ConsensusDocs®
BUILDING A BETTER WAY

ConsensusDocs Guidebook

2019 Edition

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by

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Introduction to the ConsensusDocs Guidebook

ConsensusDocs is the product of leading construction associations, dedicated to identifying and utilizing best practices in the construction industry for standard construction contracts. The 36 participating associations represent Design Professionals, Owners, Constructors, Subcontractors, and Sureties that literally spell the DOCS in ConsensusDocs. ConsensusDocs contracts and forms attempt to fairly and appropriately allocate risks to the Party in the position to manage and control the risk. The practices articulated in the documents are forward-thinking, and may not always represent the status quo, but rather a better path forward to achieve project results. The goal of the multi-disciplined drafters was to create documents that best place the Parties to a construction contract in a position to complete a project on time and on budget with the highest possibility of avoiding claims.

By starting with better standard documents that possess buy-in from all stakeholders in the design and construction industry, you reduce your transaction time and costs in reaching a final Agreement. By using fairer contracts helps eliminate unnecessary risk contingencies and thereby better pricing. In addition, "fill-in-the-blanks" are intended to lead to productive discussions about how particular risks should be allocated on specific projects before a contract is finalized.
Also, the ConsensusDocs catalog includes complete "families" of documents for each project delivery method that provide a coordinated set of Agreements and complimentary administrative forms. There also are short form agreements that address the Owner-Constructor (205), the Owner-Design Professional (245), and the Constructor-Subcontractor contractual relationships in a more abbreviated manner than do the standard Agreements (ConsensusDocs 200, 240, and 750 respectively).

In this Guidebook you will find comments by individual associations regarding particular contract documents. These comments are organized by numeric sequence of the ConsensusDocs contract documents. The overview sections highlight issues and innovative features of the documents generally. Association comments are expressions by an association to its association membership. These comments highlight provisions or alert their membership to consider possible project-specific modifications to a consensus standard Agreement or form. ConsensusDocs contracts covered in this release of this Guidebook include the 200, 200.1, 200.2, 205, 220, 221, 235, 240, 260, 246, 261, 262, 263, 298, 300, 301, 310, 410, 415, 431, 450, 460, 470, 471, 472, 473, 500, 702, 703, 710, 750, 752, and 803.

Please note that there has been a significant number of editing changes and section renumbering between the 2007 and 2011 versions that give the appearance that more substantive changes were made in the 2011 update than is actually the case. Consequently, a highlight sheet of changes was created to better pinpoint substantive changes. The 2011 update highlights sheet can be found here for free on the internet.

Lastly, the ConsensusDocs coalition organizations and ConsensusDocs staff are deeply indebted to the hard work of the many the seasoned professionals who contributed countless hours in the creation of the ConsensusDocs contracts as well as this Guidebook. Their collective experience represents hundreds of years of practical experience in the construction field. Contributor names can be found at the conclusion of this Guidebook.

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Comments and Recommendations regarding ConsensusDocs 200*

Agreement and General Conditions Between
Owner and Constructor (Lump Sum)

Overview:

Some general characteristics of the ConsensusDocs 200:

- Integrates the general terms and conditions with the contractual Agreement
- Emphasizes the primacy of the Owner-Constructor relationship and focuses on clear communication pathways as well as developing and maintaining positive relationships. The Design Professional is removed from the dispute process between Owner and Constructor
- Refers to General Contractors as a Constructor, which is a better reference term for an entity that adds value throughout the process rather than an indistinguishable commodity
- Clarifies that the Owner is responsible for design and design coordination; while the Constructor is responsible for design elements only if specifically noted. In that situation the Owner should supply all performance and design criteria
- Defines overhead (section 2.4.12) in a more detailed and clear manner to assist in finalizing change orders and the associated costs (see section 8.3.1.3) and would avoid disputes during the course of the project
- Clarifies that Parties specifically name authorized representatives (section 3.4.4 for Constructors; section 4.7 for Owners); the Constructor also names a safety representative (section 3.11.3)
- Provides a clear and extensive definition of Cost of the Work, even though this is a lump sum agreement to facilitate potential change orders without disputes
- Establishes how electronic information exchanges may be relied upon.

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* This publication is designed to provide information in regard to the subject matter covered. It is published with the understanding that the publisher, endorsers of ConsensusDocs and contributors to this Guidebook are not engaged in rendering legal, accounting, or other professional services. If legal advice or other professional advice is required, the services of a competent professional person should be sought.

—From the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations

- Establishes dates of Substantial Completion and Final Completion
- Addresses liquidated damages by giving Parties the option as to whether to use liquidated damages ("LDs") or not (section 6.5). The document also gives the option to use LDs both for Substantial Completion as well as Final Completion. The amount of the LDs is expressed as a lump sum amount, but the Parties may choose to use a per diem amount.
- Provides an order of precedence clause (section 14.2).

Definitions (section 2.4): Consider adding a definition of the Owner's Program means an initial description of the Owner's objectives that shall include budgetary and time criteria, space requirements and relationships, flexibility and expandability requirements, special equipment and systems, and site requirements.

Notification of Cancelation Insurance (ACORD Form Change):

ConsensusDocs recommends, as of September 2011, the following revision regarding notification of insurance cancelation:

Section 10.2.1 In the 6th line, after the "and broad from property damage." insert, "The Constructor shall maintain completed operations liability insurance for one year after Substantial Completion, or as required by the Contract Documents, whichever is longer.
10.2.4 Delete section 10.2.4 in its entirety which currently reads, "The policies of insurance required under subsection 10.2.1 shall contain a provision that the coverage afforded under the policies shall not be cancelled or allowed to expire until at least thirty (30) Days' prior written notice has been given to the Owner. The Constructor shall maintain completed operations liability insurance for one year after acceptance of the Work, Substantial Completion of the Project, or to the time required by the Contract Documents, whichever is longer. Before commencing the Work, the Constructor shall furnish the Owner with certificates evidencing the required coverage."

And Substitute the Following:

"10.2.4 To the extent commercially available to the Constructor from its current insurance company, insurance policies required under subsection 10.2.1 shall contain a provision that the insurance company or its designee must give the Owner written notice transmitted in paper or electronic format: (a) 30 Days before coverage is nonrenewed by the insurance company and (b) within 10 Business Days after cancelation of coverage by the insurance company. Prior to commencing the Work and upon renewal or replacement of the insurance policies, the Constructor shall furnish the Owner with certificates of insurance until one year after Substantial Completion or longer if required by the Contract Documents. In addition, if any insurance policy required under subsection 10.2.1 is not to be immediately replaced without lapse in coverage

when it expires, exhausts its limits, or is to be cancelled, the Constructor shall give Owner prompt written notice upon actual or constructive knowledge of such condition."

ConsensusDocs Guidebook Explanation of Notice of Cancelation Language:

Generally, construction contracts require that insurance policies include at least 30 days advanced written notice to the owner (or an upstream contractual party) if an insurance policy is canceled or allowed to expire. This has generally been satisfied through certificates of insurance as evidence of compliance. The Association of Cooperative Operations Research and Development (ACORD), the licensing company for insurance forms, has amended their certificate requirements (*e.g.* ACORD 25). Consequently, contractors and subcontractors may no longer be able to received certificates of insurance language that proclaims that the insurance company or insurance broker, should any policies be canceled before the expiration date thereof, "endeavor to mail 30 days written notice to the certificate holder." Therefore, contractual requirements that 30 days advanced notice be included in insurance policies may not be commercially available and altering ACORD forms to purport to do so may run afoul of state law. Consequently, current contract language addressing notice of cancelation for insurance policies no longer reflect the reality in today's construction marketplace.

Consequently, a working group of experts drafted language which reflects reality, while giving the Owner sufficient notice. The language provides an owner timely third-party notification of cancelation by the insurance company as well as creates an obligation on a party to give notice of cancelation to the owner or other upstream party. Lastly, the drafted solution looks to limit costs as well time efficiency issues by allowing for electronic notification by the insurance company or the insurance broker as a designee depending who is in the best position to have such information and can give appropriate notice. In addition, reference to prompt notice is expected to be soon as practical, but in no case longer than 5 days from first learning of cancelation or nonrenewal of an insurance policy without replacement.

The ConsensusDocs proposed contractual solution differentiates between nonrenewal, cancellation, and other changes like lapses in coverage. In the case of active nonrenewal by the insurance company, the company or designee is in the position to provide advanced notice. In the case of cancellation, it is not possible for the insurance company to provide advanced notice so notice would be provided very shortly after cancellation occurs. The most common example is late payment of premium. In this case, the company may cancel if payment is not received, however, if payment is received cancellation would be rescinded and any advanced notices would also have to be rescinded causing unwarranted confusion and inefficiencies. In other cases such as a lapse in coverage, only the design builder may be aware of the lapse and therefore only the design builders could provide that notice.

The ACORD form change impacts all standard contract documents, including the ConsensusDocs 200 and the AIA A201®, and most manuscripted construction contracts that contractually require insurance policies provide a 30-day advanced notice of cancelation. The ConsensusDocs notice of

cancelation solution references where such language should be inserted into ConsensusDocs contracts (ConsensusDocs 200, section 10.2.4). However, the ConsensusDocs proposed solution is equally applicable to other contracts that are now out-of-date due to the ACORD change. The ConsensusDocs Guidebook is being updated to respond to today's changing construction marketplace in a timely fashion and was deemed too pressing to wait until the next revision cycle.

Guided Choice Guidelines for ConsensusDocs:

ConsensusDocs agreements require non-binding mediation as a method for mitigating and resolving disputes. If properly used, mediation can be a quick and inexpensive dispute mitigation tool that gives parties a satisfactory result. Unfortunately, mediation is not always used effectively, and sometime Parties simply go through the motions in mandatory mediation. Other times, settlement occurs, but it is "late in the game" and close in time to a decision by a court or arbitration. By this time, with considerable expense incurred and relationships damaged, parties are often not pleased with the settlement. They are even less pleased when a court or arbitrator -- strangers to the matter – imposes the result.

There are many possible ways to use mediation effectively. One possible way to use mediation effectively is through something that has recently been called, Guided Choice mediation. While the name is a new, the concepts embodied in Guide Choice mediation are well known to the most successful construction mediators. Users of ConsensusDocs contracts may want to utilize these mediation processes and techniques when setting up their dispute mitigation and resolution procedures. Note, however that ConsensusDocs agreements call for the Parties to communicate directly initially to resolve disputes, and these section may need to be modified as Guided Choice is spelled out in more detail in the following article: "Guided Choice: Early Mediated Settlements and/or Customized Arbitrations," *Journal of the American College of Construction Lawyers*, Vol. 7, No 2, Summer 2013 by Paul Lurie.

Guide Choice mediation is used as early as possible in the dispute in which clients drive decisions and customize the mediation process. It does not require major changes to the ConsensusDocs contractual dispute resolution terms, except as noted above. Mediators help the parties customize the dispute resolution process based on their understanding of what impasses must be overcome to reach a settlement. Proper diagnosis is essential to a successful mediation process.

Instructions for use of the Guided Choice system:

As soon as a dispute arises, any of the parties to an agreement that contains a mediation provision files a request to engage a mediator as soon as possible. An initial contact with a mediator should occur even if the parties have agreed in their agreements to Direct Negotiations, Mitigation Procedures, or Design Review Boards submittals. The parties must all agree on the mediator, who should be knowledgeable with the principles in which the parties intend to utilize mediation – in a

manner consistent with the Guide Choice mediation concept.

The mediator will immediately begin their diagnoses of the current impasse using private meetings or telephone interviews with the parties or their attorneys. The mediator will propose a mediation methodology designed to overcome the factors causing the impasse. Usually this process includes information exchange, meeting with experts, and identifying and meeting with key decision makers and insurers' representatives. Where all else fails in breaking impasse, the Guided Choice system may also include "certifying" questions to specially appointed arbitrators or to Design Review Boards, either on a binding or non-binding basis.

The mediator will suggest the form of the negotiation process, which may or may not include the use of a traditional "mediation day." The parties acknowledge that negotiation impasses are normal and should not cause termination of the mediation process. The parties agree to consider the mediator's suggestions for overcoming impasse. If the parties have also agreed on arbitration, they may want to agree on a customized process, including an expedited schedule. The parties can also agree to select an arbitrator[s] and target hearing dates without incurring the substantial costs of actual arbitration preparation. The mediation process can and should continue even if an arbitration hearing is scheduled or even commences.

The appointed mediator and the parties, and if applicable their lawyers, should agree to principles, which includes a commitment to expeditiously exchange information that an adverse party considers necessary to evaluate its settlement position; to follow the mediator's recommendations to overcome any impasse in negotiations that may occur during the mediation process; and whether or not the parties have previously agreed to arbitrate disputes that have not settled, to consider customizing the arbitration process to resolve the dispute with a reasonable expenditure of time and money. Contemplating arbitration should be considered an aid to the settlement process and not inconsistent with mediation.

The mediation process is voluntary and no party can be legally forced to agree to anything other than participating in the mediation. Mediation efficiently allows parties to continually evaluative the strengths and weaknesses of their settlement positions, as well as reflect on whether their best interests are served by settling or proceeding to a court or arbitration decision which come with less predictable outcome.

AGC Comments for ConsensusDocs 200:

Additional comments on this document, including a discussion of pay-if-paid, can be found on AGC's website at www.agc.org/contracts.

Preamble: Job number and Account code were added to all ConsensusDocs agreements in this revision cycle as a helpful administrative tool if applicable.

Design Authority and Responsibilities (section 2.3): Under the *Spearin Doctrine*, the Party responsible for furnishing the completed design impliedly warrants its sufficiency and adequacy. United States v. Spearin, 248 U.S. 132 (1918). Constructors need to carefully consider the effect of specifying any design responsibilities in this fill-in-the-blank section. Also, a Constructor should pay particular attention to the ramifications of performance specifications, equipment selections, preparation of shop drawings, and the like in the context of section 2.3. Similarly, post-award actions such as Constructor initiated value-engineering changes may alter the Parties' responsibilities for the adequacy of the design of a particular system on the project. These actions may shift risk for design responsibilities to the Constructor. In addition, Constructors should be weary of modifications that add disclaimers to shift the risk of design flaws to a Party that was not responsible for the preparation of the design.

Exhibits (section 2.4.1.1): The User is expected to create these referenced exhibits as applicable. These exhibits contain information that is largely based on a project and company specific information that varies. The Parties are encouraged to create other exhibits as appropriate and list the exhibits in this subsection.

A named exhibit, exhibit B for labor relations was eliminated in this edition. Users are encouraged to include an exhibit addressing labor relations and their effect on the Project, if applicable. Legal counsel is recommended.

Law Effective Date (section 2.4.14): "Enacted" is new language as opposed to effective. The drafters believe this change is a best practice because those bidding on a project are on notice of a change in the law once it is enacted, as opposed to the effective, which would occur later.

Insurance Deductibles (section 2.4.18): Insurance deductibles are eliminated as an Overhead item and not included as an item for cost of the Work purposes as a job cost. Some Constructors consider a paid deductible as a cost of the Work. The ConsensusDocs drafters believe this is a best practice because it is presumed that the risk of paying insurance deductibles would be included in bid prices.

Changed Work (section 2.4.20.2): This subsection was moved to appear in alphabetical order.

General Responsibilities (section 3.1.1): Users may want to note that the obligations in the ConsensusDocs 750 Subcontract contain similar obligations as this subsection but they are spread throughout the agreement at sections 3.14, 3.2.1, 3.1.2, 4.1, 4.3.

Responsibility for Performance (section 3.3.1): The first sentence was eliminated because it was redundant with 3.3.2.

Reference to applicable Laws (section 3.3.2): Note that the reference to lowercase laws (undefined) is used here to be more broad reference to applicable laws.

Warranty Claims (section 3.8.2): The Constructor shall assist the Owner in pursuing warranty claims to the extent that the selection criteria would have been followed by the Constructor.

Correction of Defective Work (section 3.9): The Constructor is to be notified of defective work during the warranty period and given the option to correct Correction of work even after the Correction of Work period expires.

Submittals (section 3.14.1): This additional language is only to clarify that such extra work does not merit additional charges.

Professional Services (section 3.15): When taking on design responsibility (See section 2.3), the Constructor should also consider the provisions of section 3.15 that obligates it to obtain professional services from licensed design professionals and to require the design professionals to carry E&O insurance as specified in section 10.8.

Changed Time or Price due to a Change in Law (section 3.17.3): Moved to subsection 3.21.1.

Owner Provided Information (section 4.3): After Owner strike "pursuant to section 4.3" and substitute "that are Contract Documents." Owner provided information is now not necessarily considered contract documents. Therefore, Constructor's examination should be limited to documents which are designated contract documents. Otherwise, Constructors could be in a position of having to essentially rely on owner provided information that is disclaimed and therefore unreliable.

Reference was eliminated because revised section 4.3 only allows Constructor to rely on information that is designated as contract documents. Project participants should take care in identifying contract documents in 14.1.

Legal Descriptions (section 4.3.1): Language related to legal descriptions was moved from 4.3.3.

Owner Provided Information (section 4.3.3): Changed "relevant" to "required" for a more objective and narrower standard for requests. An Owner may find it desirable to provide such information.

Paper Contract Documents (section 4.6): Depending on how the ConsensusDocs 200.2 is used and completed, the need to provide hard copy of the Contract Documents could potentially be eliminated.

Documents in Electronic Format (section 4.6.1): Electronic documents are increasingly being used by the industry. This provision requires a protocol to be established relating to the use of such documents. Constructors are strongly encouraged to use the protocol in Consensus DOCS 200.2 to ensure that the risks associated with use of electronic documents are clearly understood by all the Parties to a contract. At a minimum, the 200.2 can allow Constructors to rely upon e-mails and faxes, if the document is completed to indicate such a desire.

Labor Relations (section 5.4): Labor Relations was deleted and moved into an elective exhibit, see comments notes above at 2.4.1.

Date Commencement (section 6.1): It is common for the scheduled time period of commencement and the agreement signing date to be different. Parties need to specify if this is the case for this project. The default Date of Commencement will be the signing date of the agreement.

Liquidated Damages (section 6.5): Section 6.5 is an optional liquidated damages provision, which allows the Parties to elect whether or not to provide for liquidated damages. In general, AGC members view liquidated damages negatively, and advise Constructors to take extreme caution before electing to provide any liquidated damages in this section. Liquidated damages are intended to compensate the Owner (and serve as a substitute for) the Owner's actual delay damages, such as lost revenues. Thus, a contract which allows the Owner to recover liquidated damages, but otherwise bars both Parties from collecting consequential damages, is not truly mutual; it allows the Owner to have its cake and eat it too. If liquidated damages are elected, the Constructor should recognize that the limited mutual waiver of consequential damages contained in section 6.6 is not truly mutual. In addition, Constructors should not agree to liquidated damages measured from final completion.

Note that this section contains blanks for the Parties to fill in to establish the appropriate dollar amounts (one tied to substantial completion and one tied to final completion) if the Parties elect to provide for liquidated damages. The amount of the LDs is expressed as a lump sum amount but the Parties may choose to use a per diem amount.

Limited Mutual Waiver of Consequential Damages (section 6.6): The Parties agree to waiver consequential damages except for items specified in 6.5. A mutual waiver of consequential damages benefits the Constructor if the waiver is truly mutual, meaning that liquidated damages are not specified in section 6.5.

Setting aside the interplay between liquidated damages and a "mutual" waiver of consequential damages, the Parties should also carefully consider whether liquidated damages are, themselves, desired. Many sophisticated General Contractors today desire, and may even insist upon, the inclusion of a liquidated damages provision in their contracts, because – perhaps among other reasons - it allows them to better quantify their risk. Moreover, some General Contractors and Construction Managers insist that the contract provide for liquidated damages and that the liquidated damages be capped at some amount, such as one-half of the Construction Manager's fee (under a cost-plus-fee contract). By doing this, the Constructor/Construction Manager truly can attain a real limitation of damages.

Listing an item of damages in this blank space would allow for either Party to make a claim, if appropriate, for any consequential damages. If no items are listed then consequential damages not covered by insurance are waived.

Principal office and Overhead are now considered a direct project expense and therefore, are not automatically waived in a waiver of consequential damages.

Incentives (additional possible section at 6.6.7): For those projects where an incentives clause is appropriate, the following standard language developed by the ConsensusDocs drafters could be inserted as follows:

> "6.7 AWARD INCENTIVE. The maximum amount of incentive shall be _____. To receive an incentive award based upon early completion, the Constructor must provide the Owner a written notice of its intent to achieve completion early no later than 60 days prior to the contract date of Substantial Completion. If achieved, the Contract Price shall be adjusted by Change Order to reflect the Constructor's incentive award. Incentive award payment will be made upon receipt of a proper application for final payment after execution of that Change Order."

No Obligation to Perform (section 8.1.3): This addition derives from section 7.7 of the 750 and provides a consistent approach for the parties to memorialize changes in writing, which is designed to reduce disputes about the scope and cost of such work later.

Interim Directed Change (section 8.2.2): An Owner is required to pay 50% of cost estimate if dispute occurs over whether work is within scope. This provision allows an important balance for a Constructor to maintain financial viability, while allowing an Owner to retain legitimate claims in dispute.

Cost of the Work (section 8.3.1.3): While the 200 is a Lump Sum Agreement, a more extensive delineation of the Cost of the Work is now included to clarify and help Parties avoid disputes in regard to the cost of the work for changes. This language is derived from existing language in the ConsensusDocs 500 Construction Management At-Risk agreement with some minor appropriate modifications.

Incidental Changes (section 8.5): This language was taken from section 7.9 of the ConsensusDocs 750 Subcontract. This added language provides for greater clarity for the project participants and provides a consistent approach across the ConsensusDocs family of contracts.

Retainage (section 9.2.4.1): This provision is important for Constructors to ensure payment flows in a fair and equitable manner. Owner is required to release retainage applying to work of early finishing Subcontractors upon acceptance of such work. Once the work is 50% complete, the Owner shall not withhold any additional retainage. If the recommended best practice language is modified in the Owner-Constructor, Constructors should consider modifying the ConsensusDocs 750 in a consistent manner.

Insurance Coverage for Loss in Cost of the Work (section 9.3.2): This is an added clarification that a positive indication of insurance coverage of an acceptance of loss, than the loss is not a Cost of the Work.

Adjustment of Constructor's Payment Application (section 9.3.7): This provision allows an Owner to withhold payment if a third Party files a claim, unless a Constructor furnishes the Owner with adequate security in the form of a surety bond, letter of credit or other collateral or commitment which are sufficient to discharge such claims if established. Constructors should provide more specificity regarding adequate security. If there is a bond in place, no additional security should be required besides consent to payment by the surety after acknowledging the existence of the claim. If it is a lien claim, the Constructor should be required to bond around the lien in accordance with applicable statutory requirements.

Some Constructors report abuse of the right to withhold payment, even after adequate security has been provided. Also, a Constructor should ensure that this provision is consistent in the Constructor-Subcontractor Agreement, as provided in ConsensusDocs 750 section 8.2.7.

Payment Delay (section 9.5): Subsection 9.2.1 defines the payment due date.

Failure to Achieve Substantial Completion (section 9.6.1): The Owner may want to seek the assistance of its Design-Professional to compile such list.

Indemnity (section 10.1): The Parties' indemnity obligation is limited to the extent of the Party's negligence and cover only insurable risks, i.e., personal injury (including death) and property damage. Either Party is entitled to reimbursement of defense costs paid in excess of that Party's percentage of liability for the underlying claim. Constructors should be vigilant during contract negotiations, and should only agree to broaden risks covered (if requested by the Owner) with full knowledge and understanding of the impact of a broader standard on the Constructor's anticipated profitability and fee.

Indemnitees also include the Design Professional, and "Others." The term "Others" should be defined or stricken if not defined, from the Constructor's standpoint, as it represents a potential broadening of the indemnity obligation to persons or companies who the Parties may not have actually intended to benefit from the indemnity.

Duty to Defend (section 10.1): Given the reciprocal indemnity obligations in the ConsensusDocs forms, and the pure comparative causation standard, there is not a duty to defend. A Constructor who is liable under the indemnity provision should reimburse the indemnified Party for that Party's legal fees (which may as a practical matter create a willingness to defend). But as a matter of contract obligation, there is no duty to defend of the Constructor vis-à-vis the Owner, or of a Subcontractor vis-à-vis the Constructor. For some Constructors, desire for a Subcontractor's duty to defend will outweigh the Constructor's desire not to have to defend the Owner. Constructors will need to assess this aspect of the indemnity carefully, and discuss it with their risk managers or brokers, in order to assure themselves that the proper stance is taken on this issue relative to the Constructor's insurance program.

Insurance Requirements (section 10.2.1): New language was added to provide a stronger mechanism to ensure the proper procurement of insurance. This approach already existed in the ConsensusDocs 750 Subcontract section 9.2, and this addition provides a more consistent approach across the ConsensusDocs families of contracts.

Additional Liability Coverage (section 10.5): An Owner should decide whether to require the Constructor to purchase additional insured coverage for the Owner. If so, the Owner can then decide whether it wants to choose additional insured coverage or Owners' and Contractors' Protective Liability Insurance ("OCP"). If an Owner selects OCP coverage, an Owner may desire additional insured protection for completed operations in addition to OCP coverage. If agreed upon by the Constructor, this should be accomplished by striking "operations" in this section and then checking both boxes.

Any additional cost incurred by the Constructor for purchasing additional insured or OCP coverage shall be paid by the Owner.

Insurance Coverages (section 11.2.1): The revisions to this section are more for formatting and language stylistic purposes. Owner supplementation is allowed by this language.

Improper Termination of Convenience (section 11.3.5): This language was added to address how an improper termination for cause should automatically be handled as a termination for convenience. This is being added to avoid potential disputes.

Owner's Termination for Convenience (section 11.4): If an Owner elects to terminate for convenience there is a premium payment, which the Parties need to specify in the blank space. This payment is not a penalty, but rather reflects a Constructor's lost business opportunity. This section is a carefully crafted to balance Constructors and Owners interests and risks.

Dispute Mitigation and Resolution (article 12): This section focuses on mitigation of claims by directing first, direct discussions between the Parties. Afterward, the parties may choose to use either a previously selected project neutral or a dispute review board. If the Parties decide not to use a project neutral or dispute review board the issue then goes to mediation followed by a binding dispute resolution process of the Parties' choosing. If the process goes this far any decision made by the project neutral or the dispute review board can be introduced as evidence at a binding adjudication of the matter.

Work Continuance and Payment (section 12.1): The Parties are obligated to continue to perform their obligations under the contract. Thus the Constructor continues to perform its work under the contract and the Owner continues to make payments to the Constructor for those amounts not in dispute.

Direct Discussions (section 12.2): In the event the Parties cannot reach an Agreement about the matter in dispute, they are obligated to engage in "good faith" negotiations at the next level in a step approach which moves from field representative to those representatives with greater authority in an effort to resolve the dispute; then if resolution is not achieved within five business days of the first discussion, it moves to the next level of senior executives and if resolution fails within fifteen days of the first discussion, it moves to mitigation.

Mitigation and Mitigation Procedures (section 12.3): Initially the Parties have the option to select either a Project Neutral or Dispute Review Board for the mitigation procedure. The Project Neutral/Dispute Review Board is subject to a separate retainer Agreement between the Parties and is obligated to issue nonbinding finding(s) within five business days of referral of the dispute. If Parties do not check either of the fill-in-the-blank options, then the procedures provided in this section are not required.

Binding Dispute Resolution (section 12.5): In previous AGC contract Agreements, the dispute resolution section was a separate exhibit. The ConsensusDocs includes this section in the contracts and includes fill-in-the box options. If mediation fails to resolve a dispute, the Parties submit the matter to binding dispute resolution using either the current Construction Industry Rules of the American Arbitration Association or litigation in a state or federal court. The Parties, however, are free to select another set of rules. The costs of the binding dispute resolution process are to be borne by the non-prevailing Party as determined by the Neutral.

Attorney's Fees and Prevailing Party (section 12.5.1): The ConsensusDocs Drafters made this rather significant revision to help encourage settlement of potential litigation of claims. Users may wish to provide for a definition of prevailing party. The force and effect of such definition may vary based on state law. One possible example is as follows:

> "If a party claiming a right to payment of an amount in dispute is awarded all or substantially all of such disputed amount, then such claiming party shall be the prevailing

> party. If a party defending against such claim is found to be not liable to pay all or substantially all of the disputed amounts claimed by the claiming party, then the party so defending against such claim shall be the prevailing party. If both parties prevail with respect to different claims by each of them, then the party who is prevailing with respect to the substantially greater monetary sum shall be deemed the prevailing party; otherwise, if both parties prevail with respect to monetary sums on different claims, neither of which sums is substantially greater than the other, the tribunal having jurisdiction over the controversy, claims or action shall in rendering the award determine in its discretion whether either party should be entitled to recover any portion of its attorney fees."

In alternative provision that may help facilitate better settlement offers is as follows:

> "In the event of any arbitration or litigation involving the parties, the prevailing party shall be awarded its share of the arbitration costs, arbitrator compensation, and its attorneys' fees and expert witness fees. For the purpose of the application of this provision, the prevailing party shall be determined by the arbitrator(s) as follows. The prevailing party shall be that party whose last written settlement position (demand/offer) made before the commencement of the arbitration hearing(s) is closest to the final award rendered by the arbitrator(s). In order to be considered for the purpose of this provision, any settlement position (demand/offer) must be in writing and must have been delivered by certified mail to the other party. It is the intent of this provision for the arbitrator(s) to identify the true party prevailing in any arbitration proceeding. To that end, in the event that a settlement position has not been taken by a party seeking relief, i.e. the claimant, the arbitrator(s) shall consider the settlement demand to be the full relief requested in the arbitration demand. In the event that a settlement position has not been taken by the respondent, the arbitrator(s) shall consider the offer to be a complete rejection of the relief requested by the claimant. Where there are mixed claims and counterclaims, the determination of the prevailing party shall be within the discretion of the arbitrator(s) consistent with the intent of this provision."

Venue (section 12.5.2): Binding Dispute Resolution procedures shall be the location of the project unless the Parties otherwise agree.

Multi-Party Proceedings (section 12.6): Appropriate provisions are to be included in all other contracts relating to the Project to provide for joinder or consolidation of such dispute resolution procedures.

Lien Rights (section 12.7): Nothing contained in the dispute resolution procedures is to limit any lien rights unless expressly waived.

Defining Contract Documents (section 14.1): This section was revised to add clarity as to what documents and information are considered contract documents and what is for informational purposes only.

Owner Provided Information as Contract Documents (section 14.1 (d)): This information relates to Owner provided information in section 4.3, however, not all Owner provided information is considered a Contract Document. This subsection determines whether the information can be relied upon as a Contract Document.

COAA Comments for ConsensusDocs 200:

(Additional comments on this document can be found at COAA's website, www.coaa.org, in the members-only area.)

Design Authority and Responsibilities (section 2.3): The language of section 2.3 raises concerns about having to coordinate design work provided under the construction contract with the design provided by the project's Design Professional. Many contracts will require engineering or other design services from the Constructor. Those design expectations should be clearly identified in the pertinent technical specification. Other design services will be a function of the construction means and methods selected by the Constructor (e.g. falsework, shoring, etc.). Owners should be able to expect that the Constructor will perform all Work shown on, or reasonably inferable from, the Contract Documents without having to separately delineate what design services are included in the scope of Work. Owners should modify this section to accurately reflect the Owner's expectations of the scope of Work to be performed by the Constructor.

Ownership of Construction Documents (paragraph 2.3.1): The design professional's contract may be written to the effect that the Owner owns the final delivered construction documents. If that's the case, section 2.3.1 then should be rewritten so that the Owner, not the Design Professional, is granting a license to the Constructor and its Subcontractors to use the documents. If that's not the case, and the Design Professional owns the final delivered construction documents, the Owner should ensure that appropriate licenses for use have been obtained from the Design Professional for the Constructor and its subs. This section should reflect the appropriate Ownership of the documents.

Worksite Information (section 4.3): Owners may want to modify this language to specifically disclaim the accuracy of information provided to the Constructor. COAA recommends that local legal counsel be consulted to draft appropriate language modifying section 4.3 in those instances.

Owner's Representative (section 4.7): Few Owners give their representative the complete authority that Section 4.7 requires. COAA recommends revising the language of section 4.7 to say that the Owner will define, in writing, the authority that has been granted to its representative.

Contingent Assignment of Subcontracts (subsection 5.5.1.2): Owners should consider deleting the term "and obligations" from this section. COAA recommends that local legal counsel be consulted to eliminate the Owner's exposure to Subcontractors for preexisting claims against the Constructor.

Limited Mutual Waiver of Consequential Damages (section 6.6): The ConsensusDocs mutual waiver of consequential damages provision represents a positive departure from similar provisions found in other contract forms commonly used in the industry. Consequential damages are one of the most important subjects for an owner to be familiar with in the construction context. COAA highly recommends that every owner seek the advice of competent local construction counsel prior to executing this contract containing waivers of consequential damages. Owners should assess the consequential damages risks associated with each project. Potential outcomes of the assessment could include, but are not limited to, a decision that the risks are small and consequential damages can be waived, that the risks can be captured through liquidated damages, or that the risks are such that the Owner is not willing to waive consequential damages.

Claims for Additional Cost or Time (section 8.4): Owners should consult local legal counsel regarding the exposure of the Owner to potential claims by Subcontractors being passed through by the Constructor. The Owner may want to include the following additional language in section 8.4: "Prior to submitting any claim by a Subcontractor for additional compensation, the Constructor shall have examined any such claim and verified its accuracy and completeness, and the Constructor shall have identified any Claim or portion of the Claim that is not the responsibility of the Owner."

Constructor Acceptance of Final Payment (section 9.8.7): COAA recommends deleting 9.8.7.

Insurance (sections 10.2–10.5): COAA recommends that its members review with competent local counsel or risk managers especially coverage limits and the additional insured provisions. Failure to carefully contemplate the handling of these exposures could result in significant unanticipated losses.

ASA Comments for ConsensusDocs 200:

(Additional comments on ConsensusDocs can be found on ASA's website at www.asa.org.)

Constructor's Responsibilities (article 3):

The scope of work should be limited to all work actually indicated in the plans and specifications which was the subject of the Constructor's bid.

Constructors should not ordinarily accept responsibility for design. When design services are requested, the delegation should be specific and should include all design and performance criteria. Constructors should be responsible for promptly reporting defects they actually discover, but cannot be responsible for other design defects that it is claimed they "should have" recognized, or for design requirements that violate code standards.

Clear lines of authority to authorize payments and changes should be established in the general conditions.

One-sided terms that deny a Constructor any right to collect damages for delay, often called "no-damage-for-delay" clauses, are unacceptable. Mutual waivers of consequential damages, such as the Constructor's extended home office overhead and the Owner's loss of use or added financing expenses, are beneficial and encouraged. A Constructor may reserve the right to assess a Subcontractor for a share of liquidated damages actually paid to the Owner, but only to the extent such share is proportionate to the fault of the Subcontractor in causing a delay.

A Constructor's warranty should provide that work is free of defects and performed in workmanlike manner, but should exclude defects inherent in the design or specified materials, ordinary wear and tear, improper maintenance, abuse, modifications, and implied warranties. A Constructor's warranty should have a time limit which should run from either substantial completion or issuance of a certificate of occupancy to the Owner, whichever is earlier. A Constructor's warranty should reserve the right of the Constructor to notice and an opportunity to cure any claimed breach of the warranty, by providing for waiver of any warranty claims where the Constructor is not provided an opportunity to cure.

Expenses claimed as backcharges should not be incurred before notice, and reasonable opportunity to cure, are provided to a Constructor. Backcharges should be billed within a reasonable time and not saved until the end of the project.

Deadlines for claims should be based on actual knowledge of facts giving rise to a claim (rather than constructive knowledge) and should permit a reasonable time for claims; time extensions should be required for all causes reasonably beyond the Constructor's control; price adjustments should include the entire cost of delays not caused by Constructor (including overhead) and should include a reasonable amount of overhead and profit for extra work. A Constructor should have the right to payment for any extra work that is performed at the Owner's direction, provided that the Constructor confirms verbal instructions in writing before starting work.

A Constructor may be required to conduct a site visit, make observations, and report discovered discrepancies, but should not have an affirmative duty to discover problems in the site conditions or design that a person in the Subcontractor's trade would not ascertain by a reasonable, visual

inspection. Constructors should be entitled to rely on the accuracy and completeness of the plans and specifications, and on the accuracy of reports of conditions furnished by the Owner.

Approved submittals should bind the Owner in the same manner as the specifications which are "contract documents."

Owner's Responsibilities (article 4): A Constructor should have access to complete project financing information, including change orders, in order to evaluate its risk of nonpayment. Disclosures that demonstrate adequate project financing are a necessary condition to a commencement or continuation of a Constructor's performance.

See ASA comments under article 3 pertaining to Constructor site visits.

See ASA comments under article 3 pertaining to clear lines of authority.

Contract Time (article 6): See ASA comments under article 3 pertaining to one-sided terms that deny a Constructor any right to collect damages.

See ASA comments under article 3 pertaining to deadlines for claims.

Changes (article 8): See ASA comments under article 3 pertaining to deadlines for claims.

Payment (article 9): See ASA comments under article 3 pertaining to clear lines of authority.

Owner payments to the Constructor should be held in trust for the Constructor's Subcontractors and suppliers. The Constructor should be provided a firm deadline of not more than seven days by which it should disburse funds it receives from the Owner for payment of Constructor's Subcontractors and suppliers. The Owner should expressly preserve its authority to pay a Subcontractor directly who is not paid by the Constructor.

Past due payments should bear interest at a reasonable rate, so long as payment delay is not the fault of the Constructor. A Constructor should reserve an express right to stop work for non-payment whenever non-payment is not the Constructor's fault, upon reasonable notice and opportunity to cure, including costs of shut-down, delay and start-up. A Constructor should be entitled to payment for suitably stored materials.

Language requiring one Party to sign waivers in whatever form is considered suitable by the other Party is generally unacceptable. Any waiver form should be specified before the contract is signed, should be conditional on payment (except for payments already received), should not apply to funds still held as retainage, and should not apply to claims unrelated to the payment security rights of the Constructor.

General conditions should require Constructors to provide copies of any payment bond to Subcontractors on request, and should expressly exempt steps to preserve lien rights from any dispute resolution requirements.

Retainage should be due on substantial completion, less only those amounts sufficient to pay for punch list items. Substantial completion should be objectively defined as the time when the project is sufficiently complete to be occupied or utilized, such as when a certificate of occupancy is issued. Final payment should not constitute a waiver of claims previously asserted in writing and still pending at the time of final payment.

Indemnity, Insurance, Waivers and Bonds (article 10): Hold-harmless terms should be limited to bodily injury and property damage (other than the Work itself). Such terms should also be limited to provide indemnity only to the extent of the Constructor's negligence, and should provide for payment of attorneys' fees rather than including a duty to "defend." Ideally, hold harmless terms flow in both directions and provide mutual obligations to indemnify the other Party to the subcontract against the consequences of the indemnitor's own negligence.

See ASA comments under article 3 pertaining to one-sided terms that deny a Constructor any right to collect damages.

Any requirements to name additional insureds on any of the Constructor's liability insurance policies, and any waivers of subrogation for claims covered by the Constructor's liability insurance policies (particularly workers compensation), are unacceptable. Requirements to provide special notices of policy cancellation or policy non-renewal often cause great difficulties and friction although they have never been shown to provide any benefits to anyone, and are also unacceptable. Requirements for continuation of coverage beyond the policy period, in the absence of a binding commitment from an insurer to provide that coverage, are also unacceptable. Separate liability insurance to cover the Owner and the Constructor for liability arising from "general supervision" of the project, such as Owners and Contractors Protective Liability Insurance ("OCP" - CG 00 09) or Project Management Protective Liability Insurance ("PMPL"—CG 31 15), may be required in lieu of any requirements to name additional insureds or to waive subrogation on the Constructor's liability insurance policies. The Owner or Constructor should be responsible to purchase all-risk property insurance including coverage for the interests of Subcontractors in installed work and in materials delivered, suitably stored or in transit.

Suspension, Notice to Cure and Termination of the Agreement (article 11): See ASA comments under article 3 pertaining to Constructor site visits.

Where termination is not due to the Constructor's default, then the Constructor should be entitled to its contract damages, i.e., profit and overhead on uncompleted work, plus all expenses related to termination (such as termination of subcontracts and attorneys' fees), plus payment for work completed and expenses for labor and materials to the date of termination.

The Constructor should be entitled to claim time and price adjustments for any suspension of work which is not the fault of the Constructor. The Constructor should be able to terminate the contract for unreasonably long suspensions measured in the aggregate, and not by consecutive days. Terms restricting recovery where work "would have been" suspended anyway due to Constructor's fault merely restate common law requirement for causation.

See ASA comments under article 4 pertaining to Constructor access to project financing information.

Dispute Resolution (article 12): Early mediation of disputes is beneficial and should be a condition precedent to the use of any other dispute resolution procedure. Should mediation not resolve a dispute, arbitration by an industry professional such as an architect, engineer, Constructor or Subcontractor is always preferable to litigation before a judge or jury. Arbitration should always be conducted subject to the terms of the written subcontract, so specific contract terms can assist Constructors to ensure that arbitration will provide a quick and efficient mechanism for resolving disputes. For example, contract terms can expressly provide that "The award shall be made within nine months of the filing of the notice of intention to arbitrate (demand), and the arbitrator(s) shall agree to comply with this schedule before accepting appointment. However, this time limit may be extended by Agreement of the Parties or by the arbitrator(s) if necessary." (Drafting Dispute Resolution Clauses—A Practical Guide, AAA 12/7/2000.) Or, contract terms may require direct participation by the Parties (not merely through their representatives) for

- selection of the arbitrator (to ensure an industry professional is selected),
- any Agreement or ruling to permit a continuance, and
- Agreement or ruling to permit any discovery (particularly depositions, which add considerable time and expense) beyond the discovery of information contemplated by Rule F-7 of the AAA's Construction Industry Arbitration Rules, Fast Track Procedures in fast track cases (no claim or counterclaim exceeds $75,000), or Rule R-22 of the AAA's Construction Industry Arbitration Rules, Regular Track Procedures in regular track cases ($75,001-$500,000), or Rule L-4 of the AAA's Construction Industry Arbitration Rules, Procedures for Large, Complex Construction Disputes.

See ASA comments under article 9 pertaining to general conditions requiring Constructors to provide copies of any payment bond to Subcontractors on request.

Miscellaneous Provisions (article 13): Contracts should provide that the appropriate venue for dispute resolution procedures such as litigation or arbitration is the place where the project is located, and also that the law of the place where the project is located shall govern.

Contract Documents (article 14): See ASA comments under article 3 pertaining to scope of work limitations.

Comments regarding ConsensusDocs 200.1*

Time and Price Impacted Materials

Overview:

The ConsensusDocs 200.1 Potentially Time and Price-Impacted Materials Amendment is a standardized, three-page Amendment that provides an Owner and Contractor a baseline price and calculation method for potential adjustments to material prices. When material price fluctuations are a concern, the Amendment provides a sensible framework for Owners and Contractors to protect themselves against construction material prices volatility. Only commodities specifically identified in Schedule A can potentially be adjusted up or down, and Parties may limit the amount of price adjustment. Moreover, appropriate documentation for adjustments is required and do not include overhead and profit. Amendment A also addresses time extensions in the event of a project delay caused by scarcity or delivery delay.

Parties should take the following issues into consideration. The Amendment is intended to be completed and executed contemporaneously with the construction contract. Because the Amendment is intended to be flexible and to cover many different kinds of construction materials, calculation methods are merely suggested (established market or catalog prices; actual material costs; material cost indices; or other mutually agreed upon method) and no single method is deemed to be the default method. The Parties should agree upon a baseline price and adjustment method. This amendment is a tool to use in the negotiations, but it should be modified by the Parties to reflect the project circumstances.

If the document is used in the Owner-Contractor Agreement, then the document should be used in the subcontract Agreements. This document can also be used in other Agreements such as the ConsensusDocs 410 Design-Build or the ConsensusDocs 500 Construction Management At-Risk Agreements.

AGC Comments for ConsensusDocs 200.1:

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* This publication is designed to provide information in regard to the subject matter covered. It is published with the understanding that the publisher, endorsers of ConsensusDocs and contributors to this Guidebook are not engaged in rendering legal, accounting, or other professional services. If legal advice or other professional advice is required, the services of a competent professional person should be sought.

—From the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations

(Additional Comments by AGC can be found on AGC's website at members only page of http://www.agc.org/galleries/members-only/AGC-only_ConsensusDocs_Guidebook.pdf for many of the ConsensusDocs documents.)

General Contractors should advocate for the use of this amendment when material price fluctuations are a concern. This innovative contracting tool is designed to eliminate a contingency premium in a Contractors bid. Another contracting alternative to the 200.1 that assists in eliminating materials price contingency is for an Owner to pre-purchase materials.

Decreases in Price (section 3.1): Contractors should be aware that this balanced document also carries the possibility that prices fall, and would thereby decrease payment.

Price Increase Limit (section 3.3): If this fill-in-the blank section is mutually agreed upon by the Parties, then the amount of decrease or increase is capped. However, doing so eliminates some of the benefit of a Contractor eliminating contingency in submitted bid amounts.

Comments regarding ConsensusDocs 200.2*

Electronic Communications Protocol Addendum

Overview:

The Electronic Communications Protocol Addendum is unique in the construction industry, comprehensively setting standards, processes and protocols that Parties will use to facilitate the accurate and secure transmittal of Electronic Communications among them during their Project. It is ideally intended to be completed no later than at the time the Owner and Contractor are preparing their Agreement, but may be entered into by amendment to an existing contract at any time. The 200.2 is a flexible document that can be used in any ConsensusDocs Agreement or in other contract Agreements.

The Addendum sets expectations about who will be required to comply with Addendum requirements in section 2.0. If Subcontractors and Material Suppliers will be required to conform their communications to this Addendum, the Contractor should make sure to attach a complete copy of it as an exhibit to the Agreement between Contractor and Subcontractor (ConsensusDocs 750).

The Agreement places the primary responsibility for shaping Electronic Communications exchange on three representatives designated by the Contractor, Architect and Owner respectively. These may be in-house employees knowledgeable about computer usage or experts retained for the Project, as needed. In section 3.0, this IT Management Team is given the power to develop means and methods of handling Electronic Communications during the Project consistent with the overall requirements imposed in the rest of the Addendum.

Section 3.3.6: A possible clarification would be to add the following as a last sentence to this section. "The Model Facilitator may be the Information Manager (IM) as provided in section. 2.12 and article 3 of the ConsensusDocs 301 Building Information Modeling (BIM) Addendum or a party working for or with the IM to develop virtual modeling for the Project."

Section 4.0 helps the Parties to thoroughly explore and identify what types of files will be shared among them, the hardware and operating systems on which electronic communications will be

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—From the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations

exchanged, the software types and versions, backup protocols and transmission and access requirements, including the types of devices that may be used to gain access to Project records kept electronically. The Parties will need to know what software will be used for various Project activities and identify the hardware and other system configuration that is necessary to run that software so that everyone using the Electronic Communications can access the data generated in the desired format(s). The Addendum does not presume any specific package of System Parameters will be used, but rather allows the Parties to sculpt them based on their needs. If all communications on the Project will be exchanged electronically via a tiered-access Project website with a real-time webcam, and virtual modeling will be used as the primary design tool, a much more elaborate system will need to be described than if the Parties want to simply exchange securely transmitted e-mails among themselves and that is the extent of the Electronic Communications.

If the Parties retain a Third Party Service Provider, the process of archiving or keeping copies of Electronic Communications exchanged among them may be part of the package of services being purchased. If not, in section 6.0., the Parties should pay particular attention to developing backup copies of their Electronic Communications – both to protect against loss of data as a result of their computer systems failing during the Project, as well as to ensure compliance with recently updated Federal laws regarding retention of electronically generated records.

The Parties should discuss in section 7.0 how they can revise documents capable of being revised after they are originally created and shared, and how they will keep track of those revisions. Some software programs allow for detailed metadata to be generated that automatically tracks changes and the Party generating them. Where this is not the case, an express transmittal record confirming Version Control Information as provided in section 7.2 will be extremely important or limits should be placed on each Party's ability to revise others' documents and data.

Under section 8.0, each Party is responsible for complying with the System Parameters and for the accuracy of data and documents furnished as part of their own Electronic Communications. The Addendum is silent about responsibility for errors that occur in spite of compliance with all System Parameters and other Addendum requirements.

AGC Comments for ConsensusDocs 200.2:

(Additional Comments by AGC can be found on AGC's website at members only page of http://www.agc.org/galleries/members-only/AGC-only_ConsensusDocs_Guidebook.pdf for many of the ConsensusDocs documents.)

Introduction (section 1.0): Even if a Contractor wishes to rely only on information transmitted by e-mail and fax, a Contractor should strongly consider use of this document. Otherwise Contractors would be operating at their own risk in relying on e-mails and faxes.

IT Management Coordinator (section 3.3): The person appointed in this section is the day-to-day supervisor and administrator of Electronic Communications and is charged with assisting the Parties to cause their Electronic Communications system to comply with the Addendum requirements. Unless the Contractor's computer knowledge is quite limited, the Contractor should consider having the person appointed as Coordinator within the Contractor's employ, although the Contractor typically will want to pass the costs for such duties to the Owner in section 3.3.2 or include them elsewhere as part of recoverable general conditions expenses in the Agreement between Owner and Contractor. The Coordinator will work with any Third Party Service Providers (who furnish Internet software programs or hosted site services used by the Parties), the Webmaster (who handles the operation of the Project website), and the Model Facilitator (who updates model data for virtual design or building information (3-D) modeling), if any on this particular Project.

Security/Encryption Requirements (section 4.6): These provisions should be carefully considered. If the Contractor does not have knowledgeable in-house staff capable of developing firewalls or other protections, the Contractor may want to recommend outsourcing the development of these protections.

Contract Documents (section 5.0): This section identifies which types of Contract Documents will be exchanged via electronic means and be binding on the Parties. The Contractor can take advantage of being able to rely on the comparatively swift method of e-mail exchange to bind the Owner to Change Orders, or the Architect to responses to requests for information, by making sure those types of documents may be exchanged electronically. The level to which hard copy should thereafter be exchanged will vary with the sophistication of the Parties (and their lenders, title companies, etc.) and with the sophistication of the System Parameters selected. If the Contractor's Subcontractors are not required to have a computer system compliant with the System Parameters, but design documents will be conveyed solely electronically, for example, the Contractor will need to think through providing access to a compliant computer terminal at the Project site or the Contractor's home office to which the Subcontractors can have access.

The Contractor will want to carefully discuss their role in the evolution of Project virtual modeling or other shared Electronic Communications tools with the Owner and Architect and reflect responsibilities relating specifically to its use by modifying section 7.1.1 as needed.

Responsibility for Compliance (section 8.0): Contractors and all Parties may prefer to expressly waive liability among them where such an event occurs as a means of inducing the Parties to robustly rely on Electronic Communications.

If a Third Party Service Provider will be used, their contract for the Project should be attached to the Addendum so any specific requirements for use of their services or website are made known and all Parties are bound to comply with them.

Comments regarding ConsensusDocs 200.4*

Dispute Review Board (DRB) Addendum Specification

Key Features of ConsensusDocs DRB Addendum Specification and TPA

The DRB Addendum and TPA are intended to provide a guidance specification; assist in the appointment of appropriately qualified and neutral DRBs; promote uniformity of practice across projects using ConsensusDocs; and implement DRB best practices. The ConsensusDocs DRB Addendum and TPA, based on the DRBF Guide Specifications and TPA, addresses the following topics:

- General Provisions Regarding DRB Responsibilities
- DRB Member Qualifications
- Establishment of the DRB
- DRB Meetings
- DRB Advisory Opinion Process
- DRB Dispute Submission Process
- DRB Hearing Process
- DRB Reports
- Miscellaneous Administrative Provisions

The key features to focus on are the following:

Ethics:

The DRB Addendum has comprehensive conflict of interest and disclosure requirements. The TPA requires DRB members to follow certain ethics guidelines that are modeled on the DRBF Canons of Ethics, thus making them a contractual requirements. There are repeated references to impartiality throughout the documents in relation to various DRB activities.

Selection:

DRB selection is done early in the project. The parties jointly select the DRB, including the option to select the Chair.

Dispute Prevention:

The DRB Addendum expressly gives the DRB broad jurisdiction, allowing project teams to raise any issue arising out of the project. Another dispute prevention tool the parties have available is to use the DRB for advisory opinions.

Hearing Process:

The hearing process is informal, but orderly. Legal processes are not used. Lawyer participation is limited and under the control of the DRB. Expert participation also is under the control of the DRB.

Summary of ConsensusDocs 200.4

A. ConsensusDocs 200

By way of background, ConsensusDocs 200 is that standard form of agreement between Owner and Constructor. Article 12 deals with disputes mitigation and resolution. The parties are obligated to engage in direct discussions to try to resolve any disagreement relating to or arising under the agreement (Section 12.2). After direct discussions have failed, the parties may proceed with pre-selected "dispute mitigation procedures", either the use of a project neutral (Subsection 12.3.1) or a Dispute Review Board (Subsection 12.3.2). If a DRB process is selected the parties are directed to enter into the DRB Addendum. If the parties do not resolve the disagreement after following the selected dispute mitigation procedure, they proceed by one of two pre-selected binding dispute resolution processes, either arbitration or litigation (Subsections 12.3.3 and 12.5).

B. ConsensusDocs 200.4 (DRB Addendum Specification)

Article 1: General

The parties agree to establish a DRB and enter into the TPA (Section 1.1 and 1.2). The 200.2 Agreement terms govern, if there is a conflict between it and the DRB Addendum or TPA (Section 1.3). Except as provided otherwise, all matters that arise from performance of the Agreement, and any unresolved dispute, may be referred to DRB by either party (Section 1.4). The parties may also ask the DRB to "address any issue arising out of the Project" (Section 1.4).

Article 2: Definitions

The definitions primarily relate to conflict of interest issues that are covered in Article 3. These include:

- Consulting Capacity (Section 2.1)
- Financial Ties (Sectoin 2.3)
- Involved Entity (Section 2.4)

Article 3: DRB Qualifications

DRB members shall be experienced in the type of construction to be performed; in the interpretation and application of contract documents; and in the resolution of construction disputes (Section 3.1). DRB members also shall be familiar with alternative dispute resolution techniques and trained in DRB best practices (Section 3.1).

DRB members also must meet certain eligibility and disclosure requirements. DRB members are subject to the following specific ethical obligations regarding actual or potential conflicts of interest:

- No current direct employment and past employment must be disclosed and party permission obtained (Subsection 3.2.1)
- No current consulting capacity and past consulting must be disclosed and party permission obtained (Subsectione 3.2.2)
- No financial ties (unless waived) and previous and certain current financial ties must be disclosed (Subsection 3.2.3)
- No close personal or professional ties and past ones must be disclosed (Subsection 3.2.4)
- Past and current service as a DRB member on a project with the Parties or Involved Entities must be disclosed and there cannot be any prior involvement with the project (Subsection 3.2.5)
- Continuing obligation to avoid conflicts/disclose and comply with the ethical obligations under Three Party Agreement (Section 3.3)

Article 4: Establishment of the DRB

Within 14 days after the effective date of the underlying agreement, the Parties investigate prospective DRB nominees and confer and jointly select a pool of prospective nominees (Sections 4.1 and 4.2). The Parties provide a list to DRB prospects of the Parties and Involved Entities for a conflicts check (Section 4.3). The DRB prospects provide resumes and disclosures to the Parties and the Parties jointly select the DRB and notify the DRB members of their appointment. (Subsection 4.3.1). The Parties may designate the Chair if they wish; otherwise the DRB nominates

the Chair for Party approval (Subsection 4.3.2). The TPA is executed no later than the first DRB meeting (Section 4.3).

Article 5: DRB Operations

In consultation with the Parties, the DRB shall adopt Operating Procedures that must be consistent with the contract documents but also flexible and subject to adjustment as needed to carry out the DRB's responsibilities (Section 5.1). The DRB will visit the project site periodically and as the Parties request (Section 5.2). The initial DRB meeting is to occur no later than 45 days after effective date of the Agreement, and the Parties are to supply the DRB with relevant project information in advance (Section 5.3). The Parties are to provide project update information to DRB (Section 5.4). The periodic meetings include a site visit with the Parties (Section 5.5).

The primary purpose of the DRB shall be to avoid disputes and help the Parties mitigate the effect of unforeseen events (Section 5.6). With Party permission, a Party's attorney may attend the periodic meetings, as a silent observer (Section 5.6). Statements at DRB meetings are not admissible and are deemed to be settlement discussions (Section 5.7). Other Involved Entities or stakeholders may be invited to attend periodic meetings (Section 5.8).

The DRB may give verbal advisory opinions (Section 5.9). The advisory opinion is a method for potentially avoiding a DRB hearing and may be implemented as part of the Parties' direct discussions at periodic meetings (Subsection 5.9.1). When jointly requested by the Parties, the DRB, in its discretion, may give a verbal advisory opinion on any issue that could lead to a dispute referable to the DRB. (Subsection 5.9.2). The DRB Chair establishes the procedure and schedule for the advisory opinion process (Subsection 5.9.2). If the issue is not resolved by the advisory opinion, the Parties may pursue a formal claim and the prior proceedings shall not be considered (Subsection 5.9.2)

Article 6: Formal Dispute Resolution Process

The Parties are reminded that prior to referring a dispute to the DRB, there must be direct discussions per Agreement Subsection 12.2—this process can involve asking the DRB for an advisory opinion (Section 6.1). Either party may refer a dispute to the DRB (Subsection 6.2.1.1). The dispute referral in writing is made to the DRB and other Party, and shall concisely define the scope of the dispute and the DRB report requested (Subsection 6.2.1.2). Within 10 days after receipt, the Chair shall confer with parties about the details and timing of the dispute process (Subsection 6.2.1.3).

The Parties shall submit pre-hearing position papers that include:

- A joint statement of the dispute and scope of relief requested (Subsection 6.2.2.2.a)
- A common set of documents that the parties will refer to (Subsection 6.2.2.2.b)
- The basis for each Party's position, including citation to the contract and other supporting documents (Subsection 6.2.2.2.c)
- When a dispute concerns time, the referring Party shall include a schedule impact analysis (Subsection 6.2.3)
- When dispute concerns costs or monetary damages, the referring Party shall include back up documentation (Subsection 6.2.4)

The hearing facilities shall be at or near the project or other location as agreed (Subsection 6.2.5.1). Prior to the hearing date the Chair shall set a time for the submission and exchange of hearing presentation materials (Subsection 6.2.5.2). The Parties shall require attendance at the hearing of persons directly involved in the dispute and participants in good faith negotiations prior to submittal of the dispute to the DRB (Subsection 6.2.5.3.1). Prior to the hearing date the Chair shall set a time for submission and exchange of proposed attendee lists (Subsection 6.2.5.3.2). Attorneys shall not participate in the hearing without the consent of the other Party and the DRB (Subsection 6.2.5.3.4). Subcontractors with "pass-through claims" must attend the hearing (Subsection 6.2.5.3.4).

The conduct of the DRB hearing shall be as per the Operating Procedures and generally consistent with the following:

- The referring Party goes first, followed by the other Party (Subsection 6.2.5.4.a)
- Both parties are allowed successive rebuttals until the dispute has been presented in full—the DRB is permitted to ask questions, seek clarification, and seek additional information (Subsection 6.2.5.4.b)
- No cross-examination is allowed, but the Parties, with DRB permission, can ask questions or seek clarification (6.2.5.4.c)

If either Party fails to deliver a timely pre-hearing submittal, the DRB determines whether and when to proceed (Subsection 6.2.6.1). If some or all of a Party's representatives fail to appear at a hearing, the DRB shall proceed with the hearing as if all Party representatives were in attendance (Subsection 6.2.6.2).

Experts must be disclosed at least 30 days before the pre-hearing position paper is due (Subsection 6.2.7.1). The other Party may then retain expert and make expert disclosure at least 10 days before

its pre-hearing position paper is due (Subsection 6.2.7.2). Expert reports intended to be used at the hearing shall be exchanged as part of pre-hearing submittals, with the timing set by the DRB Chair (Subsection 6.2.7.3).

The DRB's formal report shall include findings and recommendations that cover the following (Subsection 6.2.8.1):

- Issue in dispute and relief requested
- Parties' positions
- Findings of fact
- Analysis and rationale for recommendation(s)
- Recommendation(s)

The formal report can include a minority report that identifies the areas of disagreement, but all DRB members sign without identifying the member that did not agree all parts of the report (Subsection 6.2.8.2). The formal report is admissible in subsequent proceedings and the Parties waive any objections to the relevancy and admissibility of the report (Subsection 6.2.8.3).

Requests for clarification and reconsideration are permitted within certain restrictions and time frames (Subsections 6.2.8.4 and 6.2.8.5). Although the Parties agree that great weight should be given to the DRB's report, it is not binding on any Party. Within 14 days after receipt of the report (or later if clarification or reconsideration is requested), the Parties submit written acceptance or rejection of the report (Subsection 6.2.8.6.1). Acceptance of a report on entitlement does not bind a Party to any particular quantum (Subsection 6.2.8.6.2). If either Party rejects the DRB report, it may proceed with the binding dispute resolution process designated in the agreement (Subsection 6.2.8.3). The Parties may also agree to mediation (Subsection 6.2.8.7).

Conclusion

The issuance of ConsensusDocs DRB Addendum and TPA reinforces the use of DRBs as an industry best practice in the United States. The DRBF Manual Update Committee will be taking into account the form of the ConsensusDocs DRBF Addendum and TPA as a recent indication of industry input on DRB best practices.

Comments regarding ConsensusDocs 200.5*

Three-Party Agreement for a Dispute Review Board (DRB)

ConsensusDocs 200.5 (DRB Three Party Agreement)

Article 1 Agreement

The Three Party Agreement is made among the Owner, Constructor and the three DRB members (Article 1 preamble). Reference is made to the underlying agreement for the project, including the selection of a DRB as a dispute mitigation procedure (Section 1.A and 1.B).

Article 2 Purpose and Role

The DRB is charged with assisting in and facilitating avoidance of disputes and the timely and impartial resolution of disputes (Section 2.A). Ex parte communications, except for administrative communications with the DRB Chair, are prohibited (Section 2.B). Regardless of the appointment method, the DRB shall be neutral and not a Party representative (Section 2.C).

Article 3 DRB Scope of Work

The DRB is responsible to appoint a Chair (if the Parties have not already done so); stay abreast of project developments through periodic site visits and review of updates; and facilitate communications between the Parties to avoid or mitigate disputes or impacts to the work from unexpected events during the progress of the work (Section 3.A. 1 to 3). The DRB is required to prepare Operating Procedures that govern the details of the DRB process, consistent with the underlying agreement and DRB Addendum (Subsection 3.B.1). After review and approval by the Parties, the DRB adopts the Operating Procedures, subject to adding or modifying them as agreed by the DRB and Parties (Subsection 3.B.2 and .3).

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The DRB is to provide advisory opinions as requested jointly by the Parties and as deemed appropriate by the DRB (Subsection 3.C.1). Upon referral of a dispute confer with the Parties to schedule and conduct a timely and orderly hearing process (Subsection 3.C.2). The DRB convenes internal conferences and meetings as needed determine the outcome of the dispute and formulate the report (Subsection 3.C.3). The DRB is required to issue timely reports that include the DRB's supporting rationale and recommendation(s) (Subsection 3.C.5). The DRB is to provide written requests for clarification or reconsideration when requested and deemed appropriate by the DRB (Subsection 3.C.5). Finally, the DRB is to perform all other services and assume such responsibilities, as agreed by the Parties and as may be required to achieve the purposes of the DRB Addendum (Section 3.D).

Article 4 Ethics and Responsibilities

The DRB has the following ethical and other responsibilities:

- Act ethically, maintain impartiality, and avoid conflicts of interest, including disclosure of any development that could be perceived as a conflict of interest, throughout the life of the project (Subsection 4.A.1)
- Not engage in any ex parte communications, except as provided in the Operation Procedures (Subsection 4.A.2)
- Refrain from communicating any opinions of merit prior to issuance of a report, except for advisory opinions (Subsection 4.A.3)
- Not use information acquired during DRB activities for personal advantage or divulge any confidential information unless approved by the Parties (Subsection 4.A.4)
- Conduct meetings in an expeditious, diligent, orderly and impartial manner (Subsection 4.A.5)
- Impartially consider all disputes, basing reports solely on the contract documents and the facts of the dispute (Subsection 4.A.6).
- Strive to reach unanimous recommendations, but it that is not possible include a minority report without identifying the dissenting member (Subsection 4.A.7).
- Receive compensation only as specified in the TPA and not receive any bonus or commission payments (Subsection 4.A.8).

The Owner has the following responsibilities:

- Except for participation in the DRB's activities, do not solicit advice or consultation with the DRB on matters dealing with conduct of the work or resolution of problems that might compromise DRB impartiality on future disputes (Subsection 4.B.1).
- Furnish to each DRB member copies of specified documents pertinent to the performance of the Agreement and necessary for the DRB to conduct its operations (Subsection 4.B.2).
- Coordinate DRB operations in cooperation with Constructor (Subsection 4.B.3).
- Arrange for or provide conference facilities at or near the site, and provide logistical services as needed to support the DRB's operations (Subsection 4.B.4).
- Cooperate with Constructor and the DRB to facilitate avoidance of disputes and the timely and impartial resolution of disputes referred to the DRB (Subsection 4.B.5).
- Pay the fees and costs agreed to in this TPA (Subsection 4.B.6).

The Constructor has the following responsibilities:

- Except for participation in the DRB's activities, do not solicit advice or consultation with the DRB on matters dealing with conduct of the work or resolution of problems that might compromise DRB impartiality on future disputes (Subsection 4.C.1).
- Furnish to each DRB member copies of documents not furnished by the Owner as the DRB may request (Subsection 4.C.2).
- Cooperate with the Owner to facilitate avoidance of disputes and the timely and impartial resolution of disputes referred to the DRB (Subsection 4.C.3).
- Pay the fees and costs agreed to in the TPA (Subsection 4.C.6).

Article 5 Duration of DRB Activities

Unless the DRB Chair has been previously identified by the Parties, the DRB shall begin its activities by selecting the Chair and receiving Party approvals of the appointment (Section 5.A). The TPA shall survive the termination, resignation, incapacity, or death of any DRB member (Section 5.B). The DRB's jurisdiction under the TPA shall end on the date of final payment under the Agreement, unless the Parties mutually agree in writing to extend the DRB's term or to terminate the DRB earlier (Section 5.A).

Article 6 Cost of the DRB Process

The Parties shall each bear their respective in-house costs and costs of providing their DRB-related services (Section 6.A) The Parties shall equally bear the cost of the DRB's services (Section 6.B).

Article 7 Payment to DRB

Payments made to the DRB members shall constitute full compensation for work performed, travel time and services rendered, and for all materials, supplies and incidentals necessary to serve on the DRB (Section 7.A). Payment for services rendered by DRB members shall be at the rate and conditions agreed to between the Parties and each DRB member (Section 7.B). DRB members shall be reimbursed for specified actual direct, non-salary expenses, subject to any limitations imposed by the underlying project Agreement (Section 7.C). DRB members shall individually submit invoices for work completed to Constructor not more often than once per month; based on the agreed compensation together with expense receipts; and accompanied by a description of services performed (Subsections 7.D. 1 to 3). Constructor shall promptly seek approval of Owner to pay the DRB invoices; shall pay the accepted invoices within thirty (30) days after Owner approval; and shall be reimbursed for Owner's share of the costs (Section 7.F).

Article 8 Confidentiality and Recordkeeping

All information provided to and communications with the DRB shall be deemed confidential and for settlement purposes only, unless otherwise agreed in writing by the Parties (Section 8.A). No DRB member shall divulge to third parties information that has been acquired during DRB activities without obtaining prior written approval from the Parties (Section 8.B). DRB members shall maintain cost records pertaining to the TPA for inspection by Owner and Constructor for a [specified] period following the completion or termination of the TPA (Section 8.C).

Article 9 Assignment

No party to the TPA shall assign any duty established under the TPA (Article 9).

Article 10 Termination

The TPA may be terminated by mutual agreement of the Parties at any time upon not less than thirty (30) days written notice to the DRB (Section 10.A). Individual DRB members may be terminated only by agreement of both the Parties; provided, however, if there is a disagreement on this issue the Parties agree to the underlying project Agreement dispute mitigation procedure (Section 10.B). If a DRB member resigns, is unable to serve, or is terminated he or she shall be replaced within thirty (30) days in the same manner as he or she was originally selected (Section 10.C).

Article 11 Legal Relations

The Parties expressly acknowledge that each DRB member is acting in the capacity of an independent contractor and not as an employee of Owner or Constructor (Section 11.A). DRB members shall not participate in, or be required to participate in, any subsequent dispute or legal proceedings regarding the operations of the DRB, including, but not limited to, depositions, testimony, or disclosure of any information regarding the deliberations of the DRB (Section 11.B). The Parties acknowledge that each DRB member is acting in a capacity intended to facilitate the avoidance and resolution of disputes and to the fullest extent permitted by law shall be accorded quasi-judicial immunity for any actions or decisions associated with DRB activities (Section 11.C). To the fullest extent permitted by law, the Parties, jointly and severally, shall defend, indemnify and hold harmless each DRB member from any and all claims, losses, demands, costs, and damages (including reasonable attorneys' fees) for bodily injury, property damage, or economic or other loss arising out of or related to the DRB members carrying out DRB activities (Section 11.D).

Article 12 Disputes Regarding the DRB

Disputes among the Parties arising out of the TPA that cannot be resolved by negotiation and any actions to enforce any right or obligation under the TPA shall be initiated a court of competent jurisdiction in the location of the Project, unless the Parties agree on another mutually convenient location; the DRB members consent to the personal jurisdiction of the Court of the designated jurisdiction (Article 12).

Article 13 Funding Agency Review

The agency funding the project has the right to attend DRB meetings and hearings and to review DRB reports, but not to attend private DRB deliberations (Article 13).

Conclusion

The issuance of ConsensusDocs DRB Addendum and TPA reinforces the use of DRBs as an industry best practice in the United States. The DRBF Manual Update Committee will be taking into account the form of the ConsensusDocs DRBF Addendum and TPA as a recent indication of industry input on DRB best practices.

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Comments regarding ConsensusDocs 205*

Short Form Agreement Between Owner and Contractor (Lump Sum)

Overview:

This standard agreement was comprehensively updated in January of 2011. The revisions were made to reflect the best practices, respond to industry feedback, and provide consistent terminology within the ConsensusDocs library of documents. This document is intended to be a short form of agreement that is still comprehensive enough to satisfy the contractual requirements for many projects desiring a short form of agreement.

Exhibits (article 3): Users are expected to create project specific exhibits, and may need to add additional exhibits as appropriated.

Compliance with Laws (section 5.5): This added section makes the 205 more consistent with the 750 and 751 subcontract agreements.

Liens (section 6.3): This information is being added in this edition and also appears in the 200. Obtaining information regarding liens has become even more critical in light of today's challenging economic times.

Date of Commencement (section 8.1): Insert here any special provisions concerning notices to proceed and the Date of Commencement.

Schedule of the Work Sequencing (section 9.1): This language is new language in the short form and is taken from section 6.2.2 of the 200.

Attorney's Fees and Prevailing Party (section 12.5.1): Adding that the non-prevailing party pay attorneys' fees is a rather significant revision to help encourage settlement of potential litigation of claims. Users may wish to provide for a definition of prevailing party. The force and effect of such definition may vary based on state law. One possible example is as follows:

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> *"If a party claiming a right to payment of an amount in dispute is awarded all or substantially all of such disputed amount, then such claiming party shall be the prevailing party. If a party defending against such claim is found to be not liable to pay all or substantially all of the disputed amounts claimed by the claiming party, then the party so defending against such claim shall be the prevailing party. If both parties prevail with respect to different claims by each of them, then the party who is prevailing with respect to the substantially greater monetary sum shall be deemed the prevailing party; otherwise, if both parties prevail with respect to monetary sums on different claims, neither of which sums is substantially greater than the other, the tribunal having jurisdiction over the controversy, claims or action shall in rendering the award determine in its discretion whether either party should be entitled to recover any portion of its attorney fees."*

An alternative approach that may help spur better negotiation settlement offers is as follows:

> *"In the event of any arbitration or litigation involving the parties, the prevailing party shall be awarded its share of the arbitration costs, arbitrator compensation, and its attorneys' fees and expert witness fees. For the purpose of the application of this provision, the prevailing party shall be determined by the arbitrator(s) as follows. The prevailing party shall be that party who's last written settlement position (demand/offer) made before the commencement of the arbitration hearing(s) is closest to the final award rendered by the arbitrator(s). In order to be considered for the purpose of this provision, any settlement position (demand/offer) must be in writing and must have been delivered by certified mail to the other party. It is the intent of this provision for the arbitrator(s) to identify the true party prevailing in any arbitration proceeding. To that end, in the event that a settlement position has not been taken by a party seeking relief, i.e. the claimant, the arbitrator(s) shall consider the settlement demand to be the full relief requested in the arbitration demand. In the event that a settlement position has not been taken by the respondent, the arbitrator(s) shall consider the offer to be a complete rejection of the relief requested by the claimant. Where there are mixed claims and counterclaims, the determination of the prevailing party shall be within the discretion of the arbitrator(s) consistent with the intent of this provision."*

Retainage (section 13.3): This language is now included in the short form contract and the language is taken from the CD 750 long form subcontract.

NGWA Comments for ConsensusDocs 205:

The following comments are limited to job sites involving borehole or loop drilling for geothermal (aka, ground source) heat pump system installations rather than for water well construction.

Construction Responsibilities (section 5.3): NGWA proposes:

> *"The Owner shall allow, based on the estimated and reasonable schedule of the geothermal borehole or loop well drilling contractor, an adequate amount of time and space for the geothermal drilling contractor to complete their work. No other contractors shall perform any work in the designated loop field area of the construction site until such time as the loop field is completed, and the loop field area accepted by the Owner in writing."*

Worksite Conditions (section 5.11): NGWA proposes:

> *"Any borehole geophysical logs or geotechnical reports associated with the job site be referenced as "contract documents" so there is no question that these documents can be relied upon in asserting a type one differing site condition claim."*

Cleaning Up (section 5.13): NGWA proposes:

> *"Prior to discontinuing daily work contractor shall clean up and dispose of all rubbish and/or debris unless otherwise negotiated. In addition, the Contractor shall at all times, keep the site in a reasonably clean and organized manner.*
>
> *Upon completion of the project, the contractor shall remove all equipment, tools, and remaining materials in prompt manner.*
>
> *Drill cuttings removal, during and at completion of work, shall be the responsibility of the Owner, unless otherwise determined by agreement between Owner and Contractor that shall be attached herewith. In addition, the Contractor shall backfill and compact any dug pits used for construction and rough grade the site. Owner is responsible for final grading and seeding of the site."*

Comments regarding ConsensusDocs 220*

Contractor's Qualification Statement for Engineered Construction

NGWA Comments for ConsensusDocs 220:

Contractor's Organization (section 1) and (section 1.1): NGWA recommends deleting the original 220 text and substituting in its place the contractor's organization identifying text from ConsensusDocs 221, or the text that follows here:

1. CONTRACTOR'S ORGANIZATION

1.1 General Information

Address:

Telephone and Facsimile: _____

E-mail address: _____

Web site: _____

If address given above is a branch office address, provide principal home office address:

Attach brochure or promotional information.

1.2 Type of Organization

The Contractor's Organization is a:

__ *Corporation*

Date and State of Incorporation: _____

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Executive Officers: (Names and Addresses)

__ Partnership

Date and State of Organization: _____

Type of Partnership: __ General __ Limited __ Limited Liability __ Other: _____

Current General Partners: (Names and Addresses)

__ Joint Venture

Date and State of Organization: _____

Joint Venturers: (For each indicate the name, address and form and state of organization, as well as the managing or controlling Joint Venturer if applicable.)

__ Limited Liability Company

Date and State of Organization: _____

Members: (Names and Addresses)

__ Sole Proprietorship

Date and State of Organization: _____

Owner or Owners: (Names and Addresses)

__ Other

Type of Organization: _____

State of Organization: _____

Owners and/or Principals: (Names and Addresses)

Contractor's organization is certified as a:

__ Disadvantaged Business Enterprise Certified by: _____

__ Minority Business Enterprise Certified by: _____

__ Women's Business Enterprise Certified by: _____

__ Historically Underutilized Business Zone Small Business Concern Certified by: _____

Licensing and Registration (section 2): NGWA recommends deleting the original 220 text and substituting in its place the licensing and registration text from ConsensusDocs 221, or the text that follows here:

2.1 Jurisdictions in which Contractor is legally qualified to practice: (Indicate license or registration numbers for each jurisdiction, if applicable, and type of license or registration. Attach separate sheet as necessary.)

2.2 In the past five (5) years, has Contractor had any business or professional license suspended or revoked?

__ Yes __ No

If yes, describe circumstances on separate attachment, including jurisdiction and bases for suspension or revocation.

State drilling license:

State general contractor license:

NGWA Certification:

Item 4: NGWA recommends the complete deletion of item 4.

Item 11: NGWA recommends the complete deletion of item 11.

Item 13: NGWA recommends the complete deletion of item 13.

Comments regarding ConsensusDocs 221*

Contractor's Statement of Qualifications

NGWA Comments for ConsensusDocs 221:

Contractor's Organization: NGWA recommends use of the ConsensusDocs 220 as the standard document for qualifications for its members to use over the ConsensusDocs 221. However, see the comments in regard to ConsensusDocs 220, which includes suggested modifications incorporating language from the ConsensusDocs 221.

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Comments regarding ConsensusDocs 235*

Short Form Agreement Between Owner and Contractor (Cost of Work)

Overview:

This document was comprehensively updated in 2012, and follows the general terms and conditions of the ConsensusDocs 205, which is a short form agreement. The main difference is that this is a Cost of the Work of Agreement instead of a lump sum form of payment.

Exhibits A & B (article 4): Listed below are exhibits which are specifically referenced in this agreement. A model to create an exhibit A is now being provided, which the user should carefully fill-in and modify based on project specific information as well as specific project needs. In addition, users should consider creating other exhibits and reference them appropriately in modifying this agreement as appropriate.

Mechanics and Construction Lien Information (section 7.3): Obtaining information regarding liens has become even more critical in light of today's challenging economic times.

Section 12.2: Moved to 12.1 because this is a promise to procure obligation for insurance.

Bonds (article 13): For Cost of the Work agreements, the bond amount and premium is usually based upon the estimated cost of the work. If the estimated or actual Cost of the Work changes by more a certain percentage, than adjustments to the bond amount and penal sum should be considered in projects using bonds.

Cost of Dispute Resolution (section 17.7):

Attorney's Fees and Prevailing Party: The ConsensusDocs Drafters made this rather significant revision to help encourage settlement of potential litigation of claims. Users may wish to provide for a definition of prevailing party. The force and effect of such definition may vary based on state law. One possible example is as follows:

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> "If a party claiming a right to payment of an amount in dispute is awarded all or substantially all of such disputed amount, then such claiming party shall be the prevailing party. If a party defending against such claim is found to be not liable to pay all or substantially all of the disputed amounts claimed by the claiming party, then the party so defending against such claim shall be the prevailing party. If both parties prevail with respect to different claims by each of them, then the party who is prevailing with respect to the substantially greater monetary sum shall be deemed the prevailing party; otherwise, if both parties prevail with respect to monetary sums on different claims, neither of which sums is substantially greater than the other, the tribunal having jurisdiction over the controversy, claims or action shall in rendering the award determine in its discretion whether either party should be entitled to recover any portion of its attorney fees."

In alternative provision that may help facilitate better settlement offers is as follows:

> "In the event of any arbitration or litigation involving the parties, the prevailing party shall be awarded its share of the arbitration costs, arbitrator compensation, and its attorneys' fees and expert witness fees. For the purpose of the application of this provision, the prevailing party shall be determined by the arbitrator(s) as follows. The prevailing party shall be that party whose last written settlement position (demand/offer) made before the commencement of the arbitration hearing(s) is closest to the final award rendered by the arbitrator(s). In order to be considered for the purpose of this provision, any settlement position (demand/offer) must be in writing and must have been delivered by certified mail to the other party. It is the intent of this provision for the arbitrator(s) to identify the true party prevailing in any arbitration proceeding. To that end, in the event that a settlement position has not been taken by a party seeking relief, i.e. the claimant, the arbitrator(s) shall consider the settlement demand to be the full relief requested in the arbitration demand. In the event that a settlement position has not been taken by the respondent, the arbitrator(s) shall consider the offer to be a complete rejection of the relief requested by the claimant. Where there are mixed claims and counterclaims, the determination of the prevailing party shall be within the discretion of the arbitrator(s) consistent with the intent of this provision."

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Comments regarding ConsensusDocs 240*

Agreement Between Owner and Design Professional

Overview:

This standard agreement was comprehensively updated in January of 2011. The revisions were made to reflect the best practices, respond to industry feedback, and provide consistent terminology within the ConsensusDocs library of documents. You may access a sample redline of the 2007 and 2011 editions as a sample document of the CD 240 at http://www.ConsensusDocs.org/Catalog/generalcontracting

Definitions (section 2.5): Consider adding a definition of the Owner's Program means an initial description of the Owner's objectives that shall include budgetary and time criteria, space requirements and relationships, flexibility and expandability requirements, special equipment and systems, and site requirements.

Additional Services (section 3.3): In subparagraph 3.3.20, the reference to "3.2.8.6" should be "3.2.8.7."

Information and Services Provided by Owner (section 4.1): In subparagraph 4.1.1.3, strike "allies" and substitute "alleys."

Schedule of Exhibits (article 11): Delete the reference to "Exhibit E: Dispute Resolution Menu." This reference is being struck due to the fact that this information is already incorporated into the document (see article 8).

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AGC Comments for ConsensusDocs 240:

(Additional Comments by AGC can be found on AGC's website at members only page of http://www.agc.org/galleries/members-only/AGC-only_ConsensusDocs_Guidebook.pdf for many of the ConsensusDocs documents.)

Standard of Care (section 2.1): A definition of the standard of care applicable to architectural and engineering services performed under this Agreement is not included in this Agreement (previous additions of AGC contracts did include such a definition). The drafters of the new Consensus documents determined that it would be better for the design professionals to be held to a standard imposed on them by their own profession, rather than one defined by this Agreement.

Contractors and Owners should not modify this Agreement by adding language that would hold any design professional to a standard of care that is above that which is customary and normal for design professionals in the same time and location, because that might result in the unintended consequence of voiding errors and omissions coverage available to the respective design professionals.

Relationship of the Parties (section 2.2): This provision requires the Design Professional or Architect/Engineer (A/E) to accept the relationship of trust and confidence in exercising its skill and judgment in furthering the interests of the Owner and expressly affirms the A/E's representation that it possesses the requisite skill, expertise, and licensing to perform the required services. The new language is preferable, but it should be noted that it was not included in the previous AGC 240 Owner-Designer professional Agreement, no longer published.

Conflicts of Interest (section 2.4): This section expressly sets forth ethical expectations that include the Design Professional's avoidance of conflicts of interest, and contingent fees and gratuities from the Contractor.

Costs for Errors and Omissions: This provision in this location highlights the need for the Owner and A/E to formalize and come to an Agreement upon the exclusions to be enumerated under section 5.4, Limited Mutual Waiver of Consequential Damages. Special attention should be paid to the expanded language contained in section 5.4. The terms of section 5.2, relating to damages flowing from delays by the A/E, should also be considered.

Construction Documents (section 3.2.5): This paragraph succinctly states, "The Construction Documents shall completely describe all work necessary to bid and construct the Project." This effectively addresses the dilemma which Contractors have faced in recent years of having to provide Work that the A/E might argue was "inferred" by the Construction Documents.

Construction Phase Services (section 3.2.8): This section includes two Construction Phase Services, including "(3) prepare design documents in connection with Change Orders, and (4) respond to Contractor requests for information." These services have been added since the phasing out of the old AGC contracts.

Section 3.2.8.5 has been modified by the omission of language related to the review of Subcontractor requisitions, but that language has been added to a new listing of clarifications defining what representations are being made when the A/E certifies an application for payment in new section 3.2.8.6.

Additional Compensation: Subsections .22 through .25 of section 3.2 are included as additional services which are eligible for additional compensation. Note these subsections were not included as Additional Services, which were not included in previous editions of the AGC 240.

Confidentiality (section 3.10): This section further clarifies how the Owner and A/E should treat confidential information shared with one another, and it requires the Owner and A/E to "specify those items to be treated as confidential", and requires them to "mark them as 'Confidential'". This improved language is different than previous language in the now defunct AGC 240.

Owner's Financial Ability to Pay: The 240 does not include a provision to require the Owner to provide evidence of the Owner's financial ability to pay for the A/E's Services, upon written request of the A/E. Note A/E's and General Contractors using this Consensus document may wish to add such a provision back into the Agreement, or obtain such evidence of sufficient content to satisfy this concern prior to signing this Agreement.

Limited Mutual Waiver of Consequential Damages (section 5.4.1.1): This section makes the Limited Mutual Waiver of Consequential Damages applicable to, and makes it survive after, any termination of the Agreement. This improved language was not included in the previous AGC 240, which is now defunct.

Statutory Interest/Late Payment (section 6.3.6): This section provides the A/E with compensation in the form of statutory interest on any late payments to the A/E from the Owner. This improved language was not included in the previous AGC 240, which is now defunct.

Indemnity, Insurance and Waiver of Subrogation (article 7): General Contractors and any A/E's working for the Owner under this new Agreement are advised to have their legal counsel and surety and insurance professionals review and modify if necessary, the language set forth in this section. Many states have enacted legislation that affects the applicability and enforceability of indemnification and liability limiting contract language. This language is substantially different than previous language in the now defunct AGC 240.

Dispute Resolution (article 9): The dispute mitigation, mediation, and resolution procedures are intended to facilitate resolution in the most cost-effective manner.

Miscellaneous Provisions (article 10): This provision accommodates the advent of the frequent use of Electronic Documents, and the issues surrounding rights to copy and make use of tangible and electronic versions of documents describing the Work involved in a Project. This improved language is substantially different than previous language in the now defunct AGC 240.

COAA Comments for ConsensusDocs 240:

(Additional comments on this document can be found at COAA's website, www.coaa.org, in the members-only area.)

Review of Contractor's Submittals (subparagraph 3.2.8.1): Add to the end of the first sentence "or as otherwise provided in the specifications."

Processing Changes in the Work (subparagraph 3.2.8.2): The A/E ought to be responsible for preparing design documentation for change orders (ASIs, etc.) and soliciting change order prices not just for evaluating the cost proposal.

Limited Mutual Waiver of Consequential Damages (section 5.4): The ConsensusDocs mutual waiver of consequential damages provision represents a positive departure from similar provisions found in other contract forms commonly used in the industry. Consequential damages are one of the most important subjects for an owner to be familiar with in the construction context. COAA highly recommends that every owner seek the advice of competent local construction counsel prior to executing this contract containing waivers of consequential damages. Owners should assess the consequential damages risks associated with each project. Potential outcomes of the assessment could include but are not limited to a decision that the risks are small and consequential damages can be waived, that the risks can be captured through liquidated damages or that the risks are such that the Owner is not willing to waive consequential damages.

Insurance (sections 7.2–7.3): You should review with competent local counsel or risk managers especially coverage limits and the additional insured provisions. Failure to carefully contemplate the handling of these exposures could result in significant unanticipated losses.

Miscellaneous Provisions (article 10): Owners should receive Ownership of all project documents including copyrights and that the contract be amended to provide for that alternative.

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Comments regarding ConsensusDocs 246*

Agreement Between Owner and Geotechnical Consultant

Agreement (section 1): Consultant should provide state licensing number here if applicable.

Services (section 3.1): Actual requirements may vary by state. User is advised to check on direction and licensing requirements applicable in the jurisdiction where the Project is located.

Reports (section 3.2.1): Actual requirements may vary by state. User is advised to check on direction and licensing requirements applicable in the jurisdiction where the Project is located. The geologist or geotechnical engineer should be experienced and the user may want to specify a required experience level.

Standard of Care (section 3.5.1): Note that the standard of care is different for Geotechnical consultants than in other ConsensusDocs for Design professional in regard to the relevance of local standards, customs, and practices in determining the standard of care. The ConsensusDocs drafters identified such practice as a best practice for geotechnical work.

Site Damage (section 3.9): The parties should be sure to reference any known or likely to occur damages in exhibit A (description of services), as well as any exclusions to be considered NOT damages. The parties may also want to determine restoration processes (responsible party, timing, costs, etc.), if applicable, practical and/or necessary. Consultant should be sure to flow down all applicable terms and conditions to Subcontractors.

Books and Records (section 3.13): The parties may want to indicate several time periods for retaining documents. For example, you may want to retain summary reports for a longer time period than the underlying data.

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Comments regarding ConsensusDocs 297*

Joint Venture Line Item Agreement

Agreement (article 1): This form is set up for a Joint Venture (JV) among three Joint Venturers, but it should be adaptable with relative ease to situations involving two, four, or more Joint Venturers.

Indemnification and Wrongful Acts (section 3.2): This section is based on the assumption that the Joint Venturers wish to share their liabilities in proportion to their Percentage Interests, even if a mistake or negligence by one of the Joint Venturers caused the liability or cost. Under this approach, the indemnification in subsection 3.2.1 assures that liabilities remain split according to the Percentage Interests, except for certain defined exceptions, such as Wrongful Actions.

Capital Expenditures (subsection 4.3.2(h)): If the JV is expected to acquire substantial capital assets, such as real estate or major equipment, the parties may wish to consider drafting more detailed provisions regarding accounting methods, tax treatment, and disposition procedures for such assets.

Responsibility for the Work (section 6.1): The form language proposes that the Executive Committee endeavor in good faith to keep overall contributions proportional to the Percentage Interests. If it is contemplated that a particular Joint Venturer will make a disproportionate contribution in a given area, the parties may wish to modify the language accordingly.

Subcontracts (section 6.4): When parties wish to accomplish a similar effect without the formality of a subcontract agreement, parties may prefer to use work orders issued by the JV rather than subcontracts to assign tasks and related financial responsibility to a given Joint Venturer. The language of the form should be modified accordingly.

Section 6.5: Issues such as proper licensing, insurance and indemnification should be addressed in the subcontracts. The ConsensusDocs 750 or 751 (short form) subcontracts should be considered for use when subcontracting work under this JV.

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Payments by the JV (section 7.3): If the parties intend that the budget be mandatory and to exclude costs not in alignment with the Budget, this section may need to be modified.

The Executive Committee may wish to establish reimbursement policies for certain categories of costs, for example management services; accounting services; computer-related hardware, software, or services; cell phones; vehicles or vehicle allowances; legal expenses; insurance and bond premiums; and deductible or co-insurance costs for claims related to the Project.

Election of Remedies (section 8.2): This section does not limit remedies to those expressly set forth in the Agreement. If the parties desire to limit remedies, they should modify this section to specifically limit remedies to only those included in the Agreement and specifically exclude other remedies allowed by law or equity.

Insurance (section 10.1): This section outlines a "default" approach for how the JV insurance may be handled, subject to the ultimate control of the Executive Committee. The parties should not assume that the default option is necessarily best. Advice from a qualified insurance professional is strongly encouraged.

Bonds (section 10.2): This section is based on the assumption that the Joint Venturers will share responsibility for the bonding of the Project in proportion to their Percentage Interests. Sometimes this is not feasible, as when one Joint Venturer lacks the capacity to bond its portion or when the respective sureties otherwise do not agree. In such cases, the language of this section should be revised accordingly.

Comments regarding ConsensusDocs 298*
Joint Venture Agreement

Agreement (article 1): Note: This form is set up for a JV among three Joint Venturers, but it should be adaptable with relative ease to situations involving two, four, or more Joint Venturers.

Indemnification and Wrongful Acts (section 3.2): This section is based on the assumption that the Joint Venturers wish to share their liabilities in proportion to their Percentage Interests, even if a mistake or negligence by one of the Joint Venturers caused the liability or cost. Under this approach, the indemnification in subsection 3.2.1 assures that liabilities remain split according to the Percentage Interests, except for certain defined exceptions, such as Wrongful Actions.

Some parties may prefer a different model, in which each Joint Venturer bears the liabilities associated with the portion of the Work for which it is responsible to perform. It may be possible to accommodate this approach by setting up subcontracts to the Joint Venturers pursuant to exhibit A. Otherwise, if Joint Venturers are not to share losses in accordance with their Percentage Interests, this section 3.2 would need to be revised accordingly. That alternative may have the perceived advantage of letting each party take responsibility for the work it is managing, and thus avoiding one party getting stuck with part of the cost for another's mistake. However, it may have offsetting disadvantages. Determining which Joint Venturer is responsible for a particular loss could be easier in theory than in practice. Further, if one Joint Venturer can blame the other for problems and liabilities, collaboration within the Joint Venture may suffer.

Subsection 3.2.1(b): The standard form JV agreement presumes that a typical JV will be integrated for most or all of its work. Under the integrated model, personnel and other resources are provided by the Joint Venturer best able to meet the need, as determined by the Executive Committee, and overall profits or losses are shared according to the Percentage Interests regardless of which Joint Venturer actually performed a particular task. On projects that are following the integrated model completely, use of exhibit A is not required.

In an integrated JV, where some work is to be performed exclusively by one of the Joint Venturers, or in a line item joint venture, where the JV allocates the performance of functions and the related financial consequences among the Joint Venturers, exhibit A provides a mechanism to do so by authorizing the JV to award subcontracts to the Joint Venturers.

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In certain cases the parties may wish to accomplish a similar effect without the formality of a subcontract agreement. For example, if a federal contract incorporates small business subcontracting requirements, the parties may prefer to use work orders issued by the JV, rather than subcontracts, as the mechanism to assign tasks and related financial responsibility to a given Joint Venturer. If so, the language of the standard form should be modified accordingly.

Decisions of Executive Committee (section 4.3): The objective of the section is to promote decisions by consensus, with voting by majority of Percentage Interest used only if the parties cannot otherwise agree. In a 50-50 joint venture, where there is no majority Percentage Interest, the parties may wish to designate an alternative method for resolving an impasse. Options include designating one of the Joint Venturers or a third-party as the tie-breaker.

Capital Expenditures (subsection 4.3.2(h)): If the JV is expected to acquire substantial capital assets, such as real estate or major equipment, the parties may wish to consider drafting more detailed provisions regarding accounting methods, tax treatment, and disposition procedures for such assets.

Project Manager (section 4.6): The standard form assumes that the Project Manager will be an individual. If you want to designate a company as the PM, you may want to consider incorporating the relevant provisions of this section into section 4.5 Managing Joint Venturer.

Managing Joint Venturer, Tax Matters (subsection 4.8.2): Some state laws may require a Joint Venturer to include within its own "unitary" tax filing financial information for the JV. The Joint Venturers should determine the extent to which such taxes should be reimbursable from the JV.

Responsibility for the Work (section 6.1): Joint Venturers can offer value to the JV in various ways, including for example: credentials or connections that help win the project; working capital or bonding capacity; and personnel, equipment, or know-how to help deliver the project. There is no easy way to compare the value of such dissimilar contributions. The standard form proposes that the Executive Committee should endeavor in good faith to keep overall contributions proportional to the Percentage Interests. If it is contemplated that a particular Joint Venturer will make a disproportionate contribution in a given area, the parties may wish to modify the language accordingly.

Election of Remedies (section 7.2): This section does not limit remedies to those expressly set forth in the Agreement. If the parties desire to limit remedies, they should modify this section to specifically limit remedies to only those included in the Agreement and specifically exclude other remedies allowed by law or equity.

Insurance (section 9.1): The best approach for handling insurance will vary greatly depending on the Project, the Contract, and the normal insurance programs of the Joint Venturers. This section outlines a "default" approach for how the JV insurance may be handled, subject to the ultimate

control of the Executive Committee. The parties should not assume that the default option is necessarily best. Advice from a qualified insurance professional is strongly encouraged.

Bonds (section 9.2): This section is based on the assumption that the Joint Venturers will share responsibility for the bonding of the Project in proportion to their Percentage Interests. Sometimes this is not feasible, as when one Joint Venturer lacks the capacity to bond its portion or when the respective sureties otherwise do not agree. In such cases, the language of this section should be revised accordingly.

Communications/Notices (section 11.9): If the parties want to allow electronic communications as a proper form of notice, they should incorporate language in this section. Sample language may be found in the ConsensusDocs 200.2 Electronic Communications Protocol Addendum.

Non-Solicitation of Employees (section 11.10): The parties may want to consider including a remuneration amount if this provision is violated.

Subcontracts to the Joint Venturers (exhibit A): This JV agreement presumes that a typical JV will be integrated for most or all of its work. Under the integrated model, personnel and other resources are provided by the Joint Venturer best able to meet the need, as determined by the Executive Committee, and overall profits or losses are shared according to the Percentage Interests regardless of which Joint Venturer actually performed a particular task. On projects that are following the integrated model completely, use of exhibit A is not required.

In an integrated JV, where some work is to be performed exclusively by one of the Joint Venturers, or in a line item joint venture, where the JV allocates the performance of functions and the related financial consequences among the Joint Venturers, exhibit A provides a mechanism to do so by authorizing the JV to award subcontracts to the Joint Venturers.

In certain cases the parties may wish to accomplish a similar effect without the formality of a subcontract agreement. For example, if a federal contract incorporates small business subcontracting requirements, the parties may prefer to use work orders issued by the JV, rather than subcontracts, as the mechanism to assign tasks and related financial responsibility to a given Joint Venturer. If so, the standard form should be modified accordingly.

Subcontract, Payments (exhibit A, section 4): The subcontract may incorporate exceptions desired by the parties from the general principle that all profits and losses are shared in accordance with the Percentage Interests. For example, the subcontract may document any special arrangements the parties intend for dividing incentive fees and/or liquidated damages.

Payments by the JV, Costs (exhibit B, section 3.1): If the parties intend that the budget be mandatory and to exclude costs not in alignment with the Budget, this section and section 3.3.11 may need to be modified.

Exhibit B, subsections 3.3.1 through 3.3.3 contemplate that the staff performing the required work of the JV will be on the payroll of the respective Joint Venturers, and will not be employees of the JV itself. If the parties prefer the model of a "populated" JV, in which the JV itself is the direct employer of certain personnel, the Agreement should be revised accordingly.

Exhibit B, subsection 3.3.11: The Executive Committee may wish to establish reimbursement policies for certain categories of costs, for example: management services; accounting services; computer-related hardware, software or services; cell phones; vehicles or vehicle allowances; legal expenses; insurance and bond premiums; and deductible or co-insurance costs for claims related to the Project.

Comments regarding ConsensusDocs 299*
Joint Venture LLC Operating Agreement

Agreement (article 1): Note: This form is set up for a JV among three Joint Venturers, but it should be adaptable with relative ease to situations involving two, four, or more Joint Venturers.

Indemnification and Wrongful Acts (section 3.2): This section is based on the assumption that the Joint Venturers wish to share their liabilities in proportion to their Percentage Interests, even if a mistake or negligence by one of the Joint Venturers caused the liability or cost. Under this approach, the indemnification in subsection 3.2.1 assures that liabilities remain split according to the Percentage Interests, except for certain defined exceptions, such as Wrongful Actions.

Some parties may prefer a different model, in which each Joint Venturer bears the liabilities associated with the portion of the Work for which it is responsible to perform. It may be possible to accommodate this approach by setting up subcontracts to the Joint Venturers pursuant to exhibit A. Otherwise, if Joint Venturers are not to share losses in accordance with their Percentage Interests, this section 3.2 would need to be revised accordingly. That alternative may have the perceived advantage of letting each party take responsibility for the work it is managing, and thus avoiding one party getting stuck with part of the cost for another's mistake. However, it may have offsetting disadvantages. Determining which Joint Venturer is responsible for a particular loss could be easier in theory than in practice. Further, if one Joint Venturer can blame the other for problems and liabilities, collaboration within the Joint Venture may suffer.

Subsection 3.2.1(b): The standard form JV agreement presumes that a typical JV will be integrated for most or all of its work. Under the integrated model, personnel and other resources are provided by the Joint Venturer best able to meet the need, as determined by the Executive Committee, and overall profits or losses are shared according to the Percentage Interests regardless of which Joint Venturer actually performed a particular task. On projects that are following the integrated model completely, use of exhibit A is not required.

In an integrated JV, where some work is to be performed exclusively by one of the Joint Venturers, or in a line item joint venture, where the JV allocates the performance of functions and the related financial consequences among the Joint Venturers, exhibit A provides a mechanism to do so by authorizing the JV to award subcontracts to the Joint Venturers.

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In certain cases the parties may wish to accomplish a similar effect without the formality of a subcontract agreement. For example, if a federal contract incorporates small business subcontracting requirements, the parties may prefer to use work orders issued by the JV, rather than subcontracts, as the mechanism to assign tasks and related financial responsibility to a given Joint Venturer. If so, the language of the standard form should be modified accordingly.

Decisions of Executive Committee (section 4.3): The objective of the section is to promote decisions by consensus, with voting by majority of Percentage Interest used only if the parties cannot otherwise agree. In a 50-50 joint venture, where there is no majority Percentage Interest, the parties may wish to designate an alternative method for resolving an impasse. Options include designating one of the Joint Venturers or a third-party as the tie-breaker.

Capital Expenditures (subsection 4.3.2(h)): If the JV is expected to acquire substantial capital assets, such as real estate or major equipment, the parties may wish to consider drafting more detailed provisions regarding accounting methods, tax treatment, and disposition procedures for such assets.

Project Manager (section 4.6): The standard form assumes that the Project Manager will be an individual. If you want to designate a company as the PM, you may want to consider incorporating the relevant provisions of this section into section 4.5 Managing Joint Venturer.

Managing Joint Venturer, Tax Matters (subsection 4.8.2): Some state laws may require a Joint Venturer to include within its own "unitary" tax filing financial information for the JV. The Joint Venturers should determine the extent to which such taxes should be reimbursable from the JV.

Responsibility for the Work (section 6.1): Joint Venturers can offer value to the JV in various ways, including for example: credentials or connections that help win the project; working capital or bonding capacity; and personnel, equipment, or know-how to help deliver the project. There is no easy way to compare the value of such dissimilar contributions. The standard form proposes that the Executive Committee should endeavor in good faith to keep overall contributions proportional to the Percentage Interests. If it is contemplated that a particular Joint Venturer will make a disproportionate contribution in a given area, the parties may wish to modify the language accordingly.

Election of Remedies (section 7.2): This section does not limit remedies to those expressly set forth in the Agreement. If the parties desire to limit remedies, they should modify this section to specifically limit remedies to only those included in the Agreement and specifically exclude other remedies allowed by law or equity.

Insurance (section 9.1): The best approach for handling insurance will vary greatly depending on the Project, the Contract, and the normal insurance programs of the Joint Venturers. This section outlines a "default" approach for how the JV insurance may be handled, subject to the ultimate

control of the Executive Committee. The parties should not assume that the default option is necessarily best. Advice from a qualified insurance professional is strongly encouraged.
Bonds (section 9.2): This section is based on the assumption that the Joint Venturers will share responsibility for the bonding of the Project in proportion to their Percentage Interests. Sometimes this is not feasible, as when one Joint Venturer lacks the capacity to bond its portion or when the respective sureties otherwise do not agree. In such cases, the language of this section should be revised accordingly.

Communications/Notices (section 11.9): If the parties want to allow electronic communications as a proper form of notice, they should incorporate language in this section. Sample language may be found in the ConsensusDocs 200.2 Electronic Communications Protocol Addendum.

Non-Solicitation of Employees (section 11.10): The parties may want to consider including a remuneration amount if this provision is violated.

Subcontracts to the Joint Venturers (exhibit A): The form JV agreement presumes that a typical JV will be integrated for most or all of its work. Under the integrated model, personnel and other resources are provided by the Joint Venturer best able to meet the need, as determined by the Executive Committee, and overall profits or losses are shared according to the Percentage Interests regardless of which Joint Venturer actually performed a particular task. On projects that are following the integrated model completely, use of exhibit A is not required.

In an integrated JV, where some work is to be performed exclusively by one of the Joint Venturers, or in a line item joint venture, where the JV allocates the performance of functions and the related financial consequences among the Joint Venturers, exhibit A provides a mechanism to do so by authorizing the JV to award subcontracts to the Joint Venturers.

In certain cases the parties may wish to accomplish a similar effect without the formality of a subcontract agreement. For example, if a federal contract incorporates small business subcontracting requirements, the parties may prefer to use work orders issued by the JV, rather than subcontracts, as the mechanism to assign tasks and related financial responsibility to a given Joint Venturer. If so, the standard form should be modified accordingly.

Subcontract, Payments (exhibit A, section 4): The subcontract may incorporate exceptions desired by the parties from the general principle that all profits and losses are shared in accordance with the Percentage Interests. For example, the subcontract may document any special arrangements the parties intend for dividing incentive fees and/or liquidated damages.

Payments by the JV, Costs (exhibit B, section 3.1): If the parties intend that the budget be mandatory and to exclude costs not in alignment with the Budget, this section and section 3.3.11 may need to be modified.

Exhibit B, subsections 3.3.1 through 3.3.3 contemplate that the staff performing the required work of the JV will be on the payroll of the respective Joint Venturers, and will not be employees of the JV itself. If the parties prefer the model of a "populated" JV, in which the JV itself is the direct employer of certain personnel, the Agreement should be revised accordingly.

Exhibit B, subsection 3.3.11: The Executive Committee may wish to establish reimbursement policies for certain categories of costs, for example: management services; accounting services; computer-related hardware, software or services; cell phones; vehicles or vehicle allowances; legal expenses; insurance and bond premiums; and deductible or co-insurance costs for claims related to the Project.

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Comments regarding ConsensusDocs 300*

Multi-Party Agreement for Integrated Project Delivery (IPD)

Overview:

Why bother with an Integrated Project Delivery (IPD) Agreement? Stated briefly, multiple studies have reported that construction projects often suffer from adversarial relationships, low rates of productivity, high rates of inefficiency and rework, frequent disputes, and lack of innovation, resulting in too many projects that cost too much and/or take too long to build. Also, projects continue to injure or kill too many workers, and owners are often disappointed with the quality of the end product. The project delivery approach embraced by the ConsensusDocs 300 is seen as an antidote to these ills.

The initial "Integrated Form of Agreement for Lean Project Delivery" ("IFOA"), which later became the template for the original ConsensusDocs 300, was developed for a leading healthcare provider who had decided to deliver all of its projects using Lean Project Delivery. It was produced as a response to the community's belief that this different project delivery approach was inconsistent with existing industry contracts, which contain contractual risk transfer mechanisms and commercial incentives that get in the way of Lean Project Delivery.

At their foundation, all project delivery systems have three basic domains within which they operate: the project organization, the project's "operating system," and the commercial terms binding the project participants. In order for any delivery system to be coherent and effective, the structure in each of these domains must be aligned and in balance. If you attempt to make adjustments in only one or two of the domains, you are likely to produce outcomes that are less than optimal. Think of it as an under-inflated tire—while it's only flat on the bottom, it still makes steering difficult.

The ConsensusDocs 300 is the only industry standard form that addresses all three basic domains:

- Project Organization: The ConsensusDocs 300 enables teams to implement a "collaborative organizational structure," where decisions are made by a multi-disciplinary team with a focus on what is in the best interest of the Project.

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- Operating System: The ConsensusDocs 300 also adopts the fundamental principles and basic practices of the "Lean Project Delivery System," including the Last Planner™ System, Target Value Design, and Built-in Quality.
- Commercial Terms: The ConsensusDocs 300 allows the team to develop commercial terms, governing how Project participants will be paid and how risk and reward will be shared, in ways that support the needed behaviors and lean performance that will drive superior outcomes.

This new version of the ConsensusDocs 300 reflects the learning that has occurred during the past ten years since the original IFOA was introduced. It also attempts to use language that is consistent with the emerging industry standards addressing the fundamental principles and basic practices of Lean Project Delivery.

Certainly, parties can work collaboratively under a traditional project delivery approach, but doing so becomes more difficult as uncertainty and project complexity increase. Conversely, simply signing a new "collaborative" form of agreement, without engaging in the sustained effort necessary to shift traditional behaviors and develop new project management capabilities, is unlikely to produce improved results.

The ConsensusDocs 300 requires the Project team to openly engage in an explicit effort to align the operating system with a collaborative organizational structure and commercial terms that support Project-wide optimization and sustained learning. This approach creates a real opportunity to optimize the industry's goal of creating value for minimum cost and time, while sending every worker home safe, every day.

Goal of 2016 Update: The ConsensusDocs 300 was first published in 2007 when Integrated Project Delivery and IPD were making their way into the construction lexicon. The original ConsensusDocs 300 was the first industry standard multi-party IPD Agreement, and as a first-generation document it reflected then-new concepts and ways of interacting and contracting that were then tested and refined. The original ConsensusDocs 300 impacted many early practitioners and has been used on more than one hundred projects.

IPD as a project delivery method has grown significantly in the last 8 years and has spread geographically and across commercial markets. Intense experimentation and deep learning have characterized its spread. With experience, this methodology has matured and its practitioners have grown increasingly sophisticated in their performance and in their understanding of associated contractual issues.

The new 2016 version of the ConsensusDocs 300 is a product of the accumulated experience of the years since initial publication and reflects the intensive work of several of the leading legal practitioners in the field. The updated document has been comprehensively revised with an eye toward clarity, flexibility, and simple expression. It also reflects the current best practices in an area where we expect to see rapid growth. Thus, it is intended to be a document of equal utility to seasoned practitioners and novices.

Multiple-Party Agreement (article 1): This is a multi-party agreement, meaning the Owner, Design Professional, and Constructor all sign the IPD Agreement at the earliest possible stage of the Project. The intent is to assemble the collaborative Project team at the very beginning of the Project, not in a piecemeal fashion. Additional parties can easily be added using the ConsensusDocs 396 Standard Joining Agreement. Project participants executing the ConsensusDocs 396 become a Joining Party and potentially a Risk Pool Member. Alternatively, the parties could modify the standard document to allow additional signatories to the IPD Agreement at initial contract signing and thereby expand the number of signatory parties beyond three. (Experienced legal counsel is recommended to modify the standard text to accommodate a so-called "polyparty" model of more than three signatories, as there are a number of issues to work through in shifting from a three-party model.)

Joining Agreement (section 2.2): For Projects where the original signers to the IPD Agreement include fewer than all of the eventual members of the IPD Team (which will likely be the case for most Projects), the ConsensusDocs 396 Standard Joining Agreement is the recommended form for adding IPD Team members. By executing the ConsensusDocs 396, the Joining Party acknowledges receipt and review of a copy of the Project IPD Agreement and agrees to be bound to the terms of the Agreement applicable to its involvement in the Project, and to participate fully as a member of the IPD Team. The ConsensusDocs 396 also provides a checkbox for indicating whether the subject Joining Party will or will not be a Risk Pool Member under the Risk Pool Plan. As drafted, the ConsensusDocs 396 is not a substitute for the Joining Party's separate consulting agreement or subcontract, but rather assumes that each Joining Party will also be entering into a consulting agreement with the Design Professional or Owner, or a subcontract with the Constructor.

Pull Planning (section 2.6): It is possible to use pull planning when it is not contractually required. The ConsensusDocs 300 drafters thought it was superior to include pull planning in the agreement and address the construction process.

Early leaders in the removal of waste from design and construction found inspiration in Toyota's lean manufacturing principles. From these they discovered that the most important element for efficiency in a construction project is the reliable transfer of work from one trade to another. Based on this insight, they developed a collaborative approach to project planning keyed on those responsible for directly supervising the work, the "Last Planners."

In pull planning, the Last Planners engage with each other to work out a plan for each Project that includes the best of available alternatives that optimize the Project as a whole rather than just for individual participants. These Last Planners should be those with a deep knowledge of what their staffs are good at and what they are not. They also must know the scope of the work for each phase. This includes the materials, hours planned for the work, and equipment or information that is available to them or is needed. In addition, each must know the work required of the other team members for the phase in question. Through this understanding, Last Planners can make requests and negotiate handoffs during the pull planning conversation, leading to reliable commitments as

to delivery of specific units of work. Finally, to be successful, the Last Planners must know the conditions of satisfaction of the internal and external "customers" of their completed unit of work.

With this knowledge, the Last Planners collaborate to create a schedule for the Project. They start with each desired phase goal and work backward to define each task required of each participant to reach that goal. Often, Project teams will create this schedule with sticky notes containing each day's tasks where each participant has a different color. The end-to-beginning planning process can involve a lot of movement of sticky notes on the calendar as trade-offs are negotiated to facilitate the best outcome. Handled properly, each delivery of work or material is "pulled" forward for performance just in time to allow the next performance to begin. In this fashion, work is delivered reliably from one participant to the next.

For more on pull planning, see this 2014 paper by leading trainers on pull planning.

IPD Team Contingency (section 5.1.4): The IPD Team Contingency addresses the contingency needed by the Constructor and Design Professional (and, by extension, their Subcontractors and design consultants) to cover unanticipated Payable Costs for the entire Project, but is not meant to cover Change Order conditions or other items that owners should cover through a separate owner's contingency. The goal is to have one team contingency that is collectively established based on the team's analysis of the particular risks of the Project, seeking to avoid the common problem of Projects having too much and often overlapping contingency misallocated among Project participants, because each team member's contract value has its own contingency within it for many of the same risks as other team members. One common contingency fund allows money to flow across contractual boundaries and be appropriately sized for the entire Project's needs. To assure that IPD Team Contingency funds are used where needed for the good of the Project, the Core Group manages the use of this contingency. When used, the funds are transferred from the IPD Team Contingency line item to the appropriate line item of incurred cost in the cost model. Section 5.1.4 clarifies that the Owner should not dictate tapping the IPD Team Contingency inappropriately for those items spelled out in section 15.2, which includes an Owner changing its Project requirements. While not a contractual requirement, it is prudent for an Owner to create a separate Owner's contingency to help cover items that merit a change order in section 15.2. There are some recent studies that cover what a reasonable Owner should expect to cover with contingency.

The Validation Study (section 5.3): At the core of the preconstruction process in IPD lies the Validation Phase. Its purpose is to determine whether the Project and other Owner criteria can be achieved for the Allowable Cost.

The first step in this process is the review of the Owner's Program by the Core Group to establish Project goals. The Core Group assists the Owner in further developing the Owner's Program if it is not complete. Then, the Design Professional and Constructor identify the Project requirements and determine whether additional information or investigations are required. The information is obtained and investigations conducted by the IPD Team. Next, the Core Group issues a report of findings and recommendations. Once the Owner's Program is sufficiently defined, the IPD Team

undertakes the Validation Study. As part of this, the Core Group develops an estimate of the Expected Cost. The Validation Study encompasses a budget of all Payable Costs, IPD Team compensation, contingencies, a proposed Risk Pool Plan showing all participants and their respective Risk Pool amounts, and a Project Schedule with major milestone dates. Note that the Allowable Cost, the Owner's Program, and the Project Business Case can be revised pursuant to subsections 5.2.1 or 5.2.2. It is the resulting criteria, as revised, that the Core Group must confirm as part of the Validation Study.

Once the Validation Study is completed, the Owner can approve the Validation Study and proceed with the Project, use it as a basis for further discussion with the IPD Team, or cancel the Project. Importantly, this gives the Owner better and timelier information regarding the Project's viability. Before detailed design begins, the Owner gets to make an informed decision based upon carefully vetted information gathered and formulated through the collaborative engagement of all major Project participants. Through the Validation Study, IPD brings the Owner to the major decision point on the Project at less expense and with much better information and deeper insight than a traditional process would.

Target Value Design (article 6): Unique among industry standard IPD forms, the ConsensusDocs 300 "writes into the contract" the lean concept of Target Value Design (TVD)—the strategy where cost is not a trailing, derivative outcome of design but instead a driving force.

Article 6 provides specific guidance on this strategy. During the design process, workers from each participating company, designer and constructor alike, pool their expertise to find new ways of meeting both monetary and value objectives. The result is cost modeling that is constantly updated. The "starting gun" for this process is the confirmation by the Validation Study that the Expected Cost of the Project can be attained for an amount under the Owner's Allowable Cost. Target Value Design thereupon sets in motion a process for not only designing to Expected Cost, but optimally beating it.

The engines for accomplishing this result include the allocation of tasks among participants in a Responsibility Matrix (section 6.2—see discussion below), the creation of a Design Professional work plan (section 6.3.5), the required use of pull-based design production (section 6.3.4), reaching consensus on design document standards and TVD protocols (sections 6.3.6 and 6.6.3), avoiding the need for formal requests for information between participants and re-drawing of others' work (sections 6.3.1 and 6.4), assignment of smaller, focused teams called "TVD clusters" to major Project components and deliverables (section 6.6.3.4), and—where deemed appropriate—implementation of building information modeling (BIM) (section 6.3.7).

The centrality of cost to the Target Value Design strategy is not at the expense of other important Project considerations. Proceeding in tandem with cost modeling are assessments of constructability (sections 6.7.3 and 6.7.4) and how to maximize value to the Owner—including such important considerations as life cycle and operational cost (section 6.7.1).

For a helpful outline of TVD basics, see Hal Macomber and John Barberio, *Target-Value Design: Nine Foundational Practices for Delivering Surprising Client Value* (2007).

Responsibility Matrix (section 6.2): In an integrated team structure, where work is assigned to the team member whose performance will be in the best interest of the Project, team members need a mechanism to determine who is responsible for what. The Responsibility Matrix is how the Core Group will document this. For example, the Core Group may determine that the best outcome for the Project would be for the structural engineer to produce the structural design documents through detailed design. Then, the structural steel trade would take over the bulk of the detailed drafting of the construction documents for structural steel, with the structural engineer providing collaboration and oversight. This kind of arrangement would be documented in the Responsibility Matrix. A sample Responsibility Matrix is found in Exhibit 1 to this Guidebook for ConsensusDocs 300, though please note that this is only a sample based on a matrix created for a specific large health-care project and would not be suitable for other projects without significant modification.

Target Cost (section 6.6.1): The Target Cost is established as a goal for the Project that is less than the Expected Cost. The IPD Team achieves this through innovation and collaboration. The Core Group is given the mandate to establish the Target Cost in the Risk Pool Plan.

Target Cost is integral to the Target Value Design process. In its practice the IPD Team designs to a Target Cost, which converts cost into a design criterion rather than a design outcome. The IPD Team anticipates the cost consequences of different possible designs, and selects only those alternatives that fit within the relevant component of the Target Cost. Estimates are updated in real-time throughout the design to keep it on target. This is accomplished through cross-functional teams with the required areas of expertise to comprehensively address the design, constructability, and cost consequences of decisions. If a component portion of the Target Cost is exceeded, the cost of another component or components should be reduced correspondingly. Note, however, that the Core Group can authorize a decision to exceed the Target Cost.

Value Analysis (section 6.7.1): The ConsensusDocs 300 intentionally avoids the term "value engineering" so as not to imply a traditional VE process that assumes a non-integrated design approach in which design is produced by the designer in isolation after which the constructor reviews and offers VE comments that require additional design work to incorporate. This kind of VE approach is inherently wasteful. Instead, IPD calls for designers and builders to work in tandem to consider value from multiple perspectives as the design is being developed in the first place. Value analysis proposals, as part of a Target Value Design process, are a mechanism for bringing key values into the design development.

Operations Quality Plan (section 6.8.3): In Lean circles, this is commonly called a "5S" plan. For more information, see www.leanconstruction.org/training/glossary.

Correction of Defective Work (section 9.2.1.15; section 12.7): IPD projects have approached payment of the costs for post-completion correction of defective work in a variety of ways. The ConsensusDocs 300 assumes a traditional approach in which the Constructor assumes the costs of correcting its defective work (with Subcontractors correspondingly responsible for their defective work).

However, a significant minority of IPD projects provide for the Owner to reimburse Risk Pool Members their costs (without earning profit thereon) for addressing Defective Work during the one-year correction of work period, which results in the need for Owner to defer closing the books on the Project until all defective work identified by the first anniversary of the Substantial Completion date is completed and paid. These projects have often included a "warranty reserve" within the Estimated Maximum Price (EMP) to minimize the magnitude of cost true-ups after the one-year completion anniversary. A potential advantage of this approach would be to allow extracting any mark-up or burden in overhead or labor rates included by contractors to cover costs of post-completion warranty call-back work.

There are other less common approaches to payment of post-completion correction of defective work. The Constructor and certain Risk Pool Subcontractors could each include a lump sum warranty management cost in the breakdown of Payable Costs that is billed at Substantial Completion and then assume the expense of correcting their Defective Work after Substantial Completion. This would allow the Owner to close its books on the Project shortly after final payment and avoid the capital accounting issue of the approach in the prior paragraph.

Another less common alternative is having the Constructor and/or certain Risk Pool Subcontractors enter a separate long-term maintenance arrangement with the Owner covering both preventative maintenance and correction of defects in order to allow the costs of corrective work to be paid out of the Owner's operations budget rather than with capital dollars.

Risk Pool (article 10): IPD Projects utilize a wide variety of risk/reward compensation approaches. Rather than standardize one approach, ConsensusDocs has provided flexibility in the ConsensusDocs300 to allow for a team-created risk/reward compensation approach. Teams are cautioned, however, that Risk Pool Plans are contract documents and require careful drafting and expert advice to make sure needed considerations are appropriately included and addressed. Section 10.4 sets out a minimum set of considerations.

The ConsensusDocs 300 also recognizes that some teams may benefit by using a carefully prepared industry standard Risk Pool Plan. Thus, the ConsensusDocs Guidebook provides different Risk Pool Plan templates at Exhibits 2 through 3 to showcase some common approaches to risk/reward compensation.

If Payable Costs Exceed Amount Budgeted (section 10.5): When the total Payable Costs exceed the amount budgeted for Payable Costs in the current EMP, the Risk Pool Members' profits become vulnerable. Before tapping profits, the overrun is first paid from any insurance

proceeds (where applicable) or amounts recovered from third parties in reimbursement of Payable Costs. Next, the IPD Team Contingency is utilized. Only after these two sources of funds are depleted are the undistributed amounts of Risk Pool Members' profit utilized to cover the overrun. If that is not sufficient, then distributed amounts of profit must be returned by the Risk Pool Members to cover the overrun.

After all profits are exhausted, the Owner is responsible for all Payable Costs that exceed the EMP. In this fashion, the ConsensusDocs 300 balances the risks and rewards of the Risk Pool Members so that none are creating a potential to "bet the company" through their participation in the Project. That is unless the EMP Amendment provides otherwise.

Guarantee of the Estimated Maximum Price? (section 11.3): The EMP Amendment executed at the time the EMP is established gives the Core Group the option of establishing the EMP as a guaranteed price. By providing the option for Risk Pool Members to guarantee the Estimated Maximum Price, however, ConsensusDocs 300 does not assume or recommend that the EMP *should* be guaranteed by the Risk Pool Members. To the contrary, ConsensusDocs 300 assumes in the structure of the document, and the drafters assert that best practice is to provide, that the EMP *should not* become a guaranteed maximum price. Instead, it should function in its intended role as a metric for risk/reward compensation determinations. However, ConsensusDocs 300 recognizes that certain Projects, although structured and operated as integrated projects, are sometimes required to include a cost guarantee to the Owner, often as a result of later-imposed financing requirements. Thus, ConsensusDocs 300 has provided flexibility to address this possibility in section 11.3, which would require express language in the EMP Amendment to effectuate.

When faced with such a requirement for a cost guarantee, the IPD Team should consider using a Risk Pool Plan and EMP Amendment that sets the guaranteed EMP at a significantly higher dollar value than the estimated Actual Cost, but sets a different metric (a "Risk/Reward Metric") at the amount of estimated Actual Cost, with any shared savings or Risk Pool loss measured against the Risk/Reward Metric rather than the EMP. For Payable Costs that exceed the Risk/Reward Metric, the Owner would reimburse those costs (or an agreed percentage of those costs) until they total the guaranteed EMP, at which point each Risk Pool Member assumes its own further costs. This allows the team to focus on the Risk/Reward Metric as the "real number," and keep contingencies and profit percentages at levels more consistent with IPD, because the team's cost risk for amounts greater than their profit is limited to only catastrophic and unlikely cost overruns.

Risk Identification (section 12.1): One of the first collective efforts undertaken by the parties, including those executing a joining agreement, is the identification of material project risks. This is accomplished through one or more workshop sessions, and may involve participants beyond the IPD Team. These workshop sessions are to be led by a facilitator chosen by the Core Group. The process for identifying project risk may involve a number of approaches including matrix/mapping, brainstorming, check list, and other appropriate techniques. Most construction organizations rely on a combination of intuition, judgment, and experience to identify and manage construction risk. More structured risk assessment, whether it be in the form of decision analysis,

sensitivity analysis, Monte Carlo simulation, or other recognized approaches, are also grounded in the participants' experience and intuition. The IPD contracting approach recognizes that there is value in the collective experience and intuition of all relevant IPD Team members. Upon identification of project risks, the IPD Team ranks and scores the risks, paying particular attention to potential cost and time impacts to the project. Once project risks have been ranked, the IPD Team develops a risk management plan for addressing the identified risks subject to Core Group approval. Contingency plans are developed for addressing identified risks and responsibilities for managing specific risks are assigned.

Indemnification (section 12.4): The agreement calls for cross-indemnification between and among the parties to the extent of a party's negligence. A party is entitled to reimbursement of defense costs paid above its percentage of liability for the underlying claim. Note that while state law may require or imply a defense obligation for an indemnitor in certain jurisdictions, the contract itself does not explicitly require the indemnitor to defend the indemnitees. The constructor's and design professional's indemnity obligations are subject to the liability limitations set forth in section 12.6. Professional liability is allocated to the team member having responsible charge for the design element associated with the error or omission, except where the team member is required by law to overstamp the applicable documents for a design-built trade, in which case the liability is allocated to the design-build trade responsible for drafting the documents.

Insurance (section 12.5):

The parties shall evaluate and endeavor to develop a coordinated insurance program consistent with the risk allocation set forth in the IPD agreement. Any coordinated insurance program shall provide a minimum level of coverage outlined in this section. Coordinated insurance programs, such as owner-controlled insurance programs (OCIP) or contractor-controlled insurance programs (CCIP) work well within an integrated project delivery structure. Coordinated insurance programs give the parties more control over tailoring coverage for specific project needs. Moreover, controlled insurance programs reduce disputes among program participants as compared to traditional project insurance approaches.

In the event a coordinated insurance program is not pursued, the agreement requires the constructor to procure and maintain workers' compensation, employer's liability, business automobile liability, commercial general liability, and contractor professional liability insurance. The design professional shall procure and maintain professional liability, commercial general liability, workers' compensation, employer's liability, and automobile liability insurance. The owner shall procure and maintain its own general liability insurance. The limits of liability and policy terms and conditions are to be set forth in Exhibit C.

The responsibility for securing property insurance in the form of a builder's risk policy falls to the party designated in the Estimated Maximum Price (EMP) amendment. The property insurance shall name the owner, constructor, subcontractors, sub-subcontractors, suppliers and design professional as named insureds. Coverage is to be procured on an all-risk form and shall insure,

at a minimum, the perils set forth in section 12.5.3. The owner is responsible for deductibles or co-insurance penalties with a specified amount deemed Payable Costs. If the project involves remodeling or refurbishing an existing structure or the construction of an addition to an existing structure, the owner is responsible for insuring the existing structure against the perils identified in section 12.5.3. The insurance shall remain in effect until the sooner of final payment or such time as no person other than the owner has an insurable interest in the property. The builder's risk policy must contain a waiver of subrogation in favor of the named insureds. The owner is also responsible for procuring and maintaining business income insurance responding to loss of use of the owner's property caused by fire or other casualty loss. The parties waive all rights against each other to the extent loss is covered by applicable property insurance.

Subcontractor Default Insurance; Bonds (section 12.5.2.1): While requiring surety bonds of the Constructor is rare in IPD agreements, subcontractor default insurance (SDI) is becoming increasingly more common and is often seen as a more attractive way to mitigate the risk of Subcontractor default. The language of section 12.5.2.1's SDI option has been carefully drafted to address certain issues raised by the use of SDI in an IPD agreement and should not be modified without careful consideration and expert guidance. Some of the significant issues regarding SDI in an IPD agreement include:

- Satisfying SDI underwriting requirements. While SDI insurers have varying positions/requirements regarding the terms of the IPD agreement relative to the Constructor and its Subcontractors, in general the IPD agreement would need to provide for the Constructor to be able to cure the failures of its Subcontractors/Suppliers, terminate the Subcontractor for default, and bear some measure of financial risk of loss resulting from the default of the Subcontractor or Supplier. In the drafters' experience, the Constructor's profit and shared savings being at risk for Subcontractor performance issues, plus the Constructor's indemnity against third-party claims arising out of a Subcontractor's negligent acts or omissions, have satisfied the requirement that the Constructor bear financial risk from a subcontractor default. In addition, the IPD agreement must not include terms that would impede the SDI insurer's right to recover from a defaulting Subcontractor.

- Subcontractors that are Risk Pool Members. It is uncommon for Subcontractors that are Risk Pool Members to be enrolled in an SDI program. As with all insurance, SDI insurers' appetite to write SDI policies varies with the insurance market. The drafters are aware of past IPD projects where a Risk Pool Member trade (usually as a Subcontractor but even as a direct IPD agreement signatory under the Constructor's management) was accepted by the SDI insurer for enrollment, but more recently in our experience SDI insurers have resisted enrolling Risk Pool Member Subcontractors (with their limited contractual liability) in SDI programs. This creates a particular difficulty for use of an SDI program on an IPD project. SDI programs, subject to limited exceptions, require all Subcontractors to be enrolled in the SDI coverage. If the Project intends to include a Subcontractor as a Risk Pool Member, but the SDI insurer simultaneously resists enrolling the Risk Pool

Member and yet requires enrolling all the Constructor's Subcontractors, the Project has a conundrum. One possibility would be to "bond out" the Risk Pool Member by requiring it to carry payment and performance bonds, since one of the limited exceptions to enrolling all Subcontractors in the SDI coverage is that no bonded Subcontractors may be enrolled.

- Addressing SDI Deductibles. SDI programs are typically procured by Constructors to cover many projects across their company, with individual projects enrolled into the program. Thus, the deductibles or self-insured retention (SIR) amounts for the SDI program are often set at an amount appropriate to the Constructor's entire portfolio of projects. Where that is the case, the Owner and Risk Pool Members will often find it more equitable to set a limit on the amount of the SDI deductible or SIR that can be charged to the Project as a Payable Cost, established at a value that would be fair for the Project to bear. The standard text in the SDI option under section 12.5.2.1 provides a blank to fill in the amount for this limit, which of course could be filled in with the full amount of the applicable deductible or SIR if that was agreeable to the parties. Also, some SDI insurers may have policy language that requires the SDI deductible expense be "borne by the insured" in order for the payment to be counted against the Constructor's SDI deductible responsibility. In that case, some SDI insurers have been willing to issue a policy endorsement without charge that allows the amount of SDI deductible reimbursed as a Payable Cost to be counted against the Constructor's SDI deductible responsibility.

Regarding the possibility of surety bonding, the drafters of ConsensusDocs 300 are aware of at least one true IPD agreement involving a public institutional owner that involved some degree of surety bonding. In exploring the available options with the surety and Constructor, the surety indicated that it was willing to either:

- issue both performance and payment bonds covering the Constructor's Construction Phase obligations in a penal sum equal to the Constructor's estimated Construction Phase Payable Costs in the equivalent of the EMP plus the Constructor's Profit. The Constructor's Subcontractors would need to be covered by either the Constructor's SDI program or by payment and performance bonds of their own. In this scenario, the Constructor's surety indicated that it would require some revisions to the IPD agreement to further define the Constructor's scope of work; or

- issue only a payment bond covering the Constructor's Construction Phase obligations to make payment for labor and materials. The Constructor's Subcontractors would need to be covered by either the Constructor's SDI program or by payment and performance bonds of their own.

Ultimately, in this particular project, the Owner had the flexibility under its institutional requirements to require only a payment bond from the Constructor and allow the Constructor (who had no self-performed trade work) to cover the risk of performance failure through use of an

SDI program. In that project, the Constructor's surety was willing to issue a payment bond in a penal amount equal to the Constructor's estimated Construction Phase costs for labor and materials (through subcontracts) plus Constructor's Profit, as detailed in the equivalent of the EMP. The surety viewed that particular IPD agreement (which was not on a ConsensusDocs 300 form) favorably, even though outside their normal experience, and charged an attractive premium on the payment bond that was considerably less than the full cost of both a payment and performance bond for an equivalent penal sum.

Limitation of Liability (section 12.6): The limitation of liability provision protects members of the Risk Pool Team. It also eliminates the Safe Harbor concept from the original ConsensusDocs 300, which required an election that in experience was seldom selected.

The limitation of liability covers any claim by the Owner or any other Risk Pool Member. Any such claim cannot exceed the Risk Pool Member's profit at risk and share of any savings. Importantly, however, claw-backs are permitted. So, if the Project pays out a share of profits and savings, and later dips into the red, those amounts are subject to a claim for return.

This approach was consciously chosen instead of the alternative seen in other agreements: a general waiver of claims. The limitation of liability was chosen in part due to widespread adoption in states of Fairness in Construction Acts, many of which flatly prohibit an advance waiver of claims by the Constructor or Trade Contractors. In addition, individual states have more unique, but nonetheless effective, limitations on general waivers.

There are several exceptions to section 12.6's limitation of liability. Claims arising out of fraud or willful misconduct are not subject to this cap. Claims covered by insurance are likewise excluded, as are recoveries from third parties. Both insurance and third-party recoveries are important mechanisms for protecting the risk pool and are the most likely of the exceptions to manifest. Government fines and penalties are excluded, the thought being that every Risk Pool Member bears the responsibility of complying with applicable Laws. Failure to pay sums due under the IPD Agreement is an obvious exception. The last express limitation is a default on correction of work obligations. This gives an Owner recourse for post-completion claims regarding Defective Work, since the Profit pool and shared savings have been fully disbursed.

Warranties (section 12.7): See comment on Correction of Defective Work above at section 9.2.1.15.

Submittals (section 13.4): Teams are encouraged to develop processes to (1) minimize the need for submittals through more collaborative work between designers and trades and (2) implement pull planning and other Lean principles to minimize the waste in the submittals process.

Right to Audit (section 16.11): Collaborative project delivery, without a lump sum or GMP, should be based on transparency of decisions and open-book accounting. Section 16.11 requires the Designer and Constructor to maintain full and detailed accounts subject to inspection and a final accounting.

Dispute Resolution (Article 18): Generally the collaborative nature of the ConsensusDocs 300 contracting approach is to increase communication and cooperation to go the extra mile to avoid formal disputes. Elimination of or early resolution of disputes are key components of driving out waste in the Project. However, should they be needed, dispute mitigation and resolution procedures are also provided for in this agreement.

Comments regarding ConsensusDocs 301*
Building Information Modeling (BIM) Addendum

Overview:

The Building Information Modeling (BIM) addendum is intended for use on Projects on which the Project Owner and other major Project Participants have made a commitment very early in the Project planning process to utilize BIM or virtual design and construction.

The 301 BIM Addendum should be used where the Owner, lead design professional, lead construction professional, and major subcontractors and suppliers are willing to commit to model the Project design and construction media using three-dimensional design or modeling software with demonstrated interoperability, so as to eliminate the need for conversion of two-dimensional design and construction documents into three-dimensional virtual models.

The 301 BIM Addendum should be used when the Parties are prepared to involve all essential participants, including key subcontractors, subconsultants, and suppliers, early in the design, procurement, and construction planning process.

The 301 BIM Addendum is envisioned to be used with traditional project delivery methods, especially where construction is to be priced by means of a negotiated guaranteed maximum price (GMP) with significant preconstruction services. For the 301 BIM Addendum to be of value, it is not necessary for the Parties to agree to mutually shared cost-saving bonus arrangements for all Participants (as anticipated in, for instance, the ConsensusDocs 300 Standard Form of Tri-Party Agreement for Collaborative Project Delivery involving three-Party collaboration).

The 301 BIM Addendum can be used whether or not any Design Model is considered a Contract Document.

The 301 BIM Addendum can be used when the Owner has determined that a three-dimensional, digital building model is to be used as the primary means of communicating specified geometric,

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—From the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations

quantity, and other metric and representational data required for the design, procurement, and construction processes of a construction project.

The 301 BIM Addendum can be used when Models and Drawings co-exist on a project (for example, details such as waterproofing a parapet wall may more conveniently be drawn, not modeled, in some circumstances).

The 301 BIM Addendum is intended to incorporate a consensus of what many observers believe to be the current best practices in the use of BIM techniques and technology. Currently, many, if not all, BIM technologies and methodologies rely on a Federated Model. The 301 BIM Addendum assumes that the Project Model and some other models, such as the Full Design Model, will be Federated Models.

As-Built Construction Model (section 2.5): This may include including related deliverables that include non-graphical information.

"CIM" or civil information modeling (section 2.9): Information Management means implementation of measures that protect BIM project information and systems availability, integrity, authentication, confidentiality, and nonrepudiation, including providing for restoration of project information systems by incorporating protection, detection, and reaction capabilities.

LOD Specification (section 2.33): See example of the BIMForum LOD Specification, https://bimforum.org/lod/, and United States Army Corps of Engineers Minimum Modeling Matrix (M3), https://cabim.usace..army.mil/BIMContractRequirements.

The LOD specification definition will reflect the current published BIM Forum definition. This will help ensure the definition is current best practice. Note that LOD does not conflict with the concept "LOG" or Level of Granularity.

Uniformat (section 2.43) More info at http://www.csinet.org/uniformat.

Identify and prioritize desired goals and objectives for BIM (section 4.3.1): Users should take into consideration the specific Project Delivery System that will be used.

Geometric modeling (section 4.3.3): See sections4.4 and 4.5.

Responsible Party for a Model(section 4.3.3.2): Identify the party responsible for reach model deliverable. This includes all needed Design Models, Construction Models, and any Federated Models or Record Models.

Furniture Fixtures & Equipment (FF&E) (section 4.4.5.3): RFID, or Radio-Frequency Identification, means the use of an electronic chip or tag to identify materials, tools, and equipment used in construction, readable by remote antenna.

Data collection protocols (section 4.5.4): See http://www.nibs.org/?page=bas_cobie. Construction Operations Building Information Exchange or "COBie" means a data format for the publication of a subset of BIM-derived data, and may include equipment lists, product data sheets, warranties, spare parts lists, and preventive maintenance schedules to support operation, maintenance, and asset management of the completed Work. COBie formats may include spreadsheet, STEP-Part 21 (also called IFC file format), ifcXML, or COBieLite.

Other Related Deliverables (section 4.5.6): .pdf or portable document format means the open standard data format created for exchange of digital information that is independent of the software used to create that information; see http://get.adobe.com/reader/

Model sharing and networking infrastructure (section 4.6.5): This may include – databases, iRoom/.ftp/cloud or other websites, email, hyperlinking, project management platforms; use of open data exchange tools and Model Element classification standards and property sets (e.g., IFC, CIS/2, OmniClass™, UniFormat™, GUID, and other proprietary codes); storage locations; other transfer protocols, permitted file exchange and review types, and interoperability measures that will be used to ensure exchanged Model data integrity. Relevant definitions for this include the following:

"GUID" means a globally or universally unique identifier; a 128-bit integer assigned to identify and track session use of an Element. IFC, or Industry Foundation Classes, means the vendor-neutral, object-oriented, open data exchange specification in a compatible format for reading and exchanging BIM Elements within shared Models found at www.iai-tech.org, as may be revised and in effect when the Addendum is created.

"OmniClass™" means the OmniClass Construction Classification System developed to organize building Elements into specific groups; see 2010 OmniClass Tables, http://www.omniclass.org.

File and element-Protocols (section 4.6.7.2): See, e.g., BSI Standards PAS 1192-2:2013 Specification for Information Management, Section 9, Information Delivery – Production, status codes and file and layer naming conventions, http://shop.bsigroup.com/Navigate-by/PAS/PAS-1192-22013/, EC (UK) BIM Protocol v. 2, Section 8, Folder Structure and Naming Conventions and Section 9, Presentation Styles, http://aecuk.files.wordpress.com/2012/09/aecukbimprotocol-v2-0.pdf, and ANZRS_C1_Minimum Compliance Checklist, rev. 3, http://www.anzrs.org.

Model partitioning (section 4.6.7.7): This may include division of Model data by building, floor, zone, work area, design or shop discipline, etc.

Comments regarding ConsensusDocs 305*

Lean Construction Addendum

Overview:

The ConsensusDocs Lean Construction Addendum is most applicable for parties that are interested in getting the benefits of lean methods, tools and techniques, but are not ready or able to use an integrated project delivery (IPD) agreement, like the ConsensusDocs 300, which is also known as an integrated form of agreement (IFOA). The underlying prime agreement that the Lean Construction Addendum would coordinate best with is a Construction Manager (CM) At-Risk agreement, such as the ConsensusDocs 500 CM At-Risk agreement. The ConsensusDocs 500 coupled with this Lean Construction Addendum would be considered an "IPD-lite" or "IPDish" agreement. Using the Lean Construction Addendum helps remove contractual obstacles to lean practice and better aligns the contractual liabilities and responsibilities of lean practitioners with the team's desire to operate in a collaborative fashion.

Many of the lean methods adopted in the Lean Construction Addendum are antecedents to the development of IPD. They were developed beginning in the 1990s through the pioneering work of Greg Howell, Glenn Ballard, and others, who were trying to solve the problem of rampant waste in construction. The last 20 years have seen a substantial refinement in these methods, and their extension into design. While most of the headlines these days center on IPD, there has been a much more rapid assimilation of lean methods within the industry. The purpose of the Lean Construction Addendum is to provide a tried and tested framework for teams seeking to implement lean methods. This standardization will promote best practices more broadly and anchor those practices in the parties' contracts.

Certain modifications would need to be made to the Lean Construction Addendum for use with a design- build agreement or a design-bid-build agreement. ConsensusDocs plans to publish a design-build Lean Construction Addendum in the future. Also, the forthcoming ConsensusDocs Design-Assist Addendum draws from this Lean Construction Addendum and there are many specific sections which are optionally incorporated into that document through a check-the-box approach.

Article 1 - General Principles

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* This publication is designed to provide information in regard to the subject matter covered. It is published with the understanding that the publisher, endorsers of ConsensusDocs and contributors to this Guidebook are not engaged in rendering legal, accounting, or other professional services. If legal advice or other professional advice is required, the services of a competent professional person should be sought.

—From the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations

Unlike an IPD agreement, the Lean Construction Addendum anticipates separate contracts between the Owner and Design Professional (which is the architect or engineer of record) and Constructor (may also commonly be referred to as a General Contractor or Construction Manager) respectively. Article 1 mandates the incorporation of the Addendum in the prime contracts with those team members and their respective contracts with subcontractors and consultants. This requires that the Owner, Design Professional and Constructor jointly negotiate the Addendum so that the same final version is incorporated into everyone's contracts so that everyone is aligned on the same terms. If the Owner has already contracted with the Design Professional prior to determining the Constructor for the project, then the Design Professional's agreement will need to add the final, jointly negotiated Addendum by an amendment. Article 1 will require modification if the design team will not be participating in the lean methods and incorporating the Addendum. Importantly, Article 11 does provide that the Lean Construction Addendum controls over conflicting provisions in whatever contracts incorporate it.

Article 2 – Definitions

The Lean Construction Addendum reflects, and helps standardize, a common lexicon for the industry. By formalizing currently used words and expressions, it anchors a standard for expressing terms and concepts. In doing so it helps eliminate uncertainty that can grow through conflicting terms and uses that would otherwise inevitably occur. This common understanding of critical terms will provide a better foundation for continued growth of effective lean construction.

2.1 A description of an A-3 report can be found at: https://bit.ly/2Qanf9L.

Article 3 - Project Fundamentals

Project Fundamentals set forth both the objectives and practical requirements in which the lean process is rooted. It establishes as fundamental principles (a) collaboration among all team members; (b) avoiding working in silos, but rather through a network of commitments; (c) focusing on and optimizing the whole, as opposed to individual components; and (d) promoting continuous improvement. Each level of the team, Owner, Constructor – Design Professional, and other team members, make tangible commitments to cooperate. Owner involvement is express.

The concept of reliable commitments arose out of a seminal insight of the early pioneers of lean construction. In studying Toyota's lean manufacturing, Greg Howell and Glen Ballard discovered the construction analogue to "just in time" delivery in manufacturing - the work that is delivered from one trade to another on a construction site. They found that reliable handoffs of work between trades was the single most important indicator of a successful project. They determined reliable handoffs to be work that is delivered in the condition promised at the time promised. To facilitate these handoffs, the concept of reliable commitments was developed. This was one of the first lean construction methods developed. Its articulation has changed very little

since it first appeared in the early 2000s. This and its continued endurance are a testament to its power and effectiveness, which are only enhanced by its elevation to a contractual requirement.

Article 4 - Project Team Leadership

One of the first tasks upon initiating a lean project is to build a high-performance team capable of managing in a challenging, fast-paced environment. While the concept of building project teams is nothing new, for lean project management there are additional considerations that reflect not only team member characteristics but also the underlying organizational structure. Many of the team traits that need to be considered for success with Lean are similar to the traits that are relevant for IPD and include the ability to quickly adapt to solve problems and keep focused on the next challenge. In addition to problem solving and focused attention, other important team traits include resiliency, collaborative skills, mutual trust, respect of tea members and their firms, clear communication, accountability, and transparency.

The project leadership team or Core Group, as noted in the Addendum, builds and manages all other project teams, and is responsible for developing a positive team culture. The Core Group is comprised of representatives from the Owner, Designer, and Constructor who have authority from their company to make day-to-day project management decisions. Each of these individuals must be a good fit for a lean project: they must be well trained in lean principles and capable of promoting positive working relationships amongst all teams within the group. If there is not a positive working relationship and changes need to be made for this or any other reasons, the team needs to ensure the new project team member is equally qualified and will support a positive team culture. The Core Group is not necessarily limited to the primary three representatives, and can be expanded, as appropriate. As the project progresses, additional qualified individuals who are a positive fit for the Core Group can be added and may represent subcontractors, suppliers, and other key firms or stakeholders participating in the project. These individuals will also play important roles in the functional teams that support smaller tasks within the project and that make the day-to-day decisions necessary to manage the work flow processes and scheduling. In all cases, the functional teams also need to have clear communication both within their functional team, and to coordinate with other functional teams. Communication is key to identify areas for continuous improvement and the elimination of waste.

The Core Group guides the project and meets regularly to review the project progress and make key decisions. As noted in Integrated Project Delivery by the Pankow Foundation, one key to successful decision-making is to ensure everyone is aware of their roles and responsibilities. A well-documented process for decision-making includes an outline of all reasonable options, an analysis of the pros and cons for each option, and documentation of the final decision. This process provides a structured framework and helps to remove emotions from key decisions. The Core Group should work to have consensus on all decisions and avoid disputes. If there is a dispute, the group needs to work through the issues within the Core Group; the dispute resolution process included in the contract documents should be considered a last resort.

The Core Group serves as leaders and need to develop and sustain high performance teams. While the Core Group members need to stimulate excellence amongst all employees, it is important to recognize that employees are under the direct supervision of their own firm, and do not typically report to the Core Group as a whole. The Core Group doesn't command and control specific employees.

The Core Group will evaluate the project's team performance as a whole and work for continuous improvement under Lean principles. Additional information about the performance improvement program is detailed under the §4.4.3. Note that the performance improvement program could be a vehicle for incentive compensation for the project team. The Addendum doesn't directly address incentive compensation, but it certainly is possible for a project team to develop a performance improvement program that gets tied in some way to incentive compensation. For example, the performance improvement program will establish key performance metrics to gauge performance and stimulate continuous improvement. To incentive improvement performance against these performance metrics, the project team could enter into an amendment to their contracts that provides for Owner-funded award fees that the project team earns based on how well they meet the KPIs. If a project team mutually agrees upon some system of incentive compensation, then they would need to address that through an amendment to their respective project contracts.

Article 5 - General Team Responsibilities

§**5.1 Project Planning & Schedule**: The Lean Construction Addendum specifies use of a planning system that incorporates pull planning principles in a structured way. Most, if not all, lean construction projects use a project planning process called the Last Planner® System of Production Control, and § 5.1 of the Addendum allows for the use of the Last Planner System or its functional equivalent in fulling the contractual requirements for planning and scheduling. The Last Planner System consists of five phases which are represented in §5.1.2 through §5.1.5 of the Addendum. The five phases are 1) a milestone schedule (also called "master planning"), 2) phase planning, 3), "make-ready" look ahead plans, 4) weekly work plans, and 5) methods for recording, measuring and improving the reliability of the plans. For more information on pull planning, see this 2014 paper by leading trainers on pull planning.

One of the key techniques used in lean construction is called "pull planning." Pull planning is an essential element of incorporating lean construction into the management of the project and is defined in §5.1.1. In pull planning, the "last planners" engage with each other to work out a plan for each project that includes the best of available alternatives that optimize the project as a whole rather than just for individual participants. These last planners should be those with a deep knowledge of what their staffs are good at and what they are not. They also must know the scope of the work for each phase. This includes the materials, hours planned for the work, and equipment or information that is available to them or is needed. In addition, each must know the work required of the other team members for the phase in question. Through this

understanding, the last planners can make requests and negotiate handoffs during the pull planning conversation, leading to reliable commitments as to delivery of specific units of work.

Finally, to be successful, the last planners must know the conditions of satisfaction of the internal and external "customers" of their completed unit of work.

With this knowledge, the last planners collaborate to create a schedule for the project. This process is defined in §5.1.6. They start with each desired phase goal and work backward to define each task required of each participant to reach that goal. Often, project teams will create this schedule with sticky notes containing each day's tasks where each participant has a different color. The end-to-beginning planning process can involve a lot of movement of sticky notes on the calendar as trade-offs are negotiated to facilitate the best outcome. Handled properly, each delivery of work or material is "pulled" forward for performance just in time to allow the next performance to begin. In this fashion, work is delivered reliably from one participant to the next. This process is used to create each type of schedule identified above beginning with the milestone schedule, then phase planning, "make-ready" look ahead plans, and finally, the most detailed, weekly work plans.

The weekly work plans are the workhorses of the Last Planner System. As the name indicates, weekly work plans are prepared on a week by week basis. All assignments to be completed in a given week are contained on the weekly work plan. The project team determines whether an assignment has been completed as scheduled. For those that are not completed as scheduled a reason is assigned.

One of the most important tasks in the Last Planner System is calculating the Plan Percent Complete (PPC). The PPC is the percentage of activities completed as promised/scheduled and is used to track the reliability of the scheduling process. PPC can be broken down by geographic area on the project site, by subcontractor, by trade, or any number of other variables that the project team wishes to track. The Core Group monitors the PPC throughout the project. If the PPC drops or is less than the project team targeted, an analysis is performed to attempt to improve the accuracy of the scheduling process or, if necessary, to improve the performance of a certain trade or team actually performing the work. To help first-timers gauge PPC performance, it is typical for project commitments early in a project to have a PPC in the range of 40-60% and to improve to the 80-90% range when the team is implementing pull planning and lean methods well.

§**5.2 Project Team Communications**: The essential lean tool used for project team communications is the Project Communications Protocol, which is defined in §5.2.1. The Project Communications Protocol is intended to create detailed instructions for the project participants to use in all communications related to the project. The Communications Protocol will include a meeting matrix identifying who is required at which meetings and how frequently they are held. It will also include considerations for when project participants are permitted to communicate directly with one another and which parties should be

contemporaneously copied on those communications. The Addendum does not explicitly address co- location of project team members, since the approach to that will vary greatly among different projects. The Communications Protocol, with its meeting matrix, is a good vehicle for the Core Group to define the co-location approach for project team members. Co-location (a/k/a the "big room") is an effective strategy to streamline communications, improve effective decision-making, optimize team performance (especially in the design process), and strengthen the relationships of team members. Co-location can range from full-time co-location of key personnel for the duration of the project, to part-time co-location during specific time frames, to periodic co-location events, depending (ideally) on what works best for that project.

This section also addresses how to determine a protocol on electronic data sharing. The Addendum references the ConsensusDocs 200.2 Electronic Communications Protocol Addendum (CD 200.2) for this purpose, but the team could create its own electronic communications addendum. The CD 200.2 facilitates the accurate and secure transmittal of electronic communications and data on the project.

Article 6 - Services Prior to Construction

Checking-the-Boxes. To allow the Lean Construction Addendum to apply to a wide variety of project scenarios, Article 6 uses check-boxes to determine which sets of pre-construction lean features will apply to the parties. The Addendum does not require that a project team provide all of the services in Article 6 (that is, unless the parties check all the boxes in Article 6). Also, note that the Addendum doesn't have a check-box for Construction Phase activities. If a team is going to use the CD305, then they're certainly going to using it for the construction phase.

Let's illustrate with three examples. In this first example, the Owner desires a robust lean implementation from the beginning of the project. They determine that they don't need a joint worksite investigation because of the Owner's previous extensive site due diligence, so they don't check the box for §6.1 (Joint Worksite Investigation). However, the team wants to provide for the evaluation of the Owner's Program, developing a Validation Study, extensive cost modeling by Constructor throughout the project, an integrated design process using Target Value Design principles, and a major risk identification and management effort. So, they check the boxes for Sections 6.2 (Evaluation of Owner's Program), 6.3 (Validation Study), 6.4 (Cost Modeling), 6.5 (Integrated Design Process and TVD), and 6.6 (Risk Identification and Management).

In example 2, the Owner has passed the point of validation when it determines to pursue Lean project delivery. They bring on the Design Professional and Constructor from the beginning of design to engage in an integrated design process using Target Value Design, together with the continuous cost modeling of the constructor and the team's risk identification and management effort. Then they will continue on to deploy Lean methods during the construction phase. So, they check the boxes for Sections 6.4 (Cost Modeling), 6.5 (Integrated Design Process and

TVD), and 6.6 (Risk Identification and Management).

For example 3, the Owner didn't discover lean construction until the project was mostly designed. The Design Professional is willing to participate in a lean project for the construction phase, and the Constructor is selected for its lean expertise. They negotiate a CD305 to incorporate into both the design and construction agreements that provides for an initial risk identification and management effort and then proceeds to the Construction Phase's lean deployment. So, they only check the box for §6.6 (Risk Identification and Management).

Each of these examples represents a very different type of Lean deployment, but each can be facilitated through the Lean Construction Addendum.

§**6.1 Joint Worksite Investigation**. One of the first collaborative acts between the Owner, Design Professional, Constructor and its key subcontractors is to engage in a joint worksite investigation. The purpose of the joint worksite investigation is to gain the necessary information for proper development of the project design. As part of the process, this cross-disciplinary team should: (i) review all of the existing site information available and verify observable existing conditions within any existing structures and at the site, and notify Owner of the need to view inaccessible spaces (e.g., spaces containing hazardous materials, hard lid ceilings, buried utilities, occupied spaces, etc.), (ii) determine whether additional testing and studies are required, and (iii) document site-related information necessary for development of the construction documents. The outcome of the joint investigation is a report to the Owner of the Core Group's findings and recommendations. Because the outcome of the joint worksite investigation impacts the overall development of the design, this investigation should occur as early as possible in the design process. Note that the outcome of the joint investigation will also influence decisions about the level of contingency to include in cost estimates and the contract price.

§**6.2 Evaluation of Owner's Program**. If the Project Team performed a joint worksite investigation, the information gained from the Project Team during joint worksite investigation should be reviewed and vetted in conjunction with the Owner's Program. During this evaluation process, the Core Group and other key Project Team members will meet and confer on the project requirements, determine whether additional information, testing, or studies are necessary for proper development of design, and consider alternative design approaches, concepts, and technical requirements to help ensure that the approved Owner's Program will ultimately deliver best value to the Owner. At the conclusion of this process, the Project Team delivers a written evaluation of the Owner's Program to the Core Group identifying any recommended deviations from the Owner's Program.

§**6.3 Validation Study.** The purpose of the Validation Study is to determine whether the project as defined in the approved Owner's Program can be achieved for the Allowable Cost. The Validation Study must include a proposed Expected Cost jointly developed by the Design Professional and its consultants, Constructor and its key subcontractors, and a proposed project

schedule that includes key milestone dates for design development and construction. The Validation Study, once approved by the Core Group, is presented to the Owner for review and approval. Through the Validation Study process, the Owner is able to make an informed decision on whether to move forward with the project based upon carefully vetted information gathered and formulated through the collaborative engagement of the key Project Team members before incurring costs for detailed design. At the conclusion of this process, the Owner will provide written notice to the Core Group indicating whether it accepts the Validation Study and desires to move forward with the project as contemplated in the Owner's Program. Alternatively, changes to the Owner's Program or Allowable Cost could be directed if the original program could not be validated.

§**6.4 Cost Modeling**. Earlier in the design process and before construction, the Constructor will collaborate with Owner's project manager and the Design Professional to establish a cost model that includes a line item for projected cost of design (developed by the Design Professional) and a breakdown for the cost of construction including contingency and allowance items (developed by Constructor and key subcontractors). Unless the Addendum does not check the box for §6.3 or §6.5, the initial cost model should total the approved Expected Cost. The cost model will be used throughout the design and construction process to track costs expended to date, indicate variances, and provide projections for completion of design and construction. During the design process, as part of preconstruction and design- assist services, the Constructor and its key subcontractors will provide rapid cost estimates for portions of the Work and systems and components under consideration for incorporation into the design. The Core Group will establish milestones for updating and reconciling the cost model to assure that the overall cost of design and construction is within the approved Expected Cost (if the box for either §6.3 or §6.5 was checked) or else another cost metric established by the Owner.

§6.5 Integrated Design Process and Target Value Design.

§**6.5.1 Goal.** Target Value Design (TVD) is a transformational approach to an integrated and collaborative design process. TVD is a design process that requires Project values, cost, schedule, and constructability to be basic components of the design criteria and uses cost targets to drive innovation in designing a project that provides best value to the Owner. Successful project teams engage in TVD to help ensure that (i) the Project design is progressing and may be completed within Owner's Program and approved Expected Cost and Project schedule, (ii) all Project Team members' understand the design requirements, including the design intent and all technical requirements of the Project, before construction, and (iii) field conflicts and requests for information or clarifications ("RFIs") after construction starts are substantially reduced.

§**6.5.2 Integrated Design Principles.** In order to accomplish the TVD goals, the design professionals must recognize that design should not occur in a silo and value, cost, schedule, and constructability are all basic components of an integrated design process. The Constructor and its key subcontractors must engage in meaningful constructability reviews and accurate,

rapid, cost evaluation during the design process as part of their respective preconstruction and design-assist services. TVD estimates should include life cycle cost analysis for systems being considered, design details as they are being developed, and portions and components of the construction work deemed necessary by the Core Group for accurate cost modeling. Also, the Project Team should determine the extent of design-assist or design- build services from key subcontractors so that the design effort is coordinated and seamless. As noted above, the cost model should be updated throughout the design process to demonstrate whether the design is proceeding within the Expected Cost or whether adjustment to the design are necessary to bring the project cost back within the Expected Cost. Having access to this information while the design is progressing eliminates cycles of design rework and waste because the constructability and cost information allows the Owner and Project Team to make informed decisions about design before incorporating details into the design documents, allowing the design to progress within the Expected Cost and Project schedule.

§**6.5.3 Pull-Based Design Production.** In order to accomplish TVD in an organized and timely fashion, the Project Team should engage in pull-based design production. Pull-based techniques require concurrent design amongst the various disciplines and management of workflow. Design Professional and its consultants, together with Constructor and its key subcontractors providing design-assist or design-build services, work backwards from the milestone dates established in the project Schedule, creating collaborative design phase schedules. As part of the collaborative phase schedules, design tasks and completion dates are set based upon requests from a Project Team member to others upon whom the requester's portion of design service is dependent, and receipt of reliable promises made by the upstream performer about when it will finish the portion of design or information needed (such as cost or constructability) to make an informed design decision, and the agreed upon hand-off criteria in order to enable the downstream designer or design-build subcontractor to begin their respective portions of the design. Often, Project Team members will create this schedule with sticky notes containing each day's tasks where each participant has a different color. The end-to-beginning planning process can involve a lot of movement of sticky notes on the calendar as trade-offs are negotiated to facilitate the best outcome. Handled properly, each delivery of service or work product is "pulled" forward for performance just in time to allow the next performance to begin. In this fashion, work product and design services are delivered reliably from one participant to the next. Direct communication and coordination during this process allow the Project Team members to make reliable promises to each other and discuss and negotiate the hand- off criteria. To help facilitate this, the Core Group establishes documentation standards for the Design Documents.

§**6.5.4 Building Information Modeling Approach.** Before commencement of design, the Core Group and other key Project Team members should meet and determine a Building Information Model ("BIM") protocol. The team should consider the following in developing the protocol: (i) what building components and systems should be modeled and the level of development that is appropriate for each based on the complexity of the Project, and what information is more efficiently developed and conveyed using 2D design tools; (ii) where and how the BIM will be

maintained and identification of a BIM administrator; (iii) hardware and software requirements that will be used to develop the BIM; (iv) protocols for naming conventions, data structure, version control, gate keeping and archiving; (v) establishing a common coordinate system; (v) who will control the BIM and information within specific models or model elements; (vi) how existing site information will be incorporated; (vii) when and how information regarding constructability and cost will be derived; (viii) if and how RFIs, clarifications, shop drawings and submittal information will be incorporated; (ix) when and how clash detection will occur; (x) how the BIM will be updated; (xi) whether there will be a record model. If BIM is being utilized on the Project, the Project Team should consider conducting a BIM workshop after the Validation Study (if any) has been approved and before design services get very far along. The ConsensusDocs 301 BIM Addendum or other BIM protocol should be amended into the agreements of the Design Professional, design consultants, Constructor, and design-assist and design-build subcontractors.

§**6.5.5 Document Review.** Fundamental to the integrated design process and TVD is continuous document review. As the design is developing, the Design Professional and its consultants, Constructor, and key subcontractors should continuously review design documents for errors, omissions, coordination, constructability, and compliance with the approved Owner's Program. This review is done in the capacity for which each Project Team member is licensed. Having a cross-functional team review the documents will substantially reduce errors and omissions and help prevent constructability issues and field conflicts down the road, and also flush out whether additional testing or inspection of existing conditions is necessary, etc. Errors, omissions, and inconsistencies should be timely addressed by the parties most knowledgeable and capable of resolving. As part of this process, Project Team members will work with the Owner and end-users to evaluate design options and determine best design layout and solutions. Constructor and its key subcontractors will alert the Core Group and Project Team to design options or issues that will increase contingencies, allowances or the overall Expected Cost or duration of the Project schedule.

§**6.5.6 Value Analysis Strategy.** "Value engineering" (VE) is not the same as TVD and should not be confused. Traditional VE process assumes a non-integrated design approach in which design is produced by the design professionals in isolation after which the constructor and its key subcontractors review and offer VE comments or potential solutions due to cost overruns. Because traditional VE is provided after the design is produced, incorporation of VE items usually requires additional design services to incorporate or requires design rework in the case where the design has progressed too far without cost evaluation and the Project is overbudget. This kind of VE approach is inherently wasteful. In contrast, TVD requires the Design Professional and its consultants, the Constructor and its key subcontractors to work in tandem while the design is developing, taking into consideration value from multiple perspectives. Early involvement of the Design Professional and its consultants, Constructor and its key subcontractors is essential to the TVD process and should be included in the value analysis strategy. The strategy should also include carrying multiple design options forward and deferral of design decisions until the last responsible moment based on the pull scheduling

requirements. The value analysis strategy should include each of the integrated design processes discussed in §6.5 to encourage deep collaboration, best value, and optimal design solutions into the design development.

§**6.5.7 Target Value Pricing**. Target value pricing is part of the TVD process and should be addressed in the Project Team's value analysis strategy. Through rapid cost evaluation during design development, the Constructor and key subcontractors are able to price design alternatives, options, and systems as well as the overall design as it progresses. The Owner's and Project Team's goal is for the design to progress at or below the Expected Cost and within the Target Cost and Project schedule. In order to achieve maximum value and drive innovation and creativity into the design, the Target Cost should be set below the Expected Cost and early during the design process (e.g., end of schematic design or before completion of design development documents); if the Project Team is providing a Validation Study, then it is established in the approved Validation Study. The cost model will be updated throughout this process to track cost and help ensure that the design is being developed at or below the Expected Cost or Target Cost (as applicable) and is still on schedule. If at any time during the design process, the Expected Cost or Target Cost (as applicable) is exceeded, the Owner and Project Team members will collaborate on design and construction solutions to bring the projected actual cost back within the Target Cost. §6.5.7.2 addresses how escalation is handled, and §6.5.7.3 provides a set of criteria for the Core Group to use in developing TVD protocols.

§**6.5.8 Value and Constructability Analyses.** Throughout the design process, the Project Team should engage in set-based design in order to drive innovation into the Project. Project Team members or TVD Clusters work to identify options for reducing capital or life cycle costs, improving constructability and functionality, or enhancing operational flexibility consistent with Owner's Program, and within the Expected Cost or Target Cost (as applicable) and the overall Project schedule. Viable options or value analysis proposals (VAPs) are carried forward concurrently until eliminated through use of Choosing by Advantages or an alternative vetting process. During this time the design stays flexible while the Project Team tests assumptions and selects the best option for the Project. The VAPs are documented in an A-3 Report and should (i) evaluate various design options, create savings of time or money in designing, constructing, or operating and maintaining the Project, and (ii) increase quality, constructability, labor efficiencies or other measures of values that are cost-effective.

In §6.5.8.1, the reference to the "best interests of the Project" is a standard that would, for instance, discourage someone from over-designing a portion of the project to practice "defensive architecture."

§**6.6 Risk Identification and Management.** Early in the design process, the Project Team members will identify material Project risks. This is accomplished through one or more workshop sessions, and should involve all relevant Project Team members. These workshop sessions are to be led by a facilitator chosen by the Core Group. The process for identifying project risk may involve a number of approaches including matrix/mapping, brainstorming,

check list, and other appropriate techniques. Most construction organizations rely on a combination of intuition, judgment, and experience to identify and manage construction risk. More structured risk assessment, whether it be in the form of decision analysis, sensitivity analysis, Monte Carlo simulation, or other recognized approaches, are also grounded in the Project Team member's experience and intuition. Collaborative approaches recognize that there is value in the collective experience and intuition of all relevant Project Team members. Upon identification of project risks, the Core Group ranks and scores the risks, paying particular attention to potential cost and time impacts to the Project. Once project risks have been ranked, the Core Group develops a risk management plan or risk registry for addressing the identified risks subject to Core Group approval. Through-out the design and construction process, the risk management plan or risk registry is updated to address newly discovered risks. Contingency plans are developed for addressing identified risks and responsibilities for managing specific risks are assigned.

Article 7 – Construction Phase

§**7.1 Quality Assurance and Quality Planning:** One of the most important steps in achieving lean construction's primary goal of minimizing inefficiencies is to ensure that the work is performed properly the first time. As with most other lean construction functions, planning is the key. In order to accomplish that objective, the Lean Construction Addendum requires two quality-related plans, the Built-in Quality Plan and the 5S Plan. §7.1.2 describes the Built-in Quality Plan. The primary participants in preparing this plan are the Design Professional and the Constructor with participation of certain Subcontractors as needed. The Built-in Quality Plan is intended to address issues such as the following: (1) a process for ensuring the contract documents clearly communicate conditions of satisfaction; (2) a process for standardizing work practices and associated training; (3) identifying agreed levels of quality, using efforts such as mockups, first run studies, and early completion of standard work units; (4) a method for managers to review early work product; (5) a process to integrate quality review and scheduling; (6) a process to ensure quality when handing off work; (7) procedures to immediately address quality failures; and (8) standards for measuring and tracking quality performance.

The 5S Plan is prepared by the Constructor and Subcontractors and focuses on site operations. This plan is submitted to the Core Group for approval prior to the construction phase. The Plan is meant to apply the lean principle of "5S" to construction operations. Applying 5S helps to minimize inefficiencies in construction activities. The 5 S's are Sort, Set in Order, Shine, Standardize, and Sustain. The first step in the process, Sort, contemplates removing unnecessary tools, materials, and equipment to allow workers to be as efficient as possible. Set in Order involves clearly labeling and organize the work space so that needed items are easily found and close to the place they are used. The third, Shine, is to remove trash, dirt, dust, or other impediments to efficient work spaces on a continual basis. Standardize, the fourth S, promotes standardizing as many tasks as possible. Finally, Sustain is the process of empowering workers to take responsibility for their space and to continue to improve their efficiency.

§**7.2 Logistics Plan:** Another important aspect of lean construction is "just in time" delivery. The Constructor must prepare a logistics plan in which materials are ordered and delivered in an effort to minimize handling costs, obstructions on the site, and the use of the space on site for storage.

§**7.4 Requests for Information:** The Lean Construction Addendum seeks to revolutionize traditional methods of addressing requests for information (RFIs). First, the very need for RFIs is minimized when the Owner brings the Constructor and key subcontractors into the project during the design phase so that they have a high level of understanding of the design. When the need for a clarification does arise, §7.4 provides for those seeking clarification to attempt to resolve the issue first by face-to-face or telephone communications. If the clarification can be made at that time, the clarification is documented and communicated to the rest of the Project Team. If the clarification can not be made at that time, the participants agree on how the issue will be resolved by identifying the tasks required, who is responsible for completing the task, and a schedule for completion of the tasks. The goal is for RFIs to be issued to document solutions rather than raise questions. Requests are also made directly from the requesting team member to the team member that is best able to answer, rather than having to route through the contractual "chain-of-command."

§**7.5 Planning for Completion and Close-out:** The Project Team must prepare a phase plan for project completion that addresses completion, commissioning, and close-out activities. The goal is to eliminate the traditional punch list process. The purpose of the plan is to ensure that the Project satisfies the conditions of satisfaction established in the Contract Documents at the time of Substantial Completion. The plan may include methods for completion of minor incomplete items, control of personnel movement through certain areas of the Work, photos or video recording of completed work, and methods for logging and tracking completed and minor incomplete items.

The Core Group inspects the completed project to determine Substantial Completion and approves the Constructor's draft of the Certificate of Substantial Completion that is submitted to the Owner for acceptance.

Comments and Recommendations regarding ConsensusDocs 310*
Green Building Addendum

Overview:

Increased interest in and the demand for green buildings are among the most pronounced developments in the present evolution of the design and construction industry. New challenges and demands are required from multiple participants with varying responsibilities to achieve a single goal – successfully delivering a green building project. Despite a critical need to identify the legal risks presented by designing and constructing green buildings and appropriately allocate those risks, standard contract documents to help guide the performance requirements and address risk allocation have not yet been created.

Consequently, the ConsensusDocs organizations, with the input of additional diverse industry stakeholders, have developed the ConsensusDocs Green Building Addendum ("GBA") to meet this need and to benefit the industry. The GBA uses contractual best practices to collectively identify the Project Participants, including their respective roles, and the implementation and coordination efforts critical to achieving a successful project using green building elements, particularly those seeking a third-party green building rating recognition.

Evaluation of the various design and construction elements, coupled with coordinating green building elements and requirements, have resulted in the creation of the Green Building Facilitator or GBF, a person or entity charged with the responsibility to identify, coordinate, implement and conclude necessary submittal documentation to achieve the desired green building goals. In the event that there is no separate underlying agreement already in place, it will be necessary to establish the commercial terms to address the scope of work required of the GBF by the terms of the GBA. The GBA will similarly accommodate attachment to a separate underlying agreement between the owner and the person or entity that will be fulfilling the GBF's role and functions. In either scenario, the GBA is intended to identify the elements of performance required of the GBF on projects incorporating green building elements and/or rating goals.

* This publication is designed to provide information in regard to the subject matter covered. It is published with the understanding that the publisher, endorsers of ConsensusDocs and contributors to this Guidebook are not engaged in rendering legal, accounting, or other professional services. If legal advice or other professional advice is required, the services of a competent professional person should be sought.

—From the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations

The GBA is flexible in approach, adapting itself not only to multiple applications of the GBF role in the hands of the architect/engineer, contractor, construction manager or even an third-party advisor/independent consultant, in each instance hired by the owner specifically for the project, as opposed to being an in-house employee or a staff member of the owner, and application in situations where the project team has not been fully assembled. In addition, the GBA adapts itself to projects seeking formal third-party agency ratings or high-performance building criteria, as well as a combination of the two. However, for projects on a design-build delivery track, the GBA would require specific modifications to reflect both design and construction responsibilities within a single entity or Project Participant.

The GBA takes into consideration the elevated risks in green building design and construction, design/development strategies potentially impacting that risk, the unique material/equipment/design components associated with these projects, and re-evaluation of traditional design elements consistent with implementation of the green building measures. The GBF provides assistance to the owner in coordinating the design, construction and document submissions that are necessary to accomplish the green building objectives for the project, should an independent third-party rating be desired. To assist the GBF in the performance of its duties and obligations to the owner and the project, there are certain coordination, cooperation and documentation requirements for the various Project Participants are imposed in several areas of the GBA. These requirements enhance the facilitative role of the GBF and also permit the GBF to discharge its other GBA responsibilities to the owner and the project. Coupled with these express elements of coordination, cooperation and documentation, any Project Participant is encouraged to communicate the terms of the GBA to any specialty contractors, subcontractors, material suppliers or other consultants who may be engaged by a Project Participant to assist in achieving the stated green building goals for each project, whether evidenced by a formal third party rating or otherwise.

As a result, the articles that follow in the GBA address the definition of the green scope, the allocation of green building-related responsibility and risk, apportionment of liability, and changes to the design and/or construction of the project to accommodate green building objectives, as well as discuss post-physical completion actions and obligations. It is contemplated that the GBA will be used in conjunction with developing the underlying agreement between the owner and the entity that will become the Green Building Facilitator, which will further address commercial terms such as compensation and insurance requirements. Nevertheless, with this single GBA document ultimately appended to the owner and GBF agreement as well as appended to each of the other Project Participant agreements, all Project Participants should be aware of each other's roles and responsibilities as they relate to the achievement of the project's green objectives.

General Principles (article 1):
The GBA is intended to modify, accompany, and complement pre-existing or contemporaneously prepared design and construction agreements on projects where green

building elements, goals, or, more formally, third-party rating recognition is sought. The general definitions, contract terms, and the underlying expectations are contained in the traditional design and construction agreements. While the GBA makes these various documents subject to the GBA's terms, certain provisions in the underlying contract documents are not altered by the GBA. The operative alterations of the agreements to which the GBA is appended will include obligations necessary for the GBF to perform its functions, including coordination of performance and cooperation with the GBF and the other Project Participants that have agreed to the terms of the GBA. Also, while the drafters envisioned that the GBA would coordinate with ConsensusDocs family of construction contract documents, the GBA can be considered for use, upon appropriate review, with other non-standard contract agreements, as well as American Institute of Architect (AIA) or Engineers Joint Contract Document Committee (EJCDC) contract documents. Further, in the event the underlying Governing Contract adequately identifies a remodeling as opposed to a new construction scope of work, the GBA could be used to accommodate green building goals and objectives for the remodeling effort.

Definitions (article 2):
Applicable definitions specific to the GBA set the stage for the GBA's accommodation of pre-design planning and analysis to determine which green measures will be selected for the project and ultimately incorporated into the project through design, construction, and, if applicable, third-party rating certification submission. Providing unambiguous and uniform definitions are among the benefits of creating a standard document for the design and construction of green/sustainable buildings. The definitions take into account those elements of the green building project that are physical in nature, requiring specific physical parameters for performance, while also acknowledging that certain green elements require certifications or submissions of documentation of a more procedural nature in order to be recognized under applicable laws, codes, rules, regulations and/or rating system criteria. The GBA also establishes coordination and cooperation obligations that provide the GBF the ability to discharge the roles and responsibilities necessary to accomplish the project's green objectives. Furthermore, the GBA accommodates the specific identification of these green objectives, whether by declaration of a specific level of third-party rating (e.g., LEED® Gold), a specific level of building performance, or both.

The definitions article introduces the "Green Building Facilitator" or "GBF." The roles and responsibilities of the GBF are key components in the document. While the Project Participants could function without the GBF, their ability to successfully pursue the desired green elements is enhanced by the GBF's roles set forth in the GBA. On projects of larger scale and complexity, the GBA facilitates (but does not require) the engagement of a third-party as the GBF, separate and apart from the architect/engineer and contractor teams. Again, the structure of the GBA contemplates the GBF is not an in-house employee or a staff member of the owner. Further, following a design-build delivery model would necessitate specific modifications of the GBA. The definitions of green certification documents and other similar documents otherwise identified in this article reflect the GBA's understanding and accommodation that many green

building measures are already document-intensive and will require written substantiation of performance in addition to the actual performance itself. While the GBA does not require additional documentation, it certainly contemplates that the respective collection and supply of documentation verifying the underlying green building performance will be necessary elements of monitoring project progress under many selected green building rating criteria. The procedural green methods will largely be driven by the green measures selected for application in the project. For example, should the elected green measure contemplate submission of documentation supporting the underlying performance that is claimed to be compliant with the particular rating system, then that documentation would be included among the procedural green measures to be performed by the appropriate Project Participant, as also defined in this article.

Green Requirements and Procedures (article 3):
This article emphasizes that the objectives of the green building project at issue may not necessarily require ultimate review and certification by a third-party rating agency or service. In particular, the GBA accommodates scenarios where formal compliance with an established green rating system is preferred, instances where specified energy performance and/or environmentally beneficial criteria are desired, and where both the rating recognition and the actual performance-related options are selected in the GBA, rating achievement at the specified level as well as performance consistent with the identified energy and environmental parameters are sought from the design, materials, equipment, construction, and commissioning supplied and performed on the Project.

Green Building Facilitator (article 4):
In this article, the roles and responsibilities of the Green Building Facilitator are set forth in further detail. The GBA accommodates multiple options for the person or entity filling the role of the GBF. For example, the GBF could be the architect/engineer, a contractor, construction manager or even a third-party advisor/independent consultant, as long as the GBF is not in-house employee or a staff member of the owner. The GBA likewise accommodates and addresses specific situations where particular roles might be in conflict where the GBF is also the architect/engineer. Not only is the GBF relationship with the other Project Participants identified, but also the roles and responsibilities of the GBF are identified in such a fashion that the architect/engineer, the contractor and any other Project Participant will be aware of the GBF's presence and purpose on the project. The article additionally emphasizes that the GBF is not assuming the role of the architect/engineer (except, of course, where the GBF is also the architect/engineer) and that a key function of the GBF's presence on the project is to take the various documentation and reports supplied by the architect/engineer and/or the contractor and assemble that documentation and those reports for submission and processing to obtain the written certification, designation, or denomination of the elected green status. The article concludes by emphasizing that the roles and responsibilities of the architect/engineer and the contractor, consistent with the role of the GBF, are provided for otherwise in the GBA and/or in their respective Governing Contracts. This approach is more consistent with a design-bid-build project delivery model, rather than a design-build project delivery approach.

Green Status (article 5):
In this article, the path from the identification and selection of green measures to the achievement of the elected green status is discussed in more detail. Not only are further elements of the green status indicated, but it is also made clear that the elected green status shall be brought to the attention of the architect/engineer as well as the contractor engaged (or to be engaged) on the green building project. This article, and those that follow, recognize that the contractor may not be engaged as early in the process as the architect/engineer and/or the GBF.

Green Measures (article 6):
This article represents the core of the GBA. In the sections contained in this article, detailed procedures are identified for all Project Participants to be involved in incorporation of the green measures into the plans and specifications for the project and to react if these measures are perceived to be in conflict with the scope of services to be provided under a respective underlying agreement. There are, among other things, procedures for the preparation of reports by the GBF to advise the owner of the green measures to be specifically incorporated into the plans and specifications. This article places the GBF in a role of facilitating the steps to be undertaken in order to achieve the desired elected green measures and places appropriate coordination and cooperation obligations on the Project Participants. Advice to the owner about the differing approaches to achieving the desired green building objectives, coordination with the architect/engineer and contractor, and follow-up measures are clearly identified. While these points could and should be echoed in the underlying Governing Contract between the owner and the GBF, placing it in the GBA defines Project Participants' respective roles with respect to the GBF and, in turn, the GBF's role with respect to the Project Participants' various work scopes so that all Project Participants have knowledge of the GBF's and their own respective responsibilities. Ultimately, this article provides that the architect/engineer remains responsible for the design of the project and the incorporation of the green measures into the necessary documents for execution of the work consistent with those elected green measures. Furthermore, there is a detailed procedure for resolution of objections made by the architect/engineer regarding any of the elected green measures. Again, in its role as a facilitator, the GBF participates in this process and counsels the owner on alternatives to address the architect/engineer's objections. While the GBA accommodates many variables for the person or entity serving in the role of the GBF, special attention should be given to situations where the GBF is also the architect/engineer as well as in situations where the projects or the green measures being incorporated are more complex in nature.

Plans and Specifications (article 7):
In this article, the role of the GBF in preparing and issuing plans and specifications is established. The GBF again acts in its facilitator role to confirm that the elected green measures have been incorporated into the issued plans and specifications and that any necessary revisions are made by the architect/engineer as a part of review procedures set forth within the body of the GBA. Objection procedures are included to allow for resolution of any differences over

incorporation of elected green measures into the plans and specifications. The contractor is engaged in communications over the details of the elected green measures incorporated into the plans and specifications and procedures for resolution of differences over or objections to those measures both as a part of the construction of the project and as a part of revising the pertinent Governing Contracts. If changes are needed to the design of the project either as a result of or in order to assimilate elected green measures on the project, procedures are included to accommodate these changes consistent with the elected green measures. Overall, the Project Participants' roles and responsibilities with regard to the elected green measures are set forth in this single GBA document to allow for the maximum opportunity of coordination of these efforts among the various Project Participants, all under the review of the GBF.

Risk Allocation (article 8):
Specific risk allocation principles are identified in this article, including responsibility for the elected green status; reinforcement of existing liability provisions; characterization of certain damages as consequential in order to be addressed more fully in the underlying Governing Contracts; and emphasis that nothing contained in the GBA is intended to impose liability on an architect/engineer or contractor for defects or deficiencies inherent in the elected green measures as they affect their ability to achieve the elected green status. This is not to say that the inherent defect or deficiency in the design or the material would be removed from any other liability equation. Also included in this article is a paragraph dealing with damages which could reasonably be incurred by the owner as a consequence of the project not achieving the Elected Green Measure. These damages are identified as Consequential Damages in the GBA so that they can be addressed further by any applicable waiver of Consequential Damages contained in a Governing Contract. The Governing Contracts prepared by ConsensusDocs adopt the approach of clarifying those damages that will be regarded as consequential damages and providing that consequential damages are generally waived. However, unlike other standard form agreements, ConsensusDocs provides for the parties to a Governing Contract to agree upon exceptions to the waiver of consequential damages. The approach employed in the GBA provides consistency with the Governing Contract and addresses consequential damages under the GBA by accommodating how the parties agree to address that issue in the Governing Contract. The GBA does clarify which damages would be regarded as consequential in nature. Consequently, a waiver of consequential damages, and any exceptions to that waiver, in a Governing Contract, will apply to consequential damages arising under the GBA as well. Whether the parties have agreed to waive or permit the recovery of certain consequential damages between parties to a Governing Contract, the GBA accommodates that agreement by providing for the Governing Contract to control that determination on limitation or waiver of Consequential Damages. Ultimately, as to the liability of the GBF in connection with the achievement of the elected green status, that liability determination should be addressed fully and comprehensively in the underlying Governing Contract between the owner and GBF. Further, any continuing obligations of performance beyond completion of the project and initial achievement of the elected green status would have to be address separately and apart from the GBA.

Comments regarding ConsensusDocs 410*

Agreement and General Conditions Between Owner and Design-Builder
(Cost of the Work Plus Fee with GMP)

Overview:

Design-build delivery project delivery methodology offers some benefits, but you should be design-build Agreements contain different risks from traditional delivery methods. In order for a design-build project to be successful, the design-build Agreement should effectively define and allocate the risks associated with one Party assuming the responsibility for the design and construction of the project.

ConsensusDocs 410 is a balanced document that is reflective of the market. It reflects the collaborative efforts of Owners, Contractors, design-builders, Subcontractors, engineers, and sureties. The Agreement is an improvement from previous standard design-build Agreements and the CD 410 was updated in January of 2011. It addresses risks associated with relatively new construction issues, such as the use and maintenance of electronic data, while clarifying several risk provisions common to most standard form design-build Agreements. For example, this Agreement simplifies claim procedures, identifies excusable compensatory damages, and adopts the limited consequential damages provision that has become popular among Contractors and Owners.

You may access a sample redline of the 2007 and 2011 editions as a sample document of the CD 410 at http://www.ConsensusDocs.org/catalog/designbuild/

Exhibits (subsection 2.4.1.1): The User is expected to create these referenced exhibits as applicable. These exhibits contain information that is largely based on project and company specific information that varies.

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—From the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations

The Parties are encouraged to create other exhibits as appropriate and list the exhibits in this subsection.

General Provisions (subsection 2.4.9): The term “Contractor” should be replaced by “Design-Builder.”

Ownership of Documents (subsection 3.1.8): The Parties have the option of "checking-the-box" as to the Ownership of copyrights for the project's "Documents." Documents include all documents, drawings, specifications, and electronic data and information. The Parties have the option of defining "electronic data" in article 4.6. The Agreement allows the Parties to include a negotiated fee for the Ownership of copyrights. Unless the Parties agree otherwise, copyright Ownership for all documents remains with the Design-Builder.

Section 3.3.8: One of the options should be checked and the other option deleted.

Emergencies (section 3.6): This section was moved from section 9.7 in the last 2007 edition.

Electronic Documents (section 4.6): The Agreement recognizes the importance of electronic data and documents in the design and construction process. Article 4.6 allows the Parties to develop a project-specific protocol to facilitate the sharing of electronic data. Among other things, the protocol is intended to: define the scope of electronic data and identify the types of electronic documents the Parties expect to use; manage the sharing and coordination of electronic data; identify electronic formats that are acceptable to the Parties; establish security parameters for electronic data; and create mechanisms for storing and retrieving electronic data. Because there are many potential sources of electronic data and programs that manipulate electronic data, the Parties are encouraged to develop a protocol to fit their specific needs.

Labor Relations (section 5.5): If applicable, Users should insert here or attach as exhibit as necessary any conditions, obligations or requirements relative to labor relations and their effect on the Project. Legal counsel is recommended.

Delays in the Work and Delay Claims (section 6.3): Owners and Contractors expressed dissatisfaction with forms that failed to identify examples of compensable delay. Article 6.3 expressly lists events that give rise to compensable delays. This is a significant improvement over standard form Agreements that leave the Parties to determine for themselves whether excusable delays are compensable or not. The Agreement also provides a more detailed list of excusable delays – those delays caused by events beyond the Parties' control. Examples of excusable delays include traditional force majeure events, such as fire, terrorism, and governmental actions, and

Owner-caused delays, such as Owner changes, Owner-authorized delays, and Owner-ordered re-sequencing of the work.

Limited Waiver of Consequential Damages (section 6.5): The right to claim consequential damages is a contentious point in many contract negotiations. Article 6.5 enables the Parties to list consequential damages that are not waived. Article 6.5 allows for reimbursement of consequential damages otherwise recoverable under applicable insurance policies. In this regard, the Agreement provides a "limited" waiver of consequential damages that recognizes the allocation of risks among the Owner, Design-Builder, and their insurers.

Cost Items for Construction Phase Services (section 8.2): While the 200 is a Lump Sum Agreement, a more extensive delineation of the Cost of the Work is being provided to provide clarity in regard to the cost of the work for changes. This language is being derived from existing language from the ConsensusDocs 500 Construction Management At-Risk agreement with some minor appropriate modifications.

Concealed or Unknown Site Conditions (section 9.4): Revisions were made to more closely conform with the terms used in ConsensusDocs 200 3.16.2 related to concealed or unknown site conditions.

Cost of Work Estimate (section 9.5.4): The Cost of the Work estimate is subject to 3.2.8, which provides for audit rights and reasonable skill and judgment in preparing such.

Claims for Additional Cost or Time (section 9.6): The Design-Builder's notice of a claim should be made within 21 days after the occurrence, or recognition of the occurrence, whichever is later. The Design-Builder's written documentation supporting the claim should be submitted within 21 days after its notice. The Owner's response to the claim should be made within 14 days after the Owner receives the Design-Builder's documentation. The Agreement eliminates guesswork when an Owner fails to respond; the Owner's failure to respond is deemed a denial. At the end of this section, in the sentence “Owner’s failure to so respond...” the term “Contractor” should be replaced by the term “Design-Builder.”

Section 9.7 of the 2007 edition was moved to 3.3.3.1 in the 2011 edition.

Section 10.1.2: Users are advised to check state statutes to determine if there is a shorter period required by state law regard to the time period required for payment.

Notification of Cancelation Insurance, ACORD Form Change (section 10.2.1 and 10.2.4): In April 2012, ConsensusDocs agreement forms were modified to incorporate the previously suggested

language in this Guidebook. These changes were made to reflect changing practices in the Association of Cooperative Operations Research and Development (ACORD) forms.

Generally, construction contracts require that insurance policies include at least 30 days advanced written notice to the owner (or an upstream contractual party) if an insurance policy is canceled or allowed to expire. This has generally been satisfied through certificates of insurance as evidence of compliance. ACORD, the licensing company for insurance forms, has amended their certificate requirements (*e.g.* ACORD 25). Consequently, contractors and subcontractors may no longer be able to received certificates of insurance language that proclaims that the insurance company or insurance broker, should any policies be canceled before the expiration date thereof, "endeavor to mail 30 days written notice to the certificate holder." Therefore, contractual requirements that 30 days advanced notice be included in insurance policies may not be commercially available and altering ACORD forms to purport to do so may run afoul of state law. Consequently, current contract language addressing notice of cancelation for insurance policies no longer reflect the reality in today's construction marketplace.

Consequently, a working group of experts drafted language which reflects reality, while giving the Owner sufficient notice. The language provides an owner timely third-party notification of cancelation by the insurance company as well as creates an obligation on a party to give notice of cancelation to the owner or other upstream party. Lastly, the drafted solution looks to limit costs as well time efficiency issues by allowing for electronic notification by the insurance company or the insurance broker as a designee depending who is in the best position to have such information and can give appropriate notice. In addition, reference to prompt notice is expected to be soon as practical, but in no case longer than 5 days from first learning of cancelation or nonrenewal of an insurance policy without replacement.

The ConsensusDocs proposed contractual solution differentiates between nonrenewal, cancellation, and other changes like lapses in coverage. In the case of active nonrenewal by the insurance company, the company or designee is in the position to provide advanced notice. In the case of cancellation, it is not possible for the insurance company to provide advanced notice so notice would be provided very shortly after cancellation occurs. The most common example is late payment of premium. In this case, the company may cancel if payment is not received, however, if payment is received cancellation would be rescinded and any advanced notices would also have to be rescinded causing unwarranted confusion and inefficiencies. In other cases such as a lapse in coverage, only the design builder may be aware of the lapse and therefore only the design builders could provide that notice.

The ACORD form change impacts all standard contract documents, including the ConsensusDocs 200 and the AIA A201®, and most manuscripted construction contracts that contractually require insurance policies provide a 30-day advanced notice of cancelation. The ConsensusDocs notice of cancelation solution references where such language should be inserted into ConsensusDocs contracts (ConsensusDocs 200, section 10.2.4). However, the ConsensusDocs proposed solution is equally applicable to other contracts that are now out-of-date due to the ACORD change. The ConsensusDocs Guidebook is being updated to respond to today's changing construction marketplace in a timely fashion and was deemed too pressing to wait until the next revision cycle.

Here is how the language was modified.

Section 10.2.1 In the ___line, after the "and broad from property damage." insert, "The Constructor shall maintain completed operations liability insurance for one year after Substantial Completion, or as required by the Contract Documents, whichever is longer.

10.2.4 "~~The policies of insurance required under subsection 10.2.1 shall contain a provision that the coverage afforded under the policies shall not be cancelled or allowed to expire until at least thirty (30) Days' prior written notice has been given to the Owner. The Constructor shall maintain completed operations liability insurance for one year after acceptance of the Work, Substantial Completion of the Project, or to the time required by the Contract Documents, whichever is longer. Before commencing the Work, the Constructor shall furnish the Owner with certificates evidencing the required coverage.~~"

To the extent commercially available to the Design-Builder from its current insurance company, insurance policies required under subsection 10.2.1 shall contain a provision that the insurance company or its designee must give the Owner written notice transmitted in paper or electronic format: (a) 30 Days before coverage is nonrenewed by the insurance company and (b) within 10 Business Days after cancelation of coverage by the insurance company. Prior to commencing the Work and upon renewal or replacement of the insurance policies, the Design-Builder shall furnish the Owner with certificates of insurance until one year after Substantial Completion or longer if required by the Contract Documents. In addition, if any insurance policy required under subsection 10.2.1 is not to be immediately replaced without lapse in coverage when it expires, exhausts its limits, or is to be cancelled, the Design-Builder shall give Owner prompt written notice upon actual or constructive knowledge of such condition."

Section 10.3.2: Insurance coverage implies that there is a positive indication that there is an acceptance of liability for the loss.

Termination (article 12): The Agreement's termination provisions protect the Owner in the event of the Design-Builder's default while providing protections against unwarranted terminations-for-cause. Termination for cause requires two levels of notice. First, the Owner may perform the Design-Builder's obligations if the Design-Builder fails to begin to cure contractual deficiencies after 7 days' written notice. Second, after an additional 7 days' written notice to both the Design-Builder and the Design-Builder's surety, the Owner may terminate the Agreement if the Design-Builder fails to cure or commence and continue to cure during the period. Any termination that does not follow article 12.2's termination-for-cause procedures is deemed a termination-without-cause under article 12.3. Under article 12.3, the Owner should pay the Design-Builder for all work executed, all proven loss, cost, or expense in connection with the Work, and all demobilization costs. Payment to the design-builder is to a penalty, but rather reflects a Contractor's lost business opportunity.

Dispute Resolution (article 13): The Agreement offers the Parties a number of dispute resolution procedures in lieu of judicial litigation. First, the Parties are encouraged to conduct direct good faith discussions to resolve the dispute. After direct discussions, the Parties have the option of dispute mitigation with a project neutral/dispute review board or mediation. If the Parties choose dispute mitigation, the project neutral/dispute review board will create a nonbonding finding that the Parties may use in a subsequent binding proceeding.

If the Parties do not choose dispute mitigation, the Parties "shall endeavor" to mediate the dispute. Mediation should be complete within 45 business days of the first discussion between the Parties. Mediation is not required.

The Agreement allows the Parties to choose between arbitration and litigation as the binding resolution procedure. Arbitration or litigation is a last resort if mitigation or mediation fails to resolve the dispute.

Mitigation (section 13.3): Select only one option if a mitigation selection is desired.

Contract Documents, (c) (section 15.1): List here or attach exhibits to identify the binding contract documents. This is important section to fill out carefully so as to distinguish documents provided for information purposes only versus binding contract documents which can be relied upon.

AGC Comments for ConsensusDocs 410:

(Additional comments by AGC can be found on AGC's website at members only page of http://www.agc.org/galleries/members-only/AGC-only_ConsensusDocs_Guidebook.pdf for many of the ConsensusDocs documents.)

Standard of Care (section 2.1): A definition of the standard of care applicable to architectural and engineering services performed under this Agreement is not included in this Agreement (previous additions of AGC contracts did include such a definition). The drafters of the new Consensus documents determined that it would be better for the design professionals to be held to a standard imposed on them by their own profession, rather than one defined by this Agreement.

Contractors and Owners should not modify this Agreement by adding language that would hold any design professional to a standard of care that is above that which is customary and normal for design professionals in the same time and location, because that might result in the unintended consequence of voiding errors and omissions coverage available to the respective design professionals.

Relationship of Parties (section 2.1): This section requires the Design-Builder to proceed "on the basis of trust, good faith and fair dealing" and take all actions "reasonably necessary" to perform "in an economical and timely manner." Under article 3, the Design-Builder "shall exercise reasonable skill and judgment in the performance of its services."

Standard of Care (section 2.2): The Agreement removes the architect/engineer's standard of care from the former and no longer published AGC 410 section 2.2. CAUTION: Contractors and Owners should not modify this Agreement by adding language that would hold any design professional to a standard of care that is *above* that which is customary and normal for design professionals in the same time and location, because that might result in the unintended consequence of voiding errors and omissions coverage available to the respective design professionals.

Comments regarding ConsensusDocs 415*

Agreement and General Conditions Between Owner and Design-Builder (Lump Sum)

Please see comments in the ConsensusDocs 410 Guidebook which is illustrative of the 410. The CD 415 was updated in March of 2012 to reflect the updates made to the CD 410. The primary differences between the documents is the form of payment with the 415 offering a lump sum version of the CD 410.

* This publication is designed to provide information in regard to the subject matter covered. It is published with the understanding that the publisher, endorsers of ConsensusDocs and contributors to this Guidebook are not engaged in rendering legal, accounting, or other professional services. If legal advice or other professional advice is required, the services of a competent professional person should be sought.

—From the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations

Comments regarding ConsensusDocs 431[†]

Lean Design-Build Addendum

Overview

The ConsensusDocs Lean Design-Build Addendum is most applicable for parties that are interested in getting the benefits of lean methods, tools and techniques, but are not ready or able to use an integrated project delivery (IPD) agreement, like the ConsensusDocs 300, which is also called an integrated form of agreement (IFOA). The underlying prime agreement that the Lean Design-Build Addendum coordinates with is a Design-Build Agreement, such as the ConsensusDocs 400 Preliminary Design-Build agreement, the ConsensusDocs 410 Design-Build Cost of the Work with a GMP Agreement, or the ConsensusDocs 415 Lump Sum Design-Build Agreement. Any of the ConsensusDocs 400/410/415 agreements coupled with this Lean Design-Build Addendum would be considered an "IPD-lite" or "IPDish" agreement. Using the Lean Design-Build Addendum helps remove contractual obstacles to lean practice and better aligns the contractual liabilities and responsibilities of lean practitioners with the team's desire to operate in a collaborative fashion.

Many of the lean methods adopted in the Lean Design-Build Addendum are antecedents to the development of IPD. They were developed beginning in the 1990s through the pioneering work of Greg Howell, Glenn Ballard, and others, who were trying to solve the problem of rampant waste in construction. The last 20 years have seen a substantial refinement in these methods, and their extension into design. While most of the headlines these days center on IPD, there has been a much more rapid assimilation of lean methods within the industry. The purpose of the Lean Design-Build Addendum is to provide a tried and tested framework for teams seeking to implement lean methods in a design-build prime contract. This standardization will promote best practices more broadly and anchor those practices in the parties' contracts.

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—From the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations

Article 1 - General Principles

Unlike an IPD agreement, which provides for at least the Owner, Design Professional and Constructor to be in a single contract with each other for the Project, the Lean Design-Build Addendum anticipates a single prime contract between the Owner and a Design-Builder with separate contracts between the Design-Builder and its subcontractors and consultants. The Design-Builder may be the Constructor (also commonly be referred to as a General Contractor or Construction Manager), in which case it would subcontract to the Design Professional; or the Design-Builder may be the Design Professional (which is the architect or engineer of record) and subcontract to the Constructor; or the Design-Builder could be a joint venture of the Constructor and Design-Professional. Regardless of overall contract structure, Article 1 mandates the incorporation of the Addendum in the prime contract with the Owner and in the lower-tier contracts with subcontractors and consultants. Importantly, Article 11 does provide that the Lean Design-Build Addendum controls over conflicting provisions in whatever contracts incorporate it.

Article 2 – Definitions

The Lean Design-Build Addendum reflects, and helps standardize, a common lexicon for the industry. By formalizing currently used words and expressions, it anchors a standard for expressing terms and concepts. In doing so it helps eliminate uncertainty that can grow through conflicting terms and uses that would otherwise inevitably occur. This common understanding of critical terms will provide a better foundation for continued growth of effective lean construction.

2.1 A description of an A-3 report can be found at: https://bit.ly/2Qanf9L.

Article 3 - Project Fundamentals

Project Fundamentals set forth both the objectives and practical requirements in which the lean process is rooted. It establishes as fundamental principles (a) collaboration among all team members; (b) avoiding working in silos, but rather through a network of commitments; (c) focusing on and optimizing the whole, as opposed to individual components; and (d) promoting continuous improvement. Each level of the team, Owner, Constructor, Design Professional, and other team members, make tangible commitments to cooperate. Owner involvement is express.

The concept of reliable commitments arose out of a seminal insight of the early pioneers of lean construction. In studying Toyota's lean manufacturing, Greg Howell and Glen Ballard discovered the construction analogue to "just in time" delivery in manufacturing - the work that is delivered from one trade to another on a construction site. They found that reliable handoffs of work between trades was the single most important indicator of a successful project. They determined reliable handoffs to be work that is delivered in the condition promised at the time promised. To facilitate these handoffs, the concept of reliable commitments was developed. This was one of the first lean construction methods developed. Its articulation has changed very little since it first appeared in the early 2000s. This and its continued endurance are a testament to its power and effectiveness, which are only enhanced by its elevation to a contractual requirement.

Article 4 - Project Team Leadership

One of the first tasks upon initiating a lean project is to build a high-performance team capable of managing in a challenging, fast-paced environment. While the concept of building project teams is nothing new, for lean project management there are additional considerations that reflect not only team member characteristics but also the underlying organizational structure. Many of the team traits that need to be considered for success with Lean are similar to the traits that are relevant for IPD and include the ability to quickly adapt to solve problems and keep focused on the next challenge. In addition to problem solving and focused attention, other important team traits include resiliency, collaborative skills, mutual trust, respect of team members and their firms, clear communication, accountability, and transparency.

The project leadership team or Core Group, as noted in the Addendum, builds and manages all other project teams, and is responsible for developing a positive team culture. The Core Group is comprised of representatives from the Owner, Design Professional, and Constructor (and Design-Builder, if it is a separate entity from Design Professional and Constructor) who have authority from their company to make day-to-day project management decisions. (If the Design-Builder is a fully integrated company with both design and construction management done in-house, then the Core Group would be comprised of an Owner representative, an overall Design-Builder representative, a Design-Builder employee responsible for overall design and a different Design-Builder employee responsible for overall construction.) Each of these individuals must be a good fit for a lean project: they must be well trained in lean principles and capable of promoting positive working relationships amongst all teams within the group. If there is not a positive working relationship and changes need to be made for this or any other reasons, the team needs to ensure the new project team member is equally qualified and will support a positive team culture. The Core Group is not necessarily limited to the primary representatives, and can be expanded, as appropriate. As the project progresses, additional qualified individuals who are a positive fit for the Core Group can be added and may represent subcontractors, suppliers, and other key firms or stakeholders participating in the project. These individuals will also play important roles in the functional teams that support smaller tasks within the project and that make the day-to-day decisions necessary to manage the work flow processes and scheduling. In all cases, the functional teams also need to have clear communication both within their functional team, and to coordinate with other functional teams. Communication is key to identify areas for continuous improvement and the elimination of waste.

The Core Group guides the project and meets regularly to review the project progress and make key decisions, one key to successful decision-making is to ensure everyone is aware of their roles and responsibilities. A well-documented process for decision-making includes an outline of all reasonable options, an analysis of the comparative advantages for each option, and documentation of the final decision. This process provides a structured framework and helps to remove emotions from key decisions. The Core Group should work to have consensus on all decisions and avoid disputes. If there is a dispute, the group needs to work through the issues within the Core Group; the dispute resolution process included in the contract documents should be considered a last resort.

The Core Group serves as leaders and need to develop and sustain high performance teams. While the Core Group members need to stimulate excellence amongst all employees, it is important to recognize that employees are under the direct supervision of their own firm, and do not typically report to the Core

Group as a whole. The Core Group doesn't command and control specific employees.

The Core Group will evaluate the project's team performance as a whole and work for continuous improvement under Lean principles. Additional information about the performance improvement program is detailed under the §4.5.3. Note that the performance improvement program could be a vehicle for incentive compensation for the project team. The Addendum doesn't directly address incentive compensation, but it certainly is possible for a project team to develop a performance improvement program that gets tied in some way to incentive compensation. For example, the performance improvement program will establish key performance metrics to gauge performance and stimulate continuous improvement. To incentive improvement performance against these performance metrics, the project team could enter into an amendment to their contracts that provides for Owner-funded award fees that the project team earns based on how well they meet the KPIs. If a project team mutually agrees upon some system of incentive compensation, then they would need to address that through an amendment to their respective project contracts.

Article 5 - General Team Responsibilities

§**5.1 Project Planning & Schedule**: The Lean Design-Build Addendum specifies use of a planning system that incorporates pull planning principles in a structured way. Most, if not all, lean construction projects use a project planning process called the Last Planner® System of Production Control, and § 5.1 of the Addendum allows for the use of the Last Planner System or its functional equivalent in fulling the contractual requirements for planning and scheduling. The Last Planner System consists of five phases which are represented in §5.1.2 through §5.1.5 of the Addendum. The five phases are 1) a milestone schedule (also called "master planning"), 2) phase planning, 3), "make-ready" look ahead plans, 4) weekly work plans, and 5) methods for recording, measuring and improving the reliability of the plans. For more information on pull planning, see this 2014 paper by leading trainers on pull planning.

One of the key techniques used in lean construction is called "pull planning." Pull planning is an essential element of incorporating lean construction into the management of the project and is defined in §5.1.1. In pull planning, the "last planners" engage with each other to work out a plan for each project that includes the best of available alternatives that optimize the project as a whole rather than just for individual participants. These last planners should be those with a deep knowledge of what their staffs are good at and what they are not. They also must know the scope of the work for each phase. This includes the materials, hours planned for the work, and equipment or information that is available to them or is needed. In addition, each must know the work required of the other team members for the phase in question. Through this understanding, the last planners can make requests and negotiate handoffs during the pull planning conversation, leading to reliable commitments as to delivery of specific units of work.

Finally, to be successful, the last planners must know the conditions of satisfaction of the internal and external "customers" of their completed unit of work.

With this knowledge, the last planners collaborate to create a schedule for the project. This process is defined in §5.1.6. They start with each desired phase goal and work backward to define each task required of each participant to reach that goal. Often, project teams will create this schedule with sticky

notes containing each day's tasks where each participant has a different color. The end-to-beginning planning process can involve a lot of movement of sticky notes on the calendar as trade-offs are negotiated to facilitate the best outcome. Handled properly, each delivery of work or material is "pulled" forward for performance just in time to allow the next performance to begin. In this fashion, work is delivered reliably from one participant to the next. This process is used to create each type of schedule identified above beginning with the milestone schedule, then phase planning, "make-ready" look ahead plans, and finally, the most detailed, weekly work plans.

The weekly work plans are the workhorses of the Last Planner System. As the name indicates, weekly work plans are prepared on a week by week basis. All assignments to be completed in a given week are contained on the weekly work plan. The project team determines whether an assignment has been completed as scheduled. For those that are not completed as scheduled a reason is assigned.

One of the most important tasks in the Last Planner System is calculating the Plan Percent Complete (PPC). The PPC is the percentage of activities completed as promised/scheduled and is used to track the reliability of the scheduling process. PPC can be broken down by geographic area on the project site, by subcontractor, by trade, or any number of other variables that the project team wishes to track. The Core Group monitors the PPC throughout the project. If the PPC drops or is less than the project team targeted, an analysis is performed to attempt to improve the accuracy of the scheduling process or, if necessary, to improve the performance of a certain trade or team actually performing the work. To help first-timers gauge PPC performance, it is typical for project commitments early in a project to have a PPC in the range of 40-60% and to improve to the 80-90% range when the team is implementing pull planning and lean methods well.

§**5.2 Project Team Communications**: The essential lean tool used for project team communications is the Project Communications Protocol, which is defined in §5.2.1. The Project Communications Protocol is intended to create detailed instructions for the project participants to use in all communications related to the project. The Communications Protocol will include a meeting matrix identifying who is required at which meetings and how frequently they are held. It will also include considerations for when project participants are permitted to communicate directly with one another, and which parties should be contemporaneously copied on those communications. The Addendum does not explicitly address co-location of project team members, since the approach to that will vary greatly among different projects. However, the Communications Protocol, with its meeting matrix, is a good vehicle for the Core Group to define the co-location approach for project team members. Co-location (a/k/a the "big room") is an effective strategy to streamline communications, improve effective decision-making, optimize team performance (especially in the design process), and strengthen the relationships of team members. Co-location can range from full-time co-location of key personnel for the duration of the project, to part-time co-location during specific time frames, to periodic co-location events, depending (ideally) on what works best for that project.

This section also addresses how to determine a protocol on electronic data sharing. The Addendum references the ConsensusDocs 200.2 Electronic Communications Protocol Addendum (CD 200.2) for this purpose, but the team could create its own electronic communications addendum. The CD 200.2 facilitates the accurate and secure transmittal of electronic communications and data on the project.

Article 6 - Services Prior to Construction

Checking-the-Boxes. To allow the Lean Design-Build Addendum to apply to a wide variety of project scenarios, Article 6 uses check-boxes to determine which sets of pre-construction lean features will apply to the parties. The Addendum does not require that a project team provide all of the services in Article 6 (that is, unless the parties check all the boxes in Article 6). Also, note that the Addendum doesn't have a check-box for Construction Phase activities. If a team is going to use the CD431, then they're certainly going to using it for the construction phase.

Let's illustrate with three examples. In this first example, the Owner desires a robust lean implementation from the beginning of the project. They determine that they don't need a joint worksite investigation because of the Owner's previous extensive site due diligence, so they don't check the box for §6.1 (Joint Worksite Investigation). However, the team wants to provide for the evaluation of the Owner's Program, developing a Validation Study, extensive cost modeling by Constructor throughout the project, an integrated design process using Target Value Design principles, and a major risk identification and management effort. So, they check the boxes for Sections 6.2 (Evaluation of Owner's Program), 6.3 (Validation Study), 6.4 (Cost Modeling), 6.5 (Integrated Design Process and TVD), and 6.6 (Risk Identification and Management).

In example 2, the Owner has passed the point of validation when it determines to pursue Lean project delivery. They bring on the Design-Builder and its team from the beginning of design to engage in an integrated design process using Target Value Design, together with the continuous cost modeling of the constructor and the team's risk identification and management effort. Then they will continue on to deploy Lean methods during the construction phase. So, they check the boxes for Sections 6.4 (Cost Modeling), 6.5 (Integrated Design Process and TVD), and 6.6 (Risk Identification and Management).

For example 3, the Owner didn't discover lean construction until the project was mostly designed. The Design-Builder and its team are willing to participate in a lean project for the construction phase, so Owner and Design-Builder negotiate a CD431 to incorporate into prime contract by amendment that provides for an initial risk identification and management effort and then proceeds to the Construction Phase's lean deployment. So, they only check the box for §6.6 (Risk Identification and Management).

Each of these examples represents a very different type of Lean deployment, but each can be facilitated through the Lean Design-Build Addendum.

§**6.1 Joint Worksite Investigation**. One of the first collaborative acts between the Owner, Design-Builder, Design Professional, Constructor and its key subcontractors is to engage in a joint worksite investigation. The purpose of the joint worksite investigation is to gain the necessary information for proper development of the project design. As part of the process, this cross-disciplinary team should: (i) review all of the existing site information available and verify observable existing conditions within any

existing structures and at the site, and notify Owner of the need to view inaccessible spaces (e.g., spaces containing hazardous materials, hard lid ceilings, buried utilities, occupied spaces, etc.), (ii) determine whether additional testing and studies are required, and (iii) document site-related information necessary for development of the construction documents. The outcome of the joint investigation is a report to the Owner of the Core Group's findings and recommendations. Because the outcome of the joint worksite investigation impacts the overall development of the design, this investigation should occur as early as possible in the design process. Note that the outcome of the joint investigation will also influence decisions about the level of contingency to include in cost estimates and the contract price.

§**6.2 Evaluation of Owner's Program**. If the Project Team performed a joint worksite investigation, the information gained from the Project Team during the joint worksite investigation should be reviewed and vetted in conjunction with the Owner's Program. During this evaluation process, the Core Group and other key Project Team members will meet and confer on the project requirements, determine whether additional information, testing, or studies are necessary for proper development of design, and consider alternative design approaches, concepts, and technical requirements to help ensure that the approved Owner's Program will ultimately deliver best value to the Owner. At the conclusion of this process, the Project Team delivers a written evaluation of the Owner's Program to the Core Group identifying any recommended deviations from the Owner's Program.

§**6.3 Validation Study.** The purpose of the Validation Study is to determine whether the project as defined in the approved Owner's Program can be achieved for the Allowable Cost. The Validation Study must include a proposed Expected Cost jointly developed by the Design Professional and its consultants, Constructor and its key subcontractors, and a proposed project schedule that includes key milestone dates for design development and construction. The Validation Study, once approved by the Core Group, is presented to the Owner for review and approval. Through the Validation Study process, the Owner is able to make an informed decision on whether to move forward with the project based upon carefully vetted information gathered and formulated through the collaborative engagement of the key Project Team members before incurring costs for detailed design. At the conclusion of this process, the Owner will provide written notice to the Core Group indicating whether it accepts the Validation Study and desires to move forward with the project as contemplated in the Owner's Program. Alternatively, changes to the Owner's Program or Allowable Cost could be directed if the original program could not be validated.

§**6.4 Cost Modeling**. Earlier in the design process and before construction, the Constructor will collaborate with Owner's project manager and the Design Professional to establish a cost model that includes a line item for projected cost of design (developed by the Design Professional) and a breakdown for the cost of construction including contingency and allowance items (developed by Constructor and key subcontractors). Unless the Addendum does not check the box for §6.3 or §6.5, the initial cost model should total the approved Expected Cost. The cost model will be used throughout the design and construction process to track costs expended to date, indicate variances, and provide projections for completion of design and construction. During the design process, as part of preconstruction and design-assist services, the Constructor and its key subcontractors will provide rapid cost estimates for portions of the Work and systems and components under consideration for incorporation into the design. The Core Group will establish milestones for updating and reconciling the cost model to assure that the overall cost of design and construction is within the approved Expected Cost (if the box for either §6.3 or §6.5 was checked) or else another cost metric established by the Owner.

§6.5 Integrated Design Process and Target Value Design.

§**6.5.1 Goal.** Target Value Design (TVD) is a transformational approach to an integrated and collaborative design process. TVD is a design process that requires Project values, cost, schedule, and constructability to be basic components of the design criteria and uses cost targets to drive innovation in designing a project that provides best value to the Owner. Successful project teams engage in TVD to help ensure that (i) the Project design is progressing and may be completed within Owner's Program and approved Expected Cost and Project schedule, (ii) all Project Team members' understand the design requirements, including the design intent and all technical requirements of the Project, before construction, and (iii) field conflicts and requests for information or clarifications ("RFIs") after construction starts are substantially reduced.

§**6.5.2 Integrated Design Principles.** In order to accomplish the TVD goals, the design professionals must recognize that design should not occur in a silo and value, cost, schedule, and constructability are all basic components of an integrated design process. The Constructor and its key subcontractors must engage in meaningful constructability reviews and accurate, rapid, cost evaluation during the design process as part of their respective preconstruction and design-assist services. TVD estimates should include life cycle cost analysis for systems being considered, design details as they are being developed, and portions and components of the construction work deemed necessary by the Core Group for accurate cost modeling. Also, the Project Team should determine the extent of design-assist or design- build services from key subcontractors so that the design effort is coordinated and seamless. As noted above, the cost model should be updated throughout the design process to demonstrate whether the design is proceeding within the Expected Cost or whether adjustment to the design are necessary to bring the project cost back within the Expected Cost. Having access to this information while the design is progressing eliminates cycles of design rework and waste because the constructability and cost information allows the Owner and Project Team to make informed decisions about design before incorporating details into the design documents, allowing the design to progress within the Expected Cost and Project schedule.

§**6.5.3 Pull-Based Design Production.** In order to accomplish TVD in an organized and timely fashion, the Project Team should engage in pull-based design production. Pull-based techniques require concurrent design amongst the various disciplines and management of workflow. Design Professional and its consultants, together with Constructor and its key subcontractors providing design-assist or design-build services, work backwards from the milestone dates established in the project Schedule, creating collaborative design phase schedules. As part of the collaborative phase schedules, design tasks and completion dates are set based upon requests from a Project Team member to others upon whom the requester's portion of design service is dependent, and receipt of reliable promises made by the upstream performer about when it will finish the portion of design or information needed (such as cost or constructability) to make an informed design decision, and the agreed upon hand-off criteria in order to enable the downstream designer or design-build subcontractor to begin their respective portions of the design. Often, Project Team members will create this schedule with sticky notes containing each day's tasks where each participant has a different color. The end-to-beginning planning process can involve a lot of movement of sticky notes on the calendar as trade-offs are negotiated to facilitate the best outcome. Handled properly, each delivery of service or work product is "pulled" forward for performance just in time to allow the next performance to begin. In this fashion, work product and design services are delivered

reliably from one participant to the next. Direct communication and coordination during this process allow the Project Team members to make reliable promises to each other and discuss and negotiate the hand-off criteria. To help facilitate this, the Core Group establishes documentation standards for the Design Documents.

§**6.5.4 Building Information Modeling Approach.** Before commencement of design, the Core Group and other key Project Team members should meet and determine a Building Information Model ("BIM") protocol. The team should consider the following in developing the protocol: (i) what building components and systems should be modeled and the level of development that is appropriate for each based on the complexity of the Project, and what information is more efficiently developed and conveyed using 2D design tools; (ii) where and how the BIM will be maintained and identification of a BIM administrator; (iii) hardware and software requirements that will be used to develop the BIM; (iv) protocols for naming conventions, data structure, version control, gate keeping and archiving; (v) establishing a common coordinate system; (v) who will control the BIM and information within specific models or model elements; (vi) how existing site information will be incorporated; (vii) when and how information regarding constructability and cost will be derived; (viii) if and how RFIs, clarifications, shop drawings and submittal information will be incorporated; (ix) when and how clash detection will occur; (x) how the BIM will be updated; (xi) whether there will be a record model. If BIM is being utilized on the Project, the Project Team should consider conducting a BIM workshop after the Validation Study (if any) has been approved and before design services get very far along. The ConsensusDocs 301 BIM Addendum or other BIM protocol should be amended into the agreements of the applicable Project Team members.

§**6.5.5 Document Review.** Fundamental to the integrated design process and TVD is continuous document review. As the design is developing, the Design Professional and its consultants, Constructor, and key subcontractors should continuously review design documents for errors, omissions, coordination, constructability, and compliance with the approved Owner's Program. This review is done in the capacity for which each Project Team member is licensed. Having a cross-functional team review the documents will substantially reduce errors and omissions and help prevent constructability issues and field conflicts down the road, and also flush out whether additional testing or inspection of existing conditions is necessary, etc. Errors, omissions, and inconsistencies should be timely addressed by the parties most knowledgeable and capable of resolving. As part of this process, Project Team members will work with the Owner and end-users to evaluate design options and determine best design layout and solutions. Constructor and its key subcontractors will alert the Core Group and Project Team to design options or issues that will increase contingencies, allowances or the overall Expected Cost or duration of the Project schedule.

§**6.5.6 Value Analysis Strategy.** "Value engineering" (VE) is not the same as TVD and should not be confused. Traditional VE process assumes a non-integrated design approach in which design is produced by the design professionals in isolation after which the constructor and its key subcontractors review and offer VE comments or potential solutions due to cost overruns. Because traditional VE is provided after the design is produced, incorporation of VE items usually requires additional design services to incorporate or requires design rework in the case where the design has progressed too far without cost evaluation and the Project is overbudget. This kind of VE approach is inherently wasteful. In contrast, TVD requires the Design Professional and its consultants, the Constructor and its key subcontractors to work in tandem while the design is developing, taking into consideration value from multiple perspectives. Early involvement of the Design Professional and its consultants, Constructor and its key subcontractors is essential to the TVD process and should be included in the value analysis strategy. The strategy should also include carrying multiple design options forward and deferral of design decisions until the last responsible moment based on the pull scheduling requirements. The value analysis strategy should include each of the integrated design processes discussed in §6.5 to encourage deep collaboration, best value, and optimal design solutions into the design development.

§**6.5.7 Target Value Pricing**. Target value pricing is part of the TVD process and should be addressed in the Project Team's value analysis strategy. Through rapid cost evaluation during design development, the Constructor and key subcontractors are able to price design alternatives, options, and systems as well as the overall design as it progresses. The Owner's and Project Team's goal is for the design to progress at or below the Expected Cost and within the Target Cost and Project schedule. In order to achieve maximum value and drive innovation and creativity into the design, the Target Cost should be set below the Expected Cost and early during the design process (e.g., end of schematic design or before completion of design development documents); if the Project Team is providing a Validation Study, then it is established in the approved Validation Study. The cost model will be updated throughout this process to track cost and help ensure that the design is being developed at or below the Expected Cost or Target Cost (as applicable) and is still on schedule. If at any time during the design process, the Expected Cost or Target Cost (as applicable) is exceeded, the Owner and Project Team members will collaborate on design and construction solutions to bring the projected actual cost back within the Target Cost. §6.5.7.2 addresses how escalation is handled, and §6.5.7.3 provides a set of criteria for the Core Group to use in developing TVD protocols.

§**6.5.8 Value and Constructability Analyses.** Throughout the design process, the Project Team should engage in set-based design in order to drive innovation into the Project. Project Team members or TVD Clusters work to identify options for reducing capital or life cycle costs, improving constructability and functionality, or enhancing operational flexibility consistent with Owner's Program, and within the

Expected Cost or Target Cost (as applicable) and the overall Project schedule. Viable options or value analysis proposals (VAPs) are carried forward concurrently until eliminated through use of Choosing by Advantages or an alternative vetting process. During this time the design stays flexible while the Project Team tests assumptions and selects the best option for the Project. The VAPs are documented in an A-3 Report and should (i) evaluate various design options, create savings of time or money in designing, constructing, or operating and maintaining the Project, and (ii) increase quality, constructability, labor efficiencies or other measures of values that are cost-effective.

In §6.5.8.1, the reference to the "best interests of the Project" is a standard that would, for instance, discourage someone from over-designing a portion of the project to practice "defensive architecture."

§**6.6 Risk Identification and Management.** Early in the design process, the Project Team members will identify material Project risks. This is accomplished through one or more workshop sessions, and should involve all relevant Project Team members. These workshop sessions are to be led by a facilitator chosen by the Core Group. The process for identifying project risk may involve a number of approaches including matrix/mapping, brainstorming, check list, and other appropriate techniques. Most construction organizations rely on a combination of intuition, judgment, and experience to identify and manage construction risk. More structured risk assessment, whether it be in the form of decision analysis, sensitivity analysis, Monte Carlo simulation, or other recognized approaches, are also grounded in the Project Team member's experience and intuition. Collaborative approaches recognize that there is value in the collective experience and intuition of all relevant Project Team members. Upon identification of project risks, the Core Group ranks and scores the risks, paying particular attention to potential cost and time impacts to the Project. Once project risks have been ranked, the Core Group develops a risk management plan or risk registry for addressing the identified risks subject to Core Group approval. Throughout the design and construction process, the risk management plan or risk registry is updated to address newly discovered risks. Contingency plans are developed for addressing identified risks and responsibilities for managing specific risks are assigned.

Article 7 – Construction Phase

§**7.1 Quality Assurance and Quality Planning:** One of the most important steps in achieving lean construction's primary goal of minimizing inefficiencies is to ensure that the work is performed properly the first time. As with most other lean construction functions, planning is the key. In order to accomplish that objective, the Lean Design-Build Addendum requires two quality-related plans, the Built-in Quality Plan and the 5S Plan. §7.1.2 describes the Built-in Quality Plan. The primary participants in preparing this plan are the Design Professional and the Constructor with participation of certain Subcontractors as needed. The Built-in Quality Plan is intended to address issues such as the following: (1) a process for ensuring the contract documents clearly communicate conditions of satisfaction; (2) a process for standardizing work practices and associated training; (3) identifying agreed levels of quality, using efforts such as mockups, first run studies, and early completion of standard work units; (4) a method for managers to review early work product; (5) a process to integrate quality review and scheduling; (6) a process to ensure quality when handing off work; (7) procedures to immediately address quality failures;

and (8) standards for measuring and tracking quality performance.

The 5S Plan is prepared by the Constructor and Subcontractors and focuses on site operations. This plan is submitted to the Core Group for approval prior to the construction phase. The Plan is meant to apply the lean principle of “5S” to construction operations. Applying 5S helps to minimize inefficiencies in construction activities. The 5 S’s are Sort, Set in Order, Shine, Standardize, and Sustain. The first step in the process, Sort, contemplates removing unnecessary tools, materials, and equipment to allow workers

to be as efficient as possible. Set in Order involves clearly labeling and organize the work space so that needed items are easily found and close to the place they are used. The third, Shine, is to remove trash, dirt, dust, or other impediments to efficient work spaces on a continual basis. Standardize, the fourth S, promotes standardizing as many tasks as possible. Finally, Sustain is the process of empowering workers to take responsibility for their space and to continue to improve their efficiency.

§**7.2 Logistics Plan:** Another important aspect of lean construction is "just in time" delivery. The Constructor must prepare a logistics plan in which materials are ordered and delivered in an effort to minimize handling costs, obstructions on the site, and the use of the space on site for storage.

§**7.4 Requests for Information:** The Lean Design-Build Addendum seeks to revolutionize traditional methods of addressing requests for information (RFIs). First, the very need for RFIs is minimized when the Owner brings the Constructor and key subcontractors into the project during the design phase so that they have a high level of understanding of the design. When the need for a clarification does arise, §7.4 provides for those seeking clarification to attempt to resolve the issue first by face-to-face or telephone communications. If the clarification can be made at that time, the clarification is documented and communicated to the rest of the Project Team. If the clarification can not be made at that time, the participants agree on how the issue will be resolved by identifying the tasks required, who is responsible for completing the task, and a schedule for completion of the tasks. The goal is for RFIs to be issued to document solutions rather than raise questions. Requests are also made directly from the requesting team member to the team member that is best able to answer, rather than having to route through the contractual "chain-of-command."

§**7.5 Planning for Completion and Close-out:** The Project Team must prepare a phase plan for project completion that addresses completion, commissioning, and close-out activities. The goal is to eliminate the traditional punch list process. The purpose of the plan is to ensure that the Project satisfies the conditions of satisfaction established in the Contract Documents at the time of Substantial Completion.
The plan may include methods for completion of minor incomplete items, control of personnel movement through certain areas of the Work, photos or video recording of completed work, and methods for logging and tracking completed and minor incomplete items.

The Core Group inspects the completed project to determine Substantial Completion and approves the Constructor's draft of the Certificate of Substantial Completion that is submitted to the Owner for acceptance.

ASA Only Comments

The following comments are from ASA of America

ASA membership advises that while Pull Planning (Section 6.5.3) is often used successfully, it can be a troublesome to forensically review and document after the fact. It often results in two sets of schedules being run – a pull planning set and a true CPM set in the background documenting the pull-planning.

When used correctly and truly collaborated with General Contractors, it can benefit project delivery. When not used correctly, it can produce severe consequences for the Subcontractor.

Comments regarding ConsensusDocs 450*

Agreement Between Design-Builder and Subcontractor

Overview:

This document is similar to the ConsensusDocs 750 Subcontract and it is recommended that you look at additional commentary associated with this document for completing the 450. The main differences in the 450 reflect the differences in working with the design-build project delivery method.

Conflicts (section 2.5): The "Extent of the Agreement section from what was section 2.5 has been moved to section 13.1 and added to all ConsensusDocs agreements, including short forms.

Section 2.6.1.1, exhibit E: This exhibit should state specific responsibilities of the Subcontractor, and Design-Builder.

Emergencies (section 3.17): Formerly was located in section 7.8.

Permits, Fees, Licenses and Taxes (section 3.18): Section 3.17 Assignment of Subcontract work was moved to the Misc. section in 12.2.

Layout Responsibility and Levels (section 3.21): Section 3.21 Warranties was moved to section 3.13.

Article 6 (c): If appropriate the following incentives clause is suggested:

To extent awarded in the prime agreement and Design-Builder has received such payment from the Owner, subcontractor shall receive an incentive award based upon early completion, provide Subcontractor adequate notice prior to Substantial Completion.

Time of Payment (section 8.2.5): What constitutes reasonable is a controversial subject that varies from state to state based upon state statues and case law.

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Section 8.2.7.2: Insurance coverage implies that there is a positive indication that there is an acceptance of liability for the loss.

Minimum Insurance Limits (section 9.2.2): The ConsensusDocs 200 article 11 on insurance spells these requirements out in the contract, but because most Constructors/General Contractors provide these requirements as a standard attachment it is handled differently in this agreement.

AGC Comments for ConsensusDocs 450:

(Additional comments by AGC can be found on AGC's website at members only page of http://www.agc.org/galleries/members-only/AGC-only_ConsensusDocs_Guidebook.pdf for many of the ConsensusDocs documents.)

Comments regarding ConsensusDocs 460*

Agreement Between Design-Builder and Design-Build Subcontractor
(Subcontractor Provides a GMP)

Overview:

This document is similar to the CD 450 Design-build subcontract, however, the payment provisions are different to reflect when a Subcontractor provides an element of design and is paid on the basis of the Cost of the Work with a GMP.

Subcontract Work (section 2.2): Note that section 2.2 of the ConsensusDocs 460 addressing design obligations has now been moved to section 3.8.1.

Conflicts (section 2.5): The "Extent of the Agreement section from what was section 2.5 has been moved to section 13.1 and added to all ConsensusDocs agreements, including short forms.

Section 2.6.1.1, exhibit E: This exhibit should state specific responsibilities of the Subcontractor, and Design-Builder.

Emergencies (section 3.17): Formerly section 7.8.

Permits, Fees, Licenses and Taxes (section 3.18): Section 3.17 Assignment of Subcontract work was moved to the Misc. section 12.2.

Layout Responsibility and Levels (section 3.21): Section 3.21 Warranties was moved to section 3.13.

Adjustment in the Subcontractor's Fee (section 6.2.5): If appropriate the following incentives clause is suggested:

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To extent awarded in the prime agreement and Design-Builder has received such payment from the Owner, subcontractor shall receive an incentive award based upon early completion, provide Subcontractor adequate notice prior to Substantial Completion.

Section 7.1: New language conforms with CD 200 section 8.1.2.

Time of Payment (section 8.2.5): What constitutes reasonable is a controversial subject that varies from state to state based upon state statues and case law.

Section 8.2.7.2: Insurance coverage implies that there is a positive indication that there is an acceptance of liability for the loss.

Minimum Limits of Insurance (section 9.2.2): The ConsensusDocs 200 article 11 on insurance spells these requirements out in the contract, but because most Constructors/General Contractors provide these requirements as a standard attachment it is handled differently in this agreement.

AGC Comments for ConsensusDocs 460:

(Additional comments by AGC can be found on AGC's website at members only page of http://www.agc.org/galleries/members-only/AGC-only_ConsensusDocs_Guidebook.pdf for many of the ConsensusDocs documents.)

ConsensusDocs®
BUILDING A BETTER WAY

Comments regarding ConsensusDocs 498*

Teaming Agreement for a Design-Build Project

Post Award Considerations (section 6.1): State law varies widely with respect to Design-Build licensing requirements and procurement laws. Some states may require the Team Member(s) and/or the Team to be licensed even prior to submission of the Proposal. Consequently, the Team and the principal design professional Team Member should take care to ensure that all licensing requirements and procurements statutes are complies with prior to submission of the Proposal and prior to entering into a contract with the Owner.

Such agreement may take the form of a design-builder/subcontractor agreement, a joint venture agreement, a limited partnership agreement or an operating agreement for a limited liability company.

Notices (section 7.8): User may want to incorporate the ConsensusDocs 200.2 Electronic Communications Protocol Addendum to facilitate the use of electronic communications.

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Comments regarding ConsensusDocs 500*

Agreement and General Conditions Between Owner and Construction Manager (Where the CM is At-Risk)

Exhibits (section 2.3.1.1): Consider, for instance, putting in an exhibit for Labor Relations setting forth any conditions, obligations, or requirements relative to labor relations and their effect on the Project. It is recommended to get legal counsel as appropriate for this issue."

Cooperation With Work of Owners and Others (section 3.5): This section was moved from 3.4.9 to match the order of subsections used in the ConsensusDocs 200.

Section 3.8.3 of the 2007 edition was deleted as the new section 3.11 now covers this issue. The language used in ConsensusDocs 200 is now more consistent with the CD 500.

Date of Commencement (section 6.1): It is common for the scheduled time period of commencement and the Agreement signing date to be different. Parties need to specify if this is the case for this Project. The default Date of Commencement will be the signing date of the Agreement.

Construction Manager's Fee (section 7.3): State whether a stipulated sum or other basis. If a stipulated sum, state what portion of the sum shall be payable each month.

Preconstruction Services (section 7.5): State whether a stipulated sum, actual cost, or other basis. If a stipulated sum, state what portion of the sum shall be payable each month. Preconstruction services are spelled out in article 3, specifically sections 3.2 and 3.3.

No Obligation to Perform (section 9.1.3): This language was taken from section 7.7 of the ConsensusDocs 750, and now appears in other ConsensusDocs agreements.

Cost of the Work Estimate (section 9.2.2): Cost of the Work estimate is subject to 3.6.5, which provides for audit rights and reasonable skill and judgment in preparing such.

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Incidental Changes (section 9.6): This language is taken from section 7.9 of the ConsensusDocs 750 Subcontract agreement. This added language provides for greater clarity for the project participants and provides a consistent approach across the ConsensusDocs family of contracts.

Notification of Cancelation Insurance, ACORD Form Change (sections 10.2.1 and 10.2.4): The CD 500 was modified in April of 2012 to reflect updated language which was previously suggested in the ConsensusDocs Guidebook starting in September 2011.

Section 10.2.1 In the 6th line, after the "and broad from property damage." insert, "The Constructor shall maintain completed operations liability insurance for one year after Substantial Completion, or as required by the Contract Documents, whichever is longer.

Generally, construction contracts require that insurance policies include at least 30 days advanced written notice to the owner (or an upstream contractual party) if an insurance policy is canceled or allowed to expire. This has generally been satisfied through certificates of insurance as evidence of compliance. The Association of Cooperative Operations Research and Development (ACORD), the licensing company for insurance forms, has amended their certificate requirements (*e.g.* ACORD 25). Consequently, contractors and subcontractors may no longer be able to received certificates of insurance language that proclaims that the insurance company or insurance broker, should any policies be canceled before the expiration date thereof, "endeavor to mail 30 days written notice to the certificate holder." Therefore, contractual requirements that 30 days advanced notice be included in insurance policies may not be commercially available and altering ACORD forms to purport to do so may run afoul of state law. Consequently, current contract language addressing notice of cancelation for insurance policies no longer reflect the reality in today's construction marketplace.

Consequently, a working group of experts drafted language which reflects reality, while giving the Owner sufficient notice. The language provides an owner timely third-party notification of cancelation by the insurance company as well as creates an obligation on a party to give notice of cancelation to the owner or other upstream party. Lastly, the drafted solution looks to limit costs as well time efficiency issues by allowing for electronic notification by the insurance company or the insurance broker as a designee depending who is in the best position to have such information and can give appropriate notice. In addition, reference to prompt notice is expected to be soon as practical, but in no case longer than 5 days from first learning of cancelation or nonrenewal of an insurance policy without replacement.

The ConsensusDocs proposed contractual solution differentiates between nonrenewal, cancellation, and other changes like lapses in coverage. In the case of active nonrenewal by the insurance company, the company or designee is in the position to provide advanced notice. In the case of cancellation, it is not possible for the insurance company to provide advanced notice so notice would be provided very shortly after cancellation occurs. The most common example is

late payment of premium. In this case, the company may cancel if payment is not received, however, if payment is received cancellation would be rescinded and any advanced notices would also have to be rescinded causing unwarranted confusion and inefficiencies. In other cases such as a lapse in coverage, only the design builder may be aware of the lapse and therefore only the design builders could provide that notice.

The ACORD form change impacts all standard contract documents, including the ConsensusDocs 200 and the AIA A201®, and most manuscripted construction contracts that contractually require insurance policies provide a 30-day advanced notice of cancelation. The ConsensusDocs notice of cancelation solution references where such language should be inserted into ConsensusDocs contracts (ConsensusDocs 200, section 10.2.4). However, the ConsensusDocs proposed solution is equally applicable to other contracts that are now out-of-date due to the ACORD change. The ConsensusDocs Guidebook is being updated to respond to today's changing construction marketplace in a timely fashion and was deemed too pressing to wait until the next revision cycle.

Here is how the language was modified.

Section 10.2.1 In the ___line, after the "and broad from property damage." insert, "The Construction Manager shall maintain completed operations liability insurance for one year after Substantial Completion, or as required by the Contract Documents, whichever is longer.

10.2.4 "~~The policies of insurance required under subsection 10.2.1 shall contain a provision that the coverage afforded under the policies shall not be cancelled or allowed to expire until at least thirty (30) Days' prior written notice has been given to the Owner. The Constructor shall maintain completed operations liability insurance for one year after acceptance of the Work, Substantial Completion of the Project, or to the time required by the Contract Documents, whichever is longer. Before commencing the Work, the Constructor shall furnish the Owner with certificates evidencing the required coverage.~~"

To the extent commercially available to the Construction Manager from its current insurance company, insurance policies required under subsection 10.2.1 shall contain a provision that the insurance company or its designee must give the Owner written notice transmitted in paper or electronic format: (a) 30 Days before coverage is nonrenewed by the insurance company and (b) within 10 Business Days after cancelation of coverage by the insurance company. Prior to commencing the Work and upon renewal or replacement of the insurance policies, the Construction Manager shall furnish the Owner with certificates of insurance until one year after Substantial Completion or longer if required by the Contract Documents. In addition, if any insurance policy required under subsection 10.2.1 is not to be immediately replaced without lapse in coverage when it expires, exhausts its limits, or is to be cancelled, the Construction

Manager shall give Owner prompt written notice upon actual or constructive knowledge of such condition."

Insurance Coverage Acceptance of Liability (section 10.3.2): Insurance coverage implies that there is a positive indication that there is an acceptance of liability for the loss.

Payment Delay (section 10.5): Note that subsection 10.2.1 defines payment due date.

AGC comments for ConsensusDocs 500:

(Additional comments by AGC can be found on AGC's website at members only page of http://www.agc.org/galleries/members-only/AGC-only_ConsensusDocs_Guidebook.pdf for many of the ConsensusDocs documents.)

Design Authority and Responsibilities (section 2.3 and 3.1.6): Under the *Spearin Doctrine,* the Party responsible for furnishing the completed design impliedly warrants its sufficiency and adequacy. *United States v. Spearin, 248 U.S. 132 (1918)*. Contractors need to carefully consider the effect of specifying any design responsibilities in this fill-in-the-blank section. Also, a Construction Manager should pay particular attention to the ramifications of performance specifications, equipment selections, preparation of shop drawings, and the like in the context of section 2.3. Similarly, post-award actions such as Construction Manager initiated value-engineering changes may alter the Parties' responsibilities for the adequacy of the design of a particular system on the Project. These actions may shift risk for design responsibilities to the Construction Manager. In addition, Construction Managers should be weary of modifications that add disclaimers to shift the risk of design flaws to a Party that was not responsible for the preparation of the design.

Definition of Overhead (sections 2.4.10 and 3.8.3): The definition of "Overhead" includes cost incurred on any insurance policy and costs related to the correction of defective work. Under many standard industry contract forms, these costs are considered Cost of the Work, subject to the Guaranteed Maximum Price. The Contractor may consider altering this provision if its cost structure does not classify this type of cost as an overhead cost.

Constructability Review (section 3.2.5): The Construction Manager should be aware of its obligation to perform a conscientious constructability review of the drawings and specifications and report any errors or omissions it discovers in the drawings or specifications.

Preconstruction Services (sections 3.3.1 and 7.5): The Agreement provides the cost of reconstruction Services is not included in the Guaranteed Maximum Price, but is to be paid as a separate payment. Often, Owners would prefer to have Preconstruction Services included in the Guaranteed Maximum Price and paid when the Project financing closes. The manner in which Preconstruction Services will be paid for should be addressed during the negotiations and the

Agreement should be reviewed or modified to confirm that it is consistent with the treatment of payment for Preconstruction Services agreed to between the Parties.

Clarifications and Assumptions (section 3.3.4): This provision requires the Owner to cause the Design Professional to revise the drawings and specifications to the extent necessary to reflect the clarifications, assumptions and allowances on which the GMP is based. The Construction Manager should diligently ensure these revisions are made to avoid confusion concerning the scope of the Work included in the GMP.

Anticipation of Design Development (section 3.3.5): The Construction Manager should be aware of the obligation imposed by this provision to provide in the GMP for further development of the Contract Documents if the Contract Documents are not complete when the GMP proposal is submitted.

Allowances (section 3.3.7): Allowances include the cost of materials, equipment and installation, but not Overhead and profit. Therefore, the Construction Manager should be aware that no mark-up will be allowed on the cost of allowance work.

Submittals (section 3.4.7): This provision calls for the Owner to review and approve Submittals. If the Owner is going to authorize the Architect/Engineer to review and approve Submittals, this provision should be modified to provide for that process.

As-Built Drawings (section 3.4.8): The Construction Manager should be aware of the requirement to designate the format to be used to prepare the as-built drawings called for by this provision.

Correction of Defective Work (section 3.7.4): The Construction Manager is to be notified of defective work discovered by the Owner following the expiration of the warranty period, but prior to the expiration of the applicable limitations period, and given the option to correct the defect in the Work or allow the Owner to proceed to correct the defect and charge the Construction Manager for the cost of correction.

Professional Services (section 3.16): When taking on design responsibility (See section 2.3), the Construction Manager should also consider the provisions of section 3.16 that obligate it to obtain professional services from licensed design professionals and to require the design professionals to stamp the design and carry E&O insurance as specified in section 11.8.

Digitized Documents (section 4.6.1): Electronic documents are increasingly being used by the industry. If electronic documents are to be the primary source of design documents for the Project, this provision may need to be modified to accurately describe the manner in which Contract Documents are to be provided. This provision requires a protocol to be established relating to the use of electronic documents. Construction Managers are strongly encouraged to use the protocol set forth in ConsensusDocs 200.2 to ensure that the risks associated with the use of electronic documents are clearly understood by all the Parties to a contract. At a minimum, the

200.2 can allow Construction Managers to rely upon e-mails and faxes, if the document is completed to indicate such a desire.

Labor Relations (section 5.4): This provision calls for the insertion of any special provisions that apply to labor relations for the Project. This provision should be completed to address the labor relations situation that will apply to the Project.

Schedule of the Work (section 6.2): This provision requires submission of Schedule of the Work prior to submission of the first application for payment. Depending on the size and complexity of the Project, it may not be feasible to prepare a complete Project Schedule prior to submission of the first application for payment. In that event, this provision should be modified to require submission of an interim 90 or 120 schedule prior to submission of the first application for payment, and a reasonable time for submission of the complete Project schedule.

Liquidated Damages (section 6.6): Section 6.6 is an optional liquidated damages provision, which allows the Parties to elect whether to provide for liquidated damages. Although AGC members generally view liquidated damages negatively, and AGC advises Construction Managers to take extreme caution before electing to provide any liquidated damages in this section, liquidated damages are generally a better risk management arrangement than leaving the Construction Manager potentially exposed for actual damages related to delayed completion, which can be highly speculative and excessive. Liquidated damages are intended to compensate the Owner (and serve as a substitute for) the Owner's actual delay damages, such as lost revenues. Thus, a contract that allows the Owner to recover liquidated damages, but otherwise bars both Parties from collecting consequential damages, is not truly mutual. If liquidated damages are elected, the Construction Manager should recognize that the limited mutual waiver of consequential damages provision contained in section 6.7 is not truly mutual. To make the provision truly mutual, it can be modified to also provide for a stipulated payment to the Construction Manager for delays in completion of the Project caused by the Owner. In addition, Construction Managers should not agree to liquidated damages measured from final completion because the Owner generally does not suffer delay damages following Substantial Completion because the Owner has beneficial use of the Project following Substantial Completion.

Note that this section contains blanks for the Parties to fill in to establish the appropriate dollar amounts (one tied to substantial completion and one tied to final completion) to be paid for each day completion is delayed if the Parties elect to provide for liquidated damages. If liquidated damages are included in the Contract, the Construction Manager may want to include a cap to the total amount of liquidated damages that may be assessed, which should be no more than a percentage of the fee to be earned by the Construction Manager.

Limited Mutual Waiver of Consequential Damages (section 6.7): The Parties agree to waive claims for consequential damages except for items specified in section 6.6. A mutual waiver of consequential damages benefits the Construction Manager if the waiver is truly mutual, meaning that liquidated damages are not specified in section 6.6. Regardless of whether liquidated

damages are included in the Contract, the waiver of consequential damages claims is beneficial to eliminating the potential for speculative unlimited claims that may be asserted relating to late completion or other problems that may develop with the Project. The waiver of consequential damages claims also benefits the Owner by eliminating potential claims by the Construction Manager for lost profits or the ability to pursue other work that may be caused by an Owner-caused delay to the Project.

Interim Directed Change (section 9.2.2): An Owner is required to pay 50% of cost estimate if dispute occurs over the cost to be incurred in performing an Interim Directed Change. This provision allows for payment of an important balance for a Construction Manager during the process of agreement on the cost to be incurred in performing an Interim Directed Change issued by the Owner.

Disputed Change (sections 9.3.3 and 9.3.4): If there is a dispute over whether certain work is included in the scope of the Project, these provisions indicate that the Owner must direct the Construction Manager in writing to proceed with the disputed Work, and must pay the Construction Manager 50% of the Construction Manager's estimated cost to perform the disputed work, pending resolution of whether the work is extra work. These provisions allow the Construction Manager some financial relief while the work is being performed, and create an incentive for both Parties to promptly resolve the question of whether the work is required.

Retainage (section 10.2.4.1): This provision is important so that Construction Managers may ensure that payment flows in a fair and equitable manner. The Owner is required to release retainage applying to work of early finishing Subcontractors upon acceptance of such work. Once the work is 50% complete, the Owner shall not withhold any additional retainage.

Retention Bond (section 10.2.4): This provision allows for the issuance of a retention bond or other security in lieu of retention. Retention bonds are not commonly used and would impose an additional cost to the Project. Depositing securities in escrow in lieu of retention is often used on state and municipal projects, and may be a viable vehicle for the elimination of retention.

Adjustment of Construction Manager's Payment Application (section 9.3.7): This provision allows an Owner to withhold payment if a third party files a claim, unless a Construction Manager furnishes the Owner with adequate security in the form of a Surety bond, letter of credit or other collateral or commitment sufficient to discharge such claims if established. Construction Managers should provide more specificity regarding adequate security. If there is a bond in place, no additional security should be required besides consent to payment by the Surety after acknowledging the existence of the claim. If it is a lien claim, the Construction Manager should be required to bond around the lien in accordance with applicable statutory requirements.

Some Construction Managers report abuse of the right to withhold payment, even after adequate security has been provided.

Punchlist Holdback (section 10.6.4): The Construction Manager may want to consider reducing the amount of the punchlist holdback to a lesser percentage, in the range of 125–150% of the cost of completing the punchlist work following Substantial Completion.

Indemnity (section 11.1): The Parties' indemnity obligation is limited to the extent of the Parties' negligence and covers only insurable risks, i.e., personal injury (including death) and property damage. Either Party is entitled to reimbursement of defense costs paid in excess of that Party's percentage of liability for the underlying claim. Construction Managers should be vigilant during contract negotiations, and should only agree to broaden risks covered (if requested by the Owner) with full knowledge and understanding of the impact of a broader standard on the Construction Manager's anticipated profitability and fee.

Indemnitees also include the Architect/Engineer, and "Others." The term "Others" should be defined or stricken if not defined, from the Construction Manager's standpoint, as it represents a potential broadening of the indemnity obligation to persons or companies who the Parties may not have actually intended to benefit from the indemnity.

Duty to Defend (section 11.1–11.3): Given the reciprocal indemnity obligations in the ConsensusDocs forms, and the pure comparative causation standard, there is not a duty to defend. A Construction Manager who is liable under the indemnity provision is obligated to reimburse the indemnified Party for that Party's legal fees to the extent of the Construction Manager's percentage of liability (which may as a practical matter create a willingness to defend). But as a matter of contract obligation, there is no duty to defend of the Construction Manager vis-à-vis the Owner, or of a Subcontractor vis-à-vis the Construction Manager. For some Construction Managers, the desire to invoke a Subcontractor's duty to defend will outweigh the Construction Manager's desire not to have to defend the Owner. Construction Managers will need to assess this aspect of the indemnity carefully, and discuss it with their risk managers or brokers, in order to assure themselves that the proper stance is taken on this issue relative to the Construction Manager's insurance program.

Terrorism Coverage (section 11.3.2.1): This provision authorizes the Construction Manager to obtain insurance coverage to cover the risk of physical loss resulting from Terrorism, if the Owner declines to provide the coverage. As an alternative, the Contract can be modified to shift to the Owner the risk of physical loss resulting from Terrorism.

Additional Liability Coverage (section 11.5): An Owner should decide whether to require the Construction Manager to purchase additional insured coverage for the Owner. If so, the Owner can then decide whether it wants to choose additional insured coverage or Owners' and Contractors' Protective Liability Insurance ("OCP"). If an Owner selects OCP coverage, an Owner may desire additional insured protection for completed operations in addition to OCP coverage. If agreed upon by the Construction Manager, this should be accomplished by striking "operations" in this section and then checking both boxes.

Any additional cost incurred by the Construction Manager for purchasing additional insured or OCP coverage shall be paid by the Owner and should be included in the Guaranteed Maximum Price.

Owner's Termination for Convenience (section 11.4): If an Owner elects to terminate for convenience there is a premium payment. This payment is not a penalty, but rather reflects a Construction Manager's lost business opportunity. This section is carefully crafted to balance Construction Managers' and Owners' interests and risks.

Dispute Mitigation and Resolution (article 13): This article focuses on mitigation of claims by directing direct discussions between the Parties. It then allows the Parties to use either a previously selected Project Neutral or a dispute review board. If the Parties decide not to use a Project Neutral or dispute review board, the issue then goes to mediation followed by a binding dispute resolution process of the Parties' choosing. If the process goes this far, any decision made by the Project Neutral or the dispute review board can be introduced as evidence at a binding adjudication of the matter.

Work Continuance and Payment (section 13.1): The Parties must continue to perform their obligations under the contract, pending resolution of any dispute. Thus the Construction Manager continues to perform its work under the contract and the Owner continues to make payments to the Construction Manager for those amounts not in dispute during the pendency of any dispute resolution proceedings.

Direct Discussions (section 13.2): In the event the Parties cannot reach an Agreement about the matter in dispute, they are obligated to engage in "good faith" negotiations at the next level in a multiple step approach which moves from field representative to those representatives with greater authority in an effort to resolve the dispute. If resolution is not achieved within five business days of the first discussion, it moves to the next level of senior executives, and if resolution fails within 15 days of the first discussion, it moves to mitigation.

Mitigation and Mitigation Procedures (section 13.3): Initially the Parties have the option to select either a Project Neutral or Dispute Review Board for the mitigation procedure. The Project Neutral/Dispute Review Board is subject to a separate retainer Agreement between the Parties and is obligated to issue nonbinding finding(s) within five business days of referral of the dispute. If Parties do not check either of the fill-in-the-blank options, then the procedures provided in this section are not required.

Mediation (section 13.4): If the Parties do not select a mitigation procedure in section 13.3, disputes that are not resolved through the direct discussions called for under section 13.2 shall be submitted to mediation. The Parties have the option of using the Construction Mediation Rules of the American Arbitration Association, or selecting another set of mediation rules, which may be more convenient than using those of the American Arbitration Association.

Binding Dispute Resolution (section 13.5): In previous AGC contract Agreements, the dispute resolution section was a separate exhibit. The ConsensusDocs includes this section in the contracts and includes fill-in-the box options. If mediation fails to resolve a dispute, the Parties submit the matter to binding dispute resolution using either the current Construction Industry Rules of the American Arbitration Association or litigation in a state or federal court. The Parties, however, are free to select another set of rules. The costs of the binding dispute resolution process are to be borne by the non-prevailing Party as determined by the Neutral.

Venue (section 13.5.2): Binding Dispute Resolution procedures shall be at the location of the project unless the Parties agree they shall be elsewhere.

Multi-party Proceedings (section 13.6): Appropriate provisions are to be included in all other contracts relating to the Project to provide for joinder or consolidation of such dispute resolution procedures.

Lien Rights (section 13.7): Nothing contained in the dispute resolution procedures is to limit any lien rights unless expressly waived.

Shared Savings (proposed addition to Article 1 for Amendment 1 to ConsensusDocs 500):

Shared Savings

If the final Contract Sum (Cost of the Work plus Construction Manager's Fee) is less than the Guaranteed Maximum Price (as may be adjusted by Amendment or Change Order), such savings ("Savings"), shall be distributed as follows:

- On the first ten million dollars ($10,000,000) of Savings, eighty percent (80%) shall be retained by Owner and twenty percent (20%) shall be paid to Construction Manager as a Shared Savings Bonus;
- On the next ten million dollars ($10,000,000) of Savings (i.e., Savings dollars $10,000,001 through $20,000,000), seventy percent (70%) shall be retained by Owner and thirty percent (30%) shall be paid to Construction Manager as an increase of the Shared Savings Bonus;
- On the next ten million dollars ($10,000,000) of Savings (i.e., Savings dollars $20,000,001 through $30,000,000), sixty percent (60%) shall be retained by Owner and forty percent (40%) shall be paid to Construction Manager as an increase of the Shared Savings Bonus; and
- On any Savings above thirty million ($30,000,000) (in addition to the Shared Savings Bonus of $9,000,000 applicable to the $30,000,000 in Savings (20% of the first $10,000,000, plus 30% of the second $10,000,000, plus 40% of the third $10,000,000), ninety-six percent (96%) shall be retained by Owner and four percent (4%) shall be paid to Construction Manager as an increase of the Shared Savings Bonus (to reimburse

Construction Manager for the diminished Construction Manager's Fee as a result of the additional Savings).

Notwithstanding the foregoing, Construction Manager shall not be entitled to participate in any savings resulting from the actual Cost of the Work for an allowance item being less than the allowance amount for that item or any savings resulting from or associated with scope decreases.

COAA Comments for ConsensusDocs 500:

(Additional comments on this document can be found at COAA's website, www.coaa.org, in the members-only area.)

Relationship of Parties (section 2.1): COAA recommends adding the following new paragraph 2.1.5: "The Construction Manager accepts the fiduciary relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate and exercise the Construction Manager's skill and judgment in furthering the interests of the Owner. The Construction Manager represents that it possesses the requisite skill, expertise, and licensing to perform the required services."

Architect/Engineer (section 2.3): COAA recommends replacing the first sentence with: "The Owner, through its Architect/Engineer, shall provide all architectural and engineering design services necessary for the completion of the work, except as otherwise provided in the contract documents."

Definitions (section 2.4): COAA recommends adding the following definitions to section 2.4:

> Construction Cost—The total cost to construct the Project including all building costs, allowances, contingencies and field management and general conditions costs.
>
> Construction Cost Limit—The Owner's limit on the funds available to construct the Project including all building costs, allowances, contingencies and field management and general conditions costs.
>
> Interim Directed Change—A document issued by the Owner or its Architect/Engineer that directs a change in the Work prior to reaching agreement with the Construction Manager on the adjustment, if any, in the GMP or the Date of Substantial Completion or Date of Final Completion.

General Responsibilities (to be section 3.1.7): COAA recommends adding a new section 3.1.7: In a format acceptable to the Owner, the Construction Manager shall provide a monthly report showing the status of the Construction Cost, trade contracts awarded, allowances and contingencies in this contract, allowances and contingencies in trade contracts, payments made by the Owner to the Construction Manager, projected payments by month to completion,

Requests for Information log, submittals log, Architect/Engineer's Supplemental Instructions log and Proposed Change Orders log.

Schedule of the Work (section 3.2.3): COAA recommends revising the first sentence to read: "Within 30 days of execution of this agreement, the Construction Manager shall prepare a preliminary Schedule of the Work for the Architect/Engineer's review and the Owner's acceptance."

Estimates (section 3.2.4): COAA recommends replacing existing paragraphs 3.2.4.1 through 3.2.4.4 with the following paragraphs 3.2.4.1 through 3.2.4.5:

> Estimates (section 3.2.4.1): The Construction Manager may involve trade contractors in estimating the cost of the evolving design, but without the Owner's approval, shall not initiate any relationship with any trade contractor during the pre-construction phase that will inhibit the competitiveness of pricing on any bid package.
>
> Section 3.2.4.2: For all estimates of Construction Cost, an allowance shall be used for all work identified in the Owner's Program that lacks sufficient definition in the design documents to accurately estimate. Construction Cost estimates shall include specific line items with appropriate costs for:
>
> a) Construction Manager general conditions
>
> b) Construction Manager Overhead and Profit
>
> c) Trade contractor general conditions
>
> d) Trade contractor overhead and profit
>
> e) Subcontractor bonds and insurance
>
> f) Construction Manager contingency
>
> g) Design contingency
>
> h) Owner contingency
>
> Section 3.2.4.3: Upon receipt of the schematic design documents and again upon receipt of the design development documents, the Construction Manager shall prepare detailed estimates of the Construction Cost. If the schematic design estimate or the design development estimate exceeds the Construction Cost Limit, and without assuming any design liability, the Construction Manager shall make recommendations to reduce scope or quality, use alternate construction means or methods or modify the design to achieve a Construction Cost that is equal to or less than the Construction Cost Limit. Each recommendation shall be accompanied

with an estimate of the savings it would produce should the Owner accept it. If directed by the Owner, the Construction Manager shall participate in a formal value engineering exercise to generate additional cost-reduction ideas. The schematic design estimate and design development estimate shall be updated to reflect all cost-reduction ideas accepted by the Owner and shall be submitted to the Owner for approval.

Section 3.2.4.4: At its sole discretion, the Owner may direct modifications to its program or the design documents at any time. At regular intervals during their development, the Construction Manager will update its Construction Cost estimate based on the design, systems, materials and equipment described in the evolving design. The Construction Manager will promptly notify the Owner in writing any time the Construction Manager determines that the design is likely to adversely affect Construction Cost or schedule. The Construction Manager will develop and recommend cost savings and sequencing necessary to offset such impacts, while contributing to meeting Owner's expressed vision, program, budget, quality, schedule and overall Project goals. Whenever directed, the Construction Manager shall submit to the Owner an updated Construction Cost estimate.

Section 3.2.4.5: Prior to release of the first bid package for trade contractor pricing, the Construction Manager shall submit to the Owner a bid package estimate that itemizes all bid packages to be bid and awarded and which includes the Construction Manager's estimate of the cost of each bid package. If permitted by the Owner, the bid package estimate shall include line items for work self-performed by the Construction Manager. Construction Manager general conditions, Construction Manager overhead and profit and contingencies for Construction Manager, Owner and design shall be identified in separate line items. The total of the bid package estimate shall equal the Construction Cost on the Construction Manager's most recent estimate.

Basis of Guaranteed Maximum Price (to be section 3.3.2.8): COAA recommends adding the following new paragraph 3.3.2.8: "The GMP proposal shall include a list of all bid packages and purchase orders the Construction Manager anticipates awarding." In addition, article 1 of the form Amendment 1 to ConsensusDocs 500 should be amended to add "Exhibit H: List of Bid Packages and Purchase Orders to be Awarded by the Construction Manager".

Tests and Inspections (section 3.4.14.3): COAA recommends replacing the existing paragraph with the following: "If the procedures described in Clauses 3.4.14.1 and 3.4.14.2 indicate that portions of the Work fail to comply with the Contract Documents, the Construction Manager shall be responsible for the costs of correction, retesting and re-inspection.

Correction of Work Within One Year (section 3.7.2): The second sentence specifically notes that the correction period is not extended for work corrected during the correction period. So if a piece of equipment fails and is replaced in the 11th month after substantial completion, the new piece of equipment effectively has only a 1-month warranty. Corrective work performed during the correction period ought to re-start the one-year warranty.

COAA recommends striking the second sentence in paragraph 3.7.2 and replacing it with the following:

"Upon completion of any corrected Work pursuant to this article, the one-year correction period shall be renewed and recommence. The Construction Manager's obligations under this article shall cover any repairs and replacement to any part of the Work or other property caused by the Defective Work."

ConsensusDocs 500 assumes that no hazardous materials are being remediated by the Construction Manager as part of its scope of work. If that is true, COAA finds the language acceptable as drafted. If the Construction Manager is required to remove known hazardous materials (asbestos, PCBs, lead paint, etc.) as part of its scope, COAA recommends modifying paragraph 3.11 as follows:

Hazardous Materials (section 3.11.1): Modify the second sentence to read: "Unless otherwise required by the contract documents, the Construction Manager shall not be obligated …"

Sections 3.11.2 through 3.11.6: Whenever it occurs, replace the term "Hazardous Material" with the term "unforeseen Hazardous Material".

Concealed or Unknown Worksite Conditions (section 3.13): Delete the current paragraph and in its place insert the following:

"CONCEALED OR UNKNOWN WORKSITE CONDITIONS If the conditions at the Worksite are (a) subsurface or other physical conditions which are materially different from those indicated in the Contract Documents, or (b) unusual and unknown physical conditions which are materially different from conditions ordinarily encountered and generally recognized as inherent in Work provided for in the Contract Documents, the Construction Manager shall give immediate written notice of the condition to the Owner and the Architect/Engineer. Upon receipt of the Construction Manager's written notice, the Owner will investigate the conditions. If the Owner determines that a concealed or unknown site condition exists, the Owner will issue an Interim Directed Change providing the Construction Manager direction on how to proceed. If the Owner determines that a concealed or unknown site condition does not exist, the Construction Manager shall continue with the Work as shown in the Contract documents. Any change in the GMP, estimated Cost of the Work, Construction Manager's Fee, Date of Substantial Completion or Date of Final Completion and, if appropriate, the Compensation for Preconstruction Services as a result of the unknown condition shall be determined as provided in article 9. The Construction Manager shall provide the Owner with written notice of any claim as a result of unknown conditions within the time period set forth in paragraph 9.4."

Confidentiality (section 3.15): COAA recommends adding, to the beginning of this paragraph, the following customary language regarding compelled disclosure:

"Unless compelled by law, a governmental agency or authority, an order of a court of competent jurisdiction, or a validly issued subpoena, the Construction Manager shall treat as confidential..."

Strike the last sentence of paragraph 3.15 and add instead:

"In the event of a legal compulsion or other order seeking disclosure of any non-public Project information, the Construction Manager or the Owner shall promptly notify the other party to permit that party's timely legal objection, if necessary."

Binding of Subcontractors and Material Suppliers (section 5.3): COAA recommends adding, at the end of paragraph 5.3: "including but not limited to record keeping requirements as provided in section 3.4.5."

Contingent Assignment of Subcontracts (section 5.5.1.2): COAA recommends adding, to the end of this paragraph, the words: "as of the effective date of such assignment."

Delays and Extensions of Time (section 6.3.1): COAA recommends that this be conformed to read like the 6.3.1 of the 200.

Notice of Delay Claims (section 6.4): From the first sentence, COAA recommends striking "or an equitable adjustment in Contract Price."

Limited Mutual Waiver of Consequential Damages (section 6.7): The ConsensusDocs mutual waiver of consequential damages provision represents a positive departure from similar provisions found in other contract forms commonly used in the industry. Consequential damages are one of the most important subjects for an owner to be familiar with in the construction context. COAA highly recommends that every owner seek the advice of competent local construction counsel prior to executing this contract containing waivers of consequential damages. Owners should assess the consequential damages risks associated with each project. Potential outcomes of the assessment could include but are not limited to a decision that the risks are small and consequential damages can be waived, that the risks can be captured through liquidated damages or that the risks are such that the Owner is not willing to waive consequential damages.

Adjustment in the Construction Manager's Fee (section 7.4.3): COAA recommends striking the last subparagraph of 7.4.

Cost Items (section 8.2.8): In the last sentence, COAA recommends replacing the word 'value' with the term 'fair rental value.'

Section 8.2.12: COAA recommends replacing the current language with the following: "Losses, expenses or damages, to the extent not compensated, provided that such losses, expenses or damages did not arise from the fault of the Construction Manager."

Claims for Additional Cost or Time (section 9.4): COAA recommends adding the following to the end of the paragraph: "Thereafter, the Construction Manager shall submit written documentation of its claim including appropriate supporting documentation, within twenty-one

(21) Days after giving notice, unless the Parties mutually agree upon a longer period of time. The Owner shall issue a final decision, in writing, no later than fourteen (14) Days after receipt of the Construction Manager's claim. Any change in the Contract Price or the Contract Time resulting from such claim shall be authorized by Change Order."

(To be section 9.5): COAA recommends adding the following new paragraph: "With respect to any claim asserted by a subcontractor for additional time or cost, the Construction Manager shall first fully review and certify the validity of the claim and the Construction Manager's liability to the subcontractor under existing contractual agreements before presentation to the Owner."

Dispute Mitigation and Resolution (article 13): The word "mitigation" is a term of art relating to damages due to breach of contract and is not appropriate in this context and may cause confusion and further litigation rather than helping avoid it. COAA recommends striking the word "Mitigation" and reformulating the paragraph into binding and nonbinding procedures.

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Comments regarding ConsensusDocs 541*

Addendum to Agreements Between Owner and Construction Manager Between Owner and Design Professional for Design-Assist Services

Overview

The Addendum to Agreements Between Owner and Construction Manager and Between Owner and Design Professional for Design Assist Services ("Design-Assist Addendum") is intended to be used in conjunction with the ConsensusDocs 500 or 510 (Owner - CM at Risk) and ConsensusDocs 240 (Owner – Design Professional) standard forms in those situations where the project team wishes to implement a collaborative design and construction process but does not desire (or is unable) to use Integrated Project Delivery (IPD). The Design-Assist Addendum modifies both the agreement between the Owner and Construction Manager and the agreement between the Owner and the Design Professional to add a specific Design Assist process to the traditional obligations of the parties.[1] In addition to binding the Owner, Design Professional, and Construction Manager to the Design-Assist process, the Design-Assist Addendum can and should be used to incorporate key trade contractors in the process.

Design-Assist is loosely defined in the industry as a process by which the constructors collaborate with the project owner and the design professionals beginning in the design development phase to assist all parties in meeting the Project's objectives. The Construction Manager and its key trade contractors use their expertise in planning, scheduling, estimating, logistics, production, and project management to assist the Owner and Design Professional in improving the Project design to maximize the value the Owner receives for the resources it expends on the Project. In this Addendum, ConsensusDocs takes that loose definition and standardizes a specific process which can be implemented in real world situations.

The process contemplated by the Design-Assist Addendum is extensive and ranges from early in design development through completion of construction. As such, it is important that it be implemented as early in the life of the Project as possible, preferably before or at the very beginning of design development. The most important consideration that the project team must evaluate before using the Design-Assist Addendum is whether the project participants are committed to collaboration and have the corporate culture necessary to make a collaborative process work. Collaborative design and construction, whether Design-Assist, Lean Construction,

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—From the Declaration of Principles jointly adopted by a Committee of the American Bar Association and a Committee of Publishers and Associations

[1] The Design-Assist Addendum is also designed to be used in conjunction with the ConsensusDocs 305 Lean Construction Addendum, in those situations where the parties wish to incorporate the Lean Design and Construction process into the Project.

or IPD, requires a completely different environment, culture, attitudes, and mindset than other traditional project delivery methods. However, when implemented properly, the overwhelming evidence is that projects that use collaborative techniques, such as Design-Assist, produce better project outcomes than projects that do not.

As the Design-Assist Addendum is a standard form, it is intended to be broad in scope and flexible in its implementation. It is to be expected that parties using this document will make extensive revisions in order to customize it to take into consideration each project's own unique circumstances. While the Design-Assist Addendum does not presuppose that a Lean or design-assist consultant will be involved in the Project, a consultant may be beneficial to ensure proper implementation of the Design-Assist Addendum, especially if the parties are unfamiliar with the Lean or design-assist processes.

Article 1 - Agreement

The Addendum can be prepared and negotiated at the time of contracting with the Design Professional and Construction Manager or at a later time, such as the beginning of design development. It is strongly recommended that the core project team of the Owner, Design Professional, and Construction Manager be involved as early as possible. However, to obtain the greatest benefit from the Design-Assist process, this should occur at least at the commencement of design development. Article 1 ties the Design-Assist Addendum separately to the Owner-Construction Manager agreement and to the Owner-Design Professional agreement. Each agreement remains separate and distinct; however, the Design-Assist Addendum incorporates the same set of terms into both agreements.

Article 2 – Responsibilities of the Parties

From the very beginning, the Design-Assist Addendum attempts to define the type of environment necessary for a successful project. The design process is required to proceed in a collaborative manner with free flow of accurate information from all parties. The parties must meet regularly to facilitate collaboration as to all aspects of the Project design, planning, material and system selection, and work site use. Despite the level of collaboration required, the Design Assist Addendum is clear that the Design Professional still retains overall responsibility for the project design. Correspondingly, all other parties are still responsible for the risks they assume in their underlying agreements.

The language in the Design-Assist Addendum also makes clear that it does not create an integrated project delivery agreement, design-build contract, nor does it create a fiduciary relationship between the parties. The parties are all still independent contractors and all duties owed by the Design Professional and the Construction Manager are owed solely to the Owner.

While the original 2007 ConsensusDocs 240 Design Professional agreement contained some language that might have been interpreted as creating a fiduciary duty, this language is totally absent from currently published ConsensusDocs. Ironically, the current AIA design-build documents contain language that creates a fiduciary relationship under most state law. The offending language is not flowed down to the architect in the design-builder design professional agreement, but it is highly unlikely that a firm using a prime agreement that proactively creates a fiduciary relationship wouldn't flow such language down the contractual chain. This may be why in the area of design-build, ConsensusDocs and then Design-Build Institute of America (DBIA) are more commonly used for design-build projects than AIA standard contracts.

One of the most important tools to be used in conjunction with the Design-Assist Addendum is the Design-Assist/Design Build Responsibility Matrix ("Responsibility Matrix") identified in Section 2.4. The purpose of the Matrix is to establish each party's scope of responsibility for each of the individual Design-Assist tasks that will take place throughout the course of the Project. A sample is attached. The Responsibility Matrix is one of the first tasks to be completed by the project team. That stage of the project is where a lot of efficiencies can be gained by careful and detailed planning; therefore, it is recommended that the parties spend considerable time and effort in developing the Responsibility Matrix.

Section 2.5 describes another important tool for project planning: The Communications Protocol. The Communications Protocol is a detailed list of communications that the parties anticipate will occur during the Project. These include physical and virtual meetings, electronic communications, electronic data transfers, submittals, etc. For each type of communication, the Communications Protocol should identify the participating parties, the manner of communication, the method of memorializing or storing the communication, and which non-participating parties will receive any information emanating from the communication. The Communication Protocol also should identify the types of hardware and software, transmission methods, verification procedures, and storage and retrieval requirements to be used by the Project participants. The Design-Assist Addendum incorporates ConsensusDocs 200.2 Electronic Communications Protocol Addendum for electronic communications and data transfer.

Closely associated with the Communications Protocol is the requirement for the Project team to use Building Information Modeling (BIM) in Section 2.6. The ConsensusDocs 301 BIM Addendum is the recommended vehicle for establishing BIM parameters, standards, and technological requirements for the Project.

The Design-Assist Addendum provides the option for the Project team to adopt the Lean Construction process outlined in the ConsensusDocs 305 Lean Construction Addendum by virtue of a "check-the-box" option for both the Communications Protocol and BIM.

Creating efficiencies is an important tenant of the design-assist process. A common area of inefficiency during the design-development process is when the design professional completes the design of a system or other project element only for a trade contractor or supplier to redesign the system or element when preparing submittals. The Design-Assist Addendum attempts to resolve this inefficiency by establishing methods for the Project team to prescribe the point at which the Design Professional hands-off the design of a system or element to the design-assist subcontractor. The Responsibility Matrix (Section 2.4), design document standards (Section 2.7), and design for production planning (Section 5.4) all provide for such opportunities. The Owner, Construction Manager, and Design Professional determine by agreement whether the hand-off is done through design-delegation, which specifically transfers the design obligation to the trade contractor.

Article 3 – Design Assist Subcontractors

The Design-Assist Addendum contemplates that trade contractors will be involved in the design development process from an early stage. These trade contractors will be subcontractors to the Construction Manager and will provide design-assist services in conjunction with the Construction Manager during design development.

At an appropriate time agreed upon by the Owner, Construction Manager, and Design Professional, the Construction Manager proposes a list of design-assist subcontractors to Owner and Design Professional from whom proposals will be requested. The Owner, Construction Manager, and Design Professional agree on which trades and which prospective trade contractors should be invited to propose. Once proposals are received, the Owner, Construction Manager, and Design Professional jointly determine which subcontractors will participate in the Project. The Construction Manager then negotiates subcontracts with the chosen trade contractors and their tasks are added to the Responsibility Matrix. It is recommended that this process occur prior to the commencement of design development.

The Design-Assist Addendum contemplates that the design-assist subcontractors will continue as subcontractors for their particular trade during the construction phase. However, the Owner and Construction Manager may agree to replace the design-assist subcontractor for construction. Because the Design-Assist Addendum is used in conjunction with the Owner-Construction Manager at Risk agreement, the timing of the replacement would typically occur during development of the Construction Manager's price proposal.

Article 4 – Design-Assist Scope of Work

The Design-Assist Addendum includes certain tasks that are typical in any construction management project delivery, although some of those tasks are greatly enhanced and they are always performed in collaboration with the Design Professional. The Design-Assist Addendum

also includes certain tasks and deliverables that are unique to design-assist. The design-assist tasks and deliverables are identified in Article 4 of the Design-Assist Addendum.

First, the Construction Manager performs a preliminary evaluation of the Owner's Program. The Construction Manager and the Design Professional meet and confer to verify the Project requirements and to jointly submit a preliminary evaluation report to the Owner. The preliminary evaluation of the Owner's Program should identify any additional information needed. It should also propose alternative architectural, civil, structural, mechanical, and electrical elements for consideration by the Owner. When performing the preliminary evaluation of the Owner's Program, the Construction Manager and Design Professional should consider cost, quality, speed of delivery, and if requested by Owner in Sections 5.1 and 5.2, life cycle costs and sustainability.

Similarly, throughout design development, the Construction Manager conducts constructability reviews, coordination planning, and design document review. This constant process helps ensure the quality of the design documents and that the design is being performed in a manner that will result in an efficient construction phase. The Construction Manager is obligated to prepare coordination drawings "to identify routing and eliminate conflicts among the Work of various trades." The coordination drawings are provided to the Design Professional and should include recommendations from the Construction Manager for revisions to the design documents to resolve conflicts. All these tasks should be conducted by the Construction Manager in collaboration with the Design Professional to maximize efficiency during the design process. A risk in using design-assist services, which has led to some bad experiences using design-assist, is not coordinating the efforts of the build and design teams. The owner plays are role in facilitating efforts to ensure teams are collaborating and not finger pointing. The design professional has to be open to receiving ideas and suggestions, and the build team must be constructive in its suggestions rather than starting a blame game of finger pointing. Ultimately, as made clear in the addendum, the design professional still ultimately holds the authority and responsibility for the design, which includes design coordination of different design elements.

Section 4.6 provides for a very specific value analysis/value engineering process. The Design-Assist Addendum defines value engineering as "options for reducing capital or life cycle costs, improving constructability and functionality, and enhancing operation flexibility . . . that create savings of time or money . . . or increase quality, constructability, or other measures of value . . ." The important metric is the measurement of value. The value engineering process is one of adding value through extensive planning and collaboration of the Project team members. The specific process contemplates that either the Design Professional or the Construction Manager may make a value engineering proposal. The proposal should identify the value to be achieved and detail any effects on the Project. The Owner, Design Professional, and Construction Manager decide whether the proposal should be implemented. The Design Professional must verify that the proposal is feasible from a design standpoint.

Section 4.7 contains a "check-the-box" option for using the cost modeling process contained in the Lean Construction Addendum (CD 305) or using a more traditional cost estimating process described in the Design-Assist Addendum. Lean Construction cost modeling is a continuous process which is much more extensive than traditional preconstruction services cost estimating processes in most CM at Risk contracts. The more traditional cost estimating process contained in the Design-Assist Addendum contemplates that the Construction Manager will prepare a cost estimate at specific points during design development. Those are i) after identification of Owner's Program, ii) upon completion of schematic drawings, iii) upon completion of design development documents, and iv) during preparation of the drawings and specs at such times as agreed between Owner and Construction Manager. If an estimate is greater than prior budgets approved by the Owner, then the Construction Manager and Design Professional must recommend revisions to reduce the estimated cost. Whether the Lean Construction cost modeling or the traditional cost estimating approach is used depends on the size and complexity of the Project, the necessity for cost certainty, and the extent of collaboration during design development.

Another important task performed by the Project team is determining which trades to which design will be delegated. As mentioned previously, a great deal of efficiency can be gained by ensuring that each project element is only designed one time. The involvement of design-build subcontractors helps to achieve that objective. Using CM at Risk in conjunction with design-assist provides a good process to evaluate which trade contracts should be procured using design-build versus plan and spec bidding or negotiation. Because trade contractors are brought in so early in the design development process, the Project team can identify whether more value is created by delegating design to a trade contractor, or by having the design carried out by the Design Professional with the trade contractor providing design-assist services.

The Owner, Construction Manager, and Design Professional jointly agree on which trade packages will be performed on a design-build basis. For each design-build trade package, the Design Professional is obligated to specify performance and design criteria the same as with most any other CM at Risk project delivery. During design development, the design-build subcontractors participate in the collaborative design process just as the Design Professional would have for those trades.

The Design-Assist Addendum specifically gives the Design Professional responsibility for coordinating and integrating the work product of the design-build subcontractors. This is a task that is frequently omitted from design contracts. Note that the timing of establishing a lump sum or guaranteed maximum price (if any) contained in the underlying CM at Risk agreement is not changed by the Design-Assist Addendum.

<u>Article 5 – Optional Additional Design-Assist Services</u>

Article 5 of the Design-Assist Addendum contains a list of optional services to be provided by the Construction Manager if requested by the Owner. These services include Life Cycle Cost Analysis, Sustainable Design Recommendations, Risk Analysis, and Design for Production Planning.

Section 5.1, Life Cycle Cost Analysis, provides that the Construction Manager and Design Professional will identify options for reducing life cycle costs and improving functionality and operational flexibility. This process is similar to the value engineering process; however, the cost of proposed enhancements should include an analysis of costs over the entire life cycle of the Project as opposed to just construction costs. As construction costs are usually less than 20% of the entire life cycle cost of a project, it is recommended that this optional service be included whenever practicable.

Section 5.2, Sustainable Design Recommendations, if chosen, provides for the Project team to develop a sustainability plan which identifies the Owner's sustainable objectives. This could include meeting a specific target, such as LEED certification, or simply providing for sustainable considerations during design development. The Sustainable Design Recommendations should identify the deliverables required and the roles and responsibilities of each member of the Project team in achieving the sustainable goals. The Project team may choose to incorporate the ConsensusDocs 310 Green Building Addendum in situations where achieving a sustainable certification is an important aspect of the Owner's project goals.

Section 5.3, Risk Analysis, provides the option of incorporating the process from the Lean Construction Addendum (CD 305) or to use the process identified in the Design-Assist Addendum; however, both are similar. The process identified in the Design-Assist Addendum contemplates that the Owner, Construction Manager, and Design Professional jointly assess and rank risks. The Project team is tasked with adopting a scoring system which identifies the likelihood of occurrence of certain risks and the impact of those risks. The risks are scored and ranked then a risk register is prepared which identifies the principal Project risks and the team member assigned to lead efforts at monitoring and managing each risk. A risk management plan is prepared for addressing the identified risks which sets forth contingency plans, assigns primary responsibility for the management of specific risks, and addresses the role of others in managing risks.

For certain types of projects, designing to a construction production plan can bring about tremendous efficiencies. In Section 5.4, a "check-the-box" option is available for the parties to use the Design for Production Planning process in the Lean Construction Addendum (CD 305) or Design for Production Planning as provided in the Design-Assist Addendum. In the latter process, the Constructor prepares a production plan for the Project. The Project team identifies the value to be achieved if the production plan is accepted and details the anticipated effect on the Project's appearance, design, safety standards, etc. The Design Professional is responsible for ascertaining the feasibility of design, satisfaction of the design concept, and compatibility and

compliance with laws and codes and professional standards of care. The Owner, Construction Manager, and Design Professional then jointly decide whether to implement the plan. This process is particularly useful for projects that could benefit from multi-trade pre-fab and other activities involving extensive multi-trade collaboration.

Article 6 - Services Prior to Construction

One of the most significant challenges in developing contracts involving collaborative design is in demarcating liability for design and construction defects. The question of which party is responsible is ever present when multiple parties participate in each design decision, thus, graying the line that design-bid-build and the *Spearin* Doctrine so carefully created. Yet, as the evidence that collaborative design reduces cost, schedule, defects, and claims becomes clearer, it is more imperative than ever that parties submit to participating in collaborative projects. The Design-Assist Addendum attempts to clarify the obligations of the parties in such a way as to develop as clear a separation between design responsibility and construction responsibility as possible.

The Design Professional is given responsibility for the completeness and accuracy of the design in all occasions except for design delegated to the Construction Manager/design-build subcontractors and design attendant with construction means and methods. The Design-Assist Addendum clarifies that the Construction Manager performs its obligations in its capacity as a contractor and not as a design professional. The design responsibility remains with the Design professional, even where the Construction Manager participates in design decisions, proposes value engineering proposals, or proposes a production plan. With respect to value engineering, the Design Professional is specifically given the responsibility to review and evaluate all value engineering proposals to ensure compatibility with the design documents. The Design Professional is also obligated to revise the drawings and specifications to include accepted value engineering proposals including the impact on other portions of the Work.

The Design-Assist Addendum does not attempt to modify the Owner's implied warranty of the adequacy of the specifications ("*Spearin* Doctrine"). Owners or Construction Managers may wish to attempt to agree on specific language which clarifies the *Spearin* Warranty as part of the negotiation of the Design-Assist Addendum.

Article 7 – Compensation for Design-Assist Services

The Design-Assist Addendum leaves the compensation model for design-assist services flexible. The amount or method of compensation contained in the underlying contracts provides the primary model for compensating the project team members. The Design-Assist Addendum does contemplate that the Construction Manager will be reimbursed for costs incurred to design-assist subcontractors. As a practice pointer, it is important that the Construction Manager's and Design Professional's compensation be adequate to incentivize commitment to the design-assist process.

As an example, the Design Professional should be appropriately compensated for evaluating and incorporating value engineering proposals.

Article 8 – Termination

To provide as much flexibility as possible for the Owner in undertaking the design-assist process, the Design-Assist Addendum allows the Owner to terminate the Addendum for convenience. However, in doing so, the underlying contracts between Owner and Construction Manager and the Owner and Design Professional are not terminated unless Owner separately terminates those agreements.

Article 9 – Additional Insurance

The Design-Assist Addendum provides an opportunity for the parties to agree to provide additional insurance over and above what is required in the underlying contracts.

Article 10 – Miscellaneous Provisions

The Design-Assist Addendum includes a standard incorporation clause and no-third party beneficiary statement. It also includes an order of precedence clause which states that the terms and conditions of the Design-Assist Addendum take precedence over the underlying contracts in case of a conflict in terms.

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Responsibility Matrix (Example)

RESPONSIBILITY MATRIX - DESIGN DEVELOPMENT					
D&B - Specialist Design by Sub-Contractor					
		Primary	*Review*	*Due Date*	*Source*
	Performance specification	A/E	CM		Specification
	Design Criteria for Package				
	Design of Interfaces related to DB component as defined by performance requirements				
	Produce Permit Construction Documents for inclusion in permit submission				
	Detailed coordinated design and permit drawings				
	Fully Coordinated shop drawings				
	Produce all installation details				
	Produce dimensioned and coordinated 2D drawings				
	Shop Drawings for Review by A/E				
	BIM Models where required for Review by A/E				

SAMPLE

1

Responsibility Matrix (Example Cont.)

DA - Design Assistance from Sub-Contractor					
		Primary	*Review*	*Due Date*	*Source*
	Specification				
	Design Criteria for Package				
	Design of major Interfaces				
	Detailed design and Permit Construction Documents (Stamp documents)				
	Contribute toward Permit Construction Documents				
	Fully Coordinated shop drawings				
	Connection Detailing				
	Produce all installation details				
	Produce dimensioned and coordinated 2D drawing				
	Shop Drawings for Review by A/E				
	BIM Models where required for Review by A/E				

SAMPLE

2

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Responsibility Matrix (Example Cont.)

SAMPLE

Specifications & Drawings					
		Primary	*Review*	*Due Date*	*Source*

Design Coordination					
		Primary	*Review*	*Due Date*	*Source*
	Design/Assist Team Meetings				
	Building Official /Permitting Agency				
	Costing during design				
	Construction Documents				
	Coordinated Design				
	BIM				

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Comments regarding ConsensusDocs 702*

Standard Purchase Order for Commodity Goods

Overview:

This document along with the 702A General Terms and Conditions document, possess similar terms to the ConsensusDocs 703 Purchase Agreement, however, the terms and structure is simplified for commodity goods as well as some non-applicable terms for commodity purchases have been eliminated. Significantly, the Order form and the General Conditions are separate documents.

Materials or Equipment, Unit Description (article 2): Include plan, specifications and incidental services, as applicable. If significant additional services or detailed specifications are required, consider using "ConsensusDocs 703 - Standard Purchase Agreement for Noncommodity Goods By a Contractor".

Price (article 3): Sales and use taxes have been separated from the overall Agreement price so as to reduce bonding costs, which are based on the overall Agreement price.

If applicable, the Buyer should send copies of documented tax exemption certificates for Seller's files prior to executing the Purchase Order to confirm whether to purchase qualifies as tax-exempt. Otherwise, the Seller should charge applicable taxes.

WWEMA Comments for ConsensusDocs 702:

Extent of Agreement (article 3): Users may want to take care to separate the cost of incidental services for tax consequences applicable to the project.

Multiparty Proceedings (section 19.6): It is often not possible to have all vendors agree to this provision during the bid process. Owners and Buyers may wish to waive or modify this section in order to increase competition and receive the most favorable prices. WWEMA suggests that this section be modified so that the sentence begins, "Seller and Buyer will make best efforts to ensure that".

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Comments and Recommendations regarding ConsensusDocs 702.1*

Terms and Conditions for Purchase Order for Commodity Goods

Exhibits and Documents (article 1): If a detailed Progress Schedule or other details are required, consider using *"ConsensusDocs 703 - Standard Purchase Agreement for Noncommodity Goods By a Contractor"*.

Changes (article 4): The Parties may consider use of "ConsensusDocs Addendum 200.1. Time and Price Impacted Materials and Schedule A to incorporate price-escalation terms if appropriate.

Shipping (article 8): If shipping instructions change they may cause a change pursuant to the Changes article.

Binding Dispute Resolution (section 19.3): Users may wish to modify this section depending upon the local jurisdiction of the project. Jurisdictions with unique state laws may cause the parties to scrutinize and negotiate which jurisdictional laws should govern this contract.

Section 19.4: Users may wish to provide for a definition of prevailing party. The force and effect of such definition may vary based on state law. One possible example is as follows:

"If a Party claiming a right to payment of an amount in dispute is awarded all or substantially all of such disputed amount, then such claiming Party shall be the prevailing Party. If the Party defending against such claim is found to be not liable to pay all or substantially all of the disputed amounts claimed by the other party, then the Party so defending against such claim shall be the prevailing Party. If both Parties prevail with respect to different claims, then the Party who is prevailing with respect to the greater monetary sum shall be deemed the prevailing party."

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Comments and Recommendations regarding ConsensusDocs 703*

Purchase Agreement for Noncommodity Goods

Materials and Equipment (article 2): Include plan and specification references with specific sections, and incidental services, as applicable.

Price (article 3): Sales and use taxes have been separated from the overall Agreement price so as to reduce bonding costs, which are based on the overall Agreement price.

Exhibits and Documents (article 4): "Buyers should be aware that the practice of attaching the Seller's form of standard terms and conditions to a Purchase Order or Purchase Agreement may be deemed 'assent' in some jurisdictions. Buyers should consult with legal counsel regarding the effect of attachment of the Seller's terms and conditions. It is recommended that agreed terms and conditions be set out in an attachment to the Purchase Order by listing agreed Clarifications and Exceptions."

Shipping (article 11): If shipping instruction change they may cause a change pursuant to the Changes article.

Termination for Convenience (article 15): The reference to cost plus percentage for overhead includes engineering goods that haven't been delivered and are fabricated for a specific project. A routine product that can be restocked or potentially recover some of the value would led to a lower charge under this provision.

Warranty (article 16): This includes including any implied warranty of merchantability or fitness for a particular purpose.

Payment and Liens (article 17): Recommend that Owner and Buyer attach an acceptable lien waiver form to this Agreement.

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Indemnity (article 20): This provision does not address if the product is used for purposes that are not originally intended. Misuse of a product would potentially be determined in litigation and is project specific.

Compliance with Laws (article 23): Add in Notes section, Indicated in article 1.

Governing Law (article 26): Users may wish to modify this section depending upon the local jurisdiction of the project. Jurisdictions with unique state laws may cause the parties to scrutinize and negotiate which jurisdiction's laws should govern the project.

Binding Dispute Resolution (section 27.4): Users may wish to modify this section depending upon the local jurisdiction of the project. Jurisdictions with unique state laws may cause the parties to scrutinize and negotiate which jurisdictional laws should govern this contract.

Section 27.5: Users may wish to provide for a definition of prevailing party. The force and effect of such definition may vary based on state law. One possible example is as follows:

If a party claiming a right to payment of an amount in dispute is awarded all or substantially all of such disputed amount, then such claiming party shall be the prevailing party. If a party defending against such claim is found to be not liable to pay all or substantially all of the disputed amounts claimed by the claiming party, then the party so defending against such claim shall be the prevailing party. If both parties prevail with respect to different claims by each of them, then the party who is prevailing with respect to the substantially greater monetary sum shall be deemed the prevailing party; otherwise, if both parties prevail with respect to monetary sums on different claims, neither of which sums is substantially greater than the other, the tribunal having jurisdiction over the controversy, claims or action shall in rendering the award determine in its discretion whether either party should be entitled to recover any portion of its attorney fees.

Venue (section 27.6): Users may wish to modify this section depending upon the local jurisdiction of the project. Jurisdictions with unique state laws may cause the parties to scrutinize and negotiate which jurisdictional laws should govern this contract.

Limitation of Liability (article 29): This is a critical provision that User should select carefully. Endorsing organizations have to provide additional comments on this point.

AGC Comments for ConsensusDocs 703:

Limitation of Liability (article 29): AGC members indicated that the standard option would be to check the box that does not limit liability, unless the Constructor has the appropriate upstream provision in its prime agreement with the owner. The Constructor is likely to be responsible for direct damages that flow from damages, and therefore limiting the Supplier's liability would create a potential liability gap.

WWEMA Comments for ConsensusDocs 703:

WWEMA suggests the deletion of "or renders for Buyer any of the incidental services ordered." Many times, the Seller will begin preliminary engineering while contract negotiations are taking place to help the Constructor meet its timetable with the Owner. The deleted clause, if left in, is likely to impede this cooperation.

Extent of Agreement (article 6): WWEMA users may want to take care to separate the cost of incidental services for tax consequences applicable to the project.

Force Majeure (article 10): WWEMA users should consider adding "and Price" after "extension of time" because this may be an appropriate remedy.

Inspection (article 13): WWEMA proposes to add at the beginning of the second to last sentence, "Except for final payment".

Multiparty Proceedings (section 27.7): It is often not possible to have all vendors agree to this provision during the bid process. Owners and Buyers may wish to waive or modify this section in order to increase competition and receive the most favorable prices. WWWEMA suggests that this section be modified so that the sentence begins, "Seller and Buyer will make best efforts to ensure that".

Limitation of Liability (article 29): Suggests that users check the second box limiting contractual liability and add the following: "In no event shall Seller or Buyer's contractual liability exceed ____." The parties should negotiate an appropriate contractual liability limit. The contract price as well as project circumstances should provide some instructive parameters to negotiate a fair amount.

Comments and Recommendations regarding ConsensusDocs 710*

Application for Payment

NGWA Comments for ConsensusDocs 710:

Item 11: NGWA recommends the deletion of the word "certified."

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Comments regarding ConsensusDocs 750*

Agreement Between Constructor and Subcontractor

Extent of Agreement (section 2.5): The "Extent of the Agreement" section from what was section 2.5 has been moved to section 12.1 and added to all ConsensusDocs agreements, including short forms.

Section 2.5.1.1, exhibit E: This exhibit should state specific responsibilities of the Subcontractor, and Constructor.

Emergencies (section 3.17): Formerly section 7.8.
Assignment of Subcontract Work (formerly section 3.17) was moved to the Misc. section in 12.2

Layout Responsibilities and Levels (section 3.21): Warranties was moved to section 3.13.

Claims Relating to the Constructor (section 5.3.4): This clarifying sentence was in the original 450 subcontract and was added to appear in the 750.

Subcontract Amount, (c) (article 6): If appropriate, the following incentives clause is suggested. To extent awarded in the prime agreement and Constructor has received such payment from the Owner, Subcontractor shall receive an incentive award based upon early completion; provide Subcontractor adequate notice prior to Substantial Completion.

Time of Payment (section 8.2.5): "What constitutes reasonable is a controversial subject that varies from state to state based upon state statutes and case law."

Section 8.2.7.2: Insurance coverage implies that there is a positive indication that there is an acceptance of liability for the loss.

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ConsensusDocs Guidebook Explanation of Notice of Cancelation Language:

Generally, construction contracts require that insurance policies include at least 30 days advanced written notice to the owner (or an upstream contractual party) if an insurance policy is canceled or allowed to expire. This has generally been satisfied through certificates of insurance as evidence of compliance. The Association of Cooperative Operations Research and Development (ACORD), the licensing company for insurance forms, has amended their certificate requirements (e.g. ACORD 25). Consequently, contractors and subcontractors may no longer be able to received certificates of insurance language that proclaims that the insurance company or insurance broker, should any policies be canceled before the expiration date thereof, "endeavor to mail 30 days written notice to the certificate holder." Therefore, contractual requirements that 30 days advanced notice be included in insurance policies may not be commercially available and altering ACORD forms to purport to do so may run afoul of state law. Consequently, current contract language addressing notice of cancelation for insurance policies no longer reflect the reality in today's construction marketplace.

Consequently, a working group of experts drafted language which reflects reality, while giving the Owner sufficient notice. The language provides an owner timely third-party notification of cancelation by the insurance company as well as creates an obligation on a party to give notice of cancelation to the owner or other upstream party. Lastly, the drafted solution looks to limit costs as well time efficiency issues by allowing for electronic notification by the insurance company or the insurance broker as a designee depending who is in the best position to have such information and can give appropriate notice. In addition, reference to prompt notice is expected to be soon as practical, but in no case longer than 5 days from first learning of cancelation or nonrenewal of an insurance policy without replacement.

The ConsensusDocs proposed contractual solution differentiates between nonrenewal, cancellation, and other changes like lapses in coverage. In the case of active nonrenewal by the insurance company, the company or designee is in the position to provide advanced notice. In the case of cancellation, it is not possible for the insurance company to provide advanced notice so notice would be provided very shortly after cancellation occurs. The most common example is late payment of premium. In this case, the company may cancel if payment is not received, however, if payment is received cancellation would be rescinded and any advanced notices would also have to be rescinded causing unwarranted confusion and inefficiencies. In other cases such as a lapse in coverage, only the design builder may be aware of the lapse and therefore only the design builders could provide that notice.

The ACORD form change impacts all standard contract documents, including the ConsensusDocs 200 and the AIA A201®, and most manuscripted construction contracts that contractually require insurance policies provide a 30-day advanced notice of cancelation. The ConsensusDocs notice of cancelation solution references where such language should be inserted

into ConsensusDocs contracts (ConsensusDocs 200, section 10.2.4). However, the ConsensusDocs proposed solution is equally applicable to other contracts that are now out-of-date due to the ACORD change. The ConsensusDocs Guidebook is being updated to respond to today's changing construction marketplace in a timely fashion and was deemed too pressing to wait until the next revision cycle.

Notification of Cancelation Insurance, ACORD Form Change (section 10.2.1 an d 10.2.4):

Section 10.2.1 In the 6th line, after the "and broad from property damage." insert, "The Constructor shall maintain completed operations liability insurance for one year after Substantial Completion, or as required by the Contract Documents, whichever is longer.

10.2.4 ~~The policies of insurance required under subsection 10.2.1 shall contain a provision that the coverage afforded under the policies shall not be cancelled or allowed to expire until at least thirty (30) Days' prior written notice has been given to the Constructor. The Constructor shall maintain completed operations liability insurance for one year after acceptance of the Work, Substantial Completion of the Project, or to the time required by the Contract Documents, whichever is longer. Before commencing the Work, the Constructor shall furnish the Constructor with certificates evidencing the required coverage.~~

To the extent commercially available to the Subcontractor from its current insurance company, insurance policies required under subsection 10.2.1 shall contain a provision that the insurance company or its designee must give the Constructor written notice transmitted in paper or electronic format: (a) 30 Days before coverage is nonrenewed by the insurance company and (b) within 10 Business Days after cancelation of coverage by the insurance company. Prior to commencing the Work and upon renewal or replacement of the insurance policies, the Subcontractor shall furnish the Constructor with certificates of insurance until one year after Substantial Completion or longer if required by the Contract Documents. In addition, if any insurance policy required under subsection 10.2.1 is not to be immediately replaced without lapse in coverage when it expires, exhausts its limits, or is to be cancelled, the Subcontractor shall give Constructor prompt written notice upon actual or constructive knowledge of such condition."

AGC Comments for ConsensusDocs 750:

(Additional comments on this document can be found on AGC's website at members only page of http://www.agc.org/galleries/members-only/AGC-only_ConsensusDocs_Guidebook.pdf)

The Consensus Document 750, Standard Form of Agreement Between Contractor and Subcontractor, introduces several changes from the previous and now defunct AGC 650. Those changes are outlined below:

Avoidance of Conflicts: A new section 2.2.1 is added discussing the avoidance of conflicts of interest between Contractor and Subcontractor and adds a warranty that neither Party has paid or received any contingent fees or gratuities to or from the other Party, which flows down to their agents, officers and employees.

Electronic Communications: Section 2.3.1 sets out a written protocol for the exchange, storage and retrieval of electronic documents (which can be used in conjunction with new Consensus Document 200.2, the Electronic Communications Addendum.) The Contractor will want to craft a protocol with the Owner tailored to anticipated Project communications and then make sure Subcontractors follow the same protocol during performance of the Project. In the event that litigation results and e-discovery becomes an issue, preservation of electronic information by all Parties consistent with their agreed-upon protocol can help limit the Contractor's liability.

Supremacy of Documents (section 3.1): In order to eliminate potential liability gaps between obligations owed to the Owner and those passed to the Subcontractor which may have direct responsibility for such obligation, strike "this Agreement" in the last sentence and replace with Prime Agreement.

Standard of Care (section 3.2): This section lowers the standard of care for the Subcontractor in performing its responsibilities under the Agreement from "best skill and judgment" to "diligent efforts." This can be modified if a higher standard is established in the Agreement between Owner and General Contractor.

Correction of Defects (section 3.15): This section adds language that now explicitly sets forth a remedy for the Contractor, but it first requires 48 hour notice during which the Subcontractor has the opportunity to cure defects or deficiencies in the Subcontractor's Work that damages the Contractor's Work or Owner's property.

Owner Furnished Information (section 4.4): This section now provides that, to the extent the Owner provides a warranty regarding Owner-furnished information, the Subcontractor may prosecute a claim in Contractor's name for the use and benefit of Subcontractor regarding breach of that warranty. The Subcontractor may ask to see information identified in the Agreement between Owner and Contractor that is included within the information the Owner warrants.

Time and Cost Adjustments (section 5.2): This section now explicitly allows for an increase in the Subcontract Time and Subcontract Cost if Contractor's schedule changes impact the Subcontractor's schedule and costs. The Contractor will want to make sure to include a "no damage for delay" provision instead of this section in instances where the Agreement Between Owner and Contractor does not allow the Contractor to recover additional costs as a result of delay.

Liquidated Damages (section 5.5): This section adds a new provision regarding delay liquidated damages and provides an explicit flow-down provision related to a mutual waiver of consequential damages in the Agreement between Owner and Contractor. Note that any damages

for which the Contractor is liable under that Agreement are not consequential damages for the purposes of the waiver of consequential damages in the Subcontract Agreement.

Pay-When-Paid (section 8.2.5): This section contains a contingent payment provision to the Subcontractor such that payment is due from the Contractor to the Subcontractor within 7 days of Owner's payment to Contractor. This is generally referred to as a "Pay-When-Paid" provision, and mirrors the common law of most states in that it provides for payment to the Subcontractor within a reasonable time if, through no fault of the Subcontractor, the Owner fails to timely pay the Contractor. If this section is modified to be a "Pay-If-Paid" provision, enforceability varies by state. Further guidance is available on the AGC website if there is an interest in modifying the provision to be a "Pay-If-Paid" contract provision.

Payment Application Notification (section 8.2.7): This section now provides for a 7-day period for Contractor to provide written notice to Subcontractor of any disapproval or nullification of all or part of Subcontractor's payment application. This provision did not previously appear in AGC subcontracts.

Indemnification (section 9.1): This section has new language providing Subcontractor indemnification to Contractor, Architect/Engineer and Owner for all claims for bodily injury and property damage, other than to the work itself, which mirrors standard commercial general liability insurance coverage language. This section also allows for the Subcontractor to be reimbursed for the percentage of liability in the claim attributable to the negligent acts or omissions of the Owner, Contractor and Architect/Engineer. Such reimbursement was not previously included in the previous and defunct AGC 650 or 655 Subcontracts. The Contractor will want to carefully review insurance obligations in the Agreement Between Owner and Contractor to make sure any special obligations imposed on the Contractor are similarly imposed on the Subcontractor so there is no gap in insurance coverage for these types of losses.

Additional Insured: Several new sections (9.2.11-9.2.11.1) provide "check the box" options creating the Subcontractor's duty to provide additional liability coverage, the listing of the Contractor as an additional insured on Subcontractor's CGL policy (which was not addressed at all in the AGC 650) and whether the Subcontractor has a duty to provide Owners' and

Contractors' Protective Liability Insurance ("OCP") (subparagraph 11.5.2.2): If OCP coverage is selected, a Contractor may desire additional insured protection for completed operations in addition to OCP coverage. This can be accomplished by striking "operations" in this section and then checking both boxes. Note: any additional cost incurred by the Subcontractor for purchasing such coverage shall be paid by the Contract, which should be reimbursable by the Owner if a consistent option is chosen in the ConsensusDocs 200 Owner-Contract Agreement.

Time and Price Adjustments (section 10.3): This section now explicitly provides for Subcontractor to receive an adjustment to its Time and Price via Change Order to the extent the Agreement Between Owner and Contractor permits the Contractor to receive such adjustments. Thus, the Subcontractor may seek to review the Owner-Contractor Agreement when negotiating

the Subcontract to confirm when cost and schedule adjustments are permitted. The ConsensusDocs provision is consistent with ConsensusDocs 200.

Contractor Termination (section 10.4): In this section, the Subcontractor also receives some new protection in the case of the Contractor being terminated by Owner for cause, through no fault of the Subcontractor. Previously, the AGC 650 applied to any Owner termination regardless of whether it was for cause or convenience. Now, the Subcontractor is entitled to recover from the Contractor reasonable costs arising from the termination of the Subcontract, including overhead and profit on Work not performed. The new ConsensusDocs provision is consistent with ConsensusDocs 200.

Dispute Resolution (section 11.5): The Dispute Resolution provisions in section 11.5 have undergone several modifications, most notably now explicitly imposing a duty of direct discussions and good faith negotiations on the Parties regarding a dispute. In the event that good faith discussions do not resolve the conflict, then mediation and "binding dispute resolution" follow. Again, a fill-in-the-box option is provided, allowing for either arbitration or litigation. Notably, section 11.6 has now been modified to place the responsibility for binding dispute resolution on the non-prevailing Party, but attorneys' fees are no longer explicitly called out as a recovery costs. Parties in states where common law imposes a duty to explicitly list the recovery of attorneys' fees in a contract should be on guard when negotiating this section and should modify it accordingly to provide for the recovery of attorneys' fees, if desired.

ASA Comments for ConsensusDocs 750:

(Additional comments on ConsensusDocs can be found on ASA's website at www.asa.org.)

Scope of Work (article 2): The scope of work should be limited to all work actually indicated in the plans and specifications which was the subject of the Subcontractor's bid.

Subcontractor's Responsibilities (article 3): Any "flow-down" terms, i.e., terms which impose obligations on a Subcontractor by reference to the contractual obligations of the Contractor to the Owner, should also "flow-up," so that the Subcontractor also has rights against the Contractor by reference to the rights that the Contractor has against the Owner. The Subcontractor should also be entitled to copies of any documents incorporated by reference before signing the Agreement.

A Subcontractor may be required to conduct a site visit, make observations, and report discovered discrepancies, but should not have an affirmative duty to discover problems in the site conditions or design that a person in the Subcontractor's trade would not ascertain by a reasonable, visual inspection. Subcontractors should be entitled to rely on the accuracy and completeness of the plans and specifications, and on the accuracy of reports of conditions furnished by the Contractor.

Where termination is not due to the Subcontractor's default, then the Subcontractor should be entitled to its contract damages, i.e., profit and overhead on uncompleted work, plus all expenses related to termination (such as termination of subcontracts and attorneys fees), plus payment for work completed and expenses for labor and materials to the date of termination.

A Subcontractor's warranty should provide that work is free of defects and performed in workmanlike manner, but should exclude defects inherent in the design or specified materials, ordinary wear and tear, improper maintenance, abuse, modifications, and implied warranties. A Subcontractor's warranty should have a time limit which should run from either substantial completion or issuance of a certificate of occupancy to the Owner, whichever is earlier. A Subcontractor's warranty should reserve the right of the Subcontractor to notice and an opportunity to cure any claimed breach of the warranty, by providing for waiver of any warranty claims where the Subcontractor is not provided an opportunity to cure.

Subcontractors should not ordinarily accept responsibility for design. When design services are requested, the delegation should be specific and should include all design and performance criteria. Subcontractors should be responsible for promptly reporting defects they actually discover, but cannot be responsible for other design defects that it is claimed they "should have" recognized, or for design requirements that violate code standards.

Subcontractor should be afforded a reasonable time for performance, and should be entitled to equitable adjustments for schedule changes, acceleration and delays. A Subcontractor cannot be responsible for schedule changes it has not reviewed and agreed to in writing.

Any closeout procedures and documents should be specified in the contract documents.

A Subcontractor should not be responsible for safety barriers unless specifically agreed. OSHA penalties are partly based on past violations and are intended as punishment and should not be shifted to other Parties to a construction subcontract.

Hold-harmless terms should be limited to bodily injury and property damage (other than the work itself). Such terms should also be limited to provide indemnity only to the extent of the Subcontractor's negligence, and should provide for payment of attorney's fees rather than including a duty to "defend." Ideally, hold harmless terms flow in both directions and provide mutual obligations to indemnify the other Party to the subcontract against the consequences of the indemnitor's own negligence.

Expenses claimed as backcharges should not be incurred before notice, and reasonable opportunity to cure, are provided to a Subcontractor. Backcharges should be billed within a reasonable time and not saved until the end of a project.

Payment should be passed through from the Owner not more than seven days after the Contractor is paid, or within a reasonable time after the Contractor would have been paid absent circumstances that are not the fault of the Subcontractor. Past due payments should bear interest

at a reasonable rate, so long as payment delay is not the fault of the Subcontractor. A Subcontractor should reserve an express right to stop work for non-payment whenever non-payment is not the sub's fault, upon reasonable notice and opportunity to cure, including costs of shut-down, delay and start-up. A Subcontractor should be entitled to payment for suitably stored materials. A general Contractor should hold payments for the benefit of Subcontractors.

Retainage should be limited to the amount retained by the Owner, with any reductions or early release of retainage passed through immediately to Subcontractors. The Contractor should use best efforts to obtain release of retainage from the Owner as soon as permitted under the general conditions.

Contractor's Responsibilities (article 4): A Subcontractor should have access to complete project financing information, including change orders, in order to evaluate its risk of nonpayment. Disclosures that demonstrate adequate project financing are a necessary condition to a commencement or continuation of a Subcontractor's performance.

Progress Schedule (article 5): See ASA comments under article 3 pertaining to a Subcontractor's reasonable time for performance.

Deadlines for claims should be based on actual knowledge of facts giving rise to a claim (rather than constructive knowledge) and should permit a reasonable time for claims; time extensions should be required for all causes reasonably beyond the Subcontractor's control; price adjustments should include the entire cost of delays not caused by Subcontractor (including overhead) and should include a reasonable amount of overhead and profit for extra work. A Subcontractor's time and price adjustments should not be tied to amounts received by the Contractor from the Owner. A Subcontractor should have a right to payment for any extra work that is performed at the Contractor's direction, provided that the Subcontractor confirms verbal instructions in writing before starting work.

One-sided terms that deny a Subcontractor any right to collect damages for delay, often called "no-damage-for-delay" clauses, are unacceptable. Mutual waivers of consequential damages, such as extended home office overhead, are beneficial and encouraged. A Contractor may reserve the right to assess a Subcontractor for a share of liquidated damages actually paid to the Owner, but only to the extent such share is proportionate to the fault of the Subcontractor in causing a delay.

Changes in the Subcontract Work (article 7): See ASA comments under article 5 pertaining to deadlines for claims being based on actual knowledge.

See ASA comments under article 3 pertaining to the requirement that a Subcontractor conduct a site visit.

Payment (article 8): See ASA comments under article 3 pertaining to hold harmless terms, retainage, and payment passed through from the Owner and closeout procedures:

The prevailing Party in any dispute arising out of a construction subcontract should be entitled to attorneys' fees and costs. Terms only requiring payment of a Contractor's attorneys' fees in the event of a Subcontractor's default are one-sided and should be avoided. Terms that permit fees only for designated dispute resolution procedures may exclude other lawful collection procedures and should also be avoided.

Subcontracts should require Contractors to provide copies of any payment bond to Subcontractors on request, and should expressly exempt steps to preserve lien rights from any dispute resolution requirements.

Language requiring one Party to sign waivers in whatever form is considered suitable by the other Party is generally unacceptable. Any waiver form should be specified before the contract is signed, should be conditional on payment (except for payments already received), should not apply to funds still held as retainage, and should not apply to claims unrelated to the payment security rights of the Contractor.

Indemnity, Insurance and Waiver of Subrogation (article 9): See ASA comments under article 3 pertaining to hold harmless terms.

Any requirements to name additional insureds on any of the Subcontractor's liability insurance policies, and any waivers of subrogation for claims covered by the Subcontractor's liability insurance policies (particularly workers compensation), are unacceptable. Requirements to provide special notices of policy cancellation or policy non-renewal often cause great difficulties and friction although they have never been shown to provide any benefits to anyone, and are also unacceptable. Requirements for continuation of coverage beyond the policy period, in the absence of a binding commitment from an insurer to provide that coverage, are also unacceptable. Separate liability insurance to cover the Owner and the Contractor for liability arising from "general supervision" of the project, such as Owners and Contractors Protective Liability Insurance ("OCP" - CG 00 09) may be required in lieu of any requirements to name additional insureds or to waive subrogation on the Subcontractor's liability insurance policies. The Owner or Contractor should be responsible to purchase all-risk property insurance including coverage for a Subcontractor's interest in installed work and in materials delivered, suitably stored or in transit. Coverage gaps required to be filled by a Subcontractor should be reimbursed.

Contractor's Right to Perform Subcontractor's Responsibilities and Termination of Agreement (article 10): See ASA comments under article 8 pertaining to prevailing Parties in disputes.

See ASA comments under article 3 pertaining to backcharges and when termination is not due to the Subcontractor's fault.

The Subcontractor should be entitled to claim time and price adjustments for any suspension of work which is not the fault of the Subcontractor. The Subcontractor should be able to terminate the contract for unreasonably long suspensions measured in the aggregate, and not by

consecutive days. Terms restricting recovery where work "would have been" suspended anyway due to Subcontractor's fault merely restate common law requirement for causation.

Dispute Resolution (article 11): Early mediation of disputes is beneficial and should be a condition precedent to the use of any other dispute resolution procedure. Should mediation not resolve a dispute, arbitration by an industry professional such as an architect, engineer, Contractor or Subcontractor is always preferable to litigation before a judge or jury. Arbitration should always be conducted subject to the terms of the written subcontract, so specific subcontract terms can assist Subcontractors to ensure that arbitration will provide a quick and efficient mechanism for resolving disputes. For example, subcontract terms can expressly provide that "The award shall be made within nine months of the filing of the notice of intention to arbitrate (demand), and the arbitrator(s) shall agree to comply with this schedule before accepting appointment. However, this time limit may be extended by Agreement of the Parties or by the arbitrator(s) if necessary." Drafting Dispute Resolution Clauses - A Practical Guide, AAA 12/7/2000. Or, subcontract terms may require direct participation by the Parties (not merely through their representatives) for

- selection of the arbitrator (to ensure an industry professional is selected),
- any Agreement or ruling to permit a continuance, and
- any Agreement or ruling to permit any discovery (particularly depositions, which add considerable time and expense) beyond the discovery of information contemplated by Rule F-7 of the AAA's Construction Industry Arbitration Rules, Fast Track Procedures in fast track cases (no claim or counterclaim exceeds $75,000), or Rule R-22 of the AAA's Construction Industry Arbitration Rules, Regular Track Procedures in regular track cases ($75,001-$500,000), or Rule L-4 of the AAA's Construction Industry Arbitration Rules, Procedures for Large, Complex Construction Disputes.

Subcontractor claims should not be tied to resolution of claims by the Contractor against the Owner.

See ASA comments under article 8 pertaining to attorneys' fees and costs.

Miscellaneous Provisions (article 12): Subcontracts should provide that the appropriate venue for dispute resolution procedures such as litigation or arbitration is the place where the project is located, and also that the law of the place where the project is located shall govern.

NGWA Comments for ConsensusDocs 750:

Due to the unique nature of water well contracting, the following ConsensusDocs documents are recommended by the National Ground Water Association (NGWA - www.ngwa.org) to be used to assemble a water well contractor's ConsensusDocs contractual foundation: 202 (change order form from long form 200), 205, 220, 221 (Schedules A – C), 260, 261, 262, 706, 707, 710, 750, 751, 781, 782 and 795.

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Comments regarding ConsensusDocs 751*

Short Form Agreement Between Contractor and Subcontractor

AGC Comments for ConsensusDocs 751:

AGC of America Comments can be found on AGC's website at members only page of http://www.agc.org/galleries/members-only/AGC-only_ConsensusDocs_Guidebook.pdf.

NGWA Comments for ConsensusDocs 751:

Due to the unique nature of water well contracting, the following ConsensusDocs documents are recommended by the National Ground Water Association (NGWA - www.ngwa.org) to be used to assemble a water well contractor's ConsensusDocs contractual foundation: 202 (change order form from long form 200), 205, 220, 221 (Schedules A – C), 260, 261, 262, 706, 707, 710, 750, 751, 781, 782 and 795.

Additional NGWA Comments:

The following comments are limited to job sites involving borehole or loop drilling for geothermal (aka, ground source) heat pump system installations rather than for water well construction.

Safety (section 5): NGWA proposes:

> *"Debris shall not be construed to include drill cuttings, drilling fluids, drilling muds, or residual grout materials. Constructor shall provide for the subcontractor dumpsters or other appropriate waste disposal containers for the removal of debris other than drilling cuttings, drilling fluids, drilling muds, or residual grout materials."*

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Warranties (section 6): NGWA proposes:

> *"The Subcontractor's warranties shall commence on the date of startup or the use of the geothermal system by the Constructor or the Owner. Startup and use of the system shall constitute Constructor or Owner acceptance of the system."*

Schedule (section 7.2): NGWA proposes:

> *"The Constructor shall insure that he provides suitable access to the designated area of which this Subcontractor shall perform his work and shall maintain the work area at all times."*

Comments and Recommendations regarding ConsensusDocs 752*

Standard Subcontract Agreement for Use on
Federal Government Construction Projects

Other FAR Provisions and Documents (section 12.14): One of the most important things to include in a subcontract for federal work or federally financially assisted work is flowing down the proper federal acquisition regulation (FAR) clauses down to the subcontract level in a consistent manner as the Prime Contract. Users should consider FAR Provisions exhibit included in the ConsensusDocs contracts software as a separate document in producing the exhibit referenced in section 12.14.

As a resource, a link to a Federal Project Checklist can be accessed here.

AGC Comments for ConsensusDocs 752:

Section 3.1: A potential liability gap might result if the Constructor/General Contractor is responsible to the federal Owner but not be able to pass that equal responsibility to the Subcontractor in the Subcontract Agreement. Therefore, AGC members should consider the following modification:

Revise the last sentence of ~~Article~~ section 3.1 to read as follows: "In the event of an inconsistency among the documents, the specific terms of ~~this Agreement~~ THE PRIME AGREEMENT shall govern.

One example of how the above the revision might come into play is the requirements in section 3.4 of the Subcontractor to conduct a visual inspection of the Worksite, where it is common of the federal Owner to obligate the Construction/General Contractor to have a higher duty to perform independent subsurface investigations to satisfy its obligations to inspect the Worksite.

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Comments and Recommendations regarding ConsensusDocs 803*

Agreement Between Owner and Design Professional

Schedule of Exhibits (article 11): Delete the reference to "Exhibit E: Dispute Resolution Menu." This reference is being struck due to the fact that this information is already incorporated into the document (see article 8).

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Comments regarding ConsensusDocs 842*

Owner and Energy Consultant Agreement

Agreement (section 2.2.1): The User is expected to create these referenced exhibits as applicable. These exhibits contain information that is largely based on a project and company specific information that varies. The Parties are encouraged to create other exhibits as appropriate and list the exhibits in this section.

Authorized Representative (section 3.8): User may want to delete this section if damages are not expected during the normal course of the Services.

Samples (section 3.11): User may want to delete this section if samples are not expected to be collected.

Hazardous Materials (section 3.12) User should determine whether this particular section should be stricken, particularly if it is known that Hazardous Materials will not be encountered.

Insert Project Description (Exhibit A): Commercial Building Energy Audits, Second Edition, American Society of Heating, Refrigerating, and Air Conditioning Engineers, Atlanta, GA, ©2011, except completing all of the forms and templates is not required..

Measurement and Verification Plan (Exhibit A): International Performance Measurement and Verification Protocol, Concepts and Options for Determining Energy and water savings – Volume I, July 2014, Prepared by Efficiency Valuation Organization, http://www.evo-world.org/, 1689 K Street NW, Suite 300, Washington, DC 20006, USA.

Responsible Party for a Model (section 4.3.3.2): Identify the party responsible for reach model deliverable. This includes all needed Design Models, Construction Models, and any Federated Models or Record Models.

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