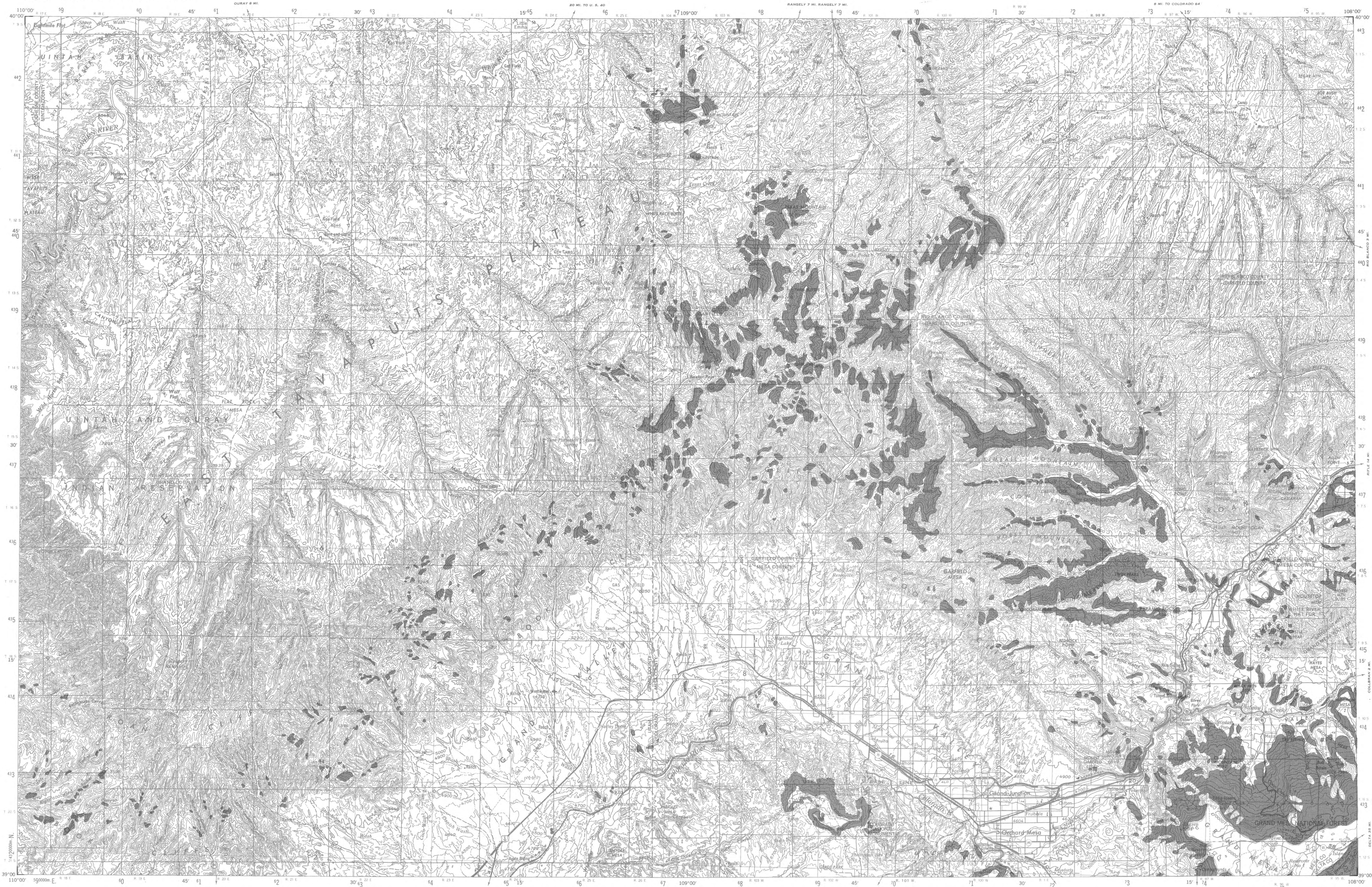
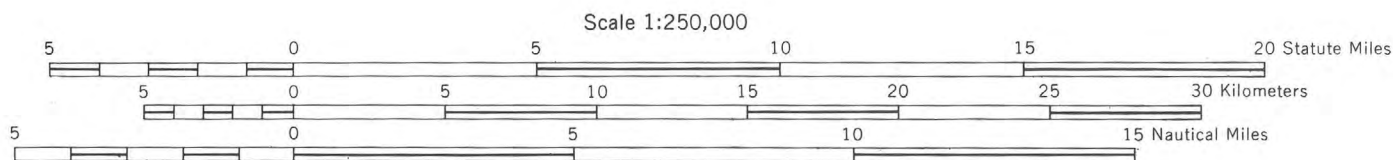




Base from U.S. Geological Survey, 1956-69

Data as of May 1975



CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS
TRANSVERSE MERCATOR PROJECTION

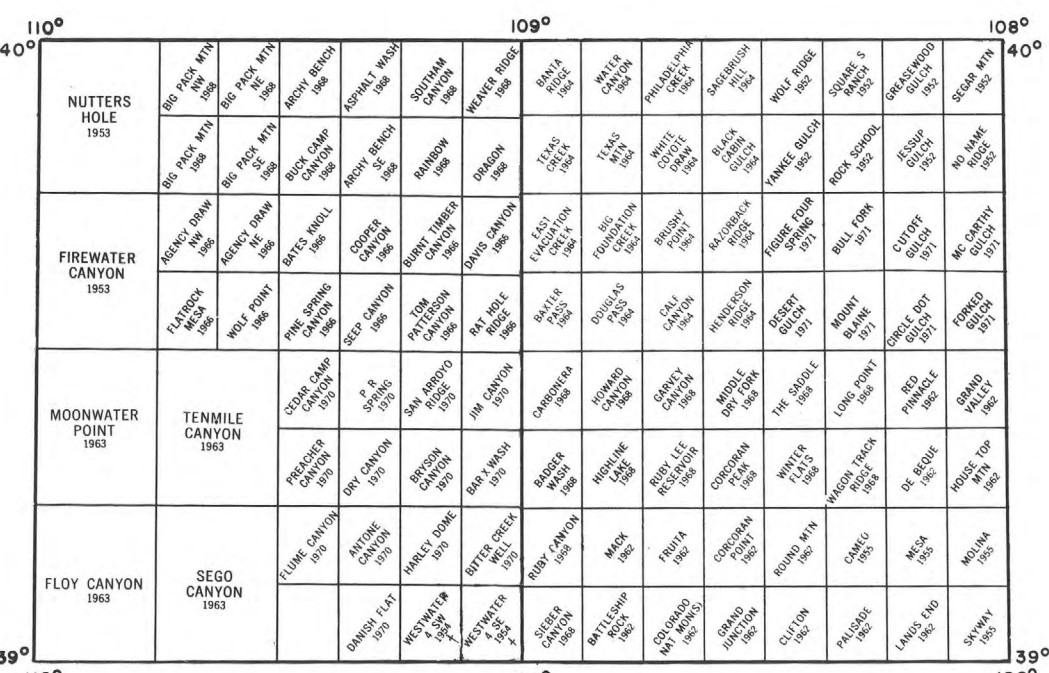
BLACK NUMBERED LINES INDICATE THE 10,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 12

PRELIMINARY MAP OF LANDSLIDE DEPOSITS, GRAND JUNCTION 1°x2° QUADRANGLE COLORADO AND UTAH

By

Roger B. Colton, Jeffrey A. Holligan, Larry W. Anderson, and John W. Whitney

1975



INDEX TO TOPOGRAPHIC MAPPING
IN GRAND JUNCTION 1°x2° QUADRANGLE

EXPLANATION



Areas inferred to be underlain by landslide deposits resulting from landsliding, avalanche, block gliding, debris sliding or flowing, earthflows, mudflows, rocksliding, rockfalls, rotational slides, slab or flake sliding, slumping, talus accumulation, and translational sliding. Rock glacier deposits, colluvium, and solifluction deposits are included in some areas. Some till is mapped with landslide deposits because distinguishing these two deposits from one another is difficult. Furthermore, in some areas till has failed by landsliding and other types of mass movements. Movement within the deposits varies from none to rapid; rates of movement may also be variable in any given landslide within the same year. Ages of deposits range from early Pleistocene to Holocene.

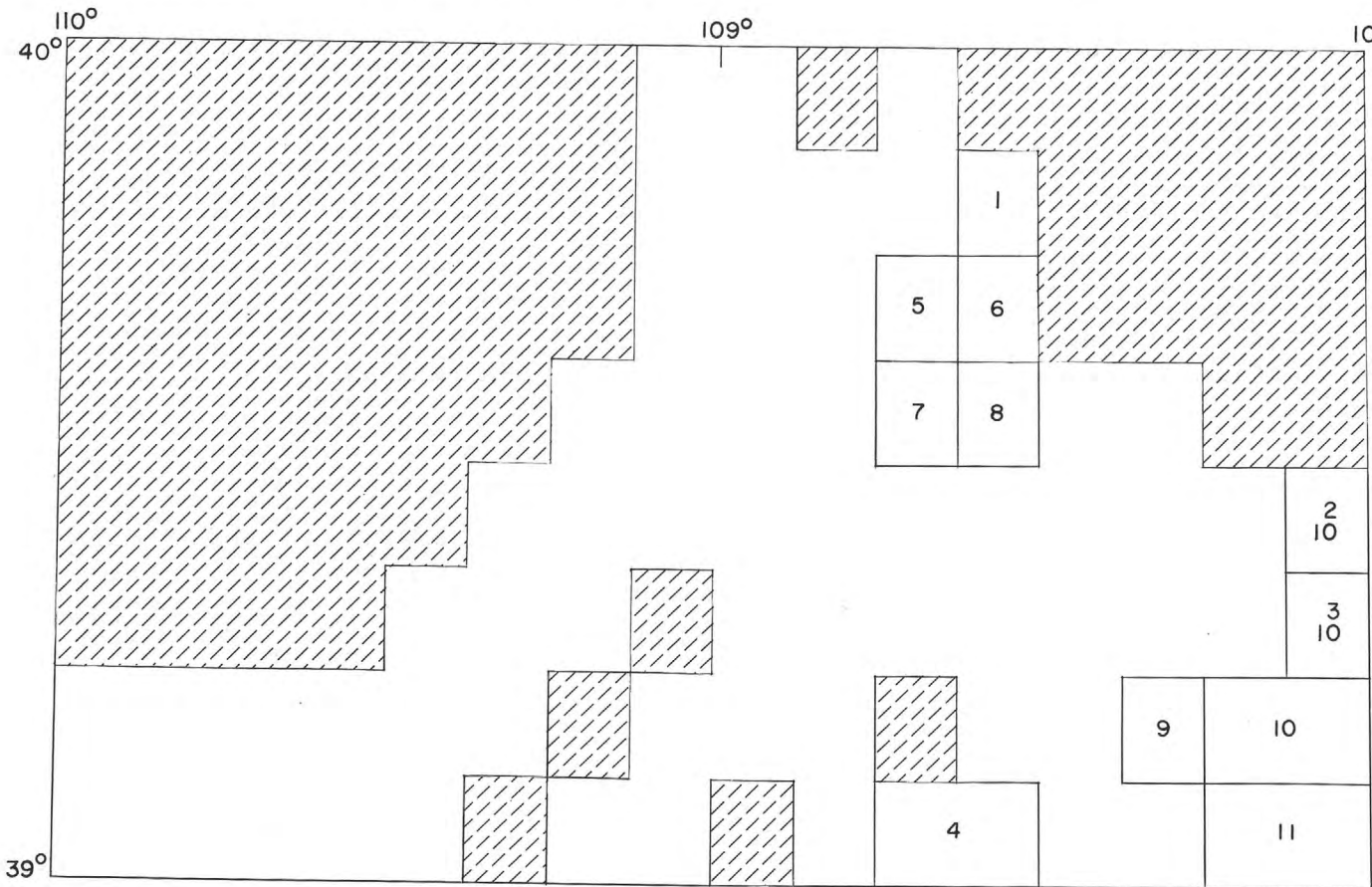
FACTORS AFFECTING MAP ACCURACY*

Landslide deposits that formed since the aerial photographs were taken are not shown. Landslides are more difficult to recognize in heavily forested areas and consequently such areas are less accurately mapped than nonforested areas. Map accuracy varies according to the quality of aerial photographs used. Haze, cloud cover, poor sun angle, and shadows make photointerpretation difficult. Mapping of landslides by photointerpretation presents many problems such as: distinction between terrace-shaped slump-type landslide deposits and alluvial terrace deposits where both are adjacent to stream courses; recognition of landslide deposit boundaries (the upslope boundary is commonly defined by an easily recognized scarp but the toe or downslope boundary is seldom well defined and thus is difficult to locate exactly); recognition of stable masses of bedrock surrounded by landslide deposits, especially where only a small knob projects through; and separation of landslide deposits from glacial deposits.

SUGGESTIONS FOR MAP USERS*

This map should not be used to determine the probability of future landsliding, as geologic and climatic changes during the past few hundred thousand years have altered slope stability and because this map does not provide information regarding composition and type of movement of individual landslide deposits. Therefore, the map is not a substitute for careful detailed large-scale site investigations by engineering geologists and soils engineers. Areas susceptible to landslide and related activity should be carefully studied before any development begins. This map has been prepared to provide a regional context for interpreting detailed site investigations and should be used in conjunction with topographic, slope, surficial, bedrock, and soils maps, aerial photographs, and other available information. The limitations of this map should be obvious inasmuch as one inch (2.54 cm) on the map equals approximately 3.9 miles (6.4 km) on the ground.

*Modified from Nilsen, T. H., 1972, Preliminary photointerpretation map of landslide and other surficial deposits of the Mount Hamilton quadrangle and parts of the Mount Boardman and San Jose quadrangles, Alameda and Santa Clara Counties, California: U.S. Geol. Survey Misc. Field Studies Map MF-339.



SOURCES OF INFORMATION

Vertical and oblique aerial photographs covering the entire quadrangle at various scales (1:60,000 and larger) and in various years were interpreted by R. B. Colton in 1975. Most aerial photographs used are small-scale (1:60,000) Army Map Service Project 137AV, 1954-55 (available from U.S. Geological Survey).

Area of no known landslides and related deposits, or area of minor landslides and related deposits too small to be shown at the present scale.

1. Cashion, W. B., 1969, Geologic map of the Black Cabin Gulch quadrangle, Rio Blanco County, Colorado: U.S. Geol. Survey Geol. Quad. Map GQ-812.

Total area. Cashion, W. B., compiler, 1973, Geologic and structure map of the Grand Junction quadrangle, Colorado and Utah: U.S. Geol. Survey Misc. Geol. Inv. Map I-736.

2. Donnell, J. R., and Yeend, W. E., 1968, Geologic map of the Grand Valley quadrangle, Garfield County, Colorado: U.S. Geol. Survey Open-file Map.

3. Donnell, J. R., and Yeend, W. E., 1968, Geologic map of the Housetop Mountain quadrangle, Garfield and Mesa Counties, Colorado: U.S. Geol. Survey Open-file Map.

4. Lohman, S. W., 1965, Geology and artesian water supply of the Grand Junction area, Colorado: U.S. Geol. Survey Prof. Paper 451.

5. Roehler, H. W., 1972, Geologic map of the Brushy Point quadrangle, Rio Blanco and Garfield Counties, Colorado: U.S. Geol. Survey Geol. Quad. Map GQ-1018.

6. Roehler, H. W., 1972, Geologic map of the Razorback Ridge quadrangle, Rio Blanco and Garfield Counties, Colorado: U.S. Geol. Survey Geol. Quad. Map GQ-1019.

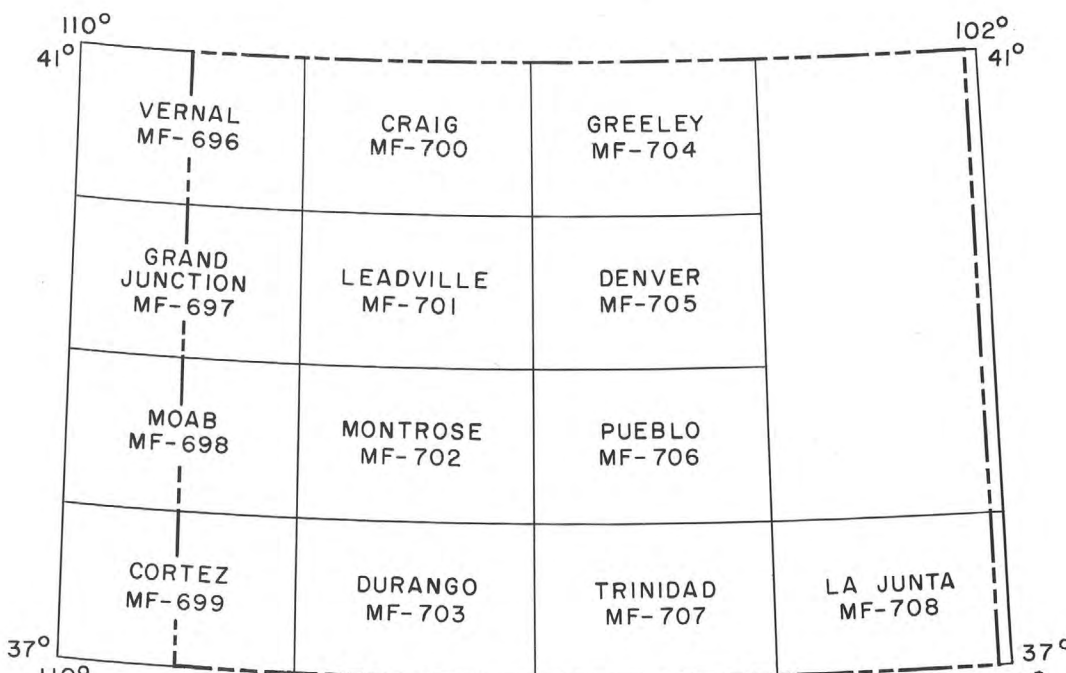
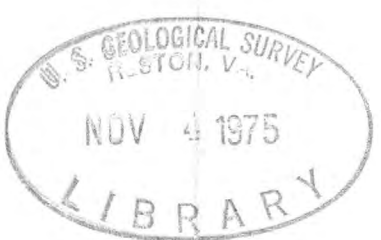
7. Roehler, H. W., 1973, Geologic map of the Calf Canyon quadrangle, Garfield County, Colorado: U.S. Geol. Survey Geol. Quad. Map GQ-1086 [1974].

8. Roehler, H. W., 1973, Geologic map of the Henderson Ridge quadrangle, Garfield County, Colorado: U.S. Geol. Survey Geol. Quad. Map GQ-1113 [1974].

9. Talbott, L. W., 1969, The De Beque Canyon slide, Mesa County, Colorado: Colorado State Univ. M.S. thesis.

10. Yeend, W. E., 1969, Quaternary geology of the Grand and Battlement Mesas area, Colorado: U.S. Geol. Survey Prof. Paper 617, pl. 1.

11. Yeend, W. E., 1973, Slow-sliding slumps, Grand Mesa, Colorado: Mtn. Geologist, 10, no. 1, p. 25-28.



1°x2° QUADRANGLES
INCLUDED IN LANDSLIDE STUDY

Colorado (Grand Junction quad) Landslide
exp. 2



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