

Professional Practice Corner

Pain-Free Management of Change Orders

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Barring miracles, change orders are a fact of life. This article offers some tips on acting early and decisively to start out...and stay...on the right path.

How often have you heard the following words from your client's lips: "I do not expect there to be any change orders on this project." I would suspect more than once if not repeatedly. While idealistic this is surely not realistic.

We all know the myriad of reasons why this is nearly an impossible task, although in my 25-plus years of experience I actually have succeeded in completing two public Design-Bid-Build projects without any change orders within a two year time-frame. The stars must have been aligned those particular years!

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So, short of a miracle (if you even believe in miracles) what alternatives do you have to embrace the inevitable and minimize the pain? I would suggest that you consider three primary opportunities to control your destiny. The first and best opportunity is in the pre-construction phase before the budget is fixed. If that doesn't work because you aren't brought into the picture early enough...have no fear. You're still in luck. You can include contract language in the front end documents to at least mitigate the battles that will ensue. Finally, if you miss out on both design and bid phase opportunities you still have some wiggle room for at least clarification and setting the job on the right path at the start of construction when wounds from the last job have healed and the team is open to starting this project at least on the right foot. Be careful, though: You only have a very short window of opportunity...certainly before negotiating your first change order!

Design Phase

- Plan an adequate contingency for construction in the owner's budget, separate from the design contingency. Realistic expectations make it easier to manage and control the construction process. Also ensure that there are adequate soft costs allocated in the budget so that dollars are not transferred out of the construction contingency to cover shortfalls on other budget line items.

Pre-Bid Phase

- Include upfront language in the contracts to make change order management easier during construction. Balance what you ask for with what it costs.

Construction Phase

- At the start of the job request all the necessary information you can in preparation for change orders so you can agree upfront on cost issues, with no surprises or conflicts under stress or time constraints. Most importantly, resolve schedule issues as they occur. If the project is on time it most likely will be on budget

What is considered an adequate contingency for construction in the owner's budget, and what should you watch out for in the owner's budget to ensure that the construction contingency is protected?

- New construction vs. renovation construction contingency, or other project type considerations and complexities impacting percentage allocation;
- Other cost considerations adequately budgeted including hazardous materials abatement, testing and inspection, moving expenses, owner furnished items, legal fees, permits, design fees, etc;
- Adequate markups in cost estimates for contingencies, cost escalation factors, market conditions – bid factor, to ensure successful bid results;
- Consideration of bid alternates and Value Analysis recommendations if Value Engineering opportunities do not occur during the design process; and
- A comparison review by CM of the cost estimate prepared by the design consultant with reconciliation of variances.

What kinds of items can be included in the upfront documents to facilitate change order management during construction? Consider the benefit of each item and, if not requested, what the ramifications are.

- Resource/cost loaded CPM schedules and updates – Use for the owner's protection, so make sure you have an expert in your camp who understands the requirements;
- Written notice requirements – stay on top of potential delay items;
- Written change order requirements and procedures, with allowable markups well defined (include sample documents in the bid package clearly representing the calculation methodology);
- T&M requirements and verification of hours;

- Detailed breakdown of Schedule of Values – Confirm costs are appropriately allocated for project start-up (suggest a mobilization line item at bid), adequately detailed to review pay requests, useful for order of magnitude pricing confirmation when changes occur as either adds or deducts;
- Frequency and form of payment application and regular inclusion of change orders;
- Earned value information – Productivity analyses of a resource loaded CPM schedule can be useful to analyze lost productivity claims;
- Certified payroll information – Analyze to identify excessive labor burdens on acceleration claims and compare labor rates charged for changed scope;
- Planned cash flow curve – projected manpower indicator;
- Submittal of general conditions breakdown of costs;
- Submittal of contractor’s daily delay costs;
- Submittal of equipment rates – understand what equipment items are chargeable and what they are used for;
- Allowable direct vs. indirect costs adequately defined upfront, i.e. no costs added to change orders for project management, as-built updates, or scheduling updates for change orders; and
- Audit/access to records clause in the contract documents.

What items should be clarified and/or requested at the start of the job or at time of bid if possible but definitely before issuance of the first cost proposal?

- Hourly rates of labor – under labor burden, ideally defined in the specifications, and ensure correct labor classification assigned to the work;
- Allowable supervision costs;
- Allowable markups and correct mathematic application;
- Caution against exaggerated material quantities and/or labor hours for work to be performed;
- Allowable direct vs. indirect costs to be included in change orders; and
- Agreed method of pricing MEP items.

What items to look for related to costs when closing out projects?

- Notice from surety reflecting increased costs due to change orders to ensure bond and insurance premiums charged for change orders were paid;

- Final payment subject to assessed value pending resolution of any outstanding issues, and subject to receipt of all close out documents including; training, manuals, as-builts, testing reports, lien releases, regulatory forms if applicable, and completion of all punch list items;
- Claims release – for any outstanding unresolved issues including schedule impacts; and
- Maximize any credits due for deleted scope.

If you can, help determine a realistic change order reserve for construction and be sure it is preserved through construction. Establish cost monitoring and management procedures upfront prior to bid so language is included in your bid documents and at the start of the job. To control costs during construction be sure to emphasize to the team (including users) that all communications must be routed to or go through the CM and the CM must be involved in all meetings. Bring any cost issues to the owner early so they can be dealt with effectively. Approve only a realistic schedule of values for work in place so the owner is never behind at any given moment, and process all payment applications promptly including changes as they occur to mitigate claims. **CM**

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We welcome submissions for the Professional Practice Corner. Please send your ideas to John McKeon at jmckeon@cmaanet.org.

