

8203

Diag. Cht. No. 3502-2.

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. B0-1155 Office No. H-8203

LOCALITY

State Alaska

General locality Knik Arm

Locality Anchorage

194/55

CHIEF OF PARTY

H. C. Applequist

LIBRARY & ARCHIVES

DATE November 8, 1956

B-1870-1 (1)

8203

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. _____

Field No. EO-1155

State Alaska

General locality Knik Arm

Locality Anchorage, ~~Alaska~~

Scale 1:10,000 Date of survey 17 May - 27 May 1955

Instructions dated 27 December 1954

Vessel Ship BOWIE (Launch # 133)

Chief of party H.C. Applequist

Surveyed by A.L. Powell

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

Fathograms scaled by F.W. Lingenfelter

Fathograms checked by H.C.A., A.B.P., & K.A.M.

Protracted by J. F. McCormack

Soundings penciled by L. W. Eason, II

Soundings in ~~fathoms~~ feet at ~~MLLW~~ and are true depths

REMARKS: _____

X.W.W. 5/19/91

Handwritten initials

DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SHEET
FIELD NO. BO-1155 (H-8203)

Special Hydrographic Survey, Vicinity of Anchorage, Alaska

Ship BOWLE

H.C. Applequist, Chief of Party

A. - PROJECT: *Instructions*
Director's Letters 27 Dec. 1954, 22/MEK, 5-2-80 and
7 June 1955, 22 RCT, 5-2-80.

This survey was executed in accordance with instructions dated 27 December 1954. The purpose of the survey is to furnish data for a large scale chart insert.

B. SURVEY LIMITS AND DATES:

This survey covers the dock and water front area of Anchorage, Alaska. The survey covers sheet H-6657, scale 1:5000 and junctions with H-6658, scale 1:20,000.

Field work was begun 17 May 1955 and ended 3 June 1955.

C. VESSELS AND EQUIPMENT:

All hydrography was done with Launch No. 133. 808 fathometer No. S-111 was used.

D. TIDE AND CURRENT STATIONS:

A portable tide gage was operated during the period of the survey. The gage was maintained on the north end of Ocean Dock, Anchorage, Alaska in Latitude $61^{\circ} 14.28'$, Longitude $149^{\circ} 53.28'$. No current stations were occupied.

E. SMOOTH SHEET:

The smooth sheet is incomplete in that the positions have been plotted but the soundings have not. The smooth sheet being incomplete is due to the fact that time did not allow completion.

The projection of the sheet was prepared by the Washington Office, 13 February 1956. Projections were made by means of ruling machine, triangulation stations were plotted by means of Dms & Dps whereas the topographic stations were transferred from topographic sheet by means of tracing paper. Hydrographic stations were plotted with protractor from sextant angles. As time did not permit shoreline details were not transferred to smooth sheet.

F. CONTROL STATIONS:

Triangulation control was furnished by previously established triangulation and topographic stations located by planetable. See report for sheet BO-A-55. A list of stations is appended to this report.

G. SHORELINE AND TOPOGRAPHY:

The shoreline for the boat sheet was transferred from the 1941 Graphic Control sheet and the largest scale chart of the area.

3495
pencil'd
by
Processing
office.

shoreline
applied
by
Process
ing of
file.

G. SHORELINE AND TOPOGRAPHY (CONT'D):

The shoreline for the smooth sheet will be obtained by photogrammetric methods. The field data for the photogrammetric plot was accomplished by this party. (*Shoreline applied from T-11570(1954-55)*)

The low water line was defined by soundings. ✓

H. SOUNDINGS:

Soundings were measured by 808 fathometer No. S-111. ✓

An abstract of bar checks comparisons and velocity corrections, is appended to this report.

I. CONTROL OF HYDROGRAPHY:

Hydrography on this survey was controlled by sextant angles taken between shore objects.

J. ADEQUACY OF SURVEY:

This survey is believed to be complete and adequate to supersede prior surveys. ✓

K. CROSSLINES:

Crosslines consist of approximately 7% of the lines run. The crosslines soundings checked satisfactorily.

L. COMPARISON WITH CHARTS:

Comparison with H-6657 (1941) soundings outside the mud banks appear to be generally deeper 3-10 ft. The mud banks in some places ^{are} making out farther. The area below $61^{\circ} 13.7'$. The low water line agrees very well, north of here - to main dock mud bank is building up. North of dock agreement is good. | Dec
Review
P6

N. DANGERS AND SHOALS:

In Latitude $61^{\circ} 14.8'$, Longitude $149^{\circ} 53.5'$ a shoal was found that is not indicated on H-6657. | shown on
Ch 8557
dated 10-17-55

O. COAST PILOT INFORMATION:

No changes or additions recommended. ✓

P. AID TO NAVIGATION:

No fixed or floating aids within the limits of this survey. ✓

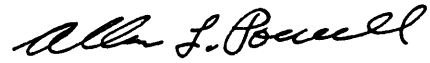
M. LANDMARKS FOR CHARTS:

Forms 567 were submitted with the photogrammetric report from the area.

R. GEOGRAPHIC NAMES:

No changes or additions recommended. ✓

Respectfully submitted:



Allen L. Powell
Lt. Comdr., C&GS

APPROVED:



Curtis Le Fever
Commander, C&GS
Commanding Officer
USC&GSS BOWIE

STATISTICS
FOR
HYDROGRAPHIC SURVEY NO. BO-1155

Special Project
Vicinity of Anchorage, Alaska

Year 1955
Ship BOWIE

| Vol. # | Day Ltr. | No. of Pos. | Stat. miles of Sdgs. | Launch No. |
|--------|-------------|----------------|-------------------------|------------|
| 1 | a | 40 | 3.8 | 133 |
| 1 | b | 144 | 21.8 | 133 |
| 2 | b | 8 | 1.5 | 133 |
| 2 | c | 135 | 15.3 | 133 |
| 2 | d | 60 | 8.8 | 133 |
| 3 | d | 88 | 11.5 | 133 |
| 3 | e | 60 | 10.1 | 133 |
| 3 | f | 42 | 2.2 | 133 |
| 4 | f | 6 | 1.9 | 133 |
| 4 | g | 121 | 17.5 | 133 |
| TOTAL | | 704 | 82.7 | |

Total Area - 2.5 square statute miles.

LIST OF SIGNALS USED IN
HYDROGRAPHIC SURVEY NO. BO-1155

| SIGNAL | ORIGIN |
|--------|---|
| GIN | BO-A-55 |
| ROK | BO-A-55 |
| TANK | Anchorage Alaska RR Elev. tank, 1947 |
| ABE | BO-A-55 |
| KENI | Anchorage Radio Station KENI Tower, 1954 |
| POD | BO-A-55 |
| USE | BO-A-55 |
| FLAG | BO-A-55 |
| TRI | BO-A-55 |
| TUB | Hydrographic |
| JOY | Hydrographic |
| LOW | LOW, 1941 |
| DAW | BO-A-55 |
| FISH | Anchorage General Fish Co., highest warehouse West gagle, 1941 |
| JAP | BO-A-55 |
| RED | BO-A-55 |
| CITY | Anchorage City Water Tank, Apex, 1941 |
| KNIK | BO-A-55 |
| OAK | BO-A-55 |
| PAL | BO-A-55 |
| KFIA | Anchorage T.V. Station KFIA tower, 1954 |
| KTVA | Anchorage T.V. Station KTVA tower, 1954 |
| RAG | BO-A-55 |

ABSTRACT OF VELOCITY CORRECTIONS
SHEET NO. BO-1155

| Day | Depth | Correction |
|----------|-----------|------------|
| | A - Scale | Ft. |
| a thru g | 0-55 | 0.0 |
| | B - Scale | |
| a thru g | 35 - 90 | -1.0 |
| | C - Scale | |
| a thru g | 70 - 125 | -2.0 |
| | D - Scale | |
| a thru g | 105 - 160 | -3.0 |

TIDE NOTE

Soundings were reduced using data from the portable gage maintained at Ocean Dock.

Mean Lower Low Water on the staff is 5.1 feet. (Director's letter 36-257-982b, dated 25 May 1955).

GEOGRAPHIC NAMES PENCILED ON H- 8203

ANCHORAGE

KNIK ARM

PROCESSING OFFICE NOTES
H-8203 (BO-1155)

Positions were plotted by the field party. This included inking of the position numbers and day letters. ✓

Soundings were penciled on the smooth sheet in the Seattle Processing Office. ✓

Shoreline detail from manuscript T-11570 was transferred direct. Excluded from this manuscript and hence from the smooth sheet is the shoreline on the NW side of Knik Arm. ✓

An attempt was made to resolve the one poor crossing on the sheet at Lat. $61^{\circ}14.20'$ Long. $149^{\circ}55.25'$ (136 to 137b and 44 to 45e). No apparent reason could be detected for the discrepancy (4 or 5 ft.) The appearance of the fathogram from pos. 134 to 137^b and the otherwise good agreement of the "e" day soundings at crossings, suggests that the soundings from 134 to 137^b be questioned or rejected.

Rejected
sdgs. 136-138b

A copy of H-6657 was not available for comparison with the smooth sheet.

Respectfully submitted



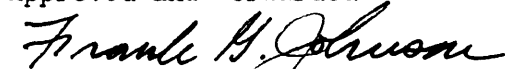
Leo W. Eason II
Cartographer, C&GS

Examined and Approved



William M. Martin
Cartographer-in-Charge SPO

Approved and Forwarded



Frank G. Johnson, Captain, C&GS
Seattle District Officer

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8203...

Records accompanying survey:

Boat sheets 1...; sounding vols. 4...; wire drag vols.;
 bomb vols.; graphic recorder rolls 4-Envelopes
 special reports, etc. 1-Smooth sheet.....

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

| | | | |
|---|------------|-----|----|
| Number of positions on sheet | | 704 | |
| Number of positions checked | | 35 | 42 |
| Number of positions revised | | 2 | 2 |
| Number of soundings revised (refers to depth only) | | 4 | 4 |
| Number of soundings erroneously spaced | | 0 | |
| Number of signals erroneously plotted or transferred | | 0 | |
| Topographic details | Time | 1 | |
| Junctions | Time | 3 | |
| Verification of soundings from graphic record | Time | 4 | |

Preliminary Verif: I.M. Zaskind
 Verification by.....Total time Date 29. 10-25-57

Preliminary
 Reviewed by I.M. Zaskind..... Time ..19... Date ..10-29-57

Verified & Inked - J. Stephens 88 4-18-58

Curves & landmarks by J.E. Charlant 8 hrs. 3-14-60

Final Review - H.W. Burgoyne - 12 hrs - 7/14/16

GEOGRAPHIC NAMES

Survey No. H-8203

| Name on Survey | A On Chart No. | B On previous survey No. | C On U. S. quadrangle Maps | D From local information | E On local Maps | F P. O. Guide or Map | G Rand McNally Atlas | H U. S. Light List | K |
|-------------------|----------------------|--------------------------------|----------------------------------|--------------------------------|--------------------|-------------------------|-------------------------|-----------------------|-------|
| <u>Alaska</u> | | | | | | | | | 1 |
| <u>Knik Arm</u> | | | | | | | | | 2 |
| <u>Anchorage</u> | | | | | | | | | 3 |
| <u>Ocean Dock</u> | | | | | | | | | 4 |
| Ship Creek | | | | | | | | | 5 |
| Fish Creek | | | | | | | | | 6 |
| Chester Creek | | | | | | | | | 7 |
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(tide station)

Names approved
11-21-56
L. Heck

See Addendum to Ch 8203 - HUB-7/14/60

DIVISION OF CHARTS
REVIEW SECTION - NAUTICAL CHART BRANCH
REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8203

FIELD NO. BO-1155

Alaska, Knik Arm, Anchorage.

Surveyed - May 1955

Scale 1:10,000

PROJECT NO.
Director's letter
27 Dec. 1954, 22/MEK
S-2-B0

Soundings:

808 Fathometer

Control:

Sextant fixes on
shore control.

Chief of Party - H. C. Applequist

Surveyed by - A. L. Powell

Protracted by - J. F. McCormack

Soundings plotted by L. W. Eason II

Preliminary Verification: - I. M. Zeskind

Verified and inked by - *G. Stephanos and J.E. Gearhart*

Reviewed by - I. M. Zeskind

Date 10-29-57

Inspected by - R. H. Carstens

1. Shoreline and Control

The shoreline originates with reviewed air-photographic survey T-11570 (1954-55). ✓

The source of the control is given in the Descriptive Report. Graphic control survey BO-A-55 had not been received in the Washington Office prior to verification and review of H-8203. The locations of the topographic stations plotted on the smooth sheet of H-8203, and which originate with the afore-mentioned graphic control survey, are in agreement with the dps. and dms. given in the Descriptive Report of air-photographic survey T-11570.

2. Sounding Line Crossings

Depths at crossings are in adequate agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated.

The bottom is fairly irregular. Submarine features such as ridges, deeps and lumps contribute to the bottom irregularity. A muddy foreshore, uncovering as much as 25 ft. at MLLW, extends about 500 meters from shore to the low-water line where the bottom generally drops abruptly to depths of about 30 ft.

4. Junctions with Contemporary Surveys

The only contemporary survey joining the present survey is H-8213 which lies approximately south of lat. $61^{\circ}14.2'$ and west of long. $149^{\circ}55.8'$. The junction will be considered in the review of H-8213. On the north and northwest limits of the present survey where hydrography is charted from H-6658, changes in the bottom are not completely covered by the extent of the present survey.

5. Comparison with Prior Surveys

A. H-4211 (1922) 1:40,000

This field examination was little more than a reconnaissance and was rejected as below standard for chart corrections, hence it is superseded in the common area by the present survey without further discussion.

B. H-3200 (1910) 1:40,000
H-3200a (1914) 1:40,000
H-4035 (1918) 1:10,000
H-5104 (1930) 1:5,000

These prior surveys were compared with and superseded, in the area of the present survey, by H-6657 and H-6658, of 1941, which will be considered in the next paragraph of the review. No further discussion of these surveys is considered necessary.

C. H-6657 (1941) 1:5,000
H-6658 (1941) 1:20,000

A comparison between the present survey and these prior surveys shows that the changeable nature of the area noted in previous reviews (H-6657, 6658) has continued. The appreciable changes since these prior surveys have been largely confined to the mid-stream area; relatively little change has taken place along the steep slopes on the sides of Knik Arm. The changes may be generally described as the expansion of the crescent shoal building up in the vicinity of lat. $61^{\circ}14.5'$ long. $149^{\circ}55'$ and the scouring of the bottom along the bend in Knik Arm off the Anchorage waterfront. The following comparison is an indication of the extreme changes that have occurred since 1941.

| <u>Present Depth (ft.)</u> | <u>Lat.</u> | <u>Long.</u> | <u>Prior Depth (ft.)</u> |
|----------------------------|--------------------|---------------------|--------------------------|
| 47 | $61^{\circ}14.82'$ | $149^{\circ}54.38'$ | 69-76 |
| 49 | $61^{\circ}14.51'$ | $149^{\circ}54.71'$ | 64 |
| 70-74 | $61^{\circ}13.72'$ | $149^{\circ}55.5'$ | 82 |
| 67 | $61^{\circ}14.3'$ | $149^{\circ}53.5'$ | 49 |
| 101 | $61^{\circ}13.88'$ | $149^{\circ}54.47'$ | 74-85 |
| 69-75 | $61^{\circ}13.68'$ | $149^{\circ}55.0'$ | 36 |

The present survey supersedes these prior surveys for cartographic purposes in the common areas.

D. H-7186 (1947) 1:20,000

Portions of two sounding lines of this prior survey with comparable depths, fall within the area of the present survey. The few soundings from H-7186 reveal nothing of cartographic interest in the common area and are superseded by the present survey.

E. H-4036 W. D. (1918) 1:10,000

There are no conflicts between the soundings of the present survey and the effective depths of this wire-drag survey. One sounding, 27 ft. in a stable area in lat. $61^{\circ}15.05'$ long. $149^{\circ}53.55'$, has been carried forward.

6. Comparison with Chart 8557 (Latest print date 10-17-55)

A. Hydrography

The charted hydrography originates with the present survey prior to verification and review supplemented by one sounding from H-4036 W. D. (1918). Only minor differences of 1 ft. in depths are noted, an uncharted 49 ft. falls on the shoal in lat. $61^{\circ}14.51'$, long. $149^{\circ}54.72'$. *charted on print of 9/29/58 - HUB*

B. Aids to Navigation

There are no aids to navigation within the limits of the present survey.

7. Condition of Survey

- a. This survey has only been given a preliminary verification. A complete statement covering the condition of the survey is deferred until the present survey has been completely verified.
- b. The Descriptive Report and sounding records are complete and comprehensive.


8. Compliance with Project Instructions

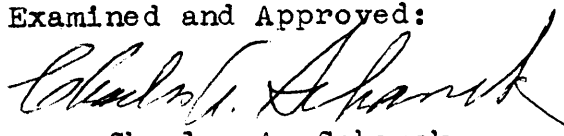
The present survey adequately complies with the Project Instructions.

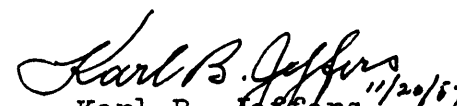
9. Additional Field Work Recommended

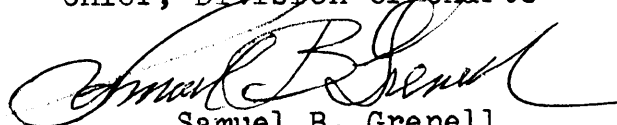
This survey is considered basic and no additional field work is recommended.

Examined and Approved:


Max G. Ricketts
Chief, Nautical Chart Branch


Charles A. Schanck
Chief, Division of Charts


Karl B. Jeffers *11/20/57*
Chief, Hydrography Branch


Samuel B. Grenell
Chief, Division of Coastal Surveys

ADDENDUM TO H-8203

Verified and inked by ----- G. Stephanos and J. E. Gearhart
Reviewed by ----- H. W. Burgoyne DATE: 7/14/60
Inspected by ----- R. H. Carstens

The verification and inking of this survey is now complete.

Comparison with Prior Surveys

A charted rock awash originating with T-3039a (1918) at Lat. $61^{\circ}14.27'$, Long. $149^{\circ}53.21'$, was carried forward to the present survey.

Comparison with Chart 8557 (Print date 9/29/58)

A. Hydrography

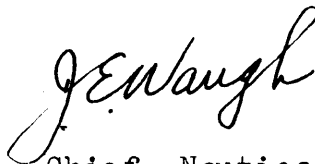
The charted hydrography originates with the present survey after preliminary verification and review. Only minor differences of 1-foot in depth are noted. Attention is called to the following items:

1. An uncharted 20-foot sounding at Lat. $61^{\circ}14.89'$, Long. $149^{\circ}56.14'$, falls on the charted 30-foot curve.
2. An uncharted 20-foot sounding at Lat. $61^{\circ}15.13'$, Long. $149^{\circ}53.20'$, falls 80 meters southwest of a charted 21-foot sounding.

Condition of Survey

The survey was smooth plotted accurately and neatly.

Approved: 10/27/60



Chief, Nautical Chart Division

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens:

28 November 1956

Plane of reference approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 8203

Locality Knik Arm, Alaska

Chief of Party: H. C. Applequist in 1955

Plane of reference is mean lower low water, reading

5.1 ft. on tide staff at Anchorage

41.4 ft. below B.M. 12 (1947)

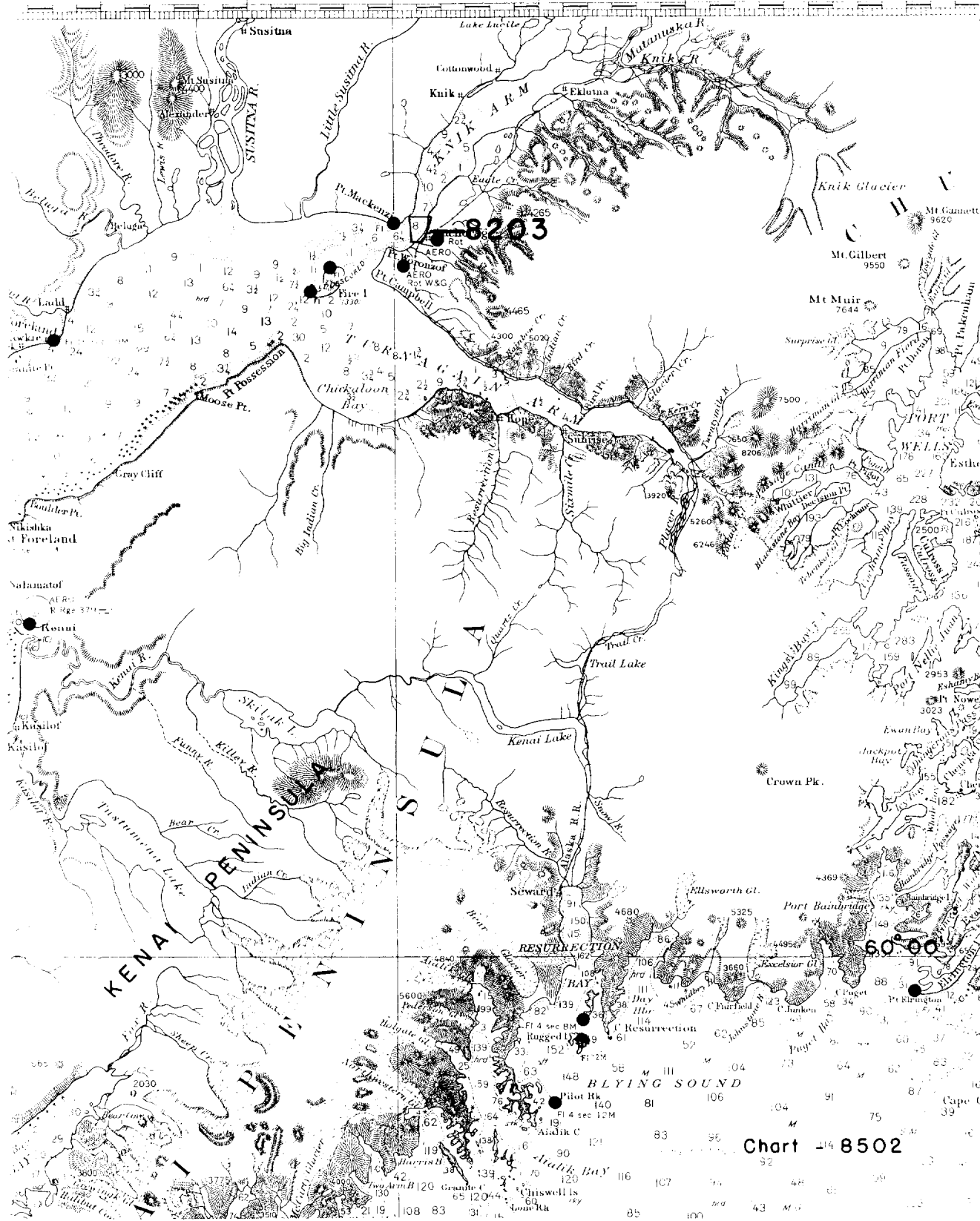
Height of mean high water above plane of reference is
28.9 feet. ✓

Condition of records satisfactory except as noted below:



Signature

Chief, Tides Branch



NAUTICAL CHARTS BRANCH

SURVEY NO. H-8203

Record of Application to Charts

| DATE | CHART | CARTOGRAPHER | REMARKS |
|--------------------|---------------------|-----------------------|---|
| 11/14/57 | <i>Plan</i> 8557 | <i>J. M. Sam</i> | Before ^{<i>preliminary</i>} After Verification and Review <i>37114</i> |
| 1-21-58 | 8557 | <i>R. K. de Landu</i> | Before After ^{<i>Prelim.</i>} Verification and Review. Not ^{<i>Fully</i>} appl. |
| 3/4/58 | 8553 | <i>J. A. Benson</i> | Before After ^{<i>Prelim.</i>} Verification and Review |
| 9-22-60 | 8557 | <i>M. Rogers</i> | Before ^{<i>Completely appld</i>} After Verification and Review |
| 7-20-61 | 8553 | <i>Earl M. Bogoy</i> | Before ^{<i>Completely appld</i>} After Verification and Review <i>thru drawing</i> |
| 7-20-61 | 8553 | | <i>#7 chart 8557</i> Before After Verification and Review |
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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.