To Tench Coxe, Commissioner Dec. 1, 1793.

In confirmity with your directions to make on thisdday my final communication on the subject of a new Lighthouse and other matters for the security and safe passing of the Navigation in this Vicinity contemplated in the petition of the merchants of Portsmouth, I now transmit answers to the queries received from you under date of the 30th of March last with my remarks.

1. There are two situations on which a new Lighthouse might be placed which are esteemed preferable to the present Site, one of which is only twice the diameter of the Lighthouse from its present stand and the other 100 yards southerly toward the sea on the point called Polock Rock.

2. The advantage of the first of these over the site of the present Lighthouse is that its nearer approach to the channel will render it safer to strangers entering the harbour in the night but the deep water is so near the present Light that no accident has ever occured on this account. However in case of erecting a new Lighthouse the conveniency for building on either spot would be equal, and the use of the old one would be retained while the new one is building. Of course the site nearest the channel of these two ought to be preferred in a line with the present Light from the outer channel (and 100 yards nearer the sea) vessels running for it might come nearer the Light with safety before they should alter their course to avoid rocks by which Vessels in the night, especially strangers, would more effectually avoid the point proposed for this Site for which reason preference is given to it by several persons of good judgment who have viewed it. But the advanced position of the first proposed toward the channel would in a great degree remove the danger suggested and render the reasons for prefering the last described place of much less importance. The objections to the situation on Polocl Rock are these;- its distance from the fort walls and being at full sea surrounded with water will render the

access to it more difficult and an expensive causeway necessary.
2d that in case of the old fortress being hereafter occupied as such, this site will be in a direct line with the most important point for the defence of the harbour whereby the Lighthouse would on every occasion of firing from the Fort to an object without the harbour be exposed to great danger. Taking every circumstance into view, I am of opinion that the first described Situation ought to be preferred.

3d. The height of ground at the two described places are the same with the foundation of the present Lighthouse, viz, 5 feet above high water.

There is no situation of higher ground that can claim a preference to those mentioned in the judgement of all who have viewed them.

4th. The ground for the site of a Lighthouse in each is a firm Rockor ledge.

5. A stone lighthouse is the most desirable on account of its durability as well as its safety against fire.

6. ~~Stones~~ Stones in a considerable quantity is near at hand composing the walls of the old fort. They are not of so good a form for the purpose as those procured in Durham on this River whence the transportation by water is 12 miles performed in one tide and by land from the waters edge from 5 rods to 300. The cost of stone from Durham for uses in this town is 8 to 10 dollars for a craft of 12 tons. In a contract for the whole quantity required for a Lighthouse they might be purchased for 15% less.

In erecting the Walls of the Fort much labour was expended and should there be a prospect of a future use of this spot for a Fortification great expence would be saved by preserving the Walls; much more than the purchase and transportation of all the Stone from

Durham for a new Lighthouse.

7. The landing is safe at all times except when the wind is high and from the sea.

8. The grounds around (though rocky) are tillable and suitable for kitchen vegetables and grass and probably for grain and Fruit, its exposure to the Cold Sea Air renders the last article the most doubtfull

9. It is found by the best observations that could be made that a lantern elevated 78 feet (or 83 feet from High water) would show a light at sea over Friars Island which would increase visibility one third of its present extent on the Sea Coast. Therefore a Lighthouse of this height, of the diameter of 26 feet at the base and 13 at Top with a lantern according to the improvements known to be the best in the United States is desired.

10. I have received the estimate of the New Lighthouse to be built of Stone 78 feet high to the floor of the lantern, 26 feet diameter at the base, 7 foot wall, and 13 feet diameter at the top and 2 foot wall. One of these is from a mason who has been employed on shore work in laying cellar walls only, his estimate is Dollars but he would not undertake the work. The other is from a person who has been in the business of supplying stone from Durham. His estimate is Dollars but he would not undertake on these terms without consulting workmen who have actually been employed in erecting such a building which he has had no opportunity of doing, nor can any amount of the cost be procured by me from any neighboring lighthouse.

It is my opinion that both these estimates are erroneous, the first greatly short of what should be the value and the latter exceeding it in a greater degree. According to my own estimate

nceive the building including the lanthorn might be completed about 4000 to 4500 dollars. It would I conceive be necessary uilding a new lighthouse of stone to procure workmen from those es hwere building in stone has been in practice, wherefore the ract for the materials should be separated from the workmanship. I have also the estimate of a wood lighthouse of the same dimention en offer to contract for the building to be completed by the day of August next in the best manner with a frame according to plan ttransmitted herewith to be covered with boards and shingles 2 coats of paint. The person who exhibits this drought is an nious and capable carpenter and will compleat the work for dollars by the time above mentioned if he shall by an early sion on the matter have opportunity to commence the preparatory by the 1st day of Feby. next.

I beg leave to add my opinion in this place, that unless greater ledge can be had on the subject of Stone work than appears to be inable in this vicinity, a wood Lighthouse would be most sable. It appears that a wood lighthouse (exclusive of ern) would be compleated for 1500 Dollars. If we suppose a e one would cost 3000 dollars, the interest at 4% on the difference d be 60 Dollars per year, a sum which would preserve a wood ding by giving it 2 coats of paint every 8 years besides other sional repairs and insuring it against fire for 100 years and ring a sum at that period sufficient to build a new House. But ve good reason to think that a wood lighthouse situated as that in State is, surrounded with water, the exhalations from which are ighly charged with salt would not be subject to decay. It is rvable in the present building that there is not the least

appearance of decay in the wood work within or without altho it has stood upwards of 20 years and has not received such repeated coats of paint as would have been best for its preservation, whence I am led to think a wood building in that situation well finished at first and secured against the weather by proper repairs would last 200 (?) years or upward.

11. The intercourse between the Custom Houses and navigators renders a connection between the former and Lighthouses generally proper. The situation of our Lighthouse in so particular a manner facilitates the security of the Revenue, that I cannot but think it expedient to have the keeper of it an officer of the Customs and the Separation of the Superindency from the Collectorship can no otherwise be accounte for than a wish in the suggester to avoid that imputation on Navigation which the convenient situation of the Lighthouse affords.

12. A number of buoys and Beacons are desired and considered as necessary. Those which appear to claim the most immediate attention and from whoch the greatest benefits may be expected are as follows:

1. A Beacon or Tower on boon Island east from the Lighthouse distant about 7 leagues/ This should be of stone and whitewashed once a year. Stone is on the spot in great plenty, the dimentions thought best is about 30 feet in height and 16 feet at the base which would admit of a cavity that would give shelter to such persons as may be cast on the island. Instances have occured in which such an establishment would have saved the lives or mariners and relieved the distress of many persons. The cost would be about 150 Dollars.

2. A Beacon on Sunken Rocks, a ledge bare at low tides, situate in the river 2 miles above the lighthouse. This might be a pier of 12 square feet cased with wood, the cost of which would be 100 dollars