CONSIDER $\mathcal{B} = \{ u \equiv r((a,b)) \mid (a,b) \subseteq T \}$

Then: $\mathcal{P} = \{ u \subseteq r(T) \mid \forall x \in u \, \exists B \in \mathcal{B}$ s.t. $(x \in B) \wedge (B \subset u) \}$

By Thm, this is a topology. (Munkres)

Now consider the poset $(\mathcal{P}, \subseteq) \equiv \mathfrak{P}$

we know $\top$ of $(\mathfrak{P}, \subseteq)$ is $r(T)$

While, $\bot$ is $\emptyset$, trivially.

As well, $\emptyset \subseteq u \; \forall u \in \mathcal{P}$, So $\mathfrak{P}$ is a meet SemiLattice.

&, $u \subseteq r(T) \; \forall u \in \mathcal{P}$, So $\mathfrak{P}$ is a join SemiLattice.

$\mathcal{P}$ = \mathcal{P}, $\mathfrak{P}$ = \mathfrak{P}