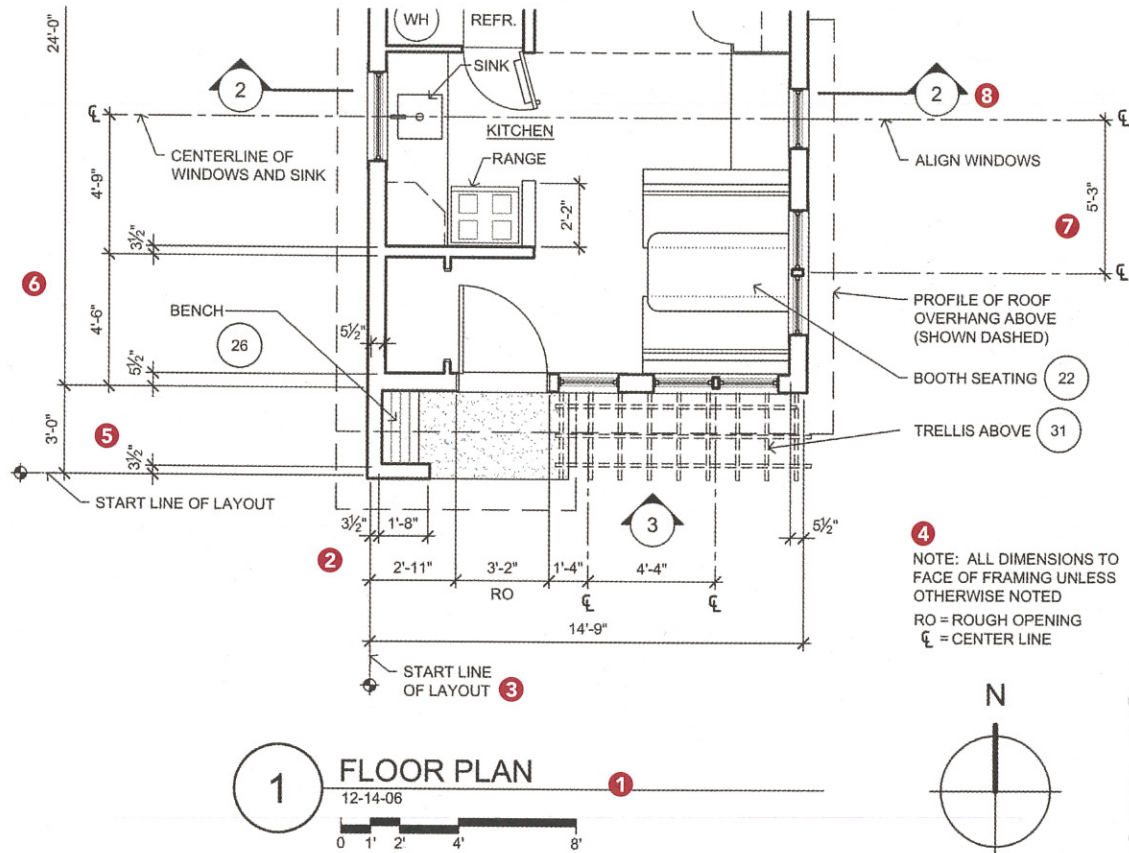


Reading and drawing construction plans

One often-overlooked aspect of design is the attention and detail that should be given to construction drawings. I firmly believe that better construction projects come out of better drawings. Drawings that look chaotic result in confusion and unintended consequences on the job site. Whether you're drawing plans for your own project or a project someone else will build, or you're reviewing a designer's plans, a well-organized and clear set of drawings quickly conveys a great deal of information. With good construction plans and an understanding of how to read them, the homeowner has a better grasp of how the design will look and function; carpenters, electricians, and plumbers have fewer questions on the job site; and the project's design goals are more likely to be met.

For plans to function properly, it's critical for dimensions to be absolutely clear. The following plans show the types of drawings and the organization, labeling, and measuring system that I use. Remember, it's critical to check all dimensions. I recommend having someone else check the dimensions as well, especially the builder.

Architect Russell Hamlet (www.studiohamlet.com) is currently designing a development of LEED-certified spec houses on Bainbridge Island, Wash. Drawings by the author.

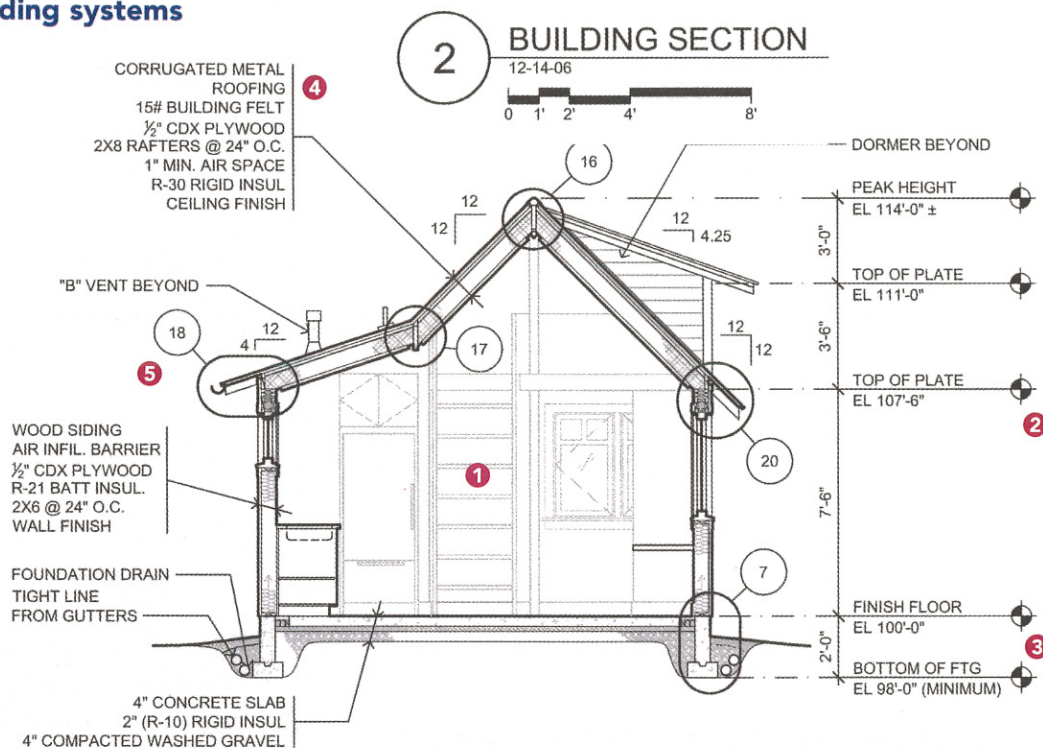


Floor plans show critical dimensions

- 1 Each should have a title, a date, and a scale. Site and floor plans require a reference point, usually a north arrow.
- 2 Consistently grouping dimensions on the left side and bottom of the plan and placing notes on the right makes it easy to navigate a series of drawings and reduces clutter. It's OK to break from this pattern to clarify a detail.
- 3 Establish a starting point for layout dimensions. Errors are reduced if all measurements on site begin from a common starting point. The starting point should be one of the first elements built (a foundation, a pier, or a column) or on an existing structure.
- 4 A note on the drawing should indicate how all dimensions are measured. In this case, it is from the face of the framing.
- 5 Plan dimensions should be drawn as you would measure them if you were building the house. For example, reference points should be surfaces that you can hook a tape measure on, such as the face of a stud or the top of a plate.
- 6 Establish a hierarchy for locating dimensions on the plan. Structural dimensions (such as wall thickness) are closest to the drawing. Slightly farther away from the drawing are measurements for door and window openings. As the work moves outward, masses such as a porch or bump-out are another step away from the drawing, and overall dimensions are farthest from the drawing. Be sure to pull each layer of measurements far enough away from the drawing to leave room for notes and symbols.
- 7 Dimensions less than 1 ft. should be noted only in inches. Note dimensions 1 ft. and greater in feet and inches. Exception: I note cabinet details only in inches because that's standard practice in cabinet shops.
- 8 Reference numbers inside a circle indicate additional drawings. A superimposed circle and triangle indicate a cross section or elevation. Matching references on each side of the plan with an extended baseline show the cut of the section, and the top of the triangle indicates the perspective of the drawing.

Section drawings show building systems

- 1 Items beyond the section in the drawing should be shown in lighter ink or pencil or not at all to avoid confusion.
- 2 Targets establish important elevations.
- 3 A base elevation of 100 ft. 0 in. simplifies the drawing. This section drawing uses the finish floor as the base elevation or the starting point. Setting the base elevation at 100 ft. means that there are no negative numbers on the drawing for footings or foundations.
- 4 Lists of materials for roof, wall, and floor systems provide a quick reference of how they are built without requiring a detail drawing.
- 5 A simple circle containing a reference number indicates a detail drawing showing construction methods or an additional view. Roof-edge detail 18 is shown on p. 126.



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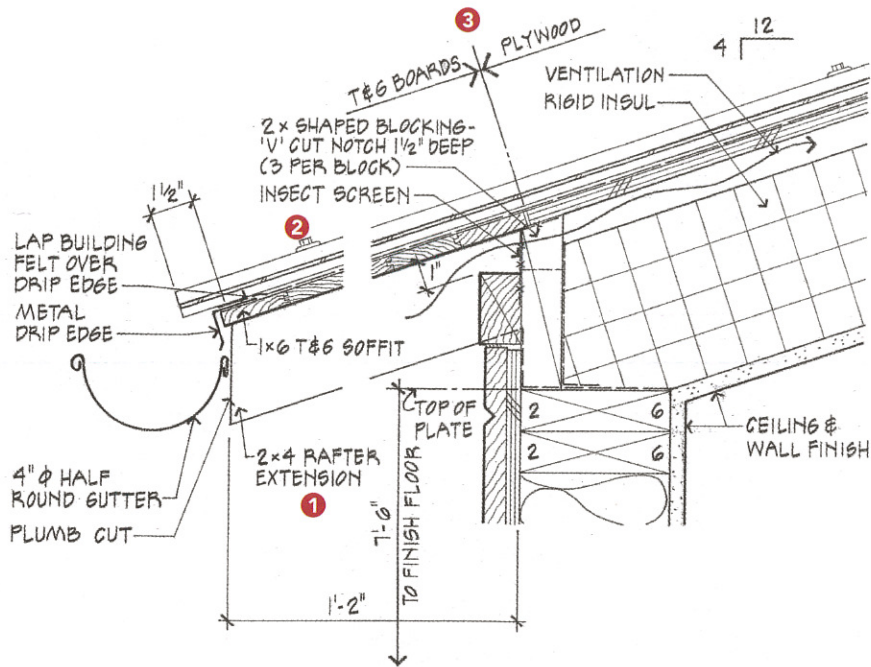
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Detail drawings show construction methods

- 1 Use notes liberally on detail drawings to anticipate job-site questions. Rather than trying to organize notes on one side as on a floor-plan, section, or elevation drawing, place the notes close to the item they explain to avoid confusion.
- 2 I like hand-drawing the details because it forces me to think through the construction process and can convey more project-specific information than computer-generated drawings.
- 3 Opposing arrows indicate a change in material.
- 4 In general, the larger the scale, the more detail can be shown in the drawing.



18 ROOF EDGE DETAIL
12.14.06

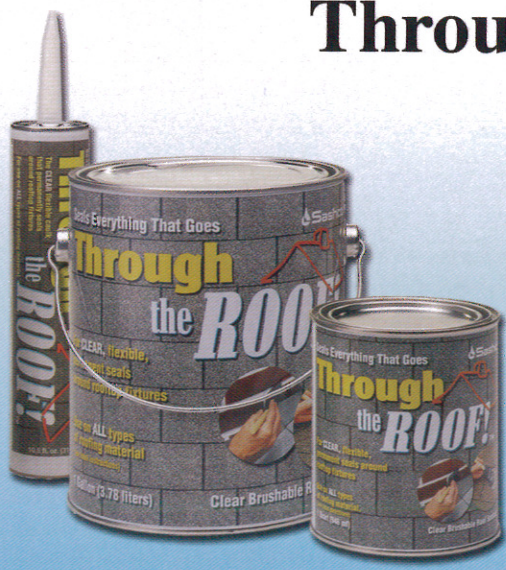


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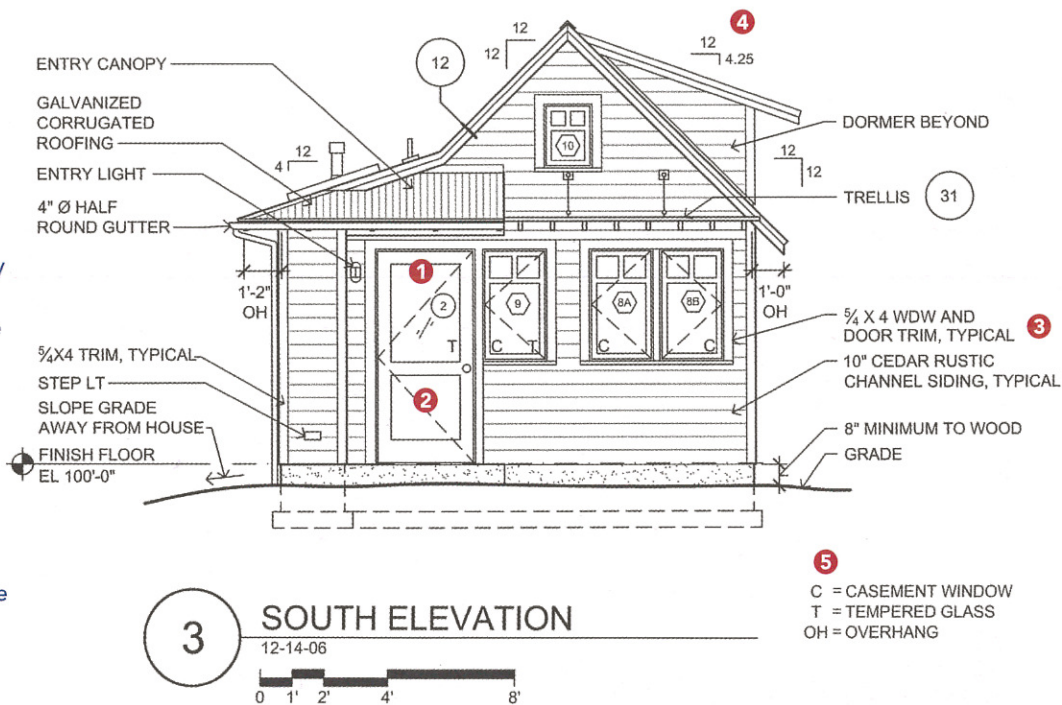
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Elevation drawings show exterior finishes

- 1 Windows and doors are identified with their own symbols, a circle for doors and a hexagon for windows. The numbers inside the symbol correspond to the purchasing schedule so that the doors and windows are matched easily to their location.
- 2 A dashed angle on doors and casement windows indicates that they are hinged on the side of the point.
- 3 Details such as siding and trim can be labeled "typical" when there are no special instructions, and they do not require dimensions on the drawing. Similarly, items like partitions, doors, and windows that are centered or located on a grid or module or by schedule do not require dimensions. This reduces clutter on the drawing and saves time.
- 4 Roof slopes are indicated with the rise and run printed along a right angle.
- 5 Consistently putting notes on the right side of the drawings makes it easy to look up abbreviations or assumptions.



5
C = CASEMENT WINDOW
T = TEMPERED GLASS
OH = OVERHANG

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