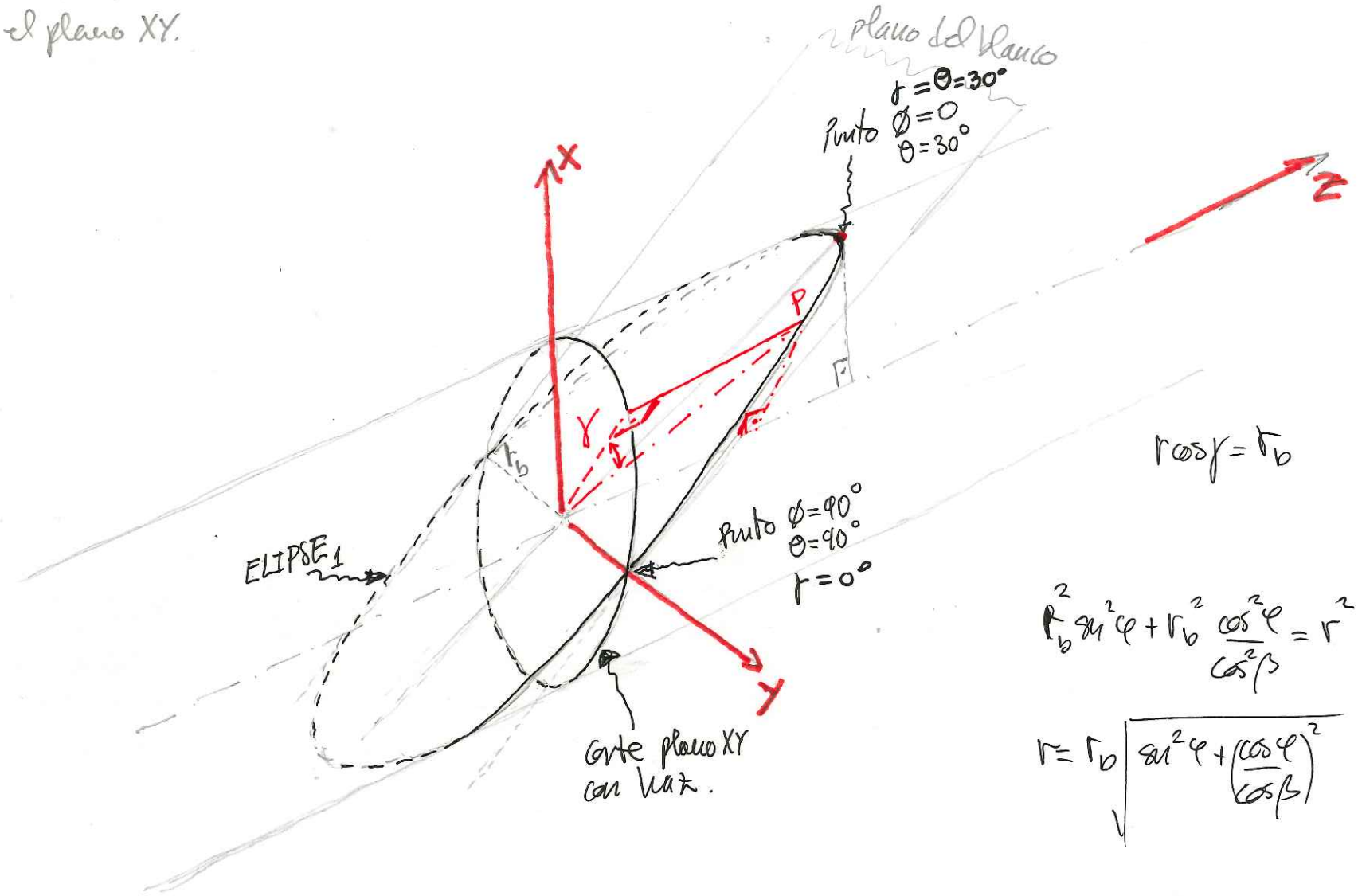
Plano del blanco forma un ángulo $\beta = 30°$ con el plano XY.



$$r\cos\gamma = r_b$$

$$r_b^2 \sin^2\varphi + r_b^2 \frac{\cos^2\varphi}{\cos^2\beta} = r^2$$

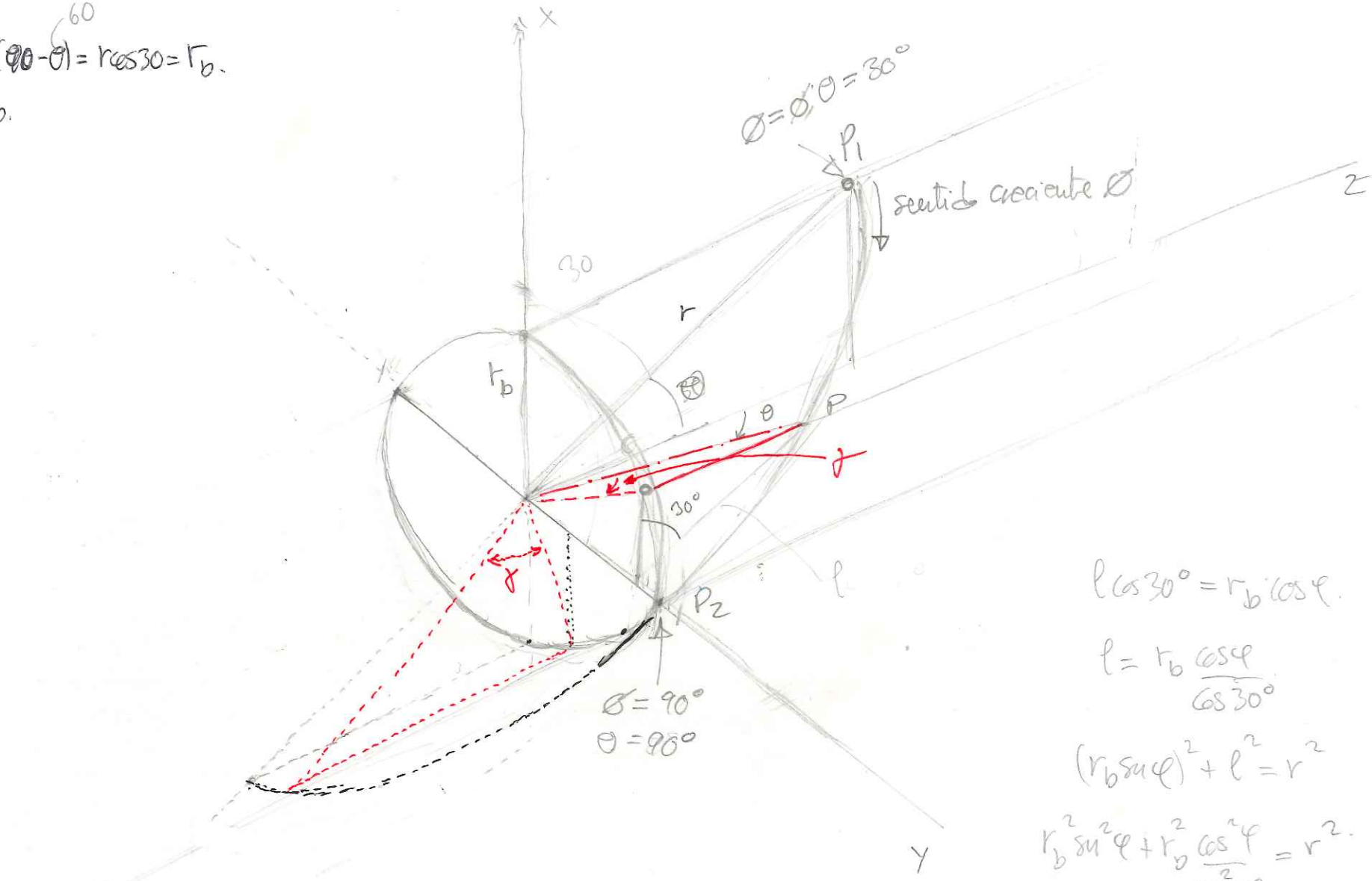
$$r = r_b \sqrt{\sin^2\varphi + \left(\frac{\cos\varphi}{\cos\beta}\right)^2}$$

Para P_1 $r\cos(90-\theta) = r\cos 30 = r_b$.

Para P_2 $r = r_b$.

Para P.

r_b^2



$$\ell \cos 30° = r_b \cos\varphi$$

$$\ell = r_b \frac{\cos\varphi}{\cos 30°}$$

$$(r_b \operatorname{sen}\varphi)^2 + \ell^2 = r^2$$

$$r_b^2 \operatorname{sen}^2\varphi + r_b^2 \frac{\cos^2\varphi}{\cos^2 30°} = r^2$$

$$r = r_b \sqrt{\operatorname{sen}^2\varphi + \frac{\cos^2\varphi}{\cos^2 30°}}$$

$$r\cos\gamma = r_b$$

$$\gamma = \operatorname{Arccos}\left(\left(\operatorname{sen}^2\varphi + \frac{\cos^2\varphi}{\cos^2 30°}\right)^{-1/2}\right)$$

$$\theta = 90 - \gamma$$