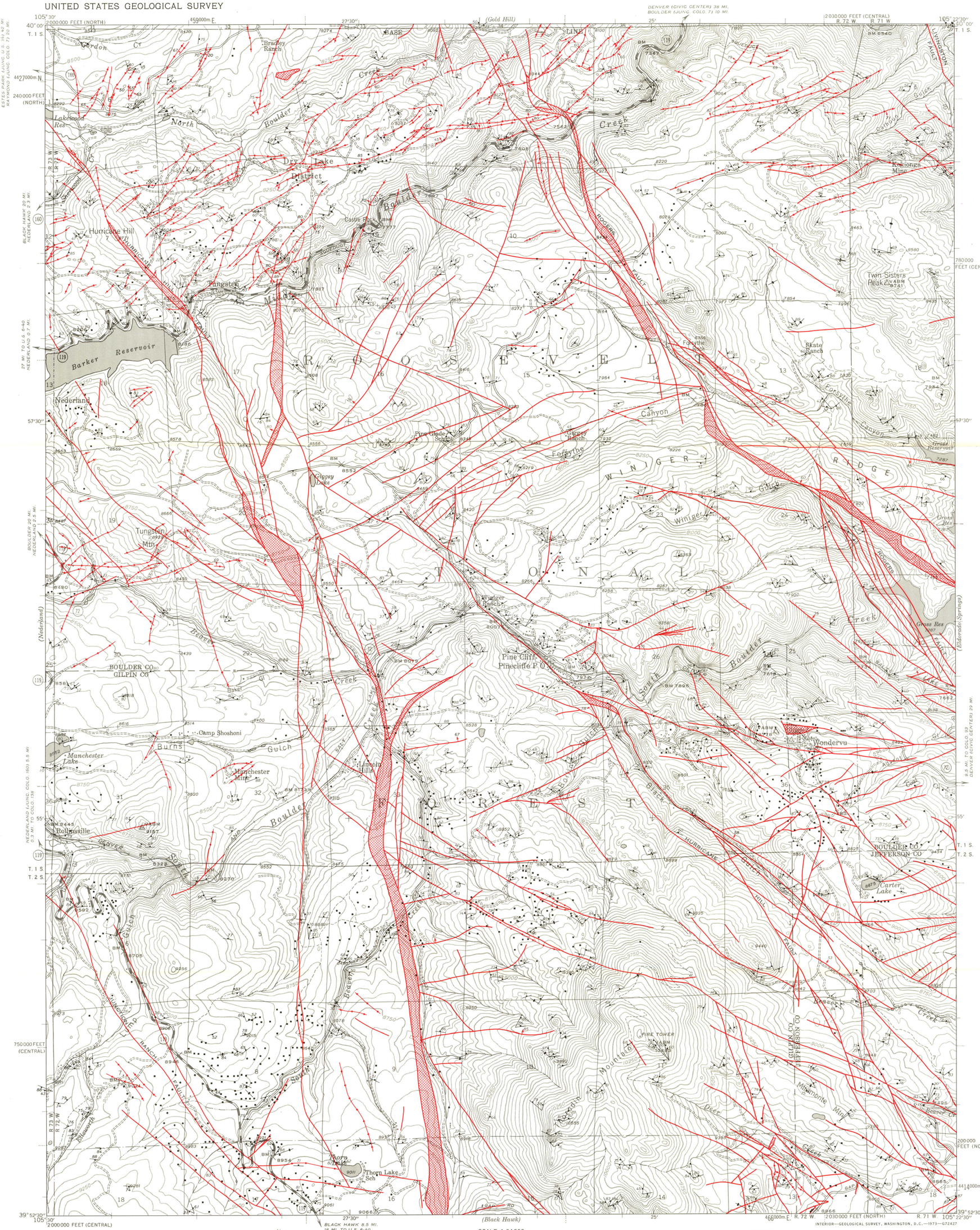


Base from U.S. Geological Survey, 1942
Gross Reservoir boundary as of 1970
10,000-foot grids based on Colorado (North) and Colorado (Central) rectangular coordinate system
1000-meter Universal Transverse Mercator grid, zone 13

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1973

SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 50 FEET
DATUM IS MEAN SEA LEVEL

COLORADO
QUADRANGLE LOCATION

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1973—G72427

Geology mapped in 1966–69

EXPLANATION

JOINT – Showing strike and dip. Center of symbol is point of observation

JOINTS – Showing strike and dip. Intersection of symbols is point of observation

VERTICAL JOINT

FAULT – Showing dip. Cross-hatched area represents extensively fractured and sometimes sheared rock generally within or adjacent to faults

QUARTZ-BEARING AND MINERALIZED VEIN – Showing dip

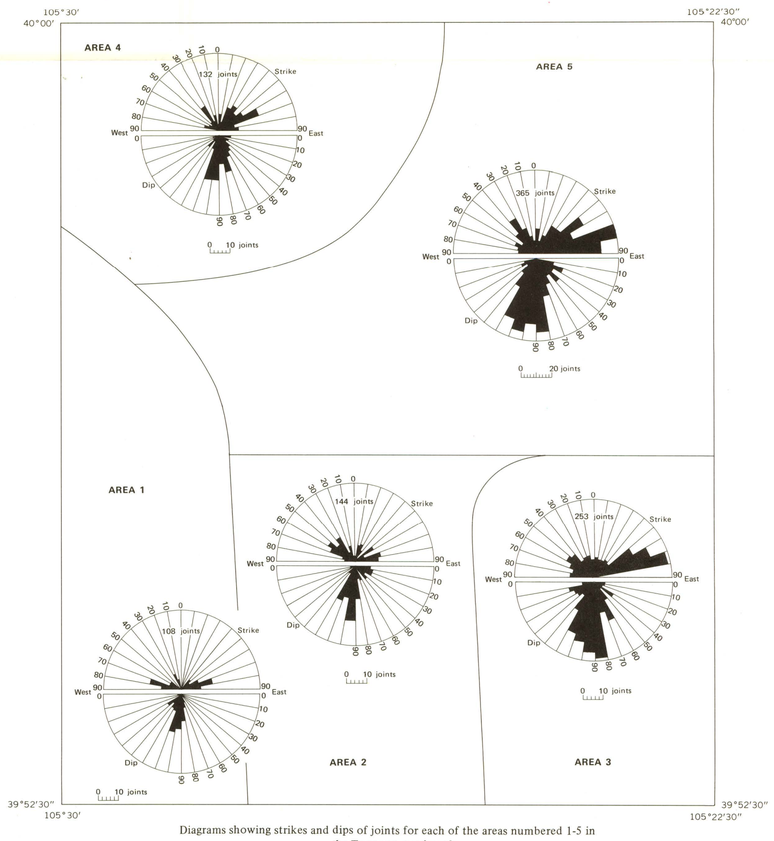
Horizontal ground surface — Strike — Dip

DIAGRAM – Illustrating strike and dip of fault, joint, or vein

HOUSE – Built between 1943 and 1971, location approximate

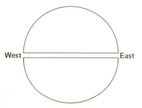
Rock fractures in the Tungsten quadrangle include joints (fractures along which little or no apparent rock displacement has taken place) and faults (fractures along which varied amounts of rock displacement have occurred in the geologic past). Mineralized fractures are called veins. Joints, faults, and veins range widely in length; some are only a few hundred feet long, whereas others are thousands of feet or even miles long. Faults and veins may occur singly, but joints always occur in sets. The spacing between joints in one set may range from a few inches to hundreds of feet. These fractures are avenues in the bedrock along which ground water and liquid wastes can travel. They are, therefore, important in populated or potentially populated areas.

The major faults, the largest of which include the Junction Ranch, Hurricane Hill, Rogers, and Livingston faults, trend north to northwesterly. Northeasterly faults occupy the intervals between the major northwesterly faults and are perhaps neither as important nor as continuous as the northwesterly faults. Observed displacement along many of the faults is small in this part of the Front Range. Joints in the Tungsten quadrangle are summarized in the diagrams below.



Diagrams showing strikes and dips of joints for each of the areas numbered 1-5 in the Tungsten quadrangle

EXPLANATION



Upper half of circle shows strike (trend) direction of joints. Number of joints in each 10-degree sector indicated by scale

Lower half of circle shows direction and amount of dip (inclination) of joints.

MAP SHOWING ROCK FRACTURES AND VEINS IN THE TUNGSTEN QUADRANGLE, BOULDER, GILPIN, AND JEFFERSON COUNTIES, COLORADO

By
Dolores J. Gable

1973

For sale by U.S. Geological Survey, price 75 cents