

5240

3 form 524 descriptions filed in 5245 file

5240

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-5240
State <u>FLORIDA</u>	
LOCALITY	
<u>St. Johns River</u>	
New Switzerland	<u>Papo Point -- Orangedale</u>
Photographs -- <u>Feb. 23, 1935</u> ✓	
193	
CHIEF OF PARTY	
<u>Riley J. Sipe</u>	

Applied to chart compilation 685 October 21, 1940 L.A.M.

Date of Survey.

Photographs taken February 23, 1935.

Graphic control surveys, 1935.

Field inspection at various times from 1935 to August 1939.

Details on T-5240 are of the date of the photographs except for the location of triangulation and topographic stations, the dates for which are shown on the sheet.

TIME SHEET

Field Sheet No. 13
Register No. T-5240

The radial plot was nearly finished before time records were begun on this sheet. This is a rough drafted sheet.

Radial Plot	16 hrs
Checking for Tilt	2 "
Detailing roads,bldgs,fences,trails.	24 "
Detailing shoreline	5 "
Detailing symbols	30 "
Field Inspection	20 "
Reports	18 "
Field review of sheet	40 "

Total - - - - - 155 hrs.

NOTES ON COMPILATION

Sheet No. 13 (Field)

Register No. T-5240

*See next page for date of field inspection
and supplemental surveys.*

PHOTOGRAPHS:

<u>5</u>	Lens	-	Flight No.	<u>3</u>	No.	<u>86 to 94 inc.</u>	(Acc. 931)
<u>5</u>	"	-	"	<u>4</u>	"	<u>96 to 118 inc.</u>	(Acc 932)
	"	-	"		"		
	"	-	"		"		

SCALE PLOT: H. A. Paton

SCALE FACTOR USED: 0.99

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: D. A. Shallenberger

SHORELINE INKED BY: R. H. Young

DETAIL INKED BY: R. H. Young

OVERLAY SHEET BY: None

DESCRIPTIVE REPORT BY: R. H. Young

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

AREA OF DETAIL INKED: 15.1 sq. stat. miles

LENGTH OF SHORELINE (Over 200 m): 7.8 Statute Miles.

LENGTH OF SHORELINE (Under 200 m): 3.1 Statute Miles.

LENGTH OF SHORELINE OF SMALL LAKES: _____ Statute Miles.

Reference Station:

Hallowes, 1934. 20-01-25.816 (1102.8m) (adjusted)
 81-39-32.430 (869.0m)
 $x = 291,448.79$ $y = 2,070,124.40$
 $x = 291,448.79$ ft $y = 2,070,124.40$ ft

①

DESCRIPTIVE REPORT

Field Sheet No. 13
Register No. T-5240

August 29, 1939.

GENERAL

This is a rough map drawing compiled in accordance with Director's letter dated June 6, 1939. The compilation was made from air photographs taken February 23, 1935, by the U. S. Army Air Corps using a five lens camera No. 32-2 (type T-3A Air Corps).

CONTROL

A total of twenty control points are plotted on this sheet, of which eighteen fall within the tracing limits. Of these, twelve are U. S. C. & G. S. triangulation stations as follows:

- 1 - (Remington 1876-1933) established in 1876.
- 1 - (Remington 2, 1933-1934) Est. by H. C. Warwick.
- 3 - Described topographic stations est. by this party.
- 7 - Triangulation stations established, 1934, by H. A. Paton.

The remaining six control stations are traverse stations established by the Florida Mapping Project and the year of their establishment is not known.

RADIAL PLOT

Radial lines were drawn directly on the sheet and points pricked at their intersections. The control was adequate along the shoreline and along the southern part of the sheet. There are no control stations in the northeast corner of the sheet. However with the control available a smooth radial plot was made and it is believed to be within the allowable limits of accuracy.

INTERPRETATION OF PHOTOGRAPHS

No difficulty was experienced in interpreting the photographs.

Trails of no importance have been left off this map drawing.

Along the shoreline of this drawing many new houses and small piers have been constructed since the pictures were made. None of these have been shown. *why not?*

Many of the roads running from State Road No. 47 towards the shoreline were impossible to accurately locate on the photographs due to the dense growth of trees. These roads have been shown as they were traced on the photographs in the field and it is believed they are accurate enough for ~~mapping~~ *charting* purposes.

There are many small spots on this map drawing labeled "Sw - Pi & Cy" or "Sw - Cy". These are clumps of pine and cypress or cypress alone, growing in a low wet spot. On some of our previous map drawings these have been shown as ponds but it is believed that swamp better identifies these areas as they exist.

*There are
all kinds of
second class
roads.*

②

This was for interpretation - the cemetery was in existence at the time the photos were taken.

→ The Cemetery at Orangedale was located in the field and the sketch is shown on Field Print C-111, Flight No. 4. (Acc. 932)

The blank areas on this map drawing should be detailed as scattered pine, brush, grass and scrub palmetto. (See Note. 1 on the map drawing).

FIELD INSPECTION

Final field inspection was made by truck in August 1939. The date of the original inspection is not available.

GRAPHIC CONTROL SURVEYS

C.S. 170 and CS 173

Detail from G. C. Sheets "EE & FF" was transferred to this map drawing and checked very closely with the following exceptions:

(1) Around triangulation station "Remington", east and west sides of Popo Pt., in the curve to the east of Popo Pt., and from triangulation station Bridge, 1934 to Zip (d) there are discrepancies of from 2 m. to 15 meters in the positions of the shoreline on the map drawing and on the G. C. Sheets. It is believed that this difference is due to the interpretation of the high water line.

(2) There is a difference of about 10 meters between this map drawing and the G. C. Sheet, in the position of the inshore end of the ruined pier on the west side of Popo Pt.

(3) The first row of piling south of Shands Bridge is shown on this map drawing to be about 10 meters south of the same row of piling shown on G. C. Sheet.

Graphic Control Surveys

were on scale 1:20,000

whereas T5240 is 1:10,000

HYDROGRAPHIC SURVEYS

All hydrography in this area was completed prior to 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 available.

COMPARISON WITH EARLY U.S.C.&G. SURVEYS

The shoreline on this map drawing checks very closely with the shoreline on T-1459, 1877. In no place is there a noticeable discrepancy in the shorelines.

COMPARISON WITH CHART NO. 683.

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

BRIDGES

The eastern section of Shands Bridge is shown on this map drawing. A portion of this section was destroyed by fire in August 1939 and is now being rebuilt in its original position. The bridge as shown on this map drawing was transferred from G. C. Sheet "FF". *CS 170*
It was impossible to prick radial points along the bridge.

Bridge information shown on this sheet was taken in the field by the early field inspection party. See Print C-111, Flight 4 for Shands Bridge and A-117, Flight 4 for the bridge over Trout Creek. *(Not in Bridge Book)*
G.C. Sheet "FF" gives the following information on the Shands Bridge through span. VC = 11 feet at MLW; HC = 24.9 feet.* As this section is being rebuilt it was impossible to check these measurements.

** Since the bridge is being rebuilt these clearances are not shown on map T5240*

SYMBOLS

No special symbols are used on this map drawing. Samples of the various growths to be shown on the map drawing are given thereon. A legend sheet showing the legend used is attached to this report. (Not in report)

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 evenly and freely. As this is a rough drawing no attempt was made to obtain uniform lines.

Respectfully submitted,

Robert H. Young
Robert H. Young

Forwarded:

Riley J. Sipe

(9)

GEOGRAPHIC NAMES

HARDWOOD

A very small settlement, of two or three houses, on Trout Creek about $\frac{1}{2}$ mile south of State Road No. 48. This was previously known as Tar Landing or Durbin Post Office. Both of these names are shown on U. S. G. S. Quad. of Orange Park and on the St. Johns County Soil Map. There is no Post Office at this point.

KENTUCKY BRANCH

A very small stream just south of triangulation station "Switzer, 1934".

KENDALL CREEK

The northerly of two streams emptying into the St. Johns River at the same point approximately one-half mile north of Shands Bridge.

NEW SWITZERLAND PT.

A not very prominent point of land at triangulation station "Switzer, 1934". In the U. S. Light List this is shown as Switzerland Pt. All other sources show it as given.

ORANGE GROVE BRANCH

A small stream about 2 mile long emptying into the St. Johns River at a point about one mile north of Shands Bridge.

ORANGEDALE

A small settlement at the intersection of State Highways No. 47 and No. 48. Formerly there was a postoffice at this place. On St. Johns County Soil Map this settlement is shown to be about two miles east of the position shown on this map drawing.

PETTY BRANCH

The southerly of two streams emptying into the St. Johns River at the same point approximately one-half mile north of Shands Bridge. Kendall Creek and Petty Branch together are sometimes referred to as Kendall Creek.

POPO PT.

A point of land at triangulation station "Hallowes, 1934". This point is sometimes referred to as "Hallowes Pt." and the cove just ^{east} north of the point as "Hallowes Cove". All charts and the Light List show it as Popo Pt.

REMINGTON PARK

The settlement at Popo Pt. It is sometimes referred to as Remington.

TROUT CREEK

A portion of this creek is on the east side of this map drawing. All sources are in agreement.

GEOGRAPHIC NAMES

Survey No. T-5240

GEOGRAPHIC NAMES		On Chart No. 883 (38/12/17)										St. Johns Co. Soil Map				
Survey No. T-5240		On previous survey No. T-1459														
Name on Survey		On U. S. quadrangle Maps										From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List
		A	B	C	D	E	F	G	H	I						
✓	HARDWOOD 300815				X										1	
✓	KENTUCKY BRANCH 300916				X								X		2	
✓	KENDALL CREEK "				X								X		3	
✓	NEW SWITZERLAND PT. "	X	X	X	X								X		4	
✓	ORANGE GROVE BRANCH "				X								X		5	
✓	ORANGEDALE "			X	X								X		6	
✓	PETTY BRANCH "			X	X								X		7	
✓	POPO PT. "	X	X	X	X					X			X		8	
✓	REMINGTON PARK "				X								X		9	
✓	TROUT CREEK 299895	X		X	X								X		10	
	St. Johns River (U.S.G.)														11	
	Shands Bridge 299816														12	
	Local references:														13	
	Mrs. M. A. Ortugas, Green Cove Springs, Fla. (Resided at Hardwood for 30 years.)														14	
	Mr. M. D. McCarthy, Green Cove Springs, Fla. (Resided at Orangedale for two years.)														15	
	Mr. M. T. Klein, Green Cove Springs, Fla. (Resided at Orangedale for 30 years.)														16	
															17	
															18	
															19	
															20	
															21	
															22	
															23	
															24	
															25	
															26	
															27	

Names underlined in red approved

by L. Heck on 7/2/40

M 234

Names underlined in red approved

by L. Heck on 7/2/40

REVIEW OF AIR PHOTO COMPILATION NO.

Chief of Party: Riley J. Sipe

Compiled by: RHY

Project: Ht-168

Instructions dated: 3/6/35

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)

None

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)

None

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.

2. The ~~degrees~~^{Yes} 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.

None

17. Remarks: *Rough drafted map drawing.*

18. Examined and approved;

19. Remarks after review in office:

Reley J. Lyle
Chief of Party

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 RULING MACHINE

Grid inked on machine by H. D. R. JR.

Intersections inked by _____

Points used for plotting grid:

x = 325,000 FT.
y = 2,065,000 FT.

x 290,000
y 2,065,000

x 325,000
y 2,085,000

x
y

x 305,000
y 2,075,000

x
y

x 290,000
y 2,085,000

x
y

Triangulation stations used for checking grid:

$x = 291,448.79 - y = 2,070,124.40$

1. Hallowes, 1934 (Ref. Sta.) 5. _____

$x = 306,431.21 - y = 2,010,719.63$

2. Bridge, 1934 6. _____

3. _____ 7. _____

4. _____ 8. _____

T 5240

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station 325,000
2,065,000
 λ (Central meridian) 81° 00'
81 33 10.49
 ϕ 30° 00' 46.85 λ 33 10.49
 $\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 0.7806667 $\Delta\lambda$ (Central meridian - λ) 1990.49
 $\Delta\lambda$ (in sec.) 1990.49

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular H (even 10')		Tabular V (even 10')	
Interpolated H (fraction of 10')	-	Interpolated V (fraction of 10')	+
Cor. for second dif.	+ 25	Cor. for second dif.	+ 1
H	87.921173	V	1.066244
a	- .721	Tabular difference of y for 1" of ϕ	
b	+ 9.121	y (for minutes of ϕ)	
		y (for seconds of ϕ)	
$H (\Delta\lambda'')$	175,006.58	Tabular y	2,064,577.63
ab	- 6	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	422.45
x'	175,000		
	500,000.00	c	- .08
x	325	y	2,065,000
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F (\Delta\lambda'')$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	
		$\Delta\alpha$	

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

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

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

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

T 5240

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

(CALCULATING MACHINE COMPUTATION)

State Fla Zone East Station 325,000
2,085,000
 λ (Central meridian) 81° 00'
 ϕ 30° 04' 04.83 λ 81 33 11.59
 $\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 4.0805 $\Delta\lambda$ (Central meridian— λ) 33 11.59
 $\Delta\lambda$ (in sec.) 1991.59

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular H (even 10')		Tabular V (even 10')	
Interpolated H (fraction of 10')	—	Interpolated V (fraction of 10')	+
Cor. for second dif.	+ 89	Cor. for second dif.	+ 4
H	87.872617	V	1.067425
a	— .718	Tabular difference of y for 1" of ϕ	
b	+ 9.121	y (for minutes of ϕ)	
		y (for seconds of ϕ)	
$H (\Delta\lambda'')$	175,006.55	Tabular y	2,084,576.69
ab	—	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	423.39
x'	175,000		
	500.0000.00	c	— 08
x	325	y	2,085,000
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F (\Delta\lambda'')$	"
$\sin \frac{\phi + \phi'}{2}$		$\Delta a''$	"
		Δa	"

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

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

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

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

T 5240

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

(CALCULATING MACHINE COMPUTATION)

State Ila. Zone East Station X 305,000
Y 2,075,000
81 00
 λ (Central meridian) 81 36 58.58
 ϕ 30° 02' 24.83 $\Delta\lambda$ (Central meridian - λ) 36 58.58
 $\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 2' 4138.333 $\Delta\lambda$ (in sec.) 2218.58

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
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>87.897152</u>	V	<u>1.066829</u>
a	- <u>.720</u>	Tabular difference of y for 1" of ϕ	
b	+ <u>9.655</u>	y (for minutes of ϕ)	
H ($\Delta\lambda''$)	<u>195,006.95</u>	y (for seconds of ϕ)	
ab	-	Tabular y	<u>2,074,474.99</u>
x'	<u>195,000</u>	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	<u>525.10</u>
	<u>500,000.00</u>	c	- <u>09</u>
x	<u>305</u>	y	<u>2,075,000</u>
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F(\Delta\lambda)''$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	
		$\Delta\alpha$	

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

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

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

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

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION
(CALCULATING MACHINE COMPUTATION)

State Fla Zone East Station 290,000
2,085,000
 λ (Central meridian) 81° 00' "
 ϕ 30° 04' 02".98 λ 81 39 49.89
 $\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 4'.04966667 $\Delta\lambda$ (Central meridian - λ) 39 49.89
 $\Delta\lambda$ (in sec.) 2389.89

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
Tabular H (even 10')		Tabular V (even 10')	
Interpolated H (fraction of 10')	-	Interpolated V (fraction of 10')	+
Cor. for second dif.	+ 89	Cor. for second dif.	+ 4
H	87.873072	V	1.067414
a	- 7.18	Tabular difference of y for 1" of ϕ	
b	+ 9.950	y (for minutes of ϕ)	
		y (for seconds of ϕ)	
$H (\Delta\lambda'')$	210,007.14	Tabular y	2,084,390.44
ab	- 7.14	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	609.66
x'	210,000		.10
	500,000.00	c	- .10
x	290	y	2,085,000
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F (\Delta\lambda'')$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	"
		$\Delta\alpha$	"

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

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

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

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

T 5240

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station x 290,000
y 2,065,000
 λ (Central meridian) 87° 00' "
81 39 48.57
 ϕ 30° 00' 45.01 $\Delta\lambda$ (Central meridian - λ) 39 48 57
 $\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 0.750 $\Delta\lambda$ (in sec.) 2388.57

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
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>25</u>	V	<u>1.066233</u>
	<u>87.921622</u>		
a	-	Tabular difference of y for 1" of ϕ	
b	+	y (for minutes of ϕ)	
	<u>721</u>	y (for seconds of ϕ)	
	<u>9.950</u>		
$H (\Delta\lambda'')$	<u>210,007.17</u>	Tabular y	<u>2,064,391.79</u>
ab	-	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	<u>608.31</u>
x'	<u>7.17</u>		<u>10</u>
	<u>210,000</u>	c	<u>10</u>
	<u>500.0000.000</u>		
x	<u>290</u>	y	<u>2,065,000</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	

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

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

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

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

T 5240

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION
(CALCULATING MACHINE COMPUTATION)

State Fla. Zone East Station Hallowes 1934
λ (Central meridian) 81 00 00
φ 30° 01' 35.816 λ 81 39 32.430
Δφ (Excess of φ over even 10' expressed as minutes and decimal) 1.5969333 Δλ (Central meridian - λ) 39 32.430
Δλ (in sec.) - 2372.430

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
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>87.909175</u>	V	<u>1,066.537</u>
a	- <u>.721</u>	Tabular difference of y for 1" of φ	
b	+ <u>9.923</u>	y (for minutes of φ)	
H (Δλ")	<u>208,558.36</u>	y (for seconds of φ)	
ab	- <u>7.15</u>	Tabular y	<u>2,069.524.21</u>
x'	- <u>208,551.21</u>	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	<u>600.29</u>
	<u>500,000.00</u>	c	- <u>.10</u>
x	<u>291,448.79</u>	y	<u>2,070,124.40</u>
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F (\Delta\lambda'')^3$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta a''$	
		Δa	

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

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

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

$$\Delta a'' = \Delta\lambda'' \sin \frac{\phi + \phi'}{2} + F (\Delta\lambda'')^3$$

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION
(CALCULATING MACHINE COMPUTATION)

State Fla Zone East Station Bridge 1934
 λ (Central meridian) 81° 00' "
 ϕ 30° 00' 03".542 λ 81 36 41.362
 $\Delta\phi$ (Excess of ϕ over even 10' expressed as minutes and decimal) 0.0590333 $\Delta\lambda$ (Central meridian— λ) 36 41.362
 $\Delta\lambda$ (in sec.) - 2201".362

		$\left(\frac{\Delta\lambda''}{100}\right)^2$	
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>87.931782</u>	V	<u>1.065985</u>
a	— .722	Tabular difference of y for 1" of ϕ	
b	+ 9.623	y (for minutes of ϕ)	
H ($\Delta\lambda''$)	<u>193,569.68</u>	y (for seconds of ϕ)	
ab	— 6.95	Tabular y	<u>2,060,203.14</u>
x'	<u>- 193,562.73</u>	$V \left(\frac{\Delta\lambda''}{100}\right)^2$	<u>516.58</u>
	<u>500,000.00</u>	c	— .09
x	<u>306,437.27</u>	y	<u>2,060,719.63</u>
$\frac{(\text{Tabular } y) + y}{2}$		$\Delta\lambda'' \sin \frac{\phi + \phi'}{2}$	
$\frac{\phi + \phi'}{2}$ (Interpolated from projection table)		$F' (\Delta\lambda'')^3$	
$\sin \frac{\phi + \phi'}{2}$		$\Delta\alpha''$	"
		$\Delta\alpha$	"

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

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

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

$$\Delta\alpha'' = \Delta\lambda'' \sin \frac{\phi + \phi'}{2} + F' (\Delta\lambda'')^3$$

REVIEW OF AIR PHOTOGRAPHIC SURVEY T-5240

July 25, 1940

Graphic Control Surveys

C.S. 170 (1:20,000) 1935
C.S. 173 (1:20,000) 1935

The descriptive reports for the graphic control surveys were never received in the air photo unit. The surveys included short sections of shoreline and offshore objects as piling and piers. They have been applied to T-5240 and all details are shown on T-5240 except temporary stations and the magnetic meridian. See also page 2 of the descriptive report.

Contemporary Hydrographic Surveys

H-6297 (1:20,000) 1935

T-5240 was compared with H-6297 by the hydrographic reviewing unit 1-15-40 and minor discrepancies adjusted.

Previous Topographic Surveys

Comparison of T-5240 with the previous topographic surveys listed below shows numerous cultural changes and also minor changes in shoreline. T-5240 is complete and adequate to supersede the sections of these surveys which it covers.

For comparison by the field party see page 2 of the descriptive report for T-5240.

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

Comparison with Chart 683 (12-7-38)

Fixed aids to navigation were located by triangulation and are shown on T-5240.

Landmarks in this area are listed in chart letter 539 (1935)

T-5240 was applied to chart 683 prior to this review. No changes have been made in T-5240 since its application to the chart.

Recoverable Topographic Stations

Descriptions are filed under T-5240.

General

T-5240 was compiled as a rough drawing and entirely redrawn in the Philadelphia office.

The compilation of map details and the descriptive report are complete and the rough drafting was adequate for redrafting.

Reviewed in office by H. D. Reed and R. E. Elkins.

Inspected by B. G. Jones, July 25, 1940. *B.G.J.*

Examined and approved:

<i>Thos. Baird</i>	<i>J. B. Bodine</i>
Chief, Section of Field Records.	Chief, Division of Charts.

<i>K. T. Adams</i>	<i>G. H. Hude</i>
Chief, Section of Topography.	Chief, Division of Coastal Surveys.

SURVEY NO. _____

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.