

was originally carried on by individual interests; but the cream, as it were, of the discoveries already made has thus been removed. However, there still remains sufficient wealth to warrant the working of the ground on a large scale; that is to say, virtually by "large-company" methods, which may be outlined briefly as follows:—

- (a) Dredging the creeks and valleys.
- (b) Hydraulicking the hillsides.
- (c) A combination of the above two, namely, the use of hydraulic and mechanical elevators.

There are many mining companies operating in the Yukon; but the one which probably is of all-absorbing interest under the present topic on account of its enormous engineering development is the Yukon Gold Company.

Whether the financial status of this organization as a dividend payer is or is not on a substantial basis is a matter which concerns only the stockholders of that corporation. Nevertheless, the fact remains that the project as a piece of construction well deserves a place among Canada's large engineering works.

the same water shed. Then changing to the next shed, the intervening "gulch" is crossed by an inverted siphon. Fortunately, the line runs from the edge of the Rockies through the foothills; consequently a continuous down grade is easily maintained. In fact, the total drop throughout the line is sufficient to necessitate "killing" part of the available head. The company also develops their own power near the intake of the water line, and transmit for distribution also along the creeks in the mining district.

WATER TRANSMISSION LINE.

(a) The Intakes.

The capacity of the system is 10,000 miners' inches, or 15,000 cubic feet per minute. The source of supply consists of two intakes of 5,000 inches each, one on the Tombstone River and the other on the Little Twelve-mile River. Both intakes are in the neighborhood of Tombstone Mountain, around which the weather has the reputation of "raining once every day" during the four or five summer months; hence a constant supply may be expected.

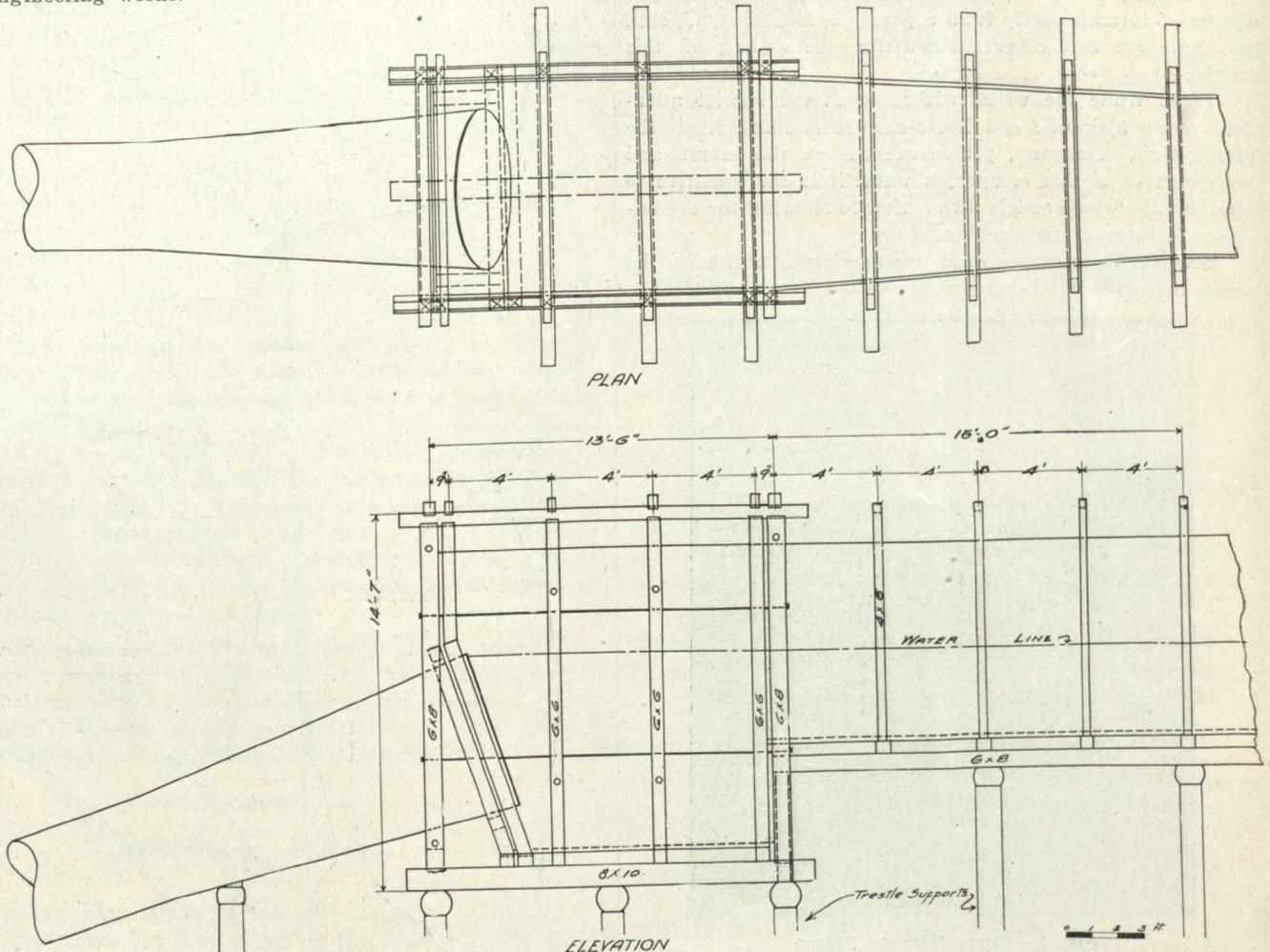


Fig. 4—Detail of Flume.

The object of the company is to obtain the gold from the ground in the neighborhood of Bonanza, Klondyke and Bunker Creeks and vicinity, and for this purpose dredges, elevators and hydraulic plants are being installed. It has long been conceded that these methods of mining were well adaptable to the gold sands of this particular district, but the necessary power and water supply were not available close at hand.

Some years ago a scheme was promoted, known as the Treadgold water supply system, whereby water for hydraulicking purposes was to be carried from Tombstone, in the Rocky Mountains, for about sixty miles to where required along Bonanza Creek. (See Fig. 1.)

The Yukon Gold Company secured the control of this project and proceeded with construction. The entire line is about sixty miles long, and consists of an open ditch, flume, wood-stave hydraulic pipe, and steel pipe. The open ditch follows the contour of the hills as far as possible on

The locations of the intakes are so chosen as to make their elevations more than one thousand feet above the elevations required for use along the creeks. The two streams from which the water is taken are mountain torrents, with glacial sources. The flow is supplemented by the evaporation and condensation in the form of rain of the mountain snow, which process continues throughout the greater part of the summer. The intakes in point of construction are merely tapered enlargements of the timber flume, yet to be described.

The Main Ditch.

For obvious reasons open ditch is used where possible. But it is in this portion of the line that the engineer finds himself closer to nature than in other portions of the construction, and; therefore, local climatic conditions are considerably more effective here than elsewhere.

In the winter months it is absolutely impossible to carry on any engineering work, partly on account of the frozen