

Bridges 101: What Makes up a Bridge

Executive Summary There are several types of bridges, but herein presented are the basic bridge components.

What's a bridge? Basically, from the dictionary, a bridge carries a road across an obstacle. On top it could be a railway, or it could be a walking path, or it could be a vehicle roadway. And down below it could be going over a river or it could be a ravine, or it could be another road. Everyone knows what a bridge is; however, not everyone knows the names of the components of a bridge.

Component Names to a Bridge Every bridge is different whether it's simple span, continuous span, suspension, segmental, precast, cast in place, arch – there are several types and names of bridges. The following page shows a typical continuous span precast girder cast-in-place deck bridge with drilled shaft foundations.



Photo courtesy of greenroads.org.

Elevation and Section Views Notice on the following page there is an elevation and section view. These show various jargon for bridge construction and bridge nomenclature. Review at your leisure and listen to the audio!

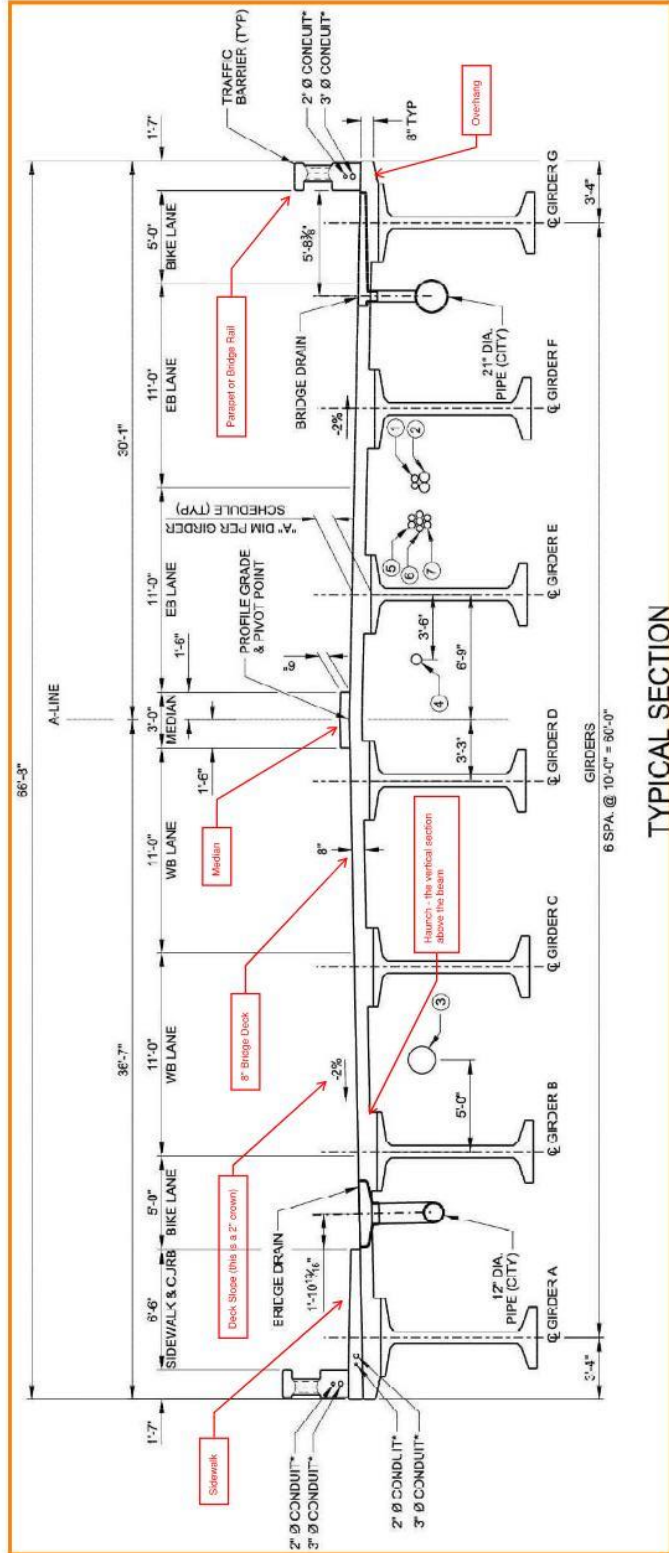
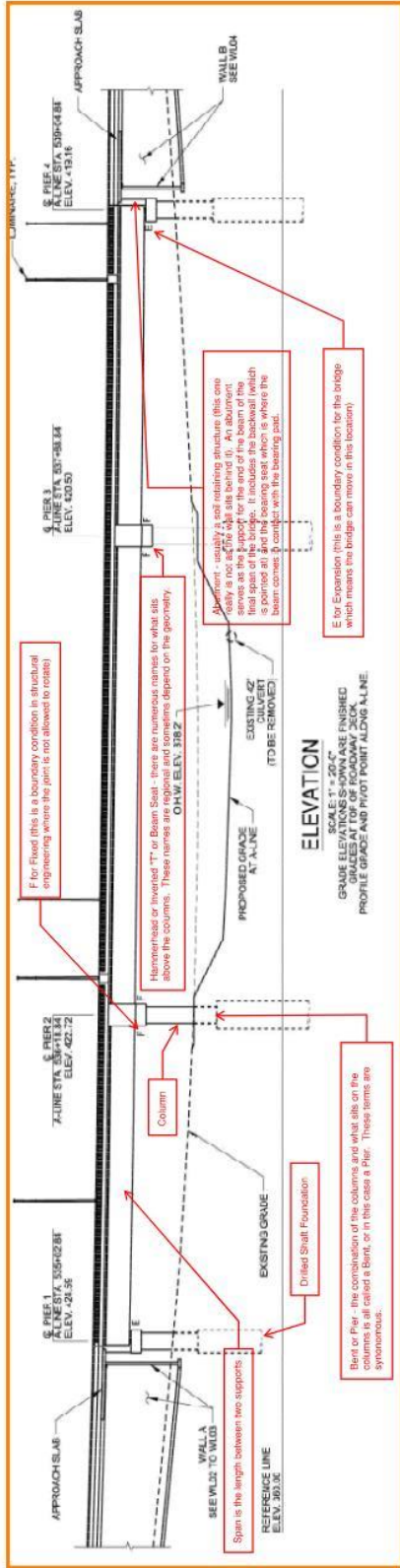
Synonymous Terms Bridge engineers use different terms, either by choice or education or region, to define different parts of a bridge. Here are some terms which are just about synonymous:

- **Drilled shaft = caisson = cast-in-place pile = drilled pier:** simply put, this is a hole filled in with cementitious material and reinforcing steel
- **Bent = pier:** both terms mean the combination of foundation, column, and then the bearing seat for the beam. This entire contraption forms the bent or the pier.
- **Beam = prestressed beam = girder:** beams span between supports and support the bridge deck.
- **Bridge rail = parapet = jersey barrier = barrier:** this is the small wall on the edge of the bridge which prevents the driver from falling off of the bridge. Each of these four are different in their geometry, but you will hear them used interchangeably.

My Story Never fails when I meet someone at a party and tell them I'm a civil engineer. The question comes: "oh wow, how do they build bridges?" I love that question and I've built some and estimated more. Hope this "101" was helpful.

Work Safe!

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