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DEVELOPMENT OF THE SEVERN RIVER
AND BIG CHUTE LOCK STATION

by

WILLIAM BEAHEN

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vi	Abstract
ix	Preface
1	Introduction
3	Part I. Development of the Severn River
6	The Opening of the Waterway
8	Lumbering Operations
12	Growth of Tourism
33	Development of the Waterway
65	Part II. Big Chute Lock Station
68	Power and Water Control Related Structures
88	Hydro Colony Structures. The Dwelling Houses
101	Miscellaneous Hydro Structures
112	Roads and Bridges
113	Canal Structures
145	Marine Railway and Associated Structures
172	Marine Railway Operators' Dwelling Houses
179	Commercial Establishments in the Immediate Big Chute Vicinity
180	Some Significant Aspects of the History of the Big Chute Site
186	Endnotes
199	Sources and Acknowledgments

Illustrations

- 5 1 Severn River area.
- 17 2 Fitzpatrick family shanty at Pretty Point, ca. 1912.
- 21 3 Deanelen Lodge, Severn Falls, 1912.
- 23 4 Railway Station at Severn Falls.
- 27 5 Mordolphton Club excursion.
- 29 6 Sports day at Mordolphton Club camp, ca. 1913.
- 31 7 O'Hara family cabin on Gloucester Pool, ca. 1890.
- 35 8 Lock and highway bridge at Port Severn, 1916.
- 37 9 Highway bridge and dam at Port Severn, 1916.
- 41 10 Regulating dams near Big Chute, 1957.
- 45 11 Swift Rapids, looking upstream, 1917.
- 47 12 Swift Rapids, looking downstream, 1916.
- 49 13 Power plant at Ragged Rapids, 1914.
- 51 14 Ragged Rapids gorge, 1917.
- 53 15 Swift Rapids marine railway, 1919.
- 55 16 Railway bridge at Ragged Rapids.
- 59 17 Couchiching lock pit, 1919.
- 61 18 Couchiching lock, 1920.
- 63 19 Ontario Hydro plant at Wasdell Falls, 1948.
- 67 20 Big Chute, looking upstream, 1908.
- 71 21 Forebay and penstocks at Big Chute, 1914.
- 73 22 Power house at Big Chute, 1912.
- 75 23 Big Chute power house extension, ca. 1914.
- 79 24 Big Chute power house forebay, 1935.
- 81 25 Big Chute power house forebay, 1935.
- 85 26 Big Chute hydro station, 1932.
- 87 27 Hydro boarding house at Big Chute, ca. 1925.
- 91 28 Superintendent's dwelling at Big Chute.
- 93 29 Operators' houses at Big Chute, ca. 1926.
- 95 30 Operators' houses at Big Chute, ca. 1950.
- 97 31 Schoolhouse at Big Chute, 1937.

- 99 32 Former schoolhouse at Big Chute, now cottage at Copp Bay, 1976.
- 103 33 Layout plan of Big Chute, ca. 1912.
- 105 34 First boathouse at Big Chute, 1923.
- 107 35 Second boathouse at Big Chute, ca. 1950.
- 109 36 Ice storage building at Big Chute, ca. 1925.
- 115 37 Canal construction area between Big and Little Chutes.
- 117 38 Canal construction camp near Big Chute, 1920.
- 119 39 Camp buildings near Big Chute, 1919.
- 123 40 Camp buildings near Big Chute, 1919.
- 125 41 Construction site near Big Chute, 1919.
- 127 42 Construction site near Big Chute, 1920.
- 129 43 Little Chute lock pit, 1919.
- 131 44 Core wall "C" under construction, 1919.
- 133 45 Core wall "C" after completion, 1920.
- 137 46 Regulating sluice dam near Little Chute, 1976.
- 139 47 Engine type boiler near Little Chute, 1976.
- 141 48 Core walls "B" and "C", 1976.
- 143 49 Lock pit excavation at Little Chute, 1976.
- 147 50 Big Chute marine railway, 1917.
- 149 51 Lower end of Big Chute marine railway, 1917.
- 151 52 Upper end of Big Chute marine railway, 1923.
- 155 53 Marine railway control building under construction, 1923.
- 159 54 Big Chute marine railway between 1924 and 1928.
- 161 55 Excavation at Little Chute, 1923 and 1924.
- 163 56 Big Chute marine railway, ca. 1962.
- 169 57 Marine railway control building at Big Chute, 1977.
- 171 58 Marine railway operator's house, 1928.
- 175 59 Assistant marine railway operator's shack, 1926.
- 177 60 Assistant marine railway operator's house at Big Chute, ca. 1973.
- 185 61 Ice cutting at Big Chute.

Abstract

This report traces modern development of the Severn River as a transportation route, a recreational resource and a source of hydro-electric power. Particular attention is given to descriptions of the structures at Big Chute and the historical context within which they evolved.

In the latter half of the nineteenth century lumber companies based at Port Severn, Severn Bridge and Washago exploited the timber on the banks of the Severn and its tributaries. In 1899 power companies began to harness the cataracts of the river to produce hydro-electricity. Within fifteen years power plants had been constructed at Big Chute, Swift Rapids and Wasdell Falls, of which the first two are still in operation.

Numbers of people began to be attracted to the Severn River as settlers and tourists after 1850. Permanent settlement occurred for the most part at the eastern and western extremities of the river where lumbering and the tourist trade became the principal economic forces. In the later years of the nineteenth century the Severn River became increasingly popular with urban dwellers and by the turn of the century was known to many as a restful and unspoiled vacation spot. The coming of the railroads, the opening of the waterway and the building of roads made visitation more frequent in the twentieth century. Summer residents erected cottages instead of staying at lodges.

The Severn River is now a thriving recreational area with much of the riverfront property developed for cottages and the waterway frequently busy with pleasure craft traffic (see Figure 1).

The Department of Railways and Canals began work on the Severn section of the Trent Canal in 1914 intending to build locks at five different locations linked by the natural river course and by artificial channels, and offering two entrances to Georgian Bay. The outbreak of the First World War with its considerable drain on labour, material and government resources disrupted the construction effort. As a result only one lock was completed at Port Severn in 1915. Marine railways were installed at Big Chute in 1917 and Swift Rapids in 1919 as temporary boat transfer systems. The government revived the canal project after the war only to have recession force curtailment of its plans. But in 1920 the Couchiching lock was finished opening a through route for small boats between Lake Ontario and Georgian Bay.

The great increase in recreational boating in Canada since the Second World War has meant increased usage of the Trent-Severn Waterway. However, owners of larger pleasure craft were denied through passage from Lake Ontario to Georgian Bay because of the small marine railways at Swift Rapids and Big Chute and they frequently voiced their discontent. In 1965 the government replaced the railway at Swift Rapids with a conventional lock but cancelled a similar project for Big Chute because of ecological concerns related to providing an access to Lake Simcoe for sea lamprey from Georgian Bay. Parks Canada recently resolved this dilemma by authorizing construction of a new high capacity marine railway at Big Chute to be completed in 1978.

The history of Big Chute's development over the last one hundred years has a number of aspects interesting in themselves yet relevant to the general story of the opening of the Severn River. Lumber drives through Big Chute were frequent in the early years and a timber dam existed there to assist the operation. A hydro-electric dam and power plant were the first permanent structures built on the site. To develop the waterway the government built part of a canal system and then erected a marine railway for boat transfers when budget considerations became paramount. A small permanent colony existed at Big Chute made up of personnel working at the power plant and on the marine railways, and their families.

Preface

This report was written to support planning for the development of the Big Chute lock station. It was anticipated that the construction of a new sophisticated marine railway system for boat transfer would occasion increased visitor use of the facility and more public interest in the site. Before firm plans were made to accommodate these changes it was necessary to consider the station's structural evolution and historical significance. Because of the lack of general historical studies on the Trent-Severn Waterway, it was decided to accompany the Big Chute report with a narrative history of the modern development of the Severn River as a transportation route and resource area. In this way the structures built at the site would be seen in their historical context. These two complementary studies have been combined into one report.

Introduction

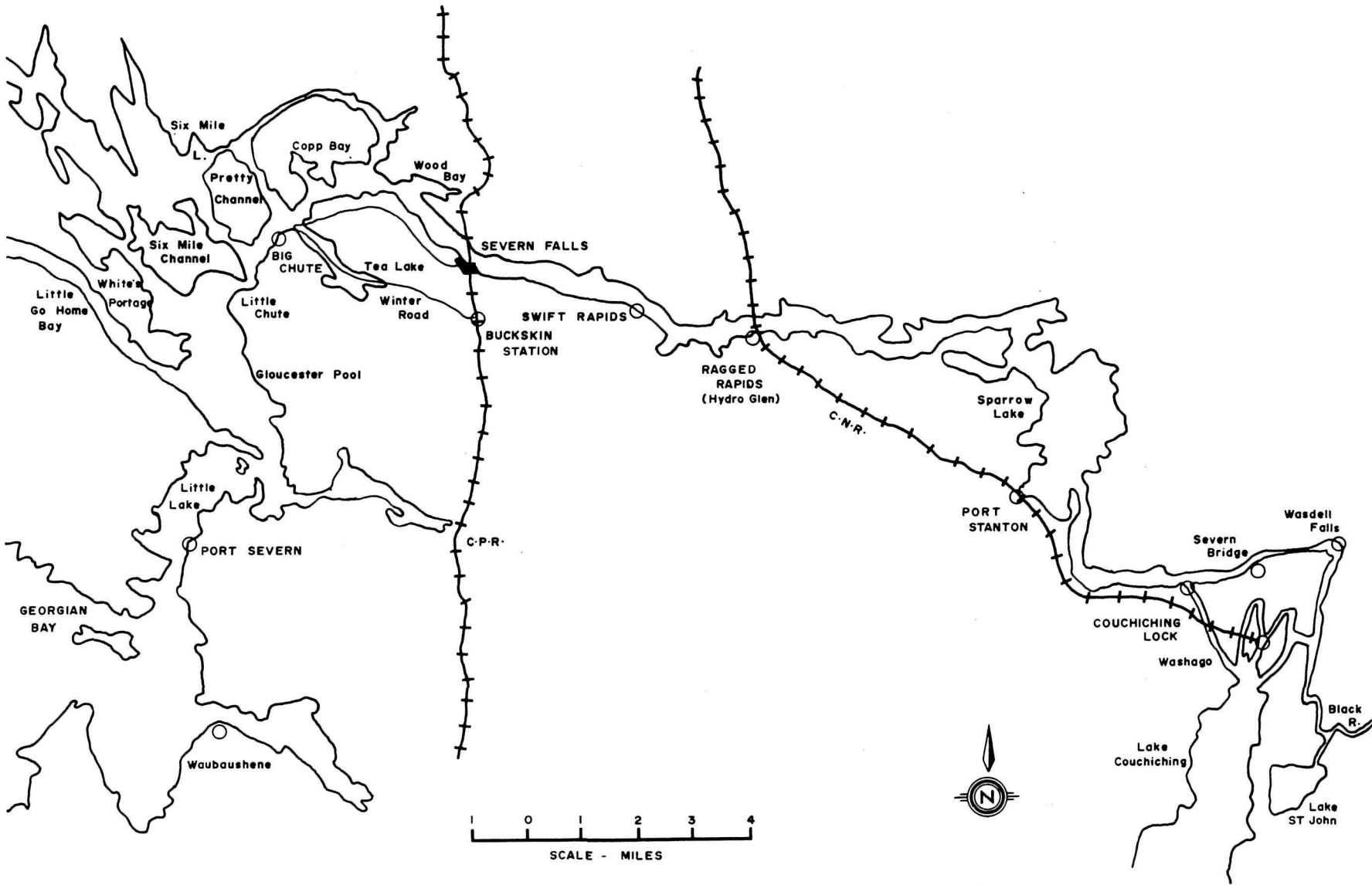
Before the arrival of the Europeans in Canada and in the early days of their settlement, the series of lakes and rivers, which today are linked together in the Trent-Severn Waterway, already formed a transportation route between Georgian Bay and Lake Ontario. Travel for the most part was by canoe or small boat requiring lengthy portages at many points where land barriers, falls or rapids made water passage impossible. After the turn of the nineteenth century farmers and entrepreneurs began to settle in greater numbers north of Lake Ontario creating a need for reliable transportation routes into and through the interior of the province. Serious attention was paid to realizing the potential of the existing water route by canalizing it where portages were required.

The government began to develop the Trent-Severn as a canal in 1833 but did not achieve a through transportation route until 1920. Several factors impeded the progress of the work including conflict between lumbermen and other interests over the best use of the system. But in general the delay can be attributed to the fact that though there was a demand for the canal it never seemed imperative to the government to finish the through waterway. The Great Lakes system was the commercial shipping route to and from the west, and railroads and roads accommodated other transportation. Nevertheless public pressure for the water route continued until it was completed early in the

twentieth century. The Severn River was the last section of the canal to be completed.

Part I Development of the Severn River

- 1 Severn River area. (Parks Canada, Ontario Region Office.)



The Opening of the Waterway

The Severn River, a popular recreational waterway, is not a new transportation route. Well known to the Indians as one connection to the interior from Georgian Bay, French fur-traders and missionaries also travelled the Severn River. After the conquest of New France by the British the route was more methodically explored. The American Revolution created interest in a more secure military and commercial water passage from Lake Ontario to Lake Huron, away from the border between the United States and British North America. Early surveys by British civil and military authorities revealed that the Severn River with its many rapids and falls could not be easily adapted to accommodate the larger boats. So while the building of the Trent Canal began in 1833, it was another 80 years before work began on the Severn sector. It did not become a through transportation route until 1920.

In the meantime the Severn River was being exploited for its natural resources. Just after the mid-nineteenth century lumbering companies established sawmills at the eastern and western extremities of the river and began cutting trees in the area. Over the next forty years most of the prime timber was removed from the banks of the waterway. In 1899 power companies began to harness the cataracts of the river to produce hydro-electricity. Within fifteen years power plants had been constructed at Big Chute, Swift Rapids and Wasdell Falls.

The development of resources did not ruin the natural beauty of the Severn River. In the wake of the lumber companies came a few holidaymakers, the vanguard of the growing tourist industry. Attracted to the area by the wilderness atmosphere and the abundant fish and game, vacationers from northern United States and southern Ontario came in small numbers in the late nineteenth century. In more recent years better transportation systems, more leisure time and money have given far greater numbers of urban dwellers the means of visiting holiday resorts. As a result the Severn River has been heavily developed as a vacation area.

Lumbering Operations

Lumbering operations along the Severn River began as early as the 1830's and have continued to the present. However, the major exploitation of the timber in this area took place from the 1860's to the turn of the century. Sawmills were built in the west at Port Severn and Waubaushene and in the east at Severn Bridge. No precise record exists of the activities of lumbermen in the area but a rough chronology can be pieced together.¹

Port Severn as the western outlet of the Severn River into Georgian Bay, was the early sawmill centre in that area. A sawmill is reported to have been built there in 1830 but it did not remain in operation.² Another sawmill was built around 1850 belonging to a James Sanson who also constructed a timber dam at the site to stabilize the water level for his mill.³ This property was purchased by Alex R. Christie in 1857 who in partnership with Andrew Heron began exploiting timber stands along the Severn River.⁴ Sometime in the 1860's, Andrew Heron sold his share in the business to Christie who continued operations along the River together with his family.⁵

For the last three decades of the nineteenth century the Dodge family of the United States and the Georgian Bay Lumber Co. dominated the lumber business on the Severn River. About 1869, Anson G. P. Dodge a businessman from New York State purchased the Christie mill at Port Severn as well as a sawmill at Waubaushene built in 1860 by

William Hall. Founding a firm under his presidency which later became the Georgian Bay Lumber Co., Anson Dodge ran into financial difficulties in the 1870's.⁶ He was rescued by the timely aid of his father W. E. Dodge who took over the business and brought in expert labour from Pennsylvania.⁷ The company prospered for some time. Timber was taken not only from the Severn River but from the shores of Georgian Bay and points farther north and processed in mills at Port Severn, Waubaushene, Byng's Inlet and Collingwood.⁸

A reorganization and consolidation of the Georgian Bay Lumber Company in 1893 resulted in the sale of the mills at Collingwood and Byng's Inlet. Although the Dodge family remained in charge of the firm several local figures were now among the principal stockholders and executives including W. J. Sheppard, H. L. Lovering and W. E. F. Russell. The company experienced a serious reversal in the summer of 1896 when the large sawmill at Port Severn burned down. The mill was rebuilt because the company planned to operate for only a few more years along the Severn River and it processed the lumber at Waubaushene. Finally, in 1920, the company's more northerly timber limits were exhausted. Two years later operations ceased completely and the Waubaushene mill was torn down in 1925.

While operating out of Port Severn and Waubaushene the Georgian Bay Lumber Co. had considerable economic force in the Severn River area. The company employed several hundred men who worked summers as sawyers in the sawmills and winters felling timber in lumber camps. The company's activities attracted labourers from Quebec and even from Pennsylvania who became permanent settlers in the area. In addition many farmers used to work in the camps during the winter as lumberjacks or teamsters.⁹

Numerous shanties or cabins were built by the company along the Severn River to house its winter work crews and at least one shanty still stands on Pretty Point between Big Chute and Swift Rapids.¹⁰ After the Georgian Bay Lumber Co. gave up lumbering on the Severn River, another firm, F. McGibbon and Sons of Penetanguishene obtained the rights to second cut along the waterway. Second cut timber exploitation involved removing larger trees which had been passed over by the original holder of timber licences because the trees were misshapen or not easily accessible.¹¹ The McGibbon company operated along the river from the turn of the century to the beginning of the 1920's.¹²

At the east end of the Severn River several lumber companies operated out of Washago and Severn Bridge. At Washago the first major sawmill, built in 1853, belonged to Quetton St. Georges son of a French refugee from the 1789 Revolution who had returned to France after making his fortune in Canada. Quetton had been born and raised in France but like his father sought and found his future in Canada.¹³ At Severn Bridge W. P. Christie operated the first sawmill probably in the 1860's. Then about 1890 the Mickle Dymont Lumber Co. opened in that town a branch of its Gravenhurst based lumber operation. Another early lumbering company in the area belonged to George Carswell who had several timber licenses along the Severn River.¹⁴ These companies cut timber along the Severn River east of Sparrow Lake Chute, along the Black River and on the shores of Lake St. John. Moving the cut timber from Sparrow Lake to sawmills at Severn Bridge and Washago was a tedious operation because the logs had to be moved against the flow of the river. Logs were either hauled across the ice by sleigh in winter¹⁵ or by water in summer in booms, rafts or scows using steam boats or winches.¹⁶

Of the major lumbering companies in the east end of the Severn River the Mickle Dymont Company lasted the longest, continuing operations on the Black River until the late 1920's.¹⁷ A number of smaller sawmills have operated along the Severn River over the years. One of these, the Gibson sawmill, at Washago was founded in 1852 and has been in continuous operation since then.¹⁸

Growth of Tourism

Over the past one hundred years the Severn River has become increasingly well known as a recreational waterway. In the latter half of the nineteenth century the area shared with the Muskoka lakes the initial attention of urban dwellers mostly from the northern United States and Ontario seeking vacations closer to nature. By the early twentieth century improvements in transportation and tourist facilities as well as better economic conditions resulted in escalation in the amount of tourism in the area.¹ The wars and the depression interrupted this process temporarily but activity accelerated after 1945.

The mass manufacture of dependable gasoline outboard motors for pleasure craft has made the Severn River a busy waterway, just as the search for cottage properties has brought residential development to its banks.

Tourism began first in the Severn River area at the eastern end primarily on Sparrow Lake. By 1860 a colonization road had been built into the Muskoka territory to the north of the Severn River starting at Washago, the head of navigation on Lake Couchiching.² The opening of this route attracted steamers carrying excursion parties to Washago from Orillia and Barrie on Lake Simcoe. From Washago the travellers could either switch to a stage-coach to continue north into the Muskoka Lake district or arrange to proceed by small boat down the Severn River to Sparrow Lake.³ From the beginning fishing was a major attraction

for travellers to Sparrow Lake. Prolonged expeditions used local guides and set up camps on the shores of the lake.

The tourist trade flourished when railways reached the area. In 1872 the Northern Extension Railways completed track in the stretch between Orillia and Barrie. By 1875 it had crossed the Severn River at Severn Bridge and pushed north into Muskoka.⁴ Now there was direct access to the waterway by train and tourists from the United States and southern Ontario began to avail themselves of the service. Taking advantage of this opportunity, Thomas Stanton, put the first steamboat, the Pioneer, on Sparrow Lake. The boat picked up passengers at Severn Bridge and deposited them at campsites around the lake.⁵ In 1884 Mr. Stanton also founded what was probably the first lodge on Sparrow Lake. His family still operates the Stanton House at Port Stanton on the south shore of Sparrow Lake.

Following the construction of the railway an intensive effort was made in the urban areas of the United States and Canada to promote tourism. One man, A. P. Cockburn, who owned steamships on the Muskoka Lakes in the 1860's, was prominent in promoting the northern wilderness adventure.⁶ A brochure published in 1876 in Toronto described the attractions of various holidays in northern Ontario. One of the routes recommended was by boat and/or train to Severn Bridge and then by the Pioneer steamship to Sparrow Lake for an excursion or to set up fishing and hunting camps.⁷ The 1879 edition of the same brochure observed that the route could be extended down the Severn River as follows:

Proceeding down the Severn River, a splendid fishing trip can be made following the stream through Six Mile Bay and Gloucester Pool to its outlet in Georgian Bay, opposite Waubaushene

and Penetanguishene. There are many portages and different rapids. The trip should not be attempted without guides. Canoe and guide will cost about \$2.00 per day.⁸

The promotional literature evidently had its desired effect as tourist facilities began to grow on Sparrow Lake by the 1890's. New steamboats followed on the tradition of the Pioneer transporting passengers from Severn Bridge but now the destination was often a simple but comfortable tourist lodge instead of tents at makeshift camps. In 1907 the Canadian Northern Ontario Railway was extended from Washago to Port Stanton on Sparrow Lake and then to a crossing of the Severn River at Ragged Rapids further west.⁹ From the beginning this line was a boon to Sparrow Lake tourism with up to 200 passengers per day disembarking at Port Stanton. From there day excursions were conducted on the lake or customers carried by steamboats to various lodges.¹⁰ The First World War naturally interrupted the flow of tourism but an industry had been created at this end of the Severn River. By about 1910 there were 16 tourist lodges between Severn Bridge and the western end of the lake with the capacity to accommodate a total of 1137 guests.¹¹

By 1916 a total of 12 steamboats had plied the waters of Sparrow Lake since the Pioneer came into service. Some of these vessels were quite large; the Gee Whizz, the Champion and the Lakefield, were all licensed to carry 200 passengers.¹² However, by that year resort owners had operated eleven gasoline powered launches on Sparrow Lake. The era of these vessels was just beginning. Shortly after the end of the First World War no steamboats remained in the area having been made obsolete by superior technology.

Steamboat boilers required constant attention, meaning two man crews, plenty of cordwood, time and patience were needed for successful operation. Gasoline motors needed far less tending.

One interesting aspect of the development of tourism on Sparrow Lake in the nineteenth century was that while many of visitors came from southern Ontario a large number also came from Pittsburg, Pennsylvania. The exact reason for the connection between Pittsburg and Sparrow Lake has not been determined but certainly it did exist. One of the early groups to travel to Sparrow Lake was the Iron City Fishing Club.¹³ A lodge still operating at the western end of Sparrow Lake is called "Torpit". This is a shortened version of Toronto-Pittsburg, the cities of origin of most of the guests at one time.¹⁴ Members of the Mordolphton club from Pittsburg spent their summers on the shores of Gloucester Pool.

Before the turn of the century most tourism had been concentrated on the eastern end of the Severn River but extension to the west was in the making. In 1907 E. J. Walsh engineer in charge of surveys for the Trent Canal recommended in a report that the Severn River became the northern route for the waterway. He commented on the recreational potential of the river as follows:

Regardless of the destruction of the primeval forests by the woodsmen and fires, much of the pristine beauty of the district remains, and here, on the very threshold of intense commercial activity, lies dormant that wild natural grandeur with the great opportunities for restful recreation, consisting of bathing, canoeing and fishing, so much

- 2 Rev. J.F. Fitzpatrick (far left), family and friends in front of lumberman's shanty at Pretty Point, ca. 1912. (Original photograph owned by Margaret Fitzpatrick, Orillia, Ont.)



sought after by the holiday tourist during the fervid heat of the summer. In 1905 (the season the survey was made) it was estimated that over 1700 tourists camped or sojourned along the Severn River for periods of from one to several weeks.¹⁵

Although the Severn River was not opened to through navigation until 1920, the extension of the railways to the west of Sparrow Lake came earlier. The Canadian Northern Ontario Railway built a line from Washago which crossed the Severn River at Ragged Rapids in 1907. That same year the Canadian Pacific Railway built a line from Toronto to Sudbury which crossed the Severn River at Severn Falls.¹⁶ These transportation links attracted tourism to the area.

Probably the first family to build a private summer cottage on the Severn River between Swift Rapids and Gloucester Pool was that of Rev. J. F. Fitzpatrick, an Ontario Methodist clergyman. Rev. Fitzpatrick had come to Sparrow Lake with his family in 1903 to recuperate from an illness as a guest at the camp of Chester Massey of Toronto. Greatly attracted to the area Rev. Fitzpatrick soon began to explore other reaches of the River by canoe. In 1908, this gentleman in the company of several friends bought from the Ontario government parcels of land on both sides of the Severn River between Big Chute and Swift Rapids. Included in the package was Pretty Point on the north shore on which stood a deserted lumberman's shanty. Using this building for temporary shelter the Rev. Fitzpatrick with the help of some friends erected a family cottage which was finished in 1912 (see Figure 2). Today both the cottage and the shanty remain in the possession of members of the Fitzpatrick family.¹⁷

Another family which moved into the Severn River area early was that of Walter Dean who became responsible for much of the cottage development. Mr. Dean left a successful boat building business in Toronto to move to Severn Falls. There he opened a lodge in 1913 called Deanelen after his family name and his wife's first name. This first tourist home on the lower reaches of the river was a two storey solid stone building with walls eighteen inches thick (see Figure 3). Mr. Dean, a committed Christian, fostered a non-denominational Christian atmosphere at the lodge. Later he provided a small building for church services at Severn Falls for the use of the growing number of summer residents. This building called Oak Lodge also served as a Community Hall and still stands today. In more recent years the Dean family has operated real estate offices in Midland, Coldwater and Severn Falls.¹⁸

A number of cottagers' associations have been formed over the years to serve the interests of summer residents. In the early days this reach of the Severn River was accessible to cottagers only by train to Severn Falls and then by small boat to the properties (see Figure 4). In 1919 there were sufficient cottagers in the area to form the Severn River Improvement Association with the provision of a motor road to Severn Falls as a principal objective.¹⁹ Within a few years a roadway was built linking Coldwater and Severn Falls. The organization also had a social dimension supporting community events and regattas. When the association dissolved in the late 1920's in a misunderstanding over disbursements of funds,²⁰ its place was taken by a succession of clubs. The latest organization was registered as the Severn River Association of Property Owners in 1975 and deals with matters of common concern to residents of the river between Big Chute and

- 3 Deanelen Lodge under construction, Severn Falls, Dec. 1912.
(Original photograph owned by Walter Dean III, Coldwater, Ont.)



4 Railway Station at Severn Falls. (Original photograph
owned by Walter Dean III, Coldwater, Ont.)



C.P.R. STATION, SEVERN FALLS, ONT.

Swift Rapids.²¹

Just after the turn of the twentieth century tourists began frequenting the western end of the Severn River at Gloucester Pool. One of the early groups to do so was the Mordolphton Club from Pittsburg, Pennsylvania. This social club bought a parcel of land on the north-eastern shore of Gloucester Pool from the Georgian Bay Lumber Company before 1910.²² Their camp consisted of three permanent wooden buildings for cooking, dining and storage as well as many tents with wooden floors for accommodation. The Mordolphton Club was a family organization and their summer activities usually included fishing for the men and excursions and games for the women and children (see Figures 5 and 6). Groups of holidayers came for two week periods over the summer. They travelled from Pittsburg to Waubaushene by train and then by boat to the campsite. The club stayed in the area until 1929 when it moved to a location on Georgian Bay. The old Mordolphton property is now the site of the Severn Lodge, a tourist home which has operated since the club departed.²³

Before the opening of the lock at Port Severn there was little recreational development on Gloucester Pool. Several residents of nearby communities involved in lumbering, fishing and trapping in the area, owned property on Gloucester Pool (see Figure 7). They sometimes acted as guides for tourists looking for good fishing and hunting. The opening of the lock at Port Severn in 1915, provided easy access to Gloucester Pool and people began building summer cottages there. By 1922 there were about 25 cottages on Gloucester Pool.²⁴ That same year a lodge opened up at Port Severn called Camp Rawley to accommodate travellers coming to the area. In the early years Camp Rawley also played host to the Gloucester Pool Cottagers

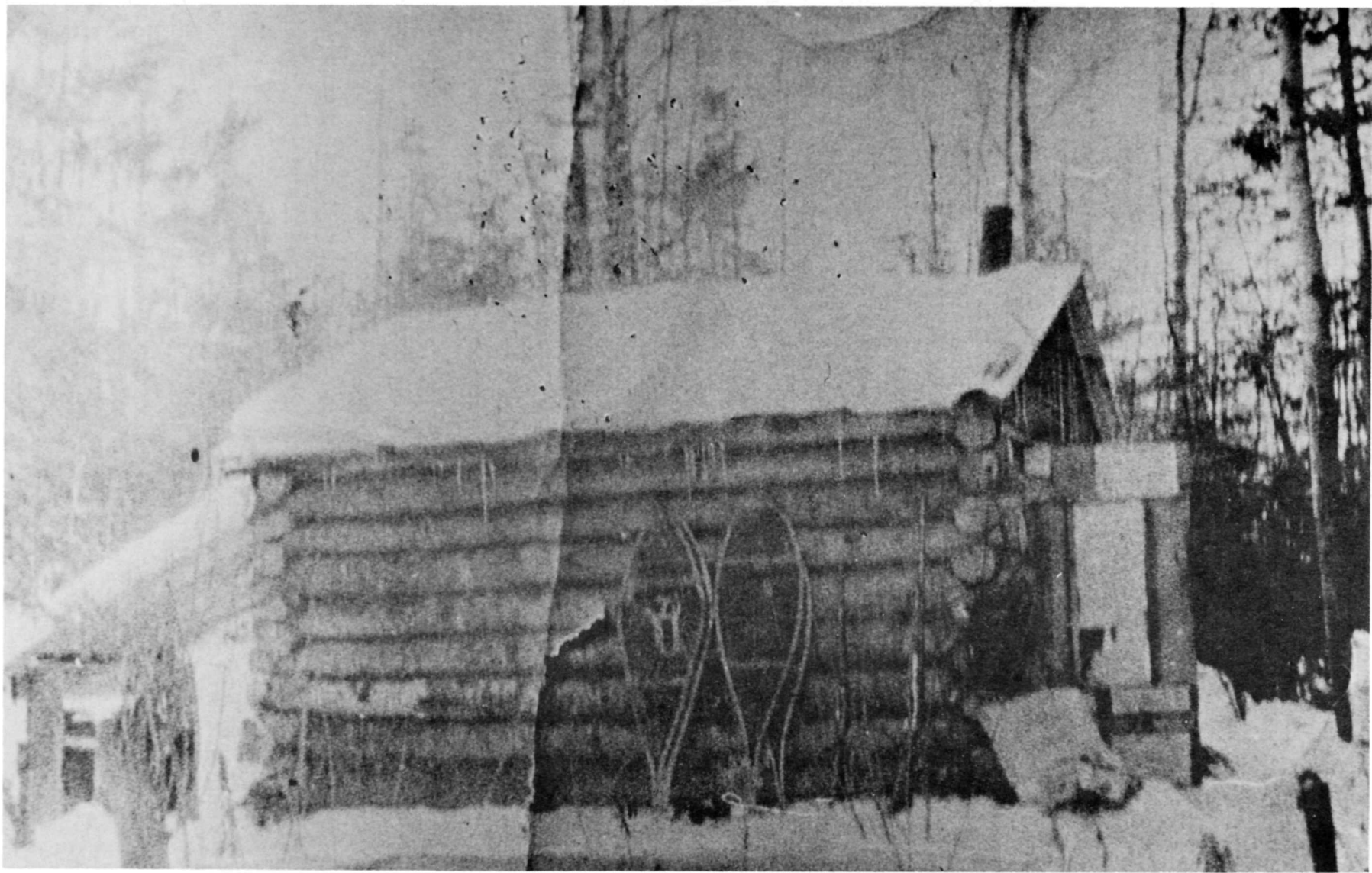
- 5 Mordolphton Club excursion. (Original photograph owned by Jack O'Hara, Midland, Ont.)



- 6 Sports day at Mordolphton Club camp, ca. 1913.
(Original photograph owned by Jack O'Hara, Midland,
Ont.)



- 7 Cabin on Gloucester Pool used by the O'Hara family for hunting in the fall, working for the Georgian Bay Lumber Co. in the winter and trapping in the spring, ca. 1890. (Original photograph owned by Jack O'Hara, Midland, Ont.)



Association's annual regattas.²⁵ A successor organization to this original group exists today primarily to arrange social and sporting functions and to provide security patrols for the cottages in the winter.²⁶

Since the 1920's Ontario has attracted many tourists from the United States and from within Canada, and the Severn River has shared in this boom. The proliferation of family automobiles has been the primary factor in opening up previously less accessible recreation areas.²⁷ The opening of the Severn River end of the Trent Canal also brought more tourism to the area particularly after the Second World War. Development along the length of the river of summer residential properties has been intensified within the last decade. This process has been accompanied by such an increase in pleasure boat traffic that concern is growing among property owners about over-development and damage to the environment. It seems that the Severn River has been changed from a wilderness retreat to an urban playground, which in the future may not differ drastically in the quality of life it offers from the cities themselves.²⁸

Development of the Waterway

At the turn of the twentieth century there was considerable public demand for the completion of the Trent Canal as a through waterway from Lake Ontario to Georgian Bay. The Liberal government, ebullient about Canada's economic prospects and the potential for expansion of transportation routes, looked favourably upon the scheme, and work on the canal was advanced. But, the issue was not without its political overtones because the route the waterway should take at its northern and southern ends was undecided. Tactfully the government decided to leave the decision on the best routes to the engineers.¹ In 1907 the engineer in charge of surveys for the Trent Canal, E. J. Walsh recommended the Severn River for the northern end, and the Trent River terminating at Trenton as the southern extremity.²

Between 1904 and 1906, E. J. Walsh investigated three possible routes for the northern end of the canal. One involved constructing a lengthy artificial channel from the Orillia area to Matchedash Bay on Georgian Bay. The second route was via the Nottawasaga River from Kempenfeldt Bay on Lake Simcoe to Nottawasaga Bay on Lake Huron. The third was further north along the Severn River linking Lake Couchiching to Georgian Bay. In making his final report on the three surveys Walsh chose the Severn River as the best course for the canal. He recommended that an artificial channel be cut between Lake Couchiching and the Severn

- 8 Lock and highway bridge at Port Severn, 10 Oct. 1916.
(Trent-Severn Waterway Office.)



- 9 Highway bridge and dam at Port Severn, 10 Oct. 1916.
(Trent-Severn Waterway Office.)



River west of Severn Bridge to avoid the meanderings of the river in the Washago area. A single lock in this section of the canal would overcome the difference in water elevation. Then the river channel would be followed with locks at Ragged Rapids, Big Chute and Port Severn. Walsh also pointed out that a number of dams would be required along the route for water control purposes.³ The acceptance by the government of the Severn River route led to extensive surveys in 1912 and 1914 and detailed planning for needed works.⁴

The Port Severn Section required a single small lock and a main dam at Port Severn as well as seven auxiliary dams in the immediate vicinity. These works provided one outlet into Georgian Bay. A contract was let to the York Construction Co. on 24 September 1913 and the job was fully completed by 30 November 1915. The lock constructed had a lift of $14\frac{1}{2}$ feet, was 100 feet long, 25 feet wide and six feet deep. Over the lock ran a highway swing bridge (see Figures 8 and 9). Indicative of the future recreational use of the canal was the first group locked through at Port Severn. On 26 July 1915, more than a month before the official opening the members of the Midland Retail Merchants Association were allowed lock through on the occasion of their annual picnic.⁶ A converted construction shanty served as a dwelling house for the lockmaster at Port Severn until 1932 when a permanent house was built.

Section No. 1 ran from Honey Harbour to Big Chute. A lock, dam and artificial channel at Honey Harbour would provide another access to Georgian Bay. To circumvent the difficult stretch of river between the Big and Little Chutes a channel was to be built with single locks at either end. Regulating dams were required at Honey Harbour and Big Chute and also at the outlets of Six Mile Lake into

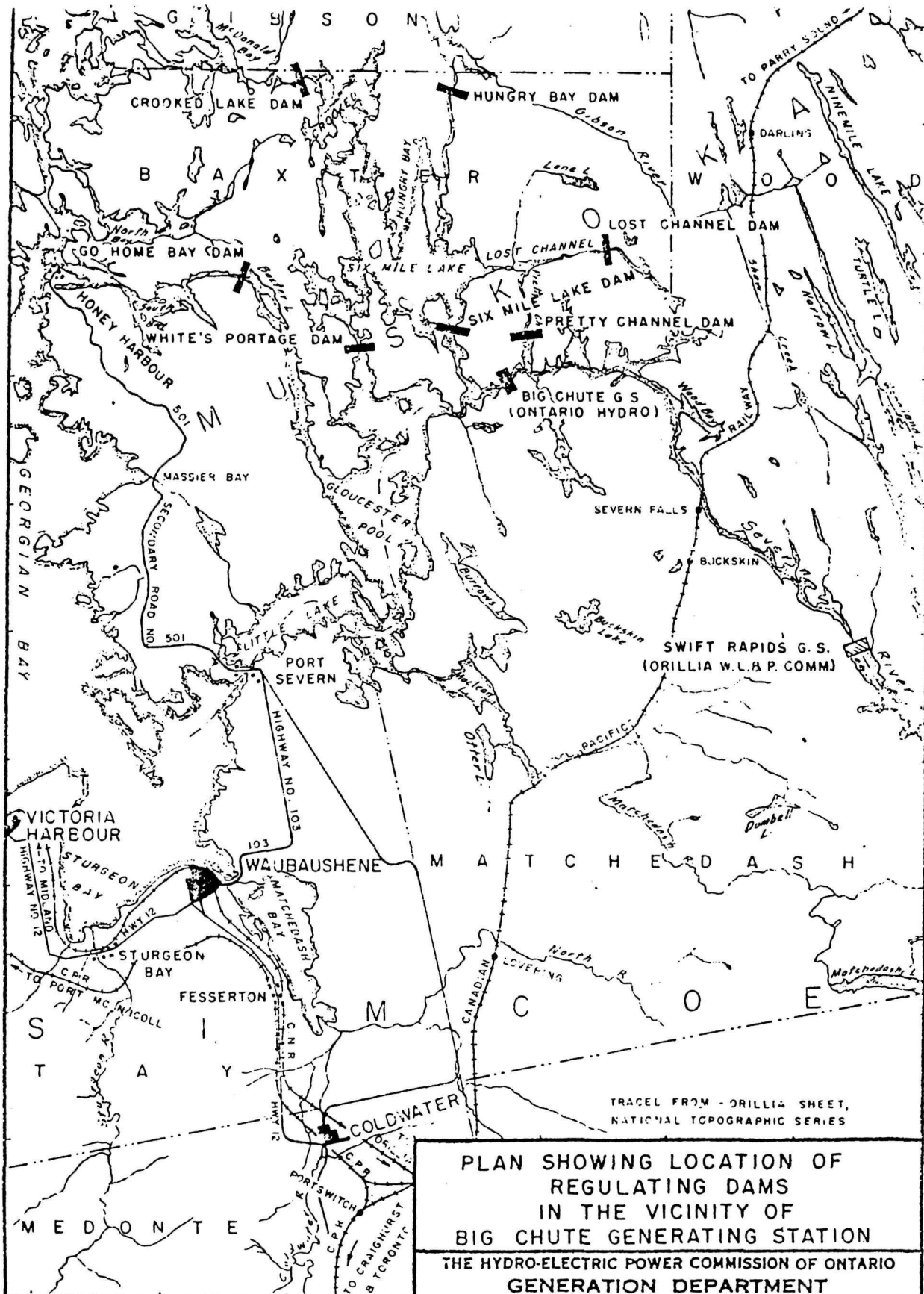
Gloucester Pool.

Plans for Section No. 1 had to take into account the existence of the Ontario Hydro power plant at Big Chute. This structure and adjacent regulating dam had been built by the Simcoe Railway and Power Company between 1910 and 1912, to provide electricity for Waubauskene and Midland. Ontario Hydro had purchased the operation in 1914 making it the first facility owned and operated by the public power commission.⁷

Plans and specifications for the work on Section No. 1 of the Severn division were prepared by mid July 1915, but no contract was let because of the financial drain of the European war. Instead the York Construction Company was asked to proceed with several of these projects as extra work under its original contract.⁸ From September to December 1916, the company constructed three dams on Six Mile Channel which flowed into the river channel from Six Mile Lake.⁹ At the largest of these dam sites the construction crew had first to remove an earth and timber cribwork dam formerly used by the Georgian Bay Lumber Co.¹⁰ This crew then proceeded to Big Chute where it put in a marine railway as a temporary boat transfer system. The last work done on this section during the war involved construction of three small dams. Two were placed across low land between Six Mile Lake and Gloucester Pool. Then a crew began building a large dam at White's Portage which was to give better control over the water level of Six Mile Lake.

After the war the York Construction Company obtained a new contract for construction in Section No. 1. The dam at White's Portage including a highway bridge was finished by 1920.¹¹ The project of building a channel around Big and Little Chutes was advanced considerably in 1919 and 1920 but was terminated without being completed early in

10 Regulating dams in the vicinity of Big Chute, 1957.
(Ontario Hydro).



PLAN SHOWING LOCATION OF
 REGULATING DAMS
 IN THE VICINITY OF
 BIG CHUTE GENERATING STATION
 THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO
 GENERATION DEPARTMENT

1921 because of a government austerity programme. Even though the contract was no longer in force the Department of Railways and Canals in 1921 hired W. H. Munro, a works Superintendent for York Construction Co., and his crew to build a wooden dam at the Hungry Bay outlet of Six Mile Lake.¹² No work was done on the Honey Harbour entrance to Georgian Bay but in 1924 a concrete sluice dam was built at Go-Home Bay. This dam developed serious cracks by the late 1950's and was replaced by a new structure.¹³ Two other water control structures for this branch of the Severn River were built in the early 1930's. The timber dam at Hungry Bay was replaced by a concrete structure and a sluice dam put in place at Crooked Lake (see Figure 10).¹⁴

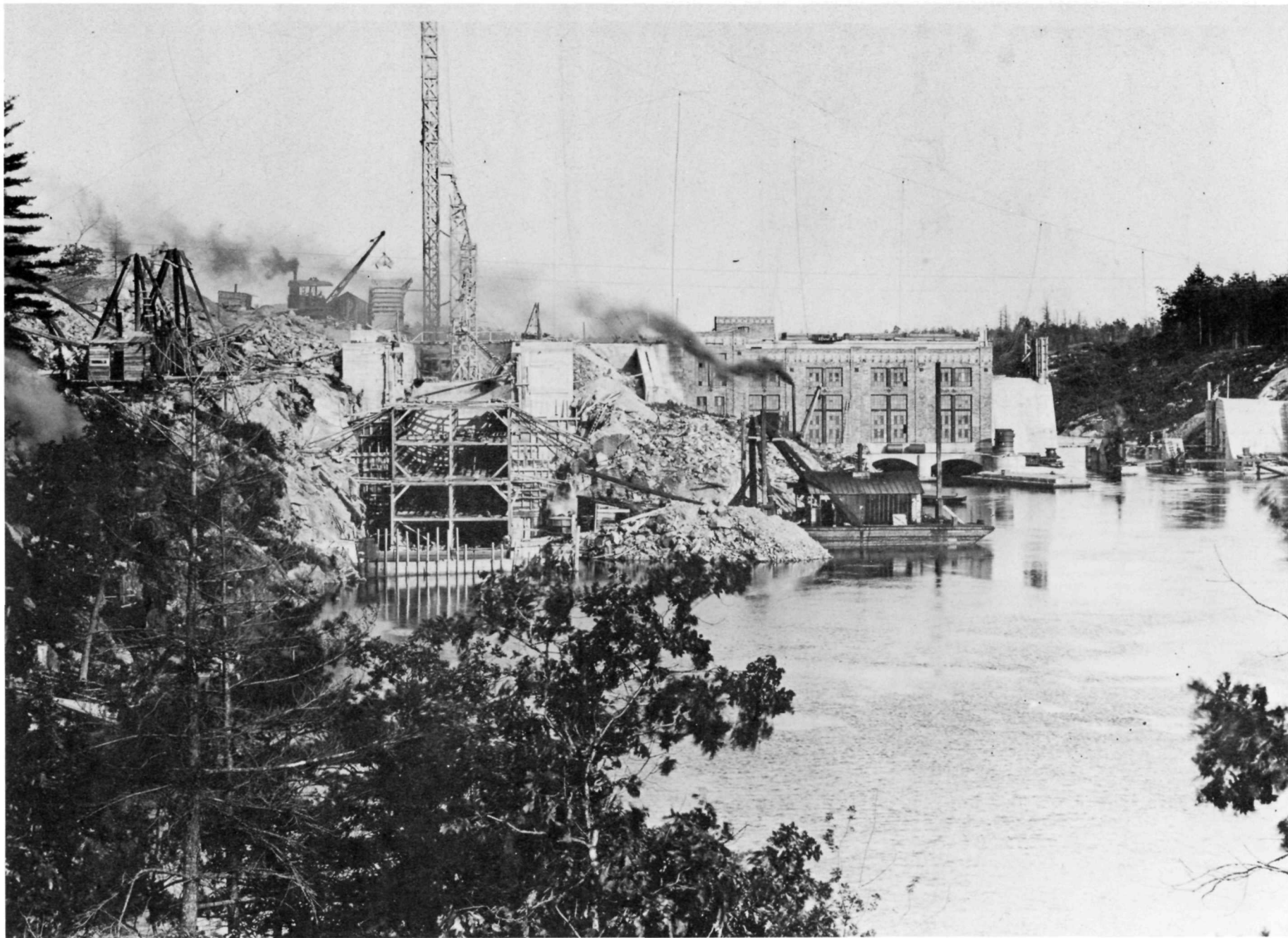
Section No. 2 extended from Big Chute to Macdonald's Rapids and involved the largest construction task on the Severn River. At Swift Rapids a lock and a dam were planned. The water level above this lock was to be raised which would render inoperable the power plant of the Orillia Water Light and Power Company upstream at Ragged Rapids. The canal authorities agreed to built a replacement plant for the municipality at Swift Rapids. For water control in this section sluice dams were needed both at Pretty and Lost Channels and five blind dams were to be erected near Swift Rapids.

A contract for Section No. 2 was let to the Inland Construction Co. in August 1914, and work began that summer. First to be constructed were the dams at Pretty Channel and Lost Channel completed by 1916 which by controlling the flow from that branch of the Severn allowed regulation of the main river between Big Chute and Ragged Rapids. This concrete structure at Pretty Channel replaced a lumber cribwork dam probably built by the Simcoe Railway and Power

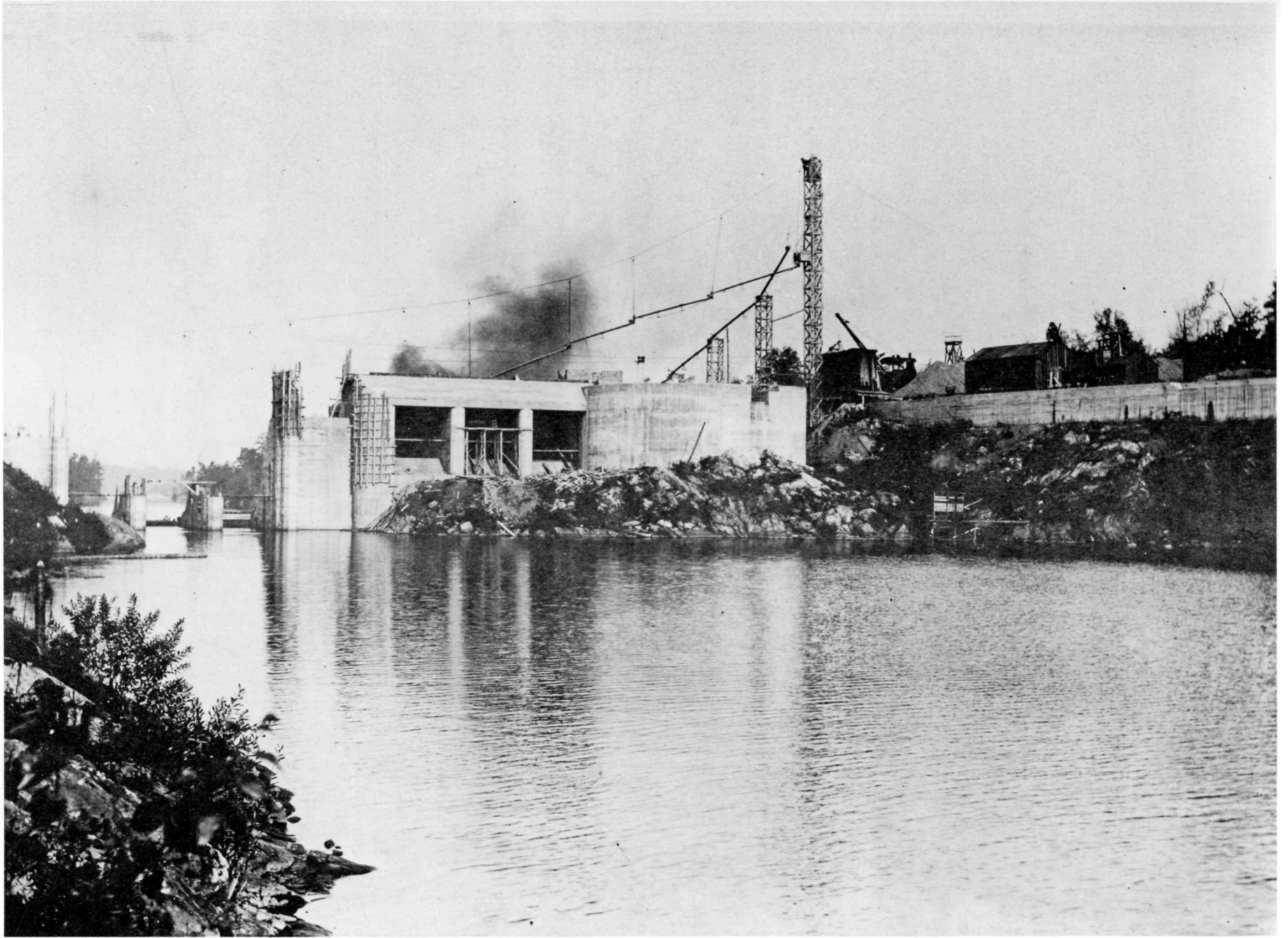
Co. a few years earlier. The lock to be built at Swift Rapids was to have a lift of 47 feet, the highest of its kind in North America (see Figures 11 and 12). The Inland Construction Co. set up a large camp on the south shore of the Severn River at Swift Rapids as well as an office at Severn Falls several miles downstream. A special siding was built from the CPR railway station at Severn Falls to a wharf on the river to facilitate transfer of supplies from railway cars on to scows.¹⁵ The Swift Rapids project proceeded smoothly for several years with the powerhouse, the main sluice dam and the blind dams being finished by the end of October 1917. The Orillia Water Light and Power Co. removed all their machinery from the Ragged Rapids plant and on 10 November 1917, the dam and old powerhouse were blown up. The Swift Rapids power plant then went into operation with a head of 45 feet.¹⁶ Orillia shares with Goderich the distinction of creating in 1887 the earliest municipally owned utilities in Ontario. The plant at Ragged Rapids, built in 1899 was the first municipally owned power plant in the province with long distance transmission (see Figures 13 and 14) of electricity.¹⁷

Good progress was also made on the lock at Swift Rapids with about 95% of the excavation, and 65% of the concreting completed by March 1919, and with machinery already being installed. But the Inland Construction Co. fell into difficult financial straits and in July 1919, the government was compelled to relieve the company of further responsibility under the contract.¹⁸ That summer the government arranged with the York Construction Co. to put in a marine railway at Swift Rapids like the one at Big Chute which would serve as a temporary boat transfer system

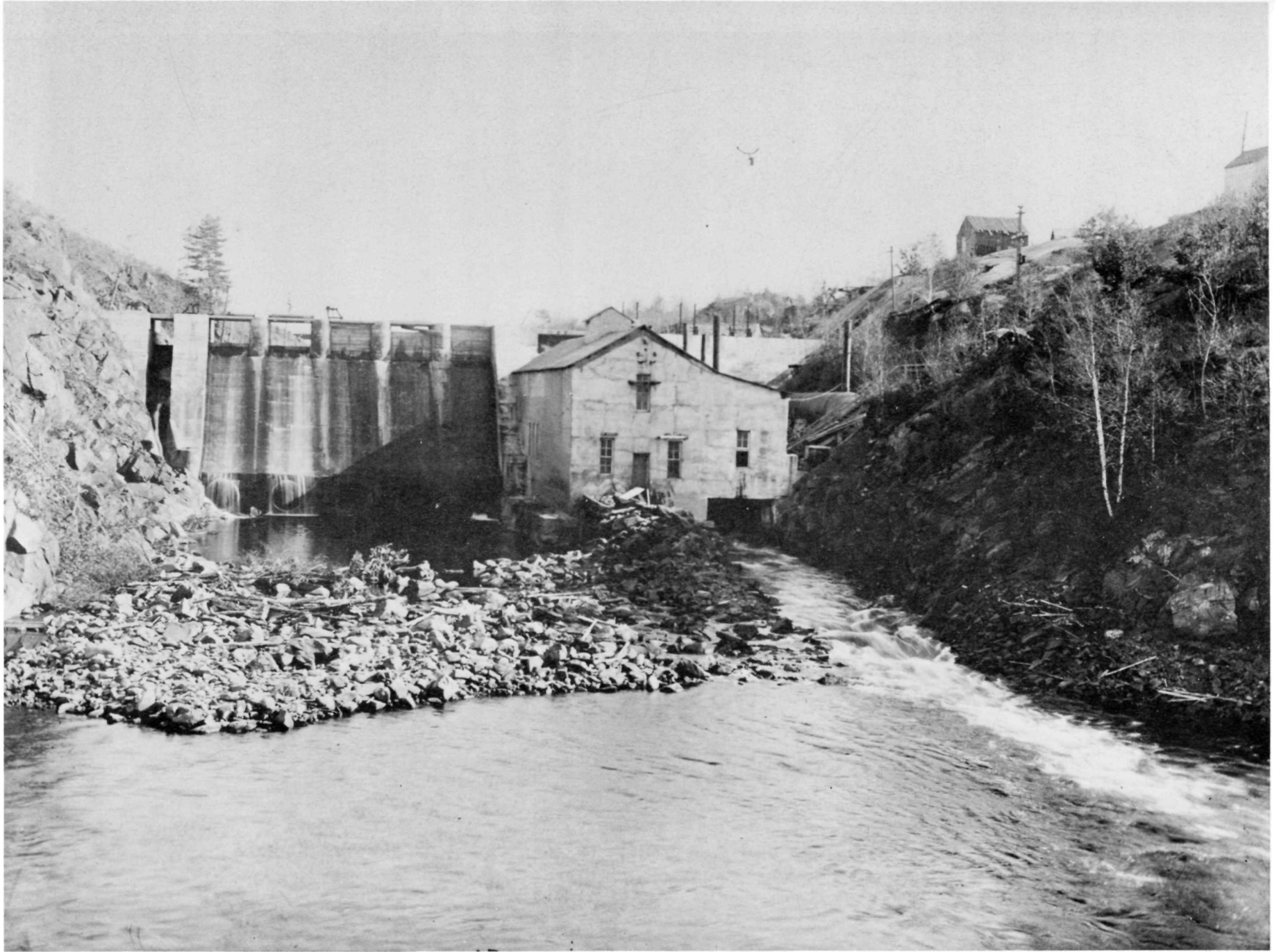
11 Looking upstream at dam, power house and lock at Swift
Rapids, 28 June 1917. (Trent-Severn Waterway Office.)



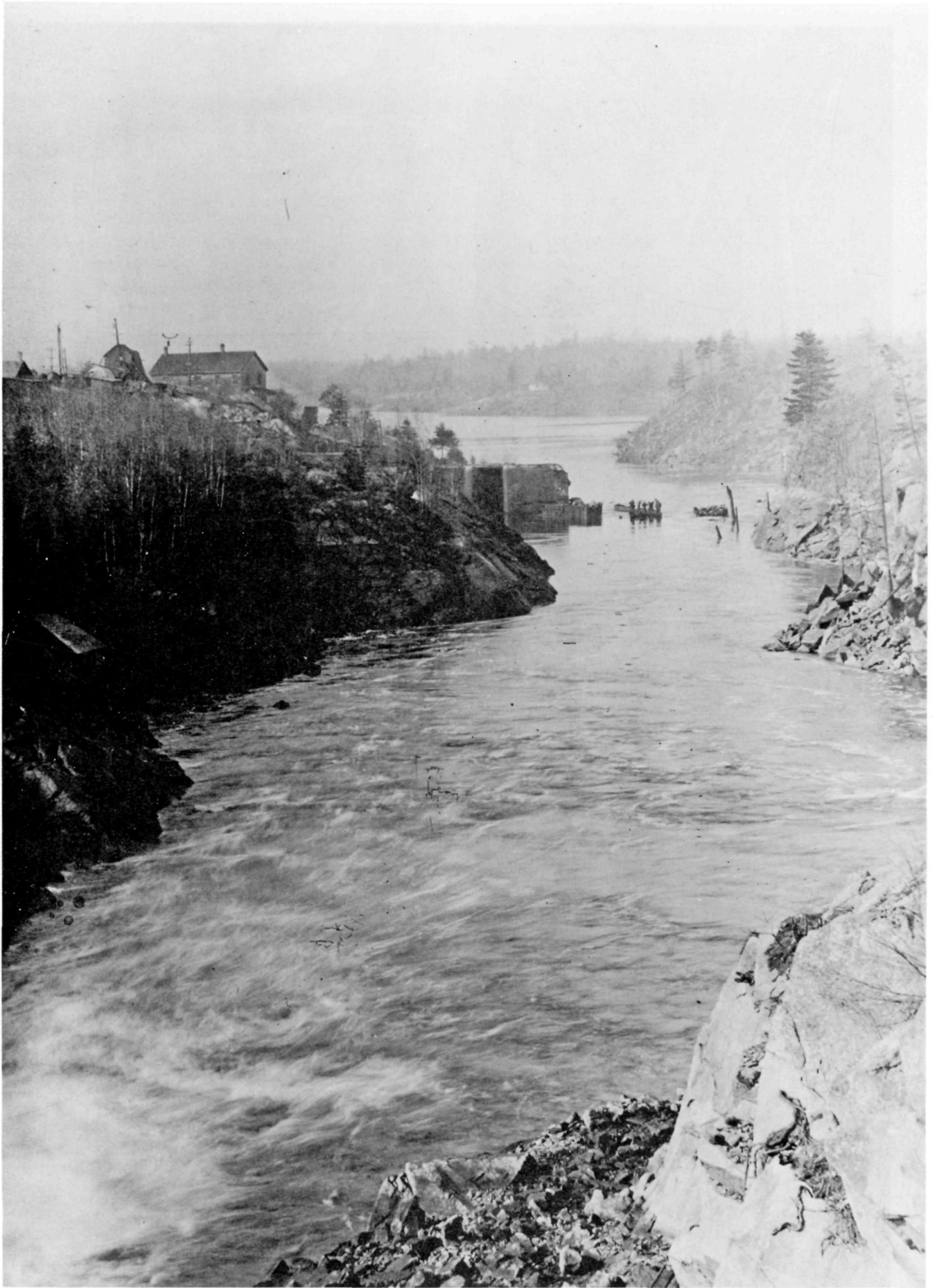
12 Looking downstream at dam, power house and lock at
Swift Rapids, 12 Oct. 1916. (Trent-Severn Waterway
Office.)



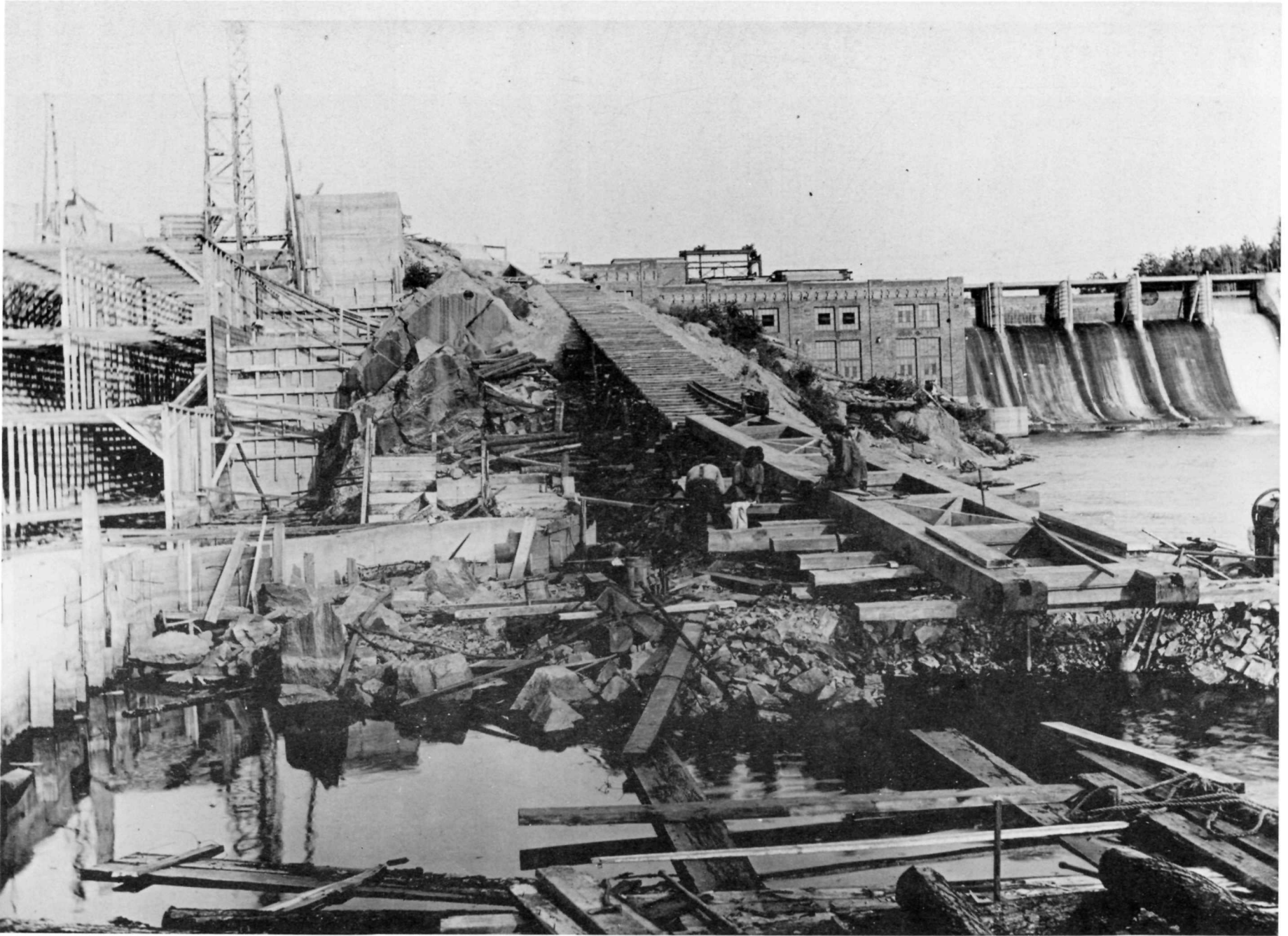
13 Orillia Water Light and Power Co. plant at Ragged Rapids,
31 Oct. 1914. (Trent-Severn Waterway Office.)



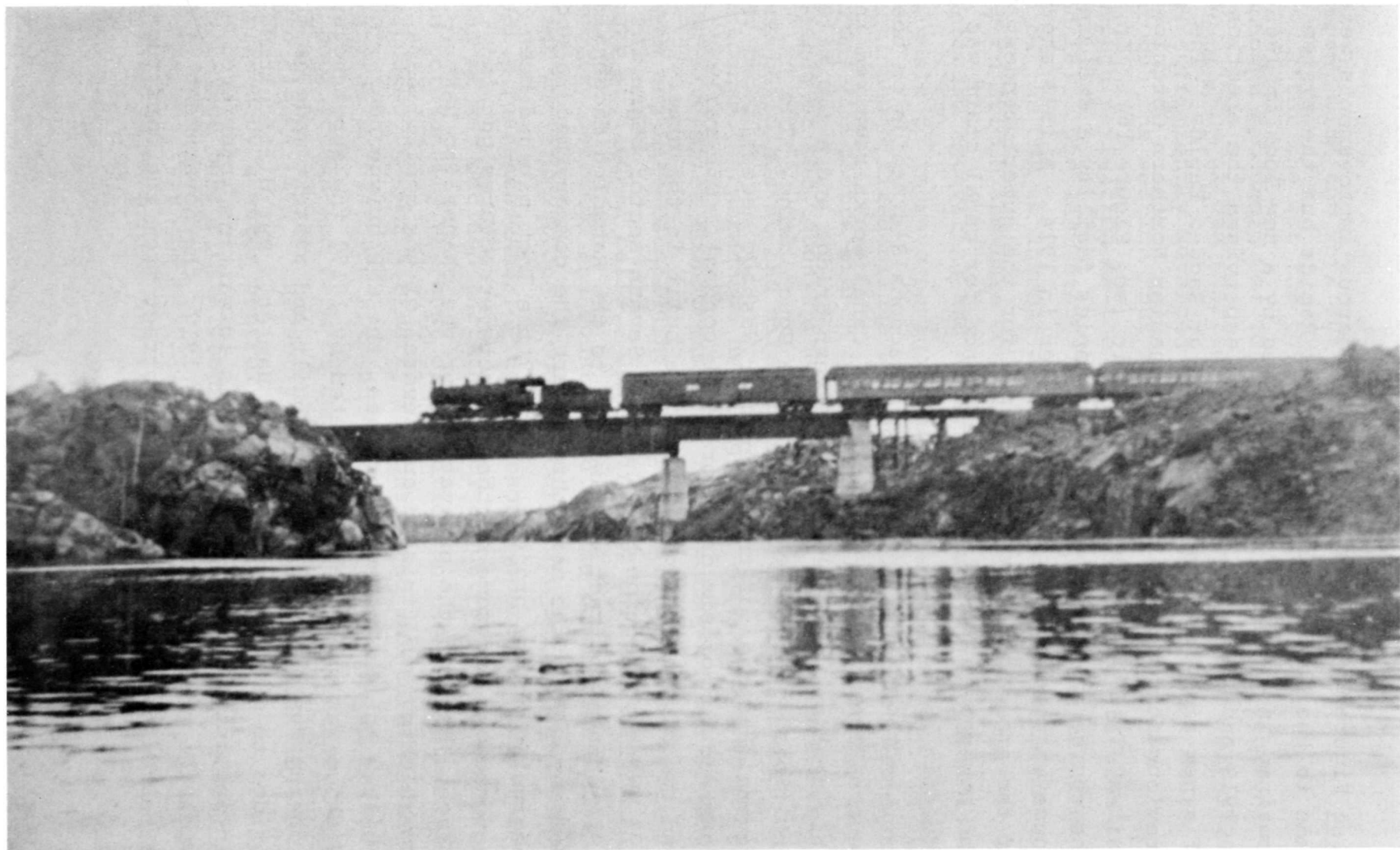
- 14 Gorge at Ragged Rapids after blowing up dam, Nov. 1917.
(Trent-Severn Waterway Office.)



- 15 Swift Rapids marine railway under construction, 1919.
(Trent-Severn Waterway Office.)



16 High level railway bridge at Ragged Rapids. (Original photograph owned by Walter Dean III, Coldwater, Ont.)



(see Figure 15). Over the years numerous improvements were made to the Marine Railway at Swift Rapids but the system remained in operation until replaced by a new lock in 1965. In 1919 and 1920 canal authorities supervised the erection of a new high level railway bridge at Ragged Rapids. The previous structure built by the Canadian Northern Ontario Railway in 1907 impeded boat traffic (see Figure 16). In the course of building the Swift Rapids facility a dwelling house was erected for the lockmaster in 1914. A 1923 sketch of the area also shows a residence for the superintendent of the powerhouse.¹⁹ A second residence for canal staff was added in 1927.²⁰

Section No. 3 extended from Macdonald's Rapids on the Severn River to Lake Couchiching. Canal works required in this section were a lock near Severn Bridge and a two mile artificial channel leading to Lake Couchiching. The several branches of the river near Washago necessitated the construction of six dams for water control. One railway and two highway bridges were to be built in the area.

Work on Section No. 3 of the Severn sector began in 1914 when a contract was awarded to the Randolph Macdonald Company. Over the next three years the company made a good beginning on the project. By 1917 the lock pit had been scooped out and some of the concrete structures put in place. Much of the excavation for the channel to Lake Couchiching was finished and several of the control dams built. As for the swing bridges, the CNR bridge near Washago was practically completed by 1917, the substructure for the Muskoka Road span was built and a start made on the bridge to cross the waterway at Hamlet. But difficulties in obtaining labour and materials in wartime interfered with the project. On 1 December 1917, the government accepted the surrender of the contract from the construction

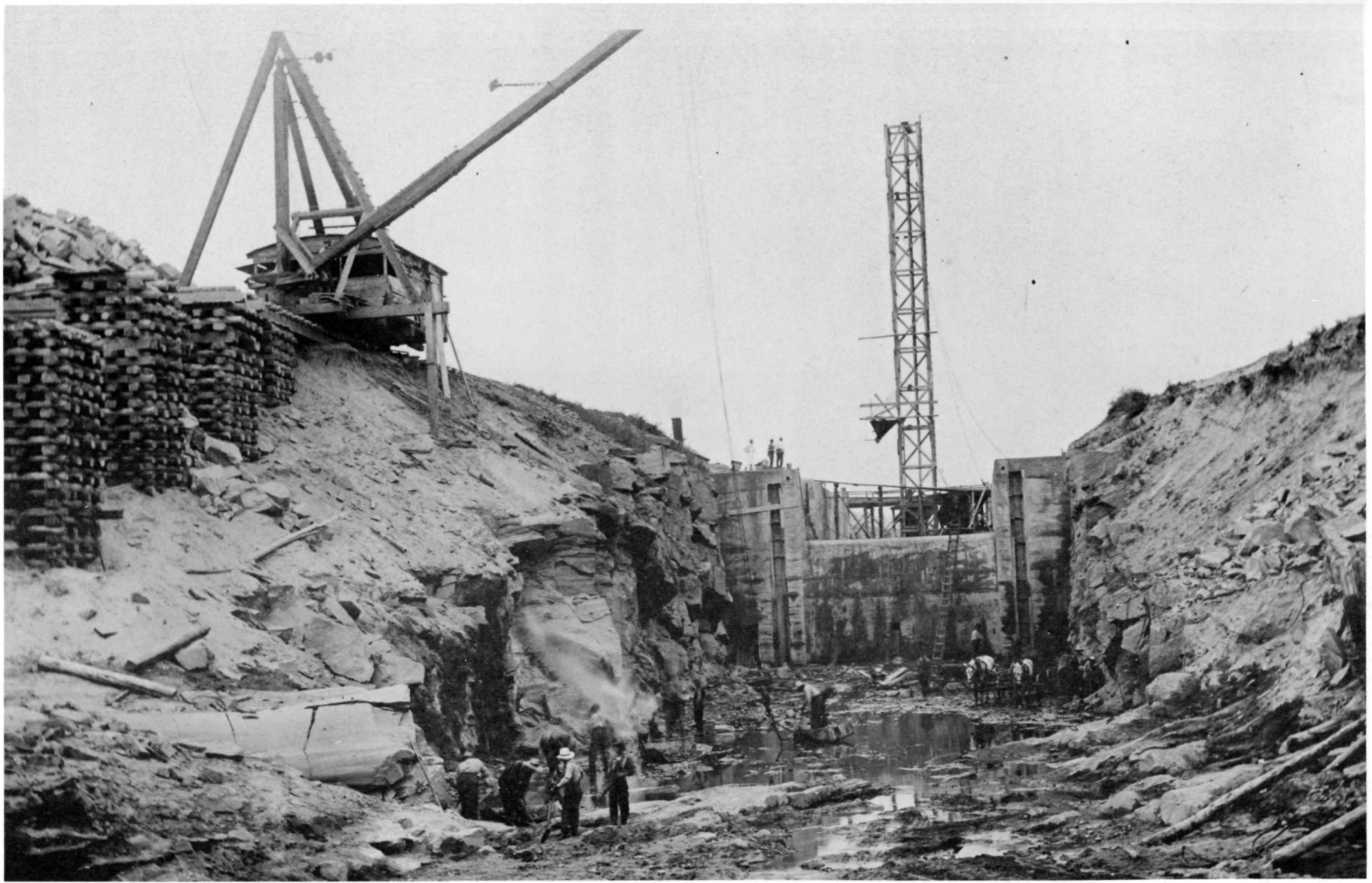
company with the work 60% complete.²¹

After the war the government contracted with the Randolph Macdonald Co. to resume construction on Section No. 3. Operations started in January 1919 and by July 1920 was sufficiently advanced to allow passage of small boats through the section thus removing the last barrier to through navigation on the Trent-Severn Waterway (figures 17 and 18). The last stage in the work had been the blowing up of the CNR embankment across the canal prism between Severn Bridge and Lake Couchiching. For several years work continued excavating and dredging the natural and artificial channels to improve navigation. Besides the bridges already mentioned a fixed bridge was built at Rama Road at Washago across the centre branch of the Severn River.²² After the opening of the Couchiching lock one of the construction camp buildings at the site was converted to a lockmaster's residence. A permanent dwelling house was erected in 1929.

Five miles downstream from the junction of the Severn River and Lake Couchiching, Ontario Hydro built a power plant at Wasdell Falls. Opened in 1914 this was the first facility designed and constructed by the commission. The plant was a small one producing only 1200 horsepower from a twelve foot headwater. The powerhouse operated until 1955 when it was decided that the small amount of power produced did not justify the cost of operation and the facility was abandoned.²³ For a time Hydro considered maintaining the plant as an historic site but the idea was given up because of poor access and lack of demonstrated public interest (see Figure 19).²⁴ Recently the station was levelled and replaced by a water control dam.

Since the original construction of the Severn sector of the waterway the major improvements made consist of the lock at Swift Rapids and the current work on the new Marine

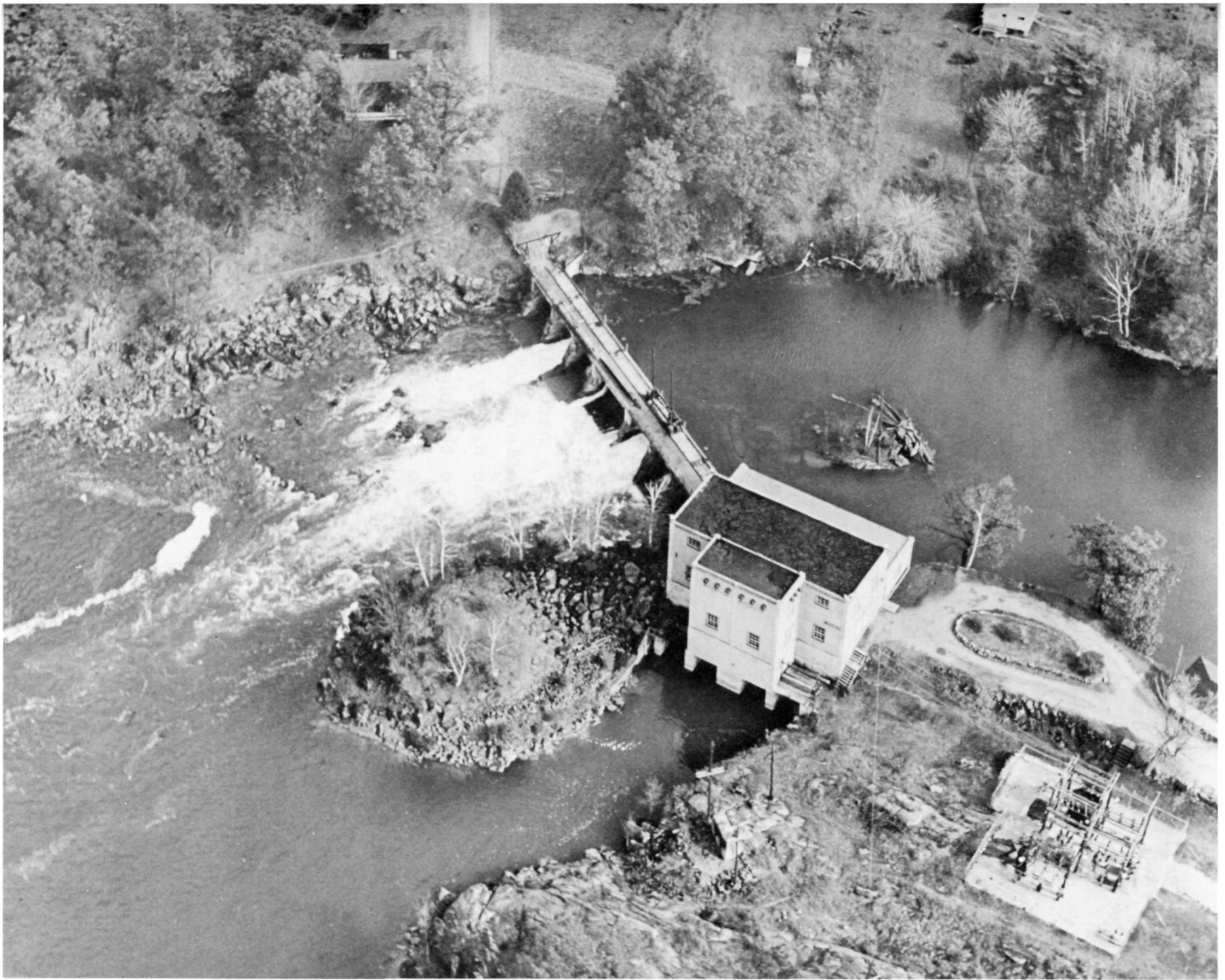
17 Couchiching lock pit under construction 5 June 1919.
(Trent-Severn Waterway Office.)



18 Couchiching lock completed, 1920. (Trent-Severn
Waterway Office.)



19 Ontario Hydro plant at Wasdell Falls, Aug. 1948. (Ontario Hydro.)



Railway at Big Chute. However, recently other significant alterations have been made to canal structures. In the 1960's a change in government policy resulted in the canal authorities terminating the practice of providing houses on sites for the lockmaster except where the location lacked proper access roads. Presently only three dwelling houses are maintained and occupied, two at Swift Rapids and one at Couchiching. Another major change made was the replacement, in 1955, of the swing bridge for the Muskoka Road at Washago by a modern high level span.²⁵ The old structure had been a serious bottleneck on a major artery and had caused traffic congestion for a number of years.²⁶ Also at Washago one of the water control dams was replaced in 1964 or 1965.²⁷

In a little more than one hundred years modern development has brought radical changes to the Severn River. The operations of lumber companies thinned its forests of their tall pine trees. The harnessing of the water power to produce hydro-electricity and the canalization of the waterway have changed the river's natural course. Tourism has grown from a few hardy travellers to crowds of urban dwellers seeking escape from the dreary cityscapes and routine existences. Yet despite the changes the river still has much natural beauty to offer visitors whether they travel along it in boats or stay a while in lodges, camps or cottages. But here as in other parts of the Trent Canal there is concern about the environment and suggestions that overcrowding may soon threaten to ruin this natural retreat.

Part II Big Chute Lock Station

20 Looking upstream from Big Chute, 1908. (Original photograph owned by Margaret Fitzpatrick, Orillia, Ont.)



Power and Water Control Related Structures

The first water control related structure at Big Chute was a timber dam built by lumbering interests to assist log drives. Although the date of construction is not known it probably was built in the 1870's by the Georgian Bay Lumber Company. This firm exploited the forests along the Severn River and its tributaries from the 1870's to the 1890's and probably maintained the timber structure until about the turn of the century. The long gentle incline of the falls at Big Chute had made a natural timber slide but fluctuating water levels along the Severn River had forced lumbermen to build timber dams at Big Chute and on Pretty Channel to raise the force of the flow along this reach for log drives.¹ While it did not block the course of the river cribwork of the dam at Big Chute was still in place in 1908. Also standing in 1908 was a lumbering type shanty on a point in the south-east shore upstream of Big Chute (see Figure 20).²

The first permanent structure built at Big Chute came about as a result of the Simcoe Railway and Power Company's decision in 1909 to construct a power plant at the site. In September of that year the company secured a water control lease for the Big Chute area from the Province of Ontario to produce hydro-electric power for the towns of Midland and Penetanguishene.³ To be built on the site were a water control dam and a power house with water intake structures.

Construction of the power facilities at Big Chute were considerably hampered by transportation difficulties which contributed to greater than anticipated costs. The lack of a permanent road to the site meant that equipment and materials could be brought in only by sleigh over Tea Lake from Buckskin Station in the winter and by scow down the Severn River from Severn Falls in the summer (see Figure 1).⁴ By November, 1910, the main concrete structures were in place: a side dam with stop-log sluices, a power house, and the head water canal. Poles for the transmission line to Waubaushene had been erected but the cable not yet installed. Considerable work remained, as the penstock and feeder pipes had not been erected nor had any of the hydraulic and electrical equipment and machinery been installed.⁵ Though the original plan had called for the power plant to house four generators with two penstocks feeding the turbines, the need to economize forced a temporary expedient. Only one penstock was put in place, the size of the power house reduced and only three generators installed. A temporary wooden wall was placed on the north end of the power house and a bulkhead put over the penstock opening in the headworks (see Figures 21 and 22).⁶ The plant finally was put into operation in July, 1911 with a capacity of 3300 hp. In 1912 a forest fire burned along the Severn River decimating the flora in the vicinity of Big Chute but leaving the power structures undamaged.⁷

The construction of the Big Chute plant was closely followed by the Hydro Electric Power Commission (HEPC) of the Province of Ontario, the recently created public body responsible for the regulation of electricity supply in the province.⁸ Late in 1910, an HEPC official conducted a thorough inspection of the site to study its potential as

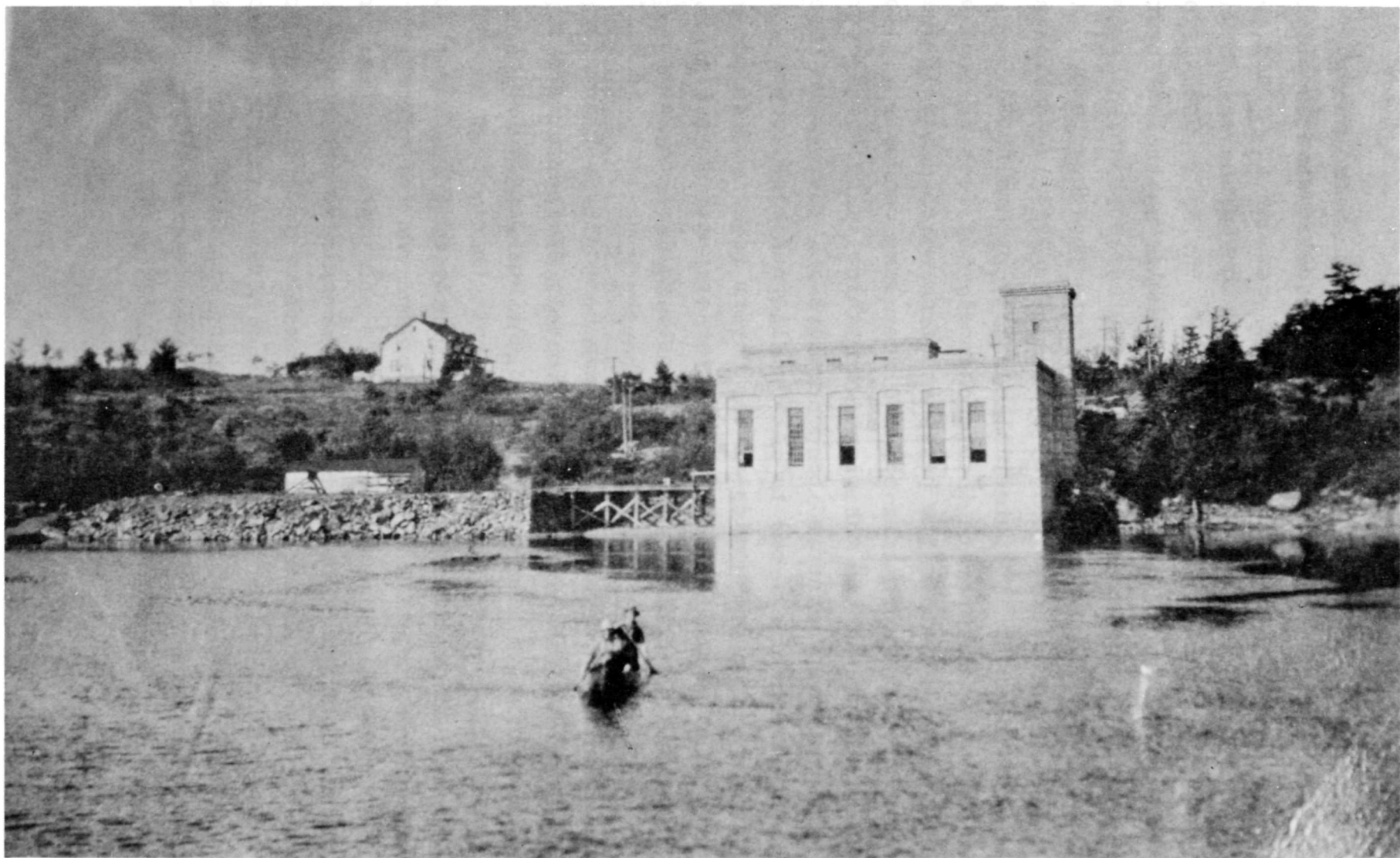
21 Forebay and penstocks at Big Chute, 30 Oct. 1914.
(Trent-Severn Waterway Office.)



22 Power house at Big Chute, 14 March 1912. (Trent-
Severn Waterway Office.)



- 23 Big Chute power house showing forms for extension sub-structure, ca.1914. (Original photograph owned by Walter Dean III, Coldwater, Ont.)



power source for the municipalities in the Georgian Bay area. Convinced of the value of the facility the Commission signed a contract with Simcoe Railway and Power Company in February, 1911, to supply electricity to Midland and Penetanguishene.⁹ Then in July, 1914, the Hydro Commission took an important first step in the public control of hydro electricity by purchasing the Big Chute plant, which became the first power producing facility owned by the agency.¹⁰

The installation bought by Hydro in 1914 was operating at a level under its potential capacity producing 3300 horsepower. A concrete intake channel, 350 feet in length, brought the water to the headworks from which a single penstock 9 feet in diameter and 150 feet long conducted it to the power house. In the plant were three 1,100 horsepower turbines, each connected to generators.¹¹ There were three transmission lines: one to the Orillia municipal power facility at Ragged Rapids on the Severn River put in to provide electricity for construction operations at Big Chute in 1910 or 1911, and later used to link the output of the facilities; and two to Waubaushene built in 1912.¹² The concrete power house itself was basically rectangular in shape, 77 feet long by approximately 66 feet at its widest point.¹³ The main part of the building containing the machinery was one large room about thirty feet in height. The smaller rear section of the building was about forty feet high with two floors for the control rooms. In the south-east corner was a square stand pipe tower taller than the main section of the plant containing the surge tank which compensated for water overflow from the penstocks when an emergency shut the plant.¹⁴ Already at the time of purchase, work to expand the building with a 39 foot longitudinal extension had begun with forms erected for the concrete sub-structure (see Figure 23).¹⁵

Increased demands for power created by the First World War expansion of the munitions industry in Ontario overtaxed the capacity of the Big Chute Generating Station and convinced Hydro to complete expansion of the plant and work began in 1917.¹⁶ A second penstock was added to the facility and the planned extension of the power house was completed. The added room in the plant was taken up by the installation of a new larger generator and a 2300 horse-power turbine bringing the total power production capacity of the plant up to 5600 hp. The increased load necessitated a complete re-wiring of the generating station which was completed early in 1919, allowing the new machinery to be brought into service on 15 February.¹⁷

At the same time as the expansion of the power plant at Big Chute there was considerable work done to the water intake structures. The building of water control structures in the Severn River sector by the Trent Canal authorities resulted in the raising of water level below Big Chute by two feet and consequent reduction of head at the power plant from 58 to 56 feet. To compensate Hydro for this the Trent Canal office agreed to raise the intake structures at the plant to allow a two foot rise in the water level above Big Chute.¹⁸ Acting on the instructions of the Chief Engineer of the Trent Canal the York Construction Co. raised the height of the headworks block and built wing-walls to prevent leakage from the forebay.¹⁹ The Hydro Commission was not satisfied that this work solved the problem as the forebay walls had not been raised and this resulted in prolonged correspondence between the Commission and the Canal office over the necessity of this additional measure.²⁰ Finally, in 1935, the Canal office carried out a complete reconstruction of the forebay structures terminating the plant's occasional problems of overflow from the

24 Big Chute power house forebay after reconstruction in 1935.
(Trent-Severn Waterway Office.)



25 Big Chute power house forebay after reconstruction in
1935. (Trent-Severn Waterway Office.)



forebay (see Figures 24 and 25).²¹

The initial raising of the headworks allowed the Hydro in 1919 to proceed with its plan to put in new water control gates for the intake canal and to construct on top a gate house. The gate house structure remains at Big Chute without significant modifications since construction.²² Within a few years, however, there was an important change in the operation of raising and lowering the control gates when the mechanism was converted from manual to motor-powered.²³

In 1919 some further alterations were made to the power house with a new toilet room being added²⁴ and an eight foot extension built to the tower.²⁵ Subsequent alterations were more minor with the exception of an important change made about 1928 when the transformers were removed from the power house and moved up the hill to their present outdoor location just south-east of the Maring Railway control building. This move and a consequent change in the electrical system of the facility were ordered as a result of a serious accident in Niagara Falls plant when transformers inside the building has exploded.²⁶ Sometime between 1934 and the 1960's, a small sub-station of transformers was built just south of the raceway; it was moved to its present location about one-quarter mile north-west of the power house in 1965.²⁷ Three tall metal ventilating pipes added to the main roof of the plant in 1928²⁸ were still in place in the 1950's.²⁹ They have since been removed.

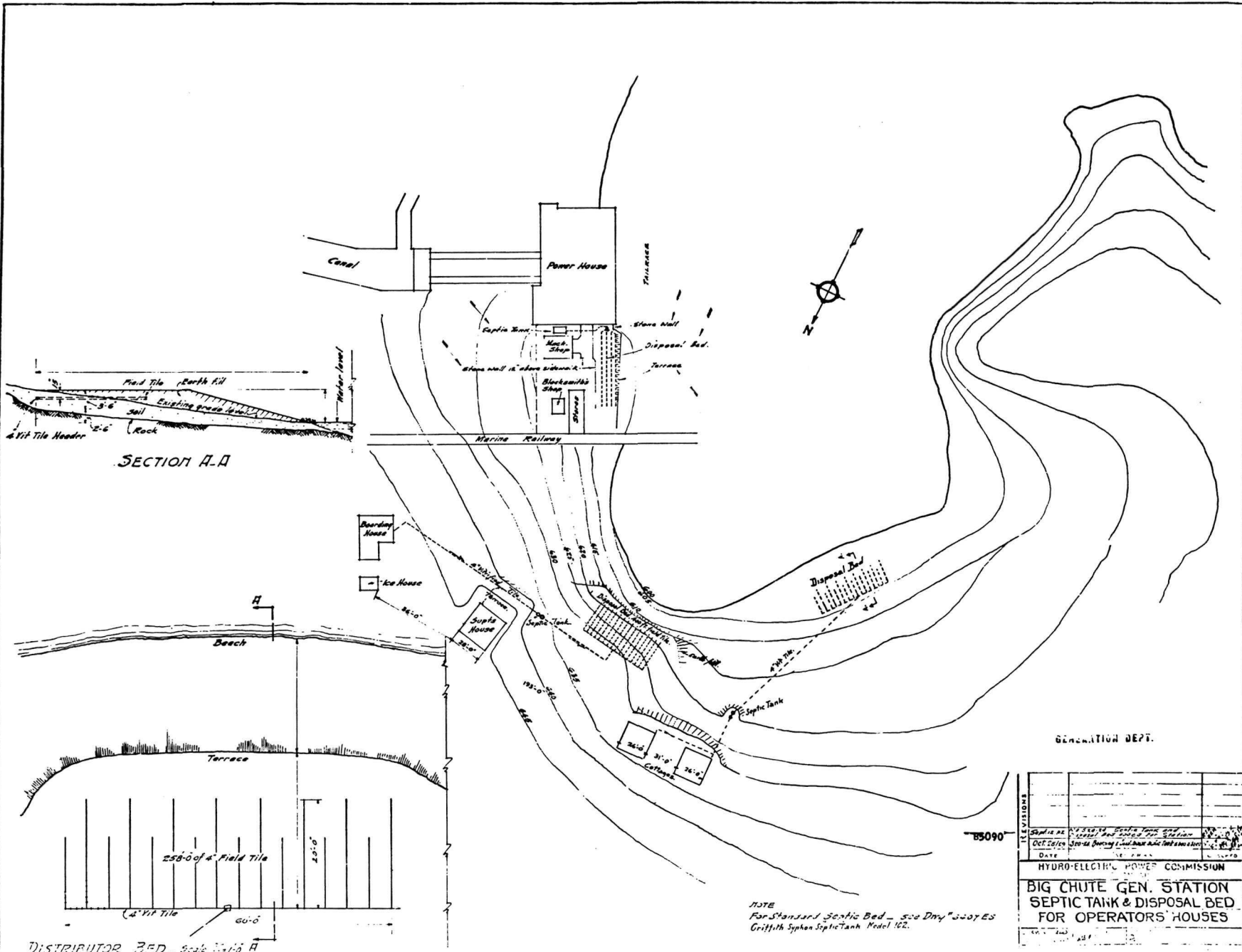
There has been growth in the number of transmission lines in the Big Chute area in recent years. In addition to the old lines linking the plant with the Orillia facility at Swift Rapids and the town of Waubaushene, another pole system was built in 1938 to connect Big Chute

with power facilities in Muskoka.³⁰ This new system superseded the transmission links with Waubaushene and these two lines were taken out at this time. Then about 1945 the transmission link between Swift Rapids and Big Chute was also removed.³¹ The wooden towers from the new system crossed the river downstream of Big Chute where the basin empties through the narrows. Within about the last ten years three new high voltage transmission lines strung between sets of large metal towers have been put in downstream of Big Chute for the purpose of long distance communication of electricity.³²

The side dam constructed by the Simcoe Railway and Power Company was maintained over the years in operating condition through the co-operation of the Ontario Hydro and the Trent Canal Office but very little change has been made in structure. The lack of a proper deck made the operation of pulling logs from the dam sluices and putting them back precarious and there was no storage of the logs. Canal authorities recognized this problem in 1969³³ and new deck was installed the following year.³⁴

The building of the hydro facility at Big Chute 1910-1912 and the alteration of water levels by Trent Canal authorities 1915-1919 resulted in certain changes in shoreline along the river.³⁵ At Big Chute this meant that at the upstream end several feet of original shoreline was flooded³⁶ and a small low island located just before the present hydro forebay disappeared under the water.³⁷

26 Layout plan of Big Chute hydro station, 1932. (Ontario Hydro.)



SECTION A-A

DISTRIBUTOR BED - Scale 1/4" = 1'-0" H

NOTE
For Standard Septic Bed - see Dry 5007ES
Griffith Siphon Septic Tank Model 102.

GENERATION DEPT.

85090

REVISIONS	DATE	BY	DESCRIPTION
5	10/12/22	J. H. ...	As per ...
4	10/12/22	J. H. ...	As per ...
3	10/12/22	J. H. ...	As per ...
2	10/12/22	J. H. ...	As per ...
1	10/12/22	J. H. ...	As per ...

HYDRO-ELECTRIC POWER COMMISSION

**BIG CHUTE GEN. STATION
SEPTIC TANK & DISPOSAL BED
FOR OPERATORS' HOUSES**

27 Hydro boarding house at Big Chute, ca. 1925. (Original photograph owned by Jack O'Hara, Midland, Ont.)



Hydro Colony Structures - The Dwelling Houses (see Figure 26)

When the Simcoe Railway and Power Company began building at Big Chute in 1909-10, the first structure erected was probably the boarding house used first as the headquarters for the construction staff and later to accommodate the operating crew of the power house. A rectangular two storey wooden frame dwelling 41 feet long by 37 feet 6 inches wide, it faced south east, oriented towards the upstream side of Big Chute. There were five bedrooms and a bathroom upstairs, and downstairs were a kitchen and dining room in the rear and two parlours in the front. One of the parlours was converted to a bedroom about 1950.¹ The house was made quite handsome by three large dormers on the front and an open verandah which ran the length of the house. At the rear of the house was an attached shed 16 feet long by 10 feet wide (see Figure 27).² After Ontario Hydro took over Big Chute it was discovered that the boarding house did not offer sufficient space to accommodate the Superintendent of the power house and his family, the women who ran the boarding house and the large operating staff for the plant.³ Therefore, the Commission decided, in 1918, to build a separate house for the Superintendent and his family.⁴

The Superintendent's house was built in 1918-19 about 100 feet east of the boarding house, facing due south towards the basin below Big Chute. The building was rectangular in shape, 26 feet wide by 24 feet long (not

including the verandah). The two storey wooden frame house had a large dormer at the front with four windows and an open verandah the width of the house. On the second floor there were three bedrooms and a bathroom, and on the first floor an office, kitchen, dining room and living room with a brick fireplace.⁵ The house was built on solid rock so the hole for the foundation and the full basement had to be drilled and blasted⁶ (see Figure 28).

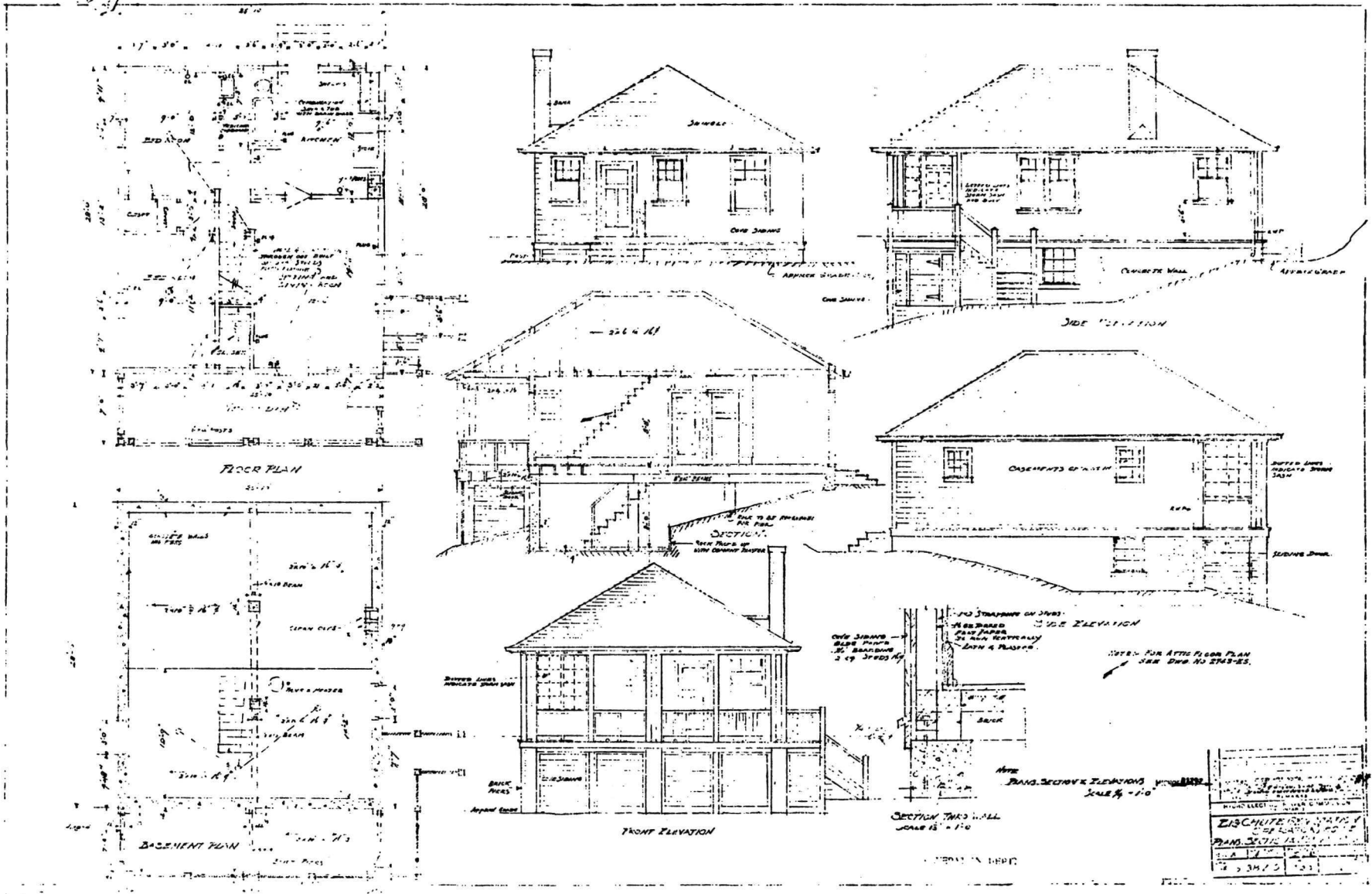
Cramped quarters at Big Chute and the need to provide accommodation for married operators convinced the HEPC of Ontario to build two more cottages in 1926.⁷ These identical dwellings were built 200 to 300 feet east of the Superintendent's house and 31 feet apart. Like the Superintendent's house the cottages faced due south and were oriented towards the basin below Big Chute. The dwellings were rectangular bungalows 28 feet wide and 25 feet 10 inches long. These small frame buildings had only four rooms on the main floor, (not including the bathroom), two bedrooms, a kitchen and a combined living and dining room area.⁸ As in the case of the Superintendent's house the full basements had been drilled and blasted out of solid rock. There were also open verandahs across the entire width of the houses at the front (see Figure 29). The cottages were not sufficiently large for the growing families occupying them and in 1943 the Commission converted them to 1½ storeys by adding two bedrooms upstairs in each (see Figure 30).⁹

Between 1929 and 1933 improvements were made by the Hydro Commission in the water supply and sewage disposal systems at Big Chute.¹⁰ Three septic tanks were installed for the power house and the four dwelling structures with disposal beds built below the tanks near the water's edge on the downstream side.¹¹ It was probably at this time

28 Dwelling occupied by the superintendents of the Big Chute power house. (Original photograph owned by Victor Conner, Coldwater, Ont.)



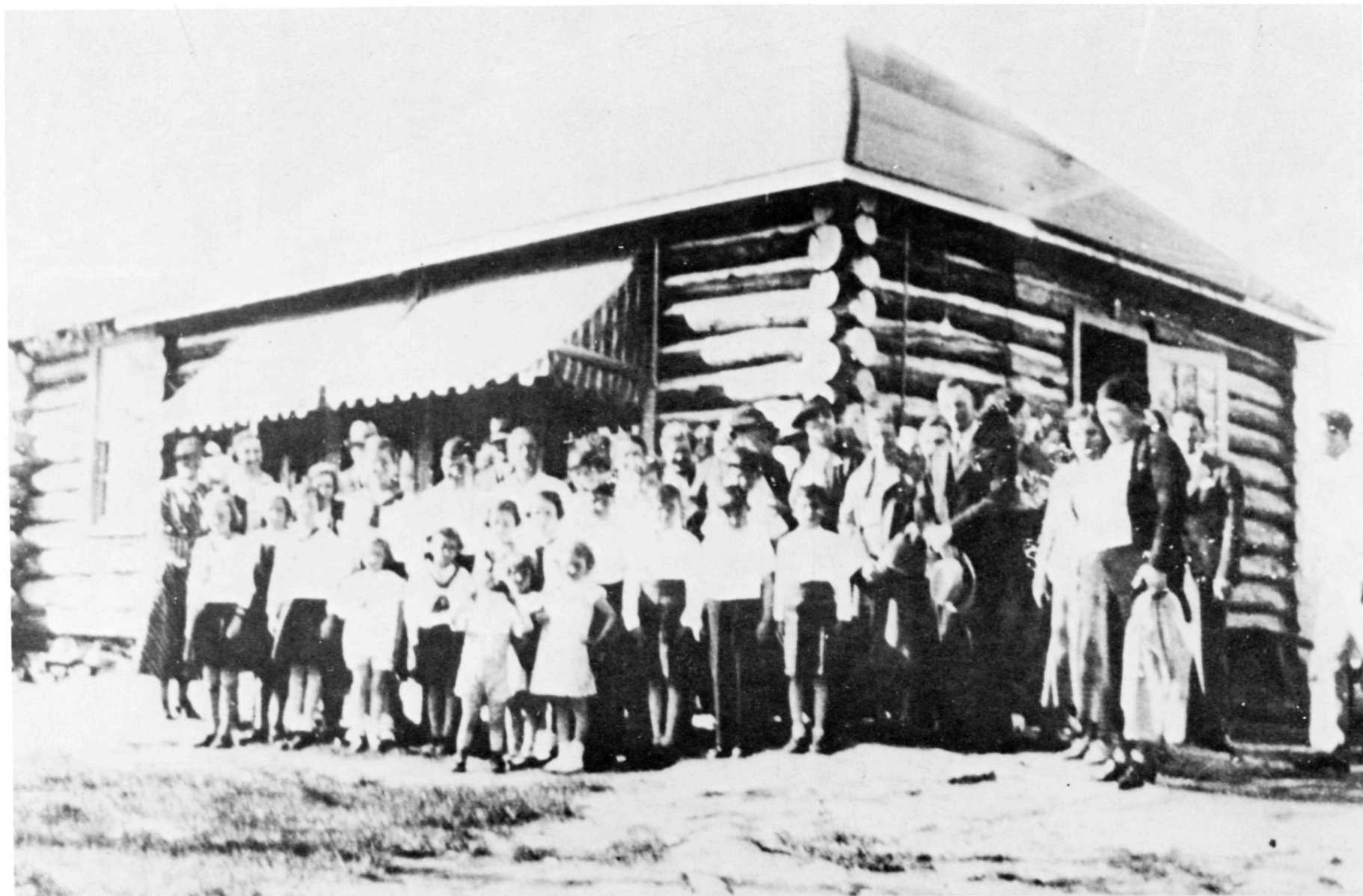
29 Plan for Operator's houses at Big Chute, ca. 1926.
(Ontario Hydro.)



30 Big Chute operators' houses after additions, ca. 1950.
(Original photograph owned by Victor Conner, Coldwater, Ont.)



- 31 Schoolhouse at Big Chute, 1937. (Original photograph owned by Jack O'Hara, Midland, Ont.)



32 Former schoolhouse at Big Chute, now cottage at Copp Bay, 1976. (Original photograph owned by Michael O'Dell, Thornbury, Ont.)



that the small frame pumphouse was built near the transformer station on the upstream side to protect the machinery used to supply the colony with its water.¹² Additional improvements were made in the sewage disposal system in 1943.¹³

In September - October, 1932,¹⁴ the residents of the hydro colony and the surrounding area built a schoolhouse at Big Chute north of the boarding house where the parking lot is now located.¹⁵ Construction was at the expense of the residents and the structure was built with scrounged materials and donated labour. Basically it was a one room schoolhouse constructed of logs hauled from the bush for walls and spruce poles cut for rafters. Six windows, lumber for the floor and shingles for the roof were all donated. An old pool table¹⁶ was converted to a slate blackboard and a teacher's desk with the cues used as pointers. Second hand desks were purchased for the ten pupils.¹⁷ Total cost of construction was \$96.00. After the school had been in operation for a year, provincial educational grants were available and improvements were made. The school was sheeted inside with gyprock and the wood stove was replaced with a coal heater. Later the number of students grew to seventeen and the school was enlarged, new desks and blackboard purchased and an oil furnace installed (see Figure 31). The school remained at Big Chute until 1962 when the pupils were shifted to a larger building at Severn Falls and the old schoolhouse was sold, dismantled, moved up the river to Copp Bay and re-erected as a cottage which is still in use (see Figure 32).¹⁸

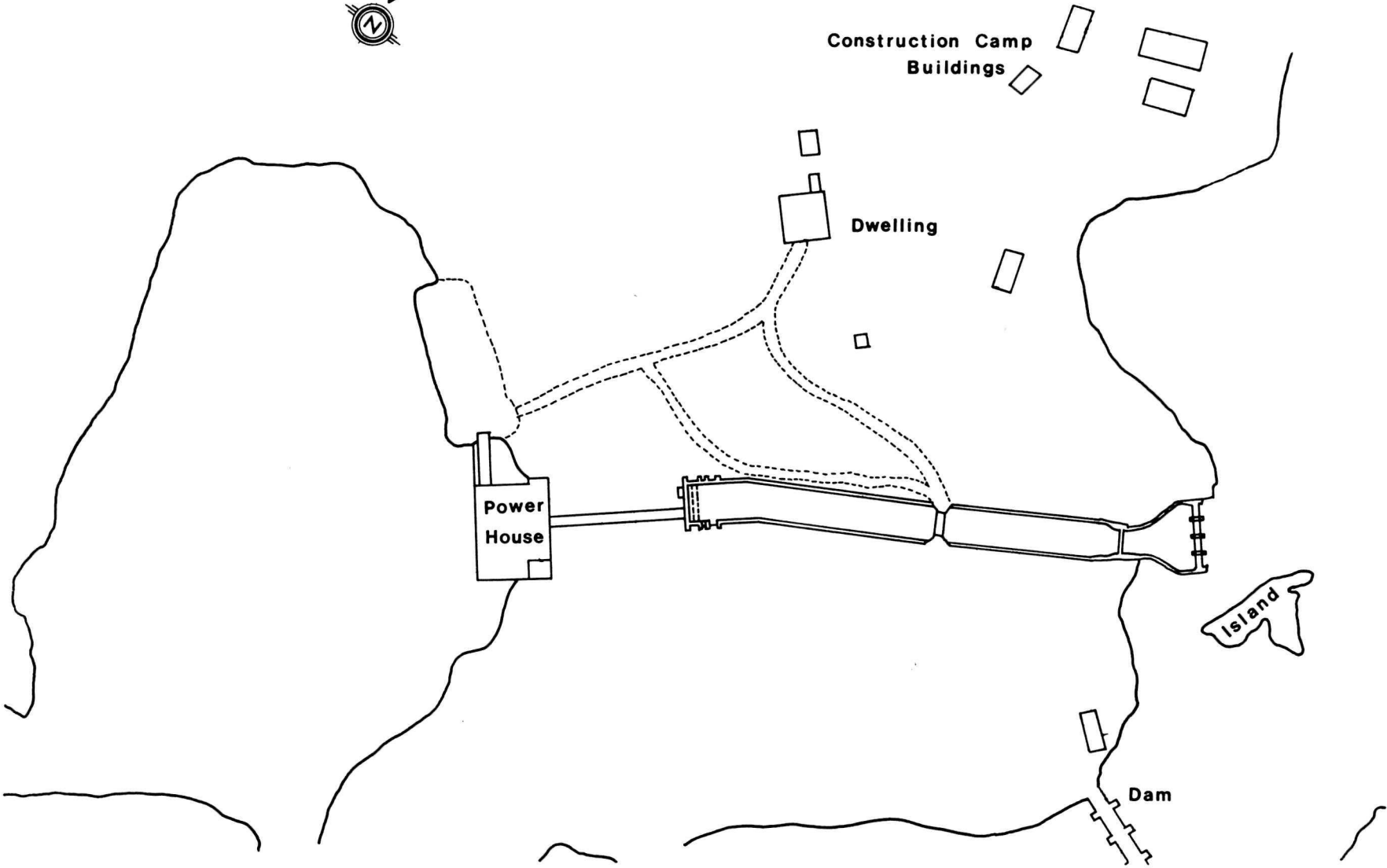
Miscellaneous Hydro Structures

There were also at Big Chute a number of buildings of a more temporary nature erected by the Hydro over the years.

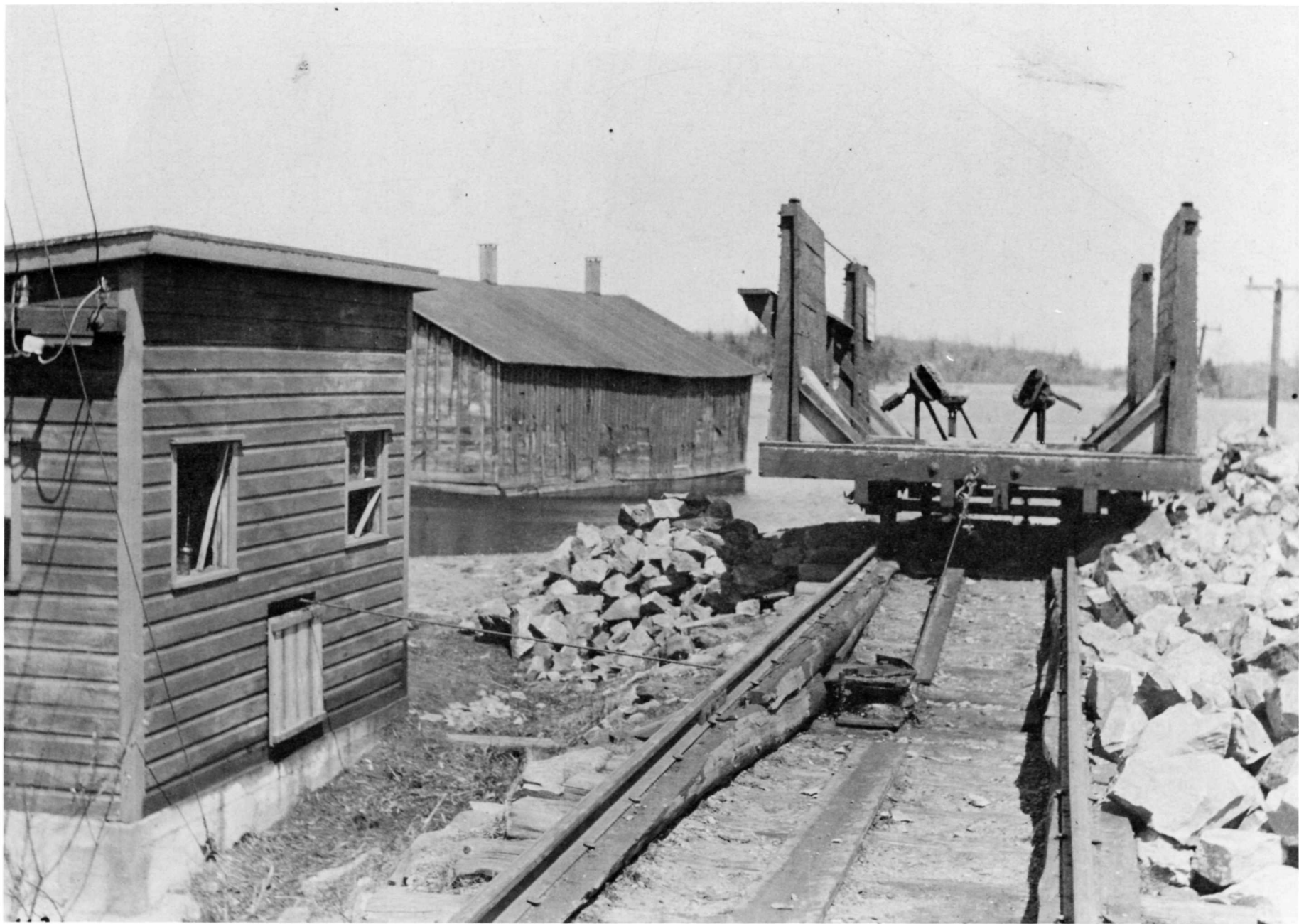
When the original construction of the power house by the Simcoe Railway Light and Power Co. was begun in 1909-10, several temporary wooden buildings were erected to accommodate the work crew and to store their equipment.¹ A Trent Canal survey map probably completed in 1912 shows the locations of seven shacks on the site: one just behind the boarding house; four north of the boarding house in the approximate location of the present marina; one west of the boarding house near the upstream shore; one near the dam. In addition there was a very small building about where the pumphouse was later placed, and another unidentified building on a hill just north of the Big Chute site (see Figure 33).²

In 1917, when the hydro construction crew moved in to build the power house extension, several of these shacks were pulled down and the material used to build an office and a bunkhouse behind the boarding house where the parking lot is now.³ The bunkhouse was a wooden shack with a dining room at one end and the bunks at the other end. Conditions were apparently quite primitive without enough windows or proper heating and lighting. When summer came the men were put up in tents while improvements were made to the bunkhouse.⁴ In 1920 this bunkhouse⁵ was converted to a horse stable with the dining room becoming the storage

- 33 Layout plan of Big Chute, ca.1912. (Trent-Severn
Waterway Office.)



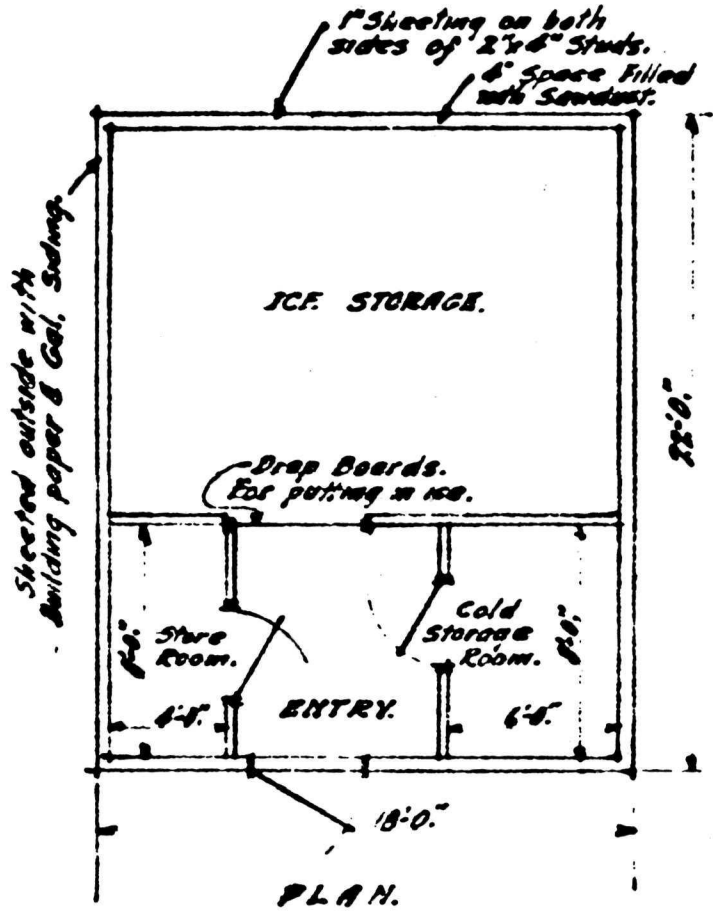
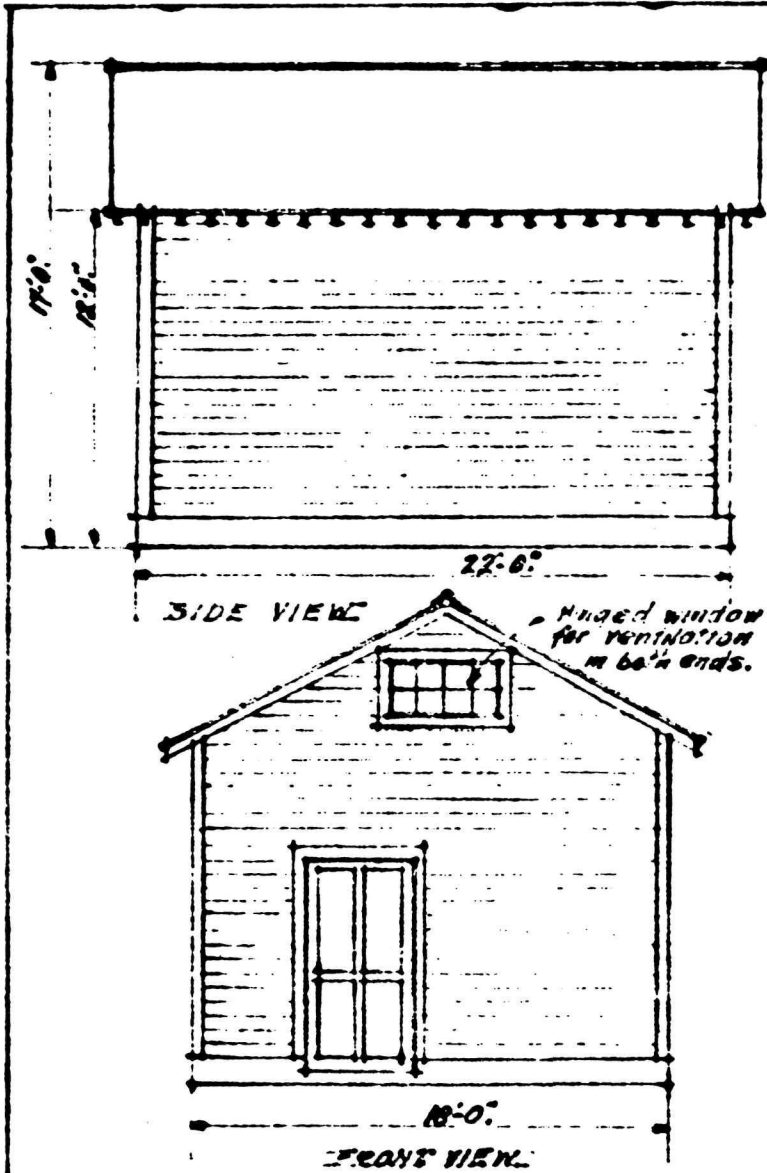
34 Upstream side of Big Chute showing first boathouse in background, 28 April 1923. (Trent-Severn Waterway Office.)



35 Second boathouse at Big Chute, ca.1950. (Original photograph owned by Victor Conner, Coldwater, Ont.)



36 Ice storage building at Big Chute, ca.1925. (Ontario
Hydro.)



REVISIONS.

HYDRO-ELECTRIC POWER COMMISSION
OF ONTARIO

**BIG CHUTE
GENERATING STATION.
ICE STORAGE BUILDING.**

DATE: SEP 1951 DRAWN BY: [Signature]

CHKD BY: [Signature] NO. [Number]

OWC: 910042 ES. 520-99

TYPE: 10/12/51 SCALE:

GENERATION DEPT.

MICROFILMED

bin for food and the bunk area the space for the stalls. At the same time a cow stable was erected behind the horse stable and other camp buildings converted to store equipment.⁶ About this time one of the old camp buildings was converted to a boathouse for the hydro personnel at the upstream end of Big Chute close to the boarding house. This structure was quite large measuring 37 feet long, 23 feet 5 inches wide⁷, but was not sturdy (see Figure 34) and was replaced with a better constructed building by 1928 (see Figure 35).⁸ In 1925 the Commission erected directly behind the boarding house an ice house⁹, 18 feet wide by 22 feet long built of wood with a single door and window at the front. Most of the building was used to store ice, but the front area contained a storeroom and a cold storage area (see Figure 36).¹⁰ In 1951 the permanent road was put through to Big Chute, and shortly after the icehouse was replaced by a four-bay wooden garage.¹¹

In the early years of the Big Chute hydro operation three small wooden buildings were constructed just northwest of the power plant. Photographic evidence reveals that a long narrow storage building was constructed between 1913 and 1917. In 1917 a blacksmith shop was built beside the storage structure to be used for hydro operations and to assist in the building of the marine railway.¹² A third more substantial building 31 feet long by 19.2 feet wide was added in 1920 quite close to the power house to be used for the storage of machine shop tools.¹³ The locations of these buildings¹⁴ are shown in a 1926 plan of the Big Chute area¹⁵ but by the 1950's only the machine shop was left¹⁶ and it no longer stands today (see Figure 26).

There were two other buildings temporarily on HEPC land at Big Chute. Small dwelling houses were erected in the 1930's by hydro employees Stanley Conner and Harry

Fell, just east of the hydro-owned cottages. In 1945 Mr. Fell moved his house to a new location and in the early 1960's Stanley Conner sold his log house to a cottager who moved it upriver to Copp Bay where it still stands.¹⁷

Roads and Bridges

Before the construction of a permanent road to Big Chute in 1951, the only access by land was by sleigh over winter roads, used when ice prevented travel by water. The first winter road was from the CPR water depot at Buckskin Station. This route ran along Buckskin Creek to Tea Lake and then up the lake to Big Chute a distance of five miles. Much of the material for construction of the power facilities by the Simcoe Railway and Power Co. came in by sleigh this way. After the dam and forebay were built, wooden bridges were constructed on top to permit access to the entire site.¹ In 1920, the hydro colony cut another winter road through to Severn Falls, a distance of six miles, where there was another railway station. In 1947 the Hydro Commission began work on a permanent road to Big Chute which was completed in 1951 (see Figure 1). Sometime thereafter, the bridges were reconstructed to support the heavier weights to which they were being subjected.²

The automation of the power house at Big Chute meant the end of the hydro colony and the removal of several structures. Partial automation was introduced in 1958 eliminating the need for several men and the plant was switched over to remote control in 1966. In 1968 HEPC decided to remove their dwelling houses, the garage and the boathouse from the site. The work was carried out shortly thereafter.³

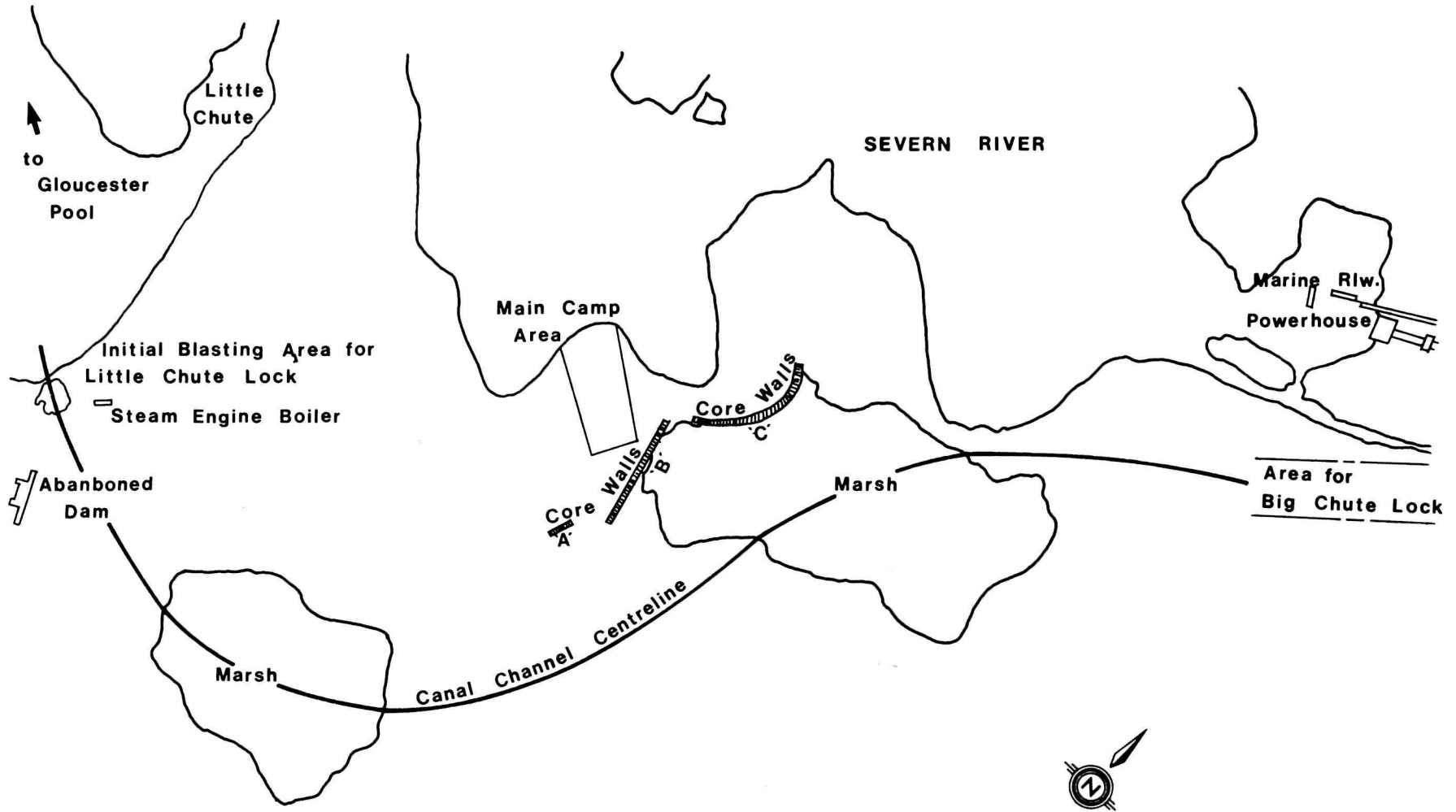
Canal Structures

When E. J. Walsh surveyed the Severn River in 1905 to assess its potential for canalization he correctly identified the Big Chute to Little Chute stretch of the river as a major obstacle. The drop in water level was 57 feet and the reach in the Little Chute vicinity was a narrow, winding, shallow, rapidly flowing channel. To overcome this block Walsh suggested placing three locks in flight at Big Chute to handle the drop in elevation and then either improving the natural river channel at Little Chute or else cutting a short canal through the narrow adjacent peninsula and avoiding the worst stretch of river.¹ This plan remained under consideration until 1912, when the Superintending Engineer of the Trent Canal, A. J. Grant, observed that the project to put locks at Big Chute had been interfered with by the erection of the power facility.²

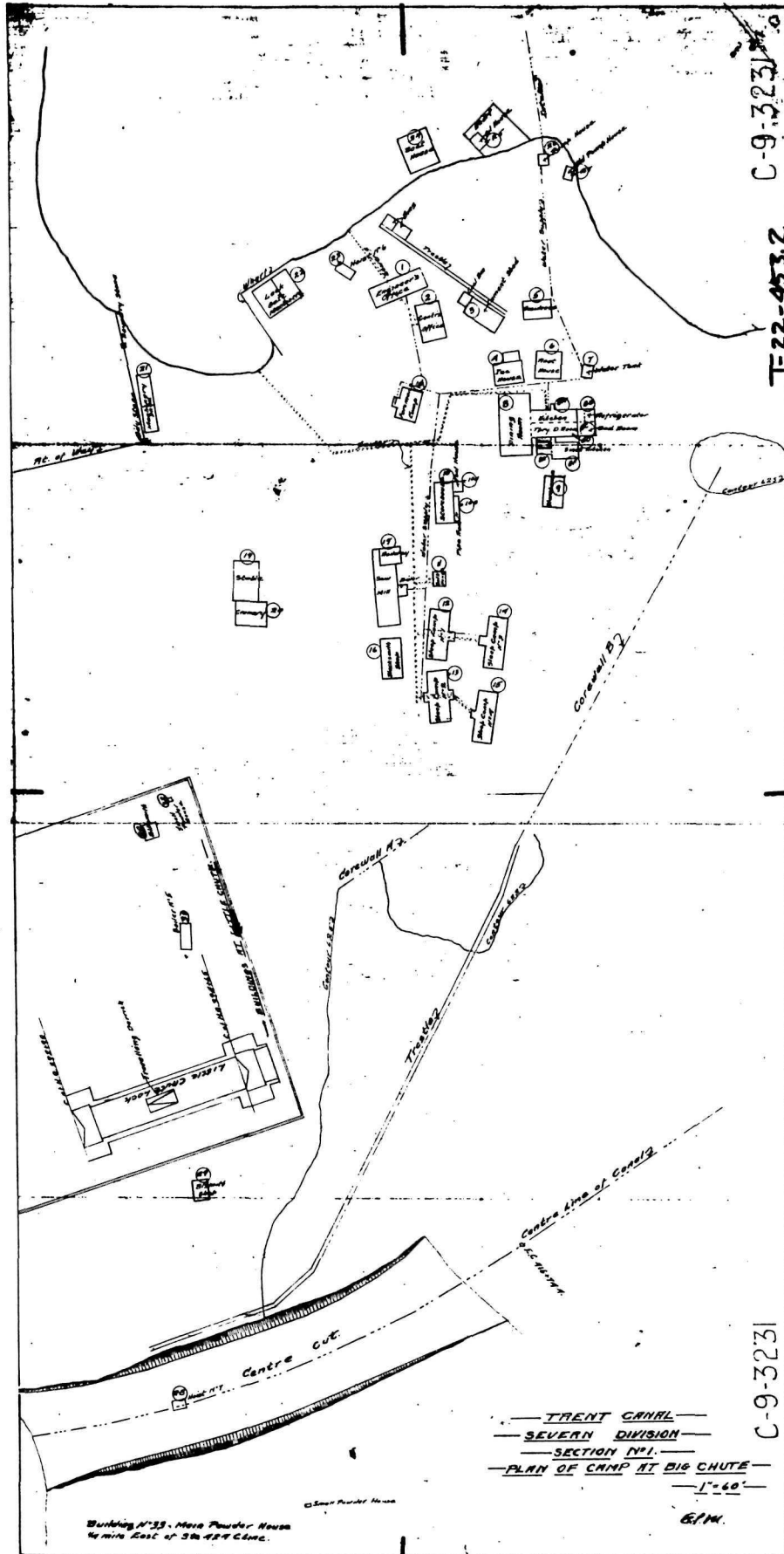
New plans were made to overcome the obstacles at Big and Little Chutes and specifications were drawn up by 7 July, 1915. The project now involved building more than one mile of canal through the area south of the Severn River to circumvent the falls at Big Chute and the treacherous waters of Little Chute. There would be two locks one at either end of the channel, each having a lift of 29 feet. Regulating sluice dams were to be built adjacent to the locks.

Between the Big and Little Chutes there were two large

- 37 Canal construction area between Big and Little Chutes.
(Parks Canada, Ontario Region Office.)



- 38 Plan of canal construction camp near Big Chute, 1920.
(Trent-Severn Waterway.)



C-9-3231

T-22-4532

C-9-3231

TRENT CANAL
SEVERN DIVISION
SECTION NO. 1
PLAN OF CAMP AT BIG CHUTE
1" = 60'
G.M.W.

Building No. 25. Mess Powder House
40 mins East of 3rd 424 Camp.

39 Camp buildings near Big Chute, 8 May 1919. (Trent-
Severn Waterway Office.)



marsh areas sided by higher ground which when joined would provide a natural channel. But it was necessary first to cut an opening through the high ground which separated them and also to build three dam structures on the west side of the marsh nearest Big Chute where the land was low.³ The dam structures adjacent the marsh were concrete core walls against which rock could be piled providing greater strength (see Figure 37). A contract for construction, however, was not let at this time because of the financial drain of the European war.⁴ Immediately after the termination of hostilities arrangements were made to commence work. A contract was let on 17 January, 1919, to the York Construction Co. of Toronto to construct the canal in return for payment of their costs and a profit of eight percent.⁵

When work began in January 1919, the first priority was to set up a camp for the workers. A substantial camp was required to support the 230 men working there by the end of the year.⁶ A plan of the camp indicates that thirty-two buildings were erected for shelter, storage and operational purposes (see Figure 38). Most of these were concentrated immediately west of the core walls⁷ and were fairly substantial structures made of dressed lumber brought in by sleigh from Buckskin Station (see Figure 39). One of the first buildings set up was a saw-mill which processed timber cut down as the land was cleared, producing rough lumber for use in constructing the works. Accommodation for the men was in four large bunkhouses but there were two other shanties, one for the foremen and the other for the Superintendent of Works. Cooking and dining facilities were all contained in a large irregularly shaped building holding a dining hall with attached kitchen for the men and a small dining room and kitchen for the supervisors. There was a stable and granary to house the horses used for

transportation and in the clearing operation.⁸

By the shore of the river there were a number of other works buildings. As much of the supplies and building materials came in by boat and scow there were two wharves and a boathouse as well as a small railway running on a trestle work to transport the goods up to the main camp. Pumphouses by the shore controlled the water supply for the camp with lines running to most of the buildings including a separate bath house. A complex of sewer lines also came from the camp running into the river downstream of the pumphouses (see Figure 40).

Completing the structures at the Big Chute camp were a number of storehouses, offices and two blacksmith shops placed at convenient locations around the site. In 1919 the York Construction Company investigated purchasing electricity to power their operations from the hydro plant at Big Chute, but the cost of running a line exclusively for this purpose proved prohibitive⁹ and the idea was temporarily abandoned. Instead the construction equipment, such as drills, hoists and pumps, was powered by steam boilers¹⁰ while a generator supplied electricity for the use of the camp. But in 1920 the company made a deal with the Hydro and a special line was strung to the camp from the power plant. Of course, man and horse power accomplished the bulk of the construction and transportation work.¹¹ Because of the inaccessibility of the site it was deemed necessary to have telephone communications and a line was strung along the hydro power transmission line right of way to Buckskin Station.¹²

During 1919-1920 a considerable amount of the excavation work was carried out for this project. The largest part of the excavation was the cut through the ridge separating the two marshes. Rock was drilled and blasted

40 Camp buildings on the shore of the Severn River
between Big and Little Chutes, 13 Nov. 1919. (Trent-
Severn Waterway Office.)



41 Derrick and trestle at cut through centre ridge, 24
June 1919. (Trent-Severn Waterway Office.)



42 Trestle from ridge across core wall "B", rock used for backfill and sleep shanties in the background, 13 May 1920. (Trent-Severn Waterway Office.)



43 Work on Little Chute lock pit, 6 June 1919. (Trent-
Severn Waterway Office.)



44 Core wall "C" under construction, 13 Nov. 1919.
(Trent-Severn Waterway Office.)



45 Core Wall "C" after completion, 1920. (Trent-Severn
Waterway Office.)



from the ridge loaded on cars with a derrick and transported on trestle work over to the core walls for the dam structures where it was used as backfill for strength (see Figures 41 and 42). By early 1920 almost 3000 yards of rock had been removed from the centre cut which represented about 20% of the total to be excavated. Much work was also done on the excavation of the lock pit at Little Chute. Here a wooden derrick was used to remove blasted rock and place it in small railway cars with a capacity of four yards of material (see Figure 43). The rock was to be used later for the lock walls. Some initial excavation was also done near Big Chute for the lower left entrance pier.¹³

In the summer of 1919, work also began on the structures for the canal. The smallest structure, core wall "A" and the regulating sluice dam at Little Chute were completed rapidly but the bigger structures took a great deal of effort. The exact dimensions of core wall "B" are not known but it is about 100 yards long, 10 feet high, 5 feet wide at the base, two feet wide at the top¹⁴ and it runs in a straight line. The core wall and the backfilling with rock was completed by the end of 1920 (see Figure 42). Core wall "C" is a much more substantial structure, 465 feet in length and built in an arc. At its highest point it is fifty feet with about 20 feet of it below the surface of the bog in places to reach a rock foundation. It also is about five feet wide at its base and two feet at the top. Core wall "C" was completed by the end of 1920 with 3257 cubic yards of concrete having been poured into the forms and the total cost of construction coming to \$78,777.63.¹⁵ The massive backfilling necessary to finish this structure was never carried out (see Figures 44 and 45).

Much of the building material which was used to construct the core walls came up the Severn River by scow. The gravel was brought from Beausoleil Island and other material came into Waubaushene by train. Picked up by scow the material was brought through the locks at Port Severn and up to Little Chute. At this time Little Chute was a bottleneck, narrow and in places only three feet deep with fast running water. Boats found it impossible to navigate this stretch of the river with a scow in tow so a steam boiler and winch was put at the head of Little Chute and the heavily loaded scows pulled through the channel with a cable. From there the scows were towed to the camp wharf and unloaded by scoop.¹⁶

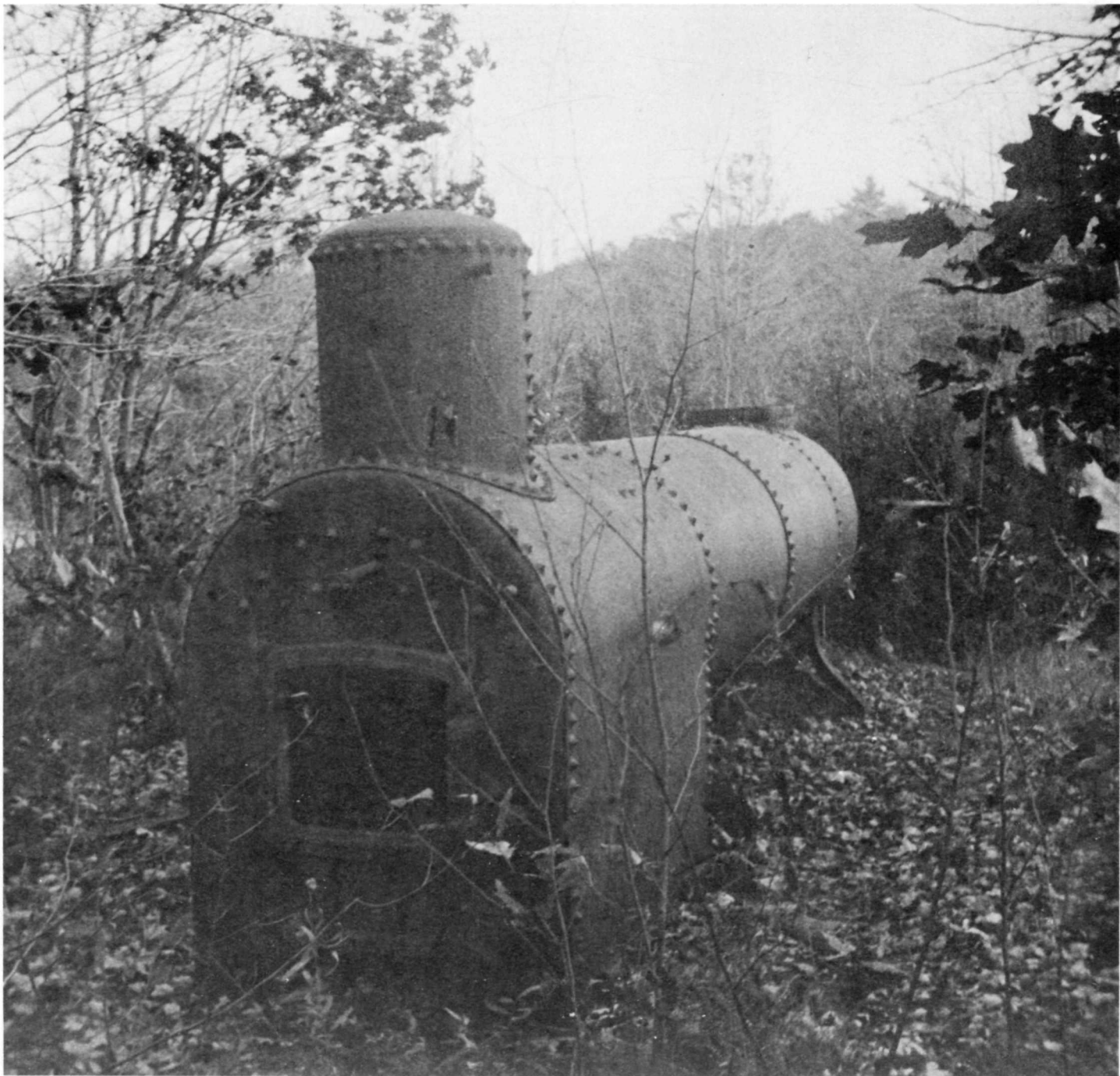
By 1920, reduction in government expenditures slowed down the pace of work at Big Chute and then in January 1921 the contract with the York Construction Company was terminated altogether.¹⁷ Government officers apparently viewed this stoppage in construction as a temporary discontinuance related to austerity in a period of post war recession. When the York Construction Company removed their men and equipment from Big Chute much material was left for future use including the buildings and railway track. A good deal of the equipment left, including the steam boilers, had been borrowed from the Inland Construction Company's camp at Swift Rapids which the federal government had taken over in 1919 when that company defaulted on its contract.¹⁸ The valves for the two locks and the lockgate machinery had been delivered to the camp site and remained in storage.¹⁹

Canal authorities did not easily abandon plans to finish the project at Big Chute on which the work was already so advanced. At intervals detailed estimates were prepared by the government showing the cost of the

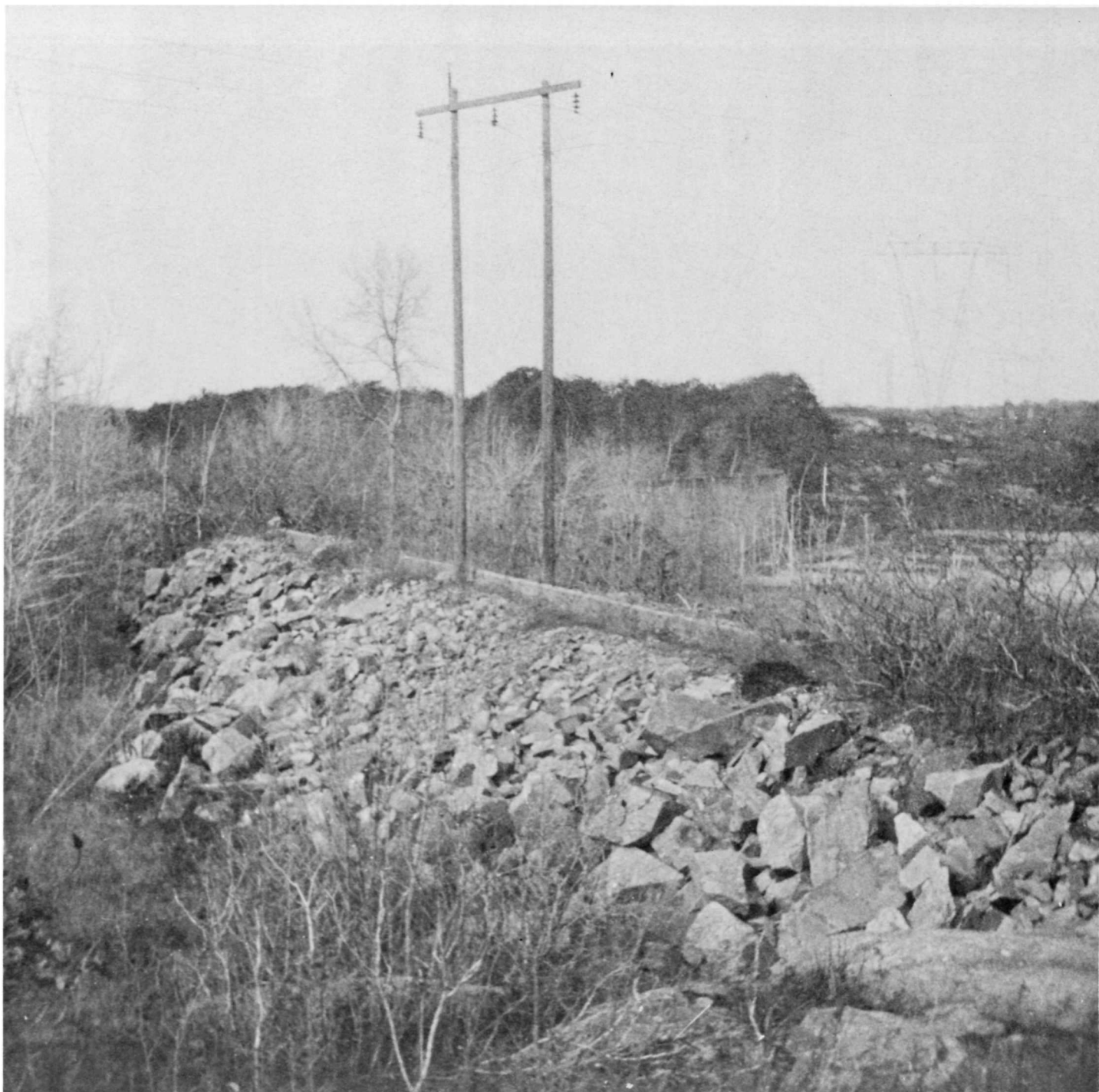
46 Regulating sluice dam near Little Chute, 1976.
(Photo by author.)



47 Engine type boiler near Little Chute, 1976. (Photo
by author.)



48 Core wall "B" with Core Wall "C" in background, 1976.
(Photo by author.)



49 Lock pit excavation at Little Chute, 1976. (Photo by author.)



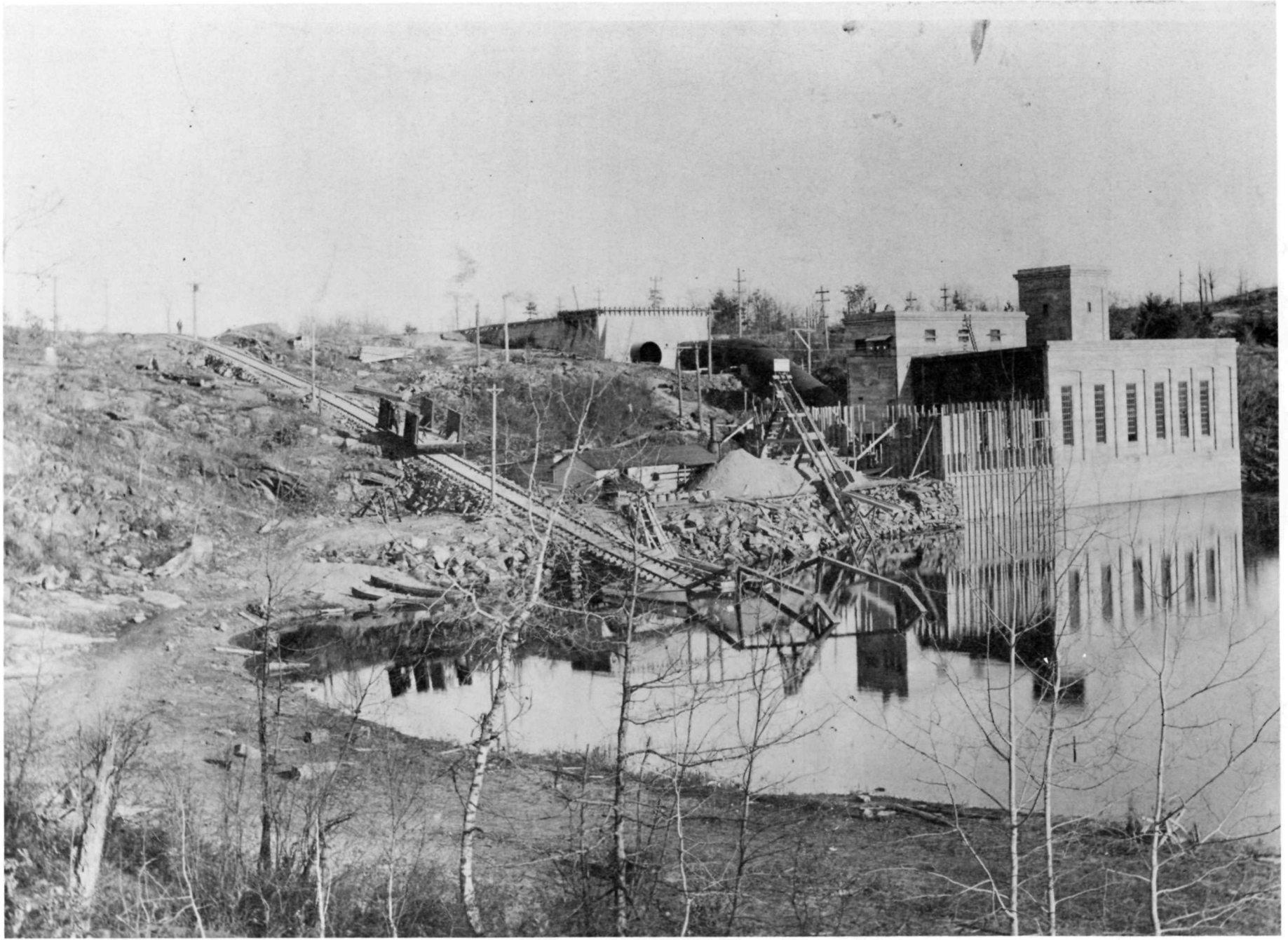
construction which remained.²⁰ The last updating of these estimates was made as late as 1958²¹ and then consideration turned to the alternate possibilities of one lock at Big Chute or a more efficient marine railway. In the meantime the construction site deteriorated. Several of the buildings were used from time to time until 1944 to house personnel working on the marine railway, but the others were left to the mercy of nature. By 1956 there were only three buildings left standing, all by the shore line: the storage building still holding the lock machinery; the old office; a log icehouse built later by a marine railway employee. That year the Trent Canal Office gave permission to a troop of Boy Scouts to camp in the area and remove some of the deteriorating structures as part of their Conservation Year project.²² As for the government owned portion of the contractor's plant, Trent Canal officials removed most of it in 1924 to Swift Rapids for storage and had the site tidied up.²³ Later in the 1950's or 1960's a scrap dealer bought and removed the remaining metal material at the camp site including the railway ties and possibly even the lock machinery.²⁴ The most visible physical remnant of the plant is the "Long Tom" engine-type boiler originally borrowed from the Inland Construction Co. camp at Swift Rapids which stands near the Little Chute lock pit in the same place where it was used in 1919 and 1920 to power the equipment. The relative inaccessibility of the area also has meant that there still are considerable signs of the camp structures that have been preserved from despoilment including floors of buildings and garbage dumps. And of course the three core walls, the sluice gate and the lock pit at Little Chute remain as striking evidence of the original canal project to circumvent this stretch of the Severn River (see Figures 46, 47, 48 and 49).

Marine Railway and Associated Structures

Early in 1916, Mr. W. H. Bennet, MP for Simcoe East suggested to the Minister of Railways and Canals, Hon. Frank Cochrane that a tramway be built at Big Chute to portage boats across the land obstacle. His rationale was that the anticipated early completion of locks at Washago and Swift Rapids left Big Chute as the only block in establishing a through waterway from Lake Simcoe to Georgian Bay.¹ Mr. Bennet's appeal brought quick action from Trent Canal authorities who studied the possibility of a marine railway to be used as a temporary expedient at Big Chute until the permanent canal works were built. Plans were made in the spring of 1916 to lay tracks across the land adjacent to the Big Chute powerhouse.² On 31 August 1916, the York Construction Co. was given an extension to their contract to construct the Port Severn lock, to build the marine railway on a cost plus ten percent basis.³

Before the railway was designed, F. S. Lazier, the government engineer responsible for the Severn Division conducted a survey of boat-owners in the area who would be using the facility and consulted with boat builders at Waubaushene and Collingwood to determine the approximate size of boats the railway would be required to handle.⁴ The survey revealed that most of the local boats were relatively small and so the railway was constructed to transfer vessels approximately 36' in length, 9 feet in

50 Big Chute marine railway, 1917. (Trent-Severn
Waterway Office.)



51 Lower end of Big Chute marine railway, 12 Nov. 1917.
(Trent-Severn Waterway Office.)



52 Upper end of Big Chute marine railway showing control building, two railway cars and trestlework supporting track before reconstruction, 1923. (Trent-Severn Waterway Office.)



beam and 5 tons in weight.⁵ The York Construction Co. began work on the project in November, 1916 and finished by the same month the following year. A railway track was built across the land barrier to the north of the power house. Fill was used where possible to make a smooth bed for the track over the uneven terrain but at the summit trestles were built. The ground did not permit the railway to be laid easily in a single gradient so there were several changes in the grade over its course. At the lower end the railway terminated with a submerged slip supported by a crib and at the upstream end there was a length of submerged track.⁶ A control house on the north side of the track at the upstream end housed an electric winch. The control house was a one storey L shaped wooden building with roof slanting front to rear.⁷

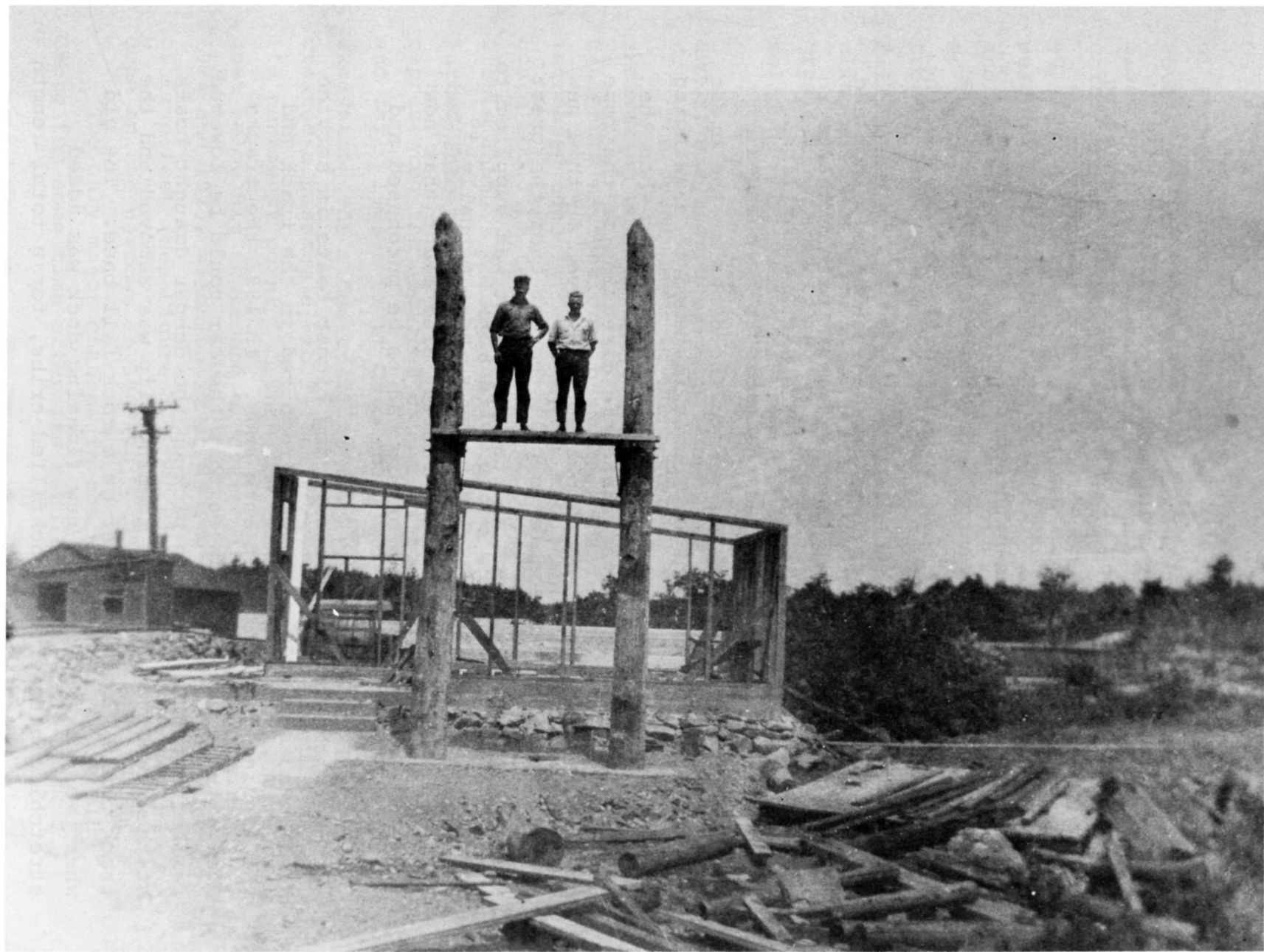
The railway car, built mainly of Douglas Fir was 24 feet long open at both ends with sides just over 6 feet high and placed just over 9 feet apart. The car travelled on 18 inch wheels of standard gauge.⁸ A second wooden flat bed car was built later to carry canal construction materials and scows across Big Chute. Also some time before 1920 a wharf was added to the slip at the lower end of the railway (see Figures 50, 51, and 52).⁹

Basically the operation of transferring a boat across the Big Chute land barrier involved placing the boat on the railway car which was hauled along the tracks by a cable pulled by an electric winch. To illustrate, a boat approaching Big Chute from either end would float onto the partially submerged railway car where it rested on cushions fore and aft and be secured by means of ropes. The car was then raised out of the water and along the tracks to the crest of the hill by a cable affixed at one end to the edge of the car and at the other to an electrically driven

two speed winch. At the summit the car was brought to a halt and the cable switched to the other end of the carriage which was then pushed to the reverse incline by hand and lowered into the water at the other end.¹⁰ This simple operation was complicated by one rather serious flaw in the original system. The control house at the summit was so disadvantageously placed that the marine railway operator could not see the downstream side of the railway. To partially ameliorate this difficulty, a mark was placed on the cable so that when the operator was at the winch controls he could estimate when the railway car was entering the water at the lower end. But to ensure safety when the car was out of sight of the cabin he was forced to put the winch in low gear and cross the crest of the hill to watch the operation.¹¹

Public pressure for further development of the waterway caused the government in 1922 to decide on increasing the capacity of the marine railway at Big Chute as well as the one which had been installed at Swift Rapids in 1919 when the lock project there was discontinued. A Trent Canal construction crew made considerable improvements to the marine railway at Big Chute to allow the transfer of boats weighing about 15 tons, 13 feet 6 inches a beam and between 50 and 65 feet in length depending on configuration.¹² To accommodate these larger boats a much bigger railway car was placed in service. This car, built of both structural steel and wood, was thirty-eight feet long and 13 feet 9 inches wide between the sides. There were four sets of adjustable cushioned saddles to support the boats' hulls. The wheels were 33 inches in diameter but as in the previous car the gauge was standard.¹³ The most significant changes in operation involved the control house and the hauling method. A new control house was

53 New marine railway control building under construction
at Big Chute, 1923. (Trent-Severn Waterway Office.)



built on the south side of the railway closer to the downstream side. Like the former control building this was a one storey L shaped wooden structure with a slanting roof. The building was constructed on a rock fill foundation topped with concrete to give the operator sufficient height to see both ends of the railway (see Figure 53).¹⁴ The old control building was converted to a storage shed and served this purpose until torn down in the 1960's.

As previously the railway car was hauled by winch and cable along the track but there was an important change in the way the cable was attached to the car. As outlined above the old system required the cable to be changed manually from one end of the car to the other at the crest of the hill. But now the cable was fastened to a swinging link under the floor midway down the car so that when the car crossed the summit the change in direction of the rope pull was automatically accommodated. But even in this new system the winch was unable to pull the car over the crest and a supplementary block and tackle outfit was supplied to do this when the load was too heavy to move manually.¹⁵ The increased capacity of the railway also meant that new motors, winches and transformers had to be purchased and installed.¹⁶

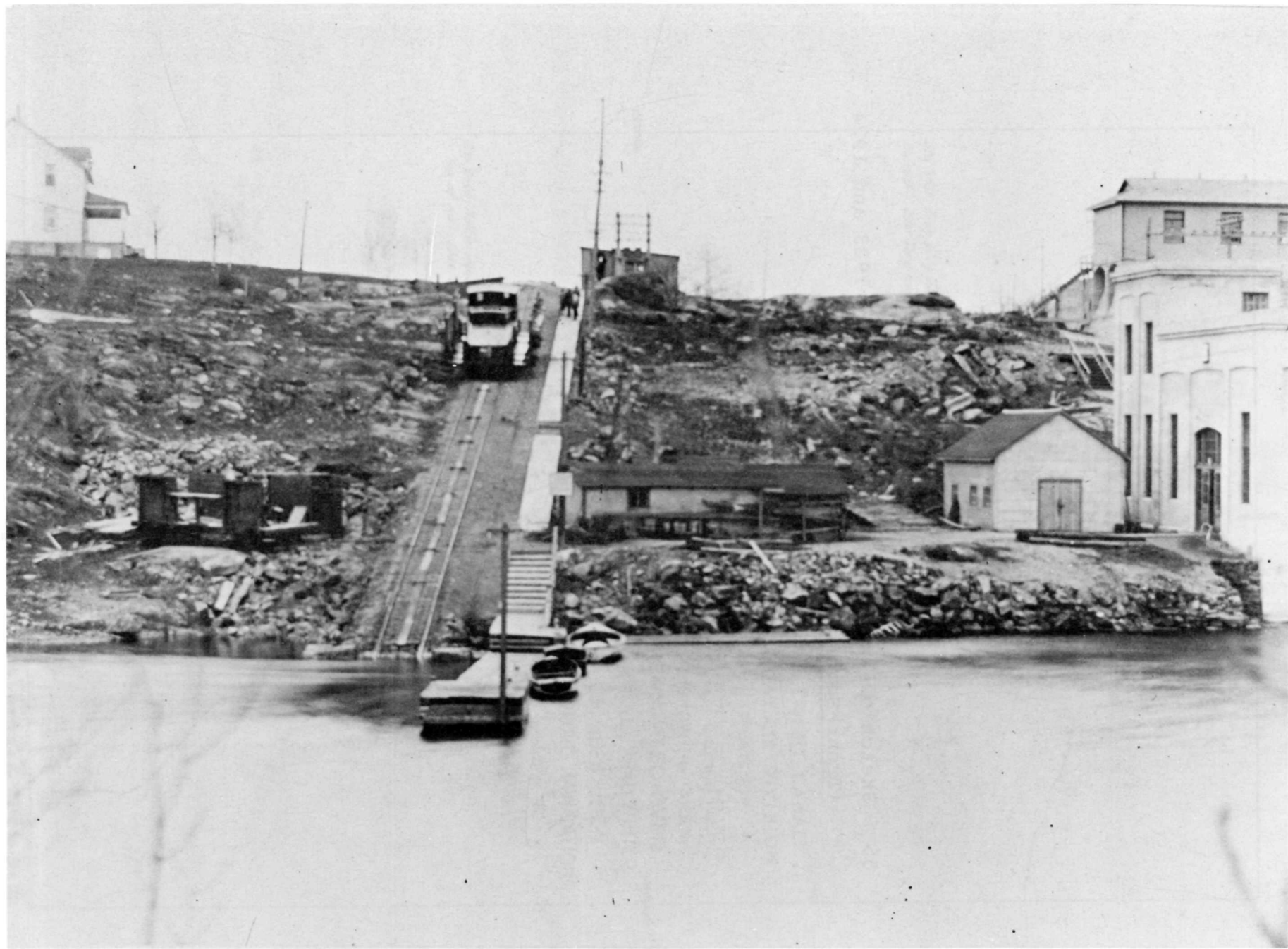
With the larger cars carrying bigger boats in service at Big Chute improvements were required in the track and the landing facilities at both ends. In 1923 the tracks were extended at the ends so that the car could be lowered farther into the water to pick up the deeper draught boats. At the downstream end the landing slip was removed and the track built 13 feet farther on a rock fill base. The old wharf was taken out and a new floating dock was added stretching between two rockfilled cribs, for a total length

of about 80 feet. At the upper end the track was extended seven feet into the water and a combination wharf and floating dock 116 feet long supported by four rock filled cribs was installed.¹⁷ When the new railway car went into service in 1923 it soon demonstrated that its heavier weight could not be borne by the old track. Decaying ties and uneven settlement made operation of the railway unsafe, so in early 1924 a Trent Canal crew rebuilt the track. The trestle work at the top was torn out and replaced by rock fill. The entire contour of the hill was altered to eliminate the varying grades and a single continuous gradient from the crest to the lower end was achieved in a solid base of rock fill. At the upper end the submerged portion of the track was found to have settled unevenly and it was shored up with stone (see Figure 54).¹⁸

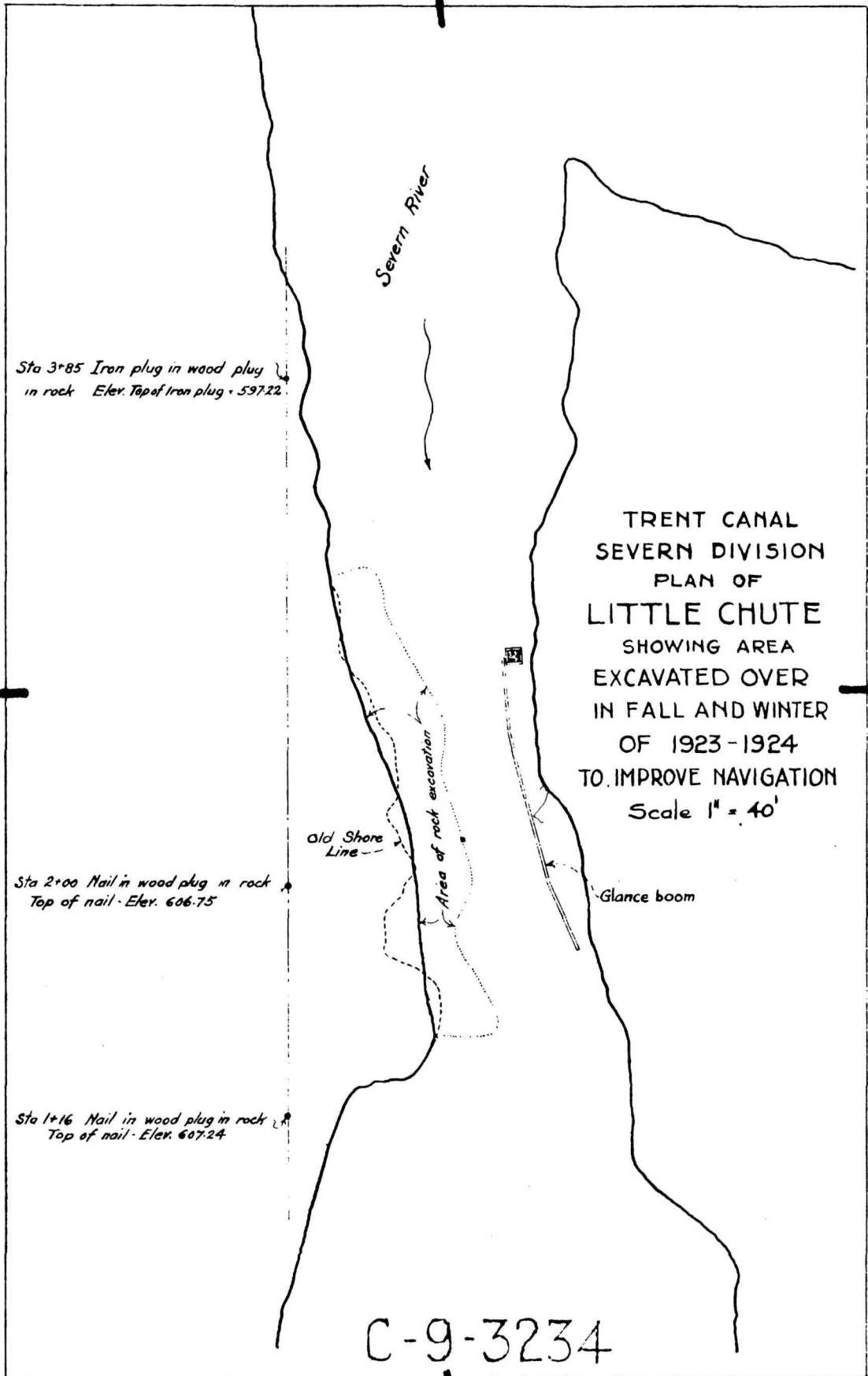
The development of the waterway also resulted in excavation work in the Big and Little Chute areas to eliminate navigational hazards. The installation of the increased capacity railway in 1923 meant that much bigger boats would be using the narrow and dangerous channel at Little Chute. A long shallow ridge of submerged rock jutted into the swiftly moving water from the west bank and represented the greatest danger to boaters. In late 1923 and early 1924 a Trent Canal crew worked on the channel excavating the ridge until by the spring of 1924 they had created a passage $6\frac{1}{2}$ to $7\frac{1}{2}$ feet deep and 50 feet wide at its narrowest point.¹⁹ Then the crew moved to the narrows just below Big Chute and excavated the passage there in 1924 and 1925, widening it to 45 feet with a minimum depth of five feet (see Figure 55).²⁰ Some more excavating was done on the narrows in 1969-70.²¹

The only major changes in the Marine Railway at Big Chute for some time after its rebuilding in 1923-1924

54 Big Chute marine railway sometime between 1924 and 1928 with original car discarded on north side of track. (Trent-Severn Waterway Office.)



55 Sketch of excavation at Little Chute, 1923 and 1924.
(Trent-Severn Waterway Office.)



TRENT CANAL
SEVERN DIVISION
PLAN OF
LITTLE CHUTE
SHOWING AREA
EXCAVATED OVER
IN FALL AND WINTER
OF 1923-1924
TO IMPROVE NAVIGATION
Scale 1" = 40'

C-9-3234

T-22-453.5

56 Big Chute marine railway showing walkway on north side of the track, ca.1962. (Trent-Severn Waterway Office.)



involved the public walkway and the dockage at the lower and upper ends. A plan of the site drawn in 1923 indicates an intention to place a walkway on the south side of the track between the new control house and the lower dockage area.²² Such a boardwalk appears in a photograph taken some time between 1924 and 1928 (see Figure 54)²³ and it seems likely that it was constructed in 1924 when the major alterations were made to the bed of the railway. This walkway appeared again in a 1934 site plan²⁴ and its continued presence is suggested by a 1939 plan which shows the lower dockage still in place to the south of the railway. However, by 1956 both the walkway and the lower dockage had been removed from the south side of the track and similar structures built on the north side. The new boardwalk was 4 feet descending the steepest part of the hill from near the crest and terminating at a timber wharf about 100 feet long by 8 feet wide, supported by three 8 by 10 feet cribs.²⁵ This walkway was extended in 1962 to the roadway at the upstream end to ensure passenger safety (see Figure 56).²⁶ This change was facilitated by the raising with fill of a low-lying area in the projected path in 1954 or 1955.²⁷ Sometime between 1924 and 1956 the upper wharf had been extended from about 116 feet to about 140 feet with the addition of two more rock filled cribs for a total of six.²⁸ Ten years later the upper wharf was rebuilt with the top planking and the first three rounds of timber cribs being replaced.²⁹

Not long after the two new marine railway facilities on the Severn River were built the question of increasing their capacities again arose and has persisted to the present day with the growth in size of vessels and frequency of usage of the waterway. In 1932, the Department of Railways and Canals decided to allow the maximum weight of vessels to be

carried on the marine railways to increase to 20 tons from 15, without any upgrading of equipment. The Superintendent Engineer of the Trent Canal, A. L. Killaly, forcefully protested this revision:

I do not wish to have you think that I have any desire to oppose the Department's decision to increase the weight of a boat to be taken over the Marine Railways, nevertheless I feel it but proper that I should repeat the opinion expressed to you on the telephone, ie. that increasing the permitted load will, some day, result in a catastrophe and probable loss of life.³⁰

Mr. Killaly's prediction missed its mark somewhat and the regulations stood until 1950 when an accident on the Big Chute Marine Railway causing damage to a cruiser and 24 hours interruption in service was found to be due to the railway hauling too heavy a load.³¹ Canal officials then considered increasing the weight capacity of the hauling apparatus by decreasing the weight of the carriage, and the wooden portion of the Big Chute car was rebuilt replacing heavy oak and fir planks with thinner sheets of cedar. But because no changes were made to the Swift Rapids car there was no repeal of a 1951 decision to limit the loads to 15 tons.³²

In 1958 and 1959 the Department of Transport gave very serious consideration to installing new 35 ton capacity Marine Railways at Big Chute and Swift Rapids.³³ This project advanced to the point that the old railway cars were dismantled and work crews were tearing up the track to meet a tentative deadline of 1 July 1959 for the improved facility to open for navigation. Then on 9 March 1959 departmental officials decided to postpone major

reconstruction of the Big Chute operation and the old cars were rebuilt, the winch overhauled and the tracks restored.³⁴ The following year new winches were installed at both marine railways with a 20 ton capacity.³⁵

Throughout the 1960's the government pondered the question of the proper transfer facility to build at Big Chute, weighing concerns of efficiency against potential ecological dangers and economic considerations. In September 1960 a firm of planning consultants recommended that lift locks be constructed at Big Chute and Swift Rapids but this proposal was rejected, mainly due to the high cost involved. Early in January, 1962, the Department of Transport announced a major programme to modernize the Trent-Severn Waterway with the principal items being the provision of conventional locks at Swift Rapids and Big Chute.³⁶ The Swift Rapids lock was completed in 1965 but the one at Big Chute was postponed due to ecological considerations. It came to light that the land obstacle at Big Chute prevented the parasitical sea lamprey access to Lake Simcoe where they would endanger the fishing industry. Tests revealed that no precautionary measures could ensure that the lamprey would not pass through the locks at Big Chute.³⁷

Increases in traffic along the waterway which could be accommodated by the locks made the marine railway at Big Chute the principal bottleneck on the canal system.³⁸ To alleviate the situation Trent Canal authorities began an extensive project to improve the existing facilities at Big Chute until the decision was made on a new type of transfer system. In 1969 a new larger control building was completed which gave the canalman a much better view of the operation and also contained public washrooms. The new one storey structure, built mostly of wood, is basically

rectangular in shape $41\frac{1}{2}$ feet long by 20 feet wide with a control tower on the west corner which rises several feet above, and juts out $3\frac{1}{2}$ feet in width, from the main portion of the building (see Figure 57).³⁹ The railway car was modified, increasing its width slightly by changing the side planking and raising the cushion supports.⁴⁰ This change was made to allow transfer of modern boats with different hull configurations. Two hundred lineal feet of five feet wide aluminum floating docks were installed to alleviate the boat congestion caused by long waiting periods particularly in the basin below Big Chute. At the lower end one of these floating docks was attached to the existing wharf and another was placed out in the basin opposite the marine railway terminus. At the upstream side the floating dock was attached as an extension to the wharf. By 1972 the ties and tracks had been replaced⁴¹ and the following year a public address system was installed in the railway car.⁴² By 1976 a new storage shed 10 feet by 12 feet was erected just south-west of the control building, a small parking lot constructed just north of the railway, and extensive landscaping carried out.⁴³

The lamprey problem forced the government to abandon plans to place a lock at Big Chute and consider the idea of installing a much more sophisticated marine railway. An engineering study completed in 1975 outlined a viable project for constructing such a facility south of the powerhouse.⁴⁴ Parks Canada favoured this scheme, let a contract for its construction and work began in January 1977 to be completed for the 1978 navigation season.

57 Present marine railway control building at Big Chute,
1977. (Photo by author.)



58 Marine railway operator's house nearly completed,
1928. (Trent-Severn Waterway Office.)



Marine Railway Operators' Dwelling Houses

The first operator, Jack Sinclair, took charge of the Marine Railway at Big Chute on 9 July 1917 and he lived for eleven years in his control house. This small building had a compartment in the rear big enough for two beds and the operator ate his meals at the hydro boarding house (see Figure 52).¹ In 1928 when Mr. Sinclair planned to be married authorities had a house built for him on the south side of the river just upstream from the Big Chute dam. The house was a 1½ storey frame structure 24 feet long by 30 feet wide with an attached summer kitchen and wood shed in the rear 11 feet by 16 feet, and an open verandah in front measuring 7 feet by 30 feet. At the front of the house was an attractive dormer with French door leading onto a small balcony. The structure was provided with electricity and septic tank. The unfinished basement contained a coal furnace, and the first floor had a separate dining and living rooms, a bedroom and a kitchen. A central staircase led to the second floor where there were two bedrooms, a bathroom and a small den or sewing room (see Figure 58).² The building was erected at a cost of \$5,508.91.³

There were few major alterations made to this house over the years but it was well maintained. In 1949 and 1950 the operator himself installed a water pressure system, hot water tank, electric heater and kitchen sink. Two years later the Trent Canal authorities put in new

bathroom fixtures and a septic tank.⁴ A forced air oil furnace was added to the house in 1960 or early 1961.⁵ With improved road access to lock stations and shorter duty hours for lockmasters the Canals Division of the Department of Transport decided in 1967 to discontinue providing houses on site for canal personnel.⁶ So in 1969 when a change in staff left the Big Chute operator's house vacant it was declared surplus⁷, and was sold dismantled and removed from the site two years later.⁸

The Trent Canal Office brought in an assistant marine railway operator, James Angus, in 1921, who was to help with the boat transfers and to act as watchman at the construction camp site near Little Chute. This man lived with his family at the old camp site in a single storey shack which had formerly been one of the camp buildings (see Figure 59).⁹ In 1941, the then assistant operator Eric Downing, obtained official authorization to build himself a new house on the camp site using old building materials supplemented by some new material supplied by the Trent Canal.¹⁰ Some time in this period Mr. Downing also built a log icehouse, an apiary and honey processing shack.¹¹ Fire from an old woodstove burned this home down in 1944 and Mr. Downing moved temporarily into the old marine railway control house.¹²

In 1945, Mr. Downing built himself a second home using a combination of old and new materials, this time on an adjacent lot east of the operator's house.¹³ As described in 1956 this 1½ storey frame house was 28 feet long by 24 feet wide with a full basement and 1350 square feet. The probable layout of the house can be surmised as separate dining and living rooms, kitchen and bathroom on the main floor; two bedrooms and large open hallway upstairs; an open porch at the rear and an enclosed porch on

- 59 Shack used by assistant marine railway operator, 1926.
(Trent-Severn Waterway Office.)



60 Assistant marine railway operator's house at Big
Chute, ca.1973. (Trent-Severn Waterway Office.)



the side (see Figure 60).¹⁴ Originally a coal furnace had been installed in the house but it was replaced by forced air by 1961.¹⁵ Mr. Downing constructed another apiary and honey production shack back of this house, then just before the road was built through to Big Chute in 1951 he constructed a double garage of wood which still stands on the east side of the road just before the Big Chute dam.¹⁶ The Trent Canal Office declared this dwelling house surplus in 1973 and it was sold dismantled and removed from the site the following year.¹⁷

Commercial Establishments in the Immediate Big Chute Vicinity

At the time the canal construction camp was operating between Big and Little Chutes one William Templeman opened a pool room and general store in the vicinity to cater to the workers. This small wooden building was located just at the narrows where the basin below Big Chute empties into the Severn River. The store closed down shortly after the camp folded and the building was moved a short piece farther down the north side of the river where it is presently used as a cottage.¹

Shortly after the Second World War a hydro employee Harry Fell, opened up a marina just off canal property to the north of Big Chute. This facility was purchased about five years ago by Mr. and Mrs. J. D. Bradley who provide refueling, berths, boat storage, and parking for cottagers.²

In 1960 the Trent Canal Office issued a licence to Mrs. M. E. Mallory to operate a refreshment booth on canal property at Big Chute, by the roadway just south of powerhouse raceway and since then the small concession has been run by the family.³

Some Significant Aspects of the History of the Big Chute Site

In providing a detailed structural history of Big Chute certain aspects of human activity emerged worthy of separate comment. The site is unusual because of its unique boat transfer system, the unfinished canal structures and the operational power plant. These features can be related directly to the story of the overall development of the waterway and the people involved in it.

The history of the development of the Trent-Severn Waterway is essentially episodic because the canal was built in stages between 1833 and 1920. Though there were both reasons and rationales for the government to open a through transportation system between Lake Ontario and Georgian Bay, there was no imperative. The Severn River was the last section to be completed in the canal and the delays in its development are characteristic of those which plagued the overall construction of the waterway. Big Chute could be used as an illustration of this crucial point.

Pre-first World War plans for the opening of the Severn River to through water transportation involved construction of locks and water control structures sufficient to make this section equal with the rest of the canal in its capacity to allow passage of vessels. The government revived the original plans after the war

but this time recession interfered and only the Washago lock was completed. The desire of canal authorities in succeeding years to implement the original concept on the Severn River was not realized until the growth of recreational boating after the Second World War created an imperative for development. The Marine Railway at Swift Rapids was succeeded by a modern lock leaving Big Chute the bottleneck of the system until the recent decision was made to replace it with a modern facility.

The marine railway itself is an interesting historical feature because of its novelty and the technology involved. Already a distinct contrast from the familiar lock as a boat transfer system, the existing marine railway will be technologically different from the modern installation being built. Most of the present railway is less than ten years old and probably nothing exists of the first system in operation between 1917 and 1923, except perhaps some of the underwater cribwork supporting the piers. However, precise structural data is available on earlier railway facilities including the original. An irony concerning the marine railway is that though the first systems did not serve well their purpose of water transportation, quite by accident they did prevent damage to the Lake Simcoe fisheries by acting as a barrier to sea lamprey from Georgian Bay.

The remains of the 1919-1920 canal project at Big Chute, the core walls, the sluice dam, the lock pit and the steam boiler, are vivid examples of an earlier attempt at canal construction and the incongruity of the forested setting of these water control structures adds to their interest. Sufficient data is available to explain and graphically illustrate the purpose of the canal which was to circumvent a difficult reach of the river and overcome a

difference in water elevation. Excellent photographs are also extant which show the methods and progress of construction.

In researching this project material gathered on the camp which stood at the canal construction site supplied a glimpse at the life of the canal labourer. Interviews with the long-time residents of the area, including one man who worked on the project, have provided some information on the origins of the men, how they lived, worked and entertained themselves at the camp, and documents supply evidence of skills and pay scales. The camp was large, housing about 230 men, and was relatively self contained because of its isolation. Historical evidence about the buildings and their construction is far from complete but enough is known to provide structural information on a camp shanty.

The hydro facility at Big Chute was built in 1910-1911 and was bought by Ontario Hydro in 1914 becoming the first power development owned and operated by the commission which was making a progressive move towards public ownership of utilities. Most of the power-related structures at Big Chute date back to the first years of the facility's existence and subsequent modifications usually have been minor. The operation of the powerhouse is basically unchanged with the one major exception that it is now run by remote control whereas it used to require a crew to maintain.

The need for a crew to run the powerhouse obliged Ontario Hydro to support a colony at Big Chute because there was no road to the site until 1951. A boarding house was run for bachelors and several married operators were provided with houses. This group and the two marine railway operators and their families constituted the

community at Big Chute. Though these people had many of the twentieth century amenities such as electricity and indoor plumbing, the very remoteness of their location required of them life-styles and self-reliance foreign to most urban dwellers (see Figure 61). For instance, the lack of a road meant that all travel in the summer was by boat and in the winter was by horse-drawn sleigh. In the late 1940's when the building of a permanent road to Big Chute meant the winter road was impassable for the sleigh, the residents surmounted this problem by building themselves "scoots", shallow draught floats driven by airplane engine and propeller which can travel over ice and water. A reasonably complete account of the history of this colony has been gathered from area residents including much anecdotal material. When the colony was closed down in the late 1960's all the residential structures were removed. However, good documentary and oral evidence exists concerning most of the hydro buildings.

The history of Big Chute provides good examples of the broader, social, political and technological aspects of the Trent-Severn waterway. That human activity at this site has taken place relatively recently has aided the historian in collecting information which can support Parks Canada's planning and interpretative programmes for Big Chute.

61 Big Chute resident taking blocks of ice cut upstream to ice storage building. (Original photograph owned by Victor Conner, Coldwater, Ont.)



Endnotes

Lumbering Operations

- 1 Local histories, newspapers and oral history interviews have yielded a good deal of useful information regarding the lumber trade. Though the various sources tend to corroborate each other in a general sense there are conflicts over precise dates. Where this occurs the text indicates that the date is approximate.
- 2 Muskoka and Haliburton, 1615-1875: A Collection of Documents, Ontario Series of the Champlain Society, Vol. 6, ed. and intro. F. B. Murray (Toronto: University of Toronto Press, 1963), p. XCIV.
- 3 Trent-Severn Waterway Office, Peterborough, (hereafter referred to as TSWO) File No. 4600-2-5, Vol. 5, D. Gormley to Joan Balch, 15 February 1973.
- 4 F. B. Murray, op. cit., pp. 300-301 and 303-304.
- 5 M. Rawson, The Story of Port Severn: Yesterday, To-day and Tomorrow (Jacket title, "Port Severn Crossroads Community"), (Midland: Simcoe Press Limited, 1976), pp. 22-24.
- 6 F. B. Murray, op. cit., pp. 303-304.
- 7 Midland Free Press, n.d.
- 8 Barrie Northern Advance, 22 March 1888, p. 4.
- 9 Interviews with Jack O'Hara, Midland, 3 February 1977, and Thomas Bonneville, Peterborough, 11 February 1977. (Transcripts and/or tapes of all oral history interviews referred to in this report are held by the Historical

- Section, Parks Canada, Ontario Region Office).
- 10 Interviews with Margaret Fitzpatrick, Orillia, 4 February 1977, and Walter Bark, Toronto, 10 February 1977.
 - 11 Jack O'Hara interview.
 - 12 Personal papers of John Caston, Ministry of Natural Resources Office, Coldwater, Ontario, List of Sawmills in Simcoe Co.
 - 13 F. MacArthur, Green and Sparkling: The Story of Washago (Washago: John Dymont Printing, 1975), pp. 12-14.
 - 14 F. B. Murray, op. cit., pp. 300-301.
 - 15 Personal papers of John Caston, Monty Leigh narrative, Old Sawmills, February 1969.
 - 16 Interviews with Richard Tatley, Streetsville, 9 February 1977, and Thomas Stanton, Port Stanton, 4 February 1977.
 - 17 Interview with John Dymont, Port Stanton, 4 February 1977.
 - 18 F. MacArthur, op. cit., pp. 11-12.

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- 2 F. B. Murray, op. cit., p. ixl.
- 3 F. MacArthur, op. cit., pp. 33-34.
- 4 F. B. Murray, op. cit., pp. xcii and cii.
- 5 Richard Tatley interview.
- 6 R. I. Wolfe, "The Summer Resorts of Ontario in the Nineteenth Century," Ontario History Vol. 54, No. 3 (Sept. 1962), p. 152.

- 7 "Picturesque Canada": The Northern Lake of Canada, their Summer Resorts and Sporting Districts (Toronto: Hunter Rose and Co., 1876), p. 24.
- 8 Ibid., 1879 edition, pp. 33-34.
- 9 A. F. Hunter, A History of Simcoe County, 1909, 2 vols.; Vol. 1 reprinted 1948, (Barrie: Historical Committee of Simcoe County), pp. 139-141.
- 10 Thomas Stanton interview.
- 11 Sparrow Lake and Severn River (Toronto: Canadian Northern Ontario Railway, ca. 1910).
- 12 Richard Tatley interview.
- 13 F. MacArthur, op. cit., pp. 34 and 83.
- 14 Thomas Stanton interview.
- 15 TSWO File No. 4284-37A-6, E. J. Walsh report on survey of Severn River, 1905, updated 28 February 1907, pp. 29-30.
- 16 A. F. Hunter, op. cit., pp. 139-141.
- 17 Interview with Mary Fitzpatrick Bark, Toronto, 10 February 1977; Margaret Fitzpatrick interview.
- 18 Interview with Walter Dean III, Coldwater, 1 February 1977.
- 19 Personal papers of Walter Dean III, Coldwater, Circular letter no. 33 of Severn River Improvement Association, 2 January 1926.
- 20 Walter Bark interview.
- 21 Walter Dean III interview.
- 22 Thomas Bonneville interview.
- 23 Jack O'Hara interview.
- 24 Thomas Bonneville interview.
- 25 M. Rawson, op. cit., pp. 32-33 and 40.
- 26 Interview with Susan Smith, Toronto, 8 February 1977.
- 27 R. I. Wolfe "...Patterns of Tourism...".
- 28 Interviews with Jack O'Hara, Walter Dean III and

Susan Smith.

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(Toronto: Annual Review Publishing Co.) Vol. 4, p. 185.
- 2 Ibid, 1907, Vol. 7, pp. 155-156.
- 3 E. J. Walsh report, 1907.
- 4 TSWO Annual Report of Superintending Engineer of
Trent Canal (hereafter referred to as TSWO Annual
Report) 1913-1914, pp. 10-13.
- 5 Ibid, 1913-1914, 1914-1915, 1915-1916 and 1916-1917.
- 6 Ibid, 1915-1916, pp. 10-11.
- 7 See Part II of this report for detailed study of the
Big Chute lock station.
- 8 TSWO Annual Report, 1916-1917.
- 9 TSWO, York Construction Co. Final Estimate Book
for Section No. 1, p. 303.
- 10 Thomas Bonneville interview.
- 11 TSWO Annual Reports, 1919-1920, p. 13, and 1920-
1921, p. 12.
- 12 TSWO Annual Report, 1920-1921, p. 12.
- 13 Ibid, 1959-1960, p. 20.
- 14 TSWO Files formerly held at Washago office and
now at Peterborough, map of area; Mary Bark interview.
- 15 Walter Bark interview.
- 16 TSWO Annual Report, 1918-1919, pp. 12-13.
- 17 R. N. Beattie, "The Impact of Hydro on Ontario", in
Ontario Historical Society Profiles of a Province
(Toronto: Bryant Press, 1967), p. 168.
- 18 TSWO Annual Report, 1918-1919, pp. 10-14.
- 19 TSWO, Field Notebook No. 265, sketch made October-
November, 1923.

- 20 TSWO Annual Report, 1928-1929, p. 16.
- 21 Ibid, 1917-1918, p. 12-14.
- 22 Ibid, 1920-21, pp. 20-32.
- 23 Ontario Hydro Electric Power Commission, File Severn River No. 157-3/1, memorandum by F. M. Near, 16 April 1970.
- 24 Ontario Hydro-Electric Power Commission, File No. CA 6133, Commission Minute, Agenda 15, 11 April 1973.
- 25 TSWO Annual Report, 1954-1955, p. 26.
- 26 F. MacArthur, op. cit., p. 23.
- 27 TSWO Annual Report, 1964-1965, p. 8.

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- 3 Hydro-Electric Power Commission of the Province of Ontario (hereafter cited as HEPC), Annual Report for 1910-1911, p. 138.
- 4 Victor Conner interview.
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- 6 Trent-Severn Waterway Office, Peterborough (hereafter referred to as TSWO), Photograph Book No. 1, photos nos. 88 to 98; Victor Conner interview.
- 7 HEPC, Annual Report for 1910-1911, pp. 139 and 163; interview with Mary Bark, Toronto, 9 February 1977.
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- 12 TSWO, File No. 8708/T90-114, T. J. Ryan to G. Carson, 25 September 1945.
- 13 HEPC, Toronto, Records Section, Design and Plans Division, Plan No. 45-23002. (Originals of all Hydro plans referred to in this report are held by the Records Section of the Design and Plans Division. Copies are held by the Historical Section, Parks Canada, Ontario Region Office).
- 14 HEPC Plan No. 45-23005.
- 15 TSWO Photo Book No. 1, photograph No. 99; Original photograph in the possession of Walter Dean, Coldwater. (Copies of Dean photographs are held by the Historical Section, Parks Canada, Ontario Region Office).
- 16 HEPC Annual Report for 1915-1916, p. 146.
- 17 TSWO File No. 529³, E. P. Murphy memorandum, 7 April 1919; Victor Conner interview.
- 18 TSWO File No. 4806-7, W. A. Bowden to York Construction Co., 5 October 1917.
- 19 TSWO York Construction Co.'s Final Estimate Book, pp. 358-362.
- 20 TSWO Files Nos. 4806-7 and 529³, various letters.
- 21 TSWO Plan No. C-9-3229B; TSWO File No. 4806-7, various photographs of finished work.
- 22 HEPC Plan No. 4-d-4.
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- 28 HEPC Plan No. 45-23013.
 - 29 PCORO, Planning Division, op. cit.
 - 30 TSWO File No. 8708/T90-114, G. Carson to T. J. Ryan, 25 September 1945.
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 - 33 TSWO File No. 4274-11 Vol. 1, G. E. Easton to D. A. H. Farmer, 27 May 1969.
 - 34 TSWO Annual Report, 1969-1970, p. 12.
 - 35 Personal papers of Walter Bark, Toronto. Sworn statement by R. J. Bark dated 11 December 1912 re shoreline flooding near Big Chute.
 - 36 TSWO Map No. TC-39-1329.
 - 37 Photograph in possession of M. Fitzpatrick, Orillia; Victor Conner interview.

Hydro Colony Structures. The Dwelling Houses

- 1 Victor Conner interview.
- 2 TSWO Field Notebook No. 266, sketch of Big Chute area, November 1923.
- 3 Victor Conner interview.
- 4 HEPC Annual Report 1917-1918, p. 247.
- 5 HEPC Plans Nos. 3-5-18028 and 45-18013.
- 6 Victor Conner narrative. Unpublished autobiographical manuscript is in possession of author, Coldwater, Ontario. Copy of narrative is held by Historical Section, PCORO.
- 7 HEPC Annual Reports 1924-1925 and 1925-1926.

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- 9 Victor Conner interview.
- 10 HEPC Annual Reports 1930-1931, 1931-1932 and 1932-1933.
- 11 HEPC Plan No. 3467ES.
- 12 TSWO File No. 4274-11, C. F. S. Tidy to W. D. Bennett, 22 October 1968.
- 13 Victor Conner narrative, p. 115.
- 14 Jack O'Hara narrative Big Chute Schoolhouse. Unpublished paper is in possession of author, Midland, Ontario. Copy of narrative is held by Historical Section, PCORO.
- 15 Victor Conner interview.
- 16 Ibid. (The hydro colony residents had earlier bought the table from William Templeman who had owned a pool hall and general store at the narrows below Big Chute basin in the early 1920's).
- 17 TSWO File No. 1650-5, Vol. 1, J.A. Wells to A. L. Killaly, 24 June 1932.
- 18 Victor Conner narrative, pp. 24-25.

Miscellaneous Hydro Structures

- 1 Victor Conner interview.
- 2 TSWO Map No. C-10-3318.
- 3 Victor Conner interview.
- 4 Victor Conner narrative, pp. 1-2.
- 5 HEPC Annual Report 1919-1920, p. 10.
- 6 Victor Conner interview.
- 7 TSWO Field Notebook No. 266, Sketch of Big Chute area, November 1923.
- 8 Victor Conner narrative, pp. 17-18.
- 9 HEPC Plan No. 3467ES.

- 10 HEPC Plan No. 910042ES.
- 11 HEPC Plan No. 14126; TSWO File No. 2507-29;
Victor Conner interview.
- 12 Interview with Thomas Bonneville, Peterborough, 11
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- 13 TSWO Field Notebook No. 266, op. cit.
- 14 HEPC, Annual Report 1919-1920, p. 10.
- 15 HEPC Plan No. 3467ES.
- 16 PCORO, Planning Division, aerial photograph,
n.d.
- 17 Victor Conner interview, and narrative, pp. 50 and
131.

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- 1 TSWO File No. 4806-7, various plans and photos.
- 2 Victor Conner interview.
- 3 TSWO File No. 2507-29, A. G. Brenneman to W. D.
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- 5 TSWO Files formerly held at Washago office and now
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- 6 Ibid., Work Force Return, October 1919.
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- 8 Jack O'Hara interview.
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18 March 1919.
- 10 Ibid., York Construction Co. to D. E. Eason, 12 June
1919.
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- 12 TSWO Annual Report, 1919-1920, pp. 13-14.
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- 14 TSWO Plan No. C-9-3208.
- 15 TSWO Annual Report, 1920-1921, p. 13.
- 16 Jack O'Hara and Victor Conner interviews.
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- 20 TSWO File No. 1650-5, Vol. 1, Revised Estimates, 1931.
- 21 TSWO File No. 4274-1, H. Granz, 13 November
1958.
- 22 TSWO File No. 4606-2-F, various correspondence.
- 23 TSWO Annual Report, 1924-1925, p. 46.
- 24 Victor Conner interview.

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15 February 1916.
- 2 TSWO Plans Nos. C-9-3220 and C-10-3336.
- 3 TSWO Washago Files, W. A. Bowden to York
Construction Co., 31 August 1916.
- 4 Ibid., Divisional Engineer to A. J. Grant, 8 March
1916.
- 5 TSWO Annual Report, 1923-1924, p. 12.
- 6 TSWO Plan No. C-10-336.

- 7 TSWO Field Notebook No. 266, Sketch of Big Chute area, November 1923.
- 8 TSWO Plan No. C-9-3225.
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- 12 TSWO File No. 4274-1A, General Description of Marine Railways at Swift Rapids and Big Chute After Reconstruction in 1923, 19 February 1929, p. 1.
- 13 Ibid., p. 9; and TSWO Plan No. C-7-307.
- 14 TSWO Field Notebook No. 266, op. cit.
- 15 TSWO File No. 4274-1A, General Description, etc., 19 February 1929.
- 16 TSWO Annual Report, 1923-1924, p. 12.
- 17 TSWO Plan No. C-9-3221; TSWO Field Notebook No. 226, op. cit.
- 18 TSWO Annual Report, 1923-1924, p. 14.
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- 26 TSWO File No. 4274-I, J. N. Betournay to W. D. Bennett, 27 June 1958; TSWO Annual Report, 1962-1963, p. 13.
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- 29 TSWO Annual Report, 1965-1966, p. 8.

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- 37 TSWO Files Nos. 4274-1, and 4274-11, Vol. 1, various correspondence.
- 38 TSWO File No. 4274-90-1, J. I. Nicol to A. E. Collin, 22 August 1973.
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- 43 Ibid., 1975-1976, p. 6.
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- 1 Victor Conner interview.
- 2 TSWO Plan No. C-9-3228.
- 3 TSWO File No. 4602-1, Superintending Engineer to A. E. Dubuc, 22 May 1930.
- 4 Ibid., J. M. Marshall to T. J. Ryan, 14 February 1953.
- 5 TSWO Annual Report, 1960-1961, p. 24.

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- 9 TSWO File No. F 110.
- 10 TSWO File No. 8708-T90-114, Superintending Engineer to E. B. Jost, 8 February 1944.
- 11 Jack O'Hara interview.
- 12 Victor Conner interview.
- 13 TSWO File No. 8708-T90-114, various correspondence.
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- 15 TSWO Annual Report, 1960-1961, p. 24.
- 16 Jack O'Hara interview.
- 17 TSWO File No. 2554-1, Vol. 7, various correspondence.

Commercial Establishments in the Immediate Big Chute
Vicinity

- 1 Jack O'Hara interview; original photograph in possession of Jack O'Hara, Midland. (Copies of O'Hara photographs are held by Historical Section, PCORO).
- 2 Victor Conner interview.
- 3 TSWO File No. 8606-T90-520, various documents.

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