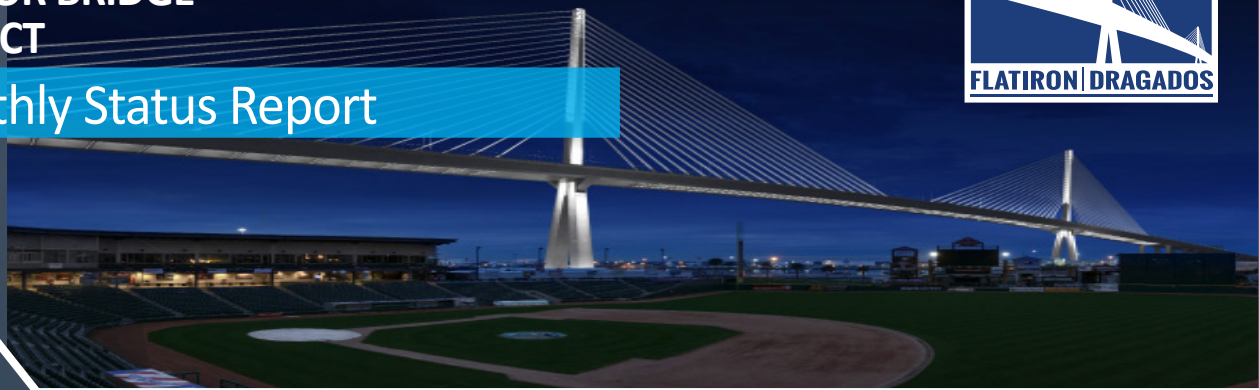


US 181 HARBOR BRIDGE PROJECT

Monthly Status Report



Toll Free: 1.877.227.4144 • Public Information: publicinformation@harborbridgeproject.com

July - August 2024

Harbor Bridge Project Stay Cable Installation and Upcoming Milestone

The stay cable installation for the new bridge is a sophisticated process that involves integrating advanced equipment, engineering expertise, and meticulous attention to detail. The design is centered around ensuring the long-term durability and reliability of the bridge, incorporating multiple layers of redundancy and safety features. This process enhances the structure's stability and ensures its longevity in the face of environmental elements and high-volume traffic usage.

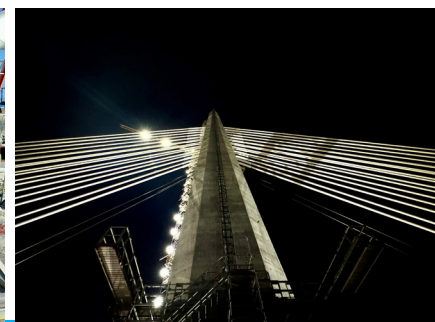
A key aspect of the installation is using multiple strands within each stay cable. In all, 7,648 strands will be cut into pieces ranging from 155 to 882 feet long. Redundancy in this design feature allows for individual strand replacement if necessary without disrupting traffic flow, ensuring the bridge remains operational during maintenance. Incorporating double cable stays further enhances the structural security, providing additional stability and reinforcing the bridge's reliability. To maintain structural integrity during installation, a 24/7 steady-force sensor monitoring system is in place, offering real-time updates as each strand is installed and ensuring potential issues are identified and addressed immediately.

Once the blue epoxy-coated cables are individually run with a winch-pulley system through the high-density polyethylene white pipe, they are stressed, secured at the anchor plates, and sealed with an impermeable wax. This process protects the cables from environmental factors such as moisture and corrosion and ensures endurance during unforeseen incidents such as fire or chemical exposure. The recently installed Cycle 11 stays on each tower exemplify the strength and capacity of this design. Each stay can support more than 1,000 tons, with 4,000 tons supported by each set of four stays on the towers. The individual strands, capable of withstanding tension of 135 tons per square inch, highlight the robust nature of this engineering feat.

Looking ahead, a significant milestone in August involves connecting Cycle 13 of the 19 cycles on each tower to the land-based Back Span Piers on either side of the ship channel. This task is a crucial step in the ongoing construction, marking substantial progress towards the completion of the bridge. The balanced cantilever span erection process involves lifting main and back span segments, pouring median slabs, and installing cables to complete each cycle. With a total of 152 permanent stay cables and eight temporary stays (to be removed after the bridge is complete), this intricate process is a testament to the meticulous planning and execution involved in the project, providing reassurance about the project's progress.

Stay cable installation is critical in the new bridge construction, ensuring its immediate functionality and long-term durability. With each milestone, the project moves closer to completion, promising a viable and secure infrastructure for the future. This steady progress and the robust design of the bridge are a testament to the project's reliability and the team's commitment to delivering a high-quality structure.

TRIVIA about the epoxy-coated CSB strand : Transported on 1,000 spools weighing up to 8,000 pounds each --> equals 1,700 miles end-to-end or the distance from Corpus Christi to Washington DC!



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