INTRODUCTION TO DRAFTING

Have you ever moved a bulky chair in your home only to find out that it didn't fit in the space that you had in mind? Or perhaps the chair did fit but as you sat on it, sweating, you discovered that there wasn't enough space left to pass through the room. This chapter will help you save blood, sweat and tears and plan before you exert any energy. By drawing your rooms you will be able to accommodate all of your furnishings. This introduction to drafting will not only help you use basic drawing techniques for placing furniture but plan for lighting and other building details. It will also help you become familiar with professional floor plans, elevations and other drawings that may be useful to you.

This is a typical furniture/floor plan, elevation and detail drawing. Remember that you are looking straight down at a floor plan—a bird's eye view—and straight ahead at an elevation. A detail drawing might be either in floor plan or elevation view. You don't see sides in floor plans or elevations because they are not three-dimensional drawings. Sometimes this is confusing because a floor plan view of a table may look simply like a rectangle. That is why some furnishings are labeled as to what they are—like "table."

Sketches or photos of floor plan, elevation and detail drawing here

We want our exercises to be as easy as they can be for you without using a lot of your time. We will start out with showing you the fastest way of drawing a floor plan and how to use it. Using grid paper to draw your design is a basic approach. If you would like to go into more detail there are other more exacting methods. We will give you more information if you want to understand and do more. It is important to note that when you use the Grid Paper technique, you are drawing **approximate measurements**.

Using Grid Paper for a Floor Plan

For this exercise you will need:

a carpenter's measuring tape
a pencil and an eraser
a ruler would be handy but any straight edge will work

You will also need copies of the Measuring Record Sheet, Grid Paper and Typical Furniture Drawings that are located in the Resource section at the back of the book. If you copy these master pages you can use them over and over again. Each square on the Grid Paper represents one square foot or twelve inches. The Typical Furniture Drawings are measured to match the grid paper. The Measuring Record Sheet will be a good reference for you later.

Here you go:

1. Measure the actual room with the carpenter's measuring tape and write down the measurement (feet and inches) on the Measuring Record Sheet. The Measuring Record Sheet is in the **Resource section, Part I, Existing Physical Characteristics**. It is helpful to have someone help you hold one end of the tape but I've watched builders pull out lengths of tape and do it themselves and fold the tape for vertical measurements. Make copies and take measurements of each room. You will need to measure and record the:

- width and length of the floor
- width and height of the walls
- width and height of the doors
- width of the corner of the room to the door opening
- width and height of the windows
- height of each window sill to floor
- width of the corner of the room to the window opening
- width and height of built-in features
- height of built-in features to the ceiling
- width of the corner of the room to built-in features.

2. Start out with a floor plan for one room at a time. Write down the name of the room and figure out which way is North—write N and an arrow in that direction. You can use a compass or look at a map of the address of the dwelling.

   SKETCHES OF PLAN AND NORTH ARROW

3. Using the grid paper you can count out feet by counting grids—one grid space equals one foot or 12 inches. Make a little pencil mark somewhere in the center of the grid paper, count the grid squares according to the recorded width and make a mark. If the width includes inches, you can estimate. For example, 6" would be half of a square. Draw a line from mark to mark on the grid paper. Write down the accurate width and length measurements near each line. At this point you will only be drawing lines for the interior dimensions.

   SKETCHES OF grid paper floor plan here—include name of room and North arrow.

4. Now you probably have a rectangle like I do. How do you know where the doors or windows are placed? First, you need to draw the exterior walls so that you can easily see doors and windows. For the sake of simplicity, draw wall lines outside of the room half a grid square from the interior lines. Yes, that would mean that the thickness of the wall would be 6 inches. (Walls are not always 6" but with grid paper it will do for now.)

   SKETCHES OF WALL LINES HERE

5. Using your Measuring Record Sheet information find out **how far the closest corner of the room is from your window**. Count the grids and make a mark on the interior lines of the grid paper. **How wide is the window?** Continue counting grid spaces of the window's width from the last mark. Make your marks. Then draw a perpendicular line, from interior to exterior, through the "walls" at each mark. For the windows you will make a parallel line in between the interior and exterior lines. That communicates that it is a window.
   SKETCHES OF WINDOW LINES HERE

6. Using your Measuring Record Sheet information find out **how far the closest corner of the room is from your door.** Count the grids and make a mark on the interior lines of the grid paper. **How wide is the door?** Continue counting grid spaces of the window's width from the last mark. Make your marks. Draw a line representing a door, which would be perpendicular to where the door would swing in or out of the room as if it is open. Measure this line according to the width of the door. For doors you can erase the opening lines. That communicates that it is a door.

   SKETCHES OF DOOR LINES HERE

7. Make a copy of this floor plan.

8. Now you can draw furniture on another copy of grid paper according to their measurements or use the Typical Furniture Drawings if you think the furniture is close in measurements to your furniture. Cut out the furniture and then move the cutouts around on the floor plan to see how they fit in the room.

9. What if you have a built-in feature such as a closet that juts out of the room or a built-in kitchen cabinet that juts into the room? Not a problem. In the case of the closet, you would draw the floor plan of the closet and then draw the type of doors to the closet as shown below. In the case of the kitchen cabinets you would draw them as you would draw furniture. You wouldn't include walls unless the cabinet was encased by walls.

   SKETCHES OF CLOSET AND CABINET

10. You will probably see the measurements written out on professional drawings of floor plans such as the example below for your information.

    SKETCHES OF DIMENSIONAL FLOOR PLAN

A word about grid paper; first of all, remember, you are **drawing approximate measurements. Secondly, you can also purchase grid paper in an office, art or architecture supply store.** I would strongly suggest using Graph paper that says 4 squares to the inch, which equals ¼ "= 1'-0."

Using Grid Paper for Elevations

The same technique for drawing floor plans applies to drawing elevations. An elevation drawing is helpful to see how a wall might look, especially for arranging or planning things like kitchen cabinets, pictures, furniture or bookshelves. If you are interested in how to draw elevations or read elevations on a plan please find a short lesson in the Resource section at the back of the book.

Drawing with an Architect Scale and Tracing Paper

Using grid paper to draw your design is a basic approach to drawing floor plans and elevations. If you would like to go into more detail there are more exacting methods. There are many ways to draw plans these days and many drawings are the results of computer methods such as CAD, computer-aided design, and other programs. We will leave those programs to your own discovery but we will include a short lesson on how to draw with an Architect scale and tracing paper. Drawing with an Architect Scale is usually more exact that Grid Paper drawing.

Michael Graves, from *Architecture and the Lost Art of Drawing* in *The New York Times* says, ". . . drawing by hand stimulate the imagination and allows us to speculate about ideas, a good sign that we're truly alive."

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First a word on what it means to draw something to scale. On the Grid Paper exercises you probably remember seeing ¼ "= 1 '-0". That particular scale means that a fraction of an inch, i. e. one fourth of an inch, represents one foot of real measured space in a building. Drawing to scale is a way of reducing an actual room, for example, to a little drawing on a piece of paper that is accurately represented. A builder, an architect or an interior designer can plan with certainty and communicate with each other when designing a plan. The scale ¼"= 1 '-0" is commonly used but for some plans the designer might need a larger or smaller scale to communicate. A large building might need to be drawn at a smaller scale so that it can fit

manageably on paper or a detail of a drawing of a fireplace mantel may be drawn at a larger scale so that it can be easily read and used in building the mantel.

For this exercise you will need the following supplies:

Carpenters measuring tape
Architect Scale—Triangle style
Pencil and eraser
Tracing paper—vellum is a hardy grade but more expensive

Here is what an Architect Scale—Triangle style looks like.

Sketches or photos of Architect Scale—Triangle style

If the scale is the triangle style it will be easy to lay down and easy to use for various scales such as 1/8 "= 1 '-0."

Now, look at the end of the scale for ¼. To the left of the ¼ you will see a 0 on a line. If you continue to the next same size line with a numeral to the left, you will see the line and a 2. Each line of that size represents one foot to scale. The smaller lines in between the longer lines represent 6." Look at the drawing below to see how we found 10 feet on the scale.

Sketches or photos of Architect Scale—Triangle style

Now you can draw lines on your tracing paper or vellum according to your measurements. For example for a width of 10 feet you can use your scale and mark 0 and the 10 on the paper and draw a line from mark to mark representing 10 feet. To measure inches of the room and translate them to your drawing, look at the end of the scale that says ¼. To the left you will see twelve little lines before the 0 line. These little lines represent inches. If your room is 10 feet and 6 inches, you can measure from the little line and left to the 10.

Sketches or photos of instructions of feet and inches on the scale

Don't be concerned if you see numerals that are much bigger in between the small numerals, for example there will be a 92 near the 0. If you look all the way to the left end of the scale, you will find the measuring scale for 1/8, which will measure 1/8" = 1' 0". For now just ignore these large numerals.

Sketches or photos of instructions of feet and inches on the scale

Why tracing paper? With tracing paper' you can save drawing time by overlaying one sheet over another drawing and trace to make changes easily. You can overlay floor plans, trace and draw different furniture arrangements so that you can put two arrangement options side by side and compare them. You can overlay a floorplan and trace on tracing paper to make

lighting and electrical plans. Professionals use tracing paper techniques for a lot of other shortcuts but many times they just doodle and create ideas by overlaying and tracing.

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DRAFTING ASSIGNMENT USING ¼" SCALE

1. Draw a 10'-0" by 12'-0" rectangle for your bedroom. Place drafting dots on corners
2. Draw walls, a 3' wide door opening and swing
3. Draw a window—your choice of size
4. Overlay drawing with tracing paper. Place drafting dots on corners
5. Draw furniture in your room to ¼" scale on the new tracing paper.
6. Overlay drawing with tracing paper. Place drafting dots on corners
7. Draw your lighting plan. If you want to draw ceiling lighting fixtures you call this the reflected ceiling plan (RCP).
8. Draw one wall or elevation and label it as to North, South, West, East
9. Overlay drawing with tracing paper. Place drafting dots on corners
10. Trace all components on the final sheet, i. e. furnishing plan on floor plan, elevation, and RCP.