$a_5 X_5 = 0)$ $\Rightarrow$ dim (Such hyperplanes) $= 1$.

By the argument above, the dimension of the set of generic hyperplanes with possible singular point r is 2. $\Rightarrow$

$\{$ generic hyperplanes with possible singular point $r\}$ $\cap$ $\{$ hyperplanes containing $T_r(X)\}$ has dimension 2.

$\Rightarrow$ For generic $x \in \sigma(q)$, U_x is smooth, since $T_x G + T_r X = \mathbb{P}^5$ at the only possible singular point r. ┘

We have thus shown that for l_x a generic line in $\mathbb{P}^3$ through $q \in S' - R$, the surface U_x is smooth. The argument above then shows that l_x meets S' in four distinct points, and hence meets S' transversely; a fortiori, it shows that q is a smooth point of S'.

┌ By P265, $\#(l_x \cap S') = \deg S' = \mu$, μ the number of singular curves in the pencil $\{X_p\}_{p \in l_x}$.

$\Rightarrow$ $l_x \cap S'$ = Set of distinct points.

$\Rightarrow$ l_x meets S' transversely.

$\Rightarrow$ l_x meets S' at q once. $\Rightarrow$ q is not singular since otherwise any line meets S' at q more than twice.

$\Rightarrow$ q is a smooth point of S'.

Note: If l_x meets S' at q more than once, then F is tangent to $\sigma(q)$ at points more than one (maybe at one point with multiplicity 2) $\Rightarrow$ F is tangent to $\sigma(q)$ along a line for this is impossible since $\deg F = 2$.