

RECONSTRUCTION OF EAST END SEWAGE DISPOSAL PLANT, HAMILTON, ONT.

By E. R. Gray, City Engineer.

IN 1907 a by-law was passed whereby it was proposed to issue debentures amounting to the sum of \$120,000 for purchase of land and the construction of sewers and sewage disposal works, in order to provide sewer accommodation for the eastern section of the city of Hamilton. At that time the city limits extended from the mountain brow along Sherman Avenue and Barton Street to a line passing northerly down De-puis Street along Burlington Street to Ottawa Street, down Ottawa Street to the bay.

These debentures were payable in annual instalments to be spread over a period of 30 years.

A very comprehensive sewage disposal scheme was designed by E. G. Barrow, Esq., then city engineer, which was at that time the last word in sewage disposal practice.

The plan consisted of a pumping plant which raised the sewage from a well and forced it through a pressure main into two large settling basins 2,500 feet away on the shore of Hamilton Bay. These tanks were 219 feet long by 76 feet wide and 11 feet deep.

After passing through these settling basins, the sewage was filtered by an upward flow through a rough filter and then conveyed by a piping system to a sprinkling filter. This filter was composed of slag obtained from the steel plant nearby. The filter is 455 feet long and 220 feet wide, the sewage being delivered to the filter through 591 sprays.

This sewage was underdrained from the filter into open ditches on the side through which it ran to the bay.

For a number of years the plant was operated very successfully. Recently, however, because of the very great overloading, and the need of the renewal of the filter media, the results have not been as satisfactory as desired.

This overtaxing has resulted from the phenomenal growth of the city's eastern section, which drains to this point. It has not been deemed wise to extend the present system during the very rapid change of opinion as to just what is the proper installation to secure the most desirable results.

It has been necessary, however, to increase the pumping plant in order to handle the increased flow of sewage.

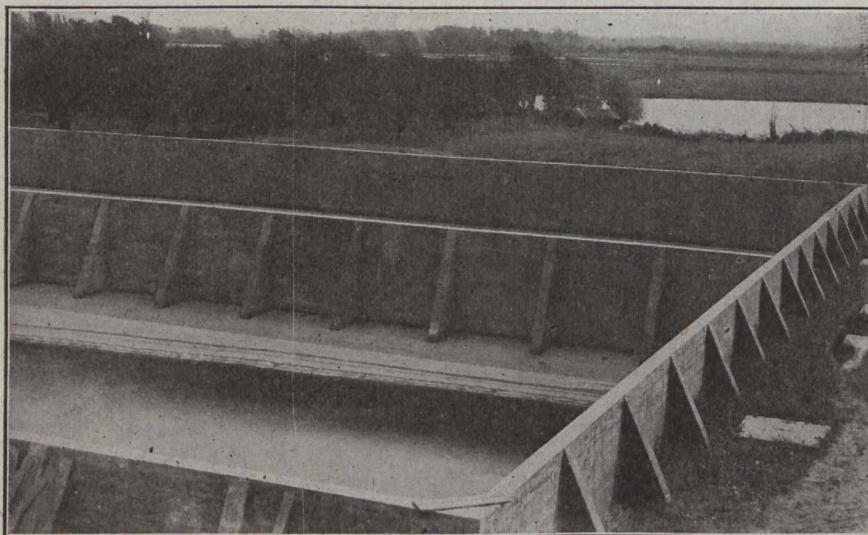
The eastern portion of the city is very flat, rising slowly from the bay level to the foot of the mountain. This has resulted in the grade of the sewers at the station being too low to allow treatment of the sewage by gravitation.

In July, 1914, a by-law was passed for the issue of debentures for \$175,000 for the cost of a main trunk sewer and plant for additional drainage for the eastern part of the city.

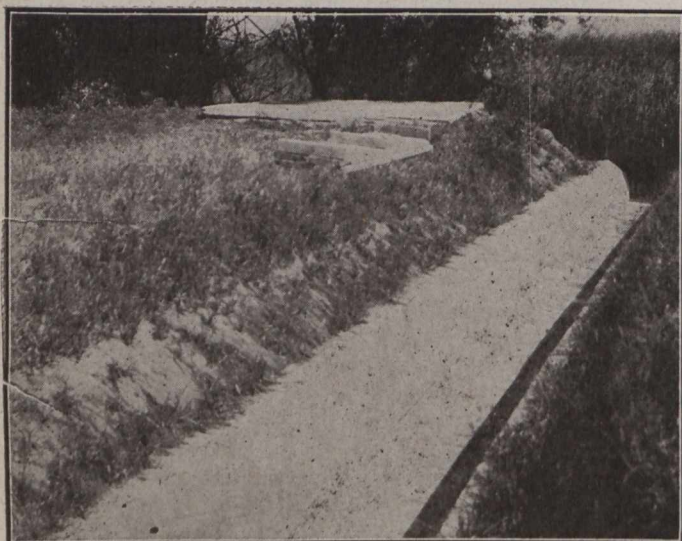
This by-law covered the cost of construction of new concrete trunk sewers, a new pumping station on the same site, including a motor-driven, direct-connected, 8,000,000-gallon centrifugal pump, the transfer and installation of two 3,000,000-gallon units from the old station and the construction of a new 36-inch rising main from the station to the tanks.

The plans and specifications were prepared in the office of the city engineer, Mr. A. F. Macallum, and the work was placed in charge of Mr. J. Stodart, engineer in charge of the sewer section, Mr. J. Wardrop designing the superstructure of the station building.

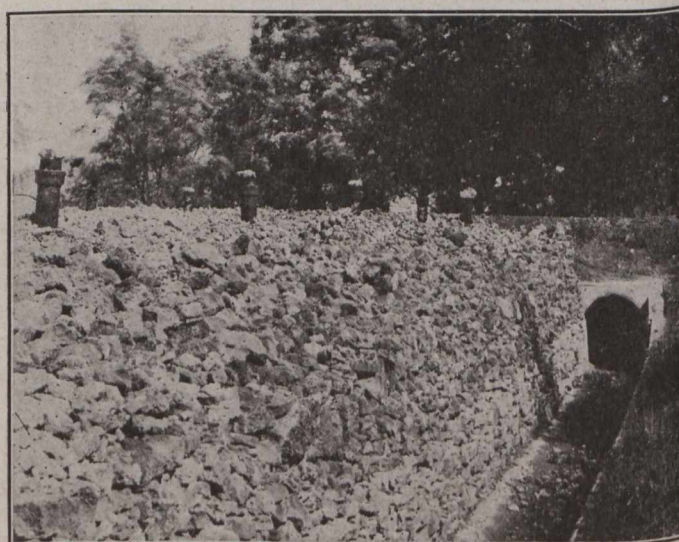
The accompanying illustrations show the tanks and filter beds.



Showing Tanks with Buttress Walls.



Effluent Channel to Bay.



Take-off Drain and Slag Filter.