

# ESTIMATING CHANGE ORDERS, COST OR OPPORTUNITY?

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A discussion about change orders should properly begin with some thought about why change orders are so prevalent and what, if anything, can be done to help in bringing about an environment in which they are no longer necessary or, are, at worst, minimized. This assumes a philosophical backdrop of construction in heaven, but it may be instructive.

Certain classes of change orders are necessary and beneficial. These involve owner-induced changes to keep the facility under construction as up to date as possible in a technologically changing environment, and which are anticipated by the owner as a natural part of the development of facilities. Those types are ideally priced by a construction team, which is also accustomed to building facilities in which change is natural and expected. Both parties, along with a design team of similar experience and expectation, approach such a project dealing with change orders as an everyday part of the process, not something unusual or adversarial.

Such projects are not the norm, however. Often change orders, or potential change orders, are viewed as an intrusion into the normal building process, the responsibility for which must be laid at the doorstep of one of the members of the construction team, who then is expected to pay for "fixing" whatever is wrong. If there must be a change and there is a cost associated with it, the owner will often take the position that the designer did not properly design the facility, having known what the owner's budget is during design, and therefore the owner will not pay for a change. The designer may take the position that the owner did not properly communicate its intent or that the construction team is not acting in good faith by pricing the change at a multiple of what it is really worth. The contractor may believe that the owner and designer are trying to force their errors upon the construction team, and thereby are acting in bad faith themselves.

Let's back out of this picture and examine the big picture of the construction process today. Let's use as a benchmark of our examination a single concept, not that the situation is so simply analyzed, but that this single one may bring the most light to a heated subject. That concept is competition.

We normally think of competition with regard to construction projects in terms of that between members of the construction team. But this is of course not the only competition present in the process at all.

Begin with the owner and ask, with whom is the owner in competition? For a privately or publicly owned company, the answer may be obvious - other firms in the same business. For the governmental or institutional organization the answer may not be as obvious, but a bit of thought may reveal that a particular firm or organization is in competition with others in the same organization,

for example, branches of government trying to get funding for their own projects, or institutions of higher learning trying to show themselves leaders in the medical or science or humanities field and so competing with other institutions of like purpose. Or consider different departments of the same institution, say the science and athletics departments of a major university, competing for the same facility construction dollars from this year's budget.

It is important to understand that virtually all owners or users of the facilities the construction industry builds are themselves in competition with some other entity for their construction dollar.

Likewise, it is important to see that design firms are in the same type of competitive environment. This may be easier to understand, but it is not always fully appreciated. Perhaps in days of old owners selected design firms solely on the basis of presentation, concept, and experience. This is rarely the case in the present day. While these facets of the selection process are considered, along with them, and perhaps the most important of them, is the design fee proposed. And just as many contractors argue that margins now are less than they were 20 years ago, so will designers argue that design fees are now less than they were 20 years ago.

Both of the arguments may well be true, but the contractor often fails to consider what lower fees mean to the design team. Many designers, in calculating the cost of design for a project have developed, analogous to the contractor's historical cost records, historical cost records for design. The costs are often expressed in a unit like man-hours/page of documents. A designer will also be able to determine fairly closely how many pages will be required to represent the current project's working drawing design. Total number of pages multiplied by hours/page multiplied by the factor a designer must have on his base wage hour to cover overhead and fee, equals total design fee.

If the designer calculates that this cost to be 7% of the projected cost of the project using the methodology above, and the owner, based upon the designer's competition, is unwilling to pay over 5%, the designer is faced with a dilemma. One answer to that dilemma is to accept the 5% fee, recognize that there are only a certain number of hours that fee will allow, and produce a set of documents that is commensurate with that number of hours. Perhaps the documents will not answer all the construction questions, but it will probably be less costly for the designer to answer the questions the construction team raises than to answer all possible questions in the original documents. This may not be, in the eyes of the contractor, the best perspective for the designer to have, but given the competitive circumstances of the designer, it is understandable.

The competitive pressures on the contractor are well recognized by those in the industry and need no lengthy exposition here. It suffices to say that they are pervasive and unrelenting.

All of the foregoing is prologue to say that changes are, in today's environment, inevitable; that is, unless one happens upon that rare project in which the owner engages the services of the design team to completely design a facility and compensates the team for a complete design, in which the contractors are allowed, nay encouraged, to do a complete job and make a fair profit, and in which the number of changes, through the cooperation of all the parties, is held to an absolute minimum, identified and resolved quickly and fairly for all parties, and everyone has respect for everyone else. Perhaps we see these once in our construction lifetimes.

How to bring about more of the projects constructed in heaven is a subject for another time, and it is well worth pursuing by all the members of the construction team, because not only does it make for better, more cost effective projects, it is also a lot more fun to work on.

An equally closely related subject, claims (or change orders gone bad) is also one for another time. A claim has a lawyerly ring to it, and is usually the result of a change order, or series of change orders, which could not be resolved by the parties of the first part, that is, those involved every day with the construction of the facility. A claim might properly be called a failed change order.

We want to deal with the recognition, preparation, and presentation of change orders.

## **RECOGNITION**

How does one recognize a condition which gives rise to a change order? While the answers to this question may seem stunningly obvious in theory, they must not be so obvious in practice, because the question of change orders is as notable for the lack of presentation of proper change orders as it is for the presentation of inflated or bogus ones. This may be so because those responsible for representing a company's interest recognize change but decide to forgo pursuing compensation for the change for a host or perfectly rational reasons - the tried and true "give and take" of construction. This is the highest and best reason available for not pursuing change orders, a true spirit of cooperation on the jobsite, the reason for which projects finish as well as they do.

In spite of the foregoing, many change orders are not pursued because they are not recognized. Why is this so? Probably the foremost reason is that the company's front line staff, those in the field, are not adequately trained to recognize the change. They may not be as well versed in the construction documents as they ought, not only those which deal directly with their work, but those on the periphery of their work. Many subcontractor's field supervisory personnel have never seen a

copy of the contract between their firm and the general contractor, do not have an in-depth knowledge of the project specifications, especially the general conditions portions, and prepare for tomorrow's work after work is complete today. In the grossest terms, how could such employees recognize a change when they do not fully know what their work is?

Related to this lack of knowledge of contractual obligations and scope of work is a more subtle but equally pervasive cause of lack of change recognition — it may be called a lack of interest of management in training supervisory staff in matters other than pushing work. That is to say, the supervisory training which does take place revolves around how to put the widget in place faster, as opposed to the more mundane matters of record-keeping, specifications and contract review and study, etc. A supervisor who cannot put the work in place effectively is short-lived. Those who remain are viewed as valuable because they can put the work in place and short shrift is made of training them in other aspects of their jobs, including the recognition of, not to mention preparation and presentation of change orders. This situation to the contrary, is it not these very staff who are in the best position to recognize changed conditions and react most quickly to them?

The remedy for these conditions is training. By training we mean organized, in-depth, "classroom," ongoing training. Perhaps it is a one day seminar on changes recognition, record-keeping, etc., conducted by in-house staff or someone brought in; perhaps the training includes project management staff, and emphasizes ongoing, thorough review of possible changes. Perhaps it includes a project start-up meeting where among other things, the specs, plans, contract, etc. are thoroughly reviewed, including the potential for change orders. Certainly, the company's estimator will want to identify potential changes as a part of bid preparation and bidding strategy. Perhaps it involves periodic, in-depth reviews of the job where one of the standard questions addressed is the status of change orders and potential change orders. All of these, as part of a written and effective management plan, will aid immeasurably in recognizing potential changes and thereby potential change orders.

## **PREPARATION**

Once we recognize a potential change, how do we prepare it for submittal?

The importance of meticulous preparation cannot be overstated. The first impression created by a request for a change order is absolutely critical to the entire process. Shoddily prepared change order requests will almost universally produce the same response, derision and/or anger, leaving the distinct impression that the presenter does not know what it is doing. Perhaps the greatest failing of initial change order requests is that they do not provide nearly adequate documentation,

so that a rational person can decide the merit of the claim on the submittal alone. If documentation is provided, it is usually that which is most favorable to the contractor, with none favorable to the other side. The most widely practiced procedure in this area is to adequately describe and price added work while not doing so for deductive work. If the entity reviewing the change order request discovers such omissions, it is extremely difficult for the submitting company to maintain the reviewer's trust, both for the change under consideration and for any that might arise in the future.

Another equally common failure is to use one set of prices for bidding and another set for change orders, the second being substantially higher than the first, without adequate, or indeed, any justification. Many change order proposals are prepared in this way, with the result again of having the reviewer lose trust in the contractor.

A third failure is that the general contractor simply passes through a subcontractor's change request data, not having reviewed it. Again, credibility is lost. It is important for the contractor to both thoroughly review the sub bidder's prices it receives and to demonstrate that it has done so.

Perhaps the best way to overcome these problems is to do the reverse of the situation described above. The scope of work should be accurate and complete. It should be described and presented in the same level of detail as the contractor prepared its own detail estimate for the project as a whole. The same pricing structure should be used, and if it is not, variances should be noted, in detail, along with their justification.

For example, if the productivity included in the original estimate is more than that provided for the same item of work in the change, a note explaining the variance should be provided. It may be, for example, that the original quantity of a work item was 10,000, all of which is done, while the change will have 1000, which must be done anew, with its concomitant new learning curve, etc. As an aside, it is equally as poor performance to fail to use pricing different from that used in the original bid if the conditions under which the work will be done demand it.

In addition to the above, no change order request which involves the work of a subcontractor, should be submitted without careful review and critique. The general contractor representative should be as familiar with this change as it is its own. The critique should include that for the items mentioned above regarding quantity survey, pricing structure, and explanatory notes. One way to demonstrate the level of the general contractor's review is to include a sub bidder's quote, which has been manually changed by the general contractor, and to allow the changes to show on the submittal.

Two items which are often overlooked by those in the construction team are the effect of the change upon general conditions, and upon the project schedule. These are often difficult to determine, but are nonetheless real. Here the original estimate schedule and general conditions are critical in proving the case, because before expecting to collect more general conditions, the contractor must show what his original bid included. Again, the documentation should clearly set out the original, how it is now changed, and what costs are added because of the change.

Another item often overlooked in change order preparation is the affect the change will have on surrounding work and schedule. Is adjacent work impacted? Does the change entail rescheduling adjacent work so that it is less efficient than before? If so, these impacts must be quantified and priced.

The contractor must not overlook, as well, the cost of preparing the change order. Change orders take time, and if the time or staff is not anticipated in the original bid, it, too, should be quantified and priced.

## **PRESENTATION**

Once the change is properly prepared, it is usually forwarded to the Owner's representative, there to fall into a great black hole, it sometimes seems. It is easy to think that once the change proposal is submitted, the bulk of the work is done; however, in some ways, the process of submittal may be the most important part of the entire process.

The contractor should take a carefully reasoned pro-active approach to change request submittal. A great deal of time, effort, and trouble and be saved thereby. A submittal meeting should be requested, at which the contractor and all parties having an interest in the change order should formally present the change. The presentation will include the scope of the change, how the quantities were derived, the basis for the pricing used, and the rationale for the impacts seen. The presentation should be detailed, as detailed as is the change itself, and should include visual aids to assist the reviewer in understanding its content. The submittal meeting should be viewed as a marketing meeting, helping the contractor to justify the change and therefore "sell" it. Remember, first impressions are important, and that is nowhere as true as in change orders.

The foundation for the entire change order process is, of course, adequate record keeping. Changes involve the original estimate, plans and specifications, contracts, correspondence, meeting minutes, daily reports, and other such documents. Lack of such records has doomed many a legitimate

change order request, and their importance cannot be overstated.

A change order is not an opportunity to prospect for gold in the project. Neither is it an opportunity for the owner or designer to put two pounds of project into a one pound bag. Either of those attitudes, when discovered, as they will surely be, will lead to attitudes among other team members, which may result in substantial cost increases for everyone involved. Unresolved or inequitable changes lead to claims, and claims often lead to little satisfaction for anyone involved, save the legal profession.