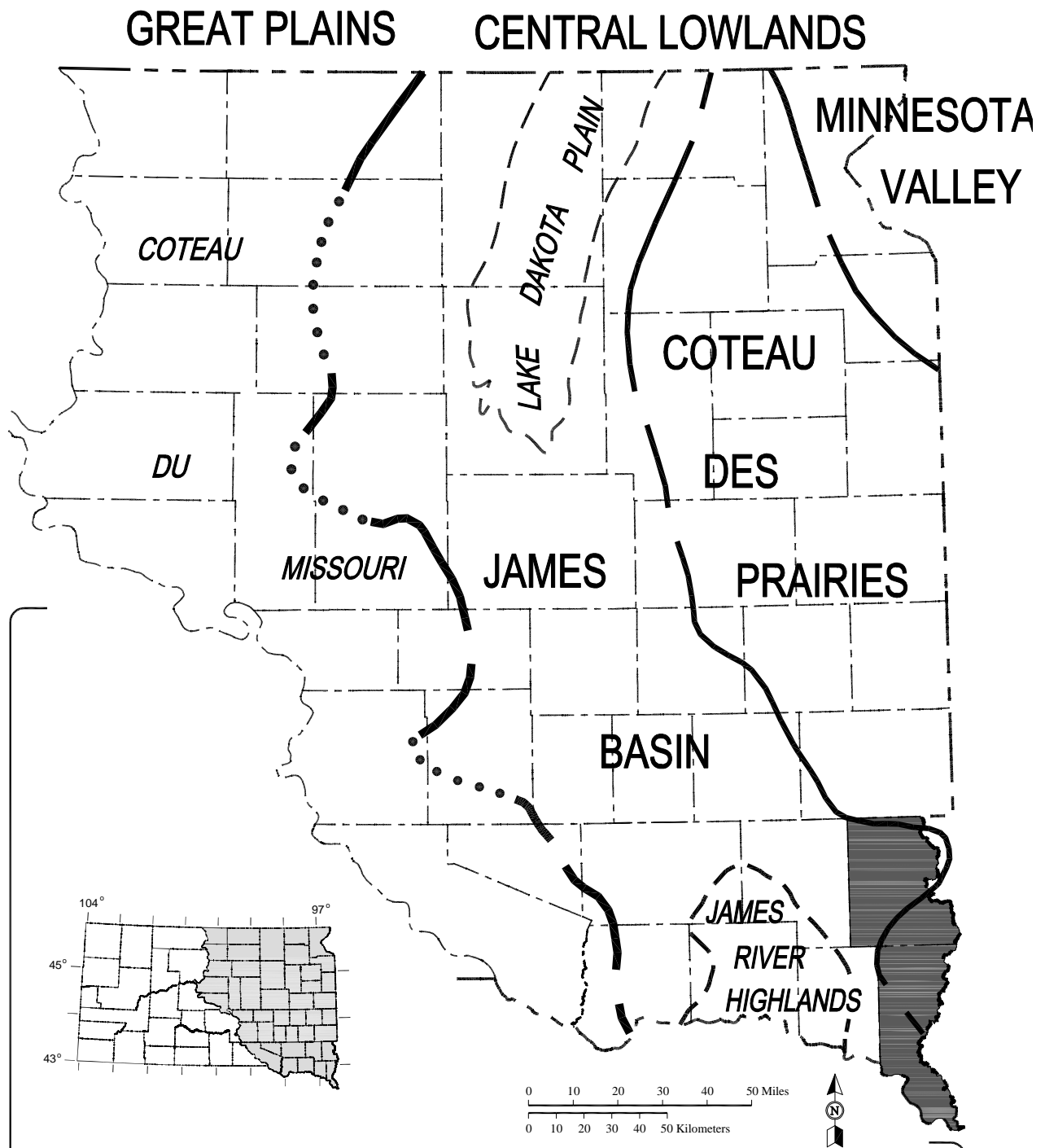


Figure 1. Status of county-wide investigations in South Dakota.



Lincoln and Union Counties (study area)

Base map modified from Rothrock, 1943, and Flint, 1955

Figure 2. Map of eastern South Dakota showing physiographic divisions and location of the study area.

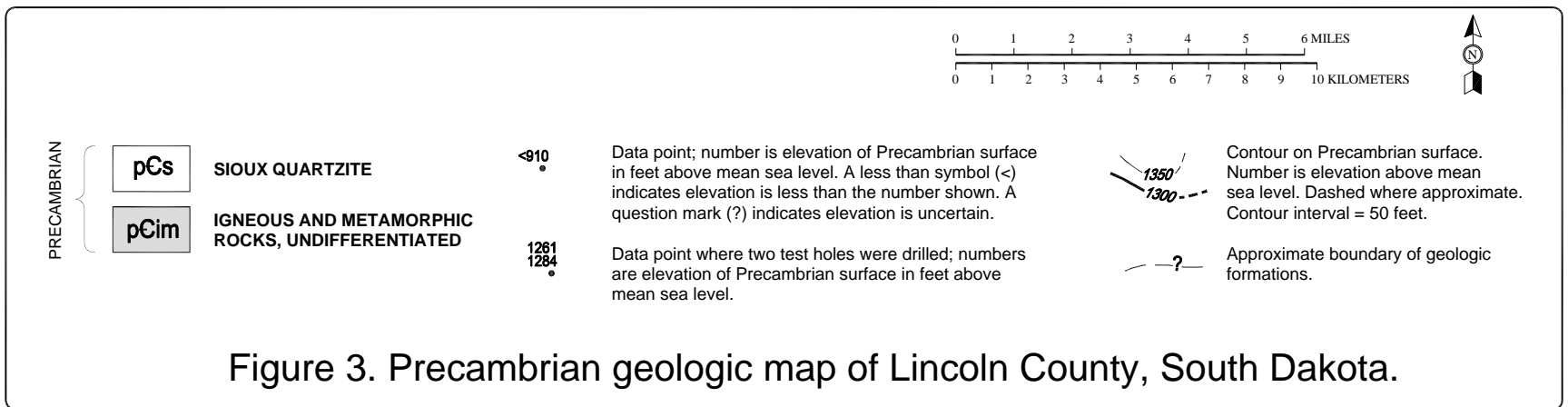
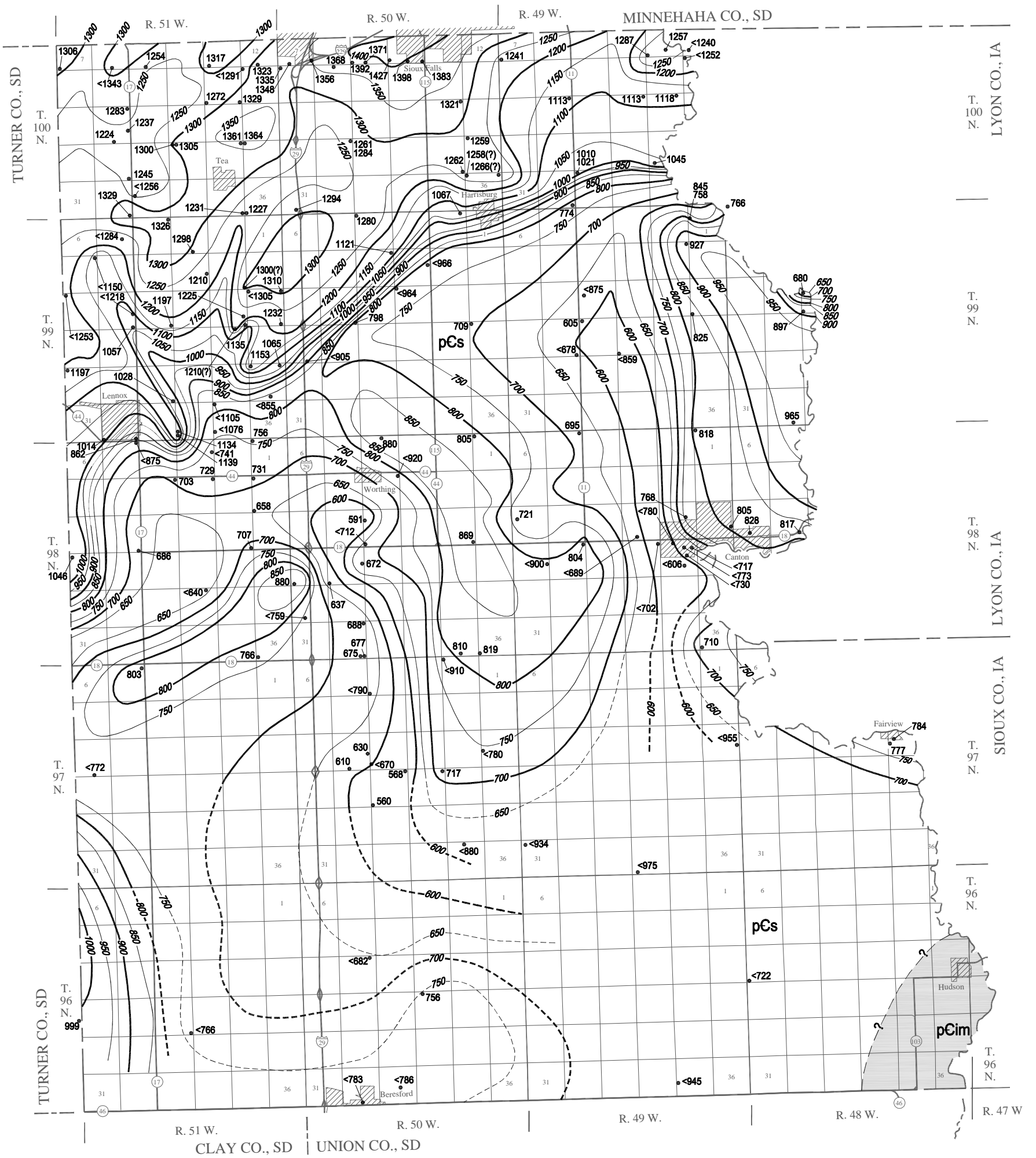
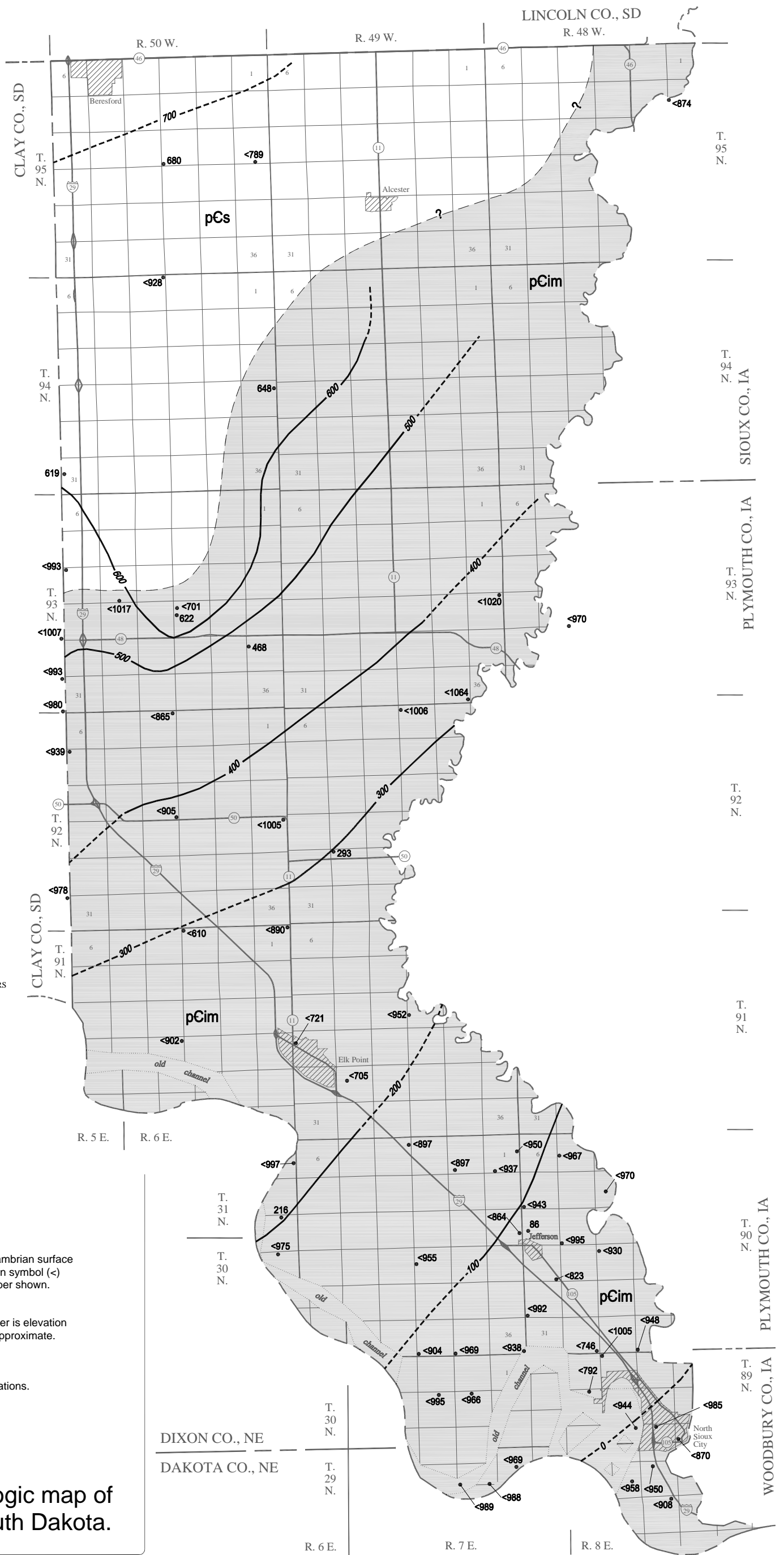
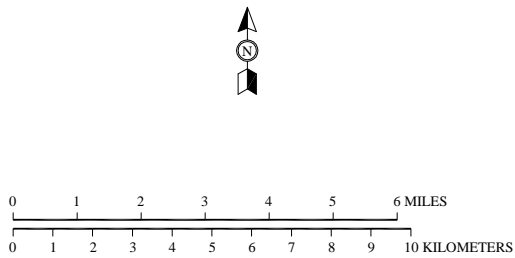


Figure 3. Precambrian geologic map of Lincoln County, South Dakota.



- PRECAMBRIAN**
- pCs** SIOUX QUARTZITE
 - pCim** IGNEOUS AND METAMORPHIC ROCKS, UNDIFFERENTIATED
- <997** Data point; number is elevation of Precambrian surface in feet above mean sea level. A less than symbol (<) indicates elevation is less than the number shown.
 - 600** Contour on Precambrian surface. Number is elevation above mean sea level. Dashed where approximate. Contour interval = 100 feet.
 - ?** Approximate boundary of geologic formations.

Figure 4. Precambrian geologic map of Union County, South Dakota.



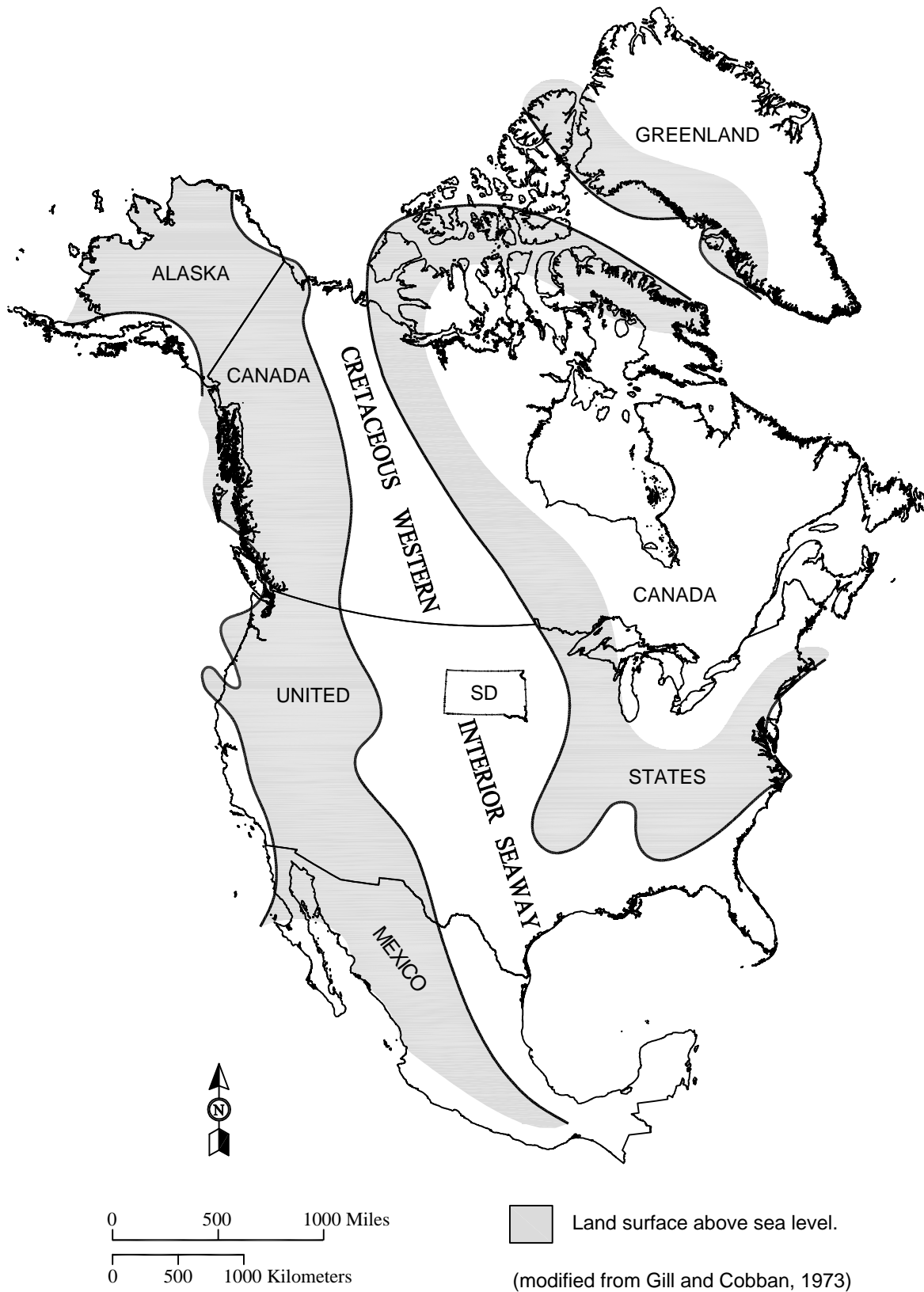


Figure 5. Map showing probable extent of the Western Interior Seaway during a portion of the late Cretaceous Period.

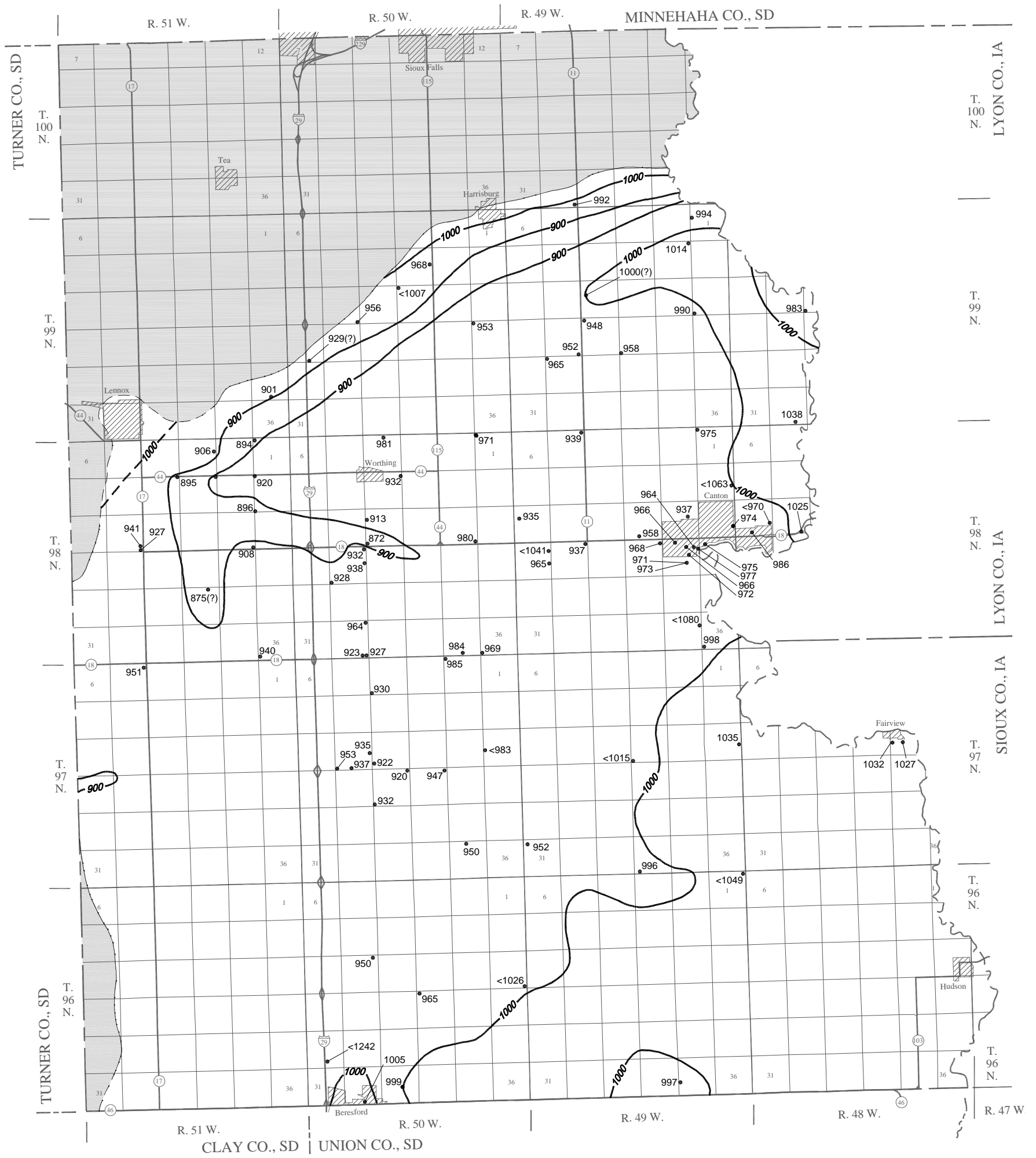


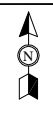
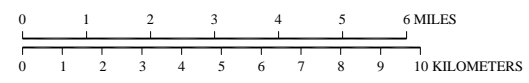
Figure 6. Contour map of the top of the Dakota Formation in Lincoln County, South Dakota.

DAKOTA FORMATION
 DAKOTA FORMATION ABSENT

<1026
 Data point; number is elevation of the Dakota Formation top in feet above mean sea level. A less than symbol (<) indicates elevation is less than the number shown. A question mark (?) indicates elevation is uncertain.

1000
 Contour of elevation of the Dakota Formation top. Number is elevation above mean sea level. Dashed where approximate. Contour interval = 100 feet.

Boundary of the Dakota Formation. Dashed where approximately located.



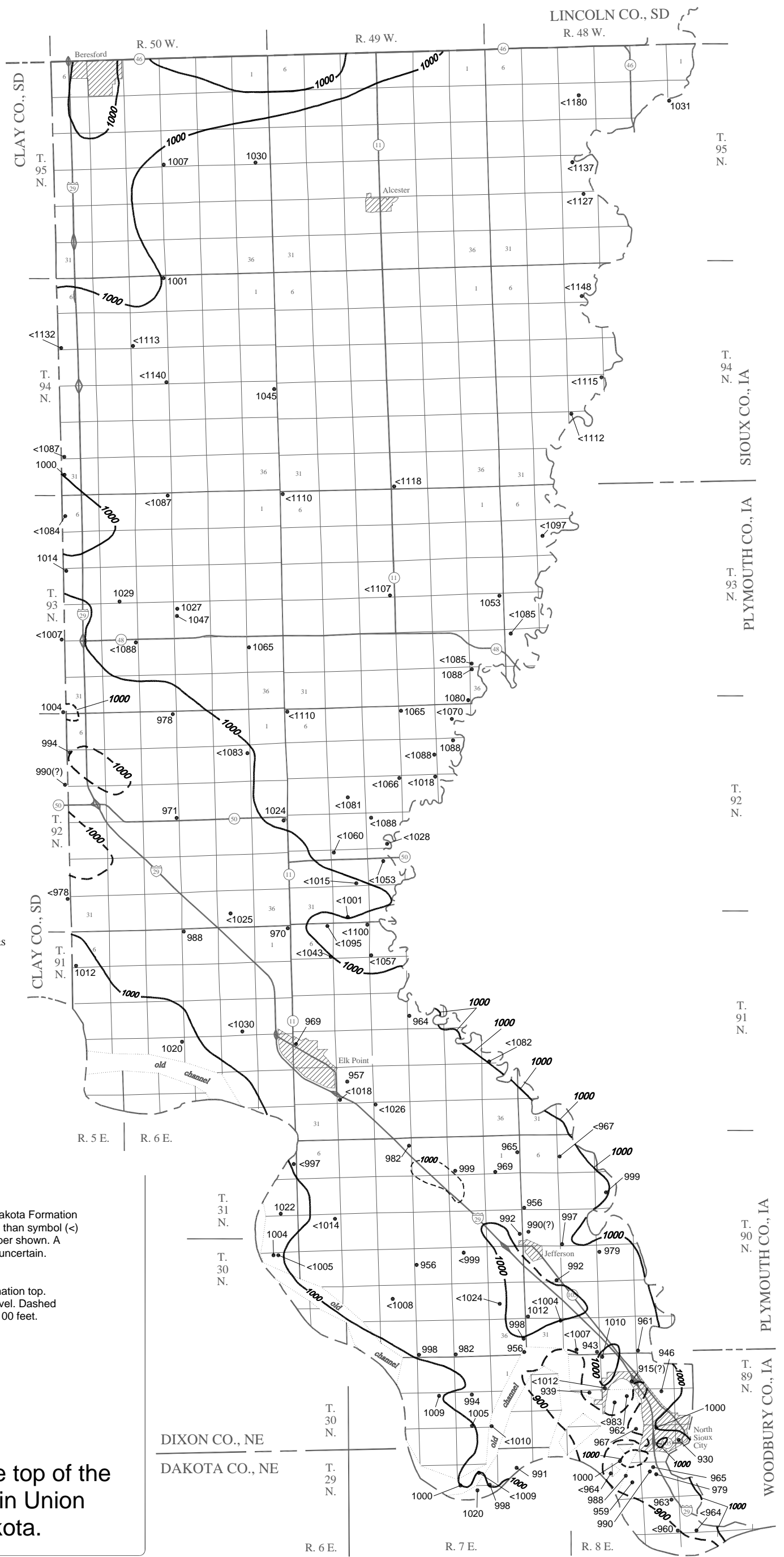
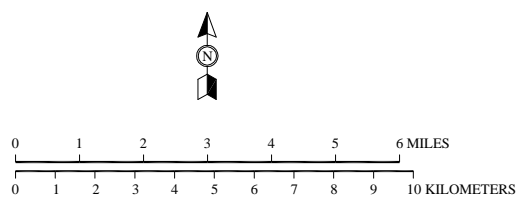
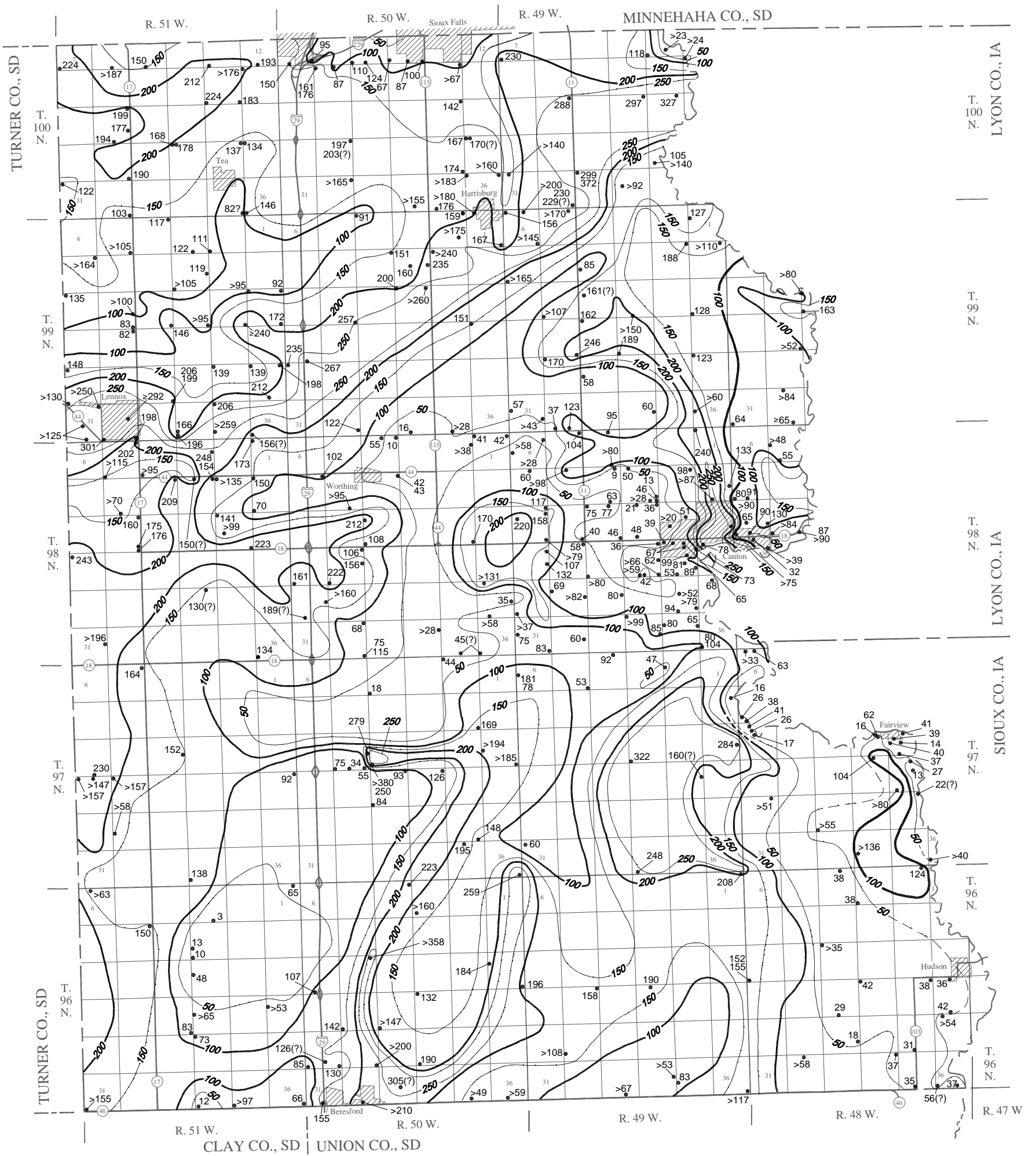


Figure 7. Contour map of the top of the Dakota Formation in Union County, South Dakota.

DAKOTA FORMATION
 Data point; number is elevation of the Dakota Formation top in feet above mean sea level. A less than symbol (<) indicates elevation is less than the number shown. A question mark (?) indicates elevation is uncertain.
 Contour of elevation of the Dakota Formation top. Number is elevation above mean sea level. Dashed where approximate. Contour interval = 100 feet.





>155 • Data point; number is thickness of Quaternary sediments in feet. A greater than symbol (>) indicates thickness is greater than the number shown. A greater than or equal to symbol (≥) indicates thickness is greater than or equal to the number shown. A question mark (?) indicates thickness is uncertain.

152
155 • Data point where two test holes were drilled; numbers are thickness of Quaternary sediments.

Contour of thickness of Quaternary sediments. Dashed where approximate. Contour interval = 50 feet.

0 1 2 3 4 5 6 MILES

0 1 2 3 4 5 6 7 8 9 10 KILOMETERS

Figure 8. Thickness of Quaternary sediments in Lincoln County, South Dakota.

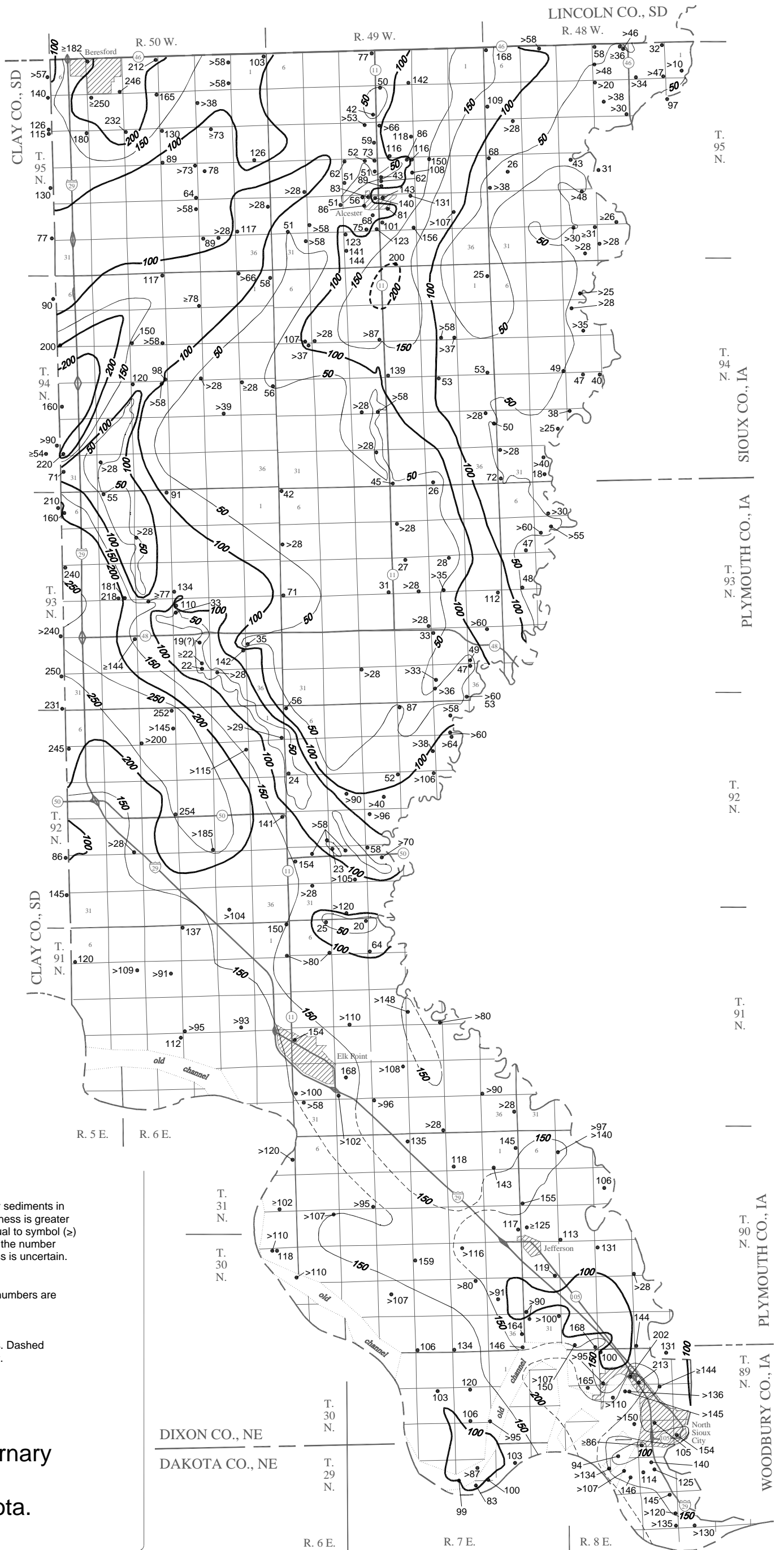
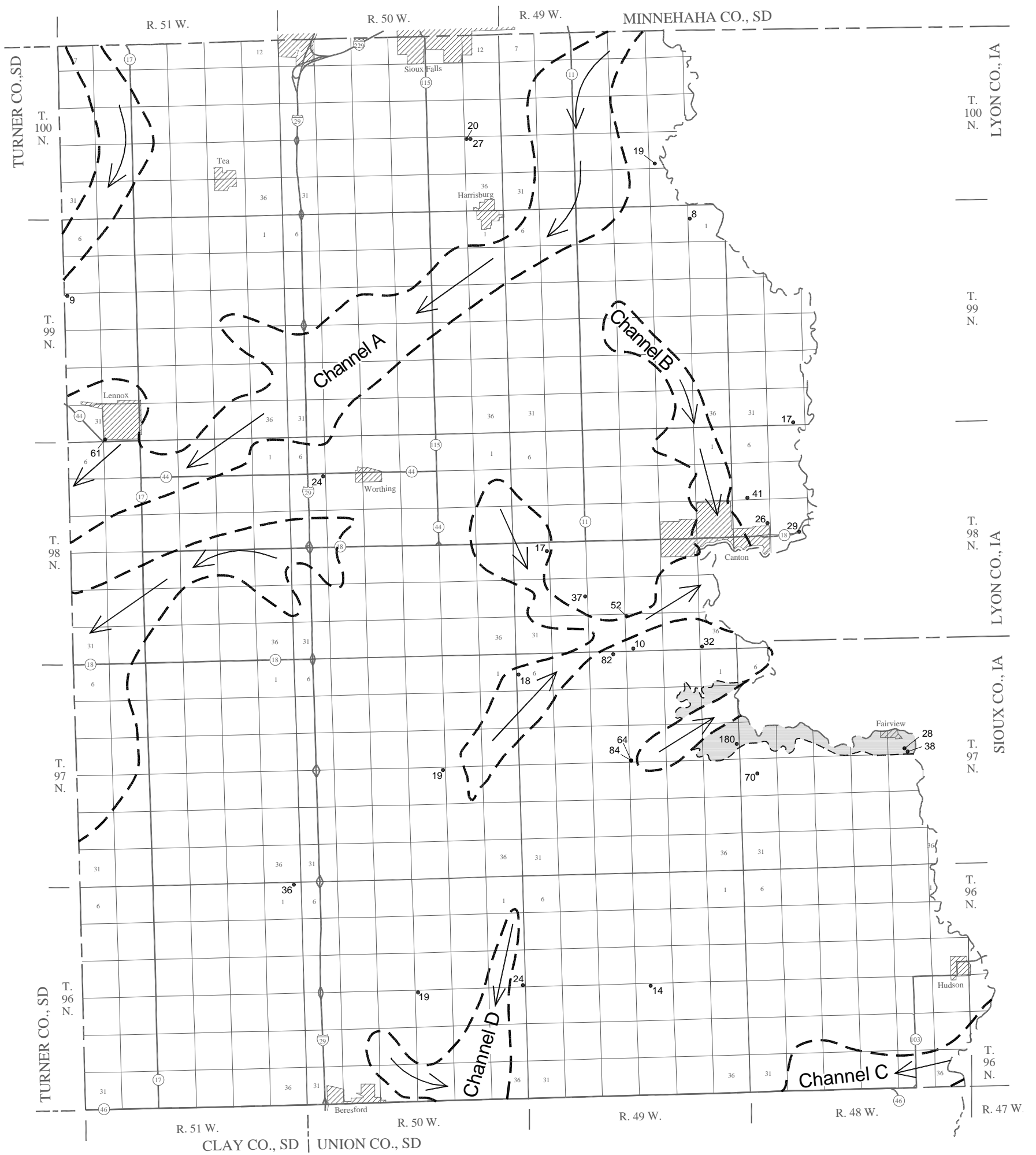


Figure 9. Thickness of Quaternary sediments in Union County, South Dakota.



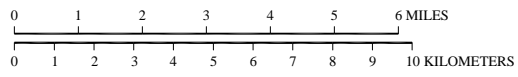
•19 Data point; number is thickness of preglacial(?) quartz sand.

Approximate location of channel boundaries.

Approximate extent of Newton Hills sand.

Arrow showing direction of drainage.

Figure 10. Location of preglacial bedrock channels and preglacial(?) quartz sand in Lincoln County, South Dakota.



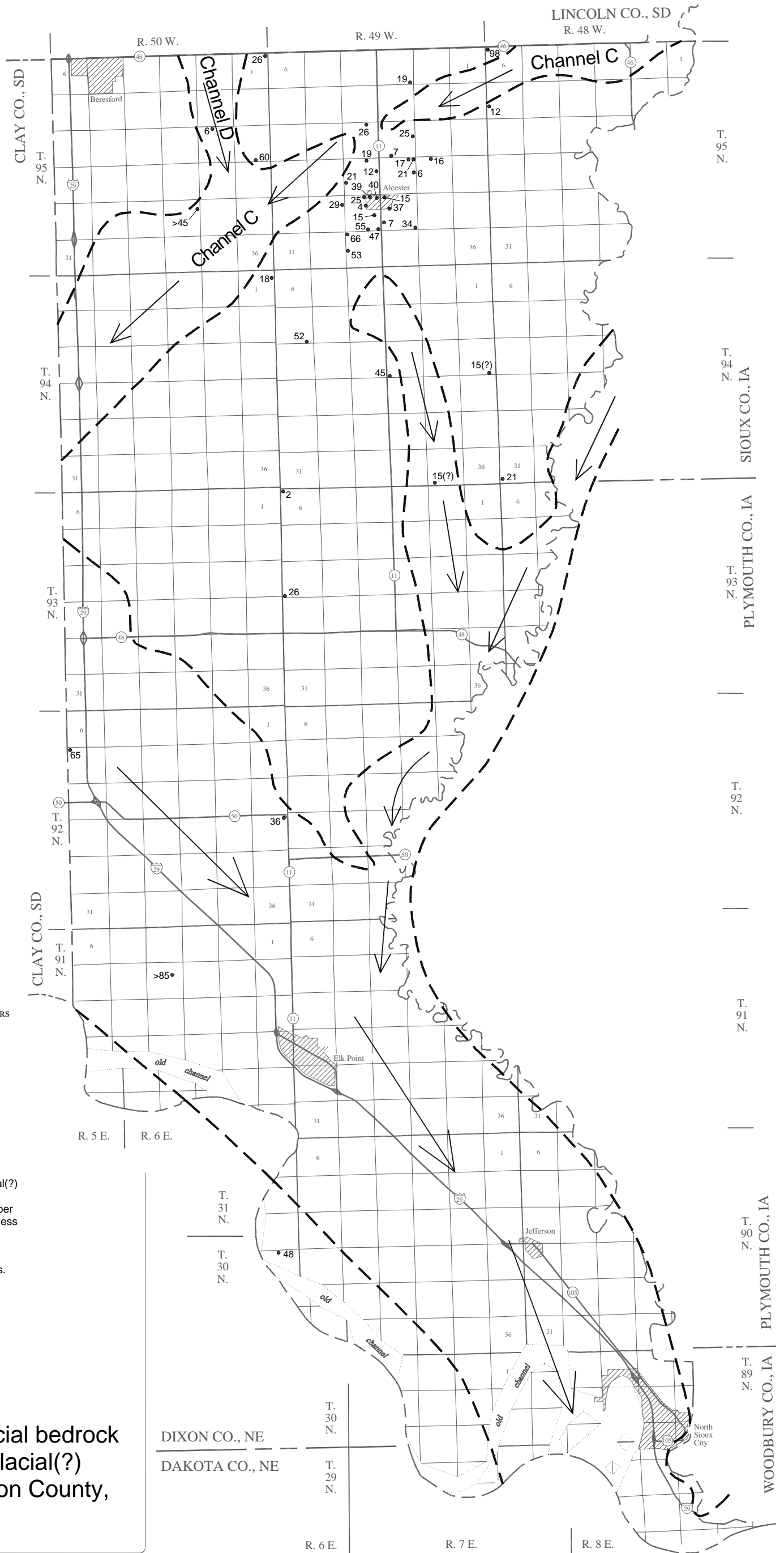
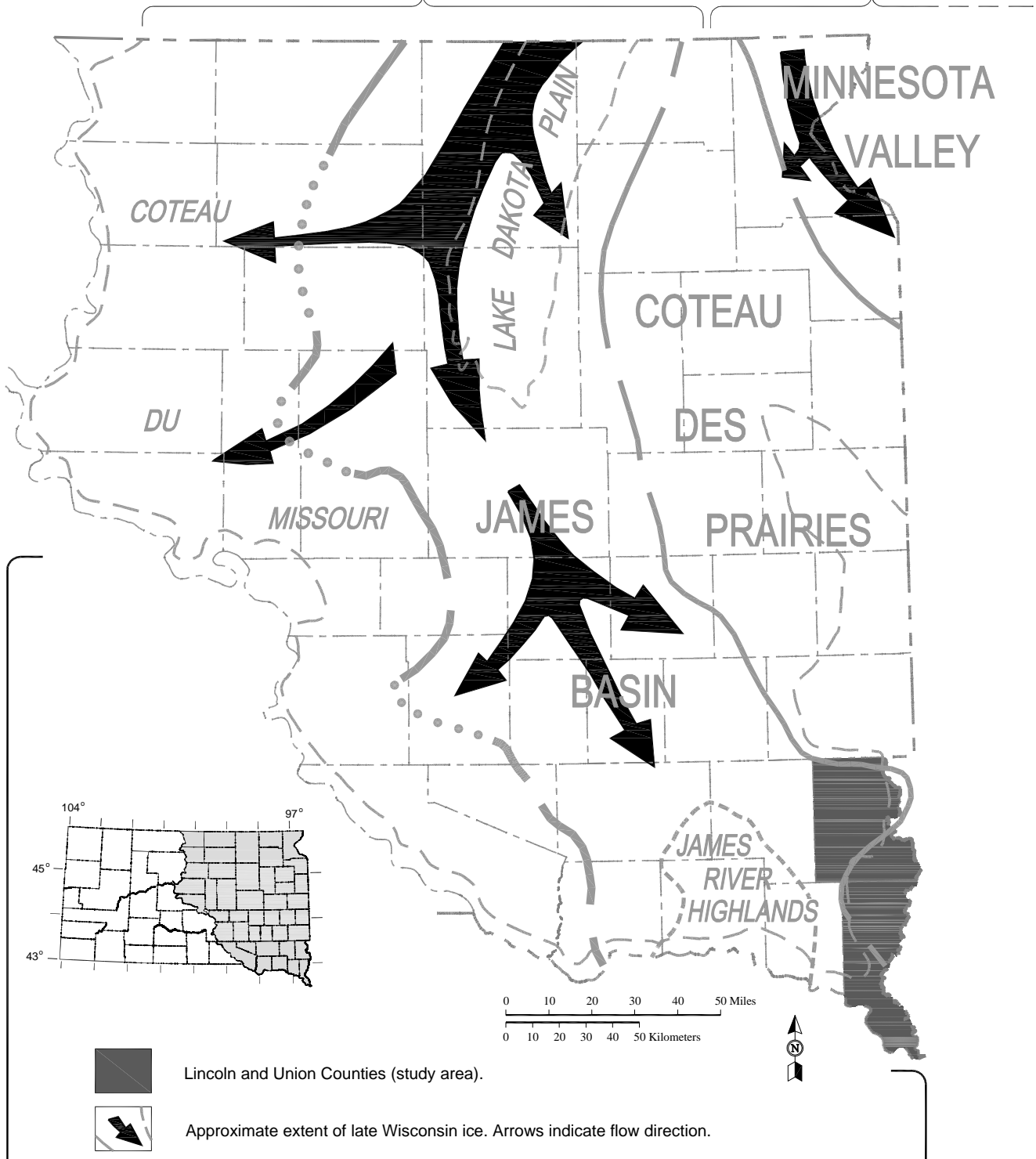


Figure 11. Location of preglacial bedrock channels and preglacial(?) quartz sand in Union County, South Dakota.

JAMES LOBE

DES MOINES LOBE



Base map modified from Rothrock, 1943, and Flint, 1955.

Figure 12. Generalized relationship of James lobe and Des Moines lobe ice to eastern South Dakota.