

# The Canadian Engineer

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## WATER DISTRIBUTION SYSTEM, OTTAWA

METHODS OF CONSTRUCTION USED IN CONNECTION WITH THE CAPITOL'S WATER SYSTEM—SOME DETAILS OF COST.

By L. McLAREN HUNTER,  
City Engineer's Office, Ottawa, Ont.

IN 1913 a report was prepared by Messrs. R. S. and W. S. Lea, consulting engineers, Montreal, on the improvement of the water distribution system in the city of Ottawa. Since that year work has been proceeding on the day labor system, until the present date, when proposal No. 1 has been nearly completed at a cost of approximately \$420,000.

In the September 10th, 1914, issue of *The Canadian Engineer* Messrs. Lea's report was dealt with at some length.

The consulting engineer's report compared Ottawa mains with those of Worcester, Springfield, Lynn, Cambridge and New Bedford, these cities being selected at random out of a class of about the same population as Ottawa. The Ottawa system compared very unfavorably with the five systems referred to, having a much smaller percentage of the large mains—also the smaller mains are mostly 5-inch, while in the other cities 6-inch has been adopted.

The new system of mains has been laid out so as not to conflict with the existing pavements in Ottawa, and provides for a 36-inch main feeder from the point of supply on Wellington Street (replacing one or both of the present 15-inch pipes on Commissioner Street), running along Bronson to Gloucester, and thence across the city on Gloucester, crossing the canal in two lines of 24-inch pipe at Laurier Avenue. The pipe will connect with the existing mains on Lyon Street and O'Connor Street, with a new 16-inch main along Elgin and Lisgar, and thence down Cartier Street. The Lyon Street main will be extended by an 18-inch line crossing the canal by the Bank Street Bridge and following along Bank Street to Billings Bridge. The present mains on Bronson Avenue and O'Connor Street are extended as shown, and cross connecting mains are also provided on Fourth Avenue and Woodlawn Place. The canal will be crossed

by a 16-inch main from the end of Cartier Street to Cedar Street by an 18-inch one from opposite Third Avenue to Sterridge Street and by 18-inch pipes at Bank Street and Bronson Avenue. The section lying between the canal and Rideau River and between Bank Street and

Hurdman Road is not completely subdivided. The consulting engineer, however, assumed a street layout in order to show approximately how this district should be taken care of.

The four parallel mains on Bronson, Lyon, O'Connor and Cartier are extended to the principal distributor for Wellington, Central and Capital Wards, and eventually for the section across the Rideau River.

The Gloucester 36-inch main, besides supplying the Lyon, O'Connor and Cartier mains, is the principal feeder for St. George, By, Ottawa and Rideau Wards, also for Rockcliffe. After crossing the canal the Gloucester Street line divides at Nicholas Street into two branches, a 24-inch running down Nicholas to Gladstone. The other branch will be a 30-inch across Waller to Besserer, having two 16-inch connections to the Rideau Street main.

For the western part of the city a 30-inch main feeder will be constructed. This is to supply Dalhousie and Victoria Wards. Branches of 24, 20 and 16-inch will be taken off the 30-inch main.

With these mains constructed it will give a pressure of 80 lbs. for fire purposes.

Fig. No. 1 shows the style of three-way hydrants to be used throughout the city on new distribution mains. These are manufactured by Thos. Lawson and Sons, Ottawa.

In the construction of the 36-inch main on Gloucester Street the cast-iron pipes had an average weight of 6,500 lbs. and cost \$38 per ton, or \$10.31 per lin. ft.



Fig. 1.—Type of Three-way Hydrant used in New Distribution System.