$\Rightarrow$ Since $\langle\,,\,\rangle$ is nondegenerate, $\overline{V}$ is nonsingular. $\Rightarrow$ $\overline{V}a$ may assume any element in $\mathbb{C}^n$, i.e., given any $c \in \mathbb{C}^n$, $\exists$ a s.t $\overline{V}a = c$. //

Clearly, W is a hyperplane in V.
$\quad = \{ v \mid \langle v, w \rangle = 0 \}$

$\lrcorner$

In particular, if $\omega_0 = v_1 \wedge v_2$ the hyperplane section $H_{\omega_0} \cap G$ of G consists of the Schubert cycle $\sigma_1(l_0)$ of lines in $\mathbb{P}^3$ meeting the line $l_0 = \overline{v_1, v_2}$ spanned by v_1 and v_2. Thus

Every Schubert cycle $\sigma_1(l_0) \subset G$ is a hyperplane section of G.

$\ulcorner$ Let $\omega = \omega_1 \wedge \omega_2 \in G$, s.t $\omega \wedge v_1 \wedge v_2 = 0$.
$\Rightarrow$ This implies that $\{\omega_1, \omega_2, v_1, v_2\}$ is linearly independent. $\Rightarrow$ $a_1\omega_1 + a_2\omega_2 + b_1 v_1 + b_2 v_2 = 0$, not all a_i's b_i's zero. $\Rightarrow$ $a_1\omega_1 + a_2\omega_2 = -b_1 v_1 - b_2 v_2$
$\Rightarrow$ The line $\overline{\omega_1\omega_2}$ meets with the line $\overline{v_1 v_2}$.
(Note: If $a_1 = a_2 = 0$, then since $\{v_1, v_2\}$ is linearly independent, $b_1 = b_2 = 0$, vice versa.)
Conversely, if $\overline{\omega_1\omega_2} \cap \overline{v_1 v_2} \neq \phi$, then $\{\omega_1, \omega_2, v_1, v_2\}$ is linearly independent. $\Rightarrow$ $\omega \wedge \omega_0 = 0$

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Remember: $\sigma_1(l_0)$ in P^5 is the image of the $\sigma_1(l_0)$ in $G(2,4)$.