



NONRESIDENT TRAINING COURSE

March 1994



Builder 3 & 2, Volume 2

NAVEDTRA 14044

Although the words “he,” “him,” and “his” are used sparingly in this course to enhance communication, they are not intended to be gender driven or to affront or discriminate against anyone.

COMMANDING OFFICER
NETPDTC
6490 SAUFLEY FIELD RD
PENSACOLA, FL 32509-5237

ERRATA #1

16 Aug 1999

Specific Instructions and Errata for
Nonresident Training Course

BUILDER 3 & 2, VOLUME 2

1. This errata supersedes all previous erratas. No attempt has been made to issue corrections for errors in typing, punctuation, etc., that do not affect your ability to answer the question or questions.
2. To receive credit for deleted questions, show this errata to your local course administrator (ESO/scorer). The local course administrator is directed to correct the course and the answer key by indicating the questions deleted.
3. Assignment Booklet

Delete the following questions, and leave the corresponding spaces blank on the answer sheets:

Questions

2-43
2-74
3-70
4-40
4-44
4-65
4-66
5-15
5-25

PREFACE

By enrolling in this self-study course, you have demonstrated a desire to improve yourself and the Navy. Remember, however, this self-study course is only one part of the total Navy training program. Practical experience, schools, selected reading, and your desire to succeed are also necessary to successfully round out a fully meaningful training program.

THE COURSE: This self-study course is organized into subject matter areas, each containing learning objectives to help you determine what you should learn along with text and illustrations to help you understand the information. The subject matter reflects day-to-day requirements and experiences of personnel in the rating or skill area. It also reflects guidance provided by Enlisted Community Managers (ECMs) and other senior personnel, technical references, instructions, etc., and either the occupational or naval standards, which are listed in the *Manual of Navy Enlisted Manpower Personnel Classifications and Occupational Standards*, NAVPERS 18068.

THE QUESTIONS: The questions that appear in this course are designed to help you understand the material in the text.

VALUE: In completing this course, you will improve your military and professional knowledge. Importantly, it can also help you study for the Navy-wide advancement in rate examination. If you are studying and discover a reference in the text to another publication for further information, look it up.

*1994 Edition Prepared by
BUCS(SCW) John Buza*

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PROFESSIONAL DEVELOPMENT
AND TECHNOLOGY CENTER

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Sailor's Creed

"I am a United States Sailor.

I will support and defend the
Constitution of the United States of
America and I will obey the orders
of those appointed over me.

I represent the fighting spirit of the
Navy and those who have gone
before me to defend freedom and
democracy around the world.

I proudly serve my country's Navy
combat team with honor, courage
and commitment.

I am committed to excellence and
the fair treatment of all."

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SUMMARY OF THE BUILDER 3&2 RATE TRAINING MANUALS

VOLUME 1

Builder 3&2, Volume 1, NAVEDTRA 14043, is a basic book that should be mastered by those seeking advancement to Builder Third Class and Builder Second Class. The major topics addressed in this book include construction administration and safety; drawings and specifications; woodworking tools, materials and methods of woodworking; fiber line, wire rope, and scaffolding; leveling and grading; concrete; placing concrete; masonry; and planning, estimating, and scheduling.

VOLUME 2

Builder 3&2, Volume 2, NAVEDTRA 14044, continues where Volume 1 ends. The topics covered in this volume include floor and wall construction; roof framing; exterior and interior finishing; plastering, stuccoing, and ceramic tile; paints and preservatives; advanced base field structures; and heavy construction.

INSTRUCTIONS FOR TAKING THE COURSE

ASSIGNMENTS

The text pages that you are to study are listed at the beginning of each assignment. Study these pages carefully before attempting to answer the questions. Pay close attention to tables and illustrations and read the learning objectives. The learning objectives state what you should be able to do after studying the material. Answering the questions correctly helps you accomplish the objectives.

SELECTING YOUR ANSWERS

Read each question carefully, then select the BEST answer. You may refer freely to the text. The answers must be the result of your own work and decisions. You are prohibited from referring to or copying the answers of others and from giving answers to anyone else taking the course.

SUBMITTING YOUR ASSIGNMENTS

To have your assignments graded, you must be enrolled in the course with the Nonresident Training Course Administration Branch at the Naval Education and Training Professional Development and Technology Center (NETPDTC). Following enrollment, there are two ways of having your assignments graded: (1) use the Internet to submit your assignments as you complete them, or (2) send all the assignments at one time by mail to NETPDTC.

Grading on the Internet: Advantages to Internet grading are:

- you may submit your answers as soon as you complete an assignment, and
- you get your results faster; usually by the next working day (approximately 24 hours).

In addition to receiving grade results for each assignment, you will receive course completion confirmation once you have completed all the

assignments. To submit your assignment answers via the Internet, go to:

<http://courses.cnet.navy.mil>

Grading by Mail: When you submit answer sheets by mail, send all of your assignments at one time. Do NOT submit individual answer sheets for grading. Mail all of your assignments in an envelope, which you either provide yourself or obtain from your nearest Educational Services Officer (ESO). Submit answer sheets to:

COMMANDING OFFICER
NETPDTC N331
6490 SAUFLEY FIELD ROAD
PENSACOLA FL 32559-5000

Answer Sheets: All courses include one “scannable” answer sheet for each assignment. These answer sheets are preprinted with your SSN, name, assignment number, and course number. Explanations for completing the answer sheets are on the answer sheet.

Do not use answer sheet reproductions: Use only the original answer sheets that we provide—reproductions will not work with our scanning equipment and cannot be processed.

Follow the instructions for marking your answers on the answer sheet. Be sure that blocks 1, 2, and 3 are filled in correctly. This information is necessary for your course to be properly processed and for you to receive credit for your work.

COMPLETION TIME

Courses must be completed within 12 months from the date of enrollment. This includes time required to resubmit failed assignments.

PASS/FAIL ASSIGNMENT PROCEDURES

If your overall course score is 3.2 or higher, you will pass the course and will not be required to resubmit assignments. Once your assignments have been graded you will receive course completion confirmation.

If you receive less than a 3.2 on any assignment and your overall course score is below 3.2, you will be given the opportunity to resubmit failed assignments. **You may resubmit failed assignments only once.** Internet students will receive notification when they have failed an assignment--they may then resubmit failed assignments on the web site. Internet students may view and print results for failed assignments from the web site. Students who submit by mail will receive a failing result letter and a new answer sheet for resubmission of each failed assignment.

COMPLETION CONFIRMATION

After successfully completing this course, you will receive a letter of completion.

ERRATA

Errata are used to correct minor errors or delete obsolete information in a course. Errata may also be used to provide instructions to the student. If a course has an errata, it will be included as the first page(s) after the front cover. Errata for all courses can be accessed and viewed/downloaded at:

<http://www.advancement.cnet.navy.mil>

STUDENT FEEDBACK QUESTIONS

We value your suggestions, questions, and criticisms on our courses. If you would like to communicate with us regarding this course, we encourage you, if possible, to use e-mail. If you write or fax, please use a copy of the Student Comment form that follows this page.

For subject matter questions:

E-mail: n314.products@cnet.navy.mil
Phone: Comm: (850) 452-1001, Ext. 1826
DSN: 922-1001, Ext. 1826
FAX: (850) 452-1370
(Do not fax answer sheets.)
Address: COMMANDING OFFICER
NETPDTC (CODE N314)
6490 SAUFLEY FIELD ROAD
PENSACOLA FL 32509-5237

For enrollment, shipping, grading, or completion letter questions

E-mail: fleetservices@cnet.navy.mil
Phone: Toll Free: 877-264-8583
Comm: (850) 452-1511/1181/1859
DSN: 922-1511/1181/1859
FAX: (850) 452-1370
(Do not fax answer sheets.)
Address: COMMANDING OFFICER
NETPDTC (CODE N331)
6490 SAUFLEY FIELD ROAD
PENSACOLA FL 32559-5000

NAVAL RESERVE RETIREMENT CREDIT

If you are a member of the Naval Reserve, you will receive retirement points if you are authorized to receive them under current directives governing retirement of Naval Reserve personnel. For Naval Reserve retirement, this course is evaluated at 9 points. (Refer to *Administrative Procedures for Naval Reservists on Inactive Duty*, BUPERSINST 1001.39, for more information about retirement points.)

COURSE OBJECTIVES

In completing this nonresident training course, you will demonstrate a knowledge of the subject matter by correctly answering questions on the following: floor and wall construction; roof framing; exterior and interior finishing; plastering, stuccoing, and ceramic tile; paints and preservatives; advanced base field structures; and heavy construction.

Student Comments

Course Title: Builder 3 & 2, Volume 2

NAVEDTRA: 14044 **Date:** _____

We need some information about you:

Rate/Rank and Name: _____ SSN: _____ Command/Unit _____

Street Address: _____ City: _____ State/FPO: _____ Zip _____

Your comments, suggestions, etc.:

Privacy Act Statement: Under authority of Title 5, USC 301, information regarding your military status is requested in processing your comments and in preparing a reply. This information will not be divulged without written authorization to anyone other than those within DOD for official use in determining performance.
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NETPDTC 1550/41 (Rev 4-00)

CHAPTER 1

LIGHT FLOOR AND WALL FRAMING

In the normal sequence of construction events, the floor and wall activities follow the completed foundation work. In this chapter, we'll examine established methods of frame construction and discuss in general how floor and wall framing members are assembled. An explanation of subflooring installation, exterior sheathing, interior partitions, and rough openings for doors and windows is also given.

WOOD SILL FRAMING

LEARNING OBJECTIVE: Upon completing this section, you should be able to describe sill layout and installation.

Framing of the structure begins after completion of the foundation. The lowest member of the frame structure resting on the foundation is the sill plate, often called the mud sill. This sill provides a roiling base for joists or studs resting directly over the foundation. Work

in this area is critical as it is the real point of departure for actual building activities.

LAYOUT

The box sill is usually used in platform construction. It consists of a sill plate and header joist anchored to the foundation wall. Floor joists are supported and held in position by the box sill (fig. 1-1). Insulation material and metal termite shields are placed under the sill if desired or when specified. Sills are usually single, but double sills are sometimes used.

Following construction of the foundation wall, the sill is normally the first member laid out. The edge of the sill is setback from the outside face of the foundation a distance equal to the thickness of the exterior sheathing. When laying out sills, remember the comers should be halved together, but are often butted or mitered. If splicing is necessary to obtain required

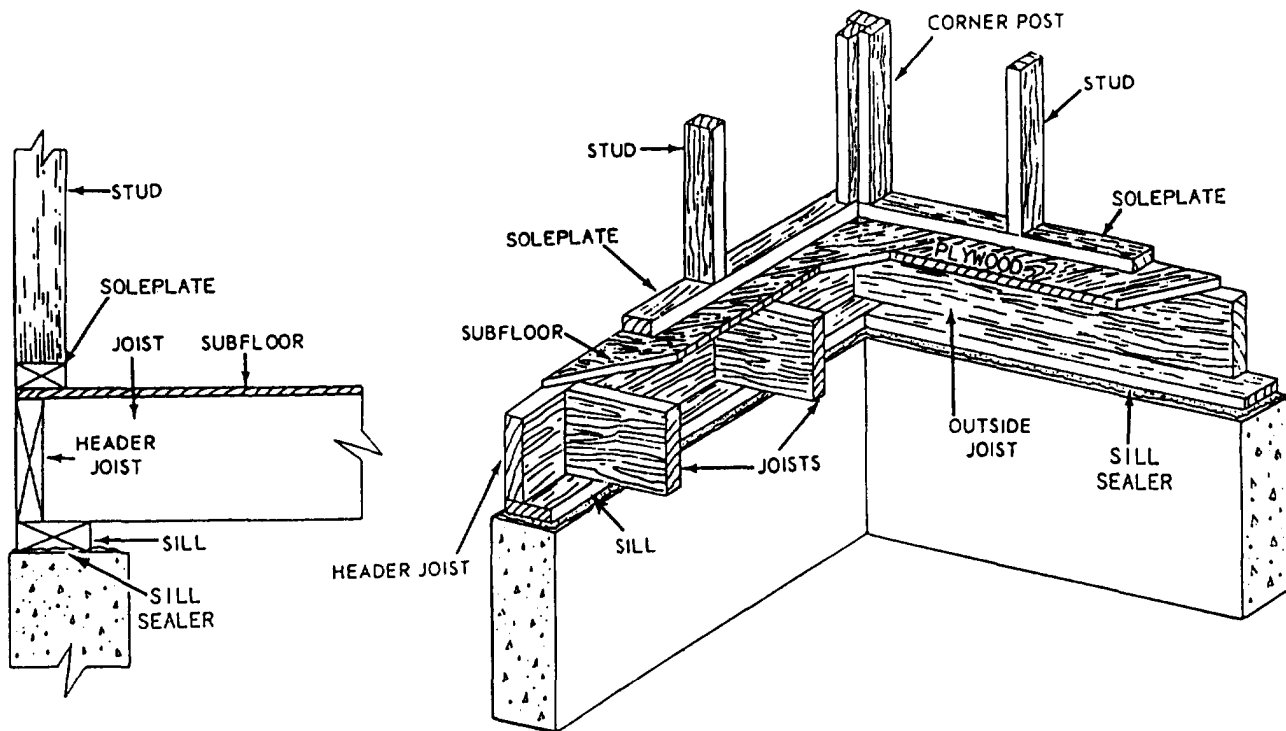


Figure 1-1.—Box-sill assembly.

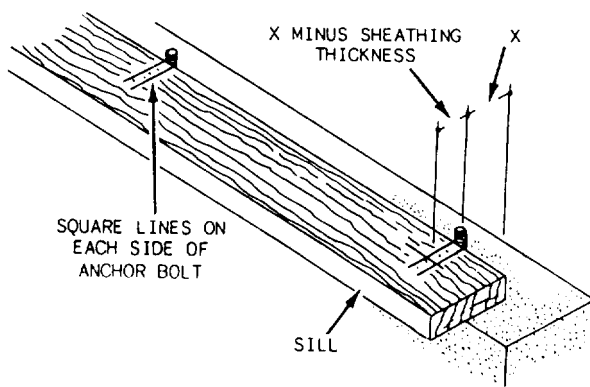


Figure 1-2.—Anchor bolt layout.

length, you should halve the splice joint at least 2 feet and bolt together.

Once the required length has been determined, the next step is to lay out the locations of the anchor bolt holes. Use the following steps:

1. Establish the building line points at each of the corners of the foundation.
2. Pull a chalk line at these established points and snap a line for the location of the sill.
3. Square the ends of the sill stock, (Stock received at jobsites is not necessarily squared at both ends.)
4. Place the sill on edge and mark the locations of the anchor bolts.
5. Extend these marks with a square across the width of the sill. The distance **X** in figure 1-2 shows how far from the edge of the sill to bore

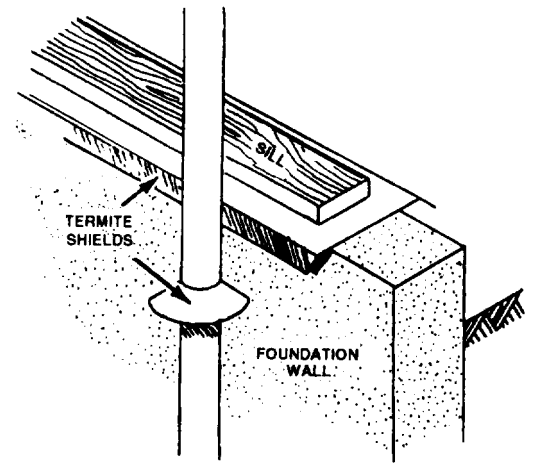


Figure 1-4.—Installing termite shields.

the holes; that is, **X** equals the thickness of the exterior sheathing.

After all the holes are marked, bore the holes. Each should be about 1/4 inch larger than the diameter of the bolts to allow some adjustment for slight inaccuracies in the layout. As each section is bored, position that section over the bolts.

When all sill sections are fitted, remove them from the anchor bolts. Install sill sealer (insulation) as shown in figure 1-3. The insulation compresses, filling the irregularities in the foundation. It also stops drafts and reduces heat loss. Also install a termite shield (fig. 1-4) if specified. A termite shield should be at least 26-gauge aluminum, copper, or galvanized sheet metal. The outer edges should be slightly bent down. Replace the sills and

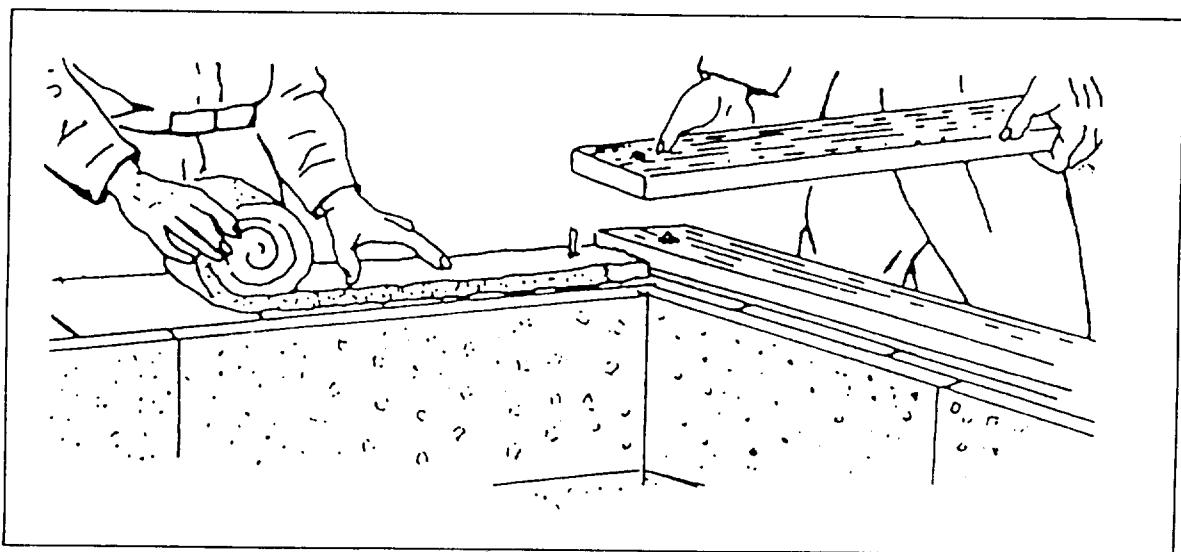


Figure 1-3.—Installing sill sealer.