
Wall & Ceiling Industry Estimator Training Course Manual

With emphasis on Drywall
and Light Gauge Framing

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Important Notice

The material in this course is provided from a trade estimator's point of view, and is not intended to render legal advice. You should consult with your attorney before signing any Subcontract or other legal document.

This course is intended for those whose background includes working in our industry at the journeyman level or higher in non-residential construction, ability to read blueprints, to use scaled rulers and basic high school reading, writing and arithmetic.

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Introduction

At some point in your career you will hear or even take part in a debate about whether estimating is an exact science or an art. These debates most often occur between an estimator and his boss, usually right after the boss chews out the estimator for missing or misinterpreting something on a bid. Experienced estimators know that estimating is a combination of both art and science.

It is important to mention these debates, because estimators measure plans and interpret documents that are almost always prepared by Architects, who for the most part consider themselves artists. The plans and other bid documents from which you prepare your bids are not always consistent or complete. And while there is an organized format for bid documents that is widely used by Architects, they are not required to use it. And even when they use it, they take liberties with it.

Similarly, not only will you sometimes work from preliminary plans, but even the so-called “100% plans and specs,” which are supposedly complete, are often lacking in detail, fraught with self-contradictions and glaring omissions, and sometimes organized in ways that have never been tried before. For these reasons I will often have to resort to such words as, “basically,” “generally,” “usually,” “supposedly,” and my favorite expression of all, “for the most part.” This just shows that estimating can never be an exact science, if our job is to interpret the work of artists.

We all bring certain strengths to our work as estimators. It doesn't matter whether we started estimating after working in the field, after some college or technical training in construction, or a combination of both. Some will have a knack for reading plans, others will write better proposals, construction math will come easier to some, and others will have a better grasp of production costs in the field.

But for those new to estimating, whatever your strengths or weaknesses, it will certainly help to have a road map prepared by someone who has traveled many miles on it. And for those more experienced, this course may provide some patches for the few potholes you may have encountered along the way, smooth out some of the bumps in the road, and keep you from driving off the shoulder or the wrong way up a one-way street, which we all still do on occasion.

In the past, most estimators in our trade, including myself, have learned everything that's covered in this course by on-the-job training. I was very fortunate back in 1982 to learn from an estimator who took as much time as he did to explain things to me. Over the years since then I have known many successful estimators in all different size drywall companies who succeeded from hard work and sheer ambition, without a training course, a manual, or even a mentor. And I have known many estimators who had great mentors like I had, but because of time constraints, busy schedules, heavy workloads and a multitude of other reasons, the information was not passed on in an organized way, and usually right after the estimator made a costly mistake that the information could have prevented.

This course is not intended to replace on-the-job training. There is no substitute for learning by doing. And the lessons we learn “the hard way” are the ones that seem to stick with us. But I believe this will save you some costly mistakes and headaches along the way.

I hope you will find much that is useful in this course, and that you will keep it handy in your office, tab some of the pages, read with a highlighter, and get out there and make some money with it. Like one former employer said when he handed me a set of plans, “Make believe it's a nice, fat barbecue chicken and *pick it clean!*”

And finally, because I too have much more to learn, I hope you will send your insights, comments, questions and particular examples from your experiences that will shed more light on this inexact science for me as well.

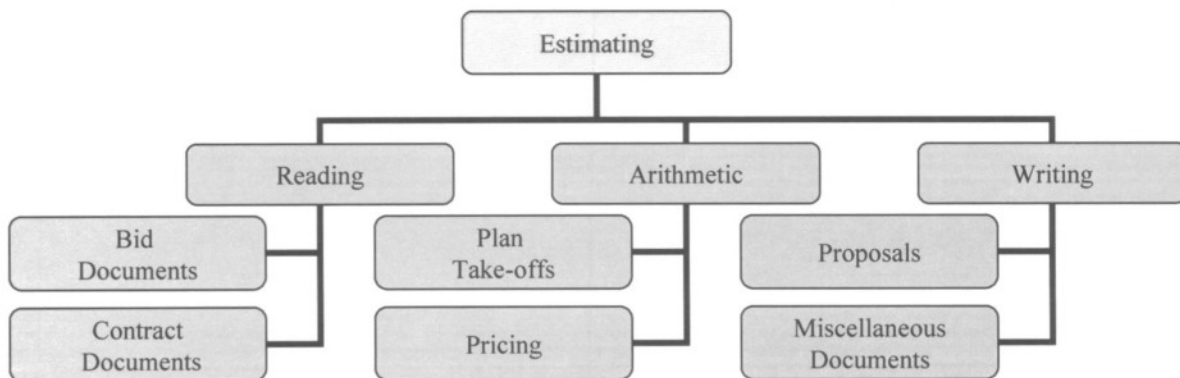
Estimating Overview

An estimator's job can be divided into three general functions: We have to read all sorts of construction documents, we have to write quite a few proposals, transmittal letters and other documents, and last but not least, we have to do take-offs and pricing - in other words, reading, writing and arithmetic. In our elementary school days they were called the three R's, because most of us at that age spelled all three beginning with an R. Now we are full-grown men and women, many of whom swore as children that once we got out of school, we would never have to deal with the three R's again, yet we find ourselves in a profession where that's pretty much all we do.

Fortunately, most of our reading will pertain to our trade, so we are already in somewhat familiar territory. And most of the arithmetic can be done on a simple adding machine. If you are using estimating software on a computer, some of the arithmetic is done for you. And the writing is easier than it sounds, because we get to re-use the same writing over and over for different projects, sometimes just changing the project name, the date and the bid amount. Again, the computers make it even easier, by checking our spelling and grammar, and especially by saving everything we write in a form that can be reused. (Most of us learned the hard way that everything won't be saved unless we press the "SAVE" button.)

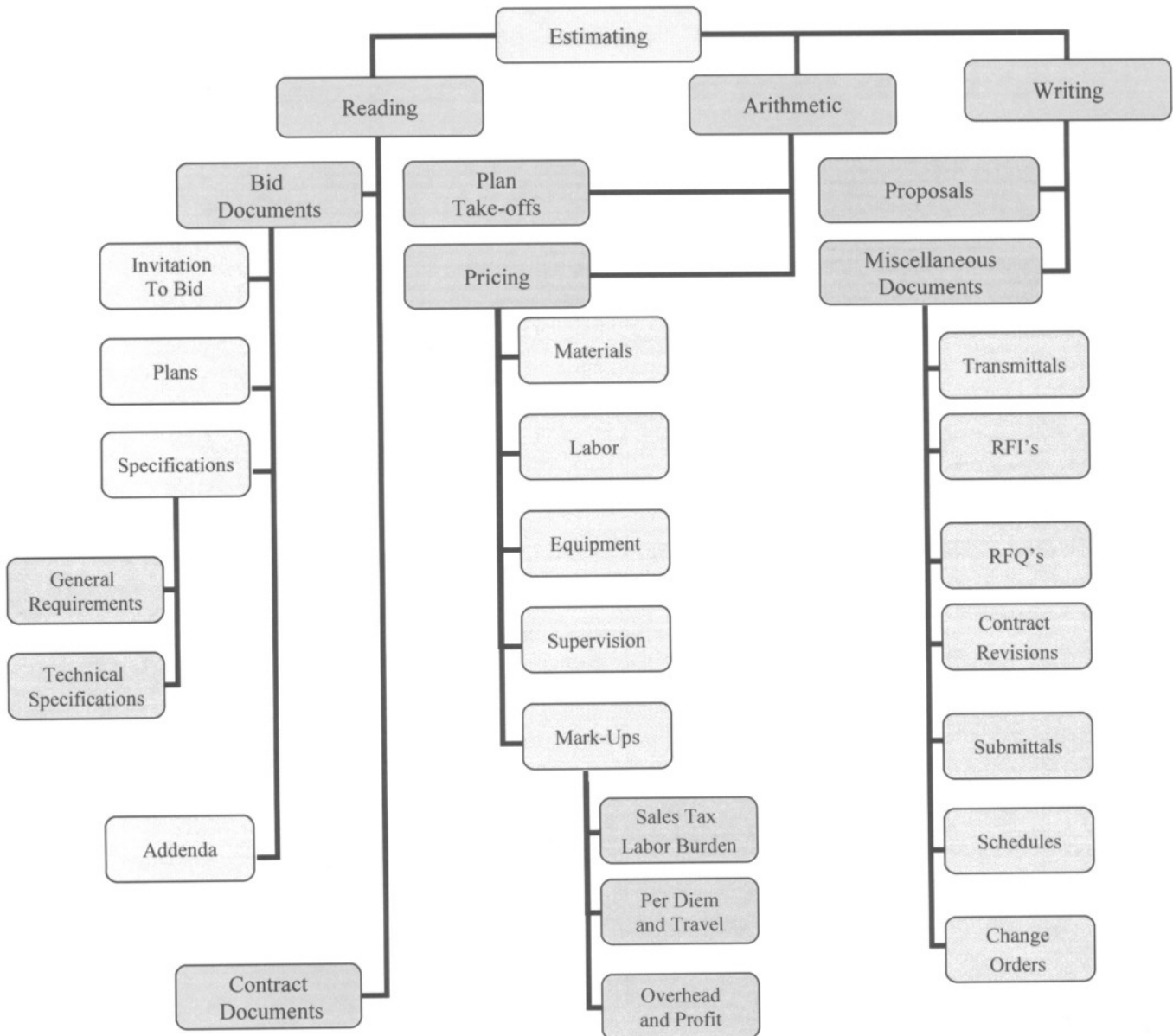
These three functions will be considered in separate Sections of the course, but each is discussed with the other two always in mind. And all will be considered in light of your main objective as an estimator, to win profitable work for your company.

The Sections will be broken down into smaller and smaller "bite-size" topics, with the most general divisions shown below, and with just a few examples of more detail shown on the following page.



Outline of Estimator's Job Functions With Examples of Detailed Functions

You do not have to memorize this chart. It is just a convenient way to outline some of the details of an estimator's job. Everything will be broken down into smaller, easily digestible topics as we move along.



Section I. Reading

Section Overview:

As I said in the Introduction, our main objective is to win profitable work for our company. When we bid on projects, in addition to our take-off from the plans, we must read several other Bid Documents. And we have to read them very carefully, at least the portions that pertain to our trade. The same can be said for Contract Documents.

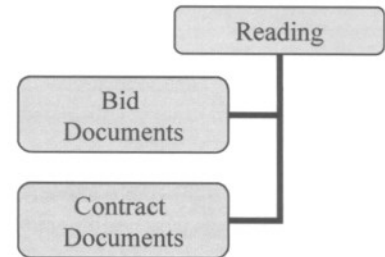
The good news is that over the course of our career we should get pretty good at reading these documents, since for the most part, they are all we have to read. And as I said earlier, most of the reading pertains to our trade. The bad news – let’s not kid ourselves – is that they are often a mess. They are sometimes such a mess that a new estimator’s hair could turn gray or fall out overnight trying to figure them out, without a mentor sitting right there to help sort things out. Hopefully, this course will act as your absentee mentor, and we’ll try to save some of that hair.

An important principle of contract law is that “the burden of clarity is on the one who prepared the documents.” It means that the Architect has a responsibility to make the plans and other Bid Documents clear, and that the General Contractor (GC) has the same responsibility with regards to the Subcontract that he hands us to sign.

This principle sometimes works in our favor when a dispute ends up in court or in arbitration, although not enough to count on it. But our goal is to avoid disputes altogether, by reading documents very carefully, and by writing very carefully – requests for information during the bid phase, qualifications and clarifications on our proposals, amendment letters to Subcontracts, transmittals and so on. Those of you who lack confidence in writing will be relieved to learn that you do not have to write like Mark Twain, just simple, clear statements such as, “We exclude this. We include that. We are not responsible for such and such. We saw Addenda 1 and 2 only.”

Now, as your absentee mentor I want to emphasize that I am not your absentee attorney. Subcontracts contain language that can make even an attorney’s hair fall out. So you can imagine what could happen to us if we try to decipher it on our own. There are parts of the Subcontract that we are in a much better position than an attorney to review, such as the schedule for our work and the nuts and bolts of what work is included or excluded. But a lot of the language is meant for an attorney’s eyes only. In this course we will review, from a trade estimator’s perspective, some of the more common clauses that appear in our Subcontracts, with the caveat that you should always consult an attorney before signing a contract.

I’m certain that Architects and GCs have no ill intent in preparing these documents. They are just trying to protect their interests and the owners’ interests. But our job is to protect our interests. Although their inconsistencies, glaring omissions and vague or one-sided language is certainly unintentional, my goal in this section is nevertheless to help you pick these documents apart like a detective picks apart evidence at a crime scene.



Section 1. Reading

Chapter 1. Bid Documents

- **Key Terms:**

Addenda – The plural for Addendum. Addenda are written communications to the bidders that modify previous Bid Documents.

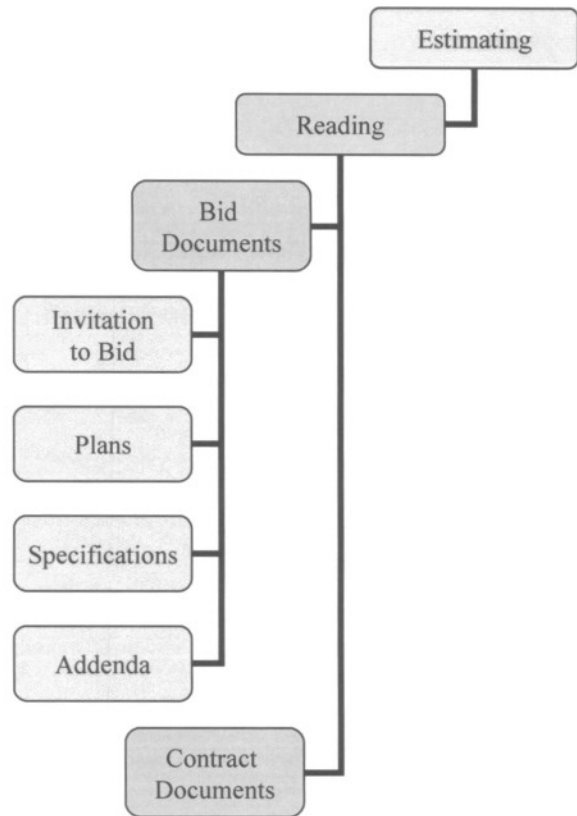
Bid Documents – All written communications to bidders before the bid date. As a Subcontractor, your bid documents are not always the same as the GC's. This distinction will be explained in topics that follow.

Bid Strategy – To use all the information, especially inconsistencies, omissions and lack of clarity, in plans and other bid documents to your advantage when qualifying your bid to make it as competitive as possible.

MasterFormat™ – The numerical system by which most non-residential construction and bid documents are organized. MasterFormat™ was developed by the Construction Specifications Institute (CSI, see list of Organizations in Appendix I).

Take-Off – The measuring of all material, labor and equipment quantities for your scope of work. The official term for take-off is “quantity survey,” but it is rarely used by estimators in our trade.

Value Engineer– This sounds like a noun, as in, “Who’s the value engineer on this job?” But it’s a verb, as in, “This bid is way over budget; we need to value engineer it.” The usual abbreviation is, “We need to V-E this job.” It means to find the materials and methods that will provide the most value relative to their cost, or to find the most cost-effective solution for a given performance requirement.



Chapter Summary

- We will learn about the information that is generally included in each of the Bid Documents listed above, how to interpret that information, and how that information affects your take-off, pricing and Bid Strategy.
- We will learn about Masterformat™, the most common format used by Architects, Engineers and GCs to organize all Construction Documents, including Bid Documents.

Chapter 1. Bid Documents

Introduction

It may appear at first that our job would be a lot easier if the plans were all we had to worry about, especially when we are handed a set of Specifications and other bid documents that are several inches thick and weigh more than the plans. Sometimes a GC not only grants our wish, he goes one step further and gives us only a partial set of drawings, say a floor plan, a building section or two, maybe a reflected ceiling plan (RCP), and if we're lucky, all four elevations.

For an experienced estimator in our trade, this does not present a problem. He will simply explain, or "qualify" in his proposal all of his assumptions about any missing information. If he is not sure that he explained it in enough detail, he can simply add that his bid is based solely on information provided "on the following drawings," which he will list one by one (if a partial set). He may also note that he acknowledges "no Specifications and no addenda," or merely "no other bid documents."

But before he begins his take-off, he will politely ask the GC if there are any other bid documents that may affect his bid. He has probably been down this road before, and knows that it's best to ask at the beginning, so he doesn't have to do his take-off and proposal all over again.

Sometimes there are no other bid documents than the plans. When that is the case, we save a lot of time reading, but we have to make up for it in writing, because the other documents shown on the preceding chart would have included important details about the job that we will want to pin down one way or another before we sign a Contract.

We will look at each of these documents individually, but first we should all be aware of the format that most of these documents follow. MasterFormat™ is a numbering system that organizes "construction documents" in an outline that makes our job, as well as everyone else's, a lot easier.

MasterFormat was developed by the Construction Specifications Institute (CSI), an association (around 17,000 members as of this writing) of architects, engineers, contractors, manufacturers and anyone else associated with "non-residential" design or construction.

When that three inch stack of paper comes into your office, as long as it follows CSI's MasterFormat, you will be able to quickly eliminate most of it from your reading. Until recently, construction Specifications were separated into sixteen major Divisions, shown in Table 1 below.

In 2004 the format was revised into fifty Divisions. Fortunately, most of our work remains in the same Division numbers as before. Load-bearing light gauge framing and trusses are still in Division 5. And non-load-bearing light gauge framing and drywall are still in Division 9. For those of you whose scope of work includes insulation, EIFS, plaster or acoustic ceilings, they are still in their same Divisions, Division 7 for the first two and Division 9 for the latter two.

Table 1. Sixteen Specification Divisions

<u>Division</u>	<u>Description</u>
1	General Conditions
2	Site Construction
3	Concrete
4	Masonry
5	Metals
6	Wood and Plastics
7	Thermal & Moisture Protection
8	Doors and Windows
9	Finishes
10	Specialties
11	Equipment
12	Furnishings
13	Special Construction
14	Conveying Systems
15	Mechanical
16	Electrical

There are numerous minor variations in how architects number individual sections within each Division. For example, sometimes non-load-bearing framing is in section 09110 and drywall is in 09260, while other times they are both combined in 09250. Some architects use the Division numbers above, but use alphabet letters for individual sections, such as 9A for Lath & Plaster, 9B for Non-load-bearing Framing and 9C for Gypsum Wall Board. We will discuss these variations, as well as the new 2004 numbering system, in the topics below.

Chapter 1. Bid Documents

Topic 1.1. Invitation to Bid

• **Key Terms:**

Bid Bond – A deposit of usually 5% to 10% of the bid amount to be submitted with your bid as a guarantee that you will sign a contract to do the job if awarded. It can usually be in the form of a letter signed by your surety that says they will pay the specified deposit amount if you don't sign the contract.

P & P Bond – Performance & Payment Bond, usually stated as a 100% P & P Bond. A promise by your surety that they will pay any costs that are incurred for another subcontractor to complete your work if you fail to do so, and that they will pay any suppliers or sub-subcontractors that you fail to pay.

Prequalification Statement – A form that you must provide (usually before the bid date) that includes information about your company, such as its size, its financial condition, its safety record and numerous references. And it usually asks for evidence that you have successfully completed from one to several projects of similar size and scope.

Scope of Work – It is the heading under which the Architect tells the GC what to include in his bid. And GCs frequently use a scope of work to tell Subcontractors what to include in their "Bid Package." When you submit a proposal, your list of the items that you include is your scope of work. You may also limit your scope in other ways. For example, on an addition/renovation, you may include "new work only, no work at existing," if the extent of renovation work is poorly defined. Finally, each section of the Specifications includes a specific scope of work for that section.

Surety – The official word used in Construction Documents for the common term, "Insurance Company." Insurance companies, or sureties, not only issue liability and workmen's compensation policies, they also underwrite the bonds described above. The Bid Documents will usually state that the surety must have a certain minimum rating, such as A+.

• **Topic Objectives:**

To learn what information is generally included in the Invitation to Bid and how it is formatted or organized.

To learn which information in the Invitation to Bid applies to your bid and which information does not.

To learn how information in the Invitation to Bid affects your take-off, pricing and Bid Strategy.

