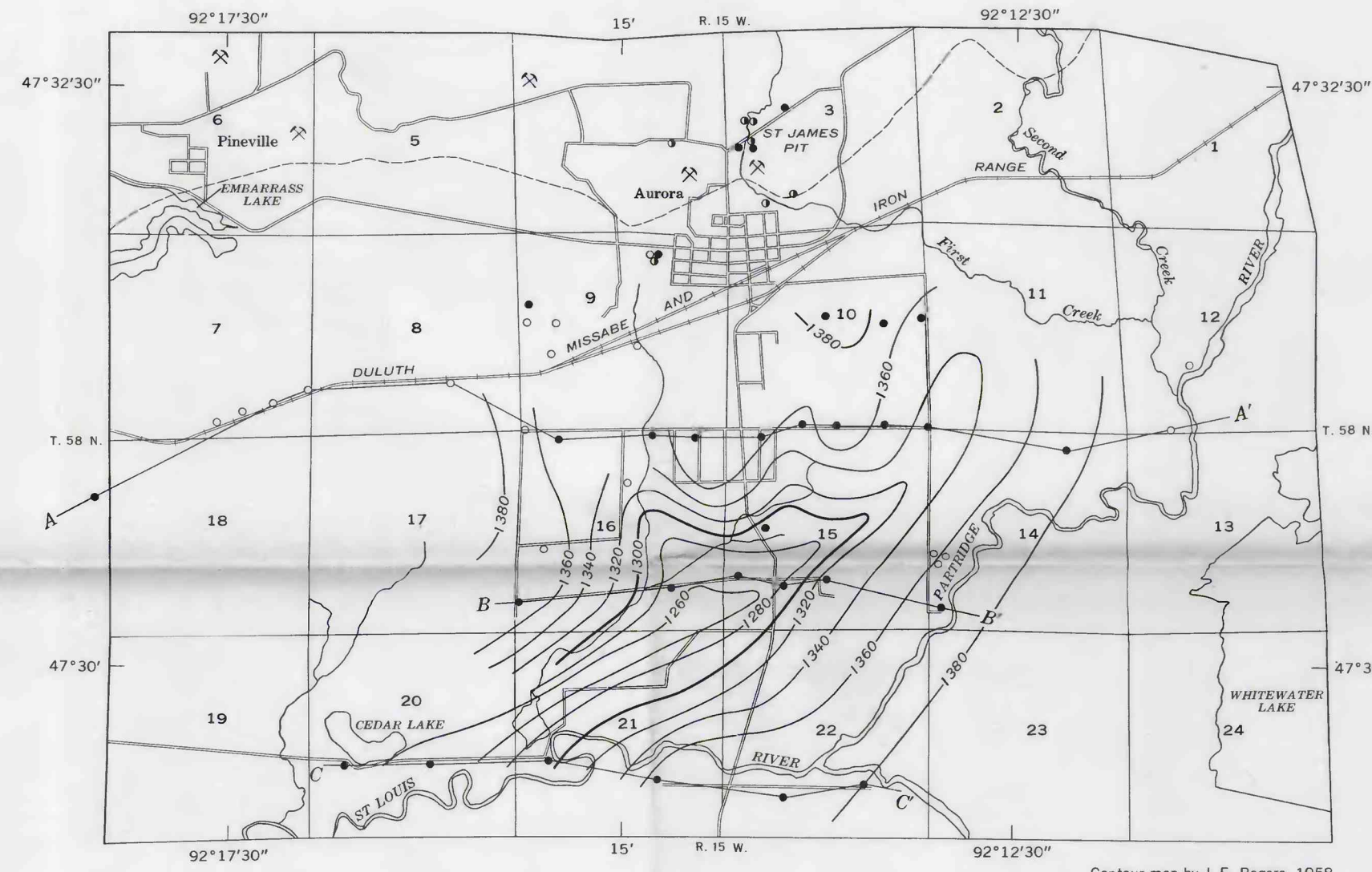


EXPLANATION
Boundary of physiographic units

Unit	Description	Availability of ground water
1 (Embarrass channel)	Terraced outwash channel underlain by thick deposits of permeable sand and gravel	At places potential wells capable of yielding as much as 1,000 gpm
2	Bedrock slopes mantled by glacial drift	Glacial drift yields sufficient water for domestic wells. At places bedrock should yield more than 100 gpm to wells
3	Uplands containing steep-walled swamps, kames, and terraces. Area largely capped by red clay till	Small yields from glaciofluvial deposits to domestic wells. At places more than 50-100 gpm may be obtained from buried kame deposits
4	Moraine and outwash area. Moraine is formed largely of bouldery till. Red clay till caps much of the outwash area	Small yields to wells from drift underlying the moraine. Moderate supplies (100-200 gpm) from outwash deposits along the Partridge River
5 (Aurora channel)	Narrow glacial channel bordered by ice-contact deposits. Glaciofluvial deposits locally capped by red clay till occur within the channel	Moderate supplies of 100-300 gpm available at places from buried glaciofluvial deposits
6	Flat swampy plain, thinly covered by fine sand	Small yields to domestic wells from perched water zone

PHYSICAL SUBDIVISIONS

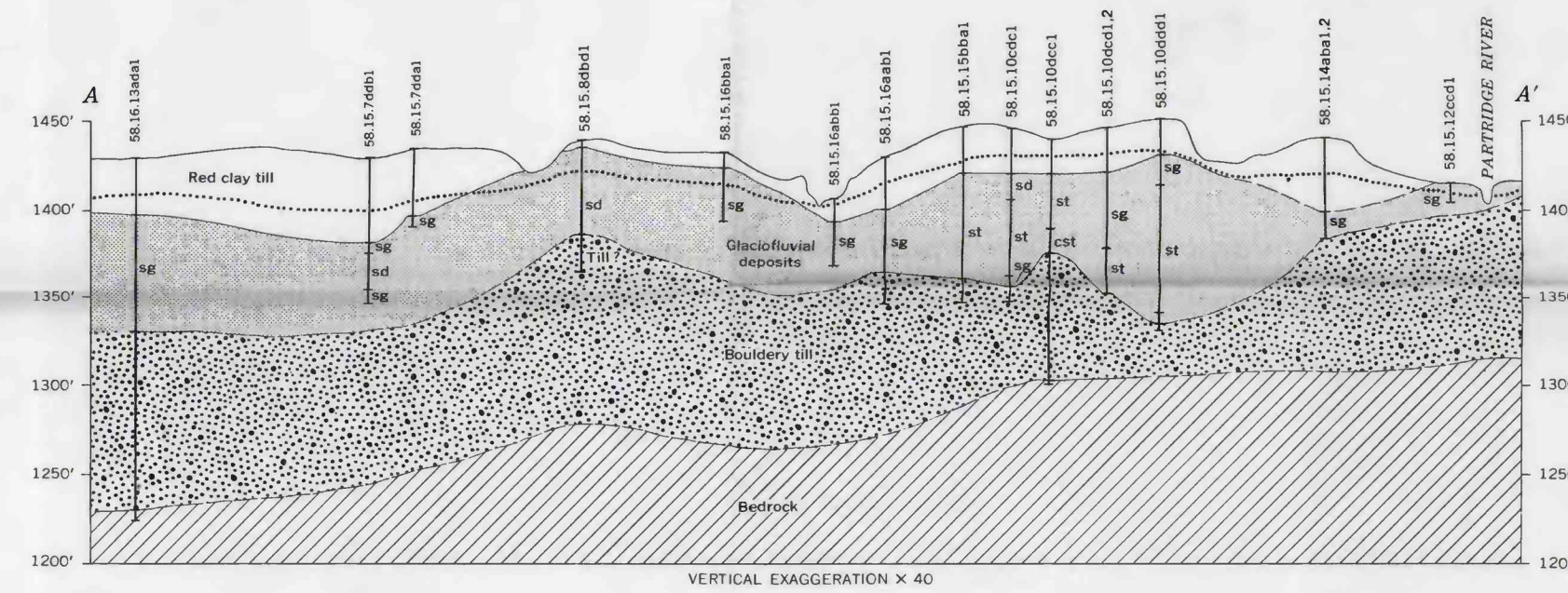


TOP OF BOULDERY-TILL SURFACE SOUTH OF AURORA

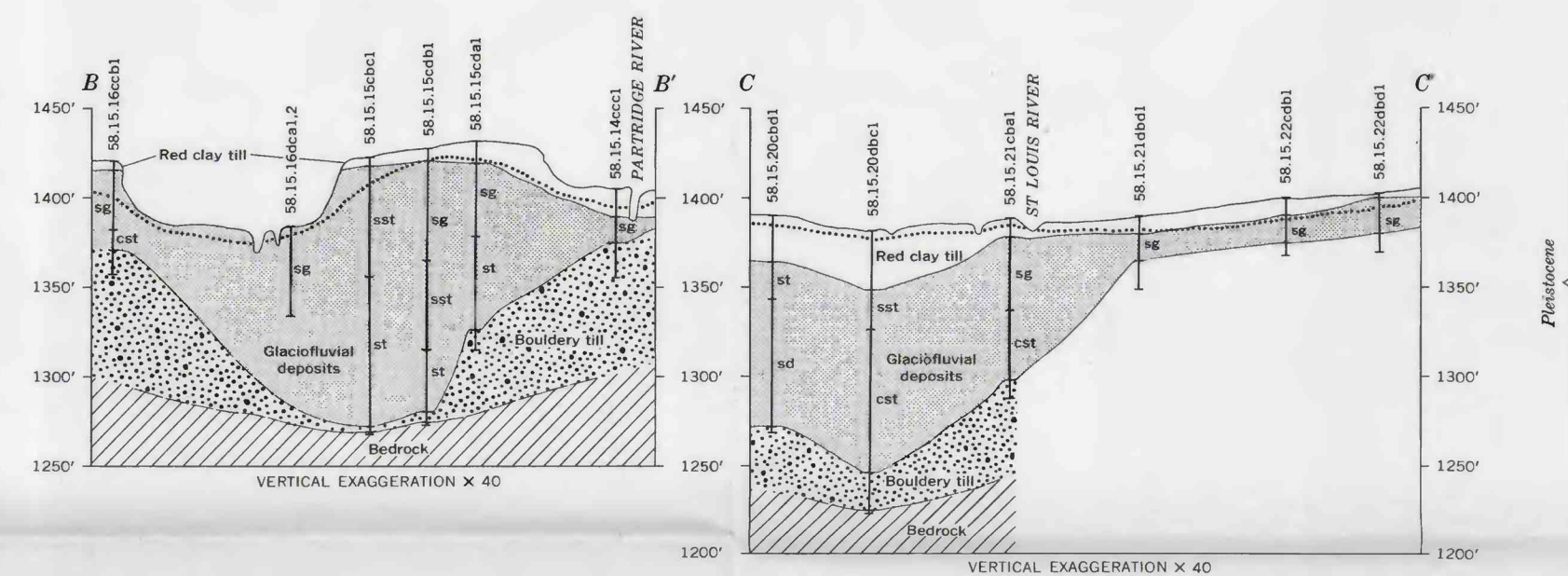
Contour map by J. E. Rogers, 1958

EXPLANATION

- Trace of buried contact between Biwabik Iron-Formation and Virginia Argillite
- Contours on bouldery-till surface
Contour interval 20 feet; datum is mean sea level
- Test hole, rotary or churn drilled
- Test hole, augered
- Well
- Mine



VERTICAL EXAGGERATION X 40



VERTICAL EXAGGERATION X 40

VERTICAL EXAGGERATION X 40

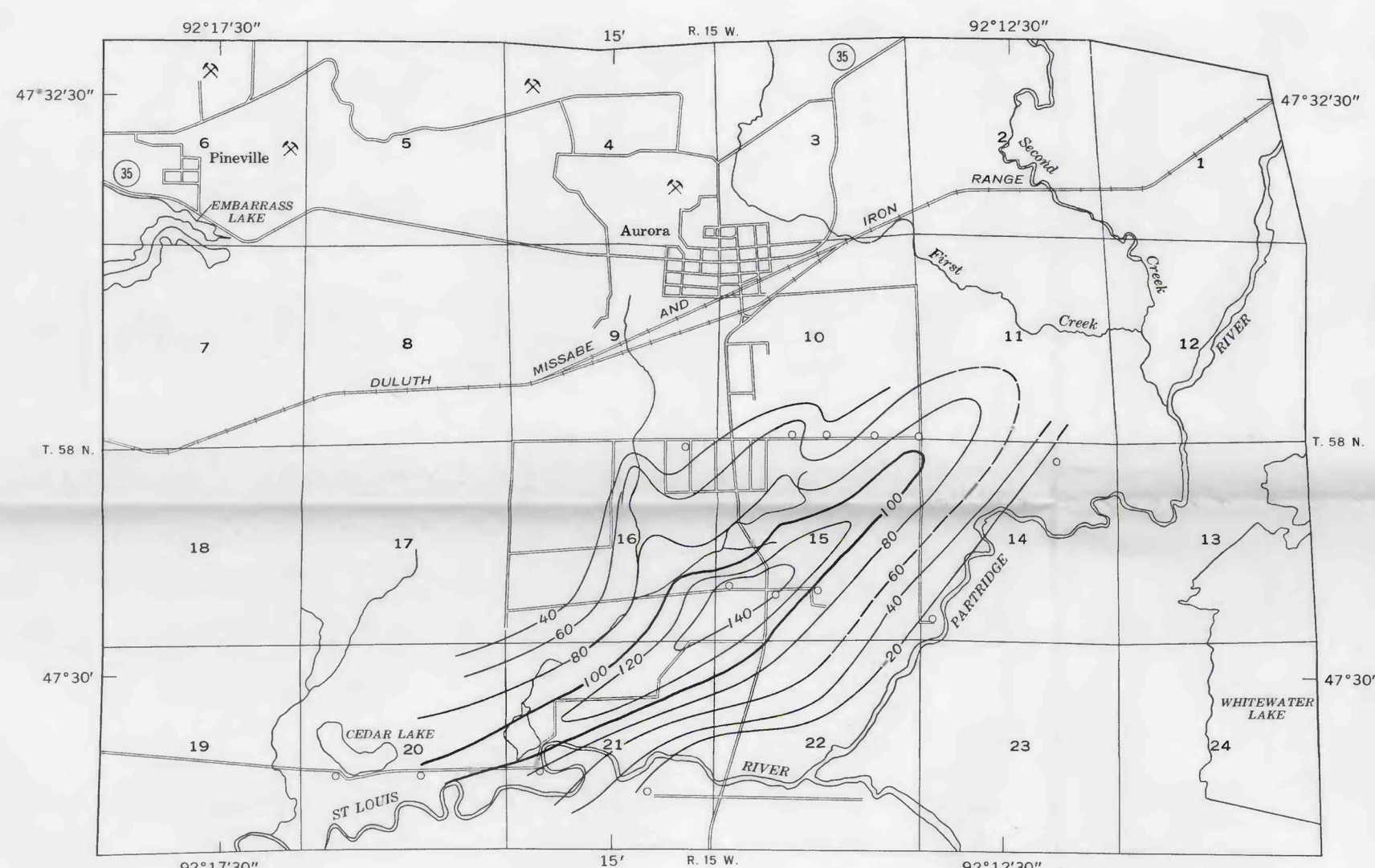
GEOLOGIC SECTIONS

EXPLANATION

- Till, clayey, reddish-to brownish-gray
- Glaciofluvial deposits
Letters indicate lithology as follows:
sd, sand; st, silt; c, clay; sg, sand and gravel; sst, sand and silt; sc, sand and clay; cst, clay and silt
- Till, sandy, bouldery, gray
- Bedrock
Argillite, taconite, and intrusives
- Water table or piezometric surface

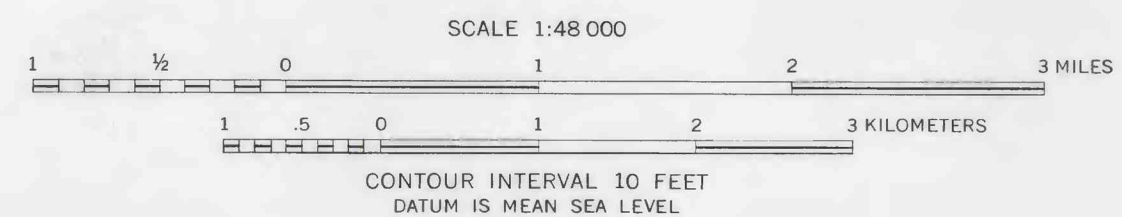
EXPLANATION

- 60
- 80
- 100
- Isopachs
Showing thickness of glaciofluvial deposits; dashed where approximate. Isopach interval 20 feet
- Test hole, rotary drilled



GLACIOFLUVIAL DEPOSITS

Isopach map by J. E. Rogers, 1958



SCALE 1:48 000
CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

Base from U.S. Geological Survey topographic quadrangles: Aurora, 1949; Biwabik, 1950; Markham, 1957 and Palo, 1951