

WAR DEPARTMENT,  
Office of the Chief of Staff,  
Washington.

February 21, 1911.

MEMORANDUM FOR THE SECRETARY OF WAR:

Subject: The defense of the entrance to Chesapeake Bay by permanent land fortifications.

The Chief of Coast Artillery, in a letter to The Adjutant General of the Army, dated July 30, 1910, states that the Taft Board, in its report of February 27, 1906, recommends the defense of the entrance to Chesapeake Bay by seacoast guns, mortars and mines and included the construction of an artificial island on the middle ground between Cape Henry and Cape Charles. He states in his letter that, in view of the experience connected with the defense of El Fraile Island in Manila Bay and other developments since the date of the report of the Taft Board, he thinks the size and consequent cost of the proposed island may be materially decreased below that considered necessary by the Taft Board, and that a better arrangement of the armament can be made. The Chief of Coast Artillery also calls attention to the necessity for procuring land at Cape Henry as a part of the defense scheme, which land he states will apparently continue to increase in value, and concludes his letter by recommending that a board of officers be appointed to prepare a complete project for the defense of the entrance to Chesapeake Bay.

The Secretary of War, in an approved memorandum, dated August 9, 1910, concurred in the recommendation that the whole matter of the defense of the entrance to Chesapeake Bay be studied again, and directed that the project be prepared by the Second Section (now the War College Division) of the General Staff, in conference with the Chief of Coast Artillery and such experts as it might find necessary to call into consultation.

The cost of the establishment of the coast defenses at the entrance to Chesapeake Bay was estimated by the Taft Board at \$9,207,871. The estimate of the cost of these defenses as modified by the Chief of Coast Artillery in a memorandum accompanying his letter of July 30, 1910, (the letter on which this sum is based) is \$7,132,671, an estimated

Decrease of cost of \$2,100,000.

The difference in the two estimates as to armament and cost is shown as follows:

ESTIMATE OF TAFT BOARD.		ESTIMATE OF CHIEF OF COAST ARTILLERY, JULY 30, 1910.	
<u>Character and Location of Armament.</u>		<u>Character and Location of Armament.</u>	
6 - 14" Rifles,	Cape Henry	4 - 14" Rifles,	Cape Henry
2 - 12" Rifles,	" "	- - - - -	- - - - -
16 - 12" Mortars,	" "	8 - 12" Mortars,	Cape Henry
4 - 6" Rifles,	" "	2 - 6" Rifles,	" "
4 - 3" Rifles,	" "	- - - - -	- - - - -
2 - 14" Rifles,	Artificial Island.	2 - 14" Rifles,	Artificial Island.
2 - 10" Rifles,	" "	- - - - -	- - - - -
3 - 6" Rifles,	" "	4 - 6" Rifles,	Artificial Island.
3 - 3" Rifles,	" "	4 - 12" Mortars,	" "
<u>Estimated Cost.</u>		<u>Estimated Cost.</u>	
Armament, emplacements and accessories, .....	\$6,102,871.	Armament, emplacements, and accessories.....	\$4,352,671.
Artificial Island in Middle Ground.....	2,600,000.	Artificial Island in Middle Ground.....	2,600,000.
Purchase of land sites.....	505,000.	Purchase of land sites....	180,000.
TOTAL.....	\$9,207,871.	TOTAL.....	\$7,132,671.
Construction of post at Cape Henry.....	1,200,000.	Construction of post at Cape Henry.....	1,000,000.
Total initial cost with post.....	\$10,407,871.	Total initial cost with post.....	\$8,132,671.
Estimated annual cost of garrison(14 companies).*	700,000.	Estimated annual cost of garrison(10 companies)**	500,000.
Estimated cost of upkeep of armament, emplacements and post**	228,000.	Estimated cost of upkeep of armament, emplacements and post***	198,500.
Total annual cost.....	\$ 928,000.	Total annual cost.....	\$ 698,500.

From the above it will be seen that the Taft Board's project would involve an estimated initial cost of \$10,407,871, and an estimated annual cost for troops and upkeep of \$928,000. The estimated cost of the Chief of Coast Artillery's project, for the corresponding items, would be \$8,132,671 and \$698,500, respectively.

(\*) Not included in Taft Board estimate, but added here for sake of comparison between estimates, and to show approximate total cost of project. Does not include target practice.

(\*\*) Not included in Chief of Coast Artillery's estimate, but added here to show approximate total cost of project. Does not include target practice.

It may be safely estimated that the cost of the defense of the entrance to Chesapeake Bay under any project so far formulated will be for installation and appliances from eight million dollars to ten million dollars, and that after the establishment there will be an annual charge of not less than from \$600,000 to \$900,000 for maintenance of the necessary garrison and upkeep of the establishment. These sums are so great that they naturally lead to the discussion of two questions:

1. Does the military policy and necessity of the United States warrant the expenditure of such an amount of money for the purpose indicated?
2. Can not the policy and the necessity, if such exists, be satisfactorily met by the expenditure of a smaller amount?

The military policy of the United States, so far as relates to coast defense, is indicated by the Endicott and Taft Boards and the appropriations made by Congress in pursuance of recommendations of these boards. That policy seems to be to protect the great commercial ports on our coasts from attack by sea, by the establishment of strong land defenses. Pursuant to that policy, the harbor entrances to practically every commercial port, including a number of minor importance, from Maine to Galveston on our Atlantic and Gulf coasts, and from San Diego, California, to Seattle, Washington, on the Pacific coast, have been fortified. Many of our military experts are of the opinion that this policy has been followed to an extreme, in that it has led to the establishment of powerful coast defenses at ports of minor importance, or at ports the water entrances to which are so shallow, tortuous and narrow as to preclude the possibility of hostile vessels of the larger battleship and cruiser class or of inferior naval vessels of even moderate draft approaching the cities which the forts are supposed to defend. Other experts believe that even at some of these ports of first importance, where strong seaward defenses are warranted, the character and amount of armament employed is in excess of the necessities.

To justify the first contention, i. e., that ports of minor importance and those with shallow, tortuous and narrow water approaches have been unnecessarily

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fortified, attention is invited to the following cases: Mobile, Pensacola, Tampa, Savannah, Charleston, Wilmington, Washington, Baltimore and Philadelphia, which are discussed in some detail in APPENDIX A.

To justify the second contention, i.e., that the character and amount of armament at some ports of first importance is in excess of necessities, attention is invited to the cases of San Francisco, California, and Philadelphia, Pennsylvania.

*As stated*  
*to extend to the defense of commercial ports and harbors.*  
*It has, up to this time, not been construed to extend to the defense of great areas of sheltered waters (such as Delaware Bay, Chesapeake Bay and Pamlico Sound) which might be used as naval bases by an enemy, unless the defenses established at the eastern entrance to Long Island Sound be so construed as an extension of the policy, a construction hardly justified, inasmuch as the prime object of the defenses is to close an approach to New York City and New London which are already protected on their real harbor entrances by strong forts.*

As stated, the seacoast defense policy, so far as developed, appears to extend to the defense of commercial ports and harbors. It has, up to this time, not been construed to extend to the defense of great areas of sheltered waters (such as Delaware Bay, Chesapeake Bay and Pamlico Sound) which might be used as naval bases by an enemy, unless the defenses established at the eastern entrance to Long Island Sound be so construed as an extension of the policy, a construction hardly justified, inasmuch as the prime object of the defenses is to close an approach to New York City and New London which are already protected on their real harbor entrances by strong forts.

*The suggestion that the entrance to Chesapeake Bay be strongly fortified, therefore, raises the question whether the entrances to other large bodies of water, such as Delaware Bay and Pamlico Sound, should not also be fortified, and leads to the question of why the closing of Chesapeake Bay to hostile ships is advocated. The arguments for closing the bay to an enemy seems to be as follows:*

The suggestion that the entrance to Chesapeake Bay be strongly fortified, therefore, raises the question whether the entrances to other large bodies of water, such as Delaware Bay and Pamlico Sound, should not also be fortified, and leads to the question of why the closing of Chesapeake Bay to hostile ships is advocated. The arguments for closing the bay to an enemy seems to be as follows:

The Army advocates it on the general ground that without fortification the bay might be used by an enemy having command of the sea as a base of operations for a land force brought to its waters in transports under naval convoy, with a view to landing and attacking Norfolk, Washington or Baltimore. No claim is advanced that a fleet having access to the bay would attempt to force a passage to any of these cities through the mine fields or gun fire of the established forts. It is therefore as a protection against a convoyed land force that the Army advocates the establishment of defenses at the entrance to Chesapeake Bay.

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The Navy appears to advocate it on the same general ground as the Army, i. e., as a protection to the cities named against a convoyed land force. In addition to this, it points out the desirability of the waters of Chesapeake Bay as a base of operations for a hostile fleet on account of the supplies to be obtained there and the injury which would result to our coast-wise commerce in the event of the waters passing into hostile control. Naval advocacy is therefore, like Army advocacy, based mainly on the dangers which would arise from the occupation of the bay by a fleet conveying a land force. Like the Army, the Navy advocates make no claim that a fleet having access to the bay would attempt to force a passage with its important ships through the mine fields or gun fire of the forts established for the protection of Norfolk, Washington, Baltimore and Richmond.

It may therefore be concluded that the main and only valid reason for defending the entrance to Chesapeake Bay is to exclude from it a fleet conveying a land force of considerable size, and this leads to the question of whether this end can not be attained by the expenditure of a less sum of money than has, up to this date, been suggested for the purpose.

Leaving aside the question of whether it would not be better policy to expend the greater part of such sums as have heretofore been suggested (from eight millions to ten and one-half millions) as necessary for the defense of the entrance to Chesapeake Bay, for the protection of other more important areas or for the creation, organization and equipment of the mobile forces so seriously needed for the protection of the existing land defenses of first-class ports, such as Boston, New York, Philadelphia, San Francisco, etc., from attack by troops landed outside the range of their guns and threatening their unprotected rears, consideration will be confined to the question whether the desired end can not be attained by a moderate and reasonable expenditure of money.

Referring to the chart enclosed herewith, on which the various depths are indicated by colored lines, it will be seen that the waters at the entrance to Chesapeake Bay which have a depth of five fathoms (50 feet)

all lie within 5,500 yards of the proposed site for batteries on Cape Henry. Ships drawing or fearing to navigate in less than thirty feet of water would therefore have to pass within 5,500 yards of any guns established on the Cape. Naval opinion seems to be that no vessels of the superior battle-ship or cruiser class would, under other than very exceptional conditions, attempt to enter waters of less than five fathoms depth. Battleships and cruisers of the superior class, as well as the larger class of passenger steamers which are subsidized in Europe for use as transports, draw from 26 to 31 feet. These ships would therefore be excluded from the bay if the area of water next to Cape Henry was mined and covered by gun and mortar fire. Further reference to the chart will show that only vessels drawing under 24 feet can enter the bay outside the area shown as covered by the fire of guns and mortars on the Cape. The deduction to be made from the above statements is that, with the five fathom channel 5,500 yards wide covered by gun fire from Cape Henry, the larger and more important ships must stay outside the bay and that only light draft cruisers, transports and torpedo craft can enter.

Expert opinion of coast artillery officers appears to warrant the statement that even should the powerful armament contemplated by the Taft Board be established at the entrance to Chesapeake Bay, that entrance would not be effectively closed against torpedo boat raids, and that vessels of this class, by taking advantage of darkness, fog or heavy weather, would have a fair chance of running past the guns.

Naval opinion appears to warrant the statement that a convoyed land force of any great size would not venture to enter Chesapeake Bay under the protection of small cruisers, gun-boats and torpedo craft alone, and that any operation connected with entry into the bay of such craft would, if Cape Henry were fortified, be confined to a raid. As the operations of this class of craft in a raid can not be looked upon as in any way a serious menace, there is, therefore, no apparent use in expending vast sums of money in an attempt which would in all probability be ineffective to prevent them.

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Protection of the five fathom channel near Cape Henry is, therefore, practicable and necessary if we desire to close the bay to the larger vessels of a hostile fleet, and protection of the remainder of the entrance by land forts against raids of small craft is impracticable. With the five fathom channel defended we need fear neither the advance of a convoyed landing force up, nor the establishment of a hostile naval base in, the waters of Chesapeake Bay. It therefore remains to be seen whether the dangers which would arise from leaving the entrance undefended are of such a character as to warrant the cost of establishing and maintaining coast defenses there.

It is inconceivable that a hostile fleet would attempt an attack upon either Baltimore or Washington before the defenses, almost impregnable from sea attack, at Fort Monroe, were destroyed or captured, for with that fort and the naval vessels which its guns might shelter lying across its line of communications, such operation would be most hazardous. This would leave an attack upon the Norfolk Navy Yard as the only possible important objective. Such an attack might be attempted before the destruction of Fort Monroe by an enemy using Lynnhaven Roads, just inside the Capes and not under fire from Fort Monroe, as a base. Lynnhaven Roads has some advantages over Virginia Beach, just outside the Capes, as a base for land operations against Norfolk, inasmuch as it is a little nearer and the waters more sheltered and quiet. The attack would, however, have to be by a land force unsupported by the fire of the fleet in its last stages, inasmuch as the hostile naval guns could not reach the Norfolk Navy Yard.

The whole question seems, therefore, to resolve itself into whether the dangers arising from the possibility of an enemy using the lower waters of Chesapeake Bay as a sheltered naval base and for land operations against the Norfolk Navy Yard, which might almost as well be conducted from Virginia Beach outside the Capes, are so great as to warrant the undertaking under discussion. It would seem as if the answer must be in the negative, unless the end can be attained at a comparatively moderate cost.

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Taking into consideration the fact referred to elsewhere in this paper, that the policy of fortifying our seacoast ports has been apparently carried to an extreme and that we have not only strongly fortified ports of minor importance but some, the water entrances to which are so shallow, tortuous and narrow as to preclude the possibility of hostile vessels of even moderate draft approaching the cities such forts are supposed to defend, we see that the question of the relative value of the defense of such places and the entrance to Chesapeake Bay is brought into prominence. As to this relative importance, there can exist little or no doubt that the closing of the five fathom channel to Chesapeake Bay and the consequent exclusion of battle-ships, first-class cruisers and transports from the interior waters of the bay is of vastly greater importance than the maintenance of strong defenses at minor ports or covering channels which can not be navigated by hostile vessels without such risks as it is inconceivable that an enemy would run. This consideration leads to the conclusion that the defense of the entrance to Chesapeake Bay can be secured to the extent necessary by the transfer of the guns and the troops manning them from the least important places to that more important place. If this can be done, the cost of closing the entrance to Chesapeake Bay can be reduced to a comparatively moderate sum.

The economical result of such a line of action is shown as follows:

Assuming that the emplacement of four 12-inch rifles, eight 12-inch mortars, four 6-inch rifles, and the establishment of a mine field in the five fathom channel at Cape Henry, would constitute a satisfactory defense for the entrance to Chesapeake Bay; that this armament can be brought to that place from some place or places where it is less useful and practically not needed; and that the troops now manning the armament can be transferred to Chesapeake Bay district with the armament, the following estimate of the suggested project can be made:

Estimated cost of sites for forts at Cape Henry,	\$150,000
Estimated cost of emplacements and accessories,	1,500,000
Estimated cost of barracks for five companies at Ft. Monroe,	500,000
Estimated cost of dismounting and mounting guns from present to new location,	50,000
Total estimated cost,	<u>\$1,980,000</u>

No amounts are estimated for armament, troops, or for upkeep, as the armament already exists, the troops are organized, and the upkeep would not exceed, if it would equal, that now chargeable to the places where the guns and men are now located.

The comparison of cost between the three projects is shown as follows:

Total estimated original cost of Taft Board project,	\$10,407,871
Annual cost of maintenance above present cost of Army	928,000
Total estimated original cost of Chief of Coast Artillery project,	8,107,871
Annual cost of maintenance above present cost of Army,	698,500
Total estimated original cost of suggested project,	1,980,000
Annual cost of maintenance above present cost of Army,	Nothing

In conclusion, it may be stated that a careful consideration of the whole question of the defense of the entrance to Chesapeake Bay leads to the following conclusions:

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.

This report is submitted after consultation with the Chief of Coast Artillery and the naval experts on duty at the Army War College, both concurring in the proposition submitted, except that the Chief of Coast Artillery appears to doubt the availability of sufficient coast artillery troops to man the armament. The estimates of cost are to be understood as approximately only.

LEONARD WOOD,  
Major General,  
Chief of Staff.

Joint Board,

Washington, D.C.,

May 8, 1911.

Sir:

Referring to the letter of the Honorable the Secretary of the Navy transmitting, at the request of the Honorable the Secretary of War, a project for the erection of sea-coast defenses for the entrance to Chesapeake Bay and requesting information as to whether the defenses suggested in that letter would secure a reasonable defense for the entrance to Chesapeake Bay, without the erection of an artificial island on the Middle Ground as suggested by the Taft Board in its report of February 1, 1906, the Joint Board has the honor to report as follows:-

It is the opinion of the Joint Board,

That such a defense could be established at a decided reduction of expense over the amounts heretofore considered necessary by the erection of sea-coast defenses on Cape Henry and the emplacement thereon of an armament capable of covering the five fathom channel so as to exclude from Chesapeake Bay the capital ships of an enemy.

The Board is of the opinion that the emplacement at Cape Henry of four 12-inch rifles, eight 12-inch mortars, and four 6-inch rifles, with adequate protection of said batteries against land attack from the rear and the provision of a submarine mine defense, would serve all the more essential purposes that would be served by the more complete and extensive defenses recommended by the Taft

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Board while the cost involved would be approximately  
only 20% of the cost of the Taft Board project.

Very respectfully,

GEORGE DEWEY.

Admiral of the Navy,  
Senior Member.

The Honorable

The Secretary of War.

Approved:

H. L. STIMSON.

Secretary of War.

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

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Hon. E. F. Holland,  
U.S. House of Representatives,  
Washington, D. C.

March 14, 1912.

Sir:

Replying to your communication of the 6th instant requesting certain information regarding the fortifications proposed at Cape Henry, I have the honor to send herewith a copy of letter of the Chief of Engineers, dated March 11, 1912, to the Chairman of the Fortifications Sub-committee of the Senate Committee on Appropriations which, it is believed, contains all of the data which you desire.

Very respectfully,

EDW. BUBB

Acting Chief of Engineers.

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Copy of letter of March 11, 1912, on 61757/77 accomp.

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

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March 11, 1912.

Hon. George C. Perkins, Chairman,  
Subcommittee in Charge of Fortification Bill,  
Committee on Appropriations,  
United States Senate.

Dear Sir:

1. Referring to your letter of March 8, 1912, requesting that the Subcommittee in Charge of the Fortification Bill be furnished some more definite and detailed information concerning the estimate of \$150,000 for the purchase of land at Cape Henry, Virginia, for fortification purposes, I have the honor to advise you as follows:

2. In 1905 The President appointed a joint board of officers of the Army and Navy to recommend in regard to the completion of the harbor defenses with the most economical and advantageous expenditure of money. This board, known as the NATIONAL COAST DEFENSE BOARD, or more commonly as the Taft Board, with a view to bringing up to date the projects for seacoast defenses, which had last been reported upon in 1886 by the Endicott Board, so called, submitted its report in 1906, and it was transmitted by The President to Congress and was published as Senate Document 248, 59th Congress, 1st Session. In regard to the locality under discussion, that is, the entrance to the Chesapeake, the Taft Board in its report made the following remarks:

The Endicott Board, while attaching importance to defenses at the entrance to Chesapeake Bay, for the protection of Hampton Roads, Norfolk, Newport News, Washington and Baltimore, and at the eastern entrance to Long Island Sound for the approaches to New York, confined its recommendations to so-called "floating defenses" for outer lines. Floating defenses are defined to be "floating batteries designed specially for operating in harbors or close to the land--armored more heavily and armed with heavier guns than any probable adversary." Guns provided with an efficient range-finding system can now bring an effective fire on all parts of these wide channels, and render unnecessary the "floating defenses" which have never been built and which, if they had been, would be objectionable because of vulnerability and of the great cost of construction and maintenance.

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Commercially and strategically Chesapeake Bay is to-day, as it always has been, of the very first importance. With the entrance as it now is, unfortified, a hostile fleet, should it gain control of the sea, can establish, without coming under the fire of a single gun, a base on its shores, pass in and out at pleasure, have access to large quantities of valuable supplies of all kinds, and paralyze the great trunk railway lines crossing the head of the bay.

3. The views expressed by the Taft Board are, so far as the information in this office goes, concurred in by all military authorities, who deem the closure of the entrance of the Chesapeake to be the most important coast defense project yet to be undertaken and deem it of such importance that they believe it should be undertaken without further delay. The limits of this report will not permit of going further into the general subject. The inquiries in your above mentioned letter will be taken up in detail in the order in which they occur in your letter.

4. What is the character of this land, and how deep would it be necessary to go to get proper foundations?

The land needed for fortifications on Cape Henry is in the vicinity of the lighthouse. The beach is of sand and in rear of the beach there is an area of sand and of sand dunes that averages about  $\frac{4}{5}$  of a mile wide in this vicinity. Back of the sand dunes is an area of low or swamp land. The land desired for fortifications extends from the beach inland to such a <sup>distance</sup> <sub>^</sub> as may be necessary for the purpose, but by reason of the topography should include the seaward slope of the main sand dunes which are approximately 2000 feet back of the shore line. As has already been stated the land is sandy in character; no borings have been made to determine the depth of the sand nor the character of the underlying material. From a knowledge of other similar lands on this coast it might be expected that the sand extends to a considerable depth with possibly a layer of no great thickness of swamp soil about mean sea level. Based on the experience with the foundations of batteries at Fort Monroe which are built on a sand spit of generally similar character it is not expected that any great difficulty or expense would be involved in foundations for batteries.

5. Is this land adapted to fortification uses, and is it necessary to purchase the entire 300 acres?

This land is adapted for fortification uses and is the land in this vicinity best adapted to such uses. In fact there is no other land in the vicinity that is so well adapted to such uses; to <sup>occupy</sup> other land for fortification purposes would reduce the efficiency of the fortifications to such an extent that it ought not to be considered, due regard being had to the important military interests involved at this locality. It may not be necessary to purchase so much as 300 acres. It is necessary to secure land having a frontage on the beach of approximately one mile and the total acreage will depend upon the depth inland to which the purchase extends. The total cost will depend largely upon the value of the land immediately on the beach; as the land in rear if needed for defensive purposes can probably be secured at a relatively low price if purchased at the same time. Past experience in the purchase of land for military purposes has shown conclusively the advisability of including in the first purchase sufficient land for all purposes so far as they can be foreseen and the purchase in this case as in all others should follow that principle. Authority should therefore include 300 acres or so much thereof as may be necessary and as may be possible to purchase with the funds appropriated for the purpose.

6. What, in your opinion, is the value of this land, compared to land values in this vicinity?

The land required for fortifications purposes is the most valuable in the vicinity. It is located in the vicinity of the light house and covers an area upon which there has grown up in recent years a colony or settlement of summer residents. This colony has been increasing in numbers in recent years and the value of the land has similarly been increasing. The purchase of this land has been under consideration for 10 years or more. When originally taken under consideration the land could have been purchased for a sum considerably less than what it would cost at the present time and

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the longer the purchase is delayed the greater will be the cost to the United States. There is no doubt in the minds of the military authorities that the entrance to the Chesapeake must be fortified and therefore the sooner the land necessary for this purpose is purchased the smaller the total cost will be to the United States.

7. In your opinion, is this proposed item absolutely necessary for the proper fortification of the entrance to Hampton Roads and contributory navigable streams?

Fortifications at Cape Henry are necessary to the closure of the entrance to Chesapeake Bay and to Hampton Roads and to all other tributary navigable waters,, and the erection of batteries at Cape Henry will be the first step in that direction. As previously stated all military authorities are agreed as to the necessity of closing the entrance to the Chesapeake.

8. Have you worked out definite plans in relation thereto; if so, what is their ultimate cost?

The War Department has decided upon the number and caliber of gund to be placed at this time in the fortifications contemplated for Cape Henry; and preliminary estimates have been prepared as to the cost of the project so far as concerns the coast defenses proper. The estimated cost for batteries, fire control installations, searchlights and submarine mines is approximately \$1,610,000. This sum does not include any allowance for armament or ammunition, it being the intention of the War Department to transfer armament to this defense from other points where no longer required, in which case there will be no additional cost either for armament or for ammunition other than that included in existing estimates. This estimate also does not include any part of the cost of barracks and quarters for a garrison since it is not contemplated to permanently maintain a full garrison at this point, but only a care-taking detachment which would be increased to full strength only in case of emergencies. The above estimate is based on preliminary plans only, which plans however include a sufficient knowledge of the details of all the elements of the defense to permit of making a

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reasonably accurate estimate. Definite plans, including all details, can be prepared only after the boundaries of the tract to be acquired have been definitely determined upon and after a complete knowledge of the topography of the site thus becomes possible.

9. From a conference with the subcommittee on the eighth instant, it appears to be its desire to so limit the terms of the appropriation for the acquirement of this land that an unnecessarily large area shall not be secured or that the area necessary for these defenses shall be secured for the sum appropriated. Based on information received from the local officer it is my opinion that the amount under discussion (\$150,000) is not excessive for the purpose, having in mind the local conditions stated above. If the subcommittee desires that all the land necessary for the purpose shall be acquired for this sum or that none shall be acquired, the following wording is suggested:

For the acquirement by the Secretary of War of lands at Cape Henry, Virginia, necessary for sea coast defenses as contemplated by the project of the War Department as embodied in the report of the Secretary of War for the year nineteen hundred and six, one hundred and fifty thousand dollars or so much thereof as may be necessary; provided, that no portion of the said sum shall be expended ~~unless it shall appear to the Secretary of War that sufficient lands for the~~ purposes of the said defenses and their accessories can be acquired <sup>at Cape Henry</sup> ~~for a sum~~ not exceeding the amount herein appropriated; and provided further, that the said land may be acquired either or both by purchase or by condemnation proceedings under the provisions of the Act of August eighteenth, eighteen hundred and ninety (Supplement to the United States Revised Statutes, page seven hundred and eighty).

Very respectfully,

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Chief of Engineers, U.S. Army.