```
least_is_least  THM

⊢  ∀k:ℕ, p:{p:(ℕk→𝔹)| ∃i:ℕk. p(i) }, j:ℕ(least i:ℕ. p(i)). ¬p(j)
| by SimilarTo:
|    Thm*  ∀k:ℕ, p:{p:(ℕk→𝔹)| ∃i:ℕk. p(i) }.
|          (least i:ℕ. p(i)) ∈ {i:ℕk| p(i) & (∀j:ℕi. ¬p(j)) }
|    {least_characterized}
|
1. k : ℕ
2. p : {p:(ℕk→𝔹)| ∃i:ℕk. p(i) }
3. (least i:ℕ. p(i)) ∈ {i:ℕk| p(i) & (∀j:ℕi. ¬p(j)) }
⊢  ∀j:ℕ(least i:ℕ. p(i)). ¬p(j)
| by (least i:ℕ. p(i)) ∈ ℤ
|      By BackThru: {i:ℕk| p(i) & (∀j:ℕi. ¬p(j)) } ⊆ ℤ
|
|    {← for type checking }
|
|    THEN
|    Analyze3 THEN Unhide THEN Analyze-2
|
3. (least i:ℕ. p(i)) ∈ ℕk
4. p(least i:ℕ. p(i))
5. ∀j:ℕ(least i:ℕ. p(i)). ¬p(j)
6. (least i:ℕ. p(i)) ∈ ℤ
⊢  ∀j:ℕ(least i:ℕ. p(i)). ¬p(j)  by Auto
END
```