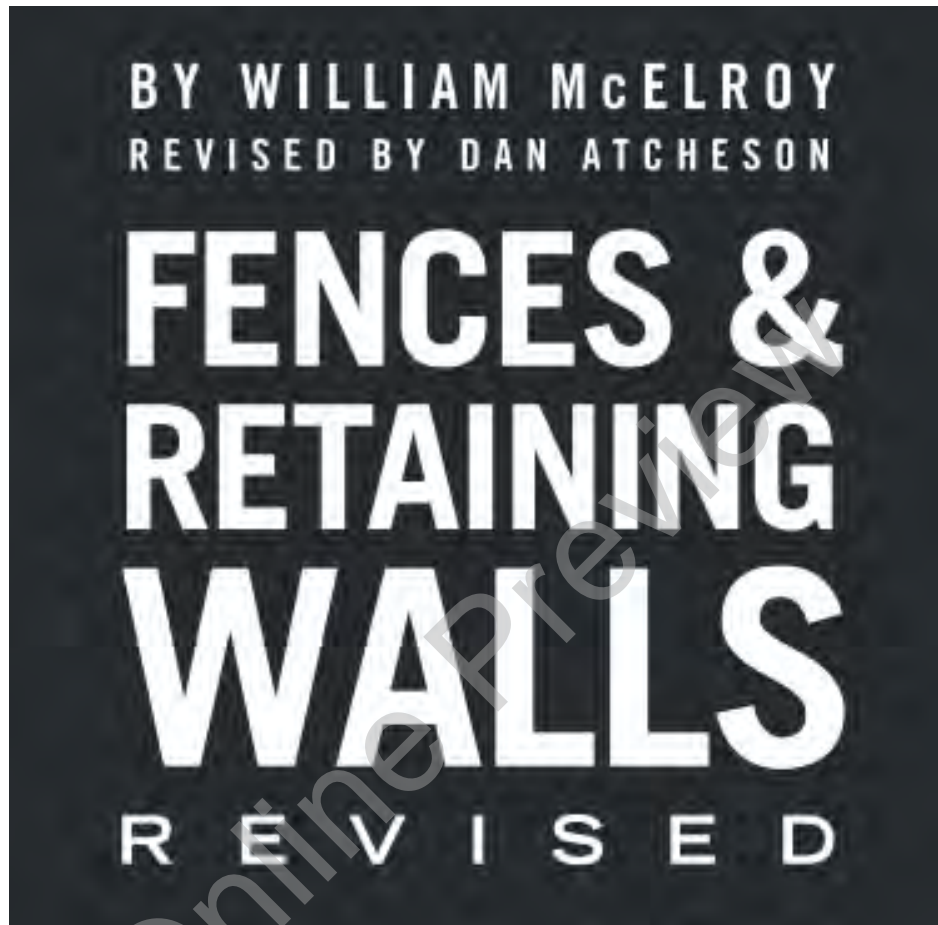


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Dedication:

*This book is dedicated to all who help with,
or offer homes to, orphaned pets.*

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Chapter 1

Fence & Wall Specialties

IT'S HARD TO IMAGINE a world without fences. We need them to keep some things in and other things out ... things *and* people. We need them to preserve our privacy. A world without fences? Not likely. And that's why fence building is good business for construction contractors. Nearly every significant new construction project includes fences and walls. So if you're qualified to build fences and retaining walls, there will be work to bid on for nearly every job. That can help build a nice extra profit into every project you handle.

This book is intended to be useful for a wide audience. Maybe you're already a licensed contractor. Maybe you're working in the trade on the payroll of a contractor. Maybe you're building your first fence. Or maybe you're a student who wants to learn fence and wall building. In any case, this manual has the information you need. You'll learn about all kinds of fences, gates, retaining walls, sea walls, and railings. We'll cover the most familiar types and styles of fences and walls, and several unusual types. I'll describe all the common construction methods and dozens of materials. You'll see what kind of equipment you need to build each type of fence. And I've included a section on estimating costs and manhours.

Established contractors will learn the fine points of fence building — including suggestions on dealing with customers, employees, building inspectors and the IRS. After reading this book, you'll probably want to pass it along to a friend, apprentice, or new employee.

If you're new to fence building and estimating, you should have no trouble following my explanations. I'll take it step by step and include plenty of photos along the way. That should make it easier to learn the essentials.

For the homeowner who's building a fence for the first time, I've provided simplified designs and construction techniques. The chapter on troubleshooting and repairs can help you avoid mistakes others have made. You'll also learn to repair and maintain existing fences and walls. I've included a glossary of terms, so when you talk to suppliers and contractors, you'll be speaking their language.

If you're an apprentice studying for your license, this book is for you. I wrote it with the California C-13 Fence Contractor's license exam in mind. Between the covers of this manual you'll find answers to nearly all the questions on the exam. The business chapters will help you set up your own contracting business and keep you from making expensive mistakes. The contractor's math chapter will teach you simple techniques for approaching math problems that you're sure to face on the job.

Teachers can use this book as a course manual. It covers everything from setting up a business and selling and preparing legal contracts to estimating and building fences and walls. Throughout this book, I've tried to use plain, conversational English that's easy for students to follow. And all readers will benefit from the chapter on safety.

Now that you know where I'm heading, I'll start from the beginning.

The History of Fences

The first true fences were probably barriers to keep domesticated animals in place. Early tribes were nomadic hunters who traveled from place to place; fences didn't have to be any more than temporary. As time passed, people learned to grow crops and domesticate animals. At that point, they needed more permanent ways to mark off their fields and corral their livestock. They made fences from stones or trees cleared from their planting fields. They made corrals by suspending vines and ropes between logs and trees — the predecessor of the barbed wire fence.

"As time passed, people learned to grow crops and domesticate animals. At that point, they needed more permanent ways to mark off their fields and corral their livestock."

Early fences were also used for protection. Stone piles or logs could protect possessions and families from theft and attacks. Stones were laid in horizontal courses and held in place with mud. The first mortar was dried mud or earth. Even in those early days, fence building must have become a skill to be learned and passed down from generation to generation.

In the 1800s, we learned to draw heated metal through a small hole, turning it into wire. That's a fine material to fence in animals and fence out trespassers.

In parts of the world where trees and rocks weren't readily available, people had to make fences out of soil. Ordinary dirt mixed with water could be molded into a building block; but dried blocks of dirt eroded easily in the rain. On the other hand, clay from river banks and ponds held up better when wet, so it was used to make durable adobe block. Eventually, someone discovered that heating clay fire-hardened and waterproofed the blocks.

People are very adaptable. In their search for homes near food, entertainment, work and riches, they sometimes built homes on the edges of mountains, oceans, and rivers. But nature is unpredictable. Mountains erode, oceans rise, and rivers flood. That's where retaining walls, sea walls, and dikes entered the picture. Concrete made all that possible. Mix cement with sand, gravel and water; then form and cure the mix to hold back that mountain, ocean, or river.

Even though people are independent by nature, they need each other. They formed groups that developed into towns and cities. As people moved closer together, the urge to maintain privacy increased. An industry matured and prospered — the fence-building industry.

Modern Wall and Fence Building

To compete effectively as a fence and wall builder, you need a wholesale materials supplier who will sell to you at a discount. You also need a vehicle and certain tools. And you need to know how to construct sound fences and walls in a legal manner, and how to make money doing it. That's what this manual is going to teach you.

Let's begin with a discussion of the various types of fence contracting specialties and the equipment you'll need for each.

Block Walls

Block walls are common in the southwestern United States because the materials are readily available in that locale. The principal materials include adobe or concrete blocks, steel reinforcing bars (rebar), mortar and lumber. Figure 1-1 shows a typical block wall in a residential development.

Here's a list of the tools and equipment you'll need to get started in block wall construction:

- ¾- to 1-ton truck
- motor-driven concrete mixer
- mason's hammer for cutting block



Figure 1-1
Concrete masonry unit (CMU) privacy wall

- circular saw for cutting forming lumber
- trowels for spreading mortar
- masonry saw
- rebar cutter
- rebar bending machine
- crowbar
- transit for laying out wall (optional)
- sledge hammer
- claw hammer
- chalkline
- cord and line blocks
- mortarboard
- assortment of screwdrivers and wrenches
- levels, 18 inch and 6 foot
- wire cutters to tie rebar
- drill and assortment of masonry bits
- protective clothing and glasses
- scaffolding (for walls over 6 feet high)



Courtesy of Don Bundock

Figure 1-2
Concrete panels that replicate natural stone

This list assumes that your supplier will deliver materials to the jobsite and will provide a forklift. I'm also assuming that you'll subcontract the trenching work to someone with a backhoe. And you'll need a concrete contractor to lay the foundation.

Sometimes you won't be able to get a concrete truck close to the jobsite. In that case, you'll have to pump the concrete through a large hose (about 4 inches in diameter) from the truck to the wall location. Pumping also works well when pouring into narrow, formed-out foundations or wall cavities.

Most concrete transit mix trucks hold about 9 cubic yards of concrete. You'll be charged by the cubic yard, of course. But if you order less than 9 yards, you'll probably have to pay a surcharge for the short load. Still, I order transit mix concrete for any job that needs more than 3 cubic yards at once; less than that, and you're probably better off mixing it yourself on the jobsite.

Brick Walls

Brick walls offer durability and a wide range of design options, and require about the same equipment as block walls — you'll just be working with more, but smaller, building units. Brick work is popular nationwide, but more common in the Northeast. Brick is also used extensively in the Southeast where Georgia clay abounds.

For repairs or additions to existing brick walls, brick staining offers a cost-effective alternative to searching for an exact color match.

Stone Walls

Stone walls can be made from natural or artificial stone. Natural stone walls are common in rural areas where stones are a waste product from land clearing operations. Stone wall builders don't need any special tools except a tractor, a wagon to cart the stones, and a strong back. When laying stone walls in mortar, you'll need mortar mixing equipment. Stone walls usually require a foundation and, therefore, the help of a concrete contractor. Figure 1-2 shows a wall made from colored precast concrete panels that replicate natural stone. See Chapter 10, Figure 10-33, for a photo of a wall built with natural stone.



Figure 1-3
Stone veneer wall

Stone veneer can be molded or cut into so many shapes and colors that it's very popular for use with many different architectural styles. It's usually applied over wood frame or concrete block walls. See Figure 1-3. The contractor who frames the wall or lays the block may also apply the veneer. The tools required for applying stone veneer are the same as for building block walls. We'll discuss veneer walls in more detail in Chapter 10.

Poured Concrete Walls

Poured concrete walls are relatively expensive to build, but they make up for it in strength. You'll need forms, usually made of $\frac{3}{4}$ -inch waterproof plywood (plyform), fiberglass, or sheet metal. See Figure 1-4. The forms come in sections that you can assemble, remove and reuse easily. You'll need a concrete pumping service to pump concrete from the truck to the forms. You'll also need a source for rebar to reinforce the concrete.

For some jobs it's cheaper to use pre-fab wall sections. If this is your choice, you'll need a crane or hoist to place these sections in position.



Figure 1-4
Poured concrete wall forms

Wire Mesh Fences

It's easy to get into the wire mesh fence contracting business. Wire mesh fencing is common in rural and semi-rural areas where ranchers have to enclose animals and fowl rather than restrict access to people. These are the materials you'll need to build wire fences:

- ½-ton truck, 8-foot bed or longer
- hand truck for moving rolls of mesh
- gas-powered post hole digger
- block and tackle or stretcher
- wire cutters
- wheelbarrow
- gas-powered concrete mixer
- 100-foot-long tape measure (minimum)
- 6-foot level
- transit to lay out and level long sections
- stringline and batten
- shovel, pick, hoe and manual post hole digger
- assortment of screwdrivers and wrenches
- 2-pound hammer

Unless there's a high demand for wire mesh fencing in your area, I suggest you handle barbed wire and chain link fencing in addition to wire mesh.

Barbed Wire Fences

In rural areas, ranchers use barbed wire to contain cattle on rangeland. It's also used to mark off fields, although any hunter can climb through it. See Figure 1-5. Sometimes you'll find barbed wire along the top of chain link fences to discourage people from climbing them.

Startup costs in the barbed wire fence business are the same as those for wire mesh fence contracting, as is the equipment. The wire stretcher is a different design, however, and you'll need a hammer or two.

Chain Link Fences

You'll find chain link fences mostly in urban commercial areas. They're effective at keeping intruders out of storage areas, off factory grounds and out of streams and lakes. They may be used inside factories to fence off equipment or inventory. Chain link security fences are usually 8 to 10 feet high. Smaller fences, in the 4- to 6-foot range, are used to define residential lots.

Chain link is very versatile: It's used to pen animals, form baseball fields, and surround swimming pools, tennis courts, children's playgrounds and parking lots. You'll need about the same equipment as for wire mesh fencing. For work inside industrial buildings you'll need some concrete drilling equipment, since most warehouse floors are poured concrete. Your truck should have a rack for carrying 20-foot sections of pipe.

Wood Fences

Here is where style takes over. There are about as many types of wood fences as there are lumber dimensions. Fortunately, most wood fence jobs will require the same basic equipment:

- ½-ton truck, 8-foot bed or longer
- manual or gas-powered post hole digger
- power saws and hand saws
- electrical generator for working in isolated areas
- air compressor for nail gun
- assortment of screwdrivers and wrenches
- stringline and batten
- shovel, axe, pick, hoe, and manual post hole digger
- hammers: claw and sledge
- drill and drill bits
- transit (optional)
- 2-foot and 6-foot levels
- gas-powered concrete mixer
- wheelbarrow
- assortment of woodworking chisels

You can build these fences from scratch, or buy and install prefab fencing. You'll usually need to buy materials, but on some rural jobs you might use timber cut on the site. For this type of work you'll need a chainsaw, log splitter, and possibly a small bulldozer (which you'll probably choose to rent).



Figure 1-5
Barbed wire fence



Figure 1-6
Ornamental metal fence

Constructed Metal Fences

These fences include those made from ornamental iron or pipe. Ornamental iron is very popular with homeowners, and most of this work will be residential. Figure 1-6 shows some typical ornamental iron fencing.

Metal security fences and gates are common around commercial buildings, while pipe fences usually serve to restrain animals — mainly horses and cattle. They're also used as safety railings where there's danger of people falling, such as balconies and scenic lookouts along highways. Here are the tools and equipment you'll need for metal fence construction:

- 1-ton truck (or larger)
- gas or gas-powered electric welder and tips
- gas-powered post hole digger
- metal-cutting saws
- drills for wood, concrete, and metal
- gas-powered concrete mixer
- assortment of screwdrivers and wrenches
- hammer and mallet

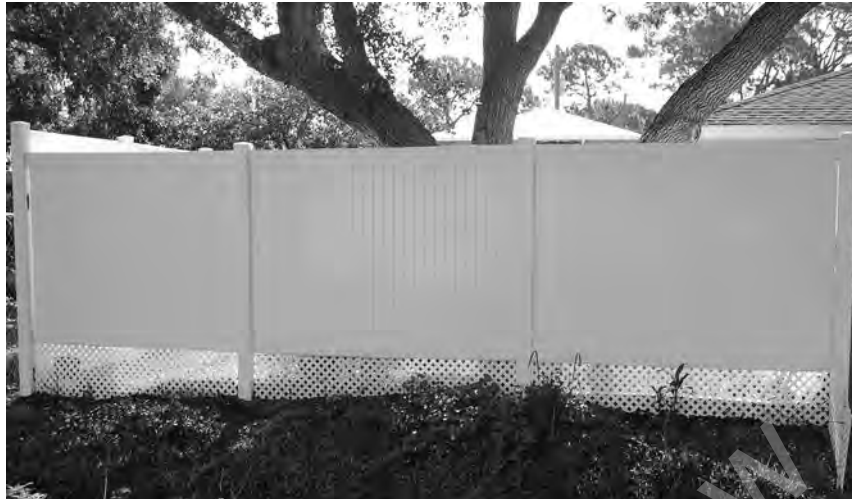


Figure 1-7
Fence built from mixed material types

- shovel, pick, hoe, and manual hole digger
- transit (optional)
- stringline
- 2- and 6-foot levels
- metal grinder or drill attachment
- paint and brushes for touchup

Highway guardrails are another common metal fencing application. If you're doing highway work, you may also need a bulldozer.

Multi-Material Fences

Building walls and fences that combine multiple styles or material types can add beauty and functionality. One common combination is a tempered glass or acrylic fence along the top of a masonry wall. Figure 1-7 shows PVC lath installed under a PVC fence. This offers extra privacy and also keeps the dog from getting out of the yard.

Siding and Stucco

You can use any kind of siding material to build fences: aluminum, steel, vinyl or stucco. First build a conventional wall frame from 2 x 4s or 2 x 6s. Then use the siding material as a facing. All you need are basic saws, drills, and hand tools.

Hedges and Landscape Fencing

For a fence that blends well with nature, you can use trees and shrubs — by themselves or in combination with other wall and fence styles — to form barriers. A well-maintained hedge is inexpensive and environmentally friendly: It won't rust and never needs painting. You do have to know what plants work best in your climate. A trip to a local nursery or some Internet research will help in that regard. Cost for tools and equipment is usually minimal.

Retaining Walls

Retaining walls prevent soil or falling rock from intruding upon occupied areas. They're also effective wind and noise barriers. Many retaining walls are built under government contracts. If you plan to bid on public works jobs, you'll probably find plenty of retaining wall work available in your area.

Equipment needed to build retaining walls tends to be expensive. You don't need many hand tools, but for most jobs you'll probably need a tractor-loader backhoe and a dump truck. You're generally better off renting the necessary equipment unless you intend to specialize in this type of work.

"Dirt is cheap, but lives aren't. You can't afford to have your wall collapse."

In most cities and counties, retaining walls require building department approval. The inspector wants to be sure the wall is strong enough to support the load. Except for small retaining walls, the building department isn't going to determine what's safe and what isn't. Instead, they rely on the opinion of the civil engineer *you* hire to prepare the plans. The engineer's stamp on the plans certifies that the wall meets accepted engineering standards. That's important. Dirt is cheap, but lives aren't. You can't afford to have your wall collapse.

Once the wall is finished, the slope above the wall should be landscaped to help hold the soil in place. You should be ready to suggest landscaping materials that will hold your man-made hills together.

Sea Walls

If you're near an ocean, lake or river, you'll probably have the opportunity to bid on sea walls. Sea walls, built to prevent damage from rising water, are made from stone, concrete, treated wood piles, sheet metal, fiberglass composites, or vinyl.

Every Job Begins With a Sale

There won't be much work to do until you start selling jobs. Selling is an important part of the business. Consider two questions:

1. Can you afford to hire a fulltime salesperson?
2. If not, can you afford to spend time selling jobs rather than building or supervising a crew?

My advice is to let the builders build and the salespeople sell. Unless you've got a special talent for sales, find someone who likes meeting the public and knows (or is willing to learn) something about fence building and retaining walls. Many people can learn to be good salespeople and enjoy selling. Favor someone who can make a sketch of what they're trying to sell. Some training in drafting or architecture is an advantage.

Your salesperson (or salespeople) should work on commission, earning more when they close more jobs. Commissions range from 5 to 15 percent of the contract price, often with a weekly draw. In Chapter 13, I suggest sales techniques that can keep your company busy and prosperous.

Fence Maintenance Contracting

All fences need repair or maintenance at some point, which makes fence maintenance contracting a good starter or add-on business. As a starter business, it's a good way to get established while you learn the ins and outs of the fence contracting business. There is definitely a market for this. I took a multitude of photos of fences for this book, and many of those fences clearly needed repair. Of course, you need to be a good handyman, and proficient in the use of hand tools. Start by looking for work in older neighborhoods.

"You can also offer limited emergency service on a per-call basis when severe damage has occurred."

Some fence contractors offer maintenance plans to customers with existing fences and walls. That typically entails coming by on a regular basis to inspect, repair any minor damage, oil hinges, tighten screws and bolts, and re-nail loose boards. You can also offer limited emergency service on a per-call basis when severe damage has occurred. This could be necessary after a wind storm, or when someone has run their car through a fence. Your service could also include periodic painting or waterproofing of customers' fences.

Your startup cost for this type of service is small: a few basic hand tools, a small inventory of materials, and a pickup truck or van. Who do you sell to? Mostly business and local governments; but many homeowners will also hire you. They either can't or don't want to bother doing it themselves.

On fence repair jobs, I recommend that you charge by the hour and add the cost of materials. Charging a fixed fee for this kind of work is usually a mistake. You'll often find hidden damage. Chapter 8 has more information on fence repairs and maintenance.

Design and Architecture

Anyone who's making a living in the fence business should see the difference between a fence that adds beauty to a home or neighborhood and a fence that's an eyesore. In many cases, you're going to be the designer — the person who recommends the fencing material *and* design. I've seen too many fences and walls that just didn't complement the property. Don't make that mistake.

I've seen many others that fell apart way too soon due to poor design. The designer didn't consider how the fence would be used and the problems that came with the site. Don't make that mistake either. The chapters that follow will help you select designs and materials to make attractive, well-engineered walls and fences.

Drafting and Layout

When you prepare plans for a fence or wall, your focus should be on technical accuracy. You have to take the designer's ideas and sketches and turn them into working blueprints that show, in detail, how all the parts fit together. To do that, a year or two of drafting experience and familiarity with fence building are essential.

Fence Rentals

Fence rental is good business in areas where many commercial or industrial buildings are under construction. Construction contractors rent fences to protect their equipment and tools on a jobsite. Insurance companies and local governments favor fenced construction sites because fencing helps keep vandals and kids off the site at night and on weekends.

Farmers and ranchers use temporary fencing to hold livestock during roundup. Businesses use it when they have to secure inventory outdoors for a period of time.

Most rental fences are chain link. You install them the same way you do permanent chain link fences, but without cementing the posts into the ground. Some varieties are freestanding, with concrete or metal panel stands that require no digging.

When renting out fencing, charge from a third to a seventh of your cost for the materials — the mesh, posts, and gates. This is based on the expectation that you can rent the same materials at least seven times, and perhaps as many as 20 times.

Charge your regular rate for delivery and installation, based on soil conditions and how level the site is. Some companies charge the same whether you rent the fence for a week or a year. You'll probably want to include a separate charge for removal.

If this sideline business interests you, check with some of your local competitors for prices. Use them as a guide to see whether you can make money renting fences.

Fence-Building Equipment Rentals

If you're in the fence-building business, consider renting out equipment that's sitting idle. Other contractors, subcontractors, and property owners may need a good source of specialized equipment. Require a deposit, valid identification, and a rental contract from your customers. In some states, your customers will need special operators' licenses to use heavy equipment such as backhoes or bulldozers.

Here are some examples of the equipment that's usually in demand:

- backhoe
- bulldozer
- power post hole diggers
- outdoor heaters
- concrete mixers
- trucks
- tractors
- stretchers
- electrical generators
- air compressors
- airless sprayers
- power washers
- specialized small hand and power tools

The daily rental rate for most small pieces of equipment is usually about 5 percent of the purchase price. That means you can recover the purchase price once equipment is rented about 20 times. But some equipment may only rent out a few times a year. So it may take several years to earn a decent payback. For weekly and monthly rentals, it's generally appropriate to offer discounts in proportion to the rental period.

Insurance will be important if you rent fence-building equipment. Make sure you're protected from liability and loss due to equipment damage or theft. To be competitive in this business, you'll probably need to invest several hundred thousand dollars in equipment. After the initial payback, you'll keep between 40 and 60 percent of each rental dollar after expenses. It's a good business if you can afford to get into it.

Material Sales

Here is another good money-maker for fence contractors: sell materials to other fence contractors. This works well if you're already stocking both raw materials and some hardware. You just need to offer delivery to the site and off-loading services. Many lumberyards carry some fencing materials, but, as you'll see in later chapters, a lot of materials are unique to fence building.

“To be competitive as a fence material dealer, you need to make a substantial investment ... several hundred thousand to a few million dollars.”

You can supply just one line — wood fencing, for example. Or you can be a full line supplier offering block, brick, metal, wood, chain link and others. To be competitive as a fence material dealer, you need to make a substantial investment ... several hundred thousand to a few million dollars. It's easier to accumulate capital like that if several people pool their resources and form a corporation. I'll tell you more about that in Chapter 11.

You might also consider prefab fencing as a business venture. Some fencing material dealers assemble and sell prefab metal, concrete, vinyl, composite or wood fence sections. You'll need a few good designs, a materials supplier, a building, and tools. You'll also need a way to deliver the completed sections to your dealers' or customers' locations. Also keep in mind that many companies already offer prefab fencing. Check out their designs and prices to be sure you can either build a better product or build the same product at a lower cost.

As you can see, the fencing and retaining wall business offers a wide range of opportunities through specialties or branch businesses. Many states now require that contractors be licensed. And all companies that have employees need to know something about labor laws. I'll cover those subjects next.

Get Your License

All states that require contractors to be licensed have contractor license schools. Some only teach the test, some only teach the basics of construction, and some may teach both. Before you invest time and money in a course, find out exactly what's offered. Ask questions like:

- Do they pre-test you to find out if you even qualify to become a licensed contractor? Many don't. All they want to do is sell you some study materials.
- Do they tell you in advance just how much money the school and the license will cost? If they don't, you could be in for a shock later.
- Do they teach you the trade using hands-on experience? Not many do. Most assume you already know how to build a fence or wall.
- Will they help you find that first job after you get your license? That first flight from the nest isn't always easy.
- Will they guarantee success in passing your test? Some will refund your money if you don't pass after you take the test twice.
- Do they teach a section on contractor's math? Questions on this subject will be included in most state tests.

How Much Does a Contractor's License Cost?

The schools that teach only the test are usually the least expensive. You get an average of 15 hours class time over a few weeks, several manuals, and sample tests to take. Most schools will allow you to retake the course for free if you fail the state exam, and will even refund part of your fee if you fail the state exam three times in a row. Make sure your contract covers restrictions and refunds.

Schools that teach a trade might charge thousands of dollars for the course. If you're going part-time, plan on spending your evenings and weekends studying and building for at least six months. There are a few fulltime schools that will teach you what you need to know in three to four weeks.

In addition to classroom training, there are plenty of Internet or self-study courses, materials and computer programs designed to help you prepare for license exams.

Check these schools and programs out carefully before you commit to one. Your state consumer affairs office or contractor's license board can tell you if a school is legitimate.

The license itself can cost anywhere from a few dollars to several hundred dollars, depending on the state. California charges a flat fee for the first classification, and a lesser amount for each additional classification or specialty.

Some states will require both a license and a *contractor's license bond*. If you default on a job, abandoning it before the work is finished, the state can revoke your license and the bond proceeds are available to compensate the owner. You may also have to show proof that you have enough *working capital* to support a contracting business. Working capital is money available to pay for labor and materials.

Many county and local governments will require that you post a bond when you bid on work under a government contract. Usually both a *bid bond* and a *completion bond* are required. The bid bond is submitted with the bid. It guarantees that you'll sign a contract to do the work if your bid is accepted. The completion bond guarantees that you'll complete work identified in the contract. Bid and completion bonds are written by insurance companies specializing in this type of work.

Most cities require contractors doing business in their city to have a business license. The license is usually a set amount plus a tiny fraction of your estimated gross receipts in the city for the coming year.

Prove It

Can you prove you know your trade? Along with your application for a license, many states now require that you submit proof of prior experience. For example, California requires a *Certification of Work Experience*, as shown in Figure 1-8.

You may substitute college-level education or union apprenticeship for construction experience. You can also substitute building your own home or owning an apartment or condo complex in which you do all your own maintenance. However, these substitutions are sometimes prorated. For example, building your own home may only count as three months' experience toward the requirement. On the other hand, apartment and condo complex owners generally get full credit for their years of ownership.

Of course, every state can set its own requirements for a fence contracting license. Check out the requirements before you invest a lot of time and money in something for which you may not be qualified. Even if you feel qualified, the license board may not agree.

The Contractor's License Application

Where do you apply for your contractor's license? Do an Internet search or look in your telephone directory under the name of your state. If there isn't a



CONTRACTORS STATE LICENSE BOARD
 9821 Business Park Drive, Sacramento, CA 95827
 Mailing Address: P.O. Box 26000, Sacramento, CA 95826
 800.321.CSLB (2752) | www.cslb.ca.gov | CheckTheLicenseFirst.com

STATE OF CALIFORNIA
 Governor Edmund G. Brown Jr.

Certification of Work Experience

Please read the General Information section on the previous page before beginning.

The qualifying individual must complete the information in Part 1; the individual certifying the experience (certifier) must complete Part 2. The experience must be verifiable through payroll records or similar documents. If additional space is needed to list the trade duties, please attach a separate sheet.

Use a separate form for each employer. If you need additional forms, please make a copy of this blank form or visit CSLB's website.

Please type or print neatly and legibly in black or dark blue ink.

FORMS CONTAINING STRIKEOUTS OR MODIFICATIONS MAY NOT BE ACCEPTED.

Corrections on the Certification of Work Experience forms must be initialed by the certifier.

PART 1 – QUALIFYING INDIVIDUAL INFORMATION

The qualifying individual must complete Part 1 in its entirety.

1. QUALIFIER'S FULL LEGAL NAME Last		First	Middle	
2. BUSINESS NAME OF EMPLOYER – OR, IF YOU WERE SELF-EMPLOYED, LEAVE THIS SPACE BLANK AND CHECK THIS BOX <input type="checkbox"/> (If you checked the box, skip line 3 and go to line 4)				LICENSE NUMBER OF EMPLOYER
3. EMPLOYER'S BUSINESS STREET ADDRESS Number/Street Only – NO P.O. Boxes		City	State	ZIP Code
4. WAS THE EXPERIENCE OBTAINED WORKING ON YOUR OWN PROPERTY AS AN OWNER-BUILDER (see previous page for definition)? <input type="checkbox"/> Yes <input type="checkbox"/> No IF YOU CHECKED "YES" ABOVE, USE THE ENCLOSED CONSTRUCTION PROJECT EXPERIENCE FORM TO PROVIDE A LIST OF COMPLETED PROJECTS.				

PART 2 – WORK EXPERIENCE AND CERTIFICATION STATEMENT

The certifier must complete Part 2 in its entirety after the qualifying individual has completed Part 1.

5. APPLICANT'S JOURNEYMAN-LEVEL OR HIGHER TIME-BASE WORKED WAS (check one):	<input type="checkbox"/> FULL-TIME	<input type="checkbox"/> PART-TIME	} FROM _____ TO _____ = _____ YEAR(S) and _____ MONTH(S)	FOR A TOTAL OF
			Month/Day/Year Month/Day/Year	(Do not claim credit for full-time work if applicant worked only part-time. For example, if applicant worked half-time for six (6) years, write "3 years" in the space above.)
(LIST ONLY JOURNEYMAN-LEVEL OR HIGHER EXPERIENCE THAT WAS OBTAINED IN THE APPLICABLE CLASSIFICATION)				

6. IN THE SPACE BELOW, LIST ALL SPECIFIC TRADE DUTIES APPLICANT PERFORMED OR SUPERVISED IN THE CLASSIFICATION FOR WHICH HE/SHE IS APPLYING. PLEASE REFER TO THE DESCRIPTION OF CLASSIFICATIONS DOCUMENT FOR ASSISTANCE. (Do not list office work or individual project names.)

My relationship to _____ Name of Qualifying Individual (Applicant) is or was (check all that apply):

Employer Fellow Employee Foreman or Supervisor Journeyman Business Associate

Union Representative Contractor (License Number _____) Client (if qualifier was self-employed)

CERTIFIER'S STREET ADDRESS Number/Street Only – NO P.O. Boxes City State ZIP Code

PHONE NUMBER ()	FAX NUMBER ()	EMAIL ADDRESS
--------------------------	------------------------	---------------

I certify that I have direct knowledge of the work covering the time period outlined above. I certify under penalty of perjury, under the laws of the State of California, that the information stated above is true and correct. (The definition of "perjury" is telling a lie while under oath.)

7. Date	Signature	Printed Name
---------	-----------	--------------

Note: For information on the collection of personal information, please refer to the General Information section at the beginning of this application package, under the heading "Collection of Personal Information."



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Figure 1-8
Work experience certification form

listing for a contractor's license board, call your state department of consumer affairs. If there's a license requirement, get a copy of the license law and ask for an application. Figures 1-9A through 1-9C include pages from a typical application form. I suggest looking it over so you have a feel for the types of questions and requirements you'll encounter. If you live in California, you can go to the state licensing board's website for more information. The address is www.cslb.ca.gov

Your contractor's license doesn't give you any special privileges except the right to bid jobs and get paid the contract price for the work you've done. In fact, it creates special duties owed to your employees, your customers and the license board. As a licensed contractor, if you do the wrong thing, you can be fined or lose your license.

You'll also be subject to regulation by the labor board, federal, state and local taxing agencies, and OSHA (Occupational Safety and Health Administration). They all have rules you must know and follow.

Fines and penalties for misconduct as a contractor can cost you dearly. We'll cover some of the contractor regulations on sales and safety in later chapters. Following are only some of the limitations that go along with being a licensed contractor.

You're subject to disciplinary action or criminal prosecution if you:

- lie or misrepresent material facts on your application for a contractor's license.
- help an unlicensed person evade the provisions of contractor's law. This includes things like falsely verifying experience so that another person can get a contractor's license.
- lend or sell your contractor's license to another person.
- deliberately withhold pay from employees, subcontractors, and suppliers for their services.
- start work on a job without first getting the required building permits. Your contractor's license may be suspended or revoked for doing so.
- contract for construction work that isn't covered by the valid license classification you hold. The exception is when the prime contract requires the contractor to do closely-related work. For example, you're permitted to paint a fence after you install it. But you can't add a wing to the customer's house that attaches to a fence.
- deliberately write checks for materials or services supplied by others without enough money in the bank to cover the checks.



CONTRACTORS STATE LICENSE BOARD

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STATE OF CALIFORNIA

Governor Edmund G. Brown Jr.

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Application for Original Contractor License

Application Fees

Single classification..... **\$300.**

Initial license fee (to be paid after exam) . \$180.

Total fees required for original license\$480.

Voluntary contribution to Construction Management Education Account.....\$ _____

The application fee for a single classification (\$300) is not refundable once the application has been filed.

Attach a money order or a personal, business, certified, or cashier's check made payable to the Registrar of Contractors. Do not send cash.

There is a \$10 service charge for each dishonored check.

Please type or print neatly and legibly in black or dark blue ink.

SECTION 1 – BUSINESS NAME AND ADDRESS

Business Name: The legal business name is the name that will appear on the license and is the actual name under which the contracting business will operate. The full business name must be provided.

Name Compatibility: The business name must be compatible with the license classification and the business entity. For example, it would not be acceptable for ABC123 Tile to apply for a C-10 Electrical contractor license, but it would be acceptable for ABC123 Construction to apply for a B-General Building contractor license or for ABC123 Tile to apply for a C-54 Ceramic and Mosaic Tile contractor license. In addition, it would not be acceptable for a sole ownership to use the words "partners" or "corporation" in its business name.

1. FULL NEW BUSINESS NAME		2. CLASSIFICATION REQUESTED (Only one classification may be requested on the original application if an exam is required)	
3a. BUSINESS MAILING ADDRESS Number/Street or P.O. Box	City	State	ZIP Code
3b. BUSINESS STREET ADDRESS Number/Street Only – NO P.O. Boxes or PMBs	City	State	ZIP Code
3c. BUSINESS PHONE NUMBER ()	BUSINESS FAX NUMBER ()	BUSINESS EMAIL ADDRESS	

SECTION 2 – BUSINESS ENTITY

Corporation / Partnership: Corporations must provide a current and active California Secretary of State corporate registration number below. Please be sure to write the corporate titles (president, secretary, and treasurer) in the space provided for the appropriate personnel in Sections 3 and 4. Partnerships must list their Federal Employer Identification Number (FEIN) below (personal Social Security numbers are not acceptable). (See pages 2 and 3 of the General Information section for more information.)

4. NEW BUSINESS WILL OPERATE AS A (check only one)

Sole Ownership Partnership – Federal Employer ID # _____ California Corporation # _____

SECTION 3 – QUALIFYING INDIVIDUAL FULL LEGAL NAME AND ADDRESS

Qualifying Individual (Qualifier): A qualifying individual is required for every classification on every license issued by CSLB. You must provide full legal names of all individuals. (See page 1 of the General Information section for more information.)

5a. QUALIFIER'S FULL LEGAL NAME Last	First	Middle	DATE OF BIRTH	SOCIAL SECURITY NUMBER
5b. RESIDENCE ADDRESS Number/Street Only – NO P.O. Boxes or PMBs			City	State ZIP Code
6. QUALIFIER'S EXISTING / PREVIOUS CSLB LICENSE NUMBER(S) (If none, enter N/A)	PERCENTAGE OF NEW BUSINESS OWNED BY THE QUALIFIER _____ %	DRIVER LICENSE NUMBER	RESIDENCE PHONE NUMBER ()	
7. TITLE OR POSITION (check only one) Corporate titles – president, secretary, and treasurer for California corporations; president only for foreign corporations <input type="checkbox"/> Owner <input type="checkbox"/> Qualifying Partner <input type="checkbox"/> RME* <input type="checkbox"/> RMO/Corporate Officer - Title(s) _____ * RMEs are prohibited from having an active sole owner license. Please visit CSLB's website for an Application to Inactivate Contractor's License, if needed.				
8. THE EXAMINATIONS ARE ADMINISTERED IN ENGLISH. IF YOU WILL REQUIRE THE USE OF A TRANSLATOR, PLEASE CHECK THIS BOX. <input type="checkbox"/>				
I certify under penalty of perjury under the laws of the State of California that all statements, answers, and representations made in this application, including all supplementary statements attached hereto, are true and accurate, and that I have reviewed the entire contents of this application. (The definition of "perjury" is telling a lie while under oath.) I authorize the Franchise Tax Board to provide CSLB with required tax information pursuant to B&P Code Section 7145.5.				
Date	Signature		Printed Name	



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Application – Page 1 of 3

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Figure 1-9A

Contractor's license application form

SECTION 4 – PERSONNEL FULL LEGAL NAMES AND ADDRESSES (Other than Qualifying Individual)

The following must be completed by **all** individuals who will be listed on the license. You must provide **full legal names** of all individuals. Each individual must sign the certification under penalty of perjury. *(The definition of "perjury" is telling a lie while under oath.)*

9a. PERSONNEL FULL LEGAL NAME Last First Middle			DATE OF BIRTH	SOCIAL SECURITY NUMBER
RESIDENCE ADDRESS Number/Street Only – NO P.O. Boxes or PMBs City			State	ZIP Code DRIVER LICENSE #
TITLE OR POSITION (check only one) <input type="checkbox"/> Owner <input type="checkbox"/> General Partner <input type="checkbox"/> Limited Partner <input type="checkbox"/> Corporate Officer - Title(s) _____				RESIDENCE PHONE NUMBER ()
I certify under penalty of perjury under the laws of the State of California that all statements, answers, and representations made in this application, including all supplementary statements attached hereto, are true and accurate, and that I have reviewed the entire contents of this application. I authorize the Franchise Tax Board to provide CSLB with required tax information pursuant to B&P Code Section 7145.5.				
Date	Signature		Printed Name	

9b. PERSONNEL FULL LEGAL NAME Last First Middle			DATE OF BIRTH	SOCIAL SECURITY NUMBER
RESIDENCE ADDRESS Number/Street Only – NO P.O. Boxes or PMBs City			State	ZIP Code DRIVER LICENSE #
TITLE OR POSITION (check only one) <input type="checkbox"/> General Partner <input type="checkbox"/> Limited Partner <input type="checkbox"/> Corporate Officer - Title(s) _____				RESIDENCE PHONE NUMBER ()
I certify under penalty of perjury under the laws of the State of California that all statements, answers, and representations made in this application, including all supplementary statements attached hereto, are true and accurate, and that I have reviewed the entire contents of this application. I authorize the Franchise Tax Board to provide CSLB with required tax information pursuant to B&P Code Section 7145.5.				
Date	Signature		Printed Name	

9c. PERSONNEL FULL LEGAL NAME Last First Middle			DATE OF BIRTH	SOCIAL SECURITY NUMBER
RESIDENCE ADDRESS Number/Street Only – NO P.O. Boxes or PMBs City			State	ZIP Code DRIVER LICENSE #
TITLE OR POSITION (check only one) <input type="checkbox"/> General Partner <input type="checkbox"/> Limited Partner <input type="checkbox"/> Corporate Officer - Title(s) _____				RESIDENCE PHONE NUMBER ()
I certify under penalty of perjury under the laws of the State of California that all statements, answers, and representations made in this application, including all supplementary statements attached hereto, are true and accurate, and that I have reviewed the entire contents of this application. I authorize the Franchise Tax Board to provide CSLB with required tax information pursuant to B&P Code Section 7145.5.				
Date	Signature		Printed Name	

9d. PERSONNEL FULL LEGAL NAME Last First Middle			DATE OF BIRTH	SOCIAL SECURITY NUMBER
RESIDENCE ADDRESS Number/Street Only – NO P.O. Boxes or PMBs City			State	ZIP Code DRIVER LICENSE #
TITLE OR POSITION (check only one) <input type="checkbox"/> General Partner <input type="checkbox"/> Limited Partner <input type="checkbox"/> Corporate Officer - Title(s) _____				RESIDENCE PHONE NUMBER ()
I certify under penalty of perjury under the laws of the State of California that all statements, answers, and representations made in this application, including all supplementary statements attached hereto, are true and accurate, and that I have reviewed the entire contents of this application. I authorize the Franchise Tax Board to provide CSLB with required tax information pursuant to B&P Code Section 7145.5.				
Date	Signature		Printed Name	

(If additional space is needed, please make a copy of this blank page.)

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Figure 1-9B
Contractor's license application form

SECTION 5 – REQUIRED APPLICATION QUESTIONS

All questions in this section must be answered. Questions 10, 11, and 12 pertain to **all** individuals listed on this application (qualifying individual and all personnel listed in Section 4). If you checked "Yes" in response to any question, the person involved must attach a separate sheet with a detailed explanation for each situation.

10. To the best of your knowledge, is anyone listed on this application (or any company the person is or was a part of, or any immediate family member of the applicant) named in or responsible for any entered and unsatisfied judgments, liens, and/or claims against any bond or cash deposit pertaining to a construction project? (Immediate family member is defined by B&P Code Section 7075.1 as a spouse, father, mother, brother, sister, son, daughter, stepson, stepdaughter, grandson, granddaughter, son-in-law, or daughter-in-law.) Yes No

If you checked "Yes" for this question, you are required to attach a statement identifying all judgments (pending or on record), liens, past due unpaid bills, claims, or suits and a detailed explanation of the situation. Include the names and addresses of the parties involved. If the obligation was or is being discharged in bankruptcy, attach a copy of the bankruptcy filing and a copy of the creditors list.

11. Has anyone listed on this application ever pleaded guilty or no contest to or been convicted by a court of any misdemeanor or felony in this state or elsewhere? You are required to check "Yes" and provide all of the requested information even if the conviction was sealed or expunged under Penal Code Section 1203.4 or an applicable code of another state. Yes No

If you checked "Yes" for this question, you are required to attach a statement disclosing all pleas/convictions, including violated law sections, and thoroughly explain the acts or circumstances which resulted in the plea/conviction. In addition, the following information must be included for each plea/conviction: date of the plea/conviction, county and state where the violation took place, name of the court, court case number, sentence imposed, jail/prison term served, terms and conditions of parole or probation, parole or probation completion dates, and parole agent/probation officer names and phone numbers. You may submit the required information using the Disclosure Statement Regarding Criminal Plea/Conviction form that is available on the Forms and Applications page on CSLB's website.

The information provided will be verified through CSLB's fingerprinting requirement. Failure to report a plea/conviction is considered falsification of your application and is grounds for denial of your application.

12. To the best of your knowledge, has anyone on this application (or any company the person was a part of, or any immediate family member of the applicant) ever received a citation from the Contractors State License Board or had a contractor license or other professional or vocational license or registration denied, suspended, or revoked by this state or elsewhere? (Check "No" if the license was suspended due to lack of a bond, workers' compensation, a qualifier, or family support.) Yes No

If you checked "Yes" for this question, you are required to attach a statement detailing the events leading to this action.

13. (This question must be answered by the qualifying individual.) The Registrar of Contractors has determined that direct supervision and control includes any one or a combination of the following activities: supervising construction, managing construction activities by making technical and administrative decisions, checking jobs for proper workmanship, or direct supervision on construction job sites. Will you, as the qualifying individual, perform one or more of these duties? Yes No

14. (This question must be answered only if the qualifying individual is a Responsible Managing Employee [RME].) CCR Section 823 states that an RME must work at least 32 hours per week or 80% of the total operating hours per week for the entity for which he or she acts as the qualifier. Will you, as the Responsible Managing Employee, meet the requirement of CCR Section 823 cited above? Yes No

15. By law, all new businesses applying for a license must have more than \$2,500 operating capital. (B&P Code Section 7067.5) Operating capital is your current assets minus your current liabilities. Does your operating capital exceed \$2,500? Yes No

SECTION 6 – QUALIFYING INDIVIDUAL EDUCATION, APPRENTICESHIP, AND LICENSURE

16. HAVE YOU COMPLETED AN EDUCATIONAL OR APPRENTICESHIP PROGRAM? Yes No

IF YOU CHECKED "YES" FOR THIS QUESTION,

YOU MAY BE GRANTED CREDIT FOR COMPLETED EDUCATION IF YOU:

- Submit a copy of your diploma for a four-year degree in a business or construction-related field; OR
- Submit transcripts for a two-year degree (or less), technical training (must include course hours and descriptions), and all other degrees. Transcripts must be official and contained in a sealed envelope. (If you received your degree outside the United States, your transcripts must be translated and evaluated by an accredited evaluation service that does business within the United States.)

YOU MAY BE GRANTED CREDIT FOR A COMPLETED APPRENTICESHIP PROGRAM IF YOU:

- Submit a copy of your apprenticeship certificate; AND
- Enter the beginning and ending dates of your completed apprenticeship program: From _____ to _____
(The apprenticeship period cannot overlap the journeyman level experience period being certified.) Month/Day/Year Month/Day/Year

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Figure 1-9C
Contractor's license application form

- enter into a contract with an unlicensed non-employee, to construct a project.
- default on a construction contract. If you fail to complete a contract, and you don't have a valid excuse, you may be fined and jailed.
- use funds collected specifically for completion of one job on another job. This is called *diversion of funds*.
- disregard and violate the laws and provisions of any official authority, such as building codes, state and local codes, labor laws, safety laws, and water codes. This also includes tax and insurance laws.
- join with another licensed contractor to submit a joint bid or contract on a job, without first getting a *joint contractor's license*.
- fail to list your correct contractor's license number on contracts, bids, legally required forms, and advertising. This includes the sign on the side of your truck.
- advertise as a contractor unless you hold a valid license for the applicable classification.
- refuse to surrender your license to the contractor's license board when requested to do so.
- operate as a contractor with an expired or forged contractor's license.
- use or display a contractor's license that is not issued to you.
- violate state safety provisions.
- remove, deface, or destroy safety signs or notices required by state agencies.
- falsely state the purpose of a loan when you apply for one. You can't apply to a bank for a loan to build a retaining wall on your property and then use the money for a new car. That's embezzlement.

Those are just a few of the rules for starters. If you have, or will be hiring, employees, there are more — lots more.

Laws Governing Employers

If you're an owner building on your own property, you don't need a contractor's license, providing you don't offer the property for sale for at least one year after you finish building. If you hire someone to help you build your project, you need workers' compensation insurance; see your insurance agent.

Heavy penalties are usually imposed on employers who fail to buy the necessary coverage — a 10 percent penalty and all medical expenses if a person gets hurt while working for you. This applies to relatives as well as non-relatives.

Generally, buying workers' compensation insurance relieves you of liability for job-related injuries. The injured employee's only claim is for workers' compensation unless you're guilty of negligence that caused the injury.

As an employer, you have to comply with both state and federal laws that apply to employers. For example, you need a Federal Employer I.D. number and you must file a Form 941, Employer's Federal Quarterly Tax Return (and remit both the employer's and employees' withheld taxes) each quarter. Both your state government and the federal government have effective ways to enforce these laws.

"Generally, buying workers' compensation insurance relieves you of liability for job-related injuries."

Like all construction contracting, fence contracting isn't the easiest job in the world. There's not much paperwork if you're a one-man company. But most fence contractors need help with carrying materials, mixing concrete, laying out paths and many other tasks. Unless you're Superman, you'll probably hire some help. Once you do, you're an employer and have to meet the requirements placed on all employers. Below are some of the things all employers need to know.

Most states have labor laws along the following lines:

- If you pay an employee with a check and that check bounces, you're subject to a civil penalty. If you lay off an employee and the final paycheck bounces, you're liable for up to 30 days' additional pay, or pay up until you make the check good, whichever comes first.
- In most states, if you fire an employee for cause, you'll need to provide their final pay at the time of firing. Failure to do so may result in additional penalties and fees.
- You may not *require* your employees to work more than 40 hours per week. You can ask them to, but they don't have to. If you discipline them for not working over 40 hours, you're subject to a fine and a possible jail sentence. But note this carefully: The 40 hours need not be in a five day week. You can ask employees to work six out of every seven days. If you ask employees to work seven days or more in a row, you have to notify your employees in advance and give rest days equal to one for each seven days in the month.

- You can't include requirements in help wanted ads that would discriminate against an applicant. Federal law prohibits discrimination based on race, color, age, sex, national origin or religion. Of course, you may discriminate on the basis of qualification. You can also reject a candidate who can't do a job because of physical or mental limitations.
- You have to pay equal wages for equal work, providing there is equal skill, responsibility, and effort involved. You can't hire a man for \$20.00 an hour to nail boards on a fence and then hire a woman for \$10.00 an hour to do the same thing.
- Private sector employers can't ask an applicant about their past criminal or arrest record or require an applicant to take a polygraph (lie detector) test.
- You can't demand that an applicant or employee purchase items from you. You can require the person to purchase items required for the job, but not from you. For example, you can require safety shoes. You should tell applicants this before you hire them.
- You can't hire an illegal alien. To knowingly hire an illegal alien to the detriment of legal residents is punishable by a fine. Examine the applicant's *green card*. This is a work permit granted by the INS (Immigration & Naturalization Service). You should also check for a passport. The green card identification number should be listed in the passport and should match the number on the card.
- You must provide employees with safe working conditions. Explain any job hazards and safety procedures to new employees before they start work.
- You can't fire or take other disciplinary action against an employee who complains to the authorities of a health or safety violation. If you fire an employee for refusing to work in an unsafe environment, you will have to reinstate them with full back pay. If you demote them, you will have to return them to the status they held before the demotion and make up the difference in pay and benefits.
- If an employee is injured due to unsafe working conditions, the employer must report the injury to the Department of Labor Statistics, OSHA, and their insurance company. In most states, if an employee is killed on the job because of unsafe working conditions, the employer can be fined and jailed.
- If a fellow employee causes another employee to be injured, the injured employee or their surviving family may seek damages from the employer. You're expected to monitor your employees and make sure they're all working safely.

- You can't punish an employee for belonging to, or speaking out for, a political party, person, or activity.
- An employer who advertises for replacement help during a labor dispute must include in the advertisement that there is an ongoing labor dispute.
- If your employees go on strike, you may use family or supervisory personnel to replace the striking workers.
- All employers must get a Federal (from the Internal Revenue Service) and a State Employer Identification Number.
- You are required to withhold Federal and State income taxes, Social Security contributions and disability insurance from employee wages. You also have to contribute matching Social Security funds and Federal unemployment tax based on your total payroll.

Contributions and withholding amounts change from year to year. When you register with your state and local taxing agencies, you'll be notified of current withholding rates, and the method for depositing them.

- You have to pay *nonexempt* employees at least twice during each calendar month. Nonexempt employees are the ones you pay by the hour. Exempt employees are usually management people, and get paid a monthly or yearly salary without regard for the number of hours they work.
- You have to pay employees in legal tender. You can't use merchandise, coupons, scrip, notes, stock, bonds, or other forms of payment. Legal tender means check or cash. You can ask your employees to accept items other than legal tender, but employees have to accept voluntarily. New companies sometimes use notes and stock as compensation during the first few months when they're going into business.
- You must keep a list of all employees on file. The list must include the ages of all minors and the names and addresses of all employees.
- You have to keep payroll records for at least four years from the time you filed the returns that apply to them, or paid the taxes, whichever is later. See IRS Publication #334, Tax Guide for Small Business. You can get it free on the Web at www.irs.gov or from any IRS office.
- You must also keep employment application forms, even from people you didn't hire, for at least a year from the date of the application.

Collecting Sales Tax

For sales tax purposes, contractors are generally considered to be consumers and pay sales tax on their materials. When they sell material to their customer, they don't add sales tax as a separate item on the bill.

In some states, dealers who hold a seller's permit (sometimes called a resale license) don't pay sales tax on their materials. Instead, they collect the tax from retail customers and remit the tax collected to the taxing agency every few months. That's a nuisance. It's easier to pay the tax, consider it a cost of materials, and avoid filing sales tax returns monthly or quarterly.

I hope this discussion hasn't discouraged you. After a while, most of these laws will begin to make sense. Following them almost gets to be automatic. But it's not always cheap or easy.

In the next few chapters, I'll tell you all about the mechanics of building all kinds of fences and walls. Later in the book, I'll explain how to get your fence and retaining wall contracting business started on the right foot and how to keep it running successfully.

Online Preview

Glossary

A

Abutment — Structure (natural or constructed) that supports a dam, bridge or arch.

Adobe — Clay building material made from straw and sun-dried earth or Playa Clay.

Adze — A tool used to shape wood; looks somewhat like a pickax with a chisel-shaped head.

Anta — Portion of a wall that is thicker than the rest and acts as a post.

Auger — Large, coarse screw bit, typically 8 to 12 inches in diameter and driven by an electric or gas motor; used for boring post holes.

Awl — Hand tool with long sharp pointed tip; used for making holes in wood or to make indent, starter hole, for a drill bit.

B

Backhoe — Power machine used for excavation; has digging bucket that is on the end of an articulating arm which is pulled toward the operator.

Balcony — Platform surrounded by railing — usually on upper stories of a building.

Bamboo — Tall grass with a woody stalk, usually about 1/8 to 1 inch in diameter and 8 to 12 feet tall; used for furniture and fences.

Band saw — Power saw with a continuous steel blade; used for cutting irregular shapes.

Banister — Railing used as a handhold on stairways and landings.

Barbed wire — Stranded wire with sharp-pointed ends twisted into it that protrude every 4 to 6 inches along its length.

Base — The bottom or supporting structure of a column or pier or wall; usually reinforced and wider than the object it supports.

Batten — Joint sealer or reinforcement made from narrow strips of wood; also the stakes used to hold the string that marks the boundary of a wall or foundation.

Block and tackle — A device that decreases the amount of power needed to move a given load.

Boss — Architectural term for portion of decorative ornamentation that protrudes outward.

Bow saw — A tensioned saw blade attached to an arched or bow-shaped handle; used for cutting logs.

Brace — To reinforce a fence or wall so it does not collapse or fall over; also, a hand tool used to drill holes in wood.

Bracket — Support for shelves or vertical loads, usually made of metal; also used to reinforce angles.

Brad — Thin, small-headed nail.

Brick — Clay formed and heat-cured into a basic building block.

Broach — To open up a hole or square off the bottom of a hole.

Brownstone — A reddish-brown sandstone building material.

C

Cantilever — Beam supported on one end only.

Cap — Top of wall, usually overhangs both sides of wall to deflect water away from wall.

Capillary action — Liquid flow through an object.

Cast iron — Molded iron manufactured from silicon, iron, and carbon. Used for decorative items.

Cattle gate — Bars installed over a hole at ground level; bar size and spacing allows people and vehicles to cross, but not cattle.

Cement — Building material used to bond materials, blocks, bricks, together; manufactured from finely-pulverized ores — usually iron oxide, alumina, lime, silica, and magnesia.

Center bit — A wood boring tool with a center screw that extends beyond two sharpened wings or spurs which shave the circumference of the hole.

Center punch — A tool you strike with a hammer to make an indent used as a starter hole for drilling.

Chain saw — Power saw used to cut timber, with a continuous revolving chain that has cutting teeth every few inches.

Chalkline — Straight line marked on an object or surface; also the device used to make the line (a roll of string enclosed in a box of powdered chalk).

Chamfer — The edge of a bevel; also a column with groves cut along its length, or the act of cutting groves along the length of a column.

Chisel — A hand tool struck with a hammer or pushed by hand, used to cut groves or irregular shapes from the surface of wood; special hardened chisels also cut or split block, brick, mortar, cement, or stone.

Chuck — The portion of a drill that is used to hold the bit.

Clapboard — Type of wood siding material that is wide at the top and narrower at the bottom.

Clasp — To hold together; also, an object designed to hold items together, such as a hook to keep a gate closed.

Clench — To bend the protruding pointed end of a nail so it can't be pulled out

Clinkerbuilt — Overlapping of boards, such as siding.

Cofferdam — Enclosure used to divert water from a construction area; a hollow, watertight structure lowered to the bottom of a water-filled area, and extending above water level which is then pumped out to expose the bottom surface.

Column — Vertical post used as a support.

Concrete — Building material made from a mixture of cement, small aggregate, and water, and used to form foundations and walls.

Console — Ornamental bracket for holding up a shelf or overhead.

Coping — The cap of a wall.

Coping saw — Small handheld bow saw with thin, narrow blade for cutting decorative strolls in wood.

Corbel — A support attached to the side of a wall — usually scroll-cut wood that supports a shelf.

D

Dado — A groove cut in any material; also, the blade used to cut the groove or the act of cutting the groove.

Dead-air space — The enclosed space in blocks where there is no air movement; acts as an insulator to heat and cold.

Dead load — Weight on foundation from wall or structure above, a constant weight that doesn't include people, vehicles, snow, etc. (see also *Live load*).

Die — Device used for cutting threads on screws and pipes.

Dovetail — Type of wood joint where each piece being joined is end-cut into sections that are wider at the ends than at the base.

Drawknife (Drawshave) — A knife blade with handles on both ends; the knife is drawn or pulled in a shaving motion across the piece of wood being shaped.

Dry wall — Rock wall construction in which no mortar is used; the roughness and weight of the stone hold the wall in place.

Duramen (Heartwood) — The center portion of a log which is dense, hard, and usually dark in color.

Dutch door or gate — Gate or door that is split horizontally with both sections independently hinged and locked, allowing the top half to open so a person can see out or talk to someone while the bottom half remains closed.

E

Eye bolt — Bolt formed with a head that forms a closed circle.

F

Face — The front portion of a wall or fence.

Filigree — Fine design ornamental work.

Footprint — Drafting term that refers to the horizontal area covered by an object being placed in that area; also, the outline of wall or fence looking from the top downward.

Footing — The enlarged base section of a foundation, used to distribute the weight of the structure being supported.

Frame — Structural supporting element of a wall or building.

G

Galvanize — Apply a zinc coating to metal to prevent rust and deterioration.

Gate — A passageway between two adjacent areas that are separated by a freestanding fence or wall.

Gate post — Posts on either side of a gate — one holds the hinges, the other the latch.

Girder — A structural component that extends horizontally and supports a vertical load.

Girth — Measurement of distance around an object.

Gouge — A narrow scoop-type chisel used for digging out wood.

Grade — The slope or elevation of the land from flat (horizontal).

Grate — Covering over an opening which consists of open mesh or bars (see *Cattle gate*).

Gravel — Pebbles or sand and rock mixture; rock size is generally less than an inch in diameter.

Ground plan — Plan or layout of where a structure will rest on a plot of land.

Groundwater — Water beneath the surface of the ground, such as an underwater stream or pool.

H

Hacksaw — Small bow saw used for cutting metals.

Half-timber — A structure, wall, or fence with exposed wood separated by plaster, masonry or concrete.

Hardhat — A reinforced safety helmet worn by construction workers to protect the wearer from falling objects.

Hasp — Two-component door or gate latch composed of a U-shaped fitting on one piece which passes through a slot in the other; usually secured with a padlock.

Header — Supporting structure placed above an opening such as a doorway, window, or gate.

Hedge — Fence or barrier of low plants, bushes or trees.

Hedgerow — Hedge lined up in a row that acts as a fence.

Heelpost — Hinged side of a gate post.

Hinge — Two-component device: One section is fixed in place and the other is allowed to turn or swivel on the first.

Hoist — A lifting device usually of block and tackle design used to lift heavy objects into place.

Hone — Stone made of fine, hard-packed grit used for sharpening knives, axes, etc.

I

Impost — Beginning of an arch or the portion of the wall or fence the arch rests on.

Incline — A slope.

Inorganic — Dirt and rock soil which is not the result of decomposed plants or animal matter.

Insoluble — Not capable of being dissolved.

Insulator — Material which restricts the flow of heat, cold, or electricity.

K

Kerf — A saw or knife cut.

Keystone — Wedge-shaped stone which is the last to be placed into the center top of an arch and locks the arch together.

Kiln — An oven used for drying clay, such as that used to manufacture brick; also, an oven used to dry fresh-cut (wet) lumber.

King post — The center vertical post of a truss.

L

Levee — Bank of earth used to contain water from a lake, stream, river, or ocean.

Line posts — Posts between the anchor or terminal posts in a fence.

Lintel — Beam above a window or doorway that supports the wall above.

Live load — Load a structure is designed to support, including animals, people and equipment.

Loop cap (eye top) — A cap for a line post with a loop for the top rail to pass through; used in chain link fencing.

Louvers — Slats arranged across an opening in such a way that air passes through, but rain or the view is fully or partially blocked.

M

Mason — One who builds with stone, brick, or block.

Matchboards — Lumber that, when put together, forms a tight fit, such as tongue and groove.

Maul — Hammer with a large, heavy head; used to drive stakes, wedges, etc.

Miter — Joint formed by two or more pieces that have been cut at an angle and butted together.

Moldboard — Forming lumber used when laying in concrete; also, the angle plow or blade of a bulldozer.

Molding — Finish lumber used to cover joints and cracks.

Mortar — Mixture of cement and sand used to bond block and bricks together.

Mortarboard — Handheld board, 18 inches square, used to hold mortar during the brick laying process.

N

Newel post — Starting post of a railing located at the head or foot of a stairway, or the center post of a circular stairway.

Niche — A recessed shelf area in a fence or wall.

O

Ornamental fence — Decorative fence usually made of wrought iron or aluminum.

P

Parcel — A small plot of land; a lot.

Peavey — A tool for manual handling of logs.

Pediment — A decorative structure over a gate or entryway.

Percolate — To pass through a material, such as water passing through a wall.

Pilaster — The terminal post of a block wall.

Pile driver — Machine used to drive piles into the bottom silt of a body of water.

Pile — Large diameter post sunk into the bottom of a body of water; used to hold up piers.

Plan view — A drawing showing a top-down view of an object or property.

Plate rail — Bottom horizontal railing of a fence which is fastened to a foundation.

Podium — The wall that forms the base or foundation of a fence.

Portal — An entrance.

Postern — A private entry or gate which is not the front or main gate.

Protractor — Drafting tool used to draw circles and arches that measures angles in degrees.

Pull or pulley — See *Block and tackle*.

Q

Quadrant — A quarter section of an area.

Quarter section — 160 acres of land bounded by a square of ½ mile on each side.

Quoin — The keystone of an arch or corner stone of a wall; usually larger and a different color than the wall.

R

Rail — The horizontal beam of a fence; the face boards are secured to the rails.

Railing — A low fence, under 4 feet high, used as a handhold on balconies.

Relief map (topographic) — A plan view map showing the elevations of a piece of property or area.

S

Scythe — A blade for cutting tall grass.

Seismic — Pertaining to earthquakes; also, metal holders that meet earthquake standards for construction.

Shot hole — Hole drilled into solid rock or compacted earth in which a dynamite charge is placed.

Sluice — Water channel or gate used to divert a stream around the work area.

Spandrel — Decorative arch built into an otherwise square entryway.

Stay — The vertical wires of a woven wire mesh; also the vertical wire(s) used to space and hold two or more strands of barbed wire.

Stile — A stairway or group of steps passing over a fence; also, a vertical cut in a post in which a face board is inserted.

Stockade — A type of wooden fence made up of 2-inch- or 3-inch-diameter poles or wide boards with rounded fronts.

Stull — Timber support used to hold back earth when digging a mine or trench.

T

Tamp — To compress and remove trapped air in earth or concrete using short sharp blows.

Tarp (tarpaulin) — Fabric (often canvas) or plastic protective covering.

Tensiometer — A gauge used to determine the amount of pull or tension on a wire fence during installation.

Terne — Alloy coating of 1 part tin to 4 parts lead; applied as a protection to metal.

Tracery — Ornamental wood- or metal-work of the Gothic period where fine intersecting lines form a pattern.

Transit — A surveying instrument for determining grades, elevations, and angles.

Trowel — A handheld tool used to apply mortar to block or brick.

V

Vault — A storage area built into a wall or fence to secure valuables; also, an arched ceiling or roof.

Veneer — A non-structural, decorative facing of block or brick.

W

Wet wall — A rock or stone wall constructed using cement or mortar as a bonding agent.

Wythe — One horizontal row of brick in a brick wall; also, the vertical seam of mortar between bricks in a wall.