Chapter 1

Industry Background

1.01 This chapter is intended as background for the presentation of recommendations and guidance on financial reporting and auditing in the industry. It does not contain recommendations or guidance on the technical application of generally accepted accounting or auditing standards. Recommendations and guidance on technical accounting and auditing issues are presented in the chapters that follow and include the guidance from FASB Accounting Standards Codification (ASC) 605-35.

Nature and Significance of the Industry

1.02 The construction industry consists of individuals and entities that are engaged in diverse types of activities defined as construction in the North American Industry Classification System (NAICS). The 2017 U.S. NAICS Manual North American Industry Classification System—United States classifies construction establishments into a wide variety of subcategories. These subcategories include: Construction of Buildings (residential and nonresidential), Heavy and Civil Engineering Construction (including Utility System Construction, Land Subdivision, and Highway, Street and Bridge Contractors), and several different classes of Specialty Trade Contractors (such as Foundation, Structure, and Building Exterior Contractors, Building Equipment Contactors, Building Finishing Contactors, and Other Specialty Trade Contractors). Data from the Bureau of Economic Analysis indicates that the construction industry is a significant factor in the U.S. economy, contributing nearly 4 percent of the gross domestic product in 2015. It represents hundreds of billions of dollars of economic activity, consists of several hundred thousand business entities widely dispersed throughout the country, and employs a large labor force.

1.03 Construction contractors may be distinguished by their size, the type of construction activity they undertake, and the nature and scope of their responsibility for a construction project. Although the construction industry also encompasses large, multinational contractors that undertake construction of billion-dollar projects, most business entities in the industry are small, local businesses whose activities are limited to a small geographical area. The large number of small entities in the industry may be attributed to the ease of entry into many phases of the construction industry and to the limited amount of capital required. The diverse types of business activities conducted by construction contractors include construction of buildings, highways, dams, and bridges; installation of machinery and equipment; dredging; and demolition. Many entities are able to meet the demands of large construction projects by combining their efforts in joint ventures.

1.04 A contractor may engage in those activities as a general contractor, a subcontractor, or a construction manager. A general contractor is a prime contractor who enters into a contract with the owner of a project for the construction of the project and who takes full responsibility for its completion, although he or she may enter into subcontracts with others for the performance of specific parts or phases of the project. A subcontractor is a second-level contractor who enters into a contract with a prime contractor or an upper-tier contractor to perform a specific part or phase of a construction project. A subcontractor's
performance responsibility is to the general contractor, with whom the subcontractor's relationship is essentially the same as that of the prime contractor to the owner of the project. A construction manager is a contractor who enters into an agency contract with an owner of a construction project to supervise and coordinate the construction activity on the project, including negotiating contracts with others for all the construction work.

1.05 The organizational structure, resources, and capabilities of contractors tend to vary with the type of activity. Each type of contractor can pose unique accounting and auditing problems.

Features of the Business Environment

1.06 Contractors operate in a business environment that differs in some respects from that of other types of businesses. The features of the business environment are discussed in this section in terms of characteristics common to contractors, types of contracts, bonding and surety underwriting, project ownership and rights of lien, contract changes, financing considerations, the use of joint ventures to accomplish objectives, and reporting for financial and income tax purposes.

Characteristics Common to Contractors

1.07 Although the construction industry is difficult to define because of its diversity, as explained in FASB ASC 910-10-15-3, certain characteristics are common to companies in the industry. The most basic characteristic is that work is performed under contractual arrangements with customers. A contractor, regardless of the type of construction activity or the type of contractor, typically enters into an agreement with a customer to build or to make improvements on a tangible property to the customer's specification. The contract with the customer specifies the work to be performed, specifies the basis of determining the amount and terms of payment of the contract price, and generally requires total performance before the contractor's obligation is discharged. Unlike the work of many manufacturers, the construction activities of a contractor are usually performed at job sites owned by customers, rather than at a central place of business, and each contract usually involves the production of a unique property rather than repetitive production of identical products.

1.08 As noted in FASB ASC 910-10-15-4, other characteristics common to contractors and significant to accountants and users of financial statements include the following:

- A contractor normally obtains the contracts that generate revenue or sales by bidding or negotiating for specific projects.
- A contractor bids for or negotiates the initial contract price based on an estimate of the cost to complete the project and the desired profit margin, although the initial price may be changed or renegotiated.
- A contractor may be exposed to significant risks in the performance of a contract, particularly a fixed-price contract.
- Customers (usually referred to as owners) may require a contractor to post a performance and payment bond as protection against the contractor's failure to meet performance and payment requirements. This requirement commonly depends on the type of work.
being performed. If a bond is required, most governmental owners, by law, are required to have the contractor post these bonds; other owners have the option of either having the contractor post the bonds or not. Recently, a trend has developed whereby owners, or general contractors, prequalify with contractors by providing financial statements and other information, such as safety records and evidence of experience on similar projects.

- The costs and revenues of a contractor are typically accumulated and accounted for by individual contracts or contract commitments extending beyond one accounting period, which complicates the management, accounting, and auditing processes.

**Types of Contracts**

© Update 1-1 Accounting and Reporting: Revenue Recognition

FASB ASC 606, *Revenue from Contracts with Customers*, is effective for annual reporting periods of a public business entity, a not-for-profit entity that has issued, or is a conduit bond obligor for, securities that are traded, listed, or quoted on an exchange or an over-the-counter market, and an employee benefit plan that files or furnishes financial statements with or to the SEC should apply the "Pending Content" that links to FASB ASC 606-10-65-1 for annual reporting periods beginning after December 15, 2017, including interim reporting periods within that reporting period. Earlier application is permitted only as of annual reporting periods beginning after December 15, 2016, including interim reporting periods within that reporting period.

For other entities, FASB ASC 606 is effective for annual reporting periods beginning after December 15, 2018, and interim periods within annual periods beginning after December 15, 2019. Other entities may elect to adopt the standard earlier, however, only as of either

- an annual reporting period beginning after December 15, 2016, including interim periods within that reporting period, or
- an annual reporting period beginning after December 15, 2016, and interim periods within annual periods beginning one year after the annual reporting period in which an entity first applies the "Pending Content" that links to FASB ASC 606-10-65-1.

FASB ASC 606 provides a framework for revenue recognition and supersedes or amends several of the revenue recognition requirements in FASB ASC 605, *Revenue Recognition*, as well as guidance within the 900 series of industry-specific topics, including FASB ASC 910, *Contractors—Construction*. The standard applies to any entity that either enters into contracts with customers to transfer goods or services or enters into contracts for the transfer of nonfinancial assets unless those contracts are within the scope of other standards (for example, insurance or lease contracts).

Readers are encouraged to consult the full text of FASB ASC 606 on FASB's website at www.fasb.org.

The AICPA has formed 16 industry task forces to assist in developing a new Audit and Accounting Guide on revenue recognition that provides helpful hints and illustrative examples for how to apply the new standard (guide available at www.aicpastore.com). Revenue recognition implementation
issues identified by the Engineering & Construction Contractors Revenue Recognition Task Force are available for informal comment, after review by the AICPA Financial Reporting Executive Committee, at www.aicpa.org/interestareas/frc/accountingfinancialreporting/revenuerecognition/pages/rrtf-construction.aspx. Readers are encouraged to submit comments to revrec-comments@aicpa.org.

As of the date of this publication, eight accounting implementation issues specific to the engineering and construction contractors industry have been identified. Of the eight identified issues, three issues have been finalized and incorporated in the 2017 AICPA Audit and Accounting Guide Revenue Recognition. These finalized issues include the following:

- Identifying the Unit of Account
- Variable Consideration and Constraining Estimates of Variable Consideration
- Acceptable Measures of Progress

For more information on FASB ASC 606, see appendix A, "The New Revenue Recognition Standard: FASB ASC 606," of this guide.

1.09 The nature of a contractor's risk exposure varies with the type of contract. As identified in FASB ASC 605-35-15-4, the four basic types of contracts used in the construction industry based on their pricing arrangements are fixed-price or lump-sum contracts, cost-type (including cost-plus) contracts, time-and-materials contracts, and unit-price contracts, which are defined in the FASB ASC Master Glossary and further described as follows:

- A fixed-price contract, also known as a lump-sum contract, provides for the contractor's performance of all work to be performed under the contract for a stated price. The stated price may be subsequently adjusted, as deemed necessary by the parties to the contract, via a change order, which is a written agreement between the contractor and owner to adjust the terms of the contract. This type of contract is usually the safest option for the owner, but the riskiest for the contractor.

- A cost-type (including a cost-plus) contract provides for reimbursement of allowable or otherwise defined costs incurred plus a fee for the contractor's services that represents profit. Usually, the contract only requires that the contractor's best efforts be used to accomplish the scope of the work within some specified time and stated dollar limitation. Cost-type contracts take a variety of forms, including guaranteed max contracts, which are "cost plus a fee" up to a certain maximum price contract, and are gaining popularity in practice. The contracts often contain terms specifying reimbursable costs, overhead recovery percentages, and fees. The fee may be fixed or based on a percentage of reimbursable costs. These types of projects can pose a higher risk for contractors, based on whether a cost is reimbursable or not.

- A time-and-materials contract is similar to a cost-plus contract and generally provides for payments to the contractor on the basis of direct labor hours at fixed hourly rates (the rates cover the costs of indirect labor and indirect expenses and profit) and cost of materials or other specified costs. This type of contract is
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usually the safest option for the contractor, but the riskiest for the owner. Some time-and-material contracts have provisions in the contract that convert the contracts from a time-and-material to a guaranteed maximum contract, in essence the contract becomes a fixed-price contract.

- A *unit-price contract* provides for the contractor's performance of a specific project at a specified price per each unit of output. Unit-price contracts are seldom used for an entire major construction project, but are frequently used for agreements with subcontractors. This type of contract is commonly associated with road building and it is not unusual to combine a unit-price contract for parts of the project with other types of contracts.

1.10 Although not specifically defined in the FASB ASC Master Glossary, the number of *design-build contracts*, over the last two decades, has dramatically increased. Design-build contracts differ from traditional contracts because one entity works under a single contract to provide both the design of the work and the performance of the construction services. This combination of the design work and actual construction work may be accomplished via a joint venture, a corporation or limited-liability company comprising two separate specialty entities, although the number of single contractors developing the expertise to handle both types of work is growing. Alternatively, the work may be done via a design subsidiary of a construction parent or a construction and design subsidiary established under a holding company.

**Contract Modifications and Changes**

1.11 All types of contracts may be modified by target penalties and incentives relating to factors such as completion dates, plant capacity on completion of the project, and underruns and overruns of estimated costs.

1.12 Management control of change orders, claims, extras, and back charges is of critical significance in construction activity. Modifications of the original contract frequently result from change orders that may be initiated by either the customer or the contractor. The nature of the construction industry, particularly the complexity of some types of projects, is conducive to disputes between the parties that may give rise to claims or back charges. Claims may also arise from unapproved change orders. In addition, customer representatives at a job site sometimes authorize the contractor to do work beyond contract specifications, and this gives rise to claims for extras. The ultimate profitability of a contract often depends on control, documentation, and collection of amounts arising from such items.

**Bonding and the Surety Underwriting Process**

1.13 Contractors bidding on or negotiating a contract may be required to make a deposit for the use of the plans and specifications for the project. Before they are allowed to submit bids, those seeking prime contracts may be required to post a bid bond or make a deposit, usually in the form of a bank-guaranteed check, equal to a percentage of the total cost estimated in the feasibility study. On virtually all public work and on some private work, bid security is usually required to provide some assurance that only qualified, responsible contractors submit bids. In the construction industry, bid bonds, as well as performance bonds and payment bonds, are provided by surety companies. A surety
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company makes itself jointly and severally responsible for the performance of the contractor via the execution of the bond.

1.14 A bid bond issued by a surety does not guarantee that the contractor will sign a contract or guarantee that the surety will issue a performance bond. The contractor and surety promise the owner that if the contractor who is awarded the contract does not sign the contract or cannot provide a performance bond, the surety will pay, subject to the maximum bid bond penalty, the difference between the contractor's bid and the bid of the next lowest responsible bidder. The bid bond or deposit protects the owner from bidders without the resources necessary to complete the work and gives the owner a certain amount of indemnity against the cost of rebidding or finding another contractor who can complete the work. Owners many times will use the bid bond requirement on a job to reduce the amount of bidders on a job and use the surety as a prequalification of the contractor. A surety required to pay on a defaulted bid usually has the right of recovery against the contractor's assets.

1.15 After being awarded a contract, a contractor may be required to post payment and performance bonds, also issued by a surety. The payment and performance bond provides protection against the contractor's failure to perform the contract in accordance with its terms. The surety's obligation under the bond terminates on satisfactory completion of the work required by the contract. However, if the contractor should fail to perform in accordance with the contract, the surety is obligated to the owner for losses or to assure performance but usually has recourse against the contractor's assets.

1.16 A payment, or labor-and-materials, bond is commonly provided by sureties as a companion (or as a combined item) to the performance bond. The protection provided by a payment bond is governed by state laws, which vary widely but generally cover the contractor's labor, subcontractors, and suppliers. The Miller Act of 1935 requires general contractors on federal government projects to post payment bonds to protect suppliers of labor, materials, and supplies to those projects. This type of bond generally applies to work already performed.

1.17 In providing the various types of bonds required in the construction industry, the primary function of sureties is to prequalify the contractor. The surety examines the contracting entity to determine if it has the management, experience, equipment, and financing capability to get the job done. This due diligence, amongst other procedures, involves the surety reviewing the contractor's financial statements. As such, sureties are one of the primary users of contractors' financial statements.

1.18 If, in the judgment of the surety, the contractor can perform the contract, the surety will provide the required bonds. Similarly, the contractor may wish to evaluate the quality and capability of the surety, including the financial stability of the surety.

1.19 Surety underwriting is similar to, yet different from, insurance. Insurance involves a two-party agreement in which a premium is paid to protect an insured party from the risk of certain types of losses. In contrast, a surety bond involves a three-party agreement in which the surety and the contractor join together to provide protection against losses to a third party. Surety underwriting is also similar to extending credit. For a fee, the surety provides a guarantee to third parties that the contractor will fulfill obligations of performance and payment. Just as a banker will not knowingly make a loan without
satisfying himself regarding a borrower's ability to repay the loan in accordance with its terms, a surety will not knowingly issue a surety bond without similar knowledge of the contractor's ability to meet obligations in accordance with the terms of a contract. The financial strength of the contractor is critical to the surety underwriting process.

Project Ownership and Rights of Lien

1.20 A contractor may be required to make a significant commitment of resources to a project under construction. His ability to recover his investment may be impaired by certain peculiar considerations. The project is ordinarily one of a kind and is built on the owner's site. The owner has title to the real estate as well as all improvements as the contractor provides them. The contractor acquires materials for specific projects and has no direct ownership claims to the work in progress. Subassemblies fabricated on the contractor's premises usually have little value to him or her because of the uniqueness of the project.

1.21 As a special remedy for these conditions, the laws of most states protect providers of labor and materials, such as contractors, from the failure of the owner to pay by granting a right of lien. Under a right of lien, contractors have a claim against the real property, although that right is not necessarily senior to other claims, such as the rights of mortgage holders. Because lien rights are lost if they are not perfected within a limited time period, contractors ordinarily have an established procedure for filing claims before the expiration of those rights. Federal government property ordinarily is not subject to lien under state law, but suppliers, other than general contractors, of labor and material for such property are normally protected by payment bonds that the general contractor is required to post under the Miller Act of 1935.

Financing Considerations

1.22 The methods of financing operations in the construction industry have developed in response to the nature of the industry and the business environment in which it functions. The cost and availability of financing are affected by the risks to which contractors are susceptible. The greatest risk factor in the industry stems from the method of pricing. A contractor, unlike a businessperson in most other industries, normally must set his or her prices in the bidding or negotiating process before product costs are absolutely determined; and the prices, particularly for fixed-price contracts, are not necessarily subject to modifications solely because of changes in costs.

1.23 A contractor's greatest financing need is working capital. Term loans to support working capital needs are rare because expansion can usually be supported by working capital loans on a contract-by-contract basis. Banks and other credit grantors typically require more tangible types of security for term loans than most contractors can furnish. However, contractors use chattel loans, which may be tailored to match payments with cash receipts (such as by a waiver of payments during off-season periods), to finance equipment purchases.

1.24 In addition to a traditional line of credit, a working capital line of credit on specific contracts is another short term financing option often available to contractors. Working capital loans are usually advanced on a contract as needed to pay for materials, labor, and subcontract costs. Such loans are a necessary means of financing for most contracts because of the lag between expenditures and the receipt of cash. The credit grantor may take an assignment of the contract and the related receivables; however, a bonding company, if
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one is involved, has rights to the receivables that take precedence over those of other creditors, including a secured lender. Credit grantors often require that the proceeds of contracts be assigned to them and may also require that the proceeds of the loan be paid directly to suppliers as invoices are submitted.

1.25 Contractors may qualify for government-sponsored programs that support or guarantee financing for small or minority-owned businesses. The programs generally guarantee lines of credit on a contract-by-contract basis. Those programs, under which the contract proceeds are usually assigned to the creditor, are ordinarily available only to contractors that would not qualify for working capital loans from banks without some form of government guarantee.

1.26 Some contractors finance bid deposits with temporary bank loans that are usually repaid by the return of the bid check. Because a bank-guaranteed check used as a bid deposit can be forfeited if a contractor who is awarded a contract cannot obtain the required bonding or withdraws from the contract, a contractor usually obtains a commitment for the required bonding before bidding on a project.

1.27 Billing practices in the industry have evolved from the need to generate cash flows in order to finance the progress of construction projects. In contrast to manufacturing entities, whose billing practices are fairly standard, with the customer billed on shipment of the goods, billing practices in the construction industry vary widely and often are not correlated with the performance of the work. Billing arrangements are usually specified in the contract and vary with the different types of contracts used in the industry. The amount and timing of billings under contract may be based, for example, on such measures as

- completion of certain stages of the work.
- costs incurred on cost-plus contracts.
- architects' or engineers' estimates of completion.
- specified time schedules.
- quantity measures of unit price contracts, such as cubic yards excavated.

1.28 In any event, progress billings or customer advances on contracts provide a significant source of financing for most construction contractors. Most contracts, however, call for retention by the owner of a specified amount of each progress billing, often ranging from 5 percent to 10 percent, until the job reaches an agreed-upon state of completion, with a provision for a reduction thereafter. The purpose of retentions is to ensure performance of the work in accordance with acceptable quality standards or to protect the owner against the cost of obtaining another contractor if a contractor fails to complete the work.

1.29 A contractor ordinarily will try to assign a higher relative bid price to job components that he or she expects to complete early in the job. The practice of unbalanced bidding, referred to as front-end loading, accelerates the contractor's cash receipts on a contract and represents a significant financing strategy for many contractors.

1.30 Front-end loading and other types of unbalanced bidding are often viewed with concern by those not familiar with the industry, but they are common practices that contractors use to assist in the financing of jobs. Money
management is a vital part of construction management, and unbalanced bidding is one of the key tools. Negotiation of advantageous cash payment terms at the bidding stage, and other procedures to accelerate cash collection, are significant financing considerations in the industry. However, the contractor needs to be aware that, as a result of unbalanced bidding, cash inflows at the end of the contract may be less than cash requirements. Therefore, appropriate controls and cash budgeting are an essential part of financial management. An increasing number of credit grantors are requiring contractors to furnish cash projections on contracts before they will extend credit.

**Joint Ventures**

1.31 According to the FASB ASC Master Glossary, a *joint venture* is an entity owned and operated by a small group of businesses (the joint venturers) as a separate and specific business or project for the mutual benefit of the members of the group. A joint venture usually provides an arrangement under which each joint venturer may participate, directly or indirectly, in the overall management of the joint venture. Joint venturers thus have an interest or relationship other than as passive investors. The ownership of a joint venture seldom changes, and its equity interests usually are not traded publicly.

1.32 In the construction industry, ownership of joint ventures may take several forms. The most common are corporate joint ventures, partnerships, limited liability corporations, and other types of pass-through entities. Contractors frequently participate in joint ventures with other parties on construction projects to share risks, combine the financial and other resources and talents of the participants, or obtain financing or bonding. In the construction industry, joint ventures often include arrangements for pooling equipment, bonding, and financing and for sharing skills such as engineering, design, and construction. Many times, these joint ventures are formed between local and nonlocal construction firms in order to share the advantages of each, for example, access to local labor and equipment, or specific expertise.

1.33 The rights and obligations of each joint venturer, the scope of the joint venture’s operations, and the method of sharing profits or losses of the joint venture are typically set forth in the joint venture agreement. A joint venture provides for the sharing of profits and losses in a variety of ways and may not be related to the method of sharing management or other responsibilities. Accomplishing objectives through joint ventures is often a significant business strategy for construction contractors, and management control of such activity can have a significant effect on the contractors’ operations.

1.34 Public-private partnerships, or P3s, are becoming increasingly common forms of collaboration for construction projects. Public-private partnerships take the form of contractual agreements between a public agency (federal, state, local) and a private sector entity. Due to governmental agencies struggling to obtain financing for large public works projects, these partnerships allow the private sector entity to share the risks and rewards of these public sector projects.

**Reporting for Financial and Income Tax Purposes**

1.35 Because of the large number of small enterprises in the construction industry, construction contractors' financial statements are used most frequently for credit and bonding purposes. Such a use is often accompanied by a request for supplemental information, including a job-by-job analysis of the
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recognized gross profit of both completed and uncompleted contracts allocated between reporting periods, a breakdown of general and administrative expenses, job costs, and a summary aging of accounts receivable. Recognition of revenues for these financial presentations is governed by accounting conventions described elsewhere in this guide and in FASB ASC 605-35.

1.36 On the other hand, business realities demonstrate that the gross profit is not certain, nor irrevocably earned, until the contract is actually completed and accepted. In addition, final collection, particularly of retentions, usually takes place sometime after the earning process has been completed and revenue has been recognized in the financial statements.

1.37 Some contractors adopt income tax reporting practices that are sensitive to the uncertainties of the estimating process and that more nearly relate to the timing of cash receipts and disbursements. This usually means the adoption of methods that defer income recognition until contracts are completed; the use of the modified accrual basis, which reports retentions only when received; or the use of the cash basis.

Typical Industry Operations

1.38 Because the industry consists of diverse types of entities engaged in various types of work that may change over time, users of the guide need to understand not only the industry but also the operation of the individual entity with which they are concerned. For that reason, a description of the process of obtaining and initiating a project is useful to identify unusual conditions that require special consideration in preparing, auditing, or using the financial statements of a particular construction contractor.

Preparing Cost Estimates and Bids

1.39 The process leading to the preparation of estimates and bids on a project usually is initiated by the entity that engages a construction contractor for a project. When a customer, usually referred to as an owner, decides to construct a new facility, an architect or engineer may be engaged to prepare preliminary plans and cost estimates. If preliminary procedures indicate the project is feasible, plans and specifications are prepared in sufficient detail for the preparation of cost estimates.

1.40 The owner may negotiate for a price with several general contracting firms or may advertise for bids. Bidders may be limited to those who can meet specified prequalification standards regarding financial capacity, experience, and availability of specialized equipment and who can furnish a bid, payment, or performance bond or all three types of bonds. The owner may decide to use one contractor as a prime contractor responsible for all phases of the work or to grant separate prime contracts for certain specialized portions of the work, such as electrical work, mechanical work, special equipment, and elevators.

1.41 Before tendering a bid, the contractor's estimating department prepares a cost estimate by examining the plans and specifications to determine the quantities of materials, the hours of various labor classifications, and the type and hours of use of the equipment necessary to perform the work. Quantity surveys, or takeoffs of the quantities of materials required for the job, prepared by the design firm or an independent agency, are often available for the contractor to use as a check on his own estimating department.
The equipment demands of a contract affect a contractor’s bidding, projected need for funds, and financing strategy. Some types of construction, such as road or heavy highway projects, require extensive use of costly equipment, and contractors are faced with decisions to buy or lease the equipment. Such decisions are often complicated because equipment may be acquired and tailored for use on a specific job and because the contractor may not be able to use the equipment on other jobs. In these situations, a contractor is then faced with a decision to either capitalize the equipment or cost it out to the specific job.

Phases of the job (such as excavating, erecting steel, and roofing) not done directly by the contractor are offered to various trade or specialty subcontractors who, in turn, prepare bids to the prime contractor for their portions of the work. Each phase of the work may be bid on by more than one subcontractor, who may submit bids to more than one prime contractor. In dealing with different prime contractors, a subcontractor may vary the amount of the bids according to his or her assessment of his or her past experience with each contractor in terms of payment policies, quality of supervision and job coordination, and negotiating pressures.

Once the estimated cost of the work is determined, the contractor determines the amount by which the estimated cost will be marked up. The markup may vary between elements of the work, such as labor, material, subcontractor costs, or equipment. In determining how much the bid will be marked up over cost, the contractor ordinarily evaluates several factors including, but not limited to, the following:

- The complexities of the job
- The volatility of the labor and materials markets
- The contractor’s experience, or lack of it, in doing the kind of work involved
- The reputation of the design agency for reliability and completeness of plans, as well as its reputation for reasonableness in its dealings with contractors
- The ability to identify and negotiate change orders with the owner or design agency
- The season and weather
- The predicted working relationship with the owner
- Prior history with the owner
- The probability of opportunities to negotiate profitable changes to the contract
- The alternate construction methods or specifications included in the bid request
- The competition and the market
- The incentive or penalty provisions of the contract
- The anticipated cash flow characteristics of the job
- Other peculiar risk conditions, including warranty requirements
After determining the total bid price, the contractor normally should estimate the timing of disbursements for the job and the cash resources available to determine the allocation of the contract price among the progress billing points called for in the contract.

**Entering Into the Contract**

The owner evaluates the bids received and may choose to sign a contract with the low bidder or to negotiate further, depending on the terms of the invitation to bid, statutes governing the bidding process of either public or private bodies, and other possible considerations. Submitted bids may be a matter of public record, and the bids of other contractors can provide a valuable, independent check on the accuracy of the contractor's estimating department. At some stage, an agreement is reached between the owner and the contractor that enables the contractor to proceed with the work. The formal signing of a contract is usually not a specific point before which all effort is selling and after which all effort is construction. Negotiation is likely to continue during the entire cycle; the signed contract represents the basic understandings and undertakings of both parties, but many contract modifications, not necessarily in writing, may be made during the progress of the job. A given situation can be covered by different types of contracts, and the risks and concerns may be different for each contract type.

**Planning and Initiating the Project**

Before construction begins, the contractor usually moves equipment to the job site, erects a temporary field office, and installs temporary utilities. The purchasing department proceeds with the selection of material suppliers and subcontractors and converts their bids to written contracts or purchase orders. The authority and responsibility for the performance of the work on a project usually rest on one individual known as the project manager.

The management organization of construction contracting entities varies considerably, depending on the size of the contractor, the complexity of the projects performed, and other factors. In some entities, the person responsible for bidding a contract is also responsible for the performance of the job. This sometimes means that there is no separation of functions among selling, pricing, and production and that the entity is a conglomerate of small profit centers sharing, perhaps, a pool of equipment and an administrative staff. In other entities, a separate department is responsible for selecting jobs to estimate, preparing bids, and executing contracts. When the entity obtains a contract for a project, a member of the production staff is assigned the responsibility as project manager. Before accepting responsibility for the profit on the project, the project manager often prepares a schedule and budget that may include a complete reestimate of the cost of the job. This procedure provides an additional control and allows the contractor to fix the responsibility for profit on a contract.

The cost reporting system for the job is usually established at about the time the work begins. The coding system may be standard throughout the entity or redesigned for each individual job, but it should conform closely to the cost categories established in the original estimate or to the categories developed in the production plan, if one is prepared. A production plan or budget that is costed out in detail is helpful because it enables the contractor to compare costs by categories to the cost standards set before beginning the work.
1.50 On most construction projects, the major construction activity is carried out at the job site. The size and location of some projects make it necessary for a contractor to establish an administrative office at the job site and conduct most control and accounting functions from that office. Recently, a trend has developed where contractors prefabricate significant components of the project at a dedicated, off-site facility. The prefabrication is performed under controlled conditions, thus improving the efficiency of the construction. The components are then delivered to the site and installed.

Variations in Size and Methods of Operation

1.51 The preceding discussion of operations is typical of a medium-sized general contractor with a small number of significant contracts; it illustrates the importance of planning, bidding, and estimating. Construction activity, however, involves all types and sizes of contractors, and the management and operations of a contractor vary with the size and type of contractor. Many contractors have a mix of jobs that includes a few large jobs and many small jobs, including fixed-price and cost-plus contracts. Service-type contractors seldom are involved in bidding for contracts. Most of their small contracts originate as service calls, and many of their large contracts result from service calls and are negotiated rather than bid.

Project Management

1.52 The quality of management is a key determinant of the success or failure of a contractor. The management objective is to develop and maintain the ability to produce reasonable and competitive cost estimates on contracts and to complete the work required by the contracts within those cost estimates. Because success is determined by the results on contracts, many contractors project the effects that every transaction and event will have at the completion of the contract and use fluctuations of the final estimated profit as the stimulus for management action. Project management requires all the functions involved in planning, acquiring, controlling, and performing a project. All the following functions are involved:

- Resource planning
- Project start-up
- Estimating
- Scheduling
- Project administration
- Technical performance
- Procurement and material planning
- Labor planning and control
- Subcontractor management
- Support equipment and facilities
- Change order identification and management
- Project accounting
- Project management reporting
- Operations analysis
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Although some of these functions overlap, all are performed on every project undertaken by a contractor, even though the specific functions may not be identified. A large contractor may assign each function to a separate department, whereas a small contractor may assign two or three people responsibility for all the functions or may engage parties outside the organization to perform some of the functions on a consulting basis.