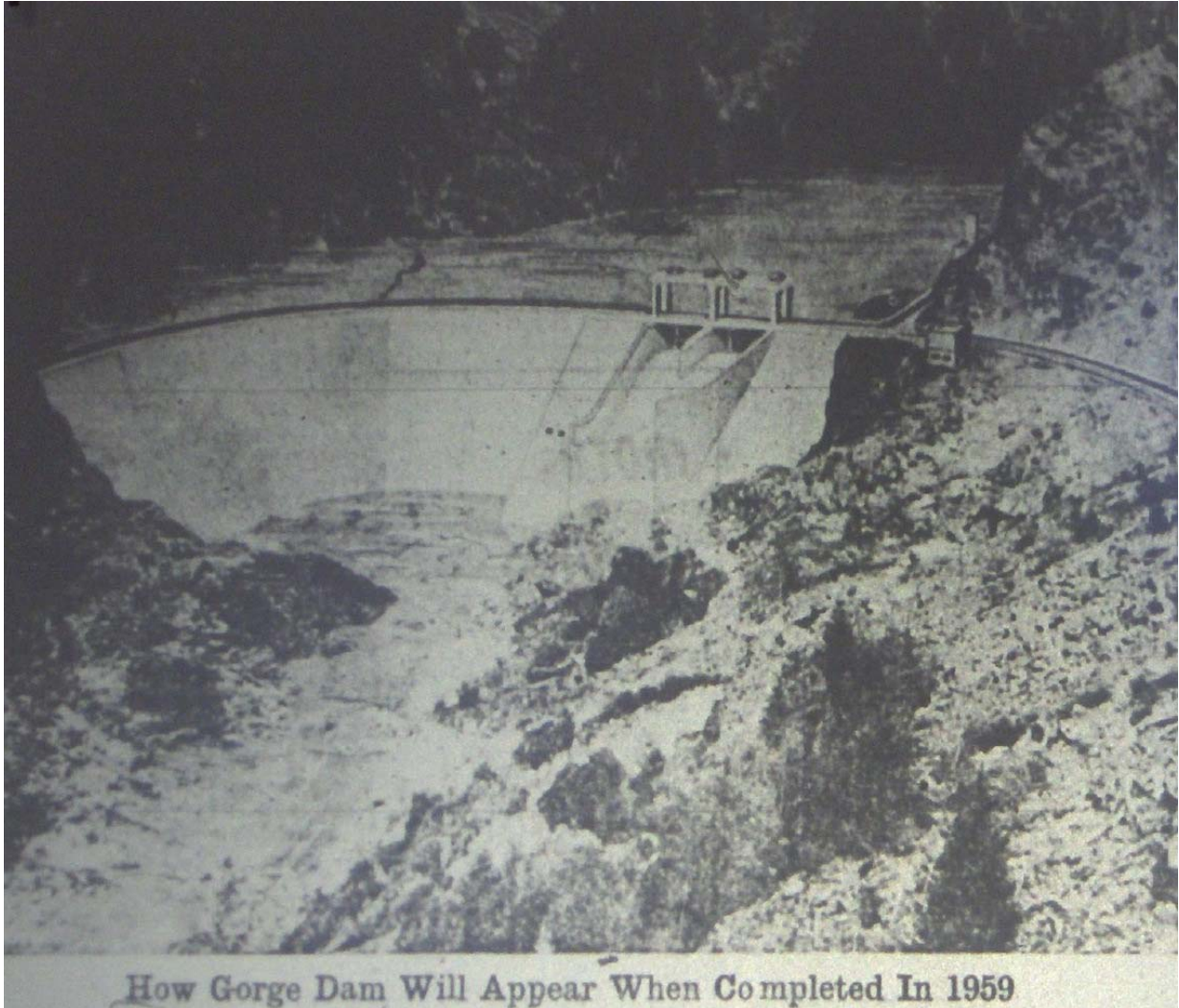


# THE CONCRETE HERALD

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How Gorge Dam Will Appear When Completed In 1959

## **FREEZING OF GROUND IS PART OF UNIQUE METHOD OF CONSTRUCTION**

Above is an artist's sketch of Seattle City Light's Gorge Dam now under construction at its Skagit Hydroelectric Project. The dam, to be located on the Skagit River two miles above the Gorge powerhouse, will be a concrete structure approximately 670 feet long and 285 feet high.

It is being built by Merritt-Chapman and Scott Corporation of New York and the

Savin Construction Corporation of East Hartford, Connecticut, a joint venture who obtained the contract on their low bid of \$14,731,107.

The dam is scheduled for completion in early 1959. Purpose of the dam is to replace the present Gorge Diversion Dam and provide an 88 foot higher head of water, thereby increasing the present 108,000 kw

capacity of the Gorge powerhouse to 155,000 kw.

The dam will run straight across the gorge from the left bank (looking downstream) for about 220 feet and swing on a curve to a point about 200 feet downstream on the right bank. The 220 foot gravity section of the dam will be about 170 feet thick at the base. The arched portion, requiring less bulk will be about 70 feet thick at the base. The dam will have a 16 ft. width at the crest.

Two gates, each 47 feet long and 59.5 feet high will control the flow over the spillway located in the gravity section of the dam. Two 8.75 by 8.75 conduits will provide sluiceways to the right of the spillway and about 120 feet below the top of the dam.

A unique feature in the construction is the freezing of an ice barrier in the river-fill material down to bedrock to keep upstream groundwater from flowing into the excavation. The ice wall will be approximately 4 feet thick and reach a depth of about 240 feet.

Included in the contract is the relocating of the Newhalem-Diablo highway. The major part of the existing road will be flooded by the waters behind the dam.

The highway work consists of widening to 28 feet the roadway from Gorge powerhouse bridge to Devil's Elbow bridge and constructing 4½ miles of new 14 foot crushed rock surface road from Devil's Elbow Bridge to Stetattle Creek.

It will include three unlined vehicular tunnels, totaling 1,130 feet, a 250 foot bridge at Gorge Creek and 4 short span bridges totally 220 feet.