STATE-OF-THE-ART CONTRACTOR

Job Costing: Step By Step

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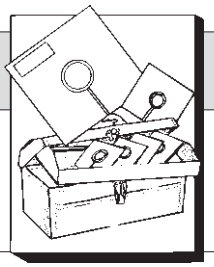

Last month we discussed job costing at the income statement level, what costs go above the line, and how job costing can be used to make your pricing more accurate.

This month we'll create an abbreviated estimate for a framing job, and follow it from job costing to making pricing corrections.

First, to do meaningful job costing, your estimates must have a high degree of pricing consistency. By making a price book that is too complicated, you may be creating a monster that will be hard to use and will make it difficult for you to achieve price consistency.

Never use a bidding unit of measure that isn't represented in the plan. For example, a plan doesn't show hours anywhere, so use caution if you are considering using hours as a takeoff unit of measure.

You can also reduce error by creating price book items that will do the most work in the least number of steps. For example: At a seminar I conducted recently, one of the students said that he took off drywall by the square foot. That's okay for ceilings, I told him, but Sheetrock on walls doesn't show on the plans by the square foot. As we all know, Sheetrock at walls is always shown on a wall with designated height. Therefore, it can be taken off by the linear foot, I pointed out. Another fellow in the room objected—he said that there were too many different wall heights to consider. I pointed out that a simple solution is to set up the Sheetrock category as shown in Table 1.

Table 1. Price Book—Sheetrock

Min. Charge for 1/2" Sheetrock	:EA
1/2" shtrk. @ wall to 4' high	:LF
—With Skip Trowel Finish	:LF
—With Smooth Wall Finish	:LF
1/2" shtrk. @ wall to 8' high	:LF
—With Skip Trowel Finish	:LF
—With Smooth Wall Finish	:LF
1/2" shtrk. @ wall to 12' high	:LF
—With Skip Trowel Finish	:LF
—With Smooth Wall Finish	:LF
1/2" shtrk. @ ceiling	:SF
—With Skip Trowel Finish	:SF
—With Smooth Wall Finish	:SF
—With Acoustic Finish	:SF
1/2" Sheetrock	:SF
for emergency use only	

You might also want to include some special applications that you find yourself using frequently. How about *Patch Ceiling-EA*, or *Patch Window to 3-feet Wide-EA*, or *Sheetrock Skylight-EA*.

Before computers, general contractors used paper and pencil and they depended a great deal on subcontractor bids to help with each estimate. Now, with the power of computing at our fingertips, we can do all the bidding ourselves just as if we were 20 or more different subcontractors—all in about an hour or so. We want our bids to reflect enough item-level detail so that, when tied to the plans and the finish schedule, we have the best specifications that money can buy.

Our estimate example is concentrated on labor because this is where job costing is most valuable. Most contractors I have talked with don't seem to have as much difficulty monitoring material and subcontractor costs.

Take note that the estimate in Table 2 includes only takeoff units of measure (UM) that can be taken directly from the plan. The selling price (the extension column) is calculated to reflect cost, waste, overhead, and profit.

By the way, the "ra" in the estimate UM column is my own concoction: ra=square footage of ROOF AREA as shown in plan view. The rate (selling price for each unit of measure) that accompanies "ra" is factored to include waste, a plan-view-to-pitched-roof conversion factor, contingency, overhead, and profit. This way, I take off roof-related items by the square foot in plan-view, so my customer can relate what's in the estimate to what's in the plan, and the price takes care of the rest.

All the customer and I need to worry about is quantity. By reducing the chance for human error at the estimate level, we stand a better chance of having more accurate estimates. More accurate estimates mean accurate job-cost accounting.

Notice that our framing estimate utilizes a great deal of detail. But once the estimate is complete, monitoring the fine detail ends.

Table 2. Sales Presentation Estimate
Job Name: JLC Shed
Job Type: 10' x 10' Wood Frame Building w/Shed Ceil/Roof & 2' Overhangs
Division 6: Rough Carpentry

		Rate/UM	Qty-UM	Extension
Subdivision 6.0: Floor Framing Labor				
6.003	Install 2x Mudsill	3.95/lf	40 lf	$16
6.005	Install Rim Joist	1.85/lf	20 lf	$4
6.006	Install Dbl Rim Joist	2.25/lf	20 lf	$5
6.009	Install Girder & Post	8.65/lf	20 lf	$17
6.012	Inst. 2x8 Flr Jst. 16" O.C.	2.35/sf	100 sf	$235
6.013	Inst. 2x8 Flr Blocking	1.75/lf	10 lf	$18
Subdivision 6.1: Subflooring Labor				
6.103	Install 1 1/8" Subfloor	4.35/sf	100 sf	$435
Subdivision 6.2: Wall Framing Labor				
6.201	Frame 2x4 Wall to 8' High	9.87/sf	10 lf	$99
6.203	Frame 2x6 Wall to 12' High	12.32/sf	10 lf	$25
6.209	Frame 2x6 Rake Wall	16.80/lf	20 lf	$168
6.220	Frame for Door-new wall	18.90/ea	1 ea	$19
6.222	Frame for Wall-new wall	32.55/ea	2 ea	$65
Subdivision 6.3: Ceiling/Roof Frame Labor				
6.308	Inst. 2x6 Rafters 16" O.C.	6.50/ra	196 ra	$1274
Subdivision 6.4: Roof Sheath Labor				
6.405	Install Roof Sheathing	4.89/ra	196 ra	$958
			Bid Total:	$3338

The time sheet is important. Ours includes a space for the crewman to write in a job name, and the hours he worked in a given division (Division 6—Rough Carpentry in our sample estimate). The workman isn't required to know what has been estimated—that's shown on the plans. All he has to do is record how many hours he worked in a given division on a given job.

The time sheet information is used by our accounting department to make payroll. The gross hourly wages for all crewmen, for all jobs, and for all divisions of work are then fed electronically by the payroll program into our job-cost accounting module to the proper job and division of work performed.

Thorough job costing can be performed most successfully by comparing division totals rather than item costs. This is because you can't expect your direct-hire personnel to generate records with enough detail to explain, for example, when they are subflooring as opposed to what time they spend wall framing. Granted, if you are a framing contractor, this kind of detail would not be hard to acquire (and job costing at that level would be wise), but that does not hold true if your crew is working in several different divisions (i.e., demolition, excavation, foundation, carpentry, etc.).

Table 3. Job Cost Accounting Estimate
Job Name: JLC Shed
Job Type: 10'x10' Wood Frame Building w/Shed Ceil/Roof & 2' Overhangs

Budget Category	Estmate Amount
Division 1: Plans and Engineering	$2,100
Division 2: Demolition Labor	2,340
Division 3: Excavation Labor	1,600
Division 4: Concrete Labor	2,890
Division 5: Concrete Material	950
Division 6: Rough Carpentry	3,338
Division 7: Finish Carpentry	1,100
Division 8: Lumber and Hardware	3,200
Division 9: Millwork	400
Division 10: Windows	900
Division 11: Insulation	150
Bid Total:	$18,968

Table 4. Job Cost Accounting Estimate
Job Name: JLC Shed
Job Type: 10'x10' Wood Frame Building w/ Shed Ceil/Roof & 2' Overhangs

	Budget Category	Est. Amt.	Costs	(Profit or Loss) Dollars	Percent
Division 1:	Plans and Engineering	2,100	1,800	300	14%
Division 2:	Demolition Labor	2,340	1,340	1000	43%
Division 3:	Excavation Labor	1,600	1,700	-100	-06%
Division 4:	Concrete Labor	2,890	2,000	890	31%
Division 5:	Concrete Material	950	650	300	32%
Division 6:	Rough Carpentry	3,338	3,300	38	1%
Division 7:	Finish Carpentry	1,100	600	500	45%
Division 8:	Lumber and Hardware	3,200	500	2,700	84%
Division 9:	Millwork	400	300	100	25%
Division10:	Windows	900	600	300	33%
Division 11:	Insulation	150	90	60	40%
	Bid Total:	$18,968	12,880	6,088	32%

Our job-cost accounting module does not contain information about line items of work. Only division names and their respective estimated subtotals by job name are included.

Although it is nice to have an estimating system and a job-cost accounting system that talk to each other electronically, such a function is not critical. As you can see from the sample job-cost estimate (Table 3) there isn't much information to enter into the job-cost module compared to what has to be entered in the actual estimate.

With job costs being entered by job name and division, we can compare our original estimate to actual costs. The system we use does this as shown in Table 4.

Notice how widely the costs vary (ranging from a 6% loss to 84% profit). The variations can stem from poor pricing, poor quantity takeoff, sloppy time cards, variables from job to job, and even a crewman who is having problems at home. Such variations will shrink over time, however. After you've done job-cost accounting for several years, each division starts to reflect more uniform profit margins, and rarely is a loss ever experienced.

The most important part of the job-cost process starts once we have the information shown in the last column in Table 4—the percentage of profit or loss column. The percentage in this column represents the amount of dollar profit or loss divided by the original amount estimated. Once we know how much profit or loss we have in each division, we can correct each of the line-item prices (by division) in our estimating system.

Because there are so many variables, I recommend that price changes be made by averages. That is, job cost five jobs, then average the percentage of profit or loss for all five jobs for each division. For this article, let's assume that the percentage of profit or loss has been derived from an average of at least five different jobs.

In Division 6, Rough Carpentry, we made a 1% profit after job costing five jobs. We will use that 1% factor to correct the prices in our estimating system at the line item level.

Walt Stoepplewerth of HomeTech tells us to mark up our cost 67% and our gross profit will be the 40% needed to cover a 30% overhead and leave a 10% net profit. Regardless of how you structure your costs, it is important that you earn enough gross profit to leave yourself with 10%. For our example we will use Stoepplewerth's numbers.

Since Stoepplewerth tells us to gross 40%, and because we only grossed 1% in Division 6 after five jobs, it should be pretty apparent that we are 39% short on our gross.

In our example, you will have to mark up each line-item price in Division 6 by 65% to make your prices correct. By the same token, you may want to decrease you markup in Division 8 (Lumber and Hardware) in order to maintain a competitive posture.

There is nothing more satisfying than knowing what your costs are, and nothing more pleasant to a businessman than a fair profit. Quit guesstimating—job cost so that your estimates will reflect fair prices for both you and your customer. ■

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