

**HISTORY OF WATER LEVEL GAUGES**

**LOWER GREAT LAKES**

**AND**

**INTERNATIONAL SECTION OF THE  
ST. LAWRENCE RIVER**

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INTERNATIONAL SECTION OF THE

ST. LAWRENCE RIVER

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HISTORY OF WATER LEVEL GAUGES  
LOWER GREAT LAKES  
AND  
INTERNATIONAL SECTION OF THE  
ST. LAWRENCE RIVER

INTRODUCTION

Requirement for internationally coordinated hydraulic and hydrologic data. The Great Lakes-St. Lawrence River system extends southerly and easterly from the headwaters of tributary streams in northern Minnesota and western Ontario some 2,000 miles to the Gulf of St. Lawrence in the Atlantic Ocean. The system drains a great interior basin of more than 295,000 square miles to the outlet of Lake Ontario, reaches almost halfway across the North American continent, and borders upon eight states of the United States and two provinces of Canada. This vast series of lakes and rivers is shared by the United States and Canada. The joint use of these waters poses numerous international problems in the solution of which the two countries need coordinated basic data.

Prior to 1953, data pertaining to the hydraulic and hydrologic factors of the Great Lakes and St. Lawrence River were collected and compiled independently by the responsible federal agencies in Canada and the United States, with only superficial and informal correlation of some of the data. As a consequence, the data in many instances were developed on different bases and datum planes and were divergent in many respects. This situation resulted in a large volume of study and evaluation by each country of the data used by the other in the solutions of international problems.

Establishment of international study. The quantity and scope of the international problems were greatly increased by the advent of extremely high lake levels in 1952 and by the imminent power and navigation development in the St. Lawrence River system. Recognizing that continued independent development of the basic data was illogical under the circumstances and that early agreement upon the hydraulic and hydrologic factors was of paramount importance, the Corps of Engineers, United States Army, and the Departments of Transport, Mines and Technical Surveys, and Resources and Development, Canada, opened negotiations early in 1953 for the purpose of establishing a basis for development and acceptance by both countries of identical data. The negotiations culminated in a meeting of representatives of the interested agencies at Ottawa on 7 May 1953.

At the meeting, the Coordinating Committee on Great Lakes Basic Hydraulic and Hydrologic Data was formed to study the problem and to establish a basis of procedure. This Committee was established advisory to the agencies of the United States and Canada who are charged with the responsibility for collecting and compiling the Great Lakes hydraulic and hydrologic data. The Committee was constituted as follows:

CANADA

T. M. Patterson  
Water Resources Division  
Department of Resources  
and Development  
Chairman

J. E. R. Ross  
Geodetic Survey of Canada  
Department of Mines and  
Technical Surveys

D. M. Ripley  
Special Projects Branch  
Department of Transport

UNITED STATE

G. A. Hathaway  
Corps of Engineers  
Department of the Army  
Chairman

E. W. Nelson  
Corps of Engineers  
Department of the Army

W. T. Laidly  
Corps of Engineers  
Department of the Army

The present membership of the Coordinating Committee is as follows:

CANADA

D. F. Witherspoon  
Inland Waters Directorate  
Environmental Conservation Service  
Ontario Region, Environment Canada  
Chairman

B. J. Tait  
Ocean and Aquatic Sciences  
Fisheries and Oceans, Canada

P. P. Yee  
Inland Waters Directorate  
Environmental Conservation Service  
Ontario Region, Environment Canada  
Secretary

UNITED STATES

D. J. Leonard  
Corps of Engineers  
Department of the Army  
Chairman

P. C. Morris  
National Oceanic and Atmospheric  
Administration  
Department of Commerce

R. E. Wilshaw  
Corps of Engineers  
Department of the Army  
Secretary

Messrs. C. M. Cross, A. T. Prince, R. H. Smith, and W. D. Forrester have also served as Canadian members of the Committee while Messrs. L. D. Kirshner, F. F. Snyder, H. F. Lawhead, F. A. Blust, B. G. DeCooke, and C. I. Thurlow have served as United States members of the Committee.

Four working groups, designated the River Flow Subcommittee, the Vertical Control Subcommittee, the Lake Levels Subcommittee, and the Physical Data Subcommittee, were formed to assist the Coordinating Committee in its work. These subcommittees were directed to conduct the required technical studies through collaboration of the appropriate agencies of Canada and the United States. In September 1969, the Vertical Control and the Lake Levels Subcommittees were combined into one body known as the Vertical Control-Water Levels

Subcommittee. The Subcommittee was normally composed of three members from Canada and three from the United States. The following persons served as members at various times during the progress of the work reported herein:

CANADA

G. C. Dohler  
L. P. Robertson  
B. E. Russell  
E. A. MacDonald  
J. M. Murakami  
M. H. Quast  
B. J. Tait  
F. W. Young  
R. Gareau  
D. A. St. Jacques

UNITED STATES

B. G. De Cooke  
C. F. Feldscher  
C. F. Ellingwood  
R. M. Berry  
D. R. Rondy  
H. A. Lippincott  
R. E. Wilshaw  
C. T. Whalen

Authority. The Committee instructed its Vertical Control-Water Level Subcommittee to prepare a report in detail on all gauges used in obtaining water levels of Lakes Erie and Ontario, and their outflow channels.

Purpose and Scope. The purpose of this report is to document the history of the operation of water level gauges on the lower two Great Lakes and their outflow rivers. Detailed information about the water levels available is given for each gauging station. This report supercedes and updates information on water level gauges published earlier in two volumes by the Coordinating Committee.

Acknowledgements. The Coordinating Committee acknowledges and expresses its appreciation of the cooperation received from the Canadian Hydrographic Service, Department of Fisheries and Oceans; the Water Survey of Canada, Department of the Environment; the Detroit District, U. S. Army Corps of Engineers and the National Ocean Survey, (National Ocean Survey reorganized as National Ocean Service in November 1982) National Oceanic and Atmospheric Administration of the United States. The information used in compiling this report has been taken from the files of the two principal agencies concerned, the Canadian Hydrographic Service and the National Ocean Survey. The operation and records of Great Lakes water level gauging stations were transferred from the United States Lake Survey (U.S.L.S.), U.S. Army Corps of Engineers, to the National Ocean Survey in October 1970. The individual efforts of Robert A. Mace, Frank M. Sullivan, James S. Moore, Leonard T. Schutze, and Harry A. Lippincott are gratefully acknowledged by the Committee in researching and compiling the information in this report. In addition, the Committee is particularly grateful to Brenda S. Vostreys for typing revisions of the manuscript.

## PRESENTATION OF DATA

Presented herein are the histories of all Canadian and United States gauging stations that the Committee considered have provided useful water level data on the lower Great Lakes, the International Section of the St. Lawrence River and the Niagara River for various periods of time through December 1982. For each station the following data are given:

1. A comprehensive statement as to how datums were established.
2. A chronological table listing the period when water level observations were made, the controlling bench mark and its elevation, the type of record, and the abbreviation for the operating agency during each observation period. See Plates \_\_\_ for the periods of operation of water level gauging stations. The following agency abbreviations have been used in the text.

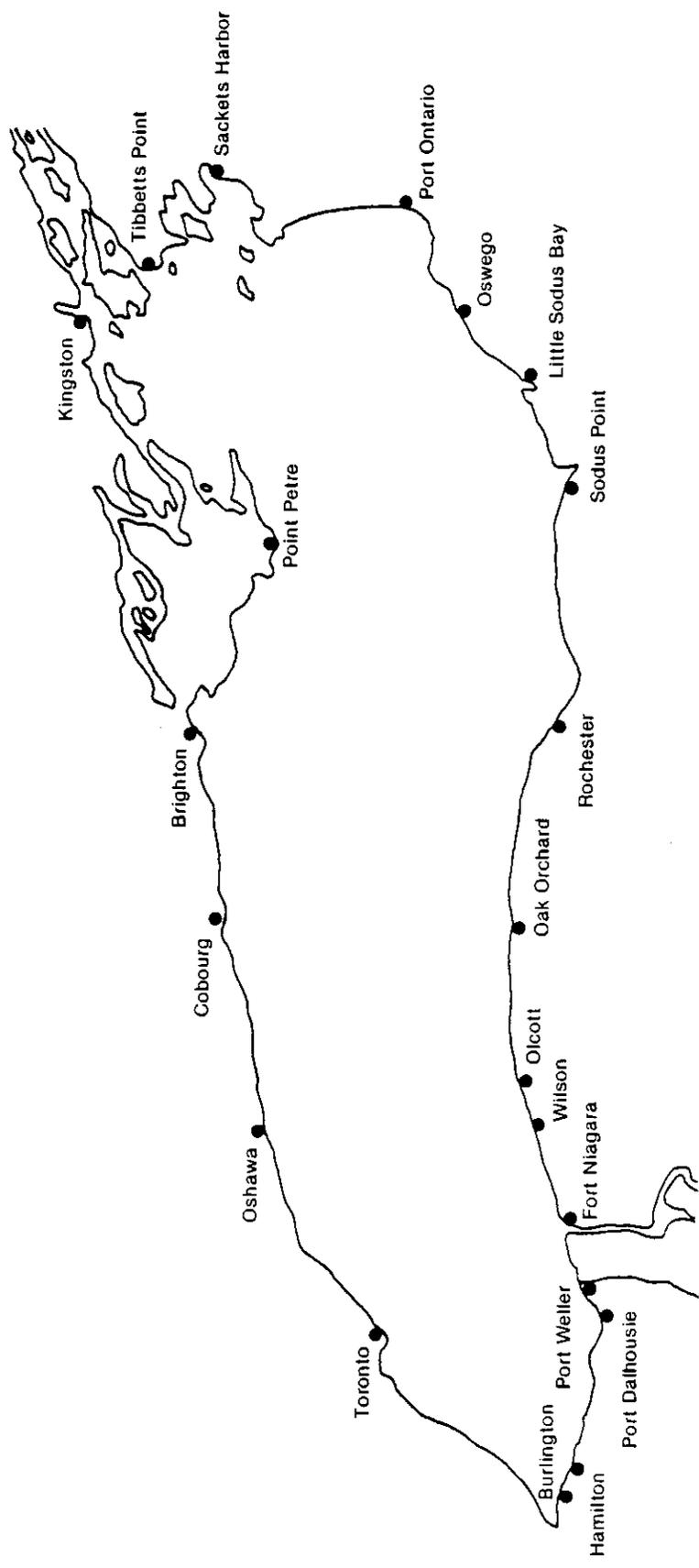
C.H.S.	- Canadian Hydrographic Service
D.W.C.	- Deep Waterways Commission
D. of R. and C.	- Department of Railways and Canals
D.O.T.	- Department of Transport
D.P.W.	- Department of Public Works
D.W.P.B.	- Dominion Water and Power Bureau
W.R.B.	- Water Resources Branch
O.P. Co.	- Ontario Power Company
H.E.P.C.O.	- Hydro-Electric Power Commission of Ontario
O.H.E.	- Ontario Hydro-Electric
P.A.S.N.Y.	- Power Authority of the State of New York
Shipbldg. Co.	- Kingston Shipbuilding Company
T.H.C.	- Toronto Harbour Commission
L.C.A.	- Lake Carriers Association
U.S.C. & G.S.	- United States Coast and Geodetic Survey
U.S.E.O.	- United States Engineering Office
U.S.L.S.	- United States Lake Survey
N.O.S.	- National Ocean Service

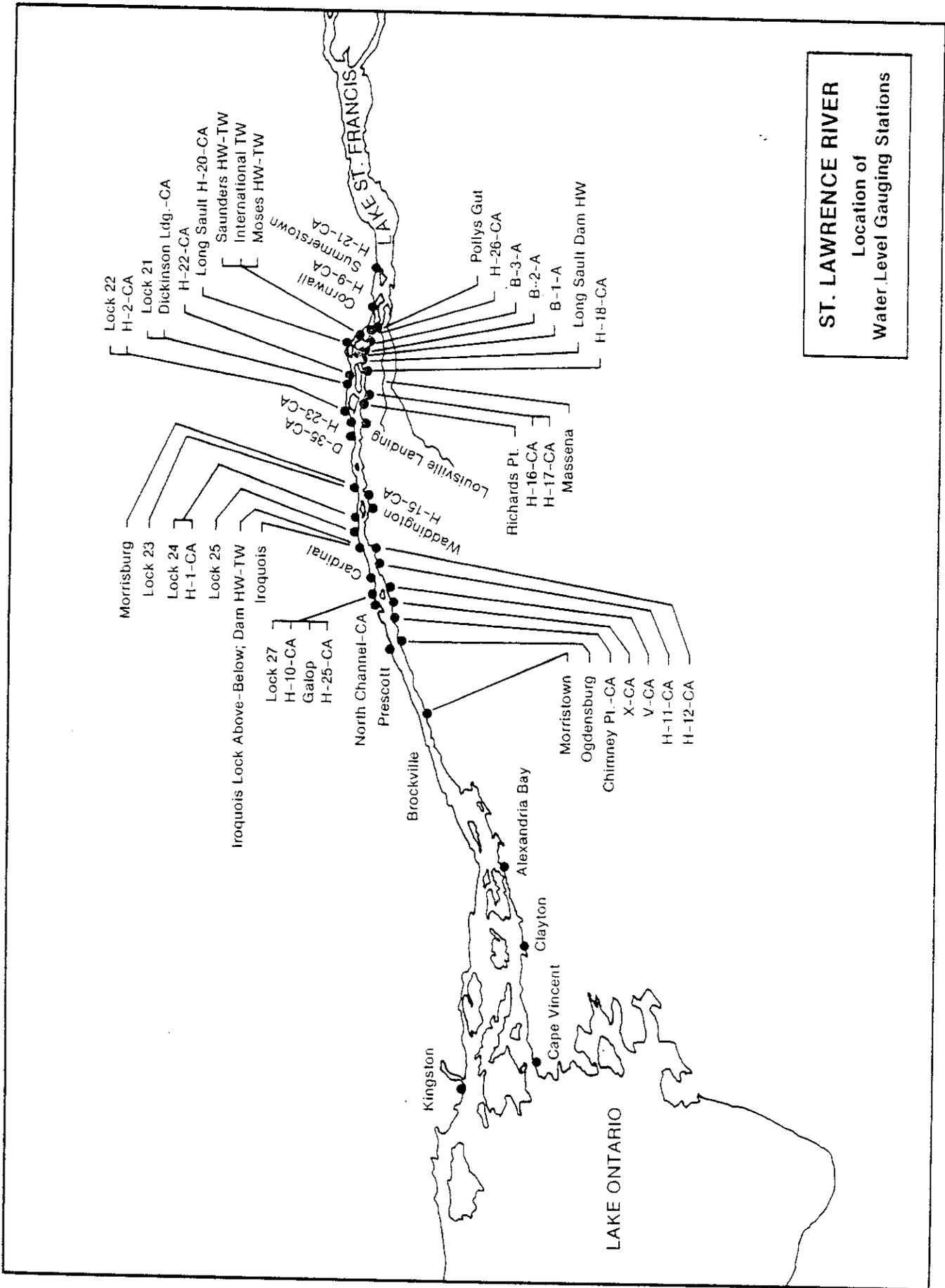
3. Elevation of the controlling bench mark on International Great Lakes Datum, IGLD (1955). Elevations in this publication are shown in the measurement unit accepted during each period of water level observations. The conversion to the equivalent customary or metric unit is shown in parenthesis. National and agency policies in the United States and Canada for conversion to the exclusive use of the metric unit are different. At present, United States policy is to plan increasing use and to coordinate the voluntary conversion to the metric system. Canada policy was to investigate, plan, schedule and implement a metric conversion program to be completed by 1980. This target date was achieved.

4. Description and location of the gauging station sites for which adequate information is available. See Plates 1-4 for general location and Plates 30-165 for detailed location.

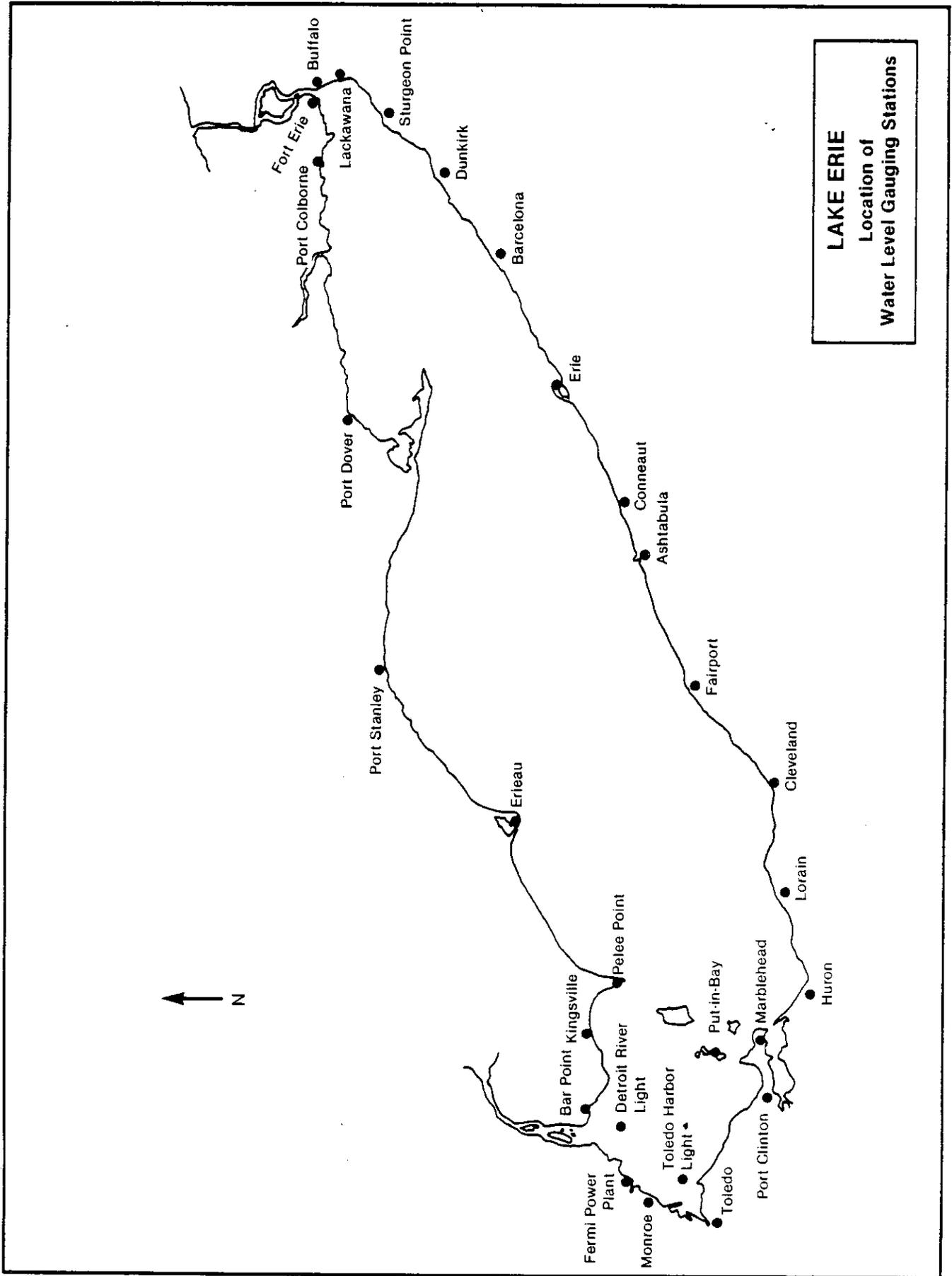
For more detailed information regarding these gauges and their records consult the Canadian Hydrographic Service in Ottawa, Ontario, for gauges in Canada, and the National Ocean Service in Rockville, Maryland, for gauges in the United States.

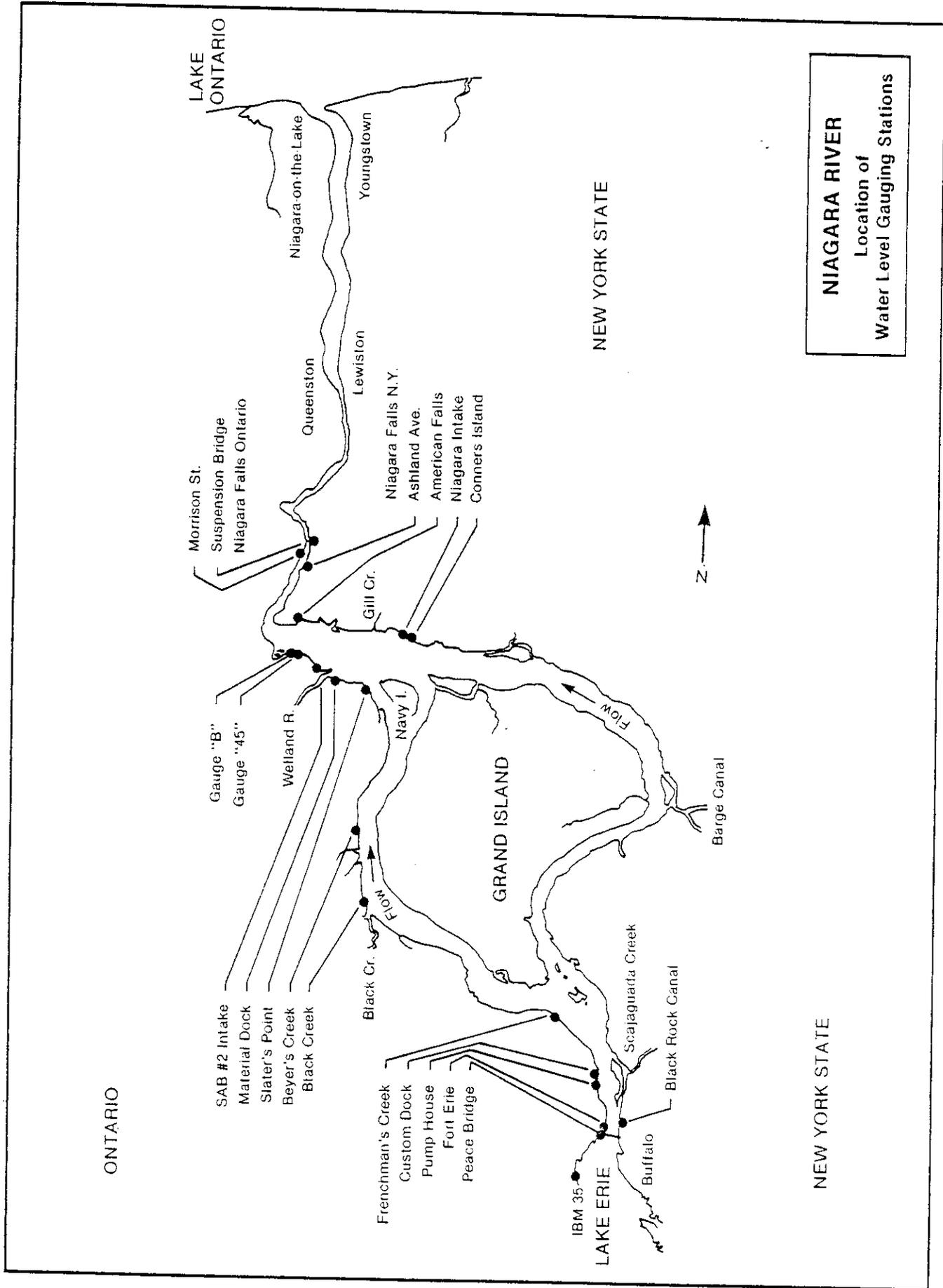
**LAKE ONTARIO**  
Location of  
Water Level Gauging Stations





**ST. LAWRENCE RIVER**  
 Location of  
 Water Level Gauging Stations





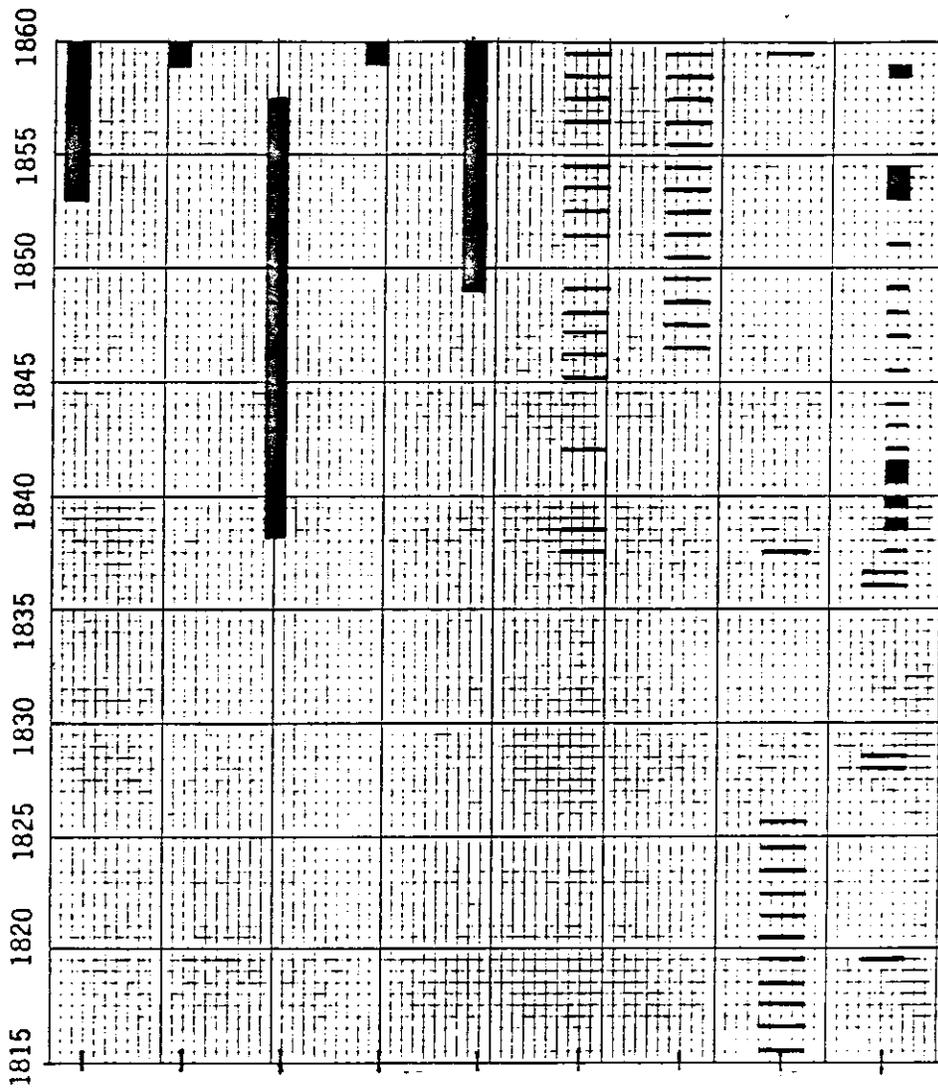
**NIAGARA RIVER**  
 Location of  
 Water Level Gauging Stations

ONTARIO

NEW YORK STATE

NEW YORK STATE

WATER LEVEL RECORDS PRIOR TO 1860



PORT COLBORNE, ONTARIO

MONROE, MICHIGAN

CLEVELAND, OHIO

ERIE, PENNSYLVANIA

PORT DALHOUSIE, ONTARIO

OSWEGO, NEW YORK

ROCHESTER, NEW YORK

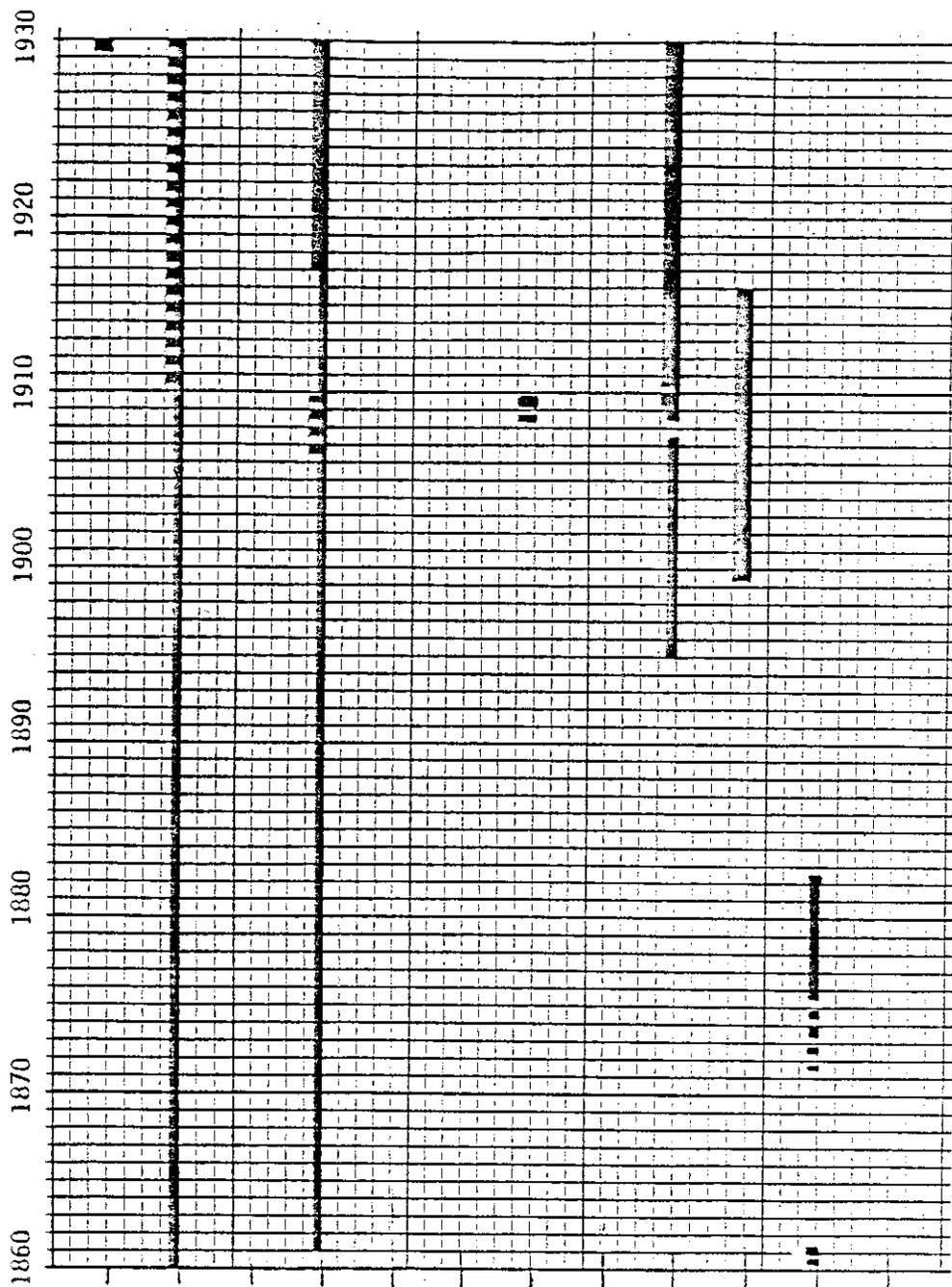
FORT NIAGARA, NEW YORK

BUFFALO, NEW YORK

FEWER THAN ONE READING PER DAY

GENERALLY ONE OR MORE READINGS PER DAY

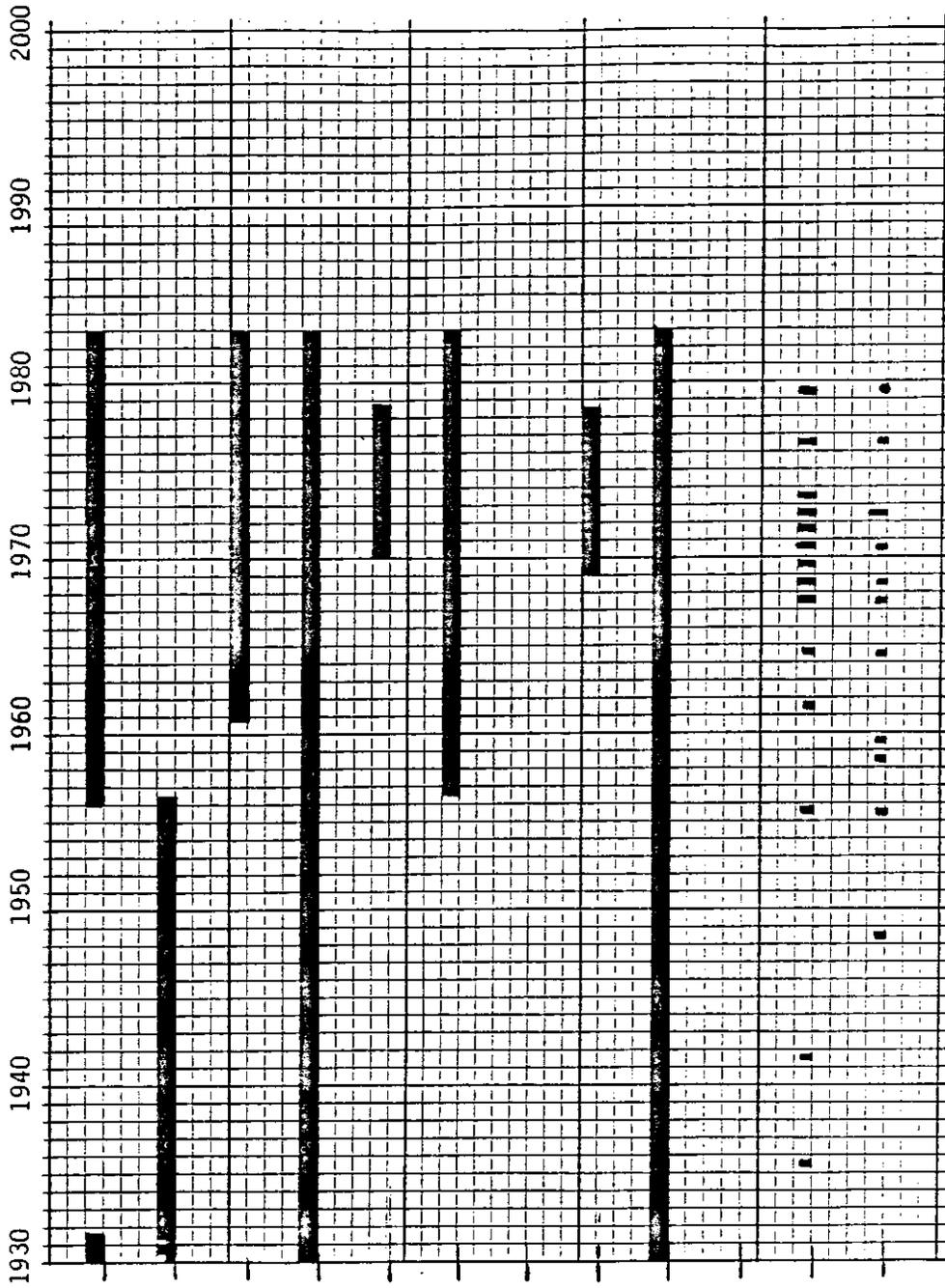
LAKE ONTARIO  
WATER LEVEL RECORDS 1860-1930



- PORT WELLS, ONTARIO
- PORT DALHOUSIE, ONTARIO
- BURLINGTON, ONTARIO
- TORONTO, ONTARIO
- OSHAWA, ONTARIO
- COBOURG, ONTARIO
- BRIGHTON, ONTARIO
- POINT PETRE, ONTARIO
- KINGSTON, ONTARIO
- TIBBETTS POINT, NEW YORK
- SACKETTS HARBOUR, NEW YORK
- PORT ONTARIO, NEW YORK

LAKE ONTARIO

WATER LEVEL RECORDS 1930- TO DATE



PORT WELLER, ONTARIO

PORT DALHOUSIE, ONTARIO

BURLINGTON, ONTARIO

TORONTO, ONTARIO

OSHAWA, ONTARIO

COBOURG, ONTARIO

BRIGHTON, ONTARIO

POINT PETRE, ONTARIO

KINGSTON, ONTARIO

TIBBETTS POINT, NEW YORK

SACKETTS HARBOUR, NEW YORK

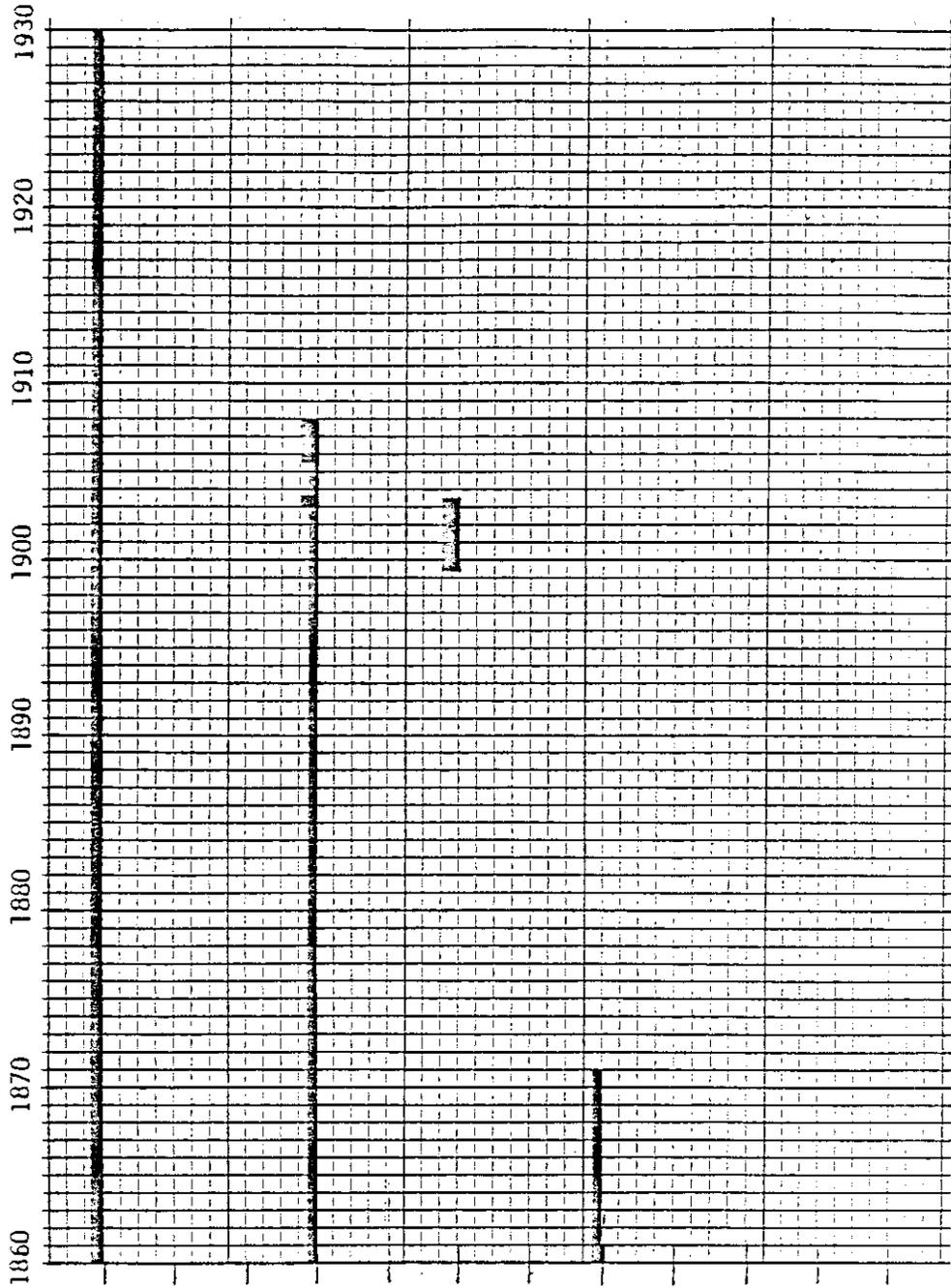
PORT ONTARIO, NEW YORK

RECORDING GAUGE

STAFF GAUGE

LAKE ONTARIO

WATER LEVEL RECORDS 1860-1930



OSWEGO, NEW YORK

LITTLE SODUS BAY, NEW YORK

SODUS BAY, NEW YORK

ROCHESTER, NEW YORK

OAK ORCHARD, NEW YORK

14 OLCOTT, NEW YORK

WILSON, NEW YORK

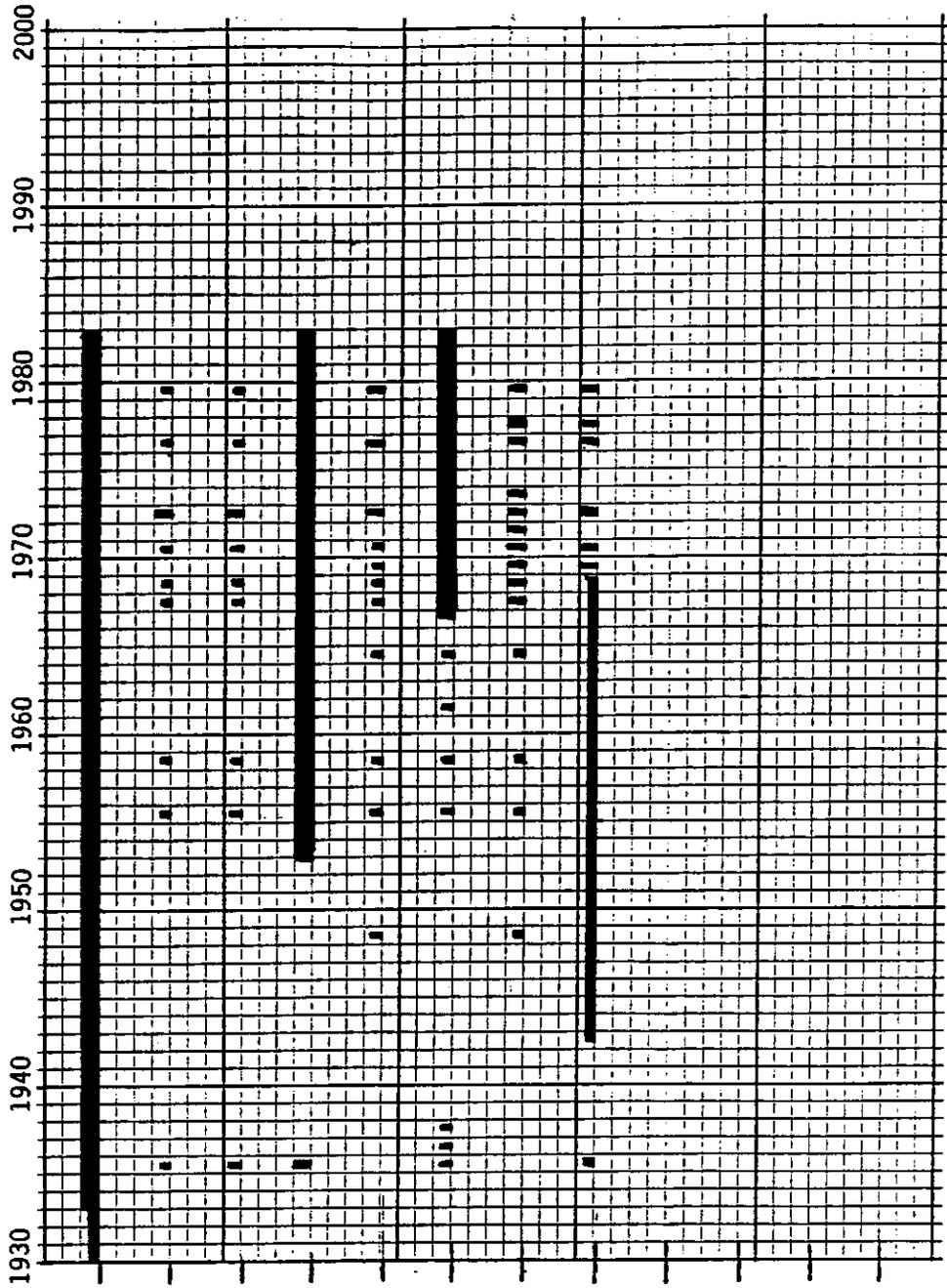
FORT NIAGARA, NEW YORK

RECORDING GAUGE

STAFF GAUGE

LAKE ONTARIO

WATER LEVEL RECORDS 1930- TO DATE



OSWEGO, NEW YORK

LITTLE SODUS BAY, NEW YORK

SODUS BAY, NEW YORK

ROCHESTER, NEW YORK

OAK ORCHARD, NEW YORK

OLCOTT, NEW YORK

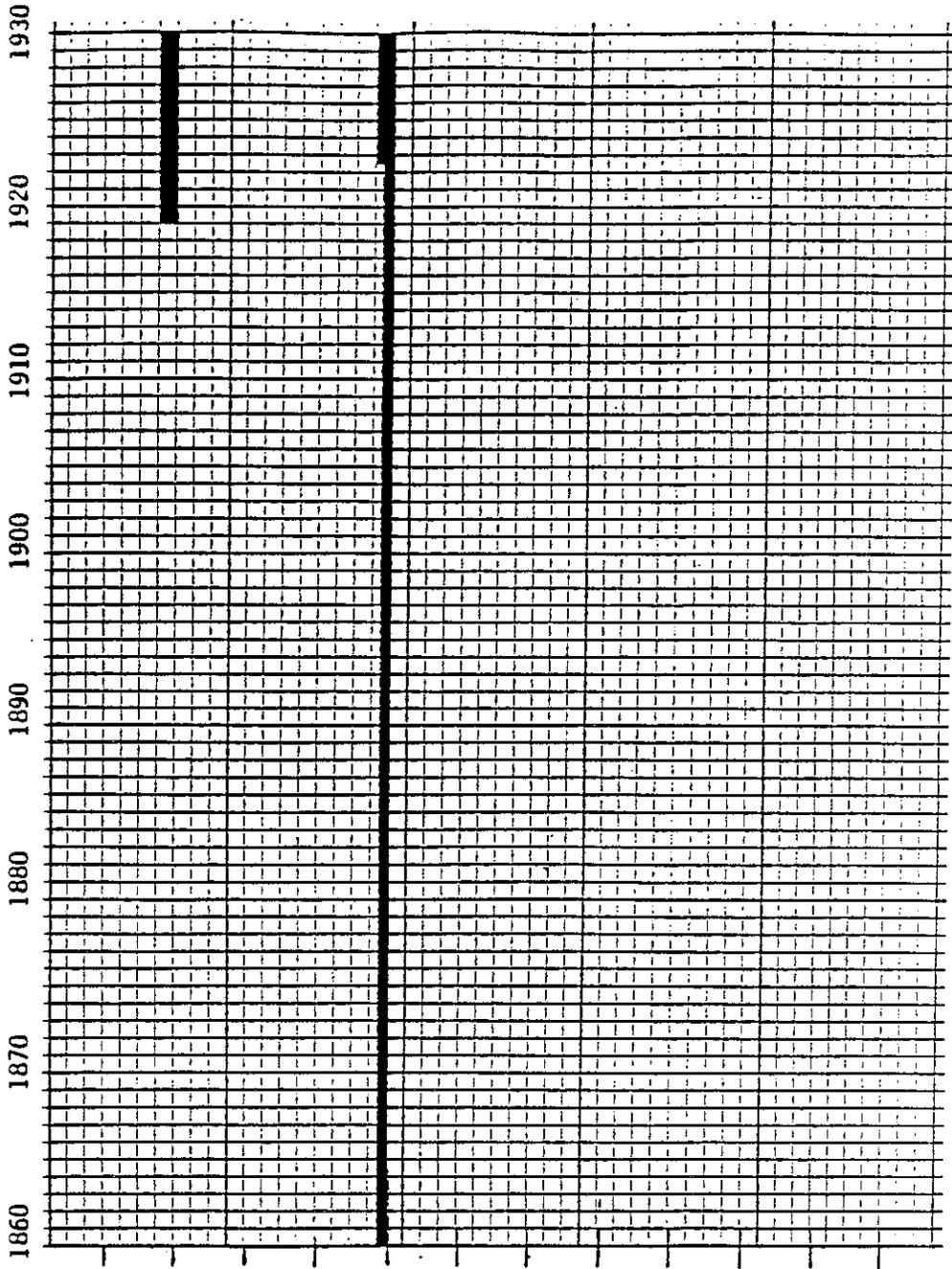
WILSON, NEW YORK

FORT NIAGARA, NEW YORK

RECORDING GAUGE ■  
STAFF GAUGE —

ST. LAWRENCE RIVER

WATER LEVEL RECORDS 1860-1930



RECORDING GAUGE

STAFF GAUGE

BROCKVILLE, ONTARIO

PRESCOTT, ONTARIO

NORTH CHANNEL-CA, ONTARIO

H-10-CA, ONTARIO

LOCK 27, ONTARIO

H-25-CA, ONTARIO

GALOP, ONTARIO

CARDINAL, ONTARIO

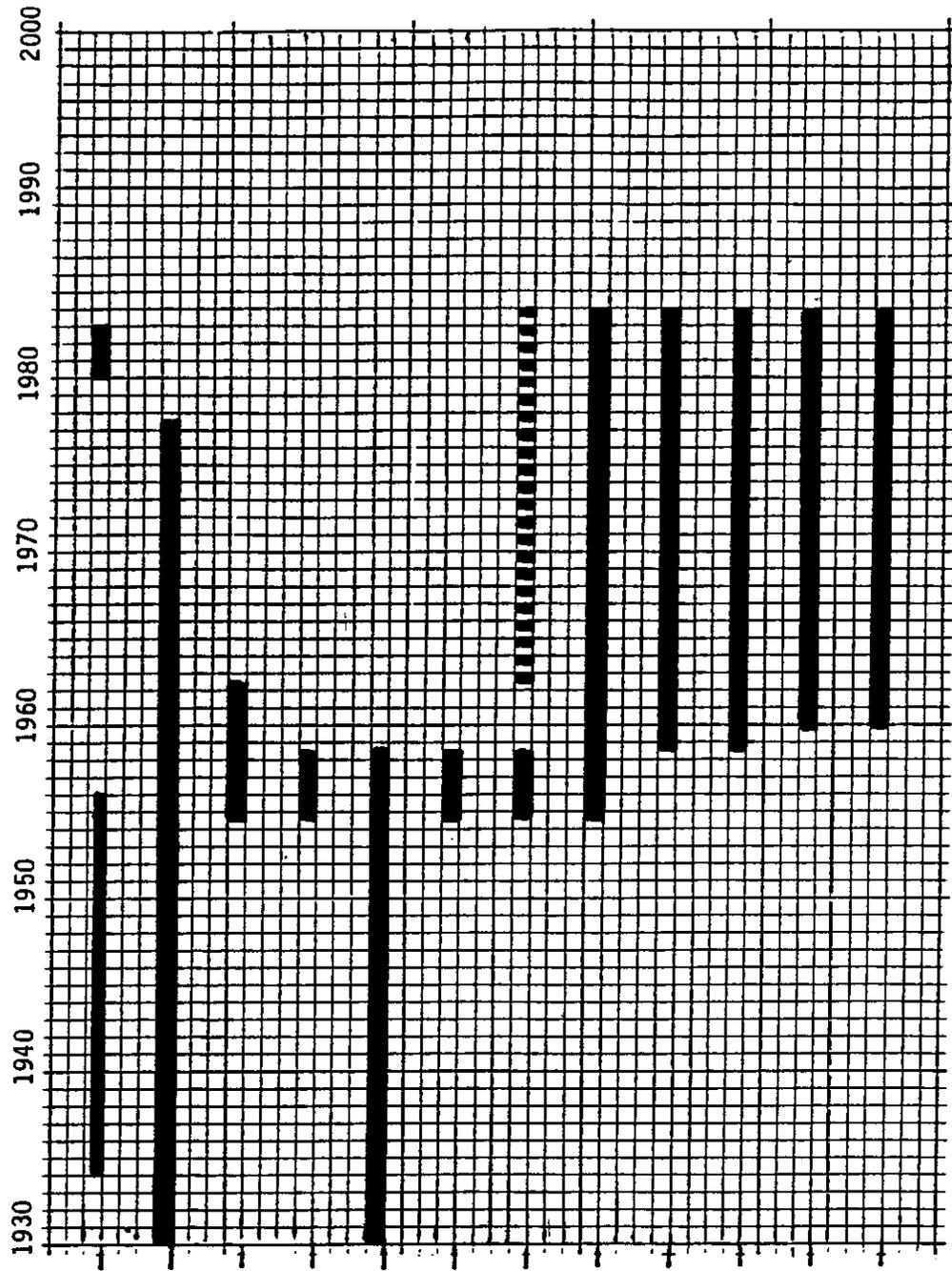
IROQUOIS DAM HW, ONTARIO

IROQUOIS DAM TW, ONTARIO

IROQUOIS LOCK ABOVE, ONTARIO

IROQUOIS LOCK BELOW, ONTARIO

ST. LAWRENCE RIVER  
 WATER LEVEL RECORDS 1930 - TO DATE

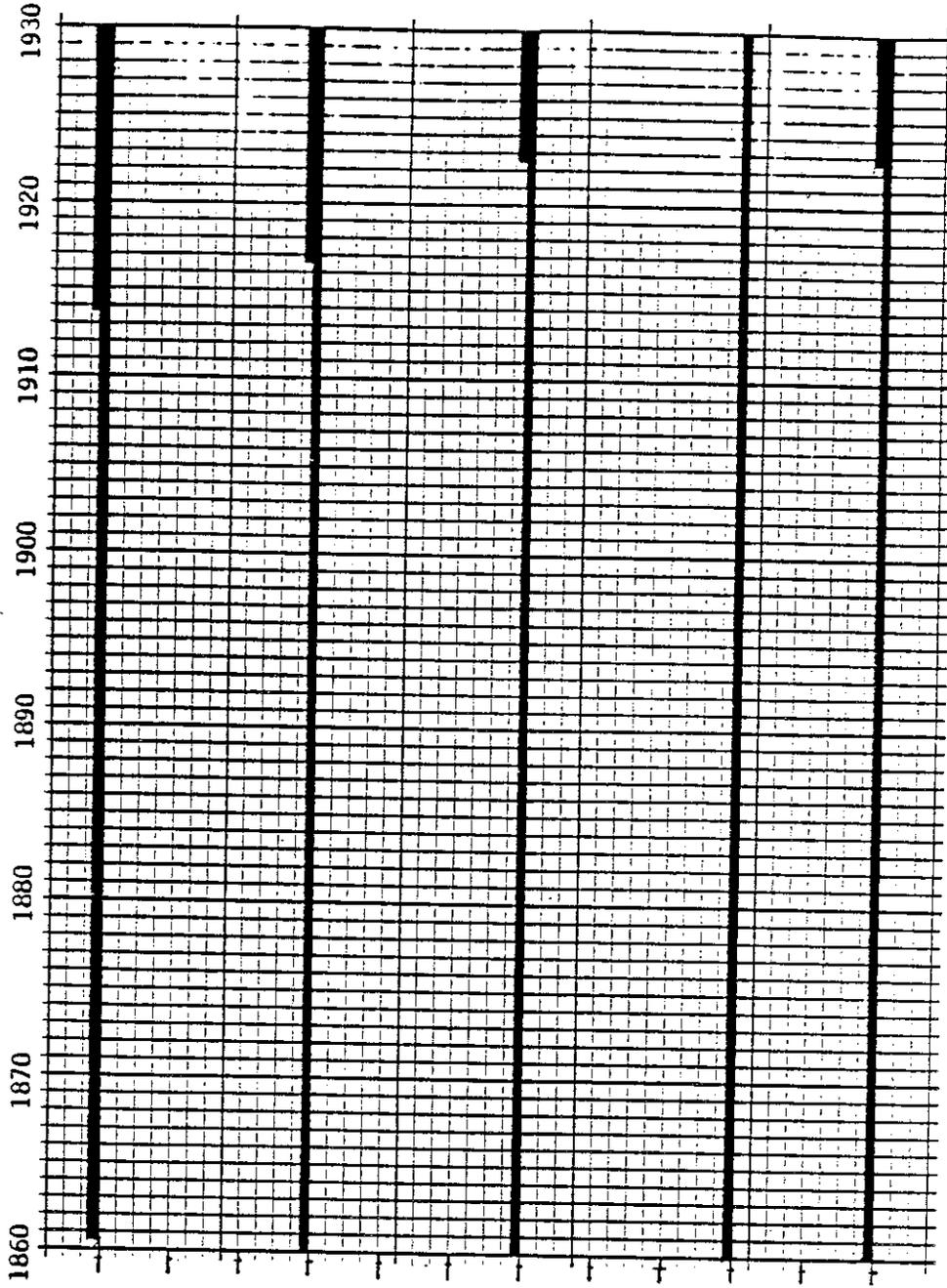


BROCKVILLE, ONTARIO  
 PRESCOTT, ONTARIO  
 NORTH CHANNEL-CA, ONTARIO  
 H-10-CA, ONTARIO  
 LOCK 27, ONTARIO  
 H-25-CA, ONTARIO  
 GALOP, ONTARIO  
 GALOP, ONTARIO  
 CARDINAL, ONTARIO  
 IROQUOIS DAM HW, ONTARIO  
 IROQUOIS DAM TW, ONTARIO  
 IROQUOIS LOCK ABOVE, ONTARIO  
 IROQUOIS LOCK BELOW, ONTARIO

RECORDING GAUGE ■■■■■ STAFF GAUGE - - - - -

ST. LAWRENCE RIVER

WATER LEVEL RECORDS 1860-1930



LOCK 25, ONTARIO

IROQUOIS-CA, ONTARIO

H-1-CA, ONTARIO

LOCK 24, ONTARIO

MORRISBURG, ONTARIO

MORRISBURG-CA, ONTARIO

LOCK 23, ONTARIO

D-35-CA, ONTARIO

H-23-CA, ONTARIO

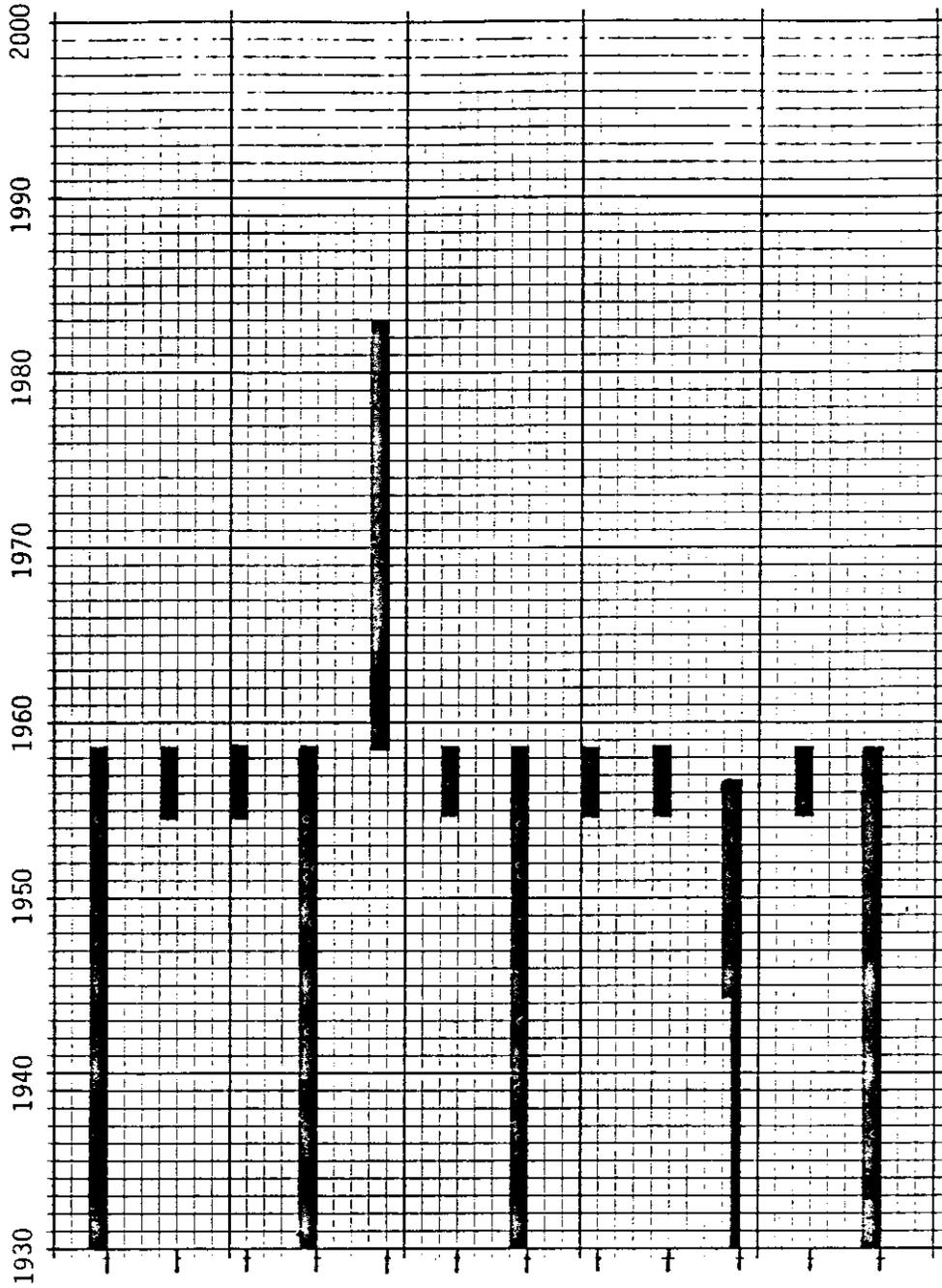
LOCK 22, ONTARIO

H-2-CA, ONTARIO

LOCK 21, ONTARIO

ST. LAWRENCE RIVER

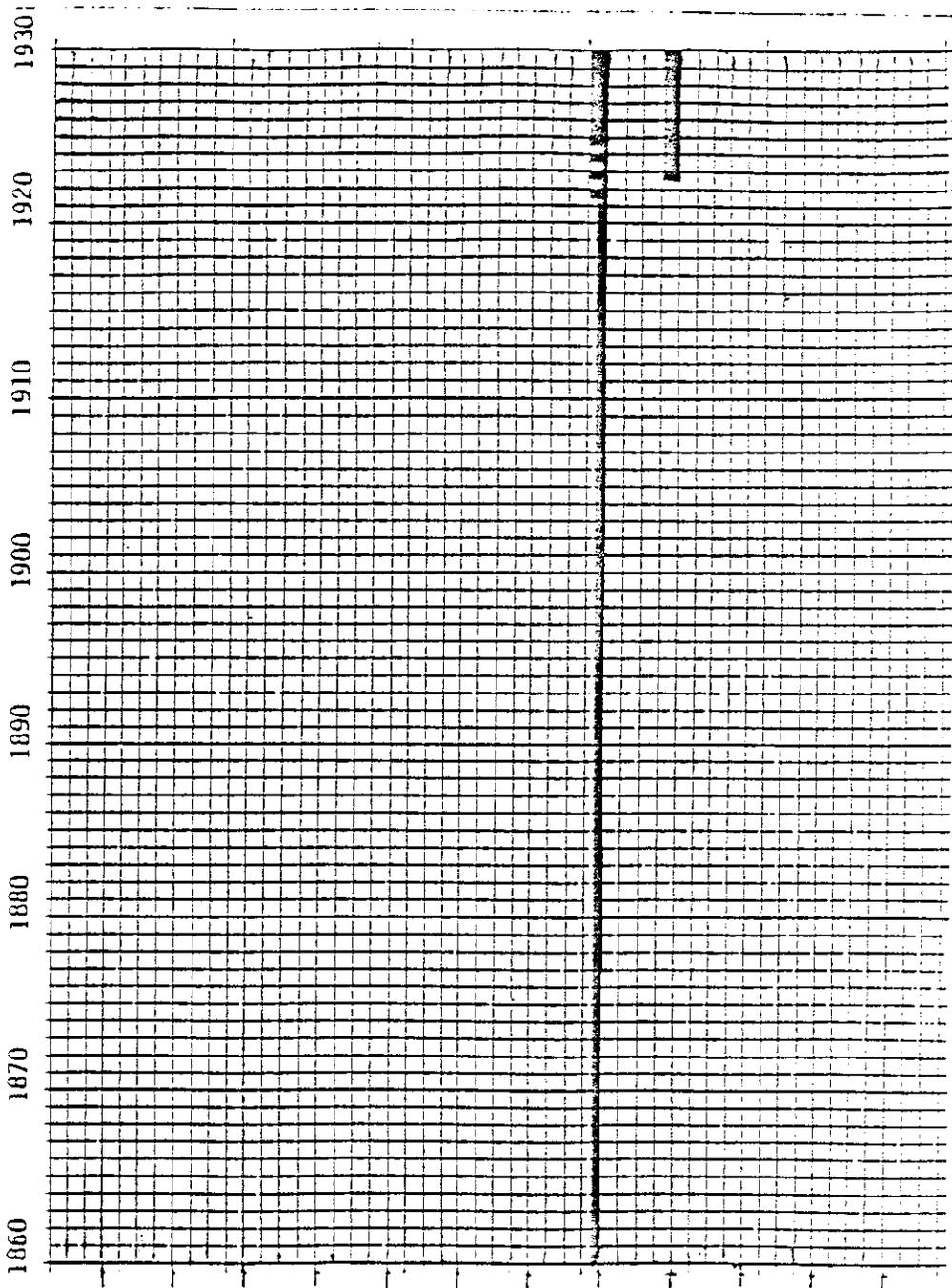
WATER LEVEL RECORDS 1930- TO DATE



- LOCK 25, ONTARIO
- IROQUOIS-CA, ONTARIO
- H-1-CA, ONTARIO
- LOCK 24, ONTARIO
- MORRISBURG, ONTARIO
- MORRISBURG-CA, ONTARIO
- LOCK 23, ONTARIO
- D-35-CA, ONTARIO
- H-23-CA, ONTARIO
- LOCK 22, ONTARIO
- H-2-CA, ONTARIO
- LOCK 21, ONTARIO

ST. LAWRENCE RIVER

WATER LEVEL RECORDS 1860-1930



STAFF GAUGE

RECORDING GAUGE

DICKINSON LANDING-CA, ONTARIO

H-22-CA, ONTARIO

H-20-CA, ONTARIO

SAUNDERS HW, ONTARIO

SAUNDERS IV, ONTARIO

INTERNATIONAL IV, ONTARIO

LONG SAULT, ONTARIO

CORNWALL, ONTARIO

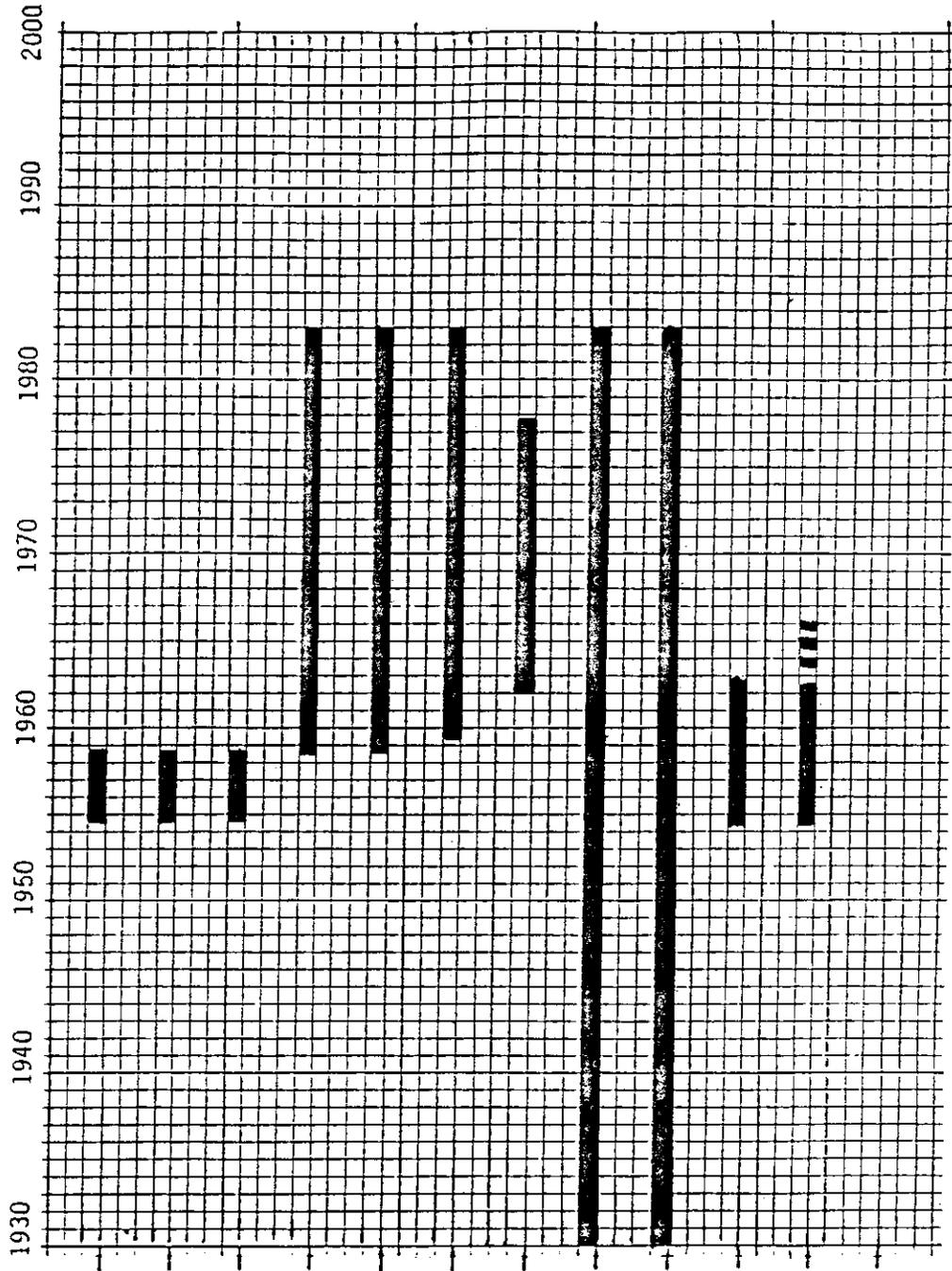
SUMMERSTOWN, ONTARIO

H-9-CA, ONTARIO

H-21-CA, ONTARIO

ST. LAWRENCE RIVER

WATER LEVEL RECORDS 1930 - TO DATE



DICKINSON LANDING-CA, ONTARIO

H-22-CA, ONTARIO

H-20-CA, ONTARIO

SAUNDERS HW, ONTARIO

SAUNDERS TW, ONTARIO

INTERNATIONAL TW, ONTARIO

LONG SAULT, ONTARIO

CORNWALL, ONTARIO

SUMMERSTOWN, ONTARIO

H-9-CA, ONTARIO

H-21-CA, ONTARIO

RECORDING GAUGE

STAFF GAUGE

ST. LAWRENCE RIVER

WATER LEVEL RECORDS 1930 - TO DATE



RECORDING GAUGE

STAFF GAUGE

POLLYS GUT, NEW YORK

H-26-CA, NEW YORK

MOSES TM, NEW YORK

MOSES HW, NEW YORK

B-3-A, NEW YORK

B-2-A, NEW YORK

B-1-A, NEW YORK

LONG SAULT DAM HW, NEW YORK

H-18-CA, NEW YORK

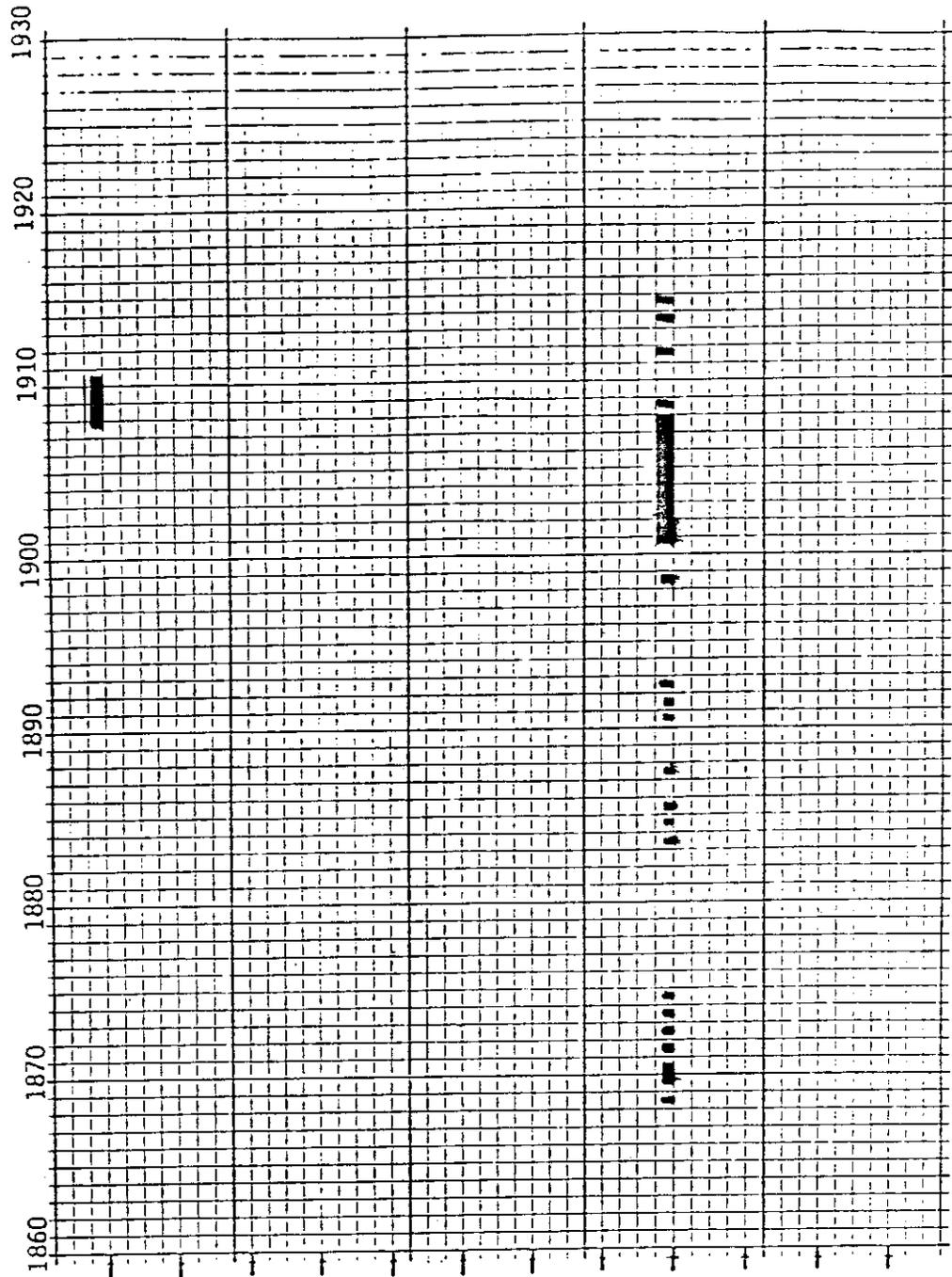
H-17-CA, NEW YORK

H-16-CA, NEW YORK

RICHARDS POINT, NEW YORK

ST. LAWRENCE RIVER

WATER LEVEL RECORDS 1860-1930



RECORDING GAUGE      STAFF GAUGE

LOUISVILLE LANDING, NEW YORK

H-15-CA, NEW YORK

WADDINGTON, NEW YORK

H-12-CA, NEW YORK

H-11-CA, NEW YORK

23

V-CA, NEW YORK

X-CA, NEW YORK

CHIMNEY POINT-CA, NEW YORK

OGDENSBURG, NEW YORK

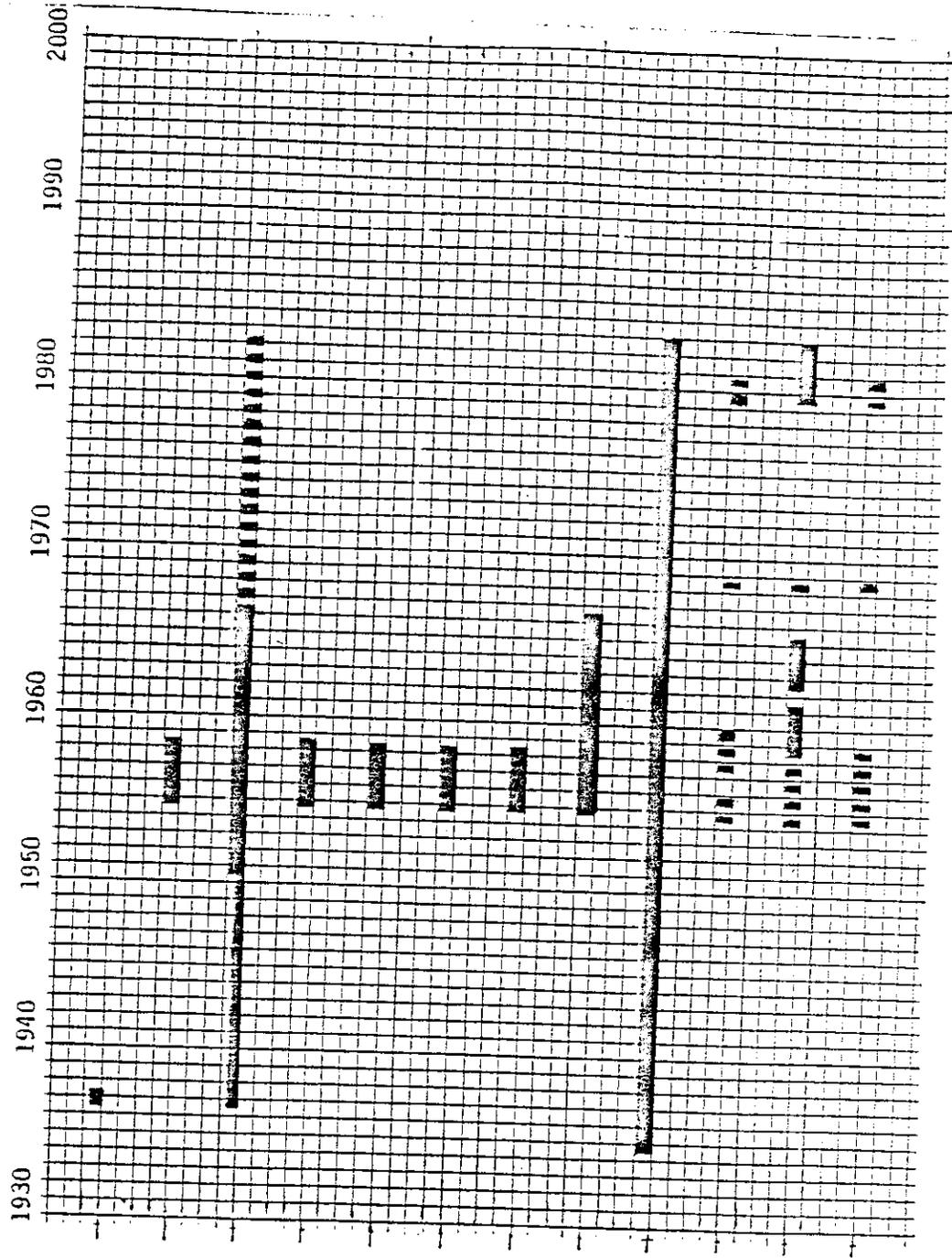
MORRISTOWN, NEW YORK

ALEXANDRIA BAY, NEW YORK

CLAYTON, NEW YORK

ST. LAWRENCE RIVER

WATER LEVEL RECORDS 1930 - TO DATE



LOUISVILLE LANDING, NEW YORK

H-15-CA, NEW YORK

WADDINGTON, NEW YORK

H-12-CA, NEW YORK

H-11-CA, NEW YORK

V-CA, NEW YORK

X-CA, NEW YORK

CHIMNEY POINT-CA, NEW YORK

OGDENSBURG, NEW YORK

MORRISTOWN, NEW YORK

ALEXANDRIA BAY, NEW YORK

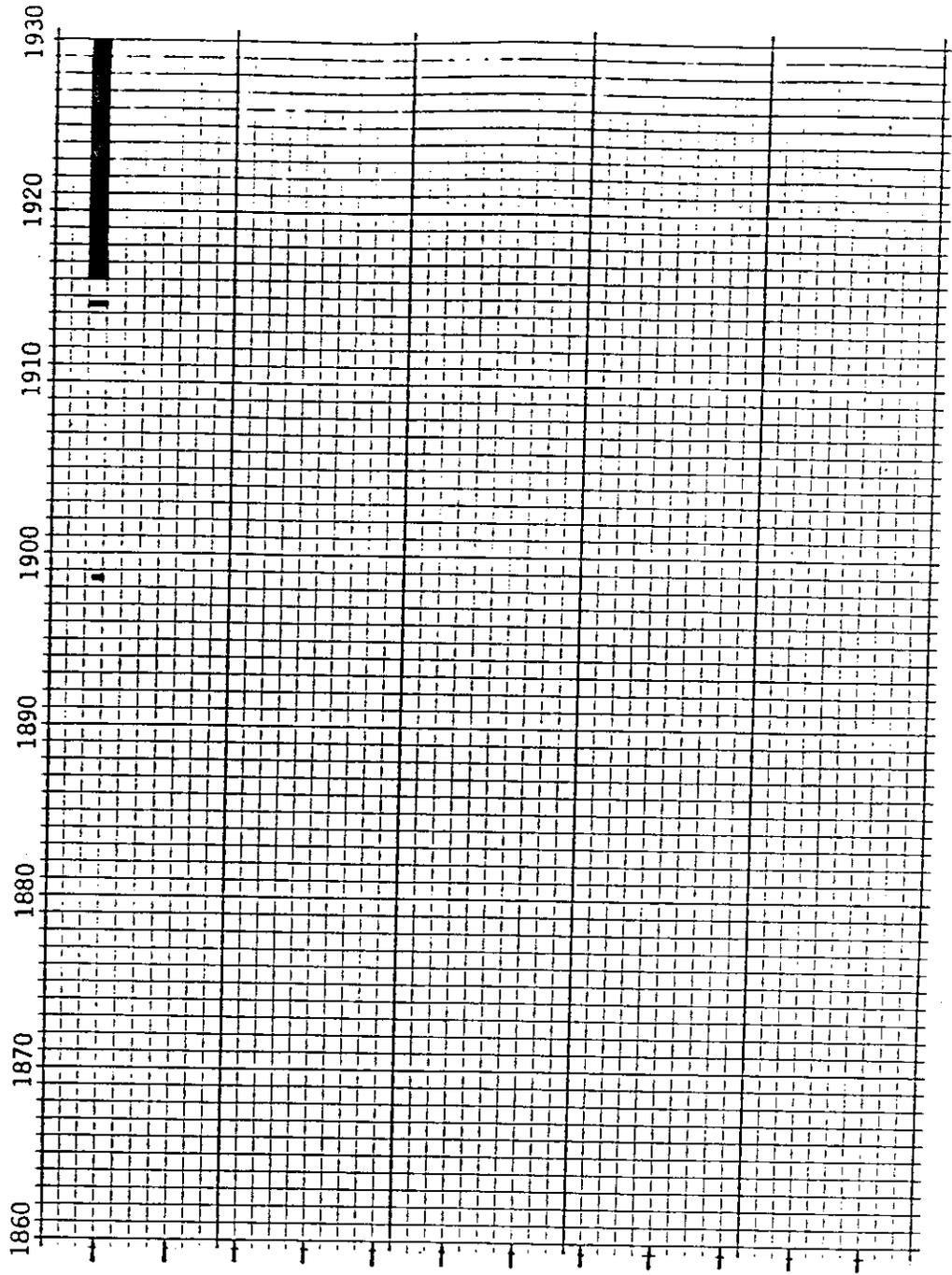
CLAYTON, NEW YORK

RECORDING GAUGE

STAFF GAUGE

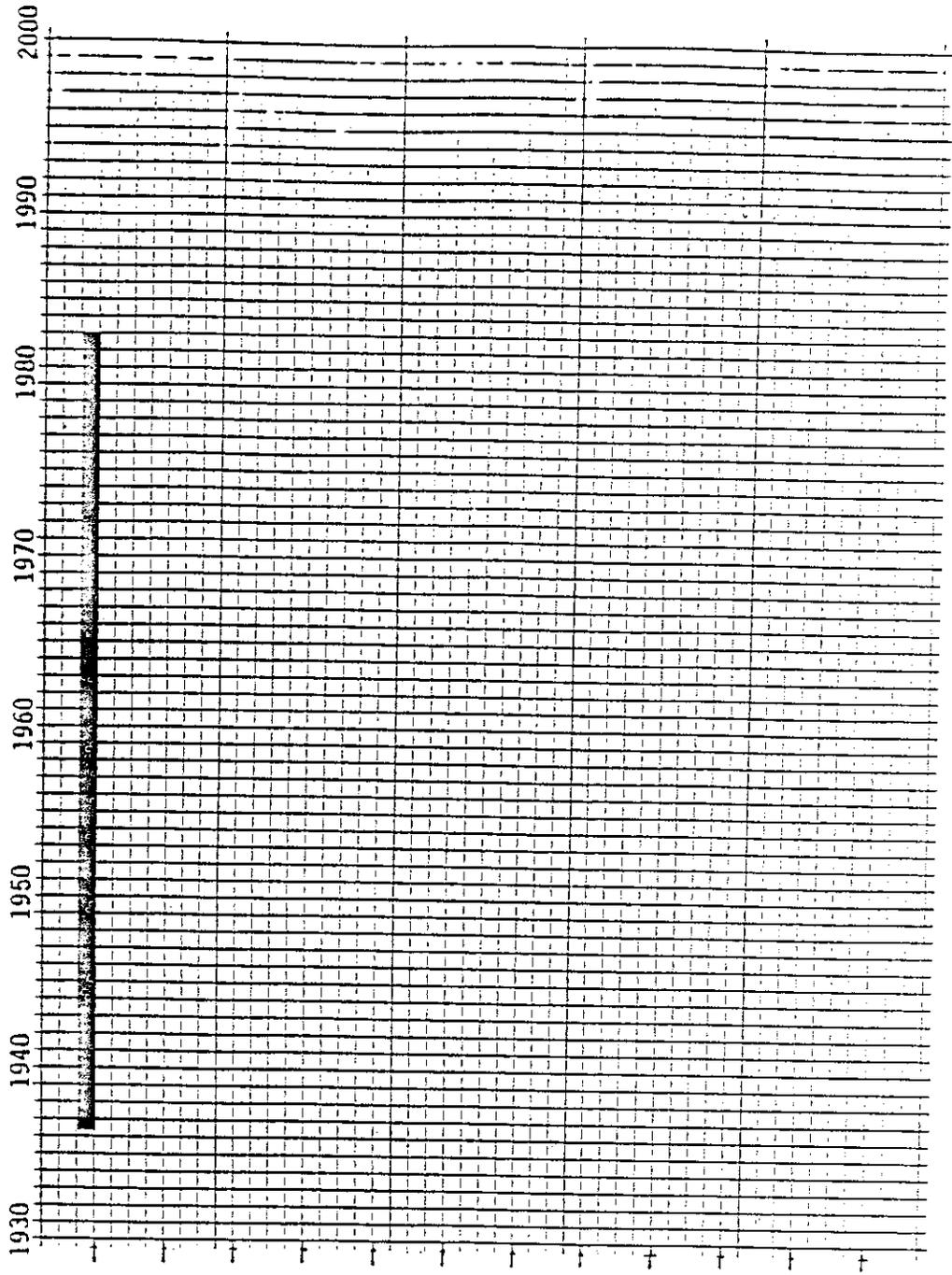
ST. LAWRENCE RIVER

WATER LEVEL RECORDS 1860-1930



CAPE VINCENT, NEW YORK

ST. LAWRENCE RIVER  
WATER LEVEL RECORDS 1930-TO DATE

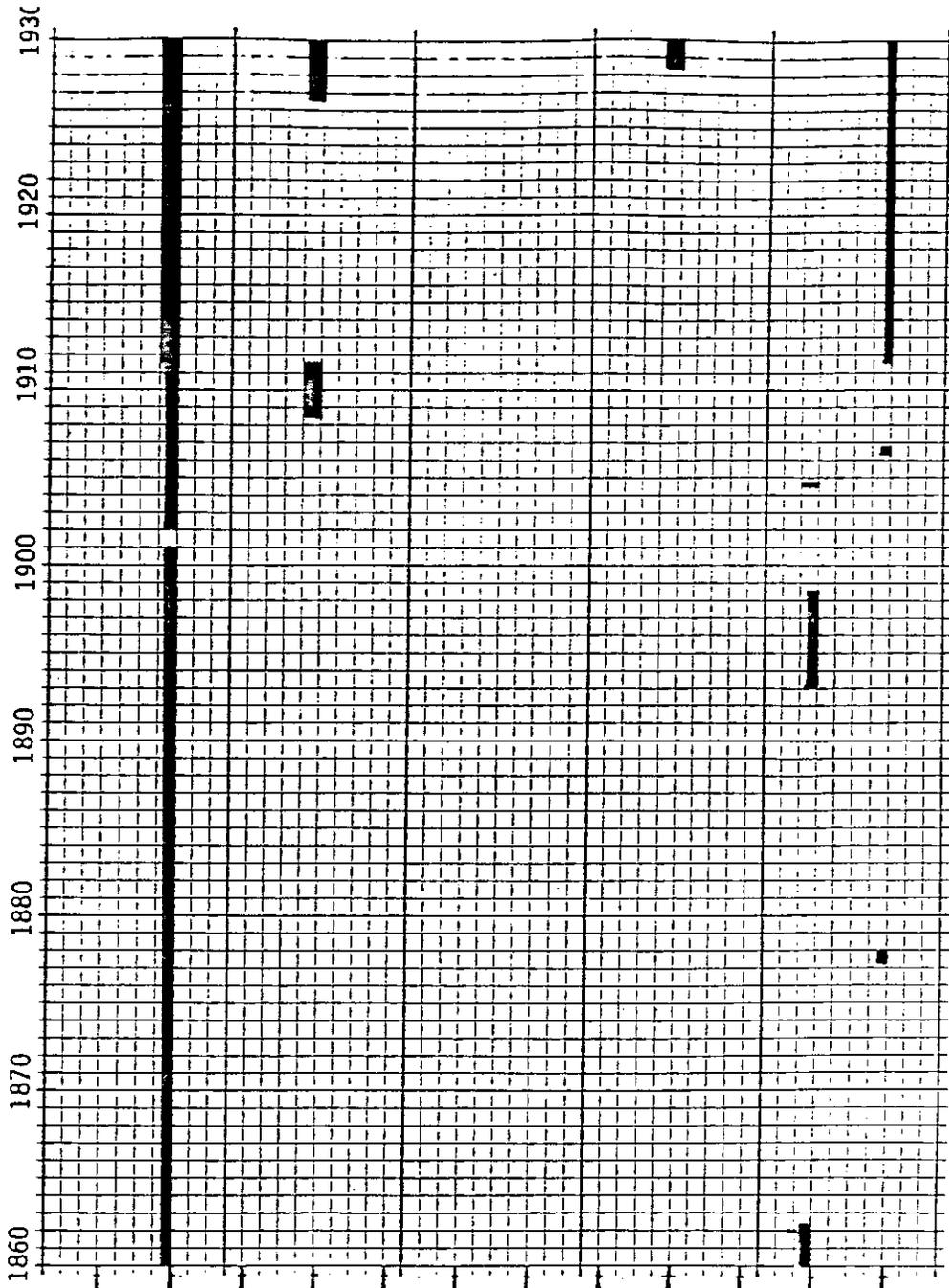


CAPE VINCENT, NEW YORK

RECORDING GAUGE      STAFF GAUGE

LAKE ERIE

WATER LEVEL RECORDS 1860-1930



FORT ERIE, ONTARIO

PORT COLBORNE, ONTARIO

PORT DOVER, ONTARIO

PORT STANLEY, ONTARIO

ERIEAU, ONTARIO

27

PELEE POINT, ONTARIO

KINGSVILLE, ONTARIO

BAR POINT, ONTARIO

DETROIT RIVER LIGHT, MICHIGAN

FERMI POWER PLANT, MICHIGAN

MONROE, MICHIGAN

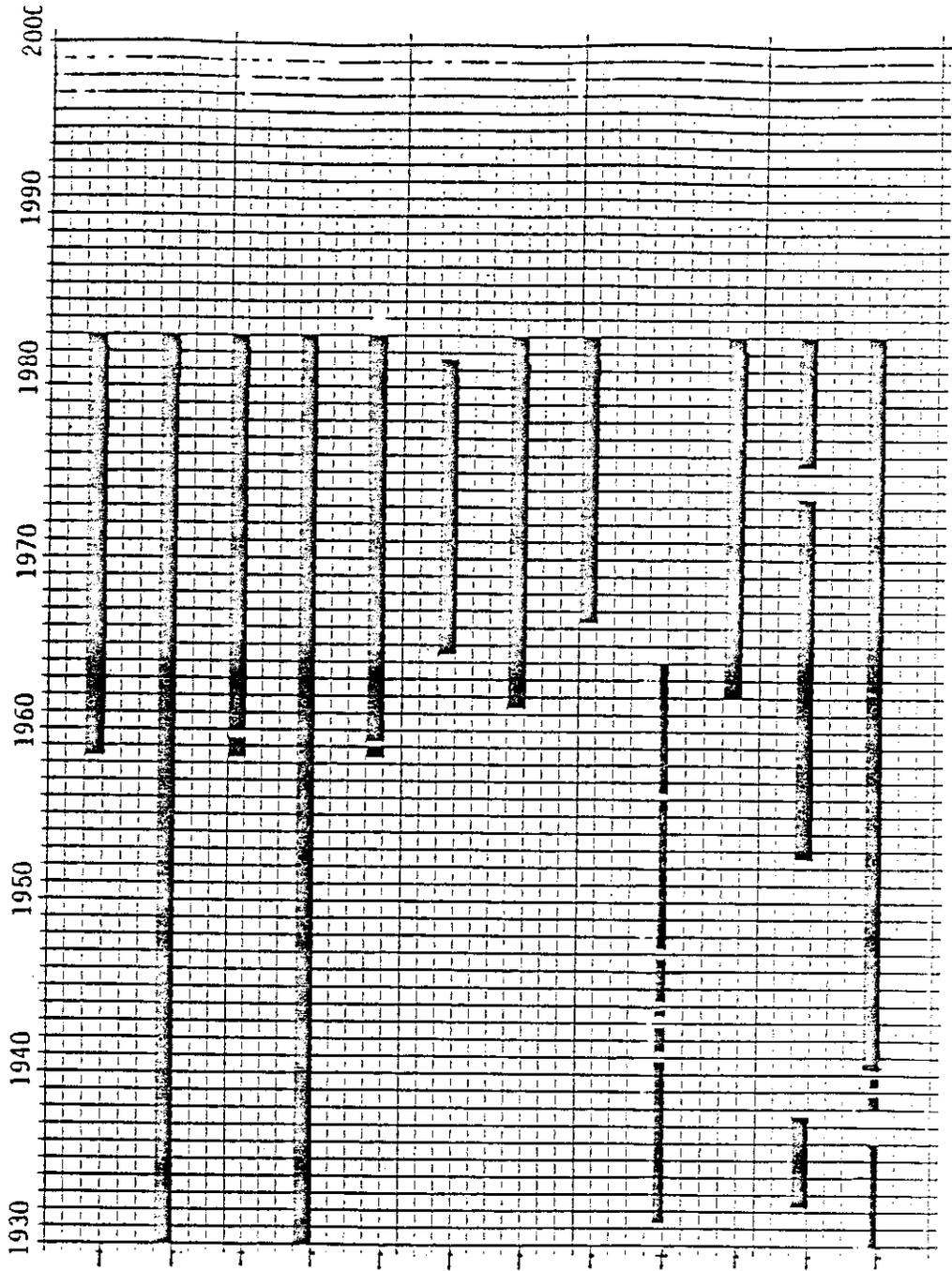
TOLEDO, OHIO

RECORDING GAUGE

STAFF GAUGE

LAKE ERIE

WATER LEVEL RECORDS 1930- TO DATE



FORT ERIE, ONTARIO

PORT COLBORNE, ONTARIO

PORT DOVER, ONTARIO

PORT STANLEY, ONTARIO

ERIEAU, ONTARIO

PELEE POINT, ONTARIO

KINGSVILLE, ONTARIO

BAR POINT, ONTARIO

DETROIT RIVER LIGHT, MICHIGAN

FEMI POWER PLANT, MICHIGAN

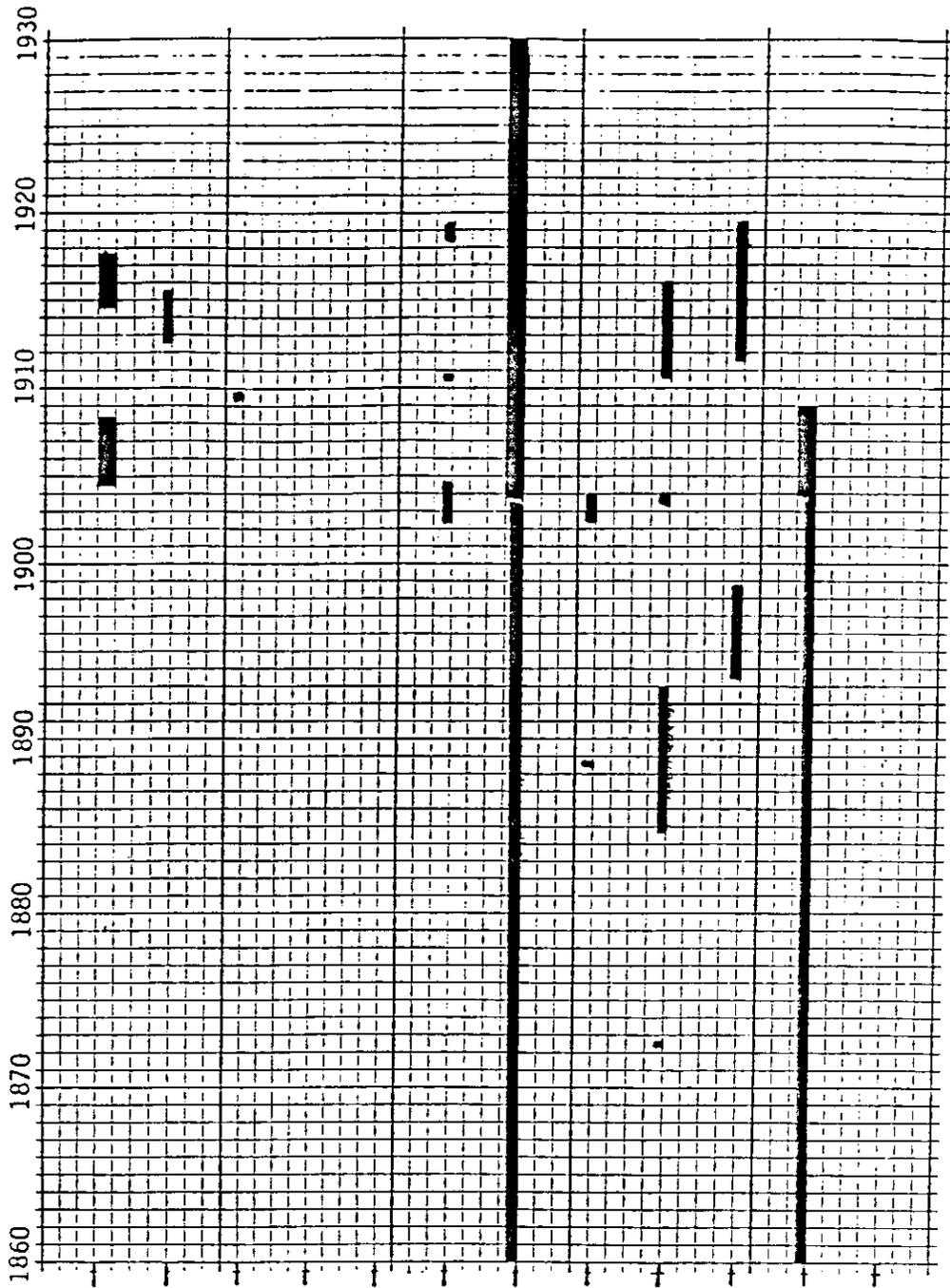
MONROE, MICHIGAN

TOLEDO, ONTIO

RECORDING GAUGE      STAFF GAUGE

LAKE ERIE

WATER LEVEL RECORDS 1860-1930



TOLEDO HARBOR LIGHT, OHIO

PORT CLINTON, OHIO

PUT-IN-BAY, OHIO

MARBLEHEAD, OHIO

HURON, OHIO

LORAIN, OHIO

CLEVELAND, OHIO

FAIRPORT, OHIO

ASHTABULA, OHIO

CONNEAULT, OHIO

ERIE, PENNSYLVANIA

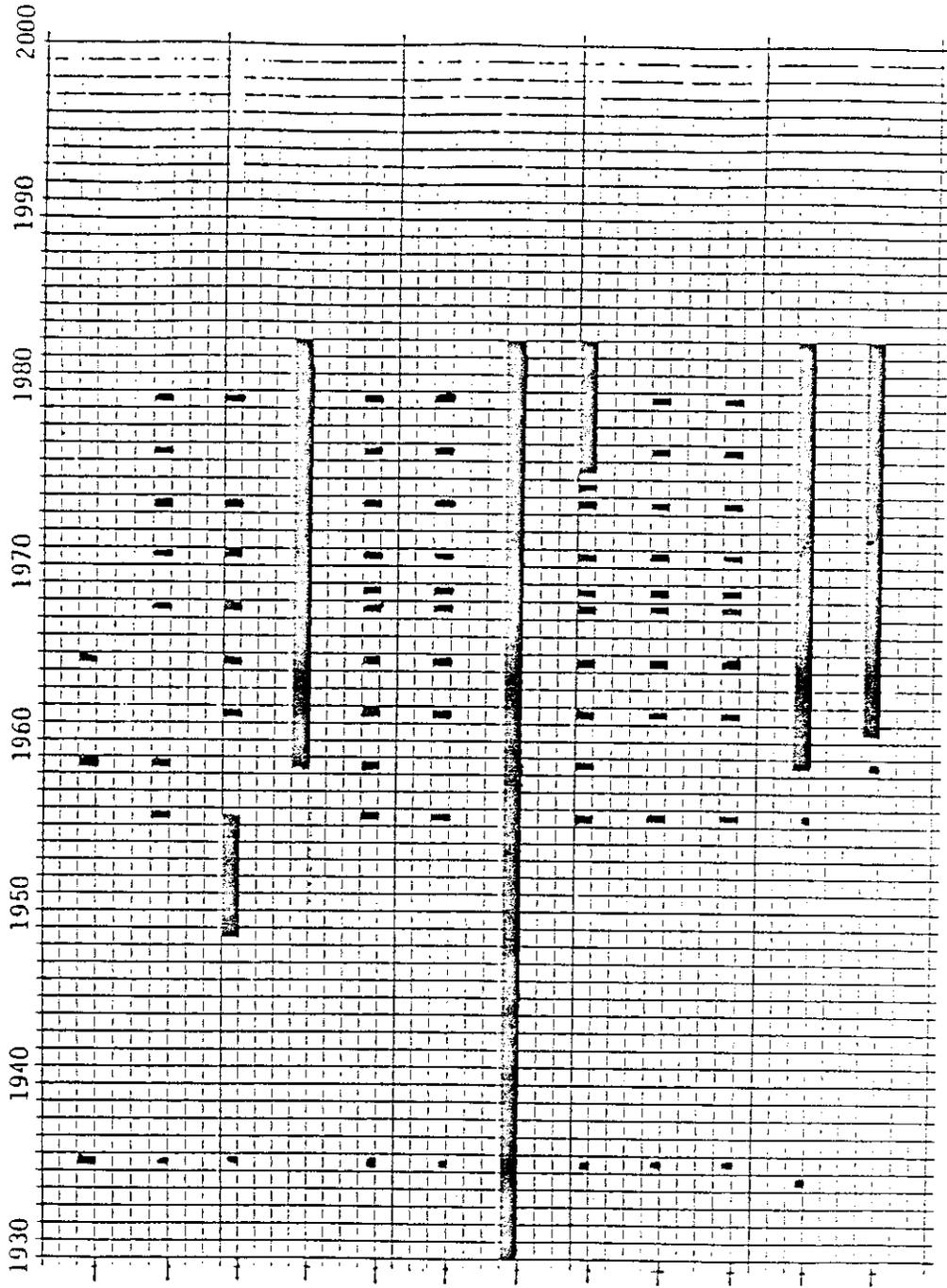
BARCELONA, NEW YORK

RECORDING GAUGE

STAFF GAUGE

LAKE ERIE

WATER LEVEL RECORDS 1930- TO DATE



TOLEDO HARBOR LIGHT, OHIO

PORT CLINTON, OHIO

PUT-IN-BAY, OHIO

MARBLEHEAD, OHIO

HURON, OHIO

LORAIN, OHIO

CLEVELAND, OHIO

FAIRPORT, OHIO

ASHTABULA, OHIO

CONNEAULT, OHIO

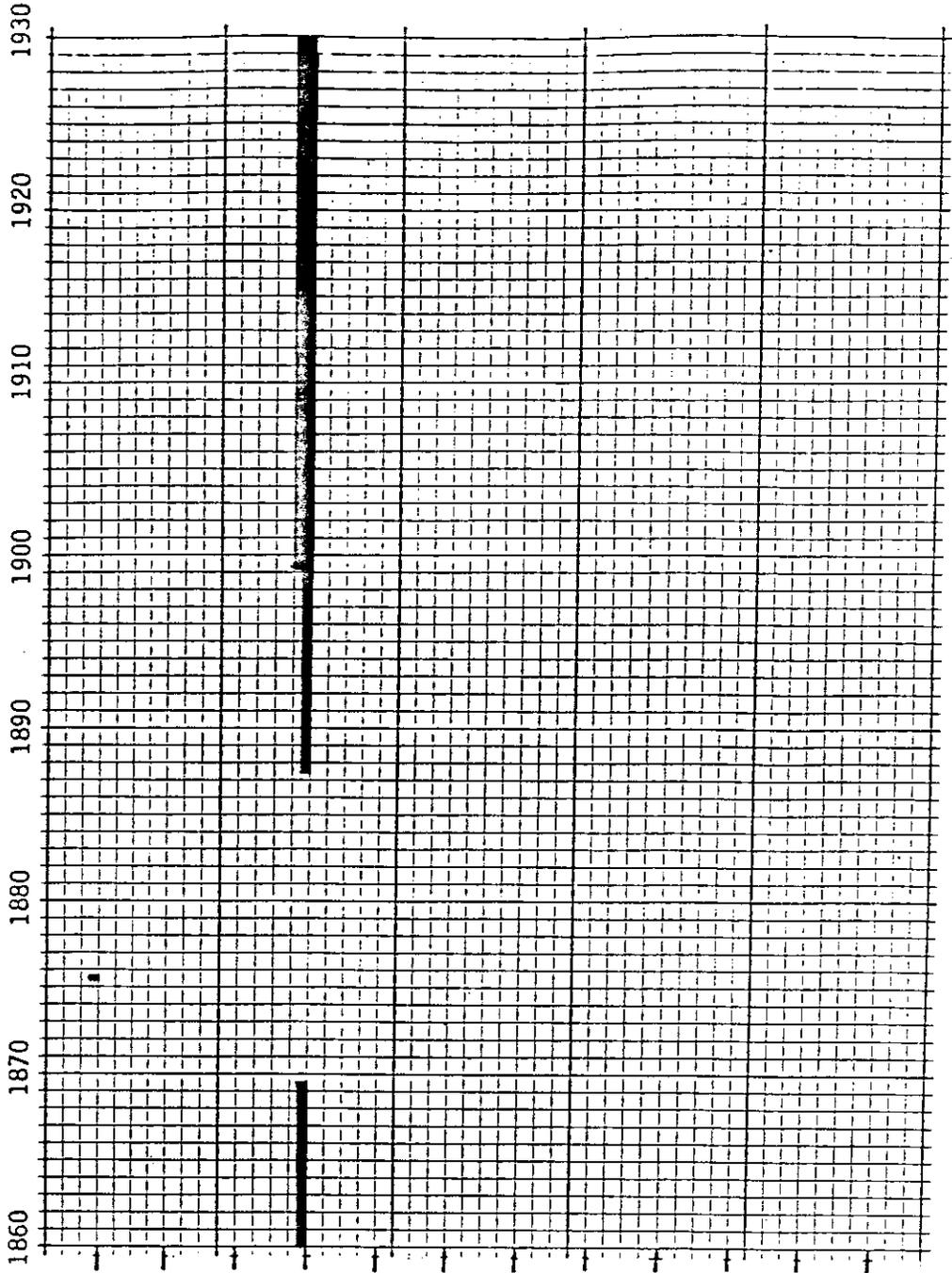
ERIE, PENNSYLVANIA

BARCELONA, NEW YORK

RECORDING GAUGE      STAFF GAUGE

LAKE ERIE

WATER LEVEL RECORDS 1860-1930



DUNKIRK, NEW YORK

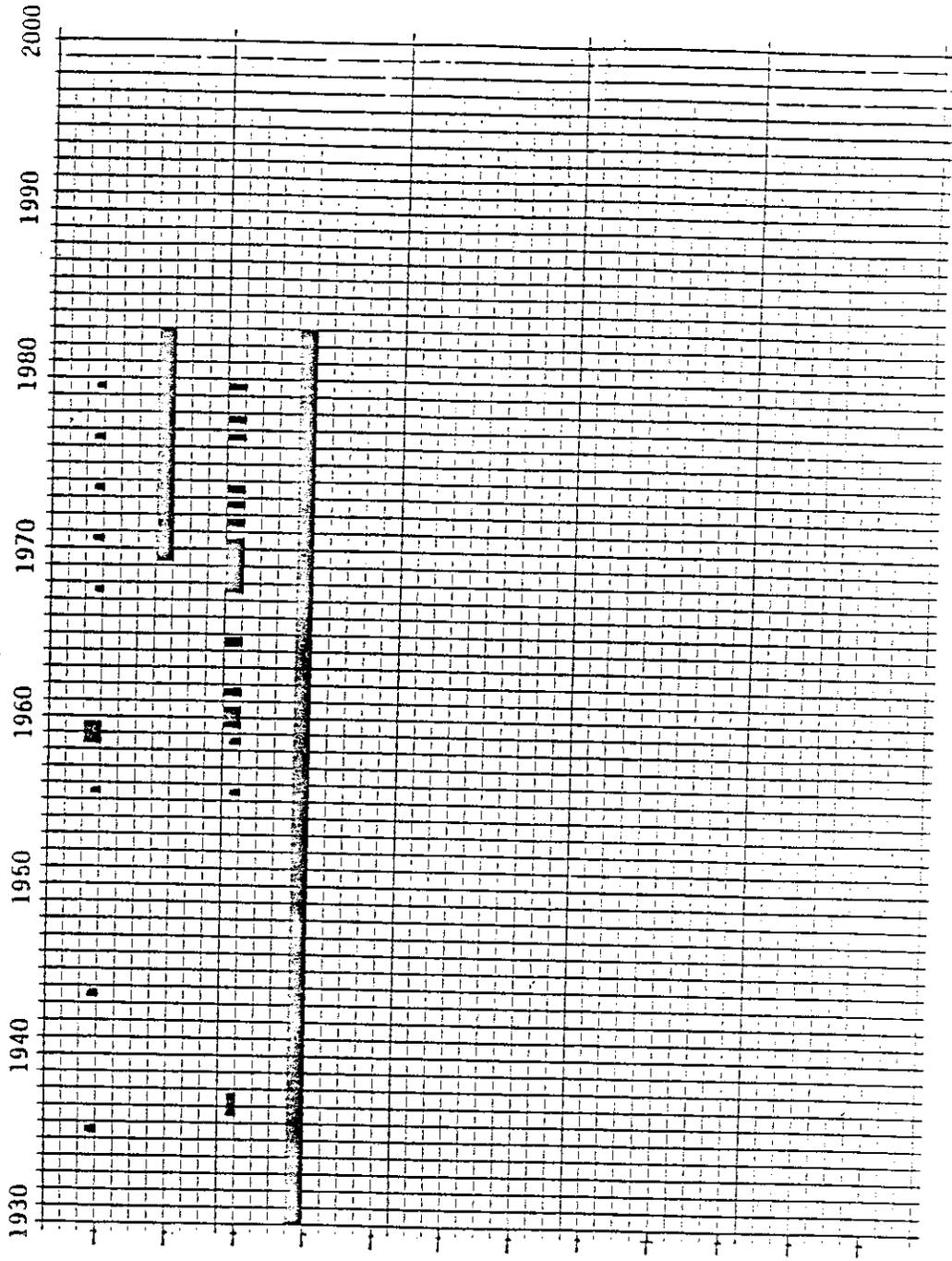
STURGEON POINT, NEW YORK

LACKAWANNA, NEW YORK

BUFFALO, NEW YORK

LAKE ERIE

WATER LEVEL RECORDS 1930- TO DATE



DUNKIRK, NEW YORK

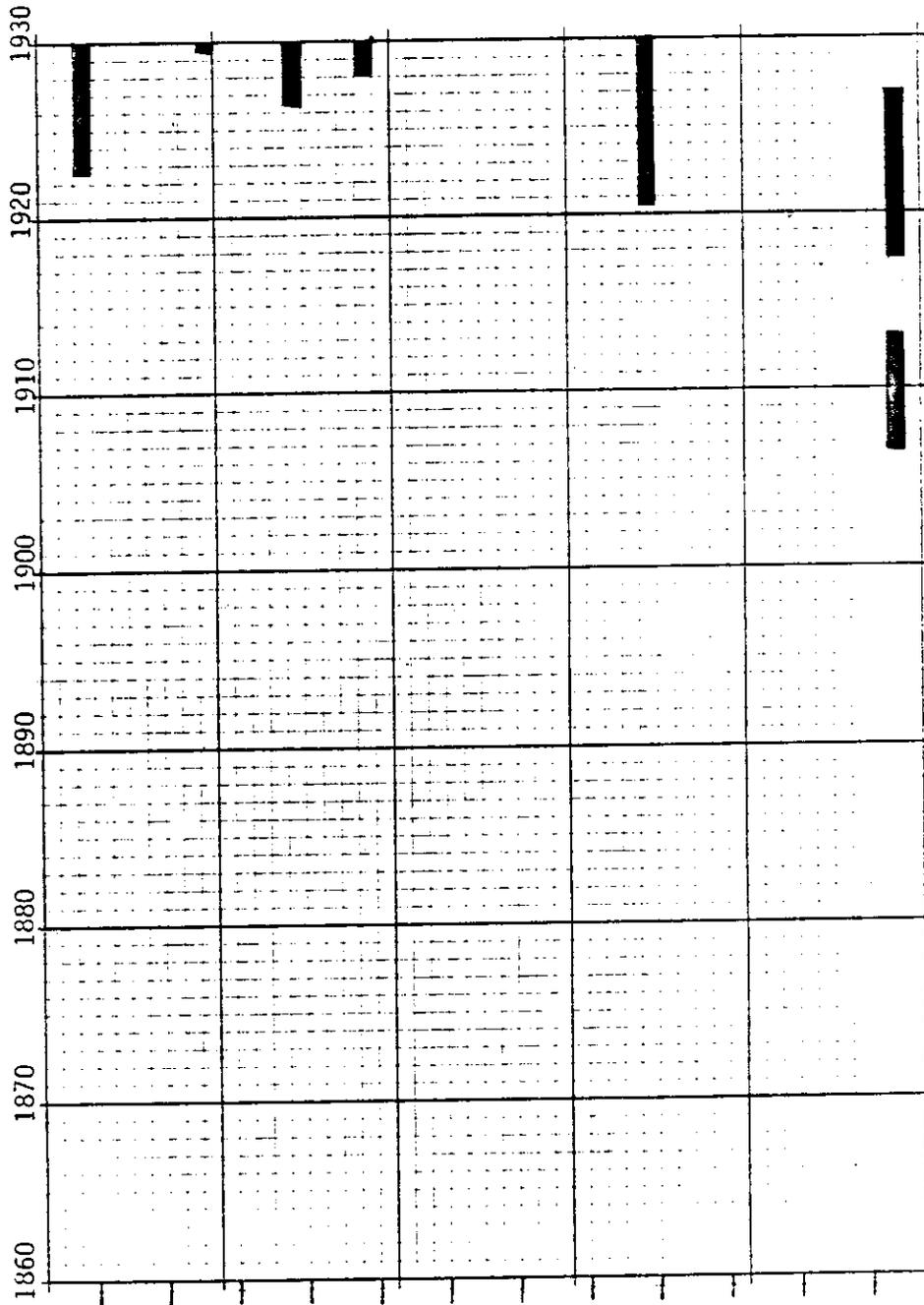
STURGEON POINT, NEW YORK

LACKAWANNA, NEW YORK

BUFFALO, NEW YORK

NIAGARA RIVER

WATER LEVEL RECORDS 1860-1930



MORRISON STREET GAUGE

GAUGE "B", ONTARIO

GAUGE "45", ONTARIO

MATERIAL DOCK, ONTARIO

SLATERS POINT, ONTARIO

33 BLACK CREEK, ONTARIO

BLACK ROCK CANAL, NEW YORK

NIAGARA INTAKE, NEW YORK

CONNERS ISLAND, NEW YORK

AMERICAN FALLS, NEW YORK

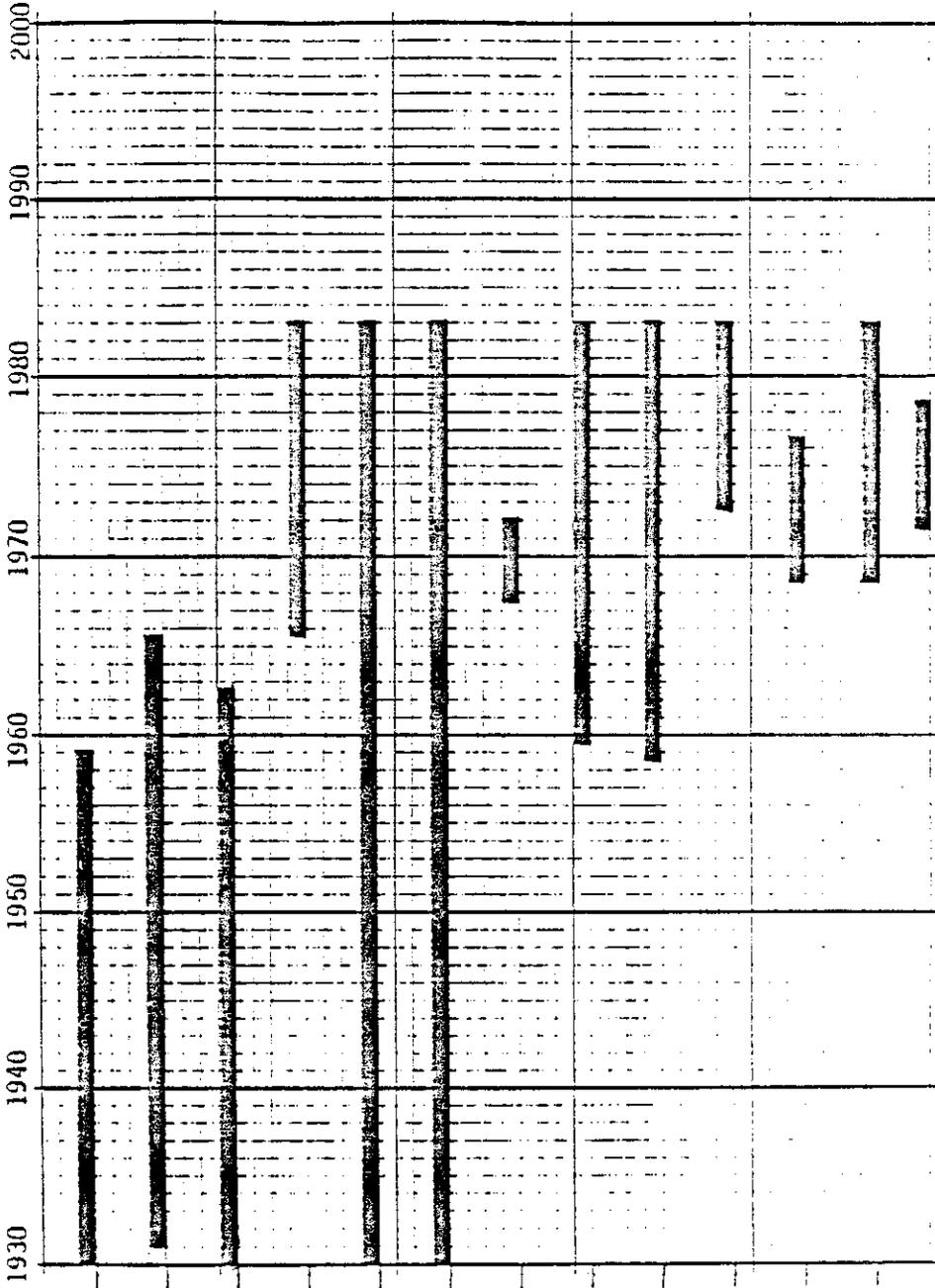
ASHLAND AVENUE, NEW YORK

SUSPENSION BRIDGE, NEW YORK

RECORDING GAUGE      STAFF GAUGE

NIAGARA RIVER

WATER LEVEL RECORDS 1930 - TO DATE

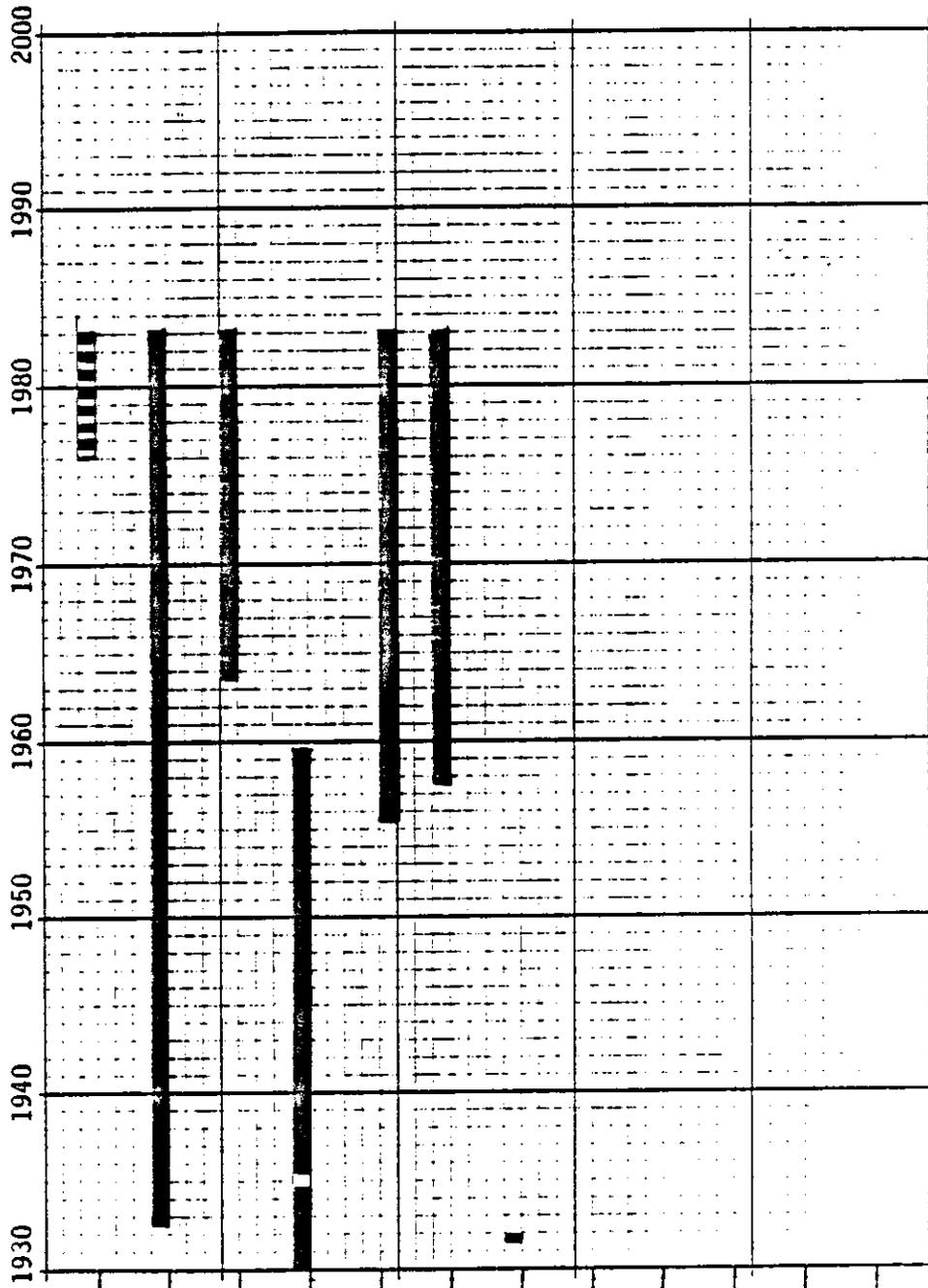


- MORRISON STREET GAUGE, ONTARIO
- GAUGE "B", ONTARIO
- GAUGE "45", ONTARIO
- SAB #2 INTAKE, ONTARIO
- MATERIAL DOCK, ONTARIO
- SLATERS POINT, ONTARIO
- BAYERS CREEK, ONTARIO
- BLACK CREEK, ONTARIO
- FRENCHMANS CREEK, ONTARIO
- CUSTOM DOCK, ONTARIO
- PUMP HOUSE, ONTARIO
- PEACE BRIDGE BELOW, ONTARIO
- PEACE BRIDGE ABOVE, ONTARIO

RECORDING GAUGE      STAFF GAUGE

NIAGARA RIVER

WATER LEVEL RECORDS 1930 - TO DATE



IBM 35, ONTARIO

BLACK ROCK CANAL, NEW YORK

NIAGARA INTAKE, NEW YORK

CONNERS ISLAND, NEW YORK

AMERICAN FALLS, NEW YORK

ASHLAND AVENUE, NEW YORK

SUSPENSION BRIDGE, NEW YORK

## GAUGE HISTORY

### Port Weller, Ontario

Elevations at Port Weller on 1903 Datum as used from 1929 to 1931 depend on B.M. "MMDVI" at elevation 295.038 feet (89.928 meters) based on a comparison of float gauge readings for 1929 with water surface elevations at Port Dalhousie. The 1903 Datum as used from 1956 to 1959 depend on B.M. "MMDVI" at elevation 295.104 feet (89.948 meters) derived by adding 0.384 feet to the published Geodetic Survey of Canada elevation of B.M. "MMDVI." This correction of 0.384 feet is taken to be the same as that used at Port Dalhousie which was determined by water level transfer from Kingston 1914-1917. Elevations at Port Weller on 1903 Datum as used from October 1959 to July 1965 depend on B.M. "MMDVI" at elevation 295.053 feet (89.932 meters). This elevation was derived by adding 0.318 feet to the published Geodetic Survey of Canada elevation of B.M. "MMDVI". IGLD (1955) elevations at Port Weller depend on B.M. "MMDVI" at elevation 293.844 feet (89.564 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

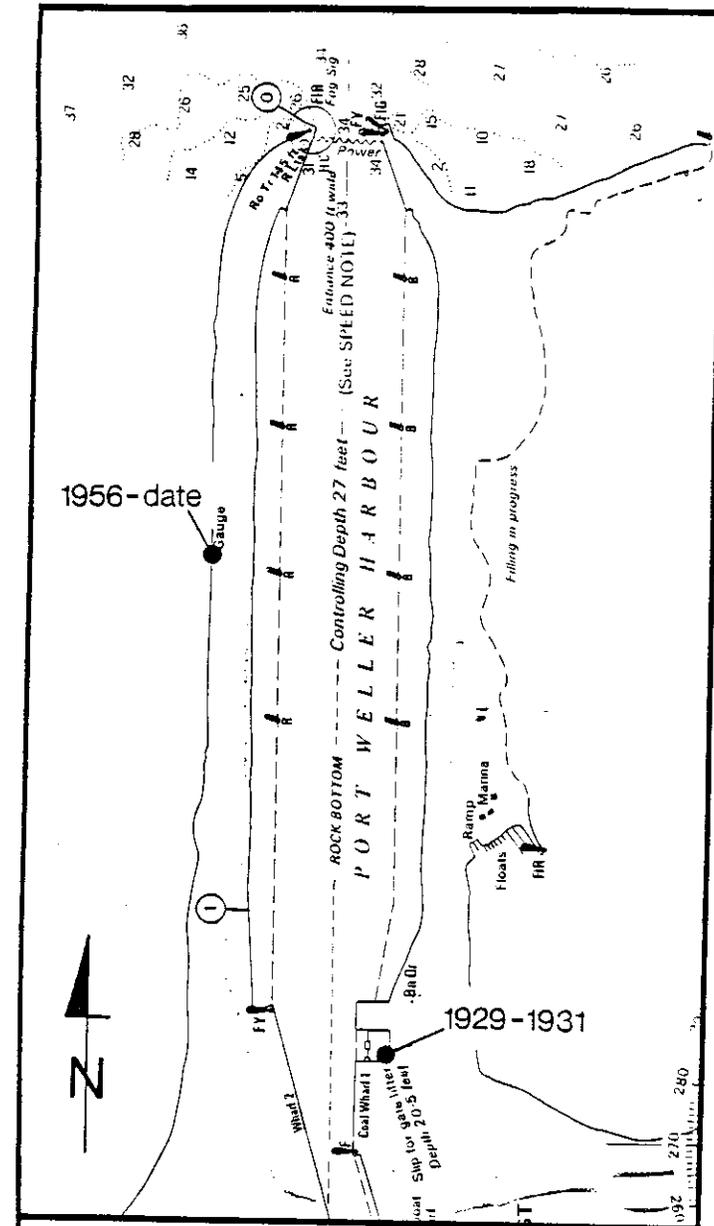
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Aug 1929-Oct 1931	MMDVI	293.829 feet (89.559 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jan 1956-Oct 1959	MMDVI	293.895 feet (89.579 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Nov 1959-Jun 1961	MMDVI	293.844 feet (89.564 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jul 1961-Jul 1965	MMDVI	293.844 feet (89.564 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Aug 1965-May 1971	H.S.3	257.392 feet (78.452 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jun 1971-Sep 1976	3526	288.161 feet (87.831 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Oct 1975-Date	H.S.3	78.452 meters (257.392 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used. Telemetering service was installed at Port Weller in May 1979.

Gauging Station Sites (see Plate 30, page 39):

(a) August 1929-October 1931: A recording gauge located over a special well in Section 15-E of the east-pier of the new Welland Ship Canal. Section 15-E is at the southeast corner of the storage basin.

(b) November 1956-Date: A recording gauge was located over a new concrete well near the lightkeeper's house on the west side of the new Welland Ship Canal.



WATER LEVEL GAUGE LOCATION  
 PORT WELLER, ONTARIO  
 1929-DATE

1982

## GAUGE HISTORY

### Port Dalhousie, Ontario

Elevations at Port Dalhousie on 1903 Datum depend on B.M. "MMDIII" and "Lower Sill of Old Lock #1" at elevations 263.402 feet (80.285 meters) and 232.79 feet (70.954 meters) respectively. Elevations at Port Dalhousie also depend on leveling from B.M. "C" at elevation 257.635 feet (78.527 meters) in 1920 and 1927. IGLD (1955) elevations at Port Dalhousie depend on B.M. "MMDIII" at elevation 262.149 feet (79.903 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the coordinating committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1849-May 1910	LOWER SILL OF OLD LOCK #1	231.537 feet (70.572 meters)	Staff Gauge, Once Daily	D. of R. and C.
Jun 1910-Nov 1910	MMDIII	262.149 feet (79.903 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Dec 1910-May 1911	LOWER SILL OF OLD LOCK #1	231.537 feet (70.572 meters)	Staff Gauge, Once Daily	D. of R. and C.
Jun 1911-Nov 1911	MMDIII	262.149 feet (79.903 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Dec 1911-May 1912	LOWER SILL OF OLD LOCK #1	231.537 feet (70.572 meters)	Staff Gauge, Once Daily	D. of R. and C.
Jun 1912-Dec 1912	MMDIII	262.149 feet (79.903 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jan 1913-May 1913	LOWER SILL OF OLD LOCK #1	231.537 feet (70.572 meters)	Staff Gauge, Once Daily	D. of R. and C.
Recording gauge operated June-December and staff gauge operated January-May until May 1917				
Jun 1917-Nov 1917	MMDIII	262.149 feet (79.903 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Dec 1917-May 1918	LOWER SILL OF OLD LOCK #1	231.537 feet (70.572 meters)	Staff Gauge, Once Daily	D. of R. and C.

Jun 1918-Dec 1918	MMDIII	262.149 feet (79.903 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jan 1919-May 1919	LOWER SILL OF OLD LOCK #1	231.537 feet (70.572 meters)	Staff Gauge, Once Daily	D. of R. and C.

Recording gauge operated June-December and staff gauge operated January-May until March 1921

Apr 1921-Dec 1921	MMDIII	262.149 feet (79.903 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jan 1922-Mar 1922	LOWER SILL OF OLD LOCK #1	231.537 feet (70.572 meters)	Staff Gauge, Once Daily	D. of R. and C.

Recording gauge operated April-December and staff gauge operated January-March until March 1931

Apr 1931-Oct 1956	MMDIII	262.149 feet (79.903 meters)	Recording Gauge, Hourly Scalings	C.H.S.
-------------------	--------	---------------------------------	-------------------------------------	--------

Gauge discontinued October 1956

Gauging Station Sites (see Plate 31, page 42):

(a) June 1849-May 1910: and the winter months thereafter until 1931; staff gauge reading over the sill of Old Lock #1.

(b) June 1910-October 1931: except for the winter months (i.e. December to May): recording gauge located on the concrete approach pier on the east side of the entrance to the Welland ship canal about 200 feet north of a coal hoist.

(c) November 1931-October 1947: A recording gauge over the well in the embarkment on the east side of the harbor at the angle where the entrance widens into the harbour.

(d) November 1947-July 1954: A recording gauge on the east coping and over the chain well for the lower gate of Old Lock #1.

(e) June 1954-October 1956: A recording gauge on the outside of the eastern approach pier, set in the recess about 200 feet north of the inner range light.

NOTE: There is an overlap of 2 1/2 months in the last two gauge positions.



## GAUGE HISTORY

### Hamilton, Ontario

1903 datum was never established at Hamilton. IGLD (1955) elevations at Hamilton depend on B.M. "MMCCCCXXXII" at elevation 262.445 feet (79.993 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

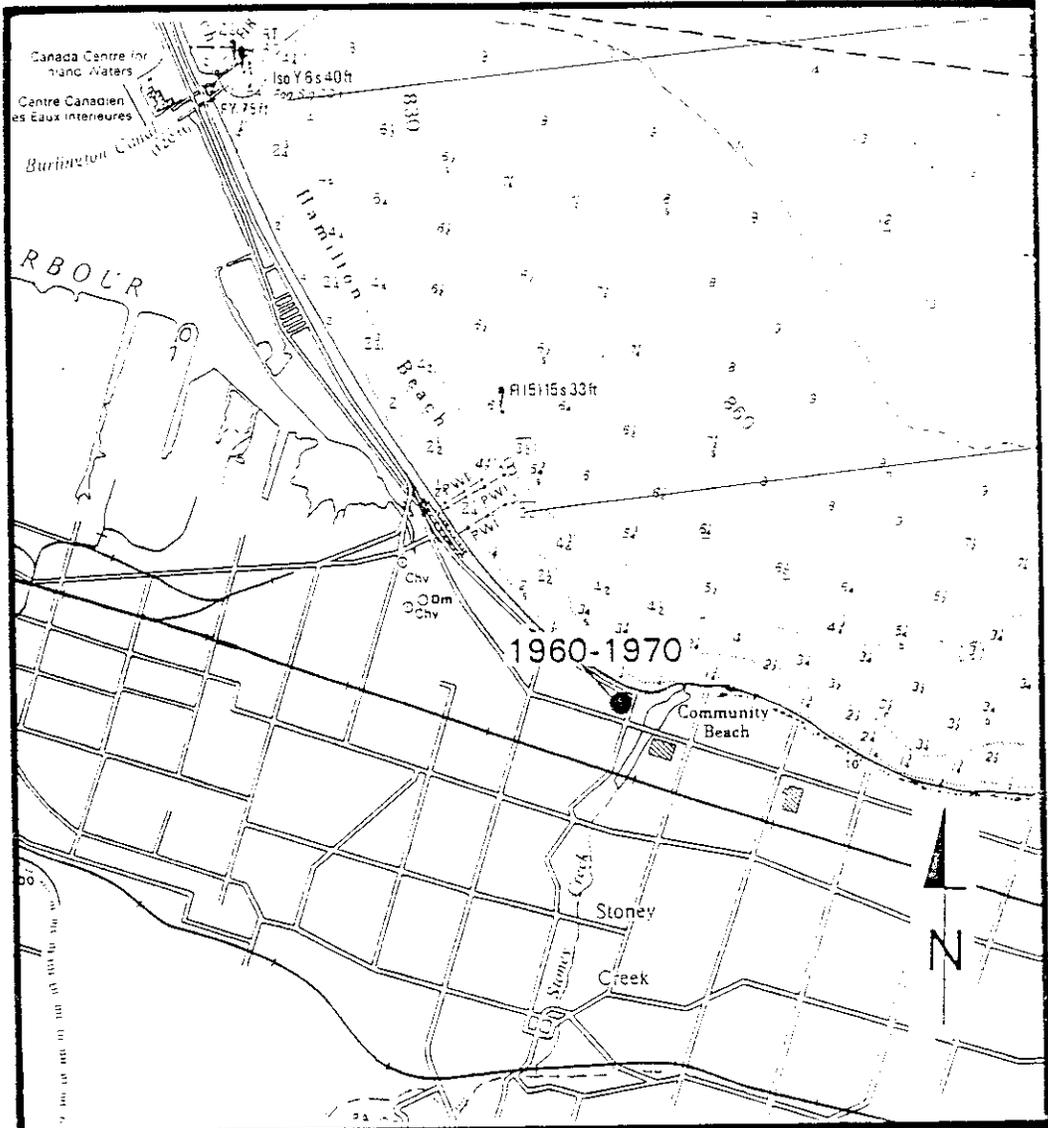
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Dec 1960-Jun 1961	MMCCCCXXXII	Arbitrary	Recording Gauge, Hourly Scalings	C.H.S.
Jun 1961-May 1970	MMCCCCXXXII	262.445 feet (79.993 meters)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: This station was relocated in May 1970 and renamed Burlington.

#### Gauging Station Site (see Plate 32, page 44):

(a) November 1960-May 1970: A analogue recording gauge located immediately in front of the Old Stoney Creek pumping station on the shore of Lake Ontario, approximately 1 1/2 miles southern end of the Burlington Skyway (overpass).



WATER LEVEL GAUGE LOCATION  
 HAMILTON, ONTARIO  
 1960-1970

1982

## GAUGE HISTORY

### Burlington, Ontario

1903 datum was never established at Burlington. IGLD (1955) elevations at Burlington depend on B.M. "3484" and "60 U 3327" at elevations 255.330 feet (77.825 meters) and 251.480 feet (76.652 meters) respectively as established by level line run in 1965 by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1970-Jun 1982	3484	255.330 feet (77.825 meters)	Recording Gauge, Hourly Scalings	C.H.S.
May 1981-Date	60 U 3327	76.652 meters (251.480 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue and digital recording gauges have been used at this location. Telemetering service was installed at Burlington in December 1980.

#### Gauging Station Sites (see Plate 33, page 46):

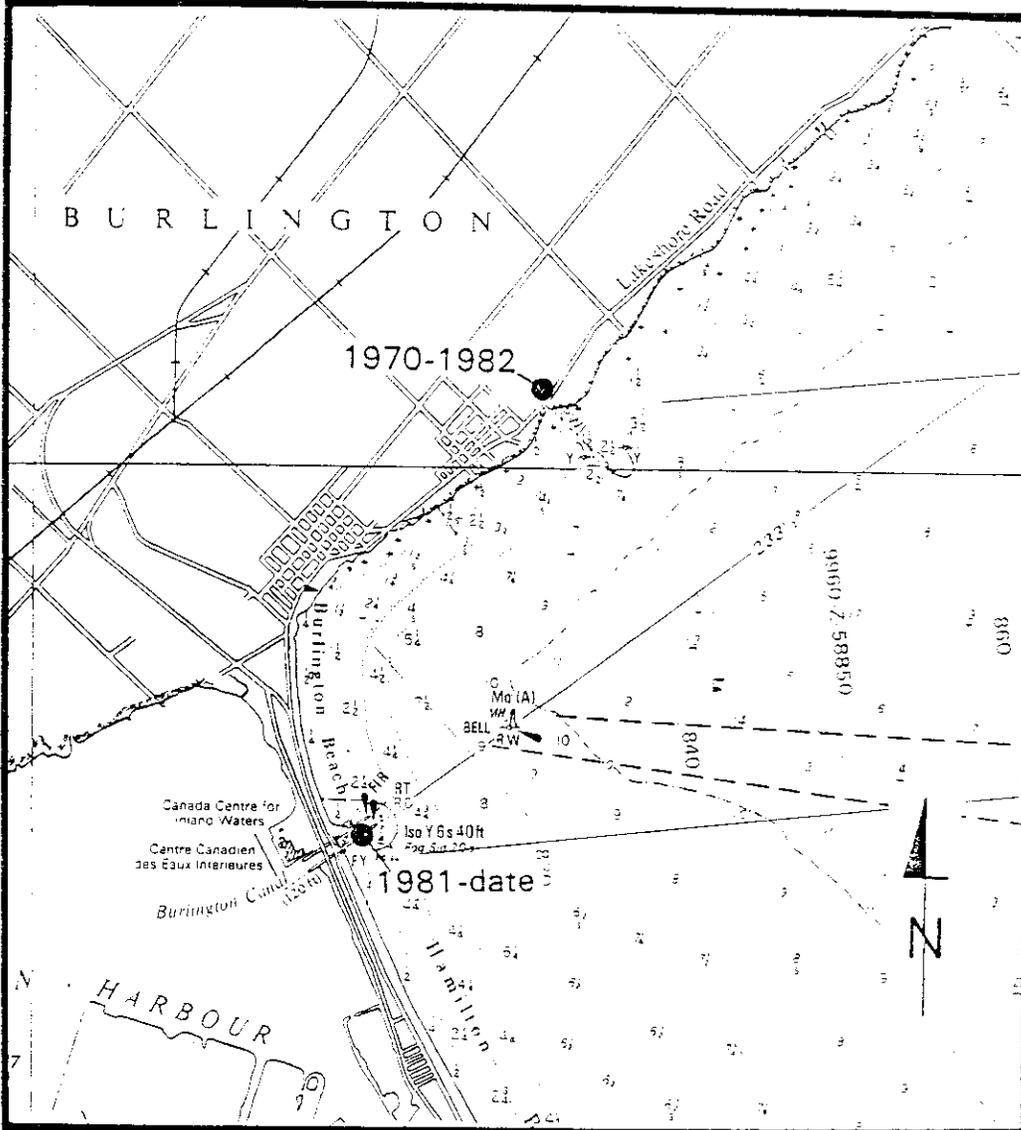
(a) May 1970-June 1982: Recording gauge located in the Burlington Filtration plant, 2.4 miles northeast of the Joseph Brant Hospital. Gauge located in an abandoned well.

(b) May 1981-Date: Recording gauge located in a concrete block house shelter on the southeast side of Burlington pier, 100 meters from lift bridge at the entrance of the Hamilton Harbour.

NOTE: There is an overlap of 13 months of records in the two locations above.

79°50'

43°20'



WATER LEVEL GAUGE LOCATION  
 BURLINGTON, ONTARIO  
 1970-DATE

1982

## GAUGE HISTORY

### Toronto, Ontario

Elevations at Toronto on 1903 Datum depend on B.M. "646 1/2" and on B.M. "BENCH PLATE" at elevations 254.16 feet (77.468 meters) and 255.061 feet (77.743 meters) respectively. Datum was based on comparisons of the float gauge readings from 1907 to 1909 with water surface elevations at Tibbett's Point and from 1917 to 1925 with water surface elevations at Kingston. It is not clear how these elevations came to change to 254.15 ft (77.465 meters) and 255.054 feet (77.740 meters). IGLD (1955) elevations at Toronto depend on B.M. "BENCH PLATE" and B.M. "579 F" at elevations 253.833 feet (77.368 meters) and 252.124 feet (76.847 meters) respectively as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jan 1861-May 1906	STAFF ZERO	243.573 feet (74.241 meters)	Staff Gauge, Once Daily	T.H.C.
Jun 1906-Nov 1906	646 1/2	252.929 feet (77.093 meters)	Recording Gauge, Hourly Scalings	D.P.W.
Dec 1906-May 1907	STAFF ZERO	243.573 feet (74.241 meters)	Staff Gauge, Once Daily	T.H.C.
Jun 1907-Nov 1907	646 1/2	252.929 feet (77.093 meters)	Recording Gauge, Hourly Scalings	D.P.W.
Dec 1907-May 1908	STAFF ZERO	243.573 feet (74.241 meters)	Staff Gauge, Once Daily	T.H.C.
Jun 1908-Oct 1908	646 1/2	252.093 meters) (77.093 meters)	Recording Gauge, Hourly Scalings	D.P.W.
Nov 1908-Apr 1909	STAFF ZERO	243.573 feet (74.241 meters)	Staff Gauge, Once Daily	T.H.C.
May 1909-Oct 1909	646 1/2	252.929 feet (77.093 meters)	Recording Gauge, Hourly Scalings	D.P.W.
Nov 1909-Dec 1916	STAFF ZERO	243.573 feet (74.241 meters)	Staff Gauge, Once Daily	T.H.C.
Jan 1917-Jun 1926	NO LEVELING RECORD		Recording Gauge, Hourly Scalings	T.H.C.

Jul 1926-Sep 1926	STAFF ZERO	243.573 feet (74.241 meters)	Staff Gauge, Once Daily	T.H.C.
Oct 1926-Dec 1959	BENCH PLATE	253.833 feet (27.368 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jan 1960-Jan 1970	BENCH PLATE	253.833 feet (77.368 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jan 1970-Nov 1976	579 F	252.129 feet (76.849 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Nov 1976-Date	579 F	76.849 meters (252.129 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used. Telemetry service was installed at Toronto in May 1979.

Gauging Station Sites (see Plates 34-36, pages 49-51):

(a) January 1861-May 1906: A Toronto Harbour Commission Staff Gauge fastened to the south face of Queen's Wharf about 200 feet from the west end. The gauge staff occupied at least one other position during that period, but was never far enough from the above location to be considered as a separate location.

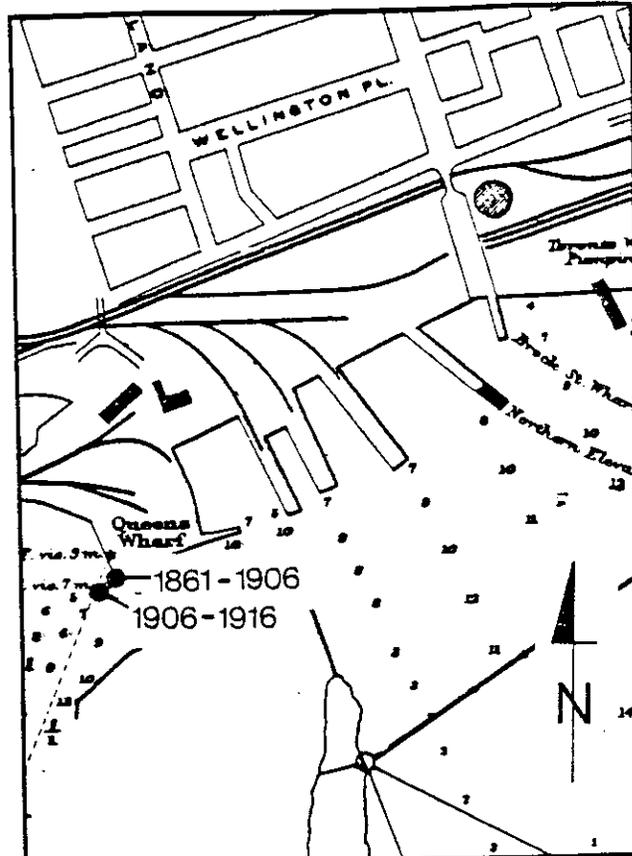
(b) July 1906-December 1916: A Public Works recording gauge and a Toronto Harbour Commission staff Gauge operated in a shed about 60 feet from the west end of Queen's Wharf.

(c) January 1917-June 1926: A recording gauge operated in the basement of the Toronto Harbour Commission Administration building at the foot of Bay Street.

(d) July 1926-September 1926: A staff gauge. Its location is uncertain.

(e) September 1926-January 1960: A recording gauge operated in or near the Toronto Harbour Commission garage on the slip at the foot of York Street.

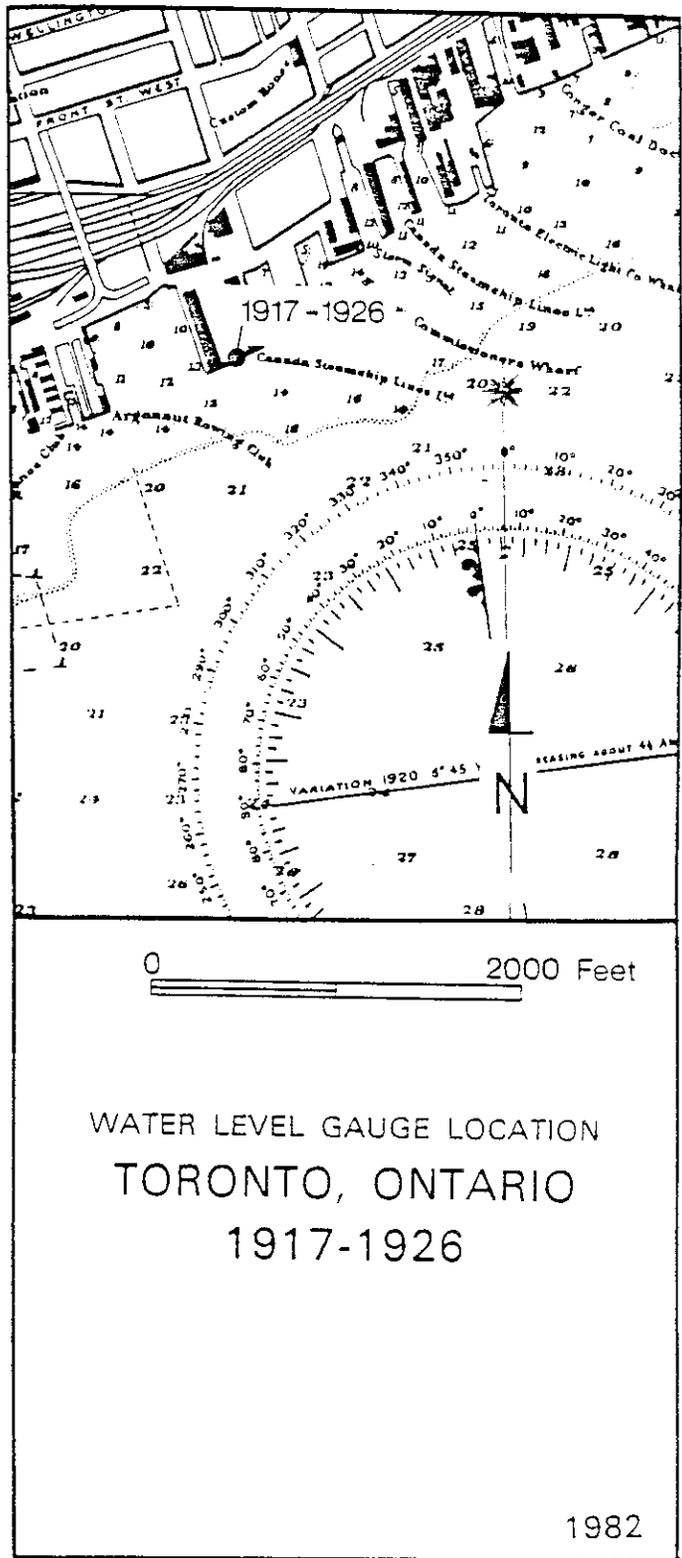
(f) January 1960-Date: A recording gauge operated at the foot of York Street approximately 50 feet in a westerly direction from the old location in the boat house.



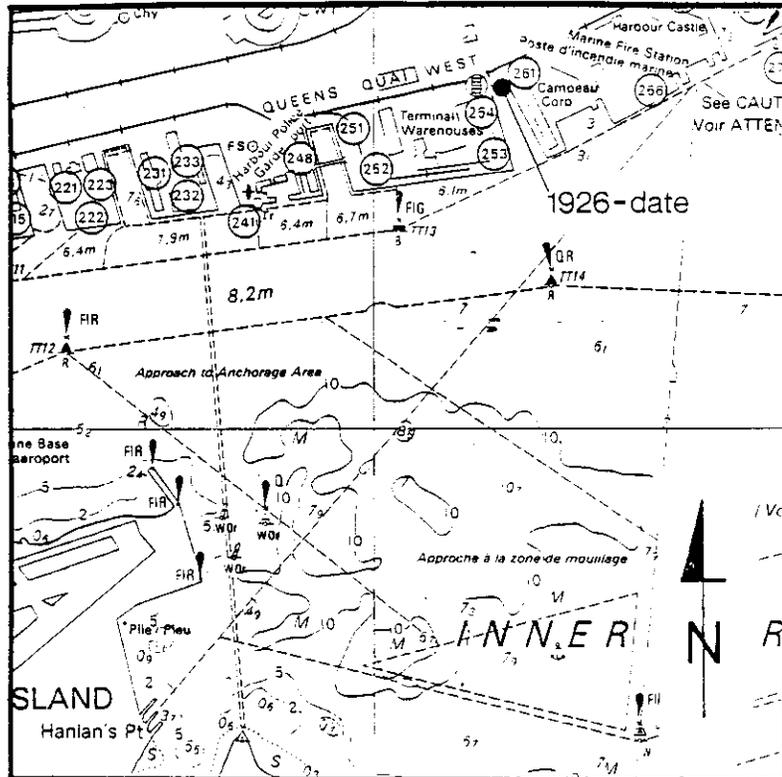
0 2000 Feet

WATER LEVEL GAUGE LOCATION  
 TORONTO, ONTARIO  
 1861-1916

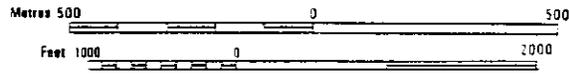
1982



79°23'



43°38'



WATER LEVEL GAUGE LOCATION  
 TORONTO, ONTARIO  
 1926-DATE

1982

## GAUGE HISTORY

### Oshawa, Ontario

1903 datum was never established at Oshawa. IGLD (1955) elevations at Oshawa depend on B.M. "67 U 041" at elevation 345.093 feet (105.184 meters). IGLD (1955) elevations at Oshawa were established by using the latest level line from Bench Mark "STEEL RIVET" at Kingston.

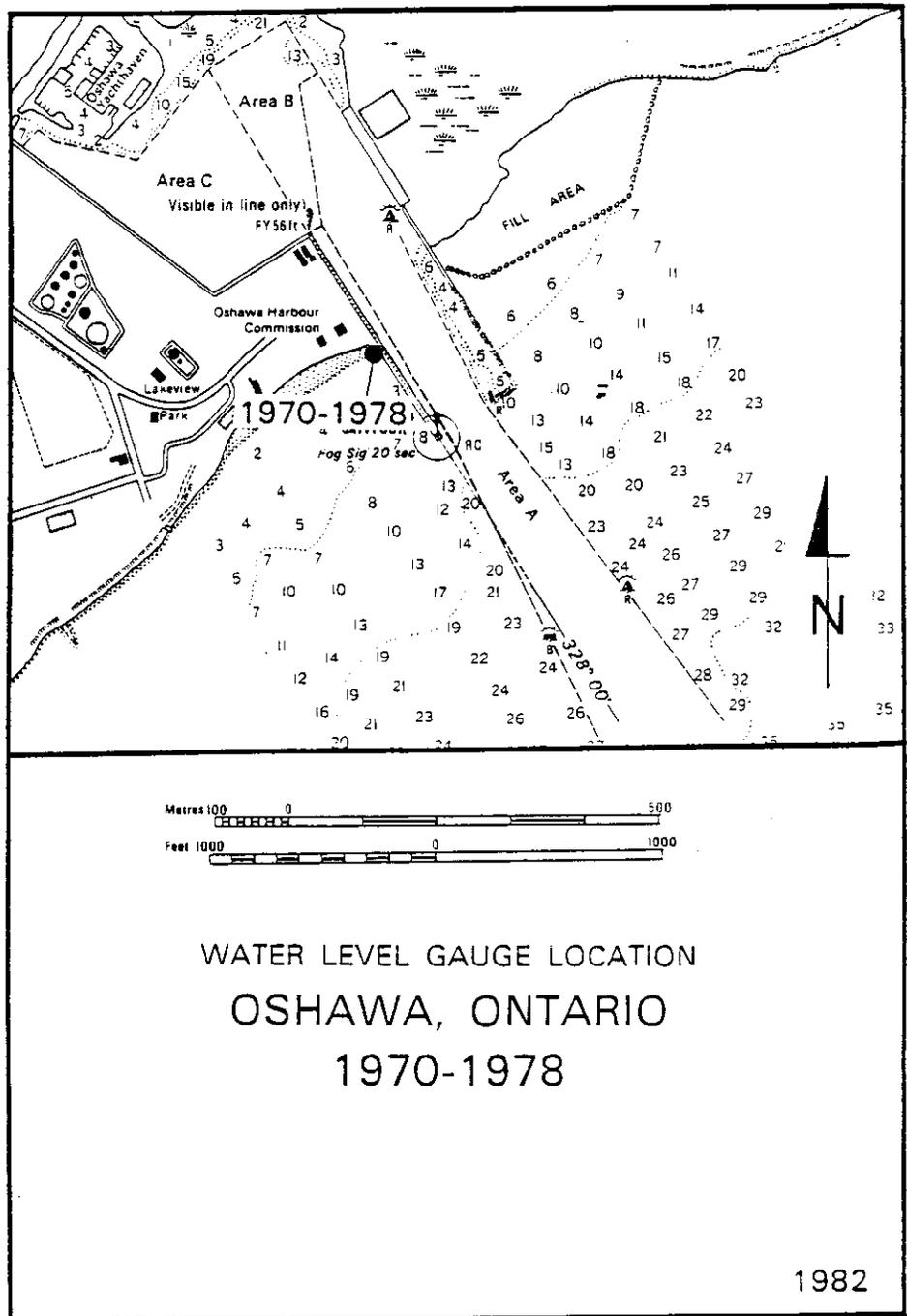
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Aug 1970-May 1975	67 U 041	345.093 feet (105.184 meters)	Recording Gauge, Hourly Scalings	C.H.S.
May 1975-Nov 1976	67 U 020	249.568 feet (76.071 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Nov 1976-Sep 1978	62 U 020	249.590 feet (76.075 meters)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Digital recording gauges have been used at this station.

#### Gauging Station Site (see Plate 37, page 53):

(a) August 1970-September 1978: A recording gauge at the north west corner of pier in the Oshawa Harbour.



## GAUGE HISTORY

### Cobourg, Ontario

Elevations at Cobourg on 1903 Datum depend on B.M. "171" at elevation 263.809 feet (80.409 meters). Elevations at Cobourg on 1903 Datum were derived by adding 0.522 feet to the published Geodetic Survey of Canada elevation of B.M. "171." This correction of 0.522 feet is taken to be the same as that at Brighton which was determined by water transfer from Tibbett's Point during the period 1908-1909. IGLD (1955) elevations at Cobourg depend on B.M. "171" at elevation 262.750 feet (80.086 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee. IGLD (1955) elevations at Cobourg also depend on B.M. "COB02" and "67 U 057" at elevations 250.243 feet (76.274 meters) and 253.806 feet (77.360 meters) respectively as established by level line run in 1975 by Geodetic Survey of Canada.

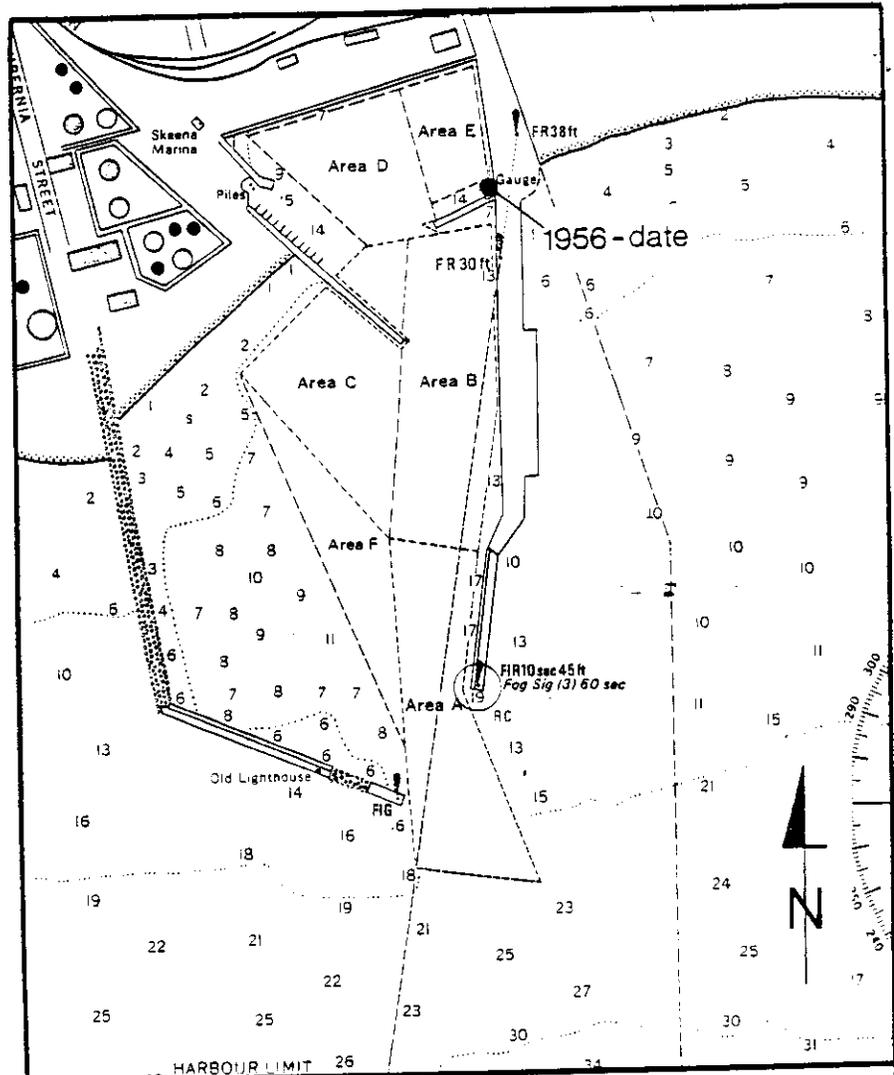
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1956-Jun 1961	171	262.750 feet (80.086 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jun 1961-Nov 1976	171	262.750 feet (80.086 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Nov 1976-Aug 1980	COB02	250.243 feet (76.274 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Aug 1980-Date	67 U 057	77.360 meters (253.806 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used. Telemetry service was installed at Cobourg in May 1979.

Gauging Station Site (see Plate 38, page 55):

(a) July 1956-Date: A recording gauge on the east side of dock, next to the Department of Public Works' boat house.



WATER LEVEL GAUGE LOCATION  
 COBOURG, ONTARIO  
 1956-DATE

1982

## GAUGE HISTORY

### Brighton, Ontario

Elevations at Brighton on 1903 Datum depend on B.M. "MCXCVIII" at elevation 256.572 feet (78.203 meters) based on a comparison of float gauge readings for 1908 and 1909 with water surface elevations at Tibbetts Point. IGLD (1955) elevations at Brighton depend on B.M. "MCXCVIII" at elevation 255.509 feet (77.879 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

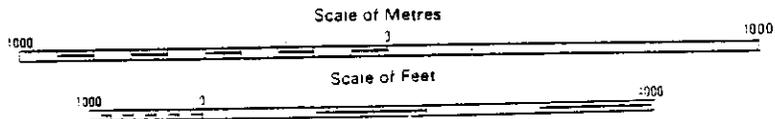
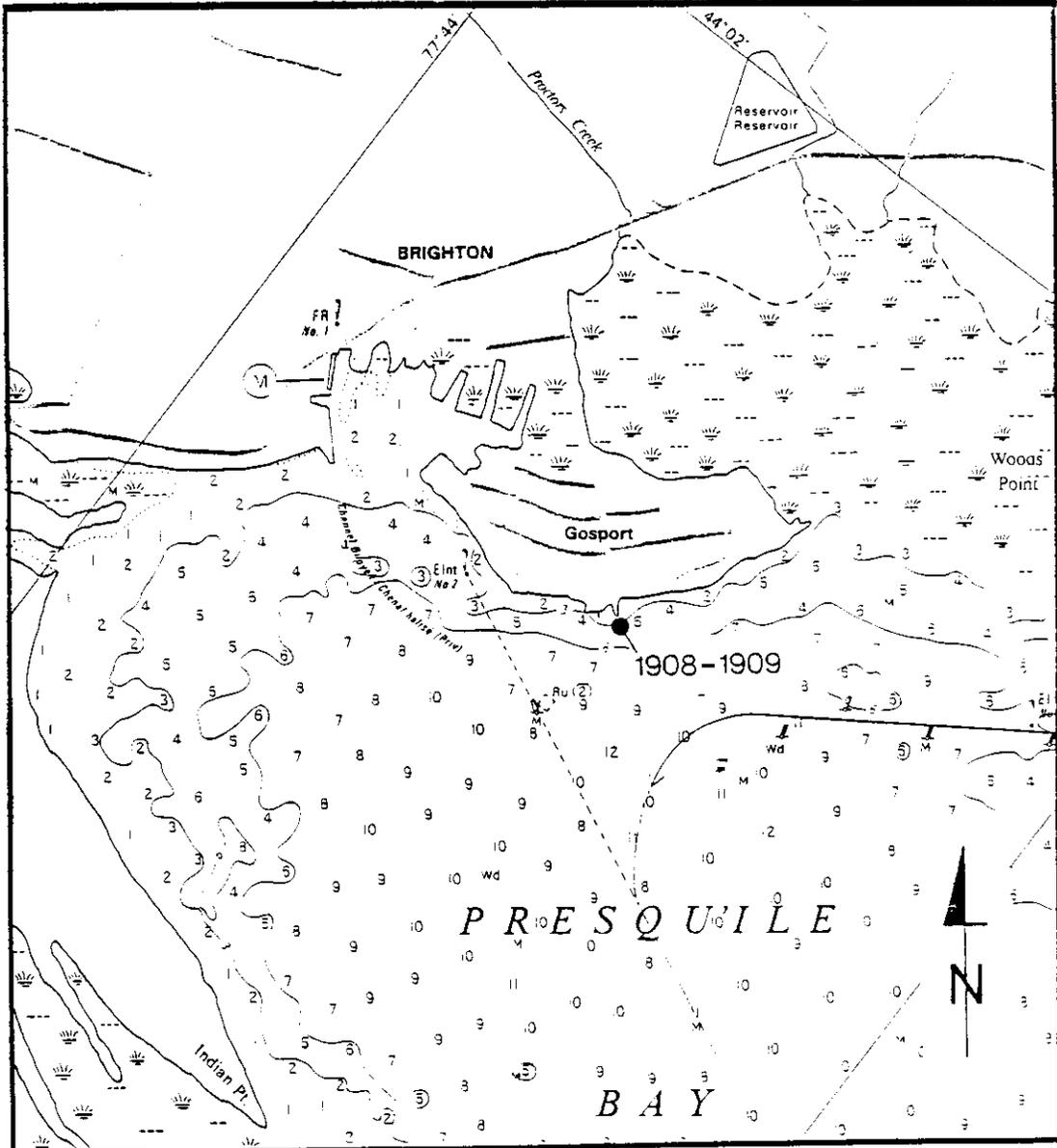
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1908-Oct 1908	MCXCVIII	255.509 feet (77.879 meters)	Recording Gauge, Hourly Scalings	C.H.S.
May 1909-Nov 1909	MCXCVIII	255.509 feet (77.879 meters)	Recording Gauge, Hourly Scalings	C.H.S.

#### Gauging Station Site (see Plate 39, page 57):

(a) June-October 1908 and May-November 1909: A recording gauge located on the Brighton Wharf.

77°44'



WATER LEVEL GAUGE LOCATION  
BRIGHTON, ONTARIO  
1908-1909

1982

## GAUGE HISTORY

### Point Petre, Ontario

1903 datum was never established at Point Petre. IGLD (1955) elevations at Point Petre depend on B.M. "67 U 155" and B.M. "NO 1" at elevation 252.626 feet (77.000 meters) and 255.899 feet (77.998 meters) as established by level line run in 1967 by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

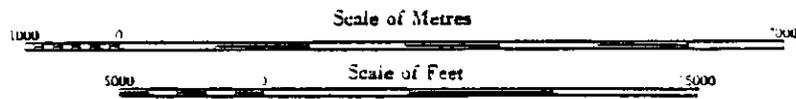
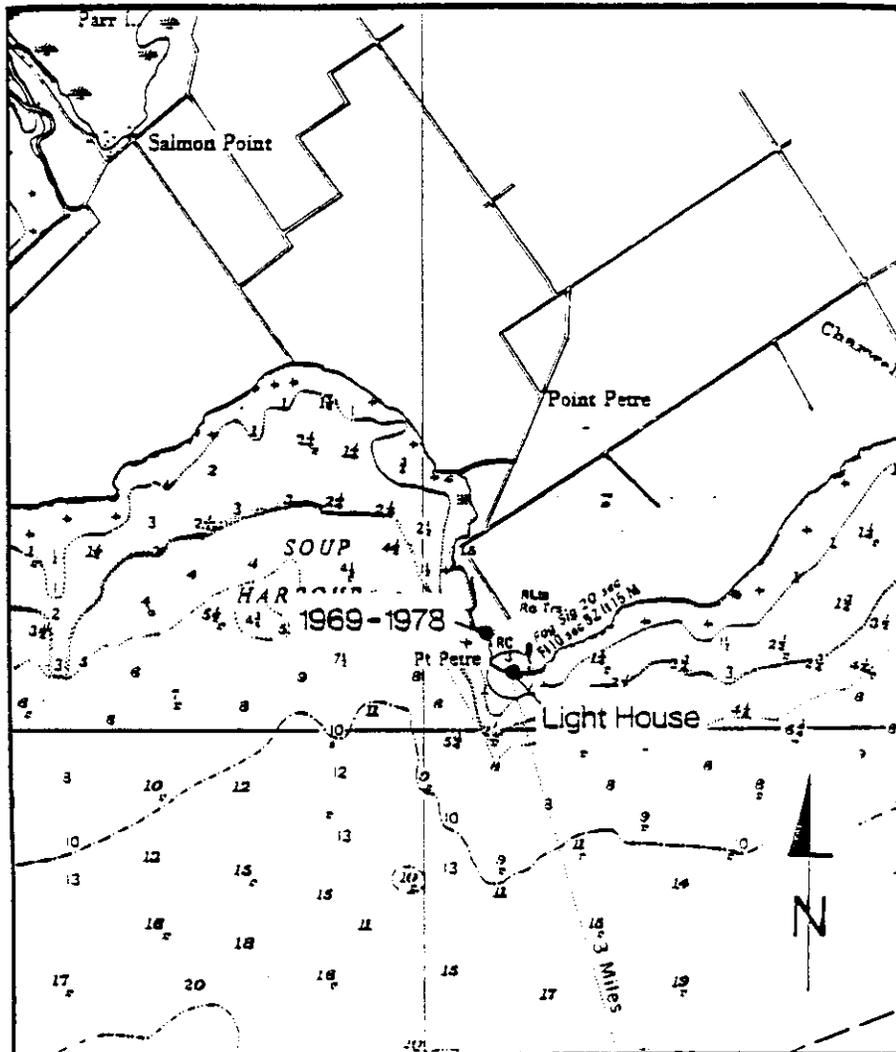
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jan 1969-Sep 1976	67 U 155	252.626 feet (77.000 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Sep 1976-Sep 1978	NO 1	255.899 feet (77.998 meters)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1975. Since that date, digital recording gauges have been used.

#### Gauging Station Site (see Plate 40, page 59):

(a) January 1969-September 1978: A recording gauge located 2,000 feet north of Point Petre lighthouse.

77°10'



WATER LEVEL GAUGE LOCATION  
POINT PIERRE, ONTARIO  
1969-1978

1982

## GAUGE HISTORY

### Kingston, Ontario

Elevations at Kingston on 1903 Datum depend on B.M. "STEEL RIVET" at elevation 252.710 feet (77.026 meters) based on a comparison of float gauge readings for 1909 and 1911 to 1915 with water surface elevations at Tibbett's Point. The sill elevation of 229.300 feet (69.891 meters) was obtained by instrumental leveling from B.M. "STEEL RIVET". IGLD (1955) elevations at Kingston depend on B.M. "STEEL RIVET" at elevation 251.664 feet (76.707 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee. IGLD (1955) elevations at Kingston also depend on B.M. "35" and B.M. "75 U 502" at elevations 264.615 feet (80.655 meters) and 250.879 feet (76.469 meters) respectively as established by level line run from B.M. "STEEL RIVET" by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jan 1895-Sep 1907	DRYDOCK SILL	228.254 feet (69.527 meters)	Staff Gauge, Once Daily	Ship Bldg Co. (?)
Aug 1908-Apr 1909	DRYDOCK SILL	228.254 feet (69.527 meters)	Staff Gauge, Once Daily	Ship Bldg Co. (?)
May 1909-Dec 1909	STEEL RIVET	251.664 feet (76.707 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jan 1910-Mar 1910	DRYDOCK SILL	228.254 feet (69.527 meters)	Staff Gauge, Once Daily	Ship Bldg Co. (?)
Apr 1910-Aug 1962	STEEL RIVET	251.664 feet (76.707 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Sep 1962-Aug 1974	35	264.615 feet (80.655 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Aug 1974-Jul 1977	67 U 197	251.364 feet (76.616 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jul 1977-Date	75 U 502	76.469 meters (250.879 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1971. Since that date, digital recording gauges have been used. Telemetry service was installed at Toronto in 1979.

Gauging Station Sites (see Plate 41, page 62):

(a) January 1895-December 1907, August 1908-April 1909, and January 1910-March 1910: A glass tube gauge in the pump house of the Kingston Shipbuilding Company's drydock.

(b) May 1909-December 1909 and April 1910-August 1962: A recording gauge inside the pump house of the Kingston Shipbuilding Company's dry dock.

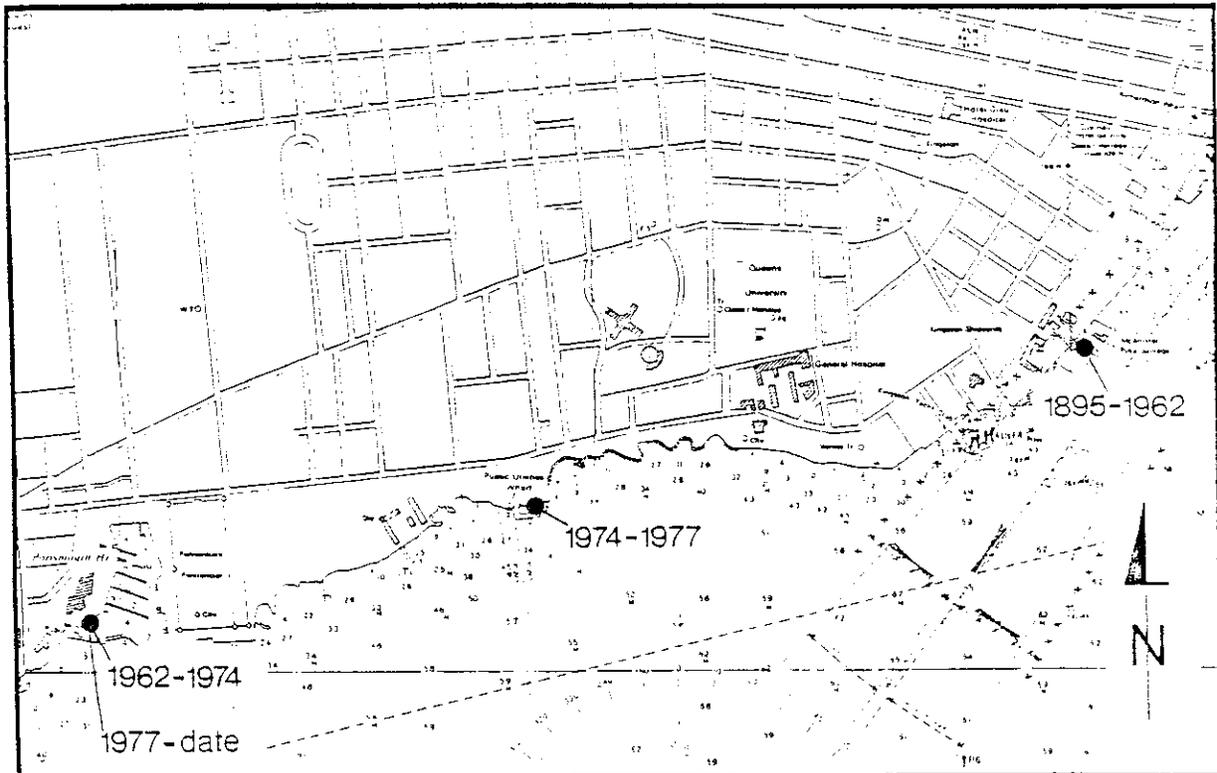
(c) September 1962-August 1974: A recording gauge in brick veneer gauge house over well on north face of Government Wharf at Portsmouth.

(d) August 1974-July 1977: A recording gauge in a STELCO gauge house over well on the inner wall of the water purification plant's wharf; one mile upstream of the Portsmouth gauge location.

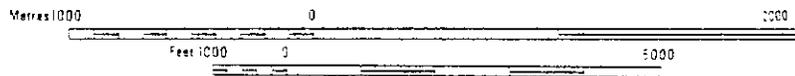
(e) July 1977-Date: A recording gauge over a well located in Portsmouth Olympic Harbour building in Kingston.

76°31'

76°29'



44°13'



WATER LEVEL GAUGE LOCATION  
KINGSTON, ONTARIO  
1895-date

1982

## GAUGE HISTORY

### Tibbetts Point, New York

Elevations at Tibbetts Point on 1903 Datum depend on B.M. "35" at elevation 263.854 feet (80.423 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Tibbetts Point on 1935 Datum were established by precise levels from Cape Vincent, New York. The 1935 Datum elevation of B.M. "35" at Tibbetts Point is 264.041 feet (80.480 meters) and depends on the elevation of B.M. "A" at Cape Vincent as being 254.326 feet (77.519 meters) on 1935 Datum. IGLD (1955) elevations at Tibbetts Point depend on B.M. "35" at elevation 262.821 feet (80.108 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

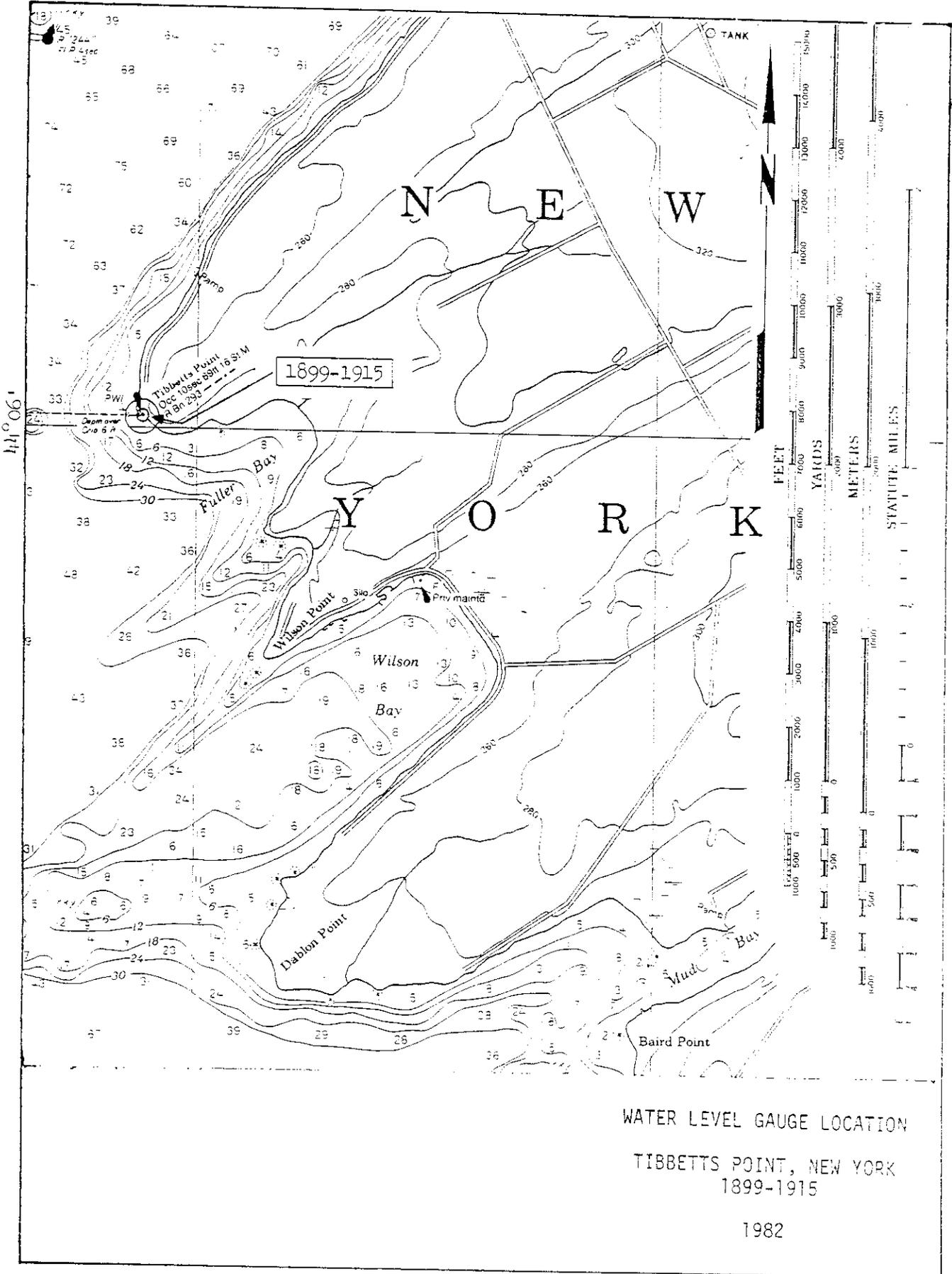
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Aug 1899-Dec 1915	35	262.821 feet (80.108 meters)	Recording Gauge, Hourly Scalings	U.S.L.S.

#### Gauging Station Site (see Plate 42, page 64):

(a) August 1899 - December 1915: A recording gauge located in the intake well of the Fog Signal Plant on the tip of Tibbetts Point.

76°22'



WATER LEVEL GAUGE LOCATION  
 TIBBETTS POINT, NEW YORK  
 1899-1915  
 1982

## GAUGE HISTORY

### Sackets Harbor, New York

Elevations at Sackets Harbor on 1903 Datum depend on B.M. "2" at elevation 264.62 feet (80.66 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Sackets Harbor on 1935 Datum were established by water level transfer from Oswego and Cape Vincent, New York, using recording gauge records at Oswego and Cape Vincent for the period May - September 1935. The 1935 Datum elevation of B.M. "2" at Sackets Harbor is 264.570 feet (80.641 meters) and depends on the elevation of B.M. "A" at Oswego as being 251.898 feet (76.779 meters) on 1935 Datum. IGLD (1955) elevations at Sackets Harbor depend on B.M. "WL 138" at elevation 265.360 feet (80.882 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1859-Dec 1859	2	263.360 feet	Float Gauge, Monthly Mean	U.S.L.S.
Apr 1860-Nov 1860	2	263.360 feet	Float Gauge, Monthly Mean	U.S.L.S.
Jan 1861-Jul 1861	2	263.360 feet	Float Gauge, Monthly Mean	U.S.L.S.
Sep 1871-Nov 1871	2	263.360 feet	Float Gauge, Monthly Mean	U.S.L.S.
Jun 1872-Nov 1872	2	263.360 feet	Float Gauge, Monthly Mean	U.S.L.S.
May 1873-Dec 1873	2	263.360 feet	Float Gauge, Monthly Mean	U.S.L.S.
May 1874-Sep 1874	2	263.360 feet	Float Gauge, Monthly Mean	U.S.L.S.
May 1875-Jun 1882	2	263.360 feet	Float Gauge, Monthly Mean	U.S.L.S.
Jun 1935-Sep 1935	2	263.360 feet	Float Gauge, Tri-Daily	U.S.L.S.
May 1941-Oct 1941	2	263.360 feet	Float Gauge, Tri-Daily	U.S.L.S.

May 1955-Oct 1955	WL 138	265.360 feet	Float Gauge, Tri-Daily	U.S.L.S.
Jun 1961-Sep 1961	WL 138	265.360 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1964-Sep 1964	WL 138	265.360 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1967-Sep 1967	MILITIA	246.528 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1968-Sep 1968	MILITIA	246.528 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1969-Oct 1969	MILITIA	246.528 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1970-Sep 1970	MILITIA	246.528 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1971-Oct 1971	MILITIA	246.528 feet	Recording Gauge, Hourly Scalings	N.O.S.
Apr 1972-Nov 1972	MILITIA	246.528 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1973-Sep 1973	MILITIA	246.528 feet	Recording Gauge, Hourly Scaling	N.O.S.
Jun 1976-Sep 1976	MILITIA	246.528 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1979-Sep 1979	WL 136	273.496 feet (83.362 meters)	Recording Gauge, Hourly Scalings	N.O.S.

Gauging Station Sites (see Plate 43, page 67):

(a) July 1859 - June 1882: A float gauge, the site of which was moved several times along the southwest shore of the harbor. The three locations were within a 500-foot stretch of the shore.

(b) June 1935 - October 1941: A float gauge located at the Naval Reserve Dock along the north shore of the harbor.

(c) May 1955 - October 1955: A float gauge located near the site of the 1860 gauge in the south corner of the harbor.

(d) June 1961 - September 1964: A tape gauge on the southerly side and near the inner end of Navy Point at the Navy Point Marina.

(e) May 1967 - September 1979: A recording gauge located on the southerly side and near the inner end of Navy Point at the Navy Point Marina.



## GAUGE HISTORY

### Port Ontario, New York

1903 Datum was never established at Port Ontario. Elevations at Port Ontario on 1935 Datum were established in 1948 by water level transfer from Oswego, New York and Kingston, Ontario using recording gauge records at Oswego and Kingston for the period July - October 1948. The 1935 Datum elevation of B.M. "LIGHT" at Port Ontario is 249.975 feet (76.192 meters) and depends on the elevation of B.M. "A" at Oswego as being 251.898 feet (76.779 meters) on 1935 Datum. IGLD (1955) elevations at Port Ontario depend on B.M. "LIGHT" at elevation 248.749 feet (75.819 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

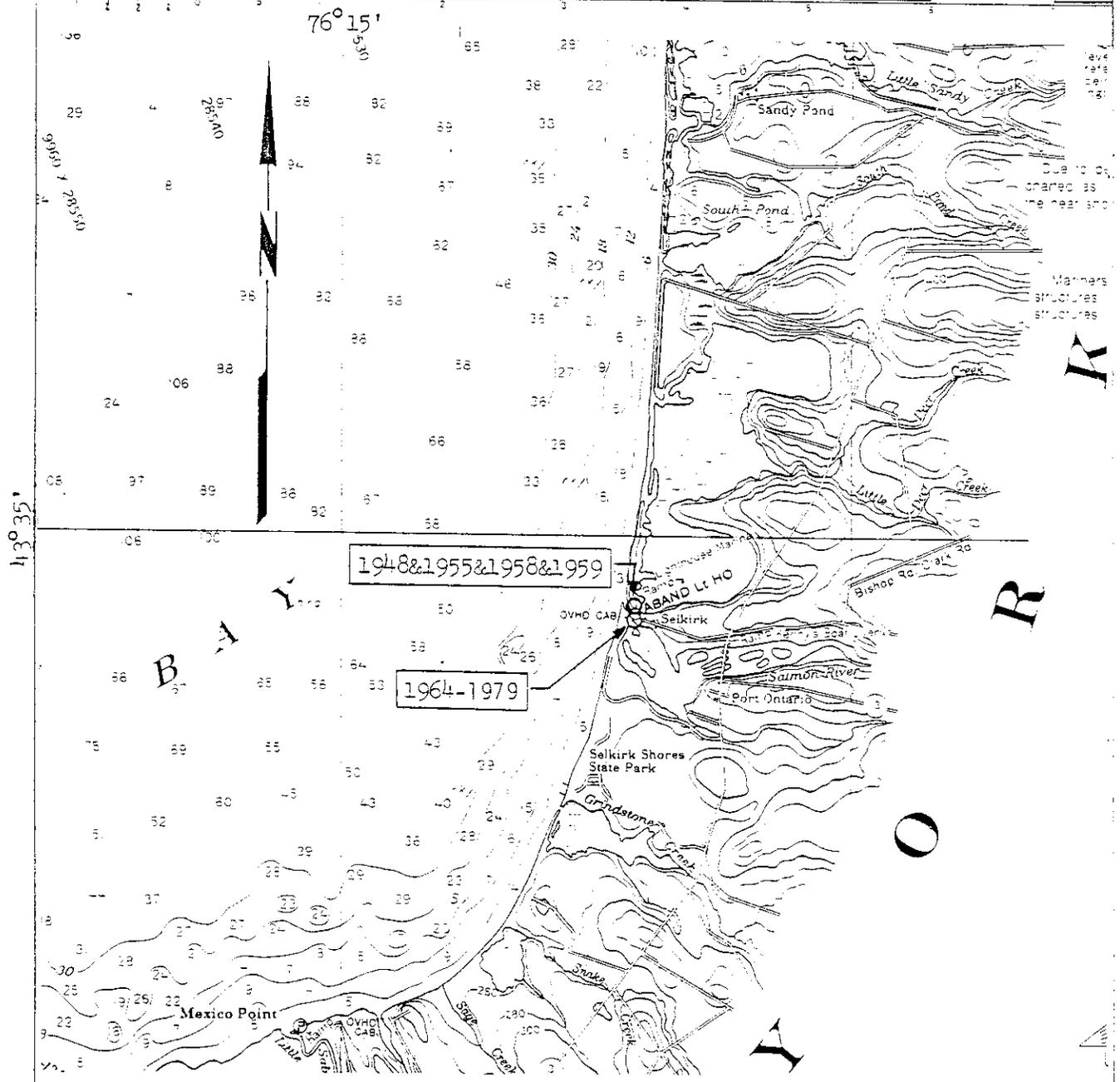
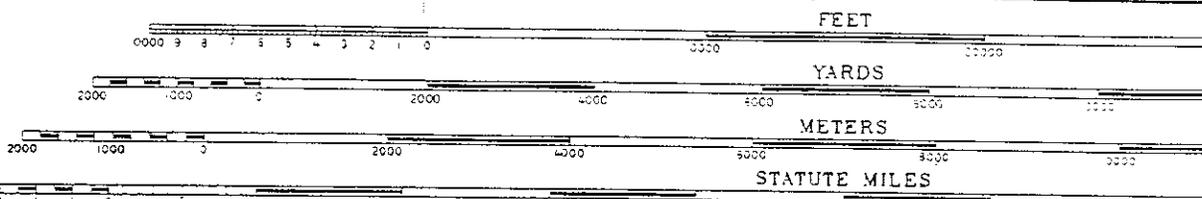
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1948-Oct 1948	LIGHT	248.749 feet	Float Gauge, Tri-Daily	U.S.L.S.
May 1955-Oct 1955	LIGHT	248.749 feet	Float Gauge, Tri-Daily	U.S.L.S.
Jun 1958-Sep 1958	LIGHT	248.749 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1959-Oct 1959	LIGHT	248.749 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1964-Sep 1964	LIGHT	248.749 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1967-Sep 1967	LIGHT	248.749 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1968-Sep 1968	LIGHT	248.749 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1970-Sep 1970	LIGHT	248.749 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Apr 1972-Nov 1972	LIGHT	248.749 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1976-Sep 1976	LIGHT	248.749 feet	Tape Gauge, Tri-Daily	N.O.S.
Jun 1979-Sep 1979	LIGHT	248.749 feet (75.819 meters)	Tape Gauge, Tri-Daily	N.O.S.

Gauging Station Sites (see Plate 44, page 70):

(a) June 1948 - September 1958: A float gauge was used until October 1955, a tape gauge was used in 1958. The gauges were located on the east bank of the Salmon River about 800 feet upstream from Lake Ontario.

(b) May 1959 - October 1959: A recording gauge located at the extreme northeast end of the hotel dockline about 800 feet upstream from Lake Ontario.

(c) May 1964 - September 1979: A tape gauge located at the southerly end of the concrete guardwall directly in front of the old Selkirk Lighthouse. A recording gauge was used in 1972.



WATER LEVEL GAUGE LOCATION  
 PORT ONTARIO, NEW YORK  
 1948-1979  
 1982

## GAUGE HISTORY

### Oswego, New York

Elevations at Oswego on 1903 Datum depend on B.M. "A" at elevation 251.898 feet (76.779 meters) as established by the U.S. Coast and Geodetic Survey level adjustment of 1903. In establishing 1935 Datum, the elevation of B.M. "A" was held at 251.898 feet (76.779 meters) above mean tide at New York. IGLD (1955) elevations at Oswego depend on B.M. "A" at elevation 250.671 feet (76.405 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jan 1837-Sep 1858	GAGE ZERO	242.86 feet	Staff Gauge, Once Monthly	NONE
Jun 1859-Mar 1872	EDGE PAVEMENT	250.653 feet	Staff Gauge, Once Daily	U.S.E.O.
Apr 1872-Nov 1872	EDGE PAVEMENT	250.653 feet	Unknown	U.S.E.O.
Dec 1872-Apr 1875	EDGE PAVEMENT	250.653 feet	Staff Gauge, Tri-Daily	U.S.E.O.
May 1875-Jan 1904	A	250.671 feet	Staff Gauge, Tri-Daily	U.S.E.O.
Feb 1904-Dec 1905	A	250.671 feet	Unknown	U.S.E.O.
Jan 1906-Dec 1932	A	250.671 feet	Staff Gauge, Tri-Daily	U.S.E.O.
Jan 1933-Apr 1934	A	250.671 feet	Recording Gauge, Hourly Scalings	U.S.E.O.
May 1934-Apr 1947	A	250.671 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1947-Sep 1947	A	250.671 feet	Float Gauge, Tri-Daily	U.S.L.S.
Oct 1947-Oct 1970	A	250.671 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	A	250.671 feet (76.405 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Readings during the period 1837-1858 were taken once a month irregularly varying from one reading in a year to eleven readings in a year except for 1850 when no readings were taken.

Analogue recording gauges used before November 1973. Since that date, digital recording gauges have been used. Telemetering service was installed at Oswego in November 1973.

Gauging Station Sites (see Plate 45, page 73):

(a) January 1837 - May 1934: A staff gauge was located in the southwest corner of the slip at the north end of the United States Engineers Storehouse at the foot of West Third Street until January 1933. At that time the staff gauge was discontinued and a recording gauge was located in the southeast corner of the same slip.

(b) June 1934 - October 1934: A recording gauge located at the U.S. Coast Guard Station on the east side of the Oswego River.

(c) November 1934 - June 1942: A recording gauge located in the southeast corner of the slip of the discontinued U.S. Engineers Storehouse at the foot of West Third Street.

(d) July 1942 - April 1947: A recording gauge at the southwest corner of the Delaware, Lackawanna, and Western Railroad coal dock near the foot of West Fourth Street.

(e) May 1947 - October 1950: A recording gauge located at the boathouse on the east side of the U.S. Coast Guard slip at the foot of West Third Street.

(f) November 1950 - May 1953: A recording gauge located at the southeast corner of the New York State Barge Canal Terminal Dock at the foot of West First Street.

(g) June 1953 - May 1963: A recording gauge located in the U.S. Coast Guard Station at the foot of West Third Street.

(h) May 1963 - Date: A recording gauge located inside and at the southwest corner of the Oswego Port Authority building on the east side of the Oswego River.



## GAUGE HISTORY

### Little Sodus Bay, New York

1903 Datum was never established at Little Sodus Bay. Elevations at Little Sodus Bay on 1935 Datum were established by water level transfer from Oswego and Cape Vincent, New York, using recording gauge records at Oswego and Cape Vincent for the period May - September 1935. The 1935 Datum elevation of B.M. "WL 132" at Little Sodus Bay is 263.179 feet (80.217 meters) and depends on the elevation of B.M. "A" at Oswego as being 251.898 feet (76.779 meters) on 1935 Datum. IGLD (1955) elevations at Little Sodus Bay depend on B.M. "WL 132" at elevation 261.931 feet (79.837 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1935-Sep 1935	WL 132	261.931 feet	Float Gauge, Tri-Daily	U.S.L.S.
May 1955-Oct 1955	WL 132	261.931 feet	Float Gauge, Tri-Daily	U.S.L.S.
Jun 1958-Sep 1958	WL 132	261.931 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1967-Sep 1967	WL 132	261.931 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1968-Sep 1968	WL 132	261.931 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1970-Oct 1970	WL 132	261.931 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Apr 1972-Nov 1972	WL 132	261.931 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1976-Sep 1976	WL 132	261.931 feet	Tape Gauge, Tri-Daily	N.O.S.
Jun 1979-Sep 1979	WL 132	261.931 feet (79.837 meters)	Tape Gauge, Tri-Daily	N.O.S.

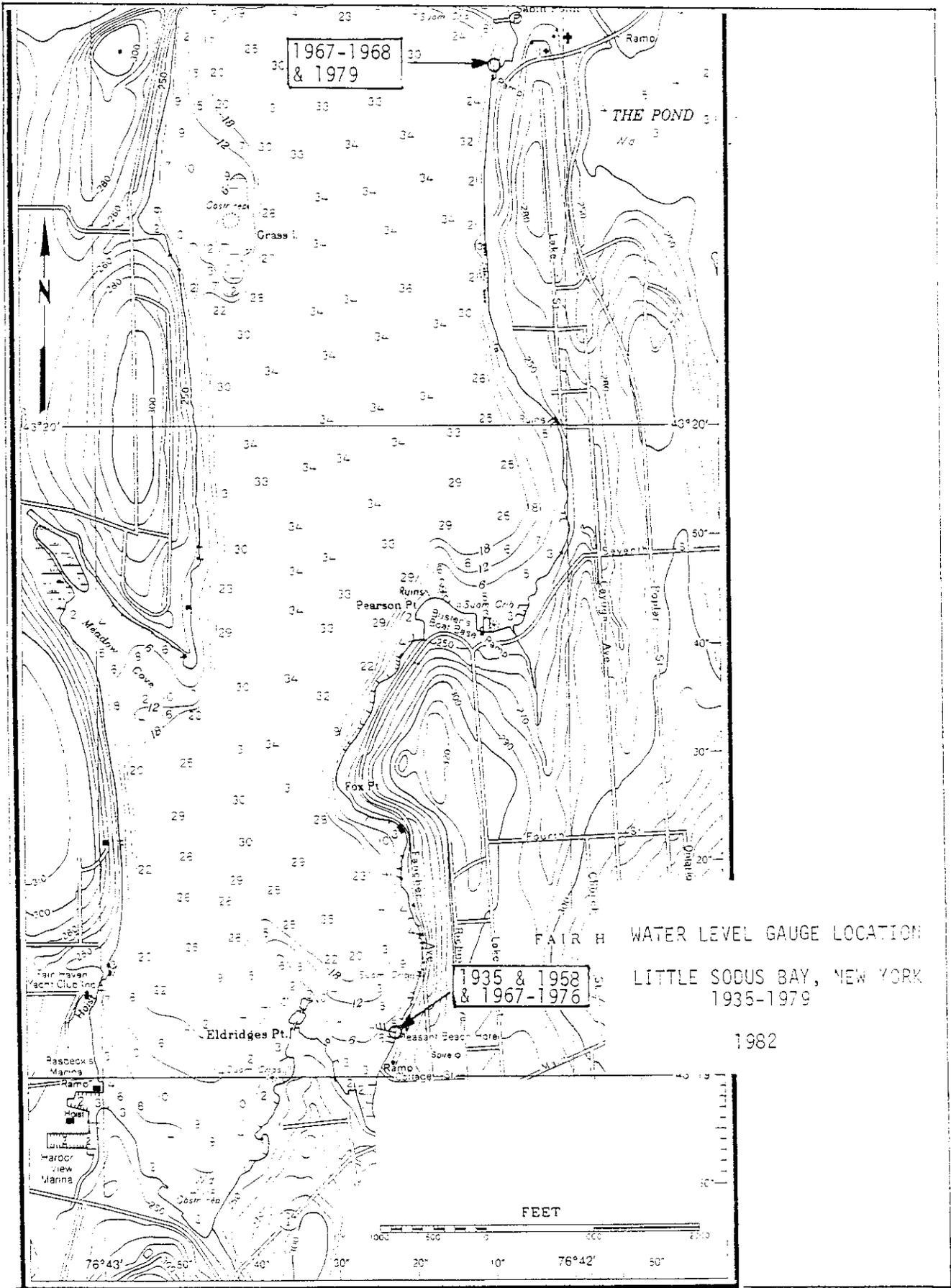
#### Gauging Station Sites (see Plate 46, page 76):

(a) May 1935 - September 1958: A float gauge was used until October 1955, a tape gauge was used in 1958. The gauges were located on the north side of the dock at the Pleasant Beach Hotel in Fair Haven, New York, in the southeast corner of the bay.

(b) May 1967 - September 1968: Tape gauges located at the dock of the Pleasant Beach Hotel in Fair Haven and the State Park Dock near the entrance of the bay.

(c) May 1970 - September 1976: A tape gauge located at the Pleasant Beach Hotel Dock in Fair Haven. A recording gauge was used in 1972.

(d) June 1979 - September 1979: A tape gauge located at the State Park Dock near the entrance of the bay.



## GAUGE HISTORY

### Sodus Bay, New York

1903 Datum was never established at Sodus Bay. Elevations at Sodus Bay on 1935 Datum were established by water level transfer from Oswego and Rochester, New York, using recording gauge records at Oswego and tri-daily gauge records at Rochester for the period May - September 1935. The 1935 Datum elevation of B.M. "WL 131" at Sodus Bay is 266.269 feet (81.159 meters) and depends on the elevation of B.M. "A" at Oswego as being 251.898 feet (76.779 meters) on 1935 Datum. IGLD (1955) elevations at Sodus Bay depend on B.M. "WL 131" at elevation 264.990 feet (80.769 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1935-Sep 1935	WL 131	264.990 feet	Float Gauge, Tri-Daily	U.S.L.S.
May 1955-Oct 1955	WL 131	264.990 feet	Float Gauge, Tri-Daily	U.S.L.S.
Jun 1958-Sep 1958	WL 131	264.990 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1967-Sep 1967	WL 131	264.990 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1968-Sep 1968	WL 131	264.990 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1970-Sep 1970	WL 131	264.990 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Apr 1972-Nov 1972	WL 131	264.990 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1976-Sep 1976	WL 131	264.990 feet	Tape Gauge, Tri-Daily	N.O.S.
Jun 1979-Sep 1979	WL 131	264.990 feet (80.769 meters)	Tape Gauge, Tri-Daily	N.O.S.

NOTE: In the 1962 report, this location was named Sodus Point.

Gauging Station Sites (see Plate 47, page 79):

(a) May 1935 - September 1935: A float gauge located near the southwest corner of the peninsula (Sand Point) projecting into Sodus Bay at Sodus Point.

(b) May 1955 - October 1955: A float gauge located at the northwest corner of Sand Point.

(c) June 1958 - November 1972: A tape gauge located near the southwest corner of the entrance channel to Sodus Bay. A recording gauge was used in 1972.

(d) June 1976 - September 1979: A tape gauge located at the northwest corner of Sand Point at the southwest corner of the Sand Point Bait Shop gas dock.



## GAUGE HISTORY

### Rochester, New York

Elevations at Rochester (Charlotte) on 1903 Datum depend on B.M. "NO 1" at elevation 283.169 feet (86.310 meters) as established by the U.S.C. & G.S. level adjustment of 1903. Elevations at Rochester on 1935 Datum were established by comparison of tri-daily float gauge readings with water surface elevations computed from hourly scalings at Oswego, New York, for the period May - September 1935. The 1935 Datum elevation of B.M. "NO 1" at Rochester is 282.975 feet (86.251 meters) and depends on the elevation of B.M. "A" at Oswego as being 251.898 feet (76.779 meters) on 1935 Datum. IGLD (1955) elevations at Rochester depend on B.M. "NO 1" at elevation 281.725 feet (85.870 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jan 1846-Jul 1850	FIXED POINT	247.35 feet	Staff Gauge, Once Monthly	NONE
Aug 1850-May 1859	FIXED POINT	Variable 248.35-247.59	Staff Gauge, Once Monthly	NONE
Jun 1859-Nov 1871	BASE STONE	279.45 feet	Staff Gauge, Two Readings/ Month-Maximum and Minimum	Weather Bureau
Dec 1871-Dec 1872	DECK ROD	248.91 feet	Unknown	U.S.E.O.
Jan 1873-Apr 1874	LIGHT HOUSE CIRCLE	281.725 feet	Unknown	U.S.E.O.
May 1874-Jun 1882	ENGINE HOUSE	251.955 feet	Unknown	U.S.E.O.
Jul 1882-May 1883	ENGINE HOUSE	251.955 feet	Staff Gauge, Tri-Daily	U.S.E.O.
Jun 1883-Nov 1903	BOLT NO 2	246.76 feet	Staff Gauge, Tri-Daily	U.S.E.O.
Dec 1903-Aug 1904	NO 1	281.725 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Sep 1904-Oct 1904	W SPIKE	247.813 feet	Recording Gauge, Hourly Scalings	U.S.L.S.

Nov 1904-Oct 1905	USEO BOARD	242.684 feet	Staff Gauge, Tri-Daily	U.S.E.O.
Nov 1905-Sep 1906	USEO BOARD	242.684 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1906-Dec 1907	GAGE	249.577 feet	Recording Gauge, Hourly Scalings	U.S.E.O.
May 1935-Sep 1935	E SPIKE	246.290 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Dec 1952-Jul 1953	MILITIA	248.073 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Aug 1953-Oct 1953	BENGEL	249.277 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Nov 1953-May 1954	MILITIA	248.073 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1954-Jul 1955	CLUB	247.623 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Aug 1955-Mar 1956	NO 1	281.725 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Apr 1956-Mar 1961	BENGEL	249.277 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Apr 1961-Sep 1967	NO 1	281.725 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Sep 1967-Oct 1970	WATERFRONT	255.502 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	WATERFRONT	255.502 feet (77.877 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Analogue recording gauges used before October 1973. Since that date, digital recording gauges have been used. Telemetering service was installed at Rochester in October 1973.

Gauging Station Sites (see Plates 48-49, pages 83-84):

(a) January 1846 - May 1859: Gauge readings made from a fixed point on a wharf near the mouth of the Genesee River. Exact gauge site location is unknown.

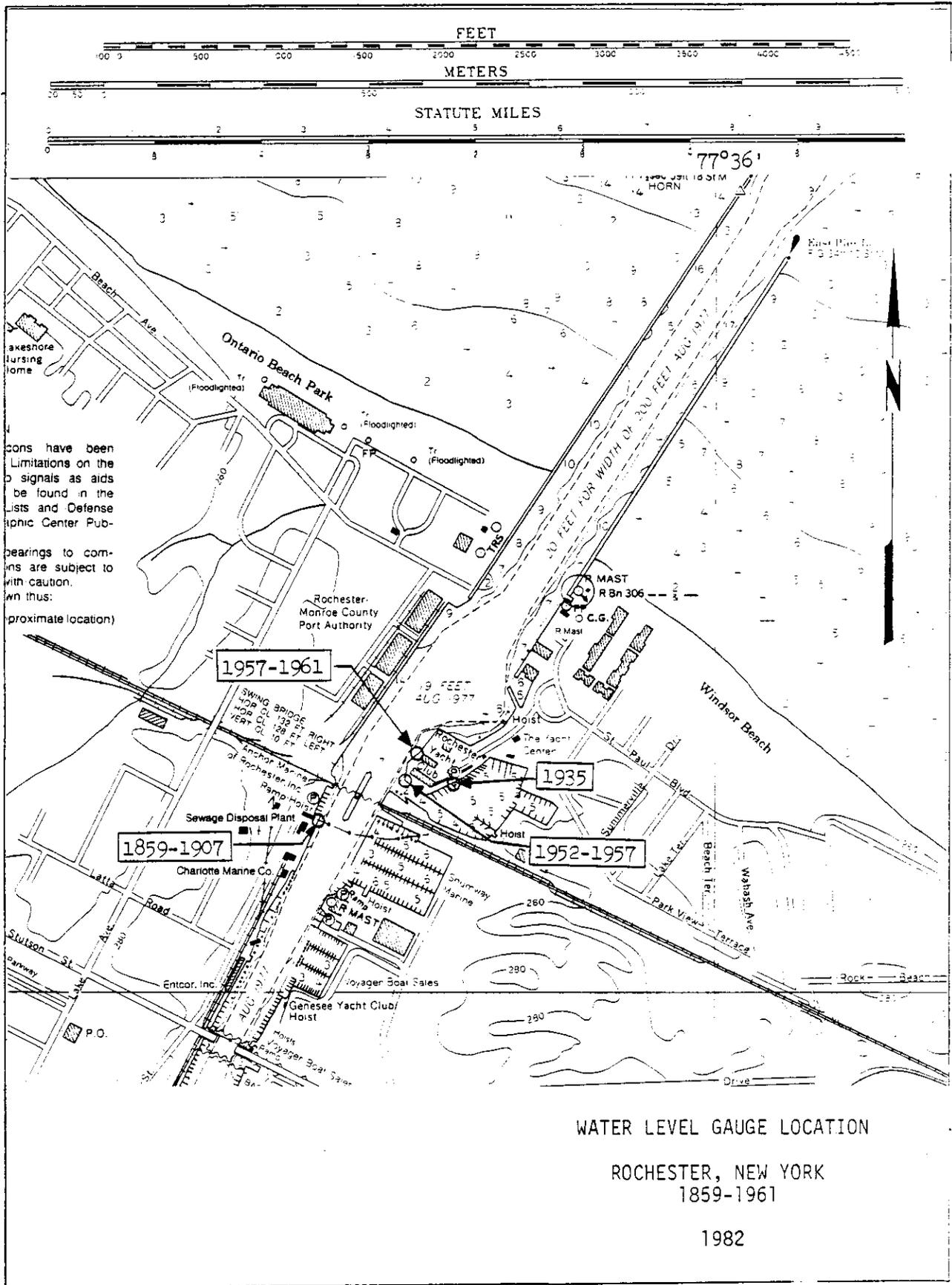
(b) June 1859 - December 1907: A float gauge located about 200 feet above the railroad bridge on the west bank of the Genesee River approximately one-half mile upstream from Lake Ontario.

(c) May 1935 - September 1935: A float gauge located in the Rochester Yacht Club basin on the east side of the Genesee River.

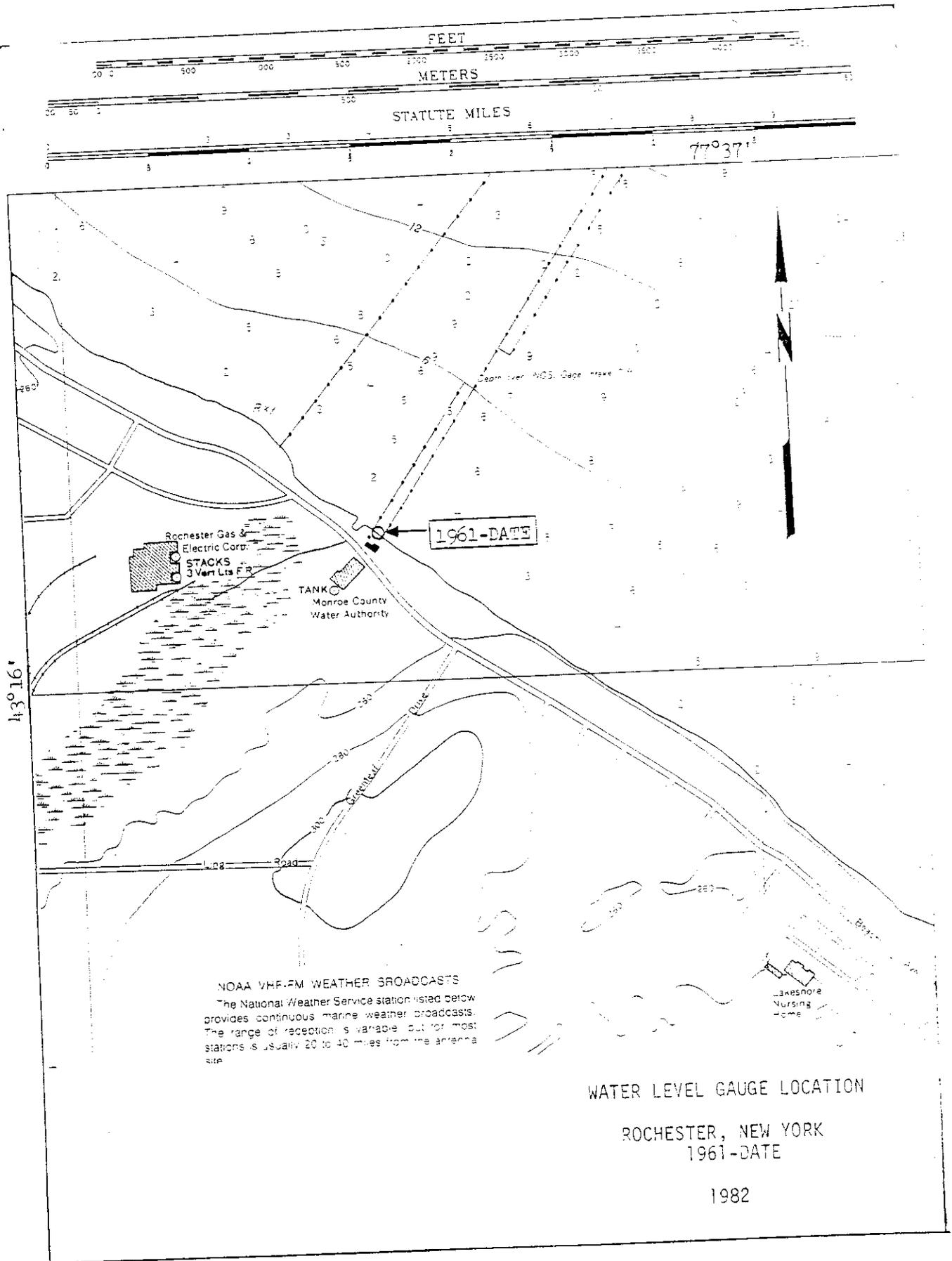
(d) December 1952 - December 1957: A recording gauge located at the entrance to the Rochester Yacht Club basin about one-half mile upstream from Lake Ontario.

(e) December 1957 - March 1961: A recording gauge located 100 feet downstream of the entrance to the Rochester Yacht Club basin on the east side of the Genesee River.

(f) April 1961 - Date: A recording gauge located on the shore of Lake Ontario approximately 1.4 miles west of the Genesee River at the Monroe County Water Authority.



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## GAUGE HISTORY

### Oak Orchard, New York

1903 Datum was never established at Oak Orchard. Elevations at Oak Orchard on 1935 Datum were established in 1948 by water level transfer from Oswego and Fort Niagara, New York, using recording gauge records at Oswego and tri-daily gauge records at Fort Niagara for the period June - October 1948. The 1935 Datum elevation of B.M. "HOTEL" at Oak Orchard is 255.774 feet (77.960 meters) and depends on the elevation of B.M. "A" at Oswego as being 251.898 feet (76.779 meters) on 1935 Datum. IGLD (1955) elevations at Oak Orchard depend on B.M. "HOTEL" at elevation 254.573 feet (77.594 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1948-Oct 1948	HOTEL	254.573 feet	Float Gauge, Tri-Daily	U.S.L.S.
May 1955-Oct 1955	HOTEL	254.573 feet	Float Gauge, Tri-Daily	U.S.L.S.
Jun 1958-Sep 1958	HOTEL	254.573 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1964-Sep 1964	HOTEL	254.573 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1967-Sep 1967	HOTEL	254.573 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1968-Sep 1968	HOTEL	254.573 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1969-Oct 1969	HOTEL	254.573 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1970-Sep 1970	HOTEL	254.573 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Apr 1972-Nov 1972	HOTEL	254.573 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1976-Sep 1976	HOTEL	254.573 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1979-Sep 1979	HOTEL	254.573 feet (77.594 meters)	Recording Gauge, Hourly Scalings	N.O.S.

Gauging Station Sites (see Plate 50, page 87):

(a) June 1948 - September 1964: A float gauge was located on the east bank of Oak Orchard Creek about 300 feet upstream from Lake Ontario and at the foot of the first east-west road south of the harbor entrance until October 1955. Tape gauges were used in 1958 and 1964.

(b) May 1967 - September 1970: A tape gauge located on the east bank of Oak Orchard Creek.

(c) April 1972 - September 1979: A recording gauge located off Water Street extended on the east bank of Oak Orchard Creek.



## GAUGE HISTORY

### Olcott, New York

Elevations at Olcott, New York on 1903 Datum depend on B.M. "4" at elevation 259.245 feet (79.018 meters) as established by the U.S.C. & G.S. level adjustment of 1903. Elevations at Olcott on 1935 Datum were established in 1937 by water level transfer from Oswego, New York, using recording gauge records at Oswego for the period May - September 1937. The 1935 Datum elevation of B.M. "4" at Olcott is 259.172 feet (78.996 meters) and depends on the elevation of B.M. "A" at Oswego as being 251.898 feet (76.779 meters) on 1935 Datum. IGLD (1955) elevations at Olcott depend on B.M. "WL 127" at elevation 276.167 feet (84.176 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Aug 1899-Aug 1903	4	257.923 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1935-Sep 1935	4	257.923 feet	Float Gauge, Tri-Daily	U.S.L.S.
May 1936-Sep 1936	4	257.923 feet	Float Gauge, Tri-Daily	U.S.L.S.
Apr 1937-Oct 1937	4	257.923 feet	Float Gauge, Tri-Daily	U.S.L.S.
May 1955-Oct 1955	WL 126	260.949 feet	Float Gauge, Tri-Daily	U.S.L.S.
Jun 1958-Sep 1958	WL 126	260.949 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1961-Sep 1961	WL 127	276.167 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1964-Sep 1964	WL 127	276.167 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Nov 1966-Oct 1970	GAGE	254.554 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	GAGE	254.554 feet (77.588 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Analogue recording gauges used before November 1966. Since that date, digital recording gauges have been used at Olcott.

Gauging Station Sites (see Plate 51, page 90):

(a) August 1899 - August 1903: A recording gauge located on the south side of the lighthouse on the outer end of the west pier.

(b) May 1935 - September 1958: A float gauge (1935-1955) located on the east shore of Eighteenmile Creek in a group of boat wells at the downstream side of the highway bridge. A tape gauge was used in 1958.

(c) June 1961 - September 1961: A recording gauge located on the easterly side of Eighteenmile Creek, about 500 feet downstream from the Main Street bridge, and on the property of the Hedley Boat Company.

(d) June 1964 - September 1964: A tape gauge located on the easterly side of Eighteenmile Creek, about 500 feet downstream from the Main Street bridge, and on the property of the Hedley Boat Company.

(e) November 1966 - Date: A recording gauge located in an abandoned water intake building one-half mile west of Olcott on Crescent Street.



## GAUGE HISTORY

### Wilson, New York

1903 Datum was never established at Wilson. Elevations at Wilson on 1935 Datum were established in 1948 by water level transfer from Oswego and Fort Niagara, New York, using recording gauge records at Oswego and tri-daily gauge records at Fort Niagara for the period June - October 1948. The 1935 Datum elevation of B.M. "GARAGE" at Wilson is 261.990 feet (79.855 meters) and depends on the elevation of B.M. "A" at Oswego as being 251.898 feet (76.779 meters) on 1935 Datum. IGLD (1955) elevations at Wilson depend on B.M. "GARAGE" at elevation 260.800 feet (79.492 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1948-Oct 1948	GARAGE	260.800 feet	Float Gauge, Tri-Daily	U.S.L.S.
May 1955-Oct 1955	GARAGE	260.800 feet	Float Gauge, Tri-Daily	U.S.L.S.
Jun 1958-Sep 1958	GARAGE	260.800 feet	Float Gauge, Tri-Daily	U.S.L.S.
May 1964-Sep 1964	GARAGE	260.800 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1967-Sep 1967	GARAGE	260.800 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1968-Oct 1968	GARAGE	260.800 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1969-Oct 1969	GARAGE	260.800 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1970-Oct 1970	GARAGE	260.800 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1971-Oct 1971	HARBOR	263.264 feet	Recording Gauge, Hourly Scalings	N.O.S.
Apr 1972-Nov 1972	HARBOR	263.264 feet	Recording Gauge, Hourly Scalings	N.O.S.
Apr 1973-Sep 1973	HARBOR	263.264 feet	Recording Gauge, Hourly Scalings	N.O.S.

Jun 1976-Oct 1976	HARBOR	263.264 feet	Tape Gauge, Tri-Daily	N.O.S
May 1977-Sep 1977	HARBOR	263.264 feet	Tape Gauge, Tri-Daily	N.O.S.
Jun 1979-Sep 1979	HARBOR	263.264 feet (80.243 meters)	Tape Gauge, Tri-Daily	N.O.S.

Gauging Station Sites (see Plate 52, page 93):

(a) June 1948 - September 1964: A float gauge located in the northeast corner of the harbor. A tape gauge was used in 1964.

(b) June 1967 - September 1973: A recording gauge located in the northeast corner of the harbor.

(c) June 1976 - September 1979: A tape gauge located along the east end of the harbor at the rear of the Wilson Harbor Restaurant.



## GAUGE HISTORY

### Fort Niagara, New York

1903 Datum was never established at Fort Niagara. Elevations at Fort Niagara on 1935 Datum were established by water level transfer from Oswego, New York, using recording gauge records at Oswego for the period May - September 1935. The 1935 Datum elevation of B.M. "WL 121" at Fort Niagara is 255.099 feet (77.754 meters) and depends on the elevation of B.M. "A" at Oswego as being 251.898 feet (76.779 meters) on 1935 Datum. IGLD (1955) elevations at Fort Niagara depend on B.M. "WL 121" at elevation 253.841 feet (77.371 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Mar 1815-Oct 1827	GAGE ZERO	240.22 feet	Staff Gauge, Once Monthly	NONE
Jul 1838-Oct 1838	GAGE ZERO	240.22 feet	Staff Gauge, Once Monthly	NONE
Jun 1859-Dec 1871	DAVIS STORE	296.439 feet	Float Gauge, Daily	U.S.L.S.
May 1935-Sep 1935	WL 121	253.841 feet	Float Gauge, Tri-Daily	U.S.L.S.
Jun 1942-Mar 1952	WL 121	253.841 feet	Float Gauge, Tri-Daily	U.S.L.S.
Apr 1952-Oct 1968	WL 121	253.841 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1969-Sep 1969	PIT	248.478 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1970-Sep 1970	PIT	248.478 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Apr 1972-Nov 1972	PIT	248.478 feet	Recording Gauge, Hourly Scalings	N.O.S.
May 1976-Oct 1976	PIT	248.478 feet	Recording Gauge, Hourly Scalings	N.O.S.
May 1977-Sep 1977	PIT	248.478 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1979-Sep 1979	PIT	248.478 feet (75.736 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: From 1815 through 1826 a single reading was made in March or April and another in either June or July. In 1827 a single reading was made in June and one in October. In 1838 one reading was made in each of the months July, August, and October. From an article on the levels of Lake Ontario, published by Mr. Edward Giddings who made the readings, it appears that the major purpose of the lake level observations was to determine the yearly rise and fall of the lake waters.

Gauging Station Sites (see Plate 53, page 96):

(a) March 1815 - October 1838: Water level readings from a point 5 feet below upper surface of upper end of cap sill of wharf at mouth of river near Fort Niagara.

(b) June 1859 - December 1871: A float gauge located on a wharf near Fort Niagara.

(c) May 1935 - September 1935: A float gauge located on the United States Coast Guard wharf near Fort Niagara.

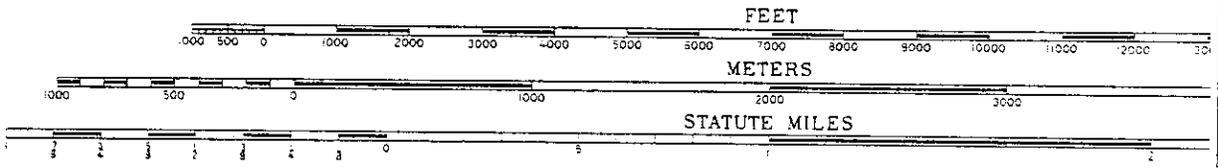
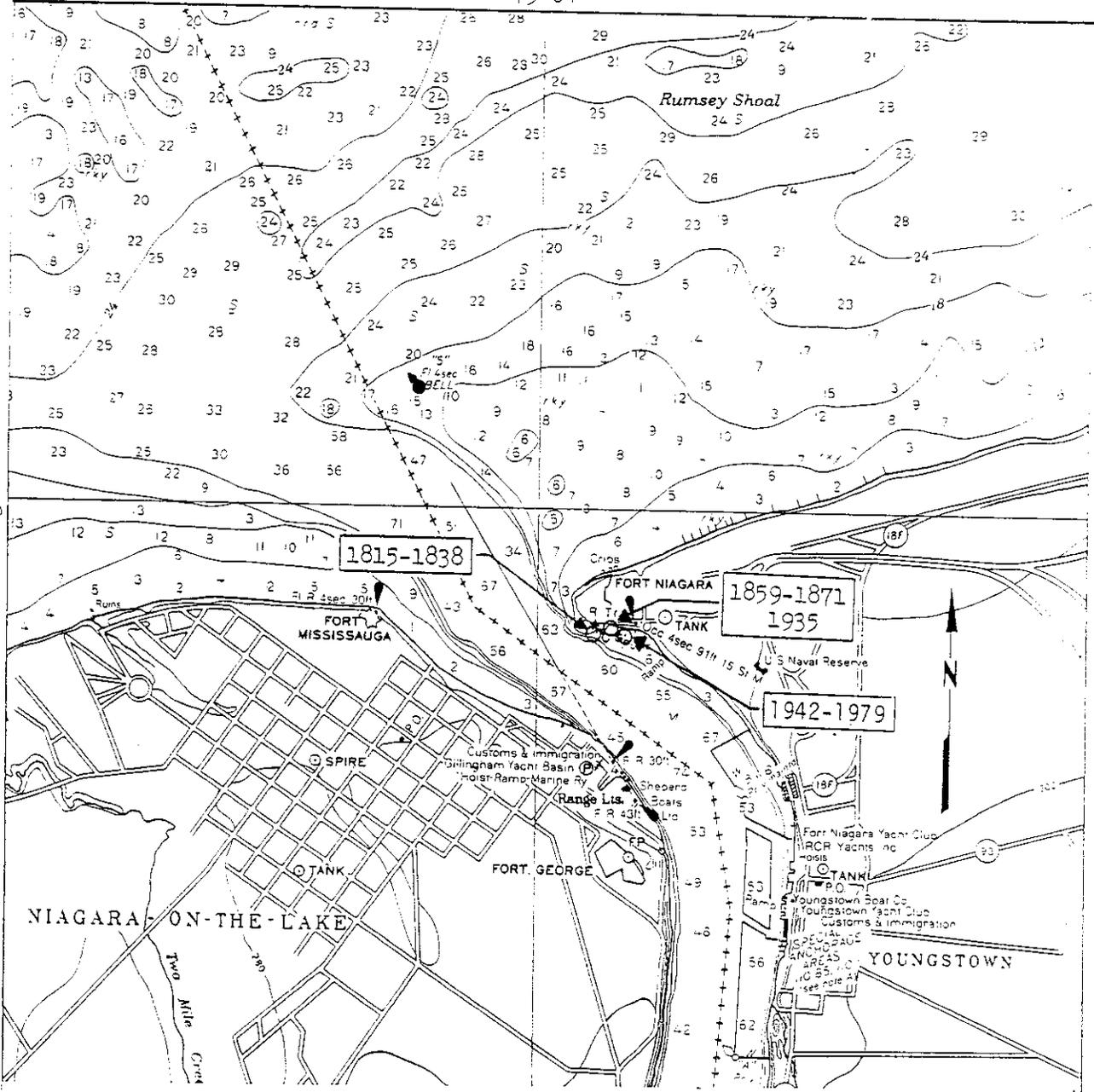
(d) June 1942 - March 1952: A float gauge located on the United States Coast Guard wharf near Fort Niagara.

(e) April 1952 - October 1968: A tape gauge located on the United States Coast Guard wharf near Fort Niagara.

(f) June 1969 - September 1979 : A recording gauge located on the United States Coast Guard wharf near Fort Niagara.

79° 04'

43° 16'



WATER LEVEL GAUGE LOCATION

FORT NIAGARA, NEW YORK  
1815-1979

1982

## GAUGE HISTORY

### Brockville, Ontario

1903 Datum was never established at Brockville. Elevations at Brockville depend on B.M. "MMCLXXVII" at elevation 252.980 feet (77.108 meters) based on Public Works Datum 1908 and at elevation 253.360 feet (77.224 meters) based on Geodetic Survey of Canada Datum. IGLD (1955) elevations at Brockville depend on B.M. "MMCLXXVII" and B.M. "68 U 339" at elevations 252.961 feet (77.103 meters) and 283.881 feet (86.528 meters) respectively as established by level line run by Geodetic Survey of Canada.

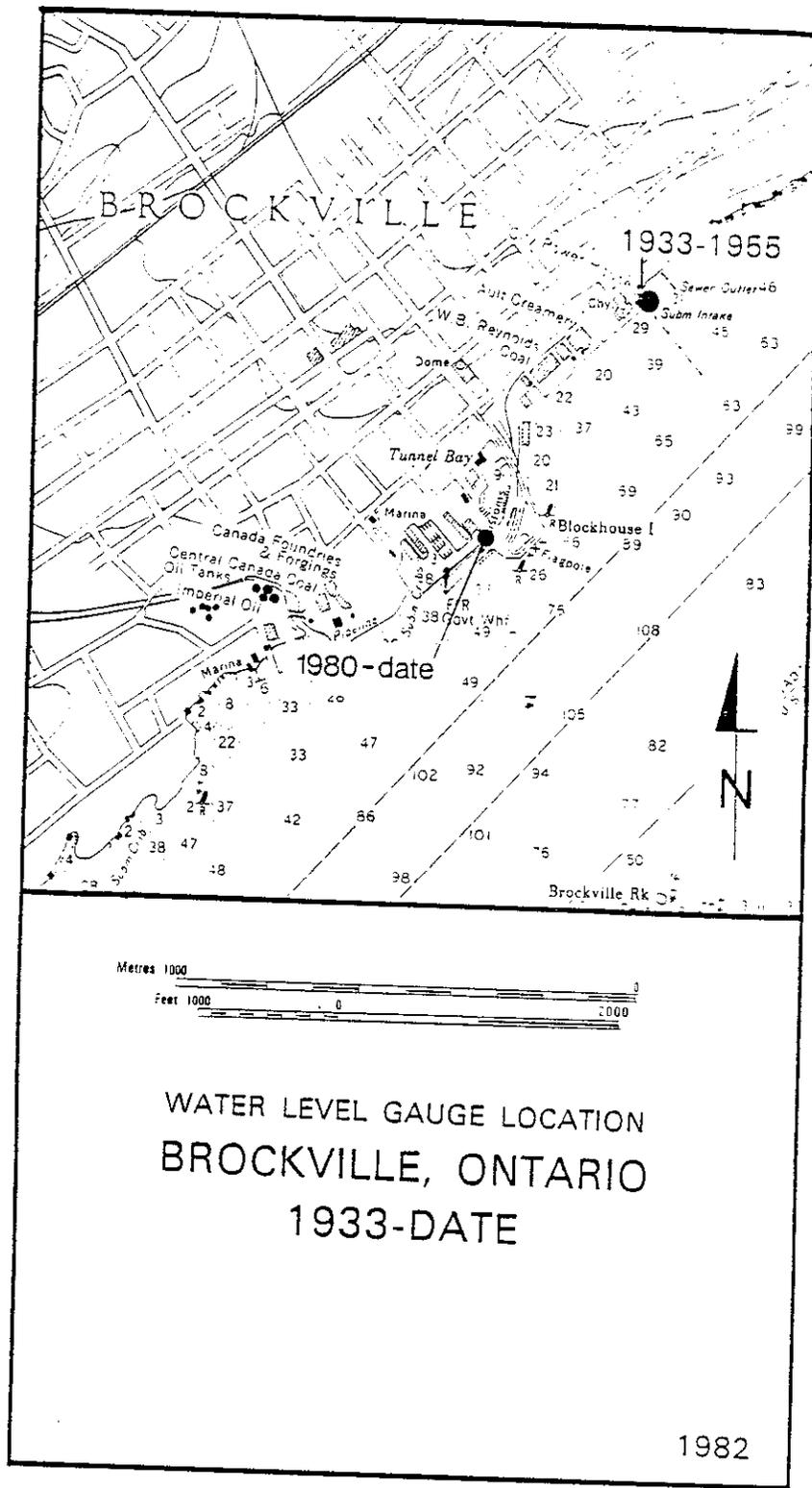
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1933-Sep 1954	MMCLXXVII	252.961 feet (77.103 meters)	Staff Gauge, Twice Daily	W.R.S.
Oct 1954-Dec 1955	MMCLXXVII	252.961 feet (77.103 meters)	Staff Gauge, Twice Daily	W.R.B.
May 1980-Date	68 U 339	86.528 meters (283.881 feet)	Recording Gauge, Hourly Scalings	C.H.S.

#### Gauging Station Sites (see Plate 54, page 98):

(a) May 1933-December 1955: Located on the retaining wall at the side entrance to the Brockville City Pumphouse on the east side of the building.

(b) May 1980-Date: Recording gauge in a steel armco shelter over a steel well located adjacent to the customs office on the south side of the entrance to Tunnel Bay at Brockville.



WATER LEVEL GAUGE LOCATION  
 BROCKVILLE, ONTARIO  
 1933-DATE

1982

## GAUGE HISTORY

### Prescott, Ontario

Elevations at Prescott on 1903 Datum depend on B.M. "MMXXV" at elevation 263.489 feet (80.299 meters) based on leveling by the Department of Public Works in 1919 from B.M. "D" at Ogdensburg, New York. IGLD (1955) elevations at Prescott depend on B.M. "MMXXV" at elevation 262.768 feet (80.092 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

### CHRONOLOGICAL TABLE

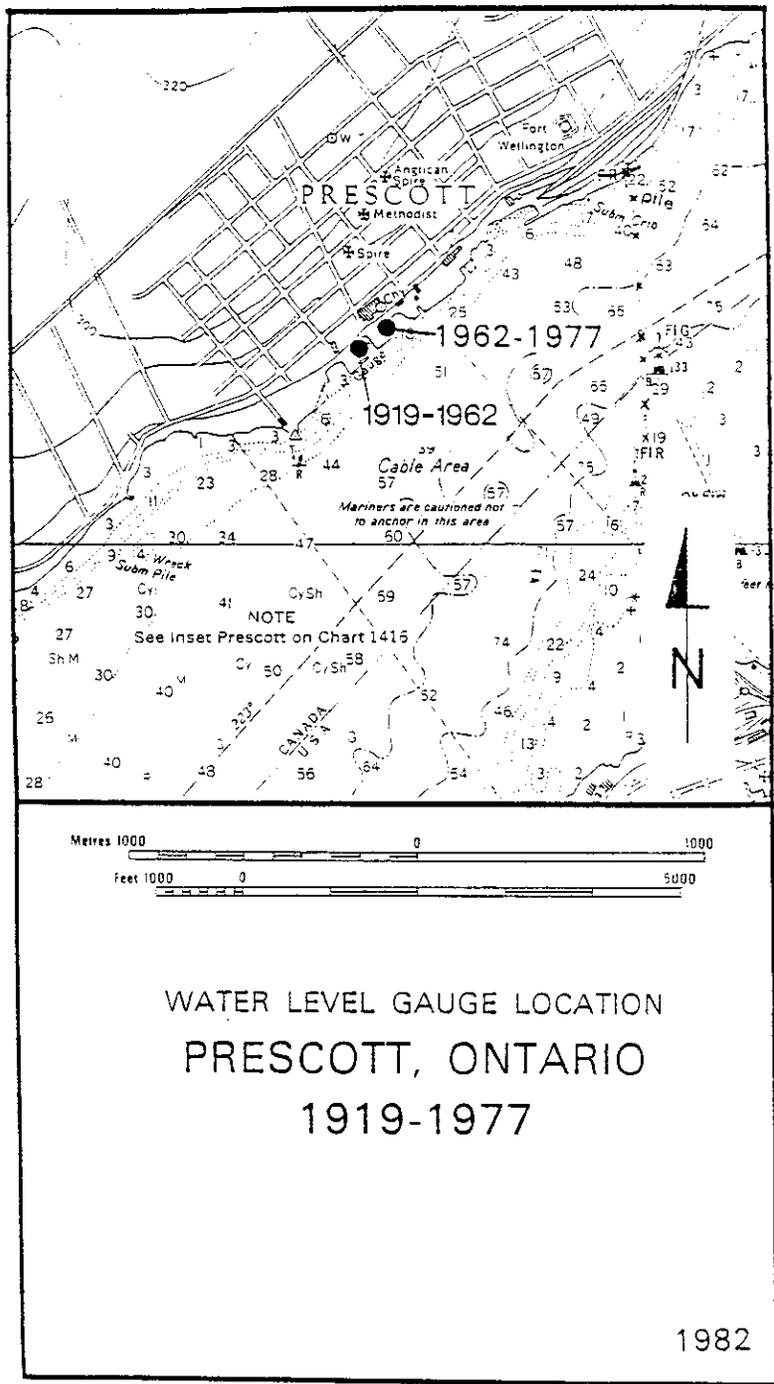
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Oct 1919-Sep 1977	MMXXV	262.768 feet (80.092 meters)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used.

### Gauging Station Sites (see Plate 55, page 100):

(a) October 1919-October 1962: A recording gauge located over concrete well at north end and west side of motorboat house in Department of Transport, Marine Depot Yard.

(b) October 1962-September 1977: A recording gauge located over steel well in northwest corner of Ferry Dock at Department of Transport, Marine Depot Yard.



## GAUGE HISTORY

### North Channel-CA, Ontario

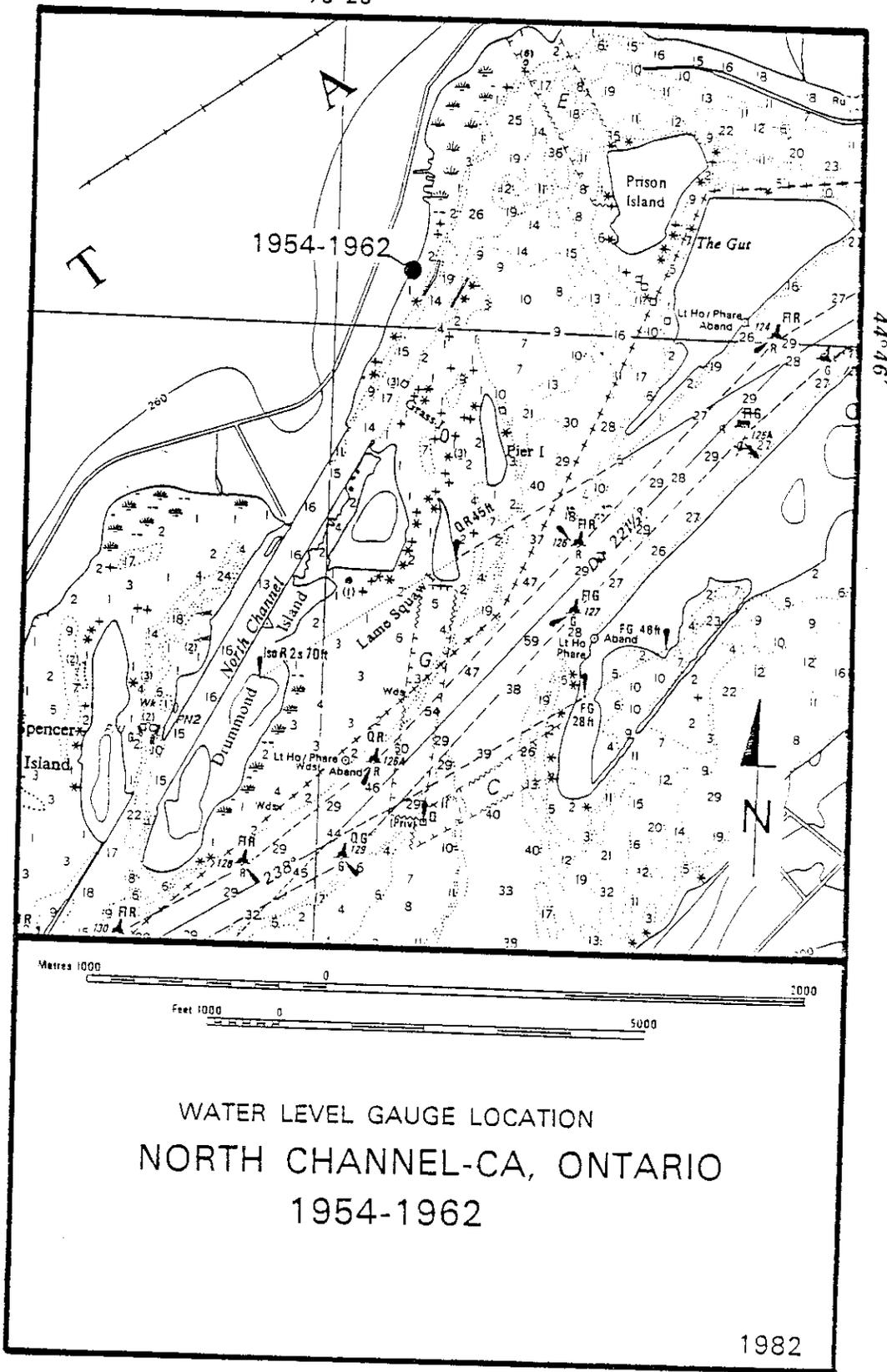
1903 Datum was never established at North Channel-CA. Elevations at North Channel-CA on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "CA 1" at North Channel-CA is 253.896 feet (77.388 meters) and depends on the elevation of B.M. "WEIR" on the main line as being 249.453 feet (76.033 meters) on 1935 Datum. IGLD (1955) was never used at North Channel-CA gauge site.

NOTE: 1935 Datum records at this station for the period October 1954 - November 1962 have been converted to IGLD (1955) by subtracting 0.97 foot (0.30 meter).  
This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 56, page 102):

(a) October 1954-November 1962: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 113 feet long, on the Canadian shore opposite the lower entrance piers to North Channel about three miles west of Cardinal.

75°26'



WATER LEVEL GAUGE LOCATION  
 NORTH CHANNEL-CA, ONTARIO  
 1954-1962

1982

## GAUGE HISTORY

### H-10-CA, Ontario

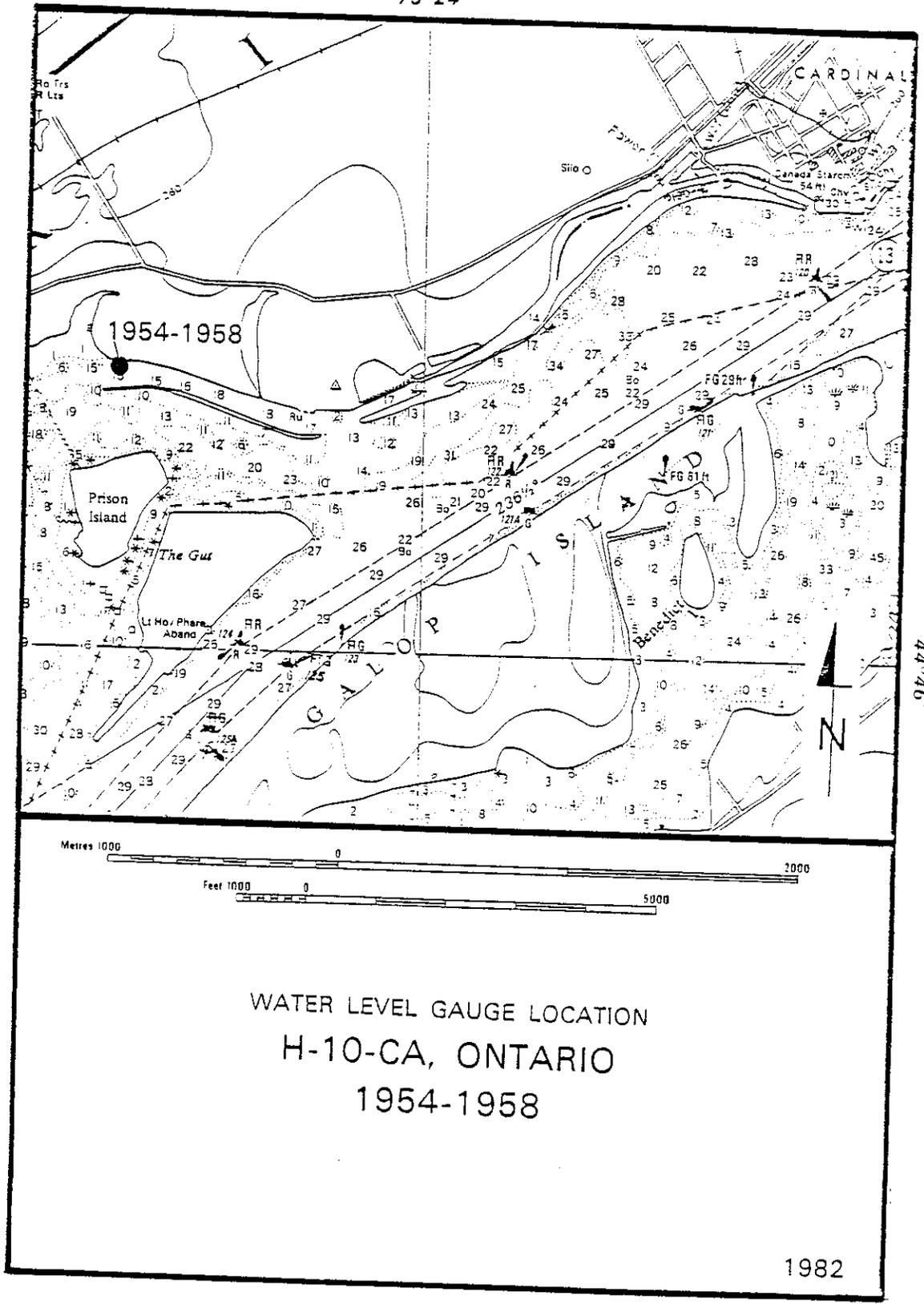
1903 Datum was never established at H-10-CA. Elevations at H-10-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 2" at H-10-CA is 250.091 feet (76.228 meters) and depends on the elevation of B.M. "WEIR" on the main level line as being 249.453 feet (76.033 meters) on 1935 Datum. IGLD (1955) was never used at H-10-CA gauge site.

NOTE: 1935 Datum records at this station for the period October 1954 - May 1958 have been converted to IGLD (1955) by subtracting 0.97 foot (0.30 meters).

#### Gauging Station Site (see Plate 57, page 104):

(a) October 1954-May 1958: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 36 feet long, on the Canadian shore at the entrance to the Cardinal Canal.

75°24'



WATER LEVEL GAUGE LOCATION  
H-10-CA, ONTARIO  
1954-1958

1982

## GAUGE HISTORY

### Lock 27, Ontario

Elevations at Lock 27 on 1903 Datum from 1857 to 1904 depend on the upper sill of Lock 27 at elevation 234.210 feet (71.387 meters). Elevations at Lock 27 on 1903 Datum as used from 1922 to 1937 depend on B.M. "MMXLI" at elevation 248.682 feet (75.798 meters). Elevations at Lock 27 on 1903 Datum used from 1937 depend on B.M. "WEIR" at elevation 249.152 feet (75.942 meters). IGLD (1955) was never used at Lock 27 gauge site.

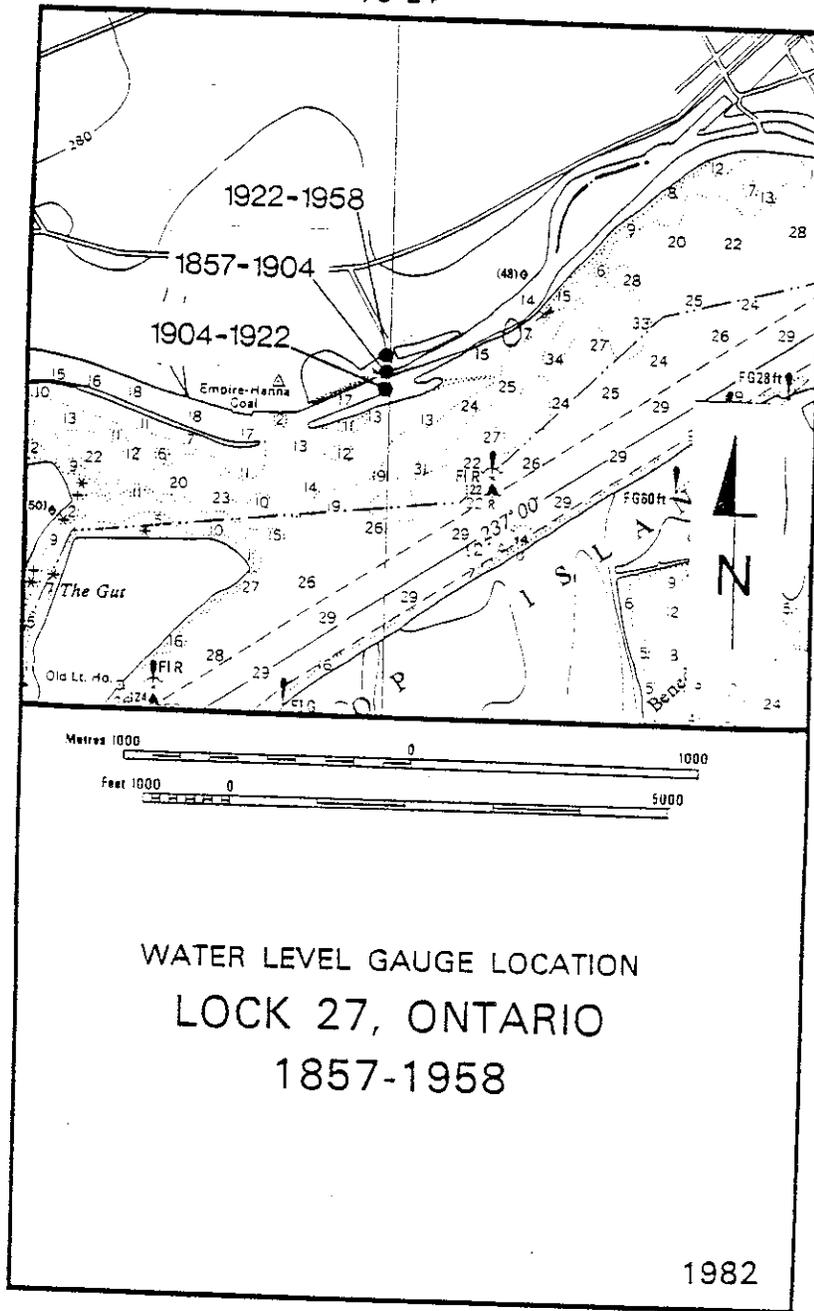
#### Gauging Station Sites (see Plate 58, page 106):

(a) May 1857-July 1904: A staff gauge located on the upper sill of Lock 27.

(b) August 1904-May 1922: Staff readings were taken at noon each day over the upper sill of Lock 27.

(c) June 1922-August 1958: A recording gauge located at the coping at the west side of the masonry wall, on the shore side of the weir at the upper end of Lock 27.

75°24'



WATER LEVEL GAUGE LOCATION  
LOCK 27, ONTARIO  
1857-1958

1982

## GAUGE HISTORY

### H-25-CA, Ontario

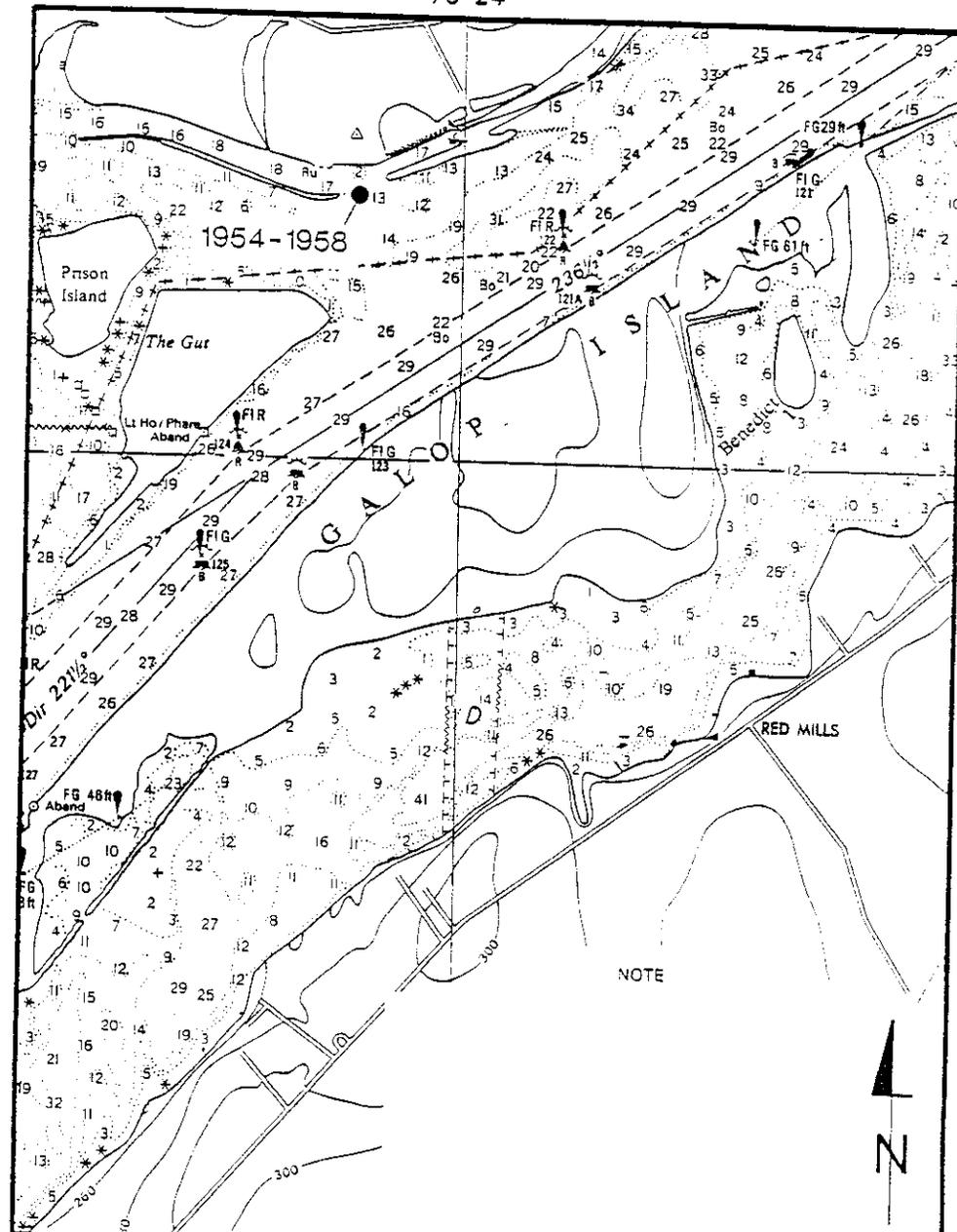
1903 Datum was never established at H-25-CA. Elevations at H-25-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 1" at H-25-CA is 250.305 feet (76.293 meters) and depends on the elevation of B.M. "WEIR" on the main level line as being 249.453 feet (76.033 meters) on 1935 Datum. IGLD (1955) was never used at H-25-CA gauge site.

NOTE: 1935 Datum records at this station for the period October 1954 to May 1958 have been converted to IGLD (1955) by subtracting 0.97 foot (0.30 meters).  
This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 59, page 108):

(a) October 1954-May 1958: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 22 feet long, on the Canadian side on the causeway above Lock 28.

75°24'



44°46'



WATER LEVEL GAUGE LOCATION  
 H-25-CA, ONTARIO  
 1954-1958

1982

## GAUGE HISTORY

### Galop, Ontario

1903 Datum was never established at Galop. Elevations at Galop on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 2" at Galop is 248.000 feet (75.590 meters) and depends on the elevation of B.M. "GALOP" on the main level line as being 249.546 feet (76.062 meters) on 1935 Datum. IGLD (1955) elevations at Galop depend on B.M. "CA 2" at elevation 246.941 feet (75.268 meters). IGLD (1955) elevations at Galop also were established by leveling from B.M. "MMXLIV" at elevation 278.179 feet (84.789 meters).

NOTE: In the 1962 report this location was named H-24-CA. It was renamed Galop in July 1966.

### CHRONOLOGICAL TABLE

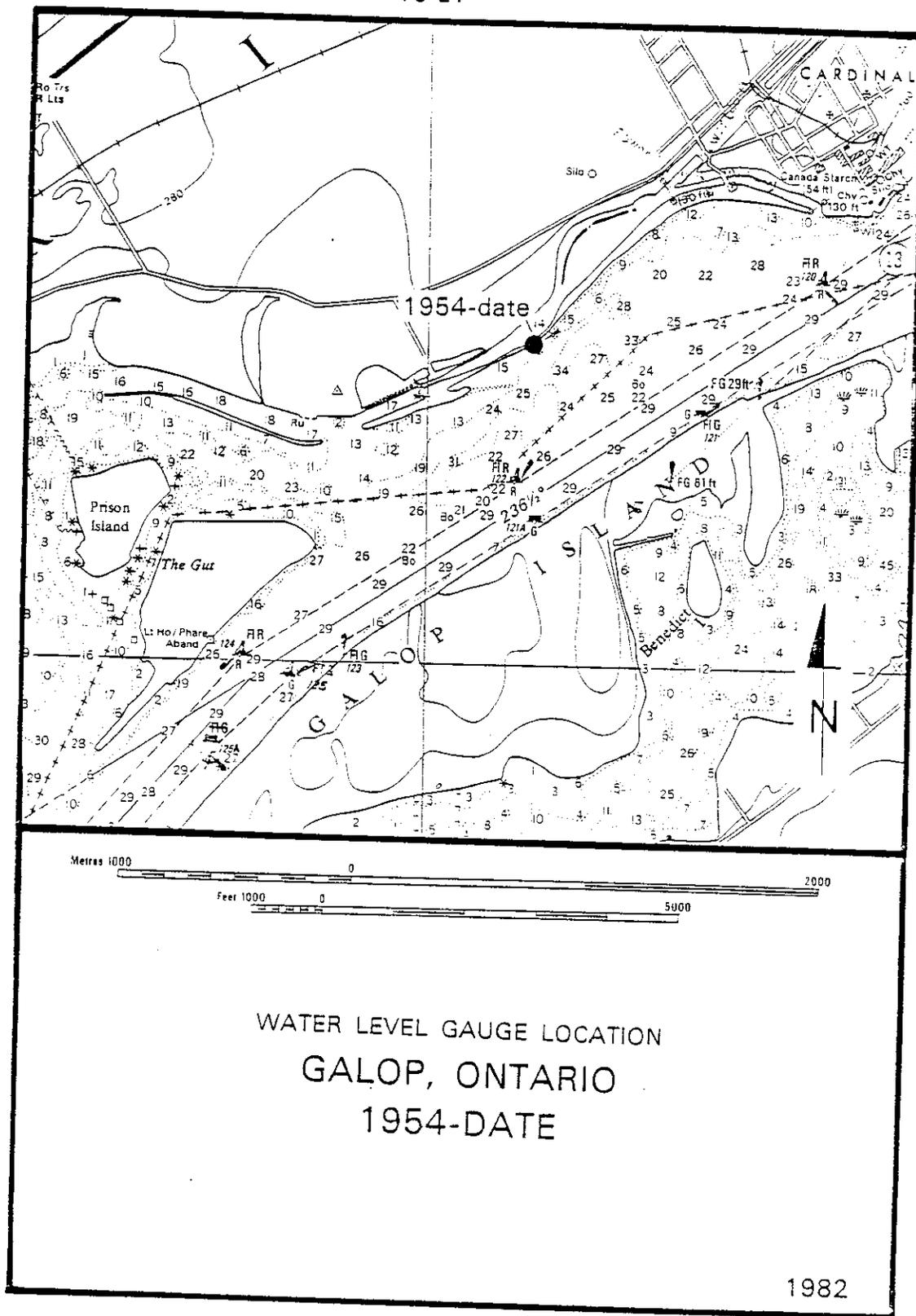
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Oct 1954-May 1958	CA 2	246.941 feet (75.268 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.
May 1962-Date	CA 2	246.941 feet (75.268 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

NOTE: Beginning in 1962, the gauge operated only during the navigation season.

### Gauging Station Site (see Plate 60, page 110):

(a) October 1954-Date: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 30 feet long, on the Canadian side on the causeway below Lock 28.

75°24'



WATER LEVEL GAUGE LOCATION  
GALOP, ONTARIO  
1954-DATE

1982

## GAUGE HISTORY

### Cardinal, Ontario

1903 Datum was never established at Cardinal. Elevations at Cardinal on 1935 Datum were established by first-order leveling in 1955. The 1935 Datum elevation of B.M. "CA 1" at Cardinal is 245.896 feet (74.949 meters) and depends on the elevation of B.M. "MMXLIV" on the main level line as being 279.153 feet (85.085 meters) on 1935 Datum. IGLD (1955) elevations at Cardinal depend on B.M. "CA 1" at elevation 244.891 feet (74.643 meters).

NOTE: In the 1962 report, this location was named D-CA. It was renamed Cardinal in July 1966.

### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Oct 1954-Date	CA 1	244.891 feet (74.643 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

### Gauging Station Site (see Plate 61, page 112):

(a) October 1954-Date: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 61 feet long, on the Canadian shore on the canal causeway just east of Cardinal.



## GAUGE HISTORY

### Iroquois Dam HW, Ontario

1903 Datum was never established at Iroquois Dam HW. Elevations at Iroquois Dam HW on 1935 Datum were established by first-order leveling in 1958. The 1935 Datum elevation of B.M. "CA 1" at Iroquois Dam HW is 275.904 feet (84.096 meters) and depends on the elevation of B.M. "2910" on the main level line as being 249.949 feet (76.185 meters) on 1935 Datum. The IGLD (1955) elevations at Iroquois Dam HW depend on B.M. "2910" at elevation 248.990 feet (75.892 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

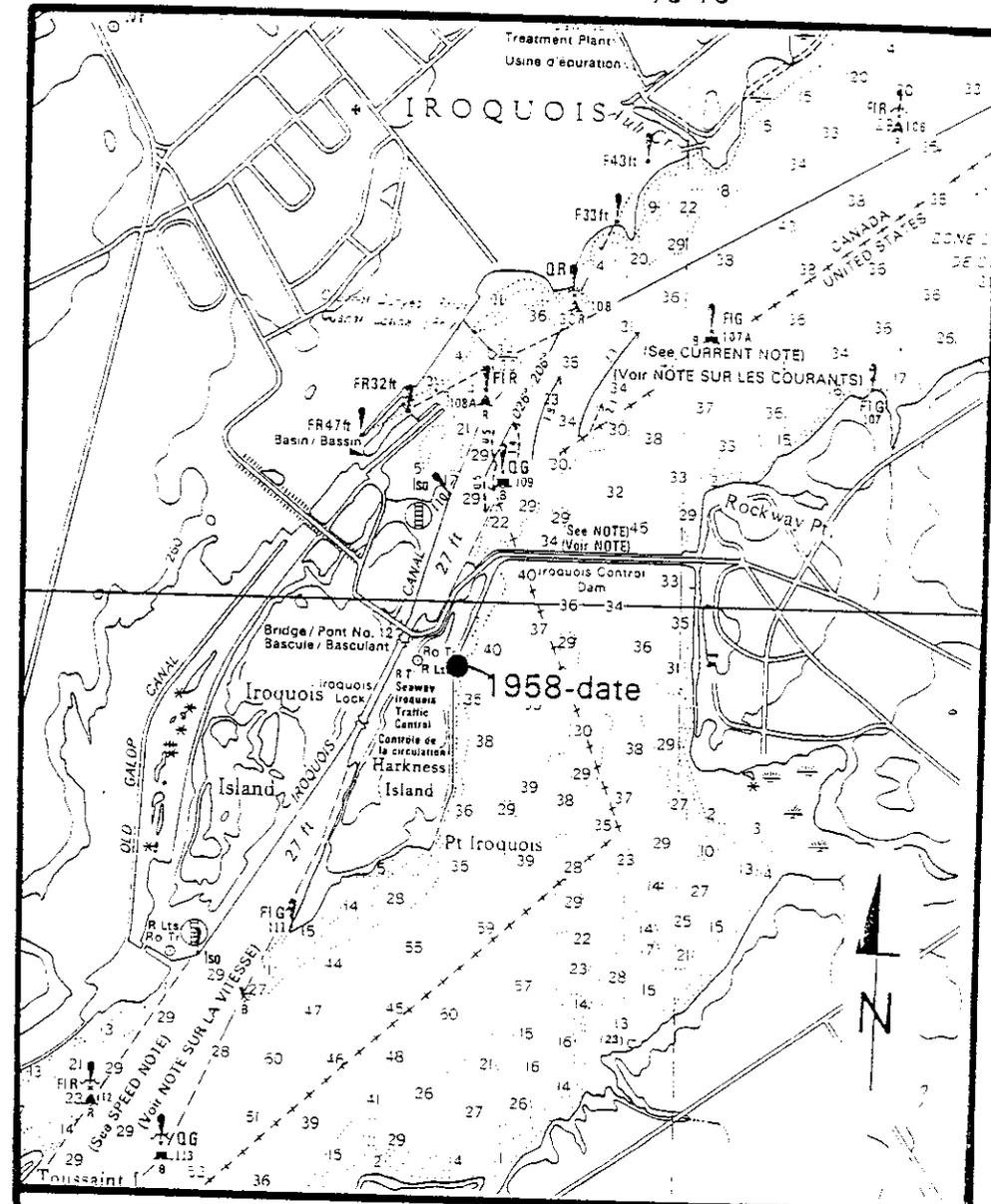
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Apr 1958-Date	CA 1	274.944 feet (83.083 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

#### Gauging Station Site (see Plate 62, page 114):

(a) April 1958-Date: A recording gauge located over a concrete stilling well, connected to the river by an intake pipe 74 feet long, on the Canadian shore 1,400 feet above Iroquois Dam.

75°18'



1958-date

WATER LEVEL GAUGE LOCATION  
 IROQUOIS DAM HW, ONTARIO  
 1958-DATE

1982

## GAUGE HISTORY

### Iroquois Dam TW, Ontario

1903 Datum was never established at Iroquois Dam TW. Elevations at Iroquois Dam TW on 1935 Datum were established by first-order leveling in 1958. The 1935 Datum elevation of B.M. "WALL" at Iroquois Dam TW is 249.902 feet (76.170 meters) and depends on the elevation of B.M. "2910" on the main level line as being 249.949 feet (76.185 meters) on 1935 Datum. IGLD (1955) elevations at Iroquois Dam HW depend on B.M. "2910" at elevation 248.990 feet (75.892 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

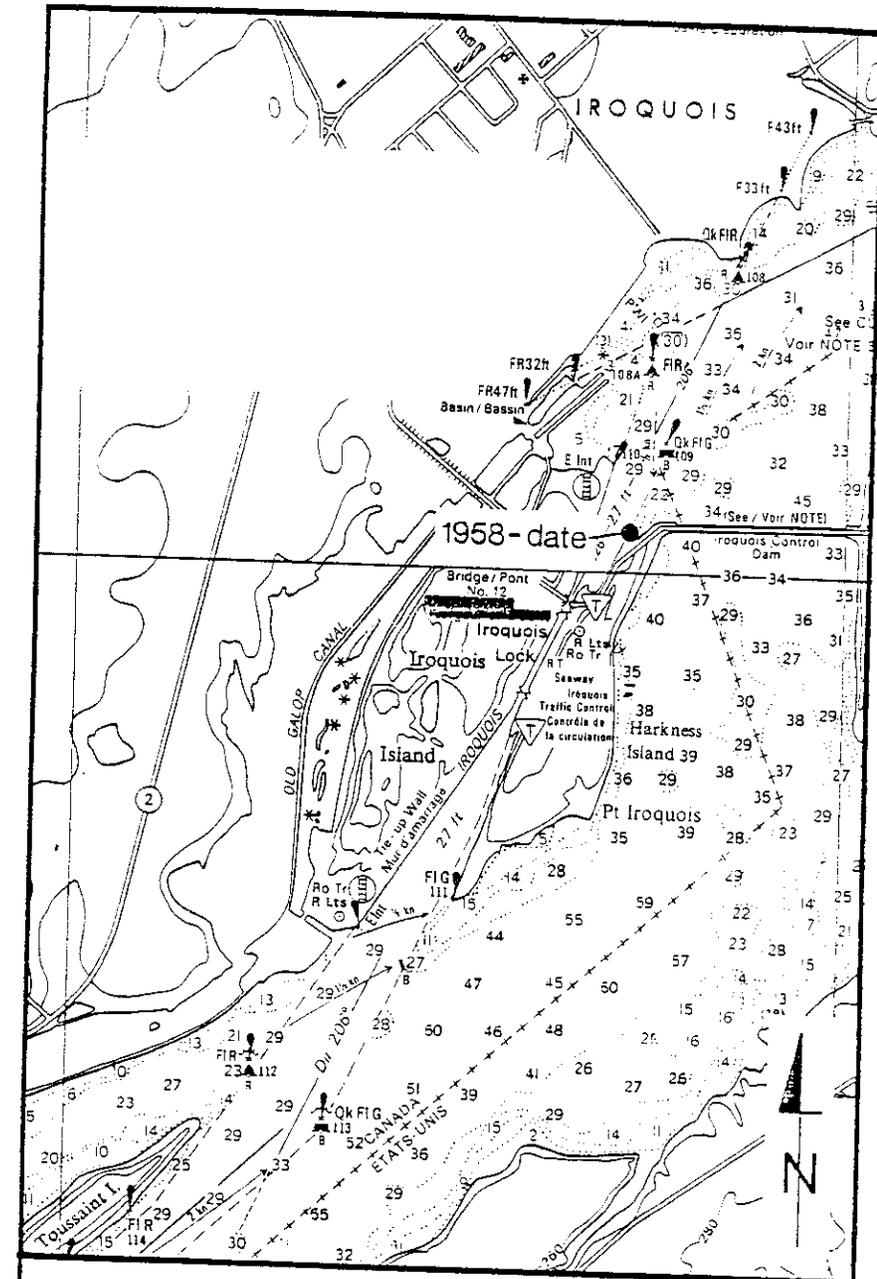
### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1958-Date	WALL	248.942 feet (75.878 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

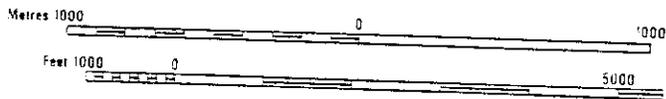
#### Gauging Station Site (see Plate 63, page 116):

(a) July 1958-Date: A recording gauge located over a concrete stilling well on the lower end of the South Seaway Lock wall of Iroquois Lock.

75°20'



44°50'



WATER LEVEL GAUGE LOCATION  
 IROQUOIS DAM TW, ONTARIO  
 1958-DATE

1982

## GAUGE HISTORY

### Iroquois Lock Above, Ontario

1903 datum was never established at Iroquois Lock Above. IGLD (1955) elevations at Iroquois Lock Above depend on B.M. "H.S. '0'" and "H.S. 2" at elevations 252.926 feet (77.092 meters) and 250.974 feet (76.497 meters) respectively as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Dec 1959-Sep 1976	H.S. '0'	252.926 feet (77.092 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Sep 1976-Date	H.S. 2	76.494 meters (250.962 feet)	Recording Gauge, Hourly Scalings	C.H.S.

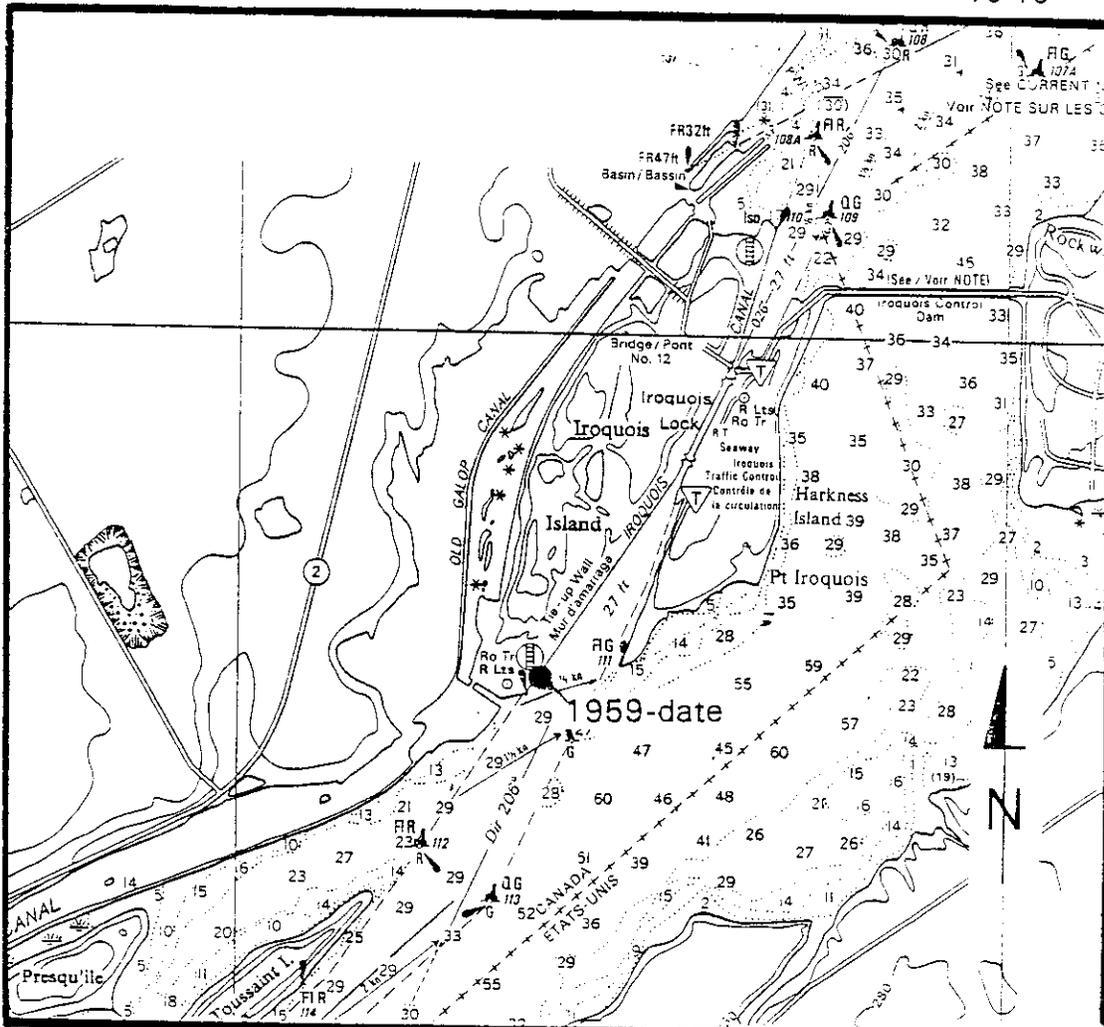
NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used.

#### Gauging Station Site (see Plate 64, page 118):

(a) December 1959-Date: A recording gauge located over concrete well built into the south end of the upper canal entrance.

75°20'

75°18'



44°50'



WATER LEVEL GAUGE LOCATION  
 IROQUOIS LOCK ABOVE, ONTARIO  
 1959-DATE

1982

## GAUGE HISTORY

### Iroquois Lock Below, Ontario

1903 datum was never established at Iroquois Lock Below. IGLD (1955) elevations at Iroquois Lock Below depend on B.M. "H.S. '0'" and "H.S. L 2" at elevations 252.926 feet (77.092 meters) and 248.986 feet (75.891 meters) respectively as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

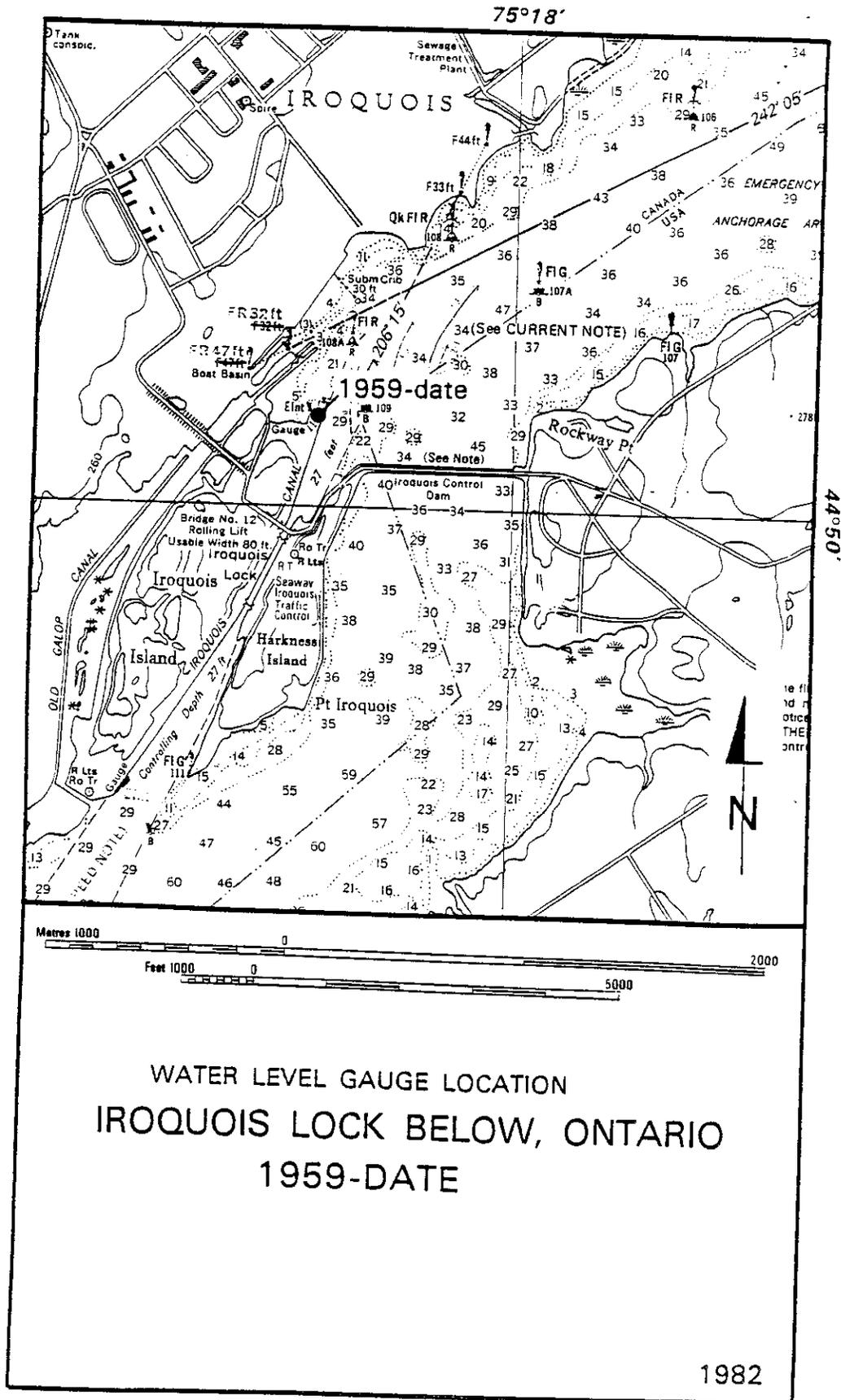
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Dec 1959-Sep 1976	H.S. '0'	252.926 feet (77.092 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Sep 1976-Date	H.S. L 2	75.886 meters (248.967 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date digital recording gauges have been used.

#### Gauging Station Site (see Plate 65, page 120):

(a) December 1959-Date: A recording gauge located over concrete well built into the north end of the west side of the lower canal entrance.



## GAUGE HISTORY

### Lock 25, Ontario

Elevations at Lock 25 on 1903 Datum used from 1860 to 1904 depend on the lower sill of Lock 25 at elevation 217.340 feet (66.245 meters). Elevations on 1903 Datum at Lock 25 from 1904 depend on B.M. "LOCK 25" at elevation 236.811 feet (72.180 meters) based on 1935 Datum. IGLD (1955) elevations at Lock 25 depend on B.M. "LOCK 25" at elevation 236.211 feet (71.997 meters) as Published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1860-Jul 1904	LOWER SILL OF OLD LOCK 25	217.340 feet (66.245 meters)	Staff Gauge, Once Daily	D. of R. and C.
Aug 1904-Sep 1917	LOWER SILL OF OLD LOCK 25	208.400 feet (63.521 meters)	Staff Gauge, Once Daily	D. of R. and C.
Oct 1917-Jun 1958	LOCK 25	236.211 feet (71.997 meters)	Recording Gauge, Hourly Scalings	C.H.S.

#### Gauging Station Sites (see Plate 66, page 122):

(a) June 1860-July 1904: A staff gauge located over the lower sill of Lock 25.

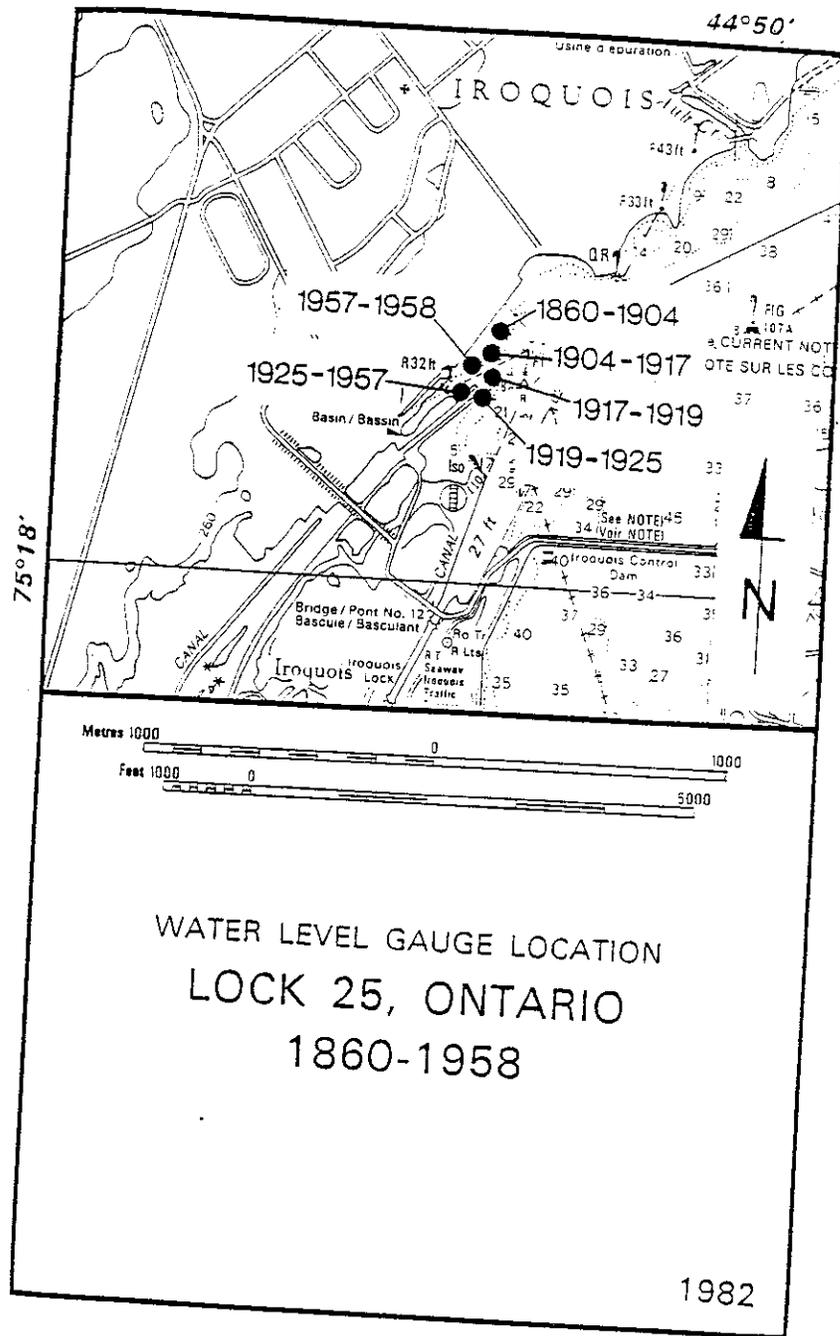
(b) August 1904-September 1917: A staff gauge located over the lower sill of Lock 25.

(c) October 1917-July 1919: A recording gauge located over the coping on the inner side of the old northwest timber approach pier to the new canal entrance.

(d) August 1919-August 1925: A recording gauge located on the coping over the chain well at the corner end and on the southeast side of the entrance to Lock 25.

(e) September 1925-May 1957: A recording gauge located over the coping on the inner side of the northwest concrete approach pier to the new canal entrance.

(f) June 1957-June 1958: A recording gauge located on the coping over the chain well at the lower end and on the southeast side of the entrance to Lock 25.



## GAUGE HISTORY

### Iroquois-CA, Ontario

1903 Datum was never established at Iroquois-CA. Elevations at Iroquois-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "MMXLIX" at Iroquois-CA is 235.338 feet (71.731 meters). IGLD (1955) was never used at Iroquois-CA gauge site.

NOTE: 1935 Datum records at this station for the period October 1954-July 1958 have been converted to IGLD (1955) by subtracting 0.97 foot (0.30 meters).  
This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 67, page 124):

(a) October 1954-July 1958: A recording gauge located over a stilling well situated on the Canadian side on the south wall near the easterly gate of the old locks on the abandoned canal at Iroquois.



## GAUGE HISTORY

### H-1-CA, Ontario

1903 Datum was never established at H-1-CA. Elevations at H-1-CA on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "CA 1" at H-1-CA is 235.506 feet (71.782 meters) and depends on the elevation of B.M. "906" on the main level line as being 250.224 feet (76.268 meters) on 1935 Datum. IGLD (1955) was never used at H-1-CA gauge site.

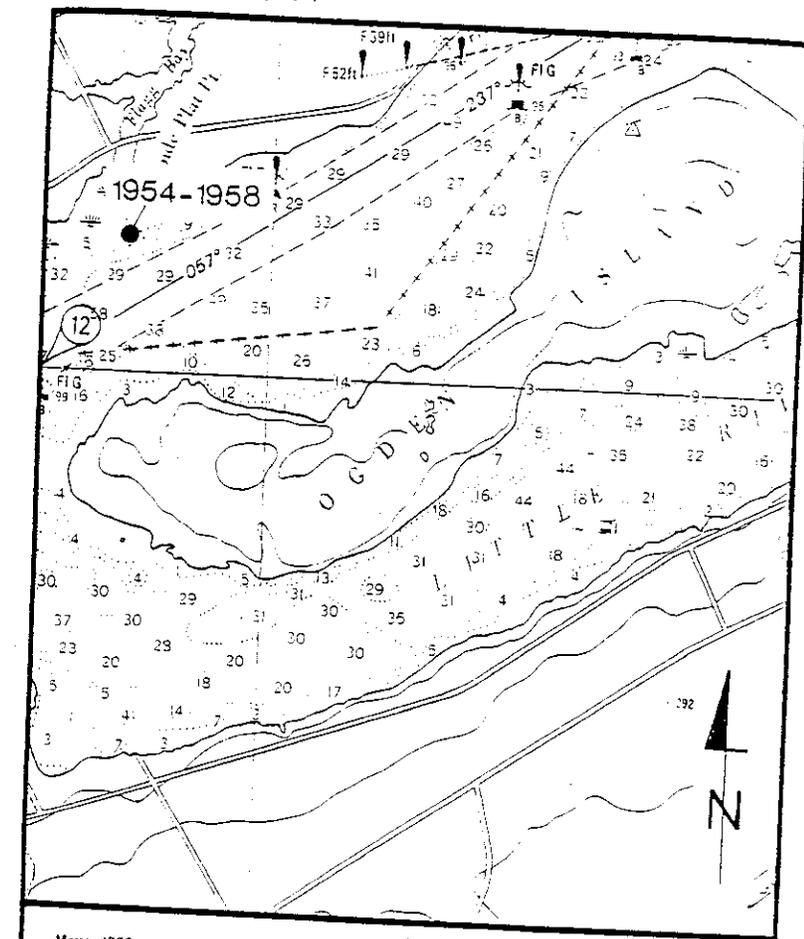
NOTE: 1935 Datum records at this station for the period October 1954-July 1958 have been converted to IGLD (1955) by subtracting 0.98 foot (0.30 meters).

This station site was submerged with the filling of Lake St. Lawrence.

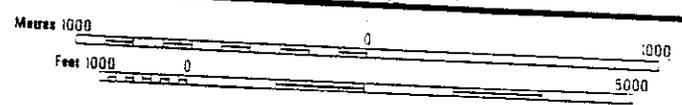
#### Gauging Station Site (see Plate 68, page 126):

(a) October 1954-July 1958: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 40 feet long, on the Canadian shore at the entrance to the Morrisburg Canal.

75°14'



44°52'



WATER LEVEL GAUGE LOCATION  
 H-1-CA, ONTARIO  
 1954-1958

1982

## GAUGE HISTORY

### Lock 24, Ontario

Elevations at Lock 24 on 1903 Datum used from 1860 to July 1904 depend on the upper sill of old Lock 24 at elevation 216.120 feet (65.120 meters). Elevations at Lock 24 on 1903 Datum from 1917 depend on B.M. "LOCK 24" at elevation 230.198 feet (70.164 meters) based on 1935 Datum. IGLD (1955) was never used at Lock 24 gauge site.

#### Gauging Station Sites (see Plate 69, page 128):

(a) June 1860-July 1904: A staff gauge located over the upper sill of Lock 24.

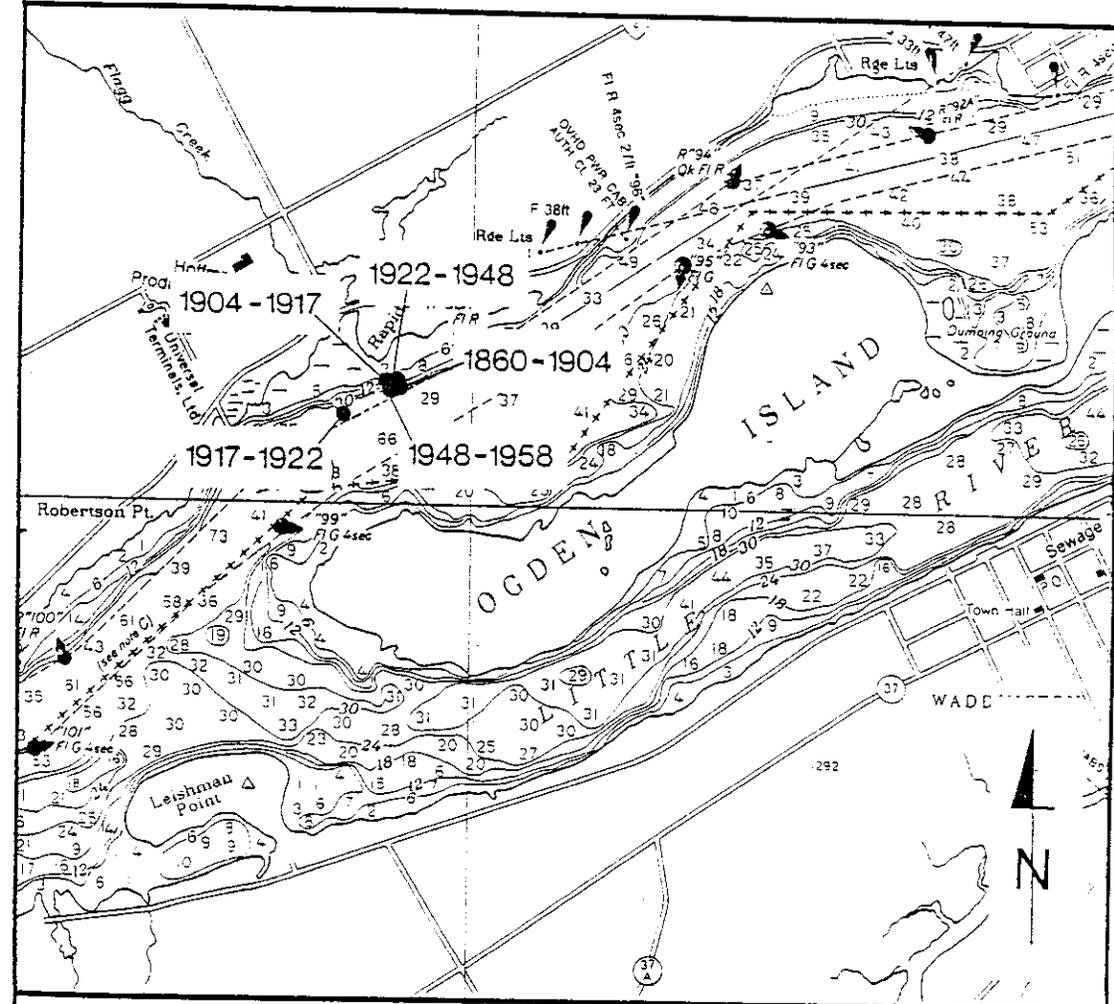
(b) August 1904-September 1917: A staff gauge located over the upper sill of Lock 24.

(c) October 1917-November 1922: A recording gauge located over the coping approximately 300 feet from the canal end of the masonry approach wall on the southeast side of the canal entrance.

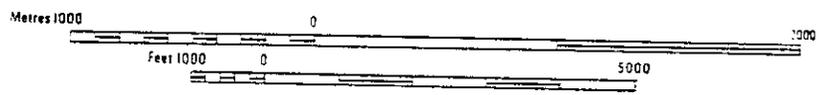
(d) December 1922-October 1948: A recording gauge located over the coping approximately 6 feet west of the Bridge over the weir at the head of Lock 24, and on the masonry wing wall on the southeast side.

(e) October 1948-June 1958: A recording gauge located over the coping on the inner side on the masonry wing wall on the southwest side of the entrance to Lock 24 and just upstream from the concrete bridge over the weir.

75°14'



44°52'



WATER LEVEL GAUGE LOCATION  
 LOCK 24, ONTARIO  
 1860-1958

1982

## GAUGE HISTORY

### Morrisburg, Ontario

1903 Datum was never established at Morrisburg. Elevations at Morrisburg on 1935 Datum were established by precise leveling in 1958. The 1935 Datum elevation of B.M. "CA 3" at Morrisburg is 248.991 feet (75.893 meters) and depends on the elevation of B.M. "905" on the main level line as being 265.649 feet (80.807 meters) on 1935 Datum. IGLD (1955) elevations at Morrisburg depends on B.M. "CA 3" at elevation 248.044 feet (75.604 meters). IGLD (1955) elevations at Morrisburg were established by level line from B.M. "905A" at elevation 252.587 feet (76.989 meters).

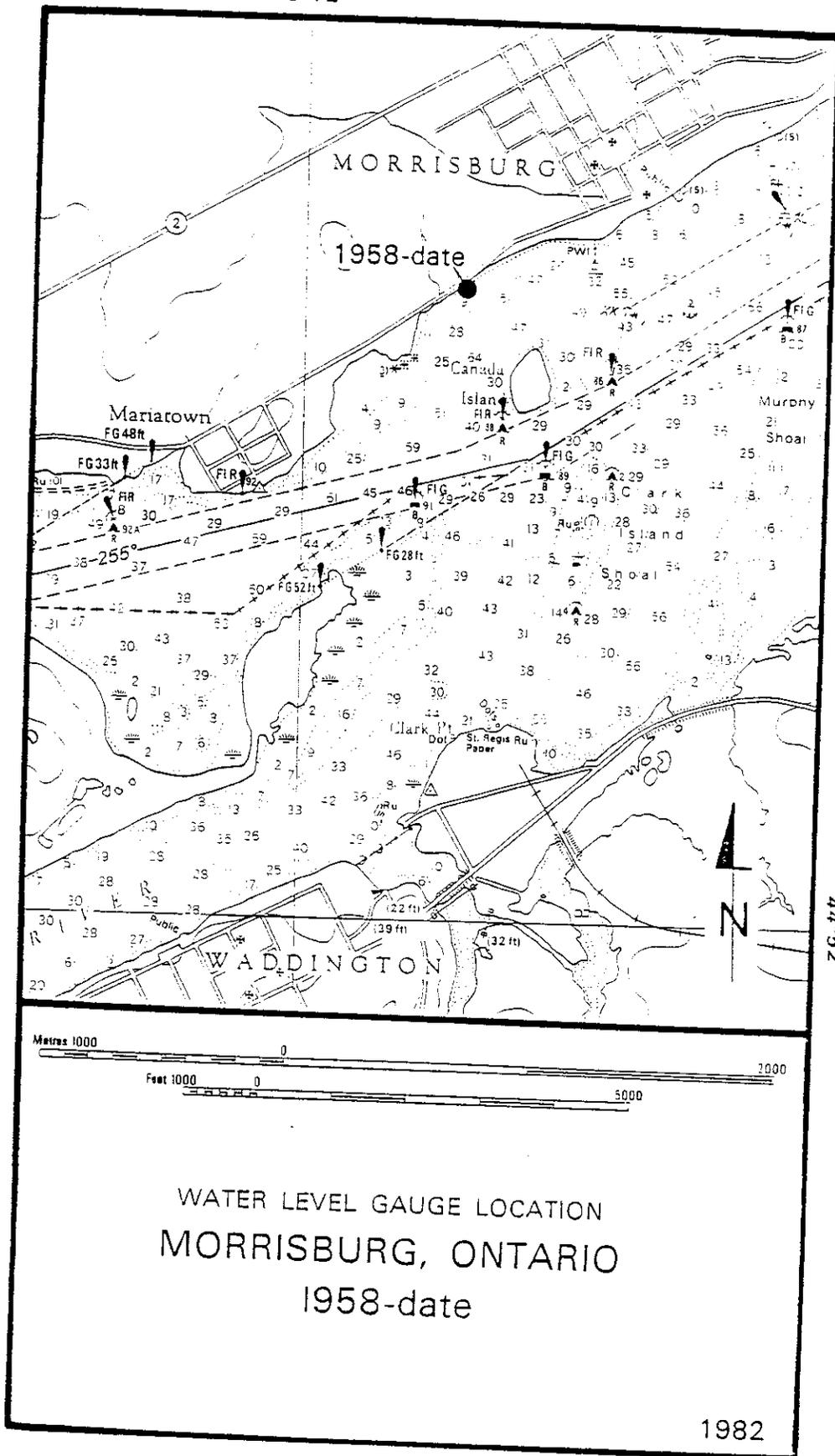
### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1958-Date	CA 3	248.044 feet (75.604 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

#### Gauging Station Site (see Plate 70, page 130):

(a) July 1958-Date: A recording gauge located over a concrete stilling well, connected to the river by an intake pipe about 50 feet long, on the Canadian shore at the westerly limits at Morrisburg.

75°12'



## GAUGE HISTORY

### Morrisburg-CA, Ontario

1903 Datum was never established at Morrisburg-CA. Elevations at Morrisburg-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 1" at Morrisburg-CA is 226.981 feet (69.184 meters) and depends on the elevation of B.M. "MMLX" on the main level line as being 219.670 feet (66.955 meters) on 1935 Datum. IGLD (1935) was never used at Morrisburg-CA gauge site.

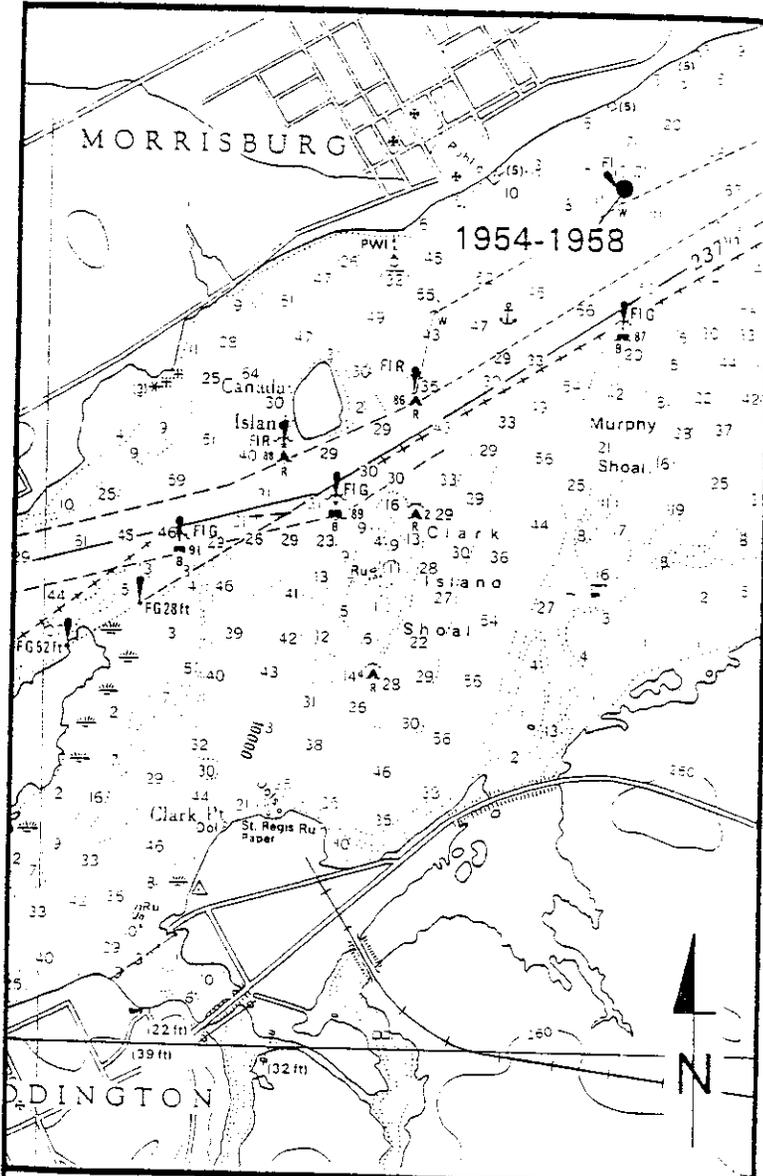
NOTE: 1935 Datum records at this station for the period October 1954-July 1958 have been converted to IGLD (1955) by subtracting 0.95 foot (0.29 meters).

This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 71, page 132):

(a) October 1954-July 1958: A recording gauge located on the Canadian side over the chain well, on the north side near the easterly gate of the old locks at Morrisburg.

75°12'



44°52'



WATER LEVEL GAUGE LOCATION  
MORRISBURG-CA, ONTARIO  
1954-1958

1982

## GAUGE HISTORY

### Lock 23, Ontario

Elevations at Lock 23 on 1903 Datum used from 1852 to July 1904 depend on the lower sill of old Lock 23 at elevation 204.604 feet (62.363 meters). Elevations at Lock 23 on 1903 Datum from July 1904 depend on B.M. "MLX" at elevation 219.234 feet (66.823 meters) based on 1935 Datum. IGLD (1955) was never used at Lock 23 gauge site.

#### Gauging Station Sites (see Plate 72, page 134):

- (a) October 1852-July 1904: A staff gauge located over the lower sill of Lock 23.
- (b) August 1904-April 1922: A staff gauge located over the lower sill of Lock 23.
- (c) May 1922-November 1958: A recording gauge located approximately 50 feet east of the high level masonry wall, and over the coping of the low level approach wall between the old and the new canal entrances and on the north side.



## GAUGE HISTORY

### D-35-CA, Ontario

1903 Datum was never established at D-35-CA. Elevations at D-35-CA on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "CA 2" at D-35-CA is 227.635 feet (69.383 meters) and depends on the elevation of B.M. "901" on the main level line as being 244.098 feet (74.401 meters) on 1935 Datum. IGLD (1955) was never used at D-35-CA gauge site.

NOTE: 1935 Datum records at this station for the period October 1954-June 1958 have been converted to IGLD (1955) by subtracting 0.95 foot (0.29 meters).

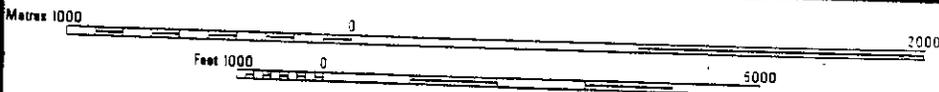
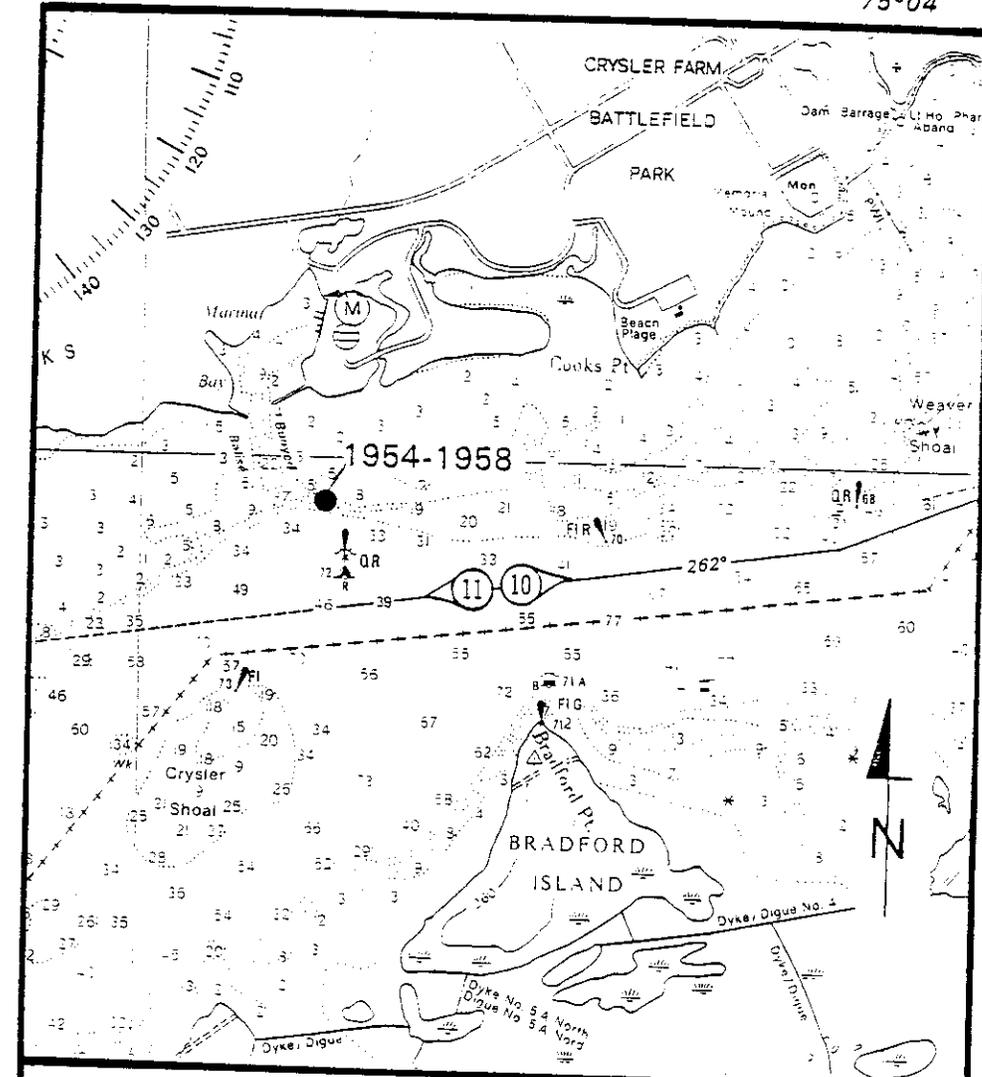
This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 73, page 136):

(a) October 1954-June 1958: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 400 feet long, on the Canadian shore approximately four miles east of Morrisburg.

75°06'

75°04'



WATER LEVEL GAUGE LOCATION  
 D-35-CA, ONTARIO  
 1954-1958

1982

## GAUGE HISTORY

### H-23-CA, Ontario

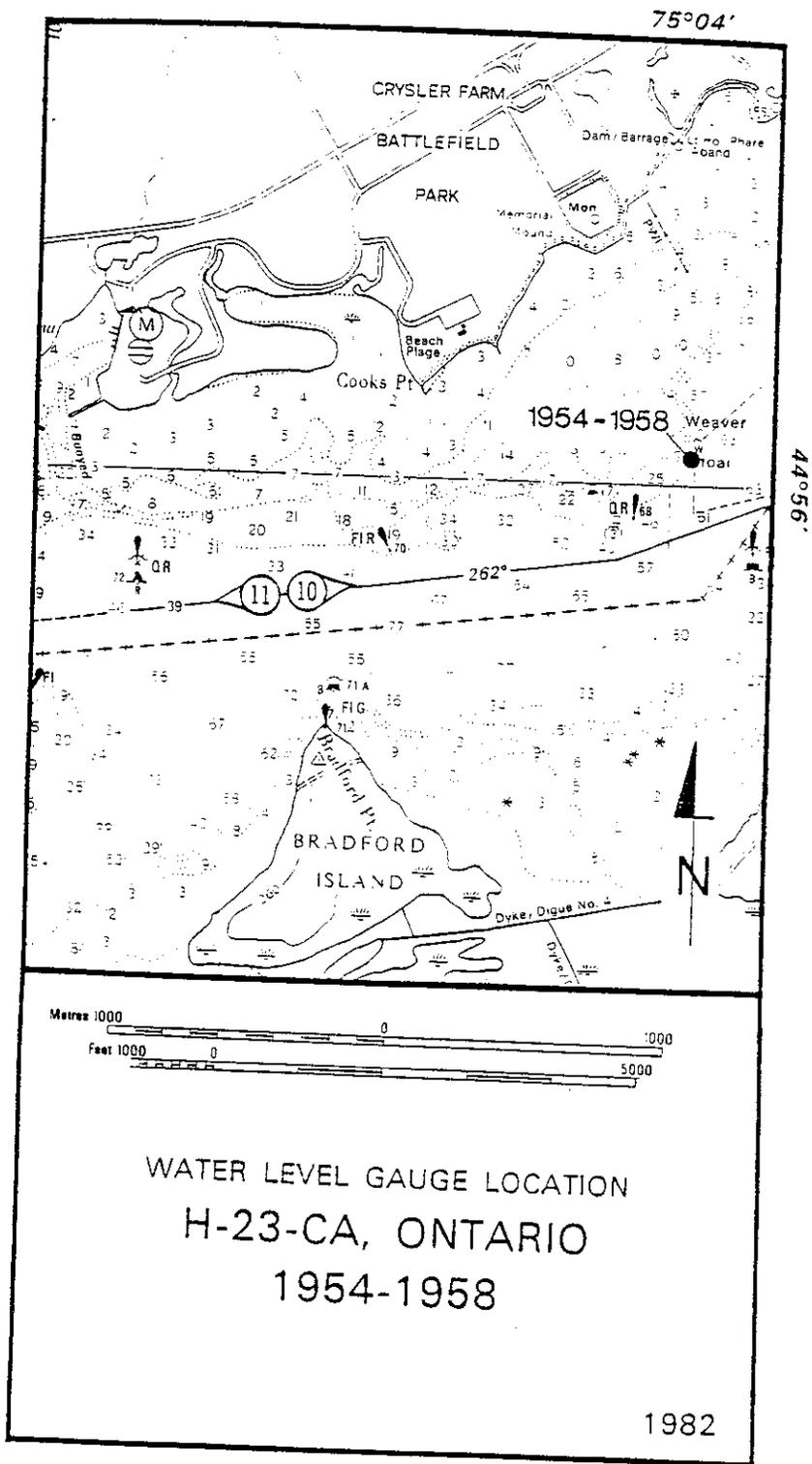
1903 Datum was never established at H-23-CA. Elevations at H-23-CA on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "CA 2" at H-23-CA is 224.945 feet (68.563 meters) and depends on the elevation of B.M. "901A" on the main level line as being 257.826 feet (78.585 meters) on 1935 Datum. IGLD (1955) was never used at H-23-CA gauge site.

NOTE: 1935 Datum records at this station for the period October 1954-June 1958 have been converted to IGLD (1955) by subtracting 0.95 foot (0.29 meters).

This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 74, page 138):

(a) October 1954-June 1958: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 100 feet long, on the Canadian shore near the eastern end of Weaver's Point, six miles east of Morrisburg.



## GAUGE HISTORY

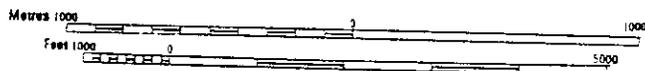
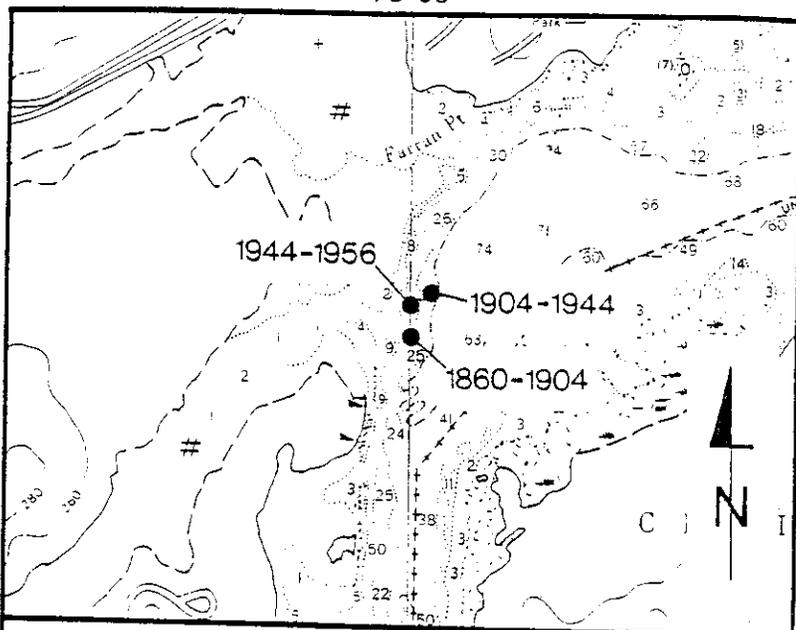
### Lock 22, Ontario

Elevations at Lock 22 on 1903 Datum used from 1860 to 1904 depend on the lower sill of old Lock 22 at elevation 192.240 feet (58.595 meters). Elevations at Lock 22 on 1903 Datum from 1904 depend on B.M. "MCMLXXXVIII" at elevation 207.326 feet (63.193 meters) and was determined by using Department of Public Works mean difference in elevations from B.M. "1" at Lock 23 and from B.M. "LOUISVILLE LANDING" at Louisville. IGLD (1955) was never used at Lock 22 gauge site.

#### Gauging Station Sites (see Plate 75, page 140):

- (a) June 1860-July 1904: A staff gauge located over the sill of Lock 22.
- (b) August 1904-April 1944: A staff gauge located at the lower entrance of the breast wall of Lock 22.
- (c) May 1944-October 1956: Recording and staff gauges located over the rear of the culvert opening under the approach wall, approximately 150 feet east of the lower gate on the west side of the lower entrance to Lock 22.

75°00'



WATER LEVEL GAUGE LOCATION  
LOCK 22, ONTARIO  
1860-1956

1982

## GAUGE HISTORY

### H-2-CA, Ontario

1903 Datum was never established at H-2-CA. Elevations at H-2-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 1" at H-2-CA is 208.689 feet (63.608 meters) and depends on the elevation of B.M. "MCMLXXXVIII" on the main level line as being 207.771 feet (63.329 meters) on 1935 Datum. IGLD (1955) was never used a H-2-CA gauge site.

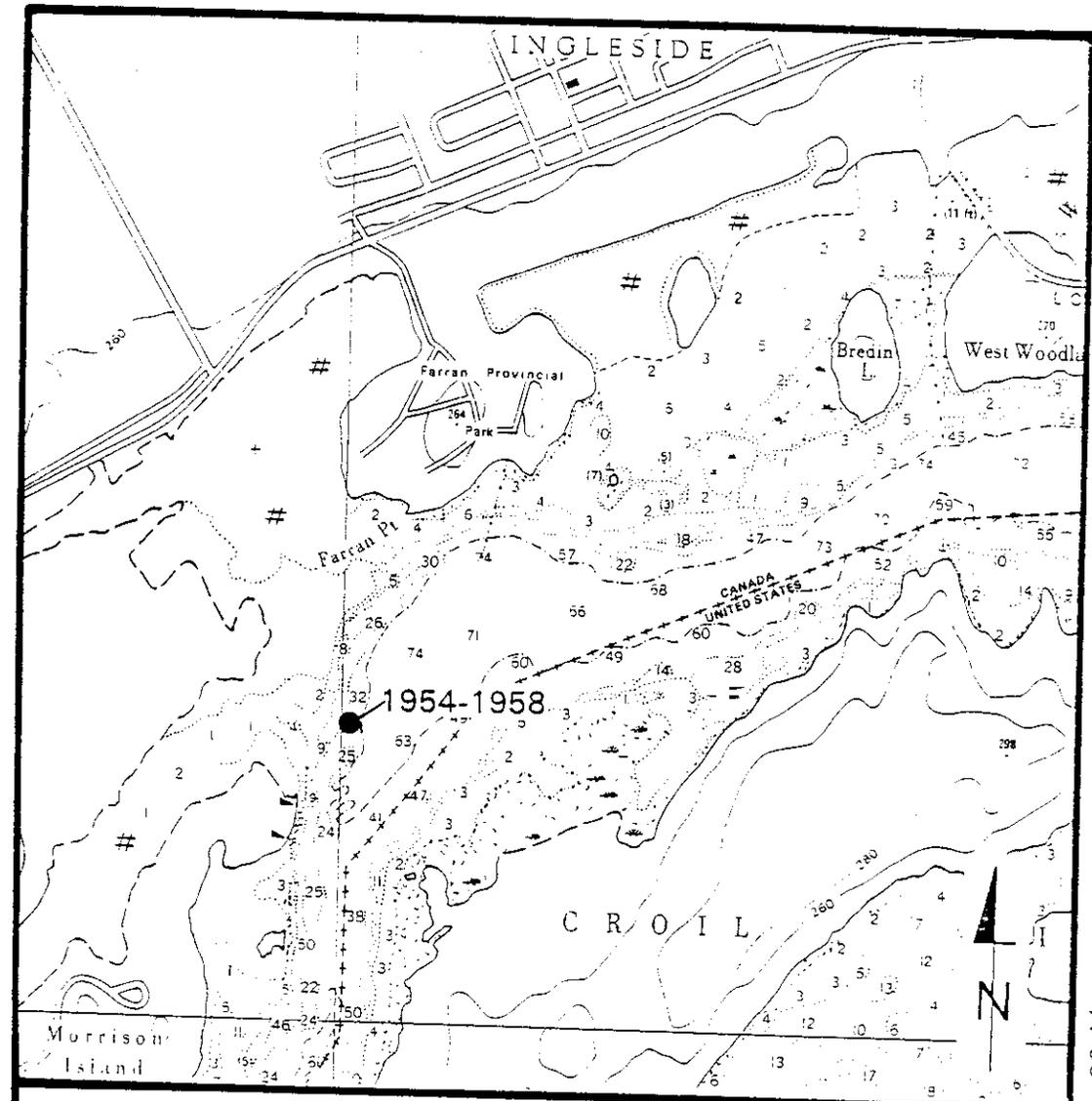
NOTE: 1935 Datum records at this station for the period November 1954-June 1958 have been converted to IGLD (1955) by subtracting 0.96 foot (0.29 meters).

This station site was submerged with the filling of Lake St. Lawrence.

### Gauging Station Site (see Plate 76, page 142):

(a) November 1954-June 1958: A recording gauge located on the Canadian side at the eastern end of Farran's Point Lock over a stilling well with an intake 20 feet long.

75°00'



WATER LEVEL GAUGE LOCATION  
H-2-CA, ONTARIO  
1954-1958

1982

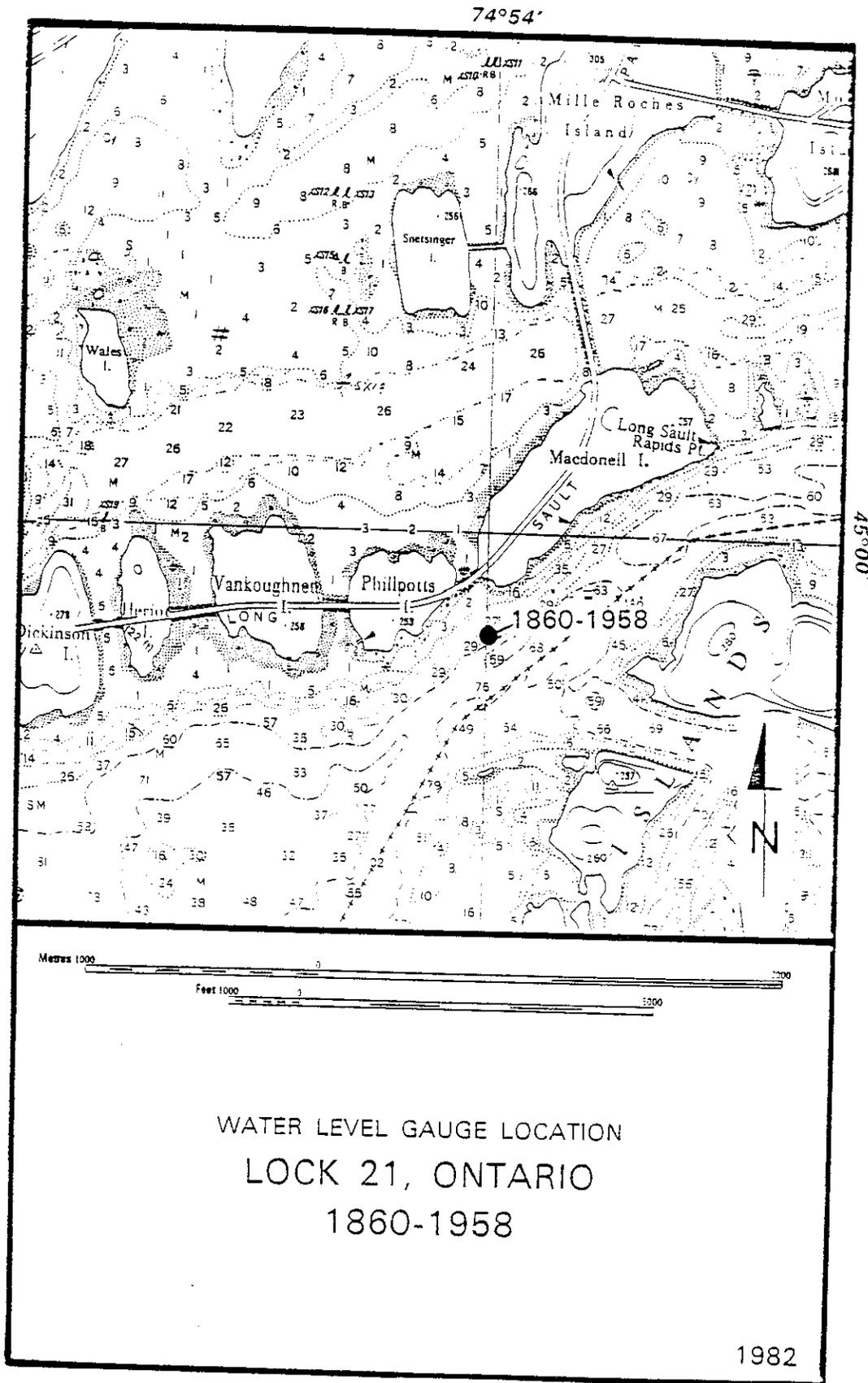
## GAUGE HISTORY

### Lock 21, Ontario

Elevations at Lock 21 on 1903 Datum used from 1860 to 1905 depend on the upper sill of old Lock 21 at elevation 190.920 feet (58.192 meters). Elevations at Lock 21 on 1903 Datum from 1905 to 1922 depend on the upper sill of the new lock at elevation 184.500 feet (56.236 meters). Elevations at Lock 21 on 1903 Datum from 1922 depend on B.M. "MCLXXX" and B.M. "B" at elevations 204.768 feet (62.413 meters) and 210.533 feet (64.170 meters) respectively and was determined by using Department of Public Works mean difference in elevations from B.M. "B" at Cornwall and B.M. "1" at Morrisburg. IGLD (1955) was never used at Lock 21 gauge site.

#### Gauging Station Sites (see Plate 77, page 144):

- (a) January 1860-June 1905: A staff gauge located over the upper sill of Lock 21.
- (b) July 1905-May 1922: A staff gauge located at the upper sill of Lock 21.
- (c) May 1922-June 1958: A recording located over the coping at the west end of the masonry wing wall at the north end of the weir at Lock 21, Cornwall Canal.



## GAUGE HISTORY

### Dickinson Landing-CA, Ontario

1903 Datum was never established at Dickinson Landing-CA. Elevations at Dickinson Landing-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 2" at Dickinson Landing-CA is 217.700 feet (66.355 meters) and depends on the elevation of B.M. "MCMLXXXI" on the main line as being 220.867 feet (67.320 meters) on 1935 Datum. IGLD (1955) was never used at Dickinson Landing-CA gauge site.

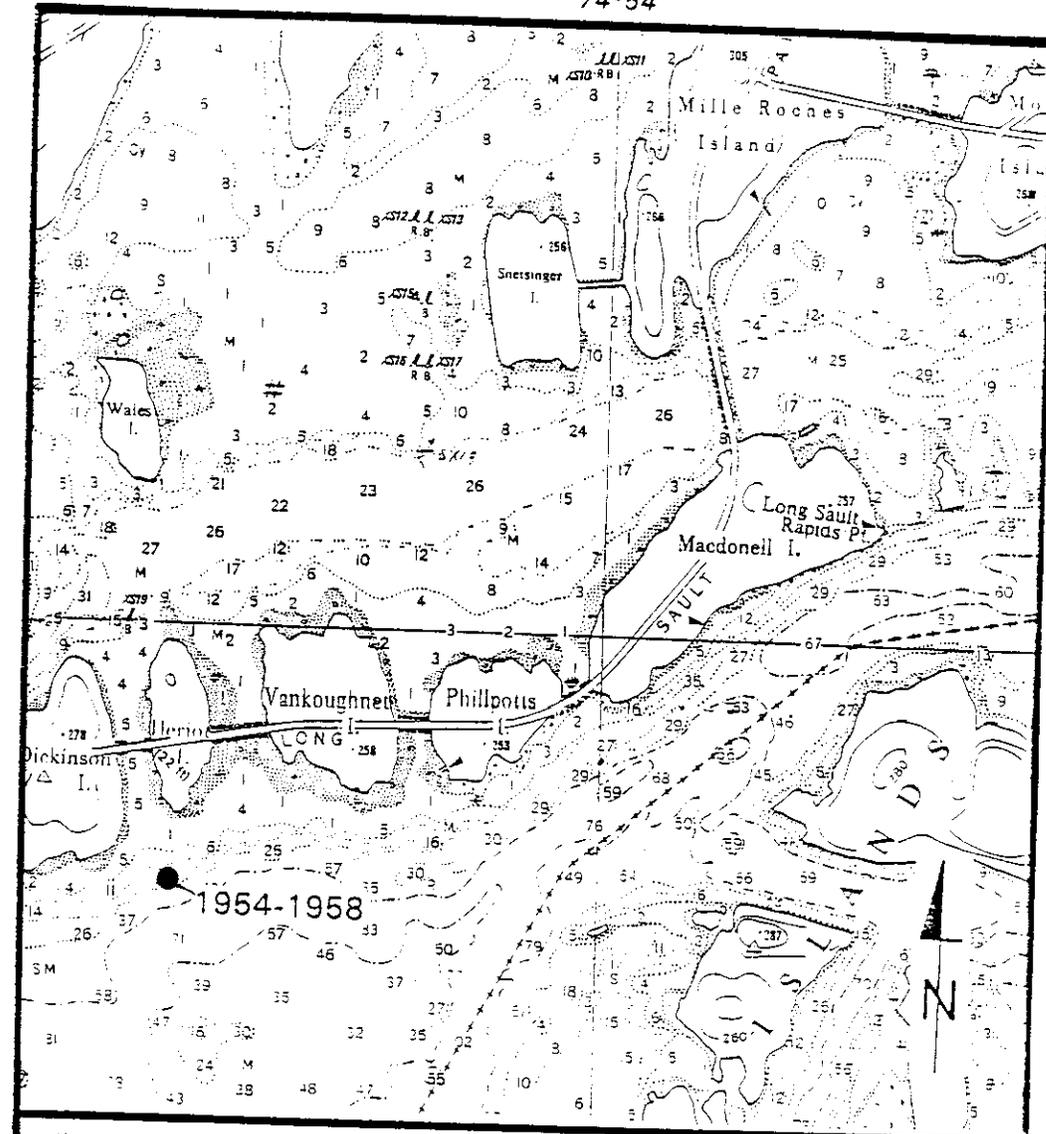
NOTE: 1935 Datum records at this station for the period October 1954-July 1958 have been converted to IGLD (1955) by subtracting 0.96 foot (0.29 meters).

This station site was submerged with the filling of Lake St. Lawrence.

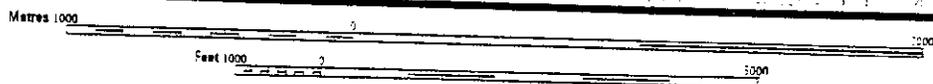
### Gauging Station Site (see Plate 78, page 146):

(a) October 1954-July 1958: A recording gauge on the Canadian side of the river at Dickinson Landing, over a steel stilling well connected to the river by an intake pipe 80 feet long.

74°54'



45°00'



WATER LEVEL GAUGE LOCATION  
 DICKINSON LANDING-CA, ONTARIO  
 1954-1958

1982

## GAUGE HISTORY

### H-22-CA, Ontario

1903 Datum was never established at H-22-CA. Elevations at H-22-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum at H-22-CA depends on the elevation of B.M. "MCMLXXX" on the main level line as being 205.261 feet (62.564 meters) on 1935 Datum. IGLD (1955) was never used at H-22-CA gauge site.

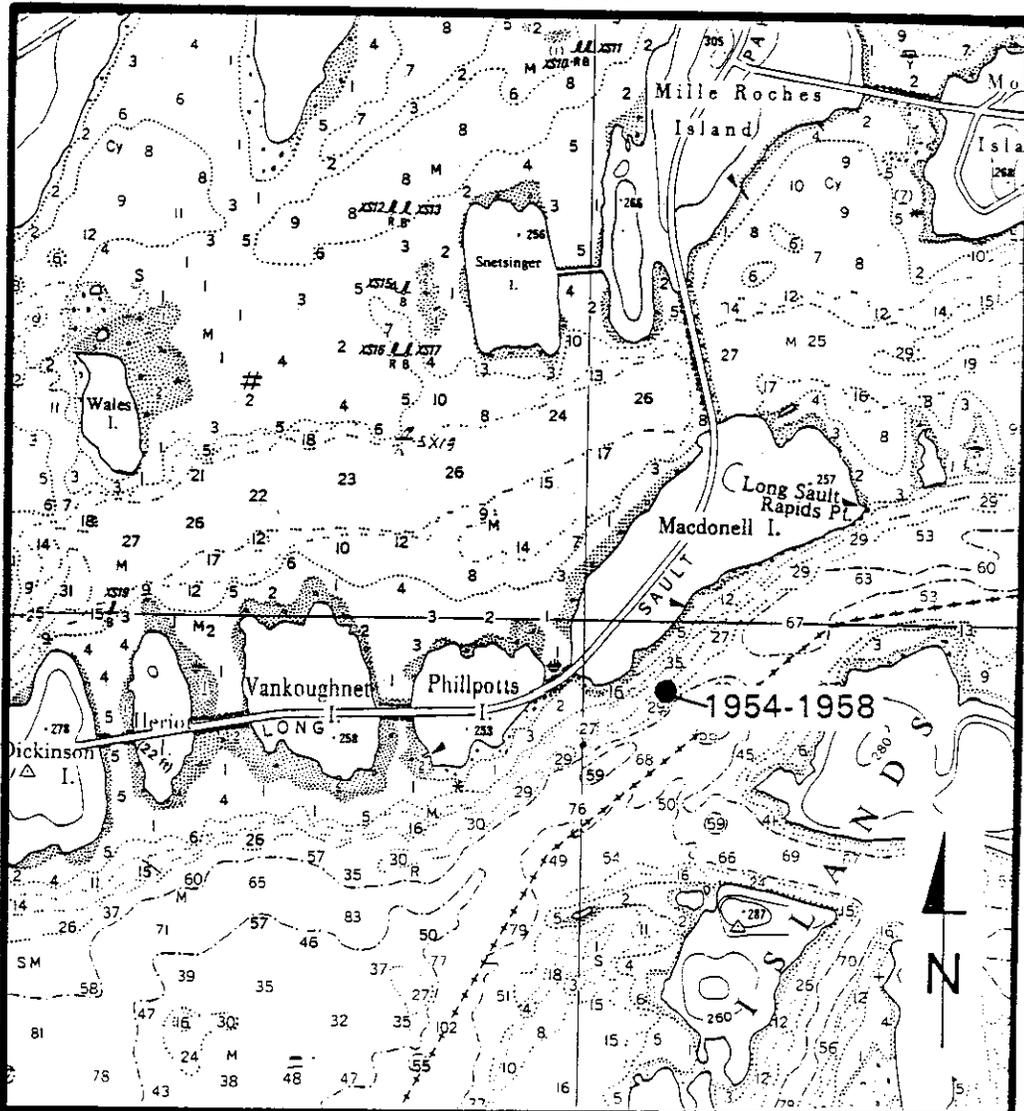
NOTE: 1935 Datum records at this station for the period November 1954-May 1958 have been converted to IGLD (1955) by subtracting 0.96 foot (0.29 meters).

This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 79, page 148):

(a) November 1954-May 1958: A recording gauge on the Canadian side of the river on the canal causeway east of Lock 21 over a stilling well connected to the river by an intake pipe 32 feet long.

74°54'



45°00'



WATER LEVEL GAUGE LOCATION  
 H-22-CA, ONTARIO  
 1954-1958

1982

## GAUGE HISTORY

### H-20-CA, Ontario

1903 Datum was never established at H-20-CA. Elevations at H-20-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum at H-20-CA depends on the elevation of B.M. "MMII" on the main line as being 207.906 feet (63.370 meters) on 1935 Datum. IGLD (1955) was never used at H-20-CA gauge site.

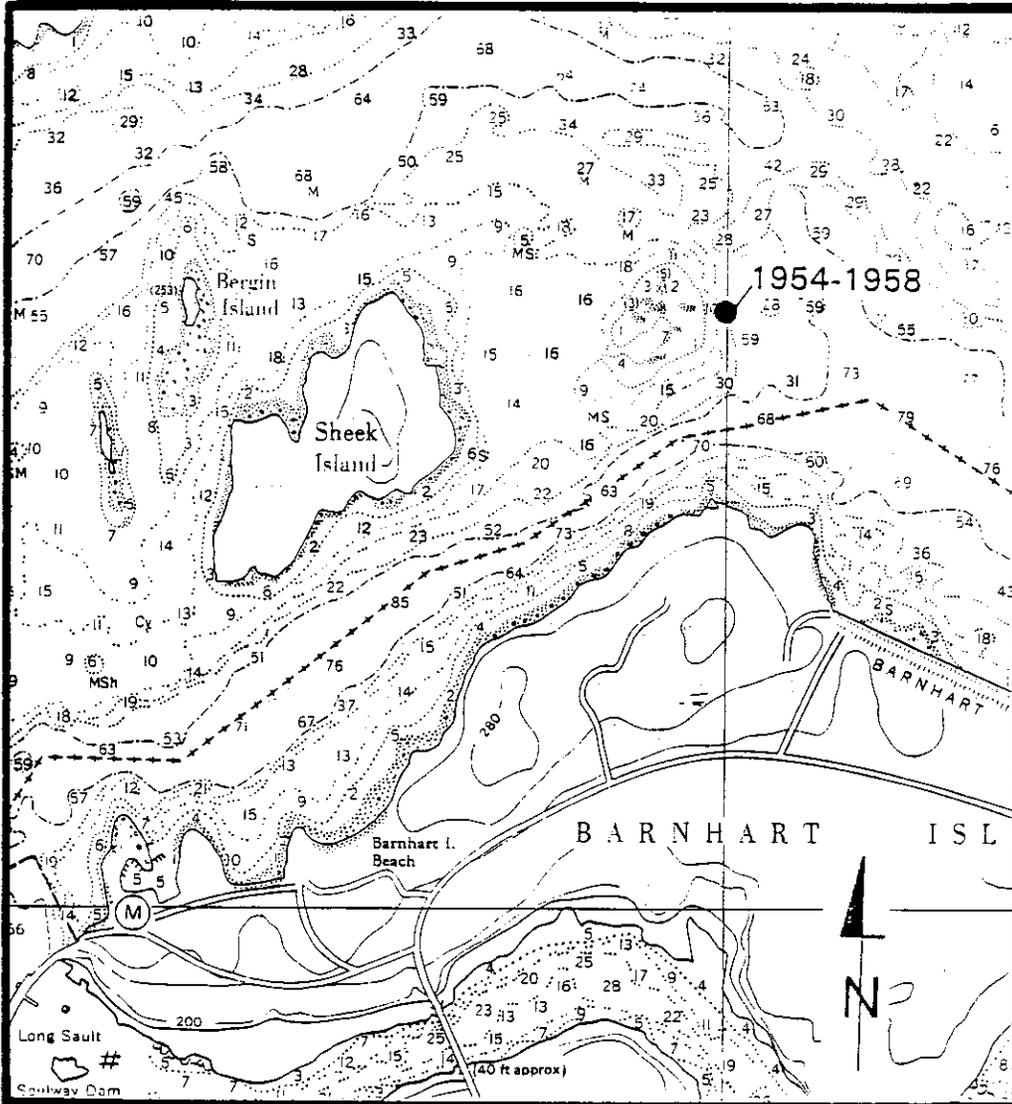
NOTE: 1935 Datum records at this station for the record November 1954-May 1958 have been converted to IGLD (1955) by subtracting 0.96 foot (0.29 meters).

This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 80, page 150):

(a) November 1954-May 1958: A recording gauge on the Canadian side of the river over a stilling well attached to the stone wall on the south side of the weir at the Sheek Island Power House.

74°50'



45°00'



WATER LEVEL GAUGE LOCATION  
 H-20-CA, ONTARIO  
 1954-1958

1982

## GAUGE HISTORY

### Saunders HW, Ontario

1903 Datum was never established at Saunders HW. Elevations at Saunders HW on 1935 Datum were established by precise leveling in 1958. The 1935 Datum elevation of B.M. "HW" is 257.994 feet (78.637 meters) and depends on the elevation of B.M. "2895" on the main level line as being 197.220 feet (60.113 meters) on 1935 Datum. IGLD (1955) elevations at Saunders HW depend on B.M. "HEADWATER" at elevation 257.038 feet (78.351 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

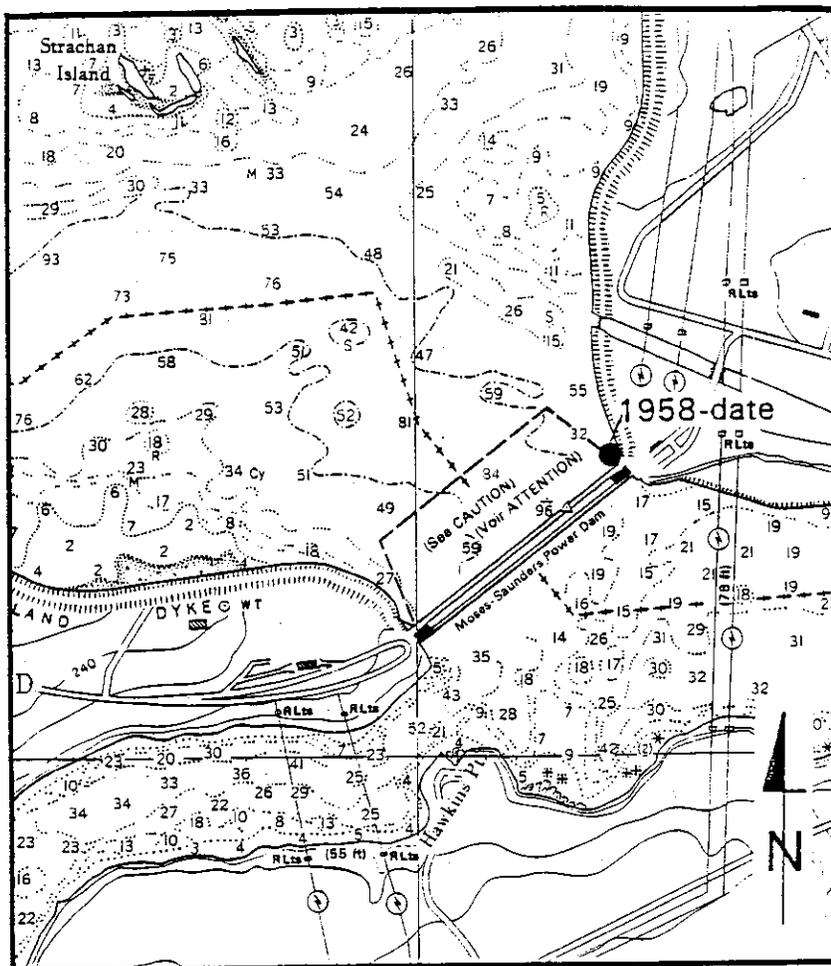
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Sep 1958-Date	HEADWATER	257.038 feet (78.351 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

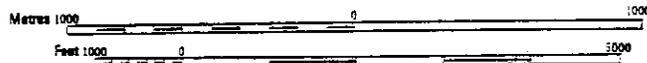
#### Gauging Station Site (see Plate 81, page 152):

(a) September 1958-Date: Water levels are transmitted to a recorder located in the control room of the Saunders Generating Station from a steel silling well connected to the Fore Bay by an intake pipe extending 60 feet upstream from the powerhouse along the Fore Bay wing wall.

74°48'



45°00'



WATER LEVEL GAUGE LOCATION  
SAUNDERS HW, ONTARIO  
1958-DATE

1982

## GAUGE HISTORY

### Saunders TW, Ontario

1903 Datum was never established at Saunders TW. Elevations at Saunders TW on 1935 Datum were established by precise leveling in 1958. The 1935 Datum depends on the elevation of B.M. "2895" on the main level line as being 197.220 feet (60.113 meters) on 1935 Datum. IGLD (1955) elevations at Saunders TW depend on B.M. "2895" at elevation 196.258 feet (59.819 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

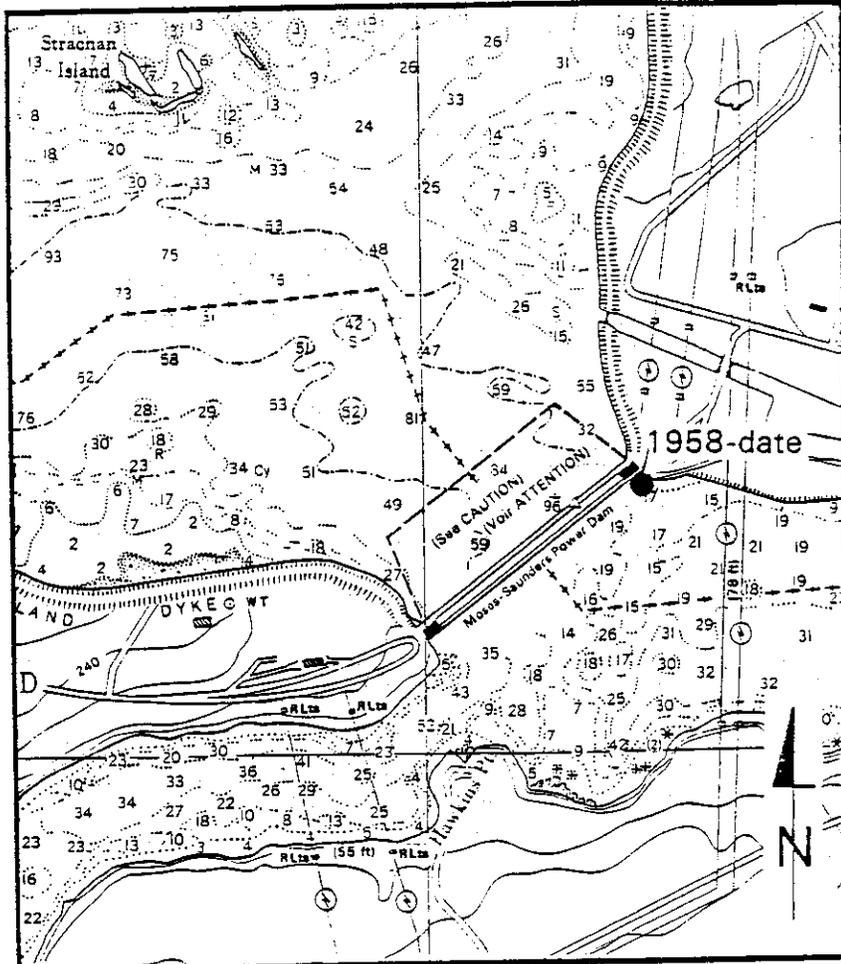
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Sep 1958-Date	2895	196.258 feet (59.819 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

#### Gauging Station Site (see Plate 82, page 154):

(a) September 1958-Date: Water levels are transmitted to a recorder located in the control room of the Saunders Generating Station from a steel stilling well connected to the tailrace by an intake pipe extending to the downstream end of the pier between ice sluices No. 1 and No. 2.

74°48'



45°00'



WATER LEVEL GAUGE LOCATION  
SAUNDERS TW, ONTARIO  
1958-DATE

1982

## GAUGE HISTORY

### International TW, Ontario

1903 Datum was never established at International TW. Elevations at International TW on 1935 Datum were established by precise leveling in 1958. The 1935 Datum elevation of B.M. "INTERNATIONAL" at International TW is 174.227 feet (53.104 meters) and depends on the elevation of B.M. "2895" on the main level line as being 197.220 feet (60.113 meters) on 1935 Datum. IGLD (1955) elevations at International TW depend on B.M. "INTERNATIONAL" at elevation 173.266 feet (52.812 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

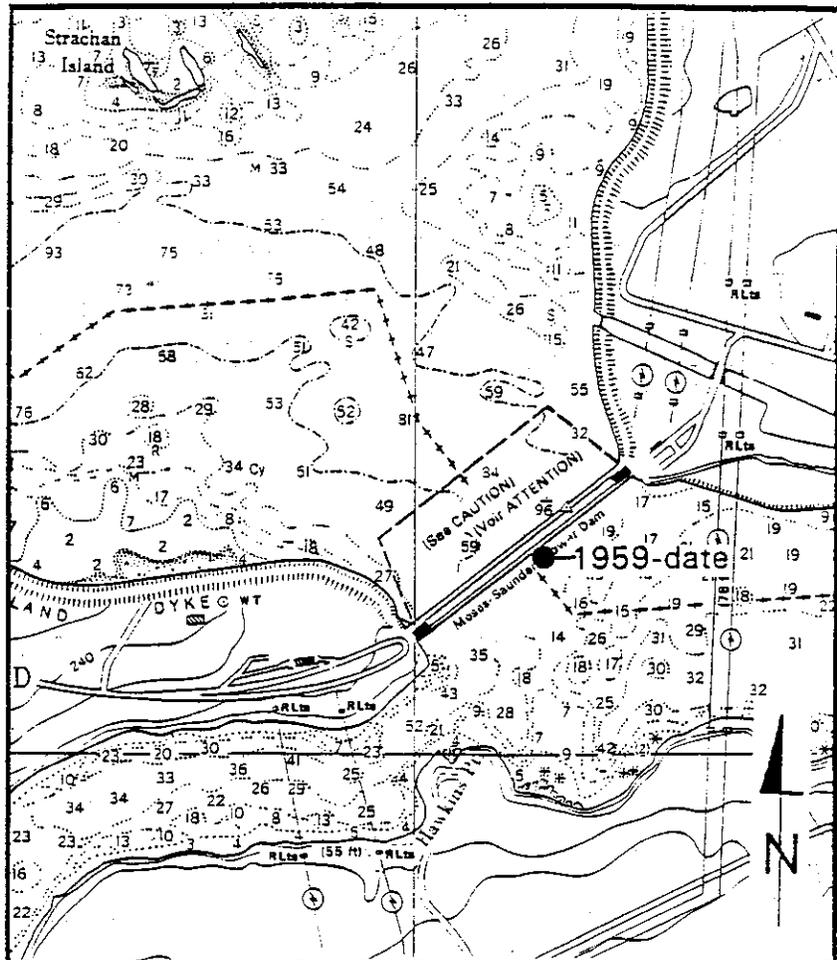
### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1959-Date	INTERNATIONAL	173.266 feet (52.812 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

### Gauging Station Site (see Plate 83, page 156):

(a) June 1959-Date: Water levels are transmitted to a recorder located in the control room of the Saunders Generating Station. They are transmitted from a steel stilling well connected to the tailrace by an intake pipe extending to the downstream end of the pier on the Canadian side of ice sluice No. 3.

74°48'



WATER LEVEL GAUGE LOCATION  
INTERNATIONAL TW, ONTARIO  
1959-DATE

1982

## GAUGE HISTORY

### Long Sault, Ontario

1903 Datum was never established at Long Sault. IGLD (1955) elevations at Long Sault depend on B.M. "2889" at elevation 260.619 feet (79.437 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

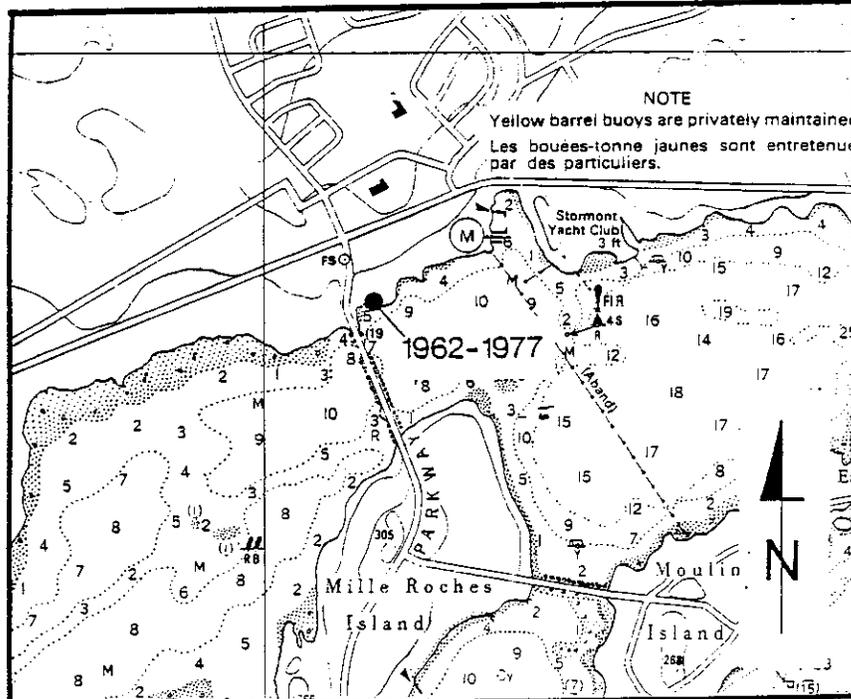
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jan 1962-Sep 1977	2889	260.619 feet (79.437 meters)	Recording Gauge, Hourly Scalings	C.H.S.

#### Gauging Station Site (see Plate 84, page 158):

(a) January 1962-September 1977: A recording gauge located over a steel well on the north shore of Lake St. Lawrence 500 feet from the information booth at the Long Sault entrance to Long Sault Parkway, 200 feet east of Roadway.

74°54'

45°02'



WATER LEVEL GAUGE LOCATION  
LONG SAULT, ONTARIO  
1962-1977

1982

## GAUGE HISTORY

### Cornwall, Ontario

Elevations at Cornwall on 1903 Datum used from 1860 to June 1905 depend on the lower sill of Lock 15 at elevation 143.440 feet (43.721 meters). Elevations at Cornwall on 1903 Datum from 1919 to 1926 depend on B.M. "DLXIII" at elevation 159.618 feet (48.652 meters). Elevations at Cornwall on 1903 Datum from 1927 to date depend on B.M. "DLXIII" at elevation 162.889 feet (49.469 meters). IGLD (1955) elevations at Cornwall depend on B.M. "B" at elevation 162.448 feet (49.514 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee. Also IGLD (1955) elevations at Cornwall depend on B.M. "Corn II" at elevation 159.478 feet (48.609 meters) as established by latest level line run in 1964 by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jan 1860-Jun 1905	LOWER SILL OF OLD LOCK 15	142.558 feet (43.452 meters)	Staff Gauge, Once Daily	D. of R. and C.
Jan 1905-Aug 1919	LOWER SILL OF NEW LOCK 15	1937.419 feet (41.885 meters)	Staff Gauge, Once Daily	D. of R. and C.
Sep 1919-Dec 1919	DLXIII	159.177 feet (48.517 meters)	Recording Gauge, 1/2 hr. readings	C.H.S.
Jan 1920-Apr 1920	LOWER SILL OF NEW LOCK 15	137.419 feet (41.885 meters)	Staff Gauge, Once Daily	D. of R. and C.
May 1920-Dec 1920	DLXIII	159.117 feet (48.517 meters)	Recording Gauge, 1/2 hr. readings	C.H.S.
Jan 1921-Apr 1921	LOWER SILL OF NEW LOCK 15	137.419 feet (41.885 meters)	Staff Gauge, Once Daily	D. of R. and C.
May 1921-Nov 1921	DLXIII	159.177 feet (48.517 meters)	Recording Gauge, 1/2 hr. readings	C.H.S.
Dec 1921-May 1922	LOWER SILL OF NEW LOCK 15	137.419 feet (41.885 meters)	Staff Gauge, Once Daily	D. of R. and C.
Jun 1922-Sep 1927	DLXIII	159.177 feet (48.517 meters)	Recording Gauge, 1/2 hr. readings	C.H.S.

Oct 1927-Sep 1963	B	162.448 feet (49.514 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Sep 1963-Sep 1968	B	162.448 feet (49.514 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Sep 1968-Date	CORN II	48.609 meters (159.478 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used.

Gauging Station Sites (see Plates 85-86, pages 161-162):

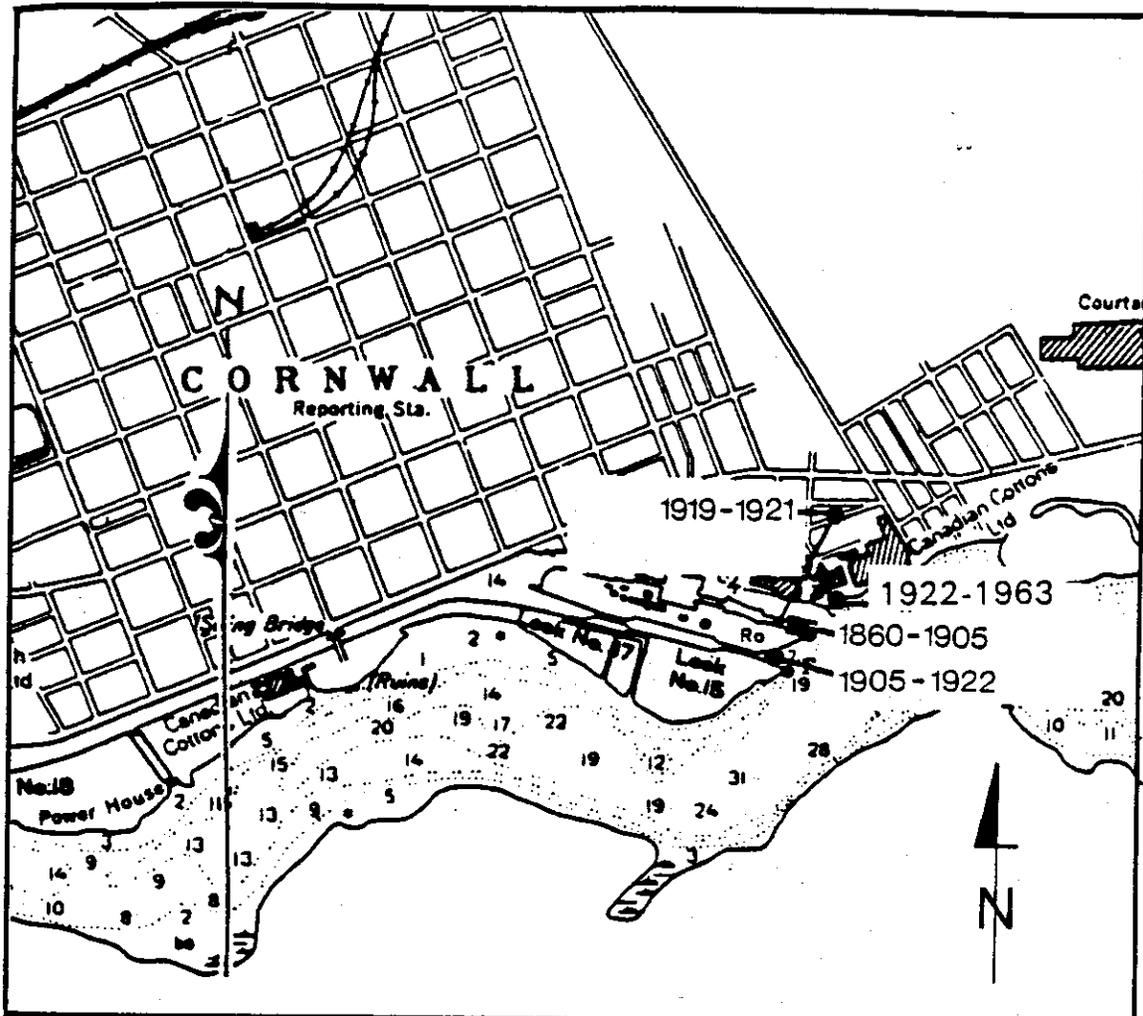
(a) January 1860-June 1905: Staff gauge readings taken at noon over the lower sill of Lock 15.

(b) July 1905-May 1922: (with exception of September 1919-December 1919, May 1920-December 1920 and May 1921-December 1921) staff gauge readings taken at noon over the lower sill of Lock 15.

(c) September 1919 to December 1921: A recording gauge located over lower chain well for upper gate of Lock 15, on the shore side of Lock.

(d) June 1922-to September 1963: A recording gauge located inside the concrete pump house belonging to the Canada Mill of Canadian Cottons Limited.

(e) September 1963-Date: A recording gauge located over a concrete well in a brick house on edge of new government wharf.



WATER LEVEL GAUGE LOCATION  
 CORNWALL, ONTARIO  
 1860-DATE

1982



## GAUGE HISTORY

### Summerstown, Ontario

1903 Datum was never established at Summerstown. Elevations at Summerstown on 1908 DPW Datum (Public Works) depend on B.M. "MMVII" at elevations 157.063 feet (47.872 meters). Since 1939, elevations at Summerstown on 1908 DPW Datum depend on B.M. "SUMMERSTOWN" at elevation 174.219 feet (53.102 meters). IGLD (1955) elevations at Summerstown depend on B.M. "SUMMERSTOWN" and BM "2616" at elevation 174.124 feet (53.073 meters) and 166.157 feet (50.645 meters) respectively as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

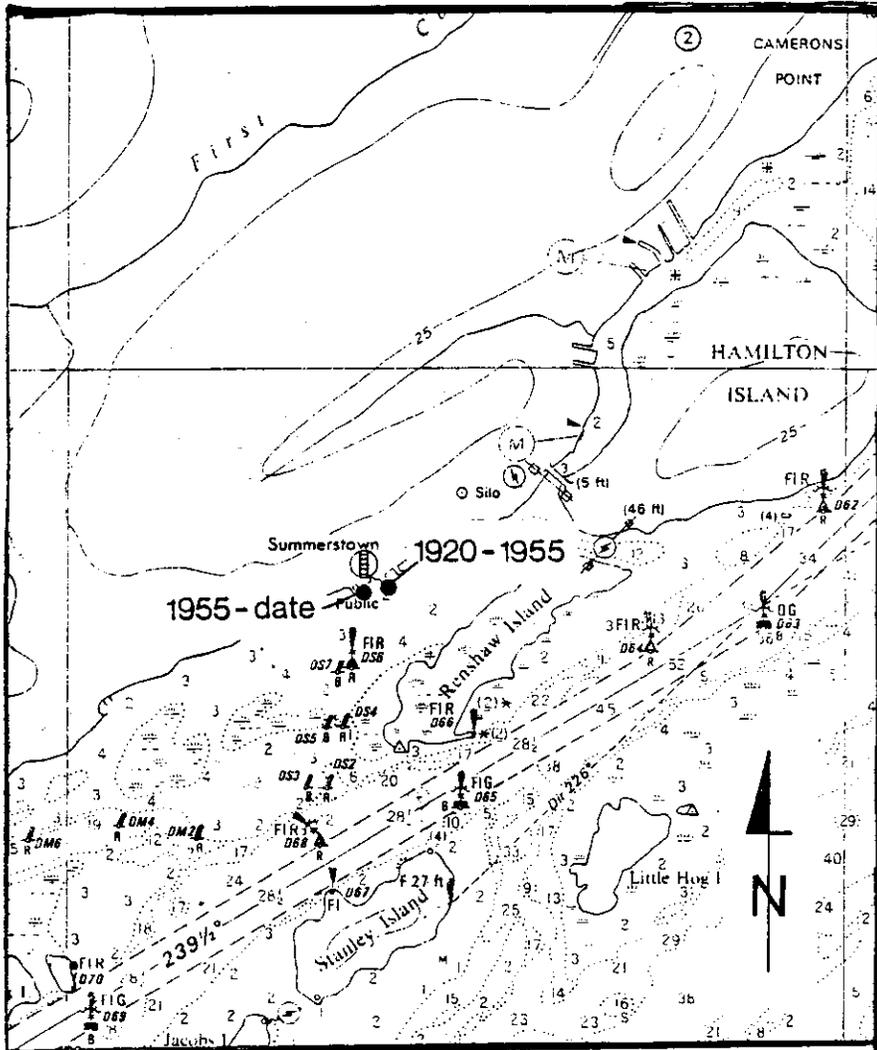
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1920-Dec 1939	MMVII	156.968 feet (47.844 meters)	Recording Gauge, 1/2 hr. Readings	C.H.S.
Jan 1940-Dec 1956	SUMMERSTOWN	174.124 feet (53.073 meters)	Recording Gauge, 1/2 hr. Readings	C.H.S.
Jan 1957-Jul 1961	SUMMERSTOWN	174.124 feet (53.073 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jul 1961-Jun 1965	SUMMERSTOWN	174.124 feet (53.073 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jun 1965-Date	2616	50.645 meters (166.157 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used.

#### Gauging Station Sites (see Plate 87, page 164):

(a) May 1920-October 1955: A recording gauge located over well at northeast corner of the Department of Public Works wharf.

(b) November 1955-Date: A recording gauge located over well at the new Department of Public Works wharf.



WATER LEVEL GAUGE LOCATION  
 SUMMERSTOWN, ONTARIO  
 1920-DATE

1982

## GAUGE HISTORY

### H-9-CA, Ontario

1903 Datum was never established at H-9-CA. Elevations at H-9-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "H 9" is 173.103 feet (52.762 meters) and depends on the elevation of B.M. "B" on the main level line as being 163.377 feet (49.797 meters) on 1935 Datum. IGLD (1955) elevations at H-9-CA depend on B.M. "B" a elevation 162.448 feet (49.514 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

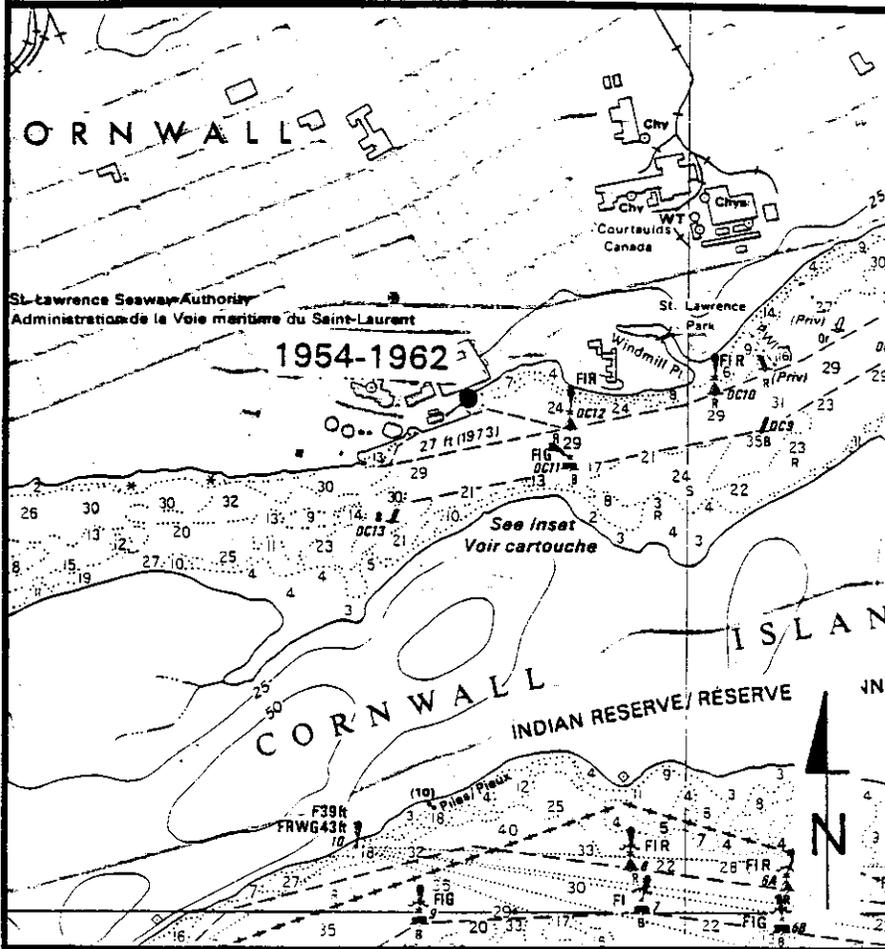
### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Nov 1954-Sep 1962	B	162.448 feet (49.514 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

#### Gauging Station Site (see Plate 88, page 166):

(a) November 1954-September 1962: A recording gauge on the Canadian side of the river over a stilling well located in the concrete pump house of the Canada Mill of Canadian Cottons Limited, in Cornwall.

74°42'



45°00'



WATER LEVEL GAUGE LOCATION  
 H-9-CA, ONTARIO  
 1954-1962

1982

## GAUGE HISTORY

### H-21-CA, Ontario

1903 Datum was never established at H-21-CA. Elevations at H-21-CA on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "SEM 30" is 165.444 feet (50.427 meters) and depends on the elevation of B.M. "B" on the main level line as being 163.377 feet (69.797 meters) on 1935 Datum. IGLD (1955) elevations at H-21-CA depend on B.M. "MM" at elevation 177.420 feet (54.078 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

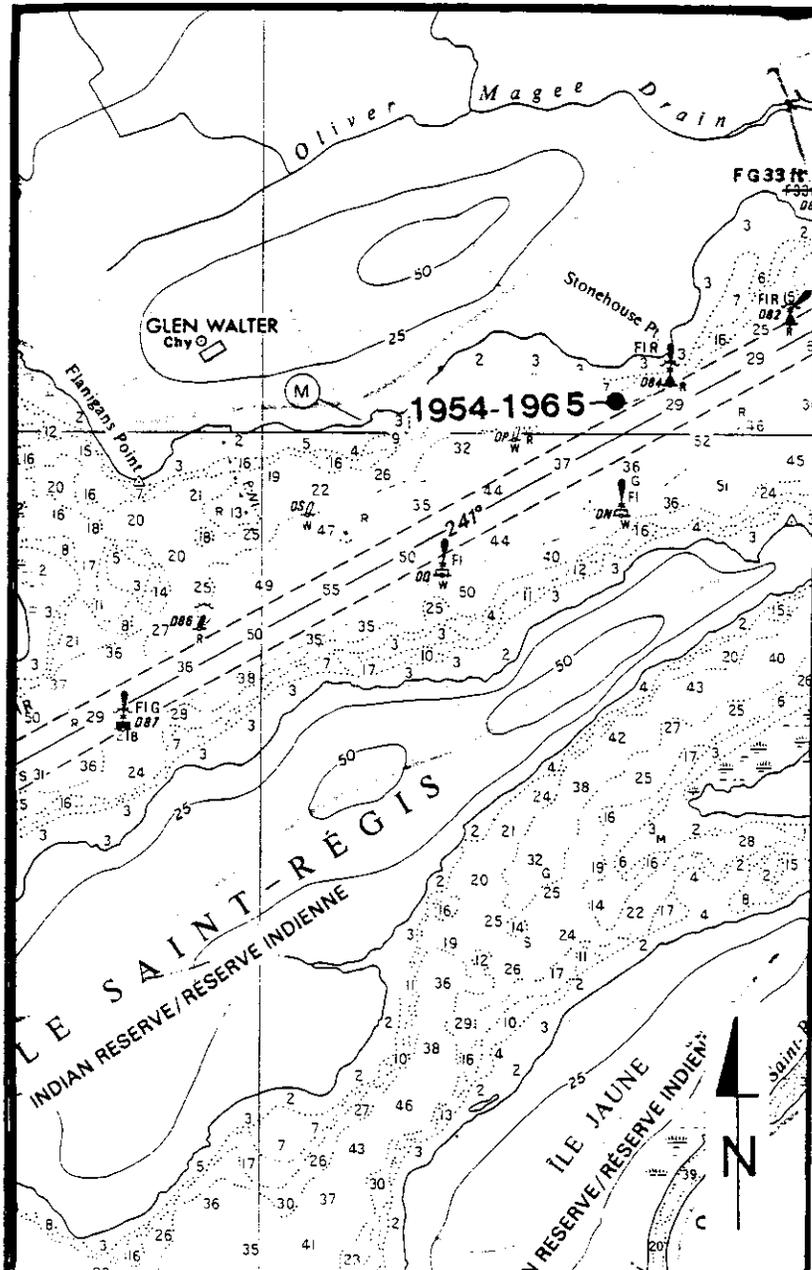
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Oct 1954-Sep 1961	SEM 30	164.505 feet (50.141 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.
Sep 1961-Dec 1965	MM	177.420 feet (54.078 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

NOTE: Beginning in 1963, the gauge operated only during the navigation season.

#### Gauging Station Site (see Plate 89, page 168):

(a) October 1954-December 1965: A recording gauge located over a steel stilling well connected to the river by an intake pipe 120 feet long, on the Canadian shore of Glengarry Point, about six miles east of Cornwall.



WATER LEVEL GAUGE LOCATION

H-21-CA, ONTARIO  
 1954-1965

1982

## GAUGE HISTORY

### Pollys Gut, New York

1903 Datum was never established at Pollys Gut. Elevations at Pollys Gut on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "STEM" at Pollys Gut is 187.677 feet (56.899 meters) and depends on the elevation of B.M. "3" on the main level line as being 204.820 feet (62.429 meters) on 1935 Datum. IGLD (1955) elevations at Pollys Gut depend on B.M. "STEM" at elevation 186.706 feet (56.908 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Nov 1954-Aug 1970	STEM	186.706 feet	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.
Aug 1970-Date	CAMP	180.195 feet (54.923 meters)	Recording Gauge, Hourly Scalings	O.H.E.& P.A.S.N.Y.

NOTE: In the 1962 report, this location was named H-8-CA. It was renamed Pollys Gut in July 1966.

From December 1962 to date, the gauge operated only during the navigation season.

#### Gauging Station Site (see Plate 90, page 170):

(a) November 1954 - Date: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 70 feet long, on the United States shore on the southern side of Massena Point near the lower end of Pollys Gut.



## GAUGE HISTORY

### H-26-CA, New York

1903 Datum was never established at H-26-CA. Elevations at H-26-CA on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "CA 2" at H-26-CA is 186.928 feet (56.976 meters) and depends on the elevation of B.M. "3" on the main level line as being 204.820 feet (62.429 meters) on 1935 Datum. IGLD (1955) elevations at H-26-CA depend on B.M. "CA 2" at elevation 185.943 feet (56.675 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

### CHRONOLOGICAL TABLE

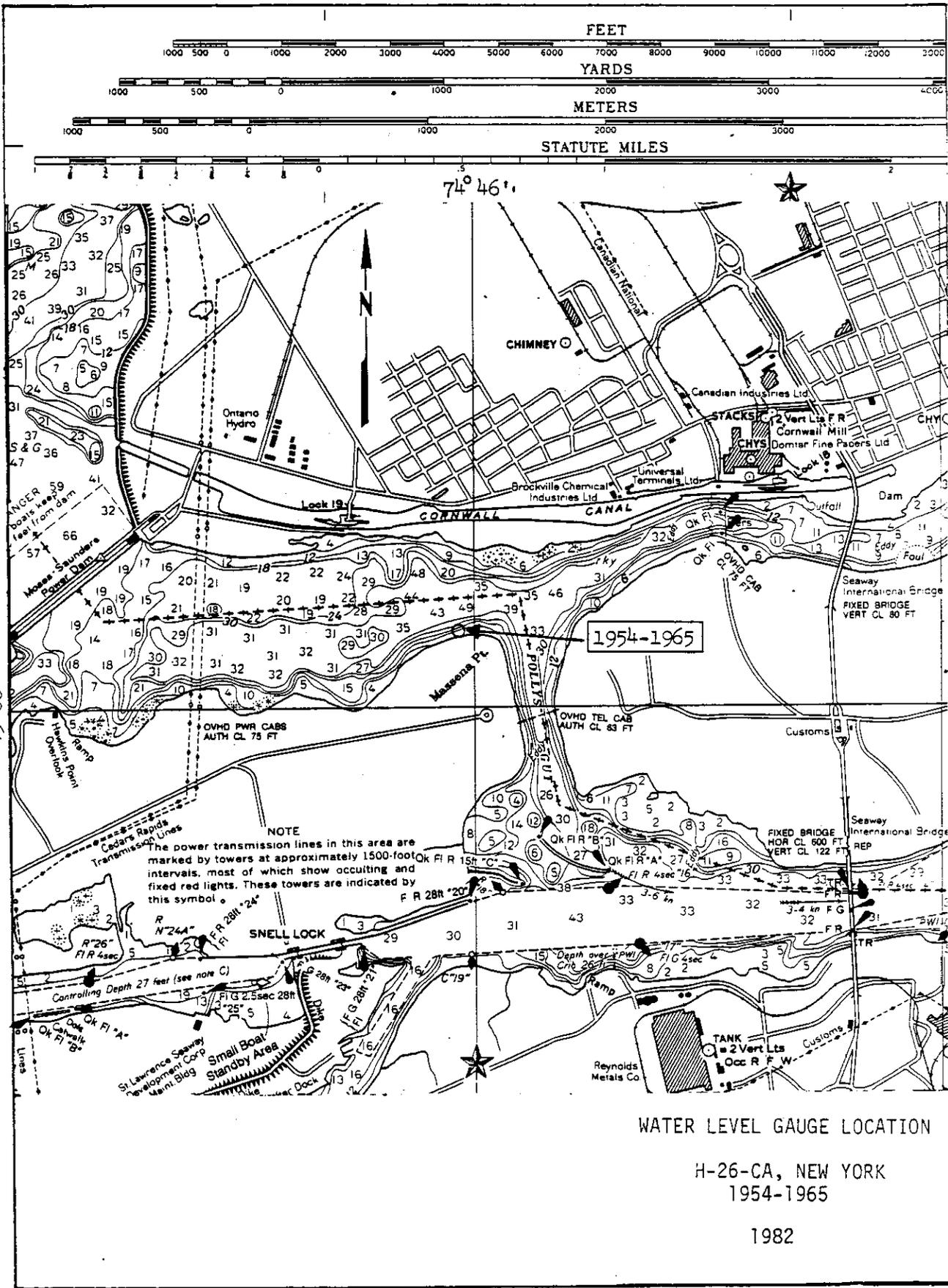
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Nov 1954-Dec 1965	CA 2	185.943 feet (56.675 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O.& P.A.S.N.Y.

NOTE: Beginning in 1963 and through 1965, the gauge was operated only during the navigation season.

During the 1977-1979 period, the St. Lawrence Seaway Development Corporation operated the gauge to monitor water levels.

### Gauging Station Site (see Plate 91, page 172):

(a) November 1954 - December 1965: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 110 feet long, on the United States shore on the northern side of Massena Point about 800 feet upstream from the start of Pollys Gut.



## GAUGE HISTORY

### Moses TW, New York

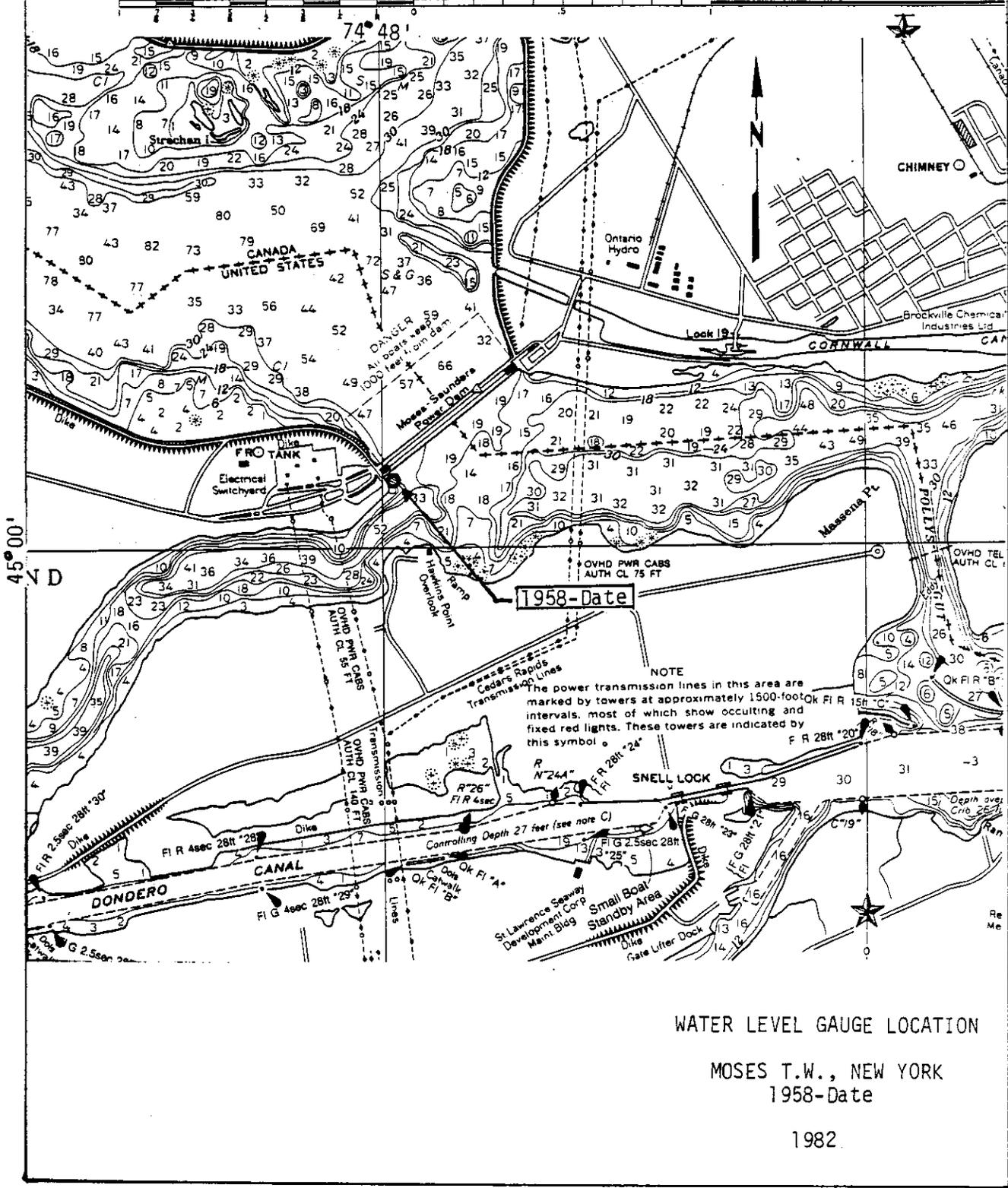
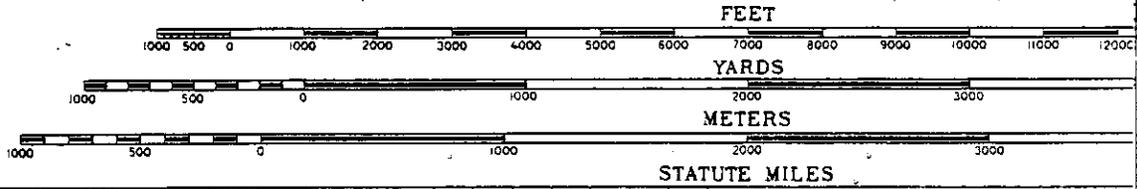
1903 Datum was never established at Moses TW. Elevations at Moses TW on 1935 Datum were established by precise leveling in 1958. The 1935 Datum elevation of B.M. "POWER" at Moses TW is 191.893 feet (58.489 meters) and depends on the elevation of B.M. "894 A" on the main level line as being 187.677 feet (57.204 meters) on 1935 Datum. IGLD (1955) elevations at Moses TW depend on B.M. "POWER" at elevation 190.933 feet (58.196 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Sep 1958-Date	POWER	190.933 feet (58.196 meters)	Recording Gauge, Hourly Scalings	O.H.E. & P.A.S.N.Y.

### Gauging Station Site (see Plate 92, page 174):

(a) September 1958 - Date: Water levels are transmitted to a recorder located in the control room of the Moses Power Dam from a steel stilling well connected to the tailrace by an intake pipe extending 75 feet downstream from the power dam along the tailrace training wall.



## GAUGE HISTORY

### Moses HW, New York

1903 Datum was never established at Moses HW. Elevations at Moses HW on 1935 Datum were established by precise leveling in 1958. The 1935 Datum elevation of B.M. "MOSES HEADWATER" at Moses HW is 248.586 feet (75.769 meters) and depends on the elevation of B.M. "894 A" on the main level line as being 187.677 feet (57.204 meters) on 1935 Datum. IGLD (1955) elevations at Moses HW depend on B.M. "MOSES HEADWATER" at elevation 247.630 feet (75.478 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

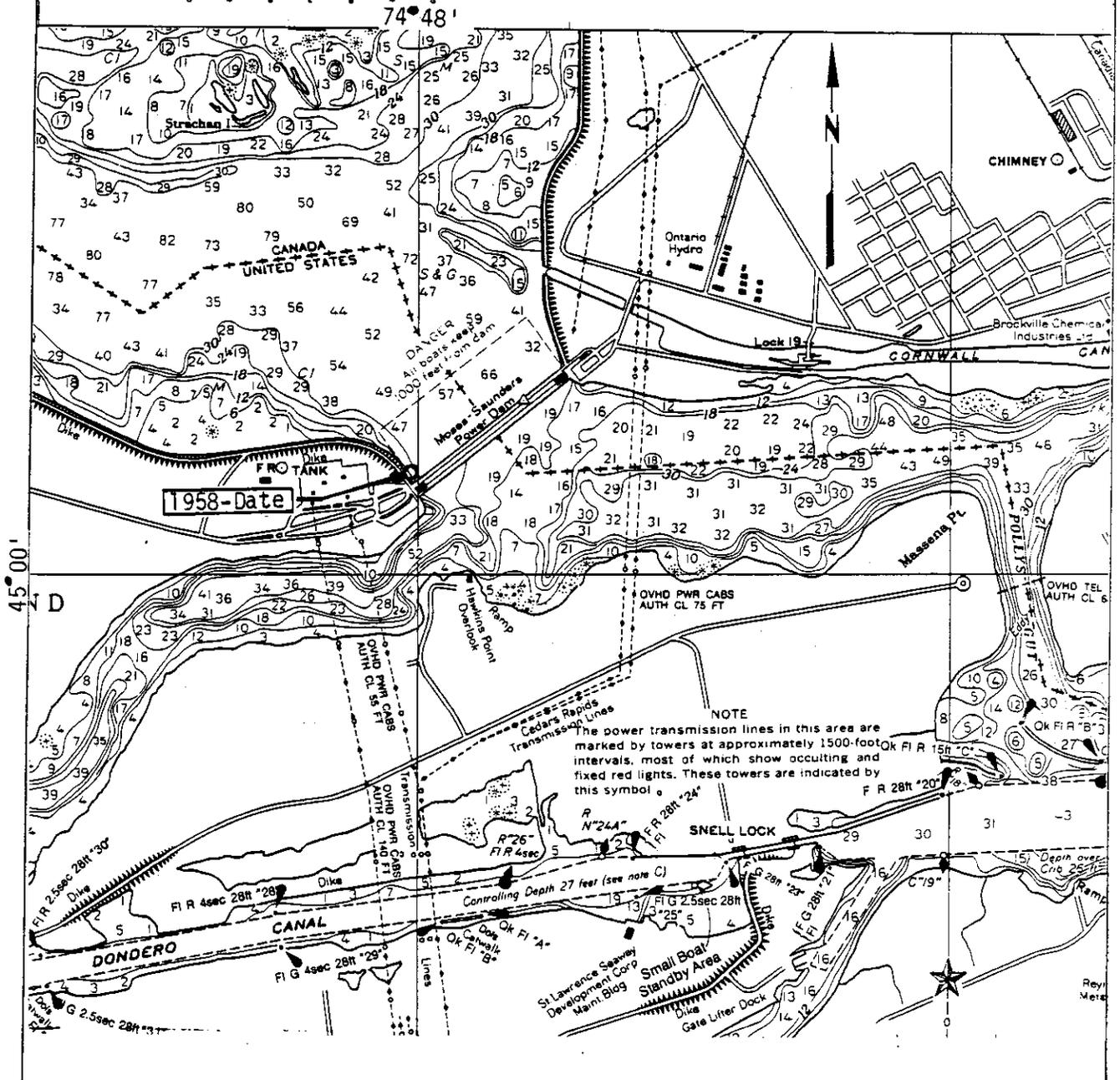
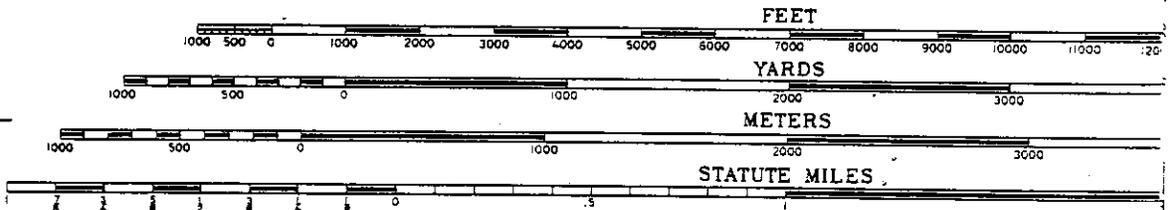
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Sep 1958-Jun 1962	MOSES HEADWATER	247.630 feet	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.
Jun 1962-Date	MOSES	242.556 feet (73.931 meters)	Recording Gauge, Hourly Scalings	O.H.E. & P.A.S.N.Y.

NOTE: Prior to publication of Appendix A, Establishment of International Great Lakes Datum, bench mark "MOSES HEADWATER" was designated TBM #4.

#### Gauging Station Site (see Plate 93, page 176):

(a) September 1958 - Date: Water levels are transmitted to a recorder located in the control room of the Moses Power Dam from a steel stilling well connected to the forebay by an intake pipe extending 40 feet upstream from the power dam along the forebay training wall.



WATER LEVEL GAUGE LOCATION

MOSES H.W., NEW YORK  
1958-Date

1982

## GAUGE HISTORY

### B-3-A, New York

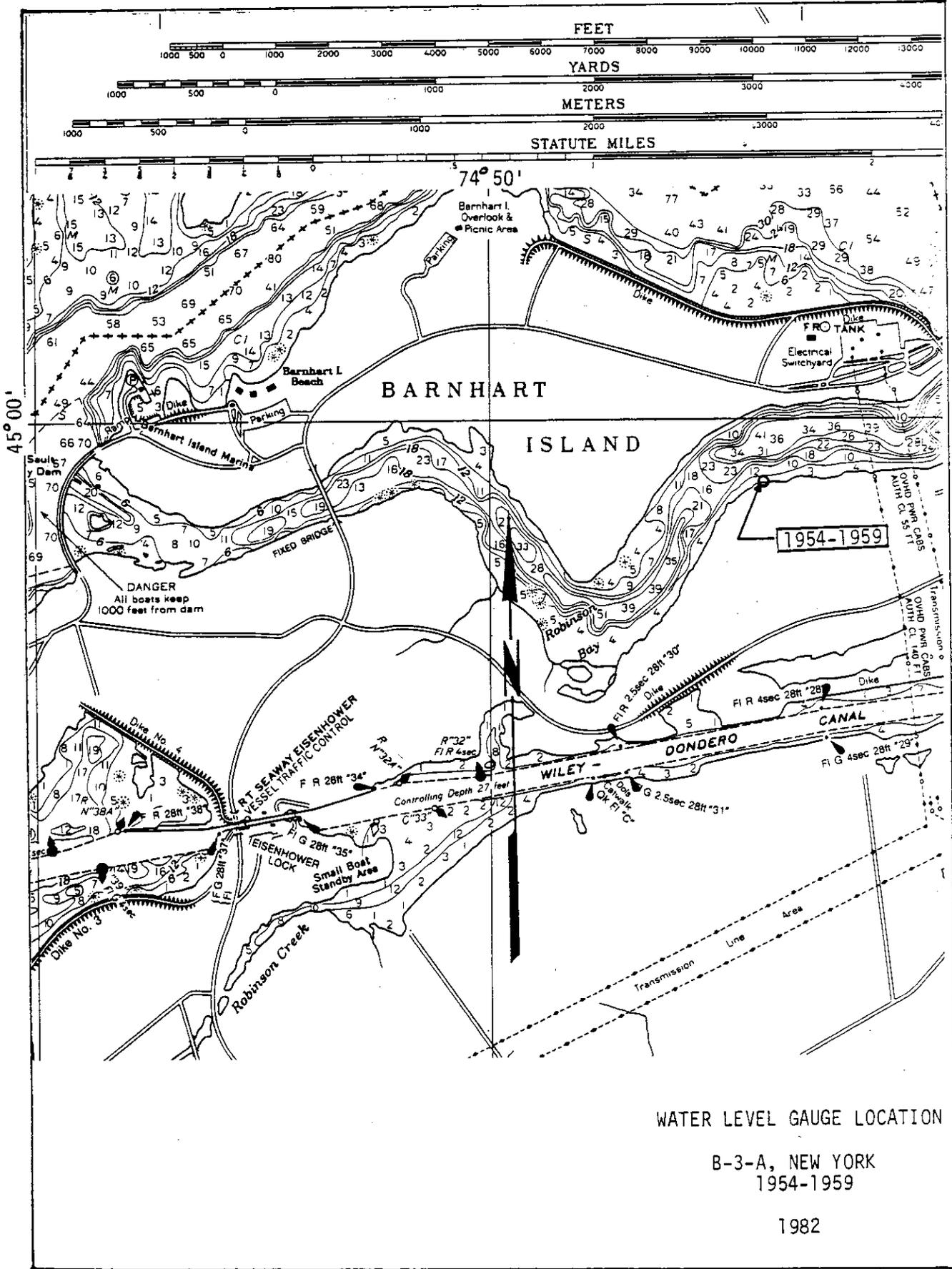
1903 Datum was never established at B-3-A. Elevations at B-3-A on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "CA 1" at B-3-A is 184.948 feet (56.372 meters) and depends on the elevation of B.M. "3" on the main level line as being 204.820 feet (62.429 meters) on 1935 Datum. IGLD (1955) elevations at B-3-A, while available, were never used in processing gauge records.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Nov 1954-Sep 1959	CA 1	184.006 feet (56.085 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

#### Gauging Station Site (see Plate 94, page 178):

(a) November 1954 - September 1959: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 147 feet long, on the south shore of South Barnhart Channel approximately 1 mile below Robinson Bay.



## GAUGE HISTORY

### B-2-A, New York

1903 Datum was never established at B-2-A. Elevations at B-2-A on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "CA 2" at B-2-A is 192.501 feet (58.674 meters) and depends on the elevation of B.M. "3" on the main level line as being 204.820 feet (62.429 meters) on 1935 Datum. IGLD (1955) elevations at B-2-A, while available, were never used in processing gauge records.

### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Dec 1954-Sep 1959	CA 2	191.569 feet (58.390 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

### Gauging Station Site (see Plate 95, page 180):

(a) December 1954 - September 1959: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 120 feet long, on the south shore of South Barnhart Channel approximately one-half mile above Robinson Bay.



## GAUGE HISTORY

### B-1-A, New York

1903 Datum was never established at B-1-A. Elevations at B-1-A on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "CA 2" at B-1-A is 185.109 feet (56.421 meters) and depends on the elevation of B.M. "SL 28 A" on the main level line as being 225.947 feet (68.869 meters) on 1935 Datum. IGLD (1955) elevations at B-1-A, while available, were never used in processing gauge records.

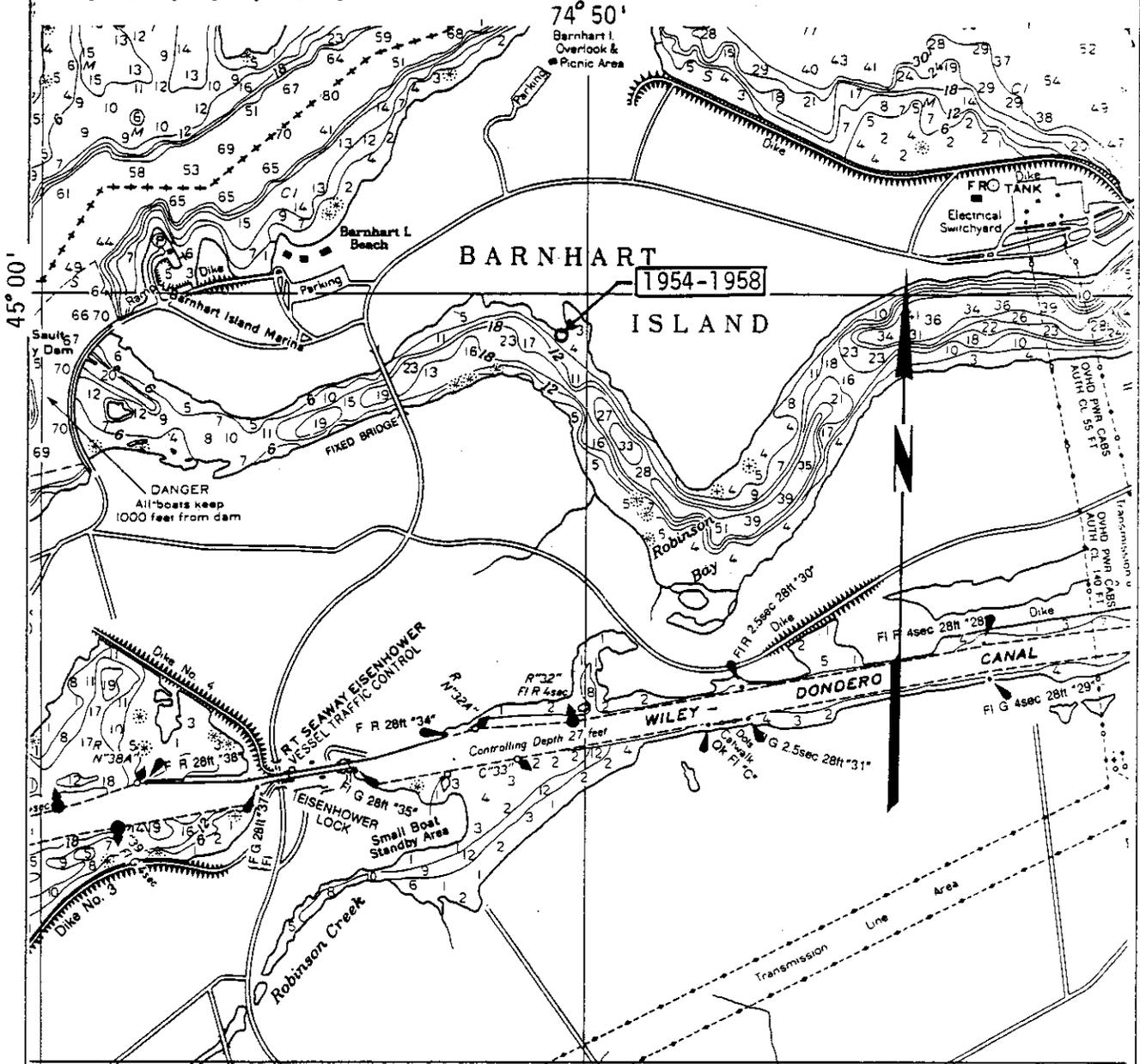
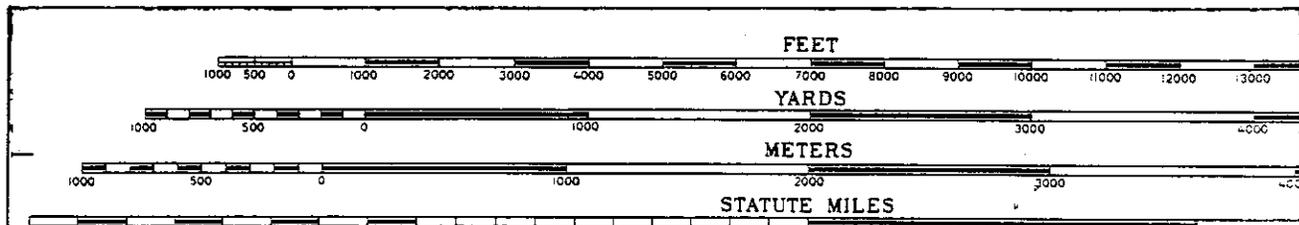
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Nov 1954-Jul 1958	CA 2	184.146 feet (56.128 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

NOTE: 1935 Datum records at this station for the period November 1954-July 1958 have been converted to IGLD (1955) by subtracting 0.96 foot (0.29 meter).

#### Gauging Station Site (see Plate 96, page 181):

(a) November 1954 - July 1958: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 80 feet long, on the north shore of South Barnhart Channel about one-half mile below Barnhart Island Bridge.



WATER LEVEL GAUGE LOCATION

B-1-A, NEW YORK  
1954-1958

1982

## GAUGE HISTORY

### Long Sault Dam HW, New York

1903 Datum was never established at Long Sault Dam HW. Elevations at Long Sault Dam HW on 1935 Datum were established by precise leveling in 1958. The 1935 Datum elevation of B.M. "SL 25 A" at Long Sault Dam HW is 276.784 feet (84.364 meters) and depends on the elevation of B.M. "3" on the main level line as being 204.820 feet (62.429 meters) on 1935 Datum. IGLD (1955) elevations at Long Sault Dam HW depend on B.M. "SL 25 A" at elevation 275.823 feet (84.071 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

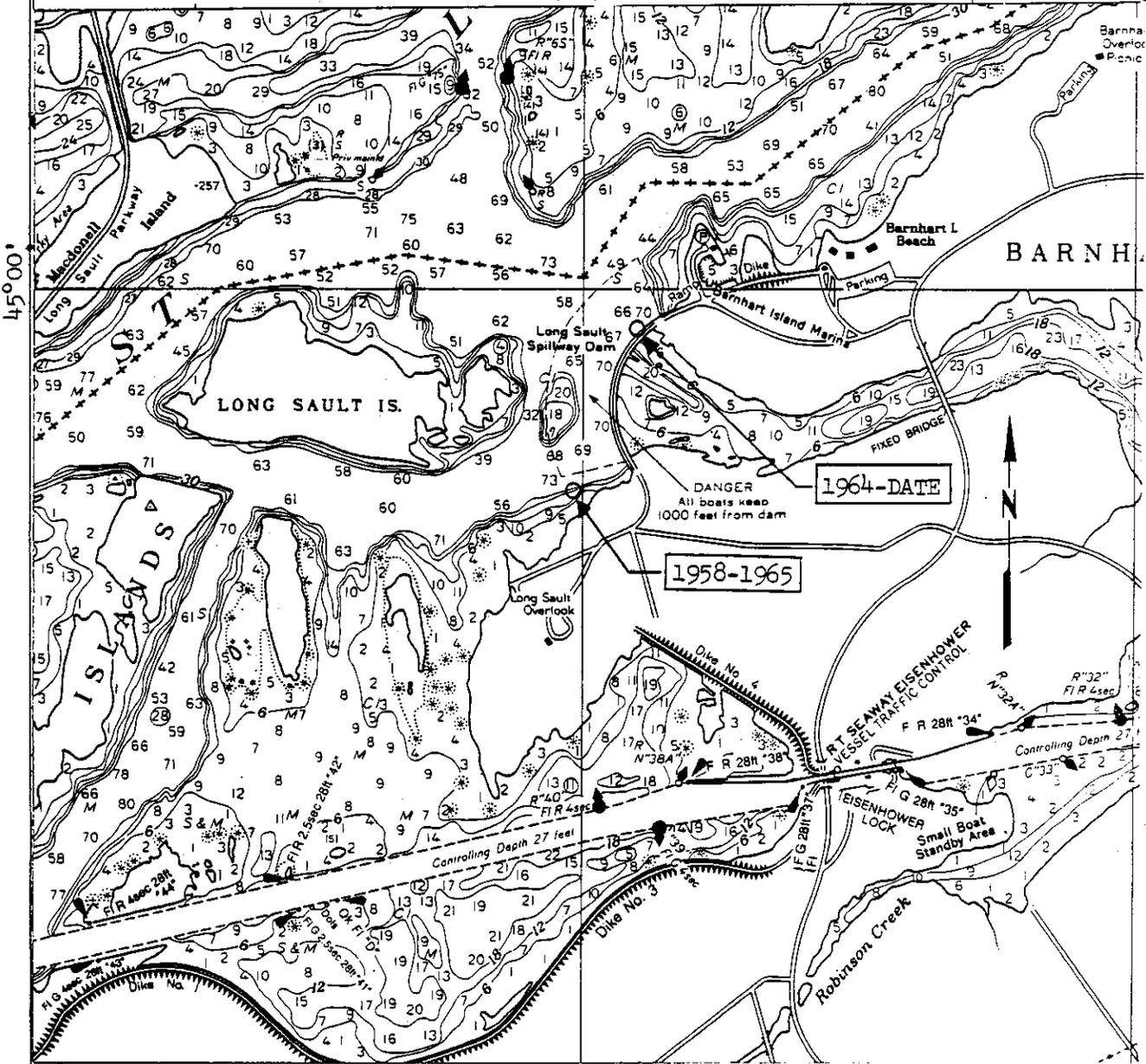
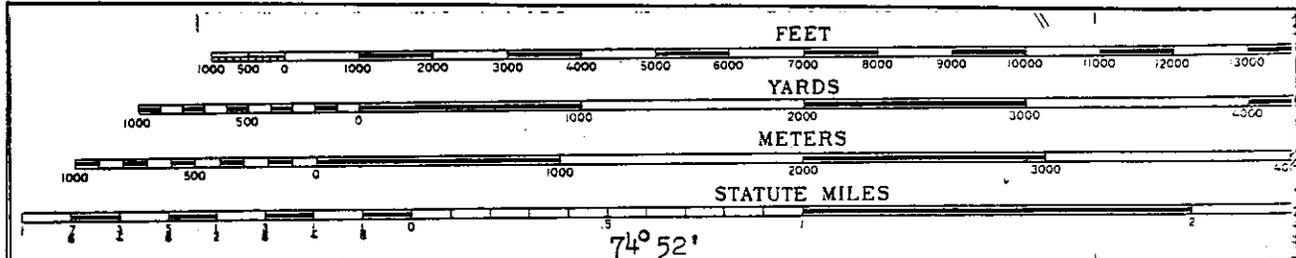
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1958-Apr 1965	SL 25 A	275.823 feet	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.
May 1965-Aug 1968	SL 25 A	275.823 feet	Recording Gauge, Hourly Scalings	O.H.E. & P.A.S.N.Y.
Aug 1968-Sep 1971	SL 25 B	267.304 feet	Recording Gauge, Hourly Scalings	O.H.E. & P.A.S.N.Y.
Sep 1971-Date	SAULT	251.332 feet (76.606 meters)	Recording Gauge, Hourly Scalings	O.H.E. & P.A.S.N.Y.

NOTE: Analogue recording gauges have been used at Long Sault Dam HW. Telemetering service began in April 1965.

#### Gauging Station Sites (see Plate 97, page 184):

(a) July 1958 - April 1965: A recording gauge located over a concrete stilling well, connected to the river by an intake pipe 180 feet long, approximately 590 feet upstream from the south end of Long Sault Dam.

(b) November 1964 - Date: A recording gauge located in the North Guard House on Long Sault Dam.



WATER LEVEL GAUGE LOCATION  
LONG SAULT DAM HW, NEW YORK  
1958-DATE

1982

## GAUGE HISTORY

### H-18-CA, New York

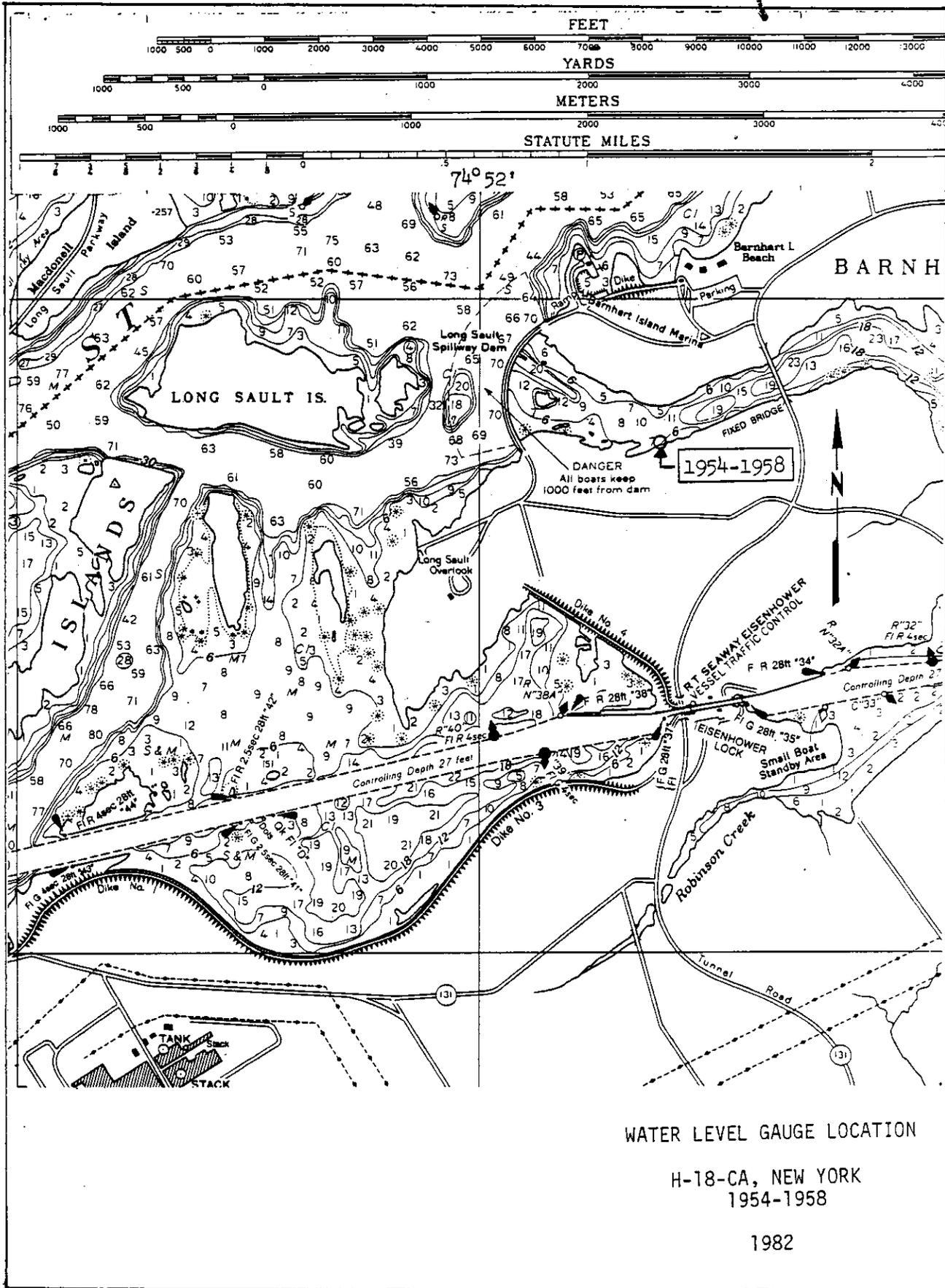
1903 Datum was never established at H-18-CA. Elevations at H-18-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 1" at H-18-CA is 203.444 feet (62.010 meters) and depends on the elevation of B.M. "3" on the main level line as being 204.820 feet (62.429 meters) on 1935 Datum. International Great Lakes Datum (1955) was never used at H-18-CA gauge site.

NOTE: 1935 Datum records at this station for the period November 1954-May 1958 have been converted to IGLD (1955) by subtracting 0.96 foot (0.29 meter).

This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 98, page 186):

(a) November 1954 - May 1958: A recording gauge on the United States shore of the river 1,500 feet upstream from the lower tip of Long Sault Island over a stilling well connected to the river by an intake pipe 120 feet long.



## GAUGE HISTORY

### H-17-CA, New York

1903 Datum was never established at H-17-CA. Elevations at H-17-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of the "reference tape gauge zero" at H-17-CA is 192.00 feet (58.52 meters) and depends on the elevation of B.M. "SL 23" on the main level line as being 205.489 feet (62.633 meters) on 1935 Datum. International Great Lakes Datum (1955) was never used at H-17-CA gauge site.

NOTE: 1935 Datum records of this station for the period January 1955-May 1958 have been converted to IGLD (1955) by subtracting 0.96 foot (0.29 meter).

This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 99, page 188):

(a) January 1955 - May 1958: A recording gauge on the United States side of the river approximately 1,500 feet downstream from Massena Weir.



## GAUGE HISTORY

### H-16-CA, New York

1903 Datum was never established at H-16-CA. Elevations at H-16-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 1" at H-16-CA is 216.890 feet (66.108 meters) and depends on the elevation of B.M. "SL 24" on the main level line as being 281.406 feet (85.773 meters) on 1935 Datum. International Great Lakes Datum (1955) was never used at H-16-CA gauge site.

NOTE: 1935 Datum records at this station for the period October 1954-June 1958 have been converted to IGLD (1955) by subtracting 0.96 foot (0.29 meter).

This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 100, page 190):

(a) October 1954 - June 1958: A recording gauge on the United States side of the river approximately one-half mile west of Massena Weir over a stilling well connected to the river by an intake pipe 80 feet long.



## GAUGE HISTORY

### Richards Point, New York

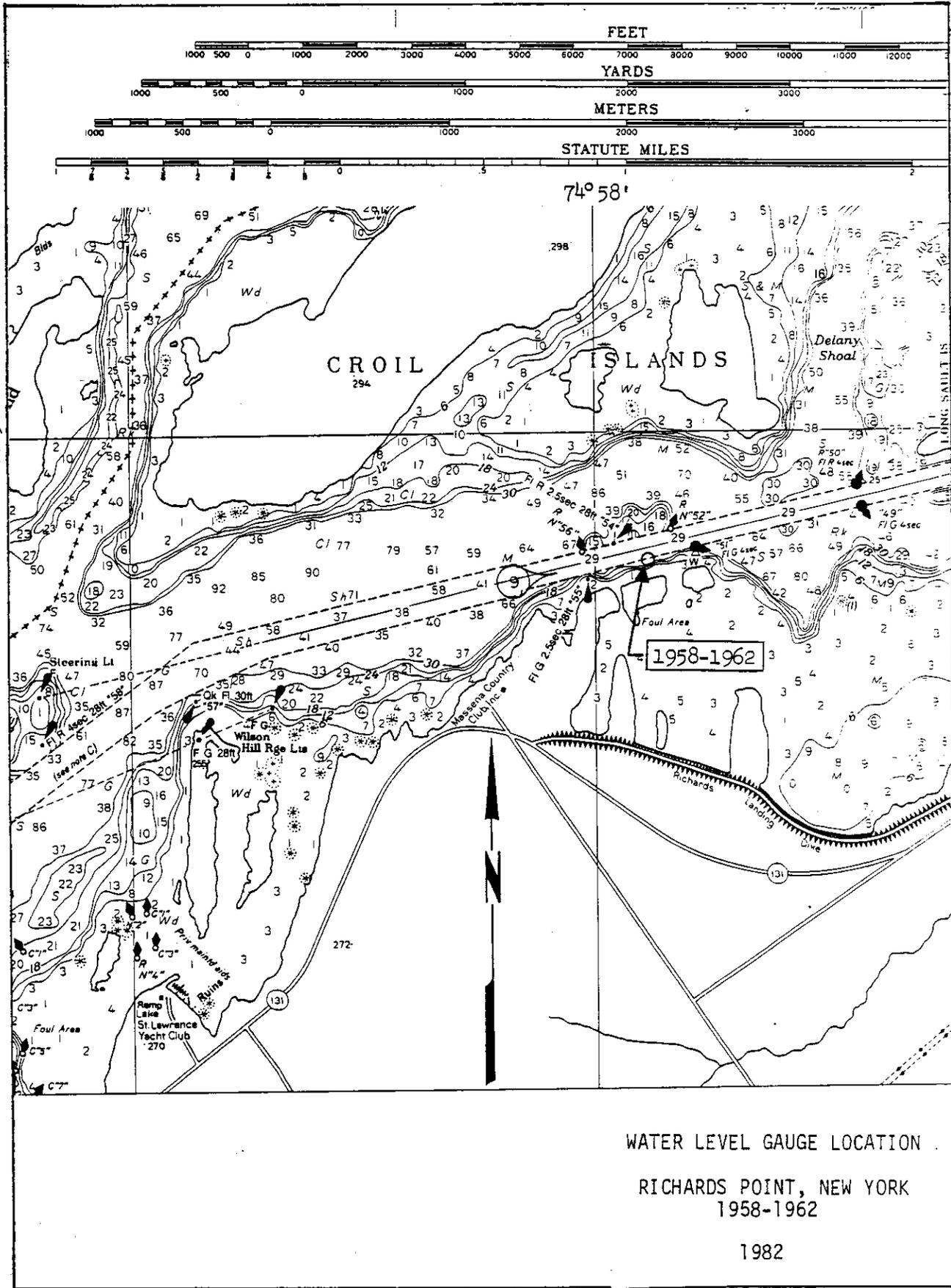
1903 Datum was never established at Richards Point. Elevations at Richards Point on 1935 Datum were established by precise leveling in 1958. The 1935 Datum elevation of B.M. "CA 1" at Richards Point is 247.327 feet (75.385 meters) and depends on the elevation of B.M. "RICHARDS" on the main level line as being 249.324 feet (75.994 meters) on 1935 Datum. IGLD (1955) elevations at Richards Point depend on B.M. "CA 1" at elevation 246.370 feet (75.094 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1958-Dec 1962	CA 1	246.370 feet (75.094 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

#### Gauging Station Site (see Plate 101, page 192):

(a) July 1958 - December 1962: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 210 feet long, on the United States shore about 2 miles upstream from the Massena Intake Structure.



WATER LEVEL GAUGE LOCATION  
 RICHARDS POINT, NEW YORK  
 1958-1962  
 1982

## GAUGE HISTORY

### Louisville Landing, New York

Elevations at Louisville Landing on 1903 Datum depend on B.M. "LOUISVILLE LANDING" at elevation 230.010 feet (70.607 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Louisville Landing on 1935 Datum were established by precise levels from Cape Vincent, New York. The 1935 Datum elevation of B.M. "LOUISVILLE LANDING" at Louisville Landing is 230.443 feet (70.239 meters) and depends on the elevation of B.M. "A" at Cape Vincent, New York, as being 254.326 feet (77.519 meters) on 1935 Datum. International Great Lakes Datum (1955) was never used at Louisville Landing gauge site.

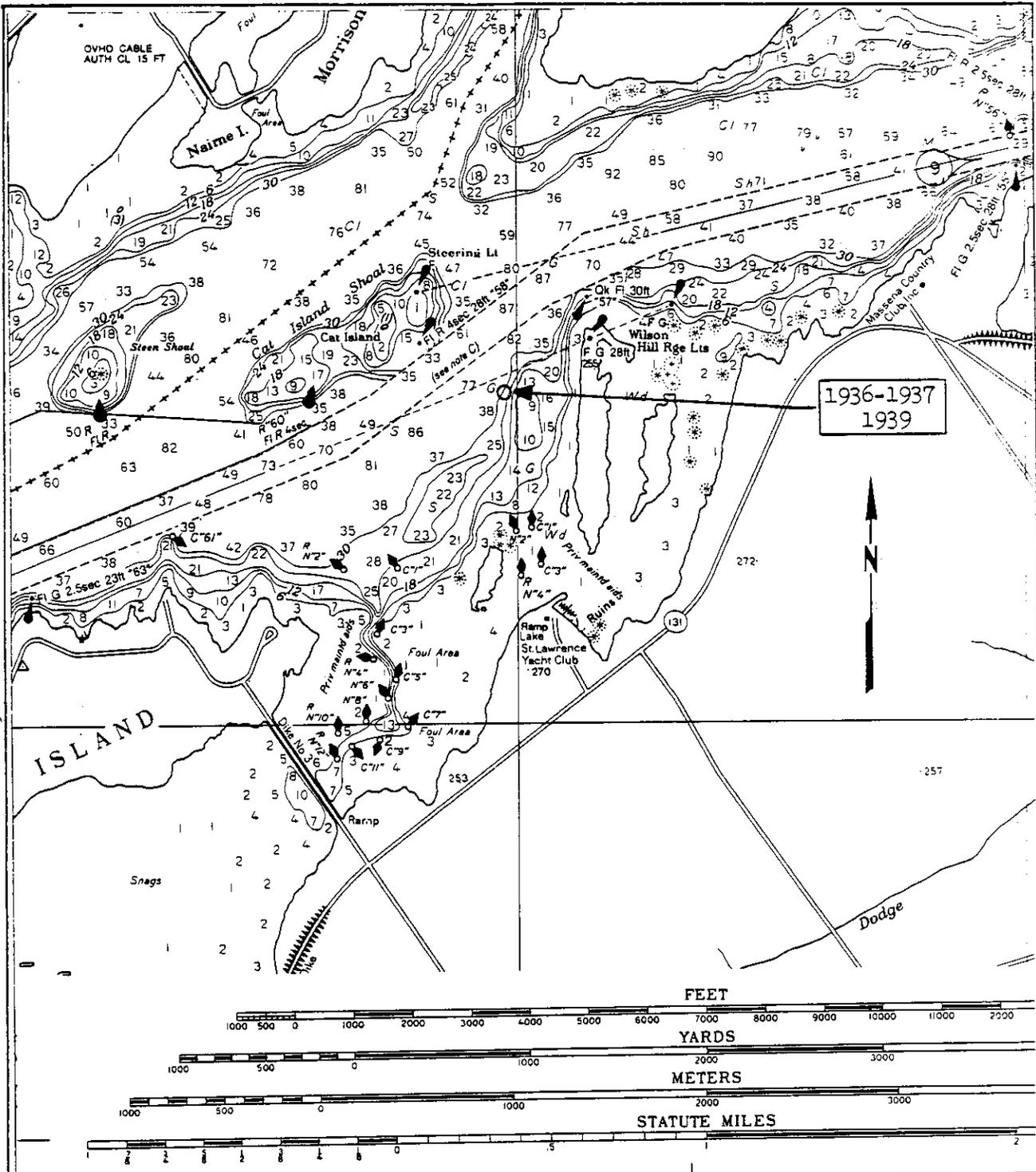
#### Gauging Station Sites (see Plate 102, page 194):

(a) September 1907 - November 1910: On St. Lawrence River Power Company property southeast of Cat Island on the mainland. Exact location is unknown.

(b) June 1936 - April 1937 and June - October 1939: On the wharf at Louisville Landing.

75°00'

44° 56'



WATER LEVEL GAUGE LOCATION  
 LOUISVILLE LANDING, NEW YORK  
 1936-1939

1982

## GAUGE HISTORY

### H-15-CA, New York

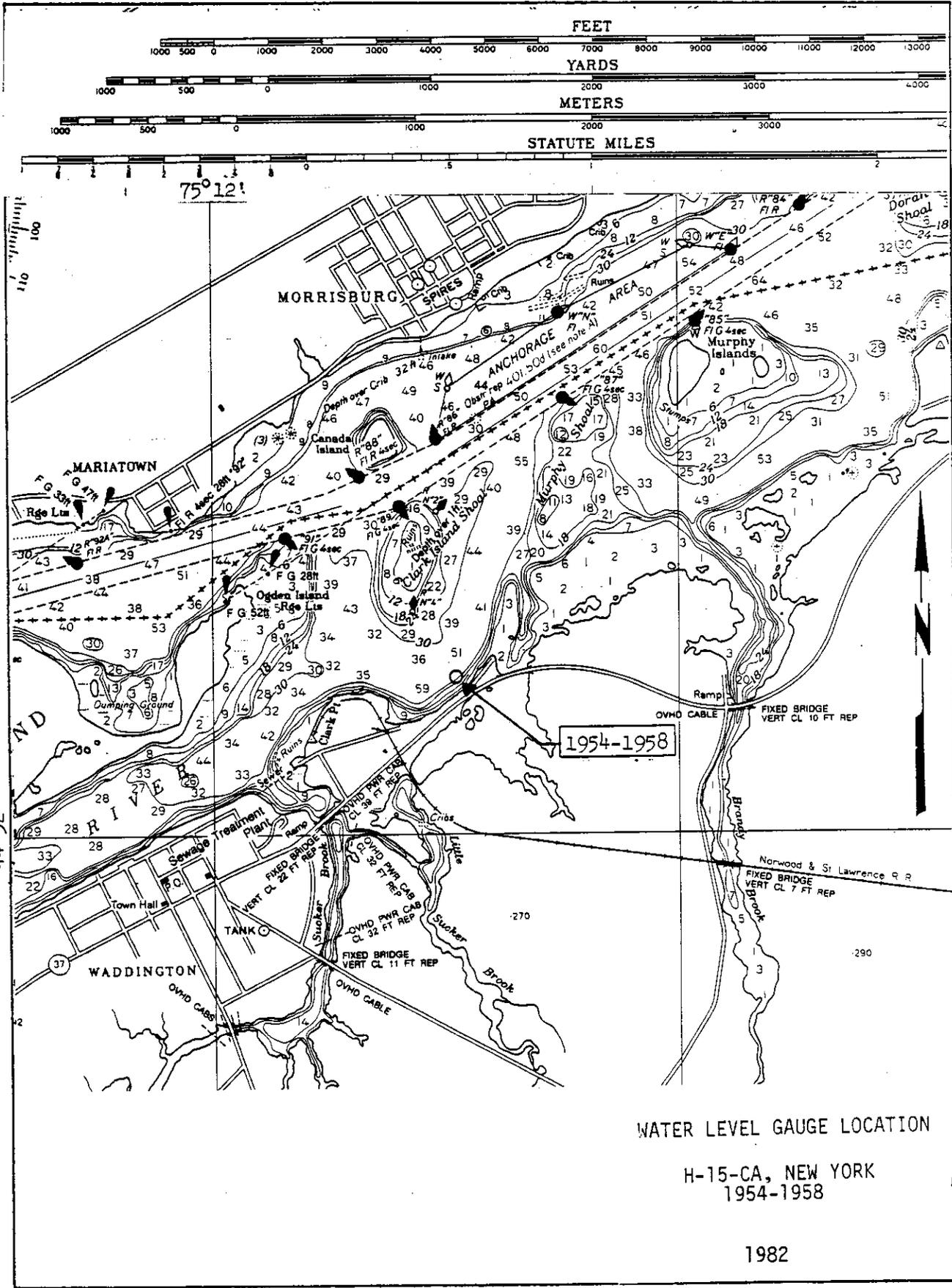
1903 Datum was never established at H-15-CA. Elevations at H-15-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 1" at H-15-CA is 238.285 feet (72.629 meters) and depends on the elevation of B.M. "A" at Waddington, New York, as being 273.278 feet (83.295 meters) on 1935 Datum. International Great Lakes Datum (1955) was never used at H-15-CA gauge site.

NOTE: 1935 Datum records at this station for the period November 1954-June 1958 have been converted to IGLD (1955) by subtracting 0.96 foot (0.29 meter).

This station site was submerged with the filling of Lake St. Lawrence.

#### Gauging Station Site (see Plate 103, page 196):

(a) November 1954 - June 1958: A recording gauge on the United States side of the river approximately 1 mile east of Waddington, New York, over a stilling well connected to the river by an intake pipe 108 feet long.



WATER LEVEL GAUGE LOCATION

H-15-CA, NEW YORK  
1954-1958

1982

## GAUGE HISTORY

### Waddington, New York

Elevations at Waddington on 1903 Datum depend on B.M. "A" at elevation 272.883 feet (83.175 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Waddington on 1935 Datum were established by precise levels from Cape Vincent, New York. The 1935 Datum elevation of B.M. "A" at Waddington is 273.278 feet (83.295 meters) and depends on the elevation of B.M. "A" at Cape Vincent as being 254.326 feet (77.519 meters) on 1935 Datum. IGLD (1955) elevations at Waddington depend on B.M. "CA 2" at elevation 255.195 feet (77.783 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1936-Aug 1950	A	272.323 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Sep 1950-May 1956	W BRIDGE	229.573 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jul 1958-Date	CA 2	255.195 feet (77.783 meters)	Recording Gauge, Hourly Scaling	O.H.E.& P.A.S.N.Y.

NOTE: Beginning in 1966, the gauge operated only during the winter months (December-March).

#### Gauging Station Sites (see Plate 104, page 198):

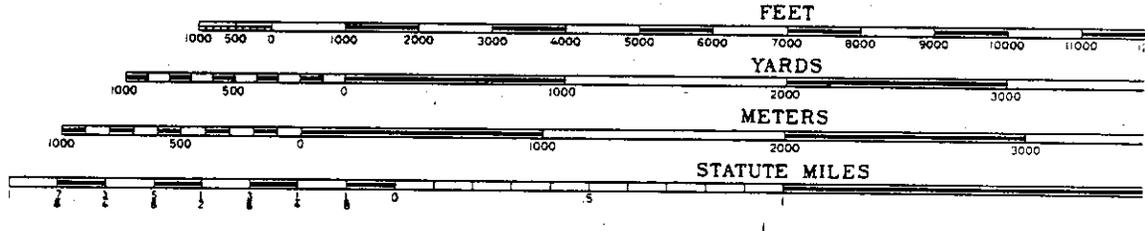
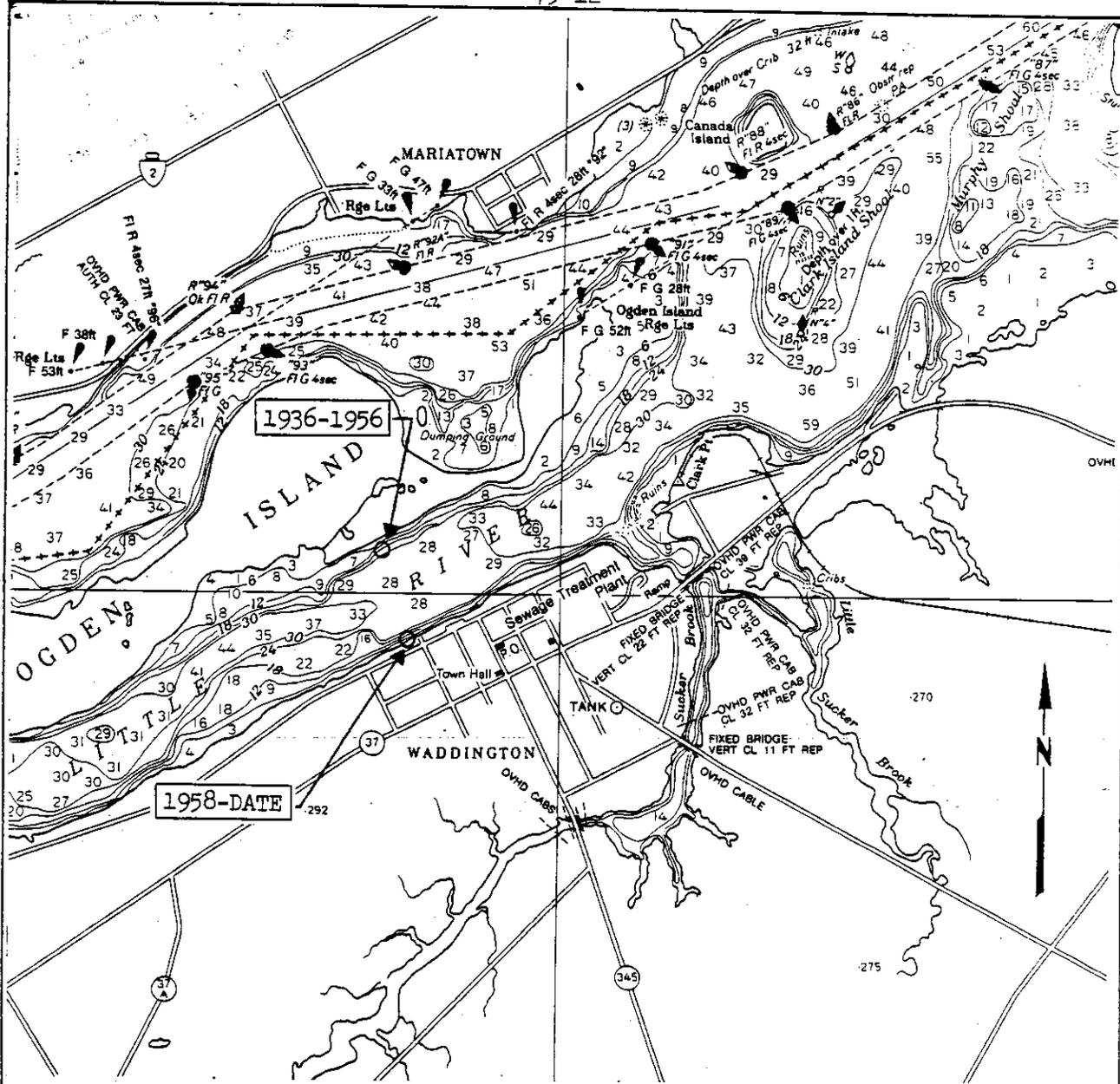
(a) June 1936 - August 1950: A staff gauge located on a pile on Ogden Island near the end of the causeway connecting the island with the mainland.

(b) September 1950 - May 1956: A recording gauge located on a timber crib on Ogden Island near the end of the causeway connecting the island with the mainland.

(c) July 1958 - Date: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 215 feet long, on the shore at the foot of Maple Street in Waddington.

75° 12'

44° 52'



WATER LEVEL GAUGE LOCATION  
 WADDINGTON, NEW YORK  
 1936-DATE

1982

## GAUGE HISTORY

### H-12-CA, New York

1903 Datum was never established at H-12-CA. Elevations at H-12-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "13" at H-12-CA is 270.277 feet (82.380 meters) and depends on the main level line. International Great Lakes Datum (1955) was never used at H-12-CA gauge site.

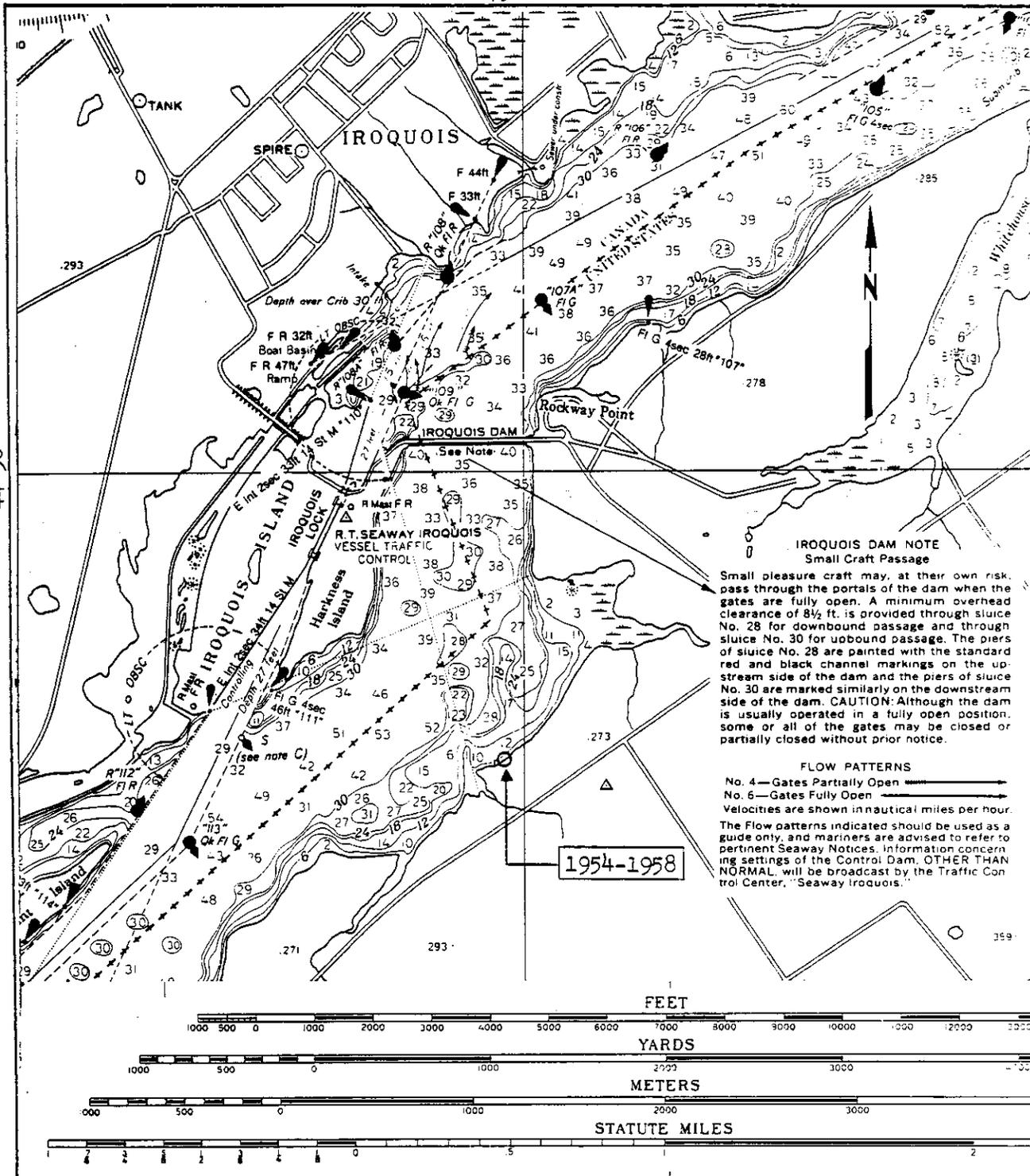
NOTE: 1935 Datum records at this station for the period November 1954-December 1958 have been converted to IGLD (1955) by subtracting 0.98 foot (0.30 meter).

### Gauging Station Site (see Plate 105, page 200):

(a) November 1954 - December 1958: A recording gauge on the United States shore of the river at Tilden, New York, over a stilling well connected to the river by an intake pipe 180 feet long.

75° 18'

44° 50'



**IROQUOIS DAM NOTE**  
Small Craft Passage

Small pleasure craft may, at their own risk, pass through the portals of the dam when the gates are fully open. A minimum overhead clearance of 8½ ft. is provided through sluice No. 28 for downbound passage and through sluice No. 30 for upbound passage. The piers of sluice No. 28 are painted with the standard red and black channel markings on the upstream side of the dam and the piers of sluice No. 30 are marked similarly on the downstream side of the dam. CAUTION: Although the dam is usually operated in a fully open position, some or all of the gates may be closed or partially closed without prior notice.

**FLOW PATTERNS**

No. 4 — Gates Partially Open  
No. 6 — Gates Fully Open  
Velocities are shown in nautical miles per hour.  
The flow patterns indicated should be used as a guide only, and mariners are advised to refer to pertinent Seaway Notices. Information concerning settings of the Control Dam, OTHER THAN NORMAL, will be broadcast by the Traffic Control Center, "Seaway Iroquois."

WATER LEVEL GAUGE LOCATION

H-12-CA, NEW YORK  
1954-1958

1982

## GAUGE HISTORY

### H-11-CA, New York

1903 Datum was never established at H-11-CA. Elevations at H-11-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "14" at H-11-CA is 273.900 feet (83.485 meters) and depends on the main level line. International Great Lakes Datum (1955) was never used at H-11-CA gauge site.

NOTE: 1935 Datum records at this station for the period October 1954-June 1958 have been converted to IGLD (1955) by subtracting 0.96 foot (0.29 meter).

#### Gauging Station Site (see Plate 106, page 202):

(a) October 1954 - June 1958: A recording gauge on the United States shore of the river just east of Sparrow Hawk Point over a stilling well connected to the river by an intake pipe 102 feet long.



## GAUGE HISTORY

### V-CA, New York

1903 Datum was never established at V-CA. Elevations at V-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 1" at V-CA is 251.747 feet (76.732 meters) and depends on the elevation of B.M. "15" on the main level line as being 278.973 feet (85.031 meters) on 1935 Datum. International Great Lakes Datum (1955) was never used at V-CA gauge site.

NOTE: 1935 Datum records at this station for the period November 1954-May 1958 have been converted to IGLD (1955) by subtracting 0.94 foot (0.29 meter).

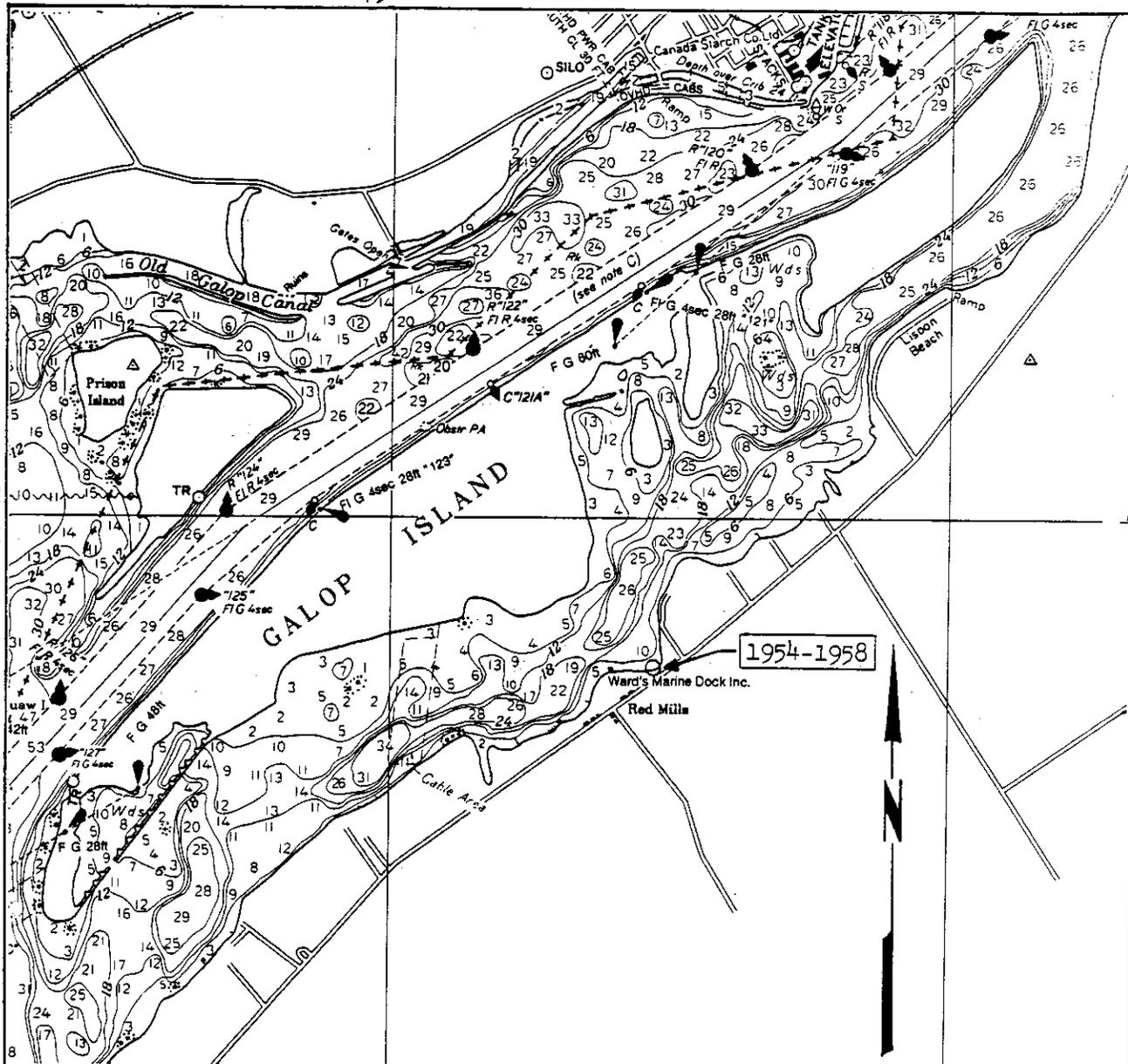
During the 1977-1979 period, the St. Lawrence Seaway Development Corporation operated the gauge.

#### Gauging Station Site (see Plate 107, page 204):

(a) November 1954 - May 1958: A recording gauge on the United States shore at Red Mills, New York, over a stilling well connected to the river by an intake pipe 210 feet long.

75°24'

41° 14'



WATER LEVEL GAUGE LOCATION

V-CA, NEW YORK  
1954-1958

1982

## GAUGE HISTORY

### X-CA, New York

1903 Datum was never established at X-CA. Elevations at X-CA on 1935 Datum were established by precise leveling in 1954. The 1935 Datum elevation of B.M. "CA 1" at X-CA is 251.300 feet (76.596 meters) and depends on the elevation of B.M. "15" on the main level line as being 278.973 feet (85.031 meters) on 1935 Datum. International Great Lakes Datum (1955) was never used at X-CA gauge site.

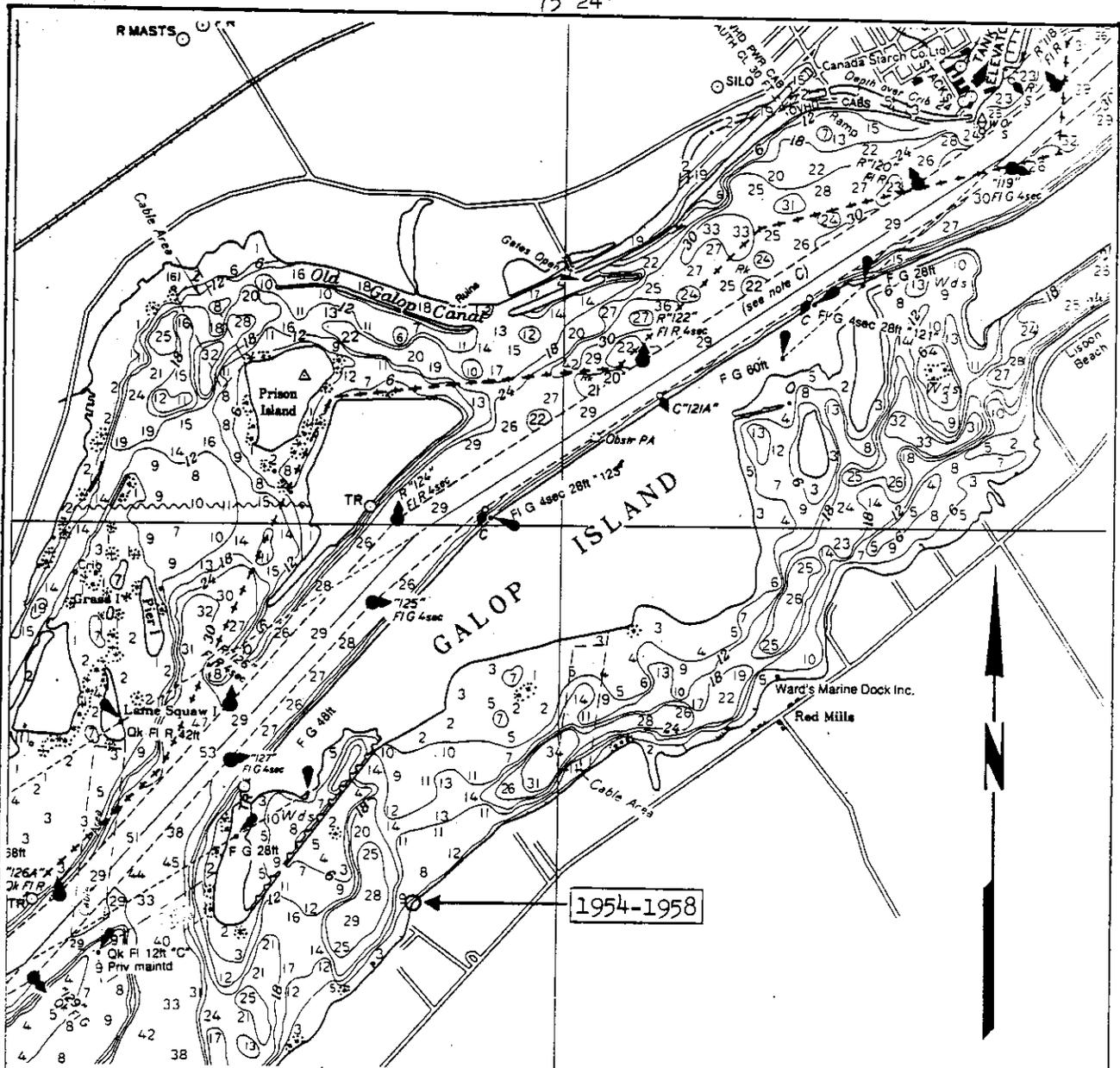
NOTE: 1935 Datum records at this station for the period November 1954-May 1958 have been converted to IGLD (1955) by subtracting 0.94 foot (0.19 meter).

### Gauging Station Site (see Plate 108, page 206):

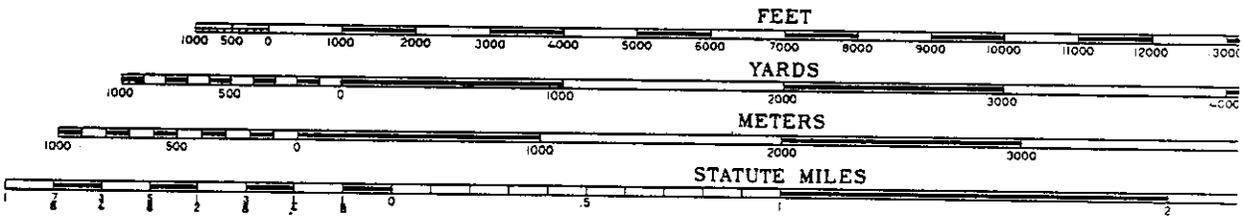
(a) November 1954 - May 1958: A recording gauge on the United States shore approximately 1-1/2 miles above Red Mills, New York, over a stilling well connected to the river by an intake pipe 96 feet long.

75° 24'

91' 41"



1954-1958



WATER LEVEL GAUGE LOCATION

X-CA, NEW YORK  
1954-1958

1982

## GAUGE HISTORY

### Chimney Point-CA, New York

1903 Datum was never established at Chimney Point-CA. Elevations at Chimney Point-CA on 1935 Datum were established by precise leveling in 1955. The 1935 Datum elevation of B.M. "CA 2" at Chimney Point-CA is 250.020 feet (76.206 meters) and depends on the elevation of B.M. "16" on the main level line as being 282.480 feet (86.100 Meters) on 1935 Datum. IGLD (1955) elevations at Chimney Point-CA depend on B.M. "CA 2" at elevation 249.077 feet (75.919 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

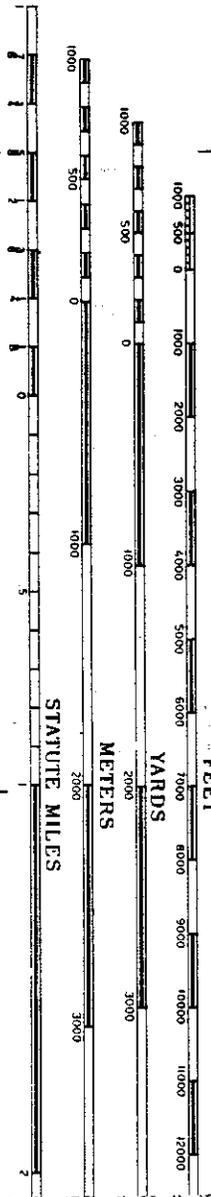
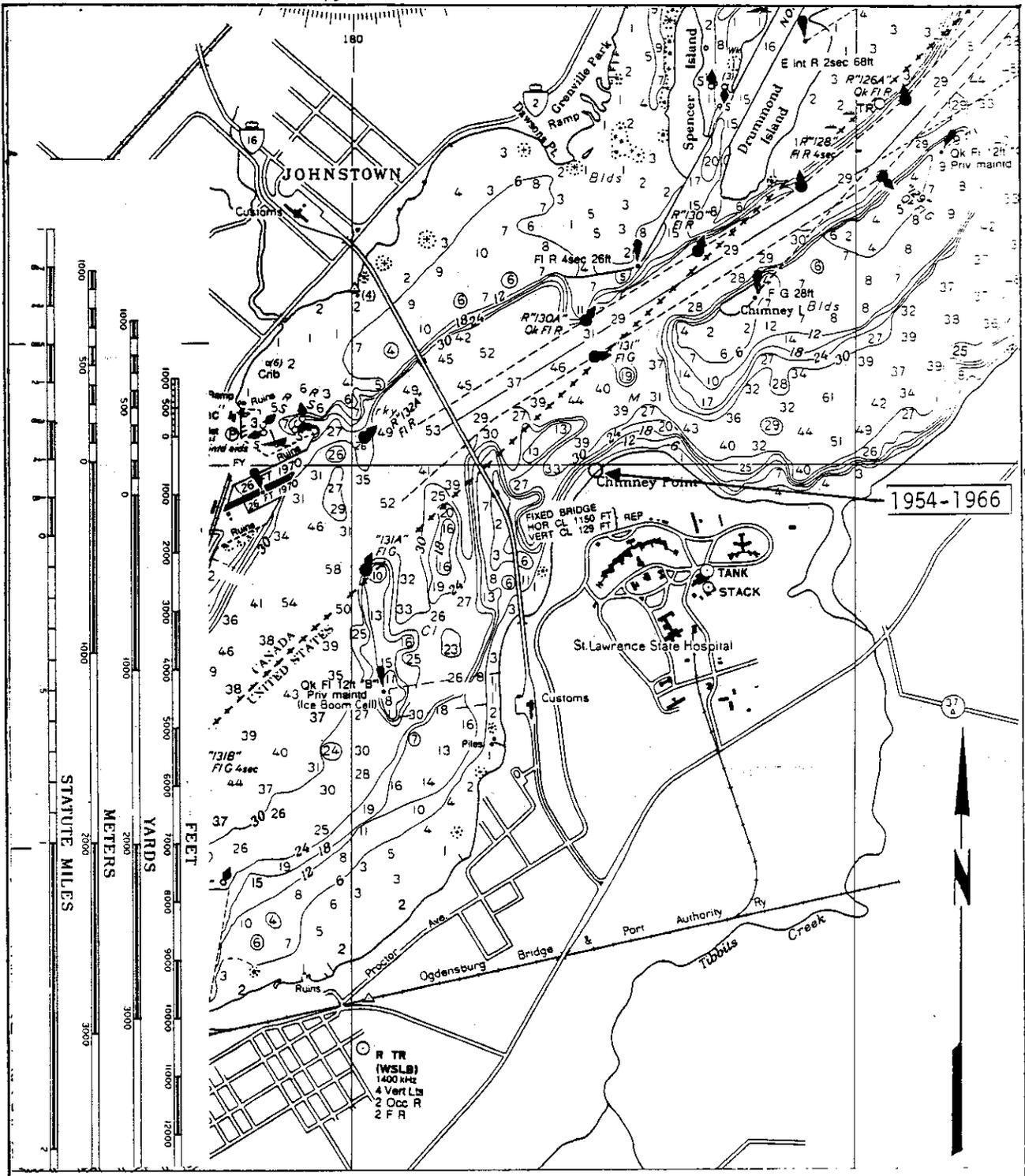
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Nov 1954-Mar 1966	CA 2	249.077 feet (75.919 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O. & P.A.S.N.Y.

NOTE: During the 1977-1979 period, the St. Lawrence Seaway Development Corporation operated the gauge.

#### Gauging Station Site (see Plate 109, page 208):

(a) November 1954 - March 1966: A recording gauge located over a steel stilling well, connected to the river by an intake pipe 194 feet long, on the United States shore at Chimney Point about 3 miles downstream from Ogdensburg.

75° 28'



WATER LEVEL GAUGE LOCATION  
 CHIMNEY POINT-CA, NEW YORK  
 1954-1966

1982

## GAUGE HISTORY

### Ogdensburg, New York

Elevations at Ogdensburg on 1903 Datum depend on B.M. "D" at elevation 251.022 feet (76.512 meters) as determined by adjustment of the level loop, Greenbush-Hogansburg-Tibbets Point-Oswego-Greenbush. Elevations at Ogdensburg on 1935 Datum were established by precise levels from Cape Vincent, New York. The 1935 Datum elevation of B.M. "D" at Ogdensburg is 251.310 feet (76.599 meters) and depends on the elevation of B.M. "A" at Cape Vincent as being 254.326 feet (77.519 meters) on 1935 Datum. IGLD (1955) elevations at Ogdensburg depend on B.M. "D" at elevation 250.363 feet (76.311 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1868-Sep 1868	LIGHTHOUSE GAGE	244.46 feet	Staff Gauge, Once Daily	U.S.L.S.
Jun 1869-Nov 1870	DOORSILL	250.716 feet	Staff Gauge, Once Daily	U.S.L.S.
May 1871-Nov 1871	DOORSILL	250.716 feet	Staff Gauge, Once Daily	U.S.L.S.
May 1872-Oct 1872	DOORSILL	250.716 feet	Staff Gauge, Once Daily	U.S.L.S.
May 1873-Jul 1873	DOORSILL	250.716 feet	Staff Gauge, Once Daily	U.S.L.S.
Aug 1874	DOORSILL	250.716 feet	Staff Gauge, Once Daily	U.S.L.S.
Jul 1883-Aug 1883	DOORSILL	250.716 feet	Staff Gauge	U.S.E.O.
Sep 1884-Nov 1884	DOORSILL	250.716 feet	Staff Gauge	U.S.E.O.
Jun 1885 & Oct 1885	DOORSILL	250.716 feet	Staff Gauge	U.S.E.O.
May 1887-Jul 1887	DOORSILL	250.716 feet	Staff Gauge	U.S.E.O.
May 1890-Sep 1890	DOORSILL	250.716 feet	Staff Gauge	U.S.E.O.
May 1891-Oct 1891	DOORSILL	250.716 feet	Staff Gauge, Once Daily	U.S.E.O.

May 1892-Oct 1892	DOORSILL	250.716 feet	Staff Gauge, Once Daily	U.S.E.O.
Aug & Nov 1898	D	250.363 feet	Staff Gauge, Minute Readings	U.S.L.S.
Sep 1900-Dec 1907	D	250.363 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Sep 1908	D	250.363 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1911-Oct 1911	D	250.363 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Sep 1913-Oct 1913	D	250.363 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1914-Oct 1914	D	250.363 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1934-Aug 1961	D	250.363 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Aug 1961-Oct 1970	A	277.234 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	A	277.234 feet (84.501 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Analogue recording gauges used before October 1966. Since that date, digital recording gauges have been used at Ogdensburg.

Gauging Station Sites (see Plate 110, page 212):

- (a) June - September 1868: A staff gauge located in the slip at Customs House.
- (b) June 1869 - August 1874: A staff gauge located at Ogdensburg Lighthouse.
- (c) July 1883 - October 1892: A staff gauge, the various locations of which are unknown.
- (d) August and November 1898: A recording gauge located at Ogdensburg Lighthouse.
- (e) September 1900 - December 1907: A recording gauge located on Halls Coal wharf, at the foot of Grant Street.
- (f) September 1908: A recording gauge located on Halls Coal wharf, at the foot of Grant Street.

(g) June - October 1911: A recording gauge located on Halls Coal wharf, at the foot of Grant Street.

(h) September - October 1913: A recording gauge located on Halls Coal wharf, at the foot of Grant Street.

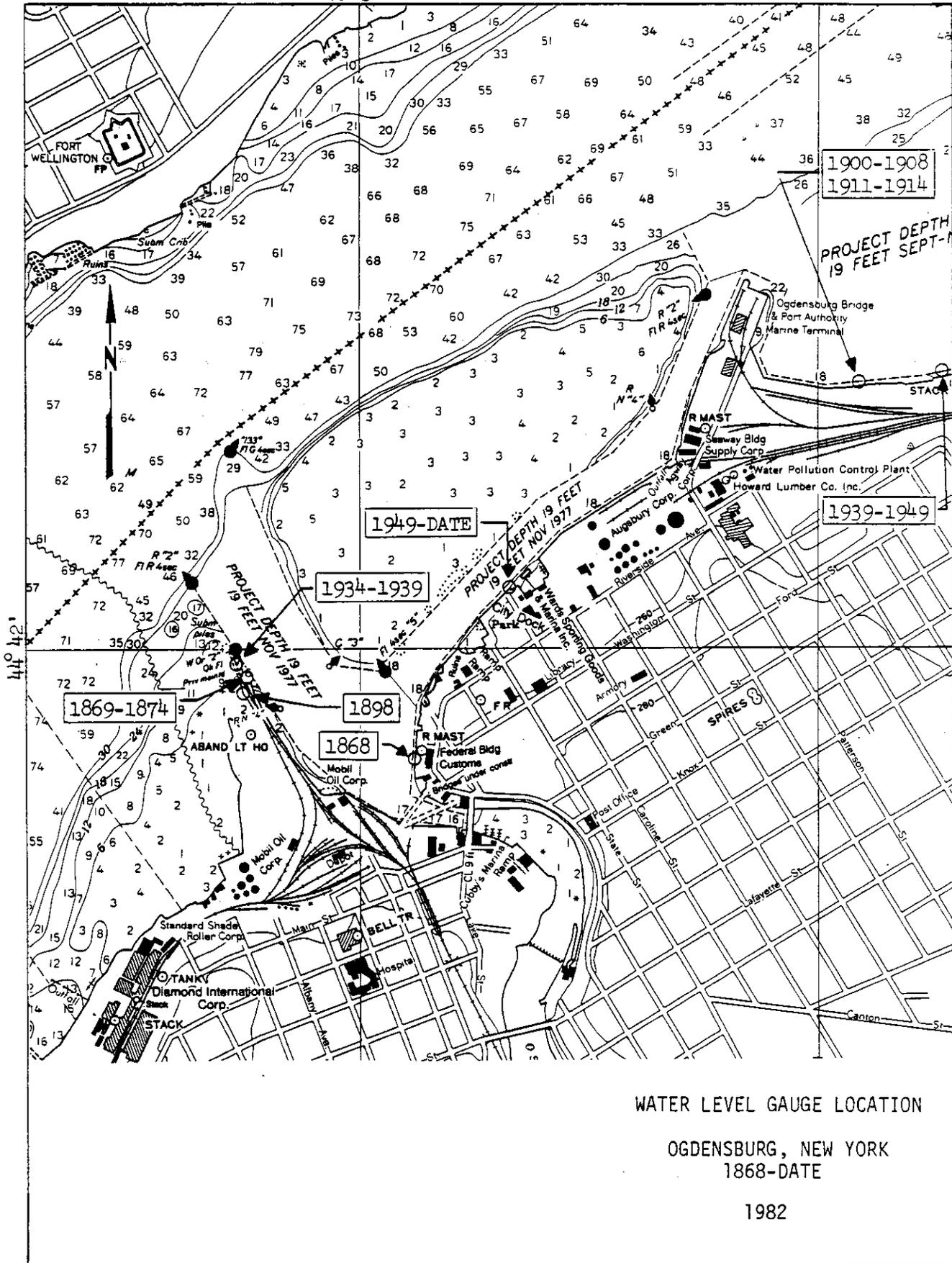
(i) June - September 1914: A recording gauge located on Halls Coal wharf, at the foot of Grant Street.

(j) May 1934 - October 1939: A recording gauge located on the Railroad Ferry wharf.

(k) October 1939 - August 1949: A recording gauge located on the Rutland Railroad wharf, east of the Cargill Elevator.

(l) May 1949 - Date: A recording gauge located on the northeast corner of city wharf, at the foot of Caroline Street.

75°30'



WATER LEVEL GAUGE LOCATION  
 OGDENSBURG, NEW YORK  
 1868-DATE

1982

## GAUGE HISTORY

### Morristown, New York

Elevations at Morristown on 1903 Datum depend on B.M. "B" at elevation 271.288 feet (82.689 meters) as published in appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Morristown on 1935 Datum were established by precise levels from Cape Vincent, New York. The 1935 Datum elevation of B.M. "B" at Morristown is 271.548 feet (82.768 meters) and depends on the elevation of B.M. "A" at Cape Vincent as being 254.326 feet (77.519 meters) on 1935 Datum. IGLD (1955) elevations at Morristown depend of B.M. "B" at elevation 270.592 feet (82.476 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1954-Oct 1954	B	270.592 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1955-Nov 1955	B	270.592 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1956-Oct 1956	B	270.592 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1957-Oct 1957	B	270.592 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1958-Aug 1958	B	270.592 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1968-Aug 1968	SL 9	246.405 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1979-Sep 1979	SL 9	246.405 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1980-Sep 1980	SL 9	246.405 feet (75.104 meters)	Recording Gauge, Hourly Scalings	N.O.S.

#### Gauging Station Sites (see Plate 111, page 214):

(a) June 1954 - August 1958: On downriver side of village wharf behind the U.S. Customs House.

(b) May 1968 - September 1980: A recording gauge located on a dock at Wright's Marina on downriver side of marina.



## GAUGE HISTORY

### Alexandria Bay, New York

Elevations at Alexandria Bay on 1903 Datum depend on B.M. "B" at elevation 284.243 feet (86.637 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Alexandria Bay on 1935 Datum were established by precise levels from Cape Vincent, New York. The 1935 Datum elevation of B.M. "B" at Alexandria Bay is 284.474 feet (86.708 meters) and depends on the elevation of B.M. "A" at Cape Vincent as being 254.326 feet (77.519 meters) on 1935 Datum. IGLD (1955) elevations at Alexandria Bay depend on B.M. "B" at elevation 283.421 feet (86.387 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1954-Nov 1954	B	283.421 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1955-Nov 1955	B	283.421 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1956-Oct 1956	B	283.421 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1957-Oct 1957	B	283.421 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1958-Oct 1961	B	283.421 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jul 1962-May 1965	B	283.421 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1968-Sep 1968	B	283.421 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1979-Date	B	283.421 feet (86.387 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: In 1979 and through 1982, the gauge operated only during the navigation season.

#### Gauging Station Sites (see Plate 112, page 217):

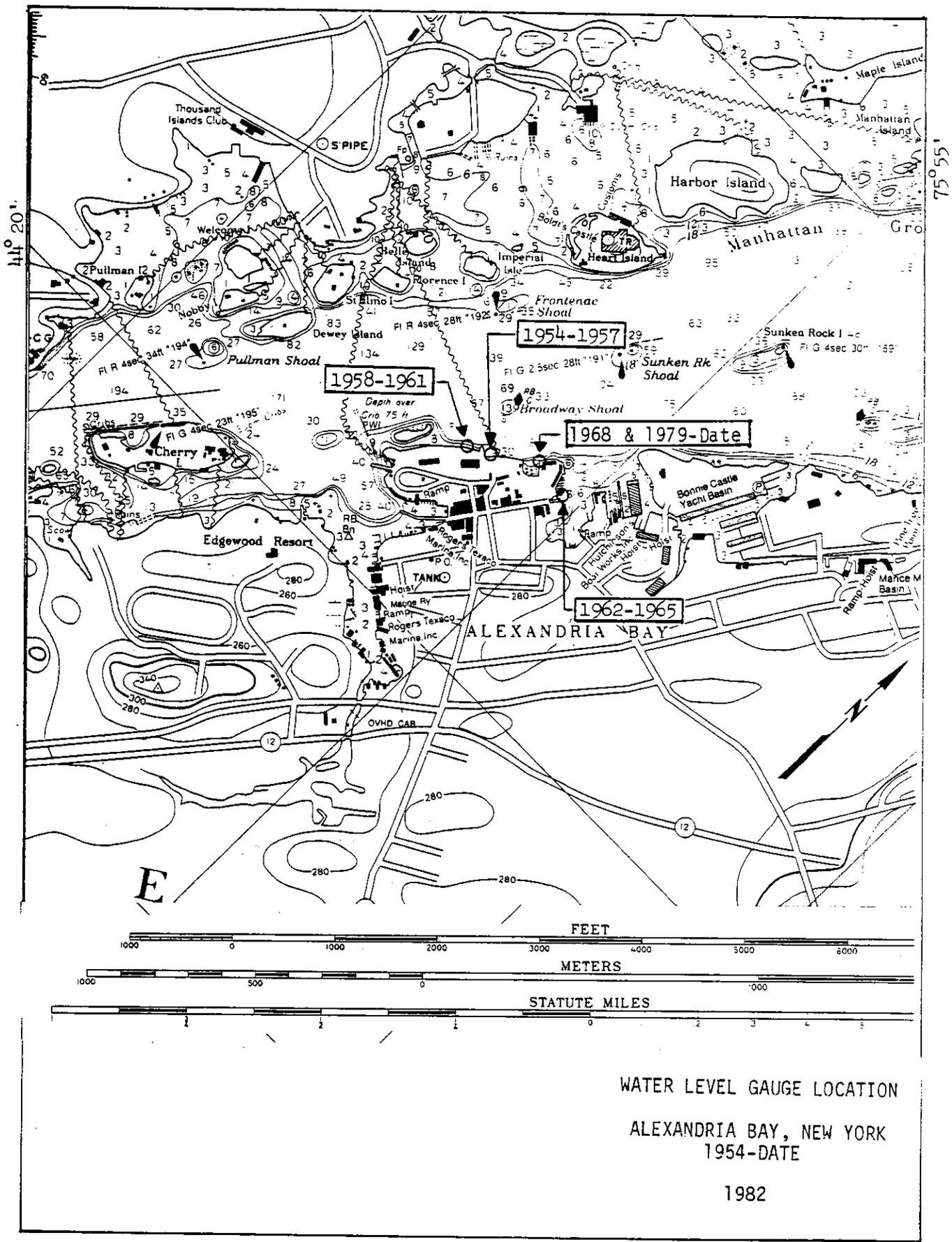
(a) May 1954 - November 1957: A recording gauge located on Canadian Steamship wharf, on river side of U.S. Post Office.

(b) May 1958 - October 1961: A recording gauge located on property of Edward J. Noble Hospital, 200 feet upstream from Post Office.

(c) July 1962 - May 1965: A recording gauge located on the northern end of the village dock at the northerly end of St. James Street.

(d) May 1968 - September 1968: A recording gauge located near the outer angle of dock at the upstream side of Capt. Thompson's Motor Lodge.

(e) June 1979 - Date: A recording gauge located near the inner end of dock at the upstream side of Capt. Thomson's Motor Lodge.



WATER LEVEL GAUGE LOCATION  
 ALEXANDRIA BAY, NEW YORK  
 1954-DATE  
 1982

## GAUGE HISTORY

### Clayton, New York

Elevation at Clayton on 1903 Datum depend on B.M. "A" at elevation 278.815 feet (84.891 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Clayton on 1935 Datum were established by precise levels from Cape Vincent, New York. The 1935 Datum elevation of B.M. "A" at Clayton is 279.024 feet (85.047) and depends on the elevation of B.M. "A" at Cape Vincent as being 254.326 feet (77.519 meters) on 1935 Datum. IGLD (1955) elevations at Clayton depend on B.M. "A" at elevation 277.861 feet (84.692 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1954-Oct 1954	A	277.861 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1955-Nov 1955	A	277.861 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1956-Oct 1956	A	277.861 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1957-Oct 1957	A	277.861 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1958-Nov 1958	A	277.861 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1968-Sep 1968	A	277.861 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1979-Sep 1979	A	277.861 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1980-Sep 1980	A	277.861 feet (84.692 meters)	Recording Gauge, Hourly Scalings	N.O.S.

#### Gauging Station Sites (see Plate 113, page 219):

(a) May 1954 - November 1958: A recording gauge located behind Clayton Locker Plant on the city wharf.

(b) May 1968 - September 1980: A recording gauge located on the city dock in the center of Clayton.



## GAUGE HISTORY

### Cape Vincent, New York

Elevations at Cape Vincent, New York, on 1903 Datum depend on B.M. "A" at elevation 254.146 feet (77.464 meters) as determined by adjustment of the level loop, Greenbush-Hogansburg-Tibbetts Point-Oswego-Greenbush. Elevations at Cape Vincent on 1935 Datum were established by comparison of 21 monthly mean water surface elevations, May - November, using the years 1933-1935. The 1935 Datum elevation of B.M. "A" at Cape Vincent is 254.326 feet (77.519 meters) and depends on the elevation of B.M. "A" at Oswego, New York, as being 251.898 feet (76.779 meters) on 1935 Datum. IGLD (1955) elevations at Cape Vincent depend on B.M. "CAPE" at elevation 252.274 feet (76.893 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee. The water level of the St. Lawrence River at Cape Vincent is considered to represent Lake Ontario level.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Nov 1898	HYDRANT	253.799 feet	Staff Gauge, 10 Minute Intervals, 0800 - 1700	D.W.C.
Jul 1914-Sep 1914	B	258.481 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jan 1916-Dec 1935	A	253.213 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1936-May 1944	A	253.213 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Jun 1944-Apr 1954	CAPE	252.274 feet	Staff Gauge, Tri-Daily	U.S.L.S.
May 1954-Nov 1954	CAPE	252.274 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Dec 1954-Apr 1955	CAPE	252.274 feet	Staff Gauge, Tri-Daily	U.S.L.S.
May 1955-Oct 1970	CAPE	252.274 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	CAPE	252.274 feet (76.893 meters)	Recording Gauge, Hourly Scalings	N.O.S.

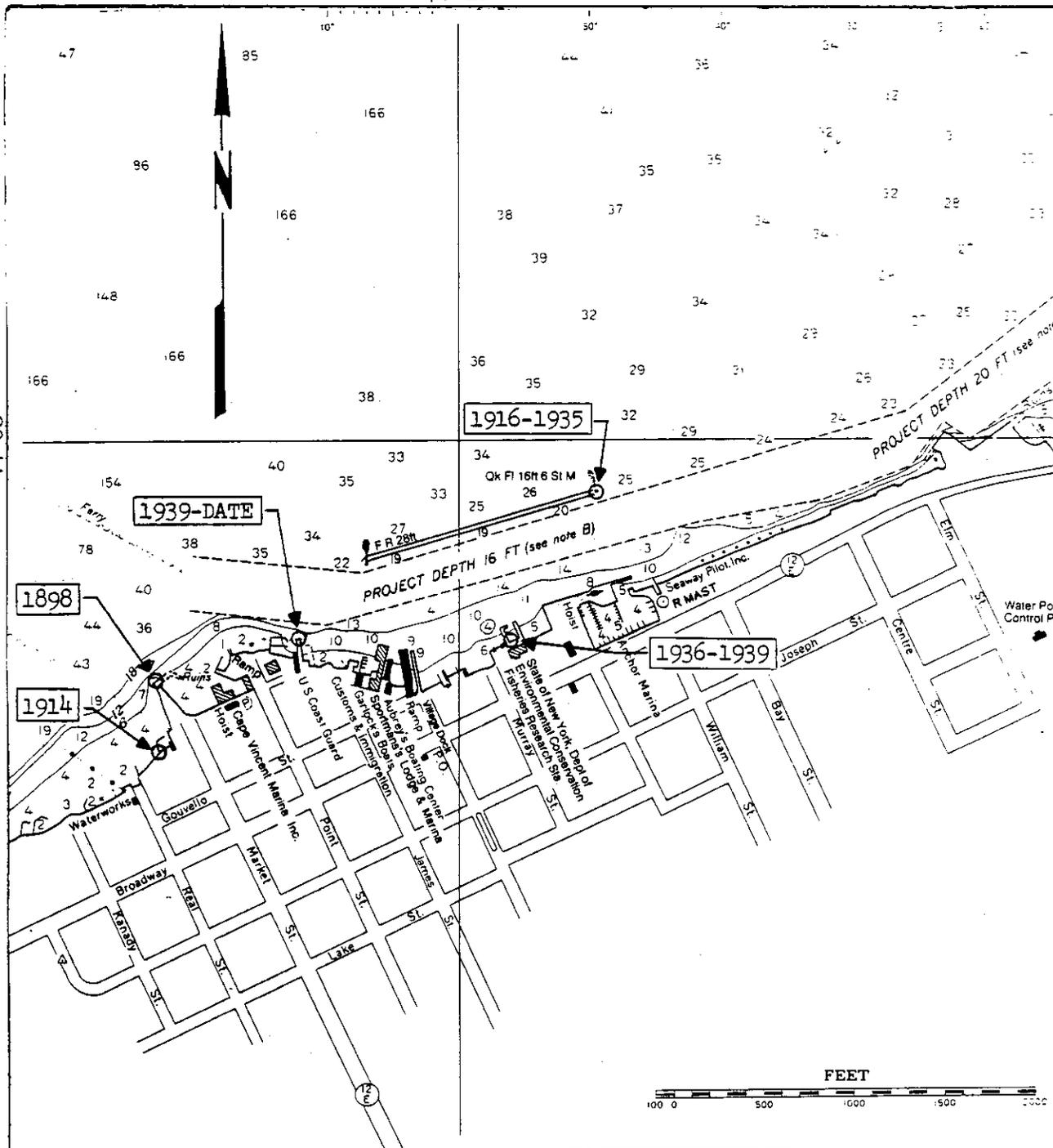
NOTE: Analogue recording gauges used before March 1972. Since that date, digital recording gauges have been used at Cape Vincent.

Gauging Station Sites (see Plate 114, page 222):

- (a) November 1898: A staff gauge located on the wharf of Cleveland Seed Company near Market Street.
- (b) July 1914 - September 1914: A recording gauge located on Wills wharf between Market and Real Streets.
- (c) January 1916 - December 1935: A recording gauge located at the lighthouse on east end of concrete breakwater.
- (d) June 1936 - October 1939: A staff gauge located on the Fish Hatchery wharf near Murray Street.
- (e) November 1939 - April 1954: A staff gauge located at the U.S. Coast Guard slip near the foot of Point Street.
- (f) May 1954 - November 1954: A recording gauge located at the U.S. Coast Guard slip near the foot of Point Street.
- (g) December 1954 - April 1955: A staff gauge located at the U.S. Coast Guard slip near the foot of Point Street.
- (h) April 1955 - Date: A recording gauge located in the U.S. Coast Guard boathouse near the foot of Point Street.

76° 20'

44° 08'



WATER LEVEL GAUGE LOCATION

CAPE VINCENT, NEW YORK  
1898-DATE

1982

## GAUGE HISTORY

### Fort Erie, Ontario

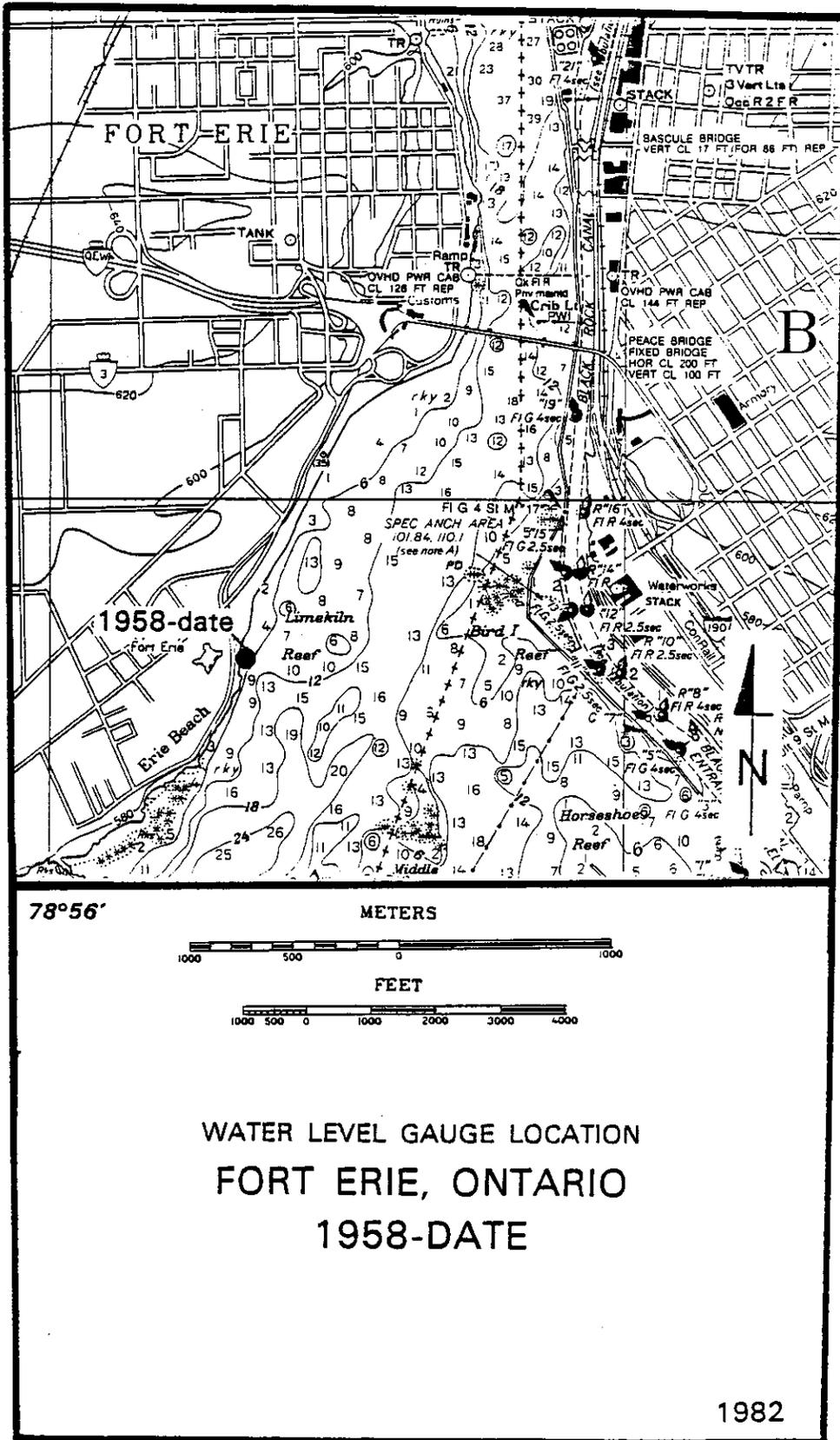
1903 Datum was never established at Fort Erie. The 1935 Datum elevation of B.M. "HYDROMON" at Fort Erie is 582.639 feet (177.588 meters) and depends on the elevation of B.M. "MON O.L." as being 580.331 feet (176.885 meters) established by level line run by Mr. G. Bowman of Ontario Hydro on 1935 Datum. IGLD (1955) elevations at Fort Erie were established by level line run in 1963 by Geodetic Survey of Canada from Port Colborne, Ontario. IGLD (1955) elevation for B.M. "HYDROMON" at Fort Erie is 580.815 feet (177.032 meters) and depends on the elevation of B.M. "STEEL RIVET" at Port Colborne as being 583.015 feet (177.703 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Mar 1958-Date	HYDROMON	580.815 feet (177.032 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O.

#### Gauging Station Site (see Plate 115, page 224):

(a) March 1958-Date: A recording gauge located on the north shore of Lake Erie about one-quarter mile southwest of Old Fort Erie.



42°54'

## GAUGE HISTORY

### Port Colborne, Ontario

Elevations at Port Colborne on 1903 Datum depend on B.M. "STEEL RIVET" at elevation 584.657 feet (178.203 meters) based on leveling in 1915 from B.M. "ENGLISH CHURCH". Elevation of B.M. "ENGLISH CHURCH" at 578.930 feet (176.458 meters) was obtained from Appendix FFF of the Annual Report of the Chief of Engineers 1903. Leveling in 1927 from B.M. "STEEL RIVET" established B.M. "137 F" at elevation 579.856 feet (176.740 meters) and was used from 1928 to 1935. Leveling in 1935 from B.M. "STEEL RIVET" established B.M. "137 F" at elevation 579.821 feet (176.729 meters) and was used from 1936 to 1950. IGLD (1955) elevations at Port Colborne depend on B.M. "577 F" and B.M. "135 F" at elevations 578.308 feet (176.268 meters) and 582.226 feet (177.462 meters) respectively as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee. IGLD (1955) elevations at Port Colborne also depend on B.M. "71 U 032" at elevation 576.614 feet (175.754 meters) as established by level line run in 1971 by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jan 1860-Dec 1900	UPPERSILL OF LOCK/OLD WELLAND CANAL	558.928 feet (170.361 meters)	Staff Gauge, Once Daily	D. of R. and C.
Jan 1902-Jul 1911	UPPERSILL OF LOCK/OLD WELLAND CANAL	558.928 feet (170.361 meters)	Staff Gauge, Once Daily	D. of R. and C.
Aug 1911-May 1928	STEEL RIVET	583.015 feet (177.703 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jun 1928-Apr 1936	137 F	578.214 feet (176.240 meters)	Recording Gauge, Hourly Scalings	C.H.S.
May 1936-May 1953	137 F	578.179 feet (176.229 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Oct 1959-Nov 1964	STEEL RIVET	583.015 feet (177.703 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jul 1970-Sep 1976	135 F	582.226 feet (177.462 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Sep 1976-Date	71 U 032	175.754 meters (576.614 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used. Telemetering service was installed at Port Colborne in May 1979.

Gauging Station Sites (see Plate 116, page 227):

(a) January 1860-July 1911: Staff gauge readings were taken at noon each day over the upper sill of guard lock of Old Welland Canal. The location of staff gauge readings are only approximate.

(b) August 1911-December 1927: A recording gauge located on coping on west side of canal in old guard lock of Old Welland canal, about 25 feet above upper lock.

(c) July 1925-November 1964: A recording gauge set over concrete well on east side of slip between old and new sections of Government Grain Elevator.

(d) November 1964-Date: A recording gauge located over steel well north of National Harbours Board Grain Elevator and the elevator office.



## GAUGE HISTORY

### Port Dover, Ontario

Elevations at Port Dover on 1903 Datum depend on B.M. "MDCCXXXI" at elevation 618.076 feet (188.390 meters) based on comparisons of float gauge readings from June to September 1958 with water surface elevations at Port Stanley and Port Colborne. IGLD (1955) elevations at Port Dover depend on B.M. "MDCCXXXI" at elevation 616.250 feet (187.833 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee. IGLD (1955) elevations at Port Dover also depend on B.M. "MDCCXXX" at elevation 576.106 feet (175.597 meters) as established by level line run in 1975 by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1958-Jun 1959	MDCCXXXI	616.250 feet (187.833 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jan 1960-Jul 1981	MDCCXXXI	616.250 feet (187.833 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jul 1981-Date	MDCCXXX	175.597 meters (576.106 feet)	Recording Gauge, Hourly Scalings	C.H.S.

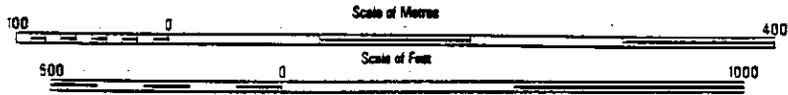
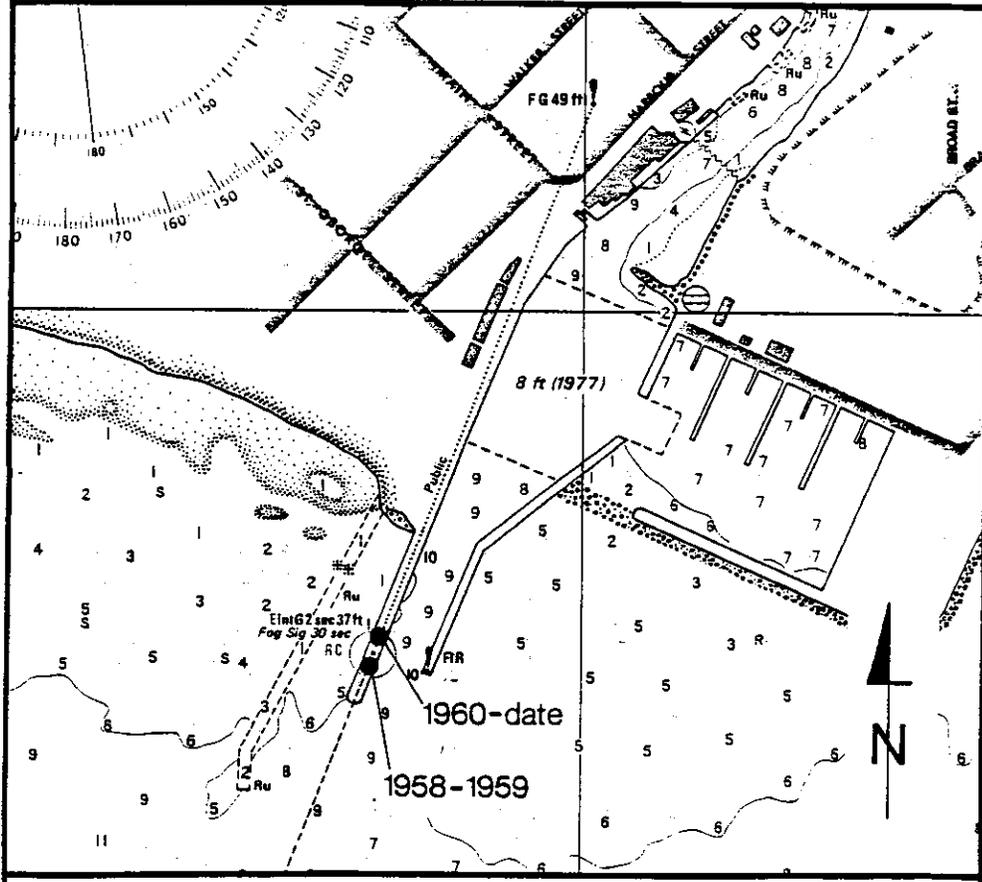
NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used.

#### Gauging Station Sites (see Plate 117, page 229):

(a) May 1958-July 1959: A recording gauge located on west side of wooden pier on west side of harbour entrance, halfway between shore and outer end, and approximately 75 feet southwest of Department of Transport Lighthouse.

(b) January 1960-Date: A recording gauge located on newly constructed wharf on west side of harbour entrance, approximately seven feet south of Department of Transport Lighthouse.

80°12'



WATER LEVEL GAUGE LOCATION  
PORT DOVER, ONTARIO  
1958-DATE

1982

## GAUGE HISTORY

### Port Stanley, Ontario

Elevations at Port Stanley on 1903 Datum depend on B.M. "STEEL RIVET" and B.M. "H.S." at elevations 586.998 feet (178.917 meters) and 584.430 feet (178.134 meters) respectively and depend on comparison of float gauge readings for the summer months for the period 1908 to 1911 at Cleveland Ohio. IGLD (1955) elevations at Port Stanley depend on B.M. "H.S." at elevation 582.716 feet (177.612 meters) as published in Appendix A, Establishment of International Great Lakes Datum as published in September 1961 by the Coordinating Committee. IGLD (1955) elevations at Port Stanley also depend on B.M. "POST 3" at elevation 575.929 feet (175.543 meters) as established by the level line run in 1975 by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1908-Nov 1911	STEEL RIVET	585.284 feet (178.395 feet)	Recording Gauge, Hourly Scalings	C.H.S.
Jun 1926-Nov 1936	STEEL RIVET	585.284 feet (178.395 feet)	Recording Gauge, Hourly Scalings	C.H.S.
Dec 1936-Mar 1937	STEEL RIVET	585.284 feet (178.395 meters)	Staff Gauge, Once Daily	C.H.S.
Apr 1937-Dec 1938	STEEL RIVET	585.284 feet (178.395 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jan 1941-Sep 1976	H.S.	582.716 feet (177.612 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Sep 1967-Sep 1976	POST 3	575.929 feet (175.543 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Oct 1976-Date	POST 3	175.543 meters (575.929 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date digital recording gauges have been used. Telemetry service was installed at Port Stanley in 1979.

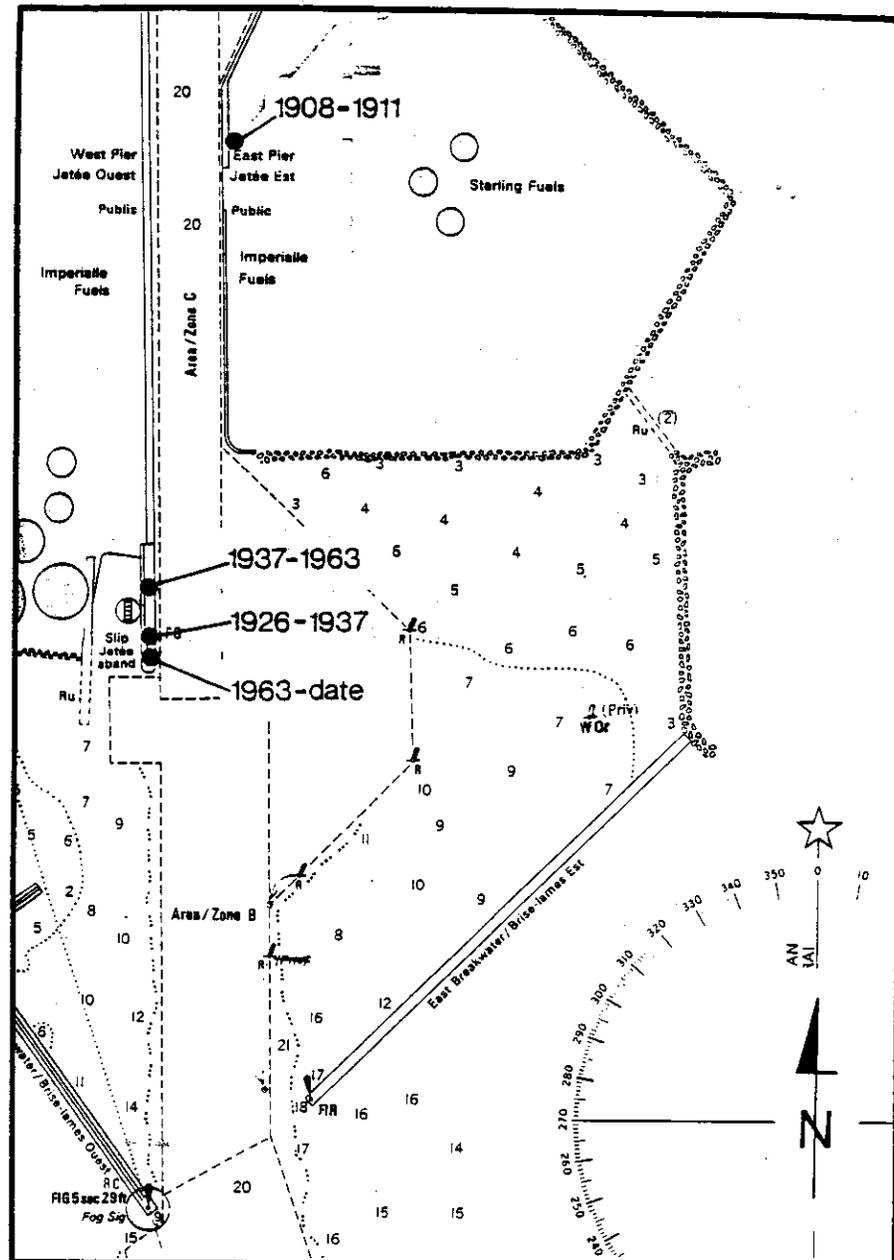
Gauging Station Sites (see Plate 118, page 232):

(a) July 1908-November 1911: A recording gauge located on an old wharf on lakeshore, northeast of the Department of Public Works' concrete wharf built in 1925 on the east side of the harbour operated during the summer months. This old wharf has since been completely destroyed and the position is only approximate.

(b) June 1926-April 1937: A recording gauge located over a well in of timber-crib bed at the end of west approach pier to the harbour. Well located about 15 feet north of back range light. A staff gauge replaced the recording gauge December 1936-March 1937.

(c) April 1937-June 1963: A recording gauge located over a concrete well in the 1937 replacement of timber section of pier on west side of harbour, about 100 feet south of the inner end of the new section.

(d) June 1963-Date: A recording gauge located over steel well in low stone-filled timber crib on west side of harbour, about 250 feet south of the inner end of the new section.



WATER LEVEL GAUGE LOCATION  
 PORT STANLEY, ONTARIO  
 1908-DATE

1982

## GAUGE HISTORY

### Erieau, Ontario

Elevations at Erieau on 1903 Datum depend on B.M. "H.S. 1" at elevation 576.450 feet (175.702 meters) based on comparison of float gauge readings with water surface elevation at Port Colborne for the period June to October 1958. IGLD (1955) elevations at Erieau depend on B.M. "H.S. 1" at elevation 574.645 feet (175.152 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee. IGLD (1955) elevations at Erieau also depend on B.M. "H.S. 2" at elevation 574.711 feet (175.172 meters) as established by level line run in 1975 by Geodetic Survey of Canada.

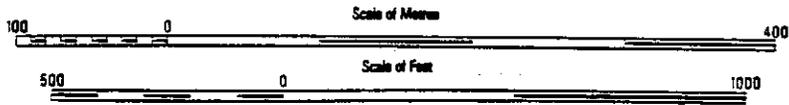
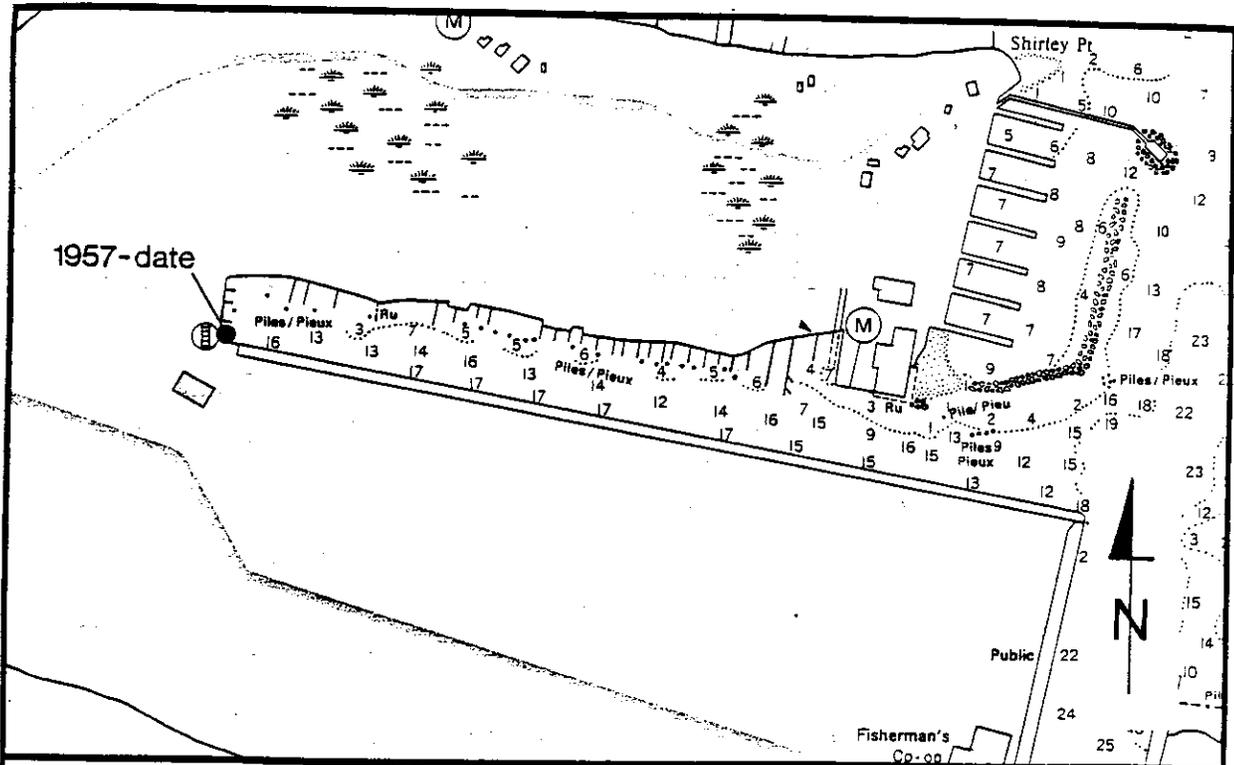
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1957-Jul 1981	H.S. 1	574.645 feet (175.152 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Jul 1981-Date	H.S. 2	175.172 meters (574.711 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used.

#### Gauging Station Site (see Plate 119, page 234):

(a) July 1957-Date: A recording gauge located in the southwest corner of the Lake Erie Coal Company slip.



WATER LEVEL GAUGE LOCATION  
 ERIEAU, ONTARIO  
 1957-DATE

1982

## GAUGE HISTORY

### Pelee Point, Ontario

1903 Datum was never established at Pelee Point. IGLD (1955) elevations at Pelee Point depend on B.M. "2058" at elevation 576.842 feet (175.821 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee. IGLD (1955) elevations at Pelee Point also depend on B.M. "75 1" and "3647" at elevations 584.606 feet (178.188 meters) and 563.094 feet (171.631 meters) respectively as established by level line run in 1975 by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

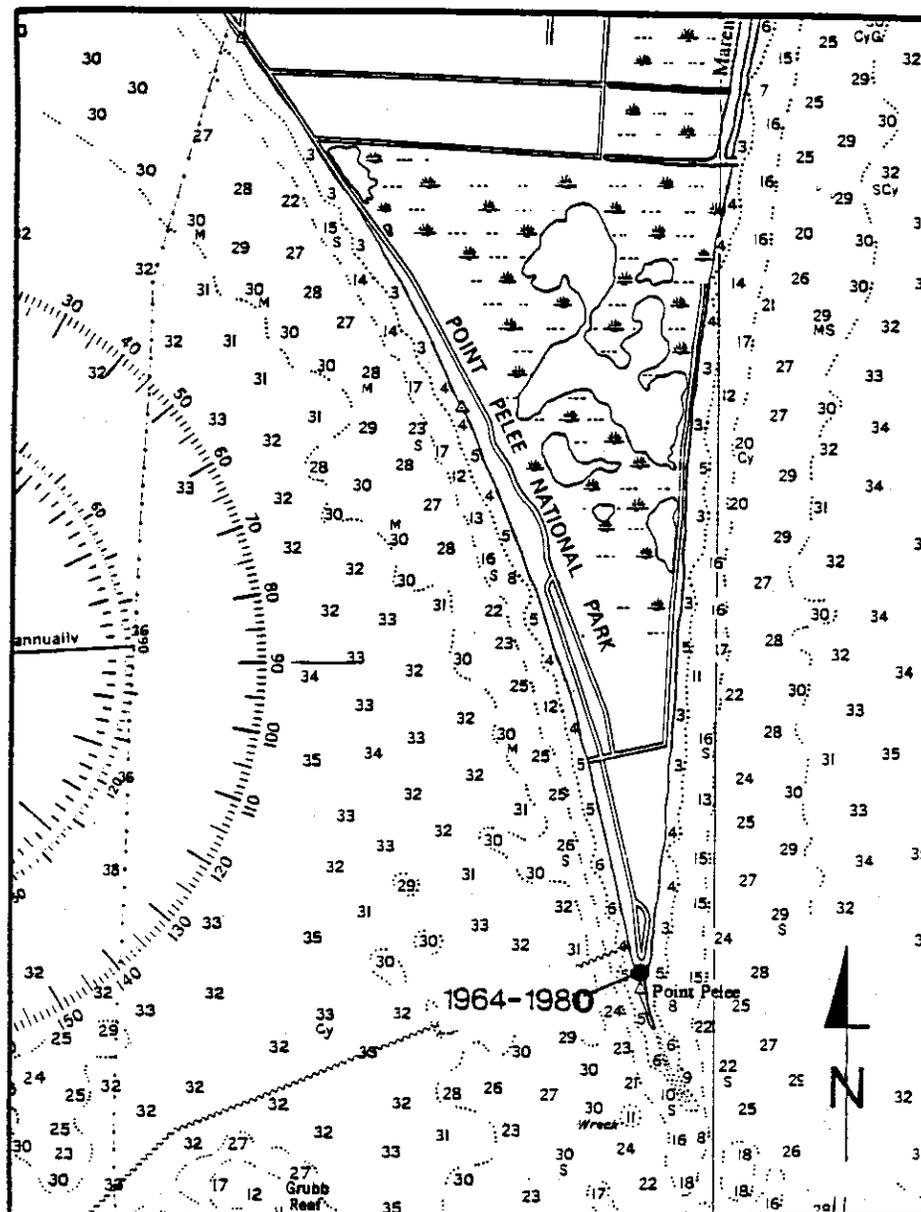
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Apr 1964-Nov 1976	2058	576.842 feet (175.821 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Nov 1976-Dec 1979	75 1	584.606 feet (178.188 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Dec 1976-Oct 1980	3647	171.631 meters (563.094 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges before 1970. Since that date, digital recording gauges have been used.

#### Gauging Station Site (see Plate 120, page 236):

(a) April 1964-Oct 1980: Two recording gauges located at the most southernly point of Pelee Point National Park at end of tree line, approximately 1,000 feet south of the end of the road. One gauge records the level of Lake Erie on the west side, while the other records the level on the east side of the "Point".

82°30'



WATER LEVEL GAUGE LOCATION  
PELEE POINT, ONTARIO  
1964-1980

1982

## GAUGE HISTORY

### Kingsville, Ontario

1903 Datum was never established at Kingsville. IGLD (1955) elevations at Kingsville depend on B.M. "3030" at elevation 596.724 feet (181.881 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee. IGLD (1955) elevations at Kingsville also depend on B.M. "3031" at elevation 574.794 feet (175.198 meters) as established by level line run in 1975 by Geodetic Survey of Canada.

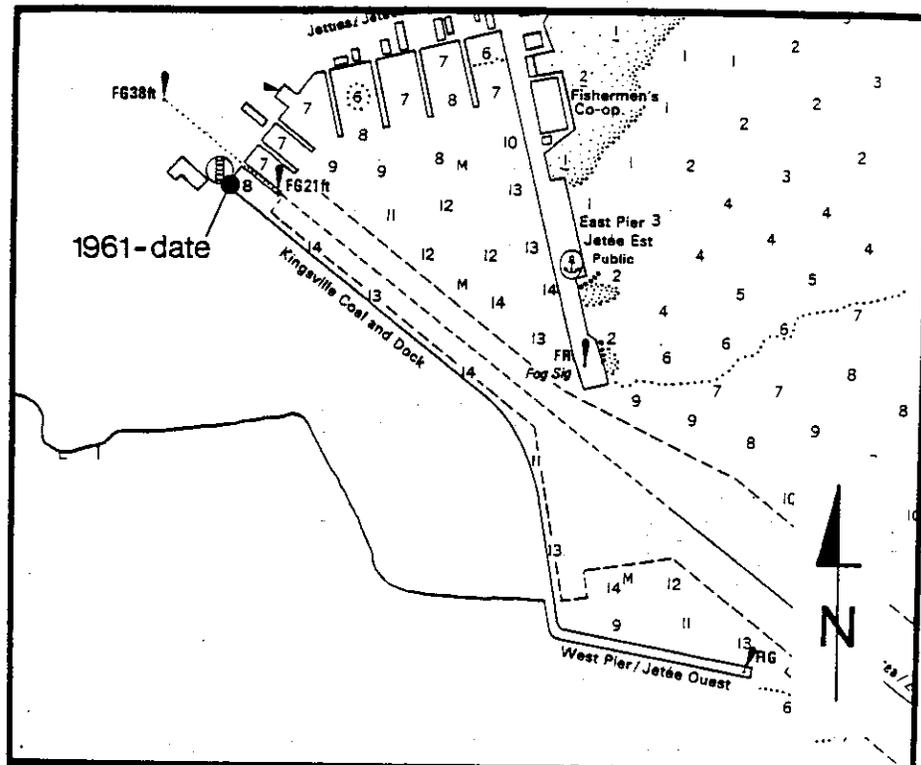
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1961-Sep 1967	3030	596.724 feet (181.881 meters)	Recording Gauge, Hourly Scalings	C.H.S.
Sep 1970-Date	3031	175.198 meters (574.794 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used. Telemetry service was installed at Kingsville in October 1977.

#### Gauging Station Site (see Plate 121, page 238):

(a) July 1961-Date: A recording gauges located at the northwest corner of Kingsville Harbour.



WATER LEVEL GAUGE LOCATION  
 KINGSVILLE, ONTARIO  
 1961-DATE

1982

## GAUGE HISTORY

### Bar Point, Ontario

1903 Datum was never established at Bar Point. IGLD (1955) elevations at Bar Point depend on B.M. "3016" at elevation 579.221 feet (176.547 meters) published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

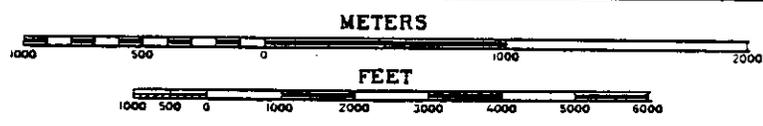
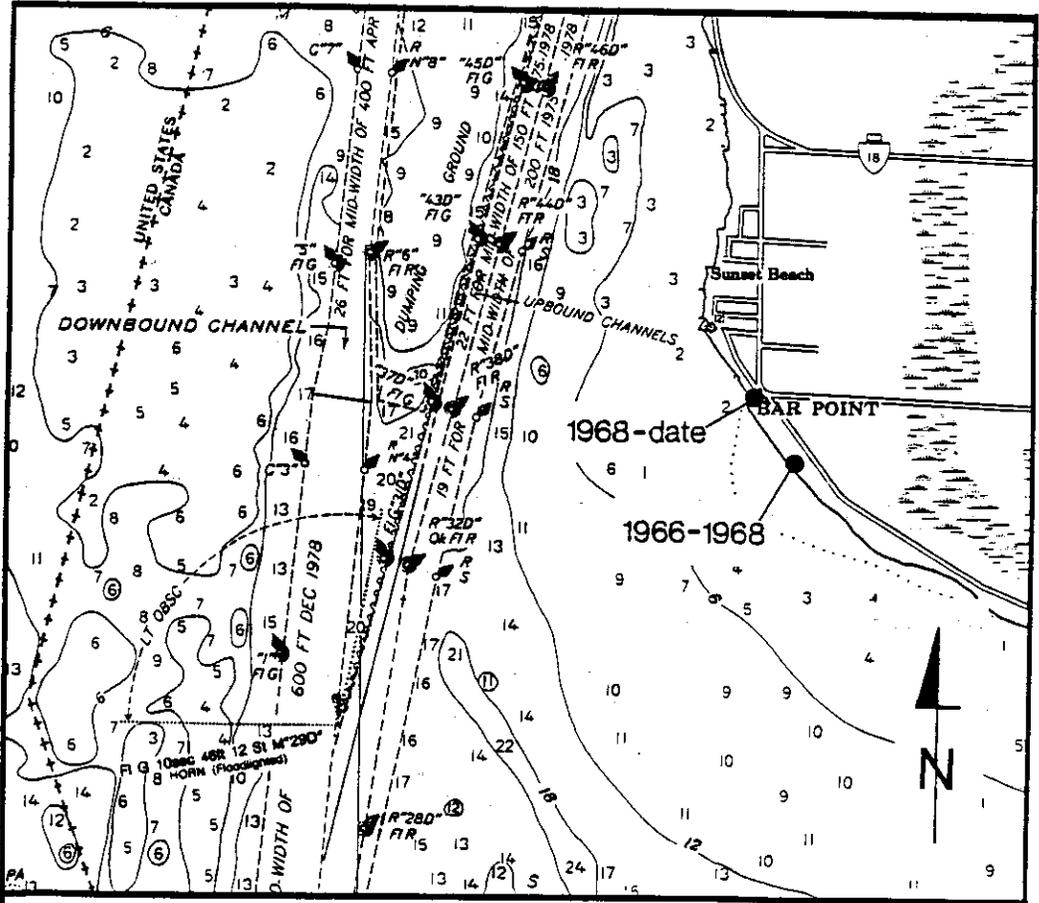
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1966-Date	3016	176.547 meters (579.221 feet)	Recording Gauge, Hourly Scalings	C.H.S.

NOTE: Analogue recording gauges used before 1970. Since that date, digital recording gauges have been used. Telemetry service was installed at Bar Point in 1979.

#### Gauging Station Sites (see Plate 122, page 240):

(a) May 1966-October 1968: Pressure type recording gauge in temporary shelter in a vacant lot 2,000 feet east of Highway 18.

(b) October 1968-Date: A recording gauge located at end of Beaudoin side road near Highway 18 and 1,500 feet west of old location.



WATER LEVEL GAUGE LOCATION  
 BAR POINT, ONTARIO  
 1966-DATE

1982

## GAUGE HISTORY

### Detroit River Light, Michigan

1903 Datum was never established at Detroit River Light. Elevations at Detroit River Light on 1935 Datum were established by water level transfer from Monroe, Michigan, using recording gauge records at Monroe for the period June - July 1935. The 1935 Datum elevation of B.M. "DRL NO 1" at Detroit River Light is 584.326 feet (178.103 meters) and depends on the elevation of B.M. "Bridge" at Monroe as being 579.268 feet (176.561 meters) on 1935 Datum. IGLD (1955) elevations at Detroit River Light depend on B.M. "DRL NO 1A" at elevation 582.594 feet (177.575 meters).

#### CHRONOLOGICAL TABLE

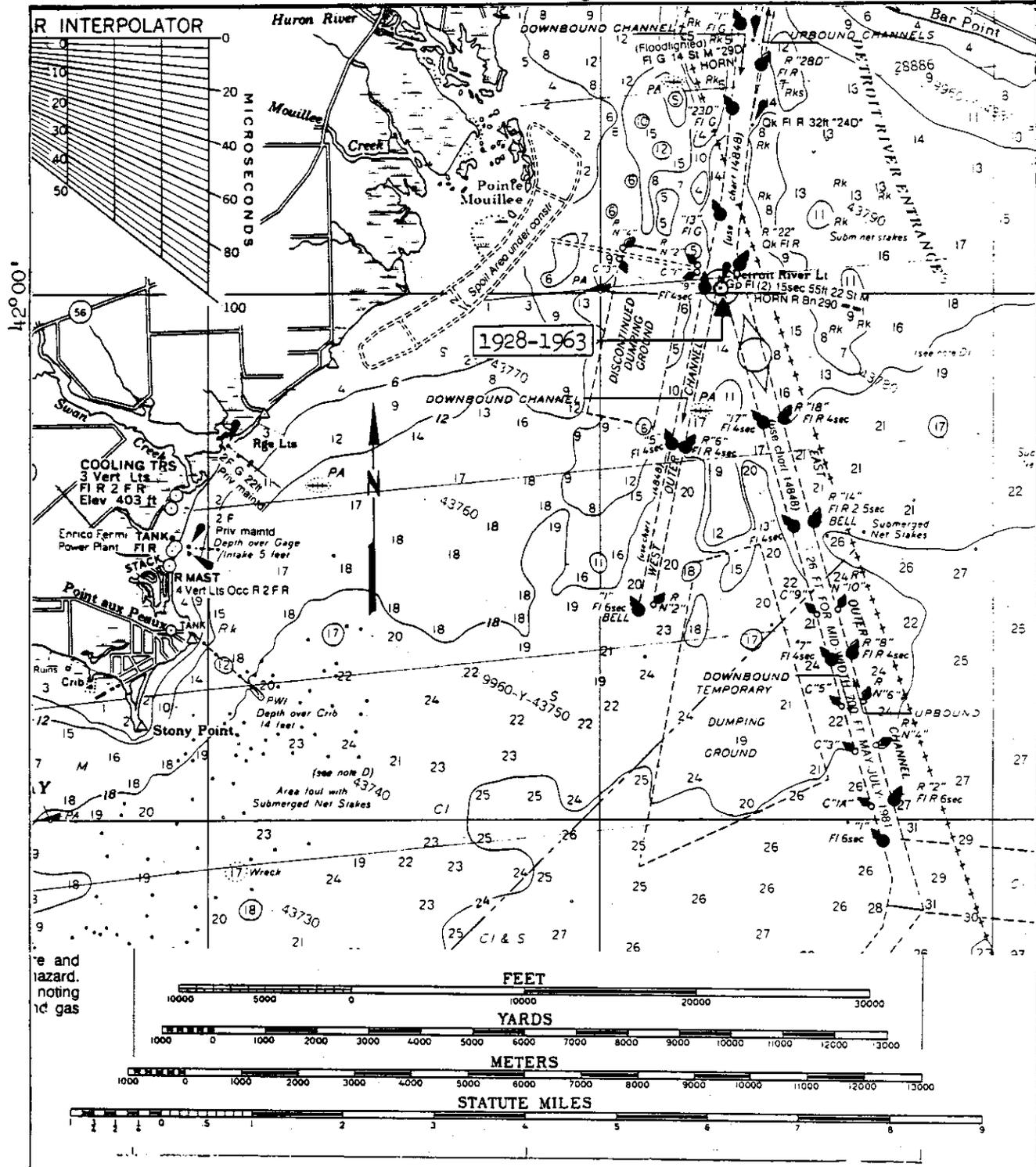
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Aug 1928-Nov 1930	GAUGE ZERO		Float Gauge, Monthly Mean	L.C.A.
Apr 1931-Nov 1939	DRL NO 1	582.460 feet	Float Gauge, Daily Mean	L.C.A.
Apr 1940-Nov 1941	DRL NO 1	582.460 feet	Float Gauge, 15-Day Mean	L.C.A.
Aug 1942-Nov 1942	DRL NO 1	582.460 feet	Float Gauge, Daily Mean	L.C.A.
Apr 1943-Nov 1945	DRL NO 1	582.460 feet	Float Gauge, 4 Times Daily	U.S.L.S.
May 1946-Nov 1946	DRL NO 1	582.460 feet	Float Gauge, 8 Times Daily	U.S.L.S.
Apr 1947-Dec 1955	DRL NO 1	582.460 feet	Float Gauge, 6 Times Daily	U.S.L.S.
Apr 1956-Dec 1963	DRL NO 1A	582.594 feet (177.575 meters)	Float Gauge, 8 Times Daily	U.S.L.S.

NOTE: In 1928 - 1930 period gauge zero elevations varied from 551.10 to 551.54 feet (167.98 to 168.11 meters) as derived from Cleveland and Toledo records. Record broken because gauge readings above 22 feet (6.7 meters) were recorded as 22 feet (6.7 meters). Gauges operated only during navigation season.

Gauging Station Site (see Plate 123, page 242):

(a) August 1928 - December 1963: A staff gauge with an indicator moved wire connected to a float in stilling pipe on the foundation pier of the lighthouse.

83°10'



WATER LEVEL GAUGE LOCATION  
 DETROIT RIVER LT., MICHIGAN  
 1928-1963

1982

## GAUGE HISTORY

### Fermi Power Plant, Michigan

1903 and 1935 Datums were never established at Fermi Power Plant. IGLD (1955) elevations at Fermi Power Plant were established by precise levels in 1961 and depend on B.M. "D 64" at elevation 591.717 feet (180.355 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

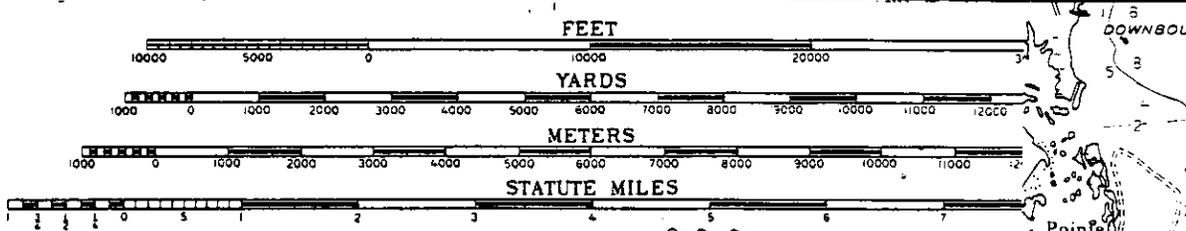
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jan 1962-Oct 1970	POWER	581.946 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	POWER	581.946 feet (177.377 meters)	Recording Gauge, Hourly Scalings	N.O.S.

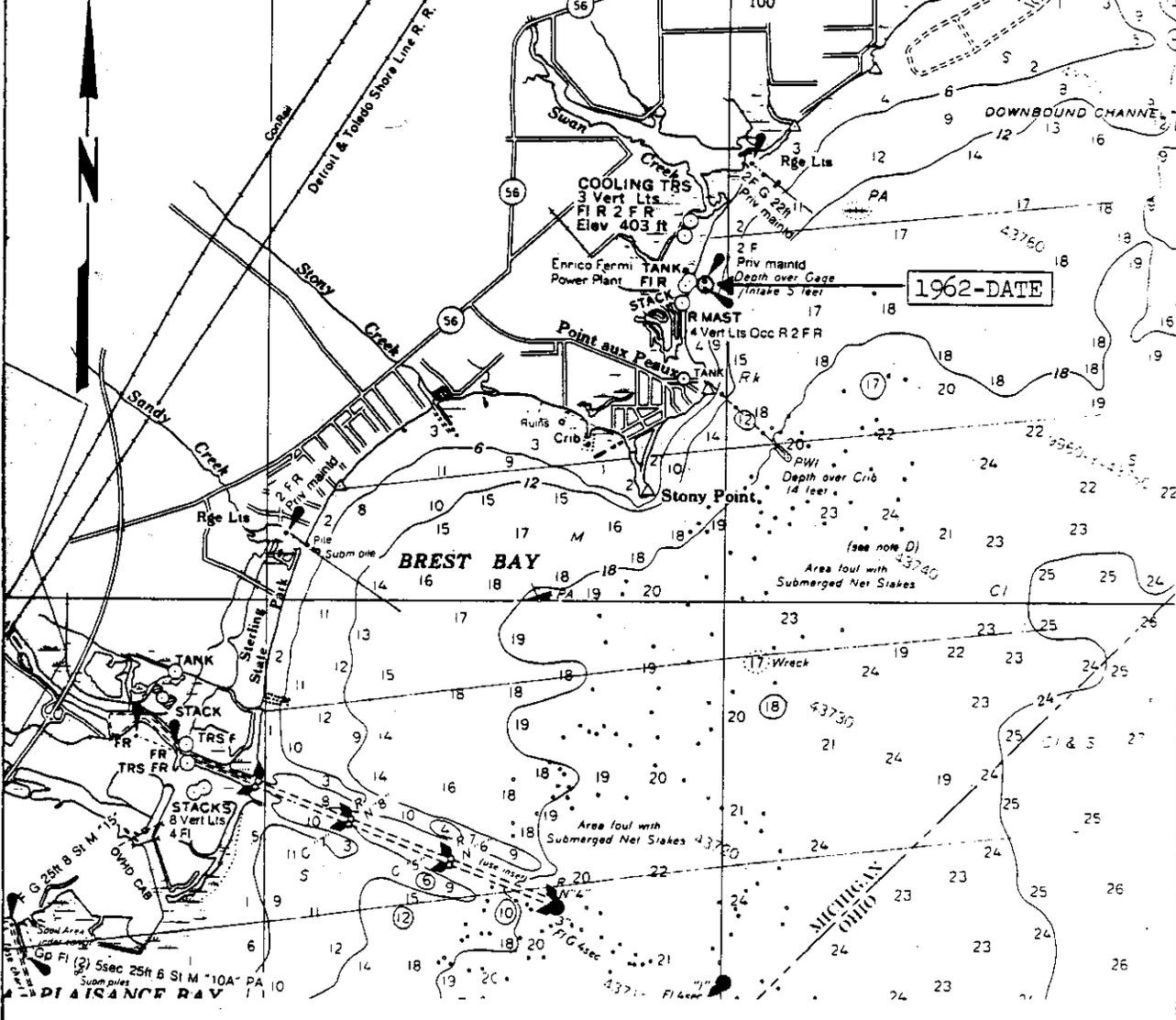
NOTE: Analogue recording gauges used before April 1967. Since that date, digital recording gauges have been used at Fermi.

#### Gauging Station Site (see Plate 124, page 244)

(a) January 1962 - Date: A recording gauge located about 1 mile north of Stony Point, Michigan, at the Fermi Power Plant on the shore adjacent to the plant and water intake.



indicated on this chart. See  
 winter months or when en-  
 certain aids to navigation are  
 types or removed. For details  
 ard Light List.



41° 50'

WATER LEVEL GAUGE LOCATION  
 FERMI POWER PLANT, MICHIGAN  
 1962-DATE  
 1982

## GAUGE HISTORY

### Monroe, Michigan

Elevations at Monroe on 1903 Datum depend on B.M. "D" at elevation 590.769 feet (180.066 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Monroe on 1935 Datum were established by water level transfer from Cleveland, Ohio, using recording gauge records at Cleveland for the months of May through September for the period 1933 - 1937. The 1935 Datum elevation of B.M. "BRIDGE" at Monroe is 579.268 feet (176.561 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Monroe depend on B.M. "WL 103" at elevation 575.111 feet (175.194 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1859-Mar 1862	GAUGE ZERO		Staff Gauge, Monthly Mean	U.S.L.S.
Jan 1893-Nov 1898	MONROE PIERS	576.694 feet	Staff Gauge, Monthly Mean	U.S.E.O.
Aug 1904-Nov 1904	LIGHTHOUSE	577.926 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1932-Sep 1937	BRIDGE	577.378 feet	Recording Gauge, Hourly Scaling	U.S.L.S.
Oct 1952-Oct 1970	WL 103	575.111 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Oct 1973	WL 103	575.111 feet	Recording Gauge, Hourly Scaling	N.O.S.
Sep 1975-Date	WL 103	575.111 feet (175.294 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: 1859 - 1862 gauge zero elevation 576.97 feet (175.86 meters) derived from Cleveland and Erie records.  
 1932 - 1937 gauge operated generally in May - October season.  
 1965 - 1973 gauge operated only in summer months.

Analogue recording gauges used before September 1975. Since that date, digital recording gauges have been used at Monroe.

Gauging Station Sites (see Plate 125, page 247):

- (a) July 1859 - March 1862: A staff gauge located outside of the old south pier at the mouth of the Raisin River.
- (b) January 1893 - November 1898: A staff gauge located on a pier at the mouth of the Raisin River.
- (c) July 1904 - November 1904: A recording gauge located at a lighthouse formerly on the outer end of the old north pier.
- (d) May 1932 - September 1937: A recording gauge located on a canal entering the lake three-quarters of a mile north of the river.
- (e) October 1952 - October 1973: A recording gauge located on steel sheet piling along the south side of the turning basin in the Raisin River, about 15 feet from the southeast corner of the basin.
- (f) September 1975 - Date: A recording gauge located in a wooden gauge house at the southeast corner of the turning basin in the Raisin River.



## GAUGE HISTORY

### Toledo, Ohio

Elevations at Toledo on 1903 Datum depend on B.M. "W" at elevation 603.888 feet (184.065 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Toledo on 1935 Datum were established by water level transfer from Monroe, Michigan, and Cleveland, Ohio, using recording gauge records at Monroe and Cleveland for the period May - September 1935. The 1935 Datum elevation of B.M. "WL 105" at Toledo is 579.600 feet (176.662 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Toledo depend on B.M. "WL 105" at elevation 577.698 feet (176.082 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1877-Dec 1877	TERRY POST	584.83 feet	Staff Gauge, Tri-Daily	U.S.L.S.
May 1906-Dec 1906	W	601.942 feet	Staff Gauge, Monthly Mean	U.S.E.O.
Oct 1911-Dec 1920	W	601.942 feet	Staff Gauge, Tri-Daily	U.S.E.O.
Jan 1921-Dec 1934	W	601.942 feet	Staff Gauge, Monthly Mean	U.S.E.O.
Jan 1935-Dec 1935	W	601.942 feet	Staff Gauge, Tri-Daily	U.S.E.O.
Apr 1935-Sep 1935	WL 105	577.698 feet	Staff Gauge, Monthly Mean	U.S.L.S.
Jan 1938-Mar 1938	W	601.942 feet	Staff Gauge, Monthly Mean	U.S.E.O.
Jun 1938-Nov 1938	WL 105	577.698 feet	Staff Gauge, Monthly Mean	U.S.E.O.
Apr 1939-Nov 1939	WL 105	577.698 feet	Staff Gauge, Monthly Mean	U.S.E.O.
Apr 1940-Dec 1940	WL 105	577.698 feet	Recording Gauge, Two Hour Scalings	U.S.L.S.

Jan 1941-Oct 1970	WL 105	577.698 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	WL 105	577.698 feet (176.082 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Analogue recording gauges used before January 1978. Since that date, digital recording gauges have been used. Telemetry service was installed at Toledo in January 1978.

Gauging Station Sites (see Plates 126-127, page 250-251):

(a) July 1877 - August 1877: A staff gauge located along the westerly bank near the mouth of the Maumee River.

(b) May 1906 - December 1906: A staff gauge in the vicinity of Madison Street about 4 miles upstream from the mouth of the Maumee River.

(c) October 1911 - December 1912: A staff gauge located near the westerly end of the Cherry Street Bridge.

(d) January 1913 - July 1913: A staff gauge located in a slip on the easterly side of the Maumee River across from the foot of Madison Street.

(e) July 1913 - March 1939: A staff gauge located on the westerly bank of the Maumee River at the foot of Madison Avenue.

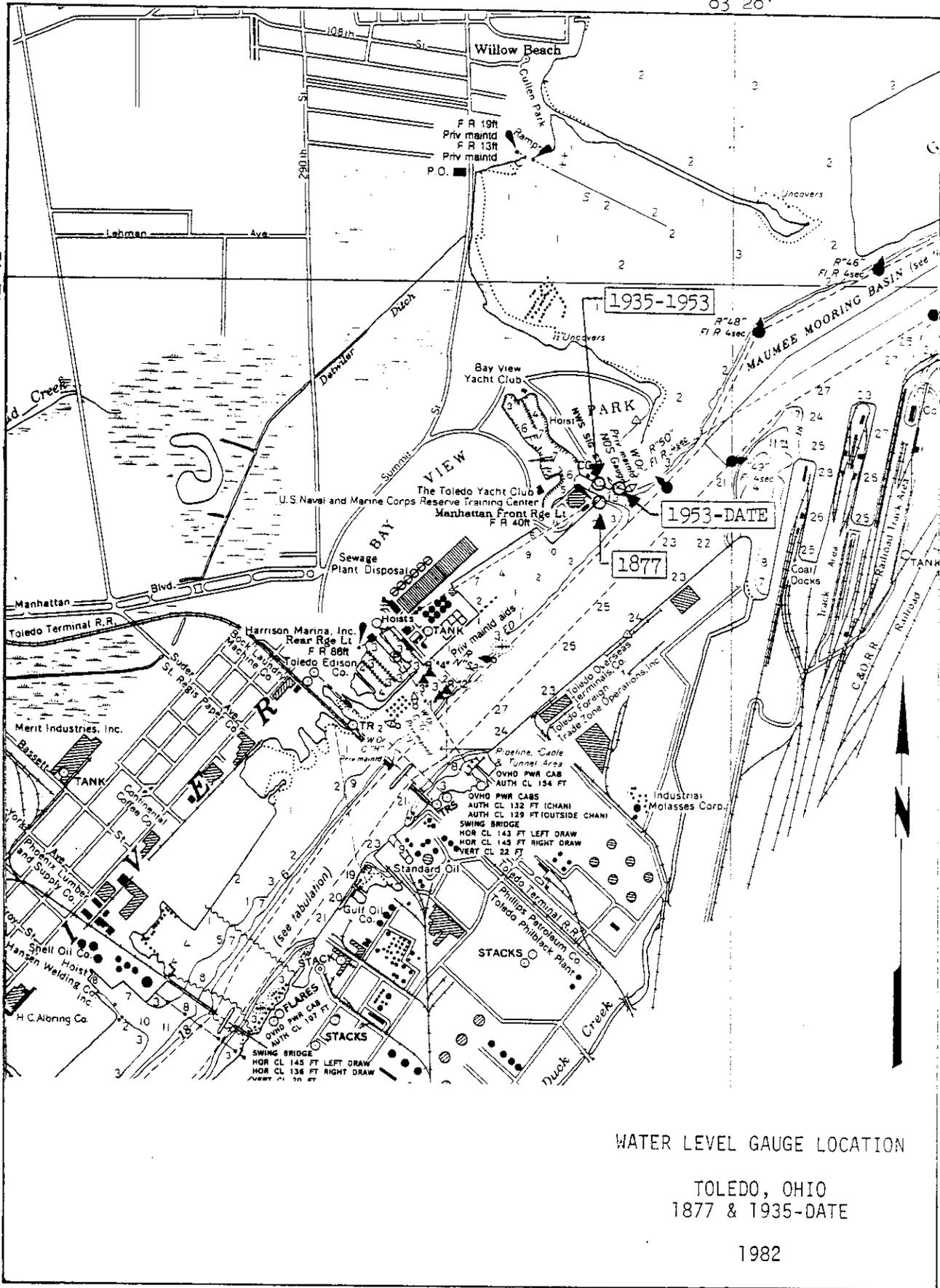
(f) April 1935 - May 1953: A staff gauge during summer months of 1935, 1938, and 1939, and a recording gauge from April 1940 through May 1953 located in the bay on the west side of the Maumee River near the mouth of the river.

(g) May 1953 - January 1964: A recording gauge located at the outer end of the U.S. Coast Guard pier at the mouth of the Maumee River.

(h) January 1964 - Date: A recording gauge located in a gauge house on Corps of Engineers property adjacent to Coast Guard pier with its intake about 50 feet downstream from previous site.

83° 28'

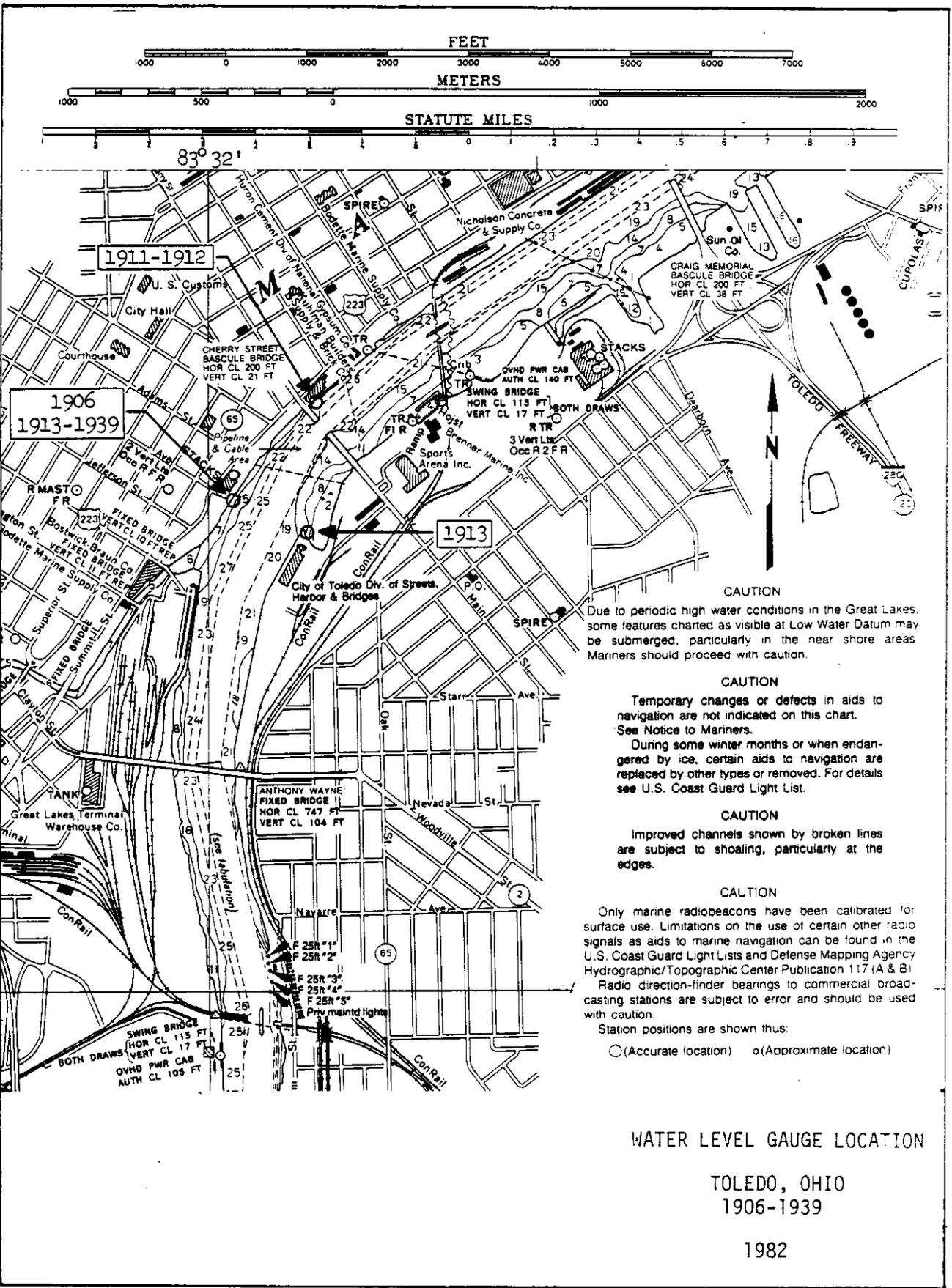
41° 42'



WATER LEVEL GAUGE LOCATION

TOLEDO, OHIO  
1877 & 1935-DATE

1982



**CAUTION**  
 Due to periodic high water conditions in the Great Lakes, some features charted as visible at Low Water Datum may be submerged, particularly in the near shore areas. Mariners should proceed with caution.

**CAUTION**  
 Temporary changes or defects in aids to navigation are not indicated on this chart. See Notice to Mariners.

During some winter months or when endangered by ice, certain aids to navigation are replaced by other types or removed. For details see U.S. Coast Guard Light List.

**CAUTION**  
 Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

**CAUTION**  
 Only marine radiobeacons have been calibrated for surface use. Limitations on the use of certain other radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and Defense Mapping Agency Hydrographic/Topographic Center Publication 117 (A & B). Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.

Station positions are shown thus:  
 ○ (Accurate location) ◦ (Approximate location)

**WATER LEVEL GAUGE LOCATION**

TOLEDO, OHIO  
 1906-1939

1982

## GAUGE HISTORY

### Toledo Harbor Light, Ohio

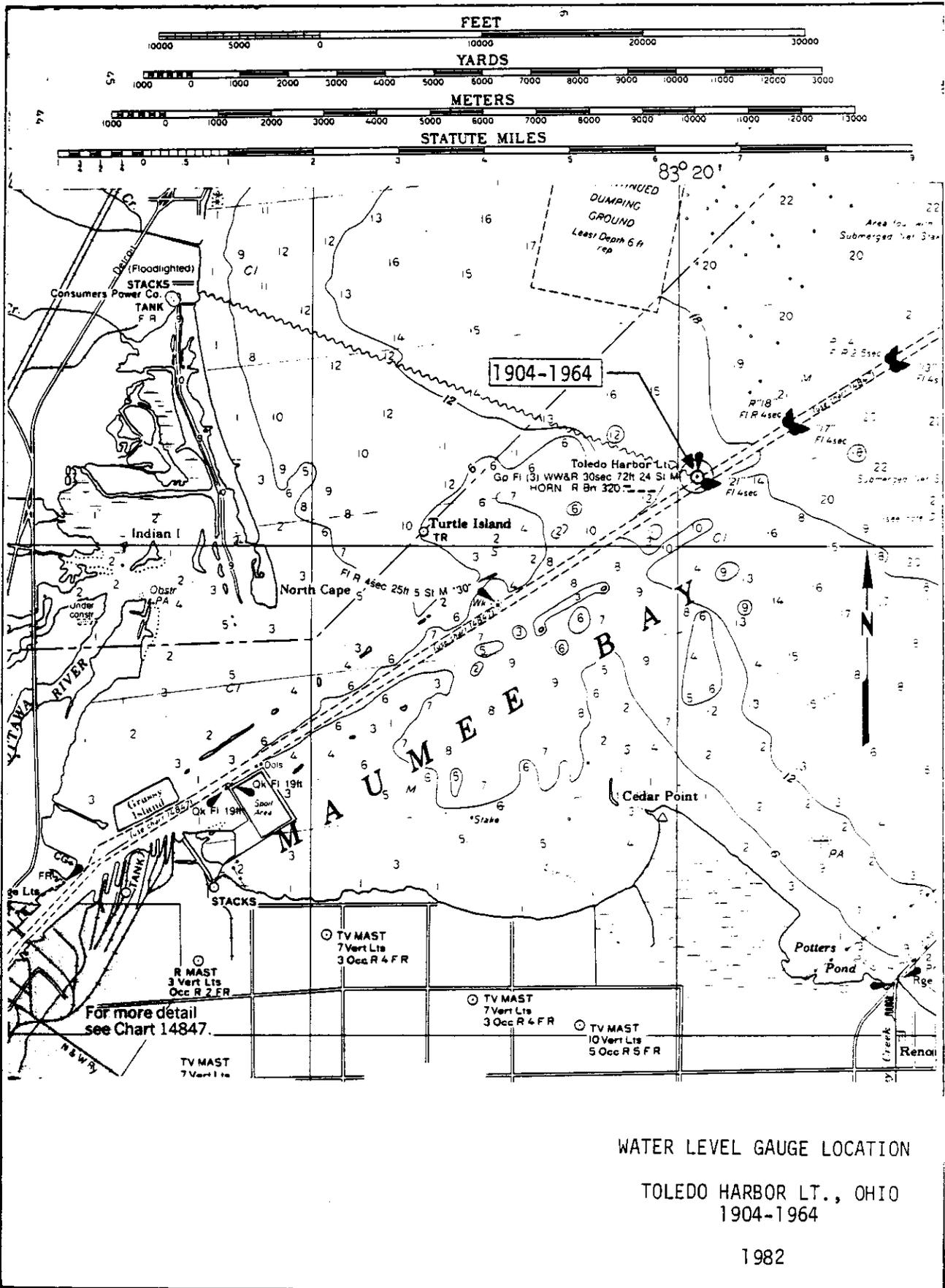
1903 Datum was never established at Toledo Harbor Light. Elevations at Toledo Harbor Light on 1935 Datum were established by water level transfer from Monroe, Michigan, and Cleveland, Ohio, using recording gauge records at Monroe and Cleveland for the period May - September 1935. The 1935 Datum elevation of B.M. "WL 101" at Toledo Harbor Light is 584.456 feet (178.142 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Toledo Harbor Light depend on B.M. "WL 101" at elevation 582.554 feet (177.562 meters).

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1904-Nov 1904	GAUGE ZERO	579.87 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jul 1904-May 1908	A	576.61 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Nov 1914-Oct 1917	NO 3	582.56 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1935-Sep 1935	WL 101	582.554 feet	Staff Gauge, Monthly Mean	U.S.L.S.
May 1958-Sep 1958	WL 101	582.554 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1964-Nov 1964	A	576.528 feet (175.726 meters)	Recording Gauge, Hourly Scalings	U.S.L.S.

#### Gauging Station Site (see Plate 128, page 253):

(a) July 1904 - November 1964: A recording gauge, except for the May - September 1935 period when a staff gauge was in operation, located in the basement of the Toledo Harbor Lighthouse about 9 miles northeast of the mouth of the Maumee River at Toledo.



WATER LEVEL GAUGE LOCATION  
 TOLEDO HARBOR LT., OHIO  
 1904-1964

1982

## GAUGE HISTORY

### Port Clinton, Ohio

1903 Datum was never established at Port Clinton. Elevations at Port Clinton on 1935 Datum were established by water level transfer from Monroe, Michigan, and Cleveland, Ohio, using recording gauge records at Monroe and Cleveland for the period June - September 1935. The 1935 Datum elevation of B.M. "WL 106" at Port Clinton is 581.509 feet (177.144 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Port Clinton depend on B.M. "WL 106" at elevation 579.589 feet (176.659 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Sep 1912-Oct 1915	GAUGE ZERO		Staff Gauge, Tri-Daily	U.S.E.O.
May 1935-Sep 1935	WL 106	579.589 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Apr 1955-Oct 1955	WL 106	579.589 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1958-Sep 1958	WL 106	579.589 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1967-Oct 1967	WL 106	579.589 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1970-Sep 1970	WL 106	579.589 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1973-Sep 1973	WL 106	579.589 feet	Tape Gauge, Tri-Daily	N.O.S.
Jun 1976-Sep 1976	WL 106	579.589 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1979-Sep 1979	WL 106	579.589 feet (176.659 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Gauge zero for the period 1912-1915 is 572.56 feet (174.52 meters) derived by comparison with the Cleveland gauge record.

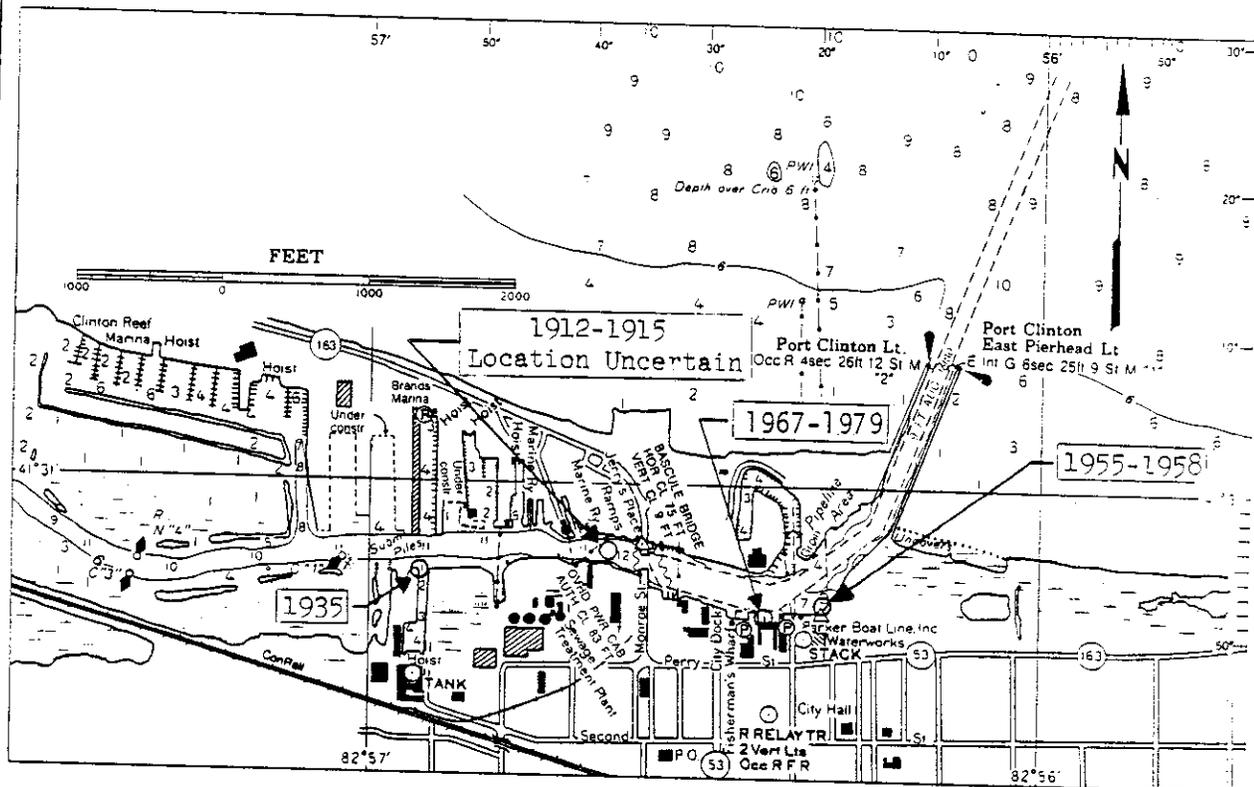
Gauging Station Sites (see Plate 129, page 256):

(a) September 1912 - October 1915: A staff gauge probably located at mouth of river.

(b) May 1935 - September 1935: A staff gauge located on the southerly side of the Portage River near the northwest corner of the Monroe Street Bridge abutment.

(c) April 1955 - September 1958: A recording gauge located on the southerly side of the Portage River at the foot of Jefferson Street.

(d) June 1967 - September 1979: A tape gauge located on the southerly side of the Portage River approximately 200 feet upstream from the foot of Jefferson Street. Recording gauges were used in 1976 and 1979.



WATER LEVEL GAUGE LOCATION

PORT CLINTON, OHIO  
1912-1979

1982

## GAUGE HISTORY

### Put-in-Bay, Ohio

1903 Datum was never established at Put-in-Bay. Elevations at Put-in-Bay on 1935 Datum were established by water level transfer from Cleveland, Ohio, using recording gauge records at Cleveland for the period May - September 1935. The 1935 Datum elevation of B.M. "CANNON" at Put-in-Bay is 582.194 feet (177.453 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Put-in-Bay depend on B.M. "CANNON" at elevation 580.278 feet (176.869 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1909-Nov 1909	CANNON	580.278 feet	Staff Gauge, Tri-Daily	U.S.E.O.
May 1935-Sep 1935	CANNON	580.278 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Jun 1948-Jun 1955	OSFH	579.450 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1961-Oct 1961	OSFH	579.450 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1964-Oct 1964	OSFH	579.450 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1967-Oct 1967	OSFH	579.450 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1970-Sep 1970	OSFH	579.450 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1973-Sep 1973	OSFH	579.450 feet	Tape Gauge, Tri-Daily	N.O.S.
Jun 1979-Sep 1979	OSFH	579.450 feet (176.616 meters)	Tape Gauge, Tri-Daily	N.O.S.

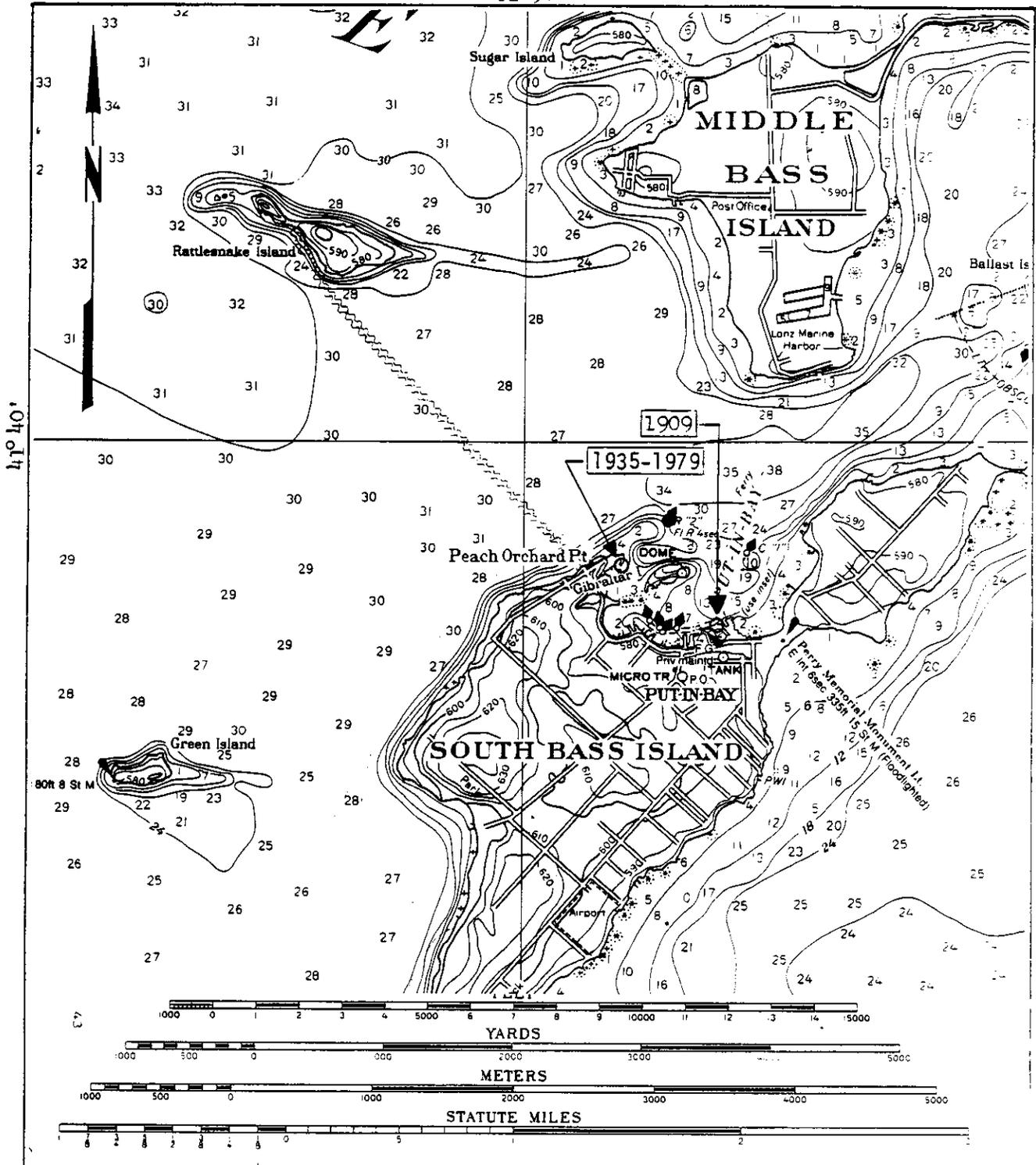
Gauging Station Sites (see Plate 130, page 259):

(a) June 1909 - November 1909: A staff gauge located at the northwest corner of the Fox Coal Company Dock and approximately 550 feet north of the cannon in Perry Park.

(b) May 1935 - October 1964: A staff gauge in 1935 and a recording gauge after May 1941 located at the inner end of northeast side of the Ohio State Fish Hatchery Dock.

(c) June 1967 - September 1979: A tape gauge located at the inner end of northeast side of the Ohio State Fish Hatchery Dock.

82° 50'



WATER LEVEL GAUGE LOCATION

PUT-IN-BAY, OHIO  
1909-1979

1982

## GAUGE HISTORY

### Marblehead, Ohio

1903 Datum was never established at Marblehead. Elevations at Marblehead on 1935 Datum were established by water level transfer from Monroe, Michigan and Cleveland, Ohio, using recording gauge records at Monroe and Cleveland for the period June - September 1959. The 1935 Datum elevation of B.M. "CELL" at Marblehead is 578.464 feet (176.316 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Marblehead were established by water level transfer from Cleveland, Ohio, and Port Stanley, Ontario, using recording gauge records for the months of June through September for the period 1959 - 1961. The elevation of B.M. "CELL" is 576.526 feet (175.725 meters) and depends on B.M. "DOORSTEP" at Cleveland at 580.494 feet (176.935 meters) IGLD (1955).

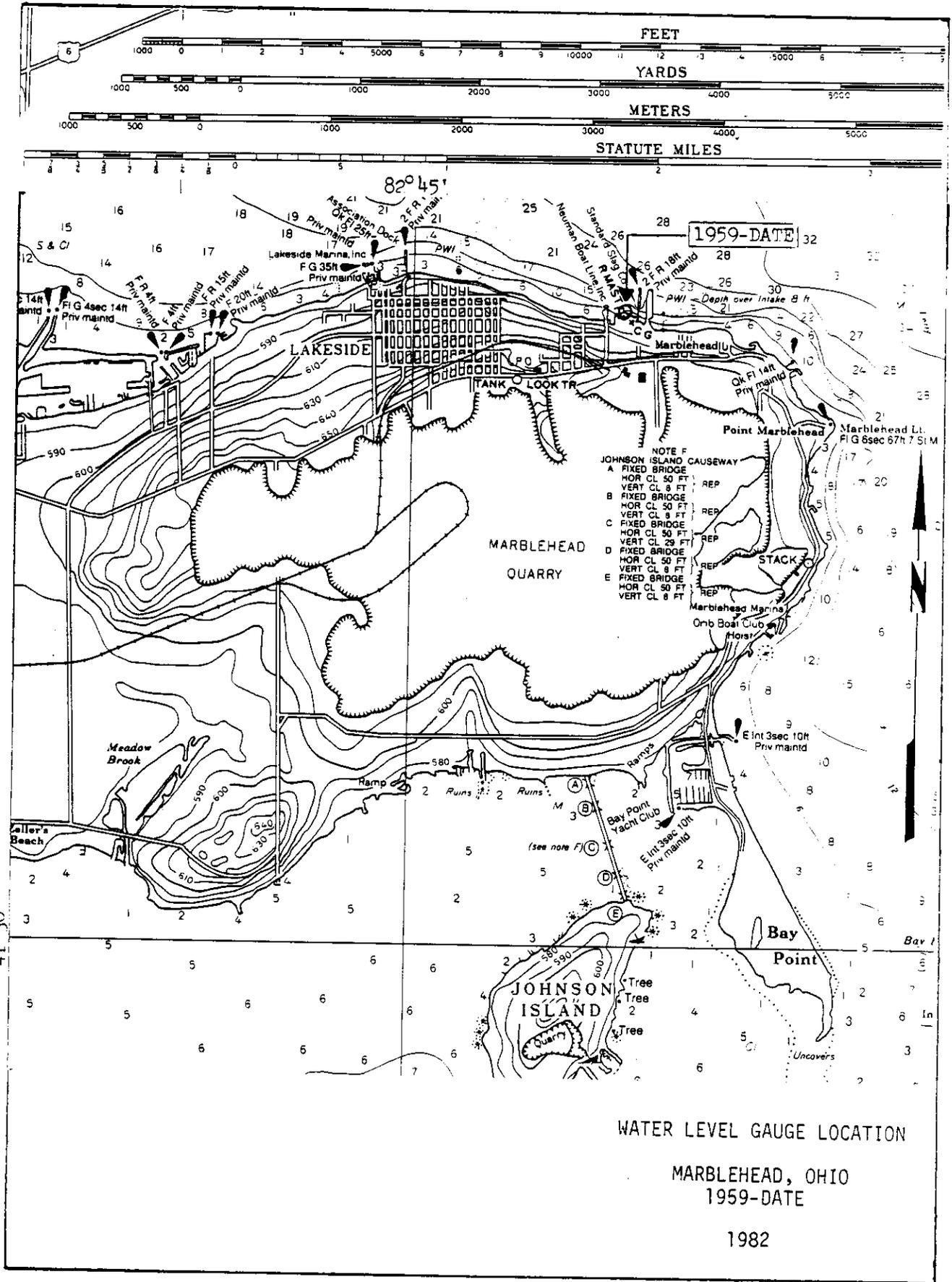
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1959-Oct 1970	CELL	576.526 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-May 1973	CELL	576.526 feet	Recording Gauge, Hourly Scalings	N.O.S.
May 1973-Jul 1982	GUARD	587.566 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jul 1982-Date	3079E	577.522 feet (176.029 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Analogue recording gauges have been used at Marblehead.

#### Gauging Station Site (see Plate 131, page 261):

(a) May 1959 - Date: A recording gauge located on the harbor side of the west breakwall at the U.S. Coast Guard boat basin, about 100 feet north of the northwest corner of the boathouse.



## GAUGE HISTORY

### Huron, Ohio

1903 Datum was never established at Huron. Elevations at Huron on 1935 Datum were established by water level transfer from Monroe, Michigan, and Cleveland, Ohio, using recording gauge records at Monroe and Cleveland for the period May - September 1935. The 1935 Datum elevation of B.M. "LAIS" at Huron is 588.357 feet (179.331 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Huron depend on B.M. "LAIS" at elevation 586.451 feet (178.750 meter) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

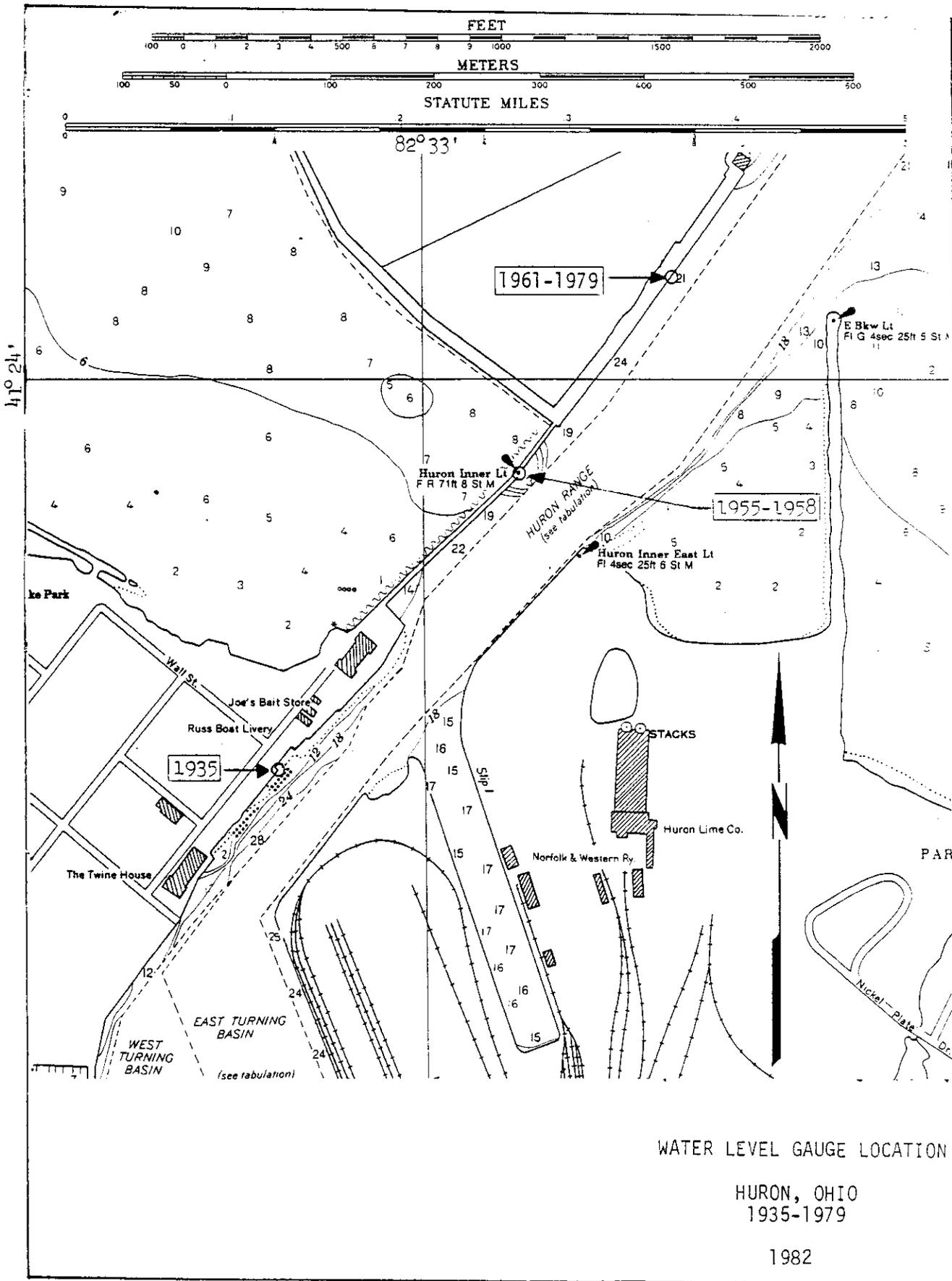
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1935-Sep 1935	LAIS	586.451 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Apr 1955-Oct 1955	LAIS	586.451 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1958-Sep 1958	LAIS	586.451 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1961-Sep 1961	LAIS	586.451 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1964-Sep 1964	LAIS	586.451 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1967-Sep 1967	POWER	578.339 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1968-Sep 1968	POWER	578.339 feet	Tape Gauge, Tri-Daily	U.S.L.S.
May 1970-Sep 1970	POWER	578.339 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1973-Sep 1973	POWER	578.339 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1976-Sep 1976	POWER	578.339 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1979-Sep 1979	POWER	578.339 feet (176.278 meters)	Recording Gauge, Hourly Scalings	N.O.S.

Gauging Station Sites (see Plate 132, page 264):

(a) May 1935 - September 1935: A staff gauge located on the westerly side of the Huron River near its mouth on the easterly corner of the Kisman Fish Company Building.

(b) April 1955 - September 1958: A recording gauge located on the river side of the west pier, approximately 600 feet north of shore adjacent to Huron Inner Light.

(c) June 1961 - September 1979: A recording gauge located on the river side of the west pier, approximately 800 feet north of Huron Inner Light. A tape gauge was used in 1968.



## GAUGE HISTORY

### Lorain, Ohio

1903 Datum was never established at Lorain. Elevations at Lorain on 1935 Datum were established by water level transfer from Monroe, Michigan, and Cleveland, Ohio, using recording gauge records at Monroe and Cleveland for the period May - September 1935. The 1935 Datum elevation of B.M. "WL 110" at Lorain is 601.723 feet (183.405 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Lorain depend on B.M. "WL 110" at elevation 599.763 feet (182.808 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Apr 1902-Jun 1904	GAUGE ZERO	570.59 feet	Staff Gauge, Twice Daily	U.S.E.O.
Oct 1910	GAUGE ZERO	570.74 feet	Staff Gauge, Tri-Daily	U.S.E.O.
Sep 1918-May 1919	GAUGE ZERO	570.78 feet	Staff Gauge, Tri-Daily	U.S.E.O.
May 1935-Sep 1935	WL 110	599.763 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Apr 1955-Oct 1955	WL 110	599.763 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1961-Sep 1961	WL 110	599.763 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1964-Oct 1964	WL 110	599.763 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1967-Sep 1967	WL 110	599.763 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1968-Sep 1968	WL 110	599.763 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1970-Aug 1970	WL 110	599.763 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1973-Sep 1973	WL 110	599.763 feet	Recording Gauge, Hourly Scalings	U.S.L.S.

Jun 1976-Sep 1976	WL 110	599.763 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1979-Sep 1979	BRIDGE	578.221 feet (176.242 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: No records are available for 9 of the 33 months indicated in the periods before 1935. Gauge zero elevation before 1935 were derived from the Cleveland gauge records.

Gauging Station Sites (see Plate 133, page 267):

(a) March 1902 - May 1919: A staff gauge located on a dock in the Black River opposite the projected foot of Second Street.

(b) May 1935 - September 1935: A staff gauge located on the westerly bank of the Black River just north of the Erie Avenue Bridge.

(c) April 1955 - October 1955: A recording gauge located on the easterly bank of the Black River in the northeast corner of the U.S. Coast Guard boat slip.

(d) June 1961 - September 1979: A recording gauge located on the east pier at the southwest corner of the U.S. Coast Guard boat slip.



## GAUGE HISTORY

### Cleveland, Ohio

Elevations at Cleveland on 1903 Datum depend on B.M. "NO 2" at elevation 577.737 feet (176.094 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. The 1903 Datum elevation of B.M. "DOORSTEP" at Cleveland is 582.435 feet (177.526 meters) as established by precise leveling in 1932 and depends on B.M. "GAGE" at elevation 577.010 feet (175.873 meters) on 1903 Datum. In establishing 1935 Datum, the elevation of B.M. "DOORSTEP" was held at 582.435 feet (177.526 meters). IGLD (1955) elevations at Cleveland depend on B.M. "DOORSTEP" at elevation 580.494 feet (176.935 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1838-Dec 1857	E PIER	575.226 feet	Staff Gauge, Monthly Mean	D.W.C.
Jul 1859-Feb 1869	E PIER	575.226 feet	Staff Gauge, Monthly Mean	U.S.L.S.
Mar 1869-Dec 1873	COPING	579.556 feet	Staff Gauge, Monthly Mean	U.S.L.S.
Jan 1874-Dec 1874	NO 1	579.102 feet	Staff Gauge, Monthly Mean	U.S.L.S.
Jan 1875-May 1903	NO 2	575.809 feet	Staff Gauge, Monthly Mean	U.S.L.S.
Nov 1903-May 1909	NO 2	575.809 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1909-Jun 1910	FS NO 1	579.140 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1910-Dec 1931	GAGE	575.069 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Dec 1931-Apr 1932	DOORSTEP	580.494 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Apr 1932-May 1965	DOORSTEP	580.494 feet	Recording Gauge, Hourly Scalings	U.S.L.S.

May 1965-Oct 1970	GORDON	576.385 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Jun 1974	GORDON	576.385 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1974-Date	DON	577.044 feet (175.883 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Monthly means published in December 1896 report of United States Deep Waterways Commission, House Doc. No. 192, 54th Congress, 2nd Session. Means for all months in 1852 and some months in 1838, 1845-1847, and 1856-1857.

Analogue recording gauges used before November 1966. Since that date, digital recording gauges have been used. Telemetering service was installed at Cleveland in January 1974.

Gauging Station Sites (see Plates 134-135, pages 270-271):

(a) May 1838 - February 1869: A staff gauge located on the second course of masonry at the inner end of the east pier of the Cuyahoga River.

(b) March 1869 - October 1888: A staff gauge located on a dock at the foot of Superior Street on the easterly side of the Cuyahoga River.

(c) October 1888 - December 1896: A staff gauge located in the U.S. Engineers boathouse on the west side of the river entrance.

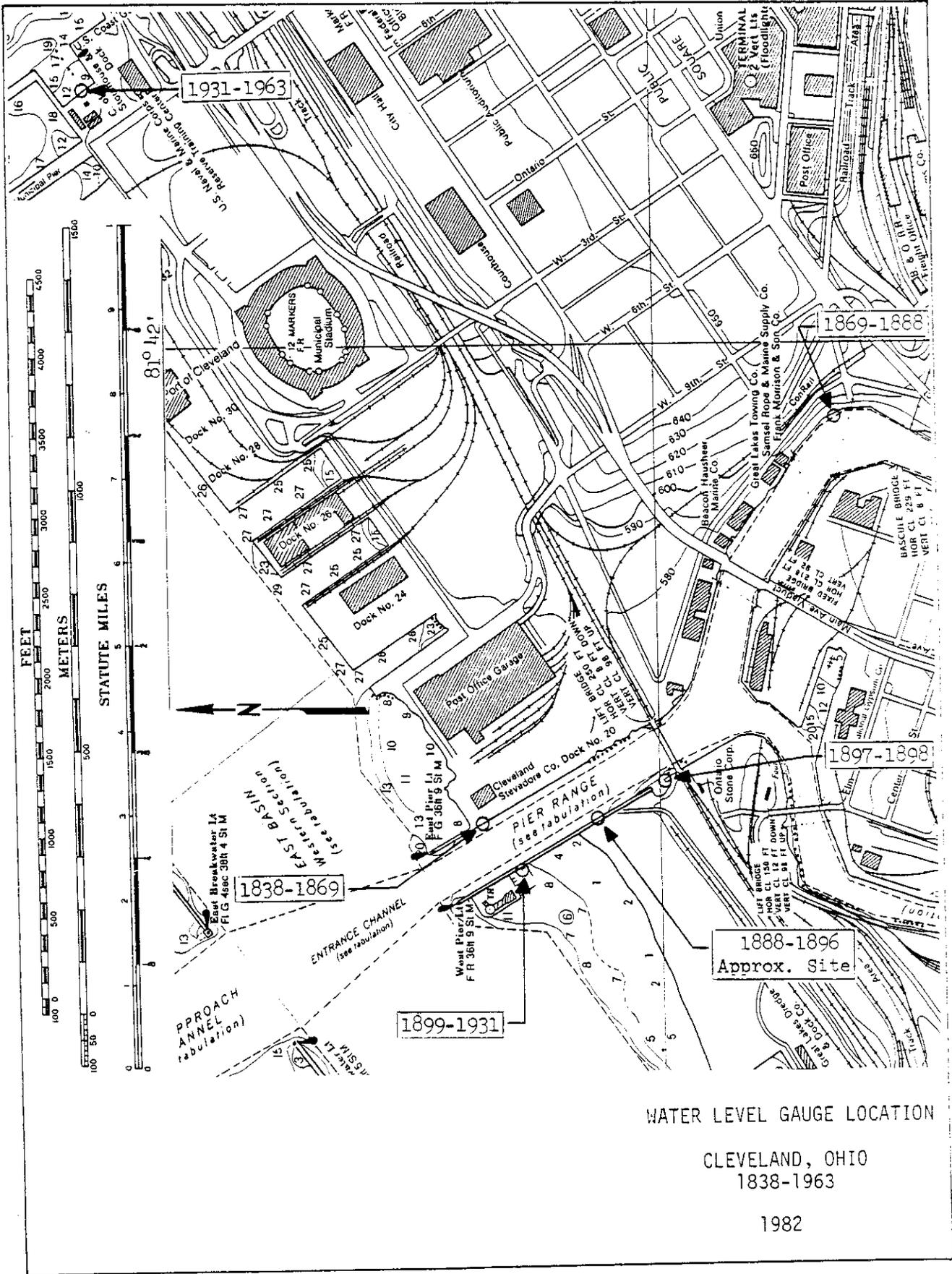
(d) January 1897 - December 1898: A staff gauge located in a small shed 175 feet north of the railroad bridge on the westerly side of the river.

(e) January 1899 - December 1931: A staff gauge replaced with a recording gauge in November 1903 located on the west pier. The location was moved several times between the U.S. Coast Guard Station and the U.S. Engineers warehouse.

(f) December 1931 - December 1963: A staff gauge replaced with a recording gauge in April 1932 located in the U.S. Engineers boat slip at the foot of East Ninth Street.

(g) January 1964 - Date: A recording gauge located just west of the boat ramp in Gordon Park.

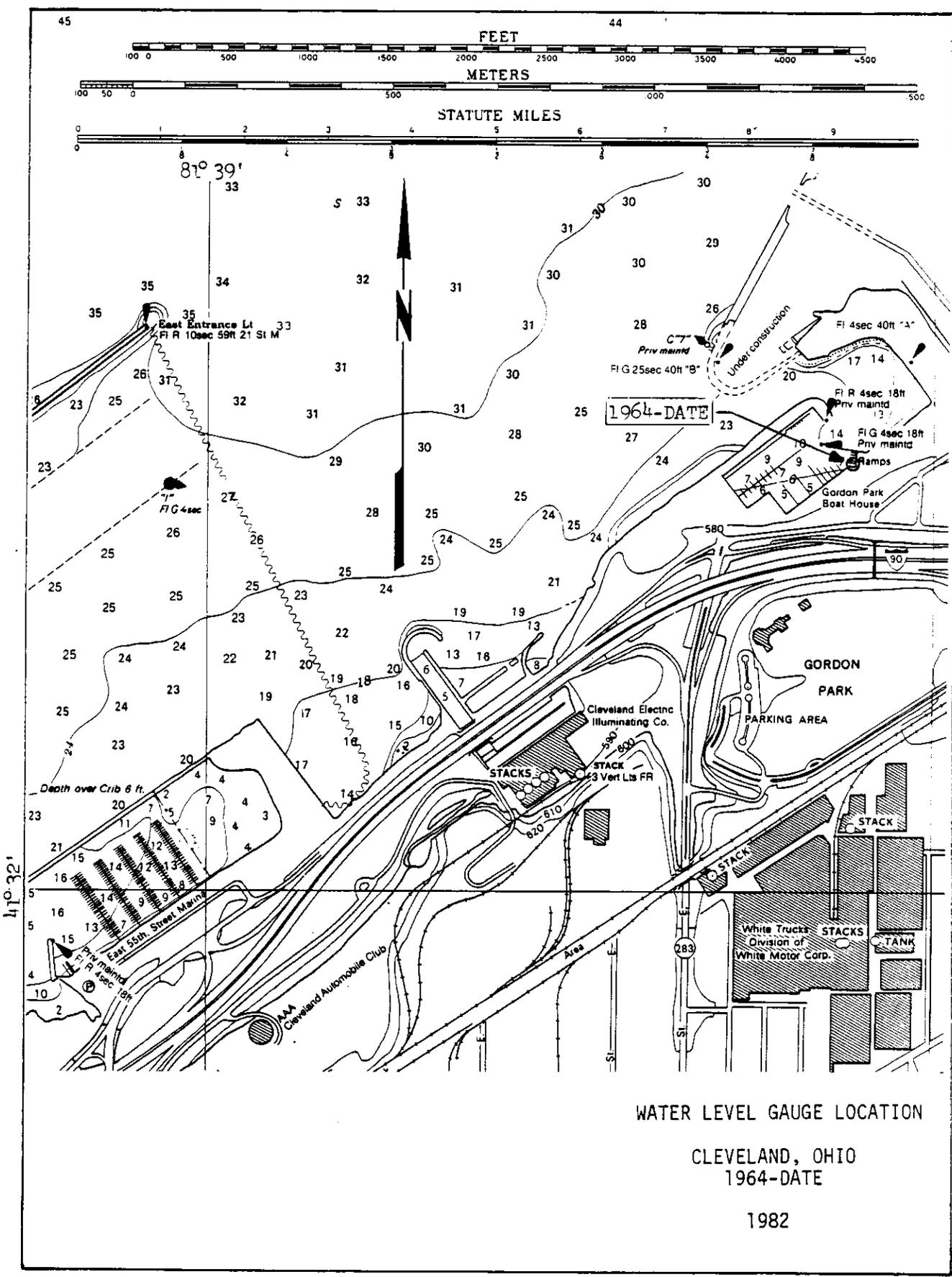
41° 30'



WATER LEVEL GAUGE LOCATION

CLEVELAND, OHIO  
1838-1963

1982



## GAUGE HISTORY

### Fairport, Ohio

1903 Datum was never established at Fairport. Elevations at Fairport on 1935 Datum were established by water level transfer from Cleveland, Ohio, using recording gauge records at Cleveland for the period May - September 1935. The 1935 Datum elevation of B.M. "LIGHTHOUSE" at Fairport is 614.819 feet (187.397 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 (177.526 meters) feet on 1935 Datum. IGLD (1955) elevations at Fairport depend on B.M. "LIGHTHOUSE" at elevation 612.781 feet (186.776 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

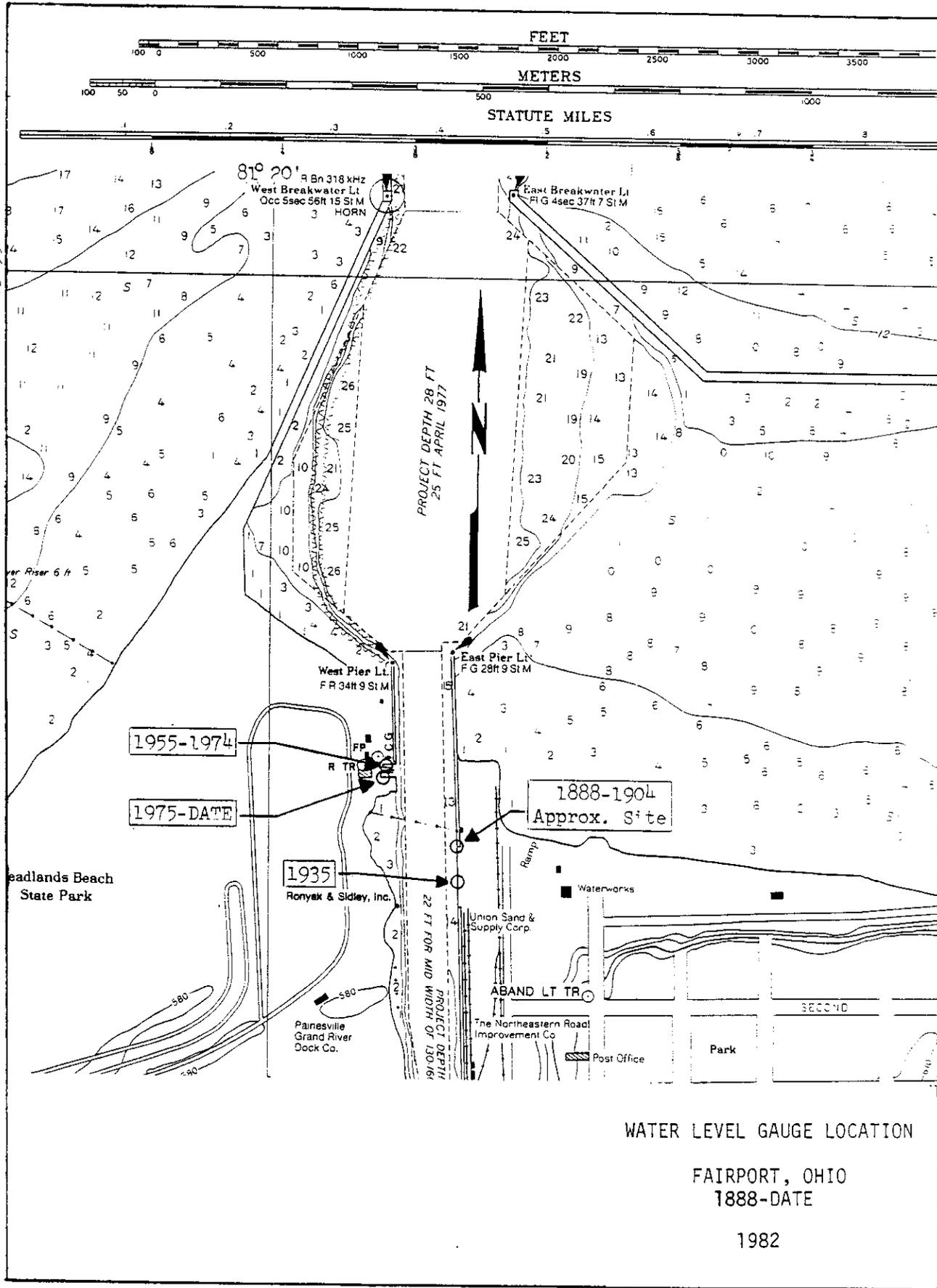
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Aug 1888	LIGHTHOUSE	612.781 feet	Staff Gauge, Monthly Mean	U.S.E.O.
Jun 1902-Jan 1904	LIGHTHOUSE	612.781 feet	Staff Gauge, Tri-Daily	U.S.L.S.
May 1935-Sep 1935	LIGHTHOUSE	612.781 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Apr 1955-Oct 1955	LIGHTHOUSE	612.781 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1958-Sep 1958	LIGHTHOUSE	612.781 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1961-Sep 1961	LIGHTHOUSE	612.781 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1964-Oct 1964	LIGHTHOUSE	612.781 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1967-Oct 1967	LIGHTHOUSE	612.781 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1968-Oct 1968	LIGHTHOUSE	612.781 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1970-Sep 1970	LIGHTHOUSE	612.781 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1973-Sep 1973	LIGHTHOUSE	612.781 feet	Recording Gauge, Hourly Scalings	N.O.S.

Jun 1974-Sep 1974	LIGHTHOUSE	612.781 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1975-Jun 1978	LIGHTHOUSE	612.781 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1978-Date	FLAG	576.585 feet (175.743 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Analogue recording gauges used prior to June 1982. Since that date, digital recording gauges have been used. Telemetry service was installed at Fairport in June 1982.

Gauging Station Sites (see Plate 136, page 274):

- (a) August 1888 - June 1904: A staff gauge located on the easterly side of the Grand River near its mouth.
- (b) May 1935 - September 1935: A staff gauge located on a piling on the easterly side of the Grand River approximately 1200 feet south of the east pier light.
- (c) April 1955 - September 1974: A recording gauge located in the north-west corner of the U.S. Coast Guard boat slip near the mouth of the Grand River.
- (d) June 1975 - July 1982: A recording gauge located at the southwest corner of the U.S. Coast Guard boat slip on the west side near the mouth of the Grand River.
- (e) July 1982 - Date: A recording gauge located in a gauge house near the Southwest corner of the U.S. Coast Guard boat slip on the west side near the mouth of the Grand River.



## GAUGE HISTORY

### Ashtabula, Ohio

1903 Datum was never established at Ashtabula. Elevations at Ashtabula on 1935 Datum were established by water level transfer from Cleveland, Ohio using recording gauge records at Cleveland for the period May - September 1935. The 1935 Datum elevation of B.M. "BRASS DISK" at Ashtabula is 572.800 feet (174.589 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Ashtabula depend on B.M. "BRASS DISK" at elevation 570.853 feet (173.996 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Sep 1872-Nov 1972	GAUGE ZERO		Staff Gauge, Once Daily	U.S.E.O.
Oct 1884-Dec 1892	GAUGE ZERO		Staff Gauge, Tri-Daily	U.S.E.O.
Jul 1903-Jan 1904	GAUGE ZERO		Staff Gauge, Tri-Daily	U.S.E.O.
Mar 1910-Dec 1915	GAUGE ZERO		Staff Gauge, Tri-Daily	U.S.E.O.
May 1935-Sep 1935	BRASS DISK	570.853 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Apr 1955-Oct 1955	BRASS DISK	570.853 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1961-Sep 1961	BRASS DISK	570.853 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1964-Sep 1964	BRASS DISK	570.853 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1967-Oct 1967	BRASS DISK	570.853 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1968-Oct 1968	BRASS DISK	570.853 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1970-Sep 1970	BRASS DISK	570.853 feet	Recording Gauge, Hourly Scalings	U.S.L.S.

Jun 1973-Sep 1973	BRASS DISK	570.853 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1976-Sep 1976	BRASS DISK	570.853 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1979-Sep 1979	WL 114	585.637 feet (178.502 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Gauge zero elevations before 1935 vary from 572.50 to 572.76 feet (174.50 to 174.58 meters) and were derived from the Cleveland gauge records. Readings available for 1 to 5 months in years from 1884 through 1892, except none available for 1885, 1888, and 1890. Readings only for open water months during the 1910-1915 period are available.

Gauging Station Sites (see Plate 137, page 277):

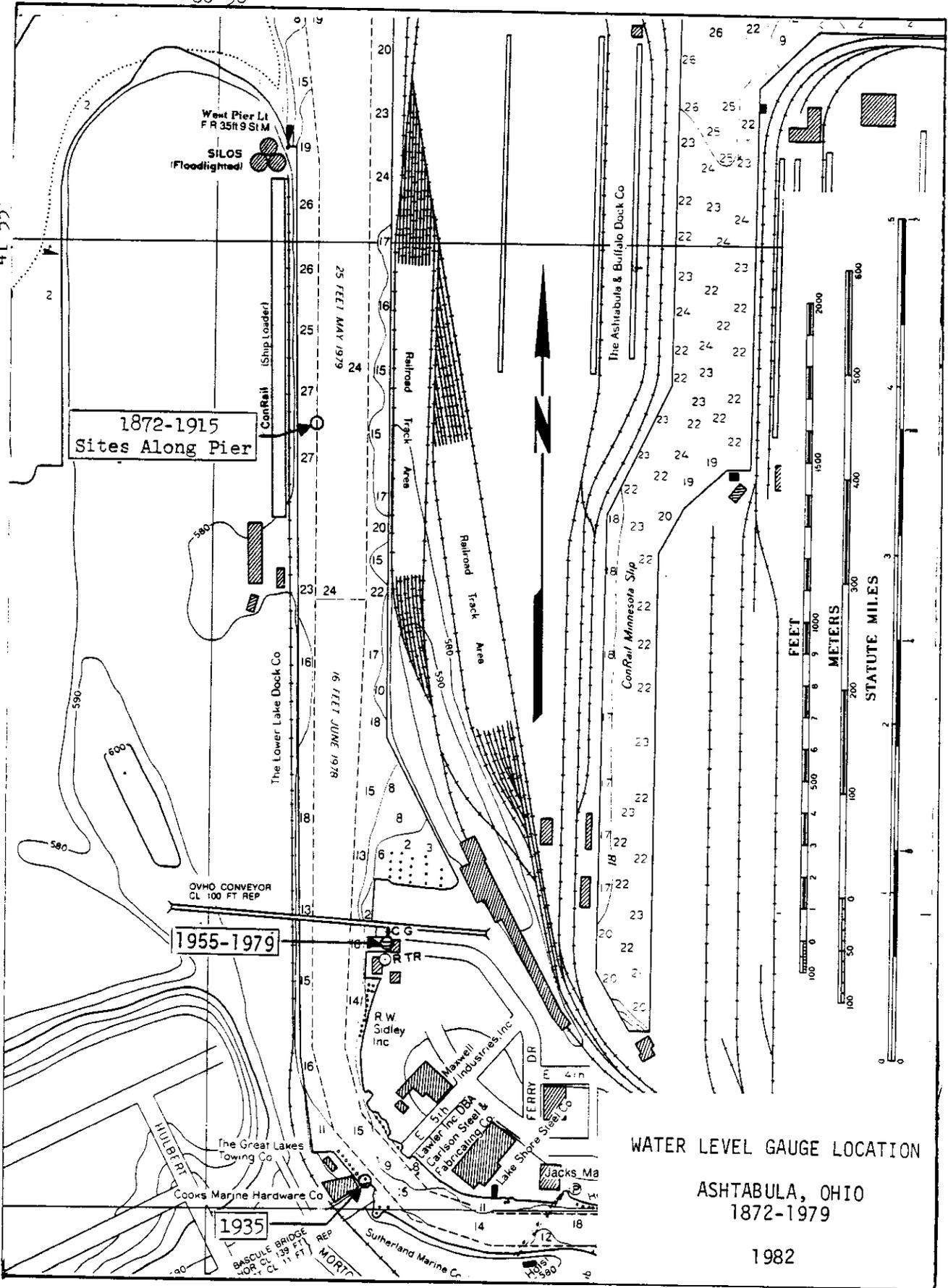
(a) September 1872 - December 1915: A staff gauge located at various indefinite sites along the west pier, at the mouth of Ashtabula River.

(b) May 1935 - September 1935: A staff gauge located at the westerly end of the Fifth Street Bridge just north of the retaining wall.

(c) April 1955 - September 1979: A recording gauge located at the northeast corner of the U.S. Coast Guard boat slip in the Ashtabula River.

80° 50'

41° 55'



WATER LEVEL GAUGE LOCATION

ASHTABULA, OHIO  
1872-1979

1982

## GAUGE HISTORY

### Conneaut, Ohio

1903 Datum was never established at Conneaut. Elevations at Conneaut on 1935 Datum were established by water level transfer from Cleveland, Ohio, using recording gauge records at Cleveland for the period May - September 1935. The 1935 Datum elevation of B.M. "P&C NO 5" at Conneaut is 578.964 feet (176.468 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Conneaut depend on B.M. "WL 116A" at elevation 581.272 feet (177.172 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jul 1893-Nov 1898	GAUGE ZERO		Staff Gauge, Tri-Daily	U.S.E.O.
Jul 1911-Nov 1919	GAUGE ZERO		Staff Gauge, Tri-Daily	U.S.E.O.
May 1935-Sep 1935	P&C NO 5	577.071 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Apr 1955-Oct 1955	CONTROL	577.027 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1961-Jul 1961	WL 116A	581.272 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1964-Oct 1964	WL 116A	581.272 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1967-Oct 1967	WL 116A	581.272 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1968-Oct 1968	WL 116A	581.272 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1970-Sep 1970	WL 116A	581.272 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1973-Sep 1973	WL 116A	581.272 feet	Tape Gauge, Tri-Daily	N.O.S.
Jun 1976-Sep 1976	WL 116A	581.272 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1979-Sep 1979	WL 116A	581.272 feet (177.172 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Gauges read during navigation season in periods shown, except no readings in 1894, 1917, and 1918. Elevations of the gauge zero vary from 572.43 to 572.63 feet (174.48 to 174.54 meters) as derived from Cleveland gauge records.

Gauging Station Sites (see Plate 138, page 280):

(a) July 1893 - November 1919: A staff gauge located at various sites along the westerly side of the river about one-half mile upstream of the mouth of the Conneaut River.

(b) May 1935 - September 1935: A staff gauge located on the westerly side of the Conneaut River approximately 2500 feet from the mouth.

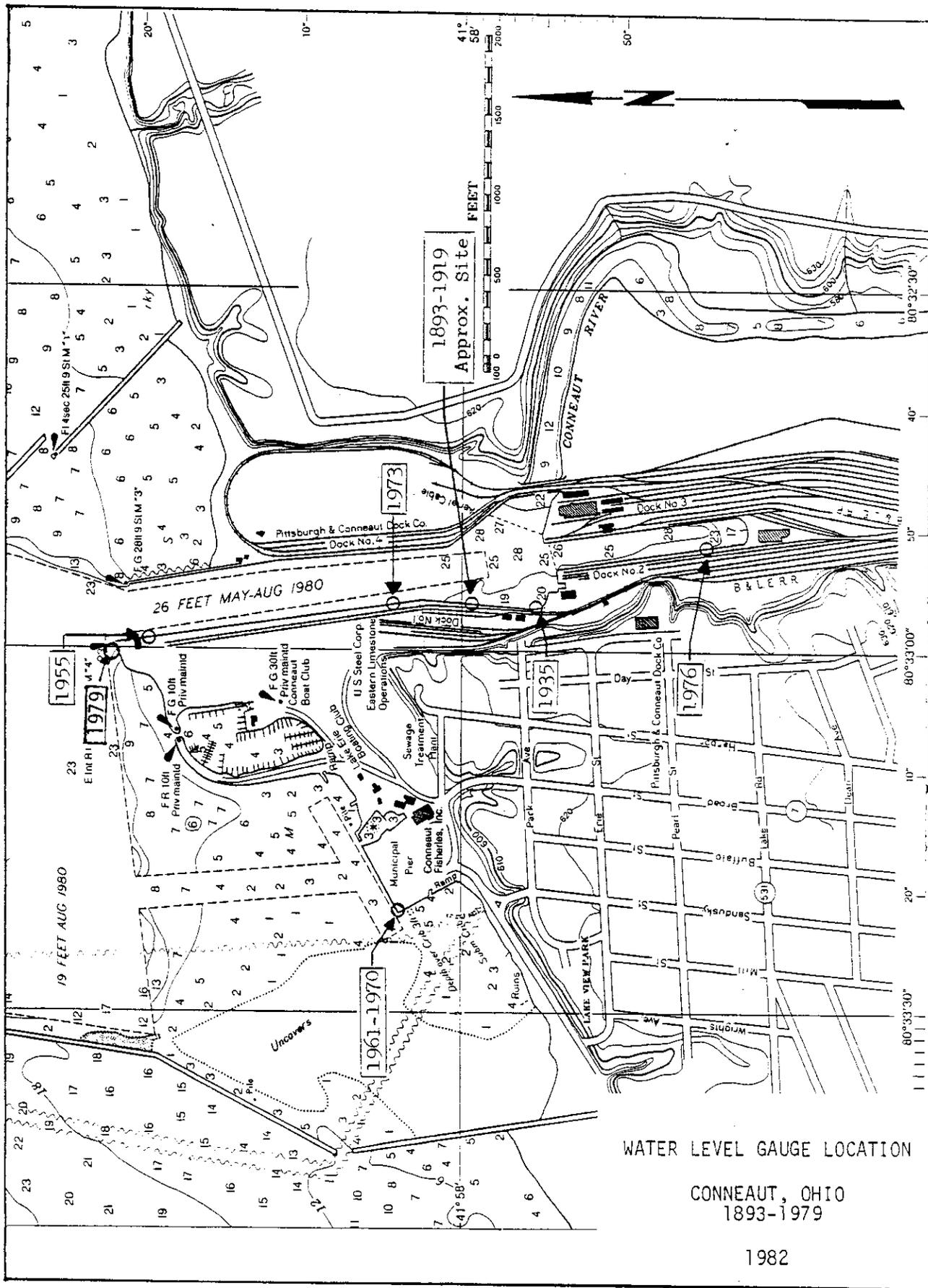
(c) April 1955 - October 1955: A recording gauge located at the southwest corner of the U.S. Coast Guard boat slip at the mouth of the Conneaut River.

(d) June 1961 - September 1970: A recording gauge located on the westerly face of the northwest corner of the municipal pier.

(e) June 1973 - September 1973: A tape gauge located at the southerly end of the U.S. Steel boat slip at the mouth of the Conneaut River.

(f) June 1976 - September 1976: A recording gauge located at the Pittsburgh and Conneaut Coal Company Dock #2 near the southwest inner corner.

(g) June 1979 - September 1979: A recording gauge located on the west side of the entrance harbor at the north end of the pier.



WATER LEVEL GAUGE LOCATION

CONNEAUT, OHIO  
1893-1979

1982

## GAUGE HISTORY

### Erie, Pennsylvania

Elevations at Erie on 1903 Datum depend on B.M. "USE NO 1" at elevation 577.591 feet (176.050 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Erie on 1935 Datum were established by water level transfer from Cleveland, Ohio, and Buffalo, New York, using recording gauge records at Cleveland and Buffalo for the period June - October 1934. The 1935 Datum elevation of B.M. "USE NO 1" at Erie is 577.548 feet (176.037 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Erie depend on B.M. "RANGE" at elevation 573.319 feet (174.748 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1859-Dec 1869	GAUGE ZERO		Staff Gauge, Monthly Mean	U.S.L.S.
Jan 1870-Jun 1873	NO 3 MEADE	579.84 feet	Staff Gauge, Monthly Mean	U.S.L.S.
Jun 1873-Feb 1881	NO 1 LEE	573.550 feet	Staff Gauge, Monthly Mean	U.S.L.S.
Mar 1881-Aug 1900	USE NO 1	575.698 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Sep 1900-Dec 1903	USE NO 1	575.698 feet	Staff Gauge, Monthly Mean	U.S.E.O.
Jan 1904-Dec 1908	USE NO 1	575.698 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1934-Oct 1934	USE NO 1	575.698 feet	Staff Gauge, Tri-Daily	U.S.L.S.
May 1955-Oct 1955	USE NO 1	575.698 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Apr 1958-Oct 1970	RANGE	573.319 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	RANGE	573.319 feet (174.748 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Gauge operated only during open water season. Elevation of gauge zeros varied from 578.21 to 578.46 feet (176.24 176.31 meters) and were derived from records at Cleveland and Port Colborne. Analogue recording gauges have been used at Erie.

Gauging Station Sites (see Plate 139, page 283):

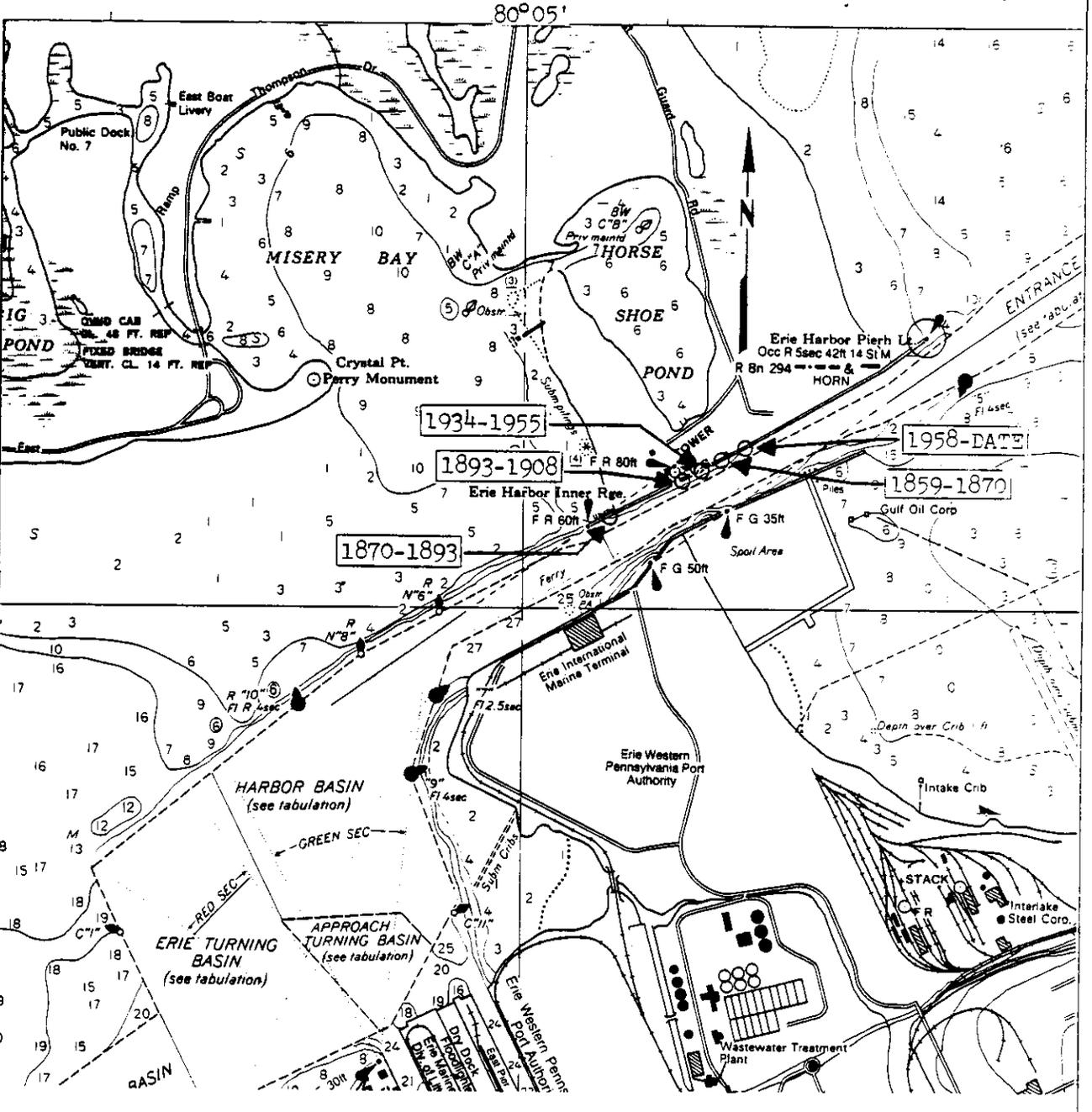
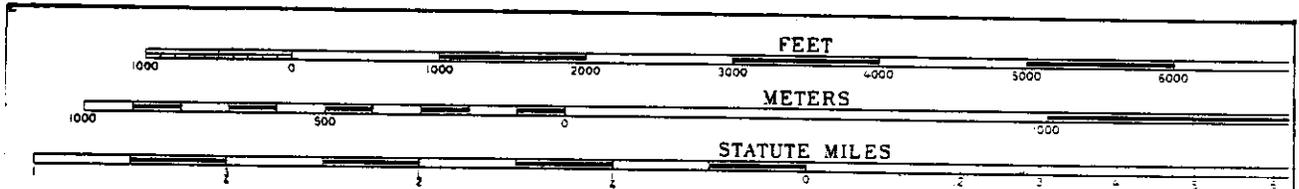
(a) June 1859 - April 1870: A staff gauge located at the northwest corner of the Beacon Pier.

(b) April 1870 - November 1893: A staff gauge located on the boat pier on Presque Isle.

(c) December 1893 - December 1908: A staff gauge, replaced with a recording gauge in December 1903, located on the north pier of Presque Isle near the U.S. Life Saving Station and light keeper dwelling.

(d) May 1934 - October 1955: A staff gauge located on the northerly side of the entrance to the U.S. Coast Guard slip on Presque Isle.

(e) April 1958 - Date: A recording gauge located on the north pier on Presque Isle, approximately 900 feet east of the U.S. Coast Guard boat slip.



WATER LEVEL GAUGE LOCATION  
ERIE, PENNSYLVANIA  
1859-DATE

1982

## GAUGE HISTORY

### Barcelona, New York

1903 Datum was never established at Barcelona. Elevations at Barcelona on 1935 Datum were established by water level transfer from Erie, Pennsylvania, using 96 simultaneous 5-minute readings of temporary staff gauges at Barcelona and Erie on September 15, 1948. The 1935 Datum elevation of B.M. "KAY" at Barcelona is 579.061 feet (176.498 meters) and depends on the elevations of B.M. "RANGE" at Erie as being 575.169 feet (175.312 meters) on 1935 Datum. IGLD (1955) elevations at Barcelona depend on B.M. "KAY" at elevation 577.129 feet (175.909 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

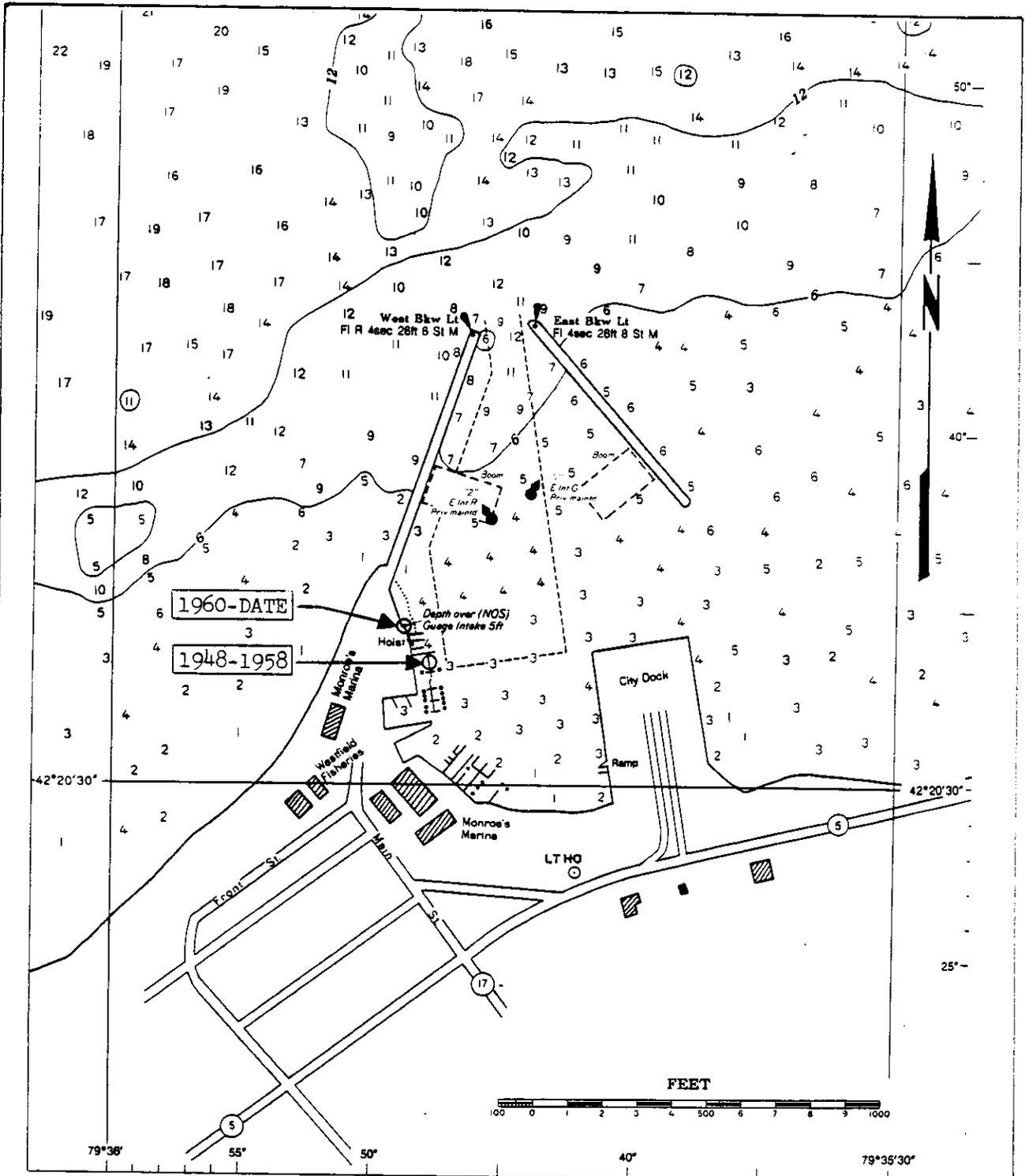
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1948-Sep 1958	KAY	577.129 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Sep 1960-Oct 1970	KAY	577.129 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	KAY	577.129 feet (175.909 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Analog recording gauges used prior to November 1966. Since that date, digital recording gauges have been used at Barcelona.

#### Gauging Station Sites (see Plate 140, page 285):

(a) September 1948 - September 1958: A temporary staff gauge in 1948 and a tape gauge in 1958 located along breakwater ruins about 200 feet south of inner end of the west breakwater.

(b) September 1960 - Date: A recording gauge located at the inner end of the west breakwater.



WATER LEVEL GAUGE LOCATION  
 BARCELONA, NEW YORK  
 1948-DATE  
 1982

## GAUGE HISTORY

### Dunkirk, New York

1903 Datum was never established at Dunkirk. Elevations at Dunkirk on 1935 Datum were established by water level transfer from Cleveland, Ohio, using recording gauge records at Cleveland for the period May - September 1935. The 1935 Datum elevation of B.M. "NELSON BLOCK" at Dunkirk is 588.671 feet (179.427 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Dunkirk depend on B.M. "WL 119" at elevation 600.717 feet (183.099 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Aug 1875-Sep 1875	STONE MONUMENT	578.819 feet	Staff Gauge, Tri-Daily	U.S.L.S.
May 1935-Sep 1935	NELSON BLOCK	586.778 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Jun 1943-Sep 1943	NELSON BLOCK	586.778 feet	Staff Gauge, Tri-Daily	U.S.L.S.
May 1955-Oct 1955	WL 119	600.717 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Apr 1958-Oct 1959	WL 118	578.705 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1967-Sep 1967	WL 119	600.717 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1970-Sep 1970	WL 119	600.717 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1973-Sep 1973	WL 119	600.717 feet	Tape Gauge, Tri-Daily	N.O.S.
Jun 1976-Sep 1976	WL 119	600.717 feet	Tape Gauge, Tri-Daily	N.O.S.
Jun 1979-Sep 1979	WL 119	600.717 feet (183.099 meters)	Tape Gauge, Tri-Daily	N.O.S.

Gauging Station Sites (see Plate 141, page 288):

(a) August 1875 - September 1875: A staff gauge located at the west end of the Beacon (now Pierhead Light) pier.

(b) May 1935 - October 1955: A staff gauge located at the inner end of the Beacon (now Pierhead Light) pier.

(c) April 1958 - October 1959: A recording gauge located on the Niagara Mohawk Power Corporation outfall pipe on the northerly shore of harbor.

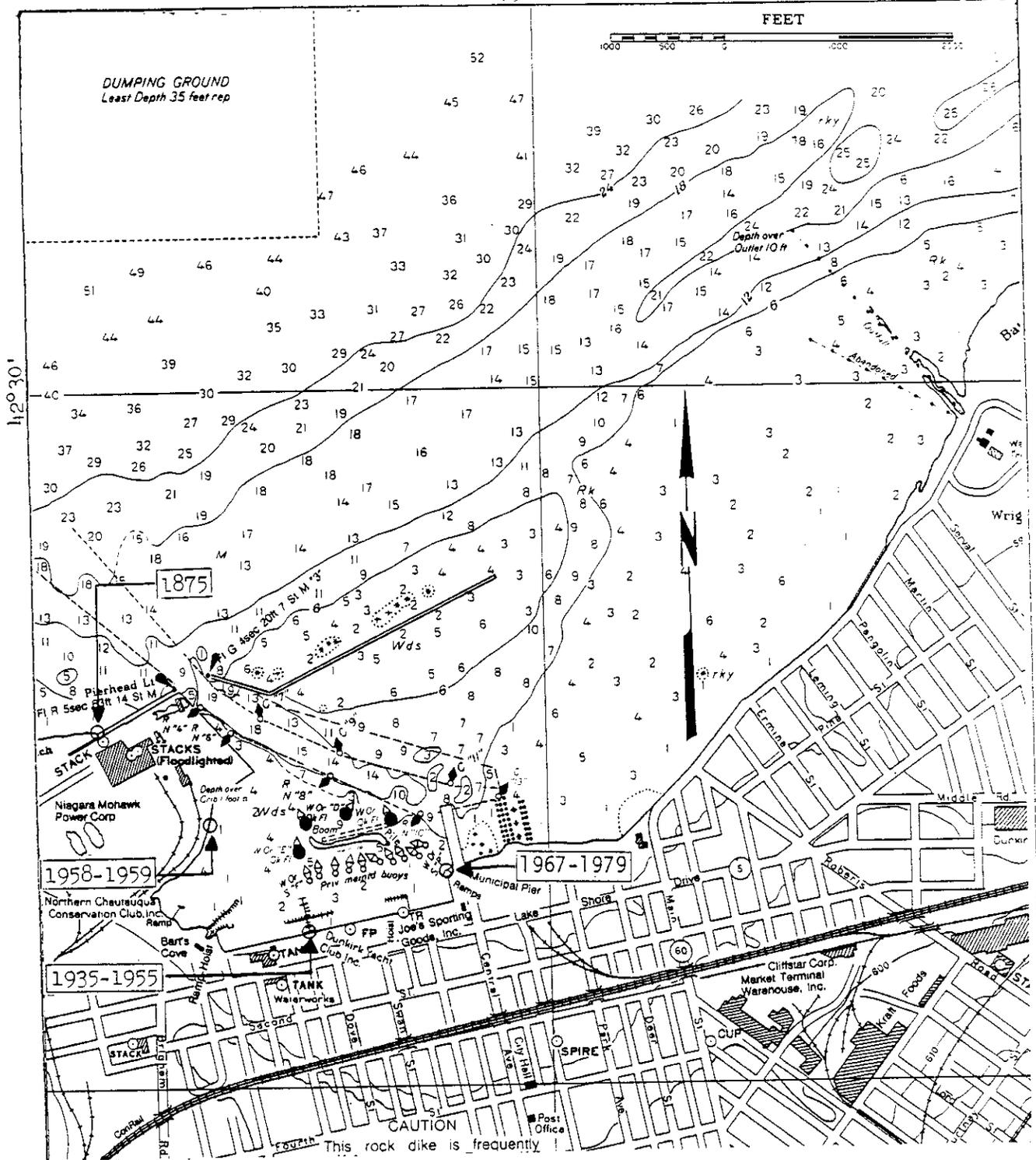
(d) June 1967 - September 1979: A tape gauge located on the west side of the city dock at the north end of Central Avenue.

79°20'

FEET



DUMPING GROUND  
Least Depth 35 feet rep



WATER LEVEL GAUGE LOCATION

DUNKIRK, NEW YORK  
1875-1979

1982

## GAUGE HISTORY

### Sturgeon Point, New York

1903 and 1935 Datums were never established at Sturgeon Point. IGLD (1955) elevations at Sturgeon Point depend on B.M. "STURGEON" at elevation 583.163 feet (177.748 meters) as established by water level transfer from Cleveland, Ohio, and Port Stanley, Ontario, using recording gauge records for the period June - September 1969.

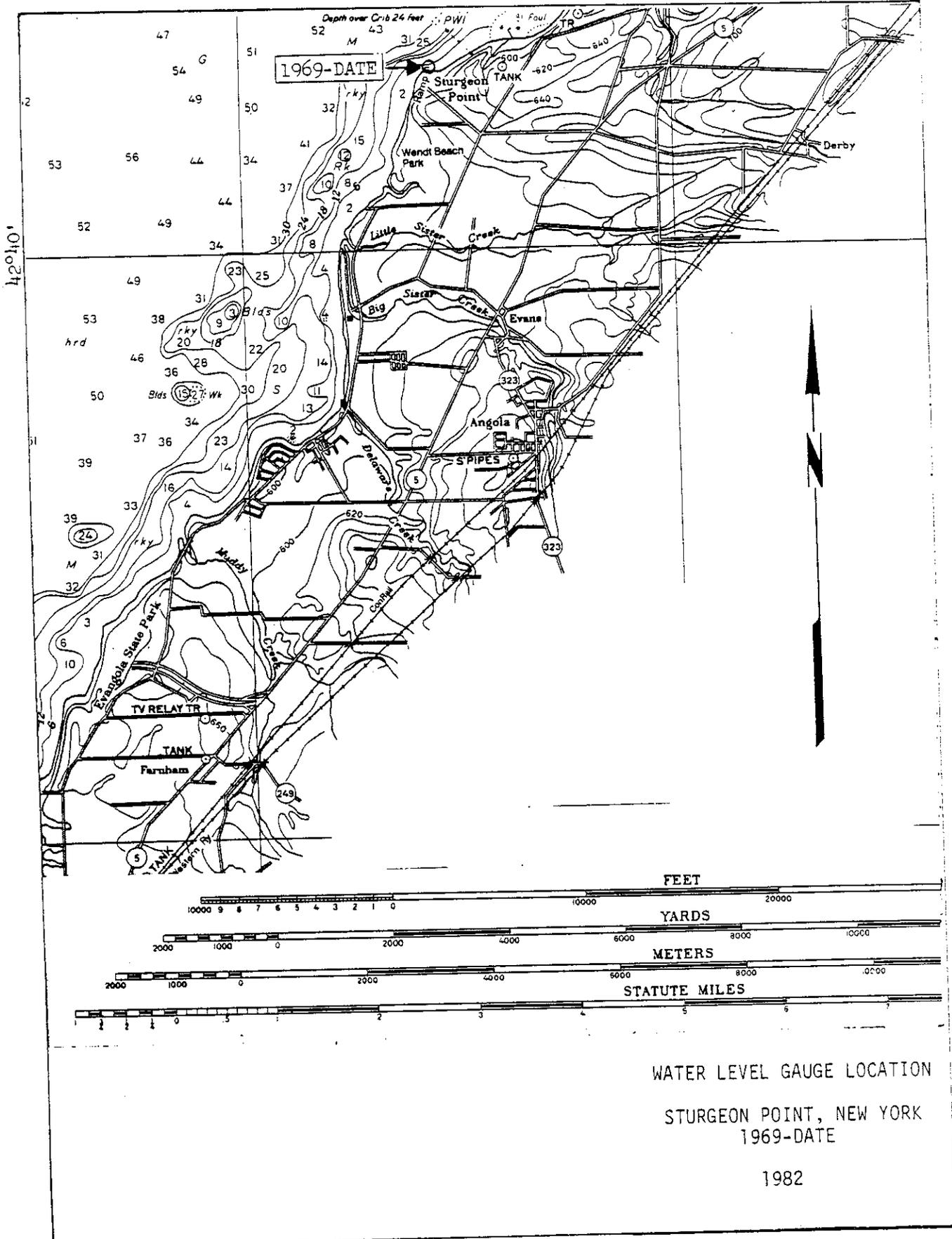
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1969-Oct 1970	STURGEON	583.163 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Jul 1979	STURGEON	583.163 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jul 1979-Date:	WATER	647.538 feet (197.370 meters)	Recording Gauge, Hourly Scalings	N.O.S.

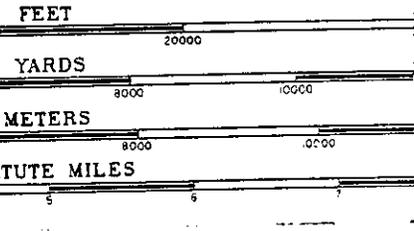
NOTE: Digital recording gauges have been used at Sturgeon Point.

#### Gauging Station Site (see Plate 142, page 290):

(a) May 1969 - Date: A recording gauge located on beach about 100 feet west of pier.



1969-DATE



WATER LEVEL GAUGE LOCATION  
 STURGEON POINT, NEW YORK  
 1969-DATE  
 1982

## GAUGE HISTORY

### Lackawanna, New York

1903 Datum was never established at Lackawanna. Elevations at Lackawanna on 1935 Datum were established in 1937 by precise levels from Buffalo, New York. The 1935 Datum elevation of B.M. "HANNA" at Lackawanna is 584.032 feet (178.013 meters) and depends on the elevation of B.M. "BUFFALO L.H." at Buffalo as being 590.221 feet (179.899) on 1935 Datum. IGLD (1955) elevations at Lackawanna depend on B.M. "FURNACE" at elevation 585.706 feet (178.523 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1936-Oct 1937	HANNA	582.226 feet	Staff Gauge, Tri-Daily	U.S.L.S.
May 1955-Oct 1955	FURNACE	585.706 feet	Staff Gauge, Tri-Daily	U.S.L.S.
Jun 1958-Sep 1958	FURNACE	585.706 feet	Tape Gauge, Tri-Daily	U.S.L.S.
Jun 1959-Sep 1960	GLPC	584.584 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1961-Sep 1961	FURNACE	585.706 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1964-Sep 1964	FURNACE	585.706 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
May 1967-Sep 1970	FURNACE	585.706 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Jun 1971-Oct 1971	FURNACE	585.706 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1972-Oct 1972	FURNACE	585.706 feet	Recording Gauge, Hourly Scalings	N.O.S.
May 1973-Sep 1973	FURNACE	585.706 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1976-Sep 1976	FURNACE	585.706 feet	Recording Gauge, Hourly Scalings	N.O.S.

Jun 1977-Sep 1977	POWER NO 5	586.228 feet	Recording Gauge, Hourly Scalings	N.O.S.
Jun 1979-Sep 1979	POWER NO 5	586.228 feet (178.682 meters)	Recording Gauge, Hourly Scalings	N.O.S.

Gauging Station Sites (see Plate 143, page 293):

(a) May 1936 - October 1955: A staff gauge located near the southeast corner of the Fuhrman Boulevard Bridge over the Union Canal on the southwest corner of the guard crib.

(b) June 1958 - September 1960: A tape gauge in 1958 and a recording gauge in 1959-1960 located on the north bank of Union Canal about 600 feet west of Fuhrman Boulevard Bridge.

(c) May 1961 - September 1979: A recording gauge located at the northerly end of the Bethlehem Steel Company Dock approximately 450 feet south of the Union Canal Light.



## GAUGE HISTORY

### Buffalo, New York

Elevations at Buffalo on 1903 Datum depend on B.M. "BUFFALO LH" at elevation 590.101 feet (179.863 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Buffalo on 1935 Datum were established by water level transfer from Cleveland, Ohio, using recording gauge records at Cleveland for the months of May through November for the period 1933-1935. The 1935 Datum elevation of B.M. "BUFFALO LH" at Buffalo is 590.221 feet (179.899 meters) and depends on the elevation of B.M. "DOORSTEP" at Cleveland as being 582.435 feet (177.526 meters) on 1935 Datum. IGLD (1955) elevations at Buffalo depend on B.M. "BUFFALO LH" at elevation 588.375 feet (179.337 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Aug 1819-Nov 1851	GUARD LOCK	574.72 feet	Staff Gauge, Monthly Mean	D.W.C.
Jun 1859-Nov 1869	WHITE STONE	579.867 feet	Staff Gauge, Monthly Mean	U.S.L.S.
Mar 1887-Feb 1899	BUFFALO LH	588.375 feet	Staff Gauge, Monthly Mean	U.S.E.O.
Feb 1899-Oct 1970	BUFFALO LH	588.375 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	BUFFALO LH	588.375 feet (179.337 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Scattered monthly levels published in December 1896 report of United States Deep Waterways Commission, House Doc. No 192, 54th Congress, 2nd Session.

Analogue recording gauges used prior to April 1968. Since that date, digital recording gauges have been used. Telemetering service was installed at Buffalo in March 1978.

#### Gauging Station Sites (see Plates 144-145, pages 296-297):

(a) August 1819 - November 1851: A staff gauge located in the vicinity of the guard lock of the old Erie Canal near the International Railroad Bridge at Black Rock.

(b) June 1859 - November 1869: A staff gauge located on the east side of Erie Basin about one-quarter mile north of the mouth of the Buffalo River near the warehouse of the Western Transportation Company.

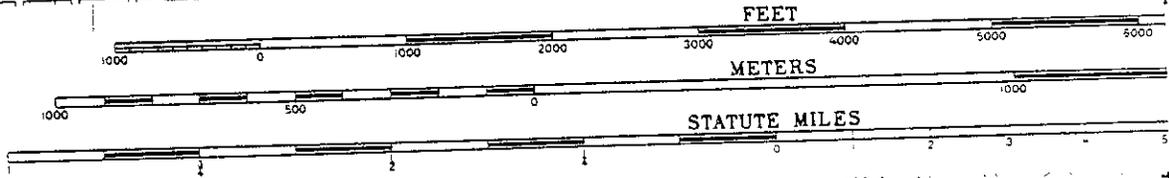
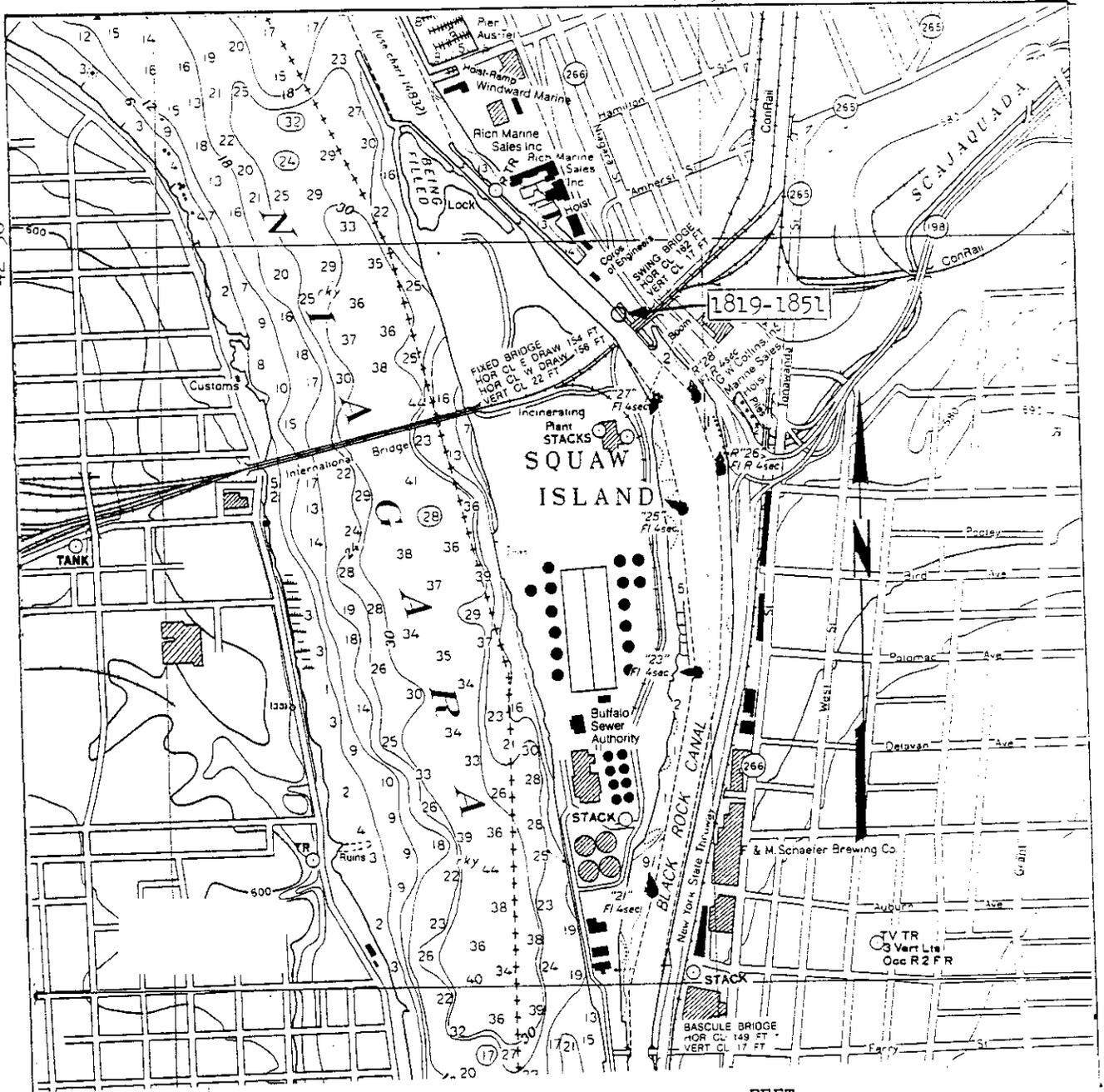
(c) March 1887 - February 1899: A staff gauge located on a pile along South Pier near the Buffalo Lighthouse at the mouth of the Buffalo River.

(d) February 1899 - October 1911: A recording gauge located in the Fog Signal Station at the northerly end of the Buffalo Breakwater.

(e) October 1911 - Date: A recording gauge located near the northwest corner of South Pier. Gauge house rebuilt in August 1960, 100 feet east of previous site.

78° 54'

42° 56'



WATER LEVEL GAUGE LOCATION  
 BUFFALO, NEW YORK  
 1819-1851  
 1982



## GAUGE HISTORY

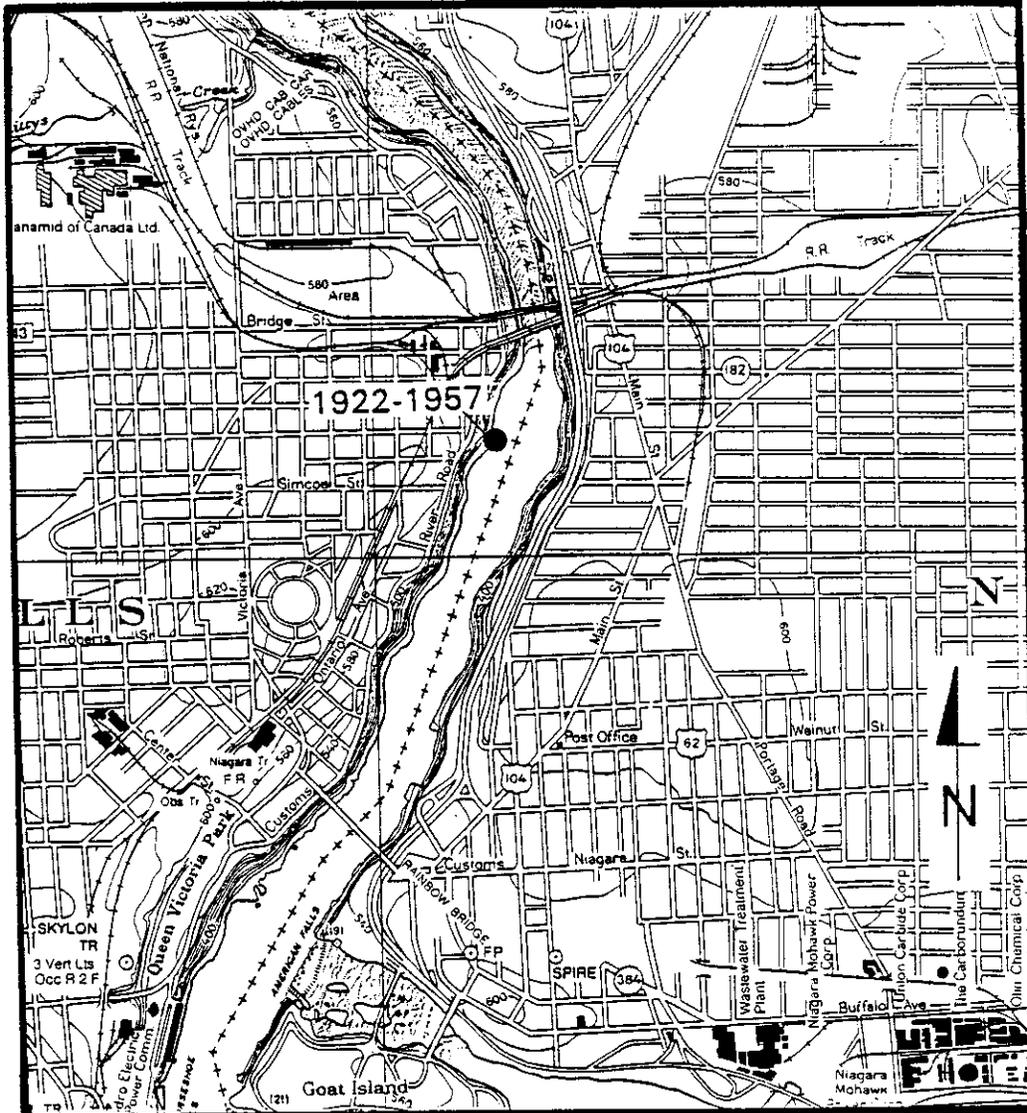
### Morrison Street Gauge, Ontario

Elevations at Morrison Street Gauge on 1903 Datum were established by leveling from B.M. "MCCCLXIX" at elevation 555.537 feet (169.328 meters). The 1935 Datum elevation of B.M. "NO 5" is 352.200 feet (107.351 meters) and depends on the elevation of B.M. "BRIDGE NO 2" as being 345.419 feet (105.284 meters) on 1935 Datum. IGLD (1955) was never used at Morrison Street Gauge site.

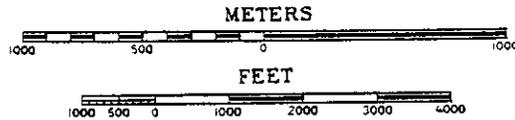
#### Gauging Station Site (see Plate 146, page 300):

(a) July 1922-December 1957: A recording gauge located in the Niagara River on the left bank near Morrison Street a few hundred yards above the head of the Whirlpool Rapids.

79°04'



43°06'



WATER LEVEL GAUGE LOCATION  
 MORRISON STREET GAUGE, ONTARIO  
 1922-1957

1982

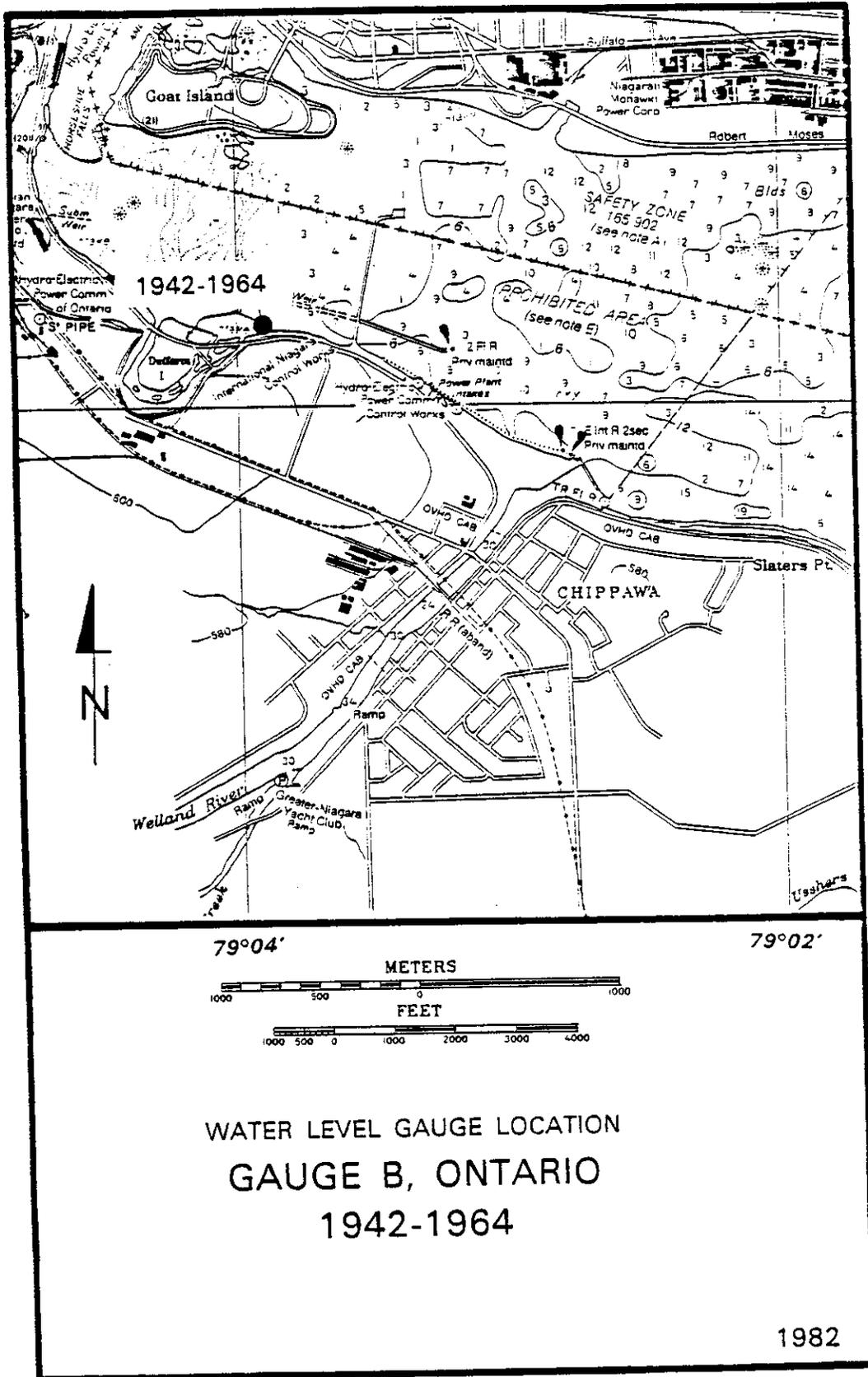
## GAUGE HISTORY

### Gauge "B", Ontario

1903 datum was never established at Gauge "B". Elevations at Gauge "B" were established by the Ontario Power Company (O.P.CO.) to the company's Datum before acquisition by H.E.P.C. in 1917. The O.P.CO. Datum of B.M. "BRASS PLATE" is 559.879 feet (163.765 meters) and depends on the elevation of B.M. "152 F" as being 537.287 feet (163.765 meters) on O.P.CO. Datum. IGLD (1955) was never used at Gauge "B" site.

#### Gauging Station Site (see Plate 147, page 302):

(a) January 1942-May 1964: A recording gauge located in a gauge house in the outer forebay of the Ontario Power Company intake structure on the downstream side of the divider wall.



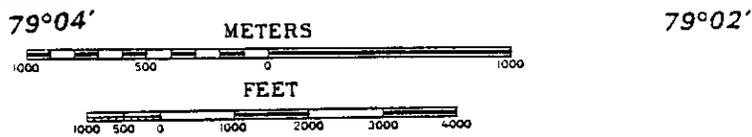
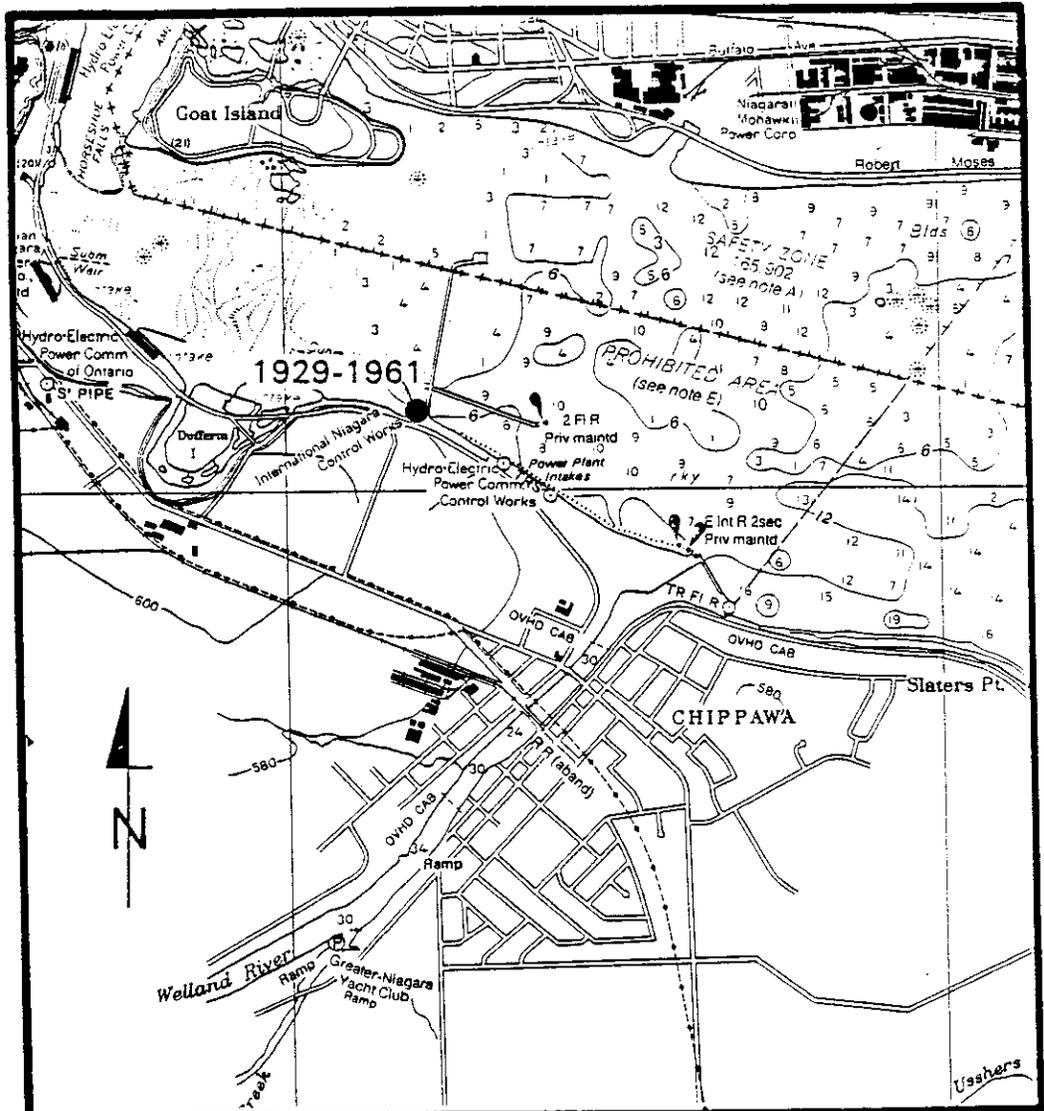
## GAUGE HISTORY

### Gauge "45", Ontario

1903 Datum was never established at Gauge "45". The H.E.P.C. Datum of B.M. "BRASS PLUG" at Gauge "45" is 558.994 feet (170.381 meters) and depends on the elevation of B.M. "MMDLIV" as being 570.620 feet (173.925 meters) on H.E.P.C. Datum. IGLD (1955) was never used at Gauge "45" gauge site.

#### Gauging Station Site (see Plate 148, page 304):

(a) April 1929-October 1961: A recording gauge located 778 feet above the intake of the Ontario Power Company.



WATER LEVEL GAUGE LOCATION  
 GAUGE 45, ONTARIO  
 1929-1961

1982

## GAUGE HISTORY

### SAB #2 Intake, Ontario

1903 Datum was never established at SAB #2 Intake. IGLD (1955) elevations at SAB #2 Intake depend on B.M. "#1" at elevation 570.890 feet (174.007 meters). IGLD (1955) elevations at SAB #2 Intake also depend on B.M. "3557" at elevation 569.673 feet (173.636 meters) as established by level line run in 1963 by Geodetic Survey of Canada.

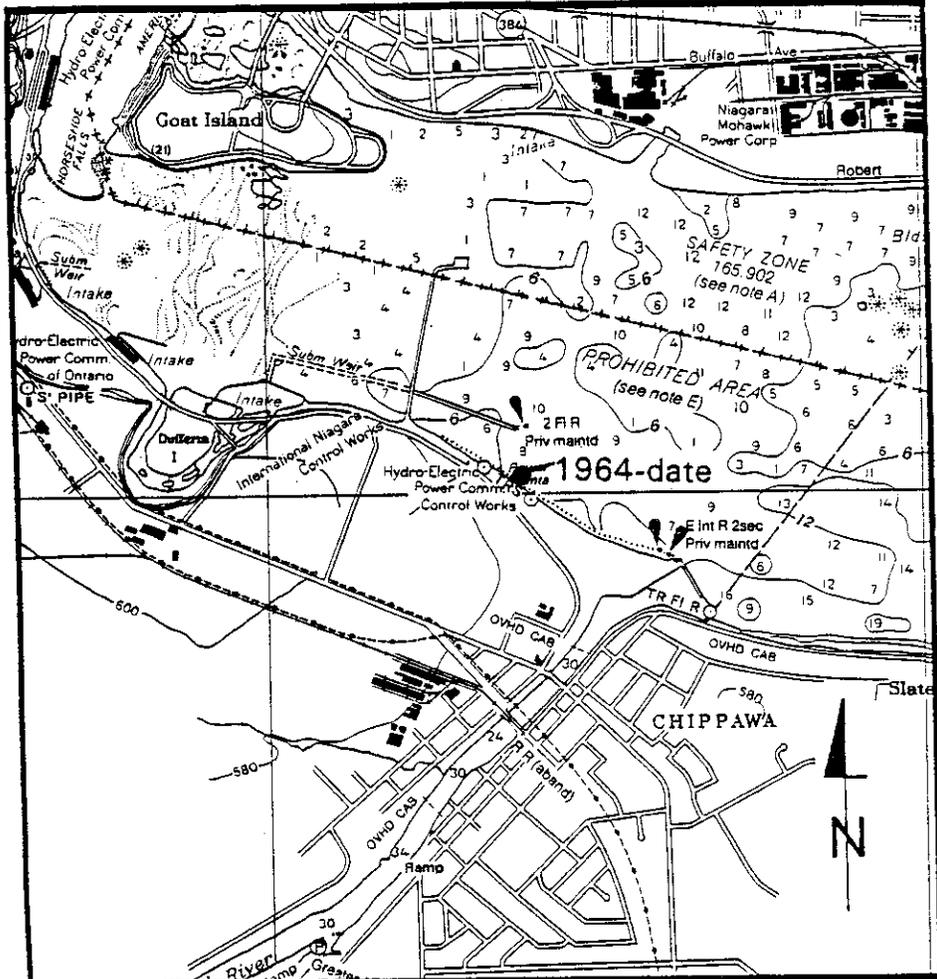
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1964-Date	#1	570.890 feet (174.007 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O.

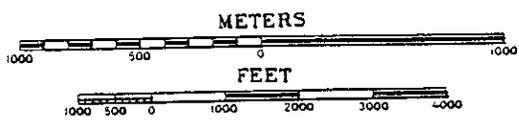
#### Gauging Station Site (see Plate 149, page 306):

(a) June 1964-Date: A transmitting gauge located over a steel stilling well, connected to the river by an intake pipe 6 feet long, on the Canadian shore, about 1/4 mile upstream from the Grass Island control structure. Gauge transmits to control structure, where recorder is located.

79°04'



43°04'



WATER LEVEL GAUGE LOCATION  
 SAB #2 INTAKE, ONTARIO  
 1964-date

1982

## GAUGE HISTORY

### Material Dock, Ontario

1903 Datum was never established at Material Dock. The H.E.P.C. Datum of B.M. "MMDLIII" at Material Dock is 568.058 feet (173.144 meters). IGLD (1955) elevations at Material Dock were established by level lines run in 1963 by Geodetic Survey of Canada from Port Colborne. IGLD (1955) elevation for B.M. "MMDLIII" at Material Dock is 568.175 feet (173.180 meters) and depends on the elevation of B.M. "STEEL RIVET" at Port Colborne as being 583.015 feet (177.703 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1926-Date	MMDLIII	568.175 feet (173.180 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O.

#### Gauging Station Sites (see Plate 150, page 308):

(a) May 1926-July 1927: A recording gauge located at Material Dock about 800 feet upstream from guard gate at intake of Chippawa Power Canal.

(b) July 1927-Date: A recording gauge located about 400 feet upstream from Chippawa Power Canal intake guard gate.



## GAUGE HISTORY

### Slaters Point, Ontario

1903 Datum was never established at Slaters Point. The H.E.P.C. Datum of B.M. "PLUG" is 568.080 feet (173.151 meters) and depends on the elevation of B.M. "MMDLXXIII" as being 572.023 feet (174.353 meters) on H.E.P.C. Datum. IGLD (1955) elevations at Slaters Point were established by level line run in 1963 by Geodetic Survey of Canada from Port Colborne. IGLD (1955) elevation for B.M. "3559" at Slaters Point is 567.518 feet (172.980 meters) and depends on the elevation of B.M. "STEEL RIVET" at Port Colborne as being 583.015 feet (177.703 meters) as Published in Appendix A, Establishment of International Great Lakes Datum published September 1961 by the Coordinating Committee.

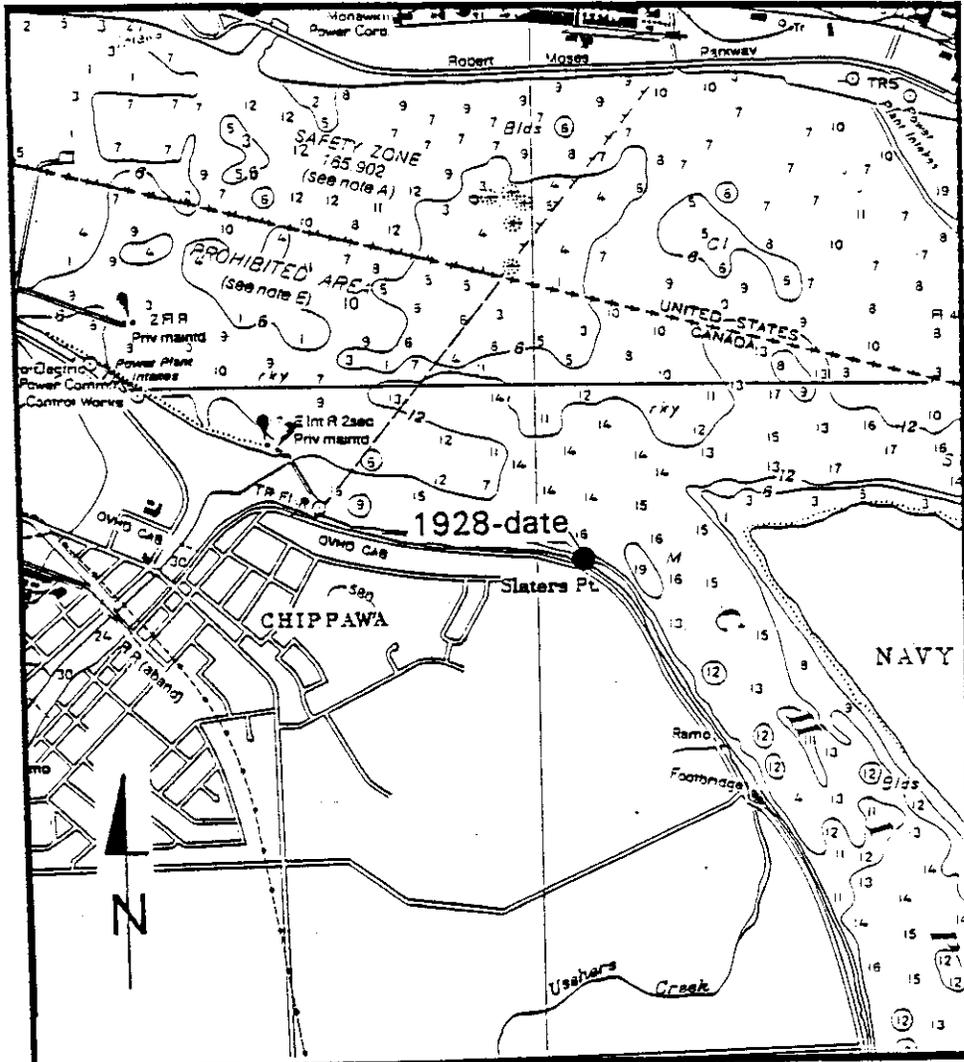
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jan 1928-Nov 1964	PLUG	565.158 feet (172.260 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O.
Dec 1964-Date	3559	567.518 feet (172.980 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O.

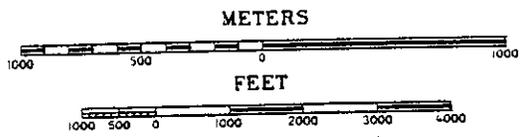
#### Gauging Station Site (see Plate 151, page 310):

(a) January 1928-Date: A recording gauge over a concrete well, along the river bank, near the Slaters Dock.

79°02'



43°04'



WATER LEVEL GAUGE LOCATION  
 SLATERS POINT, ONTARIO  
 1928-DATE

1982

## GAUGE HISTORY

### Bayer's Creek, Ontario

1903 Datum was never established at Bayer's Creek. IGLD (1955) elevations at Bayer's Creek depend on B.M. "MMDLXXXIII" at elevation 572.705 feet (174.561 meters) as established by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

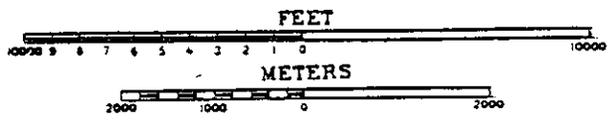
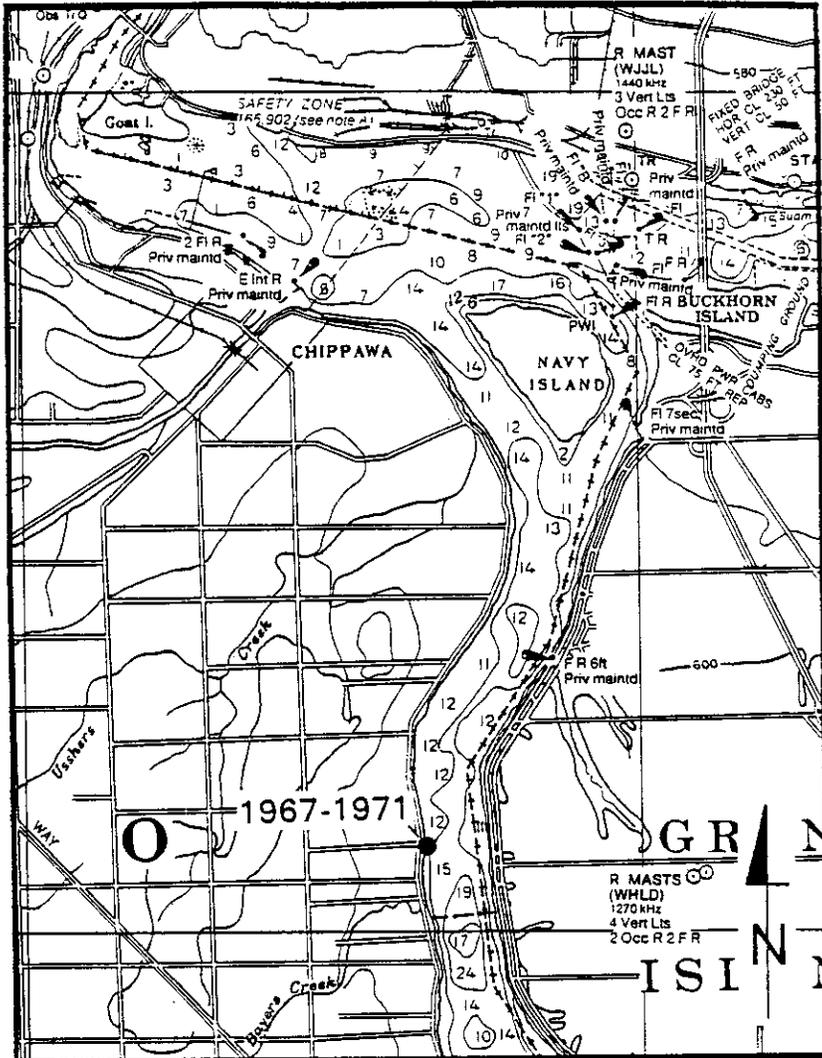
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1967-Dec 1971	MMDLXXXIII	572.705 feet (174.561 meters)	Recording Gauge, Hourly Scalings	W.R.B.

#### Gauging Station Site (see Plate 152, page 312):

(a) May 1967-December 1971: A recording gauge located 1/2 mile below Bayer's Creek, 1/2 mile above International Boundary Monument #26, at the edge of a parking area.

79°00'

43°06'



WATER LEVEL GAUGE LOCATION  
 BAYER'S CREEK, ONTARIO  
 1967-1971

1982

## GAUGE HISTORY

### Black Creek, Ontario

1903 Datum was never established at Black Creek. The 1935 Datum of B.M. "1 INCH PLUG" is 571.088 feet (174.068 meters) and depends on the elevation of B.M. "MMDLXXXII" as being 573.466 feet (174.792 meters) on 1935 Datum. IGLD (1955) elevations at Black Creek were established by level line run in 1963 by Geodetic Survey of Canada from Port Colborne. IGLD (1955) elevation for B.M. "MMDLXXXII" at Black Creek is 572.084 feet (174.371 meters) and depends on the elevation of B.M. "STEEL RIVET" at Port Colborne as being 583.015 feet (177.703 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

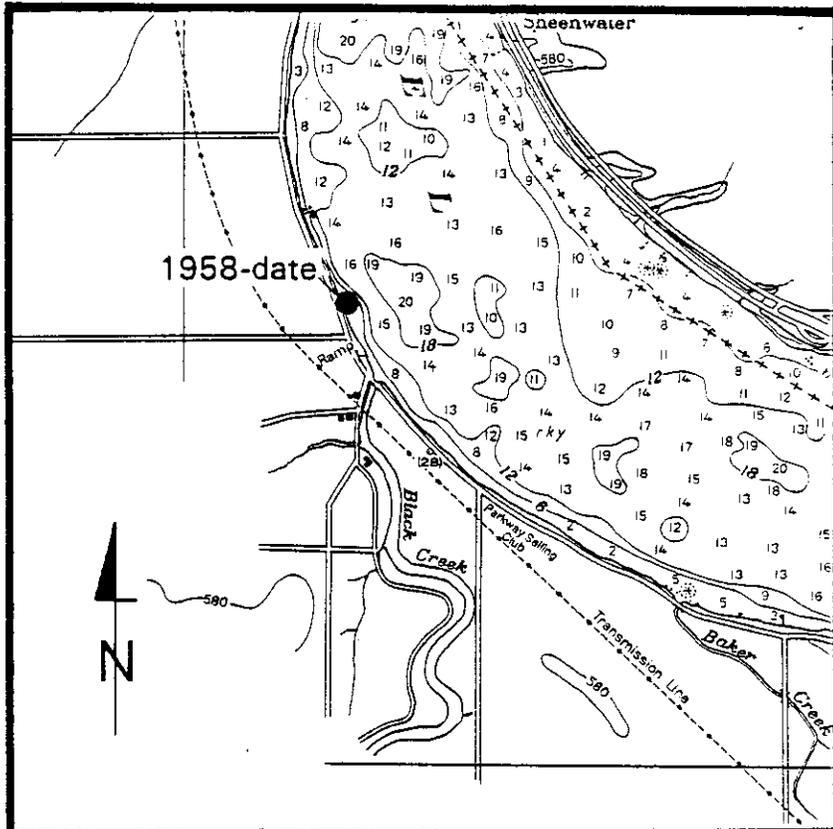
### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Mar 1958-Date	MMDLXXXII	572.084 feet (174.371 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O.

### Gauging Station Site (see Plate 153, page 314):

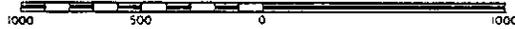
(a) March 1958-Date: A recording gauge located over a concrete well on the left bank of the Niagara River, on the Niagara Boulevard about 1,200 feet north of Black Creek Bridge.

79°02'



42°58'

METERS



FEET



WATER LEVEL GAUGE LOCATION  
BLACK CREEK, ONTARIO  
1958-DATE

1982

## GAUGE HISTORY

### Frenchman Creek, Ontario

1903 Datum was never established at Frenchman Creek. The 1935 Datum of B.M. "BRASS PLUG" at Frenchman Creek is 574.702 feet (175.169 meters) and depends on the elevation of B.M. "MMDLXXVIII" as being 577.816 feet (176.118 meters) on 1935 Datum. IGLD (1955) elevations at Frenchman Creek were established by level line run in 1963 by Geodetic Survey of Canada from Port Colborne. IGLD (1955) elevation for B.M. "BRASS PLUG" at Frenchman Creek is 572.839 feet (174.601 meters) and depends on the elevation of B.M. "STEEL RIVET" at Port Colborne as being 583.015 feet (177.703 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

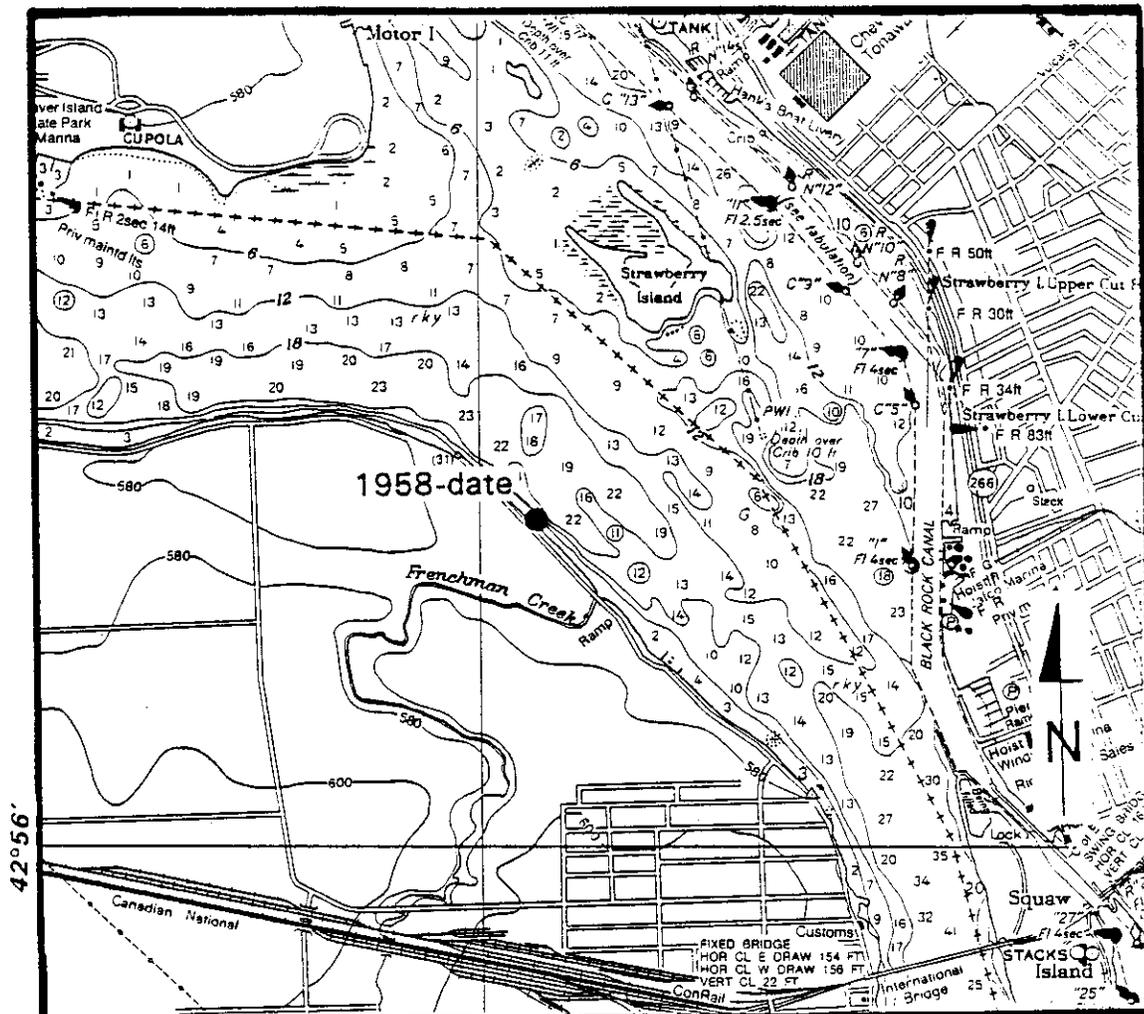
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Mar 1958-Nov 1964	BRASS PLUG	572.839 feet (174.601 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O.
Dec 1964-Date	3565	573.355 feet (174.759 meters)	Recording Gauge, Hourly Scalings	H.E.P.C.O.

#### Gauging Station Site (see Plate 154, page 316):

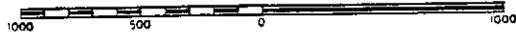
(a) March 1958-Date: A recording gauge located over a concrete well on the left bank of the Niagara River, on Niagara Boulevard about 1,400 feet north of Frenchman Creek Bridge.

78°56'



42°56'

METERS



FEET



WATER LEVEL GAUGE LOCATION  
 FRENCHMAN CREEK, ONTARIO  
 1958-DATE

1982

## GAUGE HISTORY

### Custom Dock, Ontario

1903 Datum was never established at Custom Dock. IGLD (1955) elevations at Custom Dock depend on B.M. 'MMDLXXVI' is 576.918 feet (175.845 meters) as established by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
May 1971-Date	MMDLXXVI	576.918 feet (175.845 meters)	Recording Gauge, Hourly Scalings	W.R.B.

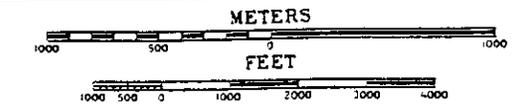
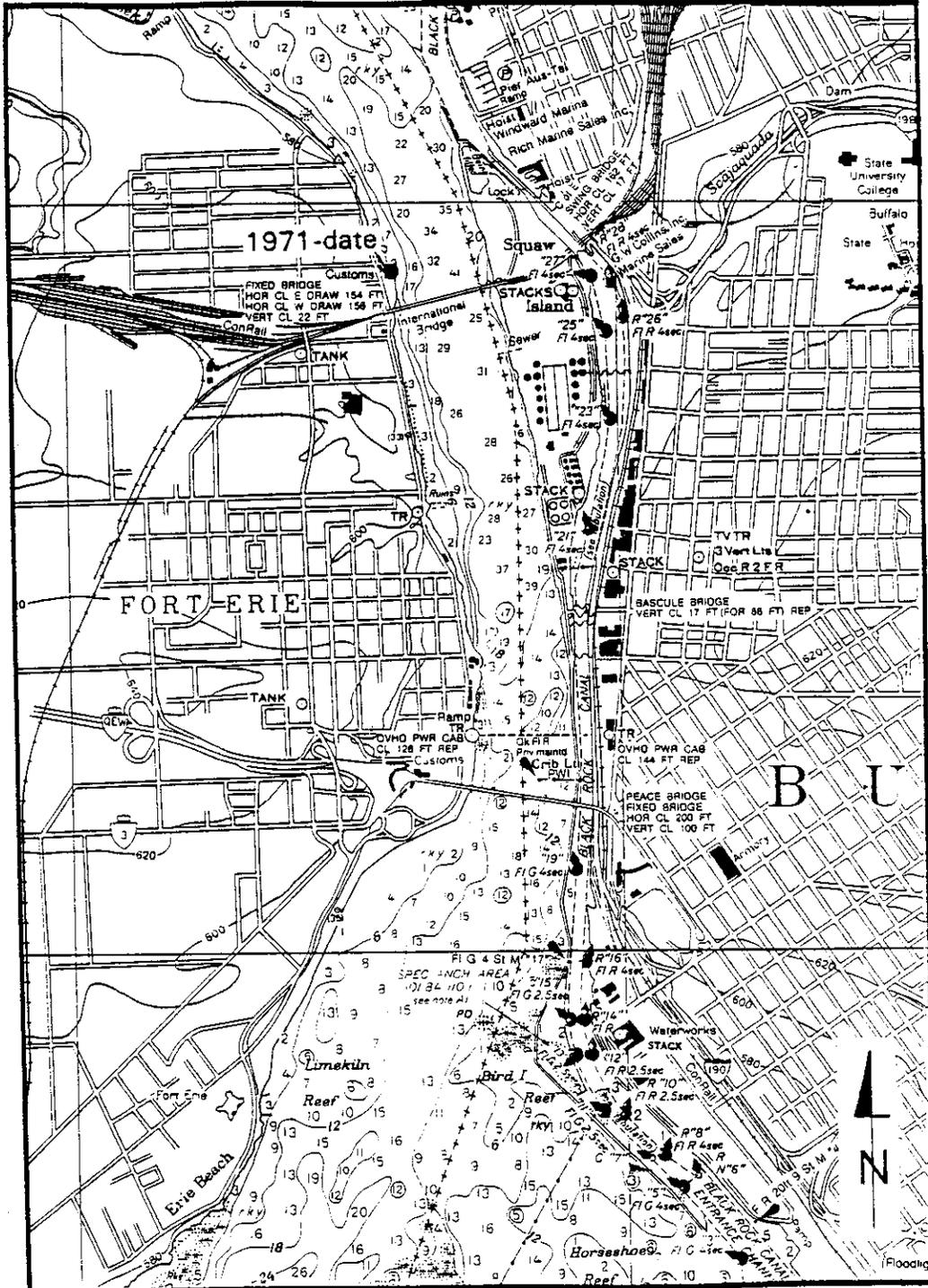
#### Gauging Station Site (see Plate 155, page 318):

(a) May 1971-Date: A recording gauge located approximately 700 feet north of International Railway Bridge, in a shelter at northwest corner of the Fort Erie Custom Dock.

78°56'

42°56'

42°54'



WATER LEVEL GAUGE LOCATION  
 CUSTOM DOCK, ONTARIO  
 1971-DATE

1982

## GAUGE HISTORY

### Pump House, Ontario

1903 Datum was never established at Pump House. IGLD (1955) elevations at Pump House depend on B.M. "MMDLXXVI" at elevation 576.918 feet (175.845 meters) as established by Geodetic Survey of Canada.

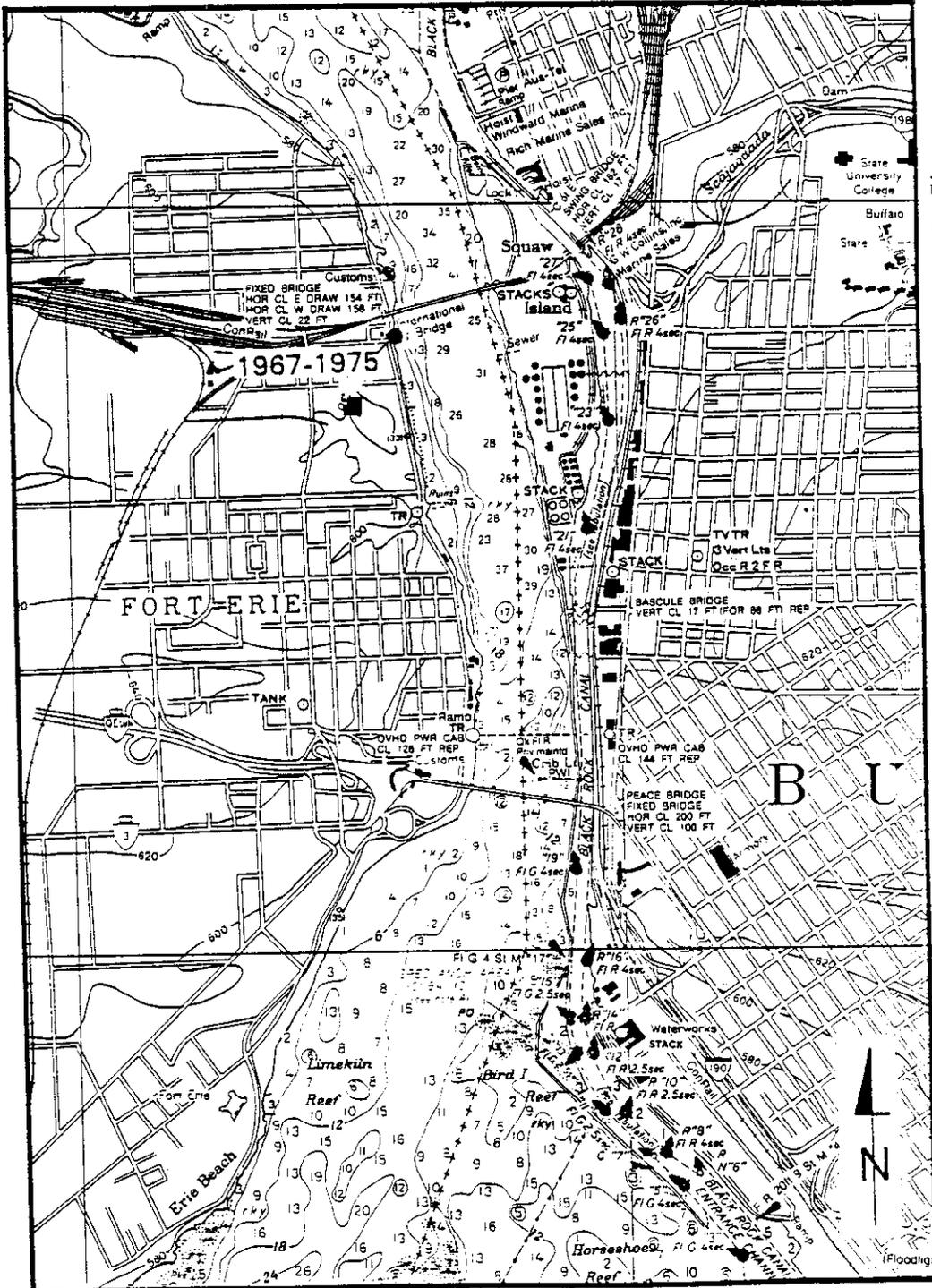
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Apr 1967-Oct 1975	MMDLXXVI	576.918 feet (175.845 meters)	Recording Gauge, Hourly Scalings	W.R.B.

#### Gauging Station Site (see Plate 156, page 320):

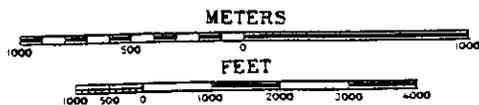
(a) April 1967-October 1975: A recording gauge located approximately 500 feet south of International Railway Bridge, in pumphouse for the town of Fort Erie.

78°56'



42°56'

42°54'



WATER LEVEL GAUGE LOCATION  
PUMP HOUSE, ONTARIO  
1967-1975

1982

## GAUGE HISTORY

### Peace Bridge Below, Ontario

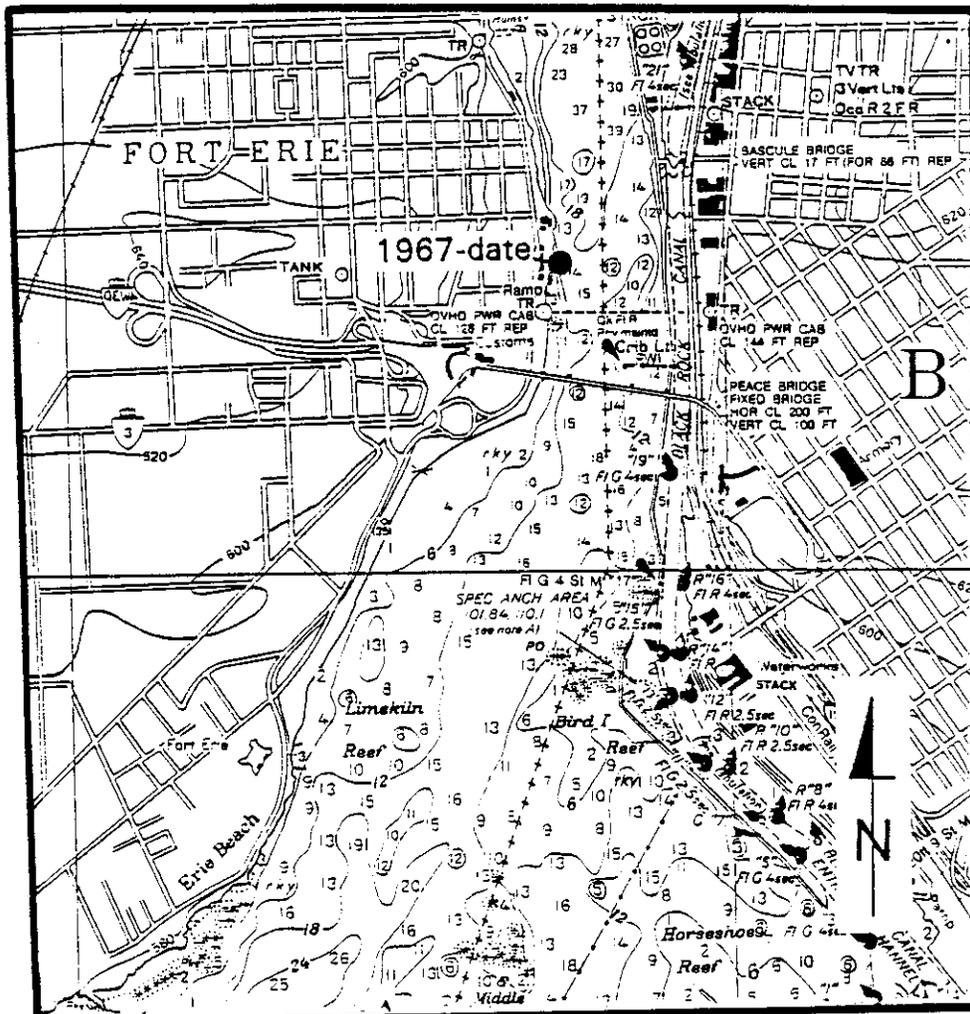
1903 Datum was never established a Peace Bridge. IGLD (1955) elevation at Peace Bridge depend on B.M. "1997" at elevation 579.651 feet (176.678 meters) as established by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Aug 1967-Date	1997	579.651 feet (176.678 feet)	Recording Gauge, Hourly Scalings	W.R.B.

Gauging Station Site (see Plate 157, page 322):

(a) August 1967-Date: A recording gauge located approximately 1,600 feet north of the Peace Bridge in Fort Erie.



78°56'

METERS



FEET



WATER LEVEL GAUGE LOCATION  
 PEACE BRIDGE BELOW, ONTARIO  
 1967-date

1982

## GAUGE HISTORY

### Peace Bridge Above, Ontario

1903 Datum was never established at Peace Bridge. IGLD (1955) elevations at Peace Bridge depend on B.M. "1997" at elevation 579.651 feet (176.678 meters) as established by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

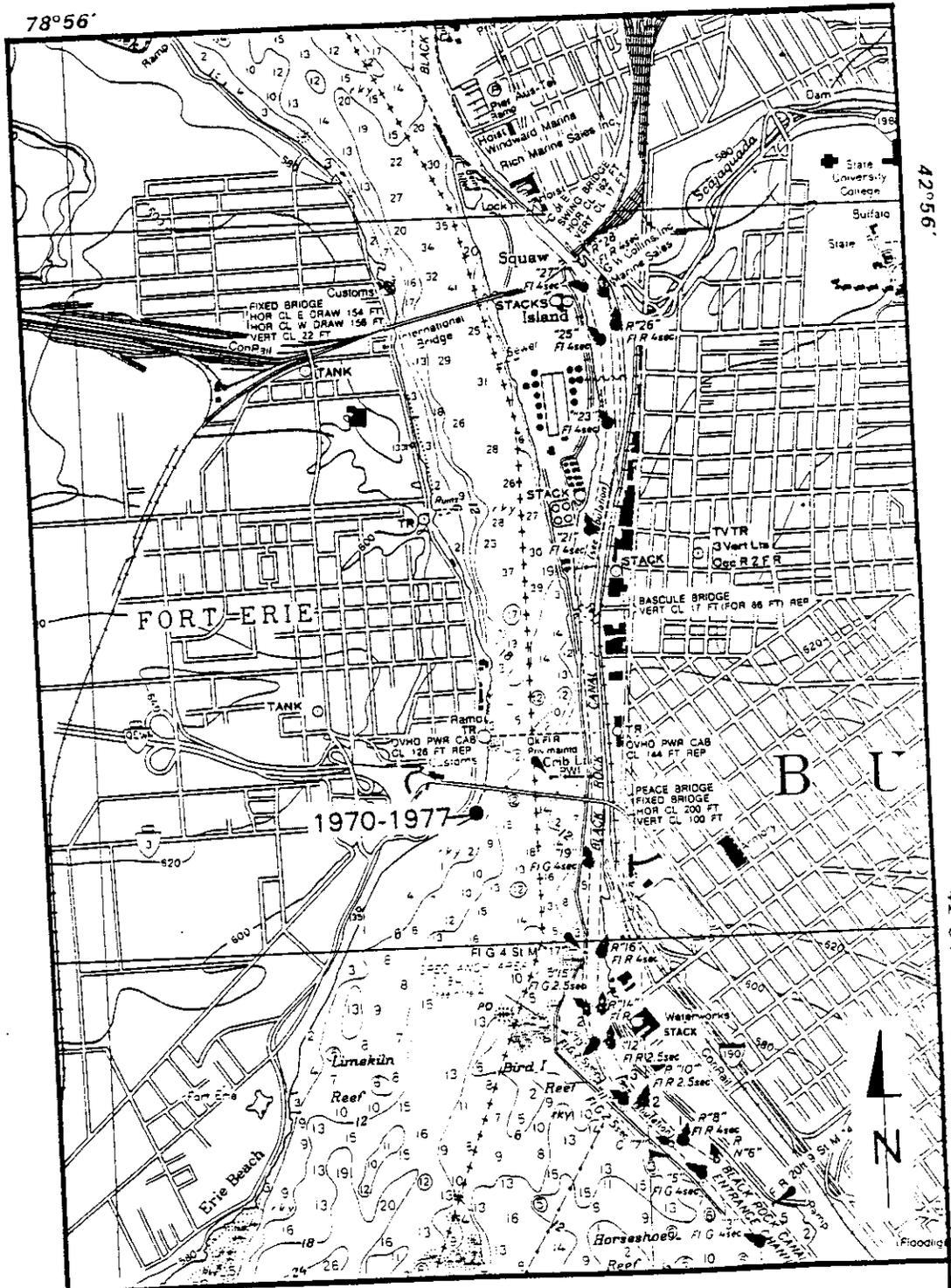
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Sep 1970-May 1977	1997	579.651 feet (176.678 feet)	Recording Gauge, Hourly Scalings	W.R.B.

#### Gauging Station Site (see Plate 158, page 324):

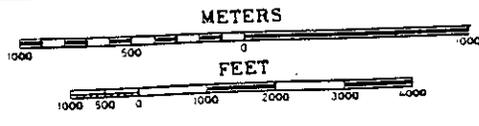
(a) September 1970-May 1977: A recording gauge located 75 feet upstream of the Peace Bridge in Fort Erie.

78°56'

42°56'



42°54'



WATER LEVEL GAUGE LOCATION  
 PEACE BRIDGE ABOVE, ONTARIO  
 1970-1977

1982

## GAUGE HISTORY

### I.B.M. 35, Ontario

1903 Datum was never established at I.B.M. 35. IGLD (1955) elevations depend on B.M. "I.B.M. 35" at elevation 577.238 feet (175.942 meters) as established by Geodetic Survey of Canada.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Nov 1976-Date	I.B.M. 35	577.238 feet (175.942 meters)	Recording Gauge, Hourly Scalings	W.R.B.

NOTE: Records for this station are seasonal only.

#### Gauging Station Site (see Plate 159, page 326):

(a) November 1976-Date: A recording gauge located approximately 1,700 feet above the Peace Bridge in Fort Erie.



## GAUGE HISTORY

### Black Rock Canal, New York

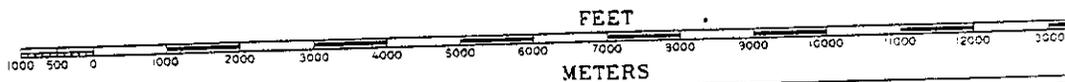
Elevations at Black Rock Canal on 1903 Datum depend on B.M. "BUFFALO LH" at elevation 590.101 feet (179.863 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Black Rock Canal on 1935 Datum were established by precise levels from Buffalo, New York. The 1935 Datum elevation of B.M. "SW CORNER" at Black Rock Canal is 583.637 feet (177.893 meters) and depends on the elevation of B.M. "BUFFALO LH" at Buffalo as being 590.221 feet (179.899 meters) on 1935 Datum. IGLD (1955) elevations at Black Rock Canal depend on B.M. "SW CORNER" at elevation 581.833 feet (177.343 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

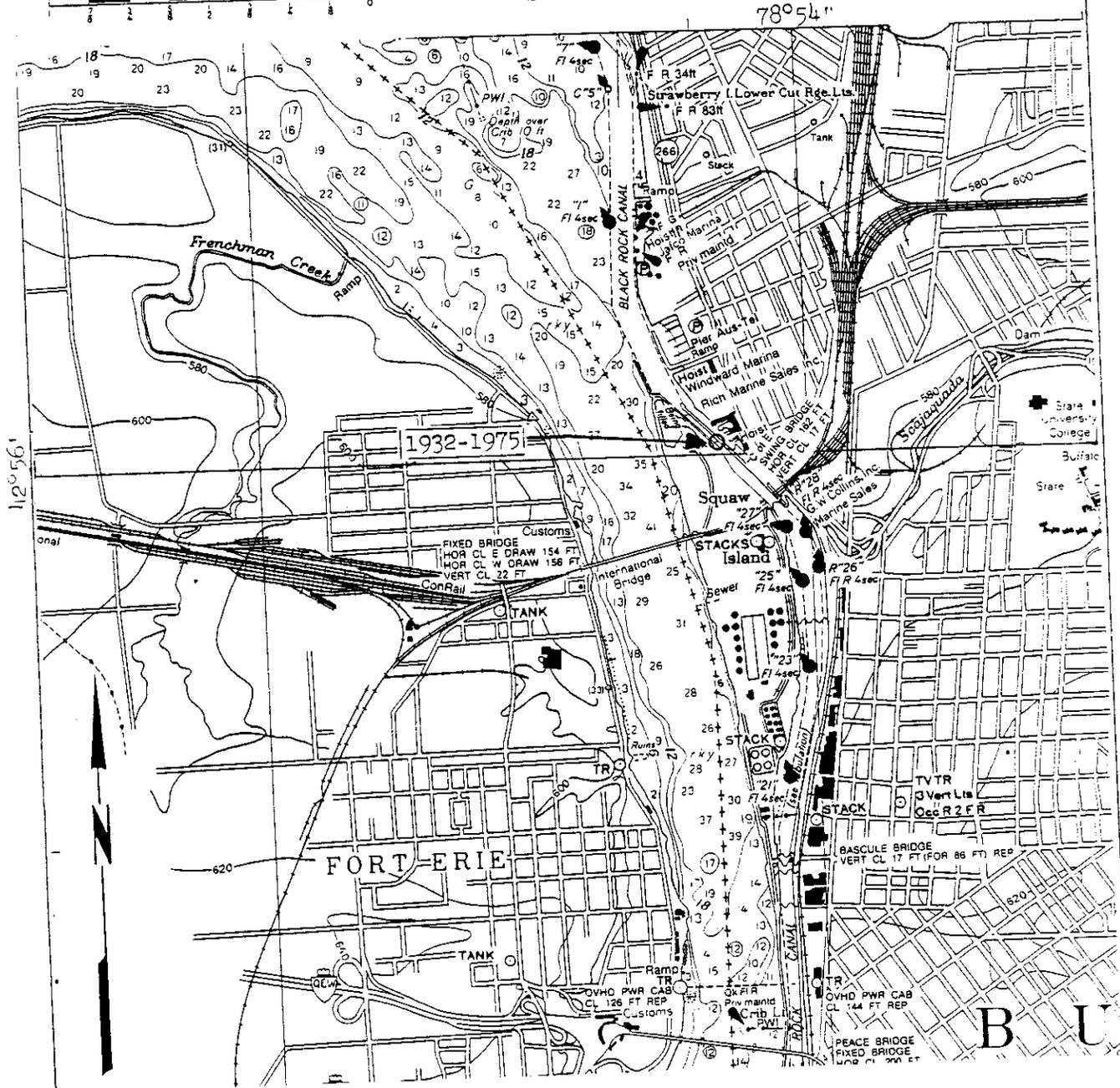
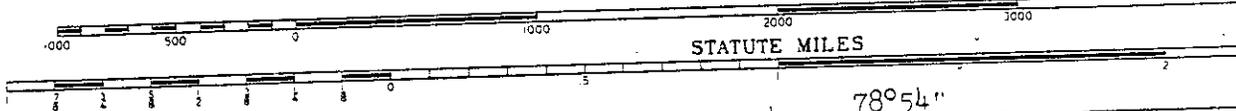
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Apr 1932-Oct 1970	SW CORNER	581.833 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Oct 1975	SW CORNER	581.833 feet (177.343 meters)	Recording Gauge, Hourly Scalings	N.O.S.

#### Gauging Station Site (see Plate 160, page 328):

(a) April 1932 - October 1975: A recording gauge located at the foot of Bridge Street, Buffalo, New York, on the west wall of the Black Rock Canal Lock near the lower gate.



STATUTE MILES



WATER LEVEL GAUGE LOCATION  
 BLACK ROCK CANAL, NEW YORK  
 1932-1975

1982

## GAUGE HISTORY

### Niagara Intake, New York

1903 and 1935 Datums were never established at Niagara Intake. IGLD (1955) elevations at Niagara Intake depend on B.M. "WL 139" at elevation 572.306 feet (174.439 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Oct 1962-Oct 1970	WL 139	572.306 feet	Recording Gauge, Hourly Scalings	U.S.E.O.
Oct 1970-Sep 1977	WL 139	572.306 feet	Recording Gauge, Hourly Scalings	N.O.S.
Sep 1977-Date	INTAKE	568.302 feet (173.218 meters)	Recording Gauge, Hourly Scalings	N.O.S.

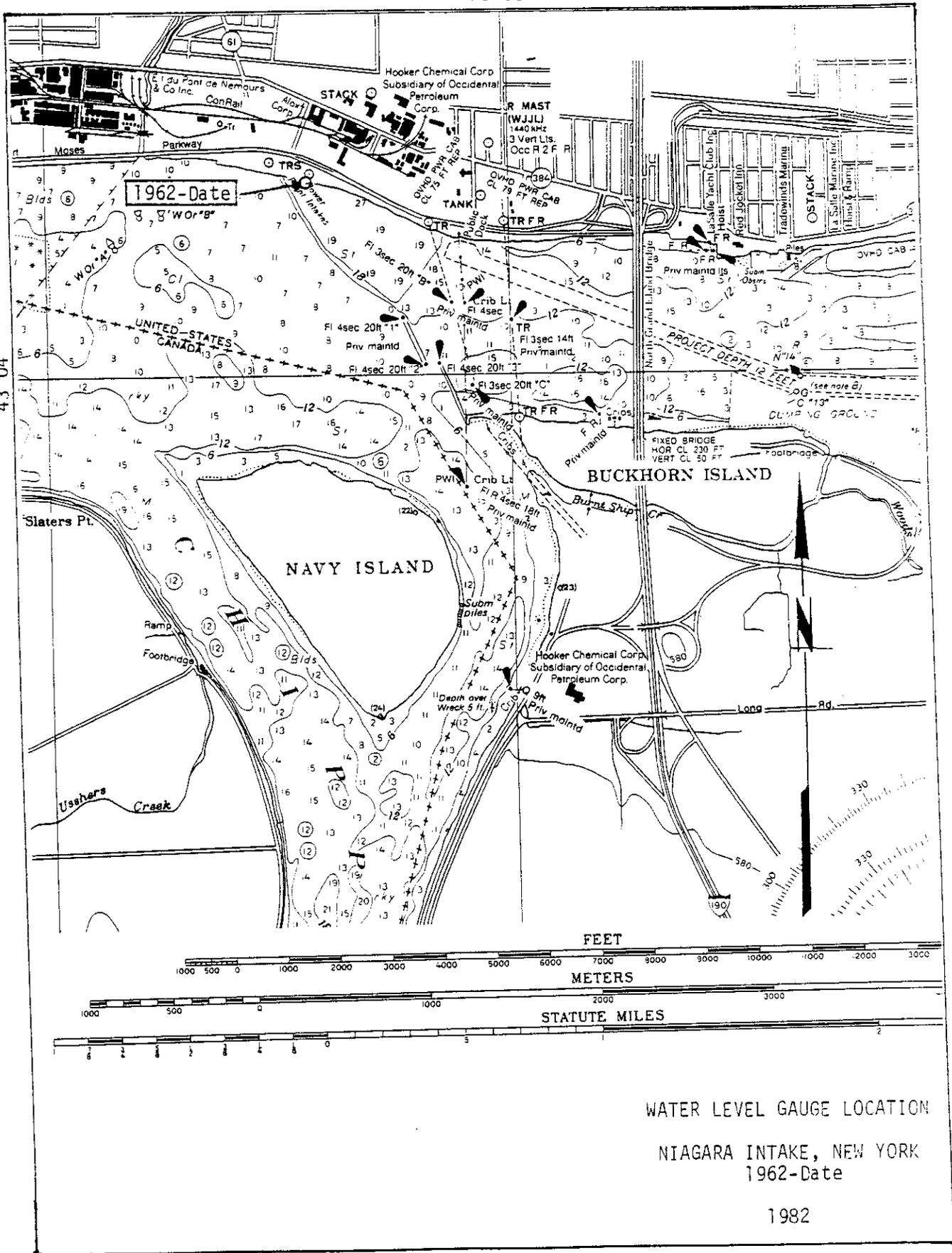
NOTE: Analogue recording gauges have been used at Niagara Intake.

#### Gauging Station Site (see Plate 161, page 330):

(a) October 1962 - Date: A recording gauge located near the easterly intake gate immediately upstream from the foot of Iroquois Street in Niagara Falls, New York. This location is approximately the same as the Connors Island site.

79° 00'

43° 04'



WATER LEVEL GAUGE LOCATION

NIAGARA INTAKE, NEW YORK  
1962-Date

1982

## Gauge History

### Conners Island, New York

Elevations at Conners Island on 1903 Datum depend on B.M. "ECHOTA" at elevation 572.922 feet (174.627 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Conners Island on 1935 Datum were established by precise levels from Buffalo, New York. The 1935 Datum elevation of B.M. "ECHOTA" at Conners Island is 573.120 feet (174.687 meters) and depends on the elevation of B.M. "BUFFALO LH" at Buffalo as being 590.221 feet (179.899 meters) on 1935 Datum. IGLD (1955) elevations at Conners Island depend on B.M. "WL 139" at elevation 572.306 feet (174.439 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

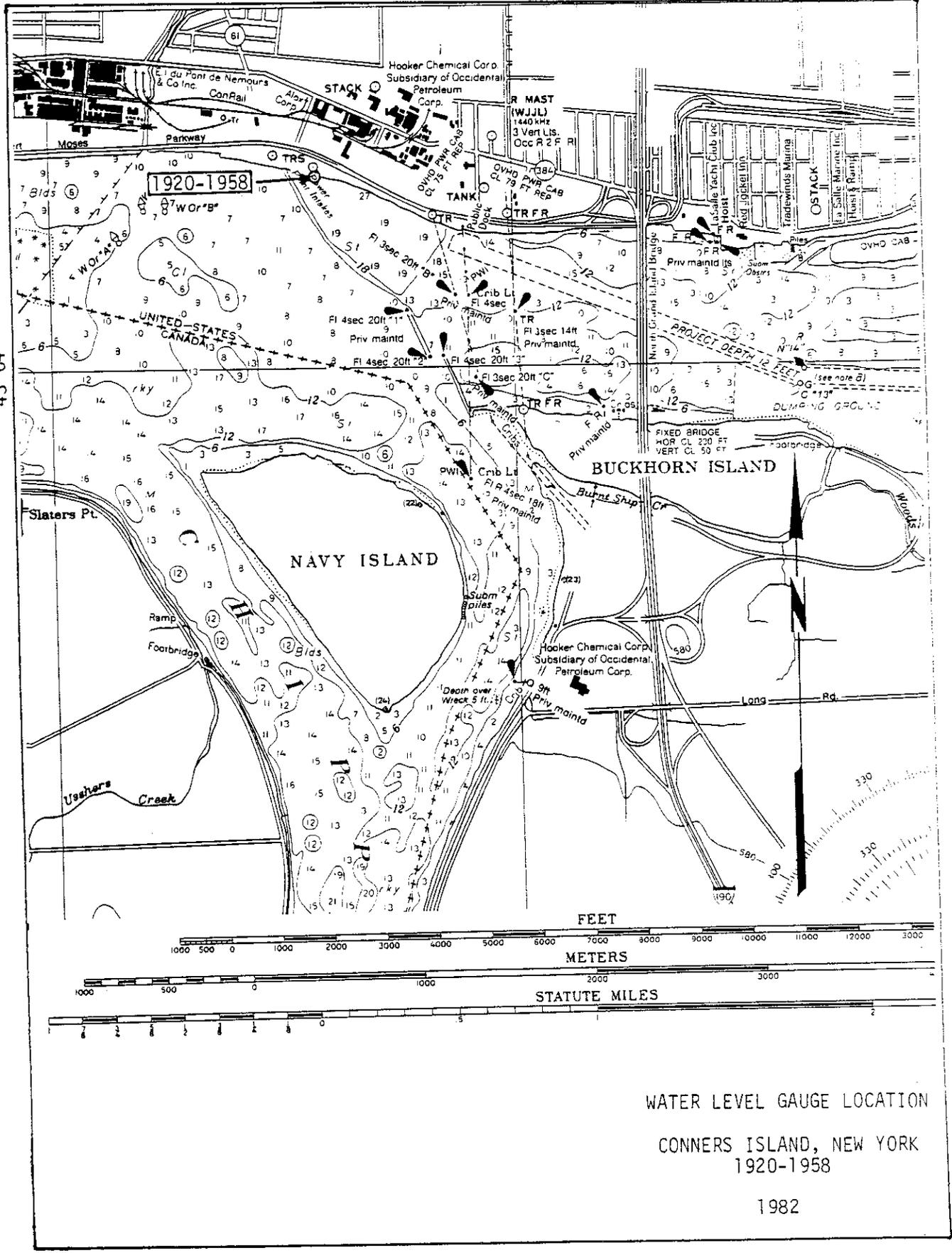
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Sep 1920-Nov 1934	ECHOTA	571.395 feet	Recording Gauge, Hourly Scalings	U.S.E.O.
May 1935-Jul 1958	WL 139	572.306 feet (174.439 meters)	Recording Gauge, Two-Hour Scalings	U.S.L.S.

#### Gauging Station Site (see Plate 162, page 332):

(a) September 1920 - July 1958: A recording gauge located on the southwest corner of a water intake crib about 560 feet upstream of Conners Island.

79° 00'

43° 04'



WATER LEVEL GAUGE LOCATION  
 CONNERS ISLAND, NEW YORK  
 1920-1958

1982

## GAUGE HISTORY

### American Falls, New York

1903 Datum was never established at American Falls. Elevations at American Falls on 1935 Datum were established by precise levels from Buffalo, New York. The 1935 Datum elevation of B.M. "PARK" at American Falls is 556.541 feet (169.634 meters) and depends on the elevation of B.M. "BUFFALO LH" at Buffalo as being 590.221 feet (179.899 meters) on 1935 Datum. IGLD (1955) elevations at American Falls depend on B.M. "PARK" at elevation 554.828 feet (169.112 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Apr 1955-Oct 1970	PARK	554.828 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	PARK	554.828 feet (169.112 meters)	Recording Gauge, Hourly Scalings	N.O.S.

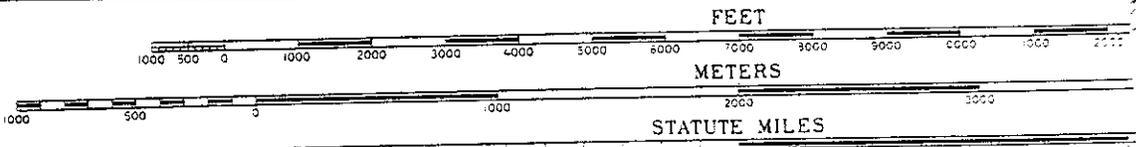
NOTE: Analog recording gauges used prior to April 1968. Since that date, digital gauges have been used at American Falls.

#### Gauging Station Sites (see Plate 163, page 334):

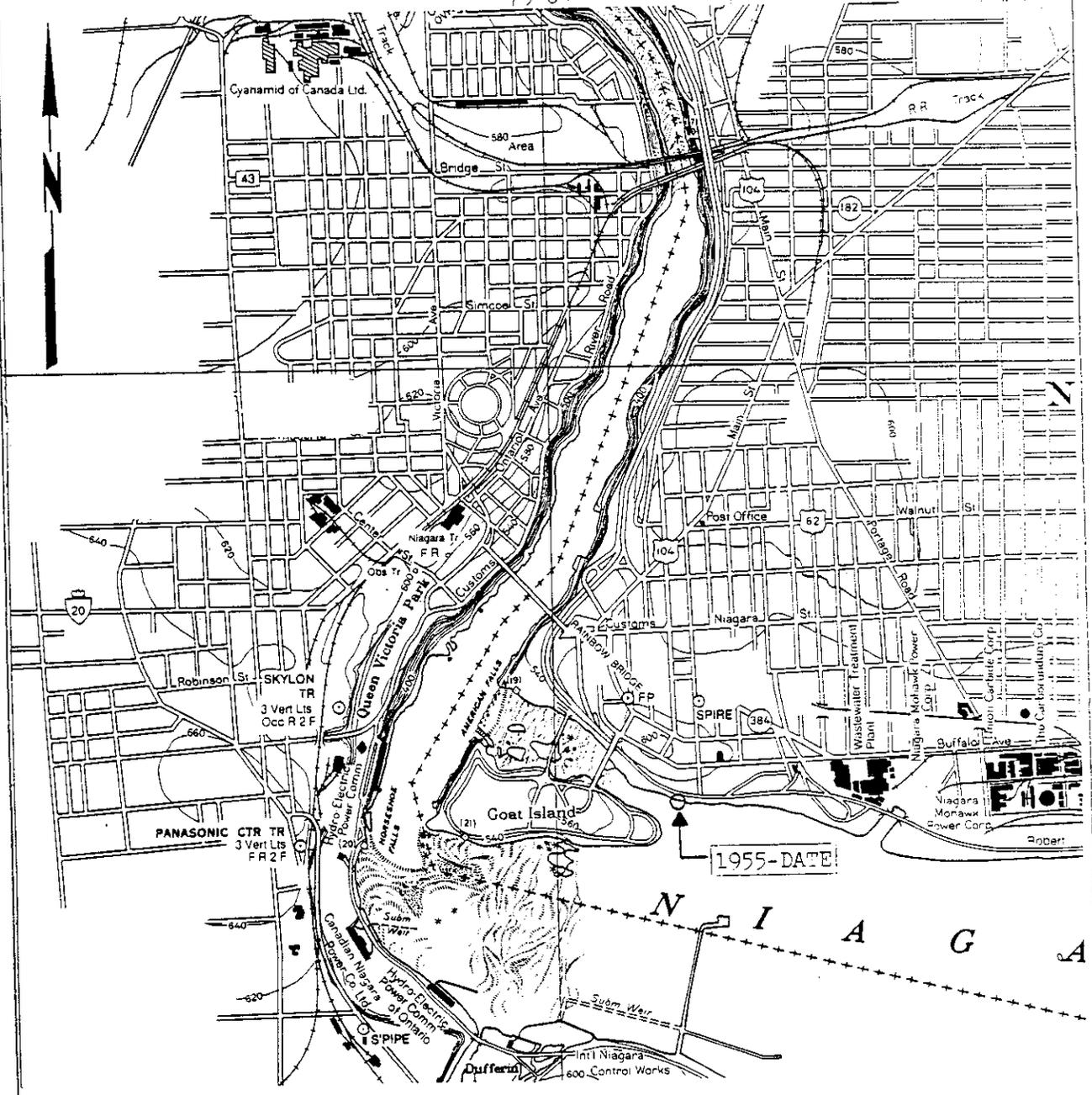
(a) April 1955 - June 1976: A recording gauge located on the U.S. shore opposite the head of Goat Island, Niagara Falls, New York.

(b) June 1976 - Date: A recording gauge located on the U.S. shore opposite Goat Island, Niagara Falls, New York, approximately 400 feet upstream of former location.

130061



79°04'



WATER LEVEL GAUGE LOCATION

AMERICAN FALLS, NEW YORK  
1955-DATE

1982

## GAUGE HISTORY

### Ashland Avenue, New York

1903 Datum was never established at Ashland Avenue. Elevations at Ashland Avenue on 1935 Datum were established by precise levels from Buffalo, New York. The 1935 Datum elevation of B.M. "N 32 A" at Ashland Avenue is 371.171 feet (113.133 meters) and depends on the elevation of B.M. "BUFFALO LH" at Buffalo as being 590.221 feet (179.899 meters) on 1935 Datum. IGLD (1955) elevations at Ashland Avenue depend on B.M. "N 32 A" at elevation 369.474 feet (112.616 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

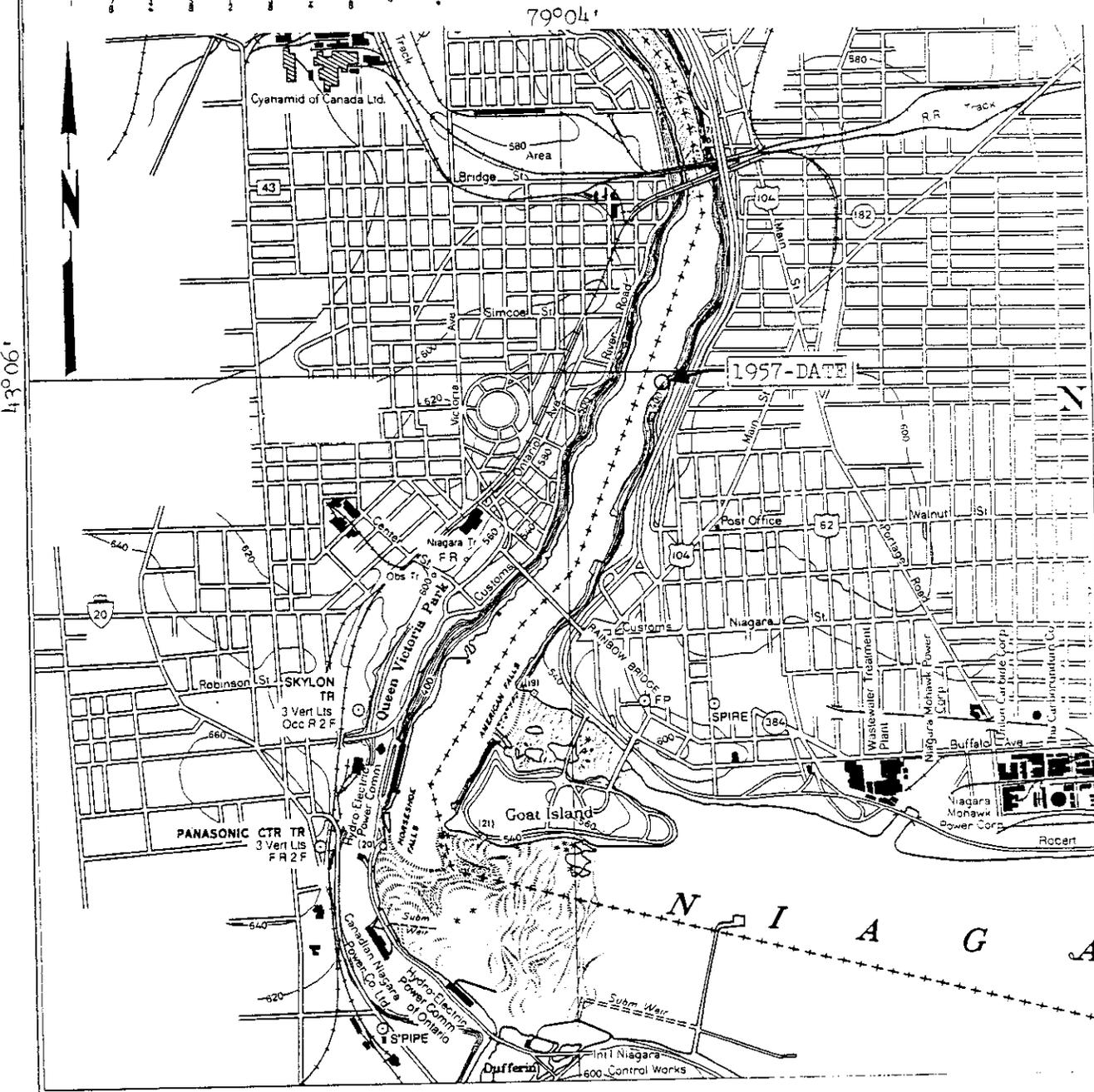
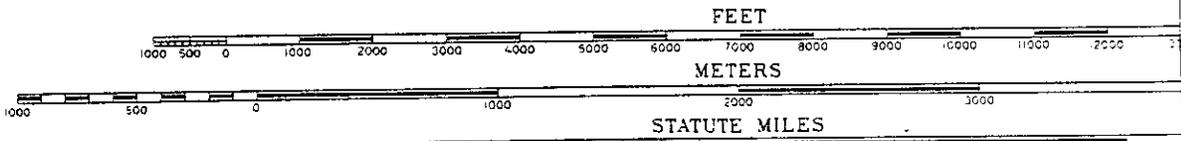
#### CHRONOLOGICAL TABLE

PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1957-Oct 1958	N 32 A	369.474 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1958-Oct 1970	POOL	365.053 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Oct 1970-Date	POOL	365.053 feet (111.268 meters)	Recording Gauge, Hourly Scalings	N.O.S.

NOTE: Analogue recording gauges used prior to November 1966. Since that date, digital gauges have been used. Telemetry service was installed at Ashland Avenue in March 1978.

#### Gauging Station Site (see Plate 164, page 336):

(a) June 1957 - Date: A recording gauge located in the Maid-of-the-Mist Pool at the foot of Ashland Avenue at the Niagara Falls Sewage Pumping Station in Niagara Falls, New York.



WATER LEVEL GAUGE LOCATION  
 ASHLAND AVENUE, NEW YORK  
 1957-DATE  
 1982

## GAUGE HISTORY

### Suspension Bridge, New York

Elevations at Suspension Bridge on 1903 Datum depend on B.M. "SUSPENSION BRIDGE" at elevation 584.377 feet (178.118 meters) as published in Appendix FFF, Annual Report of the Chief of Engineers for 1903. Elevations at Suspension Bridge on 1935 Datum were established by precise levels from Buffalo, New York. The 1935 Datum elevation of B.M. "BRIDGE NO 2" at Suspension Bridge is 345.419 feet (105.284) and depends on the elevation of B.M. "BUFFALO LH" at Buffalo as being 590.221 feet (179.899 meters) on 1935 Datum. IGLD (1955) elevations at Suspension Bridge depend on B.M. "SUSPENSION BRIDGE" at elevation 582.871 feet (177.659 meters) as published in Appendix A, Establishment of International Great Lakes Datum published in September 1961 by the Coordinating Committee.

#### CHRONOLOGICAL TABLE

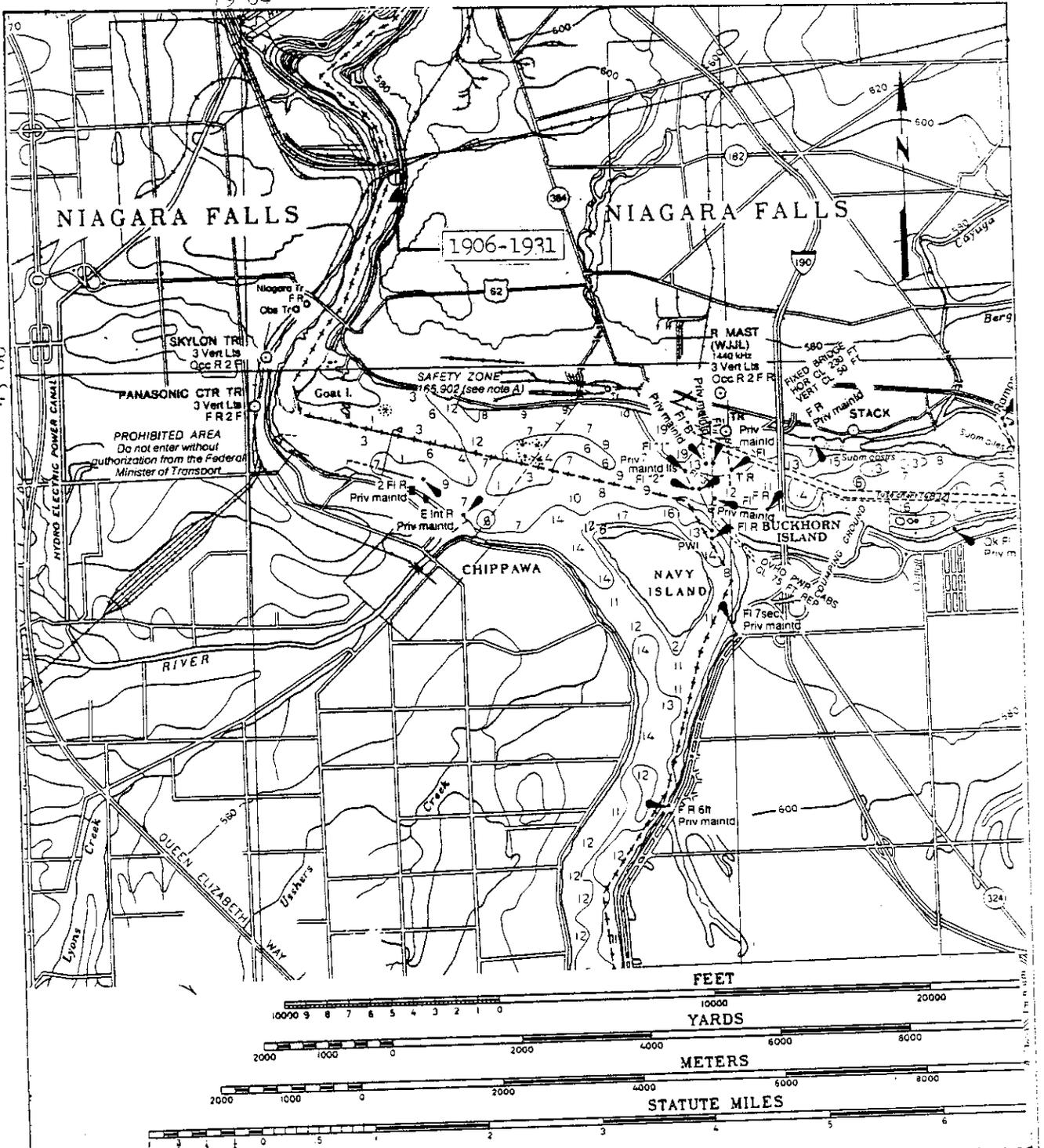
PERIOD	CONTROLLING BENCH MARK	IGLD (1955) ELEVATION	TYPE OF RECORD	AGENCY
Jun 1906-Dec 1912	BRIDGE NO 2	343.711 feet	Recording Gauge, Hourly Scalings	U.S.L.S.
Sep 1917-Dec 1926	BRIDGE NO 2	343.711 feet	Recording Gauge, Daily Mean	U.S.E.O.
May 1931-Nov 1931	BRIDGE NO 2	343.711 feet (104.763 meters)	Recording Gauge, Hourly Scalings	U.S.L.S.

#### Gauging Station Site (see Plate 165, page 338):

(a) June 1906 - November 1931: A recording gauge located in the Niagara River on the U.S. shore about 500 feet upstream from the New York Central Railroad Bridge.

79°04'

43°06'



WATER LEVEL GAUGE LOCATION  
 SUSPENSION BRIDGE, NEW YORK  
 1906-1931

1982

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