



Example – Miami, FL

Design a 12 ft high wall for a building in Miami, FL. The following gravity loads and parameters are given.

- Concentric Dead Load: 150 lb/ft
- Eccentric Dead Load: 600 lb/ft
- Live Load: 0 lb/ft (one-story building)
- Roof Live Load: 400 lb/ft
- Snow Load: 0 lb/ft
- eccentricity = 1.5 inches

The structure is assumed to be located in Seismic Design Category A. The structure is assumed to be located at a latitude of 25.80 and a longitude of -80.19. From the web-based wind speed calculator, the ASCE 7-10 design wind speed is 169 mph (Risk Category II). A wind speed of 180 mph is conservatively used in the design program.

Assume that Type S mortar is used; f'_m is taken as 2930 psi.

Load combination (6), $0.9D + 1.0W$, controls the design. Required spacing of the reinforcement is:

- #3: 12 inches
- #4: 24 inches
- #5: 36 inches

Note that the spacing could perhaps be increased by a more refined analysis that used the actual wind speed. The designer would also need to check wind uplift, and make sure that it was not greater than the assumed value of 675 lb/ft.