Here’s an overview of basic steps for preparing estimates of light-gauge steel framing that get the job.

There are many proven ways to reliably prepare a “bill of materials” of interior light-gauge framing. Most good estimators learn through trial and error which method best suits their needs. But regardless of the approach, there are several definite steps most successful estimators observe.

First and foremost is a complete “specifications review.” The specifications essentially become the estimator’s “bible” for the project, and requires in-depth study to ensure an accurate bid package. The two primary sections that pertain to light-gauge framing include “Drywall Section” and the “Building Insulation Section.”

In some cases, the specifications list other related sections which also require careful review. These sections are “Painting and Finishing,” “Miscellaneous Metals,” and “Structural Studding.” Each can further clarify the overall scope of the work, and provide details required in the bid.

Important questions for this review stage include:
- What specific items are included in the bid-related section?
- What related items are included elsewhere?
- Are metal framing gauges already specified? Unless otherwise specified, all light-gauge framing must meet the American Society for the Testing of Materials (ASTM) criteria—that is, a bare steel minimum gauge of .0179.
- Are fire-rated walls specified? If so, what are the Underwriter’s Laboratories or Factory Mutual design numbers?
- Do any of the walls require insulation to enhance sound control? What insulation is specified? what thickness and density?
- Review of the “General Scope” section also reveals key information regarding the project bidding:
  - Does the project bid complete or in phases? The bid form will alert the estimator to his pricing strategy. Are unit prices required?
  - Is lineal footage pricing specified? Many tenant projects require base bids to include shell and core work, while all divider walls are quoted on a lineal foot basis. This allows potential tenants flexibility to specify walls where they need them.

Finally, there is one important question to ask on any project.
- Have any addenda to the specifications been issued since the last contract with the project? All
The author believes there are many proven methods for estimating interior light-gauge framing, but all methods have certain basic principles in common.

Addenda should be reviewed to assess possible impact on the framing portion of the project.

From a thorough specification study, a complete scope of the work is accurately identified and understood. The estimator is then ready to review the detail sheets.

Scanning for unusual details or conditions may reveal the need for additional materials and/or labor. To miss these “special details” can be disastrous to the overall bid. The estimator should compare the detail sheets to the floor plan.

Ceiling heights for specific areas can usually be found in the section titled “Room Finish Schedule.” During this review, mark ceiling heights on the floor plans, which will simplify actual material take-off.

By reviewing the specifications, detail sheets, and room finish schedules, an estimator can then segregate wall types—for example, which walls are smoke walls, one- or two-hour fire walls, sound control walls, double studded chase walls, etc.

The next step is to isolate each wall, by type, on the floor plans. Most estimators either color code or symbolize each wall type for easy identification later. For a typical office project, this may be a relatively simple task with few differing wall types. On more complex projects, such as hospitals or large health care facilities, there easily could be dozens of different wall types.

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The specifications become the estimator’s “bible” for the project.

Once all wall types have been located and highlighted, a bill of materials is prepared for each type. All wall types are then taken off by lineal footage. The parts and pieces developed in the bill of materials by wall type, multiplied by the lineal footage of that type, will produce the job total for that wall type. After all components have been taken off by wall type, similar components can be combined to produce the final bill of materials.

Conditions generally taken off separately include corners, intersections, finished ends, door frames, glazing, and “special detail” components.

Now, it’s time to assign labor costs for the project.

In this discussion, labor units are those assigned by the Ceilings and Interior Systems Contractors Association (CISCA) as averages for favorable working conditions and normal labor productivity. These units have been determined on the basis of complete installations only, and may not be accurate for very small jobs or for small changes to big jobs.

For discussion, it is also assumed the estimator thoroughly understands the effect of various changes in installation conditions under which the same component may be installed, and

First and foremost is a complete review of the specifications, particularly the drywall and insulation sections.
how these changes directly affect the labor consumed. Without such understanding, there is a danger of indiscriminate application of labor data.

Estimating labor must begin with the stocking of the project. For a simple illustration, a one-story building easily accessed by truckers is assumed. Typically, one man-hour minimum is allowed per 375 lineal feet of partition for steel parts and accessories, with one man-hour minimum also per 2,000 square feet of gypsum drywall.

Once the material is stocked, labor then is assigned for distribution of materials throughout the project. Typically, for framing components, one man-hour minimum per 200 lineal feet of partition, and one man-hour minimum for each 1,000 square feet of drywall does the job.

After distribution of materials, the mechanic lays out the project and locates partitions, frames, glazing, etc. As a rule, there should be one man-hour needed per 60 lineal feet of partition, and an add-on for “runs” of partition (a “run” is defined as each time a line of partition changes), calculated as 3.6 runs per man-hour.

Once the layout is completed, the mechanic installs the top and bottom tracks. For ceiling heights to 10'0", there should be one man-hour for each 40 lineal feet; for ceiling heights of 12'0", one man-hour per 30 lineal feet; and for ceiling heights of 16'0", one man-hour per 25 lineal feet.

Stud installation (assuming 20-gauge 3-5/8" studs at 24" on-center) requires one man-hour per eight pieces of stud 8' to 12' high, and one man-hour per six pieces of stud 12' to 16' high. Reinforcing channels, if needed for stiffness, call for one man-hour per 10 lineal feet of channel.

To install hollow metal door frames, one man-hour per two frames is usually adequate. For frames wider than 42", it takes one man-hour per frame.

Framing for window openings typically requires one man-hour per 6' section for framing, and one man-hour to set up to 6' of window frame.

Board rates for 48" drywall vary by board size. Typical man-hour requirements are:

<table>
<thead>
<tr>
<th>Size</th>
<th>Man-Hours Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot; x 8'-10&quot;</td>
<td>2.8 boards per man-hour</td>
</tr>
<tr>
<td>1/2&quot; x 10'-12&quot;</td>
<td>2.3 boards per man-hour</td>
</tr>
<tr>
<td>1/2&quot; x 12'-16'</td>
<td>1.5 boards per man-hour</td>
</tr>
<tr>
<td>5/8&quot; x 8'-10&quot;</td>
<td>2.4 boards per man-hour</td>
</tr>
<tr>
<td>5/8&quot; x 10'-12&quot;</td>
<td>2.0 boards per man-hour</td>
</tr>
<tr>
<td>5/8&quot; x 12'-16'</td>
<td>1.3 boards per man-hour</td>
</tr>
</tbody>
</table>

Runs higher than 16' require scaffolding and should be calculated accordingly.

Cleanup of materials is generally excluded from a contract. If not, the estimator should analyze man-days required for cleanup and make provisions in the estimate for this item.

Many estimators have computerized their estimate breakdowns and estimate projects simply by inputting types of walls into their estimating programs. They typically build in a waste factor—approximately 5 percent on track, and 3 percent on studs. Obviously, the waste factor is increased or decreased as to the size and complexity of the project.

There are, of course, numerous other factors to address on a job-by-job basis. For example, in the overlap of trades, who installs the exterior polystyrene or visquine? And, is it clearly defined in the specifications? If not, it pays to qualify the final bid by spelling out exactly what is and is not included.

In estimating light-gauge steel framing, or any job for that matter, good estimators have an eye for details and variables that can make or break the bid. It’s a matter of covering the bases-low enough to get the job, high enough to make a profit.