

The Canadian Engineer

A weekly paper for Canadian civil engineers and contractors

Demolition of the Ragged Rapids Dam

Removal of Obstructions Necessitated by Inclusion of River Severn in Trent Canal System—Reinforced Concrete Dam Dynamited Under Full Head of Water

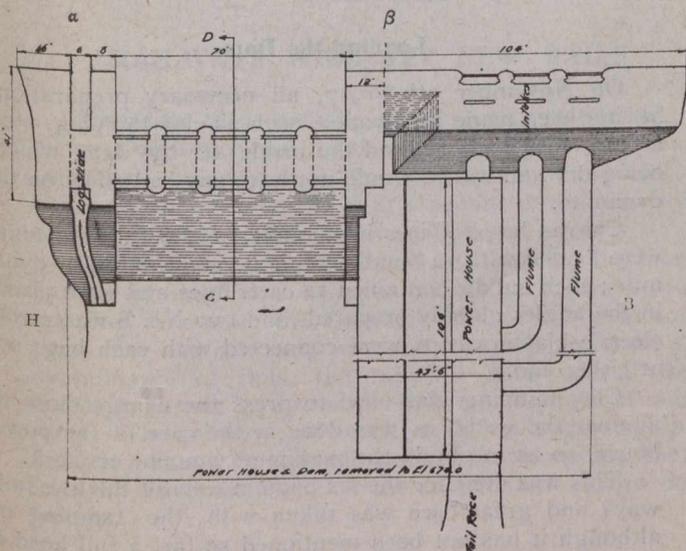
By SIDNEY BOWEN

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WHEN it was decided by the Department of Railways and Canals to make use of the River Severn as part of the Trent Canal system, consideration had to be given to the fact that the dam and powerhouse at Ragged Rapids obstructed the route.

Various plans were considered as to the best means of overcoming this difficulty, it being finally decided to build a new dam, powerhouse and lock at Swift Rapids, about 1½ miles downstream, and to remove the present power development. If only the piers from the deck to the spillway level had to be removed, the problem would have been one of extreme simplicity, but as the water coming down the river during the spring freshet amounts to quite an appreciable quantity, reaching a maximum of

generating power for the use of the town of Orillia and surrounding districts, having been constructed to withstand a head of 46.5 ft., the head water being at elevation 697.5 and tail water at elevation 651.0, regulated level.

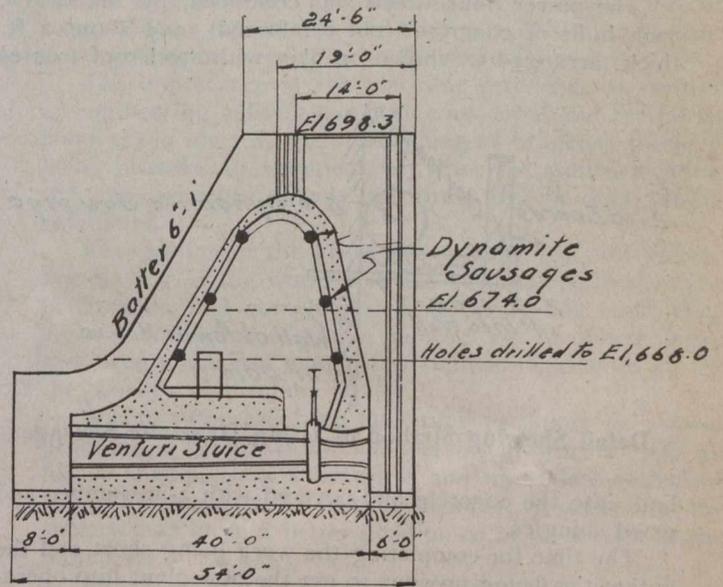


Plan of Ragged Rapids Dam

about 10,000 sec.-ft., it was deemed advisable to remove the whole development to a depth of 24.3 ft., viz., from elevation 698.3 to elevation 674, thus giving an area of about 4,000 sq. ft.

The contract for that portion of the canal known as Section 2, Severn Division, Trent Canal, was awarded to the Inland Construction Co., Limited, who decided to call in Mr. Russel, of the Canadian Explosives, Limited, Montreal, to consult with the writer as to the best methods to be employed to obtain the desired result.

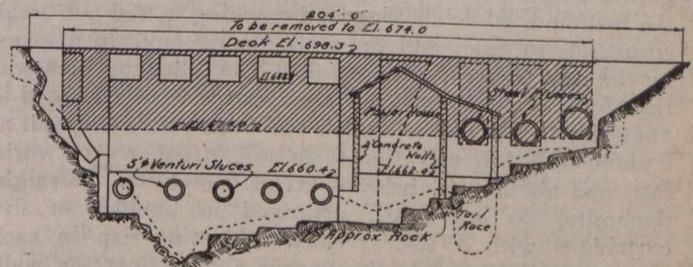
The dam in question was built about 10 years ago (to replace a dam which had proved unsatisfactory) to the plans, specifications, and under the direct supervision of Mr. J. B. MacRae, consulting engineer, Ottawa, and since that time had been used to impound water necessary for



Section at "C D"

As shown on the accompanying plan, the dam consisted of a series of five spillways, each of 10 ft. opening. An abutment 30 ft. thick or thereabouts, containing a log-slide 6 ft. wide on the north side, and a gravity wall 12 ft. thick on the south side, connected to the open penstocks and steel flumes by means of a gravity wall 7 ft. thick at deck level, with the downstream face sloping five inches to the foot.

Above the spillway crest the piers were 5 ft. thick, with the usual stop-log and emergency checks of steel framing, while inside the dam the piers were increased to a thick-



Elevation at "H B"