The following White Paper discusses general concepts and considerations that should be made when drafting or modifying a contract intended for the Construction Manager at risk delivery method. This paper is broken down into eight sections:

1. Introduction
2. Construction Manager's Responsibilities
3. Owner's Responsibilities
4. Cost of the work, GMP and Contingencies
5. Prosecution and Progress, Limitations on Operations, CPM Scheduling Specifications
6. Insurance and Bonds
7. Dispute Resolution
8. Termination and Suspension

1. Introduction

The Construction Manager at Risk (CMAR) is a delivery method which entails a commitment by the Construction Manager (CM) to deliver the project within a Guaranteed Maximum Price (GMP) which is based on the construction documents and specifications at the time of the GMP plus any reasonably inferred items or tasks. The CMAR provides professional services and acts as a consultant to the owner in the design development and construction phases. Often, the CMAR also provides some of the actual construction of the project depending on the availability of bidders and the expertise the company has. In addition to acting in the owner's interest, the CMAR must manage and control construction costs to not exceed the GMP because contractually any costs exceeding the GMP that are not change orders expanding the scope of the project are the financial liability of the CMAR.

Generally, the CMAR will give the Owner a GMP prior to bidding the project. Included in this GMP is a contingency line item to take care of bid overages, reasonably inferred items and other project related items that may arise during construction. By giving the Owner the GMP prior to bids, the CMAR assumes the risk of bids coming in higher as he is contractually bound to deliver the project per the plans and specifications and any additional allowances as defined in his GMP. This is considered a higher risk CMAR project from the CMAR's perspective and could result in higher construction management fees. When the CMAR and Owner agree to allow the GMP presented after hard bids for the major work items have been received, this lower risk (again, from the CMAR's perspective) may result in a lower construction management cost to the Owner. An Owner may want to announce at the RFP/RFQ its expected method for establishing the GMP.

Owner Benefits

This delivery method has several real and perceived benefits to the Owner, including:

- A higher level of cost control from the start. A successful CMAR project may involve hiring the CMAR prior to the architect and having the CMAR help select the architect. During the design process, the CMAR provides cost estimates at contractually established points. If these cost estimates are in line with the established budget, the architect then moves on to the next phase of design. If not, the CMAR, Owner and Architect assess the cost estimate and make design changes to bring the design back into budget alignment. This process allows for changes to be made earlier in the design process, thus minimizing the cost of change.
- The CMAR is an Owner advocate and manages the project with the Owner's best interest in mind at all times. However, this benefit is often debated. Afterall, the CM has contractually promised the Owner a GMP for which it is liable for.
- The CMAR takes the burden off of the Owner in managing and coordinating the project. Many Owners believe or act as though by use of a CM that the CM will relieve the Owner of all of its responsibility. This is false and an unengaged Owner in a CMAR delivered project has relinquished control and exposed itself to unknown risks.
- The Owner's risk is reduced by the CMAR process providing the construction documents are complete and proper allowances and contingencies are built into the GMP.
- Constructability and value to the Owner are afforded by the Value Engineering expertise brought to the process by the CMAR.
- Since the CMAR is at risk and gives the GMP prior to bid, he does not have to select the low bid*. Generally, the thorough prequalification process minimizes the number of low bidders that get disqualified and generally leads to lower long term costs, higher quality, and fewer claims because only pre-qualified contractors are performing work. *State statutes may dictate otherwise.

It is important to keep in mind that an adverse CMAR-Architect relationship can lead to some of the same issues that arise in a design-bid-build delivery method. By having the CMAR help select the Architect, the risk of an adverse relationship is minimized.

As with any delivery method, incomplete and/or inaccurate construction drawings will result in change orders and disputes. The misunderstanding associated with the GMP is that this maximum price will not be exceeded in any case. It is important to understand that the GMP is based on the plans and specifications at the time of the GMP with some reasonable assumptions made and a reasonable contingency included. Major changes in scope will result in a change order or a claim, which increases the GMP contract. In addition, any Owner changes to the project and scope require a change order. By requiring the documents by 100% complete prior to receiving the GMP, the risk of unanticipated change orders are minimized.

2. Construction Manager's Responsibilities

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Introduction

Under the CMAR contracting method, the CMAR takes on the risk of completing the project with cost certainty provided to the owner. During pre-construction, the CMAR assumes the role as an advisor to the Owner during planning. The CMAR works closely with the Architect using its knowledge and experience as a builder during scope development to improve budget, schedule, and constructability of the design. The CMAR usually provides a GMP to the owner with a partially completed design and manages a design contingency to cover any assumptions or uncertainty in the remaining design to be completed. During construction, the CMAR assumes the role of the General Contractor (GC) in a similar capacity as a GC in a traditional design-bid-build, but with the advantage that the CMAR is not required to wait until all aspects of the design are complete prior to starting construction. This offers significant opportunity for schedule improvement because the CMAR may bid and award subcontracts to start various packages early for approved portions of the design, while un-related aspects of the design are still being completed.

What to Expect from a CMAR During Procurement?

The CMAR candidates being considered for selection must bring the appropriate qualifications and experience at a competitive price. In the public sector, CMAR is usually selected using a 2-step procurement. First is a Request for Qualifications "RFQ" to establish short-list of qualified firms. Second is a Request for Proposals "RFP" soliciting pricing proposals for pre-construction, general conditions, and markup fee percentage of construction costs.

The initial agreement is often a fixed fee for pre-construction services. The fixed fee may also include general conditions costs. The initial agreement often also includes a negotiated contractor's markup fee, usually established as a percentage of construction costs.

During the procurement stage, it is important to set the "ground rules" for establishing a GMP. These include considerations such as timing, how contingencies will be handled, whether the subcontractor and vendor procurement will be open book or closed, and whether there are any shared savings provisions to be incorporated into the GMP contract. An experienced CMAR contractor will often provide recommendations for the contracting mechanism during procurement.

The CMAR's Role During the Preconstruction Phase

The CMAR first fulfills the role as an advisor to the Owner during the preconstruction phase. While it does not have a direct contractual relationship with the Architect, the CMAR works closely with the design team providing input regarding the schedule, probable construction costs, subcontractor and material availability and identifies potential risks.

Constructability Review

One of the key advantages of the CMAR delivery method is the ability to have the CMAR perform a constructability review during the early stages of design. The result is clearer contract documents and more efficient construction logistics, promoting significant cost savings to the owner, smoother construction, and fewer changes and claims. The CMAR should perform a review of the preliminary plans and specifications that includes at a minimum, staging and scheduling, permitting, site conditions, traffic plans, utilities, neighborhood impacts, equipment operability, tenant disruption and security.

Recommend Design Alternatives

By engaging as an advisor during the pre-construction phase, the CMAR has the ability to influence the design. With extensive experience in constructing similar projects, the CMAR will complement the Architect by providing input with a focus on eliminating weaknesses and ambiguities in plans and specifications that could lead to contract changes, delays, cost increases, and claims. The CMAR often provides a written report to the owner and the Architect for their inclusion of recommendations in the final documents.

Risk Management

After an initial review of the preliminary design documents, the CMAR should facilitate a risk workshop with the key project participants. The objective of the risk workshop is to identify and assess potential risks and establish a risk mitigation strategy. The CMAR's deliverable is a frequently updated risk register that identifies each risk, the probability of occurrence, potential cost or schedule impacts, the individual responsible for managing the risk and the risk mitigation strategy. The risk register can be utilized later for establishing a risk-based calculation of contingency.

Cost Modeling

The CMAR should prepare and maintain a cost model that is to be continuously

reviewed and updated throughout each stage of the design as the scope of the project is defined. The model should include all estimated costs for labor, materials, and equipment and can be supported by subcontractor and supplier quotations when they become available. The cost model should include all project costs including an allowance for contingency based upon the items identified in the risk register. The model serves as a means of transparency and constant cost feedback to the owner and architect. Many owners choose to engage with an Independent Cost Estimator "ICE" who prepares an independent opinion of probable costs for reconciliation with the CMAR's cost model.

Value Engineering

The maximum benefit of a value engineering "VE" exercise is achieved when it is performed early in the design development (e.g. 30% design documents). While the analysis is typically led by the Architect or Engineer, it is important for the GMCG to be part of the analysis to maximize contractor input. The collaborative VE efforts between the Architect, Engineer, CMAR contractor, and Owner early in the design provides the greatest opportunity to identify value improvement opportunities for the project. Many VE efforts that fail are those that take place too late in the scope development where the true value planning is replaced with an effort of scope reduction and "cheapening" of the design to reduce costs, which is not the intent of VE.

If there is a shared savings provision in the CMAR contract, any savings identified because of the CMAR's participation in a pre-construction VE workshop are usually not shared.

Obtaining Subcontractor / Vendor Quotes

As part of the pre-construction services, the CMAR should develop and provide a plan for subcontractor and vendor procurement. The plan should provide details regarding the expectation of obtaining a minimum number of quotations to ensure competitive pricing, evaluation criteria and the process for selecting a subcontractor or vendor. During pre-construction, the CMAR should begin to solicit quotations from subcontractors and vendors for major cost-driving items and long lead procurement items to be incorporated into the cost model.

Project Planning

During pre-construction, the CMAR is responsible for establishing the planning documentation that will govern the execution of the project during the construction phase. These documents usually include items such as the CPM schedule (discussed in detail under the heading, "Prosecution and Progress, Limitations on Operations, CPM Scheduling Specifications", the health and safety plan, quality control plan, and the project management plan (among others). These documents should be treated as formal submittals and be re-visited by the CMAR frequently throughout the duration of the project.

Establishing the Guaranteed Maximum Price (The "GMP")

The CMAR's Role During the Construction Phase

As the CMAR project transitions from pre-construction into the construction phase, the CMAR's advisory management assistance is no longer provided as the role shifts for the CMAR from advisor/manager to the CMAR position. This transition occurs after the transfer of risk and a GMP is established. During the construction phase it should be expected that the project will progress with fewer opportunities for change orders and disputes than with other traditional delivery methods because the CMAR has already been involved with the design review risk identification. Serving as the general contractor during construction, the CMAR has several project management responsibilities, including those detailed below.

Quality Assurance and Quality Control

The CMAR typically develops and submits to the Owner for review and approval, a Quality Assurance (QA) and Quality Control (QC) plan. During the Construction phase, the CMAR is responsible for the overall QA/QC on the project, in a similar capacity as the General Contractor in a more traditional Design-Bid-Build Delivery Model.

Establish Bid Packages

One of the primary advantages to the CMAR delivery model is the schedule savings realized due to the CM's ability to release multiple bid packages to its subcontractors as the design information is available. During construction, the CMAR is responsible for developing the scope for each bid package, soliciting bids, procurement and tracking of all subcontractor construction packages. In some cases, the CMAR may be required to provide a recommendation to the Owner and request authorization to finalize the procurement of each bid package (this is often the case with an "open book" approach or when shared savings are involved).

Subcontractor and Vendor Management

The CMAR assumes a role like that of General Contractor in a traditional Design-Bid-Build delivery for subcontractor and vendor management. The CMAR is responsible for managing the payments to its subcontractors and vendors and typically invoices the Owner either monthly or bi-weekly.

Change Management

Because the CMAR is involved during pre-construction and design, it is reasonable to expect fewer changes and disputes throughout the duration of the construction. However, in some cases the project may still experience differing site conditions, owner changes, or unforeseen circumstances that require a change order. In most cases, Change Orders to a CMAR contract are handled in a manner like a Design-Bid-Build. If it is an "open book" approach, then CMAR cost information can be used to refine the negotiated amount of the change order.

3. Owner's Responsibilities

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Introduction

The Owner's goal for using CMAR as a project delivery method is to discover project pitfalls ahead of time to reduce change order delays and costs. CMAR often feels like an arranged marriage in that the Owner (City, County, local governmental entity, etc.) independently engages its own professional design engineer/architect ("Design Team") and at some concurrent or later date, engages the CMAR. These two entities are required to work together to complete the project. In Texas, and likely other jurisdictions, procurement of the Design Team and the CMAR is governed by statute.

When to Use CMAR. As a project develops, the Owner must decide whether to use traditional design-bid-build or use an alternative delivery method such as CMAR. The Owner does not have to make this decision at the time the project begins design. For more complex projects or those which might need to be handled differently than a typical Design Bid Build, staff may determine that CMAR is more appropriate. The decision to use CMAR to deliver the project should be made early in the design phase.

Owner's Procurement of CMAR. At about 30% (usually between 30-50%) design, the Owner prepares to procure the CMAR. Bringing the CMAR on board at this stage is critical as one of its functions is to perform value engineering/constructability review of the Design Team's work.

Procurement of the CMAR is governed by statute in Texas and the steps for procurement must be carefully followed.

Owner must prepare the project's description and relevant information, including identifying the Design Team, evaluation criteria, MWBE requirements, basic schedule for delivery and estimated project budget including owner's contingency as essential elements of the advertisement seeking a qualified CMAR and announce the time and location where proposals will be publicly opened. An RFQ or RFP-style

selection process must also be stated. (Texas allows one step [RFP] or two step [RFQ to RFP] CMAR procurement).

On the designated day proposals are due, after any pre-proposal meetings, the Owner opens the proposals and reads the proposers' names, fees and costs aloud. Be sure to follow the statutory steps exactly.

Owner shall then convene a panel to evaluate the proposals using the advertised evaluation criteria, proposed fees and costs and responsiveness by the CMAR proposers to the RFP/RFQ. This results in a ranked list which may be further refined by interviews. After the Owner has finalized the rankings, it shall attempt to negotiate agreement with highest ranking firm – the CMAR offering the best value to the Owner. The City of Fort Worth allows CMAR proposers to propose certain incentives to be further negotiated but also sets a reasonable minimum dollar amount for the preconstruction services so as to avoid proposer's submitting $0 in an attempt to "win the bid". There are costs involved in the preconstruction phase and it would be folly to allow a potential CMAR to pretend there aren't.

Owner's next step is to attempt to negotiate a contract with the highest ranked CMAR. The City of Fort Worth provides a copy of its contract form and general conditions during the RFP/RFQ process so that the CMAR can base its general conditions costs on something tangible and to avoid surprises at the negotiating table. The City of Fort Worth does not prohibit proposed changes to the contract docs but discourages changes to the general conditions.

During negotiations, incentives are on the table since they are not prohibited under alternative procurement methods. The City of Fort Worth typically shares unused contingency funds.

Once a deal has been negotiated, staff gains approval from the governing body to enter into the contract and sometime thereafter, issues a notice to proceed with preconstruction phase activities.

<u>The Owner's Role During the Preconstruction Phase.</u>

At this phase, the Owner's project manager remains reasonably engaged with the Design Team and CMAR in the event questions – or disputes – arise as each party has a contractual link to the Owner, but not to each other. Often, though, the Design Team has a good grasp on the Owner's project goals and can convey the concepts to the CMAR. The CMAR and Design Team perform the Preconstruction Phase value engineering/constructability review – in anticipation of CMAR preparing the GMP. Early works packages such as for utility exploration, basic land preparation/grading and occasionally a specialty request are generally allowed by contract and with Owner's

approval. All costs associated with early works packages will be incorporated into the GMP. Texas statutes require the CMAR to publicly bid major elements of the work – the same standard as the Owner in a Design Bid Build project – however, low bid is not mandatory if properly advertised and CMARs seem to like to use best value bidding which, while a bit more time consuming due to the evaluation process, provides the CMAR with more control over which contractor gets the job.

At the appropriate time, the Design Team and CMAR present to Owner the refined project construction documents for review. These will contain a project schedule, expected construction costs, work phases, MWBE goals and other items necessary to deliver construction of the project. Owner's project manager may accept or request further review of these plans, especially if they're near the top end of the project budget. The CMAR may elect to submit its GMP on these projections – which may contain a very high contingency and risk to CMAR– or may elect to solicit hard bids for the various work phases prior to establishing the GMP. This also may be negotiated during contract negotiations or the method may be presented at the outset of the CMAR procurement process.

Establishing the Guaranteed Maximum Price (The "GMP")

In The City of Fort Worth's experience, the CMAR generally will bid the work phases prior to establishing the GMP. This is a lower risk approach and, when considering a high contingency for a GMP based on estimates may keep costs lower. When all is ready to go, the CMAR publicly solicits its work phase bids, receives and evaluates them, and submits its proposed GMP to Owner. Owner may specify to CMAR that only companies prequalified by Owner may be awarded those certain elements of the work which require prequalified contractors. CMAR may self-perform portions of the work provided that CMAR submits bids to do so in the same manner as all other companies vying for the jobs.

It is advisable that an Owner reserve the right to terminate the CMAR contract should there be failure to negotiate a GMP. It is also advisable that an Owner reserve for its own use a private contingency which is not shared with the CMAR. This is important as even after all the value engineering, or after construction begins, a scope change may become necessary for which the Owner is responsible to pay the increase to the GMP.

After the GMP is successfully established, the contract moves into the Construction Phase. At this stage, CMAR must issue its performance and payment bonds and any additional maintenance security required by the Owner.

<u>The Owner's Role During the Construction Phase.</u>

While an Owner should never not be involved with its project, the Owner has ostensibly hired a competent firm to manage and construct the project. The Owner's

own project manager is, of course, responsible for general project oversight, communication with CMAR, approving use of the project (shared) contingency and for paying invoices. Additionally, the Owner is responsible for procuring materials testing, and project inspection. It is advisable that the Owner's project manager remain in close contact with the CMAR's designated representative throughout the work. Owner's project manager needs to keep an eye out for poor project management – as on any job – which may negatively affect the public. Owner shall also monitor the CMAR's use of contractors – to make sure they're appropriately pre-qualified and ensure that CMAR's self-performance, if any, is proceeding according to plan. Owner's project management has other complications as inspectors in the field and even the project manager from time to time will engage with the CMAR's subcontractors at the job site instead of with the CMAR's project representative. It is often hard to remember that a contractor with whom the Owner might do regular business under a Design Bid Build project is not the Owner's direct hire in a CMAR project. Except for basic health and safety and installation review by the inspector, the CMAR's contractor should not be contacted directly by Owner's staff. This is particularly important when the contractor complains to the inspector or project manager about payment issues between it and the CMAR. Owner's staff has to keep straight exactly who and in what capacity they're dealing with.

Completion of the Project.

At the end of the project, the Owner and CMAR meet to reconcile the project costs and to divvy up the shared incentive if any remains. The City of Fort Worth prefers to share contingency funds as opposed to paying a bonus for early completion as that might lead contractors to try and cut corners. Sharing contingency dollars also encourages the CMAR to carefully evaluate the project's constructability and estimate costs in the preconstruction phase in order to reduce internal change orders. At completion, the CMAR presents to Owner any warranties obtained during construction and to determine exactly when the maintenance bond time begins to run.

4. Cost of the Work, GMP, Contingencies

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The sections of any Construction Manager at Risk (CMAR) agreement that address the establishment of the GMP and contingency carry some of the most significant risk for the public Owner. Disputes often arise regarding provisions related to what was known at the time of the establishment of the GMP or the contingency and exactly who owns the "left overs" at the end of a project. This section explores some of these considerations in the context of ***AIA Document A133 - 2009 Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price (A133)***.

The GMP

Introduction

Clients of all types, including municipalities, recognize that contractors have experience, wisdom and creativity. They want to leverage this experience not only during the construction phase, but during the design phase of the project. The reasoning behind this is somewhat obvious in that it is easier to make creative and cost-effective changes to a project much more inexpensively with a pencil when the project is in the design phase as opposed to when the design budget is fully exhausted, and the project is in the construction phase. Another desire is to have more consistent and predictable procurement process with costs being more accurately quantified earlier in the project lifecycle. Owners select a Construction Manager during the design phase to provide advice on cost, schedule and constructability. As the contract documents near completion the CM takes bids from subcontractors. These bids are fully transparent to owner and are ultimately used as a component to establish a guaranteed maximum price (GMP).

The term GMP – Guaranteed Maximum Price is often mis-understood. On its face one would think that this is indeed the maximum amount that an Owner will have to pay to build a project. This premise is simply not true. The GMP corresponds to a specific scope of work at a specific point in time. With this in is mind, it important to define exactly what is in the "bucket" of the GMP.

The GMP contains the sum of the cost of the work (subcontractor bids) that is already established along with estimates for trades not under contract, construction general conditions costs (field overhead, site safety, scheduling, etc.), CM contingency and the CM's fee. The GMP establishes a lump sum agreement for the work between the Owner and CM. The AIA 133 states:

> *§ 2.2.1 At a time to be mutually agreed upon by the Owner and the Construction Manager and in consultation with the Architect, the Construction Manager shall prepare a Guaranteed Maximum Price proposal for the Owner's review and acceptance. The Guaranteed Maximum Price in the proposal shall be the sum of the Construction Manager's estimate of the Cost of the Work, including contingencies described in Section 2.2.4, and the Construction Manager's Fee.*

The GMP will almost always be established prior to the project design being fully completed. Therefore, it is critical that the parties have a clear understanding of what is being bid and what should be reasonably inferred in the final design which will be completed in the future.

> *§ 2.2.2 To the extent that the Drawings and Specifications are anticipated to require further development by the Architect, the Construction Manager shall provide in the Guaranteed Maximum Price for such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include such things as changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which, if required, shall be incorporated by Change Order.*

Section 2.2.3 addresses the requirements of the CM when submitting its GMP proposal.

> *§ 2.2.3 The Construction Manager shall include with the Guaranteed Maximum Price proposal a written statement of its basis, which shall include the following:*
>
> *.1 A list of the Drawings and Specifications, including all Addenda thereto, and the Conditions of the Contract;*
>
> *.2 A list of the clarifications and assumptions made by the Construction Manager in the preparation of the Guaranteed Maximum Price proposal, including assumptions under Section 2.2.2, to supplement the information provided by the Owner and contained in the Drawings and Specifications;*
>
> *.3 A statement of the proposed Guaranteed Maximum Price, including a statement of the estimated Cost of the Work organized by, trade categories or systems, allowances, contingency, and the Construction Manager's Fee;*

.4 The anticipated date of Substantial Completion upon which the proposed Guaranteed Maximum Price is based; and

.5 A date by which the Owner must accept the Guaranteed Maximum Price.

An Owner should not necessarily stop at this list of five as a requirement in the Statement of Basis as each project is unique and has its own special features and factors that can cause risk. For example, if the project contains significant schedule risk such as the completion of a school by August, because students are coming in September, the Owner may find it appropriate to include a more robust confirmation that the substantial completion date will be met.

The greatest risk of additional costs on a construction project arises from factors such as third-party impacts and differing site conditions. These factors should be considered at every stage of the design process and especially when establishing the GMP. The CM's assumptions should be clearly documented in response to Section 2.2.3 or a similar clause. Owner's should also ensure that the contract documents adequately allocate risk to the party with the ability to best manage the risk.

Differing Site Conditions

Encountering a differing site condition on a project can be extremely costly in many ways and for multiple project participants. Consider a situation where unanticipated rock is encountered in an excavation. The first thought that comes to mind is that of an excavation crew who has stopped work and is staring into a hole, wondering where did this rock come from and how do we get it out. The project suspends, however labor, equipment and overhead costs do not. The owner also begins to incur expenses as the project stands still and a dispute arises as to whether the CM should have reasonably inferred the presence of rock when the GMP was established.

A Question of Risk Allocation

The largest risk and unknown cost on a construction project is associated with what cannot be seen. The fear of a differing site condition can influence the owner as it drafts its contract documents and the CM as it prepares it GMP proposal. Sometimes this fear manifests itself in the owner transferring all of the risk to the CM. In turn the CM prices the risk accordingly, as if a differing site condition will be encountered. The result is that the owner pays for a differing site condition whether or not it is encountered. There are a couple of questions that need to be considered during the contract drafting stage of the project:

1. Who is best able to handle the risk? This will vary from project to project depending on the type of project, strength of the owner and strength of the contracting community.

2. What is the potential cost of the risk?

3. What is the owner's risk tolerance?

These are important questions that need to be answered objectively and who's answers need to be communicated to the party who is drafting the contract provisions for the project. Any contract clause that allocates risk should consider and incorporate the answers to these questions.

Third Party Impacts

There are numerous parties that are involved with construction projects whose actions are critical to on time completion. The relocation of utilities are often required for a contractor to begin work. Outside agencies such as environmental agencies or the Army Corp. of Engineers often require detailed permits for work to commence. There are also railroad approvals and scheduling considerations when working around railroad facilities. Even though the actions of these parties can be crucial for successful completion, they typically have no contractual relationship with the owner or contractor. What that means is that despite the project participants (owner and CM) efforts to compel third parties to complete their work on time or understand the importance of on time approval of permit applications and cooperation when working around their facilities, they can work at whatever pace they choose and impose whatever regulations they wish without repercussion.

Contingency

Introduction

Contingency estimating is often mis-understood by the Owner and the CM. Often contingency is established by the contractor or CM assigning some random percentage such as 5 or 10% of the estimated construction costs. It is not uncommon for the percentage to be assigned with no more logic or methodology than gut feel. However, the proper establishment of contingency is more complicated and more important to project success than a simple guess affords. With this in mind, it is important to understand what contingency is and what it is not.

There are two types of contingency in a CMAR project, CM and Owner. It is important to understand what each of these are and their intended purpose.

CM Contingency

The CM contingency belongs to the CM if its is needed, but in most cases is returned to the owner if it goes unused. The timing of the establishment of the GMP will have an affect on the amount of contingency that a CM includes with its GMP proposal. If the design documents are less developed at the time of the GMP proposal, the contingency will be higher to reflect the uncertainty in the incomplete design. However, contingency should be less for a design that is further developed at the establishment of the GMP.

Section 2.2.4 of the AIA 133 defines CM contingency as:

Contingency used to cover cost overruns, but solely to the extent not caused by the Construction Manager's intentional misconduct, material breach of the agreement or material breach of the standard of care. It further states that the contingency will not be used for costs covered by Change Order or those excluded by the agreement. Lastly, no expenditures from contingency will be made without prior authorization from the owner.

The US Department of Energy defines contingency as:

> "The [contingency is the] amount budgeted to cover *costs that may result* from incomplete design, unforeseen and unpredictable conditions, or uncertainties within the defined project scope. The amount of the contingency *will depend on* the status of design, procurement, and construction; and the complexity and uncertainties of the component parts of the project." [italics added].

The key phrase in the DOE's definition is "may result". There is a difference in something that **will** occur as opposed to something that **may** occur. The difference in opinion between "will" and "may" occur is the basis of many disputes. Therefore, as stated above, the definition and understanding of scope along with proper documentation of that understanding at the time of establishment of the GMP is critically important.

Typical uncertainties that should be considered in the CM's contingency component of the GMP include:

- Subcontractor bid risk
- Labor and material availability
- Subcontractor coordination
- Schedule delay costs attributed to the owner

To be properly addressed, these factors may require significant analysis and pricing beyond what is typically provided in a percentage allocation.

An obvious question regarding the use of contingency is what happens if all the contingency is not used? There are three basic options in this scenario:

1. The CM retains the unused portion
2. The unused portion remains the Owner's
3. The CM and the Owner share the savings

There have been numerous studies performed and articles written trying to establish a conclusive approach. A simple search of contingency and shared savings provides the reader with the numerous studies and pros and cons of each.

Owner's Contingency:

In CMAR project delivery the owner holds the design contract and as a result, the design contingency normally assigned to the owner. Design contingency is in place to account for inaccuracies in estimating due to both quantitative (quantity take offs) and qualitative such as design errors and omissions. Some agencies have chosen to break a design contingency out of this pool of funds. In this case, the agency might give control of that contingency to the design consultant and use it as a sort of GMP on the design contract to discourage scope creep. Typical uncertainties assigned to the Owner's contingency are:

- Design errors and omissions
- Scope creep
- Owner directed scope enhancements
- Force Majeure
- Regulatory change

There are many philosophies surrounding establishment of the GMP and contingency. Regardless of one's position regarding issues like when the GMP is established, how contingency and shared savings, how contingency is addressed is vitally important for mitigating a public Owner's risk profile.

5. Prosecution and Progress, Limitations on Operations, CPM Scheduling Specifications

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Introduction

The majority of construction claims involve some component of a dispute over time. Whenever there is a dispute over time, one party asserts a claim for additional time-related costs against the other for items such as extended general conditions costs, premium time, acceleration, liquidated damages and loss of productivity.

A significant pitfall of traditional delivery models (such as Design-Bid-Build) is that the Contractor does not embark upon major planning efforts until after they have been awarded the contract and issued a notice to proceed. This is often after the 100% design has already been completed. It is not uncommon under traditional delivery methods for a project to progress several months into construction without an acceptable baseline schedule. The CMAR delivery method enables the contractor to become engaged with the project during the design, enabling contractor's planning efforts to start further "upstream" in the project lifecycle. The two primary benefits include: schedule feedback to the design team and a more thorough, well thought out plan established by the contractor to execute the work.

As with any delivery method, with CMGC it is important that the contract outline the rules and requirements regarding contract time, limitations of operations and scheduling requirements. The schedule is the tool that will enable project participants to understand the causal events and subsequent impacts that effect contract time. It enables participants to identify, avoid, and mitigate issues that may have an impact on time as they arise and quantify the time impact of changes in the work. The schedule is also the tool that will be used to apportion responsibility for delays that have already occurred. The following includes discussion and examples of key scheduling specification sections that should be considered in the establishment of a CMAR contract.

Definitions:

The CMAR Contract Documents should define key terms related to the schedule. Several of those key terms are shown below with suggested definitions.

Contract Times – The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment with the concurrence of the Owner.

Effective Date of the Agreement – The date indicated in the Agreement on which it becomes effective.

Milestone – A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to completion of all the Work.

Notice to Proceed – A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

Progress Schedule – A schedule, prepared by and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

Day – The word "day" shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

CPM – Critical Path Method is a computerized construction project planning and scheduling process where a construction project schedule's critical path is the longest chain or path of activities leading to project completion.

Delays – Any slippage of the Early Dates in the Contract Progress Schedule which forecast a slippage in the Contract Milestone and/or the Contract Completion Date.

Early Completion Schedule - A CPM schedule showing completion of the Work ahead of the Contract Completion Date specified in Subsection 8.03 - Prosecution of Work or elsewhere in the Contract Documents.

Commencement of Contract Times; Notice to Proceed: The CMAR Contract should clearly define Contract Times and stipulate that in no event will the Owner have any obligations or duties to the Contractor under the Agreement until the Notice to Proceed is given to the Contractor. Contractor has no rights or remedies arising from execution of the Agreement prior to receiving the Notice to Proceed. Careful consideration shall be paid towards the timing of the Notice to Proceed to establish

coordination with the Design Team during Pre-Construction. The Contract Price shall include the furnishing of all materials, the performing of all the labor requisite or proper, the providing of all necessary machinery, tools, apparatus and other means of construction, the doing of all the herein referenced work in the manner set forth, described and shown in the specifications and on the drawings for the work, and in the form of contract, and the completion thereof, "Acceptance of the Project", within a defined number of calendar days upon receipt of a Notice to Proceed for Construction. For projects that may involve weather-sensitive work activities (which should be clearly defined), if the completion date falls between December 1 and March 15, then the same number of days beyond December 1st will be extended after March 15.

Pre-construction schedule: The CMAR contractor's cost and schedule feedback should be provided frequently to the designer during the pre-construction services phase of the project delivery. Within 10 days after the Effective Date of the Agreement for pre-construction services (unless otherwise specified in the Contract Documents), Contractor shall submit to the Owner for review a Pre-construction schedule outlining in detail the steps required to complete the pre-construction phase services and execute the overall construction of the project through completion. The CMAR should provide regular updates (period should be defined) throughout the progression of the design. As the scope definition progresses towards each major design milestone, the Contractor should provide a schedule that reflects the latest updates to the design. In some cases, several versions of the schedule may be required to show the potential impact of potential design alternatives. The intent is to optimize buildability of the design through constant schedule feedback from the constructor.

Baseline Schedule: The Baseline Contract Progress Schedule shall be due 10 calendar days after the Effective Date the Notice to Proceed for Construction. The Baseline Schedule shall only reflect the Work awarded to the Contractor and shall not include any additional work involving extra work orders or any other type of alleged delay. The accepted project baseline schedule may also serve as the documentation of the contract time that is utilized for the establishment of the GMP. Owners should take note of how the baseline schedule defines the scope of work that will be completed prior to substantial completion – as the definition of "complete" is the source of many disputes and delay claims.

Once the Baseline Contract Progress Schedule has been accepted by the Engineer, with or without comments, it will represent the as-planned schedule for the Work. It shall then be known as the Baseline Schedule.

Progress Schedule: Status (Updated) Contract Progress Schedules shall be submitted by the Contractor along with the Application for Payment each month. A Status Contract Progress Schedule shall include a Schedule Narrative and Progress Schedule

Each Status Contract Progress Schedule shall reflect updated progress to the status date and shall forecast the finish dates for in progress activities and remaining activities, but shall not change any activity descriptions, durations, or sequences without the acceptance of the Engineer. Updated progress shall be limited to as built sequencing and as built dates for completed and in progress activities. As built data shall include actual start dates, remaining Work Days, and actual finish dates for each activity.

Status Contract Progress Schedules submitted later than fourteen (14) Calendar Days after the pay estimate submittal will be deemed to be no longer useful and will not qualify for payment. However, failure to submit a Status Contract Progress Schedule within any monthly period, whether on time or late, could result in the withholding by the Engineer of the remainder of the pay estimate payment due for that time period.

The Contractor shall seek authorization prior to making any changes to the schedule, including revision logic ties, added / deleted activities, constraints, calendars and other revisions to the schedule. The Contractor shall provide a comprehensive listing of all activities added to or deleted from the Progress Schedule as well as a complete listing of all logic and activity relationship changes which have been made. All changes shall be clearly highlighted, identified, explained, and justified in writing as part of the Contract Progress Schedule Narrative.

No Revised Contract Progress Schedule that extends performance beyond the Contract Time and/or any Contract Milestone shall qualify as a Revised Contract Progress Schedule of Record

Justification for Contract Time Extensions: Each time the Contractor submits a Proposed Change Order that it believes will delay a Key Milestone, the Contractor shall perform a Time Impact Analysis (TIA) in support of a request for extension of the Contract Time, or request for funds to mitigate the delay so that no extension is necessary. Each TIA shall be performed on a Schedule with a data date that is within five (5) Days of the date of such submission and shall be submitted at the end of the month in which they occurred. The updated Schedule for each month shall include all changes to activities and logical ties included in the TIAs for that month.

Recovery Schedule: The Contractor shall promptly report to the Engineer all schedule delays during the prosecution of the Work. In addition, a Recovery Schedule shall be required whenever the Critical Path of the Contract Progress Schedule of Record exceeds the greater of:

a.) A delay of twenty (20) Calendar Days, or

b.) A delay equal to 5% of the Calendar Days remaining until the Contract Completion Date

due to any of the three situations listed below:

1. If the contractor is behind schedule due to the fault of the contractor.
2. If the contractor anticipates becoming behind schedule due to the fault of the contractor.
3. When the delay is not the fault of the Contractor and the Department chooses to recover the lost time and requests a proposal to achieve that.

Recovery Schedules shall be prepared and submitted within fourteen (14) Calendar Days of any of the cases listed above.

Coordination with Work by Other Parties: The Contractor shall make every effort to perform its work so as not to interfere with other work for the Owner or other parties. In the case of a dispute with another contractor working for the Owner regarding their work for the Owner, or in the case of a conflict between their planned operations or the needs of their projects, the Contractor shall bring that dispute or conflict to the Engineer's attention, and the Engineer shall decide how it shall be resolved. The Engineer's decision shall be binding upon all of the contractors working for the Owner who are involved in the matter.

Change of Contract Times: The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions above.

Delays: Like a traditional Design-Bid-Build, where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work, fires, floods, epidemics, abnormal weather conditions, or acts of God. Provided, however, that Contract Times shall not be extended unless the Contractor has fulfilled its obligations under the Contract Documents, including by coordinating with utility owners and other contractors or subcontractors.

Acceptance of Project: The Project will be accepted by the Owner when all Project work has been completed, as defined by the requirements of the contract documents, and the following have been submitted to the satisfaction of the Engineer:

a) Supporting information necessary to substantiate pay quantities, such as cost-plus backup documentation;

b) Reports and forms required

c) Warranties, guaranties, final operation and maintenance manuals, and documentation to the effect that training, and start-up support required by the Contract have been completed;

d) Any other documents required by the Contract.

6. Insurance and Bonds

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Introduction: Every construction project, no matter the size, complexity and scope, comes with risk to the interested parties. To deliver a project in a cost-effective manner, it is important for an owner to manage that risk by identifying and assessing its potential exposure to loss and to allocate the risk in the construction contract among the project team. Often overlooked or left to boiler plate contract language are the insurance and bond provisions. Insurance and surety bonds are different risk transfer vehicles and both are important in protecting the interests of the owner. In general, insurance is a contract of indemnity that covers and protects against losses and damages to persons or property. A surety bond is a guarantee to remedy unexcused contract nonperformance in relation to either the nonperformance of bonded contract or nonpayment to subcontractors or suppliers. The types and amounts of insurance coverage should be tailored to the size, complexity, and scope of the construction project. In situations where a public owner is given discretion, by either statute or local ordinance, consideration should be given to having the CMAR or key prime subcontractors furnish a performance bond and a payment bond, particularly on larger construction projects. The following sample contract language from a modified A133 and A201 – 2007 edition may be suitable for a modest size (under $10M) vertical construction project. It should be noted that AIA updates most documents on a ten-year cycle and the A133 was last updated in 2009. Therefore, it is expected that the AIA will be releasing another updated A133 in late 2019. Currently, the A133 adopts as General Conditions, the A201, 2007 edition. In the spring of 2017, the AIA released an updated A201 which entirely changed the insurance and bond provisions and includes a new exhibit with comprehensive insurance and bond terms that can be incorporated into the construction contract. The Insurance and Bond Exhibit prompts the contracting parties to consider available and potentially applicable insurance coverages. Finally, an owner should always consult with its insurance broker or advisor in developing the insurance requirements for a particular project.

§ 11 INSURANCE AND BONDS
§ 11.1 CONTRACTOR'S LIABILITY INSURANCE

§ 11.1.1 For all phases of the Project, the Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor, or by a sub-subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- **.1** Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- **.2** Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- **.3** Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- **.4** Claims for damages insured by usual personal injury liability coverage;
- **.5** Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including explosion, collapse, underground hazards and damage to underground utilities and loss of use resulting therefrom;
- **.6** Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- **.7** Claims for bodily injury or property damage arising out of completed operations; and
- **.8** Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

Commercial General Liability	$1,000,000 per occurrence $2,000,000 aggregate bodily injury/property damage $1,000,000 Personal and Advertising Injury $2,000,000 Products-Completed operations aggregate The CGL policy must include coverage for liability from premises and operations; liability from products or completed operations; liability from actions of independent contractors; and liability assumed by contract.
Conditions	**The Owner, the Owner's Program Manager, and the Architect and their officers, directors, employees and agents must be named as "additional insured": on Contractor's CGL and auto policies** with

	form CG 20 10 or CG 20 33, *and* CG 20 37. The Aggregate limit must apply per job. Products/completed operations must be carried for 2 years after completion of job/acceptance by owner. Insurance is primary and noncontributory. Waiver of subrogation applies to the CGL policy.
Automobile Liability	$1,000,000 each accident $2,000,000 aggregate for bodily injury/property damage, including hired owner non-owned vehicles. $1,000,000 underinsured motorist
Conditions	Waiver of subrogation applies to the auto policy.
Workers' Compensation	Liability meeting statutory limits mandated by the state. Federal laws with minimum limits of: $1,000,000 each accident for bodily injury by accident $1,000,000 each employee for bodily injury by disease $1,000,000 policy limit for bodily injury by disease
Employers Liability	$1,000,000 each accident
Umbrella Liability	$15,000,000

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified or required by law, whichever coverage is greater. Unless expressly specified otherwise, coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of Final Payment and termination of any coverage required to be maintained after Final Payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents. All liability coverage shall be written on an occurrence basis only. The Contractor will make policies available upon the Owner's request. By requiring insurance herein, the Owner does not represent that coverage and limits will necessarily be adequate to protect the party providing insurance. The insurance required herein shall not reduce or limit any party's obligation in connection with its performance on the Project.

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of

each required policy of insurance at least fifteen (15) days prior to expiration. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. Certificates of insurance must state whether coverages are written on an occurrence or claims-made basis. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness. Failure of the Contractor to keep the Contractor's required insurance policies in force during the Work covered by this Agreement or any extensions thereof or extra or additional Work agreed to by the Contractor, shall constitute a material breach of this Agreement, entitling Owner, notwithstanding anything to the contrary contained herein, to immediately cancel and terminate this Agreement for cause.

§ 11.1.4 The Contractor shall cause the commercial liability, excess/umbrella liability and automobile liability coverage required by the Contract Documents to include the Owner, its Program Manager, the Architect, and their officers, employees, agents and representatives, as additional insureds for claims arising out of the Work for: (1) the Contractor's operations; and (2) during the Contractor's completed operations period. The Contractor and/or its Subcontractors shall be solely responsible for any loss or damage to their respective tools, equipment or material, whether owned or leased that are not to become a part of the completed Project.

§ 11.1.5 The Contractor shall maintain umbrella/excess liability insurance in the amount required by the Contract Documents on an occurrence basis in excess of the underlying insurance otherwise required hereunder. The amounts of umbrella/excess liability insurance required may be satisfied by combination of underlying and umbrella limits, so long as the total amount of insurance is not less than the limits specified in the Contract Documents for umbrella/excess liability insurance.

§ 11.1.6 If the Contractor or any Subcontractor provides any professional design services that constitute the practice of architecture or engineering, the Contractor and/or Subcontractor shall procure and maintain errors and omissions insurance for such professional services in the amount of $1,000,000 for each claim and $2,000,000 annual aggregate on a claims-made basis. With regard to such professional liability insurance, if, at the end of one year after substantial completion, the Contractor and/or Subcontractor non-renews or otherwise discontinues its professional liability insurance, it shall purchase a claims-made extended reporting endorsement so that any

subsequent reported professional liability claim by Owner will be subject to insurance coverage until the expiration of the applicable status of limitations repose.

§ 11.1.7 The Contractor's insurance coverage shall be primary insurance as respects the Owner and Owner's officers, employees, agents and representatives. Any insurance or self-insurance maintained by the Owner and Owner's officers, employees, agents, representatives or volunteers shall be excess or contingent of the Contractor's insurance and shall not contribute with it.

§ 11.1.8 The Contractor shall cause all Subcontractors to provide and maintain insurance in compliance herewith, using good business judgment in establishing coverage limits and deductibles applicable to such insurance, and subject to the Owner's acceptance. The Contractor shall ensure that Subcontractors and those for whom they are responsible have provided certificates of insurance in compliance with the Contract Documents prior to commencing activities on the Project site.

§ 11.1.9 The Owner shall not be responsible for any amounts paid by the Contractor or those for whom it is responsible on account of deductibles on their policies of insurance.

§ 11.1.10 All of the insurance policies required shall have the legal company name of the insurer providing coverage and contain the current rating of the insurer as provided by A.M. Best's Insurance Reports, which must be A or above. This obligation applies to coverage written on an occurrence as well as a claims-made basis.

§ 11.2 OWNER'S LIABILITY INSURANCE

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 PROPERTY INSURANCE

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a so-called builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until Final Payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements. Nothing contained in the Contract Documents shall be construed to, nor is intended to, constitute any indemnification of the Contractor by the Owner for any loss, cost or damage arising out of any cause insured under this Paragraph.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs of such deductibles except to the extent loss is caused by the negligent act or omission of the Contractor.

§ 11.3.1.4 This property insurance shall not cover portions of the Work stored off the site or portions of the Work in transit and Contractor shall be responsible for insuring such portions of the Work stored off the site or portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

To the extent deemed necessary by the Owner, The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work with the Owner as the named insured and the Contractor, Subcontractor, and Sub-subcontractors as the named loss

payees. Testing and start-up, other than electrical insulation breakdown test or hydrostatic, pneumatic or gas pressure tests, are included under this insurance.

§ 11.3.3 LOSS OF USE INSURANCE
The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, to the extent covered and paid by such insurance, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after Final Payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of a certificate of insurance for each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 WAIVERS OF SUBROGATION
The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their Subcontractors, Sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by insurance, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the Subcontractors, Sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each

in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement.

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

§ 11.4.1 The Contractor, and at Owner's election, any Subcontractor, shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract. Any such bonds shall be in an amount equal to the cost of the contract awarded, listing Owner as a dual obligee in the case of Subcontractors, an in a form acceptable to the Owner. The required bonds shall be provided by a surety company or companies acceptable to the Owner, authorized to transact such business in the State of _____ and named in the current listing by the Department of the Treasury of approved sureties (Department Circular 570).

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

7. Dispute Resolution

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Introduction: Litigation of disputes between the interested parties on a construction project is all too common. Further, claims generally become more time consuming and costlier the longer that they are left unresolved. In drafting the contract, the owner should consider including an option for early dispute resolution which can be efficiently managed. On projects having a longer duration with little float on the critical path, and owner may be able to mitigate the potential for a costly extended performance claim by including a mechanism to resolve disputes prior to the dispute rising to the level of a Claim as that term is defined in most standard forms of agreement. Further, non-binding mediation continues to be effective in resolving disputes early. In selecting a process for binding dispute resolution, an efficiently managed arbitration can be very effective and has many advantages over litigation. The following is a sample dispute resolution provision from a modified AIA 201 – 2007 edition:

§ 15.3 MEDIATION

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those expressly waived in this Agreement shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association or other mutually acceptable dispute resolution administrator in accordance with the American Arbitration Association's Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer

period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.3.4 For any Claim subject to, but not resolved by mediation pursuant to Section 15.3 of the General Conditions, the method of binding dispute resolution shall be, at the Owner's sole option, Arbitration pursuant to Section 15.4 of the General Conditions, or, if the Owner elects not to arbitrate, litigation. The venue for such litigation shall be the Middlesex Superior Court at Middletown.

§ 15.4 ARBITRATION

§ 15.4.1 The Owner may, at its sole option, elect arbitration as the method for binding dispute resolution in the Agreement, for any Claim subject to, but not resolved by, mediation. Unless the parties mutually agree otherwise, any arbitration shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The venue for any such arbitration shall be in the place where the Project is located, unless another location is mutually agreed upon.

§ 15.4.2 If the Owner consents to arbitration, a demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.3 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.4 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.5 CONSOLIDATION OR JOINDER

§ 15.5.1 The Owner, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1)

the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.5.2 The Owner, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.5.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

§ 15.6 LITIGATION

§ 15.6.1 All Claims, disputes and other matters in controversy between the parties that the Owner does not consent to arbitrate shall be resolved by litigation. The venue for such litigation shall be the in courts having jurisdiction over the Project.

§ 15.6.2 The Owner and Contractor both waive their rights to a trial by jury of any or all issues arising in any action or proceeding between the parties hereto or their successors, under or connected with the Contract Documents, or any of their provisions. THE PARTIES ACKNOWLEDGE THAT THEY HAVE READ AND UNDERSTAND THE FOREGOING, HAVE HAD THE OPPORTUNITY TO HAVE THIS AGREEMENT REVIEWED BY THEIR LEGAL COUNSEL, AND ACCEPT THAT THEY ARE WAIVING THEIR RIGHT TO A JURY TRIAL.

8. Termination and Suspension

Introduction: The requirements for suspension and termination found in the majority of standard form Owner-CMAR contracts are fairly uniform. However, the contract language can vary widely in relation to the entitlement permitted each party in the event of a termination or suspension, particularly if the owner elects to exercise the extraordinary right to terminate the agreement for the owner's convenience. The following is a sample termination and suspension clause from a modified AIA 201-2007 edition. As noted in connection with the Insurance and Bond provisions, the A201 family of conventional documents were updated last year. In so doing, the new forms contain a fill point for termination by the owner for convenience to prompt the contracting parties to negotiate and insert a lump sum "Termination Fee" in lieu of more typical equitable payment provisions.

§ 14.1 TERMINATION BY THE CONTRACTOR

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped for more than 180 consecutive days;
- **.2** An act of government, such as a declaration of national emergency that requires all Work to be stopped for more than 180 consecutive days; or
- **.3** Because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents, after notice has been provided pursuant to Section 9.7.

§ 14.1.2 If one of the reasons described in Section 14.1.1 exists, the Contractor may, upon seven (7) days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work properly executed, including reasonable overhead and profit on Work properly executed, said costs being the limit of the Owner's liability.

§ 14.2 TERMINATION BY THE OWNER FOR CAUSE

§ 14.2.1 The Owner may terminate the Contract if the Contractor:

- **.1** refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors pursuant to its obligations under this Agreement, after payment by Owner, for materials or labor in

accordance with the respective agreements between the Contractor and the Subcontractors;

.3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority;

.4 otherwise is guilty of substantial breach of a provision of the Contract Documents;

.5 breaches any warranty made by the Contractor under or pursuant to the Contract Documents;

.6 is declared bankrupt, has a petition in bankruptcy filed against it, or if the Contractor files for bankruptcy protection; or

.7 causes or threatens to cause or create labor unrest, dispute, picketing, slowdowns, work stoppage, strike or disharmony.

§ 14.2.2 When any of the above reasons exist, the Owner may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may:

.1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery intended to be incorporated into the Project;

.2 Accept assignment of subcontracts pursuant to Section 5.4; and

.3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, or if the Owner terminates some or all of the Contractor's services for cause, then payment shall be withheld until the Owner's damages arising out of the cause for Contractor's termination are certain.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. This obligation for payment shall survive termination of the Contract.

§ 14.2.5 In the event that a termination by the Owner for cause is ultimately deemed wrongful by a trier of fact, such termination shall conclusively be deemed to be a termination for convenience by Owner under Section 14.4 of this Agreement, and the

Contractor's sole rights and remedies against the Owner shall be as set forth in Section 14.4.3.

§ 14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for actual increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1 by Change Order. No adjustment shall be made to the extent:

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. Under such circumstances, this Agreement shall terminate on the date set forth in the notice from the Owner. The Contractor agrees to immediately prepare to cease performing all services on the date of termination and shall otherwise cease, to the extent practicable, incurring costs chargeable to the Owner under this Contract as of the date of termination. To the extent that the Owner elects (and Contractor hereby grants to the Owner the right to elect to do so in connection with termination of this Contract) to take legal assignment of subcontracts or purchase orders (including rental agreements), the Contractor shall, as a condition of receiving the payments referred to in this Section and otherwise under this Contract, at the Owner's sole cost and expense, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts or purchase orders and other contractual rights of the Contractor, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor under such subcontracts or purchase orders. Otherwise, Contractor shall terminate such subcontracts and purchase orders as of the Contract termination date or as soon as possible thereafter. In the event a termination by the Owner for cause is not in accordance with the terms of the contract documents or otherwise determined improper, it shall be deemed a termination for convenience under this Section.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall:

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, as directed by Owner, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders or assign them to Owner.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for the Cost of the Work properly executed and the Contractor's Fee computed upon the Cost of the Work completed through the date of the termination at the rate set forth in the Agreement or, if the Contractor's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion, however the Contractor and any party claiming through or under the Contractor shall not be entitled to any overhead or profit on the Work not so executed. The Contractor's right to cost of the work completed and fee through the date of termination shall be the Contractor's sole and exclusive remedy in the event of termination by Owner.