

(Copy of 61757/47)

A.G.O.-1402112.

War Department,  
Office of the Chief of Staff,  
Washington.

October 5, 1908.

MEMORANDUM FOR THE SECRETARY OF WAR:

Subject: Plans and estimates for an artificial island  
on the Middle Ground, Chesapeake Bay.

The subject is brought up by a letter of the Board of Engineers, dated April 30, 1908, submitting plans and estimates for an artificial island on the Middle Ground at the entrance to Chesapeake Bay.

It is understood that this project forms a part of the complete project for the defense of the entrance to Chesapeake Bay, as provided for by the National Defense Board, which contemplates the placing of batteries on Cape Henry and Cape Charles.

The estimated cost of the artificial island proper is within the amount (\$2,600,000) allowed for the same in the estimate of the National Coast Defense Board.

The view expressed by the Chief of Artillery in the 8th endorsement, that the proposed island will be occupied by a garrison only in time of war, is concurred in. The open space available for buildings is therefore believed to be ample for the permanent storehouses and for buildings sufficient to accommodate a care-taking detachment. There will also be sufficient space for the encampment of a temporary garrison during target practice and maneuvers. The question of the provision of a distilling plant may well be left until the yield of the proposed system of water supply (rainfall in catchment basins) is determined by actual experiment.

It is recommended that the accompanying plans and estimates be approved as the official interpretation of the project of the National Coast Defense Board for the defense of the Middle Ground, at the entrance of Chesapeake Bay.

WM. P. DUVALL  
Major General,  
Chief of Staff.

WAR DEPARTMENT,  
Oct. 6, 1908.

APPROVED:

LUKE E. WRIGHT  
Secretary of War.

REPRODUCE

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WAR DEPARTMENT,  
OFFICE OF THE CHIEF OF STAFF,  
WASHINGTON.

October 5, 1908.



MEMORANDUM FOR THE SECRETARY OF WAR:

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It is recommended that the accompanying plans and estimates be approved as the official interpretation of the project of the National

E.D. 61757/47

Coast Defense Board for the defenses of the Middle Ground, at the entrance of Chesapeake Bay.

WAR DEPARTMENT,  
Oct. 6, 1908.

APPROVED:



*William E. Borah*  
Assistant Secretary of War.

*Edmond*  
Major General,  
Chief of Staff.  
W. W. W.

The proposed project of the Middle Ground at the entrance of Chesapeake Bay is a project of the National Defense Board, which contemplated the building of a battery on the Middle Ground at the entrance to Chesapeake Bay. The project is a part of the complete program for the defense of the entrance to Chesapeake Bay. The project is a part of the complete program for the defense of the entrance to Chesapeake Bay. The project is a part of the complete program for the defense of the entrance to Chesapeake Bay.

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C. A. R. 1121/41

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Plans and estimates, as the official interpretation of the project of the National Defense Board for the defense of the Middle Ground at the entrance of Chesapeake Bay, by the construction of an artificial island.

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WAR DEPARTMENT,  
OFFICE OF THE CHIEF OF ENGINEERS,  
WASHINGTON

March 6, 1909.

The Chief of Coast Artillery,

U. S. Army.

Sir:

1. Referring to your letter of February 26, 1909, suggesting the adoption of turrets to replace the proposed artificial island at the entrance to Chesapeake Bay, in view of the plans recently adopted for El Fraile Island, Manila Bay, I have the honor to say that the two cases are so widely different that action which was compulsory at El Fraile can and should, in the view of the Chief of Engineers, be avoided at the entrance to Chesapeake Bay.

2. Guns in turrets are not as effective as those on disappearing carriages. The views of the Chief of Engineers on this matter are clearly stated at great length in the accompanying paper, which is a copy of a reply to a criticism of Coast Artillery gun practice by Lieutenant Commander Sims. (See especially pages 8, 9, 10, 11, and 12)

3. At the mouth of Chesapeake Bay, with a foundation probably underlaid by mud, the concentrated load of a pair of turrets is the most difficult problem possible to propose to the construction department, and the Chief of Engineers would hesitate to say that it could be met. The experience at Fort Wool is instructive in this connection.

4. On the contrary, at El Fraile, turrets were selected not for their intrinsic merits, but because they were the only practicable and economical solution in the great depth of water; a secure rock foundation was already available for them at El Fraile, whereas the construction of an artificial extension of the Island would entail an enormous expense.

*[Handwritten notes and signatures at the top of the page, including "C. of C. A. -2" and various initials]*

5. The Chief of Engineers recommended approved and well-tested turrets for El Fraide Island as they could be obtained at once and would afford the ~~smallest~~ practicable target, on an absolutely rigid foundation of rock.

Very respectfully,

*[Handwritten signature]*

Chief of Engineers,

U. S. Army.

61757/49

Copy of memo. of Sept. 17/07, based on 64911 accomp. ✓

✓  
WAR DEPARTMENT,  
OFFICE OF THE CHIEF OF COAST ARTILLERY  
WASHINGTON.

IN REPLY REFER TO NO. 5648/42-C O. C. A.

February 26, 1909.

The Chief of Engineers,  
War Department.

Sir:

1. Referring to the letter of the Board of Engineers, dated April 30, 1908, (O.C.E. 61757-43, O.C.C.A. 5648/42-B) submitting a project for the construction of the proposed artificial island at the entrance of Chesapeake Bay, which project was approved by the Secretary of War, I have the honor to recommend that this project receive the further consideration of the Chief of Engineers in the light of the plans recently adopted for the fortification of El Fraile Island, with a view to determining the advisability of adopting similar plans for the proposed artificial island at the entrance of Chesapeake Bay, the armament for this island to include, as in the case of the projected fortifications for El Fraile Island, four 14-inch guns mounted in pairs in armored turrets, and rapid fire guns for the defense of the mine fields.

2. The advantages of turret batteries for all-round fire will be as marked in the case of this island as in the case of El Fraile Island. It is believed that the size of the proposed island need not exceed the size of the projected work for El Fraile Island. It is understood that the adoption of such a plan would probably preclude the construction of a protected naval harbor in connection with the pro-

posed artificial island, but it is thought that the advantages of this plan will be found to more than offset this disadvantage.

Very respectfully,

  
Lt. Col., Coast Arty. Corps,  
In Charge of Office.

DEPARTMENT OF THE NAVY.  
Washington,

July 5, 1911.

Sir:-

I have the honor to acknowledge the receipt of the War Department's letter of the 29th ultimo, approving the action of the Joint Board set forth in its letter of May 8, 1911, in which the board expressed its opinion that the emplacement of armament at Cape Henry, Va., with adequate protection against land attack, and the provision of submarine mine defenses, would serve all the more essential purposes that would be served by the more complete and extensive defenses recommended by the Taft Board.

The action of the Joint Board in this case is approved by the Navy Department.

Respectfully yours,

BENJAMIN WINTHROP,

Acting Secretary of the Navy.

The Honorable

The Secretary of War,

Washington.

WAR DEPARTMENT,  
OFFICE OF THE CHIEF OF ENGINEERS,  
WASHINGTON.

File  
MS EB-HLS

PERSONAL.

January 27, 1911.

that this area could be acquired for \$150,000, but in accordance with the request contained in your letter of the 23rd instant, I have had prepared a general preliminary estimate of the cost of Engineer construction work pertaining to the installation at Cape Henry of the armament mentioned by you, namely, 4 12-inch rifles, 4 6-inch rifles, and 6 12-inch mortars. The total of this estimate is \$1,998,000, which amount I believe to be safe, although based on only general data. The estimates for gun and mortar emplacements are increased 20 to 25% over what similar emplacements have recently cost us at other places under favorable construction conditions. The possibilities with regard to poor foundations and other matters leading to possible increased cost at Cape Henry are such that I do not believe it safe to make the estimates less than they are given. Electrical and searchlight installations are normal, but the searchlights include only those necessary to the service of the guns. If mine defense is to be provided, estimates should be included for the additional searchlights necessary thereto, as well as for the necessary submarine-mine structures, as to which I have no data at this time. If desired, I might take it up with the Chief of Coast Artillery and arrive at some conclusion. The fire-control estimates include only Engineer construction, and no funds for Ordnance and Signal-Corps costs; the latter may, however, based on the usual division of funds between construction departments, be estimated at \$25,000.

2. In addition to the above estimate, funds will be required also for the purchase of land necessary for the batteries and post. The Chief of Coast Artillery has estimated that 300 acres would be sufficient, and

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H. B. GARDNER, Governor:

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that this area could be acquired for \$150,000, but it is the opinion of the district Engineer Officer, who is thoroughly familiar with the locality, that this amount probably will not be sufficient for the land that would be most likely taken for the defenses and which is that now most occupied or subdivided for cottage sites.

3. If I can be of any further assistance to you in this matter, please do not hesitate to call upon me. My own views with regard to over-fortification and to the lack of necessity for fortifications at some ports now defended, agree quite closely with your own. I should like to discuss the matter further with you, and will take pleasure in calling upon you for that purpose at an early a day as possible.

Very truly yours,

Edw. Burr

Brigadier General W. W. Wotherspoon,  
General Staff, Army War College,  
Washington, D. C.

61757

61,757/56

JAN 28 1911

WAR DEPARTMENT

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COPY.

LT. COL. EDW. BURR

TO

BRIG. GEN. W. W. WOODRUFF

Rel. to Cape Henry Project.

2 Incs., E. D.

3. If I can be of any further assistance to you in this matter, please let me know. I am sure that I shall be glad to do so.

That this amount probably will not be sufficient for the land that would be most likely taken for the battery and which is that now most occupied or subdivided for cottage sites.

The attached Engineer Officer, who is thoroughly familiar with the locality, has this area covered by a plan for \$150,000, but it is the opinion of

over-estimation and to the lack of necessity for fortifications at some points now defended, give quite closely with your own. I should like to discuss the matter further with you, and will take pleasure in calling upon you for that purpose at an early day as possible.

Very truly yours,

Edw. Burr

Brigadier General W. W. Woodruff,  
General Staff, Army War College,

61757

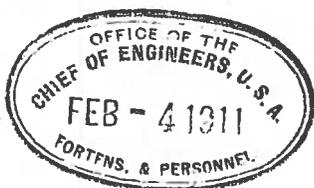
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ESTIMATED COST OF DEFENSES OF THE ENTRANCE TO CHESAPEAKE BAY.

	Taft Board Estimate	Taft Board estimate as modified to date
Guns, carriages and emplacements,	\$ 4,795,300	\$ 4,222,800
Submarine Mine defense	412,096	* 367,096
Power plants - Central Reserve	\$141,817 <u>56,557</u>	198,374
Searchlights	170,000	+ 221,000
Fire Control	<u>527,101</u>	<u>527,101</u>
Total	\$ 6,102,871	\$ 5,536,371
Artificial Island and Breakwater, Middle Ground,	<u>2,600,000</u>	<u>3,024,750</u>
Land for sites	<u>8,702,871</u> 505,000	<u>8,561,121</u> ?
Quartermaster's Structures (no estimate prepared)	?	?

\* Omitting \$45,000 for mine searchlights.

+ Including \$51,000 for mine searchlights.



61,757/55

Cape Henry Project (War College Div. Gen. Staff)  
 4 12", 8 12" mortars, 4 6"

4 12-inch, mounted in two batteries two each  
 [Taft Board \$125,000 per gun. Batty Kinzie, Ft. Worden  
 allotment for constn. \$189,000 or not \$100,000 per gun.] \$500,000  
 8 mortars, without natural protection, \$100,000  
 4 - 6-inch, two batteries, two each, \$20,000  
 Wharf \$40,000, Plant \$25,000, Water \$25,000 \$90,000

Electrical installations.

12-inch batteries, 1 25kw set and 1 reserve in each,  
 4 X 25kw sets at \$6,000 including installation  
 and wiring, \$24,000.  
 Mortar battery 1 set with 1 reserve,  
 2 sets at \$6,000 12,000.

6-inch batteries 2 sets, 2 reserves, 24,000.

Searchlights: two to battle command, 1 to each fire command

1 Battle Command = 2 lights at \$17,000 34,000  
 12-inch batteries = 1 fire command, 17,000  
 Mortar battery = 1 fire command, 17,000 68,000

Fire Control:

Battle Commanders Station and F<sub>1</sub> and F<sub>2</sub>  
 grouped or combined, with plotting room, \$8,000  
 [Panama basis]  
 Mechanical range transmission, 12 12-inch  
 1 mortar, 2 6-inch batteries, (Est. O. Coy E.) 4,000  
 B'B'B' and Plotting rooms at battys. \$3000 each 9,000  
 P"P"B"B" 1000 each 5,000  
 (5 rooms 6'x8', Mem. C.C.A.) Est. O. Coy E.

Conduits, trenches, --guess-- 10,000  
 Cable 5,000  
 Switchboard room, storage batty room,  
 Signal Corps Powerroom, etc. (Revised Panama est) 3,000  
 District Signal Station, (Revised Panama est) 6,000  
50,000  
 Contingencies 20% 10,000  
10,000

61,757/57

Mine Defense not considered - Estimates therefor would require additional searchlights. Gun.  
 Funds will also be required for acquisition of site. In memorandum of C. C. A. of February 25, 1910,  
 he estimated that 300 acres would be sufficient and that this area could be acquired for \$150,000. However,  
 see Colonel Patrick's indorsement of March 25, 1910, on 38,120. January 25, 1911.

60,000  
1,098,000

MAINTAINED  
61757  
OFFICE CHIEF OF ENGINEERS

CAPE HENRY PROJECT  
(War College Division, General Staff)  
4 12", 8 12" mortars, 4 6"

-000-

4 12-inch, mounted in two batteries, two each,.....	\$500,000.
8 mortars, without natural protection,.....	200,000.
4 6-inch, two batteries, two each,.....	120,000.
Wharf \$40,000; Plant \$25,000; Water \$25,000.....	90,000.
Electrical Installations.....	60,000.
Searchlights,.....	68,000.
Fire Control.....	60,000.
Total,.....	\$1,098,000.

61757

61,757/58

February 13, 1911.

Memorandum for the Chief of Staff:

SUBJECT: Project for the Defense of the Entrance to Chesapeake Bay.

The accompanying memorandum of the War College Division on the subject of the establishment of defenses for the entrance to Chesapeake Bay sets forth the following conclusions and recommendations:

"1. The necessity for the defense of the entrance to the bay is not so great as to warrant the expenditure of such sums as have heretofore been proposed.

"2. The necessity for the defense of the entrance to the bay is much greater than the necessity for the defense of certain places where strong coast artillery defense works are already established.

"3. That the armament and personnel now established at less important places can well be spared for use in defending the entrance to the bay.

"4. That the transfer of armament and personnel from less important places to the Chesapeake Bay region and its establishment there can be made at such moderate cost as to warrant this line of action being followed.

"It is therefore recommended that the five fathom channel at the entrance to Chesapeake Bay be defended by four 12-inch rifles, eight 12-inch mortars, four 6-inch rifles, and such mines as may be found to be necessary, obtained by transfer of armament and personnel from the least necessary existing fortified areas to Cape Henry and Fort Monroe, Virginia, respectively. That the armament be established on proper emplacements on enclosed works at Cape Henry; that the personnel be stationed permanently at Fort Monroe, Virginia, and that the fortifications, if established, be regarded as outlying works in the Chesapeake Bay Artillery District to be manned from the central coast artillery post of the district, Fort Monroe, Virginia, only when war is imminent or has been declared."

The estimate of the War College Division for acquiring sites, constructing emplacements for the armament recommended, and building quarters for the personnel, amounts, in all, to \$1,980,000.

The installation at Cape Henry of the armament recommended by the War College Division will render extremely unlikely the passage or attempted passage of the entrance to the Bay by hostile armored vessels, and therefore will preclude that Bay being used as a base by an enemy's fleet, and will, it

-2-

is considered, serve all the more essential purposes that would be served by the more complete and extensive defenses heretofore recommended, which included the erection of an expensive artificial island on the Middle Ground, as well as the construction of some minor defenses at Cape Charles.

The total estimated cost, \$1,900,000.00, of the present plan, is approximately only 20 per cent of the estimated cost, \$10,407,671.00, of the Taft Board plan, and only 25 per cent of the estimated cost, \$8,107,671.00, of the plan recommended in memorandum of this division dated October 18, 1910.

The Chief of Coast Artillery concurs in the opinion expressed in the accompanying memorandum, that the character and extent of the armament emplaced at some of the fortified harbors in the United States are in excess of present necessities. The marked improvement in recent years in coast artillery gunnery has materially increased the strength of all our seacoast defenses. Moreover, on account of the changes in the types of naval vessels a number of our fortified harbors are not now exposed to naval attacks of the strength of those to which they were liable at the time the fortifications for these harbors were planned and constructed. Among harbors of this latter class are: Wilmington, Savannah, Tampa, Mobile, Washington, and Baltimore. For this reason the transfer from these harbors of the necessary armament for installation at Cape Henry can be accomplished without unduly weakening the defenses of these harbors, while such action will save the expense that otherwise would have to be incurred for the construction of armament for Cape Henry, and for the maintenance of additional personnel.

The construction of the proposed defenses at Cape Henry will, however, render necessary an increase in the personnel of the Coast Artillery Corps by five companies and the corresponding number of officers. The present authorized strength of the coast artillery personnel is sufficient to men

approximately only one-third of the armament now mounted, and the armament that would be transferred to Cape Henry under the present proposed plan is a part of the remaining two-thirds for which there is now no personnel available. Expenditures on the proposed defenses will, therefore, be wasted, unless the Coast Artillery Corps be increased by the five companies required for their service, or unless these companies be withdrawn from other important places.

The Chief of Coast Artillery concurs in the recommendation of the War College Division that the project provide for quartering, in time of peace, at Fort Monroe, Va., the five companies required for the service of the proposed defenses at Cape Henry. The site of the present post at Fort Monroe is probably too restricted to permit of the construction of five more barracks and the necessary officers' quarters, but a suitable site for these buildings exists to the north of the present post, in the vicinity of the mortar battery, and within the limits of the present military reservation.

For the reasons given the Chief of Coast Artillery concurs with the War College Division in recommending the adoption of the plan outlined above for the defense of the entrance to Chesapeake Bay. He further recommends that in reply to the request of the Senate Committee on Military Affairs for information in connection with the accompanying draft of a bill for the acquisition of land at Cape Henry, a letter be sent to the Chairman of that committee informing him of the adoption of the above plan, and recommending an appropriation at this session of \$150,000.00, as proposed in the accompanying bill, for the acquisition of a site at Cape Henry.

The draft of a proposed letter to the Chairman of that committee