

CHAPTER 1

Blueprint Basics

BLUEPRINTS

The first thing to understand is that what we call *blueprints* are usually not blue. Years ago they were blue drawings with white lines. This was a result of the process used to produce them. Now, blueprints are usually white pages with black or blue lines. Nonetheless, the name *blueprint* has remained and probably will remain in use for a long time to come. You may also hear blueprints referred to as *drawings*, *prints*, or *plans*.

A blueprint is a representation of what is to be constructed. It is a drawing of what is to be built. Blueprints, however, are very precise drawings. They are exact representations of what is to be built. Obviously, they are much, much smaller than the proposed structure, but they are exact and detailed.

Every line on a construction drawing is carefully placed. The relation of a line to another line shows distances.

Usually, blueprints display a view of the project as seen from above—in other words, as it might be viewed by a bird. However, many blueprints show a view that cannot be seen in real life. For example, many floor plans show the walls and floor, providing a view that could only be possible in real life if you removed the roof of the completed building. Other blueprints may show only the foundation and floor slab, or a single floor of a multifloor building.

BLUEPRINTS (cont.)

Properly, the view from above is termed a *plan*; drawings shown from other perspectives have different names. Engineers may use such terms correctly, but this is seldom true on a construction site. The term *plan* is generally used for any type of drawing.

Blueprints show a great deal of information. You must read them carefully and slowly. If you skim or go too quickly, you will almost certainly miss a number of important (and expensive) items.

BLUEPRINT QUALITY

Be aware that the quality of blueprints used for construction is sometimes poor. The printing may be difficult to read. Or important information may be missing from the drawings. Entire pages may be missing, or you may receive only a set of plans or only a set of specifications.

If your prints are incomplete or of poor quality, be careful. Make sure that the people you work for, whether a contractor, building owner, architect, etc., are clear that you lack the proper documents. If you have to sign any sort of contract, make a note on it, specifying exactly what you are basing the agreement upon. For example:

“This price is based on pages A1, A2, A3, A4, M1, M2, M3, M4, and E1 provided to me by ABC Contracting. The plan sheets are dated 6/1/2005 and were prepared by James & Co. Architects.”

BLUEPRINT QUALITY (cont.)

If the prints are not clear enough to read and use, wait until you have better ones or make your own. Otherwise you may encounter serious problems in the course of the project.

Use your judgment well.

HOW TO READ A SET OF BLUEPRINTS

Keep in mind that blueprints come in sets. The set of prints for a single house may contain only a few sheets. A large project, however, may contain a hundred sheets.

The general process for reading blueprints is as follows:

1. Verify that you have all the drawings in the set, and the specification book. Also verify that these are the most current documents.
2. Study the plot plan to understand the setting of the building.
3. Study the architectural pages to understand the layout of the structure. Look especially for offset and unusual levels. Also look carefully at systems or objects that extend beyond a single floor.
4. Review the foundation plan.
5. Review the wall construction.
6. Study the plumbing, mechanical, and electrical sheets.
7. Review all notes on the plans.

HOW TO READ A SET OF BLUEPRINTS *(cont.)*

8. Review the specifications and compare them to the drawings. (Specifications normally have priority.)

TITLE BLOCK

It is standard practice to include a title block on every page of a set of blueprints. The title block shows the name of the project and the name of the page. It usually shows the name of the architect, engineer, or designer as well.

Title blocks also show the date the drawing was made, and who made it. This information may be very important, because using an outdated set of drawings can cause serious problems.

OFFICE BUILDING FOR JAMES INDUSTRIES	
1628 Old Wine Rd.	Grayson & Mill Architects
North Platte, Nebraska	16 W. Hill St.
A3	Date: 4/18/05
	By: JDE
	Ver: 1.2.0
	State Reg. # 521930

PAGE NAMES AND NUMBERS

The pages in a set of blueprints are usually carefully lettered and numbered. The letters shown here are the most commonly used:

PAGE NAMES AND NUMBERS (cont.)

A—Architectural pages

S—Structural pages

P—Plumbing pages

M—Mechanical pages

E—Electrical pages

For example, a set of blueprints may consist of 24 pages, numbered as follows:

A1 through A4 (4 architectural pages)

S1 through S8 (8 structural pages)

P1 through P3 (3 plumbing pages)

M1 through M4 (4 mechanical pages)

E1 through E5 (5 electrical pages)

Architectural pages include not only plans for the building but plans for the surrounding areas as well.

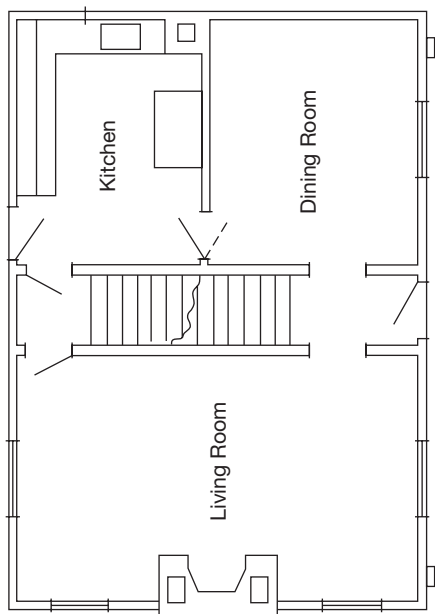
Structural plans show the structure of the building: concrete, masonry, wood framing, roof plans, and so on.

Plumbing plans, obviously, show the plumbing system.

Mechanical plans show the heating, air conditioning, and process piping systems. They may also show systems such as conveyor lines.

Electrical plans show the building's electrical system.

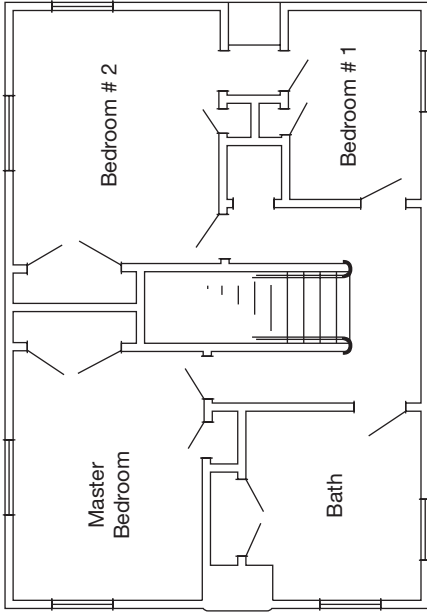
OVERHEAD VIEW



A Typical First-Floor Plan of a House

This view would be available in real life by removing the roof and the entire second floor.

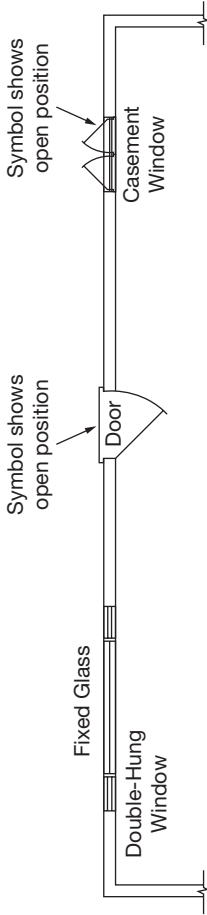
OVERHEAD VIEW (cont.)



Second-Floor Plan of a House

This view would be available in real life if the roof were removed.

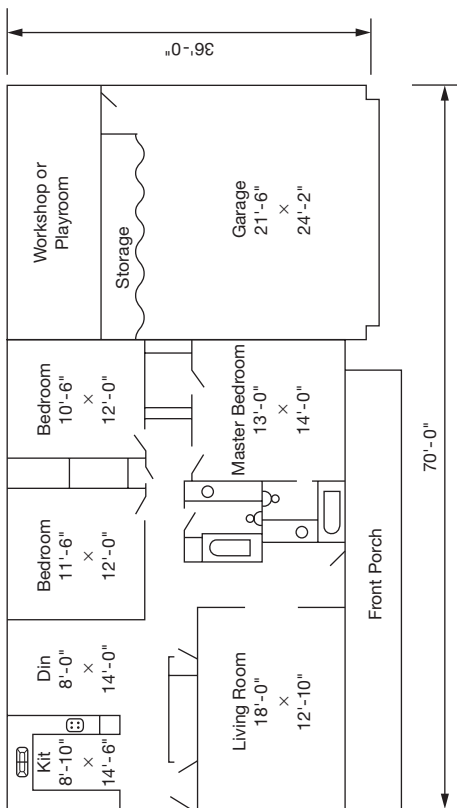
OVERHEAD VIEW (cont.)



A Plan View of a Wood-Frame Wall as Seen from Above

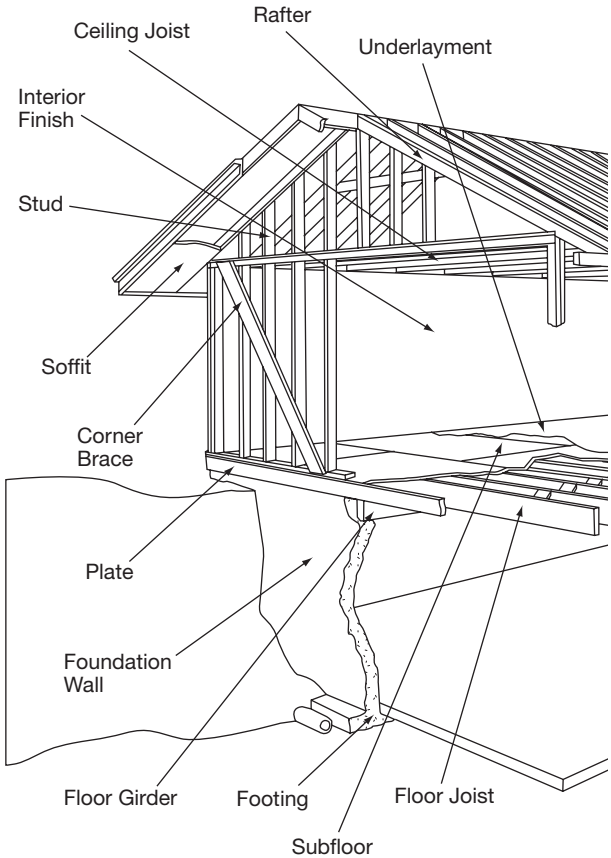
Note that this is only part of the wall, and that all unnecessary details have been left out.

OVERHEAD VIEW (cont.)



A one-floor home seen from above, as if the roof were removed. This drawing also specifies room and overall dimensions.

DETAILED PERSPECTIVE



DRAWING

