Three types of inverses appear below!

$\overline{R}$ is the inverse of R in the algebra $\mathbb{B} \otimes \mathbb{A}$.

P is the inverse of R as a quadratic form, like how an element of $V^* \otimes V^*$ can be the inverse of an element of $V \otimes V$.

$\overline{aS}$ is the inverse of aS as an operator form, like how an element of $V^* \otimes V$ can be the inverse of another element of $V^* \otimes V$.