$$
\begin{aligned}
\Psi_{42} &= C_1\left(|0uud\rangle - |d0uu\rangle + |ud0u\rangle - |uud0\rangle\right) \\
&\quad + C_2\left(-|0udu\rangle - |du0u\rangle + |u0ud\rangle + |udu0\rangle\right) \\
&\quad + C_3\left(-|0duu\rangle + |duu0\rangle + |u0du\rangle - |uu0d\rangle\right) \\
&\quad + C_4\left(-|002u\rangle + |02u0\rangle - |2u00\rangle + |u002\rangle\right) \\
&\quad + C_5\left(|00u2\rangle - |0u20\rangle - |200u\rangle + |u200\rangle\right) \\
&\quad + C_6\left(-|020u\rangle - |0u02\rangle + |20u0\rangle + |u020\rangle\right)
\end{aligned}
$$

$$
C_1 = -\left(\frac{\left(3\,i+\sqrt{3}\right)\,\left(-2\,t+U+\sqrt{16\,t^2-4\,t\,U+U^2}\right)}{36\,t+12\,i\,\sqrt{3}\,t}\right)
$$

$$
C_2 = \frac{\frac{-i}{12}\,\left(-2\,t+U+\sqrt{16\,t^2-4\,t\,U+U^2}\right)}{t}
$$

$$
C_3 = \frac{-\left(-2\,t+U+\sqrt{16\,t^2-4\,t\,U+U^2}\right)}{6\,\left(i+\sqrt{3}\right)\,t}
$$

$$
C_4 = \frac{3\,i-\sqrt{3}}{12}
$$

$$
C_5 = \frac{-3\,i-\sqrt{3}}{12}
$$

$$
C_6 = \frac{-1}{2\,\sqrt{3}}
$$