

SW 1st Street Bridge

Miami, Florida



PROJECT PARTNERS

Owner

Florida Department of Transportation – Tallahassee, FL

General and Driving Contractor

GLF Construction Corporation – Miami, FL

Designer and Engineer

Hardesty & Hanover – New York, NY

PRODUCTS

Wide flange beams: W36x232@72' (650 tons)

Sheet pile: NZ 19x42 (180 tons)

PROJECT TIME FRAME

March 2019 to February 2022

HISTORY

Built in 1929, the original 650.5-foot bascule bridge at SW 1st Street is an important part of the Miami area. Connecting neighborhoods and people is one aspect of bridge building, and the ability to connect Little Havana with Downtown Miami is beneficial to all the neighboring residents.

PROBLEM

The 92-year-old bridge, which is located within the City of Miami's Greenway System, was in need of replacement and important, traffic-assisting upgrades. The bridge piers would need new tall bulkhead walls. There was no space for an anchorage system so the wall, conceptualized by Nucor Skyline and FDOT, would need to handle the tall cantilever.

SOLUTION

The FDOT awarded the contract for the SR 986/ SW 1st Street Bridge to GLF Construction Corporation, located in Miami, FL. Hardesty & Hanover, of New York, NY served as lead designer and engineer of record on the project. The rebuilding of the bridge will allow for increased traffic, contain an exclusive bicycle lane, and be a continuation of the Miami Riverwalk project.

GLF worked with Nucor Skyline to redesign the king pile walls during the procurement process, and decided on a W36x232 box pile (double beam) system with intermediary NZ 19 sheet piles. The combination walls serve as the new bulkhead wall of the bridge piers; and was crucial to the project's early phase to build new bascule piers with land access.

GLF utilized an American Model 9310 – 225 Ton capacity crane and an American Piledriving Equipment (APE) Model 600 (Kong) vibratory hammer to drive the king piles and intermediary sheet piles to the required tip.

With the challenging fabrication and delivery schedule maintained by Nucor Skyline, GLF was able to complete both bulkheads within four months. This early completion resulted in increased navigable waterway clearance from 75 ft. to 150 ft. for the Miami River long before anticipated.