



# Change Orders

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## Recognizing Potential Change Orders

by *Stephane McShane*

Failure to recognize potential change orders is a source of significant margin fade for many contractors. Managing change orders effectively creates the environment where contract status and margins are known and, better yet, predictable. Why is it that change orders go without being noticed or acted upon? Let's look at the source of the oversight and why this may be occurring in your organization.

Change order management can be a time-consuming and painstaking process. Most of us agree that there is not a windfall of profit chasing change orders using the traditional processes. Because of the resistance received when submitting a request for a change order, many contractors decide that pursuing them, "just isn't worth it." Or, they believe that under a certain revenue limit, the effort is not worth the reward. However, if a justified change order is not transformed into a contract adjustment, who foots the bill?

### The Point of Origin for Change Orders

The most easily identifiable change orders come from RFIs or other documents coming from the owner or general contractor asking for revisions to the scope or schedule of a project. These requests must be assessed in order to receive compensation for the additional cost or time. These are the easiest potential change orders to identify but an organization must have a clearly defined process that is universally followed for their execution.

#### Drawings and Specifications

In the design-bid-build world, many change order opportunities exist due to the lack of information contained within the contract documents. What used to be considered a fully engineered set of drawings is seldom considered "complete." Change orders also exist when there are conflicts between the drawings, specifications, and addenda. Another potential for change order exists in the value engineering of an

existing design. How does a contractor ensure that these changes are recognized and pursued? The first line of defense in recognizing these change orders is the estimating group.

In performing assessments of construction organizations, it is apparent that many companies bid every opportunity that exists. In other words, any bid that is remotely within their skill set, geographic region, or vertical market is pursued with little thought to prioritizing those efforts in a structured and objective manner. It is common for estimators to struggle with having enough time to take-off the job and get it summarized by bid day. So, how can a contractor rely upon this group to identify the first line of potential change orders?

The solution exists in the process definition and resource management of the estimating group. Estimators must have the time available to capture this critical information. Utilizing tools such as scope review checklists that structure the documentation and information transfer of bid assumption, questions, risks, value engineering opportunities, and drawing/specification conflicts may be a solution to this workflow challenge. This structure creates the added benefits of a very thorough document review by the estimating group in order to capture all of this information and an expedited ramp-up for the rest of the operations team (design, fabrication, project management, field management, purchasing, safety, etc.) on the interpretation of the drawings and specifications at time of bid.

#### Unplanned Work

Unplanned work happens more often than we want to acknowledge. Is performing work that was not planned and not on the schedule grounds for a change order? It is certainly a possibility. However, the method of identifying this type of change order involves clearly defined teamwork between the field and the office.

Most contractors ask the field to provide a plan of their activities; many call this a three-week look ahead, a short-interval plan, or something similar. This plan allows the field leader to inform the rest of the team of what work will be accomplished for the project manager to ensure the correct resources are available to complete the plan. When the field tries to execute the plan and something happens outside of their control (the painters aren't done, the flooring isn't down, the sheetrock isn't complete, the framers didn't arrive on time, etc.), they are forced to abandon part or all of the plan in place. Activities A, B, and C were planned for today, but only work on activity C was completed. When that occurs, there is a serious loss in productivity as planned work, the work they had the resources to perform, is no longer available and they must regroup and find something else to do.

After the plan, the field staff perform the work and report time on the activities they spent hours on. This is where technology should be deployed to readily identify which reported activities were planned and which one were not. This is the point where many organizations lack the appropriate processes such as:

1. The company's focus and culture surrounding the accuracy of the short interval plan.
2. A review of field hours to analyze the accuracy of planned versus unplanned work activities.
3. Utilization of detailed daily project reports that document why unplanned activities occurred, who directed them, and identification of a possible time and financial impact.

If we can identify a change in schedule, show unplanned activities that were directed, and document the cause of the change, then we have a basis to discuss compensation in time or cost. This sounds simple, however, the information that allows a contractor to fight for time and compensation

comes from one single source—the field. Many organizations provide the necessary tools (process, forms, and systems) to perform the tasks of planning, time reporting, and daily project reports. However, they do not understand the critical role the field plays in gathering the information needed to identify and pursue these change orders, and many of these opportunities are lost due to lack of quality information.

## Productivity Loss

The concept of productivity loss goes hand-in-hand with the field reporting discussion. Many self-performing construction firms have construction budgets that track hours, but only a few track quantities, as well. For instance, an electrical contractor has a specified number of days to install a conduit, based on:

- other trades completing their work.
- necessary tools, materials, and equipment.
- proper information.

If any of these qualifiers are incomplete, the electrical contractor is not able to complete the activity as planned. If the electrical contractor is disciplined at production tracking, providing grounds and data for a potential change order would be much easier because the request is based on facts. For example, the amount of conduit scheduled for installation was not possible due to other contractors not completing their work, differing site conditions, delay in owner furnished materials, etc.

In Fig. 1, the field spent 11 hours to install 30 linear feet of wall rough in. However, they should have spent only 2.81 hours to do this quantity of work. The loss of productivity is the difference between the earned hours and the actual hours, or 8.19 hours.

### Schedule acceleration

When the schedule begins to slip, owners commonly ask the trades to accelerate their schedule, often requiring overtime and/or double-time work. Some may offer to pay the difference in wage rate between straight time and overtime or double-time.

That is fantastic, but only part of the reimbursement that you may be entitled to. There are multiple published studies that prove the loss of production when overtime is performed for an extended period. The differential for the loss of productivity is significantly higher than the wage rate alone, as outlined below.

*A 10-man crew is working 40 hours a week. To finish the project on time, the owner requests acceleration to finish the project on time—60-hour work weeks for the next five weeks to complete the project. Straight time wages are \$50 per hour. Overtime wages are \$75 per hour. The owner has graciously offered to pay the overtime difference of \$25 per hour.*

Using the NECA Overtime and Productivity in Electrical Construction study as an example, Week 3 will only be 85 percent efficient—a 15 percent loss of productivity. This is ONLY for Week 3 and loss of production continues to rise week to week.

#### Week 3:

85 percent efficient  
 15 percent loss of productivity  
 15 percent of 600 hours =  
 90 additional hours needed to  
 produce the work required  
 90 added hours x \$75/hour = \$6,750  
 20 OT hours/man x 10 men  
 x \$25/hour = \$5,000

Week 3 Total Impact = \$11,750

In this example, the owner offered a \$5,000 wage rate differential, but the loss of productivity will cost \$6,750—a total impact for this week of \$11,750. This example does not take into consideration any double time that may be incurred or items like tools, equipment, consumables, etc. If the contractor does not ask for all of this in a change order, there will be a loss in production, direct job cost, and profit.

Change order management is a progressive process that begins before the project starts:

1. Utilization of effective financial controls including standard cost codes and a budgeting process.
2. Preconstruction planning to identify

all potential changes discovered during the bid process.

3. Consistent field planning, time reporting, quantity reporting (production tracking) and daily project reports.
4. Proper contract administration and risk management to ensure that change orders are approved and contracts revised to allow recognition and billing of these items in a timely manner.

Recognizing potential change orders and following them through to approval and execution is a team effort. Left unchecked, direct job cost budgets may suffer and margin erosion can result. Ensuring that the entire team has the correct tools to identify potential changes and are trained well and empowered to use them is the first step. Successful firms must have the change order process standardized and defined to create consistency within the company. Done well, this can allow the transformation of potential change orders into increased revenue and margin for the organization.

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Fig. 1

Week of	Area	Phase Code	Description	Budget			Hours		Quantity		
				Labor	Qty	UM	Actual	Earned	Week	to Date	% Comp
9/26/2016		SS-00-230	WALL ROUGH IN	8750	935	LF	11.00	2.81	30.00	30.00	3.21%