

6687

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

DESCRIPTIVE REPORT

Topographic } Sheet No. T-6687
Hydrographic }

U. S. COAST & GEODETIC SURVEY

LIBRARY AND ARCHIVES

MAR 18 1940

Acc. No. _____

State Washington

LOCALITY

Southern end Swinomish Slough

Dredged Channel & Vicinity

193 9.

CHIEF OF PARTY

Robert W. Knox.

U. S. GOVERNMENT PRINTING OFFICE: 1934

Applied to Chart 6380 Feb. 19/41 B.R.

" " " 6300 Mar. 20/41

" " " 6376 Aug. 11, 1944 JTW

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 LetterF.....

T6687

REGISTER NO. T-6687

State.....Washington.....

General locality.....Skagit Bay.....

Locality.....Southern end Swinomish Slough Dredged Channel & vicinity.....

Scale.....1:5,000..... Date of survey.....July....., 1939

Vessel.....WSC&GSS EXPLORER.....

Chief of Party.....R. W. Knox.....

Surveyed by.....J. C. Tison jr.....

Inked by.....J. C. Tison jr.....

Heights in feet above MHHW.....to ground ~~XXXXXX~~~~Contours Approximate contours~~ Form line interval.....50.....feet

Instructions dated.....April 12 and June 24....., 19 39

Remarks:.....

DESCRIPTIVE REPORT

TO ACCOMPANY

TOPOGRAPHIC SHEET T-6687

SCALE 1:5,000

SOUTHERN END OF SWINOMISH SLOUGH DREDGED

CHANNEL, AND VICINITY

PROJECT HT-233

SEASON 1939

- o -

Robert W. Knox, Chief of Party, C. & G. S.

DESCRIPTIVE REPORT
TO ACCOMPANY
TOPOGRAPHIC SHEET T-6687
SCALE 1;5,000
SOUTHERN END OF SWINOMISH SLOUGH DREDGED
CHANNEL, AND VICINITY
PROJECT HT-233

SEASON 1939

INSTRUCTIONS: This survey was made in accordance with the
Director's Instructions for Project HT-233, dated April 12, 1939. ✓

EXTENT OF SURVEY: This sheet covers all topographic detail adjacent
to the southern end of Swinomish Slough Dredged Channel, from deep
water in Skagit Bay to The Hole in the Wall, including all of Goat
and Ika Islands and the southern tip of Fidalgo Island. ✓

GENERAL DESCRIPTION: Goat Island, lying on the south side of the
dredged channel just east of its Skagit Bay entrance, is heavily
wooded with virgin timber and its shoreline is steep and rocky. A
U. S. Army post, Fort Whitman, is located on the northwest side of
the Island, above the cliffs, and a dilapidated wharf and warehouse,
belonging to the post, lie just off the north shore of the Island
on the south side of the dredged channel. The Island is clear of
heavy timber in the immediate vicinity of the Fort, but a heavy
second growth of brush and small trees covers the area. 25

From the northwest side of Goat Island a low rock jetty ex-
tends in a west southwesterly direction and marks the south side
of the dredged channel. The jetty bares from three to four feet
at M.L.L.W., and on its south side sand and mud has piled up to the
level of the top of the rocks. A short section of this Jetty, in-
dicated by solid lines on the sheet, is outlined at all stages of
tide by rows of piling on either side of the rocks. These piling
are spaced about three feet apart and extend from three to four
feet above M.H.H.W.

Between the east end of the piling and the shore of Goat Island
the Jetty is very low, in places showing only a few inches above the
surface of the mud flat at low water. Small boats cross the Jetty ✓

at this point at high tide in proceeding to and from the southern part of Skagit Bay. ✓

From the east side of Goat Island, a rock Jetty built in 1938 extends in a northeasterly direction. The rock for the Jetty was blasted from the cliffs of Goat Island, and they are sheer and generally yellow in color in this vicinity. A flat rocky area, bare of vegetation, lies between the cliffs and the inshore end of the Jetty. This Jetty is from six to seven feet above M.H.H.W., with steep sides and a very sharp crest. Built on a mud flat, it is settling noticeably in places, and according to a United States Army Engineer, will be built up again in a few years to maintain the present height. ✓

Off the northeast side of Goat Island and north of the above Jetty, a considerable area is occupied by the Dunlap booming grounds, where logs brought down the North Fork of the Skagit River in small tows are made up into large rafts. The piling marking the outside limits of this area are shown on the sheet by small black circles, inside these limits numerous other piles exist. *Note that rafts would have to circle Goat Island to get inside the jetties.* ✓ 25

A short section of rock jetty making out from the south side of McGlinn Island in a S.W'ly direction is shown on this sheet. It is identical in construction with the larger jetty extending east from Goat Island, and is separated from it by a narrow fish passage, awash at half tide, which is used extensively at high water by small boats as a passage from the dredged channel into Skagit River. ✓ 25

The small section of Fidalgo Island shown on this sheet is heavily wooded with what appears to be virgin or old second growth timber. The shoreline is rocky and precipitous cliffs from the high water line. The south tip of the Island in vicinity of LaCommer Light is characterized by a steep grassy slope rising above the rock cliffs to the timbered part of the Island above. Just *east* of station "DOT", a mine *tunnel* is indicated near the base of the rock cliff. Quartz is mined here in small quantities evidently by hand, and the shaft extends horizontally into the island for a distance of more than forty feet. ✓

The small sand island shown just south of Fidalgo Island is bare white sand dredged from the channel to the south of it. It is about six feet above high water near its center and is strewn with old logs stumps and driftwood. It is separated from Fidalgo Island by a narrow strip of mud flat at low tide. ✓

The rock jetty extending west-southwest from the southern tip of Fidalgo Island marks the north side of the dredged channel and is covered at high tide, but is outlined at all stages of tide by a row of piling on either side of the jetty spaced from three to four feet apart and projecting from two to three feet above M.H.H.W. Between Fidalgo Island and the east end of the jetty there is a narrow opening through which skiffs may pass at high tide. The west end of the jetty is marked by a light mounted on a pile. On the north side of this jetty sand and mud has filled in almost on a level with, and in some instances, slightly higher than the top of the rocks.

Ika Island is heavily wooded and on its south and east sides characterized by weathered cliffs rising from the high water line. The upper part of these cliffs appear to be largely boulders and rocks in clay and soft sandstone, while the lower portions are solid rock. On the west, a small bight indents the island, from the head of which a strip of flat wooded land extends across the island in a northeasterly direction. The marsh at the head of this bight is flooded only at high tide and projects several feet above the plane of M.H.H.W. The low water line, shown as a broken line across the entrance of the bight, is a distinct mud bank several feet in height which marks the east side of a channel of the North Fork of the Skagit River. The mud flat back of this low water line is high and firm and affords easy walking at low tide. The rocky point on the north side of the bight is ringed by sheer rock cliffs and is flat on top above the cliffs. The large marsh area on the northeast side of the Island is flooded by from one to two feet of water at high tide, but the tall marsh grass projects several feet above the plane of M.H.H.W. The area is firm and affords easy walking at low tide.

Between the northwest point of Ika Island and the eastern extremity of Goat Island, sections of closely spaced piling extend on the same straight line. These piling are indicated on the sheet by a dotted pencilline, and should not be charted, since they are to be removed by the United States Engineers in the near future. *Inked in solid lines and should be charted until definitely notified of removal. Apparently removed - see Bgs 38638 (Apr. 1944) - 374 9/14/44*

LOW WATER LINE: No attempt was made to locate the low water line on this sheet except for three short sections shown by a ~~broken dotted line and labelled in each case, "L.W.L."~~. In all instances where topographic symbols for rock reefs, sand, gravel, or rock beaches appear on this sheet they are used solely for the purpose of indicating the character of the ground immediately adjacent to the

high water line or to differentiate such areas from the bare mud flats which surround most of the topographic features on this sheet at low tide. Consequently, limits of a sanded area, or of a rocky beach appearing thereon, indicate a "mud flat line" rather than the low water line.

CONTROL: This survey was controlled entirely by second and third order triangulation stations established and located in 1907, 1934, and 1939. Positions of all control points are on the North American, 1927 Datum.

TRAVERSES RUN: Closed traverses were run as follows and in the order named:

1. From a three point fix position on the rock jetty north of triangulation station "GOAT-1907", westward along the jetty to triangulation station "LaCONNER JETTY LIGHT-1939" - no appreciable closing error and no adjustment necessary.

2. From triangulation station "GOAT-1907", in a southeasterly and southerly direction to triangulation station "INNES-1888" - no appreciable closing error and no adjustment necessary.

3. From triangulation station "INNES-1888", westward to triangulation station "FORT-1934" - no appreciable closing error and no adjustment necessary.

4. From triangulation station "IKA-1934", northward to topographic station "NAD", which had been previously located by means of six intersecting cuts giving a strong location - no appreciable closing error and no adjustment necessary.

5. From topographic station "NAD", eastward and southward to triangulation station "KAG-1939" - no appreciable closing error and no adjustment necessary.

6. From triangulation station "IKA-1934", eastward to triangulation station "KAG-1939" - no appreciable closing error and no adjustment necessary.

SURVEYING METHODS: After running traverses one, two, and three, around Goat Island, as listed above, the rock jettys and the shoreline on Fidalgo Island were surveyed from plane table positions located by means of solution of the three point problem. Cuts to locate topographic control points in advance were drawn from each such position, and in spite of the fact that no triangulation points were available in the area covered by the northeast portion of this survey, it is believed that all topographic detail on the sheet is located with a degree of accuracy well within the required limits.

All off-lying features were located either by direct rod readings or by intersecting cuts drawn from three or more plane table positions to give a strong angle of intersection.

In running traverses on this sheet, distances between successive plane table set-ups were often necessarily short and in such instances the sheet was oriented by sighting on a distant station whenever such was visible rather than by sighting back on the previous set-up. Actual rod readings, doubly checked, were in all instances used for traverse distances.

ELEVATIONS: All elevations shown on this sheet were determined with the alidade during the course of the survey. All locations are from intersecting cuts and all elevations computed from two or more vertical angles. These elevations at the top of cliffs or just back of cliffs in open areas are from vertical angles taken directly to the ground, while those in heavily wooded areas of the interior are from vertical angles taken to tops of trees. The latter were reduced in each case by an amount estimated to be to the height of the trees in the vicinity, one hundred and ten feet being used on this sheet, so that the elevations as they appear on the sheet are approximate ground elevations.

FORM LINES: Form lines as shown on this sheet, due to the heavily wooded land area, necessarily follow the visible contours of the top of vegetation rather than the actual contour of the land surface. The areas form lined were viewed from many offshore angles, and every attempt was made to estimate the general land surface contour in so far as possible. None of the wooded areas were penetrated by the topographer.

JUNCTIONS WITH CONTEMPORARY SURVEYS: This sheet joins Topographic Sheet T-6685b, scale 1:10,000, along the marsh area on the northeast side of Ika Island. A satisfactory junction was accomplished in the field with no adjustments necessary.

On the north, east of Longitude $122^{\circ}31'00''$, this sheet joins Topographic Sheet T-6689a (scale 1:5,000). Point ties were made at topographic stations "MARK" (Swinomish Slough Beacon 1) and "USE mon. 3", which had been previously located on this sheet. A satisfactory junction of all topographic detail was made in the field with no adjustments necessary.

On Fidalgo Island, west of Longitude $122^{\circ}31'00''$, this sheet joins Topographic Sheet T-6684b (scale 1:10,000). A satisfactory point tie was made at topographic station "MAD", and a junction of topographic detail made in the field with no adjustments necessary.

COMPARISON WITH OTHER SURVEYS: Due to the difference in scale, no

attempt was made to compare this survey with the topographic survey of the area made in 1908. Par. 2,
Review.

LANDMARKS: None of the features on this sheet are thought to be prominent enough for charting as landmarks. ✓

MAGNETIC MERIDIANS: The declinator used in drawing magnetic meridians shown on this sheet was checked at the standard magnetic station at Seattle, Washington, at 2:45 P.M., May 3, 1939, and found to have an unadjusted ^{correction} error of 18' (additive). It was also checked against compass declinometer observations made with Compass Declinometer No. 6 at various localities during the 1939 field season. ✓

The values of the uncorrected magnetic declinations as scaled directly from this sheet are as follows:

At triangulation station "FORT-1934" (3:30 P.M., 7-7-39) - $23^{\circ}02'W$.

At triangulation station "INNES-1888" (3:45 P.M., 7-5-39) - $23^{\circ}25'W$. ✓

At triangulation station "IKA-1934" (11:00 A.M. -7-12-39) - $23^{\circ}37'W$.

NAMES: The names Skagit Bay, Fidalgo Island, McGlinn Island, Goat Island, Ika Island, and North Fork Skagit River, are from Chart No. 6380.

The name "Hole in The Wall", appears on survey maps of the U. S. Engineers and is used generally in the locality to refer to the narrow opening between McGlinn and Fidalgo Islands through which the dredged channel connects with Swinomish Slough. ✓

The name "Fort Whitman", is the name of the small Coast Artillery Fort located on the northwest side of Goat Island. ✓

STATISTICS: ✓

Statute miles of shoreline - 5.1

Statute miles of jetty - 3.1

Area, in square statute mi. - 1.5

Respectfully submitted,

James C. Tison, Jr.
James C. Tison, Jr.,
Sr. H. & G. Engr.

APPROVED AND FORWARDED:

Robert W. Knox
Robert W. Knox,
Chief of Party, C. & G. S.

LIST OF STATIONS TO ACCOMPANY DESCRIPTIVE REPORT

SHEET T-6687

LIST OF TRIANGULATION STATIONS OUTSIDE HIGH WATER LINE:

IKA, 1934 - On flat topped offshore rock awash M.H.H.W.

LaConner Jetty Light, 1939 - Light on dolphin at west end rock jetty.

TOPOGRAPHIC STATIONS:

At - whitewash on face of rock cliff - not recoverable.

Bin - whitewash on face of cliff - not recoverable.

Boy - whitewash on face of cliff - not recoverable.

Crab - whitewash on face of cliff - not recoverable.

Dab - whitewash on face rock cliff - not recoverable.

Dan - whitewash on face rock cliff - not recoverable.

Dot - whitewash on side of 18 ft. offshore rock - not recoverable.

Egg - east end of section of closely spaced piling - not recoverable.

El - whitewash on face of cliff - not recoverable.

Ex - whitewash on face of bluff - not recoverable.

Gal - whitewash on side of 15 ft. offshore rock - not recoverable.

Gun - whitewash on face of cliff - not recoverable.

Hole - whitewash on side of rock jetty - not recoverable.

Hut - north gable small unpainted shack in low brush overlooking
marsh on N. E. Side Ika Id. - recoverable.

Kido - whitewash on rock face of offshore islet - not recoverable.

Kid - whitewash on face of rock cliff - not recoverable.

LaConner Light (F.W.) - Lantern on white post on side of grass slope,
71 ft. above high water - recoverable.

- Lip - whitewash on face rock point - not recoverable.
- Mad - whitewash on face of rock cliff - not recoverable.
- Mar - easterly end of row of closely spaced piling - not recoverable.
- Mark - (Swinomish Slough Beacon #1) - white slatted daymark on white post set in concrete base on rock point - recoverable.
- Nad - whitewash on face of rock point - not recoverable
- Nib - whitewash on face cliff - not recoverable.
- Nik - whitewash on face cliff - not recoverable.
- Pin - whitewash on side of 15 ft. rock just outside high water line - not recoverable.
- Rash - whitewash on face of rock point - not recoverable.
- Rye - west end of row of closely spaced piling - not recoverable.
- U.S.E. "K" - United States Engineers' mark on N.W. point of Ika Island. Mark is a small brass plug set in cement on a narrow and low shelf of rock just inside H.W.L. - recoverable.
- U.S.E. Mon. 1 - United States Engineers' mark on east side Goat Island at base of cliff and on center line extended of rock jetty making out from this end of Island. Mark is a brass plug set in cement on narrow shelf of flat rock - recoverable.
- U.S.E. Mon. 2 - United States Engineers' mark at N.E. end of rock jetty making out from east side Goat Island. Mark is a brass disc set in cement on top of boulders forming jetty. It is just west of the narrow fish passage through the jetty - recoverable.
- U.S.E. Mon. 3 - United States Engineers' mark on south side McGlinn Id. at inshore end of rock jetty. Mark is a brass plug set in cement at base of cliff and on top of jetty - recoverable.
- Wop - East end of section of closely spaced piling - not recoverable.
- Zin - whitewash on side of rock jetty - not recoverable.

Remarks.

Decisions

1		484225
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GEOGRAPHIC NAMES

Survey No.

T6687

Name on Survey

	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
A.	B.	C.	D.	E.	F.	G.	H.	K.	
<u>Fidalgo Island</u>									1
<u>Hole In The Wall</u>									2
<u>McGlinn Island</u>									3
<u>Goat Island</u>									4
<u>Fort Whitman</u>									5
<u>Skagit Bay</u>									6
<u>North Fork Skagit River</u>									7
<u>Ika Island</u>									8
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Names underlined in red approved
by L. Heck on 4/23/40

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
PHOTOSTAT OF

~~No. 111~~

No. T T6687

received March 8, 1940
registered April 9, 1940
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	✓	<i>TRB</i>	Pages 1 to 3
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
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✓ *TBR*

DIVISION OF CHARTS

Section of Field Records

REVIEW OF TOPOGRAPHIC SURVEY NO. 6687 (1939) FIELD NO. F

Washington; Skagit Bay; Southern End Swinomish Slough

Surveyed in July 1939, Scale 1:5,000

Instructions dated April 12, 1939 (EXPLORER)

Plane Table Survey

Aluminum Mounted

Chief of Party - R. W. Knox.

Surveyed and inked by - J. C. Tison, Jr.

Reviewed by - J. A. McCormick, Nov. 8, 1940.

Inspected by - H. R. Edmonston.

1. Junctions with Contemporary Surveys.

Satisfactory junctions were made with T-6684b (1939) and T-6689a (1939) on the north and with T-6685b (1939) on the east.

2. Comparison with Prior Surveys.

T-2856 (1908), 1:20,000.

Considering the difference in scale of the two surveys, agreement of detail is fairly good. Dikes and jetties shown on the present survey were constructed subsequent to 1908, so do not appear on T-2856. Also, an extensive marsh area has built out to the northeast of Ika Island. Form lines are in fair agreement as to pattern but differ in position. The present survey supersedes T-2856 in the common area.

3. Comparison with Chart 6380 (New Print of April 13, 1940)

a. Topography.

Topography charted in this area is from T-2856 (1908), discussed in the preceding paragraph, and from U. S. Engineers' surveys in the vicinity of the dikes and jetties. The dike between Goat and McGlenn Islands was constructed in 1938 and is not shown on the latest print.

b. Navigational Aids.

Fixed aids in the area are charted substantially as shown on the present survey.

4. Condition of Survey
Satisfactory.
5. Compliance with Instructions for the Project.
Satisfactory.
6. Additional Field Work Recommended.
None.
7. Superseded Surveys.
T-2856 in part.

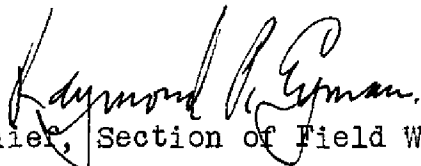
Examined and approved:



Thos. B. Reed,
Chief, Section of Field Records.



Chief, Division of Charts.



Chief, Section of Field Work.



Chief, Division of H. & T.