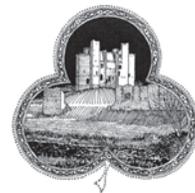


# House Building & Remodeling

by Robert B. Metcalfe

A painless checklist and guide that  
takes you from land purchase through  
occupancy permit. CD included!



*Blackwater Publications*  
Flint Hill, Virginia  
2006

## PHASE TWO - CONSTRUCTION

**Accomplish activities 9-13 at this time (scheduling item # 7)**

### 10 SPECIAL & DRY-IN MATERIALS

After determining the correct house for the land, it is the time to plan and order the materials that could take considerable lead time for delivery. **Dry in materials** are the materials necessary to make your house water-tight such as all framing lumber, roof system, windows and exterior doors, steel beams, lolly columns, and associated rough hardware. **Special items, not associated with dry in**, that could take extra time for delivery include plumbing fixtures, cabinets, counter tops, wall paper, special ceramic tile, etc.

*The following is general information regarding the material list followed by the Dry In Materials checklist (called Takeoff Checklist), and then each item on the checklist will be explained in detail. This discussion will take about 10 pages of this manual.*

#### LUMBER & DRY-IN MATERIAL LIST

Establishing a lumber list takes considerable time and energy and can be done several ways. Some plans come with material lists as part of the plan package. If your plans do not have this material list, there are three other ways to obtain this materials list (lumber companies, your carpenter), and do it yourself (general contractor).

Not all lumber companies will provide a detailed lumber list as part of their service, but some will, and this is a useful aid. Remember that the lumber company wants to sell you all the material it can, so there could be a conflict of interest.

The carpenter could make up a lumber list and in some parts of the country, the material is part of the carpentry contract. If the carpenter is supplying this material, make sure his price is guaranteed.

In my area, the general contractor provides the material, so we will now discuss how to determine this lumber and material list. This process is very time consuming, but an accurate count is necessary to obtain correct cost estimating. I would advise doing this even if other methods previously discussed are available because obtaining accurate costs is a must, and the other methods will give you a backup cost analysis.

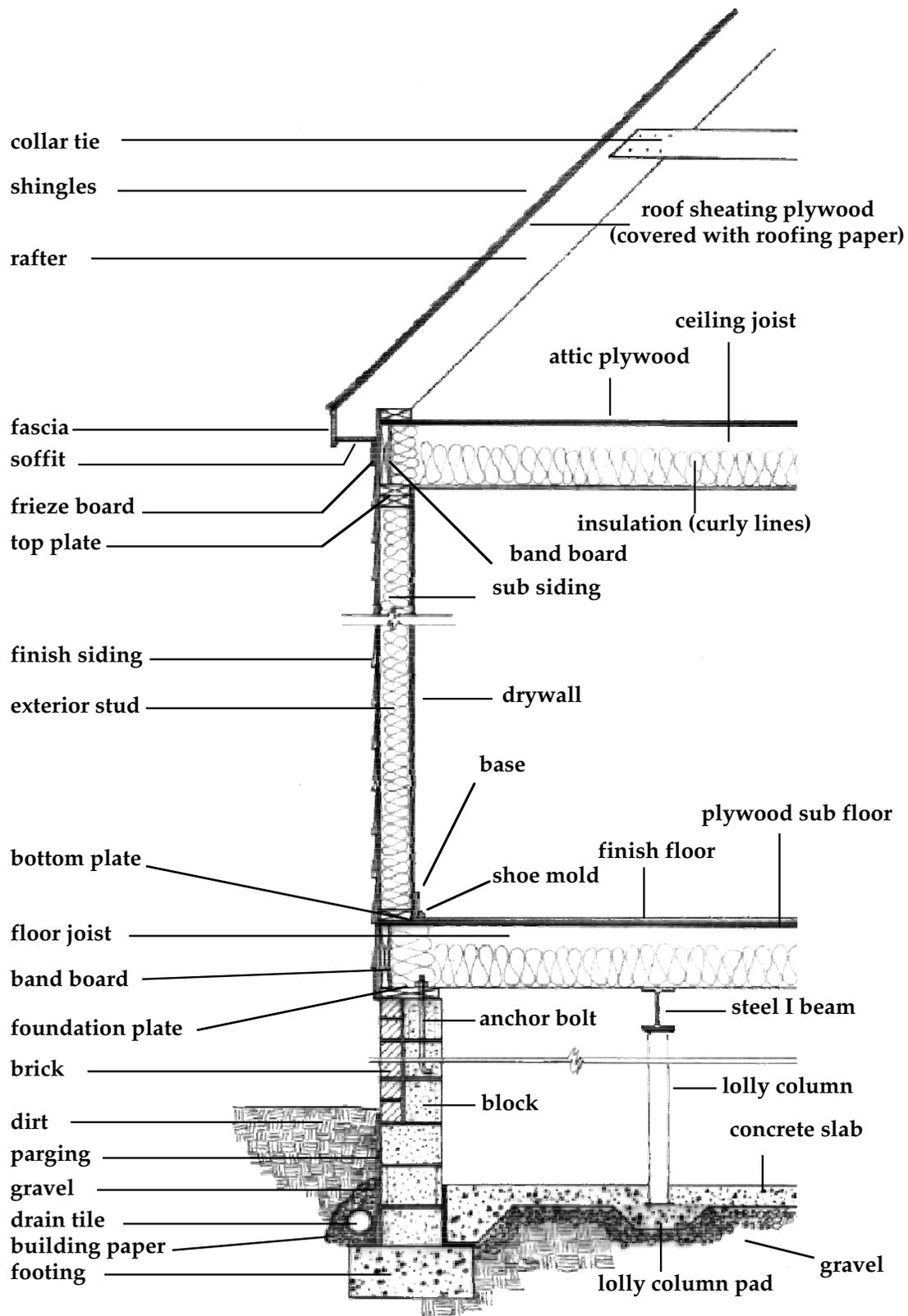


Figure 2, wall, roof, foundation & footing view

You can create this material list yourself by doing a detailed **Take-off**. Take-off means that you actually count all the various sizes of lumber and other material needed to frame your house. I go about this starting with a checklist that logically starts from the bottom (foundation) and goes to the top (roof). When figuring the cost of the lumber, *I use retail prices for my budget* which covers things I may inadvertently leave out during the take-off process. After the take-off is completed, prices can be obtained for each piece of lumber or by the board foot. **Board feet** is calculated by multiplying the **LENGTH (in feet) X WIDTH (in inches) X THICKNESS (in inches)** and **DIVIDING THIS BY 12** (this converts your answer into board feet, and your lumber supply company can quote board foot prices).

Remember that when ordering lumber, you want to order the correct lengths (studs, joists, rafters) so that waste is kept to a minimum. Top and bottom plates, headers and miscellaneous bracing material are ordered in 16 foot lengths. Bracing material (approximately 20-2x4x16 foot 2x4s) is first used as bracing and later on used for blocking material or other miscellaneous uses. Order a few (3 to 5) extra sheets of plywood for the sub floors and roof to make up for cutting waste.

Starting in the basement, crawl space, or on the slab, we will use a system to count the materials needed. The method of counting is based on how you actually will erect the building. The foundation and slab material items are counted separately, and are discussed under their own individual activities. In a basement or crawl space house the first dry in materials to count are beams and lolly columns because these are the first to be put in place. In a house built on a slab, the first lumber to be counted would be the bottom plate. **(figure 2)**

Following is the **Takeoff Checklist** I use to figure the **Dry-In Materials**. After listing the items on the checklist, each item will be discussed individually.

Lolly Columns

Beams (Wood Beams, Steel Beams , Flich Plates, etc)

Rough Lumber

(1st Floor Deck)

Foundation Plate

Floor Joists

Band Boards

Sub Floor

(1st Floor Framing)

- Exterior Wall Studs
- Exterior Wall Bottom and Top Plate
- Interior Wall Studs
- Interior Wall Bottom and Top Plate
- Headers

(2nd Floor Deck and Framing)

same as 1st floor listed above except no foundation plate

(Roof System)

- Ceiling Joist
- Rafters
- Collar Ties
- Ridge Pole
- Trusses
- Roof Plywood or other Board
- Roof Paper or Felt
- Shingles or other Finish Roof

Exterior Sub Siding (Plywood or other Board)

Exterior Paper or Wrap

Windows

Exterior Doors

Rough Hardware

Special Order Items

**Note:** This section is quite long and breaks down each item on the take-off checklist giving a description of the item and how to determine the size and quantity of each. *Adding all the costs of each item on the take-off checklist will give you the cost of all the Dry-In Materials.* Following this section of activity # 10 Dry-In Materials is item # 11, Demolition.

*We will now discuss the take-off checklist in detail.*

## LOLLY COLUMNS

**Lolly columns** are vertical steel posts that support the beams called for in your plans. (figure 3,4, & 5) The plans will show the size and location of these lolly columns which will sit on concrete pads. The concrete pads will be put in place during the “Footings” phase of construction (activities 20-22).

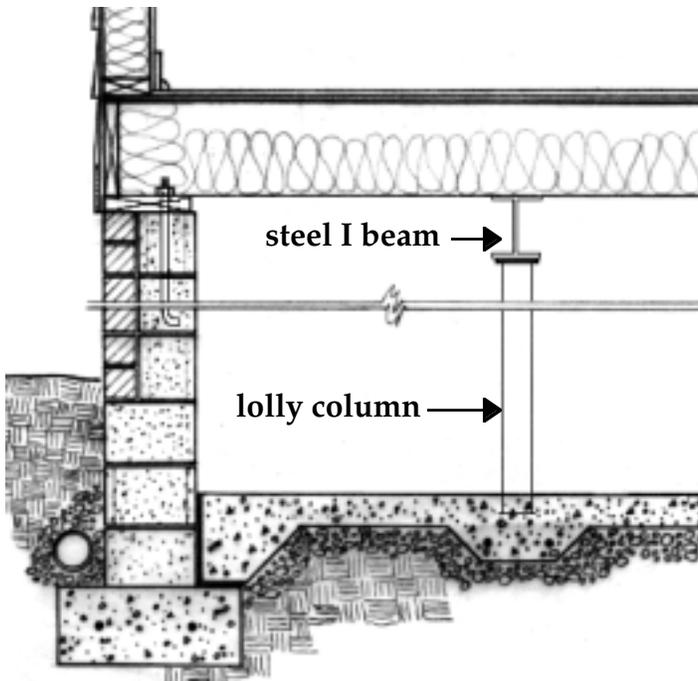


figure 3, lolly column & steel I beam

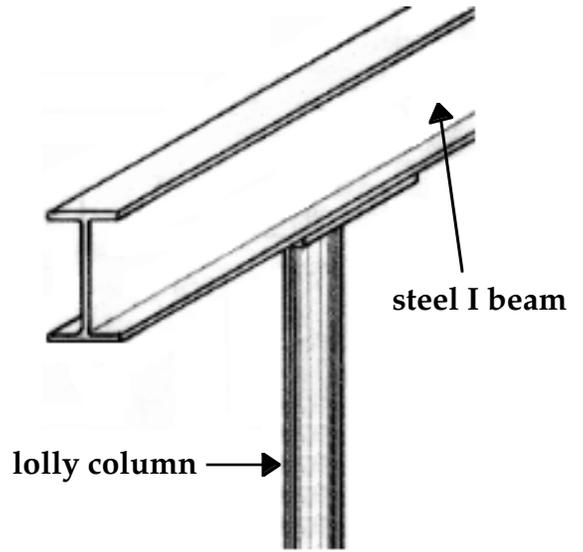


figure 4, steel I beam

**BEAMS - wood beams, steel beams, flitch plates etc.**

Beams are made out of wood or steel and are depicted on your plans. Steel fabricators will make up your steel beams (**I beams**) and deliver to your site. **Wood beams** normally are made up on the job with regular 2X#’s (2x10s, 2x12s, etc.) depicted on the plan. Sometimes beams are a combination of wood and steel with the steel (flitch beam) sandwiched between 2X#’s. This **Flitch Beam** is a flat piece of steel with bolt

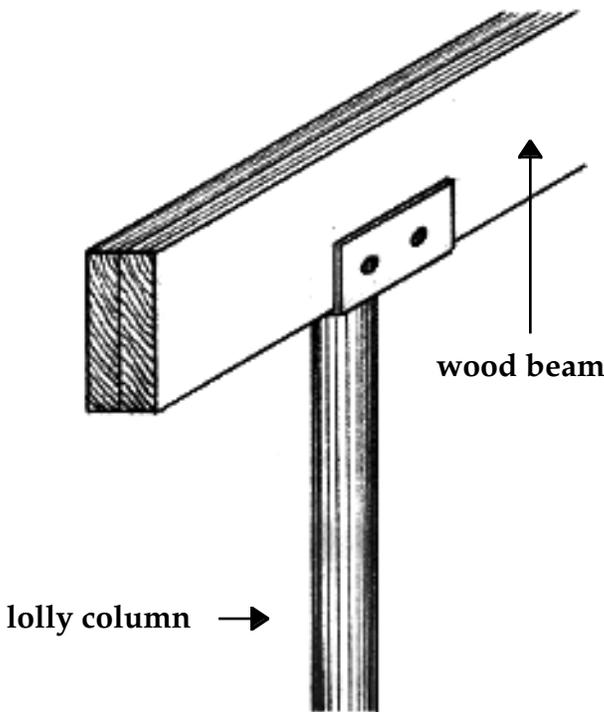


figure 5, wood beam

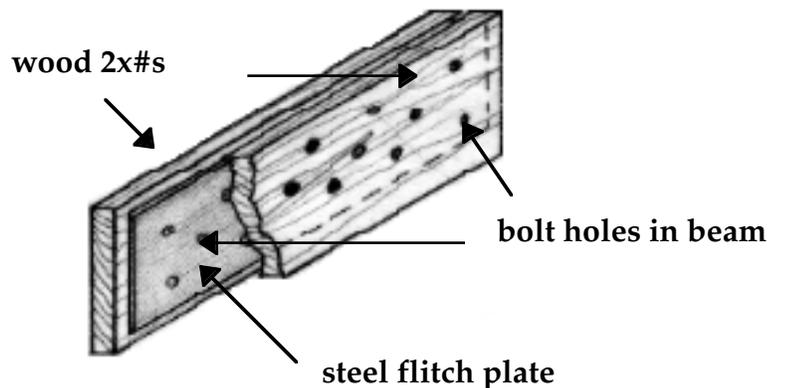


figure 6, flitch beam

holes throughout so you can bolt it to wood 2X#'s. (figure 6) These flitch beams are also made up at the steel fabricators shop. Laminated wood beams called for on the plans are made at a wood beam fabricators shop.

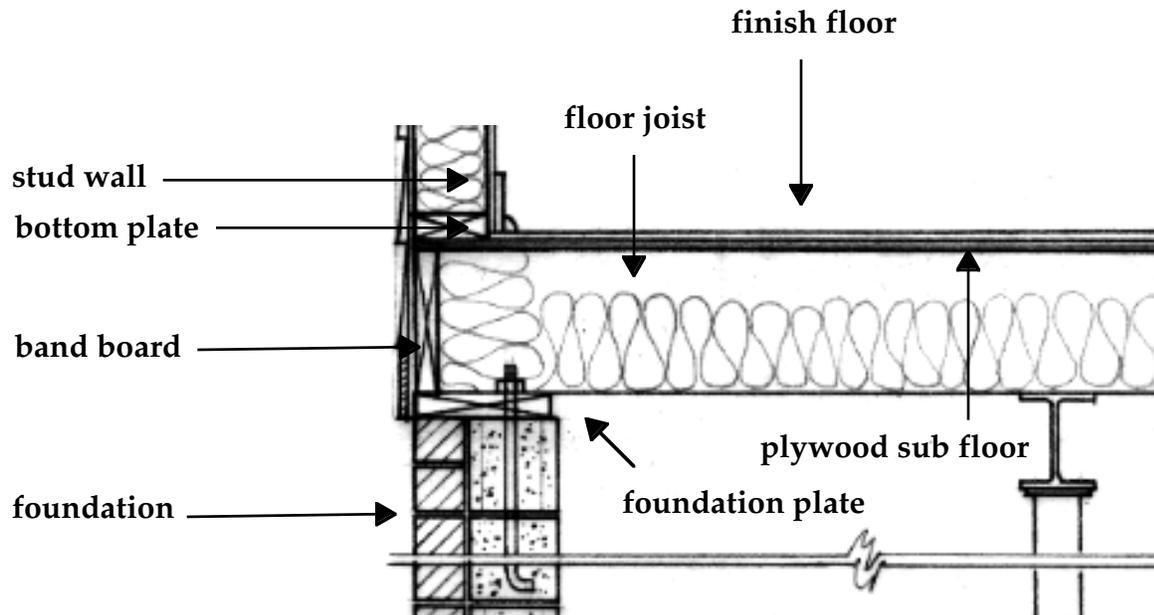


figure 7, 1st deck at foundation

## ROUGH LUMBER

(1st FLOOR DECK)

**Foundation plate - (figure 7)** The foundation plate is wooden 2X#'s that cover the top of the foundation wall. I figure the perimeter of the foundation wall and divide it by 16 which gives me the quantity of sixteen foot boards needed. The width of the boards depends on the thickness of the exterior wall. This plate is anchored to the foundation or slab with anchor bolts or straps that are installed in the foundation wall or slab by the mason or concrete contractors.

**Floor joists - Floor Trusses - (figure 7)** Floor joist are wooden 2X#'s that are the floor frame and span the foundation walls. They will sit on the foundation walls and on any beams or interior walls they would cross. Floor trusses are manufactured frameworks that cover greater spans than regular 2X#'s. Your plans will dictate the size and spacing of these joist or floor trusses. Spacing between these joists normally is 16 inches, but structural requirements may make this spacing as little as every 12 inches.