┌ Since $T_x(F)$ is nowhere tangent to G, $T_x(F)\cap G$ is smooth, and $T_y(T_x(F)\cap G) = T_x(F)\cap T_y(G)$. In particular, the tangent space of $T_x(F)\cap G$ at x is $T_x(F)\cap T_x(G)$. $\Rightarrow$ $T_x(F)\cap G\cap T_x(F)\cap T_x(G) = T_x(F)\cap G \cap T_x(T_x(F)\cap G) = T_x(F)\cap T_x(G)\cap G$ is the cone through x over a smooth quadric $T_x(F)\cap G\cap T_x(G)\cap(H\cap T_x(G)) = T_x(F)\cap G\cap T_x(G)\cap H$, $H\not\ni x$, since $T_x(G)\cap H$ is a hyperplane not containing x in $T_x(G)$.

$\Rightarrow$ By the argument on P734, $T_x(F)\cap G\cap T_x(G)\cap H = T_x(F)\cap(T_x(G)\cap G\cap H) = T_x(F)\cap Q$ is smooth conic.

Suppose two lines of $T_x(X)\cap X$ lie on some $\sigma(p)$.

$\Rightarrow$ By the recall above, $\sigma(p)=\overline{x, L}$, where $L\subset Q$.

But $L\cap T_x(F)\cap Q$ = one point $\Rightarrow$ Since any line of $T_x(X)\cap X$ is of $\overline{xy}$, $y\in T_x(F)\cap Q$, $\sigma(p)$ contains double lines. $\Rightarrow$

F must be tangent to $T_x(F)\cap Q$,

$$\begin{tikzcd} T_x(G)\cap \underset{\text{cone}}{T_x(F)\cap G} \arrow[d] \arrow[r, Rightarrow] & \underset{\text{cone}}{T_x(G)\cap T_x(F)\cap G\cap} F \arrow[d] \\ T_x(F)\cap Q = \underset{\text{conic}}{\text{smooth}} & = (T_x(F)\cap Q)\cap F = \underset{\text{points}}{\text{Set of}} \end{tikzcd}$$

since any line of $T_x(X)\cap X$ lies in F. ┘

One corollary of our lemma implied by this picture is that the locus $T_x(X)\cap X$ will contain two lines from the same $\sigma(p)$ $\Leftrightarrow$ it contains