

CPR – REBUILT TO LAST



Concrete Patching and Maintenance for I-44 in Oklahoma City, OK

>>> DIAMOND GRINDING & JOINT RESEALING

INTERSTATE I-44 IN OKLAHOMA is a highway that runs from the southern border it shares with Texas to the Missouri border in the northeast corner of the state. The highway connects three of Oklahoma's largest cities and is a primary corridor connecting this part of the country to the Midwest. The Oklahoma City section of the highway ranges from six to eight lanes and overlaps I-35 for a short time.

In 2005, the road was in desperate need of repair as the transverse joint faulting was in the 1/4-inch to 3/8-inch range with isolated 1/2-inch to 5/8-inch faults and variable 1/4-inch to 3/4-inch faulting at the longitudinal joints. As a result, the Oklahoma Department of Transportation (ODOT) decided to repair three eastbound and westbound travel lanes along with auxiliary and ramp lanes, totalling 1.898 miles.

The ODOT chose to use Concrete Pavement Restoration (CPR) because of prior success with this method. Full depth patching, dowel bar retrofit (DBR), diamond grinding and joint resealing of transverse and longitudinal joints with hot pour were chosen for three lanes in each direction.

Due to the high volume of traffic, night work was

required. The project specifications required the road to be open at 6 a.m. each day for commuter traffic. This was accomplished for the duration of the project, thus avoiding the penalty of \$10,000 per 15 minutes for not having the roadway open to unrestricted access by the specified time. Another major challenge was scheduling and completing work through the I-235/I-44 interchange during the short night work window.

According to Tom Hubbard, ODOT Edmond Resident Engineer, dowel bar retrofit and diamond grinding projects are extremely effective in extending pavement service lives.

“In the past decade, many dowel bar retrofit and diamond grinding projects have been completed in the Oklahoma City metro area. In each case, user costs were minimized by performing the work during night-time hours. The cost effective nature and minimized user costs are key in the success of concrete pavement restoration,” said Hubbard.

Since completion in 2005, the roads are still in excellent condition and the repair is expected to last for at least 10 years. The total project cost was \$1,649,220.

TEAM MEMBERS

- Oklahoma Department of Transportation, District IV, Edmond Office (Owner)
- Penhall Company (Prime contractor, diamond grinding, dowel bar retrofit, joint resealing)
- Haskell Lemon Construction Company (Full depth patching)
- Advanced Warnings (Traffic control)
- Maxwell Supply (Patching, dowel bar retrofit and joint sealing materials supplier)
- Five Star Products (Dowel bar retrofit patching material supplier)
- K2 Diamond (Blade supplier for diamond grinding)
- Penhall Diamond Products (Blade supplier for diamond grinding)