Random field Ising magnets have no thermodynamic phase transition in two dimensions, however there is strong evidence that connected spin domains percolate at a finite random field strength. Thus even though the total magnetization remains zero, the domains diverge in length scale. We examine ground state domain walls near this percolation transition finding strong evidence that they are conformally invariant and that they satisfy Schramm (stochastic) Loewner evolution (SLE) with parameter $\kappa = 6$. These stringent requirements, which hold for normal 2d percolation, permit exact calculation of properties such as the fractal dimension of domain walls and allow the powerful techniques of conformal field theory to be aimed at the random field Ising magnet.