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U. S. COAST & GEODETIC SURVEY
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(This report includes Field Inspection Report,
South Amboy to Sandy Hook, N.J.)

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July 14, 193

5100 (85100a)

Form 504 Ed. June, 1928	
DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY R. S. Patton, Director	
State: <u>New Jersey</u>	
DESCRIPTIVE REPORT	
Topographic Hydrographic	} Sheet No. T 5100
LOCALITY SANDY HOOK BAY Sandy Hook: Sandy Hook Point to Atlantic Highlands.	
1934 ✓	
CHIEF OF PARTY R. C. Bolstad, Jr. H. & G. Eng.	

U. S. GOVERNMENT PRINTING OFFICE: 1928

DECLASSIFICATION BY NOAA

PURSUANT TO DOC SYSTEMATIC REVIEW

GUIDELINES AS DESCRIBED IN SECTION

3.3 (a), EXECUTIVE ORDER 12356

Applied to Chart 543 (T-5100) July 25, 1936 Hen.
" " " 369 Dec 13, 1938 L.M.J.-
App'd to Chart 544 5-20-69 HR

AIR PHOTO FIELD INSPECTION REPORT

for

SOUTH AMBOY TO SANDY HOOK, N.J. COAST.

AIR PHOTO FIELD INSPECTION

NEW JERSEY

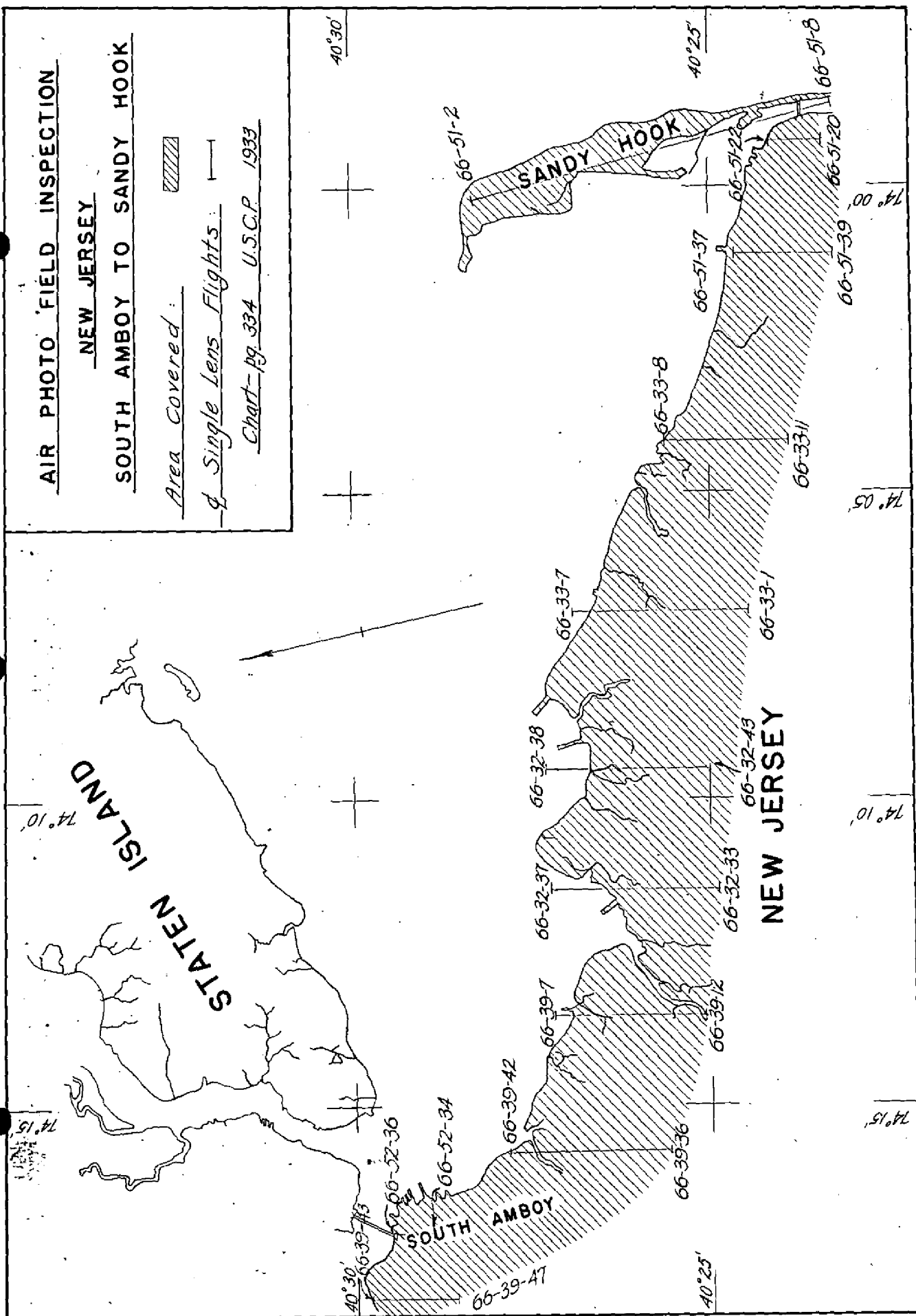
SOUTH AMBOY TO SANDY HOOK

Area Covered:



d Single Lens Flights:

Chart—pg. 334 U.S.C.P. 1933



AIR PHOTO FIELD INSPECTION REPORT

FOR

SOUTH AMBOY TO SANDY HOOK, N.J. COAST.

During the fall of 1933 a field inspection was carried on intermittantly of all photographs along the New Jersey coast from South Amboy to Sandy Hook, inclusive. The area comprises approximately 50 square statute miles, and was made by two members of Party No. 12, with U.S. truck No. 202.

PHOTOGRAPHS.

Flight lines of photographs involved are indicated on the preceding index map and the numbers and times at which the photographs were taken are given below.

66-51-2 to 8, inclusive	----	July 24, 1932
66-51-20 to 22, "	----	"
66-51-37 to 39, "	----	July 24, 1932
66-33-8 to 11, "	----	May 20, 1932
66-33-1 to 7, "	----	"
66-32-38 to 43, "	----	"
66-32-33 to 37, "	----	"
66-39-7 to 12, "	----	June 8, 1932
66-39-36 to 42, "	----	"
66-52-34 to 36, "	----	July 30, 1932
66-39-43 to 47, "	----	June 8, 1932

These photographs are all single lens photographs and are 1-10,000 scale enlargements from the negatives (approx. scale of 1-22,000) taken by the Aero Service Corporation of 1612 Chancellor Street, Philadelphia, Pa. with their 8 inch focal length "Orthomessar" lens camera. As no record of the time of the day at which these photos were taken is available the approximate time only can be guessed at according to the shadows appearing on the prints.

AREA OF INSPECTION

The area covered by this field inspection embraces the following air photo topographic sheets:-

<u>Field No.</u>	<u>Register No.</u>
50	T 5100
51	T 5101
52	T 5102
53	T 5103 (portion only)
55	T 5105 (")

GENERAL DESCRIPTION OF TOPOGRAPHY

Sufficient and adequate notes relating to the topography were marked directly on the field prints.

With the exception of South Amboy, which is an industrial town, the entire area from South Amboy to Sandy Hook consists of sandy beaches and summer resorts, interspersed with marshy areas along the shores of the Raritan and Sandy Hook Bays, with farm lands, orchards, and wooded area inland, terminating at the government reservation at Sandy Hook.

The section from South Amboy to Atlantic Highlands is fairly flat along the coast with hilly land to the southward. Atlantic Highlands to Sandy Hook is a hilly, heavily wooded area. The majority of trees over this section are deciduous. All roads are excellent.

CONTROL

(1) Triangulation

Triangulation performed by the party of Lieut. R.W.Woodworth during 1930-33 forms the basis of control for this area. The field computations were used; these are on North American datum. An approximate correction to convert these positions to the N.A. 1927 Datum should be applied as follows:-
Lat. -12.0 meters, Long. 4 (plus) 3.5 meters. These corrections should be well within any plottable limits at the scale of the compilations (1:10,000).

In addition to the triangulation as listed by Lieut. R.W.Woodworth a 1934 triangulation station, TRAIN, was established by the field inspection party in order to strengthen the control in a doubtful area. All computations involving this station were previously forwarded to the Washington Office.

(2) Topography

In addition to the above control the following topographic sheets may be used as supplementary control for the compilation of the sheets in this area:-

<u>Reg. No.</u>	<u>Date</u>	<u>Scale</u>
T 4714	1932	1:10,000
T 4247	1926	1:10,000
T 4246	1926	1:10,000

The datum correction must likewise be used in order to place on a N.A. 1927 datum before tracing.

(3) Traverses

The 29th Engineers, U.S.Army traverses were obtained. (See pages 5 to 24 for explanation and data.)

A tape-transit traverse was run in by the field inspection party and the explanation and traverse data will be found on pages 25 to 27 .

(4) Stations spotted on Photos

Number of triangulation stations spotted --- 73

Seven additional stations were visited but destruction of stations and inadequate descriptions made the recovery impossible. New recovery cards of these stations are submitted with this report.

The number of stations for this area is nearly 1.5 per square statute mile.

LIST OF RECOVERABLE OBJECTS

Detailed descriptions were not made of recoverable objects, however numerous prominent recoverable objects were spotted and indicated on the field prints. (See paragraph on LANDMARKS).

Descriptions on form 524 were not made by this party since Lieut. E.R.McCarthy, carrying on field operations in this vicinity, stated that all such objects would be described by him at the time of his field operations.

LANDMARKS

The major (chartable) landmarks have previously been submitted and cut in as triangulation stations. List was submitted by Lieut. R.W.Woodworth 1931, 1932.

Additional possible landmarks were spotted on the field prints. These landmarks were spotted from land and could be more accurately chosen if viewed from the seaward. They do, however, exhibit a degree of prominence and will fall within the classification "C" as mentioned in the descriptive report for air photo topographic sheet, reg. no. T 5059.

CHANGES

Changes in the topographic detail since the date the photographs were taken have been clearly indicated on the field prints, so that the compilations will be up to date.

BRIDGES

Measurements of the new bridge at Atlantic Highlands were obtained from a blueprint furnished by the New Jersey State Highway Department. Supplemental measurements were taken by the field party and are marked on the field prints.

Sketches on field prints 26d-4/29/35

NAMES

Any new names in this area have been labeled on the photographs and were obtained from people in the locality as being those in common use. The descriptive reports of the individual compilation sheets will list a paragraph treating with the new names for each sheet. -

COAST PILOT NOTES.

No discrepancies with the present edition of the Coast Pilot Notes have been noted by this inspection party.

GENERAL.

Lieut. E.R.McCarthy is conducting a combined operations party in this vicinity at the present time and it may be necessary to supplement this inspection by additional trips to this area in order to use the control he establishes.

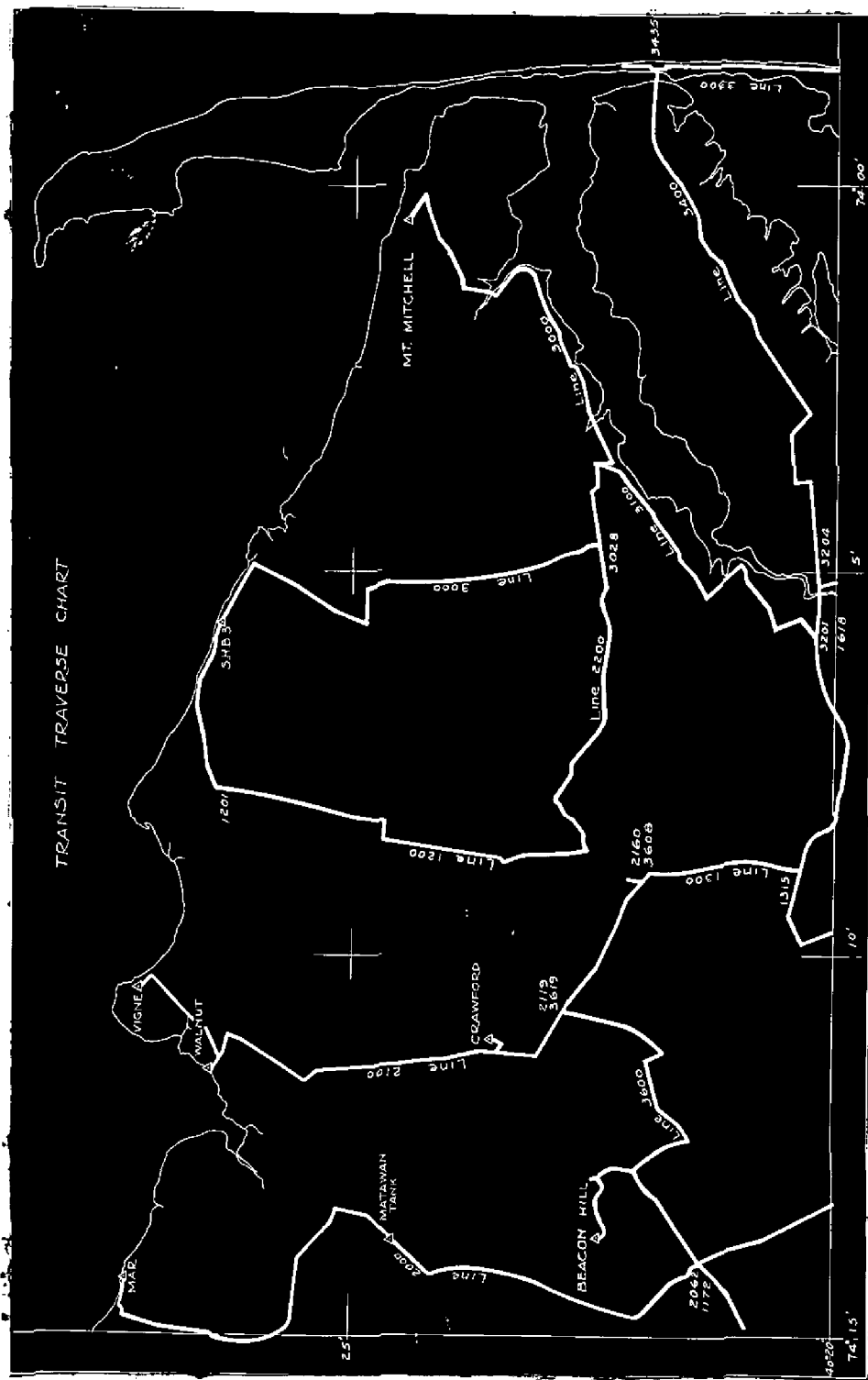
Submitted by -

J. Rippstein
J. Rippstein
Draftsman

E. W. Fickenscher
E. W. Fickenscher
Draftsman

Oct. 16, 1934.

J. J. Lannigan
J. J. Lannigan
Draftsman





U.S. ARMY ENGINEER TRAVERSES

Mapping operations have been carried on in the New York Metropolitan Area by the 29th Engineers, U.S. Army, an organization functioning as a separate battalion and specializing in topographic mapping. The general method employed by this organization was to accept U.S.C. & G.S. triangulation stations for control, and to develop the necessary detail by transit traverses, plane-table surveys, and aerial photographic methods.

Several transit traverses were run by Company B of this organization in the vicinity of the south shore of Lower New York Bay and Raritan Bay and River between Sandy Hook and New Brunswick (see preceeding photostats), for the purpose of establishing supplemental control for the detail field surveys and photographs. The data on these traverses was loaned to this office and was similarly used here as additional control for air photo compilation.

The traverse data, as furnished, was referred entirely to the standard military grid system of coordinates (see C. & G.S. Special Publication No. 59). The origin of this grid system is at Latitude $40^{\circ}-30'$, Longitude $73^{\circ}-00'$, for which point the coordinates are chosen as $X = 1,000,000$ yards, $Y = 2,000,000$ yards. The geographical coordinates and azimuths of the various triangulation stations, as supplied by this Bureau, were converted to grid coordinates and azimuths by the computers of the 29th Engineers. All traverses were run between two or more C. & G.S. triangulation stations, and the closing error distributed throughout the traverse by the usual methods of plane surveying. The maximum closure errors were held to about 1:5,000.

The method of plotting the traverses on the celluloid compilation sheets was as follows: The grid system of 1,000 yard squares was laid out on a large sheet of grained aluminum to the scale of the final sheets (1:10,000), and the triangulation stations and traverse points plotted thereon by coordinates, thus avoiding the accumulating error of plotting by bearing and distance. The celluloid sheet, on which the triangulation stations had been plotted by geographical coordinates, was then placed on top of the aluminum sheet and shifted so that the terminal triangulation stations of the traverse would coincide, and the traverse traced directly onto the celluloid holding it in this position. The traverse points were then spotted on the photographs from the descriptions in the traverse notes, and the traverse as drawn above was checked by the radial plot method at the same time the smooth radial plot for the sheet was made.

In making the smooth plots and detailing, the traverse points were not accepted as reliable if they could not be checked by radial plot. In some cases the agreement was excellent and in others there was considerable discrepancy. These discrepancies are thought to be due to the following reasons: First, the 29th Engineer's maps are produced on a scale of 1:62,500 similar to the maps of the U.S. Geological Survey, and to such a scale the discrepancies noted would not be noticeable. Second, in many cases the traverse notes as loaned to this office did not contain sufficient description of the traverse points to permit their being accurately spotted on the photographs. For example, (see sample traverse notes attached) many points are simply noted as being road intersections without specifying whether this refers to the intersection of the curb lines, property lines, or center lines, while others are definitely noted as being these points.

Az. Err. +0' - 12"
Pos. Err. 0.443 ft.

8
BOOK NO. 1 - F

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
Mt. Lore- tto Spire - Vigne	S30-40-56E		890986.26	(-12.6)	1995119.97	109.7	
2406	S54-32-20E	662.08	891166.01	151.8	1994991.93	(-7.4)	N. side of Rd. - 15' from c. of Rd.
2405	S42-51-29E	529.93	891286.13	261.6	1994862.44	788.6	C. of Rd. inter.
2404 +	N45-11-33W	700.00	890614.92	562.3	1994524.77	479.8	℄ of cross Rds.
2404 +	N45-11-33W	1400.00	890449.36	410.9	1994689.19	630.2	℄ of cross Rds.
2404	S45-11-33W	2137.73	890780.49	713.7	1994360.36	332.5	W. edge of conc. Rd. in ℄ of Rd. to W.
2403	S44-45-44W	1484.81	890431.94	395.0	1994008.99	8.2	18' from C. of Rd. at curve N.E.
2402	S26-12-25W	984.87	890286.99	262.4	1993714.45	653.3	C. of cross Rd.
2401	S71-03-46W	1544.80	889799.90	731.4	1993547.39	500.5	10' from C. of Rd. N. edge conc.
2400 +	N58-58-12E	400.00	889728.51	666.1	1993504.44	461.2	C. of bridge
2400	S58-58-12W	649.92	889614.26	561.7	1993435.70	398.4	C. of cross Rds.
2148	N38-08-56W	314.96	889549.41	502.4	1993518.27	473.9	curb - N. side of Rd.
Walnut	N59-45-00W	874.62	889297.55	272.1	1993665.15	608.2	U.S.C. & G.S. Mon 1932
Mt. Lore- tto Spire	N16-20-49W						
Walnut T. T2148	S59-45-00E		889549.41		1993518.27		curb on N. edge of Rd.
2147	S40-57-03E	586.94	889677.61	619.5	1993370.44	338.7	in Rd. 75' W. of N.W. end of bridge
2147 +	N40-57-03W	269.00	889618.84	565.9	1993438.16	400.6	℄ of cross Rds.
2146	S76-00-20E	1219.88	890072.09	65.9	1993271.96	248.7	S. edge of conc. Rd. & ℄ of gravel Rd.

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
2146 +	N76-00-20W	1122.00	889709.53		1993362.44		C. of R.R. crossing
2145	S26-32-42W	1032.90	889918.15	839.6	1992963.88	881.44	Q inter.
2145 +	N26-32-42E	477.00	889989.22		1993106.11		
2144	S25-58-35W	1399.86	889713.64	652.6	1992544.38	497.8	E. edge of Rd.
2144 +	N25-58-33E	925.00	889848.72		1992821.55		Q of side Rd. W.
2143	S36-42-27W	719.93	889570.18	521.4	1992351.82	321.7	Q cross Rds.
2143 +	N36-42-27E	610.00	889691.70	632.5	1992514.85	470.8	C. of Rd. at culvert
2142	S36-44-30W	1232.88	889324.32	296.6	1992022.35	20.4	S. edge of conc. Rd. on Q cross Rd
2142 +	N36-44-30E	540.00	889431.98		1991166.61		Q of side Rd. E.
2141	S36-43-42W	609.92	889202.69	185.3	1991859.35	785.8	3' W. of edge of gravel Rd. & 35' N. of side Rd. to cem.
2141 +	N36-43-42E	400.00	889282.44		1991966.21		C. of side Rd. E. to cem.
2140	S08-38-35W	829.90	889161.04	147.3	1991585.79	535.6	N. edge maca. Rd & Q of Rd. to N. on line with S. edge of Rd. to S.W.
2140 +	N08-38-35E	520.00	889187.11	171.1	1991757.15	692.3	C. of Y Rd. int.
2139	S35-42-18E	739.91	889304.91	278.8	1991385.43	352.4	On Rt. 35 - C. of Rd. to N.W. NoFE.
2138	S06-22-30E	2299.70	889389.80	356.4	1990623.38	570.0	C. of Rd. opp. pvt. drive 400' N.R.R.
2138 +	N06-22-30W	500.00	889371.32	339.6	1990789.02	721.5	C. of Rd. & pri- vate entrance
2137	S06-05-53E	519.94	889408.19	373.2	1990451.00	412.4	C. of Rd. & N. rail of switch track
2137 +	N06-05-53W	48.00	889406.49	371.7	1990466.91	426.9	C. of main line tracks at Hozlet crossing

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
2136	S06-31-40E	1009.87	889446.44	405.5	1990116.47	106.5	C. of Rd. of int. of drive to E. 30' NW Hazlet P.O.
2136 +	N06-31-40W	427.00	889430.24		1990257.88		Q. of side Rd. E.
2135	S06-40-28E	479.94	889464.98	425.2	1989957.52	875.6	C. of cross Rds.
2134	S04-51-26E	1419.82	889504.92	461.7	1989485.81	444.2	C. of Rd. opposit priv. drive to E.
2133	S04-45-13E	1569.79	889548.17	501.2	1988964.19	881.6	C. of Rd. opposite side Rd. W. 50' N. side Rd. E. on line S. edge Ho. to E.
2133 +	N04-45-13W	940.00	889522.22		1989276.45		Q. of Rd. W.
2132	S01-53-39W	799.90	889539.28	491.0	1988697.63	637.1	W. Edge of Rd. at inter of gravel Rd.
2131	S07-58-38E	579.92	889566.10	515.2	1988506.15	460.3	C. of side Rd. 10' from C. of main Rd.
2130	S10-53-46E	759.91	889613.96	561.4	1988257.34	235.3	Ent. of gravel drive to E - 6' N E 7' W Q. main Rd.
2129	S19-28-23E	879.88	889711.65	650.7	1987980.73	896.8	6' S of Q. of priv. dr. & 15' E. of C. of gravel Rd.
2129 +	N19-28-23W	400.00	889667.22		1988106.11		C. of Rd. between culverts
2125	S09-35-09W	799.90	889667.22	610.1	1987717.75	656.3	Int. of dirt Rd. W.
2124	S08-11-04W	399.95	889648.22	592.7	1987585.75	535.6	C. of Rd. near triang. sta. Beer
2410	S03-10-47W	474.95	889639.40	584.7	1987427.63	391.0	C. of inter.
2411	S61-38-51E	652.38	889830.75	759.6	1987324.32	296.6	Edge of Rd. at junction with trail
2412	N23-31-02E	447.05	889890.18	814.0	1987460.92	421.5	N. edge of Rd.
2413	N74-58-34E	159.73	889941.61	861.0	1987474.79	434.2	103' S. of Craford Sta.
Craford Hill	N79-55-17E	103.07	889975.43 (-22.5)		1987480.71	439.6	U.S.C. & G.S. Triang. 1932
Beacon Hill Sta.	S63-29-19W						

Az. Err. + 6' - 08"
Pos. Err. 10.869 ft.

1) 2.

BOOK NO. 8 - G

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
3028 3029	N79-35-30E		900070.14		1985279.59		On Copper Rd. S. side of Rd.
3030	N80-37-46E	1165.93	900453.48		1985342.90		1200' W. of Luf- burrow Lane on N. side of Copper Rd.
3031	N75-08-07E	760.95	900698.57		1985408.01		W. of Lufburrow Lane on N. edge of Copper Rd.
3032	N79-26-33E	843.95	900975.03		1985459.57		C. of int. of Copper Rd. & Luf- burrow Lane
3033	S38-21-47E	852.33	901151.29		1985236.85		C. of Lufburrow Lane at pvt. entrance.
3034 (E.5)	S87-54-11E	596.76	901350.02		1985229.58		600'E. of Lufbur- row Lane 122' S. of drive to Ho. Std. C.E. disc
3035	S20-54-34E	921.50	901459.59		1984942.71		opposite entrance to Wilson 200'E. of Lufburrow Lane N. side.
3036	N60-06-17E	840.00	901702.23		1985082.33		On N. side of Riverside Drive & N. side of Nave- sink River
3037	N66-32-38E	1336.38	902110.69		1985259.74		On S. side of Riverside Drive 100' E. of B.S. drive S. curb
3038	N63-44-48E	1699.71	902618.66		1985510.41		N. edge of River- side Drive 200'E of Bridge over McClees Creek
3039	N77-15-12E	882.35	902905.43		1985575.36		N. edge of River- side Drive - E. edge tarvia Rd.
3040	N79-39-45E	728.88	903144.38		1985618.98		S. edge Riverside Drive int. of pr- ivate drive
3041	N75-56-06E	575.90	903330.52		1985665.67		On S. side River- side Drive 25'E. of B.S. drive 4' S. of road edge.
3042	N58-05-42E	554.45	903487.36		1985763.35		In bend of Riv. Ave. in C. of priv- ate conc. drive
3043	N12-13-43E	464.92	903520.16		1985914.84		W. side of Riv. Ave. just N. of gvl. Rd.
3044	N64-24-44E	800.16	903760.65		1986030.05		1' from W. edge of Riverside Ave.
3045	N76-42-14E	1057.37	904103.54		1986111.19		On Riv. Ave. 75' S. of drive E. edge of road.

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
3046	N66-14-25E	374.14	904217.64		1986161.47		On Riv. Ave. 300' N. of drive, E. edge of Rd.
3047	N48-13-56E	446.93	904328.71		1986260.72		E. edge of Riv. Ave. 150' N. of drive E. edge Rd.
3048	N59-54-52E	1321.80	904709.82		1986481.64		E. edge of Riv. Drive 100' E. of Rough Pt. Drive
3049	N79-32-33E	421.94	904848.09		1986507.17		C. of Riv. Drive top of hill, S. of drive
3050	N75-04-19E	1541.95	905344.56		1986639.69		On Riv. Drive 100' S. of curve and pvt. Rd. W. edge pvg.
3051	N53-01-15E	235.96	905407.37		1986686.99		In curve on River Drive
3052	N01-37-45E	415.64	905411.28		1986825.50		Int. of Rumson Rd. & Main St. Ctr. of Int.
3053	N05-25-34W	654.75	905390.55		1987042.80		On Main St. E. Edge pvg.
3054	N36-37-23W	622.65	905266.68		1987209.42		On Main St. E. edge pvg.
3054A	N48-34-47W	1157.92	904977.11		1987464.81		Int. of Main St. & Stone Church Rd. 100' NW Locust P.O.
3054B	N31-48-09E	265.98	905023.81		1987549.17		S. end of bridge over Claypit Cr.
3054C	N09-14-20E	1889.72	905124.69		1988162.01		Int. of Stone Brdg Rd. & Highlands Rd N. edge Highlands Rd. Ctr. S.B. Rd.
3054D	S72-19-49E	235.48	905199.45		1988138.21		In curve on High- lands Rd. 150' S. of church, S. edge Rd.
3054E	N61-30-21E	2274.84	905865.61		1988500.13		In curve & E. edge of Highlands Rd.
3054F	N43-51-17E	823.94	906055.79		1988698.24		In curve on High- lands Rd. 250' N. edge dirt Rd.
3054G	N66-58-38E	2190.85	906727.71		1988983.88		E. edge of High- lands Rd. top of hill
3054H	S82-45-36E	744.04	906973.68		1988952.69		Int. of Rd. to Mt. Mitchel & High Rd. 10' S. of Wh. fence

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
3054I	N50-04-25W	544.96	906834.34		1989069.31		E. edge of Mt. Mitchel Rd.
3054J	N69-50-34W	337.68	906728.63		1989108.10		W. edge of Mt. Mit. Rd. 200' S. of dirt Rd.
3054K	N40-05-49W	567.96	906603.62		1989252.94		In N. edge of dirt road.
3054L	N60-45-43W	654.55	906416.17		1989359.52		In S. edge of Rd.
Mt. Mit- chell 4	N37-40-13E	174.73	906451.74		1989405.64		
Sandy Hook Light House	N04-59-37E	6.06 M					

BOOK NO. 12 - F

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
Δ Sandy Hook Light							
Δ S H B 3							
1200	S72-55-25W		898489.45		1993245.54		
1201	N75-27-57W	409.95	898357.16		1993279.84		About 410' W. of SHB3 on N. edge of Rd.
1202	N72-57-54W	2608.66	897526.72		1993534.62		On SW cor. of brdg over Pews Cr. on Port Monmouth & Ideal Beach Rd.
1203	N87-42-21W	2239.71	896779.72		1993564.64		At NW cor. of in- tersec. of Port Monmouth & Bray Rds.
1204	N89-53-13W	964.91	896458.06		1993565.31		On N. side of Port Mon. Rd. between Mon. Pky. & Shore- land Terrace
1204 +	N75-39-09W	345.00	896346.65		1993592.81		N. of Rd. to E. & W. C. of Rd. N & S
1205	N75-39-09W	1099.89	896102.86		1993656.21		In Keansburg - W. of Atlantic Ave. on N. side of Rd.
1206	S82-12-49W	1729.83	895531.54		1993578.14		At ctr. of Forest Ave. & N. edge of Port Monmouth Rd.
1207	S74-22-42W	1319.87	895107.81		1993459.77		S. side of Port Mon. Rd. & E. side of Main St. on edge of sidewalk
1207A	N74-22-36E	437.50	895248.26		1993499.03		First St. N. of Port Mon. Rd.
1207 +	S10-08-35W	320.00	895089.01		1993354.77		R.R. Crossing, in line with E. edge of Main St. Pavt.
1208	S10-08-35W	1964.80	894992.36		1992815.14		6' E. of left ctr. of Main St. & Keysport Seabright Hwy.
1208 +	S10-14-38W	682.00	894951.91		1992792.77		E. side of Redbank Rd. & C. of Rd. to E. (Tilton's Cor- ners)
1209	S10-14-38W	2009.80	894873.12		1992155.95		On E. edge of Red- bank Rd. 75' S. of Warren Pl., in line with SW cor. of cultiv. field
1210	S10-11-06W	2549.83	894722.82		1991319.45		On E. edge of Pal- mer Ave. & C. of Rd. to E. (cont. of Main St.)

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
1211	S13-38-54W	709.95	894666.96		1991089.50		On E. edge of Palmer Ave. in line with row of trees to W.
1211 +	S17-19-27W	1415.00	894526.57		1990639.21		Center of culvert over drain
1212	S17-19-27W	1539.90	894514.15		1990599.51		On Palmer Ave. 35' N. of SW cor. of brick warehouse, in E. traffic lane
1213	S05-40-21W	2234.85	894440.56		1989858.26		On S. side of N.J. #35 & E. edge of S. end of Palmer Ave.
1214	N82-30-36W	644.96	894227.39		1989886.27		On E. edge of pvt. of N.J. #35, C. of bridge over Mahoras Brook
1215	N80-45-23W	752.95	893979.66		1989926.63		On W. side dirt Rd., 104' S. of #35
1216	S08-15-45W	2436.92	893862.83		1989122.83		C. of under pass of dirt Rd. under R.R.
1217	S07-01-03W	299.95	893850.62		1989023.60		On E. edge of dirt Rd.
1218	S09-40-21W	909.85	893799.69		1988724.65		On W. side of Rd. at Jct. of pvt. Rd. to west
1219	S06-49-29W	579.93	893776.74		1988532.72		On S.E. end of bridge over Mahoras Creek
1220	S10-38-32W	514.93	893745.01		1988364.05		On W. side of Rd. S. of Mahoras Cr.
1221	S07-45-15W	1084.84	893696.23		1988005.77		In center of Rd. by drive
1222	S08-19-54W	1709.73	893613.61		1987441.93		C. of Rd. to N. & N. edge of Rd. going E. & W.
1223	S82-10-02W	314.95	893509.61		1987427.62		C. of Rd. to S. & S. edge of Rd. going E. & W.
1224	S16-16-00E	739.89	893578.68		1987190.88		On W. side of Rd.
1225	S20-55-52E	299.95	893614.39		1987097.51		On E. side of Rd.
1226	S01-03-06W	1049.84	893607.97		1986747.65		On W. side of Rd. 308' N. of bridge
1226 +	S08-26-56E	308.00	893592.95		1986646.10		Bridge over small creek

Station	Asimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
1227	S08-26-56E	1259.80	893669.66		1986332.31		E. side of Rd.
1228	S05-20-02W	439.94	893656.02		1986186.31		On W. side of Rd. 150' N. of bridge
1229	S12-55-00E	1289.79	893752.11		1985767.29		On W. side of Rd. 168' N. of Rd. junction
1230 2236	S18-17-41E	168.10	893769.69		1985714.10		C. of Rd. to N. & on N. edge of Rd. going E. & W. at road junction
2235	N66-59-45E	269.96	893852.52		1985749.27		N. side of Rd. on E. of Rd. from E.
2234	N88-41-13E	318.09	893958.51		1985751.71		N. side of Rd. 60' N. of curve
2233	S60-54-19E	275.43	894038.73		1985707.06		15' S. of road edge
2233 +	N47-57-59E	513.00	894149.07		1985821.56		center of cross roads
2232	N47-57-59E	719.95	894216.97		1985867.76		N. edge of Rd. at W. edge of drive- way
2231	N55-00-27E	470.02	894345.30		1985957.63		S. edge of Rd. 15' ± from C. of Rd.
2230	N35-03-55E	560.06	894452.56		1986110.46		N. side of Rd. 60' N.W. of driveway
2229	N69-28-43E	675.16	894663.33		1986189.35		N. side of road
2228	N23-38-52E	330.05	894707.45		1986290.14		20' E. of road intersection
2227	S54-56-50E	959.75	894969.34		1986106.43		S. side of Rd. 940' E. of Rd. intersec 6' N. of large tree
2226	S53-56-12E	334.89	895059.56		1986040.66		S. side of Rd. 8' N.W. of large tree
2225	S82-00-54E	945.12	895371.54		1985996.94		N. side of Rd. 12' from C. at curve
2224	S50-40-46E	584.91	895522.69		1985873.81		C. of cross roads (oldwood rds.)
2223	S51-21-03E	885.00	895753.07		1985689.60		N. side of Rd. 10' from C. of inter section
2223 +	S51-05-40E	1000.00	896012.48		1985480.28		C. of Rd. over culvert

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
2222	S51-05-40E	1295.91	896089.23		1985418.37		S. side of Rd.
2221	S51-50-12E	384.91	896190.10		1985449.10		S. side of Rd. on W. edge of inter. of wood trail to S.
2221 +	S68-01-53E	688.00	896402.78		1985253.31		C. of Rd. over culvert
2220	S68-01-53E	835.05	896448.23		1985235.00		S.W. cor. of inter- sec. 20' from C.
2220 +	N89-20-00E	19.00	896454.56		1985235.07		C. of Rd.
2219	N89-20-00E	449.75	896598.13		1985236.75		N. side of Rd. 40' W. \pm of side Rd.
2218	S86-29-17E	539.88	896777.74		1985225.74		S. side of Rd. 2' from edge
2217	S89-40-39E	1470.07	897267.74		1985223.06		2' N. of edge of Rd. 10' W. of small trail
2216	S70-23-21E	769.58	897509.37		1985136.96		S. side of Rd.
2215	S83-26-23E	1322.82	897947.40		1985086.27		S. side of Rd. in C. of R.R. tracks (double)
2214	N88-35-15E	1119.45	898320.42		1985095.82		S. side of Rd. W. edge of int. of Rd. S.
2213	N80-32-18E	263.94	898407.19		1985110.30		N. side of Rd. at W. edge of side Rd. N. at E. end of cem.
2213 +	N69-49-37E	519.00	898569.58		1985169.94		E. of side Rd.
2212	N69-49-37E	934.96	898699.72		1985217.77		N. side of Rd. at E. edge of int. of Rd. to N & 12' from C. of Rd.
2212 +	N84-38-35E	219.00	898772.40		1985224.58		E. of side Rd.
2211	N84-38-35E	354.92	898817.51		1985228.81		2' from N. edge of Rd. at curve to S.W. about 15' from C. of Rd.
2210	S82-18-17E	369.84	898939.67		1985212.29		W. side of Rd. #35 & on E. of Rd. to W. at Fairview
2209	S25-22-39E	299.88	898982.52		1985121.99		6' from W. curb #35 & on tan. line of N. edge of Rd. to E. at Fairview

Az. Err. $\pm 2' - 55''$
Pos. Err. 7.487 ft.

18 16.

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
2208	N79-33-04E	539.82	899159.46		1985154.65		N.side of Rd.14' from C. of Rd.
2208 +	N84-03-47E	1000.00	899491.01		1985189.11		C. of Rd.to cem.
2207	N84-03-37E	1079.88	899517.47		1985191.88		S. side of Rd.10' from C. & on Q of E. entrance to cemetery
2207 +	N82-26-15E	183.00	899577.94		1985199.91		C. of R.R. track
2206	N82-26-15E	869.96	899804.92		1985230.09		N. side of Rd.
2205 3029	N79-26-23E	809.43	900070.14		1985279.59		S.edge of gravel Rd. 660'E. of R.R. crossing
3028	S79-35-30W	584.96	899878.36		1985244.35		C.of E.Rd.N.edge of gravel Rd. running E. & W. 75'E. of R.R. crossing
3027	N08-43-52W	637.96	899845.88		1985454.56		800' S.of over- pass E.edge Rd. N.edge of trail leading E.
3026	N16-23-24W	799.95	899770.84		1985710.40		Int.of E.Rd.& Rec Oaks Rd.& private Rd. leading E.50' E. of overpass
3025	N36-41-29E	150.99	899800.91		1985750.76		Int.of E.Rd.& Rec Oaks Rd.200'E.of C. of overpass
3024	N24-26-03E	1499.51	899594.14		1986205.87		C. of crossing
3023	N16-55-10W	2164.87	899384.13		1986896.33		315'S.of crossing C. of R.R.
3023 +	S16-55-10E	1365.00	899516.52		1986461.02		1690'S.of cross- ing C.of R.R. & underpass
3022	N12-06-22W	314.98	899362.11		1986999.00		In bend of E.Rd. x'ing R.R., 25'E. of R.R., 10'ctr. of E. Rd.
3021	N15-45-44W	349.98	899330.41		1987111.27		350'N.of R.R. x' ing W.edge of E. Rd.
3020	N11-04-25W	599.96	899292.01		1987307.56		175'S.of overpass W.edge of E. Rd. by large oak tree
3019	N00-28-47W	549.97	899290.45		1987490.89		1200'S.of over- pass E.edge of E. Rd.
3018	N09-21-09W	1196.84	899225.62		1987884.57		At x Rds., E.end of overpass

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
3017	N09-11-16W	1241.84	899159.54		1988293.25		On E. Rd. W. side of Rd. near end of gravel rail E. of R.R.
3016	N00-29-02E	2069.73	899165.33		1988983.19		At x'Rds. in C. of Δ in line with S. E. edge of Rd. leading N.W.
3016 +	S00-29-02W	1318.00	899153.96		1988544.01		1318'S. on E. Rd. C. of culvert & E. edge of Rd.
3015	N00-54-10E	637.92	899168.66		1989195.81		S. of Hopping Cor's on E. Rd. E. edge
3014	N01-29-42E	859.89	899161.15		1989482.37		S. of Hopping Cor's on E. side of Rd. C. of culvert, 1' E. of Rd. edge
3013	N02-05-24W	889.88	899150.36		1989778.82		On E. Rd. top of hill
3012	N12-00-26W	1399.82	899053.33		1990235.27		Int. of Leonards Rd. & E. Rd. E intersec.
3011	N87-48-07W	1316.33	898614.86		1990252.14		On Leonards Rd., from Main St. E
3011 +	S87-48-07E	1043.00	898962.27		1990238.79		C. of Leonards' Rd. at R.R. x'ing
3010	N87-30-09W	804.90	898346.80		1990263.86		At Jct. of Main St. E. edge & Leonards Rd. E
3009	N25-56-59E	2235.82	898672.89		1990934.05		Jct. Main St. E. edge & Hwy. #36 E
3008	N24-35-47E	1179.83	898836.59		1991291.66		Main St. N. of R.R. x'ing W. edge of pav't. in bend
3008 +	S24-35-47W	465.00	898772.07		1991150.73		At R.R. x'ing on Main St. E int.
3007	N36-26-15E	1644.77	899162.17		1991732.80		At Jct. Main St. & Palmer St. E. edge Main St.
3007 +	S36-26-15W	1135.00	898937.48		1992508.11		C. of Main St. & R.R.
3006	N21-33-33E	1249.82	899315.29		1992120.27		East edge of Main St.
3005	N34-39-16E	714.90	899450.87		1992316.33		In E. edge & C. of bridge over Compton Creek
3004	N23-12-39E	899.88	899569.01		1992592.02		25'S. of water edge 20'N. of E roads

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
3003	N58-33-07W	1896.65	899029.64		1992921.93		C.of Seabrook Ave. in line with road to S.W.
3002	N58-48-39W	1169.00	898696.25		1993123.72		N.edge of Sea- brook Ave. in line with C. of Brainard Ave.
3002 +	S58-48-39E	476.20	898832.05		1992041.53		C.of Seabrook Ave. at cross St.
3001	N54-02-11W	342.95	898603.73		1993190.87		50'N.of Seabrook Ave. 150'N.E.of Jct.of Wilson Ave.
3000 △Sandy Hook Beach 3	N64-26-03W	379.99	898489.45		1993245.54		1.2M.N.byW. of Belford & 25'N. of C. of Seabrook Ave.
△SHB 3 S.H. Light	N72-55-25E						

Az. Err. 0'-00"
Pos. Err. 8.167 ft.

21 -19-

BOOK NO. 15 - F

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
<hr/>							
△ Great Beds to △ Mar	S22-34-33E		885279.08	255.2	1995581.66	531.9	
2001	N76-55-43W	426.49	885140.59	128.6	1995613.79	561.2	426.5' W. of Mar on Lawrence Har. Beach
2002	N85-24-13W	540.01	884961.15	878.9	1995628.21	574.4	End of boardwalk
2003	S09-02-37W	169.87	884952.24	870.7	1995572.28	523.3	8' from Q. of Rds.
2004	N88-00-13W	199.93	884885.63	809.8	1995574.61	525.4	S.W. cor. of inter of Madison Ave. & Bayville Drive, 15' W. of Gar- field Ave.
2005	N80-03-03W	648.42	884672.73	615.1	1995611.92	559.5	On Bayville Drive
2005 †	N72-25-43W	113.00	884636.82	582.3	1995623.29	569.9	Q. of side St. S.
2006	N72-25-43W	301.24	884576.99	527.6	1995642.21	587.2	C. of intersec.
2006 †	N75-56-23W	192.00	884514.91	470.8	1995657.77	601.5	Q. of side St. S.
2007	N75-56-23W	379.93	884454.14	415.3	1995672.98	615.4	N. edge of Rd. at curve
2008	S17-14-27W	319.99	884422.53	386.4	1995571.10	522.1	N.E. cor. of inter. N. edge oiled Rd.
2009	N89-24-08W	339.89	884309.23	282.8	1995572.28	523.3	N. side #35 at intersection
2009 †	S14-18-02W	1150.00	884214.55	196.2	1995200.82	183.6	Q. side St. E.
2010	S14-18-02W	1230.88	884207.86	190.1	1995174.65	159.7	W. side Matawan Rd. 60' S. of St. 5' S. large tree
2011	S14-02-02W	1178.04	884112.61	103.0	1994793.66	725.7	E. edge Matawan Rd.
2011 †	S15-42-22W	165.00	884097.73	089.3	1994740.71	677.3	Q. side St. E.
2012	S15-42-22W	180.45	884096.32	088.1	1994735.75	672.8	In bend at Mat. Rd. at inter. S side Rd.
2012 †	S55-55-12W	200.00	883968.89	886.0	1994649.86	594.2	C. of Rd. & R.R. on underpass
2013	S55-55-12W	259.75	884024.60	022.5	1994687.22	628.4	5' W. of end of overpass 4' S. of N. railing
2014	S05-18-38E	589.75	884042.81	039.1	1994491.46	449.4	E. side of Matawan Rd. & Q. Olive St
2015	S12-31-17W	969.87	883972.72	889.5	1994175.82	160.77	E. side of Mat. Rd. 15' from Q. at int. of Wilbur Pl.

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
2015 +	S04-55-17W	450.00	883959.86	877.7	1994026.37	024.1	Q side Rd. E.
2016	S04-55-17W	1340.03	883934.40	854.4	1993730.74	668.2	E. side of Rd. int. of dirt Rd. E. 3' from edge pv't.
2017	S05-09-17W	1871.05	883878.37	803.2	1993109.52	100.0	W. edge Rd. top of knole
2018	S05-31-47W	1149.95	883841.38	769.4	1992727.95	665.6	W. side Matawan Rd.
2018 +	S12-56-28E	760.00	883898.08	821.2	1992481.04	439.9	Q side Rd. W.
2019	S12-56-28E	1689.53	883967.39	884.58	1992179.00	163.7	35' S.W. Rd. intersection
2022	S44-21-13E	629.90	884114.15	104.4	1992028.84	026.37	W. side Rd. at curve
2023	S60-30-43E	559.92	884276.60	252.9	1991936.96	856.8	Road intersector
2024	S82-24-53E	209.97	884345.98	316.4	1991927.71	848.3	210' E. of Rd. int. 10' N. of Rd. C.
2025	S67-49-53E	509.82	884503.34	460.3	1991863.57	789.7	S. side Rd.
2026	S82-17-33E	710.01	884737.87	674.7	1991831.84	760.6	S. side of Rd.
2027	S88-18-18E	1999.67	885404.07	369.5	1991812.00	742.5	N. side of Rd. at bend
2028	S66-31-18E	300.06	885495.80	453.3	1991772.14	706.1	N. side of Rd. at bend
2029	S43-05-53E	459.93	885600.54	549.1	1991660.19	603.7	S. side of Rd. at bend
2030	S67-11-53E	319.95	885698.85	639.0	1991618.85	565.9	C. of inter.
2031	S56-45-03E	659.87	885882.79	807.2	1991498.23	455.6	N. side of Rd. 250' N. of bridge over creek, 100' S. of bend
2031 +	S44-34-38E	1055.00	886129.64	118.54	1991247.76	226.5	C. of x Rds.
2032	S44-34-38E	1350.06	886198.64	181.6	1991177.66	162.5	E. side of High St. at inter.
2033	S36-29-43E	1319.85	886262.05	239.6	1991091.95	084.1	N. side of Main St. & int. of High St., S. side sidewalk

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
2034	S80-41-08E	267.20	886349.93	320.00	1991077.52	070.9	N.end of shed of Matawan R.R. 40' W. of tracks
2034 +	S60-58-38E	300.00	886437.38	400.0	1991029.01	026.5	On tan. line of R.R. east
2035	S60-58-38E	429.92	886475.24	434.6	1991007.99	007.3	N.side of Atl. Ave. at R.R. x' ing, 5'W.of W. track
2035 +	S14-12-42W	588.00	886427.11	390.6	1990817.98	748.0	Q of side Rd. W.
2036	S14-12-42W	879.87	886403.19	368.7	1990723.65	661.7	W. side of Atl. Ave. at inter. 6' E. of W.curb
2036 +	S09-28-12W	355.00	886383.73	350.9	1990606.93	555.0	Q of side Rd. E.
2037	S09-28-12W	1019.78	886347.25	317.5	1990388.32	355.1	W. side Atl. Ave. & Q Little St.
2037 +	S07-26-12W	48.00	886345.18	315.6	1990372.45	340.6	
2038	S07-26-12W	189.96	886339.05	310.0	1990325.52	297.7	10'W. of overpass & 50'N. of R.R. on N. bank R.R. cut
2039	S40-29-12W	379.92	886256.82	234.8	1990229.19	209.6	On tie N. of N. rail
2039 +	S46-09-52W	1120.00	885987.51	903.0	1989970.63	887.5	C. of St. R.R. crossing
2040	S46-09-52W	1979.06	885780.90	714.0	1989772.25	706.2	12"W. of W.rail at int. of R.R. & Church St., 111' S.E. of Matawan tank.

Az. Err. $\pm 1' - 42''$
Pos. Err. 8.129 ft.

24-22:

BOOK NO. 38 - E - N.B.

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
Δ W.T. Δ RNR 14	S15-36-43E		874250.89	229.42	1997933.14	853.2	On River St. 500' N. of R.R.
3801	S04-50-00E	502.44	874265.03	242.34	1997766.27	700.7	On River St. at R.R. crossing ctr. crossing
3802	S09-13-13E	990.80	874318.00	290.78	1997440.32	402.6	Rd. junction ct.
3803	N89-56-55E	890.52	874614.90	562.27	1997440.62	402.9	Main St. ctr. Rd.
3804	N87-59-18E	910.52	874918.29	839.69	1997451.34	412.7	Main St. - ctr. top hill - ctr. curve
3805	N89-10-45E	738.04	875164.32	150.25	1997454.87	415.8	Main St. at R.R. crossing
3806	N84-01-03E	814.34	875434.35	497.17	1997483.20	441.8	S. edge of Main St.
3807	N79-35-50E	837.56	875709.01	648.32	1997533.64	487.96	Road inter. S. edge Main St. ctr. crossing
3808	N81-13-53E	1288.50	876133.58	122.1	1997599.15	547.9	Int. of Main St. & Rd. to N. & int.
3809	N80-42-21E	894.07	876427.75	391.2	1997647.35	591.9	N. edge of Main St.
3810	S85-45-02E	487.75	876589.92	539.42	1997635.33	580.6	N. edge of Main St.
3811	S80-41-34E	595.16	876785.74	718.2	1997603.30	551.7	S. edge of Main St.
3812	N85-14-49E	667.72	877007.60	006.9	1997621.76	568.5	S. edge of Main St.
3813	N73-48-46E	703.10	877232.72	212.8	1997687.11	628.3	S. edge of Main St.
3814	N60-09-34E	990.50	877519.20	474.8	1997851.41	778.5	& int. road junction
3815	N60-42-06E	1421.90	877932.63	852.8	1998083.42	076.3	C. of Main St. under C. of Trans. Line
3816	N61-32-04E	1080.20	878249.23	227.9	1998255.10	233.3	N. edge of Main St 30' S.W. of Priv. Rd.
3817	S78-27-38E	1408.61	878709.39	648.7	1998161.28	147.5	N. edge of Main St under & Trans. Line

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
3818	S78-22-31E	1322.57	879141.31	129.2	1998072.57	066.3	N. edge of Main St.
3819	S78-17-53E	801.54	879402.99	368.5	1998010.43	016.8	S. edge Main St. Rd. inter E. edge cross Rd.
3820	S78-22-30E	994.10	879727.62	665.3	1997951.66	873.2	Q. int. 3 Rd. inter.
3821	N76-00-02E	461.50	879876.92	801.8	1997988.89	904.2	E. edge of South Amboy Abt. 400' N.E. of R.R.
3822	N47-05-00E	525.94	880005.35	004.9	1998108.29	099.0	Q. int. Rd. junction
3823	N39-14-52E	610.10	880134.06	122.6	1998265.80	243.0	E. edge Main St. Rd. junct.
3824	S56-30-25E	382.01	880240.26	219.7	1998195.53	178.8	W. edge Hwy. #9 Rd. junct. Q. dirt Rd.
3825	S25-31-13W	350.42	880189.97	173.7	1998090.14	082.4	E. edge #9 at junct. of unim- prov. St.
3826	S43-06-00E	1121.50	880445.48	407.3	1997817.23	747.3	At S. end of Fuller St. Abt. 200' N. of stand- pipe
3827	N46-17-38E	310.27	880520.27	481.7	1997888.70	812.6	W. edge of Fuller St. top of hill
3828	N60-46-06E	692.38	880721.72	660.0	1998001.44	000.4	N. edge of Cath- erine St. & C. of Fuller St.
3829	N63-50-13E	599.00	880900.96	823.9	1998089.61	081.8	Q. int. Rd. inter.
3830	S29-58-59E	777.52	881030.53	027.9	1997865.06	791.0	C. of #35 in line with C. of Louise St.
3831	S11-16-22E	449.65	881059.84	054.7	1997718.09	656.6	S. edge of Hwy. # 35 ctr. of curve
3832	S29-31-54E	802.30	881191.71	175.3	1997485.45	443.9	C. of #35 foot of hill
3833	S30-13-11E	1130.56	881381.45	348.8	1997159.86	146.2	S. edge #35 at junct. with dirt road Q.
3834	S31-06-34E	1263.10	881599.13	547.9	1996799.45	731.0	S. edge #35 & in line with C. of Lush St.
3835	S31-56-46E	682.90	881719.63	658.0	1996606.33	554.4	S. edge & C. of curve on #35

Station	Azimuth	Dist.	Adjusted X	Meters from 1000 yd Grid	Adjusted Y	Meters from 1000 yd Grid	Remarks
3836	S63-00-03E	689.98	881924.59	845.4	1996501.98	459.0	S.edge #35 at junct.of dirt Rd. W. edge
3837	N83-55-34E	996.00	882254.80	232.9	1996536.79	490.8	S.edge of Hwy. #35
3838	N80-24-37E	816.10	882523.10	478.3	1996582.12	532.3	N.edge #35 in line with C. of Main St.
3839	S81-51-41E	564.90	882709.54	648.8	1996555.50	508.0	N.edge #35 60'W. of Morgan St. ctr. curve
3840	S67-35-33E	709.33	882928.19	848.7	1996465.43	425.6	C. of N.edge of R.R. underpass 3' S. N.edge
3841	S65-46-15E	598.78	883110.24	100.8	1996383.54	350.7	N. curb in E. approach of R.R. bridge
△W.Trans. Tower	S49-21-43E	241.04	883171.22	156.6	1996331.23	302.9	

△Spire
Mt. Lor. N31-52-45E

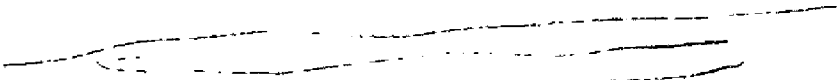
TAPE-TRANSIT TRAVERSE

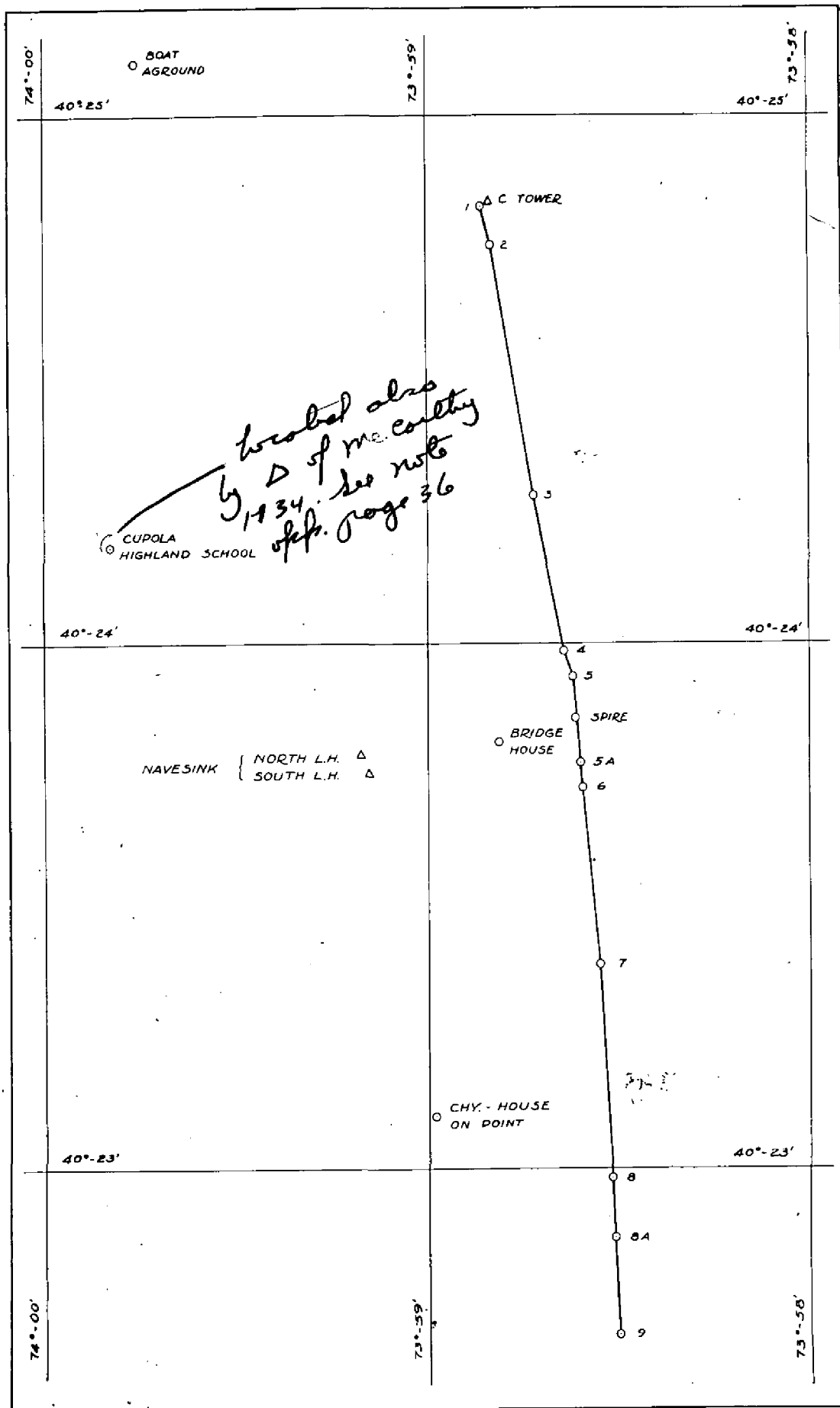
by

AIR PHOTO FIELD INSPECTION PARTY NO. 12

A traverse was run by this party in the vicinity of Highlands, N. J., to clear up discrepancies in the positions of @ Spire, @ Bridge and @ Cupola Highlands School as determined by the radial plot and by the topography executed in 1932 by Lieut. Comdr. H.A. Cotton (Sheet T4714). The distances were measured with a 300 foot steel tape and angles taken with a Berger 7 inch theodolite reading to 10 seconds. The line was started at triangulation station C Tower near the southern end of Sandy Hook and the initial orientation taken from triangulation station Navesink South Lighthouse. Cuts were taken to the objects in question as well as several other points whose location was desired, at frequent intervals along the traverse line. @ Spire was also located by a distance and offset from the traverse line, the line passing very near to this object. At each angle point, a direction was also taken to either the north or south Navesink Lighthouse as a check on the orientation, except at points 8A and 9 at the southern end of the line from which neither lighthouse was visible.

All cuts taken to each of the various objects intersected at a common point, indicating that the traversing was accurate. The radial plot positions of @ Spire and @ Bridge agreed with the traverse positions, indicating that the positions from Sheet T4714 were in error.





TRAVERSE NOTES ----- VICINITY OF HIGHLANDS, N.J.

Instrument - Berger 7 inch No. 232
May 7-8, 1934
Weather - Clear, warm

Philleo - Inst., notes
Fickenscher - Chain
Fisher - Chain

Station	Distance (Feet)	Object	Angle	Remarks
C Tower	0.00	Navesink South L.H.	000-00-00	
		Cupola Highlands		
		School	36-34-00	Cut
		Sandy Hook L.H.	148-06-10	Azimuth check-vis. poor
		Spire	337-32-00	Cut
		Bridge House		
		Middle Window	346-21-40	Cut
		Hilton	75-08-20	Cut
		White	60-51-30	Cut
	113.73	o 1	(46-21-10 A 226-21-10 B	Traverse point
o 1		C Tower	00-00-00	East edge of conc. road
	456.59	o 2	(105-44-20 A 285-44-10 B	Traverse point
		Navesink South L.H.	132-55-40	Azimuth check
o 2				East edge of conc. road
		o 1	00-00-00	
	2934.00	o 3	(185-18-10 A 05-18-10 B	Traverse point
		Navesink South L.H.	209-06-00	Azimuth check
		Boat aground off		
		Spermaceti Cove	311-10	Cut
o 3				East edge of conc. road
		o 2	00-00-00	
		Navesink South L.H.	222-03-40	Azimuth check
		Cupola Highlands		
		School	273-40-30	Cut
		Spire	178-52-00	Cut
	1830.60	o 4	(178-25-20 A 358-25-10 B	Traverse point
o 4				East edge of conc. road
		o 3	00-00-00	
	316.44	o 5	(172-05-50 A 352-06-00 B	Traverse point
		Spire	181-27-20	Cut
		Bridge House		
		Middle Window	228-34	Cut
		Navesink South L.H.	250-55-20	Azimuth check
		Boat aground	334-19	Cut

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TRAVERSE NOTES (Cont'd.)

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Station	Distance (Feet)	Object	Angle	Remarks
⑤				W. edge conc. road 6 m. S. of entrance to Ft. Hancock
		④	00-00-00	
	1284.65	⑥	(193-50-40 A 13-50-40 B	Traverse point
	478.00	Navesink North L.H. Spire	270-09-00 Offset 14.7 feet west of line from ⑤ to ⑥.	Azimuth check
⑤A				Supplemental point for cuts on line ⑤ to ⑥.
	998.22	⑤	00-00-00	
		Navesink South L.H.	273-05-40	Azimuth check
		Cupola Highlands Sch.	299-33-20	Cut
		Bridge House (center east end)	289-31	Cut
⑥				1 m. from N. rail on W. curb line conc. road.
		⑤	00-00-00	
		Navesink South L.H.	279-23-00	Azimuth check
		Boat aground	332-50	Cut
	2046.90	⑦	(179-52-50 A 359-52-40 B	Traverse point
⑦				W. edge of conc. road
		⑥	00-00-00	
		Chy. House on Point	234-10-00	Cut
		Navesink South L.H.	313-56-20	Azimuth check
	2492.70	⑧	(182-04-00 A 02-04-00	Traverse point
⑧				Near W. edge of sidewalk
		⑦	00-00-00	
		Navesink South L.H.	331-23-40	Azimuth check
		Chy. House on Point	291-56-10	Cut
		South end of Seawall at Oceanic Bridge	276-00-00	Cut
		Yellow Chy.	255-55-00	Cut
	1810.90	⑨	(180-59-30 A 00-59-30 B	Traverse point
⑧A				Supplemental point for cuts on line ⑧ to ⑨.
	693.20	⑧	00-00-00	
		Chy. House on Point	305-20-30	Cut
⑨				On W. sidewalk
		⑧	00-00-00	
		South end of Seawall	283-39-30	Cut
		Chy. House on Point	321-01-10	Cut
				Line ends at ⑨

COMPILER'S REPORT

for

AIR PHOTO TOPOGRAPHIC SHEET

FIELD NO. 50

REGISTER NO. T 5100

- 1 -
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. 50

REGISTER NO. T 5100

State New Jersey

General locality Sandy Hook BAY

Locality ~~Sandy Hook Point to Atlantic Highlands.~~ SANDY HOOK

Scale 1:10,000 Date of ^{photographs} ~~survey~~ July 24, 1932

~~Vessel~~ Air Photo Compilation Party No. 12, New York City.

Chief of party *Roswell C. Bolstad*
Roswell C. Bolstad

Surveyed by (See following data sheet)

Inked by E.W. Fickenscher

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

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

Instructions dated November 15, 1932

Remarks: Compiled on a scale of 1:10,000 and reproduced by
photo lithography.

- STATISTICS -

on

SHEET, FIELD NO. 50, REG. NO. T 5100

PHOTOS, NOS. 66-51-2 to 8; 66-51-21 & 22; 66-51-37 to 40, inclusive.

DATE OF PHOTOGRAPHS July 24th., 1932 TIME (No record)

	BY	DATE	
		From	To
ROUGH RADIAL PLOT	(Not required)		
SCALE FACTOR <u>(1.000)</u>	(Not required)		
SCALE FACTOR CHECKED	(" ")		
PROJECTION	<i>E.W. Fickenscher</i> E.W. Fickenscher	<u>1/3/34</u>	
PROJECTION CHECKED	<i>J.J. Lannigan</i> J.J. Lannigan	<u>1/3/34</u>	
CONTROL PLOTTED	<i>R.A. Philleo</i> R.A. Philleo	<u>1/8/34</u>	
CONTROL CHECKED	<i>E.W. Fickenscher</i> E.W. Fickenscher	<u>1/11/34</u>	
TOPOGRAPHY TRANSFERRED	<i>E.W. Fickenscher</i> E.W. Fickenscher	<u>1/11/34</u>	
TOPOGRAPHY CHECKED	<i>R.A. Philleo</i> R.A. Philleo	<u>2/10/34</u>	
SMOOTH RADIAL LINE PLOT	<i>E.W. Fickenscher</i> E.W. Fickenscher	<u>2/6</u>	<u>- 2/13/34</u>
RADIAL LINE PLOT CHECKED	<i>R.A. Philleo</i> R.A. Philleo	<u>2/14/34</u>	
DETAIL INKED	<i>E.W. Fickenscher</i> E.W. Fickenscher	<u>2/15</u>	<u>- 10/10/34</u> (Less 6 months appr.)
PRELIMINARY REVIEW	<i>J.P.O'Donnell</i> J.P.O'Donnell	<u>10/2</u>	<u>- 10/6/34</u>

AREA OF DETAIL INKED 7.8 sq. Statute Miles (Land Area)

AREA OF DETAIL INKED 0.7 sq. Statute Miles (Shoals in Water Area)

LENGTH OF SHORELINE (more than 200 m. from nearest opposite shore)
26.1 Statute Miles.

LENGTH OF SHORELINE (rivers and sloughs less than 200 m. wide)
3.0 Statute Miles.

LENGTH OF ROADS, STREETS, TRAILS, RAILROADS 68.0 Statute Miles.

GENERAL LOCATION Sandy Hook

LOCATION Sandy Hook Point to Atlantic Highlands.

DATUM North American 1927.

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COMPILER'S REPORT

for

AIR PHOTO TOPOGRAPHIC SHEET FIELD NO. 50

GENERAL INFORMATION

The Air Photo Field Inspection Report herewith attached for northern New Jersey, 1934 by Lieut. R.C.Bolstad, furnished the necessary field data for the compilation of this sheet. Additional information of questionable area was obtained from Mr. J.J.Lannigan and Mr. J.Rippstein, draftsmen on this party who are familiar with the topography of this vicinity.

The accompanying STATISTICS SHEET details all the data in connection with the compilation of this sheet.

This sheet was compiled from single lens photographs taken by the Aero Service Corporation, 1612 Chancellor Street, Philadelphia, Pennsylvania. The photographic prints are 1:10,000 scale enlargements from the original negatives which are on an approximate scale of 1:22,000. They were taken on July 24, 1932 and although no record of the hour was available, the shadows on the prints would indicate the time to be about 10:30 in the morning. The effect of tides was not investigated as paced measurements were made at intervals to determine an accurate high water line by the field party.

CONTROL

(A) Sources

The following sources of control were used in the compilation of this sheet:-

- (a) Triangulation by Lieut. R.W.Woodworth, in 1930, field positions unadjusted.
- (b) Triangulation by Lieut. C.D.Meaney, in 1932, adjusted N.A. 1927 positions.
- (c) Triangulation by Lieut. E.R.McCarthy, in 1934, field computations unadjusted.
- (d) 1932 Topographic Sheet (Lieut. H.A.Cotton, Register No. J4714.)

All control was converted to the N.A. 1927 datum for this compilation. Small differences between these values and the final office adjusted positions should be unplottable at the scale of this compilation (1:10,000).

In addition to the above triangulation, the following topographic signals, from topo sheet J4714, were spotted on the photographs and used in controlling this sheet:-

Mag	Bas	Nol	Wat
Ris	Pus	Step	Hamx
Bor	Hilton	Rux	White
Boy	Girl	Drive	Scaf
Bridge	Spire	Cupola, H.S.	N. Twin Tower
			S. Twin Tower

These signals have been shown on the celluloid topographic sheet by a double blue circle (⊙) together with the name as given on topographic sheet, register no. J4714, also in blue. As the blue ink will not photograph during the photo-lithographic process, no record of these control signals will appear on the finished sheet unless they are recoverable objects and have been marked with a small black circle.

If it is the desire of the Chart Section to have all these control stations shown, they may be indicated in red ink with the usual circle and topographic name; this may best be done by the draftsman in the Washington office on the printed copy, as they will have all the data at hand.

All topographic control signals used in this compilation were plotted on the celluloid sheet directly from the list of scaled positions as submitted by the topographer.

(B) ERRORS

On topographic sheet, register no. J4714, the topographer shows a topographic location of a fire control tower, signal "Trol". In 1918 a tower, "A Tower", was located by triangulation; this is believed to be the same tower inasmuch as the field inspection party could find no trace of any other tower in this locality and inquiry developed that there had always been one tower and it had always remained in the same location. It is believed that the topographer failed to plot this triangulation station on his sheet before beginning the survey. The radial plot agreed with the triangulation position. The position of this station as shown on topographic sheet #4714 is 9 meters distant in azimuth 335° (from north) from the triangulation position.

See review

In addition to the above error the following relocation of topographic control signals resulted, in making the radial plot:-

• Cupola Highlands School- the new position as determined by the radial plot lies 25 meters distant in azimuth 230° (from north) from the position as shown on topo sheet #4714.

See review also additional note page 9

• Simec - the new position as determined by the radial plot lies 11 meters distant in azimuth 275° from north, from the position as shown on topo. sheet #4714.

• Boy - the new position as determined by the radial plot lies 3 meters distant in azimuth 0° (from north) from the position as shown on topo. sheet #4714.

• Bridge - the new position as determined by the radial plot lies 16 meters distant in azimuth 220° (from north) from the position as shown on topo sheet #4714.

• Spire - the new position as determined by the radial plot lies 9 meters distant in azimuth 220°

(from north) from the position as shown on topo. sheet ~~#4714.~~

© Wat - the new position as determined by the radial plot lies 11 meters distant in azimuth 280° (from north) from the position as shown on topo. sheet ~~#4714.~~

© Pus - the new position as determined by the radial plot lies 14 meters distant in azimuth 230° (from north) from the position as shown on topo. sheet ~~#4714.~~

Each of the signals from topographic sheet ~~#4714~~ used as supplementary control for this sheet were plotted from the list of scaled positions submitted with the descriptive report. All of these were very carefully spotted on the photographs and in most cases is an object which appears visible on the photos; therefore the spotting must be correct. In order to positively establish proof that each of the above listed signals were in error as stated, a tape-transit traverse was run in at Atlantic Highlands (See page ~~25~~ to ~~27~~ in the preceeding attached Field Inspection Report). Also the large number of errors existent at vicinity near Lat. $40^{\circ} 25.3'$, Long. $74^{\circ} 02.3'$ made it necessary to establish a triangulation station, TRAIN 1934. This provided sufficient proof that the radial line plot was correct and the topography of sheet ~~#4714~~ was in error. In this locality © Bas and © Nol were also found to be in error; approximately 7 meters too far to the eastward.

(C) Discrepancies.

The U.S. Army Engineer's traverse, line 3000 (See pages 5, 10 and 11 in the attached Field Inspection Report) appeared to have a slight error of a few meters near station 3054D. The traverse, in general, checks out well with the radial plot.

COMPILATION

(A) Method

Considerable difficulty was experienced in making the radial plot at first because of the large number of supplementary control stations found to be in error. By disregarding all control from topo. sheet ~~#4714~~ it was found that no great trouble was encountered. A check traverse and a check triangulation station proved the radial plot to be correct. *See Page 2, Par 5; and pages 27 and 28*

(B) Adjustments of Plot

A slight amount of adjustment was necessary in the plot along the southwestern portion of this sheet in order to tie-in with compilation sheet ~~#65~~ ⁷⁻⁵²⁷⁹ just to the southward where the control is strong.

With the exception of minor adjustments no unusual adjustments were necessary and the plot is beleived to be well established.

ADDITIONAL NOTE - - INTERPRETATION.

Triangulation station "New Bridge (U.S.E.) 1934" has not been shown on this sheet as it is believed the field inspection party spotted one of the reference marks on the photo rather than the station disk.

Although the new highway bridge at Highlands does not show on these photographs it has been shown on this sheet. Actual measurements were made in the field by the Inspection Party. It has a bascule span with a opening 100 feet wide, as stated in the Coast Pilot. The clearance above mean highwater was difficult to obtain by direct measurements because of the construction of the bridge; however, a measured distance and a sextant angle taken by the field party, gave a clearance (computed) at the center of 41 feet. The bridge tender stated the clearance was 38 feet at the center above mean high water. The Coast Pilot has 35 feet as the clearance. Because of the arched under-construction of the bridge the clearance would vary according to the distance out from the center. (The bridge data obtained by the field inspection party is shown on the back of photographs 66-51-7 and 66-51-8).

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(C) Interpretation

Only the usual graphic symbols were used as approved by the Board of Surveys and Maps (1932), and no great difficulty was experienced in interpreting the photographic detail.

The double full line was used to indicate first order roads and the double broken line for private driveways and roads of lesser importance. An exceedingly poor road or trail was shown as a single dashed line. Practically all the roads were visited by the field inspection party, otherwise they have been shown according to their appearance when viewed under the stereoscope. At Sandy Hook, in the vicinity of triangulation station "Tall Tower, 1930" the road detail has been shown slightly altered at the request of the Second Corps Area, U.S. Army.

The new highway bridge between Highlands and Highlands Beach has been shown on this sheet in accordance with actual measurements made by the field inspection party and a blueprint furnished by the New Jersey State Highway Department.

In order to make positive no confidential information at Fort Hancock, Sandy Hook, were shown on this sheet, and in accordance with instructions from the Director in this regard, the photographs and the compilation sheet were reviewed by Major T.M. Chase, the Officer designated by the Commanding General, Second Corps Area. (See paragraph following, Item D, CONFIDENTIAL MILITARY DATA.)

At latitude 40°- 25.1', longitude 73°- 59.8' a wreck is shown on this sheet which does not appear on the photographs. The wreck was located by cuts taken while tapping the traverse down Highlands Beach. (See pages 26 & 27 of the Field Inspection Report, attached herewith.) According to the Officer in charge of the Spermaceti Cove C.G. Station it is expected that the wreck "KESTREL" would be removed soon. However, Lieut. E.R. McCarthy, carrying on operations in this locality, reports the wreck to still be there (Oct. 1934.). It has therefore been shown on this sheet.

At latitude 40°- 25, longitude 74°- 00' topographic sheet 74714 shows a sunken wreck. This wreck projects above the water line, and has been shown on this sheet by the full outline of the hull.

At the north end of Sandy Hook there is shown a broken dashed line which represents the water line due to extra high tides. The normal high water line is shown as projecting slightly in to this elevated basin. This is the actual condition as it exists to-date; a thorough study of this locality was made by the inspection party and information furnished by the soldiers at the fort stated this area was filled with water only at extremely high tides.

(D) Confidential Military Data

In compliance with instructions from the Director, the photographs were submitted to an officer, Major T.M. Chase detailed by the Commanding Officer of the Second Corps Area, U.S. Army, for inspection. A copy of the letter from Major Chase to Lt.(j.g.) Bolstad is attached in the back of this report. The detail shown on the six overlay tracings mentioned has been removed from the compilation sheet, and the tracings returned as requested.

*Letter removed
and placed in
confidential
see
return file.*

All suggestions offered by Major Chase have been carefully followed in the compilation of this sheet. As requested certain roads, railroads, important buildings, etc. in connection with elements of defense, have been omitted. In compliance with paragraph four of his letter, the following triangulation stations which were used to control the radial plot have not been shown on this sheet:~ Grey House 1930; Mills 1932; Gunnison 1932; Blimp Hanger 1930; and Scaffold 1926. It was requested that "Hanger", now shown on chart 369, be omitted since it is in connection with an element of defense. It was also requested that all descriptive data, including towers, be omitted in the vicinity of batteries. The scaffold, shown on chart 369, has therefore not been shown on this compilation sheet.*

A blueprint of the corrected compilation has been furnished this officer and has met with his approval.

(E) Information from Other Sources

Four blueprints of the U.S. Military Reservation, Fort Hancock, Sandy Hook were obtained from the Engineer's office of the Second Corps Area at Governors Island; these were used for roads, houses, etc. but only to identify such data on the photographs. No data was taken from the blueprints which did not appear on the photos.

A blueprint from the New Jersey State Highway Department aided in detailing the new bridge between Highlands and Highlands Beach. The bridge does not appear on the photos. The field inspection party made sufficient measurements to adequately tie-in the bridge.

The U.S. Army Engineer's traverse was used on this sheet; however no new information not already shown on the photographs has been obtained from the traverse. It has been used only for control.

(F) Conflicting Names

There are no names shown on this sheet conflicting with names shown on any of the U.S.C. & G.S. Charts of this area.

ADDITIONAL NOTE - LANDMARKS

"Cupola", the High School at Highlands, has been cut in as a triangulation station by Lieut. E.R. McCarthy, "Highlands School", 1934. This station, established after completion of the radial plot, was located by triangulation as follows:

Latitude $40^{\circ}-24'-346.0$ m.
Longitude $73^{\circ}-59'-1163.6$ m.

This check furnishes definite proof of the accuracy of the radial plot.

500 (2/10/34)

COMPARISON WITH OTHER SURVEYS

The junctions with adjoining sheets are satisfactory.

The differences between this compilation sheet and topographic sheet, register no. J4714 are so numerous that no attempt will be made here to itemize them. A light blue line representing the topography from sheet J4714 is left on the celluloid compilation sheet and when viewing this sheet the differences will be readily apparent. The original topographic sheet J4714 may also be placed in under the celluloid compilation sheet for comparison since they are both on a scale of 1:10,000. *See Review*

LANDMARKS

The list of landmarks, including those to be expunged, has been previously submitted, March 19th, 1931, by Lieut. R.W. Woodworth. It is assumed that Lieut. E.R. McCarthy, now conducting field operations in this area, will revise the list as necessary.

On U.S.C. & G.S. Charts 369 and 1215 there is shown a landmark "TYFON" at the north end of Sandy Hook. According to the Notice to Mariners, #15, paragraph 750, this object is interpreted to mean a fog signal. The field inspection party located in this vicinity a one story brick shack supporting on its N.W. wall two air horns. The building sets in a shallow hollow and is not prominent as a visual landmark. The position of the air horns has been accurately radial plotted in and is as follows:- *See Review*

Latitude 40°- 28'- 54m.

Longitude 74°- 00'- 399m.

See It has labeled as "TYFON" on this sheet.

The "Postal Tower" on charts 369 and 543 has been removed (See recent recovery card for this triangulation station.) and should therefore no longer be charted. It was used for controlling the radial plot but has not been shown on this sheet.

The High School "Cupola" at Highlands shown on chart 543 has been found to be erroneously located (See pages 4 & 5 of the Compiler's Report). The correct position by the radial plot is as follows:-

Latitude 40°- 24'- 34m.

Longitude 73°- 59'- 1164m.

At the request of the War Department certain landmarks now shown on existing charts have been omitted from this sheet (See page 7, paragraph "D".)

All other landmarks to be retained have been shown on this sheet (either by a triangle or small black circle). In addition to the chartable landmarks there have been shown many class "C" landmarks (See descriptive report T #059). These have been shown by the usual small black circle and are listed at the end of this report.

There are many other objects (such as houses, ends of docks, etc.) which are located within the accuracy specified under the following heading RECOMMENDATIONS FOR FURTHER SURVEYS and may be used to obtain hydrographic "fixes". Care should be taken in using the houses to use the exact center as the size shown on this sheet may be expanded somewhat.

ADDITIONAL NOTE (CONTROL)

After this sheet had been compiled, additional triangulation was run in by Lieut. E.R. McCarthy in the vicinity of Highlands. The field inspection party made a special trip to this locality and spotted all the new stations on the photographs. The radial plot was then tested out and found to require only a very slight adjustment to conform with the new control.

The traverse as mentioned on pages 26 and 27 of the Compiler's Report was found to check out exactly at the south end. The 1934 triangulation station LOWER lies very close to the house chimney on the same point which was located by traverse. The photograph 66-51-9 was placed under the compilation sheet with the triangulation on and correctly oriented; it was then found that the house chimney, as spotted on the photo, agreed exactly with the traverse position therefore showing that the traverse was correct.

RECOMMENDATIONS FOR FURTHER SURVEYS

The compilation of this sheet is believed to have a probable error of not over 2 meters in well defined detail of importance for charting and of 4 meters for other data. It is understood that the widths of roads and similar objects may be slightly expanded in order to keep the detail clear and to keep it from photographing as a solid area in the photo-lithographic process.

To the best of my knowledge this sheet is complete in all detail of importance for charting purposes, within the accuracy stated above, and no additional surveys are required.

Submitted by

E.W. Fickenscher
E.W. Fickenscher
Draftsman

Assisted by

J.P. O'Donnell
J.P. O'Donnell
Surveyor

LIST OF RECOVERABLE TOPOGRAPHIC STATIONS

CLASS (C) LANDMARKS

(Includes all recoverable objects, sufficiently prominent for use as hydrographic "fixes", shown as topographic stations with a small black circle on this sheet and not described on Form 524 by this party.)

<u>Description</u>	<u>Latitude</u>			<u>Longitude</u>			<u>Method of Determination</u>
	<u>O</u>	<u>'</u>	<u>D.M.</u>	<u>O</u>	<u>'</u>	<u>D.P.</u>	
① Wat (switch tower)	40	25	(1601.) 250.	74	02	(1192.) 223.	A.P.T.*
① Pus (Ho. on dock)	40	24	(140.) 1711.	74	02	(1361.) 53.	A.P.T.*
① Simec (spire)	40	24	(331.) 1520.	74	02	(1186.) 229.	A.P.T.*
① Hilton (R.R.Station)	40	24	(424.) 1427.	74	01	(1395.) 19.	Topo.
① White (N.E.Gab. Ho.)	40	24	(836.) 1015.	74	00	(1258.) 156.	Topo.
① Boy (Flagpole)	40	24	(1401.) 450.	73	59	(1000.) 414.	A.P.T.*
① Girl (F.P.N.Gab.Ho.)	40	24	(1674.) 177.	73	59	(1413.) 1.	Topo.
① Bridge (ctr. br. ho.)	40	23	(342.) 1509.	73	58	(259.) 1156.	A.P.T.*
① Spire	40	23	(262.) 1589.	73	58	(543.) 872.	A.P.T.*
① N (N.twin tower)	40	27.1		73	59.5		Topo.
① S (S.twin tower)	40	27.1		73	59.5		Topo.

Note: Topo. denotes topographic sheet #14714.
A.P.T.* denotes relocation by radial plot (See pages 4 and 5 of Compiler's Report.)

Review of Air Photo Compilation T 5100 (1934)

1:10,000

Comparison with previous topographic surveys

(a) T 4714 (1932), 1:10,000 (Whatman's paper)

T 4714 covers the entire area of this compilation, but is so badly distorted that an exact comparison with this compilation can not be made.

There are numerous differences in location of recoverable topographic stations and other detail. Most of the recoverable stations on T 4714 have been independently located on this compilation by the photo plot, and by additional theodolite tape traverse. See preceding pages 27 to 28 and 32 of descriptive report.

The following detail has been transferred from T 4714, to this compilation in the office. This detail does not show on the photographs and positions can not be checked, but are accepted as of sufficient accuracy for charting on the 1:40,000 scale chart No. 369.

Jetties	Lat. 40° 27.3',	Long. 73° 59.4'
Wreck	40 26.0	73 58.9
Wreck	40 25.8	73 58.7
Wreck	40 25.0	74 00.0

Three privately maintained lights and a bell on the piers at Atlantic Highlands. These lights and bell have been transferred by holding the adjacent corners of the piers, rather than by the projection and appear in a slightly different geographic position on this compilation than on T 4714.

The compilation made on non-distortion celluloid, and with adequate control is accepted as more accurate than T 4714 and is complete and adequate to supersede T 4714 except for the detail listed below:

1. Location of buoys.
2. Objects of military importance as listed on preceding page 35 of the descriptive report.
3. Additional stations not listed on page 35 of this descriptive report, but not carried forward from T 4714 on Sandy Hook, because of their military importance:
 - Topo. Sta. Trol (Fire control house)
 - Topo. Sta. OB (Fire control house)
 - Topo. Sta. Fir (Fire control house)
 - Topo. Sta. Scaf (Fire control house)
4. Topographic stations Mon, Run and Har -- black signal poles not transferred because of doubtful accuracy on T 4714 and impracticability of accurate transfer.
5. Submerged Brick Piers, Lat. 40° 24.8', Long. 74° 01.1'.
They are not shown on T 4714, but are noted with a reference to H 5234 a (1932) for location. Piers do not appear on the photographs.
6. Temporary plane table stations and magnetic declination.

7. The last page of the descriptive report, T 4714, contains a brief discussion of beach erosion on Sandy Hook as noted from comparison with the older surveys.

(b) T 4245 (1926), 1:10,000 (Whatman's paper)

T 4245 is in general agreement with this compilation except for changes in shoreline of Sandy Hook.

The compilation is complete and adequate to supersede T 4245 except for the following:

1. Low bluff lines along east and west sides of the Hook which are not shown on the compilation.

(c) T 3534 (1915), 1:20,000

The compilation is complete and adequate to supersede T 3534.

(d) The compilation is complete and adequate to supersede the area of the following older surveys which it covers. The older surveys are largely surveys of Sandy Hook and furnish interesting comparisons for beach erosion studies:

T 7 (1836)	T 413 (1853)
T 239 (1836)	T 486 (1855)
T 252 (1848)	T 894 (1862)
T 278 (1850)	T 1580 (1883)
T 342 (1851)	T 1721 (1885)

Comparison with H 5234 a (1932), 1:10,000

The compilation is in complete agreement with the topographic detail on H 5234 a and agrees with the hydrography.

Comparison with charts

(a) Chart No. 369

All landmarks and lights shown on the chart within the area of this compilation are shown on the compilation except:

1. "Hangar", on Sandy Hook, which has been omitted at the request of the Commanding Officer at Fort Hancock. See preceding pages 35, 39 and 40 of the descriptive report.
2. "Postal Tower", Sandy Hook, is omitted. This tower has been removed.
3. The compiler's attention is called to the fact that there are a number of piles, Lat. $40^{\circ} 23.93$, Long. $73^{\circ} 58.39$, that should be added to the chart.

(b) Chart No. 1215

The chart is in agreement with the compilation with the following exceptions:

The compiler's attention is called to the fact that:

1. A pier located at Lat. $40^{\circ} 24.9'$, Long. $74^{\circ} 01.5'$ no longer exists.
2. Landmark "TYPHON", Lat. $40^{\circ} 28.34'$, Long. $74^{\circ} 00.35'$ should be spelled "TYFON". See page 36 of descriptive report.

(c) Chart No. 52

The chart is in agreement with the compilation with exception:

1. "Siren Tower", Lat. $40^{\circ} 28.34'$, Long. $74^{\circ} 00.35'$ should be "TYFON", as discussed above under Chart No. 1215.

(d) Chart No. 543

The chart is in agreement with the compilation with the exception:

1. A pier at Lat. $40^{\circ} 24.9'$, Long. $74^{\circ} 01.5'$ no longer exists.

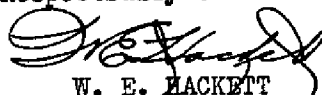
General

A better description of the accuracy as stated on page 37 of the descriptive report is two to five meters for intersected points and three to ten meters for other detail.

The projection has been checked and found satisfactory.

The instructions for the project have been complied with. The drafting is so poor that this compilation will not be published until redrawn.

Respectfully submitted,


W. E. HACKETT

July 22, 1935.

Inspected by B. G. JONES.

B. G. Jones

Survey No. T5100

Chart No. 369 and 543

*, Approved by the Division of Geographic Names, Department of Interior.

Ⓢ, Not Approved by the Division of Geographic Names, Department of Interior.

R, Referred to the Division of Geographic Names, Department of Interior.

IM 100

REVIEW OF AIR PHOTO COMPILATION NO. T 5100.

Chief of Party: Roswell C. Bolstad

Compiled by: (See page 2 of
Compilers Report.)Project: New York Air Photo Compilation Instructions dated: Nov. 15, 1932.
Party No. 12.

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)

See paragraph (B) Errors, and paragraph COMPARISON WITH OTHER SURVEYS.
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)

All information applied to this sheet from blueprints has been field checked by adequate measurements.
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)

All highwater line sketched in by actual field inspection and adequate measurements. Compilation is up-to-date.

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, rocks, and~~ and rocks, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41) No definite low water lines have been shown on this sheet; only character in accordance with par. 16(g).
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)
Submitted by Lieut. E.R. McCarthy, 1934.
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)

See paragraph on LANDMARKS.
11. All bridges shown on the compilation are accompanied by a note stating whether fixed or draw, clearance, and width of draw if a draw bridge. Additional information of importance to navigation is given in the descriptive report. (Par. 16c)
12. Geographic names are shown on the overlay tracing. The accepted local usage of new names has been determined and they are listed in the report, together with a general statement as to source of information and a specific statement when advisable. Complete discussion of place names differing from the charts and from the U. S. G. S. Quadrangles is given in the descriptive report, together with reasons for recommendations made. (Par. 64, and 66k)
13. The geographic datum of the compilation is N.A. 1927 and the reference station is correctly noted.
14. Junctions with adjoining compilations have been examined and are in agreement. (Par. 66j)
15. The drafting is satisfactory and particular attention has been given the following:
 1. Standard symbols authorized by the Board of Surveys and Maps have been used throughout except as noted in the report.
 2. The degrees and minutes of Latitude and Longitude are correctly marked.

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

(Par. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48)

16. No additional surveying is recommended at this time.

17. Remarks: Any additional reports and requirements affecting this area are referred to the reports of Lieut. E.R. McCarthy who is conducting field operations in this vicinity at the present time. Also see 1932 reports of Lieut. Comdr. Cotton.

18. Examined and approved;
Preliminary Review —

J. P. O'Donnell
J. P. O'Donnell
Surveyor.

Roswell C. Bolstad
Roswell C. Bolstad
Chief of Party

19. Remarks after review in office:

Reviewed in office by:

W. B. Jones 1/22/35

Examined and approved:

C. H. Green
C. H. Green
Chief, Section of Field Records

L. O. Lobbut
L. O. Lobbut
Chief, Division of Charts

Frederick L. Peacock
Frederick L. Peacock
Chief, Section of Field Work

Glenn
Glenn
Chief, Division of Hydrography
and Topography.

T-5100 A

T-5100A filed with T-5100 is a redrawn copy of the original T-5100 and is a duplicate of copies issued for sale this date, May 25, 1937.

On this sheet T-5100A the following changes have been made from the original:

1. Deletion of certain objects of military importance at Fort Hancock.
2. Deletion of numerous buildings.
3. Corrections to roads made from the original photographs.

It is not essential that T-5100 A be considered confidential.

B. J. Jones
5/27 /37

5100a

See also next page.

T 5100

The original T 5100 has been removed from the files and destroyed this date 7/14/39. The ^{original} copy contained certain military information which was unnecessary for charting purposes.

The number of T 5100 a (see preceding page) has been changed to T 5100 this date 7/14/39.

Examination of chart 543 to which the original T 5100 was applied on July 25, 1936 shows that the changes in T 5100 as noted on the preceding page do not affect chart 543.

It is no longer necessary that T 5100 be considered as confidential.

B.G. Jones 7/14/39