The aqueducts will be adapted to the breadth of the locks, since that regulates the breadth of the boats, and the cost of the locks of the deeper canal will be enhanced only in proportion to the increased height of their side walls, breasts and gates. In the lockage of this canal, one foot of masonry will be added to a wall of fourteen feet, and to some very inconsiderable extra expense in the construction of the gates; the whole not exceeding eight per cent. on the cost of a part only of the work of each lock, or less than $500 advance on the price of a lock of cut stone. The dams to force the river water into the feeders, and through them, into the canal, will be the same, in all respects, whether the canal be large or small; the short feeders in this case, may require some inconsiderable enlargement, to supply the greater consumption of water, by the larger canal, the depth of which, while, unless well constructed, it may increase its leakage, will decrease the relative proportion of its loss of water, from evaporation.

In the excavation of a canal, where choice may be made of a suitable level, and correspondent positions for its locks, its cutting is shallower in proportion to the increase of its breadth; because the quantity of earth required, for its banks to be of sufficient height to hold and sustain its volume of water, is the measure of its excavation. Some cases arise, in passing over a very irregular surface, where a deep canal will cost, even, less, than a shallow one, if the breadth be fixed, and, if the depth be fixed, a broad, less than a narrow one. So true is this, that, in relation to some of the most expensive sections of the Chesapeake and Ohio Canal, the advance of its cost, on that of the narrowest dimensions recently proposed for its plan, is least, where the section is most costly. The same elevated side wall, as one, of 50 feet at the Great Falls, would be necessary to sustain a canal of forty or fifty feet, in breadth, as one of sixty; and where the intervening chasm, to be filled by embankment between the artificial wall and the opposite cliff, is very deep and narrow, the increase of the depth of the canal decreases the quantity of the earth required to fill it up to the bottom. Between Bear Island and the opposite shore of the canal, there will be a body of water of the depth, in many places, of forty feet, and of a breadth exceeding one hundred. In many places of the same canal, there will be seen, an enlargement of its breadth, beyond sixty feet, to provide a sufficient quantity of earth for its towing path and embankments.