5643

Form 504
Rev. Dec. 1933

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

DESCRIPTIVE REPORT

AIR PHOTO

Topographic } FIELD 10
~~*Hydrographic*~~ } *Sheet No.* REG T-5643

State NEW JERSEY

LOCALITY

~~CAPE MAY COUNTY~~

TUCKAHOE RIVER

~~VICINITY OF CEDAR SWAMP CREEK~~

~~AND VICINITY~~

1936

CHIEF OF PARTY

E. H. Kirsch

U.S. GOVERNMENT PRINTING OFFICE: 1934

5643

1217-#2
1216-#2

Applied to drawing of Chart 1217 - May 16, 1938 - JTW.
Applied to new compilation of Cht 827 July 1939 ~~SR~~.

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. 10

REGISTER NO. T-5643 T5643

State NEW JERSEY

General locality ~~CAPE MAY COUNTY~~ TUCKAHOE RIVER

Locality ~~TUCKAHOE RIVER VICINITY OF~~ CEDAR SWAMP CREEK ~~AND VICINITY~~
Photographs 4-18-32 & 8-1-32

Scale 1:10 000 Date of survey Compilation June & July 19 36

Vessel Air Photo Party No. 21.

Chief of party E. H. Kirsch

Surveyed by See data sheet in descriptive report

Inked by F. H. McBeth

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.

SHEET NO. 10
REGISTER NO. T-5643

PHOTO NOS.	DATE
66-8-19 to 24	4-18-32
66-8-54 to 55	4-18-32
66-55-26 to 29	8-1-32

PROJECTION BY	L. C. RIPLEY 5-2-35
PROJECTION CHECKED BY	T. B. NUTTING 5-2-35
CONTROL PLOTTED BY	F. H. RICHARDSON 1935
CONTROL PLOTTING CHECKED BY	F. H. MCBETH JUNE 1936
CONTROL PLOTTED ON PHOTOS BY	F. H. RICHARDSON 1935
CONTROL CHECKED ON PHOTOS BY	F. H. MCBETH JUNE 1936
SMOOTH RADIAL PLOT BY	E. H. KIRSCH JUNE 1936
SMOOTH RADIAL PLOT CHECKED BY	F. H. MCBETH JUNE 1936
DETAILED BY	F. H. MCBETH JUNE & JULY 1936

LAND AREA 20 Square statute miles

NO COAST LINE

NO SHORELINE MORE THAN 200 METERS WIDE

LENGTH OF STREAMS 27 STATUTE MILES (Less than 200 meters wide).

Reference Station Swamp 1935
Latitude 39° 15' 41.450" (1278.2 meters) } Field Computations
Longitude 74 42 21.326 (511.3 meters) }

N.J. Grid Coord. x = 1,988,884.01 ft.
y = 155,950.05 ft.

GENERAL INFORMATION

STATISTICS:

There are 20 square statute miles composing this sheet; no coast line, no streams over 200 meters wide, and 27 statute miles of streams less than 200 meters wide.

GENERAL REPORT:

This sheet covers the area about the confluence of Cedar Swamp Creek and the Tuckahoe River. While neither of these streams are at this location more than 200 meters wide there is considerable traffic on both as far as the two bridges shown at the town of Tuckahoe and the road crossing near Station SWAMP just east of Petersburg.

Back from the well developed tidal flats surrounding both streams the country is generally timbered, but along the two main roads (U. S. Highway No. 9) and (N. J. State Highway No. 50) the country is well developed for trucking and thickly settled.

PHOTOGRAPHS:

The sheet is detailed from three different flights of photographs. Photos 66-8-19 to 66-8-24 inclusive were from the flight down the western portion of the sheet and were taken on April 18th, 1932. Pictures No. 66-8-54 to 55 were taken in the vicinity of Palermo in the south east corner of the sheet on April 18th, 1932 and join up with the flight begining with the photo No. 66-55-26 and running north along the eastern edge of the sheet to photo No. 66-55-29. This last flight was made on Aug. 1st, 1932

Other than the dates given there is no time recorded for the various flights mentioned and the consequent stage of the tide is not known.

CONTROL

SOURCES:

Control for this sheet consists of the traverse running south along N. J. Highway No. 50 and thence east along the road leading from Petersburg. This traverse was established by the N. J. Geodetic Control Survey in 1936. Second order triangulation by Lieut. B. H. Rigg in 1935. Both triangulation and traverse are on the N. A. 1927 datum.
Unadjusted

ERRORS:

No errors or descrepances have been found in the control.

COMPILATION

METHOD: The radial line method as described in "Notes on the compilation of planemetric line maps from 5 lens aerial photographs", has been used as applied to single photographs.

ADJUSTMENTS OF THE PLOT:

No unusual adjustments of the plot were found necessary.

INTERPRETATION:

The failure to record the time of the photographs has made the delineation of the high water line rather difficult at places. The water line along the Tuckahoe River in the vicinity of Lat. 39° - 18', Long. 74° - 44' has been difficult. The smoke from a forest fire in this area has obliterated the river bank and it has been found necessary to sketch a part of the water line. The river bank at this location has no marked irregularities and it is believed that the required accuracy has been attained by this method. The ditch system of drainage appearing on this sheet was dug by the mosquito and pest control organization operating in this vicinity. Where fairly definite they have been located but in places where the drainage has broken away from the system, the partically obliterated ditches have not been shown.

The Civilian Conservation Camp shown has undergone some more development since these photos were taken. These changes are not shown on the sheet.

INFORMATION FROM OTHER SOURCES:

Traverse stations from the N. J. Geodetic Control Survey. Names from a map published by the N. J. State Dept. of Conservation and development.

CONFLICTING NAMES:

This area has not been covered by any other U.S. C. & G. Survey Chart. The area has been mapped by the N. J. State Dept. of Conservation and development.* The original survey for this purpose was made in 1883-1884 and the principle features have been revised to the date of 1933. Although that map is not as detailed as this compilation, no descrepancies have been noticeable. There are no conflicting names.

* Sheet No. 37 filed in Geog. Names.

COMPARISON WITH OTHER SURVEYS:

Junctions have been made with the adjacent sheet as follows: Sheet No. T-5641 on the North, No. T-5642 on the East, and sheet No. 5644 on the south. The western edge of the sheet is the limit of the compilating.

LANDMARKS FOR CHARTS: A list of marked recoverable stations are submitted with this report.

There are no la ndmarks or objects of prominance suitable for such purposes occuring on this sheet.

BRIDGES:

The following bridge data was obtained by field inspection. Highway bridge, Tuckahoe River, Corbin City, Lat. 39°- 17.8' Long. 74°- 45.2', Single leaf bascule, Hor. Clearance 30 feet, Ver. Clearance 9 feet at M. H. W. with bridge closed.

Highway bridge, Cedar Swamp Creek, Lat. 39°-15.8' Long. 74°-42.2', concrete, fixed, Hor. clearance 4 feet, Ver. clearance 2 feet at M. H. W.

Highway bridge, Cedar Swamp Creek, Lat. 39°- 14.9' Long. 74°- 42.8', wooden, fixed, Hor. clearance 10 feet, Ver. clearance 2 feet.

Railroad bridge, Cedar Swamp Creek, Lat. 39°- 14.8', Long. 74°- 43.1', wooden trestle, fixed, Hor. clearance 8 feet, Ver Clearance 1 foot.

Highway bridge, Cedar Swamp Creek, Lat. 39°- 14.8', Long. 74°- 43.1', wooden trestle, fixed, Hor clearance 11 feet, Ver clearance 3 feet.

RECOMMENDATIONS FOR FURTHER SURVEYS:

This compilation is believed to have an error of not more than .5 MM in position of well defined detail of importance for charting, and .8 MM for other detail. It is believed to be accurate, thorough, and complete for charting purposes, and that no additional surveys are necessary.

F. H. McBeth

Assisted by E. H. Kirsch
Chief of Party. No. 21.

E. H. Kirsch

F. H. McBeth.

	Remarks	Decisions
1	called Corbin On ~~the~~ Prog. Mil. Map Quad (Tuckahoe)	
2		
3		
4		
5		
6		one word
7		drop terminal s
8		
9		
10		
11		ON adjoining sheet
12		
13		
14		
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17		
18		
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21		
22		
23		
24		
25		
26		
27		

M 234

GEOGRAPHIC NAMES

Survey No. T-5643

Name on Survey	A On Chart No. 1217	B On previous survey No. T-146	C On U. S. quadrangle Maps	D State of Md From local Conser. & Deve. Dept information sheet No. 37	E	F On local Maps	G P. O. Guide or Map	H Rand McNally Atlas	K U. S. Light List	K Official Railway Guide	
Corbin City	✓			Corbin	✓		✓	Corbin		Corbin	1
Swan Pond	✓			✓	✓						2
Tuckahoe River	Tuckahoe R.	✓		✓	✓		✓	✓			3
Cedar Swamp Creek	✓			✓	✓						4
Middletown	✓			✓				✓		✓	5
Half-Way Creek	✓			✓	✓						6
Bank Creek	✓			Bank cr.	✓						7
Hughes Creek	✓			✓	✓						8
Petersburg	✓			✓			✓				9
Palermo	✓			✓			✓				10
~~Green field~~				✓							11
											12
Cedar Springs	✓			✓	✓					✓	13
Ludlam Creek	✓			✓	Ludlams cr.						14
Tuckahoe	✓				✓		✓	✓			15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names underlined in red approved by GHE on 12/9/36

M 234

M-350

T-5643

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 N. H. Schlueter

Points used for plotting grid:

x 1,975,000 ft y 170,000	x 1,995,000 y 170,000
x 1,985,000 y 155,000	x 1,975,000 y 145,000
x 1,995,000 y 145,000	x y
x 1,975,000 y 155,000	x y

Triangulation stations used for checking grid:

X = 1,988,884.01' y = 155,950.05'

1. Swamp 1935 (field Pos.)
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1935

T-5643

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J. STATION

x	1,975,000.00	$\log S_g$	4. 39 79 39 84
K	2,000,000.00	$\log (1200/3937)$	9.4840 1583
x' $(=x-K)$	−25,000.00	$\log (1/R)$	10 86
$x'^3/(6\rho_o^2)_g$	+.01	$\log S_m$	3.48 19 66 53
S_g	−24,999.99	cor. arc to sine	− 10
		$\log S_1$	3.48 19 66 43
3 log x'	13.19 38 20 03	$\log A$	8.50 91 36 12
log $1/(6\rho_o^2)_g$	4.58 10 213	log sec ϕ	0.11 13 49 09
log $x'^3/(6\rho_o^2)_g$	17.77 48 413	$\log \Delta\lambda_1$	2.50 24 51 64
		cor. sine to arc	+ 18
log S_m^2	7.76 39 33 06	log $\Delta\lambda$	2.50 24 51 80
log C	1.31 76 13	$\Delta\lambda$	318.01 81
log $\Delta\phi$	9.08 15 46		
y	170,000.00		
ϕ' (by interpolation)	39 ° 18 ′ 00.3436 ″	λ (central mer.)	74 ° 40 ′ 00.0000 ″
$\Delta\phi$	−.1207	$\Delta\lambda$	+ 5 ′ 18.0181 ″
ϕ	39 18 00.2229	λ	74 45 18.0181
	0.69 mm.		43.17 mm.

Explanation of form:

$x'=x-K$

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

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

R=scale reduction factor

ϕ' is interpolated from table of y

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

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

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

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

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

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

U. S. GOVERNMENT PRINTING OFFICE 11—11521

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1935

T-5643

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J. STATION

x	1,985,000.00	$\log S_g$	4.176 09126
K	2,000,000.00	$\log (1200/3937)$	9.484015 83
x' $(=x-K)$	−15,000.00	$\log (1/R)$	10 86
$x'^3/(6\rho_o^2)_g$	−.00	$\log S_m$	3.660 11795
S_g	−15,000.00	cor. arc to sine	−4
		$\log S_1$	3.660 11791
3 log x'	12.528273758	$\log A$	8.509 13716
$\log 1/(6\rho_o^2)_g$	4.5810213	$\log \sec \phi$	0.111 09391
$\log x'^3/(6\rho_o^2)_g$	7.109 2951	$\log \Delta\lambda_1$	2.240 34898
		cor. sine to arc	+6
$\log S_m^2$	7.320 23590	$\log \Delta\lambda$	2.240 34904
$\log C$	1.316966	$\Delta\lambda$	190.6993
$\log \Delta\phi$	8.637202		
y	155,000.00		
ϕ' (by interpolation)	39 15 32.0835	λ (central mer.)	74 40 00.0000
$\Delta\phi$	−.0434	$\Delta\lambda$	+3 10.6993
ϕ	39 15 32.0401	λ	74 43 10.6993
	98.81 mm		25.66 mm

Explanation of form:

$x'=x-K$

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

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

R=scale reduction factor

ϕ' is interpolated from table of y

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

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

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

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

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

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

U. S. GOVERNMENT PRINTING OFFICE 11—11521

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1935

T-5643.

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J. STATION

x	1,995,000.00	$\log S_g$	3.69897000
K	2,000,000.00	$\log (1200/3937)$	9.48401583
x' $(=x-K)$	−5,000.00	$\log (1/R)$	1046
$x'^3/(6\rho_o^2)_g$	.00	$\log S_m$	3.18299669
S_g	−5,000.00	cor. arc to sine	0
		$\log S_1$	3.18299669
3 $\log x'$	11.09691000	$\log A$	8.50413785
$\log 1/(6\rho_o^2)_g$	4.56102139	$\log \sec \phi$	0.11092397
$\log x'^3/(6\rho_o^2)_g$	5.67793139	$\log \Delta\lambda_1$	1.80305851
		cor. sine to arc	+1
$\log S_m^2$	6.36599338	$\log \Delta\lambda$	1.80305852
$\log C$	1.3165544	$\Delta\lambda$	63.54117
$\log \Delta\phi$	7.6825397		
y	145,000.00		
ϕ' (by interpolation)	36° 13′ 53.2428″	λ (central mer.)	74° 40′ 00.0000″
$\Delta\phi$	−.0048	$\Delta\lambda$	+1 03.54117
ϕ	36 13 53.2380	λ	74 41 03.54117
	164.18 mm		8.50 mm

Explanation of form:

$x'=x-K$

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

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

R=scale reduction factor

ϕ' is interpolated from table of y

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

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

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

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

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

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

U. S. GOVERNMENT PRINTING OFFICE 11—11621

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1925

T-5643 46

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N.J. STATION

x	1,975,000.00	$\log S_g$	4 3 9 7 9 3 9 8 4
K	2,000,000.00	$\log (1200/3937)$	9.484015833
x' $(=x-K)$	−25,000.00	$\log (1/R)$	1078
$x'^3/(6\rho_o^2)_g$	+.01	$\log S_m$	3 8 8 1 9 6 6 5 3
S_g	−24,999.99	cor. arc to sine	−16
		$\log S_1$	3.881966643
3 log x'	13,193,82003	$\log A$	8.509137116
$\log 1/(6\rho_o^2)_g$	4.581 0213	$\log \sec \phi$	0.111 0937 8
$\log x'^3/(6\rho_o^2)_g$	17.774 8413	$\log \Delta\lambda_1$	2.502 1973 7
		cor. sine to arc	+18
$\log S_m^2$	7.763 9338 06	$\log \Delta\lambda$	2.502 1975 5
$\log C$	1.316 966	$\Delta\lambda$	317.8319
$\log \Delta\phi$	9.080 899 9		
y	155,000.00		
ϕ' (by interpolation)	39° 15′ 32.0835	λ (central mer.)	74° 40′ 00.0000
$\Delta\phi$	−.1205	$\Delta\lambda$	−5′ 17.8319
ϕ	39° 15′ 31.9630	λ	74° 45′ 17.8319
	98.57 mm		42.76 mm

Explanation of form:

$x'=x-K$

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

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

R=scale reduction factor

ϕ' is interpolated from table of y

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

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

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

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

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

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

U. S. GOVERNMENT PRINTING OFFICE 11—11531

T-5643

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1935

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N. J. STATION

x	1,995,000.00	$\log S_g$	3.698970000
K	2,000,000.00	$\log (1200/3937)$	9.484015833
x' $(=x-K)$	−5,000.00	$\log (1/R)$	10856
$x'^3/(6\rho_o^2)_g$	−.00	$\log S_m$	3.182999669
S_g	−5,000.00	cor. arc to sine	0
		$\log S_1$	3.182999669
3 log x'	11.096991000	$\log A$	8.509136122
$\log 1/(6\rho_o^2)_g$	4.581021313	$\log \sec \phi$	0.111349291
$\log x'^3/(6\rho_o^2)_g$	15.677993133	$\log \Delta\lambda_1$	1.803482110
		cor. sine to arc	+1
$\log S_m^2$	6.365999338	$\log \Delta\lambda$	1.803482111
$\log C$	1.317613	$\Delta\lambda$	63.6037
$\log \Delta\phi$	7.483606		
y	170,000.00		
ϕ' (by interpolation)	39° 18′ 00.3436″	λ (central mer.)	74° 40′ 00.0000″
$\Delta\phi$	−.0049	$\Delta\lambda$	+ 1′ 03.6037″
ϕ	39° 18′ 00.3387″	λ	74° 41′ 03.6037″
	1.04 mm		8.64 mm

Explanation of form:

$x'=x-K$

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

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

R=scale reduction factor

ϕ' is interpolated from table of y

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

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

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

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

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

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

U. S. GOVERNMENT PRINTING OFFICE 11—11531

T 5643

Geodetic positions from transverse Mercator coordinates

State N.J. Station

x	1,975,000	log S_g	4.3979
C	2	log (1200/3937)	9.48401583
x' (=x−C)	−25,000.	log (1/R)	
$x'^3/(6\rho_o^2)_g$	−.01	log S_m	−3.4819
S_g	24,999.99	cor. arc to sine	−
		log S_1	3.8819
log S_m^2	7.7639	log A	8.5091378 5−10
log C	1.316544	log sec ϕ	0.11092377
log $\Delta\phi$	5.0804	log $\Delta\lambda_1$	−2.5020
		cor. sine to arc	+
y	145,000	log $\Delta\lambda$	2.5020
ϕ' (by interpolation)	39 13 53.2428	$\Delta\lambda$	= 317.2056
$\Delta\phi$	−.1205	λ (central mer.)	74 40 00.0000
ϕ	39 13 53.1223	$\Delta\lambda$	5 17.2056
	163.82 mm	λ	74 45 17.2056
			17.7081
			42.48 mm

Station

x		log S_g	
C		log (1200/3937)	9.48401583
x' (=x−C)		log (1/R)	
$x'^3/(6\rho_o^2)_g$	−	log S_m	
S_g		cor. arc to sine	−
		log S_1	
log S_m^2		log A	
log C		log sec ϕ	
log $\Delta\phi$		log $\Delta\lambda_1$	
		cor. sine to arc	+
y		log $\Delta\lambda$	
ϕ' (by interpolation)	° ′ ″	$\Delta\lambda$	″
$\Delta\phi$	−	λ (central mer.)	° ′ ″
ϕ		$\Delta\lambda$	
		λ	

(M-29)

(over)

Explanation of form:

$$x' = x - C$$

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

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

R = scale reduction factor

ϕ' is interpolated from table of y

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

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

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

$\log S_1 = \log S_m$ − cor. arc to sine

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

$\lambda = \lambda$(central mer.) $- \Delta\lambda$

T-5643

PLANE COORDINATES ON TRANSVERSE MERCATOR PROJECTION

State N.J. Station Swamp 1935 Field Position

ϕ 39° 15' 41.450

λ (Central meridian) 74° 40' "

λ 74 42 21.326

$\Delta\lambda$ (Central meridian–λ) − 2 21.326

$\Delta\lambda$ (in sec.) −141.326

log $\Delta\lambda$	2.15022207	log S_m^2	7.059950
Cor. arc to sine	− 3	log C*	1.317 ~~259~~ 005 6955
log $\Delta\lambda_1$	2.15022204	log $\Delta\phi$	8.377 ~~209~~
log cos ϕ	9.88888990		
colog A	1.49086291	ϕ	39° 15' 41."450
log S_1	3.52997485	$\Delta\phi$	+ 0.0238
Cor. sine to arc	+ 2	ϕ'	41.4738
log S_m	3.52997487		
log 3937/1200	0.51598417	Tabular difference of y for 1" of ϕ'	101.17317
log R	− 1086		
log S_g	4.04594818	y (for min. of ϕ')	151,754.01
log S_g^3	12.1378	y (for seconds of ϕ')	+ 4196.04
log $1/6\rho_o^2R^2$	4.5810213	y	155,950.05
log $(S_g^3/6\rho_o^2)_g$	6.7188		
		log sin $\frac{\phi+\phi'}{2}$	
S_g	− 11,115.99	log $\Delta\lambda$	
$(S_g^3/6\rho_o^2)_g$		log $\Delta\alpha_1$	
x'			
	2,000,000.00	log $(\Delta\lambda)^3$	
x	1,988,884.01	log F	
		log b	
		$\Delta\alpha_1$	"
		b	
		$\Delta\alpha$	"
		$\Delta\alpha$	° ' "

* Take out C first for ϕ and correct for approximate ϕ'.

(R 349)

$$x = 2{,}000{,}000.00 + x'$$

$$x' = S_g + \left(\frac{S_g^3}{6\rho_0^2}\right)_g$$

$$S_g = \frac{3937}{1200} S_m R$$

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

$$S_1 = \frac{\Delta\lambda_1 \cos\phi}{A}$$

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

$$\left(\frac{S_g^3}{6\rho_0^2}\right)_g = \frac{S_g^3}{6\rho_0^2 R^2}$$

$$\phi' = \phi + \Delta\phi$$

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

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

S_m = distance in meters from point to central meridian

S_1 = distance in meters from point to central meridian reduced to sine

S_g = grid distance in feet from point to central meridian

R = scale reduction factor

Values of y in minutes and tabular difference for one second, scale reduction factors, colog A, and log C are given in auxiliary tables.

REVIEW OF AIR PHOTO COMPILATION NO.

Chief of Party: E. H. Kirsch Compiled by: F. H. McBeth

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." M-67

✓ 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)
Overhead Electric Cable. Near lat. 39° 17.8' long 74° 40.6' Towers about 150' high, clearance about 100'.

✓ 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. Unadjusted.

✓ 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. Kusch
Chief of Party

19. Remarks after review in office: There are no previous surveys covering this area. Hydrographic & Topographic surveys are contemplated for this area in 1937. Corrections + additions to T-5643 as a result of these surveys will be made when this work is completed.

Reviewed in office by: R. E. Ask, Paul G. Erskine

Examained and approved:

E. K. Green
Chief, Section of Field Records

Fred. L. Peacock
Chief, Section of Field Work

L. O. Colbert
Chief, Division of Charts

G. Rude
Chief, Division of Hydrography and Topography.