

**Second Edition**

# KITCHEN & BATH DESIGN PRESENTATION

Drawing • Plans • Digital Rendering



Margaret Krohn, CKD, ASID, NCIDQ / David Newton, CMKBD



# KITCHEN & BATH DESIGN PRESENTATION



# KITCHEN AND BATH DESIGN PRESENTATION

Drawing, Plans, Digital Rendering

*Second Edition*

MARGARET KROHN, CKD, ASID, NCIDQ

DAVID NEWTON, CMKBD

WILEY

**NKBA**<sup>®</sup>  
National Kitchen & Bath Association

Cover images: Design by Bryan Reiss, CMKBD  
Co-designers: Susanna Caongor and Diane Murphy  
Photo by John D Smoak III  
Floor plan rendering provided by 20-20 Technologies  
Cover design: Anne-Michele Abbot

This book is printed on acid-free paper. (∞)

National Kitchen & Bath Association  
687 Willow Grove Street  
Hackettstown, NJ 07840  
Phone: 800-THE-NKBA (800-843-6522)  
Fax: 908-852-1695  
Website: NKBA.org

Copyright © 2014 National Kitchen and Bath Association. All rights reserved.

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.

Published simultaneously in Canada.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600, or on the web at [www.copyright.com](http://www.copyright.com). Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at [www.wiley.com/go/permissions](http://www.wiley.com/go/permissions).

Limit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this book, they make no representations or warranties with the respect to the accuracy or completeness of the contents of this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No warranty may be created or extended by sales representatives or written sales materials. The advice and strategies contained herein may not be suitable for your situation. You should consult with a professional where appropriate. Neither the publisher nor the author shall be liable for damages arising herefrom.

For general information about our other products and services, please contact our Customer Care Department within the United States at (800) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Wiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with standard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to media such as a CD or DVD that is not included in the version you purchased, you may download this material at <http://booksupport.wiley.com>. For more information about Wiley products, visit [www.wiley.com](http://www.wiley.com).

#### Library of Congress Cataloging-in-Publication Data

Krohn, Margaret.  
Kitchen and bath design presentation : drawing, plans, digital rendering / Margaret Krohn, CKD, ASID,  
NCIDQ. – Second Edition.  
pages cm  
Includes index.  
ISBN 978-1-118-56874-3 (cloth); 978-1-118-80646-3 (ebk.); 978-1-118-82237-1 (ebk.)  
1. Kitchens–Design and construction. 2. Bathrooms–Design and construction. I. Title.  
TH4816.3.K58K76 2014  
747.7'8–dc23

2013026543

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

# Sponsors

The National Kitchen & Bath Association recognizes, with gratitude, the following companies whose generous contributions supported the development of this second edition of *Kitchen & Bath Design Presentation* (formerly *Kitchen & Bath Drawing*).

## **GOLD SPONSORS**

### **CHIEF ARCHITECT**

### **DELTA FAUCET COMPANY**

# About the National Kitchen & Bath Association

The National Kitchen & Bath Association (NKBA) is the only nonprofit trade association dedicated exclusively to the kitchen and bath industry and is the leading source of information and education for professionals in the field. Fifty years after its inception, the NKBA has a membership of more than 55,000 and is the proud owner of the Kitchen & Bath Industry Show (KBIS).

The NKBA's mission is to enhance member success and excellence, promote professionalism and ethical business practices, and provide leadership and direction for the kitchen and bath industry worldwide.

The NKBA has pioneered innovative industry research, developed effective business management tools, and set groundbreaking design standards for safe, functional, and comfortable kitchens and baths.

Recognized as the kitchen and bath industry's leader in learning and professional development, the NKBA offers professionals of all levels of experience essential reference materials, conferences, virtual learning opportunities, marketing assistance, design competitions, consumer referrals, internships, and opportunities to serve in leadership positions.

The NKBA's internationally recognized certification program provides professionals the opportunity to demonstrate knowledge and excellence as Associate Kitchen & Bath Designer (AKBD), Certified Kitchen Designer (CKD), Certified Bath Designer (CBD), Certified Master Kitchen & Bath Designer (CMKBD), and Certified Kitchen & Bath Professional (CKBP).

For students entering the industry, the NKBA offers Accredited and Supported Programs, which provide NKBA-approved curriculum at more than 60 learning institutions throughout the United States and Canada.

For consumers, the NKBA showcases award-winning designs and provides information on remodeling, green design, safety, and more at [NKBA.org](http://NKBA.org). The NKBA Pro Search tool helps consumers locate kitchen and bath professionals in their area.

The NKBA offers membership in 11 different industry segments: dealers, designers, manufacturers and suppliers, multi branch retailers and home centers, decorative plumbing and hardware, manufacturer's representatives, builders and remodelers, installers, fabricators, cabinet shops, and distributors. For more information, visit [NKBA.org](http://NKBA.org).



# Table of Contents

<b>PREFACE</b> .....	<b>xi</b>
<b>ACKNOWLEDGMENTS</b> .....	<b>xiii</b>

<b>CHAPTER 1</b> <b>NKBA DRAWINGS AND DOCUMENTS</b> .....	<b>1</b>
--	----------

The Set of NKBA Drawings 1

NKBA Forms 8

Summary 10

Review Questions 11

<b>CHAPTER 2</b> <b>MEASURING THE DESIGN SPACE</b> .....	<b>13</b>
---	-----------

Steps to Accurate Measurements 13

Measuring the Remodeling Job 15

Measuring New Construction 19

Angles and Curves 20

Tips from the Pros 22

Summary 23

Review Questions 23

<b>CHAPTER 3</b> <b>THE TOOLS AND TECHNIQUES OF HAND DRAFTING</b> .....	<b>25</b>
--	-----------

Drafting Tools and Techniques 25

Drawing Media 30

Drafting Pencils and Other Tools 31

Leads 32  
Technique for Drawing Vertical Lines 35  
Portfolios 48  
Additional Techniques to Draw Angled Lines and Understand Angles 50  
Summary 56  
Review Questions 56

**CHAPTER 4**  
**DRAFTING CONVENTIONS: LINE TYPES, SYMBOLS, AND TECHNIQUES.....57**  
Lines and Technique 57  
Standard Symbols for Drawings 61  
Summary 76  
Review Questions 76

**CHAPTER 5**  
**THE NKBA FLOOR PLAN: DRAFTING AND DIMENSIONING THE PLAN.....77**  
Programming 77  
Floor Plan Considerations 80  
Dimensioning the Floor Plan 90  
Summary 95  
Review Questions 95

**CHAPTER 6**  
**NKBA DRAWINGS IN A SET OF PLANS.....97**  
Floor Plan 97  
Drafting the Construction Plan 97  
Drawing the Construction Plan 98  
Drafting the Mechanical Plan 99  
Interpretive Drawings 112  
Summary 120  
Review Questions 120

**CHAPTER 7**  
**USING THE COMPUTER TO DESIGN KITCHENS AND BATHS ..... 121**  
Computer Terminology 121  
CAD: A General Overview 123

**NKBA Certification Software 127**

**Summary 133**

**Review Questions 133**

## **CHAPTER 8**

**NKBA'S GRAPHICS AND PRESENTATION STANDARDS ..... 135**

**Purpose of Graphics and Presentation Standards 135**

**Kitchen or Bath Floor Plan 136**

**Construction Plan 142**

**Mechanical Plan and Symbols 142**

**Interpretive Drawings 143**

**Specifications 144**

**Design Statement 145**

**Titling Project Documents 145**

**Copyright and Ownership 146**

**Summary 147**

**Review Questions 147**

**APPENDIX A: SAMPLE KITCHEN AND BATHROOM  
PROJECT DOCUMENTS..... 149**

**APPENDIX B: GENERIC CABINET NOMENCLATURE ..... 195**

**APPENDIX C: METRIC CONVERSIONS.....231**

**GLOSSARY .....239**

**REFERENCES.....247**

**INDEX .....249**



# Preface

Successful kitchen and bath design projects involve the work of the designer along with other tradespeople and allied professionals. The NKBA project documents must be accurately completed to guide the installation and completion of all work to be done. The drawings will also help your client to visualize their newly proposed design space and to understand the design and function of the given space.

In this book you will learn about the standards for kitchen and bath drawings along with the NKBA forms that will assist you with your designs and project completion. There are standards in the design industry to ensure a clear understanding of the components found on each type of drawing. These drawings will be used by the contractors, plumbers, electricians, and others for the successful completion of your design project. Suppliers of products may also rely on your drawings for submitting bids and ordering products.

The successful kitchen and bath designer needs to produce professionally drafted drawings in accordance with the NKBA Graphics and Presentation Standards. These standards, found throughout this book, will be a reference for the designer for the completion of accurately drawn plans. Each drawing has a purpose along with its own specific information. Accuracy of the information and details on the drawings is imperative to ensure that installed items will fit properly in the space and are placed correctly in their designated location. Meeting a client's wants and needs while creating a functional, well-designed space for them is what kitchen and bath design is all about.

I would like to thank Johanna Baars, publication specialist at the NKBA for all of her work with the completion of this book. I would also like to thank Adrean Stephenson, AKBD, of Chief Architect Inc. for her assistance with the kitchen and bath drawings.



# Acknowledgments

The NKBA gratefully acknowledges the peer reviewers of this book:

David Alderman, CMKBD  
Corey Klassen, CKD  
Judith Neary, CMKBD  
David Newton, CMKBD  
Hollie Ruocco, CMKBD  
Mark White, CKD, CBD





# NKBA Drawings and Documents



Kitchen and bath drawings are referred to as a *set* of drawings or plans. These drawings give a visual representation of how the space will look when completed as well as where items are to be installed. Each drawing has a purpose and presents information necessary for individuals involved with the project, including the installer, contractor, electrician, plumber, and others involved. Each page in the set of drawings is numbered and cross-referenced to the relevant drawing. There is an industry standard order of drawing placement within the set of plans.

An overview of each page found in a set of NKBA drawings and documents is described in this chapter. You will learn how to create the various drawings step-by-step as you read through this book. To help you focus on key components of this chapter, learning objectives are listed next.

*Learning Objective 1: Identify drawings in a set of NKBA plans.*

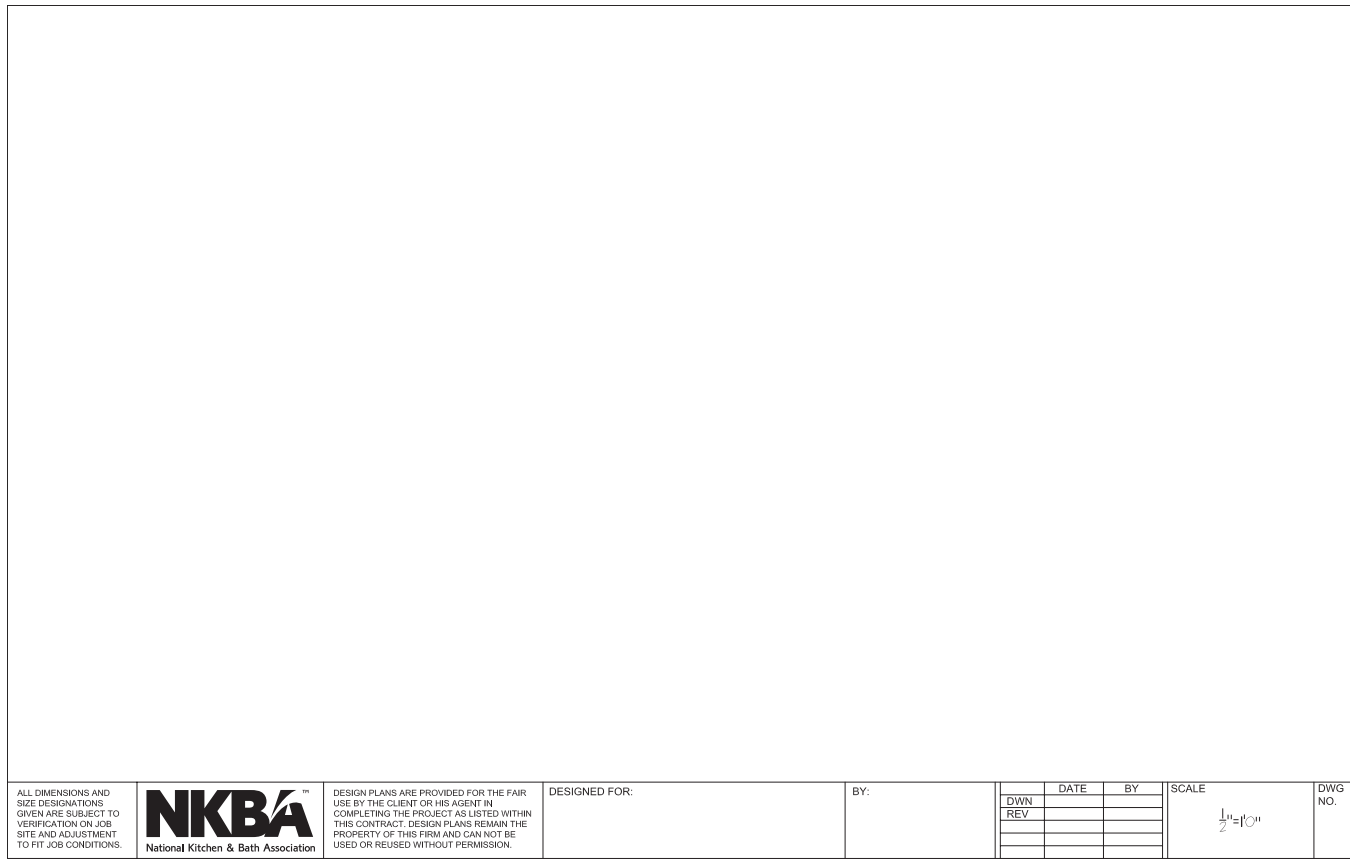
*Learning Objective 2: Understand cut height and its relationship to the floor plan.*

*Learning Objective 3: Understand components found on the different types of drawings.*

## THE SET OF NKBA DRAWINGS

Each sheet in a set of drawings is identified with a title block placed at the bottom or right side of the page. Drawings are bound on the left side. The title block contains important information that identifies the type of drawing and project specifics (see Figure 1.1).

Together the drawings and documents communicate the entire scope of the project as well as all the pertinent details. We must have client approval on all drawings for the project to ensure there are no questions regarding the work that will be completed. It is important that the entire set of drawings be reviewed by everyone involved with the project. The typical set of NKBA project drawings consists of a title page, floor plan, construction plan, mechanical plan, and interior elevations. Detail drawings and cross-sectional drawings may be needed to show more specific details. A perspective drawing is often included to show a three-dimensional view of the space. Additional drawings may include a countertop plan, soffit



**FIGURE 1.1** The title block on each sheet cross references the other drawings in the set of drawings.

plan, or reflected ceiling plan. Other documents also typically included are a schedule, specifications, and a design statement (see Figure 1.2).

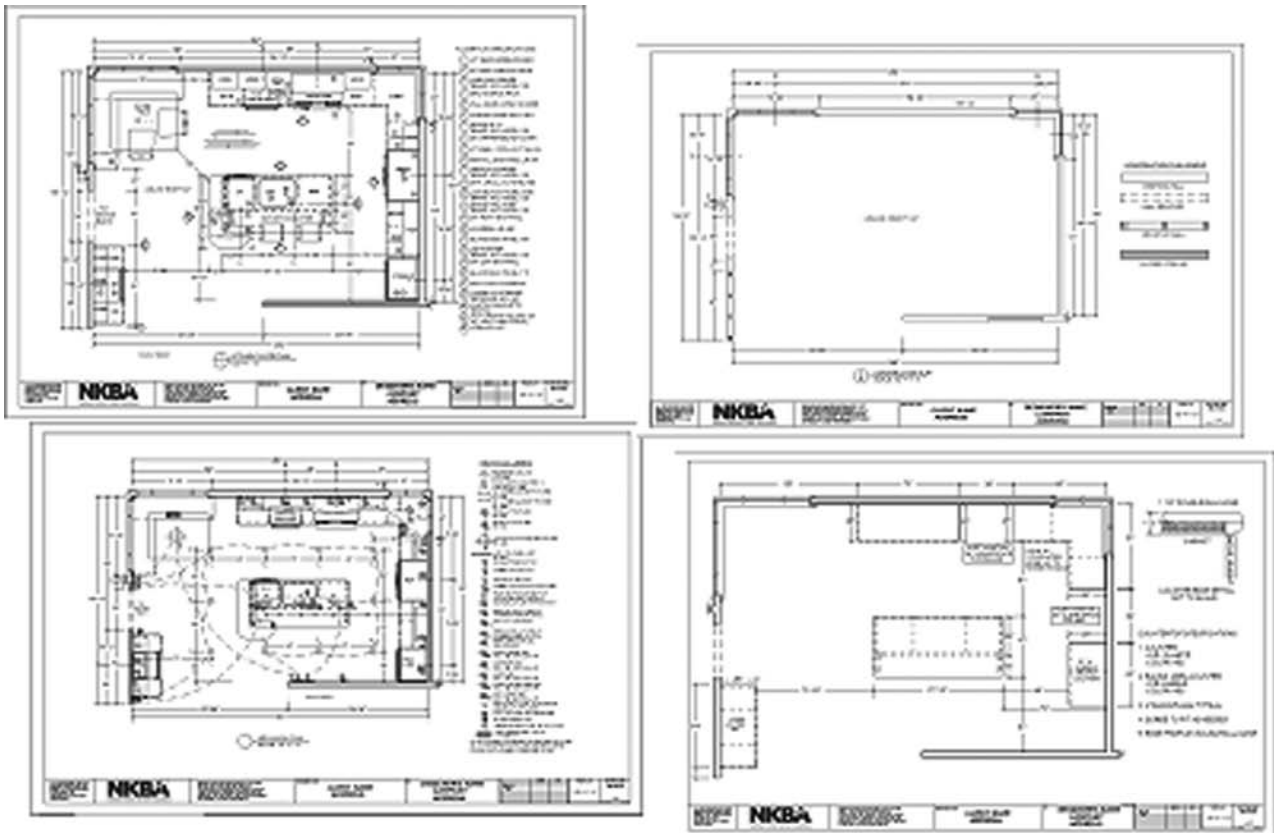
### Title Page

The title page is the cover page for a set of drawings. Information typically included on the title page is the client or building name, location, designer’s name and design firm’s name, a key to the symbols for materials, and an index of the drawings. It may also include an illustration (see Figure 1.3).

### Floor Plan

The floor plan is the central reference point for all the other drawings in the set of documents. A floor plan is an overhead cutaway view of the room. It generally depicts the entire room and shows all major structural elements, such as walls, door swings, door openings, partitions, windows, and archways. It also shows cabinet, appliance, and fixture placement, dimensions, nomenclature, and other necessary notes. There are industry standards used for drafting a floor plan, so that other individuals involved in the project will be able to interpret the information on the drawings (see Figure 1.4).

The typical scale used for NKBA drawings is  $\frac{1}{2}'' = 1'-0''$  (1:20 metric). This scale allows the drafter to provide the required level of detail. The dimensions written on the plans are exact and are always used as the actual measurement when reading a plan. Never use a scale to measure dimensions on a floor plan. The plan could be distorted from duplication or a line could be off. Always use the dimensions written on the floor plan. Sometimes the drawings may not be perfectly to scale, in which case there may be a notation “NTS” (“not to scale”) in the title block.



**FIGURE 1.2** Drawings found in a typical set of NKBA drawings.

There are line types and symbols used on a floor plan and other drawings that are standard in the industry. Specifications are also placed on the floor plan to provide more specific information. These are explained in detail in chapter 4 (see Figure 1.5).


## Construction Plan

A construction plan is another type of drawing found in the set of NKBA drawings. If walls or openings need to be altered from their original locations, a construction plan is required.

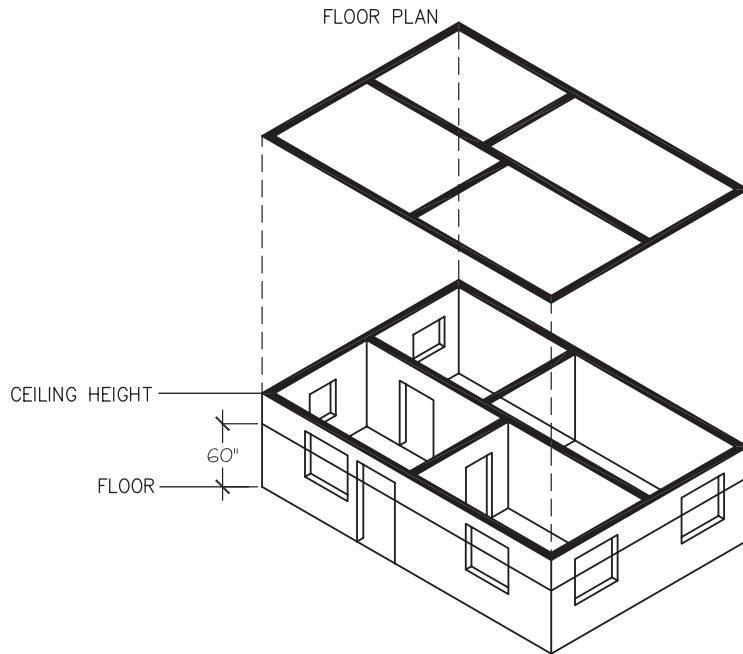
**PROPOSED KITCHEN DESIGN FOR:**  
 \_\_\_\_\_  
 (CLIENT/PROJECT NAME HERE)

**DRAWINGS:**

<b>FLOOR PLAN</b>	DWG _____
<b>CONSTRUCTION PLAN</b>	DWG _____
<b>MECHANICAL PLAN</b>	DWG _____
<b>ELEVATIONS</b>	DWG _____
<b>CEILING &amp; SOFFIT PLAN</b>	DWG _____
<b>COLOR RENDERINGS</b>	DWG _____



**FIGURE 1.3** The title page is the cover page for the set of NKBA drawings. This page typically includes the client's name and an index of drawings.

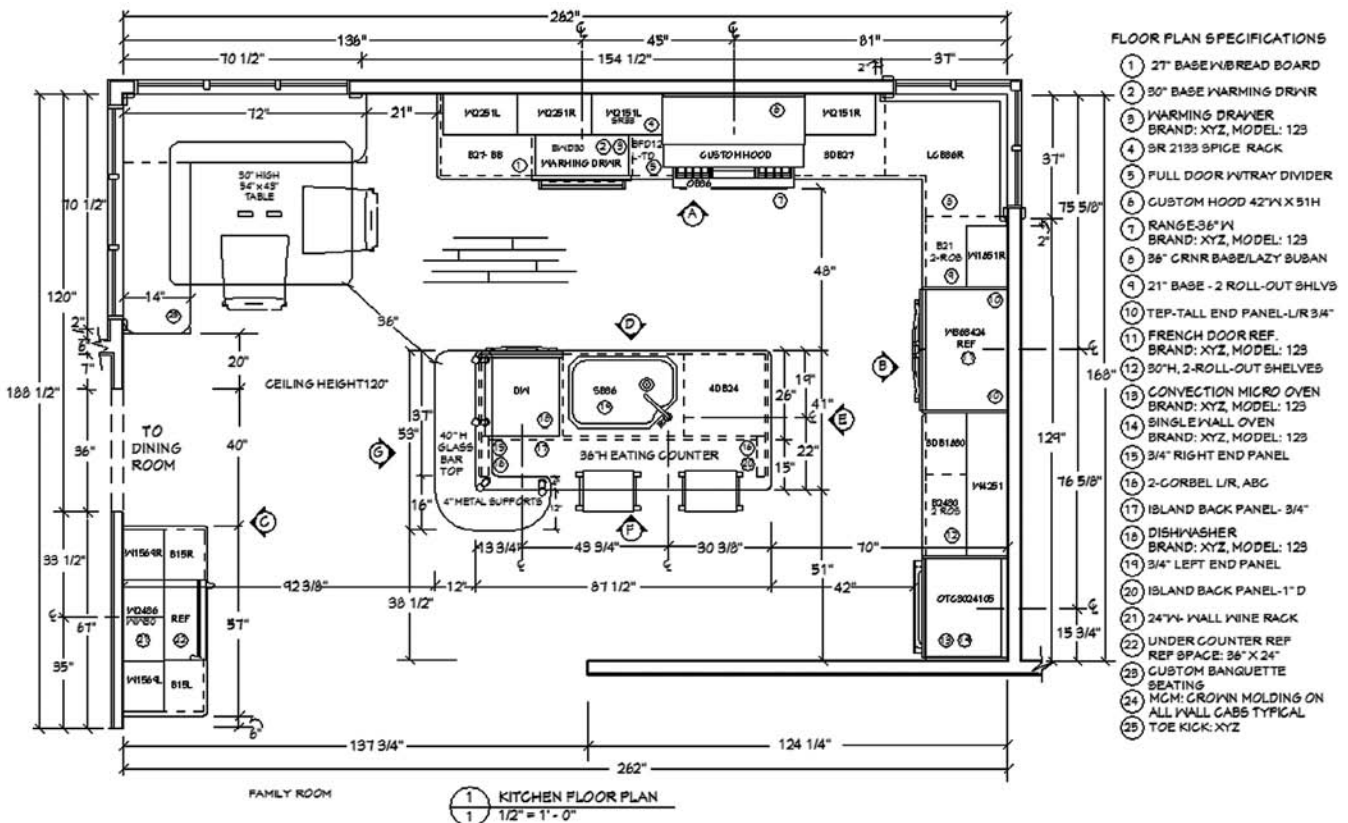


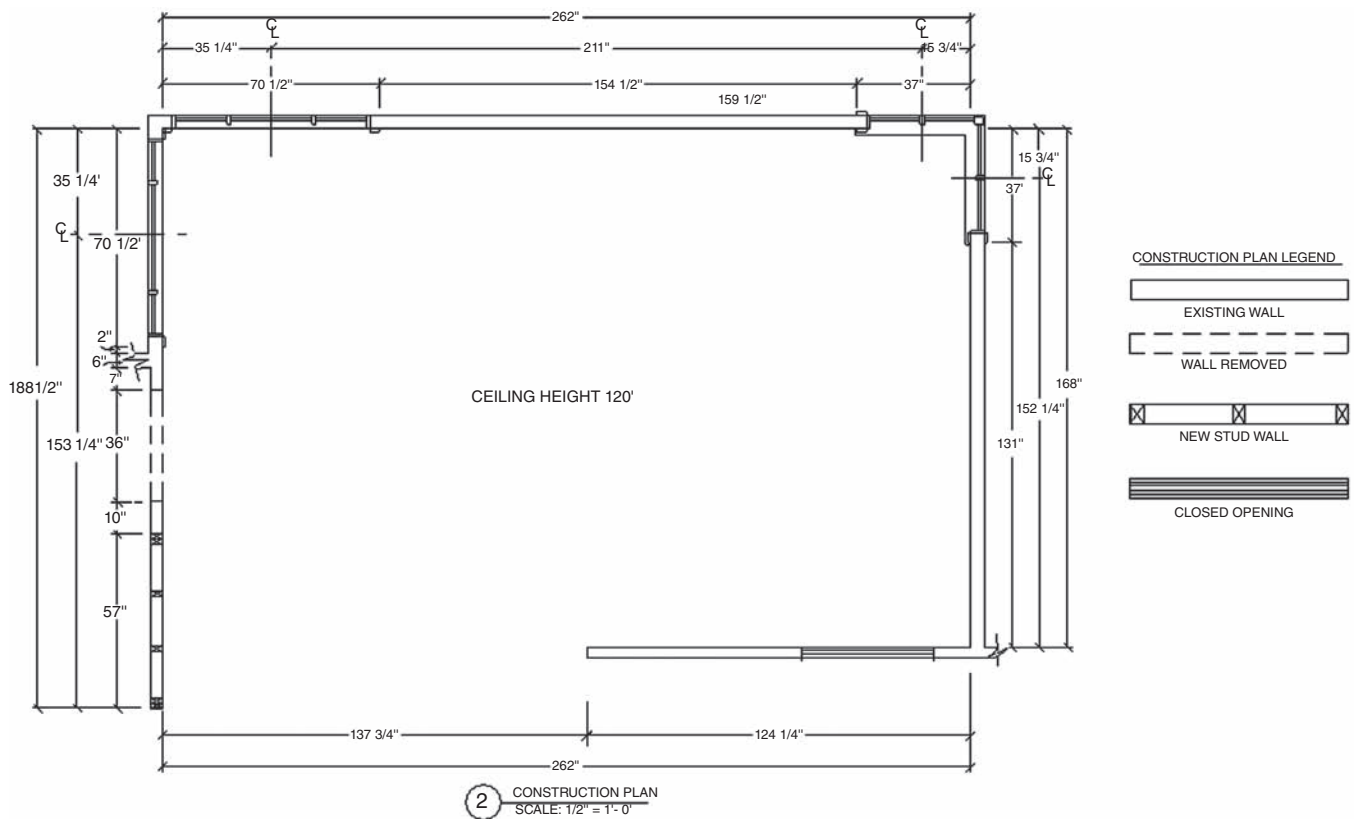
**FIGURE 1.4** Cutting plane height (cut height) is at ceiling for NKBA drawings so all details may be captured in the design of the space.

This plan shows both the existing floor plan and the changes to be made to achieve the design. Changes include items such as removing and/or adding windows, doors, walls, plus more. Specific wall symbols are used to denote changes made to original floor plan of the space. More information can be found in chapter 6.

**FIGURE 1.5** NKBA floor plan with floor plan specifications on the right side.

The construction plan includes only the walls, changes to the walls, dimensions, and a construction legend indicating what the symbols represent (see Figure 1.6).





**FIGURE 1.6** Construction plan indicating new walls and walls to be removed. Note construction legend on right side of drawing.

## Mechanical Plan

Another drawing in the set of NKBA drawings is the mechanical plan. The mechanical plan indicates placement of the electrical system, lighting, plumbing, heating, ventilation, and air conditioning (HVAC). As with the other plans, standard symbols are used on the mechanical plan to denote each item found on the plan. (More information can be found in chapter 3.) The mechanical plan must have a legend that illustrates the symbols used on the plan along with descriptions, and it must cross reference all symbols on the floor plan. The mechanical plan contains a great deal of information. The cabinet nomenclature is omitted from the plan so that all information can be more easily read (see Figure 1.7).

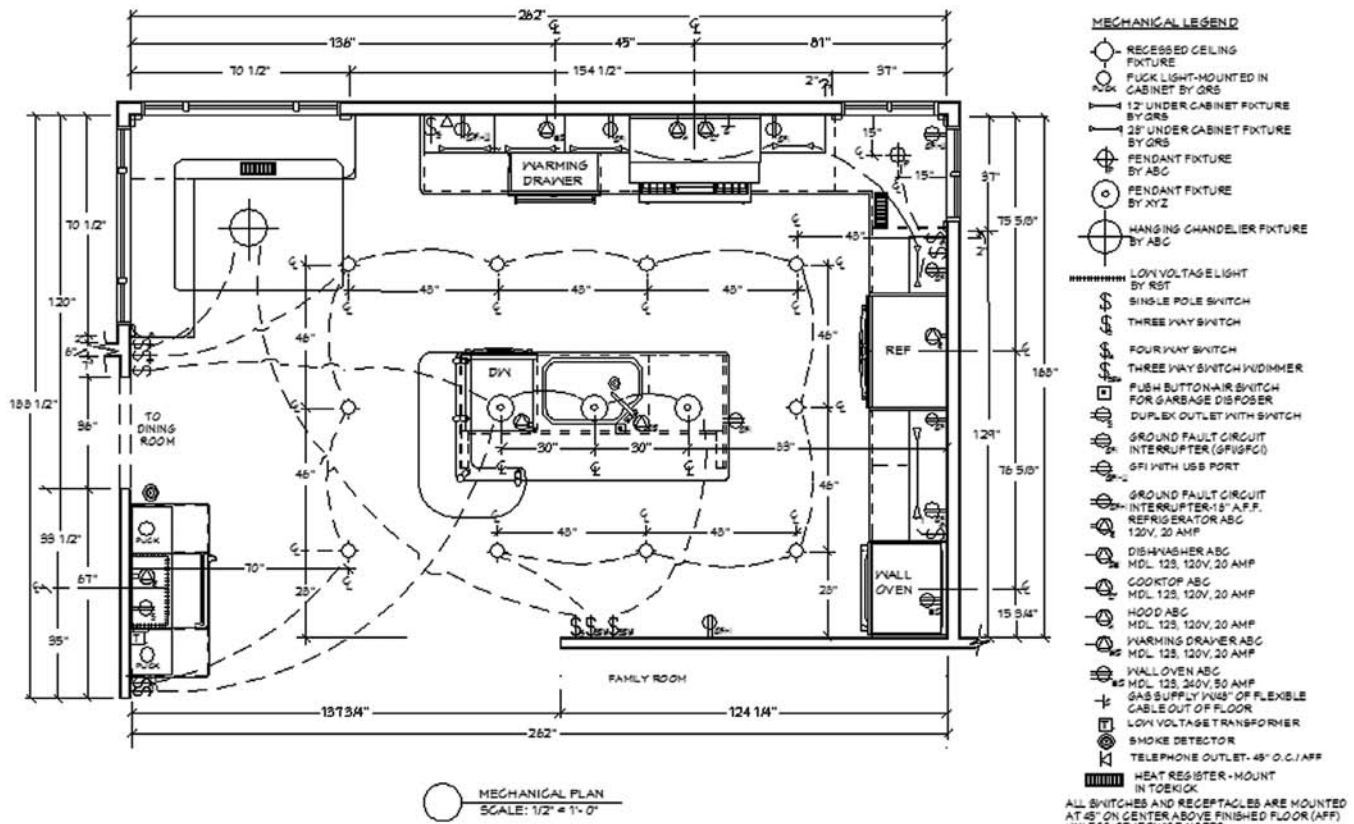
It is important to understand mechanical plans because, as you create a design, you may need to determine whether there is any flexibility in the plumbing supply line, drain, or vent locations, for example. Most likely you will not illustrate the entire heating and air conditioning system, but you do need to identify where the vents are and should be aware of where the ducting is within the structure and how it will affect your design.

## Interpretive Drawings

An interpretive drawing helps viewers visualize what the finished project will look like. Interpretive drawings are used as an explanatory means of understanding the floor plans. The most common interpretive drawings are interior elevations and perspectives.

## Interior Elevation

The interior elevation (elevation) is a two-dimensional drawing of the interior wall as you are facing it. All walls with cabinets, the sides of an island, and any built-in items and architectural features need an elevation to show how they will look when installed. This drawing is to scale and includes the heights and widths of all items. Since this drawing is



**FIGURE 1.7** Mechanical plan showing plumbing, lighting, electrical, heating, and ventilation information. Note the mechanical legend on right side of the drawing.

two-dimensional, it is a flat surface and does not show the depths of items. The interior elevations are cross-referenced with the floor plan (see Figure 1.8.).

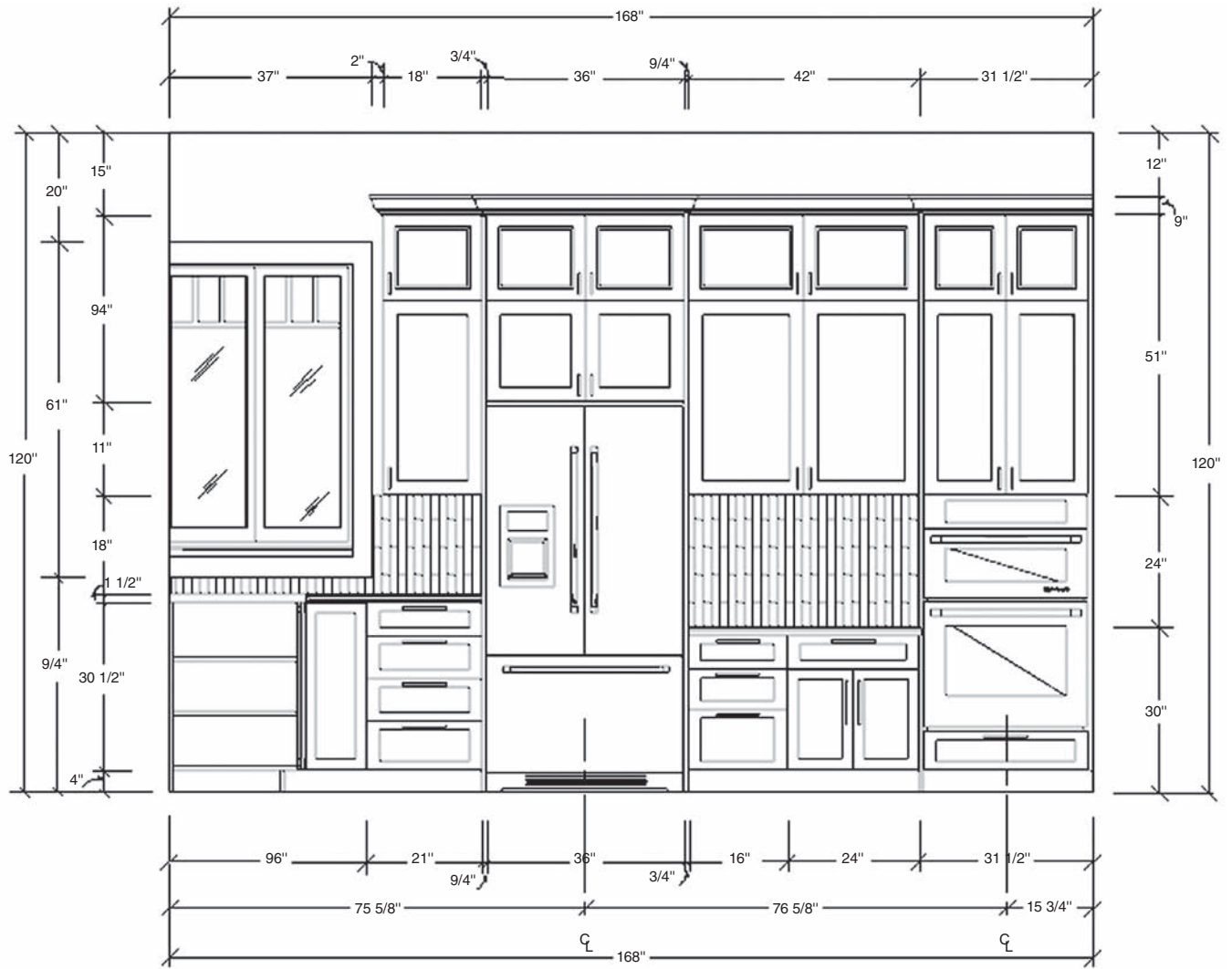
### Perspective Drawings

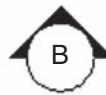
The perspective drawing is a three-dimensional view that shows how the given space will look. The realistic appearance of a perspective makes it the ideal type of interpretive drawing because it most closely resembles what the human eye sees. Perspective drawings are not drawn to a *true* scale but to *perspective* scale. This means that items in the drawing appear larger as they are closer to the viewer. Since the perspective drawing is three-dimensional, you can see the depth of items so they look more realistic and in better proportion without distortion (see Figure 1.9).

### Section Drawings and Detail Drawings

A section drawing (also referred to as a cross section) represents a vertical cut through the object to show the interior. A cross section can show the interior construction of an object, the relationships of floors in a building, or more detailed construction of items such as cabinetry, moldings, soffits, or backsplashes. To illustrate in more detail how these items are put together, an additional detail drawing may be necessary. The detail drawings show the relationship of parts and components for the specific object you are working with and are drawn at a larger scale. A typical section drawing is used to show how moldings may be stacked on a cabinet for a project (see Figure 1.10).

Additional drawings may need to be included, depending on the scope of work and how detailed and complex the counter and soffit may be. Designers should ensure that all aspects of their designs are clear so there will be no questions regarding the provided drawings.



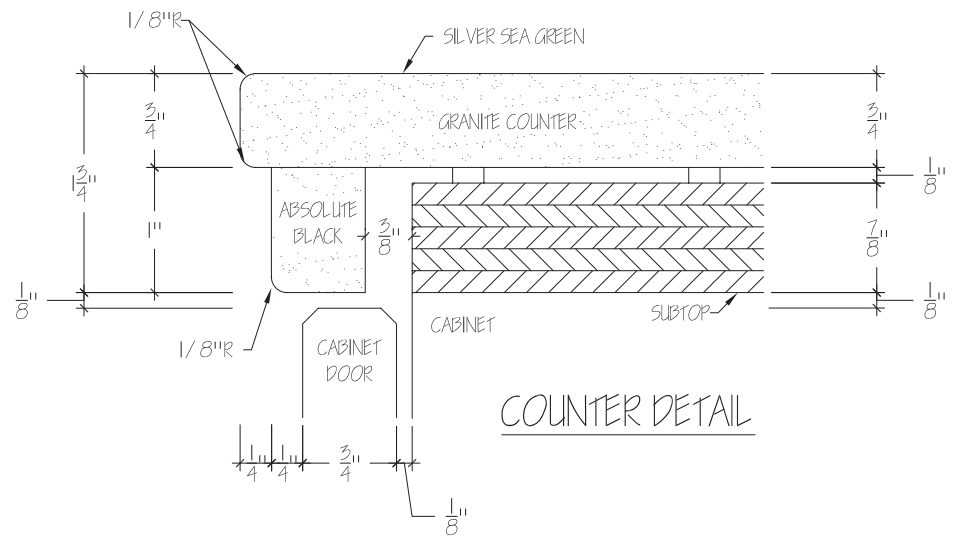

**ELEVATION**  
 SCALE: 1/2" = 1'-0"

**FIGURE 1.8** A typical interior elevation drawing showing one wall of a kitchen with the dimensions on all four sides. It is to scale in height and width but does not convey any depth.



**FIGURE 1.9** A perspective drawing provides a three-dimensional view of the space, showing depth. This drawing closely resembles how the human eye sees a space.

*Courtesy of Adrean Stephenson, AKBD, Chief Architect*



**FIGURE 1.10** A section drawing showing a cutaway view of a countertop and how it relates to the cabinet. A detail drawing is an enlarged view of that section.

Courtesy of Leslie Cohen, CKD

## Optional Plans

### Countertop Plan

A separate countertop plan is helpful to illustrate the installation or fabrication to the allied tradesperson, particularly in complex projects, such as those that combine various counter materials or built-up edge treatments. A countertop plan shows only the walls of the space, the outline of the cabinets, fixtures and equipment, applicable notes, details, and dimensions. A detailed profile of the counter edge treatment is often provided at a larger scale to clearly illustrate the counter design and its overhang relative to the face of the cabinet or to indicate inset doors.

### Soffit (Bulkhead) Plan

A drawing showing the space above the wall cabinets, called a soffit plan or bulkhead plan, is required when the soffit is a different depth than the wall or tall cabinet below it. It is also recommended when the soffit is to be installed prior to the wall or tall cabinets.

If the soffit is a complex design, cabinets may not need to be shown. An elevation of the soffit must be included on the soffit plan to further detail complex designs.

## NKBA FORMS

In addition to the drawings for a design project, documentation must be provided for necessary project information. The NKBA has standardized forms that may be used for projects.

## Schedule and Specifications

A *schedule* is a table that lists like items specified for the design project and may consist of a group of pages within the plans. The schedule lists important product specifics for the items specified for the home, such as cabinets, appliances, and so on. A reference number circled on the plan corresponds to a number on the schedule. A schedule can be considered a short form of specifications and is a quick way to find information at the job site.

Written documents accompanying the plans are called *specifications*, or *specs*. These are descriptions, in words, of the materials and products to be used and the quality expected. For example, appliances and plumbing fixtures are specified by brand and model number. Similarly, the grade of wood that is to be used for the flooring is spelled out.



The specifications can either be on the plans or in a separate document if they will complicate the drawing (see Figure 1.11). Specifications give more detailed expectations of product quality and quantity of materials to be used. A *takeoff* is the process of obtaining the correct information from the specifications or plans to calculate amounts of product needed for the given space. The specifications must be accurate with necessary information.

### Design Statement

A design statement is a document created by designers stating how they met the client’s wants and needs while justifying why they did what they did in the space. In the statement, designers summarize the design and product selections for clients. Often designers send a copy of the design statement home with clients after the design presentation to help them recall what was discussed during the presentation. A design statement is the designer’s opportunity to explain and justify their design describing what was changed in the space, why it was changed, and how it was changed. In a one-page document of 250 to 500 words, the designer pulls together his or her thought process and the reasoning behind the design solution to the client’s challenge.

A design statement should be concise and clearly outline the challenges the designer faced and overcame, such as budget, construction constraints, and client requests and lifestyle. Aesthetic choices should also be included to complete the presentation of the project. The key to a successful design statement is to keep it to the point and include how the client’s wants and needs were met. Appendix A presents examples of design statements.

All individuals involved in the project must have a complete set of project plans and documents so they understand the scope of work and how items may affect their particular task. For example, the electrician must know if tile will be on wall, as that will affect the installation of outlets.

**FIGURE 1.11** Floor plan specifications are included on the right-hand side of a floor plan and call out appliance brands and models as well as descriptions of nomenclature for clarification.

