Boston Oct. 15. 1845.

W. A. Wellman Esq.

Dear Sir,

On looking into the question of the cost of Iron Light Houses of greater height than that to be erected near Burlington, (33 feet), we think that the expense will necessarily be encreased rather more than in proportion to the encreased height, although the Lantern for a high tower should be the same as in a low one. The principal items of encreased expense would be, that it will be necessary to give it greater diameter at the base, to secure sufficient firmness, and greater thickness to the cylinder castings, & also to the stairs & supports, in order to secure sufficient strength. And it would also be much more difficult & expensive setting it up, as very long timbers or derricks would be required. But the difference in the cost of an iron tower, in consequence

of additional height, we think would not be greater than if so much as it would in case it were built of stone. As in this last case, it would be necessary to give a larger base & thicker walls, as well as to raise the stones to a greater height.

As nearly as we can estimate the cost of increasing the height would be about one hundred dollars a foot, say a little less for the first ten or fifteen feet, & a little more afterwards, as in the following scale — extra expenses to be added for transportation & setting up in distant & difficult situations.

For 33 f. (in Boston harbor)	2500	dollars
" 114 " " " "	3500	"
" 53 " " " "	4700	"
" 66 " " " "	6300	"

Intermediate heights in the same proportion.

Very respy Your obt Servts,

Cyrus Alger & Co.