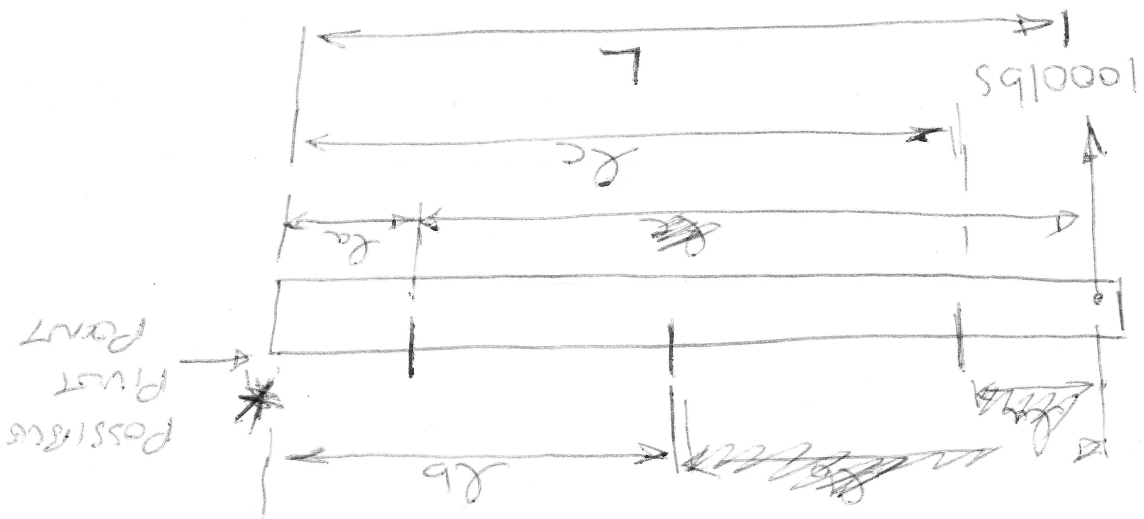
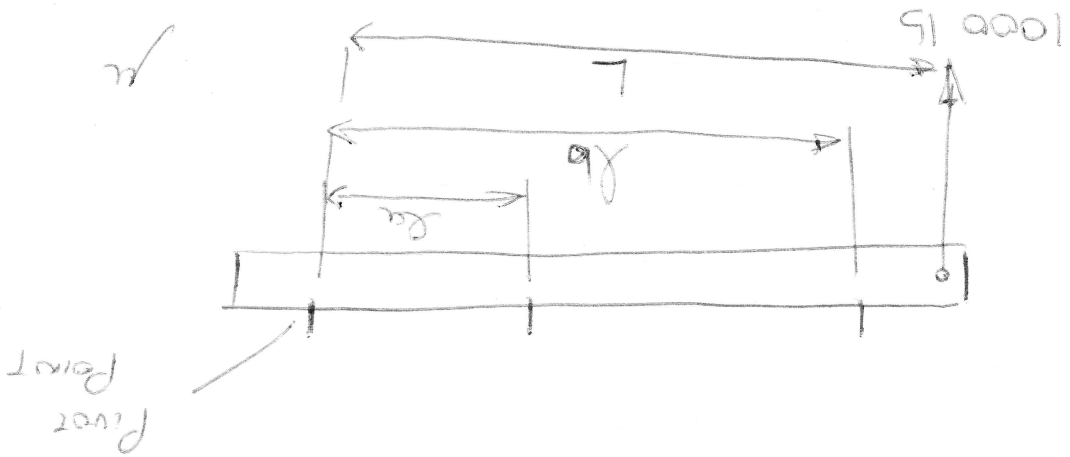


I WILL MAKE THE ASSUMPTION FROM YOUR DIAGRAM THAT THE BEAM IS RIGID AND THEREFORE I CAN CALCULATE THE BOLT REACTIONS AS FOLLOWS:-



IF THE BEAM IS AGAINST SOMETHING FIRM THEN THE PIVOT POINT CAN BE TAKEN AS THE END OF THE BEAM AS INDICATED, FAILING THAT TAKE YOUR LAST FIXING AS THE PIVOT POINT.



$$\therefore 1000lb \times L = \mu x_a^2 + \mu x_b^2 \quad \text{Let } \mu = \frac{\text{FORCE}}{\text{UNIT DISTANCE}}$$

$$\therefore \mu = \frac{1000 \times L}{x_a^2 + x_b^2}$$

MAX LOAD IN BOLT IS $\mu \times x_b$.