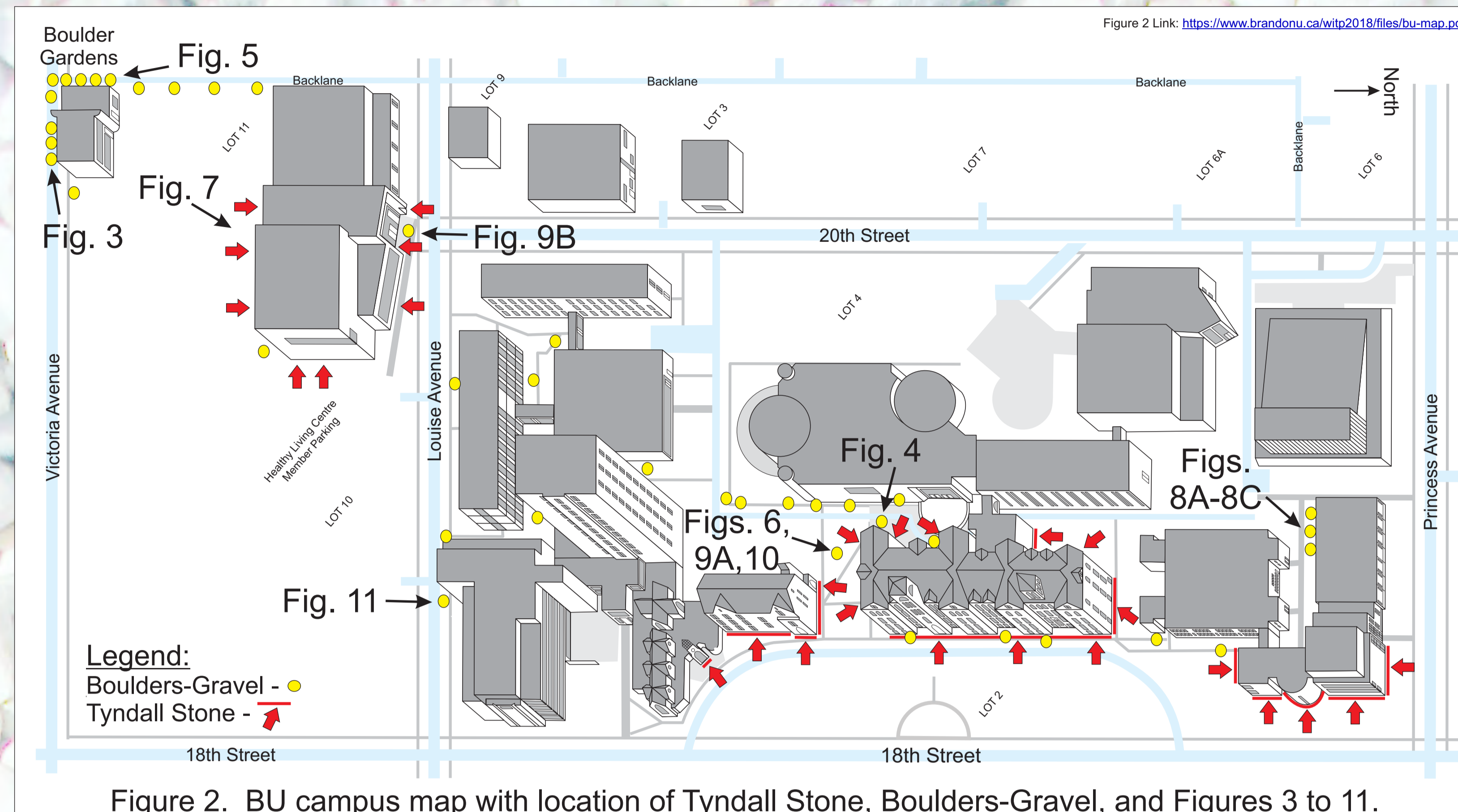
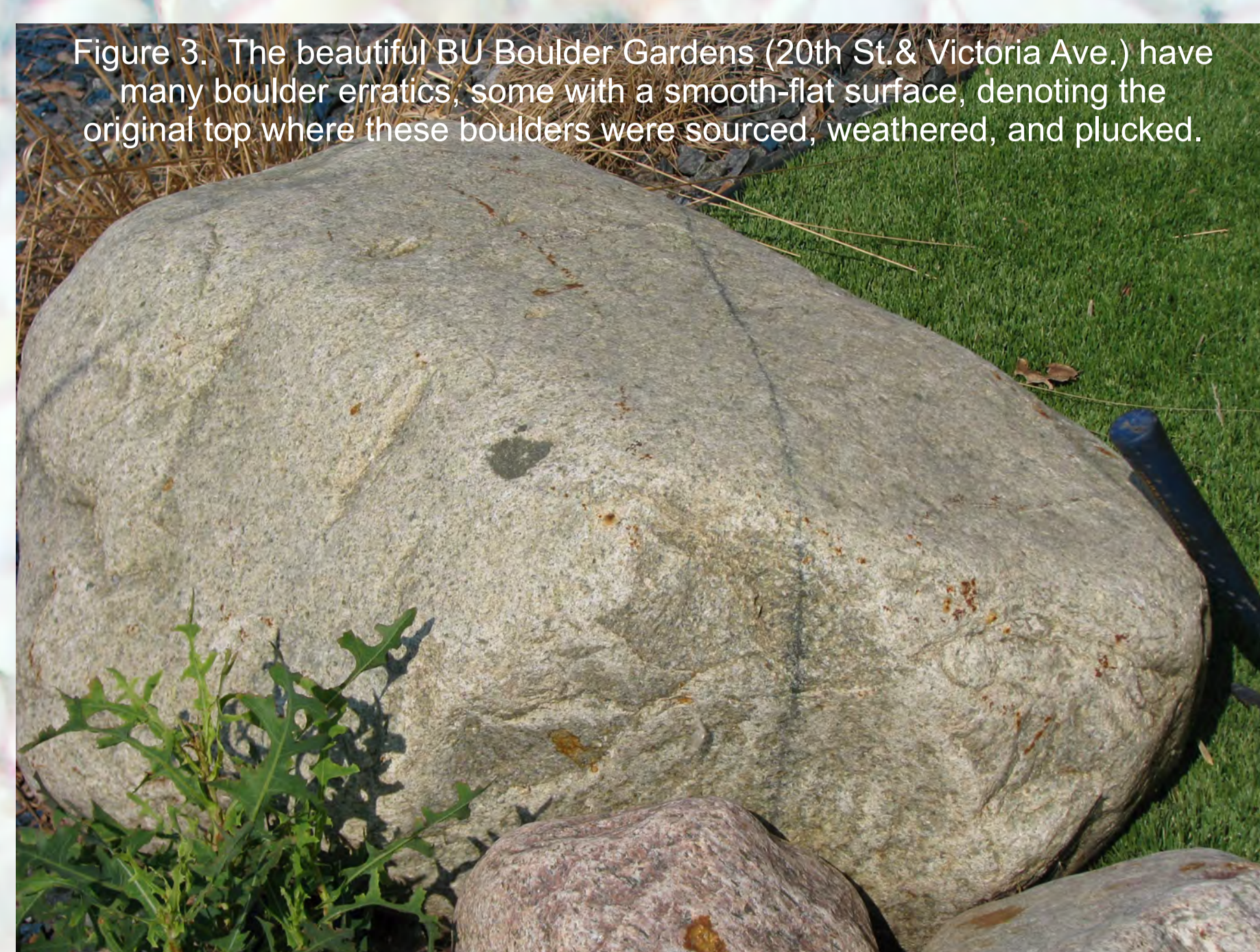
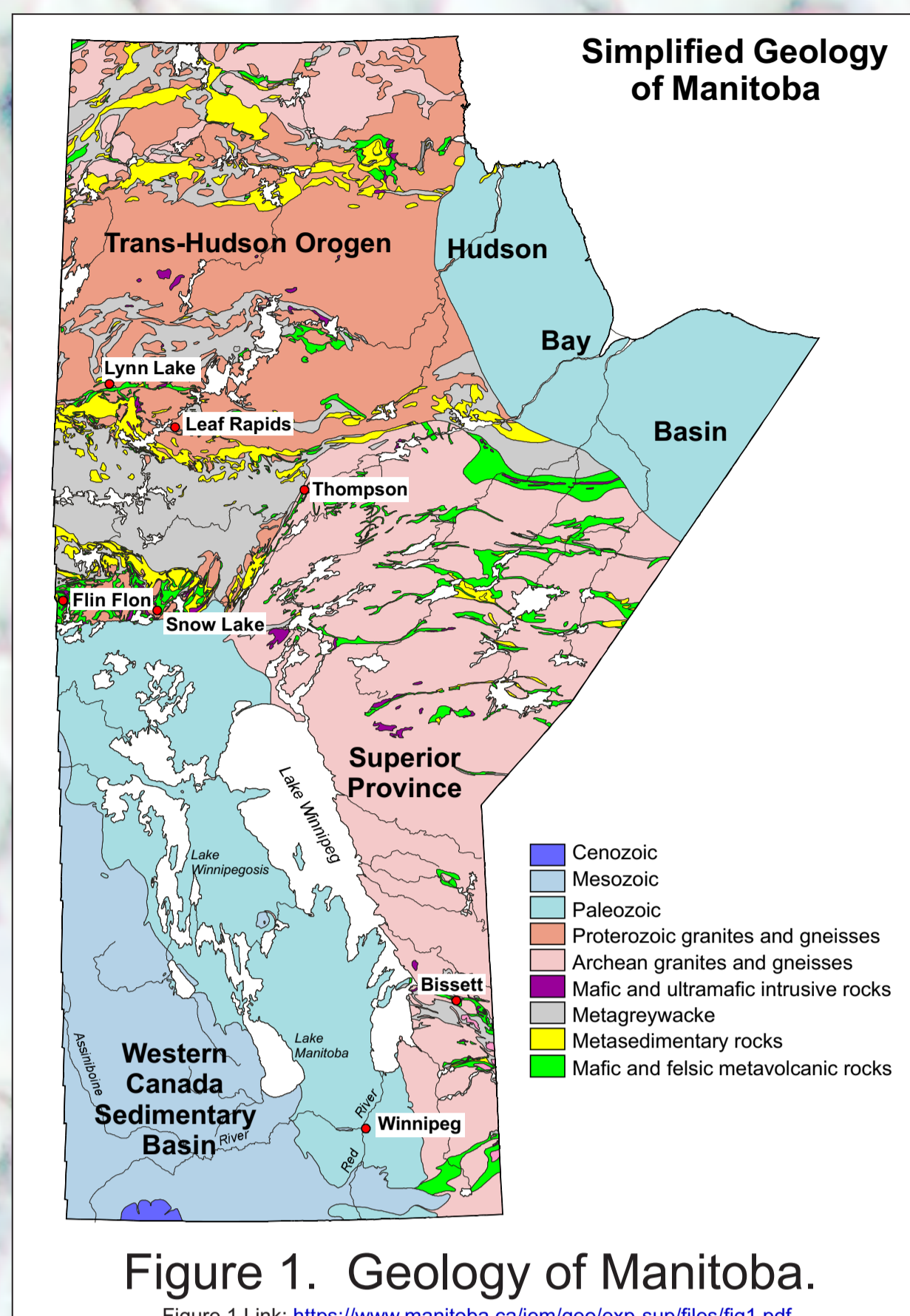
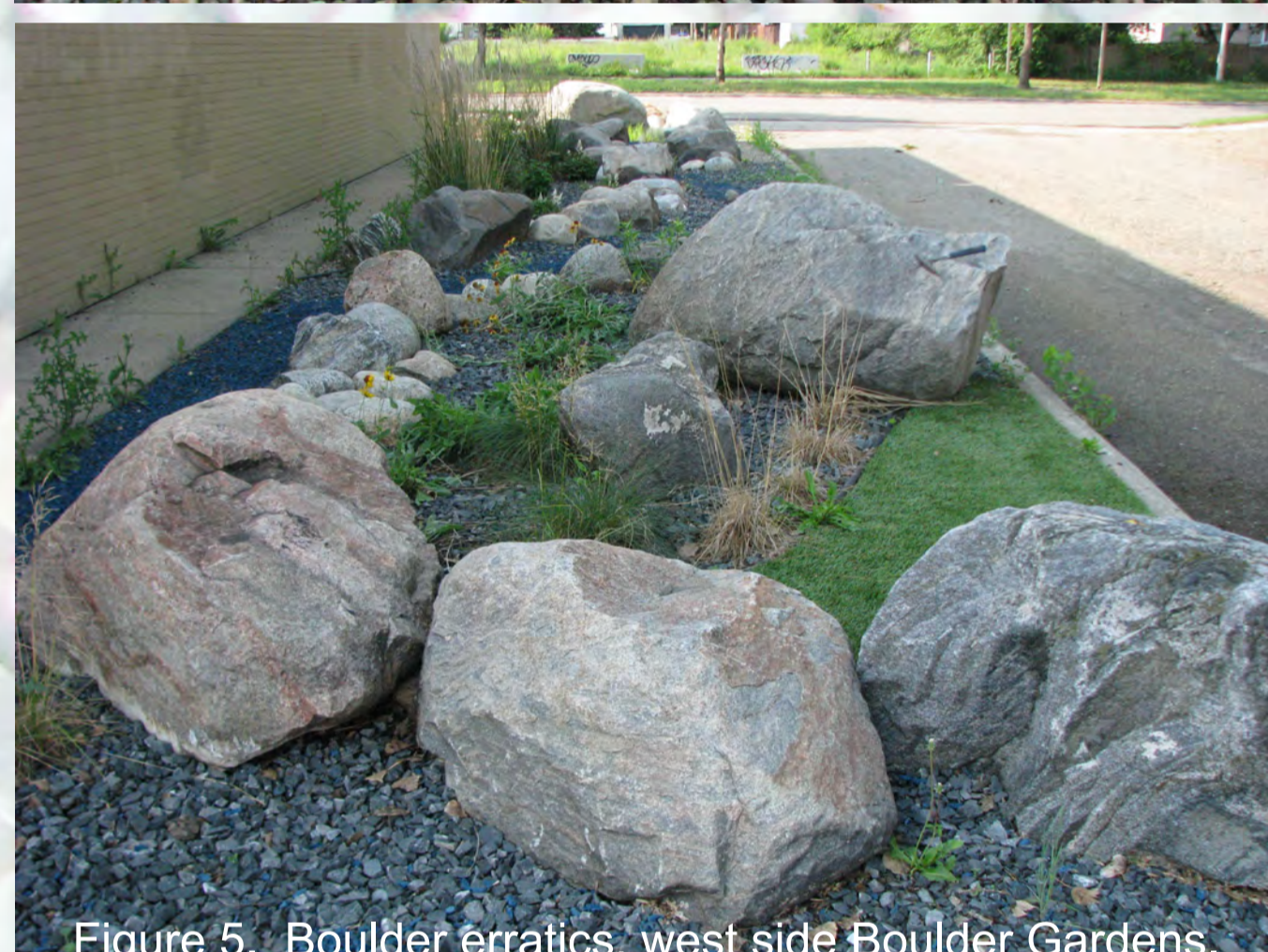
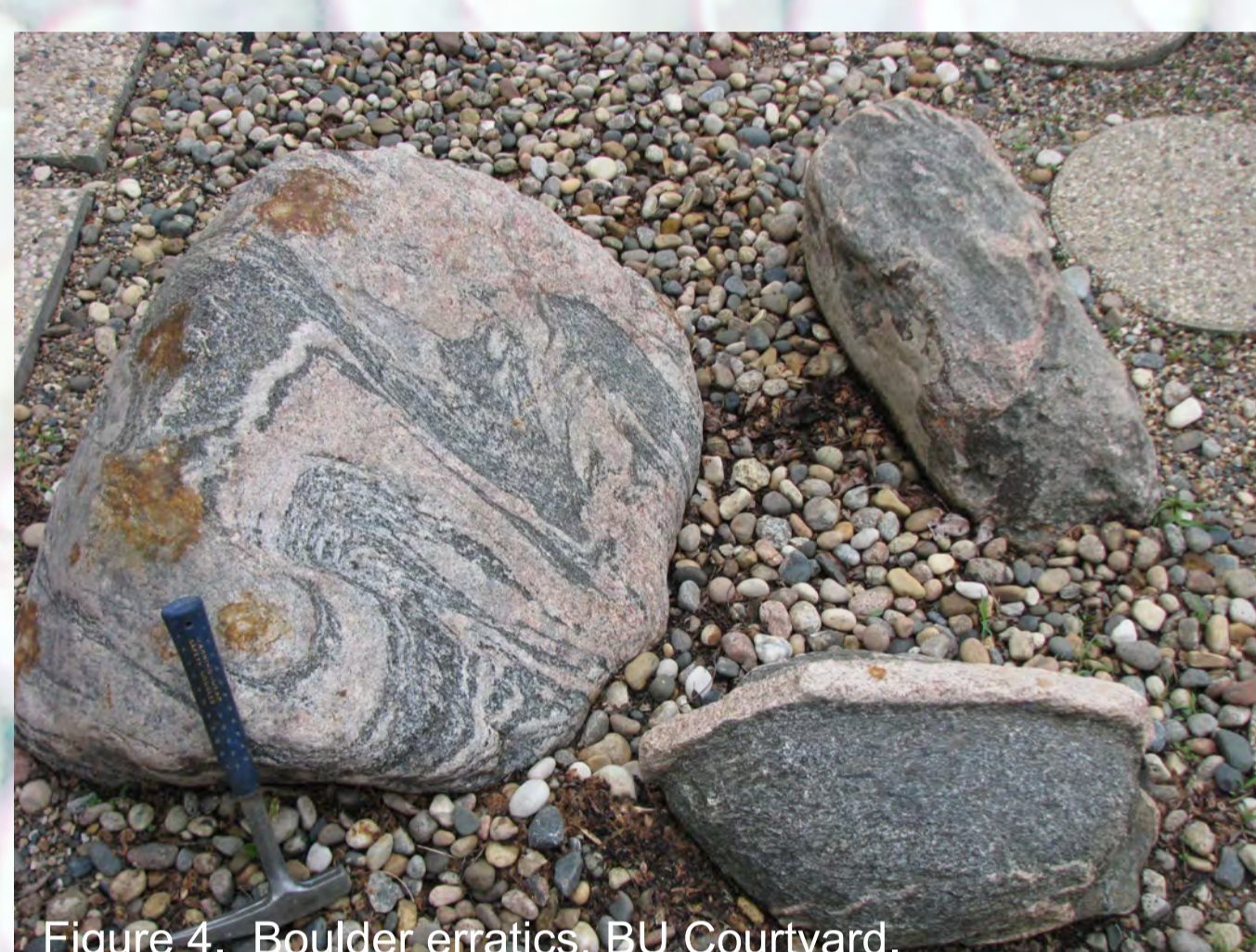


The Brandon University (BU) campus has a wide variety of rocks with examples of all three rock types: igneous, metamorphic, and sedimentary (Figures 1, 2). From the world famous Tyndall Stone which is used as building foundations, steps, window ledges, and exterior-interior walls, to eye-catching deposits of glacially transported boulder erratics and gravel, our BU campus offers up a rich and diverse geology.



Boulder Erratics

Many large campus boulders were excavated during building construction (Figures 2, 3, 4, 5). These glacially transported boulder erratics were dropped onto the landscape during the last Ice Age. Glaciers plucked the igneous (e.g., granite) and metamorphic (e.g., gneiss) rocks from the Precambrian Shield in Central-to-Northern Manitoba and transported them south, eventually dropping them 400-1000 km away from their source.



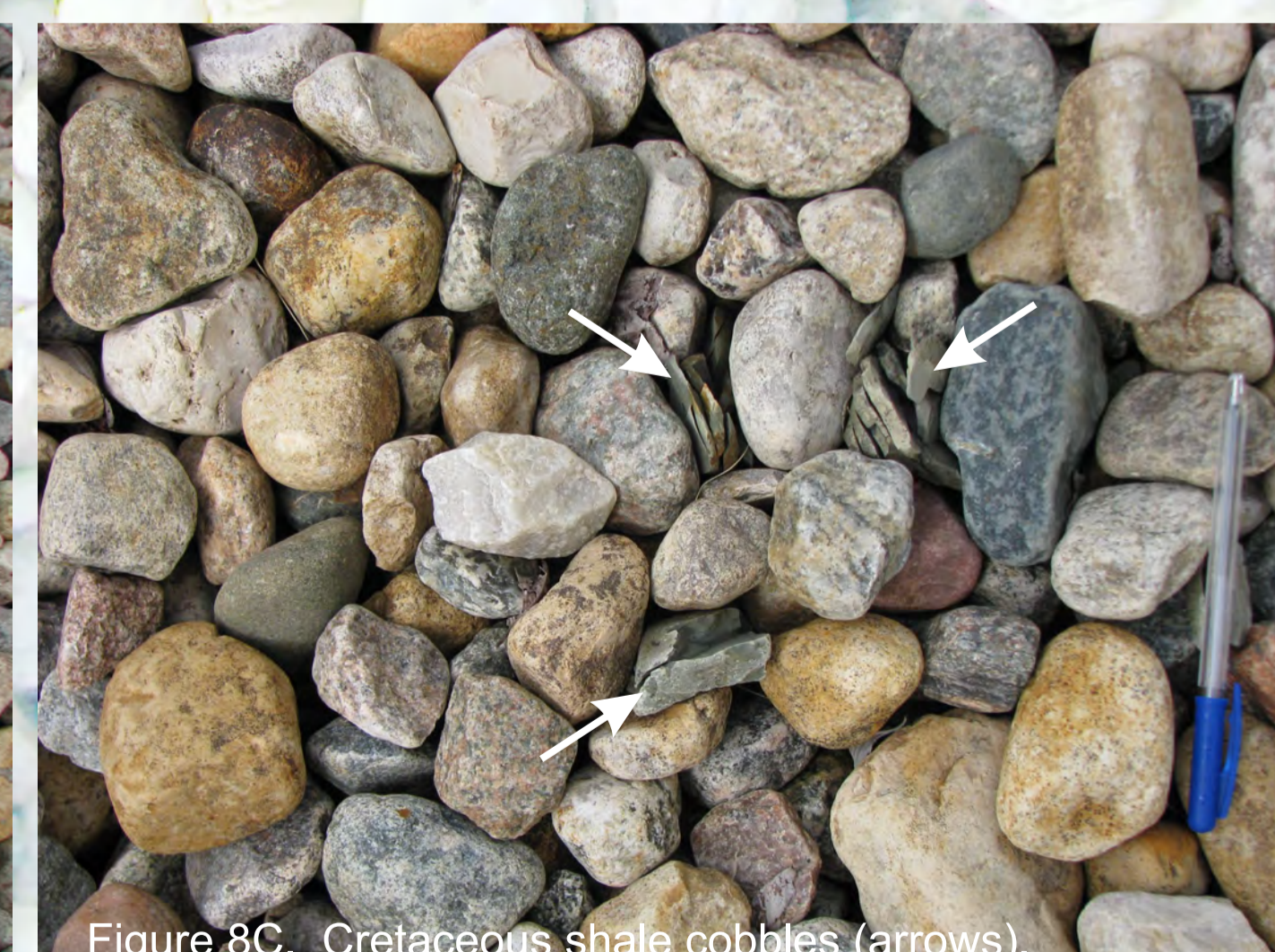
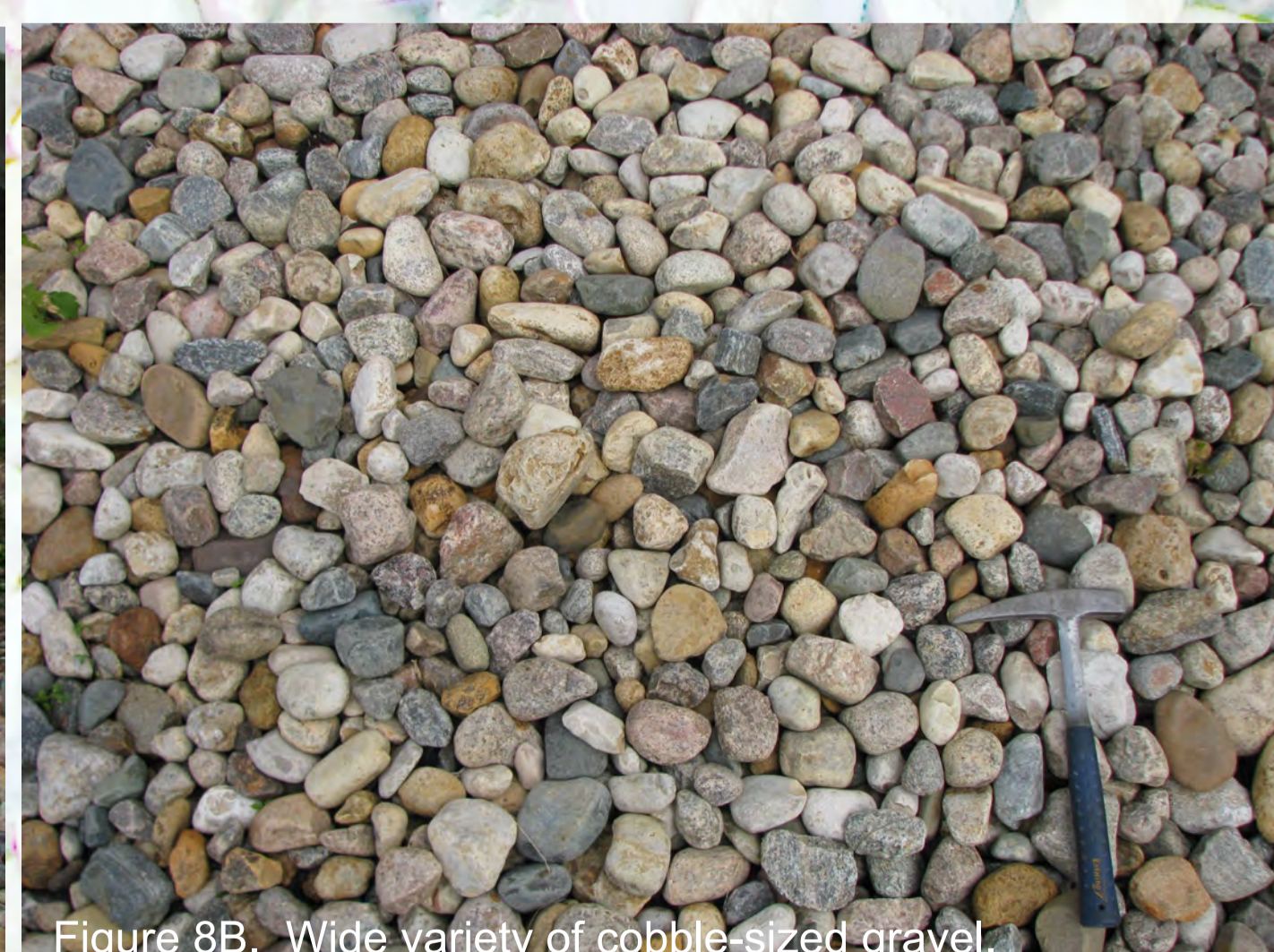
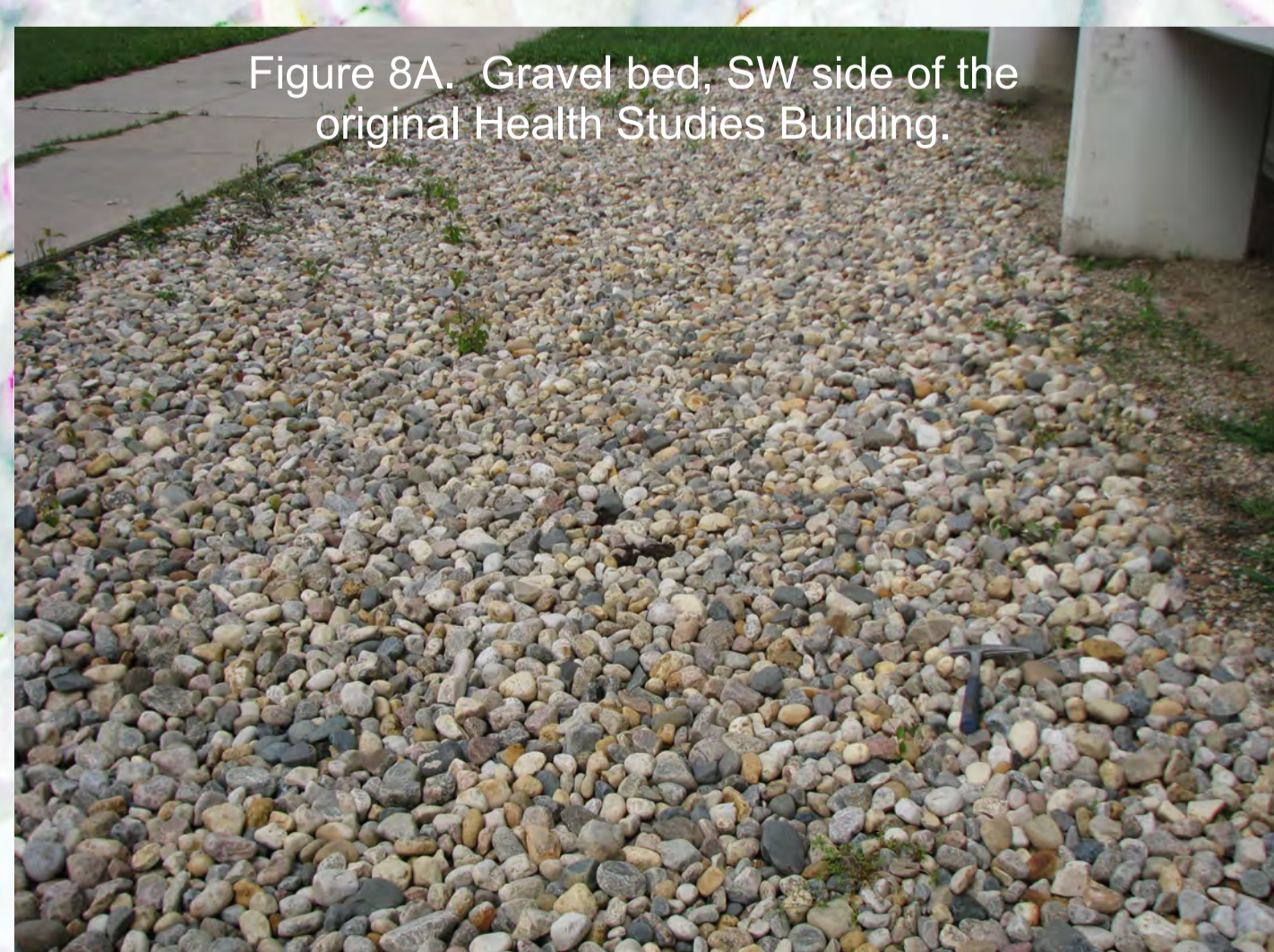
Tyndall Stone

Tyndall Stone is a fossiliferous-rich, dolomitic-limestone from the Selkirk Member of the Late Ordovician Red River Formation. Tyndall Stone originated in shallow tropical waters some 450 million years ago when MB was equatorial and global sea level was over 200 m higher than today. Body fossils are ubiquitous and include a variety of corals, nautiloids, gastropods (snails), and stromatoporoids. Trace fossils are pervasive and are marked by the grey-buff-coloured dolomitic mottling that demarcates shrimp-like burrows. Numerous campus buildings have Tyndall Stone (Figures 2, 6, 7):



Gravel

Various deposits of naturally-sourced gravel occur on BU's campus, which were quarried, sieved, and sorted from local pits. The most spectacular are the large cobble-sized gravels along the SW corner of the original Health Studies Building (Figures 8A-8C). The well rounded limestone and dolomite cobbles were sourced from Paleozoic outcrops in the Interlake region, while the igneous (e.g., granite) and metamorphic (e.g., gneiss) cobbles were derived from the Precambrian Shield further to the N-NE (Figure 1). The shale cobbles are the only local rock type and are from the Cretaceous-aged Riding Mountain Formation. Pleistocene-aged ice sheets picked-up the cobbles, transported them to the S-SW, and deposited them on the landscape. Glacial meltwaters sorted and rounded the gravels before final deposition in local gravel pits. Crushed rock is also on campus (Figures 9A-B).



Ceremonial Fire Pit

The outdoor Turtle Fire Ceremonial Fire Pit has 8 large rectangular cut blocks of Manitoba-sourced Paleozoic dolomitic-limestone. Trace fossils are exposed on block tops (Figure 10).

Lepidolite Boulder

The rock gets its purple colour (Figure 11) from the mineral lepidolite, which is the most abundant lithium-bearing mineral on Earth. Lithium is in great demand as society shifts into a low carbon future.





BU Campus Geology

The Brandon University (BU) campus has a wide variety of rocks with examples of all three rock types: igneous, metamorphic, and sedimentary (Figures 1, 2). From the world famous Tyndall Stone which is used as building foundations, steps, window ledges, and exterior-interior walls, to eye-catching deposits of glacially transported boulders and gravel, our BU campus offers up a diverse geology.

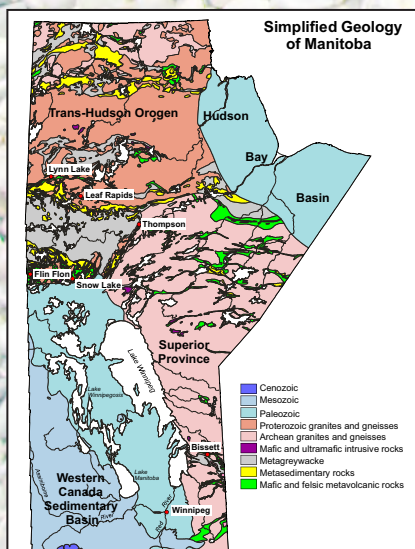


Figure 1. Geology of Manitoba.

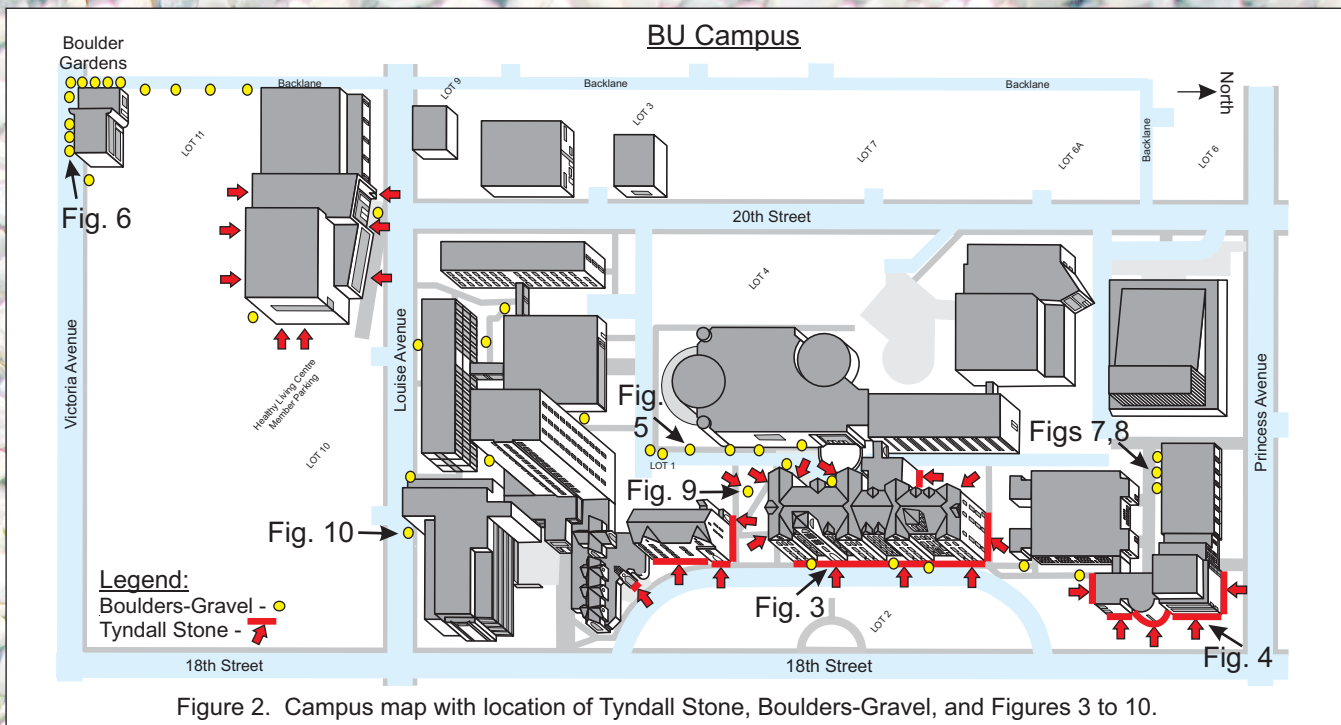


Figure 2. Campus map with location of Tyndall Stone, Boulders-Gravel, and Figures 3 to 10.

Tyndall Stone

Tyndall Stone is a fossiliferous-rich, dolomitic-limestone from the Selkirk Member of the Late Ordovician Red River Formation. Tyndall Stone originated in shallow tropical waters some 450 million years ago when Manitoba was equatorial and global sea level was over 200 m higher than today. Body fossils are ubiquitous and include a variety of corals, nautiloids, gastropods (snails), and stromatoporoids. Trace fossils are pervasive and are highlighted by the grey-buff-coloured mottling that demarcates shrimp-like burrows. Numerous campus buildings have Tyndall Stone steps, foundations, and walls (Figures 2, 3, 4).



Figure 3. Tyndall Stone steps, Clark Hall. Cody pointing to a 75 cm long nautiloid fossil embedded on the top step.



Figure 4. Tyndall Stone walls, Health Studies Complex.



Figure 5. Plutonic igneous boulder erratic, BU Courtyard.

Boulder Erratics

Many large campus boulders were excavated during construction of various buildings (Figures 5, 6). These glacially transported erratics were dropped onto the landscape during the last Ice Age. The glaciers plucked the igneous (e.g., granite) and metamorphic (e.g., gneiss) rocks from the Precambrian Shield in Central-to-Northern Manitoba and transported them southwards, eventually dropping them 400-1000 km away from their source.



Figure 6. The spectacular BU Boulder Gardens (20th St. and Victoria Ave.) consists of many erratics.



Figure 7. Gravel bed, SW side of the original Health Studies Building.



Figure 8. Cobble-sized gravel bed. All three rock types are visible.

Gravel

Various deposits of naturally-sourced gravel occur on BU's campus, which were quarried, sieved, and sorted from local pits. The most spectacular are the large cobble-sized gravels along the SW corner of the original Health Studies Building (Figures 7, 8).

The well rounded limestone and dolomite cobbles were sourced from Paleozoic outcrops in the Interlake region, while igneous (e.g., granite) and metamorphic (e.g., gneiss) cobbles were derived from the Precambrian Shield further to the N-NE (Figure 1). The shale cobbles are the only local rock type and are from the Cretaceous-aged Riding Mountain Formation. Pleistocene-aged ice sheets picked-up the cobbles, transported them to the S-SW, and deposited them on the landscape. Glacial meltwaters further sorted and rounded the gravels before final deposition in the local gravel pits.

Ceremonial Fire Pit

The outdoor Turtle Fire Ceremonial Fire Pit has 8 large rectangular cut blocks of Manitoba-sourced Paleozoic dolomitic-limestone. Trace fossils are beautifully exposed on some block tops (Figure 9).



Figure 9. Turtle Fire ceremonial fire pit limestone block with shrimp-like burrows (*Thalassinoides*). Nickel coin for scale.

Lepidolite Boulder

The rock gets its purple colour (Figure 10) from the mineral lepidolite, which is the most abundant lithium-bearing mineral on Earth. Lithium is in great demand as society shifts into a lower carbon future.



Figure 10. Lepidolite boulder, Tanco Mine, Bernic Lake, MB.