

8527

Diag. Cht. No. 8502-2.

Form 504

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. BO-10-1-60 Office No. H-8527

LOCALITY

State Alaska

General locality Cook Inlet

Locality Vicinity of Anchorage
~~Knik Arm~~

1960

CHIEF OF PARTY

Horace G. Conerly

LIBRARY & ARCHIVES

JUL 2 1961

DATE

8527

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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.

REGISTER NO. H-8527

Field No. BO-10-1-60

State Alaska

General locality Cook Inlet

Locality VICINITY of Anchorage
~~Knik Arm~~

Scale 1:10,000 Date of survey 5/3, 5/6 and 8/22/60

Instructions dated 11 December 1959

Vessel USC&GSS BOWEN's Launch #184

Chief of party H. G. Conerly

Surveyed by A. C. Korn

Soundings taken by ~~fathometer~~ graphic recorder, hand lead, ~~wire~~

Fathograms scaled by W.R.W. and M.W.Mc.

Fathograms checked by H.G. Conerly, J. W. Kinney, Jr., A. R. Benton, Jr.

Protracted by V. F. Flor

Soundings penciled by V. F. Flor

Soundings in ~~fathoms~~ feet at ~~MLLW~~ MLLW

REMARKS:

WS

DESCRIPTIVE REPORT

To Accompany

HYDROGRAPHIC SURVEY NO. H-8527 (BO-10-1-60)

COOK INLET, ALASKA

Scale: 1:10,000

Date: 1960

USC&GS SHIP BOWIE

H. G. Conerly, Commanding

A. PROJECT:

This survey was accomplished under Instructions for Project CS-413 issued by the Director and dated 11 December 1959.

The purpose of this survey was to determine the adequacy of charted hydrography in Cook Inlet in the immediate vicinity of Anchorage along the route recommended in Alaska Coast Pilot.

B. SURVEY LIMITS AND DATES:

With the exception of the dock survey made just north of Ocean Dock, this survey begins between three and four hundred meters off shore and extends off shore from three quarters of a mile to a mile and a half. Lines were run normal to the shore and the most southerly line was about 1-1/2 mile south of Ocean Dock and the most northerly line was about 1/2 mile north of Ocean Dock. This Survey covers the Port of Anchorage anchorage and the approaches to the Anchorage docks.

Junction was made on the west with H-8528 (BO-20-1-60) a survey which covered the Coast Pilot route and adjacent waters to the vicinity of Fire Island.

Hydrography was accomplished on 3 and 6 May and 22 August.

C. VESSELS AND EQUIPMENT:

All hydrography was done in Launch No. 184, a 26' plastic, diesel powered launch, which operated from the BOWIE.

Soundings were taken with the 808 depth recorder No. 57-28. Depths varied from -7 to 129 feet.

D. TIDE AND CURRENT STATIONS:

Two 100 hour current stations were observed within the limits of this sheet. Number 2 was at approximate latitude 61-13.5N, longitude 149-54.5W; it had 1 meter. Number 1 was at 61-13.8N and 149-55.1W; it had three meters.

A portable tide gage was installed on the northwest corner of Ocean Dock at 61-14.3N, 149-53.3W.

E. SMOOTH SHEET:

The smooth sheet will be constructed and plotted by personnel of the Seattle Processing Office. (Director's letter to Seattle District Officer dated 28 September 1960.)

F. CONTROL STATIONS:

Third order triangulation stations used for control on this sheet were established in 1941, 1947 and 1954. Hydrographic signals were located by taped distances and sextant angles from signal TIDE. (Position data ^{is} recorded on pages 71 and 72 of volume 1.) The position of TIDE was determined in 1955 and its coordinates were obtained from the Washington Office.

G. SHORELINE AND TOPOGRAPHY:

The shoreline and topography for the smooth sheet will be obtained from a blue-line tracing of final map T-11570.

H. SOUNDINGS:

Soundings were taken with an 808 type depth recorder (No. 57-28).

I. CONTROL OF HYDROGRAPHY:

The hydrography is controlled by three-point sextant fixes on signals ashore. No unusual or substandard methods were used for this purpose.

J. ADEQUACY OF SURVEY:

This survey is adequate and complete and should supersede previous surveys of this area especially as there are some slight changes.

K. CROSSLINES:

An adequate number of crosslines were run and crossings were satisfactory.

L. COMPARISON WITH PRIOR SURVEYS:

The previous survey of this area was made in 1955 at the same scale (1:10,000). Sounding lines on the previous survey were more closely spaced. In the vicinity of the Coast Pilot course and Ocean Dock there were evidences of shoaling as much as 20 feet, however, it was still possible to carry depths of more than 30 feet to within 100 feet of the Ocean Dock. Once one goes much south of west of the southwest end of the Ocean Dock, shoal water extends 1000 to 1200 feet offshore of the dock.

Shoaling is attributed to the swift tidal currents which carry large amounts of mud in suspension.

M. COMPARISON WITH CHART:

The difference in scale makes comparison with chart almost meaningless. In some areas charted soundings are deeper and in other areas shoaler. Charted soundings are taken from the 1955 survey which is discussed under "L".

N. DANGERS AND SHOALS:

There are no dangers and shoals that are not immediately apparent from an inspection of the soundings and depth curves.

O. COAST PILOT:

A coast pilot report on this area has been forwarded to the Washington Office.

The following should be added to line 27 page 153, "This water is very damaging to all salt water pumps and shaft bearings".

P. AIDS TO NAVIGATION:

There are no aids to navigation within the limits of this sheet.

Q. LANDMARKS FOR CHARTS:

There is only one additional structure that should be charted as a landmark; that is the ACS Microwave Relay Tower, which is a steel structure, approximately 150 feet high, with a red light on top of it. A Form 567 has been submitted on it.

R. GEOGRAPHIC NAMES:

No changes recommended and no new names added.

S. SILTED AREA:

Because of the strong currents and the character of the bottom, the area covered by this survey is continually scouring and filling.

U. MISCELLANEOUS INFORMATION:

All work done on BO-10-1-60 is in one volume including the survey of the area adjacent to Ocean Dock. The survey of Ocean Dock should be plotted on an inset at an enlarged scale, 1:2500.

The outline of the new "Port of Anchorage" dock has been completely delineated on the boat sheet with reasonable accuracy. However, the smooth plotter should request a copy of the detailed plan forwarded to Washington by the BOWIE showing both the Ocean Dock and the new Port of Anchorage Dock.

Z. TABULATION OF APPLICABLE DATA:

The following listed Special Reports are pertinent to this survey and report.

1. Triangulation Report
2. Fathometer Corrections Report
3. Form 567 for ACS Micro-wave-relay Tower

The following applicable data are attached to this report.

1. Copy of a letter to the Director re Pier Construction, Anchorage, Alaska
2. Table of Statistics for BO-10-1-60
3. Tidal Note.
4. Fathometer Corrections Note.
5. List of Signals
6. Tide Reducers

Respectfully submitted

Francis X. Popper

Francis X. Popper
CDR, C&GS
Commanding Ship BOWIE

File

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

USC&GS SHIP BOWIE
705 Federal Office Bldg.
Seattle 4, Washington

POST OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

14 September 1960

To: The Director
Coast and Geodetic Survey
Department of Commerce Bldg.
Washington 25, D. C.

Subject: Pier construction, Anchorage, Alaska.

The Port of Anchorage has a large pier construction program underway. Their plans call for construction of three piers each with a 600 foot face and probably an oil unloading wharf in addition. However, plans are to complete only one in the near future.

Enclosed are plans of the one now under construction which is scheduled for completion in time to handle the spring shipping.

Their plans are to maintain a dredged depth of 35 feet alongside the pier. The other piers are scheduled to be lined up in a northerly direction as there is a requirement and money is available.

The drawing on small sheets dated June 1, 1956 are for planning purposes and are not accurate.

The drawing by Tibbetts-Abett-McCarthy and Stratton is the final plan and the way the facilities are being constructed.

To date the piles are driven to the face of the pier and part of the sheds on the pier are being constructed.

The face of both the Army Pier (Ocean Dock) and the new dock are parallel and a sextant angle was taken for orienting the drawings with the chart. The angle measured at the NW corner of the Army Dock (which is the northernmost part of the face) from the face of the new dock to triangulation station "ANCHORAGE RADIO STATION KENI TOWER 1954" is 187° - 51'.

Horace G. Conerly
CDR, USCGS
Commanding Ship BOWIE

Three Enclosures

STATISTICS
 for
BO-10-1-60
 (H-8527)

<u>DAY</u>	<u>NUMBER OF POSITIONS</u>	<u>NAUTICAL MILES SOUNDING LINES</u>	<u>TO AND FROM</u>	<u>TOTAL</u>
a	217	24.3	2.7	27.0
b	31	1.7	1.5	3.2
c	55	1.6	1.0	2.6
*d	<u>12</u>	<u> </u>	<u> </u>	<u> </u>
TOTALS	303	27.6	5.2	32.8

**d-day has been omitted which consists of 12 positions*

TIDAL NOTE

SHEET BO-10-1-60 REG. H-8257⁸⁵²⁷

For tide reducers a portable gage at Ocean Dock, Anchorage was maintained. Observations from the gage were used for reducers two of the days worked. For a few minutes work on 22 August the marigram was fouled and predicted tides had to be used.

Tide Gage was at:

Lat. 61 - 143 Long. 149 - 53.3.

FATHOMETER CORRECTIONS

PROJECT CS-413

SHEET BC-10-1-60 REG. H-⁸⁵²⁷~~8257~~

Due to strong currents in the area, there was only one time that a bar check could be made with the fathometer. The means of the different depths on that day gives a correction of \pm 1.0 feet, to be applied to all depths. That figure was used for the three partial days required to complete the sheet.

LIST OF SIGNALS

BO-10-1-60
(H-8527)

<u>Hydrographic Name</u>	<u>Source</u>
ACS	ACS, Microwave Relay Tower, red light, 1960
CITY	Anchorage, CITY Water Tank, Apex (Steel), 1941
FISH	Anchorage, General FISH Company, highest warehouse, west gable, (CAN), 1941
KENI	Anchorage, Radio Station, KENI, Tower, 1954
KTVA	Anchorage, TV Station, KTVA, Tower, 1954
Miss	Volume 1, BO-10-1-60 (H-8527), p49
North	Volume 1, BO-10-1-60 (H-8527), p71
Pole	Theodolite angle and taped distance from Pole Ecc. Volume 1, BO-10-1-60 and description report *
TANK	Anchorage, Alaska Railroad Elevated TANK, 1947
Tide	Volume 1, BO-10-1-60 (H-8527) Tide Gage on Army Dock
Yel	Yellow Pile, Volume 1, BO-10-1-60 (H-8527), p71

* A geographic position of this signal is in the Ship BOWIE files on the 1960 field season work under Project CS-413. The original observations in a Horizontal Directions Volume, a description (on Form 525) and the computations were forwarded to the Chief, Geodesy on 16 February 1961.

TIDE REDUCERS

Field No. BO-10-1-60 (H-8527)

<u>TIME</u>	<u>REDUCER</u>
6 May	
a Day	
-0809	- 7.0
0809-0821	- 6.5
0821-0915	- 6.0
0915-0927	- 6.5
0927-0933	- 7.0
0933-0939	- 7.5
0939-0950	- 8.0
0950-0955	- 8.5
0955-1001	- 9.0
1001-1006	- 9.5
1006-1012	- 10.0
1012-1018	- 10.5
1018-1023	- 11.0
1023-1029	- 11.5
1029-1034	- 12.0
1034-1040	- 12.5
1040-1045	- 13.0
1045-1051	- 13.5
1051-1057	- 14.0
1057-1103	- 14.5
1103-1107	- 15.0
1107-1114	- 15.5
1114-1119	- 16.0
1119-1127	- 16.5
1127-1133	- 17.0
1133-1140	- 17.5
1140-1146	- 18.0
1146-1154	- 18.5
1154-1201	- 19.0
1201-1209	- 19.5
1209-1215	- 20.0

<u>TIME</u>	<u>REDUCER</u>
1215-1222	- 20.5
1222-1231	- 21.0
1231-1240	- 21.5
1240-1251	- 22.0
1251-1301	- 22.5
1301-1309	- 23.0
1309-1322	- 23.5
1322-1337	- 24.0
1337-1354	- 24.5
1354-1510	- 25.0
1510-1522	- 24.5
1522-1535	- 24.0
1535-1545	- 23.5
1545-1556	- 23.0
1556-1605	- 22.5
1605-1610	- 22.0
1610-1621	- 21.5
1621-1628	- 21.0

~~XXXX~~

<u>TIME</u>	<u>REDUCER</u>
22 August	
b Day	
0948-0953	- 11.0
0953-0958	- 10.5
0958-1003	- 10.0
1003-1008	- 9.5
1008-1012	- 9.0
1012-1017	- 8.5
1017-1022	- 8.0
1022-1027	- 7.5
1027-1032	- 7.0
1032-1036	- 6.5
1036-1041	- 6.0
1041-1046	- 5.5
3 May	
c Day	
0800-0803	- 17.5
0803-0807	- 18.0
0807-0814	- 18.5
0814-0822	- 19.0
0822-0828	- 19.5
0828-0837	- 20.0
0837-0848	- 20.5
0848-0859	- 21.0
0859-0913	- 21.5
0913-0927	- 22.0
0927-0945	- 22.5
0945-1012	- 23.0

PROCESSING OFFICE NOTES - H-8527

SMOOTH SHEET

The smooth sheet was hand constructed and checked, using standard methods, by Seattle Hydrographic Processing Unit personnel.

CONTROL STATIONS

Signal Pole was not plotted right on Boat Sheet. This apparently gave rise to the idea that Pole and Flag from BO-A-55 were not the same object. Smooth Sheet location of Pole and location of Flag on BO-A-55 appear to agree.

COMPARISON WITH CHART

The smooth sheet has been compared with Chart 8557, 7th Ed. Revised 9/29/58. See sections of chart attached to this report.

ENLARGEMENT OF OCEAN DOCK

The orientation of Ocean Dock was obtained by scaling the position of TIDE from BO-A-55 and using the azimuth and distance to ANCHORAGE, RADIO STATION KENI TOWER. The projection was considered approximate because of possible error in the location of TIDE. The angles and distances to other signals are recorded in the sounding volume.

Respectfully submitted,

William M. Martin

WILLIAM M. MARTIN
Supervisory Cartographer

APPROVED & FORWARDED

M. E. Wennermark
M. E. WENNERMARK, CAPT., USGS
SEATTLE DISTRICT OFFICER

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. *8527*....

Records accompanying survey: Smooth sheets *1*...;
 boat sheets *2*...; sounding vols. *1*...; wire drag vols.;
 Descriptive Reports *1*...; graphic recorder envelopes *1*...;
 special reports, etc.

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

Number of positions on sheet		<i>315</i>
Number of positions checked		<i>175</i>
Number of positions revised		<i>4</i>
Number of soundings revised (refers to depth only)		<i>10</i>
Number of soundings erroneously spaced		<i>14</i>
Number of signals erroneously plotted or transferred		<i>0</i>
Topographic details	Time	<i>8</i>
Junctions	Time	<i>20</i>
Verification of soundings from graphic record	Time	<i>20</i>
Special adjustments	Time	<i>20</i>

Verification by *Mary J. Fries*..... Total time *103 HR.*... Date *8/20/74*....

Reviewed by Time Date

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-8527

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.

YES

2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.

YES

3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.

YES

4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.

YES ⓐ CHESTER CREEK > added, found on large scale chart 8557
 ⓑ FISH CREEK

5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.

YES

6. All positions verified instrumentally were check marked in the sounding records.

YES

7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.

YES

8. The metal protractor has been checked within the last three months.

YES - PLASTIC PROTRACTOR WAS USED FOR THIS SURVEY

9. The protracting and plotting of all bad crossings were verified.

YES

10. All detached positions locating critical soundings, rocks or buoys were verified.

There were no rocks or buoys identified or bottom samples taken

11. The boat sheet was compared with the smooth sheet.

YES

12. The spacing of soundings as recorded in the records was closely followed.
YES
13. The bottom characteristics were shown on outstanding shoals.
None were taken or identified
14. The reduction and plotting of doubtful soundings were checked.
YES
15. The transfer of contemporary topographic information was carefully examined.
YES
16. All junctions were transferred and overlapping curves made identical.
YES
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.
Junction was made with H-8528 (1960) and is verified
" " " " inset on H-8527 (1960) - 2,500 scale
18. The depth curves have been inspected before inking.
YES. *GKH.*
19. All triangulation stations and transfer of topographic and hydrographic signals were checked.
YES
20. Heights of rocks were checked against range of tide.
NO ROCKS ARE WITHIN THE LIMITS OF THIS SURVEY
21. ~~Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.~~
22. Unnecessary pencil notes have been removed.
YES
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
YES
24. The low water line and delineation of shoal areas have been properly shown.
YES
25. Degree and minutes values and symbols have been checked.
YES
26. Questionable soundings have been checked on the fathograms.
YES

27. Source of shoreline and signals (when not given in report).
source of shoreline taken from T-11570
28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.
YES
29. All aids located, with those on contemporary topographic sheets, have been shown on survey.
None shown
30. Depth curves were satisfactory except as follows:
*The three foot supplemental curve was excluded
All curves were generally smoothed for agreement (Junctions also)
Isolated curves were delimited*
31. Sounding line crossings were satisfactory except as follows:
The one crossline was found to be in general agreement, except where some soundings were changed after rescanning fathograms creating agreement in the survey area
32. Junctions with contemporary surveys were satisfactory except as follows:
Junctional soundings from H-8528 brought forward to H-8527 were generally satisfactory except for two lines between 14'00" and 14'30". These lines were brought into agreement and problem resolved (consulted with F. Saulsbury)
33. Condition of sounding records was satisfactory except as follows:
*Left angle was consistently wrong and changed from Flag to Pole
Tides affecting soundings on d-day (dock area) were not verified until 6/10/74*
34. The protracting was satisfactory except as follows:
*positions 2040 altered
74 a altered
4 b omitted
8 b omitted*
35. The field plotting of soundings was satisfactory except as follows:
Good except where 10 soundings were changed after rescanning fathograms. There were 14 soundings that were erroneously spaced on smooth sheet also.
36. Notes to reviewer:
*Bottom samples not taken
Discrepancies resolved so as to achieve agreement throughout survey.
Tides on d-day were verified by R. Smith 6/10/74*

Verified by *Mark J. Frise*Date *8/20/74*

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

HORIZONTAL CONTROL DATA

by the
Coast and Geodetic Survey
NORTH AMERICAN 1927 DATUM

FORM 1285
(11-4-58)

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

RECOVERED

RESECTION OF TRIANGULATION INTERSECTION STATION 1960
ANCHORAGE, ALASKA COMMUNICATIONS SERVICE, HIGHWAY TOWER 3rd Judicial
County Division

Year: 1964 State: Alaska

No Previous Description

Description, including sketch of object:
The red light on top of the Alaska Communications Service microwave mast. The mast is located on Bluff Drive at Foster Street in the northwest part of the city. It is a structural steel quadrupod 20 feet square at the top, rising 212 feet above ground, painted orange and silver, and having 3 microwave reflectors on the corners at the top. The red light is located on a 10-foot extension on the south side.

landmark

landmark

Described by C. M. Gell

CG-1C 54313

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION ANCHORAGE ACS MICROWAVE TOWER
STATE ALASKA YEAR 1960, 1964 THIRD
LOCALITY ANCHORAGE-PRINCE WILLIAM SOUND AREA
SOURCE C-14462 FIELD SWITCH ALASKA 634

GEODETIC LATITUDE 61° 13' 55" 98800
GEODETIC LONGITUDE 149° 52' 21" 06113 ELEVATION 107
351

STATE COORDINATES (Feet)

STATE ZONE	COORDINATE	ADJUSTED VALUE	STANDARD ERROR
ALASKA	5004	2,662,434.35	+ 0.06

* PLANE APPROXIMATION HAS BEEN COMPUTED BY THE FORMULA $APPROX = \frac{1}{2} (L_1 + L_2) \sin^2 \phi$

TO STATION OR OBJECT

GEODETIC ALTITUDE (Feet mean)

PLANE APPROXIMATION (Feet mean)

PLATE NO. (11-4-58)
NAME OF RECOVERED CENTER OR DESCRIPTION
RECOVERED BY
DATE RECOVERED
REMARKS
DESCRIPTION

THESE DATA SHOULD BE USED FOR ALL SURVEYS AFTER 04-1964

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

August 21 1961

Division of Charts: R.H. Carstens

Plane of reference approved in
1 volumes of sounding records for

HYDROGRAPHIC SHEET 8527

Locality Cook Inlet, Alaska

Chief of Party: H.G. Conerly (1960)
Plane of reference is mean lower low water reading
3.3 ft. on tide staff at Anchorage, Alaska
40.1 ft. below B. M. 9 (1918)

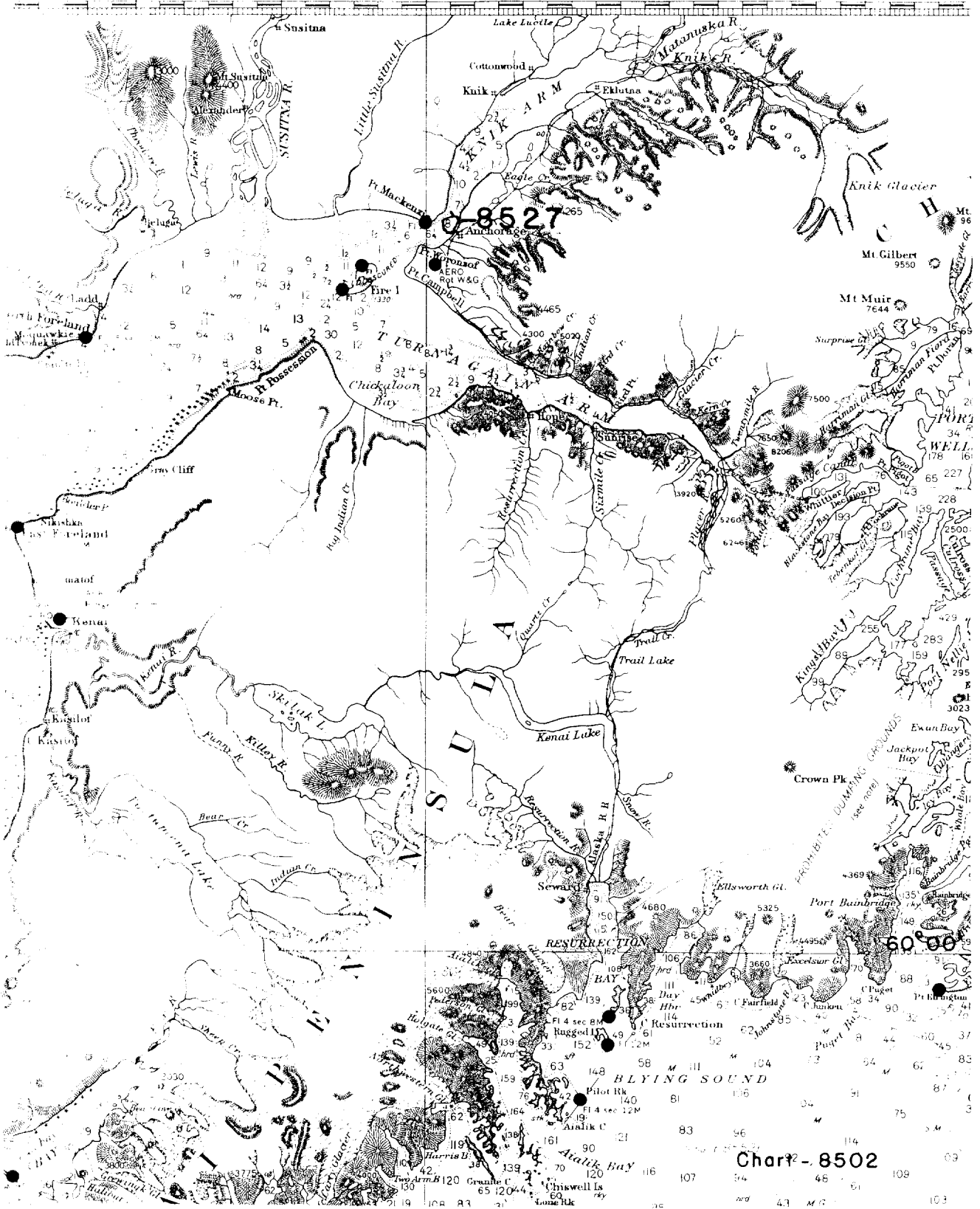
Height of mean high water above plane of reference is: 28.9 ft.

Condition of records satisfactory except as noted below:

Burt W. Wiley

Chief, Tides and Currents Branch

~~Chief, Division of Tides and Currents~~



NAUTICAL CHARTS BRANCH

SURVEY NO. 8527

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
8/16/61	8502	H.W. Buryeque	Before After Verification and Review Exam - No Corr
10-25-61	8553	H. J. Keeler	Before After Verification and Review ^{Revised curves and} added soundings.
11-24-61	8500	E. W. Gregory	Before After Verification and Review Exam No Corr at this scale
5-27-64	8557	M. Rogers	^{Examined} Before After Verification and Review This survey is generally superseded by post earthquake reconnaissance survey Nos 63793-94 (April, May, 1964.)
			Before After Verification and Review
			Before After Verification and Review
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M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.