dS SVT4 Conformal Trace

In reference to *dS4_Ein_SVT4_Conformal*, computationally I calculated $g^{\mu\nu}\Delta_{\mu\nu}$ not by $-\Delta_{00}+\delta^{ij}\Delta_{ij}$ but rather by $g^{\mu\nu}\delta G_{\mu\nu}+g^{\mu\nu}\delta T_{\mu\nu}$. With this in mind, the lack of $\dot{F}_{00}$ term originates in eq. (1.10). To check if this is in fact the correct trace of $\delta G_{\mu\nu}$, I recalculated it directly and looked at its trace in terms of $h_{\mu\nu}$:

$$\begin{aligned}\delta G_{\mu\nu} = \quad & \tfrac{1}{2}\tilde{\nabla}_\alpha\tilde{\nabla}^\alpha h_{\mu\nu}-\tfrac{1}{2}\tilde{g}_{\mu\nu}\tilde{\nabla}_\alpha\tilde{\nabla}^\alpha h-2h_{\mu\nu}\Omega^{-1}\tilde{\nabla}_\alpha\tilde{\nabla}^\alpha\Omega-\tfrac{1}{2}\tilde{\nabla}_\alpha\tilde{\nabla}_\mu h_\nu{}^\alpha-\tfrac{1}{2}\tilde{\nabla}_\alpha\tilde{\nabla}_\nu h_\mu{}^\alpha\\ & -\tilde{g}_{\mu\nu}\Omega^{-1}\tilde{\nabla}_\alpha\Omega\tilde{\nabla}^\alpha h+\Omega^{-1}\tilde{\nabla}_\alpha h_{\mu\nu}\tilde{\nabla}^\alpha\Omega+h_{\mu\nu}\Omega^{-2}\tilde{\nabla}_\alpha\Omega\tilde{\nabla}^\alpha\Omega+2\tilde{g}_{\mu\nu}\Omega^{-1}\tilde{\nabla}^\alpha\Omega\tilde{\nabla}_\beta h_\alpha{}^\beta\\ & +\tfrac{1}{2}\tilde{g}_{\mu\nu}\tilde{\nabla}_\beta\tilde{\nabla}_\alpha h^{\alpha\beta}+2\tilde{g}_{\mu\nu}h^{\alpha\beta}\Omega^{-1}\tilde{\nabla}_\beta\tilde{\nabla}_\alpha\Omega-\tilde{g}_{\mu\nu}h_{\alpha\beta}\Omega^{-2}\tilde{\nabla}^\alpha\Omega\tilde{\nabla}^\beta\Omega-\Omega^{-1}\tilde{\nabla}^\alpha\Omega\tilde{\nabla}_\mu h_{\nu\alpha}\\ & -\Omega^{-1}\tilde{\nabla}^\alpha\Omega\tilde{\nabla}_\nu h_{\mu\alpha}+\tfrac{1}{2}\tilde{\nabla}_\nu\tilde{\nabla}_\mu h.\end{aligned} \tag{0.1}$$

$$\begin{aligned}\Omega^{-2}g^{\mu\nu}\delta G_{\mu\nu} = \quad & -\Omega^{-2}\tilde{\nabla}_\alpha\tilde{\nabla}^\alpha h-2h\Omega^{-3}\tilde{\nabla}_\alpha\tilde{\nabla}^\alpha\Omega-4\Omega^{-3}\tilde{\nabla}_\alpha\Omega\tilde{\nabla}^\alpha h+\Omega^{-3}\tilde{\nabla}_\alpha h\tilde{\nabla}^\alpha\Omega+h\Omega^{-4}\tilde{\nabla}_\alpha\Omega\tilde{\nabla}^\alpha\Omega\\ & +6\Omega^{-3}\tilde{\nabla}^\alpha\Omega\tilde{\nabla}_\beta h_\alpha{}^\beta+\Omega^{-2}\tilde{\nabla}_\beta\tilde{\nabla}_\alpha h^{\alpha\beta}+8h^{\alpha\beta}\Omega^{-3}\tilde{\nabla}_\beta\tilde{\nabla}_\alpha\Omega-4h_{\alpha\beta}\Omega^{-4}\tilde{\nabla}^\alpha\Omega\tilde{\nabla}^\beta\Omega.\end{aligned} \tag{0.2}$$

Since $F_{\mu\nu}$ cannot appear in h nor $\tilde{\nabla}^\alpha h_{\alpha\beta}$, this leaves only

$$8h^{\alpha\beta}\Omega^{-3}\tilde{\nabla}_\beta\tilde{\nabla}_\alpha\Omega-4h_{\alpha\beta}\Omega^{-4}\tilde{\nabla}^\alpha\Omega\tilde{\nabla}^\beta\Omega=-8\dot{\Omega}^2F_{00}\Omega^{-4}+16\ddot{\Omega}F_{00}\Omega^{-3}=24H^2F_{00} \tag{0.3}$$

This doesn't yet resolve the apparent discrepancy with $-\Delta_{00}+\delta^{ij}\Delta_{ij}$, but it does tell us that if there is an error it would lie within the calculation of δG_{ij} and/or δG_{00}.