

the Department of the Interior, as to the power possibilities of the Bow and Elbow Rivers within feasible transmission distance of Calgary, show that in the Bow River alone it is economically feasible to so regulate the flow as to warrant the development at four power sites of over 40,000 dependable 24-hour horsepower, all within 50 miles of Calgary. The Calgary Power Company has completed an installation at Horse Shoe Falls of a maximum output of 18,000 horsepower, which is mainly transmitted to Calgary; this company will within a few weeks have a second power installation completed at Kananaskis Falls, capable of an additional maximum output of 11,000 horsepower. With these water powers developed there would be 70,000 horsepower available in the Bow River alone.

Toronto, Ont.—Favorable progress is being made on the two Don bridges. The contractors for the concrete foundations of the new duplicate bridge over the east Don, Messrs. Dickenson & Burns, expect to complete the peditments in about two weeks, while the Canadian Bridge Company, of Walkerville, has its construction train and steam hoist upon the ground, and has already unloaded a large number of the girders and the beams for the towers. This bridge is about 1,000 feet in length, its widest span being on the west side and over the C.N.R. It is 80 feet above the C.N.R. and 120 feet above the bed of the river. In addition to the peditments, a retaining wall 8 feet wide, alongside the C.N.R., is required to carry one side of the tower. Over one half of the bridge over the west Don has been completed by the Dominion Bridge Company. This structure is over 800 feet long.

Winnipeg, Man.—The report on civic improvements carried out in Winnipeg 1913, shows a total cost of \$1,224,730.60. The total cost of pavement laid by both Engineer of Construction Astley and outside contractors to have been \$470,848. The tender of the engineers of construction for asphalt pavements (No. 1) was \$344,000; but the works were completed at a cost of about \$11,000 less than that amount. The amount spent on asphalt pavements (No. 2) was \$57,969. Small sections of macadam gravel and block pavement also were laid by the engineer of construction; and these as well as the asphalt pavements were laid at costs less than the tender prices. In the case of sewer construction for the year, however, the actual cost, \$275,610, exceeded the tender price by about 10 per cent. This, in turn, was more than counteracted by a saving of 13 per cent. on granolithic sidewalks, made possible by the purchase and use of several concrete mixers. The total expenditure for the year on granolithic sidewalks was \$116,875.60. The cost of water mains was \$174,584, or 18 per cent. above tender price, the extra cost being incurred by the laying of three high pressure mains, and one domestic main during the winter when there was from 6 to 8 feet of frost in the ground. A saving of 3 per cent. and 7 per cent. on tender prices is shown in the construction of concrete pavements and plank walks respectively. The new 18,000,000-gallon reservoir was constructed at the very moderate cost of \$307,000, which included the cost of foundations, though not the cost of land. Again, though the cost (\$265,000) of the Osborne Street bridge across the Assiniboine River was mostly paid for in 1912, yet this important improvement was completed last year, the approaches and towers projecting the work well into the summer. Other municipal works on which large sums were spent, were the erection of two hospitals, the building of two new fire stations, extensions to the street railway system, a new police signal alarm service, the improvement of the city light and power plant, the extension of the artesian well system, and some preliminary work in connection with the Shoal Lake water supply. The money expended in the last of these will be refunded to the

city by the Winnipeg Water District Board. Of the \$750,000 which was allotted to the light and power department, \$250,000 still stands to its credit to be used for the installation of additional turbines at Point du Bois, the contract for which has been let, the work to be completed next spring.

Sarnia, Ont.—The increasing business of the Standard Oil Company is occupying the directors with the devising of plans and means for increasing the present plant of the company to a capacity sufficient to handle all the work that can be ordered. The company has completed the pipe line to the great oil fields of Ohio, and thus has an unlimited supply of crude oil to draw upon at all times in the year. At the present time the company has on its payroll about 1,500 men, many of whom are at the work of rebuilding the refinery and increasing the capacity of all parts of the enormous works. It is reported that during this winter the company will erect over 20 stills, with condensers for the same, and buildings to look after the by-products. Four of these stills are now under erection on the west side of the yard. A start has already been made on a battery of 12 crude stills to be constructed south from the battery now opposite the Pere Marquette Station. A new set of six stills has already been constructed in the rear of the crude stills, and a battery of half a dozen more will be added to these. At the new works, which are about a quarter of a mile from the offices of the company, the work of building the new motor spirit refinery is being rushed. The foundation for a battery of ten stills, each with a capacity of 300 barrels, has been completed, and the work on the foundations for the necessary condensers is in progress. The digging for three large underground tanks has commenced. This work will incur great cost, but is very necessary for the storage of the new spirit, which is used for operating automobiles, as it is very explosive in comparison with the gasoline now in use.

Victoria, B.C.—In connection with the tunnel work on the northwest sewer, two shafts have been sunk at McLoughlin Point at either end of the bluff of rock which interposes between the end of Smith and Robert's streets, and at the junction of Bay Street and Anson Street, with a view to open a tunnel face. A section has been opened in an earth and rock cut a little further south; and although it is deflected from the original point set out for an outfall, to avoid the current washing back sewerage into the harbor, the character of the outfall may be gauged. The intention is to carry the sewerage out to a natural tank which can be contrived by damming up the ends, and covering a basin between the land and an islet of rock at Macaulay Point. From that tank the sewerage will be carried out to sea by a submerged pipe, the exact nature of which has not been determined, but will be dependent upon further tests to be made by the engineers upon the flow of the currents. From the piercing of the two shafts, it has been found that it is particularly hard material through which the tunnel has to be driven. The other large tunnel in Esquimalt municipality is the one at Dunsmuir Street. In this case, as in that of Smith Street, it will be necessary to excavate sufficiently not only for the actual pipe line, but for inspection. The third tunnel of large size will be in Victoria West, the location depending upon the point fixed for the crossing of the Victoria arm with a syphon. Assistant Engineer Payne, after an examination of the character of the district, has recommended to the city engineer that a direct tunnel from the Gorge Road to Dominion Road would be most satisfactory, but the subject is still under advisement. The pumping station to handle the low level sewerage north of the Gorge will be located at Cecilia Road, instead of at the waterside as has been proposed. In this section between Burnside Road and the Gorge waters earth is being excavated.