

# The Canadian Engineer

*A weekly paper for Canadian civil engineers and contractors*

## Pape Avenue Storm Sewer, Toronto

Circular Brick Sewer, 1,446 Ft. Long By 4 Ft. Diameter,  
With Grade of 1 in 200, Constructed in Tunnel 22 Ft.  
Below Street Level, With Aid of 8 to 10 Lbs. Air Pressure

By R. T. GRANT JACK

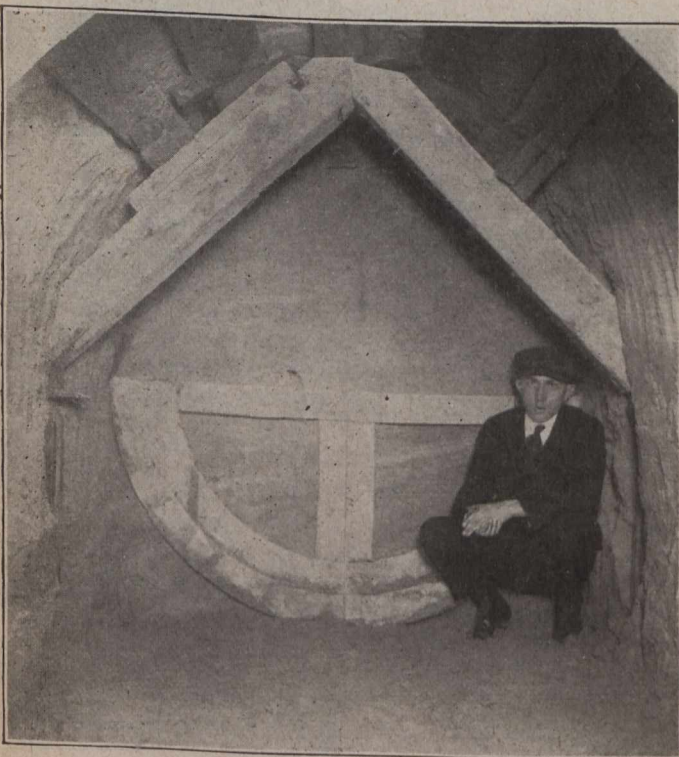
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**P**APE AVENUE Storm Sewer, Toronto, is located to the east of the centre line of Pape Avenue and extends from Danforth Avenue to the northern city limit, a distance of 1,446 feet. It was constructed to relieve that portion of Pape Avenue and vicinity and also with the idea of later extending it northward as a combined sewer, constructing laterals where necessary, as the county develops north of the city limits.

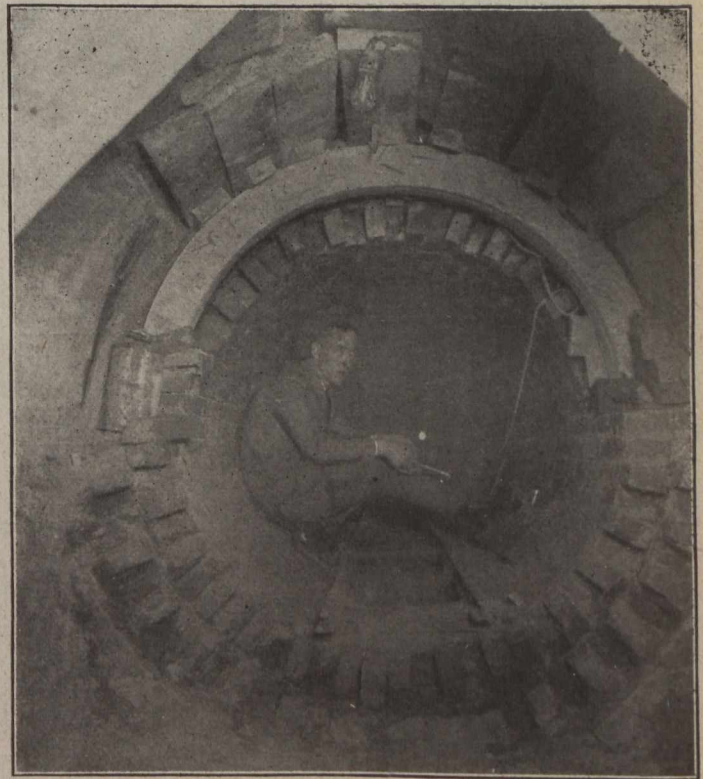
Fig. 1 shows the drainage area of the sewer within the city limits and in the County of York. An old water-course drains a large portion of the county area and runs to the city limits at Pape Avenue in an open ditch, thence southward on Pape Avenue and diagonally across Gertrude Place to Danforth Avenue, where it is admitted to the storm sewer. The portion between Danforth Avenue and the city limit is carried in a box culvert. It is intended to divert this ditch so that it will discharge

into the new storm sewer at the city limits, as shown in Fig. 1 (see next page).

The area in the County of York is 155 acres, the natural outlet for which is Pape Avenue. The estimated storm flow from this area is 81 c.f.s., for the accommoda-



View of Heading, Showing Finished Excavation.  
Note the Square Base



View of Heading Showing Finished Brickwork

tion of which there was designed a 4-ft. circular brick sewer with a grade of 1 in 200. The dry-weather flow from the county area is 1.7 c.f.s., calculated on the basis of 35 persons per acre and a water consumption of 120 gallons per head. Assuming that half of this quantity is run off in 8 hours, the resulting flow per acre is .011 c.f.s.

Fig. 2 shows the overflow chamber at Gertrude Place which allows 3.25 c.f.s. to pass to the storm sewer, and three times the dry-weather flow to enter the existing 18-in. tile pipe sewer on Pape Avenue.