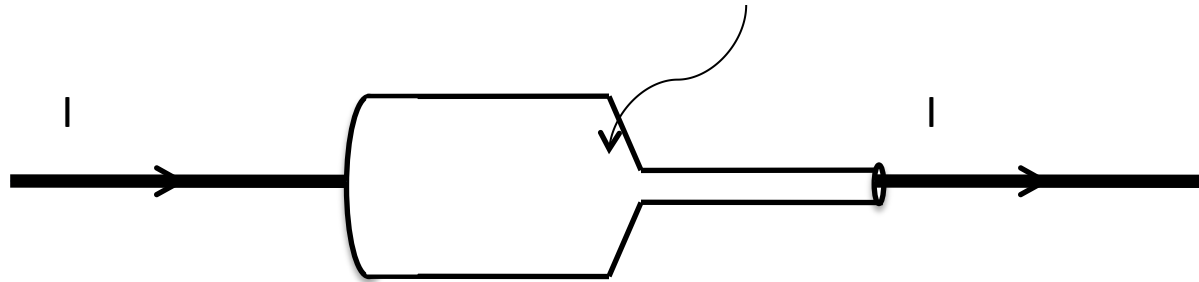


A piece of copper is machined to have the shape shown, with steady current flowing through it from left to right

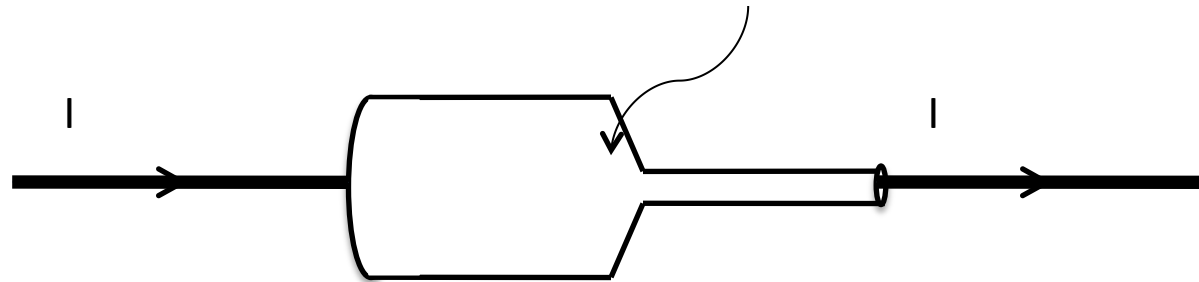


In the “necking down region” (somewhere in a small-ish region around the head of the arrow), do you think

A) $\nabla \cdot \mathbf{E} = 0$

B) $\nabla \cdot \mathbf{E} \neq 0$

Recall the machined copper from the last question...



In steady state, do you expect there will be any surface charge accumulated anywhere on the walls of the conductor?

A) Yes

B) No