Solution Manual for Estimating in Building Construction 8th Edition by Steven Dagostino ISBN 013343110X 9780133431100

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Chapter 2—Contracts, Bonds, and Insurance

LEARNING OBJECTIVES

Learn how different contracting methods, bonding requirements, and insurance requirements affect the bidding process.

ACTIVITIES

1. Invite an insurance agent to the class to discuss the different types of insurance used on a construction project. Have him or her answer the following questions:
   - What types of insurance are needed for a construction project and what types of losses do they cover?
   - How do you go about getting a project insured?
   - What steps can you take to reduce insurance costs?

2. Invite a bonding agent to the class to discuss the use of bonds in the construction industry. Have him or her answer the following questions:
   - How does one go about establishing a bonding line?
   - What factors does the bonding company take into account when establishing the maximum size of project and the total work on hand for a contractor?
   - How can a contractor increase the bonding limits for the company?

3. Obtain two different subcontracts. They may be obtained from local contractors or downloaded from the internet. Divide the students into groups and have them compare the two contracts and answer the following questions:
   - Which contract is better? Why is it better?
   - Are there clauses that are included in the contract you did not chose that you would like to have added to the contract you chose? What are they? Why would you like to add them?
   - Are there clauses that are in the contract you chose that you would like to delete? What are they and why would you like to delete them?

   Have the groups present their responses in class or discuss their answers in class. You may want to have the groups take different perspectives, such as the general contractor's, subcontractor's, architect's/engineer's, or the owner's.

4. Discuss Problem 14 from the chapter. You may choose to have the students obtain a set of construction documents from a contractor or you may provide them with a set of construction documents. The students should all have different sets.

INSTRUCTIONAL RESOURCES

PowerPoint Slides: Chapter 02.ppt
The surety information office (www.sio.org) has presentations on bonding for use in the classroom.

SOLUTIONS TO THE REVIEW QUESTIONS

1. What is a single contract, and what are its principal advantages and disadvantages for the owner?

   The single contract comprises all of the work required for the completion of a project and is the responsibility of a single prime contractor. This centralization of responsibility provides that one of the distinctive functions of the prime contractor is to plan, direct, and coordinate all parties involved in completing the project. All of the subcontractors (including mechanical and electrical) and material suppliers involved in the project are responsible directly to the prime contractor, who in turn is responsible directly to the owner. The prime contractor must insure that all of the work is completed in accordance with the contract documents, that the work is completed on time, and that all of the subcontractors and vendors have been paid

2. What are separate contracts, and what are the principal advantages and disadvantages for the owner?

   Under the system of *separate contracts* the owner signs separate agreements for the construction of various portions of a project. In this manner the owner retains the opportunity to select the contractors for the various important phases of the project. Also, the responsibility for the installation and operation of these phases is directly between the owner and contractors rather than through the general contractor. In this contracting scheme the owner or their agents provide the coordination between the contractors.

3. With separate contracts, describe three options available to the owner for managing the contractor's work on the project.

   The owner may pay the general contractor to do the coordination, pay the architect/engineer or a management company, or handle it themselves.

4. List and briefly define the types of agreements that may be used for the owner's payment to the contractor.

   Lump-Sum Agreement - The contractor agrees to construct the project, in accordance with the contract documents, for a set price arrived at through competitive bidding or negotiation.

   Unit-Price Agreement - the contractor bases the bid on estimated quantities of work and on completion of the work in accordance with the contract documents. Payments are made based on the price that the contractor bids for each unit of work, and field checks with measurements of work actually completed.

   Cost-Plus-Fee Agreements - the contractor is reimbursed for the construction costs as defined in the agreement. However, the contractor is not reimbursed for all items and complete understanding of reimbursable and non-reimbursable costs is required.

5. What is the "time of completion," and why must it be clearly stated in the contract agreement provisions?

   The time of completion is used to determine the amount of time the contractor has to complete the project. It should be in the original contract documents. Often there are incentives for early completion and costs for late completion.

6. What are progress payments, and why are they important to the contractor?

   Progress payments are the periodic payments made by the owner to the contractor. They are important to the contractor because they use this money to pay all expenses associated with the project. The timing and payment procedures should be detailed in the contract documents.

7. What is retainage, where is the amount specified, and why is it used?

   A percentage of the payments from the owner to the contractor that is withheld for the protection of the owner and suppliers. This money is withheld to insure completion of the project and payment of the bills associated with the project.

8. What is a bid bond, and how does it protect the owner?

   The *bid bond* ensures that if a contractor is awarded the bid within the time specified, the contractor will enter into the contract and provide all other specified bonds. If they fail to do so without justification, the bond shall be forfeited to the owner. The amount forfeited shall in no case exceed the amount of the bond or the difference between the original bid and the next highest bid that the owner may, in good faith, accept.

9. Where would information be found on whether a bid bond was required and, if so, its amount?

   Bid bond requirements are stated in the advertisement of bidders. They are usually amplified in the specifications.

10. What are performance bonds? Are they required on all proposals?

    The performance bond guarantees the owner that, within limits, the contractor will perform all work in accordance with the contract documents, and that the owner will receive the project built in substantial agreement with the documents. It protects the owner against default on the part of the contractor up to the amount of the bond. The warranty period of one year is usually covered under the bond also. The contractor should check the documents to see if this bond is required and in what amount, and must also make the surety company aware of all requirements.

11. How are the various surety bonds that may be required on a specific project obtained?

    Surety bonds can only be obtained through companies who specialize in issuing surety bonds. The contractor will have to request the surety company to provide the bonds.

12. How does insurance differ from a surety bond?

    With insurance an insurance company assumes the financial liability for a specified loss. The surety guarantees the performance of a contractor. The surety company will try to recover any losses from the contractor.

13. What are the different types of insurance that a contractor should maintain and what do they cover?

    Workers' Compensation Insurance. Provides benefits to employees or their families if they are killed or injured during the course of work.

    Builder's Risk Insurance. Protects projects under construction against direct loss due to fire and lightning. May also include windstorms, hail, explosions, riots, civil commotion, vandalism, malicious mischief, earthquakes, and sprinkler leakage.

Commercial General Liability. Covers negligent actions by the contractor and the company's employees, and includes bodily injury, property damage or loss, and other personal injury such as slander or damage to reputation.

Automotive. Covers vehicles used on public roads including cars, trucks, portable office trailers used on the job site, and construction equipment driving on public roads, such as dump trucks.

Inland Marine. Covers off-road construction equipment, such as back-hoes, scrapers, and dump trucks not licensed for use on public roads.

Marine. Covers equipment used on waterways, such as barges and boats.

Property. Covers real property (real estate) owned by the contractor, such as office buildings, shops, and warehouse.

Bus**iness Personal Property.** Covers the contents of a building, such as computers and furniture.

Errors and Omissions. Covers liability arising from errors or omissions by the designers.

Umbrella. Goes on top of all the company's insurance, increasing the limits of coverage.

Life. Pays in the event of the death of a key employee.

14. Obtain a copy of the contract documents (drawings and project manual) for a construction project. Contractors will often give you an unneeded set of contract documents after the project is complete. For some projects, the contract documents may be downloaded from the Internet. Answer the following questions and be prepared to discuss your findings in class, if your instructor chooses to do so.
    a. What type of agreement (lump-sum, unit price, or cost-plus-fee) is used for the project? If it is a cost-plus-fee agreement, how is the fee determined, and is there a guaranteed maximum price?
    b. What is the scope of the work for the project?
    c. What provisions are included in the contract documents regarding the time of completion? What penalties are there for failing to meet the completion date? Is there a bonus for completing the project ahead of schedule?
    d. How are progress payments handled? When are they due? How quickly will they be paid?
    e. Will retention be withheld? If so, how much? What are the requirements for the release of retention?
    f. How is final acceptance handled? What inspections are required? What forms, documents, maintenance and operation manuals, certifications, red-line drawings, etc., need to be submitted before final acceptance?
    g. What bonds are needed for the job?
    h. What are the insurance requirements for the project?

The answers to this exercise will vary from project to project.