over the dam to handle the gate section forms and steelwork and assisted in its erection and that of the gate house above.

For the placing of "plums" in the dam and for excavation, there were two stiff-leg derricks on flat cars on



Section at Sluice Gates

trestles on the upstream side of the dam similar to those on the downstream side. The lengths of derrick booms were from 60 to 75 feet. Six guy derricks were used on excavation and other work. There were two stone quarries; one at a low elevation supplied

cofferdam filling loaded by steam shovel, and hauled by 27-ton dinkies in six-yard side-dump cars onto the cofferdam, and later, "plums" were loaded by guy derricks in the same quarry.

A quarry at a higher elevation close to the crusher plant supplied rock for the crushers. A sixty-ton steam shovel was used there for loading.

Sand for concrete was hauled from a point six miles distant on the railway. A steam shovel was used for loading.

A large plateau at the foot of the mountain, and at an elevation of about

50 feet above the river, formed a good site for a yard with railway tracks for the various purposes. Blacksmith and machine shops equipped for all kinds of locomotive repairs and other machine repairs, cement store, commissary and repair part and other stores, electrical work shop and riggers store, compressor he ise, offices, hospital, large kitchens and mess rooms, while the camps for engineers, foremen and other camps were spread over suitable sites adjoining.

A 4-inch x 4-inch centrifugal water service pump, direct connected to 50-h.p. motor, supplied works and camps. Standard fire hydrants, properly equipped with hose and nozzles, were placed at convenient points to command all the works and camps. Water service was laid into the camps, which for engineers and foremen contained bath rooms and lavatories with complete fittings for hot and cold water, etc.

Camp accommodation for five hundred and sixty men was provided at the dam site. There were not so many men there in the winter time, but the providing of fuel for the large number there and for other purposes, including yard locomotives and steam shovel, was a considerable

> item. A portable electrically driven saw outfit and a wood-splitting machine operated on the mountain side, with teams and men felling and hauling birch trees. The cordwood in lengths for all purposes was sent down by chutes direct from the machinery to the firewood dump or to railway cars.

> The concrete forms were of cantilever type and were made in the carpenters' shop adjoining the saw-mill and proved very satisfactory.

The contractors were the St. Maurice Construction Company, with Julian C. Smith, vice-president and chief engineer of the Shawinigan Water and Power Company, as president. C. E. Fraser, president of Fraser, Brace & Company, supervising engineers, is managing director of the St. Maurice Construction Company. This company employed Fraser, Brace & Company, of Montreal and New York, as supervising engineers of construction. J. J. McCarthy was superintendent in charge of all work, assisted by J. B. Menzies, master mechanic; George Bullock, chief electrician, and J. R. Mackenzie, A. Post owrigan

and C. P. Howrigan.

The Quebec Streams Commission, a provincial conservation body, with Mr. O. Lefebvre chief engineer, designed the dam and had it constructed. Mr. J.



View Looking East; Quebec Streams Camp on East Shore

B. D'Aeth was resident engineer representing Mr. Lefebvre.

The bridge of the Brocade Girdle, built in the sixteen hundreds, a mass of pegs and crude joints, is one of Japan's most interesting monuments of antiquity. There is not a nail of metal in the entire length of seven hundred and fifty *ieet*, and it is as good to-day as when built.