DESCRIPTIVE REPORT

State: FLORIDA
Locality: BISCAYNE BAY
Key: BISCAYNE AND VIRGINIA KEY

1935

CHIEF OF PARTY

E. R. McCarthy
TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 

REGISTER NO. T - 5627

State. Florida.

General locality. Biscayne Bay.

Locality. Key Biscayne and Virginia Key.

Scale. 1:10,000. Date of survey, January 25, 1935.

Vessel. Shore Party, Project H 158.

Chief of party. E. R. McCarthy.

Surveyed by. See data sheet attached to descriptive report.

Inked by. 

Heights in feet above to ground to tops of trees.

Contour, Approximate contour, Form line interval .


Remarks. Compiled from aerial photographs at a scale of 1:10,200

for reproduction by the photo-lithographic process at a scale of 1:10,000.
DATA SHEET

SHEET REGISTER NO. T - 5627

Portion of work  Done by  Date completed.

Projection By:  W. J. Mignola  June 5, 1935.
Radial Plot By:  John C. Mathisson.  June 8, 1935.

Area of Sheet, 5.5 square statute miles.
Length of shoreline, 19.0 statute miles.
Length of rivers and canals, 2.1 statute miles.
DESCRIPTIVE REPORT

to accompany

PHOTO-TOPOGRAPHIC SHEET

REGISTER NO. T - 5627

KEY BISCAYNE AND VIRGINIA KEY

FLORIDA

1935

SCALE 1:10,000

E. R. McCarthy, Chief of Party.

John

John C. Mathisson, In charge, photo-compilation,

PROJECT INFORMATION:

General information, appertaining to the entire project, is contained in the General Descriptive Report which is attached to the report for Sheet Register No. T - 5629.

DESCRIPTION OF AREA:

This sheet covers the area of Key Biscayne and Virginia Key and the surrounding shoal areas. These two Keys form the east shore of Biscayne Bay south of Miami Beach.

The topography of Virginia Key is very low, the average elevation being not more than five feet above mean high water. The highest part of the Key is found along the southeast side where the soil is sandy and covered with a thick growth of brush and a few scattered Australian pines.

The southeast shoreline is sandy and the steep gradient of the beach makes a rather narrow stretch between the high and low water lines. The northwest shoreline is mangrove and the high water line or the high ground line was indeterminate from the photographs. The entire northwest side of the Key is covered with mangrove which gives away inshore to brush and scrub trees. These trees and brush have begun to grow where the marsh areas have been drained, causing the mangrove to die out.

The Key is undeveloped. Several ditches and a channel have been dug to drain the area for mosquito control.

A portion of Key Biscayne has been extensively developed by private interests. A great deal of the original mangrove marsh has been cleared and
Note. All lines delineating shoal areas on this compilation have been shown dashed. While parts of these areas may be bare at low water as in the case mentioned on the opposite page, the lines do not in most cases represent low water line.

BGd.
1/27/36
spoil, dredged from the surrounding water area, used to fill the area.
Extensive cultivation of an experimental nature has been accomplished during
the past ten years. The area is planted almost entirely in cocomut palms
and various tropical fruits. At this time the cultivation has been dis-
continued. The north and south ends of Key Biscayne have not been developed.

A channel has been dredged across Key Biscayne between the property
of the Matheson Estate on the north and the Deering Estate on the south. The
channel was dredged to depth of approximately 16 feet but is closed to the
flow of the tide by a dam under the bridge near the east end. The west end
is also closed to navigation by a chain across the channel. The division line
between the above properties is the row of pine trees just south of this
dredged channel.

There is a dredged channel into the small mangrove fringed bay on the
southwest side of Key Biscayne. This channel is marked by four stakes placed
at the four corners of the cut and locally maintained. There is approximately
6 feet of water in this channel. A series of soundings, spotted on field
photograph No. 108-B, were obtained in the channel and the small bay. These
soundings were obtained at 8:30 A.M. on July 12, 1935. The channel stakes
were not located. (Bal. 6/27/36)

There is a natural channel on the northwest side of Key Biscayne that
does not appear on the present editions of the published charts of the area.
This channel is partially obstructed by a bar covered three feet at mean low
water. The remaining portion of the channel is from 4 to 9 feet deep. A
line of soundings, taken at 11:00 A.M. on July 12, 1935, are spotted on photo-
graphs Nos. 101-C and 102-C. It is believed that these soundings are spotted
very accurately as the points of the shoal were very clear at the time the
soundings were taken. (Photographs not in office this date but will be filed
in from now when received from the field.)

There is a three pile beacon at the entrance to the channel south of
triangulation station Hurricane. This beacon, as well as the single pile
beacon to the west, are maintained by the Matheson Estate. These two beacons
have been shown on the compilation.

The large shoal area north of Biscayne Channel is bare approximately
1 foot at mean low water. This area is marked with deep 'pot' holes, averaging
from 6 to 8 feet deep. These deeper areas have been shown on the compilation.
See note on opposite page.

The wreck of an old sailing bark lies on the south edge of the above
shoal, just north of Biscayne Channel. Only the port side of the ship remains
and the keel fastenings project about six feet above mean low water.

The sunken wreck, charted northeast of Key Biscayne was reported in
a letter to the Director on July 17, 1935. (15°43' N, 80°08')

A portion of Key Biscayne lies within the city limits of Coral Gables
while Virginia Key is within the corporate limits of the city of Miami Beach.
Definite information with which to delineate these limits was not obtained
but it is believed that the north city limits of Coral Gables is the center
line of North Cross Road, shown on the compilation.
GENERAL INFORMATION:

The area of this sheet is covered by a single flight of five-lens photographs. These photographs are Nos. 91 to 113 inclusive and were secured at 1:15 P.M. on January 25, 1935.

An index of photographs is appended to the General Descriptive Report of the area.

CONTROL:

For a description of the control used in the compilation of this sheet, see the General Descriptive Report which is made a part of the report for Sheet Register No. 7 – 5629.

There is appended to this report a list of triangulation stations used in the compilation. This list shows the plotting distances used for the scale of the sheet, 1:10,200.

COMPILATION METHOD:

The usual radial line method was used in the compilation of this sheet. The excellent distribution of control made it possible to develop the radial plot without difficulty. An adjustment of the radial plot was not necessary.

INTERPRETATION OF PHOTOGRAPHS:

Generally, the photographs were very clear and adequate for charting purposes. A few cases of questionable interpretation due to the detail being removed from the center of the photographs were encountered. These areas were inspected in the field.

The shoal areas and natural channels were distinct on the photographs when these features appeared at or near the centers of the prints. In order to delineate the western limits of the shoals along the west side of Key Biscayne and Virginia Key, it was necessary to inspect them in the field due to the fact that these features appeared out on the wing photographs. The accuracy of this western limit is questionable because these shoal areas break away gradually into the deeper water of Biscayne Bay.

INFORMATION FROM OTHER SOURCES:

Most of the topographic detail appearing on this compilation was obtained from the photographs of the area. The location of four new groins at Cape Florida were obtained from sextant fixes. These groins were constructed to retard erosion.

The location of the various single pile beacons were also obtained by sextant fixes. A third angle was taken to obtain a check on the position. The fixes were plotted on the compilation with a steel protractor. Form 567 has been submitted to cover the location of these beacons. (Submitted with D.R. 7-628.)

A map of the developed portion of Key Biscayne was used from which to obtain the names of the various roads appearing on the compilation.
COMPARISON WITH CONTEMPORARY SURVEYS:

Only the northern tip of Virginia Key is duplicated by contemporary surveys in the area. This area is shown on Sheet Register No. T - 56275, surveyed during 1934 by the party of H. A. Cotton.

Very good agreement is noted between this survey and the detail as it appears on the present compilation.

COMPARISON WITH PREVIOUS SURVEYS:

The area of this sheet is covered by Air-photo Compilation No. 4529 made during 1928.

The high water line along the sand beach on the east side of Key Biscayne and the high water line on Southwest Point shows very good agreement with the present compilation. The delineation of the channel across Key Biscayne is in excellent agreement between the two sheets. Generally, the roads shown solid on the original compilation agree very well with the present sheet.

Differences are noted in the delineation of the edge of the mangrove on the northwest side of Key Biscayne. The general detail is good but the area is shifted 20 or 25 meters southeast of the correct position.

Extensive developments, accounting for differences, have taken place on Key Biscayne since the date of the original survey. The channel across Key Biscayne has been completed and a bridge and two jetties constructed at the east end. Differences are also noted which were due to dredging operations in South Basin and Hurricane Harbor.

Considerable erosion is noted at Cape Florida. The southern tip of the Cape shows about 50 meters erosion since the date of the last survey. Groins have been constructed to protect the beach and the old lighthouse on the east side of the Cape.

The delineation of the high water line on the southeast side of Virginia Key is not in agreement with the present compilation. This difference reaches a maximum of approximately 60 meters near the northeast end of the Key. The northwest edge of the mangrove also show changes since the previous survey, due partially to the mangrove growth extending out into the shoal area of Biscayne Bay.

The dredged channel and mosquito control ditches on Virginia Key have been dug since the date of the previous survey.

LANDMARKS:

'Standmarks for Charts' for the area of this sheet were submitted on September 17, 1935. A duplicate copy of this list is attached to the descriptive report for Sheet Register No. T - 4529.

A copy of the permanent ( non-floating ) aids to navigation located in the area of this sheet, is attached to the descriptive report for Sheet Register No. T - 5628.
CONFLICTING NAMES:

The name of the two natural channels south of Key Biscayne do not appear on the present edition of the published chart of the area. These are Cape Florida Channel and Biscayne Channel. The latter is also known locally as Old Flagler Channel, but the use of Biscayne Channel is more common. It is recommended that these two names be placed on future editions of charts of the area.

South Basin and Hurricane Harbor are names used by the owners of the private estate on Key Biscayne. Because these features were made and named by the owners and because they are in general use, it is recommended that they be placed on future editions of published charts of the locality.

RECOMMENDATION FOR FURTHER SURVEYS:

It is believed that this compilation fully covers the area and that further surveys are not needed at the present time.

The compilation is believed to have an error of 2 meters or less for well defined detail of importance for charting and other detail, except the indefinite shoal areas, are believed to be within 4 meters of the actual location. The western limits of some of the shoal areas, when they appear out on the wing prints, will exceed the above limits.

This compilation is well controlled and has been carefully compiled but a better estimate of the accuracy for work on this scale is as to 0.5 mm for intersected points and as to 0.8 mm for other detail.

John G. Mathison,
Jr. H. & G. E.,
U. S. Coast and Geodetic Survey.
<table>
<thead>
<tr>
<th>STATION</th>
<th>POSITION (North American Datum)</th>
<th>PLOTTING DISTANCES</th>
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<tr>
<td>Key, 1934</td>
<td>Lat. 25° 45' 96.4 L 1750.2 L 1623.6 (1715.9)</td>
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<td>Cape Florida, Light-house</td>
<td>Lat. 25° 39' 1812.6 L 33.7 L 1777.1 (33.0)</td>
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<tr>
<td>(old tower) 1850, 1930</td>
<td>Long. 80° 09' 625.0 L 1048.3 L 612.8 (1027.7)</td>
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<td>Cape Fl. Chan. R.R. 1930</td>
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<td>Light No. 8, 1930</td>
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</table>

Names underlined in red approved by: D. C. Nagle on 1-29-34

M 234
Comparison with Recent Planstable Surveys

T 6275 (1935), 1:10,000

Only the northern tip of Virginia Key is common to the area of this compilation. The temporary beacons in latitude 25° 45', longitude 80° 08', a stake and the pipe awash just off the coast of Virginia Key were all transferred in this office. There is good agreement over the common area and all detail on T 6275 is shown on this compilation for this area. Detail transferred by L. A. McGann, checked by R. M. Berry, Jan. 26, 1936.

Comparison with Previous Topographic Surveys

T 336 (1851), 1:20,000

The survey for T 336 covers the entire area of this compilation as well as a portion of the west shore of Biscayne Bay. These islands show no development on T 336 and there are many changes. T 336 is superseded by this compilation over the common area.

T 1049 (1887), 1:20,000

The survey for T 1049 covers only a small portion of this compilation. The greater portion of T 1049 extends north to the head of Biscayne Bay. The high water line of Virginia Key is the only topographic detail on T 1049 in common with this compilation. This portion of T 1049 is superseded by this compilation.

T 3375 (1913), 1:20,000

The survey for T 3375 covers the coastline only from Indian Creek in latitude 25° 50' to Cape Florida in latitude 25° 40'. Over the common area the changes in the position of the high water line are comparatively small. Largest changes of position occur on Virginia Key where differences range between 10 and 70 meters. Differences in position of high water line on Key Biscayne are smaller. T 3375 is superseded by this compilation over the common area.

T 3758 (1919), 1:20,000

The survey for T 3758 covers Biscayne Bay and the outer coast between latitude 25° 44' and latitude 25° 56'. T 3758 covers Virginia Key and a portion of Key Biscayne. In the mangrove areas where the position of the high water line is indefinite T 3758 is not complete. T 3758 is superseded by this compilation over the common area.

T 3759 (1919), 1:20,000

The survey for T 3759 covers the lower end of Biscayne Bay between latitude 25° 36' and latitude 25° 43'. The lower portion of Key Biscayne
is within the common area. The changes of detail are not prominent except for the natural channel which crosses the island in approximately latitude 25° 41'. Erosion has taken place on the outer coast and amounts to between 10 and 40 meters. A change of culture consists of a palm growth in place of mangrove in an area on the west side of the island between latitude 25° 41' and 25° 41.6'. The compilation is more detailed than the survey for T 3759 in places where the high water line is indefinite on account of mangrove growth.

T 4529 (1930), 1:20,000 (Air photo compilation)

The entire area of compilation T 5627 is covered by T 4529. A complete comparison is contained in the preceding report for T 5627 on page 4 and no additional discussion is necessary. T 4529 is superseded by this compilation over the common area.

Comparison with Charts Nos. 583 and 1248

Landmarks and aids to navigation are shown complete on this compilation to the date of the Local Light and Buoy List for 1935. There are two privately maintained pile beacons on this compilation which are not shown on these charts, one at latitude 25° 41', longitude 80° 10.7', the other at latitude 25° 41.1', longitude 80° 10.95'. A pile is shown on these charts at latitude 25° 41.15', longitude 80° 11'. This is believed to be the old position of one of these pile beacons.

The sunken wreck shown on the compilation at latitude 25° 43.6', longitude 80° 08.1' is shown on chart 1248 but not on chart 583.

Other changes to be made to these charts are discussed under the comparison with T 4529 on page 4 of the preceding descriptive report.

Leonard A. MacCaim
Jan. 28, 1936.

W.B.C. Jones
Chief of Party: E. R. McCarthy

Project: Shore Party, HT 158

Instructions dated: Nov. 17, 1933.

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. Blueprints and maps from other sources which were transmitted by the field party contain sufficient control for their application to the charts. (Par. 28)

No maps transmitted.

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."
8. The representation of low-water lines, reefs, coral reefs, and
    grooves, 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 587 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 naviga-
    tion is given in the descriptive report. (Par. 16c)
    No bridges except over private waterways.

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 North American
    and the reference station is correctly noted. (unadjusted)

14. Junctions with adjoining compilations have been examined and are
    in agreement. (Par. 66f)

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 Longi-
       tude 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:

18. Examined and approved;

ER. McCarter
Chief of Party

19. Remarks after review in office:

Reviewed in office by: Leonard A. McIlvaine, W.K. Jones.

Examined and approved:

C. H. Green
Chief, Section of Field Records

W. B. Borden
Chief, Section of Field Work

E. H. Smith
Chief, Division of Charts

J. W. Weeks
Chief, Division of Hydrography and Topography.