



Constructability Collaboration: Preconstruction to Operations

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Introduction

The culmination of preconstruction is the hand-off process from estimating to operations. Throughout the preconstruction process, the team has worked towards a common goal of coordinated and permitted construction drawings that reflect the budget and schedule. Once the bidding process is complete, it is essential to communicate all pertinent information gained during preconstruction to ensure the project will be successful. How a project starts sets the tone for the duration. Here are five considerations to ensure that the transition is seamless and successful.

Goal: Zero Qualifications

Reducing contractor qualifications to zero is a critical goal prior to contract. Communicating qualifications, assumptions and questions throughout the preconstruction process is essential. This draws the attention of the design team to items that need addressing to meet the budget and remove unknowns from the documents. Each pre-bid question and post-bid qualification must be stated clearly so that any person unattached to the project can navigate the plans and comprehend the issue.

With the help of the design team, many of the qualifications can be eliminated by answering questions and incorporating those answers into the document. At each issuance of addendums or plan sets, the preconstruction team must review for any changes to ensure items are clouded and corrected. Any remaining items including allowances need to be addressed during the buyout process to ensure no scope gaps with subcontractors.





Define & Double Check Bid Packages

Depending on the scope and size of the project, bid packages may be issued during the bidding process to divide the work into more manageable components. A bid package contains drawings, specifications and supplemental documents such as soils and environmental reports. Within each bid package the preconstruction team should:

- Review the bid packages with the field team at an early stage.
- Identify any overlapping scope so that no work is counted twice or missed as proposals are evaluated
- Identify any alternates requested by the design team and any substitutions suggested by subcontractors.

Supplemental documents within the bid package include site logistics and schedule as prepared by the superintendent. Estimates for general conditions and general requirements must be a collaboration between estimating, the project manager and the superintendent to ensure ownership of the budget. All of these items vary with each project and they affect how subcontractors prepare an estimate including start dates and crew sizes.

Alternatives & Budget Trending

The preconstruction process provides continuous value management, utilizing the trend estimating process to isolate the cost of design changes and challenges and facilitating decisions to keep the project on schedule and on budget. Trending also provides the project team a weekly budget update between the issuance of milestone drawings and estimates. The goal of any accepted trends would be to have them incorporated into the construction documents prior to contract. Any outstanding items that are not reflected are then qualified and addressed during the buyout process. Each trend must have sufficient backup, detailing a path so that the project team can buy out the accepted trends once they are incorporated in the construction documents.

BIM Integration

Setting up a Building Information Model (BIM) model in the preconstruction phase allows for its utilization during the buyout process. The BIM model can be enhanced to incorporate time in a 4D model. Tying a well-planned CPM schedule into the model can help perfect the sequencing and detail during the buyout process. When subcontractors can see the modeled schedule, they are generally much more successful at staying organized and executing in the field. *(Read more about modeling in our July 2016 White Paper: Six Key Benefits of Building Information Modeling.)*



Teamwork Through the Process

Drafting scopes of work for each subcontract is a great way for the team to engage and discuss the specifics of the project. The scopes have to take everything into account from the construction documents. Ultimately, the project team must own the final scopes, therefore it's ideal to have the field team work with preconstruction to develop detailed scopes of work.

During the buyout process, it is important to sit and meet with subcontractors. Face time is critical not just for reviewing scope but also meeting the field team and discussing prequalification information such as safety, past project history and manpower. These meetings also give the preconstruction team a chance to build relationships with subcontractors.

Inherently there are changes to the documents in the interim between the bidding process and completion of buyout. These changes may stem from plan review comments, value alternatives and finalizing qualifications to requests for information. The preconstruction team is able to identify and quantify any changes to aid the field team. Ideally any changes are priced concurrently with buyout and priced by competing subcontractors.

When buyout is close to completion, the project team, including upper management and preconstruction, convenes for a third-point meeting to review the project as it relates to safety, schedule, and cost. The real benefit for the preconstruction team is taking the project full-circle and identifying the lessons-learned. Everything from missed scopes and subcontractor performance to changes in pricing benefit future projects.



Conclusion

The preconstruction process is essential to delivering the most cost effective, best in quality project. Transferring the knowledge learned during this process from estimating to operations is essential to continuity and effective buyout. Early integration of the field team with the preconstruction team ensures a well-vetted buyout plan and a Guaranteed Maximum Price (GMP) that is proactive and comprehensive.

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Contact Us: info@milenderwhite.com

Corporate Office: 12655 W. 54th Drive, Arvada, CO | 303.216.0420
California: 1401 Dove Street, Suite 410, Newport Beach, CA | 949.724.9531