

GEOLOGICAL  
SURVEY  
OF  
CANADA

DEPARTMENT OF ENERGY,  
MINES AND RESOURCES

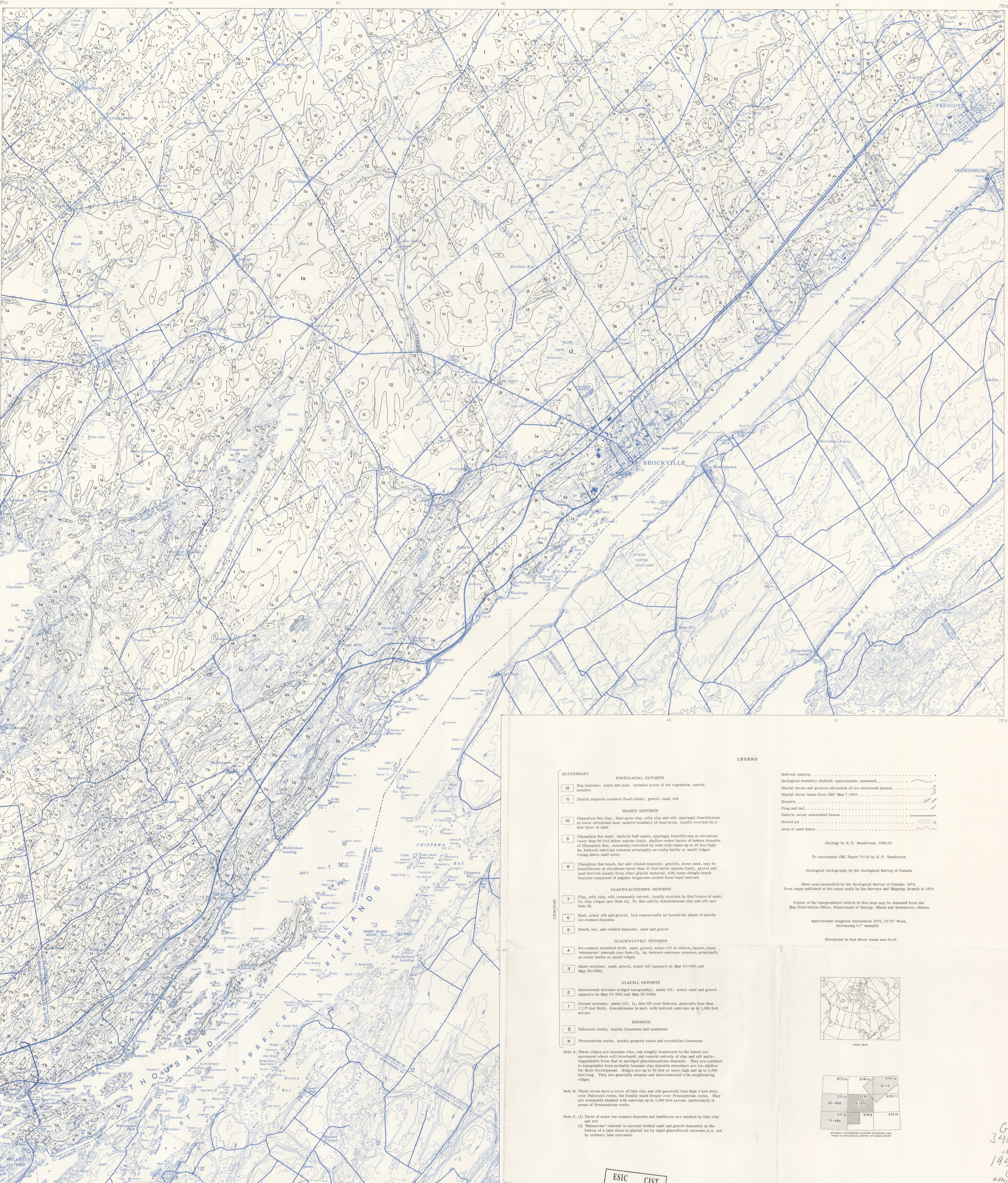
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PAPER 70-18

MAP 6-1970  
SURFICIAL GEOLOGY OF BROCKVILLE AND  
MALLORYTOWN MAP-AREAS, ONTARIO

E. P. Henderson



- LEGEND**
- QUATERNARY**
- 12 Bug deposits: muck and peat; includes areas of fen vegetation, marsh, meadow
  - 11 Fluvial deposits (modern flood-plain): gravel, sand, silt
  - 10 Champlain Sea clay: blue-grey clay, silty clay and silt, sparingly fossiliferous at lower elevations near eastern boundary of map-area; locally overlain by a thin layer of sand
  - 9 Champlain Sea sand: uniform buff sands, sparingly fossiliferous at elevations lower than 40 feet below marine limit; shallow-water facies of bottom deposits of Champlain Sea; commonly reworked by wind with dunes up to 45 feet high; bedrock outcrops common principally as rocky boulders or small ridges rising above sand cover
  - 8 Champlain Sea beach, bar and related deposits: gravels, some sand, may be fossiliferous at elevations lower than 35 feet below marine limit; gravel and sand derived mainly from other glacial material, with some shingle beach deposits composed of angular fragments eroded from local bedrock
- MARINE DEPOSITS**
- 7 Clay, silty clay, silt, commonly varved; locally overlain by thin lenses of sand; 7a, clay ridges (see Note A); 7b, thin and/or discontinuous clay and silt (see Note B)
  - 6 Sand, minor silt and gravel; laid concurrently as lacustrine phase of nearby ice-contact deposits
  - 5 Beach, bar, and related deposits: sand and gravel
- GLACIOFLUVIAL DEPOSITS**
- 4 Ice-contact stratified drift: sand, gravel, minor till in eskers, kames, local 'submarine' outwash (see Note C); 4a, bedrock outcrops common, principally as rocky boulders or small ridges
  - 3 Kame moraine: sand, gravel, minor till (appears on Map 11-1965 and Map 22-1965)
- GLACIAL DEPOSITS**
- 2 Recessional moraine (ridged topography): sandy till; minor sand and gravel (appears on Map 11-1965 and Map 22-1965)
  - 1 Ground moraine: sandy till; 1a, thin till over bedrock, generally less than 1 1/2 feet thick; discontinuous in part, with bedrock outcrops up to 1,000 feet across
- BEDROCK**
- B Paleozoic rocks: mainly limestone and sandstone
  - R Precambrian rocks: mainly granitic rocks and crystalline limestone

Bedrock outcrop . . . . .

Geological boundary (defined, approximate, assumed) . . . . .

Glacial striae and grooves (direction of ice-movement known) . . . . .

Glacial striae taken from GSC Map 7-1963 . . . . .

Drumlin . . . . .

Crag and tail . . . . .

Eskers, minor associated kames . . . . .

Gravel pit . . . . .

Area of sand dunes . . . . .

Geology by E. P. Henderson, 1968-67

To accompany GSC Paper 70-18 by E. P. Henderson

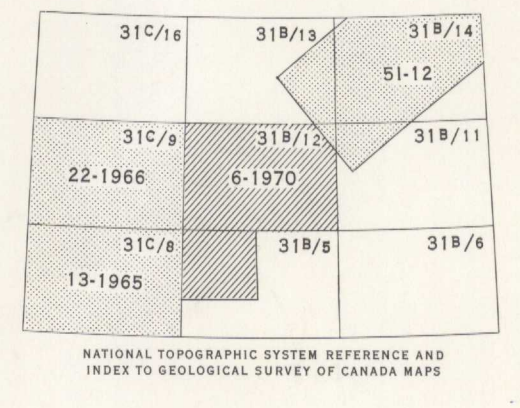
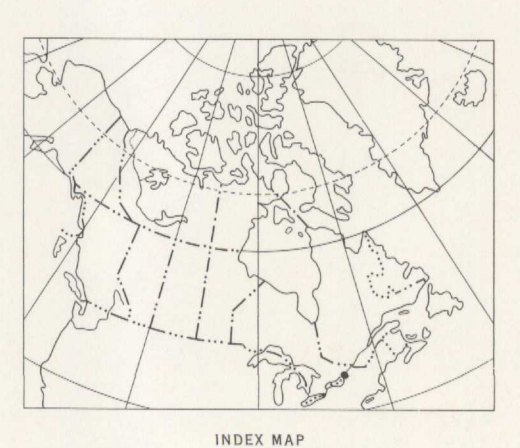
Geological cartography by the Geological Survey of Canada

Base-map assembled by the Geological Survey of Canada, 1970, from maps published at the same scale by the Surveys and Mapping Branch in 1970

Copies of the topographical edition of this map may be obtained from the Map Distribution Office, Department of Energy, Mines and Resources, Ottawa

Approximate magnetic declination 1970, 12° 37' West, increasing 5.7' annually

Elevations in feet above mean sea-level

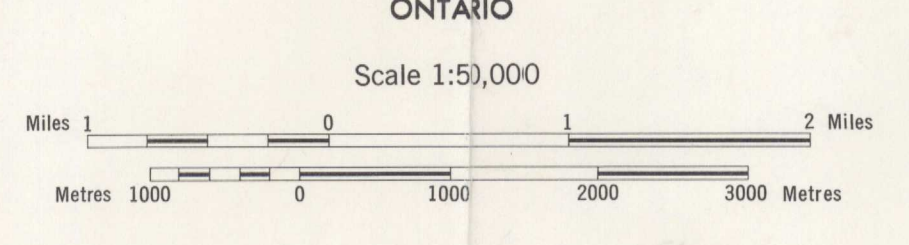


**NOTE A:** These ridges are moraine-like, run roughly transverse to the latest ice-movement where well developed, and consist entirely of clay and silt indistinguishable from that in unridged glaciofluvial deposits. They are confined to topographic lows probably because clay deposits elsewhere are too shallow for their development. Ridges are up to 50 feet or more high and up to 1,000 feet long. They are generally sinuous and interconnected with neighbouring ridges.

**NOTE B:** These areas have a cover of lake clay and silt generally less than 2 feet deep over Paleozoic rocks, but locally much deeper over Precambrian rocks. They are commonly studded with outcrops up to 1,000 feet across, particularly in areas of Precambrian rocks.

**NOTE C:** (1) Parts of some ice-contact deposits and landforms are masked by lake clay and silt  
(2) 'Submarine' outwash is current-bedded sand and gravel deposited on the bottom of a lake close to glacial ice by rapid glaciofluvial currents (i. e. not by ordinary lake currents)

MAP 6-970  
SURFICIAL GEOLOGY  
BROCKVILLE AND MALLORYTOWN  
ONTARIO



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