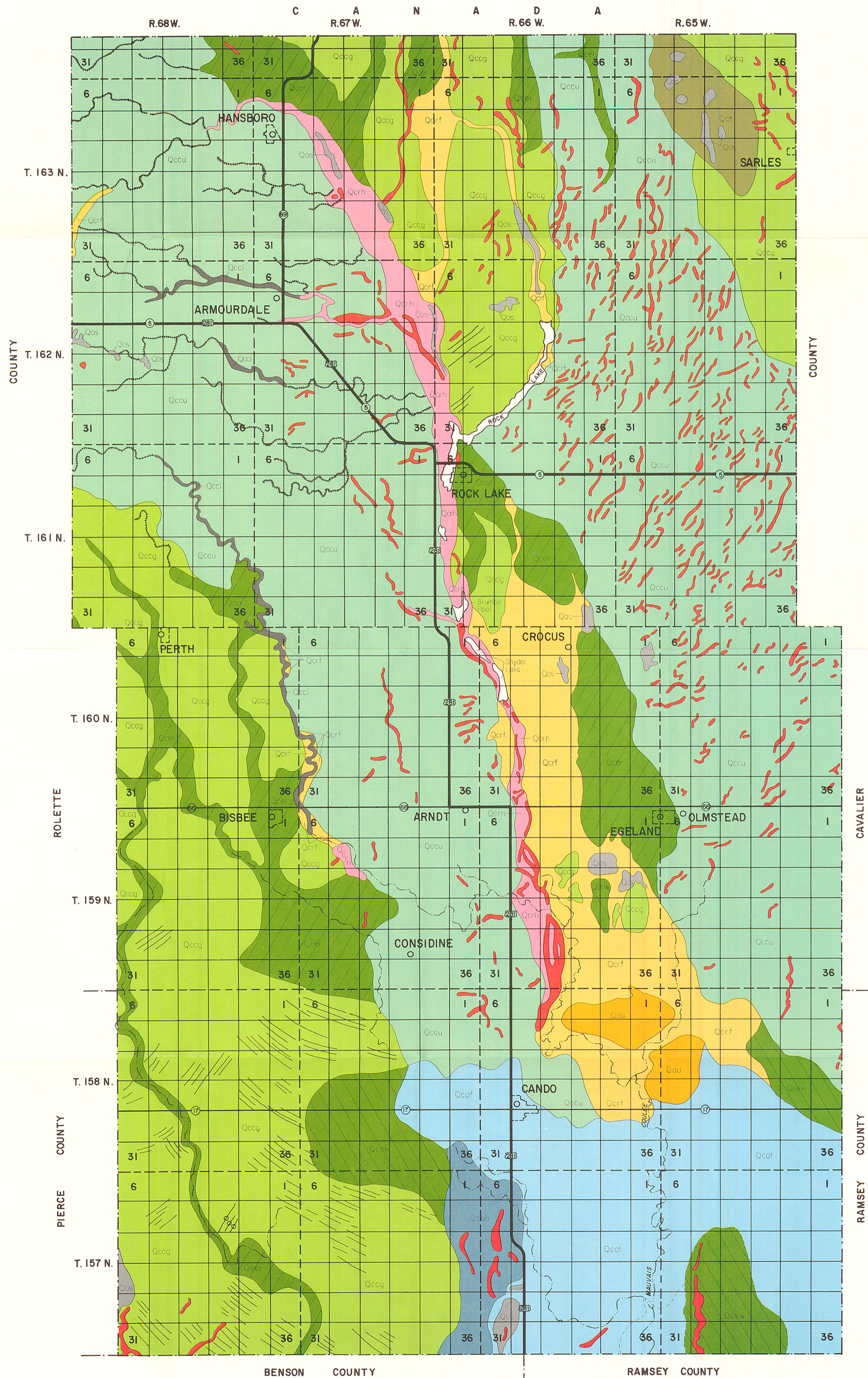


PLATE I. GEOLOGIC MAP OF TOWNER COUNTY

PART I PLATE I
COUNTY GROUNDWATER STUDIES 36
BULLETIN NO. 79

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LEGEND

See text for a more complete explanation of map units.

ROCK UNITS	DESCRIPTION
FORMATION AND FACIES	Texture, color, topography or landform, and origin.
OAHE FORMATION	
Qou	Windblown sediment. Silty sand with lenses of silt. Low relief.
Qos	Clay, sand, silt, and gravel with dispersed organic material; tough, black clay, silty clay, and clayey silt. Pond and slough sediment.
COLEHARBOR GROUP	
Silt and Clay Facies	Pebbly, sandy, silty clay with limestone, dolomite, granite, gneiss, and basalt pebbles and associated nonorganic, bedded clay, silt, sand, and gravel. Includes glacial, river, lake, and wind-blown sediment.
Qcof	Lake sediment. Laminated silty clay, clayey silt, and fine sand of glacier-dammed lakes.
Qcoh	Offshore to nearshore lake sediment (mainly turbidity-current sediment). Yellowish brown to dark gray silt and clayey silt with some sand in places; generally flat-bedded. Glacial Lake Cando plain. Commonly with blowout topography. Local relief generally less than 10 feet.
Qcer	Collapsed lake deposits; similar to Qcof, but tends to be more sandy. Local relief commonly exceeds 20 feet.
Sand and Gravel Facies	
Qcrf	River sediment. Moderately well-sorted, cross-bedded, shaly sand and plane-bedded gravel including sediment of melt-water rivers.
Qcrh	Flat fluvial plains. Flat-bedded river and stream sediment consisting of shaly, silty gravel and sand; braided channel scars common; relief generally less than 10 feet locally.
Qcrh	Hilly (collapsed) areas of fluvial sediment; similar to Qcrf, but with local relief up to 50 feet. Eskers (shown as red areas on the map) consist of ridges of shaly gravel and sand with abundant boulders, cobbles, and chunks of till; local relief of 15 to 20 feet except up to 40 to 50 feet locally.
Till Facies	
Qccg	Glacial sediment. Unsorted, unbedded mixture of angular, subangular, and rounded blocks of rock, gravel, and sand, generally in a stiff matrix of silt and clay; yellowish-brown to olive-gray in exposures depending on weathering intensity; contains discontinuous lenses of gravel and sand.
Qccu	Collapsed glacial topography with a gently rolling surface and fair to poorly integrated drainage; local relief generally less than 10 feet. Washboards are found in the southwest part of the county.
Qccw	Collapsed glacial topography with an undulating surface and nonintegrated drainage; local relief of 10 to 20 feet in the east, 5 to 15 feet in the west, except near gullies where it may exceed 25 feet. Numerous eskers are found associated with areas of Qccu in eastern Towner County.
Qcer	Nearly smooth, bouldery surface of water-worn glacial sediment; veneer of sand or gravel in places; wave-worn surface found along the northwest edge of glacial Lake Cando in southern Towner County.
Qcci	Nearly smooth, bouldery surface of water-worn glacial sediment; veneer of sand or gravel in places; surface was washed by streams flowing southward toward glacial Lake Cando.
Qct	Slope-wash-eroded till slopes consisting of steeply sloping, eroded bouldery surfaces of glacial sediment found adjacent to deep gullies in western Towner County. Local relief is as much as 50 feet.
Qct	Ice-thrust topography with large, low hills and intervening slough-filled depressions found in northeast Towner County.

Map Symbols

- Geologic contacts.
- Transverse ridges on till (areas of Qccg). Probably mainly washboard ridges.
- Streamlined, drumlin-like features in areas of till (Qccg).
- Gullies cut in till; continuations of areas of Qcci.
- Ponds and lakes.
- Roads.
- Streams.

SCALE

