

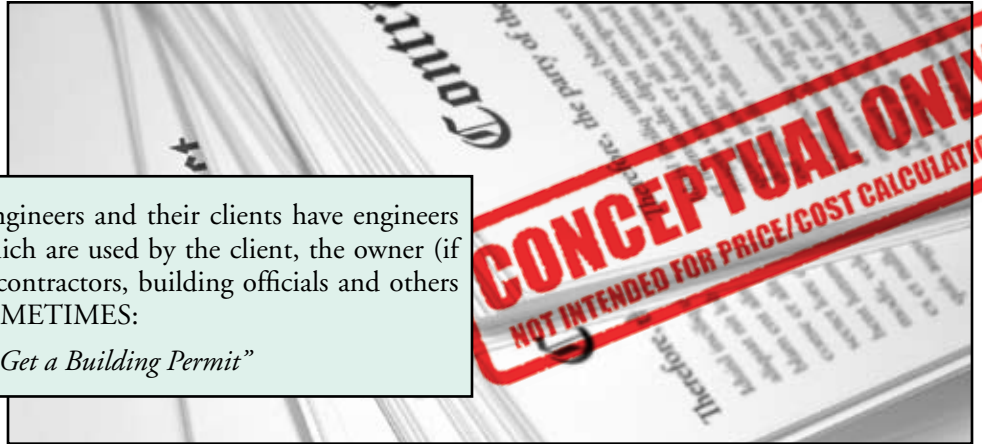
Contract Documents

Different Strokes for Different Folks

By Richard Bender, P.E., and Rob Houser, P.E.

Generally, contracts between structural engineers and their clients have engineers providing documents for construction which are used by the client, the owner (if not the client), the contractor, some sub-contractors, building officials and others involved in the building process, BUT SOMETIMES:

"All I Need Is Enough to Get a Building Permit"



Design-Build vs Bid Documents

In design build, the contractor has the ability to guide the design team in a direction geared toward his and his subcontractors' strengths and/or most economical design solutions. For example, a steel fabricator may have a preferred connection design that enables him to mass produce parts economically; therefore, his price and the design are tailored to meet this need. In a bid set, the engineer should provide connections or details that he feels are the

"...it is difficult for some contractors to price a 'concept' without knowing sizes, materials, etc."

best for the project and economical based on experience with several fabricators. Design build documents can be done based more on design intent/performance requirements, while a bid set is usually expected to have a higher level of detail and specifications. Design build, selected contractor and construction management documents and methods can generally be similar in scope and detail, depending on the owner/client/contractor/design team relationship.

Recently, we provided construction documents for a medical office building with an extremely aggressive schedule, for which the owner selected a specific contractor who in turn selected specific sub-contractors. We produced construction documents and worked with a specific steel fabricator. The urgency changed and the owner requested the contractor to take bids on the steel along with other items. Since our drawings

were tailored to a specific supplier and his fabrication process, the other bidders had concerns adapting the details to their process.

Pricing/Budgeting/Guaranteed Maximum Price

More and more, design consultants are used by contractors to help determine project costs and budgets. The production of documents for this purpose can be a slippery slope. While the structural engineer can easily define the conceptual design for a project, it is difficult for some contractors to price a "concept" without knowing sizes, materials, etc. Preliminary pricing and budgeting drawings should include information about layout, main member sizing or typical bay designs. These drawings should include language stating that the documents are not intended to be complete or fully detailed. An experienced contractor should be able to take these drawings to provide the owner with a reasonable budget, and provide for contingencies that have not been designed but can be expected based on building type and general configuration.

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How many times have you heard that one? You give the client what they asked for and contracted with you to do, and they complain later that you didn't detail a certain condition. The agreement between you and your client as to the purpose of the documents you produced was not clearly understood by both parties.

All consultants, not just structural engineers, are more frequently being asked to provide documents with a specific minimum level of detail to serve a specific purpose. You might be asked to provide documents tailored to some of the following project types; however, this is not an all-inclusive list.

- Design-Build
- Selected Contractor
- Construction Management
- Partial/Piecemeal Bidding
- Pure Bid by General Contactor
- Permit Only
- Budgeting Only
- Guaranteed Maximum Price
- Foundation Design for a Pre-engineered Building

When negotiating and/or accepting a contract with your client, specific language delineating the purpose of your documents should be included. Depending on the contract language, some of the documents you produce may never be used for construction documents, or there may be different documents produced for various phases of a project. Not only should the contract include language regarding the use of documents, the drawings themselves should include notes stating the intended use of the drawings. Notes such as this may prevent a contractor from using documents for the wrong purpose.



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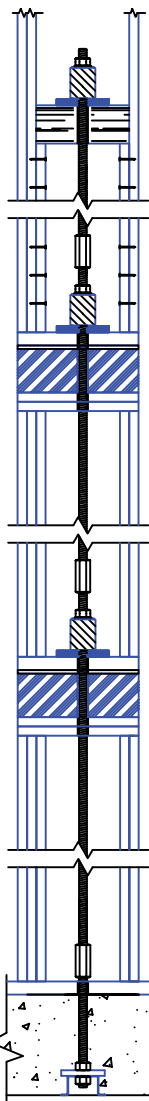
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A guaranteed maximum price set needs to be, at least for the structural consultant, as close to construction documents as possible based on the architects' level of completion. Many times, the guaranteed maximum price is given long before all of the drawings are finished, and unknowns in the design can lead to overages that the owner will get as change orders. If the drawings used for Guaranteed Maximum Price are lacking information, the consultant can provide notes to alert the contractor to provide contingencies for missing items.

What Does The Building Official Expect?

Requirements vary depending on municipality, code, project type, etc. Generally, code officials will allow different levels of completeness (final detailing, etc.) as long as the design intent is clear. Fast track type projects can require separate permits for foundations and framing; this can put a burden on structural engineers in that foundations are generally last to be designed, but first to be needed for construction. Some foundation designs, once revised based on final framing designs, are submitted with revisions to ensure compliance with building official requirements. Budget and pricing drawings are not usually complete to the standards required by building officials. Permits require sealed drawings, and most engineers are reluctant to seal a pure pricing set.

What Can You Do?

Educate your client. Tell them in writing what is to be included in the contract documents. Negotiate fair fees depending on the level of completeness you and your client have decided is necessary, and provide your services to the standard of care expected in your area. The client that asks you to provide a "pricing" set,

then uses them as an instrument for construction, can lead to serious problems for all involved. Scope creep can be difficult to avoid, but with preparation, it can be prevented. Scope of services should be delineated in the contract, along with the type of documents to be produced and their level of detail. The drawings should be labeled with notes indicating their intended use and presented to your client in an uneditable format.

If you cannot convince you client of the various pitfalls of neglecting to delineate the purpose of your documents, remember; *no deal is better than a bad deal!* ■

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