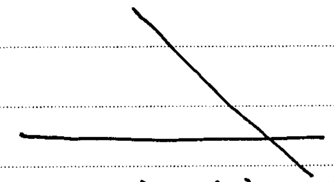
as the product of X_0^3 (→ triple lines) and X_1, i.e.



$\Rightarrow \quad H \in H^0(\mathbb{P}^2, \mathcal{J}_{P_1}^2 \otimes \mathcal{J}_{P_2}^2 \otimes \mathcal{J}_{P_3}^2(2))$.

$\Rightarrow$ G may be expressed as a linear combination of $X_1^2X_2^2$, $X_0^2X_2^2$, $X_0^2X_1^2$, $X_0X_1X_2^2$, $X_0X_1^2X_2$ & $X_0^2X_1X_2$.

$\Rightarrow \quad |\mathcal{J}_{P_1}^2 \otimes \mathcal{J}_{P_2}^2 \otimes \mathcal{J}_{P_3}^2(2)| = 6-1 = 5$.

Note: $H^0(\mathbb{P}^2, \mathcal{J}_{P_0}(4))$ = Space of sections of $[4H]$ s.t the restriction to "near" point P_i is $\{\lambda_1 f_1 + \lambda_2 f_2\}$ where $(f_1 = 0) = C$ $(f_2 = 0) = C'$. So it is not a surprising fact that $H^0(\mathbb{P}^2, \mathcal{J}_{P_0}(4)) \subsetneqq H^0(\mathbb{P}^2, \mathcal{J}_{P_1}^2 \otimes \mathcal{J}_{P_2}^2 \otimes \mathcal{J}_{P_3}^2(2))$. $\#\{f_1, f_2\} = 2$, but $\#\{X_1^2X_2^2 \cdots\} = 5$.

Choose $\sigma_1, \sigma_2, \sigma_3$, τ as follows:

$$\sigma_1 = (X_0 X_1 X_2) X_0$$
$$\sigma_2 = (X_0 X_1 X_2) X_1$$
$$\sigma_3 = (X_0 X_1 \cdot X_2) X_2$$
$$\tau = X_1^2 X_2^2$$ (for example) in general see back.

Since C and C' have equations

$$\left.\begin{array}{l} xy = 0 \\ (x-y)(x-\gamma y) = 0 \end{array}\right\} \quad \text{respectively,}$$

$$x = \frac{X_1}{X_0} \qquad y = \frac{X_2}{X_0}$$

$X_1 X_2 = 0 \quad \Rightarrow \quad X_1^2 X_2^2 = 0$ represents a curve in $|C + \lambda C'|$.