

NORTHERN LIGHTS

LIGHTWEIGHT, STRONG STEEL INFRASTRUCTURE



THE AIL GROUP OF COMPANIES



DESIGNED & SUPPLIED
IN CANADA FOR THE
CANADIAN NORTH



Structural Plate Bridges & Crossings



Geotextile Reinforced Soil (GRS) Bridges



Modular Panel Steel Bridges



Prefabricated Steel Bridges



Retaining Walls & Abutments

Northern infrastructure solutions need to be able to withstand the rigours of its harsh climate.

They need to ship and install easily with local crews and limited equipment. They need to be flexible to work with changing permafrost conditions. And, they also need to be affordable and practical for the communities and organizations they

are serving. The AIL Group understands the unique requirements of the North. Our lightweight and strong

infrastructure solutions are **economical, resilient and sustainable.**



AIL products contain recycled content and are 100% recyclable.



Gold Mine, Northern Quebec

YOUR CANADIAN AIL GROUP PARTNERS



Let's talk Northern Infrastructure!
1-877-245-7473 • info@ailnorthern.ca

Our Structural Plate Crossings and Culverts are the perfect solutions for the North.

By design, their components nest together for economical shipping by land or sea. They can be assembled by local construction crews with limited (or no) need for poured concrete. And, they create flexible and resilient structures able to handle higher settlement ranges and seismic events. These buried structures also have no road surface joints to maintain.

All told, our Structural Plate Crossings and Culverts are **ideal for remote Northern locations.**



Iron Ore Mine, Northern Quebec



Build in any weather

Limited reliance on concrete curing, fewer weather delays



Precast Footings also available

We have Structural Plate solutions for all manner of engineered structures. We manufacture a complete range of Plate products for every need and budget, with span capabilities ranging from 1.5 m (5') to 35 m (115').

And, with over 50 years of experience in engineered Structural Plate, The AIL Group is renowned for its product innovation and on-site support. Plus, we can package your solution with efficient headwalls, crash barriers and more. In short, we're your one stop for **everything from the smallest culvert to huge river crossings.**



We're big on the North!

Talk to one of our Northern Infrastructure Experts about your next project.
The sooner we get involved, the more you might save.
1-877-245-7473 or info@ailnorthern.ca

Our Buried Bridges and Culverts are versatile engineered solutions that can be tailored to your site

requirements. Our in-house Engineering Teams work closely with project partners to develop solutions that will easily accommodate their budgets, timelines and site anomalies. This may mean collaborating on geotechnical analyses, unique footing types, local backfill materials, specialized coatings or efficient options in headwall treatments. Whatever the case, we will work with you to develop custom solutions that are **able to go with the flow.**

Features and Benefits

- ▶ Available in a variety of corrugation profiles
- ▶ Spans from 1.5 m (5') to 35 m (115')
- ▶ Easy to ship and install for remote locations
- ▶ Long-lasting and virtually maintenance-free
- ▶ Bottomless designs are more environmentally-friendly
- ▶ Available with a variety of footing and headwall/wingwall options
- ▶ Available with Best-Kote Polymer Coating
- ▶ Manufactured in accordance with CHBDC, AASHTO and ASTM design requirements



Open Flow Hydraulics



Integrated Steel Spread Footings



Packaged with Steel Sheet Piling Headwalls and Wingwalls



Packaged with MSE Wire Wall

ALL Geotextile Reinforced Soil (GRS) Bridges are patented buried bridge systems developed for the forestry, resource and transportation sectors. GRS Buried Bridges are usually constructed using local materials and equipment.

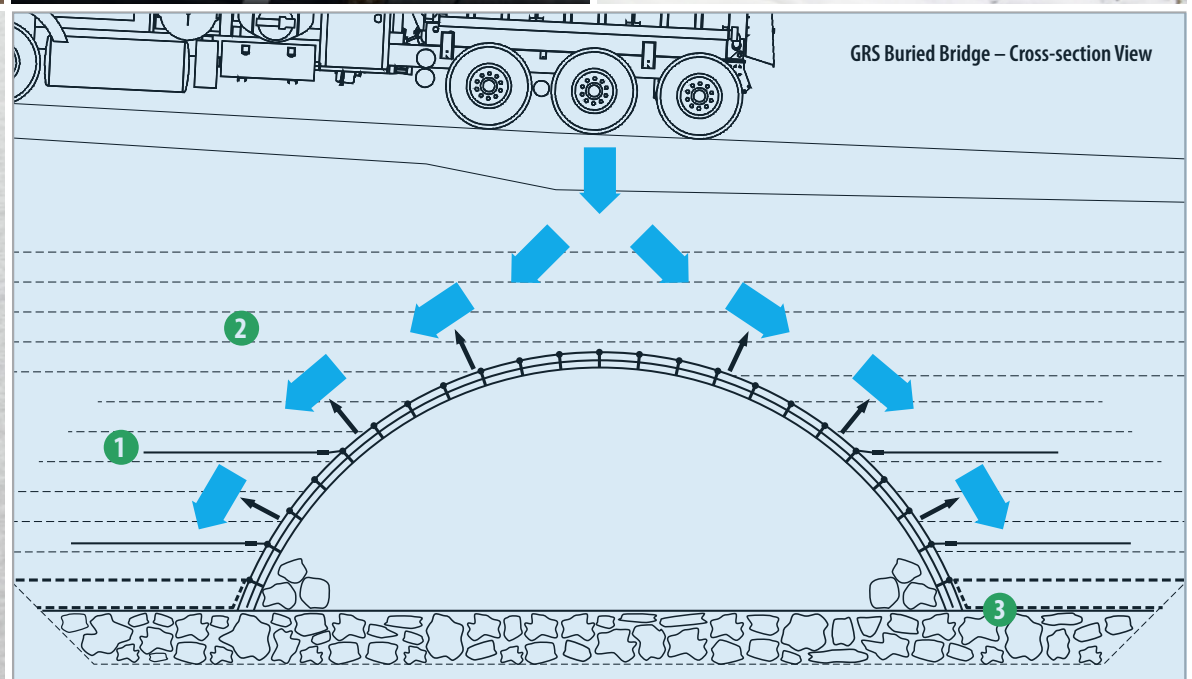
These fish and wildlife friendly solutions require no concrete footings or pile foundations, they are scour and piping resistant and they are very quick to install. Dead and live loads are supported by the surrounding GRS compacted soil mass – multiple layers of geotextile and steel anchor rods – so you could say the bridges definitely **put the dirt to work**.



How GRS Bridges work

GRS buried bridges are a soil-steel geotextile composite structure. Dead and live loads are supported by the reinforced soil, structure and natural or improved subgrade soils.

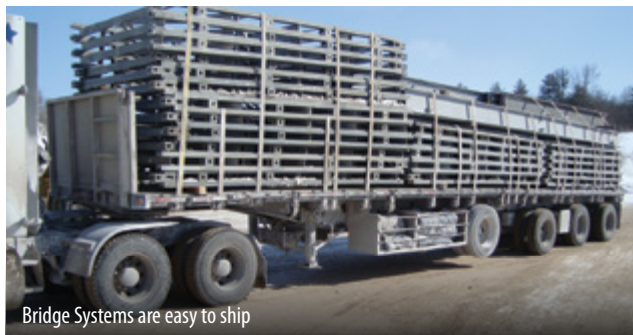
- 1 Anchor Rods**
The arch structure is connected to the GRS soil mass composite with soil anchor rods. The anchor rods ensure the structure maintains shape during backfilling.
- 2 Multiple GRS Layers**
Closely spaced geotextile between layers of compacted backfill act to confine the soil particles.
- 3 Boulder Layer Foundation**
Used in lieu of conventional strip footings or pile foundations.



Mabey Modular Panel Bridges are robust ‘quick-build’ systems that are shipped on trailers or in cargo containers for site assembly by local teams. All components are hot dip-galvanized for maximum durability. Assembled bridges can be cantilever-launched from one side or they can be crane lifted into place. We offer two versions of these systems for a full-range of applications, including heavy industrial. With a ready-to-ship inventory, our AIL Group affiliate, Algonquin Bridge, is the exclusive Canadian Distributor of these adaptable **and reusable bridge systems for sale or rent.**

Features and Benefits

- ▶ Modern versions of classic “Bailey Bridge”
- ▶ Quick ship and install
- ▶ Permanent or temporary application
- ▶ Excellent detour bridge solution
- ▶ Short-term or long-term rental options
- ▶ Able to cantilever-launch from one side
- ▶ Clear spans of up to 90 m (295')
- ▶ Optional internal or cantilevered sidewalk



Prefabricated Steel Bridges from the AIL Group offer many benefits over their site-built alternatives. They are pre-engineered and manufactured to tightly-controlled tolerances and quality regimes. Their modules are easy to transport by road, ship or barge. Able to handle heavy industrial loads, they are available in various lane widths reaching spans of up to 73 m (240').

Choose from naturally-weathering, galvanized or painted finishes. With one of our economical abutment systems ready and waiting on your site, these are bridges **that can install in just one day.**



Our Retaining Wall and Abutment Systems can help you save time and money on your next embankment project.

These historically-proven, cost-effective systems have minimal equipment and labour requirements and are easy to install.

They adapt well to curves, angles, and steps, with heights of over 30 m (100'). Our MSE Wire Walls

(wire-faced with stone) or our Bolt-A-Bin cellular metal bin style walls are ideal for remote

Northern applications because they **are fast, flexible and economical solutions.**

MSE Wall Features and Benefits

Wire mesh retaining wall systems use alternating layers of heavy-duty galvanized steel soil reinforcement and select backfill to create an extremely stable “mechanically-stabilized earth” structure.

- ▶ Economical system for retaining walls, steepened slopes and erosion control
- ▶ Heavy-duty, black or galvanized steel wire interlocking wall and mat construction
- ▶ Can handle extreme surcharge loads
- ▶ Adapts to curves, angles and steps
- ▶ Most cost-effective and easy way to construct headwall option for structural plate bridges
- ▶ Permanent or temporary applications



MSE Retaining Wall (Wire Wall)



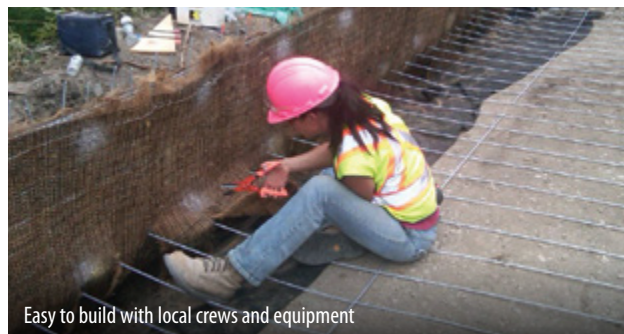
Crusher Wall with natural stone at the face



Crusher Wall with geotextile at the face



Bridge Abutment with geotextile at the face



Easy to build with local crews and equipment



Economical Bridge/Abutment Packages

Save time and money on your next project with the AIL Group of Companies.

We understand the unique requirements of Northern Infrastructure projects and the various stakeholders involved.

We specialize in value-engineering solutions for specific sites and, with locations and teams across Canada, we are well poised to work with your project group and deliver the best solution for your budget and application.

Build in value; **talk to one of our Northern Infrastructure Specialists.**



THE AIL GROUP OF COMPANIES

Bolt-A-Bin Features and Benefits

Bolt-A-Bin is a cellular metal bin system that surrounds a compacted mass of granular material. The cells are formed from strong, corrugated metal components that can be quickly hand assembled on-site with no need for pile driving or concrete pouring.

- ▶ Strong, flexible and cost-effective
- ▶ Lightweight, easy to install and ideal for remote areas
- ▶ Accepts locally-available fill material
- ▶ Galvanized and Aluminized Type 2 steel construction
- ▶ Versatile size range of 1.2 m (4') to 8.5 m (28') in height, in 3 m (9'8") increments in length



Building Bolt-A-Bin Abutments, Baffin Island, Nunavut



Completed Bolt-A-Bin Abutments, Baffin Island, Nunavut



Custom Bridge/Abutment Package, Northern Alberta



Bridge and Steel Pile / GRS Abutment, Northern Alberta

Let's talk Northern Infrastructure!

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