

EXAMINATION OF BOCA GRANDE AND CHARLOTTE HAR-  
BOR, FLORIDA.

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L E T T E R

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORT OF  
EXAMINATION OF BOCA GRANDE AND CHARLOTTE HARBOR,  
FLORIDA.

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DECEMBER 7, 1899.—Referred to the Committee on Rivers and Harbors and ordered  
to be printed.

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WAR DEPARTMENT,  
*Washington, December 5, 1899.*

SIR: I have the honor to transmit herewith a letter from the Chief  
of Engineers, United States Army, dated November 24, 1899, together  
with copy of a report from Capt. Henry Jervy, Corps of Engineers,  
dated September 5, 1899, of a preliminary examination made by him  
in compliance with the provisions of the river and harbor act of March  
3, 1899, of Boca Grande and Charlotte Harbor, Florida.

Very respectfully,

ELIHU ROOT,  
*Secretary of War.*

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

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OFFICE OF THE CHIEF OF ENGINEERS,  
UNITED STATES ARMY,  
*Washington, November 24, 1899.*

SIR: Among the localities for which provision for examination and  
survey is made by the river and harbor act approved March 3, 1899, is  
Boca Grande and Charlotte Harbor, Florida, with a view to obtaining  
a depth of 24 feet of water over the bar at the entrance of the harbor  
and 18 feet thence up to Punta Gorda.

The preliminary examination provided for was made under direction  
of Capt. Henry Jervy, Corps of Engineers, and his report of Sep-  
tember 5, 1899, of the results, is submitted herewith. The informa-

tion secured indicates that while an increased depth over the bar would probably be of material benefit to the commercial interests by enabling vessels to load to their full capacity in the anchorage grounds within the entrance, there is no apparent demand for a deeper channel from the entrance up to Punta Gorda.

The existing project for the improvement, now nearing completion, provides for a mean low-water depth of 12 feet up to a point abreast of the railroad wharf at Punta Gorda, and a greater channel depth than this could be secured only at an extraordinary cost. Accordingly, the local officer was directed, by authority of the Secretary of War, to prepare and submit a plan and estimate of cost of securing increased depth on the bar, and I have the honor to submit his report of November 3, 1899, presenting such plan and estimate, with map. The improvement proposed is to excavate a channel across the bar 300 feet wide and 24 feet deep (to be dredged to a depth of 25 feet, allowing 1 foot for back filling), at an estimated cost of \$140,000. The annual expense for maintenance will probably amount to \$1,000.

Very respectfully, your obedient servant,

JOHN M. WILSON,  
*Brig. Gen., Chief of Engineers,*  
*U. S. Army.*

Hon. ELIHU ROOT,  
*Secretary of War.*

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PRELIMINARY EXAMINATION OF BOCA GRANDE AND CHARLOTTE HARBOR, FLORIDA, WITH A VIEW TO OBTAINING A DEPTH OF 24 FEET OF WATER OVER THE BAR AT THE ENTRANCE OF THE HARBOR AND 18 FEET THENCE UP TO PUNTA GORDA.

UNITED STATES ENGINEER OFFICE,  
*Tampa, Fla., September 5, 1899.*

GENERAL: I have the honor to present the following report upon the preliminary examination of "Boca Grande and Charlotte Harbor, with a view to obtaining a depth of 24 feet of water over the bar at the entrance of the harbor and 18 feet thence up to Punta Gorda," made in accordance with section 22 of the river and harbor act approved March 3, 1899. The preliminary examination was made by Lieut. Frank C. Boggs, jr., Corps of Engineers, to whose report herewith attention is respectfully invited. The present examination was confined to taking a line of soundings along the existing channels as the locality is under improvement and all necessary data as to hydrography and commercial statistics were already available.

The project now in progress was inaugurated by the river and harbor act of September 19, 1890, and contemplates the formation of a channel 12 feet deep at mean low water and 200 feet wide from the wharf at Punta Gorda to Boca Grande Pass. The original channel depth was 19 feet on the bar, 9 feet on the shoals south of Cape Haze, and 10 feet upon the shoals near the Punta Gorda Wharf.

The work thus far done has resulted in a channel of the prescribed depth throughout and 200 feet wide throughout except near the wharfs. The \$25,000 appropriated by the act of March 3, 1899, is for the completion of the project, based on the revised estimate made in 1896 of

\$100,000 for the whole work. This amount will suffice to widen the upper portion of the cut near the wharfs to within 5 or 10 feet of the prescribed width, but will leave two sections below Long Dock considerably less than the width called for. One of these sections is 160 feet wide for a distance of 4,729 feet and the other 120 feet wide for a distance of 1,764 feet.

Lieutenant Boggs's examination indicates that shoaling has occurred in the dredged channels to a greater extent than expected, as no complaint has been made by the shipping interests of any lack of depth in these channels. The great bulk of the commerce from Punta Gorda and the only part of it requiring deep-draft vessels consists of the phosphate shipments.

Phosphate rock is now brought down from the mines up Peace River on barges and loaded upon vessels at the Boca Grande entrance. The vessels are loaded until they can just cross the bar and their cargo is completed, if necessary, on the outside. The depth over the bar is now guaranteed by the local towage company is 20½ feet for sailing vessels and 21½ feet for steamships. This necessarily operates as a restriction upon the draft of vessels seeking phosphate cargoes, as the operation of loading outside the bar is hazardous.

It is evident that an increase in depth of water on the bar to 24 feet would immediately and materially benefit a commerce already well established, and in view of this fact I am of the opinion that Boca Grande is worthy of improvement by the General Government to the extent of obtaining a depth of 24 feet at mean low water over the bar at the entrance. No survey is necessary upon which to base a plan of improvement and estimate of cost. There is no present demand for an 18-foot channel up to Punta Gorda. Such a channel would require extensive dredging for the entire distance, and should it be made there is nothing to indicate that it would benefit commerce. Neither phosphate vessels nor other seagoing craft find an 18-foot draft economical, and a channel of this depth, therefore, while permitting partial loading at Punta Gorda would still require lighterage to the bar. The conditions would be but little better than at present and the benefit accruing would not justify the cost of the proposed improvement. A statement of the water commerce of Punta Gorda for the year ending December 31, 1898, is as follows:

*Commerce of Charlotte Harbor and Peace River, Florida, during the year ending December 31, 1898.*

Name of articles.	Gross Tonnage.	Estimated value.
Fertilizers and pebble .....	69,378	\$708,780
Phosphate .....		
Cattle .....	225	11,250
Grain .....	3,500	88,104
Hides .....	10	2,250
Honey, syrup, etc .....	6	371
Lumber .....	1,250	15,000
Merchandise .....	2,400	120,990
Hay .....	1,000	18,875
Vegetables .....	1,700	510,000
Fish and oysters .....	25,758	146,895
Oranges .....	887	32,000
Pineapples, etc .....	232	9,315
<b>Total .....</b>	<b>106,346</b>	<b>1,613,830</b>

*Arrivals and departures of vessels for the year ending December 31, 1898.*

Class of vessels.	Number of arrivals.	Tonnage.	Number of departures.	Tonnage.
Steamships.....	13	14,567	13	14,567
Steamboats, light draft.....	352	138,885	352	138,885
Sailing vessels.....	34	27,715	34	27,715
Yachts.....	15	412	15	412
Total.....	414	181,579	414	181,579

Estimated number of passengers carried by the above vessels during the year ending December 31, 1898..... 9,618  
 Estimated percentage of total trade of neighborhood carried by water..... 80

Very respectfully, your obedient servant,

HENRY JERVEY,  
*Captain, Corps of Engineers.*

Brig. Gen. JOHN M. WILSON,  
*Chief of Engineers, U. S. A.*

[First indorsement.]

OFFICE CHIEF OF ENGINEERS,  
 U. S. ARMY,  
*September 12, 1899.*

Respectfully submitted to the Secretary of War.

This is a report upon preliminary examination, provided for by the river and harbor act of March 3, 1899, of Boca Grande and Charlotte Harbor, Florida, with a view to obtaining a depth of 24 feet of water over the bar at the entrance of the harbor and 18 feet thence up to Punta Gorda.

For the reasons presented by Captain Jervy, the local officer, he is of opinion, in which I concur, that Boca Grande is worthy of improvement by the General Government to the extent of obtaining a depth of 24 feet at mean low water over the bar at the entrance, but that there is no present demand for an 18-foot channel up to Punta Gorda, as such channel would require extensive dredging for the entire distance, and there is nothing to indicate that were it so improved it would benefit commerce.

A survey in the ordinary sense is not required, and I recommend that the local officer be directed to prepare and submit a plan and estimate of cost of securing increased depth on the bar, as proposed by him, the preparation of which can be effected without cost to the Government.

JOHN M. WILSON,  
*Brig. Gen., Chief of Engineers,*  
*U. S. Army.*

[Second indorsement.]

WAR DEPARTMENT,  
*September 15, 1899.*

Approved as recommended by the Chief of Engineers.  
 By order of the Secretary of War:

A. N. THOMPSON,  
*Acting Chief Clerk.*

REPORT OF SECOND LIEUT. FRANK G. BOGGS, JR., CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,  
Tampa, Fla., August 31, 1899.

**CAPTAIN:** I have the honor to report that in accordance with your instructions I proceeded to Punta Gorda, Fla., and on August 20 made a preliminary examination of Charlotte Harbor from Punta Gorda to Boca Grande entrance, Gulf of Mexico.

For a description of this locality, the requirements of commerce, the project adopted, and its modifications; the methods used, the work accomplished, its cost, and the results obtained, attention is invited to Reports of Chief of Engineers, 1896, Part II, pages 1329-1331; 1897, Part II, pages 1559, 1560; and 1898, Part II, pages 1335, 1336.

No work was done during the fiscal year ending June 30, 1899. The result of the improvement was a channel with an available depth at mean low water of 12 feet from a point opposite the railroad wharf at Punta Gorda to Boca Grande entrance, Gulf of Mexico. This channel is 200 feet wide for its entire length, except in the cut near the wharf at Punta Gorda. The first section of this cut is 1,764 feet long and 120 feet wide. The next section is 4,729 feet long and 160 feet wide.

There is a basin 300 feet square at the end of the long wharf. From this basin the channel continues upstream for a distance of 5,620 feet to a point opposite the terminal wharf of the Plant System Railway. The first 1,000 feet of this section of the dredged channel is 70 feet wide. Thence the channel has been dredged to a width of 35 feet for a length of 4,520 feet, ending in a basin 100 feet square. The \$25,000 appropriated by the river and harbor act of March 3, 1899, is being used for widening this section of the channel under the project approved March 29, 1899.

The object of this examination was to ascertain whether there had been any filling in of the channel made under the present project. For this purpose soundings were taken at points about 200 feet apart for the entire distance from Punta Gorda to Boca Grande entrance. These soundings show that the original 12-foot channel no longer exists throughout the entire course.

Leaving the long wharf at Punta Gorda, and following the channel toward Boca Grande there is, for about  $1\frac{3}{4}$  miles, an average depth of 11 feet, the minimum sounding taken giving 10.4 feet at a point about three-fourths of a mile from the wharf. From the red beacon ( $1\frac{3}{4}$  miles from the long wharf) to Cape Haze Light, the lead shows a depth of from 12 to 18 feet. From this point for a distance of about 4 miles the average depth is not more than 11 feet, the bottom rising at various points to within  $9\frac{1}{2}$  feet of the surface of the water. About 9 miles from Cape Haze Light another rise was noted, the soundings giving about 11 feet of water. The depth on the bar is about 21 feet.

In addition to the obstructions to the channel due to shoaling there are, near the long wharf at Punta Gorda, four groups of piles, which are very dangerous to navigation. These groups marked the edge of the channel made under the present project, and were set back from the channel 10 or 15 feet. They have, however, with the exception of one pile in one group, been eaten away, leaving only the stumps standing. These stumps are below the surface of the water, and are very dangerous to light-draft vessels. If it were possible to use the plant now doing the work of dredging, these piles could be removed at an estimated cost of \$200. This would be too low an estimate unless the work is done at once, for there is no plant at Punta Gorda suitable for this purpose.

My attention was also called to the fact that the only markers for the channel near Cape Haze Light are the range stakes used during the dredging.

In a conversation with Mr. Albert Dewey, of Punta Gorda, who has for the past ten years been in charge of transporting the phosphate rock from the mines to the vessels, he explained the method now used. The rock is loaded on barges at the mines, these barges being towed to the Boca Grande entrance. Here the vessels are loaded until their draft will just permit them to pass over the bar. If not completely loaded the barges are then towed over the bar and the work is completed. This transfer of material from the barges to the vessel outside the bar is a dangerous operation, and is subject to frequent interruptions on account of the heavy local storms. At present, being able to guarantee only 20 feet of water over the bar, the size of vessels which may be chartered is limited. If, however, the proposed depth of 24 feet were obtained this restriction would in a great measure be removed.

From the above and other conversations, I gather that the general desire is, first, an increased depth on the bar, and then an improvement of Peace River from Punta Gorda to Liverpool.

Very respectfully, your obedient servant,

FRANK C. BOGGS, Jr.,  
Second Lieutenant, Corps of Engineers.

• Capt. HENRY JERVEY,  
Corps of Engineers.

PLAN AND ESTIMATE FOR SECURING A DEPTH OF 24 FEET AT MEAN LOW WATER ON THE BAR AT BOCA GRANDE, THE MAIN ENTRANCE TO CHARLOTTE HARBOR, FLORIDA.

UNITED STATES ENGINEER OFFICE,  
*Tampa, Fla., November 3, 1899.*

**GENERAL:** In compliance with instructions contained in Department letter dated September 21, 1899, I have the honor to submit the following plan and estimate for securing a depth of 24 feet at mean low water on the bar at Boca Grande, the main entrance to Charlotte Harbor, Florida, as proposed in my report of September 5, 1899, upon the preliminary examination of this locality:

Charlotte Harbor lies about 74 miles south of Tampa Bay, and offers the most southerly deep-water harbor on the west coast of the mainland of Florida. The main entrance to the harbor, known as Boca Grande, enters between Gasparilla Island on the north and La Costa Island on the south. It is straight and stable in position and depth, with a depth exceeding 24 feet, except upon two shoals or bars, respectively about  $2\frac{1}{2}$  and  $3\frac{1}{2}$  miles seaward of the entrance, and upon which the least channel depth is 19 feet at mean low water. The average rise of the tide is nearly 2 feet.

Within the entrance is an anchorage ground with an area of 350 acres and a mean low-water depth of not less than 24 feet, the depth in 250 acres of the area being 27 feet and over. In this anchorage sea-going vessels can generally receive their cargoes from lighters without difficulty.

The preliminary examination referred to was made in accordance with the provisions of section 22 of the river and harbor act approved March 3, 1899, and covered "Boca Grande and Charlotte Harbor, with a view to obtaining a depth of 24 feet of water over the bar at the entrance of the harbor and 18 feet thence up to Punta Gorda."

The information available indicates that, while an increased depth on the bar would probably be a material benefit to commerce by enabling deep-draft vessels to load to their full capacity in the anchorage grounds within the entrance, there is no apparent demand for a deeper channel from the entrance up to Punta Gorda. The existing project for the improvement, now nearing completion, provides a mean low-water depth of 12 feet up to a point abreast of the railroad wharf at Punta Gorda, and a greater channel depth than this could be secured only at an extraordinary cost.

The data for the plan and estimate herein submitted have been obtained from the survey made by Capt. W. M. Black, Corps of Engineers, U. S. A., in 1890-91, supplemented by the United States Coast Survey charts.

The plan proposed is to form a channel across the bar 300 feet wide and 24 feet deep at mean low water by dredging the shoals as indicated on the accompanying map. The proposed channel consists of two cuts, aggregating 8,583 feet in length, in the same straight line and separated by a pocket of deep water about 2,000 feet across. The depths where dredging is required are generally 19 to 21 feet at mean low water.

The following estimate is based on dredging to a depth of 25 feet, allowing the extra foot for back filling, side slopes of 1 vertical to 3 horizontal (1 on 3), and scow measurement which is assumed to be 25 per cent greater than place measurement.

*Estimate of cost.*

Dredging 421,484 cubic yards sand and broken shell, at 30 cents.....	\$126, 445. 20
Engineering and contingencies, about 11 per cent.....	13, 554. 80
Total .....	140, 000. 00
Annually for maintenance.....	1, 000. 00

The dredged channels if quickly made to full dimensions will probably be reasonably permanent and require but little work of maintenance. The observed velocity of currents averages 1 to 1½ miles per hour.

The high unit price estimated for dredging is due to the exposed site and the prevalence of violent winds at certain seasons. Dredging operations can be carried on to the best advantage in the spring and summer months and as late as November.

A map showing the main entrance, the anchorage ground, and the proposed location of the new channel accompanies this report.

Very respectfully, your obedient servant,

HENRY JERVEY,  
*Captain, Corps of Engineers.*

Brig. Gen. JOHN M. WILSON,  
*Chief of Engineers, U. S. A.*  
(Through the Division Engineer.)

[First indorsement.]

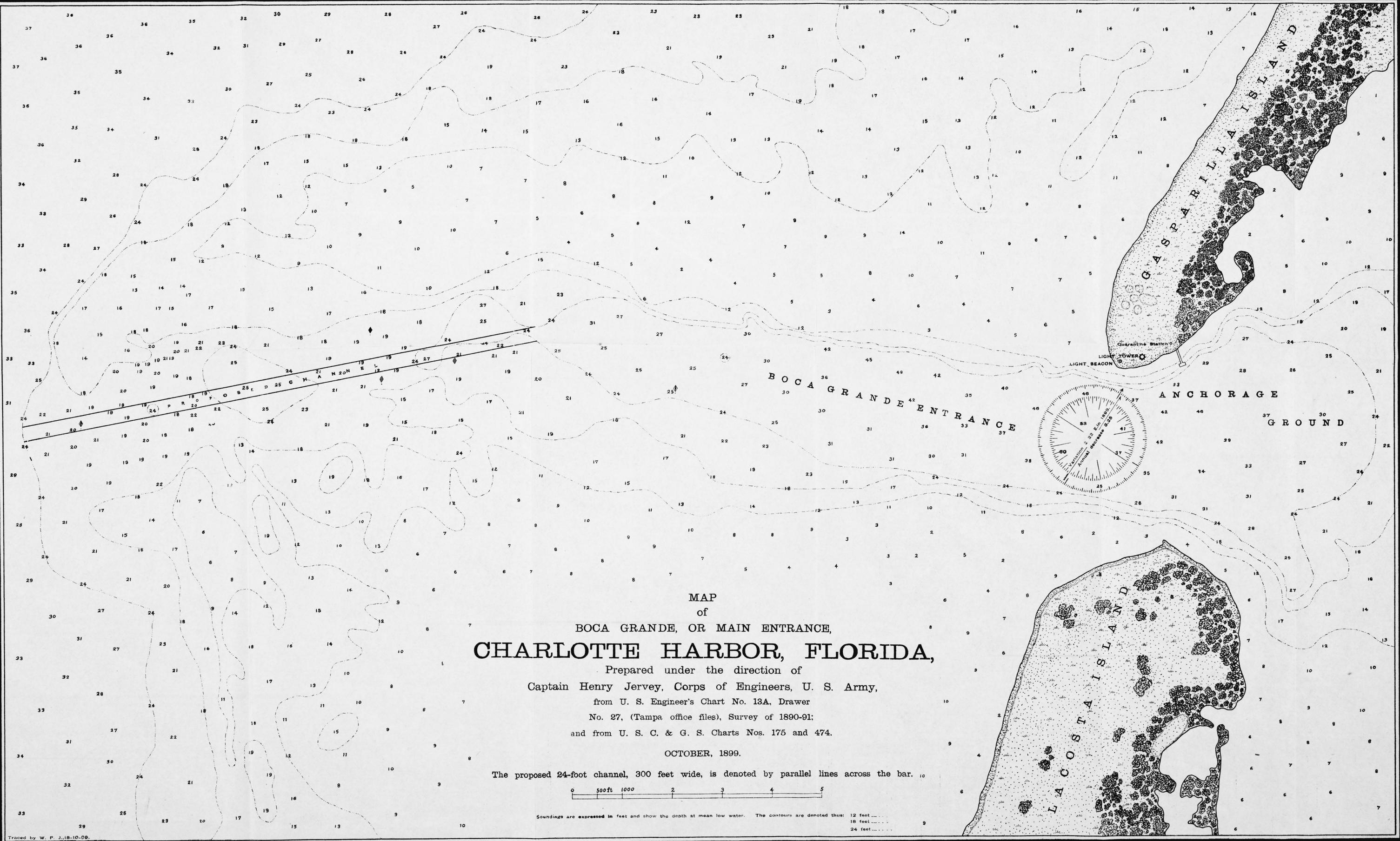
U. S. ENGINEER OFFICE,  
*Baltimore, Md., November 6, 1899.*

Respectfully submitted to the Chief of Engineers, United States Army.

I concur in the opinions expressed by the district engineer.

PETER C. HAINS,  
*Colonel, Corps of Engineers,*  
*Division Engineer, Southeast Division.*





MAP  
of  
BOCA GRANDE, OR MAIN ENTRANCE,  
**CHARLOTTE HARBOR, FLORIDA,**

Prepared under the direction of  
Captain Henry Jervey, Corps of Engineers, U. S. Army,  
from U. S. Engineer's Chart No. 13A, Drawer  
No. 27, (Tampa office files), Survey of 1890-91;  
and from U. S. C. & G. S. Charts Nos. 175 and 474.

OCTOBER, 1899.

The proposed 24-foot channel, 300 feet wide, is denoted by parallel lines across the bar.



Soundings are expressed in feet and show the depth at mean low water. The contours are denoted thus: 12 feet --- 18 feet --- 24 feet ---

Traced by W. P. J., 18-10-09.