The reader is referred to P. 746 for the definition and intersection numbers of the Schubert cycles $\sigma_1(l_0)$, $\sigma_2(p_0)$, $\sigma_{1,1}(h_0)$, and $\sigma_{2,1}(p_0, h_0)$ on G.

Now, since the wedge product

$$\wedge : \Lambda^2\mathbb{C}^4 \times \Lambda^2\mathbb{C}^4 \longrightarrow \Lambda^4\mathbb{C}^4 \cong \mathbb{C}$$

is a nondegenerate pairing, every hyperplane in $\mathbb{P}(\Lambda^2\mathbb{C}^4)$ is of the form

$$H_{\omega_0} = \{\omega : \omega \wedge \omega_0 = 0\}.$$

We have only to show the following lemma: Let V be a vector space with an inner product $\langle\ ,\ \rangle$. Assume that $\langle\ ,\ \rangle$ is nondegenerate. Then every hyperplane W in V is of the form $W = \{v \in V : \langle v, w\rangle = 0$ for some $w \in V\}$.

Proof). Let $\{v_1, \cdots v_n\}$ be a basis for V. Since we may assume that $W = \langle v_1, \cdots, v_{n-1}\rangle$, any hyperplane W is expressed as $\{a_1 v_1 + \cdots + a_n v_n \mid a_1 b_1 + \cdots + a_n b_n = 0$ for some $(b_1, b_2, \cdots b_n)\}$.

Let $\omega = a_1 v_1 + \cdots + a_n v_n$.

$\omega^{\perp} = \{v \in V \mid \langle v, \omega\rangle = 0\}$

$\langle v, \omega\rangle = \langle x_i v_i, a_j v_j\rangle = x_i \langle v_i, v_j\rangle a_j$

$= {}^t x \bar{V} a, \quad x = \begin{pmatrix} x_1 \\ \vdots \end{pmatrix} \quad \bar{V}_{ij} = \langle v_i, v_j\rangle. \quad a = \begin{pmatrix} a_1 \\ \vdots \end{pmatrix}.$