

**Project Manager Best Practices Workshop
ASA Metro Washington**

Changes

March 16, 2023

Part 2

Subcontractor Perspective

SUMMARY OF PART 1 KEY ELEMENTS SUBCONTRACTOR CHANGE ORDERS FROM GC PERSPECTIVE

- Good and timely communication with GC
- Know and understand notice and change provisions including allowable mark-ups
- Proposals including sufficient detail and back-up
- Request additional time for performance as well as an increase in price if change extends your planned/allotted work duration
- Failure to submit timely and responsive change proposals delays process for everyone

CHANGES CLASS – PART 2

ELEMENTS

- Change order cost elements and guidance on quantifying
- Sample Change Proposal
- Time Extensions, Suspensions and Delays
- Sample Change Proposals for Additional Costs incurred (1) during a period of suspension/delay and (2) due to work performed out of sequence due to a delay

CHANGES CLASS – PART 2

ELEMENTS (con't)

- Establishing credibility
- Settlement techniques
- Performing Work without a Change Order
- Backcharges

Cost Elements Associated with Change Proposals, and Guidance of Quantifying

- Labor
- Materials
- Equipment / Other Direct Cost Elements
- Overhead and Profit
- Bond

Labor

Some ways direct labor is calculated

- Quantity divided by a production rate per manhour or crewhour
- Unit cost per quantity (historical data or a recognized trade cost guide)
- Whole shifts or blocks of time vs. a production rate for
 - small change
 - no longer on site when change work req'd

Labor

Support Labor Considerations

- Support/foremen for Mechanics (Journeyman) doing production work in a crew
 - Laborers/Helpers
 - Equipment Operators
 - Foremen/Sub-foremen
- If the mechanics are performing change work, the crew that supports them are also doing change work during that time.

Labor

Support Labor Considerations (con't)

- Yard support / company trucking personnel (much of the equipment and material used on a jobsite is not direct shipped by vendors)
- Cleanup (some subcontracts require composite crew weekly based on manpower)

Labor

Support Labor Considerations (con't)

- Other General Conditions' type labor activities that may be required of your company for your trade

erosion control maintenance

traffic control

safety guardrails and hole closures

winter protection and heating

protection of finishes

Labor

Other Labor Considerations

- Labor Rates that include allowance for escalation (change could occur 6 to 12 months out)
- Examples of supervisory time that is a direct cost of change, not an overhead factor
 - shop drawing revisions/as-builts
 - field survey/scope development for designer

Labor

Other Labor Considerations (con't)

- Overtime – will the work need to be performed off-hours (at time x 1.5 or x 2.0?)

Labor

Burdens and indirect costs – establishing upfront the % to apply to the direct cost of labor, what those elements are, and what is in the direct rate and what is a burden; typical labor burdens include

- Payroll taxes (Soc Security, Medicare, Unemployment)
- Workmen's comp
- General liability (for some subs this is still determined based on payroll)
- Medical insurance benefit
- Retirement benefit
- RECENT – Sick and Safe Leave Acts (MD,DC)

Labor

- Other indirect items to consider whether as a percentage of labor, percentage of the cost of the change in general, or put in direct price line items for:
 - Parking (downtown jobsites can be very expensive)
 - Safety and training benefits/apprenticeship program
 - Vehicle allowance

Materials

Quantities

- Nearest bulk packaging amounts
 - some types of excess material are readily usable elsewhere, but many are not and/or cost as much to save and haul it around
- Calculate a waste factor

Materials (con't)

Pricing/Unit Pricing

- Escalation - are you covered for price increases?
- Factor for double handling associated with materials purchased thru your office/yard
- Unit price considerations
 - are you now buying in small quantity or odd size/lots at a higher unit price than during bulk ordering?
- Specific material delivery or short load charges

Materials (con't)

Consumable, non-permanent materials associated with the change – some examples

- blades and bits
- finish and weather protection materials (e.g. poly, homasote or plywood)
- Some contractors add a % factor to their calculated material total for miscellaneous – only works if you have historical basis
- Include sales tax unless project is exempt

Equipment/Other

- Scaffolding
- Hoisting (crane, forklift, material hoist, etc);
NOTE – you may need to factor in your estimated cost of what you might pay another sub on job for use of their equipment (e.g. a tower crane pick/by the hour)
- Equipment specific to your trade (e.g. backhoes, table saws)

Equipment/Other (con't)

- Small tools; NOTE – this often gets challenged as written, and is sometimes better to list as many significant pieces of equipment as you can (e.g. hammer drills)
- Welding or mechanic truck
- Company delivery trucks/flatbeds (or a flat delivery rate including driver/equipment)

Equipment/Other (con't)

- Foreman/job truck (unless included in labor truck allowance)
- Permits and fees
- Blueprints and reproduction (not as big an issue today with IPAD's and cloud)

Equipment/Other

- Basis for Pricing
 - company established amortized rates
 - comparable rental publications
 - include operating costs and fuel
 - fuel surcharge on fuel driven equipment
- Myth – your equipment is already on job for contract work therefore no additional cost

Overhead/Profit

Where can you find the allowable %, and what it includes?

- Subcontract general provisions
- GC's contract with the Owner (the Prime Contract)

if the Prime Contract has a more favorable mark-up and/or more types of costs that can be included, you should argue that those prevail as part of the flow down clause in the Subcontract

Performance and Payment Bond

- Does your subcontract require a bond?
- Bond is a cost element, not a portion of mark-up
- Include as a percentage of the total price of change
- Your company will be assessed a final billing from your bonding company based on the final subcontract amount, so you need to charge for it in all change orders

How could the current COVID pandemic affect change order pricing?

- With uncertainty of manpower and material availability, you may need to schedule all the extra work if feasible on overtime to meet existing commitments.
- Increased cost of performance on jobsites include disinfecting, additional procedures to get work done while separating personnel
- Calculating potential cost of Emergency Sick Leave and FMLA as an element of labor burden

Change Order Pricing Example

- Masonry contractor's project scope includes building site landscape walls out of unfinished CMU for painting by others in the Courtyard.
- A change directive is issued at end of project requiring the use of architectural finish CMU instead of unfinished, and the adding site pavers to the Courtyard.
- The project crane is no longer on site, and the masonry contractor must stock the Courtyard by hand/small lift instead.

John Doe Construction Co.

Sample Change Proposal

Sub PCO # 4 (Page 1 of 3) GC Sub

JOB NAME: Park Heights JOB NUMBER: 123456 | 13

CONTRACTOR: Builders Inc. FOREMAN: John Doe, Jr.

PROPOSAL DATE: 13-Nov-07 WORK ORDERED BY: GC Big Boss 10/28 letter

DATE WORK COMPLETED (if applicable): N/A GC PCO NUMBER 30 (CCD 30)

DESCRIPTION OF WORK **Revise Wall Blocks and add pavers at South Courtyard**

Based on Revision 4 Drawings dated October 8, 2007 (received Landscape Drawings only).

See Page 2 for Materials List, Qualifications and Exclusions

See Page 3 for quantities, labor and equipment worksheet

QTY.	MATERIAL	PRICE	AMOUNT	LABOR	HOURS	RATE	AMOUNT
			\$0.00	FOREMAN	83	\$40.00	3,308.00
			\$0.00	MECHANIC	582	\$27.00	15,703.20
			\$0.00	HELPER	622	\$16.00	9,945.60
			\$0.00	EQUIP #1 Operator	77	\$22.00	1,687.40
			\$0.00	SUPERINTENDENT	6	\$65.00	390.00
			\$0.00	Truck Driver	6	\$22.00	132.00
			\$0.00	Field Engineer	8	\$26.00	208.00
			\$0.00	EQUIP #2 Operator	73	\$22.00	1,599.40
			\$0.00	EQUIP #3 Operator	89	\$22.00	1,951.40
			\$0.00	Composite Cleanup	16	\$16.00	248.15
			\$0.00	(8 hrs helper for every 300 hrs mechanic)			
	Totals from Page 2		\$40,092.17	Helper/Operator/Fore OT Portion			1,738.23
				(1/2 for every 8 @ 1.5 rate			
				SUBTOTAL			36,911.38
				Taxes/Fringes/Insurance @		50%	18,455.69
	TOTAL MATERIALS		42,096.78	TOTAL LABOR			55,367.07
				TOTAL MATERIALS			42,096.78
				Parking @ % of Raw Lab			7% 2,583.80
				TOTAL OTHER			9,836.50
				SUBTOTAL \$			109,884.14
				Overhead			10% 10,988.41
				SUBT \$			120,872.55
				Profit			10% 12,087.26
				SUBTOTAL \$			132,959.81
				BOND			1.50% 1,994.40
				TOTAL OTHER			9,836.50

This proposal is valid for 30 days from proposal date above. **TOTAL \$ \$134,954**

This scope of work will add 9 days to our duration

GEN CONTRACTR SIGNATURE _____ TITLE _____

UNLESS OTHERWISE DETAILED ABOVE, THIS WORK INCLUDES THE SAME SCOPE OF THE ORIGINAL WORK.

John Doe Construction Co.

	Sub PCO # <u>4</u> (Page 2 of 3)	<u>GC</u>	<u>Sub</u>	
JOB NAME: <u>Park Heights</u>		JOB NUMBER: <u>123456</u>		13
CONTRACTOR: <u>Builders Inc.</u>		FOREMAN: <u>John Doe, Jr.</u>		
PROPOSAL DATE: <u>13-Nov-07</u>		WORK ORDERED BY: <u>GC Big Boss</u>		
DATE WORK COMPLETED (if applicable): <u>N/A</u>		GC PCO NUMBER: <u>30 (CCD 30)</u>		

DESCRIPTION OF WORK	<i>Revise Wall Blocks and add pavers at South Courtyard</i>
Material List	
See Page 3 for quantity and production notes.	

QTY.	MATERIAL	PRICE	AMOUNT
18270	Belgian Pavers	\$0.95	\$17,356.50
			\$0.00
5408	Custom Wall Blocks	\$5.00	\$27,040.00
840	Accent Pavers	\$2.00	\$1,680.00
			\$0.00
-5408	Standard Wall Blocks	\$2.50	-\$13,520.00
29.1	Grout Fill for Blocks	\$100.00	\$2,912.00
			\$0.00
9	Cutoff Saw Blades	\$150.00	\$1,350.00
			\$0.00
215	Bags Cement	\$9.00	\$1,932.00
54	Tons of sand (4 bgs cem/ton)	\$25.00	\$1,341.67
	Calculations		
A.	Cement Bags		
	SF x (1.5"/12" CF/SF) x 1bg/3 CF		
B.	Typ. Waste Factors		
	Pavers = 5%		
	Blocks = 4%		
	Grout and Cement = 12%		
	SUBTOTAL		\$40,092.17
	TOTAL MATERIALS		40,092.2

Exclusions

Waterproofing rear of wall blocks
 Sealing of pavers.
 Protection of pavers after completion.
 Work outside normal hours except as noted
 Cold weather protection.

Qualifications

Assumes Architect approval of pavers and blocks for ordering not later than April 1, 2008. If required to order after April 1, 2008, there will be a 5% increase in paver and block costs.
 Assumes John Doe will be given ready access on 4th Street to receive materials.

John Doe Construction

Project: Park Heights

Sub PCO #4

Crew Makeup: 8 Mech 8 Helpr 1 Fore 1 Eq Op 1 1 Eq Op 2 1 Eq Op 3

Operation	Qty	Unit	Production per mech/help day	Mandays			Equip #1	Equip #2	Equip #3	Field Engr
				Mech	Helper	Fore	Eq Op 1	Eq Op 2	Eq Op #3	Instrument
Add Custom Wall Blocks	5200	ea	100	52.0	52.0	6.50	6.50	6.50	6.50	
Add Grout Fill for Blocks	26	CY	1.5	17.3	17.3	2.2	2.2	2.2	2.2	
Add Belgian Pavers	17400	ea	400	43.5	43.5	5.4375	5.4375	5.4375	5.4375	
Add Accent Pavers	800	ea	300	2.7	2.7	0.3	0.3	0.3	0.3	
Add Cement Bed	4600	sf	500	9.2	9.2	1.15	1.15	1.15	1.15	
Add for stocking labor with crane gone from site					4	0.25	0.50		2.00	
Delete Standard Wall Blocks	-5200	ea	100	-52.0	-52	-6.50	-6.5	-6.5	-6.5	
Field Engr/Layout for Patterns	1	LS			1					1
Incorp Change in Field	1	LS				1				
Total Mandays/Equip Days				72.7	77.7	10.3	9.6	9.1	11.1	1
Total ManHours				582	622	83	77	73	89	8
Days Duration				9.1						
NOTES:			Usage/each	# Blades						
Saw Blade use for Blocks	0	ea	500	0						
Saw Blade use for Pavers	18200	ea	2000	9						
Total Saw Blade Replacements				9						

Time Extensions, Suspensions and Delayed Work

Delays and/or Impacts to Your Contract Work

A delay or suspension in work can result in one or more impacts that have real costs, such as:

- Mobilization and re-mobilization of the crew(s) to job or an area.
- Cost of extended equipment duration (rental or allocated ownership).
- Cost to bypass an area, only to have to come back to it later, stacked with other trades.

Time Extensions, Suspensions and Delayed Work

Delays and/or Impacts to Your Contract Work

EXAMPLE #1

- Subcontractor mobilizes on site with equipment and scaffolding, and the Subcontractor starts work.
- One month later, a major structural design issue is found, and Subcontractor is directed to stop all work.
- Subcontractor requests GC direction on whether to dismantle scaffold, remove, then rebuild when return, or to leave in place (GC confirms to leave in place, otherwise remove all other equipment off site).
- Three (3) months after STOP work order, GC directs Subcontractor to resume work at site.

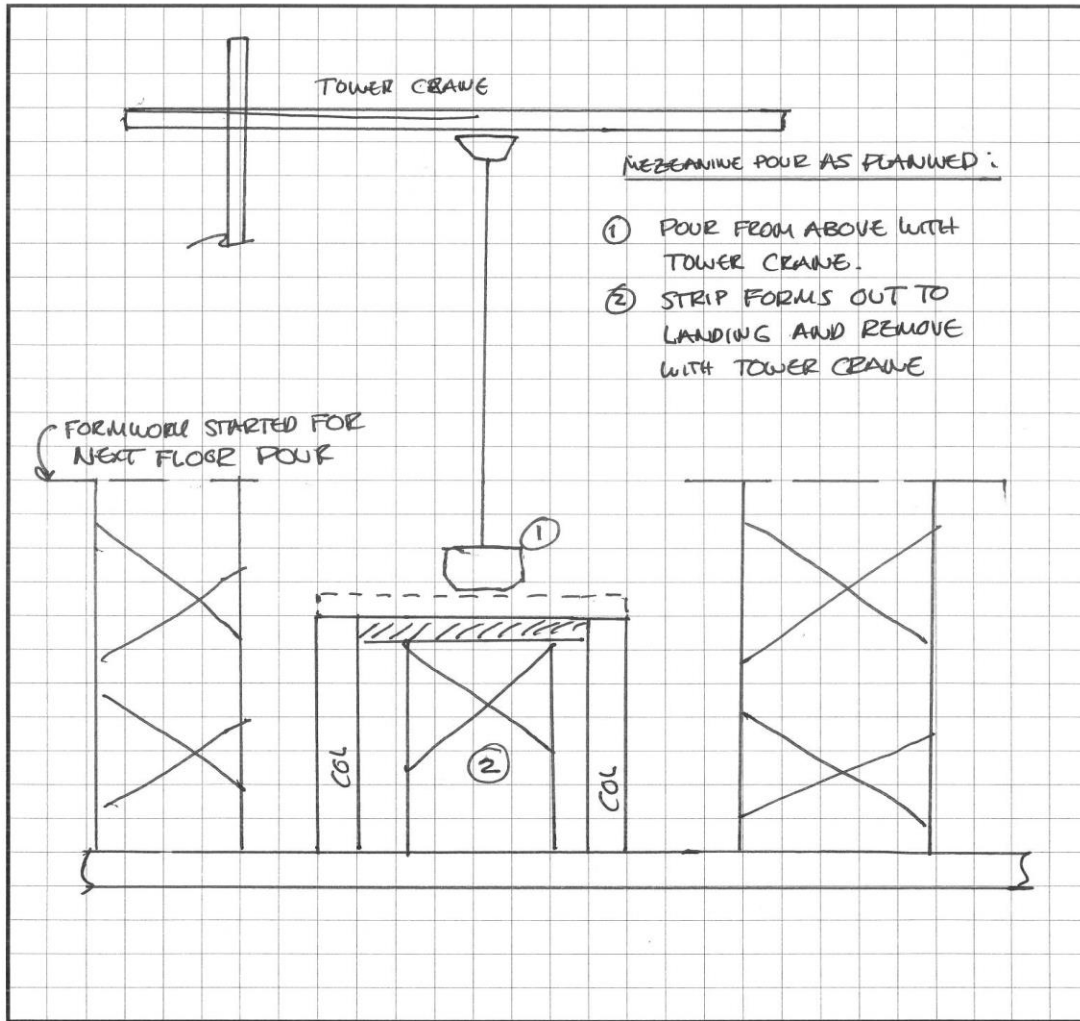
EXAMPLE #1 PRICE PROPOSAL		3 MONTH DELAY/SUSPENSION IN SUB'S CONTRACT WORK				
WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	LABOR	MATERIAL	EQUIP
<u>DEMOBILIZE FROM SITE</u>						
CREW	1	DAY	\$2,000.00	\$2,000.00		
EQUIPMENT PICKUP/TRUCKING	2	TRIPS	\$500.00			\$1,000.00
<u>REMOBILIZE TO SITE</u>						
CREW	1	DAY	\$2,000.00	\$2,000.00		
EQUIPMENT PICKUP/TRUCKING	2	TRIPS	\$500.00			\$1,000.00
<u>SCAFFOLD ADDITIONAL RENTAL</u>						
	3	MO RENT	\$8,000.00			\$24,000.00
SUBTOTAL				\$4,000.00	\$0.00	\$26,000.00
		LABOR BURDEN		45%	\$1,800.00	
		STATE TAX		6%		\$0.00
SUBTOTAL				\$5,800.00	\$0.00	\$27,560.00
		OH&P		15%	\$870.00	\$0.00
SUBTOTAL				\$6,670.00	\$0.00	\$31,694.00
		BOND		1.5%	\$100.05	\$0.00
SUBTOTALS				\$6,770.05	\$0.00	\$32,169.41
GRAND TOTAL	\$38,939.46					

Time Extensions, Suspensions and Delayed Work

Delays and/or Impacts to Your Contract Work

EXAMPLE #2

- Concrete subcontractor plans to form and pour a small Mezzanine slab area while doing the same work on the level above, using the large main crews typical for preparing floors as the building progresses upward.
- An RFI is submitted the location of this mezzanine slab due to MEP space allocation and code issues. It takes 1+ months for a response and re-design for the Mezzanine slab. Due to critical path schedule, the main building floors move forward without the Mezzanine slab being constructed.



CALVERT MASONRY, INC.
"An Employee Owned Company"

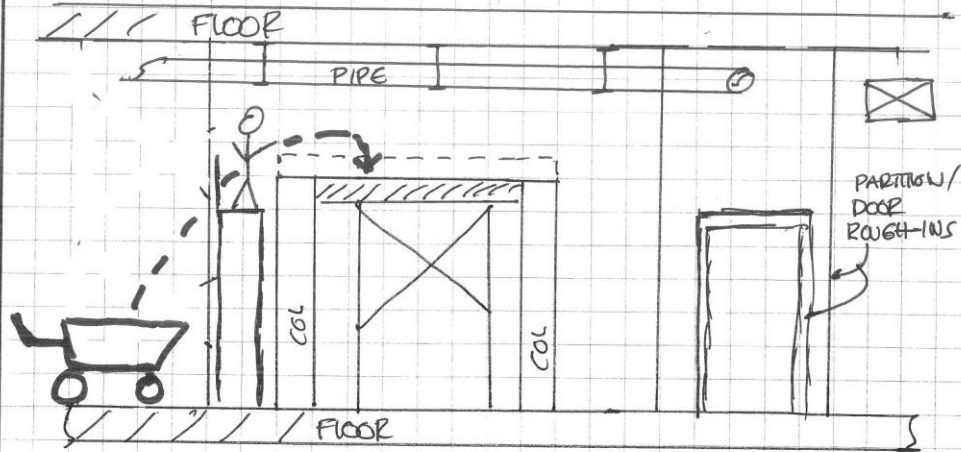
Project: MEZZANINE FLOOR POUR
Description: "AS PLANNED"

By: _____ Date: / / Sheet: of

RFI DELAYS ABILITY TO POUR FLOOR UNTIL AFTER FLOOR ABOVE IS POURED, LANDING PLATFORM REMOVED

NOW

- NO ABILITY TO POUR FROM ABOVE
- CONCRETE MUST BE BROUGHT IN WITH SMALL EQUIP
- LIFTED BY HAND OR SMALL PUMP
- FORMS REMOVED BY HAND THROUGH BUILDING TO HOIST



CALVERT MASONRY, INC.
"An Employee Owned Company"

Project: MEZZANINE FLOOR POUR
Description: "AS IMPACTED FOR RFI"

By: _____ Date: / / Sheet: of

EXAMPLE #2 PRICE PROPOSAL		RFI Design Response Delay - Mezzanine Slab Construction				TOT CRW
WORK ACTIVITY	QUANTITY	UNIT	UNIT PRICE	LABOR		HOURS
<u>DELETE SLAB POUR IN OPEN USING TOWER CRANE AND STANDARD FORM AND SLAB CREWS</u>						
FORM MEZZ SLAB - STD FORM CRW	-400	SF	\$3.70	-\$1,480.00		-4.0
POUR MEZZ SLAB - STD FORM CRW	-7.5	CY	\$87.50	-\$656.25		-1.9
STRIP MEZZ SLAB - STD FORM CRW	-400	SF				-1.6
CRANE AND BUCKET USED TO TRANSPORT MATERIAL AND FORMWORK						-7.5
<u>BUILD MEZZANINE SLAB AFTER BUILDING FRAME IN PLACE, MEP INSTALLED, DOORS INSTALLED</u>						
FORM MEZZ SLAB - SMALL CREW	400	SF	\$6.40	\$2,560.00		16.0
POUR MEZZ SLAB - SMALL CREW	7.5	CY	\$160.00	\$1,200.00		7.5
STRIP MEZZ SLAB - SMALL CREW	400	SF	\$2.46	\$984.62		6.2
HAND TRANSPORT MATL/EQ CRW	16.0	HRS	\$100.00	\$1,600.00		29.7
HAND BUGGY AND LABOR USED TO TRANSPORT AND FORMWORK						
SUBTOTAL				\$4,208.37		
LABOR BURDEN			45%	\$1,893.76		
STATE TAX			6%			
SUBTOTAL				\$6,102.13		
OH&P			15%	\$915.32		
SUBTOTAL				\$7,017.45		
BOND			1.5%	\$105.26		
SUBTOTALS				\$7,122.71		
GRAND TOTAL	\$7,122.71					

EXAMPLE #2 PRICE PROPOSAL			RFI Design Response Delay - Mezzanine Slab Construction							
			CARP OR				PROD/HR			
CREW MAKEUP	UNIT	FORE	\$/HR	FINISHER	\$/HR	LAB	\$/HR	TOT \$	RATE	\$/UNIT
STANDARD FORM CREW	SF	1	\$40.00	8	\$35.00	2	\$25.00	\$370.00	100	\$3.70
STANDARD SLAB CREW	CY	1	\$40.00	6	\$35.00	4	\$25.00	\$350.00	4	\$87.50
STANDARD STRIP CREW	SF	1	\$40.00	2	\$35.00	8	\$25.00	\$310.00	250	\$1.24
SMALL FORM HAND CRW	SF	1	\$40.00	2	\$35.00	2	\$25.00	\$160.00	25	\$6.40
SMALL SLAB HAND CRW	CY	1	\$40.00	2	\$35.00	2	\$25.00	\$160.00	1	\$160.00
SMALL STRIP HAND CRW	SF	1	\$40.00	2	\$35.00	2	\$25.00	\$160.00	65	\$2.46
LABOR HAND TRANSPRT						4	\$25.00	\$100.00		

THIS EXAMPLE ASSUMES NO EQUIPMENT TIME FACTOR; POUR SMALL ENOUGH THAT NEITHER CRANE NOR GEORGIA BUGGIES TIME ON SITE WOULD BE AFFECTED EITHER WAY.

Time Extensions, Suspensions and Delayed Work

Delays and/or Impacts to Your Contract Work (continued)

- Increased cost of keeping supervision and plant during “dilution” of crew size due to lack of work.
- Overtime cost and/or inefficient spike in manpower to mitigate time lost.
- Loss of productivity due to jumping around out of sequence and/or losing a flow and momentum established.

Time Extensions, Suspensions and Delayed Work

Delays and/or Impacts to Your Contract Work (continued)

- **NOTE – Read your subcontract regarding delays and impacts**
 - Many have “NO DAMAGE FOR DELAY CLAUSES” that if not amended could prevent you from recovering for the impacts mentioned

Could this be considered an impact due to an inaccessible site?



ESTABLISHING CREDIBILITY WITH THE GC/OWNER ON CHANGE PROPOSALS

- Building confidence on reviewer's side typically leads to a better and faster outcome
- Thorough, clear detail (usually more detail the better)
 - Consistency in pricing
 - Following the contract for submissions and allowable items
 - You may be able to offer options, reflecting that you are sensitive to Owner's budget pressures

SETTLEMENT TECHNIQUES

1. Know the drawings and changes better than anyone else in the room. Be able to answer all questions.
2. Research who is in room with you and what seems to be their hot buttons and priorities, and plan for them. For example:
 - Are they nuts and bolts people? ***See item 1.***
 - Are they big picture, “it just costs too much per SF”? ***Discuss the job conditions/constraints that add to the SF price.***

SETTLEMENT TECHNIQUES

3. Set up your pricing to allow for some minor “throw aways” without artificially inflating the price.
 - *example – round up quantity, production rate or unit price; maybe a separate cleanup item that you already have covered in the crew size*
4. Are there parts of the scope that may be questionable to be a change?
 - *Maybe shift more cost to other easily defensible parts of change, and offer to remove the pricing on the questionable*

SETTLEMENT TECHNIQUES

5. Stay even keeled and professional during negotiations.

6. You don't have to agree right off the bat to a counteroffer unless you know it is a win for you.

➤ ***“I will take a look at that and get back to you”.***

7. Try not to become predictable in agreeing to price reductions. The other side may consider that as a precedent for all negotiations.

PERFORMING WORK WITHOUT A CHANGE ORDER

- Attorneys say – NEVER DO IT!
- Contracts say (typically) – must proceed if directed in writing (with or without a formal change order)

PERFORMING WORK WITHOUT A CHANGE ORDER (con't)

Best practices (and typically in subcontract language) to protect your company:

1. Have GC direction in writing that you are to proceed with the work in question as a change to the subcontract **BEFORE PROCEEDING**.

2. Make sure in subcontract that there are no restrictions regarding who from the GC can direct changes.

- At bare minimum, you confirm in writing that you were directed to proceed with the changed work by {name/title} on this date.

BACKCHARGES

- No one is perfect; your guys are going to mess up another trade's work on occasion.
- It is always best to work out a reasonable resolution/trade directly with the other sub.
- Typical subcontract language affords you the right to a notice and time period to remedy a condition, such as
 - Repair or clean work of others due to your operations
 - Insufficient cleanup of trash generated by you

BACKCHARGES (con't)

What is NOT fair is when the General Contractor

- Sends you a backcharge change order without ever having provided written notice and opportunity to satisfactorily address the specific date and condition
- Arbitrarily (or randomly) assigns a prorated share of the backcharge costs to you without any reasonable basis (e.g. job cleanup performed by GC's temp labor service; distributing monthly crane or hoist cost based on your % use of total, regardless of actual time or use)

CHANGES CLASS PART 2

QUESTIONS??