

crete sand is being used and the gunite applied by cement-guns. The sub-station, machine shop and all of the more important buildings have already been fire-proofed in this manner, and it is the intention to gunite most of the other buildings. The bunk-houses are comfortably arranged upon the cottage plan. Each house has its own garden plot, which the men take care of during the evenings.

The crushing plant is located on the forebay. At the present time there have been erected three gyratory crushers, two No. 7's and one No. 7½, but in the Montrose yards are now the parts for a great 84-inch Traylor jaw crusher which will be erected this summer, and which will have a capacity of 2,000 cubic yards of crushed stone per day. Whether much of the rock will be dumped at St. David's or whether it will all be crushed for sale to the general public, is a matter of policy that will be determined by the Commission.

Building Four Concrete Bridges

The rock will all be drilled with Inger-oll-Rand and Sullivan rock drills and blasted with dynamite. C.X.L. brand, 40 per cent. and 60 per cent. has been used to date. The rock will be loaded on to the dump cars by electric shovels. At the present time the rock excavation at the forebay is on a very small scale, the stone being quarried merely to provide aggregate for concrete work and to supply ballast for the railways. The rock is loaded into skips which are picked up by a locomotive crane and which dump into a bin. A belt conveyer carries the stone from the bin to the crushers, and there is another conveyer from the crushers to the cars.

The concrete work for which the rock is now being used is in connection with a number of bridges which must be built by the Commission. There are four railway bridges to be constructed over the canal, one for the Niagara, St. Catharines and Toronto Railway (electric), one for the Wabash Railroad, one for the Michigan Central Railroad and one for the Grand Trunk and Michigan Central Railroads.

These will be reinforced concrete arch bridges, 36 feet to 38 feet in width, 100 feet clear span. There will also have to be constructed a number of highway and foot bridges to carry the various roads across the canal. In the concrete work to date, both Canada and St. Mary's cement have been used.

Hydraulic Similarity Models

Under the direction of Professor R. W. Angus, of the University of Toronto, several hydraulic similarity models are being prepared at Dufferin Islands, near the Ontario Power Company's intake in the Niagara River. These models are based on designs prepared by the Commission and are for the purpose of studying the conditions at the intake. The design of the intake works will be based upon the results of these studies. The models are being made to a 1/20th scale.

Personnel

Hon. Sir Adam Beck is chairman of the Hydro-Electric Power Commission of Ontario, the other commissioners being Hon. I. B. Lucas and W. K. McNaught, C.M.G. W. W. Pope is secretary, and Frederick A. Gaby, under whose direction the entire work was planned and is being constructed, is chief engineer.

The design and construction of the project are under the direction of the Hydraulic Department of the Commission, as were also the studies and surveys for the scheme. Henry G. Acres is hydraulic engineer; Thomas H. Hogg, assistant hydraulic engineer; and Max V. Sauer, the department's designing engineer. E. T. Brandon is electrical engineer.

There is a large staff of engineers and construction superintendents and foremen at Niagara Falls under the direction of J. B. Goodwin as works engineer and of George Angell as general superintendent. A. C. D. Blanchard is field engineer; F. W. Clark, assistant field engineer; R. T. Gent, plant engineer; William Snaith, office engineer; W. S. Orr, resident engineer on Division No. 1 (Welland River section); and George Lowry, resident engineer on Division No. 3 (station 235 to station 438 + 33, where the forebay begins). No construction work has been done yet on Division No. 2 (from the Welland River to station 235). To date, Mr. Orr has been acting as resident engineer on any work done on Division No. 4 (power house, gatehouse and forebay).

F. W. Scriven is division superintendent on Division No. 3, and C. Anderson acting superintendent on Division No. 1. Nos. 2 and 4 division superintendents have not yet been appointed. Harold L. Bucke is superintendent of railway construction; E. M. McGivern, mechanical superintendent; F. F. Cooper, chief clerk in charge of the accounting, cost-keeping and time-keeping systems.

