$\sigma(-p) = \sigma(p)$. Here we have to make clear one thing, in $\mathrm{Pic}^\circ(B) = A$, the involution $\mu \mapsto -\mu$ on A corresponds to the involution (as a set) $\eta \mapsto -\eta$ on $\mathrm{Pic}^\circ(B)$.

$\Rightarrow$ By the above, $2\Theta + \lambda = \{(p - p_0 + \lambda)\}$ is invariant under $\mu \mapsto -\mu$. $\Rightarrow$ $p_i - p_0 + \lambda \sim -p_i + p_0 - \lambda$

$\Rightarrow$ $p_i - \cancel{p_0 + 2\lambda} \sim 0$ $\Rightarrow$

$4p_i - \cancel{4p_0 + 2} \sim 0$ Since $2p_i - 2p_0 \sim 0$, $2\lambda \sim 0$

$\Rightarrow$ By considering $(\sigma = 0) = \Theta$, we have

$-p + p_0 - \lambda \sim q - p_0 + \lambda$, i.e., for each $p \in B$, $\exists q \in B$ s.t. $p + q - 2p_0 - 2\lambda \sim 0$.

$\Rightarrow$ ① $p = p_0 \Rightarrow q^0 - p_0 \sim 2\lambda$

② $p = p_i \Rightarrow p_i + q^i - 2p_0 \sim 2\lambda$

$\Rightarrow$ $q^0 - p_0 \sim p_i + q^i - 2p_0 \Rightarrow p_i + q^i \sim p_0 + q^0$

$\Rightarrow$ By the arguments on P262 note, if $p_i \neq q^0$, $h^0(p_i + q^i) = 1$.

$\Rightarrow$ $p_i = q^0$ & $q^i = p_0 \Rightarrow p_i - p_0 \sim 2\lambda$ for all i

$\Rightarrow$ Contradiction.

$\Rightarrow$ If $p_i = q^i$, then $q^0 = p^0$. $\Rightarrow$ $2\lambda \sim 0$

$\Rightarrow$ Since λ is a point of order 2, it is one of 16 half-lattices μ_i, μ_{ij}. $\Rightarrow$ By the result on P312, since $[2\Theta]$ is invariant under the translations τ's, $\tau \in \{\mu_i, \mu_{ij}\}$. $\Rightarrow$ $|2\Theta + \lambda| = |2\Theta|$, in case $\lambda = \mu_i$ or μ_{ij}. ∎

In particular, then the divisors $2\Theta_i$, $2\Theta_{ij}$ are all elements of the linear series $|2\Theta|$; and