$$A_{rr} = \partial_r \partial_r V + \frac{1}{2f} \partial_r f \partial_r V - \frac{V}{2f} \partial_r \partial_r f = 0 \,,$$

$$A_{rA} = \partial_r \partial_A V - \frac{\delta_A{}^C}{r} \partial_C V = \partial_r \partial_A V - \frac{1}{r} \partial_A V = 0 \,,$$

$$A_{AB} = \partial_A \partial_B V - \Gamma^C{}_{AB} \partial_C V + r \mathring{h}_{AB} f \partial_r V - \frac{V \partial_r f}{2} r \mathring{h}_{AB} = 0 \,.$$