Inference at $*$ 2 3
of proof for Lemma decidable-filter:

1. T : Type
2. T List
3. u : T
4. v : T List
5. $\forall P$:($\{x$:$T|$ $(x \in v)\} \rightarrow \mathbb{P}$).
   ($\forall x \in v$. Dec($P(x)$)) $\Rightarrow$ ($\exists L'$:T List. ($L' \subseteq v$ & ($\forall x$:T. ($x \in L'$) $\iff$ (($x \in v$) & $P(x)$)))))
6. P : $\{x$:$T|$ $(x \in [u / v])\} \rightarrow \mathbb{P}$
7. $\forall x \in [u / v]$. Dec($P(x)$)
8. $\exists L'$:T List. ($L' \subseteq v$ & ($\forall x$:T. ($x \in L'$) $\iff$ (($x \in v$) & $P(x)$))))

$\vdash \exists L'$:T List. ($L' \subseteq [u / v]$ & ($\forall x$:T. ($x \in L'$) $\iff$ (($x \in [u / v]$) & $P(x)$))))
by ((Unfold ‘l_all‘ (-2))
CollapseTHEN (((InstHyp[u] (-2))
CollapseTHENA (Auto·))·))·

1: .....antecedent..... NILNIL

7. $\forall x$:T. ($x \in [u / v]$) $\Rightarrow$ Dec($P(x)$)
8. $\exists L'$:T List. ($L' \subseteq v$ & ($\forall x$:T. ($x \in L'$) $\iff$ (($x \in v$) & $P(x)$))))

$\vdash$ ($u \in [u / v]$)

2:

7. $\forall x$:T. ($x \in [u / v]$) $\Rightarrow$ Dec($P(x)$)
8. $\exists L'$:T List. ($L' \subseteq v$ & ($\forall x$:T. ($x \in L'$) $\iff$ (($x \in v$) & $P(x)$))))
9. Dec($P(u)$)

$\vdash \exists L'$:T List. ($L' \subseteq [u / v]$ & ($\forall x$:T. ($x \in L'$) $\iff$ (($x \in [u / v]$) & $P(x)$))))

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