CANADA'S MINERAL PRODUCTION.

The table on the opposite page is from the current issue of *The Monetary Times*. With the following explanation of symbols used, it should be of great value to all readers of *The Canadian Engineer*:—

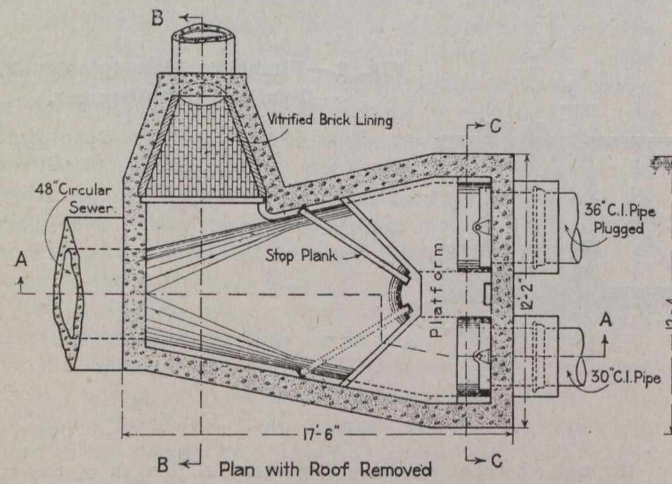
*Short tons throughout. (*a*) The metals copper, lead, nickel, and silver are for statistical and comparative purposes valued at the final average value of the refined metal. Pig iron, zinc ore, and cobalt oxides are valued at the furnace or spot, and non-metallic products at the mine or point of shipment. (*b*) Copper content of smelter products and estimated recoveries from ores exported, at 12.376 cents per pound, in 1911; and 12.738 cents per pound in 1910. (*c*) The total production of pig iron in Canada in 1911 was 917,535 tons valued at $12,307,125, of which it is estimated 875,349 tons valued at $11,693,721 should be credited to imported ores; in 1910, the total production was 800,797 tons valued at $11,245,622, of which 695,891 tons valued at $9,594,773 are credited to imported ores. (*d*) Refined lead and lead contained in base bullion exported at 3.480 cents per pound, in 1911; and 3.687 cents in 1910, the average prices in Montreal and Toronto respectively. (*e*) Nickel content of matte produced value at 30 cents in 1910 and 1911. (Increasing quantities of nickel-copper matte are now being used in making monel metal which is sold at a price much below that of refined nickel.) The value of nickel contained in matte, as returned by the operators, was about 10 cents per pound for both years. (*f*) Estimated recoverable silver at 53.304 cents per ounce in 1911, and at 53.486 cents in 1910. (*g*) Gross returns for sale of gas. (*h*) Quantity on which bounty was paid and valued at $1.22½ per barrel in 1911 and at $1.23 in 1910. (*i*) Value received in 1910 by shippers of silver cobalt ores for cobalt content. Cobalt not paid for in 1911. (*j*) In 1910 includes 547 tons arsenical ore valued at $5,716. (*k*) In 1911, figures as reported by the producers, which differ slightly from those of the Trade and Navigation reports.

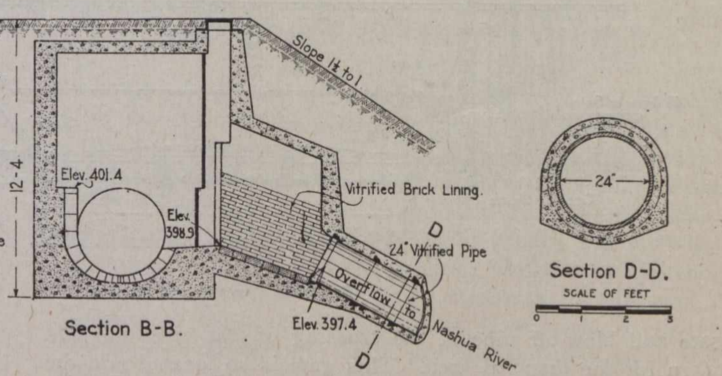
FITCHBURG SEWAGE DISPOSAL PLANT.

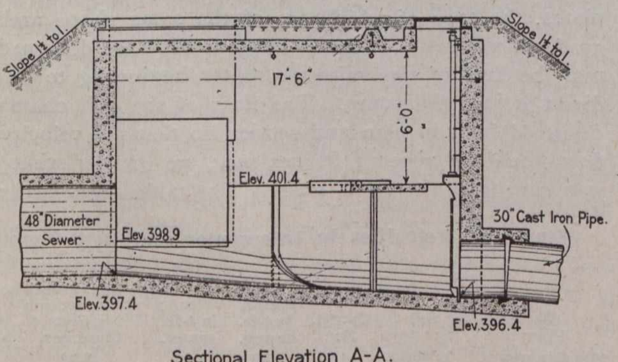
Points in the Design of Siphon and Grit Chambers of Main Interceptor—Settling Tanks and Sprinkling Filters are Also Special Features

In the fifth semi-annual report of the Sewage Disposal Commission for the city for Fitchburg, Mass., two interesting structural features of the main interceptor belonging to the new system were described. These are respectively the siphon and grit chambers. It will be remembered from previous articles that the commission was created in 1910 with authority to construct a main trunk sewer and a system of sewage disposal that would meet with the approval of the Massachusetts State Board of Health. The commission has Mr. David A. Hartwell as chief engineer and Mr. Harrison P. Eddy as consulting engineer.

Siphon Chamber.—The first section of the main interceptor is 5,989 ft. long. Of this distance 5,070 ft. is 30-in. cast iron pipe and 919 ft. is 48-in. concrete sewer. At the junction of the 48-in. sewer with the 30-in. cast iron pipe there has been constructed a siphon chamber, so arranged that when the flow in the sewer exceeds the capacity of the 30-in. siphon the excess will spill to the river through a 24-in. pipe line. The capacity of the 30-in. siphon is about 11,000,000 gals. per day, and as the present flow of sewage is only about one-half this amount it is only at times of considerable rain that anything from the sewer will flow through this overflow pipe to the river. The siphon is also







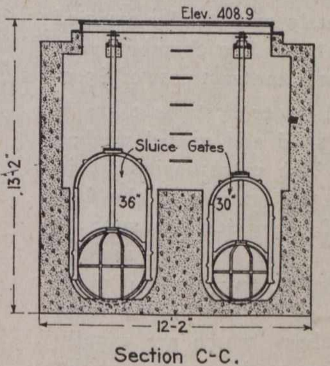


Fig. 1.—Fitchburg Main Interceptor—Details of Siphon Chamber.