$$\mu = 0 \qquad -(14)$$

Eqs. (7) to (12) simplify to:

$$\omega^1{}_{02} = -\omega^2{}_{01} = \frac{\kappa}{2} q^0{}_0, \qquad -(15)$$

$$\omega^1{}_{03} = -\omega^3{}_{01} = \frac{\kappa}{2} q^0{}_0, \qquad -(16)$$

$$\omega^2{}_{03} = -\omega^3{}_{02} = \frac{\kappa}{2} q^0{}_0. \qquad -(17)$$

So for electro-statics there is only one independent spin connection element.

The scalar potential $\phi^a{}_0$ must be the same scalar in all frames of reference. It follows that:

$$\phi^a{}_0 = \phi^{(0)} \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}, \quad q^a{}_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}. \qquad -(18)$$

The product of $\underline{\omega}^a{}_b$ and ϕ^b must be $(i = 1, 2, 3)$:

$$\begin{aligned} \omega^a{}_{ib} \phi^b &= \omega^a{}_{i1} \phi^1 + \omega^a{}_{i2} \phi^2 + \omega^a{}_{i3} \phi^3 \\ &= \phi^{(0)} \left(\omega^a{}_{i1} + \omega^a{}_{i2} + \omega^a{}_{i3} \right). \end{aligned} \qquad -(19)$$

From Eq. (~~10~~ -(12)) it is seen that:

$$a = 1, 2, 3. \qquad -(20)$$

Thus:

$$\underline{E}^1 = -\underline{\nabla} \phi - \underline{\kappa} \phi, \qquad -(21)$$

$$\underline{E}_1 := \underline{E}^1, \qquad -(21a)$$