

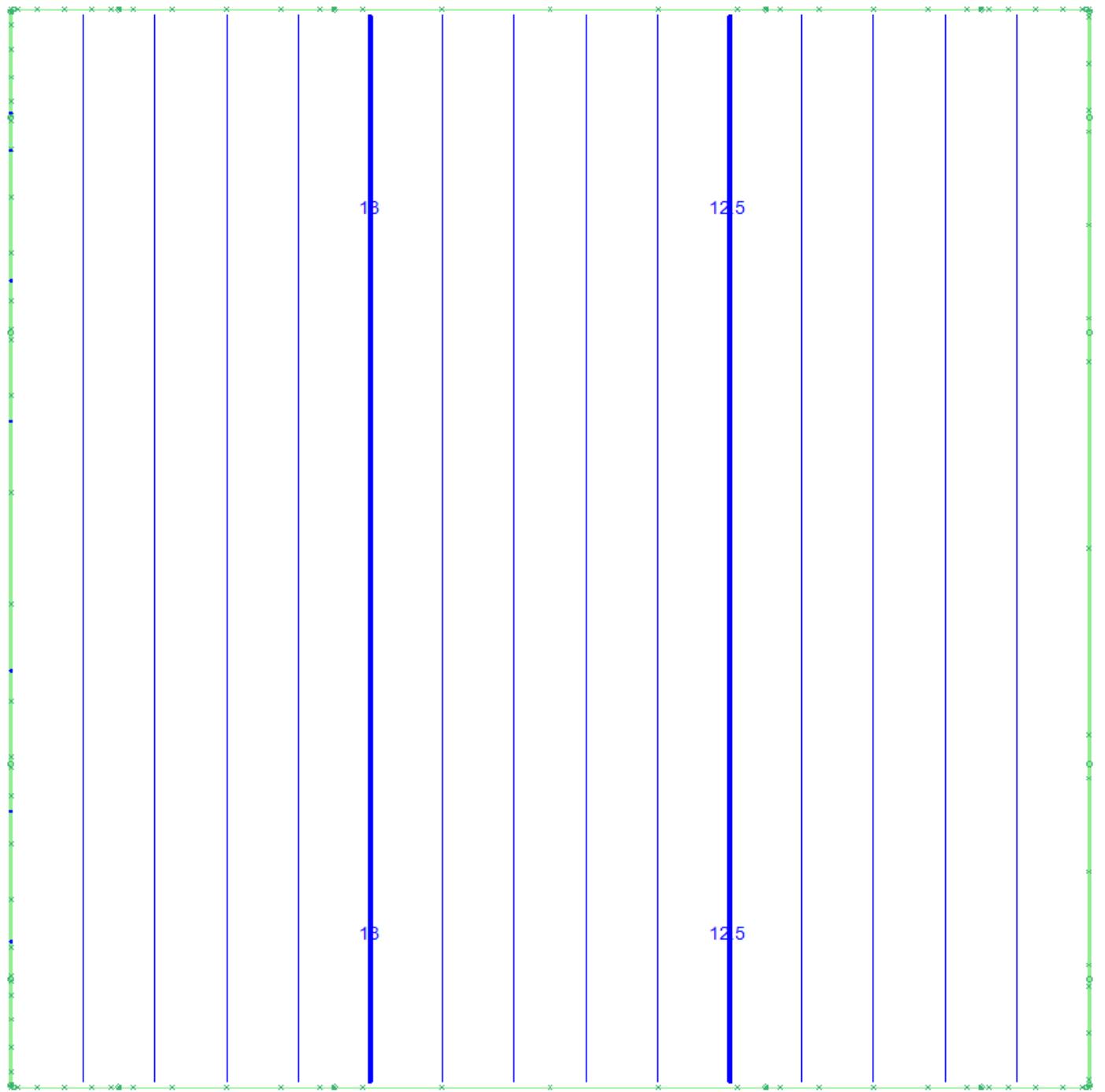
Check 16 - Head-dependent normal flux (3rd type) boundary

Checks head-dependent normal flux (3rd type) line boundary, interdomain boundary, confined and unconfined domains

This compares two single-level models that both have a confined domain that is 1000 x 1000 units in the x and y directions, specified normal flux = 0 (no-flow) boundaries at $y = 500$ and $y = -500$, and a constant head boundary $h = 12.0$ at $x = 500$.

- One model uses the head-dependent normal flux boundary at $x = -500$ with conductance $C/b = 0.001$ and $h^* = 15.0$, ([Check3rdType.anaq](#)).
- The other model doesn't have the 3rd type boundary, but instead has an equivalent finite width 2nd domain that extends from $-600 < x < -500$. The transmissivity (T) of this 2nd domain is $1/10^{\text{th}}$ the T of the other domain. A head-specified boundary with $h = 15.0$ is at $x = -600$. The conductance of this 2nd domain is equivalent to the boundary conductance $C/b = 0.1/100 = 0.001$ in the other model ([Check3rdType_alternate.anaq](#)).

Both models result in $h=13.50$ and domain discharge $Q_x = -T (dh/dx) = 0.01500$ at $x=-500$. See the contour plots compared below. Changing the model so that it is unconfined yields similar good comparisons between the model with the 3rd type boundary and the model with an equivalent finite 2nd domain ([Check3rdType_unconfined.anaq](#) and [Check3rdType_unconfined_alternate.anaq](#)).



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