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the distance from the bed of the river to the solid rock is in some instances from twelve to fourteen feet, with boulders ranging in weight from one to twenty tons—such was the description of the material met with on the Victoria Bridge, and judging from similarity of appearances in the formations at the two places, in so far as can be discovered, the excavation at this point will prove but a second edition of the one just described—under such circumstances therefore it would in my opinion be unwise to attempt to perform all the work by dredging—at the lower end however, where the water is deeper, it might be profitably performed and could be easily determined by trial.

If the foregoing remarks present the subject in rather a gloomy aspect, it must not be inferred that there exists no method of dispelling the clouds, and of allowing a ray of sun light to brighten up the project, as it would be a sorry termination of our labours in preparing plans, sections, and estimates, to discover that the whole was but an impracticable idea, or one which if realized would bury itself and its projectors in an overwhelming cost.

The method of dredging being then intelligible for the object in view, we must now consider the only other plan open for our adoption, viz: to unwater the work by coffer damming, and then remove the excavation by ordinary means, a mode of procedure open to no solid objection, but on the contrary presenting peculiar advantages, admitting, as it will, of opportunities to execute the work in sections, and with nearly as much facility as if performed on dry ground. To determine the number of sections into which the work should be subdivided, involves a knowledge of the amount of money the Company would be able to appropriate for each seasons operations, as each section would require to be completed a few feet above the level of low water in the same season it is commenced—the number may be assumed as not less than two or probably more than three—for our present purpose I have estimated that the work can be done in two years, and therefore in two sections, which I will now proceed to describe.

Section No. 1—or commencement of the work, will extend from opposite Grant, Hall and Company's Mill, downwards, a distance of one thousand three hundred and seventy-five feet, to a point opposite Hydraulic Lot No. 1, Lachine Canal; and section No. 2 from thence a distance of one thousand seven hundred and twenty-five feet, to a point opposite the foot of the Lachine Canal.

The shallow water on section No. 1, will admit at small expense of an earth embankment, say twelve feet in width on top, and raised three feet above the ordinary summer level, being placed around it—the side facing Mill street, of the coffer dam (so formed, will be placed some distance out from the street, as shown on section No. 4, and so situated as not to interfere with putting in the foundation walls of the proposed new warehouses—the space intervening between this embankment and Mill street will form a channel or tail race, to convey the waste water of the Mills, each

way, and discharge it into the river at the upper and lower ends of the section—the outer side of the coffer dam will be placed in such position as will furnish ample room for excavating and putting in the dock wall on the south side, and form the commencement of the large embankment, by being widened and elevated with the additional material to be taken from the excavation—these sides will be connected at either end by transverse embankments of clay, thus surrounding the entire section with a water tight enclosure, allowing the water to be easily removed by steam centrifugal pumps, similar to those lately employed on the Victoria Bridge, and thus laying the bed of the section dry.

The ordinary excavation can then be proceeded with after sinking wells for the pumps, to such depth as will place them one foot below the bottom of the dock, and diverting all surface drainage into them. Keeping the work moderately dry during all its future progress. The excavation should then be commenced on each side of the dock and carried to the bottom along the entire length of the dock wall, so as to admit of this important part of the work being commenced with the least possible delay, and carried on simultaneously with the remaining excavation, using the loose stones so furnished to fill the cribs. The bottom of the dock reached on both sides, a fine face will be presented for the excavators subsequent operations, as these faces can be driven each way to the centre of the dock, blasting the material down in large quantities, where it proves of more than ordinary hardness.

The opportunity thus offered of constructing the dock walls, retaining or foundation walls of buildings, with tail races on dry ground cannot be overestimated, either with reference to the quickness of time the work can be accomplished in or the decrease in cost at which the same is attained.

The total excavation on this section will amount to about three hundred and forty-eight thousand yards, and the embankment taken therefrom to two hundred and one thousand yards, leaving a surplus of one hundred and forty-seven thousand yards to be carried forward, as embankment to section No. 2, and for which an allowance has been made in the estimate for increased haul.

On referring to the detailed estimate for this section, you will find them as follows:—

1st. If masonry superstructure is used throughout on the north side, and the entire work completed as shown on the plan and section No. 3, the cost will be \$526,427.

2d. If wooden superstructure is used, and the entire work completed in accordance with the plan and section No. 4, the cost will be \$482,330.

The surplus excavation mentioned as being carried forward to section No. 2, will be arranged in the form of two side embankments to act as coffer dams for the next seasons operations, and placed in position with reference to the dock walls similar to those on section No. 1, they will be protected with stone covering so that the water in winter may not injure them.