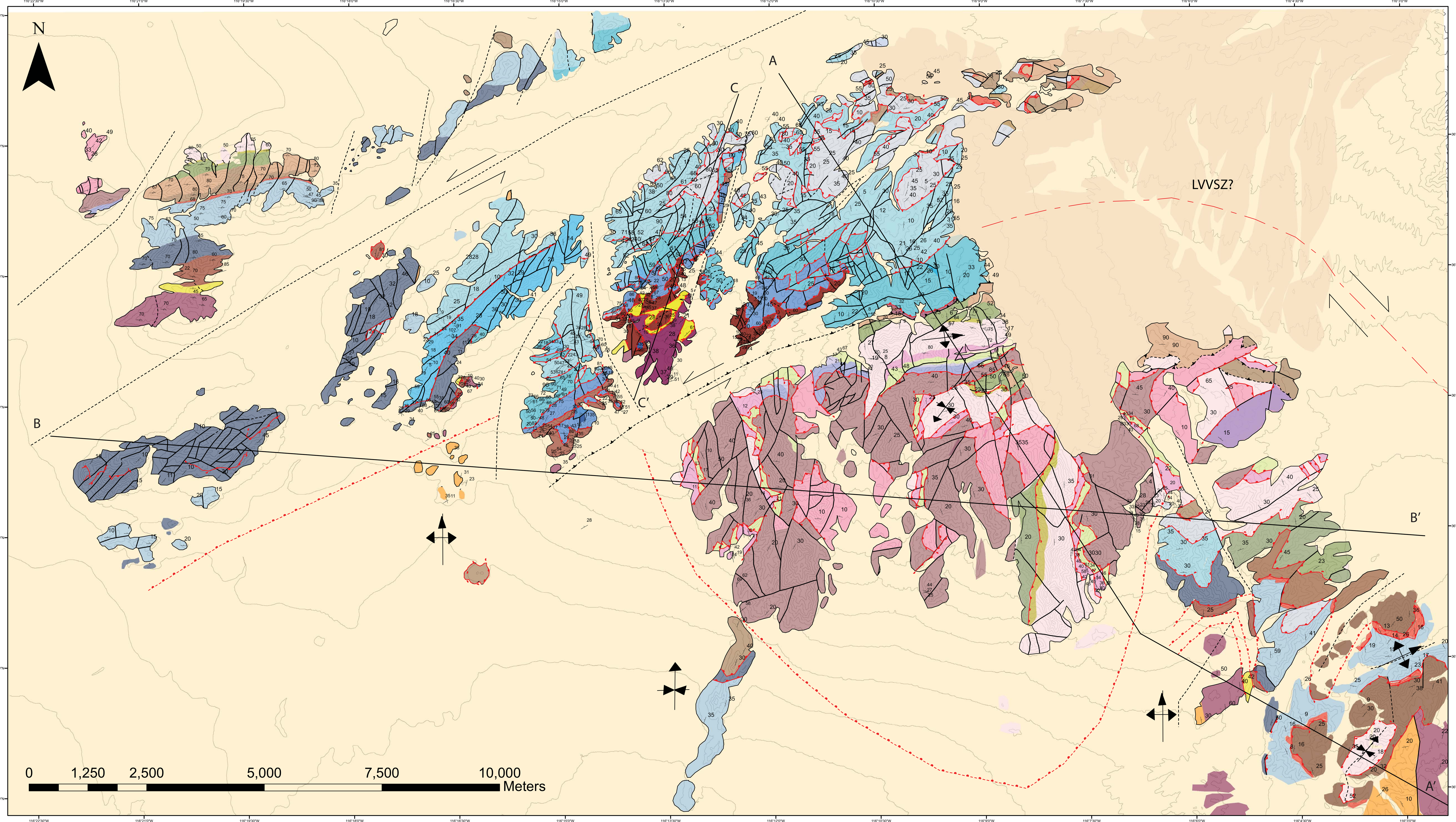
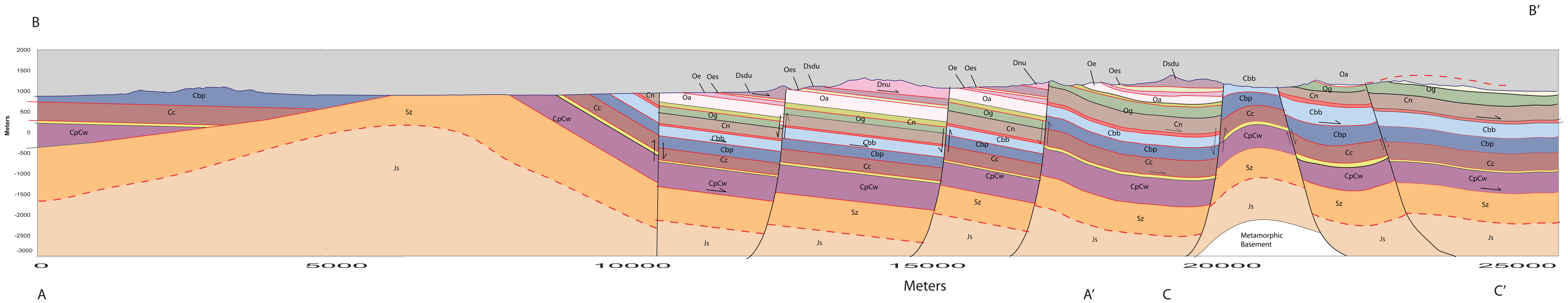
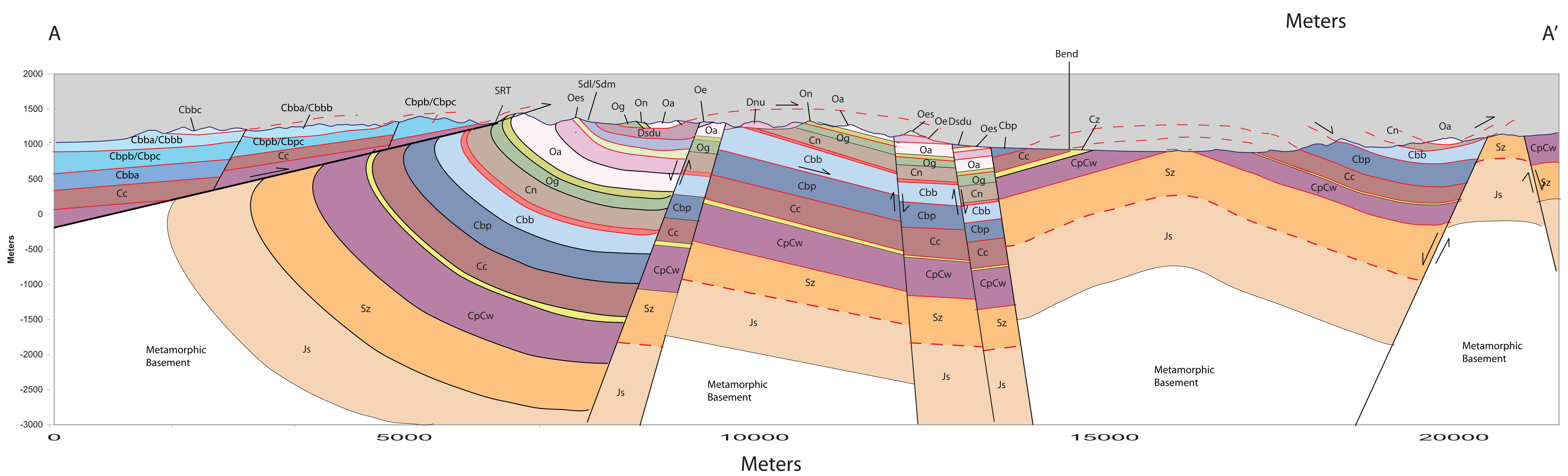
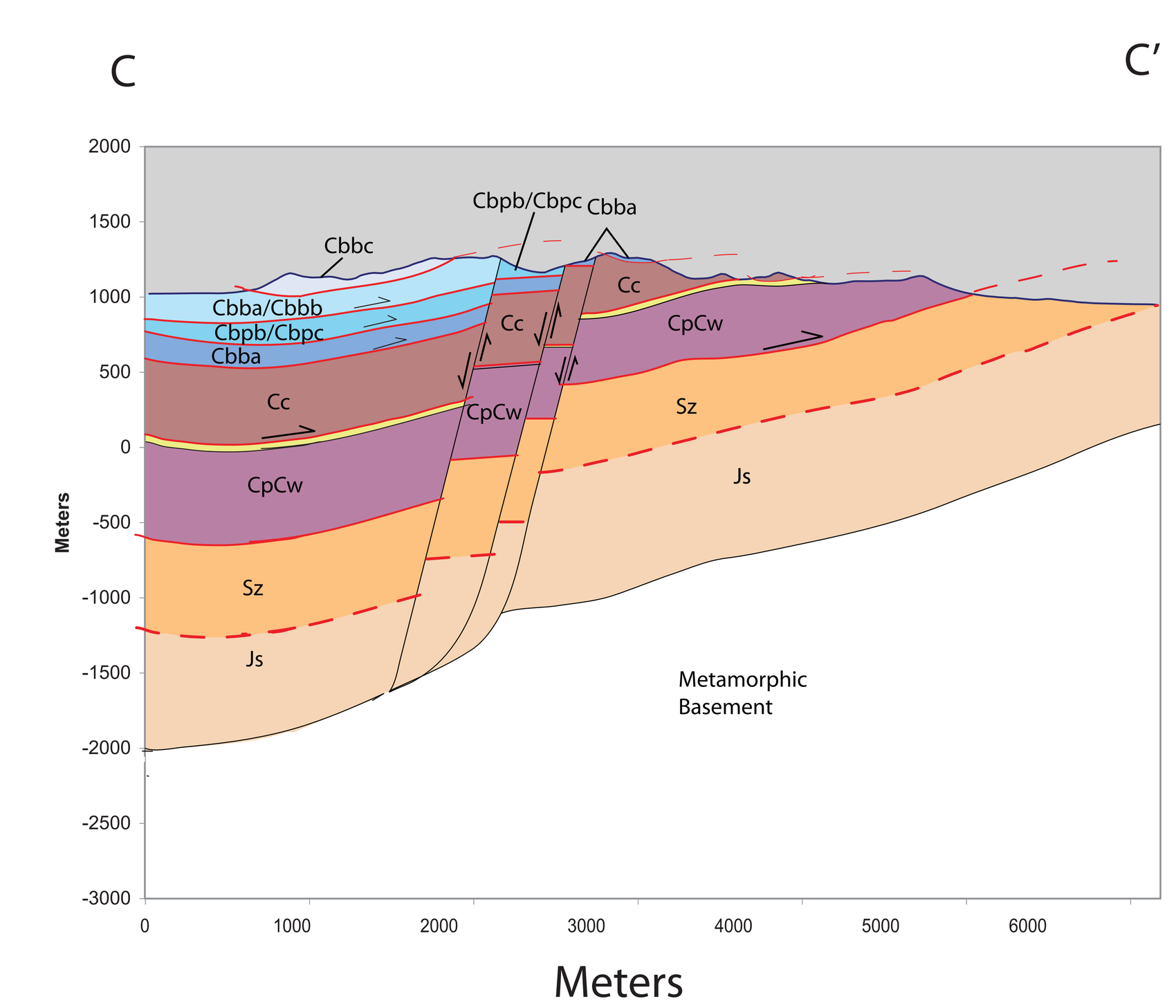


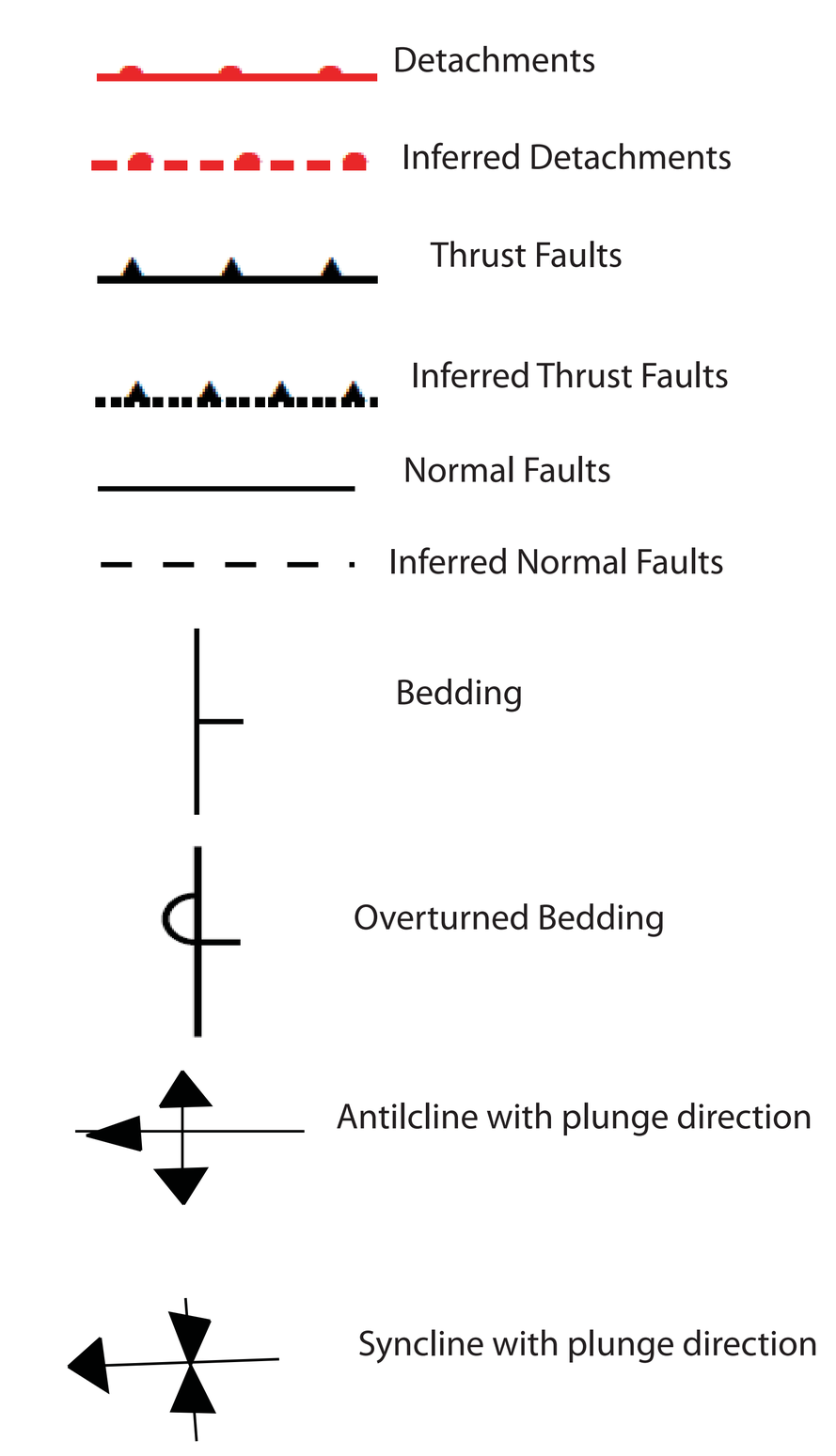
Base map was produced using the National Elevation Dataset (NED) from the USGS seamless downloadable maps. Contour intervals are in meters with an interval of 10m. All data is projected in NAD 83 Zone 11 N.





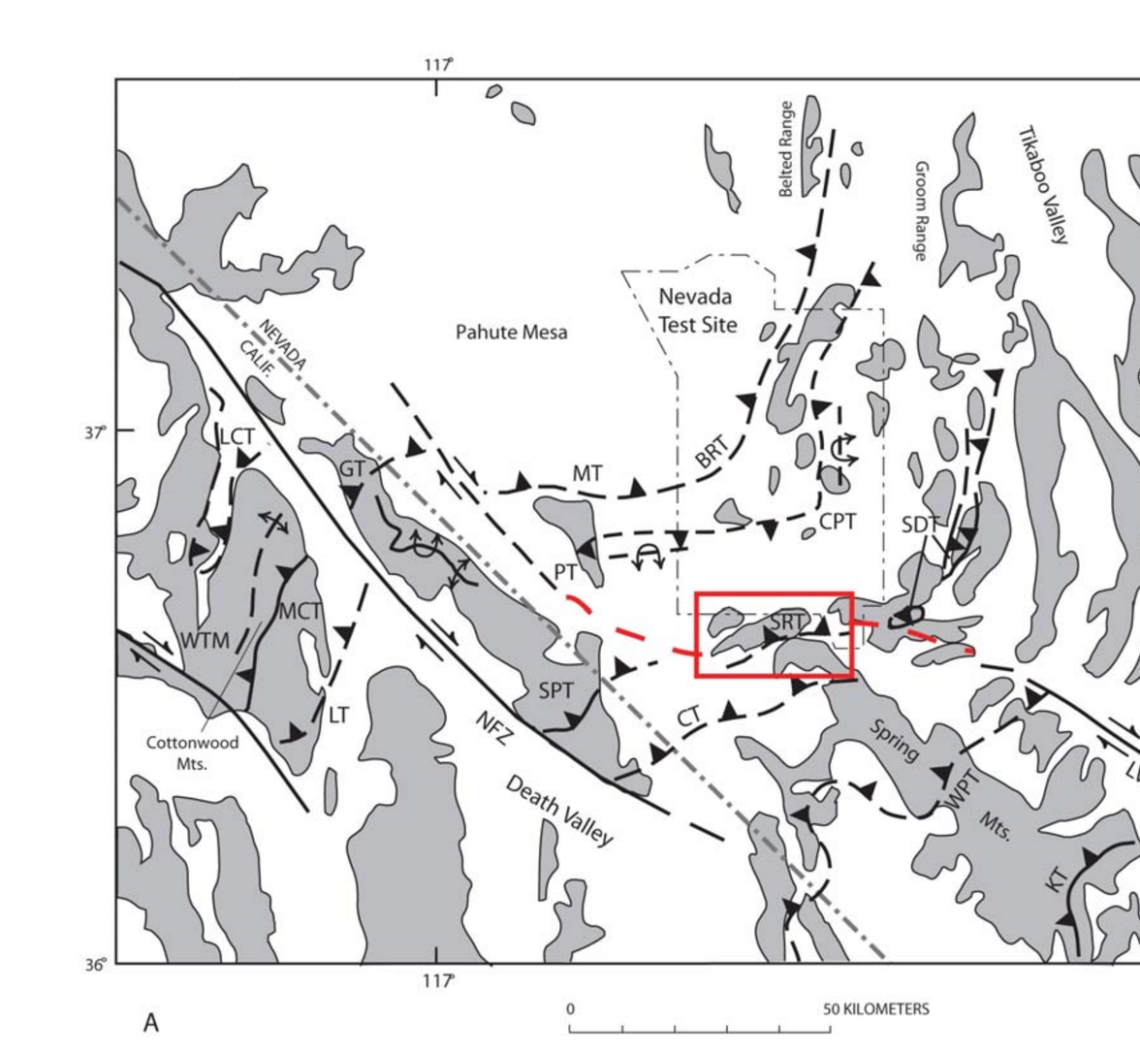


Explanation

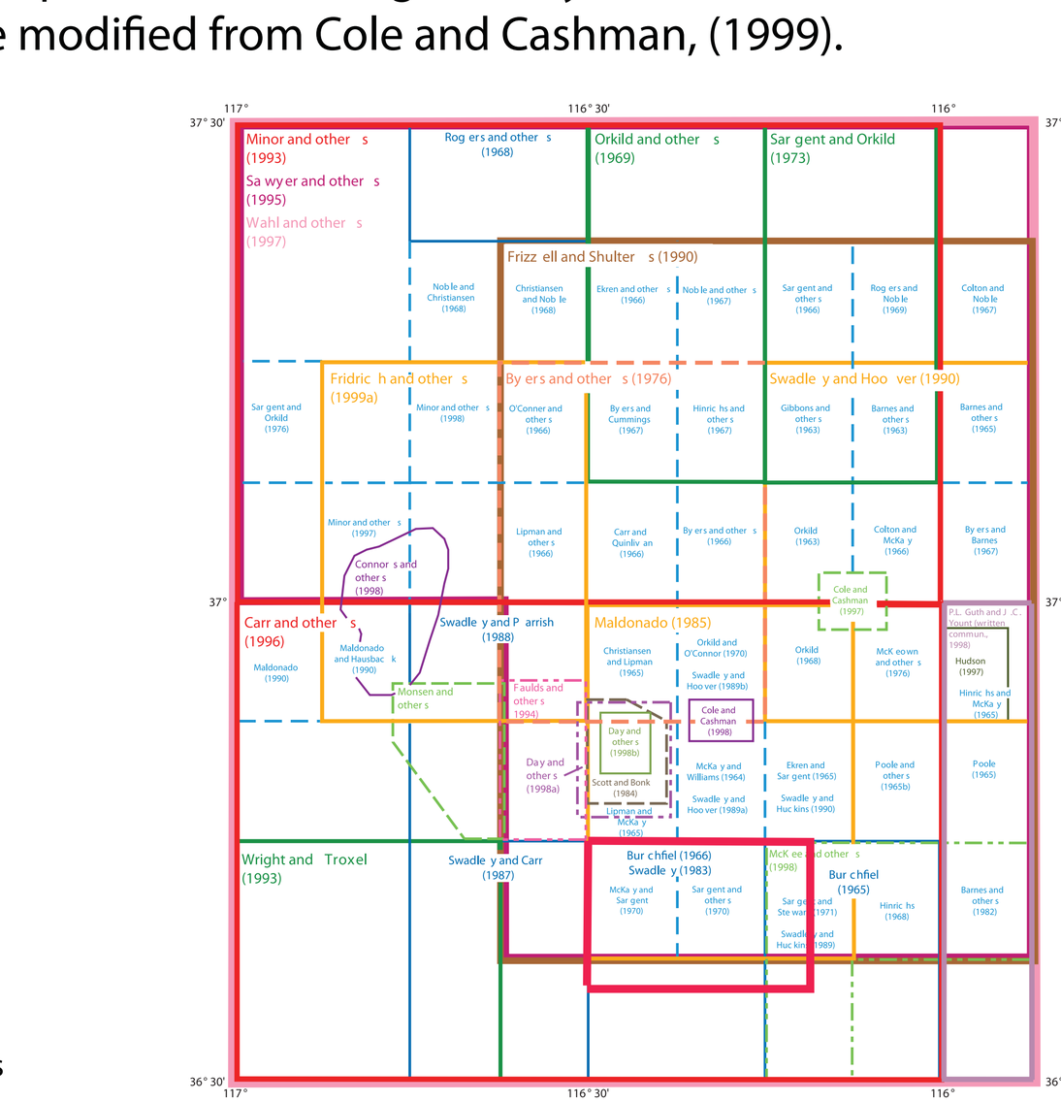


List of Map Units

- Quaternary Alluvium
- Horse Springs Formation (Oligocene)
- Tertiary Limestones (Pliocene-Miocene)
- Devils Gate Limestone (Devonian)
- Nevada Formation (Devonian)
- Middle Silurian Dolomite (Silurian) — Dsdu: Undifferentiated Silurian Dolomite
- Lower Silurian Dolomite (Silurian)
- Ely Springs Dolomite (Ordovician)
- Eureka Quartzite (Ordovician)
- Antelope Valley Formation (Ordovician)
- Ninemile Formation (Ordovician)
- Goodwin Limestone (Ordovician)
- Nopah Formation (Cambrian)
- Dunderberg Shale (Cambrian)
- Bonanza King Formation; Cbbc (Cambrian) — Cbb: Upper Undifferentiated Bonanza King (Banded Mountain member)
- Bonanza King Formation; Cbba/Cbbb (Cambrian)
- Bonanza King Formation; Cbpb/Cpbc (Cambrian) — Cbp: Lower Undifferentiated Bonanza King (Papoose Lake Member)
- Bonanza King Formation; Cbpa (Cambrian)
- Carrara Formation (Cambrian)
- Zabriskie Quartzite (Cambrian)
- Wood Canyon Formation (Precambrian-Cambrian)
- Stirling Quartzite (Precambrian)
- Johnnie Formation (Precambrian)

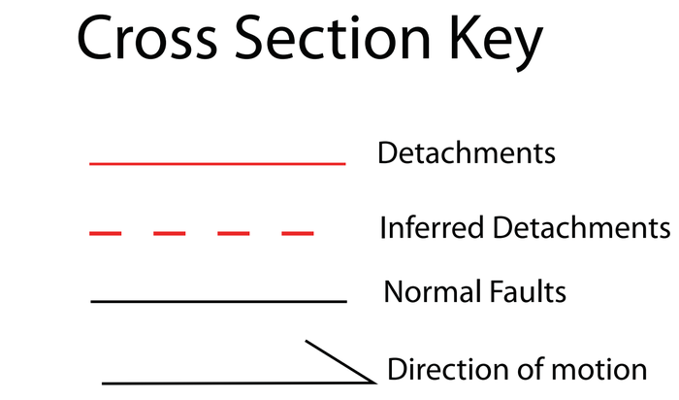


The red box denote the area of Plate 1 and Plate 2 and shows its location with respect to the Las Vegas Valley shear zone and Walker Lane domain. Figure modified from Cole and Cashman, (1999).



7.5' Quadrangle map of the Nevada test site from Slate et al., (1999). The area in the red box denotes the area of plate 1 and plate 2. 15' Quadrangle map from Burchfiel, 1965 was also used in map compilation.

Cross Section Key



Description of Map Units

Tsl-Tertiary Limestone (Pliocene-Miocene?) Tan to brownish microcrystalline limestone and contains volcanic fragments.
Hsp-Horse Spring Formation (Oligocene (Sargent and Stewart, 1971)/Miocene? (Barnes et al. 1968)) Laminated to thick bedded dense limestone with minor amounts of siltstone, sandstone and tuff.
Qal- Quaternary Alluvium: Poorly sorted unconsolidated sand to cobble sized sediments.

Dvg-Devils Gate Limestone (Devonian) (300 m) Predominantly thick-bedded gray to blue-gray limestone. The base contains thick-bedded limestones interbedded with medium-bedded dolomites. The upper 30 m is white vitreous quartzite (Burchfiel, 1964)

Dnu-Nevada Formation (Devonian) (500 m) The lower 130 m is olive-gray medium bedded dolomite at the base and a coarse grained quartzite with minor dolomitic and silty interbeds in the upper 270 m contain alternating bands of light and dark gray dolomite (Burchfiel, 1964) most of which is heavily brecciated.

Dsdu-Upper Unit (275 m) Light-olive-gray to olive-gray; some medium-light-gray bands show faint laminae; finely to coarsely crystalline; thick- to very thick- bedded in upper half, massive in lower half (Burchfiel, 1964). Brecciation is typical throughout the entire unit.

Sdm-Middle Unit (170 m) Light- to medium-dark gray finely crystalline, laminated to thin bedded dolomite with common chert layers and lenses in upper and lower part; quartz rich siltstone constitutes the lower 15 m, light-gray to yellowish weathered dolomite comprises the upper part (Sargent and Stewart, 1971). Fossils are abundant throughout.

Sdl-Lower Unit (25 m) Light- to medium-olive-gray in upper park, dark- to dark-olive-gray in lower part; finely to coarsely crystalline, rare chert lenses in upper part; chert layers as thick as 2 inches with some chert lenses and nodules in basal few meters; laminated to thin bedded. Abundant recrystallized columnals and coral heads as much as 1 foot in diameter (Sargent and Stewart, 1971).

Oes-Ely Springs (Upper Ord) 140 m: Upper 20-25 m light-olive-gray, thin-to thick bedded, burrow-mottled, variably bioclastic, containing ooids, oncoids. Remaining ~120 m of the Ely Springs is medium-dark-gray, burrow-mottled, irregularly thin- to thick-bedded with common planar laminations. Quartz sand is common at the base and the top (Burchfiel, 1964; Stewart, 1971).

Oe-Eureka Quartzite (Mid Ord) 140 m: Light to moderate brown weathering, white to light brown, thin to thick bedded, fine to medium grained, rounded to subrounded, moderately well sorted quartzite and friable sandstone (Burchfiel, 1964). Lower 10 m is predominantly sandy dolomite (Sargent and Stewart, 1971). Contains tabular planar crossbeds and, less commonly trough crossbeds (Burchfiel, 1964). Cross beds about .5 m thick on average. Skolithus burrows. Detached from the underlying Antelope Valley. A well bedded outcrop is hard to find as it is typically intensely fractured or brecciated.

Pogonip (Mid Ord-Upper Cam)

Oa-Antelope Valley (345 m): medium- and dark-gray, finely to coarsely crystalline, in well-defined beds a few cm to a few m; thinly crinkled to curved laminae of pale-red and yellowish-gray silty limestone constitute about 10% of the formation. Abundant fossils. Straight and coiled cephlapods common in middle 120 m. Lower 120 m contain layers of nodular chert as thick as 6 inches. The total thickness is similar to the type section at Antelope Valley, however in the Specter Range the unit is locally much thinner. Ninemile detachment permeates into lower layers of the Antelope Valley.

On-Ninemile (60 m): pale-olive-gray and gayish-red laminatedto thin-bedded claystone; minor thin lenses of brownish-gray aphanitic to finely crystalline abundantly fossiliferous limestone; sparse chert. Forms slopes with thin ledges. At its type section at Ninemile Canyon in Eureka County, (Merriam, 1963) the unit is as thick as 150 m. Detachment at its base often causes the section of Ninemile to be missing.

Og- Goodwin (150 m): Medium- to light-gray, rusty-weathering; local red mottling; chert in siliceous limestone laminae in upper part and as nodules in lower part; locally dolomitic especially at base. The type section at Ninemile Canyon is nearly 550 m thick (Merriam, 1963), however thicknessnes measured in Eureka are approximately 200 m less and better representative of the units average thickness. However in the Specter Range it is still approximately 200 m less. Lower contact placed at base of thin-bedded dolomite.

Cn-Nopah (Upper Cam) (425 m): The lower 120 m is thin bedded silty and cherty limestone and dolomite. The beds are commonly crenulated. The upper 300 m has distinctive light and dark gray alternating striped of thick bedded limestone and dolomite (Burchfiel, 1964). In some places the alternating bands are heavily brecciated and thinned suggesting stratigraphic detachment so that the conspicuous stripes remain cohesive with internal brecciation.

Cnd-Dunderberg Shale (30 m): olive-gray to reddish-brown fissle shale interbedded with thin beds of gray fossiliferous limestone (Burchfiel, 1964). This unit is often missing in the stratigraphic section within the Specter Range and serves as the main unit for the Nopah detachment.

Bonanza King Formation (Upper and Mid Cambrian):
Banded Mountain Member:

Cbbc (160 m) Predominately limestone with minor amounts of dolomite. Light-gray to yellowish gray and silty laminae consititute the upper half. Beds are thin- to medium bedded in the lower half (Sargent and Stewart, 1971). This unit is also detached.

Cbbb (480 m) Predominately dolomite with minor amounts of limestone. Light- to dark- gray alternating stripes from .5-3 m thick is the units defining characteristic. Dolomite is laminated to thin bedded, with locally silty and cherty layers (Sargent and Stewart, 1971).

Cbba (90 m): limestone, silty limestone, and minor dolomite; upper 60 m is dark-gray cliff-forming silty limestone with very thin wavy bedding, becomes more silty downward. The lower 30 m is dominantly grayish-orange slope-forming silty laminated to very thin bedded limestone with decreasing amounts of silt and clay towards the base (Sargent and Stewart, 1971). This unit is detached from the Papoose Lake member along silty horizons near the base.

Bonanza King Formation (Upper and Mid Cambrian):
Papoose Lake Member:

Cbpc (275 m): dolomite and limestone, laminated to thick-bedded; dolomite is light gray to very pale orange, contains scattered chert nodules in uppermost 40m. Limestone is dark to medium gray; local silty interbeds and bleached units are interspersed throughout the unit(Sargent and Stewart, 1971). Base is locally brecciated with minor brecciation persisting throughout weak layers of the unit probably related to the detachment of the unit below it.

Cbpb (55 m): silty limestone and dolomite, pale-yellowish-orange, thin-bedded, forms slope; prominent silty horizons at top, middle and base of unit (Sargent and Stewart, 1971). Also detached from its base and through out silty horizons in the unit. Detachment likely permeates through the entire units to the next highest unit.

Cbpa (150 m): limestone, medium to dark gray with irregular discontinuous dolomitic mottling. Upper part generally contains 15-30 m of light gray bleached limestone (Sargent and Stewart, 1971). Contact is detached from the silty laminae of the underlying Carrara Formation.

Cc-Carrara Formation (Mid and Lower Cambrian) (480 m)**:** Interbedded limestone, siltstone, sandstone, and shale in the lower two-thirds with fine grained mica rich sandstones and quartzites. Silty units decrease in abundance downward. Upper part is gray, platy limestone containing yellow- and red-weathering silt of clay partings (Sargent and Stewart, 1971). Its contact with the overlying Bonanza King is easily recognizable as the slope-forming, yellowish, silty limestone ends abruptly and massive cliff-forming gray carbonates of the Bonanza King begin.

Cz-Zabriskie Quartzite (Cambrian) (50 m)**:** gray to pink, fine- to medium- grained, cross-laminated; contains some interbeds of olive-gray siltstone and shale; locally includes fine-grained micaceous standstone in upper part (Sargent and Stewart, 1971). The Zabriskie is often missing and almost always intensely fractured to brecciated. It is the principal detachment horizon from which the overly Carrara detaches.

CpCw-Wood Canyon (Late Proterozoic to Early Cambrian) (800 m)**:** Quartzite, sandstone, siltstone and shale. Slope forming rather than cliff forming Stirling. Top 7-8 meters is a thick ledge of white vitreous quartzite correlative with the Zabriskie (Burchfiel, 1964). Shaly and silty units increase in abundance in upper part of formation. Basal part of formation is tan weathering silty sandstone (Page et al., 2005). Likely detached from the Stirling Quartzite.

Sz-Stirling Quartzite (Late Pro) (900 m)**:** mostly purple, pink, maroon, gray, and white conglomeratic quartzite, quartzite sandstone, with minor beds of light to darn brown micaceous siltstone. Lower 20 m mostly white quartzite. Unit locally metamorphosed to low greenschist facies in northern Spring Mountains (Page et al., 2005).

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Geologic Map of the Specter Range, Nye County, Nevada

Lindsay Williams, 2011