



Conservation
Review Board

Ministry of Tourism,
Culture and Recreation

Commission des
biens culturels

Ministère du Tourisme,
de la Culture et des Loisirs

4th floor
400 University Ave
Toronto ON M7A 2R9
Tel (416) 314-7137
Fax (416) 314-7175

4e étage
400 avenue University
Toronto ON M7A 2R9
Tél (416) 314-7137
Télec (416) 314-7175

August 8, 1991

The Mayor and Members of Council
Town of Smiths Falls
Municipal Offices
Box 695
77 Beckwith Street North,
Smiths Falls, Ontario
K7A 4T6

Dear Mr. Mayor and Members of Council:

Re: Designation under the Ontario Heritage Act of
Canadian National Railway Station and Scherzer
Rolling Lift Bascule Bridge

Although the objection to the proposed designation had been withdrawn by letter dated 7 May, 1991, the Ontario Heritage Act nevertheless is interpreted as requiring a hearing. I therefore attended at the Council Chambers on May 10th, 1991 to conduct an abbreviated hearing. At the time I advised that, as the objection had been withdrawn and as Council had approved the designation, the Board would be recommending in favour of designating the properties. Nevertheless I was requested to provide a written report concerning the museum and lift bridge and accordingly this is the report of the Conservation Review Board concerning the proposed designations.

It is based on documents that were forwarded to the Board as well as on an extensive site visit to the railway station and, by way of the Wickham track inspection car, to the bascule lift bridge.

The development of the Rideau Canal and the later completion of the railway system were central to the evolution of the history and economy not only of Smiths Falls but of eastern Ontario in general. Thus today, the canal, the railways, their intersections and points of access are significant to the heritage to eastern Ontario.

CANADIAN NATIONAL RAILWAY STATION

The station appears to have been built in approximately 1914 for the Canadian Northern Railway and it represents an outstanding example of a smaller station in Canada. As a piece of architecture it manifests its function with clarity and precision. As well, particularly by virtue of the large "through space" waiting room, it symbolizes its own function as a place of arrival and departure.

Its decorative turret and wide projecting eaves represent a departure from Canadian Northern's usual conservative buildings constructed from standard plans.

It is thought to have been designed by architect R.B. Pratt of Winnipeg. The building presents a low profile with wide projecting eaves supported by large radiused brackets (common to many small stations). It was built of red brick of "liverpool bond" pattern with concrete lintels. The original baggage room and station were separated by a breezeway. The structure is roofed in the hipstyle, slightly flared over the eaves. The south end of the building represents half a hexagon and the track side features an attractive hexagonal turret.

The south end of the building represents half of a hexagon and the track side features an attractive hexagonal turret with three small paned four over seven windows. Behind the turret stood a decorative brick chimney.

The interior is pleasingly proportioned. The main waiting room features six ornate fluted wooden pilasters with carved capitals, topped by a heavy moulding with prominent continuous dentils around the ceiling.

It is noteworthy that the Historic Sites and Monuments Board of Canada has designated this station as of national historic and architectural significance and has authorized that it be commemorated by means of a plaque.

The community has made a strong and successful effort to protect the station from demolition and to re-use it in a manner reflecting its heritage value.

The station is currently the site of the Smiths Falls Railway Museum and is operated as part of a comprehensive scheme to commemorate the railway heritage not only in Smiths Falls but of the Province at large. It is managed in conjunction with a collection of objects, railway tracks, different types of railway cars and is close to the bascule bridge.

The railway station, in itself, and particularly in the context of the comprehensive scheme in which it is now operated, is clearly of major heritage significance, both architecturally and historically, to Smiths Falls and to the Province.

BASCULE LIFT BRIDGE

just as the station has been designated by the Historic Sites and Monuments Board of Canada as being of national significance, so has the C.N.R. Scherzer rolling lift bascule bridge.

A suitable description is found in *Survivals: Aspects of Industrial Archaeology in Ontario*, by Dianne Newell and Ralph Greenhill, published by The Boston Mills Press where, commencing at page 27, it is stated that at Smiths Falls

a single-leaf bascule bridge - a Scherzer Rolling Lift-type - carried the Ottawa-Toronto branch of the Canadian Northern Railway across the canal. It is the only bascule railway bridge to be built over the Rideau Canal; the others, like the one at Kingston Mills, are fixed high-level spans. Without the construction of long approaches, the bridging of rivers and canals whose banks are very low require a movable span or spans. Until the late nineteenth century the most practical, hence common, type of movable bridge for carrying road or railway traffic across navigable waterways was the swing bridge. The balanced swing span was pivoted on a pier mid-stream in the navigation channel. But there were serious drawbacks: the pier subdivided the navigation channel, and both the centre pier and open span presented a hazard to shipping. Long-span bascule bridges were impractical because they required the development of both a practical method of counterbalancing the open span and a suitable power system for their operation. Only with the innovation of electric power and individual electric motors in the late nineteenth century could a practical new bascule form be developed.

The Scherzer Rolling Lift bridge was the invention of William Scherzer, who patented the bridge type in 1893 and founded a company in Chicago to manufacture it. The novelty and advantage of Scherzer's design was that the arm, supported on a pair of large rockers, rolled away from the navigable channel on a perfectly smooth and level track. To provide horizontal stability, lugs on the track engaged in slots on the underside of the rockers. The rolling motion all but eliminated the type of friction involved with the traditional trunion bascule, where the entire weight of the movable arm revolved about a hinged pivot. Also, with the Scherzer the arm moves backward as it moves upward, thus it provides a maximum channel width for navigation with minimum span length... Unlike swing bridges, Scherzer bridges could be built side by side to provide multi-track crossings for railroads.

The company designed and built its bridges in many styles throughout the world. It also contracted work granting the right, for a fee, to construct them. The Scherzer bridge constructed at Smiths Falls in 1911-13 is the work of the Dominion Bridge Company of Lachine, Quebec. This was not the first of the Scherzer Rolling Lift type to be built in Canada, but it is the oldest of the 14 that survive in this country. The first one built in Canada was opened in 1911, a 50-foot span over a side harbour basin of the Lachine Canal at Côte St. Paul.

Dozens of improved bascule bridges were built in Canada after 1911, but very few were of the Scherzer type. (The highway lift bridge, built in 1917, carrying the Lasalle Causeway across the entrance to the Rideau Waterway at Kingston is an example of the more common type, a Strauss heel trunion bascule.)

At Smiths Falls, the Scherzer Rolling Lift crosses the canal cut 350 feet above the upper detached lock. There are two deck plate girder approach spans (67 feet 4 inches and 37 feet 4 inches in length) set on concrete piers and abutments. These raise the bridge 8 1/2 feet above the level of water to allow small boats to pass under it without having to open the bridge. The lifting

portion consists of a plate girder 69 feet in length. At the business end of the moveable arm are the massive segmental rockers constructed of steel plate reinforced with ribs. Poised at the end of the rockers is a large reinforced concrete counterweight balancing the weight of the arm stretching across the water.... The movable arm was operated from the catwalk outside the bridge-tender's cabin, mounted on a high wooden framework to the east side of the approach span, at the heel of the lift.

This particular bridge was originally designed to be operated either manually or by an electric motor. When the small direct-current motor was installed in 1914, it took only one minute for the operator to roll back or lower the arm by 90 degrees. But a year later the town replaced direct current with alternating current, rendering the motor useless. The railway decided to operate the bridge by hand, and continued to do so until it ended service on the line in December 1978. Although operating the bridge by hand took much longer - 10 to 15 minutes to raise it by 45 to 60 degrees, or 20 minutes to raise it the full 90 degrees - than with the motor, with no canal traffic in winter and only light rail traffic during the canal season, it was possible simply to leave the arm in one position most of the time.

The bridge is an elegant and efficient engineering response to the problem created by the intersection of the canal and the railway and the property is worthy of designation for both historical and, in a broader sense, architectural reasons.

(Original Signed by)

Michael B. Vaughan, Q.C.
Chairman