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# Day in the sun

Shelly makes adjustment on way to top paving award

By Bill Wilson, Editorial Director

**S**ometimes the sun is good for an extra wake-up call.

Early on in the I-70 paving project in Licking County, Ohio, Larry Shively saw the UV rays hit a fresh layer of skin and was alarmed at blotches. Segregation was a noticeable issue, and the crew at the Shelly Co. knew something had to be done immediately—even if paving was just at the intermediate phase.

“If you were driving in the morning or in the afternoon, depending on which way the sun was shining, you could catch a glimpse of some segregation,” Shively, a quality-control manager for Shelly, told *ROADS & BRIDGES*. “So we reacted to it, and the foreman at both the plant and with the paving crew started just paying attention to a little bit more detail.”

The extra focus started paying immediate dividends, and the last detail on what quickly turned into an award-winning project was finally executed in mid-February, when the National Asphalt Pavement Association named it the recipient of the 2012 Sheldon G. Hayes Award, which is given annually for the top asphalt-paving project in the U.S. Hayes finalists are determined through a two-year process. Any highway pavement project using more than 50,000 tons of asphalt is eligible for consideration. Initially, the project must win a Quality in Construction (QIC) Award, which is determined by numerical scores calculated by pavement engineers at the National Center for Asphalt Technology in Auburn, Ala., on the basis of how well the contractor met specifications and achieved density on the finished pavement. Each pavement that meets a benchmark figure receives a QIC award.

The year after a project wins a QIC Award, it may be considered for the Hayes. The top-ranked projects from the previous year are tested for smoothness and then visually inspected by an independent pavement consultant.

## Limited window, unlimited success

The 11-mile stretch of I-70, which consisted of two lanes in each direction, was tiring, but it was not quite to the point of exhaustion. Still, there was enough center longitudinal joint cracking and rutting to call in some relief, and Shelly arrived in August 2011 with a Wirtgen W210 milling machine, which chewed off 3.25 in. of the mainline and 1.5 in. off a total of nine ramps. The milling width varied from 38 ft to 62 ft long, depending on the number of lanes. What was left was a sub-base in decent condition, according to Shively, but it did require some patching prior to the start of the paving process.

Due to a restricted paving window at night, Shelly’s daily work would consist of milling, tack-coat application, which was executed by a Ford F-700 asphalt distributor with an Etnyre tank and spray bar, and then paving. Shively said



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— Larry Shively

crews would go through about 1,500 tons of asphalt each shift, which equaled about two miles of new asphalt. Due to the tightly timed shifts, the tack coat application for the night began not long after the milling operation.

An Astec Double Drum asphalt plant with a warm-mix kit, located about 20 miles from the center of the jobsite, supplied the material. Shively said it was one of the first facilities in Ohio to have an approved warm-mix kit to use on state projects. The asphalt mix for the 19-mm, 1.75-in. intermediate course called for a PG 64-28 binder, Ohio Department of Transportation (ODOT) Nos. 57 and 8 aggregate, sand and 30% reclaimed

asphalt pavement (RAP). The mix for the 12.5-mm, 1.5-in. surface course included a PG 70-22 binder, ODOT No. 8 aggregate, sand and 14% RAP.

When the segregation problem popped up early on, Shelly decided to use a Terex Roadbuilding MS-4 material transfer device on the intermediate course. It also was used on the surface mat. At the plant, all silo-loading procedures were reviewed, and a quality-control manager was used to monitor truck loading.

The mix temperature of the intermediate course was 310° F at the plant and 290° F at laydown. It was a bit elevated for the surface course (315° F at the plant; 295° F once it left the asphalt paver).

A Vogele Vision 5200 track paver with a Carlson front-mounted screed laid the pavement on the mainline, with a Caterpillar AP-800D wheeled paver with a Carlson front-mounted screed handling the 8- to 10-ft shoulder work.

"We called the second core our 'sister core,'" said Shively. "That way we could bring it back and have results immediately."

"Once you get your gauge [readings] and your cores the technician can start getting a very good feel for when he sees a number on the gauge and how it is going to correlate with the core. Then really the core becomes less important because we can make decisions off the gauge itself."

Shelly had to reach a density of 93, and Shively said that number was met and often exceeded. ODOT also looks at joint density on all projects. Three out of the 10 cores had to be taken close to the joint in an effort to improve the compaction effort at the spot where the two mats meet. Shelly also sprayed tack coat to achieve a better bond between the sub-base and the intermediate course.

All of the nine ramps on the job received the 1.5-in. surface layer, but the one where S.R. 256 tangled with I-70 proved to be particularly challenging. Shelly was required to set up temporary work zones along the ramps, and this

ramp, located just outside of Columbus, experienced heavy traffic. Law enforcement was used throughout the project, but at one point the Ohio State Highway Patrol had to completely shut down one of the ramps due to the intense activity.

"Traffic there was insane," said Shively.

ODOT only required smoothness checks on the surface layer, but Shelly executed them with an Ames high-speed profiler every day or so on the intermediate layer as well as on the surface. Results would be relayed to the foreman, so when crews got to the surface needed adjustments could be made.

### Named for quality

High recognition was not an afterthought on this job. Before the first mill hit the existing pavement, Shively and Operations Manager Tim Anderson wanted this work to be special. Unfortunately, Anderson passed away at home before the project reached completion.

"That gave everybody an extra incentive," said Shively, who was good friends

with Anderson. "We wanted this in Tim's name, so to speak."

Tim Anderson will define quality asphalt paving at Shelly for some time to come. After his death, the Ohio contractor created the Tim Anderson Paving Award, which is handed out to the top Shelly job of the year. Each division of the company nominates a project, and Flexible Pavements of Ohio picks the winner.

As for the I-70 work, Shively still drives the 11-mile stretch almost every day.

"It is holding up very well," he said. "The winter last year was pretty mild, but this year we have had a lot of freeze-thaw."

"It is a great honor [to be named a Hayes finalist]. What it does is it highlights our commitment to quality. We also are very pleased we could partner with ODOT. It takes them and us to pull this off." **R&B**

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