$$\sigma_\lambda(v_a^{1,2}) \in V(\mathcal{S}_a^1) \setminus \{\kappa_a^1\} \text{ and } \sigma_\lambda(v_a^{1,2}) \in V(\mathcal{K}^1) \setminus \{\kappa_a^2, \kappa_b^2\}$$