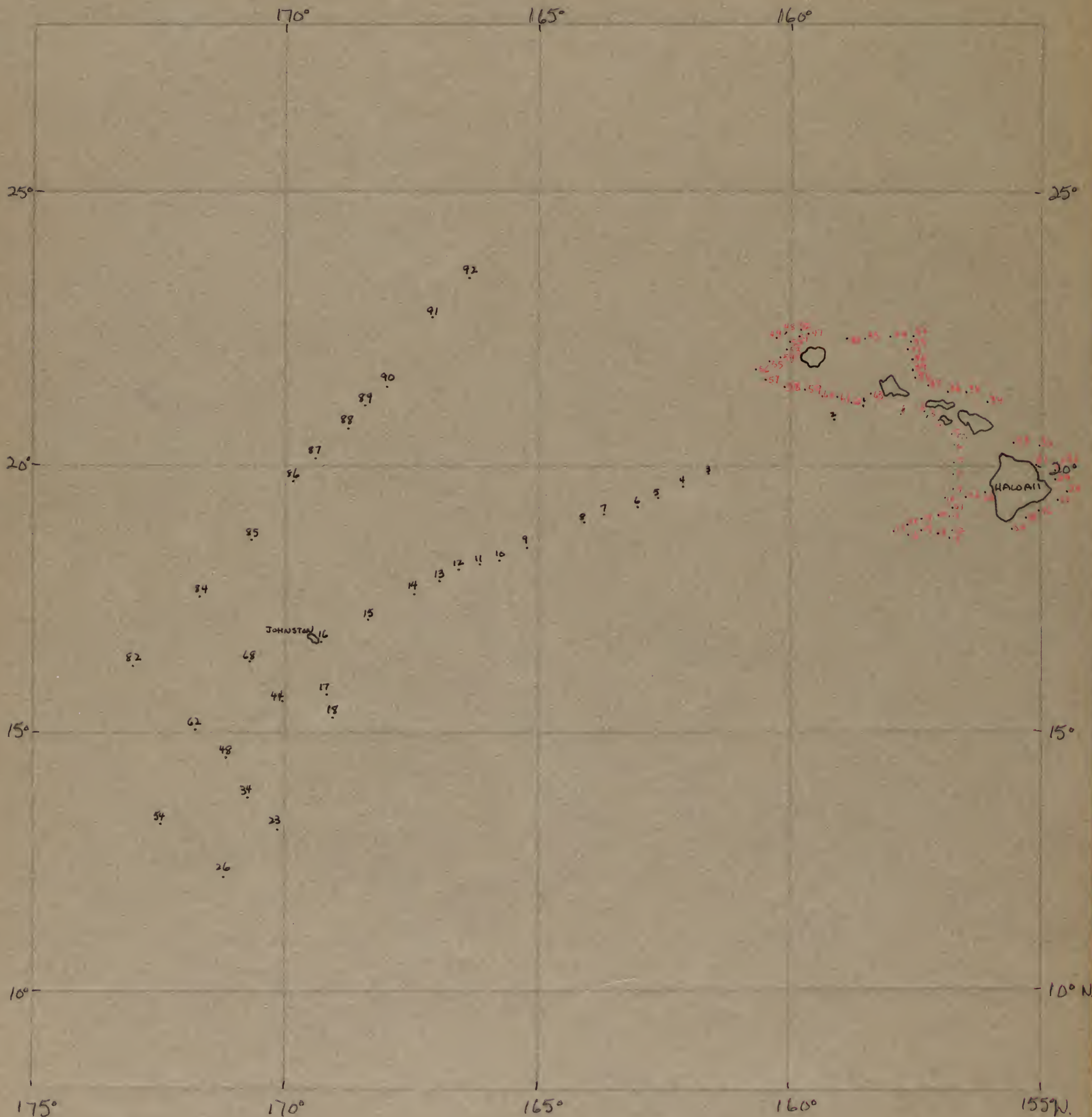


SMITHSONIAN CRUISE #89 - JUNE BT STATIONS
 6-5-64 to 6-17-64



✓ GILBERT CRUISE #74

THIS SECTION:

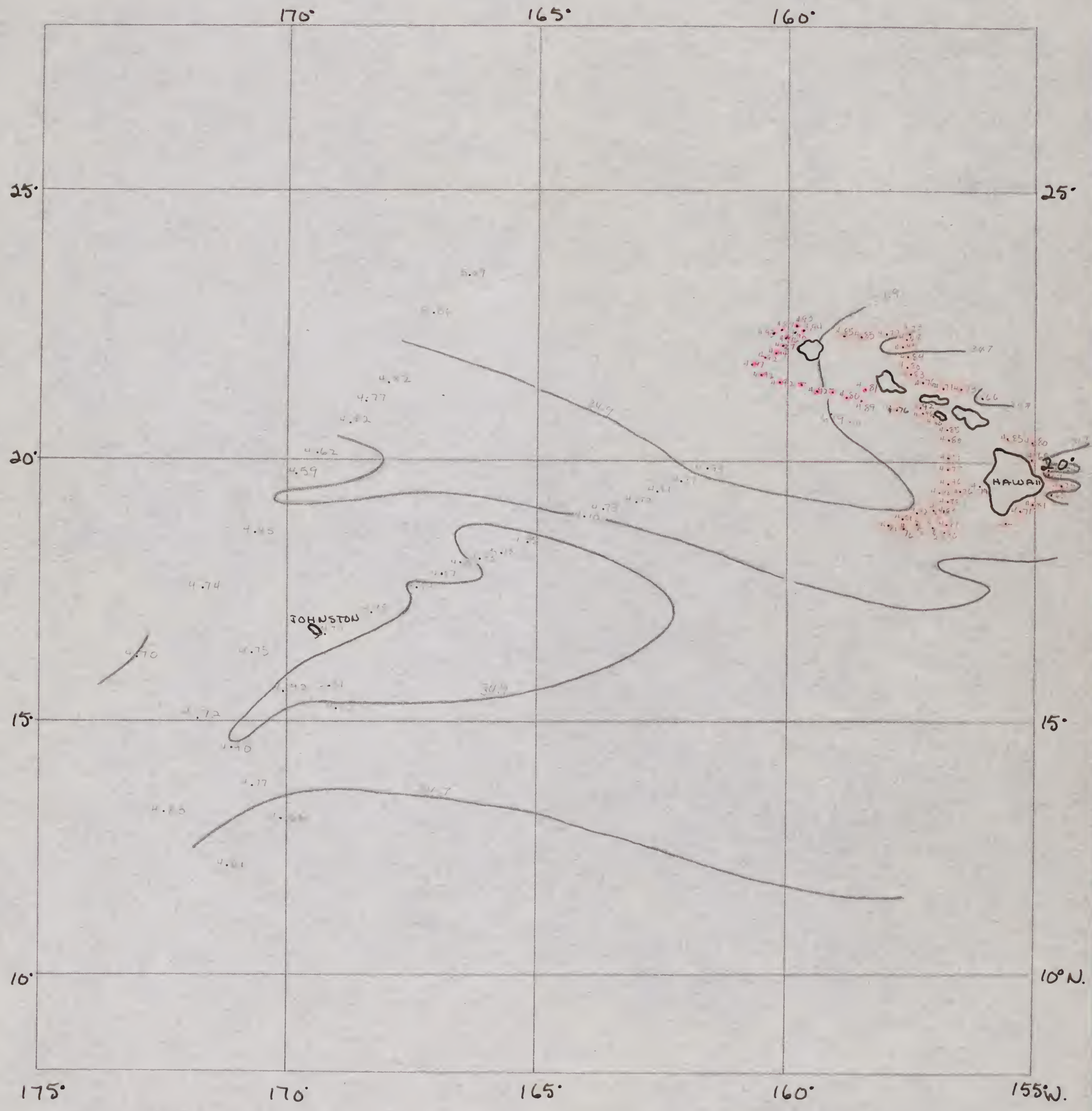
6-24-64 to 6-30-64

7-1-64 to 7-3-64

BT STATIONS

SMITHSONIAN CRUISE #89-JUNE
6-5-64 to 6-17-64

SURFACE SALINITY ‰

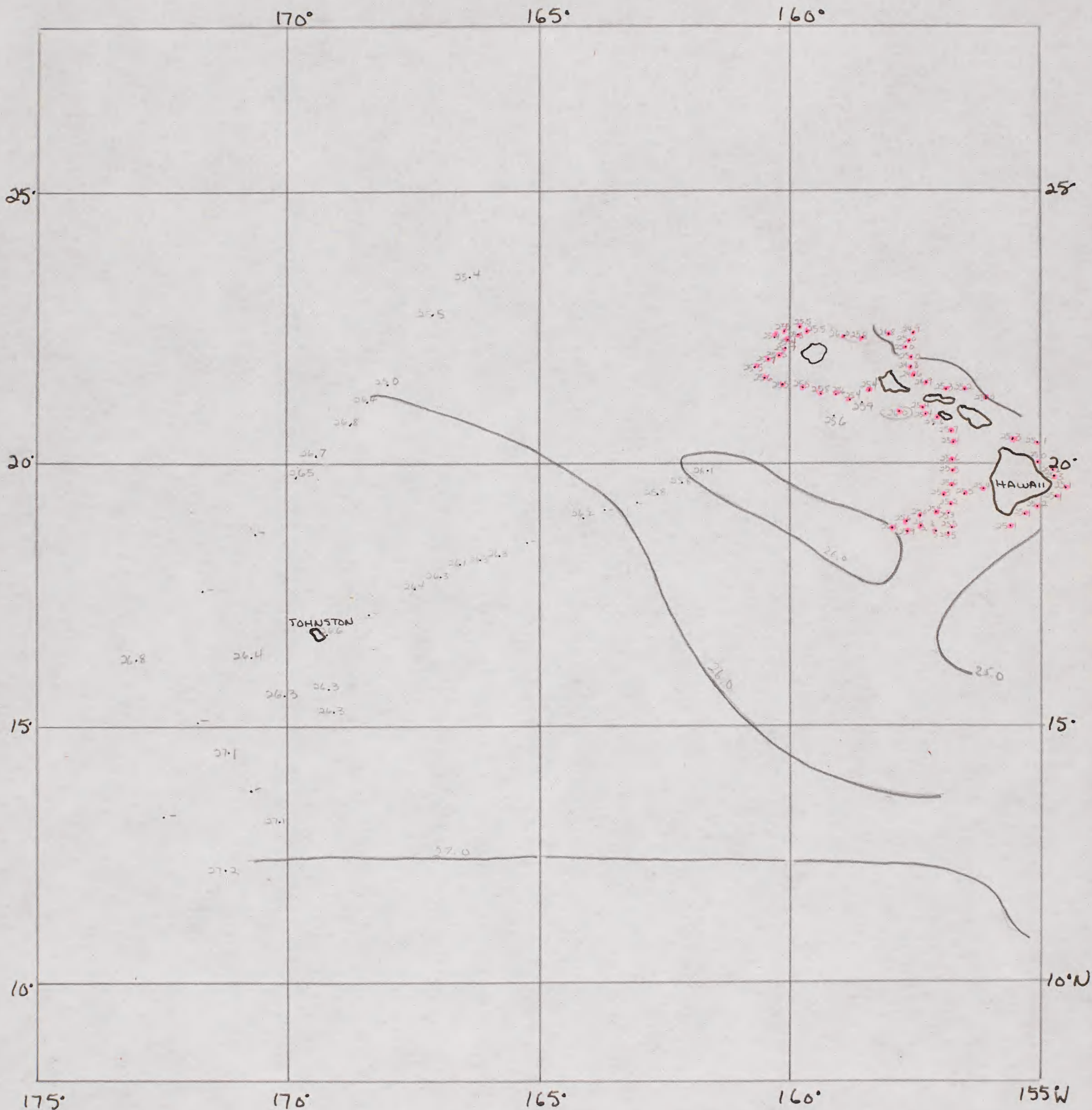


GILBERT CRUISE #74
THIS SECTION!
6-24-64 to 6-30-64
7-1-64 to 7-3-64

SURFACE
SALINITY ‰

SMITHSONIAN CRUISE #89-JUNE
6-5-64 to 6-17-64

CORRECTED
SURFACE TEMP. °C.



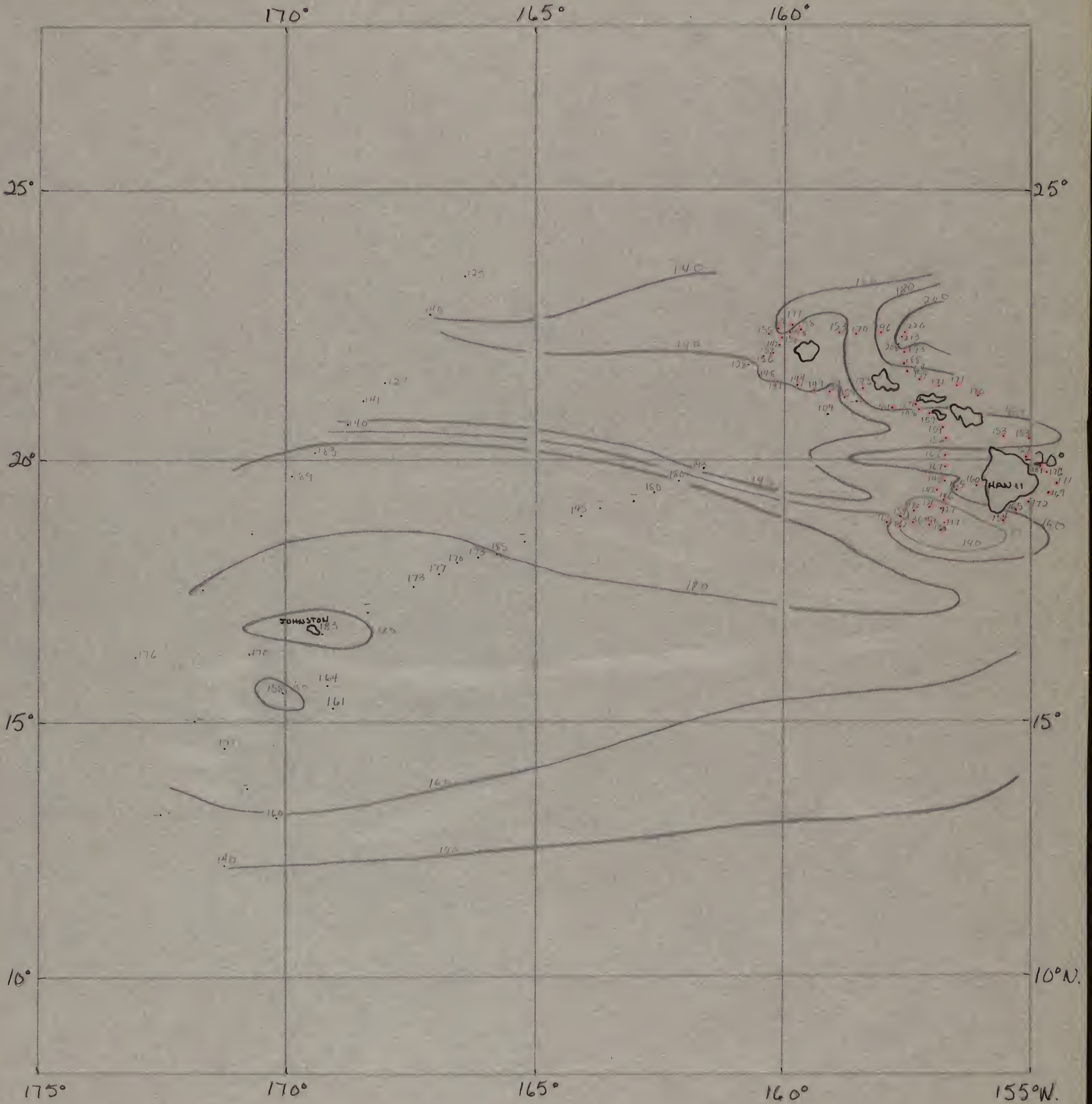
GILBERT CRUISE #74
THIS SECTION!

CORRECTED
SURFACE TEMP. °C.

6-24-64 to 6-30-64
7-1-64 to 7-3-64

SMITHSONIAN CRUISE - #89 - JUNE
6-5-64 to 6-17-64

20° ISOTHERM
DEPTH IN METERS
BTs 1-18



GILBERT CRUISE #74
THIS SECTION:

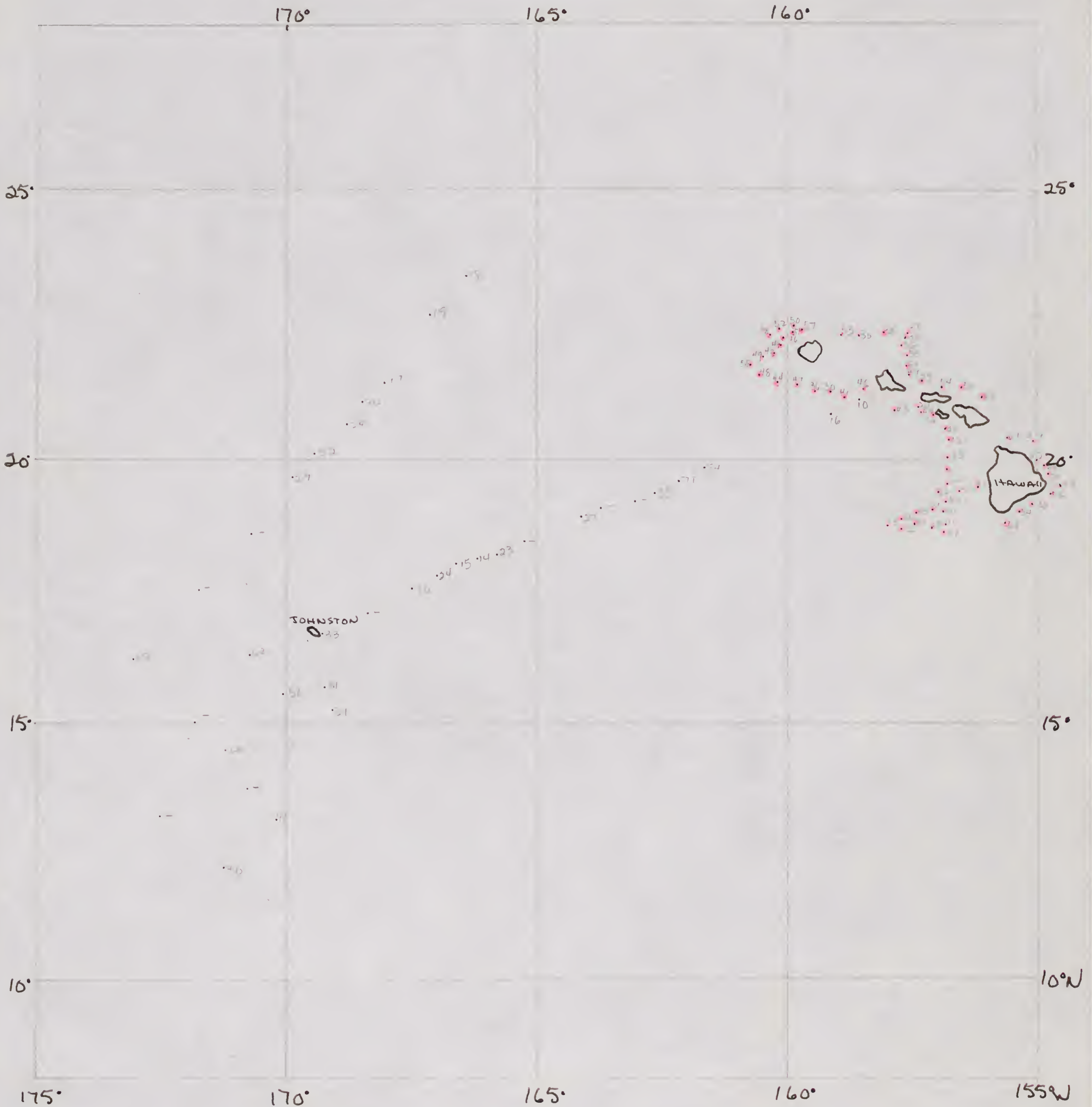
20° ISOTHERM
DEPTH IN METERS

6-24-64 to 6-30-64
7-1-64 to 7-3-64

CBT

SMITHSONIAN CRUISE #89-JUNE
6-5-64 to 6-17-64

DEPTH OF THE
MIXED LAYER - METERS



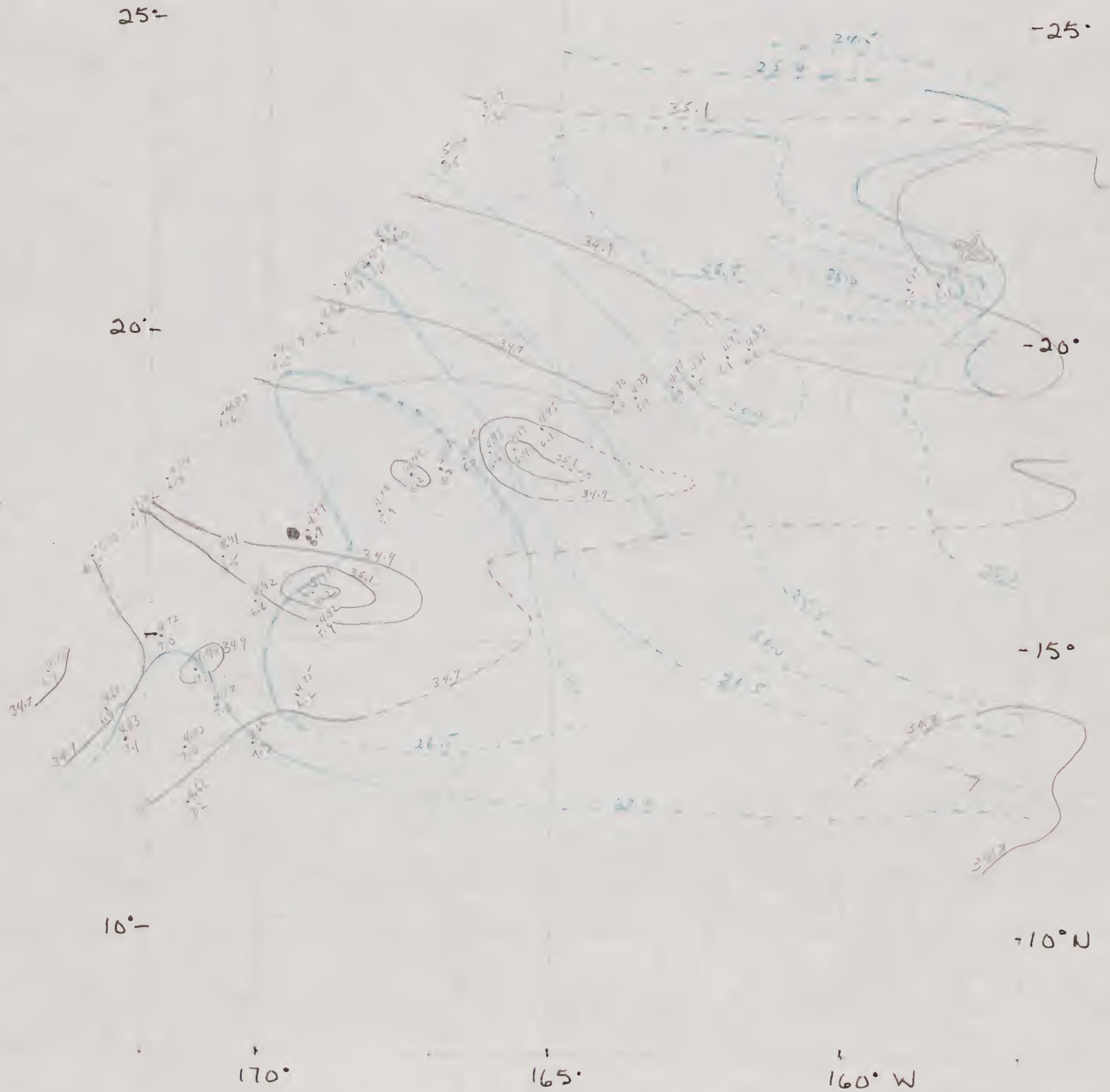
GILBERT CRUISE #74
THIS SECTION!

DEPTH OF MIXED
LAYERS - METERS

6-24-64 to 6-30-64
7-1-64 to 7-3-64

SMITHSONIAN CRUISE #89, JUNE
JUNE 5, '64 to JUNE 17, '64
170° 165°

BUCKET TEMP. °C
BUCKET SALINITY ‰
160°



T, °C —
S, ‰ - - -

SMITHSONIAN CR. - JUNE #89 BT SECTION (1-16)
6-5-64 to 6-8-64
(6,7,9,15 missing)

18° N. LAT. (AVERAGE)

35-6.19

170°

165°

160°

156°

SURFACE TEMP. °C.

SS. SURFACE SALINITY ‰

EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 340R-M DIETZGEN GRAPH PAPER
MILLIMETER

DEPTH IN METERS

DML. DEPTH OF THE MIXED LAYER

27°
26°
25°
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300

ST

SS

26°

26°

DML

25°

20°

15°

170°

165°

160°

156°

157

SMITHSONIAN CR. JUNE '89
6-14-64 to 6-17-64
175°

BT SECTION (82-92)
(84, 85 NO GOOD)
170°

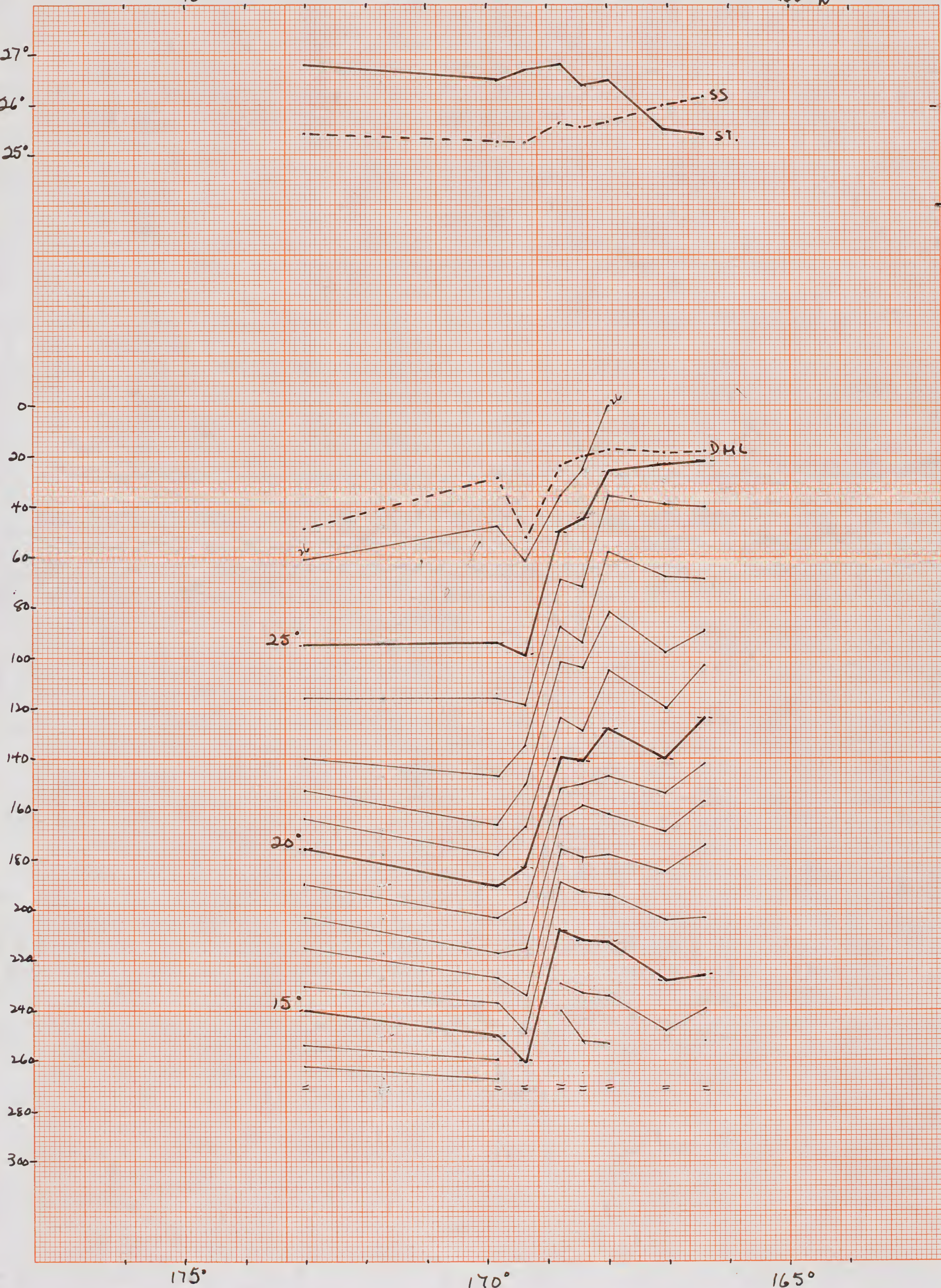
20° N. LAT. (AVER.)
165° W

EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 34DR-M DIETZGEN GRAPH PAPER
MILLIMETER

DEPTH IN METERS

SURFACE TEMP. °C.



SS-- SURFACE
SALINITY ‰
35 ‰
34 ‰

DML-- DEPTH OF THE
MIXED LAYER

CPT

B T STATION DATA S.O.S. June Cruise

| <u>Sta. #</u> | <u>Local Time</u> | <u>Time</u> | | | <u>Lat. N</u> | <u>Long. W</u> | <u>Salinity</u> | <u>Temp.</u> <u>°C.</u> |
|---------------|-------------------|-------------|------------|-------------|---------------|----------------|-----------------|----------------------------|
| | | <u>Day</u> | <u>Mo.</u> | <u>Year</u> | | | | |
| 1 | 1800 | 5 | VI | 64 | 21° 03' | 158° 32' | | 26.1 |
| 2 | 2100 | 5 | VI | 64 | 20 54 | 159 06 | | 25.5 |
| 3 | 1200 | 6 | VI | 64 | 19 52 | 161 38 | | 26.2 |
| 4 | 1500 | 6 | VI | 64 | 19 37 | 162 07 | | 26.1 |
| 5 | 1800 | 6 | VI | 64 | 19 24 | 162 37 | | 26.0 |
| 6 | 2100 | 6 | VI | 64 | 19 17 | 163 01 | | 25.85 |
| 7 | 2400 | 6 | VI | 64 | 19 03 | 163 38 | | 25.7 |
| 8 | 0300 | 7 | VI | 64 | 18 55 | 164 04 | | 26.0 |
| 9 | 0900 | 7 | VI | 64 | 18 29 | 165 16 | | 26.1 |
| 10 | 1200 | 7 | VI | 64 | 18 15 | 165 48 | | 26.4 |
| 11 | 1500 | 7 | VI | 64 | 18 10 | 166 13 | | 26.6 |
| 12 | 1800 | 7 | VI | 64 | 18 03 | 166 33 | | 26.0 |
| 13 | 2100 | 7 | VI | 64 | 17 51 | 166 58 | | 26.2 |
| 14 | 0000 | 8 | VI | 64 | 17 36 | 167 27 | | 26.2 |
| 15 | 0600 | 8 | VI | 64 | 17 08 | 168 22 | | 25.9 |
| 16 | 1200 | 8 | VI | 64 | 16 42 | 169 20 | | 26.9 |
| 17 | 1800 | 8 | VI | 64 | 15 45 | 169 13 | | 26.2 |
| 18 | 2100 | 8 | VI | 64 | 15 21 | 169 05 | | 25.9 |
| 23 | 1300 | 9 | VI | 64 | 13 12 | 170 10 | | 27.3 |
| 26 | 2280 | 9 | VI | 64 | 12 10 | 171 15 | | 27.2 |
| 34 | 1400 | 10 | VI | 64 | 13 45 | 170 46 | | 27.3 |
| 44 | 0800 | 11 | VI | 64 | 15 35 | 170 02 | | 26.55 |
| 48 | 1700 | 11 | VI | 64 | 14 31 | 171 12 | | 27.1 |
| 54 | 0300 | 12 | VI | 64 | 13 16 | 172 29 | | 27.1 |
| 62 | 1900 | 12 | VI | 64 | 15 02 | 171 49 | | 27.0 |
| 68 | 0800 | 13 | VI | 64 | 16 20 | 170 43 | | 26.8 |
| 82 | 2300 | 14 | VI | 64 | 16 17 | 173 01 | | 26.5 |
| 84 | 1200 | 15 | VI | 64 | 17 33 | 171 43 | | 26.9 |
| 85 | 2100 | 15 | VI | 64 | 18 38 | 170 42 | | 26.7 |
| 86 | 0600 | 16 | VI | 64 | 19 43 | 169 50 | | 26.5 |
| 87 | 0900 | 16 | VI | 64 | 20 07 | 169 22 | | 26.6 |
| 88 | 1500 | 16 | VI | 64 | 20 45 | 168 47 | | 26.9 |
| 89 | 1800 | 16 | VI | 64 | 21 08 | 168 26 | | 26.4 |
| 90 | 2100 | 16 | VI | 64 | 21 28 | 168 00 | | 26.0 |
| 91 | 0600 | 17 | VI | 64 | 22 42 | 167 04 | | 25.5 |
| 92 | 1200 | 17 | VI | 64 | 23 24 | 166 25 | | 25.6 |

BT 62347 - BAD PRESSURE ELEMENT

S.O.S JUNE #89

| STATION No. | SLIDE No. | Surf. BT | Temp. Bkt | Diff. | Correction | Corrected Surf. T. |
|-------------|-----------|----------|-----------|-------|------------|--------------------|
| 1 | 1 | 26.3 | 26.1 | .2 | +.4 | 25.9 |
| 2 | 2 | .0 | 25.5 | .5 | | .6 |
| 3 | 3 | .5 | 26.2 | .3 | | 26.1 |
| 4 | 4 | .2 | .1 | .1 | | 25.8 |
| 5 | 5 | .2 | .0 | .2 | | .8 |
| ✓ 6 | 6 | - | - | - | | - |
| ✓ 7 | 7 | - | - | - | | - |
| 8 | 8 | 26.6 | 26.0 | .6 | | 26.2 |
| ✓ 9 | 9 | - | - | - | | - |
| 10 | 10 | 26.7 | 26.4 | .3 | | 26.3 |
| 11 | 11 | .7 | .6 | .1 | | .3 |
| 12 | 12 | .5 | .0 | .5 | | .1 |
| 13 | 13 | .7 | .2 | .5 | | .3 |
| 14 | 14 | .8 | .2 | .6 | | .4 |
| ✓ 15 | 15 | - | - | - | | - |
| 16 | 16 | 27.0 | 26.9 | .1 | | 26.6 |
| 17 | 17 | 26.7 | .2 | .5 | | .3 |
| 18 | 18 | .7 | 25.9 | .8 | | .3 |
| 23 | 19 | 27.5 | 27.3 | .2 | | 27.1 |
| 26 | 20 | .6 | .2 | .4 | | .2 |
| * 44 | * 22 | 26.7 | 26.6 | .1 | | 26.3 |
| 48 | 23 | 27.5 | 27.1 | .4 | | 27.1 |
| ✓ 54 | 24 | - | - | - | | - |
| ✓ 62 | 25 | - | - | - | | - |
| 68 | 26 | 27.2 | 26.8 | .2 | | 26.4 |
| 82 | 27 | .2 | .5 | .7 | | .8 |
| ✓ 84 | 28 | - | - | - | | - |
| ✓ 85 | 29 | - | - | - | | - |
| 86 | 30 | 26.8 | 26.5 | .3 | +.3 | 26.5 |
| 87 | 31 | 27.0 | .6 | .4 | | .7 |
| 88 | 32 | .1 | .9 | .2 | | .8 |
| 89 | 33 | 26.7 | .4 | .3 | | .4 |
| 90 | 34 | .3 | .0 | .3 | | .0 |
| 91 | 35 | 25.8 | 25.5 | .3 | | 25.5 |
| 92 | 36 | .7 | .6 | .1 | | .4 |
| ✓ 34 | * 21 | - | - | - | | - |

✓ Surface trace bad, or very bad trace.

BT # 62347 - Pressure element bad.

B T STATION DATA S.O.S. June Cruise - #89

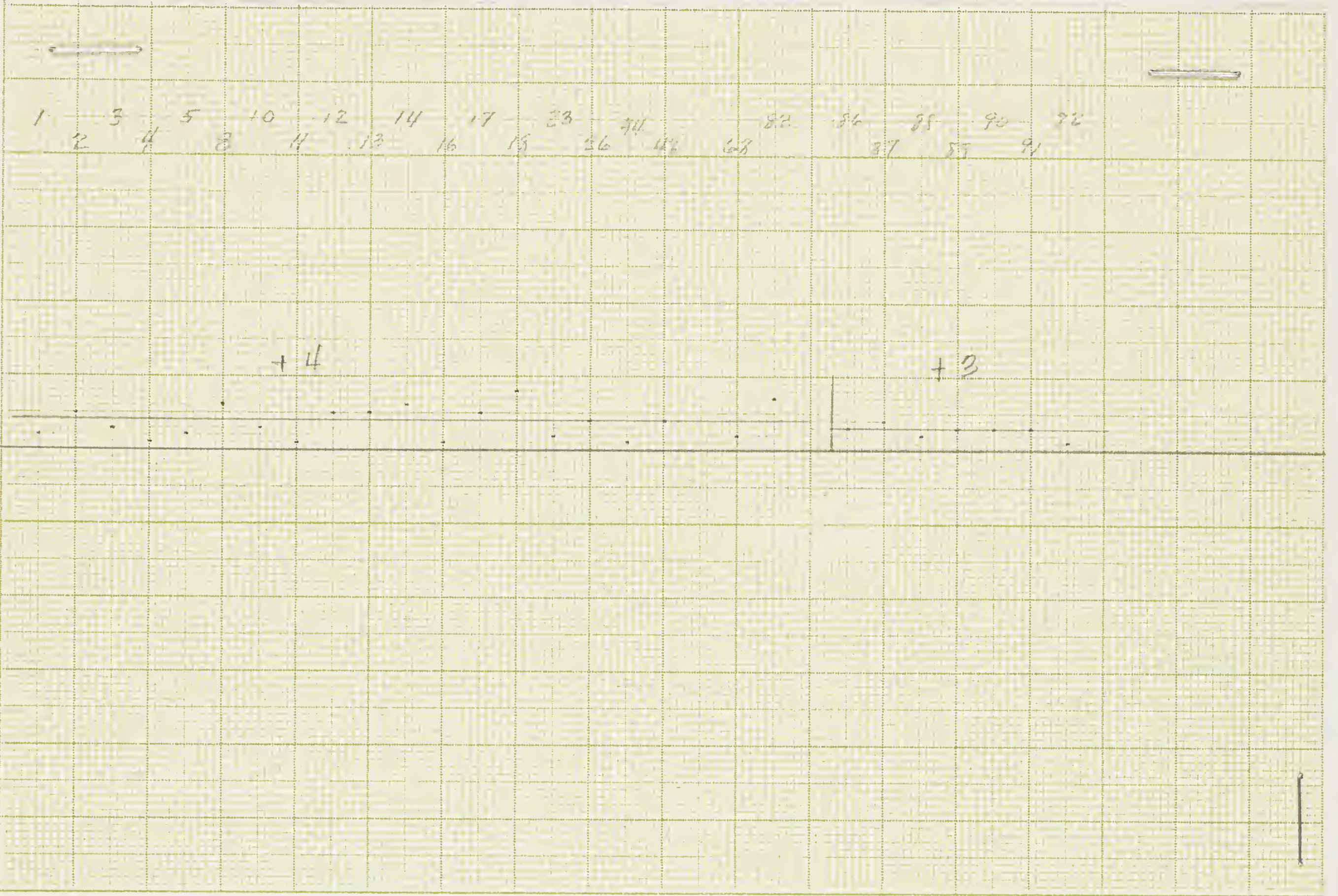
| Sta. # | Local Time | Time | | | Lat. N | Long. W | Salinity | Temp. °C. |
|--------|------------|------|-----|------|---------|----------|----------|-----------|
| | | Day | Mo. | Year | | | | |
| 1 | 1800 | 5 | VI | 64 | 21° 03' | 158° 32' | 26.1 | |
| 2 | 2100 | 5 | VI | 64 | 20 54 | 159 06 | 25.5 | |
| 3 | 1200 | 6 | VI | 64 | 19 52 | 161 38 | 26.2 | |
| 4 | 1500 | 6 | VI | 64 | 19 37 | 162 07 | 26.1 | |
| 5 | 1800 | 6 | VI | 64 | 19 24 | 162 37 | 26.0 | |
| * 6 | 2100 | 6 | VI | 64 | 19 17 | 163 01 | 25.85 | |
| * 7 | 2400 | 6 | VI | 64 | 19 03 | 163 38 | 25.7 | |
| 8 | 0300 | 7 | VI | 64 | 18 55 | 164 04 | 26.0 | |
| * 9 | 0900 | 7 | VI | 64 | 18 29 | 165 16 | 26.1 | |
| 10 | 1200 | 7 | VI | 64 | 18 15 | 165 48 | 26.4 | |
| 11 | 1500 | 7 | VI | 64 | 18 10 | 166 13 | 26.6 | |
| 12 | 1800 | 7 | VI | 64 | 18 03 | 166 33 | 26.0 | |
| 13 | 2100 | 7 | VI | 64 | 17 51 | 166 58 | 26.2 | |
| 14 | 0000 | 8 | VI | 64 | 17 36 | 167 27 | 26.2 | |
| * 15 | 0600 | 8 | VI | 64 | 17 08 | 168 22 | 25.9 | |
| 16 | 1200 | 8 | VI | 64 | 16 42 | 169 20 | 26.9 | |
| 17 | 1800 | 8 | VI | 64 | 15 45 | 169 13 | 26.2 | |
| 18 | 2100 | 8 | VI | 64 | 15 21 | 169 05 | 25.9 | |
| 23 | 1300 | 9 | VI | 64 | 13 12 | 170 10 | 27.3 | |
| 26 | 2200 | 9 | VI | 64 | 12 10 | 171 15 | 27.2 | |
| * 34 | 1400 | 10 | VI | 64 | 13 45 | 170 46 | 27.3 | |
| 44 | 0800 | 11 | VI | 64 | 15 35 | 170 02 | 26.55 | |
| 48 | 1700 | 11 | VI | 64 | 14 31 | 171 12 | 27.1 | |
| * 54 | 0300 | 12 | VI | 64 | 13 16 | 172 29 | 27.1 | |
| * 62* | 1900 | 12 | VI | 64 | 15 02 | 171 49 | 27.0 | |
| 68 | 0800 | 13 | VI | 64 | 16 20 | 170 43 | 26.8 | |
| 82 | 2300 | 14 | VI | 64 | 16 17 | 173 01 | 26.5 | |
| * 84 | 1200 | 15 | VI | 64 | 17 33 | 171 43 | 26.9 | |
| * 85 | 2100 | 15 | VI | 64 | 18 38 | 170 42 | 26.7 | |
| 86 | 0600 | 16 | VI | 64 | 19 43 | 169 50 | 26.5 | |
| 87 | 0900 | 16 | VI | 64 | 20 07 | 169 22 | 26.6 | |
| 88 | 1500 | 16 | VI | 64 | 20 45 | 168 47 | 26.9 | |
| 89 | 1800 | 16 | VI | 64 | 21 08 | 168 26 | 26.4 | |
| 90 | 2100 | 16 | VI | 64 | 21 28 | 168 00 | 26.0 | |
| 91 | 0600 | 17 | VI | 64 | 22 42 | 167 04 | 25.5 | |
| 92 | 1200 | 17 | VI | 64 | 23 24 | 166 25 | 25.6 | |

* - These traces no good.

* - This slide partially wasn't inserted on the way into BT.

#89

77.
N.S.



KEUFFEL & ESSER CO NEW YORK.

89

BT 62347A

June

| | | | | | | | | | | | |
|---|------|---|----|------|---------|----------|---|--------|------|---|----------|
| 1 | 1800 | 5 | VI | 1964 | 21° 03' | 158° 32' | 1 | 34.888 | 26.1 | 1 | +10 time |
| 2 | 2100 | | | | 20° 54' | 159° 06' | | 36.191 | 25.5 | 2 | |
| 3 | 1200 | 6 | VI | 1964 | 19° 52' | 161° 38' | | 34.932 | 26.2 | 3 | |
| 4 | 1500 | | | | 19° 37' | 162° 07' | | 34.772 | 26.1 | 4 | |
| 5 | 1800 | | | | 19° 24' | 162° 37' | | 34.814 | 26.0 | 5 | |

Smithsonian cruises hydrographic data

| Cruise number | Station number | Time and date | | | Lat. | N-S | Long. | E-W | Depth in m | Salinity o/oo | Water temp °C | BT station number | | |
|---------------|----------------|---------------|-----|-------|---------|---------|----------|----------|------------|---------------|---------------|-------------------|----|----------|
| | | LZT | day | month | | | | | | | | | | year |
| 89 | 6 | 2100 | 6 | VI | 1964 | 19° 17' | N | 163° 01' | W | 1 | 34.767 | 25.8 | 6 | +10 time |
| | 7 | 2400 | | | | 19° 03' | | 163° 38' | | | 34.732 | 25.7 | 7 | |
| | 8 | 0300 | 7 | VI | 1964 | 18° 55' | | 164° 04' | | | 34.698 | 26.0 | 8 | |
| | 9 | 0900 | | | | 18° 29' | | 165° 16' | | | 34.954 | 26.1 | 9 | +11 time |
| | 10 | 1200 | | | | 18° 15' | | 165° 48' | | | 35.185 | 26.4 | 10 | |
| | 11 | 1500 | | | | 18° 10' | | 166° 13' | | | 34.932 | 26.6 | 11 | |
| | 12 | 1800 | | | | 18° 03' | | 166° 33' | | | 34.854 | 26.0 | 12 | |
| | 13 | 2100 | | | | 17° 51' | | 166° 58' | | | 34.873 | 26.2 | 13 | |
| | 14 | 0000 | 8 | VI | 1964 | 17° 36' | | 167° 27' | | | 34.919 | 26.2 | 14 | |
| | 15 | 0600 | | | | 17° 08' | | 168° 22' | | | 34.782 | 25.9 | 15 | |
| | 16 | 1200 | | | | 16° 42' | | 169° 20' | | | 34.792 | 26.9 | 16 | |
| | 17 | 1800 | | | | 15° 45' | | 169° 13' | | | 35.312 | 26.2 | 17 | |
| | 18 | 2100 | | | | 15° 21' | | 169° 05' | | | 34.819 | 25.9 | 18 | |
| | 19 | 0700 | 9 | VI | 1964 | 13° 58' | | 169° 24' | | | 34.754 | 26.2 | -- | |
| | 23 | 1300 | | | | 13° 12' | | 170° 10' | | | 34.660 | 27.3 | 19 | |
| | 27 | 2200 | | | | 12° 10' | | 171° 15' | | | 34.609 | 27.2 | 20 | |
| | 32 | 0700 | 10 | VI | 1964 | 13° 10' | | 171° 25' | | | 34.826 | 27.0 | -- | |
| | | | | | | | | | | 7 | 34.966 | 27.2 | | |
| | | | | | | | | | | 11 | 35.062 | 27.0 | | |
| | | | | | | | | | | 24 | 35.033 | 27.0 | | |
| | | | | | | | | | | 110 | 36.205 | 24.0 | | |
| | 34 | 1400 | | | | 13° 45' | | 170° 46' | | 1 | 34.774 | 27.3 | 21 | |
| | 43 | 0630 | 11 | VI | 1964 | 15° 31' | | 169° 55' | | | 35.328 | 26.4 | -- | |
| | | | | | | | | | | 9 | 35.610 | 26.2 | | |
| | | | | | | | | | | 12 | 35.668 | 26.2 | | |
| | | | | | | | | | | 26 | 35.504 | 26.2 | | |
| | | | | | | | | | | 117 | 35.110 | 24.1 | | |
| 44 | 0800 | | | | 15° 35' | | 170° 12' | | 1 | 34.924 | 26.6 | 22 | | |
| 48 | 1700 | | | | 14° 31' | | 171° 12' | | | 34.901 | 27.1 | 23 | | |
| 54 | 0300 | 12 | VI | 1964 | 13° 16' | | 172° 29' | | | 34.828 | 27.1 | 24 | | |
| 56 | 0630 | | | | 13° 41' | | 172° 57' | | | 34.671 | 26.9 | -- | | |
| 62 | 1900 | | | | 15° 02' | | 171° 49' | | | 34.720 | 27.0 | 25 | | |
| 67 | 0630 | 13 | VI | 1964 | 16° 15' | | 170° 37' | | | 34.913 | 26.5 | -- | | |

Smithsonian cruises hydrographic data

| Cruise number | Station number | Time and date | | | Lat. | N-S | Long. | E-W | Depth in m | Salinity o/oo | Water temp °C | BT station number | |
|---------------|----------------|---------------|-----|------------|------|---------|-------|----------|------------|---------------|---------------|-------------------|----|
| | | LZT | day | month year | | | | | | | | | |
| 89 | 67 | 0630 | 13 | VI | 1964 | 16° 15' | N | 170° 37' | W | 8 | 34.932 | 26.5 | -- |
| | | | | | | | | | | 11 | 35.024 | 26.4 | |
| | | | | | | | | | | 25 | 35.126 | 26.4 | |
| | | | | | | | | | | 115 | 35.215 | 24.5 | |
| | 68 | 0800 | | | | 16° 20' | | 170° 43' | | 1 | 34.748 | 26.8 | 26 |
| | 77 | 0630 | 14 | VI | 1964 | 14° 29' | | 173° 44' | | | 34.786 | 26.7 | -- |
| | | | | | | | | | | 7 | 34.842 | 26.8 | |
| | | | | | | | | | | 10 | 34.915 | 26.9 | |
| | | | | | | | | | | 24 | 34.977 | 26.9 | |
| | | | | | | | | | | 111 | 35.258 | 25.2 | |
| | 82 | 2300 | | | | 16° 17' | | 173° 01' | | 1 | 34.697 | 26.5 | 27 |
| | 83 | 0630 | 15 | VI | 1964 | 17° 01' | | 172° 14' | | | 34.915 | 26.7 | -- |
| | | | | | | | | | | 9 | 35.014 | 26.6 | |
| | | | | | | | | | | 13 | 35.122 | 26.9 | |
| | | | | | | | | | | 26 | 35.342 | 26.8 | |
| | | | | | | | | | | 120 | 35.830 | 24.5 | |
| | 84 | 1200 | | | | 17° 33' | | 171° 43' | | 1 | 34.740 | 26.9 | 28 |
| | 85 | 2100 | | | | 18° 38' | | 170° 42' | | | 34.830 | 26.6 | 29 |
| | 86 | 0600 | 16 | VI | 1964 | 19° 43' | | 169° 50' | | | 34.590 | 26.5 | 30 |
| | 87 | 0900 | | | | 20° 07' | | 169° 22' | | | 34.618 | 26.6 | 31 |
| | 88 | 1500 | | | | 20° 45' | | 168° 47' | | | 34.818 | 26.9 | 32 |
| | 89 | 1800 | | | | 21° 08' | | 168° 26' | | | 34.770 | 26.4 | 33 |
| | 90 | 2100 | | | | 21° 28' | | 168° 00' | | | 34.820 | 26.0 | 34 |
| | 91 | 0600 | 17 | VI | 1964 | 22° 42' | | 167° 04' | | | 35.002 | 25.5 | 35 |
| | 92 | 1200 | | | | 23° 24' | | 166° 25' | | | 35.094 | 25.6 | 36 |