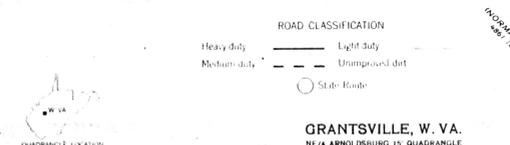
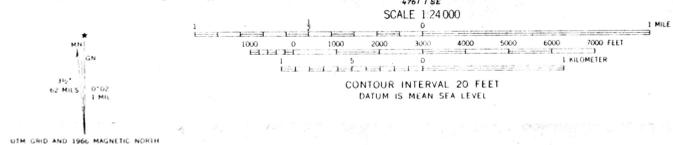


Mapped, edited, and published by the Geological Survey  
Control by USGS and USCAGS  
Topography by photogrammetric methods from aerial photographs  
taken 1963. Field checked 1966.  
Polyconic projection. 1927 North American datum.  
20,000-foot grid based on West Virginia coordinate system,  
south zone.  
1:250,000 meter Universal Transverse Mercator grid ticks, zone 17.



Landslides and related features interpreted  
from aerial photographs:  
1:60,000 SCALE BLACK AND WHITE 1960  
1:125,000 SCALE COLOR INFERRED 1973  
1:60,000 SCALE BLACK AND WHITE 1975  
  
Photointerpretation and field check 1980.  
This map has not been edited or reviewed  
for conformity with Geological Survey  
standards and nonenclature.

### LANDSLIDES AND RELATED FEATURES OF THE GRANTSVILLE, W. VA. QUADRANGLE

by  
GREGORY C. OHLMACHER  
U.S. Geological Survey  
OPEN FILE MAP 85-80 (H-8)

NOTE  
Information shown is intended as a  
general guide to ground conditions as of  
the date of field check. Additional  
landslides and rockfalls should be anticipated  
in all map units. The map unit depicts  
the dominant condition in the area delineated  
and variations in slope stability may occur  
at any point in the unit. This map is suit-  
able for general planning purposes and as a  
supplement to more detailed studies for site  
selection. The map cannot be used as a sub-  
stitute for detailed geologic and engineering  
investigations to establish design and  
construction criteria of specific sites.  
Some symbols may not appear on this map  
because the description is applicable to a  
series of maps.

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| <p><b>ACTIVE OR RECENTLY ACTIVE LANDSLIDE</b><br/>Complex landslide composed of earthflow, debris<br/>slide, earth and rock slump. Identified from<br/>historical records, and from scars, debris and<br/>other field evidence. Ground extremely unstable,<br/>sliding accelerated by excavation, loading and<br/>changes in drainage conditions. May include<br/>areas with several active slides too small to<br/>be shown separately.</p> <p><b>OLD LANDSLIDE</b><br/>Area of extensive hummocky ground caused by<br/>earthflow and earth and rock slump. Lacks<br/>clear evidence of active sliding. Relatively<br/>stable in natural, undisturbed state,<br/>generally not affected by small structures properly<br/>sited in areas away from the edge of the toe,<br/>can be reactivated by extensive, rapid exca-<br/>vation, loading, and changes in ground water and<br/>surface water conditions. Area of old landslide<br/>probably includes recent ones not identified<br/>from field evidence or otherwise documented.<br/>Upslope boundary of landslide generally defined<br/>by modified scarp, but downslope (toe) may be<br/>gradational and not well defined.</p> <p><b>COLLUVIAL SLOPE</b><br/>Valley wall along major streams with slope as<br/>steep as 40° (85%), stony, clayey silt soil up<br/>to 50 ft. (15 m) thick; commonly buttressed by<br/>a terrace or bench at the toe of the slope, very<br/>susceptible to sliding by cutting of toe area,<br/>removal of terrace or bench, and overloading,<br/>slide commonly activated without apparent cause.</p> | <p><b>AREAS SUSCEPTIBLE TO DEBRIS FLOWS AND DEBRIS<br/>AVALANCHES</b><br/>Primarily shallow, narrow ravines and chutes with<br/>accumulation of stony colluvium generally 10 ft.<br/>(3 m) or less in thickness; susceptible to rapid<br/>movement during intense rainfall. Most ravines<br/>and chutes designated show evidence of former<br/>debris flows and avalanches. Symbol-a design-<br/>ates historical debris flow or debris avalanche.</p> <p><b>AREAS SUSCEPTIBLE TO ROCKFALL</b><br/>Steep, locally vertical, natural and man-made<br/>slopes and cliffs, 15 ft. (4.5 m) or more high,<br/>formed dominantly of sandstone, limestone, sandy<br/>shale, mudstone and claystone. Interbedded mud-<br/>stone, claystone and shale weather rapidly leaving<br/>sandstone and limestone rock faces unsupported.</p> <p><b>SOIL AND ROCK SUSCEPTIBLE TO LANDSLIDING</b><br/>Soil and rock similar to that involved in land-<br/>slides elsewhere in map area; primarily areas<br/>underlain by claystone, mudstone and shale<br/>associated with other rock types. Rock weathers<br/>rapidly on exposure forming clayey soil highly<br/>susceptible to sliding. Includes coves (U-shaped,<br/>shallow valleys) containing thick layers of clayey<br/>soil that are very susceptible to sliding where<br/>excavation breaks continuity of slope and where<br/>overloaded by artificial fill.</p> <p><b>AREAS LEAST PRONE TO LANDSLIDES</b><br/>Map areas in which no patterns or symbols are shown;<br/>primarily valley floors, ridge tops and broad<br/>benches; modification by excavation and fill may<br/>lead to local landslides.</p> | <p><b>MAN-MADE FEATURES</b><br/>Strip mines (combination of letter symbols<br/>Indicates complex formed or more than one<br/>type of strip mine)</p> <p>sh bench with high wall<br/>sf furrowed with high wall<br/>sd multiple furrows and multiple benches<br/>ss hilltop removed<br/>srg reclaimed by grading<br/>sru reclaimed by secondary use<br/>shr regraded in part, high wall<br/>remains</p> <p>Coal refuse banks<br/>r identified on aerial photographs;<br/>not classified in field check</p> <p>rb not burnt nor on fire<br/>rbb burnt<br/>rbd burning<br/>rbs sludge</p> <p>Quarries<br/>q quarry site</p> <p>Gravel pits<br/>g site of gravel pit</p> <p>Slides in man-made features<br/>as earth flow in fill<br/>at earth flow in strip castings<br/>ar earth flow in coal refuse</p> |
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The first four digits of the open file number designate the  
specific 1:250,000 scale map sheet of which this quadrangle  
is a part. The last two digits designate the position of the  
quadrangle in a subdivision of the 1:250,000 scale map based  
on rows and tiers shown in the diagram to the right. The  
location of this quadrangle is shown by the black square.

