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SOUTHWEST FISHERIES CENTER

HONOLULU, HI 96812

P.O. BOX 3830

November 1982

HONOLULU LABORATORY

NATIONAL MARINE FISHERIES SERVICE

CHARTLETS OF SELECTED FISHING BANKS AND PINNACLES IN THE MARIANA ARCHIPELAGO

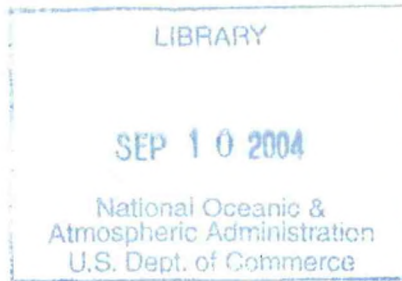
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ADMINISTRATIVE REPORT H-82-19
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The Mariana Archipelago consists of 15 islands, including Guam and Saipan, and numerous small banks, seamounts, and pinnacles. There are a number of charts published by the Defense Mapping Agency (DMA) which provide various degrees of bathymetric detail for the Archipelago (Table 1). Under the direction of the Resource Assessment Investigation of the Mariana Archipelago (RAIOMA) Program of the National Marine Fisheries Service, Southwest Fisheries Center, Honolulu Laboratory, a bathymetric survey was conducted of islands and banks which are currently being fished or appear to have potential habitat for commercially important marine species, and where the existing bathymetric detail was insufficient for the fisheries assessment work. The primary depth range of interest was 183-915 m (100-500 fathoms). The bathymetric surveys were conducted on the NOAA ship Townsend Cromwell over the period April through August 1982. Depth was determined by an echo sounder and position by Loran C. The Townsend Cromwell was under the command of Cdr. Robert C. Roush. The survey work was performed by Cdr. Roush, Lt. James D. Sarb, Lt. Dean L. Smehil, Lt. Gary M. Barone, Lt. Thomas Clark, and Ens. Andrew J. Aldridge.

Table 1.--Defense Mapping Agency charts for the Mariana Archipelago.

DMA No.	Islands
81005	Mariana Islands
81048	Guam
81063	Rota
81067	Saipan, Tinian, Aguijan
81086	Farallon de Pajaros, Sarigan, Farallon de Medinilla, Asuncion, Argihan, Alamagan, Guguan, Anatahan
81092	Pagan, Maug

During the surveys, positions and depths were determined simultaneously at precise 2-1/2 minute intervals, or approximately every 0.4 nmi along the ship's track. A continuous, time annotated analog record (fathogram) of bottom soundings was obtained, and significant bathymetric features, such as peaks or drop-offs, were scaled from the fathograms to supplement the data obtained at the regular 2-1/2 minute sounding intervals. For most of the surveys, the spacing between adjacent sounding lines was approximately 1 nmi. A few randomly spaced crosslines were run across the main lines to provide additional data and to serve as a check on navigational control by comparing soundings obtained at the line intersections.

The Northwest Pacific loran-C chain (SS3, 9970) was utilized with excellent results in most cases for navigational control of the surveys. Satellite position fixes obtained intermittently during the surveys were in close agreement with the loran-C positions. In some instances, loran-C was not available due to low signal-to-noise ratios or because the stations were off the air for maintenance. On these occasions, radar ranges and bearings were used to control the surveys.

Survey data were recorded by hand in a logbook (sounding volume) and also entered manually onto magnetic cassette tapes. Position and depth data were hand-plotted on paper field sheets which in most cases were 1:40,000 scale mercator projections. Following the actual conduct of the survey, printouts from the data cassette tapes were checked for format errors and compared for accuracy with the sounding volumes and rescanned fathograms. An edited data cassette tape, free of format errors, and containing corrections and supplements to the raw data, was then produced. The hand-plotted field sheets were reviewed for accuracy and then redrawn by hand on plastic sheets. The soundings on these sheets were contoured at 100-fathom intervals to show bathymetric detail. Vessel draft corrections of 1.8 fathoms were included in the corrector record on tape, but not applied to the field sheets from which the bathymetric chartlets contained herein were drawn. No corrections to depth were determined or applied for velocity of sound through water variations in instrument initial, belt tension, wave effects, or the vessel's motion while underway.

An overview of the Mariana Archipelago indicating the regions covered in the subsequent chartlets is presented in Figure 1. The chartlets were drawn by Tamotsu Nakata, Honolulu Laboratory scientific illustrator, from the bathymetric boat sheets. Although the attached chartlets are not recommended for use as aids to navigation, these chartlets may be useful to fishermen in identifying the extent and contours of valuable fishing grounds.

Two significant results from this bathymetry work are that the bank area around Farallon de Medinilla is substantially larger than indicated on existing charts and a bank approximately 35 nmi southwest of Guam (Chart No. 9) was charted for the first time.

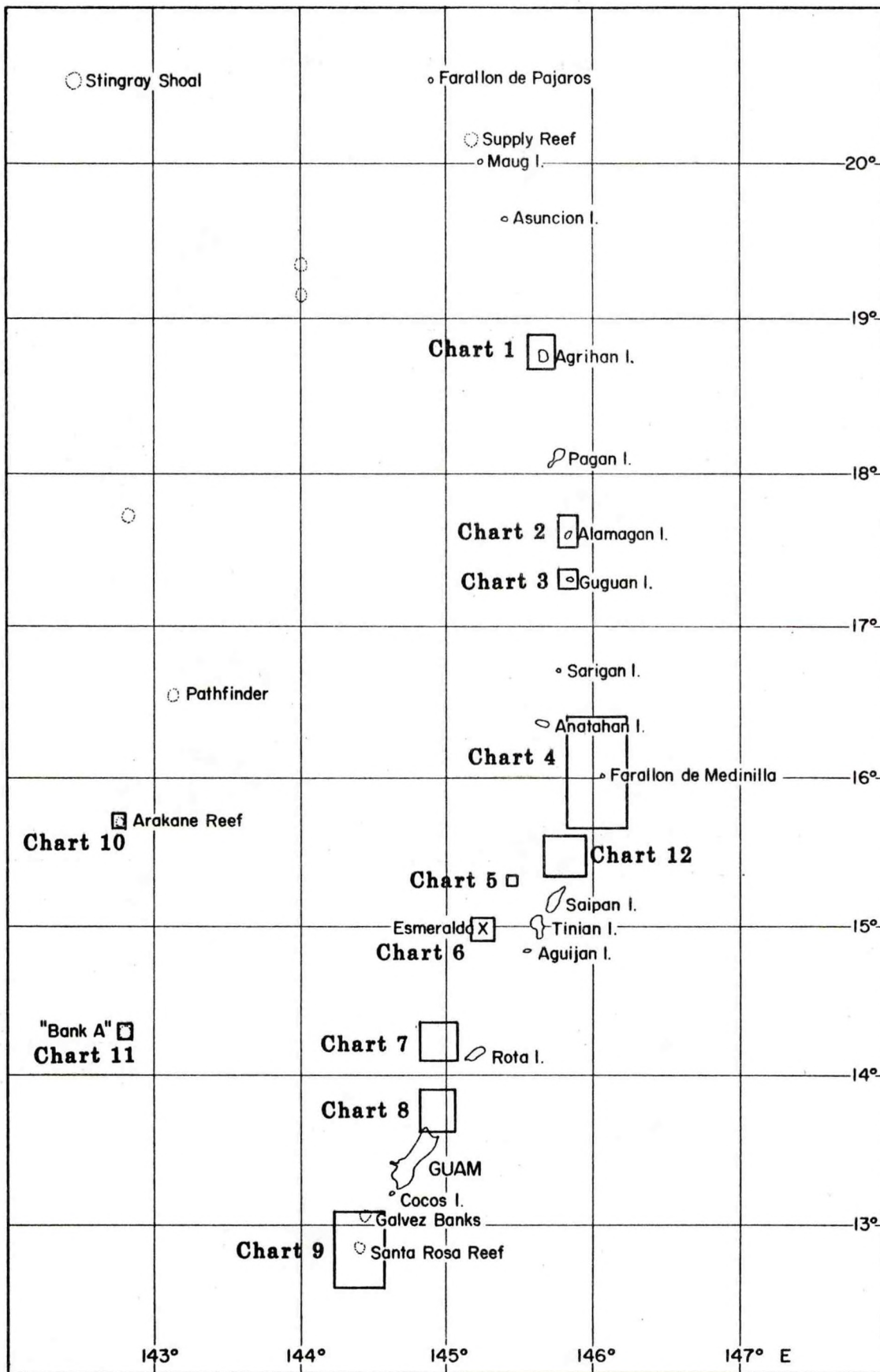


Figure 1

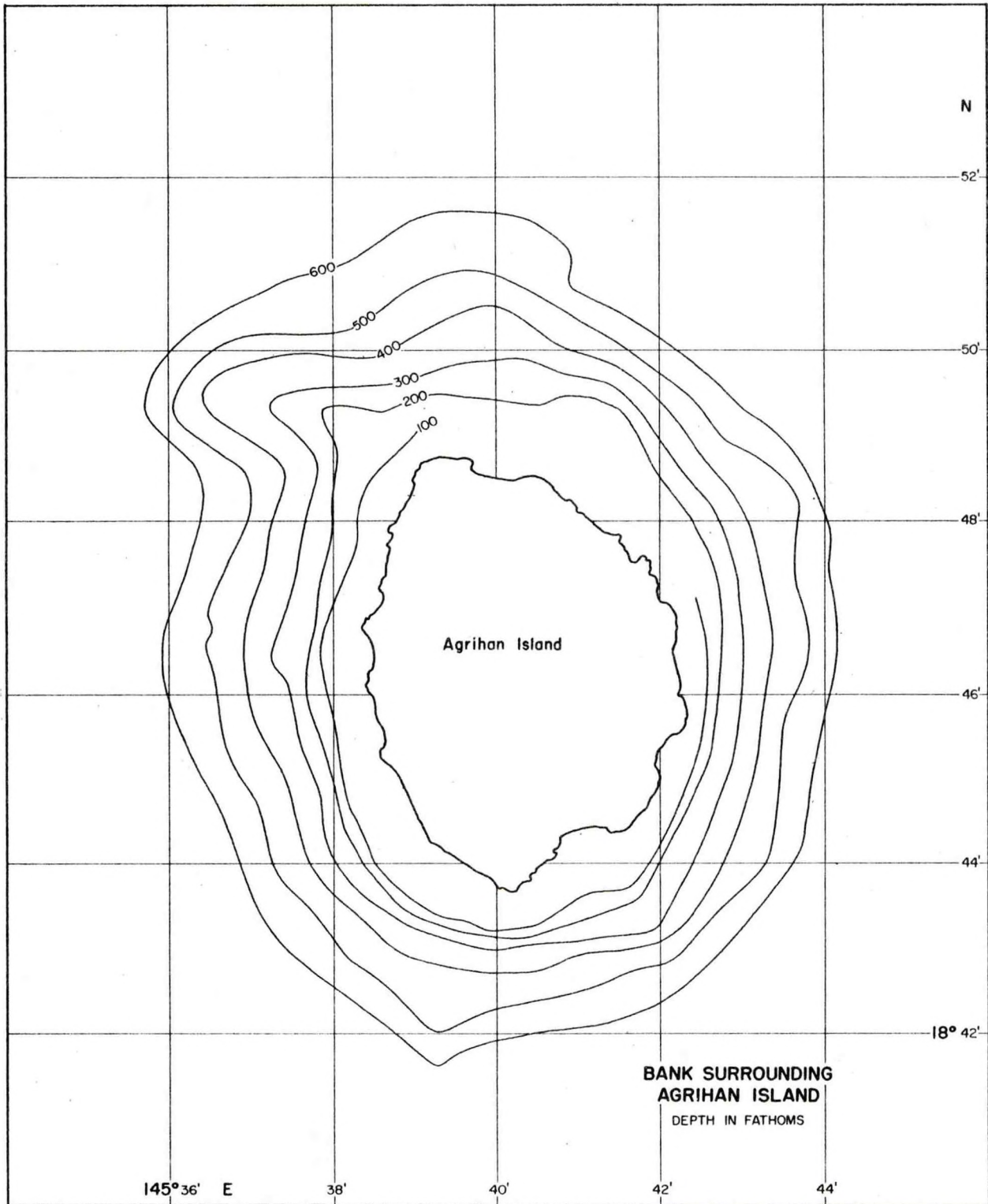


Chart 1

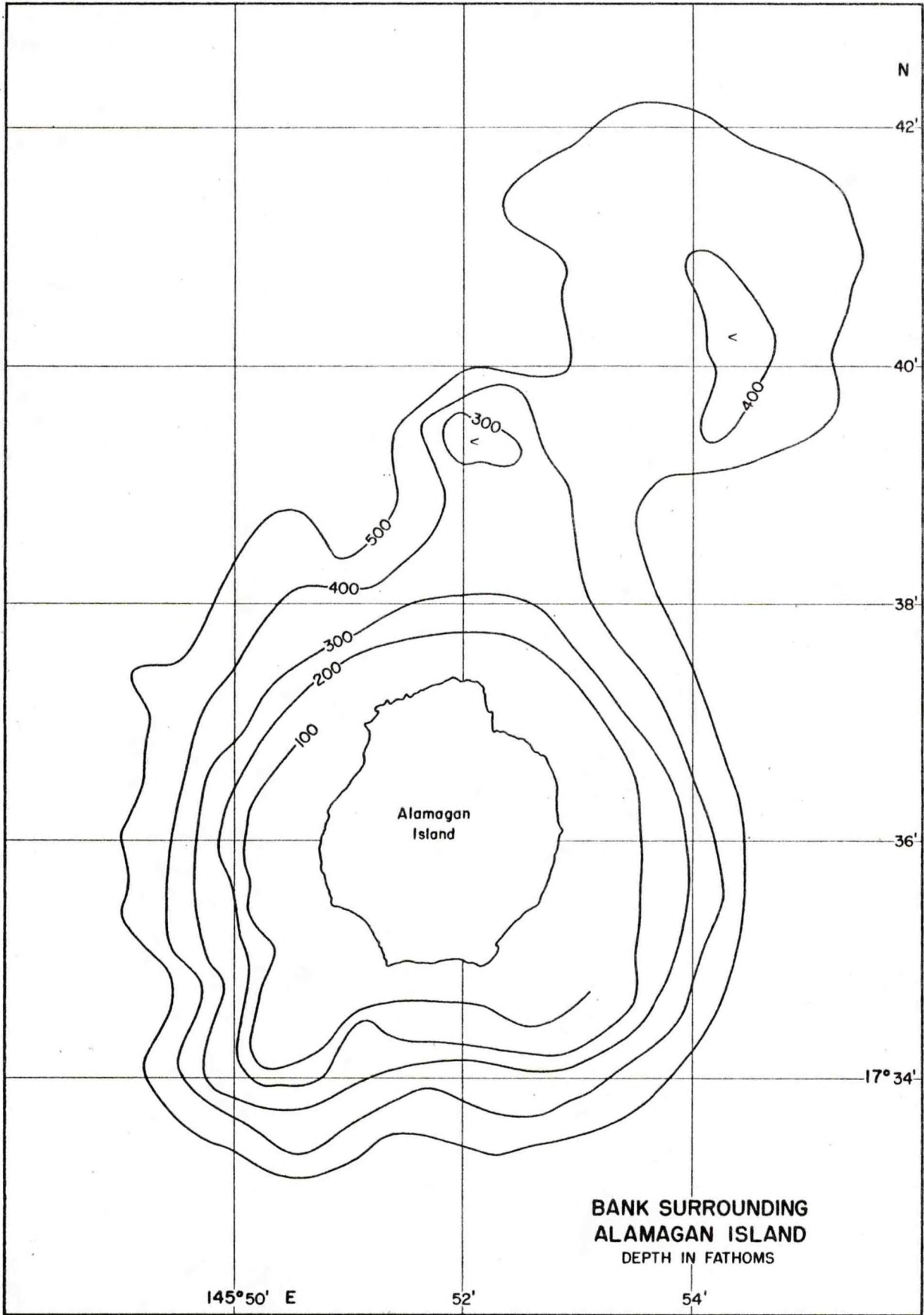


Chart 2

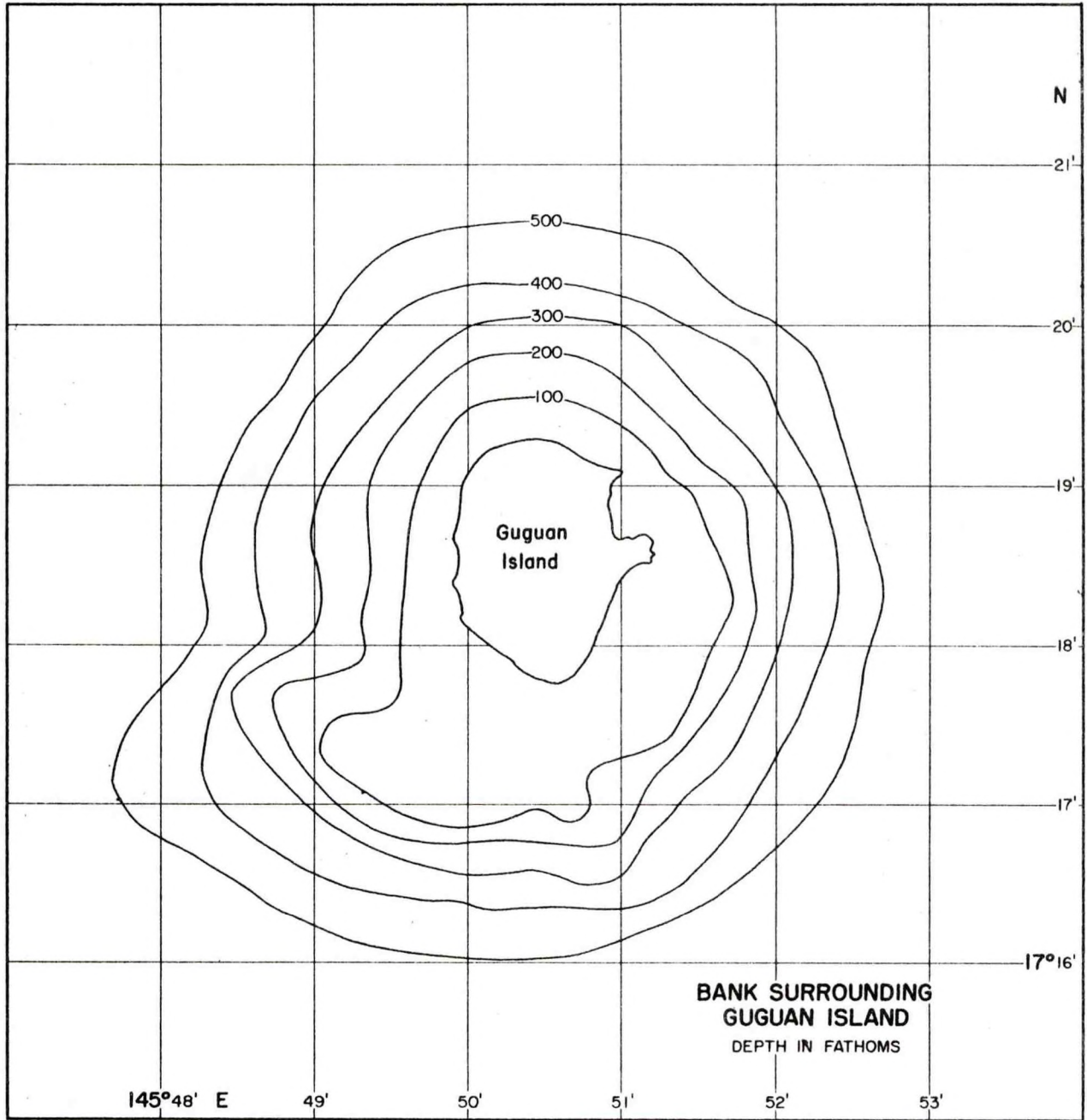


Chart 3

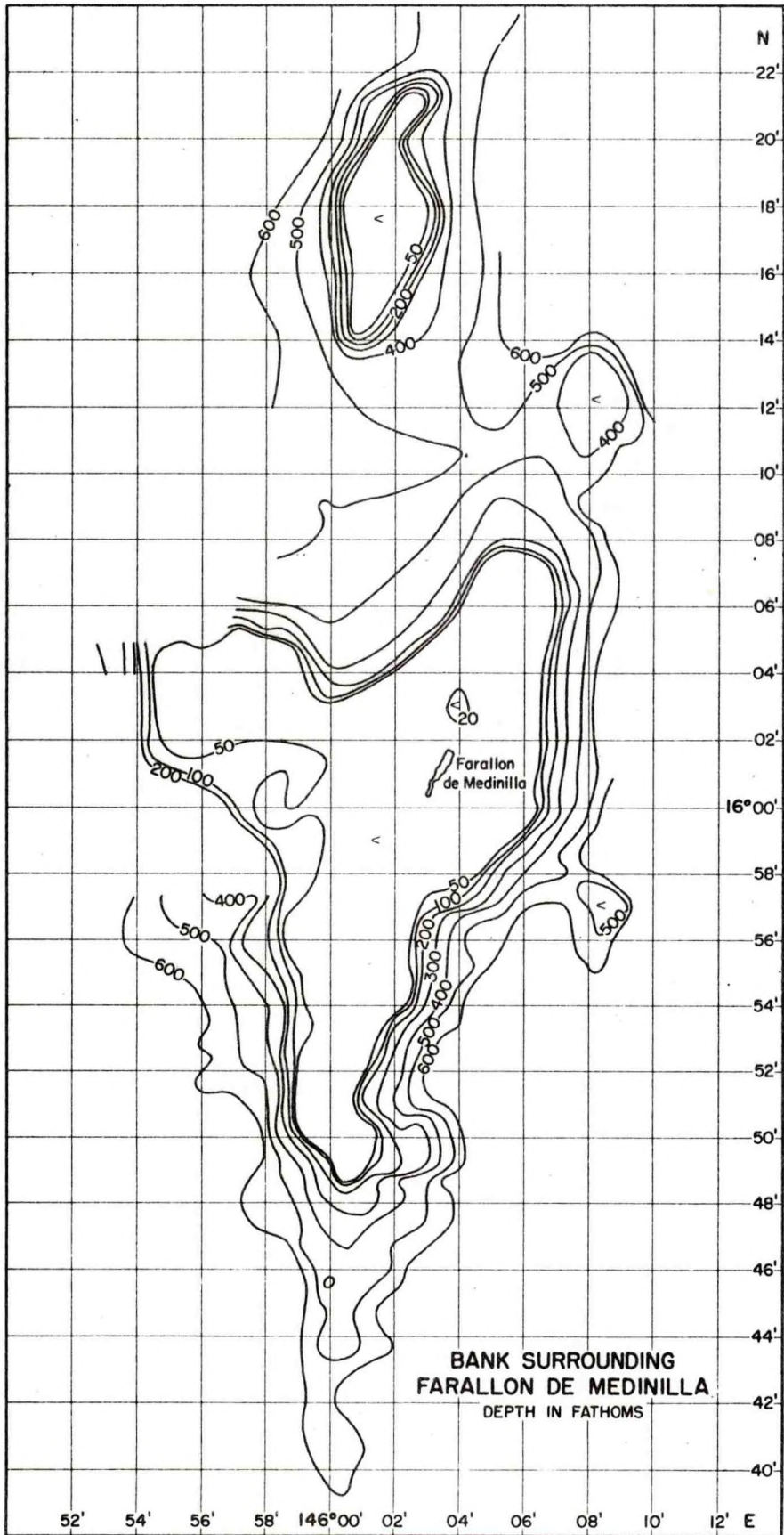


Chart 4

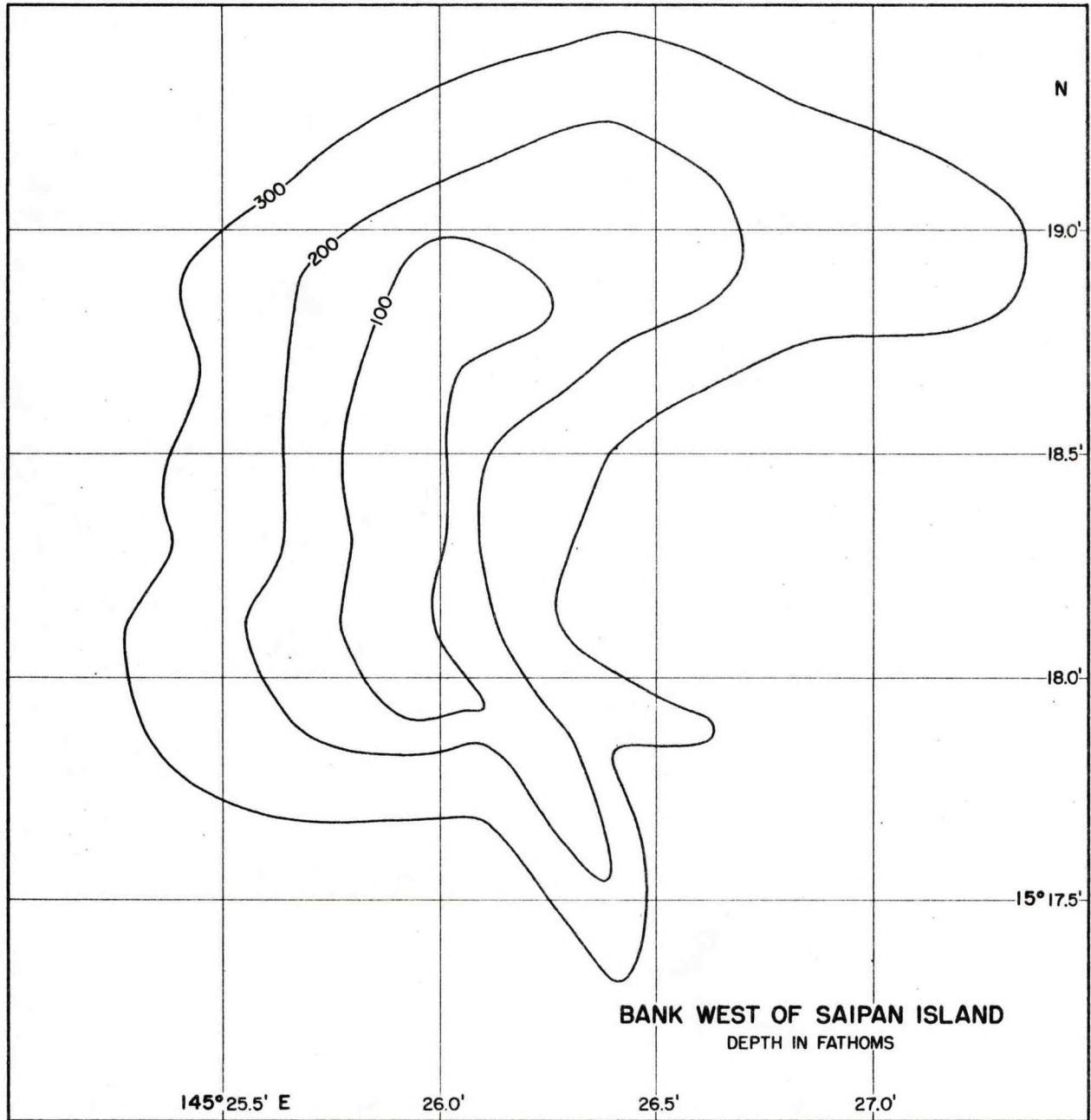


Chart 5

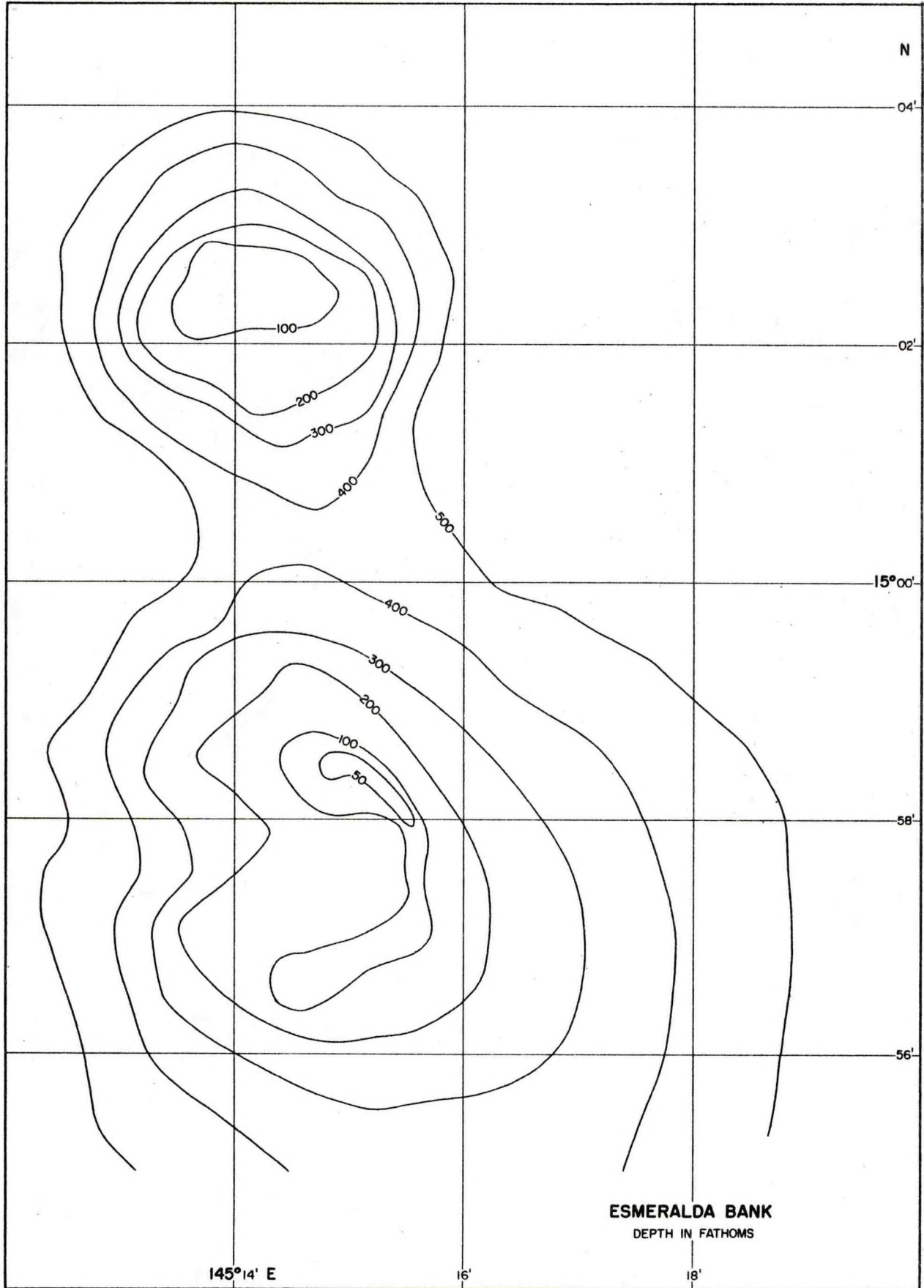


Chart 6

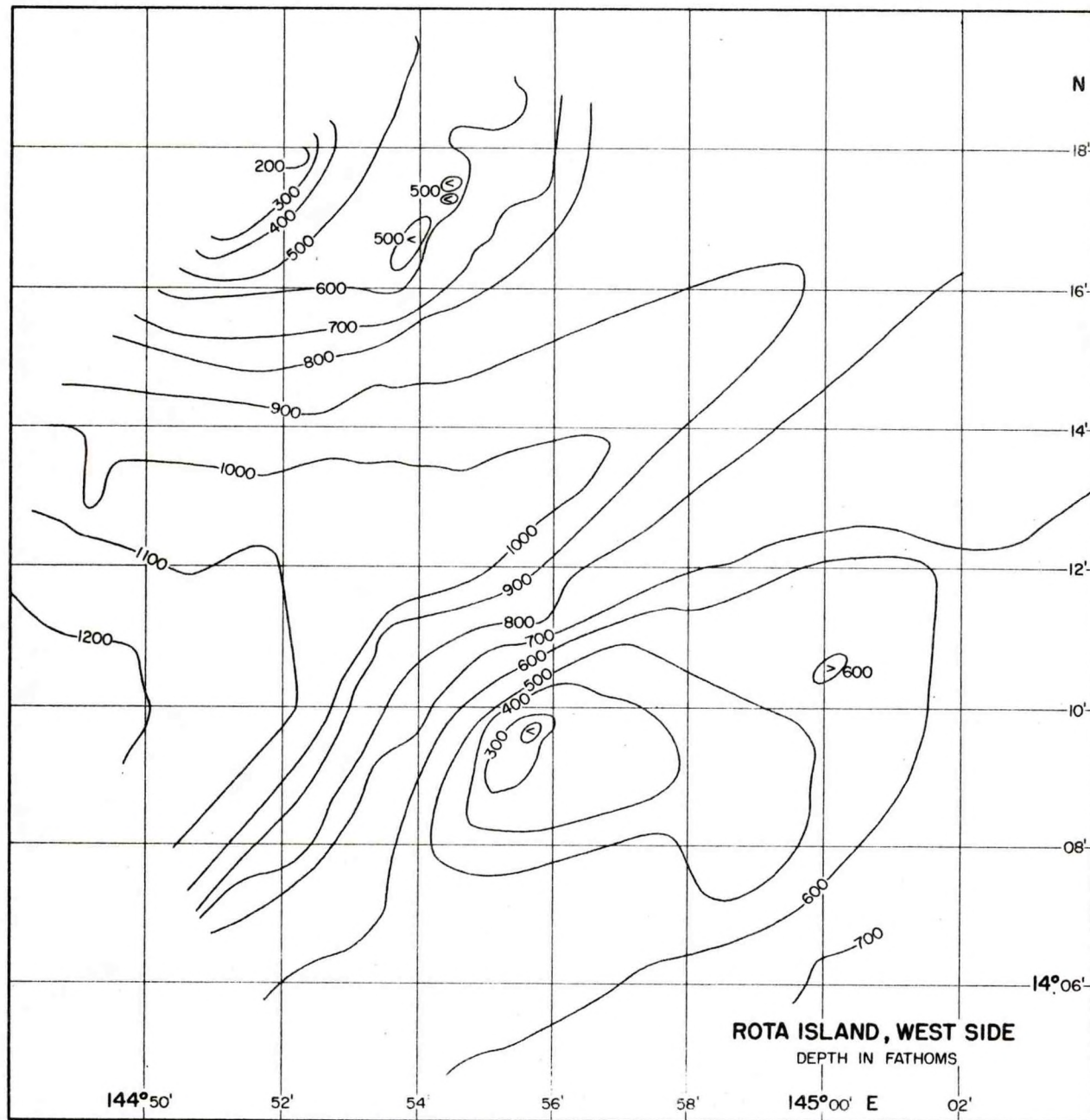


Chart 7

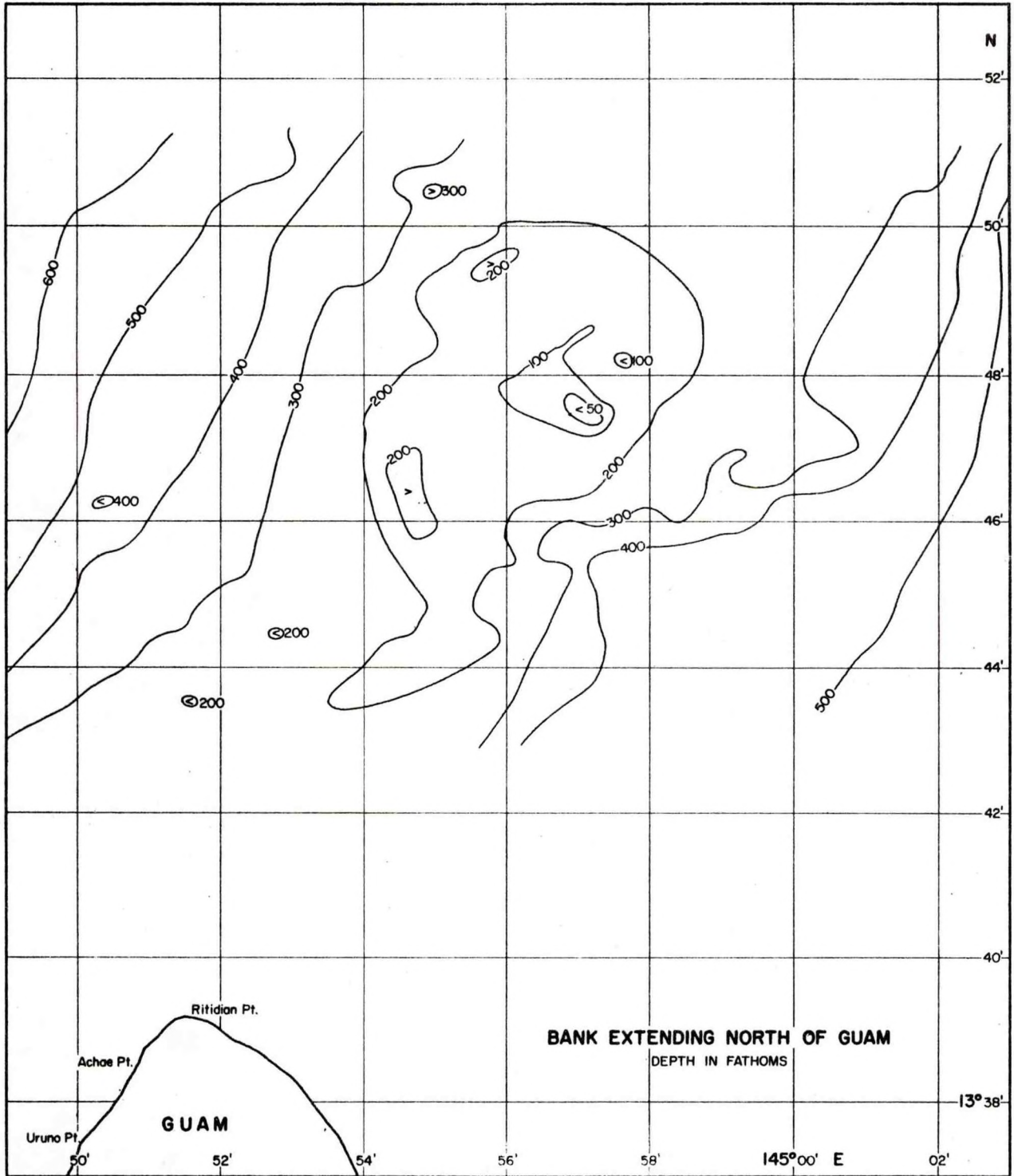


Chart 8

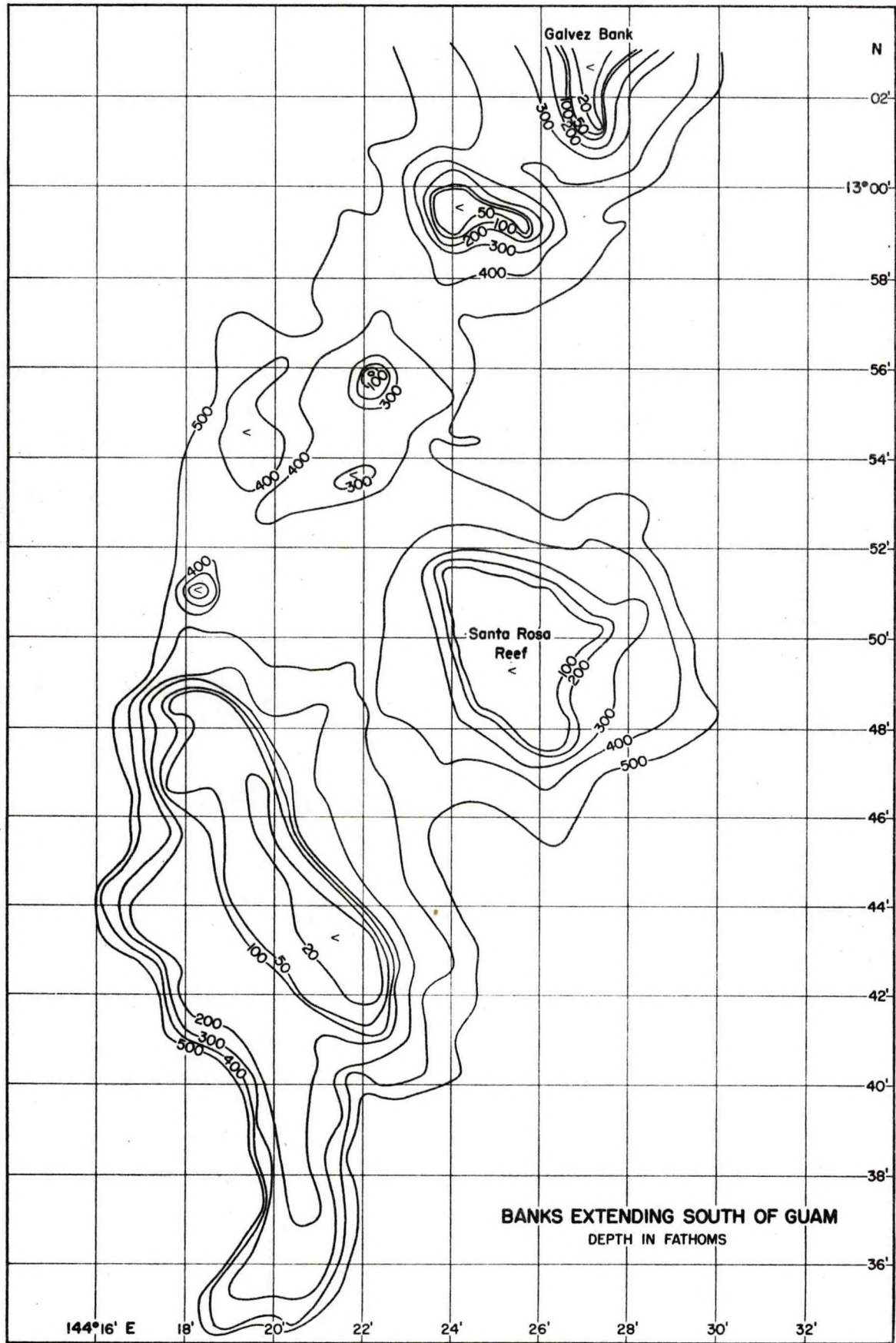


Chart 9

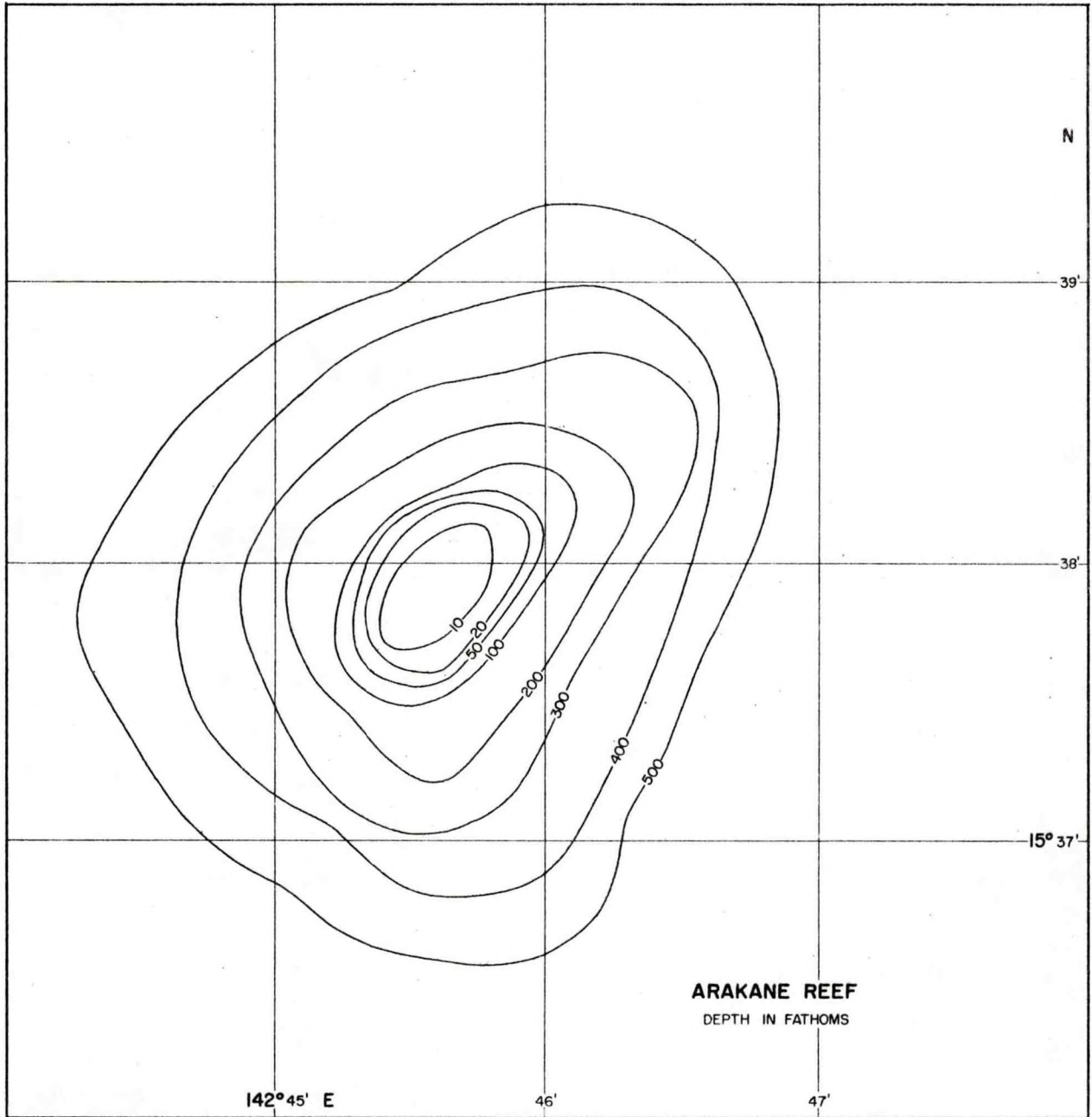


Chart 10

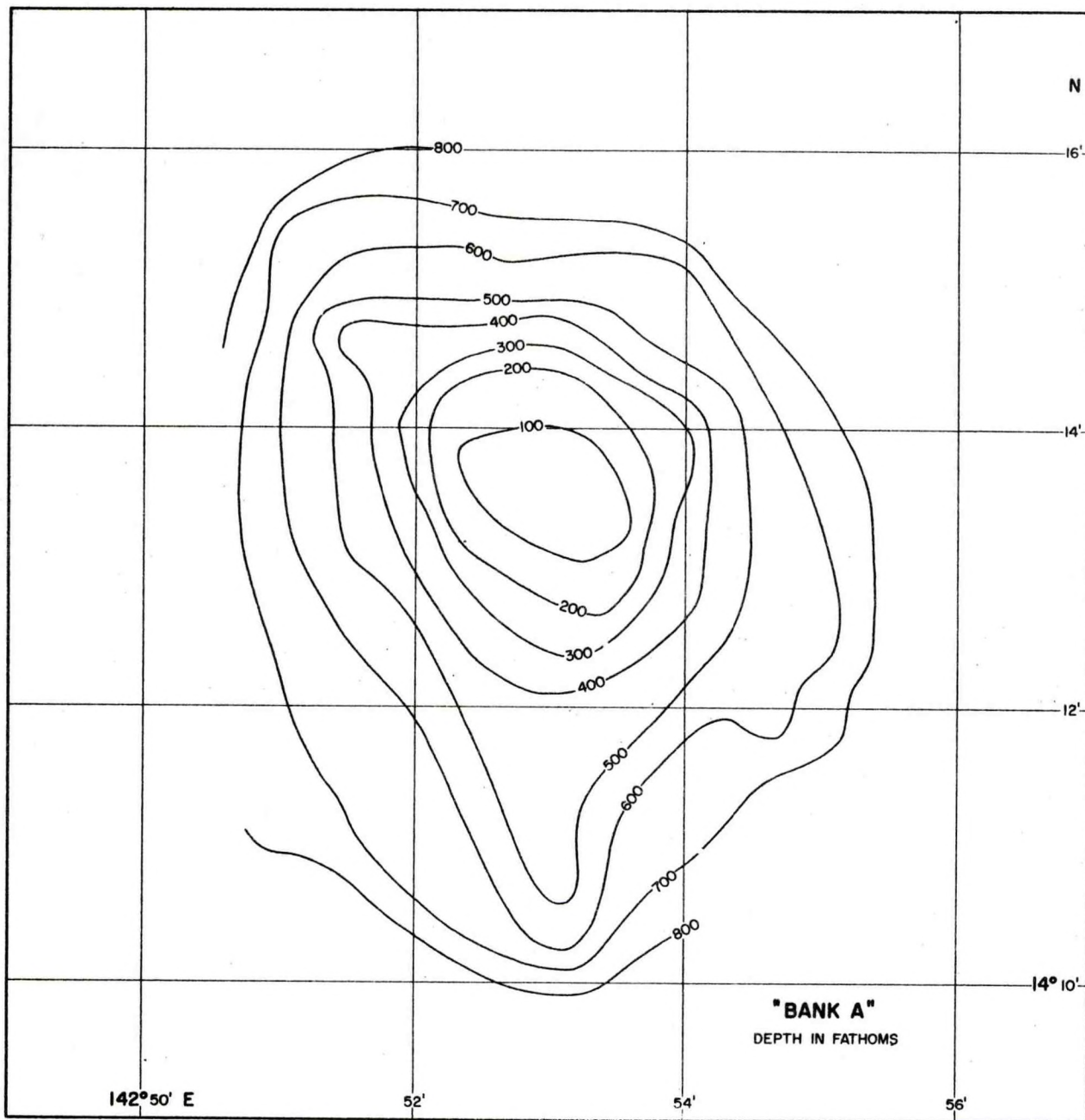


Chart 11

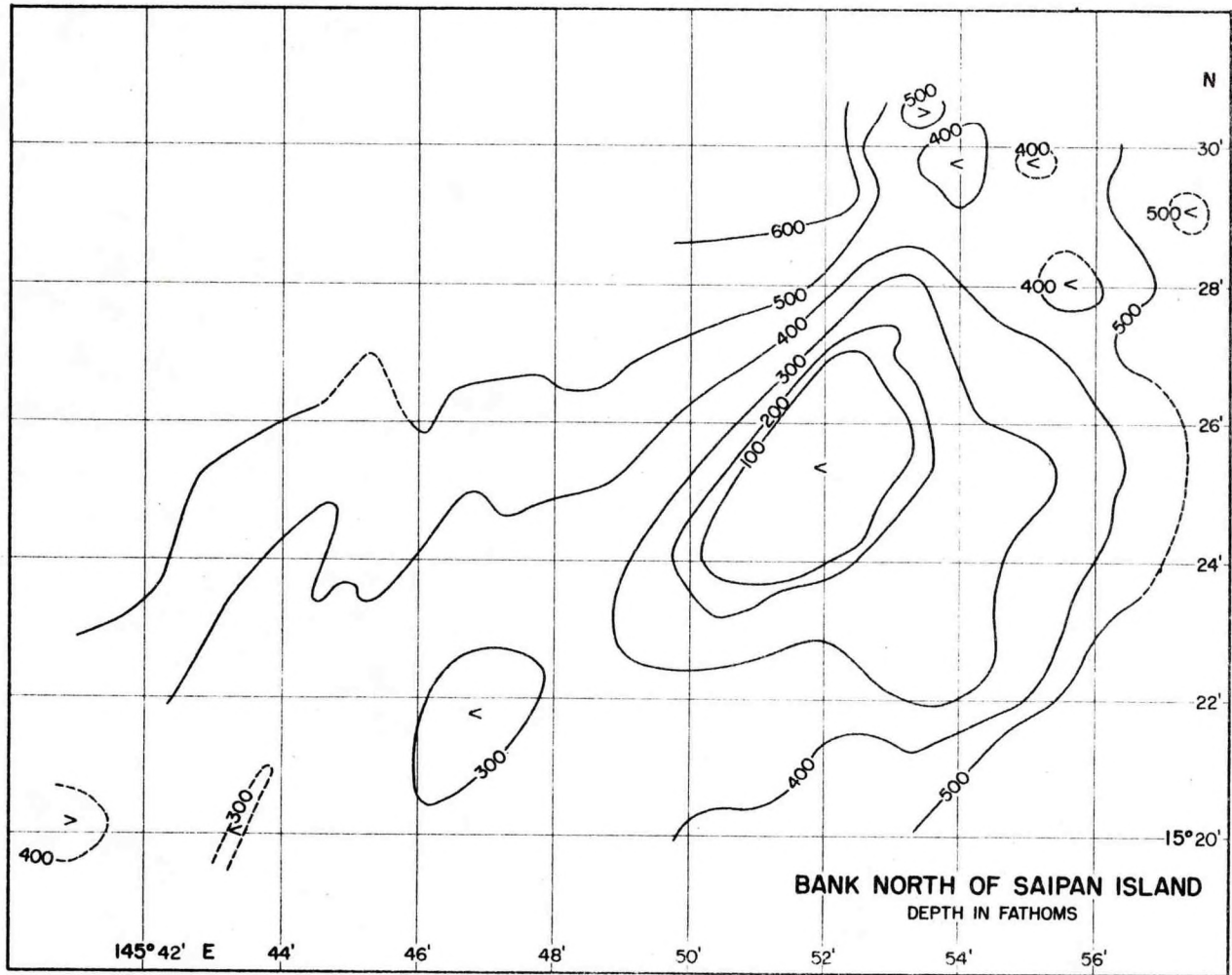


Chart 12