

EXPLANATION



**Qal**  
 Alluvium  
 Silt, sandy and clayey, may contain gravel, dark brown to black; poorly sorted; normally bedded; fossiliferous; 2 to 10 feet thick



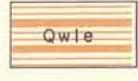
**Qds**  
 Dune Sand  
 Fine to medium quartz sand, rounded, etched; dark brownish-gray to light-yellow and white; local dune topography; 0 to 50 feet thick



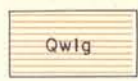
**Qwlo**  
 Outwash Deposits  
 Fine to coarse sand; some poorly sorted to fairly well-sorted sand and gravel; local bedded gray to brown fossiliferous silt and clay; 3 to 75 thick.



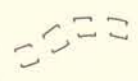
**Qwto**  
 Terrace Outwash Deposits  
 Sand and coarse gravel, poorly sorted, iron-stained; 10 to 60 feet thick. Terraces 10 and 60 feet above James River floodplain



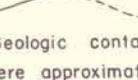
**Qwle**  
 End Moraine Deposits  
 Boulder-clay till, dark olive-brown; calcareous, sandy. Drift ranges from 12 to 95 feet in thickness and averages 40 feet



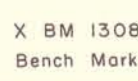
**Qwlg**  
 Ground Moraine Deposits  
 Boulder-clay till, dark olive-gray to dark olive-brown; calcareous



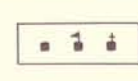
Meltwater channel from which sand and gravel has been partly or wholly removed; locally contains alluvium



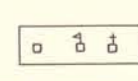
Geologic contact  
 Dashed where approximately located



X BM 1308  
 Bench Mark  
 Showing altitude above sea level



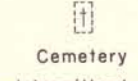
House, School, Church,



House, School, Church, (Abandoned)



Gravel Pit



Cemetery



Intermittent stream



Intermittent lake



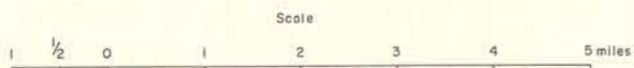
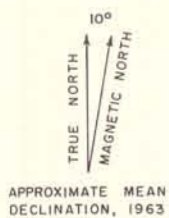
Drainage ditch



Lake

Geology by Fred V. Staeece 1959, 1960  
 Assisted by Jim D. Hammell

Base Map from South Dakota Department of Highways, General Highway Map of Sanborn County, 1954



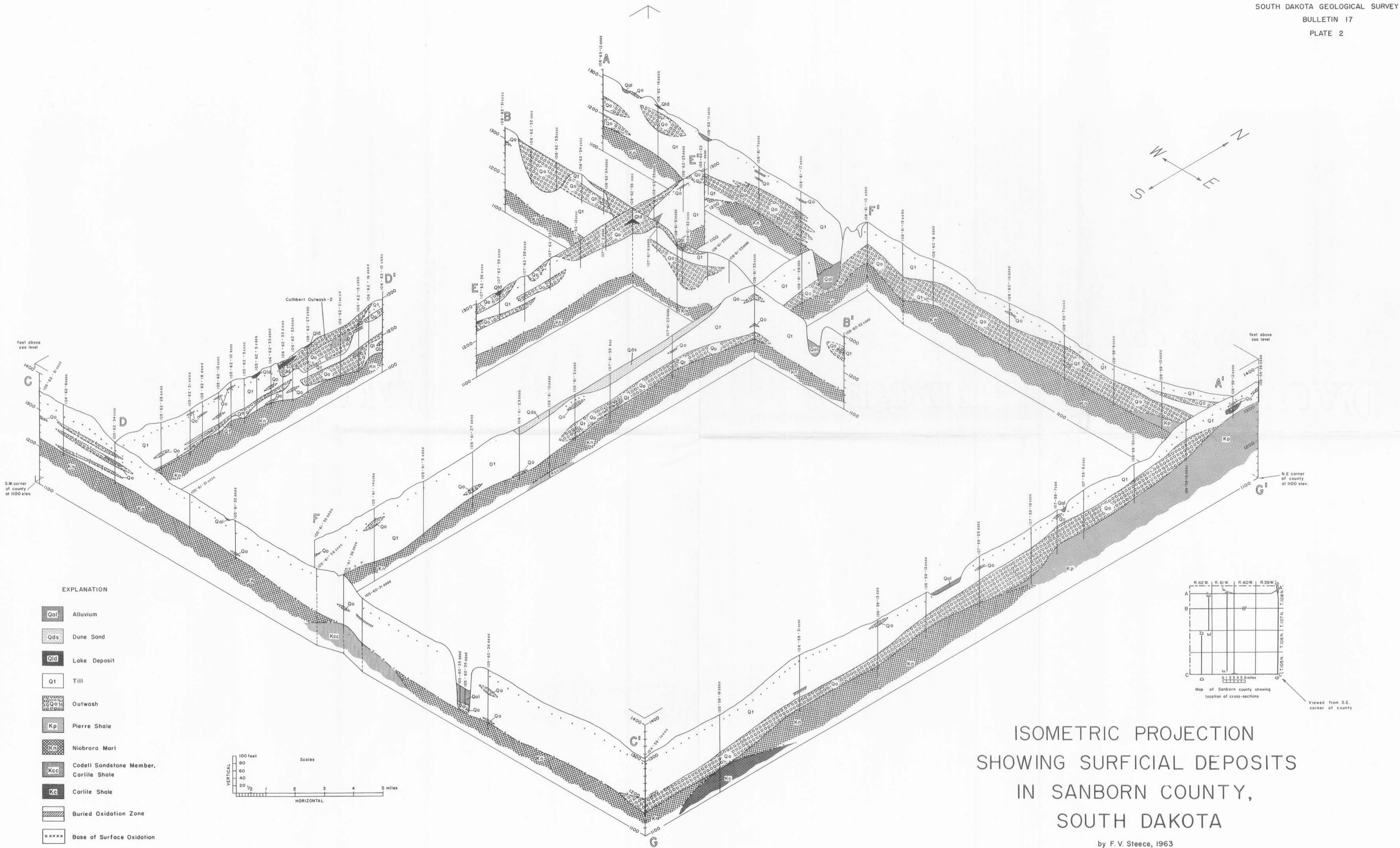
1965

6	5	4	3	2	1
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36

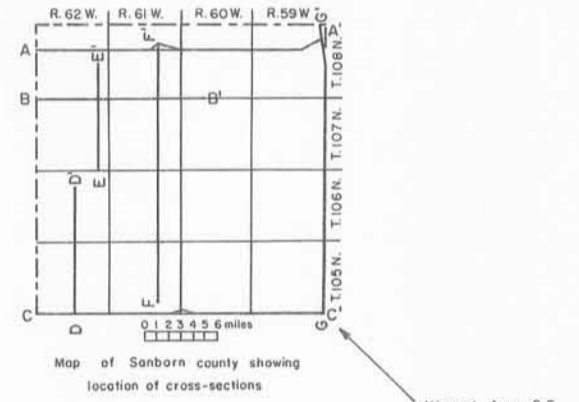
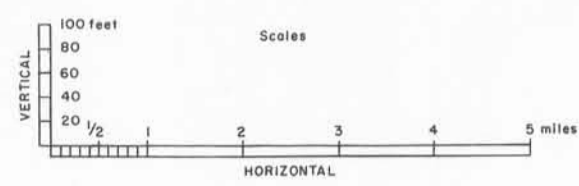
SECTIONIZED TOWNSHIP



GEOLOGIC MAP OF SANBORN COUNTY

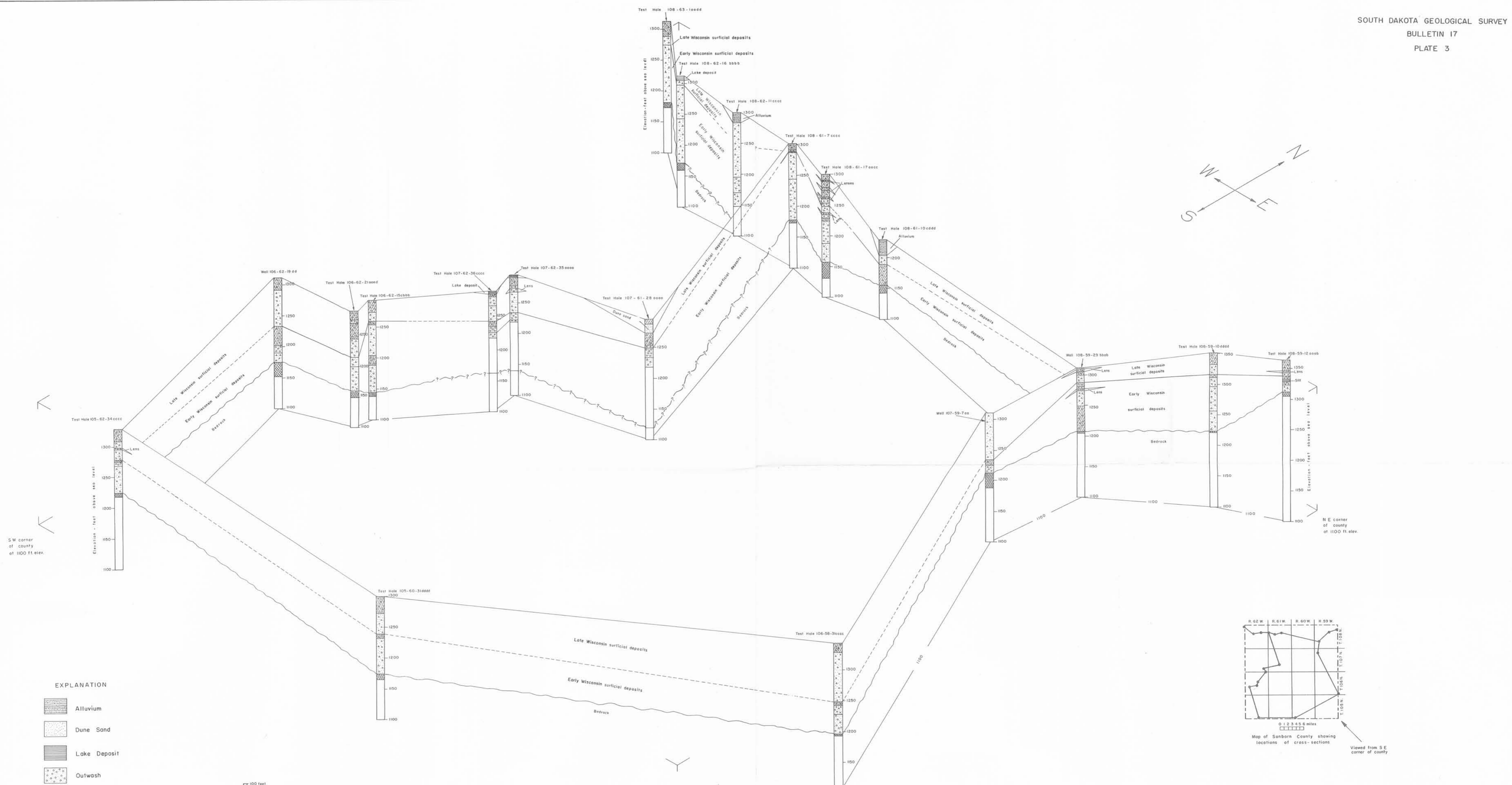


- EXPLANATION**
- Alluvium
  - Dune Sand
  - Lake Deposit
  - Till
  - Outwash
  - Pierre Shale
  - Niobrara Marl
  - Codell Sandstone Member, Carlile Shale
  - Carlile Shale
  - Buried Oxidation Zone
  - Base of Surface Oxidation

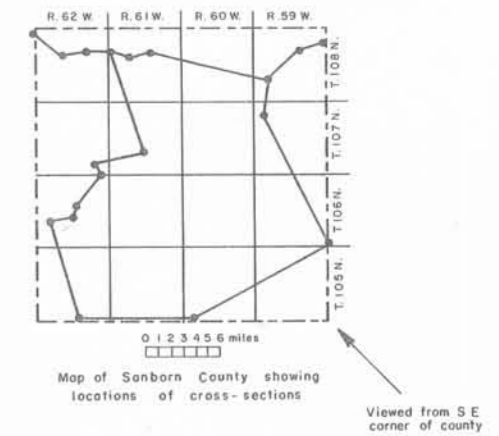
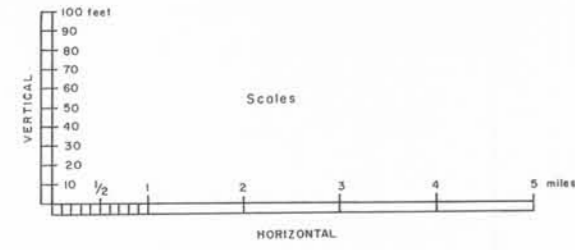


ISOMETRIC PROJECTION  
 SHOWING SURFICIAL DEPOSITS  
 IN SANBORN COUNTY,  
 SOUTH DAKOTA

by F. V. Steece, 1963



- EXPLANATION**
- Alluvium
  - Dune Sand
  - Lake Deposit
  - Outwash
  - Till
  - Bedrock
  - Zone of Oxidation

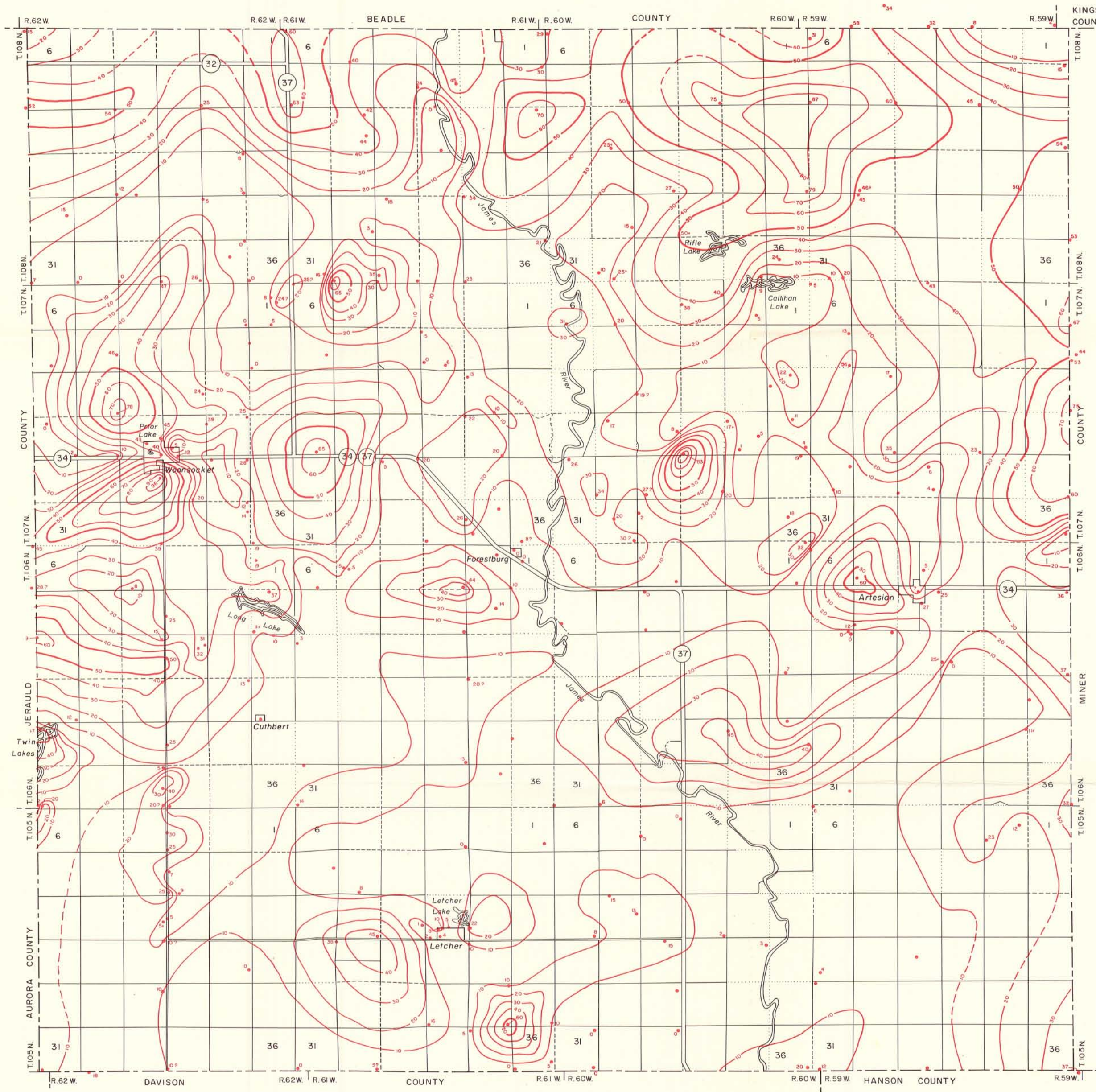


ISOMETRIC PROJECTION SHOWING STRATIGRAPHIC  
 RELATIONS OF EARLY AND LATE WISCONSIN  
 SURFICIAL DEPOSITS  
 OF SANBORN COUNTY, SOUTH DAKOTA

by  
 Fred V. Steece, 1963

S.E. corner  
 of county  
 at 1100 ft. elev.

MAP SHOWING THICKNESS  
 OF BURIED OUTWASH  
 DEPOSITS OF  
 SANBORN COUNTY,  
 SOUTH DAKOTA



**EXPLANATION**

•<sup>75</sup> Well or Test Hole; number is thickness of buried outwash deposits; absence of number indicates no record of sand and gravel in drillers log, but outwash deposits may be present.

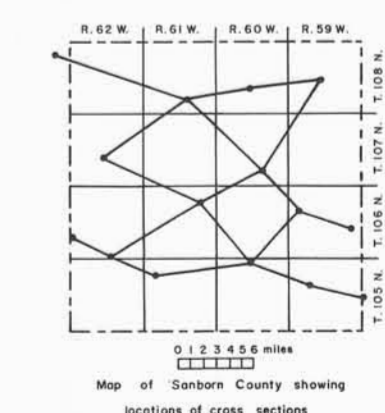
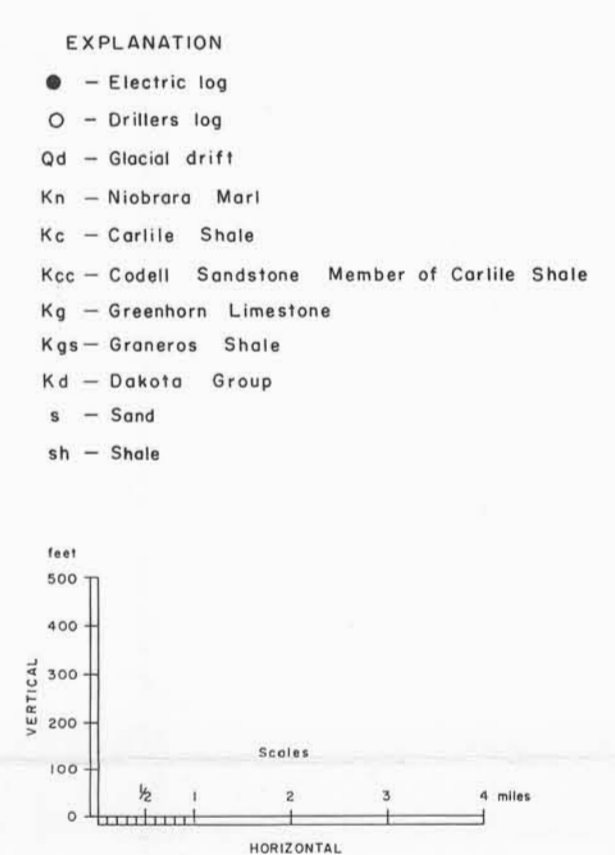
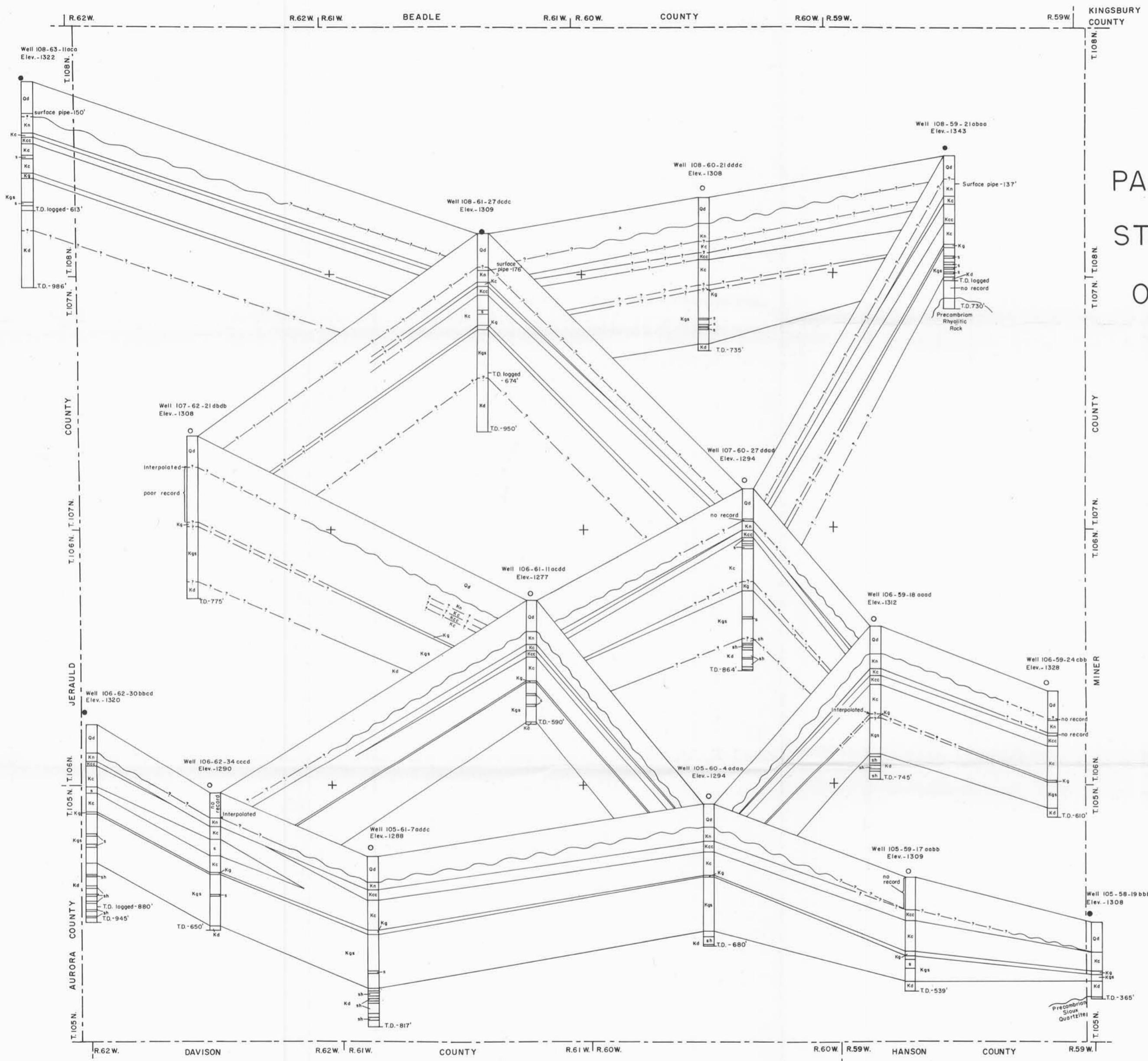
—<sub>10</sub> Contour showing thickness of buried outwash deposits. Contour Interval = 10 feet.

⊖<sup>34</sup> Numbered highways  
 == Hard surfaced roads  
 - - - Graveled roads  
 . . . Trails  
 . . . . . Section lines (no roads)

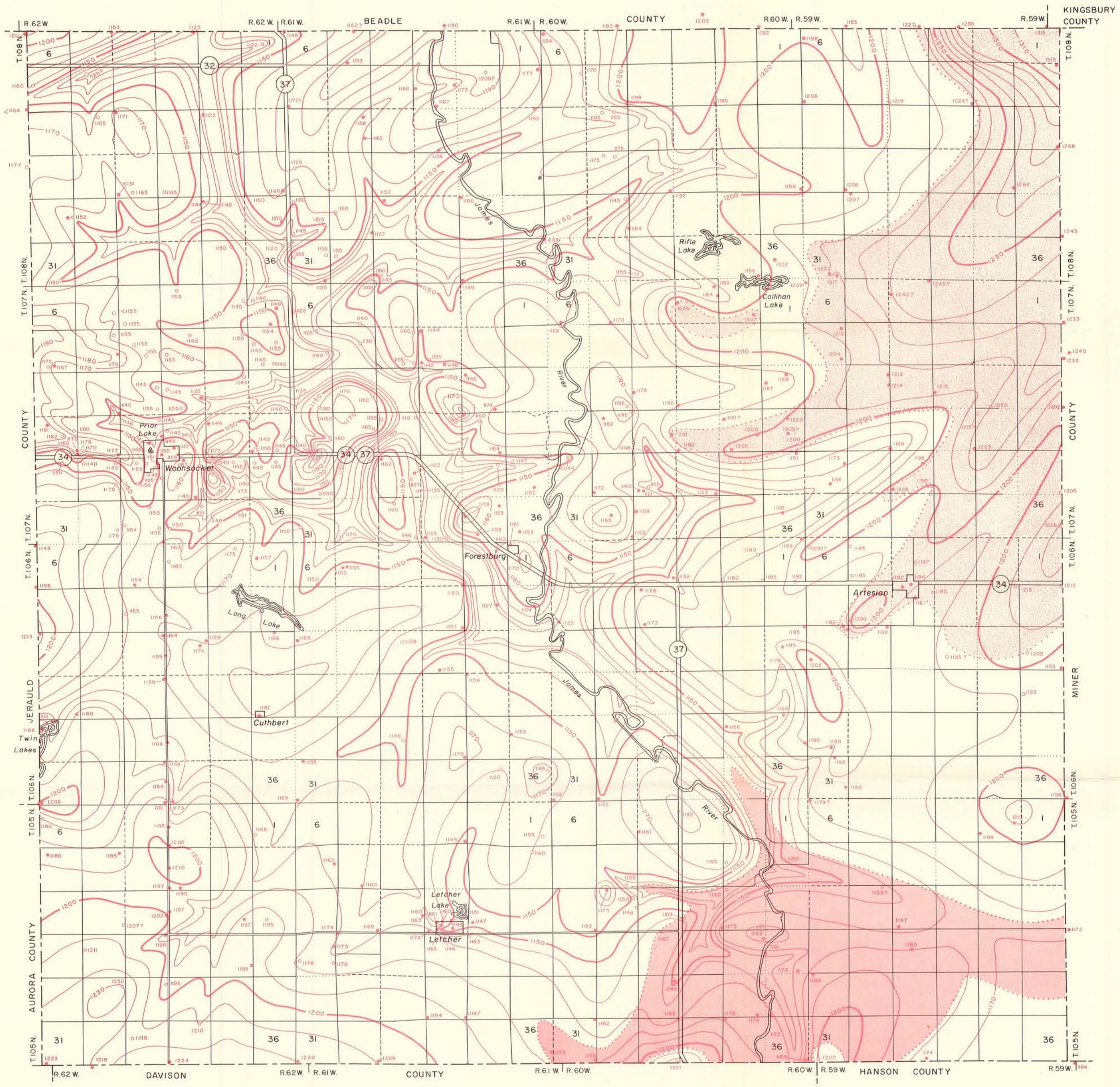


by  
 F. V. Steece  
 1963

PANEL DIAGRAM SHOWING  
 STRATIGRAPHIC RELATIONS  
 OF SUBSURFACE ROCKS  
 OF SANBORN COUNTY,  
 SOUTH DAKOTA



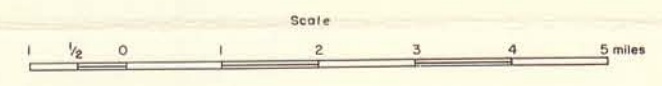
by F.V. Steece, 1963



# BEDROCK MAP OF SANBORN COUNTY, SOUTH DAKOTA

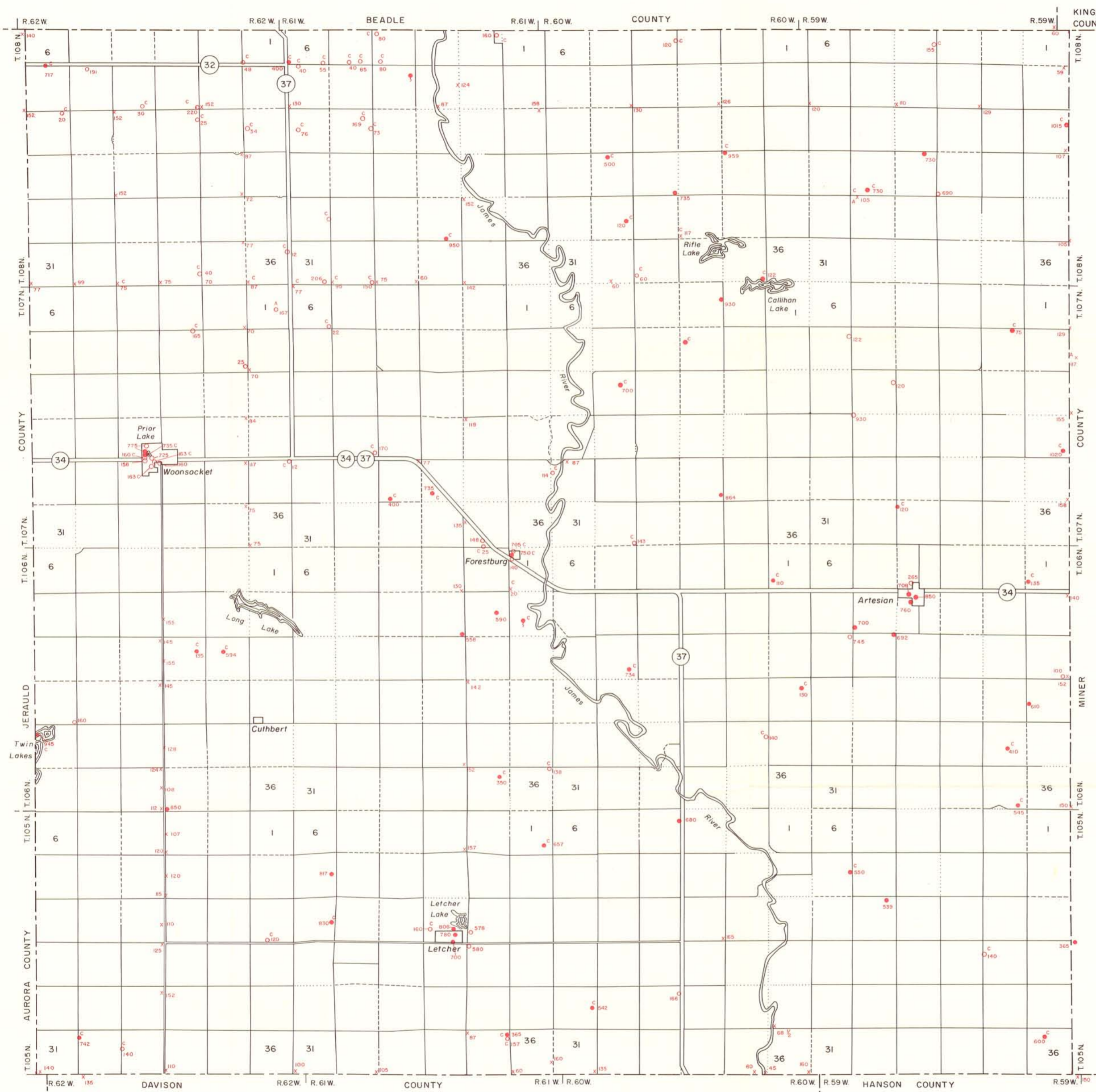
Showing contours on the bedrock surface  
 and subcrop of the bedrock formations

- EXPLANATION**
- Pierre Shale
  - Niobrara Marl
  - Carlile Shale
- Upper Cretaceous }  
 Cretaceous }
- Control point; reliable information (log available)
  - Control point; less reliable (bottom hole elevation of well in bedrock - no log available)
  - - - Contour on bedrock surface; number is elevation above sea level (Contour interval = 10 feet)
  - - - - - Approximate boundary between bedrock formations
- 34 Numbered highways
  - == Hard surfaced roads
  - Graveled roads
  - - - Trails
  - - - - - Section lines (no roads)



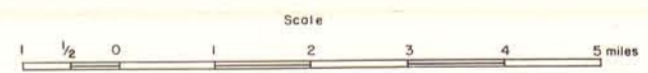
by  
 F. V. Steece  
 1963

DATA MAP  
 of  
 SANBORN COUNTY,  
 SOUTH DAKOTA  
 Showing locations of selected wells,  
 test holes, aquifer tests,  
 chemical analyses and springs



- EXPLANATION
- Flowing well
  - Nonflowing well
  - x Test hole and test well
  - c Complete chemical analysis
  - 100 Depth of well or test hole
  - A Aquifer test
  - ♣ Spring

- 34 Numbered highways
- Hard surfaced roads
- Graveled roads
- - - Trails
- ..... Section lines (no roads)



by  
 F. V. Steece  
 1963