No.

Γ Let $W = \{ i(\Xi)\Lambda : \Xi \in \Lambda^{k-1}V^* \}$. $\Rightarrow$ $W \overset{?}{=} Ann(\Lambda^\perp)$.

$i(\Xi)\Lambda \overset{?}{\in} Ann(\Lambda^\perp)$.

$\langle i(\Xi)\Lambda, \ell \rangle \overset{?}{=} 0$ for all $\ell \in \Lambda^\perp$.

We may assume that Ξ is decomposable i.e $\Xi = v_1^* \wedge \cdots \wedge v_{k-1}^*$.

$\langle i(\Xi)\Lambda, \ell \rangle = \langle \Lambda, \Xi \wedge \ell \rangle = \pm \langle \Lambda, \ell \wedge \Xi \rangle$

$= \pm \langle i(\ell)\Lambda, \Xi \rangle = 0$ since $i(\ell)\Lambda = 0$ by the definition of $\Lambda^\perp$ and $\ell \in \Lambda^\perp$.

$\Rightarrow$ $i(\Xi)\Lambda \in Ann(\Lambda^\perp)$ $\Rightarrow$ $W \subset Ann(\Lambda^\perp)$.

Let $\widetilde{W} = Ann(\Lambda^\perp)$. Suppose $\widetilde{W} \neq W$.

$\Rightarrow$ $\widetilde{W}^\perp \subset W^\perp$, where $W^\perp = \{ \ell \in V^* : \ell = 0 \text{ on } W \}$

$\Lambda^\perp = \widetilde{W}^\perp = \{ \ell \in V^* : \ell = 0 \text{ on } \widetilde{W} \}$.

$\Rightarrow \exists$ $\ell \in W^\perp - \widetilde{W}^\perp$.

$\Rightarrow$ $0 = \langle i(\Xi)\Lambda, \ell \rangle = \langle \Lambda, \Xi \wedge \ell \rangle = \pm \langle \Lambda, \ell \wedge \Xi \rangle$

$= \pm \langle i(\ell)\Lambda, \Xi \rangle$ for all decomposable $\Xi \in \Lambda^{k-1}V^*$.

$\Rightarrow$ $i(\ell)\Lambda = 0$ $\Rightarrow$ $\ell \in \Lambda^\perp = \widetilde{W}^\perp$ $\Rightarrow$ Contradiction

$\Rightarrow$ $\widetilde{W} = W$.

To hold $W = W'$, for all $w \in W$, $\Lambda \wedge w = 0$.

$\Rightarrow$ $\Lambda \wedge (i(\Xi)\Lambda) = 0$ for all $\Xi \in \Lambda^{k-1}V^*$, since every w can be expressed as $i(\Xi)\Lambda$ for some $\Xi \in \Lambda^{k-1}V^*$.

For example, suppose that

$$\Lambda = \frac{1}{2} \sum_{i,j} \lambda_{ij}\, e_i \wedge e_j \ , \quad \lambda_{ij} + \lambda_{ji} = 0,$$

is a bivector. Since for $v^* \in V^*$

$$(i(v^*)\Lambda) \wedge \Lambda = \frac{1}{2} i(v^*)(\Lambda \wedge \Lambda),$$