BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

HAT CREEK PROJECT

British Columbia Hydro and Power Authority - Hat Creek Project Memorandum - Preliminary Layout 69 kV Transmission Lines - July 1977.

ENVIRONMENTAL IMPACT STATEMENT REFERENCE NUMBER: 11

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

MEMORANDUM

PRELIMINARY LAYOUT
69 KV TRANSMISSION LINES

July 1977

25 July 1977

Hat Creek 60 kV Transmission System

(1) GENERAL DESCRIPTION

(a) Mine Supply and Construction Power 69 kV Lines

Sketch 1 shows the basic 69 kV line route recommended for supplying the mine substation and the construction power substation. Power to the mine substation would be tapped from an existing 69 kV line located near Highway 12. The new 69 kV supply line would cross Highway 12 to the mine substation and would be approximately 1.2 kilometers long. The supply to the construction substation would be taken from the mine substation using two parallel single 69 kV lines approximately 3.6 kilometers long. The right of way cross sections would require a maximum of 20.0 meters for a single 60 kV circuit, and 30.5 meters total for two parallel 69 kV single circuits.

(b) Pumping Station 69 kV Lines

The 69 kV supply to the pumping station will be taken from a new 230/69 kV substation called Rattlesnake Substation. There are two probable sites for Rattlesnake Substation, from which would emanate the 69 kV supply to the pumping station. Sketch 2 illustrates these alternatives:

(i) Site A

This site is approximately ½ km from the existing 230 kV lines on land gently sloping to the south. It is located approximately 3 km from the highway between Cache Creek and Savona, 1½ km from a subdivision, and approximately 12 km from the pumping station.

(ii) Site B

This site is approximately 3/4 km east of Site A and lies close to, and to the north of, the existing transmission lines between two creek beds.

The site is also approximately 1½ km from the highway between Cache Creek and Savona. It is also approximately 1½ km from the nearest house, and 12 and 11 transmission km from the pumping stations.

(c) Pumping Substation 69 kV Line Routes

(i) River Pumping Station

From Sites A and B, the 69 kV tap would cross the highway close to the town of Cache Creek where it is well screened from traffic

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(1) GENERAL DESCRIPTION

(c) Pumping Substation 69 kV Line Routes

(i) River Pumping Station (Cont'd)

viewing but within sight of a sub-development. It would then follow the route of the gas pipeline to the vicinity of the pumping station site adjacent to the high pressure pumphouse. The visual impact of this 69 kV line from both sites A and B would be completely acceptable.

(ii) Possible Intermediate Pumping Station

There is a possibility of a second stage Intermediate Pumping Station. If it is assumed that the 69 kV line to the River Pumping Station is the main 69 kV line, then the tap to the intermediate pumping station should occur on the gas pipeline route.

The 69 kV line from sites A and B should be tapped at point X if the distance between the Rattlesnake Substation and the pumping stations is to be kept to 10-12 km.

Over the section from the tap to the intermediate pumping station, the line will be visible from Highway 1 and the road linking Highway 1 and Ashcroft. It will also pass in the vicinity of several houses near Boston Flats. With the given parameters of 10-12 km, no alternatives are feasible, and the visual impact of this line, which is the lowest of any transmission line, must be accepted.

(d) 69 kV Loop into Rattlesnake Substation

The existing 69 kV line (60L29) between Carquille and Ashcroft must be interrupted at some point between the town of Cache Creek and the Bonaparte Indian Reserve to run along the existing 230 kV route to the proposed Rattlesnake Substation site.

The sum effect of these lines is to increase the width of the right of way and the number of structures, thereby increasing the visual pollution. It follows that the further east that these lines travel to a substation, the greater the amount of line viewed and the less desirable the visual impact. The impact is minimum at Site A, increasing marginally at Site B.

(2) 69 KV TRANSMISSION LINES

The 69 kV transmission lines to the mine, construction, and River Pumping Station will be of single-pole construction with a cross arm. From an environmental standpoint, the impact of transmission lines in the study area is limited. There is no tree cover, hence no clearing and consequently no impact on drainage patterns or wildlife. There are no creeks or lakes that

(2) 69 KV TRANSMISSION LINES (Cont'd)

support fish. The study area excludes Ashcroft and lies to the east of Cache Creek and so avoids urban areas.

(a) Visual Impact

The lines carry single conductors and for all practical purposes, the visual impact is that afforded by the structures themselves. When viewed from a distance, the lines tend to blend into the background and the landscape when there is no snow cover, always provided that several of them are not run parallel to each other with the structures in step.

(b) Erosion

In addition, there may be damage to the range land arising from erosion and the destruction of ground cover by vehicles or access road construction.

(c) Social Impact

The social impact of the transmission lines is confined to the construction period of approximately one year when a work force will be brought in from outside. The towns of Cache Creek or Ashcroft would benefit from the provision of board and lodgings for these workers. In neither instance would there be any impact upon school populations, hospitals, recreational facilities or the like.

It is considered that the social impact of the lines as routed would be minimal and inconsequential.

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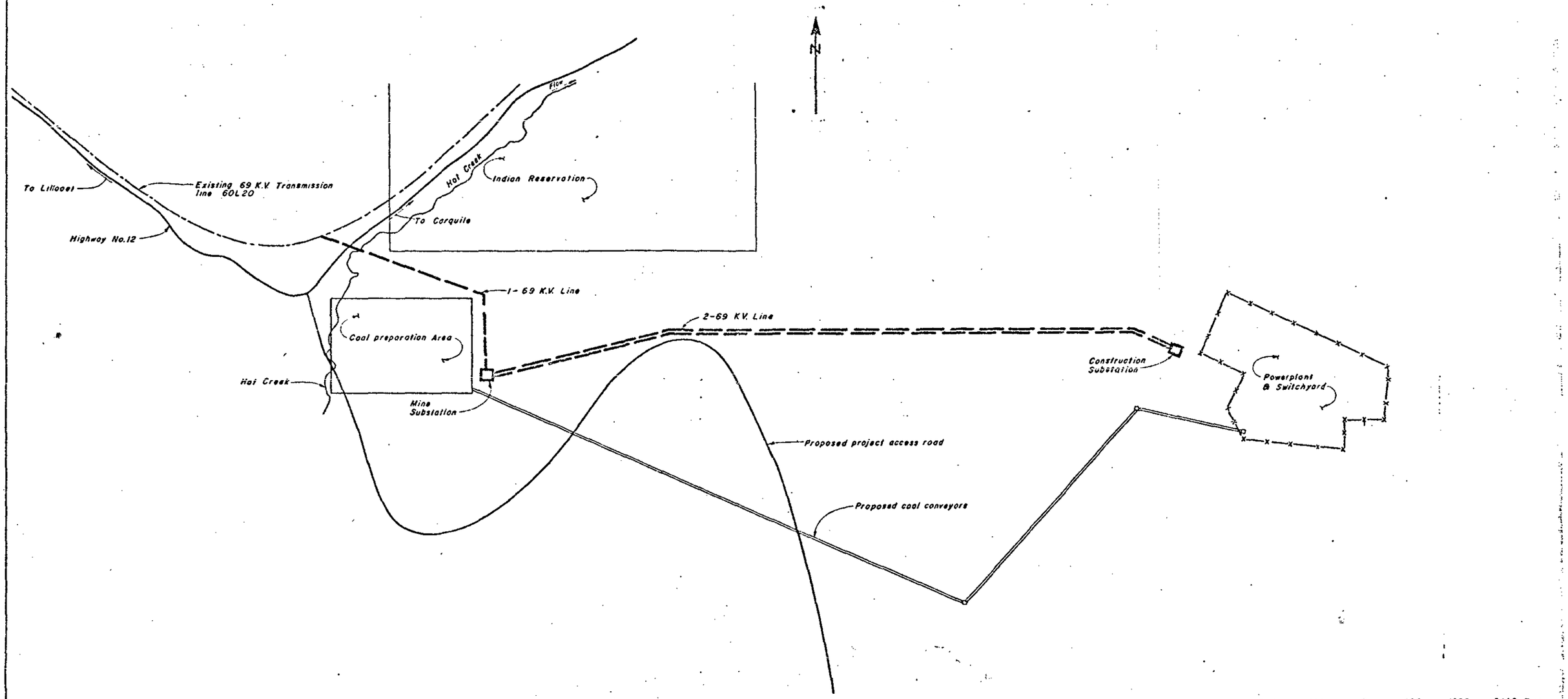

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HAT CREEK PROJECT

CONSTRUCTION POWERLINES

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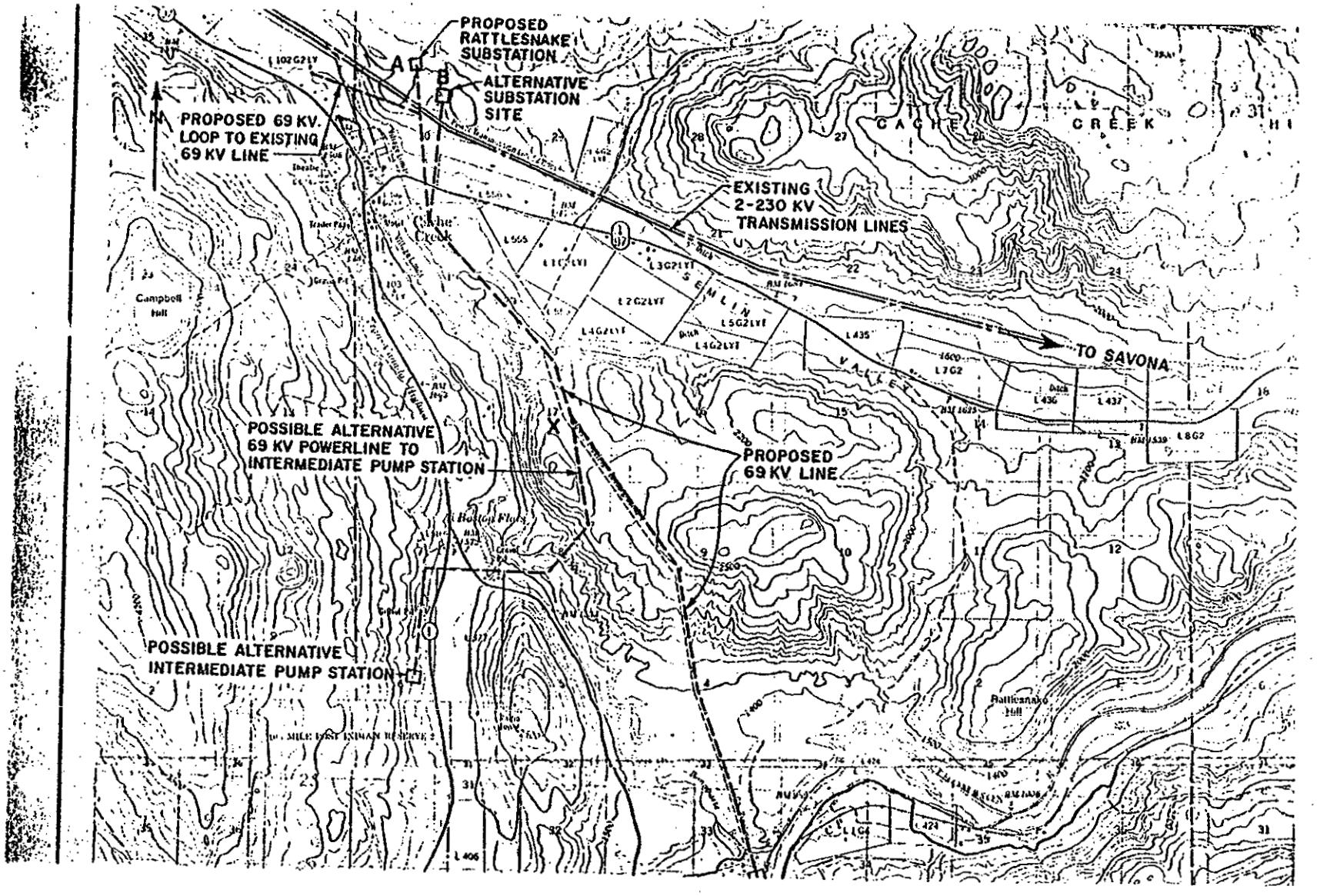
PROPOSED RATTLESNAKE SUBSTATION
A
B
ALTERNATIVE SUBSTATION SITE
PROPOSED 69 KV. LOOP TO EXISTING 69 KV LINE
EXISTING 2-230 KV TRANSMISSION LINES
TO SAVONA
POSSIBLE ALTERNATIVE 69 KV POWERLINE TO INTERMEDIATE PUMP STATION
PROPOSED 69 KV LINE
POSSIBLE ALTERNATIVE INTERMEDIATE PUMP STATION
CACHE CREEK
Campbell Hill
Battlesnake Hill
Cache Creek
SEMLIN VALLEY