

Bidding Procedures

**Developing Your Plan
and Following the Plan
Every Time**

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It has been said that a significant cause of construction company failure is poor estimating. If this is true, it is nowhere as evident as on bid day. Perhaps the most costly errors a contractor can make in the estimating process are made in the heat of the bid battle. Whether they are errors of tabulation, communication, or interpretation, they can be deadly.

The purpose of bidding procedures is to minimize those errors, and, indeed, to use bid day as a positive force for acquiring work with profit potential in it. But quite often they are developed and used haphazardly, to the detriment of the bidder. This paper will explore bidding procedures issues and provide some potential aids in implementing a set that fits your company's needs.

A company's bidding procedures cannot be separated, of course, from the state of the industry at a particular time. At present, the industry uses a number of procedures which are not helpful in estimating in general and on bid day in particular. For these reasons the American Society of Professional Estimators has developed a pamphlet entitled "Recommended Bidding Procedures," a copy of which is included at the end of this paper. These guidelines speak to a number of issues which serve to inhibit the practice of professional estimating, and they make recommendations which may help to alleviate some of them.

Among the objectives of a set of bidding procedures are these:

1. To insure that bid day activities of company staff are in concert with company goals.
2. To insure that all staff adheres to the same bidding procedures.
3. To enable staff training in bidding procedures.
4. To assist the company in procuring potentially profitable work.
5. To help those outside the company perceive the company in the correct way.

One of the initial steps in developing and implementing bidding procedures is to attempt to analyze how the company is currently perceived as opposed to how it should be perceived. If any set of bidding procedures does not reflect your company in fact, they should be modified. Another step is making a list of all the facets of bidding procedures you use or would like to use. This list should be as detailed as possible.

Bidding procedures for a subcontractor will vary from those of a general contractor, so all of the following items may not be relevant to your company. Pick out the ones which may help you and discard the rest.

Bid Abstracts and the Fax Machine

The estimate for your own work has been prepared, reviewed, and is acceptable. If your company is bidding as a subcontractor or supplier, a bid abstract should be prepared and transmitted to the prime bidders a couple of days prior to bid. This need not be a laborious task if you bid a similar scope of work on most projects. Set the blank format for your typical abstract up on a word processor and only modify it as needed to accurately reflect the current project. You cannot be too careful in preparing the abstract. ASPE, the estimators organization mentioned above, has prepared a small brochure entitled "Standard Practice for Bid Submittal by Fax Machine." The text of the brochure is given below.

This brochure is recognition that the majority of bid day communication now takes place by fax, and simply makes recommendations to help bring some order to what is now sometimes total chaos. There are several points in the brochure worth emphasizing.

1. The scope of work should be as clear and concise as possible. This will make analyzing the quote much easier, lead to less confusion on the inclusions and exclusions. The abstract should, in most cases, be unpriced.
2. If the scope changes, just refax the changes, not the entire scope.
3. Make sure that the other party receives the fax.
4. Send a written confirmation, post bid. Entitle it "Confirmation."

Standard Practice for Bid Submittal by Fax Machine

The adherence to a uniform code of practice when submitting and receiving bid proposals transmitted by "Fax Machine" is required to promote proper communication among the parties involved in "Bid Day." This code of practice will eliminate many of the current problems experienced by constructors.

Prime Contractor Responsibilities

1. *Maintain the fax machine in good working condition with proper supplies.*
2. *Monitor the fax machine and promptly deliver faxed proposals to the responsible individuals.*
3. *Keep faxed proposals confidential.*
4. *Notify subbidder if the fax transmission is incomplete or not legible.*
5. *Request all fax transmissions be completed at least two hours prior to the time prime bids are due.*
6. *Do not interfere in any way with another firm's ability to send or receive fax transmission (such as jamming or keeping their fax line busy).*

Subcontract or Vendor Bidder Responsibilities

1. *Use standard transmittal forms showing required bid information (see attached sample).*
2. *Fax scope and terms a minimum of 24 hours prior to bid deadline.*
3. *Fax only modifications to scope and/or price on bid day (Do not re-fax entire proposal).*
4. *Verify receipt of faxed transmissions.*
5. *Consider faxed bids a supplement to, not a substitute for, verbal and written communication.*
6. *Send a written confirmation of all faxed bids.*
7. *Refrain from faxing scope and/or price modifications during the last two hours prior to bid time. Make all late modifications by verbal communication.*
8. *Insure that faxed bids:*
 - 8.1 *Show bidder's name, address, phone number, etc.*
 - 8.2 *Show project name, bid date & bid time.*
 - 8.3 *List technical specification sections and addenda included.*
 - 8.4 *Clearly list exclusions and/or exceptions of the bid.*
 - 8.5 *State alternate bids as adds or deducts from the base bid and number them consistently with the bid documents.*
 - 8.6 *Note terms of proposal (F.O.B. Jobsite, furnished and installed, installation labor only, etc.).*
 - 8.7 *Note if bid includes or excludes sales or use taxes.*
 - 8.8 *Note if bid includes or excludes performance and payment bond premiums.*
 - 8.9 *List any unique contractor status (MBE, SBE, WBE, and Contractors License number(s) and bond rate).*

The proper use of fax machines can improve the accuracy and efficiency of bid day communications.

Whether typed or handwritten, the fax must be legible.

The American Society of Professional Estimators is "Dedicated to the Promotion of the Profession of Estimating and to the Benefit of the Construction Industry."

For further information, contact:

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of Professional Estimators
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Suite 412
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Telephone (301) 929-8848
Telefax (301) 929-0231***

(SAMPLE FAX TRANSMITTAL)

*BIDDER'S LETTERHEAD
W/TELEPHONE # AND MAILING ADDRESS*

FROM: FAX #

TO: FAX #

TO:

ATTENTION:

PROPOSAL FOR:

(TRADE OR MATERIAL)

PROJECT:

*TRANSMISSION INCLUDES
PAGES (INCLUDING THIS PAGE)*

IF ALL PAGES ARE NOT RECEIVED, PLEASE CALL @ (VOICE TELEPHONE)

REMARKS:

(SAMPLE BID ABSTRACT)

*SUBCONTRACT/MATERIAL BIDDER
1000 CONTRACTORS BLVD.
ANYWHERE, USA*

FAX #

TELEPHONE #

DATE:

BID PROPOSAL:

TO:

NO. PAGES INCLUDING THIS PAGE:

ITEMS BID:

COMMENTS:

5. If you want your bid incorporated into any contract resulting as a result of it, say so on the abstract.
6. If you have standard conditions of your bid, include them in large enough print to be legible on a fax.
7. Tender your price by phone, along with any last minute scope changes. Keep last minute changes to an absolute minimum.
8. If you are the party receiving the faxes, work out and train your staff in the proper way to handle them. The person receiving the fax in your office should know exactly how and when you wish them given to the bid team.
9. Keep all faxes received and include them with permanent bid records.
10. If at all possible, use a plain paper fax machine for receiving faxes. Thermal paper will fade over time.
11. Keep the fax confidential.

S.I.T.

If you are a subcontractor or material supplier, it may be necessary to be away from your office during bid day. The letters above mean simply "Stay In Touch." This cannot be overemphasized. Many estimators diligently prepare and submit their bids only to be unavailable when a question arises about them. They compound the problem by not checking with their offices for messages prior to bid time, or not informing someone else in their offices about the substance of their bids. Remember, if your bid is subject to interpretation and you are unavailable to answer questions, the general contractor will probably interpret it in the way most favorable to itself.

Price Submittal

Should the price submitted by a sub or supplier be the same for all general contractor bidders? There are many conflicting and strongly-held opinions on this issue, and it is certain that either doing so or not doing so will have consequences. The point to consider here is simply this: does the cost of doing business with a general contractor vary from contractor to contractor? For example, one contractor pays on time, completes its jobs on schedule, treats its subs and suppliers as equals, etc. A rational subcontractor or material supplier bid might recognize this cost difference. We noted above that one of the objectives of a set of bidding procedures is to enhance our chances of obtaining work. Differential pricing may help the general contractor who is best to work with obtain its work, and thereby help the sub or supplier.

Question Lists

A contractor which receives bids from subcontractors of various disciplines will want to publish to its staff a list of trade specific questions to use in taking telephone bids on bid day. These questions should be organized by specification section, and should only include those items about which there may be some confusion. The question list should be reviewed with all staff which will take bids on bid day. When a staff member takes a telephone bid, the question list will serve as a guide in obtaining information the estimator thinks important in specific areas of the project.

Fax quotes should be reviewed in light to the question list. If the question list contains a question which is not answered by the body of the fax, the bidder should be contacted to review that question. Examples of items which will typically not be on a fax quote include bond rates, acknowledgement of addenda, and whether the quote is "per plans and specs."

Below is a simple example of what a question list might look like.

The question list serves to educate staff members who may be taking bids on bid day about the items the estimating staff which put the project together considers important for accurate scoping of the bid. It will have each spec general information about the bid, such as project name, bid date and time, number of addenda, alternates and unit price descriptions, etc.

The specification sections are listed, and relevant questions listed by number. The question list for each spec section may be of any practical length, but should only contain items about which there may be some confusion in the bidder's mind.

For example, look at earthwork:

There are two spec sections involved and six questions the estimator feels may not be included by all the bidders. The person taking the bid will get the basic telephone information (see discussion below) and will ask the bidder the six questions. The bid taker may write the answers like this –

1. Testing excluded
2. Disposal of excess included
3. Water for grading operations excluded
4. Street clean up included
5. Flagman included
6. Barricades excluded

If the estimator expects the earthwork bidder to include all six items and the bidder does not, as in this case, the estimator will have previously determined the value of the excluded item so that it may be added to the price of the bidder on the bid analysis worksheet, as is shown below.

Note that some items have no questions, but instead, instructions to “give calls to...” See, for example, Site Utilities and Site Concrete. This is done for trades which are being evaluated by a particular staff member because they are too detailed or complex for the staff in general to be familiar with. The person evaluating these work items will have prepared himself or herself prior to bid day and may have already talked to bidders and received their scopes. Typical trades which require such separate analysis include Metals, Mechanical, and Electrical work.

The example given only covers the first seven specification sections, and would, of course be followed by additional sheets covering the other trades.

The estimator will present the question list on the afternoon before the bid, so that the staff taking bids are prepared with some basic information about the project and is able to assist the estimator by fielding bidder's calls. Non-estimating staff can be trained in a short period of time to competently take most telephone bids, and also to call bidders back where questions about their bid arise, whether the bid has been submitted by phone or by fax.

QUESTION LIST

XYZ HOTEL

Anywhere, USA

Bid Date: August __, ____

Bid Time: 2:00 PM CDT

Addenda: 1,2,3

Unit Prices: 1,2,3,4,5,6

Alternates: 1,2

List Subs: Mason, Roofer, Mechanical, Electrical

Take Voluntary Alternates

Sales Tax Rate: 7.0%

Schedule: 14 Months

EARTHWORK – UNIT PRICES 1,2,3

02100 Site Preparation

02200 Earthwork

- 1. Testing
- 2. Dispose of Excess
- 3. Water for Grading Operations
- 4. Street Clean Up
- 5. Flagman
- 6. Barricades

ASPHALT PAVING

02513 Asphalt Paving

02517 Stripping

- 1. Fine Grade
- 2. Clean Before Stripping

SITE UTILITIES

02500 Site Drainage

02550 Site Utilities

Give Calls to Jerry

SITE CONCRETE

Give calls to Tom

LANDSCAPING AND IRRIGATION

02750 Irrigation

02800 Landscaping

- 1. 1 Year Maintenance Agreement

REINFORCING STEEL

03210 Reinforcing Steel Material

- 1. Tonnage
- 2. Bar Supports Included

03210 Reinforcing Steel Placement

Give calls to Tom

CONCRETE MATERIALS

03300 Concrete

- 1. 3000 psi
- 2. 4000 psi

3. 4000 psi lightweight

4. Superplasticizer

CONCRETE FORM, PLACE, FINISH

Give Calls to Tom

PRECAST CONCRETE

03400 Precast Concrete

- 1. Furnished and Installed
- 2. Match Architect's Sample
- 3. Provide All Erection Hardware
- 4. Provide Embeds

METALS

05120 Structural Steel

05210 Metal Joists

05300 Metal Deck

05500 Miscellaneous Metals

05510 Metal Stairs

Give all calls to Mike

MILLWORK

06220 Millwork

- 1. Wood Doors (Break Out)
- 2. Door Molding
- 3. Louvered Doors @ Closets
- 4. In Wall Blocking for Millwork

WATERPROOFING AND ROOFING

07100 Waterproofing

- 1. Elevator Pit
- 2. Coal Tar Material

07160 Bituminous Dampproofing

- 1. Spray On

07220 Roof Deck Insulation

07311 Composite Shingles

- 1. Drawings Show None

07511 Built Up Roofing

- 1. Owens Corning
- 2. Roof Expansion Joint

07541 Roof Deck Coating System

DRYWALL, EIFS PACKAGE

05400 Light Gage Steel Framing

- 1. Seismic Bracing Connections

07200 Insulation

- 1. Batt
- 2. Sound
- 3. Fire Safing

07215 Sprayed Insulation

- 1. Spray Texture on Room Ceilings

07241 Exterior Finish System

07255 Sprayed Fireproofing

09250 Gypsum Drywall Systems

- 1. Install Door Frames
- 2. Install Access Doors

Telephone Bids

The use of the fax machine on bid day is more widespread than ever, but the ever-present telephone bid is still much in evidence. Does your company take telephone bids in the same way each time? If not, you should consider doing so, both for the sake of clarity and completeness, as well as for the sake of long-standing legal considerations about telephone bids' legal standing. Some subbidders believe that a telephone bid can be changed or withdrawn without the possibility of penalty, but depending upon the circumstances, this is definitely not the case. A telephone bid may be as binding as any other type, if certain conditions are met.

One of the conditions courts have used to verify the accuracy of a telephone bid in dispute is the system with which the bid is taken, and the consistency with which it is taken. For this reason as well as others, a telephone proposal form such as the one shown below should be used by the receiving party, and all staff members should be trained in its use.

Most of the elements of this form are self explanatory. Several of them, however, bear special emphasis.

In many states, a bidder may not bid on a project unless it is licensed, and to use the bid of an unlicensed contractor is also illegal and may make the general contractor's bid invalid. Thus the space for license number. The receiving company staff should be familiar with the form of license numbering, at least, used in the state, and should know how to quickly attempt to check the validity of a license given.

Phone numbers are critical for calling the bidder back should there be a question about its bid during bid day. The initials of the staff member should be included for the same reason. The time the bid is taken may be helpful in determining which is the most current bid of a sub which gives more than one bid during the course of bid day, which occurs all too often. It may also be important in the event of a dispute about the bid. FOB is shorthand for a material bid which includes freight to the jobsite. If a bid does not allow freight, money must be added to the bid to cover it. F&I is shorthand for furnished and installed, or a subcontractor quote.

If the quote is from a subcontractor and the general wishes to bond the sub, the BONDABLE blank is used. If a sub is not bondable, the bid may entail more risk for the general than that of a bondable sub, and should be seen as such for risk analysis. More on risk analysis below. Many generals ask a bidder if it is bondable but fail to ask for the bonding rate. This is unwise because it does not allow a calculation of the amount to be added to cover the sub bond and a rate of say, 5%, may tell a general that the sub is probably not in fact, bondable. INCLUDED is used to indicate whether the bond premium is included in the bid.

ADDENDA is a crucial element. If the sub bidder does not acknowledge all the addenda and one of them affects its work, it cannot be legally held to include that work in its bid. Sometimes this work is significant and to use such a sub bid would place the general contractor at substantial risk.

SPEC SECTION should be used to list the specific specification sections under which the bid falls. This will assist in analyzing the bid as well as help with the PP&S question. PP&S stands for "per plans and specs" and is intended to determine, in addition to all the other information given, whether the sub or material bidder represents its bid to be in conformance with same. This is potentially important if disputes arise during the course of the contract, and if the bid is not per plans and specs there may again be added risk in the general's using it.

The remainder of the form is used to communicate project specific information and pricing. All the sections should be filled out clearly and should be, if time permits, verified back to the bidder.

As an aside, it should be noted that the information obtained by telephone should be discernible from a fax bid as well. If you are a sub bidder using the fax, including the information in the fax will save time in analyzing your bid. If you are a general contractor, you may want to stamp the faxes with a specially made stamp which reflects all the basic (top) information contained on the telephone proposal form, so as to be

able to quickly ascertain what the information is, and what is not contained in the body of the fax, necessitating a call to the sub bidder.

CESCO									
TELEPHONE QUOTE									
PROJECT _____	DATE _____	TIME _____							
FIRM _____	LIC. NO. _____	FOB _____	F&I _____						
ADDRESS _____		TAX _____	INCL _____	EXCL _____					
PHONE _____	REPR. _____	BONDABLE _____	YES _____	NO _____					
FAX _____	QUOTED TO _____	RATE _____	INCL _____						
UNION _____	NONUNION _____	MBE _____	WBE _____	TO _____	ADDENDA _____				
SPEC SECTION _____	TRADE OR MATERIAL _____	PP&S _____	YES _____	NO _____					
INCLUSIONS									
EXCLUSIONS									
ALTERNATES									
UNIT PRICES									

Below is an example of a telephone quote from a subcontractor on our XYZ Hotel Project. The body of the quote is typed for clarity only; such information would be hand written in actual bid situations.

To save time on bid day, some information should be pre-typed on the form, then copies made for use on bid day. Such information includes the project's name and the bid date.

Note the typical bid information included – firm, license number, phone and fax numbers, representative of bidder and staff member taking the bid's initials. This information is critical if it becomes necessary to contact the bidder for further clarification of his bid, which happens frequently. All staff should be trained to use this form in conjunction with the question list to properly receive a telephone bid.

The bid will then be given to the estimating staff member responsible for analyzing that sub-trade area.

This bid is relatively straight forward, some trade questions may be very extensive to completely cover the work. The rule for questions is, if it is not crystal clear, ask the question.

Note that the question list items are placed on the quote and numbered exactly as shown on the question list. This insures that all questions are asked and makes tabbing and analyzing the bid much easier. Also note that it is imperative that the written information be legible. It is recommended that \$\$\$ signs not be used, since they can easily be mistaken for the number five.

When all the information is received, the bid taker should conclude the conversation with the following two questions:

1. Is there any other information about the bid you would like me to record?
2. Do I have your lowest and best price?

To some, this last question may smack of bid shopping, but as phrased it is not. It is a recognition that because of bid shopping the bidder may include shopping money for post bid negotiating. If this is the case, and since you will not be shopping the bidder's price, it is best to let the bidder know there will be no opportunity to lower its price later. The bidder must give his lowest and best price to you at bid time. Not infrequently you may find, if a subbidder trusts you, that you will in fact get a price reduction.

The first question may sometimes lead to information which creatively and legitimately used may help your firm get the job. In the present case, you ask Ed Gifford if there is anything else and he says offhandedly "Oh, yeah. I've got a Johns Manville alternate to the Owens Corning specified which is an equal product and can save you some money. The price is \$143,960." More about this in a moment.

Note that the bidder acknowledges only addenda one and two while the question list says three have been issued. If the bidder, being questioned, says he did not see addendum three, you must determine if it affects his work. If so, you must inform him, so that he may adjust his price for the revised scope or withdraw his bid. Remember, the bidder can't be forced to do work he has not acknowledged. If the effect of the unseen addendum is substantial and there is no practical way for the bidder to quantify and price it and modify his bid, encourage him to withdraw his bid to all bidders. You will save yourself untold grief and money if you can convince him to do so. Neither you nor any of your competitors want to use a bid which has substantial scope missing, but you cannot assume your competitors will discover the mistake, so you must be aggressive in trying to solve the problem.

On most projects, a substantial amount of scope clarification and problems may be rooted out with your attention to such details, to the aid of your company and of the subbidder.

We will assume that addendum three had no effect on our roofing bidder, so his bid may stand as tendered.

CESCO

TELEPHONE QUOTE

PROJECT XYZ Hotel	DATE 8/23/99	TIME 10:45
FIRM The Ellis Company	LIC. NO. CA - 26901	FOB F&I
ADDRESS		TAX INCL EXCL
PHONE 916/383-1200	REPR. Ed Gifford	BONDABLE YES NO
FAX 916/383-1207	QUOTED TO MJ	RATE 1.2% INCL No
UNION	NONUNION MBE	WBE
		ADDENDA 1,2

SPEC	TRADE OR MATERIAL	PP&S YES NO
SECTION		

07511	Built Up Roofing	\$191,801
07220	Roof Deck Insulation	incl

INCLUSIONS

- 1. Owens Corning

EXCLUSIONS

- 2. Roof Expansion Joint Excl

ALTERNATES

Vol. Alt. Johns-Manville in Lieu of Owens Corning Specified \$143,960

UNIT PRICES

bid analysis sheets in general accordance with area bidding practice.) We post the first bidder's price of say, \$25,000 (while we have included the \$\$\$\$ sign here, never, never, never use it on the bid analysis form, it can easily be mistaken for a 5, and that would be disastrous) and note under the bid across from the item "insulation" that the bidder includes it, and across from the item "acoustical ceilings" that the bidder includes that also. Now we do not want the value of the acoustical ceilings in this package, so we must deduct its value from the package. Where do we get the value? The best place is from the bidder itself. We ask for a deduct for the ceilings. If we are given this deduct, we simply subtract it from the 25000 to obtain our package value for this bidder. If the bidder refused to "break out" the value for the acoustical ceiling (as it has a perfect right to do) we are left to other devices to determine the number to deduct. One of these is to look at the value of the low bid for acoustical ceilings and deduct that value from the bidders bid. Some may feel uncomfortable doing this, as it smacks of changing a sub's bid without its permission. This is not the case. What we are doing is removing from our bid the value of the acoustical ceilings that otherwise would be used twice.

The second bidder did not, you will recall have the acoustical ceilings, which is okay, but it did not also have the insulation, which is not. We must determine a value to add to the bid for insulation. Where do we find it? We may have bids on insulation only. If so, we can post those bids, marked on the bid analysis summary as "incomplete" so we do not use them as total bids and select the lowest of them, adding it to the number of the second bidder to make a complete package price. We may have surveyed and priced the insulation as well, so that we have a value of our own to use.

With the adjustments made and the packages totaled for each bidder, we have an "apples to apples" comparison.

This is a rather simple example. As stated above, the analysis can be as detailed as we wish.

Examine the following bid analysis sheet for XYZ Hotel, Roofing and Waterproofing.

BID ANALYSIS WORKSHEET								
BID CATEGORY <u>ROOFING AND WATERPROOFING</u>								
Date <u>8/23/99</u>								
Estimator <u>JMC</u>								
1								
Section	Description	Cesco	Blues Roofing 415/984-3494 Dan	AL CAL 496-6060 Hank	ELLIS 916/323-1200 Joe	Malot- Grundy 727-4326 Jim	COMBO Ellis JM Alternate	
07100	Waterproofing	5000	170272 5000	179096 3120	191801 3120	no	no	143960
	Elevator Pit	✓	✓	✓	✓			✓
	Coal Tar	✓	✓	✓	✓			✓
		-----	-----	-----	-----			-----
07160	Bituminous Dampproofing	70000	63874	no 63874	no 63874		no	63874
	Spray On	✓	✓	✓	✓			✓
		-----	-----	-----	-----			-----
07220	Roof Deck Insulation	w/roof	✓	✓	✓			✓
		-----	-----	-----	-----			-----
07311	Composite Shingles	no -- ok	no -- ok	no -- ok	no -- ok			no -- ok
		-----	-----	-----	-----			-----
07511	Built Up Roof	150000	✓	✓	✓			✓
	Owens Corning	✓	✓	✓	✓			✓
	Expansion Joint \$3000	✓	no 3000	no 3000	✓		no	3000
		-----	-----	-----	-----			-----
07591	Roof Deck Coating	15000	no 17921	no 17921	no 17921	17921	no	17921
		-----	-----	-----	-----	-----	-----	-----
		240000	260067	267008	276716	incomplete		231875
					Alt for JM Roof			
					143960			
		1	3	4	5	2		6

Here is the scope of work the estimator thought would be included in this trade. It mirrors the question list. Bids have been received in the chronological order indicated by the numbers at the bottom of the sheet. Let's examine these in the order received.

The Cesco column (our company) contains our plug numbers for the elements of this work. The estimator has generated them by square foot areas and unit prices or other acceptable methods based upon his experience. Note also that the roof expansion joint line item contains a value of \$3000. This value is incorporated in the estimator's value for the roof as a whole and is broken out for possible later use, in case one or more of the bidders excludes it. The check marks under the pricing mean "included" in the pricing. The "no-ok" nomenclature indicates that the bidder did not include a price for this section, and the estimator did not expect the bidder to do so. Recall from the question list that there are no composite shingles on the project.

Note that this column has a circle around it with a line drawn through it. The circle means that the value, \$240,000 was taken to the project bid summary sheet at some point, probably the first time the project bid summary was totaled. The line indicates that pricing has been superceded, in this case with the Blues Roofing bid. Blues roofing numbers are posted for the areas given. Its pricing did not include the roof expansion joint (the item marked "no") and so the estimator had to add his \$3000 value to make the package complete. It also did not include the roof deck coating, but the estimator has a value for this work because of the bid received from Malot-Grundy for this work only (the reason for the Malot-Grundy bid being marked "incomplete" in the total column) and the estimator can make the Blues bid complete by adding this value. Note that the estimator is not saying that the Blues Roofing bid totals \$260,067, but that the package using Blues bid has that total. You may ask why the estimator did not use his own value for the roof deck coating, since the value was lower. The reason is typically that the estimator wants a firm bid for this work instead of his (however well thought out) budget number. Notice that this package has been circled as having been used in the project bid summary, then superceded as is shown by the line drawn through the circle.

Notice that bids 4 and 5 come in and are posted, but neither is lower than the Blues Roofing package. You will remember, however, from the Ellis telephone bid discussed above the information about the alternate roofing system. This is posted at the bottom of the bid analysis sheet.

The experienced estimator is always on the lookout for ways to reduce his price and perhaps gain a competitive advantage. In this case the estimator knows, or at least is willing to gamble, that the owner will accept the Johns-Manville alternate. He therefore produces the package in the column marked "6". Using the JM alternate price and the other appropriate adder prices from the previously posted Ellis bid. The new package total is substantially lower than the previous low package, so the estimator includes it in the project bid summary. The strategy is not without risk as the estimator is assuming the owner will accept the alternate.

The advantages of such a bid analysis system are numerous. First, the packages, properly adjusted, are comparable. Second, if all the bidders for a package are posted, the amount of risk in this bid analysis package becomes more evident. Suppose the low package is 25% below the rest of the bidders. Is this not valuable information to have? Similarly, suppose the package has so many adjustments made to it that it hardly looks like the original bid, will it be easy to contract if we get the job? The system also makes it possible for two pairs of eyes to look at the same information, thereby reducing the chance of clerical error, and finally, bid analysis packages may be tallied by trained members of the contractor's staff, relieving the lead estimator of some workload.

The main disadvantage is that it may initially require more work than the staff is now doing analyzing bids on bid day. Whether the advantages outweigh this disadvantage is up to the individual company. Certainly the company which has been stung by mistakes in bid analysis may want to experiment with it.

The Bid Room

While most sub bidders may be able to efficiently function on bid day with a staff of one or two, large sub bids, mechanical and electrical for example, and most general contractor bidders find it necessary to have several members of the staff involved. There are too many bids to analyze, too many telephone calls to answer, too much information to evaluate to go it alone. This fact brings up the discussion of the facilities for assembling bids. Possibly the adjective which best describes most bid assembly layouts is “haphazard.” For such an important activity, this should not be the case.

There are definite advantages to a central area for assembling bids. Communication is easier, there is a more pervasive notion of what is going on with the bid which may be absent if bid team members are separated, and the individual who we will call the “risk taker” will probably be more able to evaluate the bid’s risk better.

In any case, all staff members who are participating in the bid should know their assignments, have a question list, telephone proposal pads, and if they are in charge of one or several bid analysis packages, should have determined who their bidders will likely be and will have contacted those bidders. The methods of handling faxes, questions, of tabulating bids, and summing the overall bid should be known by all staff.

There should be adequate phone lines coming into the company and bid area to handle the incoming bid traffic without putting callers on hold unnecessarily. There should be a telephone line for outgoing calls, possibly not part of the regular phone system, so that communications with the bid filer can be ongoing and uninterrupted.

There should be a method of checking the bid at appropriate times to test for clerical errors and “two sets of eyes “ examinations. When computers are used on bid day, to tabulate the bid, for example, subroutines should be built into the programs to aid in checking the bid tabulation. While the use of computers can be a blessing on bid day, it can also be a curse, in that it may make verification of the accuracy of the parts of the bid more difficult to realize. As with any use of such a tool, it should be done with extreme caution.

The bid filer should be well versed in the bid form and know what to fill in and have a feel for the timing of bid submittal.

The person who makes the final decisions as to fee should have a reasoned method of keeping up with the risk in the bid, and should have some preanalyzed notion of the competition and an acceptable fee for the bid. The “risk taker” should be intimately aware of the details of the bid, the bidding community, and the marketplace. Construction is truly a risky business, bid day is risky, and making errors in judgment through lack of thorough knowledge of the bid is a prescription for bid day disaster.

Post Bid

Eventually the bid will be filed, and the good or bad news will be realized. Whether successful or not, the bidder should take the time to carefully organize its bid materials into an order which is well thought out and well known by staff. If the bidder is successful, copies of the bid material may be made to aid in contracting and field operations. The originals should remain intact and permanently stored as vital business records. Unsuccessful bids should also be organized and stored for some rational period of time. They are extremely valuable sources of information such as “Remember that job we bid a couple of years ago which had some of these widgets on it that we never see? Find out who bid that work on that job and call them up.”

As a part of this process, the lead estimator should evaluate the bid to see what lessons can be learned, or perhaps what mistakes were made, etc. A critique of yesterday’s performance is often a prelude to better performance tomorrow. It is certainly useful in training for future bid days.

The process of bid day is at best an involved one. There are many issues which may not have been addressed here. But perhaps this discussion will have helped you begin to analyze your own procedures and discern ways in which they can be improved.

In the early 1990s, the American Society of Professional Estimators, after extensive consultation with other construction organizations, published the following set of Recommended Bidding Procedures. This document is still widely distributed by the Society, a testament to the need for ongoing industry education.

**RECOMMENDED
BIDDING PROCEDURES
FOR
COMPETITIVELY BID
CONSTRUCTION
PROJECTS**

AS PREPARED BY:

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FOREWORD

Construction projects which are competitively bid constitute the largest segment of the largest industry in the United States. While the industry has long recognized the importance of this segment of the construction market, it has, until recent years, not adequately addressed the importance of a more uniform set of bidding guidelines for the market. Owners, Designers, and Constructors have, with increasing frequency, moved from one geographic region to another, only to discover a new set of local bid procedures. These local differences lead to long bid periods, often to less competition, and often to higher bids.

Recognizing a need to establish more uniform guidelines for bidding competitively priced construction projects, the American Society of Professional Estimators resolved, in consultation with other national industry associations, to research local bidding practices and to develop a comprehensive set of bid procedure guidelines which, if widely implemented by the industry, will serve to clarify and advance the industry toward a national perspective.

The Society wishes to express its gratitude to all those industry associations and individuals which contributed time and information to this effort. Among these are the Associated General Contractors of America, the Associated Builders and Contractors, the American Subcontractors Association, the Associated Specialty Contractors, the Engineers Joint Contract Documents Committee, the Tennessee Society/American Institute of Architects, the Associated General Contractors of Tennessee, the Central Texas Construction Council, and the Construction Industry Research Committee of Colorado. Participation of these entities does not imply an endorsement of the final document.

Finally, a special thanks to those individuals in the American Society of Professional Estimators' Industry Awareness Committee who reviewed the voluminous material gathered from around the nation to determine the consensus of the industry, and who devoted countless hours to distilling this information into the present document. And to those of other industry groups who reviewed draft versions of this document and critiqued it so thoroughly and with such insight and dedication, we also offer our gratitude.

The Board of Directors
American Society of Professional Estimators
April 8, 1991

SUCCESSFUL COMPLETION OF A CONSTRUCTION PROJECT DEPENDS UPON A TEAM EFFORT. WITHOUT THE FULL COOPERATION AND FAIR TREATMENT OF ALL TEAM MEMBERS - THE OWNER, THE DESIGN TEAM, AND THE CONSTRUCTION TEAM - THIS OBJECTIVE WILL NOT BE REALIZED.

IT IS WITH THIS GOAL IN MIND -- SUCCESSFUL PROJECT COMPLETION -- INVOLVING COOPERATION AND FAIR TREATMENT OF ALL TEAM MEMBERS -- THAT THIS BOOKLET HAS BEEN DEVELOPED.

1. INVITED OR SELECTED BIDDERS
1.1 Invited or Selected Bidders-Prime Bidders

The Issue:

Should Prime bids be received from any Prime Bidder, or should bids be received only from invited (Pre-qualified) Bidders?

Discussion: Many public Owners are required by law to solicit and accept bids from any bidder which meets the criteria set forth in the bidding documents (e.g., which provides a bid bond, properly executes its bid form, etc.). These criteria are often inadequate to determine whether the Prime Bidder is "responsible". That is, such criteria fail to determine whether the firm has the financial and organizational resources necessary to bid and construct the project under consideration.

For this reason, many Owners use a pre-qualification process to gather information from and about a prospective bidder prior to issuing bid documents. After evaluating this information, the Owner selects those Prime Bidders which it determines are best qualified to both bid and construct the project.

Recommendations: Where pre-qualification is used:

1. The number of Prime Bidders selected should be limited to no more than four to six. This number will insure both adequate and spirited competition.
2. The selected Prime Bidders and the construction community at large should be notified of the names of selected Prime Bidders prior to issuing bid documents.
3. Bids should be publicly opened. See also Section 4, Day and Time for Receiving Bids.
4. The contract should be awarded to the lowest responsive bidder.
5. All pre-qualified Prime Bidders should be able to furnish payment and performance bonds for the project being bid to the Owner, and to identify for the Owner the costs for such bonds.

1.2 Invited or Selected Bidders-Subcontractors & Material Suppliers

The Issue:

Should Subcontractor and Material Supplier bids be received from any Subcontractor and Material Supplier or only from those which the Owner pre-qualifies?

Discussion: There are two principal schools of thought on this issue. One is that the Prime Bidder should bear the responsibility for the Subcontractors and Material Suppliers it uses. The other is that the Owner has a valid interest in assuring itself as to the capability of its Subcontractors and Material Suppliers. An associated question for Owners in this case is the extent to which pre-qualification is carried. Some Owners choose to pre-qualify only mechanical and electrical Subcontractors; others pre-qualify these and roofing, masonry, and excavation Subcontractors; still others pre-qualify all Subcontractors. Whether and to what extent Subcontractors are pre-qualified is the choice of the individual Owner. Many Prime Bidders would prefer the Owner not pre-qualify Subcontractors and/or Material Suppliers.

Recommendations: Where Subcontractor pre-qualification is used:

1. The names and disciplines of all pre-qualified Subcontractors and Material Suppliers should be published concurrently with those of pre-qualified Prime Bidders.
2. All pre-qualified Subcontractors and Material Suppliers should be able to furnish payment and performance bonds for the project being bid to the Prime Bidders, and to identify the cost for such bonds.

2. **ADVERTISEMENT FOR BIDS**

The Issue:

Should a bid be advertised? If so, what information should be included in the advertisement?

Discussion: A typical bid advertisement is issued prior to the issuance of bid documents for the purpose of attracting prospective bidders. It may be mailed to individual firms, published in an appropriate newspaper or magazine of general circulation in the construction industry, and/or posted in plan rooms.

Recommendations: A bid advertisement should:

1. Be circulated sufficiently in advance of the distribution of bidding documents to allow prospective bidders to include the project in their respective bid calendars. The minimum advance notice should be 30 days prior to bid document issue.
2. Contain a short description of the project including bid date, time, approximate contract amount, approximate size (or capacity), project location, licensing requirements, and bid and performance and payment bond requirements.
3. Be circulated to both individual Prime and major Subcontractor and Material Supplier prospective bidders, published in construction oriented magazines and newspapers, and posted in plan rooms.
4. State date of document availability, location to obtain documents, and deposit and refund provisions.

3. ESTIMATING AND BIDDING TIME

The Issue:

How much time from the issue of bidding documents should be allowed for bid preparation?

Discussion: Bid preparation is a function of the number of sets of bid documents issued, the efficiency with which they are dispersed, the completeness of the documents, their complexity and the complexity of the bid form, and of the project.

Simple projects (usually of lesser value, for example, under \$1,000,000) with simple bid forms, complete documents, and which involve only bidders in a small geographic area do not require estimating periods as long as more complex projects with more complex bid documents, a wider geographic appeal, and/or incomplete documents.

Of whatever size, and complexity, it is essential that bidding documents be complete before they are issued. This results in less wasted time in bid preparation and lower bids for the Owner.

Recommendations:

1. Complete all bidding documents before issuing them for bid.
2. Allow three weeks minimum preparation for small (under \$1,000,000) or simple projects.
3. Allow 4 - 6 weeks for large and/or complex projects.
4. For extremely large projects (\$50,000,000 or more), extremely complex projects, or extremely complex bid requirements, the estimating time allowed should be determined after consultation with several potential Prime Bidders.

4. DAY AND TIME FOR RECEIVING BIDS

The Issue:

Upon what days of the week, times of the day and under what conditions should bids be received?

Discussion: Owners who wish to receive the most competitive bids must recognize that the construction industry has certain days and times to tender bids which are much preferred. The preferred days are Tuesday, Wednesday, and Thursday. The preferred time is a time specific between 2:00 p.m. and 4:00 p.m. local time. Bids tendered at times and on days other than these will receive substantially less coverage and very likely will be higher.

Recommendations:

1. Bids should be received at a specific time between 2:00 p.m. and 4:00 p.m. on Tuesday, Wednesday, or Thursday.
2. Bids should not be received on holidays, on the day before or after holidays, nor during the week between Christmas Day and New Years Day.
3. Prime Bidders should be afforded telephones in close proximity to the place for receiving bids for receiving and recording last minute changes to their bids.
4. The time of receipt should be clearly stated and strictly enforced. An official clock should be displayed in the place receiving bids, and the person receiving bids should stamp bids received with the time of receipt and publicly state when the time for receipt of bids has elapsed. Bids received after that time should not be accepted.
5. The Owner's construction budget for the project and basis for selecting the low bidder should be announced prior to opening bids. See also Section 10, Pre-Bid Conference and Section 19, Owner's Proof of Financial Ability.
6. Bids should be publicly opened and read aloud. Obvious problems with a bidders responsiveness (e.g., no bid bond, failure to acknowledge addenda, failure to comply with listing requirements, etc., should be noted). If protests are allowed, the mechanism for them should be set out in bidding documents.
7. Other pertinent bid information (alternates, Subcontractor listing, etc.) should also be read aloud.
8. Interested parties should be allowed to review the bidding documents of all bidders.
9. The schedule for award should be announced. Bids should not be held longer than sixty (60) days without an award announcement being made.
10. Complete bid results should be formally published in a timely way.

5. BIDDING DOCUMENT AVAILABILITY

5.1 Bidding Document Availability - Plan Deposit - Prime Bidder

The Issue:

Under what conditions should Prime Bidders be required to pay a plan deposit when bidding a project?

Discussion: Many Owners and Architects charge a deposit fee for plans used during bidding their projects. In most cases, these deposits are refundable to the Prime Bidder after bid time if certain requirements are met.

The Owners and Architects use this policy to insure the return of their plans. In this way, they may be released to the Prime Bidder awarded the project, thus reducing reproduction costs.

Recommendations: When plan deposits are used:

1. The apparent low bidder and other bidders whose bid security is retained by the Owner should be allowed to retain bid documents until the contract has been awarded. If other bidding documents are returned to the Owner or Architect within ten (10) days of bid, in good condition, their deposit should be fully refunded.
2. A bidder which decides against bidding and which notifies the Owner or Architect two days prior to bid and which returns its bid documents in good condition should have its deposit fully refunded.
3. The deposit amount should closely approximate reproduction costs of plans and specifications and deposits for all sets returned in good condition should be fully refunded.
4. If a plan deposit system is not used, bid documents should be available for purchase at the cost of reproduction and handling.
5. The successful Prime Bidders' deposit should also be returned.

5.2 Bidding Document Availability - Plan Deposit - Subcontractors & Material Suppliers

The Issue:

Under what conditions should Subcontractors and Material Suppliers be required to pay a plan deposit when bidding a project? Should Subcontractors and Suppliers be afforded the same opportunity to obtain bid documents upon the same basis as Prime Bidders?

Discussion: Many major Subcontractors, (e.g. mechanical and electrical Subcontractors), have as great a need for complete sets of bidding documents as does the Prime Bidder.

In many cases Owners do not allow major Subcontractors and Material Suppliers to use the plan deposit system to receive plans for bidding. Subcontractors and Material Suppliers should be afforded the opportunity to obtain bidding documents upon the same basis as Prime Bidders.

Recommendations: Where plan deposits are used:

1. The apparent low Subcontractor and Material Supplier should be allowed to retain documents until the contract has been awarded. In other cases, if the bidding documents are returned in good condition to the Owner within ten (10) days of bid date the deposit should be fully refunded.
2. A subbidder which decides against bidding and which notifies the Owner or Architect two days prior to bid and which returns its plans in good condition should have its deposit fully refunded.
3. The deposit amount should closely approximate the reproduction costs of plans and specifications and deposits for all sets returned in good condition should be fully refunded.
4. If a plan deposit system is not used, or if a bidder requires less than a full set of documents, documents should be available for reproduction in blueprint shops. In this way, Subcontractors and Material Suppliers may purchase individual sheets or full sets directly from the printer. The cost for such documents should not exceed the cost of their reproduction and handling.
5. As an alternative the Architect may have plans and specifications available for purchase by Subcontractors and/or Material Suppliers. The cost for such documents should not exceed the cost of reproduction.
6. Bid documents which allow the purchase of partial document sets should emphasize the potential hazards of their use.

5.3 Bidding Documents Availability-Quantity Issued for Bidding

The Issue:

How many sets of plans and specifications should be issued to each Prime Bidder on a project? How many to Subcontractors and Material Suppliers?

Discussion: Frequently, limits upon the number of sets of documents issued to Prime Bidders and Subcontractors and Material Suppliers are enforced. This limits the total number of sets of documents available to the construction community, resulting in fewer and less competitive bids.

Recommendations:

1. Each Prime Bidder should be allowed at least four (4) sets of bidding documents for its use and the use of some of its Subcontractor and Material Suppliers.
2. Major Subcontractors, (e.g., mechanical and electrical), should be issued one set of bidding documents.
3. Both Prime Bidders and Subcontractor and Material Supplier bidders should have bidding documents available through the plan deposit system.
4. Any prospective bidder, whether or not a major bidder, should either be afforded the opportunity to obtain complete sets of documents, through the deposit system and/or to purchase partial or complete sets directly from a printer or the Architect.
5. Any prospective bidder who has been provided a copy of partial or complete bid documents should be notified of any addenda issued and be provided an opportunity to obtain copies of them.

5.4 Bidding Documents Availability - Plan Rooms & Plan Services

The Issue:

Should the Architect or Owner supply plans to the local Plan Rooms and Plan Services?

Discussion: With the increasing use of Plan Rooms and Plan Services, the Architect and Owner have a means of reaching a larger number of interested bidders for their projects.

These facilities enable a larger number of bidders to have access to the documents, many of whom might not have had the opportunity to review them otherwise. The availability of bid documents to a larger number of bidders benefits the Owner by increasing competition.

Recommendations:

1. Each local Plan Room should receive, free of charge, two (2) to four (4) complete sets of bidding documents at the time of initial issue.
2. If the projects are large or complex, additional sets of documents should be furnished to the plan rooms and services, in order to offer more time for the bidders in their bid preparation.
3. Local plan rooms or services should notify the Architect if additional sets of plans and specifications are needed.
4. The Architect should furnish the plan rooms and services any addenda or changes to bid documents, as well as names of Prime Bidders.
5. Plan Rooms and Plan Services should not be required to provide a bid deposit or purchase bid documents.

6. **BID FORMS FOR PRIME BIDDERS**

The Issue:

Are bid forms becoming overly complex?

Discussion: It is increasingly difficult to complete bid forms for projects. Bid forms are asking for more information in the form of alternates, unit prices, listing requirements and general information.

Complex bid forms add to the degree of possible error at bid time. The closing hours prior to bid time are filled with Prime Bidders receiving bids from Subcontractors and Material Suppliers and trying to confirm that each bid is complete.

Overly complex bid forms add to the Prime Bidder's work load and unduly encumber the bidder during the critical hours prior to bid time.

Recommendations:

1. Bid forms should be as simple as possible, with the minimum pertinent information included at bid time. General information required from the Prime Bidders should be requested prior or after bid time, prior to award.
2. Alternates and unit prices should be kept to a minimum. Where possible, these should be negotiated with the successful bidder. Open all bids upon receipt of alternates. See Section 7, Alternates.

7. ALTERNATES

7.1 Required Alternates

The Issue:

Should bids have required alternates?

Discussion: It is becoming increasingly popular for Architects and Owners to include alternates with the base bid for the project. This offers the Owner a multiple number of building features, making determination of the low bid at bid time more tenuous and increasing the amount of time and work needed to compile a bid for the project. These increased costs must be passed on to the Owner in increased bids.

The need for alternates from the original bidding documents can be reduced or eliminated through competent estimating during design development. Each alternate required increases the probability of an error in the bid. How each alternate affects the base project must be determined and clearly defined in the bid documents.

Recommendations:

1. Where alternates cannot be eliminated from the bid, they should be the absolute minimum in number, and as simple as possible. Multiple discipline alternates (those that impact the work of many trades) in fact require the preparation of two (or more) complete mini-bids and should be avoided.
2. Pricing for alternates should be submitted two hours after the base bid is submitted. At that time, both base and alternates bids should be opened and read aloud.
3. Alternates should be clearly defined in both plans and specifications including adequate specification description of work areas and drawing exposition of interface requirements.
4. Determination of the apparent low bidder should be made upon the base bid, precluding the appearance of arbitrary low bidder selection by manipulation of alternate selection. If alternates are used to determine the apparent low bidder, the project budget should be announced prior to opening bids, and the alternates should be evaluated in the order of priority. This order, as well as the basis of award, should be clearly set out in bid documents.
5. Where alternate prices result in listed Subcontractors or Material Suppliers changes, such changes in the listing of Subcontractors or Material Suppliers should be recorded when alternate prices are submitted.

7.2 Voluntary Alternates

The Issue:

Should voluntary alternates be solicited with the base bid?

Discussion: The solicitation of voluntary alternates in the bidding process increases the difficulty of establishing the true low bidder and the appearance of bid manipulation by the Owner. Such conduct is prohibited by many public Owners.

The use of voluntary alternates may lead to using materials or systems that do not meet the intended specifications. In this process the Owner does not always get the final project intended by the Architect.

The use of voluntary or "Contractor's Alternates" is considered an unnecessary complication of the bidding procedure.

Recommendations:

1. Voluntary alternates should not be allowed at bid time.
2. If the Owner desires cost saving ideas, these should be gathered through the use of value engineering after the award of the contract, or in negotiation with only the apparent low Prime Bidder. The Prime Bidder, in turn, should negotiate only with its legitimate low Subcontractors and Material Suppliers.

8. SUBCONTRACTOR AND MATERIAL SUPPLIER LISTING

The Issue:

Should Subcontractor and Material Supplier listing be required on competitively bid projects?

Discussion: In a properly administered bid, the apparent low Prime Bidder is immediately known. In the absence of requirements to list the names of Subcontractors and Material Suppliers, these companies do not have the same opportunity to determine which of them the apparent low Prime Bidder proposes to use.

Some Owners and Architects argue that listing requirements are necessary to assure that only responsible Prime Bidders participate in the bidding process and to help assure that they receive the lowest price.

Subcontractors and Material Suppliers argue that such requirements are necessary to curtail bid shopping, and that their firms are entitled to the same treatment as are the Prime Bidders. They also stress the importance of knowing whether they will be participating in the project so they can better judge their ability to bid on other projects.

Prime Bidders argue that the additional requirement to list Subcontractors and Material Suppliers introduces increased potential for errors in their bids by diluting their efforts to present their lowest bid. They also argue that the practice of bid listing limits the time necessary to thoroughly review and compare the subbids.

Recommendations:

1. Subcontractors and Material Suppliers whose bids exceed 1/2 of 1% or \$5,000, whichever is greater, of the Prime Bidder's bid should be listed.
2. This listing should be submitted to the Owner with the bid. As an alternative, the listing may be required two hours prior to bid time. Subbidders will in this way be required to bid Prime Bidders two hours prior to bid time, eliminating the last minute flurry of activity and its potential for Prime Bidder error. Bids and listings should be opened simultaneously.
3. The names of Subcontractors and Material Suppliers proposed by the apparent low bidder should be announced at bid opening.
4. Prime Bidders should not be allowed to change from a listed Subcontractor or Material Supplier to another without sufficient cause. Requirements for listing changes should be fully set out in bidding documents and strictly enforced.

9. UNIT PRICES

The Issue:

Should unit prices be required in the bid process?

Discussion: Many bidding documents require the submittal of unit prices which can be used in the pricing of additional project work, or for site conditions encountered which cannot be reasonably anticipated. Many require that unit prices for additional work equal those for work deleted.

With few exceptions, unit prices given at bid time substantially complicate bid preparation. Pricing is intimately related to quantity of the item to be performed or omitted. Lower quantities typically indicate higher unit prices; higher quantities usually indicate lower unit prices. Project administration and project schedule effects cannot be reasonably assessed, and requiring equal pricing for additive and deductive units fails to address these issues.

Recommendations:

1. Unit prices (except for work which cannot be reasonably quantified, e.g., piling, caissons and rock and associated earthwork) should be removed from the contract documents.
2. If unit prices are required, those for additional work and for deleted work should be separated.
3. Unit prices needed should be negotiated with the apparent low bidder after the scope of changes is better known, through the change order process. Requirements for change orders should be fully set out in bidding documents. See Section 26, Change Orders.

10. PRE-BID CONFERENCE

The Issue:

Should pre-bid conferences be held?

Discussion: Pre-bid conferences are a vehicle for the Owner and Design Team to communicate information about project procurement, financing and administrative procedures. They may also be used to present technical questions related to bidding documents though the response to such questions, after investigation, is usually issued in an addendum.

Many members of the industry question the value of pre-bid conferences, believing them to be an unnecessary restatement of information contained in the bidding documents, and a dilution of bid preparation efforts, rather than an enhancement of them.

Recommendations:

1. Pre-bid conferences, if necessary, should be held where possible at the project site at the approximate mid point of the bidding period, but no later than ten (10) days prior to bid date.
2. Information communicated should be a substantive addition to the bidding process; restatement of information already available in bidding documents should be avoided.
3. Pre-bid conference minutes and answers to technical questions should be issued to all plan holders as an addendum.
4. The source and amount of funds available for construction should be discussed.
5. Mandatory attendance at pre-bid conferences by prospective bidders should be avoided.

11. PRODUCT SUBSTITUTION

The Issue:

Under what conditions should product substitutions be allowed in competitively bid projects?

Discussion: Many project specifications include "or equal" clauses which allow products not specifically named to be considered for use. These clauses establish the conditions under which alternate products may be submitted for consideration and identify the party whose responsibility it is to accept or reject such alternate products.

"Or equal" clauses allow potential added competition by broadening a product range. Problems associated with them occur in the timing of their submittal and review. Clauses which allow alternate product submittal after bids are taken and a contract is awarded place bidders in the position of determining themselves whether such alternate products are in fact equal and the probability that the reviewing entity will accept them. Often bidders are not qualified to make such a determination and expose themselves to substantial losses if alternate lower product prices are used in bidding and originally specified products are required.

Recommendations:

1. Where possible, the Designer should specify a range of products sufficient to result in adequate competition. "Or equal" clauses should not be used.
2. If "or equal" clauses are used, alternate product submittals should be required sufficiently in advance of the date bids are due so that the reviewing entity can rule on their acceptability and publish the list of accepted products to all bidders at least ten days prior to bid date. Products not named in the original specifications or by addendum prior to bid should not be allowed.
3. Conditions under which alternate products will be allowed after award of contract should be clearly stated in the specifications and scrupulously followed. Among these are specified product unavailability due to causes beyond the bidder's control.

12. ADDENDA

The Issue:

What is the purpose of an addendum?

Discussion: Questions which arise after bid documents are issued should be answered in addendum form. The initiating authority has the responsibility to answer all questions prior to bid time.

Recommendations:

1. Questions should be submitted in writing to the entity identified in the bidding documents.
2. All answers should be transmitted by written addendum to all planholders.
3. All addenda should be issued no later than seven days prior to bid date.
4. If an addendum cannot be issued seven days prior to bid opening, the bid date should be extended.
5. Verbal addenda should not be allowed.
6. All addenda changes to drawings should be clearly identified, either by "clouding" or by issuing supplemental drawings.

13. BID BOND REQUIREMENTS

The Issue:

Under what conditions should bidding security requirements be imposed upon Prime Bidders and Subcontractors?

Discussion: Owners have a legitimate interest in insuring that the low Prime Bidder on a competitively bid construction contract 1) executes a contract for its bid amount and 2) provides payment and performance bonds if required by the bidding documents. To insure that both events transpire, bidding requirements usually require each Prime Bidder to furnish acceptable bid security in the amount specified or have its bid rejected as non-responsive. Bid securities are essentially insurance which allows the Owner a mechanism for financial recovery should the low Prime Bidder default upon its bid, in the absence of a bona-fide and substantive error.

Bid securities are usually a specified percentage of the Prime Bidder's price, typically 5% to 10 %. They may entitle the Owner to collect as actual damages the difference between the low Prime Bidder's price and the second bidder's price (to the maximum limits of the bond amount), or they may entitle the Owner to the face amount of the Bond as liquidated damages regardless of the low and second Prime Bidders' prices.

Acceptable bid securities may include Bid Bonds written by U.S. Treasury-approved surety companies for this purpose, including agreement to provide Payment and Performance Bonds as specified. A certified check, an irrevocable letter of credit, negotiable securities, or other instruments may also be acceptable bid securities.

Recommendations:

1. Bidding documents should clearly set out all bid security requirements including permissible forms, amount, whether actual or liquidated damages types and time period to remain valid.
2. Bids received should be accompanied by documentation demonstrating compliance with bid document requirements, or they should immediately be rejected.
3. Bid securities should be returned to all bidders save the apparent low bidder after bids are opened to allow these bidders to pursue other projects. If the Owner wishes to maintain the second and/or third bidder's securities in the event of default of the low bidder, it should so state in the bidding documents, including the length of time such securities will be held.
4. Bid securities should not be required of any bidder at any tier of the project which will not contract directly with the Owner.

14. PAYMENT AND PERFORMANCE BOND REQUIREMENTS

The Issue:

Under what circumstances should payment and performance bonds be required of successful construction project bidders?

Discussion: Payment and performance bonds are written by a surety or an insurance company and insure faithful performance of the work contracted and full payment to those companies that provide services or materials for the project. They may protect the Owner from default by the Prime Bidder, or the Prime Bidder from default of its Subcontractors or Material Suppliers (i.e., a "Supply Bond"). In some instances a Subcontractor may also require payment and performance bonds of its sub-subcontractors and material suppliers, and so on.

The premium for such bonds may be paid directly by the entity requiring them or its cost may be included in the bidder's price, the bidder then paying and being reimbursed in the initial contract progress payments.

Premium amounts may vary from 1/2 of 1% to more than 2% of the contract or subcontract in question.

Recommendations:

1. Where payment and performance bonds are required of the Prime Bidder, their requirements should be clearly and completely set out in bidding documents. These should include the verbatim language which will appear in the Bonds proper, the amount and type of such bonds, and the mechanism for payment of their cost.
2. The time allowed to provide such bonds from notice of the Owner should be clearly identified as well as consequences of failing to do so.
3. Prime Bidders should inform their Subcontractors and Material Suppliers of their requirements for such bonds, including the party responsible for payment. This should be done prior to or concurrently with receipt of the Subcontractors or Material Suppliers bids, not later in any case.

15. ETHICS IN BIDDING

The Issue:

What constitutes ethical practice in bidding and contracting construction projects?

Discussion: The central theme underlying all business practice in the construction industry is free competition and fair play. In order for the industry to function most efficiently, to enable its participants an opportunity to earn a fair profit for producing a product of acceptable quality, all its practitioners must operate on the same level playing field, irrespective of their relative power. Practices which are detrimental to effecting this theme should be discouraged.

Recommendations:

1. Owners should award construction projects to the responsive and responsible Prime Bidder which submits the low bid on bid day.
2. Prime Bidders should award subcontracts and purchase orders to the responsible and responsive Subcontractor and Material Suppliers which submitted the low bids in their applicable trades to the Prime Bidder on bid day prior to bid time.
3. Contracts at all other levels should be awarded to responsible and responsive low bidders prior to bid time.
4. The bid amount of one competitor should not be divulged to another prior to bid time, nor should it be used by the Prime Bidder to secure a lower price from another bidder on that project.

Neither should the Subcontractor or Material Supplier request information from the Prime Bidder regarding any sub-bid in order to submit a lower proposal on that project.

16. AWARD OF CONTRACT TO PRIME BIDDER, SUBCONTRACTOR, AND MATERIAL SUPPLIER

The Issue:

To which bidders should construction contracts be awarded?

Discussion: Many construction firms representing all tiers of the project bid on construction projects. They invest time, money, and effort in the hope and belief that if they are the low bidder for their portion of the work, they will be awarded a contract and will have a reasonable prospect of a profit on that contract if it is properly managed and constructed.

Recommendations:

1. Construction contracts should be awarded to those responsible and responsive bidders, at all levels of the project, which submit the low bids for their portions of the work prior to bid time.

17. RE-BIDDING PROJECTS

The Issue:

Under what conditions should competitively bid construction projects be re-bid?

Discussion: Occasionally Owners of competitively bid construction projects find it necessary to re-bid their projects. Often this is necessary because initial bids received exceed the Owner's construction budget. The Owner must then make changes to the project's scope to reduce its cost, either through removing elements of construction, approving substitute materials of lesser cost, or a combination of both. After the changes are incorporated into bidding documents, the documents are re-issued and new bids are taken.

Sometimes, Owners use the re-bid process to simply drive bid prices down, without substantive changes to project scope. This is possible because original prices, both of the Prime Bidder and Subcontractors and Materials Suppliers are widely known, the rationale being that bidders who know their competitors' prices will reduce their own prices during re-bidding to allow themselves a better chance of being successful.

In either case, re-bidding typically results in lower bids, though not necessarily less costly or higher quality projects.

Recommendations:

1. If at all possible, re-bidding construction projects should be avoided.
2. If the lowest bid is within fifteen percent (15%) of the estimated or budgeted funds, an attempt should be made to negotiate cost reductions with only the apparent lowest Prime Bidder. The Prime Bidder should, in turn, negotiate cost reductions with its legitimate low Subcontractors and Material Suppliers.
3. If the lowest bid exceeds the estimated or budgeted funds by more than fifteen percent (15%) and cost reducing items are not easily identifiable, then re-bidding should be considered.
4. When making the determination of whether to re-bid or to negotiate, the parties should consider construction cost escalation, further delay in ultimate completion date, and the cost and time of the Design Professional, Prime Bidder and Subcontractors and Material Suppliers to re-bid the project.
5. If only one bid is received and a re-bid is considered, it is the Owner's responsibility to return the unopened bid to the Prime Bidder or be prepared to make an award on the basis of the single bid received if the bid is not over a previously stated estimate or available funds.
6. When for good cause, bids received in competition are not acceptable and must be rejected, extreme care should be taken to avoid any requirement in re-bidding the project which will compromise the integrity and principles of competitive bidding.
7. If re-bids are necessary, new bids should not be solicited until, (a.) sufficient time has elapsed to induce different cost factors in labor or

material components, or (b.) design changes will bring the project cost within the funds available.

8. As a general rule, three (3) months should be the minimum time between the initial and subsequent bidding unless the project is re-designed. Where re-designing takes place, the changes in the project requirements should be such as to effect a change of at least fifteen percent (15%) in the bidding.
9. When re-bidding, each modification should be clearly and accurately identifiable in the plans and specifications, and the scope of the modification should be clearly and accurately defined.

18. RETAINAGE

The Issue:

Under what circumstances should retainage be withheld from a construction contract?

Discussion: Retainage is the practice of paying the Prime Bidder a percentage of the earned amount at the time periodic payments for construction work performed fall due, while the Owner "retains" the remainder until completion and final acceptance of the project. It is a practice unique to the construction industry.

If the amount retained is equal to or less than the anticipated profits of the Prime Bidder and its Subcontractors and Material Suppliers, they must in effect wait until the project is complete to collect all or a significant percentage of their profits.

If the amount retained is greater than the anticipated profits of the Prime Bidder and its Subcontractors and Material Suppliers, retainage forces them to fund the difference between the amount retained and their costs, either out of their own working capital or through arrangements with lending institutions to provide needed funds. The cost of these funds must be passed to the Owner in the form of higher bids, or they must be absorbed by the bidders. In effect, the bidders subsidize the cost of construction to the extent retainage exceeds profits.

Retention is regarded by the construction industry as one of the most restrictive practices in effect today, and the one which is most limiting to members of the industry in their ability to conduct their business profitably or even to survive.

Recommendations:

1. Retainage should not be used if satisfactory construction progress is achieved. In situations where satisfactory progress is not being achieved, retainage may be used until the situation is corrected. The Owner should use other mechanisms (Payment and Performance Bonds, Release of Liens, etc.) to insure successful project completion.
2. If retainage is used, funds should be retained only on a line item basis at a rate no higher than 10 percent only until 50% of the work is completed, after which there should be no additional retainage, provided the work has proceeded to the satisfaction of the Architect and/or Owner.
3. The retained percentage held on Subcontractors and Material Suppliers should be the same rate as the Owner is retaining from the Prime Bidder, provided the Subcontractor's and Material Supplier's work is in full compliance with the contract documents and is on schedule. Amounts in dispute should remain with the Owner.
4. When the line-item work is substantially completed, all retainage should be released except amounts required for final work completion or for work in dispute. Upon final work completion, these amounts should be promptly paid.
5. All retainage held during the progress of the work should be deposited by the Owner into an escrow account, with the interest accumulating thereon accruing to the Prime Bidder and proportionately to the Subcontractors and Material Suppliers in accordance with the amount of funds withheld from each. The Owner should furnish documentation to

the Prime Bidder on the amount of interest earned and the location of the account.

6. Upon the approval and agreement of the Architect or Engineer and the Prime Bidder, the Owner should release those amounts retained from the Prime Bidder for release of retainage to those Subcontractors and Material Suppliers who have completed their work in compliance with the contract documents, without negating the contractual obligations of the Subcontractors and Material Suppliers to the Prime Bidder or releasing the Subcontractor and/or Material Supplier from their full and complete responsibilities under the contract documents.
7. Bonds or securities acceptable to the Owner and having a value equal to or greater than the amount of the retention may be substituted by the Prime Bidder for funds in the escrow account, with interest accruing on those securities accruing to the account of the Prime Bidder.
8. On projects with multiple buildings, or phased construction, or of completion and occupancy by the Owner of portions of a building prior to full completion, provisions for release of retainage based on the determination of "substantial completion" and "beneficial occupancy" by the Architect or Engineer should be applied to each building, phase, or completed and occupied portion in the same manner as for a single unit project.
9. Retainage should apply to only materials and equipment provided and services actually performed in connection with the construction project. In no instance should retention or retention escrow accounts be misused in the event of a dispute, to provide coverage for damages or third-party liability anticipated or resulting from the dispute. It is the function of a performance bond, insurance warranties, or legal action to provide for contingencies of this nature.
10. Owners should make progress payments promptly (a maximum of twenty days after receipt of an approved progress billing.) Contractors should make progress payments to Subcontractor and Material Suppliers a maximum of ten days after receipt of payment from the Owner. Payments to Subcontractors and Material Suppliers whose work is not in dispute should not be withheld because of the contractor's dispute with the Owner.

19. OWNER'S PROOF OF FINANCIAL ABILITY

The Issue:

To what extent should the Owner of a construction project demonstrate its ability to fund the project?

Discussion: Members of the construction team are frequently not informed about the source, nature, and amount of funds the Owner has available for construction of the project being bid. This lack of information hampers the construction community's ability to determine whether the cost of preparing construction documents and bids is a wise investment.

The bid documents should provide the name and address of the Owner and/or party responsible for funding the project. As the Owner is interested in obtaining the services of the Architect and Engineer it selects, and is interested in obtaining the services of qualified bidders, this can best be done by showing those others that its plans are realistic and that it has adequate financing to actually build the project.

Recommendations:

1. The Owner should establish and publish to the other members of the project team an adequate budget for the project, including the source of the funds required. Publishing this budget can only assist in an orderly design/construction process without the impact of extensive delays caused by re-design and often re-bid.
2. Full information to enable the bidders to determine the Owner's financial capabilities to fund the project should be made available prior to bidders incurring the expense of bidding. This information should be included in the "Instruction to Bidders" information.
3. At the time of the award of contract and throughout the project, the Owner should be prepared to furnish satisfactory evidence that funds are available to pay the full contract amount. Examples of forms for doing this are included in the American Institute of Architects' Form A201, General Conditions of the Contract for Construction, and the Associated General Contractors publication, Financial Questionnaire for Owners.
4. Governmental bodies and institutions should place a statement in the Invitation for Bids stating funds are presently on deposit for the project, or that funds have been approved for the project.

20. ERRORS IN BIDS

The Issue:

Under what circumstances should a Prime Bidder be allowed to withdraw its bid for a construction project?

Discussion: A Prime Bidder may make a substantive error in its bid to the Owner. Should the Owner require the Prime Bidder to perform the work for its bid price in spite of such an error, the resulting project may create an undue hardship upon the Prime Bidder, its Subcontractors and Material Suppliers, or it may result in unjust enrichment of the Owner, or both. Neither condition is likely to result in the successful completion of the project.

Recommendations:

1. If, after bids are opened, the low Prime Bidder claims it has made an appreciable error in the preparation of its bid and can support such claim with evidence satisfactory to the Owner and the Architect, it should be permitted to withdraw its bid, without forfeiting its bid security.
2. When the low Prime Bidder has withdrawn its bid, its bid security should be returned and it should be disqualified from again bidding on the project in the event re-bids are requested.
3. In the event that the apparent low Prime Bidder has withdrawn its bid, action on the remaining bids should be considered as though the withdrawn bid had not been received.
4. In the absence of legal provisions to the contrary, under no circumstances should a Prime Bidder claiming an error be permitted to alter its bid after the bids have been opened.
5. Any claim of error should be filed in writing with the Owner or Architect within twenty-four (24) hours of bid opening time. The provisions for filing such a claim should be clearly set out in the bidding documents.
6. A bid may be returned upon request from the Prime Bidder provided the time for bid receipt has not passed and bids have not been opened. The Owner should return such bids only upon written request of an authorized agent of the Prime Bidder.

21. BUILDING PERMITS

The Issue:

Who should assume the responsibility of submitting plans to the permitting authority and obtaining the required permits?

Discussion: Contractors often encounter problems obtaining permits because the permitting authority will not approve the plans and specifications as submitted. This results in delaying the start of construction while changes and/or additions are made to the plans and specifications. These changes often result in otherwise unnecessary change orders. Starting the permit process before a construction contract is executed will help to avoid these delays. On major or unusual projects, the permitting authority should be involved in the early design stages.

Recommendations:

1. Approval of plans and specifications for a construction permit should be obtained from the permitting authority prior to issuing bidding documents.
2. In the event plans and specifications are not complete prior to advertisement for bids, the Owner should submit the documents to the permitting authority for review. The amount to be paid for plan review and permit fees should be stated in the bid documents, in order that Prime Bidders may calculate the fees to be paid.
3. Inordinate delays by governing bodies in the issuance of permits should be treated in accordance with the provisions of Section 26, Change Orders.

22. UTILITY COMPANY FEES

The Issue:

How should payment for utility company connection charges and tap fees be specified?

Discussion: Bid documents often do not clarify the requirement for tap fees and connection charges (Example: "All permits and fees are to be paid by the contractor"). When utility distribution system extensions are to be made, connection charges are often extremely difficult to obtain from the utility companies and are frequently performed on a cost plus basis.

The utilities may be controlled by a company or district whose jurisdiction over utilities for the proposed construction site is not obvious. It is therefore important that this information be included in the project manual as a project can be delayed while a bidder loses time locating the proper utility.

Recommendations:

1. The bid documents should set out the proper utility companies to contact along with address, telephone number, and the name of contact person.
2. Connection charges (i.e., participation fees, impact fees, development fees, parking fees, etc.) for which the bidder will be responsible should be clearly set out in bid documents.
3. If the project will require payment of fees or charges which cannot be determined by a published fee rate schedule, the Owner should pay these costs directly, or state an allowance amount to be included in the bid documents for them.

23. TESTING AND INSPECTION FEES

The Issue:

What is the full extent of inspection and testing required and who will pay for it?

Discussion: Bid documents often do not clearly state the full extent of inspections and testing required or desired by the Owner.

In most situations, responsibility for inspections and testing should rest with the Owner, since the result of these inspections or tests can directly affect the cost of the project. Examples are geotechnical inspections of drilled piers and footing soils for bearing capacity.

Recommendations:

1. Testing and inspection should be fully described in Division 1 of the specifications. Certification testing of construction products or material should be specified in detail in the applicable specification section.
2. Responsibility for payment of various tests and/or inspections should be fully delineated in Division 1. Inspection or tests of an unusual nature (e.g., wind tunnel testing) that cannot be readily priced from local sources should be paid for by the Owner or included as an allowance amount in the bid documents.

24. CONSTRUCTION SCHEDULE

The Issue:

What kind of construction schedule should be required and how often should it be updated?

Discussion: On traditional design, bid, build projects scheduling concerns of the Owner may not be as great as for fast-track or multi-prime projects.

Regular coordination conferences with the participation of the Owner, Architect, Prime Bidder, and major Subcontractors and Material Suppliers are of major value in addressing scheduling and completion dates. Schedule updates alone will not bring about a coordinated effort for a timely completion of the job.

Some computer generated CPM schedules can be difficult for field personnel, contractors, Architects and Owners to interpret. It is critical that all concerned parties have a clear understanding of the schedule to meet completion targets.

Recommendations:

1. On traditional design, bid, build projects, scheduling requirements should be as simple as possible. If a CPM schedule is required, outline detailed requirements in Division 1 of the specifications, in order that the Prime Bidder can include the correct costs.
2. On fast-track or multi-prime projects, the Owner should consider employing an independent scheduling consultant as an agent of the Owner. This consultant should participate in the project coordination meetings.

25. LIQUIDATED DAMAGES

The Issue:

Under what conditions should liquidated damages be specified on a competitively bid project and how should their amount be determined?

Discussion: Liquidated damages provisions in contract documents arise from a determination by the Owner that it will suffer adverse economic consequences should its project not be completed on schedule.

Recommendations:

1. Where liquidated damages are specified, their amount and the date upon which they take effect should be clearly specified. The amount of such damages should be in accordance with costs the Owner can reasonably demonstrate. Arbitrarily high liquidated damages may suppress competition and result in higher bids.
2. Occurrences which extend the date upon which liquidated damages take effect should be clearly and completely specified.
3. Where possible, provisions for a bonus for project completion should be included in project specifications. Bonus amounts should be equal to liquidated damage amounts and should be equitably distributed among construction team members.
4. Provisions for actual damages, as opposed to liquidated damages, should be not be allowed. Actual damages cannot be reasonably determined by bidders, and provisions for them may result in a substantially reduced number of prime bidders, and substantially higher bids being tendered. In addition, many sureties require their clients to refrain from submitting bids on such projects.

26. CHANGE ORDERS

The Issue:

What is an equitable method for establishing fees allowed to cover overhead and profit on Change Orders?

Discussion: Change Orders are formal instruments which codify changes in project scope and/or time. They are executed after the execution of the contract and serve to modify it. They result from changes in the work, and they may add to the original scope or deduct from it. They also address any changes in the project schedule resulting from scope of work changes, or which may arise from other events not related to scope changes.

The size and scope of the change, its impact upon the construction schedule, the number of companies impacted by the change--all such issues impact indirect costs. Indirect costs associated with small change orders may exceed the costs of the direct work involved. Change Orders which substantially impact schedule may far exceed fixed overhead percentages allowed for such costs.

It is difficult to foresee all the possible occurrences which may arise during construction which affect scope and schedule. When such an unforeseen event occurs, disagreements often develop about whether and to what extent the event alters scope, the exact nature of the change, its impact on schedule, and its cost. Frequently unresolved Change Orders result in litigation which may undermine successful project completion, increase costs, and reduce profits for all parties.

Recommendations:

1. Project documents should be complete, thereby reducing scope changes resulting from document inconsistencies and/or omissions. Adequate project funds invested in design may save substantially increased costs during construction.
2. Specifications should clearly and completely set out procedures for determining when a changed condition exists, how and by whom a potential change may be recognized, the documentation required to substantiate the change, the process and entities by which the change is reviewed, and the schedule for each step in the process. Such procedures should be rigorously followed.
3. Adequate provisions for indirect costs, such as field overhead, should be addressed. Indirect costs should be quantified to the same extent as direct costs, and should be processed in the same way as direct costs.
4. Allowances for profit of Change Orders should also be clearly addressed. The size and scope of the change, its effect on the project schedule, and the number of companies involved impact the amount of profit which should be reasonably expected. Fixed percentage allowances should not be used as they are rarely satisfactory and equitable to all parties.
5. Change Orders which result in deductions to the project scope and schedule should be addressed in the same fashion as those which result in added scope or lengthened schedule.
6. Indirect costs not incurred at the project site should not be allowed.

27. RESPONSIBILITY FOR CODE COMPLIANCE

The Issue:

How should the responsibility for code compliance be allocated?

Discussion: Traditionally the Design Team has been given responsibility for designing a construction project in compliance with building codes and constructors have been given responsibility for constructing the project as designed. Often constructors are required to identify any work shown which is at variance with codes and is known to them to be so or bear the costs associated with bringing the project into compliance.

As a practical matter, constructors which have such knowledge should disclose it. Also, as a practical matter, proving that a constructor had such knowledge and did not reveal it is a difficult task.

Recommendations:

1. The Design Team should be given full responsibility to design construction projects in complete compliance with building codes.
2. The Construction Team should be given full responsibility to construct the project in complete compliance with the design.
3. Added cost for bringing the project into compliance with codes which is necessitated by design deficiencies should be the responsibility of the Design Team and/or the Owner and should be treated as a Change Order.
4. Added costs for bringing the project into compliance with the design necessitated by construction deficiencies should be the responsibility of the Construction Team.
5. Contract language which places cost responsibility for correcting code deficiencies on the Construction Team should be avoided.

28. SUBSTANTIAL COMPLETION

The Issue:

What is an appropriate definition for substantial completion of a construction project and what activities should follow substantial completion?

Discussion: Substantial completion for a construction project has traditionally been defined as the date upon which the project is available to its Owner for the use for which it is intended. Substantial completion implies acceptance of the project by governing authorities as to compliance with life safety and other building codes, and is often certified by appropriate members of the Design Team, usually in the form of the Architect's or, in some instances, the Engineer's attestation. It usually triggers the release of all funds held by the Owner except an amount sufficient to cover items of work to be completed, items identified as "Punch List" work, which items should be clearly and definitely set out. It usually also sets out the date upon which all specified warranties begin.

Recommendations:

1. The date of substantial completion should be the date upon which the project is available for use by its Owner for the purpose its construction was intended. It should be attested by the responsible design official.
2. All funds not paid to the constructor, including retainage, as of the date of substantial completion, should be immediately released to the Construction Team, less an amount reasonably required to finish any remaining punch list work.
3. The effective dates of all warranties should be set concurrently with the attestation of substantial completion of the project or designated portion thereof.
4. Punch List items and the schedule for their completion should be clearly identified and fully described. Multiple punch lists should be avoided. Upon completion of Punch List items and the attestation to their completion by the responsible Design Officer, all remaining funds for the project should be immediately released to the Construction Team.
5. Procedures for determining the date of substantial completion, the beginning date of warranties, Punch List work items listing, and schedule for their completion, release of remaining construction funds, and final completion of the project should be clearly enumerated in the project specifications. These procedures should be rigorously followed.

29. HAZARDOUS MATERIALS

The Issue:

How should bidding documents address the existence of hazardous materials, such as asbestos or PCB?

Discussion: The existence of hazardous materials, whether known or suspected, is an issue of major concern to the construction industry. Treatment and/or removal of these materials is a highly specialized, extremely risky field. As a result of this high degree of risk, many surety and insurance companies prefer, and even compel, their clients to abstain from bidding on projects in which bidding documents require the Prime Bidder to accept this work. As a result, Owners receive substantially less competition on such projects. Treatment of pre-existing hazardous materials are and properly should remain the responsibility of the Owner. If known, these materials should be treated or removed by the Owner in a separate contract with a Specialty Contractor in the field, and constructors who follow the remedial work should be absolved of any liability in connection with it.

Recommendations:

1. Known hazardous materials should be treated or removed by the Owner prior to seeking bids for the project proper.
2. Hazardous materials discovered during construction should be treated as a Change Order or separate contract, but the Prime Bidder and Subcontractors should not be forced to perform remedial work for this material.
3. The Owner should allow an appropriate extension of contract time after abatement work has been completed. Direct and indirect costs for this extension should be addressed in accordance with Section 26, Change Orders.

30. CONSTRUCTION UTILITIES

The Issue:

Who should furnish utility services (electricity, water, telephone, etc.) necessary for construction?

Discussion: It has historically been the Prime Bidder's responsibility to provide basic construction utilities such as electricity, water, telephone and temporary sanitary facilities. It is the responsibility of the Prime Bidder and Subcontractor and Material Suppliers to ascertain the acceptability or availability of these utilities. The scope and cost of these must be included in the Prime Bidder's bid.

Recommendations:

1. The responsibility for furnishing and paying for construction utilities must be delineated in the bidding documents.
2. Subcontractors and Material Suppliers should clearly state whether they are including or excluding these costs in their bid amount.
3. Prime Bidders and Subcontractors and Material Suppliers must determine their respective needs for their portion of the work. If these needs exceed the requirements set out in the bid documents (e.g., 110v supplied but 220v needed for welding equipment) the added costs for additional service should be included in their bid amount. These should be stated in the bidder's scope of work.

31. MATERIAL HOISTING

The Issue:

How should bidders approach construction material and manpower hoisting requirements at bid time?

Discussion: Material and manpower hoisting requirements receive varied levels of discussion in bid documents. Some contain extensive, thoroughly specified hoisting system requirements, some contain no discussion at all, and others fall between these extremes. Hoisting requirements are particularly important in high-rise construction, though they are a factor in all construction. It is imperative that all bidders develop a thorough understanding of the type, size, and number of pieces of hoisting equipment prior to bid.

Recommendations:

1. If bid documents do not specify, or specify inadequate hoisting facilities, it is the responsibility of the Prime Bidder to develop its own hoisting plan and to communicate this plan to its Subcontractors and Material Suppliers.
2. The hoisting plan should address the type, size, and capacity of hoisting equipment, as well as its hours of operation, and its duration on the project.
3. The Prime Bidder should address whether the hoisting equipment will be used by all without charge, and what costs will be incurred by a Subcontractor and/or Material Supplier if they wish to use hoisting facilities outside normal working hours.
4. Any Subcontractor and/or Material Supplier which feels the Prime Bidder's hoisting plan inadequate should include its additional hoisting requirements in its bid to the Prime Bidder.

32. SCOPE LETTERS

The Issue:

Should Subcontractors and/or Material Suppliers send scope of work letters (or "bid abstracts") to the Prime Bidders?

Discussion: Diversification of project types and of Subcontractors and Material Suppliers makes the scope letter indispensable to the procurement process. The scope letter is used to clarify and quantify what a Subcontractor and/or Material Supplier is furnishing and excluding in its bid.

Recommendations:

1. Scope of work letters (Scope Letters) should be used by all Subcontractors and Material Suppliers on every construction project bid.
2. The Scope Letter should clearly state all information necessary for a Prime Bidder to evaluate their bid. Guidelines for submittal of Scope Letters and bids by fax machine may be found in the American Society of Professional Estimator's brochure "Standard Practice for Bid Submittal by Fax Machine". Specific details from bid documents should be incorporated into the Scope Letter to further assist in the Prime Bidders evaluation of the bids.
3. The Scope Letters should be sent by mail or fax machine to arrive at the Prime Bidders office at least 24 hours prior to bid time.
4. The CONSTRUCTION INDUSTRY RESEARCH COMMITTEE, P. O. Box 645, Conifer, CO 80433 (Telephone 303-674-1402) has prepared a series of sample Scope Letter inclusion and exclusions for each major CSI work category. For additional information, contact CIRC.

ASPE CODE OF ETHICS

Basic Canons

CANON #1

Professional estimators shall perform services in areas of their discipline and competence.

CANON #2

Professional Estimators shall continue to expand their professional capabilities through continuing education programs to better enable them to serve clients, employers and the industry.

CANON #3

Professional Estimators shall conduct themselves in a manner which will promote cooperation and good relations among members of our profession and those directly related to our profession.

CANON #4

Professional Estimators shall safeguard and keep in confidence all knowledge of the business affairs and technical procedures of an employer or client.

CANON #5

Professional Estimators shall conduct themselves with integrity at all times and not knowingly or willingly enter into agreements that violate the laws of the United States of America or of the states in which they practice. They shall establish guidelines for setting forth prices and receiving quotations that are fair and equitable to all parties.

CANON #6

Professional Estimators shall utilize their education, years of experience and acquired skills in the preparation of each estimate or assignment with full commitment to make each estimate or assignment as detailed and accurate as their talents and abilities allow.

CANON #7

Professional Estimators shall not engage in the practice of "Bid Peddling" as defined by this code. This is a breach of moral and ethical standards, and this practice shall not be entered into by a member of this Society.

CANON #8

Professional Estimators and those in training to be estimators shall not enter into any agreement that may be considered acts of collusion or conspiracy (bid rigging) with the implied or express purpose of defrauding clients. Acts of this type are in direct violation of the Code of Ethics of the American Society of Professional Estimators.

CANON #9

Professional Estimators and those in training to be estimators shall not participate in acts, such as the giving or receiving of gifts, that are intended to be or may be construed as being unlawful acts of bribery.