

PLATE 1. DOWNDIP LIMIT OF FRESHWATER IN THE COCKFIELD, SPARTA, AND CARRIZO AQUIFERS, SOUTHERN ARKANSAS, CENTRAL MISSISSIPPI, AND NORTHERN LOUISIANA.

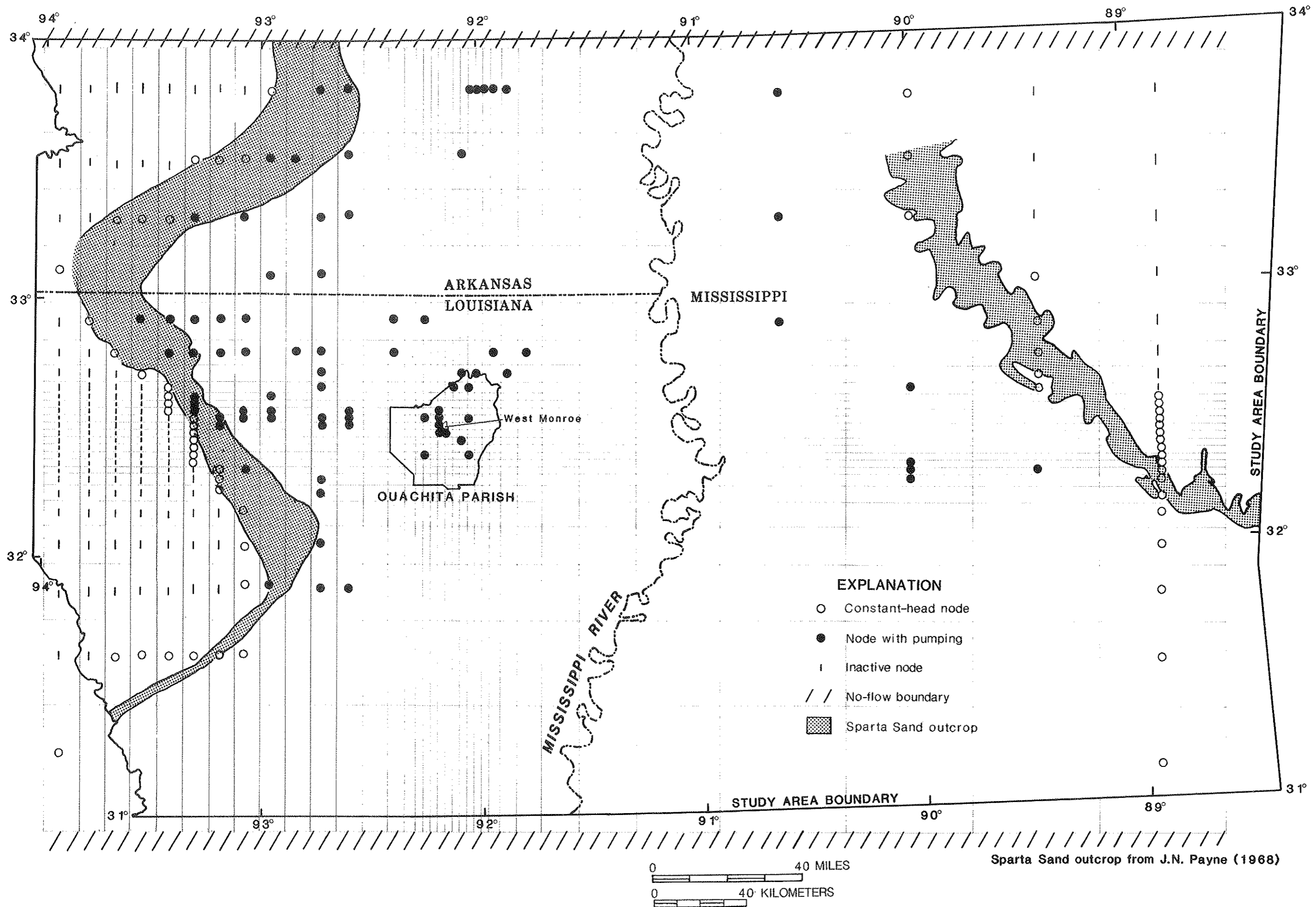
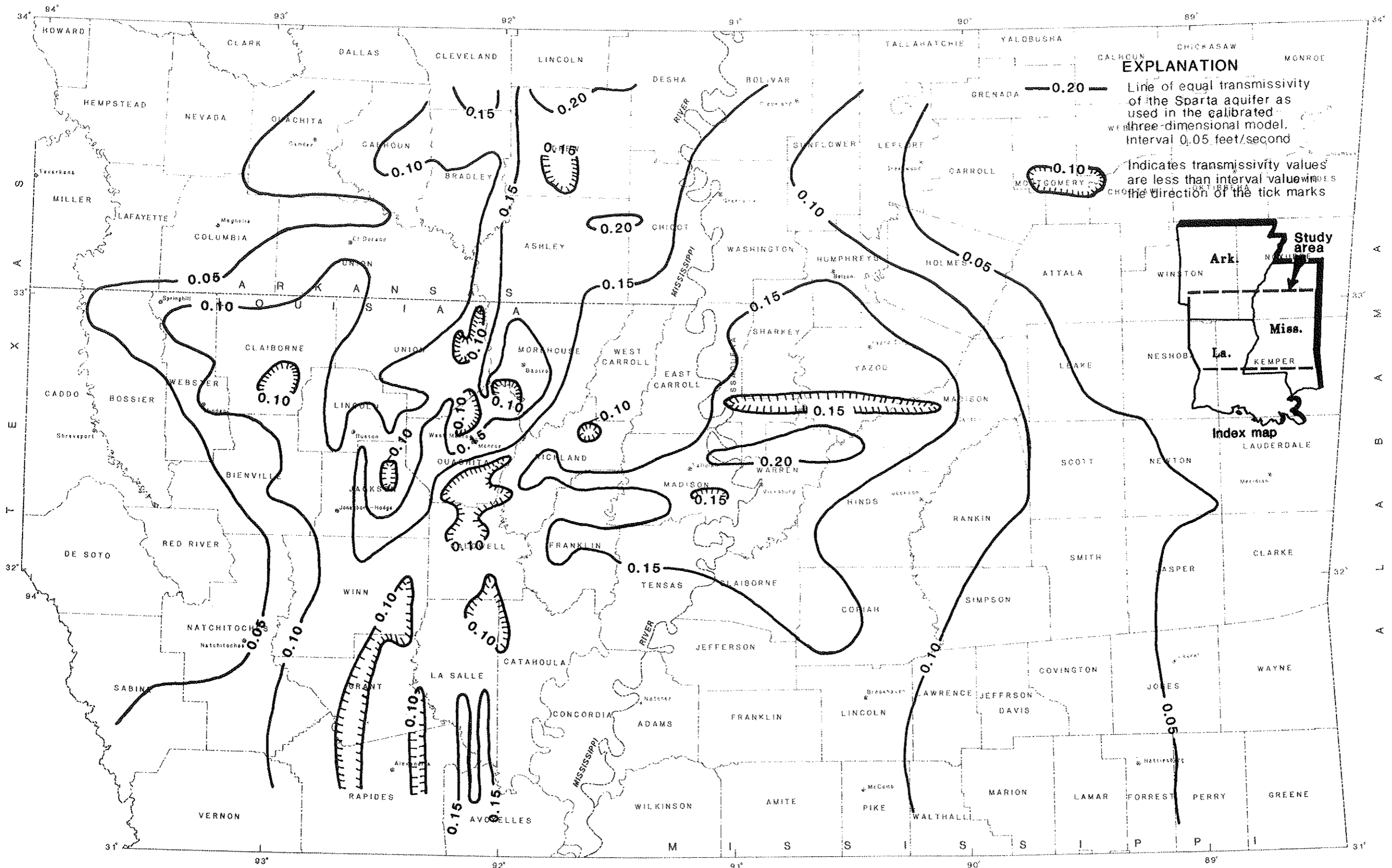


PLATE 2. FINITE-DIFFERENCE GRID USED IN THE DETAILED THREE-DIMENSIONAL MODEL, LOCATION OF PUMPING NODES AND NO-FLOW BOUNDARIES FOR THE SPARTA AQUIFER, SOUTHERN ARKANSAS, CENTRAL MISSISSIPPI, AND NORTHERN LOUISIANA.



Base from U.S. Geological Survey
 State maps of Arkansas, Louisiana, and
 Mississippi 1:500,000

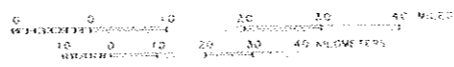
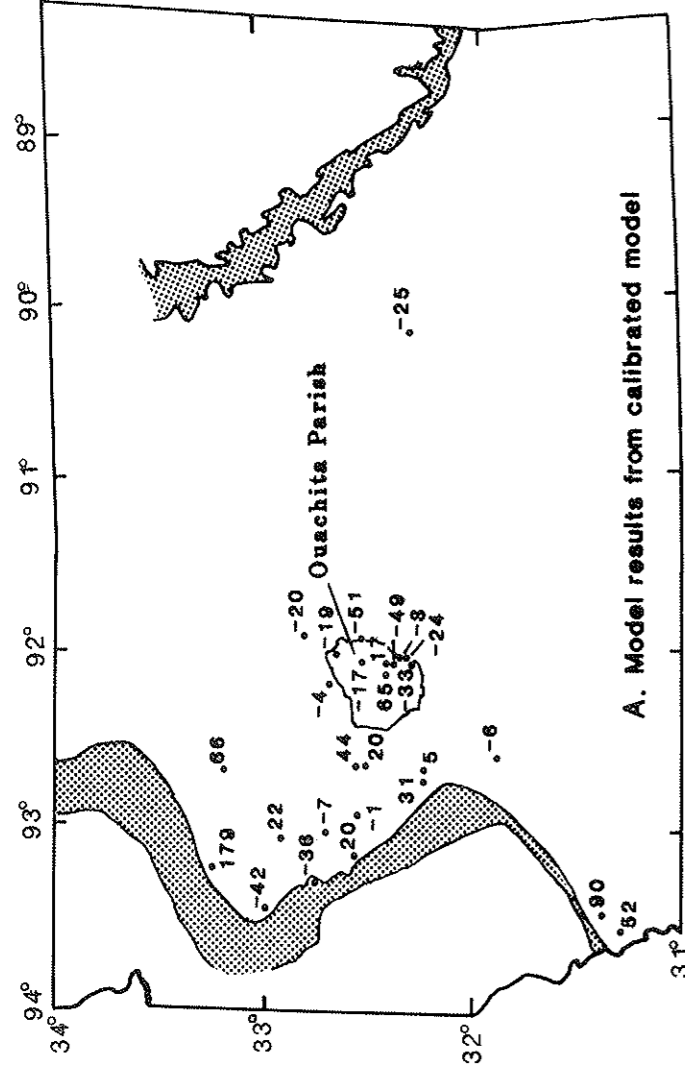
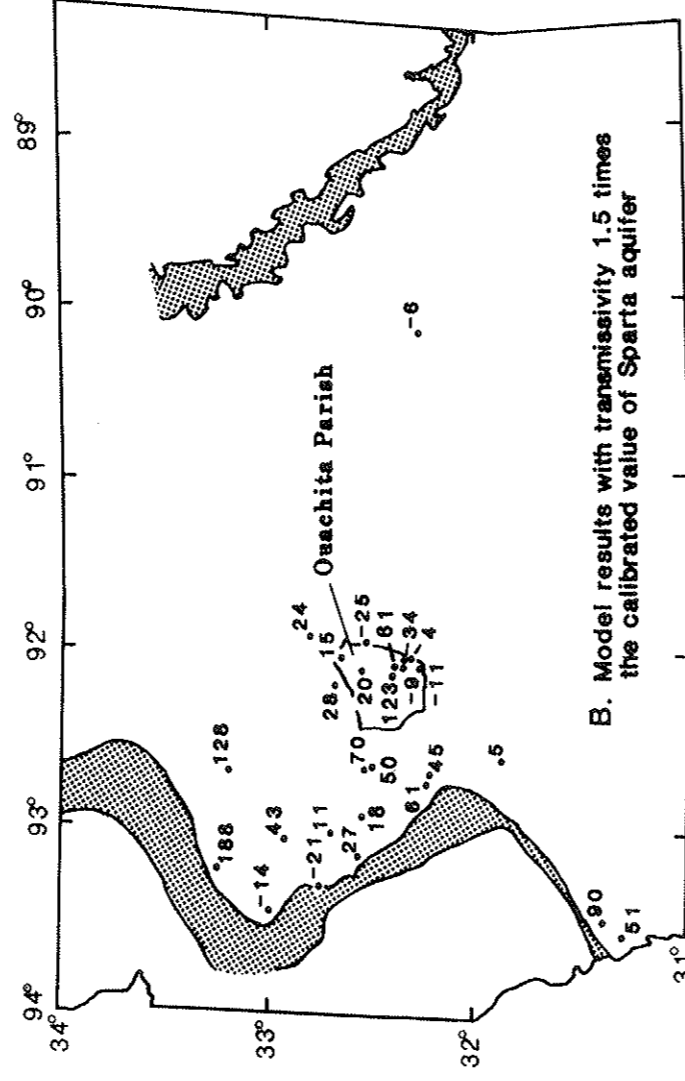


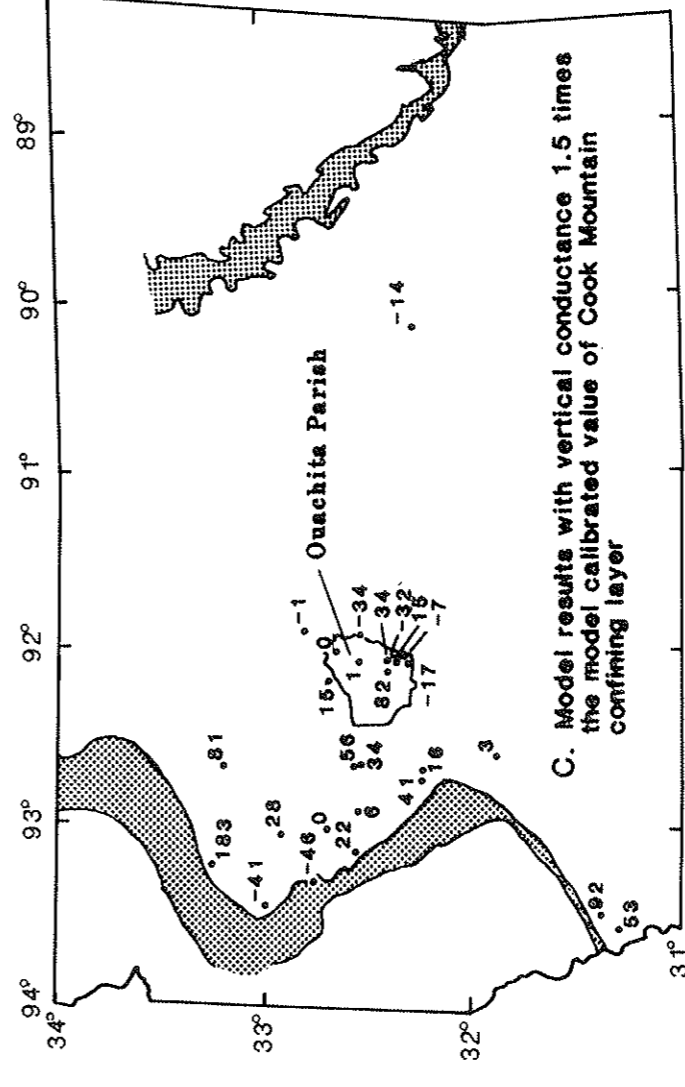
PLATE 3. TRANSMISSIVITY OF THE SPARTA AQUIFER AS USED IN THE CALIBRATED THREE-DIMENSIONAL MODEL, SOUTHERN ARKANSAS, CENTRAL MISSISSIPPI, AND NORTHERN LOUISIANA.



A. Model results from calibrated model



B. Model results with transmissivity 1.5 times the calibrated value of Sparta aquifer



C. Model results with vertical conductance 1.5 times the model calibrated value of Cook Mountain confining layer

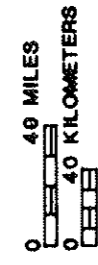
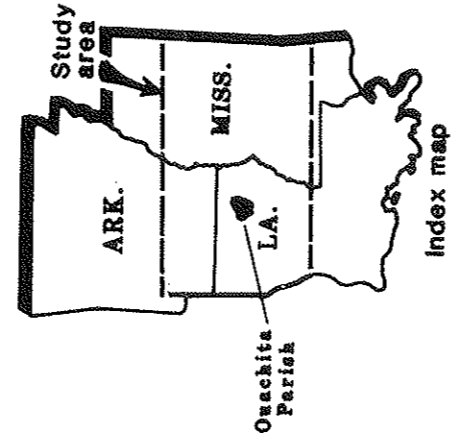
EXPLANATION

Model sensitivity measured by the difference between observed and computed drawdown

█ Sparta Sand outcrop

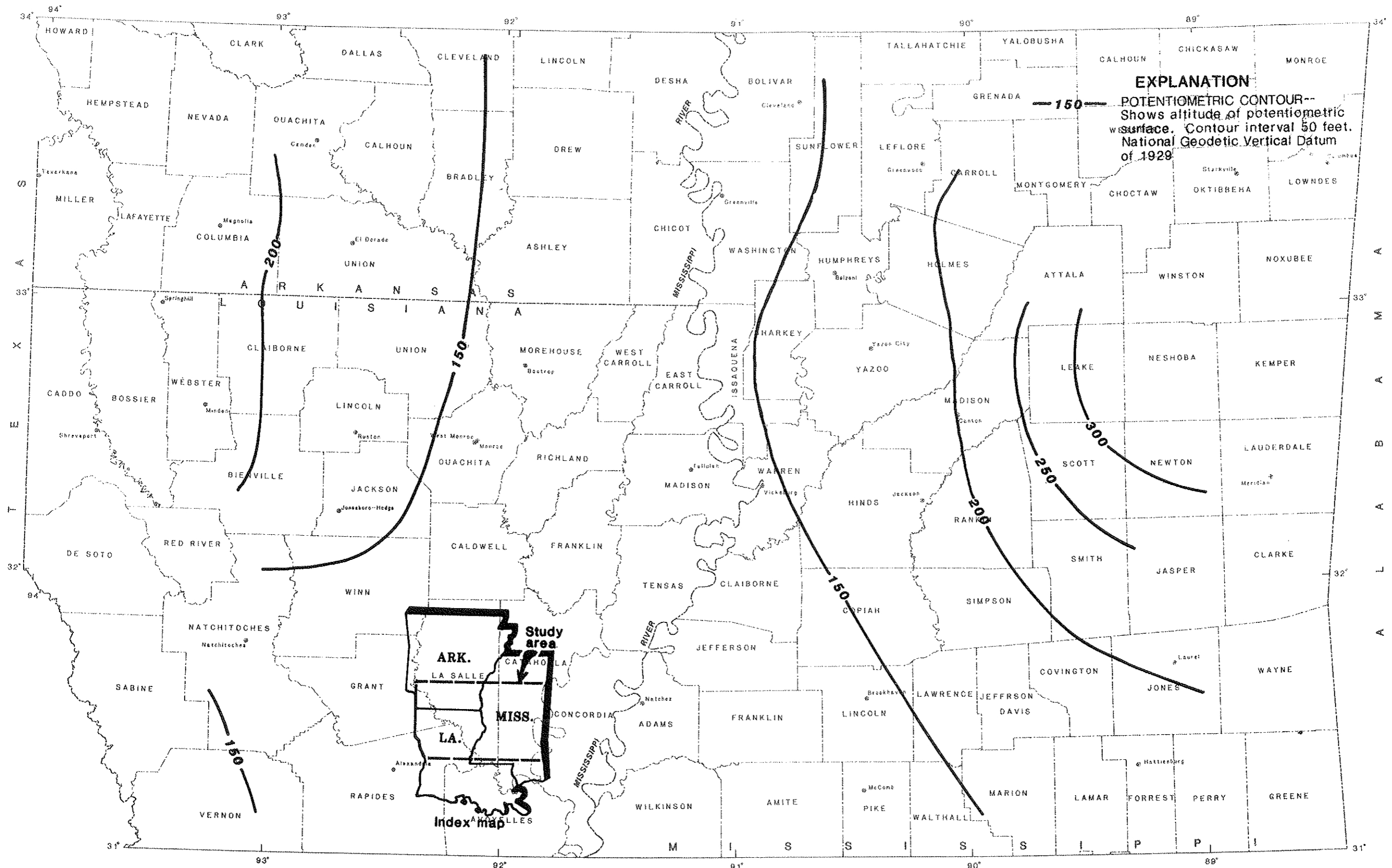
.81

Well site showing difference between observed and computed drawdown, in feet



Sparta Sand outcrop from J.N. Payne (1968)

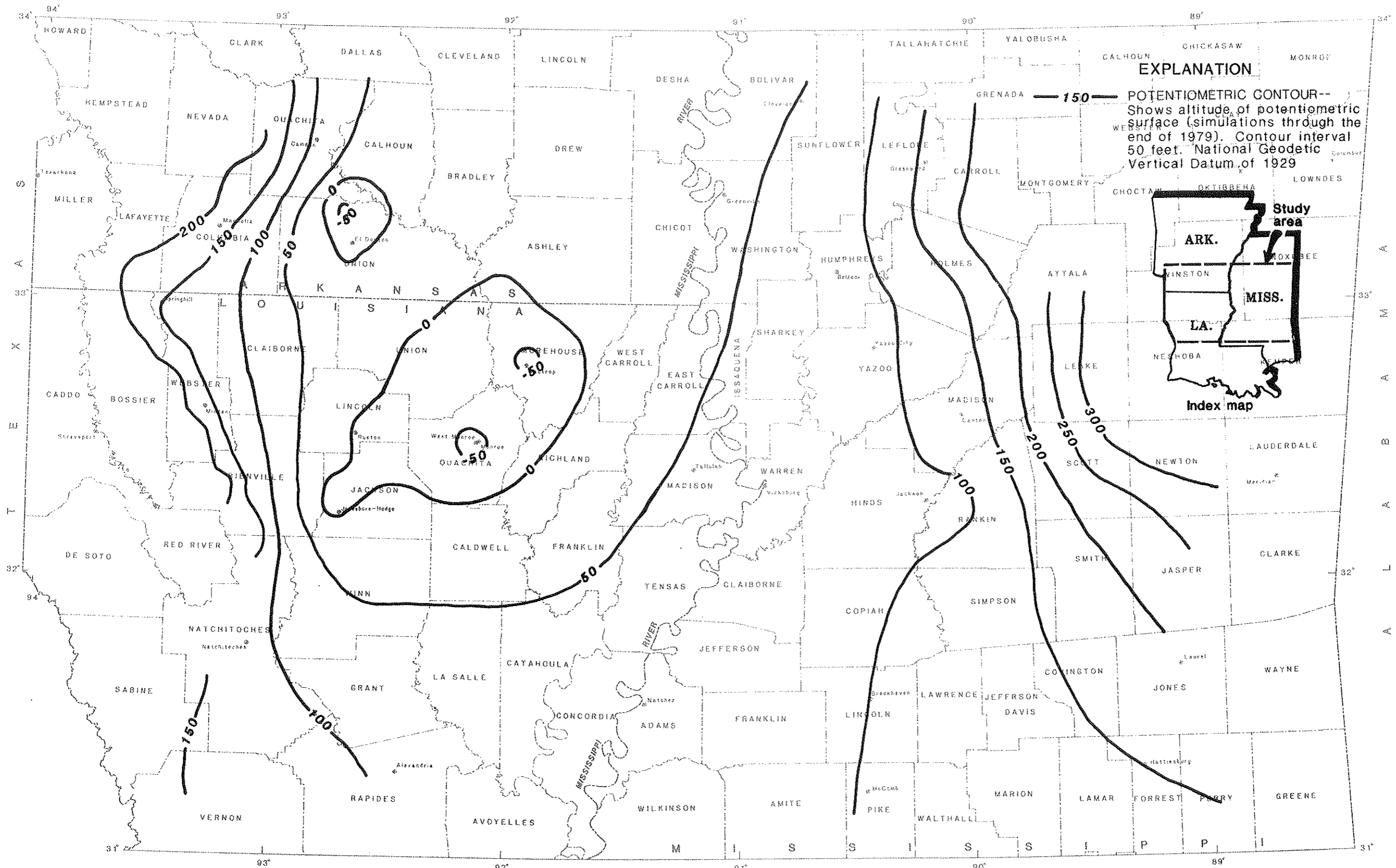
PLATE 4. AREAL SENSITIVITY OF THE CALIBRATED MODEL TO CHANGES IN MODEL HYDROGEOLOGIC PARAMETERS, SOUTHERN ARKANSAS, CENTRAL MISSISSIPPI, AND NORTHERN LOUISIANA.



EXPLANATION
 — 150 — POTENTIOMETRIC CONTOUR--
 Shows altitude of potentiometric
 surface. Contour interval 50 feet.
 National Geodetic Vertical Datum
 of 1929

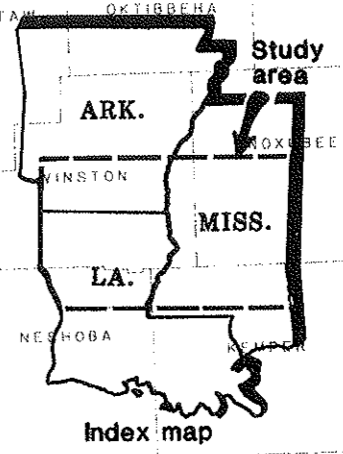
Base from U.S. Geological Survey
 State maps of Arkansas, Louisiana, and
 Mississippi 1:500,000

PLATE 5. POTENTIOMETRIC SURFACE OF THE SPARTA AQUIFER, 1900, FROM THE STEADY-STATE MODEL SIMULATION, SOUTHERN ARKANSAS, CENTRAL MISSISSIPPI, AND NORTHERN LOUISIANA.



EXPLANATION

— 150 — POTENTIOMETRIC CONTOUR-- Shows altitude of potentiometric surface (simulations through the end of 1979). Contour interval 50 feet. National Geodetic Vertical Datum of 1929



Base from U.S. Geological Survey State maps of Arkansas, Louisiana, and Mississippi 1:500,000

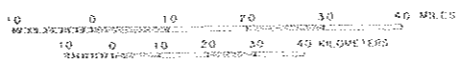
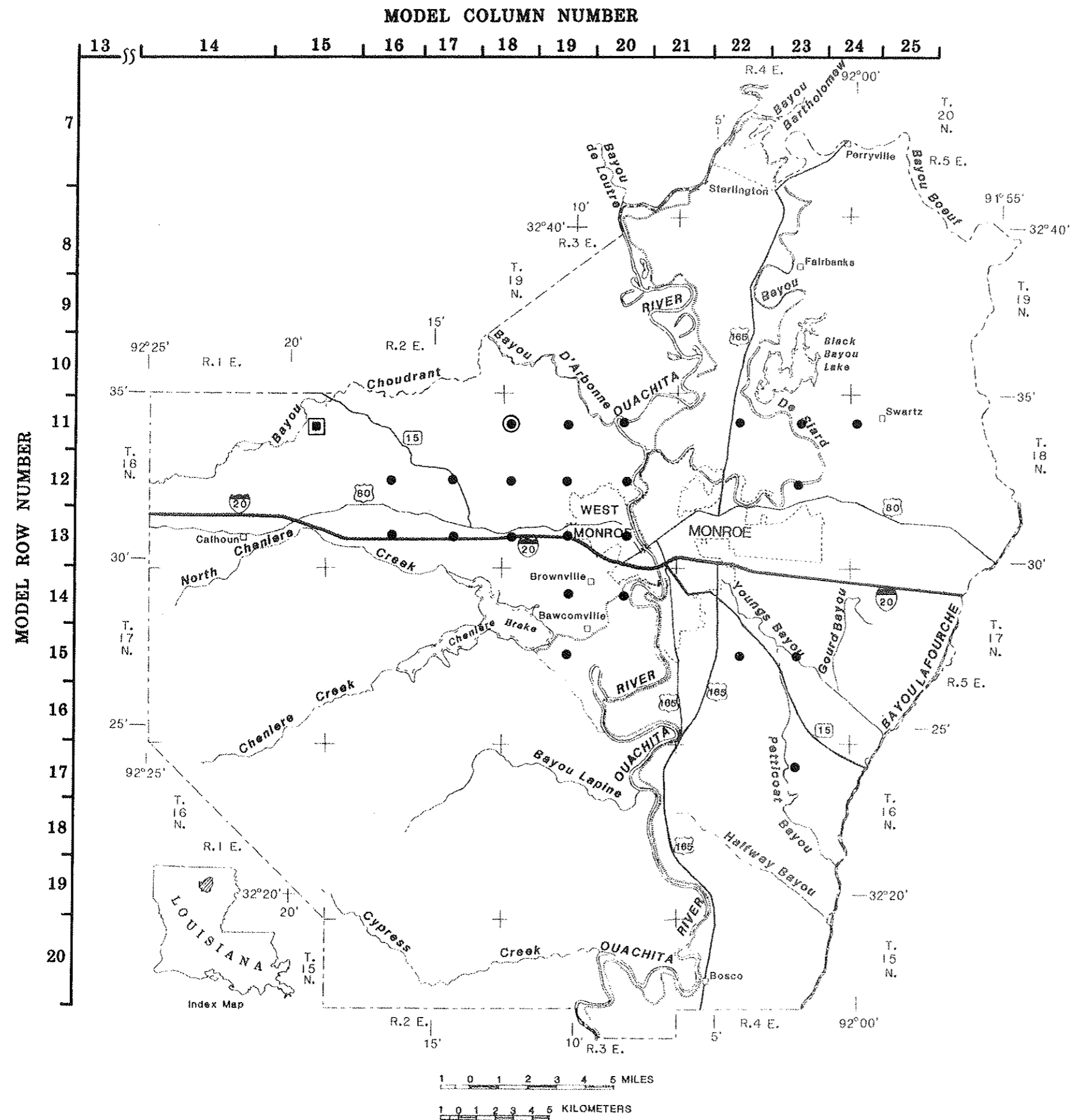


PLATE 6. COMPUTED POTENTIOMETRIC SURFACE OF THE SPARTA AQUIFER, 1980, SOUTHERN ARKANSAS, CENTRAL MISSISSIPPI, AND NORTHERN LOUISIANA.



EXPLANATION

The following are centers at which the U.S. Army Corps of Engineers has projected increased pumpage:

- Groups A, B, and C wells from table 8
- ⊙ Groups D and E wells from table 8
- Group F well from table 8

PLATE 7. LOCATION OF PROPOSED PUMPING CENTERS NEAR WEST MONROE, OUACHITA PARISH, LOUISIANA.