

INDIAN AFFAIRS BRANCH
DEPARTMENT OF CITIZENSHIP AND IMMIGRATION

Resources & Industrial Division

PROPOSAL FOR
PLANNING AND ENGINEERING
SERVICES

FEASIBILITY STUDY -
CAUSEWAY AND RELATED ACCESS
ROADS TO CHRISTIAN ISLAND IN
GEORGIAN BAY

C.C. PARKER & ASSOCIATES LTD.
Consulting Engineers

C.C.



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London

HAMILTON

Ottawa

OCTOBER, 1966

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SECRET
 DEPT. OF INDIAN AFFAIRS
 AND NORTHERN DEVELOPMENT
 MAR 15 1993
 MINISTRE DES AFFAIRES INDIGENES
 ET DU NORD CANADIEN



C. C. PARKER AND ASSOCIATES LIMITED
CONSULTING PROFESSIONAL ENGINEERS
688 QUEENSDALE AVE. E., HAMILTON

October 25, 1966.

Mr. T. L. Bonnah,
Regional Superintendent of Development,
Department of Indian Affairs,
Medical Dental Building,
1849 Yonge Street,
Toronto 7, Ont.

Dear Sir:

In reply to your letter of September 30, 1966, we are pleased to submit this proposal for an engineering survey of a causeway to Christian Island.

Investigation of the site and study of the hydrographic maps, indicates that the route of the causeway is fixed within a comparatively narrow band. This band runs from the mainland to the southern tip of the peninsula shown on the maps as Bar Point. The engineering study would involve accurate soundings of the channel and lateral adjustment of the causeway location to obtain the most economical location. It has also been noted that there is an existing gravel road in passable condition leading to each end of the proposed causeway. These roads would be subject to a much heavier traffic volume if a causeway was built. It is assumed therefore, that the study should include the reconstruction of the access roads on the Mainland and on the Island to an acceptable standard.

The engineering study consists of four sections as follows:-

- (1) The preparation of a plan, profile and cost estimate for the reconstruction of the Mainland access road from the County Road to the southern end of the proposed causeway.

Continued.....



Mr. T. L. Bonnah,
Regional Superintendent of Development,
Department of Indian Affairs

- 2 -

October 25, 1966

- (2) The preparation of a plan, profile and cost estimate for the reconstruction of the Island access road from the Agency office to the northern end of proposed causeway at Bar Point.
- (3) The preparation of a plan, profile and cost estimate of the causeway, and related structures and services including navigation lighting, etc.
- (4) A report on the economic feasibility of a causeway.

Brief biographies of the personnel who would take part in the study are included. Also included is a short list of projects recently completed or presently under way by our firm.

It is understood that no decision will be made on this proposal, until the report on the economic prospects for the Island is received. We look forward to working with you on this most interesting project at that time.

Yours very truly,

C. C. PARKER AND ASSOCIATES LIMITED,



H. C. Nixon, P. Eng. ,
Director of Highway Operations,
for
C. C. Parker, P. Eng. ,
President.

HCN-ap

STUDY PROCEDURE

1. Plan, profile and cost estimate for reconstruction of existing main-land access road. This is a township road running from the County Road at the nineteenth concession to the north end of the proposed causeway, a distance of 2.0 miles. Work required consists of running a centre line on the ground, taking profile levels and establishing a grade line to required standards. This is a routine engineering procedure. Our firm has done hundreds of miles of this type of work for the Ontario Department of Highways and various Counties and Townships.
2. Plan, profile and cost estimates for reconstruction of the Island access road. This is an existing road lightly graded and partially gravel surfaced. It runs from the Agency office to Bar Point, a distance of 4.8 miles. Work required is the establishing of a centre line on the ground, taking profile levels and establishing a grade line. Again this is routine procedure as in (1) above.
3. Plan, profile, typical cross sections and cost estimates for causeway proper. This operation requires accurate soundings of the channel, on a grid pattern, probably three hundred feet in width. An accurate contour plan of the channel bottom can then be plotted. This will permit location of the causeway centre line on the most economical alignment. We propose to do this sounding on conjunction with the firm of Emery Holzl of Montreal. This firm specializes in this type of work and is equipped with the most modern electronic equipment. An adaptation of the Tellurometer known as a "Hydro-Dist" would be used in conjunction with sonic sounders.

Consultation with the Department of Transport Marine Services Branch and with the Department of Public Works who administers the Navigable Waters Protection Act, will be required in connection with the bridge clearances for boat passages, and for navigation lighting and marking.

Considerable study will also be necessary to determine the minimum height of embankment required to withstand wave action.

4. Economic Feasibility -

This will be a cost benefit analysis taking into consideration the cost of the proposed causeway compared with ferry service that will be required over a future period of twenty years, including the cost of board and room for school children.

Under this heading all possible subsidies from Province and County will be examined.

BASIS OF PAYMENT

We propose to do the work on the basis of payroll costs plus 100%, as outlined in Scale 2 II of the Schedule of Fees for Consulting Engineers published by the Ontario Association of Professional Engineers. The services of the sounding specialists will be invoiced at cost, as well as living expenses on the job, car mileage, long distance telephone charges and other out-of-pocket expenses.

<u>Estimate of Engineering Costs</u>		\$
(1) Plans, profiles and cost estimates for mainland access road		1,400.00
(2) Plans, profiles and cost estimates for Island access road.....		3,100.00
(3) Plans, profiles, typical cross-sections of proposed causeway, preliminary design of bridge and navigation lighting -		
(a) Electronic sounding equipment and operators at cost.....		5,000.00
(b) Boat rental with operator.....		900.00
(c) Engineering supervision, plotting, draughting, etc.....		4,350.00
(d) Plans, profiles, cross-sections and cost estimates for causeway and bridge....		1,000.00
(4) Economic feasibility.....		400.00
		<hr/>
		\$16,150.00
		<hr/> <hr/>

The above figure can be considered a maximum or upset figure. Allowance has been made for possible standby while waiting for favourable weather in sounding operations. It is also assumed that the field work will be done in the interval May to October 1967. No allowance has been made for combating snow or ice conditions.

APPENDIX "A"

THE FIRM
AND
EXPERIENCE IN RECENT PROJECTS

The firm C. C. PARKER AND ASSOCIATES LIMITED

This Canadian firm since its foundation in Hamilton in 1946, has been solely and continuously engaged in the provision of consulting engineering services.

The firm has a staff of 180 including highway, bridge, structural, mechanical, electrical, mining, sanitary engineers, engineering specialists, technologists, craftsmen, and service employees.

This particular project will be under the supervision of the highway department which has carried out many miles of highway planning and design for the Ontario Department of Highways, as well as for the Counties of Grey, Haldimand, Halton, Wentworth, and others. Preliminary and final design of bridges has been carried out for the Counties mentioned as well as several other Counties.

The firm's Head Office is located in the C. C. PARKER BUILDING at 688 Queensdale Avenue East, Hamilton, Ontario.

The firm also maintains Branch Offices in London, Ontario; Ottawa, Ontario, and Port of Spain, Trinidad.

Experience

Some projects on which the firm is working, or has recently completed, are as follows: -

1. Highway 403, Hamilton Area; functional plan (completed), design (last phase nearing completion), construction supervision (in progress)
Client : Ontario Department of Highways - a \$15,000,000.00 project.
2. Queen Elizabeth Way - Functional Planning Niagara Falls to Fort Erie (in progress)
Client: Ontario Department of Highways.
3. Prescott Line Railway Relocation Ottawa - Functional planning (completed), design (completed), construction supervision (in progress).
Client: National Capital Commission.
4. Kingston - La Salle Causeway - Feasibility study which includes a bridge for small boat passage.
Client: Department of Public Works of Canada.
Report submitted but not yet released.
5. Rideau Ferry - Preliminary report on proposed high level bridge.
Client: County of Lanark and Counties of Leeds and Grenville (A copy of Report is enclosed).
We have been instructed to proceed with design and preparation of tender documents.
6. Development Road, Vineland - Functional planning and design of rural highway. Two sections completed, remaining section to be tendered in near future.
Client: Ontario Department of Highways.
7. Scotch Block Dam - Preliminary study of proposed dam.
Client: Department of Resources and Development of Ontario.

APPENDIX "B"

PERSONAL RECORD SHEETS FOR THOSE WHO
WILL HAVE RESPONSIBILITIES FOR THE PROJECT:-

C. C. Parker.....	Principal
H. C. Nixon.....	Project Manager
J. W. Disher.....	Planning and Cost Estimates
D. C. Cramm.....	Preliminary Bridge Design and Cost Estimates
J. O. Tweedy.....	Navigation Lighting

CLARENCE COLLINS PARKER - Civil Engineer



Education - University of Toronto, B.A.Sc. in C.E.
(Structural) 1929
University of Toronto, MA.Sc. in C.E. 1933

Member - Association of Professional Engineers of the
Province of Ontario
Association of Consulting Engineers of Canada
Highway Research Board
American Concrete Institute
American Society of Civil Engineers
Canadian Standards Association
Canadian Good Roads Association

Experience

1953 - date - C. C. Parker and Associates Limited
Hamilton, London, Ottawa
President

1958 - date - C. C. Parker & Parsons, Brinckerhoff Ltd.,
Hamilton, New York, Port of Spain
Executive Vice-President

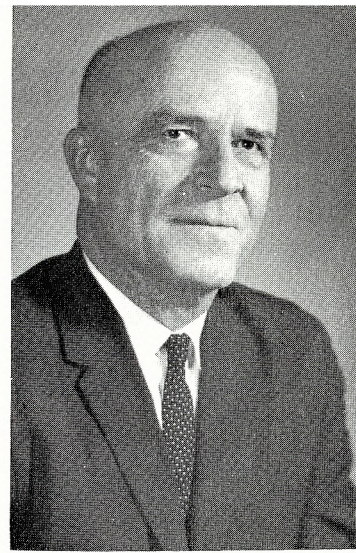
1946 - 1953 - Sole Owner, Consulting Practice, Hamilton
and London

Practice has embraced design of buildings (industrial, institutional and commercial), highway and railways bridges, movable bridges, highways, streets, expressways, defence (civil) works, and municipal works. Highway practice includes traffic studies and reports, functional planning, design and supervision of construction.

Clarence Collins Parker

- 1946 - Hamilton Bridge Company Limited
Head of Structural Design Division.
- 1939 - 1946 - Hamilton Bridge Company Limited
Estimator and Designer, Structural
Division.
- 1934 - 1939 - Department of Highways, Ontario
Field Engineer & Bridge Design
Engineer.
- 1932 - 1933 - University of Toronto
Research Bursary and Study leading
to M.A. Sc.
- 1931 - James, Proctor and Redfern,
Consulting Engineers, Toronto
Bridge Designer
- 1929 - 1930 - Manitoba Bridge & Iron Company
Winnipeg, Manitoba
Steel Detailer and Designer

HARRY C. NIXON - Civil Engineer



Education - University of Manitoba B.Sc. in C.E. 1930

Member - Association of Professional Engineers of the
Province of Ontario
Canadian Good Roads Association

Experience

May 1965 to date - C. C. Parker and Associates Limited
Director of Highway Operations

Project Manager. Trinidad Transportation
Study

May 1957 to May 1965-C. C. Parker and Associates Limited
Director

Manager Highway Department. Supervising functional planning and designing of Highway 403, Hamilton for Department of Highways, Ontario, and numerous rural and urban road improvement projects.

Chief, Highway Design Division on the Highway Survey Team in Burma, which included planning and design of Insein Road, Rangoon.

Supervised field surveys and design of airport extension for RCAF at Churchill, Manitoba, and pre-engineering of various King's Highway projects for Department of Highways of Ontario and County Development Roads.

1954 - 1957 - Department of Public Works of Canada
Highway Division

Construction Engineer. Supervised planning and design and organized engineering supervision of construction of Trans-Canada Highway

Harry C. Nixon

(80 miles) through Banff and Yoho Rocky Mountain National Parks, \$20,000,000 project.

General supervision of construction of highways in National Parks in Nova Scotia, Prince Edward Island, Alberta, British Columbia and North West Territories.

1950 - 1954 - Royal Canadian Air Force Headquarters
Ottawa

Aerodrome Development Engineer. Responsible for design and construction of aerodromes, access roads and related services, for R. C. A. F. across Canada, the Northwest Territories and Yukon.

1945 - 1950 - Department of Highways, Ontario
North Bay District

District Maintenance Engineer. Responsible for reconstruction and maintenance of district highway system. Organized supervision of work contract; Department Day Labour Forces for reconstruction and maintenance of roads and bridges; and first Bailey Bridging Team for the Department. Chairman of Editorial Committee producing the Maintenance Manual for the Department of Highways, Ontario. This manual with some revisions is still in use.

1944 - 1945 - Royal Canadian Air Force

Air Navigation Officer - Flight Lieutenant.
Instructional duties in Canada and United Kingdom.

1933 - 1941 - Department of Highways, Ontario

District Construction Engineer. Location and construction of highways in Kenora district of Northern

Harry C. Nixon

1933 - 1941 - Ontario. One of the early advocates of the use of photogrammetry, in highway location.

1930 - 1933 - Department of Highways, Ontario

Locating Engineer & Resident Engineer on construction in Kenora District of Northern Ontario.

1928 - 1930 - Canadian Pacific Railways

Resident Engineer.

JERROLD W. DISHER - Civil Engineer

Education - Queen's University, Kingston, Ontario
B. Sc. , in C. E. 1951

Member - Association of Professional Engineers
of the Province of Ontario
- Institute of Traffic Engineers
- Engineering Institute of Canada

Experience

1965 - date - C. C. Parker and Associates Limited

Manager Highway Department.
Responsible for planning and design of all rural, and urban freeways, expressways, roads and streets. Also all municipal works such as storm and sanitary sewers, water distribution, pumping and treatment.

1953 - 1965 - C. C. Parker and Associates Limited

Assistant Manager, Highway Department
Supervisor of design office co-ordinating planning and design for all highways and municipal projects.

Project Manager
Functional Planning of Q. E. Way from Niagara Falls to Fort Erie Peace Bridge.

Location Engineer
Hamilton Area Transportation Study (1963-64)
responsible for planning and staging of all freeways, expressways, highway and street improvements, and grade separation studies.

Project Engineer
Functional Planning and Design of the Chedoke Expressway (Highway 403) through Hamilton, and for several Department of Highway road improvement contracts including Highway 401, Highway 11 and 17, Development Road 683 between Highway 57 and the Q. E. Way, and for the City of Hamilton, the Q. E. W. Connections (Burlington Street Expressway)



Jerrold W. Disher

Traffic Engineering studies for Town of
Pembroke, City of Ottawa and City of
St. Thomas.

Design Engineer
Roads and sewers, Camp Pettawawa;
Community rink and pool complexes,
Hamilton; Bridge and structural design,
various locations.

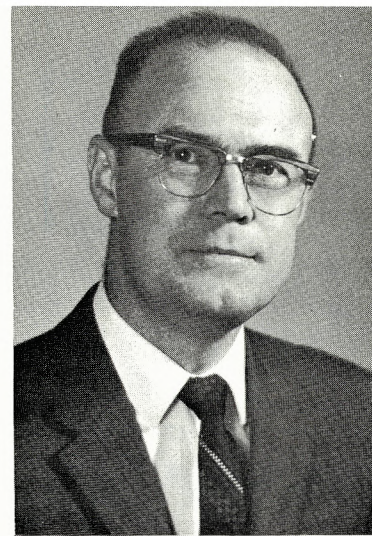
1952 - 1953 - Central Mortgage and Housing Corporation

Assistant to the Project Engineer
in charge of construction of Barracks,
Mess, and Administration Buildings,
and associated services, such as storm
and sanitary sewers, watermains,
underground steam and electrical distribution
systems, and roadways.

1951 - 1952 - Disher Farrand Construction Company

Co-owner, paving and general contracting.

1947 - 1951 - Queen's University.



DAVID CAMERON CRAMM - Civil Engineer

Education - University of Toronto B.A. Sc., in C.E. 1948

Member - Association of Professional Engineers of the
Province of Ontario
Engineering Institute of Canada
American Concrete Institute
American Welding Society
International Association for Bridge and
Structural Engineering
American Society of Civil Engineers

Experience

1957 - date - C.C. Parker and Parsons, Brinckerhoff Ltd
Director and Secretary

1948 - date - C.C. Parker and Associates Limited
Vice President and Director

Manager of Bridge Department. Responsible for all bridge planning, design and supervision of construction for 25 to 50 bridges each year with an aggregate value in excess of \$15,000,000.

Field Co-ordinator, on loan to Department of Highways, Ontario, for duration of County and Urban Road Needs Study. 1957 - 1958.

David Cameron Cramm

- 1950 - 1953 - Manager - London Office.
Independent administration and responsibility
for design of many bridges and buildings in
London and south-western Ontario.

- 1948 - 1950 - Bridge and Highway Designer and Inspector.



JOHN OLIVER TWEEDY - Electrical Engineer

- Education - Queen's University
B. Sc. in Engineering Physics 1948
- Member - Association of Professional Engineers of
the Province of Ontario

Experience

- 1966 - date - C. C. Parker and Associates Limited
Manager of Electrical Department

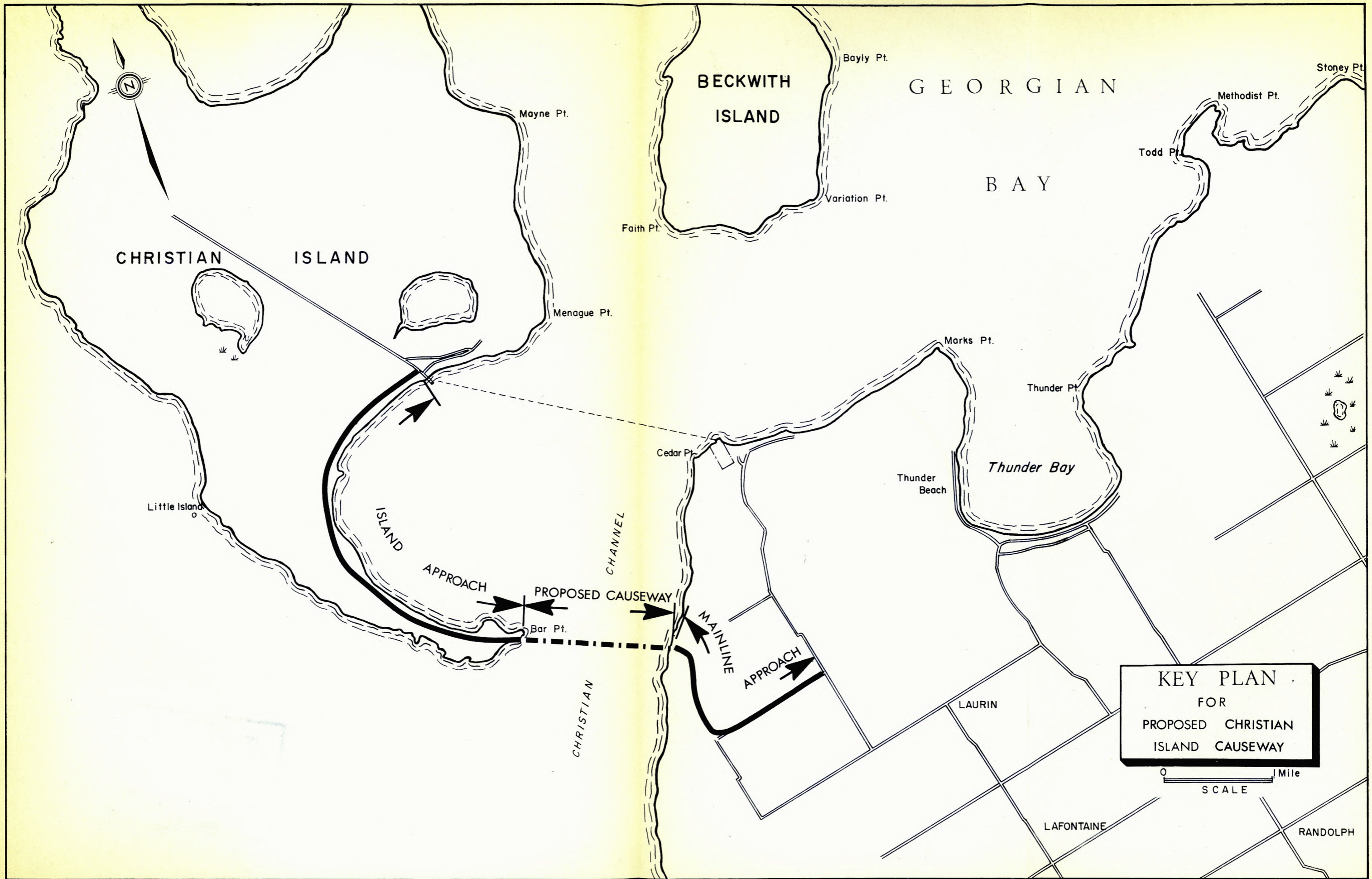
- 1949 - 1966 - Steel Company of Canada Limited

Electrical Project Engineer for a large rolling mill installation.

Power System Engineering - Specifications, layout and commissioning of transformers, rectifiers, cables and switchgear for industrial power systems - Protection and relaying studies, relay co-ordination, and short of circuit studies.

Electrical Engineering of overhead cranes, conveyors, fans, pumps and rolling mill drives.

Electrical Test - Repair and maintenance of electrical instruments and power system protective relays.



KEY PLAN
FOR
PROPOSED CHRISTIAN
ISLAND CAUSEWAY

0 1 Mile
SCALE