

CHAPTER 1

General Preparation

Successful construction bidding is a “lost art.” As an estimator, your success in biddings often determines how much business your company will receive. But, in reality, a success rate of more than 10% is rare. Someone once said, “We do not just expect miracles; we depend on them.”

OVERALL ORGANIZATION

To improve their chances of success, people often bid 5 to 6 jobs at the same time, hoping to get at least one. Each bid costs time and money. To make your efforts effective, you need to have priorities and good organization.

Having priorities means focusing more on bids for jobs that you are likely to win and make a profit from. Use the worksheet in **Figure 1.1** to help you decide which bids deserve your immediate focus. The following are factors to consider:

1. Date: Which bid is due first, second, and so on? Normally you would first work on bids that are due earlier. If the dates for the jobs you are bidding on are so close that you will not have time to do more bids during those dates, then you might consider spending a little more time now on bids that are due later.

OVERALL ORGANIZATION *(cont.)*

2. Size: How big is each job? How many square feet is the building? How many units if residential development? How many rooms in the hotel? How many students for the school? How many beds in the hospital? How many acres is the site? How many parking spaces? What's the approximate total dollar value for the job? Usually the bigger the job, the more effort required to bid and build, but also there is more profit to be made.

3. Type of construction: How complex is each bid? What types of systems for foundation, wall, and roof? Is there anything special about the job, like auger piling? Although a complex job takes more effort and means more risks, it could be more profitable.

4. Location: How far is each job from your office? Having a job close to your work area means cost savings in overhead.

5. Line of expertise: Which job you are more familiar with? You may have completed a few jobs like this before, and that experience could help you get this one.

6. Performing capacity: How many jobs do you currently have under way? Among them, how many are near completion? If another job is awarded, will it exceed your bonding capacity? Will your staff be available to run the job to finish it on time? You do not want to win a job you will not have the capacity to complete efficiently.

OVERALL ORGANIZATION *(cont.)*

7. Competition: How many other contractors are you bidding against? Did you bid against them before? Did you win? Normally it is easier to win a bid with less competition.

8. Owner: Does the owner have enough money to finance the job? How is their reputation? How and when you will expect to receive the payments?

9. Designer: Who is the architect? Who is the engineer? How is their reputation? Do they produce good quality drawings? Sketchy documents could later result in numerous change orders and associated disputes.

For each bid, it is important to have a clean approach to organize the work. Take a good look at **Figure 1.2**. To “beat the clock,” you will need to get several things going at the same time. By following the work flow chart given, you could save significant time and effort.

REVIEWING BIDDING DOCUMENTS

To set everything straight from the very beginning, you need to have a good review of the bidding documents.

1. Read *Instruction To Bidders*

Bid instructions could be included as part of the spec book, or as a separate document. These instructions talk about the procedures to submit proposals. Read every word in this important document, and use **Figure 1.3** to summarize your findings.

REVIEWING BIDDING DOCUMENTS (cont.)

By completing a pre-bid checklist, you will always have the “big-picture” information handy.

2. Check package completeness

Use the worksheet in **Figure 1.4** to make a quick check to ensure the package is complete. Not all of the listed documents are expected to exist on every project. For example, in a small warehouse that is not air-conditioned, you won't need HVAC drawings. Also, please note that some documents could be mixed with others. For example, specifications, usually appearing as a separate book, could be laid out on the drawing package like normal sheets.

3. Study drawings

First take a count of drawings to make sure you have them all. Find the drawing index, which is a comprehensive list of all the drawings included in the bid. Then flip through each individual drawing sheet and check sheet numbers off the drawing index. Make a note of missing sheets or extra sheets.

Now thoroughly go through one sheet after another to get the information you need. All the sheets, cross-referencing each other, should be reviewed. Use the question list in **Figure 1.5** to help you. While reviewing drawings, circle unfamiliar details with a red pencil so you can refer to them easily later.

REVIEWING BIDDING DOCUMENTS *(cont.)*

4. Examine specs

First find the table of contents in the spec book, and take note of any missing sections. Start by reading the sections describing general aspects of the job. Pay attention to supplementary or special conditions which cover the specific requirements for this particular job. You should make a list of items affecting costs such as working hours, project access, construction parking, noise abatement, material substitutions, change orders, conditions of final payment, etc.

Next go over all sections in the spec book for different trades. Find out what kind of materials or systems are to be used. Try to match the building components shown on drawings with their requirements in specs. Because most technical specifications today use the CSI-division (Construction Specification Institute) format, you can use the list of trade sections in the spec book to help define the general bid scope.

5. Make Notes

A good estimator always makes detailed notes. The specific format of your notes could make a difference. Use the worksheet in **Figure 1.6** to record each note according to which trade it applies and where it can be found. At any point of the reviewing process, you can go back to this worksheet, adding notes for any trade. Finally, you should have a long list of items affecting the costs. **Figure 1.7** shows a completed example.

REVIEWING BIDDING DOCUMENTS (cont.)

Reviewing documents is more than just “taking-off” the information to your note pad. You should think more about what it takes to construct the building. Not all information is shown on drawings. You are the one to build the job, not the architect, so try to visualize how you would put all of the components together to form a building.

What you get from reviewing documents is the basis for further actions. For instance, you may need to arrange for someone to deliver the bid if it requires personal delivery, mark your calendar to attend pre-bid meeting, request a quote for bond and insurance, contact the architect to get clarifications on some unclear issues, etc. See **Figure 1.8** for an example of a bid RFI to an architect.

CONTACTING SUBS AND SUPPLIERS

Using subcontractors on a job is common. An electrical contractor may seem like a sub to a general contractor, while a data communication contractor could be the sub for that electrical contractor. Sometimes people hire subs even if they are licensed to do the work themselves, because subs can be more cost-effective.

If you need subs or suppliers to bid a job, it is best to notify them as early as possible. If delayed, subs either can not finish the bid or just bid high to keep themselves covered. This could make your total bid high, and you could lose the deal.

CONTACTING SUBS AND SUPPLIERS (cont.)

1. Write a bid invitation.

A bid invitation, the official document containing general bid information, should be created to communicate with your subs and suppliers. A well-written invitation saves hours of explanation on the phone. Use **Figure 1.9** as a template. You should have reviewed drawings and specs before writing an invitation. After your review, you should have a clear idea of what the job entails.

Bid invitations could be sent to subs or suppliers in a number of ways, such as fax, mail, or email; but they should only be sent to the subs whose work is related to the bid.

2. Make documents available.

Nobody can bid a job well without having reviewed the documents. You could store the documents with a reprographics company and inform your subs or suppliers that plans are available from there. Try to have clear communication with the reprographics people, especially if you want them to keep track of further changes to the documents.

Organize drawings before sending them off to make copies. For example, you can combine on-site and off-site drawings and mark them as “Civil Drawings”; combine landscaping and irrigation drawings if they are separate; mark packages as “Building A plans”, “Building B plans,” etc.

Some subs or suppliers don't want to pay for drawings to bid jobs. You may consider setting aside a work space in your company where subs could come and view plans. Make sure subs have access

CONTACTING SUBS AND SUPPLIERS (cont.)

to the whole set of documents, not just portions of plans. Otherwise, they might turn in incorrect or incomplete bids and claim they lacked information. For example, if you only provide a concrete sub with the architectural and structural sheets, he might exclude the concrete work associated with plumbing trenches and electrical conduits.

By having subs review plans in your office, you can interact with them, talk through problems, and encourage more competitive prices. For example, if a sub thinks the flooring material specified has been discontinued; you could talk with him right away and communicate the issue back to the architect.

3. Use qualified sub.

Finding the right subs is not just for the sake of bidding. If during construction, one sub can't perform, then you have to find a replacement and pay for the price difference and associated delays.

A popular way to identify qualified subs is by word-of-mouth. Owners, architects, and engineers usually have a few subs they like to work with. Your local trade associations or construction reporting services could also recommend a list of their premium members.

Another good way to find qualified and dependable subs is to contact material suppliers for a list of people they recommend. For example:

- a. Contact pre-cast storm structure suppliers to find site subs.
- b. Contact ready mix suppliers to find concrete subs.

CONTACTING SUBS AND SUPPLIERS (cont.)

- c. Contact block, brick, or rebar suppliers to find masonry subs.
- d. Contact joist and decking suppliers to find steel subs.
- e. Contact HVAC unit suppliers to find mechanical subs.
- f. Contact lighting fixture or switchgear suppliers to find electrical subs.

The names of some subs may not be familiar to you. To have peace of mind, you can “screen” them by asking for a list of professional references from the jobs they have done before. Check out each reference. You could also ask them to provide supporting documents such as insurance certificates, business licenses, etc.

SITE INVESTIGATION

Before sending a bid, you should always visit the site. Site conditions might be different from what you see on drawings. Even if the architect did a good job in showing what is there, it is recommended to visit the actual site to get a better idea.

A site investigation could be done step by step as follows:

1. Before you go

How much do you know? Get familiar with drawings and specs. Pay special attention to documents describing existing conditions, such as the soil report, demolition plan, boundary survey, etc. Write down your questions and try to look for answers when you get there.

SITE INVESTIGATION (cont.)

How to get there? Find out the exact job location and the quickest way to get there. You might need a detailed map or driving directions. Some good references could be found on the Internet. Keep whatever you find.

Who else is going? You may want to invite your field personnel to come along.

Ask your project managers or construction superintendents if they are free. You might also consider inviting some good subs. Of course, contact them several days in advance to make sure they are available. Bringing these people may help you identify critical cost issues, and this could improve your chances of quoting the job accurately.

What to bring along? Bring a digital camera, and remember to take a set of drawings and specifications along to the site. You might also consider bringing a video camcorder, measuring tape, and other necessary aids like an earth auger and a hand level. Chances are you will need them.

2. On the road

On the way to the site, look for road conditions, weight and height limits of bridges leading to the job, etc. If the site is hard to access, problems may arise in getting material and equipment to the site after the job begins.

3. On the site

a. Which way is North? As soon as you are on site, make a sketch of site layout and proposed building orientation.

SITE INVESTIGATION (cont.)

b. What's already there? Walk through the site. Inspect existing conditions and compare them with what is on the drawings. Visualize how the building could be put together on site. Look for answers to questions you already had in mind.

c. Get down to earth. Examine existing soil conditions, and compare them with the soil report. Is the soil strong enough to support the proposed structure? Is there any hazardous material present? Could groundwater require pumping during construction? Does the site drain well if it rains? Use the earth auger you brought to find out.

d. Locate utilities. Find connections for existing electricity, water, telephone, sanitary sewer, etc. Determine temporary utilities required for construction. For example, you might have to rent a generator to provide enough power. Also decide future locations for trash dumpsters, material storage trailers, portable lavatories, etc.

e. What about existing structures? If there's an existing building, try to gain access and walk through it. Is the building to be demolished, expanded, or renovated? If demolished, are there any hazardous materials present that will hold up the demolition? If expanded or renovated, are there any requirements on matching existing materials and finishes? Is the existing building to be kept in operation while the new construction is going on? If so, are there any requirements to control dust and noise, such as limited working hours? Can you get heavy equipment into the building?

SITE INVESTIGATION (cont.)

f. Who's next door? Look around the site. Is it in a safe neighborhood? You might need some security systems in place such as fences and gates to protect the construction material as well as the crew. Walk around adjacent structures to see if they will need temporary protection or underpinning once construction starts.

g. Cooperate with authorities. Visit the local building department that has jurisdiction in the area. Learn about building ordinances, regulations, labor conditions, crimes, availability of housing, etc.

h. Take notes. Remember to take as many notes as you can of your findings. Technologies like digital cameras have made taking pictures very inexpensive, so remember to take a lot of pictures, too.

4. Back to office

After you've made it back to the office, download the pictures, and summarize your findings in an investigation report. Review the information, and ask the owner or architect for clarification on some issues if necessary. If you feel that what you have is not enough, arrange follow-up visits to acquire more information.

Site visits are very important, especially when you are bidding an unfamiliar, complex job in a remote location. Sometimes as the deadline approaches, and the site is far from the office, you may have no time to do a site visit. If so, another experienced person could visit and prepare a site investigation report for you. Use Figure 1.10 as a guideline.

FIGURE 1.1 — PLANNING MULTIPLE BIDS

Evaluation Factors	Bid #1	Bid #2	Bid #3	Bid #4	Bid #5
Job Name					
Bid Date					
Size					
Type of Construction					
Location					
Similar to previous jobs?					
Within performing capacity?					
Number of competitors					
Owner's reputation					
Designer's reputation					
Overall Winning Chances					

FIGURE 1.2 — BID WORK FLOW

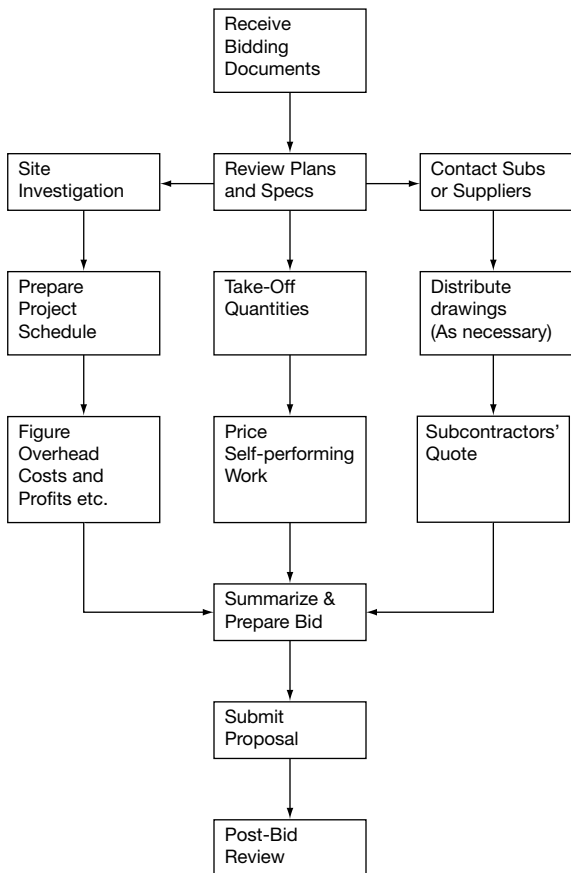


FIGURE 1.3 — PRE-BID CHECKLIST

Job Name: _____

Bid Due Date/Time: _____

Pre-bid Meeting:

Date: _____ Time: _____

Location: _____ Participants: _____

Project

Project

Start Date:

Finish Date: _____

Bid Delivery

Format:

Fax E-mail Personal Courier

Send Bid To:

Architect

Owner, Contact Info: _____

Job Location: _____

Tax Rate: _____

Construction Type: _____

Building Area: _____ Site Acres: _____

Approximate Value: _____

FIGURE 1.3 — PRE-BID CHECKLIST (cont.)

Owner's Name: _____

Architect's Name: _____

Names of Competition: _____

Liquidated Damages: _____

Labor Conditions: Prevailing wages Union
 Open Shop

Permit Costs: Include in bid proposal
 Exclude (By Owner)

Development Fees: Include in bid proposal
 Exclude (By Owner)

Bond: Bid bonds Payment and Performance bonds

Insurance: Builder's Risk Liability Insurance
 Owner's Protective Insurance

Material Testing Include in bid proposal
 Exclude (By Owner)

Work Done by Owner's Contractor
(Exclude from the bid): _____

Cost breakdown requirements: _____

Alternates: _____

FIGURE 1.4 — CHECKING PACKAGE COMPLETENESS

Job Name: _____

Checked By: _____

- Civil Drawings
 - Survey
 - Demolition
 - Paving
 - Utilities
 - Site Electrical
 - Soil Report
 - Landscaping and Irrigation

- Architectural Drawings
 - Floor Plan
 - Exterior/Interior Elevation
 - Roof Plan and Reflected Ceiling Plan
 - Sections and Details
 - Interior Design

- Structural drawings
 - Foundation
 - Floor Framing
 - Roof Framing
 - Sections and Details

- Mechanical and Electrical
 - Fire Protection
 - HVAC
 - Plumbing
 - Electrical

- Specifications Book

FIGURE 1.5 — QUESTION LIST FOR REVIEWING DOCUMENTS

Site Drawings and Specs

- Is it an existing site or new site?
- Is there a lot of earthwork to be done?
- Is there any offsite roadwork?
- Is the building to be serviced with complete utilities like water and sewer?
- What are soil conditions according to the geo-tech report?
- Should the excavated material be hauled from the site? Can it be re-used?
- Can you burn trees on site?

Architectural Drawings and Specs

- Is there an existing building to be demolished, renovated, or expanded?
- What shape is the new building?
- How many square feet are the new building and renovated building combined?
- How long is the perimeter of the new building?
- How many floors, and what's on each floor?
- Where is the building entrance?
- What are the names of each of the rooms, and how big are they?
- How high is exterior wall and what is it made of?

**FIGURE 1.5 — QUESTION LIST FOR
REVIEWING DOCUMENTS (cont.)**

- What are the principal exterior finish materials?
- What types of doors and windows do you have, and is there a schedule?
- What types of roof systems are specified?
- Are there any balconies, canopies, or walkways?
- How high is the interior ceiling?
- What's the partition wall made of, and is it load-bearing?
- What's the floor finish material, and is there a finish schedule?
- Is the building interior to be painted?
- Are there any elevators, stairs, rails, fireplaces, or chimneys?
- What types of fixtures or equipment are you required to furnish and install?

Structural Drawings and Specs

- What types of systems are used?
- How deep is the foundation, and is there any special drainage system?
- Is the foundation wall cast-in-place concrete or masonry?
- What's the concrete strength required?
- How high is the roof?

**FIGURE 1.5 — QUESTION LIST FOR
REVIEWING DOCUMENTS (cont.)**

- Is there any floor below grade, and how deep is it?
- Are the floors made of concrete, steel, or wood?
- What is the roof structure made of?
- How is the structure fire-protected?
- Will any heavy construction equipment such as a crane be required to do the work?

Mechanical and Electrical Drawings and Specs

- What types of systems are used?
- What types of materials are specified for equipment, piping, wiring, or fixtures?
- What work will be done by public utility companies?
- How will mechanical and electrical systems affect the site construction?
- How will mechanical and electrical systems affect the building construction?

FIGURE 1.6 — WORKSHEET FOR MAKING REVIEW NOTES

Job Name:	Notes Made By:		Date:
Trades	Drawing Sheets or Spec Sections	Review Notes	
Site			
Concrete			
Masonry			
Metals			
Wood/Plastics			
Thermal/Moisture Protection			
Doors and Windows			
Finishes			
Specialties			
Equipment			
Furnishings			
Mechanical			
Electrical			