

$$\begin{array}{c}
\frac{}{\vdash \textcolor{red}{p}^\perp \Downarrow [\cdot][\cdot]p; \cdot} \text{I} \\
\hline
\vdash [\cdot][1 : p^\perp]\cdot; \cdot //^1 \vdash [\cdot][\cdot]p; \cdot \quad \text{K} \\
\hline
\vdash [\cdot][1 : p^\perp]\cdot; \cdot //^1 \vdash [\cdot][\cdot]\cdot; p \quad * \\
\hline
\vdash [\cdot][1 : p, 1 : p^\perp]\cdot; \cdot \quad \text{D} \\
\hline
\vdash [\cdot][\cdot]\cdot; ?^1 p, ?^1 p^\perp \quad *
\end{array}$$