Inference at $*$
of proof for Lemma before_last:

$\vdash \forall T$:Type, L:(T List), x:T. $(x \in L) \Rightarrow (\neg(x = \text{last}(L))) \Rightarrow x$ before last$(L) \in L$
by InductionOnList

1:

1. T : Type
2. T List

$\vdash \forall x$:T. $(x \in [\,]) \Rightarrow (\neg(x = \text{last}([\,]))) \Rightarrow x$ before last$([\,]) \in [\,]$

2:

1. T : Type
2. T List
3. u : T
4. v : T List
5. $\forall x$:T. $(x \in v) \Rightarrow (\neg(x = \text{last}(v))) \Rightarrow x$ before last$(v) \in v$

$\vdash \forall x$:T. $(x \in [u\ /\ v]) \Rightarrow (\neg(x = \text{last}([u\ /\ v]))) \Rightarrow x$ before last$([u\ /\ v]) \in [u\ /\ v]$

.

---

http://www.nuprl.org/FDLcontent/p0_963683_/p122_89337_{before_last}.html