Since $\Lambda \in \underbrace{\sigma_{j\cdots j}}_{k-i+1}(V)$, $\dim(\Lambda \cap V_{n-k+k-i+1-j}) \geq k-i+1 \cdots ⊙$

$V_{n-i-j+1} = \{ e_{i+j}, e_{i+j+1}, \cdots e_n \}$.
By ⊛, $\dim(\Lambda \cap V_{n-i-j+1}) \leq k-l < k-(i-j) = k-i+j \cdots$ (⊛⊛)
Thus if $j=1$, (⊛⊛) contradicts to ⊙. $\Rightarrow x \in D_i^{(1)}$
In case $j=2$, $l > i-2$.
By (⊛⊛), $\dim(\Lambda \cap V_{\underset{j=2}{n-i-j+1}}) = k-i+1 \cdots$

Since $V_{n-i-1} = \{ e_{i-2}, e_{i-1}, \cdots e_n \}$, and $l = i-1$ or $i$,
by the argument on P361,
$\dim(\Lambda \cap V_{n-i-1}) \geq k-l+1 \geq k-(i-2)+1 = k-i+3$. which contradicts to (⊛⊛).
In the case $j=3, \cdots$, we can see what will happen as before (on P363). $\Rightarrow$ We get a contradiction ﾉ)
$\Rightarrow \iota^{-1}(\sigma_{j\cdots j}) \subset D_i^{(j)}$ $\Rightarrow$ Together with the previous result, we obtain $\iota^{-1}(\sigma_{j\cdots j}) = D_i^{(j)}$. ﾉ)

Composing $\iota$ with the isomorphism $*: G(k,n) \longrightarrow G(n-k,n)$, we find that

$$D_i^{(j)} = (*\iota)^{-1}(\underbrace{\sigma_{k-i+1, \cdots k-i+1}}_{j});$$

and since $c_r(E) = (*\iota)^* \sigma_r$, we may combine this with Giambelli's formula on P. 205 to obtain

Porteous' Formula. For $\sigma_1, \cdots \sigma_i$ suitably generic, the Poincare dual of the degeneracy cycle $D_i^{(j)}$ is

$$D_i^{(j)*} = \det \begin{bmatrix} c_{k-i+1}(E), & \cdots & c_{k-i+j}(E) \\ \vdots & & \vdots \\ c_{k-i-j+2}(E), & \cdots & c_{k-i+1}(E) \end{bmatrix}$$