

In this latter section, difficulties and disasters almost appalling were encountered, in consequence of the depth of excavation, and character of the ground through which it passed; being composed of strata of various kinds of soil, some of them of clay, and others of quick-sand, through which large quantities of water flowed, and presented a serious obstacle to the progress of the work. Immense masses of earth from the sides slipped into the canal, and required large expenditures in their removal. A heavy stone wall, of from two to five feet in thickness, sixteen feet in height in the slope, and extending along each of the sides of the canal for about three and a half miles, has been built for their support and protection. Several thousand piles have been driven as a security to this wall, and to other parts of the work requiring similar protection.

It has been satisfactorily ascertained, that these slips or fallings in of the banks, were occasioned by springs of water flowing from them, and rendering the earth loose and wet, and thus, by depriving it of tenacity, causing it to slide down by the mere force of its own weight, in those places where a body of sand or loam rested on a substratum of clay, which prevented the water from passing off. This evil has been remedied, by making trenches up the banks to the springs, placing crooked wood and stones at the bottom, and covering them over; thus forming aqueducts, by which the water is conveyed into the canal. This plan has proved highly beneficial, and it is confidently believed will effectually prevent any recurrence of the disasters which have hitherto arisen from this cause. On section No. 5, near the summit of the "deep cut," the canal is crossed by a bridge of a single arch of 248 feet, and elevated 90 feet above the bottom of the canal, sufficiently high to permit the passage of vessels under it with standing masts. The length of this section is three miles fifty-eight chains, and crosses the ridge which divides the waters of the Chesapeake and Delaware. The average depth of excavation was about 36 feet, the extreme depth about 78 feet. The quantity of earth actually taken from this section, exceeded the original estimate of it many hundred thousand yards. This excess was caused by the slipping in of the banks before referred to.

Section No. 6 is principally embankment, and in good order; near the western end of this section a pivot bridge is erected, to accommodate a main road down the peninsula.