



**Chris Lee**

Chris Lee has an extensive background in preconstruction management as a former specialty contractor and business owner. As the Chief Estimator at Esticom, he's helped thousands of specialty contractors digitize their preconstruction process to increase revenue and profitability while decreasing unnecessary overhead.

## How to estimate electrical work - basic steps to do it right

In the world of electrical contracting, you must estimate and submit bids in order to win projects and stay in business. This means bidding low enough to win against many competing electrical contractors, while high enough to cover all the project costs like labor, material, equipment rentals, subcontractors, and indirect cost or otherwise known as overhead required to run your business. And do not forget including enough profit for taking on the risk and of course growing the business. In the steps below, we have outlined a proven electrical estimating system to help you get started.

1. Choose the Right Work to Bid
2. Review the Specifications
3. Review the Drawings
4. Perform a Quantity Takeoff
5. Request Supplier Quotes
6. Create your Estimate
7. Add Overhead and Profit
8. Build your Proposal
9. Double Check Takeoff Quantities & Estimate
10. Submit Bid
11. Review the Results

## 11 Steps to Estimating Electrical Work

1. **Choose the Right Work to Bid** - The first step in the electrical estimating process is selecting the right type of work to bid. You should avoid bidding electrical projects where you have limited experience and are more likely to make mistakes during the estimating process and project execution should you win the electrical construction project. There's a learning curve for electrical estimators and your field staff when taking on any new type of work that can eat into your profit.

2. **Review the Specifications** - Thoroughly review the Division 01 general specifications in addition to the Division 26 specifications and pay close attention to contractor qualifications, payment terms, bonding capacity, insurance requirements and make sure you can meet the qualifications and live with the legal language should you win the construction project. When you're finished with the general specifications, it's time to move onto the Division 26 specifications and make a note of the material grade, installation methodologies and responsibilities of costs (who provides fire alarm, communications, etc.) Generally, the spec's will determine the quality of materials while the drawings determine quantities. It is important to highlight anything out of the ordinary and make sure you include these items in your bid. I have seen many contractors take a black eye on an otherwise profitable project because they bid a less expensive material grade only to find during the project execution that it was significantly more expensive. If you intend to offer an alternate option, make sure it is approved first and in writing because they will hold you to the specified material grades.
3. **Review the Drawings** - Look over the drawings at a high level to get an idea of the full scope of work. You should review the architectural in addition to the electrical drawings to understand working heights and elevations that will affect labor costs, material pricing and equipment requirements. Once you have an understanding of the general construction (think birds eye view of the project) it's time to review the Division 26 drawings taking note of any technical details that are depicted and watch for any discrepancies between the drawings and specifications and write this down.
4. **Perform a Quantity Takeoff** - Pull out your highlighters, scale master or your favorite takeoff software to begin the process of counting and measuring items depicted in the electrical drawings like light fixtures, receptacles, conduit runs, panels and gear. Start with one item (we suggest light fixtures) and count all items sheet by sheet keeping totals per sheet before moving to the next item. If you find something you missed earlier, immediately count it and adjust your previously noted quantity. Now total your quantities for each sheet and move to a quantity takeoff sheet, example excel sheet below. Note: Are you responsible for HVAC hookups or any low voltage?
5. **Request Supplier Quotes** - One of the reasons we suggest getting your lighting counts first is to expedite the process of receiving a quote for these items because they're

generally quoted independently of the rest of your materials. A couple things to note, do not worry about getting the specifics on the light fixtures, rather note the designations used to identify the fixtures on the plans i.e. A1, B1, C1, etc. The lighting firm will reference the lighting schedule and look up the item details and provide a lump sum quote. It is in your best interest to build a relationship with your local lighting firms to ensure you're getting competitive pricing in a timely manner.

6. **Create your Estimate** - Now that you have the quantities laid out you'll need to determine the unit cost for each item. To accomplish this, you need to determine the material and labor costs associated with each task and extend those out by the task quantity. Determining the material cost is simple, a quick call to your supplier or pricing service can give you this data, but the labor cost requires that you know how long it takes to install the material. This requires past production history and experience, or if you do not have past production history and limited field experience we suggest purchasing [NECA's Manual of Labor Units](#) to use as a guide. Once the labor unit is determined you'll multiply that by the burdened labor cost to determine the labor cost for the task. See the simple excel example quantity takeoff sheet below that includes material and labor costs per task and the totals summarized. Now you'll want to summarize the total material cost and total labor hours for all the items and you'll multiply the labor hours by your fully burdened hourly labor cost to get your total labor cost for the task. Add these two numbers together to determine your total direct costs for the project and the basis for your estimate. Keep in mind, you'll need to add line items for any other direct costs required for the installation like equipment rentals or subcontractors.
7. **Add Overhead and Profit** - Now that we have our estimated job cost (direct costs) we need to add profit and overhead to those costs to arrive at our sales price. While profit is pretty self-explanatory, overhead is not and is the total of all the other indirect expenses that are required to run your business including your office lease, estimating, sales, marketing, bookkeepers, and other expenses that must be paid to keep your business operating smoothly. Like profit, overhead is a percentage that you add to the project costs to land at your sales price. Small contractors commonly believe they do not have overhead and shouldn't charge for it and this is not correct. You're leaving money on the table and it's in your best interest to figure out the overhead required to run your small business with an accountant that specializes in construction.

8. **Build your Proposal** - Now that we have our sales price, we need to create a proposal that details what is included in our bid in clear and concise terms. We suggest using similar language to what was used in the project specifications and drawings. This makes it easier for the General Contractor reviewing your proposal to ensure you've covered everything and that nothing major is missing and he can therefore trust your price. Generally speaking, electrical contractors provide lump sum bids. This means you provide a fixed fee to cover everything outlined in your bid. This is where it's important to clarify anything that you've included or excluded to avoid any confusion once the project is awarded. [Free Electrical Proposal Template Here](#)
  
9. **Double Check Takeoff Quantities & Estimate** - It's always a good idea to get a second set of eyes from your estimating team to review your work prior to submitting your bid to make sure you have not missed anything. This review should involve a counterpart taking off the project's major systems and ensuring that nothing was missed during the original takeoff. We suggest keeping a bid log (simple excel spreadsheet) that shows recent and successfully completed projects by type and size with the price per sqft listed for reference. While you should never bid projects this way, you can compare a previously completed project against your current project to see if there is a large variance in price. If there is a big delta, it's worth looking into to figure out why. Note: you can use this log to help with preliminary budget numbers.
  
10. **Submit Bid** - Once you've double checked your work it's time to submit your bid. Today, everyone submits bids electronically either through the bid site that they received the bid or via email. We suggest that you read the Division 01 specifications again and looking for any bid instructions and follow them to a tee.
  
11. **Review the Results** - In the beginning it can be tough to determine where you're in the mix compared to other electrical contractors bidding the same work. Remember, General Contractors go with numbers from vendors they trust, potentially years of experience working together, more than the low number, so it might take a couple bids to gain a General Contractors trust. When you lose a project, it's always a good idea to ask the General Contractor how you stack up against the competition, sometimes they'll send you the bid tabs with your competitors numbers and other times they'll tell you that you're high or too low for comfort. Unless it's a public bid they're not required

to provide this information, but if you ask in a respectful manner you will receive feedback and this will help you with making adjustments on future bids. Note: It's a good idea to request bid tabs on awarded projects as well to see if you're leaving money on the table by bidding too low.

## How to Estimate Electrical Work More Easily and Accurately

If you're thinking that estimating seems like a lot of work, you're right. Electrical estimating requires a serious time commitment and this goes up significantly if you do not have an electrical estimating system in place. [Electrical estimating software](#) provides you with an easier way to get your work done using a prebuilt system and methodology. Good [electrical estimating software gives you on screen takeoff](#), estimating and quoting all in a single package with features like auto-count, a full electrical labor and material database and a way to track your bids. If you're new to electrical estimating, this can provide a framework to get you started and generally electrical contractors see a 2-3x increase in speed over manually estimating projects with paper plans and excel. Usually it's less expensive than the cost of printing out plans. With the advent of cloud-computing, you now have access to several web-based applications like [Esticom](#) that allow you to estimate projects on day one without any heavy upfront costs, set up or implementation. We have a free 14-day evaluation giving you access to the same tools big companies have and it will not cost you a penny to get started. Visit <https://www.esticom.com/electrical-estimating/> today.