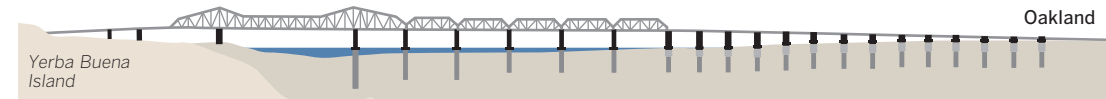


The new Bay Bridge: sleeker and safer

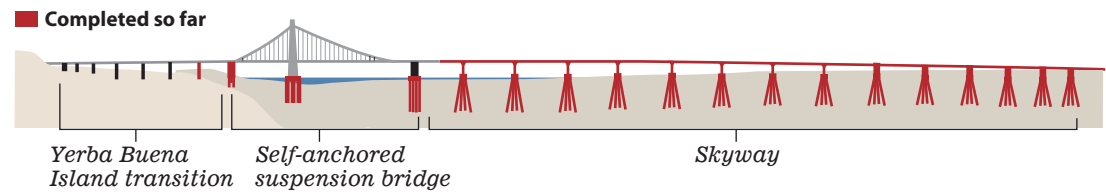
Because of construction on the new span of the San Francisco-Oakland Bay Bridge, the existing bridge will be closed Labor Day weekend from 8 p.m. Friday. Part of the western edge of the old bridge will be demolished to allow for a seismic upgrade. Here is a look at the new \$5.3-billion bridge, which is scheduled for completion in 2013:



Old bridge Double-deck roadway, built in 1936 and damaged in 1989 Loma Prieta quake, will be torn down.



New bridge The dual span, constructed just north of the old bridge, will tie into existing roadways.

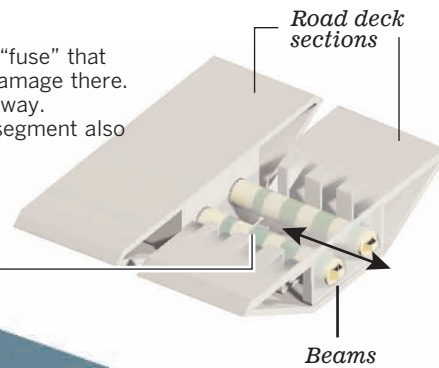


Technology guides the design

The new 2.1-mile bridge will have two five-lane roadways with 10-foot emergency shoulders. The eastbound side will have a bike-pedestrian path. A portion will be the world's longest self-anchored suspension span.

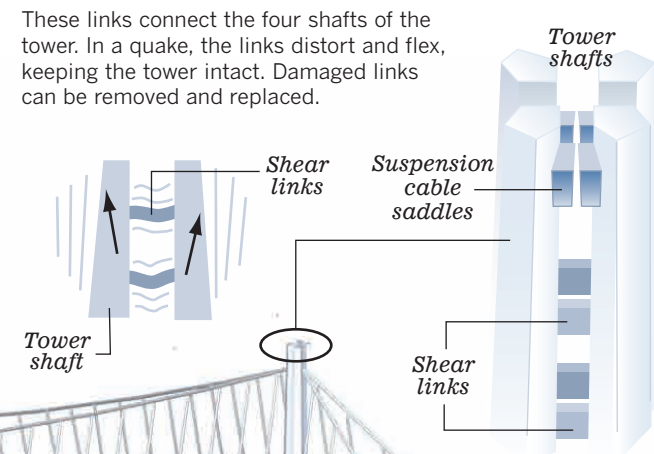
Absorbing the stress from a quake

- Each hinge pipe beam contains a soft steel "fuse" that deforms during quake movement to confine damage there.
- There are 24 such beams, mostly in the skyway.
- Expansion joints connecting each roadway segment also allow some movement.

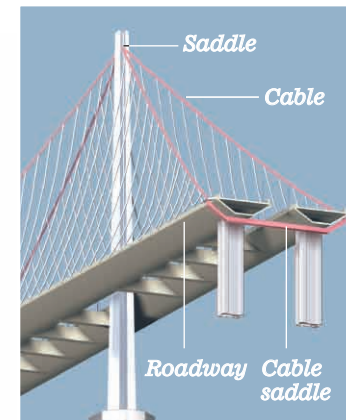


Shear links cushion movement

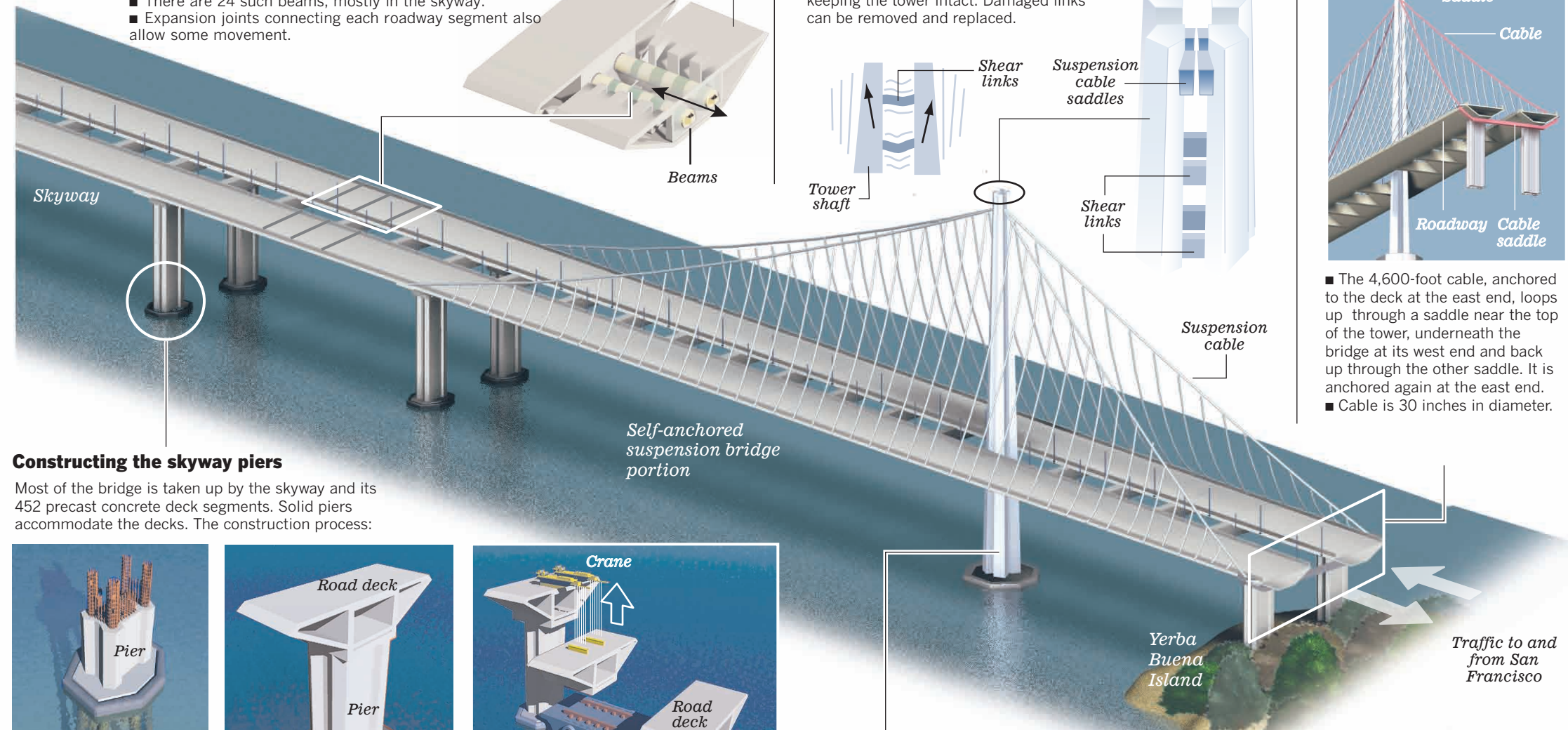
These links connect the four shafts of the tower. In a quake, the links distort and flex, keeping the tower intact. Damaged links can be removed and replaced.



Supported by a single cable



- The 4,600-foot cable, anchored to the deck at the east end, loops up through a saddle near the top of the tower, underneath the bridge at its west end and back up through the other saddle. It is anchored again at the east end.
- Cable is 30 inches in diameter.

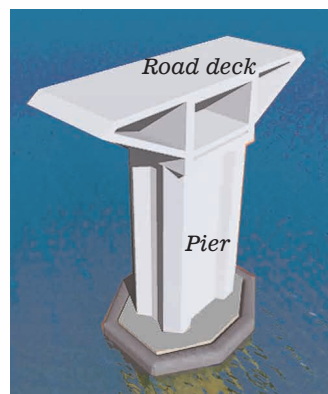


Constructing the skyway piers

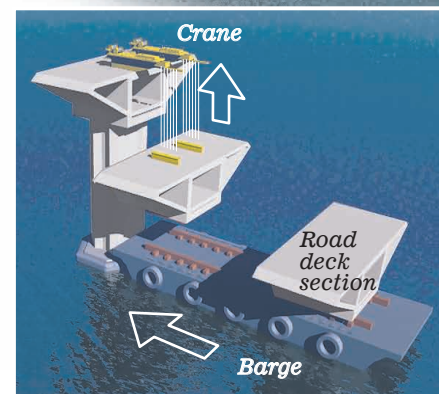
Most of the bridge is taken up by the skyway and its 452 precast concrete deck segments. Solid piers accommodate the decks. The construction process:



1. Steel pilings are driven 300 feet into the ocean floor. Piers are then erected.



2. A roadway deck section is built atop each pier.



3. Additional deck sections, fabricated in Stockton, are taken to the site by barge and lifted into place by portable cranes.

Drawings not to scale.

Tower

- 525 feet tall
- Composed of four steel shafts
- Supported by 13 piles driven 200 feet into bedrock

Aesthetics

- Seismic safety is the first priority, but the suspension bridge design was also chosen so that it would fit in with the graceful spans on the western portion of the Bay Bridge and the Golden Gate Bridge.

Bike-pedestrian path

- (not shown)
- Connected to the south side of the bridge
- 15.5 feet wide

For more information on the bridge project go to baybridgeinfo.org.