

Between Allanburg and Port Robinson, sections were carefully taken through the "Deep Cut," and the calculations for the enlargement of this formidable excavation, are made for the same bottom width as the other parts of the projected canal, namely 100 feet.

From Port Robinson to Welland, the canal is, in some places, close to the left bank of the Chippewa River, and in considerable embankment on the side next the stream. The enlargement is therefore at such place, projected on the side next the land, to avoid any interference with the banks, which are now rendered solid by repairs, and the time they have been built.

At the town of Welland, numerous cross-sections and soundings of the river were taken, with a view of obtaining a line for a new aqueduct, in case it should be considered necessary to build one. Between Welland and the junction of the Feeder, the excavation is calculated for on the west side of the canal. Beyond this, on the long straight line to Ramey's Bend, the enlargement is also intended to be on the same side. The tow path is at present on the east side of the Canal, and also the road from Welland to Port Colborne.

Through the rock cut above Ramey's Bend, and that from below Stone Bridge to Port Colborne, the quantities are taken out for the east side, the west bank being covered with large heaps of soil arising from the excavation of the present Canal.

At Port Colborne the harbor was carefully surveyed and sounded, together with the entrance, and for some distance outside the Light House on the end of the west pier.

The result of these measurements shewed that there is a considerable area of rock lying inside the west pier, which it will be necessary to excavate to the required depth for the entrance when the canal is enlarged.

The work is, I believe, now under contract.

An additional lock will probably have to be provided at Port Colborne of the size and depth required for the proposed canal, the present one being only 230 feet long between quoins.

During calm weather, and at ordinary level of the lake, neither of these locks would have any lift when Lake Erie level is introduced. But as the sudden fluctuations caused by storms have rendered it necessary that the present lock should be provided with two sets of gates opening in opposite directions, a similar arrangement will, it is presumed be made for the new lock. This will enable a higher level to be resumed temporarily for the summit should this at any time prove advisable.

It is quite evident that at no time would it be possible to pass through the gates of these locks the large body of water required for the supply of the new canal as well as that for the present canal below Thorold. It will therefore be necessary to construct a large weir for the purpose. This might be built on the east side of the inner basin, and a channel excavated from it to join the canal a short distance north of the locks, passing under the Grand Trunk Railway. The swing bridge at the crossing of this line will, of course, have to be rebuilt. With reference to the supply for both canals below Thorold, if the prism be made through rock cutting of the dimensions estimated for, an ample volume can be passed through it without creating an objectionable current. A slight current downwards and in the direction of the heaviest traffic would be an obvious advantage to the trade.