$$|\sigma(V(\mathcal{C}_a^\ell)) \setminus (V(\mathcal{S}_a^\ell) \setminus \{\kappa_a^\ell\})| = |\sigma(V(\mathcal{C}_b^\ell)) \setminus (V(\mathcal{S}_b^\ell) \setminus \{\kappa_b^\ell\})| = 2,$$