

## Leonard P. Zakim Bunker Hill Memorial Bridge



### Overview

This bridge is a cable-stayed bridge (not to be confused with a suspension bridge which only has two cables holding up the bridge). This bridge replaced part of the central artery – an elevated highway that divided the city that is now underground and replaced with a long park known as The Rose Kennedy Greenway.

### Things to Notice

Since the old Charles River crossing needed to continue carrying traffic throughout construction, they had to change from two cables to one in the backspans because the old structure was only a couple of feet away from the location of the cables. You can see the cables underneath the bridge. The bridge is not symmetrical because of this as well. There is an additional northbound lane that merges in the Mass Pike traffic. All of these configurations were carefully planned out because one of the main reasons for the project was to eliminate old sources of congestion. Directly under the south tower is the orange line.

### How it Works

Cable stay bridges are usually built symmetrically off the tower using a "balanced cantilever" system, keeping the center of the force acting on the tower, while the bridge "cantilevers" or sticks out equally in two directions. This bridge differs from the typical cable stay bridge: the main span is steel while the back spans are concrete. Two pairs of cables attach between the tower and each segment of the steel span. The steel segments lean into each other and connect at their ends. The structure is actually two completely separate structures that are connected with cables and concrete formed in place at the center of the main span. The two towers are concrete encased steel. Each cable is connected to both the tower and the main structure (known as a superstructure), connected by something similar to a nut (seen under the bridge)..

### Facts

Opened in 2003

Length: 1432 Feet

Width: 183 Feet

In 2002 to demonstrate the bridge's structural integrity, 14 elephants from the circus crossed the bridge.

This same test was used on the Brooklyn Bridge in 1884.

This is the widest cable-stayed bridge in the world.