

tons; gravel, 8,000 tons; stone for macadamizing, 2,500 tons; timber used to amount of \$215,000.

**New Construction Plant.**—Three new flat scows of the standard type, dimensions 100 ft. long, 30 ft. beam, 9 ft. depth, were launched during May and June. A new derrick, hull dimensions 88 ft. by 31 ft. by 9 ft., was launched October 19th, to be completed for the opening of navigation, 1915. The machinery of this derrick, under construction at the Commissioners' machine shop, will embody the following features in relation to the older plant.

The steel boom will be of stronger construction and more rigid, the bottom connection of the steel A frame will be of pin type instead of rigid. A further improvement will be made in the turntable pivot casting to prevent rocking. An entirely new type of friction for the hoist and trip drum has been designed and the foundations of the spud operating machinery will be stronger.

A new tug hull was laid down on the shipways, May 26th, and launched November 21st; dimensions 77 ft. by 18 ft. by 10 ft., being nearly all of oak. The engines being constructed are of compound type, 13 ins. and 26 ins. by 22 ins., jet condensing. The boiler is of Scotch Marine

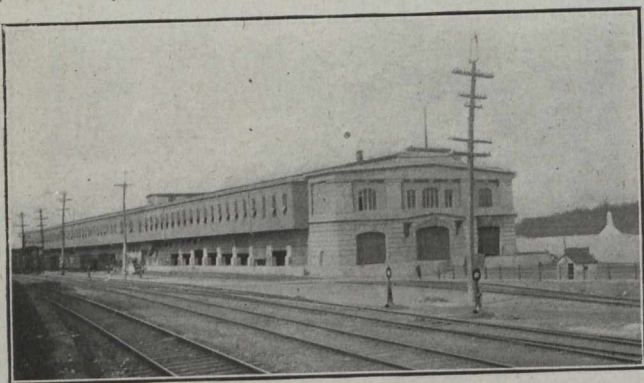


Fig. 4.—Typical Shed, Montreal Harbor Commissioners' Development.

type, 10 ft. diameter by 10 ft. 1 in. long over all, having two furnaces 38 ins., I.D., and to carry a working pressure of 150 lbs.

**Aylwin Street Subway.**—A new subway, the construction of which was urged by the city authorities, was built at Aylwin Street, under the existing railway yards of the Harbor Commissioners, and the yard was relaid to suit the new conditions.

The subway has a minimum head room clearance of 13 ft., with a teamway 30 ft. wide and a 5-ft. footpath, the whole spanned with a seven-track plate girder and steel trough floor system bridge, the tracks being laid 13 ft. centres and the steelwork designed in accordance with the Canadian Government specification for railway bridges and viaducts, type heavy.

The concrete abutment walls and the paving of the subway were done by the Harbor Commissioners' departmental organization, while the steel superstructure, of a total weight of 234 tons, was let by contract and erected by the Dominion Bridge Co., Limited.

**Proposed Warehouse at Market Basin.**—Preliminary studies were made on a warehouse which is proposed to be erected on the high level at Beaudry Street, the construction of which is under consideration by the Commissioners.

The building is designed to be about 400 ft. long and 100 ft. wide, to have six storage floors, of which five can be used the year round, and one 4 ft. above the low level wharf, will be available only the summer months when the river level is normal.

All floors will be designed to carry a live load of 300 lbs. per square foot of floor, and the six floors will be connected with four high-speed electric cargo elevators.

**This Season's Work.**—It is expected that an expenditure of about \$2,000,000 on capital account will be made during 1915. Of the new works involved the most important is the construction of a second addition to Elevator No. 1, which will increase its present capacity of 2,500,000 bushels by another 1,500,000 bushels, making this the largest elevator at any Atlantic seaport. When completed, it will give Montreal a storage capacity of 11,250,000 bushels. In Fig. 3 the present elevator is shown against which the addition is to be built. Piles have been made on the site and are now in course of driving. The office building, shown on the right, has been moved from its original location a distance of over 100 ft. to make way for the new addition.

It is expected that the new Victoria pier and market basin will be completed by the fall. It will give, on its inner side, 4,800 ft. of low level quay wall for the accommodation of river and lower St. Lawrence craft, and on the outside some 2,700 ft. of high level quay, providing berthing for five ocean liners. Fig. 1 is a view of the industrial wharf being built at Pointe-aux-Trembles for the accommodation of the Canada Cement Co. and other industries located in that section of the port.

The very large amount of dredging work will be executed in different parts of the harbor, particularly in the channel between St. Helen's Island and the south shore. It is to be remembered that the entire south shore of the river from Victoria bridge to Varennes is under the control of the harbor authorities. The dredging of the south shore channel to a depth of 20 ft. is also to be pushed forward. As stated, this work so far has had the effect of reducing the St. Mary's current by 15 per cent. The dredged material is being used for filling in the wharves that are being constructed on this side of the river. The two dredges that lowered an area 1,000 ft. x 335 ft. last year are in operation there.

The government farm has been deeded to the Harbor Commissioners, and work will be commenced at once upon the construction of a concrete roadway connecting the municipalities of St. Lambert and Longueuil.

Commencement will also be made upon the extension of the Jacques pier. It is proposed to make additions to two of the high level piers of 250 ft. each which will support, in future, steel freight sheds covering their entire width for the accommodation of lake and river vessels. Several new wharves are to be built, giving extra berths for trans-Atlantic traffic. The harbor railway system will be extended to high level from Racine pier to the Vulcan wharf at Longue Point.

Work will also be commenced this year on the construction of 400 ft. of south extension to the Bickerdike pier to handle the enormous quantities of coal being brought to that part by the different coal companies located in the western part of the harbor.

The Harbor Commissioners of Montreal are: W. G. Ross, Esq., president; Farquhar Robertson, Esq., and Col. A. E. Labelle. Mr. F. W. Cowie, M.Inst.C.E., is chief engineer; T. W. Harvie, assistant chief engineer; J. Vaughan, superintendent, and L. Mercier, assistant superintendent of railway terminals. Mr. Geo. Gendron is mechanical superintendent for the Commissioners. We are indebted to Mr. M. P. Fennell, Jr., assistant secretary, for the greater part of the above information and for the illustrations.