$$\omega = -2 \pm (2a_1 r^2 + a_2 \pm^2 + a_3) \qquad (30)$$

An examination of (29) indicates that the wafer can barrel in a parabolic fashion, having symmetry with respect to the mid-meridian wafer plane. Equation (30) shows that the wafer-anvil interface can likewise be deformed into a parabola; the line of symmetry being coincident with the wafer axis. It should be noted that no restriction has been placed on the wafer diameter-to-height ratio (D/H).

By taking the appropriate derivatives of the displacements, the strains are found to be

$$\epsilon_r = 3a_1 r^2 + 3a_2 z^2 + a_3$$
 (31)

$$\epsilon_{\theta} = a_1 r^2 + 3a_2 z^2 + a_3$$
 (32)

$$\epsilon_{z}^{=-4a_{1}} r^{2} - 6a_{2}z^{2} - 2a_{3}$$
 (33)

$$\gamma_{rz} = 2rz (3a_2 - 4a_1)$$
 (34)