

It became evident in the course of the preliminary observations that the only pass in this direction would be by some of the branches of Gillies falls and the Beaver dam creek.

The breadth & elevation of this Ridge near Ridgeville, with the great fall of Warner's Branch and Parr's Falls and their situation with respect to each other, rendered the valley of this last stream out of the question, and the result of the levels taken to ascertain the lowest and narrowest part of the Ridge and the fall of the principal streams, proved that the narrowest pass would be by the vallies of Middle Run on the East, and Grimes Spring Branch on the West of Parr's Ridge, and that a tunnel of considerable length would be unavoidable.

Besides the principal ridge extending North-easterly from Ridgeville, spurs of nearly the same altitude, separate through their whole extent, Parr's falls from Gilles falls, and the small streams flowing into it and Talbott's branch from Beaver Dam creek, rendering available for the supply of summit water to a canal by the pass above mentioned, the drainage of the extent of country comprised in the basins of the following streams only, viz.—Gillies falls and its branches, Beaver Dam creek and Warner's branch. The necessity of commanding the the greatest amount of water from this drainage, determined the elevation of the summit, which was established with reference to the single depression in the ridge, separating Grim's Spring branch, from Beaver Dam creek, through which a supply could be drawn from this last stream, and assuming this supply to be brought into the summit, by a tunnel or a deep cut of 61 feet. We fix the summit level at 236.076 feet below Parr's Ridge, near Grimes' Tobacco house, the lowest point upon the ridge N. E. of Ridgeville, or 530.170 above mid tide at Baltimore, as deduced from the surveys made under the direction of J. Trimble, Esq.

An inspection of the accompanying map No. 1, will show that no material increase of water can be obtained by depressing the level assumed, without increasing the length of the tunnel, already, as will be shewn, very great, beyond reasonable bounds or practical limits.

This elevation then, 530 feet above tide, gives for the length of the upper reach, or distance between the two first locks of the summit, 5 miles and 839 yards, to be overcome by a tunnel 3 miles and 197 yards, with a cut at each extremity of 50 feet diminishing to 0.

From the extremity of this reach a canal would follow the vallies of Gillies falls and the Beaver dam without impediment, or unusual cost in construction, until secondary water could be drawn from Talbott's branch on one side and Parr's falls on the other, making in all, including the upper reach, 12 miles and 714 yards of canal.

As a preliminary step towards ascertaining the available quantities of water for this extent of canal, the streams above the summit were gauged with great care, the months of July and August, during the prevalence of the unusual draughts of the season.

The following table shews the results obtained; a detailed description of the means employed is given in another place.