



PRINCIPAL EVIDENCE FOR IDENTIFYING FAULTS AS ACTIVE OR PROBABLY ACTIVE AND NUMBER OF EVIDENCES

As used on this map, the term **active fault** is defined as a fracture or fracture zone several miles long along which the two sides have moved in opposite or parallel to one another and parallel to the fracture or zone. It is to be distinguished from a fracture zone which is a zone of weakness in the earth's crust, but which has not moved in opposite or parallel to one another. An active fault may be based on (1) historic records of surface faulting and earthquake activity, (2) topographic evidence that demonstrates repeated and systematic displacements along the fault trace, (3) evidence of displacements of Pleistocene geologic units along the fault trace, (4) a linear pattern of small-earthquake activity along the surface trace of the fault or within a mile or so of the surface trace, or (5) correlated and measurable systematic displacements across the surface trace of the fault. Most active faults shown on the map are recognized as active on the basis of two or more of these criteria.

The faults shown on this map may be identified as active or probably active either because they are major well-known structures, because they exhibit evidence of recent movement, or because the critical evidence for recent movement has been particularly preserved and documented. They other faults in San Mateo County may be active or probably active and hence equally capable of generating large earthquakes or surface fault movement, as any evidence is obtained, it is likely that other faults will be recognized as active, for all of the San Mateo County is within a belt of recent and continuing general deformation.

Users of this map should be aware that active faults and earthquakes are the subject of very intensive research efforts. Refinements of the interpretations given here are sure to come within a few years, and users are very likely to complete the relatively simple relations shown on this map. For these reasons, this map and the interpretations shown on it should be considered a provisional inventory of active fault behavior.

SAN ANDREAS
Historic earthquakes accompanied by surface faulting in 1835 and 1906 (Loomis and others, 1908; Goodenough, 1947).
Topographic expression of fault breaks (Rehilla, 1965 and oral comm., 1971; Dickinson, 1971; R. H. Page, oral comm., 1971; R. H. Walker, oral comm., 1971).
Continuity with essentially active segment of the San Andreas fault further south (Brown and Lee, 1971).

SAN GREGORIO
Apparent continuity with essentially active zone of fault to south (Brown and Lee, 1971; "map" view, oral comm., 1971; R. H. Walker, oral comm., 1971).
Topographic expression of probable fault breaks (Brown, 1970 and this map) and anomalous stream patterns along fault trace.

SERRANO
Topographic expression of fault breaks and near coincidence with mapped bedrock fault (Glen, 1959).
Offset marine terrace remains near Moss Beach (G. Lajoie, oral comm., 1971).

OTHERS
Topographic evidence of fault breaks (Lajoie, 1971).
Structural setting resembles that of another southwest-sloping thrust fault (San Mateo County) that is considered active on the basis of small-earthquake activity (Brown and Lee, 1971).

EXPLANATION

SURFACE LINEARMENTS THAT ARE CLEARLY RELATED TO RECENT FAULT BREAKS

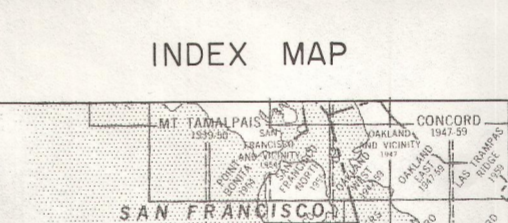
Lineaments are defined by straight, straight, offset streams, and other evidence of recent fault displacement, or resulting from gradual fault creep. They are likely to be located along these lines; occurrence of fault movement and accompanying displacements is indicated by straight, straight, offset streams, and other evidence of recent fault displacement. They are likely to be located along these lines; occurrence of fault movement and accompanying displacements is indicated by straight, straight, offset streams, and other evidence of recent fault displacement. They are likely to be located along these lines; occurrence of fault movement and accompanying displacements is indicated by straight, straight, offset streams, and other evidence of recent fault displacement.

SURFACE LINEARMENTS THAT ARE PROBABLY RELATED TO RECENT FAULT BREAKS

Lineaments are defined by topographic features that appear to be modified straight, straight, offset streams, and other topographic features. Diagnostic evidence of recent faulting is sparse and is substantially modified by other geologic processes.

INTERPRETATION: Future surface displacements accompanying moderate to large earthquakes, or resulting from gradual fault creep, are likely to be located along these lines; occurrence of fault movement and accompanying displacements are probably lower than on the main active strand of the San Andreas fault; nature and amount of movement accompanying earthquakes are uncertain, but may consist of horizontal and vertical displacements of several feet.

LINEAMENT SIGNIFICANCE: These lines indicate probable but largely uncorroborated based on future surface fault displacement. Building for home occupancy should not be constructed on or across them, unless such buildings are adequately anchored to bedrock, and public service facilities that cross them are likely to be severed in the event of major surface fault displacement.



NOTE: This map is based on the data and sections of surface fault lineaments and on observations of minor to substantial deformation accompanying surface faulting on faults similar to those shown here (Loomis, 1908; Rehilla, 1965, 1970). The data is limited to a width of 200 feet on either side of any possible fault lineament. It is intended as a continuous series of deformation even though the lineaments on which it is based may be discontinuous. The wider view shown on the San Gregorio fault results from a more complete lineament pattern, from additional geologic relations which suggest a relatively broad zone of deformation, and from uncertainty in identifying recent fault lineaments.

DISCUSSION: Lineaments are in wide general use as geologically defined or presumed and to indicate local displacements of a few inches to a few feet may occur. Detailed studies may indicate that the boundaries of this zone should be modified, or they may indicate areas within it that are relatively free from tectonic deformation because they are underlain by unfractured bedrock.

LINEAMENT SIGNIFICANCE: Unfractured areas indicate potential hazard from fracturing and displacement along fractures and fault movement. Potentially hazardous for high-rise buildings, large structures, public utilities, emergency relief storage facilities, water storage tanks, dams, power plants, but may contain areas that are adequately anchored to bedrock, and public service facilities that cross them are likely to be severed in the event of major surface fault displacement.

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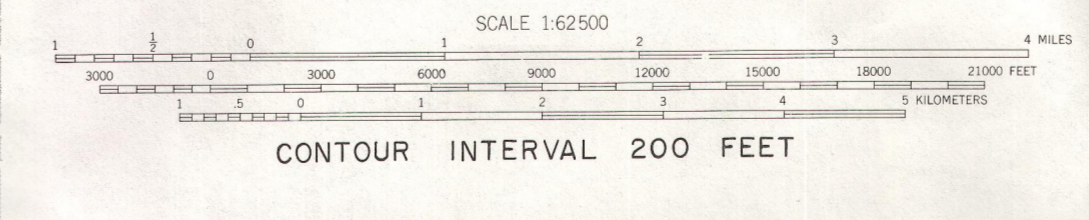
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ACTIVE FAULTS, PROBABLY ACTIVE FAULTS, AND ASSOCIATED FRACTURE ZONES, SAN MATEO COUNTY, CALIFORNIA
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Base from U.S. Geological Survey 1:25,000 San Francisco Bay Region, sheet 3, 1971; City boundaries from information provided by San Mateo County Planning Commission, December, 1971.

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey standards and nomenclature.