$$C_{Hq}^{(1)\,i1\_i2\_} \to \hbar\,\Big(\frac{1}{432}\,\frac{1}{m_\Phi^2}\,\Big(s_\gamma^2\,\overline{y_d}^{i2p}\,(5\,g_1^2\,y_d^{i1p} - 36\,c_\gamma^2\,\overline{y_d}^{rs}\,y_d^{rp}\,y_d^{i1s}) +$$

$$c_\gamma^2\,\overline{y_u}^{i2p}\,(-13\,g_1^2\,y_u^{i1p} + 36\,s_\gamma^2\,\overline{y_u}^{rs}\,y_u^{rp}\,y_u^{i1s})\Big) + \frac{1}{81}\sum_p g_1^4\,LF_{3,0}[m_{\tilde d}^{p}]\,\delta_{i1i2} -$$

$$\frac{5}{216}\sum_p g_1^4\,LF_{4,-1}[m_{\tilde d}^{p}]\,\delta_{i1i2} + \frac{4}{405}\sum_p g_1^4\,LF_{5,-2}[m_{\tilde d}^{p}]\,\delta_{i1i2} + \frac{1}{27}\sum_p g_1^4\,LF_{3,0}[m_{\tilde e}^{p}]\,\delta_{i1i2} -$$

$$\frac{5}{72}\sum_p g_1^4\,LF_{4,-1}[m_{\tilde e}^{p}]\,\delta_{i1i2} + \frac{4}{135}\sum_p g_1^4\,LF_{5,-2}[m_{\tilde e}^{p}]\,\delta_{i1i2} + \frac{1}{54}\sum_p g_1^4\,LF_{3,0}[m_{\tilde l}^{p}]\,\delta_{i1i2} -$$

$$\frac{5}{144}\sum_p g_1^4\,LF_{4,-1}[m_{\tilde l}^{p}]\,\delta_{i1i2} + \frac{2}{135}\sum_p g_1^4\,LF_{5,-2}[m_{\tilde l}^{p}]\,\delta_{i1i2} +$$

$$\frac{1}{162}\sum_p g_1^4\,LF_{3,0}[m_{\tilde q}^{p}]\,\delta_{i1i2} - \frac{5}{432}\sum_p g_1^4\,LF_{4,-1}[m_{\tilde q}^{p}]\,\delta_{i1i2} + \frac{2}{405}\sum_p g_1^4\,LF_{5,-2}[m_{\tilde q}^{p}]\,\delta_{i1i2} +$$

$$\frac{4}{81}\sum_p g_1^4\,LF_{3,0}[m_{\tilde u}^{p}]\,\delta_{i1i2} - \frac{5}{54}\sum_p g_1^4\,LF_{4,-1}[m_{\tilde u}^{p}]\,\delta_{i1i2} + \frac{16}{405}\sum_p g_1^4\,LF_{5,-2}[m_{\tilde u}^{p}]\,\delta_{i1i2} +$$

$$\frac{1}{18}\Big(s_\gamma^2\,\overline{y_d}^{i2p}\,(g_1^2\,y_d^{i1p} - 9\,c_\gamma^2\,\overline{y_d}^{rs}\,y_d^{rp}\,y_d^{i1s}) + c_\gamma^2\,\overline{y_u}^{i2p}\,(-2\,g_1^2\,y_u^{i1p} + 9\,s_\gamma^2\,\overline{y_u}^{rs}\,y_u^{rp}\,y_u^{i1s})\Big)$$

$$LF_{1,2}[m_\Phi] + \frac{1}{24}\,g_1^2\,(-s_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} + c_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,1}[m_\Phi] +$$

$$\frac{1}{216}\,g_1^2\,(9\,s_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} - 9\,c_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p} + 4\,g_1^2\,\delta_{i1i2})\,LF_{3,0}[m_\Phi] -$$

$$\frac{5}{144}\,g_1^4\,LF_{4,-1}[m_\Phi]\,\delta_{i1i2} + \frac{2}{135}\,g_1^4\,LF_{5,-2}[m_\Phi]\,\delta_{i1i2} + \frac{1}{54}\,g_1^4\,LF_{3,0}[\tilde\mu]\,\delta_{i1i2} +$$

$$\frac{1}{36}\,g_1^4\,LF_{4,-1}[\tilde\mu]\,\delta_{i1i2} - \frac{4}{135}\,g_1^4\,LF_{5,-2}[\tilde\mu]\,\delta_{i1i2} + \frac{1}{18}\,g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,0}[m_1, m_{\tilde d}^{p}] -$$

$$\frac{1}{9}\,g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{3,1,-1}[m_1, m_{\tilde d}^{p}] + \frac{1}{18}\,g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{4,1,-2}[m_1, m_{\tilde d}^{p}] +$$

$$\frac{1}{1296}\,g_1^4\,LF_{2,1,0}[m_1, m_{\tilde q}^{i2}]\,\delta_{i1i2} + \frac{1}{1296}\,g_1^4\,LF_{2,2,-1}[m_1, m_{\tilde q}^{i2}]\,\delta_{i1i2} -$$

$$\frac{1}{648}\,g_1^4\,LF_{3,1,-1}[m_1, m_{\tilde q}^{i2}]\,\delta_{i1i2} + \frac{1}{1296}\,g_1^4\,LF_{4,1,-2}[m_1, m_{\tilde q}^{i2}]\,\delta_{i1i2} -$$

$$\frac{2}{9}\,g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,0}[m_1, m_{\tilde u}^{p}] + \frac{4}{9}\,g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{3,1,-1}[m_1, m_{\tilde u}^{p}] -$$

$$\frac{2}{9}\,g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{4,1,-2}[m_1, m_{\tilde u}^{p}] + \frac{1}{48}\,g_1^2\,g_2^2\,LF_{2,1,0}[m_2, m_{\tilde q}^{i2}]\,\delta_{i1i2} +$$

$$\frac{1}{48}\,g_1^2\,g_2^2\,LF_{2,2,-1}[m_2, m_{\tilde q}^{i2}]\,\delta_{i1i2} - \frac{1}{24}\,g_1^2\,g_2^2\,LF_{3,1,-1}[m_2, m_{\tilde q}^{i2}]\,\delta_{i1i2} +$$

$$\frac{1}{48}\,g_1^2\,g_2^2\,LF_{4,1,-2}[m_2, m_{\tilde q}^{i2}]\,\delta_{i1i2} + \frac{2}{3}\,g_3^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,0}[m_3, m_{\tilde d}^{p}] -$$

$$\frac{4}{3}\,g_3^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{3,1,-1}[m_3, m_{\tilde d}^{p}] + \frac{2}{3}\,g_3^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{4,1,-2}[m_3, m_{\tilde d}^{p}] +$$

$$\frac{1}{27}\,g_1^2\,g_3^2\,LF_{2,1,0}[m_3, m_{\tilde q}^{i2}]\,\delta_{i1i2} + \frac{1}{27}\,g_1^2\,g_3^2\,LF_{2,2,-1}[m_3, m_{\tilde q}^{i2}]\,\delta_{i1i2} -$$

$$\frac{2}{27}\,g_1^2\,g_3^2\,LF_{3,1,-1}[m_3, m_{\tilde q}^{i2}]\,\delta_{i1i2} + \frac{1}{27}\,g_1^2\,g_3^2\,LF_{4,1,-2}[m_3, m_{\tilde q}^{i2}]\,\delta_{i1i2} -$$

$$\frac{2}{3}\,g_3^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,0}[m_3, m_{\tilde u}^{p}] + \frac{4}{3}\,g_3^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{3,1,-1}[m_3, m_{\tilde u}^{p}] -$$

$$\frac{2}{3}\,g_3^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{4,1,-2}[m_3, m_{\tilde u}^{p}] + \frac{1}{18}\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,0}[m_{\tilde d}^{p}, \tilde\mu] -$$

$$\frac{1}{36}\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,2,-1}[m_{\tilde d}^{p}, \tilde\mu] - \frac{1}{36}\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{3,1,-1}[m_{\tilde d}^{p}, \tilde\mu] +$$

$$\frac{1}{18}\,g_1^2\,(c_\gamma\,\overline{a_d}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_d}^{pr})\,(c_\gamma\,a_d^{pr} - s_\gamma\,\tilde\mu\,y_d^{pr})\,LF_{2,2,0}[m_{\tilde d}^{r}, m_{\tilde q}^{p}]\,\delta_{i1i2} -$$

$$\frac{1}{36}\,g_1^2\,(c_\gamma\,\overline{a_d}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_d}^{pr})\,(c_\gamma\,a_d^{pr} - s_\gamma\,\tilde\mu\,y_d^{pr})\,LF_{3,2,-1}[m_{\tilde d}^{r}, m_{\tilde q}^{p}]\,\delta_{i1i2} +$$

$$\frac{1}{18}\,g_1^2\,(c_\gamma\,\overline{a_e}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_e}^{pr})\,(c_\gamma\,a_e^{pr} - s_\gamma\,\tilde\mu\,y_e^{pr})\,LF_{2,2,0}[m_{\tilde e}^{r}, m_{\tilde l}^{p}]\,\delta_{i1i2} -$$

$$\frac{1}{36}\,g_1^2\,(c_\gamma\,\overline{a_e}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_e}^{pr})\,(c_\gamma\,a_e^{pr} - s_\gamma\,\tilde\mu\,y_e^{pr})\,LF_{3,2,-1}[m_{\tilde e}^{r}, m_{\tilde l}^{p}]\,\delta_{i1i2} -$$

$$\frac{1}{18}\,g_1^2\,(c_\gamma\,\overline{a_e}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_e}^{pr})\,(c_\gamma\,a_e^{pr} - s_\gamma\,\tilde\mu\,y_e^{pr})\,LF_{3,1,0}[m_{\tilde l}^{p}, m_{\tilde e}^{r}]\,\delta_{i1i2} -$$

$$\frac{1}{18}\,g_1^2\,(c_\gamma\,\overline{a_e}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_e}^{pr})\,(c_\gamma\,a_e^{pr} - s_\gamma\,\tilde\mu\,y_e^{pr})\,LF_{3,2,-1}[m_{\tilde l}^{p}, m_{\tilde e}^{r}]\,\delta_{i1i2} +$$

$$\frac{1}{8}\,g_1^2\,(c_\gamma\,\overline{a_e}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_e}^{pr})\,(c_\gamma\,a_e^{pr} - s_\gamma\,\tilde\mu\,y_e^{pr})\,LF_{4,1,-1}[m_{\tilde l}^{p}, m_{\tilde e}^{r}]\,\delta_{i1i2} -$$

$$\frac{1}{18}\,g_1^2\,(c_\gamma\,\overline{a_e}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_e}^{pr})\,(c_\gamma\,a_e^{pr} - s_\gamma\,\tilde\mu\,y_e^{pr})\,LF_{5,1,-2}[m_{\tilde l}^{p}, m_{\tilde e}^{r}]\,\delta_{i1i2} -$$

$$\frac{1}{18}\,g_1^2\,(c_\gamma\,\overline{a_d}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_d}^{pr})\,(c_\gamma\,a_d^{pr} - s_\gamma\,\tilde\mu\,y_d^{pr})\,LF_{3,1,0}[m_{\tilde q}^{p}, m_{\tilde d}^{r}]\,\delta_{i1i2} -$$

$$\frac{1}{18}\,g_1^2\,(c_\gamma\,\overline{a_d}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_d}^{pr})\,(c_\gamma\,a_d^{pr} - s_\gamma\,\tilde\mu\,y_d^{pr})\,LF_{3,2,-1}[m_{\tilde q}^{p}, m_{\tilde d}^{r}]\,\delta_{i1i2} +$$

$$\frac{5}{24}\,g_1^2\,(c_\gamma\,\overline{a_d}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_d}^{pr})\,(c_\gamma\,a_d^{pr} - s_\gamma\,\tilde\mu\,y_d^{pr})\,LF_{4,1,-1}[m_{\tilde q}^{p}, m_{\tilde d}^{r}]\,\delta_{i1i2} -$$

$$\frac{1}{6}\,g_1^2\,(c_\gamma\,\overline{a_d}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_d}^{pr})\,(c_\gamma\,a_d^{pr} - s_\gamma\,\tilde\mu\,y_d^{pr})\,LF_{5,1,-2}[m_{\tilde q}^{p}, m_{\tilde d}^{r}]\,\delta_{i1i2} -$$

$$\frac{1}{36}\,g_1^2\,(s_\gamma\,\overline{a_u}^{pr} - \tilde\mu\,c_\gamma\,\overline{y_u}^{pr})\,(s_\gamma\,a_u^{pr} - \tilde\mu\,c_\gamma\,y_u^{pr})\,LF_{2,2,0}[m_{\tilde u}^{r}, m_{\tilde q}^{p}]\,\delta_{i1i2} +$$

$$\frac{1}{72}\,g_1^2\,(s_\gamma\,\overline{a_u}^{pr} - \tilde\mu\,c_\gamma\,\overline{y_u}^{pr})\,(s_\gamma\,a_u^{pr} - \tilde\mu\,c_\gamma\,y_u^{pr})\,LF_{3,2,-1}[m_{\tilde u}^{r}, m_{\tilde q}^{p}]\,\delta_{i1i2} -$$

$$\frac{1}{648}\,g_1^4\,LF_{2,1,0}[m_{\tilde q}^{i2}, m_1]\,\delta_{i1i2} + \frac{1}{1296}\,g_1^4\,LF_{3,1,-1}[m_{\tilde q}^{i2}, m_1]\,\delta_{i1i2} -$$

$$\frac{1}{24}\,g_1^2\,g_2^2\,LF_{2,1,0}[m_{\tilde q}^{i2}, m_2]\,\delta_{i1i2} + \frac{1}{48}\,g_1^2\,g_2^2\,LF_{3,1,-1}[m_{\tilde q}^{i2}, m_2]\,\delta_{i1i2} -$$

$$\frac{2}{27}\,g_1^2\,g_3^2\,LF_{2,1,0}[m_{\tilde q}^{i2}, m_3]\,\delta_{i1i2} + \frac{1}{27}\,g_1^2\,g_3^2\,LF_{3,1,-1}[m_{\tilde q}^{i2}, m_3]\,\delta_{i1i2} -$$

$$\frac{1}{9}\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,0}[m_{\tilde u}^{p}, \tilde\mu] + \frac{1}{18}\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,2,-1}[m_{\tilde u}^{p}, \tilde\mu] + \frac{1}{18}\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}$$

$$LF_{3,1,-1}[m_{\tilde u}^{p}, \tilde\mu] + \frac{1}{36}\,g_1^2\,(s_\gamma\,\overline{a_u}^{pr} - \tilde\mu\,c_\gamma\,\overline{y_u}^{pr})\,(s_\gamma\,a_u^{pr} - \tilde\mu\,c_\gamma\,y_u^{pr})\,LF_{3,1,0}[m_{\tilde u}^{r}, m_{\tilde q}^{p}]\,\delta_{i1i2} +$$

$$\frac{1}{36}\,g_1^2\,(s_\gamma\,\overline{a_u}^{pr} - \tilde\mu\,c_\gamma\,\overline{y_u}^{pr})\,(s_\gamma\,a_u^{pr} - \tilde\mu\,c_\gamma\,y_u^{pr})\,LF_{3,2,-1}[m_{\tilde u}^{r}, m_{\tilde q}^{p}]\,\delta_{i1i2} +$$

$$\frac{1}{12}\,g_1^2\,(s_\gamma\,\overline{a_u}^{pr} - \tilde\mu\,c_\gamma\,\overline{y_u}^{pr})\,(s_\gamma\,a_u^{pr} - \tilde\mu\,c_\gamma\,y_u^{pr})\,LF_{4,1,-1}[m_{\tilde u}^{r}, m_{\tilde q}^{p}]\,\delta_{i1i2} -$$

$$\frac{1}{6}\,g_1^2\,(s_\gamma\,\overline{a_u}^{pr} - \tilde\mu\,c_\gamma\,\overline{y_u}^{pr})\,(s_\gamma\,a_u^{pr} - \tilde\mu\,c_\gamma\,y_u^{pr})\,LF_{5,1,-2}[m_{\tilde u}^{r}, m_{\tilde q}^{p}]\,\delta_{i1i2} -$$

$$\frac{5}{72}\,g_1^4\,(c_\gamma^2 + s_\gamma^2)\,LF_{4,1,-2}[\tilde\mu, m_1]\,\delta_{i1i2} - \frac{1}{12}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^4\,LF_{4,1,-1}[\tilde\mu, m_1]\,\delta_{i1i2} +$$

$$\frac{1}{18}\,g_1^4\,(c_\gamma^2 + s_\gamma^2)\,LF_{5,1,-3}[\tilde\mu, m_1]\,\delta_{i1i2} + \frac{1}{9}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^4\,LF_{5,1,-2}[\tilde\mu, m_1]\,\delta_{i1i2} -$$

$$\frac{5}{24}\,g_1^2\,g_2^2\,(c_\gamma^2 + s_\gamma^2)\,LF_{4,1,-2}[\tilde\mu, m_2]\,\delta_{i1i2} -$$

$$\frac{1}{4}\,m_2\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,g_2^2\,LF_{4,1,-1}[\tilde\mu, m_2]\,\delta_{i1i2} + \frac{1}{6}\,g_1^2\,g_2^2\,(c_\gamma^2 + s_\gamma^2)\,LF_{5,1,-3}[\tilde\mu, m_2]\,\delta_{i1i2} +$$

$$\frac{1}{3}\,m_2\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,g_2^2\,LF_{5,1,-2}[\tilde\mu, m_2]\,\delta_{i1i2} - \frac{1}{36}\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,0}[\tilde\mu, m_{\tilde d}^{p}] -$$

$$\frac{5}{72}\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{3,1,-1}[\tilde\mu, m_{\tilde d}^{p}] + \frac{1}{72}\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{4,1,-2}[\tilde\mu, m_{\tilde d}^{p}] +$$

$$\frac{1}{2}\,(c_\gamma^2\,\overline{y_d}^{rs}\,\overline{y_d}^{i2p}\,y_d^{rp}\,y_d^{i1s} - s_\gamma^2\,\overline{y_u}^{rs}\,\overline{y_u}^{i2p}\,y_u^{rp}\,y_u^{i1s})\,LF_{2,1,0}[\tilde\mu, m_{\tilde q}^{r}] +$$

$$(-c_\gamma^2\,\overline{y_d}^{rs}\,\overline{y_d}^{i2p}\,y_d^{rp}\,y_d^{i1s} + s_\gamma^2\,\overline{y_u}^{rs}\,\overline{y_u}^{i2p}\,y_u^{rp}\,y_u^{i1s})\,LF_{3,1,-1}[\tilde\mu, m_{\tilde q}^{r}] +$$

$$\frac{1}{2}\,(c_\gamma^2\,\overline{y_d}^{rs}\,\overline{y_d}^{i2p}\,y_d^{rp}\,y_d^{i1s} - s_\gamma^2\,\overline{y_u}^{rs}\,\overline{y_u}^{i2p}\,y_u^{rp}\,y_u^{i1s})\,LF_{4,1,-2}[\tilde\mu, m_{\tilde q}^{r}] +$$

$$\frac{1}{18}\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,0}[\tilde\mu, m_{\tilde u}^{p}] + \frac{1}{72}\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{3,1,-1}[\tilde\mu, m_{\tilde u}^{p}] +$$

$$\frac{1}{72}\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{4,1,-2}[\tilde\mu, m_{\tilde u}^{p}] + \frac{1}{72}\,m_1\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})$$

$$LF_{2,1,1,0}[m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i1}] + \frac{1}{144}\,m_1\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,2,1,-1}[m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{72}\,m_1\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\,(-c_\gamma\,a_d^{i1p} + s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{3,1,1,-1}[m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{72}\,m_1\,c_\gamma\,g_1^2\,y_d^{i1p}\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,1,1,0}[m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i2}] +$$

$$\frac{1}{144}\,m_1\,c_\gamma\,g_1^2\,y_d^{i1p}\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,2,1,-1}[m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i2}] +$$

$$\frac{1}{72}\,m_1\,c_\gamma\,g_1^2\,y_d^{i1p}\,(-c_\gamma\,\overline{a_d}^{i2p} + s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{3,1,1,-1}[m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i2}] -$$

$$\frac{1}{4}\,g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,1,-1}[m_1, m_{\tilde d}^{p}, \tilde\mu] - \frac{1}{6}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,1,0}[m_1, m_{\tilde d}^{p}, \tilde\mu] +$$

$$\frac{1}{6}\,g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{3,1,1,-2}[m_1, m_{\tilde d}^{p}, \tilde\mu] + \frac{1}{6}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{3,1,1,-1}[m_1, m_{\tilde d}^{p}, \tilde\mu] +$$

$$\frac{1}{144}\,m_1\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\,(-c_\gamma\,a_d^{i1p} + s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,2,1,-1}[m_1, m_{\tilde q}^{i1}, m_{\tilde d}^{p}] +$$

$$\frac{1}{36}\,m_1\,s_\gamma\,g_1^2\,\overline{y_u}^{i2p}\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,0}[m_1, m_{\tilde q}^{i1}, m_{\tilde u}^{p}] +$$

$$\frac{1}{72}\,m_1\,s_\gamma\,g_1^2\,\overline{y_u}^{i2p}\,(-s_\gamma\,a_u^{i1p} + \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,2,1,-1}[m_1, m_{\tilde q}^{i1}, m_{\tilde u}^{p}] +$$

$$\frac{1}{36}\,m_1\,s_\gamma\,g_1^2\,\overline{y_u}^{i2p}\,(-s_\gamma\,a_u^{i1p} + \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{3,1,1,-1}[m_1, m_{\tilde q}^{i1}, m_{\tilde u}^{p}] +$$

$$\frac{1}{144}\,m_1\,c_\gamma\,g_1^2\,y_d^{i1p}\,(-c_\gamma\,\overline{a_d}^{i2p} + s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,2,1,-1}[m_1, m_{\tilde q}^{i2}, m_{\tilde d}^{p}] +$$

$$\frac{1}{36}\,m_1\,s_\gamma\,g_1^2\,y_u^{i1p}\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,1,1,0}[m_1, m_{\tilde q}^{i2}, m_{\tilde u}^{p}] +$$

$$\frac{1}{72}\,m_1\,s_\gamma\,g_1^2\,y_u^{i1p}\,(-s_\gamma\,\overline{a_u}^{i2p} + \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,2,1,-1}[m_1, m_{\tilde q}^{i2}, m_{\tilde u}^{p}] +$$

$$\frac{1}{36}\,m_1\,s_\gamma\,g_1^2\,y_u^{i1p}\,(-s_\gamma\,\overline{a_u}^{i2p} + \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{3,1,1,-1}[m_1, m_{\tilde q}^{i2}, m_{\tilde u}^{p}] +$$

$$\frac{1}{144}\,g_1^4\,(c_\gamma^2 - s_\gamma^2)\,LF_{2,1,1,-1}[m_1, m_{\tilde q}^{i2}, \tilde\mu]\,\delta_{i1i2} +$$

$$\frac{1}{72}\,g_1^4\,m_1^2\,(c_\gamma^2 - s_\gamma^2)\,LF_{2,1,1,0}[m_1, m_{\tilde q}^{i2}, \tilde\mu]\,\delta_{i1i2} +$$

$$\frac{1}{72}\,m_1\,s_\gamma\,g_1^2\,\overline{y_u}^{i2p}\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,2,1,-1}[m_1, m_{\tilde u}^{p}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{72}\,m_1\,s_\gamma\,g_1^2\,y_u^{i1p}\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,2,1,-1}[m_1, m_{\tilde u}^{p}, m_{\tilde q}^{i2}] +$$

$$\frac{1}{2}\,g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,1,-1}[m_1, m_{\tilde u}^{p}, \tilde\mu] + \frac{1}{3}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,1,0}[m_1, m_{\tilde u}^{p}, \tilde\mu] -$$

$$\frac{1}{3}\,g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{3,1,1,-2}[m_1, m_{\tilde u}^{p}, \tilde\mu] - \frac{1}{3}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{3,1,1,-1}[m_1, m_{\tilde u}^{p}, \tilde\mu] +$$

$$\frac{7}{48}\,g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,2,1,-2}[m_1, \tilde\mu, m_{\tilde d}^{p}] +$$

$$\frac{1}{48}\,s_\gamma\,\tilde\mu\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,(10\,m_1\,c_\gamma + 3\,s_\gamma\,\tilde\mu)\,LF_{2,2,1,-1}[m_1, \tilde\mu, m_{\tilde d}^{p}] +$$

$$\frac{1}{48}\,g_1^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} + s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,2,1,-2}[m_1, \tilde\mu, m_{\tilde q}^{i1}] +$$

$$\frac{1}{48}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,(\overline{y_d}^{i2p}\,y_d^{i1p} + \overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,2,1,-1}[m_1, \tilde\mu, m_{\tilde q}^{i1}] +$$

$$\frac{1}{144}\,g_1^2\,(3\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} + 3\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p} + g_1^2\,(c_\gamma^2 - s_\gamma^2)\,\delta_{i1i2})\,LF_{2,2,1,-2}[m_1, \tilde\mu, m_{\tilde q}^{i2}] +$$

$$\frac{1}{144}\,m_1\,g_1^2\,(3\,s_\gamma\,\tilde\mu\,c_\gamma\,(\overline{y_d}^{i2p}\,y_d^{i1p} + \overline{y_u}^{i2p}\,y_u^{i1p}) + m_1\,g_1^2\,(-c_\gamma^2 + s_\gamma^2)\,\delta_{i1i2})$$

$$LF_{2,2,1,-1}[m_1, \tilde\mu, m_{\tilde q}^{i2}] - \frac{11}{48}\,g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,2,1,-2}[m_1, \tilde\mu, m_{\tilde u}^{p}] -$$

$$\frac{1}{48}\,\tilde\mu\,c_\gamma\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,(14\,m_1\,s_\gamma + 3\,\tilde\mu\,c_\gamma)\,LF_{2,2,1,-1}[m_1, \tilde\mu, m_{\tilde u}^{p}] +$$

$$\frac{3}{16}\,g_2^4\,(c_\gamma^2 - s_\gamma^2)\,LF_{2,1,1,-1}[m_2, m_{\tilde q}^{i2}, \tilde\mu]\,\delta_{i1i2} +$$

$$\frac{3}{8}\,g_2^4\,m_2^2\,(c_\gamma^2 - s_\gamma^2)\,LF_{2,1,1,0}[m_2, m_{\tilde q}^{i2}, \tilde\mu]\,\delta_{i1i2} + \frac{3}{16}\,g_2^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,2,1,-2}[m_2, \tilde\mu, m_{\tilde d}^{p}] +$$

$$\frac{3}{16}\,s_\gamma\,\tilde\mu\,g_2^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,(2\,m_2\,c_\gamma + s_\gamma\,\tilde\mu)\,LF_{2,2,1,-1}[m_2, \tilde\mu, m_{\tilde d}^{p}] +$$

$$\frac{3}{16}\,g_2^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} - s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,2,1,-2}[m_2, \tilde\mu, m_{\tilde q}^{i1}] +$$

$$\frac{3}{16}\,m_2\,s_\gamma\,\tilde\mu\,c_\gamma\,g_2^2\,(\overline{y_d}^{i2p}\,y_d^{i1p} - \overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,2,1,-1}[m_2, \tilde\mu, m_{\tilde q}^{i1}] +$$

$$\frac{3}{16}\,g_2^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} - s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p} + g_2^2\,(c_\gamma^2 - s_\gamma^2)\,\delta_{i1i2})\,LF_{2,2,1,-2}[m_2, \tilde\mu, m_{\tilde q}^{i2}] +$$

$$\frac{3}{16}\,m_2\,g_2^2\,(s_\gamma\,\tilde\mu\,c_\gamma\,(\overline{y_d}^{i2p}\,y_d^{i1p} - \overline{y_u}^{i2p}\,y_u^{i1p}) + m_2\,g_2^2\,(-c_\gamma^2 + s_\gamma^2)\,\delta_{i1i2})\,LF_{2,2,1,-1}[m_2, \tilde\mu, m_{\tilde q}^{i2}] -$$

$$\frac{3}{16}\,g_2^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,2,1,-2}[m_2, \tilde\mu, m_{\tilde u}^{p}] -$$

$$\frac{3}{16}\,\tilde\mu\,c_\gamma\,g_2^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,(2\,m_2\,s_\gamma + \tilde\mu\,c_\gamma)\,LF_{2,2,1,-1}[m_2, \tilde\mu, m_{\tilde u}^{p}] +$$

$$\frac{1}{3}\,m_3\,c_\gamma\,g_3^2\,\overline{y_d}^{i2p}\,(-c_\gamma\,a_d^{i1p} + s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,0}[m_3, m_{\tilde d}^{p}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{6}\,m_3\,c_\gamma\,g_3^2\,\overline{y_d}^{i2p}\,(-c_\gamma\,a_d^{i1p} + s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,2,1,-1}[m_3, m_{\tilde d}^{p}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{3}\,m_3\,c_\gamma\,g_3^2\,\overline{y_d}^{i2p}\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{3,1,1,-1}[m_3, m_{\tilde d}^{p}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{3}\,m_3\,c_\gamma\,g_3^2\,y_d^{i1p}\,(-c_\gamma\,\overline{a_d}^{i2p} + s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,1,1,0}[m_3, m_{\tilde d}^{p}, m_{\tilde q}^{i2}] +$$

$$\frac{1}{6}\,m_3\,c_\gamma\,g_3^2\,y_d^{i1p}\,(-c_\gamma\,\overline{a_d}^{i2p} + s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,2,1,-1}[m_3, m_{\tilde d}^{p}, m_{\tilde q}^{i2}] +$$

$$\frac{1}{3}\,m_3\,c_\gamma\,g_3^2\,y_d^{i1p}\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{3,1,1,-1}[m_3, m_{\tilde d}^{p}, m_{\tilde q}^{i2}] +$$

$$\frac{1}{6}\,m_3\,c_\gamma\,g_3^2\,\overline{y_d}^{i2p}\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,2,1,-1}[m_3, m_{\tilde q}^{i1}, m_{\tilde d}^{p}] +$$

$$\frac{1}{3}\,m_3\,s_\gamma\,g_3^2\,\overline{y_u}^{i2p}\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,0}[m_3, m_{\tilde q}^{i1}, m_{\tilde u}^{p}] +$$

$$\frac{1}{6}\,m_3\,s_\gamma\,g_3^2\,\overline{y_u}^{i2p}\,(-s_\gamma\,a_u^{i1p} + \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,2,1,-1}[m_3, m_{\tilde q}^{i1}, m_{\tilde u}^{p}] +$$

$$\frac{1}{3}\,m_3\,s_\gamma\,g_3^2\,\overline{y_u}^{i2p}\,(-s_\gamma\,a_u^{i1p} + \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{3,1,1,-1}[m_3, m_{\tilde q}^{i1}, m_{\tilde u}^{p}] +$$

$$\frac{1}{6}\,m_3\,c_\gamma\,g_3^2\,y_d^{i1p}\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,2,1,-1}[m_3, m_{\tilde q}^{i2}, m_{\tilde d}^{p}] +$$

$$\frac{1}{3}\,m_3\,s_\gamma\,g_3^2\,y_u^{i1p}\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,1,1,0}[m_3, m_{\tilde q}^{i2}, m_{\tilde u}^{p}] +$$

$$\frac{1}{6}\,m_3\,s_\gamma\,g_3^2\,y_u^{i1p}\,(-s_\gamma\,\overline{a_u}^{i2p} + \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,2,1,-1}[m_3, m_{\tilde q}^{i2}, m_{\tilde u}^{p}] +$$

$$\frac{1}{3}\,m_3\,s_\gamma\,g_3^2\,y_u^{i1p}\,(-s_\gamma\,\overline{a_u}^{i2p} + \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{3,1,1,-1}[m_3, m_{\tilde q}^{i2}, m_{\tilde u}^{p}] +$$

$$\frac{1}{6}\,m_3\,s_\gamma\,g_3^2\,\overline{y_u}^{i2p}\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,2,1,-1}[m_3, m_{\tilde u}^{p}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{6}\,m_3\,s_\gamma\,g_3^2\,y_u^{i1p}\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,2,1,-1}[m_3, m_{\tilde u}^{p}, m_{\tilde q}^{i2}] +$$

$$\frac{1}{16}\,s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p}\,\overline{y_u}^{rs}\,y_u^{i1s}\,(c_\gamma\,a_d^{rp} - s_\gamma\,\tilde\mu\,y_d^{rp})\,LF_{2,2,1,-1}[m_{\tilde d}^{p}, \tilde\mu, m_{\tilde q}^{r}] +$$

$$\frac{1}{16}\,s_\gamma\,\tilde\mu\,y_d^{i1r}\,\overline{y_u}^{i2s}\,y_u^{ps}\,(c_\gamma\,\overline{a_d}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_d}^{pr})\,LF_{2,2,1,-1}[m_{\tilde d}^{r}, \tilde\mu, m_{\tilde q}^{p}] +$$

$$\frac{1}{16}\,s_\gamma\,\tilde\mu\,y_d^{i1r}\,\overline{y_u}^{i2s}\,y_u^{ps}\,(-c_\gamma\,\overline{a_d}^{pr} + s_\gamma\,\tilde\mu\,\overline{y_d}^{pr})\,LF_{2,2,1,-1}[m_{\tilde q}^{p}, \tilde\mu, m_{\tilde d}^{r}] +$$

$$\frac{1}{16}\,s_\gamma\,\tilde\mu\,c_\gamma\,\overline{y_d}^{i2s}\,y_d^{ps}\,y_u^{i1r}\,\overline{a_u}^{pr}\,LF_{2,2,1,-1}[m_{\tilde q}^{p}, \tilde\mu, m_{\tilde u}^{r}] +$$

$$\frac{1}{16}\,\tilde\mu\,c_\gamma\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2s}\,(s_\gamma\,a_u^{ps} - \tilde\mu\,c_\gamma\,y_u^{ps})\,LF_{2,2,1,-1}[m_{\tilde q}^{p}, \tilde\mu, m_{\tilde u}^{s}] +$$

$$\frac{1}{16}\,s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p}\,\overline{y_u}^{rs}\,y_u^{i1s}\,(-c_\gamma\,a_d^{rp} + s_\gamma\,\tilde\mu\,y_d^{rp})\,LF_{2,2,1,-1}[m_{\tilde q}^{r}, \tilde\mu, m_{\tilde d}^{p}] -$$

$$\frac{1}{16}\,\tilde\mu^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{rp}\,\overline{y_u}^{rs}\,y_u^{i1s}\,LF_{2,2,1,-1}[m_{\tilde q}^{r}, \tilde\mu, m_{\tilde u}^{s}] -$$

$$\frac{1}{16}\,s_\gamma\,\tilde\mu\,c_\gamma\,\overline{y_d}^{i2s}\,y_d^{ps}\,y_u^{i1r}\,\overline{a_u}^{pr}\,LF_{2,2,1,-1}[m_{\tilde u}^{r}, \tilde\mu, m_{\tilde q}^{p}] +$$

$$\frac{1}{16}\,\tilde\mu\,c_\gamma\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2s}\,(-s_\gamma\,a_u^{ps} + \tilde\mu\,c_\gamma\,y_u^{ps})\,LF_{2,2,1,-1}[m_{\tilde u}^{s}, \tilde\mu, m_{\tilde q}^{p}] +$$

$$\frac{1}{16}\,\tilde\mu^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{rp}\,\overline{y_u}^{rs}\,y_u^{i1s}\,LF_{2,2,1,-1}[m_{\tilde u}^{s}, \tilde\mu, m_{\tilde q}^{r}] +$$

$$\frac{1}{16}\,g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,1,-1}[\tilde\mu, m_1, m_{\tilde d}^{p}] - \frac{1}{8}\,g_1^2\,s_\gamma^2\,\tilde\mu^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,1,0}[\tilde\mu, m_1, m_{\tilde d}^{p}] -$$

$$\frac{1}{16}\,g_1^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} + s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,1,1,-1}[\tilde\mu, m_1, m_{\tilde q}^{i1}] -$$

$$\frac{1}{24}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,(\overline{y_d}^{i2p}\,y_d^{i1p} + \overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,1,1,0}[\tilde\mu, m_1, m_{\tilde q}^{i1}] +$$

$$\frac{1}{24}\,g_1^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} + s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{3,1,1,-2}[\tilde\mu, m_1, m_{\tilde q}^{i1}] +$$

$$\frac{1}{24}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,(\overline{y_d}^{i2p}\,y_d^{i1p} + \overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{3,1,1,-1}[\tilde\mu, m_1, m_{\tilde q}^{i1}] -$$

$$\frac{1}{16}\,g_1^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} + s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,1,1,-1}[\tilde\mu, m_1, m_{\tilde q}^{i2}] -$$

$$\frac{1}{24}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,(\overline{y_d}^{i2p}\,y_d^{i1p} + \overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,1,1,0}[\tilde\mu, m_1, m_{\tilde q}^{i2}] +$$

$$\frac{1}{24}\,g_1^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} + s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{3,1,1,-2}[\tilde\mu, m_1, m_{\tilde q}^{i2}] +$$

$$\frac{1}{24}\,m_1\,s_\gamma\,\tilde\mu\,c_\gamma\,g_1^2\,(\overline{y_d}^{i2p}\,y_d^{i1p} + \overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{3,1,1,-1}[\tilde\mu, m_1, m_{\tilde q}^{i2}] -$$

$$\frac{1}{16}\,g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,1,-1}[\tilde\mu, m_1, m_{\tilde u}^{p}] + \frac{1}{8}\,g_1^2\,\tilde\mu^2\,c_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,1,0}[\tilde\mu, m_1, m_{\tilde u}^{p}] +$$

$$\frac{3}{16}\,g_2^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,1,-1}[\tilde\mu, m_2, m_{\tilde d}^{p}] - \frac{3}{8}\,g_2^2\,s_\gamma^2\,\tilde\mu^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,1,0}[\tilde\mu, m_2, m_{\tilde d}^{p}] -$$

$$\frac{9}{16}\,g_2^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} - s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,1,1,-1}[\tilde\mu, m_2, m_{\tilde q}^{i1}] +$$

$$\frac{3}{8}\,m_2\,s_\gamma\,\tilde\mu\,c_\gamma\,g_2^2\,(-\overline{y_d}^{i2p}\,y_d^{i1p} + \overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,1,1,0}[\tilde\mu, m_2, m_{\tilde q}^{i1}] +$$

$$\frac{3}{8}\,g_2^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} - s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{3,1,1,-2}[\tilde\mu, m_2, m_{\tilde q}^{i1}] +$$

$$\frac{3}{8}\,m_2\,s_\gamma\,\tilde\mu\,c_\gamma\,g_2^2\,(\overline{y_d}^{i2p}\,y_d^{i1p} - \overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{3,1,1,-1}[\tilde\mu, m_2, m_{\tilde q}^{i1}] -$$

$$\frac{9}{16}\,g_2^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} - s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,1,1,-1}[\tilde\mu, m_2, m_{\tilde q}^{i2}] +$$

$$\frac{3}{8}\,m_2\,s_\gamma\,\tilde\mu\,c_\gamma\,g_2^2\,(-\overline{y_d}^{i2p}\,y_d^{i1p} + \overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{2,1,1,0}[\tilde\mu, m_2, m_{\tilde q}^{i2}] +$$

$$\frac{3}{8}\,g_2^2\,(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p} - s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{3,1,1,-2}[\tilde\mu, m_2, m_{\tilde q}^{i2}] +$$

$$\frac{3}{8}\,m_2\,s_\gamma\,\tilde\mu\,c_\gamma\,g_2^2\,(\overline{y_d}^{i2p}\,y_d^{i1p} - \overline{y_u}^{i2p}\,y_u^{i1p})\,LF_{3,1,1,-1}[\tilde\mu, m_2, m_{\tilde q}^{i2}] -$$

$$\frac{3}{16}\,g_2^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,1,-1}[\tilde\mu, m_2, m_{\tilde u}^{p}] + \frac{3}{8}\,g_2^2\,\tilde\mu^2\,c_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,1,0}[\tilde\mu, m_2, m_{\tilde u}^{p}] +$$

$$\frac{1}{8}\,s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p}\,\overline{y_u}^{rs}\,y_u^{i1s}\,(-c_\gamma\,a_d^{rp} + s_\gamma\,\tilde\mu\,y_d^{rp})\,LF_{2,1,1,0}[\tilde\mu, m_{\tilde d}^{p}, m_{\tilde q}^{r}] +$$

$$\frac{1}{8}\,s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p}\,\overline{y_u}^{rs}\,y_u^{i1s}\,(c_\gamma\,a_d^{rp} - s_\gamma\,\tilde\mu\,y_d^{rp})\,LF_{3,1,1,-1}[\tilde\mu, m_{\tilde d}^{p}, m_{\tilde q}^{r}] +$$

$$\frac{1}{8}\,s_\gamma\,\tilde\mu\,y_d^{i1r}\,\overline{y_u}^{i2s}\,y_u^{ps}\,(-c_\gamma\,\overline{a_d}^{pr} + s_\gamma\,\tilde\mu\,\overline{y_d}^{pr})\,LF_{2,1,1,0}[\tilde\mu, m_{\tilde d}^{r}, m_{\tilde q}^{p}] +$$

$$\frac{1}{8}\,s_\gamma\,\tilde\mu\,y_d^{i1r}\,\overline{y_u}^{i2s}\,y_u^{ps}\,(c_\gamma\,\overline{a_d}^{pr} - s_\gamma\,\tilde\mu\,\overline{y_d}^{pr})\,LF_{3,1,1,-1}[\tilde\mu, m_{\tilde d}^{r}, m_{\tilde q}^{p}] +$$

$$\frac{1}{8}\,s_\gamma\,\tilde\mu\,c_\gamma\,\overline{y_d}^{i2s}\,y_d^{ps}\,y_u^{i1r}\,\overline{a_u}^{pr}\,LF_{2,1,1,0}[\tilde\mu, m_{\tilde q}^{p}, m_{\tilde u}^{r}] -$$

$$\frac{1}{8}\,s_\gamma\,\tilde\mu\,c_\gamma\,\overline{y_d}^{i2s}\,y_d^{ps}\,y_u^{i1r}\,\overline{a_u}^{pr}\,LF_{3,1,1,-1}[\tilde\mu, m_{\tilde q}^{p}, m_{\tilde u}^{r}] +$$

$$\frac{1}{8}\,\tilde\mu\,c_\gamma\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2s}\,(s_\gamma\,a_u^{ps} - \tilde\mu\,c_\gamma\,y_u^{ps})\,LF_{2,1,1,0}[\tilde\mu, m_{\tilde q}^{p}, m_{\tilde u}^{s}] +$$

$$\frac{1}{8}\,\tilde\mu\,c_\gamma\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2s}\,(-s_\gamma\,a_u^{ps} + \tilde\mu\,c_\gamma\,y_u^{ps})\,LF_{3,1,1,-1}[\tilde\mu, m_{\tilde q}^{p}, m_{\tilde u}^{s}] -$$

$$\frac{1}{8}\,\tilde\mu^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{rp}\,\overline{y_u}^{rs}\,y_u^{i1s}\,LF_{2,1,1,0}[\tilde\mu, m_{\tilde q}^{r}, m_{\tilde u}^{s}] +$$

$$\frac{1}{8}\,\tilde\mu^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{rp}\,\overline{y_u}^{rs}\,y_u^{i1s}\,LF_{3,1,1,-1}[\tilde\mu, m_{\tilde q}^{r}, m_{\tilde u}^{s}] -$$

$$\frac{1}{48}\,g_1^2\,\overline{y_d}^{i2p}\,(m_1\,c_\gamma - s_\gamma\,\tilde\mu)\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{1,1,1,1,0}[m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i1}, \tilde\mu] -$$

$$\frac{1}{96}\,g_1^2\,\overline{y_d}^{i2p}\,(m_1\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,-1}[m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i1}, \tilde\mu] -$$

$$\frac{1}{48}\,g_1^2\,y_d^{i1p}\,(m_1\,c_\gamma - s_\gamma\,\tilde\mu)\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{1,1,1,1,0}[m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i2}, \tilde\mu] -$$

$$\frac{1}{96}\,g_1^2\,y_d^{i1p}\,(m_1\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,1,1,1,-1}[m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i2}, \tilde\mu] -$$

$$\frac{1}{48}\,g_1^2\,\overline{y_u}^{i2p}\,(m_1\,s_\gamma - \tilde\mu\,c_\gamma)\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{1,1,1,1,0}[m_1, m_{\tilde q}^{i1}, m_{\tilde u}^{p}, \tilde\mu] -$$

$$\frac{1}{96}\,g_1^2\,\overline{y_u}^{i2p}\,(m_1\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,-1}[m_1, m_{\tilde q}^{i1}, m_{\tilde u}^{p}, \tilde\mu] -$$

$$\frac{1}{48}\,g_1^2\,y_u^{i1p}\,(m_1\,s_\gamma - \tilde\mu\,c_\gamma)\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{1,1,1,1,0}[m_1, m_{\tilde q}^{i2}, m_{\tilde u}^{p}, \tilde\mu] -$$

$$\frac{1}{96}\,g_1^2\,y_u^{i1p}\,(m_1\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,1,1,1,-1}[m_1, m_{\tilde q}^{i2}, m_{\tilde u}^{p}, \tilde\mu] -$$

$$\frac{3}{16}\,g_2^2\,\overline{y_d}^{i2p}\,(m_2\,c_\gamma - s_\gamma\,\tilde\mu)\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{1,1,1,1,0}[m_2, m_{\tilde d}^{p}, m_{\tilde q}^{i1}, \tilde\mu] -$$

$$\frac{3}{32}\,g_2^2\,\overline{y_d}^{i2p}\,(m_2\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,-1}[m_2, m_{\tilde d}^{p}, m_{\tilde q}^{i1}, \tilde\mu] -$$

$$\frac{3}{16}\,g_2^2\,y_d^{i1p}\,(m_2\,c_\gamma - s_\gamma\,\tilde\mu)\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{1,1,1,1,0}[m_2, m_{\tilde d}^{p}, m_{\tilde q}^{i2}, \tilde\mu] -$$

$$\frac{3}{32}\,g_2^2\,y_d^{i1p}\,(m_2\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,1,1,1,-1}[m_2, m_{\tilde d}^{p}, m_{\tilde q}^{i2}, \tilde\mu] +$$

$$\frac{3}{16}\,g_2^2\,\overline{y_u}^{i2p}\,(m_2\,s_\gamma - \tilde\mu\,c_\gamma)\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{1,1,1,1,0}[m_2, m_{\tilde q}^{i1}, m_{\tilde u}^{p}, \tilde\mu] +$$

$$\frac{3}{32}\,g_2^2\,\overline{y_u}^{i2p}\,(m_2\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,-1}[m_2, m_{\tilde q}^{i1}, m_{\tilde u}^{p}, \tilde\mu] +$$

$$\frac{3}{16}\,g_2^2\,y_u^{i1p}\,(m_2\,s_\gamma - \tilde\mu\,c_\gamma)\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{1,1,1,1,0}[m_2, m_{\tilde q}^{i2}, m_{\tilde u}^{p}, \tilde\mu] +$$

$$\frac{3}{32}\,g_2^2\,y_u^{i1p}\,(m_2\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,1,1,1,-1}[m_2, m_{\tilde q}^{i2}, m_{\tilde u}^{p}, \tilde\mu] +$$

$$\frac{1}{96}\,g_1^2\,\overline{y_d}^{i2p}\,(m_1\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,-1}[m_{\tilde d}^{p}, m_1, m_{\tilde q}^{i1}, \tilde\mu] -$$

$$\frac{1}{144}\,g_1^2\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,1,-1}[m_{\tilde d}^{p}, m_1, m_{\tilde q}^{i2}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{96}\,g_1^2\,y_d^{i1p}\,(m_1\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,1,1,1,-1}[m_{\tilde d}^{p}, m_1, m_{\tilde q}^{i2}, \tilde\mu] +$$

$$\frac{3}{32}\,g_2^2\,\overline{y_d}^{i2p}\,(m_2\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,-1}[m_{\tilde d}^{p}, m_2, m_{\tilde q}^{i1}, \tilde\mu] -$$

$$\frac{3}{16}\,g_2^2\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,1,-1}[m_{\tilde d}^{p}, m_2, m_{\tilde q}^{i2}, m_{\tilde q}^{i1}] +$$

$$\frac{3}{32}\,g_2^2\,y_d^{i1p}\,(m_2\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,1,1,1,-1}[m_{\tilde d}^{p}, m_2, m_{\tilde q}^{i2}, \tilde\mu] -$$

$$\frac{1}{3}\,g_3^2\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,1,-1}[m_{\tilde d}^{p}, m_3, m_{\tilde q}^{i2}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{4}\,c_\gamma\,\overline{y_d}^{i2s}\,y_d^{i1r}\,\overline{a_d}^{pr}\,(c_\gamma\,a_d^{ps} - s_\gamma\,\tilde\mu\,y_d^{ps})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{p}, m_{\tilde d}^{r}, m_{\tilde d}^{s}, \tilde\mu] +$$

$$\frac{1}{4}\,s_\gamma\,\overline{y_u}^{i2s}\,y_u^{i1r}\,\overline{a_u}^{pr}\,(-s_\gamma\,a_u^{ps} + \tilde\mu\,c_\gamma\,y_u^{ps})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{p}, m_{\tilde u}^{r}, m_{\tilde u}^{s}, \tilde\mu] +$$

$$\frac{1}{4}\,s_\gamma\,\tilde\mu\,\overline{y_d}^{rs}\,\overline{y_d}^{i2p}\,y_d^{i1s}\,(-c_\gamma\,a_d^{rp} + s_\gamma\,\tilde\mu\,y_d^{rp})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{r}, m_{\tilde d}^{p}, m_{\tilde d}^{s}, \tilde\mu] +$$

$$\frac{1}{4}\,\tilde\mu\,c_\gamma\,\overline{y_u}^{rs}\,\overline{y_u}^{i2p}\,y_u^{i1s}\,(s_\gamma\,a_u^{rp} - \tilde\mu\,c_\gamma\,y_u^{rp})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{r}, m_{\tilde u}^{p}, m_{\tilde u}^{s}, \tilde\mu] -$$

$$\frac{1}{96}\,g_1^2\,\overline{y_d}^{i2p}\,(m_1\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{i1}, m_1, m_{\tilde d}^{p}, \tilde\mu] -$$

$$\frac{1}{96}\,g_1^2\,\overline{y_u}^{i2p}\,(m_1\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{i1}, m_1, m_{\tilde u}^{p}, \tilde\mu] -$$

$$\frac{3}{32}\,g_2^2\,\overline{y_d}^{i2p}\,(m_2\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{i1}, m_2, m_{\tilde d}^{p}, \tilde\mu] +$$

$$\frac{3}{32}\,g_2^2\,\overline{y_u}^{i2p}\,(m_2\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{i1}, m_2, m_{\tilde u}^{p}, \tilde\mu] -$$

$$\frac{1}{96}\,g_1^2\,y_d^{i1p}\,(m_1\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{i2}, m_1, m_{\tilde d}^{p}, \tilde\mu] -$$

$$\frac{1}{96}\,g_1^2\,y_u^{i1p}\,(m_1\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{i2}, m_1, m_{\tilde u}^{p}, \tilde\mu] -$$

$$\frac{3}{32}\,g_2^2\,y_d^{i1p}\,(m_2\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{i2}, m_2, m_{\tilde d}^{p}, \tilde\mu] +$$

$$\frac{3}{32}\,g_2^2\,y_u^{i1p}\,(m_2\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,1,1,1,-1}[m_{\tilde q}^{i2}, m_2, m_{\tilde u}^{p}, \tilde\mu] +$$

$$\frac{1}{96}\,g_1^2\,\overline{y_u}^{i2p}\,(m_1\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,-1}[m_{\tilde u}^{p}, m_1, m_{\tilde q}^{i1}, \tilde\mu] +$$

$$\frac{1}{144}\,g_1^2\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,1,-1}[m_{\tilde u}^{p}, m_1, m_{\tilde q}^{i2}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{96}\,g_1^2\,y_u^{i1p}\,(m_1\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,1,1,1,-1}[m_{\tilde u}^{p}, m_1, m_{\tilde q}^{i2}, \tilde\mu] -$$

$$\frac{3}{32}\,g_2^2\,\overline{y_u}^{i2p}\,(m_2\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,-1}[m_{\tilde u}^{p}, m_2, m_{\tilde q}^{i1}, \tilde\mu] +$$

$$\frac{3}{16}\,g_2^2\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,1,-1}[m_{\tilde u}^{p}, m_2, m_{\tilde q}^{i2}, m_{\tilde q}^{i1}] -$$

$$\frac{3}{32}\,g_2^2\,y_u^{i1p}\,(m_2\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,1,1,1,-1}[m_{\tilde u}^{p}, m_2, m_{\tilde q}^{i2}, \tilde\mu] +$$

$$\frac{1}{3}\,g_3^2\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,1,-1}[m_{\tilde u}^{p}, m_3, m_{\tilde q}^{i2}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{96}\,g_1^2\,\overline{y_d}^{i2p}\,(m_1\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,-1}[\tilde\mu, m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i1}] +$$

$$\frac{1}{96}\,g_1^2\,y_d^{i1p}\,(m_1\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,1,1,1,-1}[\tilde\mu, m_1, m_{\tilde d}^{p}, m_{\tilde q}^{i2}] +$$

$$\frac{1}{96}\,g_1^2\,\overline{y_u}^{i2p}\,(m_1\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,-1}[\tilde\mu, m_1, m_{\tilde q}^{i1}, m_{\tilde u}^{p}] +$$

$$\frac{1}{96}\,g_1^2\,y_u^{i1p}\,(m_1\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,1,1,1,-1}[\tilde\mu, m_1, m_{\tilde q}^{i2}, m_{\tilde u}^{p}] +$$

$$\frac{3}{32}\,g_2^2\,\overline{y_d}^{i2p}\,(m_2\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,a_d^{i1p} - s_\gamma\,\tilde\mu\,y_d^{i1p})\,LF_{2,1,1,1,-1}[\tilde\mu, m_2, m_{\tilde d}^{p}, m_{\tilde q}^{i1}] +$$

$$\frac{3}{32}\,g_2^2\,y_d^{i1p}\,(m_2\,c_\gamma + s_\gamma\,\tilde\mu)\,(c_\gamma\,\overline{a_d}^{i2p} - s_\gamma\,\tilde\mu\,\overline{y_d}^{i2p})\,LF_{2,1,1,1,-1}[\tilde\mu, m_2, m_{\tilde d}^{p}, m_{\tilde q}^{i2}] -$$

$$\frac{3}{32}\,g_2^2\,\overline{y_u}^{i2p}\,(m_2\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,a_u^{i1p} - \tilde\mu\,c_\gamma\,y_u^{i1p})\,LF_{2,1,1,1,-1}[\tilde\mu, m_2, m_{\tilde q}^{i1}, m_{\tilde u}^{p}] -$$

$$\frac{3}{32}\,g_2^2\,y_u^{i1p}\,(m_2\,s_\gamma + \tilde\mu\,c_\gamma)\,(s_\gamma\,\overline{a_u}^{i2p} - \tilde\mu\,c_\gamma\,\overline{y_u}^{i2p})\,LF_{2,1,1,1,-1}[\tilde\mu, m_2, m_{\tilde q}^{i2}, m_{\tilde u}^{p}]\Big)$$