$$
\begin{aligned}
\Psi_{96} &= C_1\left(-|0u2u\rangle + |2u0u\rangle - |u0u2\rangle + |u2u0\rangle\right) \\
&\quad + C_2\left(|02uu\rangle - |0uu2\rangle + |20uu\rangle - |2uu0\rangle + |u02u\rangle + |u20u\rangle + |uu02\rangle + |uu20\rangle\right)
\end{aligned}
$$

$$
C_1 = \frac{\frac{-i}{2}}{\sqrt{2}}
$$

$$
C_2 = \frac{1}{4}
$$