5, 6 and 7, and is shortly to be moved to its new location in the very large cutting extending along the west side of the new work; 1,500,000 cu. yds. of material have been removed from this cutting within a length of 1½ miles. This line will divert from the G.T.R. main line near the present branching off point, a short distance to the west of the new crossing of the canal.

Bridge 6 will be a double track bascule bridge, carrying the G.T.R. main line over twin locks 4. At the head of this triple lift of locks will be bridge 7, a bascule highway bridge crossing the upper end of lock 6. The upper end of lock 7 will also be crossed by a bascule highway bridge. The crossing of the canal by the Niagara, St. Catharines and Toronto Ry. will be bridge 9. On the west side of the canal, this line will be carried on a reinforced concrete bridge spanning the G.T.R. division, which is completed, while the line will be carried across the new canal on a swing bridge, which will be the only one of its type on the canal. Both the centre pier and abutments, all of concrete, are completed, and only await the steel span, when the line will be diverted to this bridge.

As there is plenty of rock on section 3, but none on sections 1 and 2, the contract for section 3 provides that the contractor must crush all the rock required for concrete, etc., for sections 1 and 2, and for this purpose a large stone crushing plant has been erected north of the G.T.R., which is in operation. The crushed rock will be stored in a huge pile, extending out from the highest end of the crushing plant, and the contractors for sections 1 and 2, when they require crushed rock, will send their cars to the pile, where they will be loaded by the contractor for section 3. This crusher is of large size, and has a capacity for 3,000 cu. yds. in a 10 hour day. Its location, immediately below the heavy cutting for the triple locks, is such as to provide a convenient location for the contractor dumping the excavated rock from the cuttings. Keystone and cyclone drills, operated by electricity, are in operation on the site of lock 5, drilling blast holes from 30 to 40 ft. deep in the rock.

The contract for this section is held by the Confederation Construction Co., an amalgamation of the interests of O'Brien and Doheny, and Quinlan and Robertson, of Montreal, the headquarters for that contract being at Thorold. No subcontracts have been let on this section.

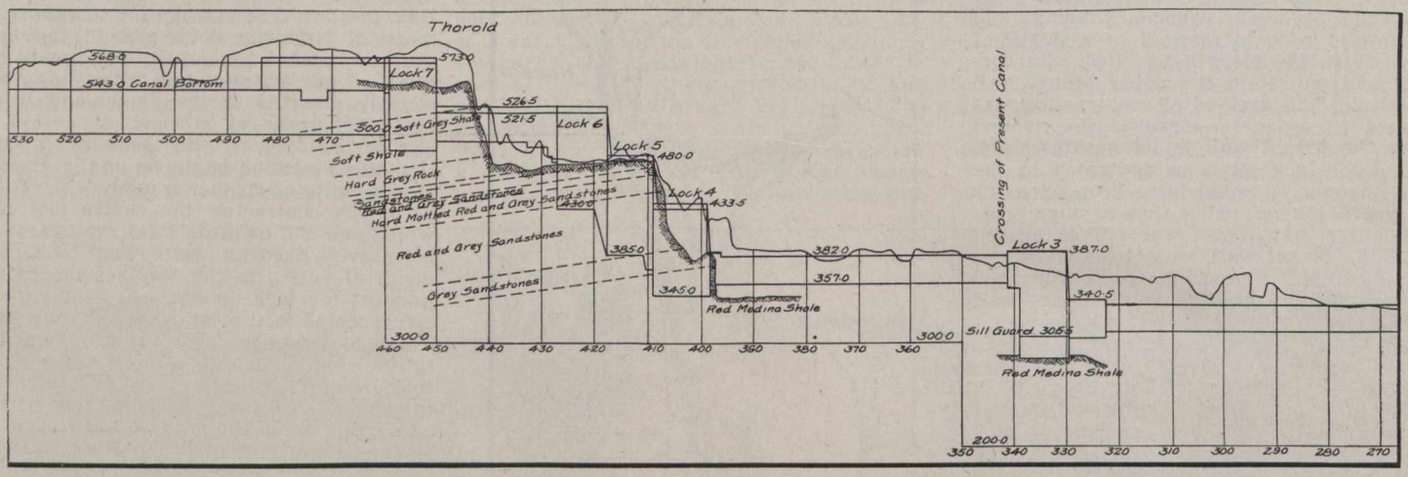
A short distance north of the crushing plant 150 ton track scales are being constructed, which will weigh a train of cars 110 ft. long. These scales will weigh all the stone leaving the crushing plant for sections 1 and 2. From the scales to Lake Ontario, little over 6 miles, the Railways and Canals Department has built a double track, standard gauge, construction railway along the west side of the canal. This railway is carried over the present canal, about a mile below the crushing plant at lock 3, by a double track steel bridge, completed recently. The department maintains this railway and supplies a superintendent, dispatchers and switchmen, who control all the operations on it. The contractors for sections 1, 2 and 3 are entitled to the free use of this road for moving crushed stone from the crushing plant to their respective works, and for removing excavated material from their works to the service ground fills in Lake Ontario. A complete interlocking plant and block signal system is being installed.

Section 4a is a small one, covering the construction of two culverts, between the present and the original canal, and a supply weir for supplying water to the original canal, which will be filled from Allanburg, for some distance north, with excavation from section 5. McGuire and Cameron, St. Catharines, Ont., have the contract for section 4a at approximately $80,477.50.

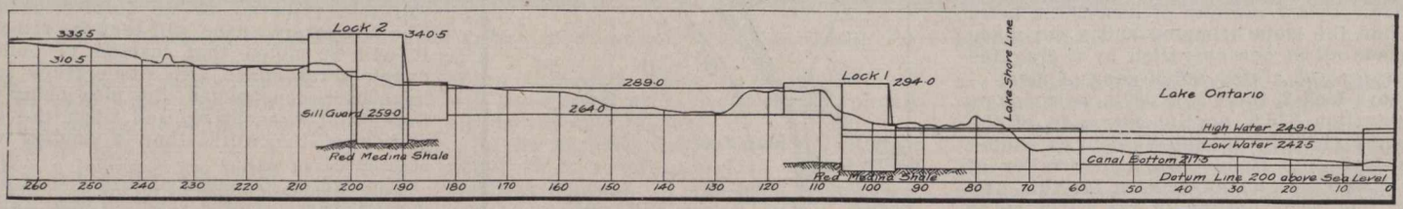
On section 5, Allanburg to Port Robinson, about 2½ miles, the contract is held by the Canadian Dredging Co., Midland, Ont., for approximately $1,945,788. A subcontract for the dry excavation work on this section has been sublet to J. H. Corbett & Co., Moncton, N.B.

Contracts for sections 4, 6, 7, 8 and 9 are still to be let. As these sections cover principally the widening and deepening of the present canal prism, the work is light, and it is said that it will be possible to complete it in half the time of the heavier work on sections 1, 2 and 3. Section 6, with its diversion of the new canal into the Welland River, and section 8, with a diversion at Humberstone, with guard lock, will be the two heaviest sections on the upper reach of the canal.

The surveys for the new canal were made under the direction of J. L. Weller, M. Can. Soc. C.E., Engineer in Charge, who also prepared the plans, etc., and who is superintending the construction. The foregoing information was secured through Mr. Weller's courtesy on an inspection trip made by the Canadian Society of Civil Engineers, Toronto branch, Oct. 31, under the charge of A. F. Stewart, Chief Engineer, Mackenzie, Mann & Co., Ltd., president of the branch. The University of Toronto Engineering Society accompanied the party. Sections 1, 2 and 3 were carefully gone over, four open electric cars provided by the Niagara, St. Catharines and Toronto Ry. being hauled over the construction railway by a contractor's locomotive from the south end of the line, the party returning to St. Catharines from Port Weller on the same cars under their own power, over the N. St. C. and T. Ry.'s new Niagara-on-the-Lake line.



Profile of North End of Welland Ship Canal.



Profile of North End of Welland Ship Canal (contd.).

Aids to Navigation in Hudson Bay.—The Department of Marine has installed 10 beacon lights on the Aga system at Button Islands, Wales Island, Charles Island, Digges Island, Hatton headland, Ashe Inlet and Nottingham Island, in the Hudson Strait; and on Mansel Island, Cape Tatnain and Coats Island, in Hudson Bay. They have not yet been put in operation, but are all ready for operation at the beginning of navigation next year. Buoys have also been taken to Hudson Bay, to mark the entrance to Nelson River.

Movements of Suspicious Vessels.—The masters of all vessels in Canadian waters are requested to report the movements of any suspicious craft which they may meet, to the Customs officer of the first port at which they touch, for transmission to the captain in charge of the dockyard at Halifax, in the case of the Maritime Provinces, and to the Superintendent of the dockyard at Esquimalt in the case of the Pacific coast. It is not desirable that any hearsay information should be given, but it is very important that all definite information secured by masters themselves be forwarded promptly.