Re-express

$$W_{h=1,s=1} = \underbrace{e^{\left(\beta_{s=1,k=1} X_{h=1}^{k=1} + \beta_{s=1,k=2} X_{h=1}^{k=2}\right)}}_{f} \cdot \underbrace{e^{\delta}}_{g} \qquad \delta = f(\beta)$$

By product rule:

$$\frac{\partial W_{h=1,s=1}}{\partial \beta_{2}} = f'g + fg'$$

$\left[\begin{matrix} s=2 \\ k=1 \end{matrix}\right]$

$$= \underbrace{0}_{\text{This will not be zero on the diagonal}} + f \cdot \frac{\partial g}{\partial \beta_2}$$

on the diagonal
this will simplify
$X_{h=1}^{k=1} \cdot W_{h=1, s=1}$ I think