

# Dur·A·Span™

The Lightweight Champion.

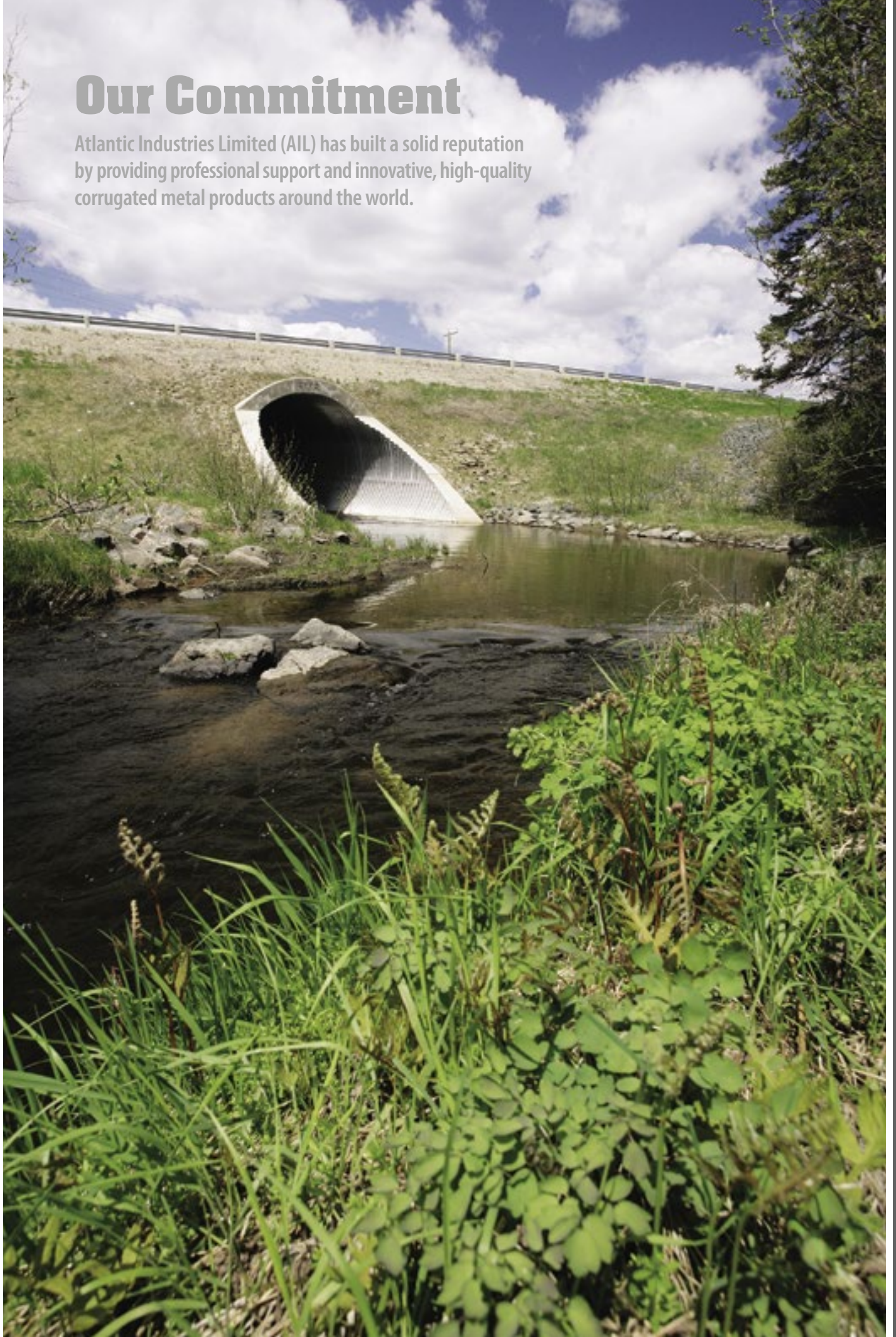
ail.ca



Atlantic Industries Limited  
**We Support You.**

# Our Commitment

Atlantic Industries Limited (AIL) has built a solid reputation by providing professional support and innovative, high-quality corrugated metal products around the world.



# Dur·A·Span™

Lightweight, strong and corrosion/abrasion resistant, AIL's Dur-A-Span Aluminium Structural Plate has been going the distance in over 15,000 structures worldwide for many years – beating the usual heavyweight contenders, like precast concrete, on overall performance and cost. And now, thanks to our innovative reinforcing rib technology, Dur-A-Span can go even farther (and wider) to outperform all challengers. The proven strength, economy and longevity of Dur-A-Span is ideal for coastal or remote installations.

## Corrosion/Abrasion Resistant

Aluminium is well-known for its longer design service life. Proven over many years of wet/dry corrosion/abrasion cycles, its tough, self-healing, oxide surface film reforms immediately if mechanically damaged or corroded in an aggressive environment like salt water.

## Lightweight

Dur-A-Span is only 1/50th the weight of reinforced concrete pipe, so it ships for less and installs faster – especially in remote areas. Individual plates and ribs can usually be handled by one worker and bundles can be moved by light-duty lifts.

## Easy to Install

Many lightweight Dur-A-Span structures can be shipped assembled to provide obvious installation savings in time and money. If delivered unassembled, the nested components can be made in large sections with up to three different radii in the same plate, reducing the number of joints and assembly time.

## Strong

Dur-A-Span is made from the strongest non-heat treatable alloy in common use – alloy 5052. Additional hardware made from alloys 6061 and 6063 also have a proven history of excellent corrosion resistance even in saltwater environments. Their principle magnesium and chromium alloying elements offer high ultimate and yield strengths to create structures that meet AS/NZS 2041: 2010, AASHTO and CHBDC design requirements.

## Dur-A-Span is ideal for coastal or remote areas in:

- Stream and river crossings
- Culverts and storm drains
- Conveyor or utility line covers
- Road salt or other storage structures



### All in a day's work and no heavy lifting!

Many Dur-A-Span™ structures can be shipped assembled and be set in position the same day with a medium-duty crane or an excavator. In this case, the headwalls were attached on arrival and, at the end of the day, everything was in position and engineered backfilling had begun.



# Light, Strong and Durable by Design.

Ever notice how it's only this type of shell that survives the pounding surf? Like the shell, Dur-A-Span™ structures are designed to withstand the harshest corrosive and abrasive coastal environments to outlast all others.



## Dur-A-Span versus Concrete

|                           |                                                                                                                  |
|---------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Weight</b>             | 1/50th the weight of concrete pipe                                                                               |
| <b>Installation</b>       | Faster, easier to install than concrete, lower labour and trucking costs                                         |
| <b>Site Impact</b>        | Minimal with aluminium, lighter (lower cost) equipment, less excavating                                          |
| <b>Maintenance</b>        | Very low, easy to inspect, continuous footings eliminate settling                                                |
| <b>Durability</b>         | Corrosion/abrasion resistant and mechanical joints eliminate separation issues                                   |
| <b>Versatility</b>        | Many size, shape, footing, headwall and wingwall choices                                                         |
| <b>Overall Cost</b>       | Installed life cycle cost is substantially lower than concrete                                                   |
| <b>Fish-Friendly Flow</b> | Expansive opening, hydraulic profile design, open bottoms, prevent debris build up and facilitate fish movement. |



Dur-A-Span



Traditional RCB

## Design

Dur-A-Span corrugation pattern of 230 mm by 64 mm incorporates design theories confirmed by exhaustive field tests. The result is a more efficient and economical structure with a higher section modulus and moment of inertia to increase strength and stiffness. The heat-treated assembly bolts are hot-dip galvanized to provide the durability required to withstand even the harshest environments. Aluminium (ASTM F468 Alloy 6061-T6) and stainless steel (ASTM F593 Alloy Group 1, 2 or 3) assembly bolts are also available.

## End Treatments

Standard end finishes for Dur-A-Span include square ends, step bevels, skews, partial bevels and skew bevels. Integrated headwall and wingwall solutions are also available.

Dur-A-Span structures are virtually maintenance-free with a design service life of over 100 years.

# Box Culverts

Dur-A-Span™ corrugated aluminium structural plate box culverts combine the structural qualities of rigid box culverts with flexible metal culverts and result in a totally engineered installation. Usually supplied with an open invert, box culverts are an environmentally friendly solution for your construction needs, promoting fish passage throughout the construction period and beyond. Box culverts are used primarily when height is limited and can be used with cover heights as low as 450 mm. A variety of footing options are available.

## Full Corrugated Inverts

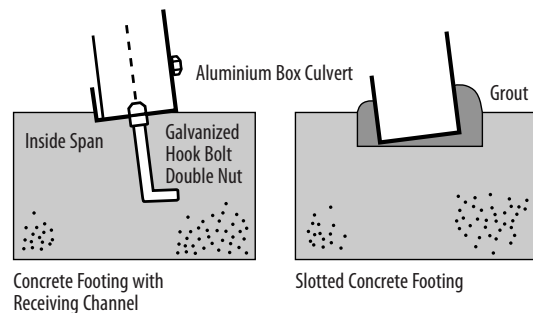
Full aluminium inverts should be used where scour is a potential problem. They are supplied with flat sheet toe walls.

## Footing Pads

Short footing pads are generally the most economical solution for sites where the stream bed is non-erodible. If the stream bed permits, footing pads should be buried a minimum of 450 mm.

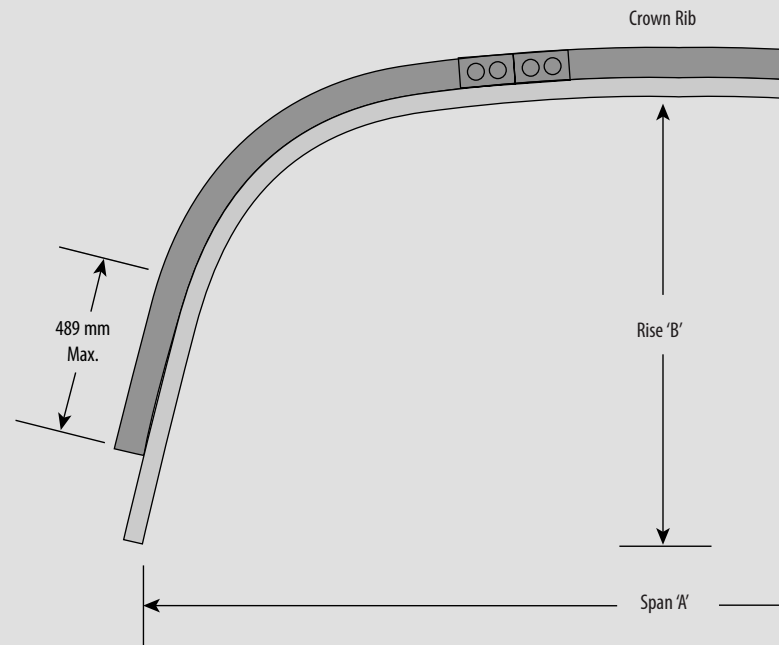
## Concrete Footings

When concrete footings or concrete inverts are required, Dur-A-Span may be placed in a receiving channel or in a pre-formed slot. AIL can also supply precast concrete footings for faster installation.



\*A minimum soil bearing capacity of 200 KPa is required.

## Box Culvert Shell Cross Section



## Headwall Packages

The standard headwall package features a headwall and usually two wingwalls. The headwall package results in a finished-looking structure, helps prevent scouring and assists in channeling water flow. Other attractive headwall options include cast-in-place concrete, precast concrete, mechanically stabilized earth walls with concrete fascia, gabion baskets or blocks.

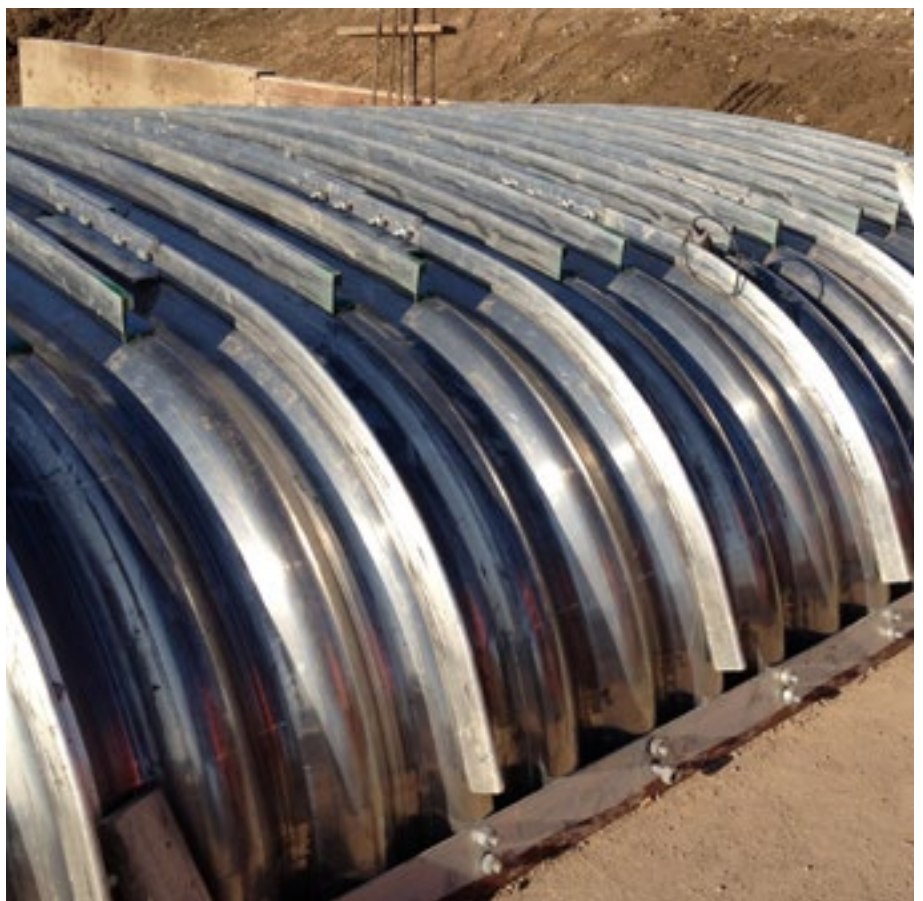
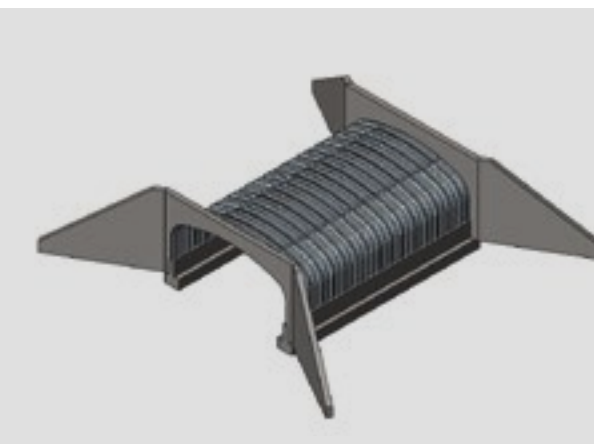
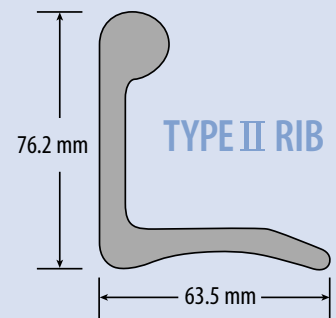
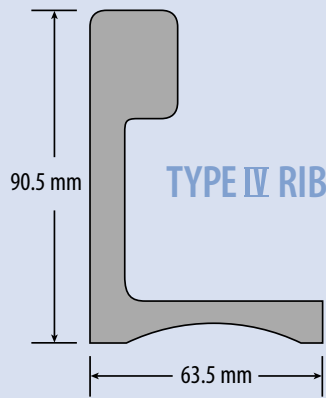
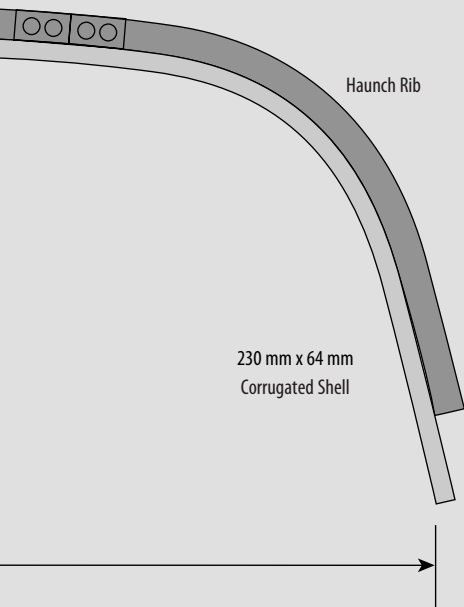


Reinforcing ribs add strength and extend span capability



TYPE IV

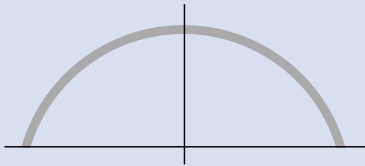
TYPE II



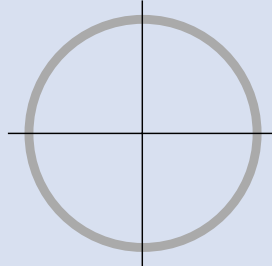
# Other Shapes

We create Dur-A-Span™ structures in a wide variety of shapes and configurations to suit many different project needs. If you don't see what you are looking for here, talk to an AIL Technical Representative about our custom sizes and shapes.

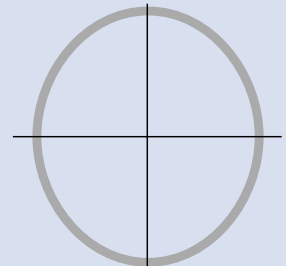
Arch



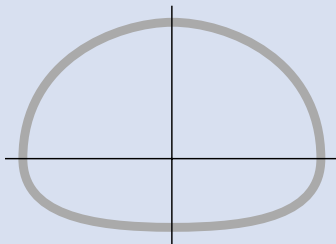
Round



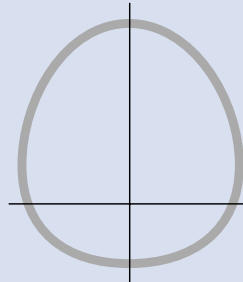
Vertical Ellipse



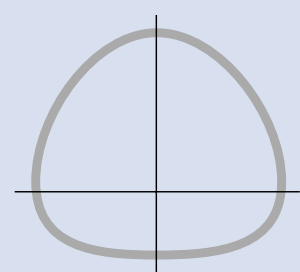
Pipe Arch

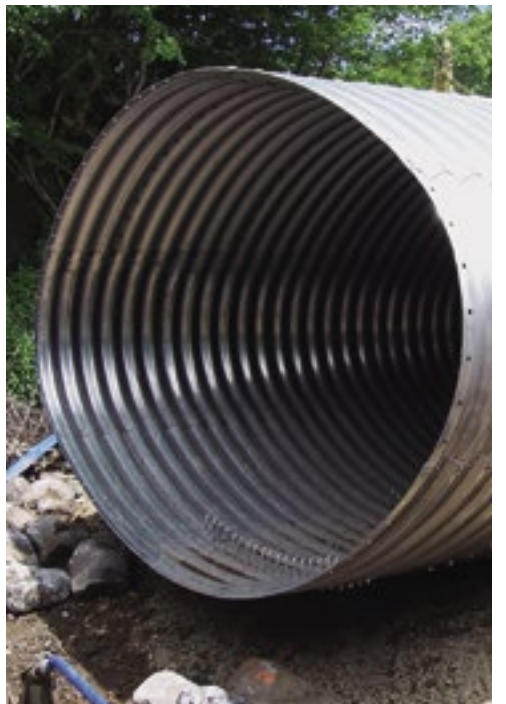


Underpass  
(Pedestrian/Animal)



Underpass  
(Vehicular)

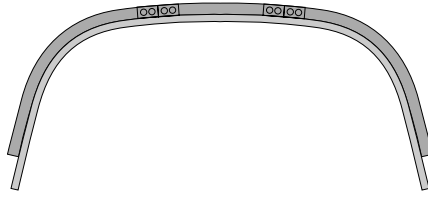




Ask your ALL Technical Sales Representative about various types of fish-friendly flow options.



## Box Culverts

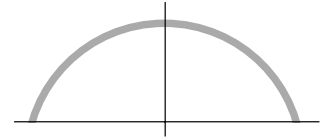


| Struct. No. | Span 'A' (mm) | Rise 'B' (mm) | Approx. Area (m²) |
|-------------|---------------|---------------|-------------------|
| DS-1B       | 2667          | 762           | 1.71              |
| DS-2B       | 2794          | 991           | 2.36              |
| DS-3B       | 2921          | 1245          | 3.03              |
| DS-4B       | 3048          | 1473          | 3.73              |
| DS-5B       | 3200          | 1702          | 4.47              |
| DS-6B       | 3327          | 1930          | 5.24              |
| DS-7B       | 3454          | 2184          | 6.04              |
| DS-8B       | 3099          | 813           | 2.14              |
| DS-9B       | 3226          | 1041          | 2.89              |
| DS-10B      | 3327          | 1295          | 3.67              |
| DS-11B      | 3454          | 1524          | 4.48              |
| DS-12B      | 3556          | 1753          | 5.31              |
| DS-13B      | 3683          | 2007          | 6.17              |
| DS-14B      | 3785          | 2235          | 7.06              |
| DS-15B      | 3531          | 864           | 2.61              |
| DS-16B      | 3632          | 1092          | 3.47              |
| DS-17B      | 3734          | 1346          | 4.36              |
| DS-18B      | 3835          | 1575          | 5.26              |
| DS-19B      | 3937          | 1829          | 6.19              |
| DS-20B      | 4039          | 2057          | 7.14              |
| DS-21B      | 3962          | 914           | 3.14              |
| DS-22B      | 4064          | 1168          | 4.11              |
| DS-23B      | 4140          | 1397          | 5.09              |
| DS-24B      | 4216          | 1651          | 6.09              |
| DS-25B      | 4293          | 1880          | 7.12              |
| DS-26B      | 4394          | 991           | 3.72              |
| DS-27B      | 4470          | 1245          | 4.78              |
| DS-28B      | 4521          | 1473          | 5.87              |
| DS-29B      | 4597          | 1727          | 6.98              |
| DS-30B      | 4674          | 1956          | 8.10              |
| DS-31B      | 4724          | 2210          | 9.23              |
| DS-32B      | 4801          | 2438          | 10.39             |
| DS-33B      | 4826          | 1067          | 4.35              |
| DS-34B      | 4877          | 1295          | 5.53              |
| DS-35B      | 4928          | 1549          | 6.72              |
| DS-36B      | 4978          | 1803          | 7.92              |
| DS-37B      | 5029          | 2032          | 9.13              |
| DS-38B      | 5080          | 2286          | 10.36             |
| DS-39B      | 5131          | 2515          | 11.59             |
| DS-40B      | 5410          | 1168          | 5.05              |
| DS-41B      | 5537          | 1397          | 6.35              |
| DS-42B      | 5664          | 1626          | 7.66              |
| DS-43B      | 5791          | 1854          | 9.02              |
| DS-44B      | 5918          | 2108          | 10.40             |

| Struct. No. | Span 'A' (mm) | Rise 'B' (mm) | Approx. Area (m²) |
|-------------|---------------|---------------|-------------------|
| DS-45B      | 6045          | 2337          | 11.81             |
| DS-46B      | 6172          | 2565          | 13.25             |
| DS-47B      | 5817          | 1270          | 5.88              |
| DS-48B      | 5918          | 1499          | 7.27              |
| DS-49B      | 6020          | 1727          | 8.70              |
| DS-50B      | 6121          | 1981          | 10.15             |
| DS-51B      | 6248          | 2210          | 11.61             |
| DS-52B      | 6350          | 2464          | 13.12             |
| DS-53B      | 6452          | 2692          | 14.64             |
| DS-54B      | 6198          | 1372          | 6.79              |
| DS-55B      | 6274          | 1600          | 8.29              |
| DS-56B      | 6375          | 1854          | 9.80              |
| DS-57B      | 6477          | 2083          | 11.34             |
| DS-58B      | 6553          | 2337          | 12.91             |
| DS-59B      | 6655          | 2565          | 14.49             |
| DS-60B      | 6731          | 2819          | 16.10             |
| DS-61B      | 6579          | 1499          | 7.79              |
| DS-62B      | 6655          | 1727          | 9.38              |
| DS-63B      | 6731          | 1981          | 11.00             |
| DS-64B      | 6782          | 2210          | 12.63             |
| DS-65B      | 6858          | 2464          | 14.28             |
| DS-66B      | 6934          | 2692          | 15.94             |
| DS-67B      | 7010          | 2946          | 17.63             |
| DS-68B      | 6934          | 1626          | 8.87              |
| DS-69B      | 7010          | 1854          | 10.56             |
| DS-70B      | 7061          | 2108          | 12.27             |
| DS-71B      | 7112          | 2337          | 13.99             |
| DS-72B      | 7163          | 2591          | 15.73             |
| DS-73B      | 7214          | 2819          | 17.48             |
| DS-74B      | 7264          | 3073          | 19.23             |
| DS-75B      | 7315          | 1753          | 10.05             |
| DS-76B      | 7341          | 1981          | 11.85             |
| DS-77B      | 7391          | 2235          | 13.64             |
| DS-78B      | 7417          | 2489          | 15.44             |
| DS-79B      | 7442          | 2718          | 17.25             |
| DS-80B      | 7493          | 2972          | 19.07             |
| DS-81B      | 7518          | 3200          | 20.90             |
| DS-82B      | 7671          | 1880          | 11.33             |
| DS-83B      | 7671          | 2134          | 13.21             |
| DS-84B      | 7696          | 2362          | 15.09             |
| DS-85B      | 7722          | 2616          | 16.96             |
| DS-86B      | 7722          | 2870          | 18.85             |
| DS-87B      | 7747          | 3099          | 20.75             |

Standard Structure Listing

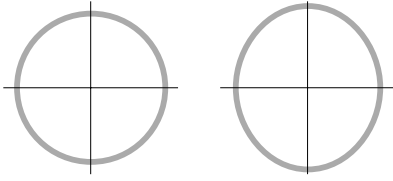
## Arch



| Span (mm) | Rise (mm) | Approx. Area (m²) |
|-----------|-----------|-------------------|
| 1524      | 533       | 0.60              |
|           | 686       | 0.79              |
|           | 787       | 0.97              |
| 1829      | 559       | 0.72              |
|           | 711       | 0.95              |
|           | 838       | 1.17              |
|           | 965       | 1.38              |
| 2134      | 711       | 1.11              |
|           | 864       | 1.37              |
|           | 991       | 1.63              |
|           | 1118      | 1.89              |
| 2438      | 889       | 1.58              |
|           | 1016      | 1.88              |
|           | 1270      | 2.45              |
| 2743      | 889       | 1.77              |
|           | 1168      | 2.44              |
|           | 1422      | 3.10              |
| 3048      | 1067      | 2.35              |
|           | 1346      | 3.09              |
|           | 1575      | 3.83              |
| 3353      | 1067      | 2.58              |
|           | 1372      | 3.42              |
|           | 1727      | 4.63              |
| 3658      | 1245      | 3.28              |
|           | 1524      | 4.18              |
|           | 1905      | 5.51              |
| 3962      | 1245      | 3.54              |
|           | 1549      | 4.54              |
|           | 1803      | 5.51              |
|           | 2057      | 6.46              |
| 4267      | 1422      | 4.36              |
|           | 1702      | 5.43              |
|           | 1956      | 6.46              |
|           | 2210      | 7.49              |
| 4572      | 1422      | 4.65              |
|           | 1727      | 5.82              |
|           | 2007      | 6.94              |
|           | 2261      | 8.04              |
|           | 2362      | 8.59              |
| 4877      | 1600      | 5.57              |
|           | 1880      | 6.81              |
|           | 2159      | 8.01              |
|           | 2413      | 9.19              |
|           | 2515      | 9.77              |
| 5182      | 1600      | 5.90              |
|           | 1905      | 7.24              |
|           | 2184      | 8.52              |
|           | 2438      | 9.77              |
|           | 2692      | 11.03             |
| 5486      | 1753      | 6.95              |
|           | 2057      | 8.35              |
|           | 2337      | 9.71              |
|           | 2591      | 11.04             |
|           | 2718      | 11.70             |
| 5791      | 1930      | 8.07              |
|           | 2235      | 9.54              |
|           | 2489      | 10.96             |
|           | 2743      | 12.37             |
|           | 2870      | 13.07             |

Standard Structure Listing

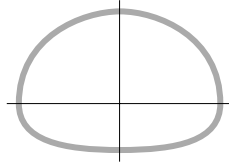
## Round and Vertical Ellipse



| Round Dia.<br>(mm) | Ellipse Dimensions |           | Approx. Area<br>(m <sup>2</sup> ) |
|--------------------|--------------------|-----------|-----------------------------------|
|                    | Span (mm)          | Rise (mm) |                                   |
| 1524               | 1422               | 1575      | 1.77                              |
| 1676               | 1575               | 1727      | 2.14                              |
| 1829               | 1702               | 1905      | 2.51                              |
| 1981               | 1854               | 2057      | 2.97                              |
| 2134               | 2007               | 2235      | 3.53                              |
| 2286               | 2159               | 2388      | 4.09                              |
| 2438               | 2311               | 2565      | 4.65                              |
| 2591               | 2464               | 2718      | 5.20                              |
| 2743               | 2616               | 2896      | 5.85                              |
| 2896               | 2769               | 3048      | 6.60                              |
| 3048               | 2921               | 3226      | 7.34                              |
| 3200               | 3048               | 3378      | 8.08                              |
| 3353               | 3200               | 3531      | 8.83                              |
| 3505               | 3353               | 3708      | 9.66                              |
| 3658               | 3505               | 3861      | 10.59                             |
| 3810               | 3607               | 3988      | 11.52                             |
| 3962               | 3759               | 4166      | 12.45                             |
| 4115               | 3886               | 4318      | 13.47                             |
| 4267               | 4039               | 4470      | 14.49                             |
| 4420               | 4191               | 4648      | 15.51                             |
| 4572               | 4343               | 4801      | 16.63                             |
| 4724               | 4496               | 4953      | 17.74                             |
| 4877               | 4623               | 5131      | 18.95                             |
| 5029               | 4801               | 5309      | 20.16                             |
| 5182               | 4953               | 5461      | 21.46                             |
| 5334               | 5080               | 5639      | 22.76                             |
| 5486               | 5232               | 5791      | 24.06                             |
| 5639               | 5385               | 5969      | 25.46                             |
| 5791               | 5512               | 6121      | 26.85                             |
| 5944               | 5690               | 6274      | 28.34                             |

Standard Structure Listing

## Pipe Arch



| Span<br>(mm) | Rise<br>(mm) | Approx. Area<br>(m <sup>2</sup> ) |
|--------------|--------------|-----------------------------------|
| 2007         | 1727         | 2.75                              |
| 2108         | 1753         | 2.96                              |
| 2210         | 1803         | 3.19                              |
| 2362         | 1829         | 3.42                              |
| 2464         | 1854         | 3.65                              |
| 2565         | 1905         | 3.89                              |
| 2692         | 1930         | 4.13                              |
| 2819         | 1956         | 4.38                              |
| 2921         | 1981         | 4.64                              |
| 3023         | 2032         | 4.90                              |
| 3124         | 2057         | 5.16                              |
| 3277         | 2083         | 5.43                              |
| 3378         | 2134         | 5.70                              |
| 3480         | 2159         | 5.98                              |
| 3581         | 2184         | 6.27                              |
| 3734         | 2210         | 6.55                              |
| 3835         | 2261         | 6.85                              |
| 3937         | 2286         | 7.15                              |
| 3988         | 2489         | 7.71                              |
| 3988         | 2540         | 8.06                              |
| 4242         | 2565         | 8.39                              |
| 4267         | 2616         | 8.75                              |
| 4242         | 2870         | 9.43                              |
| 4343         | 2921         | 9.82                              |
| 4470         | 2946         | 10.21                             |
| 4547         | 2997         | 10.61                             |
| 4674         | 3048         | 11.02                             |
| 4750         | 3099         | 11.44                             |
| 4902         | 3150         | 11.85                             |
| 4978         | 3200         | 12.29                             |

Standard Structure Listing



## Relines – infrastructure renewal made easy.

AIL's reline packages can help salvage failing structures and avoid the time, cost, safety and environmental issues inherent in full replacement. Various shapes of Dur-A-Span™ structures can be made for insertion into the existing openings with minimal environmental impact. Grout is placed in the annulus between the structures, and new headwall and wingwall packages are available in a variety of finishes. Ask your AIL Technical Representative for more details.

### Notes:

Typical cover ranges from 450 mm to 1500 mm. The maximum cover for aluminium box culverts with full inverts and footing pads should not exceed 1.3 m.

N = 244 mm

Dimensions are to inside corrugation crests and are subject to manufacturing tolerances.

Other sizes and custom shapes are available upon request.

### Standard Specifications:

Australian Standards AS/NZS 2041: 2010

AASHTO M219M  
(corrugated aluminium structural plate)

ASTM B746/B746M  
(corrugated aluminium structural plate)

ASTM B209/B209M  
(specification of Imperial and Metric plate)

ASTM B789/B789M  
(installation of structural plate)

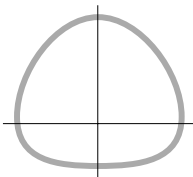
ASTM B790/B790M  
(design of aluminium pipe and structural plate)

AASHTO Standard Specifications for Highway Bridges (design)

Canadian Highway Bridge Design Code  
CAN/CSA-S6-06

CSA G401-2006

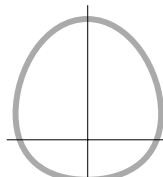
## Underpass (Vehicular)



| Span<br>(mm) | Rise<br>(mm) | Approx. Area<br>(m <sup>2</sup> ) |
|--------------|--------------|-----------------------------------|
| 3683         | 3353         | 9.85                              |
| 3912         | 3404         | 10.59                             |
| 3962         | 3658         | 11.52                             |
| 4166         | 3759         | 12.36                             |
| 4267         | 3937         | 13.29                             |
| 4420         | 4089         | 14.40                             |
| 4470         | 4293         | 15.33                             |
| 4699         | 4394         | 16.44                             |
| 4724         | 4623         | 17.65                             |
| 4928         | 4724         | 18.58                             |
| 5029         | 4877         | 19.32                             |
| 5080         | 4978         | 19.97                             |

Standard Structure Listing

## Underpass (Pedestrian/Animal)



| Span<br>(mm) | Rise<br>(mm) | Approx. Area<br>(m <sup>2</sup> ) |
|--------------|--------------|-----------------------------------|
| 1854         | 1753         | 2.60                              |
| 1905         | 1854         | 2.79                              |
| 1905         | 1956         | 2.97                              |
| 1880         | 2108         | 3.16                              |
| 1930         | 2210         | 3.44                              |
| 1905         | 2362         | 3.62                              |
| 1956         | 2464         | 3.90                              |

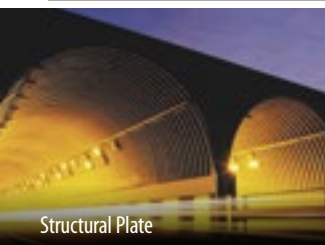
Standard Structure Listing

## PRODUCTS AND SERVICES

- Bolt-A-Plate®
- Corrugated Steel Pipe
- Corrugated Steel Pipe Arch
- Corrugated Aluminium Pipe
- Corrugated Aluminium Arch
- Super-Cor® Structures
- Ultra-Cor® Structures
- Guiderrail Systems
- Bolt-A-Bin®
- Hi-Flo Pipe
- Galvanized Spiral Duct
- Window Wells
- Construction Services
- General Fabrication
- Geotextiles
- Erosion Control Products
- Water Control Gates
- Gabion Baskets
- Dur-A-Span® Aluminium Structures
- Aluminized Type II Pipe
- MSE Structural Walls
- Atlantic Structural Walls

THE INFORMATION, SUGGESTED APPLICATIONS AND TABLES 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 CIVIL PRODUCTS TECHNICAL REPRESENTATIVE BEFORE MAKING ANY DESIGN AND PURCHASING DECISIONS.

AIL-1468 07/2026



Structural Plate



Wall Systems



Pipe Systems



Prefabricated Bridges



Sound Walls

**For project assistance, call toll-free in Canada: 1-877-245-7473, or International: +1-778-355-7000**



**Atlantic Industries Limited**  
**We Support You.**

Atlantic Industries Limited is a member of  
**THE AIL GROUP OF COMPANIES**

### Head Office:

PO Box 6161, 32 York St.  
Sackville, New Brunswick  
Canada E4L 1G6  
Phone: (506) 364-4600

### Locations across Canada:

St. John's, NL • Deer Lake, NL • Dorchester, NB • Sackville, NB  
Louiseville, QC • Ottawa, ON • Toronto, ON • Ayr, ON • Cambridge, ON  
Woodstock, ON • Thunder Bay, ON • Kenora, ON • Calgary, AB  
Edmonton, AB • Westlock, AB • Armstrong, BC • Vancouver, BC



Atlantic Industries Limited



INTERNATIONAL



SOUND WALLS

