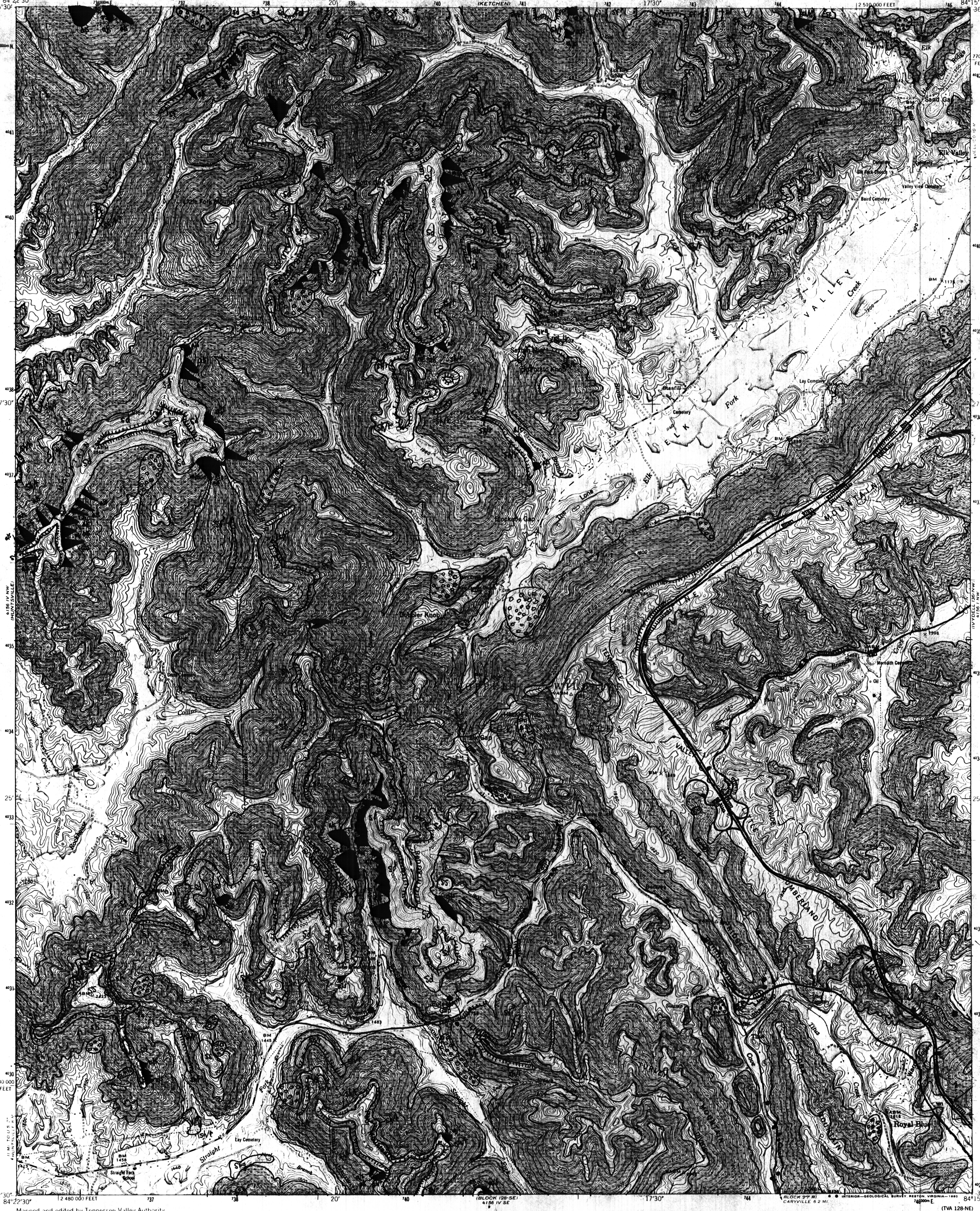
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
TENNESSEE VALLEY AUTHORITY
MAPPING SERVICES BRANCH

PIONEER QUADRANGLE
TENNESSEE
7.5 MINUTE SERIES (TOPOGRAPHIC) 128-NE



(TVA 128-NE)

Mapped and edited by Tennessee Valley Authority
Published by the Geological Survey

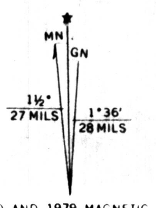
Control by NOS/NOAA, USGS, and TVA

Topography by photogrammetric methods using aerial photographs taken 1940 and 1942. Map field checked by TVA, 1952

Polyconic projection. 1927 North American datum
10,000-foot grid based on Tennessee rectangular coordinate system.
1000 meter Universal Transverse Mercator Grid ticks, Zone 16, shown in blue.

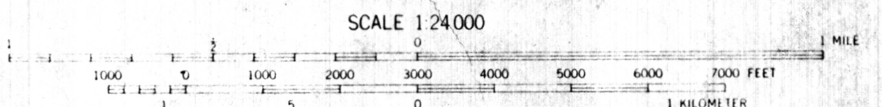
There may be private inholdings within the boundaries of the National or State reservations shown on this map

To place on the predicted North American Datum 1983 move the projection lines 6 meters south and 7 meters west as shown by dashed corner ticks

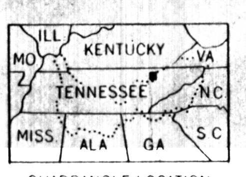


UTM GRID AND 1979 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000



CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929



QUADRANGLE LOCATION

ROAD CLASSIFICATION

Heavy-duty .... Poor motor road
Medium-duty .... Wagon and jeep track
Light-duty .... Foot trail
Interstate Route U. S. Route State Route

PIONEER, TENN.
N3622.5-W8415/7.5

1952

PHOTOREVISED 1979

Landslides and related features interpreted from aerial photographs:

1:80,000 (Black and White) 1975

1:20,000 (Black and White) 1973

Photointerpretation and field check 1979-1980, 1982

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

LANDSLIDES AND RELATED FEATURES

OF THE PIONEER, TENN. QUADRANGLE

by

Roger E. Thomas and Alfred R. Taylor

1982

U.S. Geological Survey
OPEN FILE MAP 82-653 (D-14)

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 suitable for general planning purposes and as a supplement to more detailed studies for site selection. The map cannot be used as a substitute 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.

ACTIVE OR RECENTLY ACTIVE LANDSLIDE
Complex landslide composed of earthflow, debris slide, earth and rock slump. Identified from historical records, and from scars, debris and other field evidence. Ground extremely unstable; sliding accelerated by excavation, loading and changes in drainage conditions. May include areas with several active slides too small to be shown separately. Questioned where doubtful.

OLD LANDSLIDE
Area of extensive hummocky ground caused by earthflow and earth and rock slump. Lacks clear evidence of active sliding. Relatively stable in natural, undisturbed state, generally not affected by small structures properly sited in areas away from the edge of the toe; can be reactivated by extensive, rapid excavation, loading, and changes in ground water and surface water conditions. Area of old landslide probably includes recent ones not identified from field evidence or otherwise documented. Upslope boundary of landslide generally defined by modified scarp, but downslope (toe) may be gradational and not well defined. Questioned where doubtful.

COMBINATION LANDSLIDE
Area of recent and old slides in which individual slides are not identified.

COLLUVIAL SLOPE
Valley wall along major streams with slope as steep as 40° (85%); stony, clayey silt soil up to 50 ft. (15 m) thick; commonly buttressed by a terrace or bench at the toe of the slope; very susceptible to sliding by cutting of toe area, removal of terrace or bench, and overloading; slide commonly activated without apparent cause.

COLLUVIAL SLOPES WITH LANDSLIDES
Landslides too small or obscure to map individually.

AREAS SUSCEPTIBLE TO DEBRIS FLOWS AND DEBRIS AVALANCHES
Primarily shallow, narrow ravines and chutes with accumulation of stony colluvium generally 10 ft. (3 m) or less in thickness; susceptible to rapid movement during intense rainfall. Most ravines and chutes designated show evidence of former debris flows and avalanches.

AREAS SUSCEPTIBLE TO ROCKFALL
Steep, locally vertical, natural and man-made slopes and cliffs, 15 ft. (4.5 m) or more high; formed dominantly of sandstone, limestone, sandy shale, mudstone and claystone. Interbedded mudstone, claystone and shale weather rapidly leaving sandstone and limestone rock faces unsupported.

SOIL AND ROCK SUSCEPTIBLE TO LANDSLIDING
Soil and rock similar to that involved in landslides elsewhere in map area; primarily areas underlain by claystone, mudstone and shale associated with other rock types. Rock weathers rapidly on exposure forming clayey soil highly susceptible to sliding. Includes coves (U-shaped, shallow valleys) containing thick layers of clayey soil that are very susceptible to sliding where excavation breaks continuity of slope and where overloaded by artificial fill.

AREAS LEAST PRONE TO LANDSLIDES
Map areas in which no patterns or symbols are shown; primarily valley floors, ridge tops and broad benches; modification by excavation and fill may lead to local landslides.

MAN-MADE FEATURES

Strip mines (combination of letter symbols indicates complex formed of more than one type of strip mine)

sh	bench with high wall
sf	furrowed with high wall
sd	multiple furrows and multiple benches
ss	hilltop removed
srg	reclaimed by grading
sru	reclaimed by secondary use
sh/r	regraded in part, high wall remains

Coal refuse banks

r	identified on aerial photographs; not classified in field check
rb	not burnt nor on fire
rbb	burnt

Quarries

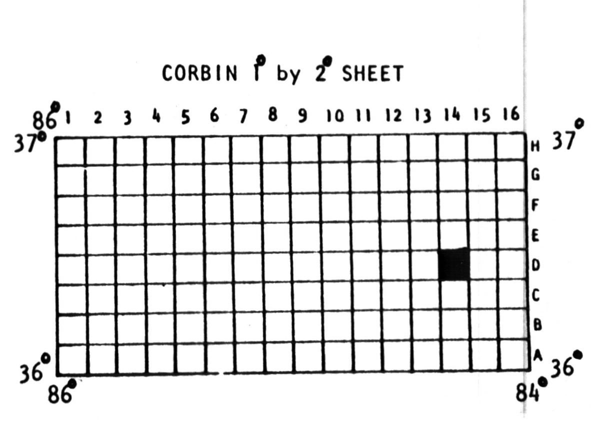
q	quarry site

Gravel pits

g	site of gravel pit

Slides in man-made features

af	earth flow in fill
a/s	earth flow in strip castings
a/r	earth flow in coal refuse

The first five 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.

CORBIN 1° by 2° SHEET