$$\left[\frac{d\phi_w}{dy}\right]_{y_1-0}^{y_1+0} + \left[\frac{d\phi_w}{dy}\right]_{y_2-0}^{y_2+0} = \frac{Q'(y_c)}{U'(y_c)}\phi_w(y_c)\frac{1-2r}{2r(1-r)}$$

$$\text{where} \quad r \equiv \frac{y_c - y_1}{y_2 - y_1}$$