Second, projection of C from a generic point $p \in \mathbb{P}^3$ to a plane maps C to a plane quartic, which by the genus formula will have two double points; consequently p lies on two chords of C and

$$\#(V_0(L) \cdot \sigma_2) = 2.$$

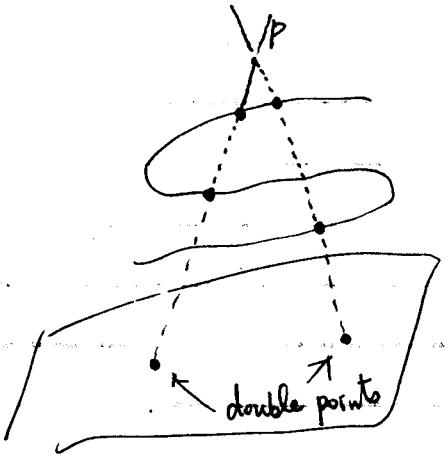
In sum,

$$V_0(L) \sim 2\sigma_2 + 6\sigma_{1,1}.$$

⊢ By the result on P172, $\deg \pi_p(C) = \deg C = 4 \Rightarrow$ $\pi_p(C)$ is a plane quartic. $\Rightarrow$ By the formula on P297

$$b = \frac{(d-1)(d-2)}{2} - g. \qquad b = \frac{(4-1)(4-2)}{2} - 1 = 3 - 1 = 2.$$

$\Rightarrow$ $\pi_p(C)$ has two double points.



$\Rightarrow$ p lies on two chords of C.

$\Rightarrow$ Since $V_0(L) \cap \sigma_2$ is the set of all chords of C containing p, by the consequence above. $\#(V_0(L) \cap \sigma_2) = 2$.

$\Rightarrow$ $V_0(L) \sim a\sigma_{1,1} + b\sigma_2$ $\Rightarrow$ Since $\#(\sigma_{1,1} \cdot \sigma_{1,1}) = \#(\sigma_2 \cdot \sigma_2) = 1$,