

Excavation.

In calculating the quantity of excavations to be done for the construction of the canal, provision has been made for the removal of the muck and soft material from the side slopes of the canal prism, and from the seat of all embankments across the bogs, swamps or other wet lands.

On the south side of the canal, where it is proposed to place the towing path, if the elevation of the ground is greater than 102 feet above datum, it is reduced to the level for a breadth of 20 feet, including 5 feet for a side ditch, or to a lower level if necessary on account of mucking. On the north side, the breadth calculated to be removed to prevent the sliding of muck, land, or of any soft material into the canal, is 10 feet.

The towing path embankment is supposed to be 10 feet wide at the top, with side slopes of two horizontal to one vertical.

The calculation of the dredging at the termini includes the removal of all material for a breadth and depth sufficient to sink the piers to the same level as the bed of the channel.

At the eastern end of the canal, the lower locks Nos. 5 and 6 are shown on the upper side of Tidnish bridge, with dams on either side across the river, for which a new channel with a regulating weir is supposed to be constructed for the passage of the water through the lower reach of the canal into Baie Verte.

This location appears to be advisable—

1st. In order to avoid the construction of a tunnel for the escape of the river water under the canal, because it would be liable to fill up with sand and saw dust or other refuse matter from the stream and mills thereon above.

2nd. If a dam is built across the Tidnish without any outlet for the water, the mills would become useless, and extensive area of low land would be permanently flooded, and the drainage of lands along the river would be much impaired.

3rd. The soil between Tidnish bridge and Tidnish Head, for a distance of $1\frac{1}{2}$ miles, according to the borings made, is of a sandy nature and does not appear to be suitable for lock foundations.

4th. Even if a good foundation can be found, on further examination, by the sinking of test pits, the waters of the Tidnish would be permanently raised to the same height as the summit level of the canal and the low lands inundation for several miles upwards, or a tunnel for the escape of the water would have to be built, if the locks were placed near Tidnish Head.

The location of the locks near Tidnish bridge, will however involve the necessity of excavating an extra depth of $1\frac{1}{2}$ miles, or an additional quantity of 443,500 cubic yards.

As ditches for the drainage of the lands on the north and south sides of the canal must be dug, the quantity to excavate for this purpose has been included with the other excavation.

The probable quantity of excavation to be done on each of the lines examined for the projected canal, the length of each line, and that of the piers required at the various termini are shown on the comparative statement appended hereto at pages 21 & 22.

Land Required.

The extent of land that would probably be required for the canal and outside drainage is about 500 feet in width for a distance of 1,884 miles, equal say to 1,146 acres.

Its cost, according to an estimate made by A. Monro, Esq., P.L.S., who acted as one of my assistants during the survey, will probable amount to \$68,000, including water damages.

Fencing Required.

The total length of fencing required on both sides of the canal from the shore to shore, will be about 199,000 feet.