



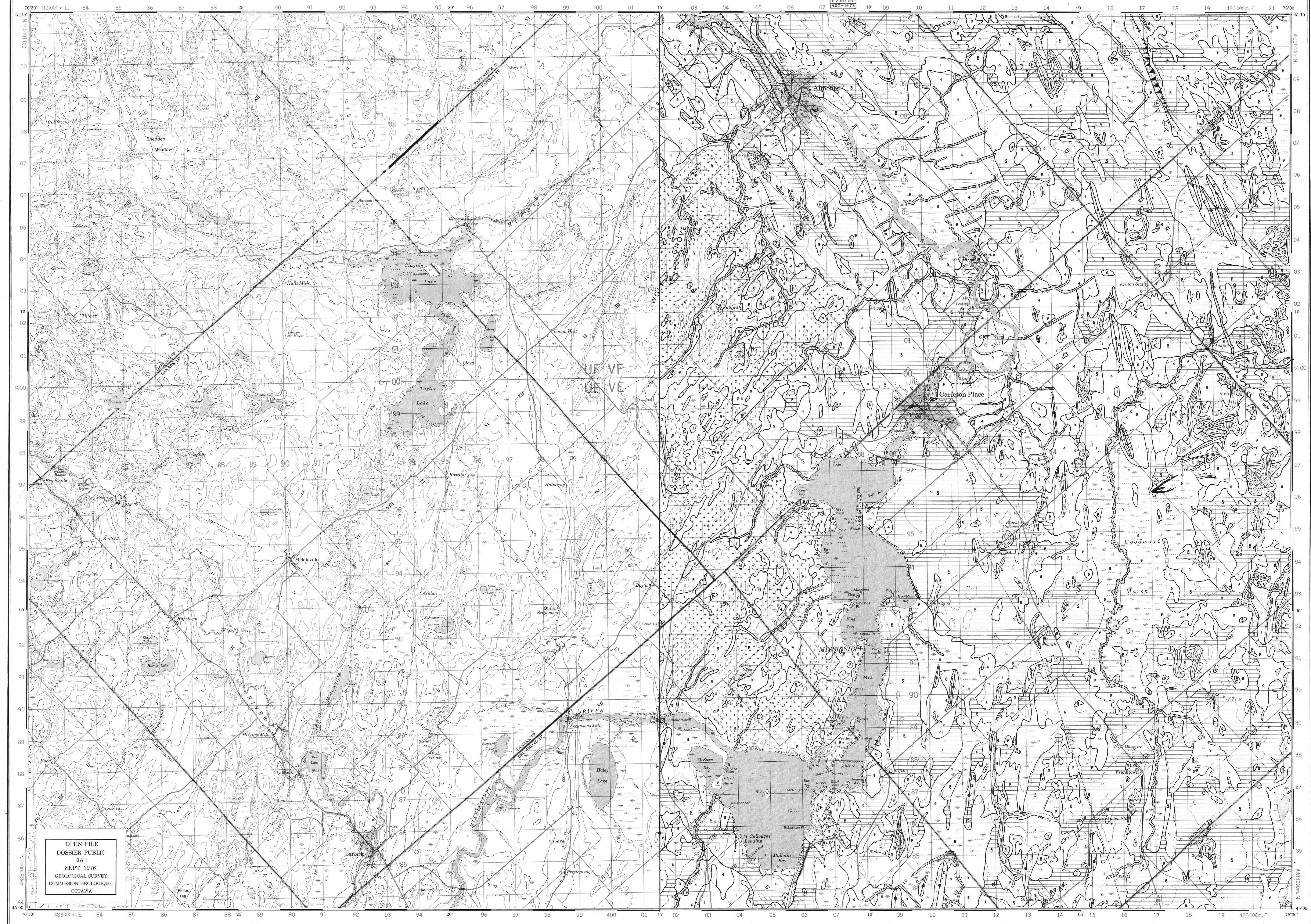
SURFICIAL GEOLOGY, CARLETON PLACE, ONT. 31 F/1 E

SCALE 1:50,000

LEGEND

SURFICIAL DEPOSITS AND TERRAIN FEATURES

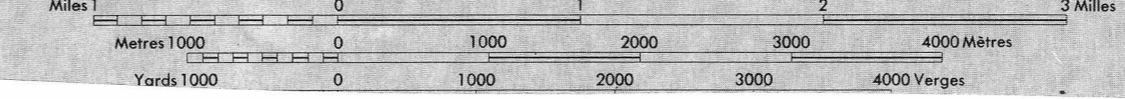
- QUATERNARY**
- 9 POSTGLACIAL - 10,000 years BP to present
 - Organic deposits: muck and peat; mainly peat bogs and poorly drained areas supporting fen, swamp, marsh and meadow vegetation
 - Alluvial deposits: stratified sand, silty sand, silt and silty clay; includes fluvial deposits, sand bars and spits of modern floodplain of present streams
 - Aeolian deposits: uniform, fine-grained, buff sand; derived from marine sands laid down in the Champlain Sea that were subsequently reworked and blown by wind into dunes; this unit is used where the flat surface of the original deposit has been completely transformed into hummocky topography
 - 6 MARINE - CHAMPLAIN SEA 12,800 to 10,000 years BP approx.
 - Marine beach deposits: gravel and sand, fossiliferous; derived mainly from the reworking by the Champlain Sea of older glacial or glacio-fluvial deposits; includes abandoned raised beaches, bars, spits, beach ridges, boulder beaches and boulder pavements; in most of the map-area where the Paleozoic bedrock outcrops these abandoned shoreline features rest directly on the limestone surface and the raised beaches are nearly entirely composed of limestone or dolomite slabs and shingles derived from the local bedrock
 - Marine sand: uniform, fine-grained, buff to grey sand, fossiliferous; shallow-water facies of off-shore sediments of the Champlain Sea; upper part of sand is buff and has often been reworked by wind into low dunes; when exposed in fresh cuts below the chemically weathered zone this sand is grey in colour
 - Marine clay: blue-grey clay, silty clay and silt, calcareous, fossiliferous; deep-water facies of off-shore sediments of the Champlain Sea; locally this unit is overlain by a thin layer of sand
 - 3 GLACIAL - LATE OR OLIGACIAL WISCONSIN - 12,800 years BP and/or older
 - Glacio-fluvial ice-contact and ice-frontal outwash deposits: gravel and sand, well sorted and bedded, mainly coarse to medium-grained with numerous cobbles and boulders, buff to grey, unfossiliferous; includes outwash plains, outwash fans, valley trains, kame terraces, kames and esker ridges deposited by fluvio-glacial meltwaters during deglaciation; either not submerged or little modified by postglacial marine inundation
 - Drumlinized glacial deposits: compact, grey to brown when leached and oxidized, calcareous, silty glacial till; denudated surface topography modified by the marine waters of the Champlain Sea during the postglacial submergence; many drumlins are overlain by gravel and sand lag deposits and abandoned beach and boulder ridges
 - Revelled or modified till deposits: compact, grey to brown when leached and oxidized, calcareous (siliceous in Precambrian basement parts of the map-area); sandy glacial till; topography flat to gently rolling with surface materials reworked and winnowed by the marine waters of the Champlain Sea; includes boulders, washed till on slopes and plains which grades downwards into unmodified till; ls. small till deposits; flat to gently rolling surface expression, lying above an elevation of 160 m. (525'), the approximate limit of submergence in the southern and central parts of the map-area along the western and highest former strandline position of the Champlain Sea
- BEDBROCK AREAS**
- R Limestone, dolomite and/or sandstone: mainly bare limestone, dolomite and sandstone - and locally shale-bedrock; includes areas thinly veneered by Quaternary unconsolidated sediments up to 1 m. (3') thick, most commonly consisting of washed and reworked glacial till and limestone, dolomite or sandstone slabs and shingles; limestone, dolomite and sandstone normally occur as tabular outcrops
 - R Intrusive and metamorphic rocks: mainly bare, hummocky or rolling areas composed of crystalline intrusive and metamorphic rocks of Precambrian age; includes areas thinly veneered by Quaternary unconsolidated sediments up to 1 m. (3') thick; below an elevation of 160 m. (525') this cover commonly consists of washed and reworked glacial till which in many places has been reduced to a sprinkling of glacial erratics resting directly on the bedrock
- PALAEZOIC**
- R Intrusive and metamorphic rocks: mainly bare, hummocky or rolling areas composed of crystalline intrusive and metamorphic rocks of Precambrian age; includes areas thinly veneered by Quaternary unconsolidated sediments up to 1 m. (3') thick; below an elevation of 160 m. (525') this cover commonly consists of washed and reworked glacial till which in many places has been reduced to a sprinkling of glacial erratics resting directly on the bedrock
- PRECAMBRIAN**
- R Intrusive and metamorphic rocks: mainly bare, hummocky or rolling areas composed of crystalline intrusive and metamorphic rocks of Precambrian age; includes areas thinly veneered by Quaternary unconsolidated sediments up to 1 m. (3') thick; below an elevation of 160 m. (525') this cover commonly consists of washed and reworked glacial till which in many places has been reduced to a sprinkling of glacial erratics resting directly on the bedrock
- Geological boundary**
- Bedrock scarps**
- Direction of ice movement indicated by drumlin**
- Former strandline positions of Champlain Sea**
- Ridge crests of sand dunes**
- Estuarine and river channel bluffs cut in marine clay**
- Fluvial channel scars showing flow direction in abandoned estuarine and river channels and terraces**
- Abandoned postglacial river channels; valley walls, gullies and present day drainage ways; includes some man-made field and road side drainage ditches**
- Fossil locality**
- Gravel or sand pit**
- Bedrock quarry**
- Locality of specimen, dated in years by radiocarbon method**
- Note 1:**
Marine limit: Small areas along the western margin of the map-sheet have escaped submergence by the Champlain Sea; the upper limit of the postglacial marine submergence is indicated by the highest elevations at which the marine sediments and their fossil record are found and varies from 122 m. (500') in the south, around Innesville, to 160 m. (525') in the centre, west of Carleton Place to 170 m. (560') in the north, west of Altonville, reflecting the differential glacio-isostatic uplift of the land from 538 to 338 since the deglaciation of the map-area
- GEOLOGY BY S.H. RICHARD 1970, 71, 72**
- Any revisions or additional geological information known to the user would be welcome by the Geological Survey of Canada.



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CARLETON PLACE ONTARIO

Scale 1:50,000 Echelle



CONTOUR INTERVAL: 25 FEET

EQUIDISTANCE DES COURBES: 25 METRES

Direction of Flow Arrow Mean Sea Level

Direction de l'écoulement Niveau de la Mer Moyenne

Produced by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND TECHNICAL SURVEYS, CANADA

Produit par le BRANCH DE LA CARTOGRAPHIE, MINISTRE DE L'ENERGIE, DES MINES ET DES GEODESIES, CANADA

Map scale may be obtained from the Map Distribution Office, Department of Energy, Mines and Technical Surveys, Ottawa

Les échelles peuvent être obtenues au Bureau de distribution des cartes, Ministère de l'Énergie, des Mines et des Ressources, Ottawa

Refer to this map as: 31 F/1

UNIVERSAL TRANSVERSE MERCATOR PROJECTION

ONE THOUSAND UNIVERSAL TRANSVERSE MERCATOR ZONE 18

EXAMPLE OF METHOD TO OBTAIN A REFERENCE TO THIS MAP

TABLEAU D'EXEMPLE DE LA MANIÈRE DE SE RÉFÉRER À LA CARTE

PROX TO ADJOINING NATIONAL MAPS

CARLETON 31 F/1