

surface of which is elevation 40, so that the bottom being elevation 18.22 feet of wall is in solid rock, leaving 40 feet to be built up in concrete.

Below the lock is the usual cribwork approach, and above is the lock cribwork pier. This is backed by earth from the canal excavation to create a dam across the small gullet just above the lock, which then forms an entrance basin about a mile long.

This expansion of the surface will diminish the bore or ware which travels down a narrow canal during and after the filling of a lock, tending to slam the upper gates shut just when they are in progress of opening.

Above the lock—mile 17 to mile 28—are 11 miles of canal, and the question of a guard lock at the head and a guard gate just above the Recollet lock, comes up.

A guard lock at the head of the canal, where it enters Oka lake would be subject to the drive of the waves down the lake, which would prevent the opening of the upper gates as has been experienced on the Soulanges canal at Coteau under similar conditions.

On the other hand, without a guard lock, winds are apt to pile the water in the narrow canal towards the foot. This action nearly resulted in overflowing the banks of the Welland canal and Thorold during a gale down Lake Erie. The gates of the Port Colborne guard lock had been left open, and could not be shut owing to the heavy waves that ran in from the lake.

Again, the carrying away of the lock gates at Recollet lock or a break in the canal bank would create a swift current through the canal, and a lowering of the surface that would wreck steamers navigating the reach.

The sides of the canal have been designed 5 feet above Oka lake, which is sufficient to obviate any danger from the piling action of the water toward the lower end of the canal.

Recollet lock, like all others, on the route, has four pairs of steel gates. Both the lower pairs are always shut against a descending boat, and is beyond all human probability that a thin steel boat cutting into the 4 foot wide girders of these steel lock gates would completely carry away the pair 57 feet below. The bows of the boat would be cut in, and she would remain hanging in the wreck of the first pair of gates, forming a very effective dam.

Near the head of the canal at Bigras island a large area of sluices is provided, that empty directly into the river channel, which at this place is rock. If then the canal bank should give way at any point, these sluices will be opened and the greater part of the flow from Oka lake will discharge through them. Only a small quantity would tend to continue down the canal, and, therefore, a temporary dam could easily be constructed across the channel below the sluices till the break in the bank was repaired.

In this connection it must be remembered that, even with a guard lock, the whole contents of the canal would tear out through any break in the bank and do practically all the damage that could be done.

I have, therefore, made no provision for guard lock nor guard gates, but have preferred to place full confidence in the Bigras island sluices.

The Recollet canal necessitates over five mil-

lion cubic yards of dry earth, excavation, and half a million cubic yards of rock. The standard size of embankments amounts to three million cubic yards, so that a good margin is left to widen and strengthen the usual cross section.

There are several bridges to be dealt with. Viau bridge traffic will be carried across at Recollet lock.

For the Canadian Pacific Railway, a bascule bridge is provided at Parc Laval—mile 19.

The Cartierville road traffic will be crossed by a bascule bridge in the same line as the present road.

The highway traffic to Ile Bizard can pass along the south bank as a roadway is provided over the Bigras sluices.

Along the whole 11 miles of canal it will be necessary to protect both sides by broken stone against the wash of boats, etc.

Above the canal, the channel toward Oka village will be dredged, 7 feet deep, through the shallow sand flats at the east end of Oka lake—mile 28 to mile 37—a total excavation of $4\frac{1}{2}$ millions cubic yards, most of which can be handled by suction dredge.

Silting in of this channel, with sand by wind storms, is liable to occur, but the powerful suction dredges now in use are capable of rapidly and cheaply clearing it away.

The time required for the construction of the Recollet reach and Oka lake section would probably be five seasons if 12 steam shovels, or their equivalent, were employed in the canal section itself—mile 17 to 28. The dredging in Oka lake can be completed in advance of this.

It may be argued that, in view of the recent expressions on the part of the right hon. leader of the government, the commencement of the Georgian Bay canal project is somewhere yet in the near future. The desire is to see it begun at once; but the extensiveness of the other great and important public works that demand immediate attention, and the means at the disposal of the government for such gigantic enterprises, compel the relegation of this national undertaking to the time to come. Consequently, it may be said, that there is not an immediate necessity for the dredging and improvements that I have so persistently asked for. But, in reply to this, I say that the immediate necessity is of a most important local character, and that it affects the interests of the great metropolitan city of Montreal and all the immediate surroundings. And while that work is being done, and that navigation is being not only restored, but made permanent for the future, you will be 'killing two birds with one stone' and preparing so much of the route that most assuredly will be adopted whenever the government of Canada finds itself in a position to freely launch the magnificent national enterprise of building the Georgian bay canal.

I will not detain the House any further on this point; but I will sum up in a few words my request. It is the same as that made to the government on the occasion of