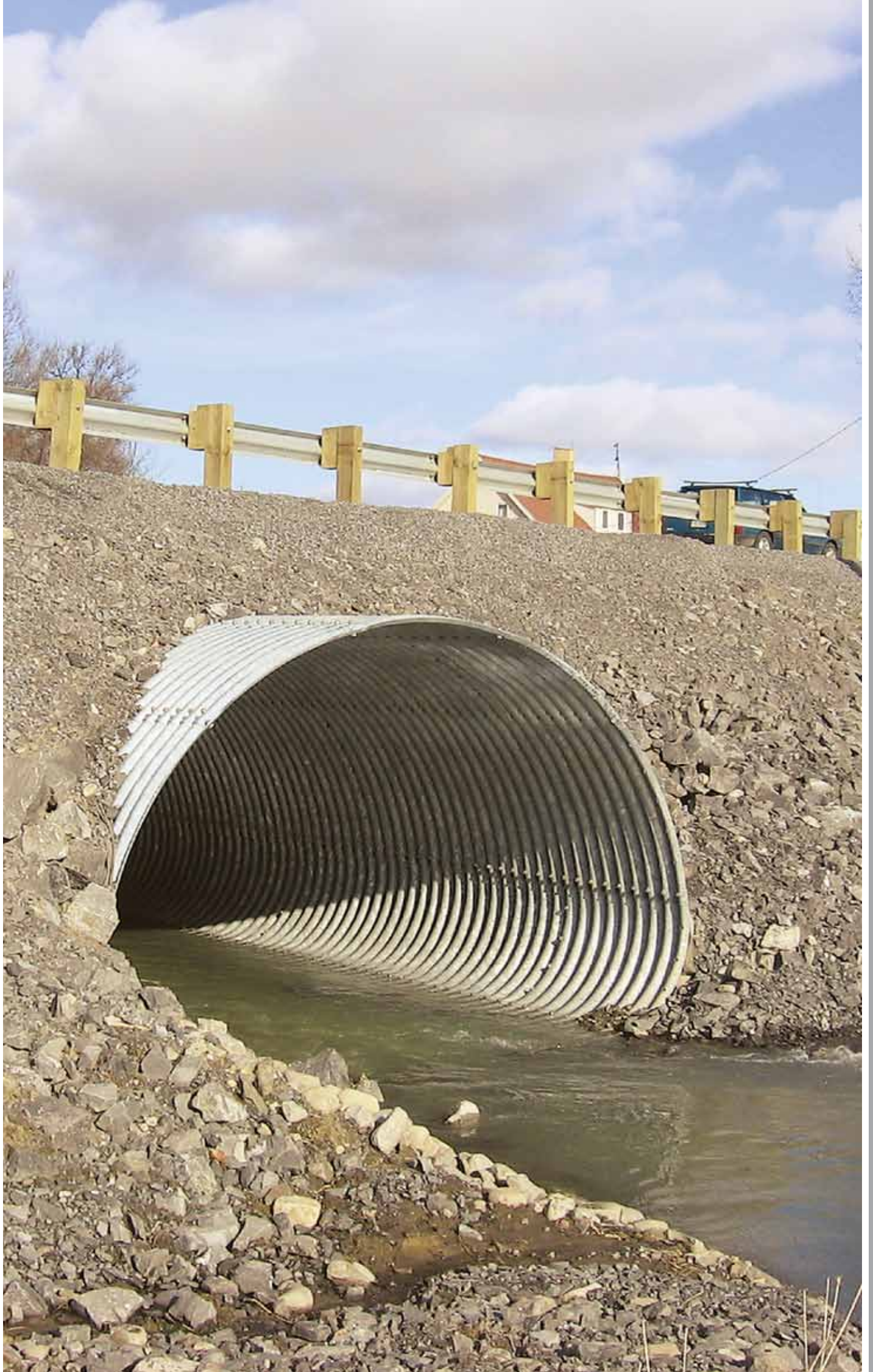


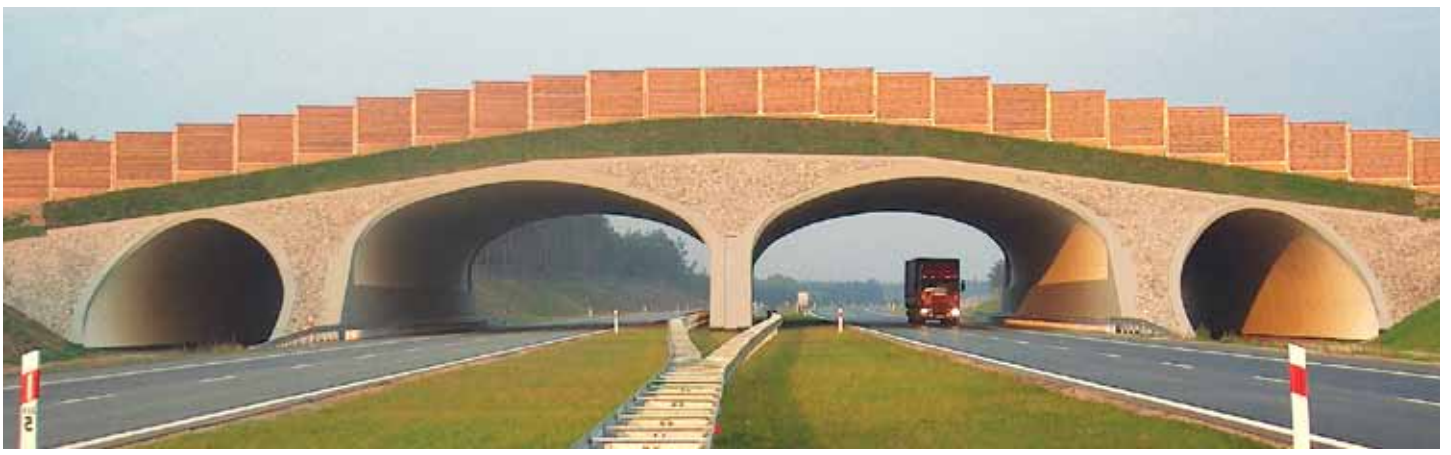
# Multi-Plate™

[www.atlanticcivil.com.au](http://www.atlanticcivil.com.au)



  
**Atlantic**  
Civil Products





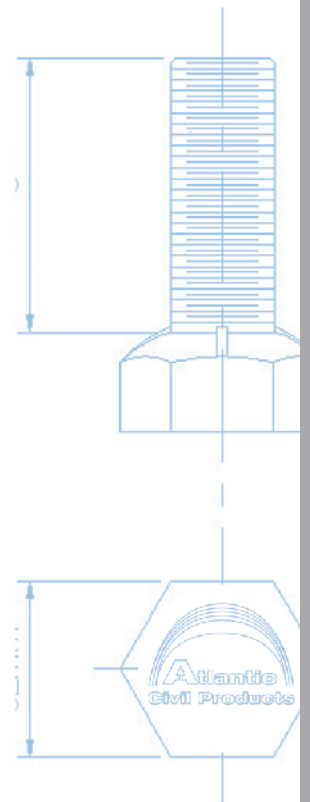
# Our Commitment

**Atlantic Civil Products has built a solid reputation by providing professional support and innovative, high quality corrugated metal products around the world.**

Innovative ideas, quality production facilities, leading-edge project management and dependable service make Atlantic Civil Products a leader in engineered solutions.

You can count on our solutions to help you overcome your biggest challenges. We combine strategic problem-solving and engineering expertise to give you the advice and support you need.

We welcome the opportunity to discuss your next project. Please contact your local Atlantic Civil Products Technical Sales Representative for assistance on 1800 997 754.



# Multi-Plate™



Multi-Plate™ is ideal for new site developments, council and municipal stream crossings, as well as urban rehabilitations. It maintains natural streambeds and reduces environmental impacts. Multi-Plate™ structures are effectively utilized as strong and economical alternatives to elaborate bridge replacements.



**Strong  
Economical  
Lightweight**

Multi-Plate™ is ideal for:

- Conveyor tunnels
- Stockpile tunnels
- Underpasses
- Culverts
- Stream enclosures
- Fishways
- Bridge replacements



# Multi-Plate™ Structural Shapes and Details

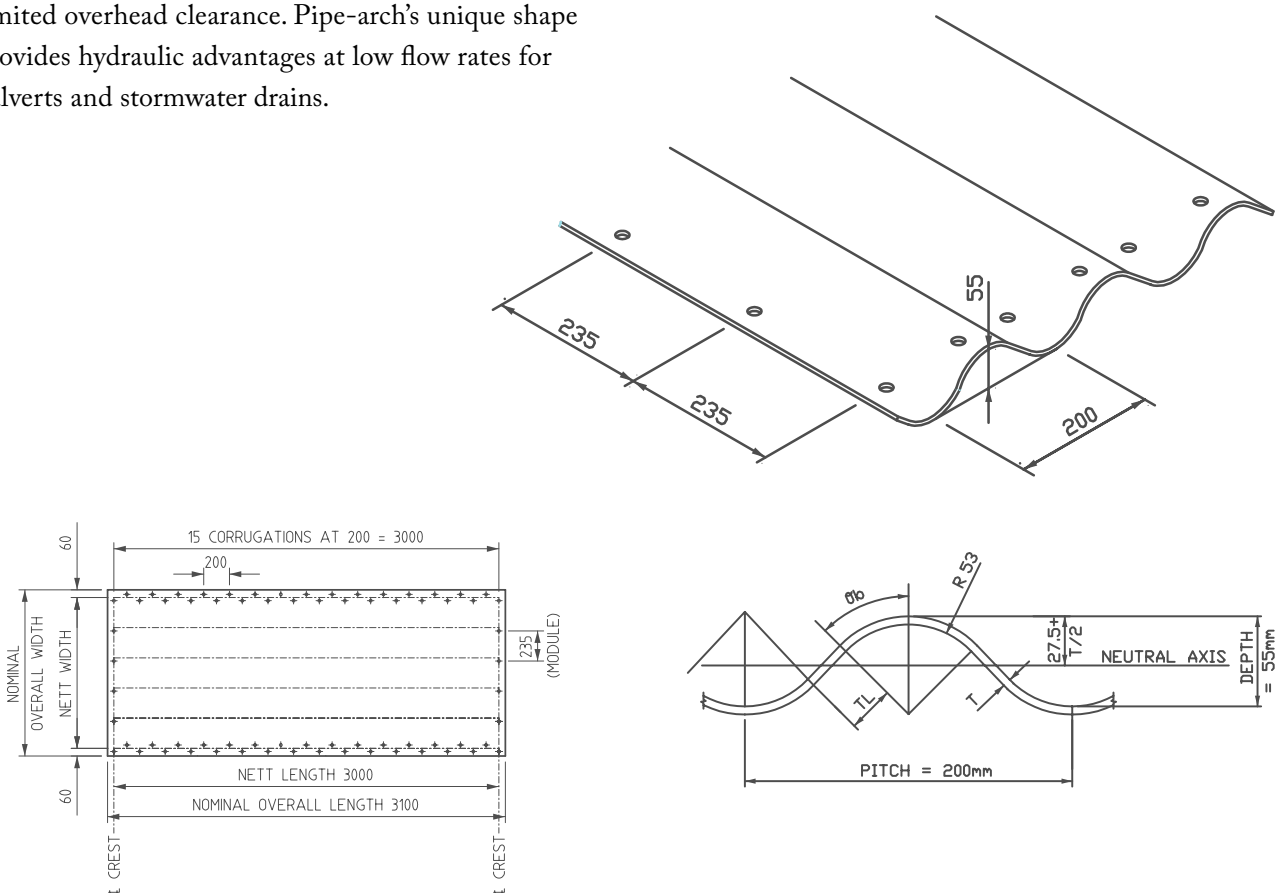
**Round Pipe** is the most common and versatile of the Multi-Plate™ shapes. This shape is used primarily for culverts, stormwater drains and sub-drains, but is also appropriate for storage bins, tunnels and bridges.

**Arches – Standard and Low Profile** anchored on footings are ideal for installations where there is limited headroom and low height of cover restrictions. They are especially useful in sites where it is desirable to maintain natural stream beds and are widely used for stream enclosures, culverts and stormwater drains.

**Pipe-Arch** is ideal for bridges and underpasses with limited overhead clearance. Pipe-arch's unique shape provides hydraulic advantages at low flow rates for culverts and stormwater drains.

**High Profile** arches (elliptical or horseshoe) are engineered to maintain a natural waterway and allow for an abrasive bedload. Additionally, these arches are ideal for projects that include large end areas or large spans. The high profile arch is also used for highway grade separations.

**Elliptical** shapes are commonly used for underpasses and service tunnels. The horizontal ellipse is better suited for multi-lane, vehicular underpasses, while the vertical ellipse shape is more appropriate for single lane vehicular and railway underpasses.

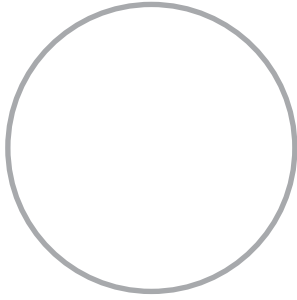


## Sectional Properties for Multi-Plate™ Profile, 200 mm x 55 mm

Specified wall thickness mm	Structural base metal wall thickness (t) mm	Section area (A) mm <sup>2</sup> /mm	Second moment of area (I) mm <sup>4</sup> /mm	Elastic section modulus (W <sub>e</sub> ) mm <sup>3</sup> /mm	Radius of gyration (i) mm	Plastic section modulus (W <sub>p</sub> ) mm <sup>3</sup> /mm
2.50	2.43	2.87	1094	38.10	19.52	50.42
3.00	2.94	3.47	1324	45.71	19.54	60.99
4.00	3.97	4.69	1797	60.94	19.57	82.71
5.00	5.00	5.91	2273	75.77	19.60	104.58
6.00	6.00	7.10	2739	89.79	19.64	125.94
7.00	7.00	8.29	3208	103.49	19.67	147.46
8.00	8.00	9.49	3681	116.86	19.70	169.15

- AS/NZS 2041.6-2010
- AS/NZS 1594 G250 and G300 STEEL, GALVANIZED to AS/NZS 4680

## Multi-Plate™ Round



Note: Structure No. 200-114P = 114N total.  
Dimensions are nominal and are to the inside crest.  
Other sizes are available upon request.

Struct. No.	Nominal Internal Diameter mm	Max Internal Span Ss mm	End Area m <sup>2</sup>	Struct. No.	Nominal Internal Diameter mm	Max Internal Span Ss mm	End Area m <sup>2</sup>
200-20P	1500	1438	1.62	200-64P	4800	4729	17.57
200-22P	1650	1588	1.98	200-68P	5100	5027	19.86
200-24P	1800	1737	2.37	200-72P	5400	5328	22.29
200-26P	1950	1887	2.80	200-76P	5700	5627	24.87
200-28P	2100	2037	3.26	200-80P	6000	5924	27.56
200-30P	2250	2186	3.75	200-84P	6300	6223	30.42
200-32P	2400	2336	4.28	200-88P	6600	6523	33.41
200-36P	2700	2635	5.45	200-92P	6900	6822	36.55
200-40P	3000	2934	6.76	200-96P	7200	7121	39.83
200-44P	3300	3233	8.21	200-100P	7500	7418	43.22
200-48P	3600	3533	9.80	200-104P	7800	7718	46.78
200-52P	3900	3832	11.53	200-108P	8100	8017	50.48
200-56P	4200	4131	13.40	200-112P	8400	8316	54.31
200-60P	4500	4430	15.41	200-114P	8500	8466	56.29

## Multi-Plate™ Arch



Note: Structure No. 200-49AA = 49N total.  
Dimensions are nominal and are to the inside crest.  
Other sizes are available upon request.

### Type AA

Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	End Area A m <sup>2</sup>	Bottom Angle θ deg
200-12AA	2000	852	1.29	9.17
200-15AA	2500	1060	2.00	9.43
200-18AA	3000	1267	2.87	9.65
200-22AA	3500	1599	4.30	5.15
200-23AA	4000	1511	4.60	14.41
200-26AA	4500	1759	5.87	13.99
200-29AA	5000	1966	7.30	13.65
200-32AA	5500	2174	8.89	13.36
200-35AA	6000	2381	10.64	13.13
200-37AA	6500	2453	11.76	15.92
200-40AA	7000	2659	13.74	15.55
200-43AA	7500	2867	15.89	15.20
200-46AA	8000	3075	18.20	14.89
200-49AA	8500	3283	20.67	14.62

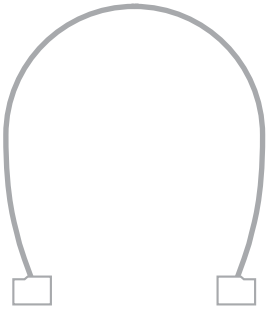


Note: Structure No. 200-56AB = 56N total.  
Dimensions are nominal and are to the inside crest.  
Other sizes are available upon request.

### Type AB

Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	End Area A m <sup>2</sup>	Bottom Angle θ deg
200-26AB	4000	1928	6.00	2.08
200-29AB	4500	2138	7.45	2.94
200-33AB	5000	2465	9.64	0.79
200-36AB	5500	2675	11.47	1.58
200-39AB	6000	2885	13.45	2.24
200-42AB	6500	3094	15.59	2.83
200-46AB	7000	3420	18.69	1.32
200-49AB	7500	3630	21.20	1.87
200-52AB	8000	3839	23.86	2.34
200-56AB	8500	4167	27.67	1.13

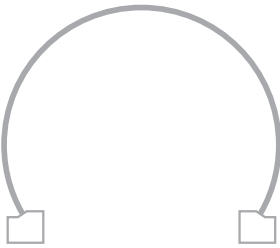
## Multi-Plate™ Elliptical Arch



Note: Structure No. 200-48EA-15 = 48N top,  
2 x 15N sides = 78N total.  
Dimensions are nominal and are to the inside crest.  
Other sizes are available upon request.

Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	Bottom Internal Span Sb mm	End Area A mm <sup>2</sup>	Bottom angle θ deg
200-16EA-5	2339	2378	1977	4.83	17.00
200-20EA-5	2937	2675	2555	6.78	18.00
200-22EA-6	3236	3056	2781	8.55	18.00
200-24EA-7	3536	3436	3005	10.52	18.10
200-25EA-10	3685	4204	2933	13.45	18.10
200-28EA-10	4134	4429	3382	15.89	18.10
200-31EA-11	4583	4874	3678	19.32	19.90
200-36EA-11	5331	5248	4426	24.16	19.90
200-40EA-12	5929	5767	4859	29.43	21.60
200-44EA-14	6528	6496	5085	36.31	25.20
200-48EA-15	7126	7005	5478	42.62	26.90

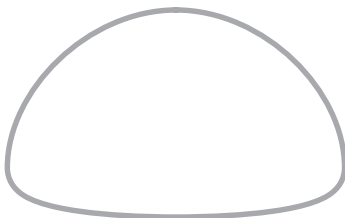
## Multi-Plate™ Horseshoe Arch



Note: Structure No. 200-HA76 = 76N total.  
Dimensions are nominal and are to the inside crest.  
Other sizes are available upon request.

Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	Bottom Internal Span Sb mm	End Area A mm <sup>2</sup>	Bottom Angle θ deg
200-HA22	2850	1778	2761	4.19	14.30
200-HA27	3500	2179	3393	6.30	14.20
200-HA32	4150	2581	4025	8.84	14.10
200-HA36	4650	2907	4502	11.17	14.50
200-HA40	5150	3233	4979	13.77	14.80
200-HA44	5650	3559	5456	16.63	15.10
200-HA49	6300	3960	6088	20.63	14.90
200-HA54	6950	4361	6720	25.06	14.80
200-HA59	7600	4763	7352	29.92	14.70
200-HA64	8250	5164	7984	35.21	14.60
200-HA70	9000	5653	8700	42.07	14.80
200-HA76	9750	6142	9415	49.55	15.10

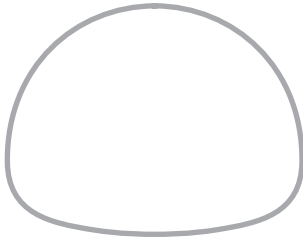
## Multi-Plate™ Pipe Arch



Note: Structure No. 200-41PA5-23 = 41N top,  
2 x 5N sides, 23N bottom = 74N total  
Dimensions are nominal and are to the inside crest.  
Other sizes are available upon request.

Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	End Area A m	Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	End Area A m
200-10PA5-5	1925	1691	2.56	200-24PA5-12	3935	2668	8.32
200-11PA5-6	2131	1782	2.98	200-25PA5-13	4140	2759	9.02
200-14PA5-6	2406	1923	3.66	200-24PA5-16	4463	2835	9.72
200-16PA5-7	2692	2063	4.41	200-27PA5-16	4690	2983	10.87
200-17PA5-7	2773	2111	4.67	200-29PA5-17	4967	3123	12.08
200-18PA5-7	2851	2160	4.94	200-31PA5-18	5241	3265	13.34
200-17PA5-11	3256	2285	5.77	200-33PA5-19	5513	3406	14.67
200-18PA5-11	3343	2332	6.06	200-35PA5-20	5782	3548	16.06
200-20PA5-11	3507	2429	6.67	200-37PA5-21	6049	3690	17.50
200-21PA5-11	3585	2478	6.99	200-39PA5-22	6314	3833	19.01
200-22PA5-11	3659	2527	7.31	200-41PA5-23	6578	3976	20.59

## Multi-Plate™ Underpass

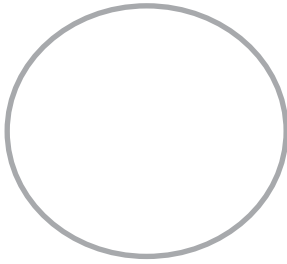


Note: Structure No. 200-45U5-19 = 45N top, 2 x 5N sides, 19N bottom = 74N total  
Dimensions are nominal and are to the inside crest.  
Other sizes are available upon request.

Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	End Area A m <sup>2</sup>
200-24U5-7	3145	2768	7.02
200-26U5-7	3288	2905	7.73
200-25U5-11	3669	3012	8.78
200-27U5-11	3799	3152	9.58
200-29U5-11	3943	3268	10.38
200-31U5-11	4085	3386	11.22
200-33U5-11	4227	3505	12.09
200-33U5-13	4452	3606	12.97

Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	End Area A m <sup>2</sup>
200-35U5-13	4590	3725	13.90
200-35U5-16	4946	3876	15.33
200-38U5-16	5145	4054	16.85
200-40U5-16	5278	4174	17.91
200-40U5-18	5521	4272	18.97
200-41U5-19	5710	4382	20.08
200-43U5-19	5838	4501	21.23
200-45U5-19	5967	4622	22.41

## Multi-Plate™ Horizontal Ellipse

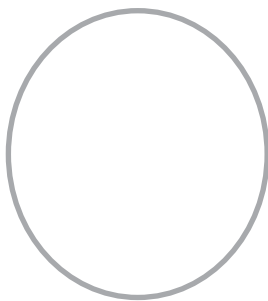


Note: Structure No. 200-35HE21 = 35N top/bottom, 2 x 21N sides = 112N total.  
Dimensions are nominal and are to the inside crest.  
Other sizes are available upon request.

Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	End Area A m
200-6HE6	1826	1643	2.36
200-7HE7	2138	1928	3.24
200-10HE5	2306	2079	3.74
200-10HE6	2457	2223	4.27
200-12HE6	2777	2508	5.43
200-14HE6	3095	2796	6.73
200-14HE7	3250	2935	7.44
200-16HE6	3411	3085	8.18
200-18HE6	3731	3371	9.76
200-19HE7	4043	3656	11.48
200-20HE7	4200	3801	12.40
200-21HE7	4362	3942	13.35
200-12HE18	4634	4188	15.35
200-14HE18	4950	4478	17.50
200-14HE19	5017	4615	18.62
200-14HE20	5264	4752	19.78

Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	End Area A m
200-18HE18	5587	5051	22.20
200-20HE18	5902	5338	24.75
200-21HE18	6065	5478	26.08
200-21HE19	6219	5618	27.45
200-21HE21	6525	5901	30.30
200-24HE20	6849	6191	33.28
200-24HE21	7005	6330	34.82
200-28HE18	7176	6486	36.40
200-27HE21	7479	6760	39.64
200-30HE20	7801	7052	43.05
200-30HE21	7953	7194	44.80
200-31HE21	8112	7338	46.59
200-33HE21	8432	7623	50.27
200-35HE21	8751	7910	54.09

## Multi-Plate™ Vertical Ellipse



Note: Structure No. 200-21VE36 = 21N top/bottom, 2 x 36N sides = 114N total.  
Dimensions are nominal and are to the inside crest.  
Other sizes are available upon request.

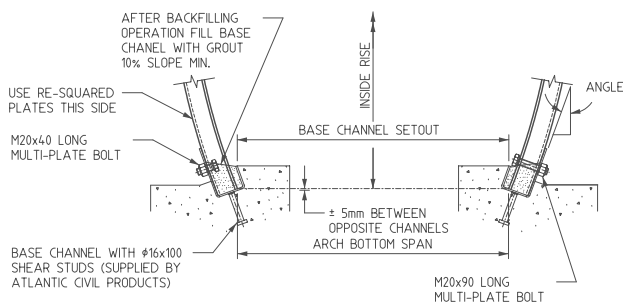
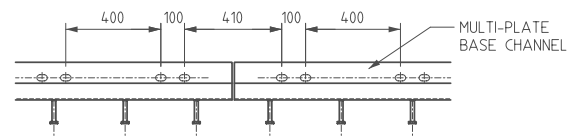
Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	End Area A m <sup>2</sup>
200-6VE6	1643	1826	2.36
200-7VE7	1928	2138	3.24
200-5VE10	2080	2305	3.74
200-6VE10	2223	2457	4.27
200-6VE12	2507	2778	5.43
200-6VE14	2795	3095	6.73
200-7VE14	2935	3250	7.44
200-6VE16	3085	3411	8.18
200-6VE18	3371	3730	9.76
200-7VE19	3656	4043	11.48
200-7VE20	3801	4200	12.40
200-7VE21	3942	4362	13.35
200-18VE12	4188	4634	15.35
200-18VE14	4478	4950	17.50
200-19VE14	4615	5107	18.62
200-20VE14	4752	5264	19.78

Struct. No.	Max Internal Span Ss mm	Internal Rise Rs mm	End Area A m <sup>2</sup>
200-18VE18	5051	5587	22.20
200-18VE20	5341	5903	24.77
200-18VE21	5481	6066	26.10
200-19VE12	5621	6220	27.47
200-21VE21	5901	6526	30.30
200-20VE24	6190	6850	33.28
200-21VE24	6330	7005	34.82
200-18VE28	6486	7176	36.40
200-21VE27	6762	7481	39.67
200-20VE30	7055	7802	43.07
200-21VE30	7197	7955	44.83
200-21VE31	7339	8115	46.61
200-21VE33	7625	8435	50.30
200-21VE35	7911	8754	54.12
200-21VE36	8055	8913	56.08

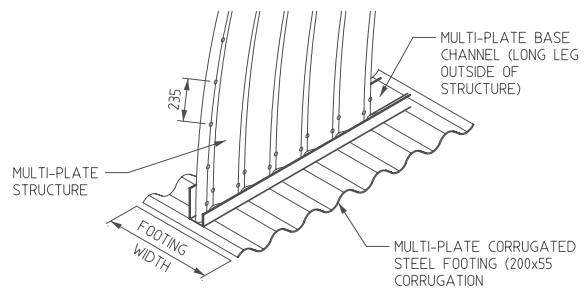
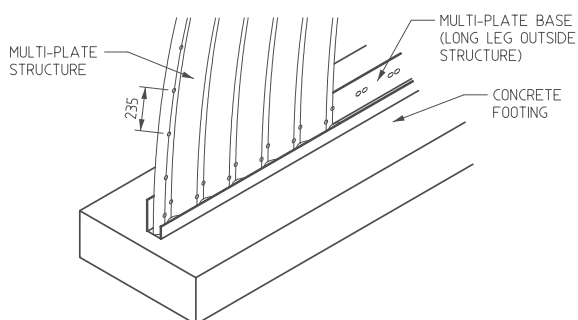
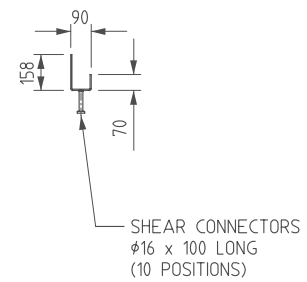


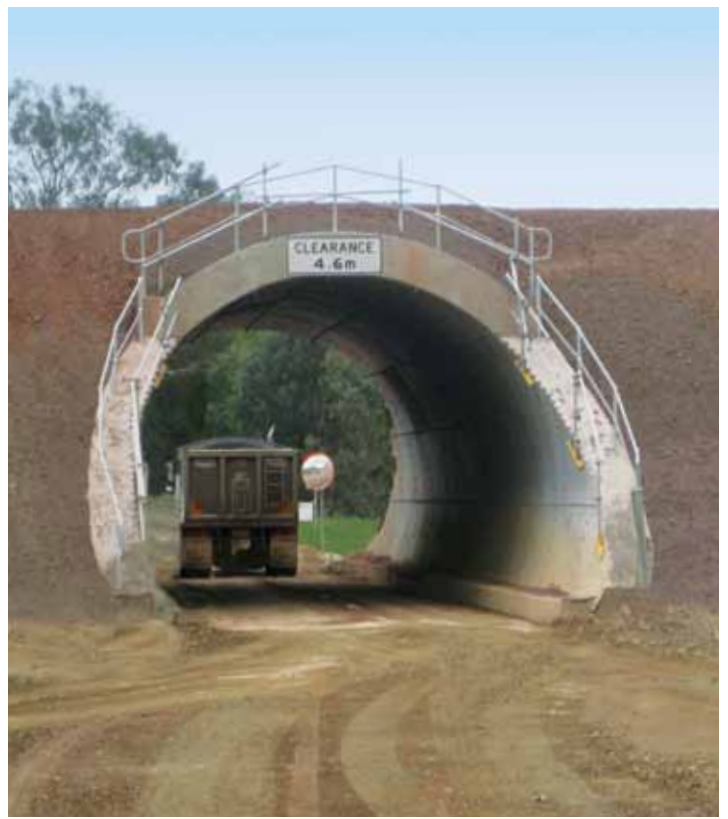
## Foundation Options And Details

Atlantic Civil Products offers technical assistance on foundation investigation and site preparation for varying site conditions.



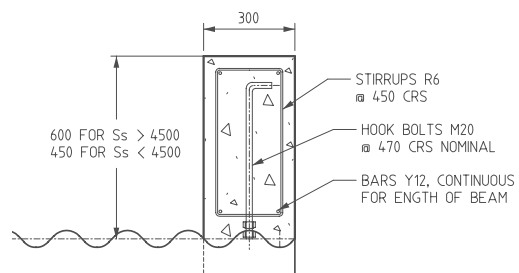
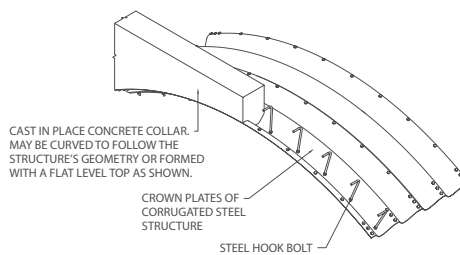
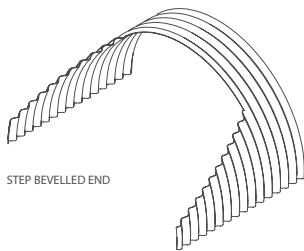
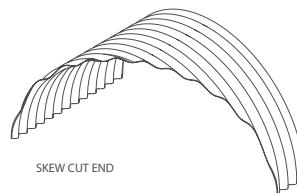
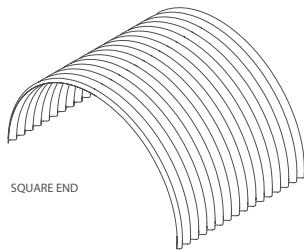
**NOTES**  
THE DESIGN OF FOOTINGS AND THE SUPPLY AND PLACEMENT OF ALL REINFORCEMENT, AND FORMWORK IS BY OTHERS.





## End Treatment Options

The purpose of the structure end treatment is to enhance aesthetic appeal, improve hydraulic efficiency, support large bevelled ends, prevent scour and increase flow capacity. Depending on the structural capacity and hydraulic efficiencies required, Multi-Plate™ structures can be supplied with square, bevelled or skewed ends.



# Multi-Plate™ Design and Installation

Multi-Plate™ structures are rapidly becoming the product of choice for high strength, economical, bridge and underpass construction. Our engineers are on call to provide complete project assistance and product support from start to finish.

## Structural Design

If designed properly, the combination of structural steel and surrounding soil allows Multi-Plate™ to support extremely heavy loads. Standard designs are developed in accordance with AS/NZS 2041. However, design assistance and recommendations can be specified to suit your project. Contact your local Atlantic Civil Products Technical Sales Representative for assistance.

## Site Investigation and Preparation

A thorough site investigation should be conducted before installing a Multi-Plate™ structure. If footings are to be used, the foundation will have to be capable of supporting vertical and horizontal loads developed by the structure. The aim is to design a structurally sound foundation that will allow the structure to develop full interaction between soil and steel Multi-Plate™.

Site preparation should provide a solid base for the structure. It should be good quality material, free from rocks, roots, debris, and organic material. Scouring must be considered when designing a Multi-Plate™ structure. Atlantic Civil Products gladly offers technical assistance on foundation investigation and site preparation for varying site conditions.

## Assembly

Atlantic Civil Products Multi-Plate™ structures arrive at the site ready for assembly and, in special situations, structures may be pre-assembled. Every Multi-Plate™ structure comes complete with a detailed plan and installation instructions. Experienced supervision, when required, will ensure correct, efficient assembly. Upon request, Atlantic Civil Products can provide onsite technical assistance for installation of any structure it supplies.



## PRODUCTS AND SERVICES

- Super-Cor®
- Bolt-A-Bin®
- Multi-Plate™
- Dur-A-Span®
- Atlantic Wire Walls
- Atlantic Precast Walls
- Modular Bridges
- Bridge Decking
- Box Culverts
- Geotextiles
- Guardrail Systems
- Helcor Pipe™
  - Galvanized
  - Aluminized Steel Type 2
  - Polymer Laminated
- Buffatank™
- Stormwater Detention
- Hi-Flo Pipe™
- Nestable Pipe
- Steel Sheet Piling

We offer engineering expertise and support on all of the above products.



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