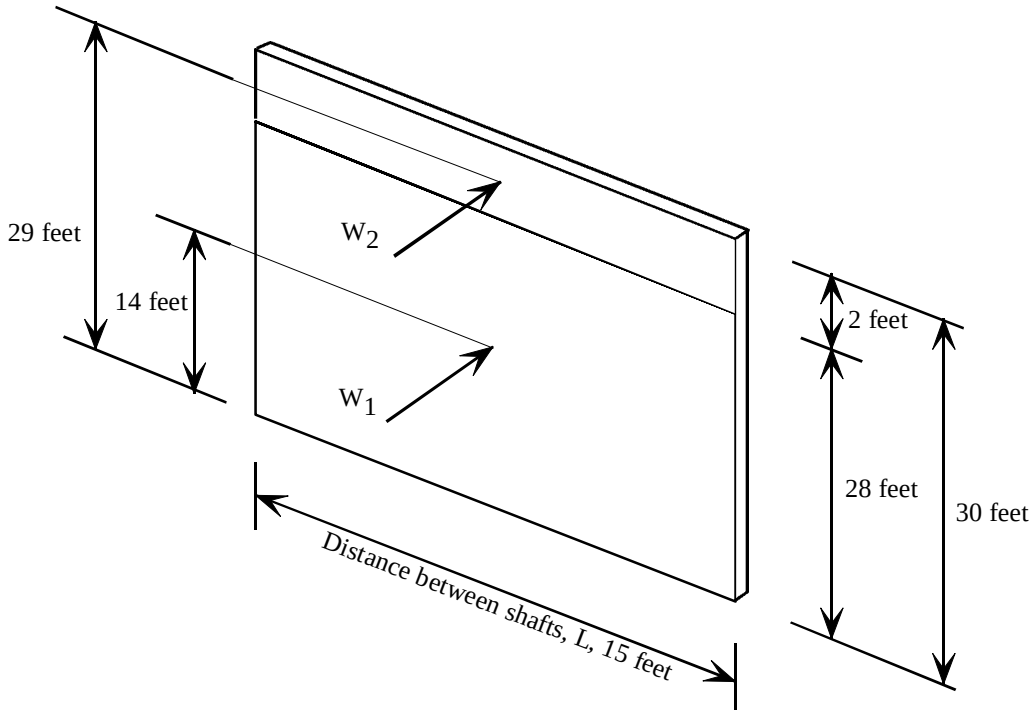

Given Conditions:

Wind speed = 80 mph
Soundwall height = 30 feet
Distance between shafts = 15 feet
Exposure category - D

Calculations:

Wind pressure zone 1 = $P_1 = 0.00256\ (1.3 \times 80)^2\ (1.2)\ (1.2) = 39.8$ psf

Wind pressure zone 2 = $P_2 = 0.00256\ (1.3 \times 80)^2\ (1.2)\ (1.37) = 45.5$ psf

Area = A = (distance between shafts) x (vertical distance from top to bottom of height zone)

A_1 = (15 ft) x (28 ft) = 420 ft^2

A_2 = (15 ft) x (2 ft) = 30 ft^2

Wind load zone 1 = $W_1 = P_1A_1$ = (39.8 psf) x (420 ft^2) = 16,716 lbs

Wind load zone 2 = $W_2 = P_2A_2$ = (45.5 psf) x (30 ft^2) = 1,365 lbs

Moment from $W_1 = M_1 = W_1$ x 14 ft = 234,024 lb-ft

Moment from $W_2 = M_2 = W_2$ x 29 ft = 39,585 lb-ft

Total horizontal load = $W_t = W_1 + W_2$ = 18,081 lbs

Total moment = $M_t = M_1 + M_2$ = 273,609 lb-ft

Resultant eccentricity = e = $(M_t)/(W_t)$ = 273,609/18,081 = 15.1 feet

Figure B.2 - Example Calculation of Wind Load