

# 5639

Form 504  
Rev. Dec. 1933  
DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY  
R. S. PATTON, DIRECTOR

## DESCRIPTIVE REPORT

Air  
Photo

Topographic  
Hydrographic  
~~Hydrographic~~

Field 6

Sheet No. Reg. T-5639

State ..... NEW JERSEY

LOCALITY

ATLANTIC COAST

~~NEW JERSEY OUTSIDE COAST~~

~~GREAT BAY HARBOR & VICINITY~~

OCEAN CITY

193 6

CHIEF OF PARTY

E. H. Kirsch

U. S. GOVERNMENT PRINTING OFFICE: 1934

Applied to drawing of Chart 1217 - Apr. 26, 1938 - J.W.

Supplemental T5639 (Corrections applied May 16, 1938) Applied to Ch. 1217 - May 19, 1938 - J.W.  
Applied to compilation of New Charts 827 July 1939

SHEET NO. 6.  
REG. NO. T-5639

PHOTO NOS.

66-13-19 to 23  
66-13-26 to 31  
66-55-13  
66-12-80  
M153 to M160

DATE

4-22-32  
4-22-32  
8-1 -32  
4-20-32  
1-24-32  
3

Projection by

L. C. Ripley 4-25-32

Projection Checked By

T. B. Nutting 4-25-32

Control Plotted by

E. J. Anderson 1935

Control Checked by

P. W. Hund 1935

Control Plotted on Photos by

J. F. Richardson 1935

Control Checked on Photos by

*C. J. Harryman*  
C. J. Harryman Apr. 1936

Smooth radial plot by

C. R. Reed Feb. 1936

Smooth radial plot Checked by

*C. J. Harryman*  
C. J. Harryman Apr. 1936

Detailed by

*C. J. Harryman*  
C. J. Harryman Apr. 1936

STATISTICS

Land Area 20 Square statute miles

Coast line 4.5 statute miles

Shore line 24 statute miles (More than 200 meters wide)

Shore line 30 statute miles (Less than 200 meters wide)

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. 6

REGISTER NO. T-5639

T5639

State New Jersey

General locality ATLANTIC COAST  
Outside Coast

Locality Great Egg Harbor & Vicinity  
OCEAN CITY

Scale 1:10,000 Date of survey Photos. Apr. 1932  
Compilation Apr., 1936

Vessel Air Photo Party No. 21

Chief of party E. H. Kirsch

Surveyed by See data sheet in the descriptive report

Inked by C. J. Harryman

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

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

Instructions dated May 16th, 1935, 19

Remarks: None

## GENERAL INFORMATION.

3

### STATISTICS:

This sheet covers a land area of 20.0 square statute miles. There are 4.5 statute miles of Coast line; 24.0 statute miles of shore line as measured along channels, streams and bays, with a width of 200 meters or more from the nearest opposite shore, and 30.0 statute miles of streams less than 200 meters wide.

### GENERAL REPORT:

This sheet covers the cities of Ocean City and Somers Point and a small suburban district north of Somers Point known as Ocean Heights. Great Egg Harbor and Great Egg Inlet cover the remainder of the sheet. The land area back of Somers Point is rather thickly covered with pine, oak and brush. Several cultivated fields are shown surrounded with this growth. The marsh, locally known as meadow, is drained in many places with numerous small ditches dug by the mosquito control. A wide sand beach runs along the entire coast and is protected in various places, from erosion, by piling and wooden jetties extending from the high water line to the low water line and in many cases out in the water for several meters.

### PHOTOGRAPHS:

This sheet was compiled from parts of four flights of single lens, one to ten thousand scale aerial photographs. They were taken by the Aero Service Corporation of Philadelphia, Pa. The time of the day and consequent stage of the tide, at which the pictures were taken is not available. The following pictures run approximately north and south; 66-13-19 to 23 along Long.  $74^{\circ} 34'$ ; 66-13-26 to 31 along Long.  $74^{\circ} 37'$ . These pictures were taken on Apr. 22nd, 1932. Photographs 66-55-16 is the end picture of a flight running parallel to the coast and covers the area around Great Egg Inlet. It was taken Aug. 1st, 1932. Picture 66-12-80 is the south picture of a flight running north and south along Long.  $74^{\circ} 32'$ . It was taken Apr. 20th, 1932. Photo M153 to M160 is a flight of pictures running parallel with the coast and covers the city of Ocean City. These pictures were taken Jan. 24th, 1933 at 12:30 P. M. ~~They were used only in making the radial plot.~~

### CONTROL.

#### SOURCES:

First order triangulation by C. D. Meaney in 1932. Second order triangulation by B. H. Rigg in 1935. Fourth order triangulation by R. C. Bolstad, 1935. Bolstads stations are shown on the compilation with black circles such as are used to show marked topographic stations. All of this control was established on N. A. 1927 datum.

4

ERRORS AND DISCREPANCIES:

No errors or discrepancies were found in the location of control stations as located on the photographs by the field inspection party.

COMPILATION:

METHOD:

The radial line method as described in "Notes on the compilation of planimetric line maps from five lens aerial photographs" was used in compiling this sheet.

ADJUSTMENTS OF THE PLOT:

The flight of pictures running north and south along Long.  $74^{\circ} 34'$  was cut short and therefore only one image appears over the west part of Ocean City. The radial plot was completed in this area by using a flight of pictures size 7" x 9", M153 to M160. These pictures are out of scale rather badly, but it is felt that the plot has a good degree of accuracy. The picture covering this area, 66-13-23, was good to scale and the detail was all taken from it.

INTERPRETATION:

Some of the photographs were very blurred and indistinct. In cases where there was some doubt the portions that had been field inspected were used as a guide and it is believed that a good degree of accuracy has been obtained in every case.

The shore line along the outer coast from Lat.  $39^{\circ} 17.8'$ , Long.  $74^{\circ} 33.4'$  <sup>South</sup> to the limit of the sheet was compiled from field inspection notes taken June 1936. —

The jetties along the outside coast are represented by a single line. No attempt was made to distinguish wooden from rock jetties.

The ramps leading from the end of the streets to the boardwalk in Ocean City are represented by a single line. These ramps are about 3 meters wide and are a continuation of the sidewalk from the end of the streets.

INFORMATION FROM OTHER SOURCES:

At Lat.  $39^{\circ} 17.5'$  Long.  $74^{\circ} 33.2'$  a street as shown on the pictures has been found from field inspection to have been washed away in a storm on Nov. 1935. The railroad track and spur in Ocean City were compiled from notes of the field inspection party taken in June 1936. A new traffic circle has been built in Somers Point at Lat.  $39^{\circ} 18.5'$  and Long.  $74^{\circ} 35'$ , since the pictures were taken. This was obtained by plane table methods. Field inspection notes on the pictures in red ink are from the party of R. C. Bolstad, <sup>May</sup> ~~March~~ 1935.

Note The values in used on the opposite  
page are from the W.S.C. Bridge list  
for 1935. In the case of No. 1 the  
90 ft Hoig Cl. is shown on the  
compilation.

BJT

Coast Guard personnel are now quartered at the old station, located at the intersection of 4th street and Atlantic Ave. in Ocean City. It is expected that by Jan. 1st, 1937 they will be moved into their new quarters located on the lagoon in Ocean City. Their lookout tower will be continued at its present location, the intersection of North Ave. and the boardwalk.

#### CONFLICTING NAMES:

The names LAZY HARBOR & GREAT EGG BAY on Chart No. 3243 are in error. It is recommended that these names be changed to BASS HARBOR & GREAT EGG HARBOR. These names were taken from a map furnished by the Department of Conservation and Development of the State of New Jersey. The names have also been checked by field inspection from sign boards, and local usage. The following new names were also checked by field parties and it is recommended that they be added to the Chart. SHIP CHANNEL, ELBOW THOROFARE, THE LAGOON and RAINBOW THOROFARE. The name of the electric railroad running from Lat.  $39^{\circ} 20.5'$  Long.  $74^{\circ} 34.5'$  to Ocean City has been changed from WEST JERSEY and SEASHORE RAILROAD to SHORE FAST LINE. This change has been verified at the local R. R. office.

#### COMPARISON WITH OTHER SURVEYS

##### JUNCTIONS:

Satisfactory junctions have been made with compilation T5641 on the West, T5642 on the Southwest and T5638 on the Northeast. There is no joining compilation on the north or southeast.

##### LANDMARKS:

A list of marked topographic stations is submitted with this report. A list of landmarks for charts will be submitted as a separate report for the project at the close of the season.

##### BRIDGES:

The following data was obtained from the field inspection report of R. C. Bolstad.

LOCALITY	LAT.	LONG.	TYPE.	VERT.	HOR.
1 Broad Thoro	$39^{\circ} 18.8'$	$74^{\circ} 33.6'$	2 leaf bascule	✓ CLEAR 11 Ft.	✓ CLEAR 50 ft.
2 Great Egg Inlet	$39^{\circ} 17.9'$	$74^{\circ} 33.4'$	2 leaf bascule	✓ 18 Ft.	✓ 90 ft. 100 Ft.
3 Back Thoro	$39^{\circ} 17.1'$	$74^{\circ} 34.8'$	Swing	✓ 4.5 Ft.	✓ 30 Ft. Both
4 Rainbow Thoro R.R.	$39^{\circ} 17.6'$	$74^{\circ} 35.2'$	Fixed Trestle	✓ 4.5 Ft.	20 12 Ft.
Elbow Thoro R.R.	$39^{\circ} 18.1'$	$74^{\circ} 35.6'$	Fixed Trestle	✓ 4.5 Ft.	✓ 12 Ft.
Ship Channel RR	$39^{\circ} 18.4'$	$74^{\circ} 35.8'$	Swing	41 4.5 Ft.	40 Ft.
Back Thoro Hwy	$39^{\circ} 17.0'$	$74^{\circ} 34.9'$	1 leaf bascule	✓ 14 Ft.	✓ 70 Ft.

*See opposite page.*



6

LOCALITY	LAT.	LONG.	TYPE	VERT. CLEAR	HOR. CLEAR
Rainbow Thoro Hwy.	39° 17.6'	74° 35.2'	Fixed Concrete	4.5 Ft	17 Ft.
Elbow Thoro. Hwy.	39° 18.1'	74° 35.6'	Fixed Concrete	4.5 Ft.	17 Ft.
Ship Channel "	39° 18.4'	74° 35.8'	1 leaf bascule	14 Ft.	50 Ft.
Patcong Creek	39° 19.0'	74° 37.8'	Swing	7.3 Ft	35 Ft.
Patcong Creek	39° 20.1'	74° 35.8'	Fixed	7.3 Ft	30 Ft.
Great Egg Harbor	39° 17.5'	74° 37.6'	2 leaf bascule	14 Ft.	60 Ft.
Drag Channel	39° 18.2'	74° 37.3'	Fixed Concrete	14 Ft.	40 Ft.
Bass Harbor	39° 19.0'	74° 35.2'	Fixed Trestle	5 Ft.	10 Ft.

RECOMMENDATIONS FOR FURTHER SURVEYS:

This compilation is believed to have a probable error of not more than .3 MM in position of well defined detail of importance for charting and of not more than .6 MM for other data.

This survey is complete and thorough for charting purposes and no further surveys are needed.

Submitted by,

*C. J. Harryman*  
C. J. Harryman

Assisted by

*E. H. Kirsch*  
E. H. Kirsch  
Chief of Party No. 21.

## Remarks

## Decisions

1		
2		<i>spelled steelmanville</i>
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12		<i>Drag Channel or</i>
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16		<i>see p "Conflicting Names this report"</i>
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## GEOGRAPHIC NAMES

Survey No. T-5639

Name on Survey	GEOGRAPHIC NAMES Survey No. T-5639										
	A	B	C	D	E	F	G	H	K		
Patcong Creek	✓	✓	✓		✓					1	
Steelmanville			✓	✓		✓	✓			2	
Bethel	✓									3	
Seaview			✓	✓			✓			4	
Mill Creek			✓	✓						5	
Somers Point	✓	✓	✓	✓	✓	✓	✓			6	
Ocean Heights	Bethel		Bethel	✓		(R.R. Guide)	✓			7	
Steelman Bay	✓	✓	✓	✓	✓					8	
Scull Thorofare	✓	✓	✓	✓	✓			✓	✓	9	
Broad Thorofare	✓	✓	✓	✓	✓					10	
Job Point	✓	✓	✓		✓					11	
Drag Channel	✓	✓	✓	✓	✓			✓		12	
Big Rainbow Bay	✓									13	
Ship Channel					✓					14	
Elbow Thorofare					✓					15	
Bass Harbor	✓	✓	✓							16	
Rainbow Islands	✓		✓	✓	✓				✓	17	
Anchorage Point	✓	✓		✓				✓		18	
Great Egg Inlet	✓		✓		✓					19	
Great Egg Harbor	✓	✓	✓	✓	✓				✓	20	
Beesley Point	✓	✓	✓							21	
Rainbow Thorofare		✓	✓		✓					22	
Cowpens Island	✓	✓								23	
Ocean City	✓		✓		✓	✓				24	
Atlantic Ocean										25	
Shooting Island	✓	✓								26	
Back Thorofare	✓	✓	✓							27	

## Remarks

## Decisions

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# GEOGRAPHIC NAMES

Survey No. T-5639

GEOGRAPHIC NAMES											
Survey No. T-5639											
Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Peck Bay</u>	✓										1
<u>Golding Point</u> ✓		T-146 T-2054									2
<u>SEdge LANDS</u>	Ledge 15	✓ T-146									3
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Names underlined in red approved											25
by JHE on 12/17/36											26
											27

## 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 H. H. Schleiter

Points used for plotting grid:

x 2,010,000  
y 180,000

x 2,015,000  
y 195,000

x 2,025,000  
y 180,000

x 2,015,000  
y 165,000

x 2,025,000  
y 165,000

x  
y

x 2,000,000  
y 180,000

x  
y

Triangulation stations used for checking grid:

$X=2,025,861.55$   $y=162,555.98$

1. Bank 1932 (ref. sta.) 5. \_\_\_\_\_
2. Somers Point Standpipe 1932 6. \_\_\_\_\_
3. Ocean City Standpipe 1932 7. \_\_\_\_\_
4. \_\_\_\_\_ 8. \_\_\_\_\_

T-5639

# GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION \_\_\_\_\_

$x$	2,010,000.00	$\log S_e$	4.00000000
$K$	2,000,000.00	$\log (1200/3937)$	9.48401583
$x' (=x-K)$	10,000.00	$\log (1/R)$	1086
$x'^3/(6\rho_0^2)_e$	— .00	$\log S_m$	3.48402669
$S_e$	+ 10,000.00	cor. arc to sine	— 0
		$\log S_1$	3.48402669
$3 \log x'$	12.00000000	$\log A$	8.50913543
$\log 1/(6\rho_0^2)_e$	4.5810213	$\log \sec \phi$	0.11151968
$\log x'^3/(6\rho_0^2)_e$	6.5810213	$\log \Delta\lambda_1$	2.10468180
		cor. sine to arc	+ 0
$\log S_m^2$	6.96805338	$\log \Delta\lambda$	2.10468180
$\log C$	1.318021	$\Delta\lambda$	127.2570
$\log \Delta\phi$	8.286074		
$y$	180,000.00		
$\phi'$ (by interpolation)	39 19 39.1431	$\lambda$ (central mer.)	74 40 00.0000
$\Delta\phi$	— 1.632	$\Delta\lambda$	2 07.2570
$\phi$	39 19 37.5111	$\lambda$	74 37 52.7430

120.77 mm

126.35 mm

Explanation of form:

$$x' = x - K$$

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

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

$R$  = scale reduction factor

$\phi'$  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-5639

# GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION \_\_\_\_\_

$x$	2,025,000.00	$\log S_0$	4.39793984
$K$	2,000,000.00	$\log (1200/3937)$	9.48401583
$x' (=x-K)$	25,000.00	$\log (1/R)$	1.086
$x'^3/(6\rho_0^2)_0$	— .01	$\log S_m$	3.88196653
$S_0$	+24,999.99	cor. arc to sine	— 10
		$\log S_1$	3.88196643
$3 \log x'$	13.19382003	$\log A$	8.50913543
$\log 1/(6\rho_0^2)_0$	4.5810213	$\log \sec \phi$	0.11151951
$\log x'^3/(6\rho_0^2)_0$	7.7748413	$\log \Delta\lambda_1$	2.50262137
		cor. sine to arc	+ 17
$\log S_m^2$	7.76393306	$\log \Delta\lambda$	2.50262154
$\log C$	1.318021	$\Delta\lambda$	318.1424
$\log \Delta\phi$	9.081954		
$y$	180,000.00		
$\phi'$ (by interpolation)	39 19 29.1431	$\lambda$ (central mer.)	74 40 00.0000
$\Delta\phi$	— .1208	$\Delta\lambda$	5 14.1424
$\phi$	39 19 39.0623	$\lambda$	74 34 41.8576

120.46 mm

100.28 mm

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

$\phi'$  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-5639

# GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J. STATION \_\_\_\_\_

$x$	<u>2,026,000.00</u>	$\log S_o$	<u>4.34793944</u>
$K$	<u>2,000,000.00</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>+ 25,000.00</u>	$\log (1/R)$	<u>10.86</u>
$x'^3/(6\rho_o^2)_o$	<u>01</u>	$\log S_m$	<u>3.84196653</u>
$S_o$	<u>+ 24,999.99</u>	cor. arc to sine	<u>10</u>
		$\log S_1$	<u>3.88196643</u>
$3 \log x'$	<u>13.19382003</u>	$\log A$	<u>8.50913646</u>
$\log 1/(6\rho_o^2)_o$	<u>4.5810213</u>	$\log \sec \phi$	<u>0.11126394</u>
$\log x'^3/(6\rho_o^2)_o$	<u>7.7748413</u>	$\log \Delta\lambda_1$	<u>2.50236643</u>
		cor. sine to arc	<u>+ 17</u>
$\log S_m^2$	<u>7.76393306</u>	$\log \Delta\lambda$	<u>2.50236700</u>
$\log C$	<u>1.317384</u>	$\Delta\lambda$	<u>317.9560</u>
$\log \Delta\phi$	<u>9.041321</u>		
$y$	<u>165,000.00</u>		
$\phi'$ (by interpolation)	<u>39 17 10.9237</u>	$\lambda$ (central mer.)	<u>74 40 00.0000</u>
$\Delta\phi$	<u>1206</u>	$\Delta\lambda$	<u>5 17.9560</u>
$\phi$	<u>39 17 10.8031</u>	$\lambda$	<u>74 34 42.0440</u>

33.32<sup>mm.</sup>100.77<sup>mm</sup>

Explanation of form:

$$x' = x - K$$

$$S_o = x' - \frac{x'^3}{(6\rho_o^2)_o}$$

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

$R$  = scale reduction factor

$\phi'$  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-5639

# GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION \_\_\_\_\_

$x$	<u>2,000,000.00</u>	$\log S_0$	<u><math>-\infty</math></u>
$K$	<u>2,000,000.00</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>.00</u>	$\log (1/R)$	
$x'^3/(6\rho_0^2)$	<u>.00</u>	$\log S_m$	<u><math>-\infty</math></u>
$S_0$	<u>.00</u>	cor. arc to sine	
		$\log S_1$	<u><math>-\infty</math></u>
$3 \log x'$	<u><math>-\infty</math></u>	$\log A$	
$\log 1/(6\rho_0^2)$	<u>4. —</u>	$\log \sec \phi$	
$\log x'^3/(6\rho_0^2)$	<u><math>-\infty</math></u>	$\log \Delta\lambda_1$	<u><math>-\infty</math></u>
		cor. sine to arc	<u>+</u>
$\log S_m^2$	<u><math>-\infty</math></u>	$\log \Delta\lambda$	<u><math>-\infty</math></u>
$\log C$	<u><math>-\infty</math></u>	$\Delta\lambda$	<u>0.</u>
$\log \Delta\phi$	<u><math>-\infty</math></u>		
$y$	<u>180,000.00</u>		
$\phi'$ (by interpolation)	<u>39 19 39.831</u>	$\lambda$ (central mer.)	<u>74 40 00.0000</u>
$\Delta\phi$	<u>.00</u>	$\Delta\lambda$	<u>0.</u>
$\phi$	<u>39 19 39.831</u> <u>120.83<sup>mm</sup></u>	$\lambda$	<u>74 40 00.0000</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

$\phi'$  is interpolated from table of  $y$

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

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

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

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

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

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

dist 117  
376

T-5639

# GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION \_\_\_\_\_

$x$	<u>2,015,000.00</u>	$\log S_e$	<u>4.17609126</u>
$K$	<u>2,000,000.00</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>+ 15,000.00</u>	$\log (1/R)$	<u>10.86</u>
$x'^3/(6\rho_0^2)$	<u>— .00</u>	$\log S_m$	<u>3.66011795</u>
$S_e$	<u>15,000.00</u>	cor. arc to sine	<u>— 4</u>
		$\log S_1$	<u>3.66011791</u>
$3 \log x'$	<u>12.52827378</u>	$\log A$	<u>8.50913439</u>
$\log 1/(6\rho_0^2)$	<u>4.5810213</u>	$\log \sec \phi$	<u>0.11177558</u>
$\log x'^3/(6\rho_0^2)$	<u>7.1092951</u>	$\log \Delta\lambda_1$	<u>2.24102788</u>
		cor. sine to arc	<u>+ 6</u>
$\log S_m^2$	<u>7.32023590</u>	$\log \Delta\lambda$	<u>2.28102794</u>
$\log C$	<u>1.318654</u>	$\Delta\lambda$	<u>190.9976</u>
$\log \Delta\phi$	<u>8.638890</u>		
$y$	<u>195,000.00</u>		
$\phi'$ (by interpolation)	<u>39 22 07.4414</u>	$\lambda$ (central mer.)	<u>74 40 00.0000</u>
$\Delta\phi$	<u>— .0435</u>	$\Delta\lambda$	<u>3 10.9976</u>
$\phi$	<u>39 22 07.3979</u>	$\lambda$	<u>74 43 10.9976</u>
	<u>22.82<sup>m m</sup></u>		<u>36 49.0024</u>

117.30<sup>m m</sup>

Explanation of form:

$$x' = x - K$$

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

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

$R$  = scale reduction factor

$\phi'$  is interpolated from table of  $y$

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

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

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

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

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

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

3  
T-5689

# GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J.

STATION \_\_\_\_\_

$x$	<u>2,015,000.00</u>	$\log S_0$	<u>4.17609126</u>
$K$	<u>2,000,000.00</u>	$\log (1200/3937)$	<u>9.48401583</u>
$x' (=x-K)$	<u>15,000.00</u>	$\log (1/R)$	<u>10.86</u>
$x'^2/(6\rho_0^2)_0$	<u>— .00</u>	$\log S_m$	<u>3.66011795</u>
$S_0$	<u>15,000.00</u>	cor. arc to sine	<u>— 4</u>
$3 \log x'$	<u>12.52827378</u>	$\log S_1$	<u>3.66011791</u>
$\log 1/(6\rho_0^2)_0$	<u>4.5810213</u>	$\log A$	<u>8.50913646</u>
$\log x'^3/(6\rho_0^2)_0$	<u>7.1092951</u>	$\log \sec \phi$	<u>0.11126407</u>
$\log S_m^2$	<u>7.32023590</u>	$\log \Delta\lambda_1$	<u>2.28051844</u>
$\log C$	<u>1.317388</u>	cor. sine to arc	<u>+ 6</u>
$\log \Delta\phi$	<u>8.637624</u>	$\log \Delta\lambda$	<u>2.28051850</u>
$y$	<u>165,000.00</u>	$\Delta\lambda$	<u>190.7737</u>
$\phi'$ (by interpolation)	<u>39 17 10.9237</u>	$\lambda$ (central mer.)	<u>74 40 00.0000</u>
$\Delta\phi$	<u>— .0434</u>	$\Delta\lambda$	<u>— 3 10.7737</u>
$\phi$	<u>39 17 10.8803</u>	$\lambda$	<u>74 43 10.7737</u>
	<u>33.56<sup>mm</sup></u>		<u>36 49.2263</u>

117.98<sup>mm</sup>

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

$\phi'$  is interpolated from table of  $y$

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

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

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

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

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

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

REVIEW OF AIR PHOTO COMPILATION T-5639  
Scale 1:10,000

There are no graphic control or recent hydrographic surveys within the limits of this compilation.

Comparison with Previous Topographic Surveys

T- 143	(1841), 1:10,000
T- 146bis	(1842), "
T-1774	(1886), 1:20,000
T-2054	(1891), "
T-2454	(1899), "
T-2562	(1901), 1:10,000

There have been numerous detail changes along the inner shore line and the coast line. The compilation is complete and adequate to supersede the sections of the above topographic surveys which it covers.

Comparison with charts Nos. 1217 and 3243

This compilation shows numerous corrections and additions to charts 1217 and 3243, due both to cultural and natural changes.

The list of landmarks for this area as submitted by the photo compilation party is filed as chart letter No. 751 (1936).

Refer to page 5 of the descriptive report T-5639 regarding the Coast Guard Lookout Tower at Great Egg Inlet.

Supplemental Information

Triangulation - Refer to page 1 of this descriptive report, T-5639 for list of control for this compilation.

Photographs - All of the compilation, except for a narrow strip along the outside coast, was compiled from the 1932 photographs.

The outer coast and the adjacent area for about 1/2 mile inland were compiled from the photographs of January 1933.

Refer to page 1 of the descriptive report, T-5639 for list of photograph numbers and dates.

Supplemental Information contd.

Field Inspection

The outer coast high water line from the south end of the bridge at Great Egg Inlet south and southwest to the limit of \* this compilation is from detailed field inspection notes of June 1936.

The date of field inspection over the remainder of the compilation is somewhat indefinite but shows no considerable change from the 1932 photographs. Part of it was done between November 1934 and March 1935, with additional work in June 1936.

Additional Surveys

The low water line and shoal lines, and high water line on the small marsh islands in the inside areas (Great Egg Bay and adjacent waterways) have been compiled from a general field inspection. Inspection of this detail and correction where necessary should be made, in so far as practicable, during the progress of the 1937 hydrographic surveys and graphic control surveys.

Feb. 26, 1937.

*W. H. H. H. H. H.*

\* Shore line at Ocean City is surveyed in June 1937. See Report T 5639 supplemental filed at back.

REVIEW OF AIR PHOTO COMPILATION NO.

Chief of Party: E. H. Kirsch

Compiled by: C. J. Harryman

Project: H. T. 205

Instructions dated: May 16th, 1935

- ✓ 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)
- ✓ 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* 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: *None*

✓18. Examined and approved;

*E. H. Korsch*  
Chief of Party

19. Remarks after review in office:

Reviewed in office by: *L. O. Lobbut* *B. G. Jones*

Examined and approved:

*C. K. Green*  
Chief, Section of Field Records

*Fred. L. Pearce*  
Chief, Division of Charts  
*Section of Field Work.*

*L. O. Lobbut*  
Chief, Section of Field Work  
*Div. of Charts*  
*R. G. Jones*  
Chief, Division of Hydrography  
and Topography.

## Report T 5639 Supplemental

corrections in red applied by Wittman  
and checked by E.W. Frederick 5/14/38  
from following sources:

a. Planotable survey of June 1937 (Field No. 1303)  
Office No. C.S. 118 M. All details within  
the area of T 5639 applied except:

1. Temporary stations
2. Magnetic meridian

3. A few of the recoverable stations  
were not transferred as there were  
more in some areas than needed.

shore line changes shown at Ocean City  
are of were surveyed in June 1937.

The descriptive report C.S. 118 M. is attached  
at the back and contains information regarding  
land marks.

b. Planotable survey of June 1937 (Field No. CC)  
Office No. C.S. 121 M. All details applied to  
5639 supplemental except:

1. Temporary topographic stations
2. Magnetic meridian

3. Several recoverable stations (not prominent)  
not transferred because of number of stations  
already shown on the sheet.

Temporary Beacons in Back therefore are not  
discussed in the planotable report. They have  
been shown on the supplemental.

c. Planotable survey of July 1937 Field No. DD.  
Office No. C.S. 119 M. Very little detail within  
the area of T 5639. All transferred except  
tide gauge location and one recoverable  
station (not prominent).

(over)

d. Hydrographic surveys H 6230, H 6254, <sup>and</sup> H 6262 (1937)

Corrections to piers and to bridge clearances  
made on T 5639 in accordance with  
the Rese. Report H 6230 pages 2 and 3.

5/16/38

B. J. Jones.

## DESCRIPTIVE REPORT

To Accompany Topographic Sheet BB

INSTRUCTIONS - May 16, 1935

Project HT-205

### LIMITS

Risley Charnel to Great Egg Bay.

### SURVEY METHODS

The shoreline shown in pencil was transferred with a projector from map drawings numbers T5638 and T5639. The shoreline shown in black ink was rodged in on this sheet. The following signals were located on the map drawings and transferred to this sheet: Port (Standpipe, Longport) from T5638; Brid (Bridge Tenders House Broad Thorofare), My (Ocean City Coast Guard Lookout Tower) and Pip (Standpipe, Aluminum) from T5639. Port and My were relocated. The new position of Port by radial plot in July 1937 is in very good agreement with the position of Port on this sheet. The position of My on the topographic map T5639 is about 2 meters north-east of the position on this sheet.

All signals on this sheet were located by cuts from triangulation stations and from accurately located positions, except signals Gal, Run, My, War, Ply and Sin, which were located from a traverse originating at triangulation station N.W. Bridge Tenders House, 1935 and closing on topographic signal Till. The traverse position of Till fell  $\frac{1}{2}$  meter north-west of the position by cuts. No attempt was made to adjust this closure. All distances along the traverse were measured with a steel tape.

### RECOVERABLE STATIONS

Eight recoverable stations have been described on forms 524. No cards are submitted for the air-planimetric stations, since they were found in good condition. A new description has been submitted for Port (Longport Standpipe).

### DESCRIPTION OF COAST

From the ocean, the Longport Standpipe (90 feet above high water mark) is the most prominent object on the northeast side of Great Egg Inlet. About 300 meters south of the standpipe may be seen two large buildings (on the front beach) each having tall cupolas 60 feet above high water mark. The standpipe is visible from all the inside waterways.

From the ocean, the two standpipes, 135 feet above high water mark, and the cupola on top the large building on the front beach, 145 feet above high water mark, 500 meters southeast of the standpipes, are the most prominent objects in Ocean City. The two standpipes may be seen from all parts of the bay.

The front beaches of Ocean City and Longport are marked with boardwalks and bulkheads and the back shores by bulkheads and wharves.

The marshes between these above named beaches and the mainland are firm and are covered with marsh grass. The mainland is marked with trees and buildings.

The Somers Point Standpipe is the most prominent object on the mainland. It can be seen from the inland waters and the inlet but cannot be seen from the ocean.

#### DISCREPANCIES AND CHANGES IN SHORELINE

At Lat.  $39^{\circ} 17.8'$ , Long.  $74^{\circ} 33.4'$ , the south end of the bridge and approaches are about 10 meters south of the position shown on topographic map T5639. There is a curve in the south end of the bridge as shown on this sheet. The approaches to the bridge shown on the sheet in pencil were traced from the topographic map and adjusted to the points rodged in on this sheet. *Comparison of US Engineer Bridge books of 1927 and 1935 under Inland Waterway shows that this bridge was rebuilt in 1935. Bgg.*

The high water line on the front beach of Ocean City has extended offshore since the data were obtained for the topographic map.

At Lat.  $39^{\circ} 18.7'$ , Long.  $74^{\circ} 32.0'$ , the shoreline has eroded about 7 meters.

At Lat.  $39^{\circ} 19'$ , Long.  $74^{\circ} 34'$ , in Sod Thorofare and Steelman Bay, many changes have occurred in the shoreline. These shores are not so high or firm as those generally found on this sheet. The grass is tall and the edges probably vary from year to year depending on the amount of freezing weather during the winter.

At Lat.  $39^{\circ} 20'$ , Long.  $74^{\circ} 33.4'$ , there is a small change of the shoreline on the point.

At Lat.  $39^{\circ} 17'$ , Long.  $74^{\circ} 34.9'$ , a new bridge has been built over Beach Thorofare and is shown on this sheet in black ink.

The Ocean City Coast Guard station is now located on the bay at Lat.  $39^{\circ} 17.6'$ , Long.  $74^{\circ} 33.8'$ , as shown on topographic map T5639. The old station at Lat.  $39^{\circ} 16.9'$ , Long.  $74^{\circ} 34'$  is no longer used by the Coast Guard; the flag tower at the old station is of no value as a landmark. The lookout station is at Lat.  $39^{\circ} 17'$ , Long.  $74^{\circ} 33.4'$  and is approximately 25 feet above high water mark and of little value as a landmark.

#### LANDMARKS

Standpipe, Longport, 90 feet above high water mark is shown on the present editions of charts 3243 and 1217, located by triangulation in 1932.

Standpipe, aluminum (Ocean City) 132 feet above high water mark is shown on the present editions of charts 3243 (print number 1-27-37) and 1217 (print number 6-1-37), ~~located by triangulation in 1932.~~

Standpipe, Ocean City, 126 feet above high water mark, located by triangulation in 1932, should be shown on the prints of charts 3243 and 1217, because with the two standpipes shown on the chart the navigator can readily tell which standpipe on which to plot his cut; and in case of small craft making shore in hazy weather, the sight of the two standpipes indicate immediately the position along the shore. ~~Located on T5639.~~

Standpipe, Somers Point, 125 feet above high water mark should be shown on the new print of chart 3243 and all inside and harbor charts printed in the future. This standpipe is not visible from the outside coast.

#### NON-FLOATING AIDS TO NAVIGATION

The only non-floating aid to navigation is the flashing white light every two seconds at the point south of Broad Thorofare (Intracoastal Waterway) and Great Egg Inlet, at Lat.  $39^{\circ} 18'$ , 259.9 meters, Long.  $74^{\circ} 33'$ , 1124.1 meters. The light is supported by a single black pile and is about 10 feet above mean high water. It is maintained in the summer by the New Jersey Department of Commerce and Navigation. The point marked by this light has changed since the shoreline was obtained for the chart 3243 (print number 1-27-37). See topographic map T5639 for the correct shoreline.


#### GEOGRAPHIC NAMES

The names on this sheet are from topographic maps T5638 and T5639.


#### BRIDGE CLEARANCES

Clearances were obtained from the topographic maps and by the hydrographer on sheet field number 13.

Submitted by,

  
E. B. Brown, Jr.  
Jr. H. & G. Engr.

Approved and forwarded:

  
L. D. Graham  
H. & G. Engineer  
Chief of Party