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Making Concrete Blocks for Toronto Breakwater

New Plant Located on Toronto Harbor Commissioners' Reclaimed Dockage at Foot of Spadina Ave.—Pouring Concrete Blocks Weighing 10 and 18 Tons Respectively—Special Design of Collapsible Wooden Forms—Economical Handling in Limited Space

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THE plant described herewith was erected for the purpose of making the large concrete blocks used in connection with the cribs laid between the Western gap and the Humber River, Toronto, to form a breakwater approximately four miles long and which in turn forms a part of the complete harbor improvement scheme.

The plant is located at the south end of Spadina Ave., with a slip 200 ft. wide on the east side and the open bay to the south.

The effort to provide a layout that would be economical and at the same time enable the entire area of the plant to be used, necessitated a very careful study. The size of the lot on which the plant is located is 180 ft. by 538 ft. and the plant is utilized in such a way as to make practically every foot of it valuable. The general layout of the plant, which is shown by the accompanying illustration, will demonstrate this.

The position of the mixing plant is such that the material can be handled very conveniently. The stiff leg derrick is set at a height above the general car level to allow the operator to see the car that is being unloaded,

and is set in such a position that it will reach across on either side and dump into the material bin or into the triangular storage space between the two tracks, providing ample storage within a very small radius. The cement storage was placed on the opposite side of the mixing plant, so as to be convenient for unloading cement either from boats or cars.

The cement is conveyed from this shed to the mixer on small cars at such a level that it will dump into bucket or hoist conveniently. The material is then hoisted and dumped into a batch hopper on the side of the tower, which in turn deposits into a Smith steam-operated 1-yard concrete mixer

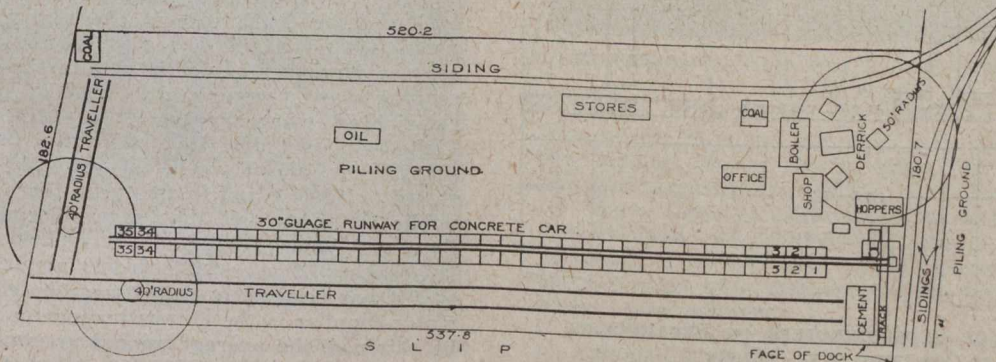
and is discharged directly from the mixer into the cars. These side-dump cars are of special design and run along a narrow gauge track between and above the forms, and are operated by an endless cable.

The forms are built on a platform 4 ins. thick and supported on beams and piles

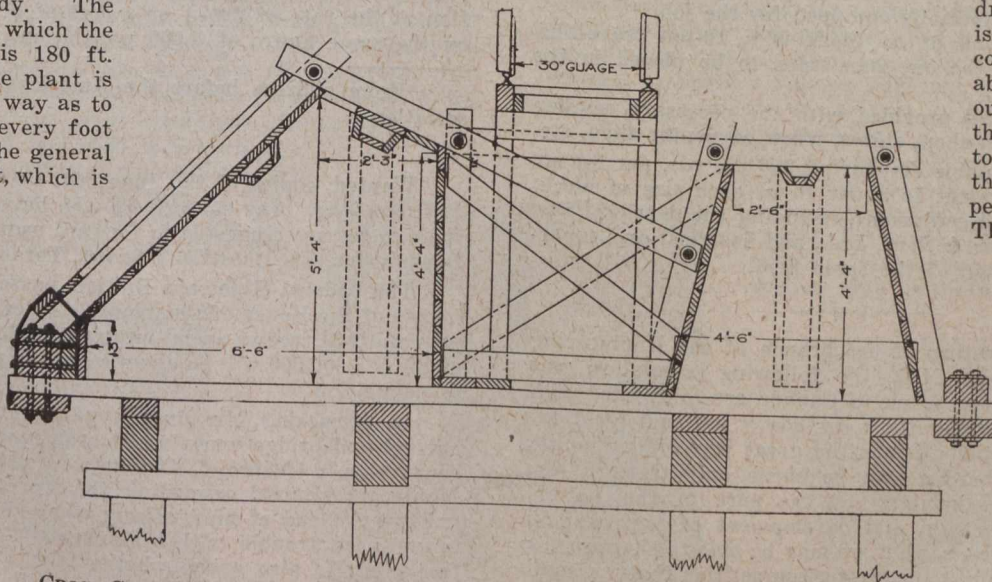
driven to rock. This is necessary on account of not being able to get a solid enough foundation on the made ground so as to ensure the floor of the forms being kept perfectly straight.

This platform is 400 ft. long, 20 ft. wide and rests on 148 piles. Located above the centre of the platform and running the entire length is a light trestle framing which supports the car tracks and is sheeted on either side to form the backforms of the blocks, thus making a continuous

wall. The forms are made of 1 3/4 in. spruce, 3 ins. by 6 ins. and 4 ins. by 6 ins. studding, and are all connected with bolts and angles with slotted holes so that the forms can be released about 1 in. away from the blocks without entirely removing them, after the concrete has set from 12 to 24 hours. This gives a free circulation of air without allow-



GENERAL LAYOUT OF CONCRETE BLOCK PLANT



CROSS-SECTION OF COLLAPSIBLE FORMS USED IN CONSTRUCTING CONCRETE BLOCKS