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In 1963, construction began on the Silas N. Pearman Bridge. The $15 million project was completed in 1966. Northbound traffic crossed the new three-lane bridge while southbound traffic used the Grace. A reversible lane on the Silas Pearman allowed motorists to go southbound should the need arise.

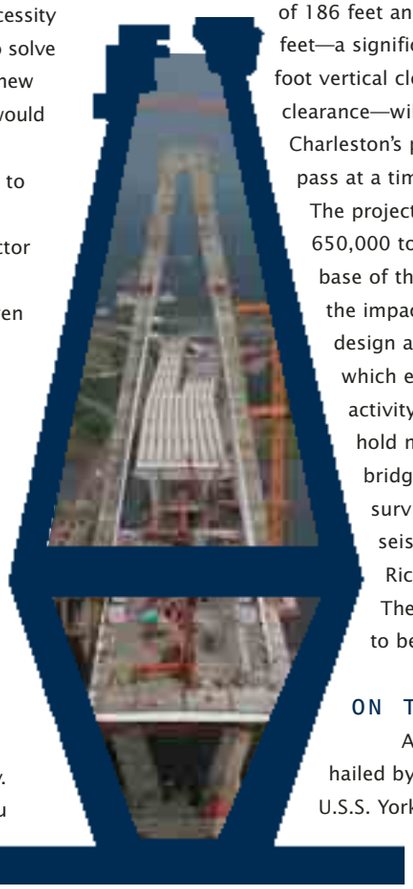
At the age of 75, the Grace Bridge is one of the most dangerous bridges in the country, scoring only four on a scale of zero to 100 with 100 being the safest. The decaying condition of the two bridges in recent decades along with an increase in traffic flow made replacement a necessity and had state and local officials scrambling to solve construction problems. How much would a new bridge cost? Who would pay for it? What would it look like?

There is a Citadel imprint in the answer to these questions.

Touchberry, a quality assurance inspector for the South Carolina Department of Transportation (SCDOT), is one of seven graduates of The Citadel School of Engineering working on the new bridge project.

Touchberry credits The Citadel not only with his knowledge of engineering, but also with his success in the field, "The Citadel teaches you to be prepared. It's a hands-on college. You're a real person, not just a number."

The college's emphasis on learning time management is also important to Touchberry. "It's now second nature. You either get it or you don't. If you don't, you're not going to make it out there."



AN ENGINEERING MARVEL

The Arthur Ravenel Jr. Bridge, named after the legislator who championed its funding, will cost $630 million to build. That includes preliminary engineering and testing and pays for the office overseeing construction, but it does not include razing the two older bridges.

At a price tag two times the state transportation department's annual construction budget, officials were creative in securing funding, including a $325 million loan from the S.C. Transportation Infrastructure Bank, a $215 million grant from federal monies (the Transportation Infrastructure Finance and Innovation Act), and $90 million from the State Ports Authority and local funds.

With a main span of 1,546 feet supported by 128 cables between two signature diamond-shaped towers, the 2.5 mile Ravenel Bridge will be the largest cable-stay span in North America. The state-of-the-art bridge will feature nine 12-foot lanes—four each for northbound and southbound traffic and one for bike and pedestrian traffic with benches and scenic lookout areas. Concrete-filled drilled shafts supporting the diamond towers disappear below the waterline 230 feet into the earth. A vertical clearance of 186 feet and a horizontal clearance of 1,000 feet—a significant increase from the current 155 foot vertical clearance and 500 foot horizontal clearance—will allow larger ships to pass through Charleston's port and allow more than one ship to pass at a time.

The project includes rock islands made of 650,000 tons of Newfoundland limestone at the base of the towers to protect the bridge from the impact of a shipping accident. A special design allows flexibility within the towers which enables them to withstand seismic activity, and cables have been designed to hold more than one million pounds. The bridge is being built to last 100 years and survive 190 mph hurricane-force winds, seismic activity exceeding 7.4 on the Richter scale, and even terrorist attacks. The 44-month long project is scheduled to be completed by summer 2005.

ON TOP OF THE LOWCOUNTRY

At the west tower site, Touchberry is hailed by a lone seagull. East of him, the U.S.S. Yorktown, the retired World War II aircraft carrier that thousands of tourists flock to each year, waits large and silent for the day's round of visitors to arrive. Touchberry ties the skiff to the massive barge moored at the foot of the rock island and heads up to work. The site is strewn with equipment and leftover pieces of construction material—scrap metal, wood supports and welding tanks.

An orange steel mesh elevator with a 6,200-pound capacity takes Touchberry to the crossbeam. From there he takes a second, smaller elevator with a 4,200-pound capacity, that rests on the perimeter of the tower at an angle like an old Charleston piazza sagging from the weight of its years. Workers riding up are dressed in similar garb—steel-toe boots, hard hats, safety goggles, and worn pants and shirts. The ride is a little jarring and the motor makes a grinding noise as it ascends, but no one seems to notice.

Out of the elevator Touchberry climbs four ladders to the top platform where workers are tying steel rebar together to form a maze that will later become encased in concrete. The west tower is at 515 feet and will rise to