$$
\begin{aligned}
C_{\text{HWB}} \to \hbar \Big(& -\tfrac{1}{8}\, g_1\, g_2 \left(-2\, c_\gamma{}^2\, \overline{y_e}^{pr}\, y_e{}^{pr} + \textstyle\sum_p c_{2\gamma}\, g_2{}^2\right) \mathrm{LF}_{3,0}\left[m_{\tilde{l}}{}^p\right] + \tfrac{1}{8}\, g_1\, g_2 \left(-2\, c_\gamma{}^2\, \overline{y_e}^{pr}\, y_e{}^{pr} + \textstyle\sum_p c_{2\gamma}\, g_2{}^2\right) \\
& \mathrm{LF}_{4,-1}\left[m_{\tilde{l}}{}^p\right] + \tfrac{1}{8}\, g_1\, g_2 \left(-2\, c_\gamma{}^2\, \overline{y_d}^{pr}\, y_d{}^{pr} + 2\, s_\gamma{}^2\, \overline{y_u}^{pr}\, y_u{}^{pr} + \textstyle\sum_p c_{2\gamma}\, g_2{}^2\right) \mathrm{LF}_{3,0}\left[m_{\tilde{q}}{}^p\right] - \\
& \tfrac{1}{8}\, g_1\, g_2 \left(-2\, c_\gamma{}^2\, \overline{y_d}^{pr}\, y_d{}^{pr} + 2\, s_\gamma{}^2\, \overline{y_u}^{pr}\, y_u{}^{pr} + \textstyle\sum_p c_{2\gamma}\, g_2{}^2\right) \mathrm{LF}_{4,-1}\left[m_{\tilde{q}}{}^p\right] + \\
& \tfrac{1}{32} \left(g_2\, g_1{}^3\, (-1 + c_{4\gamma}) + g_1\, g_2{}^3\, (3 + c_{4\gamma})\right) \mathrm{LF}_{3,0}[m_{\oplus}] - \\
& \tfrac{1}{32}\, g_1\, g_2 \left(g_1{}^2\, (-1 + c_{4\gamma}) + g_2{}^2\, (3 + c_{4\gamma})\right) \mathrm{LF}_{4,-1}[m_{\oplus}] + \\
& \tfrac{1}{4}\, g_1\, g_2{}^3 \left(c_\gamma{}^2 + s_\gamma{}^2\right) \mathrm{LF}_{2,2,-1}[m_2, \tilde{\mu}] + g_1\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2{}^3\, \mathrm{LF}_{2,2,0}[m_2, \tilde{\mu}] + \\
& \tfrac{1}{2}\, g_1\, g_2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr}\right) \left(c_\gamma\, a_e{}^{pr} - s_\gamma\, \tilde{\mu}\, y_e{}^{pr}\right) \mathrm{LF}_{3,1,0}\left[m_{\tilde{l}}{}^p, m_{\tilde{e}}{}^r\right] - \\
& g_1\, g_2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr}\right) \left(c_\gamma\, a_e{}^{pr} - s_\gamma\, \tilde{\mu}\, y_e{}^{pr}\right) \mathrm{LF}_{4,1,-1}\left[m_{\tilde{l}}{}^p, m_{\tilde{e}}{}^r\right] + \\
& \tfrac{1}{2}\, g_1\, g_2 \left(c_\gamma\, \overline{a_e}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_e}^{pr}\right) \left(c_\gamma\, a_e{}^{pr} - s_\gamma\, \tilde{\mu}\, y_e{}^{pr}\right) \mathrm{LF}_{5,1,-2}\left[m_{\tilde{l}}{}^p, m_{\tilde{e}}{}^r\right] + \\
& \tfrac{1}{2}\, g_1\, g_2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr}\right) \left(c_\gamma\, a_d{}^{pr} - s_\gamma\, \tilde{\mu}\, y_d{}^{pr}\right) \mathrm{LF}_{3,1,0}\left[m_{\tilde{q}}{}^p, m_{\tilde{d}}{}^r\right] - \\
& 2\, g_1\, g_2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr}\right) \left(c_\gamma\, a_d{}^{pr} - s_\gamma\, \tilde{\mu}\, y_d{}^{pr}\right) \mathrm{LF}_{4,1,-1}\left[m_{\tilde{q}}{}^p, m_{\tilde{d}}{}^r\right] + \\
& \tfrac{3}{2}\, g_1\, g_2 \left(c_\gamma\, \overline{a_d}^{pr} - s_\gamma\, \tilde{\mu}\, \overline{y_d}^{pr}\right) \left(c_\gamma\, a_d{}^{pr} - s_\gamma\, \tilde{\mu}\, y_d{}^{pr}\right) \mathrm{LF}_{5,1,-2}\left[m_{\tilde{q}}{}^p, m_{\tilde{d}}{}^r\right] + \\
& \tfrac{1}{4}\, g_1\, g_2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u{}^{pr} - \tilde{\mu}\, c_\gamma\, y_u{}^{pr}\right) \mathrm{LF}_{2,2,0}\left[m_{\tilde{q}}{}^p, m_{\tilde{u}}{}^r\right] + \\
& \tfrac{1}{4}\, g_1\, g_2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u{}^{pr} - \tilde{\mu}\, c_\gamma\, y_u{}^{pr}\right) \mathrm{LF}_{3,1,0}\left[m_{\tilde{q}}{}^p, m_{\tilde{u}}{}^r\right] - \\
& \tfrac{1}{4}\, g_1\, g_2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u{}^{pr} - \tilde{\mu}\, c_\gamma\, y_u{}^{pr}\right) \mathrm{LF}_{3,2,-1}\left[m_{\tilde{q}}{}^p, m_{\tilde{u}}{}^r\right] - \\
& \tfrac{1}{4}\, g_1\, g_2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u{}^{pr} - \tilde{\mu}\, c_\gamma\, y_u{}^{pr}\right) \mathrm{LF}_{4,1,-1}\left[m_{\tilde{q}}{}^p, m_{\tilde{u}}{}^r\right] + \\
& \tfrac{3}{4}\, g_1\, g_2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u{}^{pr} - \tilde{\mu}\, c_\gamma\, y_u{}^{pr}\right) \mathrm{LF}_{3,1,0}\left[m_{\tilde{u}}{}^r, m_{\tilde{q}}{}^p\right] - \\
& \tfrac{1}{4}\, g_1\, g_2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u{}^{pr} - \tilde{\mu}\, c_\gamma\, y_u{}^{pr}\right) \mathrm{LF}_{3,2,-1}\left[m_{\tilde{u}}{}^r, m_{\tilde{q}}{}^p\right] - \\
& \tfrac{9}{4}\, g_1\, g_2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u{}^{pr} - \tilde{\mu}\, c_\gamma\, y_u{}^{pr}\right) \mathrm{LF}_{4,1,-1}\left[m_{\tilde{u}}{}^r, m_{\tilde{q}}{}^p\right] + \\
& \tfrac{3}{2}\, g_1\, g_2 \left(s_\gamma\, \overline{a_u}^{pr} - \tilde{\mu}\, c_\gamma\, \overline{y_u}^{pr}\right) \left(s_\gamma\, a_u{}^{pr} - \tilde{\mu}\, c_\gamma\, y_u{}^{pr}\right) \mathrm{LF}_{5,1,-2}\left[m_{\tilde{u}}{}^r, m_{\tilde{q}}{}^p\right] - \\
& \tfrac{1}{4}\, g_2\, g_1{}^3 \left(c_\gamma{}^2 + s_\gamma{}^2\right) \mathrm{LF}_{3,1,-1}[\tilde{\mu}, m_1] - \tfrac{1}{2}\, g_2\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1{}^3\, \mathrm{LF}_{3,1,0}[\tilde{\mu}, m_1] + \\
& \tfrac{3}{4}\, g_2\, g_1{}^3 \left(c_\gamma{}^2 + s_\gamma{}^2\right) \mathrm{LF}_{4,1,-2}[\tilde{\mu}, m_1] + g_2\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1{}^3\, \mathrm{LF}_{4,1,-1}[\tilde{\mu}, m_1] - \\
& \tfrac{1}{2}\, g_2\, g_1{}^3 \left(c_\gamma{}^2 + s_\gamma{}^2\right) \mathrm{LF}_{5,1,-3}[\tilde{\mu}, m_1] - g_2\, m_1\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_1{}^3\, \mathrm{LF}_{5,1,-2}[\tilde{\mu}, m_1] - \\
& \tfrac{7}{4}\, g_1\, g_2{}^3 \left(c_\gamma{}^2 + s_\gamma{}^2\right) \mathrm{LF}_{3,1,-1}[\tilde{\mu}, m_2] - \tfrac{3}{2}\, g_1\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2{}^3\, \mathrm{LF}_{3,1,0}[\tilde{\mu}, m_2] + \\
& \tfrac{13}{4}\, g_1\, g_2{}^3 \left(c_\gamma{}^2 + s_\gamma{}^2\right) \mathrm{LF}_{4,1,-2}[\tilde{\mu}, m_2] + 5\, g_1\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2{}^3\, \mathrm{LF}_{4,1,-1}[\tilde{\mu}, m_2] - \\
& \tfrac{3}{2}\, g_1\, g_2{}^3 \left(c_\gamma{}^2 + s_\gamma{}^2\right) \mathrm{LF}_{5,1,-3}[\tilde{\mu}, m_2] - 3\, g_1\, m_2\, s_\gamma\, \tilde{\mu}\, c_\gamma\, g_2{}^3\, \mathrm{LF}_{5,1,-2}[\tilde{\mu}, m_2] \Big)
\end{aligned}
$$