Complement

Contrary to what is said after formula (2.11) of the paper, the control of $\mathbb{P}(B_i^2, \tau = t)$ is not obtained just changing s_i into s_{i+1} in the derivation of the bound for $\mathbb{P}(B_i^1, \tau = t)$; as remarked by Ivan Torrecilla-Tarantino.

I have given a complete proof of the required control. It is adapted and explained in the proof of Lemma 2.1 of the paper