

EXPLANATION

RECENT

PLEISTOCENE

LATE WISCONSIN

QUATERNARY

UPPER CRETACEOUS

PIERRE SHALE

CRETACEOUS

Atterium
(Silt, sand and clay, some gravel; light brown to black; poorly sorted, usually bedded; fossiliferous; present in most stream valleys; 2-25 feet thick.)

Aeolian Sand
(Sand, fine to medium, quartzose, subrounded, partially pitted; dark brown to black; locally found adjacent to outwash valleys; maximum thickness 6 feet.)

Calluvium
(Coteau du Missouri escarpment: Till, reworked; poorly sorted to unsorted; forms smooth apron at foot of Coteau; at least 5 feet thick. James River trench: Silt, tan to brown; may be reworked lacustrine or outwash deposits; occurs at foot of bluffs in James River trench; more than 5 feet thick.)

Lacustrine Deposits
(Lake Dakota: Silt, tan to brown, laminated; sandy near base; some coarse sand and gravel present; as much as 15 feet thick. Lake Byron channel: Clay, silt and sand; dark brown to black; bedded; more than 5 feet thick.)

Outwash Plain Deposits
(Silt and fine to medium sand; occasional gravel; poorly sorted to well sorted; usually gravelly at base and grades upwards to fine sand or silt; as much as 30 feet thick.)

Outwash Deposits
(Sand and gravel, poorly sorted to well sorted; some silt and clay; confined in stream valleys; may be covered with alluvium; as much as 30 feet thick.)

Terrace Outwash Deposits
(Sand to coarse gravel, poorly sorted; occurs as terraces along James River trench and tributaries; 2 to 20 feet thick.)

Kame Terrace
(Sand and gravel; some cobbles and boulders; 10 to 60 feet above present floodplains; at least 5 feet thick.)

Kame
(Sand and gravel; may contain cobbles and boulders; occurs as isolated hills up to 20 feet high.)

Ground Moraine
(Sandy, silty, light gray till to blue black clayey till; calcareous; oxidized to a depth of 20 feet; leached zone 18 inches.)

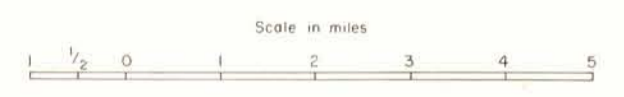
End Moraine
(Sandy, silty, olive gray to dark gray till; calcareous; surface usually contains many boulders; oxidized to a depth of 25 feet; leached zone 18 inches; average thickness 50 feet.)

Pierre Shale
(Kpm-Kpu: Mabrige member; gray clay shale, calcareous, and thin marl and chalk beds; fossiliferous; at least 50 feet thick. Kpu: Pierre shale undifferentiated; probably lies between the Gregory marl and the Mabrige members; clay, light gray to dark gray, bentonitic, contains clay ironstone concretions and hollow tubules, non-calcareous.)

Geological Symbols:
Cut off channel on James River about some elevation as present floodplain
Malwater Channel
Undifferentiated ice-contact drift
Esker ridges, braided
Flutings; arrow points in direction of ice movement
Minor Moraines
Boulder pavement
Arrows point in direction of striations
End Moraine Trend
Partially buried drainage
Gravel Pit
Intermittent stream
Intermittent lake
Lake

Geology by Lynn S. Hedges, 1962, 1963
Base map from South Dakota Department of Highways,
General Highway map of Beadle County, 1955
Drafted by D. W. Johnson, 1967

APPROXIMATE MEAN
DECLINATION 1966



by Lynn S. Hedges
1967

SECTIONIZED
TOWNSHIP


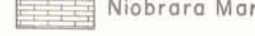
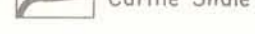






GEOLOGIC MAP OF BEADLE COUNTY, SOUTH DAKOTA

BEDROCK MAP OF
BEADLE COUNTY, SOUTH DAKOTA
and subcrop of the bedrock formations

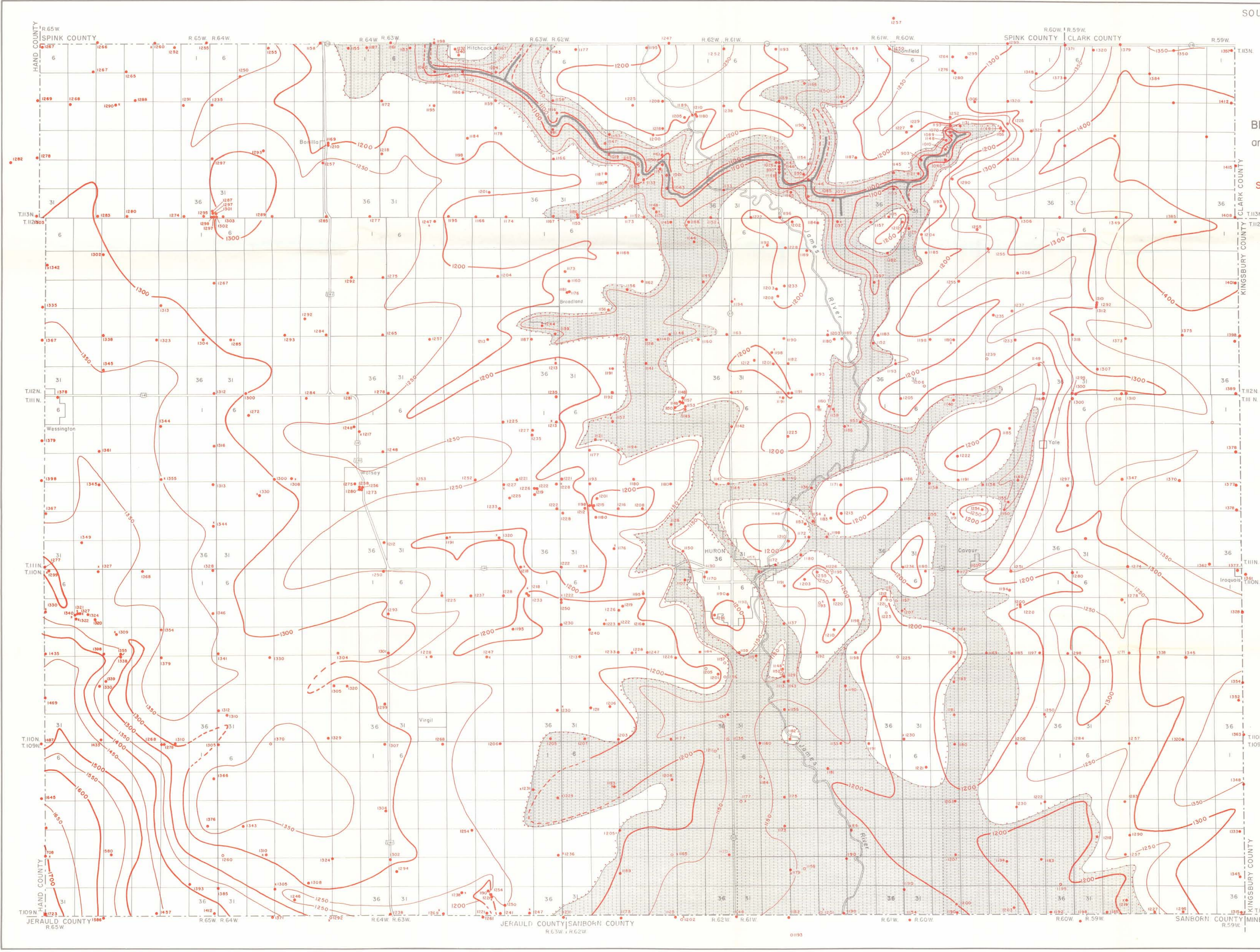
Showing contours on the bedrock surface

EXPLANATION

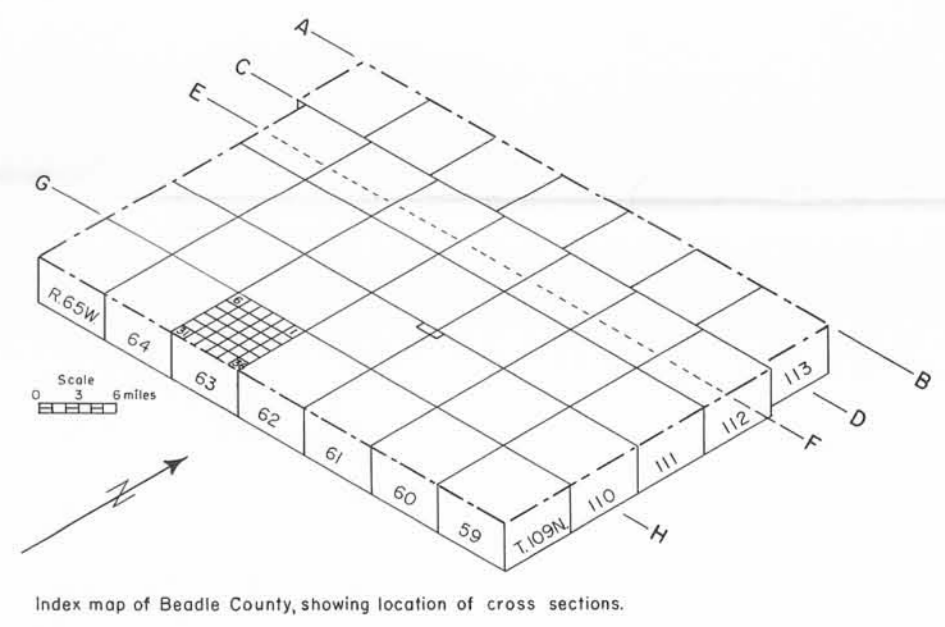
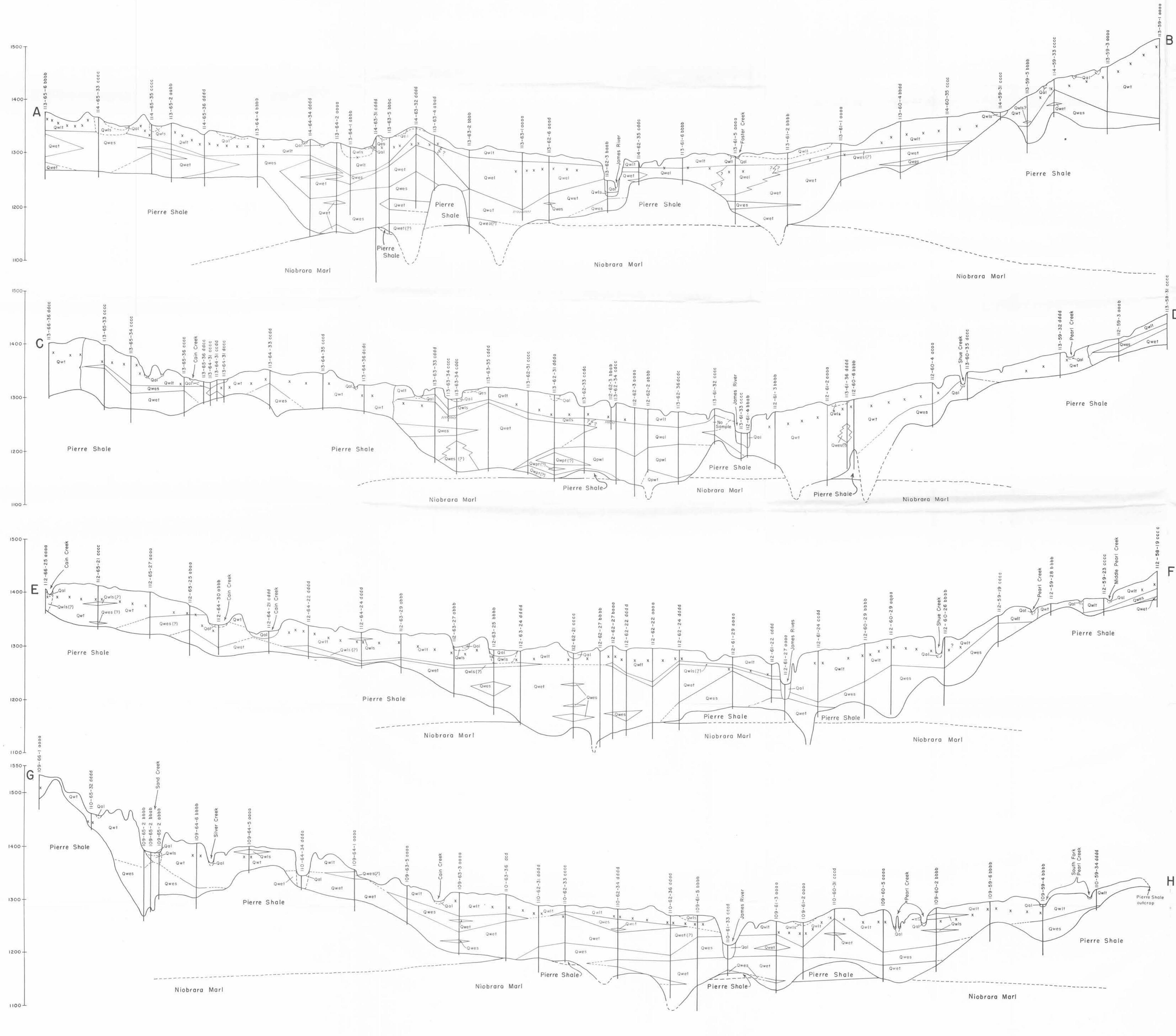
-  Pierre Shale
-  Niobrara Marl
-  Carlile Shale
-  Well or test hole control point; log available, number is elevation of bedrock surface.
-  Well or test hole control point; no log available, number is elevation of bedrock surface.
-  Test boring did not reach bedrock, number is bottom-hole elevation.
-  Test boring penetrated bedrock but no surface elevation available.
-  Contour on bedrock surface, number is elevation above sea level, contour interval 50 feet.
-  Approximate boundary between bedrock formations.



by Lynn S. Hedges
1967



SOUTH DAKOTA GEOLOGICAL SURVEY
 BULLETIN 18
 PLATE 3
 GEOLOGIC CROSS SECTIONS
 of the
 PLEISTOCENE DEPOSITS
 in
 BEADLE COUNTY, SOUTH DAKOTA



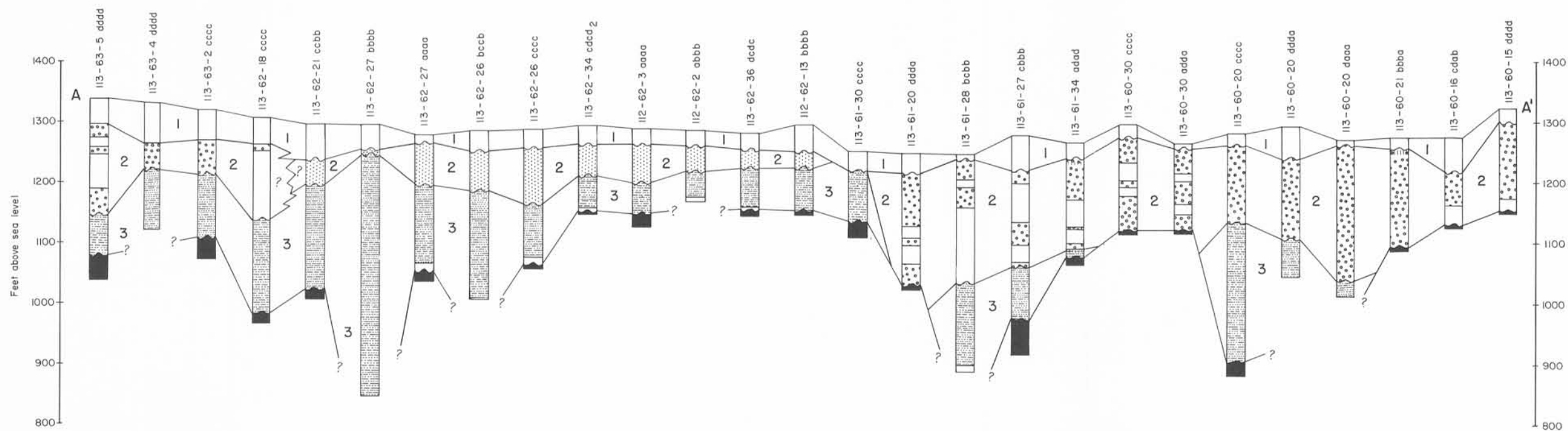
EXPLANATION

PLEISTOCENE	Recent	Qes	Eolian sand
		Qal	Alluvium
		Qwtl	Lacustrine deposits
	Late Wisconsin	Qwt	Till and intercalated deposits
		Qws	Stratified drift
	Early Wisconsin	Qwt	Drift age undifferentiated (mostly till)
		Qwe1	Lacustrine deposits
		Qwe2	Till and intercalated deposits
	Pre-Wisconsin	Qpw1	Lacustrine deposits
		Qpw2	Till and intercalated deposits
CRETACEOUS	Bedrock	Pierre Shale	
		Niobrara Marl	

x x x Depth of surface oxidation
 Buried oxidized zone
 --- Contact estimated

Vertical Scale for cross sections: 0, 25, 50, 75, 100 Feet
 Horizontal Scale: 0, 1, 2, 3, 4, 5, 6 Miles

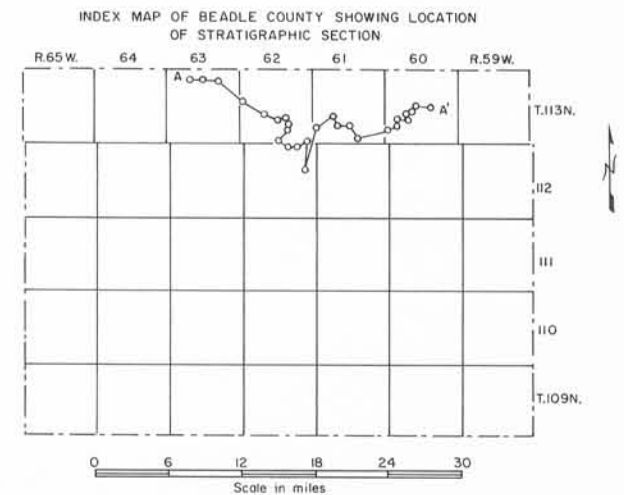
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EXPLANATION

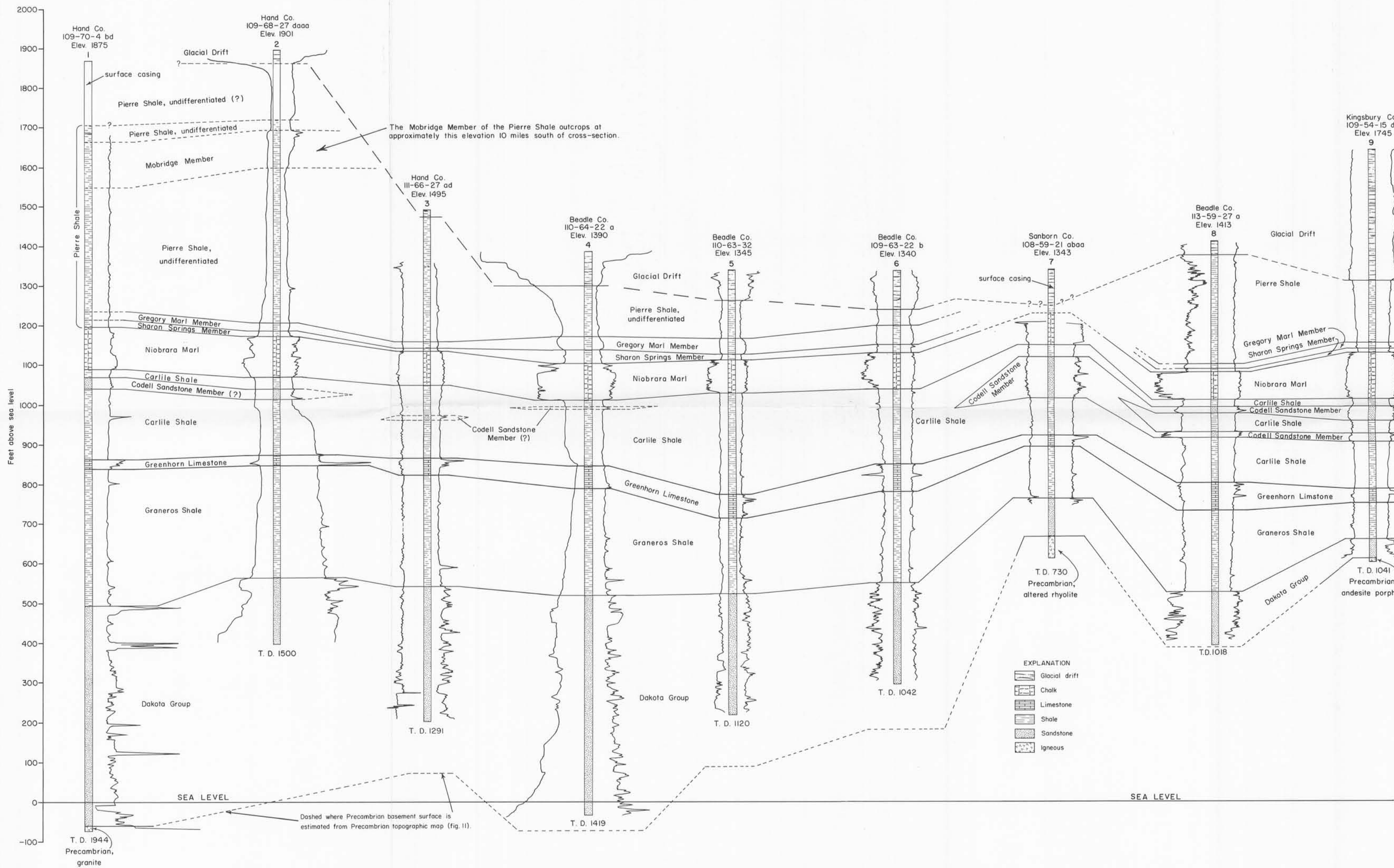
- Till
- Outwash
- sand
Lacustrine
silt
- Bedrock; (Pierre Shale, Niobrara Marl and Carlisle Shale undifferentiated.)
- Erosional unconformity
- Buried oxidized zone
- 1** Late Wisconsin
- 2** Early Wisconsin
- 3** Pre-Wisconsin
- No Horizontal Scale

These units may locally include thin deposits other than those which are indicated.



LONGITUDINAL SECTION IN THE LAKE BYRON CHANNEL, BEADLE COUNTY, SOUTH DAKOTA, SHOWING STRATIGRAPHIC RELATIONSHIP OF THE PLEISTOCENE DEPOSITS.

ELECTRIC LOG PROFILE OF SUBSURFACE FORMATIONS IN BEADLE COUNTY, SOUTH DAKOTA, AND ADJACENT AREAS



SOUTH DAKOTA GEOLOGICAL SURVEY BULLETIN 18 PLATE 5

