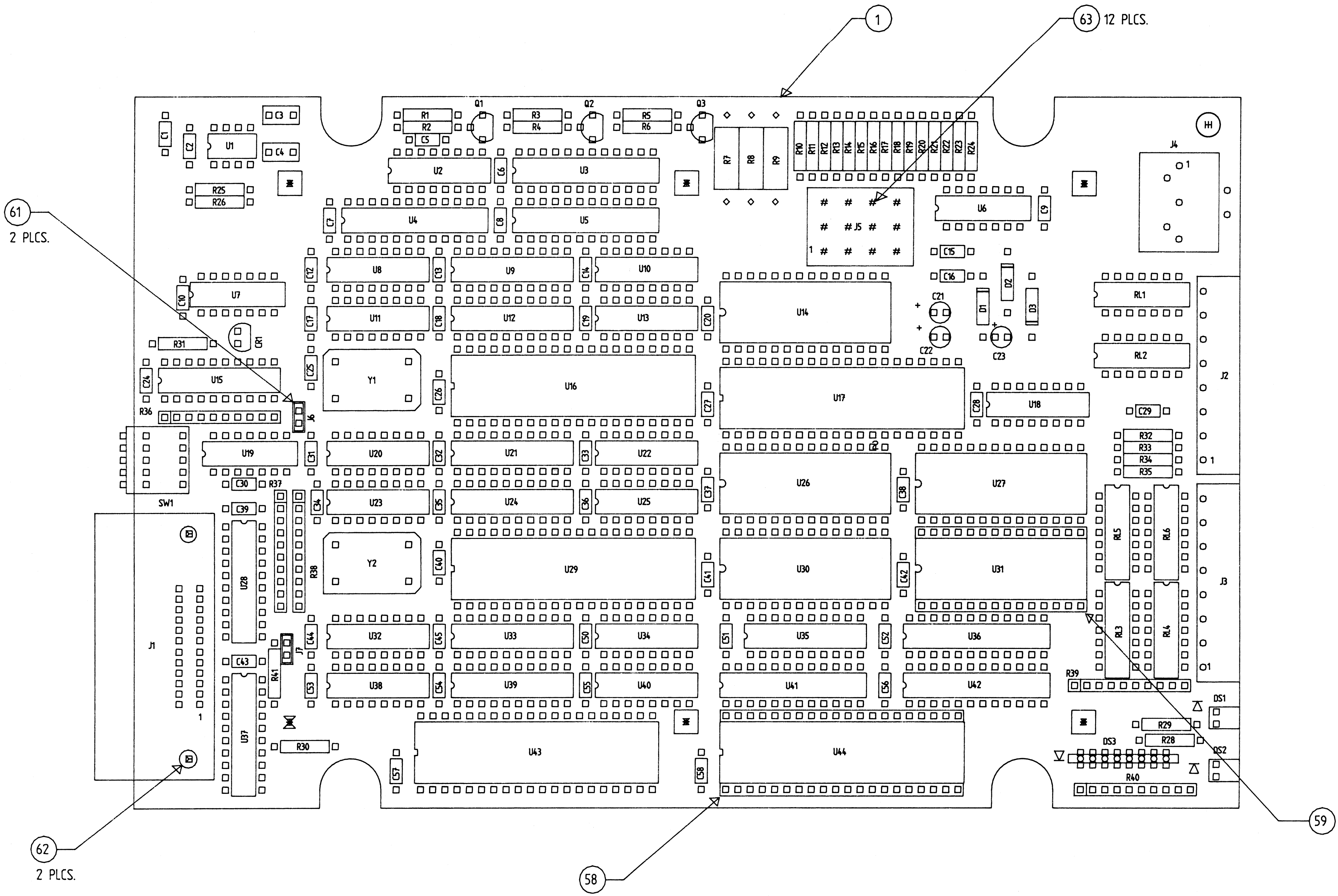


REVISIONS				
REV	DESCRIPTION	DR/DATE	APP'D	M/F
6	ECO-3883	TRM 13AUG98		
7	ECO-7092	CWH 11OCT00		
8	REDRAWN PER ECO-07540	TRM 9FEB01		
9	ECO08603	TRM 31AUG01		



FOR DIMENSIONING AND TOLERANCING USE ANSI Y 14.5M

THIRD ANGLE PROJECTION
NEXT ASSY

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UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONS ARE IN INCHES
REMOVE ALL BURRS AND BREAK SHARP EDGES.
TOLERANCES:
DECIMALS:
XX ±.01
XXX ±.005
ANGLES ±
SURFACE ROUGHNESS

DO NOT SCALE PRINT

DRAWN
J. CHRISTIAN 12JUL89
CHECKED
D. COSTIGAN 27DEC90
APP'D
B. SPEARIN 11MAR91
APP'D
F. GOMES 11MAR91
APP'D

REL

34 Maple Street Milford, MA 01757 U.S.A.
TITLE
ASSEMBLY,
PUMP CONTROLLER

SIZE
D

DWG NO
WAT200186

REV
9

SCALE
OUT OF SCALE
SHT 1 OF 3

ITEM	PART NO.	QTY	DESCRIPTION	REF/DES
0	WAT200453	REF	SCHEMATIC, PUMP BOARD	
0	WAT200454	REF	PERFORMANCE SPEC	
1	WAT200187	1	PCB, PUMP CONTROL MODULE	
2	WAT200334	1	IC., TLC555 CMOS TIMER	U1
3	WAT002-10	1	IC., 74HC174	U2
4	WAT200330	3	IC., PAL C22V10L PROG	U3,4,5
5	WAT042092	1	IC., LM324	U6
6	WAT005-24	1	IC., 74HCT05	U7
7	WAT002-13	12	IC., 74HC283	U8,10,11,13,20,22,
				U23,25,32,34,38,40
8	WAT002-12	6	IC., 74HC273	U9,12,21,24,33,39
9	WAT087277	1	IC., ADC0808	U14
10	WAT002-11	1	IC., 74HC240	U15
11	WAT020451	3	IC., 82C55A CMOS	U16,17,29
12	WAT072496	1	IC., ULN2003A 7 DARL. DRV	U18
13	WAT002-05	1	IC., 74HC393	U19
14	WAT045094	2	IC., HM62256 S-RAM 32K x 8	U26,30
15	WAT020453	1	IC., Z80A-CTS (Z84C3004)	U27
16	WAT046315	1	IC., SN75161A	U28
17	WAT087162	1	IC., PROM. PROG. SIM 2.2	U31
18	WAT200326	1	IC., PAL, 16L8Q PROG	U35
19	WAT200329	1	IC., PAL, 20G10-35 PROG	U36
20	WAT046314	1	IC., SN75160A	U37
21	WAT200327	1	IC., PAL, 20G10-35 PROG	U41
22	WAT200328	1	IC., PAL, 20G10-35 PROG	U42
23	WAT046313	1	IC., TMS9914A	U43
24	WAT020452	1	IC., Z80A CPU (Z84C0004)	U44
25	WAT046233	48	CAP, DIPGUARD .1UF 50V	C1,2,5-10,12-20,
				C24-45,50-58
26	WAT011475	2	CAP, 1UF 50V MLC	C3,4
27	WAT011468	3	CAP, 4.7UF S-TANT .35V, 10%	C21,22,23
28	WAT011481	1	CONN, GPIB IEEE-488	J1
29	WAT015157	2	CONN, 8 POLE SOCKET R/A	J2,3
30	WAT200207	1	CONN, CIRC. DIN 5 PIN	J4
31	WAT200333	1	CONN, 12 CKT .198 RECPT.	J5
32	WAT074651	2	JMP, WAFER .100, 2CKT	J6,7
33	WAT087289	3	RCTFR, 1N4002	D1,2,3

Waters

34 Maple Street Milford, MA 01757 U.S.A.

SIZE A	DWG NO WAT200186	REV 9
SCALE	OUT OF SCALE	SHT 2 OF 3

ITEM	PART NO.	QTY	DESCRIPTION	REF/DES
34	WAT011974	1	LED YELLOW, R/A	DS1
35	WAT011975	1	LED GREEN, R/A	DS2
36	WAT011488	1	LED DIP PACK 8 x 1	DS3
37	WAT011477	1	DIODE MBD 701	CR1
38	WAT050733	3	XSTR 2N4400 NPN .6A, 40V	Q1,2,3
39	WAT200342	1	DIP SWITCH 5 POS R/A	SW1
40	WAT079276	6	REST. 4.7K 5% 1/4W CC	R1-6
41	WAT071011	3	REST. 150 5% 1/2W CC	R7-9
42	WAT046276	3	REST. 2.74K 1% 1/8W MF	R10,13,16
43	WAT097042	6	REST. 10K 1% 1/8W MF	R11,14,17,19,21,23
44	WAT097043	3	REST. 8.25K 1% 1/8W MF	R12,15,18
45	WAT072876	3	REST. 20K 1% 1/8W MF	R20,22,24
46	WAT097036	2	REST. 150K 1% 1/8W MF	R25,26
47	WAT097051	2	REST. 301 1% 1/8W MF	R28,29
48	WAT097048	2	REST. 1K 1% 1/8W MF	R30,31
49	WAT087280	2	REST. 270 5% 1/4W CC	R32,34
50	WAT079282	2	REST. 330 5% 1/4W CC	R33,35
51	WAT042102	3	SIP, 4.7K 9 RES 10 PIN	R36,37,39
52	WAT038032	1	SIP, 1K 9 RES 10 PIN	R38
53	WAT060167	1	SIP, 220 9 RES 10 PIN	R40
54	WAT097055	1	RES., 10, 1% 1/8W MF	R41
55	WAT032306	6	RELAY, S.S. SPST 5V DIP	RL1-6
56	WAT060110	1	OSC., 14.31818 MHZ	Y1
57	WAT200335	1	OSC., 4 MHZ	Y2
58	WAT072838	1	SOCKET, IC., 40 PIN DIP	(FOR U44)
59	WAT072839	1	SOCKET, IC., 28 PIN DIP	(FOR U31)
60				
61	WAT072940	2	CONN., 2 PIN SHORT CAP	(FOR J6,7)
62	WAT411310	2	SCR, MET. PAN HEAD, M3 x 10	(FOR J1)
63	WAT050792	12	TERM, .093, TN, MALE, PC	(FOR J5)

Waters

34 Maple Street Milford, MA 01757 U.S.A.

SIZE

A

DWG NO

WAT200186

REV

9

SCALE

OUT OF SCALE

SHT 3 OF 3