SVT

$h_{00} = -2\phi$

$h_{0i} = w_i = \partial_i B + B_i$

$h_{ij} = -2\psi + S_{ij} = -2\psi + 2\partial_i\partial_j E + \partial_i E_j + \partial_j E_i + 2E_{ij}$

where

$\partial_i B^i = \partial_i E^i = 0$

$\partial_i E^{ij} = 0$

$\delta_{ij} E^{ij} = 0$

No gauge, $\delta G_{\mu\nu}$ flat:

00	$\frac{\partial_1\partial_1 h}{2} + \frac{\partial_3\partial_3 h}{2} + \frac{\partial_2\partial_2 h}{2} + \frac{1}{2}\partial_1\partial_1 h_{00} - \frac{1}{2}\partial_1\partial_1 h_{11} - \partial_2\partial_1 h_{12} +$ $\frac{1}{2}\partial_2\partial_2 h_{00} - \frac{1}{2}\partial_2\partial_2 h_{22} - \partial_3\partial_1 h_{13} - \partial_3\partial_2 h_{23} + \frac{1}{2}\partial_3\partial_3 h_{00} - \frac{1}{2}\partial_3\partial_3 h_{33}$
11	$\frac{1}{2}\partial_0\partial_0 h_{00} - \frac{1}{2}\partial_0\partial_0 h_{11} + \frac{\partial_0\partial_0 h}{2} - \partial_2\partial_0 h_{02} + \frac{1}{2}\partial_2\partial_2 h_{11} +$ $\frac{1}{2}\partial_2\partial_2 h_{22} - \frac{\partial_2\partial_2 h}{2} - \partial_3\partial_0 h_{03} + \partial_3\partial_2 h_{23} + \frac{1}{2}\partial_3\partial_3 h_{11} + \frac{1}{2}\partial_3\partial_3 h_{33} - \frac{\partial_3\partial_3 h}{2}$
22	$\frac{1}{2}\partial_0\partial_0 h_{00} - \frac{1}{2}\partial_0\partial_0 h_{22} + \frac{\partial_0\partial_0 h}{2} - \partial_1\partial_0 h_{01} + \frac{1}{2}\partial_1\partial_1 h_{11} +$ $\frac{1}{2}\partial_1\partial_1 h_{22} - \frac{\partial_1\partial_1 h}{2} - \partial_3\partial_0 h_{03} + \partial_3\partial_1 h_{13} + \frac{1}{2}\partial_3\partial_3 h_{22} + \frac{1}{2}\partial_3\partial_3 h_{33} - \frac{\partial_3\partial_3 h}{2}$
33	$\frac{1}{2}\partial_0\partial_0 h_{00} - \frac{1}{2}\partial_0\partial_0 h_{33} + \frac{\partial_0\partial_0 h}{2} - \partial_1\partial_0 h_{01} + \frac{1}{2}\partial_1\partial_1 h_{11} +$ $\frac{1}{2}\partial_1\partial_1 h_{33} - \frac{\partial_1\partial_1 h}{2} - \partial_2\partial_0 h_{02} + \partial_2\partial_1 h_{12} + \frac{1}{2}\partial_2\partial_2 h_{22} + \frac{1}{2}\partial_2\partial_2 h_{33} - \frac{\partial_2\partial_2 h}{2}$
01	$\frac{1}{2}\partial_1\partial_0 h_{00} - \frac{1}{2}\partial_1\partial_0 h_{11} + \frac{\partial_1\partial_0 h}{2} - \frac{1}{2}\partial_2\partial_0 h_{12} -$ $\frac{1}{2}\partial_2\partial_1 h_{02} + \frac{1}{2}\partial_2\partial_2 h_{01} - \frac{1}{2}\partial_3\partial_0 h_{13} - \frac{1}{2}\partial_3\partial_1 h_{03} + \frac{1}{2}\partial_3\partial_3 h_{01}$
02	$-\frac{1}{2}\partial_1\partial_0 h_{12} + \frac{1}{2}\partial_1\partial_1 h_{02} + \frac{1}{2}\partial_2\partial_0 h_{00} - \frac{1}{2}\partial_2\partial_0 h_{22} +$ $\frac{\partial_2\partial_0 h}{2} - \frac{1}{2}\partial_2\partial_1 h_{01} - \frac{1}{2}\partial_3\partial_0 h_{23} - \frac{1}{2}\partial_3\partial_2 h_{03} + \frac{1}{2}\partial_3\partial_3 h_{02}$
03	$-\frac{1}{2}\partial_1\partial_0 h_{13} + \frac{1}{2}\partial_1\partial_1 h_{03} - \frac{1}{2}\partial_2\partial_0 h_{23} + \frac{1}{2}\partial_2\partial_2 h_{03} +$ $\frac{1}{2}\partial_3\partial_0 h_{00} - \frac{1}{2}\partial_3\partial_0 h_{33} + \frac{\partial_3\partial_0 h}{2} - \frac{1}{2}\partial_3\partial_1 h_{01} - \frac{1}{2}\partial_3\partial_2 h_{02}$
12	$-\frac{1}{2}\partial_0\partial_0 h_{12} + \frac{1}{2}\partial_1\partial_0 h_{02} + \frac{1}{2}\partial_2\partial_0 h_{01} - \frac{1}{2}\partial_2\partial_1 h_{11} -$ $\frac{1}{2}\partial_2\partial_1 h_{22} + \frac{\partial_2\partial_1 h}{2} - \frac{1}{2}\partial_3\partial_1 h_{23} - \frac{1}{2}\partial_3\partial_2 h_{13} + \frac{1}{2}\partial_3\partial_3 h_{12}$
13	$-\frac{1}{2}\partial_0\partial_0 h_{13} + \frac{1}{2}\partial_1\partial_0 h_{03} - \frac{1}{2}\partial_2\partial_1 h_{23} + \frac{1}{2}\partial_2\partial_2 h_{13} +$ $\frac{1}{2}\partial_3\partial_0 h_{01} - \frac{1}{2}\partial_3\partial_1 h_{11} - \frac{1}{2}\partial_3\partial_1 h_{33} + \frac{\partial_3\partial_1 h}{2} - \frac{1}{2}\partial_3\partial_2 h_{12}$
23	$-\frac{1}{2}\partial_0\partial_0 h_{23} + \frac{1}{2}\partial_1\partial_1 h_{23} + \frac{1}{2}\partial_2\partial_0 h_{03} - \frac{1}{2}\partial_2\partial_1 h_{13} +$ $\frac{1}{2}\partial_3\partial_0 h_{02} - \frac{1}{2}\partial_3\partial_1 h_{12} - \frac{1}{2}\partial_3\partial_2 h_{22} - \frac{1}{2}\partial_3\partial_2 h_{33} + \frac{\partial_3\partial_2 h}{2}$

Now decompose into the form with ϕ, ψ, w_i, and S_{ij}.

00	$\partial_1\partial_1\nabla^2 E - \frac{1}{2}\partial_1\partial_1 S_{11} - 2\partial_1\partial_1\psi - \partial_2\partial_1 S_{12} + \partial_2\partial_2\nabla^2 E - \frac{1}{2}\partial_2\partial_2 S_{22} - 2\partial_2\partial_2\psi - \partial_3\partial_1 S_{13} - \partial_3\partial_2 S_{23} + \partial_3\partial_3\nabla^2 E - \frac{1}{2}\partial_3\partial_3 S_{33} - 2\partial_3\partial_3\psi$
11	$\partial_0\partial_0\nabla^2 E - \frac{1}{2}\partial_0\partial_0 S_{11} - 2\partial_0\partial_0\psi - \partial_2\partial_0 w_2 - \partial_2\partial_2\nabla^2 E + \frac{1}{2}\partial_2\partial_2 S_{11} + \frac{1}{2}\partial_2\partial_2 S_{22} - \partial_2\partial_2\phi + \partial_2\partial_2\psi - \partial_3\partial_0 w_3 + \partial_3\partial_2 S_{23} - \partial_3\partial_3\nabla^2 E + \frac{1}{2}\partial_3\partial_3 S_{11} + \frac{1}{2}\partial_3\partial_3 S_{33} - \partial_3\partial_3\phi + \partial_3\partial_3\psi$
22	$\partial_0\partial_0\nabla^2 E - \frac{1}{2}\partial_0\partial_0 S_{22} - 2\partial_0\partial_0\psi - \partial_1\partial_0 w_1 - \partial_1\partial_1\nabla^2 E + \frac{1}{2}\partial_1\partial_1 S_{11} + \frac{1}{2}\partial_1\partial_1 S_{22} - \partial_1\partial_1\phi + \partial_1\partial_1\psi - \partial_3\partial_0 w_3 + \partial_3\partial_1 S_{13} - \partial_3\partial_3\nabla^2 E + \frac{1}{2}\partial_3\partial_3 S_{22} + \frac{1}{2}\partial_3\partial_3 S_{33} - \partial_3\partial_3\phi + \partial_3\partial_3\psi$
33	$\partial_0\partial_0\nabla^2 E - \frac{1}{2}\partial_0\partial_0 S_{33} - 2\partial_0\partial_0\psi - \partial_1\partial_0 w_1 - \partial_1\partial_1\nabla^2 E + \frac{1}{2}\partial_1\partial_1 S_{11} + \frac{1}{2}\partial_1\partial_1 S_{33} - \partial_1\partial_1\phi + \partial_1\partial_1\psi - \partial_2\partial_0 w_2 + \partial_2\partial_1 S_{12} - \partial_2\partial_2\nabla^2 E + \frac{1}{2}\partial_2\partial_2 S_{22} + \frac{1}{2}\partial_2\partial_2 S_{33} - \partial_2\partial_2\phi + \partial_2\partial_2\psi$
01	$\partial_1\partial_0\nabla^2 E - \frac{1}{2}\partial_1\partial_0 S_{11} - 2\partial_1\partial_0\psi - \frac{1}{2}\partial_2\partial_0 S_{12} - \frac{1}{2}\partial_2\partial_1 w_2 + \frac{1}{2}\partial_2\partial_2 w_1 - \frac{1}{2}\partial_3\partial_0 S_{13} - \frac{1}{2}\partial_3\partial_1 w_3 + \frac{1}{2}\partial_3\partial_3 w_1$
02	$-\frac{1}{2}\partial_1\partial_0 S_{12} + \frac{1}{2}\partial_1\partial_1 w_2 + \partial_2\partial_0\nabla^2 E - \frac{1}{2}\partial_2\partial_0 S_{22} - 2\partial_2\partial_0\psi - \frac{1}{2}\partial_2\partial_1 w_1 - \frac{1}{2}\partial_3\partial_0 S_{23} - \frac{1}{2}\partial_3\partial_2 w_3 + \frac{1}{2}\partial_3\partial_3 w_2$
03	$-\frac{1}{2}\partial_1\partial_0 S_{13} + \frac{1}{2}\partial_1\partial_1 w_3 - \frac{1}{2}\partial_2\partial_0 S_{23} + \frac{1}{2}\partial_2\partial_2 w_3 + \partial_3\partial_0\nabla^2 E - \frac{1}{2}\partial_3\partial_0 S_{33} - 2\partial_3\partial_0\psi - \frac{1}{2}\partial_3\partial_1 w_1 - \frac{1}{2}\partial_3\partial_2 w_2$
12	$-\frac{1}{2}\partial_0\partial_0 S_{12} + \frac{1}{2}\partial_1\partial_0 w_2 + \frac{1}{2}\partial_2\partial_0 w_1 + \partial_2\partial_1\nabla^2 E - \frac{1}{2}\partial_2\partial_1 S_{11} - \frac{1}{2}\partial_2\partial_1 S_{22} + \partial_2\partial_1\phi - \partial_2\partial_1\psi - \frac{1}{2}\partial_3\partial_1 S_{23} - \frac{1}{2}\partial_3\partial_2 S_{13} + \frac{1}{2}\partial_3\partial_3 S_{12}$
13	$-\frac{1}{2}\partial_0\partial_0 S_{13} + \frac{1}{2}\partial_1\partial_0 w_3 - \frac{1}{2}\partial_2\partial_1 S_{23} + \frac{1}{2}\partial_2\partial_2 S_{13} + \frac{1}{2}\partial_3\partial_0 w_1 + \partial_3\partial_1\nabla^2 E - \frac{1}{2}\partial_3\partial_1 S_{11} - \frac{1}{2}\partial_3\partial_1 S_{33} + \partial_3\partial_1\phi - \partial_3\partial_1\psi - \frac{1}{2}\partial_3\partial_2 S_{12}$
23	$-\frac{1}{2}\partial_0\partial_0 S_{23} + \frac{1}{2}\partial_1\partial_1 S_{23} + \frac{1}{2}\partial_2\partial_0 w_3 - \frac{1}{2}\partial_2\partial_1 S_{13} + \frac{1}{2}\partial_3\partial_0 w_2 - \frac{1}{2}\partial_3\partial_1 S_{12} + \partial_3\partial_2\nabla^2 E - \frac{1}{2}\partial_3\partial_2 S_{22} - \frac{1}{2}\partial_3\partial_2 S_{33} + \partial_3\partial_2\phi - \partial_3\partial_2\psi$

Further decompose S_{ij} and w_i as given in the first equations.

00	$-2\nabla^2\psi$
11	$(-2\partial_0\partial_0-\partial_1\partial_1+\nabla^2)\psi \;-\; (\nabla^2-\partial_1\partial_1)(\phi+\partial_0 B-\partial_0\partial_0 E) \;+\; -\partial_1\partial_0(-B_1+\partial_0 E_1) \;+\; \Box E_{11}$
22	$(-2\partial_0\partial_0-\partial_2\partial_2+\nabla^2)\psi \;-\; (\nabla^2-\partial_2\partial_2)(\phi+\partial_0 B-\partial_0\partial_0 E) \;+\; -\partial_2\partial_0(-B_2+\partial_0 E_2) \;+\; \Box E_{22}$
33	$(-2\partial_0\partial_0-\partial_3\partial_3+\nabla^2)\psi \;-\; (\nabla^2-\partial_3\partial_3)(\phi+\partial_0 B-\partial_0\partial_0 E) \;+\; -\partial_3\partial_0(-B_3+\partial_0 E_3) \;+\; \Box E_{33}$
01	$- 2\partial_1\partial_0\psi \;-\; \frac{1}{2}\nabla^2(-B_1 + \partial_0 E_1)$
02	$-2\partial_2\partial_0\psi \;-\; \frac{1}{2}\nabla^2(-B_2+\partial_0 E_2)$
03	$- 2\partial_3\partial_0\psi \;-\; \frac{1}{2}\nabla^2(-B_3 + \partial_0 E_3)$
12	$-\partial_2\partial_1\psi \;+\; \partial_2\partial_1(\phi+\partial_0 B-\partial_0\partial_0 E) \;-\; \frac{1}{2}\partial_1\partial_0(\partial_0 E_2-B_2) \;-\; \frac{1}{2}\partial_2\partial_0(\partial_0 E_1-B_1) \;+\; \Box E_{12}$
13	$-\partial_3\partial_1\psi \;+\; \partial_3\partial_1(\phi+\partial_0 B-\partial_0\partial_0 E) \;-\; \frac{1}{2}\partial_1\partial_0(\partial_0 E_3-B_3) \;-\; \frac{1}{2}\partial_3\partial_0(\partial_0 E_1-B_1) \;+\; \Box E_{13}$
23	$-\partial_3\partial_2\psi \;+\; \partial_3\partial_2(\phi+\partial_0 B-\partial_0\partial_0 E) \;-\; \frac{1}{2}\partial_2\partial_0(\partial_0 E_3-B_3) \;-\; \frac{1}{2}\partial_3\partial_0(\partial_0 E_2-B_2) \;+\; \Box E_{23}$

Now expressed in terms of the gauge invariant quantities:

$\psi = \psi$

$\mathcal{P} = \phi + \partial_0 B - \partial_0 \partial_0 E$

$\mathcal{F}_i = \partial_0 E_i - B_i$

00	$-2\nabla^2 \psi$
11	$(-2\partial_0\partial_0 - \partial_1\partial_1 + \nabla^2)\psi - (\nabla^2 - \partial_1\partial_1)\mathcal{P} + -\partial_1\partial_0\mathcal{F}_1 + \Box E_{11}$
22	$(-2\partial_0\partial_0 - \partial_2\partial_2 + \nabla^2)\psi - (\nabla^2 - \partial_2\partial_2)\mathcal{P} + -\partial_2\partial_0\mathcal{F}_2 + \Box E_{22}$
33	$(-2\partial_0\partial_0 - \partial_3\partial_3 + \nabla^2)\psi - (\nabla^2 - \partial_3\partial_3)\mathcal{P} + -\partial_3\partial_0\mathcal{F}_3 + \Box E_{33}$
01	$-2\partial_1\partial_0\psi - \frac{1}{2}\nabla^2\mathcal{F}_1$
02	$-2\partial_2\partial_0\psi - \frac{1}{2}\nabla^2\mathcal{F}_2$
03	$-2\partial_3\partial_0\psi - \frac{1}{2}\nabla^2\mathcal{F}_3$
12	$-\partial_2\partial_1\psi + \partial_2\partial_1\mathcal{P} - \frac{1}{2}\partial_1\partial_0\mathcal{F}_2 - \frac{1}{2}\partial_2\partial_0\mathcal{F}_1 + \Box E_{12}$
13	$-\partial_3\partial_1\psi + \partial_3\partial_1\mathcal{P} - \frac{1}{2}\partial_1\partial_0\mathcal{F}_3 - \frac{1}{2}\partial_3\partial_0\mathcal{F}_1 + \Box E_{13}$
23	$-\partial_3\partial_2\psi + \partial_3\partial_2\mathcal{P} - \frac{1}{2}\partial_2\partial_0\mathcal{F}_3 - \frac{1}{2}\partial_3\partial_0\mathcal{F}_2 + \Box E_{23}$