$$C_{Hu}{}^{11\_12} \to \hbar \left(-\frac{1}{216} \frac{1}{m_e^2} \right.$$

$$\left(18 \, s_\gamma^2 \, \overline{y_d}^{pr} \, y_d^{sr} \, \overline{y_u}^{si1} \, y_u^{pi2} \left(6 \, c_\gamma^2 + s_\gamma^2 \right) + c_\gamma^2 \, \overline{y_u}^{pi1} \left(7 \, g_1^2 \, y_u^{pi2} + 18 \, s_\gamma^2 \, \overline{y_u}^{rs} \, y_u^{ps} \, y_u^{ri2} \right) \right) +$$

$$\frac{4}{81} \sum_p g_1^4 \, \text{LF}_{3,0}\!\left[m_d{}^p\right] \delta_{i1i2} - \frac{5}{54} \sum_p g_1^4 \, \text{LF}_{4,-1}\!\left[m_d{}^p\right] \delta_{i1i2} + \frac{16}{405} \sum_p g_1^4 \, \text{LF}_{5,-2}\!\left[m_d{}^p\right] \delta_{i1i2} +$$

$$\frac{4}{27} \sum_p g_1^4 \, \text{LF}_{3,0}\!\left[m_e{}^p\right] \delta_{i1i2} - \frac{5}{18} \sum_p g_1^4 \, \text{LF}_{4,-1}\!\left[m_e{}^p\right] \delta_{i1i2} + \frac{16}{135} \sum_p g_1^4 \, \text{LF}_{5,-2}\!\left[m_e{}^p\right] \delta_{i1i2} +$$

$$\frac{2}{81} \sum_p g_1^4 \, \text{LF}_{3,0}\!\left[m_L{}^p\right] \delta_{i1i2} - \frac{5}{36} \sum_p g_1^4 \, \text{LF}_{4,-1}\!\left[m_L{}^p\right] \delta_{i1i2} + \frac{8}{135} \sum_p g_1^4 \, \text{LF}_{5,-2}\!\left[m_e{}^p\right] \delta_{i1i2} +$$

$$\frac{2}{81} \sum_p g_1^4 \, \text{LF}_{3,0}\!\left[m_Q{}^p\right] \delta_{i1i2} - \frac{5}{108} \sum_p g_1^4 \, \text{LF}_{4,-1}\!\left[m_Q{}^p\right] \delta_{i1i2} + \frac{8}{405} \sum_p g_1^4 \, \text{LF}_{5,-2}\!\left[m_Q{}^p\right] \delta_{i1i2} +$$

$$\frac{16}{81} \sum_p g_1^4 \, \text{LF}_{3,0}\!\left[m_U{}^p\right] \delta_{i1i2} - \frac{10}{27} \sum_p g_1^4 \, \text{LF}_{4,-1}\!\left[m_U{}^p\right] \delta_{i1i2} + \frac{64}{405} \sum_p g_1^4 \, \text{LF}_{5,-2}\!\left[m_U{}^p\right] \delta_{i1i2} +$$

$$\frac{1}{18} \left(9 \, c_\gamma^4 \, \overline{y_d}^{pr} \, y_d^{sr} \, \overline{y_u}^{si1} \, y_u^{pi2} - c_\gamma^2 \, \overline{y_u}^{pi1} \left(g_1^2 \, y_u^{pi2} + 9 \, s_\gamma^2 \, \overline{y_u}^{rs} \, y_u^{ps} \, y_u^{ri2} \right) \right) \text{LF}_{1,2}\!\left[m_e\right] -$$

$$\frac{1}{12} g_1^2 \, c_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1}\!\left[m_e\right] + \frac{1}{108} g_1^2 \left(9 \, c_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} + 8 \, g_1^2 \, \delta_{i1i2} \right) \text{LF}_{3,0}\!\left[m_e\right] -$$

$$\frac{5}{36} g_1^4 \, \text{LF}_{4,-1}\!\left[m_e\right] \delta_{i1i2} + \frac{8}{135} g_1^4 \, \text{LF}_{5,-2}\!\left[m_e\right] \delta_{i1i2} + \frac{1}{27} g_1^4 \, \text{LF}_{3,0}\!\left[\tilde{\mu}\right] \delta_{i1i2} +$$

$$\frac{1}{9} g_1^4 \, \text{LF}_{4,-1}\!\left[\tilde{\mu}\right] \delta_{i1i2} - \frac{16}{135} g_1^4 \, \text{LF}_{5,-2}\!\left[\tilde{\mu}\right] \delta_{i1i2} + \frac{1}{36} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,-2}\!\left[m_1, \, m_Q{}^p\right] -$$

$$\frac{1}{18} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,-1}\!\left[m_1, \, m_Q{}^p\right] + \frac{1}{36} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{4,1,-2}\!\left[m_1, \, m_Q{}^p\right] +$$

$$\frac{4}{81} g_1^4 \, \text{LF}_{2,1,0}\!\left[m_1, \, m_U{}^{i2}\right] \delta_{i1i2} + \frac{4}{81} g_1^4 \, \text{LF}_{2,2,-1}\!\left[m_1, \, m_U{}^{i2}\right] \delta_{i1i2} -$$

$$\frac{8}{81} g_1^4 \, \text{LF}_{3,1,-1}\!\left[m_1, \, m_U{}^{i2}\right] \delta_{i1i2} + \frac{4}{81} g_1^4 \, \text{LF}_{4,1,-2}\!\left[m_1, \, m_U{}^{i2}\right] \delta_{i1i2} +$$

$$\frac{3}{4} g_2^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,0}\!\left[m_2, \, m_Q{}^p\right] - \frac{3}{2} g_2^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,-1}\!\left[m_2, \, m_Q{}^p\right] +$$

$$\frac{3}{4} g_2^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{4,1,-2}\!\left[m_2, \, m_Q{}^p\right] + \frac{4}{3} g_3^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,0}\!\left[m_3, \, m_Q{}^p\right] -$$

$$\frac{8}{3} g_3^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,-1}\!\left[m_3, \, m_Q{}^p\right] + \frac{4}{3} g_3^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{4,1,-2}\!\left[m_3, \, m_Q{}^p\right] +$$

$$\frac{4}{27} g_1^2 \, g_3^2 \, \text{LF}_{2,1,0}\!\left[m_3, \, m_U{}^{i2}\right] \delta_{i1i2} + \frac{4}{27} g_1^2 \, g_3^2 \, \text{LF}_{2,2,-1}\!\left[m_3, \, m_U{}^{i2}\right] \delta_{i1i2} -$$

$$\frac{8}{27} g_1^2 \, g_3^2 \, \text{LF}_{3,1,-1}\!\left[m_3, \, m_U{}^{i2}\right] \delta_{i1i2} + \frac{4}{27} g_1^2 \, g_3^2 \, \text{LF}_{4,1,-2}\!\left[m_3, \, m_U{}^{i2}\right] \delta_{i1i2} +$$

$$\frac{2}{9} g_1^2 \left(c_\gamma \, \overline{a_d}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \right) \left(c_\gamma \, a_d{}^{pr} - s_\gamma \, \tilde{\mu} \, y_d{}^{pr} \right) \text{LF}_{2,2,0}\!\left[m_d{}^r, \, m_Q{}^p\right] \delta_{i1i2} -$$

$$\frac{1}{9} g_1^2 \left(c_\gamma \, \overline{a_d}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \right) \left(c_\gamma \, a_d{}^{pr} - s_\gamma \, \tilde{\mu} \, y_d{}^{pr} \right) \text{LF}_{3,2,-1}\!\left[m_d{}^r, \, m_Q{}^p\right] \delta_{i1i2} +$$

$$\frac{2}{9} g_1^2 \left(c_\gamma \, \overline{a_e}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_e}^{pr} \right) \left(c_\gamma \, a_e{}^{pr} - s_\gamma \, \tilde{\mu} \, y_e{}^{pr} \right) \text{LF}_{2,2,0}\!\left[m_e{}^r, \, m_L{}^p\right] \delta_{i1i2} -$$

$$\frac{1}{9} g_1^2 \left(c_\gamma \, \overline{a_e}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_e}^{pr} \right) \left(c_\gamma \, a_e{}^{pr} - s_\gamma \, \tilde{\mu} \, y_e{}^{pr} \right) \text{LF}_{3,2,-1}\!\left[m_e{}^r, \, m_L{}^p\right] \delta_{i1i2} +$$

$$\frac{2}{9} g_1^2 \left(c_\gamma \, \overline{a_e}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_e}^{pr} \right) \left(c_\gamma \, a_e{}^{pr} - s_\gamma \, \tilde{\mu} \, y_e{}^{pr} \right) \text{LF}_{3,1,0}\!\left[m_L{}^p, \, m_e{}^r\right] \delta_{i1i2} -$$

$$\frac{2}{9} g_1^2 \left(c_\gamma \, \overline{a_e}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_e}^{pr} \right) \left(c_\gamma \, a_e{}^{pr} - s_\gamma \, \tilde{\mu} \, y_e{}^{pr} \right) \text{LF}_{3,2,-1}\!\left[m_L{}^p, \, m_e{}^r\right] \delta_{i1i2} +$$

$$\frac{1}{2} g_1^2 \left(c_\gamma \, \overline{a_e}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_e}^{pr} \right) \left(c_\gamma \, a_e{}^{pr} - s_\gamma \, \tilde{\mu} \, y_e{}^{pr} \right) \text{LF}_{4,1,-1}\!\left[m_L{}^p, \, m_e{}^r\right] \delta_{i1i2} -$$

$$\frac{2}{9} g_1^2 \left(c_\gamma \, \overline{a_e}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_e}^{pr} \right) \left(c_\gamma \, a_e{}^{pr} - s_\gamma \, \tilde{\mu} \, y_e{}^{pr} \right) \text{LF}_{5,1,-2}\!\left[m_L{}^p, \, m_e{}^r\right] \delta_{i1i2} +$$

$$\frac{2}{9} g_1^2 \left(c_\gamma \, \overline{a_d}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \right) \left(c_\gamma \, a_d{}^{pr} - s_\gamma \, \tilde{\mu} \, y_d{}^{pr} \right) \text{LF}_{3,1,0}\!\left[m_Q{}^p, \, m_d{}^r\right] \delta_{i1i2} -$$

$$\frac{2}{9} g_1^2 \left(c_\gamma \, \overline{a_d}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \right) \left(c_\gamma \, a_d{}^{pr} - s_\gamma \, \tilde{\mu} \, y_d{}^{pr} \right) \text{LF}_{3,2,-1}\!\left[m_Q{}^p, \, m_d{}^r\right] \delta_{i1i2} +$$

$$\frac{5}{6} g_1^2 \left(c_\gamma \, \overline{a_d}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \right) \left(c_\gamma \, a_d{}^{pr} - s_\gamma \, \tilde{\mu} \, y_d{}^{pr} \right) \text{LF}_{4,1,-1}\!\left[m_Q{}^p, \, m_d{}^r\right] \delta_{i1i2} -$$

$$\frac{2}{3} g_1^2 \left(c_\gamma \, \overline{a_d}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \right) \left(c_\gamma \, a_d{}^{pr} - s_\gamma \, \tilde{\mu} \, y_d{}^{pr} \right) \text{LF}_{5,1,-2}\!\left[m_Q{}^p, \, m_d{}^r\right] \delta_{i1i2} -$$

$$\frac{1}{2} g_1^2 \left(s_\gamma \, \overline{a_u}^{pr} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pr} \right) \left(s_\gamma \, a_u{}^{pr} - \tilde{\mu} \, c_\gamma \, y_u{}^{pr} \right) \text{LF}_{2,2,0}\!\left[m_Q{}^p, \, m_U{}^r\right] \delta_{i1i2} +$$

$$\frac{1}{18} g_1^2 \left(s_\gamma \, \overline{a_u}^{pr} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pr} \right) \left(s_\gamma \, a_u{}^{pr} - \tilde{\mu} \, c_\gamma \, y_u{}^{pr} \right) \text{LF}_{3,2,-1}\!\left[m_Q{}^p, \, m_U{}^r\right] \delta_{i1i2} -$$

$$\frac{1}{36} g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,0}\!\left[m_Q{}^p, \, \tilde{\mu}\right] + \frac{1}{36} g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,2,-1}\!\left[m_Q{}^p, \, \tilde{\mu}\right] + \frac{1}{36} g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2}$$

$$\text{LF}_{3,1,-1}\!\left[m_Q{}^p, \, \tilde{\mu}\right] + \frac{1}{9} g_1^2 \left(s_\gamma \, \overline{a_u}^{pr} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pr} \right) \left(s_\gamma \, a_u{}^{pr} - \tilde{\mu} \, c_\gamma \, y_u{}^{pr} \right) \text{LF}_{3,1,0}\!\left[m_U{}^r, \, m_Q{}^p\right] \delta_{i1i2} +$$

$$\frac{1}{9} g_1^2 \left(s_\gamma \, \overline{a_u}^{pr} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pr} \right) \left(s_\gamma \, a_u{}^{pr} - \tilde{\mu} \, c_\gamma \, y_u{}^{pr} \right) \text{LF}_{3,2,-1}\!\left[m_U{}^r, \, m_Q{}^p\right] \delta_{i1i2} +$$

$$\frac{1}{3} g_1^2 \left(s_\gamma \, \overline{a_u}^{pr} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pr} \right) \left(s_\gamma \, a_u{}^{pr} - \tilde{\mu} \, c_\gamma \, y_u{}^{pr} \right) \text{LF}_{4,1,-1}\!\left[m_U{}^r, \, m_Q{}^p\right] \delta_{i1i2} -$$

$$\frac{2}{3} g_1^2 \left(s_\gamma \, \overline{a_u}^{pr} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pr} \right) \left(s_\gamma \, a_u{}^{pr} - \tilde{\mu} \, c_\gamma \, y_u{}^{pr} \right) \text{LF}_{5,1,-2}\!\left[m_U{}^r, \, m_Q{}^p\right] \delta_{i1i2} -$$

$$\frac{8}{81} g_1^4 \, \text{LF}_{2,1,0}\!\left[m_U{}^{i2}, \, m_1\right] \delta_{i1i2} + \frac{4}{81} g_1^4 \, \text{LF}_{3,1,-1}\!\left[m_U{}^{i2}, \, m_1\right] \delta_{i1i2} -$$

$$\frac{4}{27} g_1^2 \, g_3^2 \, \text{LF}_{2,1,0}\!\left[m_U{}^{i2}, \, m_3\right] \delta_{i1i2} + \frac{4}{27} g_1^2 \, g_3^2 \, \text{LF}_{3,1,-1}\!\left[m_U{}^{i2}, \, m_3\right] \delta_{i1i2} -$$

$$\frac{5}{18} g_1^4 \left(c_\gamma^2 + s_\gamma^2 \right) \text{LF}_{4,1,-2}\!\left[\tilde{\mu}, \, m_1\right] \delta_{i1i2} - \frac{1}{3} m_1 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^4 \, \text{LF}_{4,1,-1}\!\left[\tilde{\mu}, \, m_1\right] \delta_{i1i2} +$$

$$\frac{2}{9} g_1^4 \left(c_\gamma^2 + s_\gamma^2 \right) \text{LF}_{5,1,-3}\!\left[\tilde{\mu}, \, m_1\right] \delta_{i1i2} + \frac{4}{9} m_1 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^4 \, \text{LF}_{5,1,-2}\!\left[\tilde{\mu}, \, m_1\right] \delta_{i1i2} -$$

$$\frac{5}{9} g_1^2 \, g_2^2 \left(c_\gamma^2 + s_\gamma^2 \right) \text{LF}_{4,1,-2}\!\left[\tilde{\mu}, \, m_2\right] \delta_{i1i2} - m_2 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^2 \, g_2^2 \, \text{LF}_{4,1,-1}\!\left[\tilde{\mu}, \, m_2\right] \delta_{i1i2} +$$

$$\frac{2}{3} g_1^2 \, g_2^2 \left(c_\gamma^2 + s_\gamma^2 \right) \text{LF}_{5,1,-3}\!\left[\tilde{\mu}, \, m_2\right] \delta_{i1i2} + \frac{4}{3} m_2 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^2 \, g_2^2 \, \text{LF}_{5,1,-2}\!\left[\tilde{\mu}, \, m_2\right] \delta_{i1i2} +$$

$$\frac{1}{2} s_\gamma^2 \, \overline{y_d}^{pr} \, y_d^{sr} \, \overline{y_u}^{si1} \, y_u^{pi2} \, \text{LF}_{2,1,0}\!\left[\tilde{\mu}, \, m_d{}^r\right] - s_\gamma^2 \, \overline{y_d}^{pr} \, y_d^{sr} \, \overline{y_u}^{si1} \, y_u^{pi2} \, \text{LF}_{3,1,-1}\!\left[\tilde{\mu}, \, m_d{}^r\right] +$$

$$\frac{1}{2} s_\gamma^2 \, \overline{y_d}^{pr} \, y_d^{sr} \, \overline{y_u}^{si1} \, y_u^{pi2} \, \text{LF}_{4,1,-2}\!\left[\tilde{\mu}, \, m_d{}^r\right] + \frac{1}{36} g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,0}\!\left[\tilde{\mu}, \, m_Q{}^p\right] -$$

$$\frac{11}{36} g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,-1}\!\left[\tilde{\mu}, \, m_Q{}^p\right] + \frac{1}{9} g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{4,1,-2}\!\left[\tilde{\mu}, \, m_Q{}^p\right] +$$

$$\frac{1}{2} s_\gamma^2 \, \overline{y_u}^{pi1} \, \overline{y_u}^{rs} \, y_u^{ps} \, y_u^{ri2} \, \text{LF}_{2,1,0}\!\left[\tilde{\mu}, \, m_U{}^s\right] - s_\gamma^2 \, \overline{y_u}^{pi1} \, \overline{y_u}^{rs} \, y_u^{ps} \, y_u^{ri2} \, \text{LF}_{3,1,-1}\!\left[\tilde{\mu}, \, m_U{}^s\right] +$$

$$\frac{1}{2} s_\gamma^2 \, \overline{y_u}^{pi1} \, \overline{y_u}^{rs} \, y_u^{ps} \, y_u^{ri2} \, \text{LF}_{4,1,-2}\!\left[\tilde{\mu}, \, m_U{}^s\right] +$$

$$\frac{1}{18} m_1 \, s_\gamma \, g_1^2 \, y_u^{pi2} \left(-s_\gamma \, \overline{a_u}^{pi1} + \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{2,1,1,0}\!\left[m_1, \, m_Q{}^p, \, m_U{}^{i1}\right] +$$

$$\frac{1}{36} m_1 \, s_\gamma \, g_1^2 \, y_u^{pi2} \left(-s_\gamma \, \overline{a_u}^{pi1} + \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{2,2,1,-1}\!\left[m_1, \, m_Q{}^p, \, m_U{}^{i1}\right] +$$

$$\frac{1}{18} m_1 \, s_\gamma \, g_1^2 \, y_u^{pi2} \left(s_\gamma \, \overline{a_u}^{pi1} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{3,1,1,-1}\!\left[m_1, \, m_Q{}^p, \, m_U{}^{i1}\right] +$$

$$\frac{1}{18} m_1 \, s_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \left(-s_\gamma \, a_u{}^{pi2} + \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{2,1,1,0}\!\left[m_1, \, m_Q{}^p, \, m_U{}^{i2}\right] +$$

$$\frac{1}{36} m_1 \, s_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \left(-s_\gamma \, a_u{}^{pi2} + \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{2,2,1,-1}\!\left[m_1, \, m_Q{}^p, \, m_U{}^{i2}\right] +$$

$$\frac{1}{18} m_1 \, s_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \left(s_\gamma \, a_u{}^{pi2} - \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{3,1,1,-1}\!\left[m_1, \, m_Q{}^p, \, m_U{}^{i2}\right] +$$

$$\frac{1}{4} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,-1}\!\left[m_1, \, m_Q{}^p, \, \tilde{\mu}\right] + \frac{1}{6} m_1 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,0}\!\left[m_1, \, m_Q{}^p, \, \tilde{\mu}\right] -$$

$$\frac{1}{6} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,1,-2}\!\left[m_1, \, m_Q{}^p, \, \tilde{\mu}\right] - \frac{1}{6} m_1 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,1,-1}\!\left[m_1, \, m_Q{}^p, \, \tilde{\mu}\right] +$$

$$\frac{1}{36} m_1 \, s_\gamma \, g_1^2 \, y_u^{pi2} \left(s_\gamma \, \overline{a_u}^{pi1} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{2,2,1,-1}\!\left[m_1, \, m_U{}^{i1}, \, m_Q{}^p\right] +$$

$$\frac{1}{36} m_1 \, s_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \left(s_\gamma \, a_u{}^{pi2} - \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{2,2,1,-1}\!\left[m_1, \, m_U{}^{i2}, \, m_Q{}^p\right] +$$

$$\frac{1}{9} g_1^4 \left(-c_\gamma^2 + s_\gamma^2 \right) \text{LF}_{2,1,1,-1}\!\left[m_1, \, m_U{}^{i2}, \, \tilde{\mu}\right] \delta_{i1i2} +$$

$$\frac{2}{9} m_1 \, m_1{}^2 \left(-c_\gamma^2 + s_\gamma^2 \right) \text{LF}_{2,1,1,0}\!\left[m_1, \, m_U{}^{i2}, \, \tilde{\mu}\right] \delta_{i1i2} + \frac{1}{24} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,2,1,-2}\!\left[m_1, \, \tilde{\mu}, \, m_Q{}^p\right] +$$

$$\frac{1}{24} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \left(4 \, m_1 \, s_\gamma + 3 \, \tilde{\mu} \, c_\gamma \right) \text{LF}_{2,2,1,-1}\!\left[m_1, \, \tilde{\mu}, \, m_Q{}^p\right] + \frac{1}{6} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2}$$

$$\text{LF}_{2,2,1,-2}\!\left[m_1, \, \tilde{\mu}, \, m_U{}^{i1}\right] + \frac{1}{6} m_1 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,2,1,-1}\!\left[m_1, \, \tilde{\mu}, \, m_U{}^{i1}\right] +$$

$$\left(\frac{1}{6} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} + \frac{1}{9} g_1^4 \left(-c_\gamma^2 + s_\gamma^2 \right) \delta_{i1i2} \right) \text{LF}_{2,2,1,-2}\!\left[m_1, \, \tilde{\mu}, \, m_U{}^{i2}\right] +$$

$$\frac{1}{18} m_1 \, g_1^2 \left(3 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \, y_u^{pi2} + 2 \, m_1 \, g_1^2 \left(c_\gamma^2 - s_\gamma^2 \right) \delta_{i1i2} \right) \text{LF}_{2,2,1,-1}\!\left[m_1, \, \tilde{\mu}, \, m_U{}^{i2}\right] -$$

$$\frac{9}{2} g_2^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,-1}\!\left[m_2, \, m_Q{}^p, \, \tilde{\mu}\right] -$$

$$\frac{3}{2} m_2 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_2^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,0}\!\left[m_2, \, m_Q{}^p, \, \tilde{\mu}\right] + \frac{3}{2} g_2^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,1,-2}\!\left[m_2, \, m_Q{}^p, \, \tilde{\mu}\right] +$$

$$\frac{3}{2} m_2 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_2^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,1,-1}\!\left[m_2, \, m_Q{}^p, \, \tilde{\mu}\right] + \frac{9}{8} g_2^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,2,1,-2}\!\left[m_2, \, m_Q{}^p\right] +$$

$$\frac{3}{8} \, \tilde{\mu} \, c_\gamma \, g_2^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \left(4 \, m_2 \, s_\gamma + \tilde{\mu} \, c_\gamma \right) \text{LF}_{2,2,1,-1}\!\left[m_2, \, \tilde{\mu}, \, m_Q{}^p\right] +$$

$$\frac{3}{4} m_3 \, s_\gamma \, g_3^2 \, y_u^{pi2} \left(-s_\gamma \, \overline{a_u}^{pi1} + \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{2,1,1,0}\!\left[m_3, \, m_Q{}^p, \, m_U{}^{i1}\right] +$$

$$\frac{1}{3} m_3 \, s_\gamma \, g_3^2 \, y_u^{pi2} \left(-s_\gamma \, \overline{a_u}^{pi1} + \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{2,2,1,-1}\!\left[m_3, \, m_Q{}^p, \, m_U{}^{i1}\right] +$$

$$\frac{3}{4} m_3 \, s_\gamma \, g_3^2 \, y_u^{pi2} \left(s_\gamma \, \overline{a_u}^{pi1} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{3,1,1,-1}\!\left[m_3, \, m_Q{}^p, \, m_U{}^{i1}\right] +$$

$$\frac{3}{4} m_3 \, s_\gamma \, g_3^2 \, \overline{y_u}^{pi1} \left(-s_\gamma \, a_u{}^{pi2} + \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{2,1,1,0}\!\left[m_3, \, m_Q{}^p, \, m_U{}^{i2}\right] +$$

$$\frac{1}{3} m_3 \, s_\gamma \, g_3^2 \, \overline{y_u}^{pi1} \left(-s_\gamma \, a_u{}^{pi2} + \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{2,2,1,-1}\!\left[m_3, \, m_Q{}^p, \, m_U{}^{i2}\right] +$$

$$\frac{3}{4} m_3 \, s_\gamma \, g_3^2 \, \overline{y_u}^{pi1} \left(s_\gamma \, a_u{}^{pi2} - \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{3,1,1,-1}\!\left[m_3, \, m_Q{}^p, \, m_U{}^{i2}\right] +$$

$$\frac{1}{3} m_3 \, s_\gamma \, g_3^2 \, y_u^{pi2} \left(s_\gamma \, \overline{a_u}^{pi1} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{2,2,1,-1}\!\left[m_3, \, m_U{}^{i1}, \, m_Q{}^p\right] +$$

$$\frac{1}{3} m_3 \, s_\gamma \, g_3^2 \, \overline{y_u}^{pi1} \left(s_\gamma \, a_u{}^{pi2} - \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{2,2,1,-1}\!\left[m_3, \, m_U{}^{i2}, \, m_Q{}^p\right] +$$

$$\frac{1}{8} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,-1}\!\left[\tilde{\mu}, \, m_1, \, m_Q{}^p\right] - \frac{1}{4} g_1^2 \, \tilde{\mu}^2 \, c_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,0}\!\left[\tilde{\mu}, \, m_1, \, m_Q{}^p\right] -$$

$$\frac{1}{3} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,-1}\!\left[\tilde{\mu}, \, m_1, \, m_U{}^{i1}\right] - \frac{1}{3} m_1 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,0}\!\left[\tilde{\mu}, \, m_1, \, m_U{}^{i1}\right] -$$

$$\frac{1}{3} g_1^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,1,-2}\!\left[\tilde{\mu}, \, m_1, \, m_U{}^{i1}\right] + \frac{1}{3} m_1 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,1,-1}\!\left[\tilde{\mu}, \, m_1, \, m_U{}^{i1}\right] -$$

$$\frac{1}{3} g_1^2 \, c_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,-1}\!\left[\tilde{\mu}, \, m_1, \, m_U{}^{i2}\right] - \frac{1}{3} m_1 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,0}\!\left[\tilde{\mu}, \, m_1, \, m_U{}^{i2}\right] +$$

$$\frac{1}{3} g_1^2 \, c_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,1,-2}\!\left[\tilde{\mu}, \, m_1, \, m_U{}^{i2}\right] + \frac{1}{3} m_1 \, s_\gamma \, \tilde{\mu} \, c_\gamma \, g_1^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{3,1,1,-1}\!\left[\tilde{\mu}, \, m_1, \, m_U{}^{i2}\right] +$$

$$\frac{3}{8} g_2^2 \, s_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,-1}\!\left[\tilde{\mu}, \, m_2, \, m_Q{}^p\right] - \frac{3}{4} g_2^2 \, \tilde{\mu}^2 \, c_\gamma^2 \, \overline{y_u}^{pi1} \, y_u^{pi2} \, \text{LF}_{2,1,1,0}\!\left[\tilde{\mu}, \, m_2, \, m_Q{}^p\right] +$$

$$\frac{1}{4} s_\gamma \, \tilde{\mu} \, y_d^{sr} \, \overline{y_u}^{si1} \, y_u^{pi2} \left(c_\gamma \, \overline{a_d}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \right) \text{LF}_{2,1,1,0}\!\left[\tilde{\mu}, \, m_d{}^r, \, m_Q{}^p\right] +$$

$$\frac{1}{4} s_\gamma \, \tilde{\mu} \, y_d^{sr} \, \overline{y_u}^{si1} \, y_u^{pi2} \left(-c_\gamma \, \overline{a_d}^{pr} + s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \right) \text{LF}_{3,1,1,-1}\!\left[\tilde{\mu}, \, m_d{}^r, \, m_Q{}^p\right] +$$

$$\frac{1}{4} s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \, \overline{y_u}^{si1} \, y_u^{pi2} \left(c_\gamma \, a_d{}^{sr} - s_\gamma \, \tilde{\mu} \, y_d{}^{sr} \right) \text{LF}_{2,1,1,0}\!\left[\tilde{\mu}, \, m_d{}^r, \, m_Q{}^s\right] +$$

$$\frac{1}{4} s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \, \overline{y_u}^{si1} \, y_u^{pi2} \left(-c_\gamma \, a_d{}^{sr} + s_\gamma \, \tilde{\mu} \, y_d{}^{sr} \right) \text{LF}_{3,1,1,-1}\!\left[\tilde{\mu}, \, m_d{}^r, \, m_Q{}^s\right] -$$

$$\frac{1}{6} g_1^2 \, y_u^{pi2} \left(m_1 \, s_\gamma - \tilde{\mu} \, c_\gamma \right) \left(s_\gamma \, \overline{a_u}^{pi1} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{1,1,1,1,0}\!\left[m_1, \, m_Q{}^p, \, m_U{}^{i1}, \, \tilde{\mu}\right] -$$

$$\frac{1}{6} g_1^2 \, y_u^{pi2} \left(m_1 \, s_\gamma + \tilde{\mu} \, c_\gamma \right) \left(s_\gamma \, \overline{a_u}^{pi1} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{1,1,1,1,-1}\!\left[m_1, \, m_Q{}^p, \, m_U{}^{i1}, \, \tilde{\mu}\right] -$$

$$\frac{1}{6} g_1^2 \, \overline{y_u}^{pi1} \left(m_1 \, s_\gamma - \tilde{\mu} \, c_\gamma \right) \left(s_\gamma \, a_u{}^{pi2} - \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{1,1,1,1,0}\!\left[m_1, \, m_Q{}^p, \, m_U{}^{i2}, \, \tilde{\mu}\right] -$$

$$\frac{1}{6} g_1^2 \, \overline{y_u}^{pi1} \left(m_1 \, s_\gamma + \tilde{\mu} \, c_\gamma \right) \left(s_\gamma \, a_u{}^{pi2} - \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{1,1,1,1,-1}\!\left[m_1, \, m_Q{}^p, \, m_U{}^{i2}, \, \tilde{\mu}\right] +$$

$$\frac{1}{4} \overline{y_u}^{si1} \, y_u^{pi2} \left(c_\gamma \, \overline{a_d}^{pr} - s_\gamma \, \tilde{\mu} \, \overline{y_d}^{pr} \right) \left(c_\gamma \, a_d{}^{sr} - s_\gamma \, \tilde{\mu} \, y_d{}^{sr} \right) \text{LF}_{2,1,1,1,-1}\!\left[m_d{}^r, \, m_Q{}^p, \, m_Q{}^s, \, \tilde{\mu}\right] +$$

$$\frac{1}{12} g_1^2 \, y_u^{pi2} \left(m_1 \, s_\gamma + \tilde{\mu} \, c_\gamma \right) \left(s_\gamma \, \overline{a_u}^{pi1} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{2,1,1,1,-1}\!\left[m_Q{}^p, \, m_1, \, m_U{}^{i1}, \, \tilde{\mu}\right] +$$

$$\frac{2}{3} g_1^2 \left(s_\gamma \, \overline{a_u}^{pi1} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \left(s_\gamma \, a_u{}^{pi2} - \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{2,1,1,1,-1}\!\left[m_Q{}^p, \, m_1, \, m_U{}^{i2}, \, m_U{}^{i1}\right] +$$

$$\frac{1}{12} g_1^2 \, \overline{y_u}^{pi1} \left(m_1 \, s_\gamma + \tilde{\mu} \, c_\gamma \right) \left(s_\gamma \, a_u{}^{pi2} - \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{2,1,1,1,-1}\!\left[m_Q{}^p, \, m_1, \, m_U{}^{i2}, \, \tilde{\mu}\right] +$$

$$\frac{1}{4} s_\gamma \, \overline{y_u}^{si1} \, y_u^{pi2} \, \overline{a_u}^{pr} \left(s_\gamma \, a_u{}^{sr} - \tilde{\mu} \, c_\gamma \, y_u{}^{sr} \right) \text{LF}_{2,1,1,1,-1}\!\left[m_Q{}^p, \, m_Q{}^s, \, \tilde{\mu}\right] +$$

$$\frac{1}{4} \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \, \overline{y_u}^{rs} \, y_u^{ri2} \left(-s_\gamma \, a_u{}^{ps} + \tilde{\mu} \, c_\gamma \, y_u{}^{ps} \right) \text{LF}_{2,1,1,1,-1}\!\left[m_U{}^s, \, m_Q{}^p, \, m_Q{}^r, \, \tilde{\mu}\right] -$$

$$\frac{1}{12} g_1^2 \, y_u^{pi2} \left(m_1 \, s_\gamma + \tilde{\mu} \, c_\gamma \right) \left(s_\gamma \, \overline{a_u}^{pi1} - \tilde{\mu} \, c_\gamma \, \overline{y_u}^{pi1} \right) \text{LF}_{2,1,1,1,-1}\!\left[m_U{}^{i1}, \, m_1, \, m_Q{}^p, \, \tilde{\mu}\right] -$$

$$\frac{1}{12} g_1^2 \, \overline{y_u}^{pi1} \left(m_1 \, s_\gamma + \tilde{\mu} \, c_\gamma \right) \left(s_\gamma \, a_u{}^{pi2} - \tilde{\mu} \, c_\gamma \, y_u{}^{pi2} \right) \text{LF}_{2,1,1,1,-1}\!\left[\tilde{\mu}, \, m_1, \, m_Q{}^p, \, m_U{}^{i2}\right] \right)
$$