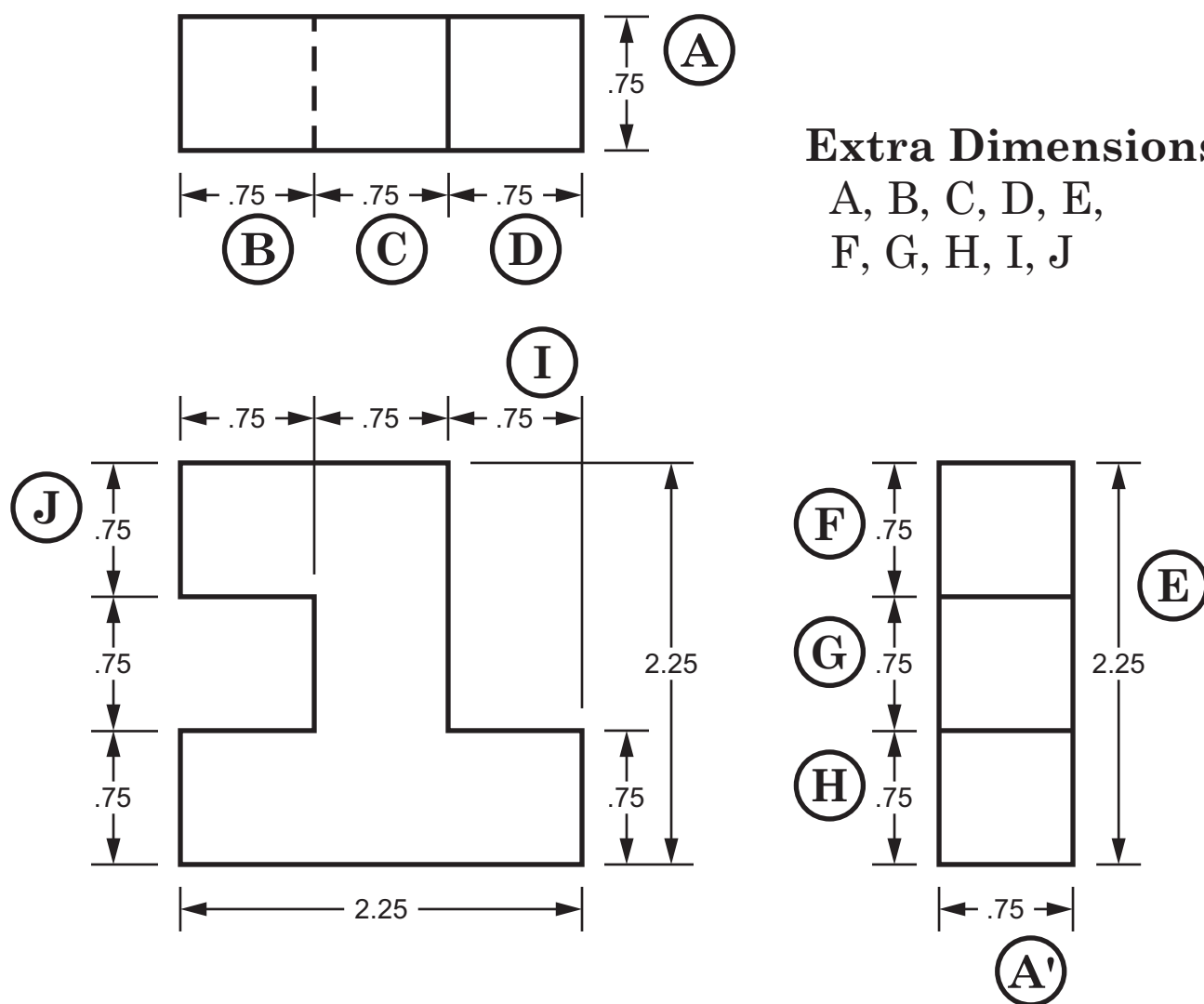


Over-dimensioning: the same feature is located more than once.

- Causes confusion on how to make a part; parts can be made in more than one way.
- "Identical" parts made by using different measurements (even if made by the same person) will not be exactly the same.



A. Already dimensioned at bottom of **Right View** (A').

B, C, D. Already dimensioned in **Front View**.

B. Do not dimension hidden lines, if possible.

E. Already dimensioned at right in **Front View**.

F, G, H. Already dimensioned in **Front View**.

I. The width of part is 2.25", already dimensioned at bottom of **Front View**.

The 0.75" labeled **I** locates the right side of the part again.

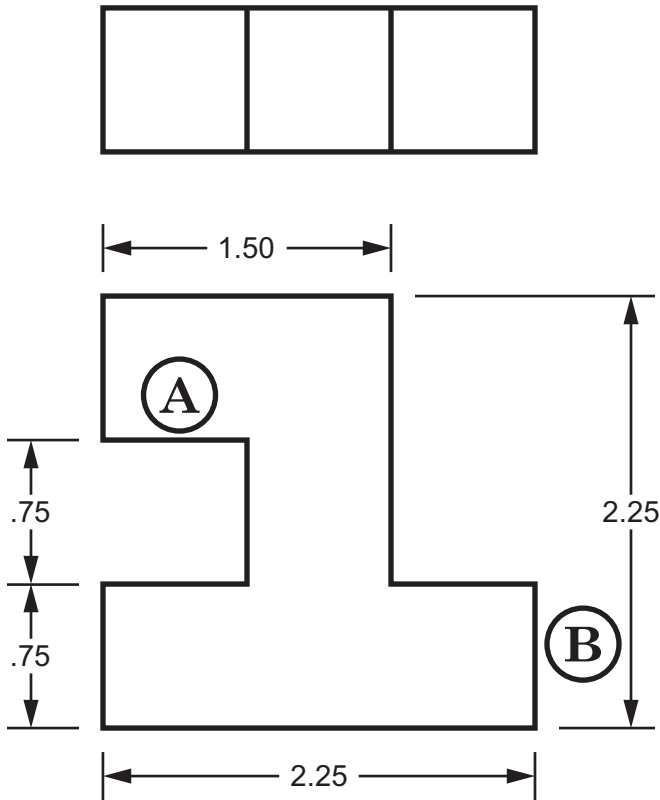
In practice, if one person makes the part 3x0.75" wide, and second person (or the same person) makes the part 2.25" wide, the two parts will not be exactly the same width. In practice, $3 \times 0.75" \neq 2.25"$.

J. The height of the part is 2.25", given at the right of the **Front View**.

The 0.75" labeled **J** locates the top of the part again (see **I**).

Under-dimensioning: not all features are located.

- Parts will not all be made to the same dimensions.

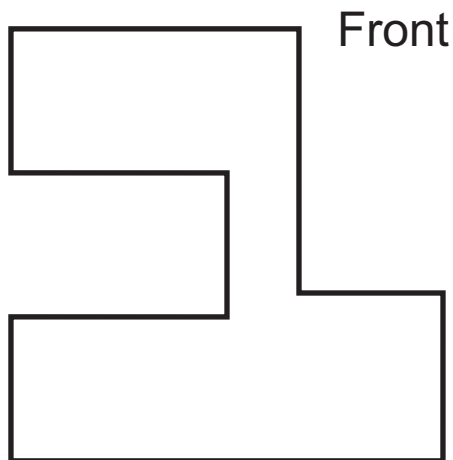


Missing Dimensions:
A, B, C

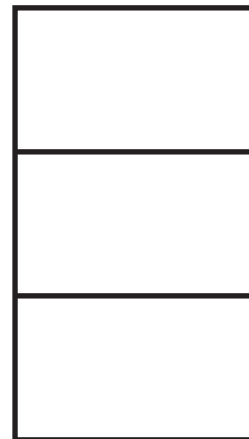


- A. The depth of the notch is not indicated.
- B. The height of the right step is not indicated. It looks like it is 0.75" above the bottom (like the left step), but do not make that assumption.
- C. The thickness (depth) of the part is not indicated.

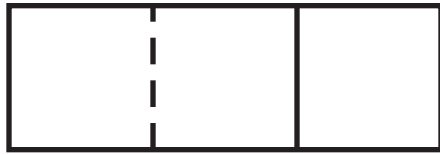
The following part(s) would satisfy the dimensions, or lack of dimensions (A, B and C), given above.



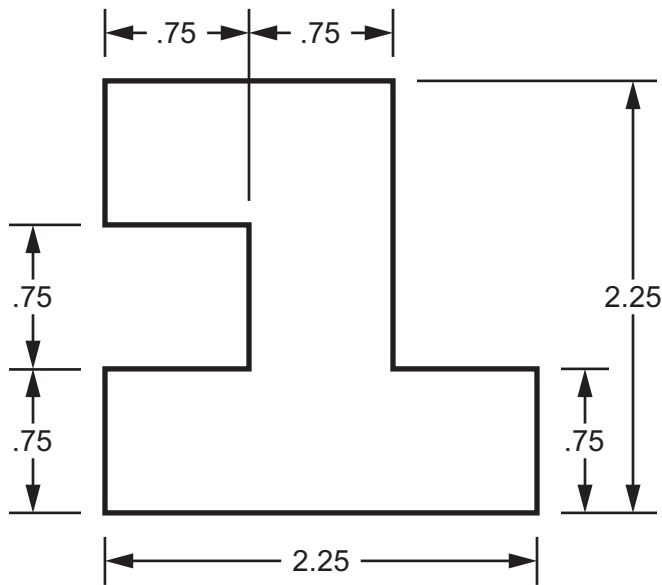
Right



JUST RIGHT: each feature is located only once.

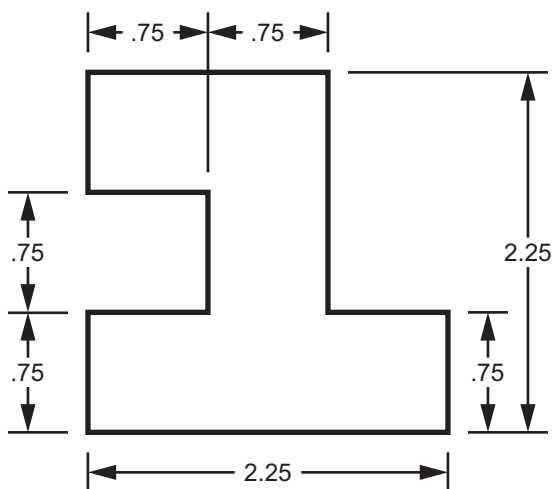


TOP VIEW: In this case , no dimensions are needed on the Top View. All features are already dimensioned in the Front and Right Views.

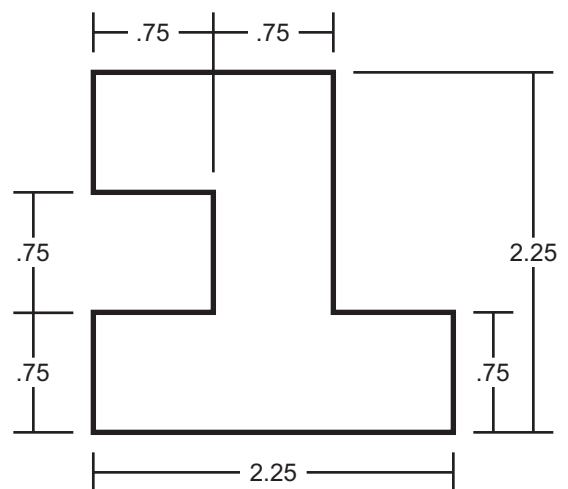


REMINDER: DIMENSION LINES have arrowheads at each end.

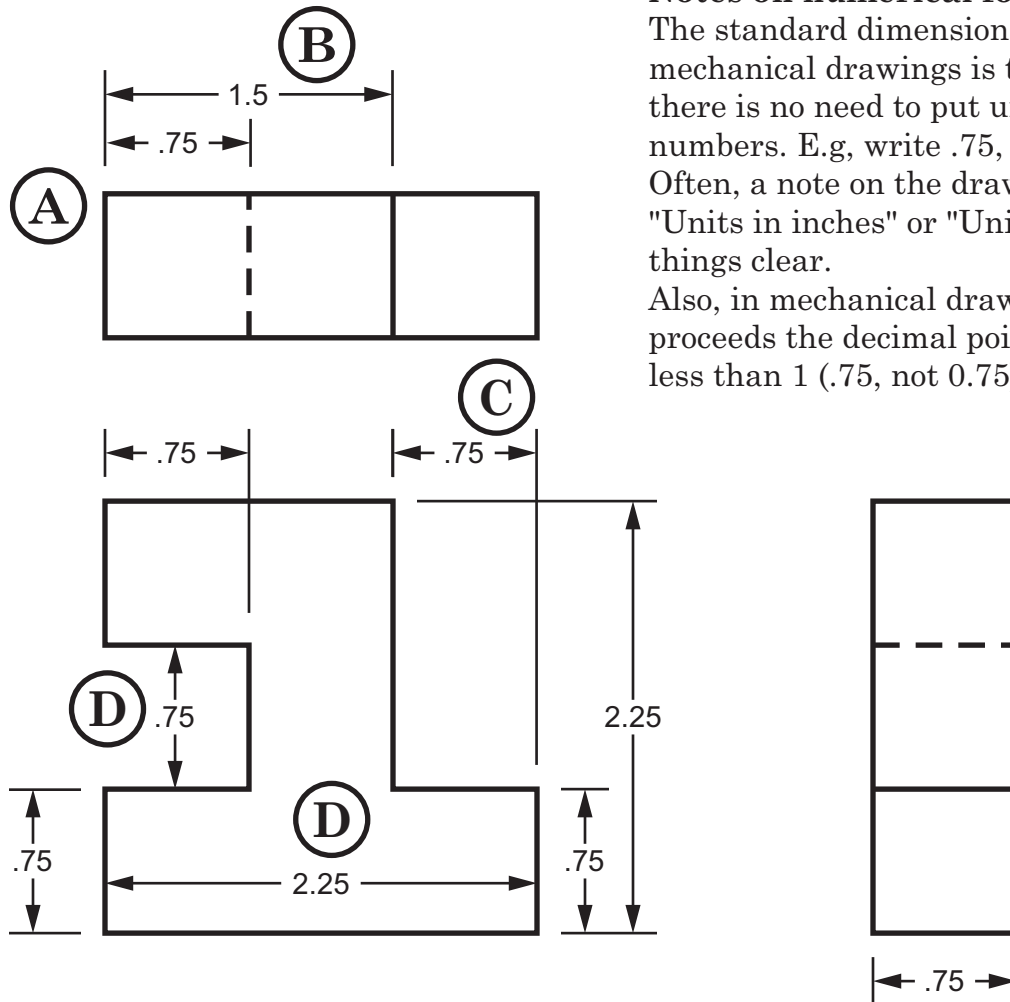
Correct



Incorrect



SOME HINTS: KEEP IT NEAT and CONSISTENT.



Notes on numerical format:

The standard dimension in United States mechanical drawings is the inch. Therefore there is no need to put units after the numbers. E.g, write .75, not .75" nor .75 in. Often, a note on the drawing will indicate "Units in inches" or "Units in mm" to make things clear.

Also, in mechanical drawings, no zero proceeds the decimal point for numbers less than 1 (.75, not 0.75).

A. Do not dimension to a hidden line.

B. Give all dimensions to the same decimal place; here, use 1.50 instead of 1.5.

The number of decimal places indicates how precise the maker needs to get to make the part. For example, 1.5 implies ± 0.05 " while 1.50 implies ± 0.005 ".

Unless there is a reason for the precision to be different, all dimensions here should be given to two decimal places.

C. If possible, try to measure all dimensions in the same direction. For example, from the bottom, or from the left. Above, the .75 at **C** is measured from the right of the part, while the other .75 at the top is measured from the left. Your eyes now need to move in two directions to understand what is going on. Unless there is a reason to measure from the right side, dimension the Front Face as in "JUST RIGHT."

Note: A reason measure from the right would be if you want to indicate to the maker that you want to make the cut on the part from the right.

D. Avoid placing dimensions on the part (the 2.25), or within the overall geometry of the part (the 0.75 in the notch). Dimension the outside of the part, as in "JUST RIGHT"). Keeping the dimension lines away from the part prevents confusion (is that line part of the object, or a dimension line?)