PREPARED BY
THE UNITED STATES GEOLOGICAL SURVEY
IN COOPERATION WITH
THE NORTH DAKOTA STATE WATER COMMISSION,
NORTH DAKOTA GEOLOGICAL SURVEY,
BOTTINEAU COUNTY WATER MANAGEMENT DISTRICT,
AND ROLETTE COUNTY WATER MANAGEMENT DISTRICT

BULLETIN 78
COUNTY GROUND-WATER STUDIES 35
PART III
PLATE 1

EXPLANATION

—1500— BEDROCK CONTOUR—Shows altitude of bedrock surface. Contour interval 50 feet (15 meters). National Geodetic Vertical Datum of 1929

A —— A' TRACE OF SECTION

• 1582 TEST HOLE—Number is altitude of top of bedrock, in feet above National Geodetic Vertical Datum of 1929

Base from North Dakota Highway Department county highway map, 1971

Geology by P. G. Randich, 1981

PLATE 1.–MAP SHOWING BEDROCK TOPOGRAPHY OF BOTTINEAU COUNTY, NORTH DAKOTA

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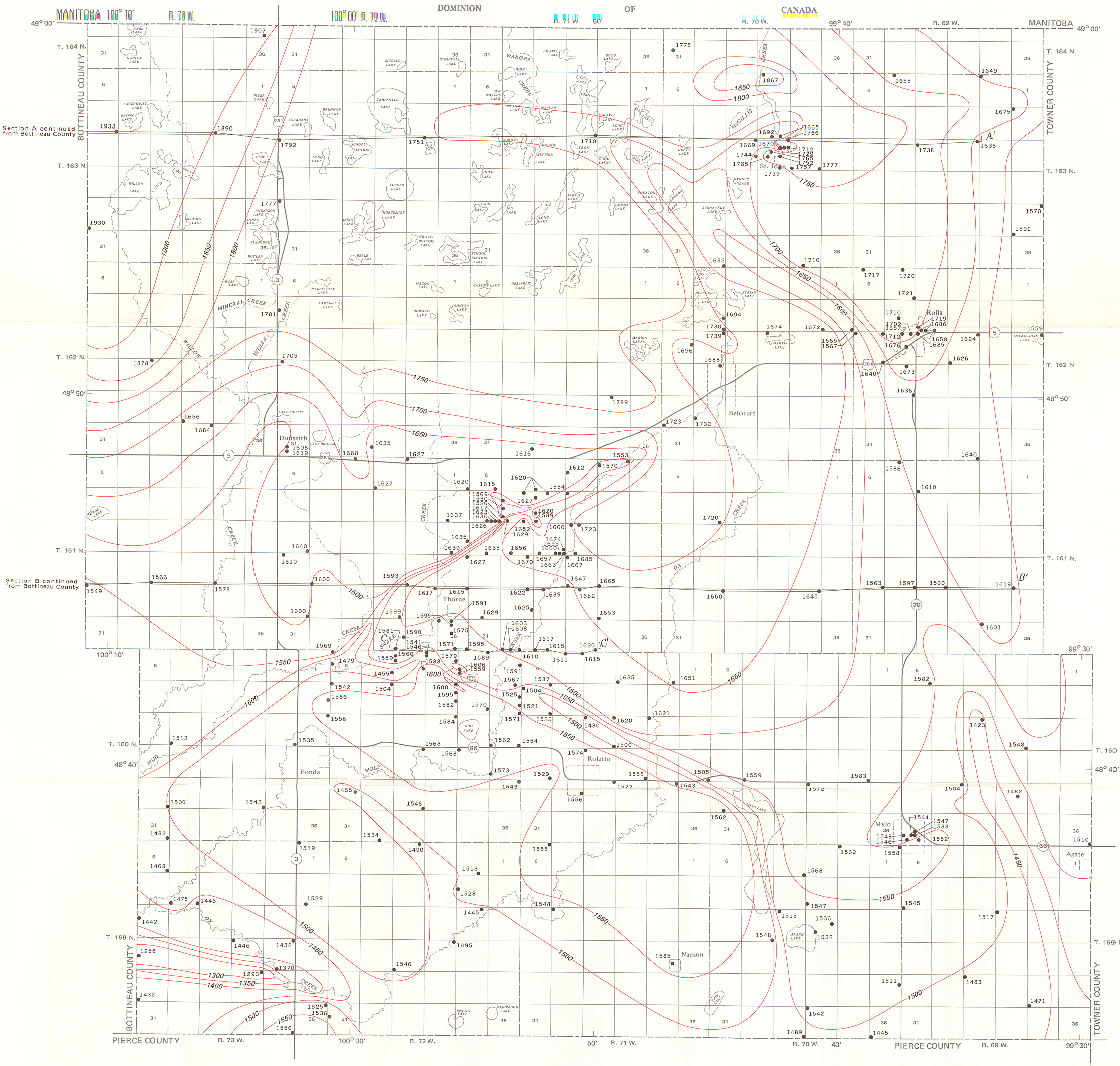

EXPLANATION

—1600— BEDROCK CONTOUR—Shows altitude of bedrock surface. Contour interval 50 feet (15 meters). National Geodetic Vertical Datum of 1929

A—A' TRACE OF SECTION

•1640 TEST HOLE—Number is altitude of top of bedrock, in feet above National Geodetic Vertical Datum of 1929

Base from North Dakota Highway Department county highway map, 1974

Geology by P. G. Randich, 1981

2 0 2 4 6 8 10 MILES

2 0 2 4 6 8 10 KILOMETERS

PLATE 2.–MAP SHOWING BEDROCK TOPOGRAPHY OF ROLETTE COUNTY, NORTH DAKOTA

PREPARED BY
THE UNITED STATES GEOLOGICAL SURVEY
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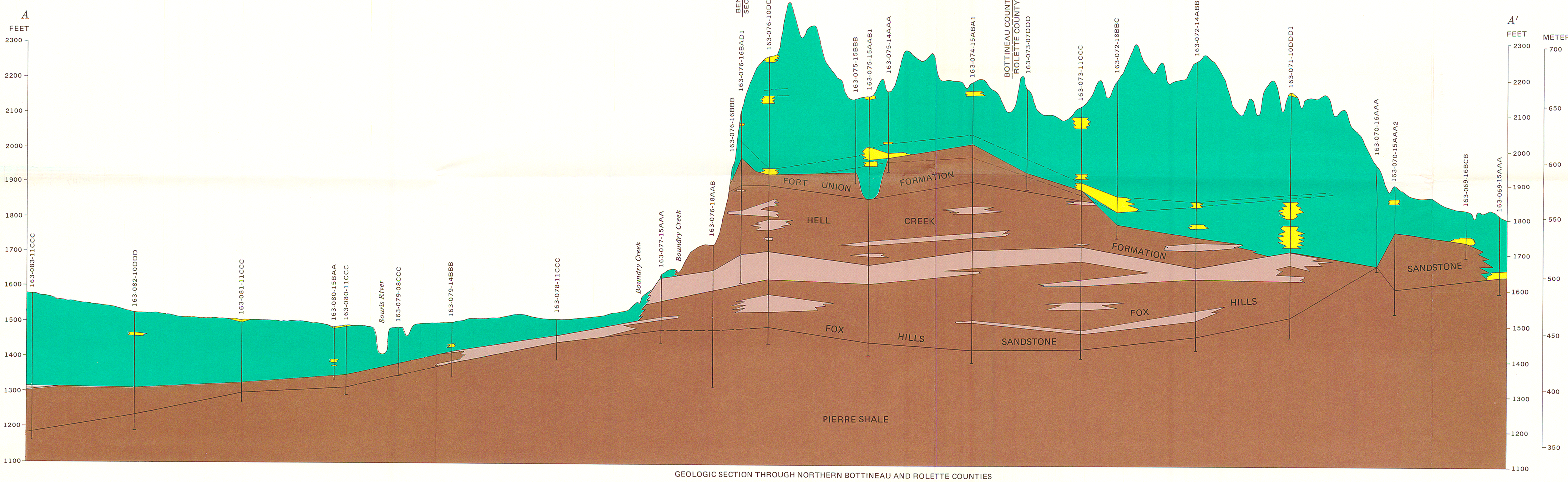
THE NORTH DAKOTA STATE WATER COMMISSION,
NORTH DAKOTA GEOLOGICAL SURVEY,
BOTTINEAU COUNTY WATER MANAGEMENT DISTRICT,
AND ROLETTE COUNTY WATER MANAGEMENT DISTRICT

BULLETIN 78
COUNTY GROUND-WATER STUDIES 35
PART III
PLATE 3



GEOLOGIC SECTION THROUGH NORTHERN BOTTINEAU AND ROLETTE COUNTIES

EXPLANATION

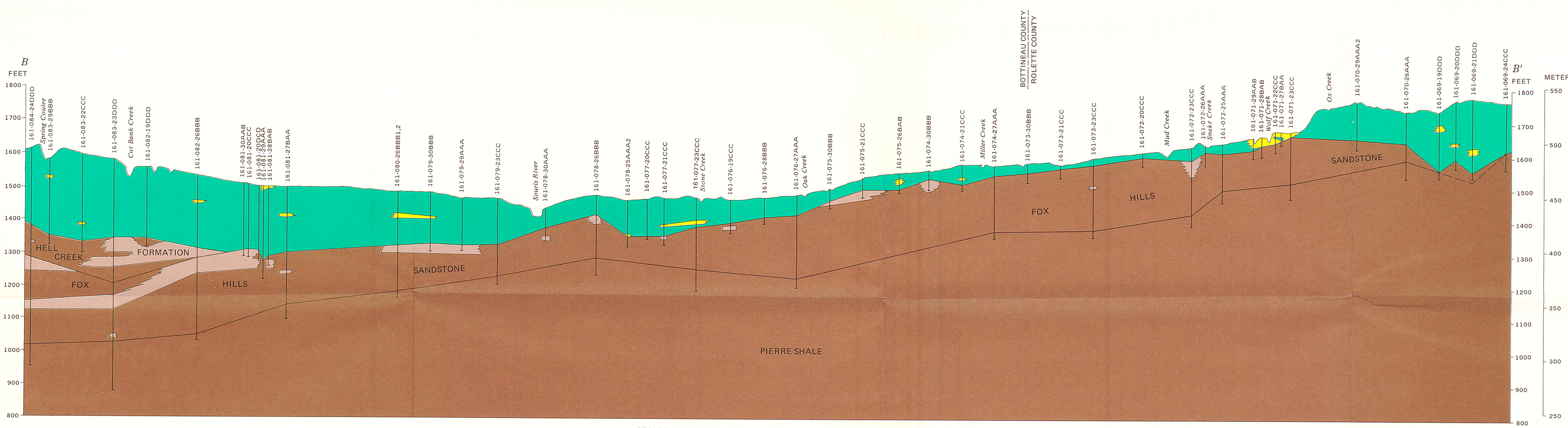
TRACES OF SECTIONS SHOWN ON PLATES 1 AND 2

- TILL OR CLAY
- SAND OR GRAVEL
- SANDSTONE
- SILTSTONE, CLAYSTONE, OR SHALE
- FORMATION CONTACT—Dashed where inferred
- LITHOLOGIC CONTACT
- BURIED ZONE OF OXIDATION IN THE GLACIAL DRIFT

TEST HOLE OR WELL

161-069-19DDD — Location number

Total depth



GEOLOGIC SECTION THROUGH SOUTHERN BOTTINEAU AND ROLETTE COUNTIES

0 1 2 3 4 5 6 7 8 9 10 MILES
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 KILOMETERS

VERTICAL SCALE GREATLY EXAGGERATED
NATIONAL GEODETIC VERTICAL DATUM OF 1929

PLATE 3.–GEOLOGIC SECTIONS IN BOTTINEAU AND ROLETTE COUNTIES, NORTH DAKOTA

Geohydrology by P. G. Randich and R. L. Kuzniar, 1982

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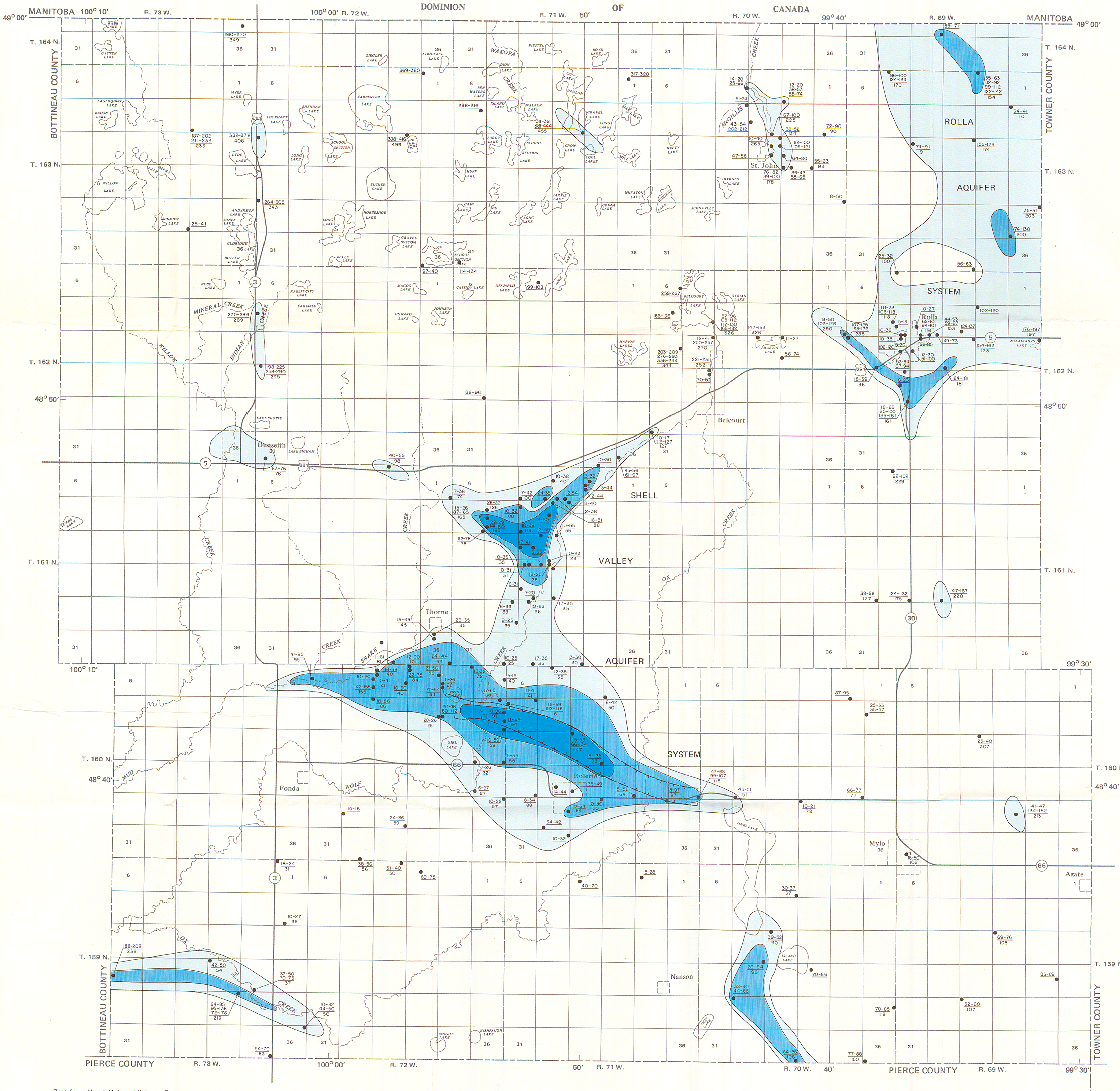

EXPLANATION

ESTIMATED POTENTIAL WELL YIELD, IN GALLONS PER MINUTE (LITERS PER SECOND)

- 250 to 500 (16 to 32)
- 100 to 250 (6.4 to 16)
- 50 to 100 (3.2 to 6.4)
- 0 to 50 (0 to 3.2)

YIELD BOUNDARY

LOCATION OF BURIED VALLEY

$\frac{10-50}{50}$ TEST HOLE OR WELL—Upper numbers are top and bottom of aquifer depth intervals in glacial drift. Sand and gravel thicknesses of less than 5 feet (1.5 meters) are not shown. Lower number is depth to bedrock, in feet below land surface. Absence of lower number indicates that the test hole or well did not completely penetrate the glacial drift

Base from North Dakota Highway Department county highway map, 1974

Geohydrology by P. G. Randich and R. L. Kuzniar, 1982

2 0 2 4 6 8 10 MILES

2 0 2 4 6 8 10 KILOMETERS

PLATE 4.–MAP SHOWING ESTIMATED POTENTIAL YIELD FROM GLACIAL-DRIFT AQUIFERS IN ROLETTE COUNTY, NORTH DAKOTA

PREPARED BY
THE UNITED STATES GEOLOGICAL SURVEY
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NORTH DAKOTA STATE WATER COMMISSION,
NORTH DAKOTA GEOLOGICAL SURVEY,
NEAU COUNTY WATER MANAGEMENT DISTRICT,
OLETTE COUNTY WATER MANAGEMENT DISTRICT

Base from North Dakota Highway Department county highway map, 1971

Geohydrology by P. G. Randich and R. L. Kuzniar, 1982

EXPLANATION

ESTIMATED POTENTIAL WELL YIELD, IN GALLONS PER MINUTE (LITERS PER SECOND)

- 500 to 1000 (32 to 63)
- 250 to 500 (16 to 32)
- 100 to 250 (6.4 to 16)
- 50 to 100 (3.2 to 6.4)
- 0 to 50 (0 to 3.2)

AQUIFER CONTACT

YIELD BOUNDARY

LOCATION OF BURIED VALLEY

70-80 / 112 TEST HOLE OR WELL—Upper numbers are top and bottom of aquifer depth intervals in glacial drift. Sand and gravel thicknesses of less than 5 feet (1.5 meters) are not shown. Lower number is depth to bedrock, in feet below land surface. Absence of lower number indicates that the test hole or well did not completely penetrate the glacial drift

PLATE 5.–MAP SHOWING ESTIMATED POTENTIAL YIELD FROM GLACIAL-DRIFT AQUIFERS IN BOTTINEAU COUNTY, NORTH DAKOTA

PREPARED BY
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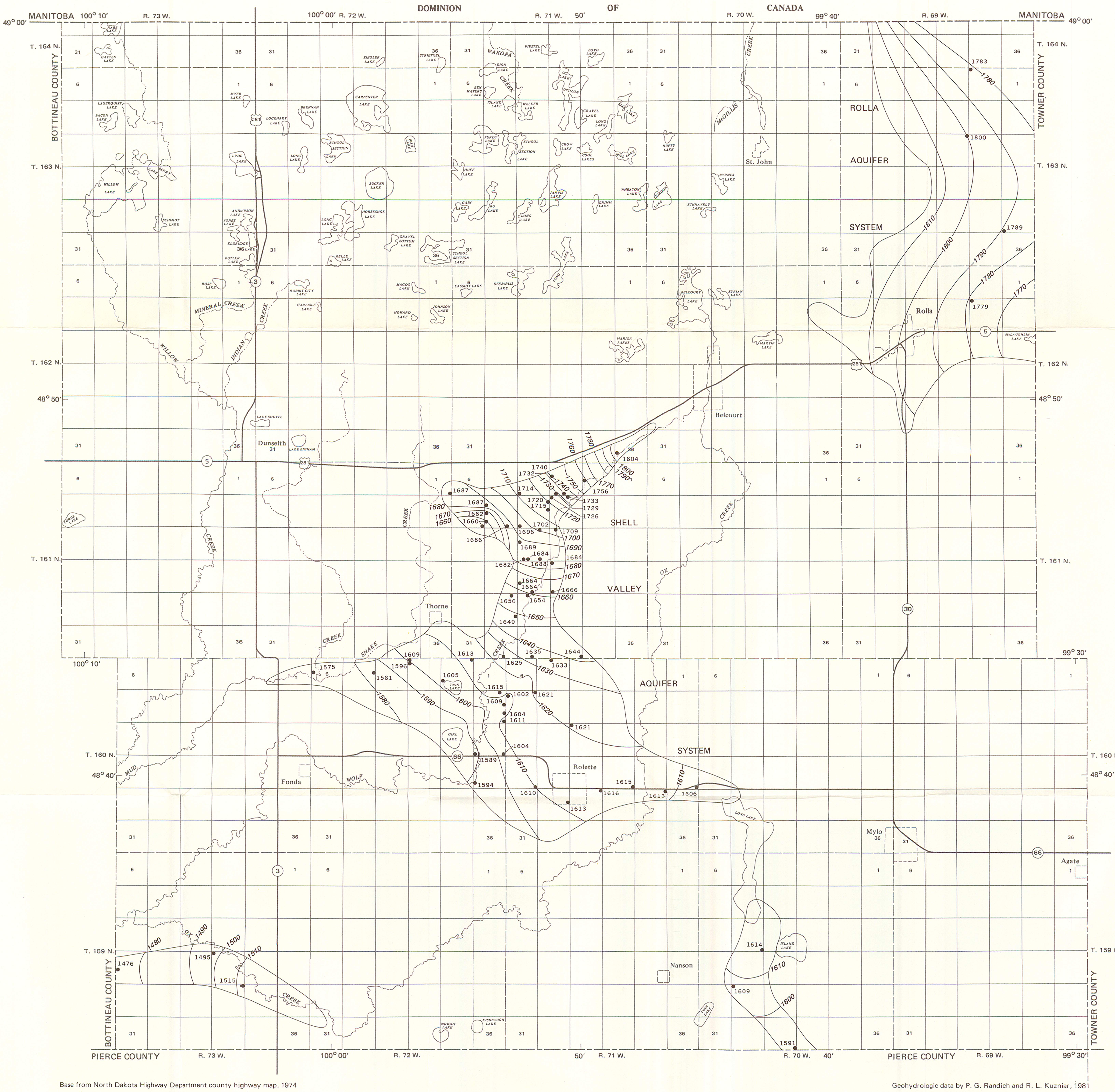
NORTH DAKOTA GEOLOGICAL SURVEY,
BOTTINEAU COUNTY WATER MANAGEMENT DISTRICT,
AND ROLETTE COUNTY WATER MANAGEMENT DISTRICT



Base from North Dakota Highway Department county highway map, 1974

Geohydrologic data by P. G. Randich and R. L. Kuzniar, 1981

2 0 2 4 6 8 10 MILES

2 0 2 4 6 8 10 KILOMETERS

EXPLANATION

AQUIFER BOUNDARY

1800 POTENTIOMETRIC CONTOUR—Shows altitude at which water level would have stood in tightly cased wells (February 1981). Contour interval 10 feet. National Geodetic Vertical Datum of 1929

1800 OBSERVATION WELL—Number is altitude of potentiometric surface, in feet. National Geodetic Vertical Datum of 1929

PLATE 6.–MAP SHOWING POTENTIOMETRIC SURFACE OF GLACIAL-DRIFT AQUIFERS IN ROLETTE COUNTY, NORTH DAKOTA