North Dakota Geological Survey
24K: Drsl - sg

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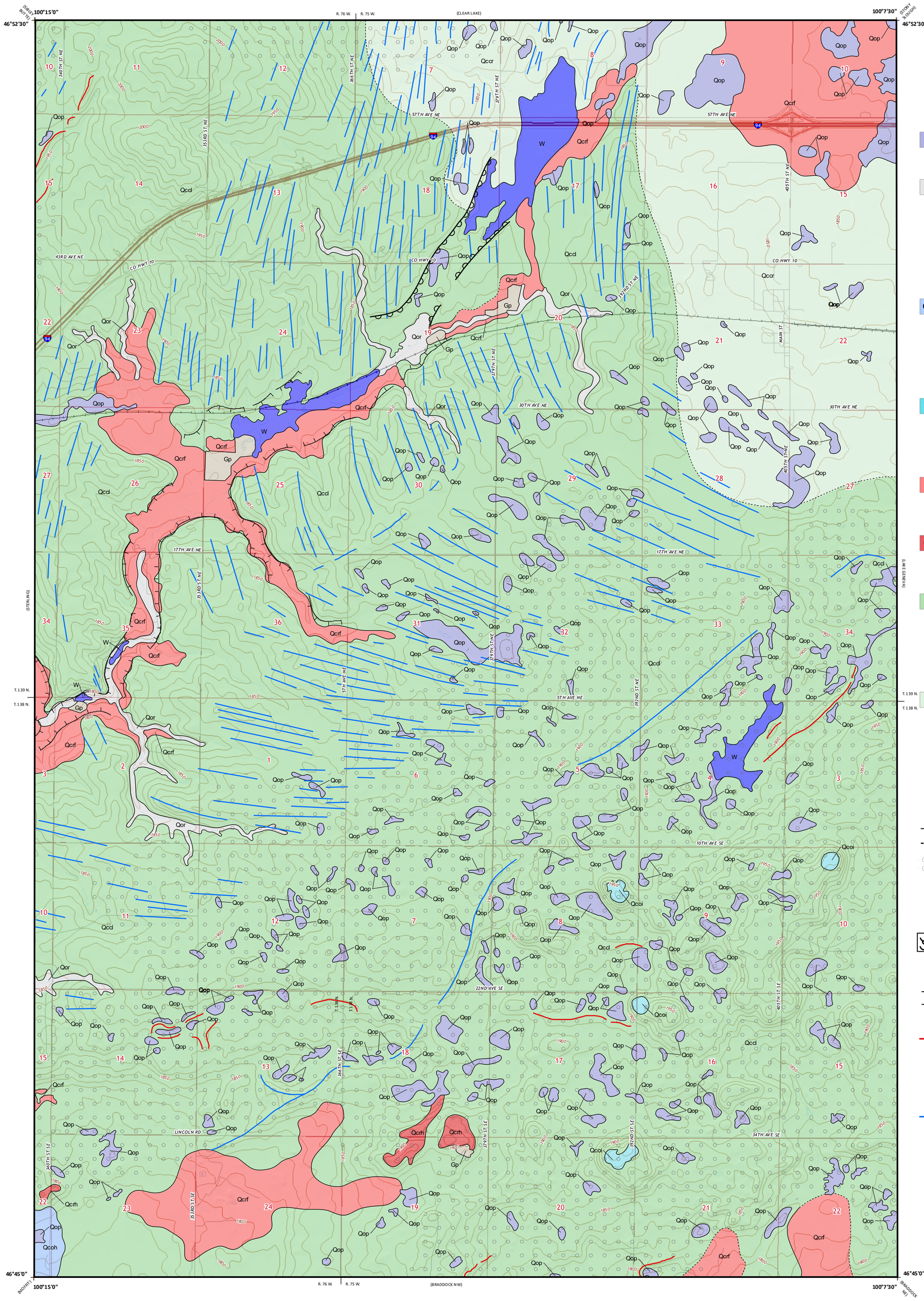
Surface Geology
Driscoll Quadrangle, North Dakota

Lorraine A. Manz

2021



QUATERNARY SYSTEM

HOLOCENE

OAHE FORMATION

Sand, silt, clay, gravel, and organic debris; all postglacial sediment deposited on the landscape; includes river sediment, windblown sediment, and lake sediment.

Qop — **Pond and slough sediment**
Organic debris, clay, and silt; obscurely bedded; dark colored; generally more than 3 feet (1 meter) thick; deposited in poorly drained depressions in the landscape.

Qor — **Alluvium and overbank sediment**
Sand, silt, clay, and disseminated organic debris; obscurely bedded, dark colored; locally abundant gastropod and pelecypod shells including *Valvata tricarinata*, *Sphaerium* sp., and *Pisidium* sp.; commonly more than 3 feet (1 meter) thick.

PLEISTOCENE

COLEHARBOR GROUP

The Coleharbor Group includes all sediments in North Dakota associated with deposition by Pleistocene glaciers.

Qcoh — **Collapsed lake sediment**
Flat-bedded to gently folded, light olive-brown to olive-brown laminated clay, clayey silt, silty clay, silt and sand; non to moderately calcareous; iron-stained in places; small (generally less than pebble-sized) carbonate nodules and masses of gypsum, and sand-sized organic fragments common; subtle, flat to gently undulating, hummocky surface; offshore sediment deposited in a proglacial, ice-dammed lake. May be covered by a patchy, thin veneer of windblown sediment.

Qcoi — **Ice-walled lake sediment**
Flat-bedded, light olive-brown to olive-brown laminated silt and clay; calcareous; iron-stained in places; root casts up to about 0.5 inches (1 cm) in diameter and trace organics common; caps several prominent till highs south of the community of Driscoll; maximum thickness is about 35 feet (10.7 meters); sediment deposited in an ice-walled lake.

Qcrf — **Collapsed outwash**
Moderately well-sorted, light to dark olive-brown, low-angle flat-bedded to high-angle cross-bedded silt, sand, and gravel; calcareous; shaly; bouldery in places; deposited as outwash or by meltwater in contact with the ice margin.

Qcrh — **Collapsed outwash**
Moderately well-sorted, light to dark olive-brown, faulted and contorted plane- and cross-bedded, pebbly silt, sand, and gravel; calcareous; shaly; cobbles and boulders common; rolling to hilly surface; collapsed sediment deposited by supraglacial rivers.

Qccl — **Collapsed glacial sediment**
Light olive-brown to olive-brown; unsorted; unbedded; calcareous; very shaly lignite fragments common; contains abundant cobbles and boulders of mostly crystalline lithologies, with minor amounts of limestone, dolostone, and, more rarely, local bedrock types (including silcrete and sandstone; root casts up 1 inch (2.5 cm) in diameter common locally); undulating to rolling, hummocky surface deposited as end moraine on a predominantly non-glacial surface by an early Late Wisconsinan glacier (Long Lake Advance).

Qccr — **Collapsed glacial sediment**
Light olive-brown to olive-brown; unsorted; unbedded; calcareous; very shaly; lignite fragments common; contains abundant cobbles and boulders of mostly crystalline lithologies, with minor amounts of limestone, dolostone, and, more rarely, local bedrock types including silcrete and sandstone; gently undulating to rolling, hummocky surface; numerous ephemeral ponds and small lakes; collapsed low-relief glacial sediment deposited as ground moraine by an early Late Wisconsinan glacier.

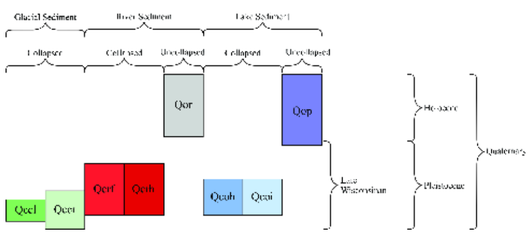
Geologic Symbols

- Geologic contact
- Geologic contact (inferred)
- **Hummocky topography** – Established from aerial photographs and LiDAR; the circular pattern indicates areas of subdued ring-shaped hummocks in collapsed supraglacial sediment; interpreted as circular disintegration ridges formed by the subsidence of supraglacial sediment (commonly till) during wastage of the underlying ice; generally difficult to discern on topographic maps and on the ground.
- **Partly buried channel** – Established from aerial photographs and LiDAR; lines indicate the crests of the scarps; half-circles indicate the downslope direction; interpreted as a partly buried stream or meltwater channel; generally apparent on topographic maps, may not be apparent on the ground.
- **Sharp-walled channel** – Established from aerial photographs and LiDAR; paired sharp scarps; lines indicate the crests of the scarps and hachures point downslope; interpreted as a meltwater channel; apparent on topographic maps and on the ground.
- **Elongate hummocks** – Established from aerial photographs and LiDAR; line indicates the crest of a conspicuous, sinuous ridge, located in collapsed supraglacial sediment; interpreted as single or coalesced disintegration ridges formed by the subsidence of supraglacial sediment (commonly till) during wastage of the underlying ice; may be apparent on topographic maps and on the ground.
- **Other lineations** – Established from aerial photographs and LiDAR; line marks the long dimension of the feature; located in glacial sediment and thinly veneered glacial sediment; interpreted as streamlined bedforms associated with the movement of glacial ice, or lineations of unknown origin; generally difficult to discern on topographic maps and on the ground.

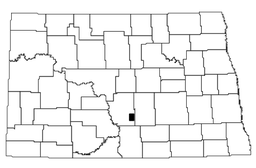
ROAD CLASSIFICATION

Expressway — Local Connector
Secondary Hwy — Local Road
Ramp — 4WD
Interstate Route — US Route — State Route

Correlation Of Map Units



Cartographic Compilation: Navin Thapa



Driscoll Quadrangle, North Dakota

Scale 1:24,000
0 0.5 1
Miles

Lambert Conformal Conic Projection
North American 1983 Datum
USGS 7.5 Minute Topo Map

Standard Parallels 46°45'0"N, 46°52'30"N
NGVD 1988

5°25'
MN
2019 Magnetic North
Declination at Center of Sheet

W Water
Gp Gravel Pit