Inference at $*$
of proof for Lemma equiv_rel_subtyping:

$\vdash \forall T$:Type, R:($T\rightarrow T\rightarrow$Type), Q:($T\rightarrow \mathbb{P}$).
EquivRel(T;x,y.R(x,y)) $\Rightarrow$ EquivRel($\{z{:}T|\ Q(z)\}$;x,y.R(x,y))
by ((RepUnfolds "equiv_rel trans sym refl" 0)
CollapseTHEN ((Auto_aux (first_nat 1:n
) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))$\cdot$

1:

1. T : Type
2. R : $T\rightarrow T\rightarrow$Type
3. Q : $T\rightarrow \mathbb{P}$
4. $\forall a{:}T.\ R(a,a)$
5. $\forall a,\ b{:}T.\ R(a,b) \Rightarrow R(b,a)$
6. $\forall a,\ b,\ c{:}T.\ R(a,b) \Rightarrow R(b,c) \Rightarrow R(a,c)$
7. a : $\{z{:}T|\ Q(z)\}$

$\vdash R(a,a)$

2:

1. T : Type
2. R : $T\rightarrow T\rightarrow$Type
3. Q : $T\rightarrow \mathbb{P}$
4. $\forall a{:}T.\ R(a,a)$
5. $\forall a,\ b{:}T.\ R(a,b) \Rightarrow R(b,a)$
6. $\forall a,\ b,\ c{:}T.\ R(a,b) \Rightarrow R(b,c) \Rightarrow R(a,c)$
7. a : $\{z{:}T|\ Q(z)\}$
8. b : $\{z{:}T|\ Q(z)\}$
9. $R(a,b)$

$\vdash R(b,a)$

3:

1. T : Type
2. R : $T\rightarrow T\rightarrow$Type
3. Q : $T\rightarrow \mathbb{P}$
4. $\forall a{:}T.\ R(a,a)$
5. $\forall a,\ b{:}T.\ R(a,b) \Rightarrow R(b,a)$
6. $\forall a,\ b,\ c{:}T.\ R(a,b) \Rightarrow R(b,c) \Rightarrow R(a,c)$
7. a : $\{z{:}T|\ Q(z)\}$
8. b : $\{z{:}T|\ Q(z)\}$
9. c : $\{z{:}T|\ Q(z)\}$
10. $R(a,b)$
11. $R(b,c)$

$\vdash R(a,c)$

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http://www.nuprl.org/FDLcontent/p0_942988_/p121_81718_{equiv_rel_subtyping}.html