1086-35-1907 **Patricia E. Bauman**, Dept. of Mathematics, Purdue University, West Lafayette, IN 47907, and **Guanying Peng*** (gpeng@math.purdue.edu), Department of Mathematics, Purdue University, West Lafayette, IN 47907. *Analysis of the Lawrence-Doniach Model in Perpendicular Applied Fields.* Preliminary report.

We analyze minimizers of the Lawrence-Doniach energy for layered superconductors occupying a bounded cylinder, $\Omega \times [0, L]$, in $\mathbf{R}^3$, where Ω is a simply connected bounded Lipschitz domain in $\mathbf{R}^2$. For an applied magnetic field $\vec{H}_{ex} = h_{ex}\vec{e}_3$ that is perpendicular to the layers where $|\ln \epsilon| << h_{ex} << \epsilon^{-2}$, we prove an asymptotic formula for the minimum Lawrence-Doniach energy as ϵ and the interlayer distance s tend to zero. Under appropriate assumtions on ϵ versus s, we establish comparison results between the minimum energies of the Lawrence-Doniach and the $3D$ anisotropic Ginzburg-Landau models. (Received September 24, 2012)