

$$\begin{array}{c}
\frac{l; \vdash; l}{\vdash; \vdash; (l \rightarrow l)} R \rightarrow_- \\
\frac{\vdash; \vdash; (l \rightarrow l)}{\Box(\perp); \vdash; \Box((l \rightarrow l))} Mod\Box \\
\frac{\Box(\perp); \vdash; \Box((l \rightarrow l))}{\Box(\Box(\perp)); \vdash; \Box(\Box((l \rightarrow l)))} Mod\Box \\
\frac{\Box(\Box(\perp)); \vdash; \Box(\Box((l \rightarrow l)))}{\Box(\Box(\perp)); \vdash \quad x; \Box(\Box((l \rightarrow l)))} Weakening \\
\frac{\Box(\Box(\perp)); \vdash \quad x; \Box(\Box((l \rightarrow l)))}{\neg(x); \neg(\Box(\Box(\perp))) \vdash \Box(\Box((l \rightarrow l)))} L\neg_+
\end{array}$$