Errata to
AWWA Manual M23

PVC Pipe—Design and Installation

(June 1, 2010)

p. 48, change Equation 4-35 to read:

\[ L_r = \frac{PA \tan(\phi)}{F_s + (\phi)R_s} \left( SF \right) \]  
(Fig 4-35)

p. 51, change Equation 4-39 to read:

\[ P_p = (\gamma)H_cN_\phi + 2C_s\sqrt{N_\phi} \]  
(Fig 4-39)

Where:

- \( P_p \) = passive pressure of the soil, lb/ft²
- \( \gamma \) = soil density (backfill density for loose soil, native soil density for compacted bedding), lb/ft³
- \( H_c \) = mean depth from surface to plane of resistance (centerline of pipe), ft
- \( \phi \) = internal friction angle of the soil, degrees
- \( C_s \) = cohesion of the soil, lb/ft²
- \( N_\phi \) = \( \tan^2(45^\circ + \phi/2) \)