

SEE OUR LATEST
PRODUCTS & APPLICATIONS



Supporting Your Success.



It's revolutionary! Page 4



EFFICIENT INFRASTRUCTURE SOLUTIONS TO KEEP YOU COMPETITIVE.



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Innovative thinking has been the cornerstone of our success for over 50 years. As industry leaders, AIL MINING and The AIL Group of Companies are committed to product research and development, with solutions that are endorsed by engineers around the world.



With countless installations in coal mines and distribution lines, AIL MINING understands the coal industry's unique challenges and requirements.

Cheviot Coal Mine, Heavy Haul Rail Crossing, Alberta, Canada. Super-Cor® Arch with Vist-A-Wall Wire Walls.

Turn-key, value-engineered solutions with a difference.

Staying competitive in today's economic climate means building in efficiencies from the ground up. That's why many of the world's most successful mines use **efficient infrastructure solutions** from AIL MINING. We can help you save time and money in providing safe, practical work sites for your employees. By design, our custom solutions are **easy to ship and install** with minimal equipment and local labour, making them ideal for remote locations. Plus, with over 50 years of working closely with the global mining industry, our Technical Sales and Engineering Teams are well-poised to deliver **turn-key, value-engineered solutions** with a difference. AIL professionals will guide you through every phase of your project – assessment, design, specification, assembly, backfilling and testing – to ensure **successful project outcomes**.

AIL MINING's infrastructure solutions have been adding value to the world's most successful mine sites for over 50 years.



Contact an AIL MINING Technical Sales Representative.

In Canada: 1-877-245-7473 In the United States: 1-800-234-0734 International: +1-506-379-2455



How we work with you.

Our systematic approach saves you money and ensures quality.

Concept

Preliminary Design

Budget

Cost/Value Assessment

Detailed Engineering

Project Management

Fabrication and Delivery

Onsite Support

Installation

Streamline your next project with an AIL MINING turn-key solution.

AIL MINING's integrated approach delivers design, manufacturing and construction services under one contract with a single point of responsibility.

Minimize your project risk and tighten the delivery schedule.

This system is used to minimize the project risks for the owner and tighten the delivery schedule by overlapping the design and construction phases of a project.

The AIL MINING turn-key solution benefits:

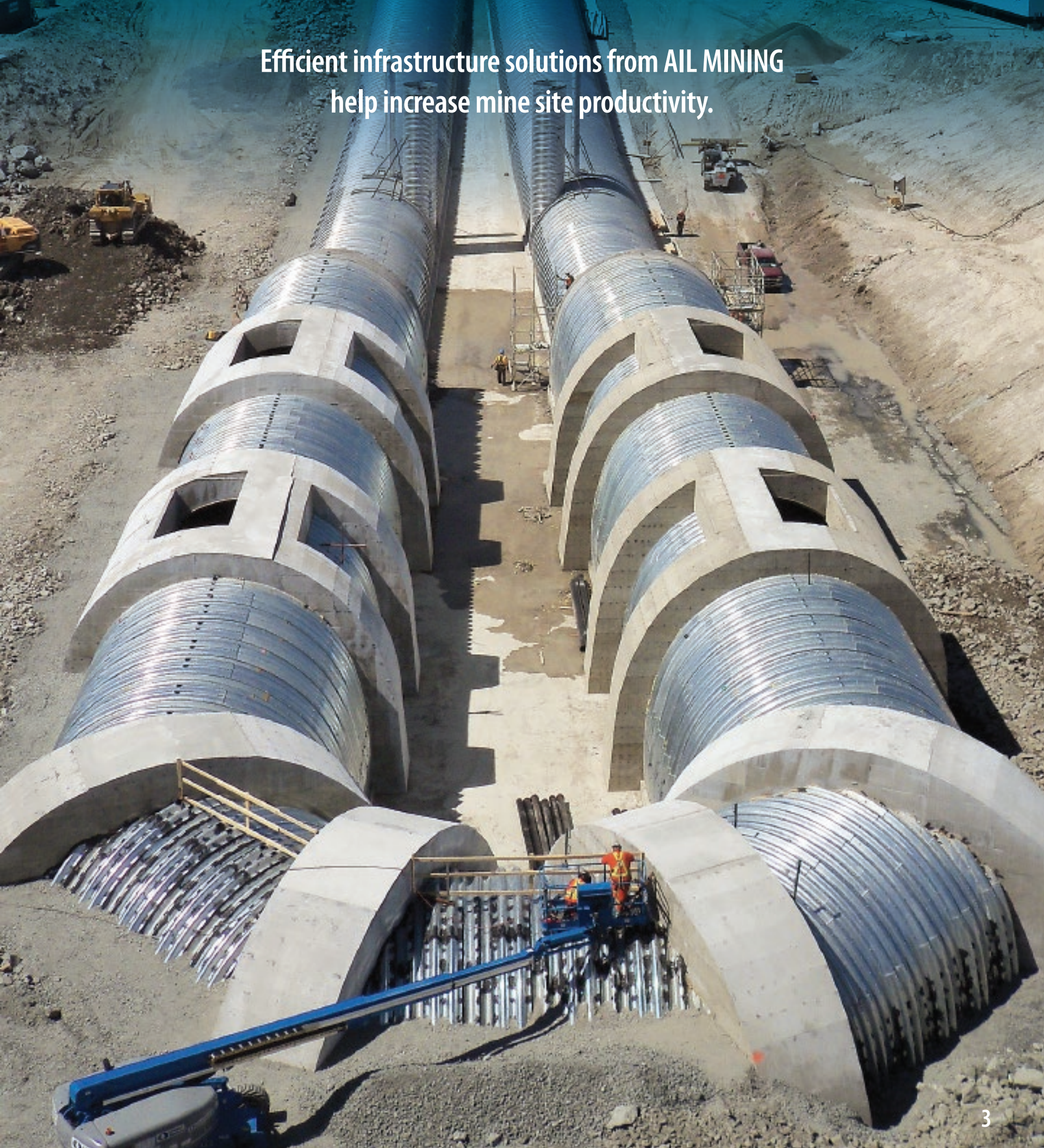
- ▶ **Faster Delivery:** AIL MINING's collaborative project management means work is completed faster and with fewer problems.
- ▶ **Cost Savings:** Our integrated team is geared toward efficiency and innovation.
- ▶ **Better Quality:** We meet performance needs and not just minimum design requirements – often developing innovations that result in a better project.
- ▶ **Simplified Communications:** One entity is held accountable for cost, schedule and performance.
- ▶ **Decreased Administrative Burden:** Owners can focus on the project rather than managing separate contracts.
- ▶ **Reduced Risk:** The AIL MINING team assumes additional risk.

How do you benefit?

- ▶ **Higher Profit Margin:** Our integrated team is fully and equally committed to controlling costs.
- ▶ **Decreased Administrative Burden:** Our approach streamlines communication between parties.
- ▶ **Increased Market Share:** More mine owners are choosing turn-key solutions as the preferred project approach.



Efficient infrastructure solutions from AIL MINING
help increase mine site productivity.



THE EDGE Super-Cor® Flange Connection makes underground structures stronger, safer.

RECOMMENDED FOR

- ▶ Mine Shafts, Vent Raises, Escape-Ways ▶ Portals and Canopies
- ▶ Ground Support Structures ▶ Relining of Existing Structures
- ▶ Road or Rail Underpasses ▶ Heavy Haul Road Arches
- ▶ Stockpile Tunnels ▶ Storage Structures ▶ Protection Structures

The latest innovation from our R&D Team takes structural plate in a new direction. THE EDGE Super-Cor® Flange Connection is an alternative to the traditional lapped connections that offers several key advantages and extends structural plate's application range.

- ▶ Easy to ship and install
- ▶ Accelerated assembly, easier fitting of plates
- ▶ Smaller crews needed, lower installed costs
- ▶ Added strength eliminating the need for ring beams
- ▶ Added safety, structures can be built from one side
- ▶ Facilitates deflection angles (horizontal and vertical)
- ▶ Allows for leak-resistant structures
- ▶ Ideal for remote sites resulting in fewer trucks and less handling
- ▶ Lower cost tank storage option
- ▶ Structures can be dismantled and removed

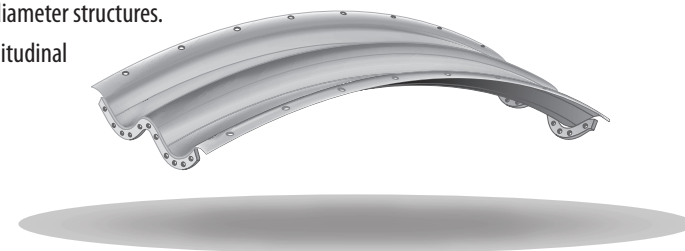


Flanged seams instead of conventional plate overlaps



Ask about our Two-Sided Hybrid Flange Connections

Ideal for creating stronger, smaller-diameter structures. Traditional plate lapping on the longitudinal edge, flanged on the latitudinal.



Integrated Equipment and Utilities:

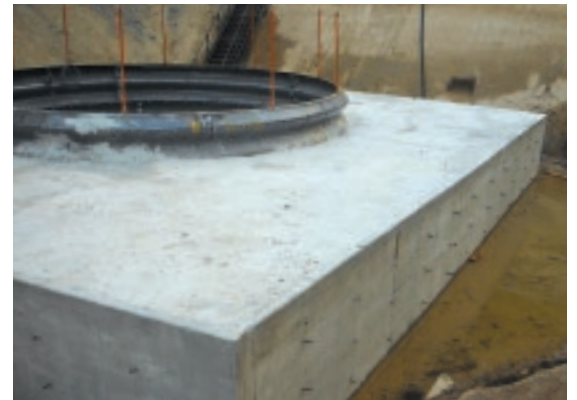
Brackets can be easily attached to mine shafts or vent raises to support Alimak rails or climbers. Similarly, brackets or hangers can be attached to drifts or tunnels to support mine air, water or electrical utility services.



Mine Shafts, Vent Raises, Escape Ways

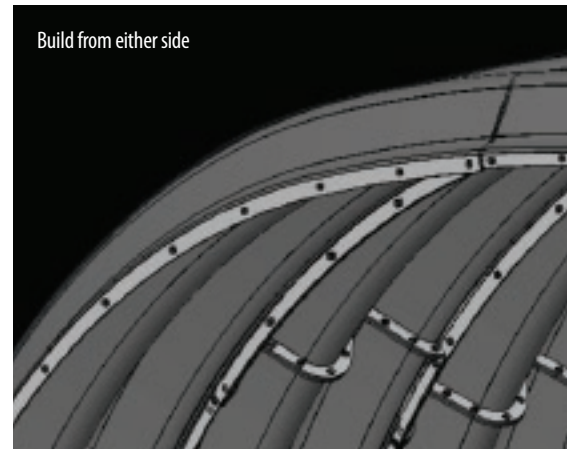
THE EDGE Super•Cor® Flange Connection is ideal for creating underground structures such as mine shafts, ventilation raises and escape ways. THE EDGE is faster and more economical than continuous smooth steel or concrete alternatives. The resulting structures

are strong, versatile and safer, because they can be assembled from the inside.



Ground Support Structures

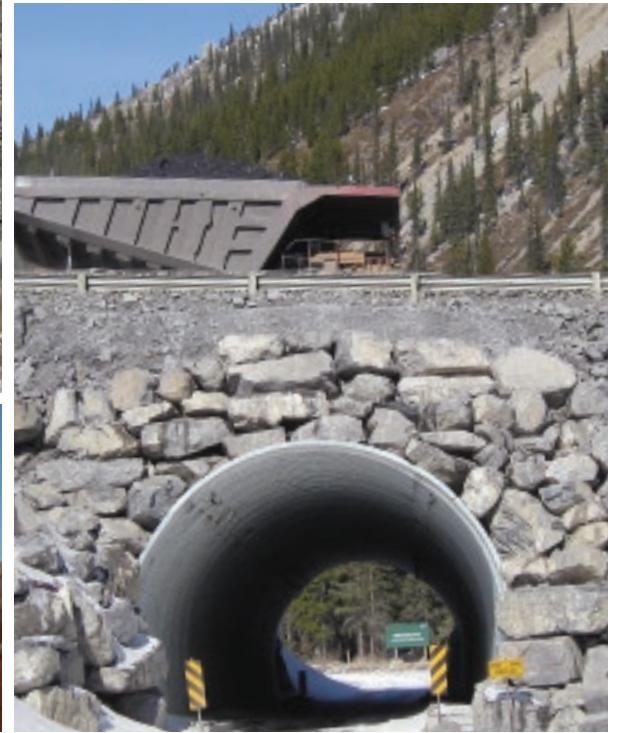
THE EDGE Super•Cor® Flange Connection provides a safe and cost-effective addition for ground support in hazardous areas. Components transport easily to remote sites, where they can be assembled quickly and safely from the inside. Structures can be completely assembled and moved into an area of unsupported ground, or they can be assembled and advanced one section at a time. For added strength and support, fill material is pumped through grout couplings or ports.





Haul Road Arches

Ultra-Cor®, the world's strongest structural steel plate, and Super-Cor® are natural solutions for larger engineered structures needing to withstand the heaviest of loads. For mid-sized structures, Bolt-A-Plate® is usually recommended. All are available in a wide range of shapes and sizes, including bottomless, fish-friendly arches.



From site preparation to first train in 120 days
Watch the time-lapse video online at ailmining.com/120days



Road or Rail Underpasses

We recommend Ultra-Cor®, Super-Cor® or Bolt-A-Plate® according to the size, specifications and load factors for road or rail underpasses. All are virtually maintenance-free.

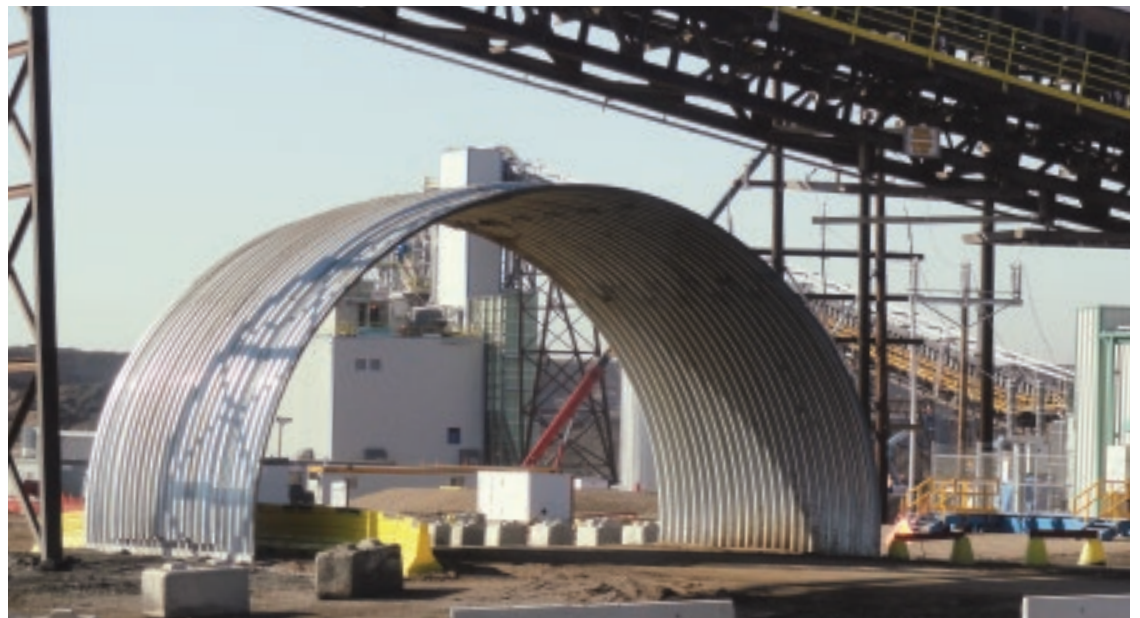
Portals and Canopies

Specify Ultra-Cor® or Super-Cor® for larger scale applications and Bolt-A-Plate® for mid-size ones. Each offers a wide variety of shapes and sizes to suit virtually any site or mine vehicle requirement. Your AIL MINING Technical Sales Representative can help you select the best solution for your needs.



Protection Structures

AIL's Protection Structures provide a protective barrier from overhead debris while also safeguarding your bottom-line. Super-Cor® is recommended for larger applications and Bolt-A-Plate® for mid-size ones.



Stockpile and Escape Tunnels

Another ideal application for our Structural Steel Plate is the stockpile tunnel. Depending on the planned pile height, Ultra•Cor®, Super•Cor® and Bolt-A-Plate® offer excellent strength and cost saving over other methods. Other applications include conveyor and loadout tunnels.



Water and Wetland Crossings

We offer a variety of solutions in Ultra•Cor®, Super•Cor®, Bolt-A-Plate® or Dur•A•Span® Structural Plate to suit many sizes and types of applications. Corrosion/abrasion-resistant Dur•A•Span® Structural Aluminum Plate is particularly well-suited to softwater or aggressive environments. Geotextile Reinforced Soil (GRS) Bridges are exceptionally fast and economical resource road solutions. Open-bottom designs and our Prefabricated Steel Bridges are effective, environmentally-friendly solutions to preserve habitat.



Conveyor Tunnels and Overcasts

Our products have covered a lot of ground on these critical arterial applications. According to the required size and specifications, overcasts and conveyor tunnels can be made from various shape profiles in Bolt-A-Plate® or Corrugated Steel Pipe. In some cases, overcasts can incorporate utilidor-type passages to serve double duty.



Drainage

AIL MINING offers a full range of Galvanized, Aluminized Type 2 or Polymer-Laminated Corrugated Steel Pipe for virtually any drainage requirement. In addition, we can supply all of the necessary elbows, couplings and access port accessories.



Crusher Walls and Ramps

Perfect for remote locations with available fill material, these structures are easily constructed using our Vist-A-Wall MSE Structural Wall Systems™. Made from heavy-duty galvanized wire, these interlocking wall and soil reinforcement systems provide easy, onsite construction solutions without the need for time-consuming concrete. They are also ideal for bridge or tunnel headwalls and wingwalls.



Abutments

Our Vist-A-Wall MSE Structural Wall Systems® and Bolt-A-Bin® System create cost-effective on-site abutments and walls. Bolt-A-Bin® is a cellular bin-type of retaining wall system available in a variety of sizes for vertical or battered applications.



Permanent or Temporary Bridges

Fast and easy, our Custom Prefabricated Bridges and Modular Panel Bridges come in a variety of widths and spans to handle heavy mining vehicles. Ideal for permanent or temporary applications, these bridges ship and install quickly in remote sites without the need for specialized bridge construction companies. Redeployable Modular Panel Bridges are also available as rentals.



Safety Barriers

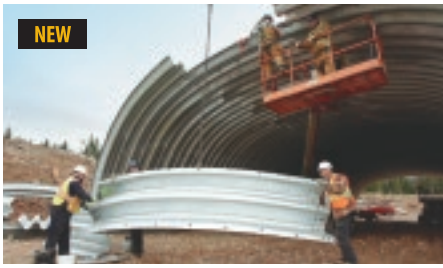
According to the needs of the site and safety regulations, we can provide our galvanized Guiderail System or Gabion Basket System.



Sound Walls

When dealing with ambient mine site noise; AIL Sound Walls provide optimum performance. Easy-to-install, our Silent Protector® (Absorptive) and Tuf-Barrier® (Reflective) Sound Wall Systems are engineered for maximum noise mitigation. AIL Sound Walls are ideal for Mine/Quarry Perimeters, Haul Road Fencing, Crusher Fencing and Equipment Screens.





Ultra-Cor® Structural Steel Plate

WIDER SPANS • HIGHER COVERS

- ▶ Combines all the advantages of lightweight construction with previously-unheard-of strength and durability
- ▶ The world's strongest corrugated steel plate ▶ Handles extreme loadings ▶ Spans up to 30 m (98')
- ▶ Corrugation profiles of 500 mm (20") pitch x 237 mm (9.5") depth
- ▶ Available in: Box Culverts, and; Standard, Low, Medium, or High Profile Arches
- ▶ Bottomless designs are environmentally-friendly ▶ Available with Best-Kote Polymer Coating

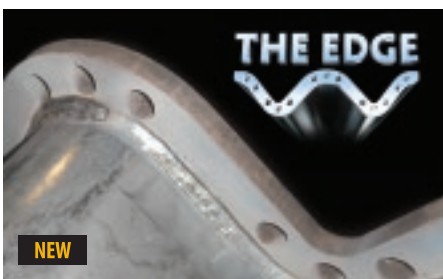
- ▶ Structural Plate Arches and Bridges
- ▶ Grade Separations
- ▶ Road or Rail Underpasses
- ▶ Stream Crossings ▶ Box Culverts
- ▶ Heavy Haul Road Arches
- ▶ Stockpile Tunnels
- ▶ Portals and Canopies



Super-Cor® Structural Steel Plate

- ▶ Premium, hot-dip-galvanized, deep-corrugated, structural steel plate for larger applications
- ▶ Revolutionary alternative to conventional bridges ▶ Handles extreme loadings
- ▶ Spans can exceed 25 m (82') ▶ Corrugation profile of 381 mm (15") pitch x 140 mm (5.5") depth
- ▶ Available in: Box Culverts; Standard, Low, Medium, or High Profile Arches; Rounds, and; Ellipses
- ▶ Bottomless designs are environmentally-friendly ▶ Available with Best-Kote Polymer Coating

- ▶ Structural Plate Arches and Bridges
- ▶ Grade Separations
- ▶ Road or Rail Underpasses
- ▶ Stream Crossings ▶ Box Culverts
- ▶ Heavy Haul Road Arches
- ▶ Stockpile Tunnels
- ▶ Storage Structures
- ▶ Portals and Canopies



Super-Cor® with the Flange Connection.

- ▶ An alternative to the current "lapped" connection ▶ Accelerated assembly, easier fitting of plates
- ▶ Provides added strength to plate structures ▶ Added safety, structures can be built from the inside
- ▶ Facilitates curved structures (horizontal and vertical) ▶ Allows for leak-resistant structures

- ▶ Grade Separations
- ▶ Road or Rail Underpasses
- ▶ Stream Crossings ▶ Box Culverts
- ▶ Heavy Haul Road Arches
- ▶ Stockpile Tunnels
- ▶ Mine Shafts and Vent Raises
- ▶ Storage or Protection Structures
- ▶ Portals and Canopies
- ▶ Ground Support Structures

Build structures from the inside.



Bolt-A-Plate® Structural Steel Plate

- ▶ Industry-standard, hot-dip-galvanized, corrugated, structural steel plate for medium and small applications
- ▶ Spans of 1.5 m (5') to 12 m (40') ▶ Corrugation profile of 152.4 mm (6") pitch x 51 mm (2") depth
- ▶ Available in: Standard, Low or High Profile Arches; Rounds; Horizontal or Vertical Ellipses; Pipe Arches, and; Pear Shaped ▶ Bottomless designs are environmentally-friendly ▶ Can reline older structures
- ▶ Available with Best-Kote Polymer Coating

- ▶ Structural Plate Arches and Bridges
- ▶ Grade Separations
- ▶ Road or Rail Underpasses
- ▶ Stream Crossings and Fish Passages
- ▶ Heavy Haul Road Arches
- ▶ Stockpile and Escape Tunnels
- ▶ Portals and Canopies
- ▶ Storage Structures ▶ Utilidor Systems
- ▶ Conveyor Tunnels and Overcasts



Dur-A-Span™ Structural Aluminum Plate

- ▶ Corrosion/abrasion-resistant solid aluminum alloy structural plate ideal for saltwater and aggressive soil environments
- ▶ Recommended for sites with corrosive soil and/or water ▶ Lightweight ▶ Performance proven in over 10,000 installations worldwide ▶ Spans can exceed 12.2 m (40') ▶ Corrugation profile of 229 mm (9") pitch x 64 mm (2.5") depth ▶ Available in: Box Culverts; Standard, or High Profile Arches; Rounds; Vertical Ellipses; Pipe Arches, and; Pear Shaped ▶ Bottomless designs are environmentally-friendly ▶ Can reline older structures

- ▶ Saltwater and Aggressive Applications
- ▶ Stream Crossings and Fish Passages
- ▶ Culverts
- ▶ Road Salt and Other Storage Structures



Geotextile Reinforced Soil (GRS) Bridges

- ▶ Exceptionally fast and economical resource road crossings ▶ Steel anchor rods to connect a structural plate arch to the backfill/geotextile composite ▶ Transfers loads into the surrounding GRS mass ▶ No need for concrete footings or pile foundations ▶ Light weight and ships economically to site ▶ Maintains existing stream bed ▶ Allows for wide range of backfills ▶ Fish friendly ▶ Scour resistant ▶ Spans of 6 m to 12 m or more

- ▶ Wetland Crossings
- ▶ Stream Crossings
- ▶ Fish Passages
- ▶ Environmentally Sensitive Areas

Easy to ship and install.

Long-lasting and virtually maintenance-free, AIL MINING's corrugated metal structures ship and install quickly and economically, with minimal equipment and labour requirements. Our technical teams will guide you through the complete project to ensure its success.



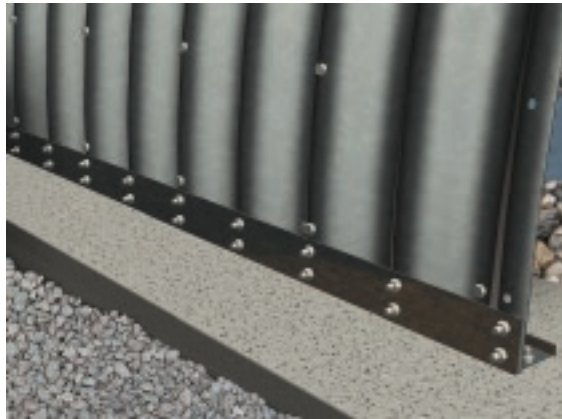
Reinforced concrete footings are cast over the prepared site.



The first arch segment is completely assembled on the ground.



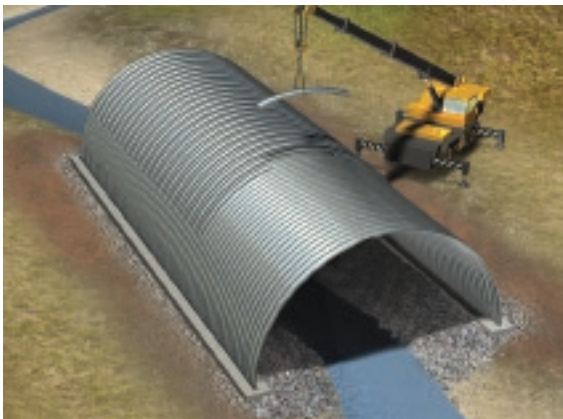
Then, it is lifted into place and bolted to the footings on either side.



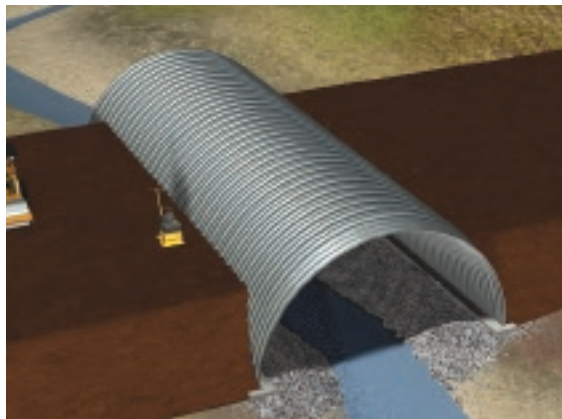
The segments bolt into base channels, integrated into the concrete.



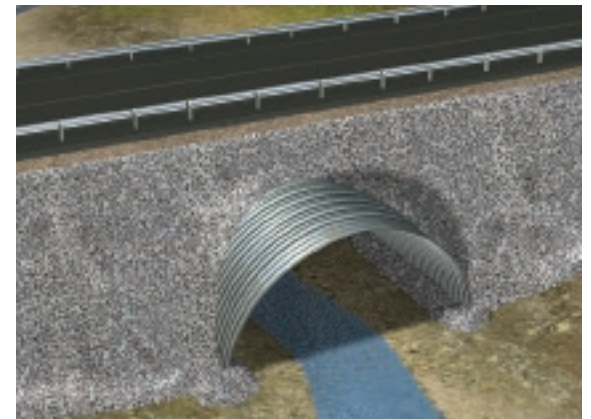
Plates then attach individually to make up other arch segments.



If specified, reinforcement ribs are then added.



Layers of engineered backfill are added in sequential lifts.



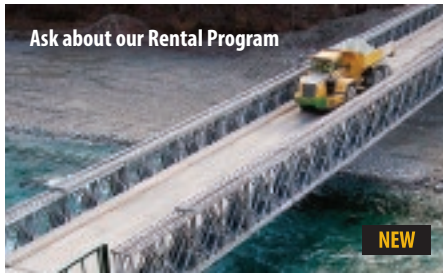
Then the completed road surface is added with safety barriers.



Custom Prefabricated Bridges

- ▶ Permanent or temporary applications
- ▶ Strong: able to withstand heavy-duty loading
- ▶ Variety of widths, spans up to 45.7 m (150')
- ▶ 2.4 m (8') wide modules are typical
- ▶ 10.8 cm (4.25") corrugated steel deck is standard
- ▶ Decking options – poured or precast concrete, asphalt, grating, wood or gravel
- ▶ Weathering, Galvanized or Painted Steel
- ▶ Bearing plates and pads
- ▶ Curb or rail system
- ▶ Excellent fish passage solutions
- ▶ Sidewalks and utility corridors can be added to enhance use

- ▶ Stream Crossings
- ▶ Road or Rail Overpasses
- ▶ Detour Bridges



Ask about our Rental Program

Mabey Modular Panel Bridges (in Canada only)

- ▶ Inventoried components ready to ship and install quickly by local crews ▶ Can be launched from one side without lifting equipment ▶ Permanent or temporary applications ▶ Easy to dismantle, store and reconfigure for multiple uses
- ▶ Strong: able to withstand heavy-duty loading ▶ Variety of widths, spans up to 90 m (295') ▶ Galvanized finish
- ▶ Available in Compact 200, Delta and Universal Systems ▶ Variety of decking options ▶ Bearing plates and pads
- ▶ Excellent fish passage solutions ▶ Sidewalks and utility corridors can be added to enhance use

- ▶ Stream Crossings
- ▶ Road or Rail Overpasses
- ▶ Detour Bridges



Vist-A-Wall MSE Structural Wall Systems®

- ▶ 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 ▶ Available finishes: natural stone, temporary (fabric), shotcrete or vegetated ▶ Most cost-effective and easy way to construct headwall option for structural plate bridges ▶ Permanent or temporary applications ▶ Wall heights can exceed 30 m (100')
- ▶ Height increments are 610 mm (2') ▶ Adapts to curves, angles and steps

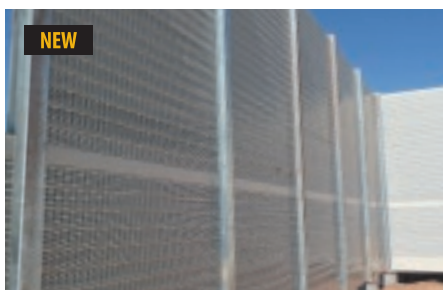
- ▶ Crusher Ramps/Walls
- ▶ Retaining Walls
- ▶ Headwalls and Wingwalls
- ▶ Bridge Abutments
- ▶ Grade Separations



Bolt-A-Bin® Cellular Bin Style Retaining Walls

- ▶ Economical, strong and versatile cellular bin-type retaining wall or abutment system
- ▶ Lightweight, easy to install and ideal for remote areas ▶ Galvanized and Aluminized Type 2 steel construction
- ▶ Size range of 1.2 m (4') to 8.5 m (28') in height, in 3 m (9.8') increments in length
- ▶ Full design and engineering support

- ▶ Retaining Walls
- ▶ Headwalls and Wingwalls
- ▶ Bridge Abutments



AIL Sound Walls

- ▶ An industry leader in sound mitigation ▶ Meets accelerated test requirements for durability
- ▶ Impervious to rain, snow, ice and sleet ▶ Will not rust, rot, or stain
- ▶ Maintenance-free ▶ Wind load tested up to +225 kph (+140 mph)

- ▶ Mine/Quarry Perimeters
- ▶ Haul Road Fencing
- ▶ Crusher Fencing
- ▶ Equipment Screens



Corrugated Steel Pipe

- ▶ Economical, strong, lightweight and easy to install ▶ Variety of sizes, thicknesses and materials
- ▶ Complete line of standard and specialized fittings and accessories ▶ Available in Round or Pipe Arch Profiles
- ▶ Can be used to reline existing systems

- ▶ Culverts
- ▶ Drainage Systems
- ▶ Stormwater Systems
- ▶ Fish Passages
- ▶ Conveyor Tunnels and Overcasts
- ▶ Ventilation Systems
- ▶ Utilidor Systems

Gabions

Recommended for safety barriers, steepened slopes and erosion control, these strong, lightweight galvanized steel mesh baskets hold face alignment with machine filling.

Guiderail System

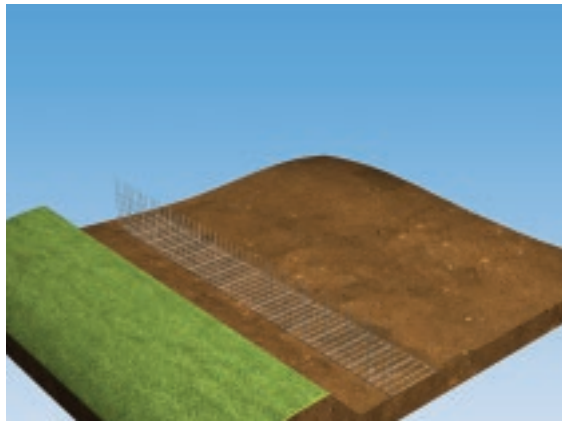
AIL's lightweight and easy-to-install Guiderail System is ideal for road dividers and barriers, bridge approaches and railings, curves and other highway hazards, and for traffic direction. Guiderail is manufactured to the highest specifications and all components are galvanized.

Geotextiles

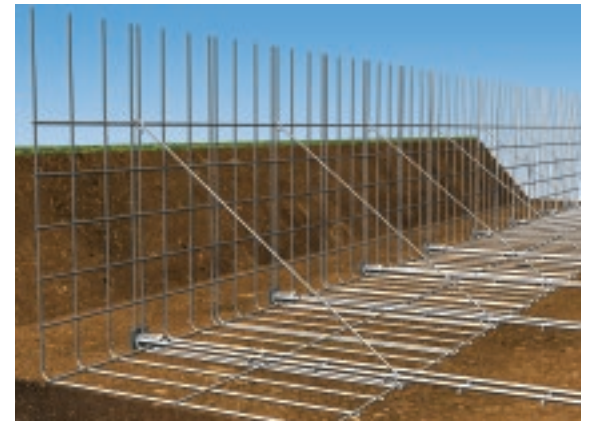
We offer a comprehensive line of Geotextiles including woven and non-woven fabrics for soil stabilization and reinforcement, erosion control, drainage, filtration, separation and other needs.

Vist-A-Wall™ Wire Walls

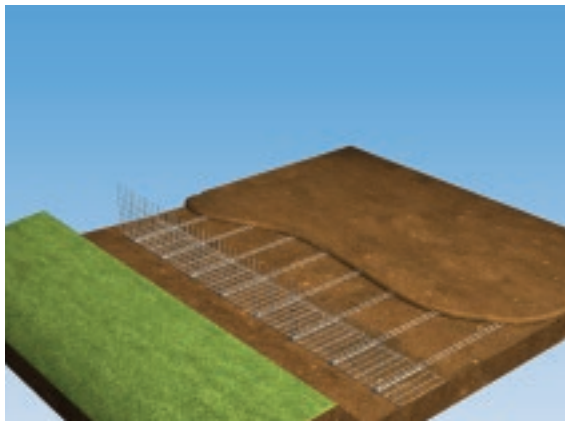
Wire Walls provide fast, flexible embankment protection for both temporary and permanent applications. Wire Walls easily accommodate curves, angles or steps, culverts, bridge piles or other site requirements.



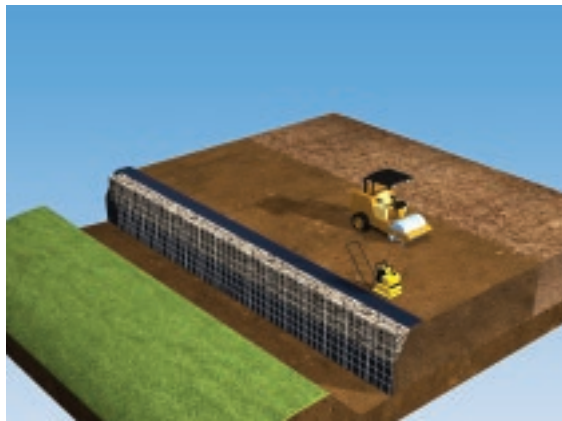
Starter wire face is installed on a compacted base.



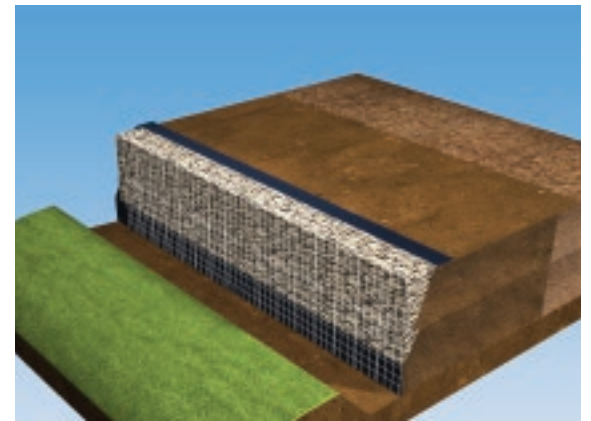
Grid-Strip™ Soil Reinforcement System added.



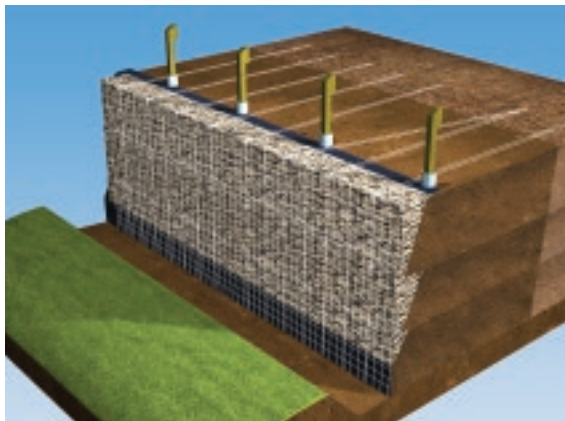
Backfill added over first course of reinforcement.



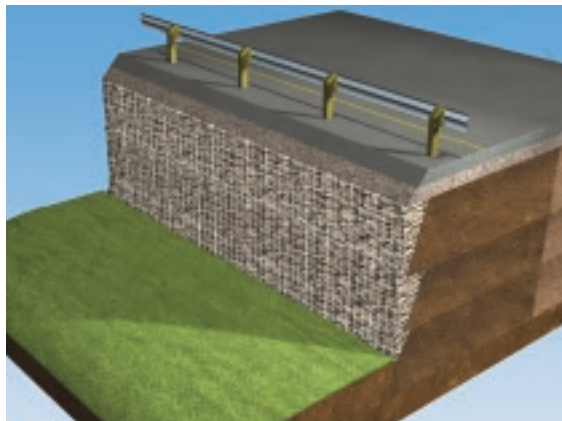
First fill lift with fabric and select stone above grade.



Repeat previous steps for additional lifts.



Grid-Strip™ System can skew around obstructions.



Then safety barrier and road surface are added.

Wire Walls are quick and easy to erect for both permanent and temporary applications.

The Grid-Strip™ Soil Reinforcement System

- ▶ Simplifies wall installations
- ▶ Saves time and money on labour and materials
- ▶ Easily accommodates obstructions and geometric constraints

NEW



We support your sustainable development needs.

We believe it is our responsibility to deliver infrastructure solutions that contribute to the well being of society, the economy and the environment. Sustainability guides our product development as we continue to look for ways to do more with less, ensuring the success of your project without compromising the needs of future generations.



Reduced Biodiversity Impacts

- ▶ Reduced need for cast-in-place concrete on site
- ▶ Wide span and curved structures reduce stream impacts and washout concerns
- ▶ Prefabricated Bridges allow for easier crossings in sensitive areas
- ▶ Wildlife crossings help maintain movement in habitat
- ▶ AIL Sound Walls reduce noise pollution
- ▶ Fish baffle inserts and open-bottomed culverts facilitate fish movement



Lighter Greenhouse Gas Emissions

- ▶ Many components have high recycled steel content
- ▶ Less material transportation costs than concrete
- ▶ Solutions engineered for optimum cover depths to reduce hauling grades and fuel consumption



More Local Solutions

- ▶ Less imported resources – product, labour and equipment
- ▶ Uses non-specialized equipment and labour available through local contractors
- ▶ Optimal use of locally available fill material



Positive Social Impacts

- ▶ Use of local labour and equipment benefits community
- ▶ Super•Cor® Flange Connection offers increased worker safety
- ▶ Potential of using portable culvert mills with local labour



Decommissioning Benefits

- ▶ Less effort to decommission structural plate and MSE walls than concrete
- ▶ Less imported material means less offsite haulage and disposal
- ▶ Some structures can be disassembled and reused
- ▶ Metal components can be recycled

Your global portal to efficient mine site solutions.

With locations and professional representation around the world, The AIL MINING Team can help increase mine site productivity with efficient infrastructure solutions.



AIL MINING

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The AIL Group of Companies

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Based in Sackville, New Brunswick, Canada
Operations Across Canada

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bigrbridge.com

Based in Greeley, Colorado, United States
Operations in Mansfield, Texas, United States
and Abingdon, Virginia, United States

Algonquin Bridge

algonquinbridge.com

Minesing, Ontario, Canada

AIL International

Global activity based out of AIL Group Corporate Headquarters
and Licensees:

- Viacon (Europe)
- Pyungsan SI (South Korea)
- Atlantic Civil Products (Australia, New Zealand, Papua New Guinea)

Call AIL MINING In Canada: 1-877-245-7473 In the United States: 1-800-234-0734 International: +1-506-379-2455

We're big on mining. Very big.

From the world's largest haul road arch to towering crusher walls, value-engineered infrastructure solutions from AIL MINING have been supporting the world's most successful mine sites for over 50 years.

By design, our solutions ship and install easily, making them ideal for remote sites. Plus, our in-house engineering teams work with you through the entire project cycle to help you build in success from the ground up.

Contact one of the mine infrastructure experts at AIL MINING.
They're big on mining.

Contact an AIL MINING
Technical Sales Representative.

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International: +1-506-379-2455

info@ailmining.com



03/2005 AIL-639



SAVE TIME AND MONEY WITH AN AIL TURN-KEY SOLUTION.

