



STANDARD SOUND BARRIER WALL FOUNDATIONS SELECTION TABLE
(If site and subsurface conditions are not listed below, standard sound barrier wall foundations do not apply and a site-specific foundation design is required)

<i>Wind Load – Table No (WL - #)</i>	<i>Soil Parameters [ϕ (°), c (PSF), γ (PCF)]</i>	<i>Front Slope (H:V) [2:1 to (steeper than) 3:1, 3:1 to (steeper than) 6:1, 6:1 or flatter]</i>	<i>Front Slope Soils (Cut, Fill, Both)</i>	<i>Groundwater (GW) [GW at or below natural ground (NG), GW between finished grade and bottom of hole (High), GW below bottom of hole (Low)]</i>
WL - 1	27, 0, 105	6:1 or flatter	Both	High
WL - 2	30, 0, 120	6:1 or flatter	Both	High
		2:1 to 3:1	Both	Low
		3:1 to 6:1	Fill	NG
WL - 3	30, 0, 120	3:1 to 6:1	Cut	Low
WL - 4	30, 0, 120	6:1 or flatter	Both	Low
WL - 5	34, 0, 120	6:1 or flatter	Both	High
		2:1 to 3:1	Both	Low
WL - 6	34, 0, 120	3:1 to 6:1	Both	Low
WL - 7	34, 0, 120	6:1 or flatter	Both	Low



STANDARD SOUND BARRIER WALL FOUNDATIONS FOR WL = 27 PSF
(Pile Excavation Depths, “D” (ft) for 36" dia. hole; add 1 ft to D for 30" dia. hole)

Sound Barrier Wall Foundation Table No. 27-1

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	9	11	13	14
10 ft < S ≤ 15 ft	11	13	15	17
15 ft < S ≤ 20 ft	13	15	17	19

Sound Barrier Wall Foundation Table No. 27-2

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	9	10	12	13
10 ft < S ≤ 15 ft	10	12	14	15
15 ft < S ≤ 20 ft	11	13	15	17

Sound Barrier Wall Foundation Table No. 27-3

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	8	9	10	11
10 ft < S ≤ 15 ft	9	10	11	12
15 ft < S ≤ 20 ft	10	11	12	14

Sound Barrier Wall Foundation Table No. 27-4

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	7	8	9	10
10 ft < S ≤ 15 ft	7	9	10	11
15 ft < S ≤ 20 ft	8	10	11	12

Sound Barrier Wall Foundation Table No. 27-5

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	8	9	10	11
10 ft < S ≤ 15 ft	9	10	12	13
15 ft < S ≤ 20 ft	10	12	13	15

Sound Barrier Wall Foundation Table No. 27-6

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	7	8	9	10
10 ft < S ≤ 15 ft	8	9	10	11
15 ft < S ≤ 20 ft	9	10	11	13

Sound Barrier Wall Foundation Table No. 27-7

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	6	7	8	9
10 ft < S ≤ 15 ft	7	8	9	10
15 ft < S ≤ 20 ft	8	9	10	11



STANDARD SOUND BARRIER WALL FOUNDATIONS FOR WL = 51 PSF
(Pile Excavation Depths, “D” (ft) for 36" dia. hole;
add 1 ft or extra depth shown in parentheses to D for 30" dia. hole)

Sound Barrier Wall Foundation Table No. 51-1

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	12	14 (+2)	16 (+2)	18 (+2)
10 ft < S ≤ 15 ft	14 (+2)	17 (+2)	19 (+2)	22 (+3)
15 ft < S ≤ 20 ft	16 (+2)	19 (+2)	22 (+2)	24 (+3)

Sound Barrier Wall Foundation Table No. 51-2

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	11	13	15	16 (+2)
10 ft < S ≤ 15 ft	13	15	17	19 (+2)
15 ft < S ≤ 20 ft	15	17	19 (+2)	22 (+2)

Sound Barrier Wall Foundation Table No. 51-3

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	9	11	12	13
10 ft < S ≤ 15 ft	11	12	14	16
15 ft < S ≤ 20 ft	12	14	16	18

Sound Barrier Wall Foundation Table No. 51-4

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	8	9	11	12
10 ft < S ≤ 15 ft	9	11	12	14
15 ft < S ≤ 20 ft	10	12	14	15

Sound Barrier Wall Foundation Table No. 51-5

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	10	11	13	14
10 ft < S ≤ 15 ft	11	13	15	17
15 ft < S ≤ 20 ft	13	15	17	19 (+2)

Sound Barrier Wall Foundation Table No. 51-6

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	9	10	11	12
10 ft < S ≤ 15 ft	10	11	13	14
15 ft < S ≤ 20 ft	11	13	15	16

Sound Barrier Wall Foundation Table No. 51-7

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	7	9	10	11
10 ft < S ≤ 15 ft	9	10	12	13
15 ft < S ≤ 20 ft	10	11	13	14



STANDARD SOUND BARRIER WALL FOUNDATIONS FOR WL = 68 PSF
(Pile Excavation Depths, “D” (ft) for 36" dia. hole;
add 1 ft or extra depth shown in parentheses to D for 30" dia. hole)

Sound Barrier Wall Foundation Table No. 68-1

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	14	16 (+2)	18 (+2)	21 (+2)
10 ft < S ≤ 15 ft	16 (+2)	19 (+2)	22 (+2)	24 (+3)
15 ft < S ≤ 20 ft	18 (+2)	22 (+2)	25 (+2)	N/A

Sound Barrier Wall Foundation Table No. 68-2

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	12	15	17	18 (+2)
10 ft < S ≤ 15 ft	15	17 (+2)	19 (+2)	22 (+2)
15 ft < S ≤ 20 ft	17 (+2)	19 (+2)	22 (+2)	N/A

Sound Barrier Wall Foundation Table No. 68-3

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	10	12	14	15
10 ft < S ≤ 15 ft	12	14	16	18
15 ft < S ≤ 20 ft	13	16	18	20

Sound Barrier Wall Foundation Table No. 68-4

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	9	11	12	13
10 ft < S ≤ 15 ft	10	12	14	16
15 ft < S ≤ 20 ft	12	14	16	17

Sound Barrier Wall Foundation Table No. 68-5

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	11	13	14	16
10 ft < S ≤ 15 ft	13	15	17	19
15 ft < S ≤ 20 ft	14	17	19	21 (+2)

Sound Barrier Wall Foundation Table No. 68-6

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	9	11	12	14
10 ft < S ≤ 15 ft	11	13	15	16
15 ft < S ≤ 20 ft	12	14	16	18

Sound Barrier Wall Foundation Table No. 68-7

Pile Spacing (S)	Wall Height (H)			
	H ≤ 15 ft	15 ft < H ≤ 20 ft	20 ft < H ≤ 25 ft	25 ft < H ≤ 30 ft
S ≤ 10 ft	8	10	11	12
10 ft < S ≤ 15 ft	10	11	13	14
15 ft < S ≤ 20 ft	11	13	15	16