

5239

5 Form 524 Cards Filed under 5239

5239

Form 504 Rev. Dec. 1933	
DEPARTMENT OF COMMERCE U.S. COAST AND GEODETIC SURVEY R. S. PATTON, Director	
DESCRIPTIVE REPORT	
Topographic Hydrographic	Sheet No. T-5239
State FLORIDA	
LOCALITY	
St. Johns River	
BAYARD POINT	
Green Cove Springs	
and Vicinity	
Photographs - Feb. 27, 1935	
193	
CHIEF OF PARTY	
Riley J. Sipe	

Applied to chert Comp. 685. October 21, 1940. L.Am.

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. 14

REGISTER NO. T-5239

T5239

State Florida

General locality St. Johns River

Locality Bayard Pt. and vicinity
Green Cove Springs

Scale 1:10,204 Date of Photographs - Feb. 27, 1935 survey, 19

Vessel Air Photographic Party No. 2-A.

Chief of party Riley J. Sipe

Surveyed by See Notes on Compilation

Inked by " " " "

Heights in feet above sea to ground to tops of trees

Contour, Approximate contour, Form line interval 10 feet

Instructions dated March 6, 1935 & June 6, 1939, 19

Remarks: Photographs taken by Army Air Corps with 5 lens

Camera. Sheet rough drafted in field in accordance with

Letter of June 6, 1939.

TIME RECORD T-5239

The following time shows the amount of time put in on rough drafting this sheet. The radial plot was completed before time records were kept.

Pricking additional points for detail	3	hrs
Transferring data from other sheets	2	"
Detailing roads, fences, buildings, trails,	62	"
Detailing symbols	44	"
Detailing shoreline	6	"
Field Inspection	26	"
Field Review of sheet	40	"
Report	<u>12</u>	"
Total	195	"

15
7/106
2

NOTES ON COMPILATION

Sheet No. 14 (Field)

Register No. T-5239

PHOTOGRAPHS:

<u>5</u>	Lens	Flight No. <u>8</u>	No. <u>436 - 458 incl.</u>
<u>5</u>	"	"	" <u>9</u> " <u>461 - 480</u> "
	"	"	"
	"	"	"

SCALE PLOT: H. A. Paton

SCALE FACTOR USED: 0.98

PROJECTION BY: Washington, Office

CONTROL PLOTTED BY: H. A. Paton

CONTROL CHECKED BY: F. R. Gossett

SMOOTH RADIAL PLOT BY: H. A. Paton

TOPOGRAPHY TRANSFERRED BY: R. H. Young

TOPOGRAPHY CHECKED BY: R. J. Sipe

SHORELINE INKED BY: R. H. Young

DETAIL INKED BY: R. H. Young

OVERLAY SHEET BY: R. H. Young

DESCRIPTIVE REPORT BY: R. H. Young

REVIEWED BY: D. A. Shallenberger & R. J. Sipe

AREA OF DETAIL INKED: 13.5 sq. stat. miles.

LENGTH OF SHORELINE (Over 200 m): 8.4 Statute Miles.

LENGTH OF SHORELINE (Under 200 m): 3.6 Statute Miles.

LENGTH OF SHORELINE OF SMALL LAKES: ----- Statute Miles.

Ref. Sta.

White, 1876 29-59-12.963 (399.1 m) (adjusted)
81-39-52.780 (1414.8 m)

$x = 289,576.15$ Ft.

$y = 2,055,703.95$ Ft.

Supplemented by other surveys to July, 1939

DATE OF SURVEY

Field Inspection for the interpretation of the photographs was carried out at various times during the progress of the survey up to and including July 1939.

Details on T-5239 are of the date of the photographs except for the following:

1. New construction since the date of the photographs located by field inspection on photos 437 C, Acc. 937 and 437 B, Acc. 937 in July 1939 as noted on the opposite page.

2. Details transferred from the Graphic Control Survey, such as piers and piling.

DESCRIPTIVE REPORT

Field Sheet No. 14
Register No. T-5239

August 25, 1939.

GENERAL

This is a rough map drawing compiled according to the Director's letter of June 6, 1939. *Redrafted in Philadelphia office*

This map drawing was compiled from air photographs taken February 27, 1935, by the U. S. Army Air Corps, using a 5 lens camera No. 32-2 (type T-3-A Air Corps).

CONTROL

38 control points were plotted on the sheet, 31 of which fall within the tracing limits. Of these 31, 11 are triangulation stations established by this party in 1934, 5 are described topographic stations, and the remaining 15 are Florida Mapping Project Traverse Stations. The year of the establishment of the Traverse is not known.

RADIAL PLOT

Radial lines were drawn directly on the sheet and radial points were pricked at the intersection of these lines. The control was adequate for the entire sheet.

INTERPRETATION OF PHOTOGRAPHS

No difficulty was experienced interpreting the photographs covering this area.

Trails of no importance have been left off this map drawing. This is particularly true in the area north of $29^{\circ} 57'$ and east of $81^{\circ} 39'$. The area about the center of this map drawing is mostly pasture land with numerous ditches. The culverts are not shown where these ditches cross the highways as they are corrugated pipe from 18" to 24" in diameter.

FIELD INSPECTION AND SUPPLEMENTAL SURVEYS

Final field inspection for this sheet was made in July 1939 by truck. No date is available for the earlier field inspection.

The location of Shands Bridge was checked by plane table in July 1939 and checked very well with the location shown on G.C. Sheet FF.

The new school in Green Cove Springs was located in the field by measurements. The sketch for this building is shown on C-147, Flight No. 8. (Acc. 937)

⁴³⁷ The factory building at the east end of Bay Street was located in the field and the sketch is on the back of B-437, Flight No. 8. (Acc. 937)

GRAPHIC CONTROL SURVEYS

CS-170-M

Detail from G. C. Sheet "FF" was transferred to this sheet and found to check very closely except for the docks and streets at Green Cove Springs. The G. C. Sheet shows all docks about 10 meters north of the positions as shown on this map drawing. This is also true of Spring Street which is shown on the G.C. Sheet. The positions as shown on the map drawing are believed to be correct.

Piling, houses and fences not visible on the photographs have been transferred from G. C. Sheet "FF" to this map drawing.

Around "Bayard 3, 1934", "Mary (d)", "Bay 1934", "Clock (d)" there are differences of some 5 or 10 meters between the shoreline on the map drawing and that on G. C. Sheet "FF". Around "Bayard 3" the difference is about 5 meters and is apparently due to the interpretation of the high water line. Around the other three stations mentioned, the discrepancies lie between the indicated rod readings on the G. C. Sheet. At the points where the rod readings were taken the shore line checks but the shoreline sketched in between the rod readings does not check.

Bench Marks shown on the G. C. Sheet at Green Cove Springs have not been shown on the map drawing.

All detail on G. C. Sheet "FF", 1935, within the area of this map drawing are shown except; Magnetic Declination, Azimuth of Ranges and temporary stations for the control of hydrography.

HYDROGRAPHIC SURVEYS

All hydrography in this area was completed before this map drawing and the shoreline has not been transferred to the smooth sheets. A comparison was not made as copies of the hydrographic surveys were not on hand.

COMPARISON WITH EARLY C. & G. SURVEYS.

Shoreline comparison with U. S. C. & G. S. T-1459 and T-1465, made in 1878, checks very closely with the shoreline on the map drawing with the following exception. A discrepancy of about 150 meters in the shoreline around the city dump at Green Cove Springs. The shorelines of Governors Creek and Red Bay Creek does not check the present map drawing.

COMPARISON WITH CHART NO. 633.

Shoreline comparison with this chart was not attempted due to the large differences in scale.

COMPARISON WITH OTHER SURVEYS

A map of Green Cove Springs compiled August 14, 1935, by a Mr. S. C. Kenney, Civil Engineer, Green Cove Springs, Fla., will be sent to the office with this map drawing. There are some discrepancies in the street layout. Many of the streets shown on Mr. Kenney's map are non-existent. The angles made by the streets on the two drawings differ in places. Mr. Kenney's map was made primarily for taxing purposes and it is believed that the street layout as shown on this map drawing is correct as the streets exist today.

BRIDGES

The southern end of Shand's Bridge appears on this map drawing. This bridge is about 2.3 miles long and it was impossible to pick radial points along it. As mentioned under Field Inspection and Supplemental Surveys, the section of the bridge shown was transferred from the G. C. Sheet. ^{CS 7708} The bridge data was taken from the publication "List of Bridges over Navigable Waters of the U. S., 1935. The eastern section of this bridge was destroyed by fire in August 1939 and is being rebuilt at the present time. The draw of the bridge (shown on this map drawing) collapsed in August 1939 and is also being rebuilt. *Since bridge is being rebuilt all clearances are not shown on T5237*

The bridge data for the bridge crossing Red Bay Creek was secured in the field by the early inspection party and is shown on Photograph A-444, Flight No. 8. *Not mentioned in study book.*

MISCELLANEOUS

The area bounded by Governors Creek on the north and a continuation of Green Cove Avenue to the St. Johns River on the south, constitutes the approximate city limits of Green Cove Springs. Only the most important buildings have been shown in this area.

Vegetation in the city proper has not been shown. The vegetation west of the Atlantic Coast Line Railroad has been shown although it is within the city limits of Green Cove Springs. The area is not heavily populated.

Small gardens within the city limits have not been shown.

SYMBOLS

No special symbols are used on this map drawing. Samples of the various growths to be shown on the map drawing are indicated to the right of the title block. A legend sheet showing the legend used on this map drawing is attached to this report. Cypress ponds have been circled and merely labeled "Cyp". These ponds are small swampy areas filled with small cypress trees and have been shown on our smooth drawings with the swamp symbol with only cypress trees and without a shoreline.

PREPARATION OF SHEET FOR INKING

The surface of this sheet was rubbed with dry Carbonate of Magnesia before inking. This produced a clean surface and the ink flowed smoothly and evenly. As this is a rough map drawing no attempt was made to maintain uniform lines.

Respectfully submitted,

Robert H. Young
Robert H. Young

Forwarded:

Robert H. Young

④

GEOGRAPHIC NAMES

BAYARD PT.

A point of land at triangulation station "Bayard 3, 1934". All sources are in agreement on this name.

GOVERNORS CREEK

A creek crossing in the northwest section of this map drawing. All sources in agreement.

PUERTO RICO BAY ^{Cove on name list. New.}

A bay just north of Bayard Point.

RED BAY

A small bay near topo station "Rosa".

RED BAY CREEK

A small creek running into Red Bay.

RED BAY POINT

The point of land at triangulation station "Sappho 2, 1934". All sources in agreement.

SULPHUR SPRING COVE

A small cove just north of topo station "Mary".

WATEROAK POINT

A point of land at triangulation station "Bay, 1934". It is spelled as two words on the G. C. Sheet. (FF)

The street names were taken from the map of Mr. S. C. Kenney. This map will be forwarded to the office.

All the above names are in local usage and are recommended for charting purposes.

	Remarks	Decisions
1		299816
2	Name O.K. if usage desired.	300816
3		299816
4		"
5		"
6		"
7		"
8		"
9	Well established name for bridge	"
10		"
11		USGB
12		
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27		

GEOGRAPHIC NAMES

Survey No. T5239

GEOGRAPHIC NAMES										
Survey No. T5239										
Name on Survey	<div>On Chart No. 683</div> <div>On previous survey No. T-1459 T-1465</div> <div>On U. S. quadrangle Maps</div> <div>From local information</div> <div>On local Maps</div> <div>P. O. Guide or Map</div> <div>Rand McNally Atlas</div> <div>U. S. Light List</div>									
	A.	B.	C.	D.	E.	F.	G.	H.	K.	
BAYARD PT	X			X				X		1
GOVERNORS-CREEK out	X	X		X	X					2
PUERTO RICO COVE				X						3
RED BAY				X						4
RED BAY CREEK				X						5
RED BAY POINT	X			X				X		6
SULPHUR SPRING COVE				X						7
WATEROAK POINT	X			X						8
SHANDS BRIDGE <small>Geographi- Name (?)</small>				X	X					9
Green Cove Springs										10
St. Johns River										11
										12
										13
										14
										15
										16
										17
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										25
										26
										27

M 234

Names underlined in approved
by L. Heck on 9/13/40

REVIEW OF AIR PHOTO COMPILATION NO. T-5239

Chief of Party: Riley J. Sipe

Compiled by: R.H.Y.

Project: HT-168

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)
Yes
2. Change in position, or non-existence of wharfs, lights, and other topographic detail of particular importance to navigation which affect the chart, is discussed in the descriptive report. (Par. 26; and 66 g,n)
Yes
3. Ground surveys by plane table, sextant, or theodolite have been used to supplement the photographic plot where necessary to obtain complete information, and all such surveys are discussed in the descriptive report. (Par. 65; and 66 d,e)
Yes
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)
Green Cove Springs Street Map forwarded to the Washington Office
5. Differences between this compilation and contemporary plane table and hydrographic surveys have been examined and rectified in the field before forwarding the compilations to the office and are discussed in the descriptive report.
Yes
6. The control and adjustment of the photo plot are discussed in the descriptive report. Unusual or large adjustments are discussed in detail and limits of the area affected are stated. (Par. 12b; 44; and 66 c,h,i)
Yes
7. High water line on marshy and mangrove coast is clear and adequate for chart compilation. (Par. 16a, 43, and 44)
Yes

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

8. The representation of low water lines, reefs, coral reefs and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41)

Yes

9. Recoverable objects have been located and described on Form 524 in accordance with circular 30, 1933, circular letter of March 3, 1933, and circular 31, 1934. (Par. 29, 30, and 57)

Yes

10. A list of landmarks was furnished on Form 567 and instructions in the Director's letter of July 16, 1934, Landmarks for Charts, complied with. (Par. 16d, e; and 60)

Furnished with G. C. Sheet

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)

Yes

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)

Yes

13. The geographic datum of the compilation is NA 1927 and the reference station is correctly noted.

Yes

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

Yes

15. The drafting is satisfactory and particular attention has been given the following:

1. Standard symbols authorized by the Board of Surveys and Maps have been used throughout except as noted in the report.

Yes

2. The degrees and minutes of Latitude and Longitude are correctly marked.

Yes

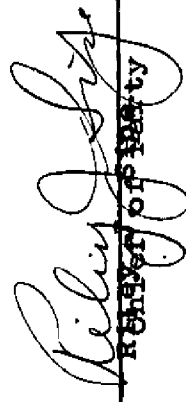
3. All station points are exactly marked by fine black dots.
Yes
4. Closely spaced lines are drawn sharp and clear for printing.
Yes
5. Topographic symbols for similar features are of uniform weight.
Yes
6. All drawing has been retouched where partially rubbed off.
Yes
7. Buildings are drawn with clear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

This is a rough map drawing.

18. Examined and approved;


Riley J. Lipp
Surveyor of Property

19. Remarks after review in office:

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT } No. H
 PHOTOSTAT OF } No. T

{ received
 { registered
 { verified
 { reviewed
 { approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
✓ 25	Coast Pilot	AKC	Page 3 of desc report Bridge just below green Cove the rap - St Johns River - Page 175 Section D - Draw is being rebuilt.
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

826 Jones Room 2229

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 H. D. REED, JR.

Positions checked by " ON ROLLING MACHINE

Grid inked on machine by S. KASS & H. D. R.

Intersections inked by S. KASS

Points used for plotting grid:

x = 275,000 FT
y = 2,040,000 FT.

x 290,000
y 2,050,000

x 310,000
y 2,040,000

x
y

x 275,000
y 2,055,000

x
y

x 310,000
y 2,055,000

x
y

Triangulation stations used for checking grid:
 $x = 299,516.15 \text{ FT} - y = 2,055,703.96 \text{ FT}$

- | | |
|-------------------------------------|----------|
| 1. <u>White, 1876</u> | 5. _____ |
| $x = 308,726.14 - y = 2,037,737.82$ | |
| 2. <u>Bayard 3, 1934</u> | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ | 8. _____ |

T 5239

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION
(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station X 310,000
y 2,055,000
 λ (Central meridian) 81°
 ϕ 29° 59' 07.11" λ 81 36 00.50

$\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 9.118500 $\Delta\lambda$ (Central meridian— λ) 2160.50
 $\Delta\lambda$ (in sec.) 2160.50

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular H (even 10')		Tabular V (even 10')	
Interpolated H (fraction of 10')	—	Interpolated V (fraction of 10')	+
Cor. for second dif.	+ 31	Cor. for second dif.	+ 2
H	87.945603	V	1.065648
a	— .723	Tabular difference of y for 1" of ϕ	
b	+ 9.535	y (for minutes of ϕ)	
		y (for seconds of ϕ)	
$H (\Delta\lambda'')$	190,006.89	Tabular y	2,054,502.67
ab	— 6.89	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	497.42
x'	190.000		
	500,000.00	c	— .09
x	310,000	y	2,055,000
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F (\Delta\lambda'')$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	"
		$\Delta\alpha$	"

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

$$\Delta\alpha'' = \Delta\lambda'' \sin \frac{\phi + \phi'}{2} + F (\Delta\lambda'')$$

75239

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station X 295,000
y 2,050,000
 λ (Central meridian) 81°
29° 58' 16.81" λ 81 38 50.74
 $\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 8.2801666 $\Delta\lambda$ (Central meridian— λ) 38 50.74
 $\Delta\lambda$ (in sec.) 2330.74

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular H (even 10')		Tabular V (even 10')	
Interpolated H (fraction of 10')	—	Interpolated V (fraction of 10')	+
Cor. for second dif.	+ 52	Cor. for second dif.	+ 3
H	87.957914	V	1.065347
a	— 724	Tabular difference of y for 1" of ϕ	
b	+ 9.858	y (for minutes of ϕ)	
		y (for seconds of ϕ)	
$H (\Delta\lambda'')$	205,007.14	Tabular y	2,049,421.35
ab	— 7.14	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	578.75
x'	205,000		
	500,000.00	c	— 10
x	295	y	2,050,000
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F (\Delta\lambda'')$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	"
		$\Delta\alpha$	"

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

$$\Delta\alpha'' = \Delta\lambda'' \sin \frac{\phi + \phi'}{2} + F (\Delta\lambda'')$$

75239

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

(CALCULATING MACHINE COMPUTATION)

State Fla Zone East Station χ 275,000
y 2,055,000

λ (Central meridian) 81°

φ 29° 59' 05".13 λ 81 42 38.47

Δφ (Excess of φ over even 10' expressed as minutes and decimal) 9.0855 Δλ (Central meridian - λ) 2558".47
Δλ (in sec.) 2558".47

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular H (even 10')		Tabular V (even 10')	
Interpolated H (fraction of 10')	-	Interpolated V (fraction of 10')	+
Cor. for second dif.	+	Cor. for second dif.	+
H	<u>87.946087</u>	V	<u>1.065636</u>
a	-	Tabular difference of y for 1" of ϕ	
b	+	y (for minutes of ϕ)	
		y (for seconds of ϕ)	
$H (\Delta\lambda'')$	<u>225,007.33</u>	Tabular y	<u>2,054,302.57</u>
ab	-	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	<u>697.54</u>
x'	<u>225,000</u>	c	-
	<u>500,000.00</u>	y	<u>2,055,000</u>
x	<u>275</u>	$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{(\text{Tabular } y) + y}{2}$		$F (\Delta\lambda'')$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$\Delta\alpha''$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha$	

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

$$\Delta\alpha'' = \Delta\lambda'' \sin \frac{\phi + \phi'}{2} + F (\Delta\lambda'')$$

75239

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

(CALCULATING MACHINE COMPUTATION)

State Fla Zone East Station 310,000
2,040,000

λ (Central meridian) 81°

ϕ 29° 56' 38".62 λ 81 35 59.61

$\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 6.643667 $\Delta\lambda$ (Central meridian - λ) - 35 59.61
 $\Delta\lambda$ (in sec.) - 2159.61'

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular H (even 10')		Tabular V (even 10')	
Interpolated H (fraction of 10')	-	Interpolated V (fraction of 10')	+
Cor. for second dif.	+ 82	Cor. for second dif.	+ 4
H	87.981934	V	1.064757
a	- .725	Tabular difference of y for 1" of ϕ	
b	+ 9.535	y (for minutes of ϕ)	
		y (for seconds of ϕ)	
H ($\Delta\lambda''$)	190.006.91	Tabular y	2,039,503.51
ab	- 6.91	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	496.58
x'	190.000		9
	500,000.000	c	- .09
x	310	y	2,040,000
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F' (\Delta\lambda)''$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	
		$\Delta\alpha$	

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

$$\Delta\alpha'' = \Delta\lambda'' \sin \frac{\phi + \phi'}{2} + F' (\Delta\lambda)''$$

75239

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station X 275,000
y 2,040,000

λ (Central meridian) 81°

ϕ 29° 56' 36.65 λ 81 42 37.41

$\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 6.610833 $\Delta\lambda$ (Central meridian - λ) - 42 37.41
 $\Delta\lambda$ (in sec.) 2557.41

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular H (even 10')		Tabular V (even 10')	
Interpolated H (fraction of 10')	-	Interpolated V (fraction of 10')	+
Cor. for second dif.	+	Cor. for second dif.	+
H	<u>82</u>	V	<u>4</u>
	<u>87.982452</u>		<u>1.064746</u>
a	-	Tabular difference of y for 1" of ϕ	
	<u>725</u>		
b	+	y (for minutes of ϕ)	
	<u>10.136</u>	y (for seconds of ϕ)	
$H (\Delta\lambda'')$	<u>225,007.35</u>	Tabular y	<u>2,039,303.73</u>
ab	-	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	<u>696.38</u>
	<u>7.35</u>		<u>00.11</u>
x'	<u>225,000</u>	c	<u>.11</u>
	<u>500,000.00</u>	y	<u>2,040,000</u>
x	<u>275,</u>		
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F' (\Delta\lambda'')$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta a''$	
		Δa	

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

$$\Delta a'' = \Delta\lambda'' \sin \frac{\phi + \phi'}{2} + F' (\Delta\lambda'')$$

T5239

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

(CALCULATING MACHINE COMPUTATION)

State Ila Zone East Station Bayard 3, 1934
 λ (Central meridian) 81° 00'
 ϕ 29° 56' 16".165 λ 81 36 13.956
 $\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 6.2694167 $\Delta\lambda$ (Central meridian - λ) - 36 13.956
 $\Delta\lambda$ (in sec.) - 2173.956

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular H (even 10')		Tabular V (even 10')	
Interpolated H (fraction of 10')	-	Interpolated V (fraction of 10')	+
Cor. for second dif.	+	Cor. for second dif.	+
H	<u>86</u>	V	<u>4</u>
	<u>87.987424</u>		<u>1.064622</u>
a	<u>- 0.725</u>	Tabular difference of y for 1" of ϕ	
b	<u>+ 9.562</u>	y (for minutes of ϕ)	
		y (for seconds of ϕ)	
$H (\Delta\lambda'')$	<u>- 191,280.79</u>	Tabular y	<u>2,037,234.76</u>
ab	<u>- 6.93</u>	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	<u>503.15</u>
x'	<u>191,273.86</u>		<u>91</u>
	<u>500,000.00</u>	c	<u>- .09</u>
x	<u>308,726.14</u>	y	<u>2,037,737.82</u>
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F' (\Delta\lambda'')$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta a''$	
		Δa	

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

$$\Delta a'' = \Delta\lambda'' \sin \frac{\phi + \phi'}{2} + F' (\Delta\lambda'')$$

7 5239

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION
(CALCULATING MACHINE COMPUTATION)

State Ila. Zone East Station White, 1876.
 λ (Central meridian) 81° 00' "
 ϕ 29° 59' 12".963 λ 81 39 52.780
 $\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 9.2160500 $\Delta\lambda$ (Central meridian - λ) 39 52.780
 $\Delta\lambda$ (in sec.) - 2392.780

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular H (even 10')		Tabular V (even 10')	
Interpolated H (fraction of 10')	-	Interpolated V (fraction of 10')	+
Cor. for second dif.	+	Cor. for second dif.	+
H	<u>87.944169</u>	V	<u>1.065683</u>
a	<u>- 0.723</u>	Tabular difference of y for 1" of ϕ	
b	<u>+ 9.955</u>	y (for minutes of ϕ)	
H ($\Delta\lambda''$)	<u>210,431.05</u>	y (for seconds of ϕ)	
ab	<u>- 7.20</u>	Tabular y	<u>2,055,093.91</u>
x'	<u>- 210,423.85</u>	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	<u>610.15</u>
	<u>500,000.00</u>	c	<u>- .10</u>
x	<u>289,576.15</u>	y	<u>2,055,703.96</u>
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F' (\Delta\lambda'')$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta a''$	
		Δa	

$$x' = H\Delta\lambda + ab$$

$$x = x' + 500,000$$

$$y = \text{Tabular } y + V \left(\frac{\Delta\lambda''}{100}\right)^2 + c$$

$$\Delta a'' = \Delta\lambda'' \sin \frac{\phi + \phi'}{2} + F' (\Delta\lambda'')$$

REVIEW OF AIR PHOTOGRAPHIC SURVEY T-5239

Graphic Control Surveys:

C S 170 M (1:20,000) 1934. All details on C S 170 M are shown on T-5239 except for temporary topographic stations.

Contemporary Hydrographic Surveys:

H-6297 (1935) 1:20,000. T-5239 has been compared with H-6297 by the hydrographic verifying unit and the two surveys are in agreement.

Previous Topographic Surveys:

Comparison of T-5239 with the previous topographic surveys listed below shows numerous cultural changes and also several changes in shoreline. T-5239 is complete and adequate to supersede the sections of these surveys which it covers.

See page 2 of the descriptive report for T-5239 for comparison made by the field party.

T-1459b (1:20,000) 1876-77
T-1465 (1:20,000) 1878
T-2027 (1:80,000) 1875

Comparison with Chart 683 (12-7-38):

Comparison of T-5239 with Chart 683 shows numerous changes in cultural details and several shoreline changes.

Fixed aids to navigation were located by triangulation and are shown on T-5239.

Landmarks in this area are listed in Chart letter 539 (1935). Regarding station "Counter Weight" listed in letter 539 (1935), the drawbridge is being rebuilt and this station may have been changed or removed. See Descriptive Report T-5239, page 3. This fact was reported to the Nautical Chart Section September 15, 1939.

Recoverable Topographic Stations:

Five Form 524 descriptions for recoverable topographic stations on T-5239 are filed under T-5239.

General:

T-5239 was compiled as a rough drawing and was redrawn in the Philadelphia office.

The descriptive report and compilation of details of T-5239 are complete.

Reviewed in office by - H. D. Reed, Jr.

Inspected by - B. G. Jones

Examined and approved:

H. D. Reed

Chief, Section of Field Records.

J. S. Benson

Chief, Division of Charts.

K. T. Adams

Chief, Section of Topography.

G. F. Hude

Chief, Division of Coastal Surveys.

SURVEY NO. T-5239

Record of Application to Charts

[illegible]

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.