$$-\underline{H} - \frac{1}{\sqrt{2}} \begin{pmatrix} 1 & 1 \\ 1 & -1 \end{pmatrix} \qquad \begin{vmatrix} 0 \rangle - \underline{H} - \frac{|0\rangle + 1\rangle}{\sqrt{2}} \\ |1\rangle - \underline{H} - \frac{|0\rangle - 1\rangle}{\sqrt{2}} \end{vmatrix}$$