

Appendix 9: Talbot's Table for Round Culvert Sizing

Based on Talbot's formula for a 2.5-inches per hour rainfall.

Area in square feet required for waterway

No. of acres	Impervious 100% runoff	Steep slopes, heavy soils, moderate cover		Moderate slopes, heavy to light soils, dense cover		Gentle slopes, agricultural soils and cover		Flatland pervious soils
		C = .80	C = .70	C = .60	C = .50	C = .40	C = .30	
	C = 1.00							C = .20
2	1.0	0.8	0.7	0.6				
4	1.7	1.4	1.2	1.0				
6	2.3	1.9	1.6	1.4	1.2	0.9	0.6	
8	2.9	2.3	2.0	1.7	1.4	1.2	0.9	0.6
10	3.4	2.7	2.4	2.0	1.7	1.4	1.0	0.7
20	5.8	4.6	4.0	3.5	2.9	2.3	1.7	1.2
30	8.0	6.3	5.4	4.8	4.0	3.2	2.4	1.6
40	9.8	7.8	6.8	5.9	4.9	3.9	3.0	2.0
50	11.6	9.3	8.0	7.0	5.8	4.6	3.5	2.3
60	13.4*	10.7	9.2	8.0	6.7	5.3	4.0	2.7
70	15.0	12.0	10.3	9.0	7.5	6.0	4.5	3.0
80	16.6	13.3	11.5	10.0	8.3	6.6	5.0	3.3
90	18.2	14.6	12.5	11.0	9.1	7.2	5.4	3.6
100	19.7	15.8	13.5	11.8	9.8	7.8	5.8	3.9
150	26.9	21.2	18.5	16.0	13.3	10.7	8.0	5.4
200	33.2	26.8	22.9	20.0	16.7	13.3	10.0	6.6
250	39.5	31.5	27.1	23.8	19.7	15.7	11.8	7.9
300	45.7	36.1	31.0	27.1	27.0	18.0	13.5	9.0
350	51.0	40.6	35.0	30.5	25.3	20.2	15.0	10.1
400	56.0	45.0	39.0	33.9	28.0	22.2	16.7	11.2
450	61.7	49.7	42.0	37.0	30.6	24.2	18.0	12.3
500	66.8	52.8	46.0	40.0	33.2	26.5	19.8	13.2
600	77.0	61.6	52.5	46.0	38.2	30.3	22.8	15.3
700	86.0	68.4	59.5	52.0	43.0	34.0	25.8	17.2
800	96.0	76.1	65.8	57.0	47.5	38.0	28.5	19.0
900	104.0	83.0	71.7	62.2	51.9	41.5	31.1	20.8
1000	113.0	90.0	77.7	68.0	56.5	45.0	33.7	22.4

*Culverts larger than 48 inches in diameter are discouraged. Where watersheds require culverts larger than 48 inches, bridges, fords, or multiple culverts may provide a more suitable crossing solution.

Sizes of round pipe needed for areas of waterway listed in drainage table

Area (square feet)	Diameter (inches)
1.25	15
1.80	18
3.10	24
4.90	30
7.10	36
9.60	42
12.60	48