

crete beam over the top of these as a support to the pavement. If, as in the case of some of the city roads, the sewer is laid in the centre of the street, they propose that two rows of piers be constructed, one row on each side of the sewer. With such a system, it is said, the pavement would carry the greatest loads even when the supporting earth sinks away beneath it.

**Brandon, Man.**—In an address made to the Brandon Trades and Labor council upon the power question, Mayor Hughes advocates as the most feasible and profitable way of getting power for Brandon the hydro-electric scheme from the Winnipeg river. In support of his contention, Mr. Hughes gave the following figures for the cost of power from Winnipeg: cost of line from Portage to Brandon, \$297,903, this to include transformers, patrol and upkeep of the line, \$5,500 per annum; one-half cost of line from Portage to Winnipeg, \$12,630; 2,500 h.p. at \$20, \$50,000, making a total of \$91,386 for power and upkeep of line. Speaking of the probable income, the speaker said that from the waterworks \$20,000 would be realized; from the street railway, \$12,000; and from the street lighting, \$18,000. These sums were in addition to revenue from two flour mills, the C.P.R., C.N.R., and numerous smaller plants.

**Vancouver, B.C.**—A recent report on the construction of C.P.R. bridges over the Pitt and Harrison rivers in British Columbia says that structural operations are now well advanced on the double-track bridge being erected by the C.P.R. over the Pitt River. The huge swing span, 276 feet in length, and weighing 650 tons, is being erected; and girders are being placed from the eastern end of the structure. Nearly one-third of the upper portion of the bridge has been erected; and the work is expected to be completed in November. The structure is 1,750 feet in length, and will be the largest of its kind on the British Columbia division of the C.P.R. Also rapid progress is being made on the Harrison River bridge, a structure of a similar type to the Pitt River bridge, and 950 feet long. The superstructure is nearing completion, the swing span having been installed and work well advanced from both ends. It will be ready for service, it is anticipated, by the end of July.

**Brantford, Ont.**—The Board of Water Commissioners has awarded contracts for a new waterworks pumping plant. Two De Laval 12-inch, multi-stage, centrifugal pumps, two De Laval single-stage, double suction type booster pumps, and two high-speed turbines for driving the booster pumps, will be supplied by the Turbine Equipment Company, Toronto. The contract for the 250 h.p. synchronous motors for driving the domestic pumps has been awarded to the Canadian Westinghouse Company, Hamilton. The output of each of the domestic units will be 4,000,000 imperial gallons per day, against 200 feet head. The output of each of the booster units will be 4,000,000 gallons, against 100 feet head. In case of the electrical power being out of commission, the two booster pumps can be arranged to run in series, the output being 4,000,000 gallons against approximately 90 pounds pressure. In case of fire, either booster pump can run in series with either electrically-driven domestic pump.

**Ottawa, Ont.**—The city council of Ottawa has passed the first reading of by-laws authorizing the issue of debentures totalling about \$1,000,000, which include the following amounts for local improvements: \$44,239.33 for sewers; \$164,846.84 for asphalt pavements; \$10,206.23 for opening of Murray street; \$14,385.41 for opening of Heney street; \$93,530.53 for asphalt pavements; \$14,008 for tarvia pavements; \$98,571.91 for concrete sidewalks; \$159.50 for plank sidewalks. Other items of expenditure are: \$5,000 to complete main drain system; \$5,000 to pay city's share of cost of subway on Bank street; \$8,000 to pay for cost of alterations and additions to Howick hall; \$50,000 for construction

of horticultural and agricultural hall; \$30,000 for completion of main drainage system along certain streets; \$25,000 for trunk sewer in Rideau ward; \$80,000 for bridge over canal; \$60,000 for cost of intercepting sewer through Broad street yard of C.P.R.; \$40,000 for new hydrants and water meters; \$80,000 for water mains and extensions.

**Sault Ste. Marie, Ont.**—According to a judgment made public at Ottawa on June 4 by the International Joint Commission in the case of the Michigan Northern Power Company and the Algoma Steel Corporation, these companies are to be allowed to divert 30,000 cubic feet of water per second from the river; and this means the development by Sault Ste. Marie of 106,000 continuous electrical h.p. The capital cost of the development will be \$13,250,000. Throughout the consideration of the case the paramount rights of navigation interests have been kept in mind; and the powers given the companies are contingent upon the construction of a dyke so operated under Government supervision as to ensure the maintenance of the level of Lake Superior. Under the lease by the United States Government to the Michigan Power Company the dyke and sluice-gates on the American side will eventually be acquired by the United States Government, and similar action will probably be taken by the Canadian Government in respect to the works on its side of the river.

**Toronto, Ont.**—The plans for the Don section of the Bloor Street viaduct, as designed by Engineers Thomas Taylor and C. W. Power, of the Civic Works Department, show a straight stretch of construction from Castle Frank road east to the present western terminus of Danforth avenue, with a high bridge of 4-arch span crossing the Don Valley and river, the longest span to be 282 feet from pier to pier. The deck of the viaduct is divided longitudinally into three sections, the two outward sections being devised for street traffic, the central section for rail. A ballasted roadbed is planned to deaden the noise customary in connection with traffic bridges. Moreover, provision is made in the plans for providing a lower deck to the viaduct in future to accommodate rapid transit railways; and whenever the growth of street traffic warrants, it will be possible with little alteration and expense to remove all the cars from the upper deck and to provide a clear roadway from one side of the viaduct to the other. Preparation of plans for the Rosedale section of the viaduct are almost completed. This section comprises two diagonal stretches from Sherbourne and Bloor Street south-east to the head of Parliament Street produced, and thence north-east to Castle Frank road.

**Vancouver, B.C.**—Besides the Central Park section of the trunk sewer to be constructed by the Greater Vancouver joint sewerage commission, and for which tenders are to be advertised shortly, there are many other portions of work, some of which are also included in the 1914 program outlined by the commission. Sections which are in a fair way to being realized are the Clark drive interceptor, which will take all the sewage from China Creek to Burrard Inlet; extensions to the present Bridge street sewer, the construction of that along Balaclava street, and the laying of a trunk line east of Hastings Park, extending from the inlet some distance south of Hastings street; the Stanley Park interceptor, which will do away with the outfall at English Bay and will carry all sewage from the West End into the First narrows; and the deepening of the Brunette river, which will lower Burnaby lake and allow of better drainage of the surface water in the section of Burnaby municipality in this vicinity. The China Creek trunk sewer and its tributary, the Canoe Creek extension, are now in progress; and the city is preparing to lay lateral sewers draining into the trunks, which will serve D.L. 301, hitherto without sewers of any kind. Up to the present, at least \$200,000 has been expended on the work.