30. of the business & motive to be prepared to make an offer.

It will be essentially necessary that all expences should be well ascertained, in order that the appropriation may not be exceeded, and that difficulties may be avoided.— Advances will be made at different stages as the building progresses, when security being rendered for the due completion of the contract.

A Lanton of much smaller size than the one of Cape Cod will render all the advantages which the situation requires, and differ from the adjacent situation of other Lights it may be so constructed as to distinguish it— improvements in this respect should be communicated along with the Plan.— If any buildings are convenient it is probable that the Keeper may be accommodated without the expense of erecting a house &c.

I am with respect &c
For.
Signed. Wm. Miller
C. R.

Daniel Stevens Esqr
Charleston.

T. D. R. O. May 28th 1794.

Sir,

A. Several alterations on the proposed Light house & beacon on the North Carolina Coast, having been recently suggested which will somewhat affect the utility and oeconomy of the plan, I have delayed an answer to your esteemed favor of the 20th ultimo until they could be matured.—

It is deemed impracticable as well as unnecessary to dig a foundation of 9½ feet for the Shell Castle Beacon: the Soil is represented as a solid bed of sand & shells almost impenetrable; it is therefore proposed to substitute a foundation of the following discription, the diameter to commence 28 feet, 5 feet below the surface of the Earth, the first 2 feet to be laid solid from thence to the height of one foot

above

above the surface & to the bottom of the Wood work 5 feet thick

It is apprehended that the projection of the Eaves and the great size of the Lanthern of the Cape Hatteras house, will endanger so elevated a Building in the violent Winds to which it must be exposed. The projection of the Eaves may therefore be lessened ± 6 Inches, and a Lantern of 6½ feet in the smallest Diamiter, with proportionate Elevation; covered &c. may be substituted. It is well ascertained that as much effective light can be contained in a Lantern of this size as in one of the former dimensions, it has the following advantages in addition; The smoke of the Lamps having less room to expand is more immediately expelled, the glass is thereby preserved cleaner; the encreased warmth of the air renders the Oil less liable to coagulate in cold weather. —

Cisterns of the construction pointed out are found not to answer, the penetrating quality of Oil occasions great waste and leakage when exposed to the air, a more convenient and safe plan, is to have 9 light cedar Cisterns with strong covers capable of containing 100 Gallons each, to be sunk in clay which must be well rammed round them; the space above to be sufficient to admit any surplus quantities of Oil in barrels, the cover of the cistern on which the barrels will rest to be constructed so as to admit the drains & leakage of the Barrels into the Cistern.

As the effect of a Light depends greatly on the construction of the Lamps as well as the manner in which they are suspended, future directions will be given on those points as soon as the best mode is ascertained. This expense is understood to be included with the Lantern, & of course the contract is to pay it; You are however to understand that the expense of the ordinary number of Lamps will not be exceeded. —

The size of the 8 corner pieces or Iron Stanchions for fixing & securing the Lantern on the Cape house, are thought unnecessarily large, they may be reduced to a suitable size; a Diamiter of at least ¾ an inch less, would answer as well & being of less weight would be less liable to work.

Should it be found impracticable to dig a

32.

a foundation of 13 feet at the Cape on account of a flow of water or other insuperable cause, or if at that depth its Stability should be doubted, it must be underlaid & secured with timbers of large dimentions at the Buildens expense. —

As the foregoing articles will abate something of the expense, labour & Materials of the original proposal, a proportional Discount is expected. — As soon as you have made up your mind what the amount shall be, I will thank you to communicate it in order that a decision upon the whole contract may be had. —

E & A.

It is to be understood that the Light-house Beacon &c. are to be Erected on such Site as shall be determined upon by a person or persons appointed for the purpose by this Department. A person or persons are also at suitable periods to examine the foundation & progress of the work and report the same in order that it may be known whether it is conducted & finished in a workman-like manner, and according to contract. —

An advance will be made on the execution of the contract to purchase materials &c. and proportionate payments as the works progress —. It is however to be understood that a reasonable amount shall remain unpaid until the whole work is executed and the business completed. Satisfactory security must also be given that the terms of the contract shall be duly complied with by you. —

As much time is lost by the great distance our correspondence has to travel, I have thought it best to comprize in this letter, as much as possible of the substance of what is proper to be fully understood and agreed on previous to presenting it to the President for his sanction. —

I am respectfully &c.

Henry Dearborn Esqr. Sir, Signed, Wm. Miller

Gillsborough Maine