

6802

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

MAR 27 1941

Acc. No. Original

Form 504
Rev. April 1935
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Topographic } Sheet No. C
Hydrographic }State Washington

LOCALITY

San Juan IslandsBurrows Bay1939-40

CHIEF OF PARTY

R.L. Schoppe

U. S. GOVERNMENT PRINTING OFFICE

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

The Topographic 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. **T6802**

State Washington

General locality San Juan Islands, Fidalgo Island

Locality Burrows
Burroughs Bay

Scale 1/10,000 Date of survey Dec. Jan., 19 39-40

Vessel U.S.C. & G.S.S. SURVEYOR

Chief of party Ray L. Schoppe

Surveyed by D.E. Sturmer

Inked by D.E. Sturmer & Processing Office

Heights in feet above High Water to ground to tops of trees

Contour, Approximate contour, Form line interval 100 feet

Instructions dated Sept. 22, 1939, 19

Remarks: _____

DESCRIPTIVE REPORT TO ACCOMPANY TOPOGRAPHIC SHEET NO. C T-6802
SAN JUAN ISLANDS, WASHINGTON
SCALE 1 : 10,000
U.S.S. SURVEYOR R.L. SCHOPPE, COMDG
PROJECT NO. 241
SEASON 1939-1940

AUTHORITY

This work was executed in accordance with the Director's Instructions dated September 22, 1939.

EXTENT OF SURVEY

This survey covers the western shore of Fidalgo Island from Lat. 48°-27'16" Long. 122°-39.'3 around Fidalgo Head to Shannon Point; also Burrows Island and Allan Island.

CONTROL

This survey was controlled by second and third order triangulation executed during the fall of 1939, with the exception of station ALLAN, 1854, which had been relocated in 1926.

SURVEYING METHOD

Combinations of traversing, resecting, three point fixes and plane table triangulation were used in executing this survey. The number of traverses run was kept to a minimum and the plane table located by other means whenever possible. The steep bluffs and many points made traversing difficult, necessitating many short setups.

At each triangulation station all visible signals were cut in and these were used as additional control points. The intersection of the cuts was in most instances excellent and it is believed that the use of these was better control than attempting to run traverses.

All offlying features were located by direct rod readings.

TRAVERSES

The following traverses were run:

1. From triangulation station FIDALGON2 to triangulation station SHIP HARBOR the closing error was $3\frac{1}{2}$ meters, and the traverse was adjusted on the sheet.
2. From triangulation station FIDALGON2 southwestward to Fidalgo Head. A flag was set up at the end of the traverse and this was later cut in. There was no appreciable error in this end of the traverse.
3. From the southeast corner of E.K. Wood dock westward to a flag located by resection near topographic signal WAG. There was no error in azimuth and 1 meter in distance. No adjustment was made.
4. From Burrows Island Lighthouse northward to a flag located by resection near signal BUS. Closing error was $2\frac{1}{2}$ meters which was adjusted on the sheet.

5. From whitewashed rock ^{ALL} on the south side of Allan Island to triangulation station ALLAN. The traverse closed satisfactorily in azimuth but was off 3 meters in distance, which is slightly above the allowance. Field inspection proved that it was in the closing shot which was rather long. Whitewashes located from the traverse points fell on cuts taken earlier in the season from triangulation station WILLIAMSON.

6. From triangulation station ALLAN to a flag on the northwest corner of Allan Island located by resection, the traverse closed by 2 meters. Adjustment was made on the sheet.

7. From Flounder Bay along the track to a setup point in the traverse run from triangulation station FIDALGON2 to triangulation station SHIP HARBOR. The closing error was 7 meters, being off in both azimuth and distance, but mainly in distance.

At the time of running the traverse it was noticed that the second setup appeared to be in error, being alright in azimuth but out in distance. Piles of lumber on the line of sight made reading of the rod difficult. After running the traverse further, field inspection showed, by an additional setup, the second setup to be in error in distance from 3 to 4 meters. This error was corrected and the remainder of the traverse adjusted on the sheet.

GENERAL DESCRIPTION

The rocky shoreline on this sheet is very broken with many small indentations of a few meters, that cannot be shown on the sheet. In many instances there is a slight ledge of not over 5 meters makes out from the shoreline at about $\frac{1}{2}$ tide or what might be called the low water line. In the most pronounced cases this is shown as a reef paralleling the shoreline. However, in most instances, this shore reef has been disregarded, as indicating it on the sheet would only lead to confusion. As a whole the rocky shoreline has a bluff varying in height from a few feet to about 75 feet. As the high bluffs are very steep and the lower ones very broken no attempt has been made to show the bluff line. Height has been shown by lengthening the bluff symbol, the top of which is farther inshore than the actual bluff line. In places where the rocky bluff is very low, 4 to 10 feet, such as the north side of Burrows Island, it has been shown ~~starkly~~ with short lines perpendicular to the beach.

Below is given a sectional description of the shoreline, inland country and other notes.

From station ERIE to signal OHM is a rocky shoreline with few off-lying rocks. Immediately above the top of the bluff line is grass but the inland country is covered with brush and trees.

From signal OHM to signal SOK is a sand beach with a flat sandy area behind it, about 60 meters wide. The inland country is covered with brush and trees, although it has the appearance of having been burned over at one time. At signal MIL a rocky point makes out and 50 meters north of signal LUM there is a steep rock bluff but a sandy beach.

The houses near signals LUM and SOK are summer homes, being vacant in winter, except for a caretaker. Two corners of these houses were rod-ded in.

From signal SOK to signal HAM is a rocky bluff shoreline with heavy wooded country, beginning at the bluff line, inland.

From signal HAM to the entrance of Flounder Bay is a gravel and boulder beach. The dirt bluff indicated on the sheet along part of this stretch has its base about 2 meters back of the high water line. The center portion of this bluff is covered with a vine tree growth which makes it appear as a two section bluff. The southern part of the inland country is heavily wooded, while the northern part is covered with a thick tall brush and occasional trees. The houses near station GABLE are occupied the entire year. The area between the high and low water lines in this stretch of shoreline is composed of gravel and boulders, some of which are up to 2 feet in diameter.

Flounder Bay is really a log pond for the E.K. Wood Lumber Co. There is a concrete wall across the entrance, which maintains a certain level of water in the bay at low tide. Tugboats taking logs into the bay go in and out at high water. There are numerous piling in the bay. Those in rows are indicated by dashed lines, while single piling are shown with a black dot. The beach of Flounder Bay is sandy and grassy. The long narrow spit between the mill and the bay entrance is of sand and gravel. The inland country to the east is covered with heavy brush and occasional trees, while to the north only the tops of the low hills are wooded. There are many houses scattered about the northwest side of the bay. These are occupied the year around, as it is where the employees of the mill live. The dirt road shown goes to Anacortes. The sawmill was in operation at the time of the survey. The dock is in good condition at the present but shows signs of needed repairs. The 175 foot red brick stack at the lumber mill serves as an excellent landmark for this vicinity.

From the E.K. Wood mill to station FIDALGO 2 is rocky bluff shoreline, except for the sand beach as shown on the sheet. The southern side of Fidalgo Head is sparsely wooded, and the top is heavily wooded. The monument at Lat. 48° 29.'5 Long. 122° 41.'4 is the burial place of a pioneer of this vicinity. The entire part of Fidalgo Island west of the railroad track is a park belonging to the City of Anacortes.

From station FIDALGO 2 to signal KEG is a rocky shoreline. From signal KEG to signal IRA is a rocky shoreline backed by a dirt bluff of about 15 feet in height. From signal IRA to 50 meters south of signal EGG is a sandy beach backed by lawn of the park entrance. On each side of signal EGG is a rock boulder embankment of the railroad and the same from signal DUG to signal CAD. From signal CAD to the end of the sheet is a gravel and boulder beach, backed by a dirt bluff, 4 feet in height at signal CAD increasing to 20 feet in height at signal ANK. Brush and vines hang ~~over~~ over this bank, so in many places it is not visible. The inland country is covered with heavy brush and trees.

The shoreline of Burrows Island is of the rocky bluff formation, except for the short stretches of gravel beach indicated on the sheet. The south and southeast side of Burrows Island is sparsely wooded, while the remainder is heavily wooded. Burrows Island belongs to Skagit County and is uninhabited, except for the lighthouse personell on the western end.

The shoreline of Allen Island is of the rocky bluff formation, except for a few short sandy stretches. The south side is sparsely wooded but the remainder is heavily wooded. The island is a private game reserve and is uninhabited, except for the caretaker who lives in the shacks at the small bay on the eastern side.

FORM LINES

Elevations shown on the sheet were for the most part located by two or more plane table cuts with vertical angles. These were supplemented by a few sextant cuts and vertical angles. Elevations on the western sides of Burrows Island, Allan Island, ^{and} Fidalgo Head were obtained by sextant cuts and vertical angles from a stopped launch. In most cases the cuts were taken to identifiable trees and these same trees cut in from the next setup. In heavily and evenly wooded places, such as the north side of Burrows Island, few identifiable trees or objects could be found.

The form lines were drawn in the field after the elevations were computed. In areas where the ground could not be seen, elevations were taken to the top of the smaller trees and 60 feet subtracted for the height of trees.

COMPARISON WITH PREVIOUS SURVEYS

In general the agreement of the shoreline with previous surveys (J.J. Gilbert, 1885) is excellent. It will be noticed that the sand beach just south of signal MIL has built out about 30 meters. T-1667

The general form line agreement is also good. The form lining of the top of Burrows Island has been changed somewhat on the present survey.

There is some disagreement in the form lines back of station GABLE, on the western slope of Fidalgo Island. This area is evenly and heavily wooded and appearing different from every angle. This made it difficult to always cut in the same object, especially on the sides of the hills. Care was exercised in the present survey of always cutting in the same object.

The kelp area shown just south of Flounder Bay was not discernable during the present survey and probably no longer exists. The kelp on Dennis shoal was only seen once by the topographer during this survey. The heavy current tows the kelp under. As this will be shown on the hydrographic sheet no special effort was made to locate the shoal.

GEOGRAPHIC NAMES

All the important names are already shown on the chart. The following additional ones have local usage.

Alexander Beach - local name for the stretch of sand beach north of signal OHM.

Sunset Beach - The short stretch of sand beach around signal GAL.

Short Bay - The small bay with the gravel beach 100 meters east of

signal WAG. This name applies only to this small bay.

Peartree Bay - The small bay on the southeast side of Burrows Island, opposite Youngs Island. It is so named because of a peartree at the head of the bay.

ADDITIONAL NOTES

The location of the gravel road from the E.K. Wood sawmill towards Anacortes is only considered accurate to a point at Lat. 48° 29.'9 Long. 122° 40.'9, where it is noted on the sheet as road intersection and marked by a black dot. The remainder of this road was run as a dead end traverse. The location of a short piece of gravel road near station ~~CHIMNEY~~ CHIMNEY is also located by a dead end traverse. Four setups were necessary to run this distance from the beach.

Additional roads, all of which are gravel on this sheet, were not run because of their very winding nature in heavily wooded country. There was no control in the interior and to traverse down to the beach would be, in most cases, difficult.

LOW WATER LINE

Since during the execution of this survey the tide was never very low, and then just before darkness, the low water line is estimated. ~~The~~ main value on this sheet is to give the character of the beach between high and low water. Occasional reefs between the low and high water line are shown. This is to give the nature of the shoreline in these places.

RAILROAD

The railroad continues around Shannon Point about 30 to 50 meters from the beach. It was not run further, because it would have been a dead end traverse.

INKING

The topographer inked the high water line, the low water line, the bluffs, signals, building details in Flounder Bay, roads and form lines.

STATISTICS

Statute miles of shore line -----	16
Statute miles of roads -----	1
Statute miles of railroad -----	1.5
Square statute miles of form lines -----	3.3

Respectfully submitted,

Dale E. Sturmer

Dale E. Sturmer,
Ensign, U.S.C. & G. Survey.

LIST OF UNMARKED RECOVERABLE STATIONS

Name	Latitude	Longitude	Description
How	48° 30' 4 m.	122° 41' 558 m	Chimney in the center of a shed with a roof, but no walls.
War	48° 29' 867 m.	122° 41' 92 m	Signal was 1 meter north of southwest corner of dock.
Yam	48° 29' 795 m.	122° 40' 1084 m	Signal was 1 meter north of southeast corner of dock.
Mut	48° 29' 928 m.	122° 40' 681 m	Center pile of about a 6 pile dolphin
Gas	48° 29' 493 m.	122° 41' 123 m	$\frac{1}{8}$ " drill hole, about $1\frac{1}{2}$ " deep. Triangulation Station "NE Burrows 1885"
Ebb	48° 28' 871 m.	122° 41' 757 m	$\frac{1}{8}$ " drill hole, about $1\frac{1}{2}$ " deep. Triangulation Station "Cedar 1885".
Ike	48° 28' 195 m.	122° 42' 787 m	Signal was 2 meters seaward on range with Burroughs Island Lighthouse from Triangulation Station "Seaurchin (marked) 1885"
Flagpole	48° 28' 1271 m	122° 42' 893 m	Flagpole at Burrows Island Lighthouse
Monument	48° 29' 1010 m	122° 41' 485 m	Conspicuous ^{granite} monument on hillside.

DESCRIPTION OF SIGNALS OUTSIDE THE HIGH WATER LINE.

Mut -- Dolphin

Goo -- Pile

~~Mon~~ ^{Set} -- Corner of ruins of boathouse

Zo -- Whitewash on rock detached from shore.

APPROVAL SHEET

The field work and inking of sheet was done under my supervision.

The sheet and its descriptive report have been reviewed, and both are approved.



Ray L. Schoppe, Chief of Party,
Commanding Str., SURVEYOR.

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

Commanding Officer
U. S. C. & G. S. S. SURVEYOR
601 Federal Office Bldg.
Seattle, Washington.

C
O
P
Y

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

Juneau, Alaska
June 22, 1940.

To: U. S. Coast and Geodetic Survey,
Processing Office,
Box 2512 Custom-house,
San Francisco, California.

From: The Commanding Officer,
U. S. S. SURVEYOR.

Subject: Work necessary to complete topographic Sheets.

The following work remains to be done on topographic sheets
C, D, and E- San Juan Islands, Washington, Season of 1939-40 being
forwarded under G.B.L. No. C211955, 4/25/40.

All Sheets:

1. Ink triangulation and topo signal names.
2. Ink notes on magnetic meridians.
3. Ink note regarding Lat. and Long. of one triangulation station.
4. Ink initials etc. in stamp No. 25.
5. Ink misc. notes (vegetation, nature of objects outside high water, rocks awash etc.)
6. Pencil geographic names.

Sheet C: T-6802

1. Ink sand and kelp symbols.
2. Ink degrees and minutes on projection.
3. Scale and list the following recoverable plane table positions:
monument, granite, about 10' high Lat. $48^{\circ} 29'.5$ Long. $122^{\circ} 41'.4$.
4. Submit the following on landmarks for Charts form:
Stack (brick, 175 ft. high) Lat. $48^{\circ} 29'.5$ Long. $122^{\circ} 40'.9$
Burroughs Id. Lighthouse.

Sheet D:

1. Ink projection (including degrees & minutes.)
2. (page 2)

2. Scale and list following recoverable plane table positions:

Iceberg Pt. Lt. (Fl. w. lt. on white house)
w. w. boulder Lat. $48^{\circ} 25.26'$ Long. $122^{\circ} 53.2'$ (large lone boulder
at top of grassy bluff).
rock at Lat. $48^{\circ} 25.65'$ Long. $122^{\circ} 50.33'$ (rock bare 2 ft. at h.w.)
w.w. boulder at Lat. $48^{\circ} 25.98'$ Long. $122^{\circ} 48.03'$
(largest lone boulder on side of hill)

Boundary monument near Δ Iceberg (square concrete marker)

3. Submit the following on landmarks for Charts form:

Iceberg Pt. Lt.
Davidson Rocks Lt.

Sheet E:

1. Ink projection (including degrees and minutes).
2. Scale and list the following recoverable plane table positions:
Arch 1889 ($\frac{1}{2}$ drill hole--see triangulation record)
James H.W. 1889(" " " " ")
w.w. boulder Lat. $48^{\circ} 30.8'$ Long. $122^{\circ} 47.7'$ (bare 11 ft. high water)
w.w. rock Lat. $48^{\circ} 30.8'$ Long. $122^{\circ} 46.6'$ (top of large rock)
w.w. boulder Lat. $48^{\circ} 30.1'$ Long. $122^{\circ} 47.5'$ (largest boulder in
vicinity, bare 8 ft. high water)

3. Submit the following on landmarks for Charts form:

Fauntleroy Pt. Lt.
Lopez Pass Lt.
Belle Rk. Lt. (just off edge of sheet)

/s/ Ray L. Schoppe
Commanding Officer
U.S.S. & S.S. SURVEYOR

RLS/err:hk.

Statement of Work Done in
Oakland Processing Office
To accompany
Topographic Sheet Field "C" T-4802
San Juan Islands
1939-1940.

The work necessary to complete topographic Sheet Field "C" as per attached letter from The Commanding Officer, U. S. Coast and Geodetic Survey Ship SURVEYOR, was done by Lieut. (j.g.) Walter J. Chovan, in the Oakland Processing Office.

Walter J. Chovan
Walter J. Chovan
Officer in Charge
Oakland Processing Office.

Recoverable Plane Table Positions

to accompany

Topographic Sheet Field "C". T-6802

San Juan Islands

1939-40.

<u>Objects and Description</u>	<u>Latitude</u>	<u>D. M.</u>	<u>Longitude</u>	<u>D. P.</u>	<u>Remarks</u>
	o ' "	meters	o ' "	meters	
Monument, (granite about 10 ft, high.) Elev. 182 ft.	48 29	1010	122 41	484	✓

Comp. by W. J. C.
Checked by G. A. K.

Remarks.

Decisions

1		484227
2		484226 U.S.G.B.
3		" "
4		"
5		484225
6		484226
7		"
8		484227 U.S.G.B.
9		485226
10		485226
11		484226
12		"
13		484227
14		484226
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		

GEOGRAPHIC NAMES

Survey No. **T6802**

GEOGRAPHIC NAMES											
Survey No. T6802											
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>Allen Island</u>										1	
<u>Burrows Bay</u>										2	
<u>Burrows Island</u>										3	
<u>Fidalgo Head</u>										4	
<u>Fidalgo Island</u>										5	
<u>Flounder Bay</u>										6	
<u>Green Point</u>										7	
<u>Rosario Strait</u>										8	
<u>Shannon Point</u>										9	
<u>Sunset Beach</u>										10	
<u>Young Island</u>										11	
<u>Alexander Beach</u>										12	
<u>Short Bay</u>										13	
<u>Pearlree Bay</u>										14	
										15	
										16	
										17	
										18	
										19	
										20	
										21	
										22	
										23	
										24	
										25	
										26	
										27	

Names underlined in red approved

by L. Heck on 5/8/41

M 234 1/2

Names underlined in red approved
by L. HECK on 5/8/41

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
~~PHOTOSTATIC~~

~~No. 11~~

No. T T6802

received Mar. 28, 1941
registered Apr. 3, 1941
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25	✓	11/11	Pages 2 to 4
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
----	------------

✓ TBR

SURVEYS SECTION

REVIEW OF TOPOGRAPHIC SURVEY NO. 6802 (1939-40) FIELD NO. C-1939-40

Washington, San Juan Islands, Fidalgo Island, Burrows Bay.
Surveyed in December - January 1939-40, Scale 1:10,000
Instructions dated September 22, 1939 (SURVEYOR)

Plane Table Survey

Aluminum Mounted

Chief of Party - Ray L. Schoppe
Surveyed by - D. E. Sturmer
Inked by - D. E. Sturmer
Reviewed by - Harold W. Murray, April 7, 1941
Inspected by - H. R. Edmonston

1. Junctions with Surveys

- a. The junction on the south with T-6736 (1940) is excellent.
- b. There are no contemporary surveys to the north-east of the present survey at this time. A satisfactory junction for charting purposes is made with T-4317 (1927).

2. Comparison with Prior Surveys

a. T-1667 (1885), scale 1:10,000

This survey covers the entire area of the present survey. Agreement of shoreline details is excellent. Flounder Bay was formerly about 1/3 larger. The west end, however, has been artificially reclaimed for commercial purposes. The railroad tracks in this vicinity are also subsequent improvements.

Most of the 20-foot form lines on the 1885 survey were sketched and controlled by only a few elevations. Disagreement of as much as 200 meters in identical form lines is quite common. In general, the old survey shows considerably more irregularity as in the vicinity of Lat. 48° 28', Long. 122° 40'. Another area is Allan Island. The present survey shows a continuous 200-foot form line around the higher portion based on 6 elevations whereas the older survey shows several mounds and valleys but no elevations. Additional comparative details are noted in the Descriptive Report, page 4. The present survey supersedes this survey.

b. T-2113 (1892), scale 1:5,000

This survey covers practically all of the mainland area of the present survey. Agreement of shoreline details is good. No form lines and little inland details are shown on this sheet. The present survey shows new improvements in the vicinity of Flounder Bay. In Lat. $48^{\circ} 30.3'$, Long. $122^{\circ} 41.3'$, the railroad which formerly cut across the bight has been shifted to the mainland. The present survey supersedes this survey.

c. T-4317 (1927), scale 1:5,000

This survey covers the area including and northwest of Flounder Bay. General agreement of shoreline is good. Off Green Point, several small ledges extending beyond the high water line which are confirmed by T-2113 (1892) previously considered are not indicated on the present survey but it is quite probable that topographer did not see them because he was in the vicinity at high tide. Since a half-scale transfer to the present survey and subsequent reduction for 1:80,000 scale charting makes these features insignificant, they are not being carried forward. (See also D. R., page 2, General Description)

The D. R., page 1 of T-4317 states that the railroad track from Flounder Bay to Shannon Point thence eastward does not exist but that a survey was started with a view to relaying the track. This was probably the basis for the deletion from the charts. The present survey shows the tracks in practically the same location. At Shannon Point and eastward the tracks are not shown, but the D. R. of T-6802, page 5, states that the tracks continue around the point about 30 to 50 meters from the beach.

The present survey supersedes this survey.

3. Comparison with Chart 6377 (New Print date Nov. 2, 1939)

a. Topography

Topography shown on the chart originates with surveys discussed in the preceding paragraphs. The burner charted at Flounder Bay from T-4317 (1927) is probably no longer in existence since it was not located on the present survey. A large stack, however, has been located close by the old burner.

b. Magnetic Meridian

The three magnetic meridian determinations agree closely with the charted value. No mention is made in the D. R. as to whether the declinatoire was checked at a station of known value.

4. Compliance with Instructions for the Project

The plan, character, and extent of the survey satisfy the instructions for the project.

5. Condition of Survey

- a. The inking of the topographic details is excellent.
- b. The Descriptive Report is clear and satisfactorily covers all matters of importance.

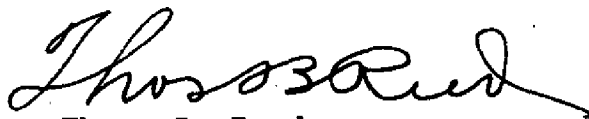
6. Additional Field Work Recommended

No additional field work is necessary.

7. Superseded Surveys

T-1667 (1885)	In part
T-2113 (1892)	" "
T-4317 (1927)	" "

Examined and approved:



Thos. B. Reed,
Chief, Surveys Section



Chief, Division of Charts



Chief, Section of Hydrography



Chief, Division of Coastal
Surveys