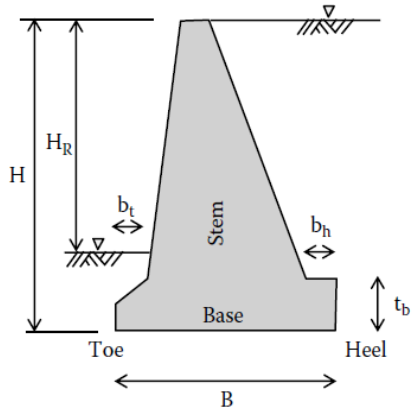
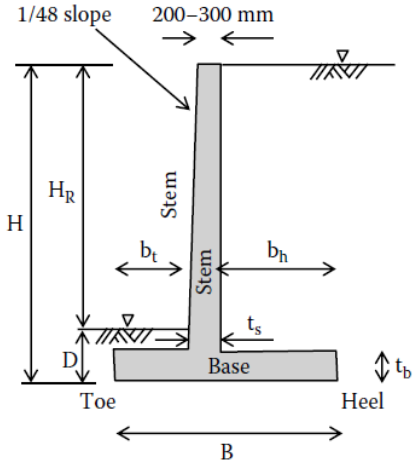
INITIAL SIZING OF GRAVITY WALLS

Figure defines some key dimensions that can be chosen during preliminary design on the basis of simple rules-of-thumb (see, for example, Cernica 1995) as summarised in Table 9.1, below.





Initial sizing of gravity walls: semi-gravity; cantilever.

Rules of thumb for initial sizing of gravity walls

		Typical value for		
Dimension		*Semi-gravity wall*	*Cantilever wall*	*Counterfort wall*
Base width	B	0.5H–0.7H	0.4H–0.7H $0.5H_R$–H_R†	0.4H–0.7H
Base thickness	t_b	H/6	H/10 $H_R/12$–$H_R/10$†	H/12
Stem thickness	t_s	–	H/10 $H_R/12$–$H_R/10$†‡	H/14
Toe extension	b_t	H/10	B/3 ≈0.13H–0.23H $H_R/10$–$H_R/8$‡	
Heel breadth	b_h	H/10	≈ 0.5H	
Toe embedment	D		min. 600 mm below frost line‡	
Counterfort spacing				0.3H–0.6H

Source: From †Coduto, D.P., *Foundation Design Principles and Practices*, Second Edition, Prentice-Hall, USA, 2001; ‡Teng, W.C., *Foundation Design*, Prentice-Hall, New Jersey, 1962; Cernica, J.H., *Foundation Design*, John Wiley & Sons Ltd., New York, USA, 1995.