

The contract price given for masonry in the above table included all dredging, coffer dams, pumping, bailing, timbering, cement, sand, and every other expense connected with the construction of the work, except excavation of foundations, as noted in same table, wet excavation being considered as all material below pool.

There were 1,930 barrels of cement used, out of which about 300 barrels were used in concrete, leaving 1,630 barrels for masonry work proper, allowing 130 barrels as wasted or condemned, which is above the mark, leaves 1,500 barrels for 3,710 cubic yards, or 4-10 barrel per cubic yard.

As this work was watched continually by an inspector, so that no large spaces were allowed, it may be considered a very generous use of cement, especially as the writer has occasion to know that in 5,000 cubic yards of second-class rubble arch and box culvert masonry, built on another part of his work, where the cement was furnished gratis by the company, and also inspected, the average was only $\frac{1}{3}$ -barrel per cubic yard.

As the former was a much higher grade of masonry, in which, as before mentioned, very few spaces or interstices of any size were allowed, it reflects creditably on the integrity of the contractors, who were The Drake & Stratton Co. (Ltd.) of Pittsburg.

A GENERAL PLAN OF PIERS.

Plans of abutments and general plan and profile of the bridge are also presented, which may be of some interest as to detail.

They were prepared by Division Engineer, Mr. Andrew Onderdonk, under approval of the Chief Engineer B. & O. R.R. The construction of the State Line & F., M. & P. R.R.'s was under the charge of the former gentleman, and the writer cannot but make mention here of the great amount of new ideas and careful detail that he has learned while with him on these roads and the Roanoke & Southern Railway, of which he was the Chief Engineer.

In conclusion, the author does not claim to have done anything that would be of great interest to older members of the profession engaged in such works, but hopes that the little incidents and details which go to making up an accomplished piece of work may afford reading matter to those who are just beginning to turn their minds towards such a class of construction.