

CPR – REBUILT TO LAST



Your Pavement Preservation Resource

I-90 Diamond Grinding of Asphalt, Wall, SD

>>> PAVEMENT REHABILITATION AND DIAMOND GRINDING

IN THE SUMMER OF 2006, the South Dakota Department of Transportation (SDDOT) recognized that Interstate 90 from milepost 94 to 112 was in need of rehabilitation. As the longest stretch of Interstate highway in South Dakota, I-90 runs from the Minnesota border through the Central Plains area and into the heart of the Black Hills region covering 412 miles of the state. Having overlaid this roadway with an asphalt surface almost three years before, the Department of Transportation was not satisfied with the results. The deteriorating asphalt was in need of improvements and posed a safety issue for travelers.

In order to repair the rideability of this 18-mile stretch of road, SDDOT decided to diamond grind approximately 11.89 lane miles of asphalt. Typically, a project such as this would be milled and overlaid with new asphalt pavement, but SDDOT recognized that they could improve the overall ride and friction on the existing surface with diamond grinding and save money at the same time. The scope of work included 83,724 square yards of asphalt grinding, which consisted of safety improvements (guardrail), asphalt milling and repaving of deteriorated asphalt pavement, as well as bridge approach improvements, rumble strips and pavement markings. Diamond grinding was performed on asphalt pavement sections that were structurally sound but needed ride improvement.

According to Brenda Flottmeyer, Lead Project Engineer for South Dakota Department of Transportation, the designers recommended diamond grinding as a means to smooth the road based on their prior experience in using diamond grinding on concrete surfaces and other asphalt surfaces.

“We chose to profile grind the area and we were pleased with the results,” said Flottmeyer.



With the total project cost of \$ 8,212,721, the grinding cost \$263,000 or \$22,176 per lane mile, which is three to four times less than an overlay would have cost. The project started in June 2006 and had a total of 25 working days.

Using the method of diamond grinding not only corrected the ride quality issues on I-90, but allowed for less maintenance and increased pavement longevity. Since the completion of this project, the South Dakota Department of Transportation has completed other similar projects.

According to Terry Kraemer, President of Diamond Surface, the project validated that diamond grinding can be used to improve the surface characteristics of asphalt roadways.

TEAM MEMBERS

- South Dakota Department of Transportation (Owner)
- Border States Paving (Contractor)
- Diamond Surface (Subcontractor)
- Diamond B (Diamond blade supplier)

“In addition to providing the travelers of I-90 with a smoother ride, this project confirmed that ride deficiencies can be corrected on asphalt pavements using diamond grinding,” said Kraemer. “There is a mindset in our industry that diamond grinding is not for asphalt, but that isn’t true.”