

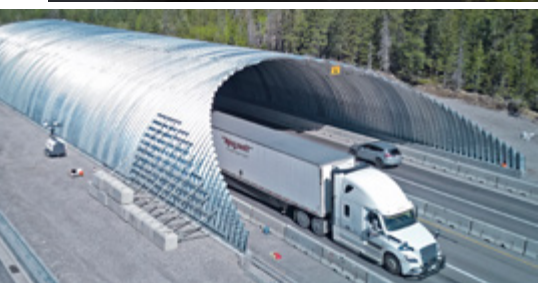

ULTRA-COR®
Structural Steel Plate



- ▶ Six-lane spans of over 115'
- ▶ Save on material, installation and life cycle maintenance costs
- ▶ "Greener" alternative to concrete structures



atlanticindustries.com



BUILDING AMERICA'S LARGEST BURIED METAL BRIDGES

NET ZERO BY
2050 



Atlantic Industries Limited USA
We Support You.

Innovative Ultra-Cor® creates the world's largest metal buried bridge span: 106.3', Dubai, UAE.



Highway grade separation

ALL has been adding value to some of the world's most successful infrastructure projects since 1965.

Ultra-Cor's nestable components are easy to ship, store on site and install



We're all about support.

Ultra•Cor® structures from Atlantic Industries Limited USA (AIL USA) can support multiple lanes of highway traffic, the heaviest freight trains or the largest mining vehicles. However, those structures are only as strong as the people supporting them with full design and engineering services, on-time manufacturing and delivery and dependable field supervision. Our people have been supporting some of the world's largest infrastructure projects since 1965.

An extensive network and international scope

With experienced sales, engineering and manufacturing teams, AIL USA is a proven project partner ready to help you through every stage of your next infrastructure project. Plus, as a member of The AIL Group of Companies, we bring a world of resources and expertise to our projects in the transportation, public works, mining, energy, forestry and development sectors.

AIL USA offers a wide range of efficient Buried Metal Bridges engineered to deliver optimum performance and value for applications. By design, our complete line of resilient and sustainable solutions are easy to ship and install with minimal equipment and labor requirements, making them ideal even in remote locations.



Atlantic Industries Limited USA

Ultra•Cor® is recommended for applications in the transportation, public works, mining, energy, forestry and development sectors.



Watercourse Crossing with Vegetated MSE Wire Walls



Manufactured in Northern Mississippi



Ultra Low Profile Arch



Low Profile Arch



Standard Arch



Box Structure

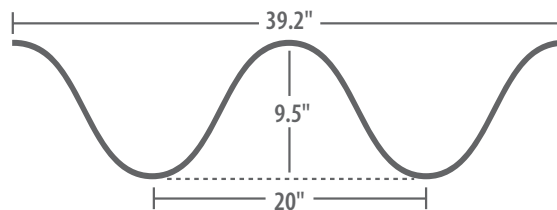
RECOMMENDED FOR

- ▶ Bridges and Tunnels
- ▶ Bridge Rehabs
- ▶ Conveyor Covers and Overcasts
- ▶ Fish Passages
- ▶ Grade Separations
- ▶ Heavy Haul Road Crossings
- ▶ Portals and Canopies
- ▶ Road or Rail Underpasses
- ▶ Stockpile and Escape Tunnels
- ▶ Storage Structures
- ▶ Watercourse Crossings
- ▶ Underground Structures
- ▶ Vertical Shafts and Vent Raises
- ▶ Wildlife Crossings



Building America's largest Buried Metal Bridges

With the introduction of Ultra•Cor®, AIL has taken engineered Buried Metal Bridges to new dimensions in capability and performance. As the world's deepest corrugation profile, Ultra•Cor® combines all the advantages of lightweight construction with previously unheard-of strength and durability to create the largest Buried Metal Bridges in the world today.



With an impressive 20" pitch and 9.5" depth, its ultra-large corrugations allow it to reach greater spans and withstand the heaviest of loads. And, just like all AIL engineered solutions, Ultra•Cor® ships and installs easily with minimal equipment and labor requirements.

- ▶ The world's strongest corrugated steel plate
- ▶ Handles extreme loadings
- ▶ Spans can exceed 115'
- ▶ Stockpile heights can reach greater than 100'
- ▶ Corrugation profile of 20" pitch × 9.5" depth
- ▶ Bottomless designs are environmentally friendly
- ▶ Hot dip galvanized zinc coating is standard on all structures and alternative coatings may be available
- ▶ Designed and manufactured to National Standards at our third-party quality-certified facility ISO 9001-2015



Wildlife overpass near national park expected to dramatically reduce animal-vehicle collisions



Connecting habitats.
Saving lives.

Corrugated metal structures ship and assemble easily in all seasons
and in remote locations, often without the need for concrete.



Ultra-deep corrugation profile

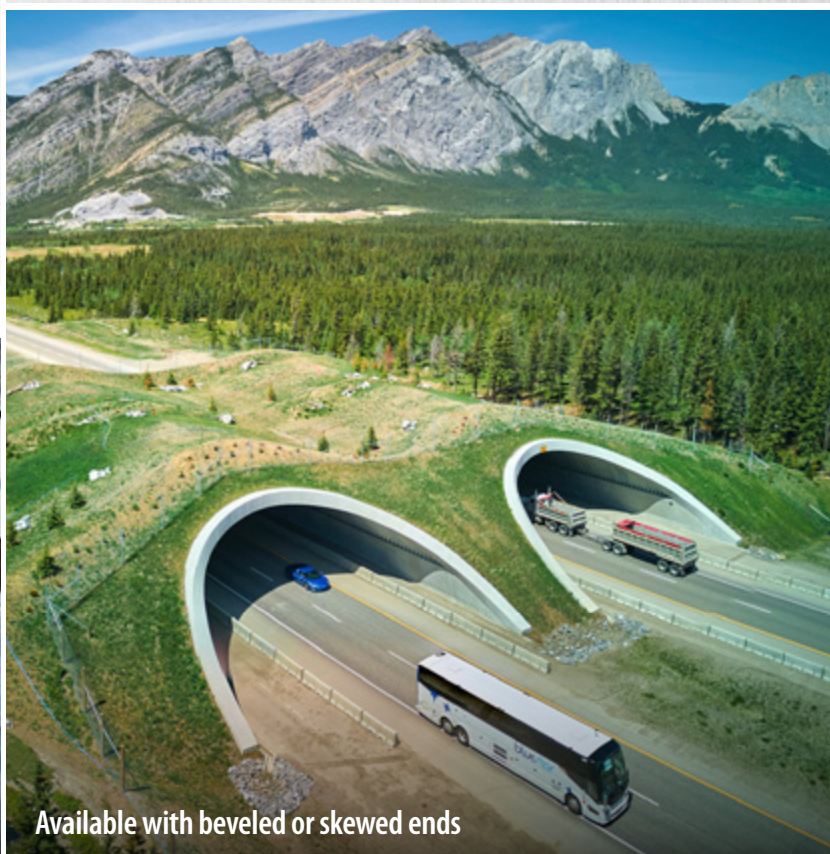
Standard Arch Dimensions

Name	Span (ft-in)	Rise (ft-in)	Periphery (U)	End Area (ft ²)
UCA1	72'-4"	18'-0"	54	1044.42
UCA2	72'-3"	21'-9"	57	1261.1
UCA3	71'-9"	25'-2"	60	1456.03
UCA4	72'-4"	28'-11"	63	1650.43
UCA5	82'-2"	20'-5"	61	1331.82
UCA6	82'-2"	24'-7"	64	1582.29
UCA7	81'-10"	28'-6"	67	1818.78
UCA8	82'-9"	33'-1"	72	2154.5
UCA9	90'-5"	27'-1"	70	1888.85
UCA10	90'-4"	30'-4"	74	2187.76
UCA11	90'-2"	36'-2"	78	2528.33
UCA12	98'-7"	29'-5"	77	2274.84
UCA13	98'-7"	34'-6"	81	2660.62
UCA14	98'-8"	39'-6"	85	3016.37
UCA15	108'-5"	34'-7"	87	2978.37
UCA16	108'-7"	39'-0"	91	3379.87
UCA17	120'-1"	38'-7"	97	3715.16

- ▶ Modified or site-specific geometries are available with negligible impact on supply cost and can result in more efficient structure and footing designs and overall project cost savings
- ▶ Compatible with square, beveled or skewed ends to suit site requirements and client preference
- ▶ Compatible with numerous headwall options (MSE precast panels or wire, cast-in-place, vegetated) to optimize structure, footing, and overall project costs (See page 9)



Can be assembled during the winter season



Available with beveled or skewed ends



Build without disruption to watercourses



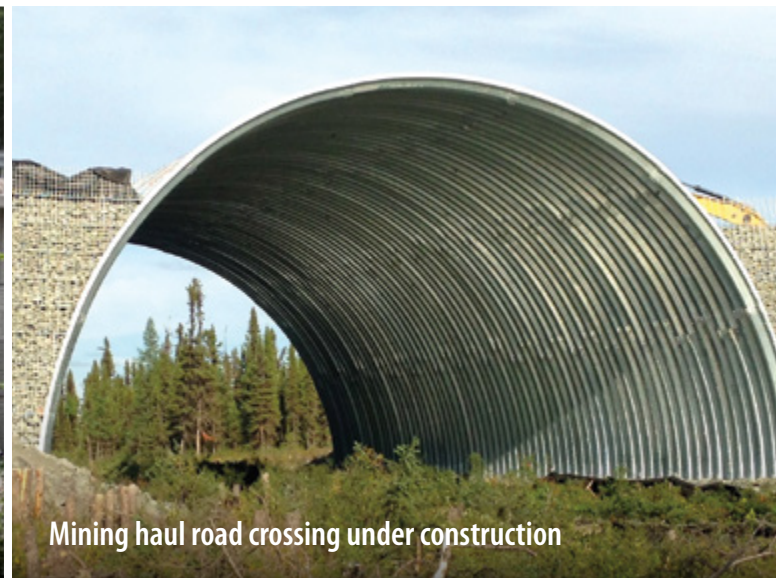
Highway overpass installation



Mining haul road crossing



Stream crossing for military base designed to support heavy-duty tanks and equipment



Mining haul road crossing under construction



Easy to build with local crews and equipment



Two-product solution: Ultra-Cor® will support mining haul road and Super-Cor® will support adjacent service road



AIL's Buried Metal Bridges are ideal for Accelerated Bridge Construction.

- ▶ Can be built in significantly less time, reducing disruption time and detours and expediting construction schedules
- ▶ Lightweight, easy to ship and install with local crews
- ▶ Lighter weight equipment can be used to assemble most structures
- ▶ Various construction/staging options available such as building over live traffic or two-stage construction with temporary retaining walls
- ▶ Small laydown area required for construction
- ▶ Limited on-site concrete work

Virtually no maintenance; minimized life cycle costs.

- ▶ Ultra•Cor® bridges have a lower life cycle cost compared to a functionally equivalent concrete beam bridge¹
- ▶ Eliminates recurring life cycle costs to maintain and repair bridge decks, expansion joints, bearings, girder fatigue, de-icing agent corrosion issues, concrete durability, fracture issues, approach slabs and freeze/thaw or wet/dry cycles
- ▶ No differential settlement “bridge bump” to maintain between decks and approach slabs
- ▶ Wider spans eliminate need for bridge piers that restrict hydraulic flow and trap debris
- ▶ Open-bottom shapes can offer longer design service life
- ▶ Optional protective coatings can extend design service life in aggressive conditions
- ▶ Structure length can be extended to accommodate future road widening; increased functional service life

1. Third-Party Consultant (2022). AIL Life Cycle Cost Comparison Between a Sample Bridge and Buried Structure.

Wider, smoother roadway with no expansion joints to maintain



Safer driving experience than girder bridges.

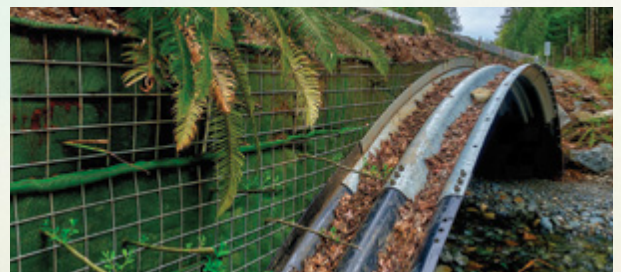
- ▶ No need to narrow roadway at crossing
- ▶ Pavement structure is continuous and seamless
- ▶ No bridge deck freezing issues or freeze/thaw differential with roadway approaches
- ▶ Easily adaptable to curved roadways

More flexible and resilient than concrete structures or girder bridges.

- ▶ Unmatched performance, especially in less-than-ideal foundation conditions
- ▶ Settlement tolerance is much higher than concrete structures or beam bridges
- ▶ Little differential movement, settlement or frost heave between buried bridge and adjacent approach fills
- ▶ Works with shallow or deep foundation systems
- ▶ Headwalls and wingwalls offer more resiliency in flood events
- ▶ Compatible with geomembrane water proofing for protection against road salt infiltration, and mitigation of icicles over grade separations
- ▶ Geotextile Reinforced Soil (GRS) backfill technology also increases flood and settlement resiliency

Buried Steel Bridges have a substantially lower life cycle carbon footprint than concrete beam bridges².

- ▶ Steel is the world's most recycled material³
- ▶ Less energy is used in the production and shipping of Buried Steel Bridges than concrete bridges
- ▶ Can accept a range of local backfill materials, potentially reducing trucking costs
- ▶ Zinc used in galvanizing is a naturally occurring material and is 100% recyclable⁴
- ▶ Biodiversity-friendlier green headwall options available



2. Third-Party Consultant (2022). AIL Life Cycle Cost Comparison Between a Sample Bridge and Buried Structure.

3. Reference: www.aisc.org

4. Reference: <https://galvanizeit.org/hot-dip-galvanizing/is-galvanizing-sustainable/hdg-environmental-advantages>



Highway interchange with MSE Precast Panel Walls

A tale of two bridges

Choosing an AIL Ultra•Cor® Buried Metal Bridge solution on the highway grade separation (below) could have provided significant savings on the overall construction and life cycle maintenance costs, while still providing the same functionality — even with a custom precast mural treatment on the headwalls.

Ultra•Cor® Buried Metal Bridge

Buried Steel Bridges have a substantially lower life cycle carbon footprint than concrete beam bridges.
Details on page 5.



Concrete Beam Bridge



Buried Metal Bridges are easy to install with local crews.

AIL USA's Buried Metal Bridges ship and install quickly and economically, with minimal equipment and labor requirements. Our technical teams will guide you through the complete project.



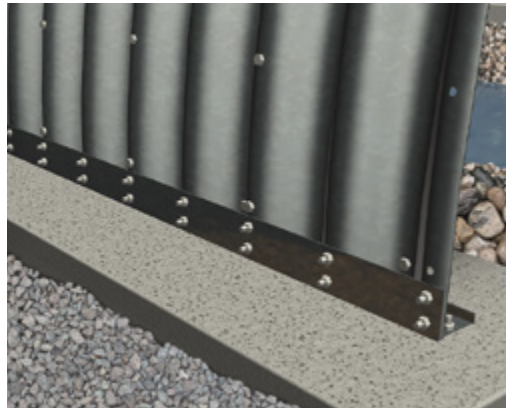
Precast or cast-in-place concrete footings are set over the prepared site.



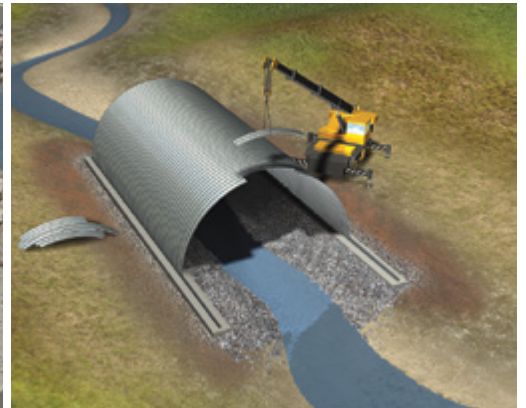
The first arch segment is completely assembled on the ground.



It is then lifted into place and bolted to the footings on either side. In most cases, a boom truck is sufficient for this.



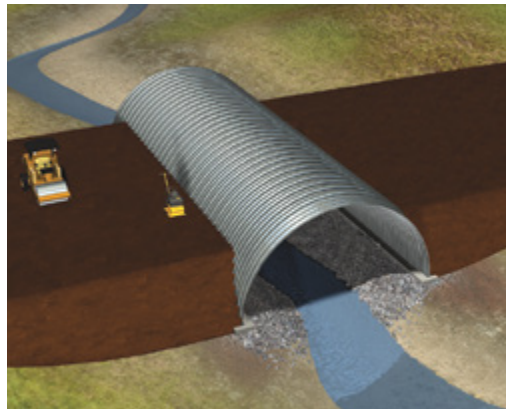
The segments bolt into base channels integrated into the concrete.



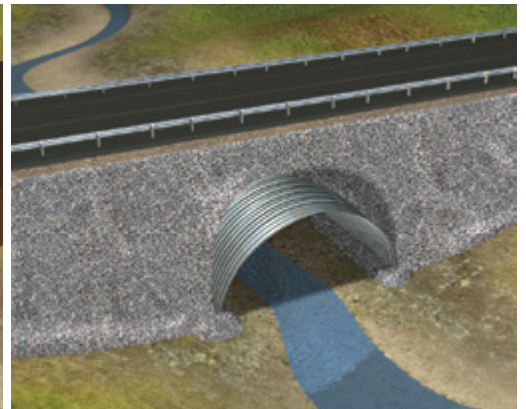
Plates then attach individually to make up other arch segments.



If specified, reinforcement ribs are then added.



Layers of engineered backfill are added in sequential lifts.

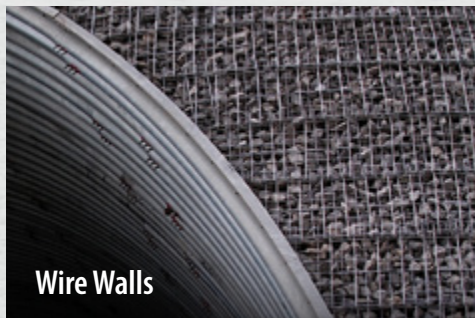


The road surface is then completed with safety barriers.

Choose from a variety of headwall options.



Precast Panel Walls



Wire Walls



Vegetated Wire Walls

FOR PROJECT ASSISTANCE, CALL 1-865-895-0642

The information and suggested applications in this brochure are accurate and correct to the best of our knowledge, and are intended for general information purposes only. These general guidelines are not intended to be relied upon as final specifications, and we do not guarantee specific results for any particular purpose. We strongly recommend consultation with an Atlantic Industries Limited Technical Sales Representative before making any design and purchasing decisions.



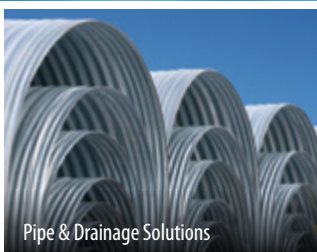
AIL USA steel products contain recycled content and are 100% recyclable.



Structural Plate Bridges & Tunnels



Prefabricated Bridges



Pipe & Drainage Solutions



Retaining Walls & Abutments



Sound Barrier Walls

THE AIL GROUP OFFERS A COMPLETE RANGE OF BRIDGE AND INFRASTRUCTURE SOLUTIONS.



Atlantic Industries Limited USA
A member of The AIL Group of Companies

USA Sales Office
Cartersville, Georgia
1-865-895-0642

USA Manufacturing
Ultra-Cor® is manufactured
in Northern Mississippi

atlanticindustries.com