

Old Fruita Bridge: Engineering Geology to the Rescue!

Old Fruita Bridge in the fall of 2009

The Old Fruita Bridge is a 465 foot-long Three-Span Pinned Parker Through Truss Bridge.

- The three spans or sections on the bridge are held together by pins, a method used until the 1920s.
- A truss bridge is made of trusses, structures assembled of straight pieces arranged in triangles,

which can take compression and/or tension.

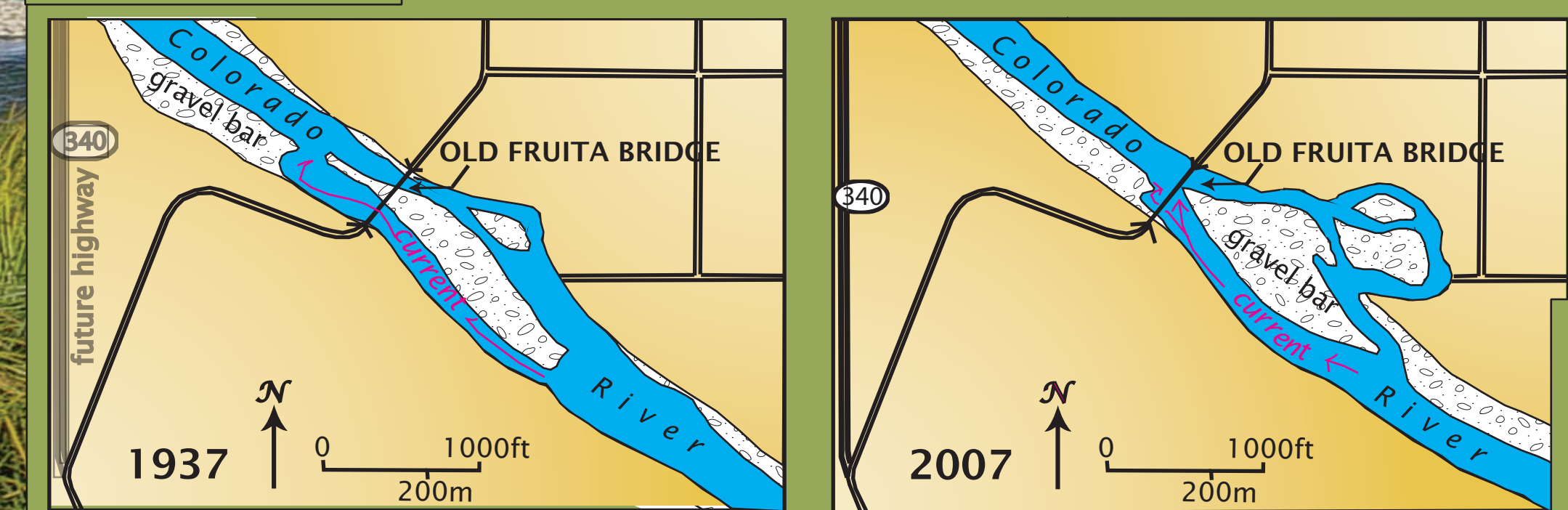
- A through truss bridge is one where the roadway passes through the truss, rather than over or under it.
- A Parker truss has vertical pieces, and diagonals

that slope down toward the center, with a polygonal upper chord which makes the top of the truss look roughly curved.

- Parker trusses are particularly strong, and are used for wide spans.



The Toll of Years



As you can see in these maps from 1937 (left) and 2007 (right), the Colorado River's gravel bars have changed over the years, shifting the river's course with them. Eventually, the river became aimed toward the bridge's northeastern pier, undermining it.

A Little History



Fruita Historic Preservation Board photo



Vera Mulder photo



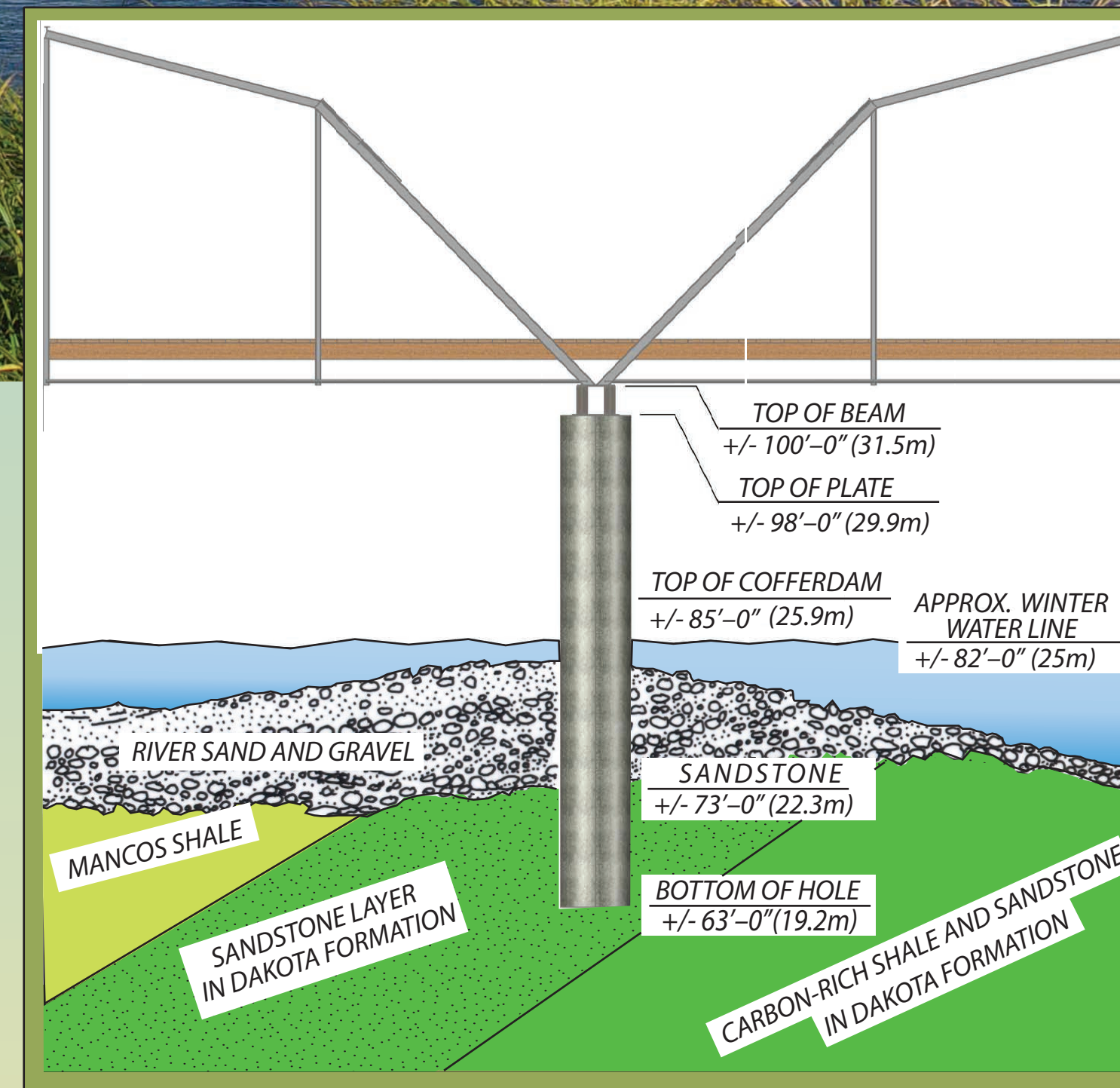
Vera Mulder photo

The Old Fruita Bridge was built in 1906 and 1907 (left), and used until 1970. Only three bridges like this remain in the US. At center, by 2005 the northeast pier had begun to shift and lean, twisting the bridge's deck dangerously.

At right, in early 2009 when the river was low, the pier was replaced. A platform of riprap (angular chunks of rock) was built to work on. Then a crane lifted and held the sagging part of the bridge while the old pier was removed and the new pier was built.



The bridge's most important use was hidden beneath it! Fruita owns a spring south of Glade Park for clean drinking water. A 23 mile (40 km) wooden pipeline was built across the high mesa and down the side of Fruita Canyon. The water was carried across the Colorado River by suspending the pipeline under the bridge's deck. The pipeline is no longer there.



Engineer's Drawing of the Reconstructed South Pier

The new pier is seated in a solid layer of sandstone, a much stronger foundation than the gravel bar that was beneath the original pier.

