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American Institute of Certified Public Accountants. MCS Technical and Industry Consulting Practices Subcommittee

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Industry Consulting

General Construction Contractors

AICPA

CONSULTING SERVICES PRACTICE AID 95-1

AMERICAN

INSTITUTE OF

CERTIFIED

PUBLIC

ACCOUNTANTS

Management Consulting Services Division

NOTICE TO READERS

This practice aid is designed as educational and reference material for Institute members and others who provide consulting services as defined in the Statement on Standards for Consulting Services (SSCS) issued by the AICPA. It does not establish standards or preferred practices. However, since the services described in this series of practice aids are consulting services, the standards in the SSCS should be applied to them as appropriate.

The 1992-93 AICPA MCS Technical and Industry Consulting Practices Subcommittee initiated the preparation of this practice aid. The members of the subcommittee are listed below.

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The subcommittee gratefully acknowledges the contribution made to the development of this practice aid by its principal author, Richard B. Donahue.

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ACCOUNTANTS

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PREFACE

This practice aid is one in a series providing practitioners with information about a particular industry, its typical consulting services engagement opportunities, and additional information on the sources of industry and technical engagements. The practice aid's purpose is to assist practitioners in identifying pertinent issues as well as the resources needed for engagements involving a particular industry.

Although these practice aids often deal with aspects of consulting services knowledge in the context of a structured consulting engagement, they are also intended to be useful to practitioners who provide advice on the same subjects in the form of a consultation. Consulting services are defined in the Statement on Standards for Consulting Services (SSCS) issued by the AICPA's Management Consulting Services (MCS) Division.

This series of Industry Consulting Practice Aids should be particularly helpful to practitioners who are considering (a) offering initial or additional consulting services to clients in an industry, (b) offering consulting services to clients who are entering or considering entry into the industry, (c) expanding their practice by marketing services to potential clients in the industry, and (d) undertaking a cooperative engagement by arranging for an industry specialist from outside the firm to assist a client. For readers employed in the industry, Industry Consulting Practice Aids may be useful in providing advice to management.

These practice aids do not purport to include everything that a practitioner needs to know to become expert in providing services to that industry. Current conditions in an industry may vary from those at the time the practice aid was developed.

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GENERAL CONSTRUCTION CONTRACTORS

85/105 SCOPE OF THIS PRACTICE AID

.01 The primary purpose of this practice aid is to describe the general commercial construction industry, industry trends, and critical operating issues that the certified public accountant (CPA) practitioner may encounter during a consulting services engagement in this industry. This practice aid is designed to assist practitioners in providing consulting services to clients who are general commercial construction contractors (GCs), contractors involved with the construction or renovation of commercial buildings. It also provides information that will help practitioners to expand their services and identify the resources available. It does not provide guidance on related industries including real estate development, single or multifamily residential construction, highway construction, architecture, or property management.

85/110 INDUSTRY PROFILE

Definition of the Industry

.01 The construction industry accounts for a major component of the industrial output of the United States economy and a significant portion of the United States gross national product. Nonresidential construction and improvements have exceeded \$100 billion annually.

.02 GCs typically contract for the construction or renovation of an entire building or project, rather than a portion of the work. General contractors normally take full responsibility for all phases of a construction project, including the hiring, supervision, and payment of all subcontractors and the coordination of all construction activities.

.03 General contractors include large firms that construct multimillion dollar projects such as shopping malls, office skyscrapers, hotels, and power plants. Their work may be exclusively in the United States, or it may be worldwide. GCs also include the builders of regional or local projects such as strip malls, industrial buildings, and small office buildings. These contractors may work in only one state or perhaps one region of a state.

.04 Other general contractors specialize in particular kinds of construction projects (for example, industrial buildings, hospitals, or power plants). In both large and small projects, the construction process, pitfalls, problems, and opportunities are similar.

§ 85/110.04

.05 Commercial real estate construction involves those properties used for distribution, wholesale, retail, and service activities. The following kinds of properties are classified as commercial real estate construction:

- Office buildings
- Warehouses
- Industrial facilities
- Shopping centers
- Strip malls
- Hotels
- Nursing homes
- Schools
- Hospitals
- Government buildings
- Sports facilities

.06 Development Process. The construction or renovation of a commercial project is the culmination of a development process that includes feasibility analysis, site selection and analysis, development activity, and financing. A project may be developed by the owner of the project or the owner may hire a development company. Only after the following development activities are completed does the GC become involved in the project.

.07 *Feasibility analysis*. In determining the financial feasibility of the development of the project, the analyst considers the current and projected supply and demand and makes assumptions and estimates regarding revenues and the costs of development, construction, financing (interest rates and term), marketing, management, and so forth. The financial feasibility is updated continually during the development process as cost estimates are refined. It is common for several development and construction scenarios to be prepared and analyzed for the same property.

.08 *Site selection and analysis.* The selection of the optimum site for construction requires analysis of the cost of property, development costs, environmental and zoning requirements, and similar financial and regulatory issues.

.09 Development activity. During the development process, the developer needs to obtain all necessary licenses and permits to perform engineering studies, select an architect, get approval of plans, and perform additional financial analysis based upon current cost estimates.

.10 *Financing*. The developer needs to obtain development or construction financing, which is normally for a relatively short period (one to three years), and a commitment for permanent financing. Permanent financing normally closes only after the project has attained certain leasing benchmarks such as a percentage of occupancy or a certain dollar amount of annual revenue.

Methods of Operations

.11 The organization of a GC and its methods of operations can take several forms. In fact,

a contractor may use different methods of operation on several different projects under way at the same time. The following are examples of methods of operation.

- The GC employs a significant direct labor force and utilizes its employees to perform large portions of the contract. In addition, the contractor may be responsible for providing the building materials for the entire project or for the portion of the contract undertaken by its labor force. The portions of the project for which the contractor does not use its direct labor are subcontracted to specialty contracting companies.
- The GC supervises the project but uses subcontractors exclusively for all areas of the contract.
- Under a construction management contract with the owner-developer, the GC, for a fee, supervises the work of subcontractors that may be employed directly by the owner or by the construction manager.

.12 The profit on a contract is normally more predictable and less at risk if the GC uses subcontractors or enters into a construction-management-only contract. The contractor assumes the greater amount of responsibility by using its own workforce and has a greater opportunity of earning additional profits on a contract. However, the potential to incur substantial losses is also greater in this arrangement.

.13 Contractor Selection. The selection process of a GC can normally take several forms, including a bid contract, a negotiated contract, and a cost plus contract.

.14 *Bid contract*. The construction contract may be put out for bid by the owners. This process is normally used to obtain the lowest possible responsible bid price for the project. The bid process is often mandated by government agencies for publicly financed projects, but it is also used by private owners and investors seeking to acquire the lowest possible price from a qualified contractor.

.15 Negotiated contract. The contract is not put out for bid. Instead, the GC and the owner negotiate the contractual agreement. This process is less frequently employed than the bid process. It is usually used when the contractor is one of few specialists in the kind of construction required or when the contractor has an ongoing relationship with the owner or developer.

.16 Cost plus contract. The owner hires a GC to build or renovate a project on a cost-plus-aprofit basis. This kind of contract is rarely used by owners for new construction since it offers the contractor little incentive to control costs. This kind of contract is sometimes used for renovations of older buildings because it is difficult to estimate costs reasonably since the contractor may not know the actual condition of the property until renovations begin.

.17 The contractor carries the greater portion of risk under a bid or negotiated contract because the contract amount is stipulated as fixed, subject to modification only by approved change orders.

¶ 85/110.17

- .18 Other variations on construction contracts include the following.
- Cost plus contract, not to exceed a predetermined amount. If the cost plus profit is less than the upper limit of the contract amount, the contractor may be entitled to a percentage of the additional profits.
- Construction management contract. The contractor agrees to be paid a fee or percentage of construction costs with an upper limit of total costs and to share in the savings if the cost is less than the limit.

Related Industries

.19 The members of related industries that GCs work with most frequently include architects, engineers, real estate developers, interior designers and space planners, and various subcontractors.

.20 Architects. The design work for new construction, tenant improvements, and refitting of space is done by architects. The architect works very closely with the developer in converting ideas to working plans, given the constraints of the property layout, zoning requirements, governmental regulations, and various cost considerations. The architect is responsible for the detailed plans and specifications for a building.

.21 Engineers. Engineers provide technical expertise in areas such as environmental issues, review of load carrying structures, traffic access and transportation patterns, water drainage, soil stability, and other kinds of site work and infrastructure planning.

.22 Real Estate Developers. Real estate developers transform property from one stage of use to another. Developers typically start with raw land or a property used for other purposes. They plan the use for the property including determining the feasibility of the project. They solicit and receive the permits necessary to construct the project, assist in obtaining construction and permanent financing, contract with GC for the construction, and may be responsible for the marketing and leasing of the completed project.

.23 Interior Designers and Space Planners. Interior designers and space planners are generally retained once the end user of the facility is determined. In many instances, the architect performs these functions and plans the space to fit the customer's needs. Many large tenants, however, require space planners to maximize the use of their space and designers to create a pleasing environment.

.24 Subcontractors. Subcontractors are contractors that specialize in certain areas of building construction. Subcontractors normally work under a contract with the general contractor. The specialty contractors provide the skills needed in the following areas:

- Site excavation
- Steel erecting
- Building framing

- Environmental engineering
- Landscaping
- Masonry
- Electrical work
- Plumbing
- Heating, ventilation, and air conditioning (HVAC)
- Dry wall
- Carpentry
- Flooring
- Glass
- Ceiling installation
- Roofing

Standard Industry Classification Code

.25 The Standard Industry Classification code (SIC) categorizes industries by economic activity. Its purpose is to facilitate the collection, tabulation, presentation, and analysis of data relating to businesses and to promote uniformity and comparability in the presentation of statistical data describing the economy. The SIC is used by agencies of the United States Government that collect and publish data about particular industries. It is also used by private businesses, trade associations, and other organizations including publishers of industry reference books. The code for general commercial contractors is 0059.

Historical Information

.26 The construction industry has experienced the impact of several influences. These include economic factors such as changes in interest rates and tax incentives. Others factors are the activity of labor unions, the migration patterns of the United States population, and the movement of industries to different geographic areas.

.27 In the middle of this century, GCs typically performed significant portions of a construction project with their own labor force, which was usually unionized. There were few large national contractors because most contractors concentrated on their own area of the country.

.28 At the same time, the scale of construction has become much larger, even though the kinds of activity have not changed over the last fifty years. There are numerous skyscrapers in every major city; once, there were only a few such buildings in the entire United States. Enclosed shopping malls have supplanted shopping centers. Nuclear power plants have replaced smaller fossil fuel plants. Nursing homes and hospitals are larger and more complex. Baseball and football are now played inside domed stadiums. The advent of such megaprojects has resulted in the formation of several national and worldwide construction companies with the specialized knowledge and financial resources necessary to construct such projects.

.29 Despite this trend, the majority of commercial construction projects in the United States today are projects that cost from \$250,000 to \$5,000,000. The bidders for these projects are not megacontractors, but local and regional GCs with appropriate expertise and financial capability.

.30 The migration of people and industries to the South and West has resulted in new construction booms in those areas. On the other hand, developers in the North and Northeast have concentrated the renovation and restoration of existing buildings. This kind of work may include the modifications needed to put old buildings to new uses. This trend was encouraged by Federal tax laws that provided significant incentives to the owners of these projects.

.31 Construction activity is decided upon by the owner or developer after an analysis of the supply and demand for the project. Included in the analysis of the financial feasibility of a construction project are current and projected interest rates. Historically, as interest rates rise, construction activity declines.

.32 Other economic influences on construction activity in the United States are the amounts of foreign investment, changes in the banking industry, and ongoing changes in Federal tax law regarding passive activity, low income tax credits, historical tax credits, and similar issues.

Industry Trends

.33 GCs have become more specialized, concentrating primarily on certain kinds of projects such as office buildings, shopping malls, or power plants. Specialization is attractive to real estate owners and developers; they are interested in contractors whose experience goes beyond general contracting to include the construction of specific kinds of projects.

.34 Labor costs continue to escalate not only in direct payroll dollars, but also in payroll taxes, workers' compensation insurance, group medical insurance, and union benefits. Nonunion GCs have been formed and accepted even in large metropolitan areas where union construction used to be the norm. This acceptance has had an impact on the power of trade unions as well as the cost of construction projects.

Impact of Technology

.35 In the construction industry, information systems have become vital to the search for a competitive advantage. The use of computers will continue to expand as hardware and advanced software applications become more affordable and available. The increased cost effectiveness of hardware is most visible in microcomputer technology. In addition, during the last few years, software vendors have responded to increased industry demand by developing new packages and enhancing existing products.

.36 Computer technology has had a dramatic impact on the general contractor's operations. Even smaller construction companies can now afford microcomputers and application software to assist in estimating, cost control, purchasing, inventory control, scheduling of construction activities, budgeting, job cost reporting, and financial reporting.

.37 Computer systems are also used to control the payment of subcontractors and to compute retainages. The systems report not only the costs to date, but also, more importantly, the costs of completing the project. This report provides management with current profit projections for a project on an ongoing basis.

.38 The use of computers has increased because project owners and construction managers recognize that sound planning and control systems are critical to the success of a project. Many project owners expect bidders to demonstrate that their control systems and procedures are adequate even for fixed-price contracts. Industry managers know that information systems are becoming a marketing requirement as well as an internal management requirement. Bonding agents also demand that contractors have adequate accounting and control systems. In a number of cases, yearly audits are required, thereby making a sound system of internal controls and accounting controls necessary.

.39 The application of computer technology to the operations of construction contractors is discussed further in a later section of this practice aid entitled, "Automating Construction Firm Systems."

.40 Technology has also helped to improve construction equipment and materials. Construction equipment still includes hammers, nails, wheelbarrows, backhoes, cranes, and trucks. However, other construction equipment has been improved significantly. These improvements include concrete pumps, automatic nail guns, and lasers for cutting materials and for precisely determining measurements and levels.

.41 Construction materials continue to improve and are often lighter, stronger, less expensive to purchase, and easier to install. Prefabricated materials, such as roof trusses and wall systems, have improved construction methods.

Capital Requirements

.42 GCs vary substantially in their methods of operations and, accordingly, in their capital requirements. In general, however, GCs require a strong capital base in order to compete and prosper. Capital is an important criteria for obtaining bonding, financing, and equipment.

.43 Bonding. 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, contractors seeking prime contracts may be required to post a bid security 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. Bid security is required on virtually all public work and on some private work to provide assurance that bidders are qualified, responsible contractors. In the construction industry, bid security bonds, as well as performance bonds and payment bonds, are provided by surety companies. In providing the various kinds 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. If, in the judgment of the surety, the contractor can perform the contract, the surety will provide the required bonds.

.44 A bid bond issued by a surety does not guarantee that the contractor will sign a contract or that the surety will issue a performance bond. The contractor and surety promise the owner that, if the contractor does not sign the contract or cannot provide a performance bond, the surety will pay the difference between the contractor's bid and the bid of the next lowest responsible bidder subject to the maximum bid bond penalty. 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. A surety required to pay on a defaulted bid has the right of recovery against the contractor's assets.

.45 After being awarded a contract, a contractor may be required to post a performance bond, which protects against the contractor's failure to perform according to the contract 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 but has recourse against the contractor's assets.

.46 A payment bond is executed by a contractor to protect suppliers of labor, materials, and supplies to a construction project.

.47 Financing. The GC may require a working capital line of credit to fund construction projects. The GC is responsible for paying its weekly payroll, the cost of material and supplies, and subcontractors on a predetermined schedule. The GC usually invoices monthly and waits seven to thirty days for funds requisitioned against its contract. Consequently, the general contractor may have to carry significant costs for five to eight weeks before being reimbursed. In addition, a portion of each requisition may be held by the owner as retainage until the construction project is completed and accepted. The more construction projects under way at one time and the more direct labor used by the contractor, the greater the amount of working capital required. Exhibit B-4 in appendix B provides a checklist of the documents usually needed to negotiate interim financing.

.48 Equipment. Equipment can be purchased, leased, or rented. The amount of equipment and related debt on the balance sheet of a GC may have an impact on the amount of available bonding and financing. Equipment used continually by a contractor (for example, trucks, generators, office trailer) is often purchased or leased, while equipment used for a specific project or portion of a project is usually rented (for example, cranes and forklift). The equipment used by a GC in the normal course of operations depends upon the kind of construction undertaken and the company's operating philosophy.

Industry Characteristics

.49 GCs range from multinational corporations with large specialized staffs to the local commercial contractors with small staffs that subcontract in virtually all areas of construction.

.50 The GC is responsible for the construction phase of a real estate development and consequently must be capable of planning and supervising all construction activity. The contractor must have the organizational and technical skills to provide services competently. To ensure this competency, a GC may restrict itself to projects of a certain type or size.

.51 GCs for major projects in urban areas tend to be large national or regional contractors. Smaller projects are usually undertaken by local or regional GCs. Because of the complexity of construction and the cost of direct labor, GCs use subcontractors to perform significant percentages of projects. The use of subcontractors normally reduces the financial risk as well as the reward to the GC. It also improves a contractor's cash flow during the construction period because subcontractors are normally not paid until the contractor receives payment from the owner. On the other hand, a contractor that employs its own workforce incurs a weekly payroll cost for which the owner receives a requisition once a month, which is usually paid thirty days later.

.52 Projects in urban areas and for the government often require that union labor be employed or, if nonunion labor is used, prevailing union wages be paid. Urban and governmental construction projects also often require that a certain percentage of the contract be awarded to minority subcontractors and that a certain number of minority workers be hired.

Competition

.53 Competition for construction contracts is intense and ongoing. Contractors are often evaluated on the basis of not only price, but also the following factors:

- a. Experience in constructing similar projects
- b. Ability to complete projects on schedule (this factor can have a significant impact on the owner since interest expense is directly related to the construction time. Furthermore, the owner may require that the construction be completed by a certain date in order to comply with requirements for closing on permanent financing and meet the required occupancy dates in tenants' leases.)
- c. Ability to work well with the developer and the developer's team (architect, engineers, and so forth)
- d. Ability to maintain productive relations with labor unions, governmental agencies, and other third parties
- e. Financial stability. (The contractor must be able to complete the project even if it experiences losses on this or other projects.)
- f. Skill in coordinating the activities of the subcontractors
- g. Ability to provide a performance bond on the project

Marketing

.54 The marketing activities of a general contractor involve contact with architects, developers, real estate owners, and investors. Furthermore, contractors must keep abreast of requests for bids from federal, state and local governments, and private enterprises. To help keep abreast, many contractors subscribe to the *Dodge Reports*, a daily publication that lists all construction contracts in certain geographical areas that are being put out to bid.

85/115 MAJOR DAY-TO DAY ACTIVITIES

.01 For GCs, the typical major day-to-day activities are associated with bidding for contracts, negotiating and entering into contracts, and submitting requisitions for payment.

Bidding

.02 General construction contracts are most often awarded as a result of competitive bidding. In order to bid on contracts for certain governmental agencies and private owners, contractors often have to be prequalified. The determination of qualification focuses primarily on financial stability and also on several other factors including bonding capacity, experience, and the factors described earlier in section 85/110.53, "Competition."

.03 The owner or developer requesting the bid provides the bidders with the architect's plans or drawings and building specifications. The plans detail the structural components of the building while specifications normally include the kinds of building materials to be used. In addition, if a GC intends to use subcontractors for some or all of the construction project, prices for such work must be obtained and included in the bid.

.04 Usually, the GC's bid must be accompanied by a bid bond or a deposit of a specified amount. The owner will hold the bid bond or deposit from the selected contractor to ensure that the contractor will sign a contract for the amount bid. The bid bond is discussed earlier in the section entitled, "Bonding."

Subcontractors

.05 Specialty subcontractors are used by GC's for a wide variety of construction specialties as described earlier in sections 85/110.19-.24, "Related Industries."

.06 The GC should evaluate subcontractors using the same criteria by which it is evaluated, namely, price, ability to perform on schedule, bonding capability, and the several other factors discussed earlier in section 85/110.53, "Competition." Contracts that the GC enters into with its subcontractors usually contain the same basic elements as the GC's contract with the owners.

.07 Subcontractors normally submit a monthly requisition, which is included in the GC's requisition. The subcontractor is usually only paid after the GC receives payment from the owner.

Labor

.08 The control of direct labor cost will enhance the profitability of the contract. The contractor must consider the estimated time to complete each task and the associated cost of personnel. The projected costs include potential increases, wages, payroll taxes, workers' compensation, and union benefits. The ability of the contractor to control direct labor hours and minimize overtime will help to increase profits.

.09 To maintain productive labor relations, management must plan the deployment of workers properly and provide adequate supervision. Reports comparing the budget with actual performance for each phase of the project will help in planning and supervision. Management must also comply with union rules and labor regulations.

Contract Management

.10 The owner or developer negotiates and enters into a contract with the GC. The contract will require that construction conform to the plans and specifications and may also establish requirements in the following areas:

- *Insurance.* Coverage includes builder's risk, liability, and workers' compensation, and the amount required for each type of policy is usually specified.
- *Bonding*. The amount of the performance bond and the minimum rating of the insurance company providing the bond may be specified.
- Starting and completion dates. The time frame that satisfies both parties must be specific.
- Liquidating damages. The damages for any delays in completing the contract are normally set as a daily dollar amount for each day the project is incomplete after the specified completion date. The timely completion of the project is usually critical to the owner since delays may affect leases with tenants, interest rates on financing, or the date when permanent financing begins.
- *Incentives*. A bonus may be paid to the contractor for completing the project before the scheduled completion date. An incentive is most frequently used when a tenant is willing to move in upon completion of the project.
- Schedule of values. The owner, GC, and financing source agree to a schedule of values. The schedule is a detailed breakdown of each component of the project with a value for each component.

¶ 85/115.10

- *Retainages.* The contract usually specifies the amount of each requisition to be retained or held back by the owner to ensure that the contractor will complete the project, pay all subcontractors, and meet any other obligations. Retainages usually range from 5 percent to 10 percent of each requisition and are held until the owner is satisfied that the project is complete. On large construction projects, the amount of retainage may be reduced as the project nears completion (for example, from 10 percent to 5 percent).
- Other requirements may include minority participation, union labor, nonunion labor with prevailing union wages, or nonunion labor and restrictions on daily starting or ending times, noise, and other elements.

Requisition Procedures

.11 Requisitions are prepared by the contractor for submission to the owner, normally once per month. In preparing the requisition, the GC indicates the percentage of each phase completed and computes the total funds earned on each phase of the contract, the total value of the contract earned to date, and the total value completed for the month (the total value to date less the total value completed as of the prior requisition). The GC requisitions payment for the work completed for the month less any retainage to be held by the owner.

.12 It is imperative that the GC receive requisitions from each subcontractor currently working on the project for inclusion in the requisition. Failure by a subcontractor to submit a timely requisition may delay the GC's requisition, which, in turn, would delay payment for all parties involved in the contract. However, the requisition may be prepared without a subcontractor's amount, resulting in the subcontractor having to wait until the following month to submit its requisition. In addition to being timely, all subcontractors and the GC must complete the requisition accurately because any errors in the requisition may delay payment.

.13 Requisitions normally must be approved by the project architect or consulting engineer. This independent review assures the owner and financial institution that the work for which funds are being requested has been performed.

.14 Usually, each subcontractor and supplier of significant material is requested to sign a partial lien release when paid each month. This release signifies that the subcontractor or material supplier has been paid to date according to its contract for all work requisitioned. The lien release prevents the supplier or subcontractor from claiming it has not been paid and attempting to place a lien on the property for nonpayment.

Change Orders

.15 Projects rarely are constructed without some change to the contract's original plans and specifications. A change order may be requested by the owner, contractor, or architect during the construction process. The change order may be necessary because of—

a. A change of specified materials to be used.

- b. Conditions that affect construction but that were not anticipated, such as differences in soil type or a requirement for dewatering during excavation.
- c. Additions or deletions to construction, such as the building size being changed.
- d. Delays in construction that are not the fault of the contractor, such as architectural working drawings not being available in time or the inability of developers to obtain all permits.

.16 Change orders that may be required are normally discussed during the course of the construction process and usually must be agreed to by the owner, architect, and the contractor. It is important that change orders be in writing, and approved by all parties prior to any work being performed relating to the change order.

Planning

.17 The primary attribute of a successful GC is the ability to plan and supervise construction activity. The planning process involves coordinating the scheduling of labor and subcontractors and the acquisition of materials used during the construction project. The contractor must determine for which portions of the project its own labor force will be used, where subcontractors will be utilized, from whom the materials in the projects will be purchased, and what delivery dates are required.

.18 Contractors often use the Critical Path Method (CPM) for planning and scheduling a project. With this method, all activities are diagrammed to form a network that will show the longest irreducible sequence of activities, allowing the GC to determine the minimum time in which a project can be completed.

Materials

.19 The architect's specifications may stipulate not only the materials but also the grades and manufacturers. The GC must determine whether it or the subcontractor is responsible for supplying the materials for each phase of the project. If the contractor is responsible, it must purchase sufficient quantities at the best price and have the material delivered according to schedule. Late delivery of material may delay the project and result in a significant loss of time and money.

Management

.20 Effective management is a key aspect of the success of any construction project. Many GCs are functioning as construction managers and using subcontractors for all construction activities. It is the responsibility of management to coordinate and supervise all labor and

subcontractors on the project; to meet with owners, architects, and engineers to review the status of construction; to negotiate change orders to the contract and the pricing of change orders; and so forth.

Accounting Methods

.21 Primarily, the two methods of accounting available for long-term contracts are the completed contract method and the percentage of completion method. The two methods used for income tax purposes are the accrual and the cash basis methods.

.22 Basic Accounting Policy for Contracts. The choice between the two generally accepted methods of accounting for contracts—the completed contract method and the percentage of completion method—is a basic decision for construction contractors.¹

.23 Completed contract method. The contractor reports the gross income from a long-term contract. All expenses and costs allocable to the contract are deducted only when it is finally completed and accepted.

.24 *Percentage of completion method.* Gross income is recognized on a long-term contract as equal to the total revenue expected from the contract multiplied by the percentage of the contract completed to date. The percentage of completion is determined by dividing the costs incurred to date by the total estimated costs of the contract.

.25 Accounting Methods Acceptable for Income Tax Purposes. Contractors are not ordinarily required to use the same method of accounting for both financial reporting and tax purposes, but they should be familiar with both the financial reporting and tax effects of a choice of a method for income tax purposes.²

.26 Accrual basis method. Revenue is recognized on short-term contracts if invoices are actually billed. Costs and expenses are recognized as incurred.

.27 *Cash basis method.* Revenue is recognized on short-term contracts when payment is actually received; costs and expenses are recognized when invoices are paid.

85/120 AREAS OF BUSINESS RISK

.01 GCs are exposed to a variety of risks associated with both the operation of their business

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¹ The circumstances in which the percentage of completion and the completed contract methods are deemed to be preferable are discussed in the AICPA Audit and Accounting Guide *Construction Contractors* (New York: AICPA, 1994), product number 012092.

² The accounting methods acceptable for income tax purposes are discussed further in the AICPA Audit and Accounting Guide *Construction Contractors* (New York: AICPA, 1994), product number 012092.

and each individual contract. These risks include the bankruptcy of the project owner, inadequate financing, nonperformance of subcontractors, labor strikes or other labor problems, and problems related to materials, weather, and regulations.

Bankruptcy of Project Owner

.02 The bankruptcy of the owner of the project during construction may result in the contractor not receiving payment for outstanding requisitions and retainages, and may stop construction activity. Furthermore, the contractor may have to continue to incur significant overhead costs directly related to both the project and general corporate operations that cannot be reduced. The contractor needs to perform a due diligence review of the project owner to determine if sufficient funds are available to fund the project.

Construction Financing

.03 The GC needs to ascertain that the project is properly financed before incurring any significant costs. If the owner does not have adequate construction financing and equity, the project may run out of funds to pay the GC before completion.

Contractor's Financing

.04 The GC's inability to meet payroll or subcontractor and material payments will have an adverse impact on not only the construction project but also the contractor's business reputation. The contractor should ensure that sufficient cash flow is available from operations or bank financing to fund the project costs and all corporate activities.

Nonperformance of Subcontractors

.05 The bankruptcy or nonperformance of a subcontractor may result in construction delays and additional costs to perform the subcontracted work. The GC is responsible for finding a replacement subcontractor who may, in turn, charge more than the original subcontractor. In addition, the delay in replacing the subcontractor and the usual difficulty and expense in taking over work already started may cause a loss of income to the GC. GCs should consider requiring performance bonds for subcontractors who have significant contracts on the project or who supply a very specialized trade that may be difficult to replace in a reasonable time.

Materials

.06 A delay in delivery of construction materials, or the delivery of defective materials, may delay construction or may require the purchase of replacement materials at a higher price.

Labor

.07 The GC's ability to control direct labor on the project will affect the profitability of the contract. To maintain control, the GC needs to compare the total labor hours of each phase or task of the project with the budget and the percentage of the task completed to date. It is also important to ensure that each task is being worked on by appropriate personnel. For example, using a carpenter to do a laborer's work not only is expensive but also may violate union rules. A strike called by one or more labor unions on a project may result in construction delays and higher labor costs. The GC must be careful to comply with all labor rules and regulations.

Weather

.08 Adverse weather conditions can delay construction activity. There may be an adverse impact on the productivity of the personnel working on the project.

Regulations

.09 The contractor must adhere to the various building, safety, and environmental regulations relating to the project. These regulations affect building permits, Occupational Safety and Health Act requirements, and environmental concerns (for example, asbestos, and groundwater contamination). In addition, there may be Federal regulations that address wage rates and benefits on government construction projects such as the Davis-Bacon Act.

85/125 PERFORMANCE MEASURES

.01 The performance of a contract is normally measured by comparing the costs incurred to date with the total estimated costs, considering the actual percentage of completion to date. Each contract is normally divided into several phases that can be subdivided further. The early detection of a phase that is going over budget is critical to the success of the contract. Early detection gives management time to take corrective action. If the problem is not discovered until the phase is complete or substantially complete, little or nothing can be done to correct the situation.

.02 Cost overruns occur primarily in the areas of direct labor and materials. The cost of subcontractors is normally fixed by contract. The subcontractors can also have cost overruns.

.03 Labor budgets are normally expressed in both hours and dollars. Actual performance can be measured in terms of each. To determine the performance status of a project before a phase is complete, it is necessary to estimate the percentage of each phase completed. It is possible to be on budget in labor hours but over budget in labor dollars for several reasons. Labor costs may be higher than projected because more skilled personnel may be performing the work, or wage increases that were not anticipated have become effective.

.04 Material budgets are often expressed in both dollars and units of measure (for example, cubic yards of concrete, tons of steel, board feet of lumber). The units of measure represent the quantity of material expected to be used on the phase of the project. An accurate budget projection requires reliable estimates of both quantity and price. In a number of contracts, reasonable estimates of the quantity of certain materials (for example, yards of gravel to be used in the site work) may not be possible. Consequently, a material allowance is provided and the contractor agrees to be paid a price per unit of material.

.05 A contractor that regularly builds similar kinds of projects normally develops labor and material standards for selected phases of the project from past experience. These standards assist in the preparation of estimates for contracts.

85/130 TYPICAL ENGAGEMENT OPPORTUNITIES

Developing a Labor Cost System

.01 GCs have various alternatives for deploying labor in each phase of a project. As discussed earlier in section 85/110.11, "Methods of Operation," each alternative has certain risks and rewards. Subcontractors, the cost of whose work is fixed, can be used, thereby minimizing the risks to the GC. The GC can also elect to use its own labor force for some or all of the construction activity. The use of its own labor force presents certain risks in being able to complete the work either at or under budget. Therefore, the planning, control, and analysis of labor costs on a construction contract are vital to the success of a GC.

.02 Engagement Objectives. The objectives of an engagement to develop a labor cost system are to—

- Determine and quantify budgeted amounts.
- Capture actual costs accurately and in a timely way.
- Determine whether costs are frequently over or under budget.
- Forecast the final cost of the labor phase of the contract.

.03 The system should enable management to determine the current status of the contract and allow for early corrective action to maximize the profitability of the contract.

.04 Engagement Activities. To assist the client in developing a labor cost system, the practitioner establishes the objectives and guidelines for the system. To do this, the practitioner needs to gain a thorough understanding of the client's construction activity, the typical projects, the phases of a contract for which the contractor uses its own labor force, and any expected changes in the methods of operations. The system must be flexible enough to provide for not only the current number of job phases, but also the future requirements. The analysis of labor costs requires that budgeted labor costs, actual labor costs, and the percentage of the project completed be input into the system.

.05 Budgeted time and costs. Upon being awarded a construction contract, the contractor determines the phases of the job for which it intends to use its own labor force. The phases of the job should be clearly identified as distinct portions to be completed. The total budgeted hours and dollars of each phase are input into the system.

.06 Actual time and costs. The actual labor hours and dollars are to be input into the system weekly and will be updated to determine total hours and dollars of each phase of the contract expended to date.

.07 *Percentage completed.* To analyze the relationship of budgeted to actual amounts incurred to date while the phase is in process, the percentage of completion of the phase must be determined. The percentage completed is normally computed or estimated by the job superintendent, job foreman, or a project manager.

.08 Labor analysis. With the budgeted and actual amounts and the estimated percentage of completion, each labor phase of a job can be analyzed to determine whether it is over or under budget and what may be required to maximize profits on the contract. The analysis should be of both labor hours and dollars since the relationship may not be directly proportional. For example, a job phase may be exactly on budget in hours but over budget in dollars. This is normally due to the use of employees who are better paid than anticipated or the incurrence of overtime hours.

.09 Engagement Benefits. The primary benefit of a labor cost system is to provide the client with a system and structure to monitor performance and undertake corrective action when necessary. It enables a GC to properly monitor and control the areas of a construction project that have the most risks and provides a mechanism for predicting profitability and managing resources.

Equipment Decisions: Lease or Purchase

.10 The GC must often decide whether to lease or purchase certain construction equipment or whether to simply rent the equipment on a daily, weekly, or monthly basis.

.11 Engagement Objective. The objective of this kind of engagement is to determine the most cost effective method of acquiring the use of equipment on a project.

.12 Engagement Activities. The practitioner can assist the client in estimating the cost of purchasing and operating the equipment including the costs of financing, insurance, repairs and maintenance, gas and oil, depreciation, and other operating expenses. The client must also be concerned with the amount of additional debt incurred as a result of the purchase because this may have an impact on its bonding requirements and capacity.

.13 The cost of leasing the equipment under a long-term lease or lease purchase would also be computed. The practitioner, in reviewing a proposed lease, must determine whether the lessor or lessee is responsible for taxes, insurance, and certain maintenance expenses.

.14 The practitioner can also assist in analyzing the costs of renting the equipment on a jobby-job basis. This analysis involves estimating the number of days the equipment will be used, the optimum rental period (day, week, month), and the operating expenses of the equipment.

.15 The kind of equipment under review is significant. The practitioner considers whether the equipment is very specialized and required for a current job but not normally required for most construction contracts undertaken, or whether the equipment is used for most of the work that the contractor performs.

.16 The impact of a lease (and types of lease) or purchase on the company's cash flow is another factor to be considered. A lease purchase of equipment may reduce the contractor's working capital.

.17 The CPA practitioner can assist the client in preparing detailed procedures for compiling the necessary data, and determining the manner in which the data will be analyzed and decisions made.

.18 Engagement Benefits. The primary benefit of an engagement to analyze the advantages of leasing or purchasing equipment is that it will help the contractor select the most cost-effective method of acquiring equipment, thereby helping to increase the profitability of jobs and maintain the financial health of the company.

Cash Flow Planning

.19 A GC's method of operations or business philosophy has a significant impact on its cash flow requirements. A contractor that subcontracts substantially all of its construction activity typically does not have job-related cash flow problems since it pays subcontractors only after it receives payment from the property owner. In addition, retainages are normally withheld from subcontractors to correspond with retainages withheld by the owners from the general contractor.

.20 Engagement Objectives. The primary objectives of this type of an engagement are to determine the projected annual cash flow of the company and the cash flow on specific contracts and to recommend corrective measures, if required.

.21 Engagement Issues. GCs that utilize their own labor force and are responsible for material purchases require cash flow planning on a job-by-job basis and a total company operating basis. Payroll and related fringe benefits are paid weekly, and material invoices are normally due thirty days after delivery. Typically, the GC requisitions funds at the end of each month but may not be paid by the owner for thirty days. Consequently, the GC must be able to fund at least sixty days of job costs and expenses for each job it undertakes.

.22 The GC's cash flow is also affected by the retainage withheld by the project owner and the amount of construction activity undertaken at any time. Proper cash flow planning will assist the contractor in determining potential cash flow problems and in addressing them in advance by using working capital lines of credit or by securing additional capital. An alternative to addressing projected cash flow problems is to change the method of operations on one or more

jobs from providing labor and materials to using subcontractors. Although this alternative may reduce profits, it may be the only way that the contractor can successfully complete each contract.

.23 Engagement Benefits. The primary benefit of a cash flow planning engagement is that it provides the client with a thorough understanding of the impact of projected operations, including specific construction projects, on cash flow and the action that can be taken to provide sufficient cash flow to operate the company.

Automating Construction Firm Systems

.24 Automated systems can help a construction firm respond to pressures to expand service levels, reduce costs, and meet scheduled dates. In today's competitive environment, a contractor's profitability, and even survival, depend on its ability to respond effectively to these pressures. However, automation has a significant impact on a firm's operations, clients, and suppliers. For example, automation introduces new procedures and methods to employees and affects inventory transactions with suppliers. In addition, the majority of the computer system requirements are defined by the contractor/client relationship.

.25 To respond to the pressures caused by rapid changes and competition in the construction industry, firms are seeking better ways to control costs and manage projects. Clearly, efficient project management and labor cost control give construction firms an advantage over their competitors. Consequently, contractors are constantly evaluating new equipment, materials, methods, structures, financing alternatives, and operating policies.

.26 Engagement Objectives. The primary objective of this kind of engagement is to develop an accounting system that is efficient and under proper internal control and provides financial and management information necessary to control job costs, company operations, and cash flow.

.27 Engagement Issues. The increased use of information technology brought with it a greater need for security and job segregation. Construction company software provides a highly integrated system that allows the simultaneous posting of information to several journals and records. Hence, a single computer operator or bookkeeper can manage the information that, under a manual system, may have been assigned to more than one person. An integrated system helps to ensure accuracy and contain labor costs, but it also introduces the risk of gaps in internal control. To prevent serious gaps, the construction firm needs to establish proper accounting controls and segregation of duties. The practitioner may wish to list the examination of internal controls in a computer environment as a separate item in the engagement letter and bill accordingly.

.28 The nature of the construction industry requires that all costs incurred on each job be accumulated accurately. Because of its importance, the job cost system is one of the first applications that is automated for a construction firm. The job cost system can be integrated with other accounting applications, which include the following:

• Payroll and labor distribution

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- Accounts payable and purchasing-committed costs
- Billing and accounts receivable
- Inventory management
- General ledger
- Construction equipment accounting control
- Labor productivity control
- Overhead

.29 Several checklists that may be useful in an engagement to automate a construction firm are provided in exhibit 85B-6 in appendix 85/B.

.30 Other major applications are associated with project development, management, and design. They include scheduling, estimating, design, and other applications associated with the day-to-day administrative activities of construction firms. A more detailed discussion of computer applications in construction firms is provided in Consulting Services Practice Aid 92-5, *Automating Small and Medium Sized Businesses in Selected Industries* (New York: AICPA, 1992).

.31 Engagement Benefits. The primary benefit of an engagement of this type is the development of an accounting system that will provide management with the job cost data, accounting and financial management information, and cash flow data necessary to operate the business.

Workers' Compensation Review

.32 Labor cost is normally a significant factor in the total cost of a construction project. The kinds of labor classification on a project may include supervision, rough and finished carpentry, roofing, excavation, and other categories. The contractor may subcontract some sections of a job rather than use its own labor force.

.33 The cost of labor includes regular and overtime wages, payroll taxes, union benefits, and worker's compensation insurance. Worker's compensation can be a significant expense for a contractor depending upon the kind of work performed and the contractor's injury-loss experience.

.34 Engagement Objective. The objective of a workers' compensation review is to minimize workers compensation expense by—

a. Determining the proper classification for all employees.

- b. Determining that all subcontractors have workers' compensation insurance.
- c. Reviewing losses and loss control data from the insurance company to determine their accuracy.
- d. Determining whether the state in which the company does business has a policy of providing credits against premiums if special safety programs are established.

.35 Engagement Activities. The practitioner can assist construction clients in a variety of ways to minimize worker's compensation premiums. In certain specialties—for example, steelworkers and roofers—it is not uncommon for workers' compensation premiums to be 50 percent or more of direct labor costs. The practitioner can assist the client in establishing procedures for ensuring that all employees are properly placed in categories with the lowest premiums.

.36 If a subcontractor working for a GC does not have proper workers' compensation insurance, the GC may be held responsible for the payment of premiums on the subcontractor's wages. The practitioner can assist management in developing a system to ensure that subcontractors have properly documented their insurance coverage.

.37 Insurance companies provide their contractor clients with loss control reports that list all workers who have had claims paid or funds reserved for potential claims against the contractor's account. The practitioner can assist management in reviewing the report to ensure accuracy and to discuss the potential reserve accounts with the insurance company to make certain that the reserves are at the lowest possible levels.

.38 The practitioner can also assist a client in developing a loss management program which may include the following:

- A safety program with a structured and measurable approach that focuses all levels of the organization on the issue of safety (the establishment of a safety committee would be part of the program.)
- A post-injury response system for uniform handling of workers' compensation claims, which assists injured workers in obtaining appropriate medical care and identifies opportunities to bring the worker back to work as soon as medically possible

.39 Engagement Benefits. The benefits of this kind of an engagement are the reduction of workers' compensation premiums, a system to ensure that future premiums are as low as possible and that all data is accurate, and an effective safety program.

APPENDIX 85/A

INDUSTRY INFORMATION SOURCES

The following are sources of information about the construction industry. The practitioner may also find it useful to refer to trade associations or local chambers of commerce and to the bibliography at the end of this practice aid for additional guidance.

American Institute of Architects 1735 New York Avenue, NW Washington, DC 20006

American Institute of Constructors 20 South Front Street Columbus, OH 43215

Associated General Contractors of America 1957 E Street, NW Washington, DC 20006

Construction Financial Management Association 40 Brunswick Avenue, Suite 202 Edison, NJ 08818

Construction Management Association of America 7918 Jones Branch Drive, Suite 540 McLean, VA 22102

Mechanical Contractors Association of America 1385 Pickard Drive Rockville, MD 30832

National Association of Women in Construction 327 South Adams Street Fort Worth, TX 76104

National Construction Software Association 104 Wilmont Road, Suite 201 Deerfield, IL 60015

National Institute of Building Sciences 1201 L Street, NW Washington, DC 20005

Professional Construction Estimators Association of America P.O. Box 11626 Charlotte, NC 28220-1626

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Professional Women in Construction 342 Madison Avenue, Suite 453 New York, NY 10173

The AICPA conducts the following seminar related to the construction industry:

Contractors' Tax Accounting Problems

Level: Intermediate Length: One day Recommended CPE credit: Eight hours

APPENDIX 85/B

ILLUSTRATIVE ENGAGEMENT FORMS AND CHECKLISTS

Exhibit 85B-1

| Consulting Engagement Acquisition Control Form | | | | | |
|--|-------------|--|--|--|--|
| Prospective Client Data | | | | | |
| Name | | | | | |
| Address | | | | | |
| | (street) | | | | |
| (city) | (state) | (zip code) | | | |
| Nature of business | | | | | |
| | | | | | |
| □ New Client | | | | | |
| □ Current or previous client for: | | | | | |
| ☐ Audit | Compilation | 🗆 Tax | | | |
| □ Consulting services (nature of work) | | | | | |
| Other (describe) | | ······································ | | | |
| Partner(s) for above | | | | | |
| | | | | | |
| | | | | | |
| Initial Contact Data | | | | | |
| Contact's position | | ······································ | | | |
| Contact partner or staff member | | | | | |
| Date of contact | Location | | | | |
| Brief description of contact | | ······ | | | |
| - | | | | | |
| | | | | | |
| Acquisition partner | | Date assigned | | | |
| Principal contact if different | | Date assigned | | | |
| | | | | | |
| Initial Assessment | | | | | |
| Nature and scope of potential consulting engage | gement | | | | |
| | | | | | |
| | | | | | |
| The first of an and the first of the first o | | ~ | | | |
| Evaluation of engagement probability | | _ % | | | |
| | | - | | | |
| | | | | | |

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| Consulting Engagement Acquisition Control Checklist* | | | | |
|--|-----------------------|--|--|--|
| | Enter check or N/A | | | |
| 1. Partner(s) advised and potential engagement discussed, if for a current client | | | | |
| 2. Background of prospective consulting services reviewed, including any firm files and reports | | | | |
| 3. Industry data for prospective client researched | | | | |
| 4. Preliminary survey performed if required | | | | |
| 5. Engagement scope and objectives determined | | | | |
| 6. Engagement file initiated | | | | |
| 7. Preliminary findings reviewed with client partner or equivalent if for current client | | | | |
| 8. Acceptability determined if for new client | | | | |
| 9. Engagement benefits anticipated by prospective client evaluated, and limitations communicated | | | | |
| 10. Firm competence to perform engagement evaluated and validated | | | | |
| 11. Preliminary engagement plan developed | | | | |
| 12. Oral proposal (if any) communicated to client | | | | |
| 13. Oral proposal documented in file | | | | |
| 14. Written proposal (if any) cleared with appropriate partner(s) and counsel and delivered to client | | | | |
| Date checklist completed | - | | | |
| Signature | _ | | | |
| Date of oral or written proposal to prospective client | - | | | |
| * Note: Support documents, if any, are attached | | | | |

Management Consulting Services Engagements— Client Background

Part I Client: _____ Engagement Date: _____ **INSTRUCTIONS** This form should be completed for all prospective clients for which management consulting services are to be performed. The data on the form should be reviewed as a basis for initially accepting the client. The form should be updated and reviewed periodically as a basis for understanding the requirements and policies and for accepting or rejecting new clients. Client's Legal Name:_____ Address: Phone:_____ Federal Tax I.D. No: State Tax I.D. No.: COMPANY ORGANIZATION AND PERSONNEL Describe the nature of client's business 1. 2. Identify the type of entity for example, corporation, limited liability corporation or partnership, proprietorship, partnership, S Corporation, or nonprofit:

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| Contract construction | | | |
|--------------------------------------|----------------------------|--------------------------|--------------------------|
| Other | | | |
| What basis of accounting is used? | | | |
| Contracts | | <u>Yes</u> | <u>No</u> |
| Completed contract method | | | |
| Percentage of completion me | | | |
| Tax | | | |
| Accrual basis method | | | |
| Cash basis method | | | |
| Describe any significant or unusua | l accounting policies. | | |
| List key owners, officers, and dire | ctors of the client: | | |
| <u>Name</u> | Percentage <u>Owned</u> | <u>Position</u> | Famil <u>Relation</u> |
| | | | |
| Identify any related businesses or i | ndividuals: | | |
| <u>Name</u> | _ | <u>Nature of Relatio</u> | nship |
| | | | |
| | | | |
8. Identify and describe the responsibilities and experience of officers and accounting personnel.

| | <u>Name</u> | <u>Responsibilities</u> | <u>Experiences</u> |
|-----|--|--|---------------------------------------|
| | | | |
| | | | |
| | | | |
| 9. | Describe the locations at which the of employees at each location. | client does business and the nature | of the activities and number |
| | | | · · · · · · · · · · · · · · · · · · · |
| 10. | Describe any affiliated company re | elationships. | |
| | | | |
| 11. | Describe any relationships with ma | ijor customers or vendors. | |
| | | | |
| 12. | Describe the company's sources of | f revenues and marketing methods. | |
| | - <u>-</u> | ······································ | |
| 13. | State the name(s) of third parties co and integrity. | ontacted concerning management's | reputation, attitude, ability, |
| | | | |

FINANCING

14. Identify the client's CPA firm.

| Nam | ne: | | |
|------|--|---|-------------------------------------|
| Add | ress: | | |
| Cont | tact person: | | |
| 15. | Describe the client's relationshi | ps with financial institutions: | |
| | <u>Name</u> | Type of A/C's or Loans | Account Executive |
| | | | |
| 16. | Obtain copies of agreements for | r permanent file. | |
| 17. | Describe major sources of shore | t- and long-term financing. | |
| 18. | Describe the stock option, comp Describe any convertible debt covenants. | pensation, or repurchase plan. features, compensating balanc | e requirements, or restrictive debt |
| | | | |

ACCOUNTING SYSTEM RECORDS AND PROCEDURES

Describe method of processing records (manual, write-it-once, microcomputer, service bureau, 20. etc.). Cash receipts journal: Cash disbursements journal:_____ Petty cash journal: Contract revenues journal: Sales journal: Contract billings journal: Purchases journal: Payroll journal and records: **Subsidiary ledgers** Contract receivables: Other receivables: Accounts payable: Inventory:_____

| Fixed assets | : |
|----------------------------|---|
| Insurance: | |
| Contract cos | its: |
| Payroll: | |
| Subcontracto | DIS: |
| Other (descr | -ibe): |
| Revenues an Customer or | mbering, method of filing, etc.). nd Collections Cycle rder form: |
| Shipping rep | ort: |
| Construction | 1 contracts: |
| Change orde | er form: |
| | |
| Sales invoic | e: |

| Credit memo: |
|--|
| Cash receipts prelist: |
| Remittance advices: |
| Deposit slip: |
| Contract progress billing documents: |
| Other (describe): |
| Acquisitions and Payments Cycle Purchase order form: |
| Receiving report: |
| Vendor invoice: |
| Bank checks: |
| Contract estimating and bidding documents: |
| Other (describe): |

22.

| Payroll and Personnel Cycle | |
|-----------------------------|--|
| Employee | personnel records and files (describe): |
| | |
| | |
| Time card | s: |
| Other (des | scribe): |
| | |
| | |
| Constructi administra | on contract management reports (describe reports, documents and forms used for project ition and evaluation and for construction site accounting and control): |
| | ······································ |
| | |
| Describe a | accounting system procedures by major transaction cycle. |
| Revenues | and Collections Cycle |
| <u>Authoriza</u> | tion |
| a. | Describe the contract cost estimating and bidding process and documents used by the client. |

- b. How is a construction contract authorized?_____
- c. Which personnel are involved with authorizing a contract and what are their responsibilities?

| d. | If there are other sales transactions, how are they authorized; how is the authorization |
|----|--|
| | evidenced; which personnel are involved with the authorization and what are their |
| | responsibilities? |
| | |

Initiation

| a. | Describe the procedures and documents used to generate progress billings on contracts |
|----|---|
| | in process |

| b. | If there are other sales transactions, how are they initiated and documented; which |
|----|---|
| | personnel are involved with the initiation and what are their responsibilities? |

c. How are cash collections received?_____

d. What documents are used to evidence cash collections?_____

e. Which personnel are involved with cash collections and what are their responsibilities?

| f. | Who makes bank deposits and how often are they made? |
|--------|---|
| | How are credits to customers' accounts initiated? |
| | |
| h. | What documents are used to evidence credits to customers' accounts? |
| i. | Which personnel are involved with initiating credits to customers' accounts and whare their responsibilities? |
| | Ikeeping |
| | |
| b. | Which personnel record the construction contract revenue journal and how often a entries prepared? |
| | |
| | |

c. If there are other sales transactions, how are they recorded (include description of source journals); which personnel record the transactions and how often are entries prepared?

| d. | How are cash receipts transactions recorded? |
|--------|--|
| | · · |
| e. | Describe the source journals used to record cash collections |
| | |
| f. | Which personnel record transactions in the cash collections source journal and h often are entries prepared? |
| | |
| egu | arding and Accountability |
| a. | How are revenues, collections and receivables balanced summarized for individ customers? |
| | |
| | |
| b. | Which personnel are involved with the summarization of revenues and collections a what are their responsibilities? |

| с. — | How often are contract billings mailed? |
|----------------|---|
| | |
| d. | How often are customers' statements mailed? |
| | |
| e. | How are revenues and collections transactions posted to the general ledger and how often is it done? |
| | |
| | Which personnel reconcile general ledger receivables balances with summaries of balances for individual customers and how often is it done? |
| | |
| g. | How often are receivables aged and reviewed by the owner or manager? |
| <u> </u> | |
| usiti | ons and Payments Cycle |
| <u>A</u> a. | uthorization How are the purchases transactions authorized? |
| | |
| | |

b. What document or record is used to evidence purchases authorization?_____

c. Which personnel can authorize purchases?_____

Initiation

a. How is the purchases transaction initiated?_____

b. What document or record is used to evidence purchases initiation? (Which first evidences liability?_____

c. Which personnel are involved in initiating purchases and what are their responsibilities?

d. Who prepares checks, how many are prepared monthly, and how often are they prepared?_____

| Who signs checks and what documents are reviewed at the time of signing? |
|---|
| |
| What procedures prevent duplicate payments? |
| |
| cordkeeping |
| How are purchases transactions recorded? |
| |
| |
| Describe the source journal used to record purchases transactions. |
| |
| Which personnel record transactions in the purchases source journal and how often are entries prepared? |
| |
| Describe the source journal used to record disbursements |
| |
| |
| |

| <u>5a</u> | eguarding and Accountability |
|-----------|---|
| a. | How are purchases and disbursements summarized by vendor? |
| | |
| | |
| ŀ | Which personnel are involved in the summarization and what are their responsibilities |
| D. | which personnel are involved in the summarization and what are their responsionitie |
| | |
| | |
| | How are purchases and payments posted to the general ledger and how often is it do |
| с. | now are purchases and payments posted to the general redger and now often is it do |
| | |
| | |
| d. | Which personnel reconcile general ledger accounts payable balances with a summarization of purchases and disbursements by vendor? |
| | |
| | |
| e. | what kinds of documents or records are maintained to control inventory items? |
| | |

| f. | Whic | ch personnel are involved with the inventory recordkeeping? |
|----|--------------|--|
| g. | Whic | ch personnel have physical access to inventories? |
| | | |
| h. | How | often are physical counts of inventories made? |
| i. | What main | kinds of fixed asset records are maintained and who has responsibility for taining them? |
| j. | Cons • | truction contract payables and costs Describe the procedures and documents used to account the costs of materials, labor, equipment and overhead for individual contracts. |
| | • | Describe the procedures used to select subcontractors and to control payments on uncompleted contracts: |
| | | |

.

| | • | Describe the accounting and internal control procedures that are performed a construction sites |
|---------------|-------------|---|
| | | |
| yroll a | und F | Personnel Cycle |
| <u>A</u> | utho | rization |
| a. | . Ho | ow are employees hired and fired? |
| _ | | |
| b. | . WI | hat documents or records are used to evidence hiring or firing? |
| _ | | |
| с. | . vv | hat personnel are involved with hiring and hiring and what are their responsibilitie |
| <u>Ir</u> | nitiat | ion |
| a. | . Ho | ow are hours worked by employees accounted for? |
| _ | | |
| b. | • W | hat document or record is used to evidence hours worked? |
| | <u>_</u> | |
| | | |

| c. | Which personnel approve hours worked and how is the approval evidenced? |
|-----------------|---|
| | How are rates of pay, withholding, and deductions established or changed? |
| e. | Which personnel are involved in payroll computations and what are their responsibilities? |
| <u>Re</u> a. | cordkeeping How are payroll transactions recorded? |
| b. | Describe the source journal used to record payroll transactions |
| c. | Which personnel record transactions in the source journal and how often are entries prepared? |
| | |

Safeguarding and Accountability

| a. | What kinds of employee payroll records are maintained? |
|---------|---|
| | |
| b. | Which personnel are involved in preparing these records? |
| | |
| с. — | How often are paychecks distributed to employees? |
| | neral |
| a. | How is the general ledger posted and balanced and how often is it done? |
| b. | Which personnel post and balance the general ledger? |
| | |
| c. | Which personnel prepare and post adjusting journal entries? |
| | |

71 . .

| | it reconciled? |
|-------------|--|
| | |
| | e. How often are interim financial statements prepared and what information do the contain? |
| | f. What functions of internal check are performed by management that have not bee mentioned above? |
| | g. What hazard and fidelity insurance is carried by the company? |
| | |
| How Adeq | does management monitor the following: uacy of insurance coverage |
| Com | pliance with restrictive loan covenants and similar agreements |
| | |
| | |

Potential contract claims and back charges_____

24. Does management adequately exclude personal transactions from the business? (Describe any such personal transactions recorded in the business records.)

Describe the organization of management, accounting, and operations personnel below or attach an organization chart._____

Describe management's attitude and practices that may affect the risk of errors or irregularities in the financial statements. Consider such factors as deteriorating operations creating a need for additional financing, financial statement ratios influencing lenders' decisions, motivation of owner to reduce income taxes, and owner's history of taking unnecessary business risks.

In the case of an absentee owner, describe the manager's compensation method and whether it is reasonable._____

| List the education | accounting personnel, their positions and length of employment. Describe briefly n and experience, and evaluate their job performance |
|--------------------|--|
| | |
| | |
| Describe | the major operational or administrative problems. |
| | |
| | |
| | |
| Describe we may | any other significant engagement performance, accounting, or tax problems with be concerned. |
| <u></u> | |
| | |
| . <u></u> | |
| Describe | any statutes, laws, or regulations that have a direct effect on the entity's operation |
| | |

| | Part II | |
|--------------------|---------|--|
| | | |
| Client: | | |
| Engagement Date: . | | |

Overall Engagement Approach (describe any high risk-Yes-answers in a planning memorandum):

Management Integrity

| vialia | agement integrity | Yes | No | N/A |
|--------|--|-----|----|-----|
| 1. | Is there any reason to doubt the integrity of management (owners)? | | | |
| 2. | Is there difficulty in obtaining information from management or have responses been vague or evasive? | | | |
| 3. | Have there been comments by attorneys, bankers, creditors, or others having a business relationship with the potential client? | | | |
| 4. | Is there disagreement about consulting engagement procedures or similarly significant matters raising doubts about management's integrity? | | | |
| Enga | gement Performance Risk | | | |
| 1. | Are the client's needs beyond our capabilities or staffing abilities? | | | |
| 2. | Are we aware of any independence or conflicts of interest problems that may affect our ability to meet the client's needs? | | | |
| 3. | Are there high-risk factors related to the engagement that may affect our decision to accept the client (for example, high risk of litigation or unfavorable publicity)? | | | |
| 4. | Are we certain about collecting the fee? | | | |
| 5. | Will the combination of high costs with low service hinder our ability to make a profit in this engagement? | | | |
| 6. | Will the firm's internal standards on profitability be impacted by the client's firm size? | | | |

For any "Yes" answers, explain how we plan to mitigate the problem (for example, by assigning more experienced personnel to the engagement, obtaining outside consultants, obtaining a retainer from the client, etc.).

| Acceptance Decision: | | |
|------------------------------|----|--|
| Yes | No | |
| Engagement Partner: Date: | | |
| Concurring Partner: | | |
| | | |

Exhibit 85B-3

Checklist of Personnel and Personnel Policies Planning

PLANNING AND PROCUREMENT

1. What are the short-range and long-range needs in every job classification?

| Job Classification | <u>Needs</u> |
|--------------------|--------------|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

2. What sources can be used to attract qualified candidates for these positions?

| | | <u>Yes</u> | <u>No</u> | <u>N/A</u> |
|----|--|------------|-----------|------------|
| | Internal Search firms Labor unions Advertising State and federal employment services Other (for example, referrals) | | | |
| 3. | What interviewing and selection process should be | used? | | |
| | Application forms Testing Interview process Assessment centers | | | |
| 4. | What department makes these decisions? | | | |
| | Department with opening Human resources More than one department | | | |

| | | <u>Yes</u> | <u>No</u> | <u>N/A</u> |
|----|--|-------------------|-----------|------------|
| 5. | Will any of the following investigations be made a | t or before hirin | ıg? | |
| | Credit check Reference check Credential verification | | | |
| TE | MPORARY AND PART-TIME EMPLOYEES | | | |
| 1. | Should temporary or part-time employees be used | at all? | | |
| | Temporary Part-time | | | |
| 2. | If they are used, what is done about the following | ? | | |
| | Compensation levels Benefits Training Supervision Relations with other employees | | | |

COMPLIANCE WITH GOVERNMENT REGULATIONS

1. Are pertinent documentation and records maintained to comply with the following?

| | Fair Labor Standards Act | | | |
|----|---|---------------------------------------|-------------------------|------------|
| | Age Discrimination in Employment Act | | | |
| | Title VII of the Civil Rights Act of 1964 | | | |
| | Age Discrimination in Employment Act of 1967 | | | |
| | Executive Order No. 112466 | - <u></u> | | |
| | for Government Contractors | | | |
| | Public Contractors | | | |
| | Federal Insurance Contributions Act | | <u> </u> | |
| | Other payroll tax acts | | · · · · · · · · · · · · | |
| | Employee Retirement Income Security Act of | | | anian - an |
| | 1977 (ERISA) | | | |
| | Occupational Health and Safety | | | |
| | Administration (OSHA) | | | |
| | American with Disabilities Act of 1990 | | | |
| | Civil Rights Act of 1991 | | | |
| | Family and Medical Leave Act of 1993 | | | |
| | Tunniy and moundar Douve rist of 1995 | <u> </u> | | |
| 2. | Is there a company policy on the following? | | | |
| | Discrimination | | | |
| | Sexual harassment | | | |
| | Affirmative action | · · · · · · · · · · · · · · · · · · · | | |
| | Equal Employment Opportunity (EEO) complaints | | | |
| | Equal Employment Opportunity (EEO) complaints | | | |

| | | <u>Yes</u> | <u>No</u> | <u>N/A</u> |
|-----|---|----------------|-----------------|------------|
| COI | MPENSATION | | | |
| 1. | Are policies set for job evaluation and pricing? Description Evaluation Pay grades Merit increases Promotional increases General increases | | | |
| 2. | Are employee benefits policies appropriate and following? | clear, and are | costs evaluated | for the |
| | Social Security Vacation Medical insurance Dental insurance Life insurance Sick leave Pension benefits Leave of absence Rest periods Counseling Transportation Parking | | | |
| | raikilig | | | |

DEVELOPMENT AND TRAINING

1. Are programs designed to use the human resources of the contractors in the most efficient and effective manner possible? These programs should include consideration of the following:

| Organization structure Training | | |
|--|------|----------|
| On-the-job/in-house programs Evaluation | | <u> </u> |
| Characteristics of the evaluation | | |
| Planned Relevant | | |
| Objective Verifiable | | |
| Continuous | | |
| Quantitative | | |
| Cost effective | | |

| PER | RFORMANCE APPRAISALS | <u>Yes</u> | <u>No</u> | <u>N/A</u> |
|-----|---|------------|-----------|------------|
| 1. | Are performance appraisals appropriate? | | | |
| | Include in the design the steps that make the appraisal understandable to both the supervisor and employee | | | |
| | Clarify accountability and objectives | | | |
| | Provide analysis of the rating system | •••••••• | | |
| | Avoid evaluation pitfalls such as the following: Allowing one event to prejudice evaluation Allowing a recent event to change general | | | |
| | Being too lenient or too harsh | | | |
| | Letting past record affect current evaluation | | | <u></u> |
| 2. | Are employees part of evaluation system? | | | |
| | Right to review and discuss Implementation of future goals or measures | | | |

LABOR RELATIONS

| 1. | Does management | understand | the labor | union and i | ts procedures | regarding the | e following? |
|----|-----------------|------------|-----------|-------------|---------------|---------------|--------------|
| | | | | | | | |

| | Work rules Discipline Grievances Exit interviews | | |
|-----|---|---|------|
| 2. | Does contractor have procedure for negotiations with the union? | | |
| | Objections—short- and long-term Qualitative programs Adequate labor law representation | | |
| SAJ | FETY AND SECURITY | | |
| 1. | Does the contractor have a clear OSHA program to address the following? | · | |
| | Safety records Filings Safety awareness and training Injury frequency Accident investigations | | |

| | | <u>Yes</u> | <u>No</u> | <u>N/A</u> |
|----|---|-------------------|-----------|------------|
| 2. | Has a security program been designed that include | des the following | ;: | |
| | Pre-employment screening | | | |
| | Physical security | | | |
| | Employee identification | | | |
| | Asset control | | | |
| | Sensitive information control | | | |
| | Fire prevention | | | |
| | Investigation | | | |
| | Systems backup | | | |
| | | | | |

Checklist of Documents for Negotiating Interim Financing

| | | <u>Yes</u> | <u>No</u> | <u>N/A</u> |
|-----|---|------------|-----------|------------|
| 1. | Acceptable permanent financing commitment | | | |
| 2. | Project cost analysis | | | |
| 3. | Appraisal of project on "when completed" basis | | | |
| 4. | Principals' endorsement | | | |
| 5. | Title guarantee policy showing merchantable title to include loan disbursement guarantee | | | |
| 6. | Survey of entire property with location of improvements (meaning, buildings, easements, utilities, parking facilities, streets, building lines) | | | |
| 7. | Permanent or short-term mortgage loan papers and other documentation required under loan commitment | | | |
| 8. | Adequate hazard insurance with mortgage clause attached in favor of lender, plus adequate public liability insurance | | | |
| 9. | Sworn detailed construction statement setting forth all general and subcontracts, and the amount of each | | | |
| 10. | Construction contract and assignment thereof | | | |
| 11. | Completion of performance contract bond including labor and material coverage AIA form with dual obligee rider | | | |

| | | <u>Yes</u> | <u>No</u> | <u>N/A</u> |
|-----|--|------------|-----------|------------|
| 12. | Certification by the architect, general contractor, owner, and bank's inspecting engineer that construction is proceeding in accordance with plans and specifications approved by permanent lender | | | |
| 13. | Undisbursed loan balance is sufficient to complete the project | | | |

Checklist to Evaluate Acceptability of Contracts

The following checklist does not address all the issues that may arise concerning a contract. However, it does cover the typical considerations for determining a contract's acceptability.

| | | <u>Yes</u> | <u>No</u> | <u>N/A</u> |
|-----|--|------------|-----------|------------|
| 1. | The language of the contract documents is understandable in every respect. | | | |
| 2. | Questions about possible ambiguities are resolved with the owner's engineer in advance of the bid. | | | |
| 3. | The duties and responsibility of the owner and his engineer, as well as the contractor, are well defined and equitable. | | | |
| 4. | The indemnification required is usual and reasonable. | | | |
| 5. | Excessive financial investment by the contractor is not required. | | | |
| 6. | The specified contract time is sufficient for normal speed of production. | | | |
| 7. | Penalties or liquidated damages provisions are reasonable. | | | |
| 8. | Equitable extensions of contract time are provided for delays beyond the contractor's control. | | | |
| 9. | All rights-of-ways and easements are provided by the owner. | | | |
| 10. | Extra costs of suspending the work at the direction of the owner or his engineer are compensable. | | | |

| | | <u>Yes</u> | <u>No</u> | <u>N/A</u> |
|-----|--|------------|-----------|------------|
| 11. | Provisions for paying for extra work or changed work are equitable. | | | |
| 12. | Provision is made for adjusting the contract price for unforeseen, unknown, and unusual conditions not contemplated by the parties, such as subsurface conditions. | | | |
| 13. | Escalation due to increases in costs of labor and materials can be made a matter of adjustments in payments under the contract. | | | |
| 14. | A fair means of handling disputes about contract matters is provided to permit appeals to higher authority, arbitration, and so forth. | | | |
| 15. | The technical specifications are practicable and understandable. | | | |
| 16. | The construction designs and contract drawings are practicable and complete. | | | |
| 17. | The schedule of bid items includes all work necessary to produce the completed works. | | | |
| 18. | The contractor is not expected to absorb the cost of items omitted or overlooked that would be required to produce a completed job. | | · | |
| 19. | The owner has made all necessary arrangements with utility and transportation companies and public bodies for the necessary interruption of their services or use of their rights of way, public roads, or waterways. | | | |
| 20. | The funding or means of financing the project is adequate. | | | |
| 21. | Advance payments can be obtained to cover plant and move-in costs and for the cost of materials when delivered to the job site. | | | |
| | ··· ··· J··· ···· | | | |

Checklist for Construction Firm Automation Engagements

Checklist of Accounts Receivable Features

| <u>Features</u> | <u>Required</u> | <u>Desired</u> | <u>No Need</u> | <u>Notes</u> |
|---------------------------|-----------------|----------------|----------------|---------------------------------------|
| Billing basis | | | | |
| Percent complete | | | | |
| Time and materials | | | | |
| Draw requests | | <u></u> | | · · · · · · · · · · · · · · · · · · · |
| Fixed bid | | | | |
| Direct labor | | | | |
| Fixed bid | | | | |
| Recurring bills | | | | |
| Change orders | | | | |
| C | | | | |
| Retainage | | | | |
| Separate retainage record | | | | |
| Tracks by invoice | | | | |
| J | | | | |
| Draw sheets | | | | |
| | | | | |
| Reports | | | | |
| Billing history by job | | | | |
| Trial balance by job | | | | |
| Progress billings | | | | |
| | | | | |

Checklist of Job Cost Features

| <u>Features</u> | <u>Required</u> | <u>Desired</u> | <u>No Need</u> | <u>Notes</u> |
|---------------------------|-----------------|----------------|----------------|--------------|
| Job file information | | | | |
| Status | | | | |
| Category | | | <u></u> | |
| Retainage code | | | ····· | |
| Workers' Compensation | | | | |
| Name | | | | |
| Contract | | | | |
| Estimator | | | | |
| Project manager | <u></u> | | | |
| Foreman | <u></u> _ | | | |
| Start date | | | | |
| Estimated completion date | | | | |
| Actual completion date | | | <u></u> | |
| | | | | |
| Phase | | | | |
| Description | | | | |
| Status | <u></u> | <u> </u> | | <u></u> |
| Percent complete | | | | |
| Unit of measure | | <u> </u> | | |
| Start date | | | | |
| Completion date | | | | |
| | | | | |
| Contract data | | | | |
| Original amount | · | | | |
| Contract date | | | ····· | |
| Change orders amount | <u> </u> | | | |
| Current billing | | | | |
| Ich numbering scheme | | | | |
| Numeric only | | | | |
| Alphanumeric | | | | |
| Alphanumente | | <u> </u> | | |
| Total job costs | | | | |
| Estimated | | | | |
| Actual | | | | |
| | | | | |
| Job costs types per phase | | | | |
| Labor | | | | |
| Material | | | | |
| Equipment | | | | |
| Subcontractor | | | | |
| General | | | | |
| Miscellaneous | | | | |
| | | | | |

| <u>Features</u> | <u>Required</u> | <u>Desired</u> | <u>No Need</u> | <u>Notes</u> |
|--------------------------------------|-----------------|--|--|--|
| Percentage of completion calculation | | | | |
| JOD Tabaan tabaan | <u> </u> | ······································ | | |
| Job and phase | | | | |
| Job, phase, and cost type | | <u> </u> | | |
| Budget variance calculation | | | · | |
| Job history by budget | | | | |
| Job | | | | |
| Job class | | <u></u> | | |
| Customer | | | ····· | · |
| Project manager | <u> </u> | | | · · · · · · · · · · · · · · · · · · · |
| State taxing authority | | | | |
| State taxing autionity | | | | |
| Labor costs | | | | |
| Unit estimates | | | | |
| Cost estimates | | | | ······································ |
| Unit actual | | ······ | | |
| Cost actual | | | | |
| Variance | | ······ | | |
| Job and phase | •••••• | | | |
| Markup percentage or | <u> </u> | | | |
| amount | | | | |
| uniouni | | | | |
| Material costs | | | | |
| Cost estimates | | | | |
| Unit estimates | | | · | |
| Actual costs | | 61 | | and the second |
| Actual units | | ······ | | |
| Variance cost to date | | | | |
| Job and phase | | | | |
| Markup percentage or | | ····· | | |
| amount | | | | |
| | | | | |
| Subcontractor detail report | | | | |
| Original cost | | | | |
| Current budget | | | | |
| Date | | | e | |
| Units | | | | |
| Amount | | | | |
| Description | | | ************************************** | |
| Retainage due | | | | |

Checklist of Accounts Payable Features

| <u>Features</u> | <u>Required</u> | <u>Desired</u> | <u>No Need</u> | <u>Notes</u> |
|-------------------------|-----------------|----------------|--|--------------|
| Subcontractor control | | | | |
| Contract amount | | | | |
| Amount billed | | | | |
| Amount retained | | <u></u> | <u></u> | |
| Amount paid Balance | | | | <u></u> |
| Workers' Compensation | | | | |
| certificate | | | | |
| Change orders | | | | |
| Detention | | | | |
| Percent computation | | | | |
| Flat-amount computation | | <u></u> | and the second s | |
| | <u></u> | | | |
| Draw requests | | | | |
| 1099s | | | | <u></u> |

Checklist of Payroll Features

| <u>Features</u> | <u>Required</u> | <u>Desired</u> | <u>No Need</u> | <u>Notes</u> |
|------------------------------------|-----------------|----------------|----------------|--------------|
| Time-card input By job | | | | |
| By type of skill | | | | |
| By employee | | | | |
| By employee and job | | | | |
| By day | | | | |
| Multicosts/billing rates per job | | | | |
| Multibilling rates per employee | | | | |
| Earnings distributions to— | | | | |
| Unions | | | | |
| Departments | | | | |
| Rates | | | | |
| Job and phases | | | | |
| Day (certified) | | | | |
GLOSSARY

Back charges. Billings for work performed or costs incurred by one party that, in accordance with the agreement, should have been performed or incurred by the party to whom billed. Owners bill back charges to general contractors, and general contractors bill back charges to subcontractors. Examples of back charges include charges for cleanup work and charges for a subcontractor's use of a general contractor's equipment.

Backlog. The amount of revenue that a contractor expects to be realized from work to be performed on uncompleted contracts, including new contractual agreements on which work has not begun.

Bid. A formal offer by a contractor in accordance with specifications for a project to do all or a phase of the work at a certain price in accordance with the terms and conditions stated in the offer.

Bid bond. A form of bid security executed by the bidder as principal and by a surety. See also **surety bond**.

Bid security. Funds or a *bid bond* submitted with a bid as a guarantee to the recipient of the bid that the contractor, if awarded the contract, will execute the contract in accordance with the bidding requirements and the contract document.

Bid shopping. A practice by which contractors, both before and after their bids are submitted, attempt to obtain prices from potential subcontractors and material suppliers that are lower than the contractors' original estimates on which their bids are based or, after a contract is awarded, seek to induce subcontractors to reduce the subcontract price included in the bid.

Bidding requirements. The procedures and conditions for the submission of bids. The requirements are included in documents such as the notice to bidders, advertisement for bids, instructions to bidders, invitations to bid, and sample bid forms.

Bonding capacity. The total dollar value of construction bonds that a surety will underwrite for a contractor, based on the surety's predetermination of the overall volume of work that the contractor can handle.

Bonding company. A company authorized to issue *bid bonds*, *performance bonds*, *labor*, and *material bonds*, or other types of surety bonds.

Bonus clause. A provision in a construction contract that provides for payments to the contractor in excess of the basic contract price as a reward for meeting or exceeding various contract stipulations, such as the contract completion date or the capacity, quality, or cost of the project.

Broker. A party that obtains and accepts responsibility as a *general contractor* for the overall performance of a contract but enters into subcontracts with others for the performance of virtually all construction work required under the contract.

Builder's risk insurance. Insurance coverage on a construction project during construction, including extended coverage that may be added for the contractor's protection or required by the contract for the customer's protection.

Building codes. The regulations of governmental bodies specifying the construction standards that buildings in a jurisdiction must meet.

Building equipment. Machinery and equipment permanently installed in a building, as distinct from equipment and construction equipment.

Building permit. An official document issued by a governing body for the construction of a specified project in accordance with drawings and specifications approved by the governing body.

Change order. An order issued in writing by a designer or owner to a contractor, according to the terms and conditions of the construction contract, to change some part of the work or some other part of the contract, such as the contract schedule. The change order may result in a change in the contract sum and the contract time, depending on the substance and purpose of the change order. It is also known as a *modification* in AIA Document A201 and as a *variation* in some countries.

Claims. Amounts in excess of the agreed contract price that a contractor seeks to collect from customers or others for customer-caused delays, errors in specifications and designs, unapproved change orders, or other causes of unanticipated costs.

Completed and accepted. A procedure relating to the time for closing jobs for tax purposes under the completed-contract method of accounting that allows closing a job when construction is physically completed and the customer has formally accepted the project as defined in the contract.

Completion bond. A document providing assurance to the customer and the financial institution that the contractor will complete the work under the contract and that funds will be provided for the completion.

Conceptual estimate. An estimate of construction costs made from the designer's preliminary sketches and outline specification usually by a quantity surveyor or other cost consultant.

Construction equipment. Mobile machinery used in the performance of construction work, such as a bulldozer.

Construction loan. Interim financing for the development and construction of real property.

Construction manager. A corporate or individual person appointed by an owner or project manager as an agent to work with the owner's designer in the design of construction work, to arrange the necessary construction contracts, and to manage the several contractors to ensure that the project is completed within the scheduled time and the budget according to the terms and conditions of a contract between the construction manager and the owner or project manager.

Contract bond. An approved form of security executed by a contractor and surety for the execution of the contract and all supplemental agreements, including the payment of all debts relating to the construction of the project.

Contract cost breakdown. An itemized schedule prepared by the contractor after the receipt of a contract showing in detail the elements and phases of the project and the cost of each element and phase.

Contract documents. The drawings, specifications, conditions, agreement, and other documents prepared by the designer that illustrate and describe the work of the contract and the terms and conditions under which it shall be done and paid for, and which should contain nothing that is not in the bidding documents except by agreement between the owner and the contractor. These documents in the first instance are bidding documents and later are identified and listed in the contract agreement.

Contract item (pay item). An element of work, specifically described in a contract, for which the contract provides either a unit or lump-sum price.

Contract overrun (underrun). The amount by which the original contract price, as adjusted by **change** orders, differs from the total cost of a project at completion.

Contract payment bond. The security furnished by the contractor to guarantee payment for labor and materials obtained in the performance of the contract. See also **payment labor and materials bond**.

Contract performance bond. The security furnished by the contractor to guarantee the completion of the work on a project in accordance with the terms of the contract. See **performance bond**.

Contract sum. The sum of money paid by an owner to his contractor usually in installments for construction work done according to the terms and conditions of the construction contract. In stipulated (lump) sum contracts, the contract sum is explicit in the agreement but subject to modification according to changes and other terms and conditions of the contract. In some other kinds of contracts (for example, cost plus fee), the contract sum is only implicit and is not known until the work is completed and the costs are all accounted for.

Contractor. A party to a construction contract who does construction work for an owner (the other party) and who often has one or many subcontracts with subcontractors to do part of the work.

Contractor's estimate. As distinct from a designer's estimate, an estimate of construction costs made on the basis of more or less complete design information, experiential information, and measured quantities of work, generally used as a basis for a bid.

Cost-plus-fee contract. A construction contract in which the owner agrees to pay the contractor all the actual direct costs of the work (the direct, reimbursable costs), usually monthly plus a fee for the indirect costs of the work (the indirect, nonreimbursable costs). The fee is usually either a stipulated amount paid in installments and prorated with the actual costs, or a stipulated percentage of the actual costs. Generally, this kind of contract is made because the owner/designer is unable to provide bidders with more design information about the work required and therefore the owner is unable to obtain a construction contract with less risk, such as a lump-sum contract.

Critical path method (CPM). A method of planning and scheduling a project by diagraming activities in a critical path network to determine the longest irreducible sequence of activities that represents the minimum time in which the project could possibly be completed. The longest irreducible sequence of activities is known as the critical path.

Direct costs (of work). Those costs of work generally classified as labor costs, material costs, plant and equipment costs, and job overhead costs, all of which are directly attributable to a specific construction job.

Division (of a specification). One of the sixteen standard divisions of construction work in the Uniform Construction Index. Divisions are divided into nonstandard sections according to the nature and extent of work specified to facilitate the production and use of the specifications. The sixteen standard divisions of work are the following:

Division 1—General Requirements Division 2—Sitework Division 3—Concrete Division 4—Masonry Division 5—Metals Division 6—Wood and Plastics Division 7—Thermal and Moisture Protection Division 8—Doors and Windows Division 9—Finishes

Division 10—Specialties Division 11—Equipment Division 12—Furnishings Division 13—Special Construction Division 14—Conveying Systems Division 15—Mechanical Division 16—Electrical

Draw request. A request usually made by a subcontractor for partial payment for work performed as part of a yet uncompleted project.

Equipment. Mobile machinery used in the performance of construction work such as a bulldozer. Equipment is sometimes referred to as **construction equipment** to distinguish it from machinery and equipment installed in a building.

Estimate. A contractor's prediction of the cost to complete a given construction task. The total estimate for the job includes costs, direct costs, and profit margin.

Escalation clause. A contract provision that provides for adjustments of the price of specific items as conditions change. An example is a provision that requires wage rates to be determined on the basis of wage levels established in agreements with labor unions.

Estimated cost to complete. The anticipated additional cost of materials, labor, and other items required to complete a project at a scheduled time.

Extras (customer's extras). Additional work, not included in the original plan, requested of a contractor that will be billed separately and will not alter the original contract amount.

Feasibility study. A study of the economic feasibility of a real estate development usually based on a conceptual estimate of the development and construction costs, available resources and finances, estimated revenue income, taxes, and rates of investment returns.

Final acceptance. The customer's acceptance of the project from the contractor on certification by an architect or engineer that the project is completed in accordance with contract requirements. The customer confirms final acceptance by making final payment under the contract unless the time for making the final payment is otherwise stipulated.

Final inspection. The final review of the project by an architect or engineer before issuance of the final certificate for payment.

Front-end loading. A procedure under which **progress billings** are accelerated in relation to costs incurred by assigning higher values to contract portions that will be completed in the early stages of a contract than to those portions that will be completed in the later stages so that cash receipts from the project during the early stages will be higher than they otherwise would be.

General condition items. A popular term to describe items that are part of the job overhead costs of construction and are often required by the general conditions of a construction contract (for example, a **performance bond**).

General contractor. A contractor who enters into a contract with the owner of a project for the construction of a project and who takes full responsibility for its completion, although the contractor may enter into a subcontract with others for the performance of specific parts or phases of the project.

General requirements. Temporary facilities and services and other such requirements for work provided by a contractor, which, because of their general nature, are related to the work as a whole rather than to specific items of work.

Incentives. See bonus clause and penalty clause.

Indirect labor costs. Those labor costs paid by an employer on an employee's behalf for such things as medical and workers compensation insurance, social security, pensions, vacations, and so forth.

Joint venture. An entity owned, operated, and jointly controlled by a small group of participants as a separate and specific business or project for the mutual benefit of the participants, including arrangements in pooling equipment, bonding, financing, and sharing skills (such as engineering, design, and construction).

Labor costs. That part of the total costs of work expended on labor dependent upon the labor rates paid for workmen and upon their productivity, including both direct and indirect labor costs.

Letter agreement (letter of agreement). A letter stating the terms of an agreement between addressor and addressee, usually prepared for signature by the addressee as indication of acceptance of those terms as legally binding.

Letter of intent. A letter signifying an intention to enter into a formal agreement and usually setting forth the general terms of such an agreement.

Lien. A charge against a project for satisfaction of unpaid debts on work performed or materials supplied.

Lien release. A document stating that materials and services furnished to a project have been paid for.

Lien waiver. An instrument by which a person or organization that has or may have a right of mechanics or materials lien against the property, or against another property, relinquishes such right.

Liquidated damages. Money damages payable to an owner for damages suffered through late completion of construction by a contractor. Money damages are settled in advance and included in the construction contract agreement. They are distinct from a penalty for late completion or from damages subsequently obtained through legal action.

Loss contract. A contract on which the estimated cost to complete exceeds the contract price.

Maintenance bond. A document, given by the contractor to the owner, guaranteeing to rectify defects in workmanship or materials for a specified time following completion of the project. A one-year bond is normally included in the performance bond.

Maximum cost-plus-fee contract. A construction contract that is basically the same as a cost-plus-fee contract except that the contractor agrees to complete the work at a total cost not greater than the maximum cost stipulated in the contract. Such a contract often contains a sharing-clause whereby the contractor shares in any savings made by completing the work at an actual cost less than the stipulated maximum cost.

Mechanics lien. A lien on real property, created by statute in many areas, in favor of persons supplying labor or materials for a building or structure, for the value of labor or materials supplied by them. In some jurisdictions, a mechanics lien also exists for the value of professional services. Clear title to the property cannot be obtained until the claim for the labor, materials, or professional services is settled. Timely filing is essential to support the encumbrance, and prescribed filing dates vary by jurisdiction. See waiver of lien.

Negotiated contract. A contract for construction developed through negotiation of plans, specifications, terms, and conditions without competitive bidding.

Owner. The first party to a construction contract, who pays the contractor (the other party) for the construction work; the party who owns rights to the land upon which construction work is done and who, therefore, owns the project; the client of a designer, of a construction manager, a project manager, or of a development manager.

Payment (labor and materials) bond. A bond executed by a contractor to protect suppliers of labor, materials, and supplies to a construction project.

Penalty. As distinct from liquidated damages a monetary penalty payable to an owner for late completion of construction work by a contractor. The penalty has been agreed to and included in the construction contract agreement, irrespective of actual damages suffered by the owner because of late completion. The penalty is often balanced in an agreement by a bonus for early completion of work.

Performance bond. A bond given to an owner by a surety company on behalf of a contractor to guarantee proper performance of the construction contract.

Prequalification. The written approval of an agency seeking bids on a project that authorizes a contractor to submit a bid on the project in circumstances in which bidders are required to meet certain standards.

Prime contract. A contract between an owner of a project and a contractor for the completion of all or a portion of a project under which the contractor takes full responsibility for its completion. See also general contractor.

Progress (in advance) billing. Amounts billed, in accordance with the provisions of a contract, on the basis of progress to date under the contract.

Punch list. A list made near the completion of work indicating items to be furnished or work to be performed by the contractor or subcontractor in order to complete the work as specified in the contract.

Quantity surveyor. A person who surveys the quantity of materials to be used in construction work.

Quantity takeoffs. An itemized list of the quantities of materials and labor required for a project, with each item priced and extended, which is used in preparing a bid on the project.

Retentions. Amounts withheld from progress billings until final and satisfactory project completion.

Schedule of values. A written breakdown, or analysis, of a contract sum, usually required of a contractor in a stipulated-sum contract prior to the first application for payment, for checking and subsequent approval by the designer. The schedule of values is the basis for all subsequent applications for payment by the contractor. It usually shows the several and various parts of the work to be done, the name of the contractors and subcontractors who will perform each part of the work, and the value of each part of the work totalling the contract sum.

Small tools. As distinct from plant and construction equipment, generally are hand tools and other relatively small items of equipment provided by a contractor (other than those provided by tradesmen themselves). They are usually allowed for in an estimate of costs as a proportion of the labor costs as determined by cost accounting.

Specifications (specs). A written description of the materials and workmanship required on a project (as shown by related working drawings), including standard and special provisions related to the quantities and qualities of materials to be furnished under the contract.

Stipulated-sum contract. A contract in which the contractor agrees to do the work and perform the contract for a stipulated sum and in which the contractor usually has several subcontractors.

Stop order. A formal notification to a contractor to discontinue some or all work on a project for reasons such as safety violations, defective materials or workmanship, or cancellations of the contract.

Subcontract. A contract between the *prime contractor* and another contractor or supplier to perform specified work or to supply specified materials in accordance with plans and specifications for the project.

Subcontractor. A party to a subcontract who does construction work for a contractor; one who is defined as such by a prime construction contract between an owner and a contractor.

Subcontractor bond. A bond executed by a subcontractor and given to the *prime contractor* to assure the subcontractor's performance on the subcontract, including the payment for all labor and materials required for the subcontract.

Substantial completion. The point at which the major work on a contract is completed and only insignificant costs and potential risks remain. Revenue from a contract is recognized under the completed-contract method when the contract is substantially completed.

Surety. See also bonding company.

Surety bond. Noninsurance transfer under which a person called a *surety* guarantees that another person, called a *principal*, will carry out some express obligation to some third person called an *obligee*.

Supplier. One who supplies materials (products) for construction work and who is not a subcontractor as defined in the prime contract between the owner and contractor.

Supply bond. A bond given to guarantee proper and timely delivery of materials (products).

Takeoff. Measurement of construction work from drawings.

Turnkey project. A project for which a contractor undertakes under contract to deliver a fully operational and tested facility before being entitled to payment.

Unbalanced bid. A bid proposal under which the contract price is allocated to phases or items in the contract on a basis other than that of cost plus overhead and profit for each bid item or phase. A common practice is to *front-end* loan a bid proposal to obtain working capital to finance the project. Another form of unbalanced bid on *unit-price* contract assigns higher profits to types of work for which the quantities are most likely to be increased during the performance of the contract.

Unit price contract. A contract in which unit prices for specific items of work are stipulated by bidders for the approximate quantities of those items provided in the document the actual quantities of work done are then measured and priced at the contract's unit prices as the basis for payment to the contractor.

Waiver of lien. An instrument by which the holder of a mechanics or materials lien against property formally relinquishes that right.

Warranty (maintenance) period. A specified period, which is normally indicated in the contract, after the completion and acceptance of a project, during which a contractor is required to provide maintenance construction, and for which the contractor is required to post a *maintenance bond*.

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