5658

5658

Form 504
Rev. Dec. 1933

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

Air photographic
~~Topographic~~
~~Hydrographic~~ } *Sheet No.* T-5658

State Maryland

LOCALITY

Chesapeake Bay, Northern Part

Sassafras River Entrance

Photographs taken
Apr, May, July 1937

CHIEF OF PARTY

Compiled in
Section of Field Records
Washington Office

U.S. GOVERNMENT PRINTING OFFICE: 1934

Applied to Chr. 572. May 1940. JKSG.

The correction on the opposite page was made in black on the file copy.
4-15-41 B.G.J.

Form 537a
Ed. Nov. 1929

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.....

REGISTER NO. T-5658

T5658

State Maryland

General locality Chesapeake Bay, Northern Part

Locality Sassafras River Entrance

Scale 1:10,000 Date of ~~survey~~ photographs Apr. May & July 1937

Vessel

[redacted]

Air Photographic Survey T-5658

Data Record

Nine-lens photographs Nos. 1686 to 1688, 1378 to 1380, 1319 to 1321, taken May 1937. Also See below.

1687 1379 1320

Supplemental Surveys

Field inspection of shoreline and control: Oct. 1937, by J. C. Partington.
Field inspection of interior details and Turner Creek Light: Aug. and Dec. 1938, by L. W. Swanson
Hydrographic Survey H-6370, Aug. 1938.

Details on T-5658 are of the date of the photographs except as follows:

1. Several small piers located by H-6370 (Aug. 1938).
2. Light off Turner Creek located by field inspection, Dec. 20, 1938.

Chief of Party - Compiled in Section of Field Records:
T. B. Reed, Chief of Section.
Radial plot by E. H. Kirsch and L. C. Lande, winter 1937-38.
Compiled as a rough drawing by L. C. Lande
Redrafted by R. E. Elkins, 1939.

Reference Station

Station Stillpond, 1886: Lat. 39°18'54.409" (1677.9 m.)
Long. 76°02'39.100" (936.7 m.)adjusted

Datum: N. A. 1927

Maryland system of plane coordinates:

x = 1,070,433.82 feet
y = 541,059.52 feet

Photo	Date	Time
1319-21	4-30-37	3:07 - 3:09
1378-80	5-1-37	10:00 - 10:02
1686-88	7-8-37	11:14 - 11:16

Descriptive Report and Review of Air Photographic Survey
T-5658

This map T-5658 was compiled in this office and the descriptive report and usual office review are combined in one report.

Radial plot

T-5658 (1:10,000) was plotted together with T-5659/(1:10,000) and T-5660 using templates as follows:

1. Control consisted of stations Manlove 1934, Woodall 1934, Hartt 1934, Poor 1934, Leaf, Ref. Mark 1934, and Still Pond 1934. Since these stations, as spread over the three sheets T-5658 to T-5660, were too widely spaced to fix any one photograph, the templates were laid approximately by holding to supplemental control points located from the 1:20,000 photographs in this area and enlarged to 1:10,000. The template plot was then smoothed out to hold the triangulation and the supplemental points disregarded and relocated from the completed 1:10,000 scale plot.

   This plot was theoretically practical with the nine-lens photographs but was weak in this case because of

   (a) Distortion of photographs due to the poor quality of photographic paper used,

   (b) Slight errors in adjustment of the transforming printer which was later revised and readjusted.

   In consideration of the expense of additional control and lack of time for preparing shoreline for the 1938 hydrography the plot was accepted as of sufficient accuracy for hydrographic control and for charting on scales of 1:20,000 or smaller.

   Subsequent hydrography in this area disclosed no difficulty in using the photographic locations of shoreline and signals with the exception of the relocation of three signals by 5 meters, 10 meters, and 12 meters. These were localized errors.

   The accuracy of photographic point locations is estimated as within 10 to 15 meters of correct geographic positions in the interior and within 10 meters along the shoreline.

Previous Topographic Surveys

T- 212 (1845), 1:20,000, Entrance to Sassafras River, shoreline only.
T- 279 (1845), 1:20,000, Sassafras River, shoreline and adjacent details.
T- 469 (1854), 1:20,000, Sassafras River Entrance, small section of shoreline and adjacent details.
T-2369 (1898), 1:10,000, Sassafras River, shoreline only.
T-2381 (1899-1900), 1:20,000, Sassafras River, shoreline and interior details for several miles back from the river.

There have been many changes in natural features and changes and additions in cultural features since the above surveys were made. No detailed comparison was made with the above surveys except for T-2381. T-2381 and T-5658 were compared by using the projector. Except for minor changes the shapes and positions of shoreline details agree very well. In the interior there are errors in azimuth and distance on T-2381.

T-5658 is adequate to supersede the sections of the older surveys which it covers except for the contours on T-2381.

Contemporary Hydrographic Surveys

H-6370 (Aug. 1938), 1:10,000

The projection, shoreline, and part of the hydrographic signals on H-6370 were printed from a reproduction of T-5658.

H-6370 has been compared with T-5658 this date. Several small piers on H-6370 have been added to T-5658. Three signals originally located by T-5658 and relocated by sextant as noted in the descriptive report H-6370 have either been corrected on T-5658 to agree with H-6370 or have been removed from T-5658.

There are no remaining discrepancies.

Temporary signals located for hydrography are not shown on the printed copies of T-5658 but are on the celluloid in Room 2229.

Graphic Control Surveys - None.

Chart 1226 (printed 10-18-38)

Landmarks are covered by chart letter 198 (1939).

The light off Turner Creek, shown on T-5658 as a topographic station was spotted on the photographs by reference measurements December 11, 1938 and was located by the photographic plot.

B. G. Jones
Air Photographic Unit.

October 20, 1939

Examined and Approved:

Chief, Section of Field Records

K. T. Adams
Chief, Division of Charts

Fred. L. Peacock
Chief, Section of Field Work

Chief, Division of H. & T.

T-5658

	Remarks.	Decisions
1		393760
2		" USGB
3		394759
4		394760
5		393760
6		393759
7		"
8		393760
9		393759
10		393760 USGB
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M 234

GEOGRAPHIC NAMES

Survey No.

T 5658

Name on Survey	On Chart No. A,	On previous survey No. B,	On U. S. quadrangle Maps C,	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Sassafras River ✓										1
Grove Neck ✓										2
Pond Neck ✓										3
Pond Creek ✓										4
Grove Pt. ✓										5
Ordinary Pt. ✓										6
Money Creek ✓										7
Lloyd Creek ✓										8
Turner Creek ✓										9
Stillpond ✓										10
Chesapeake Bay										11
										12
		L. Heck 10/19/39								13
										14
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										26
										27

M 234

M 350

D

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T-5658

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 "

Grid inked on machine by "

Intersections inked by "

Points used for plotting grid:

x 1,065,000 FT y 575,000 FT	x y
x 1,090,000 y 575,000	x 1,080,000 y 560,000
x 1,065,000 y 545,000	x y
x 1,090,000 y 545,000	x y

Triangulation stations used for checking grid:

x = 1,070,433.82 - y = 541,059.52

1. Still Pond 1896 (Ref Sta) 5. _____
2. _____ 6. _____
3. _____ 7. _____
4. _____ 8. _____

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Plane coordinates on Lambert projection

State Md. Station

ϕ = 39° 22′ 00″.5950 λ = 76° 00′ 34″.7785

Tabular difference of R for 1″ of ϕ =

R (for min. of ϕ)			y′ (for min. of ϕ)		
Cor. for sec. of ϕ		−	Cor. for sec. of ϕ		+
R		25,810,631.55	y′		558,481.21
			y″ (=2R sin² $\frac{\theta}{2}$)		+ 1518.80
		° ′ ″	y		560,000.01
θ (for min. of λ)					
Cor. for sec. of λ		−			
θ		+ 0 37 17.6546	$\frac{\theta}{2}$		° 18′ 38.8273
θ''	For machine computation	″		For machine computation	
			log θ''		
log θ''			colog 2		9.69897000
S for θ			S for $\frac{\theta}{2}$		
log sin θ	sin θ	.0108482428	log sin $\frac{\theta}{2}$	sin $\frac{\theta}{2}$	.0054242012
log R				R sin $\frac{\theta}{2}$	140,002.059
log x′			log sin² $\frac{\theta}{2}$	R sin² $\frac{\theta}{2}$	759.399
x′	R sin θ	280,000	log R		
		2,000,000.00	log 2		0.30103000
x		2,280,000	log y″		

$x = 2{,}000{,}000.00 + R \sin \theta$

$y = y' + 2R \sin^2 \frac{\theta}{2}$

y′= the value of y on the central meridian for the latitude of the station

S = log of ratio for reducing arc expressed in seconds to sine (see log tables)

R, y′, and θ are given in special tables

(R 340)

5658

don't copy

Plane coordinates on Lambert projection

1,065,000
$x = \cancel{2,265,000}$
$y = 545,000$

State Md. Station

$\phi = 39^\circ\ 19'\ 33.9108$ $\lambda = 76^\circ\ 03'\ 47.7186$

Tabular difference of R for 1" of ϕ =

R (for min. of ϕ)		y' (for min. of ϕ)	
Cor. for sec. of ϕ	−	Cor. for sec. of ϕ	+
R	25,825,472.40	y'	543,640.36
		y'' (=2R $\sin^2 \frac{\theta}{2}$)	+ 1,359.64
	° ′ ″		545,000.00

[redacted]

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Plane coordinates on Lambert projection

x = ~~2,265,000~~ 1,065,000
y = 575,000

State Md. Station

ϕ = 39° 24′ 30″.4074 λ = 76° 03′ 43″.7967

Tabular difference of R for 1″ of ϕ =

R (for min. of ϕ)			y′ (for min. of ϕ)		
Cor. for sec. of ϕ		−	Cor. for sec. of ϕ		+
R		25,795,474.00	y′		573,638.78
			y″ (=2R $\sin^2 \frac{\theta}{2}$)		+ 1,361.22
θ (for min. of λ)		° ′ ″	y		575,000.00
Cor. for sec. of λ		−			
θ		+ 0 35 19.0204	$\frac{\theta}{2}$		° 17′ 39″.5102
θ''	For machine computation	″		For machine computation	
			log θ''		
log θ''			colog 2		9.69897000
S for θ			S for $\frac{\theta}{2}$		
log sin θ	sin θ	.0102731201	log sin $\frac{\theta}{2}$	sin $\frac{\theta}{2}$	.005136627 8
log R				R sin $\frac{\theta}{2}$	132,501.749
log x′			log $\sin^2 \frac{\theta}{2}$	R $\sin^2 \frac{\theta}{2}$	680.612
x′	R sin θ	265 000 00	log R		
		2,000,000.00	log 2		0.30103000
x		2,265,000	log y″		

x = 2,000,000.00 + R sin θ

y = y′ + 2R $\sin^2 \frac{\theta}{2}$

y′ = the value of y on the central meridian for the latitude of the station

S = log of ratio for reducing arc expressed in seconds to sine
(see log tables)

R, y′, and θ are given in special tables

(R 340)

5658

Plane coordinates on Lambert projection

State Md. Station

ϕ = 39° 19 31.2557 λ = 75° 58 29.6043

Tabular difference of R for 1" of ϕ =

R (for min. of ϕ)			y' (for min. of ϕ)			
Cor. for sec. of ϕ		−	Cor. for sec. of ϕ		+	
R		25,825,741.03	y'			543,371.73
			y'' (=2R $\sin^2 \frac{\theta}{2}$)		+	1628.27
		° ′ ″	y			545,000.00
θ (for min. of λ)						
Cor. for sec. of λ		−				
θ		+ 0 38 36.2182	$\frac{\theta}{2}$			° 19 ′ 18.1091 ″
θ''	For machine computation			For machine computation		
			log θ''			
log θ''			colog 2			9.69897000
S for θ			S for $\frac{\theta}{2}$			
log sin θ	sin θ	.011229 1067	log sin $\frac{\theta}{2}$	sin $\frac{\theta}{2}$		.005614 6419
log R				R sin $\frac{\theta}{2}$		145,002.288
log x'			log sin^2 $\frac{\theta}{2}$	R sin^2 $\frac{\theta}{2}$		814.136
x'	R sin θ	290,000.00	log R			
		2,000,000.00	log 2			0.30103000
x		2,290,000	log y''			

$x = 2{,}000{,}000.00 + R \sin \theta$

$y = y' + 2R \sin^2 \frac{\theta}{2}$

y' = the value of y on the central meridian for the latitude of the station

S = log of ratio for reducing arc expressed in seconds to sine (see log tables)

R, y', and θ are given in special tables

(R 340)

don't apply 5558

Plane coordinates on Lambert projection

State Md. Station

$\phi = 39^\circ 24' 27.7493$ $\lambda = 75^\circ 58' 25.3127$

Tabular difference of R for 1" of ϕ =

R (for min. of ϕ)			y' (for min. of ϕ)		
Cor. for sec. of ϕ		−	Cor. for sec. of ϕ		+
R		25,795,742.93	y'		573,369.84
			y'' (=2R $\sin^2 \frac{\theta}{2}$)		+ 1630.17
		° ' "	y		575,000.01
θ (for min. of λ)					
Cor. for sec. of λ		−			
θ		+ 0 38 38.9118	$\frac{\theta}{2}$		° 19 19.4559
θ''	For machine computation	"		For machine computation	
			log θ''		
log θ''			colog 2		9.69897000
S for θ			S for $\frac{\theta}{2}$		
log sin θ	sin θ	.011242 1648	log sin $\frac{\theta}{2}$	sin $\frac{\theta}{2}$	.005621 1712
log R				R sin $\frac{\theta}{2}$	145,002.287
log x'			log $\sin^2 \frac{\theta}{2}$	R $\sin^2 \frac{\theta}{2}$	815.083
x'	R sin θ	289,999.99	log R		
		2,000,000.00	log 2		0.30103000
x		2,290,000	log y''		

$x = 2{,}000{,}000.00 + R \sin \theta$

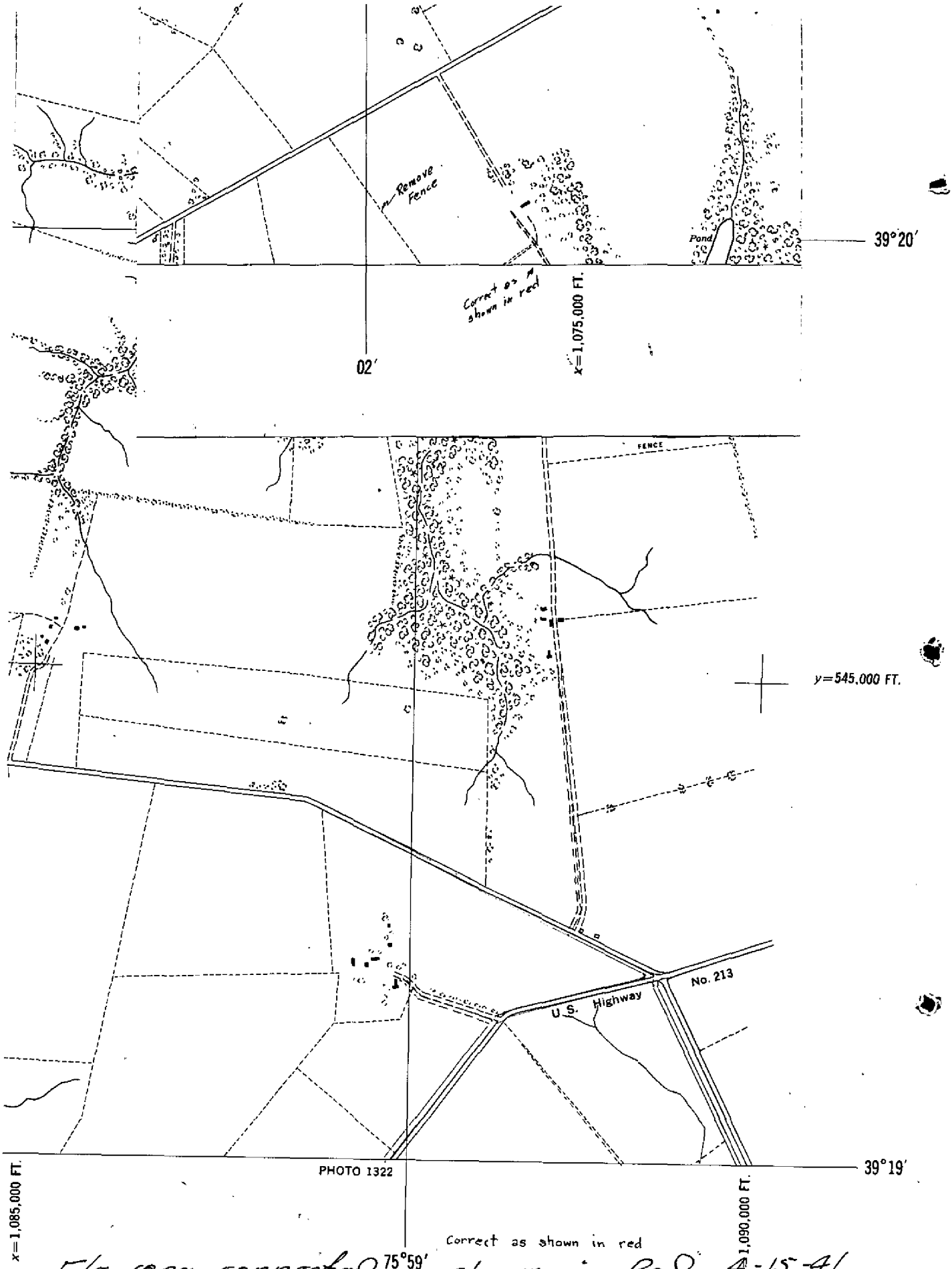
$y = y' + 2R \sin^2 \frac{\theta}{2}$

y' = the value of y on the central meridian for the latitude of the station

S = log of ratio for reducing arc expressed in seconds to sine (see log tables)

R, y', and θ are given in special tables

(R 340)



File copy corrected as shown in Red 4-15-41
This is to remain in Descriptive Report until Plate is corrected.