

$$\begin{array}{ccc}
 \Delta_{\{i,i+1,k\}}^G & \xrightarrow{\varphi(\{i,i+1,k\},\{i,i+1\})} & \Delta_{\{i,i+1\}}^G \\
 \downarrow \varphi(\{i,i+1,k\},\{i+1,k\}) & & \downarrow \varphi(\{i,i+1\},\{i+1\}) \\
 \Delta_{\{i+1,k\}}^G & \xrightarrow{\varphi(\{i+1,k\},\{i+1\})} & \Delta_{\{i+1\}}^G
 \end{array}$$