



Full Depth Reclamation (FDR) with a Concrete Surface – Wabasha County CSAH 25 & 2

An interview with Dietrich Flesch, Wabasha County Engineer

What was the problem?

By 2015 the surface of the pavement around the intersection of County State Aid Highway (CSAH) 25 and 2 just north of Elgin, Minnesota, was distressed, and the ride quality was poor. Highway 25 also had narrow shoulders and a deteriorating metal culvert underneath. Further east on 25, there was a poor approach alignment toward Minnesota State Highway 42; it was skewed at about 45 degrees. Also, as drivers approached that intersection, cars in the right turn lane onto Highway 42 prevented them from seeing approaching cars. This area of Wabasha County had not been paved since 1994.

What was the solution?

In 2015, the county performed FDR on the existing eight inches of heavily cracked bituminous pavement. They completely pulverized it and graded it to an average thickness of 12 inches, including the mixed aggregate base. This would become the subbase for a concrete pavement in 2016.

The reclamation took two to three weeks to complete, and leftover material that wasn't needed for the subbase was used for shouldering material. Afterward, people drove on the reclaimed grade through the winter, and the grade became hard and compacted. Snow and ice removal were a challenge, but the county thought the long-term cost benefits of the reclamation were worth it.

"We looked at life cycle costs over 50 years, and concrete was the preferred choice," said Dietrich Flesch, County Engineer. "We considered the amount of local traffic and the commercial traffic along with farm implements that carry a lot of heavy weight."

In 2016, the skew on Highway 25 was realigned, the intersection of Highways 25 and 42 was widened to improve visibility past the right-hand turn, and the concrete pavement construction was completed.

Key facts about the project

- ▶ Project was approximately 3.6 miles on CSAH 25 and 2 miles on CSAH 2.
- ▶ 92,000 square yards of concrete were placed.
- ▶ Concrete was 7.5 inches thick for five miles; 8 inches thick for 0.6 miles.
- ▶ Doweled joints were used throughout the pavement so the concrete panels transferred the vehicle load better.
- ▶ Project cost was \$4.6 million. The reclamation did not require any stabilizing agent, which saved on costs.
- ▶ The project was awarded in Spring 2015 and allowed the flexibility in the schedule to complete the project by the following year, also resulting in reduced costs.

Project numbers: S.P. 079-625-015;
079-070-007; 079-602-039

Owner: Wabasha County
Design/Project Engineer: Wabasha County Staff

Contractor: Chippewa Concrete Services, Inc.

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