CASE STUDY

CONCRETE HIGHWAYS
HIGHWAY 43 - GRANDE PRAIRIE, AB

PROJECT TEAM

ENGINEERING CONSULTANT:

EBA Engineering Consultants Ltd.
(sub-consultant to ISL Engineering and Land Services)

CONTRACTOR:

Knelsen Rock Products GP Ltd.
Proform Concrete Services Inc.

CONCRETE SUPPLIER:

Knelsen Rock Products GP Ltd.

OWNER:

Alberta Transportation

THE OPPORTUNITY

Highway 43, which passes through the City of Grande Prairie, is a major highway in northwestern Alberta and key component of the north-south trade corridor. Braking and turning by a high volume of heavy truck traffic caused severe, constantly recurring asphalt rutting at two intersections.

THE SOLUTION

Alberta Transportation sought a durable pavement solution with extended service life and less frequent re-surfacing. Full-depth concrete pavement has worked very well in other locations in Alberta that carry heavy vehicle loads, and Knelsen Rock Products GP Ltd. assembled a project team (EBA Engineering Consultants Ltd., Proform Concrete Services Inc.) to replace the rutted asphalt with concrete.

PROJECT DETAILS:

- Existing asphalt concrete pavement (ACP) was milled off four left turn lanes at two different intersections, a total of about 2050 sq m.
- Enough base material was removed to accommodate the proposed portland cement concrete (PCC) pavement.
- Where there was PCC under the ACP, it was completely removed as well, and where required, additional base material was brought in to maintain grade.
- Concrete was poured in sections to a nominal thickness of 240 mm; no edge thickening was required.
- All longitudinal and transverse joints were saw-cut and hot-sealed over backing rod.
- Transverse joints were made at 4.5 m intervals with wired dowel baskets, using 32 mm x 450 mm epoxy coated smooth steel dowels at 300 mm o/c.

ABOUT THE CEMENT ASSOCIATION OF CANADA (CAC)

The CAC is the voice of Canada's cement industry. A vital contributor to the country's economy and infrastructure, the industry provides a reliable, domestic supply of cement required to build our country's sustainable communities and is committed to the environmentally responsible manufacturing of cement and concrete products. Visit www.cement.ca for more information.

ABOUT CONCRETE ALBERTA

Concrete Alberta represents over 93% of the concrete producers in Alberta, and is fully funded by the membership of Producers, Associates and Affiliates. Visit www.concretealberta.ca for more information.