```
int_seg_well_founded_down  THM

⊢  ∀i:ℤ, j:{i...}. WellFnd{u}({i..j⁻};x,y.x>y)  by UnivCD
|
1. i : ℤ
2. j : {i...}
⊢  WellFnd{u}({i..j⁻};x,y.x>y)
| by Inst
|    Thm* ∀n:ℤ. WellFnd{i}({n...};x,y.x<y)    {int_upper_well_founded}
|    [lexpr{u};0]
|
3. WellFnd{u}({0...};x,y.x<y)
⊢  WellFnd{u}({i..j⁻};x,y.x>y)
| by Using [`B',{i..j⁻};`f',(λx.j-x)]
|    (FwdThru
|     Thm* ∀r:(A→A→Prop), B:Type, f:(B→A).
|          WellFnd{i}(A;x,y.r(x,y)) ⇒ WellFnd{i}(B;x,y.r(f(x),f(y)))
|     {inv_image_ind}
|     [3])
|
4. WellFnd{u}({i..j⁻};x,y.(λx.j-x)(x)<(λx.j-x)(y))
⊢  WellFnd{u}({i..j⁻};x,y.x>y)  by Reduce 4
|
4. WellFnd{u}({i..j⁻};x,y.j-x<j-y)
⊢  WellFnd{u}({i..j⁻};x,y.x>y)
| by RWH (LemmaC Thm* ∀i,j:ℤ. i>j ⟺ -i<-j    {minus_mono_wrt_lt}) 4
|
4. WellFnd{u}({i..j⁻};x,y.-(j-y)<-(j-x))
⊢  WellFnd{u}({i..j⁻};x,y.x>y)
| by (RWH
|     (LemmaWithC [`n',j]
|      Thm* ∀a,b,n:ℤ. a<b ⟺ a+n<b+n    {add_mono_wrt_lt})
|     4)
|    THEN
|    (ArithSimp 4)
|
4. WellFnd{u}({i..j⁻};x,y.y<x)
⊢  WellFnd{u}({i..j⁻};x,y.x>y)  by Trivial
END
```