$$
H_{55} \quad = \quad \left[\begin{array}{cccccccc}
-6\,\mu + 2\,U & -\left(\sqrt{3}\,t\right) & 0 & \sqrt{3}\,t & 0 & 0 & 0 & 0 \\
-\left(\sqrt{3}\,t\right) & -6\,\mu + 2\,U & 0 & 0 & 0 & 0 & t & -t \\
0 & 0 & -6\,\mu + U & 0 & -2\,\sqrt{3}\,t & 0 & \sqrt{3}\,t & -2\,\sqrt{3}\,t \\
\sqrt{3}\,t & 0 & 0 & -6\,\mu + 3\,U & 0 & 0 & 0 & 3\,t \\
0 & 0 & -2\,\sqrt{3}\,t & 0 & -6\,\mu & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & -6\,\mu + U & -t & -2\,t \\
0 & t & \sqrt{3}\,t & 0 & 0 & -t & -6\,\mu + U & 0 \\
0 & -t & -2\,\sqrt{3}\,t & 3\,t & 0 & -2\,t & 0 & -6\,\mu + 2\,U
\end{array} \right]
$$