I_1 + Add'l V from M_{welds} = total shear

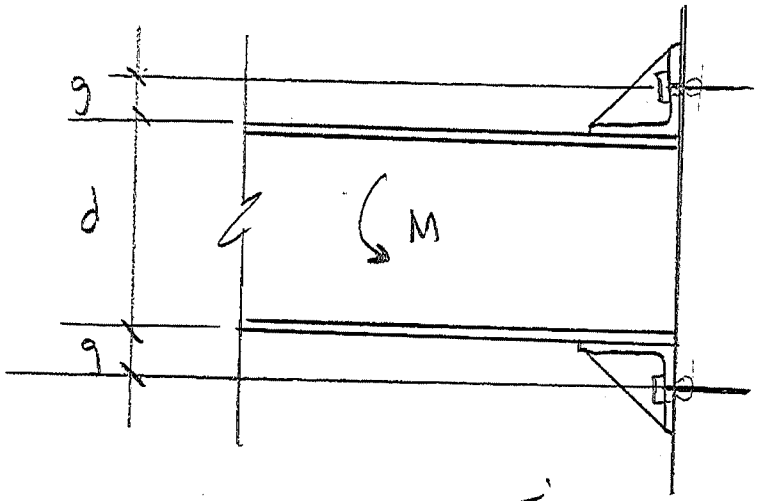
Add'l V from $M_{welds} = \dfrac{[(T')\,a]\,2}{d}$

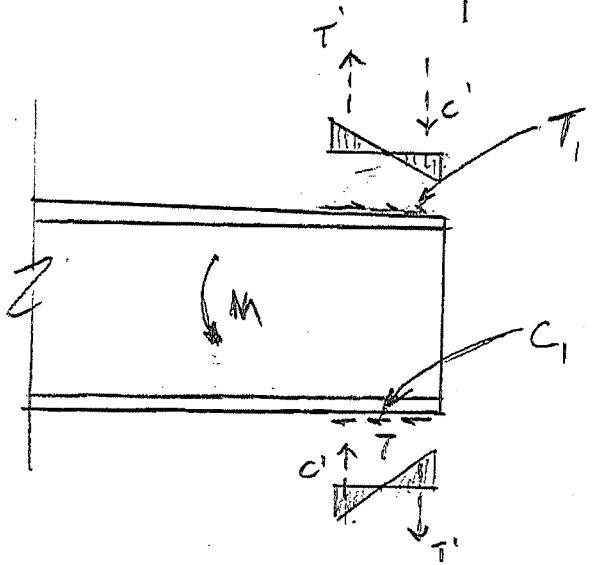
$T_1 = \dfrac{M}{d+2g}$ $\therefore$ Total $V = \dfrac{M}{d+2g} + \dfrac{2T'a}{d} \Rightarrow T' = \dfrac{T_1 g}{a}$

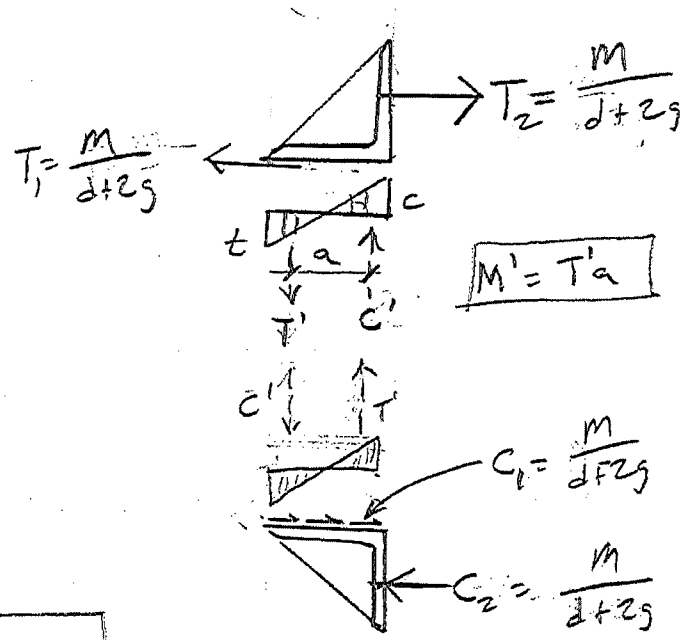
$V = \dfrac{M}{d+2g} + 2\left(\dfrac{T_1 g}{a}\right)\left(\dfrac{a}{d}\right) = \dfrac{M}{d+2g} + 2\left(\dfrac{M}{d+2g}\right)\dfrac{g}{d}$

$V = \dfrac{M}{d+2g} + \dfrac{2Mg}{d(d+2g)} = \dfrac{Md + 2Mg}{d(d+2g)} = \dfrac{M(d+2g)}{d(d+2g)}$

$$\boxed{V = \frac{M}{d}}$$







$M' = T'a$

$$\boxed{T_1 g = M' = T'a}$$