5. $(1.2 + 0.2S_{DS})D + Q_E + L + 0.2S$
7. $(0.9 - 0.2S_{DS})D + Q_E + 1.6H$

NOTES:

1. The load factor on L in combination 5 is permitted to equal 0.5 for all occupancies in which L_o in Table 4-1 is less than or equal to 100 psf (4.79 kN/m^2), with the exception of garages or areas occupied as places of public assembly.
2. The load factor on H shall be set equal to zero in combination 7 if the structural action due to H counteracts that due to E. Where lateral earth pressure provides resistance to structural actions from other forces, it shall not be included in H but shall be included in the design resistance.

Basic Combinations for Allowable Stress Design (see Sections 2.4.1 and 2.2 for notation).

5. $(1.0 + 0.14S_{DS})D + H + F + 0.7Q_E$
6. $(1.0 + 0.105S_{DS})D + H + F + 0.525Q_E + 0.75L + 0.75(L_r \text{ or } S \text{ or } R)$
8. $(0.6 - 0.14S_{DS})D + 0.7Q_E + H$

12.14.3.2 Seismic Load Effect Including a 2.5 Overstrength Factor

Where specifically required, conditions requiring overstrength factor applications shall be determined in accordance with the following:

1. For use in load combination 5 in Section 2.3.2 or load combinations 5 and 6 in Section 2.4.1, E shall be taken equal to E_m as determined in accordance with Eq. 12.14-7 as follows:

$$E_m = E_{mh} + E_v \qquad (12.14\text{-}7)$$

2. For use in load combination 7 in Section 2.3.2 or load combination 8 in Section 2.4.1, E shall be taken equal to E_m as determined in accordance with Eq. 12.14-8 as follows:

$$E_m = E_{mh} - E_v \qquad (12.14\text{-}8)$$

where

E_m = seismic load effect including overstrength factor
E_{mh} = effect of horizontal seismic forces including overstrength factor as defined in Section 12.14.3.2.1
E_v = vertical seismic load effect as defined in Section 12.14.3.1.2

12.14.3.2.1 Horizontal Seismic Load Effect with a 2.5 Overstrength Factor The horizontal seismic load effect with overstrength factor, E_{mh}, shall be determined in accordance with Eq. 12.14-9 as follows:

$$E_{mh} = 2.5Q_E \qquad (12.14\text{-}9)$$

where

Q_E = effects of horizontal seismic forces from V or F_p as specified in Sections 12.14.7.5, 12.14.8.1, and 13.3.1

EXCEPTION: The value of E_{mh} need not exceed the maximum force that can develop in the element as determined by a rational, plastic mechanism analysis or nonlinear response analysis utilizing realistic expected values of material strengths.

12.14.3.2.2 Load Combinations with Overstrength Factor Where the seismic load effect with overstrength factor, E_m, defined in Section 12.14.3.2, is combined with the effects of other loads as set forth in Chapter 2, the following seismic load combinations for structures not subject to flood or atmospheric ice loads shall be used in lieu of the seismic load combinations in Section 2.3.2 or 2.4.1:

Basic Combinations for Strength Design with Overstrength Factor (see Sections 2.3.2 and 2.2 for notation).

5. $(1.2 + 0.2S_{DS})D + 2.5Q_E + L + 0.2S$
7. $(0.9 - 0.2S_{DS})D + 2.5Q_E + 1.6H$

NOTES:

1. The load factor on L in combination 5 is permitted to equal 0.5 for all occupancies in which L_o in Table 4-1 is less than or equal to 100 psf (4.79 kN/m^2), with the exception of garages or areas occupied as places of public assembly.
2. The load factor on H shall be set equal to zero in combination 7 if the structural action due to H counteracts that due to E. Where lateral earth pressure provides resistance to structural actions from other forces, it shall not be included in H, but shall be included in the design resistance.

Basic Combinations for Allowable Stress Design with Overstrength Factor (see Sections 2.4.1 and 2.2 for notation).

5. $(1.0 + 0.14S_{DS})D + H + F + 1.75Q_E$
6. $(1.0 + 0.105S_{DS})D + H + F + 1.313Q_E + 0.75L + 0.75(L_r \text{ or } S \text{ or } R)$
8. $(0.6 - 0.14S_{DS})D + 1.75Q_E + H$

12.14.3.2.3 Allowable Stress Increase for Load Combinations with Overstrength Where allowable stress design methodologies are used with the seismic load effect defined in Section 12.14.3.2 applied in load combinations 5, 6, or 8 of Section 2.4.1, allowable