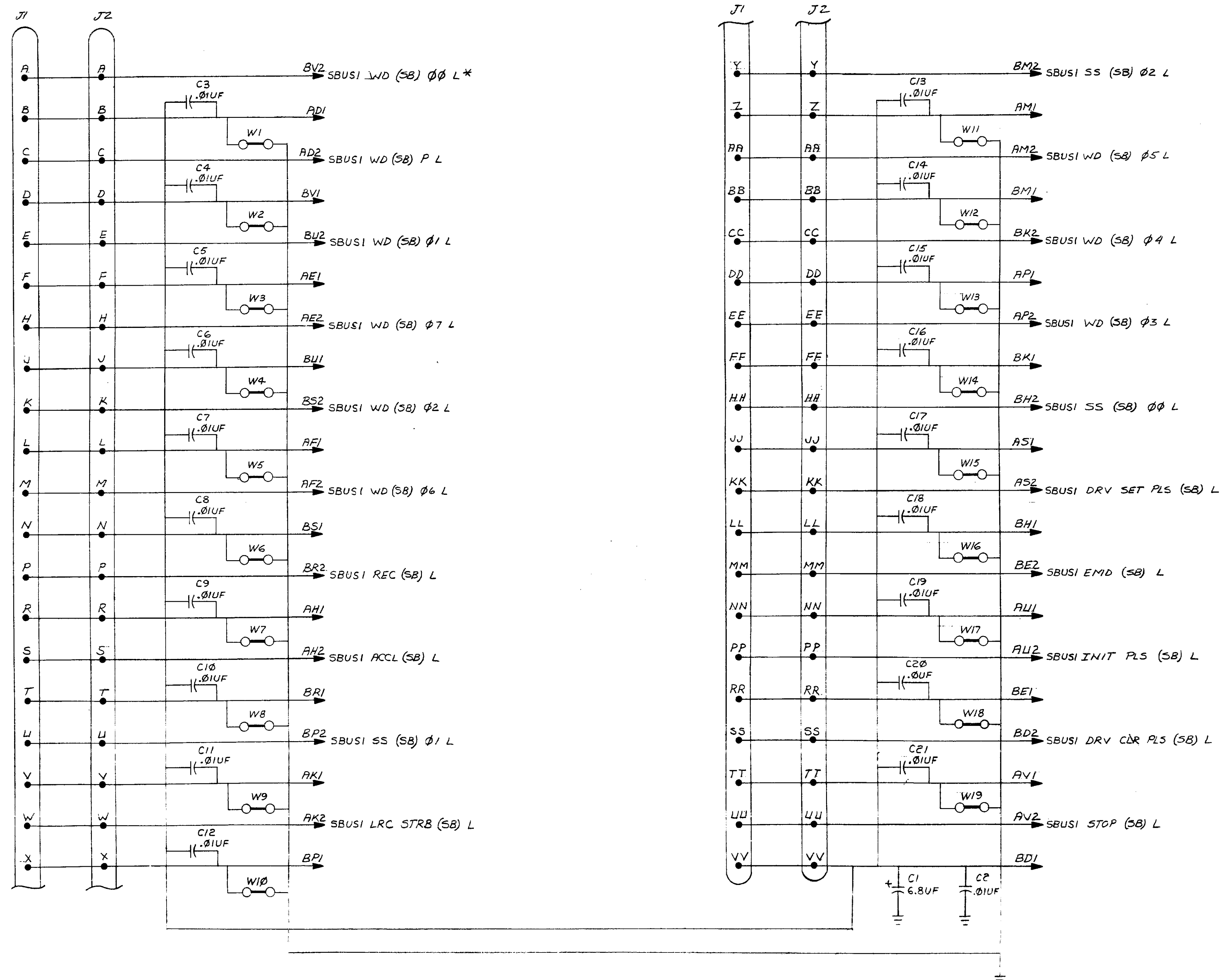
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: GEN PURPOSE CARD (A&B)

SIZE D | CODE CS | NUMBER M9001-0-1 | REV. C

DIST.

DEC FORM NO. DRD 1316



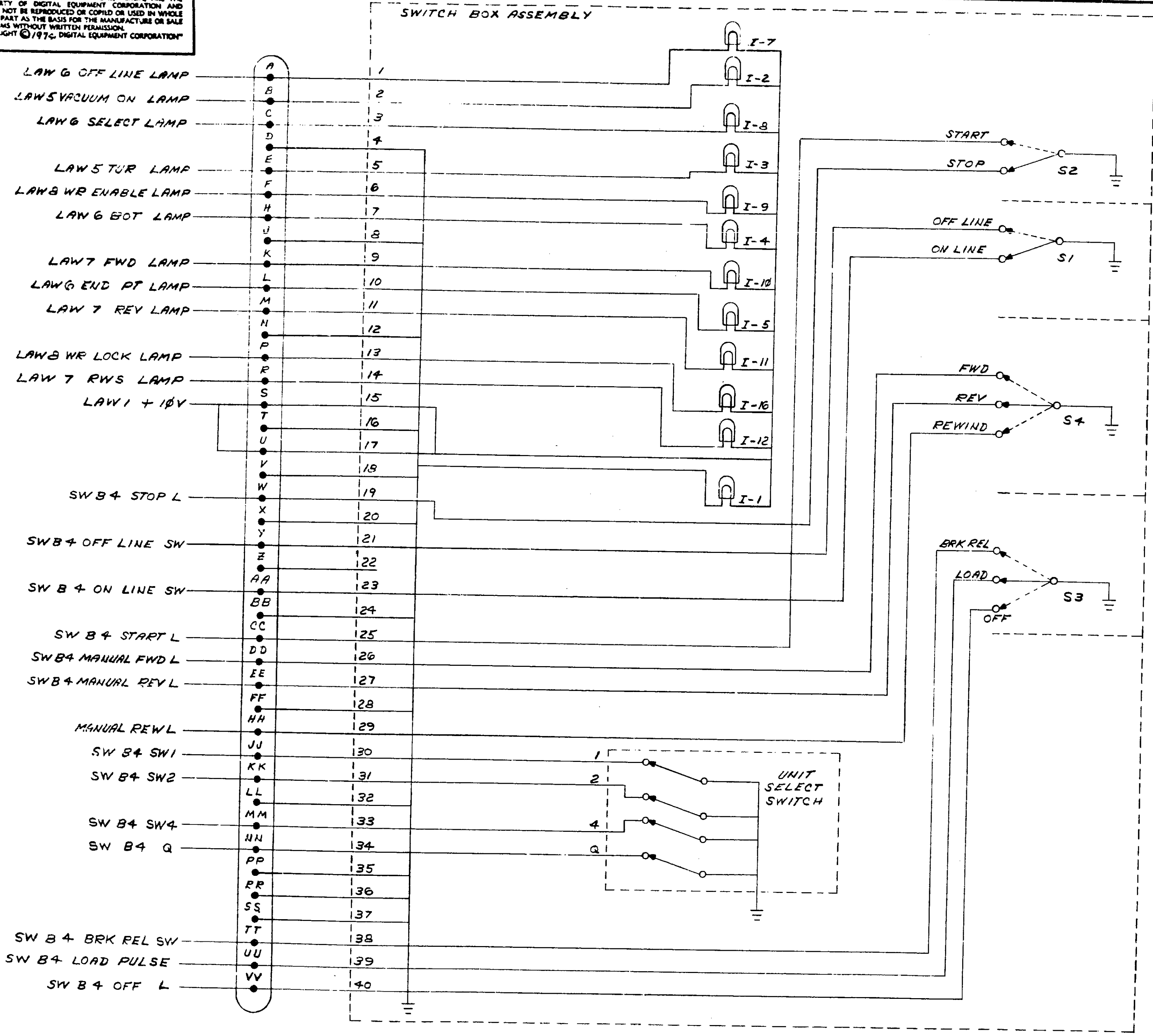
* NOTE: ALL SIGNALS ORIGINATE IN TMØ2.

REVISIONS		
CHK	CHANGE NO.	REV

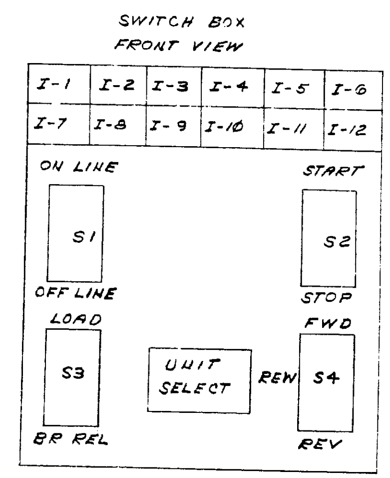
TITLE GEN PURPOSE CARD (A&B)

SIZE D CODE CS NUMBER M9ØØ1-Ø-1 REV. C

SHEET 2 OF 2



SWITCH BOX ASSEMBLY
LAW 6 OFF LINE LAMP
LAW 5 VACUUM ON LAMP
LAW 6 SELECT LAMP
LAW 5 TUR LAMP
LAW 8 WR ENABLE LAMP
LAW 6 BOT LAMP
LAW 7 FWD LAMP
LAW 6 END PT LAMP
LAW 7 REV LAMP
LAW 8 WR LOCK LAMP
LAW 7 RWS LAMP
LAW 1 +10V
SW B4 STOP L
SW B4 OFF LINE SW
SW B4 ON LINE SW
SW B4 START L
SW B4 MANUAL FWD L
SW B4 MANUAL REV L
MANUAL REW L
SW B4 SW1
SW B4 SW2
SW B4 SW4
SW B4 Q
SW B4 BRK REL SW
SW B4 LOAD PULSE
SW B4 OFF L
START
STOP
S2
OFF LINE
ON LINE
S1
FWD
REV
REWIND
S4
BRK REL
LOAD
OFF
S3
UNIT SELECT SWITCH
I-7
I-2
I-8
I-3
I-9
I-4
I-10
I-5
I-11
I-16
I-12
I-1



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TU16		PARTS LIST		

DIMENSIONAL TOLERANCE

DIMENSIONS ARE MILLIMETERS / INCHES UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
X.XX = ±0.10 .XX = ±0.5 X = ±2.	.XXX = ±.005 .XX = ±.02 .X = ±.1	±0° 30'

THIRD ANGLE PROJECTION — REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓

MATERIAL —

FINISH —

		DATE
DRN.	N. Reiser	6-25-74
CHK'D	[signature]	6-28-74
ENG.	[signature]	7-2-74
PROJ. ENG.	[signature]	7-2-74
PROD.	[signature] D.S.	9/27/74

NEXT HIGHER ASSY. D-AD-7009637-0-0

SCALE — SHEET 1 OF 1

digital

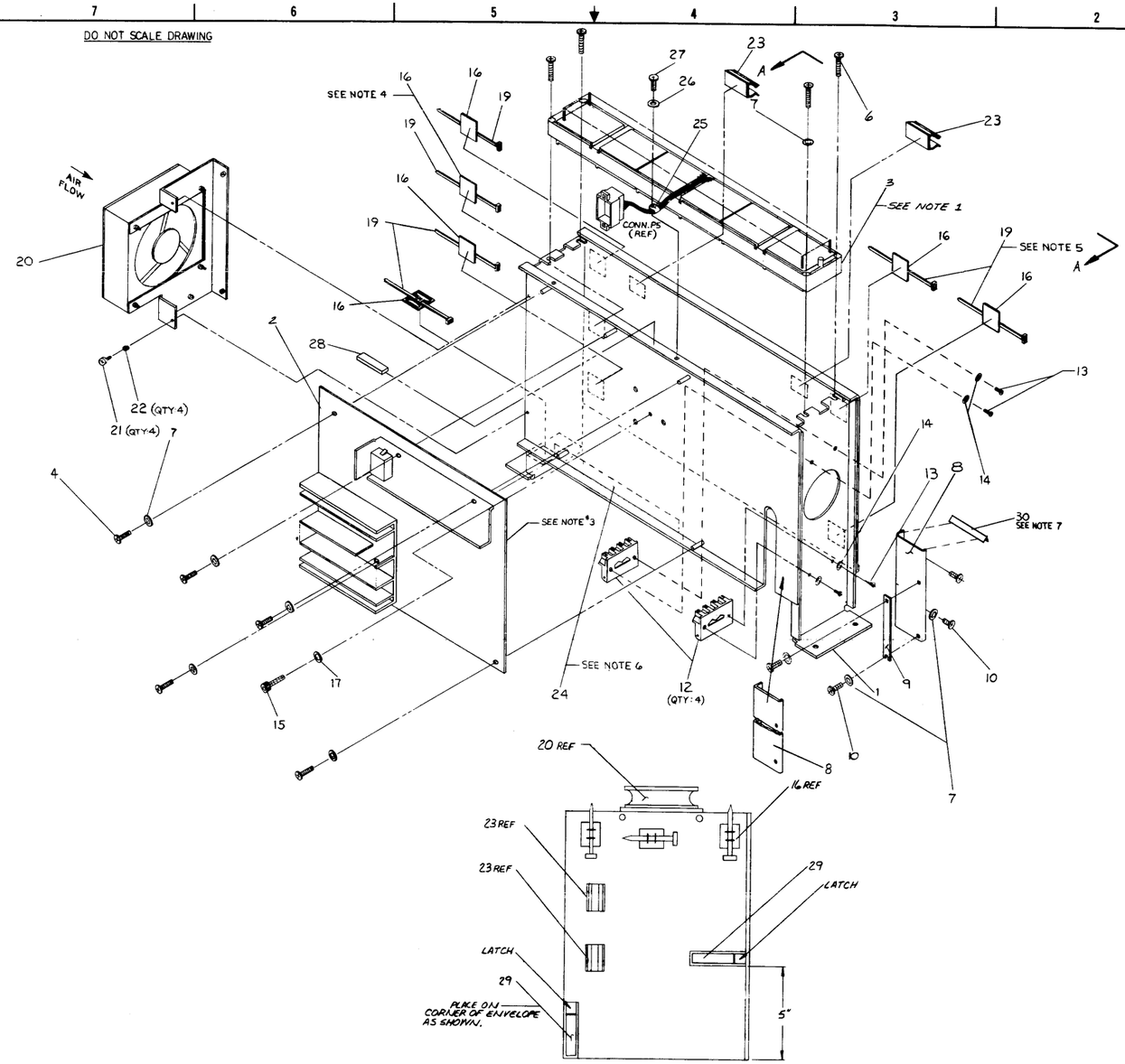
TITLE WIRING CONTROL BOX

SIZE D CODE CS NUMBER 7009637-0-1 REV.

REVISIONS — CHANGE NO. — REV. — CHK

DEC FORM NO. DRO 102C

DO NOT SCALE DRAWING



VIEW A-A SCALE: NONE
FRONT OF LOGIC CHASSIS FACING TOWARDS CASTING.

NOTES:

1. ITEM 3 TO BE MOUNTED UNDER FLANGES.
2. WHEN INSERTING MODULES INTO LOGIC ASSEMBLY, CARD GUIDES (ITEM 12) WILL BE ADJUSTED BY SLIDING RIGHT OR LEFT SO AS TO PROPERLY ALIGN P.C. CARDS.
3. BEFORE ASSEMBLING ITEMS 1 AND 2, COAT MATING SURFACE OF DIODE HEAT SINK WITH THERMAL COMPOUND.
4. PLACE, ADHEISIVE BACK MOUNT, DIRECTLY IN MIDDLE OF ENVELOPE, FLUSH WITH TOP RIDGE.
5. DELETE THESE TWO MOUNTS ON TE16 DRIVES.
6. INSTALL ITEM 24 AS SHOWN ALONG EDGE OF FLANGE ON INSIDE PANEL SURFACE 1.875 IN. FROM TOP PANEL.
7. APPLY ADHESIVE (ITEM 31) TO TOP EDGE OF CABLE CLAMP BRACKET (ITEM 8) THEN AFFIX GROMMET (ITEM 30) TO EDGE.

A/R			
A/R	HY BOND ADHESIVE	9007594	31
A/R	GROMMET, BLACK 1.25"	9008209	30
2	CLIP, FLATCABLE, ADHESIVE BACK	1213715-00	29
1	IND, ELAPSED TIME	1210721	28
1	SCR, PHL PAN HD 6-32 x .501 LG	9006024-01	27
1	WASHER, FLAT #6	9006656	26
1	CLAMP, CABLE .3/8 DIA.	9007083	25
A/R	TAPE, SCOTH 3/4 WIDE	9008845-00	24
2	CLIP, PVC HARNESS	9009771-02	23
4	WASHER, LOCK #4	9006688	22
4	SCR, PAN HD 4-40 x .43 LG	9006012-1	21
1	BRACKET, FAN ASSY	D-UA-7012911-0-0	20
6	TIE WRAP	9007032	19
A/R	THERMAL COMPOUND	9008268	18
1	WASHER, SPLIT LOCK, #8	9006690	17
6	MOUNT, ADHEISIVE BACK	9008264	16
1	SCREW, SOCKET HD 0-36 x 1/4	9009464-8	15
1	ELECTROSTATIC SHIELD	1200521	14
8	WASHER, INT TOOTH LOCK #8	9006632	14
8	SCREW, PAN HD PHL 4-40 x 3/16 LG	9006010-1	13
4	GUIDE, CARD & EXTRACTER	1210699	12
~~X~~	~~NUT, KEPS #6-32~~	~~9006633~~	~~11~~
4	SCREW, PAN HD PHL 6-32 x 5/16 LG	9006021-1	10
1	PLATE, PRESSURE	KMD-7009479-0-0	9
2	BRACKET, CABLE CLAMP	K-1A-7011535-0-0	8
13	WASHER, #6 INT LOCK	9006633	7
4	SCREW, PHL PAN HD. 6-32 x 3/8 LG	9006028-1	6
~~5~~	~~WASHER #6 NYLON~~	~~9006707~~	~~6~~
5	SCREW, PHL PAN HD. 6-32 x 7/8 LG	9006027-1	4
1	LOGIC HARNESS ASSEMBLY (TU16)	D-AH-7001130-0-0	3
1	P.C. CARD ASSEMBLY (TU16 POWER SUPPLY)	D-AH-5411246	2
1	LOGIC CHASSIS (TU16)	D-UA-7009630-0-0	1
QTY	DESCRIPTION	PART NO.	ITEM

PARTS LIST

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

LOGIC ASSEMBLY (TU16)

SIZE AD 7009635-0-0 REV K

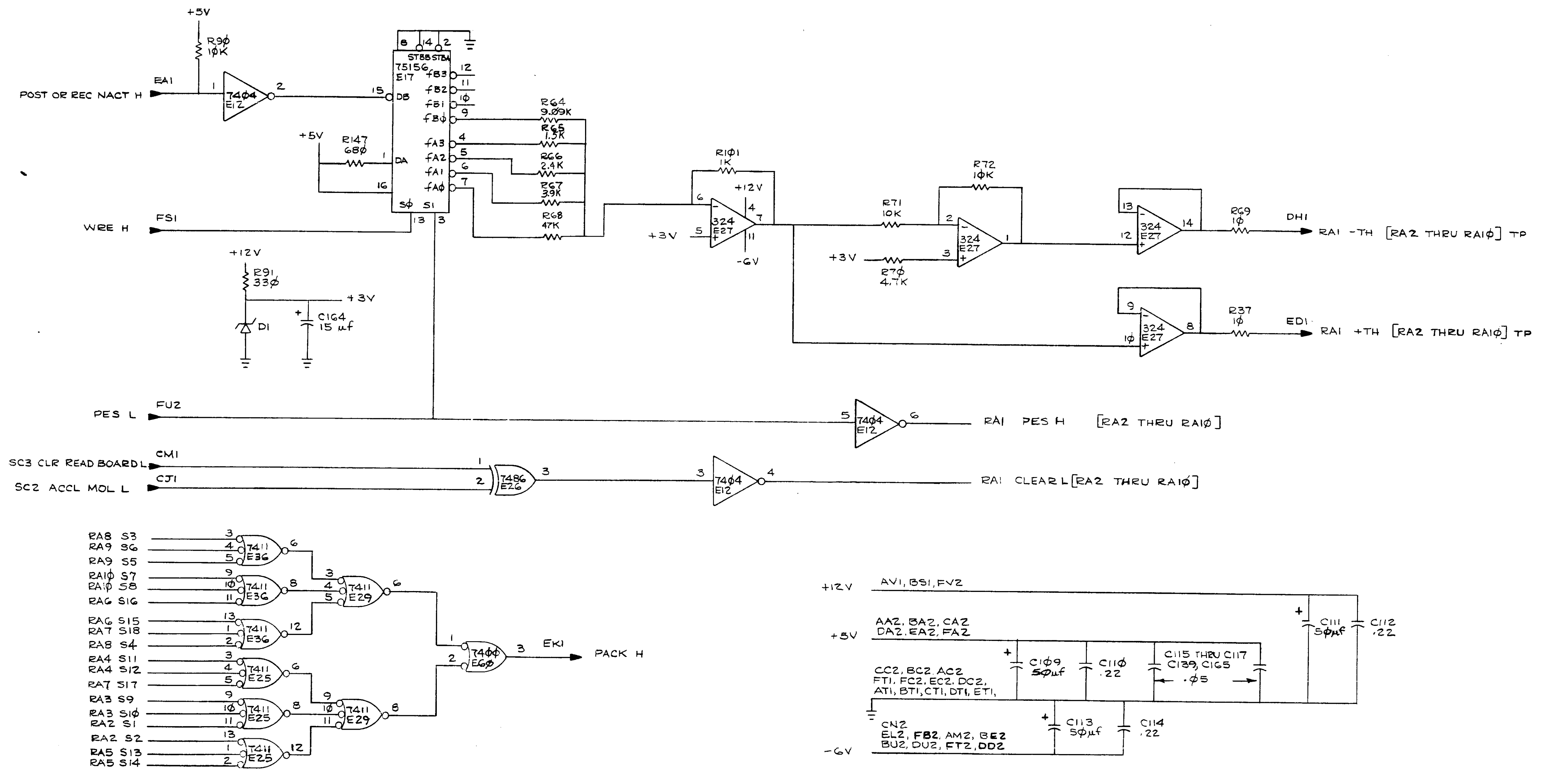
SEE PARTS LIST

E-AD-7009634-0-0

SCALE 1/2 SHEET 1 OF 1

7009635-0-0 K

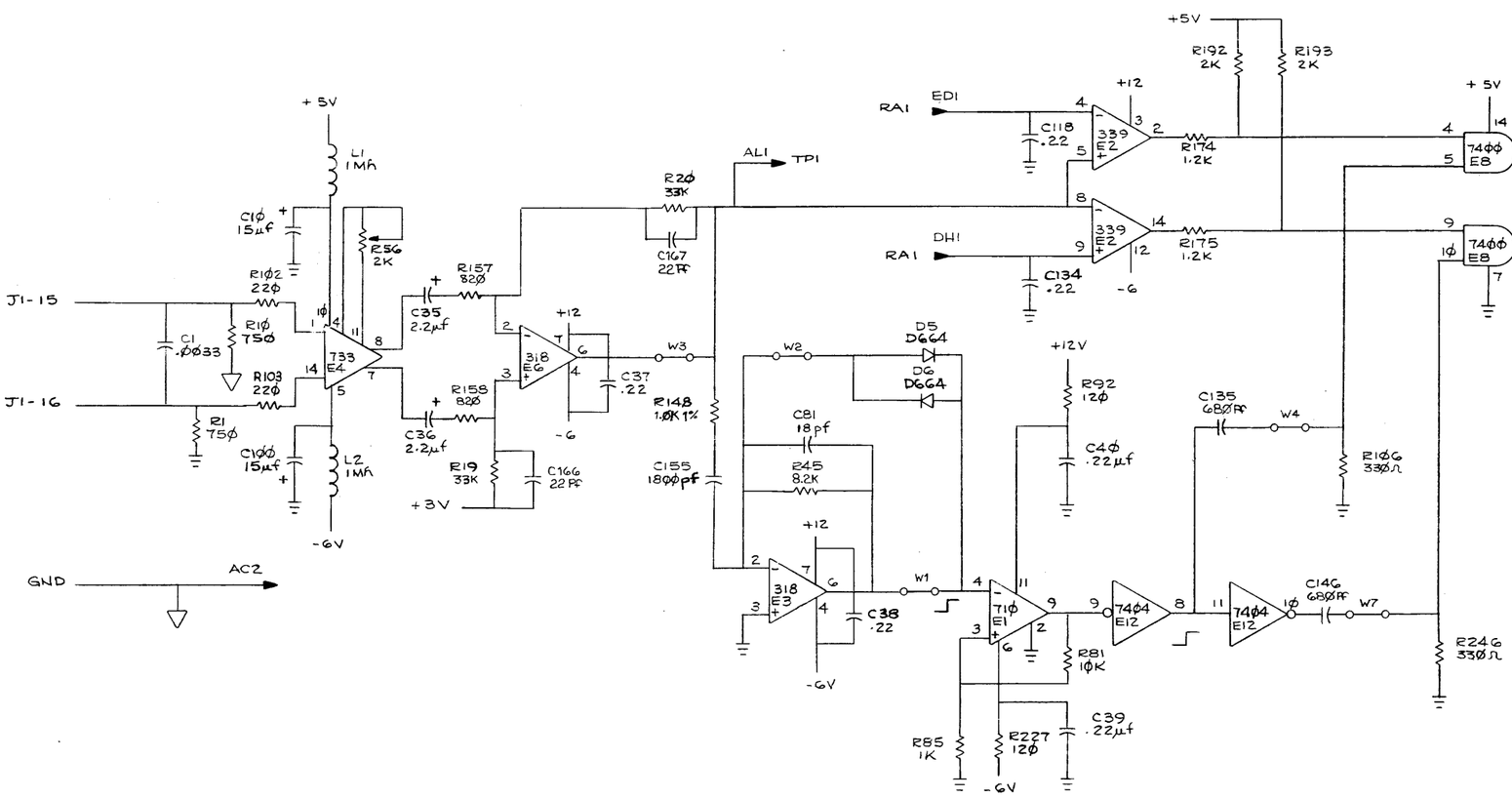
NOTE:
1. ALL RESISTORS ARE 1/4W, ±5% UNLESS OTHERWISE SPECIFIED



REV.	CHANGE NO.	CHK
C	G066-00001	
D	G066-00002	
E	G066-00003	
F	G066-ML004	

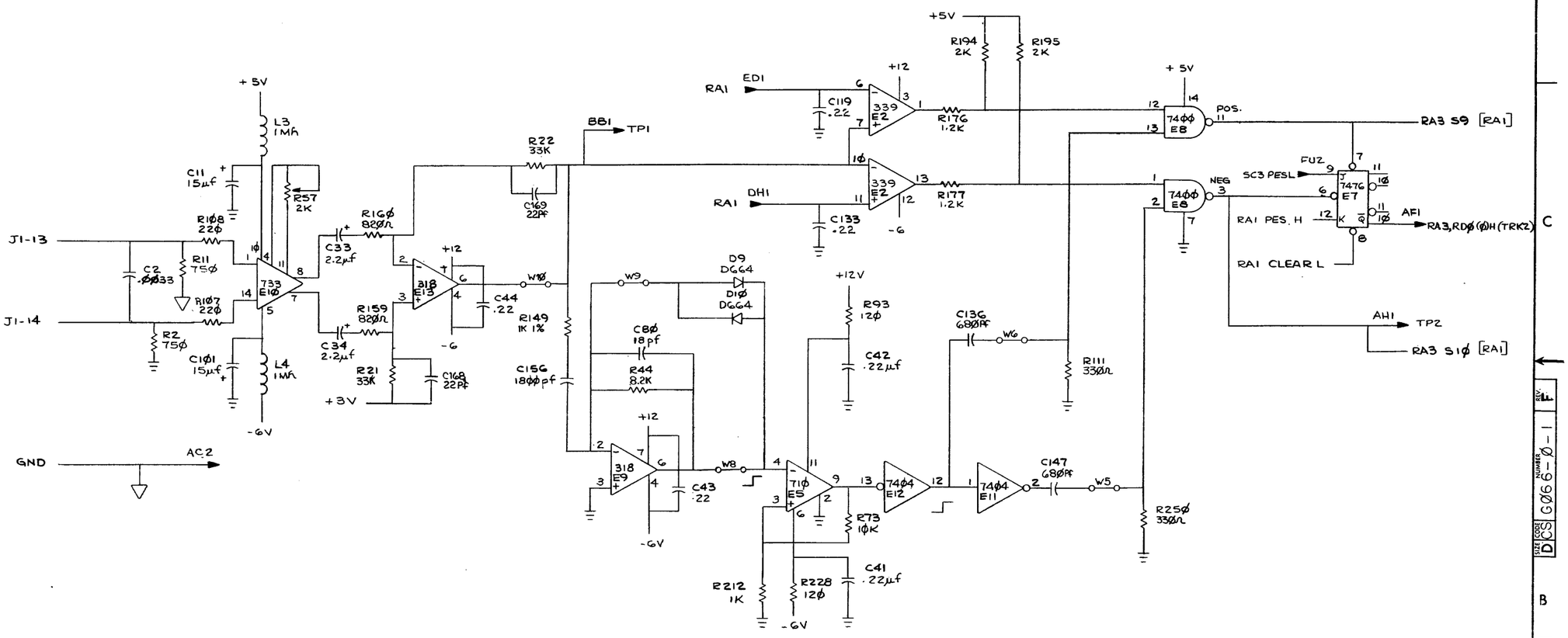
FIRST USED ON	TU16
TITLE	9 TK TU16 READ AMP (RA1)
NEXT HIGHER ASSY.	D-UA-G066-0-0
SIZE	D
CODE	CS
NUMBER	G066-0-1
REV.	F
SHEET	1 OF 10

digital



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
9TK TU16 READ AMP (RA2)	D	CS	GØ66-Ø-1	F
SCALE	SHEET 2 OF 1Ø	DIST.		



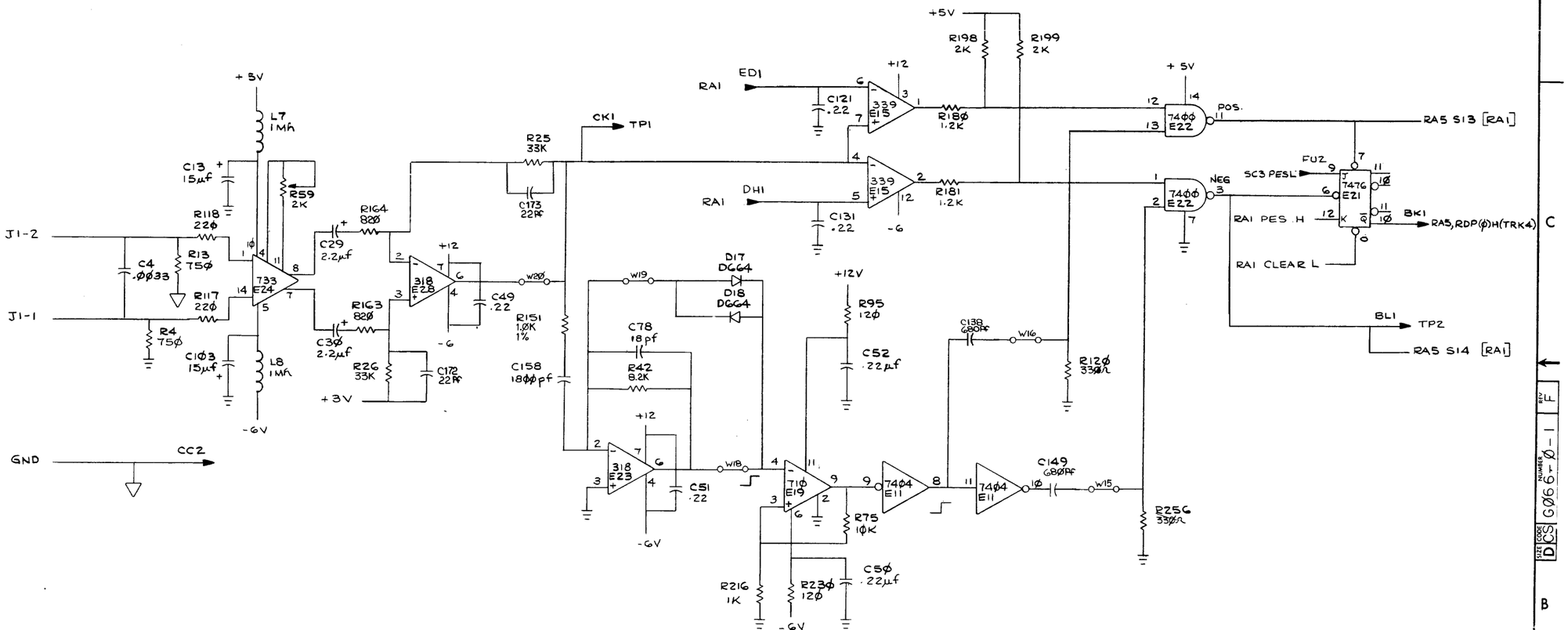
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
9TK TU16 READ AMP (RA3)	D	CS	GØ66-Ø-1	F
SCALE —	SHEET 3 OF 1Ø	DIST.		

+5V
L5 1MA
C12 15µf
R258 2K
R113 22Ø
J1-11
C3 .ØØ33
R12 75Ø
R112 22Ø
J1-12
R3 75Ø
C1Ø2 15µf
L6 1MA
-6V
GND
BC2
R162 82ØΩ
C31 2.2µf
R161 82ØΩ
C32 2.2µf
R23 33K
C17Ø 22PF
+3V
R24 33K
C171 22PF
BM1
TP1
W14
C48 .22
R15Ø 1ØK 1%
W13
C157 18ØØpf
C79 18pf
R43 8.2K
C47 .22
W12
D13 DG64
D14 DG64
+12V
R94 12Ø
C46 .22µf
C137 68ØPF
W17
R116 33ØΩ
R214 1K
R229 12Ø
C45 .22µf
1ØK
RA1 EDI
C12Ø .22
R196 2K
R197 2K
R178 1.2K
RA1 DH1
C132 .22
R179 1.2K
-6
+12
POS.
RA4 S11 [RA1]
NEG.
SC3 PESL
FUZ
RA1 PES H
RA1 CLEAR L
BF1
RA4,RD4(Ø)H(TRK3)
BN1
TP2
RA4 S12 [RA1]
C148 68ØPF
W11
R253 33ØΩ

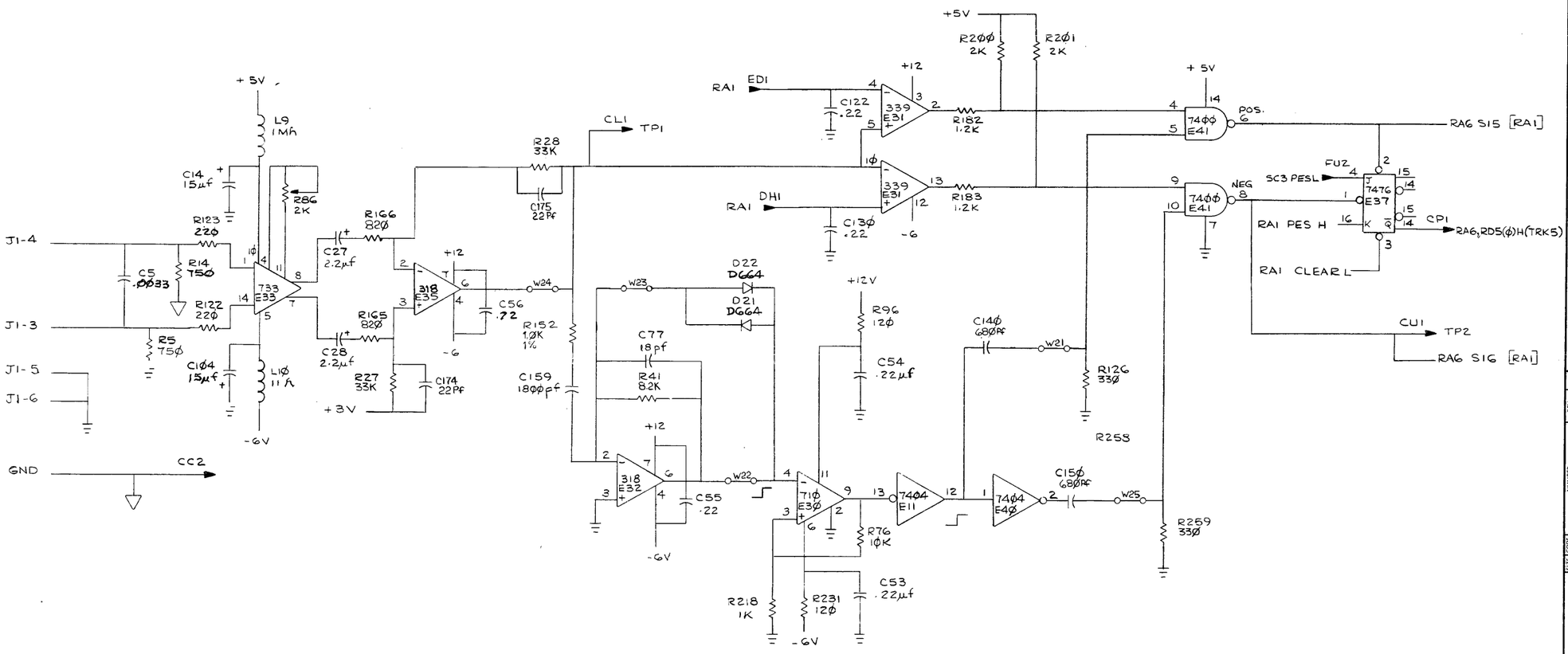
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
9 TK TU16 READ AMP (RA4)	D	CS	G066-Ø-1	F
SCALE —	SHEET 4 OF 1Ø	DIST.		



REVISIONS		
CHK	CHANGE NO.	REV.

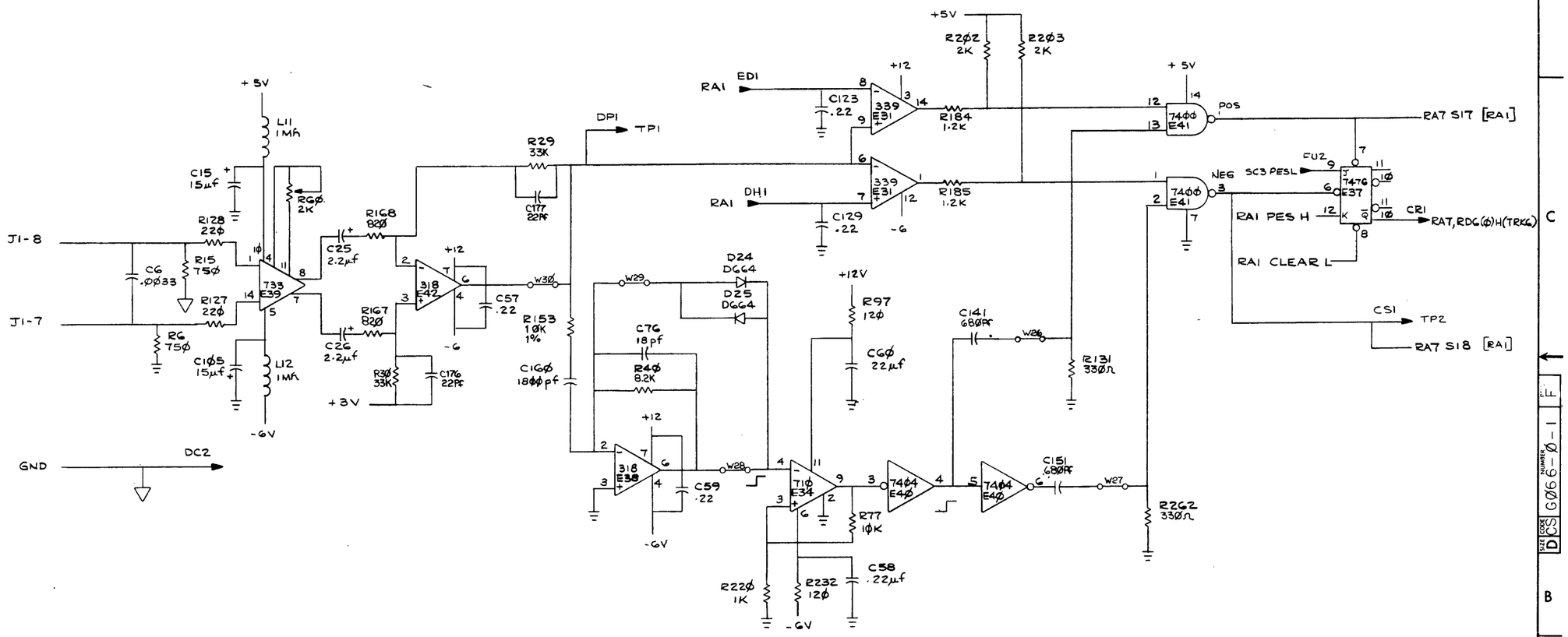
TITLE	SIZE	CODE	NUMBER	REV.
9TK TU16 READ AMP (RA5)	D	CS	GØ66-Ø-1	F
SCALE —	SHEET 5 OF 1Ø	DIST.		



REVISIONS		
CHK	CHANGE NO.	REV.

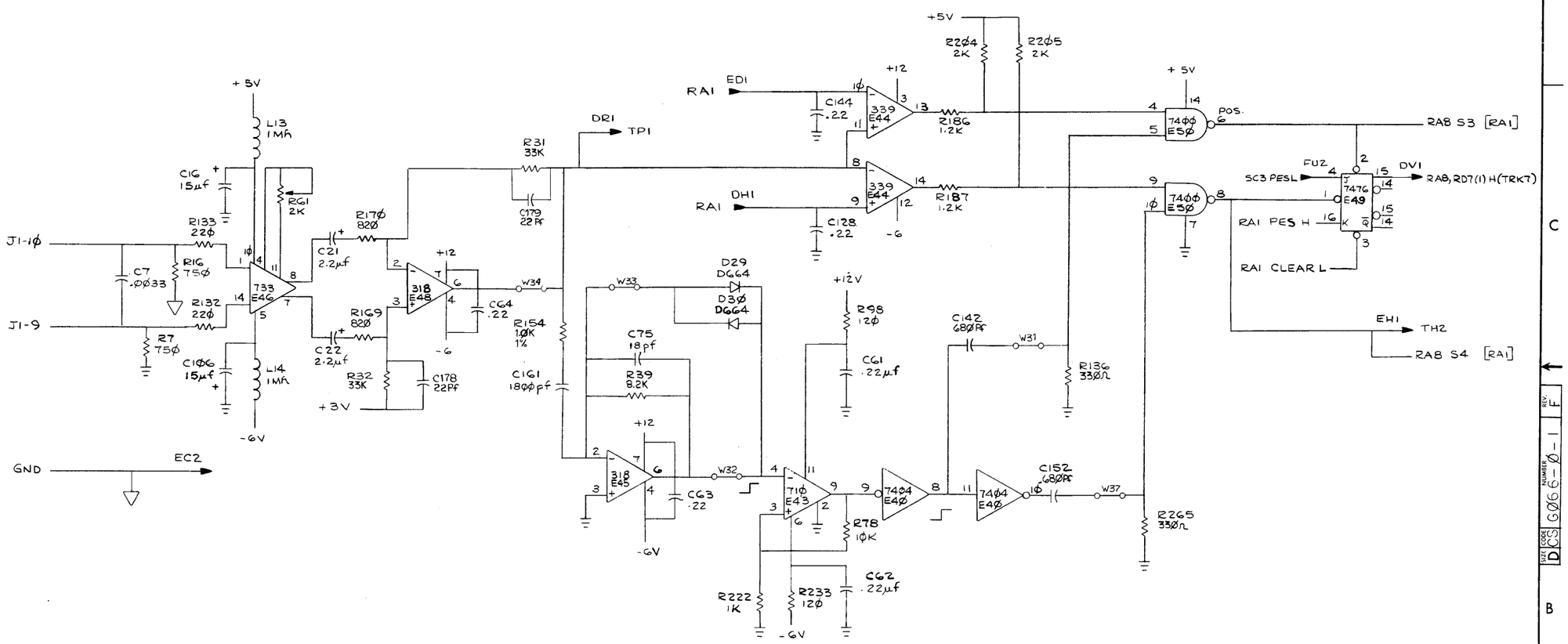
TITLE	SIZE	CODE	NUMBER	REV.
9TK TU16 READ AMP (RA6)	D	CS	GØ66-Ø-1	F
SCALE —	SHEET 6 OF 1Ø	DIST.		

DEC FORM NO. 0110 138



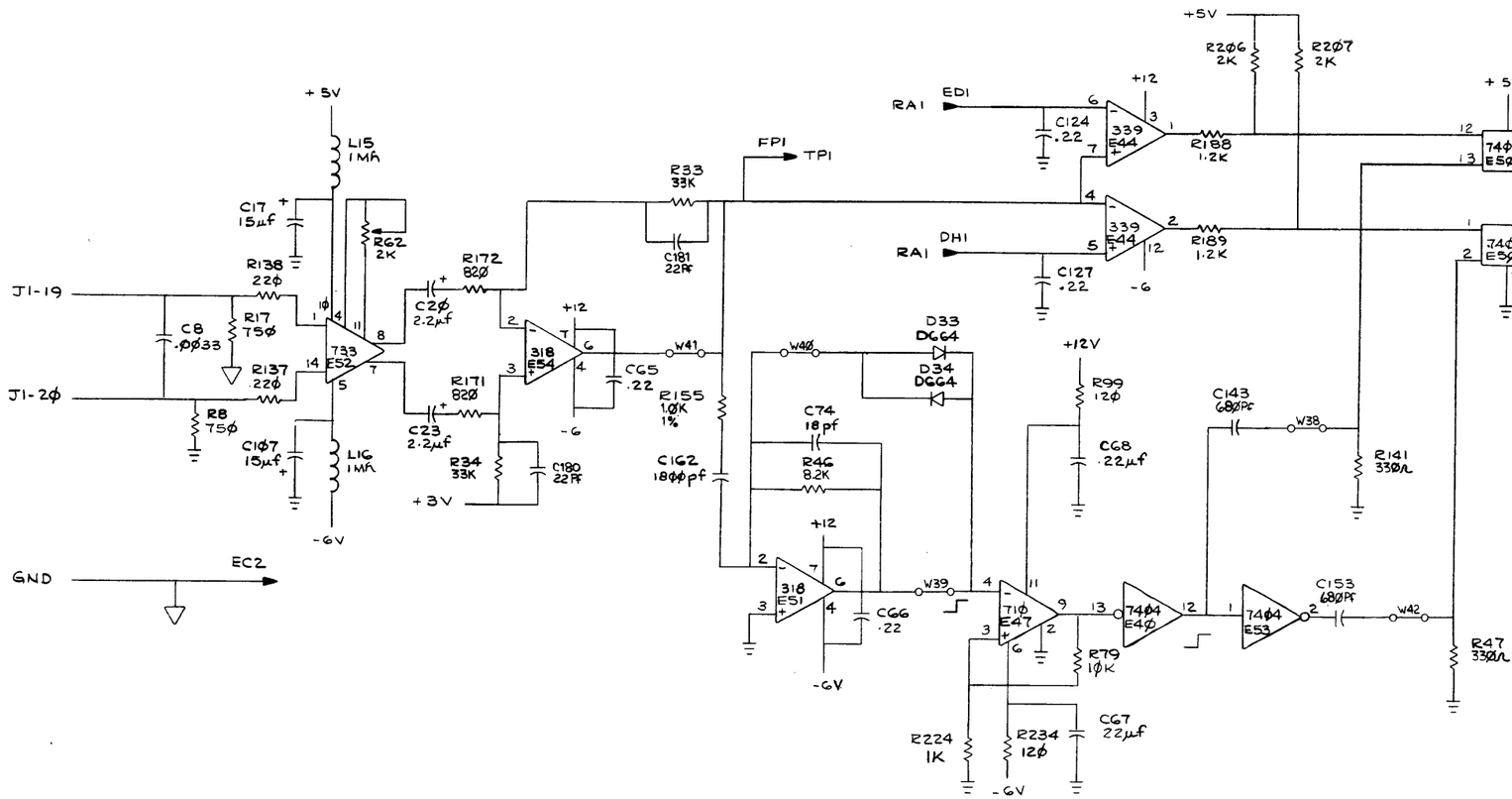
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
9TK TU16 READ AMP (RA7)	D	CS	GØ66-Ø-1	F
SCALE — SHEET 7 OF 1Ø	DIST.			



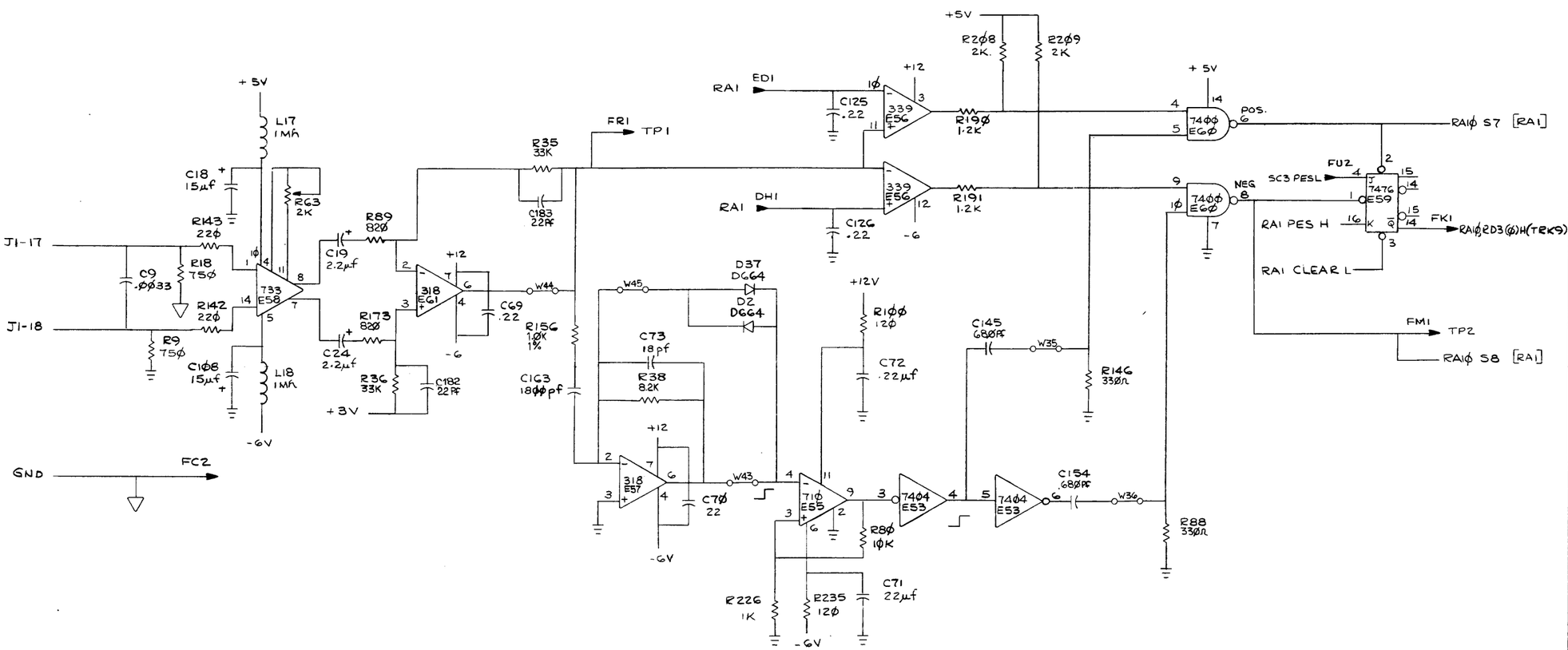
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
9TK TU16 READ AMP (RA8)	D	CS	GØ66-Ø-1	F
SCALE —	SHEET 8 OF 1Ø	DIST.		



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
9 TK TU16 READ AMP (RA9)	D	CS	GØ66-Ø-1	F
SCALE —	SHEET 9 OF 1Ø	DIST.		



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	9 TK TU16 READ AMP (RAIO)	SIZE	CODE	NUMBER	REV.
SCALE	SHEET 1ϕ OF 1ϕ	D	CS	GØ66-Ø-1	F
		DIST.			

REVISIONS				
CHK	CHANGE NO.	REV.		
	TU16-00010	A		
	TU16-00013	B		
	TU16-00021	C		
	TU16-00022	D		
	TU16-00027	E		
	TU16-00030	F		

FIRST USED ON OPTION MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TU16		PARTS LIST		

DRN. D. Schmidt	DATE 2/20/74	digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS
CHK'D. D. Schmidt	DATE 2/20/74	
ENG. J R Hess	DATE 2-20-74	TITLE WIRE LIST (TU16)
PROJ. ENG.	DATE 2-20-74	
PROD. D A Smith	DATE 5-31-74	
NEXT HIGHER ASSEMBLY D-AD-7009605-0-0		SIZE K / CODE WL / NUMBER TU16-Ø-WL / REV. F
SCALE —		
SHEET 1 OF 1		DIST.

DEC FORM NO.
DRB 109

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
+12V		.A04V													1-PIN RUN	1
+5V		B04A2		1-01 *							1		N	3-5/8		2
+5V		B02V1		1-02 *												2
+5V				1										3-5/8		2
-6V		A01A1		1-01 *							1		N	2-7/8		3
-6V		A04M2		1-02 *												3
-6V				1										2-7/8		3
1ST ONE SHOT L		A03S1		1-01 *							1		N	8-1/8		4
1ST ONE SHOT L		D02K1		1-02 *												4
1ST ONE SHOT L				1										8-1/8		4
3RD ONE SHOT H		B03B2		1-01 *							1		N	0-5/8		5
3RD ONE SHOT H		B03C1		1-02 *												5
3RD ONE SHOT H				1										0-5/8		5
4TH ONE SHOT H		A03U1		1-01 *							1		N	8-1/8		6
4TH ONE SHOT H		D02M1		1-02 *												6
4TH ONE SHOT H				1										8-1/8		6
4TH ONE SHOT L		B03F1		1-01 *							2		N	2-1/8		7
4TH ONE SHOT L		B03V2		1-02 *												7
4TH ONE SHOT L				1										2-1/8		7
7CH (SB) L		C03L2		1-01 *							1		N	5-7/8		8
7CH (SB) L		E01D2		1-02 *												8
7CH (SB) L				1										5-7/8		8
7TRK H		C03T1		1-01 *							1		N	0-4/8		9
7TRK H		C03T2		1-02 *												9
7TRK H				1										0-4/8		9
ACCL (SB) L		A01H2		1-01 *							1		N	7-3/8		10
ACCL (SB) L		C03P2		1-02 *												10
ACCL (SB) L				1										7-3/8		10
ACCL L		C04J1		1-01 *							1		N	2		11
ACCL L		C03U1		1-02 *												11
ACCL L				1										2-0/8		11
BOI (SB) L		D01M2		1-01 *							1		N	6-5/8		12
BOI (SB) L		B02H2		1-02 *												12
BOI (SB) L				1										6-5/8		12
BOI H		C02H1		1-01 *							1		N	3-5/8		13
BOI H		D03F1		1-02 *												13
BOI H				1										3-5/8		13
CLEAR READ BOARD L		C03V1		1-01 *							1		N	1-5/8		14
CLEAR READ BOARD L		C04M1		1-02 *												14
CLEAR READ BOARD L				1										1-5/8		14

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
CLK L		D01A1		1-01 *							2		N	1		15
CLK L		D02C1		1-02 *							1		N	1		15
CLK L		D03C1		1-03 *												15
CLK L				1										2-0/8		15
CLOCK (SB) L		D01E1		1-01 *							1		N	3-4/8		16
CLOCK (SB) L		C03M2		1-02 *												16
CLOCK (SB) L				1										3-4/8		16
DEN (SB) 00 H		C03J2		1-01 *							1		N	7-3/8		17
DEN (SB) 00 H		E01P2		1-02 *												17
DEN (SB) 00 H				1										7-3/8		17
DEN (SB) 01 H		D03E1		1-01 *							1		N	5-1/8		18
DEN (SB) 01 H		E01V2		1-02 *												18
DEN (SB) 01 H				1										5-1/8		18
DEN (SB) 02 H		C03U2		1-01 *							1		N	7-5/8		19
DEN (SB) 02 H		F01D2		1-02 *												19
DEN (SB) 02 H				1										7-5/8		19
DRV CLR PLS (SB) L		B01D2		1-01 *							1		N	7-7/8		20
DRV CLR PLS (SB) L		E02A1		1-02 *												20
DRV CLR PLS (SB) L				1										7-7/8		20
DRV SET PLS (SB) L		A01S2		1-01 *							1		N	1		21
DRV SET PLS (SB) L		A02S2		1-02 *												21
DRV SET PLS (SB) L				1										1-0/8		21
DT (SB) 00 L		F01H2		1-01 *							1		N	1-4/8		22
DT (SB) 00 L		F03H2		1-02 *												22
DT (SB) 00 L				1										1-4/8		22
DT (SB) 01 L		E01M2		1-01 *							1		N	1-6/8		23
DT (SB) 01 L		E03V1		1-02 *												23
DT (SB) 01 L				1										1-6/8		23
DT (SB) 02 L		F01P1		1-01 *							1		N	2-1/8		24
DT (SB) 02 L		F03K2		1-02 *												24
DT (SB) 02 L				1										2-1/8		24
DT L		F03A1		1-01 *							2		N	1-3/8		25
DT L		F03J1		1-02 *							1		N	1-4/8		25
DT L		F03T1		1-03 *												25
DT L				1										2-7/8		25
EMD (SB) L		B01E2		1-01 *							1		N	5-1/8		26
EMD (SB) L		C03S2		1-02 *												26
EMD (SB) L				1										5-1/8		26
END PT (SB) L		C01M2		1-01 *							1		N	5-7/8		27
END PT (SB) L		A02P2		1-02 *												27
END PT (SB) L				1										5-7/8		27

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
FWD (SB) L		A02U2		1-01 *							1		N	6-1/8	28
FWD (SB) L		C01U2		1-02 *											28
FWD (SB) L				1										6-1/8	28
FWD H		D03D1		1-01 *							1		N	4-3/8	29
FWD H		E02N1		1-02 *											29
FWD H				1										4-3/8	29
GND		F03C1		1-01 *							1		N	0-4/8	30
GND		F03C2		1-02 *							2		N	0-5/8	30
GND		F03F1		1-03 *											30
GND				1										1-1/8	30
INIT L		B03N2		1-01 *							1		N	8-7/8	31
INIT L		E02R2		1-02 *											31
INIT L				1										8-7/8	31
INIT PLS (SB) L		A01U2		1-01 *							1		N	9-7/8	32
INIT PLS (SB) L		E02F1		1-02 *											32
INIT PLS (SB) L				1										9-7/8	32
INTERCHG READ L		D03J1		1-01 *							1		N	2-3/8	33
INTERCHG READ L		E04A1		1-02 *							2		N	4-3/8	33
INTERCHG READ L		F04L1		1-03 *											33
INTERCHG READ L				1										6-6/8	33
IRD (SB) L		C03L1		1-01 *							1		N	7-3/8	34
IRD (SB) L		E01U2		1-02 *											34
IRD (SB) L				1										7-3/8	34
LOCAL H		D02H1		1-01 *							1		N	1	35
LOCAL H		D03H1		1-02 *											35
LOCAL H				1										1-0/8	35
LRC STRB (SB) L		A01K2		1-01 *							1		N	1	36
LRC STRB (SB) L		A02K2		1-02 *											36
LRC STRB (SB) L				1										1-0/8	36
MOL (SB) L		F01V2		1-01 *							1		N	1	37
MOL (SB) L		F02V2		1-02 *											37
MOL (SB) L				1										1-0/8	37
MOL H		C03P1		1-01 *							1		N	5-5/8	38
MOL H		E02M2		1-02 *											38
MOL H				1										5-5/8	38
MOL L		C02S1		1-01 *							1		N	2-5/8	39
MOL L		C01A1		1-02 *											39
MOL L				1										2-5/8	39
PACKET H		D03J2		1-01 *							1		N	3-1/8	40
PACKET H		E04K1		1-02 *											40
PACKET H				1										3-1/8	40

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
PCLR L		A03B2		1-01 *							1		N	14-7/8	41
PCLR L		F02E1		1-02 *							2		N	7-5/8	41
PCLR L		C01N2		1-03 *											41
PCLR L				1										22-4/8	41
PES L		C03B1		1-01 *							2		N	5-5/8	42
PES L		D02U1		1-02 *							1		N	6-7/8	42
PES L		F04U2		1-03 *											42
PES L				1										12-4/8	42
PESB (SB) L		C03R1		1-01 *							1		N	3-6/8	43
PESB (SB) L		D03V1		1-02 *							2		N	1-6/8	43
PESB (SB) L		E01D1		1-03 *											43
PESB (SB) L				1										5-4/8	43
RD (SB) 00 L		D01V2		1-01 *							1		N	1-4/8	44
RD (SB) 00 L		D03V2		1-02 *											44
RD (SB) 00 L				1										1-4/8	44
RD (SB) 01 L		D01U2		1-01 *							1		N	1-4/8	45
RD (SB) 01 L		D03U2		1-02 *											45
RD (SB) 01 L				1										1-4/8	45
RD (SB) 02 L		D01S2		1-01 *							1		N	1-4/8	46
RD (SB) 02 L		D03S2		1-02 *											46
RD (SB) 02 L				1										1-4/8	46
RD (SB) 03 L		D01R2		1-01 *							1		N	1-4/8	47
RD (SB) 03 L		D03R2		1-02 *											47
RD (SB) 03 L				1										1-4/8	47
RD (SB) 04 L		D01P2		1-01 *							1		N	1-4/8	48
RD (SB) 04 L		D03P2		1-02 *											48
RD (SB) 04 L				1										1-4/8	48
RD (SB) 05 L		C01H2		1-01 *							1		N	1-4/8	49
RD (SB) 05 L		C03H2		1-02 *											49
RD (SB) 05 L				1										1-4/8	49
RD (SB) 06 L		C01F2		1-01 *							1		N	1-4/8	50
RD (SB) 06 L		C03F2		1-02 *											50
RD (SB) 06 L				1										1-4/8	50
RD (SB) 07 L		C01E2		1-01 *							1		N	1-4/8	51
RD (SB) 07 L		C03E2		1-02 *											51
RD (SB) 07 L				1										1-4/8	51
RD (SB) P L		C01D2		1-01 *							1		N	1-2/8	52
RD (SB) P L		C03A1		1-02 *											52
RD (SB) P L				1										1-2/8	52
RD 00 L		A04F1		1-01 *							1		N	5-7/8	53
RD 00 L		C03D1		1-02 *											53
RD 00 L				1										5-7/8	53

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
RD 01 L		D03U1		1-01 *							1		N	1-7/8		54
RD 01 L		E04E1		1-02 *												54
RD 01 L				1										1-7/8		54
RD 02 L		A04B1		1-01 *							1		N	6-5/8		55
RD 02 L		C03E1		1-02 *												55
RD 02 L				1										6-5/8		55
RD 03 L		D03B1		1-01 *							1		N	6-7/8		56
RD 03 L		F04K1		1-02 *												56
RD 03 L				1										6-7/8		56
RD 04 L		B04F1		1-01 *							1		N	3-3/8		57
RD 04 L		C03F1		1-02 *												57
RD 04 L				1										3-3/8		57
RD 05 L		C03M1		1-01 *							1		N	1		58
RD 05 L		C04P1		1-02 *												58
RD 05 L				1										1-0/8		58
RD 06 L		C03N1		1-01 *							1		N	1		59
RD 06 L		C04R1		1-02 *												59
RD 06 L				1										1-0/8		59
RD 07 H		C03S1		1-01 *							1		N	4-1/8		60
RD 07 H		D04V1		1-02 *												60
RD 07 H				1										4-1/8		60
RD P L		B04K1		1-01 *							1		N	3-3/8		61
RD P L		C03K1		1-02 *												61
RD P L				1										3-3/8		61
REC (SB) L		B01R2		1-01 *							1		N	5-7/8		62
REC (SB) L		D03K2		1-02 *												62
REC (SB) L				1										5-7/8		62
RECORD PULSE L		B03D1		1-01 *							1		N	6-5/8		63
RECORD PULSE L		D03L2		1-02 *							2		N	1		63
RECORD PULSE L		D02L2		1-03 *												63
RECORD PULSE L				1										7-5/8		63
REV (SB) L		B02F1		1-01 *							1		N	4-5/8		64
REV (SB) L		C01V2		1-02 *												64
REV (SB) L				1										4-5/8		64
RSDO (SB) L		C01K2		1-01 *							1		N	1-4/8		65
RSDO (SB) L		C03K2		1-02 *												65
RSDO (SB) L				1										1-4/8		65
RUNNING H		D02R2													1-PIN RUN	66
RWND (SB) L		B02D2		1-01 *							1		N	4-5/8		67
RWND (SB) L		C01P2		1-02 *												67
RWND (SB) L				1										4-5/8		67

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
RWS (SB) L		B02M1		1-01 *							1		N	11-1/8		68
RWS (SB) L		F01M2		1-02 *												68
RWS (SB) L				1										11-1/8		68
SDWN (SB) L		A02M2		1-01 *							1		N	11-7/8		69
SDWN (SB) L		E01S2		1-02 *												69
SDWN (SB) L				1										11-7/8		69
SET SCC (SB) L		D01K2		1-01 *							1		N	7-1/8		70
SET SCC (SB) L		F02V1		1-02 *												70
SET SCC (SB) L				1										7-1/8		70
SET TEST WRE L		B03M2		1-01 *							1		N	6-3/8		71
SET TEST WRE L		D02N1		1-02 *												71
SET TEST WRE L				1										6-3/8		71
SET VPE (SB) L		D01H2		1-01 *							1		N	1-4/8		72
SET VPE (SB) L		D03H2		1-02 *												72
SET VPE (SB) L				1										1-4/8		72
SLA (SB) L		E02V1		1-01 *							1		N	1-7/8		73
SLA (SB) L		F01E2		1-02 *												73
SLA (SB) L				1										1-7/8		73
SLAVE BUS ENBL L		B01H1		1-01 *							1		N	1-2/8		74
SLAVE BUS ENBL L		B02D1		1-02 *												74
SLAVE BUS ENBL L				1										1-2/8		74
SLAVE PRESENT H		D02B1		1-01 *							1		N	4-5/8		75
SLAVE PRESENT H		E03M2		1-02 *												75
SLAVE PRESENT H				1										4-5/8		75
SN (SB) 00 L		E03D2		1-01 *							1		N	6-1/8		76
SN (SB) 00 L		F01V1		1-02 *												76
SN (SB) 00 L				1										6-1/8		76
SN (SB) 01 L		E03S2		1-01 *							1		N	4-1/8		77
SN (SB) 01 L		F01S2		1-02 *												77
SN (SB) 01 L				1										4-1/8		77
SN (SB) 02 L		F01U2		1-01 *							1		N	1-4/8		78
SN (SB) 02 L		F03U2		1-02 *												78
SN (SB) 02 L				1										1-4/8		78
SN (SB) 03 L		E01K2		1-01 *							1		N	1-4/8		79
SN (SB) 03 L		E03K2		1-02 *												79
SN (SB) 03 L				1										1-4/8		79
SN (SB) 04 L		E01E2		1-01 *							1		N	1-4/8		80
SN (SB) 04 L		E03E2		1-02 *												80
SN (SB) 04 L				1										1-4/8		80
SN (SB) 05 L		E01F1		1-01 *							1		N	2-1/8		81
SN (SB) 05 L		E03P2		1-02 *												81
SN (SB) 05 L				1										2-1/8		81

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
SN (SB) 06 L		F01U1		1-01 *							1		N	1-7/8		82
SN (SB) 06 L		F03S2		1-02 *												82
SN (SB) 06 L				1										1-7/8		82
SN (SB) 07 L		E01F1		1-01 *							1		N	2-4/8		83
SN (SB) 07 L		E03V2		1-02 *												83
SN (SB) 07 L				1										2-4/8		83
SN (SB) 08 L		E01F2		1-01 *							1		N	1-4/8		84
SN (SB) 08 L		E03F2		1-02 *												84
SN (SB) 08 L				1										1-4/8		84
SN (SB) 09 L		F01S1		1-01 *							1		N	2-1/8		85
SN (SB) 09 L		F03E1		1-02 *												85
SN (SB) 09 L				1										2-1/8		85
SN (SB) 10 L		F01R2		1-01 *							1		N	1-4/8		86
SN (SB) 10 L		F03R2		1-02 *												86
SN (SB) 10 L				1										1-4/8		86
SN (SB) 11 L		E01H1		1-01 *							1		N	4-1/8		87
SN (SB) 11 L		F03D2		1-02 *												87
SN (SB) 11 L				1										4-1/8		87
SN (SB) 12 L		E01H2		1-01 *							1		N	1-4/8		88
SN (SB) 12 L		E03H2		1-02 *												88
SN (SB) 12 L				1										1-4/8		88
SN (SB) 13 L		E03A1		1-01 *							1		N	5-5/8		89
SN (SB) 13 L		F01R1		1-02 *												89
SN (SB) 13 L				1										5-5/8		89
SN (SB) 14 L		F01P2		1-01 *							1		N	1-4/8		90
SN (SB) 14 L		F03P2		1-02 *												90
SN (SB) 14 L				1										1-4/8		90
SN (SB) 15 L		E01K1		1-01 *							1		N	1-7/8		91
SN (SB) 15 L		E03B1		1-02 *												91
SN (SB) 15 L				1										1-7/8		91
SPR (SB) L		D02A1		1-01 *							1		N	6-5/8		92
SPR (SB) L		F01E1		1-02 *												92
SPR (SB) L				1										6-5/8		92
SS (SB) 00 L		B01H2		1-01 *							1		N	4-5/8		93
SS (SB) 00 L		C02V1		1-02 *												93
SS (SB) 00 L				1										4-5/8		93
SS (SB) 01 L		B01P2		1-01 *							1		N	4-1/8		94
SS (SB) 01 L		C02V2		1-02 *												94
SS (SB) 01 L				1										4-1/8		94
SS (SB) 02 L		B01M2		1-01 *							1		N	5-1/8		95
SS (SB) 02 L		D02D1		1-02 *												95
SS (SB) 02 L				1										5-1/8		95

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH	EXCEPTIONS	RUN NUMBER
STOP (SB) L		A01V2		1-01 *							1		N	5-5/8		96
STOP (SB) L		C02S2		1-02 *												96
STOP (SB) L				1										5-5/8		96
TEST DATA -A		A03K1		1-01 *							2		N	1-3/8		97
TEST DATA -A		A02C1		1-02 *							1		N	0-4/8		97
TEST DATA -A		A02E1		1-03 *							2		N	0-1/8		97
TEST DATA -A		A02F1		1-04 *							1		N	0-4/8		97
TEST DATA -A		A02J1		1-05 *							2		N	3-1/8		97
TEST DATA -A		B02H1		1-06 *												97
TEST DATA -A				1										5-5/8		97
TEST DATA -B		A03J1		1-01 *							2		N	3-5/8		98
TEST DATA -B		B02J1		1-02 *							1		N	1-2/8		98
TEST DATA -B		B02R1		1-03 *							2		N	0-1/8		98
TEST DATA -B		B02P1		1-04 *							1		N	2-7/8		98
TEST DATA -B		C02M2		1-05 *												98
TEST DATA -B				1										7-7/8		98
TEST DATA A		A03L2													1-PIN RUN	99
TEST DATA B		A03H1													1-PIN RUN	100
TEST DEN H		A03T2		1-01 *							1		N	4-3/8		101
TEST DEN H		C03C1		1-02 *												101
TEST DEN H				1										4-3/8		101
TEST PE H		B03L2		1-01 *							1		N	2		102
TEST PE H		C03B2		1-02 *												102
TEST PE H				1										2-0/8		102
TESTER ENBL L		B03N1		1-01 *							1		N	4-7/8		103
TESTER ENBL L		D02D2		1-02 *												103
TESTER ENBL L				1										4-7/8		103
TESTER GND		B03M1		1-01 *							1		N	0-4/8		104
TESTER GND		B03P1		1-02 *							2		N	0-5/8		104
TESTER GND		B03T1		1-03 *							1		N	0-1/8		104
TESTER GND		B03U1		1-04 *							2		N	0-1/8		104
TESTER GND		B03V1		1-05 *												104
TESTER GND				1										1-3/8		104
TUR (SB) L		C01S2		1-01 *							1		N	4-1/8		105
TUR (SB) L		B02K2		1-02 *												105
TUR (SB) L				1										4-1/8		105
WD (SB) 00 L		B01V2		1-01 *							1		N	1		106
WD (SB) 00 L		B02V2		1-02 *												106
WD (SB) 00 L				1										1-0/8		106
WD (SB) 01 L		B01U2		1-01 *							1		N	1		107
WD (SB) 01 L		B02U2		1-02 *												107
WD (SB) 01 L				1										1-0/8		107

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
WD (SB) 02 L		B01S2		1-01 *							1		N	1	108
WD (SB) 02 L		B02S2		1-02 *											108
WD (SB) 02 L				1										1-0/8	108
WD (SB) 03 L		A01P2		1-01 *							1		N	3-7/8	109
WD (SB) 03 L		B02R2		1-02 *											109
WD (SB) 03 L				1										3-7/8	109
WD (SB) 04 L		B01K2		1-01 *							1		N	1-1/8	110
WD (SB) 04 L		B02P2		1-02 *											110
WD (SB) 04 L				1										1-1/8	110
WD (SB) 05 L		A01M2		1-01 *							1		N	1-1/8	111
WD (SB) 05 L		A02H2		1-02 *											111
WD (SB) 05 L				1										1-1/8	111
WD (SB) 06 L		A01F2		1-01 *							1		N	1	112
WD (SB) 06 L		A02F2		1-02 *											112
WD (SB) 06 L				1										1-0/8	112
WD (SB) 07 L		A01E2		1-01 *							1		N	1	113
WD (SB) 07 L		A02E2		1-02 *											113
WD (SB) 07 L				1										1-0/8	113
WD (SB) P L		A01D2		1-01 *							1		N	1	114
WD (SB) P L		A02D2		1-02 *											114
WD (SB) P L				1										1-0/8	114
WRITE (SB) L		A02U1		1-01 *							1		N	6-7/8	115
WRITE (SB) L		D01D2		1-02 *											115
WRITE (SB) L				1										6-7/8	115
WRITE ENABLE H		D02S1		1-01 *							2		N	1	116
WRITE ENABLE H		D03S1		1-02 *							1		N	6-1/8	116
WRITE ENABLE H		F04S1		1-03 *											116
WRITE ENABLE H				1										7-1/8	116
WRL (SB) L		B02M2		1-01 *							1		N	11-1/8	117
WRL (SB) L		F01K2		1-02 *											117
WRL (SB) L				1										11-1/8	117
WRT CLK (SB) L		D03M2		1-01 *							1		N	1-6/8	118
WRT CLK (SB) L		D01E2		1-02 *											118
WRT CLK (SB) L				1										1-6/8	118
WRT CLK TEST ENB L		B03H1		1-01 *							1		N	5	119
WRT CLK TEST ENB L		D03A1		1-02 *											119
WRT CLK TEST ENB L				1										5-0/8	119

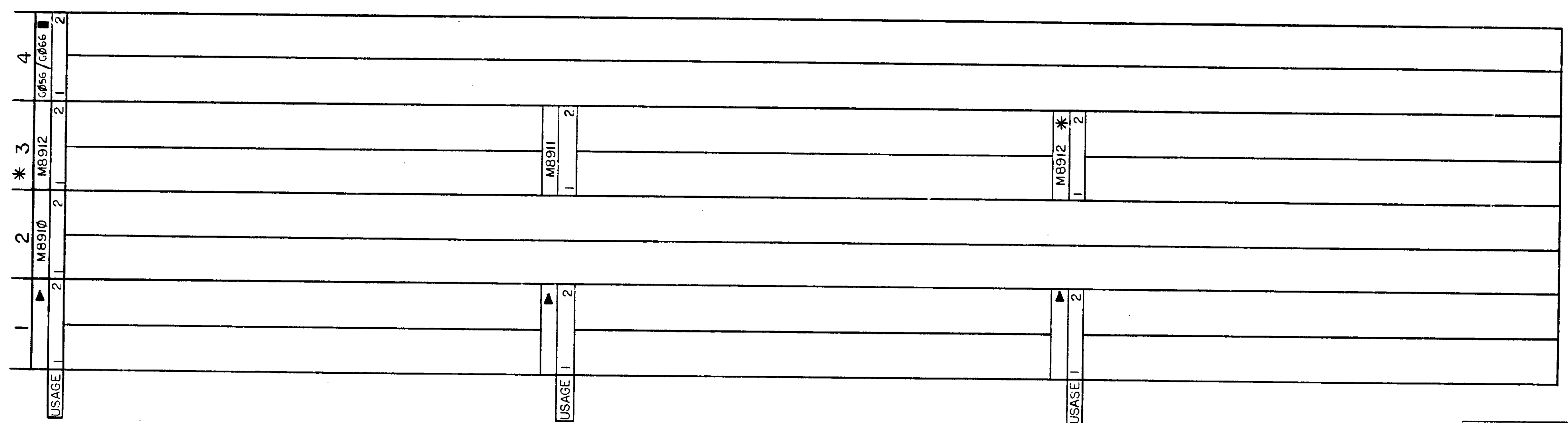
D MU TU16-Ø-MU C

NOTES:

1. USE CABLE SLOTS AS FOLLOWS

	END-OF-BUS	MIDDLE-OF-BUS
A,B	M9001YB	M9001
C,D	M8913YA	M8913
E,F	M9001YC	M9001-YA

2. M8912 CAN BE USED AS A TEST FUNCTION GENERATOR IN SLOT 3 A/B. IT DRIVES SERIAL NO. AND DRIVE TYPE LINES IN SLOT 3 E/F. THE TU16 CAN NOT OPERATE ON-LINE WITH M8912 IN SLOT 3 A/B.
3. ELECTROSTATIC SHIELD IS POSITIONED BETWEEN THE GØ56 MODULE AND THE M8911/M8912 MODULES.
4. GØ66 REPLACES GØ56. GØ66 BOARD AND GØ66 READ CABLE MUST BE ORDERED TOGETHER. CABLE ISN'T ATTACHED TO BOARD.



▲ SEE NOTE #1
* SEE NOTE #2
■ SEE NOTE #4

QTY.	DESCRIPTION	PART NO.	ITEM NO.
1	GØ66 READ CABLE	7012844	9
1	ELECTROSTATIC SHIELD	1700021	8
A/R	GEN PURPOSE CARD (E&F)	M9ØØ1-YA	7
1	CLK & TEST LOGIC	M8911	6
A/R	DATA DRIVER	M8913	5
1	READ AMP (RAI)	GØ56/GØ66	4
2	SLAVE TEST FUNCT GEN	M8912	3
1	LOGIC & WRITE BOARD	M891Ø	2
A/R	GEN PURPOSE CARD (A&B)	M9ØØ1	1

PARTS LIST

FIRST USED ON OPTION/MODEL: TU16

DIMENSIONAL TOLERANCE
DIMENSIONS ARE MILLIMETERS / INCHES UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
X.XX = ±0,10 X.X = ±0,5 X = ±2,	.XXX = ±.005 .XX = ±.02 .X = ±.1	±0° 30'

THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP CORNERS SURFACE QUALITY ✓
MATERIAL
FINISH

DRN. DATE 7/AUG/74
CHK'D DATE 9/5/74
ENG. DATE 9-5-74
PROJ. ENG. DATE 9-5-74
PROD. D.S. DATE 9/20/74
NEXT HIGHER ASSY. D-UA-TU16-Ø-Ø
SCALE
SHEET OF
DIST.

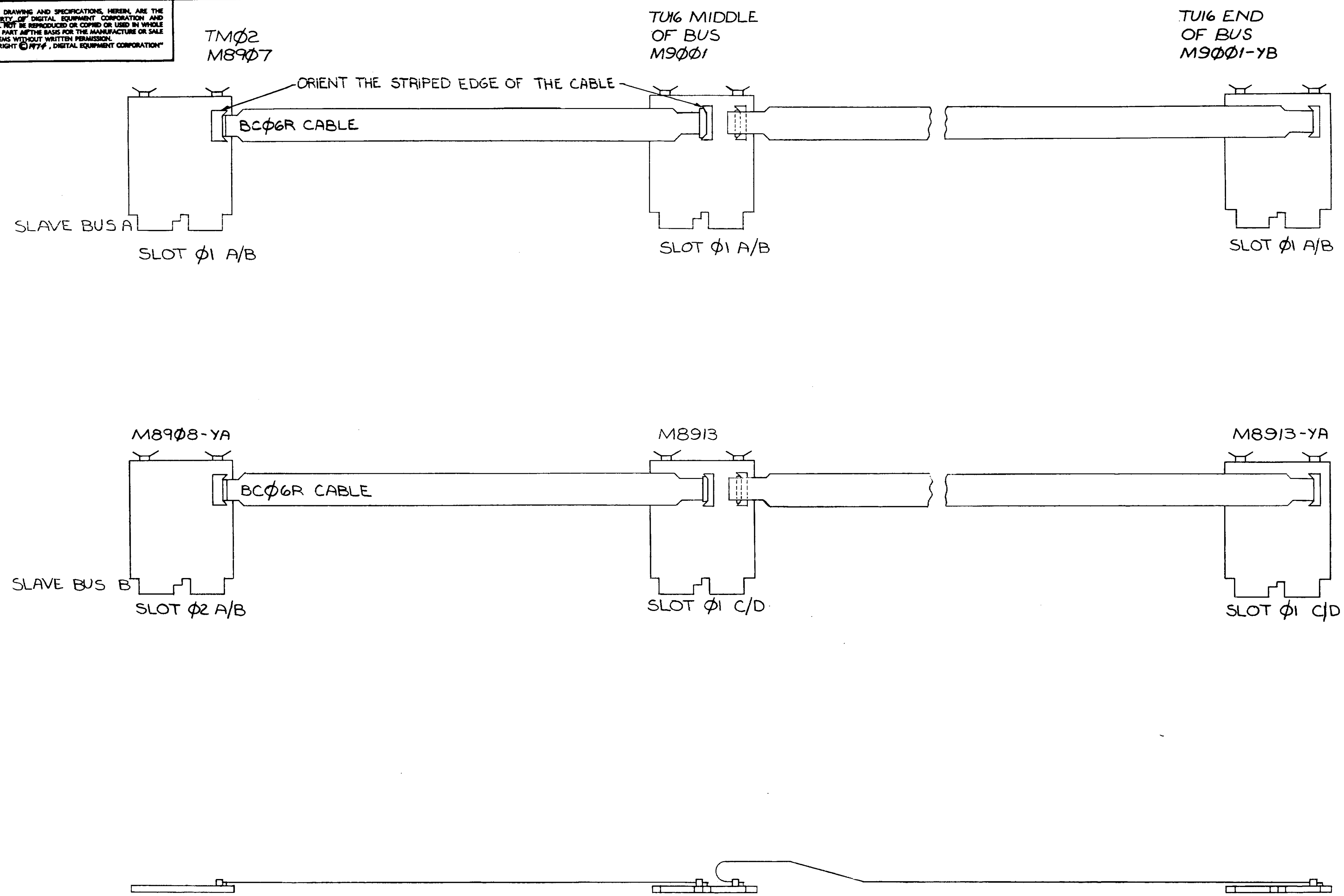
digital

TITLE: MODULE UTILIZATION

SIZE D | CODE MU | NUMBER TU16-Ø-MU | REV. C

REVISIONS

CHK	CHANGE NO.	REV.
	TU16-00005 J. HESS	A
	TU16-00007	B
	TU16-00031 H. DRAB 29 APR 77	C



FIRST USED ON OPTION/MODEL	QTY.	DESCRIPTION	PART NO.	ITEM NO.
TU16	PARTS LIST			

DIMENSIONAL TOLERANCE
DIMENSIONS ARE [redacted] INCHES
UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
X.XX = ± 0.10 X.X = ± 0.5 X = ± 2.	.XXX = ± .005 .XX = ± .02 .X = ± .1	±0° 30'

THIRD ANGLE PROJECTION
REMOVE BURRS AND BREAK SHARP CORNERS
SURFACE QUALITY ✓
MATERIAL
FINISH

	DATE
DRN.	9-27-74
CHK'D.	[illegible]
ENG.	[illegible]
PROJ. ENG.	[illegible]
PROD.	10-1-74

NEXT HIGHER ASSY. B-DD-TU16-Ø
SCALE [illegible]
SHEET 1 OF 2

digital

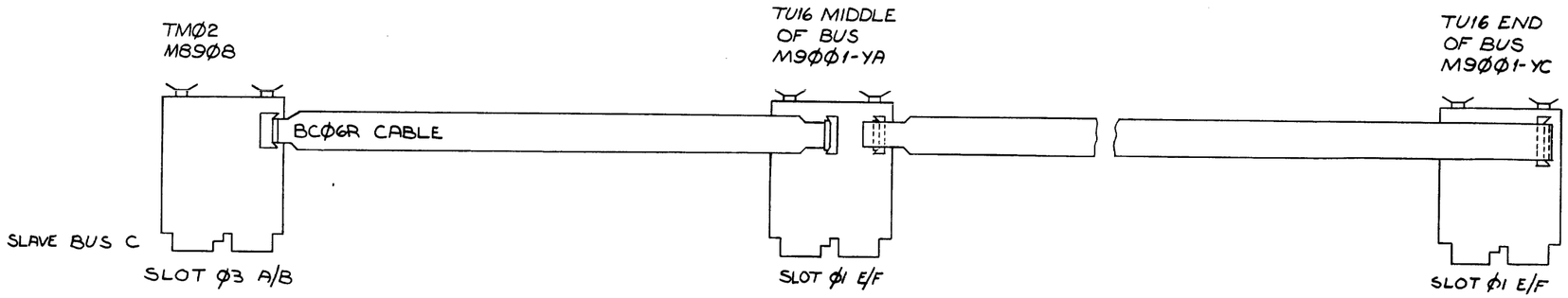
TITLE MASSBUS TRANSCIEVER (TU16)

SIZE	CODE	NUMBER	REV.
D	BS	TU16-Ø-2	

DIST.

REVISIONS | REV. | CHANGE NO. | CHK

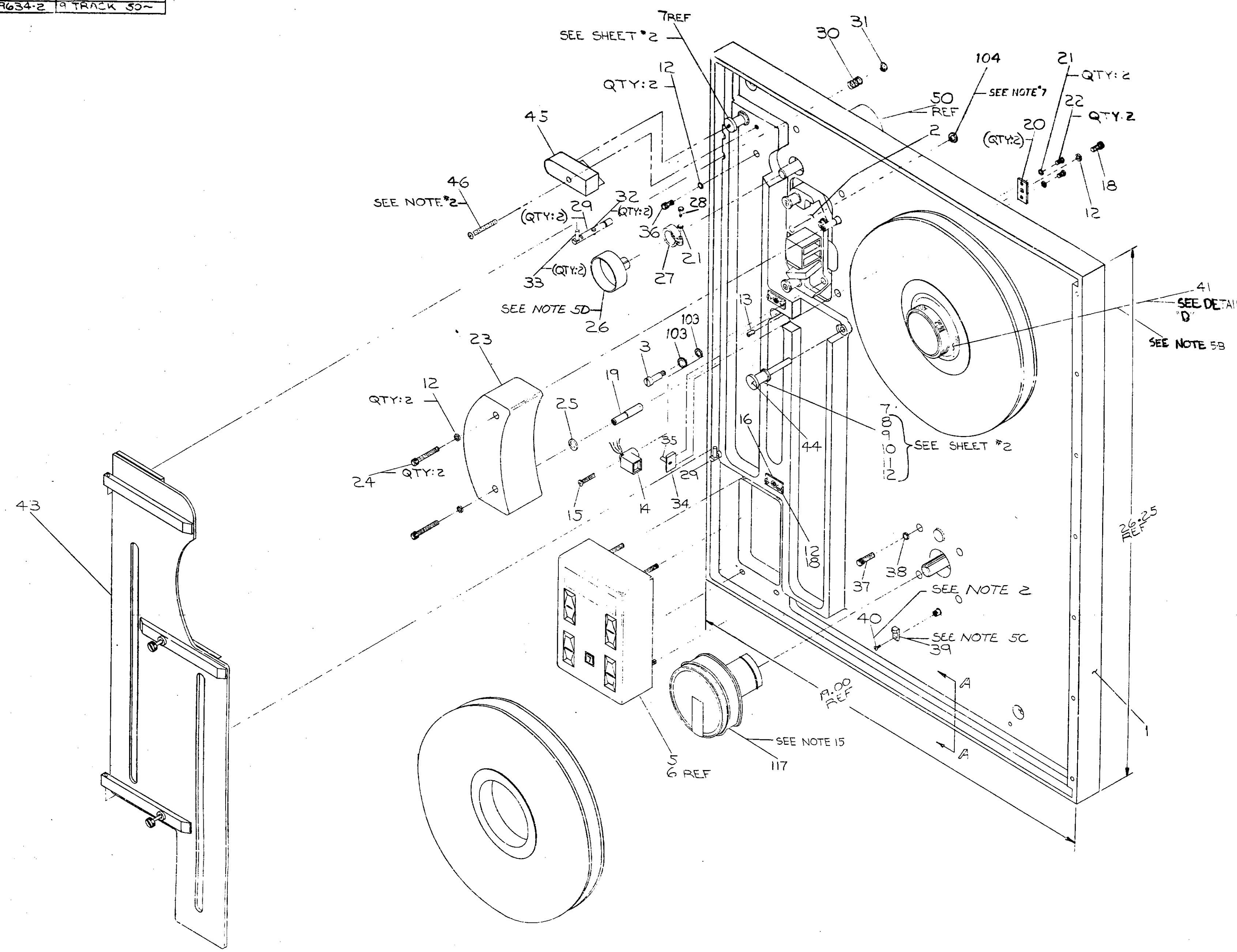
DEC FORM NO. ...



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV
MASSBUS TRANSCIEVER (TU16)	D	BS	TU16-Ø-2	
SCALE —ff— SHEET 2 OF 2	DIST.			

LEGEND	
NUMBER	VARIATION
7009634-1	9 TRACK 65~
7009634-2	9 TRACK 30~



NOTES:

1. FOR HARNESS CONNECTIONS & GENERAL WIRING REFER TO SHEET #3.
2. THESE ITEMS TO BE COATED WITH LOCKTITE AT ASSY.
3. THESE ITEMS TO HAVE THREADS COATED WITH TEFLON PLUMBERS TAPE.
4. THESE ITEMS TO BE CEMENTED IN PLACE AT ASSY USING HYBOND ADHESIVE.
5. GAGES REQUIRED:
   A. ROLLER GUIDE GAGE: #9605460
   B. HUB GAGE: #9605461
   C. READ WRITE REEL GAGE #9605493
   D. CAPSTAN GAGE #9605606
6. REELS (ITEMS 1 & 2) ARE SUPPLIED AT UNIT ASSY.
7. PRECISION SPACERS (3 REQ) THICKNESS PER SPEC. A-SP-TU16-0-4
8. INSTALL FOAM FILTER, MEDIUM.
9. INSTALL PLUG FILTER.
10. INSTALL FOAM FILTER, SMALL.
11. INSTALL FOAM FILTER, LARGE.
12. USE UNTAPPED HOLE APPROXIMATELY 3-1/4 IN. FROM SURFACE MARKED Z.
13. INSTALL HEAD PLUG FILTER.
14. PUT #6 EXT. STAR WASHER ON BOTH SIDES OF GROUND STRAP.
15. QUICK LATCH HUB WILL NOT FIT ON ALL CASTINGS DUE TO THE SMALLER HOLE DIAMETER. THIS HOLE CAN BE FILLED WITH A COARSE HALF ROUND BASTARD FILE TO ACCOMODATE THE QUICK LATCH HUB ASSY. FOR FIELD RETROFIT.

QTY.	DESCRIPTION	PART NO.	ITEM NO.
PARTS LIST			

FIRST USED ON OPTION/MODEL: TU16

DIMENSIONAL TOLERANCE: DIMENSIONS ARE INCHES UNLESS OTHERWISE SPECIFIED

MILLIMETERS	INCHES	ANGLES
X.XX ± 0.10	.XXX ± .005	±0° 30'
X.X ± 0.5	.XX ± .02	
X ± 2.	.X ± .1	

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS. SURFACE QUALITY ✓

MATERIAL: SEE PARTS LIST

FINISH: //

DRN. D. F. SCHMIDT — DATE
CHK'D — DATE
ENG. — DATE
PROJ. ENG. — DATE
PROD. — DATE

NEXT HIGHER ASSY.: D-UA-TU16-0-0

SCALE: 1/2
SHEET OF 4

digital

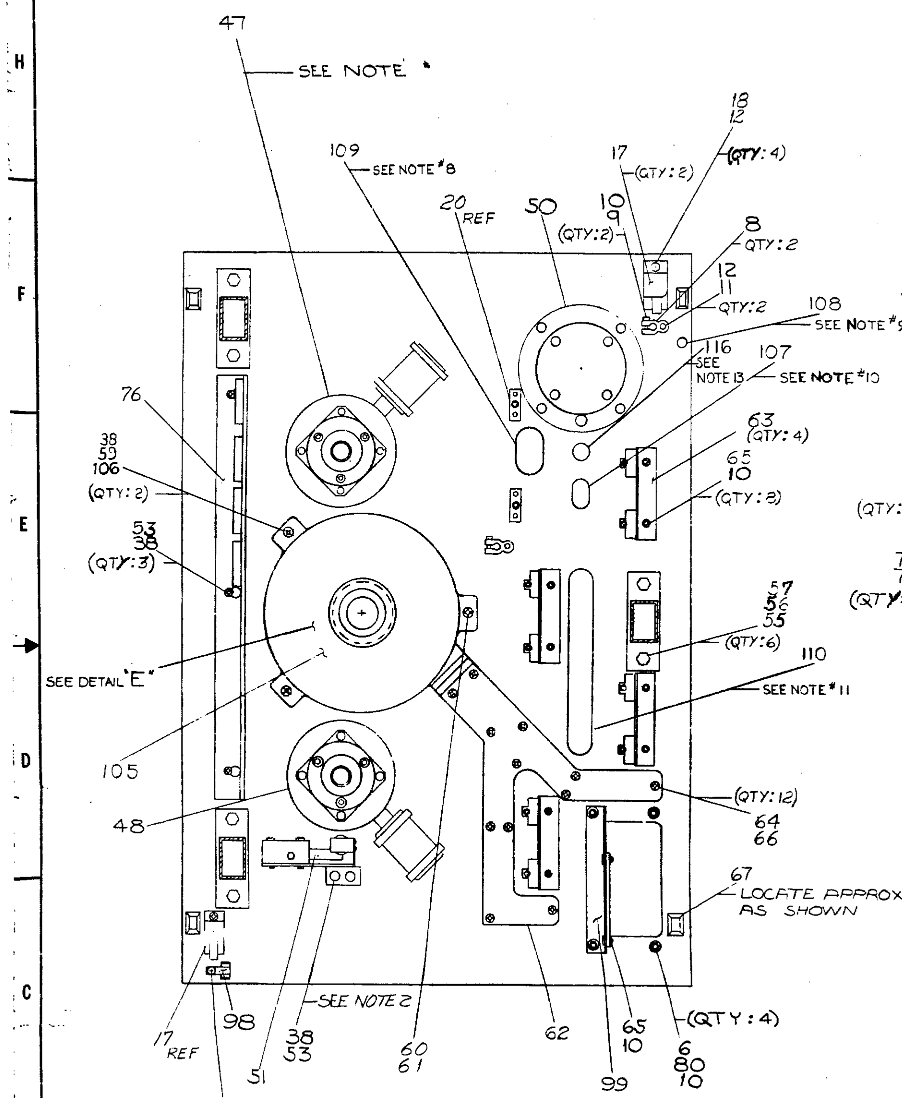
TITLE: TAPE TRANSPORT ASSY

SIZE: E CODE: AD NUMBER: 7009634-0-0 REV.: S

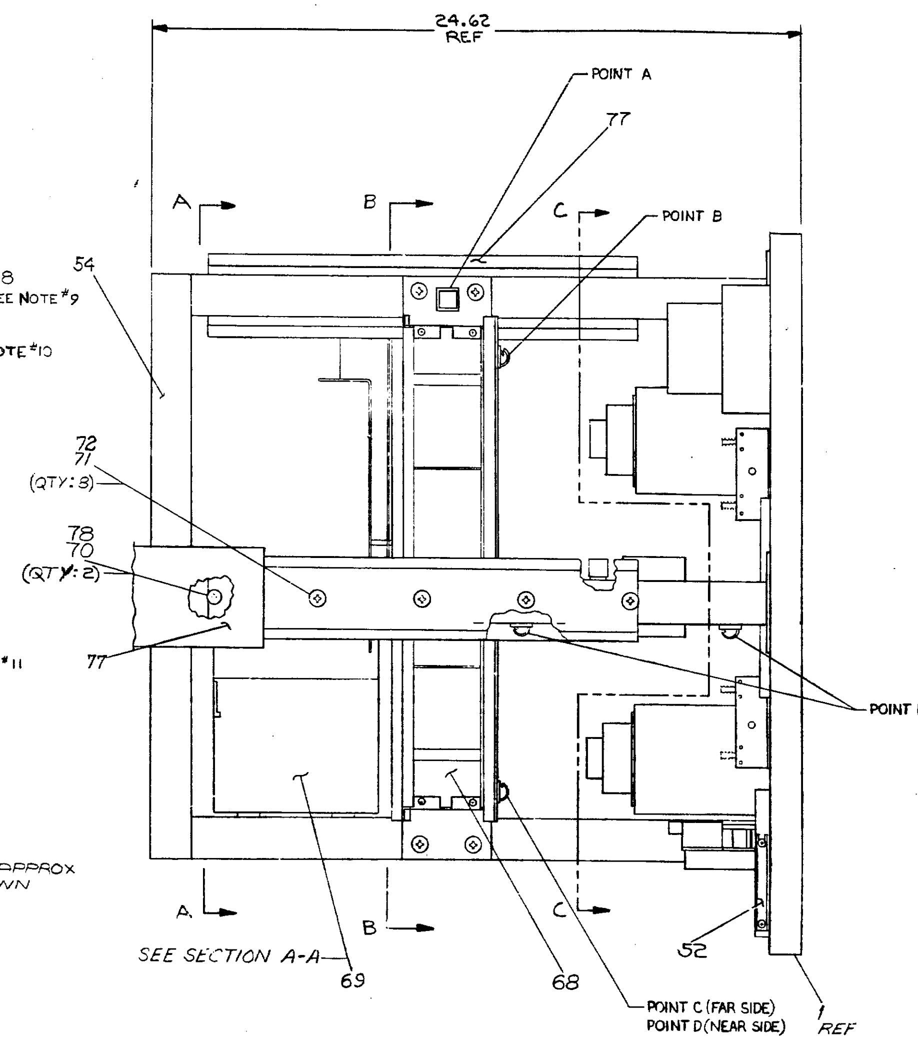
DIST.

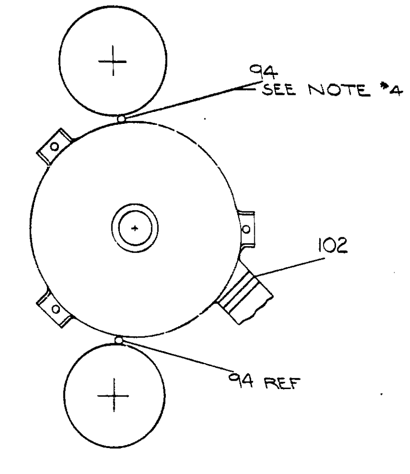
WIRE TABLE

WIRE NO	WIRE ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	WIRE LENGTH	STRIP LENGTH 'X'	STRIP LENGTH 'Y'	TERM 'X' ITEM NO	TERM 'Y' ITEM NO	FROM CONN 'X'	TO CONN 'Y'	REMARKS	FUNCTION
1	47	14	BLK	12.0		.16		PIN	M-1	P8-1	M-MOTOR	
2	47	14	RED	12.0		.16		PIN	M-2	P8-2		
3	47	18	BLU	12.0		.16		PIN	B-1	P8-3	B-BRAKE	
4	47	18	BLU	12.0		.16		PIN	B-2	P8-4		

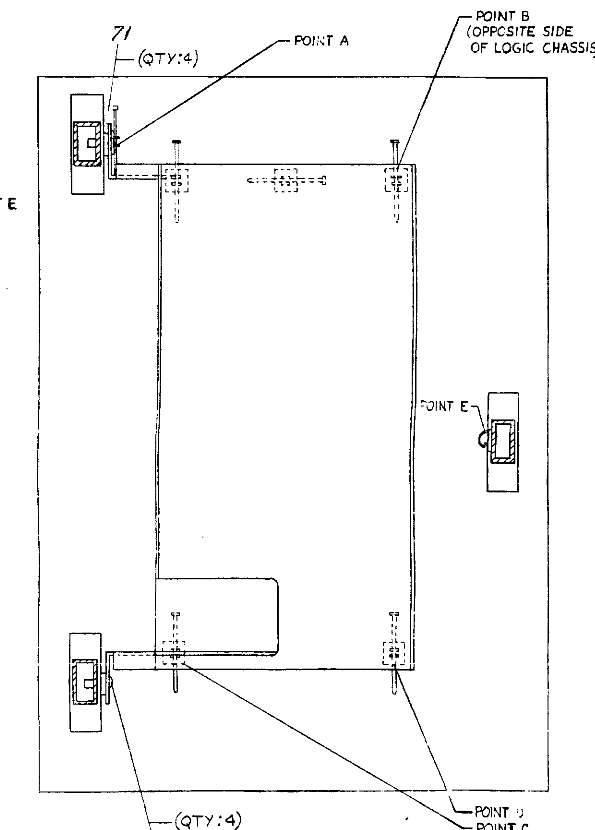


SECTION C-C

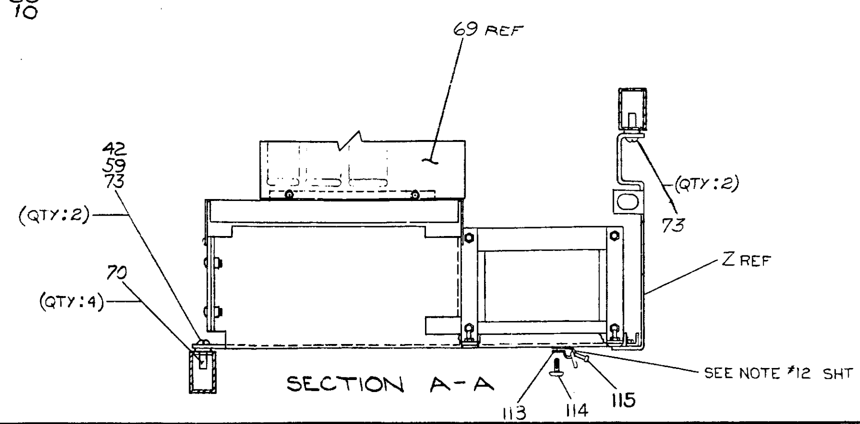




DETAIL 'E'



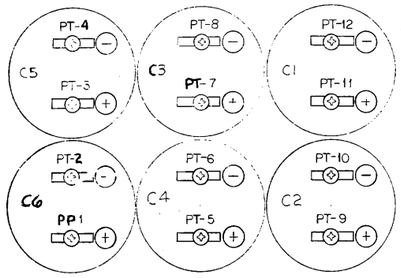
SECTION B-B



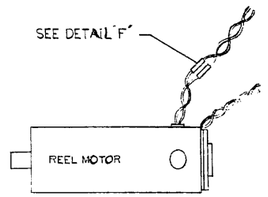
SECTION A-A

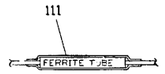
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
TAPE TRANSPORT ASSY	E	AD	7009634-0-0	S
SCALE 1/2 SHEET 2 OF 4	DIST.			

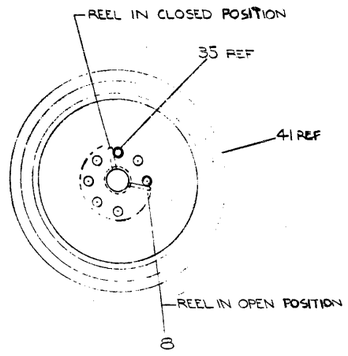


TOP VIEW F-F
SHOWN WITH "CAPACITOR GUARD" REMOVED

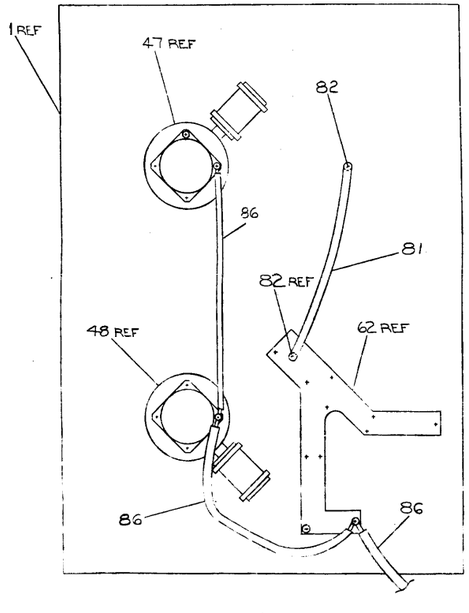


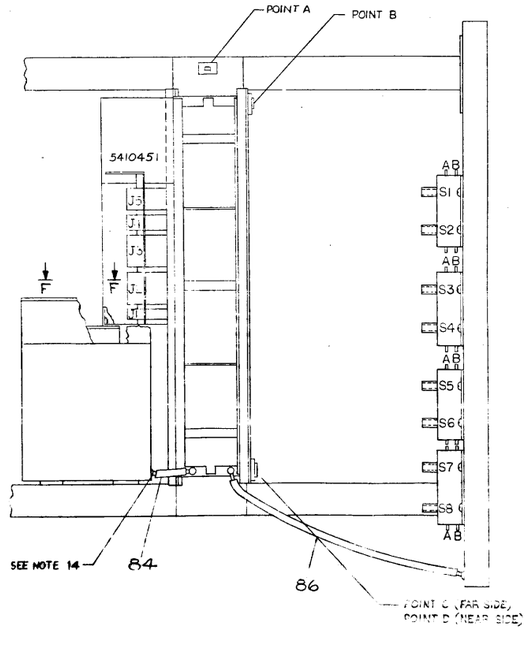


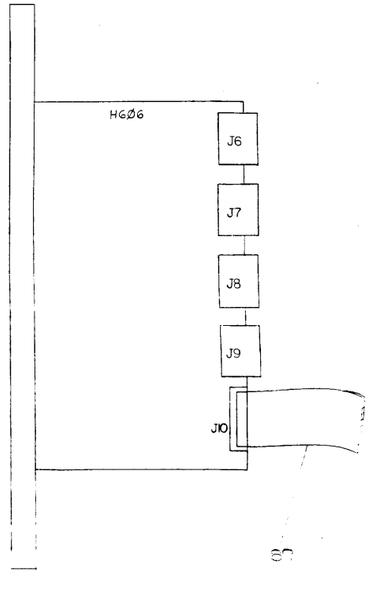
DETAIL 'F'
COVER WITH SHRINK TUBING 2-1/4 IN. LG.+ SHRINK OVER TUBE.



DETAIL 'D'







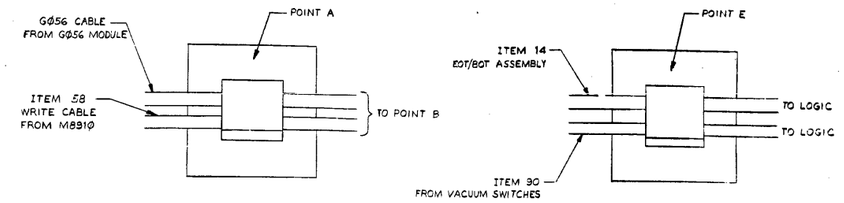
REVISIONS		
CNR	CHANGE NO.	REV.

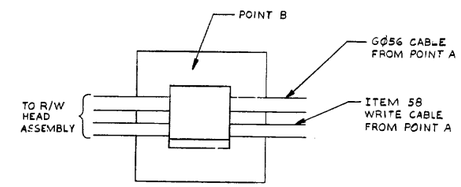
TITLE	TAPE TRANSPORT ASSY	SIZE	CODE	NUMBER	REV
		E	AD	7009834-00	S
SCALE	1/2	SHEET	3 OF 4	NEXT	

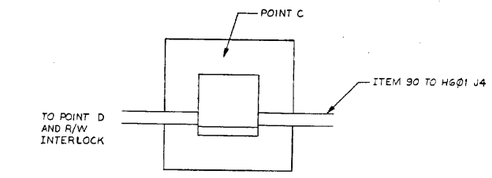
7009834-0-0

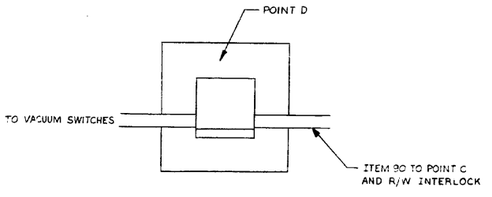
INTERCONNECTION TABLE

ITEM NO	DESCRIPTION AWG	COLOR	FROM CONNECTION	WITH	TO CONNECTION	WITH	TIE DOWN POINT (SEE NOTE 8)	REMARKS
90	22	WHT/YEL	VAC SW HARN - TB-1	—	VAC SW S1-A	—	B	
	18	BLK	- TB-2	—	S1-B	—		
	22	WHT/GRY	- TB-3	—	S2-A	—	D	
	18	BLK	- TB-4	—	S2-B	—		
	22	WHT/YEL	- PT-18	—	LOGIC C02U1	—	B	
	22	GRN	- PT-19	—	LOGIC C02U2	—	B	
	22	WHT/YEL	- TB-5	—	VAC SW S3-A	—	B	
	18	BLK	- TB-6	—	S3-B	—		
	22	WHT/BLU	- TB-7	—	S4-A	—	D	
	18	BLK	- TB-8	—	S4-B	—		
	22	WHT/BRN	- TB-9	—	S5-A	—	D	
	18	BLK	- TB-10	—	S5-B	—		
	22	GRY	- TB-11	—	S6-A	—		
	22	GRN	- TB-12	—	S6-B	—		
	22	WHT/ORN	- TB-13	—	S7-A	—	D	
	18	BLK	- TB-14	—	S7-B	—		
	22	GRN	- TB-15	—	S8-A	—		
	18	BLK	- TB-16	—	S8-B	—		
	18	BLK	- E-17	—	ITEM 92 DEC PLATE - GND	105		
	—	—	- P13	—	R/W INTERLOCK - J13	—	C	
	—	—	VAC SW HARN - P4	—	HG06 J9	—	C	
91	14	PLU	CAP. HARN - TB-1	—	CAPACITOR BANK PT-11	—		
		BLK	TB-2	—	PT-12	—		
		WHT	TB-3	—	PT-8	—		
		BLK	TB-4	—	PT-7	—		
		BLK	TB-5	—	PT-4	—		
		BRN	TB-6	—	PT-3	—		
		BLK	TB-7	—	PT-2	—		
		RED	TB-8	—	PT-1	—		
		BLK	TB-9	—	PT-6	—		
		VIO	TB-10	—	PT-5	—		
		BLK	TB-11	—	PT-10	—		
	14	YEL	TB-12	—	PT-9	—		
	—	—	CAP. HARN - P3	—	54-12242 J3	—		
5	—	—	CONT BOX CABLE	—	MB310 - J1	—		
68	—	—	LOGIC ASSY - P5	—	54-12242 J5	—		
69	—	—	TRANSFORMER - P2	—	54-12242 J2	—		
89	—	—	BC05L	—	HG06 J10	—		
	—	—	BC05L	—	MB310 J2	—		
92	—	—	SERVO BD HARN - P4	—	54-12242 J4	—		
	—	—	SERVO BD HARN - P7	—	HG06 J7	—		
14	—	RED	EOT/BOT ASSEMBLY	—	LOGIC	—	E	
	—	ORN	EOT/BOT ASSEMBLY	—	LOGIC	—	E	
	—	YEL	EOT/BOT ASSEMBLY	—	LOGIC	—	E	
	—	BRN	EOT/BOT ASSEMBLY	—	LOGIC	—	E	
—	—	—	G056 CABLE - G056	—	R/W HEAD ASSEMBLY	—	A,B	
—	—	—	WRITE CABLE	—	MB310 J3	—	A	
—	—	—	WRITE CABLE	—	R/W HEAD ASSEMBLY	—	B	



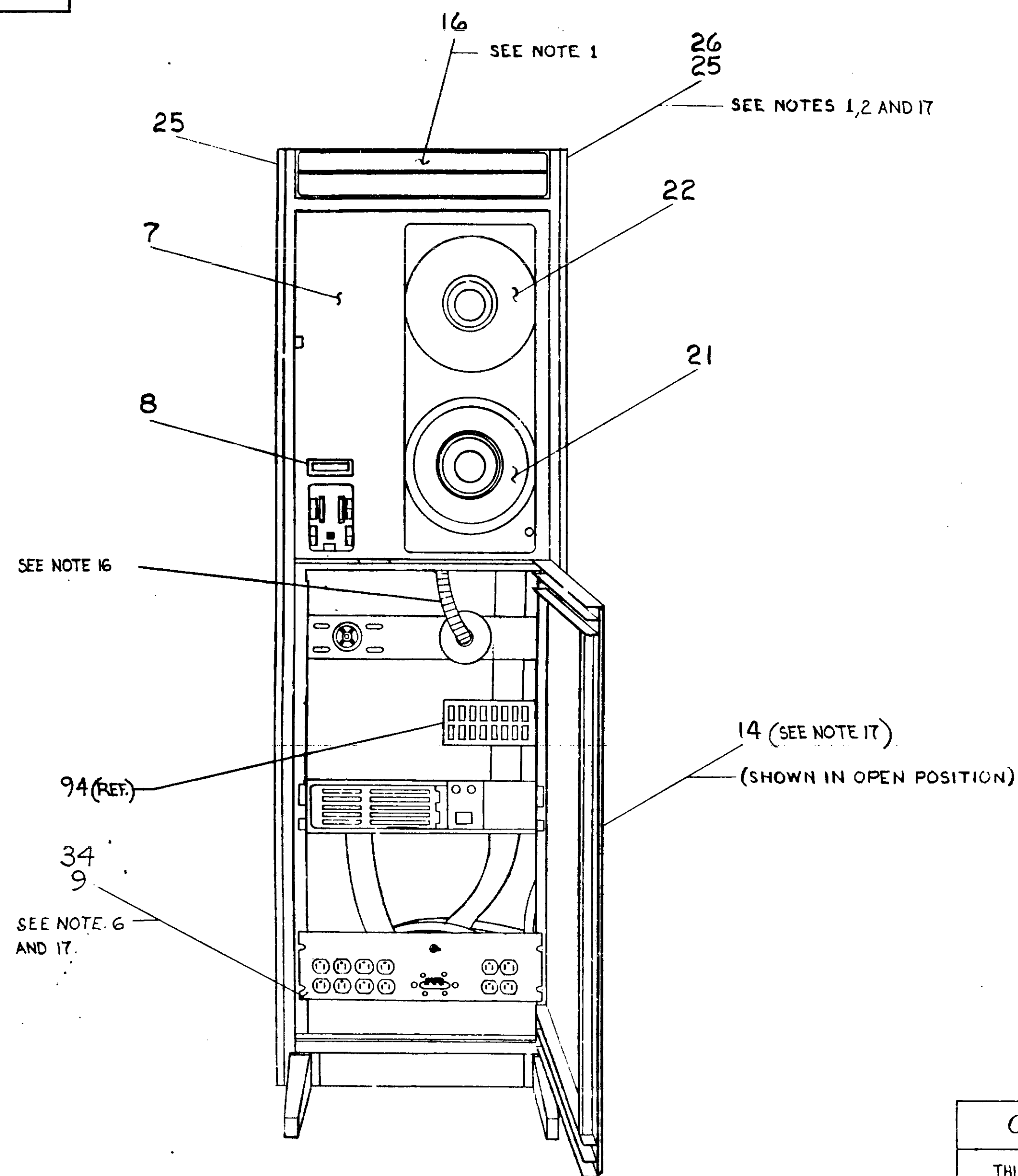






REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
TAPE TRANSPORT ASSY	E	AD	7009634-00	S
SCALE	SHEET 4 OF 4		DIST.	



FRONT VIEW

LEGEND

NUMBER	VARIATION	
	DESRIPTION	VOLTAGE
TU16-EE	MAG TAPE SLAVE UNIT 45 IPS 9 TRACK PE/NRZI	115V, 60HZ
TU16-EF	MAG TAPE SLAVE UNIT 45 IPS 9 TRACK PE/NRZI	230V, 60HZ
TU16-EH	MAG TAPE SLAVE UNIT 45 IPS 9 TRACK PE/NRZI	115V, 50HZ
TU16-EJ	MAG TAPE SLAVE UNIT 45 IPS 9 TRACK PE/NRZI	230V, 50HZ
TU16-EA	TU16-EE & TMØ2-FA	115V, 60HZ
TU16-EB	TU16-EF & TMØ2-FB	230V, 60HZ
TU16-EC	TU16-EH & TMØ2-FA	115V, 50HZ
TU16-ED	TU16-EJ & TMØ2-FB	230V, 50HZ
TU16-EK	TU16-EE & TMØ2-FC	115V, 60HZ
TU16-EL	TU16-EF & TMØ2-FD	230V, 60HZ
TU16-EM	TU16-EH & TMØ2-FC	115V, 50HZ
TU16-EN	TU16-EJ & TMØ2-FD	230V, 50HZ
TU16-AA THROUGH-AJ	TU16 IN H95ØØ SERIES CAB (CORP. CAB) SEE SHEETS 5 & 6	

NOTES:

1. THE CORRECT DEC PART NUMBER VARIATION FOR ITEMS #16 & 25 SHOULD BE DETERMINED BY THE SYSTEM THAT THE TU16 IS TO BE INCLUDED WITH.
2. THE QUANTITY REQUIRED FOR THE H952-A END PANEL ASSY' (ITEM #25) AND THE H952-GA FILLER STRIP ASSY' (ITEM #26-NOT SHOWN) IS DETERMINED BY WHETHER THE TU16 IS INCLUDED IN A SYSTEM OR WHETHER IT STANDS ALONE.
3. INFORMATION FOR CONNECTING THE CABLES (ITEM #17) TO TAPE TRANSPORT (ITEM #6, #35) REFER TO DWG NO. D-MU-TU16-Ø-MU.
4. PHANTOM LINES REPRESENT TRANSPORT ASSY' IN CLOSED POSITION TO SHOW LOCATION OF SHIPPING BRACKETS (ITEM #38).
5. TO CONVERT FROM 120 TO 240-VAC OPERATION, CUT MALE END FROM TU16'S POWER CORD, AND CONNECT END OF CORD TO 240 VAC MALE CONNECTOR, ITEM #43 (NOT SHOWN).
6. POWER CORD ROUTING: 861-CABLE CLAMP (ITEM #42-NOT SHOWN) TINNERMAN NUT, SCREW, AND WASHER MOUNT ON RIGHT SIDE REAR HOLE #10 ROUTE CORD THROUGH CLAMP AND OUT BOTTOM OF CABINET. TU16-ROUTE CORD THRU CABLE CLAMP (ITEM 54 ~~NOT SHOWN) LOCATED IN HOLE #67~~ ON LEFT FRONT SIDE OF CABINET OUTSIDE OF CHASSIS SLIDE AND INTO PLUG ON 861. USE TWO FLAT WASHERS (1(ONE) PER CLAMP).
7. ITEMS 57 AND 56 ARE USED AS A POSITIVE STOP TO PREVENT PULLING THE TRANSPORT OUT OF THE CABINET. THEY MUST BE INSTALLED WHEN TRANSPORT ASSY IS MOUNTED TO CAB.
8. USE BLACK TUBING TO COVER 36 IN. GROUND STRAP USE 2 TIE WRAPS (ITEM #52) TO SECURE TUBING TO STRAP
9. USE ONE TIE WRAP TO BIND EXTRA ITEM #51 TO ITEM #45.
10. INSERT 5 ITEM #49'S (NOT SHOWN) IN LEFT SIDE, FRONT HOLES NUMBERS 68, 76, 90, 100, AND 106. USE 5 TIE WRAPS (ITEM #52, NOT SHOWN) TO SECURE HARNESS TO CAB. ROUTE CAB FAN HARNESS THRU 861 POWER CONTROL, FAN BOX AND INTO SWITCHED PLUG ON 861 BOX.
11. FASTEN TWO ITEM #50'S TO UNDER SIDE OF CAB ROOF AND CAPTIVATE POWER WIRES FROM FAN.
12. GROUND STRAP, JUMPER FROM TMØ2 ~~LOGIC BOX TO BE CONNECTED TO~~ POWER SUPPLY TRANS-CAP ASSY.
13. FASTEN (ITEM #50) WHERE SHOWN AND SECURE VACUUM MOTOR HARNESS (ITEM #66) USING TIE WRAP (ITEM #52) SECURE HARNESS TO VACUUM HOSE USING TIE WRAPS (ITEM #67) AND CONNECT TO J1 ON POWER BOARD.
14. FASTEN (ITEM #50) TO FRONT OF LOGIC ASSY. CHASSIS AND SECURE VACUUM SYSTEM HOSE. HOSE SHOULD NOT COME IN CONTACT WITH COMPONENTS ON REAR OF DECK PLATE.
15. USE ONLY ON REAR CHASSIS TRACKS QTY. 4 PER TRACK.
16. WITH TRANSPORT FULLY IN CAB LOOSEN CLAMP AT VACUUM ASSY., TWIST HOSE UNTIL HOSE FORMS A SERVICE LOOP ABOVE OR IN PARALLEL WITH VACUUM SYSTEM.
17. THIS ITEM MUST BE CONNECTED TO A MAIN VERTICAL UPRIGHT GROUND STAND OFF.

CAUTION

THIS SHEET IS FOR THE TU16 IN THE H950 SERIES CAB.

DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'

SURFACE QUALITY IN MICROINCHES

CLASS OF ACCURACY (CHECK ONE)	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
MEDIUM	±.004	±.008	±.012	±.016	±.024	±.04
PREFERRED	±.012	±.016	±.025	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL —

FINISH —

DRN.	M. DUGGAN	8-21-74
CHK'D	D. SCHMIDT	9-24-74
ENG	J. BARDONE	9-24-74
PROJ. ENG.	BARDONE	9-24-74
PROD.	R. GUGUEN	10-2-74

NEXT HIGHER ASSY. B-DD-TU16-Ø

SCALE —

SHEET OF 7

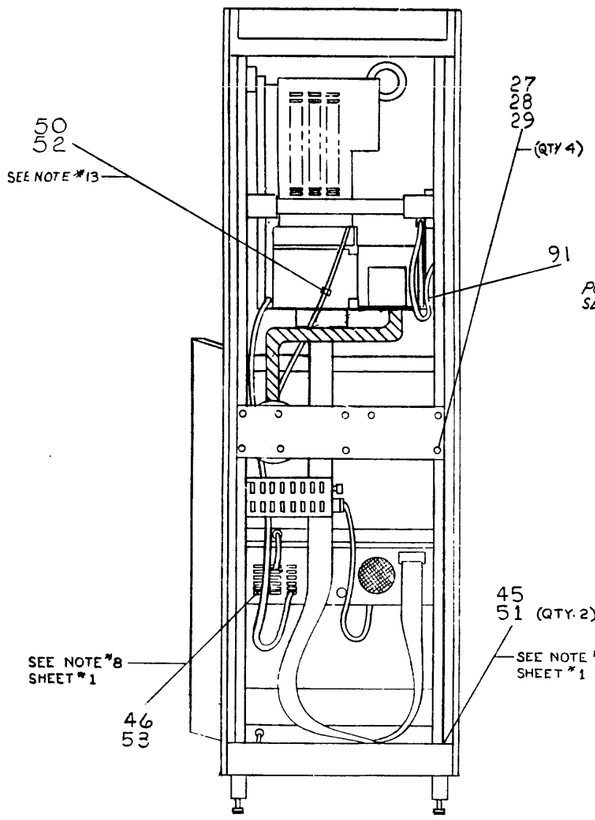
FIRST USED ON TU16

digital

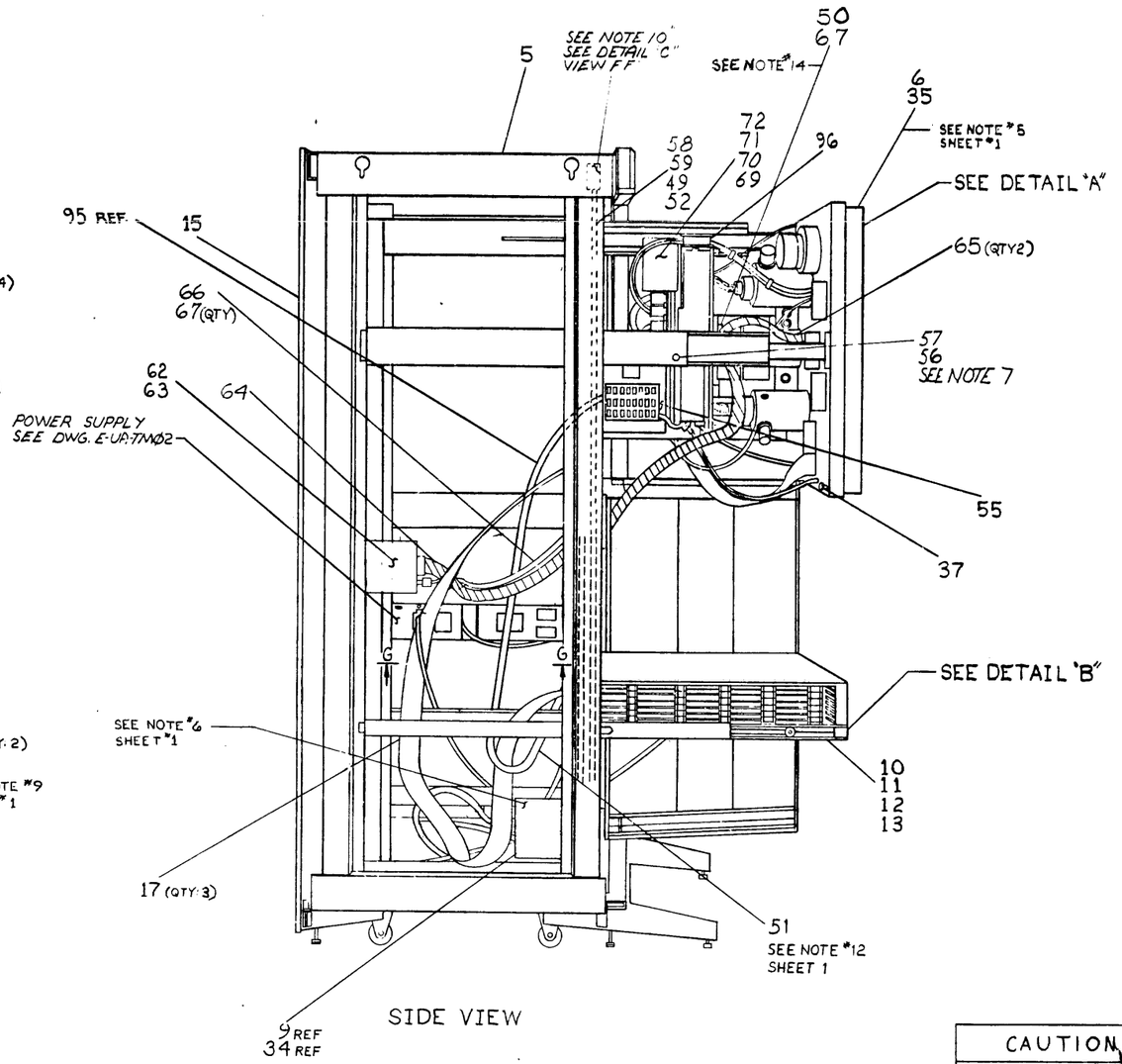
TITLE MAG TAPE DRIVE (TU16)

SIZE	CODE	NUMBER	REV.
D	UA	TU16-Ø-Ø	P

DIST.



REAR VIEW



SIDE VIEW

CAUTION
THIS SHEET IS FOR THE TU16 IN THE H95Ø SERIES CAB

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
MAG TAPE DRIVE (TU16)	D	UA	TU16-Ø-Ø	R
SCALE —	SHEET 2 OF 7	DIST.		

CABLE CHART

ITEM NO	DESCRIPTION COLOR	DESCRIPTION AWG	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
59	—	—	BC1 POWER BOX	PLUG			
58	—	—			T1-B	PT-2	
	—	—			T1-D	PT-1	
5	—	—	FAN-1	—	T1-A	ITEM 36	
	—	—	FAN-2	—	T1-C	ITEM 36	
18	—	—	READ BOARD		HEAD-READ SIDE		SEE DETAIL "D"
20	—	—	WRITE BOARD		HEAD-WRITE SIDE		

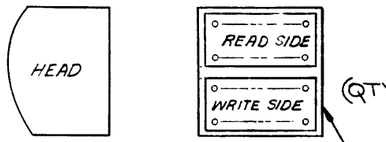
LOCATION OF "TINNERMAN NUTS" (ITEM #27)

LOCATE ALL NUTS BY COUNTING HOLES UP FROM BOTTOM OF CABINET UPRIGHT

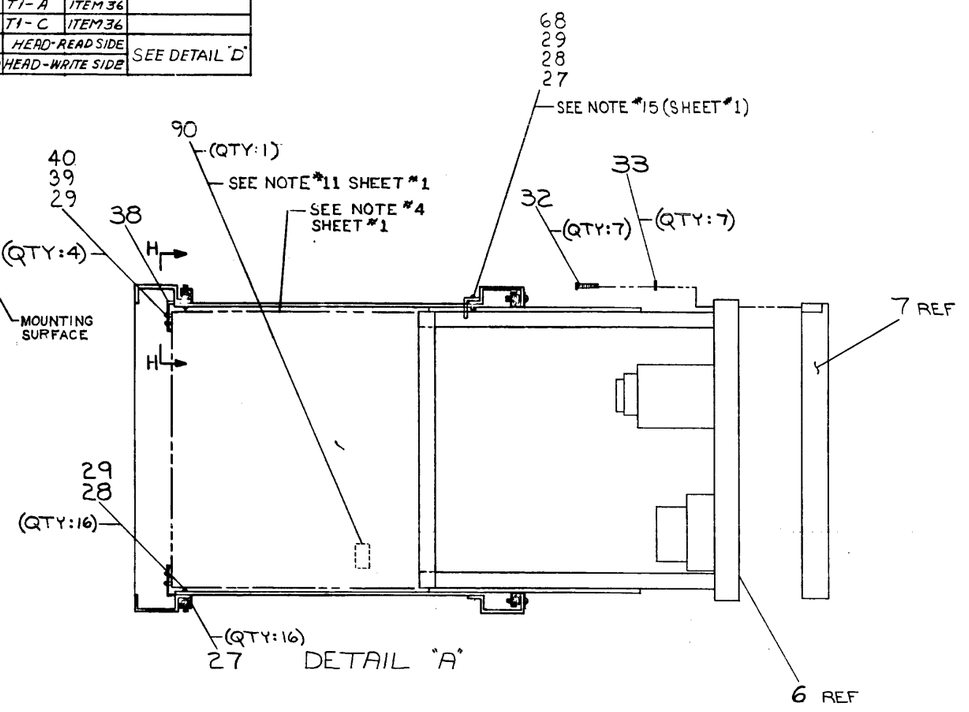
FRONT HOLE NUMBERS	REAR HOLE NUMBERS
RIGHT SIDE: 9,13,32*,33*, 103,104,105,106	RIGHT SIDE: 32*,33* 53,60
LEFT SIDE: 9,13,32*,33* 84,85,86,87	LEFT SIDE: 32*,33* 53,60
LEFT SIDE HOLE NUMBERS FRONT: 67 REAR: 84,85,86,87	RIGHT SIDE HOLE NUMBERS FRONT: REAR: 7, 103, 104, 105, 106

NOTE:

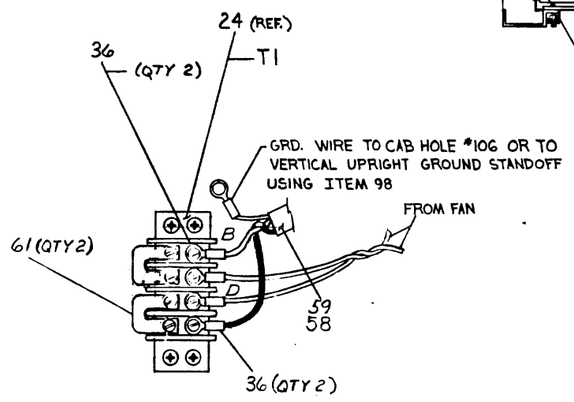
* NUMBERS WITH ASTERISKS USED ONLY WHEN TM02 IS USED.



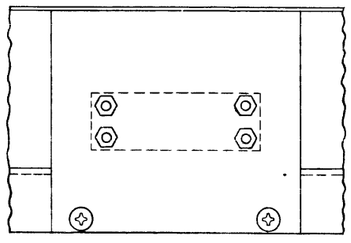
DETAIL "D"



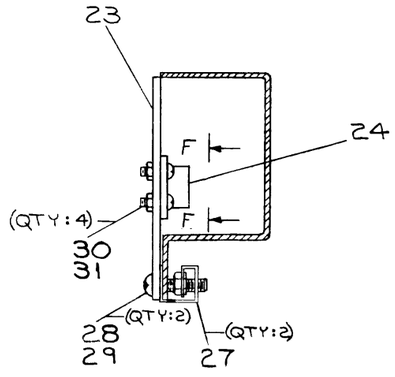
DETAIL "A"

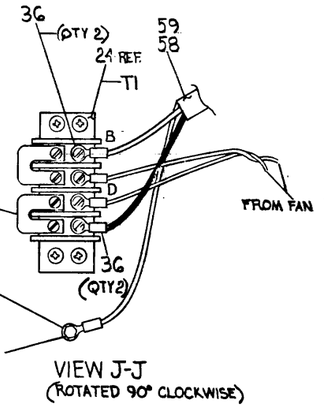


VIEW F-F
(ROTATED 90° CLOCKWISE)



DETAIL "C"





VIEW J-J
(ROTATED 90° CLOCKWISE)

CAUTION

THIS SHEET IS FOR THE TU16 IN THE H950 SERIES CAB

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: MAG TAPE DRIVE (TU16)	SIZE: D	CODE: UA	NUMBER: TU16-0-0	REV: P
SCALE: —	SHEET 3 OF 7	DIST:		

CABLE CHART

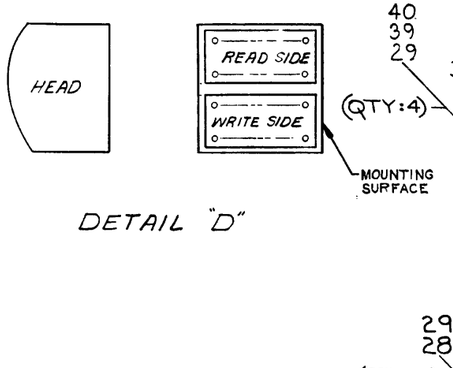
ITEM NO	DESCRIPTION COLOR	DESCRIPTION AWG	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
59 58	—	—	BG POWER BOX	PLUG			
	—	—			T1-B	PT-2	
	—	—			T1-D	PT-1	
5	—	—	FAN-1	—	T1-A	ITEM 36	
	—	—	FAN-2	—	T1-C	ITEM 36	
18	—	—	READ BOARD		HEAD-READ SIDE		SEE DETAIL "D"
20	—	—	WRITE BOARD		HEAD-WRITE SIDE		

LOCATION OF "TINNERMAN NUTS" (ITEM *27)

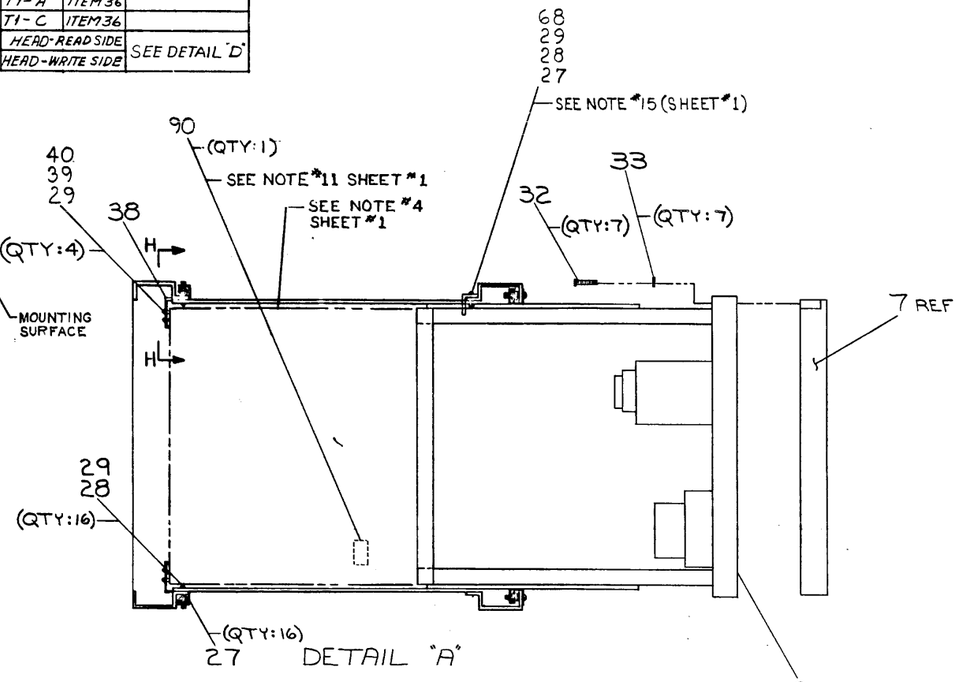
LOCATE ALL NUTS BY COUNTING HOLES UP FROM BOTTOM OF CABINET UPRIGHT

FRONT HOLE NUMBERS	REAR HOLE NUMBERS
RIGHT SIDE: 9, 13, 32*, 33*, 103, 104, 105, 106	RIGHT SIDE: 32*, 33* 53, 60
LEFT SIDE: 9, 13, 32*, 33* 84, 85, 86, 87	LEFT SIDE: 32*, 33* 53, 60
LEFT SIDE HOLE NUMBERS FRONT: 67	RIGHT SIDE HOLE NUMBERS FRONT:
REAR: 84, 85, 86, 87	REAR: 7, 103, 104, 105, 106

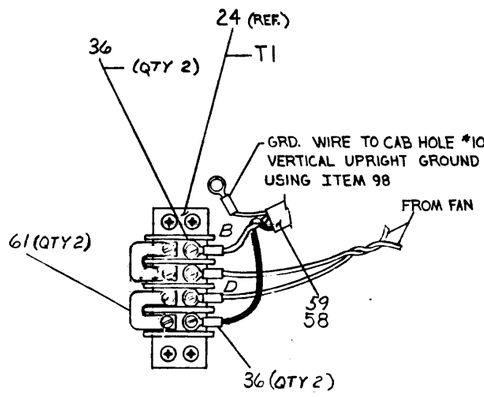
NOTE:
* NUMBERS WITH ASTERISKS USED ONLY WHEN TMØ2 IS USED.



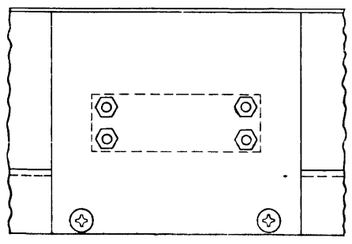
DETAIL "D"

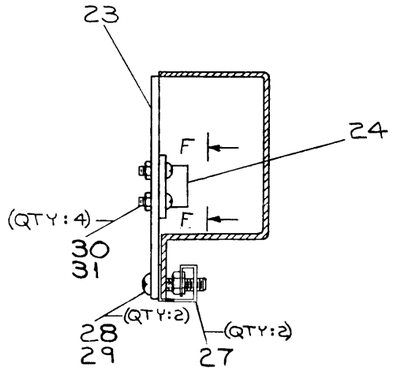


DETAIL "A"

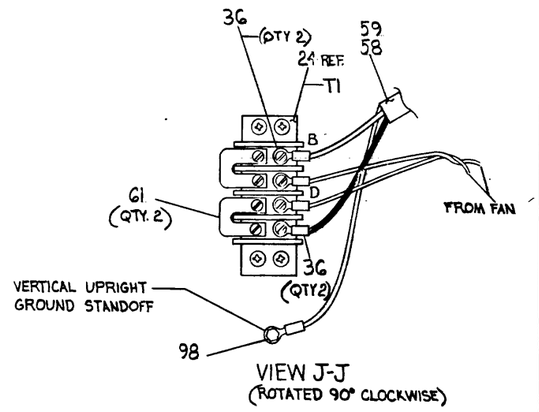


VIEW F-F
(ROTATED 90° CLOCKWISE)





DETAIL "C"



VIEW J-J
(ROTATED 90° CLOCKWISE)

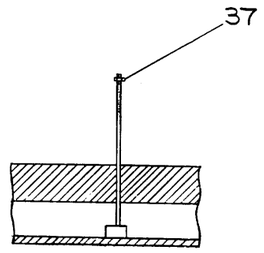
CAUTION

THIS SHEET IS FOR THE TU16 IN THE H95Ø SERIES CAB

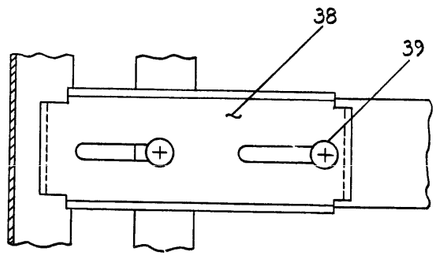
REVISIONS

CHK	CHANGE NO.	REV.

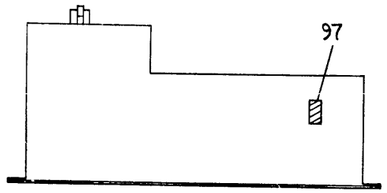
TITLE	SIZE	CODE	NUMBER	REV.
MAG TAPE DRIVE (TU16)	D	UA	TU16-Ø-Ø	P
SCALE —	SHEET 3 OF 7	DIST.		



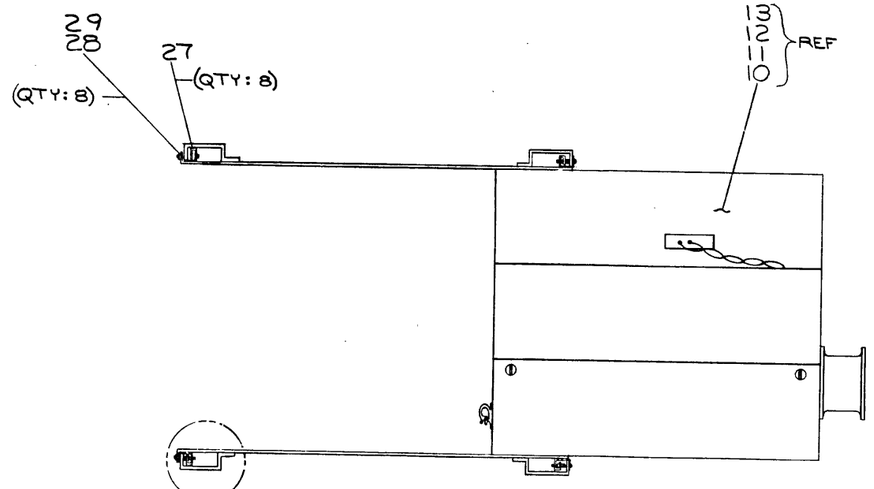
SECTION E-E



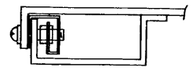
SECTION H-H



VIEW G-G
SCALE: NONE



DETAIL "B"
(SHOWN EXTENDED)



DETAIL G

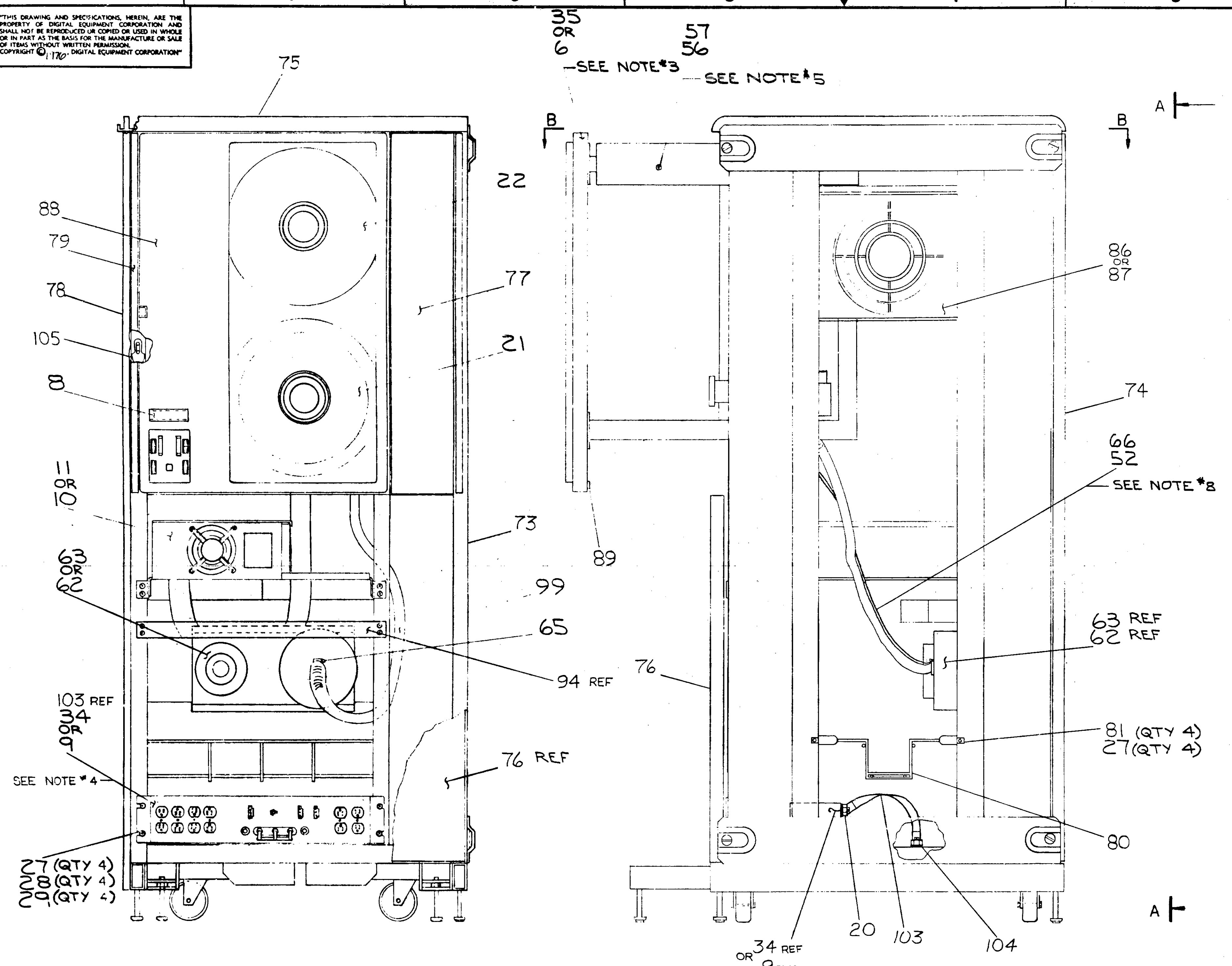
CAUTION

THIS SHEET IS FOR THE TU16
IN THE H950 SERIES CAB

REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV.
MAG TAPE DRIVE (TU16)	D	UA	TU16-Ø-Ø	P
SCALE — H — SHEET 4 OF 7	DIST.			

DIUATU16-Ø-Ø P



NOTES:

1. FOR INFORMATION ON CONNECTING THE "BC06R I/O CABLE" (ITEM*17) TO THE TAPE TRANSPORT ASSY" (ITEMS*6,*35) REFER TO D-MU-TU16-Ø-MU.
2. PHANTOM LINES REPRESENT "TAPE TRANSPORT ASSY" (ITEMS*6,*35) IN CLOSED POSITION TO SHOW LOCATION OF "SHIPPING BRACKETS" (ITEM *38)
3. TO CONVERT FROM 120 TO 240 VAC OPERATION, CUT MALE END FROM TU16'S POWER CORD, THEN CONNECT THE CORD TO "240 VAC MALE CONN" (ITEM*43, NOT SHOWN).
4. POWER CORD ROUTING FOR:
   861 POWER CONTROL - "CABLE CLAMP" (ITEM*42, NOT SHOWN), "TINNERMAN NUT" (ITEM*27) "PHL TRUSS HD SCREW" (ITEM *28) AND "KEP NUT" (ITEM*29) TO MOUNT ON RIGHT SIDE REAR HOLE *10, ROUT CORD THRU CABLE CLAP AND OUT THE BOTTOM OF CABINET.
   TU16 - ROUTE CORD THRU "CABLE CLAMP" (ITEM*54, NOT SHOWN) SECURED WITH THE ABOVE HARDWARE, LOCATE ON THE LEFT SIDE FRONT HOLE *67, OUTSIDE OF CHASSIS SLIDE AND INTO PLUG ON 861.
5. "HEX HED SCREW" (ITEM*56) AND "KEP NUT" (ITEM*57) ARE USED AS A POSITIVE STOP TO PREVENT PULLING THE "TAPE TRANSPORT ASSY" (ITEMS*6,*35) OUT OF THE CAB AND MUST BE INSTALLED WHEN THE "TAPE TRANSPORT" IS MOUNTED TO CAB.
6. USE "BLK EXTRUDED TUBING" (ITEM*53) TO COVER "38 IN GROUND STRAP" (ITEM*46) AND USE 2 "CABLE TIES" (ITEM*52, NOT SHOWN) TO SECURE TUBING TO STRAP.
7. GROUND STRAP JUMPER FROM TMØ2 LOGIC BOX TO BE CONNECTED TO GROUND LUG AT BOTTOM OF BASE CAB.
8. SECURE "VACUUM MOTOR HARNESS" (ITEM *66) TO "HOSE" (ITEM*99) AND CONNECT HARNESS TO J1 ON THE POWER BOARD.
9. INSTALL "TINNERMAN NUT" (ITEM*27) INTO HOLES *76 & *77 ON THE RIGHT FRONT SIDE OF CAB AND MOUNT "STOP BRACKET" (ITEM*62) AS SHOWN.
10. REMOVE HEX HD. CAP SCREW IN FRAME ASSY. (ITEM *73) TO ASSEMBLE COUNTERWEIGHT LEAD, (ITEM *100) & BRK'T COUNTERWEIGHT (ITEM *101) TO FRAME ASSY.

CAUTION
THIS SHEET IS FOR THE TU16 IN THE H9500 SERIES CAB

DESCRIPTION	DWG./PART NO.	ITEM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	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
SURFACE QUALITY IN MICROINCHES	MEDIUM	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED	±.012	±.018	±.025	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

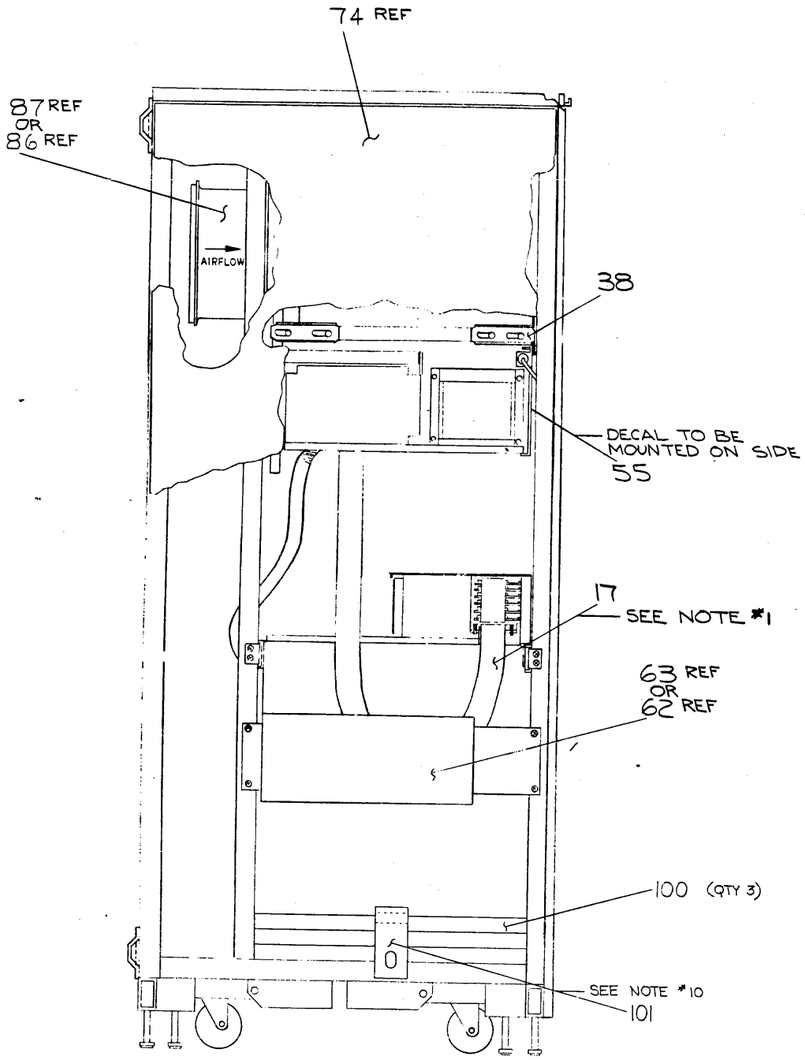
DRN. M. DUGGAN	6-21-74	FIRST USED ON TU16
CHK'D. S. HEALY	9-24-74	
ENG. J. FAHDONE	9-24-74	TITLE MAG TAPE DRIVE (TU16)
PROJ. ENG. EARLDON	9-24-74	
PROD. F. GOGUEN	10-2-74	
NEXT HIGHER ASSY B-DD-TU16-Ø		
SCALE NONE		
SHEET 5 OF 7		

MATERIAL —
FINISH —

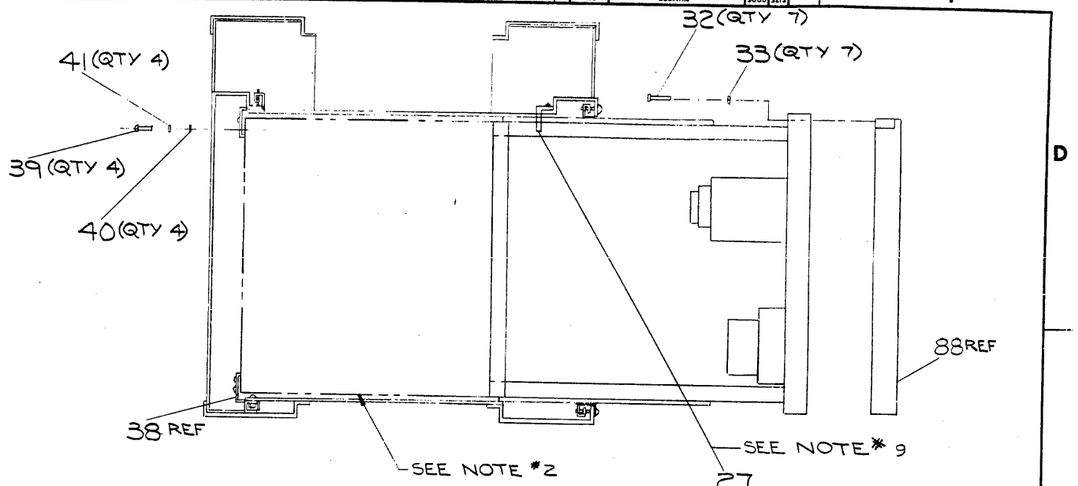
SIZE	CODE	NUMBER	REV.
D	UA	TU16-Ø-Ø	P

DIST.

REVISIONS | CHANGE NO. | REV.



VIEW-A-A



SECTION B-B

LEGEND (CONT. FROM SHEET 1)

NUMBER	VARIATION DESCRIPTION	VOLTAGE
TU16-AA	TU16-AE & TM02-FA	115V, 60 HZ
TU16-AB	TU16-AF & TM02-FB	230V, 60 HZ
TU16-AC	TU16-AH & TM02-FA	115V, 50 HZ
TU16-AD	TU16-AJ & TM02-FB	230V, 50 HZ
TU16-AE	MAG TAPE SLAVE UNIT 45 IPS 9 TRACK PE/NRZI	115V, 60 HZ
TU16-AF	MAG TAPE SLAVE UNIT 45 IPS 9 TRACK PE/NRZI	230V, 60 HZ
TU16-AH	MAG TAPE SLAVE UNIT 45 IPS 9 TRACK PE/NRZI	115V, 50 HZ
TU16-AJ	MAG TAPE SLAVE UNIT 45 IPS 9 TRACK PE/NRZI	230V, 50 HZ

LOCATION OF "TINNERMAN NUTS" (ITEM *27)

LOCATE ALL NUTS BY COUNTING HOLES UP FROM BOTTOM OF CABINETS UPRIGHT

FRONT HOLE NUMBERS	REAR HOLE NUMBERS
RIGHT SIDE: 3, 7, 25, 28, 31, 32, 85, 86, 87, 88	RIGHT SIDE: 16, 23, 31, 32.
LEFT SIDE: 3, 7, 25, 28, 31, 32, 66, 67, 68, 69	LEFT SIDE: 16, 23, 31, 32.

RIGHT SIDE HOLE NUMBERS	LEFT SIDE HOLE NUMBERS
FRONT: 17, 66, 79	FRONT: 17
REAR: 17, 66, 79, 85, 86, 87, 88	REAR: 17, 66, 67, 68, 69

CAUTION

THIS SHEET IS FOR THE TU16 IN THE H95ØØ SERIES CAB

REV.	DESCRIPTION	DWG./PART NO.	ITEM NO.
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		

ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	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
SURFACE QUALITY IN ✓ MICROINCHES	MEDIUM ☐	±.004	±.008	±.012	±.016	±.024	±.04
	PREFERRED ☐	±.012	±.016	±.025	±.04	±.063	±0.1

QUANTITY & VARIATION

THIRD ANGLE PROJECTION

REMOVE BURRS AND BREAK SHARP CORNERS

DO NOT SCALE DWG

MATERIAL —#—

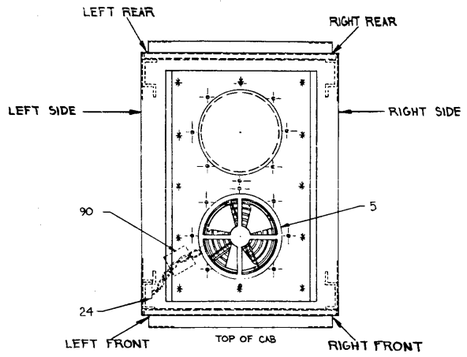
FINISH —#—

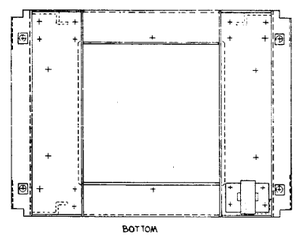
DRN M.DUGGAN	8-21-74	FIRST USED ON TU16
CHK'DD. SCHMIDT	9-24-74	digital
ENG. J. BARDONE	9-24-74	TITLE MAG TAPE DRIVE (TU16)
PROJ. ENG BARDONE	9-24-74	
PROD. R. GOGUEN	10-2-74	
NEXT HIGHER ASSY.		
B-DD-TU16-Ø		SIZE D · CODE UA · NUMBER TU16-Ø-Ø · REV. P
SCALE NONE		
SHEET 6 OF 7		DIST.

REV.	REVISIONS	CHANGE NO.	CHK

DEC FORM NO. SRD 10-0-C

HARDWARE AID PRINT



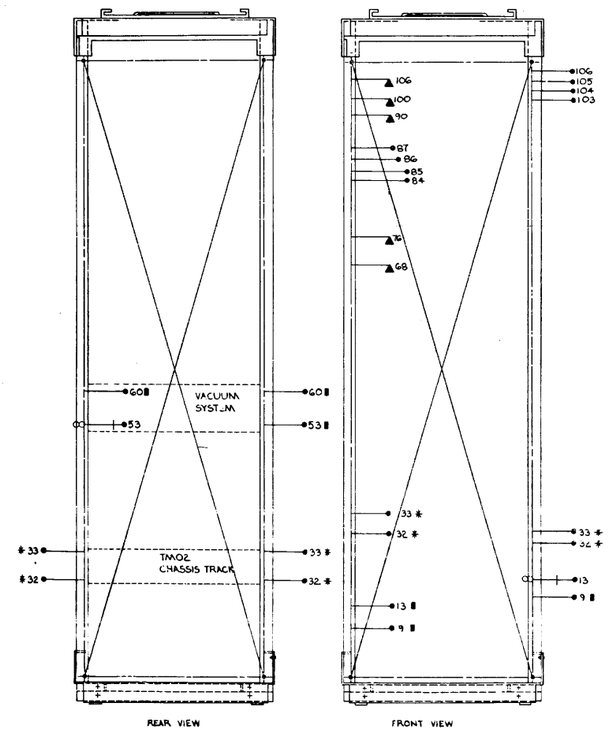


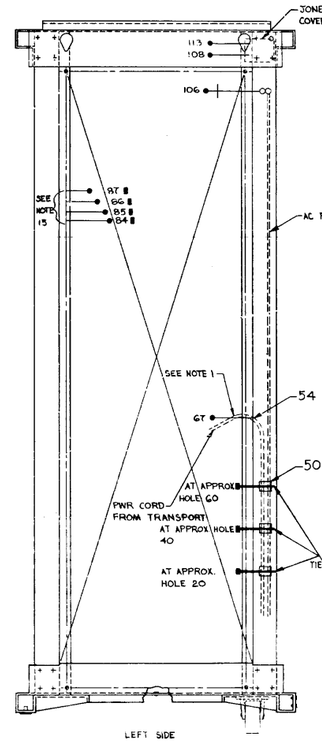
VIEW J
SCALE NONE

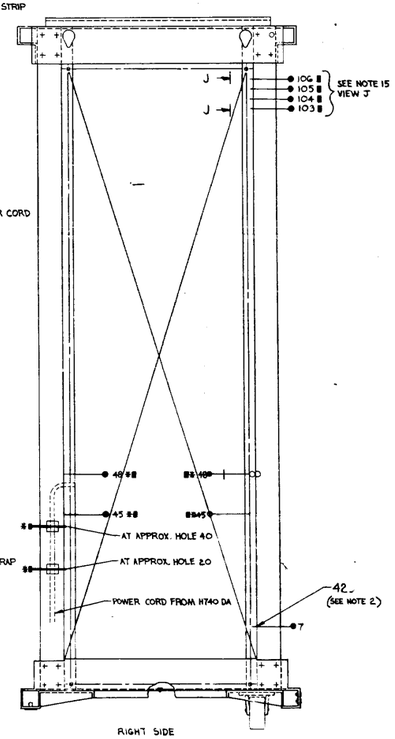
NOTES:

1. USE .375 CLAMP FOR POWER CORD FROM TRANSPORT 907083, USE FLAT WASHER.
2. USE .625 CLAMP FOR BG1 POWER CORD, USE FLAT WASHER.

—● THIS SIGN INDICATES WHERE TINNERMAN CLIP SHOULD BE, COUNTING FROM BOTTOM OF CAB
—+● INDICATES USE OF SCREW & KEP-NUT FOR GROUNDING PURPOSES.
—▲ INDICATES CABLE TIE MOUNT 9078GT FOR TIE WRAP.
* THIS SIGN INDICATES USE ONLY WHEN INSTALLING A TM02
▮ USE FLAT WASHER #10
∞ USE KEP-NUT #10-32







REVISIONS		
CHK	CHANGE NO	REV

TITLE	SIZE	CODE	NUMBER	REV
MAG TAPE DRIVE (TU16)	D	UA	TU16-Ø-Ø	D
SCALE —	SHEET 7 OF 7	DIST.		

DEC FORM NO. DRD 137