

# CPR: REBUILT TO LAST



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## I-195 from I-95 to Valley Street, East Providence, R.I.

### >>> DIAMOND GRINDING

**INTERSTATE 195 IS A 40-MILE HIGHWAY** that runs east to west from Rhode Island to Massachusetts. A portion of the highway, from Interstate 95 to the Valley Street exit, was generating high levels of tire/pavement noise. Recently reconstructed in 2010, the transversely tined concrete surface prompted several noise complaints from local residents. In an effort to reduce noise and improve ride quality, the Rhode Island Department of Transportation (RIDOT) chose conventional diamond grinding as the solution to improve the pavement surface characteristics.

The project involved grinding 77,178 square yards of pavement including ramps, mainline and bridge decks. RIDOT's use of a noise reduction specification set this project apart from others. This was the first time in the U.S. that a diamond ground surface would be re-

quired to meet a noise target. The final diamond ground surface specifications needed to meet 102 dBA or less as measured by an On Board Sound Intensity (OBSI) device. "Grinding a surface to this type of specification was a challenge. All of our experience to this point was based on lab work and small test sections," said Terry Kraemer, President, Diamond Surface, Inc. "Lessons were learned on the specific techniques required for this type of project, and we were able to meet or exceed the specifications on the majority of the work."

"The quality workmanship by the grinding machine operators has resulted in a noticeable reduction in tire/pavement noise as well as a smoother ride experience for the driver," said Frank Corrao, Deputy Chief Engineer, RIDOT.

### TEAM MEMBERS

- Rhode Island Department of Transportation (Owner)
- Aetna Bridge Company (Prime contractor, traffic control)
- Diamond Surface, Inc. (Diamond grinding)

The total project value was approximately \$776,000, with diamond grinding accounting for \$414,100. Overall noise reduction was between 60 and 70 percent and the rideability of the bridges and pavement were improved. The taxpayers now have a quiet, smooth riding and safe section of pavement that is expected to last for 20 years. The project was completed in December 2012.