$$C_{HW} \to \frac{1}{16\,\pi^2}\Big(-\frac{1}{16}\,g_2^{\,2}\,\Big(2\,c_\gamma^{\,2}\,\overline{y_e}^{pr}\,y_e^{\,pr}+\sum_p c_{2\gamma}\,g_1^{\,2}\Big)\,LF_{3,0}\big[\tilde{m_l}^p\big]+\frac{1}{16}\,g_2^{\,2}\,\Big(2\,c_\gamma^{\,2}\,\overline{y_e}^{pr}\,y_e^{\,pr}+\sum_p c_{2\gamma}\,g_1^{\,2}\Big)\,LF_{4,-1}\big[\tilde{m_l}^p\big]+\frac{1}{16}\,g_2^{\,2}\,\Big(-6\,c_\gamma^{\,2}\,\overline{y_d}^{pr}\,y_d^{\,pr}-6\,s_\gamma^{\,2}\,\overline{y_u}^{pr}\,y_u^{\,pr}+\sum_p c_{2\gamma}\,g_1^{\,2}\Big)\,LF_{3,0}\big[\tilde{m_q}^p\big]+\frac{1}{16}\,g_2^{\,2}\,\Big(6\,c_\gamma^{\,2}\,\overline{y_d}^{pr}\,y_d^{\,pr}+6\,s_\gamma^{\,2}\,\overline{y_u}^{pr}\,y_u^{\,pr}-\sum_p c_{2\gamma}\,g_1^{\,2}\Big)\,LF_{4,-1}\big[\tilde{m_q}^p\big]+\frac{1}{64}\,\Big(g_1^{\,2}\,g_2^{\,2}\,(1+3\,c_{4\gamma})+3\,g_2^{\,4}\,(-1+c_{4\gamma})\Big)\,LF_{3,0}[m_\Phi]-\frac{1}{64}\,g_2^{\,2}\,\Big(g_1^{\,2}\,(1+3\,c_{4\gamma})+3\,g_2^{\,2}\,(-1+c_{4\gamma})\Big)\,LF_{4,-1}[m_\Phi]+\frac{5}{4}\,g_2^{\,4}\,LF_{2,2,-1}[m_2,\tilde{\mu}]+m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{\,4}\,LF_{2,2,0}[m_2,\tilde{\mu}]+g_2^{\,4}\,LF_{3,1,-1}[m_2,\tilde{\mu}]-g_2^{\,4}\,LF_{3,2,-2}[m_2,\tilde{\mu}]-2\,m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{\,4}\,LF_{3,2,-1}[m_2,\tilde{\mu}]-g_2^{\,4}\,LF_{4,1,-2}[m_2,\tilde{\mu}]-2\,m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{\,4}\,LF_{4,1,-1}[m_2,\tilde{\mu}]-\frac{1}{4}\,g_2^{\,2}\,\Big(c_\gamma\,\overline{a_e}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_e}^{pr}\Big)\,\Big(c_\gamma\,a_e^{\,pr}-s_\gamma\,\tilde{\mu}\,y_e^{\,pr}\Big)\,LF_{4,1,-1}\big[\tilde{m_l}^p,\tilde{m_e}^r\big]+\frac{1}{4}\,g_2^{\,2}\,\Big(c_\gamma\,\overline{a_e}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_e}^{pr}\Big)\,\Big(c_\gamma\,a_e^{\,pr}-s_\gamma\,\tilde{\mu}\,y_e^{\,pr}\Big)\,LF_{5,1,-2}\big[\tilde{m_l}^p,\tilde{m_e}^r\big]-\frac{3}{4}\,g_2^{\,2}\,\Big(c_\gamma\,\overline{a_d}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr}\Big)\,\Big(c_\gamma\,a_d^{\,pr}-s_\gamma\,\tilde{\mu}\,y_d^{\,pr}\Big)\,LF_{4,1,-1}\big[\tilde{m_q}^p,\tilde{m_d}^r\big]+\frac{3}{4}\,g_2^{\,2}\,\Big(c_\gamma\,\overline{a_d}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr}\Big)\,\Big(c_\gamma\,a_d^{\,pr}-s_\gamma\,\tilde{\mu}\,y_d^{\,pr}\Big)\,LF_{5,1,-2}\big[\tilde{m_q}^p,\tilde{m_d}^r\big]-\frac{3}{8}\,g_2^{\,2}\,\Big(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\Big)\,\Big(s_\gamma\,a_u^{\,pr}-\tilde{\mu}\,c_\gamma\,y_u^{\,pr}\Big)\,LF_{2,2,0}\big[\tilde{m_q}^p,\tilde{m_u}^r\big]-\frac{3}{8}\,g_2^{\,2}\,\Big(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\Big)\,\Big(s_\gamma\,a_u^{\,pr}-\tilde{\mu}\,c_\gamma\,y_u^{\,pr}\Big)\,LF_{3,1,0}\big[\tilde{m_q}^p,\tilde{m_u}^r\big]+\frac{3}{8}\,g_2^{\,2}\,\Big(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\Big)\,\Big(s_\gamma\,a_u^{\,pr}-\tilde{\mu}\,c_\gamma\,y_u^{\,pr}\Big)\,LF_{3,2,-1}\big[\tilde{m_q}^p,\tilde{m_u}^r\big]+\frac{3}{8}\,g_2^{\,2}\,\Big(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\Big)\,\Big(s_\gamma\,a_u^{\,pr}-\tilde{\mu}\,c_\gamma\,y_u^{\,pr}\Big)\,LF_{4,1,-1}\big[\tilde{m_q}^p,\tilde{m_u}^r\big]+\frac{3}{8}\,g_2^{\,2}\,\Big(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\Big)\,\Big(s_\gamma\,a_u^{\,pr}-\tilde{\mu}\,c_\gamma\,y_u^{\,pr}\Big)\,LF_{3,1,0}\big[\tilde{m_u}^r,\tilde{m_q}^p\big]+\frac{3}{8}\,g_2^{\,2}\,\Big(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\Big)\,\Big(s_\gamma\,a_u^{\,pr}-\tilde{\mu}\,c_\gamma\,y_u^{\,pr}\Big)\,LF_{3,2,-1}\big[\tilde{m_u}^r,\tilde{m_q}^p\big]-\frac{9}{8}\,g_2^{\,2}\,\Big(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\Big)\,\Big(s_\gamma\,a_u^{\,pr}-\tilde{\mu}\,c_\gamma\,y_u^{\,pr}\Big)\,LF_{4,1,-1}\big[\tilde{m_u}^r,\tilde{m_q}^p\big]+\frac{3}{4}\,g_2^{\,2}\,\Big(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\Big)\,\Big(s_\gamma\,a_u^{\,pr}-\tilde{\mu}\,c_\gamma\,y_u^{\,pr}\Big)\,LF_{5,1,-2}\big[\tilde{m_u}^r,\tilde{m_q}^p\big]-\frac{1}{8}\,g_1^{\,2}\,g_2^{\,2}\,LF_{3,1,-1}[\tilde{\mu},m_1]-\frac{1}{4}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{\,2}\,g_2^{\,2}\,LF_{3,1,0}[\tilde{\mu},m_1]+\frac{3}{8}\,g_1^{\,2}\,g_2^{\,2}\,LF_{4,1,-2}[\tilde{\mu},m_1]+\frac{1}{2}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{\,2}\,g_2^{\,2}\,LF_{4,1,-1}[\tilde{\mu},m_1]-\frac{1}{4}\,g_1^{\,2}\,g_2^{\,2}\,LF_{5,1,-3}[\tilde{\mu},m_1]-\frac{1}{2}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{\,2}\,g_2^{\,2}\,LF_{5,1,-2}[\tilde{\mu},m_1]-\frac{3}{8}\,g_2^{\,4}\,LF_{3,1,-1}[\tilde{\mu},m_2]-\frac{3}{4}\,m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{\,4}\,LF_{3,1,0}[\tilde{\mu},m_2]-g_2^{\,4}\,LF_{3,2,-2}[\tilde{\mu},m_2]-2\,m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{\,4}\,LF_{3,2,-1}[\tilde{\mu},m_2]+\frac{9}{8}\,g_2^{\,4}\,LF_{4,1,-2}[\tilde{\mu},m_2]+\frac{3}{2}\,m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{\,4}\,LF_{4,1,-1}[\tilde{\mu},m_2]-\frac{3}{4}\,g_2^{\,4}\,LF_{5,1,-3}[\tilde{\mu},m_2]-\frac{3}{2}\,m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{\,4}\,LF_{5,1,-2}[\tilde{\mu},m_2]\Big)$$