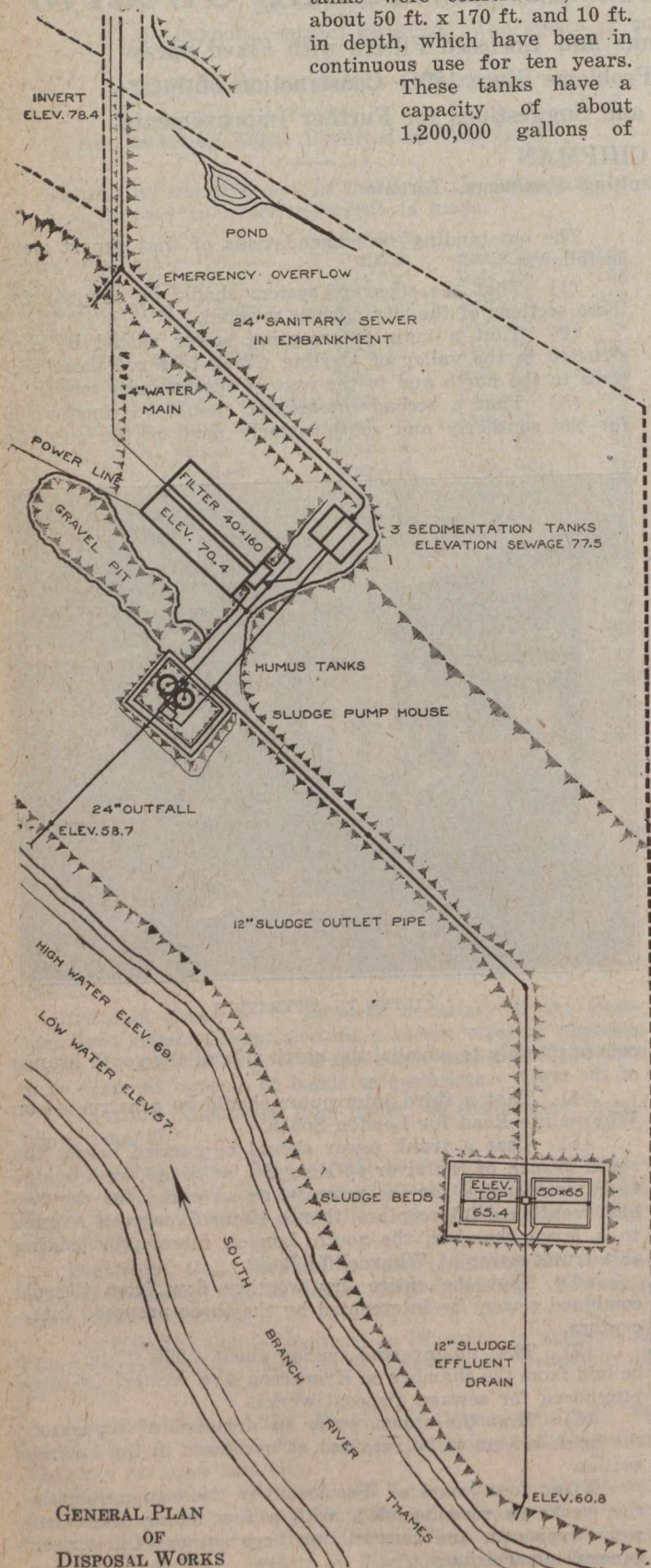


The interceptors, the main sewers, and the inverted syphon outfall were constructed in 1901 and designed to treat about 400,000 gallons per day if properly operated. The entire sewage flow, at that time two million gallons per twenty-four hours, was discharged on these beds and their efficiency was soon destroyed. The coke filling thereafter acted as a coarse strainer, until clogged with sludge. It is doubtful if these beds were ever operated in a scientific way, even experimentally. In 1908-1909 three sedimentation tanks were constructed, each about 50 ft. x 170 ft. and 10 ft. in depth, which have been in continuous use for ten years. These tanks have a capacity of about 1,200,000 gallons of

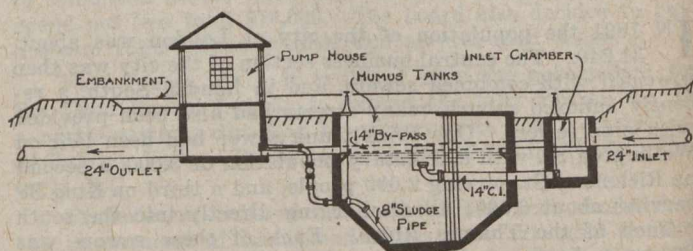
These tanks have a capacity of about 1,200,000 gallons of



sewage, the detention varying from twelve hours to six hours, depending upon the inflow and the amount of the sludge deposit. They are simply rectangular chambers provided with baffles, but with no proper provision for removing sludge. The effluent is generally darker in color than the crude sewage, and flows directly to the river. At times a part of the flow is diverted to the two small beds.

The main sewer and interceptors are now of ample capacity for the normal sewage flow, but the capacity of the inverted syphon is inadequate, as it will only take two-thirds of the flow, the remainder overflowing to the river at Evergreen Ave., without treatment. The laying of another inverted syphon has been recommended to council on several occasions and no doubt this much-needed outfall will be laid in the near future.

It was clearly pointed out when the separate system was under discussion in 1892-1896, and thoroughly understood by the city council and the city engineer, that all



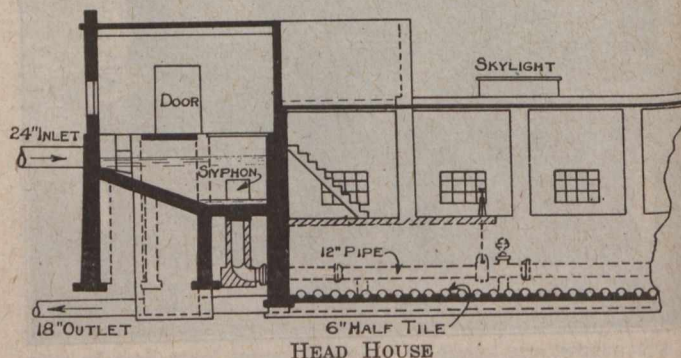
CROSS-SECTION OF HUMUS TANKS AND HEAD HOUSE

storm water was to be excluded from the sanitary sewers, and upon the completion of main sanitary sewers, the writer recommended that a storm sewer system should then be designed and constructed in advance of roadway improvements, but no action was taken.

#### Storm Sewer System

From 1899 to 1912 many sanitary sewers were laid as local improvements, discharging into the interceptors and tributaries thereto, and a few storm sewers were also laid. In many instances street catch basins were connected with the sanitary sewers, and generally speaking the surplus roof water was also discharged into these sewers. The sanitary sewer system had expanded from 22 miles in 1898 to over 70 miles in 1912, and as a result the interceptors were overtaxed during rains, causing flooding of basements and cellars in several districts.

Permanent pavements had been laid on certain streets in the central area prior to 1912. Before proceeding with any extensive programme for paving streets not provided



with storm sewers, the city decided in 1913 to have a general plan of storm sewers prepared. A topographical survey was then directed to be made, a general plan prepared, and an estimate given of the cost.

Early in 1914 it was decided to proceed with construction, and contracts were awarded for five sections of the works. The enclosing of Carling Creek was included in the scheme, but not in the works contracted for in 1914. As the city had increased in population from 32,000 in 1892 to 48,000 in 1912, and an industrial district had developed in