$$
H_{58} = \begin{bmatrix}
-6\,\mu+3\,U & 0 & 0 & 0 & \sqrt{\frac{2}{6+\sqrt{6}}}\,t-3\,\sqrt{\frac{3}{6+\sqrt{6}}}\,t & 0 & 0 & 0 & 3\,\sqrt{\frac{2}{6+\sqrt{6}}}\,t+\sqrt{\frac{3}{6+\sqrt{6}}}\,t & 0 & 0 & 0 \\
0 & -6\,\mu+3\,U & 0 & 0 & \sqrt{\frac{2}{6-\sqrt{6}}}\,t+3\,\sqrt{\frac{3}{6-\sqrt{6}}}\,t & 0 & 0 & 0 & 3\,\sqrt{\frac{6}{18-3\,\sqrt{6}}}\,t-\frac{3\,t}{\sqrt{18-3\,\sqrt{6}}} & 0 & 0 & 0 \\
0 & 0 & -6\,\mu+U & 0 & \sqrt{6}\,t & 0 & 0 & 0 & 0 & 0 & 0 & -\left(\sqrt{3}\,t\right) \\
0 & 0 & 0 & -6\,\mu+U & \sqrt{3}\,t & 0 & 0 & 0 & \sqrt{3}\,t & 0 & 0 & -\left(\sqrt{6}\,t\right) \\
\sqrt{\frac{2}{6+\sqrt{6}}}\,t-3\,\sqrt{\frac{3}{6+\sqrt{6}}}\,t & \sqrt{\frac{2}{6-\sqrt{6}}}\,t+3\,\sqrt{\frac{3}{6-\sqrt{6}}}\,t & \sqrt{6}\,t & \sqrt{3}\,t & -6\,\mu+2\,U & -2\,t & 0 & 0 & 0 & \sqrt{2}\,t & t & 0 \\
0 & 0 & 0 & 0 & -2\,t & -6\,\mu+2\,U & 0 & 0 & 0 & 0 & 0 & \sqrt{2}\,t \\
0 & 0 & 0 & 0 & 0 & 0 & -6\,\mu+2\,U & -2\,t & -\left(\sqrt{2}\,t\right) & 0 & 0 & t \\
0 & 0 & 0 & 0 & 0 & 0 & -2\,t & -6\,\mu+2\,U & 0 & -2\,t & 0 & 0 \\
3\,\sqrt{\frac{2}{6+\sqrt{6}}}\,t+\sqrt{\frac{3}{6+\sqrt{6}}}\,t & 3\,\sqrt{\frac{6}{18-3\,\sqrt{6}}}\,t-\frac{3\,t}{\sqrt{18-3\,\sqrt{6}}} & 0 & \sqrt{3}\,t & 0 & 0 & -\left(\sqrt{2}\,t\right) & 0 & -6\,\mu+2\,U & 0 & t & 0 \\
0 & 0 & 0 & 0 & \sqrt{2}\,t & 0 & 0 & -2\,t & 0 & -6\,\mu+U & 0 & t \\
0 & 0 & 0 & 0 & t & 0 & 0 & 0 & t & 0 & -6\,\mu+U & \sqrt{2}\,t \\
0 & 0 & -\left(\sqrt{3}\,t\right) & -\left(\sqrt{6}\,t\right) & 0 & \sqrt{2}\,t & t & 0 & 0 & t & \sqrt{2}\,t & -6\,\mu+U
\end{bmatrix}
$$