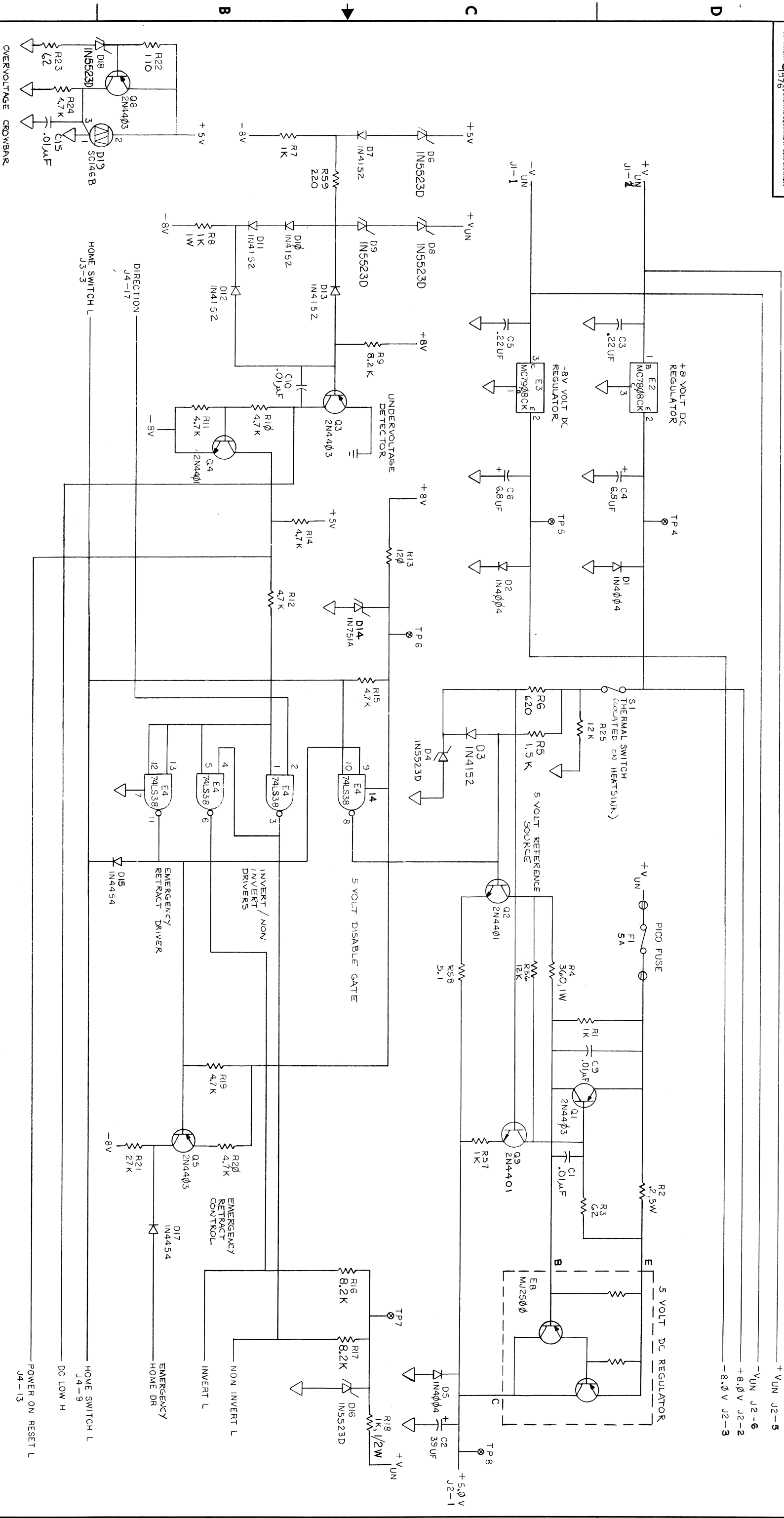


NOTES:
1. ALL RESISTORS TO BE 1/4 W 5%
UNLESS OTHERWISE SPECIFIED

digital

"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART WITHOUT WRITTEN PERMISSION OF DIGITAL EQUIPMENT CORPORATION"

+V_{UN} J2-5
-V_{UN} J2-6
+8.0V J2-2
-8.0V J2-3



NOTES:
1. ALL RESISTORS TO BE 1/4W 5%;

REVISIONS	
CHK	CHANGE NO.
2B	PCO 251
2D	RELEASED AT REV B EQUAL TO .81
2B	5411850-0001
2B	Burnell
2B	G. REICHENBERG
2B	5411850C0002
2B	GREICHENBERG
2B	5411850-CZ003
2B	M. ZARICH
2B	M. Schmid

FIRST USED ON	
CHKD	2-1-71
ENG.	6-7-77
PROJ. ENG.	6-7-77
PROD. J.	6-7-77
NEXT HIGHER ASSY.	
D-UN-5411850-0-0	
SCALE	#
SHEET	1 OF 2
TITLE	
DC SERVO AND POWER BOARD	
SIZE CODE	D
NUMBER	5411850-0-1
REV.	E

"THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF THE MANUFACTURER AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ANY OTHER EQUIPMENT WITHOUT THE WRITTEN PERMISSION OF THE MANUFACTURER." 1376

D.C. LOW H

NON INVERT L

HOME DR

DRIVE MODE
SELECTION
SWITCHES

VEL MODE L

VEL COMMAND

INVERT L

POS MODE L

POS SIG

TACH

TACH AMPIFIER

TP10

TP1

TP2

TP3

TP4

TP5

TP6

TP7

TP8

TP9

TP10

TP11

TP12

TP13

TP14

TP15

TP16

TP17

TP18

TP19

TP20

TP21

TP22

TP23

TP24

TP25

TP26

TP27

TP28

TP29

TP30

TP31

TP32

TP33

TP34

TP35

TP36

TP37

TP38

TP39

TP40

TP41

TP42

TP43

TP44

TP45

TP46

TP47

TP48

TP49

TP50

TP51

TP52

TP53

TP54

TP55

TP56

TP57

TP58

TP59

TP60

TP61

TP62

TP63

TP64

TP65

TP66

TP67

TP68

TP69

TP70

TP71

TP72

TP73

TP74

TP75

TP76

TP77

TP78

TP79

TP80

TP81

TP82

TP83

TP84

TP85

TP86

TP87

TP88

TP89

TP90

TP91

TP92

TP93

TP94

TP95

TP96

TP97

TP98

TP99

TP100

TP101

TP102

TP103

TP104

TP105

TP106

TP107

TP108

TP109

TP110

TP111

TP112

TP113

TP114

TP115

TP116

TP117

TP118

TP119

TP120

TP121

TP122

TP123

TP124

TP125

TP126

TP127

TP128

TP129

TP130

TP131

TP132

TP133

TP134

TP135

TP136

TP137

TP138

TP139

TP140

TP141

TP142

TP143

TP144

TP145

TP146

TP147

TP148

TP149

TP150

TP151

TP152

TP153

TP154

TP155

TP156

TP157

TP158

TP159

TP160

TP161

TP162

TP163

TP164

TP165

TP166

TP167

TP168

TP169

TP170

TP171

TP172

TP173

TP174

TP175

TP176

TP177

TP178

TP179

TP180

TP181

TP182

TP183

TP184

TP185

TP186

TP187

TP188

TP189

TP190

TP191

TP192

TP193

TP194

TP195

TP196

TP197

TP198

TP199

TP200

TP201

TP202

TP203

TP204

TP205

TP206

TP207

TP208

TP209

TP210

TP211

TP212

TP213

TP214

TP215

TP216

TP217

TP218

TP219

TP220

TP221

TP222

TP223

TP224

TP225

TP226

TP227

TP228

TP229

TP230

TP231

TP232

TP233

TP234

TP235

TP236

TP237

TP238

TP239

TP240

TP241

TP242

TP243

TP244

TP245

TP246

TP247

TP248

TP249

TP250

TP251

TP252

TP253

TP254

TP255

TP256

TP257

TP258

TP259

TP260

TP261

TP262

TP263

TP264

TP265

TP266

TP267

TP268

TP269

TP270

TP271

TP272

TP273

TP274

TP275

TP276

TP277

TP278

TP279

TP280

TP281

TP282

TP283

TP284

TP285

TP286

TP287

TP288

TP289

TP290

TP291

TP292

TP293

TP294

TP295

TP2

DIGITAL EQUIPMENT CORPORATION				QUANTITY / VARIATION										NOTES:											
PARTS LIST														1. R60 + R61 not included on PL. Value will be determined in testing.											
MADE BY SCOTT STEVENS		CHECKED <i>E. Y. Bunnell</i>		SECTION																					
DATE 10 Jun 76		DATE 2-9-77																							
ENG <i>[Signature]</i>		PROD <i>D. A. Sage</i>		ISSUED SECTION																					
DATE 6/7/77		DATE 6-7-77												REF DESIGNATION											
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	5411850-0-0																					
1	D-MD-5011843-0-0	5011849	ETCHED BOARD	1																					
2		1013466-08	CAPACITOR, 680 pF, 10%, 50V, Cer.Ax.	1														C12							
3		1002423-00	CAPACITOR, 3,300 pF, 10%, 50V, Mica	1														C7							
4		1001610-00	CAPACITOR, .01 uF, 10%, 50V, Cer.	4														C1, C9, C10, C15							
5		1002630-00	CAPACITOR, .015 uF, 10%, 100V, Mylar	1														C8							
6		1013466-11	CAPACITOR, .22 uF, 50V, Cer. Ax.	3														C3, C5, C11							
7		1005306-00	CAPACITOR, 6.8 uF, 35V, Tant	4														C4, C6, C13, C14							
8		1000076-00	CAPACITOR, 39 uF, 10V, Tant	1														C2							
9		1309422-00	RESISTOR, 5.1 OHM, 1/4 W 5% CC	1														R58							
10		1312929-00	RESISTOR, 62 OHM, 1/4 W 5% CC	2														R3, R23							
11		1311523-00	RESISTOR, 110 OHM, 1/4 W 5% CC	1														R22							
12		1300247-00	RESISTOR, 120 OHM, 1/4 W 5% CC	1														R13							
13		1300271-00	RESISTOR, 220 OHM, 1/4 W 5% CC	1														R59							
14		1301425-00	RESISTOR, 300 OHM, 1/4 W 5% CC	1														R55							
15		1303178-00	RESISTOR, 620 OHM, 1/4 W 5% CC	1														R6							
16		1300365-00	RESISTOR, 1K, 1/4 W 5% CC	5														R1, R7, R44, R57, R39							
17		1300391-00	RESISTOR, 1.5K, 1/4 W 5% CC	1														R5							
18		1302388-00	RESISTOR, 2K, 1/4 W 5% CC	1														R43							
19		1300426-00	RESISTOR, 2.7K, 1/4 W 5% CC	2														R46, R47							
20																									
21		1302389-00	RESISTOR, 4.3K, 1/4 W 5% CC	1														R53							
22		1300447-00	RESISTOR, 4.7K, 1/4 W 5% CC	9														R10, R11, R12, R14, R15, R19, R20, R24, R49							
23		1303179-00	RESISTOR, 8.2K, 1/4 W 5% CC	3														R9, R16, R17							
24		1300488-00	RESISTOR, 12K, 1/4 W 5% CC	5														R25, R26, R31, R45, R56							
25		1305346-00	RESISTOR, 27K, 1/4 W 5% CC	1														R21							
26		1300539-00	RESISTOR, 120K, 1/4 W 5% CC	1														R35							
27		1312923-00	RESISTOR, 2.10K, 1/4 W 1% MF	1														R41							
28		1305114-00	RESISTOR, 3.48K, 1/4 W 1% MF	1														R34							
E.C.O. NO. <i>PCO 251</i> <i>-B1-</i> RELEASED AT B EQUAL B1 PHOTO C Burnell S. Reichen- berg 7/8 KLOS D S. Reichen- berg 7/8 KLOS D S. Reichen- berg 7/8 KLOS D				THIS DRAWING AND SPECIFICATIONS. HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1977 DIGITAL EQUIPMENT CORPORATION										TITLE DC SERVO AND POWER BOARD		ASSY NO. D-UA-5411850-0-0		SIZE B		CODE PL		NUMBER 5411850-0-0		REV. D	
EN-01140A-16-R276(325)				DRB 125		SHEET 1 OF 3		INSERTION PARTS LIST DATA BASE REV																	

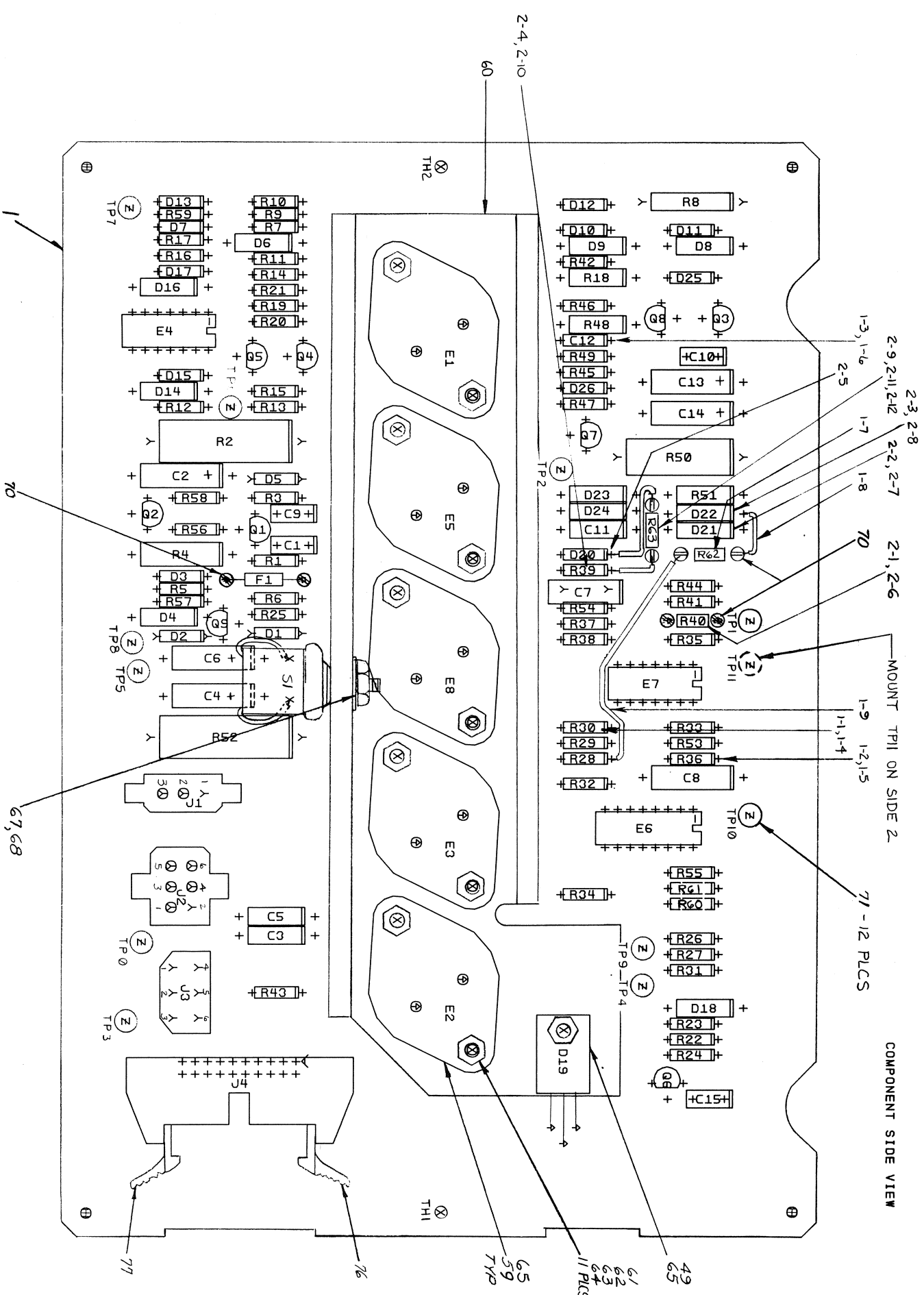
DIGITAL EQUIPMENT CORPORATION				QUANTITY / VARIATION										NOTES:											
PARTS LIST														1. R60 + R61 not included on PL. Value will be determined in testing.											
MADE BY SCOTT STEVENS		CHECKED <i>E. Y. Bunnell</i>		SECTION																					
DATE 10 Jun 77		DATE 2-9-77																							
ENG <i>[Signature]</i>		PROD <i>D. A. Sage</i>		ISSUED SECTION																					
DATE 6/7/77		DATE 6-7-77												REF DESIGNATION											
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	5411850-0-0																					
29		1314763-00	RESISTOR, 4.12K, 1/4 W 1% MF	1														R36							
30		1303312-00	RESISTOR, 10.0K, 1/4 W 1% MF	3														R28, R29, R62							
31		1312924-00	RESISTOR, 10.7K, 1/4 W 1% MF	1														R32							
32		1309412-00	RESISTOR, 18.2K, 1/4 W 1% MF	1														R33							
33		1311594-00	RESISTOR, 30.1K, 1/4 W 1% MF	1														R54							
34		1313843-00	RESISTOR, 107K, 1/4 W 1% MF	1														R27							
35		1313844-00	RESISTOR, 221K, 1/4 W 1% MF	1														R38							
36		1302378-00	RESISTOR, 51 OHM, 1/2 W 5% CC	1														R51							
37		1300364-00	RESISTOR, 1K, 1/2 W 5% CC	2														R18, R48							
38		1314068-00	RESISTOR, 360 OHM, 1 W 5% CC	1														R4							
39		1300368-00	RESISTOR, 1K, 1 W 5% CC	1														R8							
40		1301494-00	RESISTOR, 200 OHM, 2 W 5% CC	1														R50							
41		1313358-00	RESISTOR, .2 OHM, 5 W 3% CC	2														R2, R52							
42		1105796-00	DIODE, 1N4004, (D041)	3														D1, D2, D5							
43		1113953-00	DIODE, 1N5523D, (D07)	8														D4, D6, D8, D9, D18, D16, D21, D22							
44		1109990-00	DIODE, 1N757A, (D07)	2														D23, D24							
45		1110994-00	DIODE, 1N751A, (D07)	1														D14							
46		1114117-00	DIODE, 1N4152, (D035)	6														D3, D7, D10, D11, D12, D13							
47		1111577-00	DIODE, 1N4454, (D035)	5														D15, D17, D20, D25, D26							
48		1513698-00	TRIAC, SC146B	1														D19							
49		9009597-00	INSULATING WASHER, TRIAC	1														(D19)							
50		1513489-00	TRANSISTOR, 2N4401, (T092)	4														Q2, Q4, Q8, Q9							
51		1513490-00	TRANSISTOR, 2N4403, (T092)	5														Q1, Q3, Q5, Q6, Q7							
52		1511282-00	TRANSISTOR, MJ2500, (T03)	2														E1, E8							
53		1511349-00	TRANSISTOR, MJ3000, (T03)	1														E5							
54		1911706-00	FET ANALOG SWITCH, IH5012, (16 PIN)	1														E6							
55		1912818-00	IC, DEC, 74LS38, (14 PIN)	1														E4							
56		1912107-01	OP AMP, LM324 AN (14 PIN)	1														E7							
E.C.O. NO. <i>PCO 251</i> <i>-B1-</i> RELEASED AT B EQUAL B1 PHOTO C Burnell S. Reichen- berg 7/8 KLOS D S. Reichen- berg 7/8 KLOS D				THIS DRAWING AND SPECIFICATIONS. HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT © 1977 DIGITAL EQUIPMENT CORPORATION										TITLE DC SERVO AND POWER BOARD		ASSY NO. D-UA-5411850-0-0		SIZE B		CODE PL		NUMBER 5411850-0-0		REV. D	
EN-01140A-16-R276(325)				DRB 125		SHEET 2 OF 3		INSERTION PARTS LIST DATA BASE REV																	

DIGITAL EQUIPMENT CORPORATION				QUANTITY / VARIATION										NOTES:			
PARTS LIST																	
MADE BY SCOTT STEVENS		CHECKED <i>E.Y. Burnelo</i>		SECTION													
DATE 10 Jun 76		DATE 2-9-77															
ENG <i>[Signature]</i>		PROD <i>D. K. [Signature]</i>		ISSUED SECTION													
DATE 6/7/77		DATE 6-7-77															
ITEM NO.	DRAWING NO.	PART NO.	DESCRIPTION	5411850-0-0												REF DESIGNATION	
57		1913695-00	IC, MC7808CK, (T03)	1												E2	
58		1913694-00	IC, MC7908CK, (T03)	1												E3	
59		9008419-00	INSULATING WASHER, T03	5												(E1, E2, E3, E5, E8)	
60		7418595-00	HEATSINK	1													
61																	
62		9008033-01	SCREW, PAN. HD. #4-40, 9/16"	11												(E1, E2, E3, E5, E8, D19)	
63		9006557-00	KEPNUT, #4-40	11												(E1, E2, E3, E5, E8, D19)	
64		9006655-00	FLAT WASHER, #4	11												(E1, E2, E3, E5, E8, D19)	
65		9008268-00	THERMAL COMPOUND	AR												(E1, E2, E3, E5, E8, D19)	
66		1210824-00	SWITCH, THERMAL	1												S1	
67		9008185-00	KEPNUT, #6-32	1												(S1)	
68		9006653-00	FLAT WASHER, #6	1												(S1)	
69		1205747-00	FUSE, PICO, 5 AMP	1												F1	
70		9006735-00	SPLIT LUG	8												(F1, R40, R62, R63)	
71		9007791-00	TERMINAL TURRET, SOLDER	12												TP0 THRU TP11	
72		1213922-01	CONNECTOR, AMP, 3 PIN, BLK/TIN	1												J1	
73		1213922-04	CONNECTOR, AMP, 6 PIN, BLK/TIN	1												J2	
74		1213900-00	CONNECTOR, BURNDY, 6 PIN, BLK/GOLD	1												J3	
75		1209941-06	CONNECTOR, BERG, 20 PIN	1												J4	
76		1209941-03	LATCH, RIGHT	1												(J4)	
77		1209941-04	LATCH, LEFT	1												(J4)	
78		1305324-00	RESISTOR, 4.99K, 1/4 W 1% mf	2												R37, R30	
79		1300250-00	RESISTOR, 150 OHM, 1/4 W 5% CC	1												R42	
80		9105740-55	WIRE 30 AWG	AR													
81		1312618-00	RESISTOR, 16.9K, 1/4W, 1%	1												R40	
82		1300229-00	RESISTOR, 100R, 1/4W, 5%	1												R63	
ECO. NO.																	
THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF DIGITAL EQUIPMENT CORPORATION AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION. COPYRIGHT ©1977 DIGITAL EQUIPMENT CORPORATION																	
TITLE				ASSY NO.				SIZE		CODE		NUMBER		REV.			
DC SERVO AND POWER BOARD				D-UA-5411850-0-0				B		PL		5411850-0-0		D			
				SHEET 3 OF 3				INSERTION PARTS LIST DATA BASE REV									
EN-01140A-16-R276(325)				DRB 125													

THIS DRAWING AND SPECIFICATION, HEREIN, AND THE INFORMATION CONTAINED THEREIN, ARE THE PROPERTY OF THE DISTRICT OF COLUMBIA. ANY REPRODUCTION OR TRANSMISSION OF THIS INFORMATION IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN PERMISSION OF THE DISTRICT OF COLUMBIA, IS PROHIBITED.

0-0-058115 UN D 2

COMPONENT SIDE VIEW



NOTES:

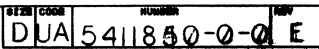
CHK	CHANGE NO	REV
28	PC 2.51	B1
5-3-77	RELEASED	B
8B	EQUAL B1	
5-4-77	5411850-0001	C
5-4-77	5411850-0002	D

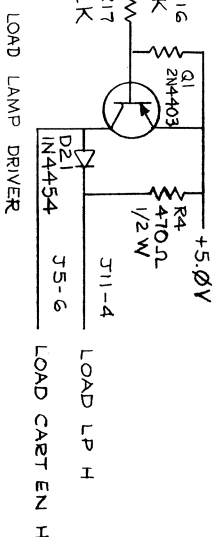
SIGNATURES	DATE
DRN. 2. 5411850-0	5/4/77
CHK. D. 5411850-0	5/4/77
ENG. 2. 5411850-0	5/4/77
PROD. 2. 5411850-0	5/4/77
SCALE 2. 5411850-0	5/4/77
SHT. 1 OF 4	
NEXT HIGHER ASSY. R-DD-5-111850-0	

SIZE	CODE	NUMBER	REV
DUA	5411850-0-0	D	
DRN. 2. 5411850-0			
CHK. D. 5411850-0			
ENG. 2. 5411850-0			
PROD. 2. 5411850-0			
SCALE 2. 5411850-0			
SHT. 1 OF 4			
NEXT HIGHER ASSY. R-DD-5-111850-0			

[illegible]

SIGNATURES		DATE	digital			
DRN. <i>P. J. H. H. H. H. H.</i>		3/17/72				
CHK. D. <i>James D.</i>		3-24-72				
ENG. <i>P. J. H. H. H.</i>		6/11/72	TITLE DC SERVØ AND			
PROJ. <i>Eng. J. H. H.</i>		6/21/72	POWER BOARD			
PROD. D. <i>James D.</i>		6/17/72				
SCALE 2/1			SIZE CODE	NUMBER	REF	
SHT. 1 OF 4			D	5411850-0-0	E	
NEXT HIGHER ASSY. B-DD-5411850-0						





IC	△	≡	+5V	-5V	+8V	-8V
75101B-00	7		14	13		
75113, 7442, LS123, LS174, LS193 LS195, LS279, E31, E36, EC3	8		16			
324					4	11
E43 (ROM)		8	16			
UNSPECIFIED	7		14			
E8 (339)	12				3	
E34 (339)					3	12
E61 (339)	12				3	

REVISIONS			
CHK	CHANGE NO.	REV.	
CB 3/24/77	RELEASED EQUAL TO C2		C
CB	5412175-0001		D
P. BURNELL			
G. REICHENBERG			
4/5/77	<i>Alan Burnell</i>		
CB	5412175-0002		E
P. BURNELL			
G. REICHENBERG			
AK	<i>Alan Burnell</i>		
AK	5412175-C200B		F
M. ZARICH			
<i>M. Zarich</i>			
AK 4/14/78	5412175CX004 G REICHENBERG <i>Alan Burnell</i>		H
U.M.M. 29-JAN-78	5412175-CZ005 M. ZARICH <i>M. Zarich</i>		J

FIRST USED ON		DIGITAL	
RLO1			
TITLE DRIVE LOGIC			
(STATE CONTROL			
LOGIC) (DL1)			
SIZE		NUMBER	
CODE			REV.
D	CS	5412175-0-1	J
SHEET 1		OF 8	
SCALE 1			
3.00-D-5.112175-0			
NEXT HIGHER ASSY.			
PROD. 10-16-72			
PROL. ENG. 10-16-72			
CHK'D BY 10-16-72			
ENGR. 10-16-72			
DIN. 10-16-72			

