

$$\left( \begin{array}{ccc|c} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & \mathbf{k}_{up} \\ 0 & 0 & 0 & \mathbf{k}_{up} \\ \hline 0 & 0 & 0 & 0 \end{array} \right) \quad \begin{array}{c} \overbrace{\hspace{1cm}}^{B^T} \\ \\ \\ \underbrace{\hspace{1cm}}_A \end{array} \quad (1)$$