The assumption is made that a perfect lubricant is applied to the wafer-anvil interface, thus creating a condition of zero shear. The simpler form of the strain equations permits the use of the Ludwig equation for relating the effective stress and strain, which is written as

$$\sigma_o = b + (\bar{\epsilon})^n \qquad (63)$$

where "n" is a constant exponent which characterizes the shape of the experimentally determined stress-strain curve. Utilizing equations (62) and (63), and following precisely the same steps as shown in the two-dimensional analysis, the resulting normal stress equations for one-dimensional variations, and zero shear, are found to be of the form shown in equations (64), (65), and (66). The coefficients α and β appearing in these equations are defined as

$$\alpha = \sqrt{7}\left[\left(\frac{R-R_o}{R^2}\right) - \frac{\Delta}{2R(2h_o-\Delta)}\right]$$

$$\beta = \frac{\sqrt{3}\,\Delta}{2(2h_o-\Delta)} \qquad (67)$$