To avoid this it became necessary to diverge further south than the Little Deep Cut; and after a careful survey of the ground, Marlatt's Pond, seemed, under all the circumstances, to be the best place for the purpose.

By continuing the general line of the reach south of Hurst's Bridge across the road to Allanburg and the Welland Railway, the latter can be crossed at a fair angle, and where the grade is nearly level. The height of the rails being about 9 feet over the present surface of the pond, is also favorable for the construction of a swing bridge at this point.

There is, in addition, an evident advantage in drawing from such a large body of water, as the long reach below Allanburg, for the supply of the proposed canal, as well as for that of the existing one.

The trial line after crossing the Railway, sweeps to the north by a curve of 1000 feet radius, and enters the ravine at the bend on Hoover's farm.

Advantage has been taken of a small branch of Marlatt's Pond, and also of the shape of the ground, to reduce the amount of excavation as much as possible. Still it is very considerable, as the ridge already traversed by the "Little Deep Cut" has again to be cut through. The distance from the point of divergence, to the 24th lock from Lake Ontario, as shewn, is 5130 feet. About 2630 of this is in cutting; the remaining 2500 being through Marlatt's pond, where there is from 5 to 9 feet water.

From the 24th lock to the mouth of the ravine, the distance is 2400 feet. Down the gully it is proposed that the centre line of the new canal shall be the same as that of the present Railway, the latter to be shifted about 120 feet to the westward.

Although the work here will be heavy, and a great part of it through rock, yet it is believed this is the best line that can be had under the circumstances. The Railway can in this way be relaid on precisely the same grade as at present, and the turn out to the line in its new position, can be made by an easy reversed curve just north of Thorold Station, the tangent down the ravine being, as before stated, run 120 feet parallel to, and west of its present location, so as to join the existing line a short distance from the Cement Quarry, thus straightening a portion of the track, at that place, which is now curved. In short, as may be said that the traffic of the line need not in any way be interfered with by the proposed arrangement.

Lock 21 is placed on the slope, north of the mouth of the ravine, the reaches between it and No. 24, being shewn as 630 feet each.

The rock in the cutting will consist of the upper layers of the the Niagara limestone, amongst them being the bed from which the well known "Thorold Cement" is manufactured.

From the mouth of the ravine to the crossing of the Great Western Railway, the line gradually descends the slope, passing close by the north end of Thorold Cemetery, and near the old, (and now abandoned) stone church. At the Railway the distance from the starting point is 2.40 miles.

Nearly the same arrangement as to locks and reaches is preserved from Lock 24 to Lock 17, which latter it is proposed to connect with the abutments of the swing bridge to be built at the crossing of the Great Western Railway. That is to say, a lock and reach occupy together from 1000 to 1100 feet, from which deducting the length of the lock, leaves from 630 to 730 feet in the reaches, the latter being nearly three times the length of the largest vessel which could navigate the enlarged canal. The lift of all these locks is 14 feet each; the level above 24 being 320 feet, and at the Great Western Railway, above 16, 260 feet above datum of mean water surface of Lake Ontario.