

# The Canadian Engineer

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## Construction of the Woodville Avenue Sewer, Toronto

Circular Sewer, 8 Feet in Diameter, Which Presented Many Difficulties Owing to Nature of the Ground—Method of Testing Employed to Ascertain the Line of Sewer—Needle-Beam Method of Supporting Timber Used Throughout the Job

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WOODVILLE AVENUE sewer was designed to serve the easterly section of the West Toronto sewer system. The boundaries of the district served are difficult to describe clearly, because of the fact that Dundas Street describes nearly a quarter circle in this section. In its southern part, the district is bounded on the south by Conduit Street, on the west by Keele Street and on the east by Dundas Street. As stated above, Dundas Street sweeps around to the west and cuts across the course of the sewer so that, north of Dundas Street, the boundaries are: On the east, Symington Avenue; on the west, Clendenan Avenue; on the north, the city limit. To make its location more clear, we shall trace its course from the stand-by tanks in the corner of High Park at Bloor Street and Keele Street. From the tanks, a 9-ft. sewer leads north along Keele Street, 1,400 ft. south on Conduit Street and thence east one block to Woodville Avenue. It is at this point that the work under description begins.

The sewer proceeds north along Woodville Avenue to Annette Street, where the direction of Woodville Avenue changes to about north-northeast. The sewer continues along Woodville Avenue, crosses under Dundas Street and the C.P.R. tracks and reaches Junction Road, where it turns west to Mulock Avenue. It follows this street north to St. Clair Avenue.

The total length of the sewer is 5,780 ft. It is circular and all one size, 8 ft. in diameter. The grade changes to accommodate the laterals as they are picked up, becoming greater as the outlet is approached. The first 240 ft. north from Conduit Street was built on bents

across a shallow ravine. Then 1,650 ft. were built in open cut and the last 3,890 ft. in tunnel. Each of these three divisions is described in turn.

### The 240 Feet on Bents

The shallow ravine which necessitated these bents is the bed of a creek which in former times was much larger but is now contained in a 3-ft. concrete pipe which terminated at Conduit Street at the time when the construction of the Woodville Avenue sewer was begun. At that time, the pipe was extended and the ravine was afterwards filled in where Woodville Avenue crosses it, with surplus material taken from the sewer excavation. This filling provided both



Woodville Avenue Sewer Complete and 3-foot Concrete Pipe

the roadway and a future foundation for the sewer when the bents will have decayed. As in the case of Clendenan Avenue, pipes were left through the bottom of the sewer through which sand was later run to fill the space left by shrinkage.

An excavation 3 ft. deep was made across this ravine to obtain a solid foundation for the timber bents. In the centre and low part of the ravine, the ground for 30 ft. was rather soft and on this account a 3-in. plank decking, placed lengthwise of the sewer with broken butt joints, was provided for the sills to rest upon. Throughout the remainder of this excavation the sills rested on the ground. The bents were 5 ft. apart between centres. The sills are 10-in. x 12-in., five vertical 10-in. x 10-in. posts, 2-ft. 6-in. centres rest on each of these sills and are let into them 1 inch, and are held apart by light 2-in. x 8-in. straps. There is an 8-in. x 6-in. runner placed lengthwise with the sewer at the top of each row of posts and let into the