PART

II

Accounting for Financial Resources

In this section we look at how to account for the company's financial resources. Accounting for these resources is built around a company's accounting system. This section includes the following chapters:

- ❑ Chapter 2: Construction Accounting Systems
- ❑ Chapter 3: Accounting Transactions
- ❑ Chapter 4: More Construction Accounting
- ❑ Chapter 5: Depreciation
- ❑ Chapter 6: Analysis of Financial Statements

CHAPTER

2

Construction Accounting Systems

In this chapter you will be introduced to the structure of construction financial statements, including the different ledgers used by construction accounting systems. You will also learn the difference between accounting systems that are used for cost reporting and systems that are used for controlling costs, as well as the different accounting methods available to construction companies. Because of the unique characteristics of construction companies, there are some key differences between accounting systems and financial statements for the construction industry and other industries. Before you can understand how to read construction company financial statements or understand how construction costs are tracked and managed, you must understand how construction accounting systems operate.

Construction accounting systems include the software, hardware, and personnel necessary to operate a construction accounting system. Construction accounting systems serve four purposes.

First, the accounting system processes the cash receipts (collecting payments) and disbursements (paying bills) for the company. The accounting system should ensure that revenues are billed and collected in a timely fashion and that timely payments are made only for bona fide expenses incurred by the company. Failure to collect revenues or careless payment of bills can quickly deplete the cash reserves of a company and, if left unchecked, can bankrupt a company.

Second, the accounting system collects and reports the data needed to prepare company financial statements that are used to report the financial status of the company to shareholders and lending institutions. These reports are needed to assure shareholders and lending institutions that the company is solvent and is managing its financial assets in a wise manner.

Third, the accounting system collects and reports the data needed to prepare income taxes, employment taxes, and other documents required by the

government. Failure to pay taxes and file other required documents—such as W-2s and 1099s—on time results in the assessment of penalties.

And, finally, the accounting system collects and provides the data needed to manage the finances of the company, including data for the company as a whole, each project, and each piece of heavy equipment. To successfully manage the company's financial resources, the accounting system must provide this data quickly enough for management to analyze the data and make corrections in a timely manner. Accounting systems that fail to do this are simply reporting costs.

Cost Reporting versus Cost Control

Cost reporting is where the accounting system provides management with the accounting data after the opportunity has passed for management to respond to and correct the problems indicated by the data. When companies wait to enter the cost of their purchases until the bills are received, management does not know if they are under or over budget until the bills are entered, at which time the materials purchased have been delivered to the project and may have been consumed. The extreme case of cost reporting is where companies only look at the costs and profit for each project after the project is finished. Cost reporting is typified by the accounting reports showing where a company has been financially without giving management an opportunity to proactively respond to the data.

Cost control is where the accounting system provides management with the accounting data in time for management to analyze the data and make corrections in a timely manner. Companies that enter material purchase orders and subcontracts, along with their associated costs, into their accounting system as committed costs before issuing the purchase order or subcontract allow management time to address cost overruns before ordering the materials or work. Committed costs are those costs that the company has committed to pay and can be identified before a bill is received for the costs. For example, when a contractor signs a fixed-price subcontract he or she has committed to pay the subcontractor a fixed price once the work has been completed and, short of any change orders, knows what the work is going to cost. Accounting systems that track committed costs give management time to identify the cause of the overrun early on, identify possible solutions, and take corrective action. Cost control is typified by identifying problems early and giving management a chance to proactively address the problem. A lot of money can be saved by addressing pervasive problems—such as excessive waste—early in the project.

If a company's accounting system is going to allow management to control costs rather than just report costs, the accounting system must have the following key components:

First, the accounting system must have a strong job cost and equipment tracking system. The accounting system should update and report costs, including committed costs and estimated cost at completion on a weekly

basis. Having timely, up-to-date costs for the project and the equipment is a must if management is going to manage costs and identify problems early.

Second, the accounting system must utilize the principle of management by exception. It can be easy for managers to get lost in the volumes of data generated by the accounting system. The accounting system should provide reports that allow management to quickly identify problem areas and address the problems. For example, as soon as bills are entered into the accounting system, management should get a report detailing all bills that exceed the amount of their purchase order or subcontract. Problems that are buried in volumes of accounting data are often never addressed because management seldom has time to pour through all of the data to find the problems or if they are found they are often found too late for management to address the problem. Providing reports that flag transactions that fall outside the acceptable limits is a necessity if management is going to control costs. By having reports that flag items that fall outside acceptable limits, management can make addressing these items a priority.

Third, accounting procedures need to be established to ensure that things do not fall through the cracks. These procedures should include things such as who can issue purchase orders and what to do when a bill is received for a purchase order that has not been issued. The procedures should also identify the acceptable limits for different types of transactions. Procedures ensure that the accounting is handled in a consistent manner and give management confidence in the data that it is using to manage the company.

Finally, the data must be easily and quickly available to management and other employees who are directly responsible for controlling costs. It does little good to collect cost data for use in controlling costs if the data cannot be accessed. Where possible the reports should be automatically prepared by the accounting software. This eliminates the time and effort needed to prepare the reports manually. Additionally, frontline supervisors who are responsible for control costs should readily have access to their costs. Holding supervisors responsible for costs at the end of a job while not giving them access to their costs throughout the project denies them the opportunity to proactively control costs.

The accounting system for many construction companies consists of three different ledgers: the general ledger, the job cost ledger, and the equipment ledger. The general ledger tracks financial data for the entire company and is used to prepare the company's financial statements and income taxes. The job cost ledger is used to track the financial data for each of the construction projects. The equipment ledger is used to track financial data for heavy equipment and vehicles. All construction companies should have a general ledger and a job cost ledger. Companies with lots of heavy equipment or vehicles should have an equipment ledger.

The General Ledger

Like all other companies, construction company accounting systems have a general ledger. The general ledger consists of all of the accounts necessary to track the financial data needed to prepare the balance sheet, income statement, and income taxes. A chart of accounts lists all of the accounts in the general ledger. A sample chart of accounts is shown in Figure 2-1. In the chart of accounts, the accounts for the balance sheet are listed before the accounts for the income statement. In Figure 2-1, accounts 110 through 430 are used for the balance sheet and accounts 500 through 950 are used for the income statement. The accounts on the chart of accounts appear in the order they appear in on the balance sheet and income statement; however, not all accounts from the chart of accounts appear on the balance sheet or income statement because successive accounts may be rolled up into a summary account that appears on the balance sheet or income statement. Other items—such as profit—appear on the balance sheet and income statement that are not included in the chart of accounts because they are calculated from accounts on the chart of accounts. The way transactions are handled in the general ledger is based on the accounting method used by the construction company.

Method of Accounting

There are four methods of accounting available to construction companies. They are: cash, accrual, percentage of completion, and completed contract. The cash and accrual methods are two widely used accounting methods and are used in many industries. The percentage-of-completion and completed contract methods are used when companies enter long-term contracts, which are defined by the Internal Revenue Code as "any contract for the manufacture, building, installation, or construction of property if such contract is not completed within the taxable year in which such contract is entered into."[11] The key difference between these methods is how and when they recognize income, expenses, and profits. A construction company may use a different method of accounting when preparing its financial statements than it does when it is preparing its income taxes. Let's look at these accounting methods.

Cash

Cash is the easiest of the accounting methods to use. Revenue is recognized when the payment from the owner is received and expenses are recognized when bills are paid. Profit at any point equals the cash receipts less the cash disbursements. Because of the easiness of its use, it is often a favorite of small

[12]Title 26, Subtitle A, Chapter 1, Subchapter E, Part II, Subpart B, Section 460.

CHART OF ACCOUNTS

110 Cash
120 Accounts Receivable-Trade
121 Accounts Receivable-Retention
130 Inventory
140 Costs and Profits in Excess of Billings
150 Notes Receivable
160 Prepaid Expenses
199 Other Current Assets

210 Building and Land
220 Construction Equipment
230 Trucks and Autos
240 Office Equipment
250 Less Acc. Depreciation
260 Capital Leases
299 Other Assets

310 Accounts Payable-Trade
311 Accounts Payable-Retention
320 Billings in Excess of Costs and Profits
330 Notes Payable
340 Accrued Payroll
341 Accrued Payables
342 Accrued Taxes
343 Accrued Insurance
344 Accrued Vacation
350 Capital Leases Payable
360 Warranty Reserves
379 Other Current Liabilities
380 Long-Term Liabilities

410 Capital Stock
420 Retained Earnings
430 Current Period Net Income

500 Revenue

610 Materials
620 Labor
630 Subcontract
640 Equipment
650 Other

710 Rent and Lease Payments
720 Depreciation
730 Repairs and Maintenance
740 Fuel and Lubrication
750 Taxes, Licenses, and Insurance
798 Equipment Costs Charged to Employees
799 Equipment Costs Charged to Jobs

805 Advertising
806 Promotion
810 Car and Truck Expenses
811 Computer and Office Furniture
812 Repairs and Maintenance
819 Depreciation
820 Employee Wages and Salaries
821 Employee Benefits
822 Employee Retirement
823 Employee Recruiting
824 Employee Training
825 Employee Taxes
830 Insurance
835 Taxes and Licenses
840 Office Supplies
841 Office Purchase
842 Office Rent
843 Office Utilities
844 Postage and Delivery
845 Janitorial and Cleaning
846 Telephone
850 Charitable Contributions
855 Dues and Memberships
860 Publications and Subscriptions
865 Legal and Professional Services
870 Meals and Entertainment
875 Travel
880 Bank Fees
881 Interest Expense
885 Bad Debts
891 Unallocated Labor
892 Unallocated Materials
893 Warranty Expense
898 Miscellaneous
899 Overhead Charged to Jobs

910 Other Income
920 Other Expense
950 Income Tax

FIGURE 2-1 Chart of Accounts

construction companies. Another advantage of the cash method of accounting is that it can easily be used to defer income tax. For example, to decrease the company's tax liability for the year all the company has to do is to have any of the project's owners who are going to make payments during the last few weeks of the company's fiscal year hold the checks until the beginning of the next fiscal year. This moves the revenues from the current year into the next year, reduces the profit for the year, and thereby reduces the income tax liability for the year. The company can further reduce the profit by paying any bills that are due during the first few weeks of the next year on the last day of the current year. Regular "C" corporations whose average annual receipts for the last three taxable years are more than $5,000,000 may not use the cash method of accounting for income tax purposes.

The big disadvantage of the cash method is that financial statements based on the cash method are of little use for financial management because of the delay in recognizing revenue and expenses. Because of this, many financial institutions will not accept financial statements based on the cash accounting method. Construction companies that use the cash method of accounting for income tax purposes often use another accounting method for preparing financial statements for use in financial management.

Accrual

The accrual method tries to provide a more accurate financial picture by recognizing revenues when the company has the right to receive the revenues and by recognizing the expenses when the company is obligated to pay for the expenses, rather than when its cash flows occur. Revenues are usually recognized when the company bills the project's owners. Because the company does not have the right to receive the retention until the project is complete, the revenue associated with the retention is usually not recognized until the project is complete and the company has the right to receive the retention. Expenses are often recognized when the company receives a bill from the supplier or subcontractors. Because the accrual accounting method recognizes revenues and expenses before the revenues are received and the bills have been paid, financial statements prepared using the accrual method are more useful for financial management. Use of the accrual accounting method may also result in the payment of income taxes on revenues not received. Furthermore, companies that front-end load their contracts—put most or all of the profit at the beginning of the contract—may be paying income taxes on imaginary or unearned profits.

Percentage of Completion

The percentage-of-completion method requires construction companies to recognize revenues, expenses, and estimated profits on a construction project through the course of the project. Revenues are recognized when the company bills the project's owners. The revenue associated with the retention is recognized, along

with the revenues from the bill, unlike with the accrual accounting method, which allows the company to defer recognizing retention as revenue until it has the right to receive the retention. Expenses are recognized when the company receives a bill from the supplier or subcontractors. Under the percentage-of-completion method the estimated profits must be equally distributed over the entire project based on the expected cost of the project. Revenues, expenses, and the estimated profits are calculated based on the percentage of the project that is complete. For example, if the project were 40% complete a company would recognize 40% of the expected revenue, 40% of the expected costs, and 40% of the expected profit. At the completion of the project the construction company must look back over the life of the project and determine if income taxes were overpaid or underpaid for each tax year. For underpayments of income taxes the construction company must pay interest to the Internal Revenue Service on the amount underpaid in addition to paying the underpaid taxes. For overpayment the Internal Revenue Service must pay interest to the construction company on the overpayment in addition to refunding the overpaid taxes. Larger construction companies are required to allocate general overhead to the individual projects when using the percentage-of-completion method. The percentage-of-completion method provides the best picture of the company's financial situation.

Completed Contract

The completed contract method recognizes revenues and expenses at the completion of the project. The benefit of recognizing revenues and expenses at the completion of the project is that the revenues and expenses are known. Historically, speculative builders used the completed contract method because the contract amount was not known until the project was sold. The disadvantage of the completed contract method is that it creates large swings in income.

To get the best picture of a company's financial health, a construction company should use the method that best matches its costs to its revenues and profits. For most general contractors this is the percentage-of-completion method. For smaller companies the added cost and complexity of using the percentage-of-completion method may not be warranted and the company may use the cash method.

For tax purposes construction companies must use the percentage-of-completion accounting method for long-term contracts except for (1) contracts entered into by a construction company whose average annual receipts for the last three taxable years is less than $10,000,000 and who estimates that the contract can be completed within a two-year period beginning at the contract commencement date or (2) home construction contracts, including improvements to dwelling units and the construction of new dwelling units in buildings containing no more than four dwelling units. Because the income tax regulations are very complex and ever changing, it is a good idea for construction companies to employ the services of a certified public accountant when determining what method of accounting to use for financial and tax purposes.

The Balance Sheet

The balance sheet is a snapshot of a company's financial assets, liabilities, and the value of the company to its owner—often referred to as net worth or equity—at a specific point in time. Balance sheets are commonly prepared at the end of each month and at the end of the fiscal year. A typical balance sheet for a construction company using the percentage-of-completion accounting method is shown in Figure 2-2.

The balance sheet is divided into three sections: assets, liabilities, and owner's equity. The balance sheet reports the values of each of the accounts in the balance sheet portion of the chart of accounts at the time the balance sheet is printed. For example, the amount reported as cash on the balance sheet in Figure 2-2 comes from account number 110 from the chart of accounts shown in Figure 2-1. To prevent the balance sheet from becoming too complicated multiple accounts may be summarized by combining two or more consecutive accounts into a single line on the balance sheet. Other items on the balance sheet may be calculated from other lines on the balance sheet. For example, the Total Current Assets is the sum of the Cash, Accounts Receivable-Trade, Accounts Receivable-Retention, Costs and Profits in Excess of Billings, Notes Receivable, Prepaid Expenses, and Other Current Assets or accounts 110 through 199 on the chart of accounts in Figure 2-1. Not all companies will use all the accounts shown in Figure 2-1. For example, the construction company in Figure 2-2 does not use the inventory account.

On the balance sheet the relationship between assets, liabilities, and equity is as follows:

$$\text{Asset} = \text{Liabilities} + \text{Equity} \tag{2-1}$$

Assets

Assets are those resources held by the company that will probably lead to some future cash inflows. For example, a piece of property is an asset because it could be sold to produce a cash inflow. A pallet of custom framing brackets left over from a job would not be considered an asset unless there was a reasonable chance that the brackets could be used on a future job for which the company would be paid to build. Assets are divided into three broad categories: current assets, long-term assets, and other assets.

Current assets are the most liquid assets. Current assets are those assets that are expected to be converted to cash, exchanged, or consumed within one year. Common current assets include cash, accounts receivable, inventory, cost and profit in excess of billings, notes receivable, prepaid expenses, and other assets. Let's look at what would be included in each of these categories.

Cash: Cash includes demand deposits (such as savings and checking accounts), time deposits (such as certificates of deposits) with a maturity of one year or less, and petty cash.

BIG W CONSTRUCTION
BALANCE SHEET

	Current Year	Last Year
ASSETS		
CURRENT ASSETS		
Cash	200,492	144,254
Accounts Receivable-Trade	402,854	308,253
Accounts Receivable-Retention	25,365	21,885
Inventory	0	0
Costs and Profits in Excess of Billings	32,586	15,234
Notes Receivable	12,548	0
Prepaid Expenses	5,621	4,825
Other Current Assets	11,254	7,225
Total Current Assets	690,720	501,676
FIXED AND OTHER ASSETS		
Land	72,000	72,000
Buildings	103,862	103,862
Construction Equipment	95,284	95,284
Trucks and Autos	51,245	31,556
Office Equipment	56,896	42,546
Total Fixed Assets	379,287	345,248
Less Acc. Depreciation	224,512	182,990
Net Fixed Assets	154,775	162,258
Other Assets	178,544	171,256
Total Assets	1,024,039	835,190
LIABILITIES		
Current Liabilities		
Accounts Payable-Trade	325,458	228,585
Accounts Payable-Retention	22,546	18,254
Billings in Excess of Costs and Profits	5,218	11,562
Notes Payable	15,514	45,250
Accrued Payables	15,648	16,658
Accrued Taxes	10,521	8,254
Accrued Vacation	3,564	3,002
Capital Lease Payable	0	0
Warranty Reserves	0	0
Other Current Liabilities	25,438	35,648
Total Current Liabilities	423,907	367,213
Long-Term Liabilities	153,215	99,073
Total Liabilities	577,122	466,286
OWNER'S EQUITY		
Capital Stock	10,000	10,000
Retained Earnings	436,917	358,904
Current Period Net Income	0	0
Total Equity	446,917	368,904
Total Liabilities and Equity	1,024,039	835,190

FIGURE 2-2 Balance Sheet for Big W Construction

ACCOUNTS RECEIVABLE: Accounts receivable are invoices owed to the company that will likely be paid within one year and have not been formalized by a written promise to pay, such as a note receivable. For construction companies the monthly bills or draws to the owners of the construction projects constitute an account receivable until the bill is paid. When retention is held, it is common practice to divide the accounts receivable into two categories: accounts receivable-trade and accounts receivable-retention. The retention that is being held by the project's owner for which the company has not met the requirements for its release is recorded in the accounts receivable-retention category. The monthly bills—less retention—and retention for which the company has met the requirements for its release are recorded in the accounts receivable-trade category. This separation lets management quickly see which of the receivables are tied up in the form of retention, whose release is contingent on the completion of construction projects.

INVENTORY: Inventory includes materials that are available for sale or are available and expected to be incorporated into a construction project within the next year. Many construction companies have little or no inventory. Subcontractors are the most likely group of contractors to carry inventory.

COSTS AND PROFITS IN EXCESS OF BILLINGS: Costs and profits in excess of billings may also be referred to as costs and estimated earnings in excess of billings or underbillings. Construction companies using the percentage-of-completion accounting method are required to recognize the estimated profits on a construction project as the project is being completed rather than at the completion of the project. In these situations, the estimated profits must be equally distributed over the entire project based on the expected cost of the project. Costs and profits in excess of billings occur when the company bills less than the costs incurred plus the estimated profits or earnings associated with the completed work. If the billings are in excess of the costs and estimated profits, the difference is recorded as a liability under the billings in excess of costs and profits category. Costs and profits in excess of billings can be the result of cost overruns on the completed work or as a result of the profit not being equally spread over the items listed on the schedule of values. For companies using the completed contract accounting method, this category is replaced with a category entitled cost in excess of billings. For companies using the cash or accrual accounting method this category is not included on the financial statements.

NOTES RECEIVABLE: Notes receivable includes all invoices due to the company that will likely be paid within one year and have been formalized by a written promise to pay. Invoices, short-term loans, or advances to employees that have been formalized by a written promise to pay and are likely to be paid within a year are considered notes receivable.

PREPAID EXPENSES: Prepaid expenses are payments that have been made for future supplies and services. Examples of prepaid expenses include prepaid taxes, insurance premiums, rent, and deposits.

Other Current Assets: Other current assets are all current assets not recorded elsewhere.

Total Current Assets: Total current assets represent the total value of the current assets.

Fixed and other assets include assets with an expected useful life of more than one year at the time of their purchase. Fixed assets are recorded on the balance sheet at their purchase price and with the exception of land are depreciated for financial purposes. Fixed and other assets include fixed assets, accumulated depreciation, net fixed assets, and other assets. Let's look at what would be included in each of these categories.

Fixed Assets: On the balance sheet shown in Figure 2-2 the fixed assets have been broken down into the following categories: land, buildings, construction equipment, trucks and autos, and office equipment. Land and buildings include all real property (real estate) owned by the company. Construction equipment includes heavy construction equipment, such as excavators and dump trucks, and other depreciable construction tools, such as compressors. Trucks and autos include pickup trucks and automobiles used by office and field personnel. Office equipment includes all depreciable office equipment and furnishings such as desks and computers. These subcategories are then summed up to get the total fixed assets.

Accumulated Depreciation: The losses in value to date of the fixed assets are recorded as accumulated depreciation. The depreciation method used in financial statements may be different from the depreciation method used for tax purposes. The depreciation taken for a fixed asset may never exceed the purchase price of the asset. The accumulated depreciation account is a contra account because it is subtracted from another account.

Net Fixed Assets: The net fixed assets equals the total fixed assets less the accumulated depreciation. The net fixed assets is also known as the book values for all of the fixed assets or the value of the fixed assets on the accounting books.

Other Assets: Other assets include assets not elsewhere classified. Common other assets include inventory that will not be sold within a year, investment in other companies, and the cash value of life insurance policies.

Total Assets: Total assets represent the total value of the current, fixed, and other assets.

Liabilities

Liabilities are obligations for a company to transfer assets or render services at some future time for which the company is already committed to. Loans and warranty reserves are common liabilities. Liabilities are divided into two broad categories: current liabilities and long-term liabilities.

Current liabilities are those liabilities that are expected to be paid within one year. Current assets are usually used to pay current liabilities. Current liabilities include accounts payable, billings in excess of costs and estimated earnings, notes payable, accrued payables, capital lease payments, warranty reserves, and other current liabilities.

ACCOUNTS PAYABLE: Accounts payables are debts that the company owes and expects to pay within one year that are not evidenced by a written promise to pay. For construction companies the monthly bills that they receive from their suppliers and subcontractors constitute accounts payable until the bill has been paid. When retention is withheld from the subcontractor payments, it is common practice to divide accounts payable into two categories: accounts payable-trade and accounts payable-retention. The retention that is being withheld from the supplier or subcontractor's payments on projects that the requirements for release of the retention have not been met is recorded in the accounts payable-retention category. The monthly bills from the suppliers and subcontractors, less retention, and retention on projects where the requirements for release of the retention have been met are recorded in the accounts payable-trade category. The separation of these two categories allows management to see quickly how much of its accounts payable are being held until the requirements for the release of retention have been met.

BILLINGS IN EXCESS OF COSTS AND PROFITS: Billings in excess of costs and profits may also be referred to as billings in excess of costs and estimated earnings or overbillings. Billings in excess of costs and estimated profits is the opposite of costs and profits in excess of billings. Construction companies using the percentage-of-completion accounting method are required to recognize the estimated profits on a construction project as the project is being completed rather than at the completion of the project. In these situations, the estimated profits must be equally distributed over the entire project based on the expected cost of the project. Billings in excess of costs and estimated profits occur when the company bills more than the costs incurred plus the estimated profits or earnings associated with the completed work. If the costs and estimated profits are greater than the billings, the difference is recorded as an asset under the costs and profits in excess of billings category. Billings in excess of costs and profits can be the result of cost savings on the completed work or as a result of the profit not being equally spread over the items listed on the schedule of values. For companies using the completed contract accounting method, this category is replaced with a category entitled billings in excess of costs. For companies using the cash or accrual accounting method this category is not included on the financial statements.

NOTES PAYABLE: Notes payable includes all debts that will likely be paid within one year and have been formalized by a written promise to pay.

ACCRUED PAYABLES: Accrued payables are monies owed for supplies and services that have not been billed. They include accrued taxes, rents, wages, and employee vacation time that have not been paid. For example, from the time an employee's

hours are entered into the accounting system until the payroll check is prepared, the wages due to the employee are recorded as an accrued payable. On the balance sheet in Figure 2-2 the accrued payables have been broken down into accrued payables, accrued taxes, and accrued vacation.

Capital Lease Payable: Capital leases must be recorded as a liability. Capital leases include all leases that are noncancelable and meet at least one of the following conditions: (1) the lease extends for 75% or more of the equipment or property's useful life, (2) ownership transfers at the end of the lease, (3) ownership is likely to transfer at the end of the lease through a purchase option with a heavily discounted price, or (4) the present value of the lease payments at market interest rates exceeds 90% of the fair market value of the equipment or property.

Warranty Reserves: Warranty reserves are funds set aside to cover the foreseeable cost of warranty work. When a company has a foreseeable expense associated with providing warranty work on a completed construction project, the foreseeable expenses should be included as a liability on the balance sheet. Many homebuilders should be able to forecast their expected warranty costs based on past warranty experience.

Other Current Liabilities: Other current liabilities include all other current liabilities that are not recorded elsewhere.

Total Current Liabilities: Total current liabilities represent the sum of all the current liabilities.

Long-term Liabilities: Long-term liabilities include all debts that are not expected to be paid within one year. Common long-term liabilities include loans.

Total Liabilities: Total liabilities represent the total of both current and long-term liabilities.

Owner's Equity

Owner's equity is the claim of the company's owner or shareholders on the assets that remain after the liabilities are paid. Owner's equity may also be referred to as net worth. Owner's equity is recorded differently on the balance sheet for corporations, sole proprietors, and partnerships.

For corporations the owner's equity is commonly broken down into three categories: capital stock, retained earnings, and current period net income. The capital stock represents the initial investment in the company by the shareholders. The retained earnings represent prior accounting period's profits or earnings retained by the corporation to invest in company operations rather than be distributed to the shareholders. The current period net income represents the profits or losses incurred during the current accounting period.

For sole proprietors the owner's equity is listed as a single sum and is known as the owner's capital. For partnerships, the owner's equity is listed for each partner separately and is known as owner's capital.

THE INCOME STATEMENT

The income statement shows a company's revenues, expenses, and the resulting profit generated over a period of time. Income statements span a period of time between two balance sheets and record all transactions that occur during the period. Income statements are commonly prepared for each month and the fiscal year. A typical income statement for a construction company using the percentage-of-completion accounting method is shown in Figure 2-3.

FIGURE 2-3 Income Statement for Big W Construction

BIG W CONSTRUCTION
INCOME STATEMENT

REVENUES	3,698,945	100.0%
CONSTRUCTION COSTS		
Materials	712,564	19.3%
Labor	896,514	24.2%
Subcontract	1,452,352	39.3%
Equipment	119,575	3.2%
Other	5,452	0.1%
Total Construction Costs	3,186,457	86.1%
EQUIPMENT COSTS		
Rent and Lease Payments	35,425	1.0%
Depreciation	32,397	0.9%
Repairs and Maintenance	21,254	0.6%
Fuel and Lubrication	29,245	0.8%
Taxes, Licenses, and Insurance	1,254	0.0%
Equipment Costs Charged to Jobs	119,575	3.2%
Equipment Costs Charged to Employees	0	0.0%
Total Equipment Costs	0	0.0%
GROSS PROFIT	512,488	13.9%
OVERHEAD	422,562	11.4%
NET PROFIT FROM OPERATIONS	89,926	2.4%
OTHER INCOME AND EXPENSE	21,521	0.6%
PROFIT BEFORE TAXES	111,447	3.0%
INCOME TAX	33,434	0.9%
PROFIT AFTER TAXES	78,013	2.1%

The income statement includes the following items: revenues, construction costs, equipment costs, overhead, other income and expense, and income tax. The income statement reports the value of each of the accounts in the income statement portion of the chart of accounts. Like the balance sheet, multiple accounts on the income statement may be combined and unneeded accounts left out.

Revenues

Revenue is the income recognized from the completion of part or all of a construction project. For a company using the percentage-of-completion or accrual accounting methods, revenue is recognized at the time the project's owner is billed for the work. For a company using the completed contract method, revenue is recognized at the completion of the project. For a company using the cash method, revenue is recognized when the company is paid for the work by the project's owner. Revenue may also be referred to as contract revenue on a construction company's income statement and is equivalent to net sales used by other industries. Income from nonconstruction operations is usually classified as other income.

Construction Costs

Construction costs include both direct costs and indirect costs. Construction costs are the same as cost of sales in other industries.

Direct costs are the cost of materials, labor, and equipment that are incorporated into the construction of a project. Direct costs can be specifically identified to the completion of a specific construction component of a specific construction project, such as a wall, a road, a tree, and so forth. Direct costs include the cost of all materials incorporated into the completed construction project and the cost of the labor and equipment to install them. For example, for the task of installing a door the direct costs would include the material cost for the door—including sales tax and delivery costs—and the labor cost with burden to install the door. Most work in Divisions 2 through 49 of the MasterFormat[13] is specified as direct costs. The key is that direct costs can be billed to a specific component of a specific project.

Indirect costs consist of those costs that can be specifically identified to the completion of a specific construction project but cannot be identified with the completion of a specific construction component on that project. Indirect costs may also be referred to as indirect project costs, project overhead, or direct overhead costs. For example, job supervision and the jobsite trailer are indirect costs. Although these costs are required to complete the construction project, they are not directly incorporated into the construction project. Most work in Division 1 of the MasterFormat is specified as indirect costs. The key is that indirect costs can be billed to a specific project but cannot be billed to a specific component on the project.

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[13]MasterFormat is a registered trademark of Construction Specification Institute (CSI).

All construction costs should be charged to a specific construction project. Construction costs are commonly broken down into five types or groups that include materials, labor, subcontract, equipment, and other costs. Some companies break labor down into labor and labor burden and equipment down into equipment rental and equipment owned. One reason for this breakdown is that a company often pays a different liability insurance rate on each of these types of costs.

Materials: The materials cost type includes supplies or material that are purchased by the company and incorporated into the finished project, such as lumber, windows, and concrete. The transportation and storage of the materials should be included in the cost of the materials as well as any sales tax on the purchase. The materials cost type does not include any labor for the installation of the material. Purchases that include labor would be considered a subcontract cost type.

Labor: The labor cost type includes only the labor that is processed through the construction company's payroll system and is charged to a construction project. Labor includes all labor burden costs, including social security, Medicare, Federal Unemployment Tax (FUTA), State Unemployment Tax (SUTA), vacation allowance, company-paid health insurance, company-paid union fees, and other company-paid benefits. Labor that does not pass through the company's payroll system, including temporary labor services, would be considered a subcontract cost type. When the labor cost type is separated into labor and labor burden, the employee's wages would be considered a labor cost type, whereas all burden costs would be considered a labor burden cost type.

Subcontract: The subcontract cost type includes work that is performed by subcontractors for a construction project. Subcontracts must always include labor being performed by the subcontractor and may include the supplying of materials, equipment, and other items. Subcontract does not include labor that is processed through the contractor's payroll system.

Equipment: The equipment cost type includes equipment costs that have been charged to a construction project. These charges come from the equipment cost section of the income statement. When equipment is charged directly to the construction costs section of the income statement it should be categorized as an other cost type or the company should break the equipment cost type into equipment rented and equipment owned. When this is done, the equipment that is charged directly to the construction costs section of the income statement is categorized as an equipment rented cost type, whereas charges coming from the equipment cost section of the income statement are categorized as an equipment owned cost type. When a company does not use the equipment portion of the income statement, all equipment costs are charged directly to the jobs as an equipment cost type and there is no need to break down the equipment category. This separation is necessary to maintain checks and balances within the accounting system.

OTHER: The other cost type includes all costs that are not classified as labor, materials, equipment, or subcontract cost types and are performed on a construction project. Other costs include services (such as surveying, temporary toilets, and utilities) and materials that are not incorporated into the construction project (such as materials used on temporary office facilities).

Equipment Costs

When equipment is used on multiple construction projects the allocation of equipment costs to construction jobs is much more complicated than the billing of materials, labor, and subcontractor's services. When equipment is used on a single construction project, all costs go to the project. When a construction company spends $5,000 on tires for a front-end loader that is used on dozens or maybe hundreds of jobs during the life of the tires, it becomes unclear which construction project should be charged for the costs of the tires. Suppose the front-end loader was used on a construction project for two days. After the first day the company's maintenance personnel came to the project and changed the tires on the front-end loader. Even though the costs associated with the new tires occurred while the front-end loader was on the project, it would be unfair to charge the entire cost of the tires to the project. To do so would unfairly skew the costs of the project and render the data obtained from the accounting systems less meaningful. To fairly handle construction equipment costs, the costs must be allocated. The equipment costs portion of the income statement is where these costs are held until they can be allocated to specific projects. In the case of the front-end loader, the cost of the tires would be recorded under equipment costs and then would be allocated to the individual jobs based on the project's usage of the equipment.

The equipment cost portion of the income statement is a unique feature of income statements for construction companies that own their own equipment. Equipment costs are considered construction costs that have yet to be allocated or charged to specific projects and should not be confused with company overhead costs. Some companies and accountants require that all of the equipment costs be allocated by the end of the company's fiscal year.

Let's look at how the equipment section of the income statement works. Suppose that your company had a front-end loader whose costs for depreciation, taxes, licenses, and insurance were $3,200 per month and whose preventative maintenance, fuel, and lubrication were $35 per billable hour. During the month of April the tires were replaced on the loader at a cost of $6,000. No other costs were incurred during the year. The loader was only used during the months of April through October. The monthly costs and billable hours by job are shown in Table 2-1.

If a company were to bill the monthly costs to the jobs the loader worked on during the month, for the months of January, February, March, November, and December the monthly costs would go unbilled. During the remaining months the average hourly cost ranged from $52.78 to $150.00 per hour. To more evenly distribute the costs and to ensure all costs incurred during the year are billed to jobs,

TABLE 2-1 Loader Costs

MONTH	MONTHLY COSTS ($)	HOURLY COSTS ($)	TIRES ($)	BILLABLE HOURS BY JOB	AVERAGE HOURLY COST ($)
January	3,200	0	0	0	?
February	3,200	0	0	0	?
March	3,200	0	0	0	?
April	3,200	2,800	6,000	80 hr on Job 101	150.00
May	3,200	6,300	0	80 hr on Job 101 100 hr on Job 102	52.78
June	3,200	6,300	0	180 hr on Job 102	52.78
July	3,200	6,300	0	180 hr on Job 102	52.78
August	3,200	6,300	0	180 hr on Job 102	52.78
September	3,200	6,300	0	180 hr on Job 102	52.78
October	3,200	1,400	0	40 hr on Job 102	115.00
November	3,200	0	0	0	?
December	3,200	0	0	0	?

the monthly costs are charged to the equipment cost portion of the income statement in the month they are incurred and then the costs are allocated based on a projected hourly cost of the equipment and the billable hours to each project. Suppose the company in the above example were to project that the hourly cost of the loader was $80 per hour. During January, February, and March the monthly costs would be recorded to the equipment cost portion of the income statement, whereas no costs would be allocated to the jobs. At the end of March, the equipment cost portion of the income statement would have a balance of $9,600 in unallocated costs. During April $12,000 would be billed to the equipment cost portion of the income statement and $6,400 of these costs would be allocated to Job 101. This would continue through October, when at the end of the month the equipment cost portion of the income statement would be overallocated by $7,900. November and December's costs would reduce this overallocation to $1,500. This remaining overallocation at the end of December is due to the fact that the actual hourly cost was $78.53 per hour rather than the project cost of $80.00 per hour.

Equipment costs are often broken down into the following categories: rent and lease payments; depreciation; repairs and maintenance; fuel and lubrication; taxes, licenses, and insurance; and equipment costs charged to jobs. They may also be broken down in other ways.

RENT AND LEASE PAYMENTS: Rent and lease payments include the rental fees and lease payments for the use of equipment not owned by the construction company. Equipment that is rented or leased for a specific job may be billed directly to the job as an equipment rented cost type rather than being processed through the equipment cost portion of the income statement and subsequently allocated.

Depreciation: Depreciation includes the loss in value of company-owned equipment over its useful life. The depreciation method used for allocating construction costs may be different from the depreciation method used for income tax purposes. Amortization of capital leases is included with depreciation costs. Depreciation methods are discussed in detail in Chapter 5.

Repairs and Maintenance: Repairs and maintenance include repairs, routine maintenances, and the replacement of tires and other wear items. Repairs include repairs because of damage and abuse and other major repairs such as overhauls to extend the life of the equipment. Routine maintenance includes all regularly scheduled or preventative maintenance and includes oil and filter changes. Tires and other wear items include the replacement of tires, cutting edges, bucket teeth, and other items that frequently wear out. Repair and maintenance costs should include the materials, supplies, and labor involved in the repairs and maintenance.

Fuel and Lubrication: Fuel and lubrication includes the fuel used to operate the equipment and lubricants consumed on the job, such as grease for the grease fittings. Lubricants added by the operator at the beginning of each shift are included in fuel and lubrication.

Taxes, Licenses, and Insurance: Taxes include all taxes and licensing fees assessed by government agencies. This includes property taxes on the equipment and licensing fees for vehicles that travel over public roads. Insurance includes insurance to protect against loss or damage to the equipment as well as insurance to cover the damage caused by the use of the equipment.

Equipment Costs Charged to Jobs: The equipment costs charged to jobs category is a contra account used to record the equipment costs that have been allocated or charged to the construction costs for a specific construction project. Equipment costs charged to jobs offset the cost categories in the equipment cost section of the income statement in the same way depreciation offsets the fixed assets on the balance sheet.

Equipment Costs Charged to Employees: The equipment costs charged to employees includes all costs reimbursements from employees for the personal use of company vehicles. Employees must be charged for personal use of company vehicles—including travel to and from work—or the company must include the value of the employees' use of company vehicles as a taxable benefit in the employees' benefit package. Like equipment costs charged to jobs, equipment costs charged to employees is a contra account used to offset the cost categories in the equipment cost section of the income statement.

Gross Profit: Gross profit equals the revenues less the construction costs and equipment costs.

Overhead

Overhead are those costs that cannot be charged to a specific construction project or be included in the equipment costs section of the income statement. Overhead is often referred to as general overhead, general and administrative expense, or indirect overhead. Because the term *project overhead* is often used to describe indirect costs, this book often uses the term *general overhead* in the place of *overhead* to avoid confusion. In other businesses general overhead is often referred to as *operating expenses*. General overhead includes all main office and supervisory costs that cannot be billed to a specific construction project. General overhead is discussed in detail in Chapter 9. Some large companies may be required to allocate general overhead to the individual construction projects.

Net Profit from Operations: Net profit from operations equals the gross profit less the overhead and also equals the revenues less the construction costs, equipment costs, and overhead.

Other Income and Expenses

Other income and expenses is a catchall category that includes all income and expenses not associated with construction operations. A common source of other income and expenses is interest and the operation of a rental property.

Profit Before Taxes: Profit before taxes or before-tax profit equals the net profit from operations less other income and expenses.

Income Tax

Income tax consists of income tax liabilities as well as deferred income taxes. Income tax consists of income taxes levied by the federal, state, and local governments. Some companies pay income taxes at the corporate level, whereas other companies pass their tax liability on to their shareholders. Deferred income tax occurs when a construction company uses a different accounting method for income tax purposes than they do for financial purposes. For example, a company may use the cash accounting method for income tax purposes because it allows the company to defer income tax, but uses the percentage-of-completion method for preparation of financial statements because it provides the most accurate financial picture of the company. In this case, the difference in the income tax calculated using the cash method and the percentage-of-completion method would be reported on the financial statement as deferred income tax. Income taxes are discussed in Chapter 13.

Profit After Taxes: Profit after taxes equals the profit before taxes less income taxes.

There are three key relationships that must be maintained in the general ledger. First, the sum of the asset accounts on the balance sheet must equal the sum of the liability and the equity accounts on the balance sheet. For a company using the chart of accounts in Figure 2-1, the sum of accounts 110 through 299 must equal the sum of accounts 310 to 430. Second, the profit for the period reported on the income statement must equal the total revenue for the period—including other income—less the sum of the expenses, including all construction costs, equipment costs, overhead costs, other expenses, and income tax. For the company using the chart of accounts in Figure 2-1, the profit would be equal to the sum of accounts 500 and 910 less the sum of accounts 610 through 899, 920, and 950. Third, the profit for any period must equal the change in equity for that same period. For a company using the chart of accounts in Figure 2-1, the change in equity would occur in accounts 410 through 430. Changes in the equity that occur throughout a period are usually recorded in the current period net income category and are then transferred to another equity category at the end of the period.

The Job Cost Ledger

For management to monitor and control the cost of construction projects, the costs for each project must be tracked against a budget. Additionally, the cost recorded to the job cost ledger, become part of company's historical records. These historical records are used to prepare estimates and bids, which are the basis for the budgets used in the job cost ledger. This cost information cycle is depicted in Figure 2-4.

Although construction costs are recoded in the general ledger, the general ledger lacks the necessary details to meet these two needs. These needs are met through the job cost ledger. The job cost ledger tracks the costs for each project as well as individual components within each of the projects. The job cost ledger tracks costs using a cost coding system based on a company's work breakdown structure. Most accounting systems allow for four levels of tracking: project,

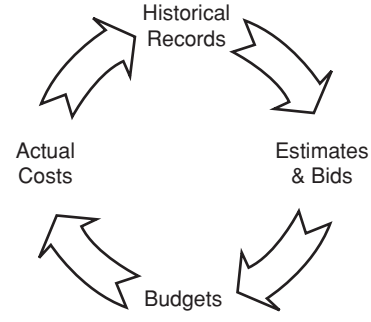

Figure 2-4 Cost Information Cycle

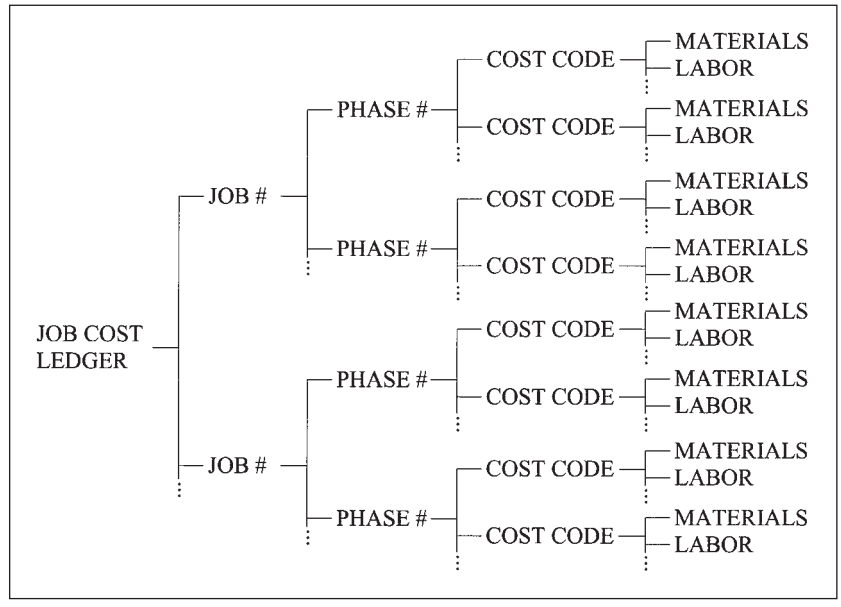

FIGURE 2-5 Breakdown of Job Cost Ledger

phase or area, cost code, and cost type. A graphical representation of the breakdown of the job cost ledger is shown in Figure 2-5.

The first level of breakdown is by project. Each construction project is assigned a project code and is tracked separately. An easy way to set up project codes is to use the first one or two digits of the project code to represent the year that the project was started. The remaining digits are assigned sequentially starting with 1 for the first project of the year, 2 for the second project of the year, and so forth.

Each project may then be broken down into phases, which are assigned a number. The phases may be used to separate different structures within a project—such as different apartment buildings within an apartment complex—or may be used to separate the costs into groups—such as site costs versus building costs. Some companies may not separate the projects into phases.

The phases—if phases are not used, the projects—are then broken down into cost codes. Sample cost codes for a commercial contractor are found in Figure 2-6 and cost codes for a residential contractor are found in Figure 2-7. A cost code often consists of two parts, with the first two digits representing a group of codes and the remaining digits representing a cost category within that group. The job cost codes are often based on the Construction Specification Institute's MasterFormat or Uniformat. The job cost codes provide standard categories for costs, which are used by both the estimating and accounting departments to ensure that the costs are tracked the same way they are estimated. The scheduling department uses the same job cost codes when developing tasks to ensure each task has only one job cost code; although there can be multiple

COST CODES

Code	Description
01000	GENERAL CONDITIONS
01100	Supervision
01400	General Labor
01600	Temporary Facilities
01700	Temporary Utilities
01800	Temporary Phone
01900	Clean-Up
02000	SITE WORK
02050	Demolition & Grubbing
02100	Grading & Excavation
02400	Sanitary Sewer
02450	Water Line
02500	Storm Drain
02550	Gas Lines
02560	Power Lines
02570	Telephone Lines
02600	Asphalt
02610	Site Conc.-Labor
02620	Site Conc.-Concrete
02630	Retaining Walls
02640	Rebar
02670	Signage
02700	Landscaping
02800	Fencing
02810	Dumpster Enclosures
02900	Outside Lighting
03000	CONCRETE
03200	Under-slab Gravel
03300	Footing & Found.-Labor
03400	Footing & Found.-Conc.
03450	Concrete Pump
03500	Slab/Floor-Labor
03600	Slab/Floor-Concrete
03650	Light-Weight Concrete
03700	Pre-cast Concrete
03900	Rebar
04000	MASONRY
04100	Masonry
05000	METALS
05100	Structural Steel
05300	Joist & Deck
05400	Misc. Steel
05900	Erection
06000	WOOD & PLASTICS
06110	Rough Carpentry
06120	Lumber
06150	Trusses
06210	Finish Carpentry

Code	Description
07000	THERMAL & MOIST. PROT.
07100	Waterproofing
07200	Insulation
07210	Foundation Insulation
07250	Fireproofing
07300	Stucco
07400	Siding
07450	Rain Gutters
07500	Roofing
07600	Flashings-Sheet Metal
07700	Roof Specialties
07900	Caulking & Sealants
08000	DOORS & WINDOWS
08110	Metal Doors & Frames
08200	Wood Doors
08300	Overhead Doors
08400	Store Fronts
08700	Hardware
08800	Glass & Glazing
09000	FINISHES
09050	Metal Studs
09100	Drywall
09200	Ceramic Tile
09300	Acoustical Treatment
09400	Carpet & Vinyl
09800	Paint
09850	Wall Coverings
10000	SPECIALTIES
10400	Signage
10700	Toilet Partitions
10800	Toilet & Bath Accessories
11000	EQUIPMENT
11100	Appliances
12000	FURNISHINGS
12300	Cabinetry & Counter Tops
12350	Counter Tops
12500	Window Treatments
14000	CONVEYING SYSTEMS
14100	Elevators
15000	MECHANICAL
15100	Plumbing
15300	HVAC
15500	Fire Sprinklers
16000	ELECTRICAL
16100	Electrical

FIGURE 2-6 Sample Cost Codes for Commercial Contractor

COST CODES

Code	Description
1000	GENERAL CONDITIONS
1100	Supervision
1200	Building Permits
1210	Other Permits
1220	Bonds
1300	Blueprints
1400	Surveying
1500	Temporary Facilities
1510	Temporary Power
1520	Temporary Toilets
1530	Temporary Water
1600	Telephone
1900	Warranty
2000	SUBDIVISIONS
2100	Clearing
2110	Demolition
2200	Rough Grading
2210	Fill and Earthen Materials
2300	Water Lines
2400	Sewer Lines
2500	Storm Sewer
2510	Retention Ponds
2600	Power Lines
2610	Gas Lines
2620	Phone Lines
2630	CTV Lines
2900	Amenities
3000	BUILDING EXC. & FOUND
3100	Excavation and Backfill
3200	Footings
3300	Foundation
3310	Window Wells
3400	Rebar
3500	Plumbing-Underground
3600	Slab-on grade
3700	Waterproofing
3800	Termite Protection
4000	STRUCTURE
4100	Lumber-1st package
4110	Lumber-2nd package
4120	Lumber-Roof
4130	Lumber-Miscellaneous
4140	Trusses
4200	Steel
4300	Framing-1st package
4310	Framing-2nd package
4320	Framing-Roof
4330	Framing-Miscellaneous
4400	Fireplace
4500	HVAC-Rough
4600	Plumbing-Rough
4700	Electrical-Rough

Code	Description
5000	BUILDING EXTERIOR
5100	Windows
5110	Skylights
5200	Exterior Doors
5210	Garage Doors
5300	Masonry
5400	Siding
5410	Soffit and Fascia
5500	Stucco
5600	Roofing
5700	Gutters and Downspouts
6000	INTERIOR FINISHES
6100	Insulation
6150	Drywall
6200	Doors & Trim-Material
6210	Doors & Trim-Labor
6300	Painting
6400	Cabinets
6410	Countertops
6500	Flooring
6550	Ceramic Tile
6560	Marble
6600	Hardware
6610	Shower Doors and Mirrors
6620	Bathroom Accessories
6650	Appliances
6700	HVAC-Finish
6800	Plumbing-Finish
6900	Electrical-Finish
7000	SITE
7100	Final Grade
7200	Driveways
7210	Patios and Walks
7300	Decks
7400	Fences
7500	Landscaping
7600	Pools
7900	Clean-up

FIGURE 2-7 Sample Cost Codes for Residential Contractor

tasks assigned to one job cost code. The first two digits of the cost codes in Figure 2-6 correspond with the divisions of the 16 division MasterFormat. The last three digits of the cost code loosely follow the MasterFormat. Modifications were made to the MasterFormat numbers to prevent the cost codes from bunching up and to meet the individual needs of the company. Not all of these cost codes are used for every job—only those codes for which costs have been budgeted.

The cost codes are then broken down into a cost type. Typically the cost types should match the types used on the income statement. In the case of the income statement in Figure 2-3 the cost types would be materials, labor, subcontracts, equipment, and other.

A complete cost code—consisting of the job number, phase code, cost code, and cost type—is used to describe each account on the job cost ledger. The job cost code may be written as follows:

###.##.#####A

where the three numbers to the left of the first decimal point represent the job number, the two numbers between the decimal points represent the phase code, the five numbers to the right of the second decimal point represent the cost code, and the last alphanumeric character represents the cost type. For the company using the income statement in Figure 2-3 the cost types would be M, L, S, E, and O, representing materials, labor, subcontracts, equipment, and other. The job cost code of 102.01.07200L for a company using the cost codes in Figure 2-6 would represent the labor component for the insulation work on Phase 1 of Project 102. Delimiters other than dots, such as dashes, may be used in the job cost code. For example, the previous code could be written 102-01-07200L.

For the job cost coding system to work, the system must be standardized, follow a common-sense format, match the way the company does business, and allow for expansion. It is also important that all parties who use the system—estimators, field employees, the accounting department, and management—must be using the same coding and must be consistent in how items are coded. If field employees code framing hardware to a different code than the estimators, tracking the project's costs against the estimator's budget will be of little use when trying to manage costs and cost data from past projects will be of little use to the estimating department when bidding future projects. For this consistency to occur there must be a written, companywide standard that explains the coding system and how items are to be coded. This document should include a list of the cost codes with a description of what is to be included in each cost code.

Developing a job cost coding system that follows an easy, common-sense format makes it easier to ensure that items are coded correctly and easier to use for cost control. A hard-to-follow format will create confusion and increase the number of coding errors. The coding systems should be set up so that only one vendor or subcontractor is coded to any one of the costs codes; thereby making it easy to determine which vendor or subcontractor is responsible for costs

overruns. It should also not require bills from vendors to be split up among different cost codes unless it is required for the tracking of costs; as is the case when invoices are broken up by building or when plumbing is divided into sub-rough (underground), rough, and finish. Splitting of invoices between job codes often leads to errors and inaccurate historical costs and should be avoided when it does not foster improved job cost control.

The job cost coding system must match the way the company buys out a construction project and tracks the costs on the project. Looking at the cost codes in Figure 2-6, we see that 02610 Site Conc.-Labor and 02620 Site Conc.-Concrete have been included under 02000 Site Work. The contractor set this up this way so that building costs could be easily separated from the site costs. In this case the building costs are 3000 Concrete through 16000 Electrical. Additionally, the contractor uses both subcontractors and in-house crews to form and pour the site concrete, but the contractor always provides the concrete. By separating the forming and pouring costs from the concrete costs the contractor can easily compare the cost of using a subcontractor to the cost of using in-house crews by charging all costs usually paid by the subcontractor to the labor cost code when the company's work crews pour the concrete. For example, if the concrete subcontractor typically includes the costs of tie wire, form oil, and other materials in their bid, when the company uses in-house crews to pour the concrete, these costs would be billed to 02610M the materials portion of the 02610 Site Conc.-Labor cost code. Similarly, equipment costs incurred by the in-house crew would be billed to 02610E and labor costs would be billed to 02610L, the equipment and labor portion of the 02610 Site Conc.-Labor cost code. Materials which are provided by the contractor regardless of who is performing the labor (subcontractor or in-house) are billed to 02620M the materials portion of the 02620 Site Conc.-Concrete cost code. This makes it possible for management to directly compare the cost of performing the work in-house to hiring a subcontractor to perform the work by comparing the costs recorded to 02610 Site Conc.-Labor on one job where the concrete was poured by an in-house crew to the costs recorded to 02610 Site Conc.-Labor on a second and similar job where the concrete was poured by a subcontractor. If the material costs for tie wire, form oil, and so forth were mixed with concrete costs it makes it difficult to make a direct comparison.

Finally, the system must allow for expansion. Companies often set up a coding system to fit their current business operations. Later they find that their business has expanded, requiring additional codes that cannot be supported by their current coding system. The company then must change its coding system, which leads to confusion and coding problems. Common mistakes in this area are not leaving enough space between cost codes to allow for the addition of cost codes between two codes and not setting up the project and phase codes with enough places to allow for the increase in the number of projects or phases.

For the job cost ledger to be of use, budget must be recorded for each cost code. These budgets come from the cost estimate for the project that was generated when the project was bid and must be updated when changes occur. Whenever a cost is recorded to the general ledger as a construction cost it should also be

recorded to the job cost ledger. Many job cost ledgers also allow revenues to be credited to individual jobs. Many job cost ledgers allow the company to track committed costs. Committed costs should be tracked to get a more accurate picture of the project's financial status. If the job cost ledger does not allow for the tracking of committed costs, the project's management should perform these calculations on a regular basis. Committed costs are discussed in detail in Chapter 4.

Two key relationships must be maintained between the general ledger and the job cost ledger. First, the total of the revenue on the job cost ledger must equal the revenue from the core business—exclusive of interest received and other income—on the income statement for a specific period of time. For the company using the chart of accounts in Figure 2-1, the amount in account 500 Revenue must be equal to the total revenue recorded on the job cost ledger for the period. Second, the total of the costs—exclusive of committed costs that have not been recognized as an expense—on the job cost ledger must equal the construction costs on the income statements for a specific period of time.

The total in each of the five subcategories—labor, material, equipment, subcontract, and other—on the job cost ledger must equal the construction costs on the general ledger in the associated account for any given period. For the company using the chart of accounts in Figure 2-1, the amount in accounts 610 Materials, 620 Labor, 630 Subcontract, 640 Equipment, and 650 Other must equal the costs recorded in the job cost ledger for the period. Additionally, 610 Materials must equal the total of all costs on the job cost ledger with a material cost type, 620 Labor must equal the total of all costs on the job cost ledger with a labor cost type, 630 Subcontract must equal the total of all costs on the job cost ledger with a subcontract cost type, 640 Equipment must equal the total of all costs on the job cost ledger with an equipment cost type, and 650 Other must equal the total of all costs on the job cost ledger with an other cost type for a specific period. Again, committed costs that have not been recognized as expenses are not included in these calculations. At the end of each month, the company's accountant should verify that these relationships are being adhered to and make the necessary corrections. It is important to note that the costs on the job cost ledger span multiple months or years; therefore, the cost comparison between the job cost ledger and the general ledger must only include the costs recorded during a specific month, quarter, or year.

The Equipment Ledger

Many construction companies have major investments in equipment that is moved from job to job. Some equipment, such as a dump truck, may be on multiple jobs during one day. For a construction company to effectively manage equipment and to ensure that the equipment costs are being billed to projects and that they are making enough money on each piece of equipment to warrant the investment in the equipment, the costs and billings for each piece of equipment must be tracked. This tracking is accomplished through the equipment ledger.

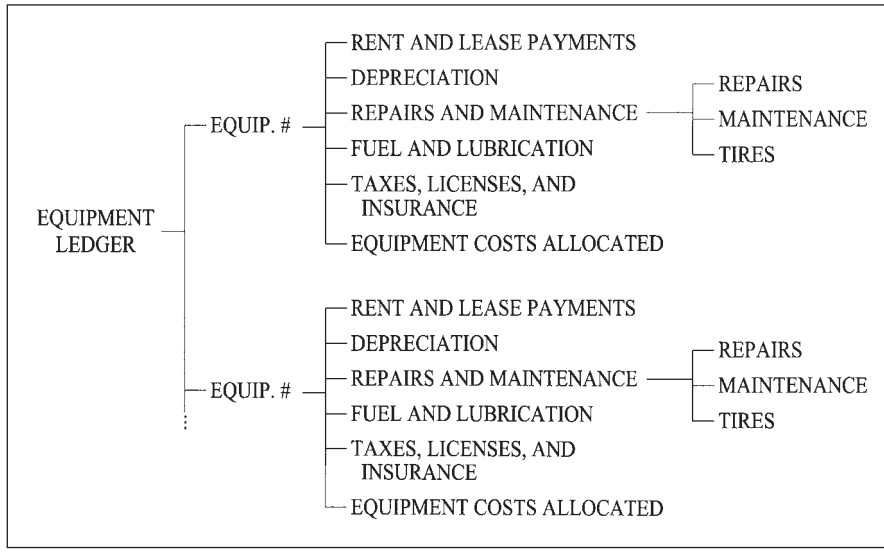

FIGURE 2-8 Breakdown of Equipment Ledger

The equipment ledger is broken down into two and sometimes three levels. A graphical representation of this breakdown in shown in Figure 2-8. The first level of breakdown is by piece of equipment. Each piece of construction equipment is assigned a code and is tracked separately. The equipment costs and equipment costs charged to jobs for each piece of equipment are tracked in the equipment ledger. The second level of breakdown is by the accounts found in the equipment section of the income statement. For the company using the chart of accounts in Figure 2-1 these accounts include 710 Rent and Lease Payments; 720 Depreciation; 730 Repairs and Maintenance; 740 Fuel and Lubrication; and 750 Taxes, Licenses, and Insurance. Also at this level the equipment costs charged to the job are tracked. For the company using the chart of accounts in Figure 2-1 the costs charged to jobs and employees is recorded in accounts 798 and 799, respectively. The third level of breakdown is where an account from the income statement is broken down into smaller accounts. For example, in Figure 2-8, Repairs and Maintenance is broken down into repairs, maintenance, and tires. This allows for more detailed tracking.

Two key relationships must be maintained between the general ledger and the equipment ledger. First, the total of the costs allocated to jobs on the equipment ledger must be equal to the equipment contra accounts on the income statement for a specific period. For the company using the chart of accounts in Figure 2-1, the total of the costs allocated to jobs and employees on the equipment ledger must equal the amount in accounts 798 Equipment Costs Charged to Employees and 799 Equipment Costs Charged to Jobs for the year. Second, the costs on the equipment ledger must equal the total of the equipment cost on the income statement—exclusive of the contra accounts—for a specific period. For

the company using the chart of accounts in Figure 2-1, the costs recorded in the equipment ledger must be equal to the costs in accounts 710 Rent and Lease Payments; 720 Depreciation; 730 Repairs and Maintenance; 740 Fuel and Lubrication; and 750 Taxes, Licenses, and Insurance for the period. Additionally, 710 Rent and Lease Payments from the income statement must equal the total of all of the cost in the rent and lease payment category for all of the equipment in the equipment ledger for a specific period. The same is true for the 720 Depreciation; 730 Repairs and Maintenance; 740 Fuel and Lubrication; 750 Taxes, Licenses, and Insurance; 798 Equipment Costs Charged to Employees; and 799 Equipment Costs Charged to Jobs. Like the job cost ledger, the general ledger spans multiple months or years; therefore, the cost comparison between the equipment ledger and the general ledger must include only the costs recorded during a specific month or year.

Conclusion

For management to manage costs, the company's accounting system must provide cost data in time for management to proactively respond to the data. For this to occur, the accounting system must have a strong job costing and equipment tracking system, the data must allow management to manage by exception, and the accounting data must be readily available to all employees who are responsible for controlling costs.

Construction accounting systems consist of a general ledger and a job cost ledger. They also consist of an equipment ledger when a company has heavy equipment or lots of vehicles. The general ledger is divided into two sections, the balance sheet and the income statement, and is used to prepare the balance sheet and income statement for the company. The job cost ledger provides a detailed breakdown of the construction costs recorded on the income statement. On the job cost ledger, costs are broken down by project, phase (if desired), cost code, and cost type. The job cost ledger is used by construction managers to manage the costs of the individual projects. The equipment ledger provides a detailed breakdown of equipment costs on the general ledger, is broken down by individual pieces of equipment, and is used to manage heavy equipment and vehicles.

There are four methods of accounting available to construction companies: cash, accrual, percentage of completion, and completed contract. Because long-term contracts—contracts that span more than one fiscal year—are very common in the construction industry, many construction companies are required to use the percentage-of-completion method. When using the percentage-of-completion method, companies are required to report their costs and profits in excess of billing (underbillings) and billings in excess of costs and profits (overbillings) on their financial statements. Additionally, these companies are required to recognize their estimated profits as they are earned even if they have not yet received these profits.

Problems

1. Describe the purposes of the accounting system.
2. Describe the difference between cost reporting and cost control.
3. What are the key components of an accounting system that facilitates cost control?
4. Describe the different accounting ledgers used by construction companies and explain their purpose.
5. Describe the relationship among the chart of accounts, the balance sheet, and the income statement.
6. Compare and contrast the different accounting methods that are available to construction companies.
7. Describe the key relationships that must be maintained within the general ledger.
8. Describe the key relationships that must be maintained between the general ledger and the job cost ledger.
9. Describe the key relationships that must be maintained between the general ledger and the equipment ledger.