phic to X_0^2, if $F \in W_2$, then $F = \ell^2$, ℓ line.
$\Rightarrow \quad f^{-1}(W_2) = \Delta \cong \mathbb{P}^{2*}$

Since the series $|\omega_1 + \omega_2|$ cuts out the complete series $|\mathcal{O}_{\mathbb{P}^2}(2H)|$ on Δ, W_2 is the Veronese surface $\iota_{2H}(\mathbb{P}^2)$ in $W \cong \mathbb{P}^5$.

To understand $|\omega_1 + \omega_2|$, we had better make clear on ω_1, ω_2.

Claim: ω_1 & ω_2 are Poincare dual of $\ell \times \mathbb{P}^2$ & $\mathbb{P}^2 \times \ell$ respectively, ℓ a line in $\mathbb{P}^2$.

To show this, let $\widetilde{\ell \times \mathbb{P}^2}$ be the Poincare dual of $\ell \times \mathbb{P}^2$ in $H_6(\mathbb{P}^2 \times \mathbb{P}^2)$.

$\Rightarrow \quad \widetilde{\ell \times \mathbb{P}^2} = a\,\omega_1 + b\,\omega_2 \in H^2(\mathbb{P}^2 \times \mathbb{P}^2)$

$\Rightarrow \quad \widetilde{\ell \times \mathbb{P}^2}(\ell \times *) = \#((\ell \times \mathbb{P}^2) \cdot (\ell \times *)) = 1$

Poincare duality theorem

$= a\,\omega_1(\ell \times *)$

$+ \; b\,\omega_2(\ell \times *) = a\,\pi_1^*\omega(\ell \times *) + b\,\pi_2^*\omega(\ell \times *)$

$= a\,\omega(\pi_{1*}(\ell \times *)) + b\,\omega(\pi_{2*}(\ell \times *))$

$= a\,\omega(\ell) + b \cdot 0 = a \quad \Rightarrow \quad a = 1$

$\widetilde{\ell \times \mathbb{P}^2}(* \times \ell) = b = \#((\ell \times \mathbb{P}^2) \cdot (* \times \ell)) = 0$

$\Rightarrow \quad \widetilde{\ell \times \mathbb{P}^2} = \omega_1$

Similarly, we obtain $\widetilde{\mathbb{P}^2 \times \ell} = \omega_2$

$\Rightarrow$ Thus we may understand $|\omega_1 + \omega_2|$ as $|\ell \times \mathbb{P}^2 + \mathbb{P}^2 \times \ell|$. ///

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