

4015

4016

U. S. COAST AND GEODETIC SURVEY
APR 22 1917

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

11-5012

State: Washington

DESCRIPTIVE REPORT

Hyd. Sheet No. 4015
4016

LOCALITY:

Duwamish River, East West

Waterways

1917

CHIEF OF PARTY:

John A. Daniels, Jr. H & G. Eng.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4016

State . . . Washington

General locality . . . Puget Sound

Locality . . . City of Seattle

Chief of party . . . John A. Daniels

Surveyed by . . . Henry Bernhardt

Date of survey . . . 1917 . . . October

Scale 1:5000

Soundings in

Plane of reference . . . M.L.W.

Protracted by A.L.S. Soundings in pencil by

Inked by Verified by

Records accompanying sheet (check those forwarded):

Des. report, Tide books, Marigrams, Boat sheets,
 Sounding books, Wire-drag books, Photographs.

Data from other sources affecting sheet

Remarks:

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheets Nos. 4015, 4016

DUWAMISH RIVER

EAST AND WEST WATERWAYS:

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Surveyed by Henry Bernhardt, Mate.

1917

John A. Daniels, Jr. H. & G. E., Chief of Party.

DESCRIPTIVE REPORT

Hydrographic Sheets Nos.

DUWAMISH RIVER
EAST AND WEST WATERWAYS.

Surveyed by Henry Bernhardt, Mate.
John A. Daniels, Jr. H. & G. E., Chief of Party.

A hydrographic resurvey of the East and West Waterways and the Duwamish Waterway, Seattle, Washington was made necessary on account of extensive industrial improvements incident to the installation of several new shipyards and auxiliary plants, and of the digging of the new Duwamish Waterway that straightens and deepens the Duwamish River from the junction of the East and West Waterways for a distance of about 4½ miles to the south-eastward. The various dredging operations in the locality have insured the depths at certain times, but the soft nature of the material forming the shores and bottom results in considerable erosion by the river and tidal currents. The depths at various points change rapidly and cannot be maintained except by almost constant dredging.

The survey was commenced in the West Waterway and includes the entrances to both East and West Waterways to deep water and the Duwamish Waterway to its head. The development consists of a series of lines approximately 50 meters apart and running diagonally to the channels. The small whaleboat belonging to the EXPLORER, propelled by oars was used throughout the work. The revision party was assisted by enough men from the EXPLORER to man the boat. All slips and tributaries into which the whaleboat could be taken were sounded out.

The signals used were located by the revision party in 1917 by triangulation or planetable.

Tidal stations were established at the northern and southern ends of the waterways and comparative readings with the automatic gauge at Madison Street, Seattle showed very little variation. The readings from the automatic gauge were used for the reduction of the soundings.

The new Duwamish Waterway opens up a new waterfront about 9 miles in length with flats on each side affording desirable sites for all kinds of industrial enterprises.

All of the area is easily accessible to the transcontinental railroads and to extensive and healthful residential areas of

Seattle. There is little doubt that it will become a very important area in a short time. In fact no less than three new shipbuilding plants were in course of construction and one older one was being greatly enlarged while the survey work was in progress.

Respectfully Submitted

John A. Daniels.
J. H. + H. E.

J.S.S.J.

ADDRESS
U. S. COAST AND GEODETIC SURVEY
WASHINGTON, D. C.

REFER TO NO.

5-EMK

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

LIBRARY

Place with descriptive report

September 21, 1917
Hydrographic Sheet No. 4015

Drawing Section. *X*

Division of Hydrography and Topography: *WCH*

Division of Charts: *✓*

Tidal reductions have been approved in
2 volumes of soundings for

HYDROGRAPHIC SHEET 4015

East and West Waterways, Seattle Harbor, Washington.
by John A. Daniels in 1917.

Plane of reference is
Mean lower low water, reading

7.3 ft. on the tide staff at Madison St., Wharf.

Paul Schuman

Acting Chief, Section of
Tides and Currents.

J.S.J.

ADDRESS
U. S. COAST AND GEODETIC SURVEY
WASHINGTON, D. C.

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U. S. COAST AND GEODETIC SURVEY LIBRARY
WASHINGTON

Place with descriptive report
September 21, 1918
of hydrographic sheet No. 4016

Drawing Section, *4*

Division of Hydrography and Topography: *HC4*

Division of Charts: *✓*

Tidal reductions have been approved in
1 volume of soundings for

HYDROGRAPHIC SHEET 4016

Duwamish Waterways, Seattle Harbor, Washington.
John A. Daniels, in 1917

Plane of reference is
Mean lower low water, reading

-2.0 ft. on tide staff in Duwamish River.

Paul Schumann

Acting Chief, Section of
Tides and Currents.

Most of this survey has been superseded by later U. S. Engineers' surveys made in 1918 and was therefore not verified nor inked, except outside the limits of the Engineers' surveys.

A 21 ft. edg. appears between positions 9 & 10 "a" day which is undoubtedly an error and was rejected. This edg. appears near the northeastern limit of this sheet, in the middle of the approaches to East Waterway where I am informed it is customary to carry 28 feet of water. The old surveys and the work of the U. S. Engineers show about 70 feet at this same spot, with no indication of a nearby shoal.

The edg. records appear to be in good condition except for the ~~fact that~~ disregard of section 268 of General Instructions for Field Work which states, "In edg. records, one line should be omitted after the edg. on which a position was taken and about four lines between the end of one line of edgs. and the beginning of another line." These spaces were rarely omitted, adding to the likelihood of error in plotting the sheet. The recorder also overlooked O. K. in sudden changes in depth.

S. L. Rosenberg.
April 10, 1919.