

5462

369-4

5462

Form 504
Rev. Dec. 1933

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

Air Photo
Topographic
Hydrographic

Sheet No. T-5462

State New York

LOCALITY

Brooklyn

Gravesend Bay and Coney Island

193 7

CHIEF OF PARTY

J.C. Partington - Junior H. & G. E.

Applied to Chart 541- Oct 23, 1937. L.M.Z.
" " " 540 Oct 30, 1945 W.A. Bruders

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. 94 **T5462**

REGISTER NO. T-5462

State New York

General locality Brooklyn

Locality Gravesend Bay and Coney Island

Scale 1:5,000 Date of photographs May 11, 1935
survey May 15, 1935, 1935
June 25, 1935

Vessel Photo Compilation Party # 25

Chief of party J.C. Partington

Surveyed by Field Inspection by J. Rippstein
Compilation by R.S. Poor & J.C. Partington

Inked by J.C. Partington

Heights in feet above mean low water to ground to tops of trees

Contour, Approximate contour, Form line interval 5 feet

Instructions dated March 11, 1934

Remarks:

STATISTICS
on

AIR PHOTO COMPILATION SHEET, FIELD NO. 94; REGISTER NO. T-5462.

PHOTOGRAPH NO.	DATE	TIME	TIDE			
			High		Low	
			Time	Ht.	Time	Ht.
160-166 (870 N-8)	May 11, 1935	2:40 PM	1:46 AM	4.2	8:36 AM	0.5
			2:40 PM	4.3	9:02 PM	1.1
191-195 (870 N-8)	May 15, 1935	9:35 AM	5:25 AM	4.1	11:34 AM	0.3
			5:46 PM	5.2	- -	- -
207-210 (870 N-8)	May 15, 1935	9:29 AM	5:20 AM	4.2	11:29 AM	0.3
			5:41 PM	5.3	- -	- -
222-223 (870 N-8)	June 25, 1935	9:07 AM	2:27 AM	4.4	8:47 AM	-0.1
			3:08 PM	5.1	9:34 PM	0.3

	By	Date	From	To
SCALE FACTOR (1.000)	R.C. Boistad		(Previously determined)	
PROJECTION	Projection machine		11-21-36	
PROJECTION CHECKED	J.C. Partington	J.C.P.	11-24-36	
CONTROL PLOTTED	J.C. Partington	J.C.P.	11-24-36	
CONTROL CHECKED	R.S. Poor		11-25-36	
SMOOTH RADIAL LINE PLOT	R.S. Poor		11-27-36	12- 5-36
RADIAL LINE PLOT CHECKED	J.C. Partington	J.C.P.	12-7 -36	12-10-36
DETAIL INKED	J.C. Partington	J.C.P.	12-15-36	2-10-37
PRELIMINARY REVIEW OF SHEET	J.C. Partington	J.C.P.	2-11-37	2-15-37
AREA OF DETAIL INKED (land area)	3.5	Square Statute Miles		
AREA OF DETAIL INKED (shoals)	0.0	" " "		
LENGTH OF SHORELINE (more than 200 M. from opposite shore)	6.6	Statute Miles		
LENGTH OF SHORELINE (rivers & sloughs less than 200 M. wide)	0.0	" "		
LENGTH OF STREETS, ROADS, RAILROADS, TRAILS	76.0	Statute Miles		
GENERAL LOCATION	New York City			
LOCATION	Brooklyn			
DATUM	North American 1927			

STATION Public School # 201
1931; 1932 (N.Y.)

Latitude 40° 37' 07.027" = 216.8 M.
Longitude 74 00 49.163 = 1155.6 M.

(Adjusted computations)

COMPILER'S REPORT

for

AIR PHOTO TOPOGRAPHIC SHEET, FIELD NO. 94; REGISTER NO. T-5462

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 listed on page 2 of this report. Photographs numbers 160-166 (870 N-8) were taken on May 11, 1935 at the time of high water. Photographs numbers 191-195 (870 N-8) were taken on May 15, 1935 at approximately two hours before low water. Photographs numbers 207-210 (870 N-8) were taken on May 15, 1935 at approximately two hours before low 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 Camera Corporation, 62-10 Woodside Ave., Woodside, New York City. Due to the fact that these photographs were among the first to be taken by 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 effects the overlap. This is also probably the cause of excessive tilt in 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 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 by the Washington office of the U.S. Coast and Geodetic Survey for enlarging a set of office prints on a scale of 1:5,000. The 1:5,000 prints were furnished the field party and were used in compiling this sheet.

CONTROL(a) Sources.

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

1. Triangulation, 1930-33 by R.W. Woodworth (Adjusted)
2. Triangulation, 1932 by C.D. Meaney (Adjusted)
3. Triangulation, 1903-08 Greater New York
4. U.S. Engineers stations as described on Form 524 submitted with this report.

The triangulation by R.W. Woodworth and C.D. Meaney is given on the N.A. 1927 datum (adjusted). The triangulation 1903-08, Greater New York is given on the N.A. datum and a correction of -12.1 meters was applied to latitude and +3.5 meters to longitude in order to place the positions on the N.A. 1927 datum.

(b) Lost Stations --(additional)

Recoverable H. & T. Station " Flag Pole (Socony-Dock),
Sheet T-6382 is lost. The field inspection party reports that this
dock burned and the flag pole was destroyed before the date of the
photographs. This station has not been shown on the sheet.

(a) Sources. (Continued)

The geographic positions of all of the U.S. Engineers stations were computed from their coordinates and plotted on the sheet with a $2\frac{1}{2}$ mm. circle.

The positions of all recoverable H. & T. stations shown on Topographic Sheet T-6382 were plotted on this sheet from their scaled positions shown on card Form 524. This was also done for the recoverable H. & T. stations shown on Topographic Sheet T-6381.

(b) Lost Stations.

Triangulation station "Gravesend Bay, Fort Lowry Hotel, White Turret" is lost. The field inspection party reports that the portion of the building on which this station was located burned down in 1932. The station has not been shown on the sheet.

Station "Sewer U.S.E.D." Latitude $40^{\circ} 37' 42.3$ M. Longitude $74^{\circ} 02' 73.7$ M. is lost. A note by the field inspection party dated June 25, 1935 states that the timbers of the sewer have been removed and the station destroyed. The position of this station is not shown on the sheet for this reason.

The flagpole originally marking triangulation station "Schoolhouse Bensonhurst" has been reported lost on card 929, Recovery Note, by R.W. Woodworth. The recovery note also states that the station could be re-established within an accuracy of 0.5 meters for topographic or air photo control. Since the station could be easily spotted on the photographs it has been used as control and the position plotted on the sheet.

*Reported to quarry
Bgg.*

(c) Errors.

No error was found in the position of any of the triangulation stations.

All of the U.S. Engineers stations agreed with the radial line plot within 1.0 meter and the positions as given by the U.S. Engineers were considered correct.

The positions of the recoverable H. & T. stations shown on Topographic Sheet T-6381 were considered correct and plotted on the sheet from their cards Form 524. The radial plot in this vicinity is not strong enough to accurately check the positions of these stations. They are the following:

Twin Cupola (a) North
Twin Cupola (b) South

Green Cupola
Black Cupola

The positions of the following recoverable H. & T. Stations shown on Topographic Sheet T-6382 were considered correct and plotted on the sheet from their cards Form 524. Most of these stations were not spotted on the photos by the field inspection party. The remainder of the stations had too weak a radial plot to check their position accurately so that the Form 524 position was used. These stations are listed as follows:

(c) ERRORS. (Continued)

Twin White Elevators	(Yacht Club) Flag Pole
Flag Pole (on Club House)	Flag Pole
Flag Pole	Fog Bell
Flag Pole	Square Red Cupola
Flag Pole	Red Top Cupola

The following recoverable H. & T. Stations shown on Topographic Sheet T-6382 do not agree with the radial line plot:

White Cupola	Yellow Gable (Y.C. near SEMKEN)
F.P. (Atop Bldg. Henjes Coal Co.)	Flag Pole (near SEMKEN)

White Cupola

Radial plot position	Card Form 524 Position
40° 36' 474.5 M.	40° 36' 477.0 M. 2.5
74 00 1326.2 M	74 00 1326.7 M 0.5

This station is easily spotted on the photographs and has been located by the radial plot by 3 "cuts" giving a strong angle of intersection. The radial plot position is shown on the celluloid sheet.

F.P. (Atop Bldg. Henjes Coal Co.)

Radial Plot Position	Card Form 524 Position
40° 36' 133.0 M.	40° 36' 135.0 M. 2.0
74 00 664.4 M.	74 00 661.7 M. 1.7

This station cannot be readily identified on the photographs but is believed to be correctly spotted from the field inspection notes (Photo 164-870 N-8). It is located by 5 intersecting "cuts" giving a strong angle of intersection. The position as found by the radial line plot is shown on the celluloid sheet.

Yellow Gable (Y.C. near SEMKEN)

Radial Plot Position	Card Form 524 Position
40° 35' 1325.4 M.	40° 35' 1327.7 M. 2.3
74 00 82.0 M	74 00 78.0 M. 4.0

This station is easily spotted on the photographs and has been located by 5 intersecting "cuts" giving a strong angle of intersection. The position as found by the radial line plot is shown on the celluloid sheet.

Flag Pole (near SEMKEN)

Radial Plot Position	Card Form 524 Position
40° 35' 1330.4 M.	40° 35' 1332.7 M. 2.3
73 59 1308.2 M	73 59 1304.1 M. 4.1

(c) Errors. (Continued)

This station cannot be readily identified on the photographs but is believed to be correctly spotted from the field inspection notes (Photo 160-870 N-8). It is located by 5 intersecting "cuts" giving a strong angle of intersection. The position as found by the radial line plot is shown on the celluloid sheet.

It should be noted that recoverable H. & T. station "Gray Gable" located on topographic sheet T-6382 is a triangulation station "Gravesend Bay, Large Gable" located by R.W.Woodworth in 1930.

Triangulation Position

Sheet T-6382 Position

40° 35' 1775.9 M.
74 00 319.1 M.

40° 35' 1772.7 M.
74 00 317 M.

3.2

2.1

This would tend to show that the topography on T-6382 is slightly in error in this locality.

COMPILATION

(a) Method

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

The U.S. Engineers stations and the recoverable H. & T. stations were used as supplementary control and their positions accepted as correct only after it was found that they agreed with the radial line plot. There is sufficient triangulation control on this sheet to establish the plot independent of the U.S. Engineers stations and the recoverable H. & T. stations.

(b) Adjustment of Plot.

No great difficulty was encountered in running the radial line plot and no unusual adjustment of the plot was necessary. Photographs numbers 163 and 191 (870 N-8) were tilted so that the radial lines are drawn from the isocenter.

In the vicinity of Fort Hamilton, Latitude $40^{\circ} 36' 30''$ Longitude $74^{\circ} 02' 00''$ the plot is weak due to insufficient overlap of the photographs. The radial points are located by two "outs" which do not form a strong angle of intersection. In all other parts of the sheet the radial points have been located by three or more intersecting "outs".

This sheet is made up from four different flights of photographs three of which are very close to scale. Photographs 160-166 however, are approximately $\frac{1}{4}\%$ too small which caused some trouble in tracing of detail.

Except as noted above these photographs showed very little tilt or scale fluctuation.

(c) Interpretation.

No attempt has been made to show street car tracks except for the one on the west end of Coney Island. Elevated tracks have been shown and designated on the overlay sheet.

The double full line has been used to show first class roads and streets (curb to curb); the double dashed line to show second class roads; and the single dashed line to show trails.

An attempt has been made to show all the buildings of any importance along the waterfront, and some of the more prominent buildings inland have been shown. The stereoscope has been used freely in determining the shapes of buildings.

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

(d) Information from Other Sources.

The positions of the U.S. Engineers stations shown on this sheet were taken from their coordinates. This was done by changing the coordinates to geographic positions and plotting them on the sheet.

The positions of the following recoverable H. & T. stations were taken from topographic sheet T-6381:

Twin Cupola (a). North	Green Cupola
Twin Cupola (b) South	Black Cupola

The positions of the following recoverable H. & T. stations were taken from topographic sheet T-6382:

Twin White Elevators	(Yacht Club) Flag Pole
Flag Pole (on Club House)	Flag Pole
Flag Pole	Fog Bell
Flag Pole	Square Red Cupola
Flag Pole	Red Top Cupola

Names were taken from charts and maps of the area.

Except as mentioned above all information shown on the sheet was taken from the photographs.

(e) Names.

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

Street names may be obtained from the Map of the City of New York, Board of Estimate and Apportionment.

(f) Military Reservations.

Fort Hamilton and Fort Lafayette are fortified military reservations. The usual topographic detail of these areas has not been shown.

JUNCTIONS.

The north end of this compilation joins the south end of compilation T-5461 along the parallel $40^{\circ} 37' 30''$ and the junction is satisfactory.

The east end of this compilation joins the west end of compilation T-5463 along the meridian $74^{\circ} 00' 00''$ on Coney Island; and along the meridian $73^{\circ} 59' 30''$ in Gravesend and the junction is satisfactory.

LIST OF RECOVERABLE OBJECTS.

Three cards form 524 are included with this report which give the description and position of each U.S. Engineers station shown on this sheet.

Recoverable H. & T. stations have the cards form 524 filed with the descriptive report of the plane table sheet.

COMPARISON WITH OTHER SURVEYS.

This sheet has been compared with topographic surveys Nos. T-6381 and T-6382 accomplished by the party of M.O. Witherbee in 1934. T-6381 and T-6382 were done on a scale of 1:10,000. Bromide enlargements to a scale of 1:5,000 were made and the enlargements were used for this comparison.

In general there is a very close agreement between this compilation and topographic sheets T-6381 and T-6382.

Comparison with T-6381.

The shoreline of Fort Lafayette shown on T-6381 disagrees with the compilation by a maximum amount of about 7 meters. On T-6381 this island appears to be slightly too far north and east and is twisted in azimuth. This shoreline has been checked from the photographs and is believed to be correctly shown on the compilation.

The rocks and piling shown on T-6381 approximately 300 meters north of Fort Lafayette is farther offshore on the compilation than shown on T-6381. This is probably due to the building out of this feature since the date of the topographic sheet. Some construction is underway in building the "Shore Drive" in this area. The outer limit of these rocks and piling can be seen on photograph 192 and it has been checked on the compilation.

Station "Sewer U.S.E.D." is lost as explained on page 4 of this report.

Except as stated above, sheet T-6381 agrees very closely with the compilation.

Comparison with T-6382.

The shoreline on the compilation in Latitude $40^{\circ} 36.3''$ Longitude $74^{\circ} 01.6'$ shows that there has been some construction work in the building of this seawall since the date of the topographic sheet T-6382.

An examination of the photographs shows that the 3 docks and the shoreline in Latitude $40^{\circ} 36.2'$ Longitude $74^{\circ} 00.9'$ are incorrectly shown on topographic sheet T-6382. It is recommended that the compilation be used for this detail.

The shoreline in Latitude $40^{\circ} 35.8'$ Longitude $74^{\circ} 00.1'$ appears to be incorrectly shown on T-6382 - the topographic sheet evidently showing "storm water line". The photographs of this area were taken at the time of high water and measurements were taken by the field inspection party from land features to the high water line. It is recommended that the compilation be used in preference to sheet T-6382.

The dock in Latitude $40^{\circ} 35.4'$ Longitude $74^{\circ} 00.1'$ appears to be incorrectly shown on sheet T-6382. An examination of the photographs shows this dock to be correctly shown on the compilation.

Other small differences in the location of high water line are evident but this is probably due to the difference in interpreting high water line between the topographer and the field inspection party. The field inspector's interpretation of high water has been followed in drawing the shoreline on the compilation.

COMPARISON WITH CHARTS.

Due to the fact that chart 541 of this area is on a scale of 1:10,000 and the compilation is on a scale of 1:5,000 no direct comparison between the two has been made. However, a visual comparison shows the following discrepancies between the compilation and chart 541, edition of Nov. 18, 1936.

The small dock shown on the chart in Latitude $40^{\circ} 36.6'$ Longitude $74^{\circ} 02.25'$ does not appear on the photographs nor on topographic sheet T-6381. If this dock exists it has been built since May 15, 1935, the date of the photographs of this area. The dock is not shown on the compilation.

The three docks shown on the chart in approximately Latitude $40^{\circ} 36.2'$ Longitude $74^{\circ} 00.8'$ have evidently been changed. The easterly dock burned down in 1932 and the other two have been torn down and other docks built. The compilation shows the location of the present docks in this area.

LANDMARKS.

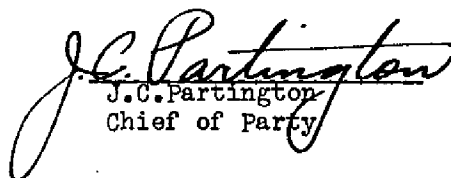
The landmarks within the area of this compilation are shown on charts 369 and 541. They are all in existence and should be charted.

No additional landmarks are recommended.

RECOMMENDATIONS FOR FURTHER SURVEYS.

This sheet is believed to be complete in all detail of importance for charting and no further surveys are required. The probable error is not greater than 2 meters in position of well defined objects along the waterfront and not greater than 5 meters for other detail.

Respectfully submitted,


J.C. Partington
Chief of Party

Remarks

Decisions

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GEOGRAPHIC NAMES

Air Photo

Survey No. T-5462

GEOGRAPHIC NAMES										
Survey No. T-5462										
Name on Survey	<div>On Chart No. 369</div> <div>On previous survey No. 5281 & 5282</div> <div>On Chart No. 511</div> <div>From local Field Information</div> <div>Board of Inspection & Appointments</div> <div>On local Maps</div> <div>P. O. Guide or Map</div> <div>Rand McNally Atlas</div> <div>U. S. Light List</div>									
	A	B	C	D	E	F	G	H	K	
<u>Brooklyn</u>	app'd x	x	x		x					1
<u>Dyker Beach Park</u>	x			x	x					2
<u>Fort Hamilton</u>	app'd x		x	x	x					3
<u>Fort Lafayette</u>	541 app'd	x	x	x	x					4
<u>Gravesend Bay</u>	app'd x	x			x					5
<u>Coney Island</u>	app'd x	x								6
<u>Norton Point</u>	app'd x	x								7
<u>Bensonhurst Park</u>				x	x					8
<u>Fort Hamilton Park</u>				x	x					9
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Names underlined in red approved

by A. J. E. on 5/6/37

M 234

Names underlined in red approved

by A. J. E. on 5/6/37

REVIEW OF AIR PHOTO COMPILATION T-5462

Data Record

Triangulation to 1933
Photographs to 1935
Planetable Surveys to 1934
Hydrography to 1934
Field Inspection to 1935

The detail on the compilation is that of the date of the photos except for a few changes along the shoreline as determined by field inspection and the 1934 P. T. Surveys.

Comparison with Contemporary Graphic Control Surveys

T-6381 (1934), 1:10,000
T-6382 (1934), 1:10,000

T-6382 at Lat. $40^{\circ}35.2'$ long. $73^{\circ}59.6'$ does not show two docks and a wreck which appear on the photographs and have been shown on the compilation. For other differences between the above surveys and the compilation see pages 5 and 19 of Descriptive Report. After a check of the compilation and the photographs the compilation ~~have~~ ^{has} been accepted as correct. All information and detail shown on the above surveys ~~has~~ ^{have} been shown on the compilation.

Comparison with Contemporary Hydrographic Surveys

H-5734 (1934), 1:10,000
H-5736 (1934), 1:10,000

The shoreline for the above Hydrographic surveys was taken from the graphic control surveys and therefore disagrees with the compilation shoreline as noted under Comparison with Contemporary Graphic Control Surveys.

Comparison with Former Surveys

T- 5 (1835), 1:10,000
T- 586 (1856), 1:10,000
T-1456 (1878), 1:10,000
T-1576 (1892), 1:10,000
T-1592 (1895), 1:10,000

The previous surveys show none of the present docks and piers. Coney Island is much larger than the old surveys show, due to fills and

break waters. The compilation is complete and adequate to supersede those portions of the above surveys which it covers.

Comparison with Charts 369 and 541.

Additional break water, docks and buildings are shown on the compilation that do not appear on the above charts. *See also page 10 of the descriptive report T 5462.*

April 28, 1937

L. C. Lande

B. G. Jones

REVIEW OF AIR PHOTO COMPILATION NO. T-5462

Chief of Party: J.C.Partington

R.S.Poor &
Compiled by: J.C.Partington

Project: HT-175

Instructions dated: March 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, ~~x~~, d, e, g and i; 26; and 64)

Yes.

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)

Yes.

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.

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 maps transmitted.

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.

Yes.

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)

Yes.

7. High water line on marshy and mangrove coast is clear and adequate for chart compilation. (Par. 16a, 43, and 44)

Yes.

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." 11-27

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)

Yes.

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)

Yes.

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)

No additional landmarks submitted.

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)

No bridges.

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)

Submitted with descriptive report.

13. The geographic datum of the compilation is *N.A. 1927 adjusted* and the reference station is correctly noted.

Yes.

14. Junctions with adjoining compilations have been examined and are in agreement. (Par. 66j)

Yes.

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: L. C. Lande ✓ B. G. Jones

Examined and approved:

E. N. Green
Chief, Section of Field Records
L. O. Colbert
Chief, Division of Charts

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

PLANE COORDINATE GRID SYSTEM

Positions of grid intersections used for fitting the grid to this compilation were computed by Division of Geodesy and the computation forms are included in this report.

Positions plotted by R. E. Ask

Positions checked by R. E. Ask

Grid inked on machine by R. E. Ask

Intersections inked by P. Sushka

Points used for plotting grid:

x 2,002,000 ft
y 144,000

x 1,996,000
y 134,000

x 2,002,000
y 126,000

x
y

x 1,990,000
y 126,000

x
y

x 1,990,000
y 144,000

x
y

Triangulation stations used for checking grid:

$x = 1,996,208.62$ $y = 143,215.22$ ft

1. Public School #201 Ref. Sta. 5. Also check on 74 Meridian.
1931-2
2. School House 79th St. (1908) 6. _____
3. Schoolhouse, Bensonhurst (1908) 7. _____
4. Coney Is. Lighthouse (1908) 8. _____

State Long Island

Station _____

x	2,002,000	$R_b + A$	24,462,545.30
C		y	144,000
$x' (= x - C)$	+ 2,000	$R_b + A - y$	24,318,545.30
	3.30103000		
	7.38593759		
tan θ	5.91509241		
	4.68557487	R	
θ	1.22951754 "		
	16".9636	y	144,000
$\frac{\theta}{\ell} (= \Delta \lambda)$		y''	- 0.08
		y'	143,999.92
λ (central mer.)	74° 00' "		
$-\Delta \lambda$	25.9350	ϕ (by interpolation)	40° 37' 14.7839
λ	73 59 34.0650		

19.11 mm

91.20 mm

Station _____

x	2,002,000	$R_b + A$	24,462,545.30
C		y	126,000
$x' (= x - C)$	+ 2,000	$R_b + A - y$	24,336,545.30
	3.30103000		
	7.38625893		
tan θ	5.91477107		
	4.68557487	R	
θ	1.22919620 "		
	16".9510	y	126,000
$\frac{\theta}{\ell} (= \Delta \lambda)$		y''	- .08
		y'	125,999.92
λ (central mer.)	74° 00' "		
$-\Delta \lambda$	25.9157	ϕ (by interpolation)	40° 34' 16.9179
λ	73 59 34.0843		

19.21 mm

104.36 mm

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

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

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

C is constant added to x' in computation
of coordinates

R_b is map radius of lowest parallel

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

ϕ is interpolated from table of y'

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

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

$$R = (R_b + A - y) \sec \theta$$

State Long Island

Station _____

x	1,990,000	$R_b + A$	24,462,545.30
C		y	126,000
$x' (= x - C)$	-10,000	$R_b + A - y$	24,336,545.30
$\tan \theta$	7.38625893 6.61374107 4.68557485	R	
θ	1.92816622 "	y	126,000
$\frac{\theta}{\ell} (= \Delta \lambda)$	24.847552	y''	- 2.05
λ (central mer.)	74° 00' "	y'	125,997.95
$-\Delta \lambda$	2 09.5788	ϕ (by interpolation)	40° 34' 16.8985
λ	74 02 09.5788		

45.06 mm

104.24 mm

Station _____

x	1,990,000	$R_b + A$	24,462,545.30
C		y	144,000
$x' (= x - C)$	-10,000	$R_b + A - y$	24,318,545.30
$\tan \theta$	4.0000000 7.38593759 6.61406241 4.68557485	R	
θ	1.92848756 "	y	144,000
$\frac{\theta}{\ell} (= \Delta \lambda)$	84.8179	y''	- 2.06
λ (central mer.)	74° 00' "	y'	143,997.94
$-\Delta \lambda$	2 09.6747	ϕ (by interpolation)	40° 37' 14.7643
λ	74 02 09.6747		

45.48 mm

91.08 mm

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

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

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

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

C is constant added to x' in computation
of coordinates

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

R_b is map radius of lowest parallel

$$R = (R_b + A - y) \sec \theta$$

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

ϕ is interpolated from table of y'

State Long Island

Station _____

x	1,996,000	$R_b + A$	24,462,545.30
C		y	134,000
$x' (= x - C)$	-4,000	$R_b + A - y$	24,328,545.30
	3.602051999		
	7.38611614		
	6.21594385		
tan θ	4.68557486	R	
θ	1.58036899 "		
	33.9132	y	134,000
$\frac{\theta}{\ell} (= \Delta \lambda)$		y''	- 33
		y'	133,999.67
λ (central mer.)	74° 00 "		
$-\Delta \lambda$	51.8485	ϕ (by interpolation)	40° 35 35.9671
λ	74 00 51.8485		

102.75 mm

36.81 mm

Station _____

x		$R_b + A$	
C		y	
$x' (= x - C)$		$R_b + A - y$	
tan θ		R	
θ	° ' "	y	
	"	y''	-
$\frac{\theta}{\ell} (= \Delta \lambda)$		y'	
λ (central mer.)	° ' "		
$-\Delta \lambda$		ϕ (by interpolation)	° ' "
λ			

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

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

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

$$R = (R_b + A - y) \sec \theta$$

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

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

C is constant added to x' in computation
of coordinates

R_b is map radius of lowest parallel

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

ϕ is interpolated from table of y'