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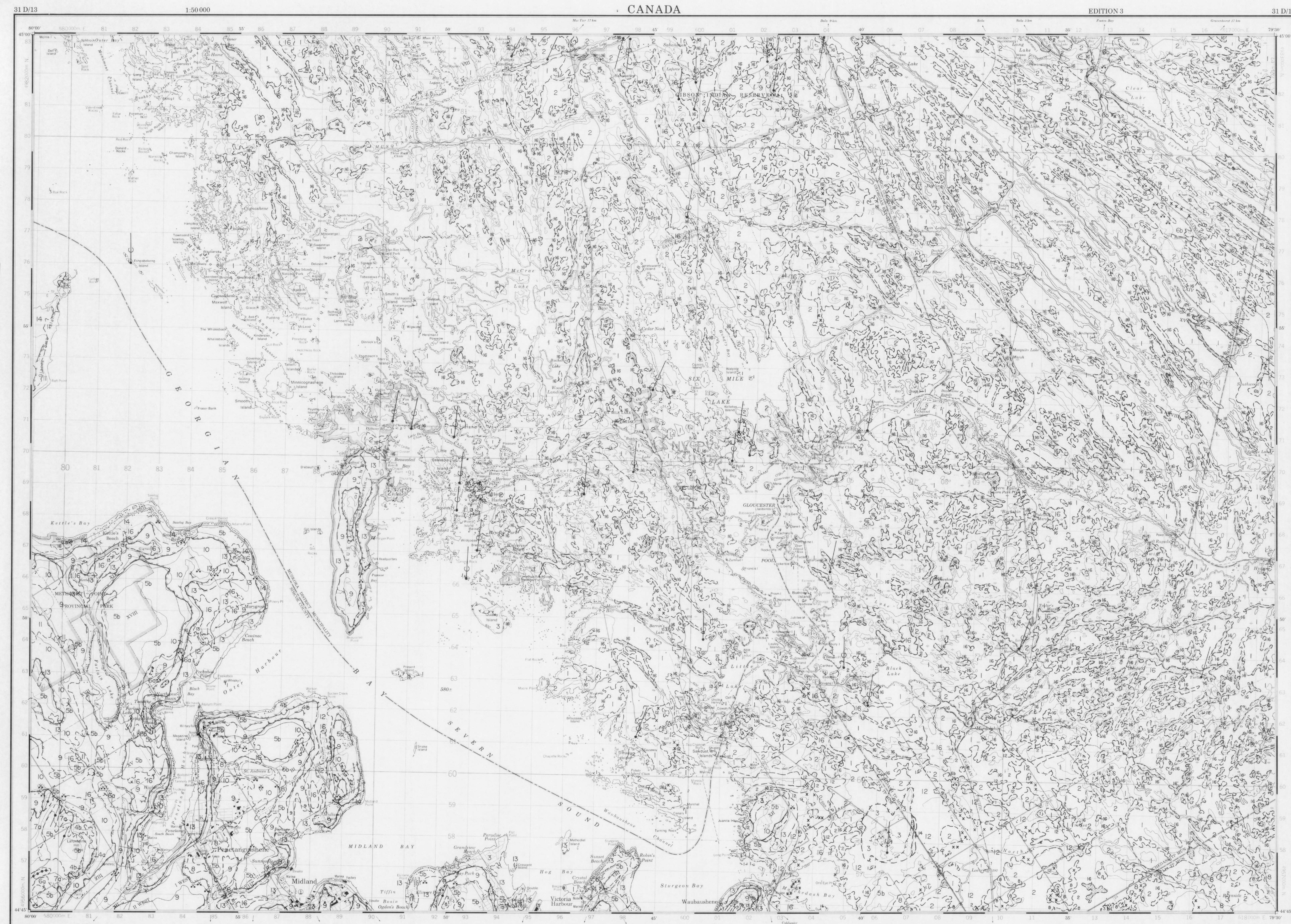
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31 D/13
1:50 000
EDITION 3

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MAP 31 D/13 QUATERNARY GEOLOGY OF THE PENETANGUISHENE AREA

GLOSSARY GLOSSAIRE

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ABBREVIATIONS ABBREVIATIONS

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ONE THOUSAND METRE
UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 17
QUADRILLAGE DE MILLE MÈTRES
TRANSVERSE UNIVERSAL DE MERCATOR

TABLEAU D'ÉCHELLES DE DISTANCE
DE DISTANCE CARROUSÉE

1:100 000	1:50 000	1:25 000	1:12 500
1:10 000	1:5 000	1:2 500	1:1 250

SYMBOLS

- Geological boundary (approximate).
- Glacial striae; direction of ice movement known or assumed; dot represents actual site location.
- Fluting
- Ice-contact slope.
- Trend of moraine crest.
- Bedrock escarpment.
- Wave-cut notch or shore bluff.
- Beach ridge or bar
- Small area of bedrock outcrop in areas of extensive drift cover.
- Parabolic dunes and blowout depressions.
- Sand and gravel pit.
- Bedrock quarry.

PENETANGUISHENE
31 D/13
EDITION 3

OFM 194-1

LEGEND^a

PHANEROZOIC
CENOZOIC
QUATERNARY
RECENT

- 17^a Modern alluvial deposits: sand and silt; may contain detrital organic remains.
- 16 Swamp and organic deposits: peat and muck.
- 15^a Older alluvial deposits: sand and silt, minor gravel; occur in terrace remnants.
- 14 Lacustrine nearshore beach and bar deposits: sand and gravel.
- 13 Lacustrine coarse-grained deposits: fine to very fine sand, minor pebbly sand and silt.
- 12 Lacustrine fine-grained deposits: silt and clay, minor fine to very fine sand.

PLEISTOCENE

- 11 Eolian deposits: fine to very fine sand
- 10 Glaciolacustrine nearshore beach and bar deposits: sand and gravel.
- 9 Glaciolacustrine coarse-grained deposits: fine to very fine sand, minor pebbly sand and silt; includes sandy distal facies of subaquatic fans.
- 8 Glaciolacustrine fine-grained deposits: silt and clay, minor fine to very fine sand; massive to well laminated.
- 7 Glaciolacustrine outwash deposits
7a: fine to coarse sand, minor gravel.
7b: sandy gravel to gravel.
- 6 Glaciolacustrine ice-contact stratified drift deposits: sand, gravel, boulders, minor till
6a: in eskers, kames and kame terraces.
6b: in subaquatic fans; may be overlain by thin deposits of glaciolacustrine sand, silt and clay.
- 5 Till
5a: silty sand till rich in Precambrian rock fragments.
5b: silty sand till rich in Paleozoic rock fragments.
- 4 Older stratified drift
4a: glaciolacustrine sand and gravel.
4b: glaciolacustrine sand, silt and clay.

ORDOVICIAN

- 3 Paleozoic bedrock: exposed or with very thin (<1 m) drift cover.

PRECAMBRIAN

- 2 Bedrock drift complex: thin, discontinuous drift cover in Precambrian terrain, contains areas of drift greater than 1 m thick, although not large enough to delineate at the scale of this map.
- 1 Precambrian bedrock: exposed or with very thin (<1 m) drift cover.

^a Deposits on this sheet are mapped only where they reach one metre or more in thickness. Thinner deposits are not shown.
^b Unit not present on this map sheet.

SOURCES OF INFORMATION

Basemaps derived from Maps 31D/13 (Penetanguishene) and 41A/16 (Christian Island) of the National Topographic System. Contour interval 50 feet (Penetanguishene area) and 25 feet (Christian Island area), scale 1:50 000.

Aerial photography by the Ontario Ministry of Natural Resources, Toronto.

Magnetic declination approximately 9°21' (Penetanguishene) in 1978 and 8°26' (Christian Island) in 1977.

CREDITS

Geology by A.F. Bajc, J.T. Paterson and assistants, 1991.

Every possible effort has been made to ensure the accuracy of the information presented on this map; however, the Ontario Ministry of Northern Development and Mines does not assume any liability for errors that may occur. Users may wish to verify critical information.

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Quaternary Geology of the Penetanguishene Area
Department of Energy, Mines and Technical Services
100 Waterlo Street, Toronto, Ontario M5H 5B6

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PENETANGUISHENE
ONTARIO

Scale 1:50 000 Échelle 1:50 000

CONVERSION TABLE FOR ELEVATIONS
ÉCHELLE DE CONVERSION POUR ALTITUDES

Feet	0	100	200	300	400	500	600	700	800	900	1000
Meters	0	30	60	90	120	150	180	210	240	270	300

Ministry of Northern Development and Mines
Ontario Geological Survey

Open File Map 194
Quaternary Geology of the
Penetanguishene and Christian
Island Areas
Southern Ontario

Scale 1:50 000
1 000 m 0 1 2 km

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OFM 194-1

Ministry of Northern Development and Mines
Ontario Geological Survey

Open File Map 194
Quaternary Geology of the
Penetanguishene and Christian
Island Areas
Southern Ontario

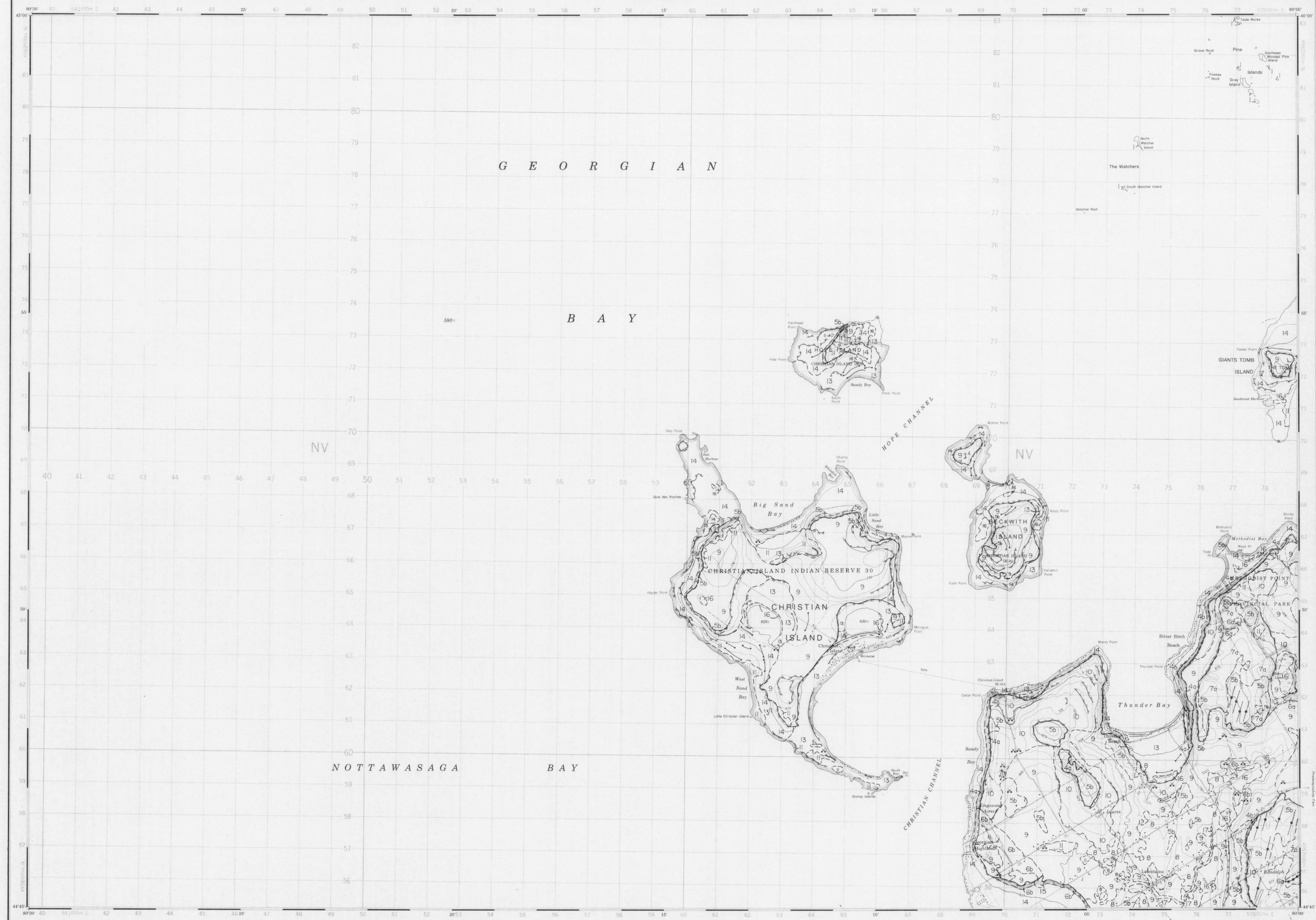
Scale 1:50 000
1 000 m 0 1 2 km

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Military users refer to this map as... GLOSSARY GLOSSAIRE... ABBREVIATIONS ABRÉVIATIONS... ONE THOUSAND METRE... SYMBOLS... TABLE OF EQUIVALENTS... CHISTIAN ISLAND 41 A/16 EDITION 3

- PHANEROZOIC CENOZOIC QUATERNARY RECENT 17 Modern alluvial deposits: sand and silt; may contain detrital organic remains. 16 Swamp and organic deposits: peat and muck. 15 Older alluvial deposits: sand and silt, minor gravel; occur in terrace remnants. 14 Lacustrine nearshore beach and bar deposits: sand and gravel. 13 Lacustrine coarse-grained deposits: silt to very fine sand, minor pebbly sand and silt. 12 Lacustrine fine-grained deposits: silt and clay, minor fine to very fine sand. PLEISTOCENE 11 Eolian deposits: fine to very fine sand. 10 Glaciolacustrine nearshore beach and bar deposits: sand and gravel. 9 Glaciolacustrine coarse-grained deposits: fine to very fine sand, minor pebbly sand and silt; includes sandy distal facies of subaquatic fans. 8 Glaciolacustrine fine-grained deposits: silt and clay, minor fine to very fine sand; massive to well laminated. 7 Glaciolacustrine outwash deposits 7a: fine to coarse sand, minor gravel. 7b: sandy gravel to gravel. 6 Glaciolacustrine ice-contact stratified drift deposits: sand, gravel, boulders, minor till 6a: in eskers, kames and kame terraces. 6b: in subaquatic fans; may be overlain by thin deposits of glaciolacustrine sand, silt and clay. 5 Till 5a: siltly sand till rich in Precambrian rock fragments. 5b: siltly sand till rich in Paleozoic rock fragments. 4 Older stratified drift 4a: glaciolacustrine sand and gravel. 4b: glaciolacustrine sand, silt and clay. ORDOVICIAN 3 Paleozoic bedrock: exposed or with very thin (<1 m) drift cover. PRECAMBRIAN 2 Bedrock drift complex: thin, discontinuous drift cover in Precambrian terrain, contains areas of drift greater than 1 m thick, although not large enough to delineate at the scale of this map. 1 Precambrian bedrock: exposed or with very thin (<1 m) drift cover. Deposits on this sheet are mapped only where they reach one metre or more in thickness. Thinner deposits are not shown. Unit not present on this map sheet.

CHRISTIAN ISLAND ONTARIO Scale 1:50,000 Échelle 1:50,000 CONVERSION SCALE FOR ELEVATIONS... CHISTIAN ISLAND 41 A/16 EDITION 3

Ministry of Northern Development and Mines Ontario Mines and Minerals Division Ontario Geological Survey Open File Map 194 Quaternary Geology of the Penetanguishene and Christian Island Areas Southern Ontario Scale 1:50,000 1000 m 0 1 2 km UNEDITED MANUSCRIPT This unedited Open File Map is presented for viewing in order to provide early access to recent geoscience mapping. It will be available for on-request viewing and photocopying at the Resident Geologist's office - London, Resident Geologist's office - Donnet, Ontario Geological Survey Mines Library - Sudbury, and the Mines and Minerals Information Centre Library - Toronto. Open File Maps are also available for sale at the Natural Resources Information Centre. Information from this publication may be quoted if credit is given. It is recommended that reference to this map be made in the following form: Bajc, A.F. and Paterson, J.T., 1992. Quaternary geology of the Penetanguishene and Christian Island areas, southern Ontario. Ontario Geological Survey, Open File Map 194, scale 1:50,000.

SOURCES OF INFORMATION Basemaps derived from Maps 31D/13 (Penetanguishene) and 41A/16 (Christian Island) of the National Topographic System. Contour interval 50 feet (Penetanguishene area) and 25 feet (Christian Island area), scale 1:50,000. Aerial photography by the Ontario Ministry of Natural Resources, Toronto. Magnetic declination approximately 9°21' (Penetanguishene) in 1978 and 8°26' (Christian Island) in 1977. CREDITS Geology by A.F. Bajc, J.T. Paterson and assistants, 1991. Every possible effort has been made to ensure the accuracy of the information presented on this map; however, the Ontario Ministry of Northern Development and Mines does not assume any liability for errors that may occur. Users may wish to verify critical information. Issued 1992. The Ontario Ministry of Natural Resources and the District Municipality of Muskoka provided financial assistance to the field program of this project. Information on this publication may be quoted if credit is given. It is recommended that reference to this map be made in the following form: Bajc, A.F. and Paterson, J.T., 1992. Quaternary geology of the Penetanguishene and Christian Island areas, southern Ontario. Ontario Geological Survey, Open File Map 194, scale 1:50,000.