$$
\begin{aligned}
\Psi_{204} &= C_1\left(|2dud\rangle + |d2du\rangle + |dud2\rangle + |ud2d\rangle\right) \\
&\quad + C_2\left(|2udd\rangle + |d2ud\rangle + |dd2u\rangle + |udd2\rangle\right) \\
&\quad + C_3\left(|2ddu\rangle + |ddu2\rangle + |du2d\rangle + |u2dd\rangle\right) \\
&\quad + C_4\left(|022d\rangle + |22d0\rangle + |2d02\rangle + |d022\rangle\right) \\
&\quad + C_5\left(|02d2\rangle + |202d\rangle + |2d20\rangle + |d202\rangle\right) \\
&\quad + C_6\left(|0d22\rangle + |20d2\rangle + |220d\rangle + |d220\rangle\right)
\end{aligned}
$$

$$
C_1 = \frac{\left(3 - i\sqrt{3}\right)\,\left(-2\,t + U + \sqrt{16\,t^2 - 4\,t\,U + U^2}\right)}{24\sqrt{3}\,t}
$$

$$
C_2 = \frac{\frac{-i}{24}\,\left(-3\,i + \sqrt{3}\right)\,\left(-2\,t + U + \sqrt{16\,t^2 - 4\,t\,U + U^2}\right)}{\sqrt{3}\,t}
$$

$$
C_3 = \frac{\frac{i}{12}\,\left(-2\,t + U + \sqrt{16\,t^2 - 4\,t\,U + U^2}\right)}{t}
$$

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

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

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