$\cancel{x_{12}\ E_{12}}$

$\boxed{\vec{x_1}^T E_{12} \vec{x_2} = 0.}$

where $\boxed{E_{12} = [t_{12}]_\times R_{12}}$ is the essential matrix that relate the 2nd image to the first.

similarly $\boxed{\vec{x_2}^T E_{21} \vec{x_1} = 0}$

$\cancel{x_1\ x_2\ E_{12}\ x_2 x_2}$

$\cancel{\vec{x_1}^T [t]_\times R \vec{x_2}} = 0.$

$K^{-1} p_1 [t]_\times R K^{-1} \vec{p_2} = 0. \quad (\because \vec{x_1} = K^{-1} \vec{p_1}$

p_1

$x_1^T E x_2 = 0 \Rightarrow x_1^T [t]_\times R\, x_2 = 0$

$[K^{-1} p_1]^T t_\times R K^{-1} \vec{p_2} = 0 \longrightarrow (9).$

$p_1^T K^{-1T} [t]_\times R K^{-1} p_2 = 0 \longrightarrow (10)$

$\boxed{p_1^T F_{12} p_2 = 0.}$

where $\boxed{F_{12} = [K^{-1}]^T E_{12} K^{-1}} \longrightarrow (11).$

$K^T F_{12} K = E_{12}.$

or $\boxed{K^T F K = E, \quad F = K^{-T} E K^{-1}}$

$\longrightarrow (12).$