$$+ \frac{W_4^{z}(Q^2)}{m_N^2} Q^\mu Q^\nu \Big]$$

$$W_1^{z} = \frac{|Q^2|}{4m_N^2}\left[(F_1^z + F_2^z)^2 + F_A^{z\,2}\right] + F_A^{z\,2}$$

$$W_2^{z} = F_1^{z\,2} + \frac{|Q^2|}{4m_N^2} F_2^{z\,2} + F_A^{z\,2}$$

$$V^\mu = \frac{1}{m_N}\left[P^\mu + \frac{P.Q}{|Q^2|} Q^\mu\right]$$

$$W_3^{z} = F_A^z (F_1^z + F_2^z)$$

$$W_4^{z} = \frac{m_N^2}{|Q^2|} F_A^{z\,2}$$

NOTE : for electron scattering in general one has

:

$$\frac{W_S^{\mu\nu}}{m_N^2} = X_1 g^{\mu\nu} + \frac{X_2}{m_N^2} P^\mu P^\nu + \frac{X_3}{m_N^2}\left(P^\mu Q^\nu + Q^\mu P^\nu\right) + \frac{X_4}{m_N^2} Q^\mu Q^\nu$$

$$\frac{W_A^{\mu\nu}}{m_N^2} = \frac{X_5}{m_N^2}\left(P^\mu Q^\nu - P^\nu Q^\mu\right)$$

and no term in $i\varepsilon^{\mu\nu\alpha\beta} P_\alpha Q_\beta$ for parity conservation

Then by current conservation $Q_\mu J^\mu = Q_\nu J^\nu = 0$

$$\Rightarrow Q_\mu W_S^{\mu\nu} = Q_\mu W_A^{\mu\nu} = 0$$

$$\Rightarrow W_A^{\mu\nu} = 0$$

$$\Rightarrow \frac{W_S^{\mu\nu}}{m_N^2} = -W_1\left(g^{\mu\nu} + \frac{Q^\mu Q^\nu}{|Q^2|}\right) + W_2 V^\mu V^\nu$$