

BLUEPRINT READING FOR ESTIMATING Part Two of two

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By **Michael Luke**, Owner Mountainlands Area Plan Rooms, Estimating Consultant,
Architectural Draftsman; former Sub Contractor, Fabricator and Erector

This topic is also offered in workshop format at several locations recently including at the Society’s 51ST Annual Convention and Estimating Academy in Park City, UT and again in Houston recently. Watch ASPEnational.org for more opportunities like this and other on-line educational courses. For those who didn’t get enough of Utah, again there in January 2008.

In Part One we discussed the unique aspects surrounding estimating and planning your take offs of documents. Here we follow up with how plans are produced, point of contacts, responsibilities and how to get answers. Discussion of the specs, especially division One as it applies to all participants. The new CSI spec divisions or Master Format now about 3 years old. They do a great job to clarify some redundant situations found in the old. We will discuss the cost items found there that some estimators may not know exist or recall to add. No matter how seasoned the veteran, these reminders help us all. Then finally some greater detail in the plan documents themselves.

It is with rare exception to find a plan actually ‘drawn’ by hand now. That skill has for most part retired or now writes articles. One failing I see in today’s Architecture and the training for it are to encourage the natural abilities to draw. In construction we need problem solvers. Wouldn’t it be nice for an owner’s rep to recognize and solve an issue right on the spot or be able to translate a solution timely and legibly by hand? Many times I have been able to draw or suggest a fix on a scrap of wood and the job can move on. Now it requires several meetings and a trip back to the computer to look for a similar detail pictured in memory to get close. However for bid purposes the problems may not get solved prior to bid deadline, our purpose for discussion here.

Today the cad programs available provide for most conditions of traditional construction practice. Just like the draftsman can refer to a picture or detail in memory, the estimator needs to create a similar database. Whether physically or mentally stored, the knowledge of the cost for these is a valuable skill set. Recognition of factors can and should include and allow for traditional costs related to the firm itself. You all have one or two who when you see their logo know you need to add money to the bid, or conversely know they will provide a smooth guideline.

We suggest your chapter recognize the good ones publicly with an Architect of the Year Award from the Estimator’s vantage point. No, not a beauty contest as some already get. Rather, at the bid stage is what we estimators have access to or knowledge of. Consider the firms professionalism in handling addendums, courtesy addressing questions, build-ability at the time of bid, access to plans in multi-media, and providing ample time to bid, etc...Present it at a nice banquet and show them we know they are trying harder than most.

While that is a step towards rewarding positive behavior, now let's deal with a question and how to get it answered, seems elementary but for estimating purpose is a challenge at best. First, the drawings admittedly may not be finished, so questions posed from subs and suppliers start 'bothering' some design teams. Ironically, it is usually the worst firms at that. While the estimator may think they should be applauded for checking the drawings for free, it is sometimes off putting to the designers. One suggestion the architects will like here is to run all your questions in writing to someone at the next level. Let the invited or advertised set of prime contractors attempt answering or submitting on to the design teams or owner's reps.

The risk in a subcontractor getting a 'correct' answer in private or from a subordinate design team member is that it may not be published for all. As in an addendum, if not published it did not become an official document or part of the 'per plans and specs' (at time of bidding) language. So the sub armed with right answer may not be considered or worse may have an attractive price only to be subjected to the more expensive original option. This issue can be addressed or clarified with a well-written scope letter as we have discussed before. See the June Issue of Estimating Today for an article on the subject. If not answered, bid what you see or protect your firm in writing. The job here is to identify, quantify and value 'risks' as much as 'products'.

Another situation that has considerations beyond the norm when asking questions are either design build or work for the federal government (some other public agencies or CM jobs as well). Lets address the latter first. Usually by the time you see a set of federal or military plans the designer is out of the loop at that point. They operated under a procurement contract for designing a job that is separate for actual construction and are no longer the point of contact for that purpose. Again, usually is the key word here.

In division One, the solicitation or contract documents the POC will usually be alluded to. That individual or point of contact will then redirect the questions and be sure answers are published. Again questions not answered by addendum, become fodder for change orders when under contract. This is true in both the public and private sectors.

The other unique situation to address a question is the design build process. Questions here are not only more likely to get answered but are encouraged if you are an invited participant. The POC will usually be identified early on, or in pre-bid and pre-construction meetings. Be sure to participate and attend those. The POC may be the architect or may be the general contractor. Regardless once the lead is appointed or chosen, run questions and suggests through them always.

Also noted in division one or sometimes div 00 is both the contract document and bid form (or samples of). As we mentioned in part one, you should plan your take off based on the boundaries of alternates or as the bid breakdown suggests. Take off and summarize based on the answer (bid) needed. Read the sample contract. Even though intended for a level above you, your sub-contract will both refer to and make you subject to those conditions.

Several other items of note there that may cost implications for your firm there are: submittals, work hours, days to complete, OCIPs and other named conditions. Your firm's bid team should delegate a representative to address these specialties on a job-by-job or bid by bid basis.

Submittals may include an unusual distribution or number of your documents. In some cases actual products delivered, while others require small assemblies manufactured for review. All prior to production once the bid is won. We recently saw one of our mason's build a number of 8' x 8' "samples" with grouted for color and batch review as specified they would do. This was totally out of their pocket because it was noted in their division that this would occur and they missed the note.

Work hours and days to complete not only affect schedule, but also production and daily access to the jobsite. Move-ins and set up, start and stopping all logistics need considered. Businesses that remain open have special cost factors too. Not to mention infection control and staging in the medical fields. Some jobs or sites only allow 7-4 pm, some nighttime only or no overtime allowed, may be mentioned. A job with 60 days to complete generally costs more than one with 90 or vice versa. Point here is that it needs identified and addressed as a cost factor or not.

Insurances, even if not an Owner Controlled Insurance Program or OCIP deserve analyzed, not whether they affect you or not, but how much they affect you as it may require higher coverage than you normally carry. What is unique about OCIPs (they have many different handles nationwide but the outcome is the same) is that your insurance may not credit them back in your annual quote. Plus, they may not cover anything on that same job, or any difference in your deductible to the OCIPs.

For instance, a well known retailer utilizes an OCIP however they also have a \$10-15,000 deductible per occurrence. I doubt your firms policy's deductible is that high, but I also bet your policy does not help cover any shortfall for that project. Especially the gap between their deductible and the coverage offered. Check it out and know how these should be applied. I believe it is seldom a credit yet many firms give money back thinking they do not have to cover that project. We have seen several subs forking out 8,000 – 10,000 claims out of pocket because it was within that shortfall. That folks is risk worth pricing in your bids. You will find it in division one.

In the 2004 Master Format alluded to above there are no longer a division 2 for example. What? No site work specs? Rather, they are just moved and clarified. For those who have not dealt with division 2 before they had several duplications in trades exist or could have. A utility trench for example may have been included by the excavator 1; the plumber 2; the electrician 3; a utility specialty sub 4. The chance of this happening now is limited by spec.

Currently site work is divided up to above ground (IE: Landscaping, paving, etc.) below ground, as in excavating and a third sub segment of utilities. Overall the CSI divisions were accumulated and divided similarly. Now the number series remain the same for most, the MPE and site, catch the majority of change. Basically, if you think of it now as the site; the building frame; and the operating systems you will have an understanding. We won't go further into those details here. We just need you know they exist and will be incorporated more and more as time goes forward. I say that, yet it seems some AE teams laughably never adequately adopted the 1984 Master Format.

Let us now address the drawings. I realize that it seems like all we have been 'Reading' so far is the specs. But when else will it get done? or by whom? if not the estimator or an interested bid team member. Do it to be selfish so that alternates and bid structure is planned for and incorporated into the print review time allowed. In the Figure One from Part One, we suggest becoming familiar with the drawings from front end to back. Here is how that is typically composed and why.

Most plan sets have a cover, or title page. Sometimes that is one and the same. On or near the beginning is the list of drawings included, legends and symbols they sometimes or typically use. The Civil Engineer (usually the lead on industrial or civil work) may produce the “C” drawings for the site development. Yet sometimes an “S” or “SD” does the same. The Architect (usually the lead on a building) does the “A” drawings and any other portions they have expertise in. For institutional work related to the main building as in a school or correctional facility for instance, you may see another layer of subordinate contributions such as “K” for the kitchen and cafeteria specialists.

The building set continues on to the structural engineer’s interpretation of the design with their “S” sheets. Generally what follows are known as the MP & Es for the mechanical, plumbing and electrical engineering specialties. Now there may be variations to this, and of course more depth in AE teams exist too. Plus, all may have a set of notes and legends on their sheets that may be unique to their few pages, and in no correlation to architects or the over-all. I’m sure that frustrates our quantity surveyors from the UK or South Africa where drawings are produced to a rigid standard for symbols and their use.

We are not going to spend any valuable space in the ET with all the possible tables or symbols that may occur on a given plan set. When for our purpose as estimators we are to identify those that apply to us for that job and attempt to find every occurrence of that condition.

Some basic things to remember about the drawings and estimating are: Always try to do your take offs at the largest scale (BTW, check the scale first) made available. Look for complicated areas like the restrooms, elevators and stairs for a phantom line out lining that area. There may be a bubble or symbol attached to the line indicating where (which detail on which page) to find an enlarged view. Do your take offs at that enlarged view.

Wall sections and elevations may have similar use to show fine detail of certain connections. Where nomenclature, product names and room to describe all that conflict with space allowed, you may find small alpha numeric characters called “Coded Notes” tied to a legend where they may be more thoroughly described and listed en mass.

This is the point in my workshops that we would get on some drawings and find certain products and relate them to a spec for a few dedicated minutes of exercise on some projects. Watch for the chance for an upcoming workshop, attend and Estimating Academy or sign up on-line at ASPEnational.org’s Education Board for a variety of classes and detail for your options to practice and develop.

As always, good luck with your bidding
Best Regards

Mike Luke

Michael D. Luke, Estimator

Owner **Mountainlands Area Plan Rooms**

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801-288-1188

mapr@isqft.com