HCL

Hugh A. McKellar

ENGINEER

provo, utah 373-4869

January 9, 1970

Mr. Donald C. Norseth
Office of the State Engineer
442 State Capitol
Salt Lake City, Utah

Dear Mr. Norseth:

Reference is made to your letter of December 17, 1969, in connection with the washout of the Timpanogos Canal.

Some time prior to September 12, 1969, the Utah Power and Light Company discussed with me the possibility of turning out part of the water in their flume for the purpose of inspection and repair. It was decided that water would be bypassed on September 12 for about twelve hours.

I tried to contact the water master of the Timpanogos Canal but was unable to reach him. Because of the press of other business matters I forgot to try to call him at a later time, and so he was not notified of the water to be released.

On September 12 the power company bypassed water as follows: 3 a.m., 60 CFS; 4 a.m., 60 CFS; 5 a.m., 60 CFS. At approximately 4 p.m. they started turning water back into the pipe. The flume carried 120 CFS during the day, so only half of the total flow was bypassed.

During this period the Timpanogos Canal was carrying 13.5 CFS. The width of the diversion dam for the Timpanogos Canal is 62 feet; 120 CFS flowing would raise the water surface at the diversion dam 0.70 feet.

It is not known whether the canal gate was wide open or not. This is something I do not check. It is difficult to keep this canal regulated, because it is the only one between the power company flume inlet and outlet and picks up any extra water that might come down the river from any source. Quite often it gets more water than the decree specifies. If the canal gate were closed to an area of 2 square feet, a head difference of 2 feet (assuming submerged orifice) would permit 13.7 CFS to flow. Increasing head difference to 2.70 would permit 16.10 CFS to flow.

The Timpanogos Canal has no bypass or other safety device to prevent a flush of water from going down the canal and causing damage. Most of the other canals in the area do not have any safety bypass and are susceptible to flood damage from unannounced flushes of water. It would appear that a little money spent for safety features could prevent a lot of damage claims.

Enclosed is a sketch showing the relationship between the elevations of the canal bottom, the top of the diversion dam, and the water depth over the dam for a flow of 120 CFS.

If you have any further questions, please let me know.

Very truly yours,

Hugh A. McKellar

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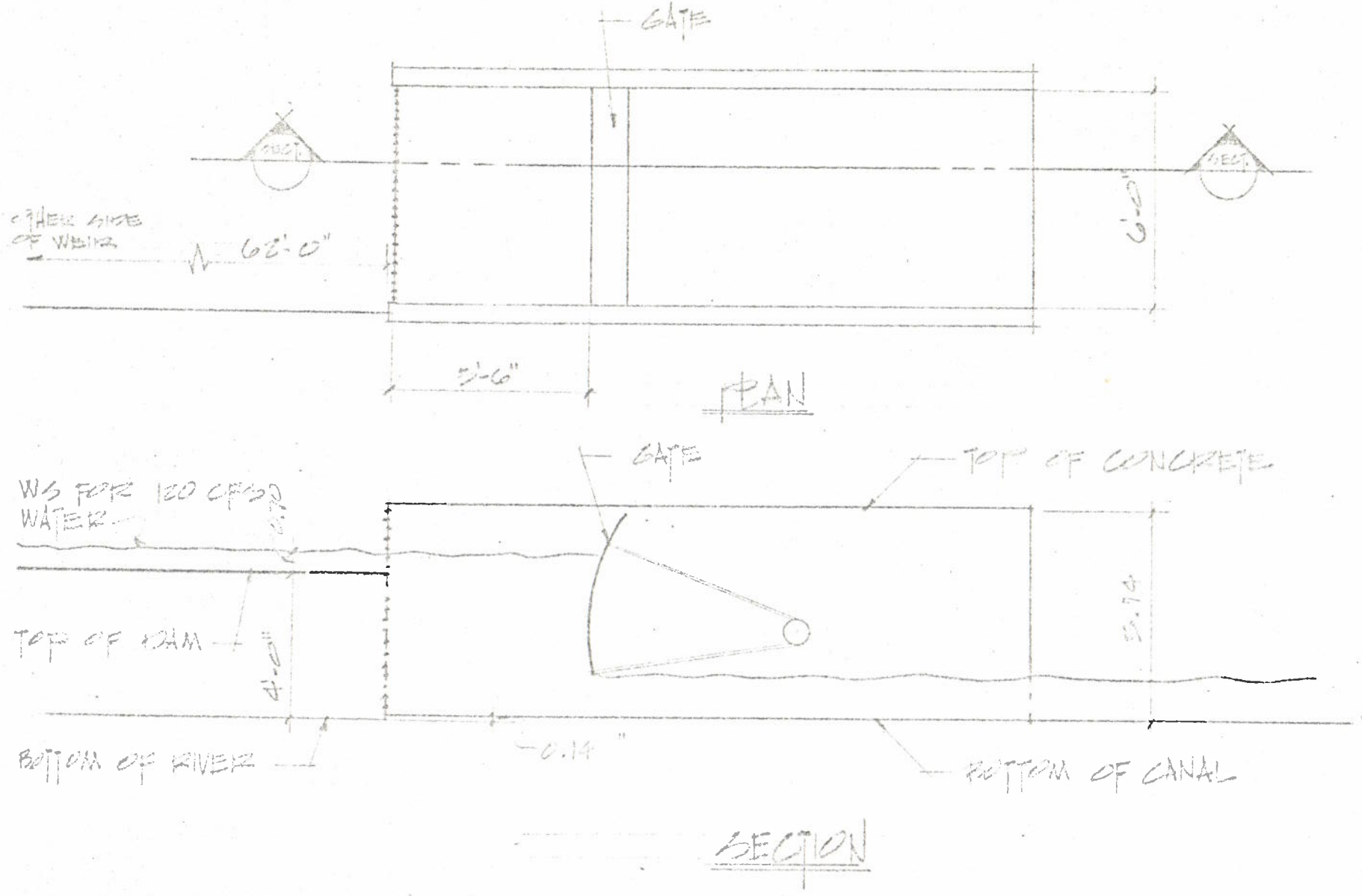

HUGH A. McKELLAR

JAN. 9, 1970