

feet in width; the slope of the remaining excavation being at forty-five degrees.

2. In order as much as possible to avoid confusion, the Commissioners will address themselves in recording the Estimates to each line in its particular section: and, in a subsequent one, will combine the results of all.

It should be stated in the commencement, that the mode which has appeared to them as preferable in all respects for the excavation necessary, is the use of temporary rail-ways, accomplishing, with the same power, and in much less time, the work required. The economy, of course, is just in proportion to the time saved.

They begin with the Rehoboth and Lewes route:

The levels have shown at the surface water of Rehoboth an elevation rather more than five feet. This was greater than was expected: nevertheless, it will not prevent what was all along hoped—that one lock could be made to answer all the purposes of a tide and of a lift lock. The location of a lock of eight feet fall will fully provide for a safe and speedy transit.

On this line the whole amount of excavation is computed at = 399 712 cubic yards, of which 150 732 yards, the whole probable solid to the depth of five feet below the surface of the ground, can be excavated in the ordinary way, leaving 248.980 yards to be removed by the rail-road. The whole length of this cut is 10 300 feet; one half of which, or 1.716.66 yards, will be the longest distance of transportation.

Dividing the whole distance into short prisms, each one yard in length, the mean weight of one of these prisms will be, as computed at the rate of 125lbs. the cubic foot, 244.749. tons.

The mean prism, nearest the the end of the cut, would have to be transported one yard; and that in the centre, as shown above, 1716.66 yards. If these be made the first and last terms of an arithmetical series, the sum of the progression will be 1491 448 yards, or 847.49 miles.

The moving power may be thus computed: one horse draws ten tons gross, or six and two-thirds tons neat weight, at two and a half miles the hour. This would take twenty-four minutes for one mile, (loaded)