

sq. mi. The upper part of the watershed rises to 8,000 ft., and is covered with perpetual snow. Over this watershed the annual precipitation for the last eleven years has averaged 155 in. The maximum year during that period was in 1906, when the precipitation was 190 in. The minimum year was in 1911, with a record of 132 in. The

443 ft. The lake was raised by means of a rock-filled timber crib dam 169½ ft. in length, which was designed as an overflow dam, having a spillway 113 ft. long. The area of the lake formed by the old dam was 2,328 acres, and with the growth of the demand for electric energy, it was decided that practically all of the water running off

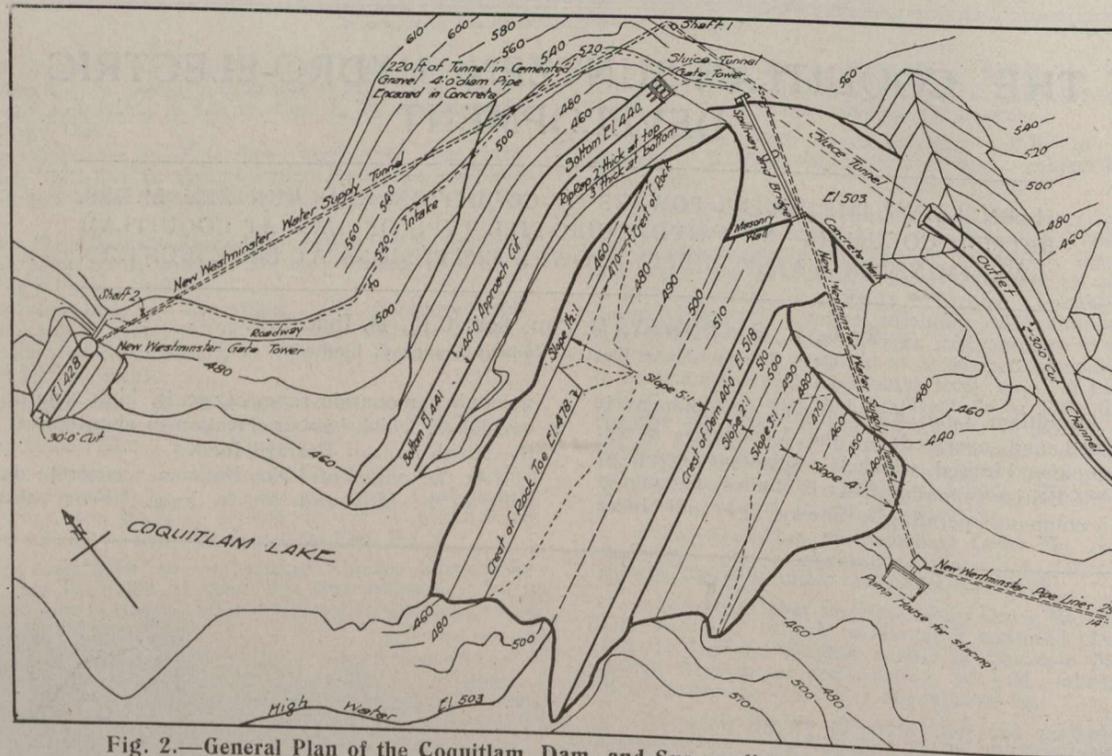


Fig. 2.—General Plan of the Coquitlam Dam, and Surrounding Development.

maximum monthly precipitation is during the month of November. The average precipitation for November for the past ten years amounts to 28 in.; the maximum recorded rainfall during that period for the month amounts to 37¼ in.; the minimum recorded is 10.62 in. The minimum monthly rainfall is in July, the average for the past ten years being 2½ in. In the original project, Lake Coquitlam, which has an area of about 2,000 acres, was raised 11 ft., or from El. 432 ft. above sea level to El.

from the watershed could be conserved if a dam were built at the outlet of the lake sufficiently high to store an additional 60 ft. of water, or a total depth of about 71 ft. that might be drawn down. Careful observation of the run-off data showed that slightly in excess of 1,000 cu. ft. per sec. was the average run-off for the whole year. This run-off represented about 78 to 80% of the recorded precipitation at Coquitlam Lake, and represents an average water storage of electric energy of 220,000,000

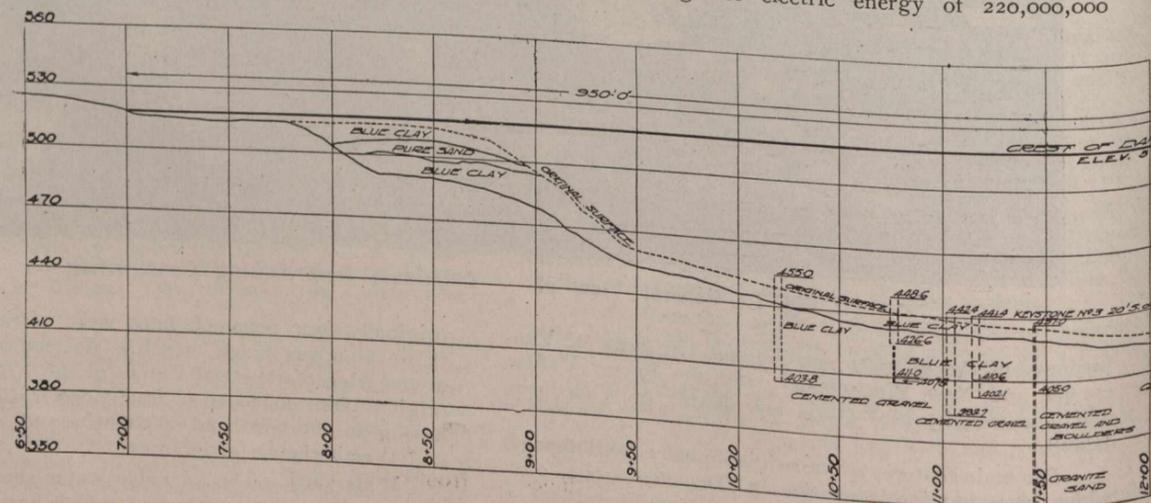


Fig. 3.—Profile Along Centre Line of the Coquitlam

kilowatt-hours. To deal with this increased quantity of water it was necessary to enlarge the Coquitlam-Buntzen power tunnel, which originally had a cross-section of 81 sq. ft. and a capacity of 300 cu. ft. per sec., to 178 sq. ft. This work was completed in the spring of 1911, and the

1906, when it was 137½ in., the minimum year 98½ in. 1911. The storage capacity of Lake Buntzen is 6,000 acre-feet.

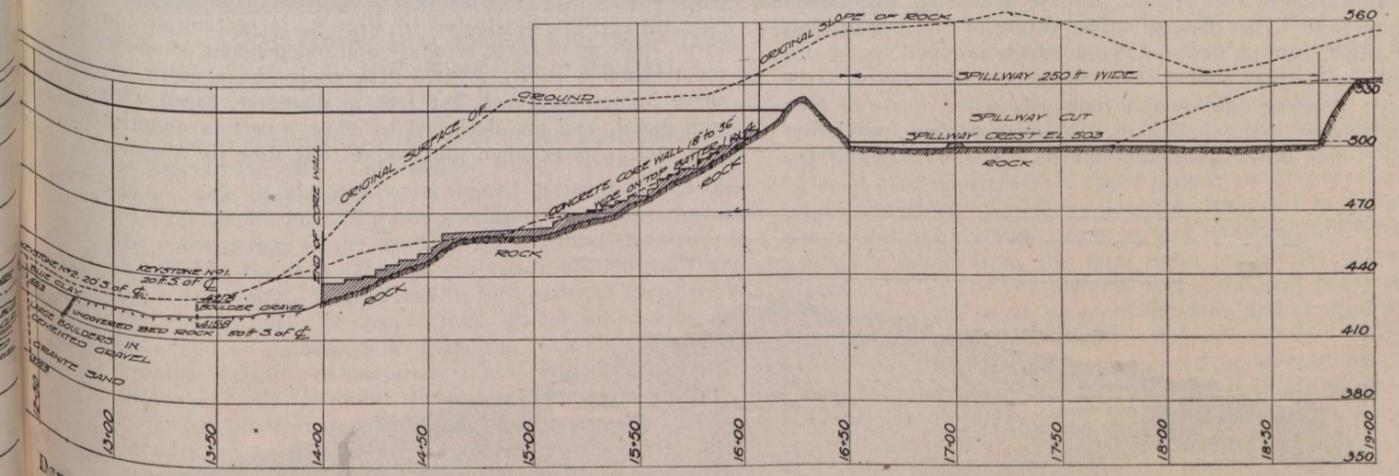
The necessity of utilizing all the available water supply in Coquitlam Lake was due to the extraordinary



Fig. 4.—Foundation Ready for Hydraulic Filling, Coquitlam Dam.

tunnel has now, when the lake is full, a maximum discharging capacity of 1,350 cu. ft. per sec. In addition to the water for Coquitlam Lake, Lake Buntzen, which has an area of 500 acres and a drainage of 7 sq. mi., has a considerable run-off. The rainfall at that lake averages 113 in. over the last ten years; the maximum year was

growth which has taken place in the development of the City of Vancouver and surrounding districts during the last five years. The following figures represent the output of electric energy from the company's plants since 1908:—



Dam, Vancouver Power Company, Limited.