



AIL Engineers World's Largest Corrugated Arch

When Cardinal River Coal needed to transport raw coal from their new Cheviot Creek pit through the Canadian wilderness to their processing plant over 20 km away, it was obvious many unique challenges would need to be overcome. One of the biggest was engineering a structure on the haul road that would be large enough to span Whitehorse Creek, and strong enough to withstand the weight of the world's largest mining equipment including a 2.4 million pound shovel. After reviewing several alternatives, it became apparent that the engineers at AIL and their innovative products were the partner they were looking for. The finished product turned out to be the construction of the largest corrugated arch in the world.

- 24.0 m Span, 12.052 m Rise, 30.48 m Length

Timeline

From the time of order, engineering of the arch structure was completed within one month. An additional month was needed for revisions and changes, due to site constrictions. Site preparation began in early May lasting until mid June and assembly of the Super•Cor arch was completed within three weeks. Backfilling and wall assembly was completed within six weeks.



Atlantic Industries Limited

“AIL’s engineering expertise and experience with large arches gave us the confidence to proceed with this essential installation. They also provided us with effective support throughout the project and proved to be a strong partner.”

– Cardinal River Coal General Manager, Lloyd Metz

Cheviot Creek Mine Spans

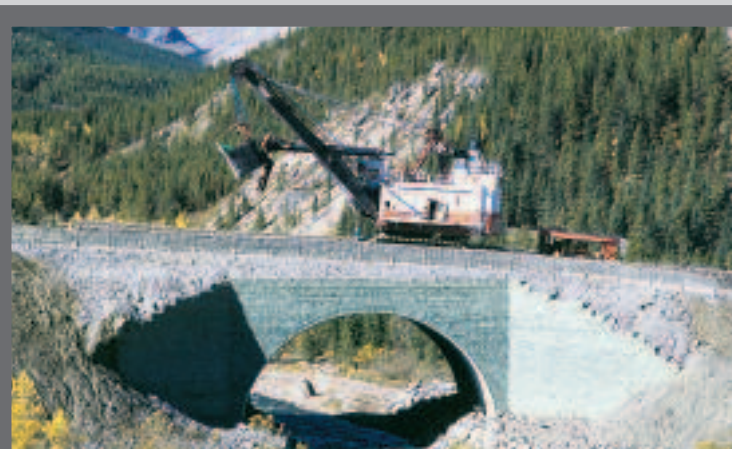
- Whitehorse Creek Arch: 24.0 m Span, 12.052 m Rise, 30.48 m Length, 93S Super•Cor Arch, 4.0 m Height of Cover
- Vehicle Underpass Arch: 6.86 m Span, 5.138 m Rise, 37.338 m Length, 35S Super•Cor Arch, 4.792 m Height of Cover
- Atlantic Wire Wall: up to a maximum of 16.549 m High

The AIL Difference

AIL provided on-site technical assistance throughout the construction. That assistance ranged from training crews on optimum assembly methods, providing input on solutions to construction issues such as backfill quality and compaction methods, and providing experts on its wire wall system for installation efficiency. “AIL provided on-site technical specialists that were phenomenal,” says Wes Erickson of Formula Contractors Ltd. “They went to great lengths to help us provide quality workmanship, increase our production, and achieve our very tight schedule.” Over and above, AIL provided research engineers to conduct three days of testing to determine the strain induced on the structure by the heaviest vehicles.

Other products used at Cheviot Creek Mine

- Atlantic Wire Walls – Used to minimize the length of the structure, and fit into the site geometry
- Super•Cor Arch (6.86 m span) – Used as underpass for campers travelling through Provincial Park
- Welded Wire Gabions – Used for crash barrier at the top of the structure along the haul road



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