Inference at $*$ 1 4 2
of proof for Lemma fincr_wf:

1. $i : \mathbb{N}$
2. $f : \{f \mid i{:}\{z{:}\mathbb{N} \mid z < i\} \rightarrow \text{if } (i =_0 0) \text{ then } \mathbb{Z} \text{ else } \{f(i \text{ - } 1)\ldots\} \text{ fi } \}$
3. $\forall j{:}\{k{:}\mathbb{N} \mid k < i\}\ .\ f(j) \in \mathbb{Z}$

$\vdash$if $(i =_0 0)$ then $\mathbb{Z}$ else $\{f(i \text{ - } 1)\ldots\}$ fi $\in$ Type
by ((SplitITE 0)
CollapseTHEN (Try (((Auto_aux (first_nat 1:n) ((first_nat 1:n
),(first_nat 3:n)) (first_tok :t) inil_term))
CollapseTHEN (Fail))$\cdot$))$\cdot$

1: .....falsecase..... NILNIL

4. $i \neq 0$
$\vdash \{f(i \text{ - } 1)\ldots\} \in$ Type
.