4716

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ..... Office No. 4716

LOCALITY

State Washington

General locality Cape Elizabeth

Locality Point Grenville to Flat Rock

194 ....

CHIEF OF PARTY

LIBRARY & ARCHIVES

DATE .....

8-1870 I (1)++

4716

DESCRIPTIVE REPORT
to accompany

SHEET "C" 4716

Locality: Sea Coast

Point Grenville to Flat Rock, Washington.

July to October

1927

Chief of Party:

Thos. J. Maher.

DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SHEET "C"

Scale: 1:20,000
Instructions dated March 5, 1927.

LIMITS: This sheet covers the water area from shore to the fifteen fathom curve and from Point Grenville to Latitude 47° 23'.

DESCRIPTION: The coast from Point Grenville to Cape Elizabeth consists of high, dark, rocky cliffs, broken at the mouth of the Quinault River. Here the beach is flat and sandy, but steep to. The cliffs drop abruptly to high water line and the beach it self is steep and narrow. Point Grenville is a broken rocky promontory, with high vertical cliffs. The southwest side of the point is rough and rugged, having numerous rocks extending offshore from it. The eastern and southern side of the point forms a small bight, which forms Grenville Bay; a shallow bay with three or four feet of water in it. Scattered sunken rocks in this bay prohibit craft of any appreciable draft from seeking protection here. Large, high, twin rocks, light brown in color lie about 300 meters southeast of the southeast extremity of the point. Grenville Arch is a high, semi-elliptical shaped rock having an opening running through it in an east and west direction at the high water line. A smaller rock lies about 400 meters N W by N (true) from Grenville Arch. This rock is barely above, being awash at high water. Sonora Reef consists of several sunken rocks as shown on the sheet. From this reef to Cape Elizabeth there are numerous scattered rocks, both sunken and awash. The town of Tahola is a small Indian settlement located at the mouth of the Quinault River. Cape Elizabeth is a broken rocky point, about one mile northwest of the mouth of Quinault River The immediate area surrounding Cape Elizabeth is foul with sunken rocks, rocks awash and rocks above high water; similarly with the area inside a line from the outer end of the reef at Cape Elizabeth to Flat Rock. Flat Rock is a low flat rock about two miles N W by W (true) from Cape Elizabeth. A rock covered by three feet at low water is two-third mile west (true) from the western extremity of Cape Elizabeth. The entire area covered by the sheet is irregular and covered by scattered rocks. Vessels cruising inside the fifteen fathom curve should proceed with great care.

Top. Sht. 4306
Rks awk 4' abv H.W.

CONTROL: Control for this survey was furnished by the com-

bined traverse and topographic party of Lieutenant Bernstein, consisting of signals located by traverse with intermediate, topographically located signals. The hydrographic party progressed more rapidly than the topographic party and it was necessary to locate, by sextant cuts, some of the signals built in advance of the topography by the party ashore. These signals were located by very weak fixes and when the preliminary locations were furnished the launch party by the shore party it was necessary to re-plot all positions on the boat sheet which were plotted with these original sextant locations. When final positions were furnished by the shore party there still existed an appreciable discrepancy between them and the preliminary positions. This discrepancy is responsible for some of the wider spaces and overlapping lines shown on the smooth sheet. The two wide spaces just north of Latitude 47° 19', near the outer ends of the lines, were covered by the ship.

METHOD: The hydrography on this sheet was entirely accomplished by hand lead soundings. The equipment consisted of the chartered launch RICHARD M and all necessary hydrographic gear. "l" and "m" days were accomplished with the ship's motor sailer, "a" (green) day with the ship's gig.

The personnel of the RICHARD M consisted of two officers, one man acting as engineer and coxswain, one recorder, two leadsman, one cook. On each of the ship's launches were two officers, one engineer, one coxswain, one recorder, two leadsman.

A regular system of 300 meter lines running east and west to the fifteen fathom curve was run. So many irregularities existed that a great deal of developement was necessary, and on casual observance of the sheet, it does not appear that any system was observed. Several cross lines were run at no regular interval or in any particulardirection. The close inshore area was surveyed by the ship's launches. As far as possible the following scheme was followed:- Positions every three minutes and sounding every 20 seconds from 0 to three fathoms, every 30 seconds from 3 to 7 fathoms, every 45 seconds from 7 to 9 fathoms, every minute from 9 to 12 fathoms, every one minute and 20 seconds from 12 to greatest depth sounded.

During the progress of the work the launch was anchored in the working grounds at a position south of Point Grenville, when weather conditions would permit. While using the launches the work was carried on from the ship.

The tide reducers for the soundings of "a" day were obtained from automatic tide guage at Westport, Washington, corrected for outside conditions as per Director's letter of September 13, 1927. The reducers for the rest of the sheet were obtained from tides obtained from Point Grenville, Washington; these tides were used direct as per same authority.

In plotting the soundings on this sheet it was impossible to plot every one. In cases, and there were many, when soundings overlapped, or were too close together, the shoalest of the soundings was plotted, erasing soundings already plotted when necessary.

CURRENTS: With the exception of the somewhat erratic currents in the vicinity of Quinault River, a general statement pertaining to this subject may suffice. Immediately following northerly weather a decided southerly set of from one to two knots was evident, and a set in the opposite direction immediately following southerly weather.

INSHORE DANGERS: In general, it may be said that it is dangerous for vessels to pass inside the ten fathom curve in this area. The numerous off laying rocks in this area make navigation dangerous. It is believed that as far as possible, by present methods, all these rocks are accurately located, but it is the opinion of the writer that nothing but a wire drag survey will determine beyond doubt the existance of all rocks in this area.

Sonora Reef and rocks awash, and sunken rocks between this reef and Cape Elizabeth, and the off laying rocks from Cape Elizabeth are among the most dangerous in the area.

Respectfully
submitted,

H. C. Warwick

H. C. Warwick,
Jr. H & G Engineer,
Hydrographer.

Forwarded, approved.

Thos. J. Maher,
Commanding,
Steamer GUIDE.

STATISTICS SHEET NO "C"

Date	Letter	Volume	Positions	Soundings	Miles	Vessel
July 14	a	1	131	562	33.2	RICHARD M
" 19	b	1	72	221	15.5	"
" 20	c	1	116	360	24.5	"
" 21	d	1	15	48	4.0	"
" 30	e	1	31	105	8.9	"
Aug. 4	f	2	104	349	29.4	"
" 5	g	2	113	252	22.2	"
Sep. 14	h	3	104	403	30.4	"
" 16	j	3	15	45	3.4	"
" 22	k	3	137	462	36.7	"
Oct. 7	l	3 & 4	150	752	25.0	Motor sailer
" 8	m	4	144	605	24.6	"
" 8	a (green)	1 (green)	86	334	14.5	Gig
TOTAL	13	5	1218	4498	272.3	

January 31, 1928.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 4716

Locality: COAST OF WASHINGTON

Chief of Party: T. J. Maher, 1927.
Plane of reference is M L L W
2.4 ft. on tide staff at Westport
2.9 " " " " " Pt. Grenville

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

G Rude

Chief, Division of Tides and Currents.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

January 8, 1929.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4716

Pt. Grenville to Flat Rock, Wash.

Surveyed in 1927

Instructions dated Mar. 5, 1927 (GUIDE)

Chief of Party, T. J. Maher.

Surveyed by H. C. Warwick, F. L. Gallen.

Protracted by H. C. W.
Soundings by H. C. W.
Verified and inked by G. Risegari.

1. The records conform to the requirements of the General Instructions.

2. The plan and character of development fulfill the requirements of the General Instructions.

3. The plan and extent of development satisfy the specific instructions.

4. There are certain sections of this sheet where it is apparent that the sounding line crossings are insufficient and in the other sections where crossings were made the soundings appear satisfactory.

5. The usual depth curves with the exception of those nearer to shore can be completely drawn. The six foot and twelve foot curves between Pt. Grenville and Quinault River are incomplete and in accordance with descriptive report for Topo. 4306 there appears to be a beach 40 meters wide within these limits and also, no dangers are indicated on the topographic sheet 4306. It would appear from the above information that the development could have been carried nearer inshore as was done on the adjacent survey, H. 4715, in a similar instance.

   The northeastern section of this sheet shows the 12 and 6 foot curves incomplete. The data on hand are insufficient and incomplete to base a satisfactory opinion whether or not the development might have been carried farther inshore. The accompanying topographic sheet does not reach as far north as this area.

6. A number of positions had to be reprotracted, apparently due to a faulty or unadjusted field protractor. The discrepancies resulting were in most cases negligible, particularly those positions near the signals used, but it was necessary, however, to consume additional time for this phase of the verification.

While a number of rocks have been located by cuts and other satisfactory means, a number of other rocks without any definite information of their source or origin have been plotted on this sheet and which are questionable as to their location and number. After much study and investigation it is apparent that these particular rocks were drawn in merely to indicate in general, foul areas, and they appear to have been taken from the boat sheet.

The plotting of two rocks (mentioned below) fall in the line of soundings and it is safe to say that such obstacles could not possibly have been passed unobserved and not so recorded in the sounding volumes.

Ex.: 760 meters south of Flat Rock -- record gives no information of this particular rock under or near the 39 foot sounding.

Ex.: 590 meters little north of west of Cape Elizabeth -- record gives no information under or near the 24 foot sounding.

The rocks awash 600 meters south of Flat Rock are apparently indefinitely located.

The rocks awash off Sonora Reef are also indefinitely located with the exception of three rocks which are on Topo. 4306.

While a number of the remaining questionable rocks are near the shore line and in four areas it is not as serious a matter as the location of the rocks mentioned aforesaid and it is recommended that further information be gathered about them and forwarded to this office.

Chart 6002, south of Cape Elizabeth, shows two rocks, one near a 5 and the other a 4 fathom sounding. It appears that these rocks are in doubtful locations and it is so stated on Hyd. 2201. Two rocks in the area shown by Hyd. 4716 appear to be the same rocks.

On Topo. 4306 is shown a pile, 3 ft. in height, off the mouth of Quinault River. This information is not recorded by the Hydrographic party and it is probable it was not existent at the time.

(See also "6 Supplemental" at end of this report.)

7. The junction with Hyd. 4715 is satisfactory. The other adjoining sheet, H. 4729, is not completed at this date.

8. Numerous shoal spots are apparent on this sheet, which indicate the rocky treacherous area, and while this survey has brought out many hidden dangers it is the belief that a more thorough survey method of this area should be undertaken to clear any doubt that any other rocks exist in this area if such is of commercial importance.

9. Character and scope of surveying, good.
Field drafting, good.

10. Reviewed by G. Risegari, December 28, 1928.

Supplemental Report

6. In Volume No. 5, A day (green), the time intervals between soundings is quite irregular and there appears to have been no particular reason for deviating from the usual practice regarding the spacing of soundings, particularly in most of this day's work. It was necessary to consume extra time to execute the plotting of the sheet.

G.R.

Reviewed by J.M. Dunook, Jan. 1929.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON January 8, 1928.

Inspection

~~Review~~ of Hydrographic Sheet No. 4716

Instructions dated March 5, 1927 (GUIDE)

1. As stated by the verifier of the sheet there are a large number of rocks awash shown on the sheet for which there is no information recorded as to their location. These are taken up separately as follows:

a. In the area immediately west and southwest of △Ho, the boat sheet shows an outline around several plotted rocks with the notation, foul area. In this locality there are shown 20 symbols for rocks awash, and one for a sunken rock. The records show that the sunken rock and two of the rocks awash only were definitely located either by cuts or approximate distances from a fixed position. In the absence of other information it is assumed that the rocksnot definitely located were sketched in by the hydrographic party (as they aren't shown on the topographic sheet) and it is thought that perhaps it was intended to have these shown as sunken rocks, instead of rocks awash, to bring the foulness of the area to the attention of the navigator.

b. The descriptive report for the hydrographic sheet (4716) states that "Sonora Reef consists of several sunken rocks as shown on the sheet." The reef as shown on the sheet, however, is represented by nine rocks awash. Of these, three were located by the hydrographic party, as such, and three were transferred from the topographic sheet. The remaining three rocks should probably be shown as sunken rocks as mentioned in the report.

c. Six hundred meters south of flat rock a foul area is shown consisting of seven rocks awash. Of these only one has been located by a cut and distance and the others were probably sketched in. As stated above it is probable that the rocks, other than the located one, should be represented by the symbols for sunken rocks, and since no limit was given for the foul area a dotted line should be drawn close around the sunken rocks to indicate same. One of the rocks plots on a 39 ft. sounding and the position of the rock is therefore questionable.

Correct delineation of this reef is shown on H-5107.

d. In the reef that makes off Cape Elizabeth there are several rocks awash shown that weren't located and these should probably also have been shown as sunken rocks.

e. Five hundred ninety meters west by north of Cape Elizabeth is shown a rock awash which plots practically on a 24 ft. sounding. This is probably in error as there is no information that the rock exists. No cuts were taken to same, and no remark concerning it was made although it was near low water when the 24 foot sounding was taken. The rock is shown in the same position as on the boat sheet, and although the positions and soundings were changed on the smooth sheet, due to change of location of signals caused by the hydrography having been done in advance of the topography, the rock was not changed and consequently is in error. There is no information available in the records to move it to the correct position.

This rock not found by party on H-5107 Should not be charted.

2. A good deal of the uncertainty as to the correct location of most of the aforementioned rocks would have been removed had the topographer, while in the locality, rodded in the extent of the reefs. This would have necessitated an additional set up on Sonora Reef to get the limits of that one, a set up on Flat Rock to get the reef about 700 meters to the southward and a few more readings in rounding Cape Elizabeth. It is possible that weather conditions were such that the topographer could not land on the rocks in which case when the hydrography was executed the extent of the foul area around these places should have been indicated. If additional work is done in this locality it would be advisable to have these limits defined, especially around Sonora Reef and the locality just south of Flat Rock.

3. Near Lat. 47° 20', Long. 124° 19' there is a sunken rock shown. This was located in Vol. 1, page 18 by a note, sunken rock 100 meters north. At a later date, Vol. 4, page 16, pos. 132 1, another line of soundings was run between the sounding from which the rock was located and the rock yet no mention was made of its existence. The position of the rock is therefore questioned. Upon developing the area as recommended under 5(d), the correct location will be determined.

4. The topographic sheet for this area shows cuts to breakers, and while they appear to go through or near rocks there are not enough cuts to definitely define the limits. No mention is made of breakers either in the records or the descriptive report accompanying the sheet.

5. The following areas, where shoal soundings were obtained, need further development:-

a. Lat. 47° 20'.5, Long. 124° 19', 16 ft. sounding.
b. Lat. 47° 20'.5, Long. 124° 21', 30 ft. and 21 ft. soundings.
c. Lat. 47° 19'.7, Long. 124° 19', 26 ft. sounding.
d. Lat. 47° 20', Long. 124° 19', 23 ft. sounding.
e. Lat. 47° 20', Long. 124° 20'.2, 26 ft. sounding.
f. Just north of Lat. 47° 20', Long. 124° 20', 3 soundings 33 ft.

6. Station Lion on this sheet is shown as being on Sea Lion Rock. The position of this rock corresponds to Willoughby Rock shown on Chart 6002 and probably was intended for that one.

7. Chart 6002 shows an island and a rock awash at Lat. 47° 21', Long. 124° 20' and neither of these is borne out by the recent survey. The rock awash was obtained from H. 2201, Crosby 1894, and was marked position doubtful. The island corresponds to a small red circle used to denote a position on H. 2201, and was probably shown originally on chart 6002 due to misinterpretation of notes on H. 2201. There is a note for this position: "Rock, position doubtful." but no rock is shown. In view of the soundings obtained by the recent survey showing 34 ft. and more for this area, it is recommended that neither the island nor the rock awash be shown on the next edition of the chart.

8. ~~Reviewed~~ Inspected by J. M. Smock, January, 1929.

Approved:

Chief, Section of Field Records (Charts)

Chief, Section of Field Work (H. & T.)

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

JSB 14 3 11

FEB 18 8 34 AM 29

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

Steamer GUIDE, Honolulu, T. H.,
February 5, 1929.

To: Director, Coast & Geodetic Survey, Washington, D. C.

Through: Commanding Officer, U.S.C. & G.S.S. GUIDE.

From: Lieutenants F. L. Gallen & H. C. Warwick, C. & G. S.

Subject: Hydrographic Sheet #4716

Replying to your letter of January 17, 1929, we beg to state, answering each of the questions written on the photostat copy of the section of the sheet in numerical order. This photostat is returned herewith as per your request.

1. The reef line should be drawn to include the sunken rock adjoined to the 39 foot sounding. The other rocks shown included in this limit should remain as shown. There are two possible reasons why the location of these rocks are not in the record books. First possibly it was a case of inexperienced recorders not taking all the notes given by the officer in charge, but were sketched in by the officer on the boat sheet and transferred to the smooth sheet. The second cause may be that one or more of the rocks being located, the officer in charge merely sketched in the remainder of the reef as it looked from the boat on the boat sheet. It is quite likely and very probable, if not self evident that sunken rocks exist within the limits of this area, and should probably be shown so on the chart. The rocks that are shown as rocks awash, however, should remain as shown. OK'd by Ams as shown on Hyd sheet

2. The 39 foot sounding is not on the rock but adjacent thereto. The sounding was taken very close to the rock. This rock should be included in the limit of the foul area just north of it and should remain as shown, This is probably a case of the recorder not making a note as given by the officer in charge.

3. The rocks shown within the limits of the foul area shown should remain as shown. They were merely sketched in and the position of them is probably not accurate, but the whole area within the limit is fouled with sunken rocks and rocks awash. There are probably a great many more than are shown. The limit of this area is correct as shown.

4. The same answer as No. 2 applies here. The 24 ft. sounding is adjacent to, but very close to the rock.

5. The limit of this reef is shown by the dotted blue line, however the area between this line and the rocks awash outside of it is probably foul. The rocks awash shown near the limit of the reef should remain as shown with sunken rocks shown between them.

6. The island and rock awash shown on Chart #6002 does not exist. This symbol on the chart probably has reference to the rock awash shown just inshore from this area.

7. This rock should remain as shown. The state of the sea and position of the sun had a great deal to do with the visibility of these sunken rocks. Unless further search is made for this rock it should remain as shown.

8. The rocks at the southern end of Sonora Reef were located by sextant cuts from the launch, and the angles should have been recorded in the record books. However these rocks should remain as shown with sunken rocks shown between them. The limit of this reef looks to be correct.

Ok'd by ARMS as shown on Hyd Sheet. 8R

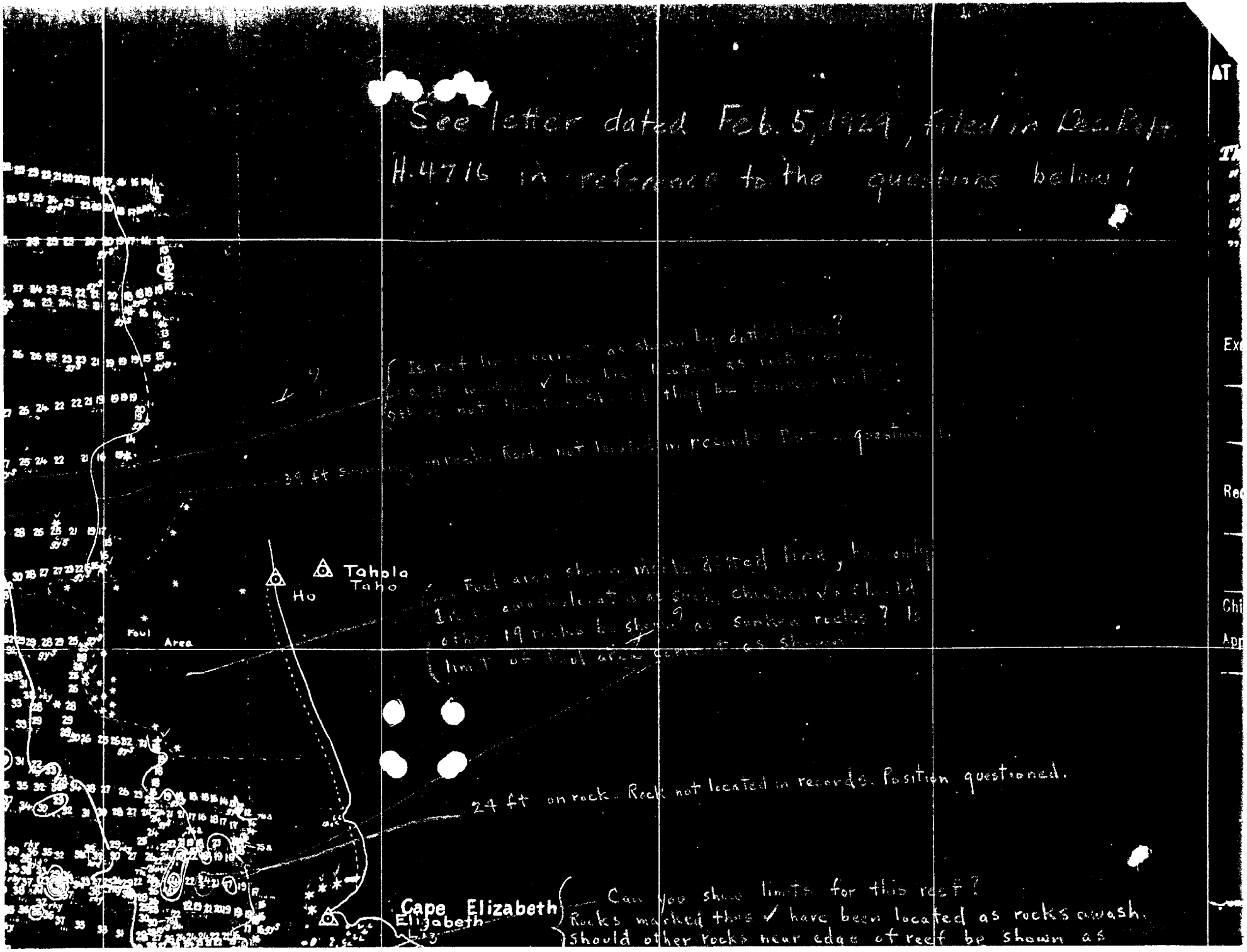
Francis L. Gallen,
H. & G. E., C & G.S.

H. C. Warwick,
Jr. H. & G. E., C. & G. S.

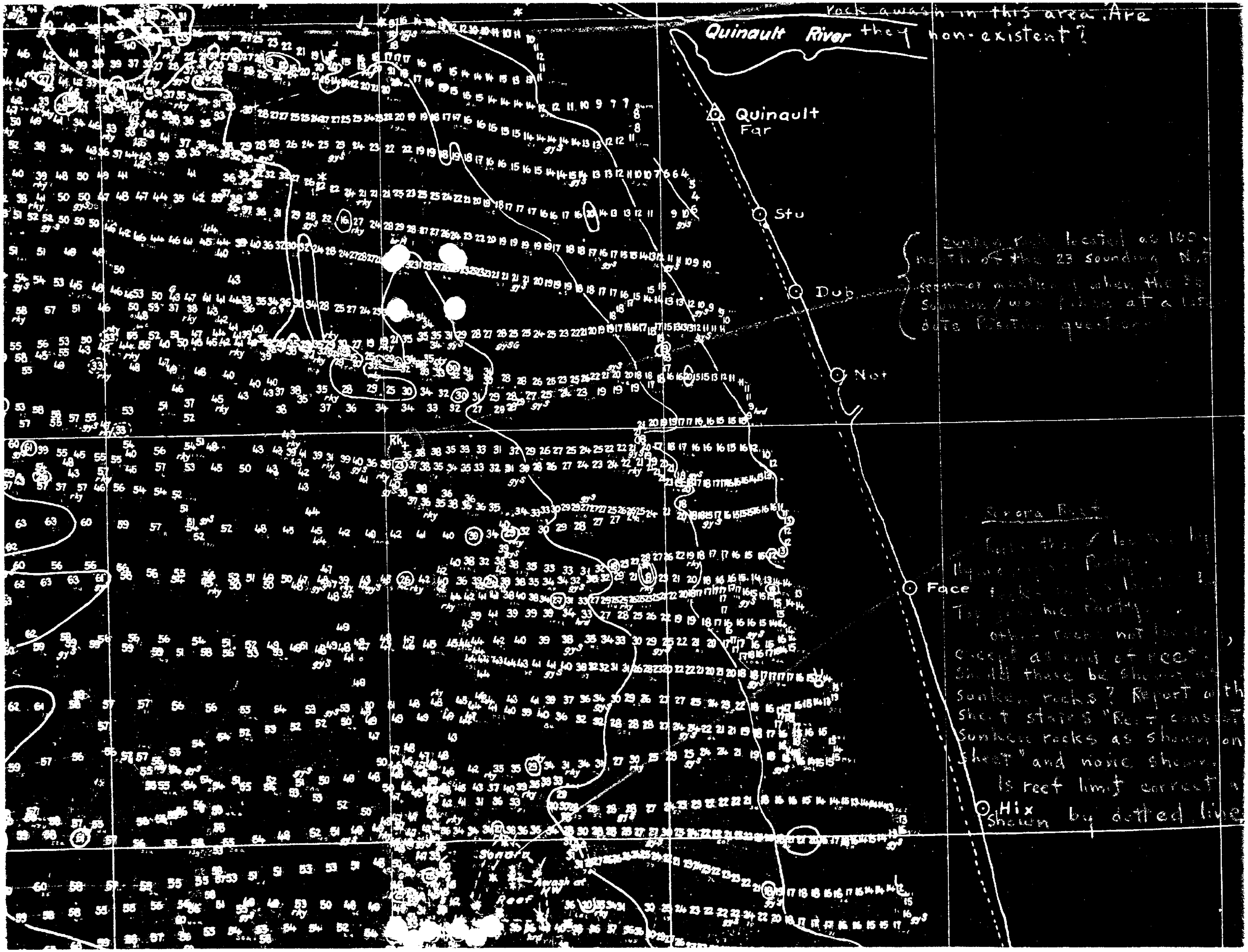
Forwarded:

K. T. Adams,
Commanding
Steamer GUIDE.

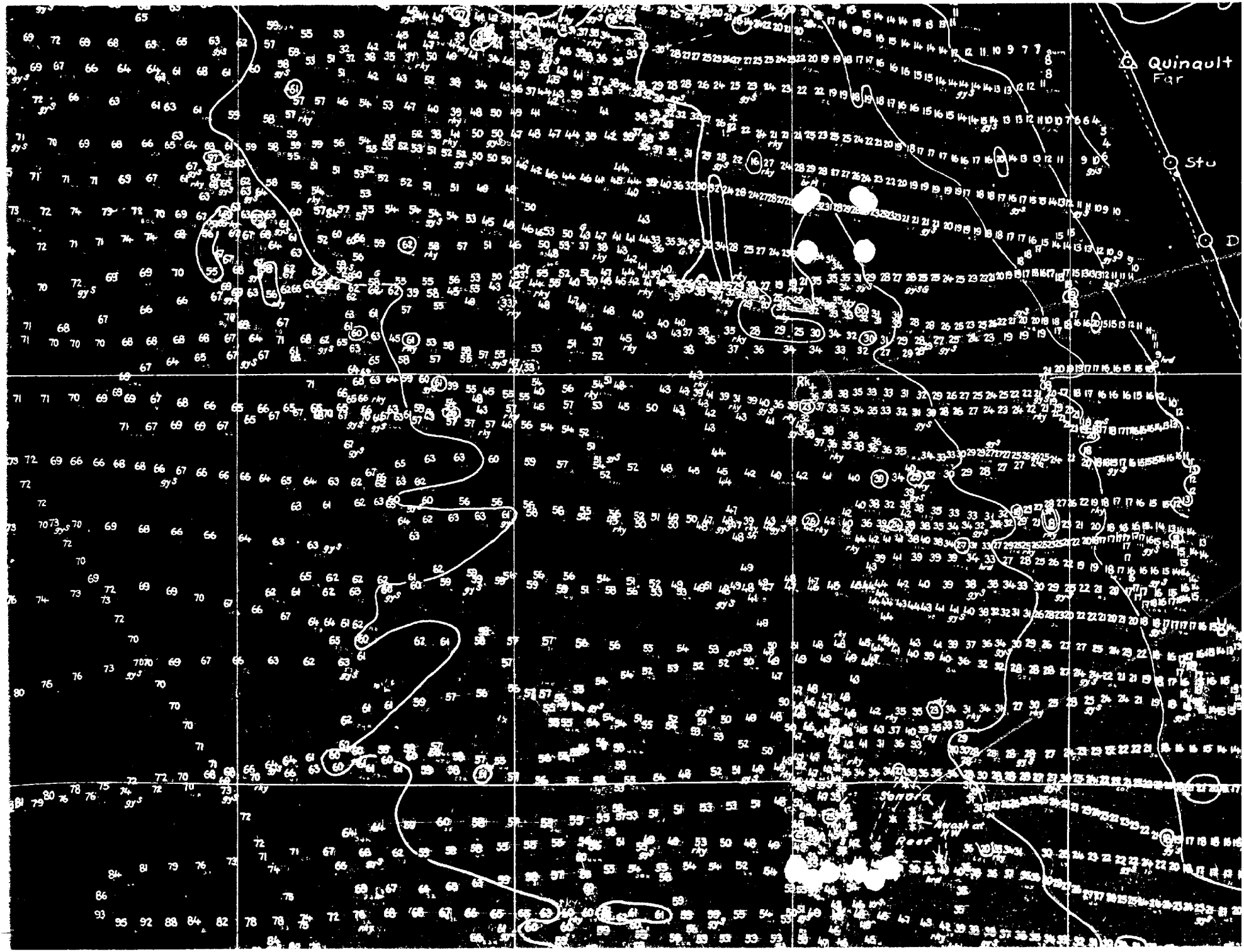
FLG/w

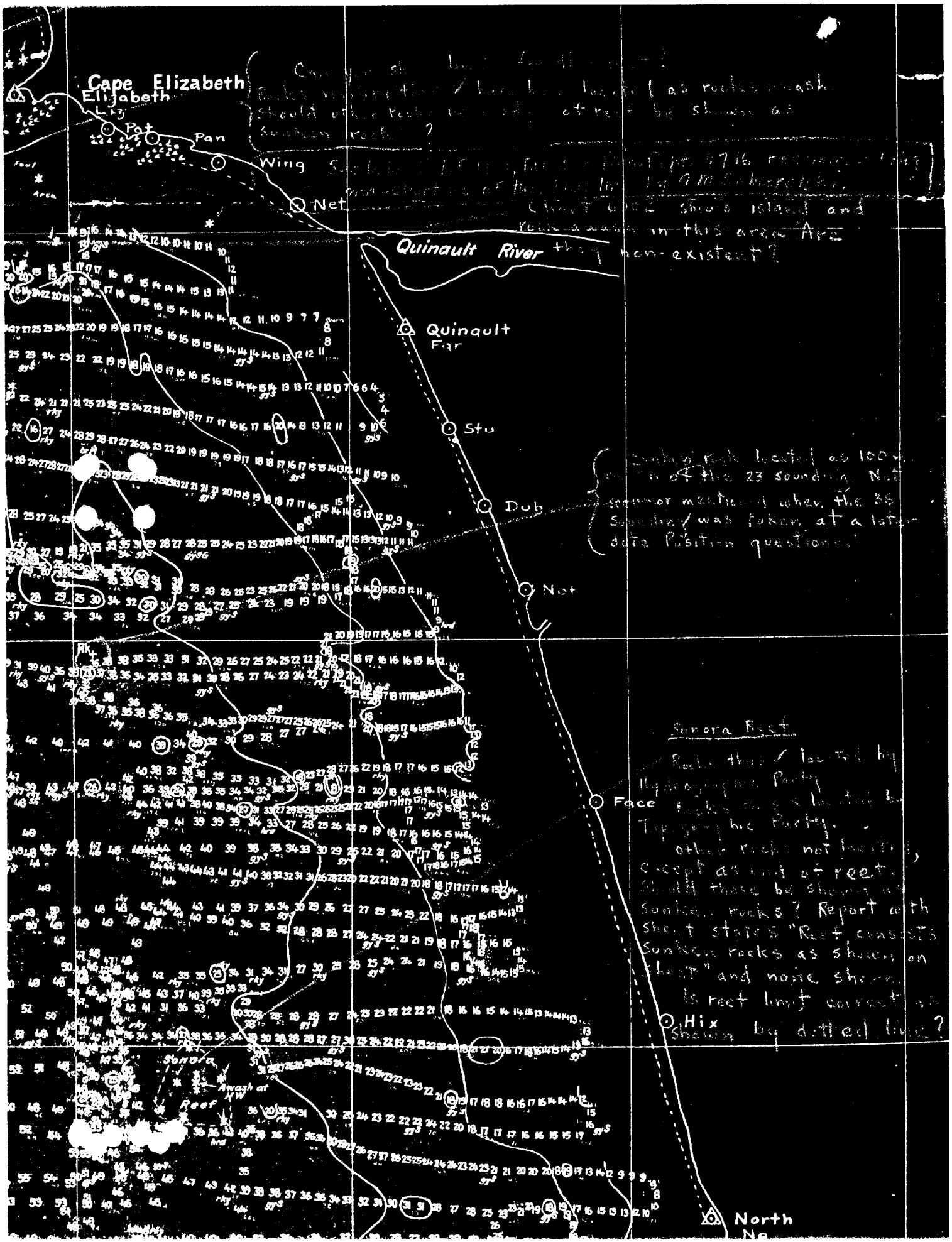

See letter dated Feb. 5, 1929, filed in Reg. Reg.
H.4716 in reference to the questions below!
Is reef limit correct as shown by dotted line?
Rocks marked thus ✓ have been located as rocks awash.
Foul area shown inside dotted line, has only
Tahola
Taho
Ho
Foul
Area
other 19 rocks be shown as sunken rocks? If
limit of foul area
24 ft on rock. Rock not located in records. Position questioned.
Cape Elizabeth
Elizabeth
Can you show limits for this reef?
Rocks marked thus ✓ have been located as rocks awash.
Should other rocks near edge of reef be shown as

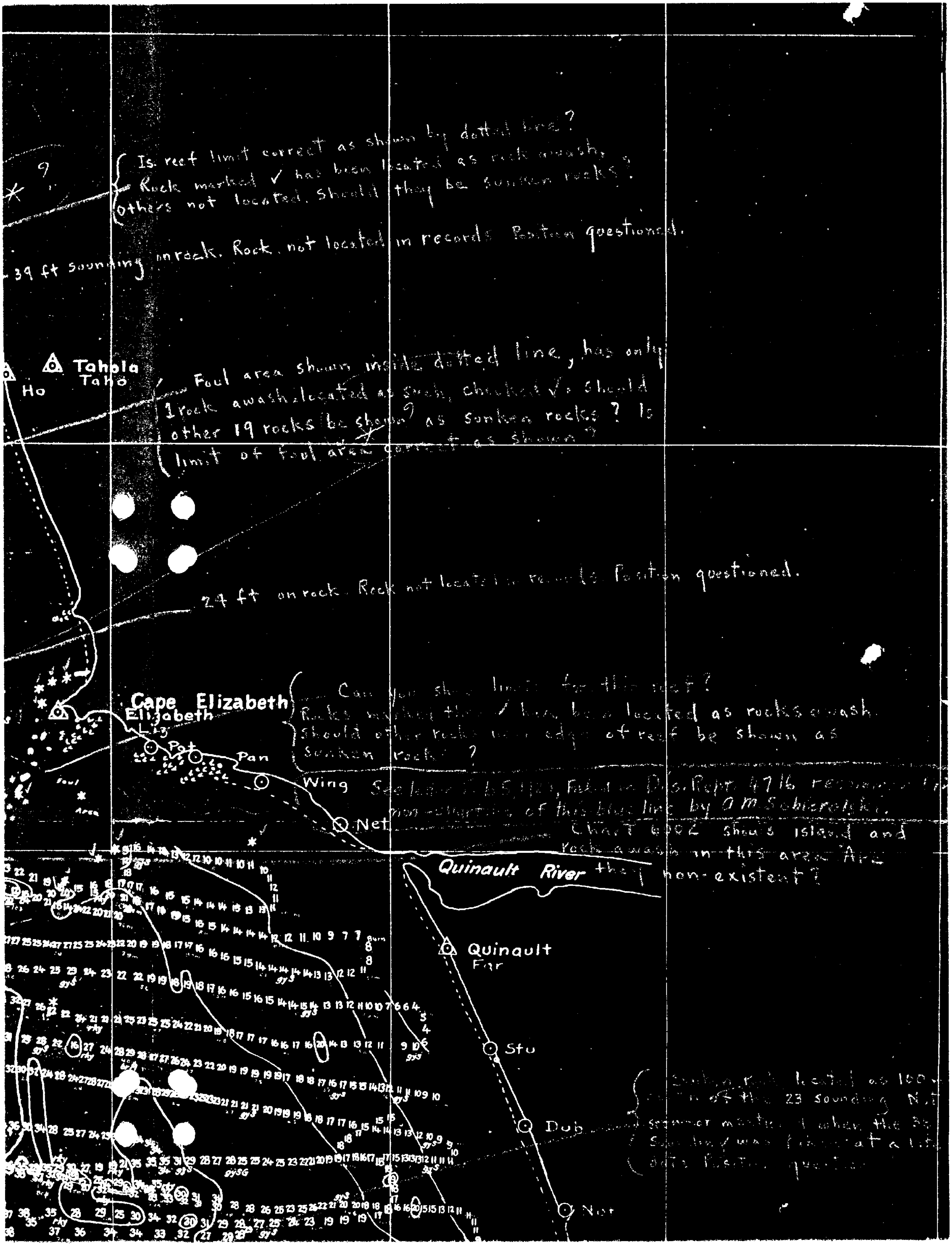

See letter dated
H-4716 in reference to the
Flat Rock
Foul Area
Tahpla
Taho
Ho
24 ft on rock. Rock not located in
Cape Elizabeth
Elizabeth
Can you show limits
Should other rocks near
sunken rocks ?

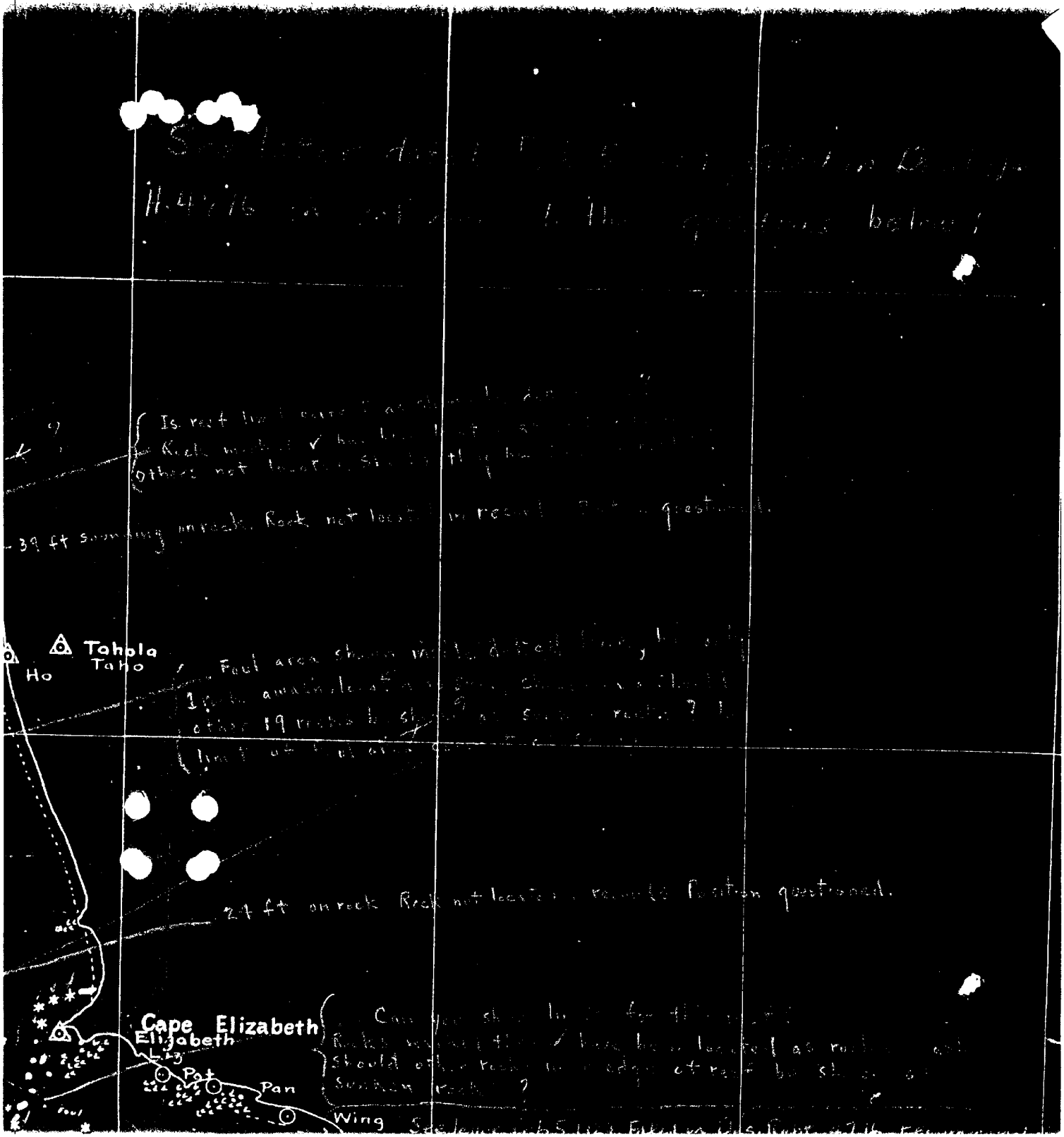


Quinault River
Quinault
Far
Stu
Dub
Not
Face
Hix
Sonora
Reef
non-existent?


Quinault
Far
Stu
D
Rk
Sonora
Awash at
Reef


Cape Elizabeth
Elizabeth
Pot
Pan
Wing
Net
Quinault River
Quinault
Far
Sto
Dub
Not
Face
Hix
North
Sonora Reef
Awash at
Reef


Is reef limit correct as shown by dotted line?
Rock marked ✓ has been located as rock awash,
others not located. Should they be sunken rocks?
39 ft sounding on rock. Rock not located in records. Position questioned.
Tahola
Taho
Ho
Foul area shown inside dotted line, has only
1 rock awash located as such, checked ✓. Should
other 19 rocks be shown as sunken rocks? Is
limit of foul area correct as shown?
27 ft on rock. Rock not located in records. Position questioned.
Cape Elizabeth
Elizabeth
Liz
Pot
Pan
Wing
Net
Foul
Area
Can you show limits for this reef?
Rocks marked thus ✓ have been located as rocks awash.
Should other rocks near edge of reef be shown as
sunken rocks?
Chart 6002 shows island and
rock awash in this area. Are
they non-existent?
Quinault River
Quinault
Far
Stu
Dub
Nor
Sunken rock located as 100 m
N of the 23 sounding
gyS


Tahola
Ho
Taho
Cape Elizabeth
Elizabeth
Pat
Pan
Wing

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4716

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet 1218.

Number of positions checked 209.

Number of positions revised 10.

Number of soundings recorded 4498.

Number of soundings revised 50.

Number of signals erroneously plotted or transferred .....

Date: Jan. 2, 1929

Cartographer: E. Pisegani

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4716

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. C

REGISTER NO. 4716

State Washington

General locality ~~Washington Coast~~ Cape Elizabeth

Locality Point Grenville to ~~2 miles north of Cape Elizabeth~~ Flat Rock

Scale 1:20,000 Date of survey July 14 - October 8, 1927

Vessel "Richard M", motor sailer, gig, sub-parties of Steamer GUIDE.

Chief of Party Thos. J. Maher

Surveyed by H. C. Warwick and Francis L. Gallen

Protracted by H. C. Watwick

Soundings penciled by H. C. Warwick

Soundings in ~~xxxxxxx~~ feet

Plane of reference MLLW

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated March 5, 1927

Remarks: Soundings on boat sheets in fathoms and feet. Work on this sheet contained in five volumes. Work on this sheet was not carried on continuously.
Tide Reducers contained in one cahier

Per. Rpt.
2 BS.
5 Sdg Vol.

DE24312

9130-Karis

9306 ✓

9369 ✓

8796
8738

23 - 1837