



Atlantic Industries Limited

PROJECT PROFILE



July 29, 2018

AIL's MSE Retaining Wall Systems partner up in two Saskatoon interchanges

Atlantic Industries Limited (AIL) is proud to have been selected as a partner on a large design-build project for two interchanges in the City of Saskatoon. Our role was to design and supply MSE Precast Panel Wall bridge abutments. We also provided a temporary wire-faced shoring wall and precast concrete coping elements.

We were heavily involved from the procurement stage right through to project sign-off, working very closely with our customer PCL and project partners CIMA+ and Trek Geotechnical.

A tale of two city interchanges and the challenges within

The interchanges will relieve signaled intersection congestion in the City's growing east side. One is located at McOrmond Drive and College Drive. The other is at Boychuk Drive and Highway 16 (Yellowhead Highway). Each location brought its own challenges:

Project at a glance:

Project Name: McOrmond and Boychuk Interchanges

Location: Saskatoon, Saskatchewan

Owner: The City of Saskatoon

Engineer: CIMA+

Geotechnical Consultant: Trek Geotechnical

Contractor: PCL Construction Management Inc.

Product: MSE Retaining Wall System (Precast Panels Walls, Precast Coping, Temporary Wire Walls)

Sector: Urban

Applications: Bridge Abutments and Temporary Shoring

Dimensions: 1850 square metres



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1. Poor foundations and controlling total and differential settlements
2. Construction sequence at McOrmond Interchange
3. Construction staging/detours at Boychuk Interchange

Here's how the challenges were overcome

1. Poor foundations and controlling total and differential settlements

The sites were characterized by high water tables and poor foundation soils. Working closely with our project partners, the group put measures in place to control and limit settlements. This was accomplished by using rock columns that extended back from the MSE wall face to the end of the Grid Strip steel soil reinforcements.

2. Construction sequence at McOrmond Interchange

The construction schedule required that the bridge be built before the MSE Wall was installed. This affected our compaction process when installing the MSE wall under the abutment.

In order to ensure proper compaction, PCL used a lightweight cellular concrete (Cematrix) in the top ~1.5m of the wall and took precautions to ensure it did not bond to the piling or abutment seat. This allowed the MSE wall to move independently from the bridge, as designed.

3. Construction staging/detours at Boychuk Interchange

To keep detours open and traffic flowing during construction of the Boychuk Interchange, PCL used our wire-faced MSE wall to temporarily shore the precast MSE wall.

This temporary wall was buried once the detour changed and the precast wall was completed.

Precast Coping helped accelerate the projects

The use of precast coping helped PCL accelerate the projects — as the overall time and costs to form and pour cast-in-place concrete coping on site are much higher.



Constant coordination with respect to design iterations and material delivery proved invaluable. Plus, we had a field representative on site for much of the construction. This helped answer construction questions quickly and keep PCL moving forward.

"From conceptual design and budget pricing through to construction completion AIL stayed closely involved with PCL's project team. AIL's commitment to the project demonstrated their desire to collaborate and deliver a successful project."

— Daniel Rarog, Construction Coordinator,
PCL Construction Management Inc.

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