

5096

(Original)

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-5096

State ~~---~~ **New Jersey**

LOCALITY

Barnegat Bay,
~~Cedar Creek~~
Pettar Creek to Forked River,
Forked River

1936 2

CHIEF OF PARTY

Roswell C. Holstad - - Jr. H. & G. E.

U. S. GOVERNMENT PRINTING OFFICE: 1934

$$\begin{array}{r} 3949 \\ \underline{65} \\ 3884 \end{array}$$

6-17-18

12-10-1968

Applied to drawing of Chart 12 16 - June 27, 1937 - JFW
" " compilation " 825 1938 O.P.L.-J. Jm.G.

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. 46

REGISTER NO. T-5096

T5096

State New Jersey

General locality Barnegat Bay

Locality ~~Cedar Creek~~ Forked River
Potter Creek to Forked River

Scale 1 : 10,000 Date of survey photographs 7/25/32: 4/4/32: 4/4/32, 1932

Date of Compilation: January 21, 1936

Vessel Photo Compilation Parties Nos. 12 and 25; N.Y. City & Balto. Md.

Reviewed and recommended for approval :

Chief of party

Rosewell C. Bolstad
Rosewell C. Bolstad

Surveyed by See STATISTICS SHEET of this report.

Inked by W.E. Brown, H. Mach, J.C. Partington

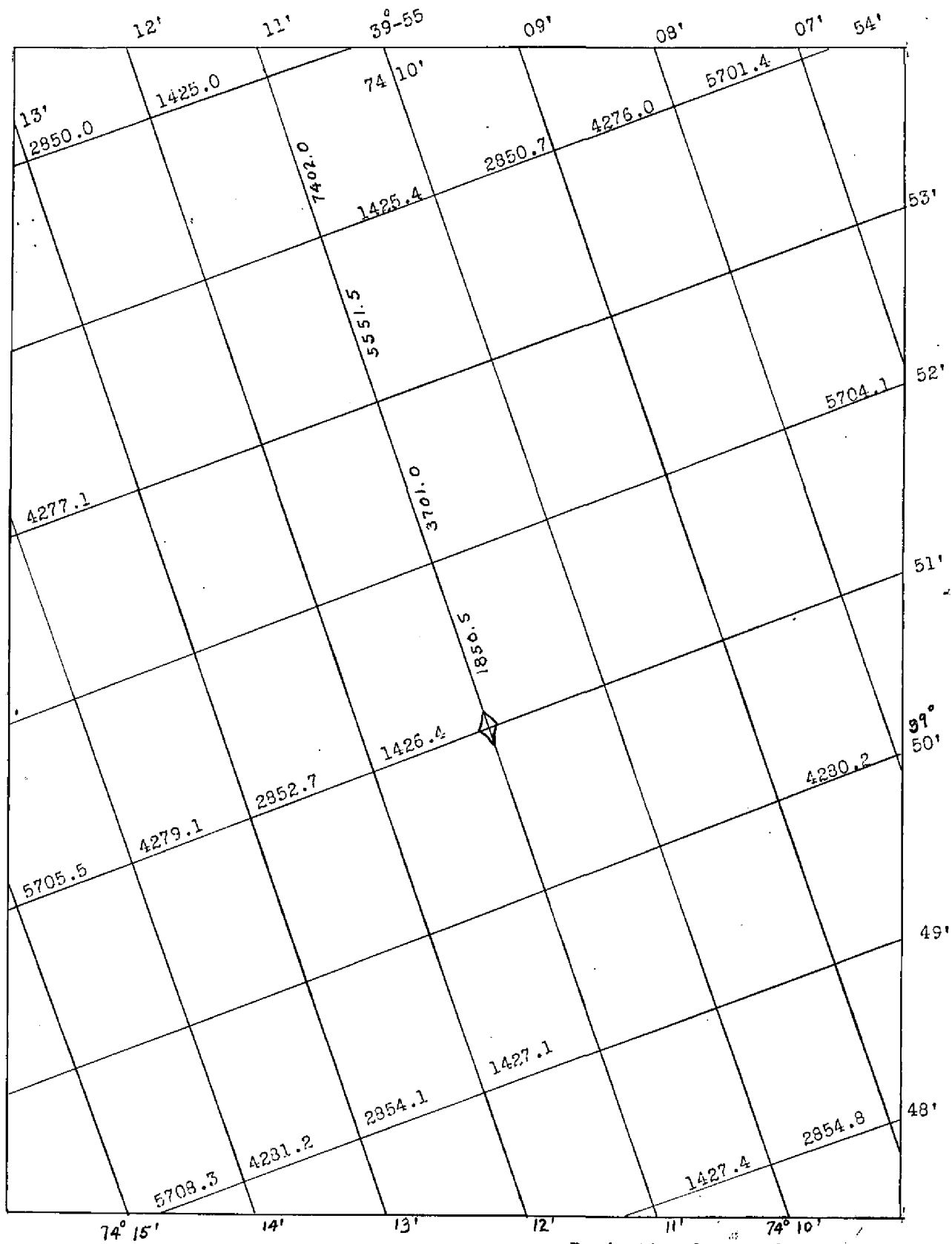
Heights in feet above --- to ground to tops of trees

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.



Projection layout for Sheet T-5096

Comp. by R.C.Bolstad
 Checked by W.D.Ayers

STATISTICS

on

SHEET, FIELD NO. 46, REG. NO. T-5096

PHOTOGRAPHS AS FOLLOWS:

66-51-56 to 66-51-59 incl.	taken	July 25, 1932
66- 4- 9 to 66- 4-15 incl.	taken	April 4, 1932
66- 4-73 to 66- 4-78 incl.	taken	April 4, 1932

	<u>BY</u>	<u>DATE</u>	
		<u>From</u>	<u>To</u>
ROUGH RADIAL PLOT	none	---	---
SCALE FACTOR (1.000)	none	---	---
SCALE FACTOR CHECKED	none	---	---
PROJECTION	<i>J.R. Batchelor</i> J.R. Batchelor	10-16-34	
PROJECTION CHECKED	W.D. AYERS W.D. Ayers	10-16-34	
CONTROL PLOTTED	{ W.E. Brown W.E. BROWN J.P.O'Donnell J.P.O'DONNELL J.C. Partington J.C. Partington }	{ 10-31-34 2- 6-35 12-23-35 }	
CONTROL CHECKED	{ J.G. Albert J.G. ALBERT R.C. Bolstad R.C. Bolstad }	{ 2-26-35 1-23-36 }	
TOPOGRAPHY TRANSFERRED	none	---	---
TOPOGRAPHY CHECKED	none	---	---
SMOOTH RADIAL LINE PLOT	J.P.O'Donnell J.P.O'Donnell	3/7/35	3/15/35
RADIAL LINE PLOT CHECKED	H. Mach H. MACH	3/18/35	3/20/35
DETAIL INKED	{ W.E. Brown W.E. BROWN H. Mach H. MACH J.C. Partington J.C. Partington }	{ 4/2 /35 6/24/35 12/20/35 }	{ 5/ 2/35 6/29/35 1/21/36 }
PRELIMINARY REVIEW OF SHEET	J.C. Partington J.C. Partington	1/22/35	1/24/36
AREA OF DETAIL INKED	22.5 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)	27.6	Stat. Mi	
LENGTH OF SHORELINE(rivers and sloughs less than 200 m. wide	21.0	Stat. Mi	
LENGTH OF STREETS, ROADS, TRAILS, RAILROADS, etc.	120.0	Stat. Mi	
GENERAL LOCATION	Barnegat Bay, New Jersey		
LOCATION	Potter Creek to Forked River		
DATUM	North American 1927		
STATION	Pottery 1935		
	Latitude 39 - 53' - 44.260 " (1365.1 m) 44.246 " 1364.6 m.		
	Longitude 74 - 08' - 00.820 " (19.5 m) (adjusted) 00.823 " 19.6 m.		
	(Field Computations)		

COMPILER'S REPORT

for

AIR PHOTO TOPOGRAPHIC SHEET FIELD NO. 46

GENERAL INFORMATION

The 1934 Air Photo 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 data for the compilation of this sheet. Additional information was obtained from Mr. R.L. Fisher, Draftsman, who made the field inspection of this area.

The accompanying STATISTICS SHEET details all the 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 St., Philadelphia, Pa. The photographs are on a 1:10,000 scale enlargement from the original negatives which are on an approximate scale of 1:21,800. There are three sets of photographs; the date when each set was taken is listed on the STATISTICS SHEET. No record was made of the hour at which these photographs were taken and so the stage of the tide could not be determined. ~~Accurate measurements were taken at intervals by the field party to determine the high water line and the distances are noted on the photos.~~ ✓

CONTROL

(A) Sources

1. The positions of the following triangulation stations were obtained from the adjusted computations of Lieut. C.D. Meaney in 1932. They are on North American Datum of 1927, Atlantic Coast Arc.

Lacey 1932

Large Bldg. 1932

2. Theodolite observed control stations. (See item 4 on page 5 of the field inspection report of this area attached to the report for sheet Reg. No. T-5286.) These stations are shown by the regulation 2½ millimeter black circle on this compilation sheet. They are marked (d) on the overlay sheet and have been described on Form 524. They are on North American 1927 Datum, and are as follows:

Potter	Dome	Golf Club Tank
E.Gable Green Roof	South Gable House,	So.Gable Hut
Stout	Forked River F.P. Chy	(A.T.& T.)
Forked River M.E.Ch.	Greyhound	Cupola Staff
Forked	Signal (Temp.)	

Station TANK WINDMILL 1935 was located by the party of Lieut.R.C.Bolstad as a theodolite observed control station. This station was located by Lieut.J.C.Sammons at a later date by triangulation methods. It is accordingly shown on the compilation with the triangulation station symbol.

BRIDGES.

The data for the two bridges as shown on the over-lay sheet for this compilation, one at Cedar Creek and one At Forked River, was obtained from the field inspection report attached to Desc. Report T-5286. They are not at present of great importance to navigation as depth of water is the controlling factor which limits navigation to very small craft and row-boats only.

2. (continued)

Station INTER was located by a traverse from triangulation station LACEY 1932. Station INTER is the intersection of two roads and was used to control the radial line plot. It is unmarked and is therefore shown on the celluloid sheet with a double (⊙) blue circle.

3. Triangulation station CEDAR 1926 was obtained from triangulation during that year. It was used to control the radial line plot.

(B) Errors

No error in position of any control station was found by the radial line plot.

(C) Discrepancies

The railroad traverse of the Central Railroad of New Jersey was used to control the radial line plot and was of great aid. No plottable discrepancies were noted except where obvious changes had been made by new road crossings.

COMPILATION

(A) Method

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

(B) Adjustment of Plot

The railroad traverse noted under CONTROL paragraph (C) was of great aid in making the radial line plot of this sheet. The railroad traverse was tied in the field to theodolite observed stations "VENT CUPOLA" (Sheet No. T-5329) at latitude $39^{\circ} 54.7'$ and to station "GREYHOUND" at Latitude $39^{\circ} 50.2'$. No plottable discrepancy with the radial plot in either azimuth or distance was discovered between these two stations. All road crossings along the railroad were used as supplementary control and no plottable error in the railroad traverse was noted.

Also A LARGE BLDG 1932. See back of Photo 66-4-15.

The photographs covering this area appear to have little scale fluctuation or tilt. No appreciable adjustment of the plot was found necessary.

(C) Interpretation

The usual symbols as approved by the Board of Surveys and Maps were used for all conventional signs. No great difficulty was experienced in interpreting the photographic detail.

Good motor roads are indicated by a double full line and poor motor roads by a double dashed line. Poor roads, trails, and paths are shown by a single dashed line. The boundary of cultivated fields are shown by a long dashed line where such boundaries are definite on the photographs.

Buildings have been examined under the stereoscope and it is believed that all buildings of importance have been shown on the compilation.

There are no bridges of importance to navigation within the area of this sheet.

(D) Information from Other Sources

Some triangulation was accomplished in this area after the sheet had been compiled. This triangulation will be found under Second Order Triangulation, New Jersey Coast, 1935; B.H.Rigg and J.C.Sammons, Chiefs of Party. The following stations form a part of this scheme of triangulation:

Pottery 1935	Lano 1935
Stouts 1935	Fork 1935
Tank Windmill 1935	

The station Tank Windmill had been located by R.C.Bolstad as a Fourth Order Theodolite Control station prior to the above triangulation. A comparison of the two shows that Bolstad's position is 2.6 meters north and 0.7 meters west of the position as determined by J.C.Sammons. The position as determined by R.C.Bolstad was used to control the radial line plot, since this station was not located by J.C.Sammons until after the photo plot had been completed.

The field inspection of this sheet was completed before stations POTTERY, LANO, STOUTS, and FORK had been located by triangulation. These four stations were not used in controlling the radial line plot. Their positions have been plotted on the compilation, but they have not been spotted on the photographs.

(E) Conflicting Names

The names on this sheet are listed on form M-234 which forms a part of this report. The name as listed in the column "Name on Survey" is recommended for charting.

COMPARISON WITH OTHER SURVEYS

This compilation (T-5096) has been compared with aluminum topographic sheets field letters G, E, and F. The aluminum sheets were accomplished by the party of J.C.Sammons in 1935.

A comparison of this compilation with sheet E shows the following:

Topographic station Potter is identical on both sheets.

Topographic station Dome is the same on both sheets in an east - west direction but is $2\frac{1}{2}$ meters farther north on aluminum sheet E than on Photo Compilation T-5096. The position of this station on aluminum sheet E is also $2\frac{1}{2}$ meters north of the position shown on card Form 524. On aluminum sheet E, station Dome was located by three plane-table cuts from triangulation stations SEASIDE PARK, NEW JERSEY, and POTTERY. From SEASIDE PARK, station Dome is about 1 inch beyond the end of an ordinary plane-table alidade and from station New Jersey, Dome falls within about 2 inches from the end of the alidade. The three cuts intersect very well, however.

Station Dome was located by the party of Lieut. R.C.Bolstad by theodolite cuts from stations SEASIDE HEIGHTS S.P. 1926 and from Shack. SEASIDE HEIGHTS S.P. is a 1926 triangulation station, while the position of Shack was determined by a theodolite and tape traverse from triangulation station FLY 1932.

It is believed that the position of station Dome as determined by theodolite cuts is more accurate than the planetable position.

See next Page

* no corrections have been made to these
stations as they are within the accuracy of
the compilation

L.C.H.

In the vicinity of triangulation station POTTERY the shoreline on aluminum sheet E agrees with the shoreline shown on compilation T-5096.

Photo Compilation No. T-5096 was compared with aluminum topographic Sheet F with the following results:

The position of topographic station E.Gable Green Roof as shown on Sheet F is 3.0 meters south and 2.0 meters east of the position shown on Compilation T-5096.

The positions of topographic stations South Gable House, So. Gable Hut, Stout, and Forked are identical on the two sheets.

On aluminum topographic sheet F the position of station E. Gable Green Roof was determined by plane-table cuts from triangulation stations FLY, FORK and plane-table setup 31. The position of this station was determined by the party of R.C.Bolstad by means of a theodolite three-point fix on triangulation stations ISLAND BEACH C.G.STA., CEDAR CREEK C.G.STA., and FORKED RIVER C.G.STA. The position of this station can also be determined by the quadrilateral E.Gable Green Roof, CEDAR CREEK C.G. STA., FORKED RIVER C.G.STA., Stout. It is believed that the position as shown on the photo compilation T-5096 is more accurate than that shown by aluminum sheet F.

The shoreline on sheet F has been compared with the shoreline on the photo compilation and the two are in agreement.

The positions of the following recoverable topographic stations have been transferred to photo compilation T-5096 from aluminum sheet F:

Wow	Pink	Beacon 47-A
Radio	Aco (Beacon)	Beacon 46

Photo Compilation No. T-5096 was compared with aluminum topographic Sheet G with the following results:

The positions of the following topographic stations were determined by the party of Lieut.R.C.Bolstad by theodolite fourth order control:

Chy (A.T. & T.)	Forked River F.P.	Forked River M.E.Ch
Greyhound	Cupola Staff	Signal (Temp.)

The position of each of the above stations as shown on the photo compilation was compared with the position as found on sheet G. The positions of these stations were found to be identical on the two sheets.

The positions of the following recoverable topographic stations have been transferred to the photo compilation from aluminum sheet G:

State	Throop	Chat
-------	--------	------

There is no shoreline on aluminum sheet G which falls within the area of this compilation.

In addition to all the recoverable topographic stations mentioned there are ~~four~~ other stations which have been shown on the compilation with a 2 $\frac{1}{2}$ millimeter black circle. These ~~four~~ stations

FIVE

see opposite page

have been spotted in the photos by the field inspection party and their positions determined by radial line plot. They are as follows:

~~N.J. Geod. S.~~
~~E.R.A.~~ # 2239
~~N.J. Geod. S.~~
~~E.R.A.~~ # 2241
~~E.R.A.~~ # 2244
~~N.J. Geod. S.~~

Lanoka Harbor M.E. Church
~~Perked River Pres. Ch.~~
Universalist Church, West Gable
Golf Club TANK

This compilation joins on the north with Sheet Reg. No. T-5329, and on the south with Sheet Reg. No. T-5098. This compilation joins on the east with Sheets Reg. Nos. T-5097 and T-5330 but the junction falls in the water area so that no comparison is necessary.

The junction of this compilation with Sheets Nos. T-5329 and T-5098 have been compared and found satisfactory.

No comparison has been made between this compilation and former topographic sheets.

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 make 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, which 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

This compilation is believed to have a probable error of not more than 2 meters in the position of well defined detail of importance for charting, and of not over 4 meters for other data. It is understood that the width of roads and similar objects may be slightly exaggerated in order to procure well defined lines when the detail is reproduced.

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

Submitted by:

J.C. Partington
J.C. Partington
Jr. H. & G.E.

* An accuracy of 2 to 4 meters for work on the is scale is too high a better estimate is 0.3 to 0.6 mm for interested points and 0.3 to 0.8 mm for other details
L.C. L.

RECOVERABLE TOPOGRAPHIC STATIONS, COMPILATION T-5096

Name	Method of Location	Remarks
Aco ^{Light} (Beacon)	Topo. Sheet "F"	Transferred to T-5096
Beacon 46	Topo. Sheet "F"	Transferred to T-5096
^{Light} Beacon 47-A	Topo. Sheet "F"	Transferred to T-5096
Chat	Topo. Sheet "G"	Transferred to T-5096
Chy (A.T. & T.)	4th Order Triang	Verified- Topo Sheet "G"
Cupola Staff	4th Order Triang	" " " "
Dome	4th Order Triang.	Discrepancy of 3 M. with Sheet "E"
E.Gable Green Roof	4th Order Triang.	" " $3\frac{1}{2}$ M " " "F"
^{N.S. Good S.} E.H.A. # 2239	Radial plot T-5096	
^{N.J. Good S.} E.H.A. # 2241	" " T-5096	
^{N.S. Good S.} E.H.A. # 2244	" " T-5096	
Forked	4th order Triang.	Verified- Topo Sheet "F"
Forked River F.P.	4th order Triang.	" " " "G"
Forked River M.E.Ch	4th order Triang	" " " "G"
Forked River Pres.Ch	Radial plot T-5096	
Golf Club Tank	4th order Triang.	
Greyhound	4th " "	Verified- Topo Sheet "G"
Lanoka Harbor M.E.Ch.	Radial plot T-5096	
Pink	Topo. Sheet "F"	Transferred to T-5096
Potter	4th order Triang.	Verified- Topo Sheet "E"
Radio	Topo. Sheet "F"	Transferred to T-5096
Signal (Temp)	4th order Triang.	Verified-Topo Sheet "E"
South Gable House	4th order Triang.	Verified- Topo Sheet "F"
So.Gable Hut	4th order Triang.	" " " "F"
State	Topo.Sheet "G"	Transferred to T-5096
Stout	4th order Triang.	Verified- Topo Sheet "F"
Threop	Topo Sheet "G"	Transferred to T-5096
Universalist Church		
West Gable	Radial plot T-5096	
Wow	Topo Sheet "F"	Transferred to T-5096

Remarks

Decisions

1	Also on official N.J.State Highway map. R.R.Station also named "Pinewald"	
2		
3	Also on official N.J.State Highway map.	
4		
5	Shown as Lanoka Harbor on N.J.State official map, (highway). R.R.Station named "Lanoka Harbor"	
6	Formerly called "Toms River & Wareton Branch of N.J. Southern Railroad". N.J. State official Hwy. map shows C.R.R. of N.J.	
7	Also shown on official N.J.State Highway map.	
8		
9	<i>A photo-camp only</i>	
10	<i>Do.</i>	
11	<i>Do.</i>	
12	<i>Do.</i> Also shown on official N.J.State Highway map.	
13	" " " " " " " " " " " "	
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25		
26		
27		

GEOGRAPHIC NAMES

Survey No. T-5096

GEOGRAPHIC NAMES											
Survey No. T-5096											
Name on Survey	On Chart No. 3243 1216										
	A	B	C	D	E	F	G	H	K	U. S. Light List	
PINEWALD				X 3 men	X				✓	1	
POTTER CREEK	X		Potters Cr.	X 3 men						2	
CEDAR CREEK	X		X	X 3 men	X					3	
STOUT CREEK	X		Stouts Cr.	X 3 men						4	
LANOKA HARBOR	Lanoka		Lenok Sta.	X 3 men	X	✓				5	
CENTRAL R.R. of N.J.	X			X 3 men	X					6	
FORKED RIVER (town)	X		X	X 3 men	X					7	
FORKED RIVER (stream)	X		X	X 3 men						8	
NORTH BRANCH - Forked R			X	X 3 men						9	
MIDDLE BRANCH - Forked R			X	X 3 men						10	
SOUTH BRANCH - Forked R			X	X 3 men						11	
STATE GAME FARM				X 3 men	X					12	
BARNEGAT BAY	X		X	X 3 men	X					13	
										14	
										15	
										16	
										17	
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										20	
										21	
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										24	
										25	
										26	
										27	

James Underline

by *[Signature]*

in red approved

on 3/5/36

M 234

Names underlined in red approved
by *C. E. Hager* 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. B.E. Ask

T-5096

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION _____

x	<u>2,130,000.00</u>	$\log S_r$	<u>5.11354054</u>
K	<u>2</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>+ 130,000.00</u>	$\log (1/R)$	<u>10.86</u>
$x'^3/(6\rho_0^2)_s$	<u>1.84</u>	$\log S_m$	<u>4.59796723</u>
S_s	<u>129,999.16</u>	cor. arc to sine	<u>279</u>
$3 \log x'$	<u>15.34183005</u>	$\log S_1$	<u>4.59796444</u>
$\log 1/(6\rho_0^2)_s$	<u>4.5810213</u>	$\log A$	<u>8.50912123</u>
$\log x'^3/(6\rho_0^2)_s$	<u>9.9228514</u>	$\log \sec \phi$	<u>0.11504417</u>
$\log S_m^2$	<u>9.19592446</u>	$\log \Delta\lambda_1$	<u>3.22212984</u>
$\log C$	<u>1.326650</u>	cor. sine to arc	<u>+ 473</u>
$\log \Delta\phi$	<u>0.522584</u>	$\log \Delta\lambda$	<u>3.22213457</u>
y	<u>385,000.00</u>	$\Delta\lambda$	<u>1667.7639</u>
ϕ' (by interpolation)	<u>39 53 25.2879</u>	λ (central mer.)	<u>74 40 00.0000</u>
$\Delta\phi$	<u>3.3311</u>	$\Delta\lambda$	<u>27 47.7639</u>
ϕ	<u>39 53 21.9568</u>	λ	<u>74 12 12.2361</u>

Explanation of form:

$$x' = x - K$$

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

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

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-5096

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION _____

x	<u>2,150,000.00</u>	$\log S_0$	<u>5.17508753</u>
K	<u>2,</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>+ 150,000.00</u>	$\log (1/R)$	<u>1.086</u>
$x'^2/(6\rho_0^2)_0$	<u>1.29</u>	$\log S_m$	<u>4.65911422</u>
S_0	<u>149,998.71</u>	cor. arc to sine	<u>359</u>
$3 \log x'$	<u>15.52827328</u>	$\log S_1$	<u>4.65911053</u>
$\log 1/(6\rho_0^2)_0$	<u>4.5810213</u>	$\log A$	<u>8.50912123</u>
$\log x'^3/(6\rho_0^2)_0$	<u>0.1092951</u>	$\log \sec \phi$	<u>0.11504227</u>
		$\log \Delta\lambda_1$	<u>3.24327403</u>
		cor. sine to arc	<u>+ 627</u>
$\log S_m^2$	<u>9.31822844</u>	$\log \Delta\lambda$	<u>3.28328030</u>
$\log C$	<u>1.326650</u>	$\Delta\lambda$	<u>1919.9075"</u>
$\log \Delta\phi$	<u>0.644878</u>		
y	<u>345,000.00</u>		
ϕ' (by interpolation)	<u>39 53 25.2879</u>	λ (central mer.)	<u>74 40 00.0000</u>
$\Delta\phi$	<u>4.4145</u>	$\Delta\lambda$	<u>31 59.9075</u>
ϕ	<u>39 53 20.8734</u>	λ	<u>74 08 00.0925</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-5096

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION _____

x	<u>2,130,000.00</u>	$\log S_p$	<u>5.11394054</u>
K	<u>2.</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>+ 130,000.00</u>	$\log (1/R)$	<u>10.86</u>
$x'^3/(6\rho_0^2)$	<u>— .44</u>	$\log S_m$	<u>4.59796723</u>
S_p	<u>129,999.16</u>	cor. arc to sine	<u>— 279</u>
$3 \log x'$	<u>15.34183005</u>	$\log S_1$	<u>4.59796444</u>
$\log 1/(6\rho_0^2)$	<u>4.5810213</u>	$\log A$	<u>8.50912297</u>
$\log x'^3/(6\rho_0^2)$	<u>9.9228514</u>	$\log \sec \phi$	<u>0.11460991</u>
$\log S_m^2$	<u>9.19593446</u>	$\log \Delta\lambda_1$	<u>3.22169732</u>
$\log C$	<u>1.325600</u>	cor. sine to arc	<u>+ 472</u>
$\log \Delta\phi$	<u>0.521534</u>	$\log \Delta\lambda$	<u>3.22170204</u>
y	<u>360,000.00</u>	$\Delta\lambda$	<u>1666.1038</u>
ϕ' (by interpolation)	<u>39 49 18.2126</u>	λ (central mer.)	<u>74 40 00.0000</u>
$\Delta\phi$	<u>— 3.3230</u>	$\Delta\lambda$	<u>— 27 46.1038</u>
ϕ	<u>39 49 14.8896</u>	λ	<u>74 12 13.8962</u>

Explanation of form:

$$x' = x - K$$

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

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

R = scale reduction factor

ϕ' is interpolated from table of y

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

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

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

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

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

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

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T-5096

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J. STATION _____

x	<u>2,140,000.00</u>	$\log S_p$	<u>5.18512478</u>
K	<u>2</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>+ 140,000.00</u>	$\log (1/R)$	<u>10.86</u>
$x'^2/(6\rho_0^2)_0$	<u>1.05</u>	$\log S_m$	<u>4.62915147</u>
S_p	<u>139,998.25</u>	cor. arc to sine	<u>3.21</u>
		$\log S_1$	<u>4.62914826</u>
$3 \log x'$	<u>15.43838412</u>	$\log A$	<u>8.50912228</u>
$\log 1/(6\rho_0^2)_0$	<u>4.5810213</u>	$\log \sec \phi$	<u>0.11478258</u>
$\log x'^3/(6\rho_0^2)_0$	<u>0.0194054</u>	$\log \Delta\lambda_1$	<u>3.25305312</u>
		cor. sine to arc	<u>+ 5.88</u>
$\log S_m^2$	<u>9.25830294</u>	$\log \Delta\lambda$	<u>3.25305858</u>
$\log C$	<u>1.326020</u>	$\Delta\lambda$	<u>1790.8474</u>
$\log \Delta\phi$	<u>0.584323</u>		
y	<u>370,000.00</u>		
ϕ' (by interpolation)	<u>39 50 57.0431</u>	λ (central mer.)	<u>74 40 00.0000</u>
$\Delta\phi$	<u>577</u>	$\Delta\lambda$	<u>4.9758</u>
	<u>3.8294</u>		<u>29 50.8474</u>
ϕ	<u>39 50 53.2032</u>	λ	<u>74 10 09.1226</u>

Explanation of form:

$$x' = x - K$$

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

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

R = scale reduction factor

ϕ' is interpolated from table of y

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

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

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

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

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

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

Correction in pencil by Dir J. Gorden
Nov. 12, 1946, J. M. G.

REVIEW OF AIR PHOTO COMPILATION T-5096

Comparison with Contemporary Graphic Control Surveys.

T-6397a & b (1935) 1:10,000; T-6398a (1935) 1:10,000.

Light No. 46 shown on T-6397b has been moved since the survey was made and for this reason has not been shown on the compilation.

The compilation is in agreement with portions of the above surveys which it covers.

All information and detail on the above Graphic Control Survey and covered by the compilation, is shown on the compilation, except the temporary topographic ~~signs~~ ^{signals} and magnetic meridians.

Comparison with Contemporary Hydrographic Surveys.

H-5871 (1935) 1:10,000; H-6140 (1935) 1:10,000.

The shoreline on the above Hydrographic Surveys was taken from the compilation and is in agreement with the soundings.

Comparison with Former Topographic Surveys.

T-117 (1839) 1:10,000; T-118 (1839) 1:10,000.

The compilation is much more complete in detail than the above former surveys. ^{Comparison with} T-117 and T-118 show only minor ~~time~~ changes along ^{shoreline} ~~their shores~~ from the compilation. The compilation is complete and adequate to supersede those portions of the above surveys which it covers.

Comparison with Charts 1216 and 3243.

The compilation shows numerous corrections to topographic detail on Chart 1216. Chart 3243 is a chart showing and marking the inland waterway.

General.

A comparison with the photos shows the compilation to be complete in detail but the drafting is below the average.

✓
L. C. Lande
B. Jones

REVIEW OF AIR PHOTO COMPILATION NO. T-5096.

Chief of Party: Roswell C. Bolstad

Compiled by: (See STATISTIC SHEET).

Project: Air Photo Compilation Party #12. Instructions dated: Nov. 15, 1932.

- ✓ 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) No blueprints secured of this area.
- ✓ 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. Hydro. Sheets not available for comparison.
- ✓ 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) None shown on this sheet.
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) (See Landmarks, report T-5286, also submitted by Lt. Sammons, 1935 with topo. sheets E, F, & G.)
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 N. A. 1927 ^(~~used~~ *fair*) and the reference station is correctly noted. _(adjusted)
14. Junctions with adjoining compilations have been examined and are in agreement. (Par. 66j)
15. The drafting is ^{*fair*} ~~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. MAY Require some Office touching-up. *gus.*
5. Topographic symbols for similar features are of uniform weight. *same remark as for 4 above. gus.*
6. All drawing has been retouched where partially rubbed off. *same remark as for 4. above gus.*
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 reports and requirements affecting this area are referred to the reports of Lt. Sammons who conducted a 1935 combined-operations party in this locality. Field inspection report attached to Descriptive Report T-5286 also gives additional information.

18. Examined and approved;


Roswell C. Polsted
Chief of Party

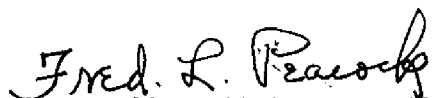
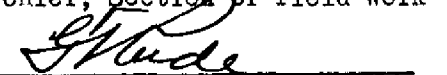
19. Remarks after review in office:

Reviewed in office by: *L. E. Landy B. G. Jones*

Examined and approved:


Chief, Section of Field Records

Chief, Division of Charts


Chief, Section of Field Work

Chief, Division of Hydrography
and Topography.

GEOGRAPHIC NAMES

Survey No.
T-5096

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Pinewald										1
Potter Creek										2
Cedar Creek										3
Lanoka Harbor										4
Forked River										5
Central Railroad of N.J.										6
Stout Creek										7
Barnegat Bay										8
North Branch-Forked River										9
Middle Branch Forked River										10
South Branch Forked River										11
										12
										13
										14
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