

5308

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Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton, Director

State: New York

DESCRIPTIVE REPORT

5308

~~Topographic~~
Hydrographic

Sheet No. 2 (Field)

Other additional work

LOCALITY

Hudson River

Constitution Id. to Breakneck Pt.

19 33

CHIEF OF PARTY

C. A. Egner

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES
SEP 27 1933
REG. NO. 5308
Acc. No. _____

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No.2....

REGISTER NO. 5308

StateNew York.....

General localityHudson River.....

LocalityConstitution I., to Cornwall on the Hudson.....

Scale.....1/5:000..... Date of survey.....August....., 19 33

VesselM. V. NATOMA.....

Chief of Party.....C. A. Egener.....

Surveyed byJack C. Sammons.....

Protracted byF. A. Nielsen.....

Soundings penciled byC. A. Egener.....

Soundings in ~~fathoms~~ feet

Plane of referenceHudson River Datum.....

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions datedMay 17, 1933....., 19

Remarks:

D E S C R I P T I V E R E P O R T

T O A C C O M P A N Y

H Y D R O G R A P H I C S H E E T 2 (F I E L D)

H U D S O N R I V E R , N E W Y O R K

P R O J E C T N O . 1 4 7 , 1 9 3 3

M . V . N A T O M A

C . A . E G N E R , C O M ' D G .

I N S T R U C T I O N S
A N D A U T H O R I T Y :

The work on this sheet was done as a part of the season's work on Combined Operations by the Motor Vessel NATOMA on the Hudson River from June to November 1933. Since it was a continuation of the work done on this project in the Summers of 1930 and 1932 and was executed under similar conditions, the instructions for the previous work were considered to apply. Therefore, excepting the case of tidal observations, the Instructions for which were date June 18, 1932, no definite instructions govern the area surveyed this year.

L I M I T S :

The work on this sheets joins, and overlaps, the work of this party on Sheet No. ⁵³⁰⁷1 of this seasons work to the south and to sheet No. 3 to the north. It includes all the river from Constitution Island to Breakneck Point. Hydrography was done from the east bank to the west bank throughout this area.

SURVEY
METHODS:

The Motor Launch with usual launch hydrographic party was used for all the work on this sheet. Both hand lead and machine soundings were taken. As there is considerable current in this section, the hand lead soundings were only taken at slack water, or with the launch running at dead slow speed with the current. As it was necessary to stop the launch dead in the water before taking a machine sounding, lines for this work could be run both with and against the current.

The lines are spaced about 50 meters apart and run parallel to the channel line. All shoal indications were further developed to determine the least water.

TIDES:

All soundings on this sheet were reduced from the tidal data obtained from the portable automatic gage at Cold Spring, N.Y. This gage was located on the municipal wharf at Cold Spring, N.Y. near Topographic Signal FUN and the staff was tied down by levels to the First Order Bench Marks along the N.Y. Central Railroad and to other Bench Marks located near the docks. Tidal data for this sheet were forwarded to the Office on September 23, 1933.

CONTROL:

Good control for this sheet was furnished by numerous triangulation stations, supplemented by well located topographic signals.

CHANGES
NOTED:

No natural changes were noted. In some places railroad fills have been widened and this changed the shore line slightly. The O'Brien Brothers trap rock plant has recently been constructed near Stony Point. Extensive excavations for rock are being made on this hill on Stony Point as well as on the mountain on the opposite side of the railroad, and it appears that in a short time Stony Point will be a level point instead of the hilly one it is now. On the north side of this spit a large breakwater of sunken barges filled with rock has been constructed. The area inside of this breakwater is rapidly being filled in from the material washed out of the trap rock which is disposed of in this area.

Near Topographic Signal HER the old railroad dock has fallen in decay or been burned. The piling are now awash at High Water and the old bent rails have fallen in the ruins, at the end of these ruins there are several sunken barges and some of these are filled with earth, forming a small island on which there are several small bushes growing. The New York Water Supply aqueduct passes under the Hudson River near Topographic Signal WASH.

DANGERS

DISCOVERED:

No new dangers were discovered. The dock mentioned above is a menace to small boat navigation. Near Topographic Signal MILE there is another old dock fallen in ruins which will soon be a menace to small boat navigation unless it is removed. Just north of Triangulation Station CONSTITUTION ISLAND there is a large rock which is bare at extreme Low Water and covered with from 2 to 3 feet of water at High Water which is a dangerous menace to navigation. It is shown on the chart and is well marked with a buoy. A sextant fix was taken while standing on this rock and recorded in the record volume of Sheet No. 1. Numerous lines of hand lead soundings were run over this area at High Water on this sheet.

STATISTICS:

Statute miles of sounding lines	49.0
Number of soundings	1617
Number of positions	468

GENERAL:

Soundings were taken along the edges of all docks. On the smooth sheet inserts are made showing sketches of the docks with the soundings taken from the docks, plotted in their relative positions.

Attached to and forming a part of this sheet are List of Signals, Tidal Data sheet and Statistics Sheet.

Respectfully submitted;

Jack C. Sammons
 Jack C. Sammons
 Hyd. & Geod. Engr.

Approved and forwarded;

C. A. Egner
 C. A. Egner, Chief of Party

HYDROGRAPHIC STATISTICS, SHEET NO. 2, HUDSON RIVER

DATE 1933	Day	Vol.	Boat	Miles of Snd'gs.	No. of Snd'gs.	No. of Positions
Aug. 25	a	1	M/L	19.0	398	165
Aug. 28	b	1	M/L	13.0	584	138
Aug. 29	c	1	M/L	8.0	275	73
Aug. 29	c	2	M/L	2.0	87	21
Aug. 30	d	2	M/L	7.0	273	71
Totals				49.0	1617	468

Motor Vessel NATOMA

List of signals on Hydrographic Sheet No. 2 (Field) Hudson River, N.Y. 1933.

 Located by triangulation:

WARNERS ISLAND (WAR)	JACK	CASTLE
EX	STONY POINT 2 (STONY)	POLYPUS 2
ZIP	FRY	STONE
CONSTITUTION ISLAND (CON)	WEB	CORNWALL LANDING
CHAN	NECK	ANGIE
NECOR	TELEPHONE (TEL)	VENTILATOR
COLD	BREAKNECK POINT 2 (BREAK)	
PALOPEL LIGHT (LIT)	HUBBARD 2 (HUB)	

LOCATED BY TOPOGRAPHY:

BOY	PAL	CUD	SUN	CLOS	MILL
BULL	LIN	SHE	BUM	ZOO	SHELL
SAL	ROCK	BOUL	CUP	JOE	AMEY
SIT	OX	BAY	SHAK	MAR	CLIF
HI	SHORT	GIRL	RAP	PIT	SEA
DOG	WHIT	LOW	IRON	GAB	BLACK
TAT	IKE	ZOO	POST	CON	NAM
RE	EV	FIT	WAT	TUL	EAT
ANCHOR	WASH	CIT	COAL	PRO	GREEN
SUB	MAX	CO	RIP	TOM	
ADD	DOT	THE	LA	PAL	
SIN	CRAP	COVE	MO	SPEED	
PO	ATE	FUN	FILL	ROCK	
HAM	HER	IN	CANOE	GIV	
NO	EAT	RUST	ZA	POLE	
			BALL	NEL	
			CHAN	GAT	
			BOX	SEC	

SECTION OF FIELD RECORDS
Review of Hydrographic Surveys Nos. 5307 & 5308.
Con Hook to Cornwall on the Hudson, Hudson River, New York.
Surveyed in 1932.
Instructions dated July 22, 1930 (Matoma).

Chief of Party - C. A. Egner.
Surveyed by - C. R. Bush & J. C. Sammons (H. 5307); J.C.S. (H. 5308).
Protracted by F. A. Nielson.
Soundings plotted by - C. A. Egner.
Verified and inked by - A. F. Johnson.

1. Records.

The records for these surveys are in conformity with the provisions of the Hydrographic Manual with the following exceptions:

- a. The deep water area on H. 5307 is almost completely lacking in bottom characteristics. Of the two sounding volumes for this sheet the first volume and a half contains no more than a half dozen notations as to character of bottom.
- b. Tide reducers were extended to the nearest foot for depths under 10 fathoms instead of the nearest half foot as called for in paragraph 134 of the Manual. These have been changed by the division of tides at the instance of the Section of Field Records and the soundings corrected accordingly.
- c. Date of establishment of triangulation stations were omitted from the smooth sheet (see paragraph 23 of Hydrographic Manual).

In connection with the sounding records for these sheets it is noted that in a number of cases the notation "Rock" or "Rocks" was entered when the surrounding depth of water indicated that "rky" was probably more correct. It is wondered whether the use of the term "rock" in these cases was merely a loose use of the correct term, or whether the leadman actually felt an isolated rock.

2. Instruction for the Project.

The work on these sheets was done as a continuation of the work outlined in the instructions issued in 1930. The plan of the survey and extent of development of the area conform in general to the instructions for the project except as follows:

- a. No cross lines were run on either of the sheets. The instructions call for quarter mile cross lines over areas where channel lines are run.
- b. The channel lines on H. 5308 are spaced 100 meters apart instead of 50 meters. It should be noted that in a corresponding area the 1857 survey (H. 631) shows approximately one third more soundings than the present survey.
- c. The shoal area to the northwestward of Constitution Id. and the channel in Laundry Cove are insufficiently developed. These will be considered more fully under additional work.

3. Depth Curves.

The usual depth curves can generally be completely drawn except in the area to the northwestward of Constitution Id. and in some stretches along the shore where the slope is very steep. There are also certain portions of the flatter areas where the low water curve cannot be delineated.

4. Junctions with Surveys.

A good junction exists between these two surveys H. 5307 and H. 5308. The junction between H. 5307 and H. 5286 on the south is also satisfactory. No surveys have as yet been received for work to the northward of H. 5308.

5. Field Drafting.

The usual amount of field plotting was accomplished and was generally satisfactory. However, it was observed that whenever soundings were taken at irregular intervals they were almost without exception plotted uniformly. The plotter also omitted all bottom characteristics from this sheet.

On sheet H. 5307, the prick points marking the boats positions were larger than necessary.

6. Comparison with old surveys.

a. The Survey of 1857 (H. 630, 631, 632). This survey is in many respects in greater detail than the present survey. However, no close comparison was regarded as necessary because of the date of the survey and the fact that practically all lines were run across the river. In areas of strong currents, as this area is known to have, depths obtained on such lines have been proven to be subject to a varying degree of error. (Hydrographic Manual pg. 132). With the exception of the shoal to the northwestward of Constitution Island, on which additional work is being requested, no critical depths are involved. Some deeper and some shallower depths may exist on the old survey, but because of their uncertain accuracy they will not be carried forward to the new survey.

b. The Survey of 1905 (H. 2742). This survey is on a scale of 1-10,000 and is a very sparse development of the area. A general comparison of the two surveys shows good agreement. The only critical area on this survey is the shoal to the northwestward of Constitution Id. The 1905 survey shows a 16½ foot sounding about 100 meters south of the rock awash that falls close to an undeveloped 27 foot indication on the present survey. This 16 has been transferred to the new survey in blue and should be retained on the charts pending additional work in this area. Near the western shore between latitude 41°24'30" and 41°25' there are several soundings on the 1905 survey that are ^{considerably deeper than the present survey. The soundings are} on a line running across the river and may have been affected by adverse currents. They have not been transferred to the new survey.

c. Chart 282 (edition of 1931). The charted 63 foot sounding about 250 meters west of Constitution Id. in lat. 41°24'.3 long. 73°57'.8 originates with the survey of 1857 (H. 631 pos. 57g). Such depth was not found on the present survey nor on the 1905 survey, but it is not conclusive that it does

not exist. The surrounding depths of 87 to 96 feet on the 1857 survey are in close agreement with the depths on the new survey. The 63 is believed to be an erroneous sounding and will not be carried forward to the new survey. It will be examined when additional work is done in the vicinity.

7. Additional Work.

The following additional work is recommended to satisfactorily complete the survey of this area:

a. A detailed development of the area surrounding the shoal to the north-westward of Constitution Id. (H. 5308) to permit the definite drawing of all curves to and including the 30 foot curve. The 16 foot sounding and vicinity mentioned in paragraph 6, b of this review should be examined for possible shoaler water.

b. A closer development of the channel in Foundry Cove particularly at the entrance to enable the definite drawing of the 6, 12 and 18 foot curves. This channel is not an Engineer's project.

c. An examination of the charted 63 foot sounding from the 1857 survey as mentioned in paragraph 6, c of this review.

d. Additional lines in the blank area to the north of Little Stony Point.

e. If a navigable entrance exists to the head of Foundry Cove then lines should be run inside the Cove to determine the depth of water.

Information is desirable as to the source of the value of the seconds in meters for triangulation station Blockhouse, the reference station given on H. 5307. There is a discrepancy between the sheet, the field computations and the old adjusted values as follows:

<u>Sheet</u>	<u>Field Computations</u> (1932)	<u>Old Value</u>
lat. 41°22' - 1828.2	41°22' - 1823.9	41°22' - 1827.3
long. 73°57' - 574.6	73°57' - 576.8	73°57' - 574.8

Note: The value on the sheet of the seconds in meters agrees with the 1933 field computations locating Blockhouse from the north. These computations were not in the office at the time this review was written. The field computation listed above, is the 1932 An locating the point from the South A.L.S.

8. Note to Compiler.

The present surveys with the indicated additions from the old surveys contain all the information necessary for charting this area without any further reference to the old sheets. It should be considered the basic survey of the area and should supersede all previous surveys within its limits.

The large scale sketches of the various docks on the sheets are not drawn to scale. The soundings shown along these docks are in their approximately correct position being plotted in the positions as indicated on the sketches in the sounding records. No measured distances were given.

9. Reviewed by - A. L. Shalowitz, Nov. 1933.

Examined and approved:

Chief, Field Records Section. *oversey* Chief, Charts Division.

Chief, Field Work Section. *See signatures attached to 5307* Chief, Division of H. & T.

Addenda to Review H. 5307 and 5308 - 2.

The additional lines run outside the breakwater will assist in a better definition of the depth curves.

Paragraph 7. e

The work intended under this paragraph in the head of Foundry Cove was contingent upon a navigable entrance existing under the railroad bridge. Since the latter does not exist (see paragraph 3 of the Descriptive Report on Additional Work), the need for the work was removed.

The additional examinations made in 1933 are plotted in black on the sheet, but the position numbers and day letters have been indicated in red.

Reviewed by - A. L. Shalowitz, Jan. 1934.

Examined and approved:

L. O. Colbert,
Chief, Section of Field Records.

See signatures attached to copy with DR 5307
Chief, Division of Charts.

Chief, Section of Field Work.

Chief, Division of H. & T.

Addenda to Review H. 5307 and 5308.

The additional work accomplished on this sheet covers investigations called for in paragraphs 7, a, b, c, d and e of the original review. They will be considered in the indicated order.

Paragraph 7, a

The additional lines run in the area surrounding the shoal to the northwestward of Constitution I. has been productive in reducing the 29 foot indication on the original work to 16 feet. However, since the 16 was a regular sounding on line and not the result of a development there is still uncertainty as to the least depth existing here. The 16 foot sounding from the 1905 survey (H. 2742) shown in blue on the present survey has not been verified by the additional work. The soundings obtained on the line that runs across this 16 are not close enough to it to be considered a disapproval. In view of the 27 foot indication found close by in the original work on this sheet, the 16 is being carried forward to the new survey.

In addition to reducing the depths on the shoal indications, the additional work has also made material changes in the depth curves.

Paragraph 7, b

The additional work called for under this paragraph seems to have been misinterpreted by the field party. By "a closer development of the channel in Foundry Cove particularly at the entrance" was meant the channel as it left the deep water of the river to the railroad bridge and not the channel under the railroad bridge and into the head of the cove as the field party seemed to think. The latter item was covered by paragraph 7, c of the review in case "a navigable entrance exists" under the bridge.

The original work as submitted failed to show the controlling depth across the bar at the entrance and also the few soundings in the channel made the drawing of the depth curves uncertain. The additional lines materially change the delineation of the curves and blocks the entrance to the channel with a 5 foot depth.

Paragraph 7, c

The additional examination in the vicinity of the charted 63 foot sounding in lat. 41°24'.3 long. 73°57'.8 (authority H. 631) together with the fact that it was not found on the 1905 survey (H. 2742) is sufficient to establish its non-existence. It should therefore be omitted from future editions of the chart.

Paragraph 7, d

The additional lines intended under this paragraph was inside the breakwater, but since the field party states that this is being "rapidly filled in with dirt", there is no longer any need for additional work.

L.C.C.

Division of Hydrography and Topography:

October 5, 1933

✓ Division of Charts:

Tide Reducers are approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 5308

Locality Constitution Island to Cornwall on the Hudson, Hudson River, N.Y.

Chief of Party: C. A. Egner in 1933

Plane of reference is Hudson River datum (mean low water during lowest
1.2 ft. on tide staff at Cold Springs river stages) reading
6.4 ft. below B. M. 4

Height of mean high water above plane of reference is 2.9 feet.

Condition of records satisfactory except as noted below:

➔ Location of tide station not indicated on hydrographic sheet.

H. Hammer
Chief, Division of Tides and Currents

Add'l WORK

5308

5308

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton, Director

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

DEC 19 1933

State: NEW YORK

Acc. No. _____

DESCRIPTIVE REPORT

~~Hydrographic~~ } Sheet No. 2 5308

LOCALITY

Hudson River.

Additional work west of Constitution I.

1933

CHIEF OF PARTY

C. A. Egner.

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.

Field No. 2

REGISTER NO. 5308 (ADDITIONAL-WORK)

State New York

General locality Hudson River.

Locality Additional work west of Constitution Island.

Scale 1:5,000 Date of survey Nov. 10. 1923

Vessel M.V. Natoma.

Chief of Party C.A. Egner.

Surveyed by J.C. Sammons.

Protracted by _____

Soundings penciled by _____

Soundings in ~~fathoms~~ feet

Plane of reference Hudson River Datum.

Subdivision of wire dragged areas by _____

Inked by _____

Verified by _____

Instructions dated Additional work done in accordance with Paragraph #7 of review of H 5307 and H 5308.

Remarks: _____

REG. NO. 5308
(ADDITIONAL-WORK)

REPORT ON ADDITIONAL FIELD
WORK DONE ON
HYDROGRAPHIC SHEET NO. 5308.
(FIELD NO. 2, 1933)

REPORT ON ADDITIONAL FIELD

WORK DONE ON

HYDROGRAPHIC SHEET NO. 5308

(FIELD NO. 2, 1933)

The additional work done on this sheet is in accordance with Paragraph #7 of the review of hydrographic sheets #5307 and #5308.

Item (a) of Paragraph #7 of the above mentioned review calls for a detail development of the area surrounding the shoal to the northwestward of Constitution Id. This area comes at the junction of hydrographic sheets #5307 and #5308, and fixes on the rock bare at L.W. are recorded in sounding volumes for sheet #5307. On the day that this additional work was done in this area, there was a strong northerly wind blowing and a considerable chop and sea. Because of this fact, no additional lines were run over the extreme shoal part. A 16-foot spot was located to the south of the rock bare at L.W. and slightly west of the 16-foot sounding transferred to the boat sheet from the 1905 survey of this area. The bottom in this area is very uneven, and it is difficult to determine the exact location of the depth curves.

Item (b) of Paragraph #7 of the review calls for a close development of the channel into Foundry Cove. This channel has a controlling depth of 4 feet at the railroad bridge. The bridge across the channel is a fixed structure and has an overhead clearance of from 1 to 3 feet depending on the tide. It has no commercial value as it can be used only by boats having a draft of less than 4 feet and less than 2 feet of overhead clearance. The launch could not be taken to the east side of the railroad.

Item (c) of the review calls for an examination to be made for the charted 63-foot sounding taken from the survey of 1857. An examination of this area was made by the ship, taking soundings with a hand lead. No indication of a sounding this shallow could be found and it appears very likely that the old survey was in error. It is recommended that the sounding be removed from the chart.

Item (d) calls for additional work in the blank area to the north of Little Stony Point. It is not definitely known what is wanted here. The area within the breakwater is rapidly being filled in with dirt washed out of trap rock. It is very difficult to get fixes within this area as the breakwater can not be seen over. Several additional lines were run past outside of this breakwater. There are still numerous barges tied up alongside the dock which interferes with running systematic sounding lines in this area, but soundings were taken from the edges of the barges to supplement the sounding lines.

Item (e) of the review calls for additional sounding lines inside of Foundry Cove provided there is a navigable entrance. As the entrance to this cove is blocked off by the fixed bridge mentioned above, this work was not executed.

The value of the seconds in meters for Δ Blockhouse (which is the reference station for sheet #5307) was obtained from a recomputation of this station made this season. The third order triangulation executed this season to the north of Δ Blockhouse were computed from a break-down line from the second order triangulation near Newburgh. As there is a slight discrepancy between the scheme brought down from the north and the scheme brought up to Δ Blockhouse from the south, the position of this station was recomputed for the scheme brought down from the north so that all stations on this sheet would be on the same datum.

The instructions for the above mentioned additional work were received just as this party was closing the season's work and preparing to leave for the southern working grounds. All tide gages had been removed, but the tide staff at Cold Springs was still in place. This staff was read at odd intervals of time and it was thought that this, together with the predicted tides, would be sufficient for reducing the soundings. Unfortunately, on the day that this work was done there was a strong northerly breeze blowing and the predicted tides were considerably affected by it. It is noted that the soundings taken this day do not agree closely with those already shown on the boat sheet, but the soundings on the boat sheet were reduced from predicted tides, and it is hoped that this day's work will agree more closely with the soundings on the smooth sheet, which were reduced from the correct tide.

The readings of the tide staff at Cold Springs are recorded in the front of the sounding volume for this work. The staff is in the same position as it was when the tide gage

was dismantled, and no levels were run to it at this time.

Respectfully submitted,

JACK C. SAMMONS
Jack C. Sammons, *by J.C.S.*
H. & G. E.,
U.S.C. & G. Survey.

Approved and forwarded:

C. A. Eger
C. A. Eger,
Chief of Party.

Jan., 1934

The additional work surveyed in Nov. 1933 was plotted on the original sheet (H-5308) with red position numbers and day letters by "A.L. Williams" and subsequently verified and inked by "Harold W. Murray."

APPLIED TO ALUMINUM-MOUNTED DRAWING OF THE
RECONSTRUCTION OF CHART NO. 282

J. M. Albert

Dec. 1934