

5446

ORIGINAL

5446

Form 504 Ed. June, 1928	
DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY R. S. Patton, Director	
<div style="border: 1px solid black; width: 100px; height: 50px; margin: 0 auto;"></div>	
State: <u>New Jersey</u>	
DESCRIPTIVE REPORT	
Photo Topographic Hydrographic	} Sheet No. T-5446
LOCALITY <u>ATLANTIC COAST</u> <u>Little Egg Harbor</u>	
<u>Coastal</u>	
<u>193 5</u>	
CHIEF OF PARTY <u>Roswell C. Rolstad, Jr. H. & G. Engr.</u>	

Applied to drawing of Chart 1216 - Dec. 30, 1937 - J. Walkey
" " compilation " 825 1938 P. L. S.

3ma

COMPILER'S REPORT

for

AIR PHOTO TOPOGRAPHIC SHEET

FIELD NO. 78

REGISTER NO. T-5446

- 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. 78

REGISTER NO. T-5446

T5446

State New Jersey

General locality ~~Little Egg Harbor~~ ATLANTIC COAST

Locality ~~Little Egg Harbor~~ LITTLE EGG HARBOR

photographs:- 4/32; 7/32

Scale 1:10,000 Date of survey, 19

Date of Compilation July 10, 1935

~~xxxxxx~~ Air Photo Compilation Party No. 12

Reviewed and recommended for approval

Chief of party Roswell C. Rolstad, Jr. H. C. G. Engr.

Surveyed by See data sheet enclosed in Descriptive Report for this sheet.

Inked by R. L. Fisher

Heights in feet above ----- to ground to tops of trees

Contour, Approximate contour, Form line interval ----- feet

Instructions dated November 15, 1932

Remarks: Compiled on a scale of 1:10,000 and printed by Photo-

Lithography.

- 2 -
- STATISTICS -

on

SHEET, FIELD NO. 78, REG. NO. T 5446

PHOTOGRAPHS AS FOLLOWS:-

DATE TAKEN

66-6-23 to 24 incl. :	66-6-36 to 39 incl.	4/15/32
66-11-74 to 76 incl. :	" "	4/20/32
66-51-91 to 95 incl. :		7/30/32

	BY	DATE	From	To
ROUGH RADIAL PLOT	None			
SCALE FACTOR (1.00)	None			
SCALE FACTOR CHECKED	None			
PROJECTION	<i>D.B. Bogart</i> D.B. Bogart	10/27/34		
PROJECTION CHECKED	<i>J.G. Albert</i> J.G. Albert	10/27/34		
CONTROL PLOTTED	<i>W. Brown</i> W. Brown	10/30/34		
CONTROL CHECKED	<i>J.P. O'Donnell</i> J.P. O'Donnell	11/13/34		
TOPOGRAPHY TRANSFERRED	None			
TOPOGRAPHY CHECKED	None			
SMOOTH RADIAL LINE PLOT	<i>J.G. Albert</i> J.G. Albert	3/25/35	4/13/35	
RADIAL LINE PLOT CHECKED	<i>J.J. Lanigan</i> J.J. Lanigan	4/15/35	4/16/35	
SHORELINE INKED	<i>J.J. Lanigan</i> J.J. Lanigan	4/17/35	4/20/35	
DETAIL INKED	<i>R.L. Fisher</i> R.L. Fisher	6/20/35	7/10/35	(10 days -intermittently)
PRELIMINARY REVIEW	<i>S.E. Sperry</i> S.E. Sperry	7/17/35	7/31/35	

AREA OF DETAIL INKED 19.4 sq. Statute Miles (Land Area)
 AREA OF DETAIL INKED 0.0 sq. Statute Miles (Shoals in Water Area)
 LENGTH OF SHORELINE (more than 200 m. from nearest opposite shore)
 13.3 Statute Miles
 LENGTH OF SHORELINE (rivers and sloughs less than 200 m. wide)
 110.0 Statute Miles
 LENGTH OF ROADS, STREETS, TRAILS AND RAILROADS 71.0 Statute Miles

GENERAL LOCATION Little Egg Harbor

LOCATION Tuckerton

DATUM North American 1927

STATION Cullen 1932 Latitude 39° 36' 52.579" (1621.5m.)

(Final Office Adjusted Position) Longitude 74° 19' 44.003" (1049.6m.)
adjusted ✓

COLPILER'S REPORT

for

AIR PHOTO TOPOGRAPHIC SHEET FIELD No. 78

GENERAL INFORMATION

The 1934 Field Inspection Report for the east coast of New Jersey (Metedeconk River to Townsend Inlet), attached to the Descriptive Report for Air Photo Topographic Sheet Reg. No. T 5286 furnished the necessary field information for the compilation of this sheet. Additional information was obtained from Messrs. G. Crowther and R.L. Fisher, Surveyor and Draftsman respectively, of Party No. 12, who are familiar with the topography of this area.

The accompanying STATISTICS SHEET details all the necessary data in connection with the compilation of this sheet.

This sheet was compiled from single lens photographs taken by the Aero Service Corporation, 1612 Chancellor Street, Philadelphia, Pennsylvania. These photographs are on a 1:10,000 scale, enlarged from the original negatives which are on an approximate scale of 1:21,800. There are four sets of these photographs, and the numbers contained in each set together with the dates they were taken are enumerated on the STATISTICS SHEET, page 2. No record was available of the hour at which these photographs were taken, and so the condition of tide could not be determined. The high water line was located on the photographs, at intervals, by accurate measurements taken by the field inspection party.

CONTROL

(a) Sources

The following sources of control were used in the compilation of this sheet:-

- (1) Triangulation by Lieut. C.D. Meaney, 1932, field positions adjusted to North American 1927.
- (2) Theodolite observations - observed recoverable topographic stations (see item 4 on page 5, Field Inspection Report for this area, attached to Descriptive Report Reg. No. T 5286.). There are fourteen such stations occurring on this compilation and every one has been shown by the regulation black circle, and described on form 524.

There were no topographic sheets of sufficiently recent date, that could have been used as control in this area.

The R.R. traverse of the Tuckerton Railroad was used as supplementary control, but as there were no bearings given for the traverse, the azimuths had to be computed from the curve data. The resulting bearings did not always hold to the radial plot, however the distances along the separate tangents held sufficiently close so that the infor-



Kodak photograph taken in Spring of 1935, at a point about 75 feet S.E. of Willett, looking to Northwest.

Additional Note:

Interpretation: Tuckerton Railroad Branch

On the Little Egg Harbor chart of the U.S. Geological Survey (reprint edition of Aug., 1914) and also on Chart No. 1216, of the U.S. Coast and Geodetic Survey, there is shown a branch of the Tuckerton Railroad, leaving the main line at a point north of the town of Tuckerton and running out to Edge Cove.

The field inspection party which worked in this area, asserts that this branch no longer exists and that, except for a few spots, no signs of even the roadbed remain. Though the trace of this line may still be seen in the photographs (which were taken three years ago), it was not shown on this compilation

mation could be used somewhat as supplementary control.

(b) Errors

There are no apparent errors in the control positions for this sheet. The control is, in general, strong and well distributed and the radial line plot gave good intersections, with but one or two exceptions mentioned below under Adjustment of Plot

(c) Discrepancies

No control stations, established by other organizations, were used in this compilation. As mentioned under CONTROL,

(a) Sources page 3, the traverse of the Tuckerton Railroad was used as supplementary control, but only on the tangents. The azimuths of the traverse did not check so well with the radial line plot, but the distances along the individual tangents did.

COMPILATION

(a) Method

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

(b) Adjustment of Plot

With but a few exceptions, the photographs covering this compilation appear to have no undue amount of scale fluctuation or tilt. Photograph 66-11-77 appeared to have so much tilt that a new center was chosen before the photograph was used in the smooth line plot. Photograph 66-6-38 has an unusual amount of distortion near its limits, especially in the area near station Methodist Church (W. Creek). No amount of adjustment could correct the few radial points that were affected in this area. Included in this area, is station E.R.A. #2257, ? the position of which may be questioned because of the flatness of the radial cuts. The remaining photographs caused no unusual adjustment, to the extent of causing any appreciable error.

(c) Interpretation

The usual graphic symbols were used as approved by the Board of Surveys and Maps (1932) and no great difficulty was experienced in interpreting the photographic detail.

The area along the shore is low, flat and marshy, with a vertical edge. There is but little rise and fall of tide and no unusual difficulty was met with in interpreting the high water line.

The double full line was used to indicate first order roads, the double dashed line to indicate poor motor roads and the single dashed line to indicate exceedingly poor roads, trails and paths. Unless labeled on the photographs, the classification had to be determined under the stereoscope.

Lieut. B.H. Rigg is at present conducting a combined-operations party in this area covered by this compilation, and it is assumed that the results of his survey will check the correctness of this compilation.

ADDITIONAL NOTE - INFORMATION FROM OTHER SOURCES.

Three 1934 U.S. Engineer's survey sheets, file nos. 3368, 3369 and 3370, were used as a guide in detailing the Tuckerton Creek area. As these sheets were performed on a scale of one inch to the hundred feet and were executed in January 1934, almost two years later than the date at which the photographs were taken, priority has been given them over the photographs. Lt. B.H. Rigg, operating a combined operations party in this locality, will discover and rectify any errors in the compilation as a duplicate copy of this compilation (shoreline only) has been previously furnished him for this purpose.

The above U.S.E.D. sheets, nos. 3368, 3369, and 3370 will be forwarded to the Washington Office with this compilation.

There are numerous ditches in the marsh areas. Only the main ditches have been shown.

There are no bridges of importance to navigation on this sheet.

(d) Information from Other Sources

As mentioned under CONTROL, (a) Sources, page 3, the individual tangents of the Tuckerton Railroad traverse were used as supplementary control.

There were no topographic sheets of sufficiently recent date that could be used in this compilation.

No other information from any other source was used in the compilation of this sheet.

(e) Conflicting Names

There are no names on this sheet, conflicting with the U.S.C. & G.S. Charts of this area.

COMPARISON WITH OTHER SURVEYS

The junctions with all adjoining sheets are satisfactory.

There were no topographic sheets of sufficiently recent date to compare with this compilation.

LANDMARKS

A list of landmarks, including those to be expunged, has been submitted by this party in the field inspection report which is attached to the descriptive report of sheet Reg. No. T-5286. It is assumed that Lieut. B.H. Rigg, who is conducting operations in this area at present, will check the list and any revisions if necessary.

There are also many other objects (such as houses, ends of docks etc.) which are located within the accuracy specified under the following heading, RECOMMENDATIONS FOR FURTHER SURVEYS, and may be used to obtain hydrographic "fixes". Care should be taken, when using the houses, to use the center as the size shown on the compilation may be expanded somewhat.

RECOMMENDATIONS FOR FURTHER SURVEYS

The compilation of this sheet is believed to have a probable error of not over 2 meters in well defined detail of importance for charting, and of not over 4 meters for other data. It is understood that the widths of roads and similar objects may be slightly exaggerated in order to keep the detail clear and to avoid the closing up of the lines and photographing as a solid area in the photo-lithographic process.

To the best of my knowledge this sheet is complete in all detail of importance for charting purposes within the accuracy stated above, and no additional surveys are required.

Assisted by *J. J. Lanigan*
J. J. Lanigan
Surveyor

Submitted by *R. L. Fisher*
R. L. Fisher
Draftsman

a better estimate of accuracy is from 0.2 to 0.5 mm for in-lined points and 0.2 to 0.8 mm for other detail

RECOVERABLE TOPOGRAPHIC STATIONS.

This list includes all recoverable objects shown by a small black circle on this compilation, and all described on form 524 (except Lights 39A and 40A) submitted with Lt. Rigg's Graphic Control Sheets or with the descriptive report T-5286 (see pages 5 & 6).

NAME	LAT.	LONG.	METHOD OF DETERMINATION.
Bridge (Cox Estate)	39°-38.8'	74°-16.9'	T.S.
E.R.A. #2257	39°-38.3'	74°-18.3'	A.P.T.
M.E. Ch. (West Creek)	39°-38.0'	74°-18.6'	T.S.
N.E. Gable	39°-37.2'	74°-18.5'	T.S.
Hill	39°-36.2'	74°-21.9'	T.S.
Tuckerton 1st. M.E. Church	39°-36.3'	74°-20.4'	T.S. & A.C.S."N".
E.R.A. #2259	39°-36.2'	74°-20.4'	A.P.T.
Flagpole - Firehouse (U.S.E.)	39°-36.1'	74°-20.5'	A.P.T.
Tuckerton W.T.	39°-36.2'	74°-20.4'	T.S. & A.C.S."N".
E. Radio Marine Tower	39°-36.5'	74°-19.7'	T.S. & A.C.S."N".
W. Gable (Parker Run)	39°-36.6'	74°-17.7'	T.S.
East Gable (West Creek)	39°-36.9'	74°-15.8'	T.S.
E.R.A. #2261	39°-35.9'	74°-22.5'	A.P.T.
Temp. Sta. (Edge Cove)	39°-35.9'	74°-19.3'	T.S.
W. Gable (Edge Cove)	39°-35.9'	74°-18.9'	T.S. & A.C.S."N".
W. Gable (Long Point)	39°-35.9'	74°-15.7'	T.S. & A.C.S."M".
Rear Range (U.S.E.)	39°-34.9'	74°-20.5'	T.S. & A.C.S."N".
Front Range (U.S.E.)	39°-34.8'	74°-20.4'	T.S. & A.C.S."N".
Willett	39°-33.9'	74°-20.6'	T.S. & A.C.S."N".
Tuckerton Yacht Club	39°-34.9'	74°-20.3'	A.C.S."N".
Chy. West Creek Yacht Club	39°-37.0'	74°-16.3'	A.C.S."M".
Light 40 A	39°-36.8'	74°-15.8'	A.C.S."M".
Light 39A	39°-36.5'	74°-17.5'	A.C.S."M".

NOTE:- A.C.S. denotes Aluminum Control Sheet, Rigg, 1935.

T.S. denotes Theodolite-observed control Station (See pages 5 & 6 in field inspection report attached to Desc. Report T-5286).

A.P.T. denotes location by Air Photo Topography (Radial plot).

The positions and descriptions of the T.S. and A.P.T. stations were furnished Rigg before his topography was completed, and were all verified by his graphic control sheets (when shown above with A.C.S. following T.S.).

It is noted that on Rigg's graphic control sheets he has shown many of the above stations inked in but he did not verify the positions in the field.

Remarks

Decisions

1	*Formerly called "Willetts Thoro."	
2		
3		
4	*Formerly called "Jessie Point". <i>Relate the possessive.</i>	
5	<i>do.</i>	
6		
7	<i>Relate the possessive.</i>	
8		
9		
10	*Formerly called "Parker Run". <i>U.S.G.B decision 5/6/41</i>	
11		
12		
13	*Formerly called "Westecunk Creek".	
14		
15		
16		
17		
18		
19	<i>Relate the possessive</i>	
20	<i>do.</i>	
21		
22		
23		
24		
25		
26		
27		

GEOGRAPHIC NAMES

Survey No. T-5446
Air Photo Compilation

GEOGRAPHIC NAMES		Rigg's Air-photo 1216, Special Field 3243, Report Inspection Geographic Names, 1985 On Chart No. 1085 On U. S. Quadrangle Maps From local information On local Maps P. O. Guide or Map Rand McNally Atlas U. S. Light List Hwy. maps & Signs.									
Name on Survey	A	B	C	D	E	F	G	H	K		
<u>Thorefare</u>											
<u>Big Creek</u> ✓	*	x	*							1	
<u>Tuckerton Creek</u> ✓	x	x	x	3 men						2	
<u>Tuckerton</u> ✓	x		x	4 men	x					3	
<u>Jeremys Point</u> ✓	*	x	*							4	
<u>Gaunts</u>											
<u>Gaunts Point</u> ✓	x	x								5	
<u>Edge Cove</u> ✓	x	x	x	3 men						6	
<u>Jeremys Creek</u> ✓		x								7	
<u>Little Egg Harbor</u> ✓	x	x	x	3 men						8	
<u>Parker Cove</u> ✓	x	x	x	2 men						9	
<u>Parker Run</u>											
<u>Parkertown Creek</u> ✓	*	x	*							10	
<u>Thompson Creek</u> ✓		x								11	
<u>Long Point</u> ✓	x	x	x	3 men						12	
<u>West Creek</u> ✓	x	x	*	3 men						13	
<u>Dinner Point</u> ✓	x	x	x	2 men						14	
<u>Dinner Point Creek</u> ✓	x	x	x	3 men						15	
<u>Horse Point</u> ✓	x	x	x							16	
<u>Parkertown</u> ✓		x	x	4 men						17	
<u>West Creek (town)</u> ✓	x	x	x	4 men						18	
<u>Roses Cove</u> ✓		x								19	
<u>Roses Point</u> ✓		x								20	
										21	
										22	
										23	
										24	
										25	
										26	
										27	

Names underlined in red approved

by C. Egan on 3/5/36.

M 234

Names underlined in red approved

by *O. Egan* on 3/5/36.

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 _____

Positions checked by _____

Grid inked on machine by _____

Intersections inked by _____

Points used for plotting grid:

$\frac{x}{y}$ _____

$\frac{x}{y}$ _____

$\frac{x}{y}$ _____

$\frac{x}{y}$ _____

$\frac{x}{y}$ _____

$\frac{x}{y}$ _____

$\frac{x}{y}$ _____

$\frac{x}{y}$ _____

Triangulation stations used for checking grid:

1. _____ 5. _____

2. _____ 6. _____

3. _____ 7. _____

4. _____ 8. _____

* This grid was not plotted on celluloid because of poor projection. The attached computations may be used later. R.E. Ask

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J. STATION _____

x	<u>2,085,000.00</u>	$\log S_0$	<u>4.92941775</u>
K	<u>2</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>85,000.00</u>	$\log (1/R)$	<u>10.86</u>
$x'^3/(6\rho_0^2)$	<u>.23</u>	$\log S_m$	<u>4.41344444</u>
S_0	<u>84,999.77</u>	cor. are to sine	<u>119</u>
$3 \log x'$	<u>14.78825679</u>	$\log S_1$	<u>4.41344325</u>
$\log 1/(6\rho_0^2)$	<u>4.5810213</u>	$\log A$	<u>8.50912851</u>
$\log x'^3/(6\rho_0^2)$	<u>9.3692781</u>	$\log \sec \phi$	<u>0.11323059</u>
$\log S_m^2$	<u>8.82688488</u>	$\log \Delta\lambda_1$	<u>3.03580235</u>
$\log C$	<u>1.322235</u>	cor. sine to arc	<u>+ 201</u>
$\log \Delta\phi$	<u>0.149124</u>	$\log \Delta\lambda$	<u>3.03580436</u>
y	<u>280,000.00</u>	$\Delta\lambda$	<u>1085.9363</u>
ϕ' (by interpolation)	<u>39 36 07.5517</u>	λ (central mer.)	<u>74 40</u>
$\Delta\phi$	<u>1.4092</u>	$\Delta\lambda$	<u>18 05.9363</u>
ϕ	<u>39 36 06.1426</u>	λ	<u>74 21 54.0637</u>

Explanation of form:

$$x' = x - K$$

$$S_0 = x' - \frac{x'^3}{(6\rho_0^2)}$$

$$S_m = \frac{1}{R} \left(\frac{1200}{3937} \right) S_0$$

R = scale reduction factor

ϕ' is interpolated from table of y

$$\Delta\phi = C S_m^2$$

$$\phi = \phi' - \Delta\phi$$

$$\Delta\lambda_1 = S_1 A \sec \phi$$

$$\log S_1 = \log S_m - \text{cor. are to sine}$$

$$\log \Delta\lambda = \log \Delta\lambda_1 + \text{cor. are to sine}$$

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

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J. STATION _____

x	<u>2,100,000.00</u>	$\log S_0$	<u>4.99999835</u>
K	<u>2,</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>100,000.00</u>	$\log (1/R)$	<u>1086</u>
$x'^3/(6\rho_0^2)_0$	<u>— .38</u>	$\log S_m$	<u>4.48402504</u>
S_0	<u>99,999.62</u>	cor. arc to sine	<u>— 165</u>
$3 \log x'$	<u>15.00000000</u>	$\log S_1$	<u>4.48402339</u>
$\log 1/(6\rho_0^2)_0$	<u>4.5810213</u>	$\log A$	<u>8.50912920</u>
$\log x'^3/(6\rho_0^2)_0$	<u>9.5810213</u>	$\log \sec \phi$	<u>0.11305758</u>
$\log S_m^2$	<u>8.96805008</u>	$\log \Delta\lambda_1$	<u>3.10621017</u>
$\log C$	<u>1.321814</u>	cor. sine to arc	<u>+ 278</u>
$\log \Delta\phi$	<u>0.289864</u>	$\log \Delta\lambda$	<u>3.10621295</u>
y	<u>270,000.00</u>	$\Delta\lambda$	<u>1277.0649</u>
ϕ' (by interpolation)	<u>39 34 28.7170</u>	λ (central mer.)	<u>74 40</u>
$\Delta\phi$	<u>— 1.9493</u>	$\Delta\lambda$	<u>— 21 17.0649</u>
ϕ	<u>39 34 26.7678</u>	λ	<u>74 28 42.9351</u>

Explanation of form:

$$x' = x - K$$

$$S_0 = x' - \frac{x'^3}{(6\rho_0^2)_0}$$

$$S_m = \frac{1}{R} \left(\frac{1200}{3937} \right) S_0$$

R = scale reduction factor

ϕ' is interpolated from table of y

$$\Delta\phi = C S_m^2$$

$$\phi = \phi' - \Delta\phi$$

$$\Delta\lambda_1 = S_1 A \sec \phi$$

$$\log S_1 = \log S_m - \text{cor. arc to sine}$$

$$\log \Delta\lambda = \log \Delta\lambda_1 + \text{cor. arc to sine}$$

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

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION _____

x	<u>2,100,000.00</u>	$\log S_0$	<u>4.99999435</u>
K	<u>20</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>100,000.00</u>	$\log (1/R)$	<u>10.86</u>
$x'^3/(6\rho_0^2)$	<u>.38</u>	$\log S_m$	<u>4.48402504</u>
S_0	<u>99,999.62</u>	cor. arc to sine	<u>1.65</u>
		$\log S_1$	<u>4.48402339</u>
$3 \log x'$	<u>15.00000000</u>	$\log A$	<u>8.50912451</u>
$\log 1/(6\rho_0^2)$	<u>4.5810213</u>	$\log \sec \phi$	<u>0.11322965</u>
$\log x'^3/(6\rho_0^2)$	<u>9.5810213</u>	$\log \Delta\lambda_1$	<u>3.10638155</u>
		cor. sine to arc	<u>+ 278</u>
$\log S_m^2$	<u>8.96805008</u>	$\log \Delta\lambda$	<u>3.10638433</u>
$\log C$	<u>1.322235</u>	$\Delta\lambda$	<u>1277.5689</u>
$\log \Delta\phi$	<u>0.290285</u>		
y	<u>280,000.00</u>		
ϕ' (by interpolation)	<u>39 36 07.5517</u>	λ (central mer.)	<u>74 40</u>
$\Delta\phi$	<u>1.9511</u>	$\Delta\lambda$	<u>21 17.5689</u>
ϕ	<u>39 36 05.6006</u>	λ	<u>74 18 42.4311</u>

Explanation of form:

$$x' = x - K$$

$$S_0 = x' - \frac{x'^3}{(6\rho_0^2)}$$

$$S_m = \frac{1}{R} \left(\frac{1200}{3937} \right) S_0$$

R = scale reduction factor

ϕ' is interpolated from table of y

$$\Delta\phi = C S_m^2$$

$$\phi = \phi' - \Delta\phi$$

$$\Delta\lambda_1 = S_1 A \sec \phi$$

$$\log S_1 = \log S_m - \text{cor. arc to sine}$$

$$\log \Delta\lambda = \log \Delta\lambda_1 + \text{cor. arc to sine}$$

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

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION _____

x	<u>2,115,000.00</u>	$\log S_0$	<u>5.06069565</u>
K	<u>21</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>115,000.00</u>	$\log (1/R)$	<u>10.86</u>
$x'^3/(6\rho_0^2)_0$	<u>.58</u>	$\log S_m$	<u>4.54372234</u>
S_0	<u>114,999.42</u>	cor. arc to sine	<u>212</u>
$3 \log x'$	<u>15.18209352</u>	$\log S_1$	<u>4.54372017</u>
$\log 1/(6\rho_0^2)_0$	<u>4.5810213</u>	$\log A$	<u>8.50912852</u>
$\log x'^3/(6\rho_0^2)_0$	<u>9.7631148</u>	$\log \sec \phi$	<u>0.11322857</u>
$\log S_m^2$	<u>9.44468</u>	$\log \Delta\lambda_1$	<u>3.16807726</u>
$\log C$	<u>1.322235</u>	cor. sine to arc	<u>+ 366</u>
$\log \Delta\phi$	<u>0.409680</u>	$\log \Delta\lambda$	<u>3.16708089</u>
y	<u>280,000.00</u>	$\Delta\lambda$	<u>1455.6209</u>
ϕ' (by interpolation)	<u>39 36 07.5517</u>	λ (central mer.)	<u>74 40 9.1980</u>
$\Delta\phi$	<u>2.5400</u>	$\Delta\lambda$	<u>24 25.8209</u>
ϕ	<u>39 36 04.9432</u>	λ	<u>74 15 34.1771</u>

Explanation of form:

$$x' = x - K$$

$$S_0 = x' - \frac{x'^3}{(6\rho_0^2)_0}$$

$$S_m = \frac{1}{R} \left(\frac{1200}{3937} \right) S_0$$

R = scale reduction factor

ϕ' is interpolated from table of y

$$\Delta\phi = C S_m^2$$

$$\phi = \phi' - \Delta\phi$$

$$\Delta\lambda_1 = S_1 A \sec \phi$$

$$\log S_1 = \log S_m - \text{cor. arc to sine}$$

$$\log \Delta\lambda = \log \Delta\lambda_1 + \text{cor. arc to sine}$$

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

T-5446

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION _____

x	<u>2,100,000.00</u>	$\log S_0$	<u>4.99999835</u>
K	<u>2</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>100,000.00</u>	$\log (1/R)$	<u>1086</u>
$x'^3/(6\rho_0^2)_0$	<u>-.38</u>	$\log S_m$	<u>4.48402504</u>
S_0	<u>99,999.62</u>	cor. arc to sine	<u>165</u>
$3 \log x'$	<u>15,00000000</u>	$\log S_1$	<u>4.48402339</u>
$\log 1/(6\rho_0^2)_0$	<u>4.5810213</u>	$\log A$	<u>8.50912747</u>
$\log x'^3/(6\rho_0^2)_0$	<u>9.5810213</u>	$\log \sec \phi$	<u>0.11348808</u>
		$\log \Delta \lambda_1$	<u>3.10663894</u>
		cor. sine to arc	<u>+ 278</u>
$\log S_m^2$	<u>8.96805008</u>	$\log \Delta \lambda$	<u>3.10664172</u>
$\log C$	<u>1.322866</u>	$\Delta \lambda$	<u>1278.3263</u>
$\log \Delta \phi$	<u>0.290916</u>		
y	<u>295,000.00</u>		
ϕ' (by interpolation)	<u>39 38 35.8029</u>	λ (central mer.)	<u>74 40 "</u>
$\Delta \phi$	<u>1.9540</u>	$\Delta \lambda$	<u>21 18.3263</u>
ϕ	<u>39 34 33.8489</u>	λ	<u>74 19 41.6737</u>

Explanation of form:

$$x' = x - K$$

$$S_0 = x' - \frac{x'^3}{(6\rho_0^2)_0}$$

$$S_m = \frac{1}{R} \left(\frac{1200}{3937} \right) S_0$$

R = scale reduction factor

ϕ' is interpolated from table of y

$$\Delta \phi = C S_m^2$$

$$\phi = \phi' - \Delta \phi$$

$$\Delta \lambda_1 = S_1 A \sec \phi$$

$$\log S_1 = \log S_m - \text{cor. arc to sine}$$

$$\log \Delta \lambda = \log \Delta \lambda_1 + \text{cor. arc to sine}$$

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

ADDITIONAL NOTE FOR COMPILATION, FIELD NO. 78.


After the completion of this compilation the 1935 Aluminum Control Sheets of Lieut. Rigg were furnished this party for comparison; previous to this a comparison was made in August 1935 and several discrepancies called to Lt. Rigg's attention which are now rectified. There is now no discrepancy between this compilation and the graphic control sheet, field letters "M" & "N"; however, as no hydrographic sheets have been furnished this party no comparison could be made. It is assumed that no errors existed in the compilation shoreline previously furnished the hydro. party as no word has been received to the contrary.

There are a few minor errors on the aluminum control sheets, such as the topographer extending marsh symbol beyond the points at which H.W. rod readings were taken, etc. The compilation shows the correct shoreline which has been altered because of evident erosion and now agrees with the aluminum control sheets.

The following 1935 triangulation stations of Lt. Rigg were established after the date of this compilation and were not available for controlling the photo plot:- JESSIE 1935, WEST 1935, and PARKER 1935. The shoreline shown on the compilation agrees with the reference measurements made as given in the descriptions for these stations. At station PARKER it was necessary to adjust the shoreline about 5 meters in order to comply with these measurements. This, however, was not considered as being without logic as the station is located at the mouth of a creek, the aerial photos were taken over 3 years ago, and there is frequent mention on Lt. Rigg's topographic sheets of cases of shoreline erosion, also there is a T.S. station "W. Gable (Parker Run)" located only a short distance away which gives conclusive proof that photo plot could not be in error.

A list of geographic names appearing on this sheet are submitted on the special forms herewith.

Feb. 5th., 1936.


Roswell C. Bolstad,
Chief of Party No. 12.

REVIEW OF AIR PHOTO COMPILATION T-5446.

Comparison with Contemporary Graphic Control Surveys.

T-6399b (1935 and 1936) 1:10,000; T-6400a (1935 and 1936)
1:10,000.

The above Graphic Control surveys are in agreement with the compilation. The range lights at lat. $39^{\circ} 34.8'$, long. $74^{\circ} 20.5'$ ^{were} ~~have been transferred to the compilation in this office by ^{report T-6400a} Lande~~ and checked by ~~Land~~. The azimuth of this range is given on T-6400a as $323^{\circ} 24'$ and was determined by a planetable set up on the range. The azimuth is not shown on this compilation. All information and detail shown on the above Graphic Control Surveys is shown on the compilation except temporary topographic signals and magnetic meridians.

Comparison with Contemporary Hydrographic Surveys.

The 1936 hydrographic surveys in the area of this compilation are not yet in this office.

Comparison with Former Topographic Surveys.

T-119 (1841) 1:20,000; T-1315a (1872) 1:20,000; T-1333 (1871)
1:20,000.

Comparison with the above topographic surveys ^{show} minor time changes as far as the shoreline is concerned. Many new topographic features such as roads, bridges and houses which have been constructed since the date of the above surveys are shown on the compilation. The compilation is complete and adequate to supersede those portions of the above surveys which it covers except for contours shown on T-1315a.

Comparison with Charts 1216 and 3243.

A list of landmarks is to be submitted for this area by the Hydrographic Party of Lieutenant L. D. Graham. The radio towers at lat. $39^{\circ} 36.5'$, long. $74^{\circ} 19.7'$ are recommended as landmarks in graphic control survey report T-6400a Page 7.

A detailed discussion of aids to navigation is given on pages 3 to 5 of graphic control survey report T-6399b. The range lights at lat. $39^{\circ} 34.8'$, long. $74^{\circ} 20.5'$ were located in graphic control survey T-6400a, June 1935. The azimuth of the range, $323^{\circ} 20'$ was determined by a planetable position on range, scaled and checked by compilation.

The lights on this compilation were located or checked on Graphic Control Survey T-6399b to June 1936. Some of these lights are of a temporary nature as noted on page 8 of report T-6399b.

General.

A large part of the marsh in this area is covered with small drainage ditches which were not shown by the field compiler. These have not been added in this office.

A number of larger drainage ditches and sloughs left off by the field compiler have been added in this office.

Supplemental Data.

The field inspection of this compilation was made between November 1934 and March 1935. The field inspection showed only few minor changes since the date of the photographs, 1932.

Planetable surveys in 1935 and 1936 have added lights, beacons, recoverable topographic stations, and a very few minor corrections to shore line.

Therefore, practically all detail on the compilation is of the date of the photographs, 1932, except the location of lights, beacons, and recoverable stations.

L. C. Lande
v B. Jones

REVIEW OF AIR PHOTO COMPILATION NO.

Chief of Party: Roswell C. Bolstad

Compiled by: (see page 2 of
Descriptive Re-
port)
Nov. 15, 1932

Project: New York Air Photo Compilation
Party No. 12

Instructions dated:

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)

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)

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.

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)

Previously submitted, see paragraph on LANDMARKS, page 5

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 of importance to navigation occur on this sheet.

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 N.A. 1927 ^{adjusted} 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: Any additional notes and requirements affecting this area are referred to the report of Lt. B.H. Rigg, who is conducting a combined-operations party in this area at the present time.

18. Examined and approved;

Preliminary review by:-

S. E. Sperry Jr.
S.E. Sperry Jr.
Surveyor

Roswell S. Holstad
Roswell S. Holstad
Chief of Party

19. Remarks after review in office:

Reviewed in office by: *L. C. Lande* ✓ *B. J. Jones*

Examined and approved:

C. H. Green.
Chief, Section of Field Records

L. O. Solbert.
Chief, Division of Charts

Frederick L. Peacock
Chief, Section of Field Work

Arthur H. Hall
Chief, Division of Hydrography and Topography.