

## Contractor Estimating: Drop the Curtain

**Executive Summary.** Lots of times we hear from Engineers that Contractors have fat and contingencies in their estimates. On a *low bid wins* scenario, that's just not the case. Look behind the curtain here at some real numbers.



**What job are we talking about here?** My construction company was low bidder on a project as follows:

<b>JENNINGS PACIFIC</b>		<b>BID RESULTS</b>			
		BID DATE: May 7, 2009			
		BID TIME: 2:00 pm HST			
Owner:	City and County of Honolulu				
Project:	Pearl City Corporation Yard NPDES Improvements				
Location:	Pearl City, Oahu, Hawaii				
Contractor	Bid Amount	\$ Difference from previous Bidder	\$ Difference from first Bidder	%	
<b>1 Jennings Pacific LLC</b>	<b>\$ 2,374,526</b>				
2 T. Iida Construction	\$ 2,448,000	\$ 73,474	\$ 73,474	3.09%	
3 Okada Trucking	\$ 2,465,000	\$ 17,000	\$ 90,474	3.81%	
4 BCP Construction	\$ 2,507,590	\$ 42,590	\$ 133,064	5.60%	
5 S&M Sakamoto	\$ 2,621,126	\$ 113,536	\$ 246,600	10.39%	
6 Haron Construction	\$ 2,654,076	\$ 32,950	\$ 279,550	11.77%	
7 Ralph Inouye	\$ 2,858,426	\$ 204,350	\$ 483,900	20.38%	
8 Jas Glover	\$ 2,896,426	\$ 38,000	\$ 521,900	21.98%	
9 Honolulu Builder	\$ 3,100,640	\$ 204,214	\$ 726,114	30.58%	
10 Engineering Remediation	\$ 3,404,569	\$ 303,929	\$ 1,030,043	43.38%	
11 Mira Image	\$ 3,474,848	\$ 70,279	\$ 1,100,322	46.34%	
12 Project Plus Inc.	\$ 3,592,267	\$ 117,419	\$ 1,217,741	51.28%	
13 Goodfellow Brothers	\$ 3,923,426	\$ 331,159	\$ 1,548,900	65.23%	

I know it says it was 14 years ago which for some was an eternity – for me it seems not long ago at all. Point being, the industry hasn't changed much in the time passed – Contractors are still their own worst enemy and cannibalizing each other. It's called capitalism.

**What do you have for profit and overhead?** Here you go from the actual bid estimate documents:

047PEARLCTY 050709 PEARL CITY CORP YARD  
 \*\*\* Scott Jennings-SJCIVIL

Indirects are the Jobsite Overhead folks: PM, PE, Supt, and various other costs not specifically assigned to any particular bid item.

ESTIMATE RECAP - BID QUANTITIES				
	DIRECT	INDIRECT	TOTAL	% OF TOTAL
Labor	161,624.07	35,392.80	197,016.87	9.528%
Burden	126,507.82	14,763.55	141,271.37	6.832%
Lab+Bur	288,131.89	50,156.35	338,288.24	16.361%
Perm Matl	325,507.98		325,507.98	15.743%
Const Exp	84,102.35	34,840.00	118,942.35	5.752%
Equipment	69,693.57	17,916.00	87,609.57	4.237%
Subs	1,197,346.61		1,197,346.61	57.907%
Other				0.000%
<b>Total Costs:</b>	<b>1,964,782.40</b>	<b>102,912.35</b>	<b>2,067,694.75</b>	<b>99.999%</b>
% of Total	95.023%	4.977%	100.000%	

Escalation on:	Labor	Burden	Perm Matl	Const Matl	Co Eqp	Rented Eqp
	0	0	0	0	0	0
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Eq Op Exp	Sub	Misc1	Misc2	Misc3	Total Escalation	
0	0	0	0	0	0	0
100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Corporate overhead (which ran about 7% of my company revenue, so this should be 7% not 2%)

\* Data Below here is dependent on the Summary Process. \*  
 The Summary Process was last run 04/23/2023 at 7:34 PM

Profit

GET is General Excise Tax

Markup on Resource Costs		103,384.73	5.0000%
<b>MARKUP TOTALS ==&gt;</b>		<b>103,384.73</b>	<b>5.0000%</b>
<i>Cost Addons</i>			
GL	1.9000 % of Job Value	45,127.24	2.1825%
SMALL TOOLS	3.0000 % of Total Labor	10,148.65	0.4908%
GET	4.7120 % of Job Value	111,915.55	5.4126%
GET SUB DEDUCT	-4.7120 % of Total Sub	-56,418.97	-2.7285%
BLDR'S RISK	Lump Sum	2,750.00	0.1330%
CORP OVHD	2.0000 % of Job Value	47,502.36	2.2974%
fin tools, etc.	Lump Sum	8,000.00	0.3869%
shoring	Lump Sum	11,500.00	0.5562%
Bond from Summary Table		23,513.52	1.1372%
<b>MARKUP, ADDON &amp; BOND TOTALS ==&gt;</b>		<b>307,423.08</b>	<b>14.8679%</b>
			(% of costs)
<b>COST + MARKUP -----&gt;</b>		<b>\$2,375,117.83</b>	
		(On Takeoff Quantity)	

The job value (it varies from the bid amount due to rounding of the unit prices on the bid form by me)

-Effect on Bid-

-591.80 Adjusted  
 (on Bid Quantity)

It's funny, or not really so funny, to look back at this estimate and see that I got this job with actual corporate overhead on the job. That's pretty good as most times we had to remove it to win work.

**What about the cost of the actual direct work?** Ok, here's cost for 515 lineal feet (LF) of a water line:

20	Exc & Install	Quan: 515.00 LF	Hrs/Shift: 8.00	WC: CRAFT	**Unreviewed
Production Based on: Street Connection & Tie in = 2.0 days Assemblies (2 ea) = 1.5 days Mainline 515 = 3 days due to anticipated obstructions Hydrant .5 days Total 7 days					
XX	BLANK CREW	56.00	CH	Prod: 7.0000 S	Lab Pes: 4.00    Eqp Pes: 3.00
8BH416	CAT 416 BACKHOE	2.00	112.00 HR	51.000	5,982    5,982
8F350	F350 UTILITY/PIPE TRUC	1.00	56.00 HR	18.950	1,061    1,061
L1	LAB I	3.00	168.00 MH	27.250    8,058	8,058
OP12	OPER TY 12	1.00	56.00 MH	35.120    3,646	3,646
\$18,747.47	0.4349 MH/LF	224.00 MH	[ 12.708 ]	11,705	7,043    18,747
7.0000 Shifts	* 73.5714 Un/Shift	2.2991 Unit/MH		22.73	13.68    36.40

*Handwritten annotations in red:*  
 - Arrow from "515.00 LF" to "Must get 73.5 LF/shift of this overall 515 LF."  
 - Arrow from "7.0000 S" to "7 each 8-hour shifts."  
 - Arrow from "35.120" to "Total Manhours in this activity"

What is above is one activity associated with this particular bid item. The entire bid item was for the water system in general for the project. This activity (activities combine one-by-one to add up to accomplishing whatever is required of the bid item) shows a total cost of \$18,747 or \$36.40/LF (this is just cost, not the price to the Owner).

**My story.** From this I wanted the reader to take that fee on estimates is not as huge as thought. Or maybe to you it is as large as you thought. Here I put \$103,384 on it, which is 5% of the cost. Not too sexy.

Also, I wanted the reader to note that the work in the field has a pretty finite limit in its cost. The water line has 224 manhours whether you use a 10-man crew or a 2-man crew – you as a Contractor have to figure out how not to use more than the allotted manhours. Notice on the Estimate Recap on the second page of this article, there is no *slush fund* or *waiting-around-for-RFI answers* line item. This is why Contractors bid differently depending on the Owner and the CM. Owners or Construction Managers that do not hustle for answers and make quick decisions cost Contractors money.

Notice that estimating is both art and science. The science is easy to see in productivity rates and costs per manhour or hour. You can see lots of science above in the black and white font. Now the art, the art in these printouts, comes in last minute adjustments and the “feel” of the estimator. I felt that we needed more



finishing tools and more shoring dollars – that’s what you see on the bottom of the Estimate Recap sheet at the last minute (hence the poor capitalization).

Work safe!

PS. Oh, and I bet your wondering if we made or lost money on this job. Well, we went to claims on this job for various reasons. Before the lawyers got involved, I had lost \$800,000 on this job. We made almost half of it back in mediation, but went in the hole almost \$500,000. Terrible job for me.