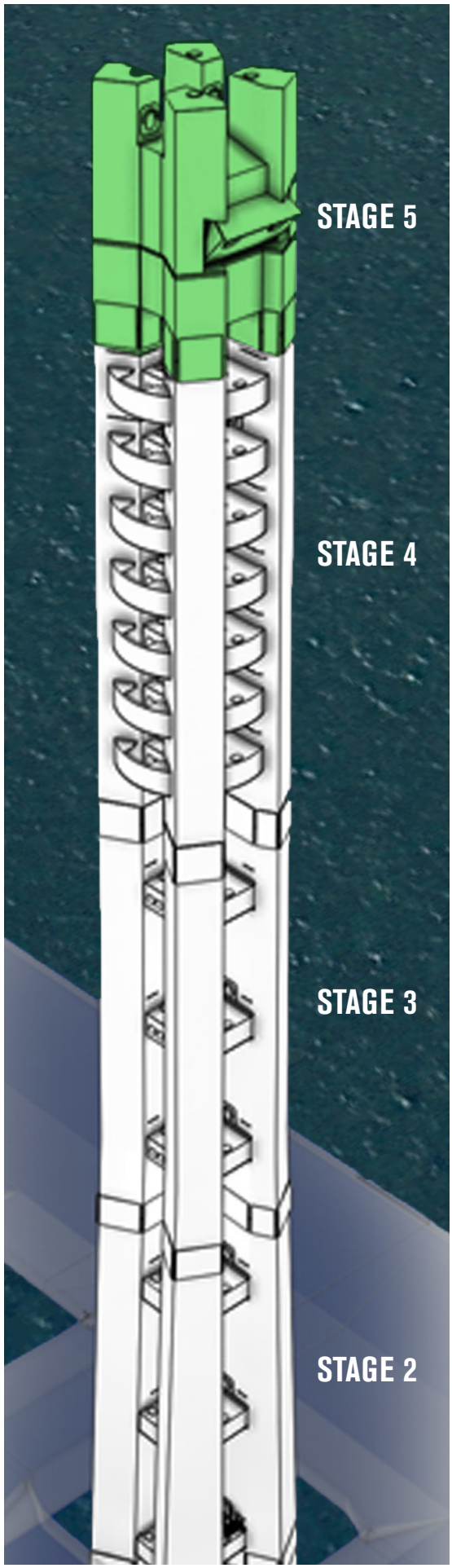

TOPPING OFF THE SELF-ANCHORED SUSPENSION SPAN (SAS) TOWER

THE SIGNATURE ELEMENT OF THE NEW EAST SPAN OF THE SAN FRANCISCO-OAKLAND BAY BRIDGE IS THE SELF-ANCHORED SUSPENSION (SAS) SPAN.

The 525-foot-reach of the single tower, one of several unique elements of the new span, will echo the towers of the West Span while giving the SAS a unique profile.

THE GRILLAGE

The latest section to be placed will bring the tower to 495 feet (94 percent) of its final height. Unlike the previous four tower lifts, which were comprised of four individual sections, this lift – known as the "grillage" – is a single segment that will sit atop the tower's four legs. The grillage weighs approximately 500 tons, and measures 30 feet by 30 feet. It is designed to distribute the weight of the 480-ton cable saddle and eventually the SAS's nearly mile-long single cable as it passes over the tower. It is nicknamed the "grillage" due to the pattern of its internal steel plates which create the appearance of a grill grate.

After placing the grillage will come the saddle, which will be positioned in late May, and finally the tower head, to be installed after the cable is in place. These latest tower sections arrived in the Bay Area on February 14.

ERECTING THE TOWER SECTIONS

Like the previous tower sections, the grillage will be floated on a barge to the construction site and hoisted into place. Two strand jacks, capable of lifting 1,455 tons, will hoist the grillage nearly 500 feet into the air, and carefully place it onto the tower legs. While lifting the grillage will not take as long as some of the other sections, placing this piece could take longer, as it must be perfectly aligned over all four tower legs.

It will take approximately one day to lift and place the grillage onto the tower legs. Once it has been set down, crews will connect the grillage to the tower legs with bolts, welds and splice plates.

Crews placed the first tower sections onto the foundation in July 2010, the second set in October 2010, the third in December 2010 and the fourth in February. The cable saddle is tentatively scheduled to be placed in late May.

THE SIGNATURE ELEMENT

The SAS tower construction has added a new dimension to the already astonishing and unprecedented engineering and construction that is synonymous with the seismic retrofit of the Bay Bridge. When completed, the SAS, the signature element of the new East Span, will take its place on the list of iconic Bay Area landmarks.

FOR THE LATEST INFORMATION, VISIT

BayBridgeInfo.org/projects/sas-tower

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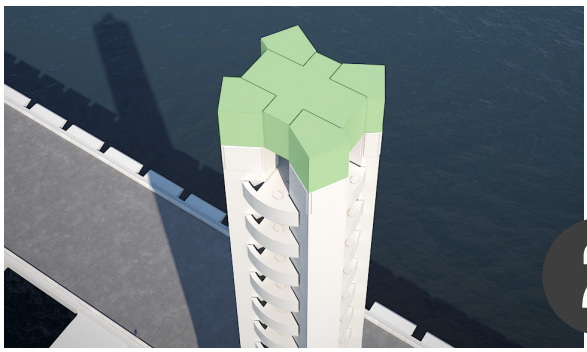
Discover more information, photos and videos about the SAS Tower by scanning the QR tag.
QR tags can be scanned with a smartphone or other personal media device using free QR reader apps that are available online.

THE SAN FRANCISCO-OAKLAND
BAY BRIDGE
SEISMIC SAFETY PROJECTS

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

TOPPING OFF THE SAS TOWER

1



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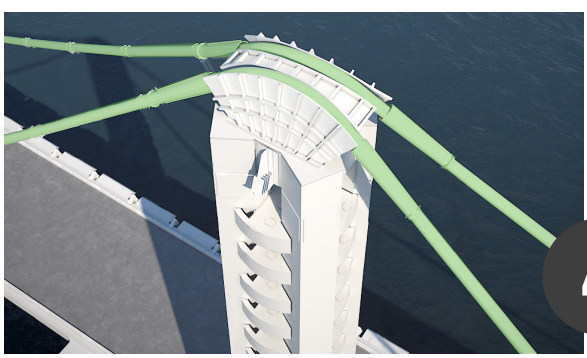

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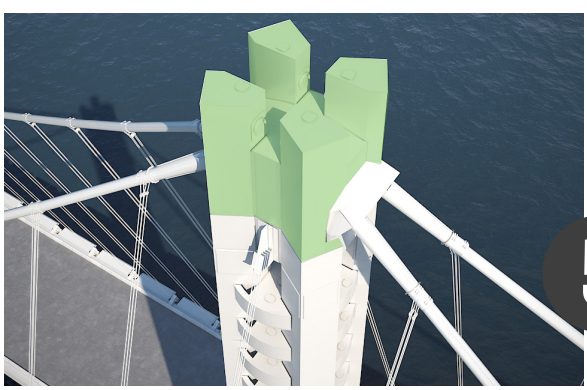

5

The tower is made up of four independent steel legs, each composed of four vertical sections. Cross bracings and shear link beams connect the four legs.

The shear link beams are designed to absorb seismic energy during an earthquake and to protect the tower from catastrophic damage. If damaged, the beams can be individually removed and replaced.

2) THE GRILLAGE: This single section sits atop all four leg sections. The grillage will evenly distribute the weight of the cable saddle and single cable amongst the four legs.

3) THE CABLE SADDLE: The largest cable saddle in the world will carry the nearly mile-long looped cable over the top of the tower.

4) THE MAIN CABLE: The SAS's single cable anchors into the east end of the roadway, travels up and over the single tower to wrap around the west end before traveling back up and over the tower to anchor back into the east end.

5) TOWER HEADS: After the cable is placed, the tower heads are attached to complete the tower's distinctive design.