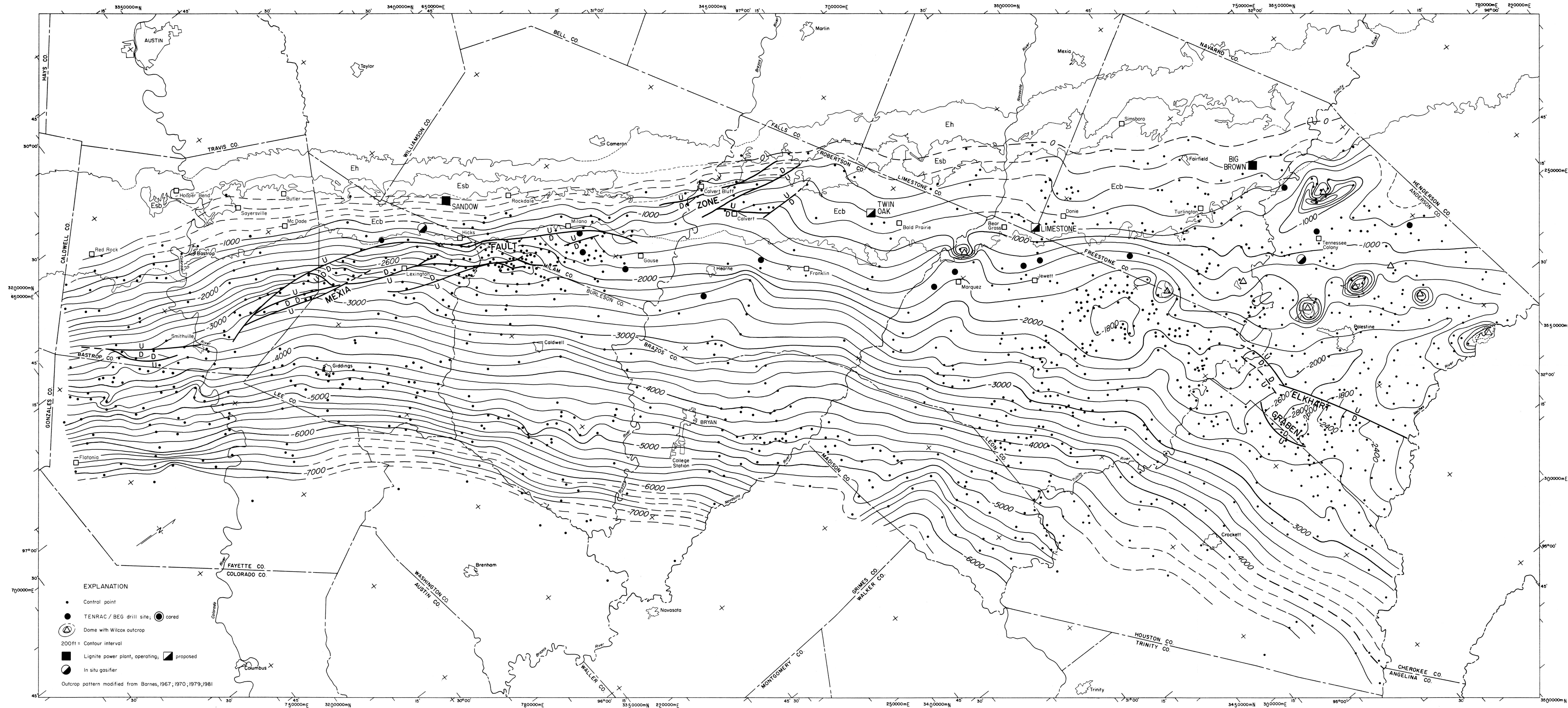




ATTACHMENT 2 –  
REFERENCE MATERIALS



- EXPLANATION**
- Control point
  - TENRAC / BEG drill site; ● cored
  - ⊙ Dome with Wilcox outcrop
  - 200ft = Contour interval
  - Lignite power plant, operating; ▨ proposed
  - ⊙ In situ gasifier
- Outcrop pattern modified from Barnes, 1967, 1970, 1979, 1981

- Ecb Calvert Bluff Formation
- Esb Simsboro Formation
- Eh Hooper Formation

Base map adapted from Army Map Service base maps, 10,000-meter Universal Transverse Mercator grid, zones 14 and 15. Cartography by John T. Ames under the supervision of Richard L. Dillon.

by W. B. Ayers, Jr., and Amy H. Lewis

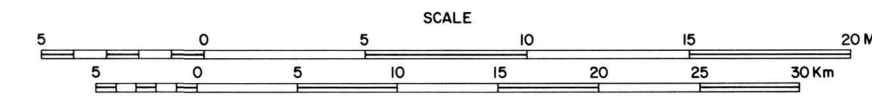
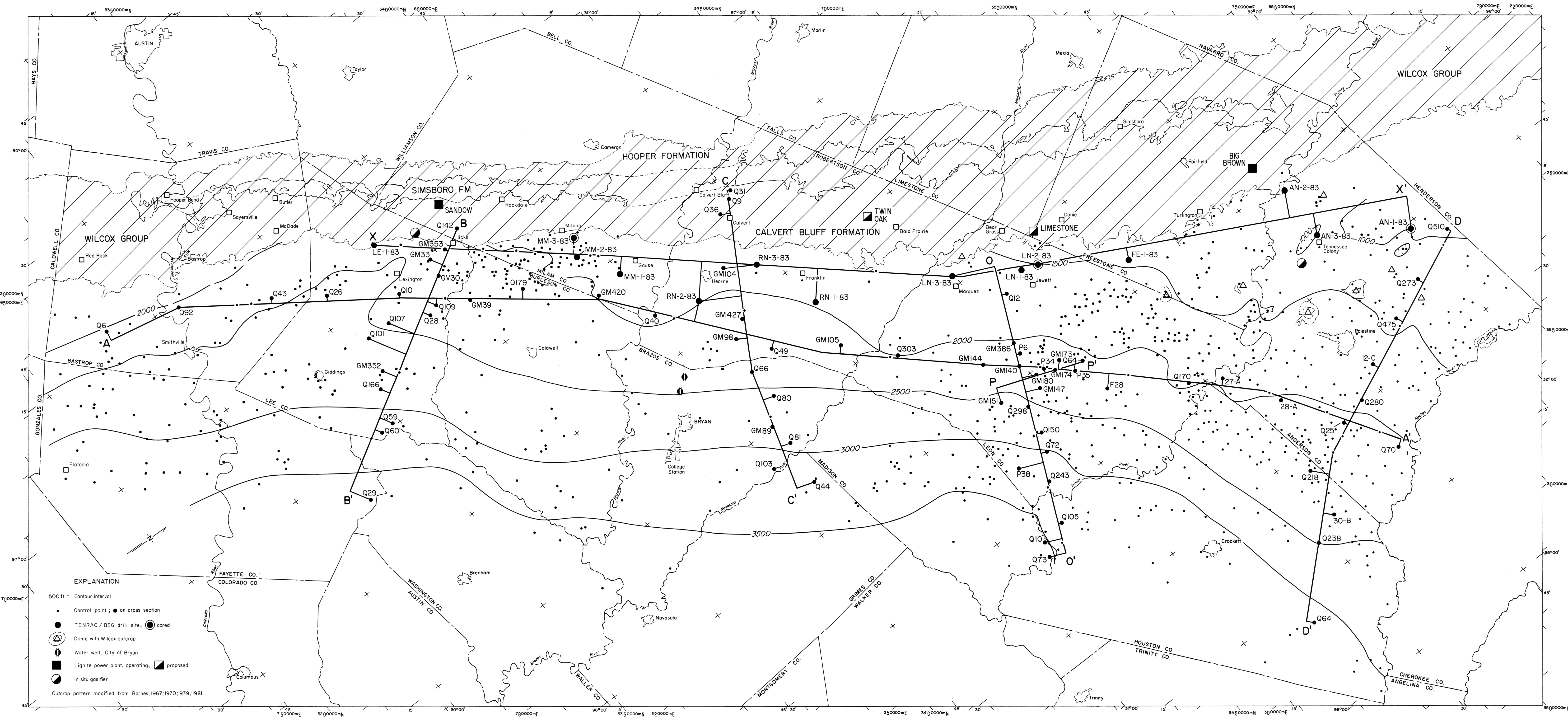


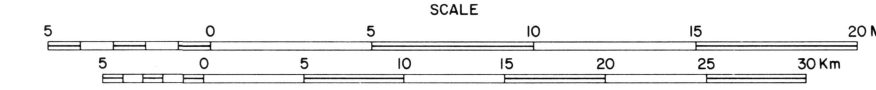
PLATE 2. WILCOX STRUCTURE MAP

1985

Generalized structure map drawn on the base of the Wilcox Group (sea-level datum) shows regional dip to the southeast. The angle of dip increases from the northeast (1/2°) to the southwest (2°). Major structural elements are the Mexia Fault Zone, the Elkhart Graben, salt structures in Anderson and Freestone Counties, and the East Texas Basin (fig. 2).



- EXPLANATION**
- 500 ft = Contour interval
  - Control point; ● on cross section
  - TENRAC / BEG drill site; ● cored
  - ⊙ Dome with Wilcox outcrop
  - ⊕ Water well, City of Bryan
  - Lignite power plant, operating; ▣ proposed
  - ⊙ In situ gasifier
- Outcrop pattern modified from Barnes, 1967; 1970; 1979; 1981



Base map adapted from Army Map Service base maps. 10,000-meter Universal Transverse Mercator grid, zones 14 and 15. Cartography by John T. Ames under the supervision of Richard L. Dillon.

PLATE 3. WILCOX ISOPACH MAP AND LOCATIONS OF CROSS SECTIONS

The Wilcox Group thickens from less than 1,000 ft (305 m) on the north to more than 3,500 ft (1,065 m) at the basinward margin of the study area. The local increase in thickness in central Lee County is attributed to syndepositional movement along the Mexia Fault Zone (fig. 2 and pl. 2).

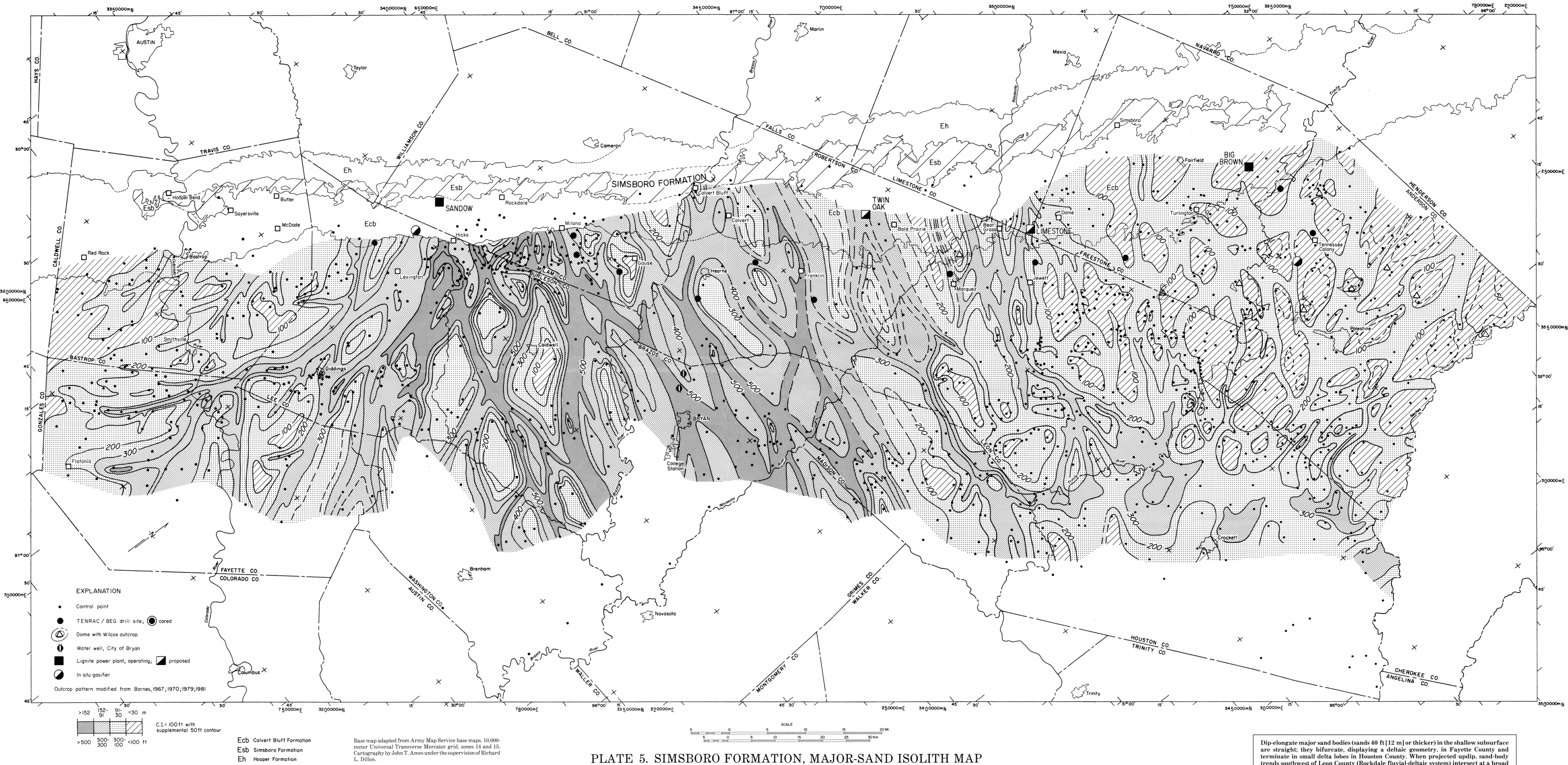


PLATE 5. SIMSBORO FORMATION, MAJOR-SAND ISOLITH MAP

Ecb Calvert Bluff Formation  
 Esb Simsboro Formation  
 Eh Hooper Formation

Base map adapted from Army Map Service base maps, 10,000-meter Universal Transverse Mercator grid, zones 14 and 15. Cartography by John T. Ames under the supervision of Richard L. Dillon.

by W. B. Ayers, Jr., and Amy H. Lewis

Dip-elongate major sand bodies (sands 40 ft [12 m] or thicker) in the shallow subsurface are straight; they bifurcate, displaying a deltaic geometry, in Fayette County and terminate in small delta lobes in Houston County. When projected updip, sand-body trends southwest of Leon County (Rockdale fluvial-deltaic system) intersect at a broad locus in Coryell County (fig. 3). Sand-body trends in Anderson and Houston Counties (secondary fluvial system with sources to the north and northeast) are directed into the axis of the East Texas Basin (fig. 2 and pl. 2).

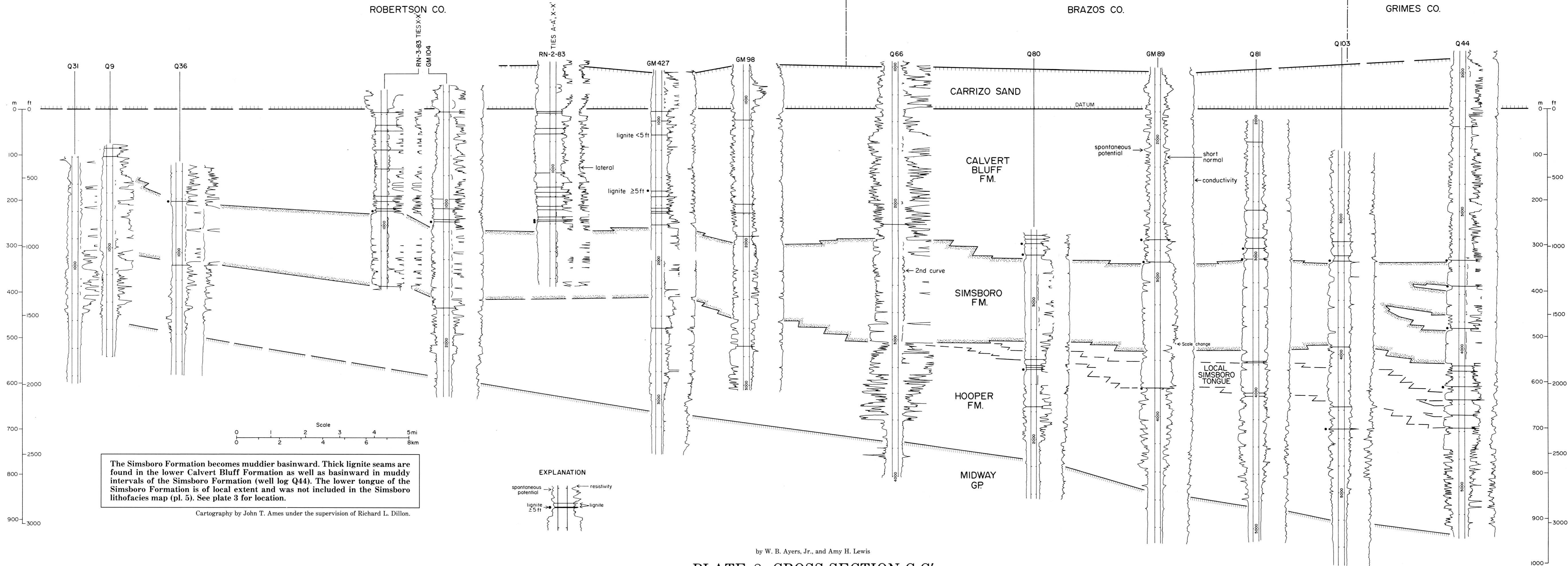
G0461984-5

C

NORTHWEST

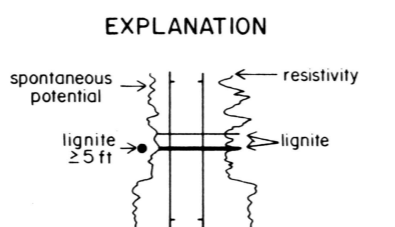
C'

SOUTHEAST



The Simsboro Formation becomes muddier basinward. Thick lignite seams are found in the lower Calvert Bluff Formation as well as basinward in muddy intervals of the Simsboro Formation (well log Q44). The lower tongue of the Simsboro Formation is of local extent and was not included in the Simsboro lithofacies map (pl. 5). See plate 3 for location.

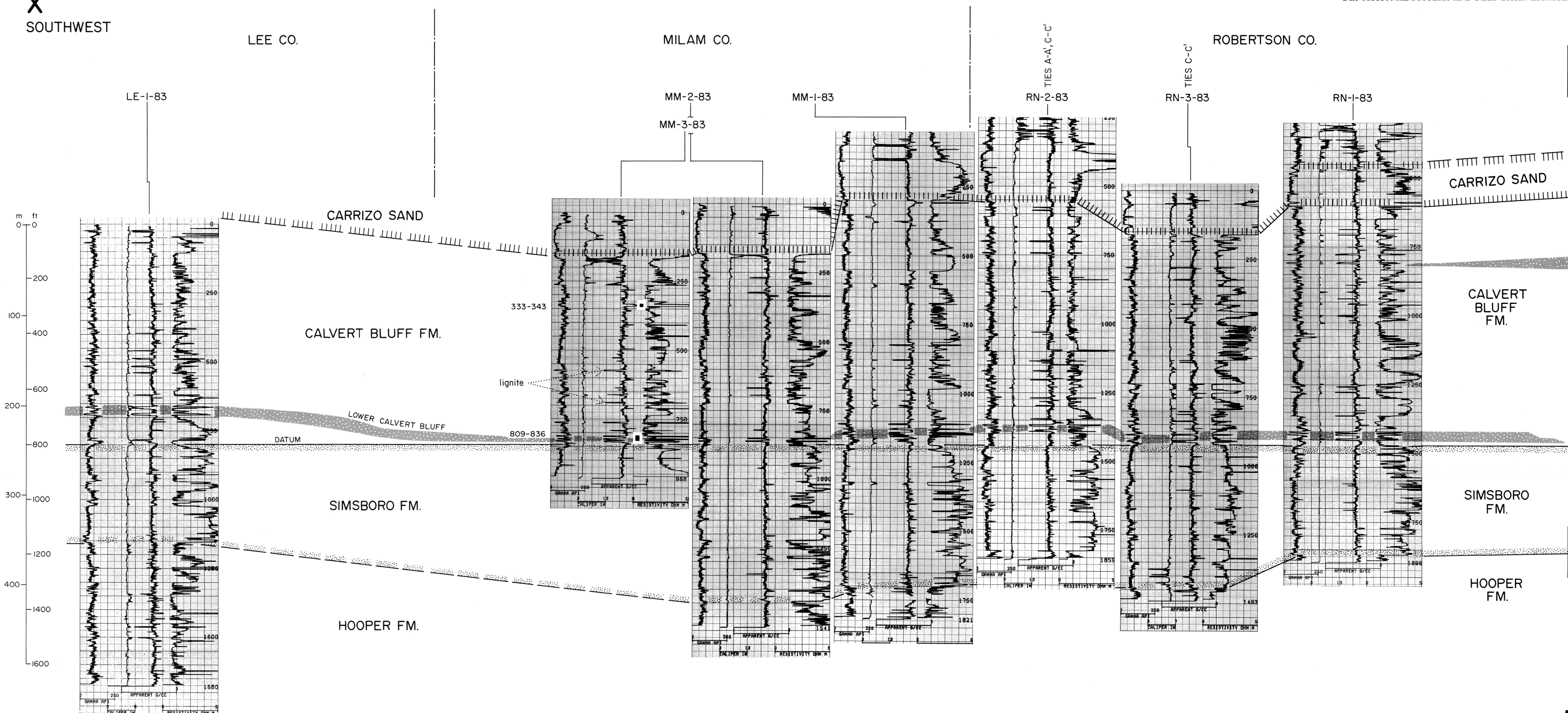
Cartography by John T. Ames under the supervision of Richard L. Dillon.



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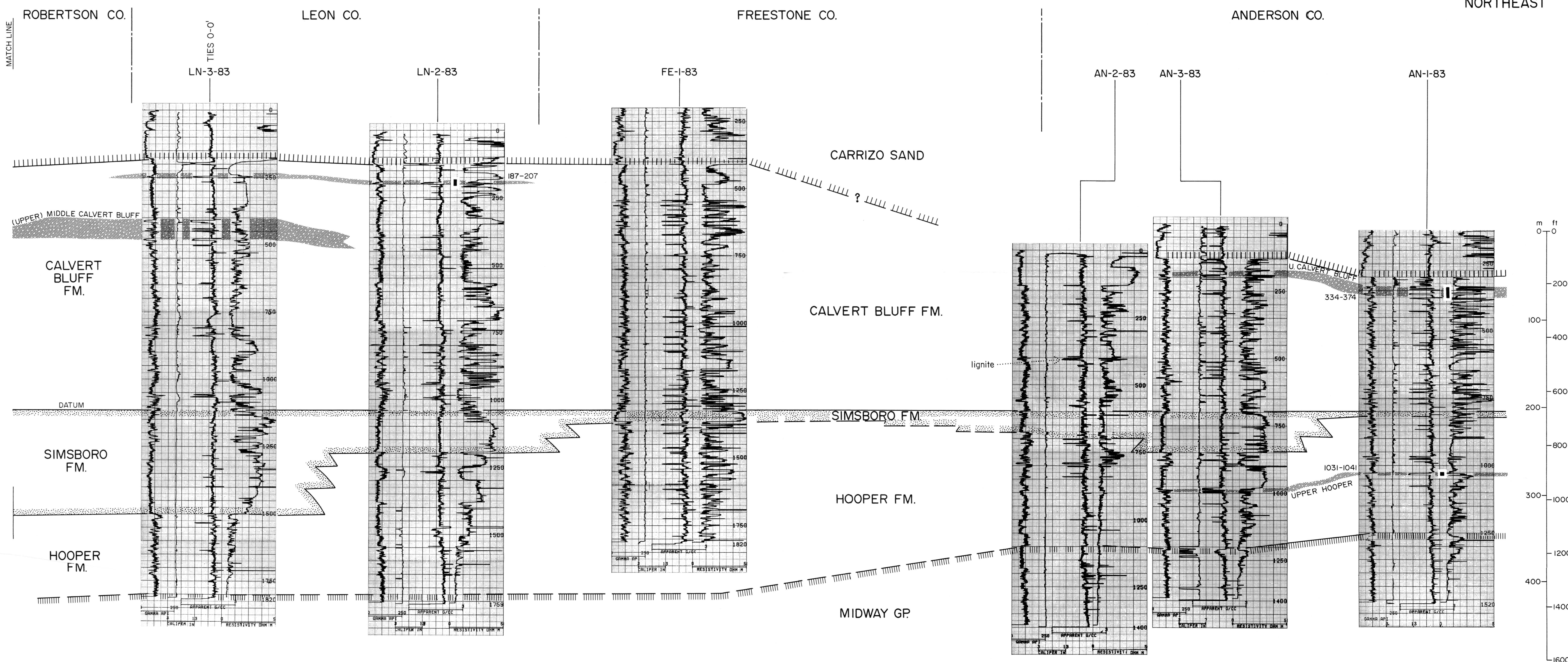
PLATE 8. CROSS SECTION C-C'  
 1985

X  
SOUTHWEST



MATCH LINE

X'  
NORTHEAST



MATCH LINE

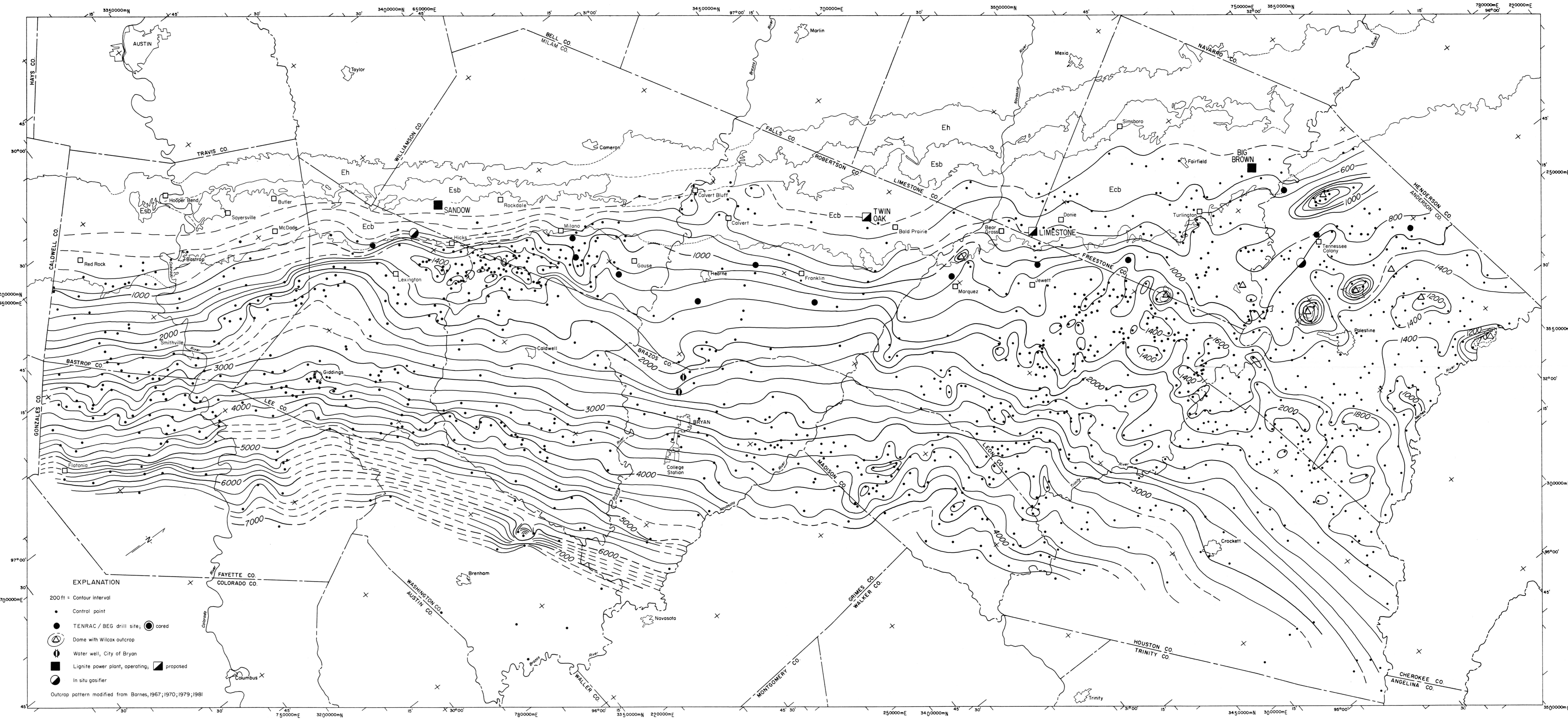
Geophysical logs from Texas Energy and Natural Resources Advisory Council/Bureau of Economic Geology wells show the stratigraphic occurrence of deep lignite (200 to 2,000 ft [61 to 610 m]) in east-central Texas. Thick lignite seams (seams 5 ft [1.5 m] or thicker) are found in the (a) upper Hooper Formation on the northeast, (b) lower Calvert Bluff Formation on the southwest, and (c) upper Calvert Bluff Formation on the northeast. Lateral continuity of individual lignite seams within the zones is neither implied nor true; wells were drilled in low-sand (floodbasin) areas between major-sand axes, which limit seam continuity. See plate 3 for location. Full-scale geophysical well logs are available from the Bureau of Economic Geology.

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PLATE 22. LIGNITE CROSS SECTION X-X'  
1985

EXPLANATION  
Zone of thick lignite  
(1 or more seams ≥5 ft [1.5 m])  
333-343 ■ Cored interval

Cartography by John T. Ames under the supervision of Richard L. Dillon.



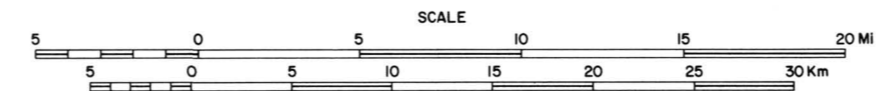
- EXPLANATION**
- 200 ft = Contour interval
  - Control point
  - TENRAC / BEG drill site; ● cored
  - ⊙ Dome with Wilcox outcrop
  - ⊕ Water well, City of Bryan
  - Lignite power plant, operating; ▨ proposed
  - ⊙ In situ gasifier
- Outcrop pattern modified from Barnes, 1967; 1970; 1979; 1981

- Ecb Calvert Bluff Formation
- Esb Simsboro Formation
- Eh Hooper Formation

Base map adapted from Army Map Service base maps, 10,000-meter Universal Transverse Mercator grid, zones 14 and 15. Cartography by John T. Ames under the supervision of Richard L. Dillon.

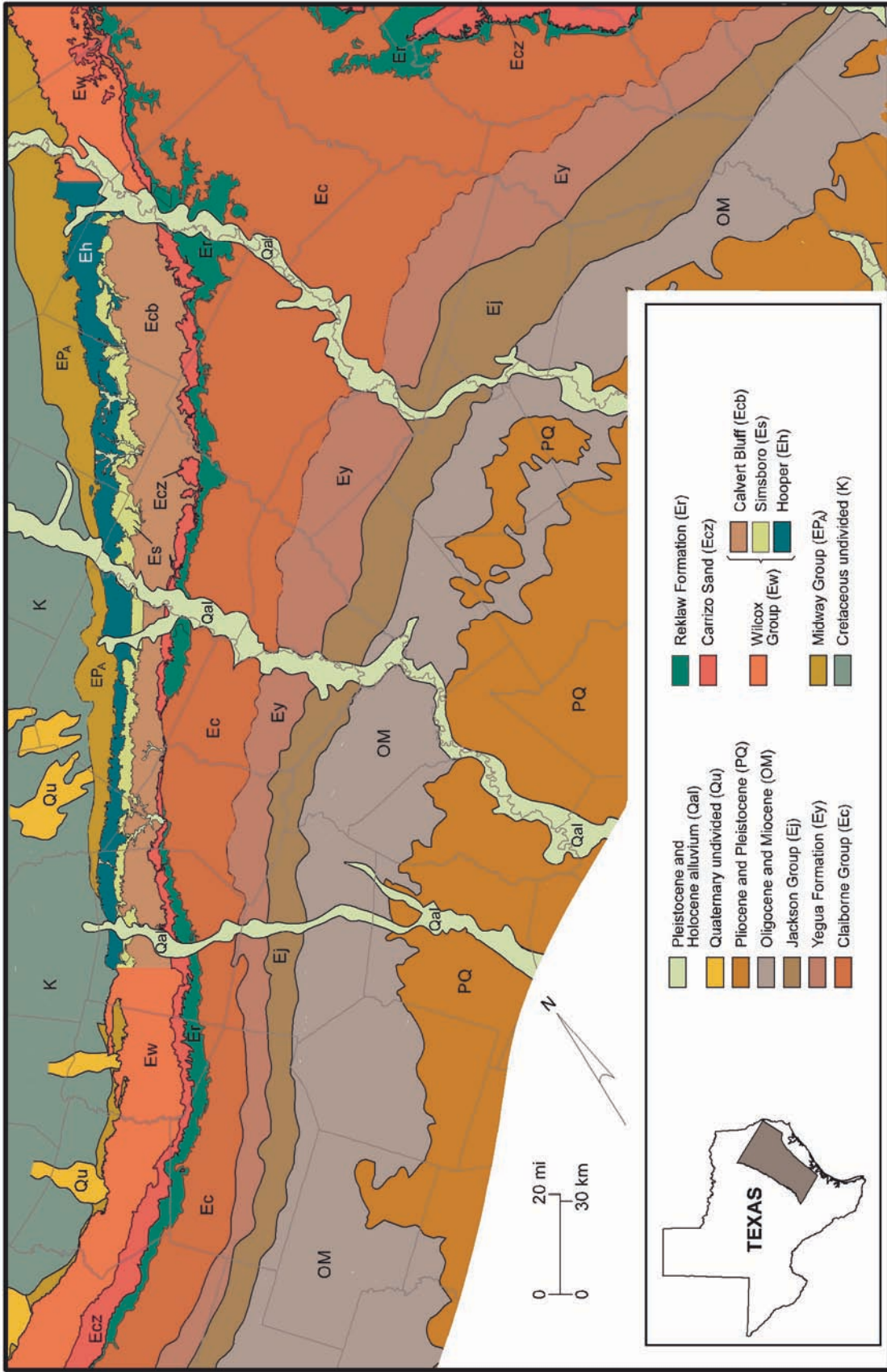
by W. B. Ayers, Jr., and Amy H. Lewis

**PLATE 28. SIMSBORO OVERBURDEN MAP**



The depth to the top of the Simsboro (Simsboro overburden) provides an estimate of the depth required to test the entire lignite-bearing Calvert Bluff Formation.

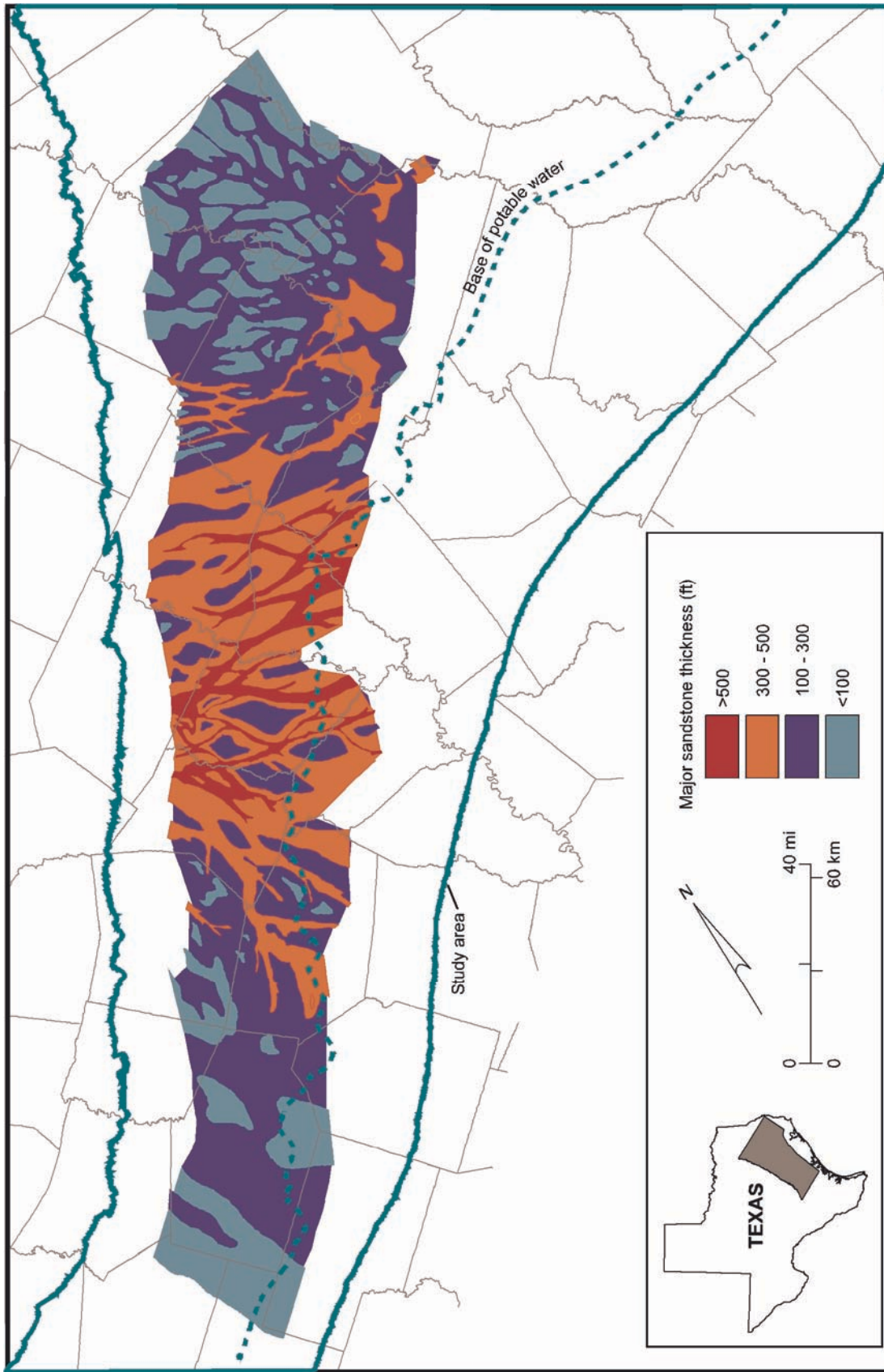
04E1984-28



QA41815c

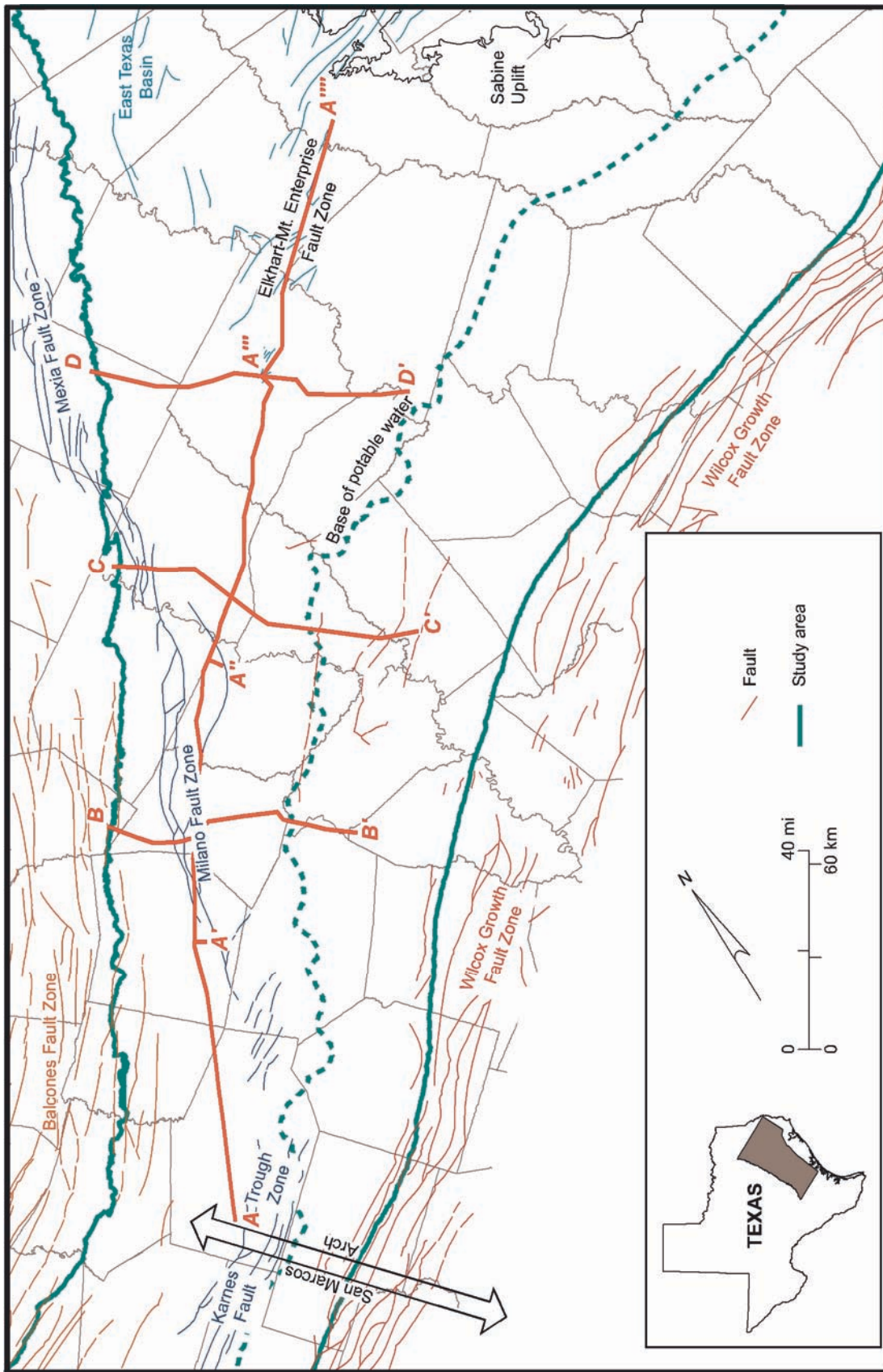
Figure 11. Generalized map of surface geology in the study area. The Wilcox Group is not subdivided into formations south of the Colorado River or north of the Trinity River. Claiborne Group shown on map does not include Yegua Formation, Reklaw Formation, and Carrizo Sand. Modified from Bureau of Economic Geology (1992).





Q-A41799c

Figure 12. Thickness of major sandstones in the Simsboro Formation in the study area. Modified from Ayers and Lewis (1985).



QAd1798c

Figure 14. Geologic structure in the study area. Modified from Ewing (1990). Lines of sections shown in figures 15 and 16.

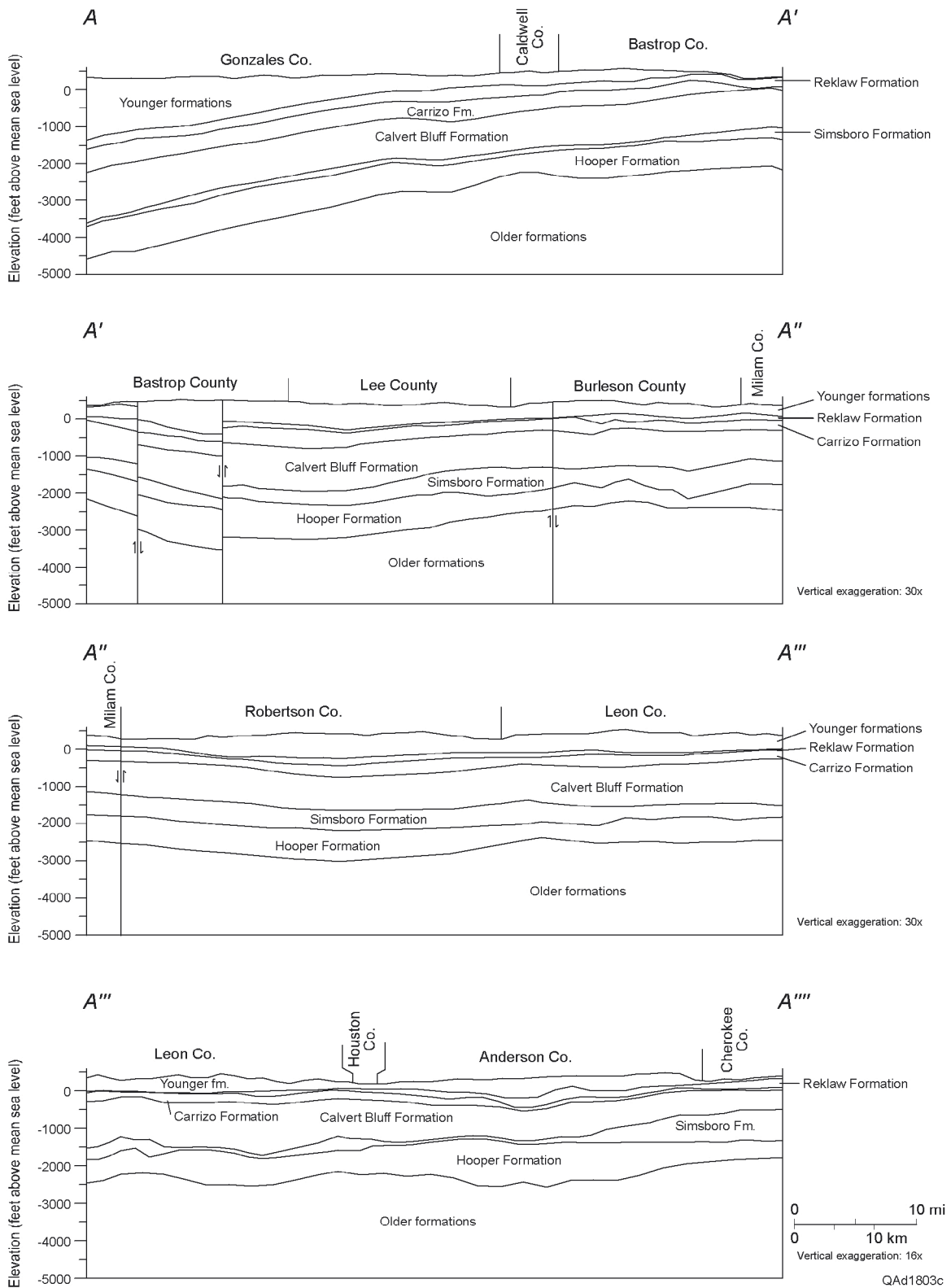
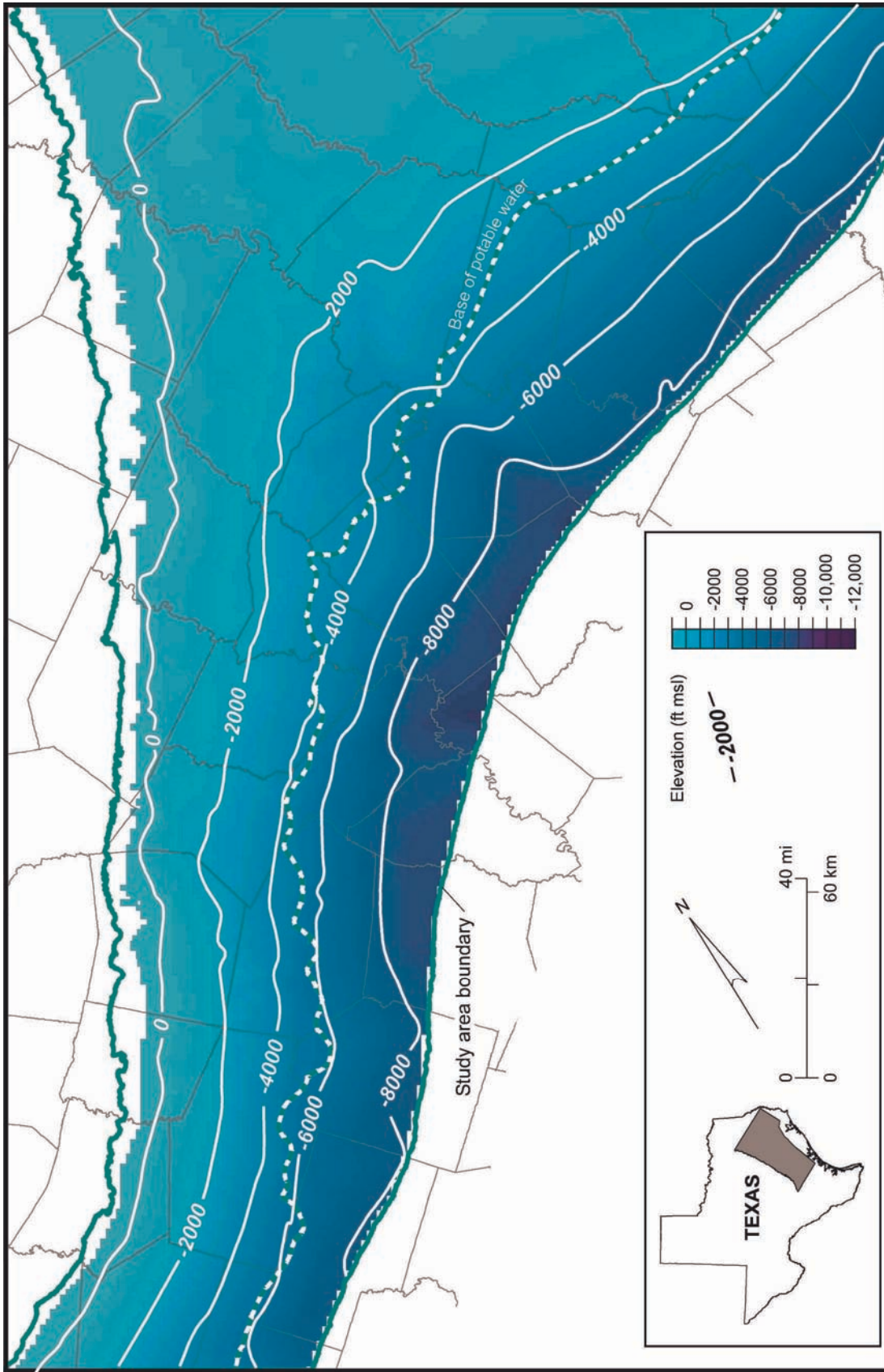
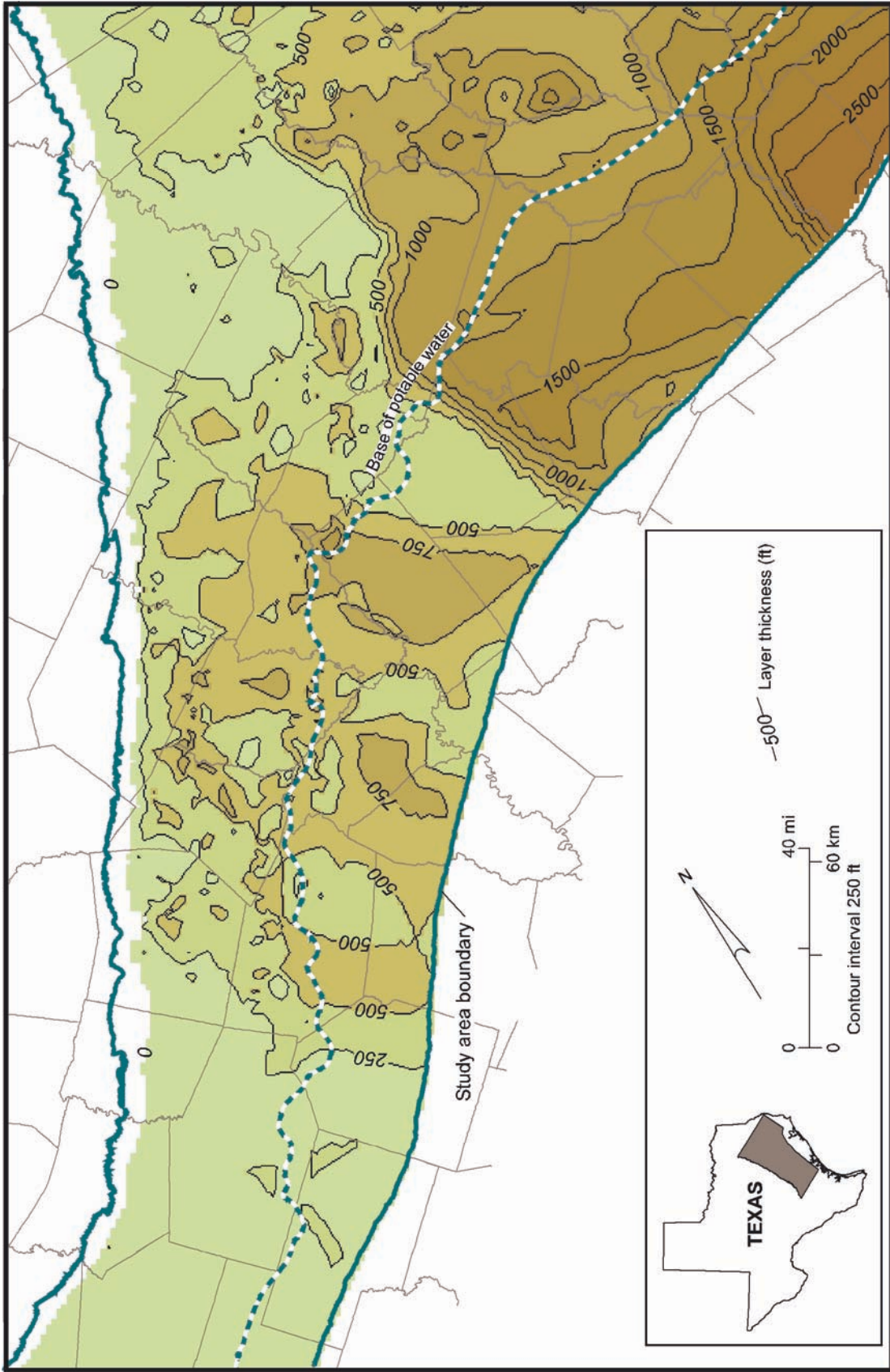


Figure 15. Vertical strike-oriented profile of the formations making up the Carrizo–Wilcox aquifer and adjacent formations. Strike section A–A''' shown in figure 14.



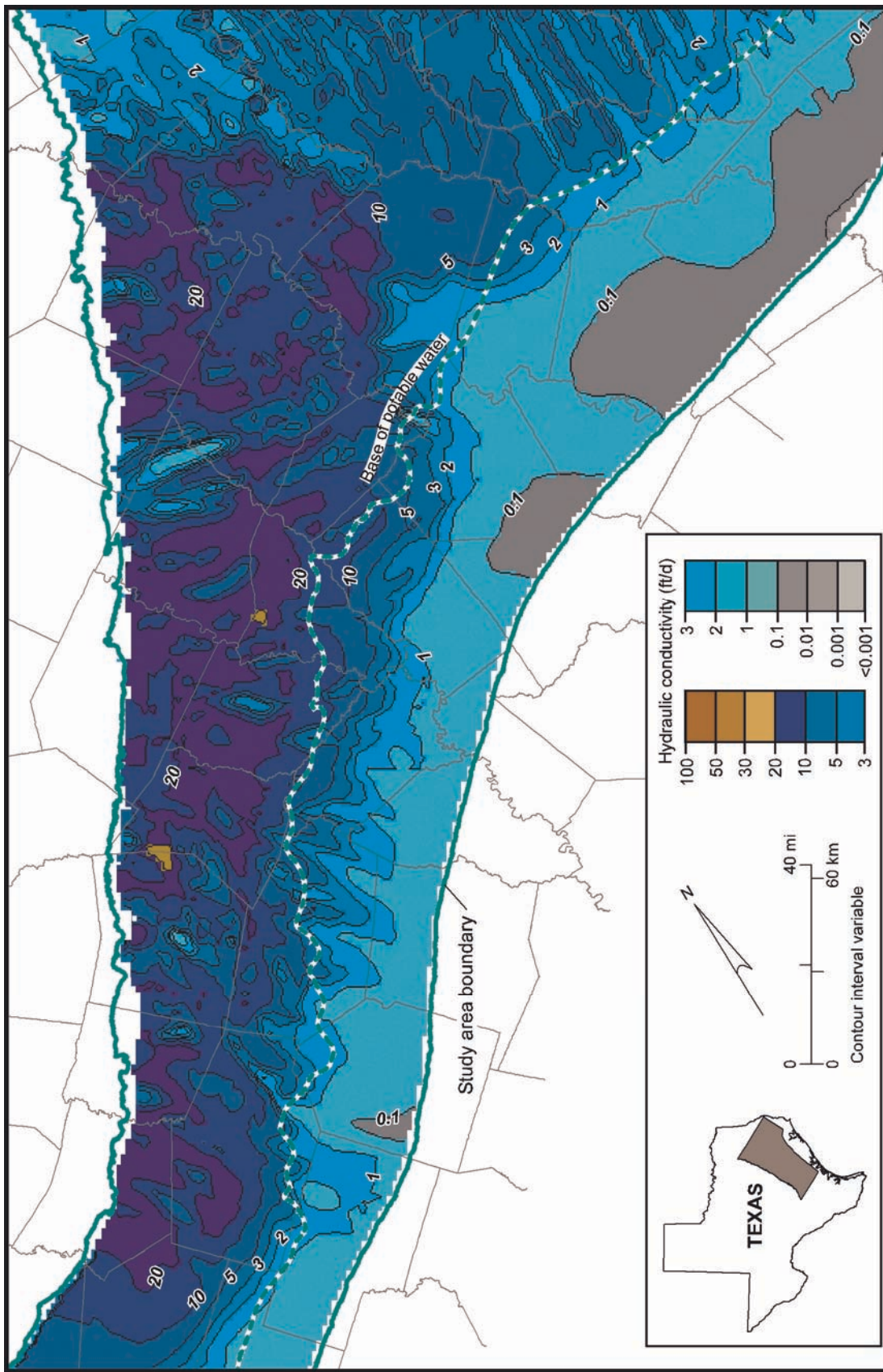
QA41812c

Figure 19. Elevation of the base of the Calvert Bluff Formation (top of Simsboro Formation).



QA41820c

Figure 24. Total thickness of the Simsboro Formation.



QA01811(e)c

Figure 49. Map of average hydraulic conductivity in the Simsboro Formation. Method of calculation described in text.