

HYDRAULIC ENGINEERING IN THE YUKON.

R. E. W. Hagarty, B.A.Sc.

There are many factors which may enter into any great engineering work. Each of these will probably require the results of life-long study and experience in some well-defined "branch" of one of the departments included in the broad term "engineering." However, the market for special products, such as turbines, pumps, dynamos, steel work, etc., depends directly upon such things as the building of railroads, power installations and other commercial and municipal enterprises involving mass construction; and the greatness of such works is measured principally by magnitude and unit efficiency of results rather than by the scientific accuracy of constituent parts.

It is evident, then, that the essential element in large engineering construction is organization; and the engineer in charge must be, above everything else, an organizer.

The subject of "Hydraulic Engineering in the Yukon" will be of interest partly from a purely hydraulic standpoint, but there are two other reasons for the writing of this article:—

First. While the writer wishes to devote special attention to the hydraulic and hydro-electric installation of the Yukon Gold Company, yet on account of the extent and completeness of this company's work, it is the intention to construct the whole article with a view to showing the organization features of such undertakings.

Second. There are several engineering conditions to be herein met with which are peculiar to the Yukon; and, since

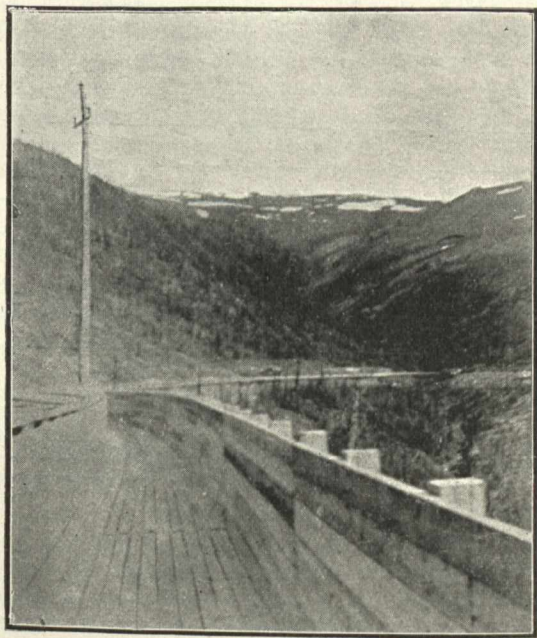


Fig. 2.—Open Timber Flume.

Canada's successful future will depend to a considerable degree upon the development of her vast northern unexplored territory, it is believed that all scientific information from the North will surely be of utmost importance.

A recapitulation of a previous article, entitled "Hydraulic Mining in the Yukon,"* may throw light upon the discussion of the engineering equipment which has been installed for the purpose of meeting the requirements of the operations heretofore described.

Gold in the Yukon occurs principally in the free or placer state, and is usually found near bedrock depth, mixed with a yellow or black sand. Also, the ground, although surfaced by luxuriant vegetation, remains perpetually frozen nearly all the way up from bedrock. These are the two main conditions which effect the mining and engineering of the district.

At the present time mining of gold is the principal occupation in Alaska, U.S., and the Yukon, Canada. This

* The Canadian Engineer, Vol. XV., page 795.

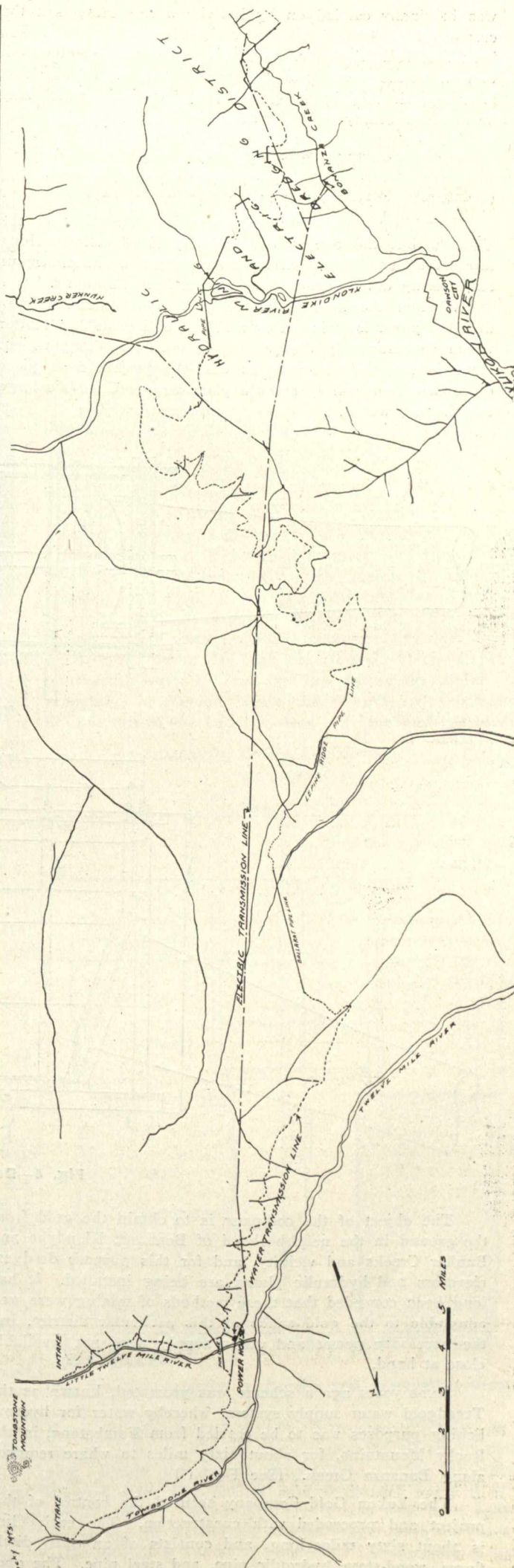


Fig. 1—Plan of Transmission and Pipe Line.