

CPR – REBUILT TO LAST



I-94 Repair From Upper Midwest to Upper Northwest Douglas and Grant Counties, MN

>>> CONCRETE PAVEMENT RESTORATION (CPR) WITH DIAMOND GRINDING

IN 2007, the Minnesota Department of Transportation (MNDOT) determined repairs were needed on 32 lane miles of Interstate 94, located in the west and central region of the state. This section of the highway is heavily travelled by trucks and is the northernmost east-west interstate highway that connects the Great Lakes and the intermountain region of the U.S.

Originally reggraded in 1988 with 11-inches of concrete, repairs were needed to fix transverse cracks located halfway between the existing 27-foot-wide by-27-foot skewed joint spacing. The mid-panel cracking was facilitated by the excessively long joint spacing utilized in this non reinforced pavement design. An asphalt overlay was considered but was not selected due to the strong functional and structural condition of the concrete. As such, full- and partial-depth patches, dowel bar retrofit (DBR), diamond grinding, sawing and sealing joints, and routing and sealing cracks were selected. These repair methods were chosen due to their cost-effectiveness and proven longevity – at-

tractive to both owner and taxpayers alike.

The project consisted of 101,000 lineal-feet of routing and sealing cracks, as well as 131,000 lineal-feet of saw and seal of joints. Because the inside wheel track was in better shape than the outside track, it only required two DBR – an innovative approach that saved money. The owner also chose to simply route and seal the longitudinal cracks rather than replace entire slabs as the cracks did not affect the ride or integrity of the concrete slab. Once again, this approach proved cost effective.

Completed in October 2007 after a mere four months despite numerous rain delays, MNDOT demonstrated the flexibility and cost effectiveness of the CPR process by targeting only the most deteriorated sections of the pavement thereby stretching their dollars for more miles. The result benefits MNDOT and taxpayers alike with a smooth, economical roadway that is expected to last for more than 15 years.

TEAM MEMBERS

- Minnesota Department of Transportation (Owner)
- Diamond Surface (Prime contractor, patching, DBR, grinding)
- Superior Saw and Seal (Sub-contractor, joint saw and seal)
- Central Specialties (Sub-contractor, shoulder rehabilitation)
- Simplex Construction Supplies (Materials supplier)
- Diamond B (Diamond blade supplier)
- Construction Materials, Inc (Sealant supplier)