r_m = characteristic foundation length as defined by Eq. 19.2-8 (ft or m)

S_S = mapped MCE_R, 5 percent damped, spectral response acceleration parameter at short periods as defined in Section 11.4.1

S_1 = mapped MCE_R, 5 percent damped, spectral response acceleration parameter at a period of 1 s as defined in Section 11.4.1

S_{aM} = the site-specific MCE_R spectral response acceleration parameter at any period

S_{DS} = design, 5 percent damped, spectral response acceleration parameter at short periods as defined in Section 11.4.4

S_{D1} = design, 5 percent damped, spectral response acceleration parameter at a period of 1 s as defined in Section 11.4.4

S_{MS} = the MCE_R, 5 percent damped, spectral response acceleration parameter at short periods adjusted for site class effects as defined in Section 11.4.3

S_{M1} = the MCE_R, 5 percent damped, spectral response acceleration parameter at a period of 1 s adjusted for site class effects as defined in Section 11.4.3

s_u = undrained shear strength; see Section 20.4.3

$\overline{s}_u$ = average undrained shear strength in top 100 ft (30 m); see Sections 20.3.3 and 20.4.3, ASTM D2166 or ASTM D2850

s_{ui} = undrained shear strength of any cohesive soil layer i (between 0 and 100 ft [30 m]); see Section 20.4.3

s_h = spacing of special lateral reinforcement (in. or mm)

T = the fundamental period of the building

$\tilde{T}$, $\tilde{T}_1$ = the effective fundamental period(s) of the building as determined in Sections 19.2.1.1 and 19.3.1

T_a = approximate fundamental period of the building as determined in Section 12.8.2

T_L = long-period transition period as defined in Section 11.4.5

T_p = fundamental period of the component and its attachment, Section 13.6.2

$T_0 = 0.2S_{D1}/S_{DS}$

$T_S = S_{D1}/S_{DS}$

T_4 = net tension in steel cable due to dead load, prestress, live load, and seismic load (Section 14.1.7)

V = total design lateral force or shear at the base

V_t = design value of the seismic base shear as determined in Section 12.9.4

V_x = seismic design shear in story x as determined in Section 12.8.4 or 12.9.4

$\tilde{V}$ = reduced base shear accounting for the effects of soil structure interaction as determined in Section 19.3.1

$\tilde{V}_1$ = portion of the reduced base shear, $\tilde{V}$, contributed by the fundamental mode, Section 19.3 (kip or kN)

ΔV = reduction in V as determined in Section 19.3.1 (kip or kN)

ΔV_1 = reduction in V_1 as determined in Section 19.3.1 (kip or kN)

v_s = shear wave velocity at small shear strains (greater than 10^{-3} percent strain); see Section 19.2.1 (ft/s or m/s)

$\overline{v}_s$ = average shear wave velocity at small shear strains in top 100 ft (30 m); see Sections 20.3.3 and 20.4.1

v_{si} = the shear wave velocity of any soil or rock layer i (between 0 and 100 ft [30 m]); see Section 20.4.1

v_{so} = average shear wave velocity for the soils beneath the foundation at small strain levels, Section 19.2.1.1 (ft/s or m/s)

W = effective seismic weight of the building as defined in Section 12.7.2. For calculation of seismic-isolated building period, W is the total effective seismic weight of the building as defined in Sections 19.2 and 19.3 (kip or kN)

$\overline{W}$ = effective seismic weight of the building as defined in Sections 19.2 and 19.3 (kip or kN)

W_c = gravity load of a component of the building

W_p = component operating weight (lb or N)

w = moisture content (in percent), ASTM D2216

w_i, w_n, w_x = portion of W that is located at or assigned to Level i, n, or x, respectively

x = level under consideration, 1 designates the first level above the base

z = height in structure of point of attachment of component with respect to the base; see Section 13.3.1

β = ratio of shear demand to shear capacity for the story between Level x and $x - 1$

$\overline{\beta}$ = fraction of critical damping for the coupled structure-foundation system, determined in Section 19.2.1