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Diag. Chart No. 12-51-1

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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

O. H. Tittmann
Superintendent.

State: Fla.

DESCRIPTIVE REPORT.

Hydro. *Sheet No:* 2991

LOCALITY:

Approaches and
Entrance to Bahia
Honda Harbor

1909

CHIEF OF PARTY:

W. E. Parker

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Descriptive Report
to accompany
Hydrographic Sheet No. 2991
Reserves of Approaches to Bahia Honda
Florida.
March-April 1909

Descriptive Report to accompany hydrographic sheet No. 2991 Resurvey of Approaches to Bahia Honda, Florida.

1 Changes in shoreline. The outside shore line of Bahia Honda Island has undergone considerable changes since the last survey. The south-western end of the island, which is of sand formation, has been cut away for a distance of about 400 meters, leaving the present H.W. shoreline as shown by the broken line sketched on the sheet. The new shoreline meets the old near a "Coco", beyond which there appears to be no changes until nearly to the eastern corner of the island. The new Δ "W. Bahia Honda 2" plots approximately 380 meters north of the old station and it (the new station) set only 22 meters north of the shore. West and north of Δ W. Bahia Honda 2 no natural changes were detected.

The little islet shown south of "Pile" is of coral rock formation, covered in places with a thin layer of sand, and evidently was at one time the southwestern extremity of Bahia Honda. It supports a thin growth of bushes, not mangroves, and has the appearance of being above water at all stages of the tide. It was not submerged at any time during our stay here.

The southeastern corner of Bahia Honda Island has built out some and the new Δ "Bahia Honda 2", which plots outside the old shore line is fully 30 meters from the water.

The corrections to shore line noted here and sketched on the sheet are obtained from sextant angles and measured distances -

from this Δ stations. More complete survey of this island is not warranted in view of the fact that the entire topography will shortly be changed in constructing the railroad.

At West Summerland Keys, along the east side of Big Pine Key from Δ Sand to Δ Pine and at the southern tip of No Name Key no natural changes in the shore line were detected. In fact wherever the shore line was tested, and in plotting new stations, it was found to agree closely with that shown on the sheet.

2 Artificial changes. Railroad trestles connect the West Summerland Keys and Big Pine Key. Concrete arches are being built from Bahia Honda Key, about 100 meters north of Δ W. Bahia Honda 2, across the channel to the eastern W. Summerland Key. A line of piles extends from the eastern W. Summerland Key, as shown on the sheet to ⊙ "Cable", which is the outer pile, and from Bahia Honda Key west of Δ W. Bahia Honda 2 to ⊙ "Pile", which is also the outer pile of this group. From ⊙ "Cable" to ⊙ "Pile" a telegraph submarine cable is to be laid.

On the middle and eastern W. Summerland Keys construction camps have been built, some of the buildings of which show prominently from the Channel. The flag pole, ⊙ "Flag", the store house, the largest and most easterly building, the eastern gable of which is ⊙ "Store", and the two story office building, small but highest, the eastern gable of which is

"Office" are all visible from the edge of the bank at the Strait of Florida.

3 Changes in hydrography. The most marked change in depth appears in the vicinity of black buoy No 12. The photographic enlargement of hydrographic sheet #669 furnished from the office shows a narrow ridge extending southward from the shoals of W. Summerland Keys nearly to the position of buoy No 12, over which depths of from 11 to 17 feet are given. We found no indication of this ridge but good water completely surrounding the buoy. Also 23 feet are shown about 3/4 of a mile southward from this buoy which we found not less than 25 feet.

We found better water east of the red buoy than is shown on the photo.

A little over 1/3 of a mile south and 150 metres west of the red buoy we found 22 feet over rock and sand bottom where the photo. shows from 23 to 25 feet.

On the whole the new survey agrees well with the old and where there is a difference the new survey usually gives deeper water.

4 Currents. The party had no opportunity to gather accurate current data without prolonging its stay in the field or slighting other work. When the sea was too rough for hydrography there was heavy tide rips in the channel preventing anchoring the launch there.

One set of only four measurements by current pole and line was made from an anchorage between the red buoy and

buoy No 1/2. These showed a fair current at low tide and near the end of ebb current. This of course does not fairly represent conditions here.

The current in the channel between these buoys probably attains a velocity of two knots at the maximum ebb. It increases in velocity as the entrance is approached until between the islands a maximum of at least 4 knots is reached at certain stages of the ebb tide. The flood current appears weaker. South of the buoys the current falls off rapidly and merges with the current of Hawk Channel. The current at the entrance to Bahia Honda Harbor appears to be governed principally by the tides and follows the direction of ebb and flow of tide, flood current sets north and ebb south. Between Bahia Honda and West Summerland Islands the currents have been observed to change from one to two hours after the change of the tides. Heavy tide rips may be expected between the red and black buoys and the entrance whenever even a moderate breeze blows contrary to the current.

Sponge fishermen, who have worked ~~worked~~ these waters for years, claim the currents here as well as at other openings between the keys have more than doubled since work on the railroad began.

5 Buoys - During April three new buoys were planted off Bahia Honda as shown on the sheet.

The outside channel buoy (black & white)

marks the best water across the bank. Its position is well chosen.

The red buoy at the southwestern extremity of the shoal extending out from Bahia Honda Island serves as a guide for small vessels. There are however depths of from 20 to 22 feet south and a little west of this buoy. 22 feet was found at a distance of over 1/3 of a mile S 15° W from it.

The black buoy No 1/2 is surrounded by deep water on all sides.

6. ~~Sailing directions~~ To enter Bahia Honda Harbor with the best water cross the outside bank close to the channel buoy and steer N 18° W (true) for the black buoy No 1/2. When nearly to the buoy change course to N x E or N x E 1/2 E to pass to the eastern half of the entrance.

7. ~~Surveys~~ - Δ Bahia Honda 2, Δ W. Bahia Honda 2 and Δ Little Pine 2 are all new stations determined by Asst Winston and plotted from his field computations.

Δ Codfish, Δ Mid. Summerland 2, Δ Sand and Δ Pine are new stations determined by this party from the base Little Pine 2 to W. Bahia Honda 2 furnished by Asst Winston.

○ Coco ○ Key, ○ Stye, ○ Flag and ○ Office were determined by theodolite cut from the Δ stations, but were here treated graphically.

○ Pile and ○ Cable were occupied by sextant and plotted as three point problems.

J. E. Parker
Asst C. & G. S.
Chief of Party.

Hyd. Sheet No. 2991. June 28, 1909.

The ridge which runs SSW (approx) from O Pile and entirely across the area surveyed is not sufficiently developed also the 21 ft spot about 1 mile south of O West and several shoals near the southern limit of the work should have been examined.

H. L. Simons

Verified Nov. 17, 1910.
R. L. Johnston.

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Coast and Geodetic Survey

O. H. Tittmann, Superintendent

U. S. G. SURVEY
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MAY 12 1909
Acc. No.

Hydrography of approaches to Bahia Honda, Florida from Straits of Florida to entrance.

by the Party in charge of W. E. Parker, Asst.

Begun March 29, 1909
Ended April 22, 1909

Scale - 1:20,000

Statistics -

Date 1909	Letter	Vol.	Positions	Soundings	Miles	Vessel
April 9	a	1	75	209	15	Launch
" 15	b	1	40	108	7½	"
" 16	c	1	57	163	9	"
" 19	d	1	137	379	26	"
" 20	e	1	127	345	19	"
" 21	f	1	26	72	4	"
" 22	g	1	1	3	½	"
Totals			463	1279	81	

Plotted & inked by H. L. Simons
Verified by R. L. Johnston