

District 6 News

Beaufort, Berkeley, Charleston, Colleton, Dorchester and Jasper counties

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Bridge crews evolve with changing needs

Over the past year, SCDOT has been assessing and load rating every bridge in the state.

This was accomplished quickly by consulting firms. While this was a tremendous victory for the overall bridge program, every District has been overwhelmed to some degree with the resulting load postings that impact traffic, local businesses and emergency response.

One bridge in Berkeley County was a particular challenge for District 6. A small H-15 maintenance bridge on Halfway Creek Road (S-100) was constructed in the 1960s. The load rating determined that the bridge should be restricted to 8 tons for a typical dump truck style vehicle and 7 tons for emergency vehicles. At these levels even unloaded dump trucks would be restricted and fire trucks would not be permitted to cross. The rating was given due to slabs with full depth cracks.

The route's average daily traffic is only 1,500 vehicles per day, but it has a lot of heavy trucks and serves as the primary access for local dirt pits. The detour around the bridge was 12 miles and added 15 minutes to fire and medical emergency responders. The detour routes would not stand up to the sustained trucking loads associated with local businesses. It was in SCDOT's best interest replace the bridge.

The bridge was rehabilitated numerous times in the past. The replacement



The work was done overnight on a Friday to be open early the next morning.

of a single cracked slab (a relatively simple fix) wasn't going to be a long term solution. Over the years, numerous pilings had been redriven and full spans had been replaced with in-kind H-15 components. In-fact, the failed span had previously been replaced less than a year before. The constant, heavy loading from the local dirt pit was just too great for this bridge type. For that reason, the District sought a better solution.

The result was a sturdier, more modern slab that could be placed interchangeable with the older maintenance slabs, but support current day design loads. This unique solution was a variation of a design previously utilized by the District Bridge Engineer at an entrance to a port facility. So this was a technique proven to be effective in supporting a large volume of heavy loads.

To minimize long term road closures that could have significant impacts to the public, the slabs were specifically detailed to be rigged and lifted by smaller equipment such as excavators that do not require the same set-up time as cranes. Since excavators do not have the same reach as cranes, the slabs were verified to have capacity to support not just the weight of the tracked

equipment, but also the forces induced by that equipment lifting, swinging, and walking slabs of the next span in line.

The result was a major repair that was able to take place from 7 p.m. on a Friday night to be completed by 6 a.m. Saturday morning with almost no impact to the public or local businesses. It also eliminated the need for a bridge posting in support of the Department's 10-Year Plan.

It was determined to be so successful that a similar effort is being organized for a higher volume route in Berkeley County (6,000 vehicles per day) that is also being load posted.

The success of this repair was due to a focused, coordinated effort of many individuals, units and outside organizations. The office of the Director of Maintenance provided slab designs and detailed drawings to make the District's concept compatible with the older standards. The District met with local concrete precasters to ensure that the slabs were easily constructible (and thus cost efficient) by using tilt-up wall forms

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Debra Jerideau

they were already using for the vertical building industry.

Berkeley, Colleton and Jasper Maintenance units worked with traffic control, equipment and material transport. The District's Specialized Bridge Division did the repair. The local dirt pit agreed to not haul out of the pit on Saturday in case the repairs took longer than expected. This allowed work to be done on Friday instead of Saturday night, ensuring staff had the ability to go to Easter Sunday services with their families. The local fire departments were notified to preposition response equipment on each end of the road closure. Finally, the local County Government's public information officers supported the efforts by using their communication tools to educate the public on the impending work. Collaboration and detailed coordination governed every action.

As the state-wide bridge program continues to evolve, District 6 is committed to remaining flexible and agile to support the public's needs.

Meet Steven Diamond

Name: Steven Diamond
Title: Berkeley Resident
Construction
Engineer



Steven Diamond

Steven Diamond is the Resident Maintenance Engineer for Berkeley County. He was born in Myrtle Beach and grew up in Sumter.

He earned his bachelor's degree in Economics and Sociology, and a bachelor's degree in Civil Engineering from Clemson University.

He has previous work experience at Starbucks, Harris-Orkand, and Jacobs Engineering.

Diamond started his career with SCDOT in July 2016 at York Maintenance as an Assistant Resident Maintenance Engineer. He was promoted to Resident Maintenance Engineer at York Maintenance in March 2019.

Diamond married his wife, Abby, in May 2007. They have a daughter, Olivia, and a son, Jack.

His hobbies include going to Clemson football games, supporting the Boston Bruins and Arsenal FC, and spending time with his family.



An excavator removes slabs from the interior spans.