



JOURNEY *of the* **STEEL**

Atlanta's new bridge was born in Tampa

Alumnus Bob Clark's company, Tampa Steel Erecting, built the beams that will support Atlanta's 17th Street bridge.



By Gary Goettling

Atlanta's new 17th Street bridge would be difficult to miss even if it wasn't painted bright yellow. The massive 830-foot-long, 137-foot-wide steel span is taking shape over 21 lanes of the I-75/I-85 Downtown Connector.

When completed by the end of the year, it will link Midtown with the 138-acre Atlantic Station development.

The \$38 million bridge includes four automobile lanes, bike pathways, pedestrian sidewalks and room for a future rail line.

It's the first bridge built over the Downtown Connector in 20 years, but it was part of the regular workload at Tampa Steel Erecting, the Florida company that fabricated the structure.

"We'll make any kind of bridge," says Georgia Tech alumnus Robert J. "Bob" Clark Jr., president of Tampa Steel. "The only thing that limits our ability to perform is the customer's ability to pay," laughs the 1961 civil engineering graduate. His brother, John Clark, CE 69, works for Tampa Steel as vice president and director of engineering.

Tampa Steel's other high-profile fabrication and erection projects include the signature "Spaceship Earth" geodesic sphere at the entrance to Epcot Center, the Florida Aquarium in Tampa and the 39-story One Tampa Center.

Founded in 1945 by the Clarks' father, Robert Sr., the family-owned company decided to concentrate on bridges

about a dozen years ago. That decision was followed by a \$2.75 million plant expansion in 1994 and an additional \$6 million investment since then.

"You have to be able to pick up 100 tons in your shop and move stuff around," Bob Clark says. His 95 employees work in a 150,000-square-foot facility situated on 25 acres.

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The company receives orders for bridges from all over the country, particularly Northern states, according to Clark. Several Tampa Steel projects have received awards from the National Steel Bridge Alliance, including a ramp on 48th Street at FDR Drive in New York City, a bridge at mile marker 159 on the Garden State Parkway in New Jersey, Storow Drive bridge in Boston and the Casco Bay drawbridge in Portland, Maine.

Like the 17th Street bridge, some Tampa Steel projects use color.

"We shipped a brick-red drawbridge to Portland, Maine, and made a bunch of blue railroad girders that went to Bridgeport, Connecticut," says Clark. "We see all kinds of things."

Fabrication of the 17th Street bridge followed a conven-



Steel workers install beams for the new 17th Street bridge over the I-75/85 Connector in Midtown Atlanta. The bridge is scheduled to open Dec. 31.

tional process that began by breaking down the design drawings into detailed fabrication drawings and specifications for the structure's individual components, Clark notes.

The parts were grouped by size and thickness to maximize the number of items cut from a single sheet of steel, thereby reducing waste as well as determining the amount of steel to order from the mill. For the 17th Street bridge, 8 million pounds of steel were ordered from Bethlehem Steel in Baltimore and shipped by rail to Tampa.

Guided by the fabrication drawings, the massive steel sheets were cut, shaped and welded into the various bridge components. The bridge was completely assembled inside the company plant, then broken down for shipment by truck to the job site in Atlanta.

"That's the only way you can do it," Clark explains. "You have to fabricate the bridge sections and then bolt them all together to make sure everything is right, then send the sections out to the final destination for field assembly." It takes a lot of bolts — about 44,000.

Among the 17th Street bridge's unusual features are its "variable depth girders" that give the bottom edges of the span a scalloped look, according to Clark.

For most of his customers, Clark can deliver the huge bridge girders by barge from the port of Tampa. But landlocked Atlanta called for other means. Over a period of about three months this past spring, each of the bridge's 48 girders were trucked to the job site.

"We made six pieces that weigh 115 tons each, then 12

pieces that weigh 100 tons each," he says. The largest beams measured 14 feet square and 100 feet long, necessitating the use of a special 19-axle tractor-trailer with pivoting axles in its midsection and rear to negotiate cornering.

The loaded vehicle totaled 262 feet in length — 38 feet shy of a football field, Clark notes — and weighed more than 400,000 pounds when loaded.

The rig was followed by another tractor to provide a helpful push when climbing over south Georgia's hills, but

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even getting into the state was a challenge. Florida would not allow the heavy vehicle to use its interstates, so the girders were hauled from Tampa over winding U.S. routes to pick up I-75 at Valdosta, Ga.

At the 17th Street job site, the girders were arranged in six parallel lines exactly 11 feet 8 inches apart. Metal forms welded between the girders will support the bridge's pavement.

Finishing touches, including a canopy over the walkways and decorative lighting, will be added by the time the bridge is expected to open on Dec. 31. **GT**