If $H \subset W$ is the hyperplane in W consisting of conics containing a point $p \in \mathbb{P}^2$, then the pullback f^*H is the divisor of pairs (l_1, l_2) with either $p \in l_1$ or $p \in l_2$, and so it represents the class $\omega_1 + \omega_2$.

$\ulcorner$ $\dim H^0(\mathbb{P}^2, \mathcal{O}(\tilde{H})) = {}_4C_2 = 6$

$\Rightarrow H^0(\mathbb{P}^2, \mathcal{O}(2H)) = \langle \sigma_1, \sigma_2, \cdots \sigma_6 \rangle.$

$\{(a_1, \cdots a_6) \mid a_1\sigma_1(p) + \cdots + a_6\sigma_6(p) = 0\} = \tilde{H}$

$\Rightarrow$ $\tilde{H}$ is a hyperplane in $H^0(\mathbb{P}^2, \mathcal{O}(2H))$. $\Rightarrow$ H is the hyperplane corresponding to $\tilde{H}$ in $W = \mathbb{P}(H^0(\mathbb{P}^2, \mathcal{O}(2H)))$.

$$f : \mathbb{P}^{2*} \times \mathbb{P}^{2*} \longrightarrow \begin{matrix} W \\ \cup \\ H \end{matrix}$$

$f^*H \ni (l_1, l_2) \Rightarrow (l_1 + l_2)(p) \Rightarrow l_1(p)\, l_2(p) = 0$

where we use l_1, l_2 as polynomials representing the lines l_1, l_2 respectively.

$\Rightarrow l_1(p) = 0$ or $l_2(p) = 0 \Rightarrow p \in l_1$ or $p \in l_2$.

By the argument above, we can see that $\{l \in \mathbb{P}^{2*} \mid l(p) = 0\}$ is a hyperplane in $\mathbb{P}^{2*}$.

$\Rightarrow$ If we let $H' = \{l \in \mathbb{P}^{2*} \mid l(p) = 0\}$,

$\pi_1^* H' = \omega_1$ & $\pi_2^* H' = \omega_2$. $\Rightarrow \omega_1 + \omega_2 = f^*H.$ $\lrcorner$

Consequently, since f is two to one,

$$\begin{aligned} \deg W_1 &= (H)^4_{W_1} \\ &= \frac{1}{2}(\omega_1 + \omega_2)^4_{\mathbb{P}^{2*} \times \mathbb{P}^{2*}} \\ &= \frac{1}{2} \cdot 6 = 3. \end{aligned}$$