

Feature Story

Sawing and Drilling Helps City Bridge the Gap

Dam Performs Double Duty as Base of New Pedestrian Path Over the Arkansas River

The Arkansas River Trail, also known as the Millennium Trail, is an extensive network of paved pedestrian pathways extending northwest from downtown Little Rock and skirting both shores of the Arkansas River. When completed, the Arkansas River Trail will reach from downtown Little Rock to Pinnacle Mountain State Park on the southern shore, and from downtown North Little Rock to Cook's Landing on the northern shore. More than 24 miles of trails have been proposed and nearly 14 miles are complete.

A final link in the loop connecting Little Rock and North Little Rock is the Pulaski County Pedestrian and Bicycle Bridge over the Murray Lock and Dam. Now under construction, this bridge will be longest bridge specifically designed and constructed for pedestrians and bicycles.

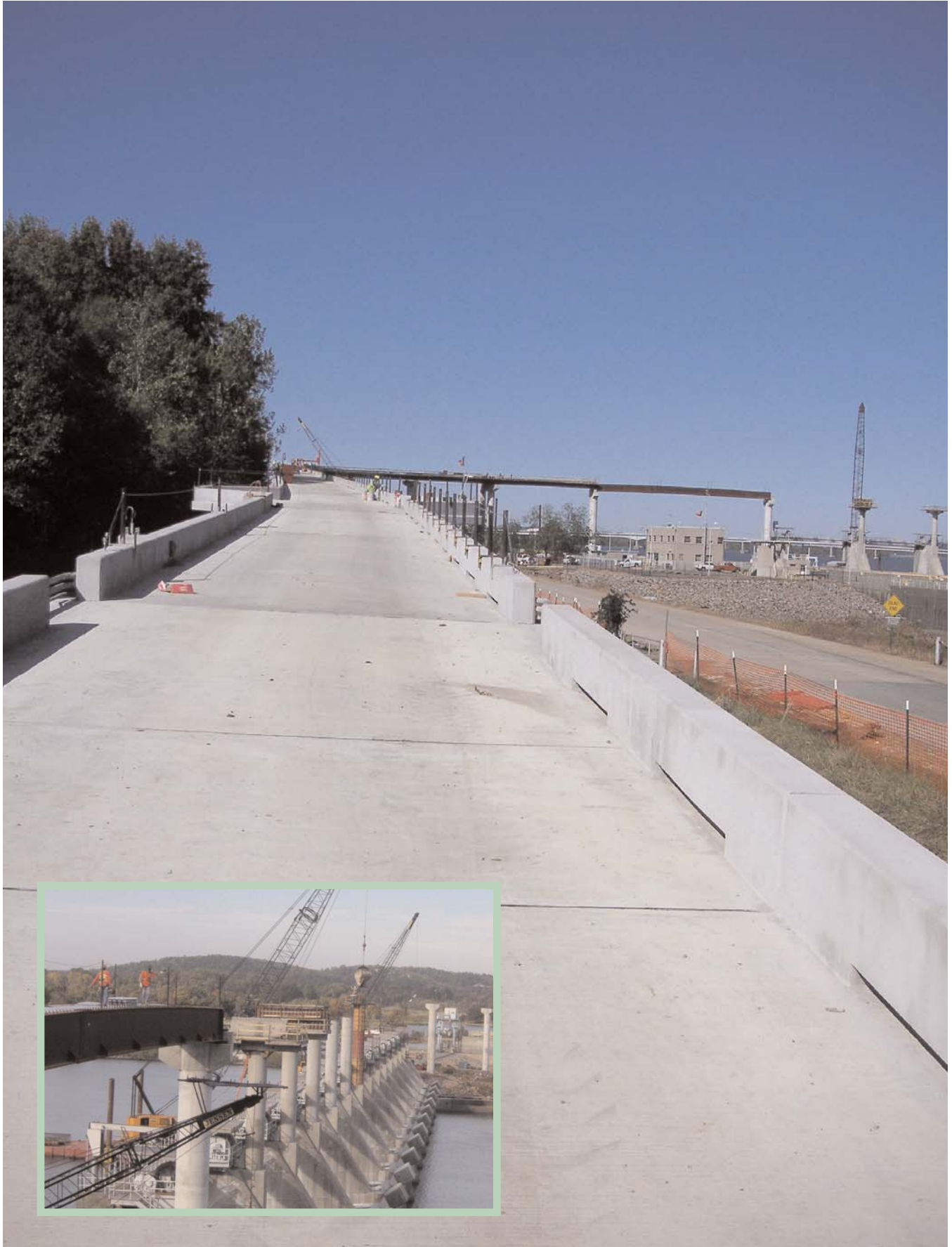
The new bridge will be 3,463 lineal feet long, elevated 65 feet above the navigation channel, with 653 feet of walled embankments. It will feature a 14-foot wide deck capable of handling pedestrian and bicycle traffic. The deck is being constructed with weathering steel girders to minimize future maintenance, and it is being built with gentle slopes to assure compliance with Uniform Federal Accessibility Standards.

Plans called for the Murray Lock and Dam to serve as the foundation for the new bridge, but it was determined that the Murray Dam could not accommodate additional supports on top as they would interfere with the operation of the gates.



Instead, engineers decided to drill shafts into the existing 14 sloped piers on the downstream side of the dam. Rock bolts would then be installed into the piers so that the new bridge columns could be anchored to the dam.

In Spring 2005, general contractor Jensen Construction of Sand Springs, Oklahoma hired CSDA contractor Bluegrass Concrete Cutting, Inc. of Greenville, Alabama to perform the sawing and drilling needed to create the shafts as well as to drill the core holes for the anchors. Bluegrass determined that wire sawing would be the quickest, least destructive and most cost-effective method for removing the concrete segments and set to work.



Bluegrass operators began core drilling five intersecting holes for wire access. They drilled two 3-inch-diameter holes, 13 feet deep, from the top of the pier and then drilled two horizontal, 3-inch-diameter holes from the face 8 feet deep. Then, drilling from the side of the concrete pier, they intersected all of the holes with a 6-inch-diameter, 5-foot-long horizontal hole. Operators then wire sawed the concrete section loose from the pier. Then they made a mid-horizontal cut to divide the section into two blocks for rigging and removal.

Working inside the newly-created pocket, Bluegrass operators core drilled a series of holes for the installation of rock bolts. In each of the 14 piers, they drilled 16 3-1/2-inch-diameter, 10-foot-deep holes in a diamond shape.

To ensure job safety, operators performed a thorough pre-

site check and evaluation and wore the appropriate Personal Protective Equipment (PPE).

The river's high water levels forced operations to shut down for several weeks, but otherwise, the job progressed smoothly. In all, Bluegrass operators drilled nearly 300 core holes and hollowed out 14 piers, removing 121 cubic yards of concrete. The sawing and drilling operation took two full months with six operators on the job, and the project was finished on time.

"We developed our strategy and our technicians did what they always do — worked hard and efficiently performed the task to the contractor's praise," said Tony Niehaus, Bluegrass Vice President. He said that he believes Bluegrass won the job because of their experience performing this type of work over



Below: Pockets had to be created in all 14 piers to support new bridge columns per the drawing.



Above: A new pedestrian bridge over the Arkansas River will piggyback on the piers of the Murray Lock and Dam.

Right: After the piers were hollowed out with wire sawing, operators core drilled shafts for rock bolt installation.



the past 27 years. "We know everything there is to know about wire sawing and can provide solutions for the easiest job to the most complicated," Niehaus said. "They remember our name because we save them time and money."

The Pulaski County Pedestrian and Bicycle Bridge is slated for completion in Fall 2006 and city leaders are eagerly awaiting the completion of the 14-mile loop hoping it will draw more residents and visitors to the growing downtown and river-front areas. Little Rock and North Little Rock residents who use the trail are looking forward to using the new connection and enjoying the city from their new vantage point.

For more information on the status of the project, visit <http://www.swl.usace.army.mil/projmgmt/pulaskibrIDGE.html>. ●

COMPANY PROFILE

Bluegrass Concrete Cutting, Inc. of Greenville, Alabama performs specialized concrete and metal demolition services worldwide. The company offers services in several areas of selective demolition including consulting, construction engineering, project management, diamond wire sawing, core drilling, concrete contamination shaving and robotic hammering. Bluegrass also has substantial nuclear experience including fast-track shutdowns, fossil power, petrochemical and steel renovations. They operate 30 diamond wire saws and 25 Brokk robotic hammers. Bluegrass attributes their success to a dedicated management team and their 25 highly skilled demolition technicians, 20 of which have extensive nuclear experience and 21 of which have 40-hour hazwoper training. Bluegrass has been in business since 1979 and has been a member of CSDA since May 2005.

RESOURCES

General Contractor:
Jensen Construction
Sand Springs, OK
Sawing & Drilling Contractor:
Bluegrass Concrete Cutting Incorporated
Greenville, AL
Methods Used: Core Drilling, Wire Sawing
Tel: 334-382-0200
Fax: 334-382-0815
Web: www.concretecutters.com
E-mail: lmullen@concretecutters.com



Left: Working inside the newly-created pocket, operators were tied off.



Above: The section of bridge over the Murray Dam will be 3,403 feet long and 65 feet high.

Left: 3-inch-diameter holes were drilled in a diamond pattern on each pier.

