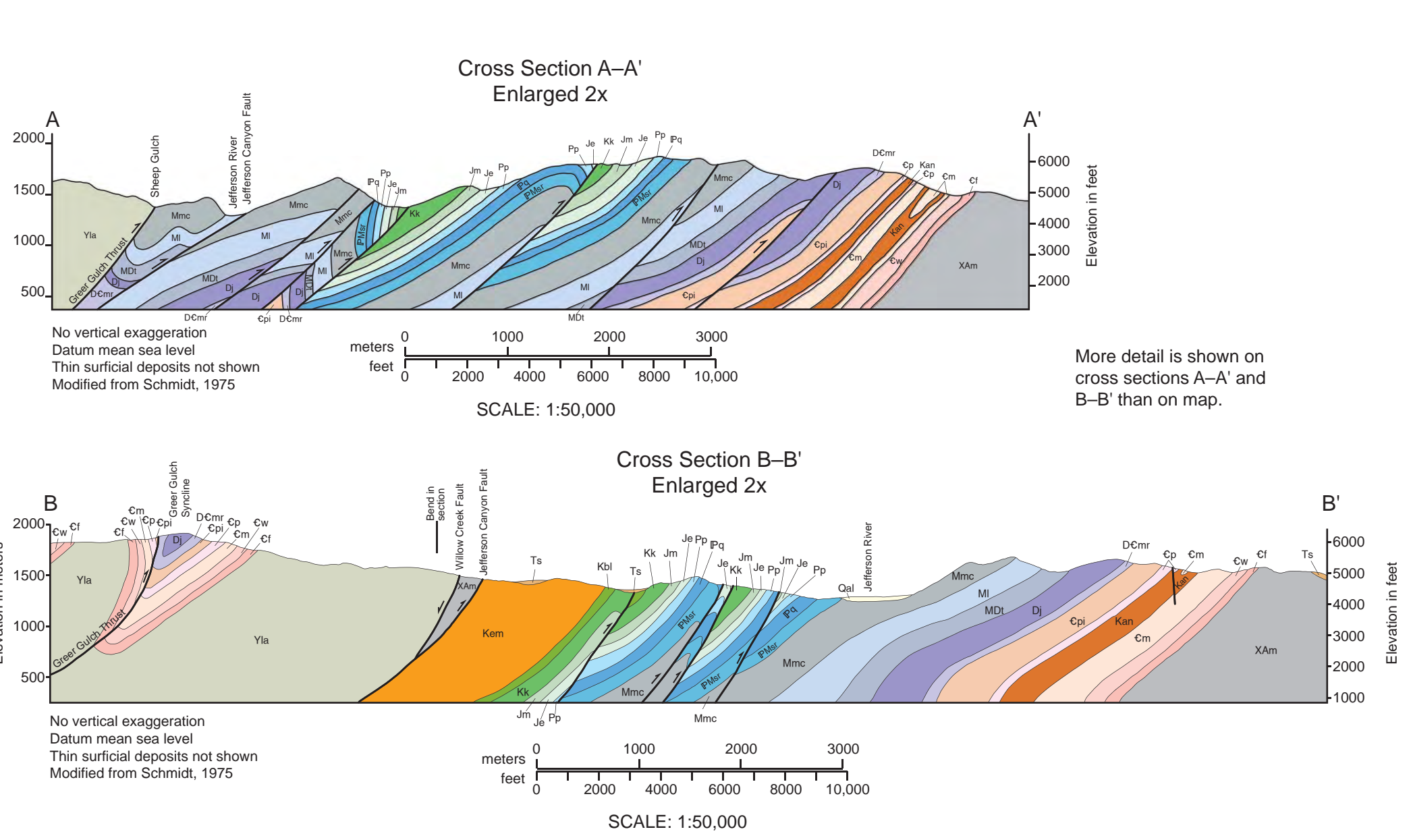
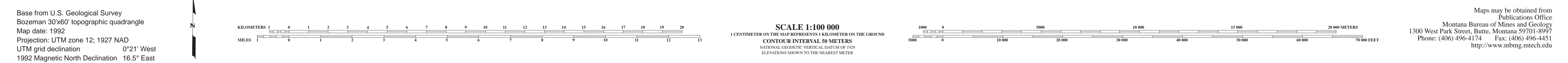
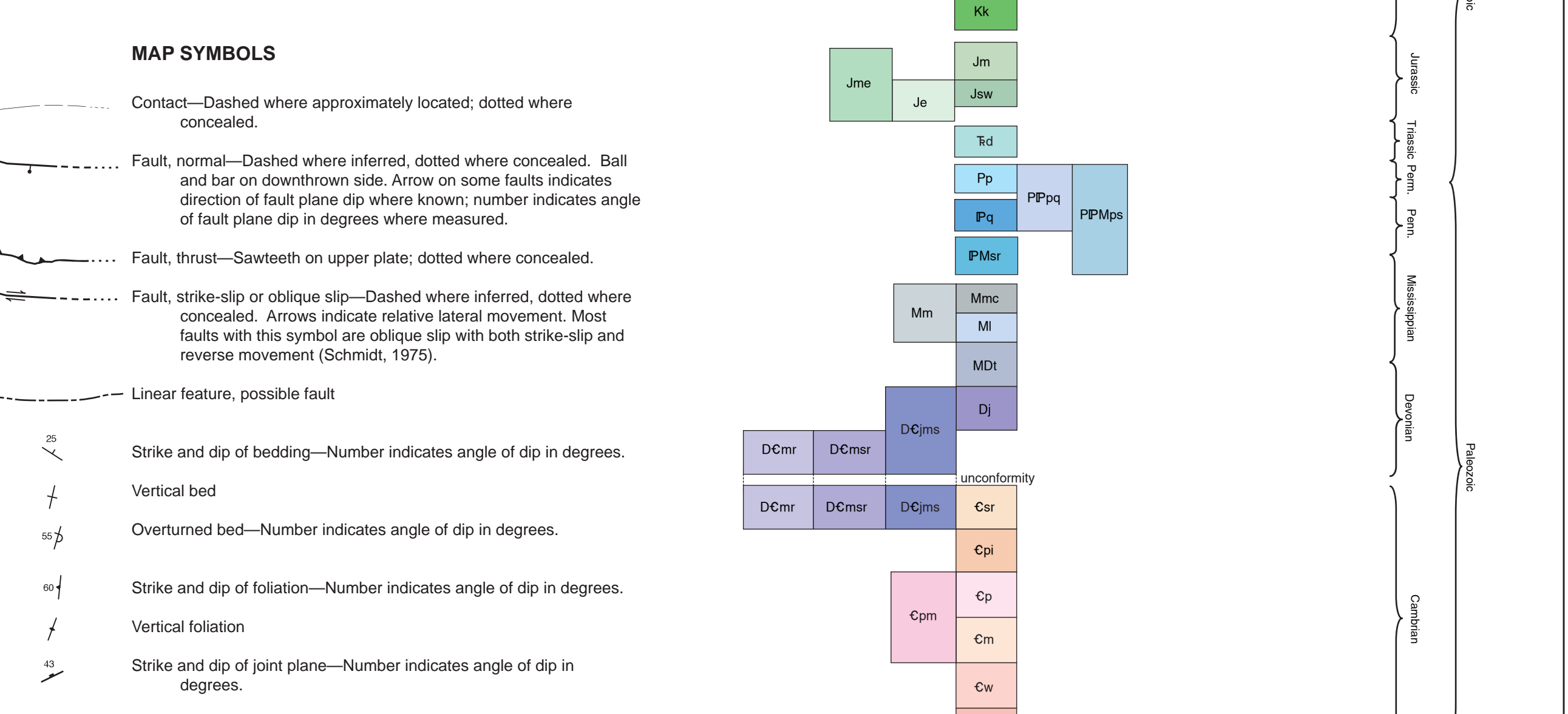
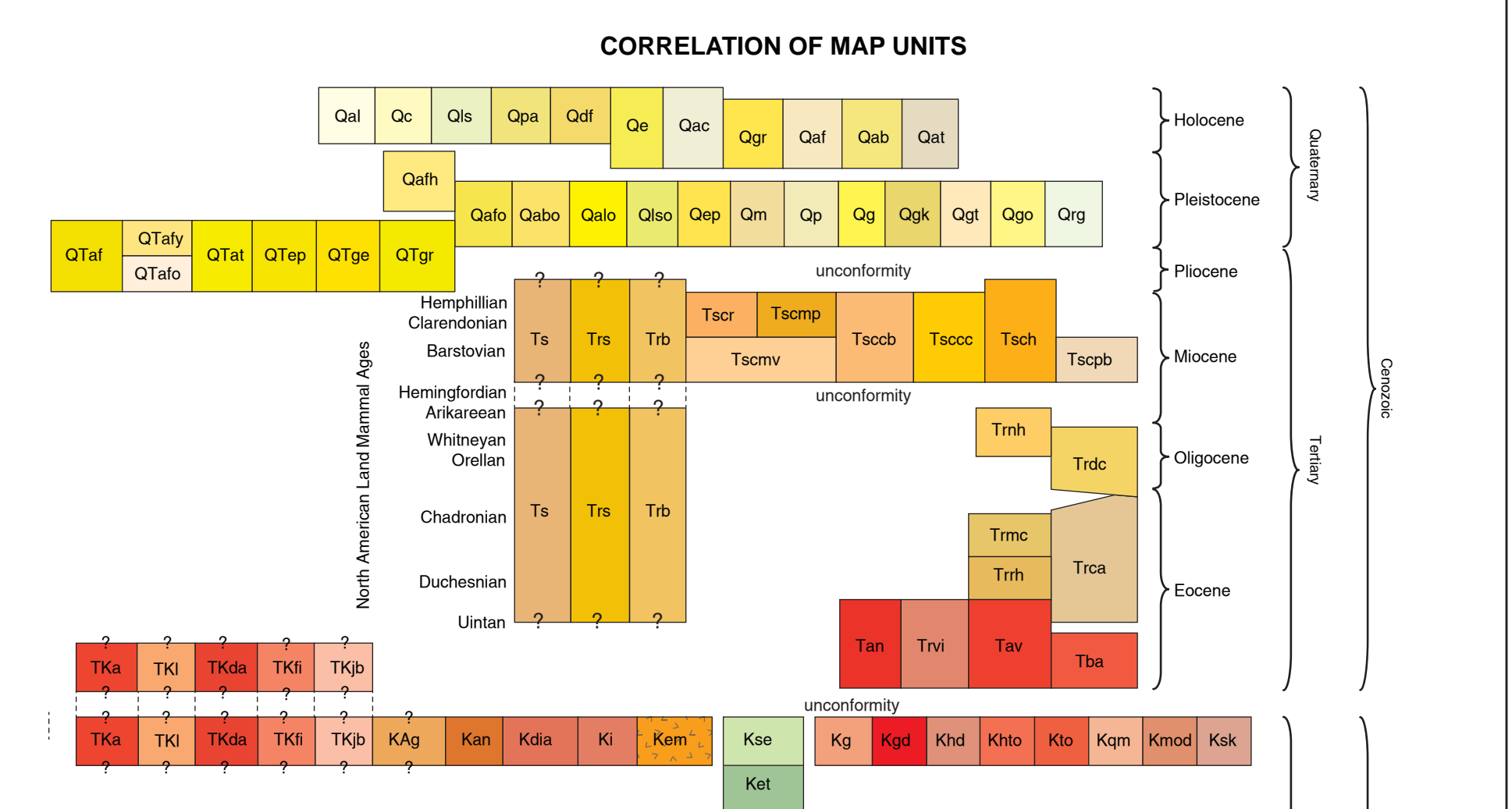


MAP UNITS

Qal	Alluvium	Qd	Andesite	Qm	Quartzite
Qc	Coluvium	Qe	Phyllite, vitric	Qn	Snowcrest Range Group
Qd	Landslide deposit	Qf	Abercrombie Volcanics	Qo	Madison Group, undivided
Qe	Paludal deposit	Qg	Basalt	Qp	Mission Canyon Limestone
Qf	Deltaic flow deposit	Qh	Andesite	Qq	Lodopole Limestone
Qg	Estuarine deposit	Qi	Lalite	Qr	Three Forks Formation
Qh	Alluvium and coluvium, undivided	Qj	Dolite	Qs	Jefferson, Maywood, and Snowy Range Fms., undivided
Qi	Gravel deposit	Qk	Felsic intrusive rocks	Qt	Jefferson Formation
Qj	Alluvial fan deposit	Ql	Dispersed breccia	Qu	Maywood and Flat Linn Fms., undivided
Qk	Broad plain alluvium	Qm	Intrusive rock, undivided	Qv	Maywood and Snowy Range Fms., undivided
Ql	Alluvial terrace deposit	Qn	Elkhorn Mountains Volcanics	Qw	Snowy Range Formation
Qm	Hyaline alluvial fan	Qo	Andesite	Qx	Pilgrim Limestone
Qn	Alluvial fan deposit, older	Qp	Olsonite	Qy	Park and Meagher Formations, undivided
Qo	Broad plain alluvium, older	Qq	Granite	Qz	Park Shale
Qp	Alluvium, older	Qr	Granodiorite	Ca	Meagher Limestone
Qq	Landslide deposit, older	Qs	Hornblende diorite	Cb	Wiley Shale
Qr	Estuarine and sediment deposits	Qt	Hornblende tonalite	Cc	Flathead Formation
Qs	Madison	Qu	Tonalite	Cd	Grayson Formation
Qt	Pediment deposit	Qv	Quartz monzonite	Ce	Newland Formation
Qu	Glacial deposit, undivided	Qw	Slam	Cf	Laird Formation, undivided
Qv	Glacial kame deposit	Qx	Marquette and diorite	Yal	Laird Formation, alluvial-fan and fan-delta facies
Qw	Glacial till	Qy	Siderite	Yas	Laird Formation, shelf facies
Qx	Glacial outwash deposit	Qz	Elgie and Telegraph Creek Fms., undivided	Yav	Laird Formation, slope facies
Qy	Rock glacier deposit	Ca	Cody through Thermopola Fms., undivided	Yay	Laird Formation, submeridion-lens, undivided
Qz	Alluvial fan deposit	Cb	Cody and Frontier Fms., undivided	Yay	Laird Formation, inner submeridion-lens facies
Ca	Alluvial fan deposit, younger	Cc	Blackfoot Formation	Yay	Laird Formation, middle submeridion-lens facies
Cb	Alluvial fan deposit, older	Cd	Muddy and Thermopola Fms., undivided	Yay	Laird Formation, outer submeridion-lens facies
Cc	Alluvial terrace deposit	Ce	Thermopola Formation	Yay	Laird Formation, basin-fan facies
Cd	Estuarine, paleosol, and pediment deposits	Cf	Kootenai Formation	Yay	Laird Formation, basin-fan facies
Ce	Coarse gravel and estuarine deposits	Cg	Mission Formation and Elia Group, undivided	Yay	Laird Formation, basin-fan facies
Cf	Deltaic deposit	Ch	Mission Formation	Yay	Laird Formation, basin-fan facies
Cg	Gravel	Ch	Elia Group, undivided	Yay	Laird Formation, basin-fan facies
Ch	Sediment or sedimentary rocks, undivided	Ch	Shalt Formation	Yay	Laird Formation, basin-fan facies
Ch	Rhyolite sediment	Ch	Chico Formation	Yay	Laird Formation, basin-fan facies
Ch	Red Butte Formation	Ch	Phosphoria and Quaternary Fms. and Snowcrest Range Group	Yay	Laird Formation, basin-fan facies
Ch	Reese Creek member	Ch	Phosphoria and Quaternary Formations, undivided	Yay	Laird Formation, basin-fan facies
Ch	Claxton Basin member	Ch	Phosphoria Formation	Yay	Laird Formation, basin-fan facies
Ch	Madison Plateau member	Ch		Yay	Laird Formation, basin-fan facies
Ch	Cottonwood Canyon member	Ch		Yay	Laird Formation, basin-fan facies
Ch	Harrison member	Ch		Yay	Laird Formation, basin-fan facies
Ch	Parrot Bench member	Ch		Yay	Laird Formation, basin-fan facies
Ch	Nego Hollow member	Ch		Yay	Laird Formation, basin-fan facies
Ch	Dunbar Creek Member	Ch		Yay	Laird Formation, basin-fan facies
Ch	Climbing Arrow Member	Ch		Yay	Laird Formation, basin-fan facies
Ch	Milgum Creek Member	Ch		Yay	Laird Formation, basin-fan facies
Ch	Red Hill member	Ch		Yay	Laird Formation, basin-fan facies



Explanation for Cross Sections

Geologic Units

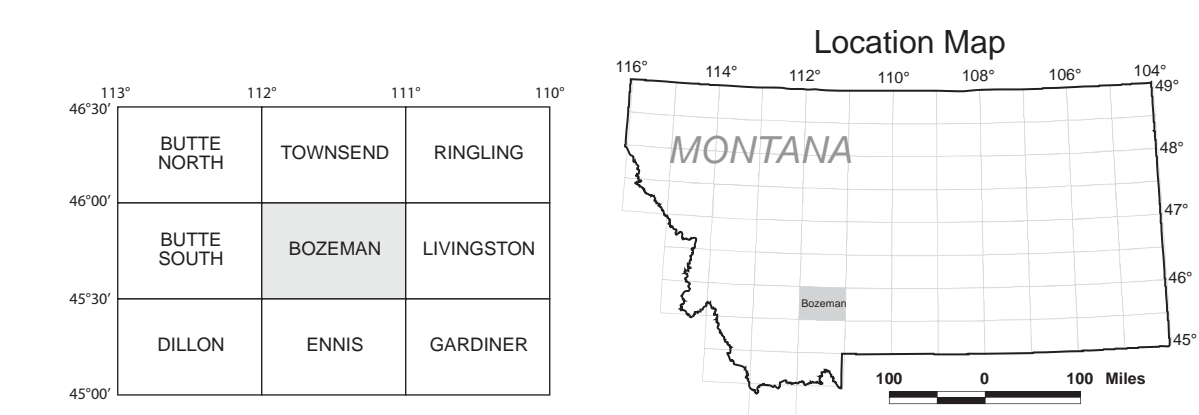
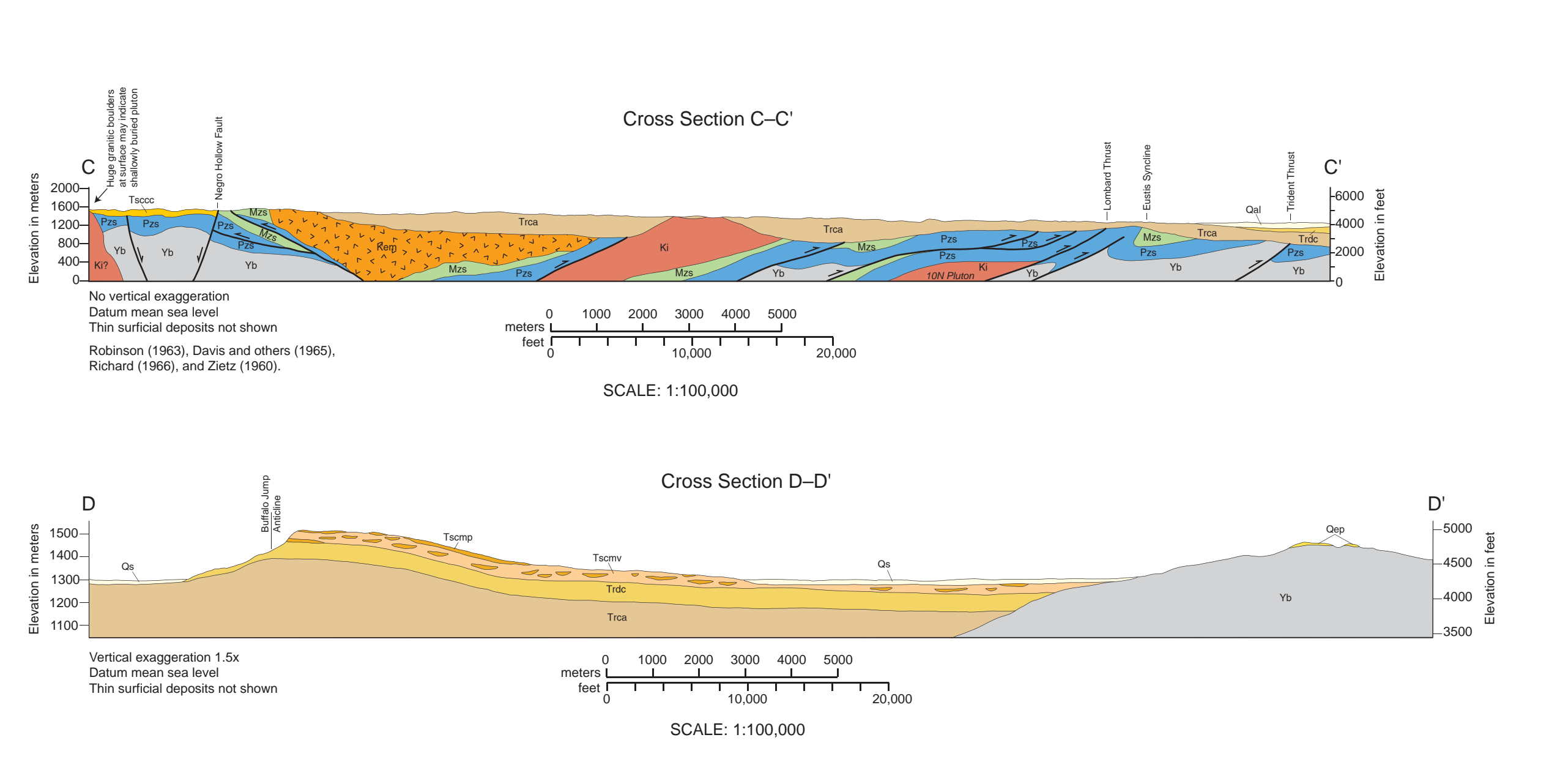
Qal Alluvium. Includes Qal and Qalo on map.
Qep Estuarine and pediment deposits

Sixmile Creek Formation
Madison Valley member
Cottonwood Canyon member

Renova Formation
Dunbar Creek Member
Climbing Arrow Member

Kem Elkhorn Mountains Volcanics
Ki Intrusive rock
Mzs Mesozoic sedimentary rocks, undivided
Pzs Paleozoic sedimentary rocks, undivided
Ys Salt Supergroup (Laird Formation and others)
XAm Metamorphic rock

Fault, arrow shows sense of relative movement
Coarse-grained deposits (pebble-size clasts and larger) on cross section D-D'



Montana Bureau of Mines and Geology
Open-File Report 648
**Geologic Map of the
Bozeman 30' x 60' Quadrangle
Southwestern Montana**
Compiled and mapped by Susan M. Vuke, Jeffrey D. Lonn,
Richard B. Berg, and Christopher J. Schmidt
2014