

The work has been divided into nine general sections and up to the present contracts have been let for Sections 1, 2, 3, 5, and a portion of Section 4, called 4 A.

Section 1.—The contract for Section 1 was let on August 1st, 1913, to The Dominion Dredging Company, Limited, Ottawa, at about \$3,500,000. It extends from deep water about $1\frac{1}{2}$ miles from the Lake Ontario shore line to Sta. 150, about $1\frac{1}{2}$ miles inland. The contract includes the construction of Lock 1, the lower end of which is about 2,500 ft. from the shore line. There is a lock wall about 800 ft. in length and an entrance wall also 800 ft. long. The inland part of this section entails a large amount of dry excavation. The contract also includes sub-structures for two bridges. One of these will be situated over the head of Lock 1 and will be for the electric line to Niagara, of the Niagara, St. Catharines and Toronto Railway. This will comprise a bascule lift bridge over the Canal proper with 95 ft. clear span, and a reinforced concrete approach of six spans over the regulation weir on the east side. The two outer spans will be $41\frac{1}{2}$ ft. and the four central spans 40 ft. in length.

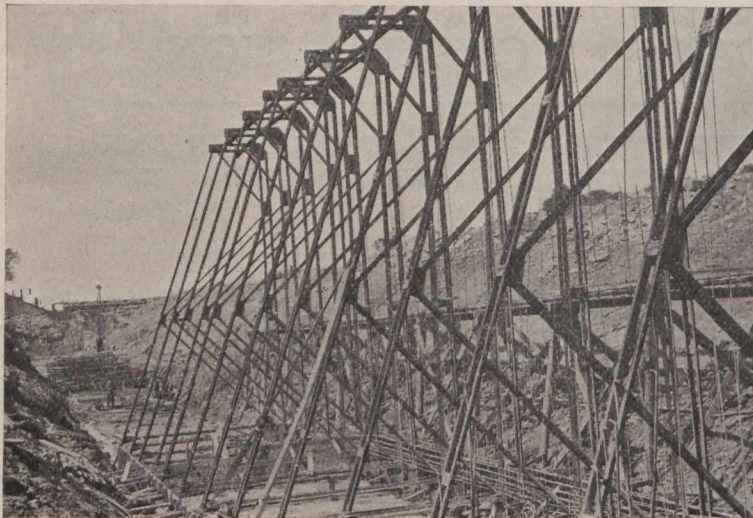


Fig. 4.—End Section of Steel Frame for West Entrance Wall at Port Weller, Before Placing Reinforcing Steel.

The contract calls for the complete construction of this approach.

The other bridge, No. 2, will also be a bascule lift highway bridge, but of 200 ft. span. It will be situated about a mile south of bridge No. 1, and will lie between the second and third concessions of the Township of Grantham.

A considerable part of The Dominion Dredging Co.'s contract consists of the construction of a harbor at Port Weller. This harbor is to be formed by two earth dykes about 500 ft. in width and extending, as stated, $1\frac{1}{2}$ miles from shore line. These dykes each carry a temporary trestle used in their formation. This trestle carries the tracks of a railway to be described later. Here all the surplus material from Sections 1 and 2 and the lower end of Section 3 is being dumped. At present the trestle on the west side extends over half way out and that on the east side is almost as far advanced.

It is expected that the side embankments of the harbor will eventually be three or four hundred feet in width at the top at the narrowest point, and considerably wider toward the shore. The material dumped into these embankments washes away to a very small extent under

normal conditions, and even during storms no great quantity has so far been taken out. When the earth filling is completed rock will be brought from Section 3 to roughly rip-rap the outer slopes.

The work in the lake includes dredging a 25-foot channel from deep water to the shore line, the material being cemented gravel and hard-pan overlying shale rock. Some of the latter will also be removed.

The harbor work includes the building of 55 cribs, each weighing about 2,000 tons, to be placed at the entrance piers and at the east docking and gate yard slip, near the shore line. Each is 110 ft. in length, 38 ft. wide and 34 ft. deep and contains 18 compartments, each 12 x 18 ft. The exterior walls are 18 in. wide at the bottom, tapering to 12 in. at the top. The base and top widths of the interior walls are 14 and 10 in. respectively. There is an offset at the bottom of each compartment providing a seating for a movable timber bottom. When the cribs are floated to position they are sunk by the removal, by chain operation, of these bottoms. When sunk they will be filled with earth. One of the cribs has

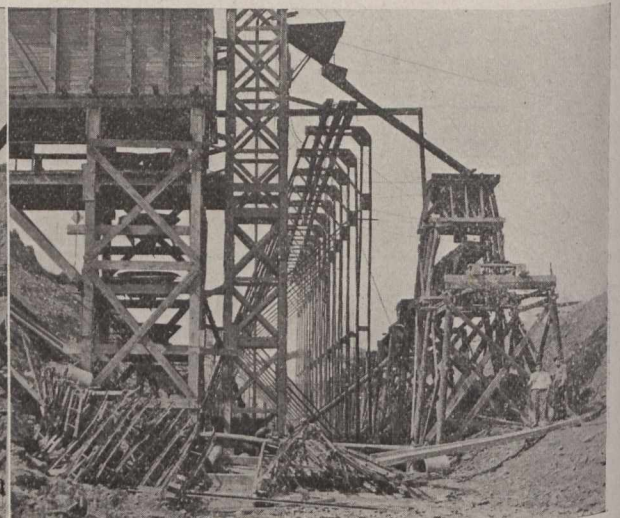


Fig. 5.—Part of the Concreting Plant at the South End of the Retaining Wall.

already been constructed and floated out into the lake and temporarily rests on bottom pending the dredging of a deeper channel and the preparation of the site. The bottoms of the compartments of the crib are, as stated, removable, and will be used over and over in the construction and placing of the different cribs. When sunk, the top of the cribs will reach water level. They will extend for a distance of 700 feet on either side of the harbor entrance. Upon such cribs also will be placed the concrete superstructure forming the lines of docking at the shore end of the harbor.

The entrance wall to Lock No. 1 involves some interesting construction. The steel frame work, $41\frac{1}{2}$ ft. in height, and a large part of the steel reinforcing has already been placed and considerable concreting has been done. The entrance wall extends from near the lake to the foot of the lock and is of reinforced concrete, buttress type. In the use of the structural steel frames, one in each counterfort, a departure from ordinary design has been made. These frames are for the purpose of supporting the reinforcing rods, many of which pass through holes punched through the framework, and also for supporting the concreting forms. The illustrations of this