

5723

5723

Form 504
Rev. Dec. 1933
DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 10 **5723**
Hydrographic }

State Alabama

LOCALITY

Vicinity of Gulf Coast

Wolf Bay

1934 & '35

CHIEF OF PARTY

I.E. Rittenburg

Bp

Form 537
Ed. Dec., 1930

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
REG. NO.
APR 15 1935
Acc. No. _____

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. 10

REGISTER NO. **5723**

State Alabama

Vicinity of
General locality Gulf Coast

Locality Wolf Bay, Bay La Lanch

Scale 1:10,000 Date of survey ~~1934~~ Feb. 1935, 19

Vessel Shore Party 15 and U. S. Eng.

Chief of Party I. E. Rittenburg

Surveyed by J. A. Kinghorn and U. S. Eng.

Protracted by J.R. Walsh and C.P. Jackson

Soundings penciled by J. R. Walsh

Soundings in ~~fathoms~~ feet

Plane of reference Mean Low Water

Subdivision of wire dragged areas by _____

Inked by _____

Verified by _____

Instructions dated _____ Nov. 30, 1934, 19

Remarks: _____

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET FIELD # 10, WOLF BAY,
~~BAY LA LAUNCH~~, ALABAMA. PROJECT H. & T. # 196. Feb. 1935 & ~~summer 1934~~.

1 Authority

This work was executed in accordance with instructions from the Director, dated Nov. 30, 1934. Authority for the acceptance of the U. S. Engineers Survey in Bay La Launch is contained in your letter of Dec. 28, 1934, and attached hereto. Field work was done in Feb. 1935 in Wolf Bay and the U. S. Engineers survey was done in the summer of 1934.

2 Area Covered and junctions

This sheet is comprised of 2 sections.

1. Wolf Bay, surveyed by this party;

2. Bay La Launch and intracoastal waterway surveyed by U. S. Eng. and shown on the attached 3 photostatic copies of their original sheet. A full discussion of this U. S. Eng. survey is made below under paragraph 4. Together these surveys extend from Ross Pt., Ala., to the entrance to the Intracoastal Waterway Canal at the head of Portage Creek, Ala., and include Bay La Launch and Wolf Bay and Tributaries. This sheet joins hydro. shet 3 submitted some time ago by this party.

3 Control, Datum, and shoreline.

This sheet is on the final adjusted *field computations* N. A. 1927 Datum. The basic Control was furnished by the party of Lieut. J. G. M. H. Reese, 1934. The shoreline was also furnished by the party of M. H. Reese, 1934. Supplemental stations necessary for the control of hydrography were located by the usual topographic methods on aluminum mounted Graphical Control sheets "B" back and "C" front submitted by this party a few days ago. Practically all the U. S. eng. stations have been tied in either by triangulation or topography and these stations and beacons are encircled in red on the attached photostats.

4 Photostats of the U. S. Eng. Survey

turned over to Cartographic Section assigned No's 87's 28785, '86, and 87.

The attached three photostats are copies from the original hydrographic survey executed by the U. S. Engineers Office, Mobile, Alabama, in the summer of 1934. The original sheets are on file at the U. S. Eng. office at Mobile Alabama. This survey is joined on the east by hydrographic sheet 3 of this party. These sheets embrace the area from Ross Pt. Beacon through Bay La Launch to beacon 79 of the recently completed intracoastal waterway connecting Pensacola, Fla., and Mobile Ala. Beacon 79 is slightly west of the east end of the new canal cut to connect Bay La Launch with Oyster Bay, Ala. The origin for the U. S. Eng. co-ordinate system is station W-9 with an assumed position of 20,000 ft. North and 20,000 ft. east. This station, W-9 has been located by triangulation and its position on the N.A. 1927 Datum has been computed by the party of M. H. Reese. In addition, many of their other stations, beacons, day marks etc. have been tied in by Lieut. Reese's triangulation, and positions for these stations have been computed on the N.A. 1927 Datum. In addition practically all their other stations, beacons etc. have been cut in by topographic methods and are shown on the aluminum mounted sheets covering this area mentioned above. These aluminum mounted

control sheets have already been forwarded to your office. The U. S. Engineers grid system has been laid down on these aluminum mounted sheets B back and C front rather than on this sheet as the control sheets are not subject to change due to distortion. The plane co-ordinates of the locations of numerous U. S. Eng. stations and their locations for numerous beacons and markers have been scaled off the control sheets by this party and compared with the computed co-ordinates as computed by the U.S. Eng. A list is attached hereto showing the G.P. of numerous of these stations and beacons, the computed co-ordinates of the U.S. Engineers, and the scaled co-ordinates as scaled from the aluminum mounted sheets. As you will see the maximum discrepancy between the two lists of co-ordinates, - computed by U.S. Eng. and scaled by this party, is about 17 ft. in Lat. and 20 ft. in departure, or 5 to 6 meters. For the most part these stations agree within 1 or 2 meters. It is therefore believed that no trouble will be experienced in charting these soundings on the N.A. 1927 Datum.

These photostats are on an approximate scale of 1:10,000.

All the U. S. Engineers stations are well marked and described on form 524, and it is believed that these stations will be used in future examinations of this area.

The geographic positions of the various triangulation and topographic stations shown on the attached lists are on the final adjusted NA 1927 Datum. The co-ordinates are based upon an assumed position for the origin of 20,000 ft. North and 20,000 ft. east as the position of station W-9. As has been said this station and numerous other stations have been located by Lieut. J.G. Reese by triangulation and computed on the final NA 1927 Datum. The azimuth to station W-10 as computed by triangulation is 173-11-01.5. All this information is clearly shown on Graphical Control Sheets "B" back and "C" front recently forwarded to your office.

- field computations

5 Methods

Standard Hydrographic methods were employed throughout this survey shown on the smooth sheet. A 10# hand lead was used and soundings were taken as close to shore as possible. Soundings were taken up the tributaries of Wolf Bay as shown. These tributaries were not carried any further due to the uncertainty of how long this party would continue operations due to funds and the instructions called for certain areas to be given priority.

6 Dangers and Channels

The only dangers on this sheet of importance are along the edges of the dredged channel across Bay La Launch. The channel is very narrow and vessels must stay in it. The project depth of 9 ft. can easily be carried across as the channel is fairly well marked.

7 Landmarks for charts and Coast Pilot Notes.

There are no objects of sufficient prominence for charting here. The original Coast Pilot notes have been given to Commdr. Cotton and the duplicates forwarded with hydro. sheet 3.

8 Statistics

79.6 Miles of Soundings
2960 Soundings taken
838 Positions.

The records and sheet have been inspected and approved.

I. E. Rittenburg, Lieut., Coast & Geodetic Survey, Chief of Party.

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

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

AND REFER TO No. 22-AA
1990 (15)

December 28, 1934.

To: Lieutenant Isidor Rittenburg,
U. S. Coast and Geodetic Survey,
P. O. Box 869,
Pensacola, Florida.

From: The Director,
U. S. Coast and Geodetic Survey.

Subject: U. S. Engineer Surveys.

The three photostatic copies of U. S. Engineer Surveys, referred to in your letter of December 20, have been received and examined in this office. The hydrography shown thereon is considered satisfactory for charting purposes provided, of course, that you show on your aluminum mounted sheets the positions of the control signals used by the Engineers. It is hoped that the Engineer Control Stations are well marked and will be used on future examinations of this waterway.

In addition to showing the positions of the U. S. Engineers Stations, you will please project in pencil on your sheet the grid system and check the control by plotting several well distributed stations by coordinates. If you are assured after making this test that the coordinate system is well coordinated with our control, you will please list on each sheet the coordinates of the stations shown thereon. The origin station "W9" should be indicated by an appropriate note and the azimuth to one of the stations from the origin of the system should also be shown.

If the test shows the two systems in poor agreement, you will state this fact in the Descriptive Report. The three photostatic copies of surveys forwarded by you are being returned under separate cover.



Director.

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. ...5723

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

Number of positions on sheet	..838..
Number of positions checked	..82..
Number of positions revised	...0...
Number of soundings recorded	..2960..
Number of soundings revised	...50 ^{See Report.} ...
Number of signals erroneously plotted or transferred	...0...

Date: 5-24-35

Verification by

Inked

Review by

Michael Robinson
by F. R. Grubb
V. D. Behn

Time: 36 hrs.
20 1/2 hrs.

Time: 10 hrs.

TIDE NOTE FOR HYDROGRAPHIC SHEET

May 11, 1935.

Division of Hydrography and Topography:

Division of Charts: Attention Mr. E. P. Ellis

Tide Reducers are approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 5723

Locality Wolf Bay, Alabama

Chief of Party: I. E. Rittenburg in 1934-1935
Plane of reference is mean low water reading
1.7 ft. on tide staff at Petersons Landing
5.0 ft. below B.M. 1

Height of mean high water above plane of reference is 0.9 foot.

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

5-24-35

Verifier's Report on H-5723.

- 1- The Records conform to Hydrographic Manual instructions. Sounding Records taken in fathoms and feet are shown in feet on H-5723.
- 2- Areas were sufficiently developed to show depth curves properly and clearly.
- 3- Positions were well protracted and soundings satisfactorily indicated except as will be noted under (6) "Remarks."
- 4- No change of positions were necessary. Courses were free from jogs and swerve.
- 5- There are no adjacent sheets; however, there is an old Survey H-2073 in existence; dated:- Nov. 21, 1891. Scale 1:10,000.
- 6 The records are neat and legible, but from Pos. 1A to the last Pos. 46G, no geographic location was given in the Sounding Records for beginnings nor ends of lines, which necessitated the protracting of almost every new line of Positions. These geographic locations were supplied in the Records to aid the Reviewer in the expediency of his work. The field men might have had good cause to run short lines in spotted locations, but it took time to locate and record the beginnings of these lines in the process of verifying. Bottom Characteristics were lavishly given in the Sounding Records and were shown on the "Smooth Sheet" These had to be selected to keep the Sheet from a cluttered appearance. In several instances, Soundings on "Smooth Sheet" were given in reversed reading:- Example Pos X 76654 Pos Y, read Pos X 45667 Pos Y.

Respectfully submitted

Michael Robinson

Inked by Mr. F. R. Grubb

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5723 (1935) - FIELD NO. 10

Wolf Bay, Vicinity of Gulf Coast, Alabama
Surveyed in February, 1935
Instructions dated November 30, 1934 (I. E. Rittenberg)

Hand Lead Soundings

3 Point Fixes on Shore Signals

Chief of Party - I. E. Rittenberg.
Surveyed by - J. A. Kinghorn.
Protracted by - J. R. Walsh and C. P. Jackson.
Soundings penciled by - J. R. Walsh.
Verified by - Michael Robinson.
Inked by - F. R. Grubb.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual.

The Descriptive Report is clear and comprehensive and adequately covers all matters of importance.

2. Compliance with Instructions for the Project.

This survey complies with the instructions for the project.

3. Sounding Line Crossings.

Such cross lines as were run are in good agreement.

4. Depth Curves.

Within the limits of the survey the usual depth curves can be satisfactorily drawn.

5. Junctions with Contemporary Surveys.

This survey makes a junction on the south with the U. S. Engineers Survey of 1934 (Bp's. 28785, 28786, and 28787). The junction is not very satisfactory. The U. S. Engineers survey is consistently from 1 to 2 feet shoaler than the present survey. This difference may be due to the Engineers possibly having used a different plane of reference than that used by this Bureau. This is borne out by the fact that the present survey is in general in good agreement with the survey of 1891 (H-2073). In addition, this Engineers survey of 1934 is also shoaler than their survey of 1931. This latter survey is not very complete and does not join the new survey of this Bureau. The field party has been instructed to investigate the apparent discrepancy in reference planes. *See letter from Tides - attached to this report.*

6. Comparison with Prior Surveys.

a. H-2073 (1891).

This survey is in general in good agreement with the new survey.

7. Comparison with Chart No. 1265.

Within the area of the present survey this chart is based on the survey discussed in the foregoing paragraph and contains no additional information that needs consideration in this review.

8. Field Plotting.

The field plotting and protracting are satisfactory and conform to the requirements of the Hydrographic Manual.

9. Additional Field Work Recommended.

This survey is complete and no additional field work is required, except a tie-in between the reference plane used by this survey and the plane of the Engineers' work (par. 5, this review).

10. Superseding Old Surveys.

Within the area covered the present survey supersedes the following survey for charting purposes:

H-2073 (1891) in part.

11. Reviewed by - V. D. Behn, June, 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green, *C. K. Green.*
Chief, Section of Field Records.

A. L. Shalowitz
Chief, Section of Field Work.

L. O. Pollock
Chief, Division of Charts.

G. Stude
Chief, Division of H. & T.

Applied to drawing of Chart 1265 - Sept 28, 1935 - JTW

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

1935 JUL -15- AM 9:16

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DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

P. O. Box 869, Pensacola, Fla.,
July 12, 1935

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

From: Lieutenant I. E. Rittenburg,
Coast & Geodetic Survey.

Subject: Discrepancy on Hydrographic Sheet H-5723. Reference your letter
July 6, 1935, 22/MEK, 1990 (15)

In reply to the above mentioned letter you are advised that an interview was had yesterday with the U. S. Engineer Office in Mobile Ala., with reference to the discrepancy mentioned in your letter. I was informed that they know there is a difference of .71 ft. between the low water datum used by them and the M.L.W. used by the Coast & Geodetic Survey, in the Pensacola, Fla., area.

The datum plane used by the U.S. Engineer Dept. is the zero of a tide staff located at Orange Beach, Ala.. This zero of the staff is supposed to have been brought down from Ft. Pickens, Fla., part way by levels and part way by transferring the zero from other staves. No bench marks were set at Orange Beach. The Mobile office thinks that the level records for the Pensacola area is in the office at Pensacola, Unfortunately this office is closed at present. An attempt will be made to locate this level record as soon as the person in charge returns to Pensacola. There seems to be no records kept of any levelling or tidal observations in either office.

As all the instruments of this party had been packed up and moved to Valparaiso, Fla., it was impracticable to establish tide gages to make simultaneous observations between the Engineer's staff at Orange Beach and the tide station used by this party in Wolf Bay at Peterson's Landing. Therefore the next best thing was done. Two plain tide staves were established at these two places, tide observers were hired, the staff at Peterson's Landing was levelled in from the existing C&GS bench marks established by this party, and simultaneous observations will be made for one month from date between the hours of 7 AM and 7 PM daily. The tide staff at Orange Beach used by the U.S. Engineer Dept. was recovered in good shape and is being used. It is believed that this will furnish all the data necessary to compare the two datum planes.

There is enclosed with this communication on an attached sheet the staff readings of the staff at Orange Beach used by the U. S. Engineers in reducing the soundings taken in this area in question. They may be of some value in establishing a preliminary datum for the Engineer's staff. In passing it might be said that if any difference is found in the datum planes this difference will exist in this entire area.

I. E. Rittenburg

Observed staff heights;

June 20th 1934.

7:15 AM	----Height	1.4	Feet ✓
8:15 AM	"	1.4	" ✓
9:15 AM	"	1.4	" ✓
10:15 AM	"	1.4	" ✓
11:15 AM	"	1.4	" ✓
12:15 PM	"	1.4	" ✓
1:15 PM	"	1.3	" ✓
2:15 PM	"	1.3	" ✓
3:15 PM	"	1.25	" ✓
4:15 PM	"	1.25	" ✓
5:15 PM	"	1.2	" ✓

June 28th 1934.

7:51 AM	----Height	1.2	Feet ✓
8:26 AM	"	1.3	" ✓
9:35 AM	"	1.3	" ✓
1:05 PM	"	1.7	" ✓
2:00 PM	"	1.8	" ✓
3:33 PM	"	1.7	" ✓
4:05 PM	"	1.7	" ✓

June 29th 1934.

7:05 AM	----Height	1.1	Feet ✓
8:05 AM	"	1.2	" ✓
9:05 AM	"	1.3 ³	" ✓
10:05 AM	"	1.4	" ✓
12:40 PM	"	1.6	" ✓
1:40 PM	"	1.7	" ✓
2:40 PM	"	1.7	" ✓
3:40 PM	"	1.7	" ✓
4:40 PM	"	1.6	" ✓

August 14th 1934.

8:00 AM	----Height	1.55	Feet ✓
12:20 PM	"	1.6	" ✓
1:20 PM	"	1.6	" ✓
2:20 PM	"	1.6	" ✓
3:20 PM	"	1.65	" ✓
4:20 PM	"	1.65	" ✓

August 15th 1934.

7:00 AM	----Height	1.8	Feet ✓
8:00 AM	"	1.75	" ✓
9:00 AM	"	1.75	" ✓
10:00 AM	"	1.7	" ✓
11:00 AM	"	1.6	" ✓
12:00 M	"	1.6	" ✓
1:00 PM	"	1.6	" ✓
2:00 PM	"	1.55	" ✓
3:00 PM	"	1.5	" ✓
4:00 PM	"	1.5	" ✓
4:30 PM	"	1.5	" ✓

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

AND REFER TO No. 34-MT

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

August 19, 1935

To: The Chief,
Division of Charts

From: The Chief,
Division of Tides & Currents

Subject: Discrepancy on Hydrographic Survey Sheet H-5723

In order to furnish further information in regard to the discrepancy between our soundings and the U. S. Engineers' soundings in Wolf Bay, Alabama, Lieutenant Rittenburg reinstalled a plain tide staff at Petersens Landing, Wolf Bay and tied it in to the bench marks established by his party in 1935 so that the low water datum previously used could be readily ascertained. He states in his letter of August 8, 1935 that he recovered the staff used by the U. S. Engineer Department at Orange Beach, Alabama, which is supposed to be set with zero at their datum. Simultaneous staff readings were made daily at both places from 7 A. M. to 7 P. M. from July 13 to August 5, 1935.

On the basis of these observations and the above statements relative to the zero of the Engineers' staff, it appears that the U. S. Engineer Department datum at Orange Beach is approximately one foot below our mean low water datum at Petersens Landing, which was used for the reduction of soundings in that locality in 1935.

Ham

Acting Chief, Division of Tides & Currents.

fac
CKG

Sta.	Lat	C&GS	Long	Lat	USE Comp. Dep.	Lat	Scaled Dep.
Δ W10	30-18	258.7 M	87-34 1032.1 M	22 965.28 Ft	19,645.49 Ft	22,963.2 Ft	19652.2 Ft
Bn 63	30-18	90.4	87-35 87.5 ✓	22,412.7	17,484.1	22,410.1	17488.2
W5	30-18	2.9 ✓	87-36 1125.7 ✓	22,127.14	8,819.97	22,110.1	8830.0
Top Row 1	30-18	42.7 ✓	87-37 630.7 ✓	22,261.65	5,172.3	22,255.9	5,190.9
Row 2	30-18	216 ✓	87-37 664 ✓	22,836.58	5,074.11	22,820.2	5,079.4
P3	30-18	7.1 ✓	87-36 1497.5 ✓	22,142.55	7,597.52	22,137.8	7,609.6
P4	30-18	263.8	87-36 1457.1 ✓	22,983.92	7,728.61	22,981.0	7,737.5
W6	30-18	533.0	87-36 1077.2 ✓	23,867.26	8,975.18	23,862.2	8,987.5
W7	30-17	1563.5	87-36 12.6 ✓	21,178.92	12,473.15	21,185.5	12,479.0
W8	30-18	803.6	87-36 316.0 ✓	24,756.04	11,477.22	24,744.7	11,482.9
Bn 65	"	92.0	87-35 433 ✓	22,414	16,365	22,415	16,354.3
" 67	"	90.0	" 748 ✓	22,407	15,326	22,406	15,318.9
" 69	"	87.0	" 1038 ✓	22,398	14,371	22,397	14,370.7
" 71	"	85	" 1306 ✓	22,390	13,497	22,390.4	13,492.8
" 73	"	81	87-36 17 ✓	22,377	12,458	22,377.3	12,462.6
" 75	"	80	" 323 ✓	22,375	11,451	22,374.0	11,453
" 77	"	77	" 633 ✓	22,369	10,429	22,367.5	10,436
" 79	"	77	" 957 ✓	22,366	9,371	22,360.9	9,380
" 81	"	74	" 1252 ✓	22,358	8,405	22,351.0	8,409
" 83	"	72	" 1563 ✓	22,349	7,390	22,344.5	7,389
" 85	"	88	87-37 204 ✓	22,410	6,580	22,400.3	6,588
" 87	"	73	" 840 ✓	22,358	5,477	22,348.0	5,486
" 89	"	02	87-37 741 ✓	22,129	4,814	22,118.4	4,836

Scaled W.N.M.
J.A.M.

5723

Sta.	Lat	C. & G. S.	Long.	Lat	U.S.E.	Comp.	Dep.	Lat	Scaled	Dep.
LL13	30-18	179 M.	87-34	114 M.	22702.91		22,656.71	22,702.1		22,656.2
LL14	30-18	1328	87-33	996	26,473.76		25,014.76	26,472.4		25,014.0
LL15	30-18	452	87-33	1066	23,604.65		24,792.38	23,598		24,790.7
LL17	30-18	45	87-33	120	22,254.08		27,890.05	22,262		27,893.0
LL18	30-18	1172	87-32	541	25,959.63		31,781.36	25,960.5		31,780.0
LL19	30-17	1654	87-32	1196	21,468.25		29,628.33	21,479.7		29,633.8
LL20	30-19	487	87-31	993	29,782.13		35,555.84	29,770.0		35,548.6
LL21	30-18	268	87-32	760	22,989.14		31,064.82	22,986.0		31,065.0
LL23	30-18	621	87-31	1404	24,155.15		34,215.33	24,147.6		34,196.8
LL25	30-18	1203	87-31	715	26,077.71		36,474.55	26,065.6		36,459.3
PD27	30-18	1148	87-31	96	25,900.18		38,495.03	25,883.2		38,485.6
PD22	30-19	354	87-31	45	29,340.73		38,660.54	29,328.7		38,649.6
BP3	30-17	1139	87-32	400						
BP4	30-17	454	87-31	822						
BP5	30-16	1372	87-33	280						
W9	30-17	1202.6	87-34	924.1	20,000		20,000	20,000		20,000
LL11	30-17	1531.5	87-34	358.0	21,079.42		21,857.37	21,076.1		21,854.4
BP6	30-16	1642.6	87-32	639.5						
LL16	30-18	713.8	87-32	967.3	24,459.96		30,377.92	24,460		30,378
BP1	30-18	103.7	87-30	1486.6	22,464.35		39,195.86	22,449.5		39,184
Red Bn 6	30-19	162.4	87-31	84.2	28,718.4		38,532.2	28,708		38,527
LL12	30-18	523.6	87-34	605.8	23,834.44		21,044.02	23,833		21,040
Bn. 10	30-18	46.0	87-34	747.5	22,267.3		20,579.0	22,267		20,577.4
Bn 8	30-18	685.9	87-32	414.5	24,368		32,192	24,364		32,190.3
Bn 61	30-18	683.6	87-33	1327.0	24,359.9		23,938.1	24,360.9		23,936

Scaled W.N.M.
J.A.M.

U.S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
APR 15 1935
Acc. No. 5723

APPLIED TO I.W.W. #872 12/8/1947 H.J.H.

Applied to 872-SC (Completed Hydro in Wolf Bay)
11-2-65 C.F.K.