```
cons_iseg  THM

⊢  ∀T:Type, a,b:T, l1,l2:T List.
|  [a / l1] ≤ [b / l2] ⟺ a = b & l1 ≤ l2
| by Unfold `iseg` 0 THEN Auto THEN ExRepD
|
|\
| 1. T : Type
| 2. a : T
| 3. b : T
| 4. l1 : T List
| 5. l2 : T List
| 6. l : T List
| 7. [b / l2] = ([a / l1] @ l)
| ⊢  a = b  by Obvious
|
|\
| 1. T : Type
| 2. a : T
| 3. b : T
| 4. l1 : T List
| 5. l2 : T List
| 6. l : T List
| 7. [b / l2] = ([a / l1] @ l)
| ⊢  ∃l:T List. l2 = (l1 @ l)  by Assert [b / l2] = ([a / l1] @ l)
| |
| |\
| | .....assertion .....
| | 1. T : Type
| | 2. a : T
| | 3. b : T
| | 4. l1 : T List
| | 5. l2 : T List
| | 6. l : T List
| | 7. [b / l2] = ([a / l1] @ l)
| | ⊢  [b / l2] = ([a / l1] @ l)
| |   by ...
| |
| .\
| . 1. T : Type
| . 2. a : T
| . 3. b : T
| . 4. l1 : T List
| . 5. l2 : T List
| . 6. l : T List
| . 7. [b / l2] = ([a / l1] @ l)
| . 8. [b / l2] = ([a / l1] @ l)
| . ⊢  ∃l:T List. l2 = (l1 @ l)
| . | by ApFunToHypEquands `z' tl(z) T List
| . |     (-1) THEN Reduce (-1) THEN Auto
| . |
| . 1. T : Type
| . 2. a : T
| . 3. b : T
| . 4. l1 : T List
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| . 5. l2 : T List
| . 6. l : T List
| . 7. [b / l2] = ([a / l1] @ l)
| . 8. [b / l2] = ([a / l1] @ l)
| . 9. l2 = (l1 @ l)
| . ⊢  ∃l:T List. l2 = (l1 @ l)  by AutoInstConcl [] THEN Auto
|
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. 1. T : Type
. 2. a : T
. 3. b : T
. 4. l1 : T List
. 5. l2 : T List
. 6. a = b
. 7. l : T List
. 8. l2 = (l1 @ l)
. ⊢  ∃l:T List. [b / l2] = ([a / l1] @ l)
. | by InstConcl [l] THEN Auto THEN HypSubst (-1) 0 THEN Auto
. |
. 1. T : Type
. 2. a : T
. 3. b : T
. 4. l1 : T List
. 5. l2 : T List
. 6. a = b
. 7. l : T List
. 8. l2 = (l1 @ l)
. ⊢  [b / (l1 @ l)] = ([a / l1] @ l)  by Reduce 0 THEN EqCD THEN Auto
END
```