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MAIN GARRISON CREEK STORM OVERFLOW SEWER AND EXTENSIONS, TORONTO

A REVIEW OF THE CONSTRUCTION OF THE NEW GARRISON CREEK SEWER AND EXTENSIONS THERETO, WITH PARTICULAR REFERENCE TO SECTION NO. 4, RECENTLY COMPLETED.

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WHILE the city of Toronto was developing in virtue of its increasing size and population into Greater Toronto, the district bounded by Dupont Street, Lansdowne Avenue, Avenue Road and College Street, an area of approximately eight square miles, was increasing very rapidly in population, new streets were being opened up, permanent roadways placed, manufacturing plants established and many residences built. The district became settled very quickly on account of easy access to and from the more central part of the city. The Works Department, therefore, found that a new and much larger sewer had to be built to relieve the Garrison Creek sewer which had been in commission for over 25 years, and which had become very inadequate to handle the large increase in storm water and sewage. So, when in 1912 a by-law for storm sewers had been sanctioned by the ratepayers, a portion of the money was allotted for the main Garrison Creek and its extensions.

Much time and deliberation was spent on preparing the plans.* Numerous surveys were made to ascertain the best and most economical route, and it was finally decided to parallel the old Garrison Creek sewer as much as possible. For one reason, where the route of the sewer was off the city streets it ran through city property, thereby dispensing with the necessity of acquiring costly easements. Another reason was that over a half a mile of the old sewer runs through ravines and the work could be carried on in open cut, which is less expensive than tunnel work. The third and probably the most important reason was that junctions were to be made at several points for the relief of Garrison Creek sewer, as it was intended to use the latter entirely as a storm sewer.

Work was commenced in the spring of 1912, and the last section of the main Garrison Creek was completed in September, 1915, at a total cost of about \$1,200,000, a saving of several hundred thousand dollars over the estimated cost.

The first section to be let was No. 1, which has its outlet for storm water in Lake Ontario at the foot of Strachan Avenue. This outlet is shown in Fig. 7. From this point it proceeds north along Strachan Avenue to

Defoe Street, where it turns west and Section No. 2 commences. This was the next section to be tendered for. It runs along Defoe Street to Crawford Street and north to Lobb Street. Section No. 3 starts here and runs west on Lobb Street, north on Shaw Street and crosses Arthur Street to a point 300 ft. north of Arthur Street on Roxton Road, where it intersects the old Garrison Creek sewers, a 5-ft. 6-in. running north, a 4-ft. 6-in. sewer running west. A very large chamber (Fig. 6) was built here for relief of the Garrison Creek south of this point. After this stage had been reached the engineering department decided to construct some of the more urgent extensions, the work on which had already started on Barton Avenue, Section No. 1. By making an outlet for Section No. 1 extension in the old Garrison Creek sewer just south of Bloor Street, it proceeds north through Willowvale Park to Barton Avenue, where it branches, one branch running north to Pendrith Street, west to Shaw Street, north, then west on Manchester Avenue and north on Ossington Avenue. At Ossington Avenue and Hallam Street there is a junction chamber with a section that runs west on Hallam Street. The other branch of the main extension runs east on Barton Avenue to Christie Street, where it branches, one running north on Christie Street to the C.P.R. tracks, the other continuing along Barton Avenue to Brunswick Avenue, south to Lowther Avenue, thence east to Avenue Road.

After these sections had been completed Section No. 4 of the main sewer was commenced, it running north from junction chamber on Roxton Road through Prettie's Ravine to Sully Crescent, east on Sully Crescent to Montrose Avenue, north across College Street and up Beatrice Street to Bickford Ravine, where it intersects the old sewer again. Here another chamber was constructed, and Section No. 5, which was the last section to be let, commences and runs north to the junction chamber just south of Bloor Street.

The chief branch of the main Garrison Creek is Argyle Street storm overflow sewer, a section of which is under construction. This sewer joins the main sewer at Argyle and Shaw Streets, running west to Gladstone Avenue, north on Gladstone Avenue and west to Brock Avenue by way of Trafalgar Avenue, Dufferin Street, Gordon Avenue and Middleton Avenue. It then goes north on Brock Avenue to McConnel Street, west to St. Clarens Avenue, north to College Street and west to St. Helen's Avenue by way of College Street, Lansdowne Avenue and Lum-

*An illustrated article describing the design of the main Garrison Creek storm overflow sewer, sections 1, 2, and 3, showing cross-sections, wier chambers, junction chambers, etc., was published in *The Canadian Engineer* for March 20th, 1913, the author being Mr. R. R. Knight, now City Engineer of Fort William, Ont.