

## The Beacon

is published quarterly by the Missouri Department of Transportation's Southeast District. It is mailed to Southeast Missouri residents interested in the construction of the Bill Emerson Memorial Bridge to provide information on the project's progress, significant milestones and related news. Comments, questions and suggestions are welcome. Please send to:

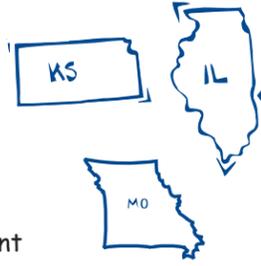
### The Beacon

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## Funding Facts

### Did You Know . . .

Missouri has **more miles of highway than Kansas and Illinois combined**--but spends only about 1/3 as much per mile as each of those states?



According to a recent AAA survey, it costs the average motorist 51 cents a mile to own and drive a car. Of that amount, our highways receive **less than a penny?**

Missouri's gas tax is the **second lowest** in the region--and our highways only receive a **portion of that money?**



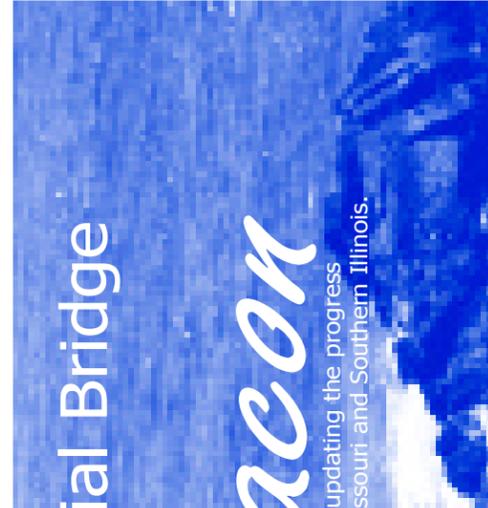
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Bill Emerson Memorial Bridge

# The Beacon

A Missouri Department of Transportation publication updating the progress of the new bridge under construction linking Southeast Missouri and Southern Illinois.



February 2002  
Vol. 2, Issue 3

## It's Finished!

### • Pier 2 Tower Doesn't Get Much Taller

For months, people have been asking how much taller the pier on the Missouri side can get. Well, the answer is not much more.

"We finished the concrete pours on the towers in mid-January," said Area Engineer Stan Johnson. "After the girders and cables are in place, there will be one more pour to cap the tower."

Pier 2 isn't the only Emerson Bridge pier that's making big strides in construction. Last issue, we reported that Pier 3

in the middle of the river was above water level. A two-day concrete pour wrapped up in mid-January to complete the pier's stem, followed by a pour to cap the stem. Work is expected to begin on the tower leg pours in late February.

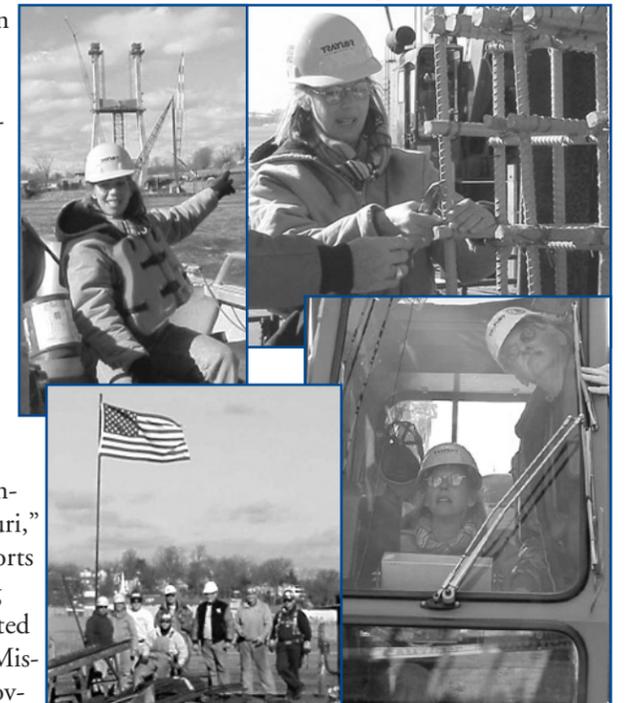
Pier 4 is also moving right along. The follower cofferdam has been completed. Work is resuming to sink the caisson and it is expected to be set on the bedrock in approximately two months.



## Rep. Emerson Works On Emerson Bridge

Rep. JoAnn Emerson and her staff spent four days in January 'On the Road and on the Job,' trying on different occupations from health care to bridge building.

"I was fortunate to spend the morning not just operating the cranes but working side by side with the men and women dedicated to making the Bill Emerson Memorial Bridge the gateway to commerce in Southern Missouri," Emerson said. "Their efforts and their guidance during the work day are appreciated and reaffirms to me that Missourians are the key to moving Missouri forward."



# Cables: Bringing It All Together

This spring, work should begin on the cables for the Emerson Bridge. We spoke with MoDOT Senior Construction Inspectors Allen Friedrich and Rick Lamb to give you a lesson in how the cables will be installed and what they'll do.

## Cable-Stay Bridge

Because the Emerson Bridge is a cable-stay structure, the cables are very important to the structure. The bridge is basically held up by the tension in cables strung diagonally from the towers to the bridge deck.



A cable-stay bridge is not to be confused with a suspension bridge, like the Golden Gate. Suspension bridges have overhead cables from one tower to another and then vertical cables to the roadway.



## Down To Business

Now that we know what type of bridge MoDOT is building, here's how the cable process will come together.

Last issue we discussed the strands of cable that were looped through the tower leg to make the pier stronger, called

post-tensioning. Because the bridge cables will be pulling on the piers, these strands were put through a pipe

in the tower leg and then filled with grout. This forces the concrete to compress and makes it stronger. The cables will be attached to anchors in the tower legs near these strands.

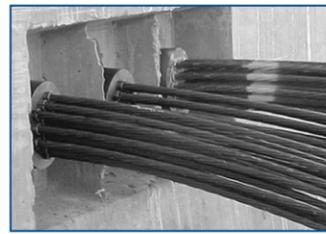
Next, two 36-foot girders will be built on each side of the tower. This is where the cables will anchor on the bridge deck. The inside of the tower leg is poured like a saw tooth, which gives an edge for the cable anchor inside the leg.

The sections will be alternately installed from each leg of each pier until they meet and the span is connected.

"It's important to keep the tower balanced," said Senior Construction Inspector Allen Friedrich. "If we just strung the cables on one side, it would pull the pier tower in that direction."

## What's In A Cable

Each cable on the Emerson Bridge will be made of a system of



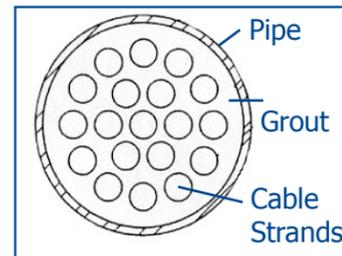
smaller cable strands. The cables you will see are actually

more of a pipe that each of the cable strands will be fed through, like the diagram below. The whole cable will range in size from seven to nine inches. Each of the smaller cable strands inside are about the size of your finger. The cables will range from 143 feet to almost 600 feet in length, with a total of 128 cables on the bridge.

## Tension Is Good

To keep the elevation of the roadway to what MoDOT wants, a hydraulic jack is used to tension the cables so the bridge deck is level.

"Once we're ready, we'll actually survey the girders and send the information to an engineer in Washington," said Senior Construction Inspector



## The Cable Guys

MoDOT and contractor Traylor Brothers are getting some expert help on the Emerson Bridge cables.

David Goodyear is the Washington-based engineer mentioned in the article at left, who Traylor Brothers hired to help with the engineering calculations. Not only will he work with the cables, but also worked out the sequencing to erect each of the piers.

Nicolas Raudin, a representative with PTSC/Freyssinet, is now on site to help coordinate the cable installation and lend expertise.

Freyssinet is the French parent company and PTSC is the Virginia-based U.S. affiliate. The company has provided the materials and equipment for the cable installation.

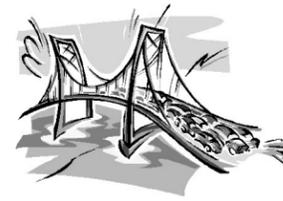
Rick Lamb.

David Goodyear, with a company called TyLin, is in charge of the engineering calculations for the cables and girders. Goodyear will calculate the tension for the cables to get the elevation needed.

The last step in the cable installation is to fill the cable with grout, securing the smaller cable strands inside and making the whole cable a solid structure.

*Emerson Bridge  
Fun Fact  
For Kids:*

The cables used in the bridge would stretch for 171 miles. If you lined skateboards up for 171 miles it would take 361,152 skateboards. The cables hold the bridge up out of the water.



# The Bridge Beat

## • New Commissioner From Southeast Missouri

State Supreme Court Justice Laura Denvir Stith administered the oath of office to the Missouri Highways and Transportation Commission's newest member, Duane Michie of Hayti during the group's monthly meeting in December. Michie is beginning a six-year term on the commission.

Michie was appointed in early December by Governor Bob Holden.

"We are excited to have Duane as the newest member of the MHTC," District Engineer Scott Meyer said. "He brings a wealth of transportation and financial talent that will be good for all Missourians."

Michie is chairman of the Pemiscot County Port Authority and has served on the board for more than 25 years, most of that time as chairman. He said his membership on the Commission will provide an opportunity for sharing the needs of ports.

"River ports are a very important part of Missouri's total transportation package, particularly for communities located near a river," Michie said. "Many people may not realize it, but ports affect a lot of people who live away from rivers. So much commerce takes place at our ports, but most Missourians never see it."

Even though his background is with ports, Michie wants to improve all modes of transportation in Missouri.

"Improved ports are just part of the equation. We need sufficient highway and railroad access to move products in and out of the ports," Michie said.



## An In-Depth Look: Roger Schindele, Traylor Brothers Project Superintendent

Roger Schindele began working in construction while he was still in high school. Today, he is the project superintendent for a \$100 million bridge that crosses the largest river in North

America.

Schindele said when he became the project superintendent he was told his job was to make everyone happy but he passes the time by pre-planning the construction, deciding what methods and what equipment to use. Other

than keeping people happy, what's been the challenge?

"The foundation process has been the most challenging and the most interesting part of the project," he said.

Despite any challenges, Schindele has enjoyed the project.

"I want to thank everyone involved for making this an enjoyable project."

So is he ready for the project to be finished?

"Not as anxious as some. When I met Cape's mayor, he told me he was glad we were here and asked 'when are ya leaving?'"

# Emerson Bridge Helps Decorate For the Holidays

The Bill Emerson Memorial Bridge made its way into the famous Hutson's Furniture holiday window display.



We appreciate

seeing the Hutson's rendering of the bridge, at right, as well as the artist's rendering, at left, all lit up for the holidays.

The "elves" will continue working to open the bridge in 2003.

