

5459

From Survey of 1935

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

DESCRIPTIVE REPORT

Topographic

~~Hydrographic~~

Sheet No. *215459*

State *New York*

LOCALITY

East River

~~Brooklyn~~

~~Green Point and Vicinity~~

Newton Creek to

Wallabout Bay

1935

CHIEF OF PARTY

J. C. Partington

U. S. GOVERNMENT PRINTING OFFICE

5459

Applied to Chart 745 - Aug 30, 1937 Lm. 3
Applied to Chart 369 - April 14, 1939 Lm. 3

1.
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. 91 **T5459**

REGISTER NO. T-5459

State.....New York.....
General locality.....New York City.....*Brooklyn East River*
Locality.....*Green Point and vicinity*.....*Newton Cr.*
.....*Newtown Creek to Wallabout Bay*.....*Brooklyn Wallabout Bay*
* Scale ~~1:5,000~~ ~~1:2,000~~ photographs Mar. 26 & 27, 1935
Date of survey....., 19.....
Vessel.....Photo Compilation Party # 25.....
Chief of party.....J.C. Partington.....
Surveyed by.....See STATISTICS SHEET, page 2 of this report.....
Inked by.....See STATISTICS SHEET, page 2 of this report.....
Heights in feet above.....to ground to tops of trees
Contour, Approximate contour, Form line interval.....feet
Instructions dated.....March 14....., 1934
Remarks:.....

* Blue print on scale 1:5076

369-4

2.
STATISTICS
on

AIR PHOTO COMPILATION, FIELD NO. 91; REGISTER NO. T-5459

PHOTOGRAPH NUMBERS	DATE	TIME	TIDE	
			High Time	Low Time
472-475 (876 B-8)	Mar. 26, 1935	11:00 AM	12:28 AM	6:56 AM
			12:51 PM	6:28 PM
476-479 (876 A-8)	Mar. 26, 1935	11:05 AM	as above	
427-431 (876 B-8)	Mar. 27, 1935	11:20 AM	1:26 AM	8:19 AM
			1:53 PM	7:46 PM

	By	Date	
		From	To
SCALE FACTOR (0.985)	J.C.P.	7-17-36	7-18-36
PROJECTION	J.C.P.	7-20-36	
PROJECTION CHECKED	R.H. Young	7-21-36	
CONTROL PLOTTED	J.C.P.	7-21-36	
CONTROL CHECKED	R.H. Young	7-22-36	
SMOOTH RADIAL LINE PLOT	J.C.P.	7-23-36	7-30-36
RADIAL LINE PLOT CHECKED	J.C.P.	(on another projection)	
DETAIL INKED	J.C.P.	8-3-36	9-30-36
PRELIMINARY REVIEW OF SHEET	J.C.P.	10-19-36	10-23-36
AREA OF DETAIL INKED (Land area)	4.5	Square Statute Miles	
AREA OF DETAIL INKED (Shoals)	0.0	Square Statute Miles	

LENGTH OF SHORELINE (more than 200 m. from opposite shore) 8.25 Statute Mi.
 LENGTH OF SHORELINE (rivers & sloughs less than 200 m. wide) 1.75 Statute Mi.
 LENGTH OF ROADS, RAILROADS, STREETS, TRAILS 150 Statute Mi.

GENERAL LOCATION: ~~New York, East River~~ *Brooklyn East River*
 LOCATION: ~~Newton Creek to Wallabout Bay~~ *Green Point & vicinity*
 DATUM: North American 1927

STATION: Fulton (N.Y.) 1932
 Latitude 40° 42' 52.977" = 1634.1 m.
 Longitude 73 57 56.499 = 1326.2 m.

N.Y. State System of Plane Coord. (Adjusted computations)
 Long Island Zone: $x = 2,009,510.50$ ft.
 $y = 178,227.15$ ft.

COMPILER'S REPORT

for

AIR PHOTO TOPOGRAPHIC SHEET, FIELD NO. 91, REGISTER NO. T 5459

GENERAL INFORMATION

The Air-photo Field Inspection Report for Metropolitan New York, attached to the descriptive report of AIR PHOTO TOPOGRAPHIC SHEET, Field No. 90, Register No. T 5458, furnished the necessary information for the compilation of this sheet.

This sheet has been compiled from single lens photographs numbers 472 to 475 (876 B 8) taken at 11:00 A.M. March 26, 1935; photographs numbers 476 to 479 (876 A 8) taken at 11:05 A.M. to 11:12 A.M. March 26, 1935; these pictures were taken at approximately two hours before high water. Photographs numbers 427 to 431 (876 B 8) were also used in compiling the sheet. The 427 to 431 photographs were taken at 11:20 A.M. March 27, 1935 at approximately two and one half hours before high water.

The photographs were taken by the U.S. Army Air Corps at Mitchell Field, L.I., N.Y. with a special camera recently developed by the Fairchild Aerial Camera Corporation, 62-10 Woodside Ave., Woodside, New York City. Inasmuch as these photographs were among the first to be taken with this camera mechanical troubles were encountered which caused considerable difficulty at first. This probably accounts for the irregular time interval between exposures which in turn affects the amount of overlap. This also probably is the cause of excessive tilt on some pictures.

The camera is known as the "K-7C" by the Army and as the "K-7A" by the Fairchild Corporation. The Army plane was piloted by Lieut. Cullen at an altitude very close to 15,000 feet; the photographer was sergeant Cates. A 2 1/4 inch cone (focal length 2 1/4 ") was used with this camera, producing the original negatives on a scale of 1:7,500. Contact prints were furnished the field party for use in field inspection. The original negatives were used to enlarge a set of office prints to a 1:5,000 scale in the Washington Office. These 1:5,000 prints were furnished the field party and were used for compiling this sheet.

CONTROL(a) Sources

Control for the compilation of this sheet was obtained from the following sources:

1. Triangulation, 1932 by R.W. Woodworth (Adjusted)
2. Triangulation, 1903-08, Greater New York.
3. U.S. Engineers stations as described on form 524 submitted with this report.

(b) Errors

No error in any of the control established by the U.S. Coast and Geodetic Survey was discovered. There were a few small errors discovered in the locations of stations of the U.S. Engineers and these are listed in the following paragraph.

Note. The differences of 1.8 meters and 1.3 meters
~~on~~ measured on the opposite page are
within the probable error of the visual
plot. Examination of the photos shows
that these differences may be due to
small inaccuracies in the field inspection.

1399

(c) Discrepancies

The following U.S. Engineers stations were found to agree with the position as found by the radial plot within an amount of 1.0 meter or less. The positions of these stations were determined by the radial plot and then the geographic position of each computed by changing from rectangular coordinates to geographic coordinates. (See Special Publication No. 71).

Sugar (U.S.E.)

F.P. American Mfg. Co. (U.S.E.)

Navy Yard (U.S.E.)

F.P. East end of Williamsburg Bridge (U.S.E.)

Discrepancies in the positions of the following U.S. Engineers stations were noted by the radial line plot:

Power (U.S.E.) differs by 1.8 meters in Azimuth 330° (from North) from the radial plot position.

Cube (U.S.E.) differs by 1.3 meters in Azimuth 40° (from North) from the radial plot position.

Each of these stations were located by three "cuts" which gave a good intersection. The small circles shown on the celluloid sheet are the radial line plot positions. *See note on opposite page*

All of the U.S. Engineers stations which were recovered in the field by the inspection party are not shown on this sheet. An effort has been made to show the most permanently marked stations at intervals of about one-half mile along the waterfront.

COMPILATION(a) Method

The usual radial line plot was used in the compilation of this sheet.

Some of the photographs show an abnormal amount of tilt. This is particularly true of photos Nos. 472, 473, and 475. On each of these photos the radial lines were drawn from the isocenter and the radial points and control points were dropped down to ground level before the radial line was drawn.

South of the Williamsburg Bridge the radial plot was materially strengthened by use of photographs 427 - 431. It is believed that all radial points along the waterfront of the East River are located within 2.0 meters of their true position. The radial points along the eastern edge of the sheet may possibly be in error by as much as 5.0 meters due to the acute angle of intersection of radial lines.

The U.S. Engineers stations were used as supplementary control and their position accepted only after it was found that they agreed with the radial line plot.

(b) Adjustment of Plot.

Some difficulty was encountered in running the radial line plot due to the tilt in the majority of the photographs. For this reason the radial lines were drawn from the isocenter instead of the principal point of the pictures when tilt was evident. This procedure gave a much better radial line plot.

Except as stated above, no unusual adjustment of the plot was necessary.

On account of the photographs being somewhat smaller than a.

(b) Adjustment of Plot. (continued)

1:5,000 scale the projection was constructed using a scale factor of 0.985 so that the compilation is actually to a scale of 1:5,076.

(c) Interpretation

No attempt has been made to show street railway systems. Only railroad tracks and elevated tracks have been shown. No information on the railroad track layouts on this sheet were available and they have been detailed entirely from the photographs. It is quite possible that some of the tracks have been omitted particularly in the railroad yards and sidings.

The double full line is used to show first class roads and streets (curb to curb), and the double dashed line to show second class roads and sidewalks in park areas.

An attempt has been made to show all the buildings along the waterfront. Some of the more important buildings farther inland have also been shown. The stereoscope has been used freely in interpreting the shape of buildings. Numerous buildings in the Navy Yard have been shown. This has been supplemented by the use of a Map of the U.S. Navy Yard which accompanies this report. It is noted that on the Chart 745 edition of October 8, 1934 the majority of the buildings in the Navy Yard are shown. Most of these buildings have been removed from Chart 745 edition of January 23, 1935. It is not known whether the Navy Yard is considered a "military reservation", if such is the case the buildings should probably be removed from the compilation.

The usual graphic symbols were used and no difficulty was experienced in interpreting the photographic detail.

(d) Information from other Sources.

The Map of U.S. Navy Yard was used for interpretation of buildings in the Navy Yard area. This map is included with this report.

Some of the names were obtained from the Map of the City of New York, Board of Estimate and Apportionment.

All other information was taken from the photographs.

(e) Names.

A list of the geographic names shown on this sheet are given on Form M 234 included with this report.

The only discrepancies in names between chart 745 and the Map of the City of New York, Board of Estimate and Apportionment are:

Metropolitan Ave. is shown as N. 2nd St. on chart 745.

St. Edwards St. is shown as Canton St. on chart 745.

The names of some streets in Long Island City appear to have two names on the Board of Estimate and Apportionment Map.

BRIDGES.

The bridge data shown on the overlay sheet was taken from the

All clearances of bridges checked with 1935 U.S. Engineers Bridge List. These are in agreement with Coast Pilot. The Williamsburg bridge clearance was changed to 136 ft as given in Bridge List for Maximum Loads. ←

Bridges in Dutch Kills are not clear enough on photographs to warrant opening on compilation.

No information available concerning bridge over Mottabout Canal.

BRIDGES. (continued)

Coast Pilot, Atlantic Coast, Section B, 1933; and from the publication List of Bridges over the Navigable Waters of the United States, 1927.

The data pertaining to the Vernon Ave. Bridge has been compared in the two above publications and found to be in agreement.

The data pertaining to bridges over Dutch Kills has been taken from the publication, List of Bridges over the Navigable Waters of the United States.

The data pertaining to the Greenpoint Ave. Bridge has been taken from the Coast Pilot. This does not agree with the data given in the List of Bridges over the Navigable Water of the United States but it is probable that the latter publication is in error and that the present bridge is the one listed in the Coast Pilot.

The two publications mentioned above list the vertical clearance of the Williamsburg Bridge as 139 feet. This does not agree with the clearance given on chart 745 which gives the clearance as 132 feet.

No data is on hand in this party for verifying the above discrepancies.

JUNCTIONS.

The north end of this compilation joins the south end of compilation T-5458 and the junction is satisfactory.

The southwest corner of this compilation joins compilation T-5460 at meridian 73° 59' and the junction is satisfactory.

This compilation joins compilation T-5457 at the Williamsburg Bridge only and the junction is satisfactory. 4

LIST OF RECOVERABLE OBJECTS.

Five cards form 524 are included with this report which give the description and position of U.S. Engineers stations.

Other recoverable objects located by the radial line plot but for which no descriptions are given are as follows:

<u>Name</u>	<u>Latitude</u>	<u>Meters</u>	<u>Longitude</u>	<u>Meters</u>
N.W. Stack	40° 44'	1074.5	73° 57'	721.0
N.E. Stack	40 44	1063.5	73 57	673.5
S.E. Stack	40 44	1037.5	73 57	679.5
S.W. Stack	40 44	1050.0	73 57	727.5
Stack	40 44	39.0	73 57	934.0

LIST OF RECOVERABLE OBJECTS (continued)

<u>Name</u>	<u>Latitude</u>	<u>Meters</u>	<u>Longitude</u>	<u>Meters</u>
Dome	40° 43'	302.0	73° 57'	319.5
Spire	40 43	7.5	73 57	653.0
F.P. Brooklyn side of Williamsburg Bridge - (U.S.E.)	40 42	1406.0	73 58	271.0
Stack	40 42	752.0	73 58	238.5

Sealed by J.C. Partington
Checked by R.S. Poor

The five described U.S. Engineers stations and the nine recoverable objects listed above are shown on the sheet with a $2\frac{1}{2}$ mm circle.

There are two additional stacks shown by $2\frac{1}{2}$ mm circles in Latitude 40° 42.3' Longitude 73° 58.8'. These two stacks were located on the sheet by stepping off equal spaces between triangulation stations "Brooklyn Edison Co. East Stack" and "Brooklyn Edison Co. West Stack". These four stacks are shown on the chart 745 as landmarks.

COMPARISON WITH OTHER SURVEYS°.

No comparison between this sheet and other surveys has been made due to the fact that no other surveys of this area are on hand at this office.

COMPARISON WITH CHARTS.

Due to the fact that the charts of this area are on a 1: 10,000 scale and the compilation is on a 1: 5,000 scale (with 0.985 scale factor) no direct comparison between the two has been made.

However a visual comparison shows the following discrepancies between chart 745, edition of January 23, 1935 and this compilation:

The dock just north of Flushing St. Latitude 40° 44.5' Longitude 73° 57.7' shown on chart 745 has been removed. The bulkhead line in this vicinity has also been changed from that shown on the chart.

The dock shown on the chart as a dashed line between Eagle St. and Freeman St. Latitude 40° 44.1' Longitude 73° 57.8' has been removed or was not built at the time these photographs were taken.

The shoreline is believed to be correctly shown on this compilation and it is recommended that it be used in preference to that shown on the present charts.

LANDMARKS.

The landmarks in the area of this compilation which are shown on chart 745 are still in existence and should be charted.

The following landmarks are recommended for charting in addition to the ones shown on chart 745:

STACK, octagonal brick, 100 feet.
SPIRE, St. Vincent de Paul's church, 125 feet.
STACK, 250 feet

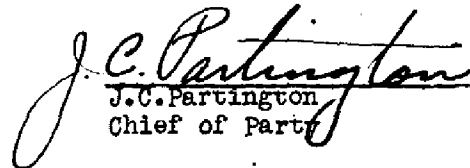
These landmarks are listed on form 567 included with this report.

RECOMMENDATIONS FOR FURTHER SURVEYS.

This sheet is believed to have a probable error of not greater than 2 meters in position of well defined detail of importance for charting in the vicinity of the East River, and not more than 5 meters for detail along the eastern border of the sheet. It is understood the width of railroads and similar detail may be slightly exaggerated in order to keep the detail clear when the sheet is reproduced.

No additional surveys are recommended.

Respectfully submitted,


J.C. Partington
Chief of Party

Remarks

Decisions

1		
2		
3		
4		
5	* Called "Whale Creek Canal"	
6	<i>Altho the district name does not appear on the City of N.Y. E & A map the name Greenpoint Ave does.</i>	<u>Green point</u>
7		
8		
9		
10		
11		
12		
13	Called "Wallabout Channel" in Coast Pilot. <i>(refers to next line)</i>	
14	Called "Wallabout Basin" on U.S. Navy Yard Map.	
15		
16	* Called "U.S. Navy Yard"	
17		
18	* Called "N. 2nd St." on chart	
19	* Called "Canton St" on chart	
20		
21		
22		
23		
24		
25		
26		
27		

GEOGRAPHIC NAMES

Survey No. T-5459

GEOGRAPHIC NAMES											
Survey No. T-5459											
Name on Survey	On Chart No. 745										
	A	B	C	D	E	F	G	H	K		
<u>Long Island City</u>	x ✓				x					1	
<u>Hunters Point</u>	x ✓		✓							2	
<u>Newtown Creek</u>	x ✓		✓		x					3	
<u>Dutch Kills</u>	x ✓			x	x					4	
<u>Whale Creek</u>	x ✓			x	*					5	
<u>Green Point (one word)</u>	x ✓		Green Point							6	
<u>Bushwick Inlet</u>	x ✓									7	
<u>East River</u>	x ✓		✓		x					8	
<u>McCarren Park</u>				x	x					9	
<u>Winthrop Park</u>					x					10	
<u>Williamsburg Bridge</u>	x ✓				x					11	
<u>Wallabout Bay</u>	x ✓		✓		x					12	
<u>Wallabout Canal</u>	x ✓				x					13	
<u>Wallabout Channel</u>					x					14	
<u>Navy Yard Basin</u>	x ✓				x					15	
<u>Navy Yard</u>	x ✓		✓		*					16	
<u>City Park</u>	x				x					17	
<u>Metropolitan Ave.</u>	*				x					18	
<u>Saint Edwards St.</u>	*				x					19	
										20	
										21	
										22	
Names underlined in red approved										23	
by K.T.A. on 11/19/36										24	
										25	
										26	
										27	

PLANE COORDINATES ON LAMBERT PROJECTION

State Long Island Station T. 5459 Fulton (N.Y.) 1932
 $\phi = 40^{\circ} 42' 52.977''$ $\lambda = 73^{\circ} 57' 56.499''$
 Tabular difference of R for $1''$ of $\phi = 101.20117$

R (for min. of ϕ)	24 289 681.34	y' (for min. of ϕ)	172,863.96
Cor. for sec. of ϕ	- 5 361.33	Cor. for sec. of ϕ	+ 5,361.33
R	24 284 320.01	y'	178,225.29
		$y'' (= 2R \sin^2 \frac{\phi}{2})$	+ 1.86
θ (for min. of λ)	01 57.73478	y	178,227.15
Cor. for sec. of λ	- 36.95498		
θ	01 20.77980	$\frac{\theta}{2}$	0 10.38990
θ''	For machine computation 80.77980		For machine computation
		$\log \theta''$	1.90730277
$\log \theta''$	1.90730277	$\text{colog } 2$	9.69897000
S for θ	4.68557486	S for $\frac{\theta}{2}$	4.68557486
$\log \sin \theta$	$\sin \theta$	$\log \sin \frac{\theta}{2}$	$\sin \frac{\theta}{2}$ 6.29184763
$\log R$	7.38532594		$R \sin \frac{\theta}{2}$
$\log x'$	3.97820357	$\log \sin^2 \frac{\theta}{2}$	$R \sin^2 \frac{\theta}{2}$ 2.58369532
x'	$R \sin \theta$ + 9 510.50	$\log R$	$2 R \sin^2 \frac{\theta}{2}$ 7.38532594
	2,000,000.00	$\log 2$	0.30103000
x	2 009 510.50	$\log y''$	0.27005126
			1.862

$$x = 2,000,000.00 + R \sin \theta.$$

$$y = y' + 2R \sin^2 \frac{\theta}{2}.$$

y' = the value of y on the central meridian for the latitude of the station.

S = log of ratio for reducing arc expressed in seconds to sine.

(See log tables.)

R , y' , and θ are given in special tables.

Plane coordinates on Lambert projection

State Long Island Station Fulton (N.Y.)

$\phi = 40^{\circ} 42' 52.977''$ $\lambda = 73^{\circ} 57' 56.499''$

Tabular difference of R for $1''$ of $\phi = 101.20117$

R (for min. of ϕ)		24,289,681.34	y' (for min. of ϕ)		172,863.96
Cor. for sec. of ϕ		- 5361.33	Cor. for sec. of ϕ		+ 5361.33
R		24,284,320.01	y'		178,225.29
			y'' (= $2R \sin^2 \frac{\theta}{2}$)		+ 1.86
θ (for min. of λ)		+ $0^{\circ} 01' 57.73478''$	y		178,227.15 ✓
Cor. for sec. of λ		- 36.95498			
θ		+ 1 20.77980	$\frac{\theta}{2}$		40.38
θ''	For machine computation	"		For machine computation	
			log θ''		1.90730277
log θ''		1.90730277	colog 2		9.69897000
S for θ		4.68557486	S for $\frac{\theta}{2}$		4.68557486
log sin θ	sin θ		log sin $\frac{\theta}{2}$	sin $\frac{\theta}{2}$	6.29184763
log R		7.38532594		R sin $\frac{\theta}{2}$	
log x'		3.97820357	log sin ² $\frac{\theta}{2}$	R sin ² $\frac{\theta}{2}$	2.58369526
x'	R sin θ	+ 9510.50	log R		7.38532594
		2,000,000.00	log 2		0.30103000
x		2,009,510.50	log y''		0.27005120

$$x = 2,000,000.00 + R \sin \theta$$

$$y = y' + 2R \sin^2 \frac{\theta}{2}$$

y' = the value of y on the central meridian for the latitude of the station

S = log of ratio for reducing arc expressed in seconds to sine

(see log tables)

R, y', and θ are given in special tables

GEODETIC POSITIONS FROM LAMBERT COORDINATES

STATE Long Island Grid

STATION _____

x	<u>2,018,000.00</u>	$R_0 + A$	<u>24,462,545.30</u>
C	<u>2,000,000.00</u>	y	<u>187,000.00</u>
$x' (=x-C)$	<u>+18,000.00</u>	$R_0 + A - y$	<u>24,275,545.30</u>
$\log (x-C)$	<u>4.2552 7251</u>	$\frac{\theta}{2}$ (in secs.)	<u>76.46316</u>
$\log (R_0 + A - y)$	<u>7.3851 6900</u>	$\log \frac{\theta}{2}$	<u>1.883 45224</u>
$\log \tan \theta$	<u>6.8701 0351 -10</u>	$\log S$	<u>4.645 574 86</u>
θ	<u>0° 02' 32.92631"</u>	$\log \sin \frac{\theta}{2}$	<u>6.569 027 10</u>
	<u>152.92631"</u>		
$\log \theta$ (θ in secs.)	<u>2.1845 2456</u>	$\log \sin^2 \frac{\theta}{2}$	<u>3.138 054 2</u>
$\log l$	<u>9.8156 3226</u>	$\log 2$	<u>0.301 030 0</u>
$\log \frac{\theta}{l}$	<u>2.3688 9630</u>	$\log R^*$	<u>2.385 169 0</u>
$\Delta\lambda (= \frac{\theta}{l})$	<u>233.8279</u>	$\log y''$	<u>0.824 253 2</u>
		y''	<u>6.67#</u>
λ (central mer.)	<u>74° 00' 00.0000</u>	$R_0 + A - y$	<u>24,275,545.30</u>
$-\Delta\lambda$	<u>- 03 53.8279</u>	y''	<u>+ 6.67</u>
λ	<u>73 56 06.1721</u>	R	<u>24,275,551.97</u>
		y	<u>187,000.00</u>
		y''	<u>- 6.67</u>
		y'	<u>187,993.33</u>
		ϕ (by interpolation)	<u>40 44 29.4977</u>

$$\tan \theta = \frac{x-C}{R_0 + A - y}$$

$$\Delta\lambda = \frac{\theta}{l}$$

$$\lambda = \lambda \text{ (central mer.)} - \Delta\lambda$$

$$y'' = 2R \sin^2 \frac{\theta}{2}$$

$$y' = y - y''$$

C is constant added to x' in computation
of coordinates

R_0 is map radius of lowest parallel

A is value of y' for R_0 ; in most cases it is zero

ϕ is interpolated from table of y'

* Use $(R_0 + A - y)$ as an approximate value of R and later correct this value when R is obtained below.

GEODETIC POSITIONS FROM LAMBERT COORDINATES

STATE Long Island Grid

STATION _____

x	<u>2,018,000.00</u>	$R_0 + A$	<u>24,462,545.30</u>
C	<u>2,000,000.00</u>	y	<u>170,000.00</u>
$x' (=x-C)$	<u>+18,000.00</u>	$R_0 + A - y$	<u>24,292,545.30</u>
$\log (x-C)$	<u>4.2552 7251</u>	$\frac{\theta}{2}$ (in secs.)	<u>76.41780</u>
$\log (R_0 + A - y)$	<u>7.3854 7302</u>	$\log \frac{\theta}{2}$	<u>1.88319453</u>
$\log \tan \theta$	<u>6.8697 9949-10</u>	$\log S$	<u>4.68557786</u>
θ	<u>0° 02' 32.8356"</u>	$\log \sin \frac{\theta}{2}$	<u>6.56876939</u>
	<u>152.83561</u>		
$\log \theta$ (θ in secs.)	<u>2.1842 2454</u>	$\log \sin^2 \frac{\theta}{2}$	<u>3.1375388</u>
$\log l$	<u>9.8156 3226</u>	$\log 2$	<u>0.3010300</u>
$\log \frac{\theta}{l}$	<u>2.3685 9228</u>	$\log R^*$	<u>7.3854730</u>
$\Delta\lambda (= \frac{\theta}{l})$	<u>233.6643</u>	$\log y''$	<u>0.8240418</u>
		y''	<u>6.67</u>
λ (central mer.)	<u>74° 00' 00.0000</u>	$R_0 + A - y$	<u>24,292,545.30</u>
$-\Delta\lambda$	<u>- 03 53.6643</u>	y''	<u>+ 6.67</u>
λ	<u>73 56 06.3357</u>	R	<u>24,292,551.97</u>
		y	<u>170,000.00</u>
		y''	<u>- 6.67</u>
		y'	<u>169,993.33</u>
		ϕ (by interpolation)	<u>40 41 31.6344</u>

$$\tan \theta = \frac{x-C}{R_0 + A - y}$$

$$\Delta\lambda = \frac{\theta}{l}$$

$$\lambda = \lambda \text{ (central mer.)} - \Delta\lambda$$

$$y'' = 2R \sin^2 \frac{\theta}{2}$$

$$y' = y - y''$$

C is constant added to x' in computation
of coordinates

R_0 is map radius of lowest parallel

A is value of y' for R_0 ; in most cases it is zero

ϕ is interpolated from table of y'

* Use $(R_0 + A - y)$ as an approximate value of R and later correct this value when R is obtained below.

GEODETIC POSITIONS FROM LAMBERT COORDINATES

STATE Long Island Grid

STATION _____

x	2,005,000.00	$R_0 + A$	24,462,545.30
C	2,000,000.00	y	187,000.00
$x' (=x-C)$	+ 5,000.00	$R_0 + A - y$	24,275,545.30
$\log (x-C)$	3.6989 7000	$\frac{\theta}{2}$ (in secs.)	21 24 23.1
$\log (R_0 + A - y)$	7.3851 6900	$\log \frac{\theta}{2}$	1.3272 0174
$\log \tan \theta$	6.3138 0100 -10	$\log S$	4.6855 7487
θ	42.44462	$\log \sin \frac{\theta}{2}$	6.0127 7661
	42.44462		
$\log \theta$ (θ in secs.)	1.6242 2613	$\log \sin^2 \frac{\theta}{2}$	2.0255 5332
$\log l$	9.8156 3226	$\log 2$	0.3010 3000
$\log \frac{\theta}{l}$	1.8125 9387	$\log R^*$	7.3851 6900
$\Delta\lambda (= \frac{\theta}{l})$	64.9522	$\log y''$	9.7117 5222
λ (central mer.)	74° 00' 00.0000	y''	0.51
$-\Delta\lambda$	- 1 04.9522	$R_0 + A - y$	24,275,545.30
λ	73 58 55.0478	y''	+ 0.51
		R	24,275,545.81
		y	187,000.00
		y''	- 0.51
		y'	186,999.49
		ϕ (by interpolation)	40 44 19.6773

$$\tan \theta = \frac{x-C}{R_0 + A - y}$$

$$\Delta\lambda = \frac{\theta}{l}$$

$$\lambda = \lambda \text{ (central mer.)} - \Delta\lambda$$

$$y'' = 2R \sin^2 \frac{\theta}{2}$$

$$y' = y - y''$$

C is constant added to x' in computation
of coordinates

R_0 is map radius of lowest parallel

A is value of y' for R_0 ; in most cases it is zero

ϕ is interpolated from table of y'

* Use $(R_0 + A - y)$ as an approximate value of R and later correct this value when R is obtained below.

GEODETIC POSITIONS FROM LAMBERT COORDINATES

STATE Long Island Grid

STATION _____

x	<u>2,005,000.00</u>	$R_0 + A$	<u>24,462,545.30</u>
C	<u>2,000,000.00</u>	y	<u>170,000.00</u>
$x' (=x-C)$	<u>+5,000.00</u>	$R_0 + A - y$	<u>24,292,545.30</u>
$\log (x-C)$	<u>3.6989 7000</u>	$\frac{\theta}{2}$ (in secs.)	<u>21.22717</u>
$\log (R_0 + A - y)$	<u>7.3854 7302</u>	$\log \frac{\theta}{2}$	<u>1.32689210</u>
$\log \tan \theta$	<u>6.3134 9698-10</u>	$\log S$	<u>4.685 57487</u>
θ	<u>42.75434</u>	$\log \sin \frac{\theta}{2}$	<u>6.01246697</u>
	<u>42.75434</u>		
$\log \theta$ (θ in secs.)	<u>1.6279 2211</u>	$\log \sin^2 \frac{\theta}{2}$	<u>2.0249339</u>
$\log l$	<u>9.8156 3226</u>	$\log 2$	<u>0.3010300</u>
$\log \frac{\theta}{l}$	<u>1.8122 8985</u>	$\log R^*$	<u>7.3454730</u>
$\Delta\lambda (= \frac{\theta}{l})$	<u>64.9067</u>	$\log y''$	<u>9.7114369</u>
		y''	<u>0.51</u>
λ (central mer.)	<u>73 00 00.0000</u>	$R_0 + A - y$	<u>24,292,545.30</u>
$-\Delta\lambda$	<u>- 01 04.9067</u>	y''	<u>+ 0.51</u>
λ	<u>73 58 55.0933</u>	R	<u>24,292,545.81</u>
		y	<u>170,000.00</u>
		y''	<u>- 0.51</u>
		y'	<u>169,999.49</u>
		ϕ (by interpolation)	<u>40 41 31.6952</u>

$$\tan \theta = \frac{x-C}{R_0 + A - y}$$

$$\Delta\lambda = \frac{\theta}{l}$$

$$\lambda = \lambda \text{ (central mer.)} - \Delta\lambda$$

$$y'' = 2R \sin^2 \frac{\theta}{2}$$

$$y' = y - y''$$

C is constant added to x' in computation
of coordinates

R_0 is map radius of lowest parallel

A is value of y' for R_0 ; in most cases it is zero

ϕ is interpolated from table of y'

* Use $(R_0 + A - y)$ as an approximate value of R and later correct this value when R is obtained below.

GEODETIC POSITIONS FROM LAMBERT COORDINATES

STATE Long Island Grid

STATION _____

x	2,012,000.00	$R_0 + A$	24,462,545.30
C	2,000,000.00	y	179,000.00
$x' (=x-C)$	+ 12,000.00	$R_0 + A - y$	24,283,545.30
$\log (x-C)$	4.0791 8125	$\frac{\theta}{2}$ (in secs.)	50.96409
$\log (R_0 + A - y)$	7.3853 1209	$\log \frac{\theta}{2}$	1.70726428
$\log \tan \theta$	6.6938 6916-10	$\log S$	4.68557486
θ	0 01 41.52818	$\log \sin \frac{\theta}{2}$	6.39283914
	101.92818		
$\log \theta$ (θ in secs.)	2.0082 9426	$\log \sin^2 \frac{\theta}{2}$	2.7856783
$\log l$	9.8156 3226	$\log 2$	0.3010300
$\log \frac{\theta}{l}$	2.19266200	$\log R^*$	7.3853121
$\Delta\lambda (= \frac{\theta}{l})$	155.8339	$\log y''$	0.4720204
		y''	2.97
λ (central mer.)	74° 00' 00.0000	$R_0 + A - y$	24,283,545.30
$-\Delta\lambda$	- 02 36.8239	y''	+ 2.97
λ	72 57 24.1661	R	24,283,548.27
		y	179,000.00
		y''	- 2.97
		y'	178,997.03
		ϕ (by interpolation)	40 43 00.6028

$$\tan \theta = \frac{x-C}{R_0 + A - y}$$

$$\Delta\lambda = \frac{\theta}{l}$$

$$\lambda = \lambda \text{ (central mer.)} - \Delta\lambda$$

$$y'' = 2R \sin^2 \frac{\theta}{2}$$

$$y' = y - y''$$

C is constant added to x' in computation
of coordinates

R_0 is map radius of lowest parallel

A is value of y' for R_0 ; in most cases it is zero

ϕ is interpolated from table of y'

* Use $(R_0 + A - y)$ as an approximate value of R and later correct this value when R is obtained below.

GEODETIC POSITIONS FROM LAMBERT COORDINATES

STATE _____

STATION _____

x	2,011,500.00	$R_0 + A$	24,462,545.00
C	2,000,000.00	y	178,500.00
$x' (=x-C)$	+ 11,500.00	$R_0 + A - y$	24,284,045.00
$\log (x-C)$	4.0606 9784	$\frac{\theta}{2}$ (in secs.)	48.83958
$\log (R_0 + A - y)$	7.3853 2103	$\log \frac{\theta}{2}$	1.6887 7192
$\log \tan \theta$	6.6753 7681	$\log \delta$	4.6855 7886
θ	0° 0' 37.67916	$\log \sin \frac{\theta}{2}$	6.3743 4678
	97.67916		
$\log \theta$ (θ in secs.)	1.9898 0191	$\log \sin^2 \frac{\theta}{2}$	2.7446 936
$\log l$	9.8156 3226	$\log 2$	0.3010 300
$\log \frac{\theta}{l}$	2.1741 6965	$\log R^*$	7.3453 210
$\Delta \lambda (= \frac{\theta}{l})$	2.45.9384 X	$\log y''$	8.4350 446
		y''	2.72
λ (central mer.)	73° 00' 00.0000	$R_0 + A - y$	24,284,045.00
$-\Delta \lambda$	- 2.29.3378	y''	+ 2.72
λ	73 55.64.06.22	R	24,284,047.72
	5720.6622		
		y	178,500.00
		y''	- 2.72
		y'	178,497.28
		ϕ (by interpolation)	40 42 55.6646

$$\tan \theta = \frac{x-C}{R_0 + A - y}$$

$$\Delta \lambda = \frac{\theta}{l}$$

$$\lambda = \lambda \text{ (central mer.)} - \Delta \lambda$$

$$y'' = 2R \sin^2 \frac{\theta}{2}$$

$$y' = y - y''$$

C is constant added to x' in computation
of coordinates

R_0 is map radius of lowest parallel

A is value of y' for R_0 ; in most cases it is zero

ϕ is interpolated from table of y'

* Use $(R_0 + A - y)$ as an approximate value of R and later correct this value when R is obtained below.

NOTE: Regarding the dry dock shown on this compilation in dashed outline at Lat. 40 44.6 Long. 73 57.6, this drydock is clearly visible on the photos but the field inspection has not noted whether it is in use or is aground. It is shown on Blueprint 27709 by a dashed line indicating that it is inactive and is carried in the same way on this compilation.

BJS

REVIEW OF AIR PHOTO COMPILATION T-5459 (1935)

Scale 1:50,000

There are no contemporary hydrographic or planetable surveys in this area.

Comparison with Previous Topographic Surveys

T-13 (1837)	1:10,000
T-483 (1855)	"
T-608 (1855-7)	"
T-789 (1860)	"
T-808 (1858)	"
T-917 (1856)	"
T-1414 (1875)	"
T-1586 (1885)	"
T-3226 (1911)	"

All of these previous surveys with the exception of T-3226 are at least 50 years old and furnish no information in making a comparison with the present air photo compilation T-5459.

T-3226 (1911) is a revision survey on an old section of chart 369 and is likewise not comparable to the present compilation.

The compilation is complete and adequate to supersede the sections of the above surveys which it covers.

Comparison with Chart 745

See pages 7 and 8 of the Descriptive Report T-5459.

This compilation shows numerous corrections to buildings and water front detail.

The compilation detail has been checked against the photographs in this office.

* *See opposite page*

State Coordinate System

The New York state coordinate system, Long Island zone has been added in this office. Coordinate positions computed in the Division of Geodesy and computations are filed at back of this report.

Grid points plotted by *F.G.E.*
plotting checked by *Arthur M. Jackson* and
Ruled on projection ruling machine by *F.G.E.*

Because of errors of 0.3 mm to 0.5 mm in the projection lines it was necessary to make a careful check and to ^{revise} ~~review~~ certain lines of the projection before applying the grid. The projection was reruled in the ruling machine and the lines showing appreciable error corrected.

* *The check on chart 745 lat. 40° 44.6' long 73° 57.6' is not shown on this compilation but is not displayed. The photographs show a number of uncorrected blurs here which might obscure the check on the photographs. 1938*

General

The control is sufficient and well distributed over the entire plot.

The drafting is only fair. The street lines and cross hatching of buildings is not of uniform weight which will necessitate additional work in cutting the negatives.

Chas. R. Bush Jr.

REVIEW OF AIR PHOTO COMPILATION NO. T-5459

Chief of Party: J.C. Partington

See STATISTICS
Compiled by: SHEET

Project: HT-175

Instructions dated: Mar. 14, 1934

1. The charts of this area have been examined and topographic information necessary to bring the charts up to date is shown on this compilation. (Par. 16a, b, c, d, e, g and i; 26; and 64)
2. Change in position, or non-existence of wharfs, lights, and other topographic detail of particular importance to navigation which affect the chart, is discussed in the descriptive report. (Par. 26; and 66 g, n)
3. Ground surveys by plane table, sextant, or theodolite have been used to supplement the photographic plot where necessary to obtain complete information, and all such surveys are discussed in the descriptive report. (Par. 65; and 66 d, e)
No ground surveys used to supplement plot.
4. Blue-prints and maps from other sources which were transmitted by the field party contain sufficient control for their application to the charts. (Par. 28)
No blue-prints or other maps transmitted. *Except Navy Yard Map.*
5. Differences between this compilation and contemporary plane table and hydrographic surveys have been examined and rectified in the field before forwarding the compilations to the office and are discussed in the descriptive report.
No contemporary plane table or hydrographic surveys in this area.
6. The control and adjustment of the photo plot are discussed in the descriptive report. Unusual or large adjustments are discussed in detail and limits of the area affected are stated. (Par. 12b; 44; and 66 c, h, i)
7. High water line on marshy and mangrove coast is clear and adequate for chart compilation. (Par. 16a, 43, and 44)

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Refer also to the pamphlet "Notes on the Compilation of Planimetric Line Maps from Five Lens Air Photographs."

8. The representation of low water lines, reefs, coral reefs and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, ~~38~~, ~~39~~, 40, ~~41~~)
9. Recoverable objects have been located and described on Form 524 in accordance with circular 30, 1933, circular letter of March 3, 1933, and circular 31, 1934. (Par. 29, 30, and 57)
10. A list of landmarks was furnished on Form 567 and instructions in the Director's letter of July 16, 1934, Landmarks for Charts, complied with. (Par. 16d, e; and 60)
11. All bridges shown on the compilation are accompanied by a note stating whether fixed or draw, clearance, and width of draw if a draw bridge. Additional information of importance to navigation is given in the descriptive report. (Par. 16c)✓
12. Geographic names are shown on the overlay tracing. The accepted local usage of new names has been determined and they are listed in the report, together with a general statement as to source of information and a specific statement when advisable. Complete discussion of place names differing from the charts and from the U. S. G. S. Quadrangles is given in the descriptive report, together with reasons for recommendations made. (Par. 64, and 66k)✓
13. The geographic datum of the compilation is North American¹⁹²⁷ and the reference station is correctly noted. ✓
14. Junctions with adjoining compilations have been examined and are in agreement. (Par. 66j)✓
15. The drafting is satisfactory and particular attention has been given the following:
 1. Standard symbols authorized by the Board of Surveys and Maps have been used throughout ✓ except as noted in the report.
 2. The degrees and minutes of Latitude and Longitude are correctly marked. ✓

3. All station points are exactly marked by fine ✓
black dots.
4. Closely spaced lines are drawn sharp and clear ✓
for printing.
5. Topographic symbols for similar features are of ✓
uniform weight.
6. All drawing has been retouched where partially ✓
rubbed off.
7. Buildings are drawn with clear straight lines ✓
and square corners where such is the case on
the ground.

(Par. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48)

16. No additional surveying is recommended at this time. ✓

17. Remarks:

18. Examined and approved;

J. C. Partington
Chief of Party

19. Remarks after review in office:

Reviewed in office by: Chas. R. Bush Jr.

Examined and approved:

C. T. Green
Chief, Section of Field Records
L. O. Colburn
Chief, Division of Charts

Fred. L. Peacock
Chief, Section of Field Work
G. W. de
Chief, Division of Hydrography
and Topography.