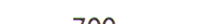

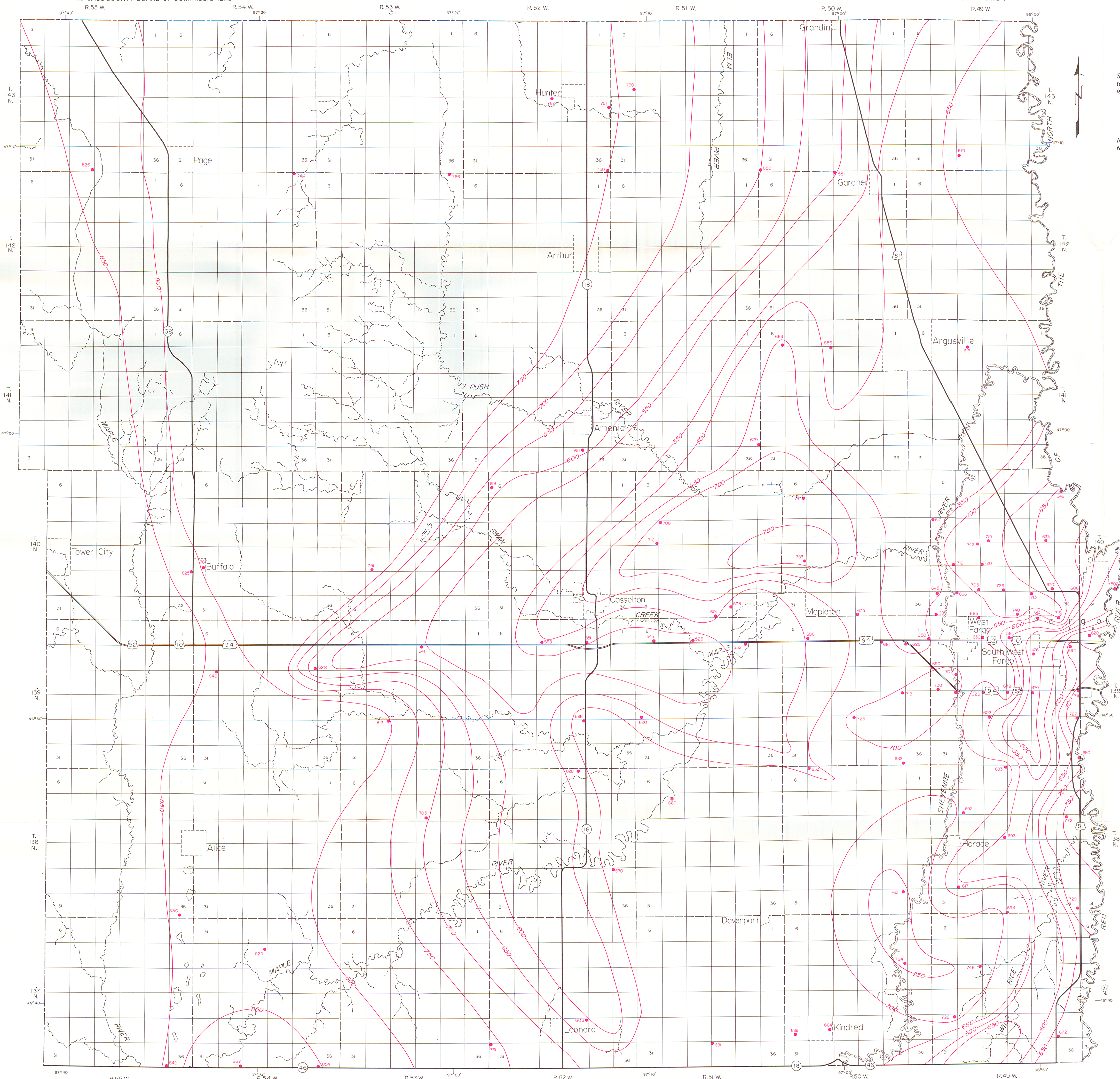


EXPLANATION

-  700  
Bedrock contour
- Shows altitude of bedrock surface. Contour interval 50 feet. Datum is mean sea level
-  613  
Control point
- Number is altitude of bedrock surface, in feet above mean sea level





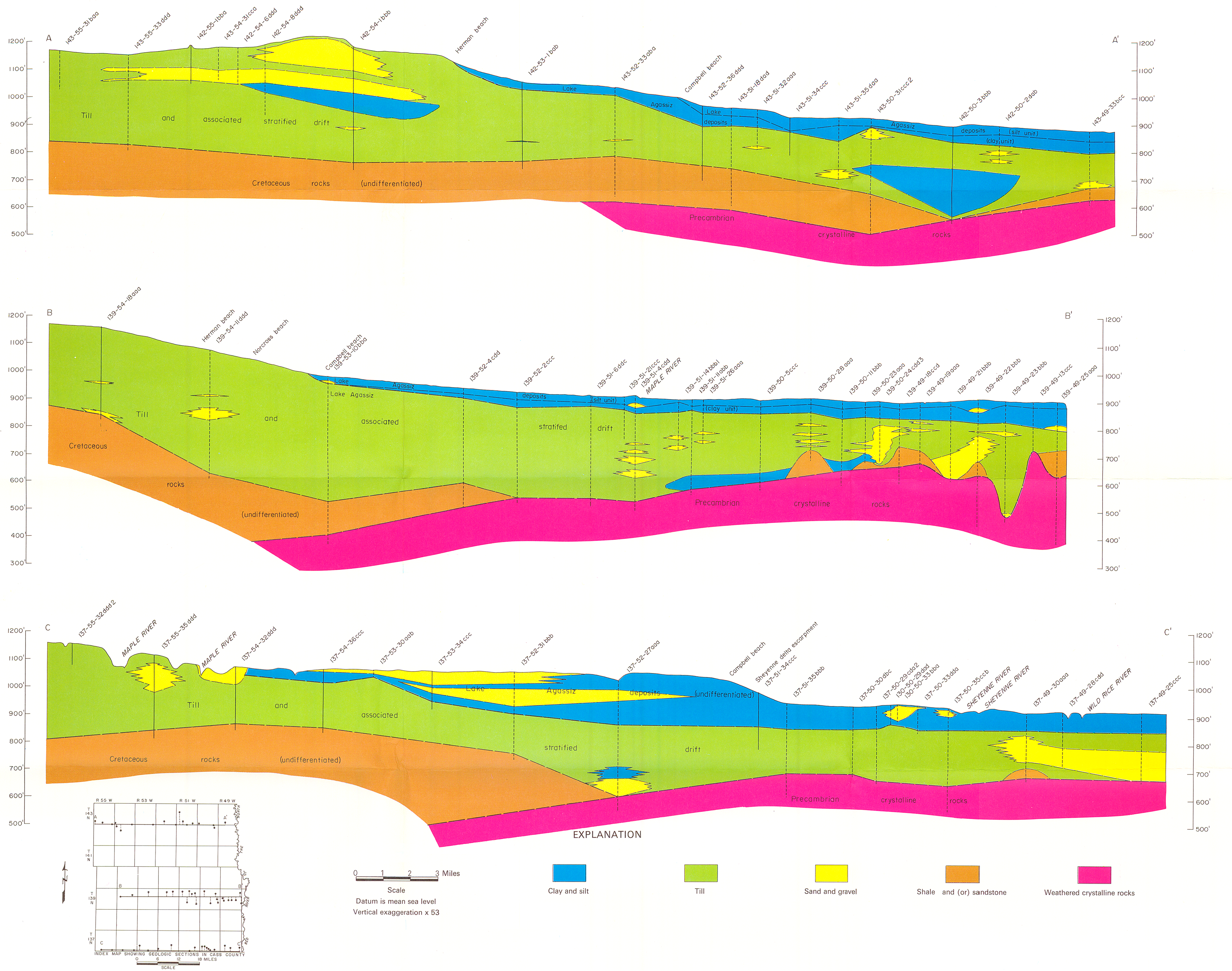
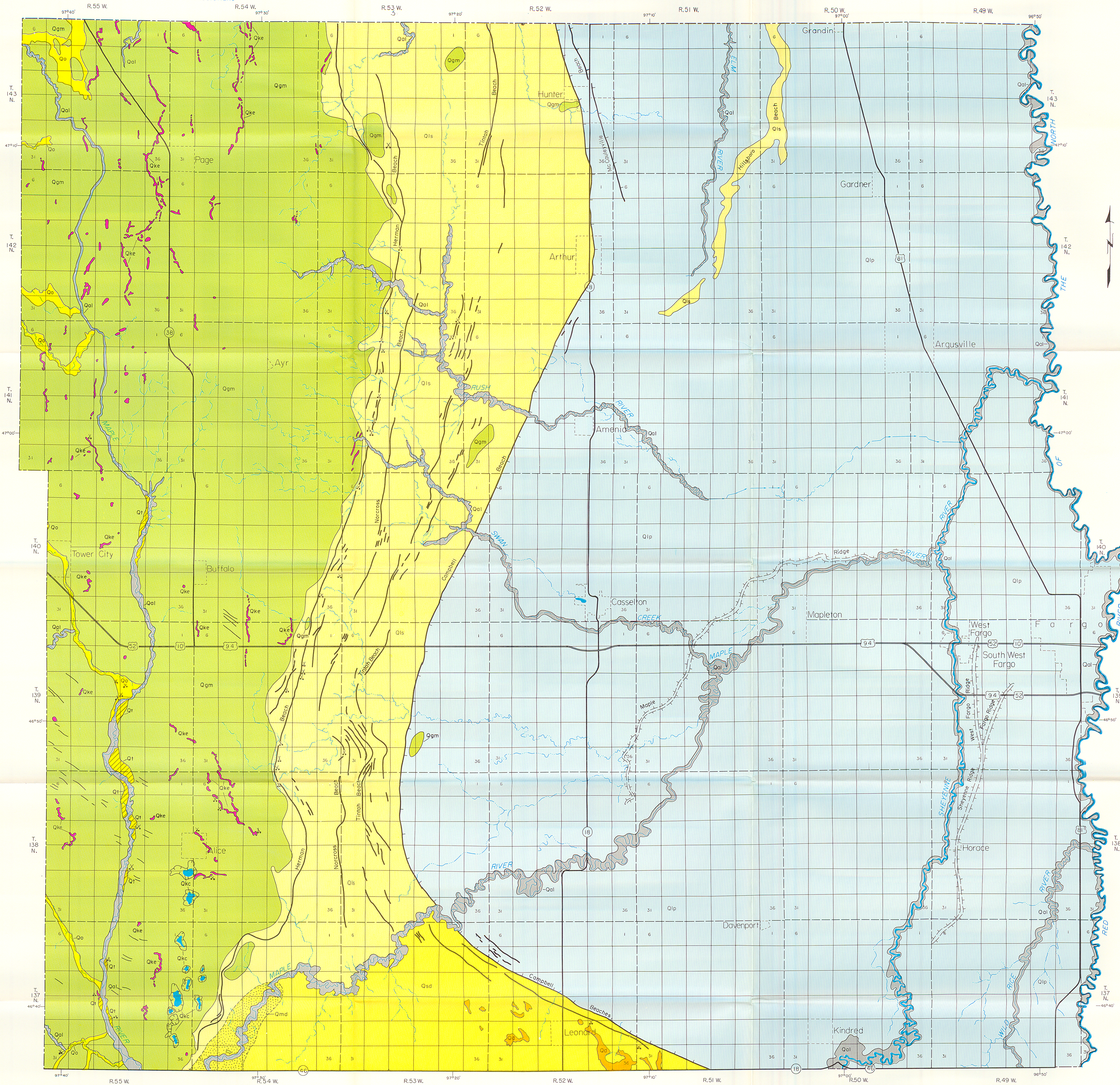


PLATE 2.—GEOLOGIC SECTIONS IN CASS COUNTY, NORTH DAKOTA





EXPLANATION

(Deposits are almost contemporary in age; units arranged approximately in order of deposition)

- Qal**  
ALLUVIUM  
Sand, silt, and clay underlying flood plains of major streams. Known maximum thickness 15 feet
- Qd**  
DUNE SAND  
Silt to fine sand in low dunes; not mapped where too thin to form distinct dune topography. Gradational contact with Sheyenne delta deposits (Qsd)

- Qls**  
SHORE DEPOSITS  
Sorted and stratified deposits of gravel, sand, silt, and clay; range in thickness from 0 to about 15 feet
- Qlp**  
LAKE-PLAIN DEPOSITS  
Consists of two units: upper unit is a silty, yellow clay that ranges in thickness from 0 to about 50 feet; lower unit is a silty, olive-gray, plastic clay that ranges in thickness from 0 to about 80 feet

- Qsd**  
SHEYENNE DELTA DEPOSITS  
Well-sorted deposits of thinly laminated silt and fine to medium sand. Range in thickness from 0 to about 120 feet
- Qmd**  
MAPLE DELTA DEPOSITS  
Deposits of sand and gravel ranging in thickness from 0 to about 50 feet. Finer sediments cannot be differentiated from adjacent deposits

- Qo**  
OUTWASH CHANNELS AND ASSOCIATED DEPOSITS  
Linear bodies of gravel, sand, silt, and clay deposited by glacial melt water in channels either in the till or on thin stagnant ice. The deposits range in thickness from 0 to about 25 feet
- Qa**  
TERRACE DEPOSITS  
Poorly bedded terrace deposits of sand and gravel in the Maple River valley. Range in thickness from 0 to about 20 feet

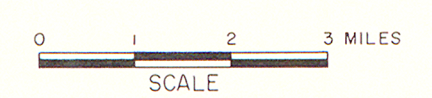
- Qke**  
KAMES AND ESKERS  
Mounds and sinuous ridges ranging from 10 to 40 feet in height, and consisting chiefly of poorly sorted silt, sand, gravel, and minor amounts of till. Maximum known thickness about 20 feet
- Qgm**  
GROUND MORAINE  
Gently rolling terrain underlain by clayey till that ranges in thickness from 270 to 470 feet. Local relief generally less than 25 feet. Surficial deposits are of Late Wisconsin age

- Qa**  
CREST OF BEACH RIDGE
- Qa**  
WAVE-CUT SLOPE
- Qa**  
WASHBOARD MORAINES  
Low ridges composed of till 10 to 15 feet high
- Qa**  
KETTLE CHAIN  
Isolated depressions and groups of depressions in till, as much as 25 feet deep. Linear trend

- Qa**  
MAPLE AND SHEYENNE RIDGES  
Long ridges, 5 to 20 feet high. Consist of silty, gray clay underlain by sand and gravel
- Qa**  
GEOLOGIC CONTACT, DASHED WHERE INFERRED

- Qa**  
SAND AND GRAVEL PIT
- Qa**  
DRAIN

BASE PREPARED FROM NORTH DAKOTA HIGHWAY DEPARTMENT COUNTY HIGHWAY MAPS



GEOLOGY BY R. L. KLAUSING

PLATE 3.—SURFICIAL GEOLOGIC MAP OF CASS COUNTY, NORTH DAKOTA