Culvert Guidelines

To determine what size of culvert is required, first look near your proposed crossing to see if there are any other culverts on the same stream which work well in storms (ie, do not flood upstream in smaller floods and do not regularly overtop). This may give you a guide as to an appropriate pipe size, although in many cases culverts in place on the stream may not be appropriately sized.

If your catchment is larger than those in the culvert tables you should contact your local regional council or an agricultural/rivers engineer for advice. You may require a bridge rather than a culvert.

In some cases a large single culvert may not be the most practical option. Table 2.1 gives equivalent multiple barrel culvert installations, which will provide the required culvert capacity.

Table 2.1: Equivalent capacities for multiple barrel culverts			
Pipe diameter	Equivalent to - 2 x	Equivalent to - 3 x	Equivalent to - 4 x
300 mm			
375 mm	2 x 300 mm		
450 mm	2 x 375 mm	3 x 300 mm	
525 mm	2 x 450 mm	3 x 375 mm	4 x 300 mm
600 mm	2 x 450 mm	3 x 375 mm	4 x 375 mm
675 mm	2 x 525 mm	3 x 450 mm	4 x 375 mm
750 mm	2 x 600 mm	3 x 450 mm	4 x 450 mm
825 mm	2 x 675 mm	3 x 525 mm	4 x 450 mm
900 mm	2 x 675 mm	3 x 600 mm	4 x 525 mm
975 mm	2 x 750 mm	3 x 600 mm	4 x 525 mm
1050 mm	2 x 825 mm	3 x 675 mm	4 x 600 mm
1200 mm	2 x 900 mm	3 x 750 mm	4 x 675 mm
1350 mm	2 x 1050 mm	3 x 825 mm	4 x 750 mm
1600 mm	2 x 1200 mm	3 x 975 mm	4 x 900 mm
1800 mm	2 x 1350 mm	3 x 1200 mm	4 x 975 mm
1950 mm	2 x 1600 mm	3 x 1200 mm	4 x 1050 mm
2100 mm	2 x 1600 mm	3 x 1350 mm	4 x 1200 mm
2550 mm	2 x 1950 mm	3 x 1600 mm	

The culvert sizes provided in this guide will in most cases pass storm flows equating to about the 1 in 5 year storm. Therefore from time to time they can be expected to overtop and in very large storms may scour out. If you wish to have a higher level of storm protection, or gain a more site-specific understanding of your risk, you will need to take advice from your regional council or a suitably experienced consulting engineer.

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