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- Contracts
- Contract requirements
- Scheduling requirements
- Contract management



Dennis Sobota

- 40+ years in claims avoidance contract administration
- Primarily Owner representative
- Several years working for Contractors

Chris Carson

- 38+ years in construction management, focusing on project controls
- Primarily Contractor representative
- 12 years working as consultant for Owners



- Contract administration & construction management
 - Seem simple
 - Review the Contractor's work timely and accurately
 - Project is successful
- However
 - Without a good understanding of time related issues
 - Without administering the contract from a schedule perspective
- Projects fail
 - Late completion
 - Blown budgets
 - Disputes resulting in costly legal resolution



- Construction management & administration
 - Unique of all types of projects
 - One design, one location, one new set of stakeholders
 - End user is facility management, different needs
- Construction management is different from administration
 - May be a professional CM on project
 - May be administered by A/E
 - May or may not have any depth of CM background
 - Professionals, certified by state, for technical knowledge
 - CM not generally part of the A/E certification
 - State of Virginia now has CM as one of P.E. disciplines



- Although there are more bells & whistles, CM has not changed significantly through the years
 - Some components are evolving
 - Computer based project management
 - LEED certification
 - Increased ramifications of change management
 - Many components have not changed
 - Means and methods still essentially the same
 - Few major changes in construction techniques
 - Good news is lessons learned can be used over and over



- Do you want to be the most important person involved with the construction project?
- READ the contract
 - Not just the technical sections
 - Read the General Conditions
 - Read the bid form
 - Read the Division One requirements
- Because most people don't!
 - AACEi session several years ago yielded survey
 - More than half project controls professionals did not even read the scheduling specification
- How many professionals never read the contract?



- Dennis wrote a article for the National Society of Professional Engineers' magazine (NSPE)
 - In 93% of all claims against A/Es in 2009, non-technical issues were present
 - Schedule control
 - Project team capabilities
 - Construction-phase services
 - A/Es often concentrate on design goals, technical sections, coordination among design disciplines
- However, these areas are rarely the only or primary source of disputes



- General Conditions of the Contract
 - Contains all basic contractual & admin details for project
 - For Virginia construction
 - 50 sections
 - 50 pages long
 - Still much shorter than the government's Federal Acquisition Regulations (FAR)
 - GCs contain many potentially critical items
 - Notification requirements
 - Submission requirements
 - Change management process
 - Dispute resolution process



- For example
 - In Virginia General Conditions Section 47, Contractual Disputes
 - A claim must be filed "at time of occurrence"
 - "the filing of a timely notice is a prerequisite to recovery under this Section"
 - Documentation supplied with the claim is vital to negotiated settlements
 - "all claims shall be submitted with all practically available supporting evidence and documentation"



- How are GCs altered in the contract?
 - By add Supplemental General Conditions
- Precedence among the contract documents
 - Contract agreement between Owner and Contractor
 - Supplemental General Conditions
 - General Conditions
- Must read these sections!



- Starts with Bid Form
 - May establish cost/pricing issues
 - May establish time constraints
 - May dictate phasing requirements
- Next, Division One of the Specifications
 - Why should contractors bother to read?
 - Contains specific work restrictions at site
 - Includes project management and coordination requirements
 - Why should A/E be concerned?
 - Contractor is relying on A/E to act as contract administration
 - Contractor is relying on A/E's understanding of project
 - GCs define roles of all stakeholders
 - Defines assignment of risk



- Continues with the Scheduling Specification, Section 19 in Virginia's standard specs, Section ~01300 in other specs
 - Schedule review is not typically an expertise found in-house at the A/E
 - Complex projects need expert help in review and claims avoidance
- Always treat time like money
- RFIs are an example
 - If handled timely
 - Surveys show that relationships are improved when mistakes are corrected, unless not done timely and accurately
 - Slow response will spark delays and claims



- First and last rule Document, Document, Document
 - If it isn't written, it didn't happen
 - In litigation, the one with the most paper wins
 - This means relevant paper
 - Contemporaneous project documentation is highest of all "proofs" required in litigation
- Primary goal should be to avoid disputes
 - Produce accurate and timely meeting minutes
 - Summarize points of agreement from meetings
 - Ensure full and complete daily reports
 - Use statistics rather than vague terms "many", "a number"
 - Use "reasonable standard of care"



- Think of documentation as building a case
 - Even if no one is claims oriented
 - No one plans to litigate, but too many projects fail
- Lessons learned from dispute resolution process
 - Memories are inconsistent and misleading
 - Emotions rule when contemporaneous documents are not available
 - Many claims cannot be proven due to the lack of support documentation
 - Many claims chase weak or incorrect issues, and ignore legitimate delays or disruption
 - Costs of entering into formal dispute resolution are 5 to 10 times as much as negotiating the issues without attorneys



Scheduling oriented process

- All contracts have some level of requirements for schedule control
- First rule: manage the project from the schedule
 - Require schedules as specified
 - Perform technical schedule reviews
 - Discuss ramifications of time at every meeting
 - If the Contractor appears weak in scheduling, take extra care
 - Recognize that all technical engineering components of the project have time components
 - RFIs have response needs
 - Shop drawings dictate sequence of installation
 - Quality control failure has time ramifications



- From "Scheduling Practice & Project Success" by Dr. Andrew Griffith
- Study identifying characteristics of schedules that correlated with better project performance (success)
 - Integration of all project phases into a single schedule
 - Application of Critical Path Method (CPM) scheduling
 - Resource-loading of project schedule
 - Detailed review of schedule by project team



- Integration of all project phases into a single schedule
 - Includes full scope of work
 - Allows for planning for interfaces between project phases (predesign, design, procurement, construction, post-construction)
 - Limited use of constraints
 - Better cost performance & less schedule slip



- Application of Critical Path Method (CPM) scheduling
 - Forces team to break down project into discrete activities, estimate durations, identify & review sequencing
 - Network is permitted to calculate accurately, providing better tool with reasonable Critical Path and float values
 - Unrelated to project size
 - Better cost performance & less schedule slip



- Resource-loading of project schedule
 - Helps to ensure alignment between cost & schedule
 - Allows evaluation of peak labor
 - Focuses the team on critical resources
 - Better cost performance & less schedule slip



- Detailed review of schedule by project team
 - Provides a check on accuracy
 - Allows functional leaders to verify that means & methods are represented in the schedule
 - Supports buy-in by project team
 - Demonstrated less cost growth



Lessons Learned

- Benchmark schedule development
- Schedule definition developed early in project when ability to influence outcome is greatest
- Allocate resources to develop & use an integrated project schedule
- Proper planning and scheduling are worth the investment since they contribute to project success



- Project management requires
 - Planning and management skills
 - Nimble response to daily occurrences on a project
 - Hundreds of quick decisions
 - Problem solving
- PM often evolves into a pattern of crisis project management.
- Major step to eliminating systematic crisis management:
 - Development of a scheduling program place the company on a schedule-driven project management program



- If a program has symptoms that include
 - Late completion of projects
 - Just-in-time completion of projects
 - Consistent two-minute warning completions
 - Budget-busting completions
- The company needs to put a schedule-driven program in place.
- Implementing the program consists of:
 - Senior Management buy-in for:
 - Planning and scheduling
 - Dedicated schedule development and maintenance
 - Elimination of crisis management
 - Good analytical software use
 - A process of mandated schedule development, updating and analysis, with consistent monitoring



- Senior management
 - Little recognition of the problems behind visible symptoms
 - Uses management "club" to treat those symptoms, including for project managers
- Senior management must be convinced
 - Stop focusing on the project managers "failings"
 - Support dedicating time to planning the projects
- Project managers have so many responsibilities that they cannot control
 - Invoicing, cost control, budgeting
 - Problem resolution, client communications
 - Resource management
 - Communications & paperwork demands
- Scheduling will not be consistently managed
- Senior management must mandate a schedule-driven program.



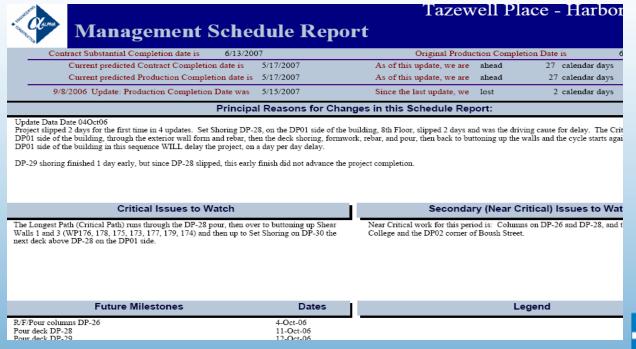
- Development of effective and simple reports
 - Senior level management reports
 - At-a-glance style for all projects
 - Clear, meaningful metrics
 - Project level management reports
 - Predictive information
 - Focus on Critical Path work
 - Clear, meaningful metrics
- Training the entire PM team in scheduling philosophy, with technical training for scheduler
- Implementation of the process, with scheduling taking a prominent role in PM meetings
- Follow through to ensure the process is adopted
- Assessment of results



- The scheduling program:
 - Must be written down & explained step by step
- Every project (no matter how small):
 - Develop a detailed schedule
 - Project management team has buy-in to the plan by participating in development
 - Project managed by the schedule
 - Schedule updated & analyzed frequently
 - Schedule progress reported regularly
 - Schedule prominent in meeting agenda.
- Running meetings by the schedule is the best way to show dedicated schedule planning
- Once schedule is updated, analyzed, reported, if slippage shown, must involve resolution.



- Developing senior management reports is crucial
 - Frequent updates promote use of schedule for management
 - Frequency depends on project performance

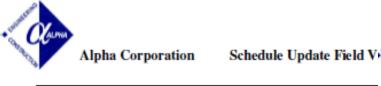




- Senior management should take report when they drive by sites. This provides visual overview of progress compared against plan.
- Project manager gets a copy of report, so he knows what information is reported.
- Project manager level reports
 - Most important report Critical & Near-Critical Path
 - PM walks the job with the report in hand
 - PM verifies that Critical & Near Critical Path is being worked
 - PM also verifies that other "mass volume" work is progressing and not eroding Total Float (or Free Float)



Field visit forms to capture schedule information



Subcontractor

Concerns

Alpha Corporation

Schedule Update Field Visit Form

Proj	ect: Name	Name of Project									 _
Clie	nt: Name	Name of Client		No.	1	File Nam		Schedule	In-House Labor	Resource availability?	╛
Sup	ere	PM:							Concerns	Shared needs?	╛
								Submittals	Outstanding submittals?		╛
#	Issue	Information Required					*	Submicials	Outstanding	shop drawings?	
1		CCD (Contract Completion Date)?				5	Approvals	Outs	tanding?		
		Outstanding time extension requests?						,	Respo	nse time?	
	Current Project	Need for a Time Impact Analysis (TIA)?					6	RHs	Missing	or Needed?	
	Status							KIIS	Respo	nse time?	
		Outstanding Issues A Schedule?	Affecting				7	Change	Own	er issues?	
							'	Orders	Subcontr	actor issues?	٦
2		Owner Responsibility Issues					8	Quality	Non-confo	rmance issues?	٦
		Third Party Responsibility Issues						Control	Rework	required?	٦
		Previous Schedule A	Previous Schedule Approval Y / N Comments?			ments?			Missing sc	tope of work?	٦
	Schedule						0	Schedule Revision	Work pt	an changes?	\neg
	Update	Status of Buy-outs		\vdash			,	Need	Changed	conditions?	٦
									Out of sec	que noe work?	٦
							-0				ユ
		Accuracy of 3 week took-ahead				1					
П		Scheduled?									



Mitigation Schedule Analysis

- Triple constraints
 - Time
 - Cost
 - Scope/quality
 - Fourth constraint often added; risk
- Most programs are driven by one of the constraints
 - When one constraint must be fixed, others will vary
 - In this case, time was the fixed constraint
 - This requires a focus on mitigation of delays
- A structured effort is essential



- Scheduler should take field visit report to walk project
 - Meet with superintendent or project manager
 - Fill out field data sheet
- The process forces attention onto the schedule
 - Triple constraints
 - Time
 - Cost
 - Scope/quality
 - Fourth constraint often added; risk
 - Most programs are driven by one of the constraints
 - When one constraint must be fixed, others will vary
- Schedule is the one constraint that monitors all others



- Meeting agenda for schedule-centric contract admin
- Current Project Status:
 - CCD
 - Time extension requests
 - Need to analyze
 - Submitted, waiting on negotiation/approval
 - Change order requests
 - Outstanding issues



- Meeting agenda for schedule-centric contract admin
- Owner responsibility issues
- Third party responsibility issues
- Baseline approval
 - Status of buy-outs
- Update
 - Approved?
 - TIAs?
 - Changed conditions?
 - Production issues?



- Meeting agenda for schedule-centric contract admin
- Short interim look-ahead schedule
 - Subcontractors
 - Scheduled
 - Shared with other projects
 - Problem subs
 - Start problems
 - Production problems
 - Finish problems



- Meeting agenda for schedule-centric contract admin
- Long lead time issues
- Submittals/Approvals
 - Status of scheduled shop drawings
 - Status of scheduled submittals
 - Status of approvals
- RFIs
 - Missing/needed RFIs/answers
 - Outstanding RFIs



- Meeting agenda for schedule-centric contract admin
- Change orders
 - Owner
 - Subcontractors
- Quality control issues
- Schedule revisions
 - Missing scope of work in schedule?
 - Changes to logic due to work plan changes
 - Changes due to additional work
- Out of sequence work



Was the message clear?

- Construction management implementation changes according to phases in the project lifecycle
- Need to understand contracts and project delivery systems because they affect management of projects
- Success in construction projects is driven primarily by the project controls effort
- The better and more comprehensive the project controls system, the higher likelihood of project success



Thank You For Attending!

