

Half of Highway 101 twinning covered in concrete

By Lynne Wells
Contributing Writer

Nova Scotia has just opened 21 kilometres of a newly twinned section of Highway 101 leading into the Annapolis Valley, and slightly more than half of it was paved with concrete. Nova Scotia typically doesn't pave with concrete due to the higher initial costs. However, the safety issues surrounding Highway 101 convinced officials to opt for a partial concrete roadway.

Gill Ross of St. Lawrence Cement, the company that took out the initial tender papers, says concrete's durability and visibility went a long way toward convincing the Nova Scotia Department of Transportation and Public Works that concrete was a viable alternative to asphalt.

"Because concrete is a rigid substance, there's no rutting, so there's no collection of water on the road surface and the risks of hydroplaning are greatly reduced," Ross says. "Also concrete's almost white colour makes it much easier to navigate at night."

The entire 21 kilometre section cost \$33 million dol-

lars to build. St. Lawrence Cement subdivision Demix Construction bid on the concrete section of the job and won with a \$6.5 million bid.

"The pricing for the contract was very competitive," Ross says. "Concrete paving typically costs 10 to 12 per cent more than asphalt, but the lower maintenance costs provide pay-back over the long-term. It's unfortunate that budgetary restrictions on the Nova Scotia government have kept concrete highways almost non-existent in the province. We were thrilled when the government agreed to concrete and we were very excited to have the opportunity work on the project."

The project involved a number of sub-contractors working together in what Ross calls a "tremendously co-operative effort. We were just thrilled with the level of co-operation on the job. Everyone did a phenomenal job."

The paving work proceeded smoothly, with only a slight initial delay as the paving crew and concrete supplier worked together to get the best mix.

"We wanted strength results that just weren't there in the very first pours," Ross

says. "We worked together on the mix and got the strength results we needed to meet specifications, and away we went."

St. Lawrence Cement's Quebec division, Demix Construction, served as the general contractor. Dufferin Construction, an Ontario division of St. Lawrence, did the actual concrete paving, using concrete mixed to Dufferin's specifications from the Lafarge plant in Brookfield, Nova Scotia. Excavation services, guard rails and gravelling was done by Alva Construction Ltd. Sciage de Beton did the saw cutting, while CPM Charron Inc. did the joint work. VJ Rice Concrete Ltd. and Gateway Materials Ltd. supplied the aggregate. Coastal and the Truckers Association of Hants County met the trucking needs for the project. Arrow provided other necessary construction products.

"When you consider that no one in Nova Scotia is equipped for large-scale concrete paving, the end results are terrific," Ross says. "With only one or two concrete paving projects every 10 years or so, it's just not feasible to invest in the necessary equipment, but otherwise the local



firms we worked with on the job were phenomenal."

Plans for the twinning of Highway 101 have been in place for years. Work will continue on twinning further sections of the highway through the winter and into 2004.

Jean-François Coté, project engineer for Demix Construction Ltd., oversees the progress of concrete paving on Highway 101. Sand for the project was supplied by V. J. Rice Concrete Limited, Bridgetown, N.S. and admixtures came from Master Builders Technologies through its Atlantic distributor, Pinnacle Agencies Ltd., Dartmouth, NS.

Irving redeveloping powerhouse, dam at St. George Pulp and Power

Construction work at the St. George Pulp and Power plant in New Brunswick is proceeding on schedule. The multi-million dollar redevelopment project involves the demolition of existing infrastructure at the Irving-owned subsidiary and the construction of a new underground powerhouse, dam and spillway. The new underground pow-

erhouse will house two 7.5 MW turbine/generators and a tailrace tunnel. The project also involves a new downstream fish passage.

The key goals of the project are to improve energy production and efficiency at the plant and to improve flood control with additional spillage capacity.

Lafarge Construction Materials is supplying the concrete

for the project from a certified portable plant located on-site. LaFarge's on-site project manager, Joel Harris, says the company poured 9,400 cubic metres of concrete to date, and another 1,200 to 1,400 cubic metres should be poured before the project wraps up in December.

Much of the concrete used has a strength of 30 mpa, with 20 ml aggregate, but Harris

says two different mixes were used in the project.

"We used 40 ml stone in the massive pours for the dam walls," he reports. "We've been trying to keep the heat down, so the fly ash content is between 15 and 20 per cent."

While LaFarge has produced the mixes, Fundy Ready Mix supplied the trucks to bring in the aggregate, etc.

Work this past summer

included the placement of the intake concrete, the installation of intake head gates and the completion of the powerhouse substructure concrete placement, as well as a 60 per cent placement of the concrete for the powerhouse walls.

Repairs on the existing main dam were also completed and 65 per cent of the concrete for the non-overflow section of new dam was placed.

The project has moved ahead steadily this fall, with more than three quarters of the total volume of concrete poured. Throughout October and November, construction will focus on the concrete being poured for the new spillway dam and the installation of the gates on the intake dam. All concrete work should be completed on the site by year's end.

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