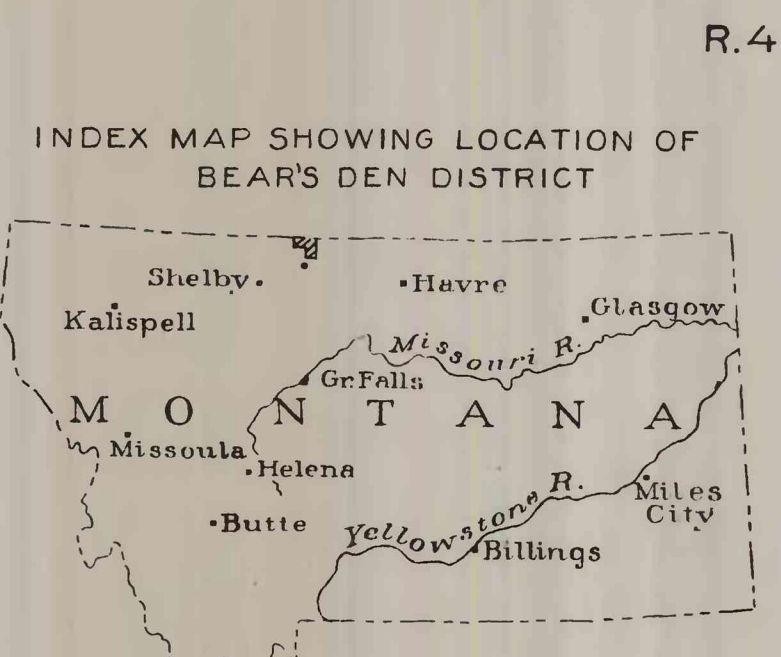
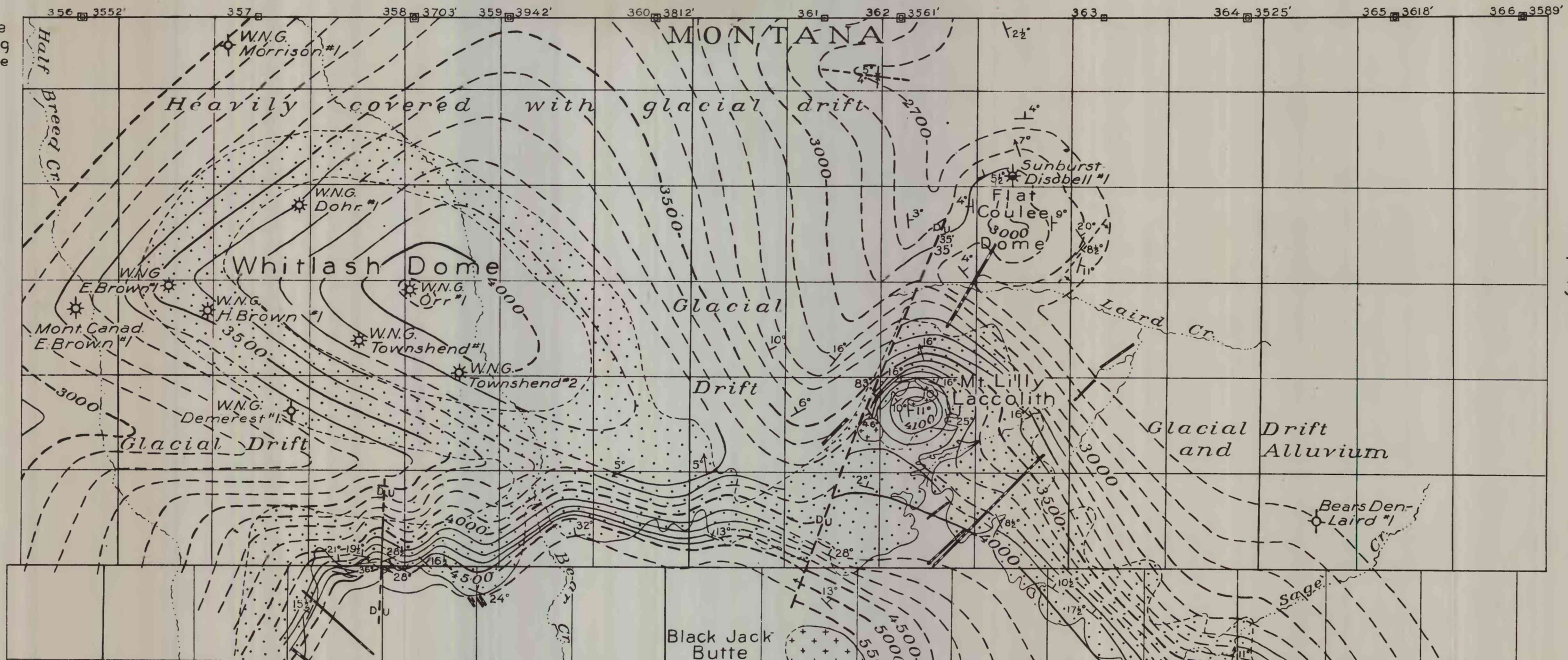


GEOLOGIC SECTION  
BEAR'S DEN DISTRICT

Note: Maximum thickness given are normal for non-fold region. Thinning due to movements on flanks of the uplift may decrease thickness of lower shale formations up to 15%.

| SYSTEM        | SERIES              | Formation                 | Thick. Feet | Description   |
|---------------|---------------------|---------------------------|-------------|---|
| QUATERNARY    | PLEISTOCENE         | Glacial Drift             | 0-200       | Boulder till, gravels, sand and clay. Water bearing.  |
| CRETACEOUS    | UPPER               | Unconformity              |             | Gray shales and thin sandstones. Ostraea and fresh water marls. Basal sandstone 0-35'   |
|               |                     | Cluggett Shale            | 125+        | Greenish gray and drab colored, fissile, marine shale. Very thin sandstone lentils.   |
|               |                     | Eagle Sandstone           | 350-420     | 380<br>Conglomeratic ss. Black chert pebbles. Carbonaceous shale and coal. Virgelle member. Massive gray and buff sandstone. Thin bedded near base. |
| CRETACEOUS    | UPPER               | Colorado Shale            | 1480-1845   | Gray to dark gray marine shale with few thin sandstones and calcareous concretionary beds.  |
|               |                     | Kootenai                  | 305-507     | Maroon, light and olive green, and dark gray sandy shale, with local thick lenses of coarse gray sandstone.   |
| CRETACEOUS    | LOWER               | Sunburst sandstone member |             | Sunburst sandstone member.  |
|               |                     | Ellis                     | 210-235     | Gray to black calcareous shale. Thin dark limestones. Sandstones at base locally.   |
| CARBONIFEROUS | LOWER MISSISSIPPIAN | Madison Limestone         | 800-900     | Upper portion white to cream colored massive limestone, lower dense bluish gray. Marbleized where in contact with igneous rock.                     |
|               |                     | Three Forks               | 450         | Sandstones, black shale, sandy shales and limestones. Anhydrite.  |
| DEVONIAN      | LOWER               | Jefferson Limestone       | 20          | Brown magnesian limestone. Total thickness about 540 feet.  |

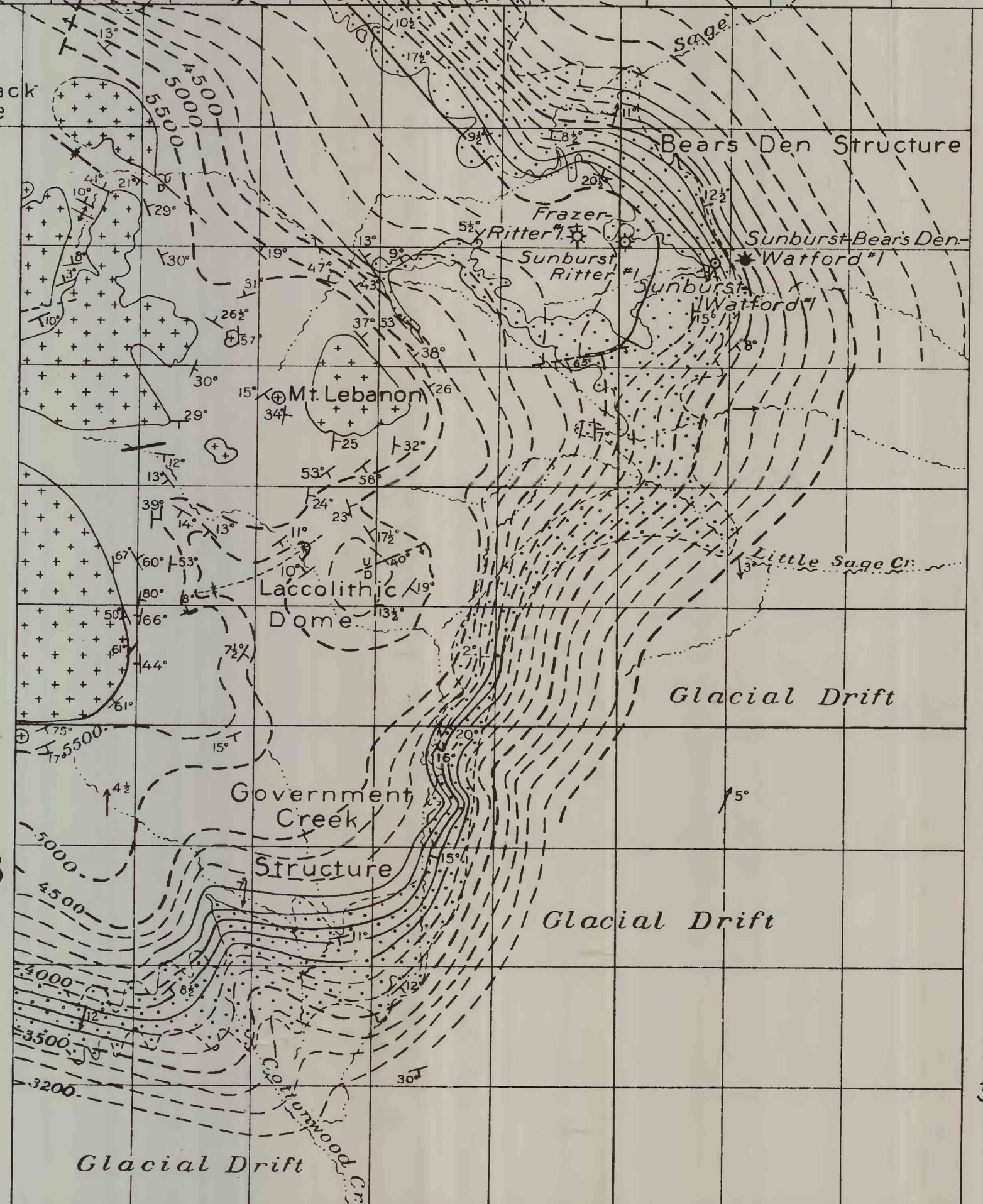
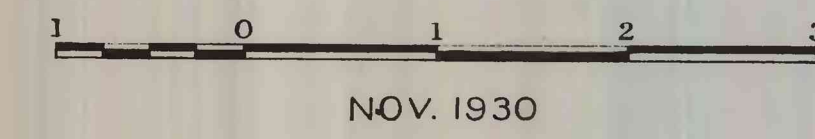


- EXPLANATION
- 356 3552' No. Alt. Boundary Monuments
  - Eagle Sandstone
  - Intrusive igneous rock. All sills omitted.
  - Dike
  - Dip and strike
  - Direction of dip
  - Drilling
  - Dry well
  - ⊗ Gas well
  - ⊗ Abandoned gas well
  - ⊗ Oil well show of oil
  - ⊗ Oil well show of gas
  - - - Fault
  - - - Structure contours. Datum
  - - - 3500 top Colorado shale.

DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY

PRELIMINARY STRUCTURE CONTOUR MAP  
OF THE  
BEAR'S DEN-FLAT COULEE-WHITLASH DISTRICTS  
NORTH CENTRAL MONTANA

BY  
C. E. Erdmann



R. 5 E. R. 6 E. T. 35 N. T. 36 N. T. 37 N.