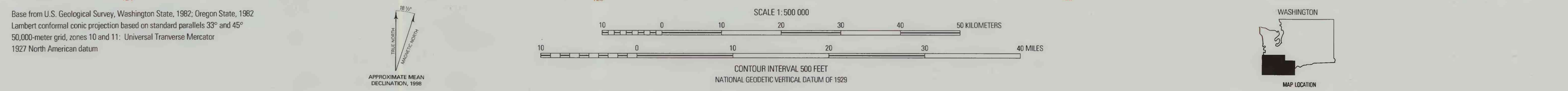


**EXPLANATION**

Ground failures induced by the April 13, 1949, Olympia earthquake and the April 29, 1965, Seattle-Tacoma earthquake are indicated by the following symbols

▲	Landslides (1949)	Includes rotational slides (slumps), translational slides, rockfalls, soil falls, lateral spreads, flows, and avalanches
△	Landslides (1965)	
■	Ground settlement (1949)	Settlement of the ground surface not clearly related to landsliding
□	Ground settlement (1965)	
◆	Ground cracks (1949)	Includes surface cracks in soil and rocks, and cracks in foundations, sidewalks, patios, and so forth that are possible indicators of ground settlement and (or) incipient landsliding
◇	Ground cracks (1965)	
●	Sand boils (1949)	Ejection of ground water or ground water and sediment from cracks or vents at the ground surface
○	Sand boils (1965)	
★	Miscellaneous effects (1949)	Includes broken underground water pipes and gas lines, permanent bridge and piling displacements, bent or broken well pipe, disruption or change in water well or spring flow, and other effects that are commonly associated with ground failure but are not in themselves conclusive evidence of ground failure
☆	Miscellaneous effects (1965)	

163 Location number corresponding to ground failures described in table 33



**LOCATION MAP OF GROUND FAILURES IN THE WESTERN COLUMBIA RIVER REGION, OREGON AND WASHINGTON**

By  
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