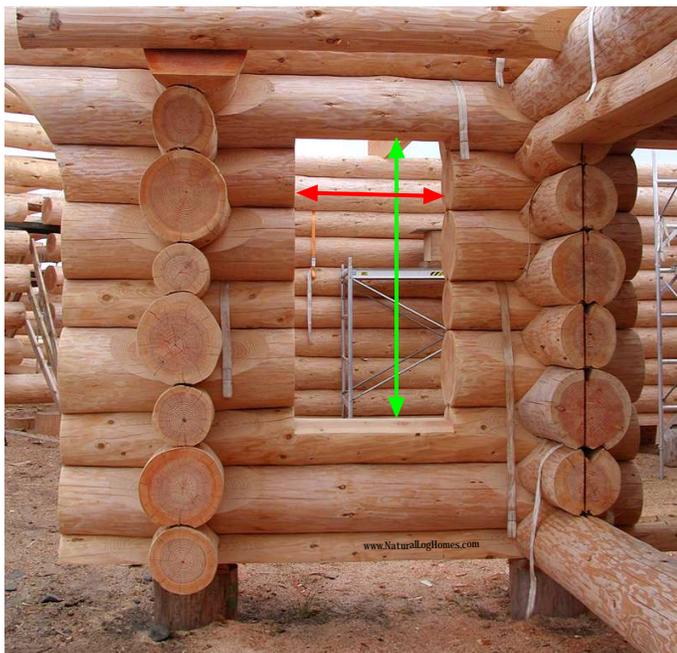
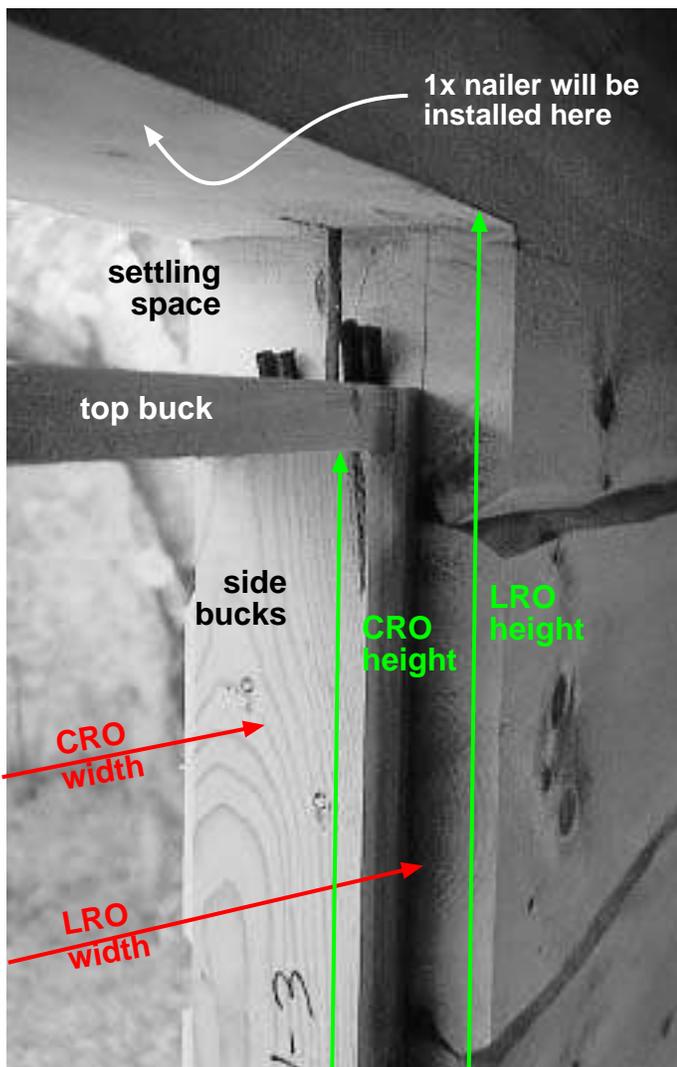


# Windows and Doors



Log Rough Opening (LRO) height is green, and LRO width is red.



This LRO has been framed and it is now a CRO. There is one 2x on top (top buck) and there are two side bucks to make up 3" thickness. The side bucks are nailed to each other only -- those nailheads you see do NOT go into the log ends (or they would cause a settling hangup).

CRO shows the Carpentry Rough Opening width. The window fits in the CRO space. Log Rough Opening height -- the green arrows go down to the log window sill. The 3/4" nailer is not yet attached to the log window header and so is not shown here. Settling space is the free area below the nailer and above the top buck.

1) First, choose a window manufacturer (Pella, Andersen, or etc) and the model (product line) that you will buy. You cannot go any farther than Step 1 until you select which window you will actually use. Every window manufacturer uses different widths and heights. There is NO standard window size. The log openings in your log home shell must be cut to suit the particular window manufacturer's product line.

Homeowners, log builders, and architects also have their own preferences for the width of the window trim -- some want it to be 2-1/4" wide (for example), and some want 4", or some other width. These variations mean that log rough openings are framed differently depending upon what is wanted by the homeowner or designer, and what is needed by the window manufacturer.

2) Get the catalog that shows your window's Carpentry Rough Opening (CRO) dimensions, and has detail drawings of the product -- in particular, does this line of windows have built-on "flanges" that are used for nailing the window into a standard 2x carpentry opening? Some windows have nailing flanges and some don't -- and either type can be used in log homes. If there is a flange, then how much wider than the CRO is the flange? All carpenters will understand this question and why it's going to be important to the next steps.

3) Measure the existing opening widths and heights in the log walls--these are called "Log Rough Openings" (LRO) and make a list of all window and door openings in your home.

CRO's are always narrower and shorter than the LRO's. Extra width is needed to make room for "bucks" (2x4 or 2x6 that are installed between log ends and windows and doors), and extra height is needed for a buck, a nailer, sometimes for a 2x sub-sill (if windows have a flange, for example) and for settling allowance. (See the Log Construction Manual by Robert W. Chambers, pp. 253 and 259).

4) WIDTH -- If the windows you decided to buy do NOT have a nailing flange, then add 3 inches to each CRO width of the window you intend to use. The result is the LRO width. Example: CRO width is 47-1/4", add 3" = LRO width of 50-1/4". (Note that using a single 2x buck on each side results in narrow finish trim, which some homeowners do not prefer.)

If the windows you decided to buy DO have a nailing flange, and that flange is wider than 1-1/2", then add 6 inches to the CRO's width. The answer you get is the LRO width you will need to use doubled bucks on each side. (If the window's flange is larger than 1-1/2" but less than 3", then any carpenter can figure out what to do -- you use one 2x buck plus some plywood to make up a buck of special thickness, for example, a 2-1/4" window buck is made from one 2x plus one piece of 3/4" ply.) Thicker bucks mean you will have wider finish side trim-- which is what some log home owners seem to prefer.

5) HEIGHT -- Take the CRO height from the window catalogue, add the sill buck (if any) the top buck, and the nailer thickness. Multiple the resulting number by 1.06. (If you will use one 2x top buck plus one 1x nailer attached to window header log, then you will add 2-1/4" to the CRO height --see Log Construction Manual p. 253, Figure 2.H.1). Add 3-1/2", or another amount as needed, if the windows DO have a flange.

Example: CRO height is 52.5". Add 2-1/4" (2.25") and you get 54.75". Multiply 54.75 times 1.06 and this equals 58", which is the LRO height. Note: 1.06 calculates the settling allowance required (see the Log Construction Manual pp.140-143 and page 253).

6) It is easy to make side bucks thicker than 1.5" (that's 1-1/2") by doubling them to make 3", or adding in 3/4" boards, or any number of plywood thicknesses. This is usually done for two reasons: either because the window has built-on flanges, or because the owner or the designer wants to use wide trim around the opening.

7) In general, you cannot use one standard window trim that is called "brick mould," so do not order it (if possible) when you order your windows, and it may save you a few dollars. If your windows come with brick moulding you will probably just take it off and discard it. The windows will need flat trim all around ("picture frame" style) -- mostly because you need a flat surface for settling boards to rub against.

## Window Installation

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