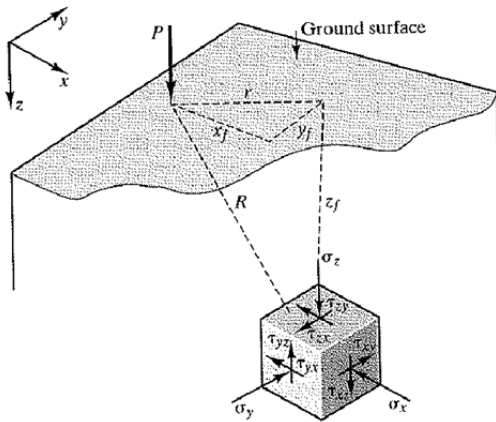


$$\sigma_x = \frac{P}{2\pi} \left[\frac{3x_f^2 z_f}{R^5} - (1-2\nu) \left(\frac{x_f^2 - y_f^2}{Rr^2(R+z_f)} + \frac{y_f^2 z_f}{R^3 r^2} \right) \right]$$



AASHTO LRFD Bridge Design Specifications, 4th edition, 2007:

The horizontal pressure, Δ_{ph} in ksf, on a wall resulting from a point load may be taken as:

$$\Delta_{ph} = \frac{P}{\pi R^2} \left[\frac{3ZX^2}{R^3} - \frac{R(1-2\nu)}{R+Z} \right] \quad (3.11.6.2-2)$$

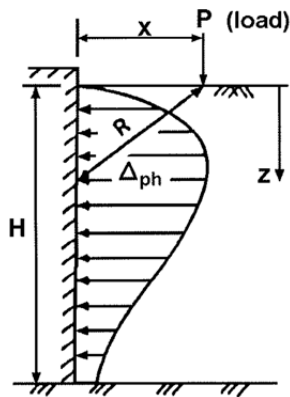


Figure 3.11.6.2-2 Horizontal Pressure on a Wall Caused by a Point Load.