



- EXPLANATION**
- BEDROCK**
- EXCAVATION DIFFICULT - Heavy power equipment and explosives needed except where rocks are highly weathered, altered, or fractured
 - EXCAVATION MODERATELY DIFFICULT TO DIFFICULT - Heavy power equipment necessary; explosives required on some beds
 - EXCAVATION MODERATELY DIFFICULT TO MODERATELY EASY - Heavy or light power equipment necessary
- SURFICIAL DEPOSITS**
- EXCAVATION MODERATELY EASY - Light power equipment or hand tools necessary; boulders as much as several feet in diameter may be encountered. Pattern indicates bouldery ridge
 - EXCAVATION EASY - Light power equipment or hand tools necessary

NOTES

On this map the rocks of the Aspen quadrangle are divided into units according to the ease with which they can be excavated. This is only a general guide based on rock type. Other geologic factors and the changing technology of excavation make a more specific map not feasible.

All surficial deposits can be excavated easily, but if they contain large boulders, the techniques used may differ from those used in boulder-free unconsolidated material. Consequently, surficial deposits in which large boulders may be found are separated from those lacking them.

The bedrock unit designated *moderately difficult to difficult* contains rocks of differing ease of excavation. These rocks typically contain some beds that may be difficult to excavate, such as conglomerate, sandstone, and limestone, and some beds that are easy to excavate, such as siltstone and shale. Where the rocks are weathered deeply or are strongly fractured, excavation of the difficult-to-excavate beds may be easier.

On the gentle terrain of Smuggler Mountain the granitic rock is locally weathered. Although no definite information is available on the depth of weathering or the distribution of weathered rock on top of Smuggler Mountain, I estimate that depths of weathering would range from 5 to 30 feet. The distribution of weathered rock is very irregular, for slightly weathered outcrops of granitic rock are found in many places on top of Smuggler Mountain. The weathered granitic rock would be easy to excavate, but it is underlain by difficult-to-excavate unweathered rock. Consequently, the whole Smuggler Mountain area is included in the difficult-to-excavate unit.

Base from U.S. Geological Survey, 1960
10,000-foot grid based on Colorado coordinate system,
central zone
1000-meter Universal Transverse Mercator grid ticks,
zone 13, shown in blue



**MAP SHOWING RELATIVE EASE OF EXCAVATION IN THE ASPEN QUADRANGLE,
PITKIN COUNTY, COLORADO**

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