

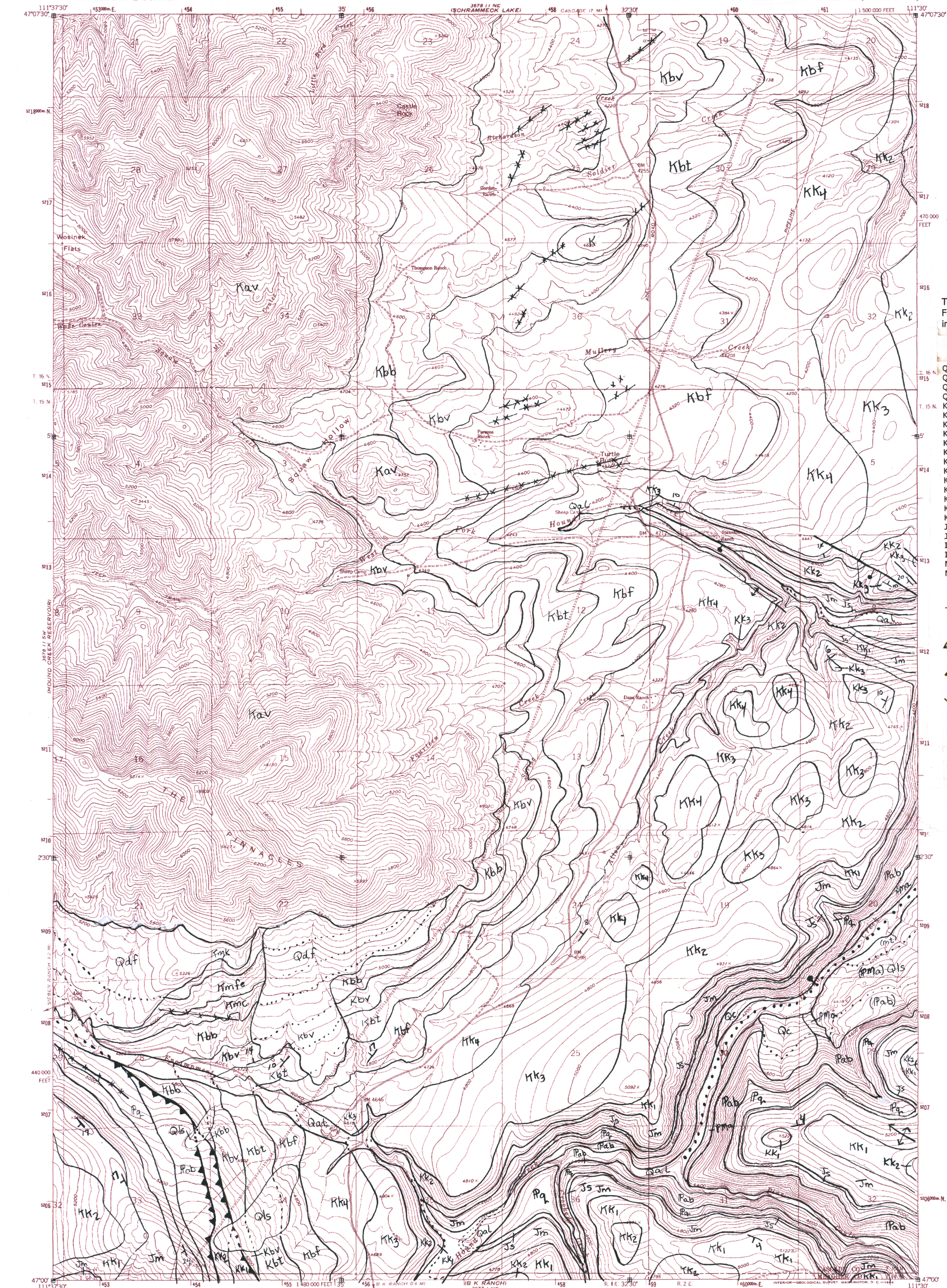
Geologic Maps of the Dana Ranch, Conway Ridge, and Millegan 7.5' Quadrangles, Central Montana

Susan M. Vuke
Scale 1:24,000
1999

Prepared in cooperation with the USGS

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

DANA RANCH QUADRANGLE
MONTANA
7.5 MINUTE SERIES (TOPOGRAPHIC)



This map was prepared as part of the Great Falls South 30' x 60' quadrangle with an intended publication scale of 1:100,000.

EXPLANATION

Qal	Alluvium of Recent channels and floodplains
Qc	Colluvium
Qls	Landslide deposit
Qdf	Debris flow deposit
Kav	Adel Mountain Volcanics (shonkinites)
Ksh	Shonkinitic sill
Kmk	Kevin Member of Marias River Shale
Kmfe	Ferdig Member of Marias River Shale
Kmc	Cone Member of Marias River Shale
kbb	Bootelegger Member of Blackleaf Formation
kbv	Vaughn Member of Blackleaf Formation
kbt	Taft Hill Member of Blackleaf Formation
kbf	Fourth Member of Blackleaf Formation
kk4	Fourth Member of Kootenai Formation
kk3	Third Member of Kootenai Formation
kk2	Second member of Kootenai Formation
kk1	Cutbank Member of Kootenai Formation
Jm	Morrison Formation
Js	Swift Formation
IPq	Quadrant Formation
IPab	Alaska Bench Formation
MPa	Amnsden Formation
Mt	Tyler Formation

MAP SYMBOLS

-  Contact, dotted where concealed.
-  Strike and dip of bedding.
-  Axial trace of anticline, dashed where approximately located, dotted where concealed.
-  Axial trace of syncline, dashed where approximately located, dotted where concealed.
-  Thrust fault, teeth on upper plate, dotted where concealed.
-  High angle fault, dashed where approximately located, dotted where concealed. Ball and bar on downthrown side.
-  Dike.
-  (Mt) Concealed stratigraphic unit.

Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography by photogrammetric methods from aerial
photographs taken 1956. Field checked 1961
Polyconic projection. 1927 North American datum
10,000-foot grid based on Montana coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks,
zone 12, shown in blue
Fine red dashed lines indicate selected fence lines

UTM GRID AND 1961 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

CONTOUR INTERVAL 40 FEET

DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Light-duty Unimproved dirt



QUADRANGLE LOCATION

DANA RANCH, MONT.
N4700-W11130/7.5

1961

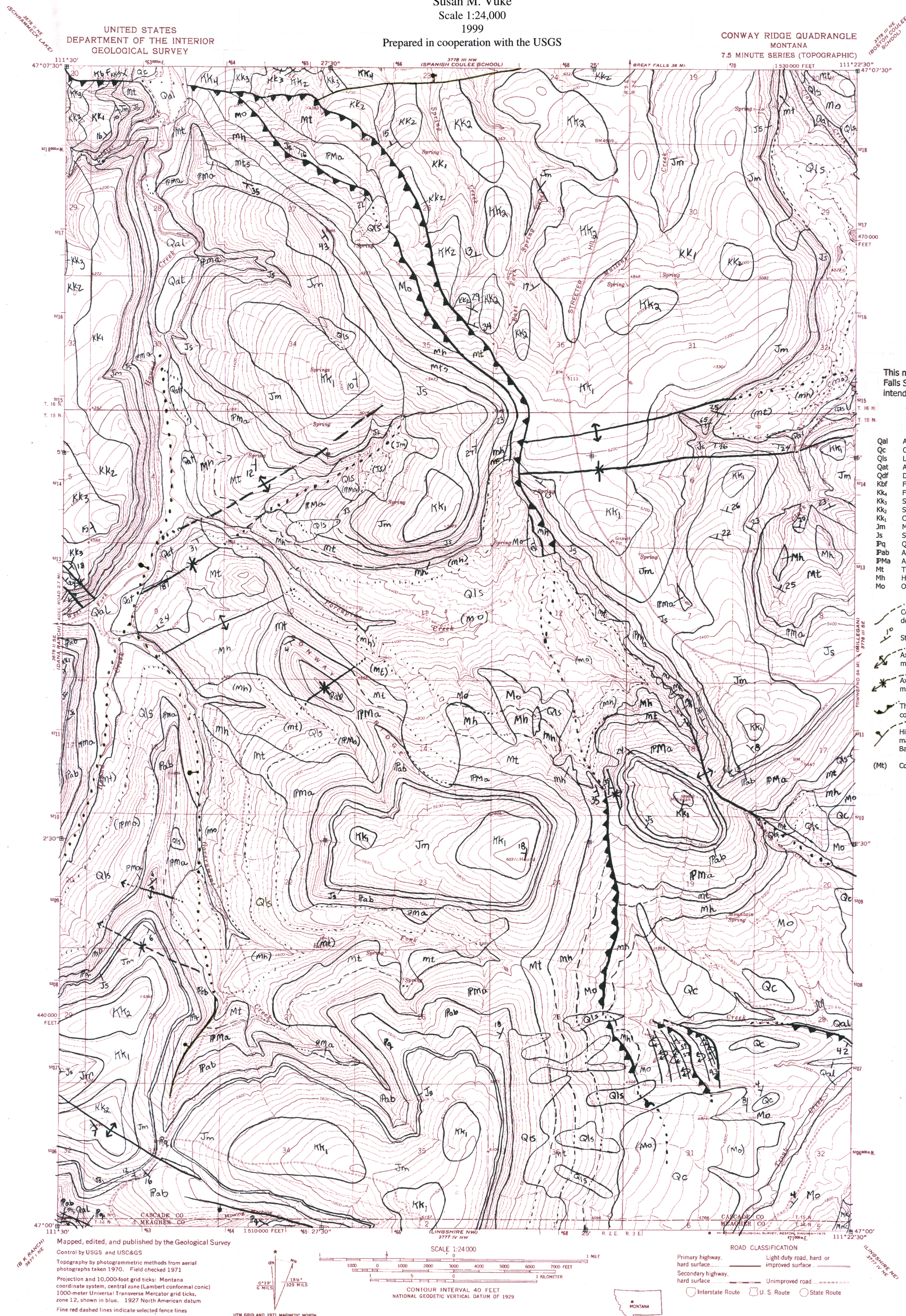
AMS 3678 11 SE-SERIES V894

Geologic Maps of the Dana Ranch, Conway Ridge, and Millegan 7.5' Quadrangles, Central Montana

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Scale 1:24,000
1999

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CONWAY RIDGE QUADRANGLE
MONTANA
7.5 MINUTE SERIES (TOPOGRAPHIC)

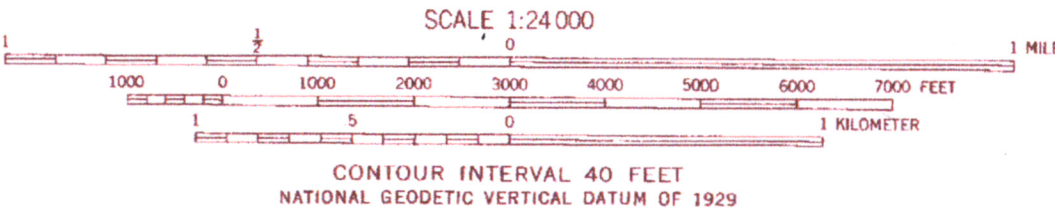
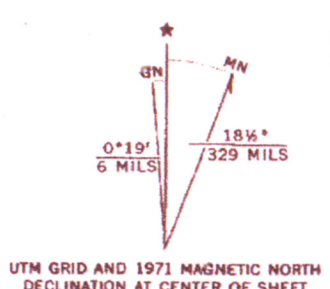


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- EXPLANATION**
- Qal Alluvium of Recent channels and floodplains
 - Qc Colluvium
 - Qls Landslide deposit
 - Qat Alluvial terrace deposit
 - Qdf Debris flow deposit
 - Kbf Flood Member of Blackleaf Formation
 - Kk Fourth member of Kootenai Formation
 - Kk2 Sunburst Member of Kootenai Formation
 - Kk3 Second member of Kootenai Formation
 - Kk4 Cutbank Member of Kootenai Formation
 - Jm Morrison Formation
 - Js Swift Formation
 - Pq Quadrant Formation
 - Pab Alaska Bench Formation
 - Pma Amsden Formation
 - Mt Tyler Formation
 - Mh Heath Formation
 - Mo Otter Formation

- MAP SYMBOLS**
- Contact, dashed where approximately located, dotted where concealed.
 - Strike and dip of bedding.
 - Axial trace of anticline, dashed where approximately located, dotted where concealed.
 - Axial trace of syncline, dashed where approximately located, dotted where concealed.
 - Thrust fault, teeth on upper plate, dotted where concealed.
 - High angle fault, dashed where approximately located, dotted where concealed. Ball and bar on downthrown side.
 - (Mt) Concealed stratigraphic unit.

Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography by photogrammetric methods from aerial photographs taken 1970. Field checked 1971
Projection and 10,000-foot grid ticks: Montana coordinate system, central zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue. 1927 North American datum
Fine red dashed lines indicate selected fence lines



- ROAD CLASSIFICATION**
- Primary highway, hard surface
 - Secondary highway, hard surface
 - Unimproved road
 - Interstate Route
 - U.S. Route
 - State Route



CONWAY RIDGE, MONT.
N4700-W11122.5/7.5

1971

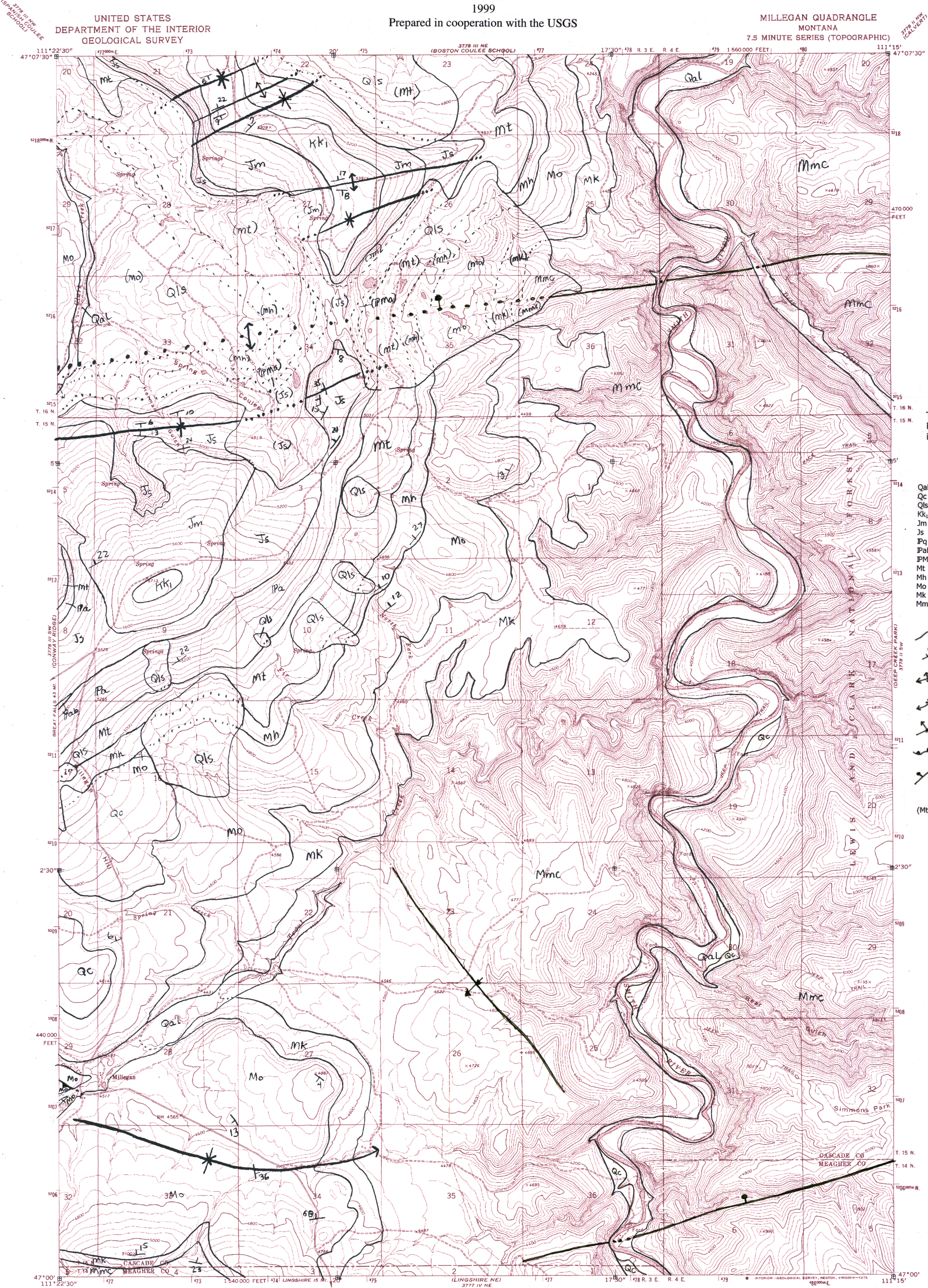
AMS 3778 III SW-SERIES V894

Geologic Maps of the Dana Ranch, Conway Ridge, and Millegan 7.5' Quadrangles, Central Montana

Susan M. Vuke
Scale 1:24,000
1999

Prepared in cooperation with the USGS

MILLEGAN QUADRANGLE
MONTANA
7.5 MINUTE SERIES (TOPOGRAPHIC)

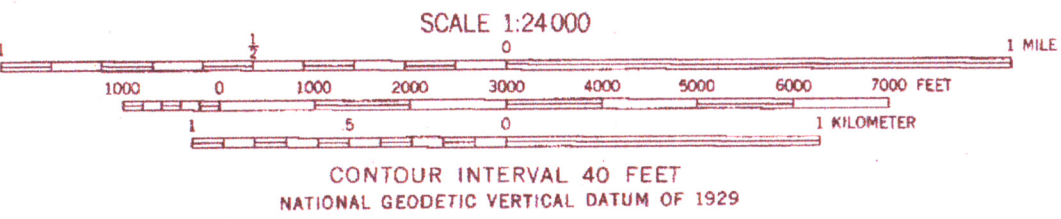
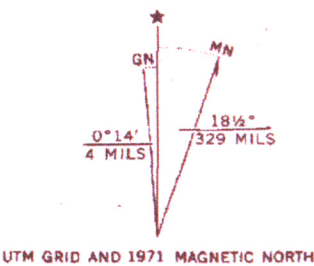


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- EXPLANATION
- Qal Alluvium of recent channels and floodplains
 - Qc Colluvium
 - Qls Landslide deposit
 - Kk1 Cutbank Member of Kootenai Formation
 - Jm Morrison Formation
 - Js Swift Formation
 - Jpq Quadrant Formation
 - Jpab Alaska Bench Formation
 - Jpma Amsden Formation
 - Mt Tyler Formation
 - Mh Heath Formation
 - Mo Otter Formation
 - Mk Kibbey Formation
 - Mmc Mission Canyon Formation

- MAP SYMBOLS
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 - Strike and dip of bedding.
 - Axial trace of anticline, dotted where concealed.
 - Axial trace of syncline, dotted where concealed.
 - Axial trace of synclinal flexure.
 - Thrust fault, teeth on upper plate, dotted where concealed.
 - High angle fault, dashed where approximately located, dotted where concealed. Ball and bar on downthrown side.
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- ROAD CLASSIFICATION
- Primary highway, hard surface
 - Secondary highway, hard surface
 - Unimproved road
 - Interstate Route
 - U.S. Route
 - State Route

MILLEGAN, MONT.
N4700-W11115/7.5

1971

AMS 3778 III SE--SERIES Y694