WHAT KEEPS THIS FLOATING BRIDGE FROM FLOATING AWAY?

The new SR 520 floating bridge is, in a sense, a 1.5-mile-long boat. And like a boat, the bridge could drift away if it weren’t firmly secured in place. But don’t worry, this bridge is well-fastened! Read on to find out how.

THE RIGHT CONNECTIONS

The moveable, floating bridge is connected at both the east and west ends to stationary bridge sections whose support piers are firmly embedded in the bottom of Lake Washington. The transition span at either end of the floating bridge – basically, a 190-foot-long hinge – allows the floating bridge to move up and down as the lake’s water level rises and falls between winter and summer.

ANCHORS (NOT) AWEIGH

Though connected to fixed bridges at both ends, the floating bridge is held in place primarily by anchors – 58 really big anchors – at the bottom of Lake Washington. Each anchor is connected to the bridge by 3½-inch-thick steel cable measuring up to 1,000 feet in length. Below are the three types of anchors that hold this bridge in place.

FLUKE ANCHOR

Dimensions: 35 ft L x 26 ft W x 17.5 ft H
Weight: 100 tons; concrete and steel
Quantity: 45
Locations: Embedded in deep, soft soils of the lakebed and flat areas, then covered with mounds of heavy rock

GRAVITY ANCHOR

Dimensions: 40 ft L x 40 ft W x 23 ft H
Weight: 420 tons; concrete; (587 tons after anchor’s chambers are filled with rock)
Quantity: 8
Locations: Solid soils with sloped topography, typically near shore; underwater grading and installation of gravel creates a level footing for anchor placement

DRILLED SHAFT ANCHOR

Dimensions: 10-ft-diameter concrete shaft, 79 to 92 ft tall
Quantity: 5
Locations: Embedded in solid soils near shore where gravity anchors might cause a navigation hazard