How to "Read" and Use an Architect's Scale

The $\frac{1}{4}$ tells us that the *actual* distance between 0 and the twelfth line is $\frac{1}{4}''$; and that $\frac{1}{4}'' = 1' - 0''$. Knowing that twelve inches equal one foot and using dimensional analysis, we can determine that each of the 12 lines to the *right* of 0 represents one inch.
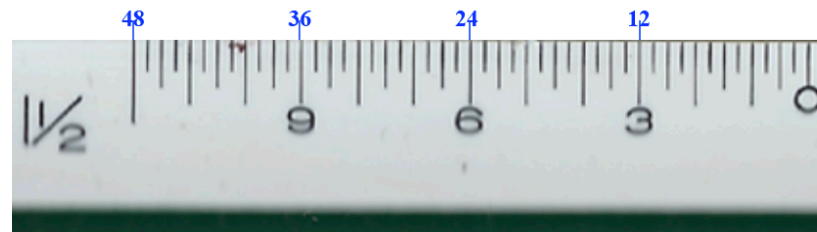

(illustration not to scale)

$$\frac{1' - 0''}{\underset{1}{\cancel{12}} \text{ lines}} \times \frac{\cancel{12}^{1} \text{ inches}}{1' - 0''} = \frac{1 \text{ inch}}{1 \text{ line}}$$

(illustration not to scale)

Now, look at the side that reads $1\frac{1}{2}$ on the **left** end and 3 on the **right** end; we'll start with the **left** end of this side is the mixed number $1\frac{1}{2}$, which means the scale $1\frac{1}{2}'' = 1' - 0''$. There are 48 lines to the **left** of 0.

(illustration not to scale)