digital

TU16

Engineering Drawings

Digital Equipment Corporation

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

DRAWING DIRECTORY

CUSTOMER PRINT SET INDEX

THIS IS PRINT SET

SEQUENCE		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	
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				

REVISIONS

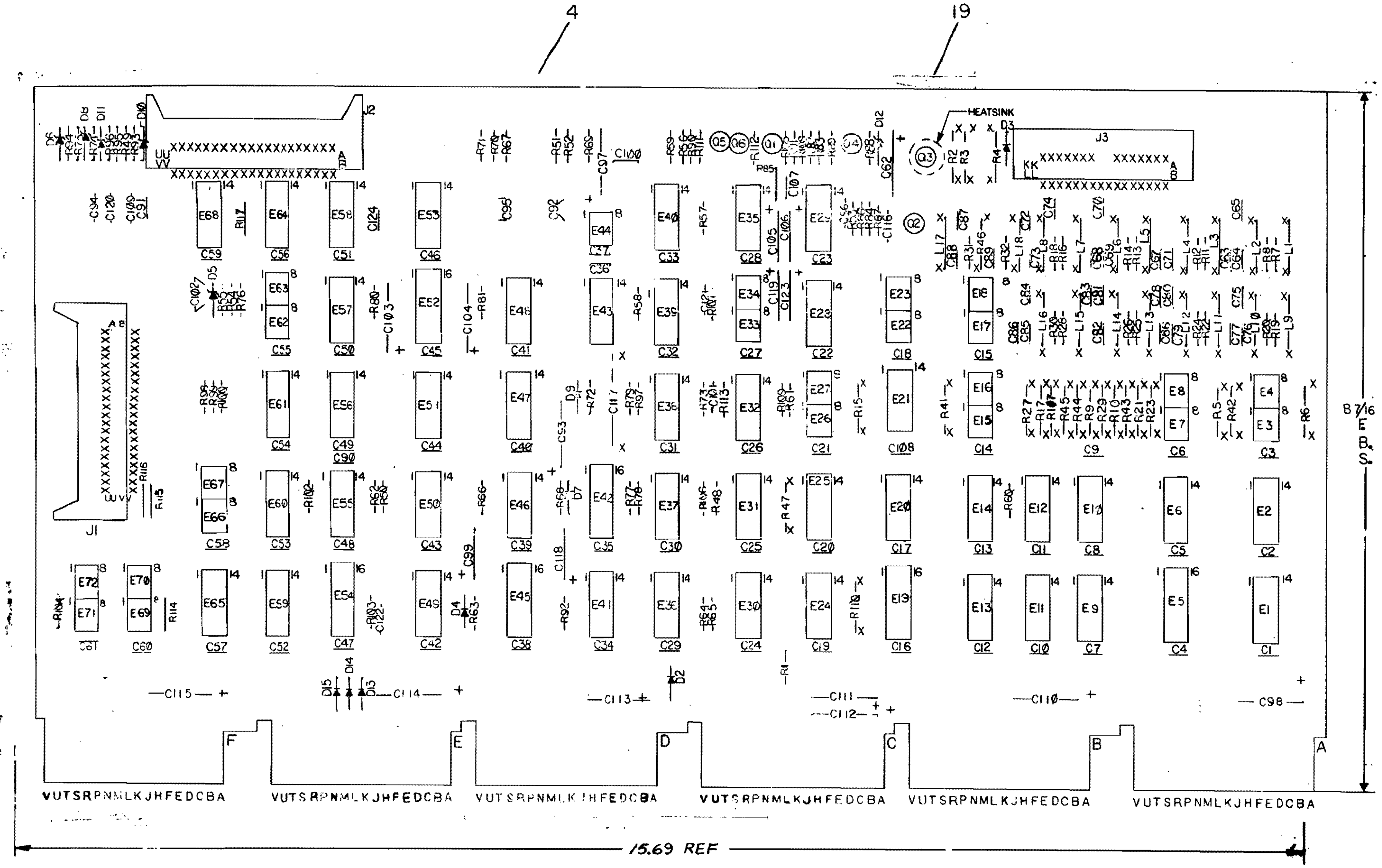
REV	CHG. NO.	DATE
A	TU16-3	
		12-16-...
B	TU16-5	
C	TU16-6	
D	TU16-9	
E	TU16-10	J.H.
F	TU16-11	
H	TU16-12	
J	TU16-13	
K	TU16-14	
L	TU16-15	
M	TU16-16	
N	TU16-19	
P	7006743-2	
R	TU16-20	
S	TU16-21	
T	TU16-22	

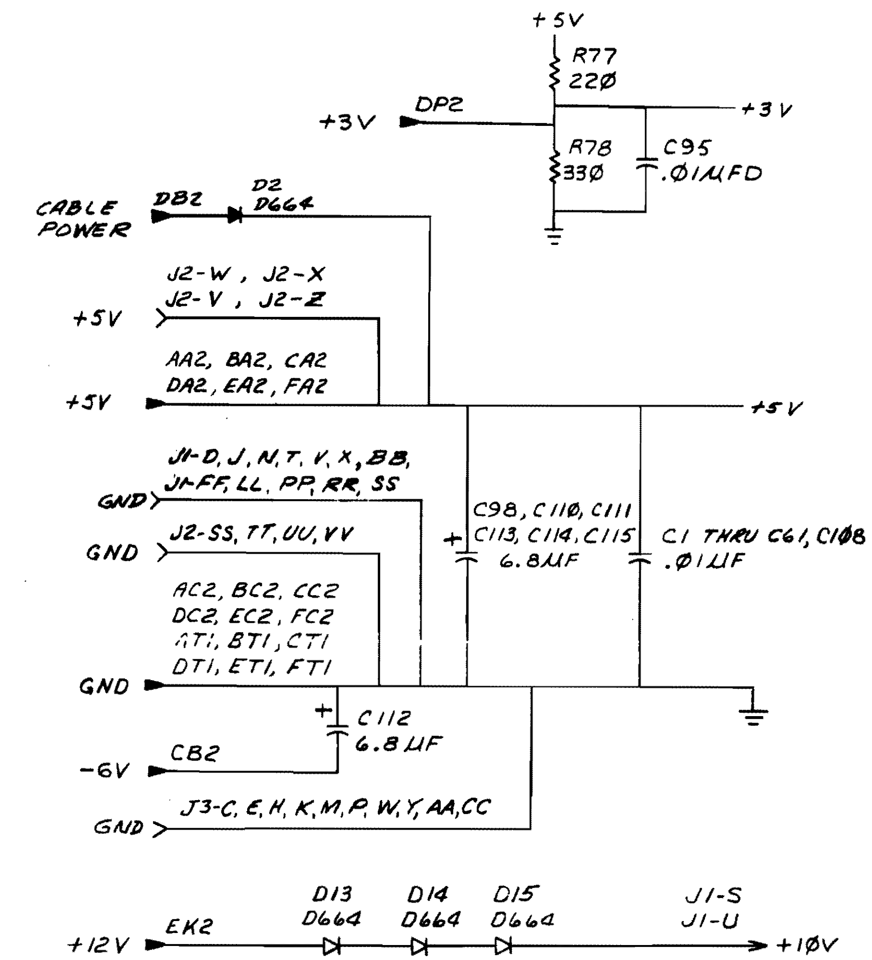
USED ON OPTION/MODEL		DRN.	DATE 8/27/74	TITLE: MAGNETIC TAPE UNIT
		CHK'D.	DATE 8/29/74	
		PROJ ENG.	DATE 8/29/74	
		PROD.	DATE	SIZE B — CODE DD — NUMBER TU16-Ø — REV T
SHEET 1 OF 6		FIELD SERV.	DATE 9/3/74	DIST

DEC 16-(325)-1062-1A-R972

DRB 106

NOTES:





8640	1	8
75452	4	8
74123	8	16
8266	8	16
7473	11	4
384	1	8
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
D	M8910-00001	J. HESS
E	M8910-00002	J. HESS
F	M8910-00003	J. HESS
H	M8910-00004	J. HESS
J	M8910-00005	H. DHAB

REVISIONS

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV E

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

SEMICONDUCTOR CONVERSION CHART

DRN. / CHK'D / ENG. / PROJ. ENG. / PROD. — DATE 11-7-73

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: LOGIC AND WRITE BOARD (LAW1)

SIZE D CODE CS NUMBER M8910-0-1 REV. J

SCALE — SHEET 1 OF 9

DIST.

NOTES:
1. FOR PART NO 1910645-01 - QTY = 754525 PER CARRIER.

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8910-0-4	1
REF		ASSY/DRILLING HOLE LAYOUT	D-AH-M8910-0-5	2
REF		MODULE ECO HISTORY	B-MH-M8910-0-6	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, R107, 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 36398	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
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
AR		WIRE, SOLID, INSULATED	9105740	73
AR		WIRE, SOLID, INSULATED	9107688	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

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV
LOGIC AND WRITE BOARD (LAW2)	D	CS	M8910-0-1	J
SCALE	SHEET 2 OF 3		DIST	

D CS M8910-0-1

DEC FORM NO DRD 139

CK2
CJ2
WRITE VOLTAGE
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
J3-B
D3 D670-1
J3-A
LAW8 WRITE ENABLE H
PT* CM2
7450 E13
API LAW3 WP
SBUS2 WD P (SB) L AD2
LAW6 MDL L
8640 E14
7404 E31
+5V
R106 1K
TFG-3 SET TEST WRE L DN1
LAW3 SET TEST WRE H
SK CLK P** BJ2
LAW4 PE+LRC (D)H
7486 E1
7473 E2
75452 E18
75452 E4
R5 470 1/2W 5%
R7 39 1/4 W
R6 390 1/2W 5%
L1 10 UH
C63 .01
R8 39 1/4W
C64 5000 PF
L2 10 UH
C65 .01
J3-D
J3-F
SK CLK 7 ** BL2
R9 470 1/2W 5%
R11 39 1/4 W
R10 390 1/2W 5%
L3 10 UH
C66 .01
R12 39 1/4W
C71 5000 PF
L4 10 UH
C67 .01
J3-J
J3-L
SBUS1 WD 7 (SB) L AE2
8640 E9
7T* BP1
SBUS1 WD6 (SB) L AF2
GT* BR1
SBUS1 WD5 (SB) L AH2
5T* BJ1
SBUS1 WD4 (SB) L BP2
4T* BH1
51 54
B266 E5
B0 A0 B1 A1 B2 A2 B3 A3
F0 F1 F2 F3
AV1 LAW3 W7
AV2 LAW3 W6
AT2 LAW3 W5
AS1 LAW3 W4
SK CLK6** CF1
SK CLK 5** BK1
SK CLK 4** BF1
75452 E16
75452 E23
75452 E3
R41 470 1/2W 5%
R13 39 1/4 W
R107 390 1/2W 5%
L5 10 UH
C68 .01
R14 39 1/4W
C69 5000 PF
L6 10 UH
C70 .01
J3-N
J3-R
R15 470 1/2W 5%
R16 39 1/4 W
R17 390 1/2W 5%
L7 10 UH
C72 .01
R18 39 1/4W
C73 5000 PF
L8 10 UH
C74 .01
J3-T
J3-V
R42 470 1/2W 5%
R19 39 1/4 W
R43 390 1/2W 5%
L9 10 UH
C75 .01
R20 39 1/4W
C76 5000 PF
L10 10 UH
C77 .01
J3-X
J3-Z

* TEST DATA P-TERMS MAY BE JUMPERED FROM THE M8312 TEST FUNCTION GENERATOR.

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

REVISIONS		
ECO	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV
LOGIC ANI WRITE BOARD (LAW3)	D	DCS	M8910-0-1	J
SCALE	SHEET 3 OF 4	DIST.		

LAW3 WRITE HEAD POWER

LAW3 SET TEST WRE H

SBUSI WD3 (SB) L BR2 — 8640 E30

SBUSI WD2 (SB) L 3T AJ1 BS2 — 8640 E30

SBUSI WD1 (SB) L 2T AF1 BU2 — 8640 E30

SBUSI WD0 (SB) L 1T AE1 BV2 — 8640 E30

ØT AC1

8266 E19 (SI, SØ, BI, AI, BØ, AØ, B2, A2, B3, A3; FI, FØ, F2, F3)

BA1 → W3

BC1 → W2

BB1 → W1

EB2 → WØ

SK CLK 3 ** BN1 — 7486 E10 — 7473 E6 — 75452 E7

LAW3 WRITE ENABLE H

SK CLK 2 ** BE2 — 7486 E24 — 7473 E20 — 75452 E15

SK CLK 1 ** BN2 — 7486 E24 — 7473 E20 — 75452 E22

SK CLK Ø BF2 — 7486 E24 — 7473 E25 — 75452 E17

R21 470 1/2 W 5%	R22 39 1/4 W	L11 10 UH	C78 .Ø1	J3-BE
R23 390 1/2 W 5%	R24 39 1/4 W	L12 10 UH	C80 .Ø1	C79 5ØØØPF, J3-DD
R44 470 1/2 W 5%	R25 39 1/4 W	L13 10 UH	C81 .Ø1	J3-FF
R45 390 1/2 W 5%	R26 39 1/4 W	L14 10 UH	C83 .Ø1	C82 5ØØØPF, J3-EE
R27 470 1/2 W 5%	R28 39 1/4 W	L15 10 UH	C84 .Ø1	J3-JJ
R29 390 1/2 W 5%	R30 39 1/4 W	L16 10 UH	C86 .Ø1	C85 5ØØØPF, J3-HH
R46 470 1/2 W 5%	R31 39 1/4 W	L17 10 UH	C87 .Ø1	J3-LL
R47 390 1/2 W 5%	R32 39 1/4 W	L18 10 UH	C89 .Ø1	C88 5ØØØPF, J3-KK

LAW 6 MOL L AK2 — SBUSI LR C STRB (SB) L — 8640 E14 — 7404 E31

SC3 PES L DU1 — 7408 E46

LAW8 WRITE ENABLE H

SC3 RECORD PULSE L DL2

LAW8 WRITE ENABLE(DL) — 7473 E25 — 7474 E11 (+3V)

74164 E12

R5(1) 11

R4(1) 10

R3(1) 6 AB1, AB2 → LAW 4 SK CLK D

R2(1) 5 AL1, AL2 → LAW 4 SK CLK C

R1(1) 4 AN1, AN2 → LAW 4 SK CLK B

SER IN — R0(1) 3 AR1 AR2 → LAW 4 SK CLK A

CLR CLK — +3V

7404 E31 → SC2 CLK L DC1

7474 E11 → LAW 4 PE + LRC (1) H

* 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: D	CODE: 03	NUMBER: M8912-Ø-1	REV: J
SCALE: —	SHEET 1 OF 9	DIST.		

DEC FORM NO DRD 138

DCS M8912-Ø-1

SWB4 PWR ON SW J1-Z FP1

LAW 6 LOCAL L — 75452 E67

LAW 6 MOTION H — 7402 E43 — 7405 E37

LAW 6 LOCAL H — 7405 E37

R62 100 — C90 470PF — LAW 5 MOTION + LOCAL L

LAW 6 MOL H — 7408 E46 — 75452 E27 — AM2 — LAW 5 SDWN (SB) L

C99 3.9 UF — +5V — R63 10K — D4 D664

74123 E45 8-12 MSEC — DR2 — LAW 5 RUNNING (1) H

LAW 5 RUNNING (1) L

75452 E70 — J1-E — LAW 5 TUR LAMP

75452 E34 — BK2 — LAW 5 TUR (SB) L

LAW 6 MOL H

LAW 6 LOCAL L — 384 E29

SWB4 OFF L — J1-VV — +5V R70 1K

J2-C

LFS H — CU2 — R65 68 — +5V R64 3.9K — C 97 39UF — 7405 E38

UFS L — CU1 — R66 220 — +5V R67 3.9K — C100 .05UF

LAW 5 VACUUM ON (0) L

7402 E43 — LAW 6 PWLR L — 7474 E53 — EB1 — LAW 5 FAIL (1) H

LAW 5 FAIL (1) L

7405 E38 — 7403 E38 — 7404 E40

C93 39 UF — +5V — R68 10K — +5V — R69 12K — D7 D664

74123 F42 95-155 MSEC — J2-EE — LAW 5 REEL MTR ENABLE (0) L

LAW 5 FAIL (1) L — 7408 E46

LAW 7 RWS (1) H — C103 15 UF — +5V — R80 20K — 74123 E52 80-160 MSEC — 7402 E57 — J2-Y — LAW 5 FOR H

LAW 7 REV (1) L — 7404 E35 — 7400 E41 — 7400 E58 — J2-AA — LAW 5 REV/REW H

LAW 7 FWD (1) L — 7400 E61

LAW 7 RWS (1) H

C104 — +5V — R81 22K — UF — 74123 E52 240-360 MSEC — 7427 E50 — J2-E — LAW 5 REWIND CAP H

SWB4 LOAD PULSE — J1-UU — +5V R74 1K — C94 .01 UF — +5V R75 1K — D8 746A 3.3V

7400 E58 — 7400 E58 — J2-A — LAW 5 RELAY ENABLE H

+5V R71 1K — C124 .05UF

7405 E38 — +5V R48 1K — J2-K — LAW 5 RELAY ENABLE L

C117 330 UF — +5V R72 47K — +5V R73 1.2K — D9 D664

74123 E42 2-4 SEC — C101 .01 UF — CT2 — LAW 5 VACUUM ON (0) L

FU2 — LAW 5 VACUUM ON (0) H

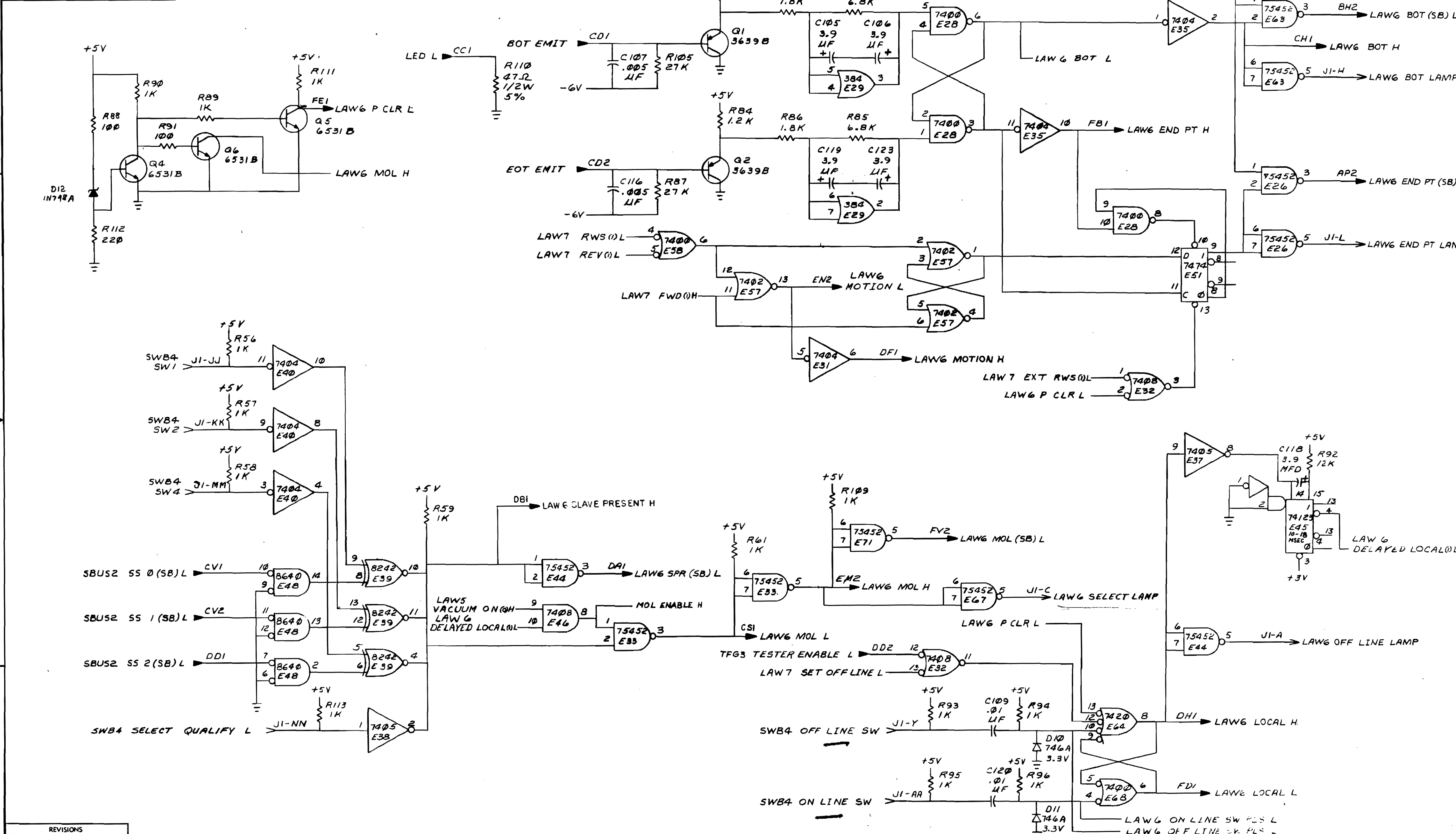
75452 E71 — J1-B — LAW 5 VACUUM ON LAMP

SWB4 BRK REL SW — J1-TT — +5V R76 1K — 7402 E43 — 7474 E53 — J2-CC — LAW 5 FORCE BRK REL (1) L

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
LOGIC AND WRITE CARD (LAW 5)	D	DCS	M8910-0-1	J
SCALE —	SHEET — OF —	DIST.		

DEC FORM NO. DRD 126

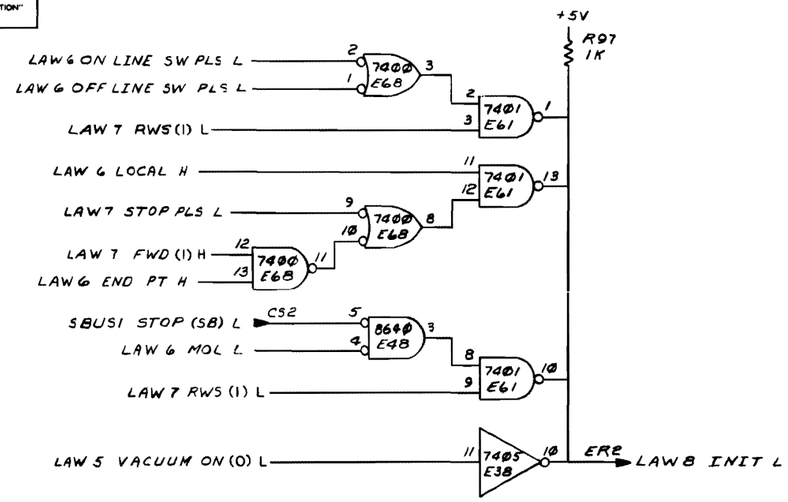


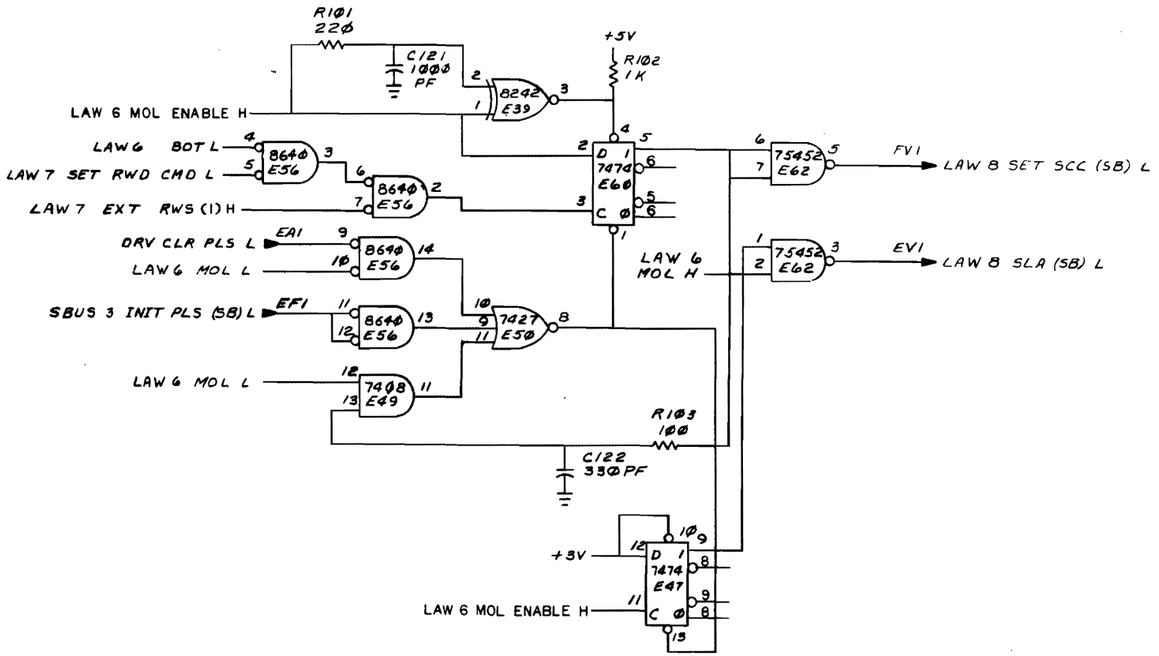
TITLE	LOGIC AND WRITE BOARD (LAW6)
SIZE	D
CODE	CS
NUMBER	M8910-0-1
REV.	J
SHEET	6 OF 9

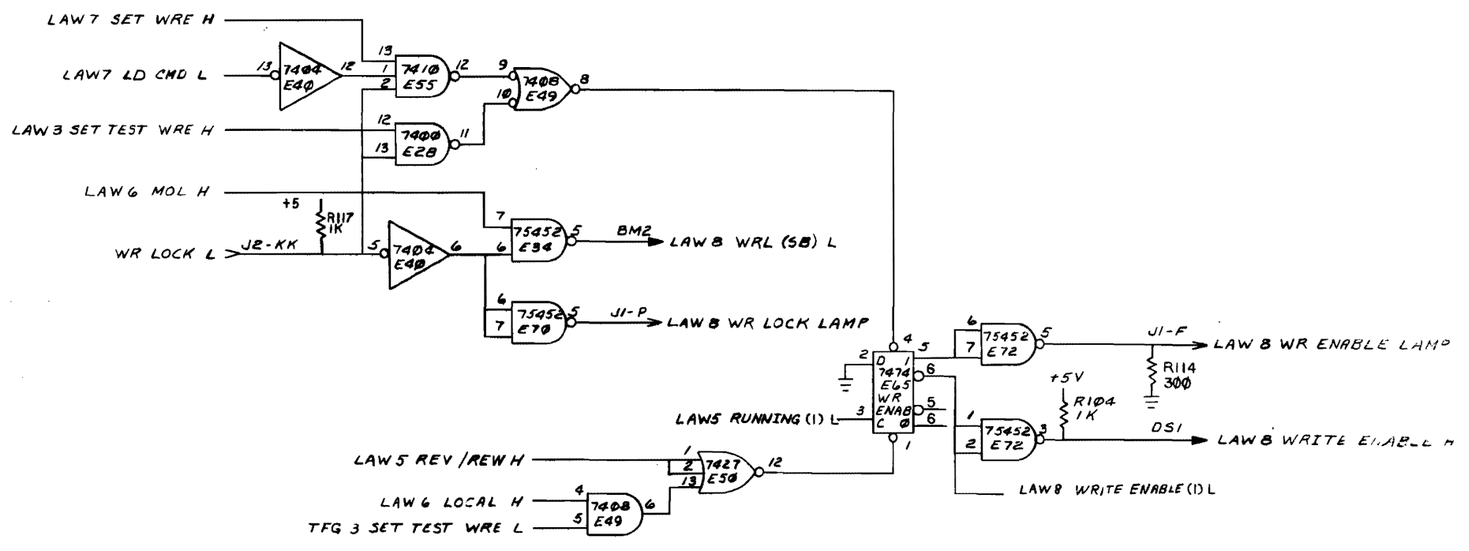
TFG3 1ST ONE SHOT L — DK1
+5V R51 680
C92 100PF
R52 4.7K
R53 4.7K
C96 220PF
384 E29
7410 E55
LAW6 LOCAL H
LAW6 MOTION L
LAW6 MOL H
LAW5 MOTION + LOCAL L
SWB4 START L — J1-CC — R49 1K — C91 .01UF — R50 1K — D6 746A 3.3V
TFG3 4TH ONE SHOT(1)H — DM1 — R79 1K
7474 E51
SWB4 STOP L — J1-W — R54 1K — C102 .01UF — R55 1K — D5 746A 3.3V
LAW7 STOP PLS L
R68 1K
SLAVE BUS ENABLE — BD1
SBUS1 DRV SET PLS (SB) L — AS2
8640 E14
7410 E55
LAW7 LD CMD L
R98 1K
SWB4 MANUAL FWD L — J1-DD
SBUS1 FWD (SB) L — AU2
8640 E14
R99 1K
SWB4 MANUAL REV L — J1-EE
SBUS1 REV (SB) L — BE1
8640 E36
R100 1K
SWB4 MANUAL REW L — J1-HH
SBUS1 RWND (SB) L — BD2
SBUS1 DRV SET PLS (SB) L
8640 E36
8640 E36
8640 E36
+5V
SBUS1 WRITE (SB) L — AU1
LAW7 SET WRE H
8266 E54
B0 B1 B1 A1 B2 A2 B3 A3
F0 F1 F2 F3
LAW7 SET RWD CMD L
7402 E43
7404 E35
LAW6 BOT H
LAW7 SET OFFLINE L
75452 E66
J1-K
LAW7 FWD LAMP
R115 300
7400 E41
7474 E59 FWD
EN1
LAW7 FWD (1) H
LAW7 FWD (1) L
LAW6 BOT H
LAW8 INIT L
7474 E60 RWS
DJ2
LAW7 RWS (1) H
FF1
LAW7 RWS (1) L
7474 E59 REV
75452 E66
J1-M
LAW7 REV LAMP
R116 300
EU1
LAW7 REV (1) H
EP2
LAW7 REV (1) L
LAW6 MOL H
75452 E69
BM1
LAW7 RWS (SB) L
7474 E65
LAW7 EXT RWS (1) H
LAW5 RUNNING (1) L
75452 E69
J1-R
LAW7 REW LAMP
LAW6 PCLR L
LAW7 EXT RWS (1) L

REVISIONS		
CHK	CHANGE NO.	REV.

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







REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV
LOGIC AND WRITE ECARD (LAW8)	D	CS	M8910-0-1	J
SCALE 1 ——	SHEET 2 OF 4	DIST.		

DEC FORM NO. DRD 138

DCSM8910-0-1 J

SWITCH BOX CONNECTOR

J1

LAW6 OFF LINE LAMP	A
LAW5 VACUUM ON LAMP	B
LAW6 SELECT LAMP	C
	D
LAW5 TUR LAMP	E
LAW8 WR ENABLE LAMP	F
LAW6 BOT LAMP	H
	J
LAW7 FWD LAMP	K
LAW6 END PT LAMP	L
LAW7 REV LAMP	M
	N
LAW8 WR LOCK LAMP	P
LAW7 REW LAMP	R
+10V	S
	T
	U
	V
SWB4 STOP L	W
	X
SWB4 OFF LINE SW	Y
SWB4 PWR ON SW	Z
SWB4 ON LINE SW	AA
	BB
SWB4 START L	CC
SWB4 MANUAL FWD L	DD
SWB4 MANUAL REV L	EE
	FF
SWB4 MANUAL REW L	HH
SWB4 SW1	JJ
SWB4 SW2	KK
	LL
SWB4 SW4	MM
SWB4 SELECT QUALIFY L	NN
	PP
	RR
	SS
	TT
SWB4 BRK REL SW	UU
SWB4 LOAD PULSE	VV
SWB4 OFF L	

J2

LAW5 RELAY ENABLE H	A
	B
LFS H	C
	D
LAW5 REWIND CAP H	E
	F
	H
	J
LAW5 RELAY ENABLE L	K
	L
	M
	N
	P
	R
	S
	T
	U
+5V	V
	W
	X
LAW5 FOR H	Y
	Z
LAW5 REV/REW H	AA
	BB
LAW5 FORCE BRK ON (1) L	CC
	DD
LAW5 REEL MTR ENABLE (0) L	EE
	FF
	HH
	JJ
WR LOCK L	KK
	LL
	MM
	NN
	PP
	RR
	SS
	TT
	UU
	VV

REVISIONS

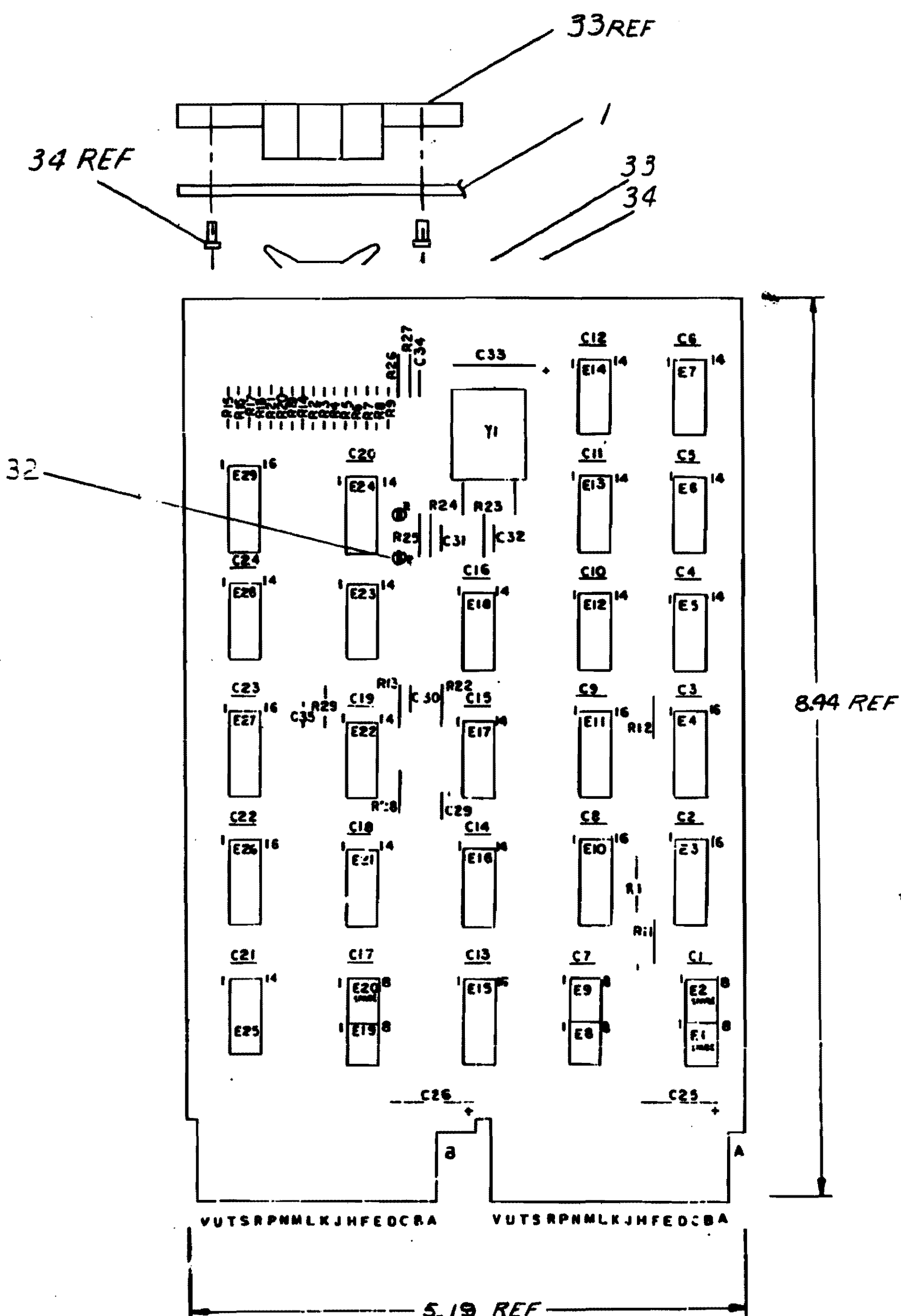
CHK	CHANGE NO.	REV.

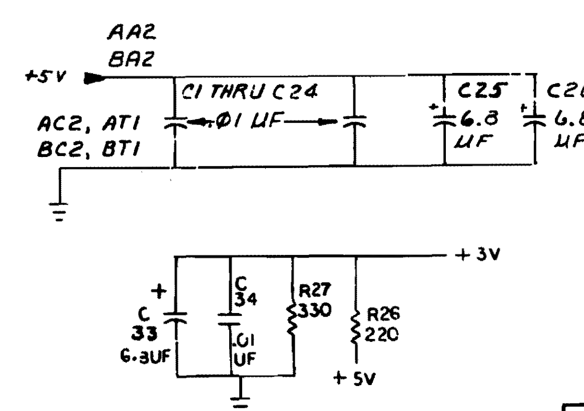
TITLE	LOGIC AND WRITE BOARD (LAW9)		
SCALE		SHEET 9 OF 9	
SIZE	CODE	NUMBER	REV.
D	CS	M8910-0-1	J
DIST.			

J | M8910-0-1 | D | CS

DEC FORM NO. DRD 138

NOTES:





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

PARTS LIST

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

IC PIN LOCATIONS

REV.	CHANGE NO.		
D	M8911-00002	J.HESS	10-8-75
C	M8911-00001	J.HESS	4-1-75 / 11-26-74

REVISIONS

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: D

SEMICONDUCTOR CONVERSION CHART

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

DRN: D. Bissonnette, DATE 10-17-73
CHKD: DATE 2/28/74
ENG: DATE 3-6-74
PROJ. ENG: DATE 3-6-74
PROD: DATE 3-7-74

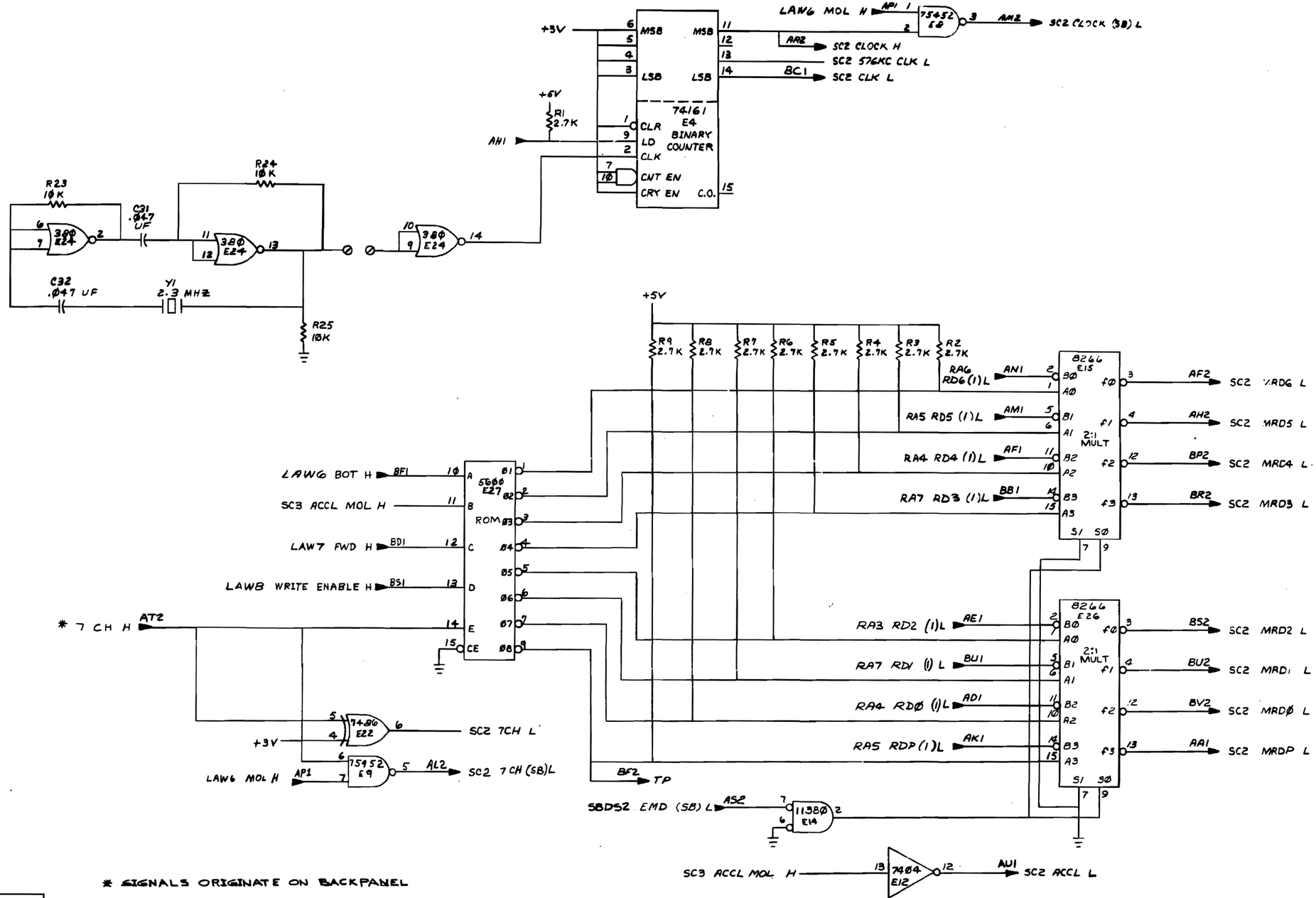
NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS

TITLE: SLAVE CLOCK (SCI) MOTION DELAY

SIZE: D CODE: CS NUMBER: M8911-Ø-1 REV.: D

SCALE — SHEET 1 OF 3 DIST.



* SIGNALS ORIGINATE ON BACKPANEL

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SLAVE CLK MOTION DLY (SC2)	D	CS	M8911-Ø-1	D
SCALE —	SHEET 2 OF 3	DIST.		

DEC FORM NO
DRD 128

+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
5688 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 E18 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
380 E14
EL2 SC3 RECORD PULSE L
1476 E11 WRT CLK K
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
11380 E14
SC3 MOL L
+5V R22 1K
TFG3 WRT CLK TEST ENABLE L BA1
LAW6 LOCAL H BH1
7400 E19
SC3 ACCL MOL H
7402 E13
LAW6 MOL H AP1
75452 E8
AR1 SC3 PES (SB) L
SBUS2 DEN 2 (SB) H AU2
11380 E7
7402 E5
SC2 7 CH L
7408 E16
282 SC3 PES H
+5V R11 1K
TG3 TEST PE H AB2
7404 E6
SBUS2 DEN 1 (SB) H BE1
11380 E7
7402 E5
7404 E12
7400 E17
+5V R12 1K
AC1 TG3 TEST DEN H
SBUS2 DEN Ø (SB) H AJ2
11380 E7
7402 E5
7404 E12
LAW8 WRITE ENABLE H BS1
SBUS3 IRD (SB) L AL1
11380 E14
7402 E18
7404 E6
AV2 SC3 WRT+IRD H
RA3 RD2 (1) L
RA4 RD0 (1) L
RA4 RD4 (1) L
RA5 RDP (1) L
RA5 RDS (1) L
RA6 RD6 (1) L
RA7 RD1 (1) L
RA7 RD3 (1) L
7430 E21
7402 E13
RA6 RD7 (Ø) H AS1
7404 E12
AE2 SC3 MRD 7 L
SC2 CLK L BC1
7404 E12
7476 E11 SKEW K
380 E24
7404 E12
7402 E18
SC3 SDØ H AN2
7408 E16
SC3 PES L AB1
LAW6 MOL H AA1
7408 E17
7402 E18
SC3 ACCL MOL H
7404 E25
AK2 SC3 RSDO (SB) L
7400 E17
AV1 SC3 CLEAR READ BOARD L
7486 E22
C35 .005 UF
R29 22Ø
R13 33Ø Ω
C30 1000 PF
SC3 SDØ H AN2
7545 E19
BH2 SC3 SET VPE L
RA3 PACKET H BJ2
7408 E16
7486 E22
R28 33Ø Ω
C29 1000 PF
BR1 SC3 NTZO H
AN2 SC3 SDØ H
SC3 SK DLY 32
SC3 SK DLY 16
SC3 SK DLY 8
SC3 SK DLY 4
SC3 SK DLY 2
SC3 SK DLY 1
74197 E23
74197 E28
D3 D2 D1 DØ R3 (1) R2 (1) R1 (1) RØ (1) CLR LD CLK1 CLK2

REVISIONS
CHK | CHANGE NO. | REV.

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

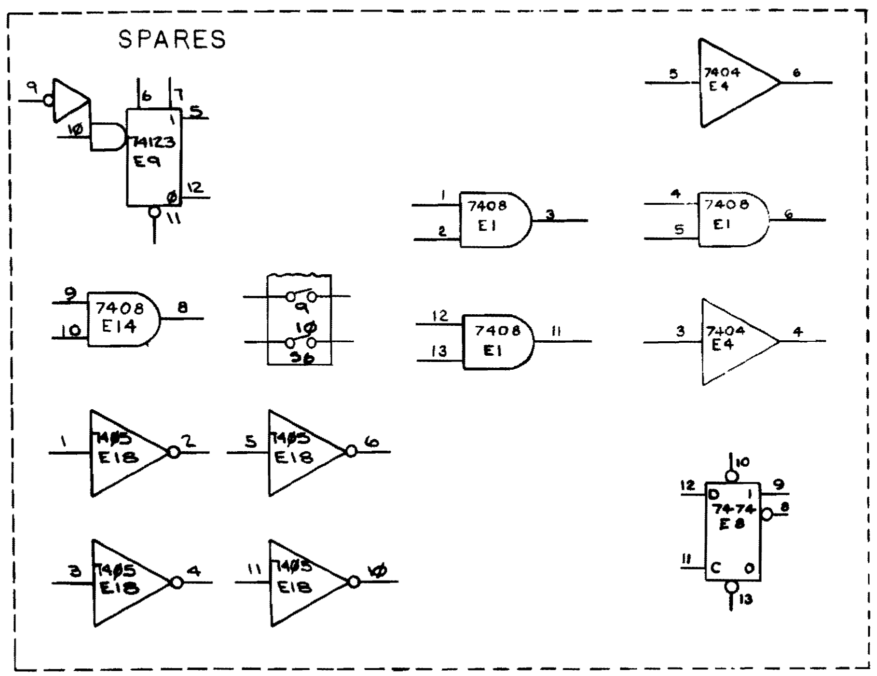
DCS M8911-Ø-1

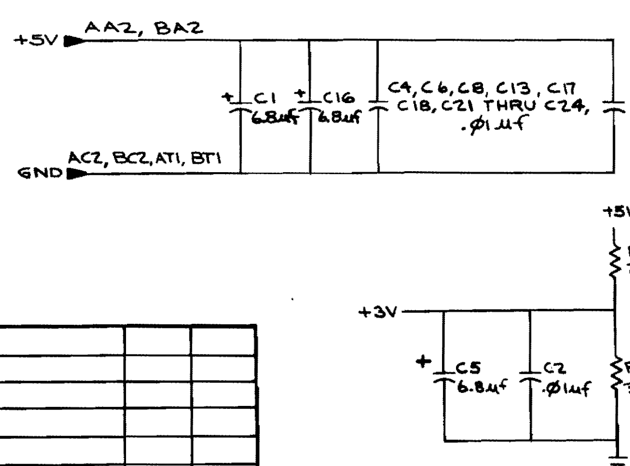
FORM NO. A-136

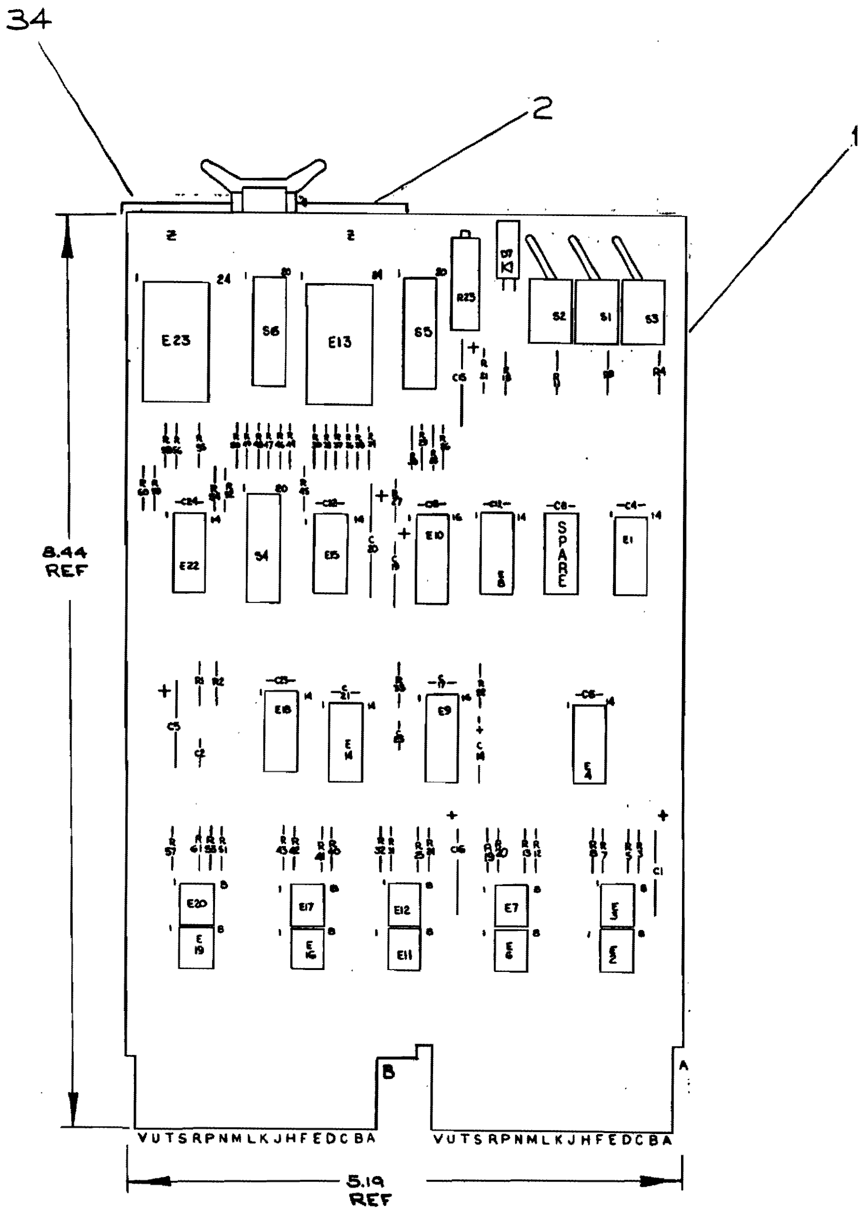
NOTES:

*

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







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
11	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 1/4W 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	3[illegible]
2		EYELET	9006732	3[illegible]

* NOTE

PARTS LIST

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

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

IC PIN LOCATIONS

REVISIONS

CHANGE NO.	REV	CHK
M8912-1	B	JOHN HESS 7/31/74
M8912-00002	C	R. CORNEAU 3-26-75
M8912-00004	D	H. DRAB 13-JAN-76

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: D

SEMICONDUCTOR CONVERSION CHART

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

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

NEXT HIGHER ASSY

SCALE

SHEET 1 OF 3

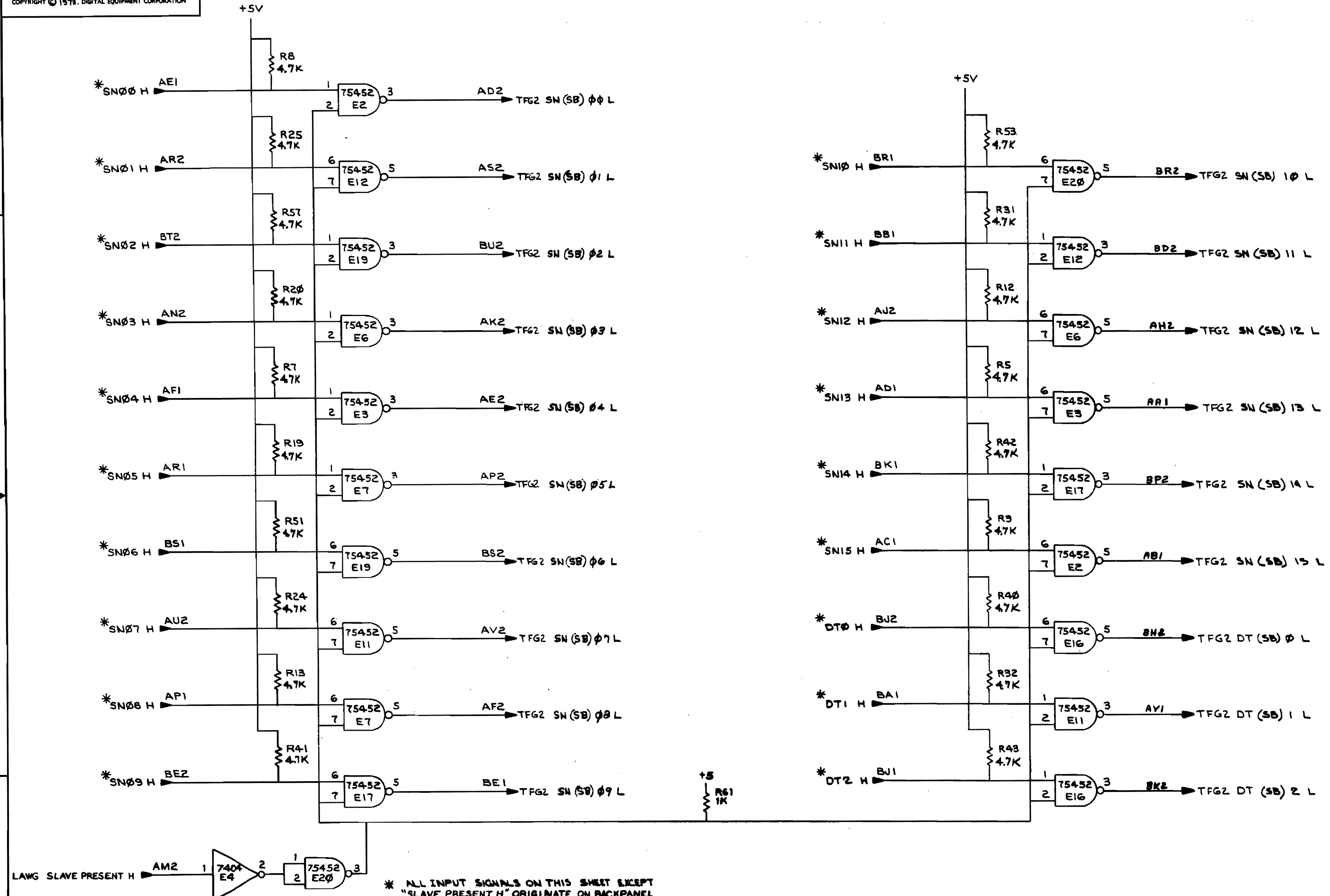
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: SLAVE TEST (TFGI) FUNCTION GENERATOR

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

DIST.

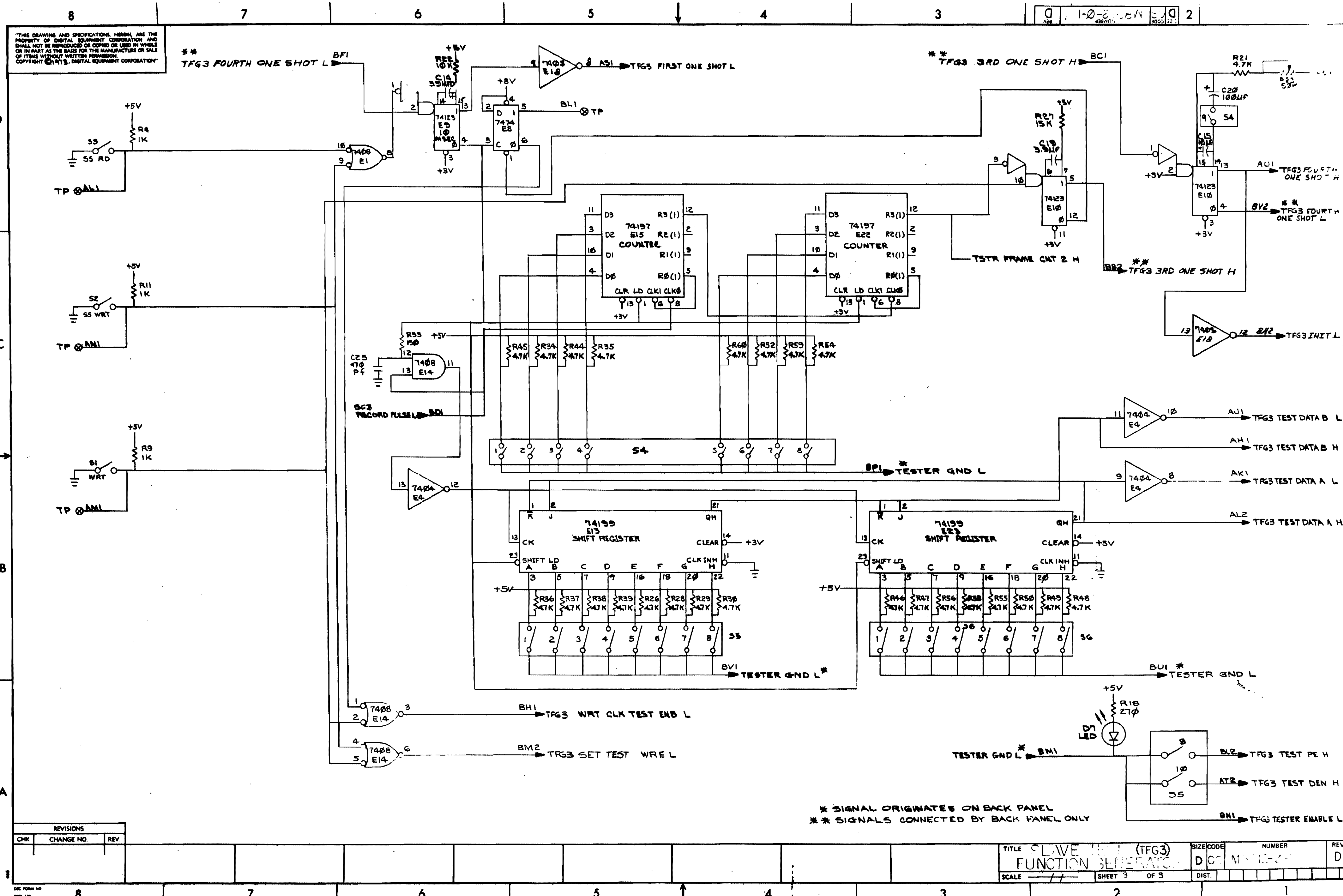
DEC FORM NO. DRD 135-8



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

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE SLAVE T... FUNCTION GENERATOR — D CS M8912-Ø-1 — REV D — SHEET 2



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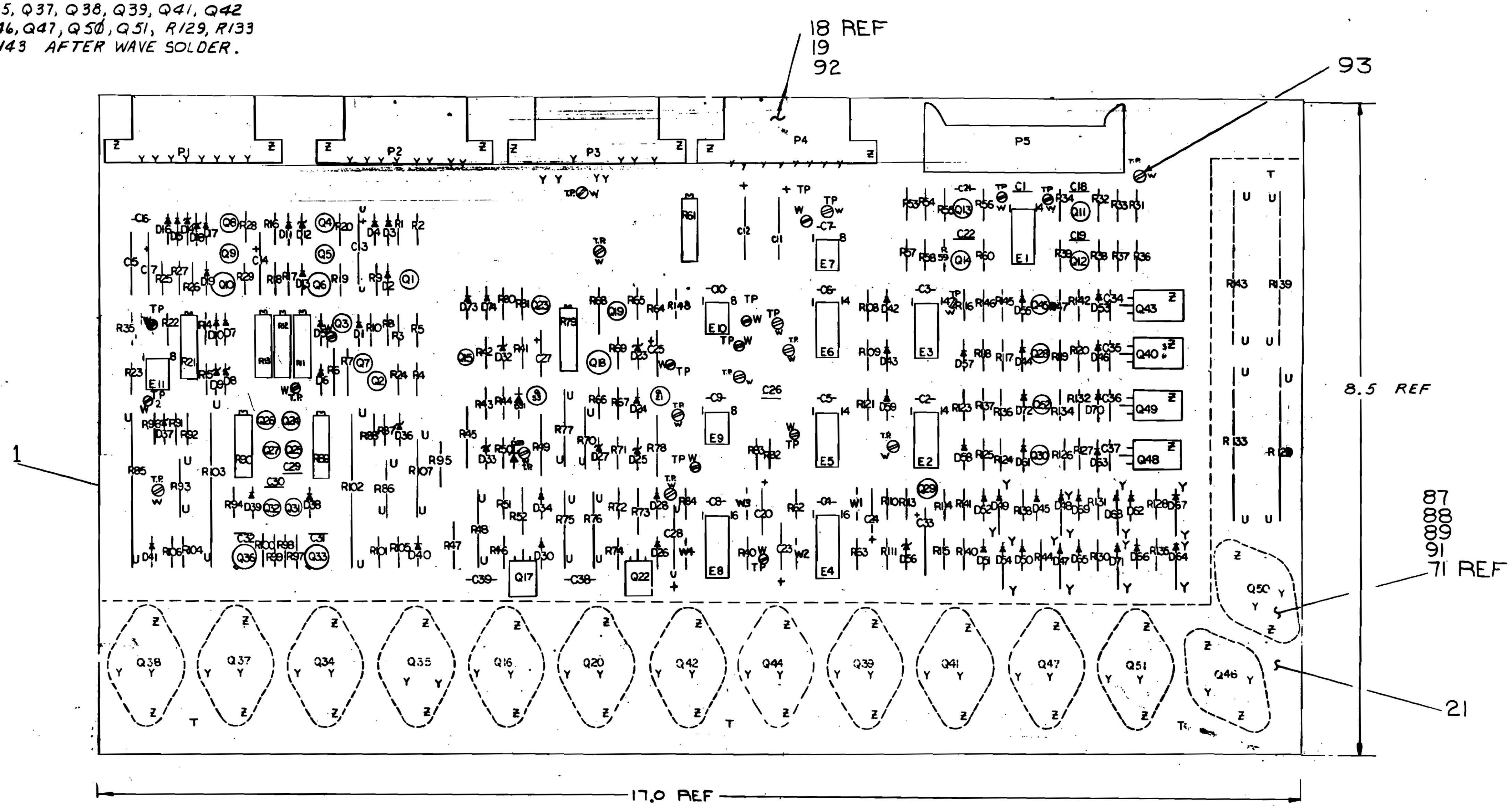
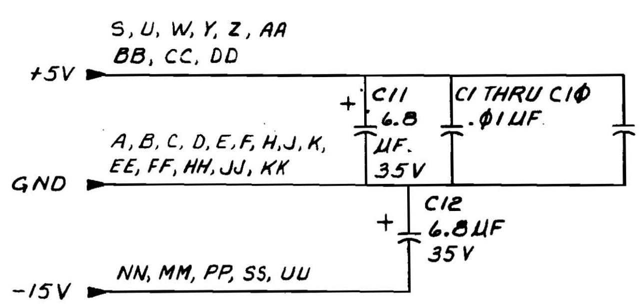
** TFG3 FOURTH ONE SHOT L
BF1
+5V
74123 E9 10 MSEC
7474 E8
7405 E18
AS1
TFG3 FIRST ONE SHOT L
BL1
TP
** TFG3 3RD ONE SHOT H
BC1
R21 4.7K
C20 100µF
S4
74123 E10
AU1
TFG3 FOURTH ONE SHOT H
BV2
** TFG3 FOURTH ONE SHOT L
S3 SS RD
R4 1K
7408 E1
TP AL1
74197 E15 COUNTER
74197 E22 COUNTER
R27 15K
C19 3.3µF
TSTR FRAME CNT 2 H
BB2
** TFG3 3RD ONE SHOT H
7405 E18
BH2
TFG3 INIT L
S2 SS WRT
R11 1K
TP AM1
R33 150
C25 470 PF
7408 E14
R45 4.7K
R34 4.7K
R44 4.7K
R35 4.7K
R60 4.7K
R52 4.7K
R59 4.7K
R54 4.7K
SC3 RECORD PULSE L
BD1
S4
7404 E4
AJ1
TFG3 TEST DATA B L
AH1
TFG3 TEST DATA B H
S1 WRT
R9 1K
TP AM1
BP1
* TESTER GND L
7404 E4
AK1
TFG3 TEST DATA A L
74199 E13 SHIFT REGISTER
74199 E23 SHIFT REGISTER
AL2
TFG3 TEST DATA A H
R36 R37 R38 R39 R26 R28 R29 R30 4.7K
R46 R47 R56 R58 R55 R50 R43 R48 4.7K
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
S5
BN1
TFG3 TESTER ENABLE L
* SIGNAL ORIGINATES ON BACK PANEL
** SIGNALS CONNECTED BY BACK PANEL ONLY
REVISIONS
CHK
CHANGE NO.
REV.
TITLE SLAVE (TFG3) FUNCTION GENERATOR
SIZE D
REV. D
SCALE
SHEET 3 OF 3
DIST.

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.





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

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

IC PIN LOCATIONS

CHK	CHANGE NO.	REV
W. Smith	W. SMITH	
H. Dinsmore 4-28-76	H606-00006	E
	H. DRAB 6 Jan '76	
H. Dinsmore 31 DEC '75	H606-00004	D
John R. Hess 8-27-75	JOHN HESS	
7-29-74	H606-00001	C

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. Buonvitte DATE 10-18-73
CHK'D. Carbony DATE 12/18/73
ENG. John Hess DATE 1-4-74
PROJ. ENG. John Hess DATE 1-4-74
PROD. DATE

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: TU16 POWER BOARD (DRVR 1)

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

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 ECO 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 C18,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
4	D40,D41,D73,D74	DIODE IN 4004	1105796	13
2	D27,D33	DIODE IN 4736A ZENER	1103340	14
3	D25,D29,D56	DIODE IN 756A ZENER	1103441	15
20	D50 THRU D53,D62,D63,D65, D66,D69,D70,D15,D16,D24, D28,D26,D30,D31,D34,D45,D46	DIODE D672	1105275	16
8	D47,D48,D49,D54,D64,D67,D68,D71	DIODE 5G24	1110420	17
4	P1,P2,P3,P4	CONN MATE-N-LOK 6 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 ¼W 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 ¼W 5%	1300285	27
9	R82,R119,R120,R128,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	R88	RES 750 ¼W 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,R6	RES 1K ¼W 5%	1300365	32
14	R1,R4, R24,R42,R65,R88 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	R106,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 ¼W 10%	1301642	43
1	R85	RES 47 ¼W 5%	1301695	44
1	R63	RES 22K ¼W 5%	1301808	45
1	R40	RES 5.6K ¼W 5%	1301874	46

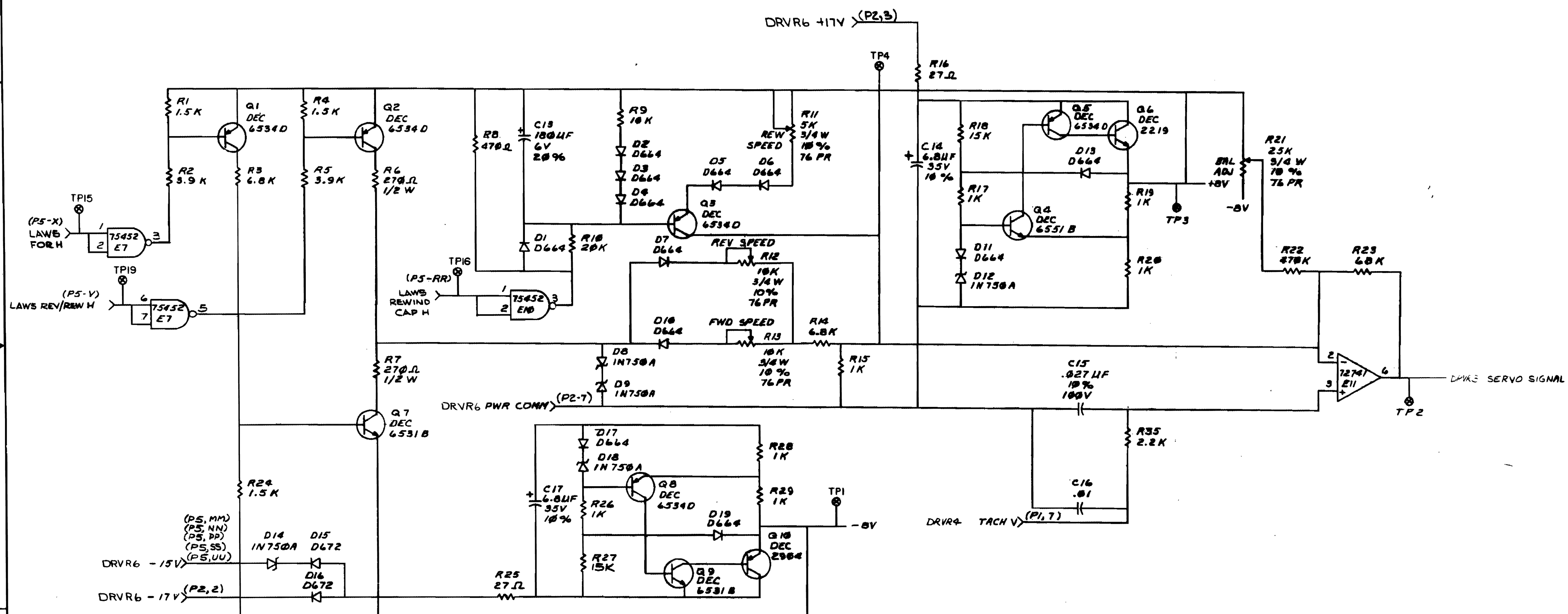
QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
2	R43,R66	RES 560 ¼W 5%	1301890	47
5	R48,R74,R84,R98,R89	RES 270 ¼W 5%	1301872	48
2	R52,R73	RES 39 ¼W 5%	1302338	49
1	R10	RES 20K ¼W 5%	1302391	50
1	R22	RES 470K ¼W 5%	1302398	51
1	R94	RES 35K ¼W 10%	1300516	52
8	R128,R130,R131,R135,R138 R140,R141,R144	RES 56 ¼W 5%	1302802	53
2	R75,R77	RES 56 2W 5%	1302836	54
2	R66,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,R46	RES 27 2W 10%	1305624	61
1	R65	RES .1 10W 1%	1309108	62
1	R79	POT 100 ½W 10% 76PR	1309143-04	63
2	R89,R90	POT 1K ½W 10% 76PR	1309143-07	64
1	R11	POT 5K ½W 10% 76PR	1309143-09	65
2	R12,R13	POT 10K ½W 10% 76PR	1309143-10	66
2	R21,R61	POT 25K ½W 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	1508913	70
5	Q37,Q41,Q44,Q50,Q51	TRANS DEC 3715	1503088	71
12	Q1,Q2,Q3,Q26,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,Q46Q47	TRANS DEC 3791	1509581	74
2	Q17,Q22	TRANS DEC 4923	1509804	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	1909485	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	9007781	93
6	C34 THRU C39	CAP .1UF 100V 20% DISC	1000030	94
4		EYELET	9006746	95
4		SCREW, BD HD 4-40X5-16 LG	9006010-4	96
~~A/R~~		~~TURING #22 THIN WALL~~	~~9007256~~	97
~~1~~		~~SOLDER~~	~~1210249~~	98
4	W1 THRU W4	JUMPER,WIRE,WHITE INSULATION	9009185	99

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	TU16 POWER BOARD (DRVR2)	SIZE D	CODE DCS
NUMBER	H606-0-1	REV.	E
SCALE		SHEET 2 OF 6	DIST.

DEC FORM NO. DRD 137

E H6Ø6-Ø-1 CS D


DRVR6 +17V (P2,3)
TP4
R16 27Ω
R1 1.5K
Q1 DEC 6534D
R4 1.5K
Q2 DEC 6534D
R8 47Ω
C13 180UF 6V 20%
R9 10K
D2 D664
D3 D664
D4 D664
R11 5K 3/4W 10% 76PR
REW SPEED
D5 D664
D6 D664
Q3 DEC 6534D
C14 6.8UF 35V 10%
R18 15K
Q5 DEC 6534D
Q6 DEC 2219
D13 D664
R17 1K
Q4 DEC 6551B
R19 1K
TP3
BAL ADJ
+8V
-8V
R21 25K 3/4W 10% 76PR
R2 3.9K
R3 6.8K
R5 3.9K
R6 270Ω 1/2W
TP15
(P5-X) LAWS FOR H
75452 E7
D1 D664
R10 20K
D7 D664
REV SPEED
R12 10K 3/4W 10% 76PR
D11 D664
D12 1N750A
R20 1K
R22 470K
R23 68K
TP19
(P5-V) LAWS REV/REW H
TP16
(P5-RR) LAWS REWIND CAP H
75452 E10
D10 D664
FWD SPEED
R13 10K 3/4W 10% 76PR
R14 6.8K
R7 270Ω 1/2W
D8 1N750A
D9 1N750A
R15 1K
C15 .027UF 10% 100V
7274I E11
SERVO SIGNAL
TP2
DRVR6 PWR COMM (P2-7)
Q7 DEC 6531B
D17 D664
D18 1N750A
R28 1K
R35 2.2K
Q8 DEC 6534D
C17 6.8UF 35V 10%
R26 1K
R29 1K
TP1
-8V
C16 .01
DRVR4 TACH V (P1,7)
R24 1.5K
D19 D664
Q10 DEC 2904
(P5,MM) (P5,NN) (P5,PP) (P5,SS) (P5,UU)
D14 1N750A
D15 D672
DRVR6 -15V
D16 D672
R27 15K
Q9 DEC 6531B
R25 27Ω
DRVR6 -17V (P2,2)

REVISIONS		
CHK	CHANGE NO.	REV

TITLE	SIZE	CODE	NUMBER	REV.
TU16 POWER BOARD (DRVR3)	D	CS	H6Ø6-Ø-1	E
SCALE	SHEET 3 OF		DIST.	

DEC FORM NO DRD 7-14

P1

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)

R86 330 1W

R85 .1Ω 10W 1%

R87 1K

R88 2K

R89 1K 3/4W 10% TC PR

CURRENT ADJ

D36 1N750A 4.7V

Q24 DEC 6531B

Q25 DEC 6531B

D38 D664

C29 .01μF

DRVR6 PWR COM (P2,7)

R95 47 1/2W

R94 270Ω

R96 3.9K

R97 1.5K

R101 100

R105 47

D40 1N4001

Q35 DEC 4502

Q34 2N3791

Q33 DEC 2904

C31 .02μF -Ø +20%

R98 270

Q31 DEC 6531B

R102 12 10W

R107 120 2W

(P1,1) DRVR4 MOTOR

Q32 DEC 6534D

D37 1N 750A 4.7V

CURRENT ADJ

R90 1K 3/4W 10% TC PR

Q26 DEC 6534D

Q27 DEC 6534D

C30 .01μF

D39 D664

R91 1K

R92 2K

R93 330 1W

R99 270

C32 .02μF -Ø +20%

R103 12 10W

Q36 DEC 2219

Q37 DEC 3715

Q38 DEC 802

R100 1.5K

R104 100

R106 47

D41 1N4001

DRVR6 -16V (P2,5)

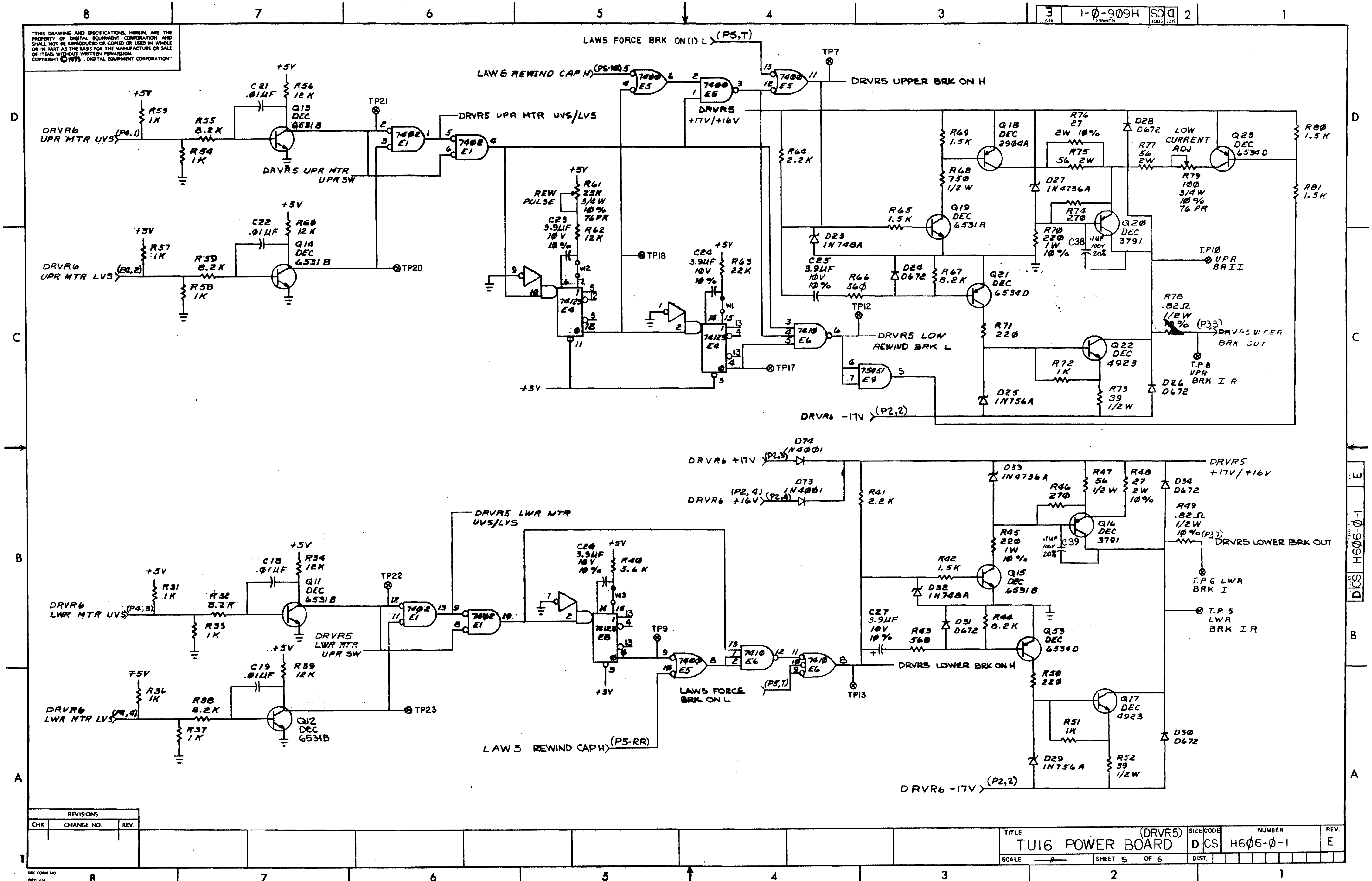
DRVR6 PWR COM INT (P2,6)

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
TU16 POWER BOARD (DRVR4)	D	CS	H9Ø6-Ø-1	E
SCALE —// SHEET 4 OF 6	DIST.			

DEC FORM NO DRD 130

DCS H9Ø6-Ø-1 E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DRVR6 UPR MTR UVS
DRVR6 UPR MTR LVS
DRVR5 UPR MTR UPR SW
DRVR5 UPR MTR UVS/LVS
LAW5 FORCE BRK ON (1) L (P5,T)
LAW5 REWIND CAP H
DRVR5 +17V/+16V
DRVR5 UPPER BRK ON H
REW PULSE
DRVR5 LOW REWIND BRK L
DRVR6 -17V (P2,2)
LOW CURRENT ADJ
DRVR5 UPPER BRK OUT
T.P 8 UPR BRK I R
T.P10 UPR BRK I
DRVR6 +17V
DRVR6 +16V
DRVR5 +17V/+16V
DRVR5 LWR MTR UVS/LVS
DRVR6 LWR MTR UVS
DRVR6 LWR MTR LVS
DRVR5 LWR MTR UPR SW
LAW5 FORCE BRK ON L
LAW5 REWIND CAP H (P5-RR)
DRVR5 LOWER BRK ON H
DRVR5 LOWER BRK OUT
T.P 6 LWR BRK I
T.P 5 LWR BRK I R
DRVR6 -17V (P2,2)
TITLE TU16 POWER BOARD (DRVR5)
SIZE D CODE CS NUMBER H606-0-1 REV. E
SHEET 5 OF 6

DRVR5 +17V/+16V

LAW5 RELAY ENABLE H (P5,VV)
DRVR6 LFS H (P5,TT)
75451 E9
R148 1K
+5V
C28 180UF 8V 10%
R84 39K 10%
74123 E8
75452 E10
R110 1.5K
R111 1.5K
Q29 DEC 6534D
R113 8.2K
TP11
R114 620Ω
C33 68UFD 15V 10%
D56 1N756A 8.2V
R115 10K
D57 D664
DRVR6 REEL MTR PLS
D58 D664
+3V
R83 220
TP14
C26 .01UF
R82 330

P5
DRVR5 UPR MTR UVS/LVS
D59 D664
R121 3.3K
+5V
380 E2
R125 1.5K
Q30 DEC 6531B
D61 D664
R124 68K
-17V
DRVR5 UPR MTR UPR SW
380 E2
R123 1K
R137 1K

DRVR6 +17V INT
R128 56
D62 D672
Q46 2N3791 *
D63 D672
D67 A158
D68 A158
Q47 2N3791 *
R131 56
D69 D672
R132 330
D70 D672
Q49 D456B
C36 .1UF 100V 20%
R127 330
R126 330
C37 .1UF 100V 20%
Q48 D456B
R129 56 10W
DRVR6 (P3,1) UPR MTR
DRVR6 (P3,2) UPR MTR RT
UPR MTR
D64 A158
Q50 3715 *
D66 D672
Q51 3715 *
R133 56 10W 1%
R134 330
Q52 DEC 6531B
D72 D664
R136 68K
R130 56
D65 D672
D71 A158
R135 56

P2
DRVR6 +17V INT
DRVR6 -17V
DRVR6+17V
DRVR6+16V
PWR COMM INT
DRVR6 PWR COMM
LAW5 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

DRVR6 +5V
LAW5 MTR ENABLE (Ø) L
LAW5 FORCE BRK ON(1) L
LAW5 REV/REW H
LAW5 FOR H
DRVR6 -15V
LAW5 REWIND CAP H
DRVR6 LFS H
LAW5 RELAY ENABLE H

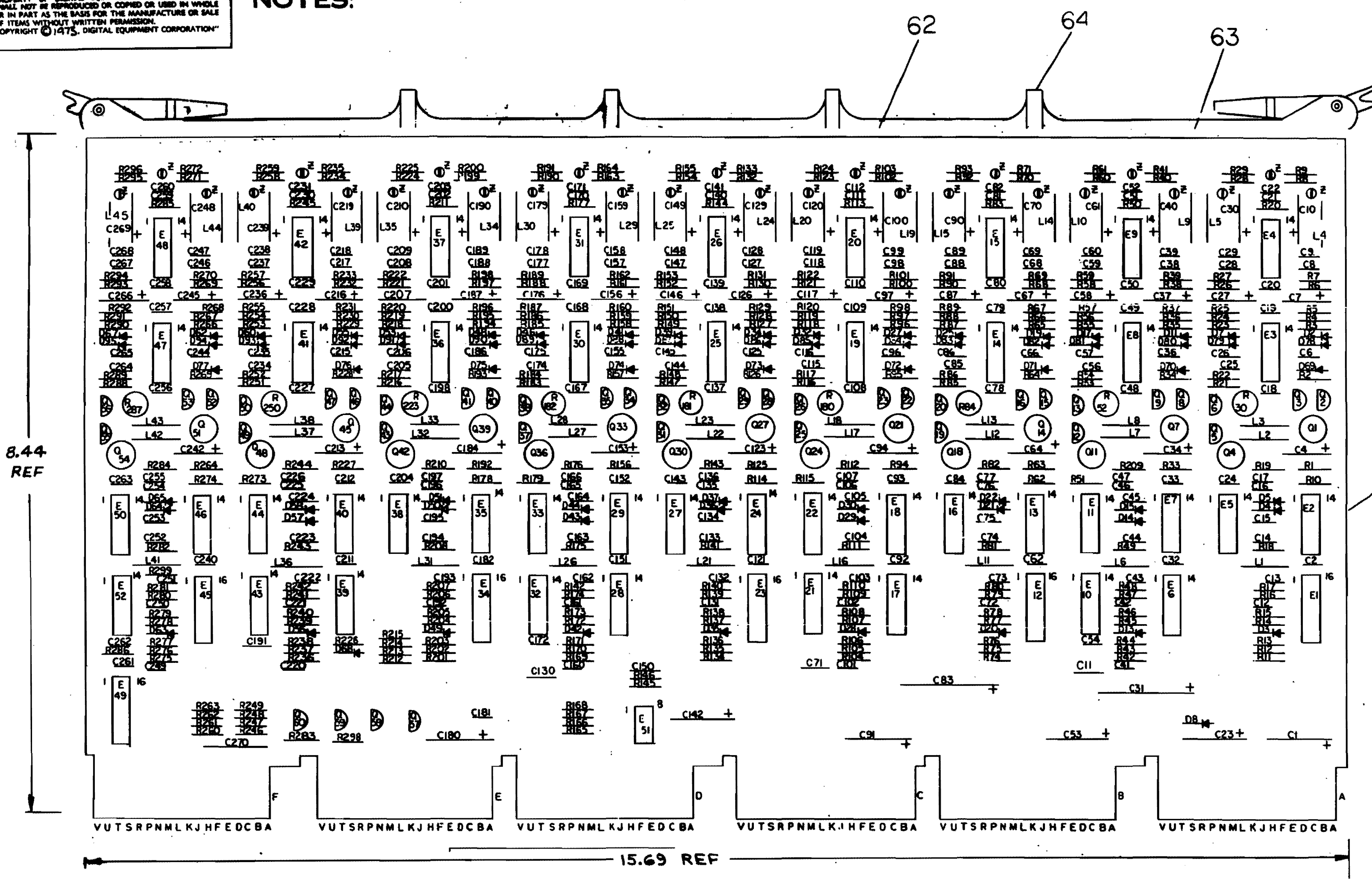
D42 D664
DRVR5 LAW5 LWR MTR UVS/LVS
R108 3.3K
+5V
R109 3.3K
D43 D664
LAW5 REEL MTR ENABLE (Ø) L (P5,R)
DRVR5 LWR MTR UPR SW
380 E3
R118 1.5K
Q28 DEC 6531B
D44 D664
R117 68K
R116 1K
DRVR6 -17V (P2-2)
DRVR6 REEL MTR PLS
R119 330
C35 .1UF 100V 20%
R120 330
D45 D672
Q39 2N3791
D46 D672
Q40 D456B
D48 A158
D49 A158
Q42 2N3791
R141 56
D52 D672
R142 330
D53 D672
Q43 D456B
C34 .1UF 100V 20%
DRVR6 (P3,5) LWR MTR
DRVR6 (P3,6) LWR MTR RT
LWR MTR
R138 56
R139 56 10W 1%
D47 A158
Q41 3715
D50 D672
Q44 3715
R143 56 10W 1%
R147 330
Q45 DEC 6531B
D55 D664
R145 68K
R140 56
D51 D672
D54 A158
R144 56
R146 1K

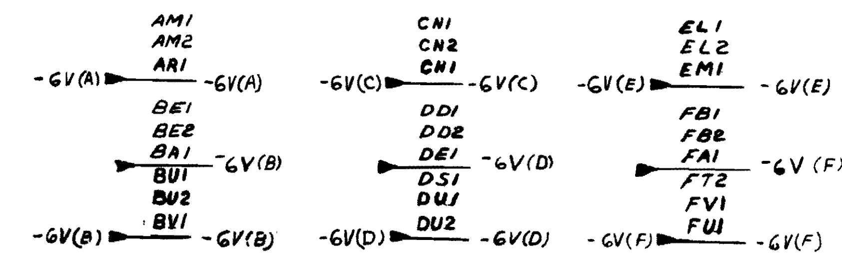
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
TU16 POWER BOARD (DRVR6)	D	CS	H606-0-1	E
SCALE	SHEET 6 OF 6	DIST.		

DEC FORM NO. ORD 138

NOTES:

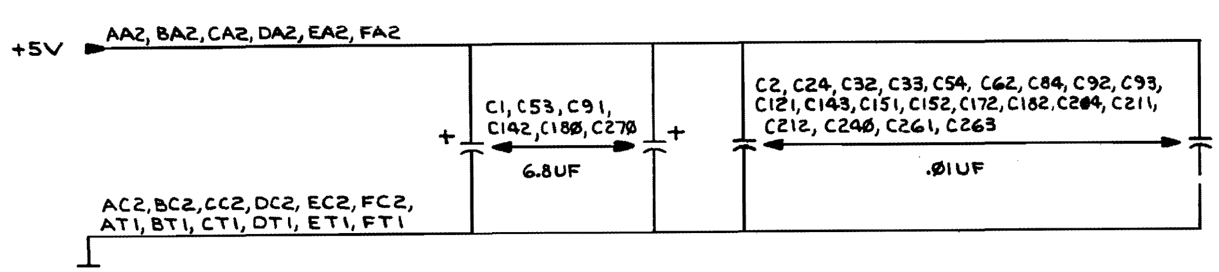




TRACK NUMBER	BINARY REFERENCE
1	RD2
2	RDØ
3	RD4
4	RDP
5	RD5
6	RD6
7	RD7
8	RD1
9	RD3

	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

REV	CHANGE NO.
K	
J	GØ56-ØØØØ6
H	GØ56-ØØØØ3
D	GØ56-ØØØØ2

REVISIONS

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: D

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.

PARTS LIST

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

SEMICONDUCTOR CONVERSION CHART

DRN. | CHKD | ENG | PROJ. ENG. | PROD. | NEXT HIGHER ASSY | SCALE | SHEET 1 OF 7

digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

TITLE: READ AMP (RAI)

SIZE D CODE CS NUMBER GØ56-Ø-1 REV. K

DIST.

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-G056-0-4	1
REF		ASSY-DRILLINGHOLE LAYOUT	D-AH-G056-0-5	2
REF		MODULE ECO HISTORY	B-MH-G056-0-6	3
1		ETCHED CIRCUIT BOARD	5010479	4
9	C20,C50,C89,C110,C139,C169 C201,C228,C256	CAP 680PF,100V,5% DM	1000028	5
6	C1,C53,C81,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
~~6~~	~~C11,C41,C71,C101,C130,C160, C191,C220,C249,~~	~~CAP 1500PF,100V,5%~~	~~1000037~~	~~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	~~C9~~,C25,~~C39~~,C58,~~C65~~,C85,~~C95~~ C115,~~C124~~,C144,~~C154~~,C174, ~~C185~~,C205,~~C214~~,C234,~~C244~~, 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	C8,C8,C9,C18,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,C87 C87,C94,C97C117,C123,C148,C226 C153,C156,C176,C184,C187,C207 C213,C216,C236,C242,C245,C256	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,~~C223~~,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,~~29~~,30,34-37,39 ~~41~~,~~43~~,44,46,~~48~~,49-51,53,55- 58,60,62-65,67,72,78-95	DIODE D664	1100114	21 22
1	D68	DIODE IN747A 3.6V 5%	1110872	23
~~2~~	~~D18,D30~~	~~DIODE IN756A~~	~~1100125~~	~~24~~
10	,R23, ,R55, ,R87, R116, ,R149, ,R185, ,R218, ,R253, R290, R214	RES 910 ¼W 5%	1305374	25
1	R145	RES 100,¼W 5%	1300229	26
~~2~~	~~R84,R28~~	~~RES 100,¼W 5%~~	~~1301088~~	~~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.
28	R8,R28,R40,R80,R70,R92,R102 R123,R132,R154,R163,R190, R189,R224,R234,R258,R271,R12,R170,R276, R295,R215,R43,R75,R105,R135,R202,R237	RES 220 1/4W 5%	1300271	30
19	R9,~~R18~~,R29,R41,~~R49~~,R61,R71 ~~R75~~,R93,R103,~~R106~~,R124,R133 ~~R139~~,R155,R164,~~R170~~,R191, R200,~~R205~~,R225,R235,~~R237~~, R259,R272,~~R276~~,R298,	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		
72	R1,R6,R7,R15,R17,R26,R27,R33 R38,R39,R46,R48,R58,R59,R64 R69,R78,R80,R90,R91,R96,R100 R101,R108,R110,R121,R122,R125 R130,R131,R138,R140,R142,R152 R153,R156,R161,R162,R173,R186 R189,R192,R197,R198,R205,R207 R221,R222,R227,R232,R238,R240 R242,R244,R247,R248,R249,R256 R257,R260,R261,R262,R265 R266,R268,R270,R278,R281, R285,R284,R295	RES 1K ¼W 5%	1300385	33
1	R263	RES 820, 1/4, 5%	1301775	34
18	R18,R19,R49,R81,R82,R111, R112,R284,R141,R143,R175, R178,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 R205,R238,R277	RES 82,¼W 5%	1301477	41
~~1~~	~~,R214~~	~~RES 340 OHM ¼W 5%~~	~~1305394~~	~~42~~
9	,R25, ,R57, .R69, 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%	1300498	44
9	R30,R52,R84,R180,R181,R223 R250,R287,R182	POT 2K ½W 10%	1309150-07	45
1	R213	RES 1.8K ¼ 5%	1300398	46
~~1~~	~~R214~~	~~RES 340 OHM ¼ 5%~~	~~1301888~~	~~47~~
4	Q57,Q58,Q59,Q60	TRANSISTOR 6534D	1503409	48
~~2~~	~~Q18,Q21~~	~~TRANSISTOR 2N918~~	~~1501881~~	~~49~~
18	Q1,Q4,Q7,Q11,Q14,Q18,Q21, Q24,Q27,Q30,Q33,Q38,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,L8,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. 74155	1910856	54
1	E51	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
4	E6,E17,E28,E39	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	7009820-0-0	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,R83,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%	1303045	75
1	R212	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

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
READ AMP (RA2)	D	CS	G056-0-1	K
SCALE — SHEET 2 OF 7	DIST.			

+12V AV1 — C31 22UF — G
+12V BS1 — C83 22UF — G
AK1
AA2
AM2
+6V (+5V)
-6V(A) *
REFER TO NOTE ON SHEET 2
R28 22Ø
R29 47Ø
R8 22Ø
R9 47Ø
C22 .005UF
C21 330PF
R20 68Ø
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 E4
72733 E3
L3 1000UH
L4 1000UH
L2 1000UH
L5 1000UH
C8 .47UF
C6 .47UF
C9 .47UF
C28 .47UF
C26 .47UF
C29 .47UF
AL1 — TP1
R10 4.7K
R1 1K
TP (-TH) DH1
TP (+TH) ED1
C4 3.9UF 10V
C16 .47UF
C17 .47UF
C18 1000PF
R5 9.16K
R4 14.7K
C7 3.9UF 10V
R3 909
Q3 2N4250
Q1 6531B
D2 D664
D78 D664
D69 IN942 11.7V
R2 4.0K
Q2 2N4250
R25 3.3K
R24 15K
C27 3.9UF 10V
R23 910
Q6 2N4250
Q4 6531B
D7 D664
D79 D664
R15 1K
TP1
Q5 2N4250
R22 3.9K
+12V FV2
C262 .47UF
-5.5V
75107 E2
+5V
R298 68Ø
D5 D664
D4 D664
AJ1 — TP2
SC3 PES L FU2
7476 E1
SC3 CLR READ BOARD L CM1
SC2 ACCL MOL L CJ1
7486 E21
7404 E17
AB1 — RA3 RD2 (Ø)H (TRK 1)
-6V(A) * R18 12Ø
R17 1K
R16 150K
C14 .22UF
C13 470PF
L1 1.8UH
710 E5
R14 150K
7404 E6
+5V R1 68Ø
D3 D664
R12 220
R13 82
C11 1500 PF
7486 E10
R19 12Ø
C15 .22UF
C12 470PF

D8 D777 — -5.5V
C23 10UF
STB8 STBA
74-156 DB E49
FB3 FB2 FB1 FB0
FA3 FA2 FA1 FA0
SØ S1
+5V R286 68Ø
WRE H FS1
PES L FU2
+3.6V
R283 82Ø
7486 E43
EK1 — PACKET H
C150 .01UF
R146 196 1%
R168 196 1%
TP(+TH) ED1
72741 E51
R145 100 — DH1 — TP (-TH)
R166 196 1%
R167 5K
R165 1K
-6V(D) *
R246 1K
R260 1K
R249 1K
R263 1K
R247 1K
R261 1K
R248 1K
R262 1K
R226 4.7
Q58 6534D
Q57 6534D
Q60 6534D
Q59 6534D
D68 IN747A 3.6V
+3.6V
R213 1.8K
R212 511
R215 220
C181 .47UF
E43 7486
K

* SEE SHEET 1 FOR EXTERNAL PIN DESIGNATIONS.

Ⓖ Ⓚ Ⓛ Ⓢ INDICATE INTERNAL CONNECTIONS

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
READ AMP (RA3)	D	CS	G056-0-1	K
SCALE —	SHEET 3 OF 7	DIST.		

* 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
C50 680PF
C40 2.2UF
R38 1K
R39 1K
C49 120PF
R53 330
R52 2K 10% 1/2W
72733 E9
72733 E8
BA2
+6V (+5V)
L8 1000UH
L9 1000UH
C38 .47UF
C36 .47UF
C39 .47UF
-6V(B) *
BE2
BU1
BU2
L7 1000UH
L10 1000UH
C59 .47UF
C57 .47UF
C60 .47UF
BB1
TP1
R51 4.7K
R33 1K
TP(-TH) DH1
TP(+TH) ED1
C34 3.9UF 10V
C46 .47UF
C47 .47UF
C48 1000PF
R37 3.16K
R36 14.7K
C37 3.9UF 10V
R35 909
Q9 2N4250
Q7 6531B
D11 D664
D80 D664
D70 IN942 11.7V
R34 4.0K
Q8 2N4250
R57 3.3K
R56 15K
C58 3.9UF 10V
R55 910
Q13 2N4250
Q11 6531B
D17 D664
D81 D664
Q12 2N4250
R54 3.9K
-5.5V
75107 E11
D15 D664
D14 D664
AH1
TP2
SC3 PES L
FU2
7476 E1
AF1
RA4 RD0 (0)H (TRK 2)
-6V(B) *
R49 120
R48 1K
R47 150K
C44 .22UF
C43 470PF
L6 1000UH
C42 470PF
R46 1K
TP2
R45 3.9K
710 E7
7404 E6
+5V
R42 680
D13 D664
R43 220
7486 E10
R44 82
C41 1500PF
R209 120
C45 .22UF
+12V
FV2

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
C80 680PF
C70 2.2UF
R68 1K
R69 1K
C79 120PF
R85 330
R84 2K 10% 1/2W
72733 E15
72733 E14
BA2
+6V (+5V)
L13 1000UH
L14 1000UH
C68 .47UF
C66 .47UF
C69 .47UF
-6V(B) *
L12 1000UH
L15 1000UH
C88 .47UF
C86 .47UF
C89 .47UF
BM1
TP1
R62 4.7K
R63 1K
TP(-TH) DH1
TP(+TH) ED1
C64 3.9UF 10V
C76 .47UF
C77 .47UF
C78 1000PF
R67 3.16K
R66 14.7K
C67 3.9UF 10V
R65 909
Q16 2N4250
Q14 6531B
D19 D664
D82 D664
D71 IN942 11.7V
R64 4.0K
Q15 2N4250
R89 3.3K
R88 15K
C87 3.9UF 10V
R87 910
Q20 2N4250
Q18 6531B
D25 D664
D83 D664
Q19 2N4250
R86 3.9K
-5.5V
75107 E12
D22 D664
D21 D664
BN1
TP2
SC3 PES L
FU2
7476 E12
BF1
RA4 RD4 (0)H (TRK 3)
-6V(B) *
R81 120
R80 1K
R79 150K
C74 .22UF
C73 470PF
L11 1000UH
C72 470PF
R78 1K
TP3
R77 150K
710 E16
7404 E17
+5V
R74 680
D20 D664
R75 220
7486 E21
R76 82
C71 1500PF
R82 120
C75 .22UF
+12V
FV2

REVISIONS		
CHK	CHANGE NO.	REV.

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

G056-0-1 K DCS

*SEE SHEET 1 FOR EXTERNAL PIN DESIGNATIONS.

Ⓖ Ⓚ Ⓛ Ⓢ INDICATE INTERNAL CONNECTION

CF1 · R123 220Ω · C112 .005UF · R124 47Ω · C111 330PF · R102 220Ω · R103 47Ω · REFER TO NOTE ON SHEET 2 · R113 68Ω · C120 2.2UF · R121 1K · R116 33Ω · R180 2K 10% 1/2W · C110 680PF · R122 1K · 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 · R115 4.7K · TP1 · R94 1K · TP(-TH) DH1 · TP(+TH) ED1 · C94 3.9UF 10V · C106 .47UF · C107 .47UF · C108 1000PF

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

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

-5.5V · 75107 E22 · S · D30 D664 · BL1 · TP2 · D29 D664 · SC3 PES L · FU2 · J 1 7476 E12 · K · L · BK1 · RAS RDP (Ø)H (TRK 4)

-6V(C) * · R111 120Ω · R110 1K · R109 150K · C104 .22UF · C103 470PF · L16 1000UH · 710 E18 · R107 150K · 7404 E17 · +5V · R104 680Ω · D28 D664 · R105 221Ω · 7486 E21 · R106 82 · C101 1500PF · R112 120Ω · C105 .22UF

CB1 · R154 220Ω · C141 .005UF · R155 47Ω · C140 330PF · R132 220Ω · R133 47Ω · REFER TO NOTE ON SHEET 2 · R144 68Ω · C149 2.2UF · R152 1K · R147 33Ω · R181 2K 10% 1/2W · C139 680PF · R153 1K · 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 · R114 4.7K · TP1 · R125 1K · TP(-TH) DH1 · TP(+TH) ED1 · C123 3.9UF 10V · C135 .47UF · C136 .47UF · C137 1000PF

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

R151 3.3K · C146 3.9UF 10V · R149 910 · Q32 2N4250 · R150 15K · C 82PF · D39 D664 · D87 D664 · R148 3.9K · Q30 6531B · R138 1K · TP5 · C131 470PF · FV2 · +12V

-5.5V · 75107 E24 · S · D37 D664 · CU1 · TP2 · D36 D664 · SC3 PES L · FU2 · J 1 7476 E23 · K · L · CP1 · RA5 RDS (Ø)H (TRK 5)

-6V(D) * · R141 120Ω · R140 1K · R139 150K · C133 .22UF · C132 470PF · L21 1000UH · 710 E27 · R137 150K · 7404 E28 · +5V · R134 68Ω · D35 D664 · R135 221Ω · 7486 E32 · R136 82 · C130 1500PF · R143 120Ω · C134 .22UF

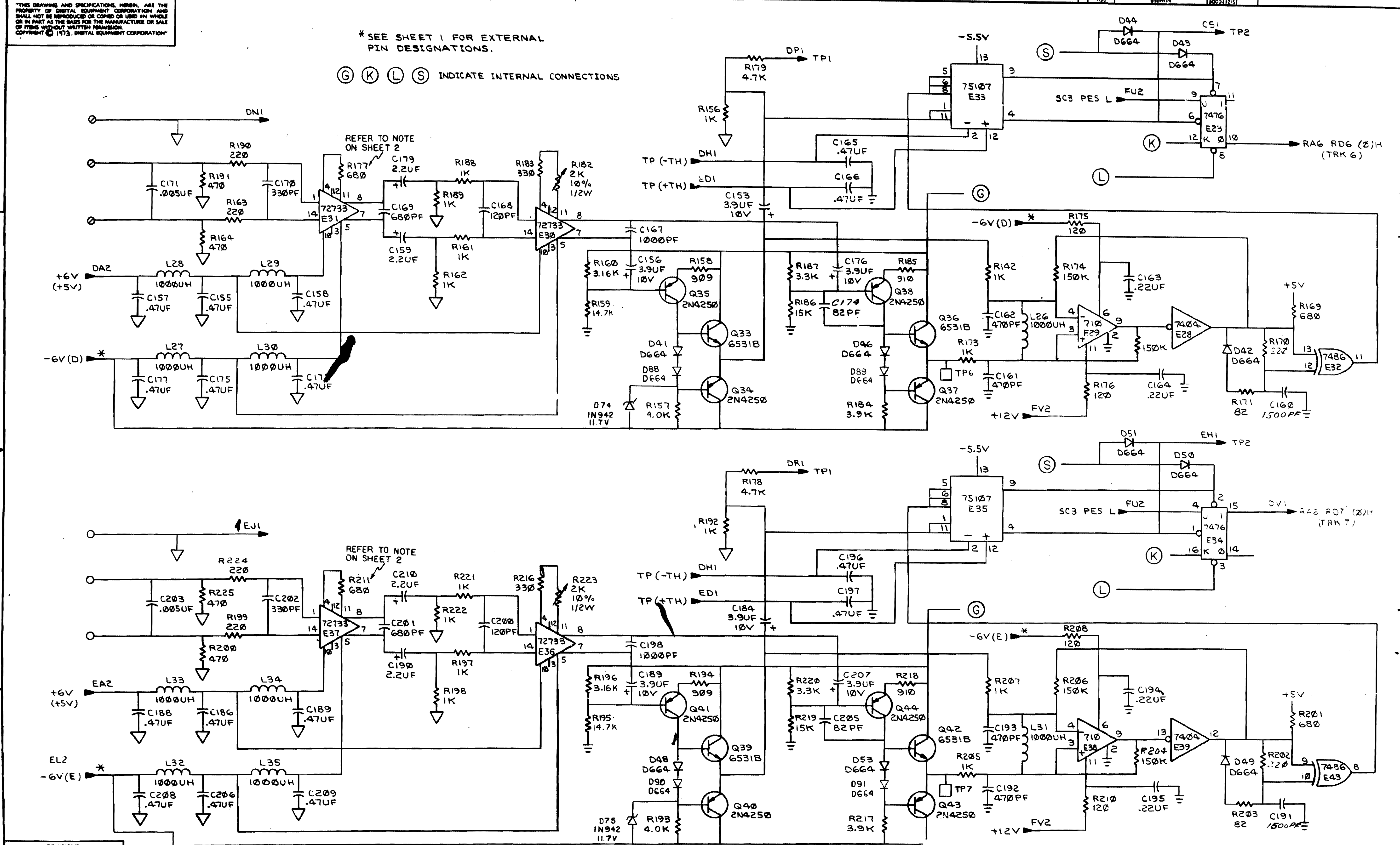
REVISIONS

CHK	CHANGE NO.	REV.

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

* SEE SHEET 1 FOR EXTERNAL PIN DESIGNATIONS.

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


DN1
R190 220
R191 470
C171 .005UF
C170 330PF
R163 220
R164 470
REFER TO NOTE ON SHEET 2
R177 680
72733 E31
C179 2.2UF
C169 680PF
C159 2.2UF
R188 1K
R189 1K
R161 1K
R162 1K
C168 120PF
R183 330
R182 2K 10% 1/2W
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
DP1
TP1
R179 4.7K
R156 1K
TP (-TH)
TP (+TH)
DH1
ED1
C165 .47UF
C166 .47UF
C153 3.9UF 10V
C167 1000PF
R160 3.16K
C156 3.9UF 10V
R158 909
Q35 2N4250
R159 14.7K
Q33 6531B
D41 D664
D88 D664
Q34 2N4250
D74 1N942 11.7V
R157 4.0K
R187 3.3K
C176 3.9UF 10V
R185 910
Q38 2N4250
R186 15K
C174 82PF
D46 D664
D89 D664
R184 3.9K
Q36 6531B
Q37 2N4250
-5.5V
75107 E33
CS1
TP2
D44 D664
D43 D664
SC3 PES L
FU2
7476 E23
RA6 RD6 (0)H (TRK 6)
-6V(D)
R175 120
R142 1K
R174 150K
C163 .22UF
C162 470PF
L26 1000UH
710 E29
7404 E28
+5V
R169 680
R173 1K
TP6
C161 470PF
150K
D42 D664
R170 220
7486 E32
R176 120
C164 .22UF
R171 82
C160 1500PF
+12V
FV2
EJ1
R224 220
R225 470
C203 .005UF
C202 330PF
R199 220
R200 470
R211 680
72733 E37
C210 2.2UF
C201 680PF
C190 2.2UF
R221 1K
R222 1K
R197 1K
R198 1K
C200 120PF
R216 330
R223 2K 10% 1/2W
72733 E36
EA2
L33 1000UH
L34 1000UH
C188 .47UF
C186 .47UF
C189 .47UF
EL2
-6V(E)
L32 1000UH
L35 1000UH
C208 .47UF
C206 .47UF
C209 .47UF
DR1
R178 4.7K
R192 1K
C196 .47UF
C197 .47UF
C184 3.9UF 10V
C198 1000PF
R196 3.16K
C189 3.9UF 10V
R194 909
Q41 2N4250
R195 14.7K
Q39 6531B
D48 D664
D90 D664
Q40 2N4250
D75 1N942 11.7V
R193 4.0K
R220 3.3K
C207 3.9UF 10V
R218 910
Q44 2N4250
R219 15K
C205 82PF
D53 D664
D91 D664
R217 3.9K
Q42 6531B
Q43 2N4250
75107 E35
EH1
D51 D664
D50 D664
7476 E34
DV1
(TRK 7)
R208 120
R207 1K
R206 150K
C194 .22UF
C193 470PF
L31 1000UH
710 E38
R204 150K
7404 E39
R201 680
D49 D664
R202 220
7486 E43
R205 1K
TP7
C192 470PF
R210 120
C195 .22UF
R203 82
C191 1500PF

REVISIONS		
CHK	CHANGE NO.	REV

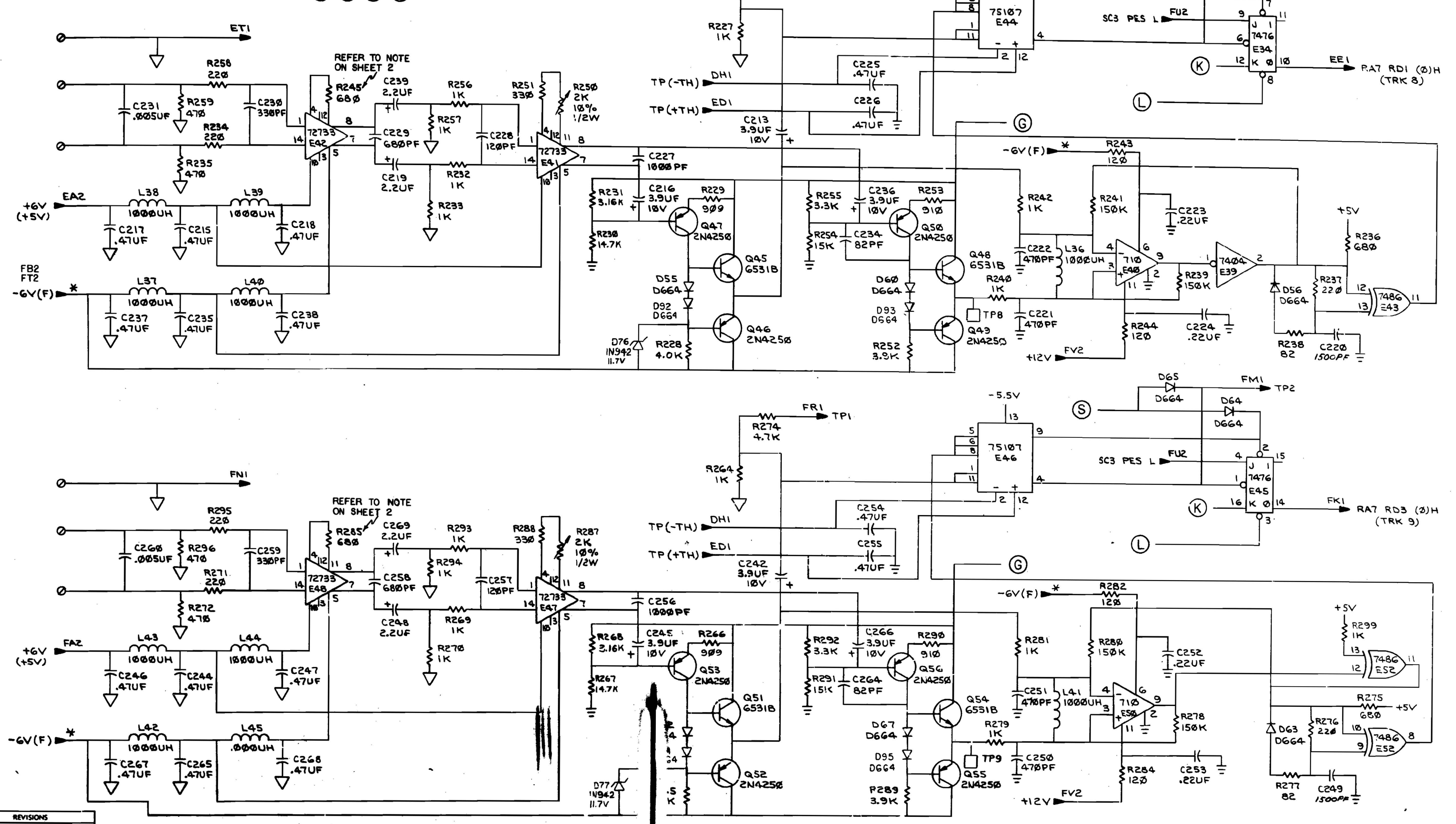
TITLE: READ AMP (RA6)

SIZE	CODE	NUMBER	REV.
D	CS	G056-0-1	K

SCALE — SHEET 6 OF 7 DIST.

* SEE SHEET 1 FOR EXTERNAL PIN DESIGNATIONS.

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



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV
READ AMP (RA7)	D	CS	G056-0-1	K
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 125V/60 CYCLE OPERATION. USE LITTEL FUSE P/N 3136.25. F2 = 4 AMP SB FOR 250V/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.

QTY	REF DESIGNATION	DESCRIPTION	PART NO	ITEM NO
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

QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
1	R15	RES. 12K, 1/4W, 5%	1300458	51
4	R16, R37, R26, R44	RES 1K POT	1309150-03	52
2	R17, R23	RES 5,6K ¼W 5%	1301874	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	1305872	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%~~	~~1303478~~	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	9008556	71
~~1~~		~~LUG, SPLIT~~	~~9006735~~	~~72~~
~~2~~	~~Q1, Q9~~	~~TRANSISTOR SAC 58~~	~~1510533~~	73
~~3~~	~~Q2, Q3, Q4~~	~~TRANSISTOR DEC 6531B~~	~~1509898~~	74
3		SCREW, PAN HD #6-32 X 1/4	9006020-1	75
4	Q5, Q7, Q8, Q10	TRANSISTOR 2N3055	1505815	76
1	Q6	TRANSISTOR 2N4234	1504809	77
2	Q11, Q12	TRANSISTOR 2N2904A	1501913	78
3	D15, D22, D28	SCR 2N4441	1505887	79
~~1~~	~~T1~~	~~TRANSFORMER~~	~~1610076~~	80
1	E1	IC LM300	1303371	81
2	E2, E3	IC DEC 723	1310415	82
1	E4	IC LM304	1911555	83
1	E5	IC DEC 75451	1310406	84
4	W1-W4	JUMPER INSULATED (.4)	9003185	85
~~1~~	~~F2~~	~~FUSE 4ASB~~	~~9007220~~	~~86~~
~~1~~	~~F3~~	~~FUSE 7A SLO BLO~~	~~9007224~~	87
1	F4	FUSE 10ASB	9007225	88
1	F5	FUSE 3.0ASB	9007219	89
2	F6, F7	FUSE 15A	9007226	90
2	F8, F9	FUSE .6A	9007299	91
2	F11, F10	FUSE 3/4A	9007210	92
5	1-4, 6	TAB FASTON	9008219	93
1	5	TAB FASTON	9007113	94
~~1~~	~~R60~~	~~RES 560 ¼W 5%~~	~~1301890~~	95
1	R57	RES 5K POT	1309150-4	96
~~1~~	~~R59~~	~~RES 1K ¼W 5%~~	~~1300365~~	97
~~1~~	~~R34~~	~~RES 4 5W 5% WW~~	~~1300224~~	98
6		WASHER NYLON	9008707	99
~~2~~		~~SCREW, PAN HD #4-40 X 7/16~~	~~9006012-1~~	100
~~1~~		~~HEAT SINK~~	~~D-IA-7411522-0-0~~	101
1	F12	FUSE 5A (AXIAL LEAD)	9005747	102
1	D20	DIODE 1N755A ZENER 6.2V 5%	1103441	103
1	F1	FUSE 5ASB, BUSS MDX5	9009791	104

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	9007814	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	1210684	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	,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~~	~~D9,~~	~~DIODE 1N967A ZENER 18V 10%~~	~~1110068~~	32
5	D8, D14, D17, D21, D25	DIODE D670-1	1102162	33
~~1~~	~~D28~~	~~DIODE 1N746A ZENER 3.3V 5%~~	~~1104860~~	34
3	D9, D11, D12	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

PARTS LIST

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: H

IC TYPE	GND	+ 5V
75451	4	8

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

IC PIN LOCATIONS

REV	CHANGE NO.	NAME	DATE
P	5410451-00010	W. SMITH	4-28-76
N	5410451-00009	H. DRAB	17-FEB-76
M	5410451-	J. HESS	10-2
L	5410451-00007	A. KORELITZ	
K	5410451-00006	A. KORELITZ	2-28-75
J	5410451-00005	A. KORELITZ	2-13-75
H	5410451-00004	A. KORELITZ	2/10/75
F	5410451-0003	A. KORELITZ	
E	5410451-00002		
D			

SEMICONDUCTOR CONVERSION CHART

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

DRN. DATE 11/9/73 · CHK'D DATE 1/14/74 · ENG. · PROD. · NEXT HIGHER ASSY

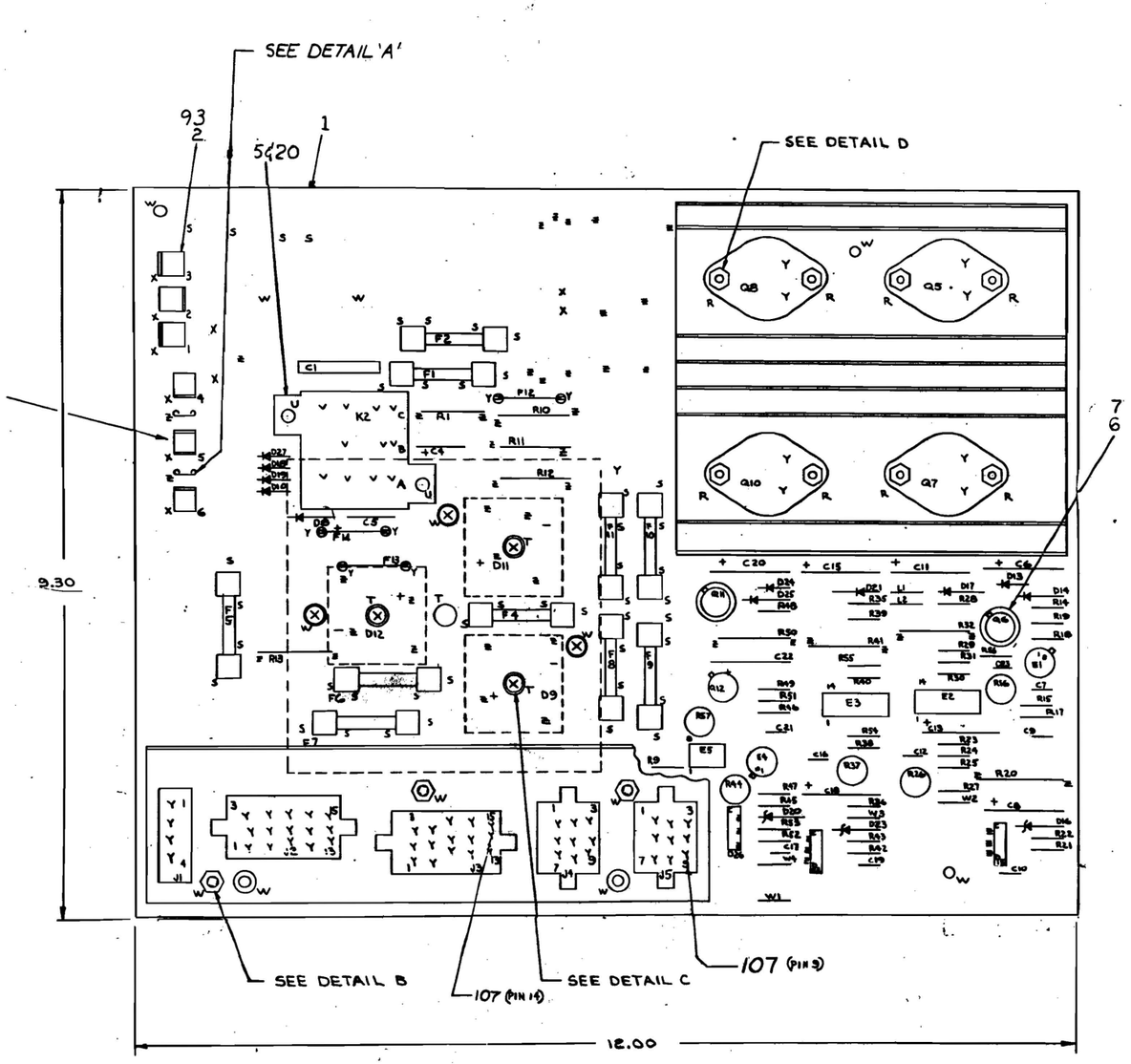
digital EQUIPMENT CORPORATION MAYNARD, MASSACHUSETTS

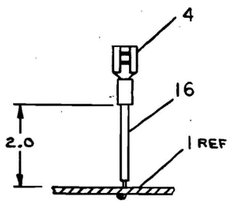
TITLE: TU16 POWER SUPPLY

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

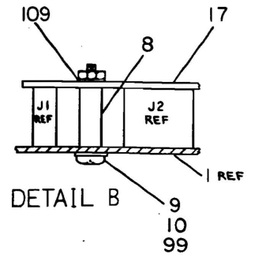
SCALE · SHEET 1 OF 4 · DIST.

36 10267

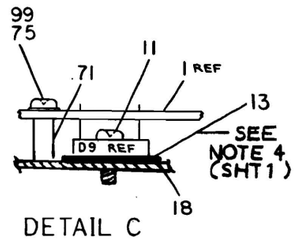




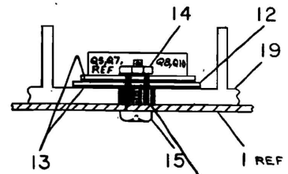
DETAIL A



DETAIL B

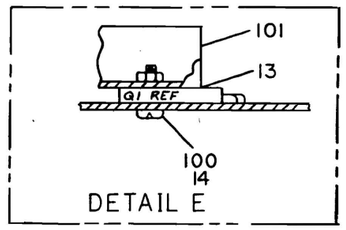


DETAIL C



DETAIL D

SEE NOTE 3 (SHT 1)
114



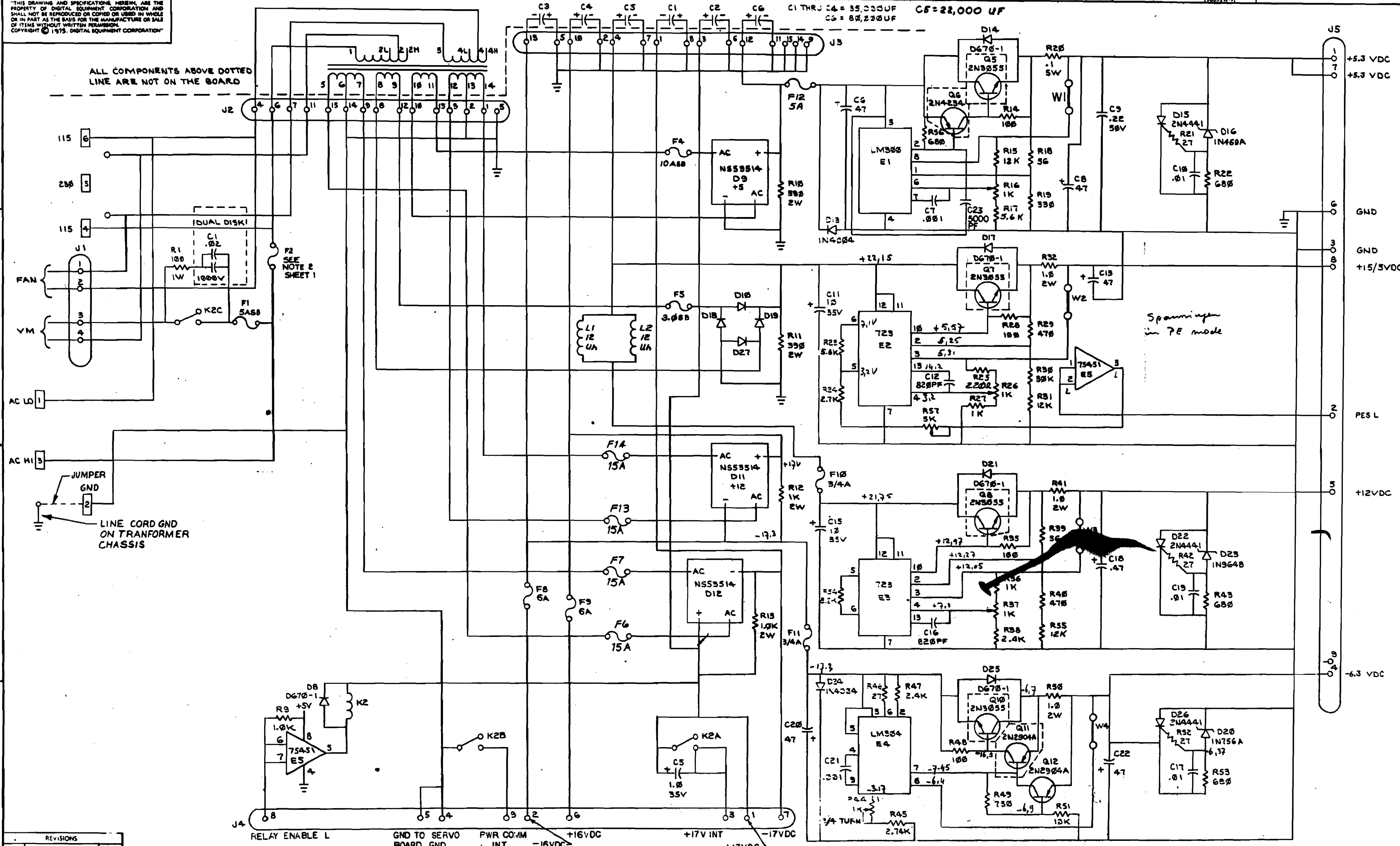
DETAIL E

DO NOT USE

REVISIONS		
CHK	CHANGE NO.	REV.

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

DEC FORM NO. BRD 130



REVISIONS		
CHK	CHANGE NO.	REV.

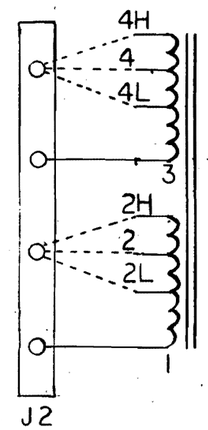
TITLE: TU16 POWER SUPPLY

SIZE	CODE	NUMBER	REV.
C	CS	5410451-0-1	P

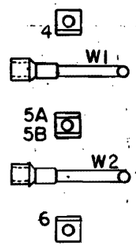
SCALE: — SHEET 3 OF 4

DEC FORM NO. DRD 130

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		
REV.	CHANGE NO.	CHK

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 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 ✓

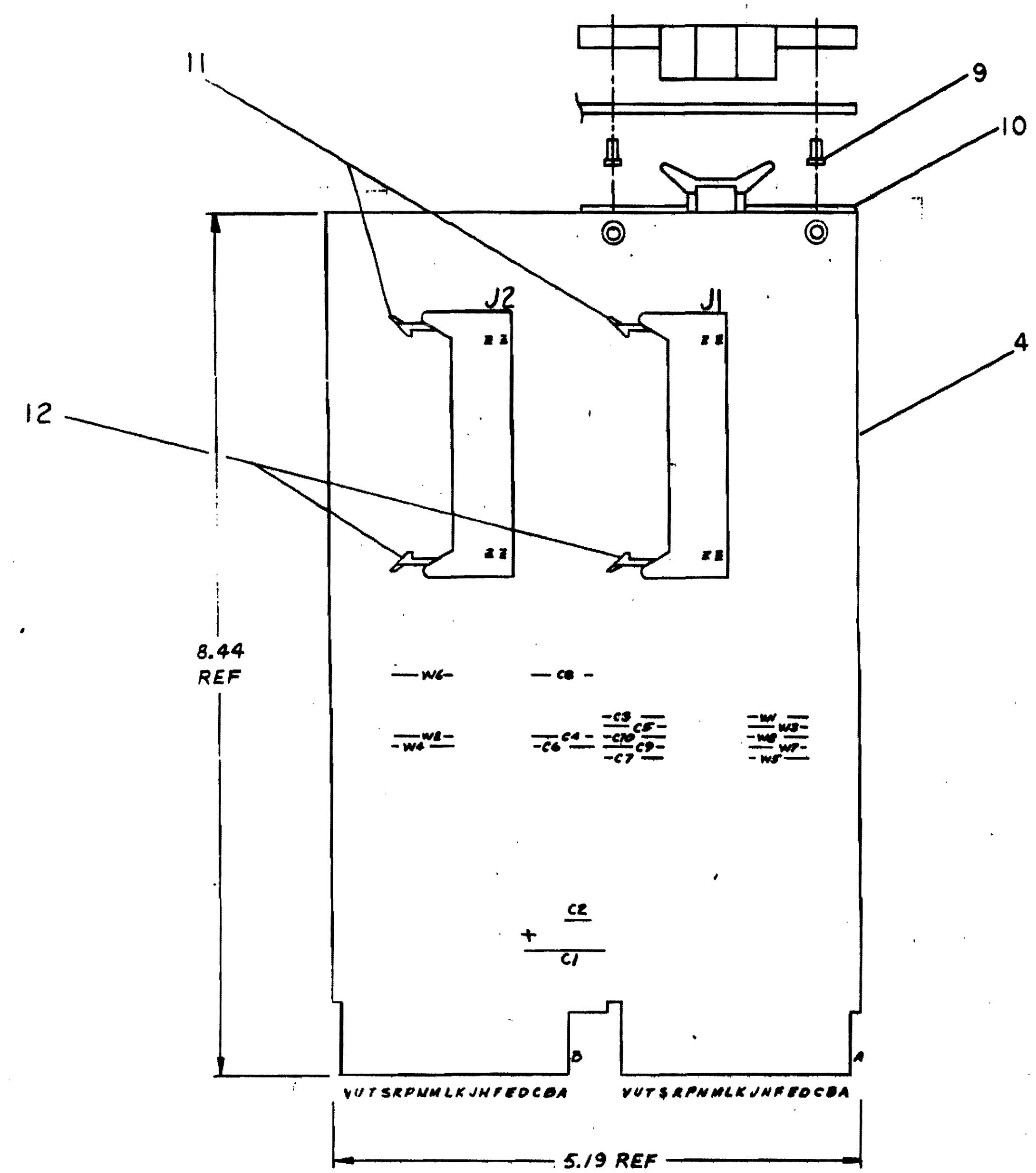
MATERIAL

FINISH

DRN. H.DANALJIAN	DATE 11-9-73	digital
CHK'D. F. CARBERRY	DATE 1-14-74	
ENG. A. KORELITZ	DATE 1-14-74	
PROJ. ENG. A. KORELITZ	DATE 1-14-74	TITLE: TU16 POWER SUPPLY
PROD. R.GOGUEN	DATE 1-14-75	
NEXT HIGHER ASSY.		SIZE C · CODE CS · NUMBER 5410451-01 · REV. P
SCALE		
SHEET 4 OF 4		DIST.

REV. P · NUMBER 5410451-01 · CODE CS · SIZE C

NOTES:



PARTS LIST

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-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	9006752	9
2		HANDLE, FLIP-CHIP, MAGENTA	9008337-6	10
2		CONNECTOR LATCH, LEFT	1209941-3	11
2		CONNECTOR LATCH, RIGHT	1209941-4	12

IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: C

REVISIONS

REV	CHANGE NO.	CHK		
C	M9001-YA-00001		H.DRAB	27FEB-76

SEMICONDUCTOR CONVERSION CHART

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

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

NEXT HIGHER ASSY

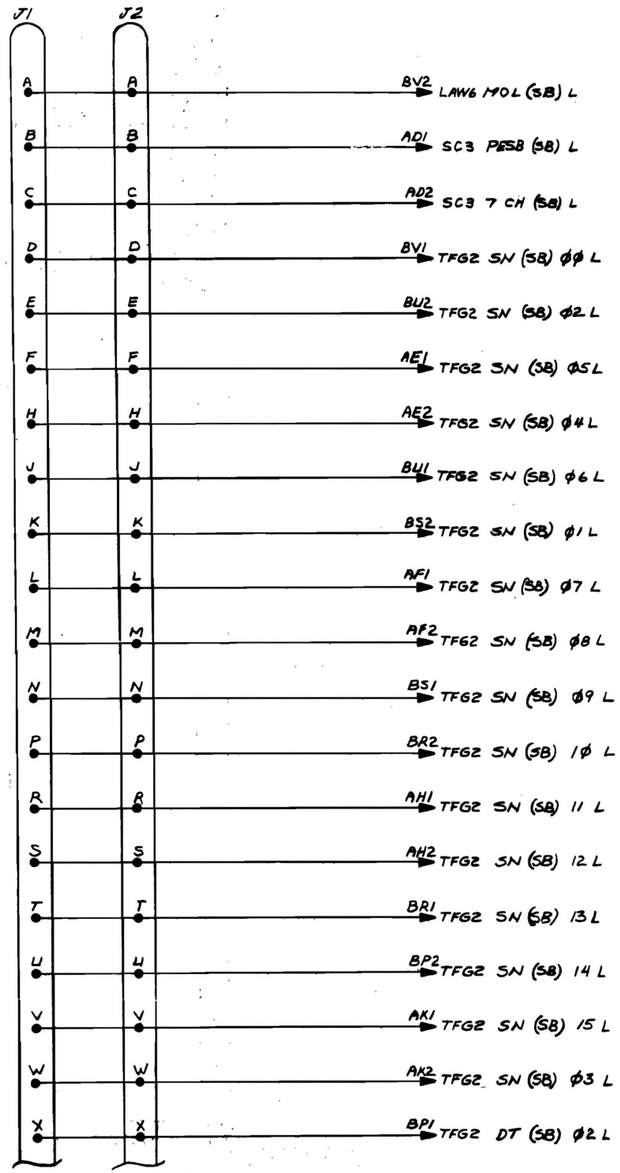
SCALE —
SHEET 1 OF 2

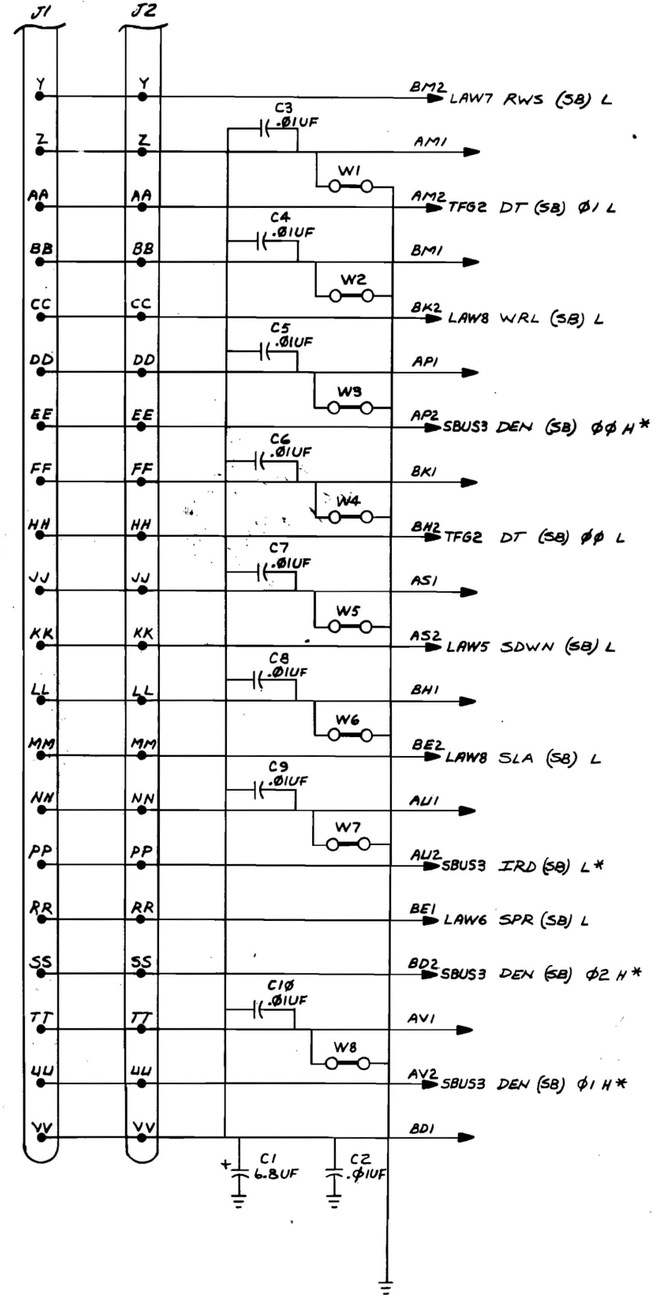
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: GEN PURPOSE CARD (E & F)

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

DIST.



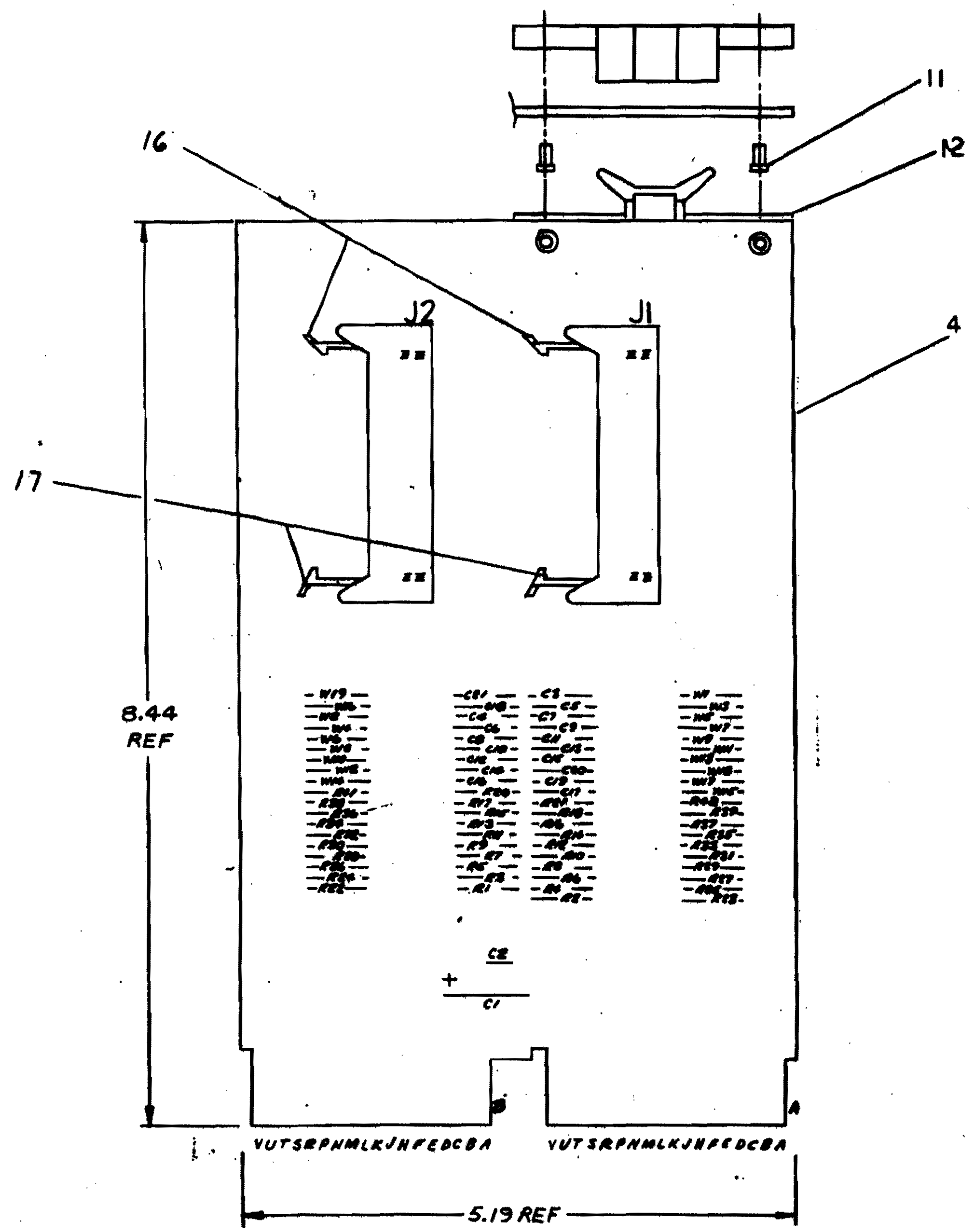


NOTE: ALL SIGNALS DESIGNATED "SBUS" ORIGINATE IN TM02.

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:	

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-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. 120 1/4W 5%	1300247	7
11	R28-R32, R36-R38, R41, R42	RES. 220 1/4W 5%	1300271	8
19	W1 THRU W19	JUMPER, INSULATED WIRE	9009185	9
2	J1, J2	CONN, 40 PIN	1209941-2	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	1209941-3	16
2		CONNECTOR LATCH, RIGHT	1209941-4	17

PARTS LIST

ETCH BOARD REV C

FIRST USED ON OPTION MODEL: TU16

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.			
C	M9001-YB-0001	J. Chartier 2-16-76	H. DRAB	16-FEB-76

REVISIONS

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

NEXT HIGHER ASSY

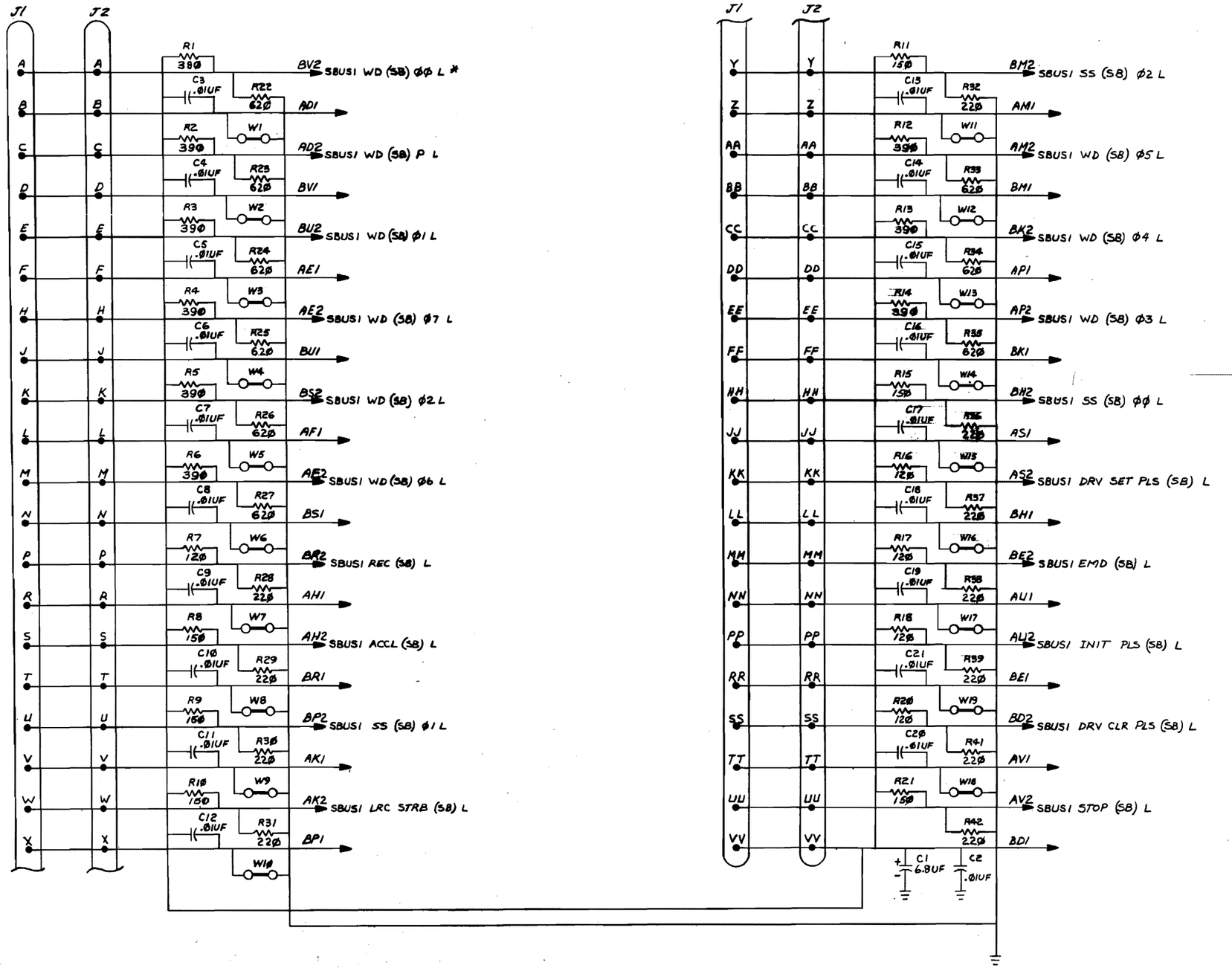
SCALE —
SHEET 1 OF 2

digital EQUIPMENT CORPORATION
MAYNARD MASSACHUSETTS

TITLE
GEN PURPOSE CARD
(A & B)

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

DIST.



*NOTE: ALL SIGNALS ORIGINATE IN TMØ2

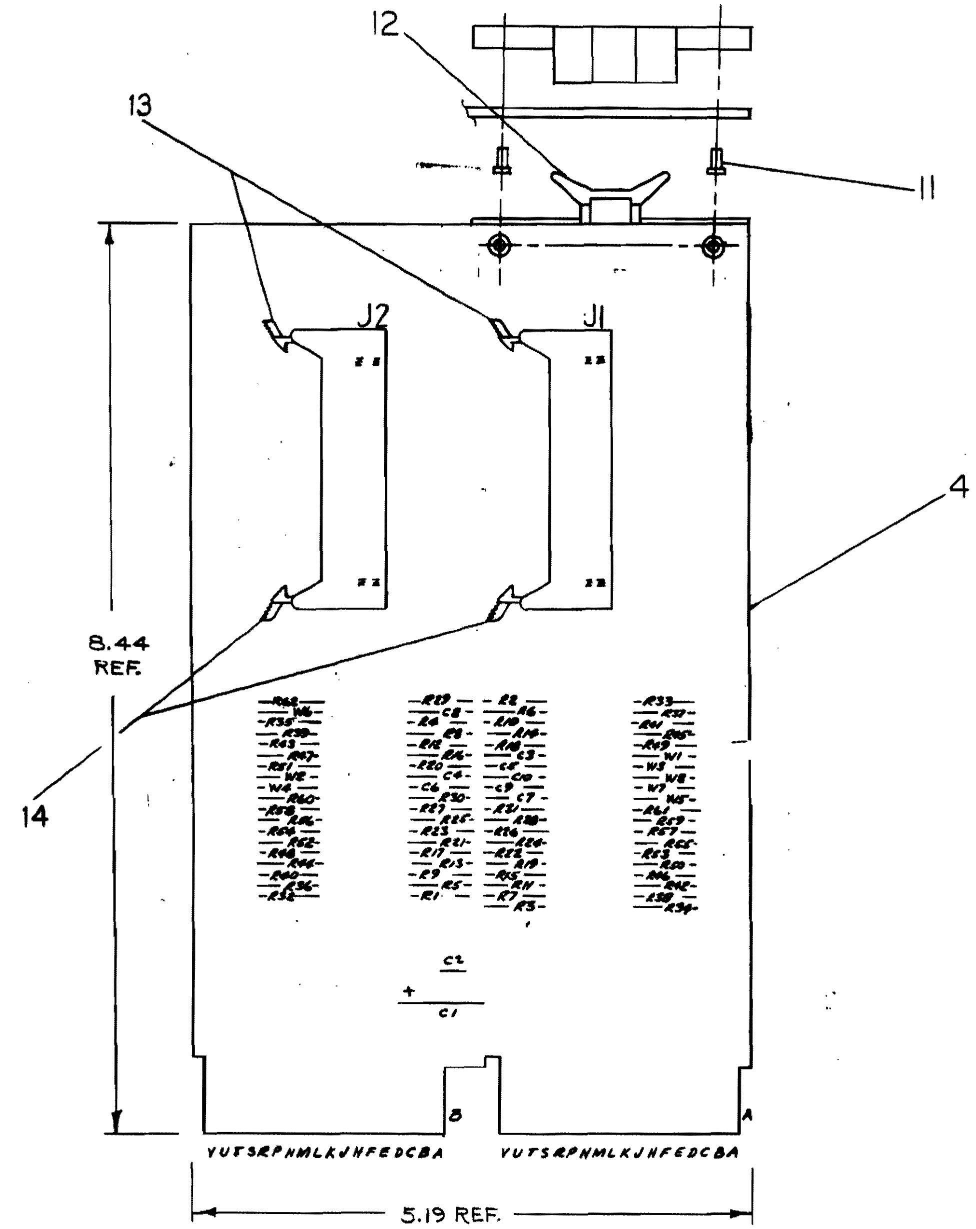
REVISIONS		
CHK	CHANGE NO.	REV.

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

M9001-YB-1 C

D CS M9001-YC-1 C

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 1/4W 5% CC	1300250	7
31	R32 THRU R62	RESISTOR 220 Ω 1/4W 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

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: C

CHK	CHANGE NO.	REV
H. DRAB 2/4 FEB 76	M9001-YC-00001 13-FEB-76	C

REVISIONS

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

SEMICONDUCTOR CONVERSION CHART

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

NEXT HIGHER ASSY

SCALE —
SHEET 1 OF 2

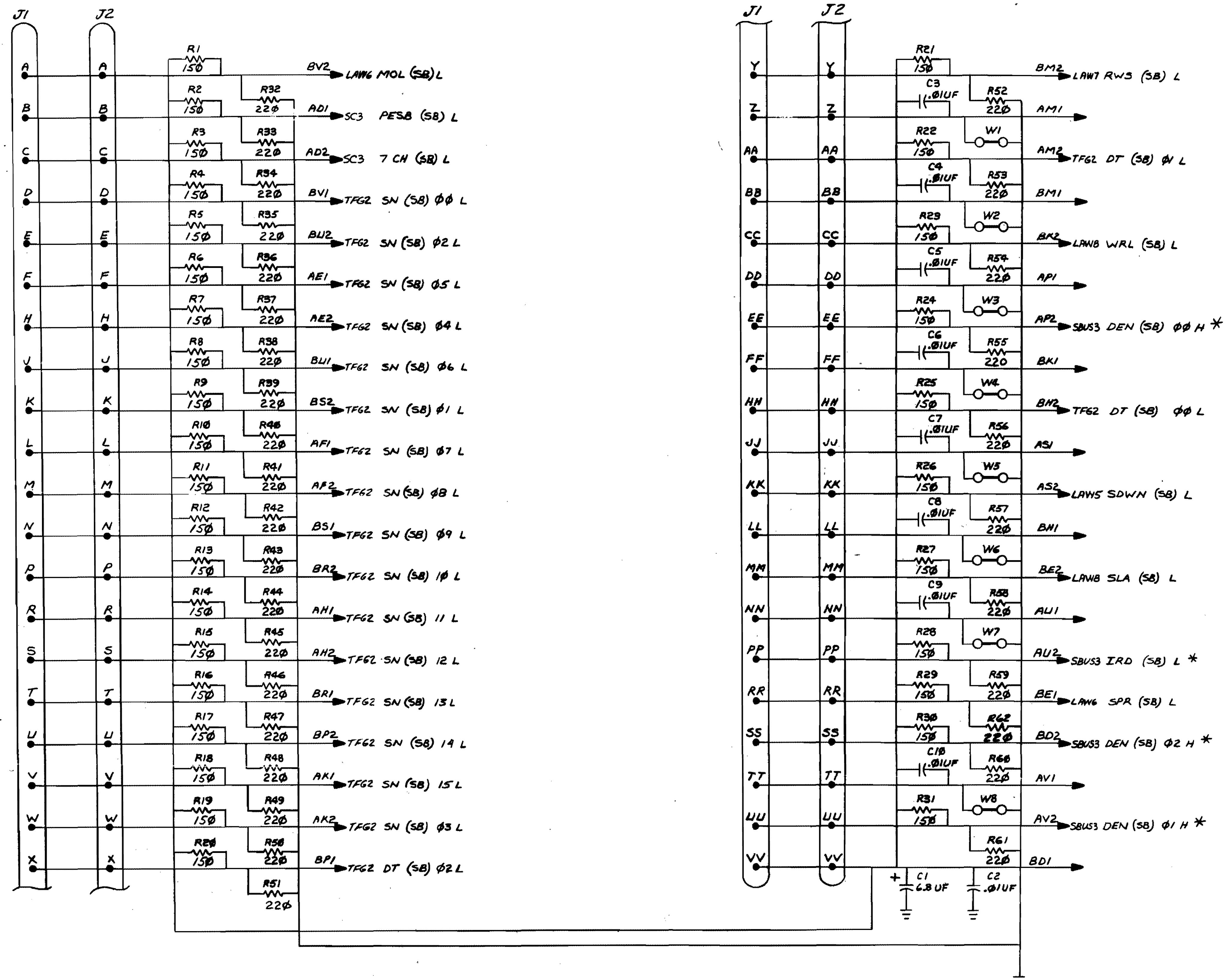
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE: GEN PURPOSE CARD (E+F)

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

DIST.

DEC FORM NO DRD 135-8



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

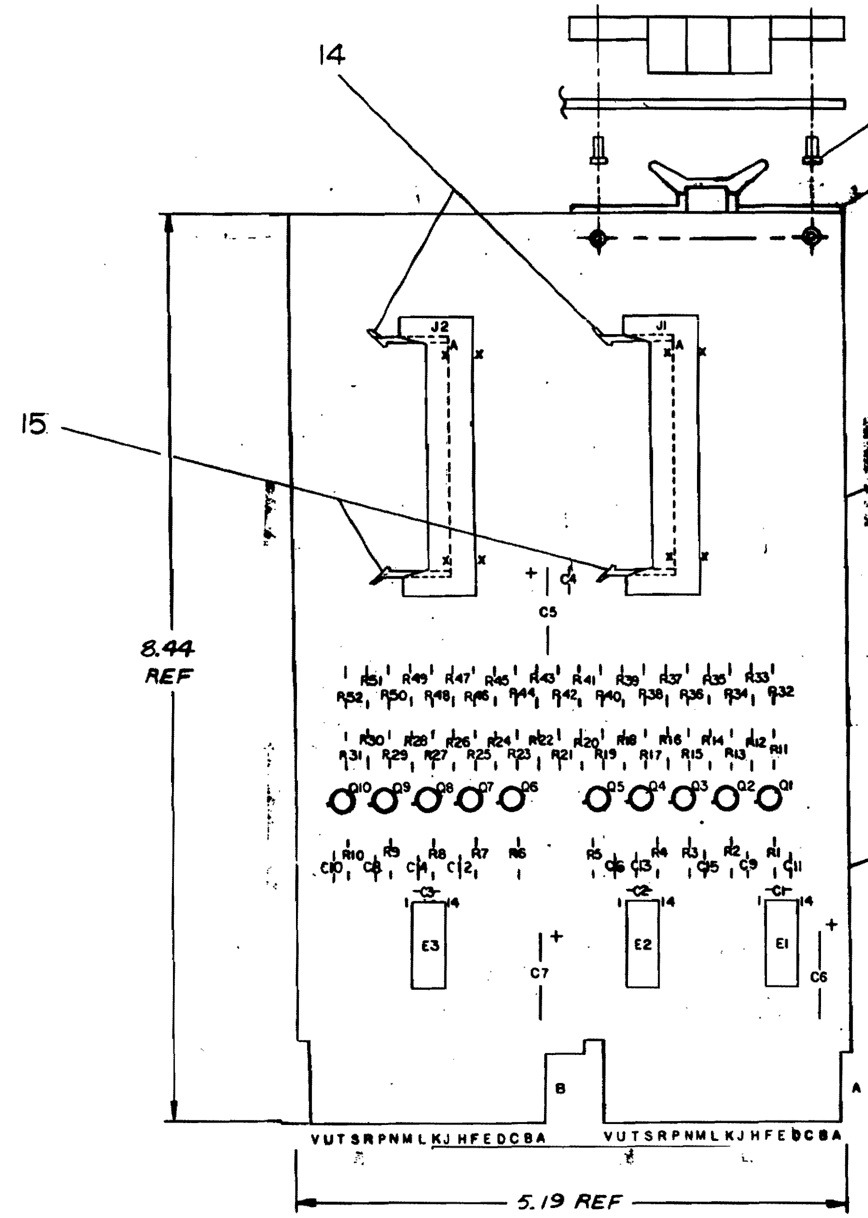
REVISIONS		
CHK	CHANGE NO.	REV.

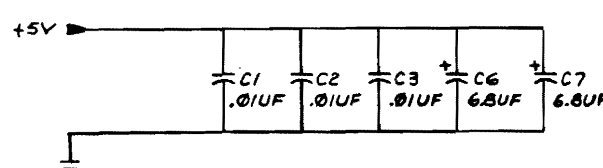
TITLE GEN PURPOSE CARD (E & F)

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

SCALE — SHEET 2 OF 2 DIST.

NOTES:





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
10	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

IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: B

REVISIONS — REV | CHANGE NO. | CHK

SEMICONDUCTOR CONVERSION CHART — DEC NO. | EIA NO. | DEC NO. | EIA NO.

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

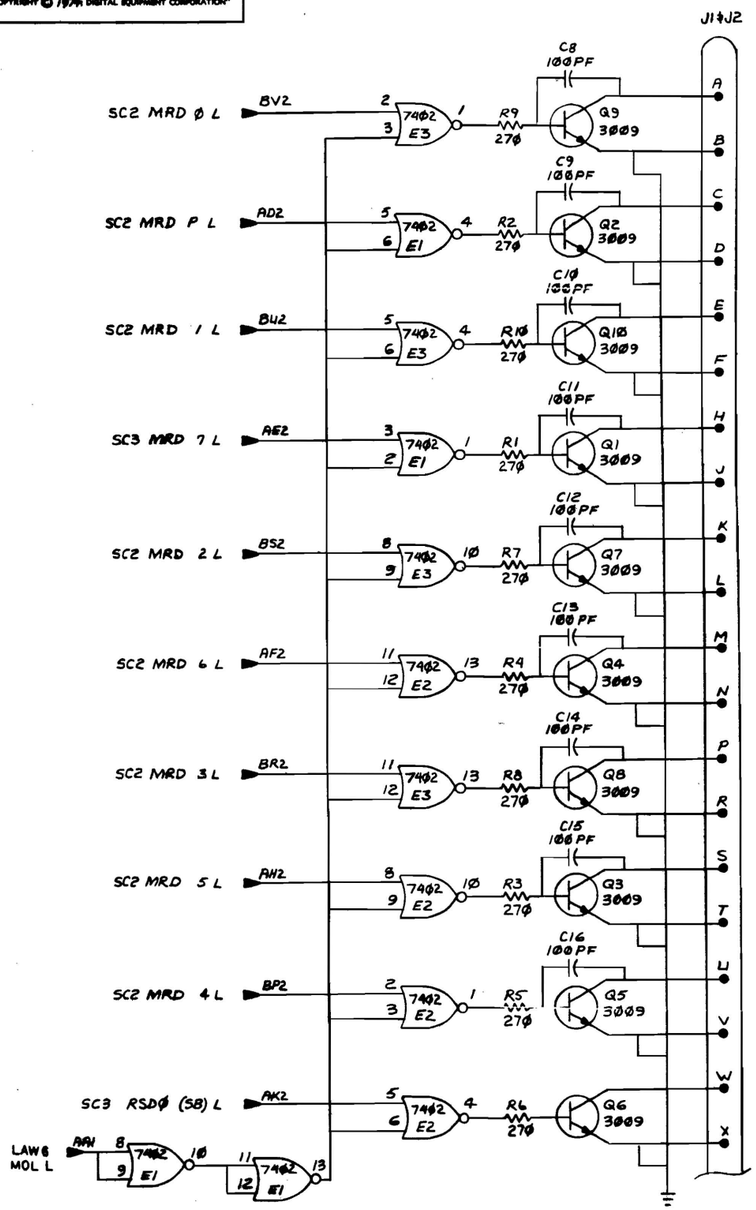
NEXT HIGHER ASSY

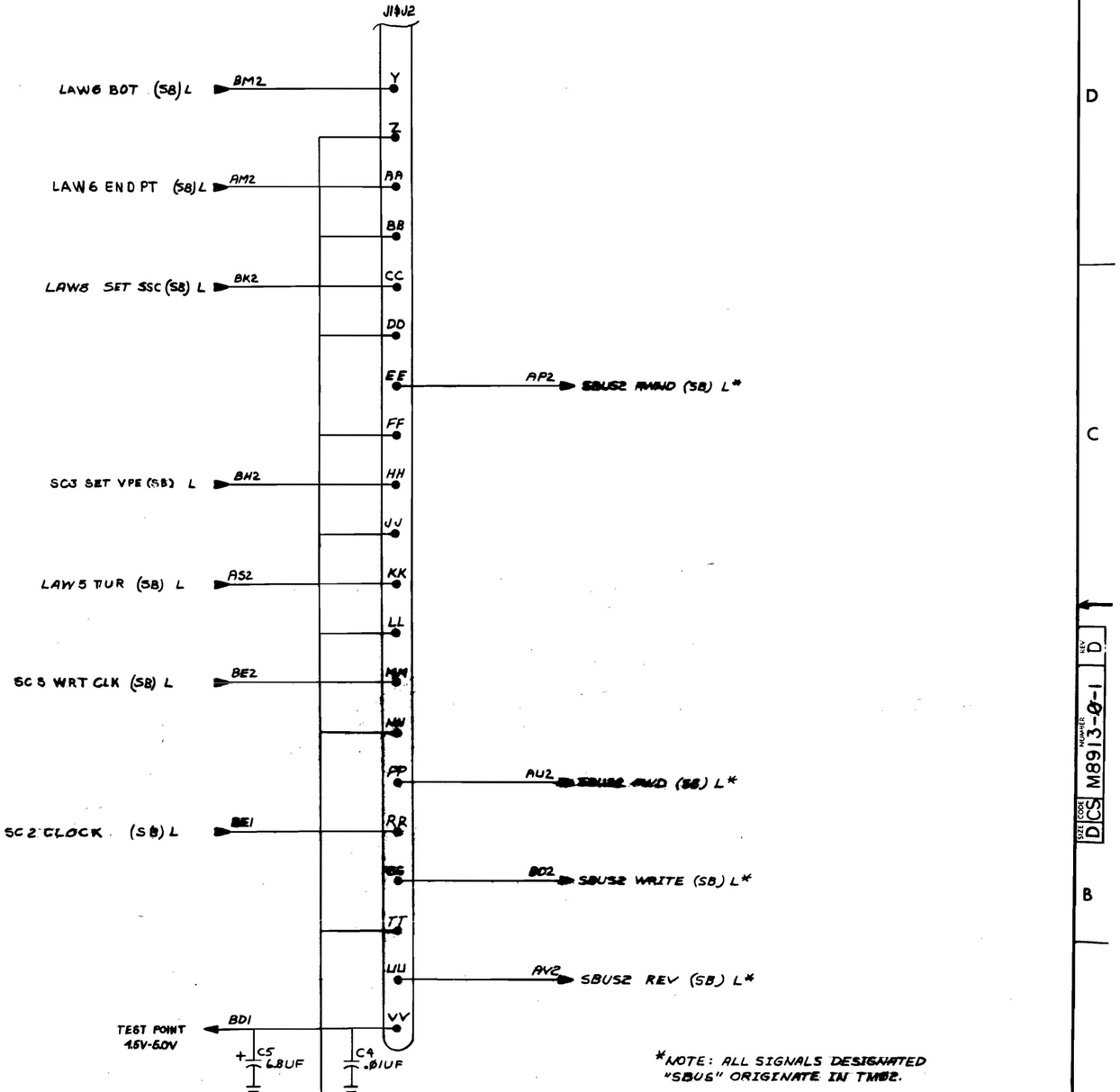
digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE
DATA DRIVER
(SLOT C/P)

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

SCALE — · SHEET 1 OF 2 · DIST.





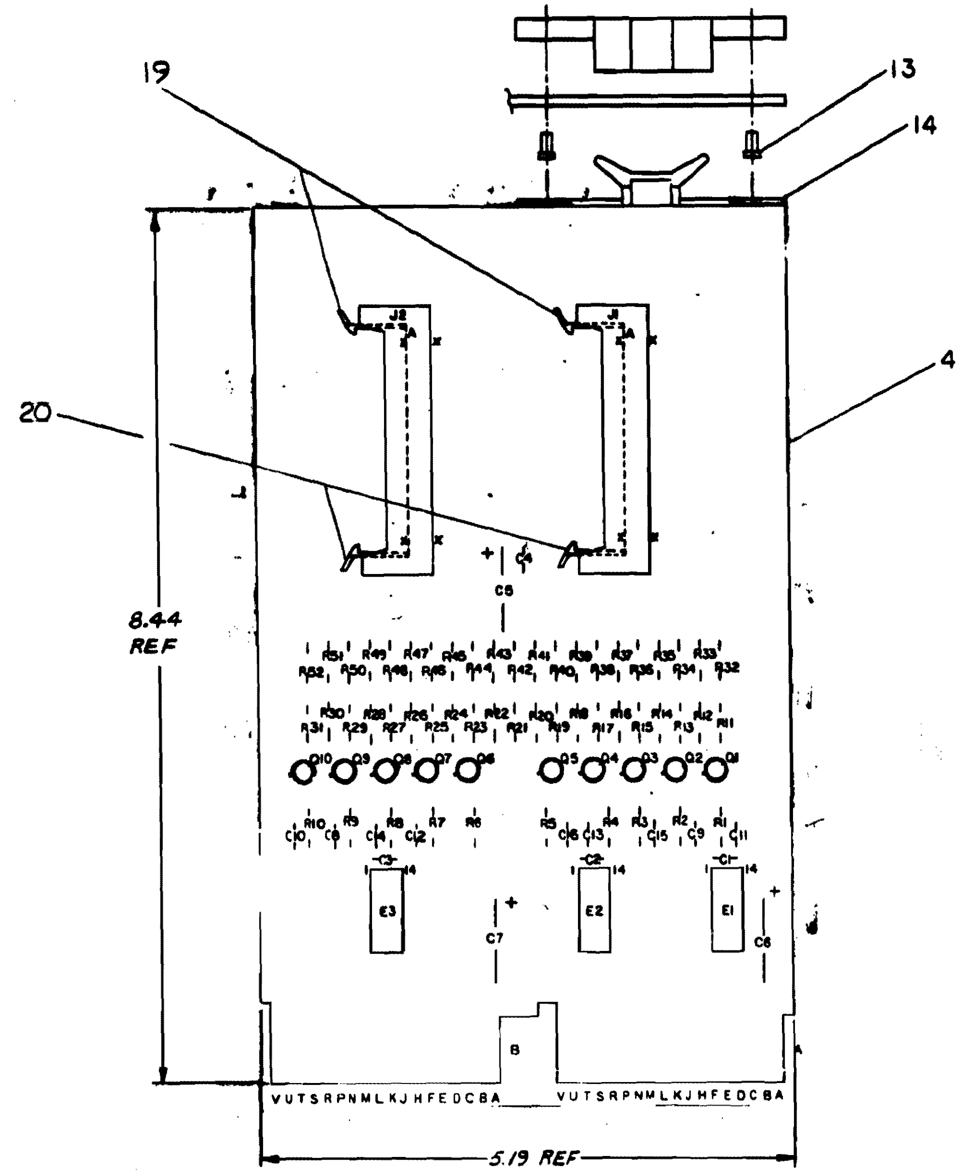
*NOTE: ALL SIGNALS DESIGNATED "SBUS" ORIGINATE IN TM02.

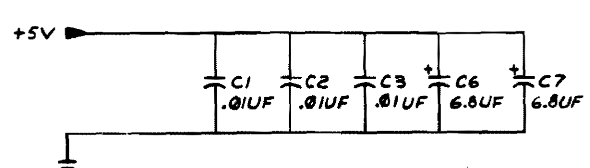
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
SBUS2 DATA DRIVER (SLOT C/P)	D	CS	M8913-0-1	D
SCALE —	SHEET 2 OF 2	DIST.		

M8913-0-1 REV D

NOTES:





QTY	REF DESIGNATION	DESCRIPTION	PART NO.	ITEM NO.
REF		X-Y COORDINATE HOLE LOCATION	K-CO-M8913-Ø-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	J1, J2	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
				19
2		CONNECTOR LATCH, LEFT	1209941-3	19
2		CONNECTOR LATCH, RIGHT	1209941-4	20

PARTS LIST

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: B

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

SEMICONDUCTOR CONVERSION CHART

REV	CHANGE NO.
A	M8913-00001
B	M8913-00002
C	M8913-YA-00003

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

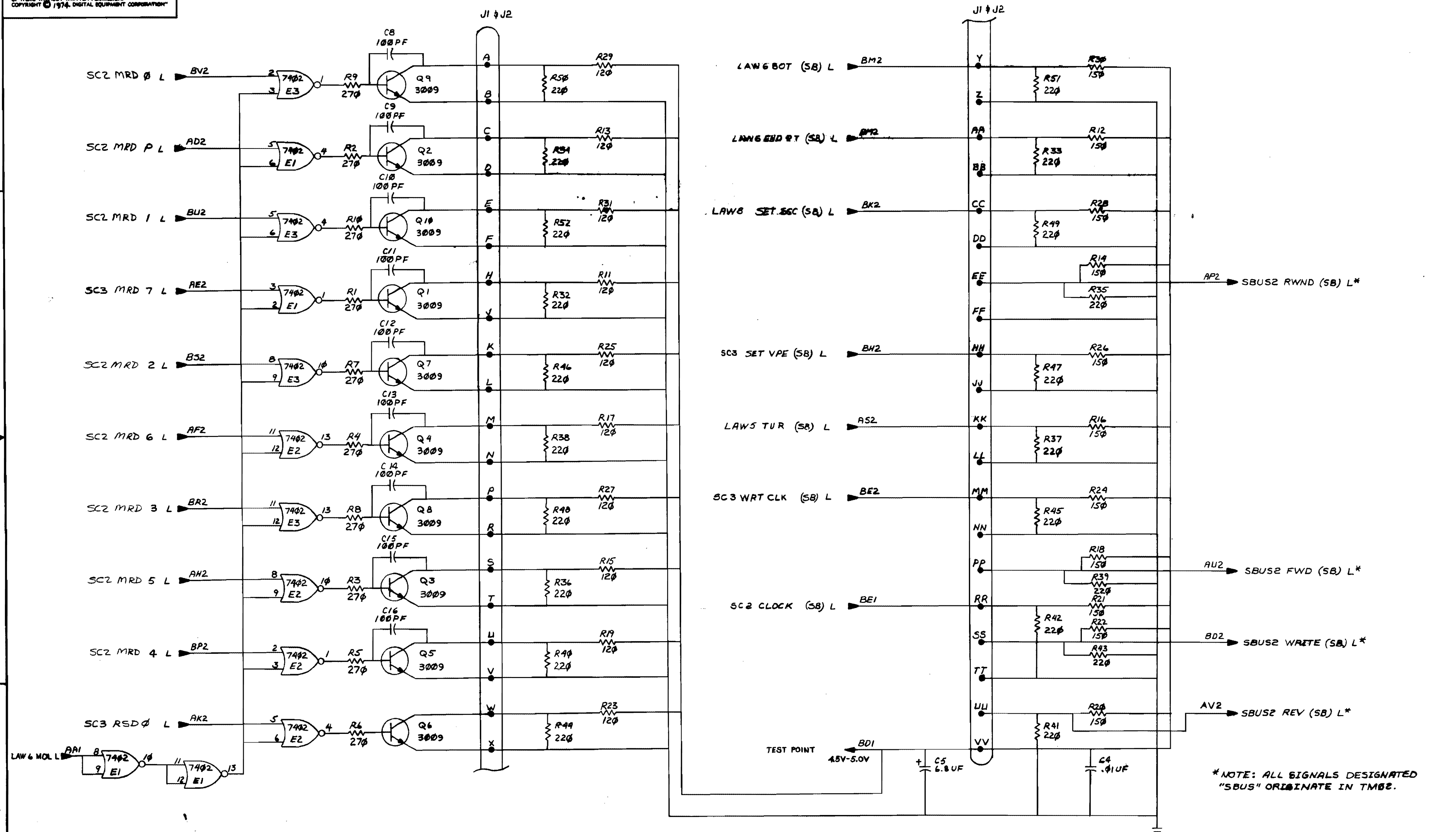
NEXT HIGHER ASSY

SCALE
SHEET 1 OF 2

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

TITLE DATA DRIVER SBUS 2 (SLOT C/P)

D CS M8913-YA-1 REV. C



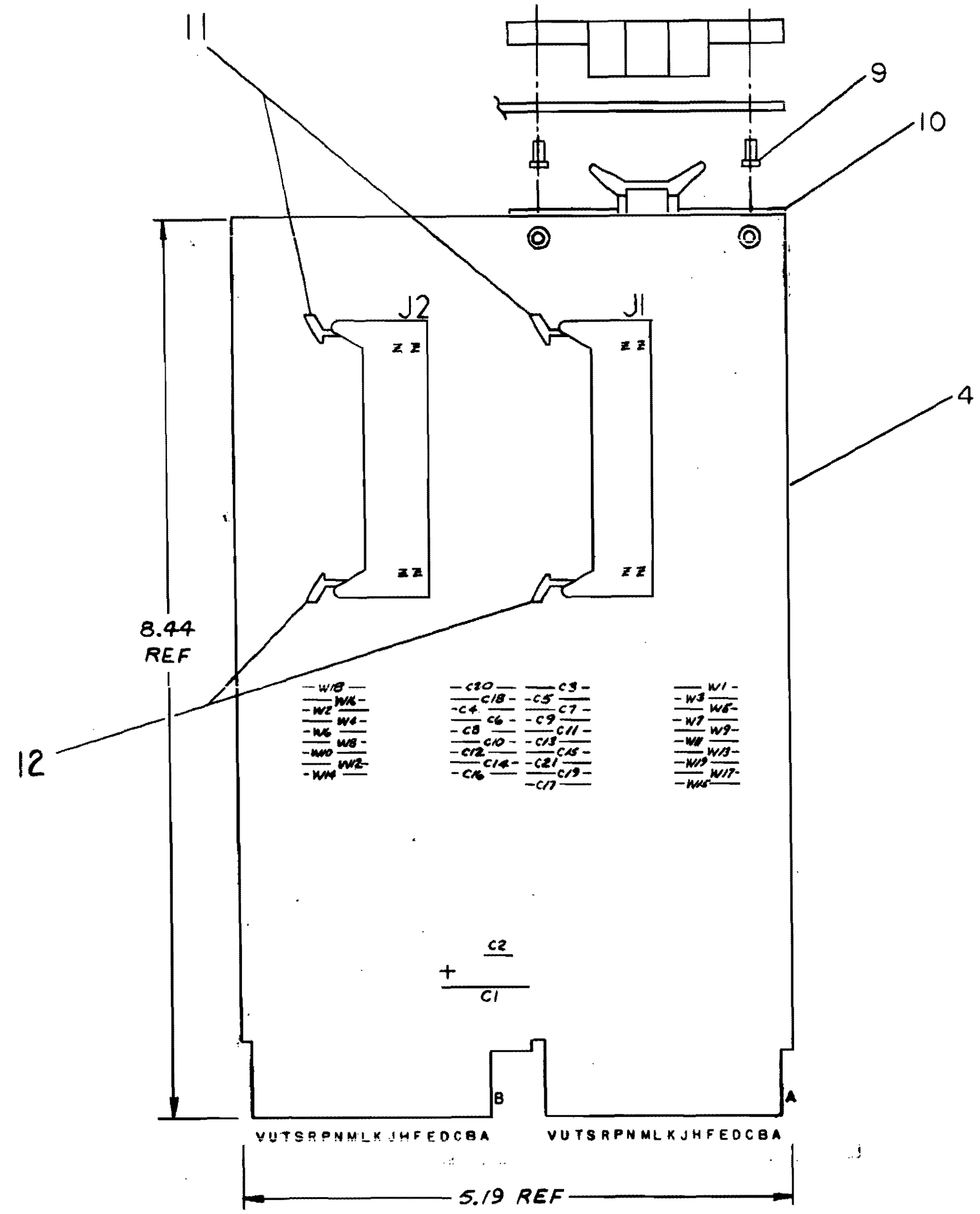
REVISIONS		
CHK	CHANGE NO.	REV.

TITLE DATA DRIVER SBUS 2 (SLOT C/P)

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

SCALE — SHEET 2 OF 2

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-M9001-0-5	2
REF		MODULE ECO HISTORY	B-MH-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

PARTS LIST

IC TYPE	GND	+ 5V

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

IC PIN LOCATIONS

FIRST USED ON OPTION MODEL: TU16

ETCH BOARD REV: C

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

SEMICONDUCTOR CONVERSION CHART

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

NEXT HIGHER ASSY

digital EQUIPMENT CORPORATION MAYNARD MASSACHUSETTS

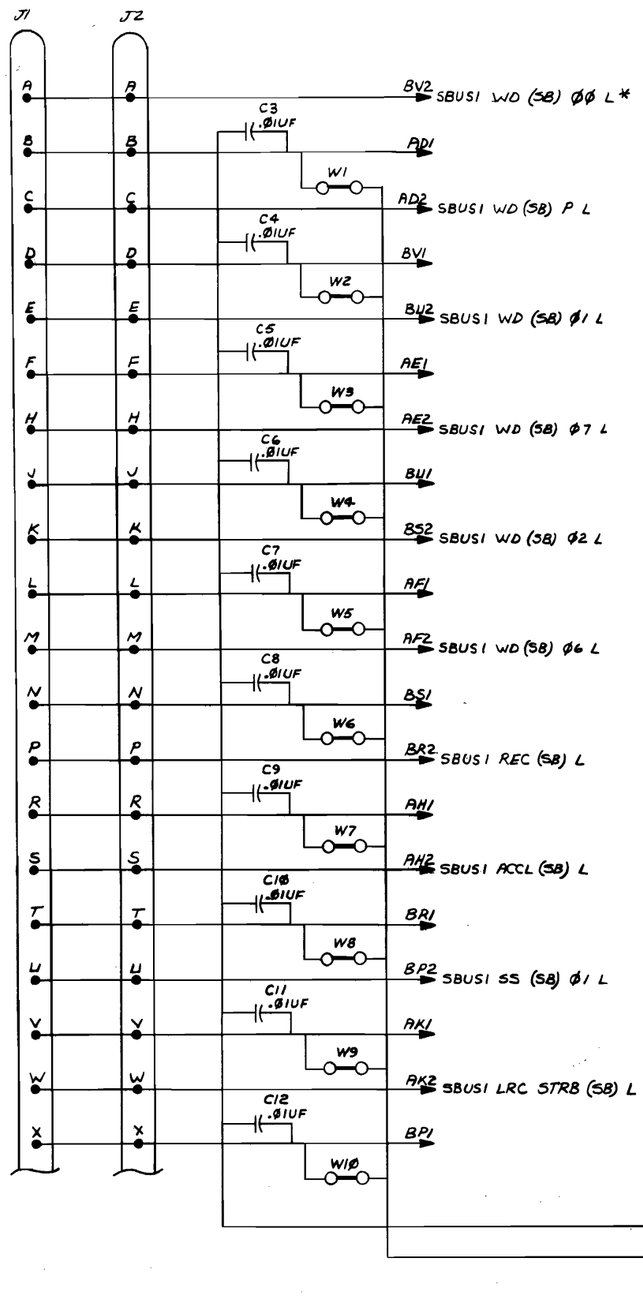
TITLE: GEN PURPOSE CARD (A & B)

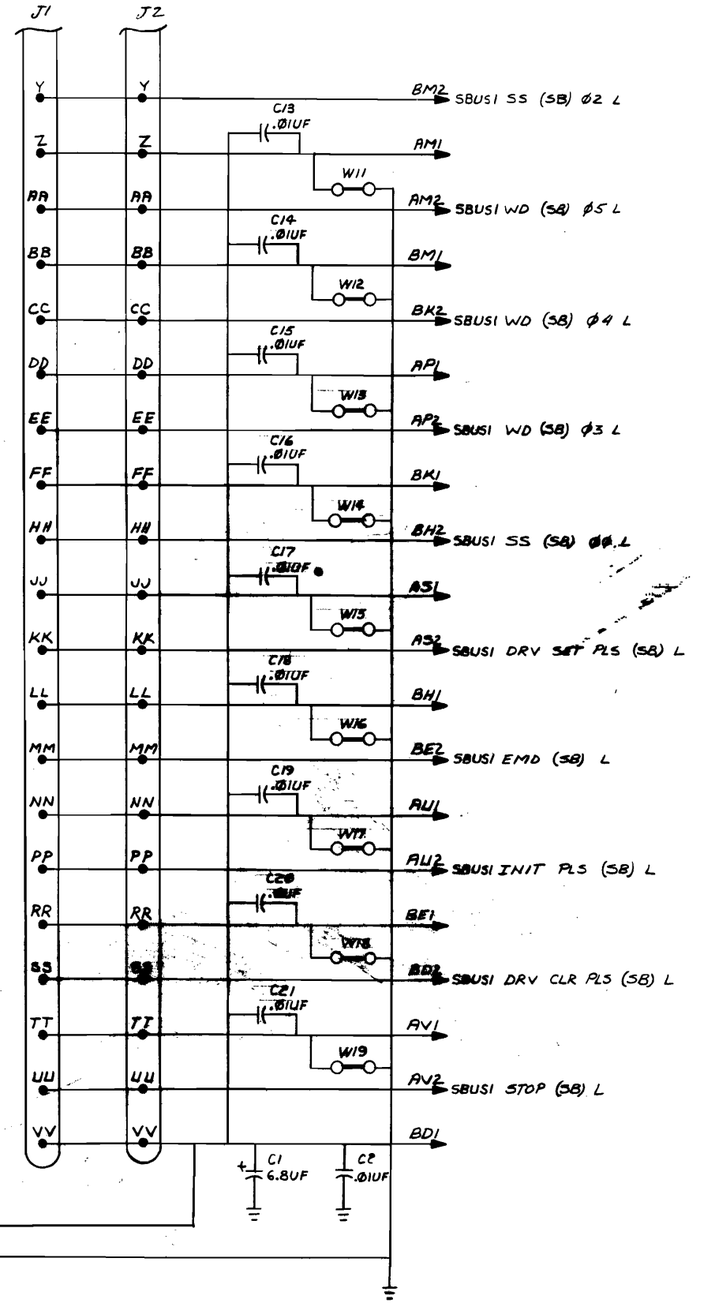
SIZE	CODE	NUMBER	REV.
D	CS	M9001-0-1	C

SCALE — SHEET 1 OF 2

DIST.

DEC FORM NO. DRD 125-B





* NOTE: ALL SIGNALS ORIGINATE IN TMØ2.

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
GEN PURPOSE CARD (A & B)	D	CS	M9001-0-1	C
SCALE —	SHEET 2 OF 2	DIST.		

DEC FORM NO. DRD 128

SWITCH BOX ASSEMBLY

LAW 6 OFF LINE LAMP — A — 1 — I-7
LAW 5 VACUUM ON LAMP — B — 2 — I-2
LAW 6 SELECT LAMP — C — 3 — I-8
D — 4
LAW 5 TUR LAMP — E — 5 — I-3
LAW 8 WR ENABLE LAMP — F — 6 — I-9
~~LAW 6 EOT LAMP~~ — H — 7 — I-4
J — 8
LAW 7 FWD LAMP — K — 9 — I-10
LAW 6 END PT LAMP — L — 10 — I-5
LAW 7 REV LAMP — M — 11 — I-11
N — 12
LAW 8 WR LOCK LAMP — P — 13 — I-16
LAW 7 RWS LAMP — R — 14 — I-12
LAW 1 + 18V — S — 15 — I-1
T — 16
U — 17
V — 18
SW B4 STOP L — W — 19
X — 20
SW B4 OFF LINE SW — Y — 21
Z — 22
SW B4 ON LINE SW — AA — 23
BB — 24
SW B4 START L — CC — 25
SW B4 MANUAL FWD L — DD — 26
SW B4 MANUAL REV L — EE — 27
FF — 28
MANUAL REW L — HH — 29
SW B4 SW1 — JJ — 30
SW B4 SW2 — KK — 31
LL — 32
SW B4 SW4 — MM — 33
SW B4 Q — NN — 34
PP — 35
RR — 36
SS — 37
SW B4 BRK REL SW — TT — 38
SW B4 LOAD PULSE — UU — 39
SW B4 OFF L — VV — 40

START
STOP
S2

OFF LINE
ON LINE
S1

FWD
REV
REWIND
S4

BRK REL
LOAD
OFF
S3

1
2
4
Q
UNIT SELECT SWITCH

SWITCH BOX
FRONT VIEW

I-1	I-2	I-3	I-4	I-5	I-6
I-7	I-8	I-9	I-10	I-11	I-12

ON LINE — S1 — START — S2
OFF LINE — STOP
LOAD — S3 — UNIT SELECT — REW — S4 — FWD
BR REL — REV

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	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
FINISH

DRN. M. Poirier	DATE 6-25-74	digital
CHK'D D. Schmidt	DATE 6-28-74	
ENG. C. Lamb	DATE 7-2-74	
PROJ. ENG. C. Lamb	DATE 7-2-74	TITLE WIRING CONTROL BOX
MOD. D.S.	DATE 7-2-74	

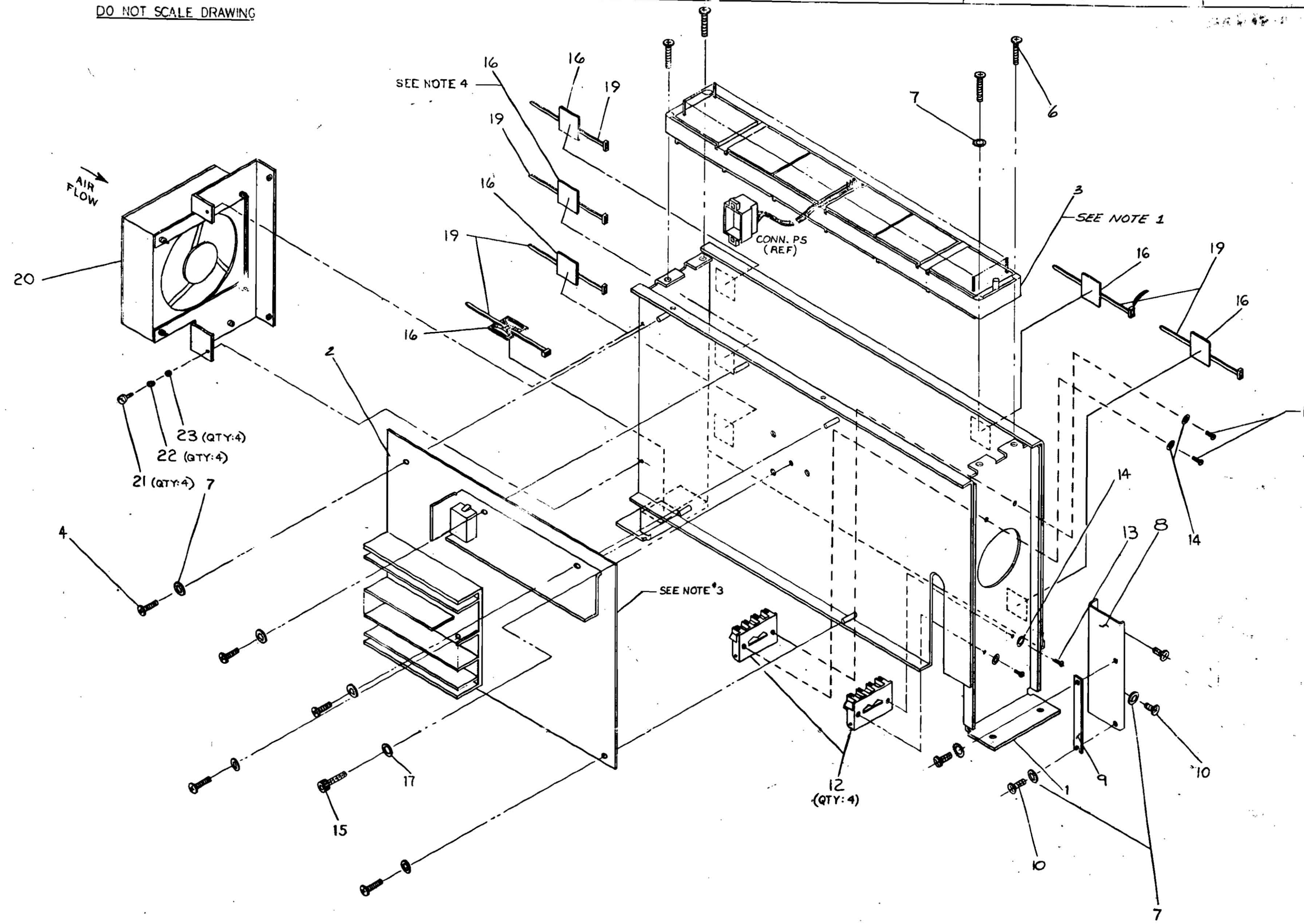
NEXT HIGHER ASSY. D-AD-7009637-0-0
SCALE
SHEET 1 OF 1

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

REVISIONS — REV. — CHANGE NO. — CHK

SIZE CODE DCS NUMBER 7009637-0-1 REV.

DO NOT SCALE DRAWING



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.

4	WASHER, FLAT #4	9008172	23
4	WASHER, LOCK #4	9006688	22
4	SCR, PAN HD 4-40 × .50 LG	9006013-1	21
1	BRACKET, FAN ASSY	D-UA-7018911-0-0	20
6	TIE WRAP	9007052	19
A/R	THERMAL COMPOUND	[illegible]	18
1	WASHER, SPLIT LOCK, #8	[illegible]	17
6	MOUNT, ADHEISIVE BACK	[illegible]	16
1	SCREW, SOCKET HD 8-32 X 1/4	9009464-8	15
[illegible]	[illegible]	[illegible]	[illegible]
8	WASHER, INT TOOTH LOCK #4	[illegible]	[illegible]
8	SCREW [illegible] #4-40 X 5/16 LG	[illegible]	[illegible]
4	GUIDE, CARD & EXTRATER	1210699	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
4	SCREW-PAN HD PHL #6-32 X 5/16 LG	9006021-1	[illegible]
1	PLATE, PRESSURE	[illegible]	[illegible]
1	BRACKET, CABLE CLAMP	[illegible]	[illegible]
[illegible]	WASHER #6, [illegible] LOCK	[illegible]	[illegible]
4	SCREW PHL [illegible] #2-32 X 3/8 LG	9006022-1	[illegible]
[illegible]	WASHER #6 [illegible]	[illegible]	[illegible]
[illegible]	SCREW [illegible] #6-32 [illegible]	[illegible]	[illegible]
1	LOGIC [illegible] (TU16)	[illegible]	3
1	PC CARD ASSEMBLY [illegible] POWER SUPPLY	[illegible]-5414-451-0-5	2
1	[illegible] CHASSIS [illegible]	[illegible]	1

PARTS LIST

FIRST USED ON OPT OR MODEL: TU16

TOLERANCES
DECIMAL
.XXX = ± .005
.XX = ± .02
.X = ± .1

SEE PARTS LIST

NEXT HIGHER ASSY: E-AD-7009634-0-0

TITLE: LOGIC ASSEMBLY (TU16)

AD 7009635-0-0 D

FIRST USED ON OPTION MODEL
TU16

QTY.	DESCRIPTION	PART NO.	ITEM NO.
	PARTS LIST		

REVISIONS

REV.	CHANGE NO.			
A	TU16-00010	5-5-75	J. HESS	5-7-75
B	TU16-00013	7-25-75	J. HESS	7-10-75
C	TU16-00021	25 JUNE 76	H. DRAB	6 Jul 76
D	TU16-00022	2 Aug 76	H. DRAB	2 Aug 76

DRN.	D. Schmidt	DATE 2/20/74
CHK'D.	D. Schmidt	DATE 2/20/74
ENG.	J. R. Hess	DATE 2-20-74
PROJ. ENG.	J. R. Hess	DATE 2-20-74
PROD.		DATE 5-31-74

NEXT HIGHER ASSEMBLY
D-AD-7009605-0-0

digital EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

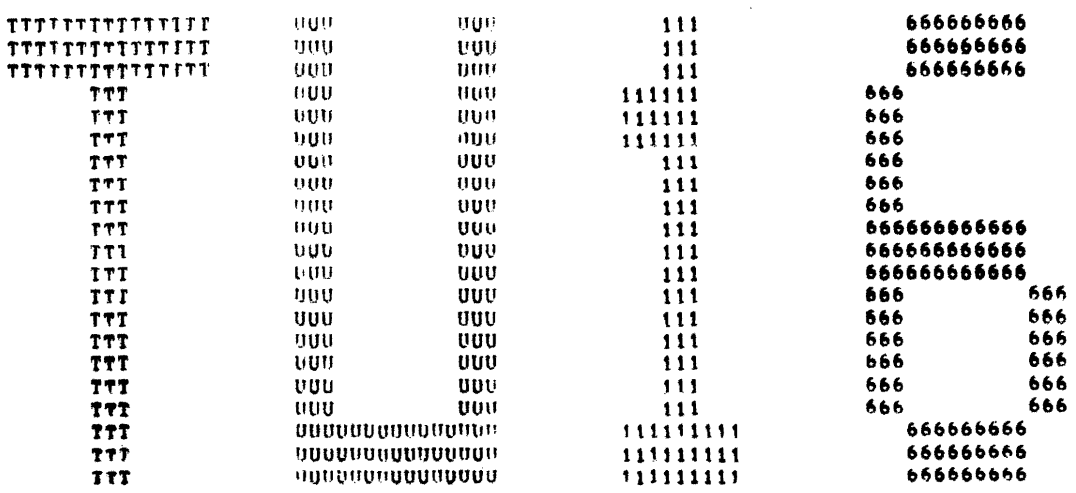
TITLE
WIRE LIST (TU16)

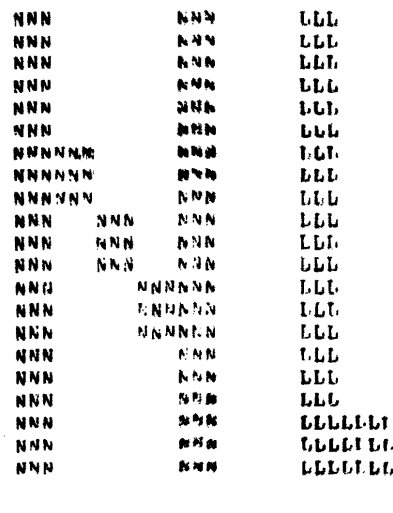
SIZE	CODE	NUMBER	REV.
K	WL	TU16-Ø-WL	D

SCALE —
SHEET 1 OF 1
DIST.

K WL TU16-Ø-WL D

DEC FORM NO. DRB 109





LPTSPL Version 100(2025) Running on LPT010
*[illegible] User 4=LIST SUPP [202,202] Job TU16 Seq. 7019 Date 08-Jul-76 13:29:35 Monitor DEC-10 Cadnet/1 6.02:2 *START*
Request created: 08-Jul-76 10:48:27
File: DSKC:TU16.NL[202,202] Created: 08-Jul-76 10:45:00 <057> Printed: 08-Jul-76 13:30:02
QUEUE Switches: /FILE:ASCII /COPIES:1 /SPACING:1 /LIMIT:102 /FORMS:NORMAL

TU16.D WRE288.V34(62)-1 31-Jul-75 8-Jul-76 10:45 PAGE 1

RUN NAME	A/P	PIN NAME	ORDER PIN	RAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC	LENGTH EXCEPTIONS FLAG	RUN NUMBER
+10V.		A04V1												1-PIN RUN	1
-6V		C02B2												1-PIN RUN	2
1ST ONE SHOT L		A03S1		1-01 *							1		N	8-1/8	3
1ST ONE SHOT L		D02K1		1-02 *											3
1ST ONE SHOT L				1										8-1/8	3
3RD ONE SHOT H		B03B2		1-01 *							1		N	0-5/8	4
3RD ONE SHOT H		B03C1		1-02 *											4
3RD ONE SHOT H				1										0-5/8	4
4TH ONE SHOT H		A03U1	D02M1	1-01 *							1		N	8-1/8	5
4TH ONE SHOT H		D02M1		1-02 *											5
4TH ONE SHOT H				1										8-1/8	5
4TH ONE SHOT L		B03F1		1-01 *							2		N	2-1/8	6
4TH ONE SHOT L		B03V2		1-02 *											6
4TH ONE SHOT L				1										2-1/8	6
7CH (SB) L		C03G2		1-01 *							1		N	5-7/8	7
7CH (SB) L		E01D2		1-02 *											7
7CH (SB) L				1										5-7/8	7
7TRK H		C03T1		1-01 *							1		N	0-4/8	8
7TRK H		C03T2		1-02 *											8
7TRK H				1										0-4/8	8
ACCL (SR) L		A01H2		1-01 *							1		N	7-3/8	9
ACCL (SR) L		C03P2		1-02 *											9
ACCL (SR) L				1										7-3/8	9
ACCL L		C04J1		1-01 *							1		N	2	10
ACCL L		C03U1		1-02 *											10
ACCL L				1										2-0/8	10
BOT (SB) L		D01M2	B02H2	1-01 *							1		N	6-5/8	11
BOT (SB) L		B02H2		1-02 *											11
BOT (SB) L				1										6-5/8	11
BOT H		C02H1		1-01 *							1		N	3-5/8	12
BOT H		D03F1		1-02 *											12
BOT H				1										3-5/8	12
CLEAR READ BOARD L		C03V1		1-01 *							1		N	1-5/8	13
CLEAR READ BOARD L		C04M1		1-02 *											13
CLEAR READ BOARD L				1										1-5/8	13
CLK L		D02C1		1-01 *							1		N	1	14
CLK L		D03C1		1-02 *											14
CLK L				1										1-0/8	14
CLOCK (SB) L		D01E1	C03M2	1-01 *							1		N	3-4/8	15
CLOCK (SB) L		C03M2		1-02 *											15
CLOCK (SB) L				1										3-4/8	15

SGN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
DEN (SB) 00 H		C03J2		1-01 *							1		N	7-3/8	16
DEN (SB) 00 H		E01P2		1-02 *											16
DEN (SB) 00 H				1										7-3/8	16
DEN (SB) 01 H		D03E1		1-01 *							1		N	8-1/8	17
DEN (SB) 01 H		E01V2		1-02 *											17
DEN (SB) 01 H				1										8-1/8	17
DEN (SB) 02 H		C03U2		1-01 *							1		N	7-3/8	18
DEN (SB) 02 H		F01D2		1-02 *											18
DEN (SB) 02 H				1										7-3/8	18
DRV CLR PLS (SB) L		B01D2		1-01 *							1		N	7-7/8	19
DRV CLR PLS (SB) L		E02A1		1-02 *											19
DRV CLR PLS (SB) L				1										7-7/8	19
DRV SET PLS (SB) L		A01S2		1-01 *							1		N	1	20
DRV SET PLS (SB) L		A02S2		1-02 *											20
DRV SET PLS (SB) L				1										1-0/8	20
DT (SB) 00 L		F01H2		1-01 *							1		N	1-4/8	21
DT (SB) 00 L		F03H2		1-02 *											21
DT (SB) 00 L				1										1-4/8	21
DT (SB) 01 L		E01H2		1-01 *							1		N	1-0/8	22
DT (SB) 01 L		E03V1		1-02 *											22
DT (SB) 01 L				1										1-0/8	22
DT (SB) 02 L		F01P1		1-01 *							1		N	2-1/8	23
DT (SB) 02 L		F03S2		1-02 *											23
DT (SB) 02 L				1										2-1/8	23
DT L		F03A1		1-01 *							2		N	1-3/8	24
DT L		F03J1		1-02 *							1		N	1-4/8	24
DT L		F03T1		1-03 *											24
DT L				1										2-7/8	24
END (SB) L		B01E2		1-01 *							1		N	8-1/8	25
END (SB) L		C03S2		1-02 *											25
END (SB) L				1										8-1/8	25
END PT (SB) L		C01M2	A02P2	1-01 *							1		N	5-7/8	26
END PT (SB) L		A02P2		1-02 *											26
END PT (SB) L				1										5-7/8	26
FWD (SB) L		A02U2		1-01 *							1		N	6-1/8	27
FWD (SB) L		C01U2		1-02 *											27
FWD (SB) L				1										6-1/8	27
FWD H		D03D1		1-01 *							1		N	4-3/8	28
FWD H		E02N1		1-02 *											28
FWD H				1										4-3/8	28

RUN NAME	A/P	PIN NAME	ORDER PIN	BAY - ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC LENGTH EXCEPTIONS FLAG		RUN NUMBER
GND		F03C1		1-01 *							1		N	0-4/8	29
GND		F03C2		1-02 *							2		N	0-5/8	29
GND		F03F1		1-03 *											29
GND				1										1-1/8	29
INIT L		B03N2		1-01 *							1		N	8-7/8	30
INIT L		E02R2		1-02 *											30
INIT L				1										8-7/8	30
INIT PLS (SB) L		A01U2		1-01 *							1		N	9-7/8	31
INIT PLS (SB) L		E02F1		1-02 *											31
INIT PLS (SB) L				1										9-7/8	31
INTERCHG READ L		D03J1		1-01 *							1		N	2-3/8	32
INTERCHG READ L		E04A1		1-02 *							2		N	4-3/8	32
INTERCHG READ L		F04L1		1-03 *											32
INTERCHG READ L				1										6-6/8	32
IRD (SB) L		C03L1		1-01 *							1		N	7-3/8	33
IRD (SB) L		E01U2		1-02 *											33
IRD (SB) L				1										7-3/8	33
LOCAL H		D02H1		1-01 *							1		N	1	34
LOCAL H		D03H1		1-02 *											34
LOCAL H				1										1-0/8	34
LRC STRB (SB) L		A01K2		1-01 *							1		N	1	35
LRC STRB (SB) L		A02K2		1-02 *											35
LRC STRB (SB) L				1										1-0/8	35
MOL (SB) L		F01V2		1-01 *							1		N	1	36
MOL (SB) L		F02V2		1-02 *											36
MOL (SB) L				1										1-0/8	36
MOL H		C03P1		1-01 *							1		N	5-5/8	37
MOL H		E02M2		1-02 *											37
MOL H				1										5-5/8	37
MOL L		C02S1		1-01 *							1		N	2-5/8	38
MOL L		C01A1		1-02 *											38
MOL L				1										2-5/8	38
PACKET H		D03J2		1-01 *							1		N	3-1/8	39
PACKET H		E04K1		1-02 *											39
PACKET H				1										3-1/8	39
PCLR L		A03B2		1-01 *							1		N	14-7/8	40
PCLR L		F02E1	C01N2	1-02 *							2		N	7-5/8	40
PCLR L		C01N2		1-03 *											40
PCLR L				1										22-4/8	40
PES L		C03B1		1-01 *							2		N	5-5/8	41
PES L		D03U1		1-02 *							1		N	6-7/8	41
PES L		F04U2		1-03 *											41
PES L				1										12-4/8	41

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
PESB (SR) L		C03R1		1-01 *							1		N	3-6/8	42
PESB (SR) L		D03V1		1-02 *							2		N	1-6/8	42
PESB (SR) L		E01D1		1-03 *											42
PESB (SR) L				1										5-4/8	42
RD (SB) 00 L		D01V2		1-01 *							1		N	1-4/8	43
RD (SB) 00 L		D03V2		1-02 *											43
RD (SB) 00 L				1										1-4/8	43
RD (SB) 01 L		D01U2		1-01 *							1		N	1-4/8	44
RD (SB) 01 L		D03U2		1-02 *											44
RD (SB) 01 L				1										1-4/8	44
RD (SB) 02 L		D01S2		1-01 *							1		N	1-4/8	45
RD (SB) 02 L		D03S2		1-02 *											45
RD (SB) 02 L				1										1-4/8	45
RD (SB) 03 L		D01R2		1-01 *							1		N	1-4/8	46
RD (SB) 03 L		D03R2		1-02 *											46
RD (SB) 03 L				1										1-4/8	46
RD (SB) 04 L		D01P2		1-01 *							1		N	1-4/8	47
RD (SB) 04 L		D03P2		1-02 *											47
RD (SB) 04 L				1										1-4/8	47
RD (SB) 05 L		C01H2		1-01 *							1		N	1-4/8	48
RD (SB) 05 L		C03H2		1-02 *											48
RD (SB) 05 L				1										1-4/8	48
RD (SB) 06 L		C01F2		1-01 *							1		N	1-4/8	49
RD (SB) 06 L		C03F2		1-02 *											49
RD (SB) 06 L				1										1-4/8	49
RD (SB) 07 L		C01E2		1-01 *							1		N	1-4/8	50
RD (SB) 07 L		C03E2		1-02 *											50
RD (SB) 07 L				1										1-4/8	50
RD (SB) P L		C01D2		1-01 *							1		N	1-2/8	51
RD (SB) P L		C03A1		1-02 *											51
RD (SB) P L				1										1-2/8	51
RD 00 L		A04F1		1-01 *							1		N	5-7/8	52
RD 00 L		C03D1		1-02 *											52
RD 00 L				1										5-7/8	52
RD 01 L		D03U1		1-01 *							1		N	1-7/8	53
RD 01 L		E04E1		1-02 *											53
RD 01 L				1										1-7/8	53
RD 02 L		A04B1		1-01 *							1		N	6-5/8	54
RD 02 L		C03E1		1-02 *											54
RD 02 L				1										6-5/8	54
RD 03 L		D03B1		1-01 *							1		N	6-7/8	55
RD 03 L		F04K1		1-02 *											55
RD 03 L				1										6-7/8	55

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 04 L		B04F1		1-01 *							1		N	3-3/8	56
RD 04 L		C03F1		1-02 *											56
RD 04 L				1										3-3/8	56
RD 05 L		C03M1		1-01 *							1		N	1	57
RD 05 L		C04P1		1-02 *											57
RD 05 L				1										1-0/8	57
RD 06 L		C03N1		1-01 *							1		N	1	58
RD 06 L		C04R1		1-02 *											58
RD 06 L				1										1-0/8	58
RD 07 H		C03S1		1-01 *							1		N	4-1/8	59
RD 07 H		D04V1		1-02 *											59
RD 07 H				1										4-1/8	59
RD P L		B04K1		1-01 *							1		N	3-3/8	60
RD P L		C03K1		1-02 *											60
RD P L				1										3-3/8	60
REC (SB) L		B01R2		1-01 *							1		N	5-7/8	61
REC (SB) L		D03K2		1-02 *											61
REC (SB) L				1										5-7/8	61
RECORD PULSE L		B03D1		1-01 *							1		N	6-5/8	62
RECORD PULSE L		D03L2		1-02 *							2		N	1	62
RECORD PULSE L		D02L2		1-03 *											62
RECORD PULSE L				1										7-5/8	62
REV (SB) L		B02E1		1-01 *							1		N	4-5/8	63
REV (SB) L		C01V2		1-02 *											63
REV (SB) L				1										4-5/8	63
RSDO (SR) L		C01K2		1-01 *							1		N	1-4/8	64
RSDO (SR) L		C03K2		1-02 *											64
RSDO (SR) L				1										1-4/8	64
RUNNING H		D02R2												1-PIN RUN	65
RWND (SB) L		B02D2		1-01 *							1		N	4-5/8	66
RWND (SB) L		C01P2		1-02 *											66
RWND (SB) L				1										4-5/8	66
RWS (SB) L		B02M1		1-01 *							1		N	11-1/8	67
RWS (SB) L		F01M2		1-02 *											67
RWS (SB) L				1										11-1/8	67
SDWN (SB) L		A02M2		1-01 *							1		N	11-7/8	68
SDWN (SB) L		C01S2		1-02 *											68
SDWN (SB) L				1										11-7/8	68
SET SCC (SB) L		D01K2		1-01 *							1		N	7-1/8	69
SET SCC (SB) L		F02V1		1-02 *											69
SET SCC (SB) L				1										7-1/8	69

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
SET TEST VRF L		B03M2		1-01 *							1		N	6-3/8	70
SET TEST VRF L		D02N1		1-02 *											70
SET TEST VRF L				1										6-3/8	70
SET VPE (SB) L		D01M2		1-01 *							1		N	1-4/8	71
SET VPE (SB) L		D03M2		1-02 *											71
SET VPE (SB) L				1										1-4/8	71
SLA (SB) L		E02Y1		1-01 *							1		N	1-7/8	72
SLA (SB) L		F01E2		1-02 *											72
SLA (SB) L				1										1-7/8	72
SLAVE BUS ENBL L		B01H1		1-01 *							1		N	1-2/8	73
SLAVE BUS ENBL L		B02D1		1-02 *											73
SLAVE BUS ENBL L				1										1-2/8	73
SLAVE PRESENT H		D02B1		1-01 *							1		N	4-5/8	74
SLAVE PRESENT H		E03M2		1-02 *											74
SLAVE PRESENT H				1										4-5/8	74
SN (SB) 00 L		E03D2		1-01 *							1		N	6-1/8	75
SN (SB) 00 L		F01V1		1-02 *											75
SN (SB) 00 L				1										6-1/8	75
SN (SB) 01 L		E03S2		1-01 *							1		N	4-1/8	76
SN (SB) 01 L		F01S2		1-02 *											76
SN (SB) 01 L				1										4-1/8	76
SN (SB) 02 L		F01U2		1-01 *							1		N	1-4/8	77
SN (SB) 02 L		F03U2		1-02 *											77
SN (SB) 02 L				1										1-4/8	77
SN (SB) 03 L		E01K2		1-01 *							1		N	1-4/8	78
SN (SB) 03 L		E03K2		1-02 *											78
SN (SB) 03 L				1										1-4/8	78
SN (SB) 04 L		E01E2		1-01 *							1		N	1-4/8	79
SN (SB) 04 L		E03E2		1-02 *											79
SN (SB) 04 L				1										1-4/8	79
SN (SB) 05 L		E01E1		1-01 *							1		N	2-1/8	80
SN (SB) 05 L		E03P2		1-02 *											80
SN (SB) 05 L				1										2-1/8	80
SN (SB) 06 L		F01U1		1-01 *							1		N	1-7/8	81
SN (SB) 06 L		F03S2		1-02 *											81
SN (SB) 06 L				1										1-7/8	81
SN (SB) 07 L		E01F1		1-01 *							1		N	2-4/8	82
SN (SB) 07 L		E03V2		1-02 *											82
SN (SB) 07 L				1										2-4/8	82
SN (SB) 08 L		E01F2		1-01 *							1		N	1-4/8	83
SN (SB) 08 L		E03F2		1-02 *											83
SN (SB) 08 L				1										1-4/8	83

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) 09 L		F01S1		1-01 *							1		N	2-1/8	84
SN (SB) 09 L		F03E1		1-02 *											84
SN (SB) 09 L				1										2-1/8	84
SN (SB) 10 L		F01R2		1-01 *							1		N	1-4/8	85
SN (SB) 10 L		F03R2		1-02 *											85
SN (SB) 10 L				1										1-4/8	85
SN (SB) 11 L		E01H1		1-01 *							1		N	4-1/8	86
SN (SB) 11 L		F03D2		1-02 *											86
SN (SB) 11 L				1										4-1/8	86
SN (SB) 12 L		E01H2		1-01 *							1		N	1-4/8	87
SN (SB) 12 L		E03H2		1-02 *											87
SN (SB) 12 L				1										1-4/8	87
SN (SB) 13 L		E03A1		1-01 *							1		N	5-5/8	88
SN (SB) 13 L		F01A1		1-02 *											88
SN (SB) 13 L				1										5-5/8	88
SN (SB) 14 L		F01P2		1-01 *							1		N	1-4/8	89
SN (SB) 14 L		F03P2		1-02 *											89
SN (SB) 14 L				1										1-4/8	89
SN (SB) 15 L		E01K1		1-01 *							1		N	1-7/8	90
SN (SB) 15 L		E03A1		1-02 *											90
SN (SB) 15 L				1										1-7/8	90
SPR (SB) L		D02A1		1-01 *							1		N	6-5/8	91
SPR (SB) L		F01E1		1-02 *											91
SPR (SB) L				1										6-5/8	91
SS (SB) 00 L		B01H2		1-01 *							1		N	4-5/8	92
SS (SB) 00 L		C02V1		1-02 *											92
SS (SB) 00 L				1										4-5/8	92
SS (SB) 01 L		B01P2		1-01 *							1		N	4-1/8	93
SS (SB) 01 L		C02V2		1-02 *											93
SS (SB) 01 L				1										4-1/8	93
SS (SB) 02 L		B01M2		1-01 *							1		N	5-1/8	94
SS (SB) 02 L		D02D1		1-02 *											94
SS (SB) 02 L				1										5-1/8	94
STOP (SB) L		A01V2		1-01 *							1		N	5-5/8	95
STOP (SB) L		C02S2		1-02 *											95
STOP (SB) L				1										5-5/8	95
TEST DATA =A		A03K1	A02C1	1-01 *							2		N	1-3/8	96
TEST DATA =A		A02C1	A02E1	1-02 *							1		N	0-4/8	96
TEST DATA =A		A02E1	A02F1	1-03 *							2		N	0-1/8	96
TEST DATA =A		A02F1	A02J1	1-04 *							1		N	0-4/8	96
TEST DATA =A		A02J1	A02H1	1-05 *							2		N	3-1/8	96
TEST DATA =A		A02H1		1-06 *											96
TEST DATA =A				1										5-5/8	96

RUN NAME	A/P	PIN NAME	ORDER PIN	RAY = ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
TEST DATA -R		A03J1	B02J1	1-01 *							2		N	3-5/8	97
TEST DATA -R		B02J1	B02R1	1-02 *							1		N	1-2/8	97
TEST DATA -R		B02R1	B02P1	1-03 *							2		N	0-1/8	97
TEST DATA -R		B02P1	C02M2	1-04 *							1		N	2-7/8	97
TEST DATA -R		C02M2		1-05 *											97
TEST DATA -R				1										7-7/8	97
TEST DATA A		A03L2												1-PIN RUN	98
TEST DATA B		A03H1												1-PIN RUN	99
TEST DEN H		A03T2		1-01 *							1		N	4-3/8	100
TEST DEN H		C03C1		1-02 *											100
TEST DEN H				1										4-3/8	100
TEST PE H		B03L2		1-01 *							1		N	2	101
TEST PE H		C03B2		1-02 *											101
TEST PE H				1										2-0/8	101
TESTER ENBL L		B03N1		1-01 *							1		N	4-7/8	102
TESTER ENBL L		D02D2		1-02 *											102
TESTER ENBL L				1										4-7/8	102
TESTER GND		B03M1		1-01 *							1		N	0-4/8	103
TESTER GND		B03P1		1-02 *							2		N	0-5/8	103
TESTER GND		B03T1		1-03 *							1		N	0-1/8	103
TESTER GND		B03U1		1-04 *							2		N	0-1/8	103
TESTER GND		B03V1		1-05 *											103
TESTER GND				1										1-3/8	103
TUR (SB) L		C01S2	B02K2	1-01 *							1		N	4-1/8	104
TUR (SB) L		B02K2		1-02 *											104
TUR (SB) L				1										4-1/8	104
WD (SA) 00 L		B01V2		1-01 *							1		N	1	105
WD (SA) 00 L		B02V2		1-02 *											105
WD (SA) 00 L				1										1-0/8	105
WD (SB) 01 L		B01U2		1-01 *							1		N	1	106
WD (SB) 01 L		B02U2		1-02 *											106
WD (SB) 01 L				1										1-0/8	106
WD (SB) 02 L		B01S2		1-01 *							1		N	1	107
WD (SB) 02 L		B02S2		1-02 *											107
WD (SB) 02 L				1										1-0/8	107
WD (SA) 03 L		A01P2		1-01 *							1		N	3-7/8	108
WD (SA) 03 L		B02R2		1-02 *											108
WD (SA) 03 L				1										3-7/8	108
WD (SA) 04 L		B01K2		1-01 *							1		N	1-1/8	109
WD (SA) 04 L		B02P2		1-02 *											109
WD (SA) 04 L				1										1-1/8	109

RUN NAME	A/P	PIN NAME	ORDER PIN	RAY = ORDER	Q	DRAW OPT	RV	RG	Y	X	Z	REMARKS	NC FLAG	LENGTH EXCEPTIONS	RUN NUMBER
WD (SA) 05 L		A01M2		1-01 *							1		N	1-1/8	110
WD (SA) 05 L		A02H2		1-02 *											110
WD (SA) 05 L				1										1-1/8	110
WD (SA) 06 L		A01F2		1-01 *							1		N	1	111
WD (SA) 06 L		A02F2		1-02 *											111
WD (SA) 06 L				1										1-0/8	111
WD (SA) 07 L		A01E2		1-01 *							1		N	1	112
WD (SA) 07 L		A02E2		1-02 *											112
WD (SA) 07 L				1										1-0/8	112
WD (SA) P L		A01D2		1-01 *							1		N	1	113
WD (SA) P L		A02D2		1-02 *											113
WD (SA) P L				1										1-0/8	113
WRITE (SA) L		A02N1		1-01 *							1		N	6-7/8	114
WRITE (SB) L		D01D2		1-02 *											114
WRITE (SB) L				1										6-7/8	114
WRITE ENABLE H		D02S1		1-01 *							2		N	1	115
WRITE ENABLE H		D03S1		1-02 *							1		N	6-1/8	115
WRITE ENABLE H		F04S1		1-03 *											115
WRITE ENABLE H				1										7-1/8	115
WRL (SB) L		B02M2		1-01 *							1		N	11-1/8	116
WRL (SB) L		F01K2		1-02 *											116
WRL (SB) L				1										11-1/8	116
WRT CLK (SB) L		D03M2	D01E2	1-01 *							1		N	1-6/8	117
WRT CLK (SB) L		D01E2		1-02 *											117
WRT CLK (SB) L				1										1-6/8	117
WRT CLK TEST ENB L		B03H1		1-01 *							1		N	5	118
WRT CLK TEST ENB L		D03A1		1-02 *											118
WRT CLK TEST ENB L				1										5-0/8	118

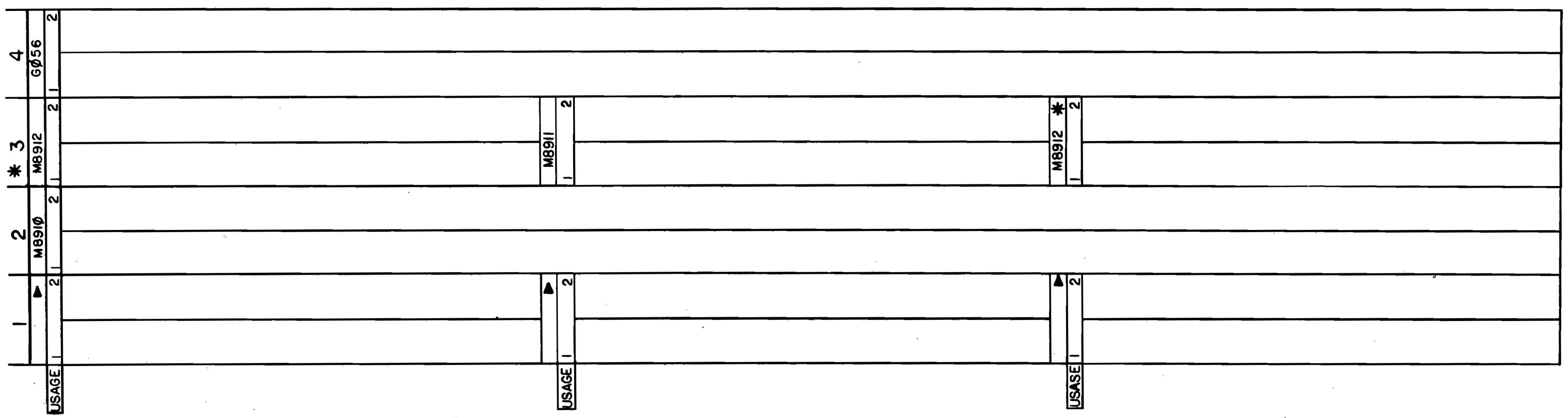
D MU TU16-Ø-MU B

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.



▲ SEE NOTE #1

✱ SEE NOTE #2

QTY.	DESCRIPTION	PART NO.	ITEM NO.
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	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; CHKD. / DATE; ENG. / DATE 9-5-74; PROJ. ENG. / DATE 9-5-74; PROD. / DATE

NEXT HIGHER ASSY. D-UA-TU16-Ø-Ø

SCALE

SHEET OF

digital

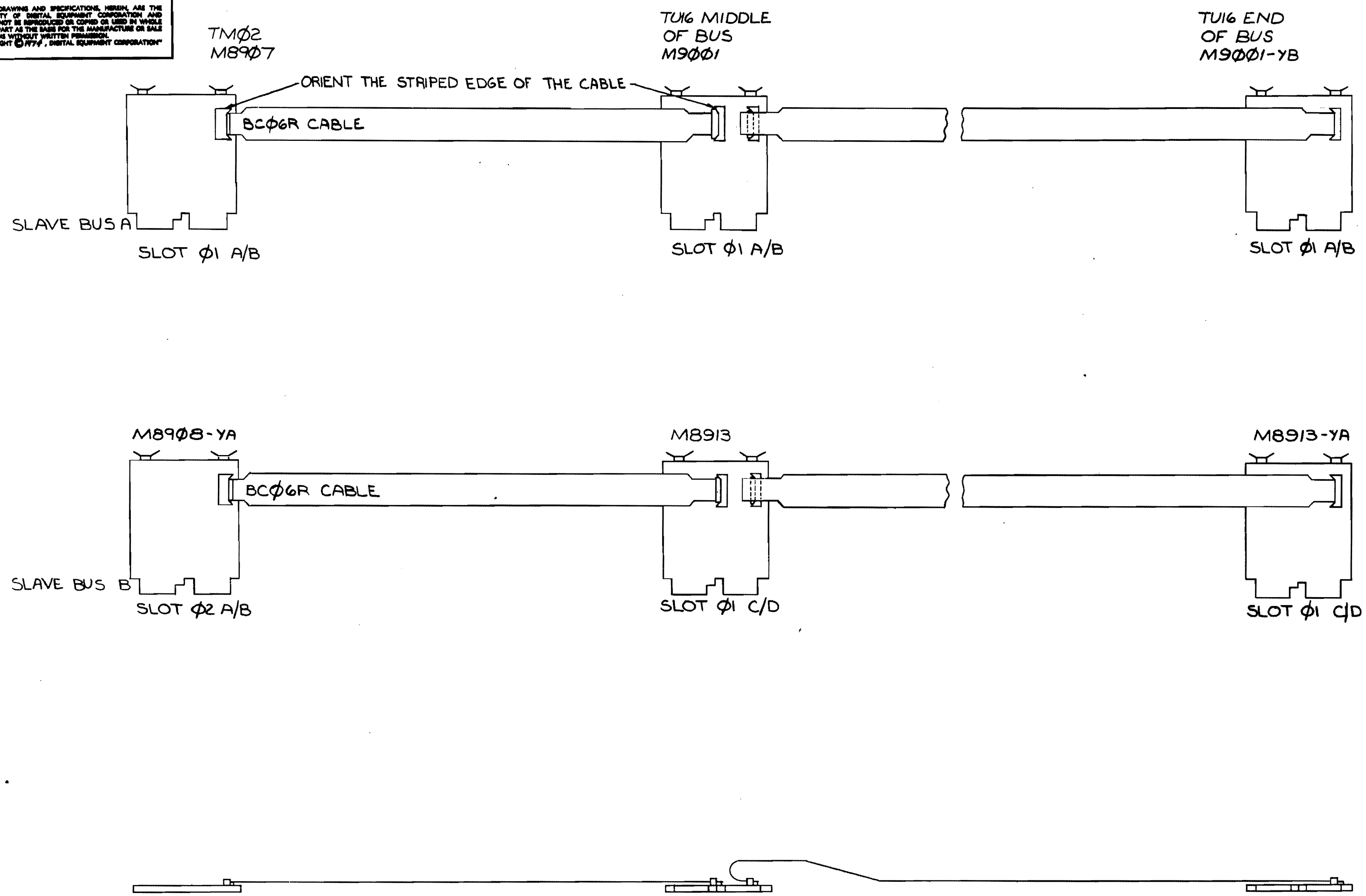
TITLE: MODULE UTILIZATION

SIZE D CODE MU NUMBER TU16-Ø-MU REV. B

DIST.

REVISIONS

REV.	CHANGE NO.	CHK
A	TU16-00005	J. HESS
B	TU16-00007	J. HESS



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.	
ENG.	
PROJ. ENG.	
PROD.	

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

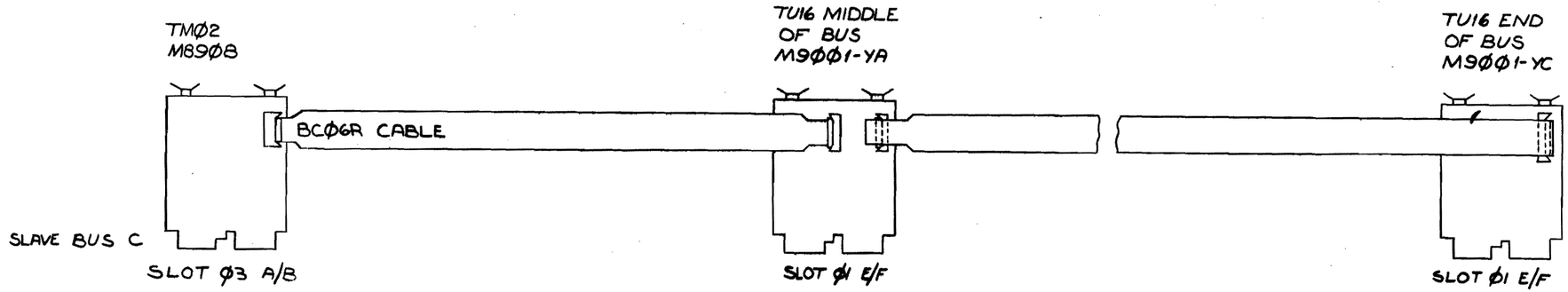
digital

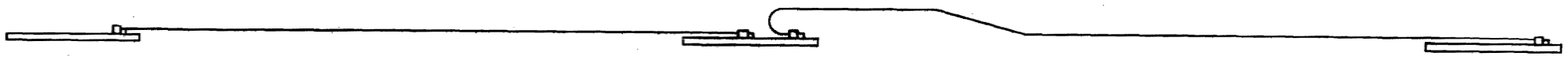
TITLE MASS BUS TRANSCIEVER (TU16)

SIZE	CODE	NUMBER	REV.
D	BS	TU16-Ø-2	

DIST.

REVISIONS | REV. | CHANGE NO. | CHK



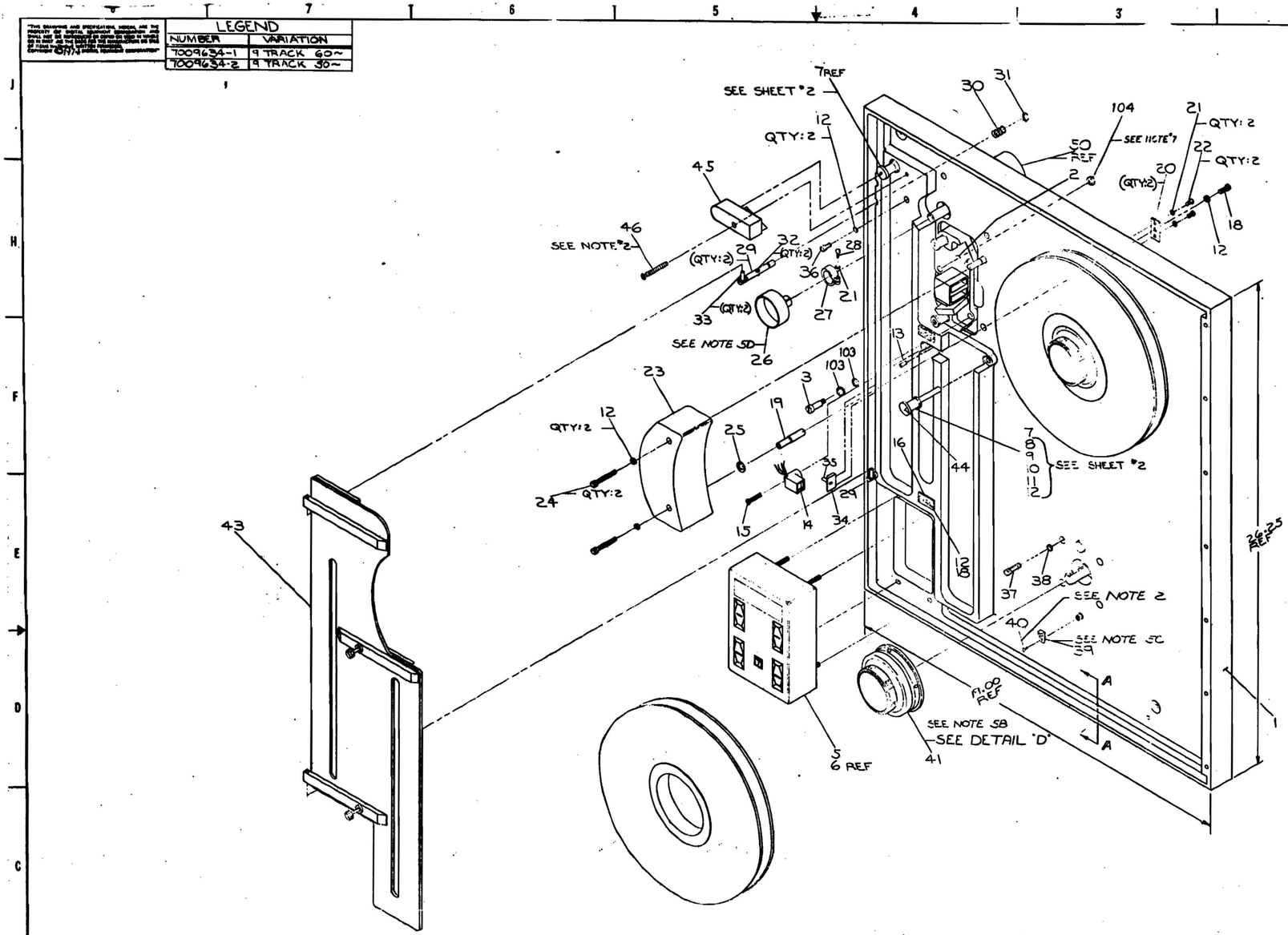


REVISIONS		
CHK	CHANGE NO.	REV.

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

DEC FORM NO. DRD 137

LEGEND	
NUMBER	VARIATION
7009634-1	9 TRACK 60~
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 HYSOND 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 SPACER (AR REQ) THICKNESS PER SPEC. A-SX-TU16-0-4
8. INSTALL FOAM FILTER, MEDIUM.
9. INSTALL PLUG FILTER.
10. INSTALL FOAM FILTER, SMALL.
11. INSTALL FOAM FILTER, LARGE.

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

DRAWN		DATE
CHK'D.		DATE
ENG.		DATE
PROJ. ENG.		DATE
MGR.		DATE

digital

TITLE: TAPE TRANSPORT ASSY

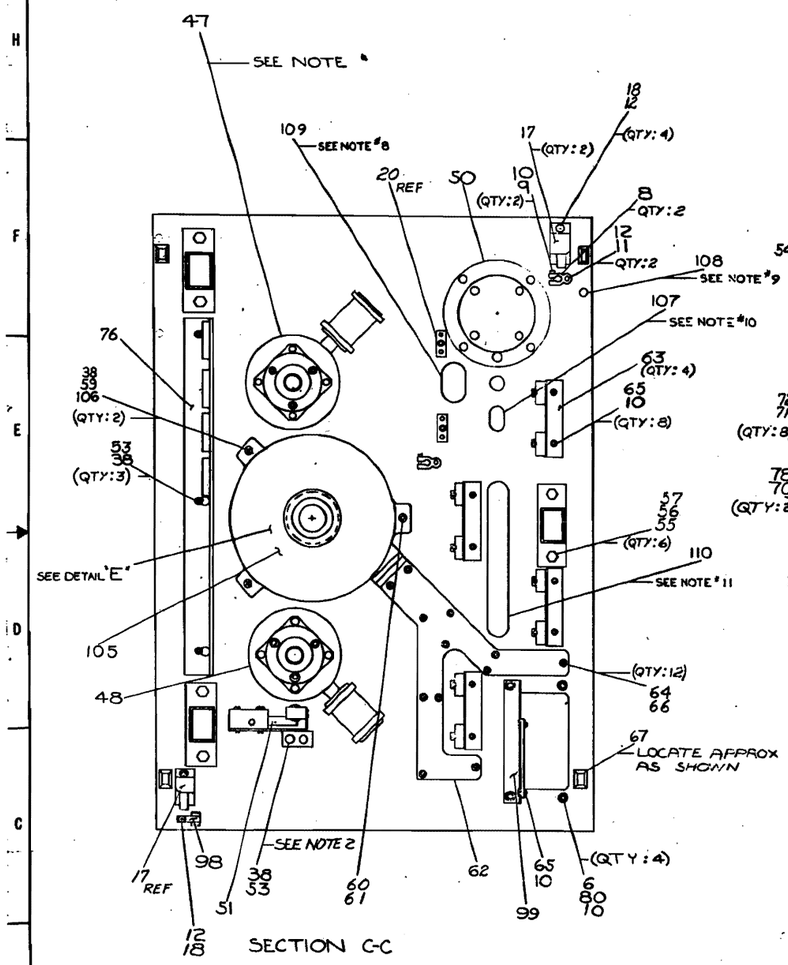
SIZE	CODE	NUMBER	REV.
E	AD	7009634-0-0	L

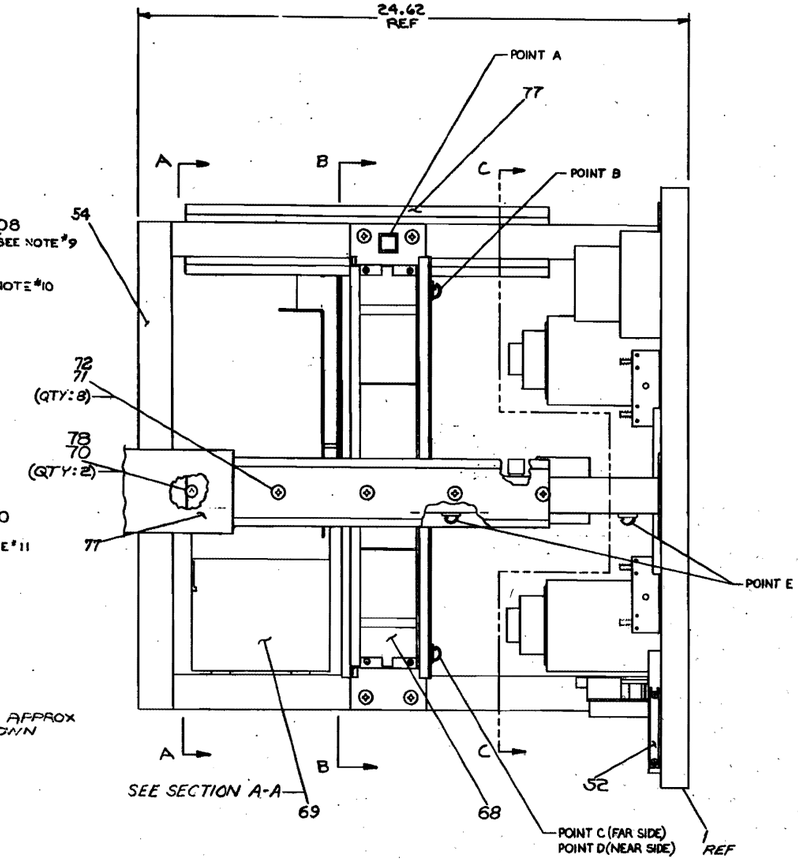
SCALE: 1/2

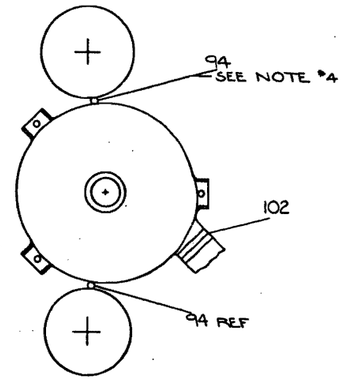
SHEET 1 OF 3

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' FROM 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		

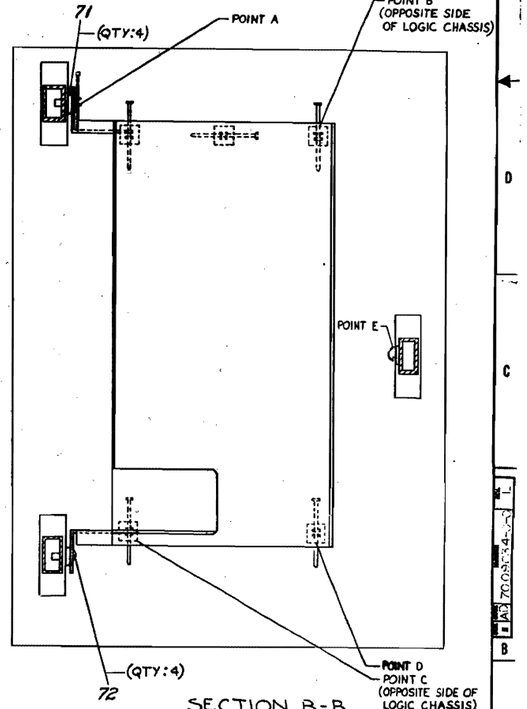






DETAIL 'E'

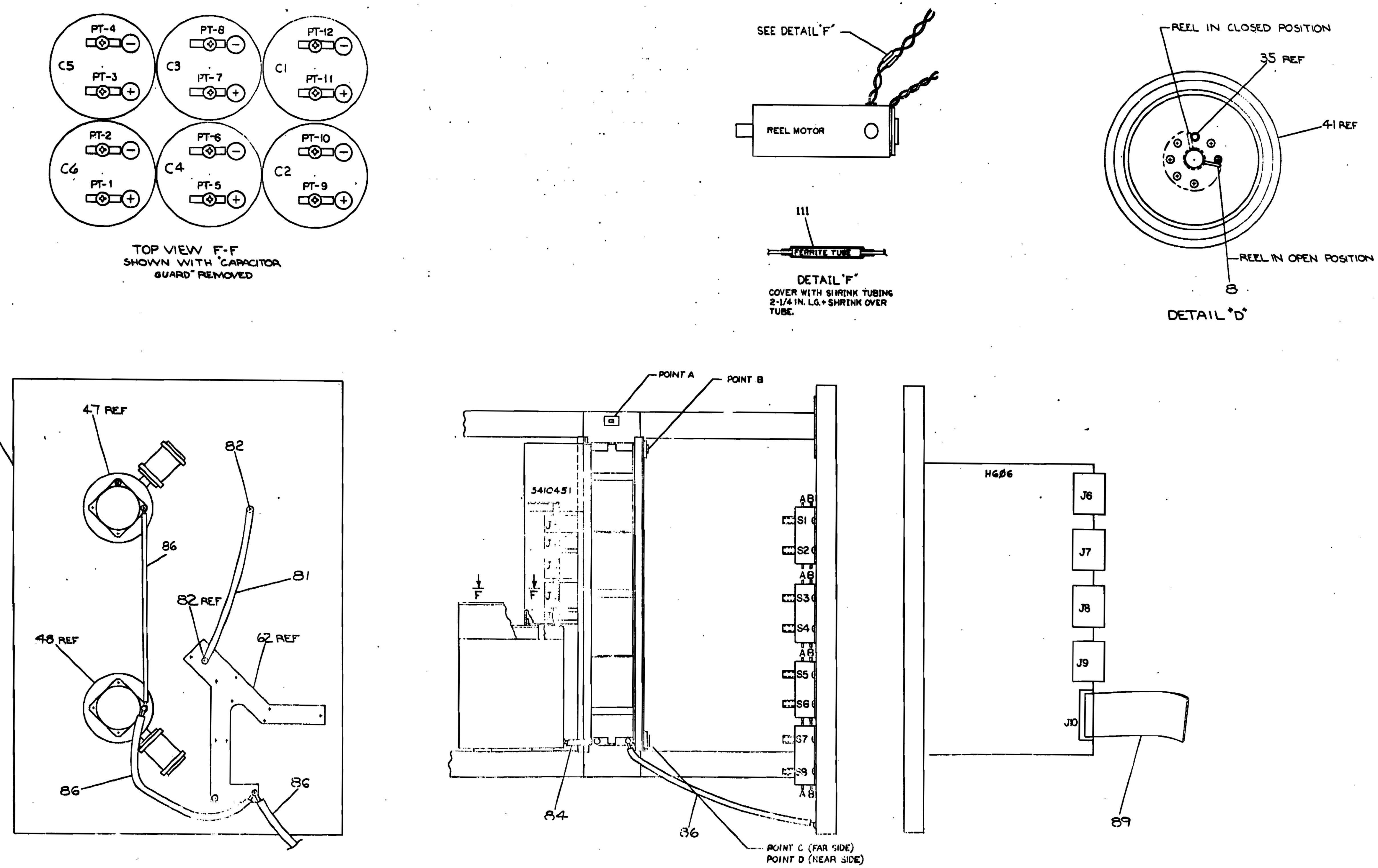
SECTION A-A



SECTION B-B

REVISIONS		
CHG	CHANGE NO.	REV.

TITLE: TAPE TRANSPORT ASSY
SCALE: 1/2 SHEET 2 OF 4
CODE: AD NUMBER: 7009634-0-0 REV: L



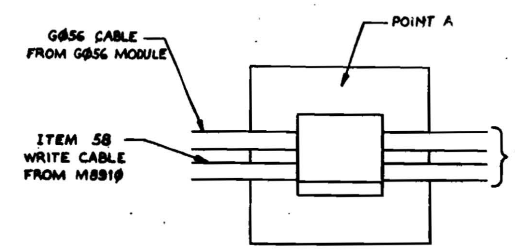
PT-4
PT-3
C5
PT-8
PT-7
C3
PT-12
PT-11
C1
PT-2
PT-1
C6
PT-6
PT-5
C4
PT-10
PT-9
C2
TOP VIEW F-F
SHOWN WITH "CAPACITOR GUARD" REMOVED
SEE DETAIL "F"
REEL MOTOR
111
FERRITE TUBE
DETAIL "F"
COVER WITH SHRINK TUBING 2-1/4 IN. LG.+ SHRINK OVER TUBE.
REEL IN CLOSED POSITION
35 REF
41 REF
REEL IN OPEN POSITION
8
DETAIL "D"
1 REF
47 REF
82
86
81
82 REF
48 REF
62 REF
86
86
POINT A
POINT B
5410451
F
F
AB
S1
S2
S3
S4
S5
S6
S7
S8
H606
J6
J7
J8
J9
J10
84
86
POINT C (FAR SIDE)
POINT D (NEAR SIDE)
89

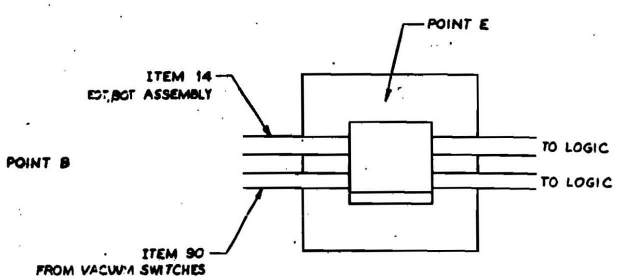
REVISIONS | CHG. | CHANGE NO. | REV.

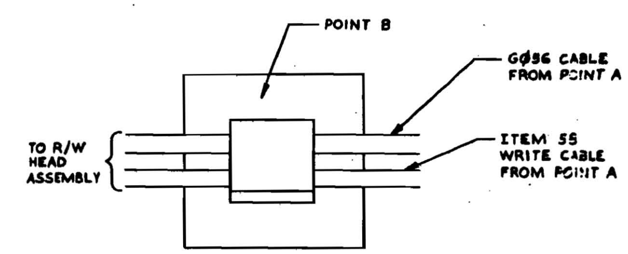
TITLE TA E T NSPORT ASSY | SCALE 1:2 | SHEET 3 OF 4 | SIZE E | NUMBER ...400 | REV. L

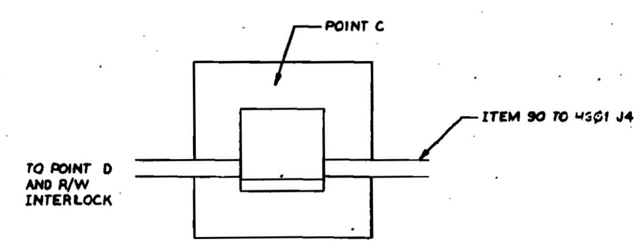
INTERCONNECTION TABLE

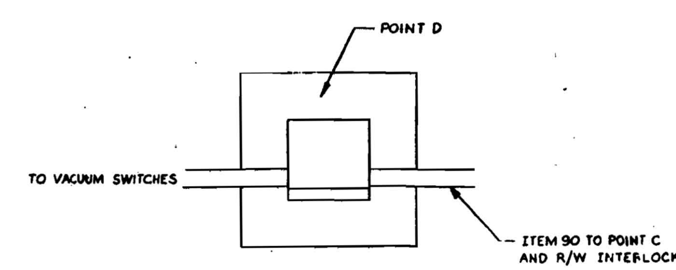
ITEM NO	DESCRIPTION AWG	DESCRIPTION COLOR	FROM CONNECTION	FROM WITH	TO CONNECTION	TO WITH	TIE DOWN POINT (SEE NOTE 8)	REMARKS
	22	WHT/YEL	VAC SW HARN - TB-1	—	VAC SW S1-A	—	B	
	18	BLK	- TB-2	—	S1-B	—	—	
	22	WHT/GRY	- TB-3	—	S2-A	—	D	
	18	BLK	- TB-4	—	S2-B	—	—	
	22	WHT/YEL	- PT-18	—	LOGIC CØ2U1	—	B	
	22	GRN	- PT-19	—	LOGIC CØ2U2	—	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	—	—	
90	22	WHT/BRN	- TB-9	—	S5-A	—	D	
	18	BLK	- TB-10	—	S5-B	—	—	
	22	GRN	- 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 #62 DEC PLATE - GND	105	—	
	—	—	- P13	—	R/W INTERLOCK - J13	—	C	
	—	—	VAC SW HARN - P4	—	HGØ6 J9	—	C	
	14	BLU	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	—		
91		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	—	5410451 J3	—		
5	—	—	CONT BOX CABLE	—	M891Ø - J1	—	—	
68	—	—	LOGIC ASSY - P5	—	5410451 J5	—	—	
69	—	—	TRANSFORMER - P2	—	5410451 J2	—	—	
89	—	—	BCØ5 L	—	HGØ6 J10	—	—	
	—	—	BCØ5 L	—	M891Ø J2	—	—	
92	—	—	SERVO BD HARN - P4	—	5410451 J4	—	—	
	—	—	SERVO BD HARN - P7	—	HGØ6 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	
—	—	—	GØ56 CABLE - GØ56	—	R/W HEAD ASSEMBLY	—	A, B	
—	—	—	WRITE CABLE	—	M891Ø J3	—	A	
—	—	—	WRITE CABLE	—	R/W HEAD ASSEMBLY	—	B	

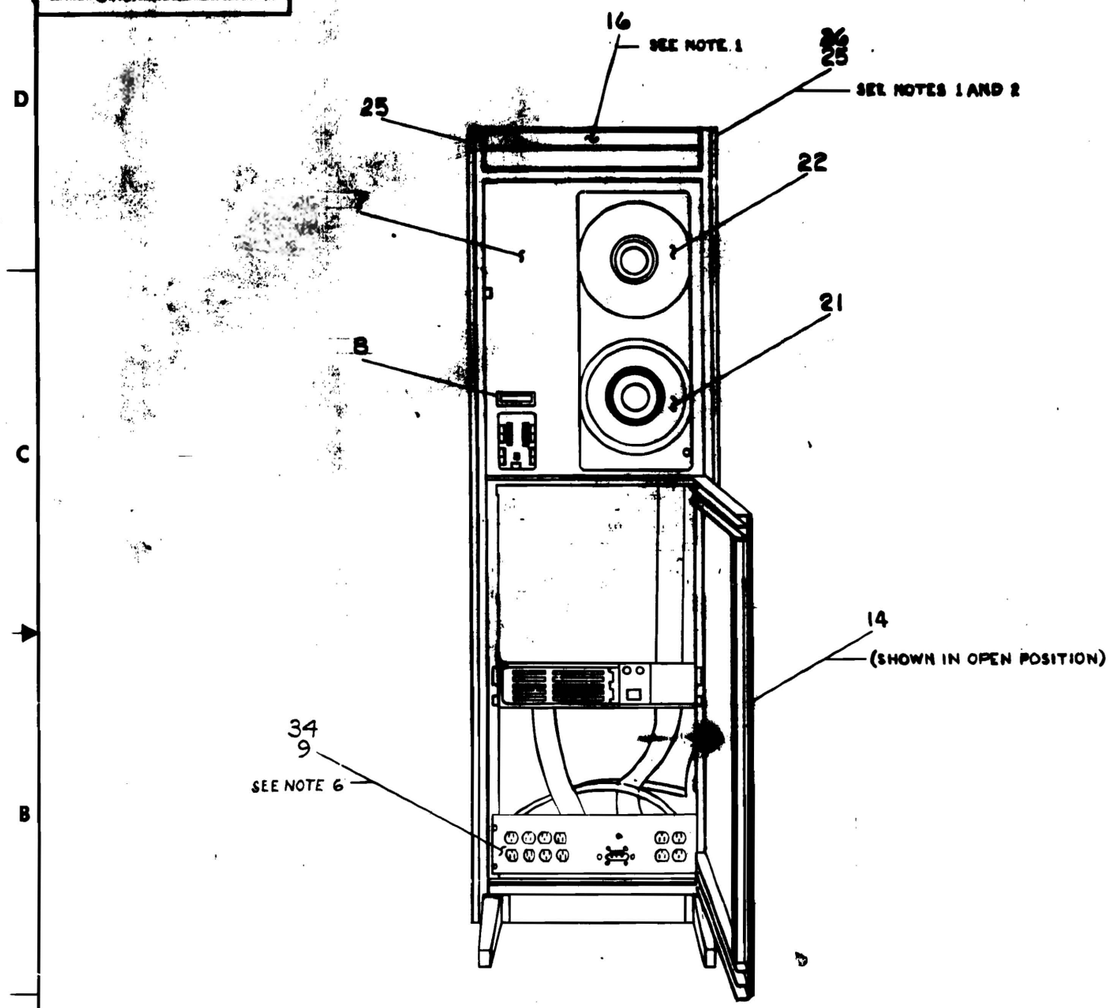












FRONT VIEW

LEGEND

NUMBER	VARIATION DESCRIPTION		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, 60HZ
TU16-EJ	MAG TAPE SLAVE UNIT 45 IPS 9 TRACK PE/NRZI		230V, 50HZ
TU16-EA	TU16-EE	TM02-FA	115V, 60HZ
TU16-EB	TU16-EF	TM02-FB	230V, 60HZ
TU16-EC	TU16-EH	TM02-FA	115V, 50HZ
TU16-ED	TU16-EJ	TM02-FB	230V, 50HZ
TU16-EK	TU16-EE	TM02-FC	115V, 60HZ
TU16-EL	TU16-EF	TM02-FD	230V, 60HZ
TU16-EM	TU16-EH	TM02-FC	115V, 50HZ
TU16-EN	TU16-EJ	TM02-FD	230V, 50HZ

10. INSERT 5 ITEM #49'S (NOT SHOWN) IN LEFT SIDE, FRONT HOLES NUMBERS 68, 76, 84, 92, AND 100. USE 5 TIE WRAPS (ITEM #52, NOT SHOWN) TO SECURE HARNESS TO CAB. ROUTE FAN HARNESS THRU 861 POWER CONTROL FAN BOX AND INTO 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 TM02 LOGIC BOX TO BE CONNECTED TO GROUND LUG AT BOTTOM OF BASE CAB.
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. INSTALL ITEM #27 (QTY 2) INTO HOLES #76 & #77 ON RIGHT FRONT SIDE OF CHASSIS AND MOUNT ITEM #68 AS SHOWN.

NOTES:

1. THE CORRECT DETAIL PART NUMBER VARIATION FOR [illegible] 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 #7) TO TAPE TRANSPORT (ITEM #6, #38) REFER TO DWG NO D-MU-TU16-0-M1.
4. PHANTOM LINES REPRESENT TRANSPORT ASSY IN CLOSED POSITION TO SHOW LOCATION OF SHIPPING BRACKETS (ITEM #34).
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.
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 #61 TO ITEM #46.

REVISIONS			
CHK	CHANGE NO.	REV.	
TJ	TU16-00008	B	REVISED AND REDRAWN
	J. HESS 4-22-75		
	TU16-00012	C	
	J. HESS 7-31-75		
	TU16-00014	D	
	J. HESS 10-22-75		
	TU16-00015	E	
	W. SMITH 11/3/75		
	TU16-00016	F	
	J. HESS 12-19-75		

	DESCRIPTION	DWG./PART NO.	ITEM NO.
	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
QUANTITY & VARIATION	ANGLES ±0° 30'	CLASS OF ACCURACY (CHECK ONE)	NOMINAL DIMENSION RANGE INCHES: 0 TO 6 / 6 TO 12 / 12 TO 24 / 24 TO 48 / 48 TO 72 / 72 TO 96
	SURFACE QUALITY IN MICROINCHES ✓	MEDIUM ☐	±.030 / ±.060 / ±.012 / ±.090 / ±.060 / .05
		PREFERRED ☐	±.003 / ±.010 / ±.005 / .03 / ±.030 / 63

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.	J. BARDONE	9-24-74
PROD.	R. GOGUEN	10-2-74

NEXT HIGHER ASSY. D-DD-TU16-0

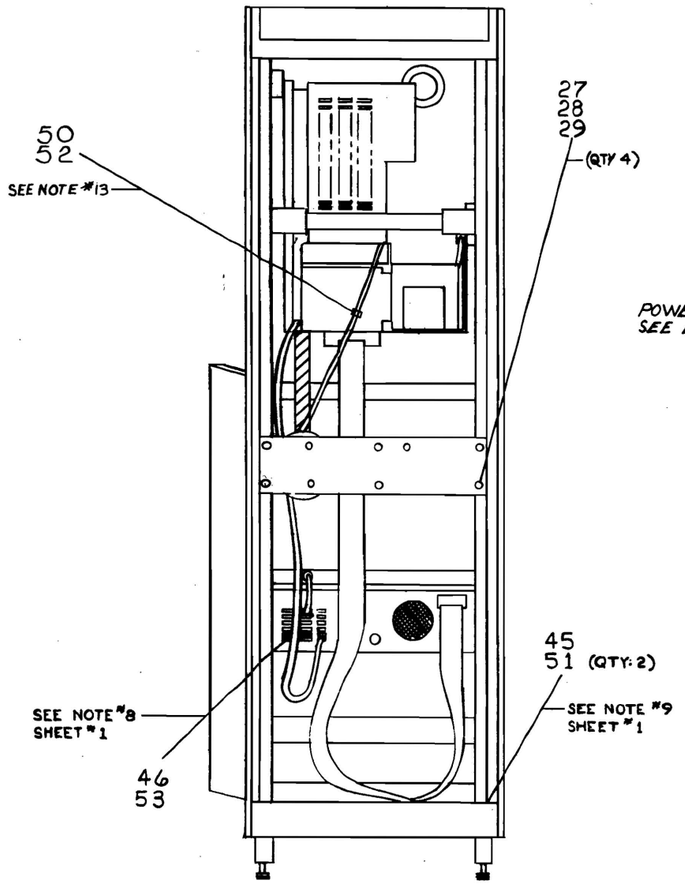
SCALE —

SHEET 1 OF 4

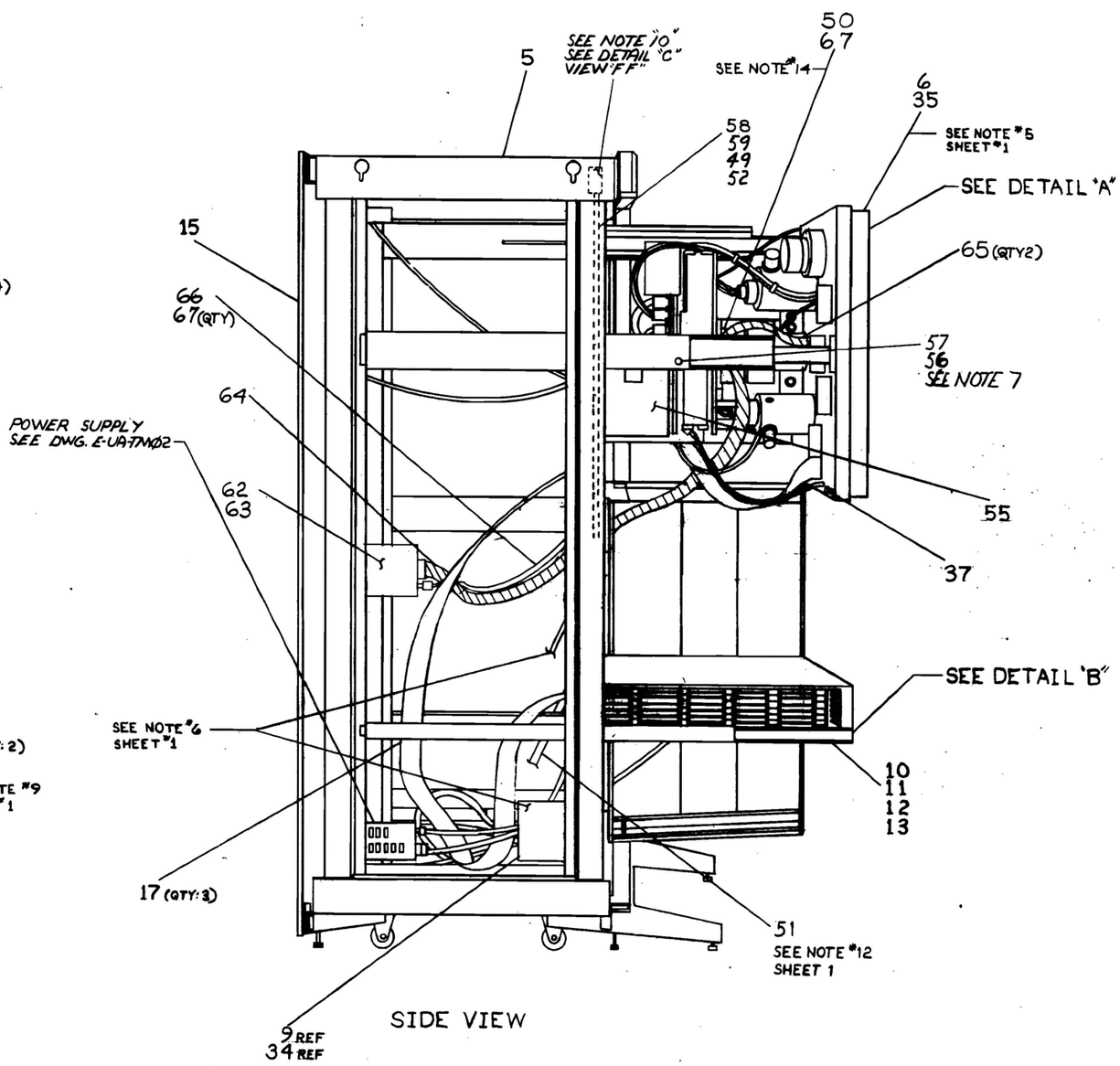
FIRST USED ON TU16

TITLE: MAG TAPE DRIVE (TU16)

D-DD-TU16-0 A



REAR VIEW



SIDE VIEW

REVISIONS		
CHK	CHANGE NO.	REV.

TITLE	SIZE	CODE	NUMBER	REV.
MAG TAPE DRIVE (TU16)	D	UA	TU16-0-0	F
SCALE —	SHEET 2 OF 4		DIST.	

DEC FORM NO. DRD 137

CABLE CHART

ITEM NO	DESCRIPTION COLOR	DESCRIPTION AWG	FROM CONN	FROM WITH	TO CONN	TO WITH	REMARKS
59	—	—	BG1 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		

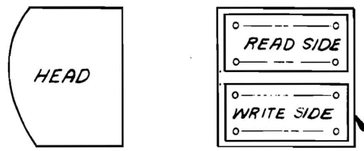
LOCATION OF "TINNERMAN NUTS" (ITEM #27)

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

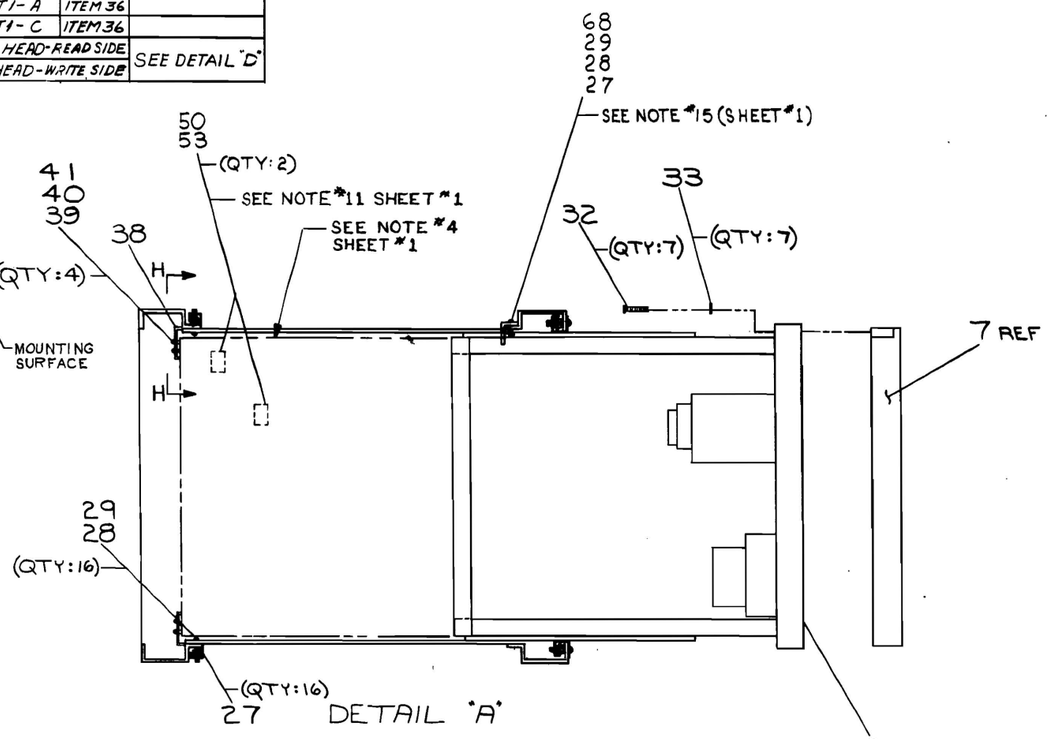
FRONT HOLE NUMBERS	REAR HOLE NUMBERS
RIGHT SIDE: 9, 13, 32, 33, 103, 104, 105, 106	RIGHT SIDE: 3*, 6*, 32*, 33*, 51, 58
LEFT SIDE: 9, 13, 32, 33, 84, 85, 86, 87	LEFT SIDE: 32*, 33*, 3*, 6*, 51, 58
LEFT SIDE HOLE NUMBERS FRONT: 67	RIGHT SIDE HOLE NUMBERS FRONT: 76, 77
REAR: 81, 84, 85, 86, 87	REAR: 10, 103, 104, 105, 106

NOTE:

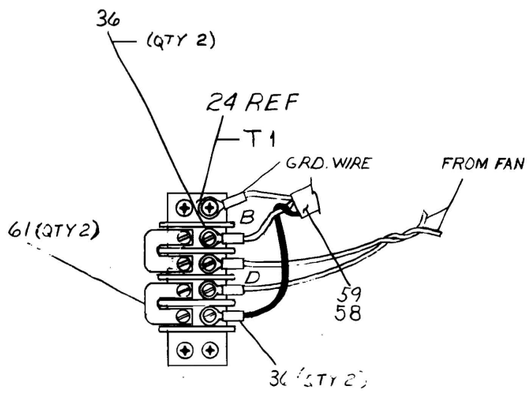
NUMBERS WITH ASTERISKS USED ONLY WHEN TM02 IS USED.



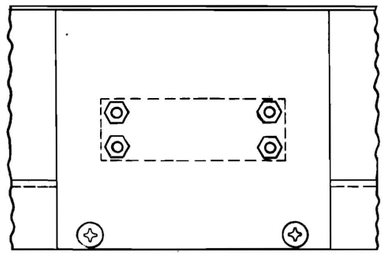
DETAIL "D"

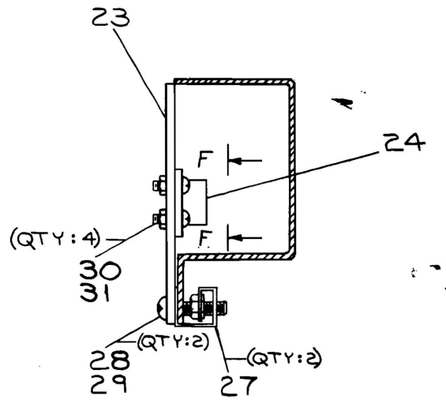


DETAIL "A"



VIEW F-F
(ROTATED 90° CLOCKWISE)





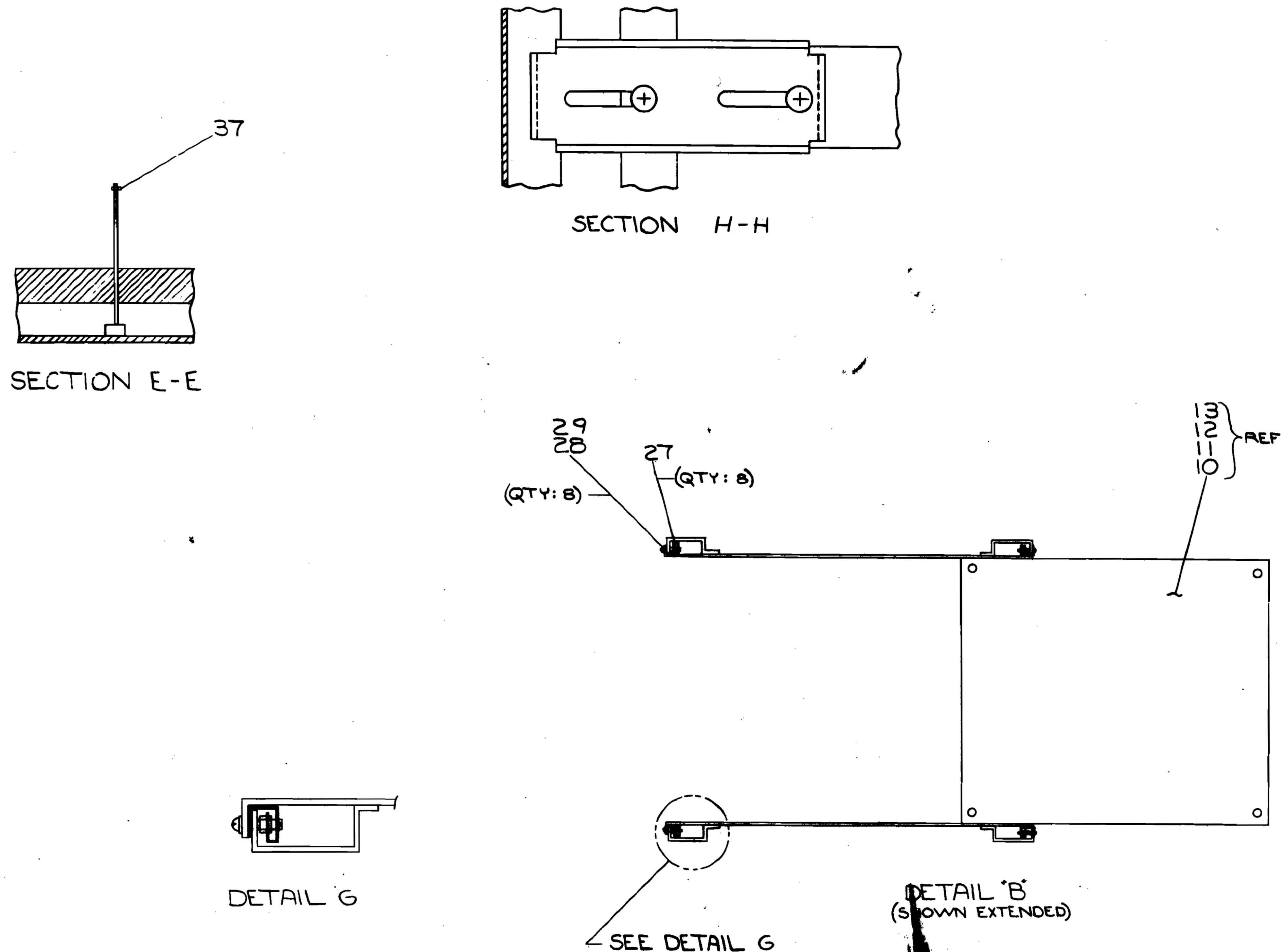
DETAIL "C"

REVISIONS		
CHK	CHANGE NO.	REV.

SIZE	CODE	NUMBER	REV.
D	UA	TU16-Ø-Ø	F

DIST.

DEC FORM NO. DRD 137



REVISIONS		
CHK	CHANGE NO.	REV.

TITLE: MAG TAPE DRIVE (TU16)
SIZE: D
CODE: UA
NUMBER: TU16-0-0
REV.: F
SCALE: —
SHEET 4 OF 4
DIST.