Form 504
21st June, 1928
DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. P. Paton, Director

S. & G. SURVEY
L. & A.
SEP 22
Acc. No.

State: Florida

DESCRIPTIVE REPORT
Topographic
Hydrographic
Sheet No. 4544

LOCALITY
Indian River
Cocoa Beach to Eau Gallie

1938
CHIEF OF PARTY
G. D. Cowie
Graphic Control

DESCRIPTIVE REPORT TO ACCOMPANY

TOPOGRAPHIC SHEET "A", EAST COAST OF FLORIDA

SEASON - SPRING, 1930.

U.S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

SEP 16, 1930

PROJECT #50

INSTRUCTIONS, STR. LYDONIA, DATED DEC. 31, 1929

GEORGE D. COWIE, CHIEF OF PARTY
DESCRIPTIVE REPORT TO ACCOMPANY

TOPOGRAPHIC SHEET "A", EAST COAST OF FLORIDA

SEASON - SPRING, 1930.

PROJECT #50

INSTRUCTIONS DATED DEC. 31, 1929.

PURPOSE OF SURVEY

This topographic survey was executed for two purposes: to locate signals along the shore for the control of hydrographic surveys, and to furnish control for aerial surveys.

The control for aerial surveys consisted in locating structures, roads -- and particularly crossroads--which could be readily spotted on the aerial photographs. This was supplemental to triangulation which determined the position of the most outstanding objects in the area and of stations on points of land conspicuous in the aerial photographs.

GENERAL DESCRIPTION

This is a low, flat, sandy country with no landmarks other than man-made structures. The coastal strip is covered by palmetto growth, with a few small isolated palm trees. Banana Island is covered with orange groves. There are a few groups of pine trees.

The shore line of the entire coast consists of sandy beach.

DETAILED DESCRIPTION

Cocoa Beach extends for about one half mile south of Casco. There are numerous beach cottages and several improved roads here. South of Cocoa Beach extend palmetto-covered sand ridges parallel to the shore. From Cocoa Beach to Δ Cocoa the shore side of these dunes is eroded into steep sandbanks about ten feet high. The edge of the palmetto growth at the top of these banks lies 6 meters inshore from M.H.W. line.

The sea-eroded bank between Δ Cocoa and Δ Tuck gradually diminishes in height from 10 feet to 6 feet. The edge of the palmetto growth is 5 meters inshore from the M.H.W. line.

Near Δ Concrete is a small, white, stucco-covered house and wooden barn inclosed by a fence. A shed lies south of the enclosure.
Between △ Concrete and △ Tripod all the terrain consists of palmetto-covered sand ridges. A sand ridge about twenty feet high lies parallel to the shore about 100 meters inshore. This slopes seaward to eroded banks about 5 feet high and landward to a depression through which runs a swampy road. Palmetto growth covers the area to the top of the eroded banks. The edge of this palmetto growth is 6 meters inshore from M.H.W. line.

The palmetto-covered sand ridges continue from △ Tripod to △ Civet, but are slightly higher. The eroded banks are about 10 feet high; the edge of the palmetto growth is 5 meters inshore from M.H.W. line. Canova Casino is a two-storied square structure with an orange-colored stucco finish. A fishing pier extends seaward from the casino.

From △ Canova to △ Blue the sandbanks are 8 feet high; the edge of the palmetto is 4 meters inshore from M.H.W. line.

**SURVEY METHODS**

The topographic beach signals were located by traverse between the triangulation stations along the beach. From △ Lucky to △ Cocoa distances were measured by ordinary rod readings. From △ Cocoa southward for the remainder of the sheet distances between set-ups were measured with a three-hundred foot tape. The set-ups were spaced 600 meters apart. All traverse closures were within the required limits. The closing errors of the sections are listed on a sheet attached to this report.

Due to the height of the sandbank bordering the beach it was impractical to rod the roads parallel to the beach while the traverse was in progress. These roads, necessary for the aerial photo control, were located later. Since a good part of these roads were in low ground between growths of palmetto, the seeing of signals from the ground was difficult. The plane-table was mounted, therefore, on the truck. The truck was stopped wherever it was desired to secure topographic detail, the table leveled, and the position determined by three-point fix.

Because the coastal area between Latitude 28° 14' and △ Canova was missed by the aerial photographs, effort to secure the detail of this area was made. From △ Tripod north to △ Concrete the road passes through low swampy ground; in fact, for most of the distance the water was above the running-boards of the truck. The road could not be traveled further north than Lat. 28° 12'. This road, therefore, between Lat. 28° 12' and 28° 13' 20" is merely sketched.

The inland control for the aerial photographs consists of triangulation stations located on definite points of land easily spotted on the photographs. The distances of the shoreline and grassline from these stations are given with the descriptions of stations in a sketch-book accompanying this series of topographic sheets.
The area within ½ mile of \( \Delta \) Ban was surveyed by traverses originating from \( \Delta \) Ban. A steel tape was used along the roads. The shoreline near \( \Delta \) College 2 was surveyed by traverse from \( \Delta \) College 2.

**MAGNETICS**

Magnetic observations were made at \( \Delta \) Palmetto and \( \Delta \) Blue with a compass declinometer. At \( \Delta \) Palmetto observations with a declinatoir were also taken. The results with the declinatoir checked those obtained with the declinometer as closely as could be scaled on the sheet.

**Declination obtained with Declinometer:**

\[
\begin{align*}
\Delta \text{ Palmetto} & \quad 0^\circ 34.0' \ E \\
\Delta \text{ Blue} & \quad 0^\circ 39.0' \ E
\end{align*}
\]

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L.S. Hubbard

H & G. Engr.
<table>
<thead>
<tr>
<th>Triangle</th>
<th>Location 1</th>
<th>Location 2</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUCKY</td>
<td>BEACHY</td>
<td></td>
<td>0 meters</td>
</tr>
<tr>
<td>BEACHY</td>
<td>COCOA</td>
<td></td>
<td>10 &quot;</td>
</tr>
<tr>
<td>COCOA</td>
<td>TUCK</td>
<td></td>
<td>4 &quot;</td>
</tr>
<tr>
<td>TUCK</td>
<td>PALMETTO</td>
<td></td>
<td>0 &quot;</td>
</tr>
<tr>
<td>PALMETTO</td>
<td>CONCRETE</td>
<td></td>
<td>0 &quot;</td>
</tr>
<tr>
<td>CONCRETE</td>
<td>TRIPOD</td>
<td></td>
<td>3 &quot;</td>
</tr>
<tr>
<td>TRIPOD</td>
<td>CIVET</td>
<td></td>
<td>9 &quot;</td>
</tr>
<tr>
<td>CIVET</td>
<td>BLUE</td>
<td></td>
<td>6 &quot;</td>
</tr>
<tr>
<td>OBJECT AND DESCRIPTION</td>
<td>LATITUDE</td>
<td>D.M.</td>
<td>LONGITUDE</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------</td>
<td>------</td>
<td>-----------</td>
</tr>
<tr>
<td>White house, red roof</td>
<td>28 19</td>
<td>538</td>
<td>80 36</td>
</tr>
<tr>
<td>Church</td>
<td>28 18</td>
<td>1419</td>
<td>80 36</td>
</tr>
<tr>
<td>House, chimney</td>
<td>28 18</td>
<td>1556</td>
<td>80 36</td>
</tr>
<tr>
<td>House</td>
<td>28 18</td>
<td>1111</td>
<td>80 36</td>
</tr>
<tr>
<td>Old house, half broken down</td>
<td>28 17</td>
<td>91</td>
<td>80 36</td>
</tr>
<tr>
<td>Old house</td>
<td>28 16</td>
<td>1797</td>
<td>80 36</td>
</tr>
<tr>
<td>Shed, red roof</td>
<td>28 14</td>
<td>132</td>
<td>80 36</td>
</tr>
<tr>
<td>Shed</td>
<td>28 13</td>
<td>1421</td>
<td>80 36</td>
</tr>
<tr>
<td>Concrete house, one-storied, light cement</td>
<td>28 13</td>
<td>1123</td>
<td>80 36</td>
</tr>
<tr>
<td>Shed</td>
<td>28 13</td>
<td>1082</td>
<td>80 36</td>
</tr>
<tr>
<td>Shed</td>
<td>28 13</td>
<td>1061</td>
<td>80-36</td>
</tr>
<tr>
<td>Shed</td>
<td>28 11</td>
<td>460</td>
<td>80 35</td>
</tr>
<tr>
<td>Pier, center of outer face</td>
<td>28 08</td>
<td>562</td>
<td>80 34</td>
</tr>
<tr>
<td>Shack</td>
<td>28 08</td>
<td>243</td>
<td>80 34</td>
</tr>
<tr>
<td>Lone palm tree</td>
<td>28 08</td>
<td>528</td>
<td>80 35</td>
</tr>
<tr>
<td>Palm tree</td>
<td>28 08</td>
<td>270</td>
<td>80 35</td>
</tr>
<tr>
<td>Palm</td>
<td>28 08</td>
<td>135</td>
<td>80 35</td>
</tr>
</tbody>
</table>
LANDMARKS FOR CHARTS

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted.

George D. Cowie, Chief of Party.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>POSITION</th>
<th>METHOD OF DETERMINATION</th>
<th>CHARTS AFFECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caso, Cocoa Beach Casino</td>
<td>Latitude N.A.</td>
<td>Triang 3259, 162</td>
<td></td>
</tr>
<tr>
<td>Concrete House, light colored</td>
<td>Longitude 1123</td>
<td>N.A. Triang 3259, 162</td>
<td></td>
</tr>
<tr>
<td>Canova Casino, two-storied, orange</td>
<td>N.A. Topo.</td>
<td>Triang 3259, 162</td>
<td></td>
</tr>
<tr>
<td>Tank, Eau Gallie, Skeleton tower</td>
<td>Datum 1327.7</td>
<td>Triang 3259, 162</td>
<td></td>
</tr>
<tr>
<td>Lighted Beacon, Eau Gallie</td>
<td>N.A. Triang 3259</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank, Oleander Hotel, Eau Gallie</td>
<td>N.A. Triang 3259</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaffs and like objects are not sufficiently permanent to chart.
DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

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 Letter A

REGISTER NO. 4544

State Florida

General locality East Coast of Florida Indian River

Locality Cocoa Beach to Eau Gallie

Scale 1-20,000 Date of survey April 1930

Str. LYDDEA

Vessel

Chief of Party George D. Cowie

Surveyed by L.S. Hubbard

Inked by L.S. Hubbard

Heights in feet above M.H.W. to ground to tops of trees

Contour Approximate contour Form line interval feet

Instructions dated December 31, 1929

Remarks

U.S. NOVEMBER 1930