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Form 504 Ed. June, 1923	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
R. S. Patterson, Director	
U. S. COAST & GEODETIC SURVEY LIBRARY AND ARCHIVES	
SEP 29 1931	
State: New Jersey - New York	
Acc. No.	
DESCRIPTIVE REPORT	
Photo- Hydrographic	Topographic Sheet No. 4588
LOCALITY	
Hudson River	
Forest View, N. J., to Piermont	
Pier, N. Y.	
1931	
CHIEF OF PARTY	
O. S. Reading	

Supplemental work applied to Chest Correction 748 HEM. 11/1/89

DESCRIPTIVE REPORT TO ACCOMPANY AIR
PHOTO-TOPOGRAPHIC SHEET No. 4588
FOREST VIEW, N. J., to PIERMONT PIER, N. Y.

This is a compilation of two overlapping strips of single lens photographs Nos. 291-321, 322-334, 183-189, 220-222 and 350-351; direction of flight to the northward, taken with a Hegershoff 5 x 7 camera by the Aerotopographic Corporation of America. Photographs 291-321 were taken at 11:15 A.M. September 4, 1930; 322-334 at 11:20 A.M. September 4, 1930; 183-189 at 12:00 M. September 28, 1930; 220-222 at 12:30 P.M. September 28, 1930; 350-351 at 11:30 A.M. September 4, 1930. Low water in the Hudson River on September 4, 1930, occurred at 1:33 P.M. at Tarrytown, N. Y.

LIMITS OF SHEET

This sheet includes the area from the west bank of the Hudson River to about one mile inland and from Forest View, N. J., to Piermont Pier, N. Y.

CONTROL

This sheet was controlled by several triangulation and topographic stations and the shoreline of T-4559. Several topographic stations were found to be in error. The shoreline of the photographs failed to check T-4559 in some places, and where the photographs were sufficiently controlled, the shoreline was made to comply with them.

COMPILATION

A 1:5,000 projection was made on the celluloid sheet and all control stations plotted. The shoreline of T-4559 was traced in black ink.

The single lens negatives of this area were of an approximate scale of 1:10,000. The photographs from these negatives were enlarged to a scale of 1:5,000. Due to the fact that the sheet included part of the Palisades (being about 400 feet high), the photographs covering the shoreline -- the shore strip -- were not to a 1:5,000 scale throughout. In making the radial plot it was found that not a great deal of weight could be given to the topographic stations. Consequently, the plot was made by holding to the triangulation and the azimuth of the shoreline. A plot was made that tied in very well with the adjoining aerial sheet No. 4587. With the exception of a few photographs of the inshore strip, the overlap was very good. Tilt in one or two places caused difficulty.

The shoreline of the marsh is not the high water line. In the report of T-4559 is the following statement: "Where the marsh formed the west shore its outer edge was located and no attempt was made to

locate the high water line on the marsh." The topographic sheet also shows a fine line at the back edge of the marsh. These same two lines are shown on the aerial sheet, neither being the high water line. The outer line marks the definite edge of the marsh and the inner line the edge of the fast land. This line -- as a line -- does not extend the full length of the marsh as a road and two creeks mark the boundary in places.

The pile shown just south of Socony Pier was taken from T-4559. There is no evidence of this pile in the photographs, but since the photographs were taken at the time this survey was made, the pile is evidently there.

The sunken rocks and rocks awash shown along the shoreline were also taken from T-4559.

At the end of Piermont Pier an object was picked up in the stereoscope that was plotted as the lighted beacon at the end of this pier. This location agreed with T-4560.

CHANGES

Beginning at the southern end of the sheet and running northward, practically no change was noted in the shoreline until reaching signal PAT ($40^{\circ}50'30''$). At this point the shoreline was shifted north about five meters. At signal MY ($40^{\circ}59'30''\frac{1}{4}$) the shoreline agreed again. This shift slightly opened the bight just south of PAT and shifted the spits containing rocks (between PAT and MY) slightly north. Around signal AL ($41^{\circ}00'30''$) a southern shift was necessary, closing the bight here slightly and pulling the spits (around signal CAN) southward. The shifting continued along the shore and at signal NOR ($41^{\circ}00'30''\frac{1}{2}$) the pier was pulled about seven meters south. The beginning of the marsh (between this point and Socony Pier) was thrown a few meters inshore. Referring to H-5045 it was seen that one position plotted on this marsh, showing $1\frac{1}{2}$ feet of water. With the corrected marsh line, this position falls about the same distance away as the others. This seems to verify the inshore shifting. Pier Socony was moved some two meters southward. The marsh shoreline in general agreed for the remainder of the sheet, but there were numerous bights, etc., that the plane table party could not have been expected to have gotten.

The New York-New Jersey state line was located on the sheet from an inshore photograph, the center of which was on the cleared line marking the boundary. The azimuth of this line does not agree with that of T-4559 but it does check that of the old topographic sheet T-800. Triangulation station LINE is some twenty-five meters from the shore and marks this boundary line. The Palisades rise some four hundred feet here and only about one hundred meters from the shore. Since there is no statement as to the establishment of this line in the descriptive report of T-4559 it is believed that great care was not used in its location, especially since it has no great importance on charts. No geodetic azimuth of the line or other triangulation stations on the line were found in the archives. The azimuth of the line as shown therefore depends only on the radial plot of the photographs.

Six topographic stations were moved -- NOR, END, HOU, DOC, OIL and PIL, four of these to such an extent that the hydrography was influenced. A check was not had on all the stations due to the inability of identifying them in the photographs. With some it was impossible to identify them on enough photographs to warrant a change. The four that influenced the hydrography were NOR, END, HOU and DOC. A thorough study of this sheet (H-5045) was made by the reviewer (see descriptive report). It was found that in T-4559 there was about a ten meter shrinkage per mile of latitude over the average shrinkage as found in the other sheets made at the same time along the Hudson River, and that in longitude the shrinkage was about five meters more than the average. This great and unequal distortion might be the reason for the disagreement of these topographic stations.

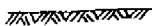
LANDMARKS FOR CHARTS

A list of prominent objects for charts was furnished by the Ship NATOMA from a field inspection. These objects are marked on a set of 1:10,000 prints which should be consulted by the cartographer.

NAMES

The names appearing on this sheet were taken from chart No. 281, the Rand McNally road map, T-4559, and the Sanborn map of Piermont, N. Y., and A.A.A. road map.

SYMBOLS

The standard topographic symbols were used throughout this sheet except crest of Palisades, definite  ; crest of Palisades, indefinite - - - - -.

REMARKS

Quite a bit of difficulty was experienced in making the radial plot of this sheet. The fact that there were two different elevations (the shore and the top of the Palisades) had much to do with it; also some of the photographs contained marked tilt. One cause of the difficulty was the location of the control points. Apparently, the importance of great care in spotting the control stations in the photographs was not known to the field party. Triangulation station CORNER was located wrong on two of the three photographs of the shore strip on which it appeared. This station is a flag pole on the corner of a building. The wrong building was taken in these two cases. Topographic station DOC was wrong on all photographs. This station is the northeast corner of a wooden frame on the dock just south of Piermont Pier. In all photographs it was located on the southeast corner. The difference was some four or five meters, which is quite noticeable on a 1:5,000 scale. No attempt was made to locate triangulation station YORK, a very important station in the plot. On one photograph, a

circle was drawn around its approximate location. The location of triangulation station LINE varied some two or three meters. Several of the other topographic stations varied a greater or smaller distance. Some of the stations were not located at all and others were spotted on only a few photographs. Accurate locating of these control stations is of vital importance in preparing an aerial topographic sheet and more care by the field inspection party should be exercised in the future.

Respectfully submitted,

Frank G. Erskine

Frank G. Erskine
Jr. Cartographic Engineer.

August 18, 1931.

*Approved & forwarded
O. Reading*

APPROVED

K.T. Adams
FIELD RECORDS (C)

J.S. Borden
Chief, Section Field Work

L.O. Zolbert
Chief, Division of Charts

G. Thode
Chief, Div. of Hyd'y and Ton'y

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Washington, D. C.

August 19 _____, 1931

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and ~~should be charted.~~ *are recommended for charting on the proposed*

1:10,000 anchorage chart

~~G. S. Reading~~

Chief of Party.

DESCRIPTION	POSITION					METHOD OF DETERMINATION	CHARTS AFFECTED
	LATITUDE		LONGITUDE		Photo Station Number		
	° ' "	D. M. METERS	° ' "	D. P. METERS			
X White house	41-00.6		73-54.2		14-305	Photo	281 10,000 Anchorage charts 748
X Brown stucco house	41-00.7		73-54.2		14-305	"	281 " 748
OK 5 white cylinders Δ Sil	41-01-57.190	1764.1 (87.0)	73-54-47.394	1107.4 (294.5)	14-317	Tri.	281 " 748
OK Observation post Top of Palisades	40-59.4		73-54.4		15-182	Photo	281 " 748
X House, many chimneys	41-00.5		73-54.2		14-325	"	281 " 748
X White house, gable shows to river	41-00.5		73-54.4		14-325	"	281 " 748
OK Twin stacks, Std. Oil Farm \odot Oil*	41-01-00	92 (833)	73-54-00	491 (210)	14-327	"	281 " 748
OK Steeple, 1st Reformed Church, Piermont, N. Y.	41-02.2		73-55.0		14-332	"	281 " 748
OK Large paper mill with 7 stacks, Piermont, N.Y.	41-02.5		73-54.9		14-332	"	281 " 748
OK \odot Black House?	41-01-00	110 (815)	73-53-30	402 (299)	14-307	Topo.	281 " 748
X \odot Hou* House	41-01-00	216 (709)	73-54-00	269 (432)	14-307	Photo	281 " 748
OK \odot Doc* Shed or House	41-02-00	178 (747)	73-53-30	541 (160)	14-316	"	281 " 748
X \odot Crap Small shed	41-02-30	105 (820)	73-53-30	648 (53)	14-319	Topo	281 " 748

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstuffs and like objects are not sufficiently permanent to chart. * Location changed by photographs.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4588

AERO -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.

REGISTER NO. 4588

State New Jersey - New York

General locality Hudson River

Locality Forest View, N. J., to Piermont Pier, N. Y.

Scale 1:5000 Date of survey Photos taken Sept. ~~xxx~~ 4 and 28, 1930.

Vessel Aerotopographic Corporation of America's aeroplane

Chief of Party O. S. Reading

Surveyed by F. G. Erskine

Inked by F. G. E.

Heights in feet above to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated, 19....

Remarks: Compilation of single lens air photographs Nos.

291-334, 350-351, 183-189, 220-222 and printed by photolitho-
graphic process in the Printing^{PFO} Section.

REPORT FOR SUPPLEMENTAL T-4588

Corrections in red were plotted from single lens Air photographs without the aid of field inspection as no field inspection is contemplated at this time.

Photographs

Single lens 7 x 9, Scale 1:10,000.

Negatives are on file in this office, the photographs were taken February, 1939, by the Photographic Unit of the Naval Air Station, Washington, D. C.

Plot

The details in red were plotted by C. R. Wittman, in March, 1939, and reported to the Nautical Chart Section for the correction of Chart 748.

Details in blue were plotted by L. C. Lande in April, 1939, and were not reported to Standards until June 3, 1939.

No radial plot was made on this sheet. All details were transferred from the single lens contact prints in the projector.

Remarks

T-4588 is not covered by the hydrography recently completed in this vicinity.

B. G. Jones
June