ZR (14)

($\Leftarrow$) Conversely,

Spse B satisfies (i), (ii), (iii)

Let $A = B$

$\phi \subsetneq A \subsetneq \mathbb{Z}_{(\infty)}$

Claim $B = \bigcup_{a \in A} L_a$

Clearly $\bigcup_{a \in A} L_a \subseteq B$. (Why?)

Take any $b \in B$.

$\exists\, b' \geq b$ s.t. $b' \in B$

$\therefore b \in L_{b'}$ ~~so~~

$B \subseteq \bigcup_{a \in A} L_a$ qed