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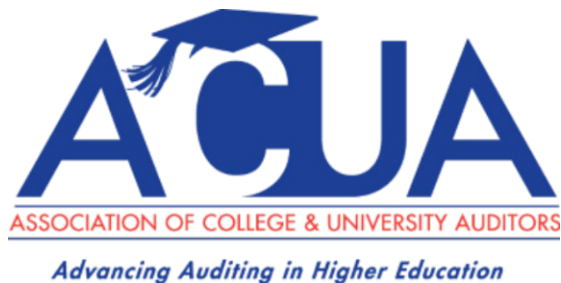
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Construction Audit Overview
August 13, 2020



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Consultancy founded in 2006 which focuses solely on Construction Contract Auditing

Significant focus on Higher Education and Healthcare clients

Audit philosophy of proactively identifying potential issues and establishing financial controls prior to contract execution

Services include “Owner-specific” Audit Training for Inhouse Staff

Construction Contract Audits

- **Can be performed at any point during project lifecycle and is proper way to closeout project**
- **Construction Contract Reviews audit billings to the lowest source document to validate the reimbursable nature of the billing pursuant to the Contract Documents**
- **Any rates employed are validated for both accuracy and the reimbursable nature of the various components comprising the rate**
- **Review of Change Orders for the application of markups along with approval process**

Validating Project Costs Related to a GMP Contract

- **GMP Contracts allow the Owner to only pay for valid reimbursable costs up to a defined maximum**
 - AIA Contract defines ‘Costs to be Reimbursed’ and ‘Costs not to be Reimbursed’
 - ‘Costs to be Reimbursed’ have to be ‘incurred in the actual performance of the work’
- **An understanding of how the Contractor/CM is defining ‘cost’ is then essential**
 - Any rate (normally a percentage of the cost of work or the GMP) must be closely scrutinized to ensure it is not a Contractor/CM profit center
 - Additions and deletions of personnel and equipment can create opportunities for the Contractor/CM to garner additional profit
 - Ensure overhead costs are not passed to the project

Sample for Illustrative Purposes Only

“Hidden Costs”

- **Labor – Home Office Overhead**
- **Labor Burden**
- **CM/Contractor Insurance**
- **Costs for Information Technology**
- **Various Markups on Change Orders**
- **CM/Contractor Owned Equipment**
- **Daily Cleanup**
- **Corporate Overhead Billed to Owner’s Project**



Pitfalls of Reimbursable Contracts to Avoid

- **Fixed General Conditions**
 - Ambiguous clarification of where costs reside (i.e. under General Conditions or Cost of Work)
- **Rates utilized in lieu of actual costs**
 - Labor Bill Rates
 - Labor Burden Rate (with actual base wages)
 - Rates for various types of Insurance
 - Information Technology
 - Rate for Construction Manager Owned Equipment Leased to Project
- **Lack of Transparency**
 - Lack of Supporting Documentation with Payment Application

Types of Audits

- **Pre-Construction Review (Bid and Procurement Phase)**
 - Review of Contract Language and Rates from a Financial Perspective During the RFP Process to Mitigate Disadvantages to the Owner
 - Set up Pay Application Process and Documentation Requirements
 - Proactively audit all rates/burden to be utilized during the construction projects with a component level breakdown of those rates to clarify reimbursable nature
- **Construction Phase (Interim Review)**
 - In-Depth Reconstruction of Billings from CM/Contractor to Determine Compliance with Contract Terms
 - Verification and Validation of the Reimbursable Nature of Billings Passed to the Owner
- **Project Close-out Phase**
 - In-Depth Reconstruction of Billings from CM/Contractor to Determine Compliance with Contract Terms
 - Verification and Validation of the Reimbursable Nature of Billings Passed to the Owner
 - Preferably performed in conjunction with project close-out

Question #1

- **When is the optimal time to begin an audit?**
 - **A – Prior to Contract Execution**
 - **B – Prior to Construction**
 - **C – During the Project Lifecycle**
 - **D – In Conjunction with Project Closeout**
 - **E - Unsure/Don't Know/NA**

Timing

At what point in the construction project lifecycle is there the greatest risk/need for an audit?

- **Prior to Contract Execution**
 - **Ambiguous Language can be mitigated**
 - **Profit Centers (outside the stated fee) can be identified and quantified**
 - **Control Points can be inserted to remedy issues**
 - **Ensures more collaboration among all parties**

Pre-Construction Contract Reviews

- **Pre-Construction Contract Reviews** eliminate ambiguities in Contract language and evaluate any rates the CM/Contractor is planning on employing for both reasonableness and the reimbursable nature of all components comprising this rates.
- **Rates evaluated under a pre-construction contract review** include but are not limited to:
 - **Billable Rates**
 - **Labor Burden**
 - **Overtime Labor Burden**
 - **Rates for Contractor Insurance**
 - **Rates for Information Technology Charges**
 - **Rates for Contractor-Owned Equipment**
 - **Change Order Markups**



Pre-Construction Contract Reviews

- **Review RFP response to identify attempts to supersede contractual language and/or institutional business practices**
- **Validate billable employees and labor burden**
- **Review & validate leased equipment rates**
- **Validate GL & Subguard rate application**
- **Review IT charging methodology**

Areas of Leakage

Labor	Materials	Subcontractors	Leased Equipment	Other
Payroll reconstruction	Billed in accordance with contract	Payment cancellation	Rates are in accordance with contract	Monetary float
Multiplier verification	Review for duplicate payments	Change Order pricing reviews	Aggregate payments do not exceed fair value	Travel
Proper application of multiplier	Confirmation of rebates issued	Review of duplicate payments	Equipment idle on job site	Misc. expenses
Non-reimbursable personnel	Pricing reasonableness testing	Appropriate bid process	Auto allowances	Overhead charges
Overtime	Quantity purchased reasonableness testing	Payment reconciliation		Recruiting expenses
Ghost(s) on payroll	Unconsumed materials/scrap reasonableness testing			Relocation expenses





Owner Risk Area: Labor Bill Rates/Labor Burden

“Labor burden components and percentages have been negotiated and agreed in advance. The labor burden rate shall be billable salary times 29.83%, which covers FICA, FUTA/SUTA, 401K, group insurance, life and disability insurance and training for all staff listed in Attachment B. The list of full and part time employees is attached as Attachment B, dated January 15, 2015. Any additions or deletions to the team shall be provided to the owner in writing and approved by the Owner. The labor burden rate set forth in the agreement is fixed for the term of this project and is not subject to audit at project completion unless there is a justifiable need as a result of the components of this burden being changed in which the Contractor had no control.”

Sample for Illustrative Purposes Only



Division 1 – General Requirements (Include

- Project Manager - \$90.00 per hour
- Senior Superintendent - \$100.00 per hour
- Superintendent - \$90.00 per hour
- Field Engineer - \$65.00 per hour
- Assistant Superintendent/Foreman - \$65.00 per hour
- Equipment Manager - \$65.00 per hour
- Craftsman - \$35.00 per hour
- Laborer - \$24.00 per hour

Division 2 – Sitework

- Demolition Technician Regular Time - \$36.00 per hour
- Demolition Technician Overtime - \$46.00 per hour
- Asbestos Piping Demolition - \$18.00 per LF
- Asbestos Floor Tile & Mastic - \$3.00 per SF
- Asbestos Plaster Walls - \$9.00 per SF
- Removal of Unsuitable Soils & Haul In Suitable Backfill - \$25.00 per CY
- Excavate & Removal of Rock - \$500.00 per CY
- Seeding (Minimum of 30,000 SF) - \$0.05 per SF
- Sod - \$6.00 per SY

Division 3 – Concrete

- Removal & Replacement of Sidewalks - \$10.50 per SF

Division 4 – Masonry

- Laborer Regular Time - \$22.50 per hour
- Laborer Overtime - \$33.75 per hour
- Mason Regular Time - \$31.00 per hour
- Mason Overtime - \$46.50 per hour
- Foreman Regular Time - \$40.30 per hour
- Foreman Overtime - \$60.45 per hour

Division 6 – Wood & Plastics

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responsible for all obligations under the Contract. The Owner may assign this Agreement, in whole or in part to (among others deemed necessary or desirable by the Owner) any direct or indirect affiliate of the Owner. The Construction Manager shall execute all consents reasonably required to facilitate any such assignment by the Owner.

§ 11.5 Other provisions:

§ 11.5.1 Wages or salaries of the Construction Manager's supervisory and administrative personnel when engaged in the Work will be charged at the following rates for actual hours worked (except for salaried positions which are based on 2,080 hours per year, with paid vacation time):

Salaried	
Senior Project Manager	\$125.00 per hour
Project Manager	\$110.00 per hour
Assistant Project Manager	\$85.00 per hour
General Superintendent	\$130.00 per hour
Senior Superintendent	\$125.00 per hour
Superintendent	\$110.00 per hour
Assistant Superintendent	\$85.00 per hour
Virtual Engineer/ Layout	\$100.00 per hour
Project Engineer	\$85.00 per hour
Field Engineer	\$75.00 per hour
Safety Manager	\$65.00 per hour
Equipment Manager	\$70.00 per hour
Secretary/Administrative Assistant	\$45.00 per hour
Hourly	
FLB Craftsmen	\$45.00 per hour
FLB Laborer	\$35.00 per hour

§ 11.5.1.1 For required overtime, hourly personnel will be paid time and a half on gross pay hourly rates.

§ 11.5.1.2 These rates reflect the only charges that will be included in Cost of the Work for all PMs, field managers, support staff and self-perform craftsmen. All "burden and fringe" charges e.g. FICA, FUTA, SUTA, vacation, health insurance, etc. are included in the above rates. All hardware accompanying FLB employees (cell phone, laptop, ipads, etc.) as well as any truck allowance charges are included in the above rates. Any craftsman or laborer working through a temporary agency will be billed at "pass through" rates.

§ 11.6 Extreme Fast Track Delivery.

§ 11.6.1 Recital: The parties acknowledge the Owner's longstanding precedent of not waiving its rights to consequential damages in design and construction contracts. Project One and Project Two are a one-time exception due to the unique extreme fast track delivery schedule inherent in this Project. Under no circumstances will contractors on future projects use this one-time exception as precedent. For this particular Project One and Project Two, Contract Time is of paramount importance to the Owner. In order to shorten the time of completion, the Owner has agreed to a project delivery strategy to start construction before the design is complete. The extreme fast track delivery of this Project One and Project Two is achieved through the integration of design and construction phases, which is acknowledged to be more difficult to manage than the traditional design bid build process. For example, there is additional risk that work built in an early phase of the project may not suit later design decisions, which could result in increased cost and delay if completed work needs to be modified. As a result of the unique "extreme fast track" delivery strategy to be used on Project One and Project Two, the Owner has determined Project One and Project Two can be a one-time exception to the Owner's precedent of deleting the waiver of consequential damages language

§ 11.6.2 For the instant Project One and Project Two only:

CLAIMS FOR CONSEQUENTIAL DAMAGES

Int.

§ 6.1.2 Where any cost is subject to the Owner's prior approval, the Construction Manager shall obtain this approval prior to incurring the cost. The parties shall endeavor to identify any such costs prior to executing Guaranteed Maximum Price Amendment.

§ 6.2 Labor Costs

§ 6.2.1 Wages of construction workers directly employed by the Construction Manager to perform the construction of the Work at the site or, with the Owner's prior approval, at off-site workshops.

§ 6.2.2 Wages or salaries of the Construction Manager's key Project staff identified pursuant to the provisions of Article 2 of this Agreement when stationed at the site with the Owner's prior approval.

§ 6.2.3 Wages and salaries of the Construction Manager's supervisory or administrative personnel engaged at the Construction Manager's corporate office, factories, workshops or on the road, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time required for the Work.

§ 6.2.4 Costs paid or incurred by the Construction Manager for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Sections 6.2.1 through 6.2.3.

§ 6.2.5 Bonuses, profit sharing, incentive compensation and any other discretionary payments paid to anyone hired by the Construction Manager or paid to any Subcontractor or vendor, with the Owner's prior approval.

§ 6.2.6 The premium portion of overtime wages paid to labor, whether subcontracted or employed directly by the Construction Manager, but only to the extent that the recovery of such overtime costs is expressly permitted under the Contract Documents.

§ 6.3 Subcontract Costs

Payments made by the Construction Manager to Subcontractors in accordance with the requirements of any subcontracts properly entered into in accordance with the terms of this Agreement.

§ 6.4 Costs of Materials and Equipment Incorporated in the Completed Construction

§ 6.4.1 Costs, including transportation and storage, of materials and equipment incorporated or to be incorporated in the completed construction.

§ 6.4.2 Costs of materials described in the preceding Section 6.4.1 in excess of those actually installed to allow for reasonable waste and spoilage. Unused excess materials, if any, shall be properly stored at the Project site and shall become the Owner's property at the completion of the Work or, at the Owner's option, shall be sold by the Construction Manager. Any amounts realized from such sales shall be credited to the Owner as a deduction from the Cost of the Work.

§ 6.5 Costs of Other Materials and Equipment, Temporary Facilities and Related Items

§ 6.5.1 Costs of transportation, storage, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Construction Manager at the site and fully consumed in the performance of the Work. Costs of materials, supplies, temporary facilities, machinery, equipment and tools that are not fully consumed shall be based on the cost or value of the item at the time it is first used on the Project site less the value of the item when it is no longer used at the Project site. Costs for items not fully consumed by the Construction Manager shall mean fair market value.

§ 6.5.2 Subject to the limitations found in Section 5.1.4, rental charges for temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Construction Manager at the site and costs of transportation, installation, minor repairs, dismantling and removal. Rates of Construction Manager-owned equipment and quantities of equipment shall be subject to the Owner's prior approval.

Question #2

- **Reimbursable payroll burden should not include which of the following items:**
 - **A – Social Security Costs**
 - **B – Payroll Taxes**
 - **C – Training Costs**
 - **D – Paid Time Off**
 - **E - Unsure/Don't Know/NA**

Owner Risk Area: Labor Burden

Construction Manager Burden Rate Analysis			
Burden Component	Construction Manager Calculation	FHA Suggested Calculation	Comments
Social Security	7.65%	7.09%	Reduced to Actual Amount to account for appropriate caps
Unemployment - Federal	0.80%	0.03%	
Unemployment - State	3.34%	0.68%	
Worker's Comp	9.05%	8.32%	Reduced to account for appropriate rate modification
Health Insurance	10.45%	8.89%	Reduced to account for actual participation
Pension	4.50%	1.89%	Reduced to actual amount of 401(k) participation
Disability (Long Term)	0.05%	0.05%	
Bonus	5.00%	0.00%	Eliminated as Contract calls for Owner approval for bonus
Car Allowance	2.00%	0.00%	Eliminated as Contract calls for Owner approval for auto allowance
Vacation	5.77%	2.89%	Reduced to weighted average amount of vacation time per employee per hour worked
Total Fringe	48.61%	29.84%	

Sample for Illustrative Purposes Only

Owner Risk Area: Labor Burden

Construction Manager Burden Rate Analysis			
	Base Labor	Fringe Uplift %	Total
Total Labor Billed	\$ 3,152,154.47	48.61%	\$ 4,684,259.15
Recommended	\$ 3,152,154.47	29.84%	\$ 4,092,599.76
Overbilling			\$ (591,659.39)

Sample for Illustrative Purposes Only

Question #3

- **Is Construction Manager Owned equipment reimbursable?**
 - **A – Yes**
 - **B – No**
 - **C - Unsure/Don't Know/NA**

Rental Rates

Page: 1/6
Date: 12/05/2014
Time: 4:17 PM

Logistics Rental Rates
Home Location: 6041-WD
Equipment Class: ALL

Rental Rate Disclaimers:

- Rates escalate yearly and are 90% or less of adjusted AED Greenbook or Market Rate
- Charges for superintendent trucks are based on hourly rates varying by Region and are distinct from any truck rates reflected on this sheet.
- Rates are not subject to a rental cap based on equipment value

Home Location	Class	Start Date	End Date	28-Day Rate	Weekly Rate	Daily Rate
6041-WD	12-DA FLAT - 12-DL Trailer - Dual Axle-Flat	01/01/2014	12/31/2014	289.40	96.47	32.16
6041-WD	21-JOB-CC - 21-Truck-Job-Crew Cab 4x2	01/01/2014	12/31/2014	719.40	239.80	79.93
6041-WD	21-JOB-CC4 - 21-Truck-Job-Crew Cab 4x4	01/01/2014	12/31/2014	719.40	239.80	79.93
6041-WD	21-JOB-RC - 21-Truck-Job - Reg Cab 4x2	01/01/2014	12/31/2014	719.40	239.80	79.93
6041-WD	21-JOB-RC4 - 21-Truck-Job - Reg cab 4x4	01/01/2014	12/31/2014	719.40	239.80	79.93
6041-WD	21-JOB-SUV - 21-Truck-Jobsite-SUV	01/01/2014	12/31/2014	719.40	239.80	79.93
6041-WD	21-JOB-XC - 21-Truck-Job - Ext Cab 4x2	01/01/2014	12/31/2014	719.40	239.80	79.93
6041-WD	21-JOB-XC4 - 21-Truck-Job - Ext Cab 4x4	01/01/2014	12/31/2014	719.40	239.80	79.93
6041-WD	21-SPT-250 - 21-Truck-F250	01/01/2014	12/31/2014	0.00	0.00	0.00
6041-WD	21-SPT-CC - 21-Truck-Super - Crew Cab	01/01/2014	12/31/2014	0.00	0.00	0.00
6041-WD	21-SPT-CC4 - 21-Truck-Super - Crew Cab 4x4	01/01/2014	12/31/2014	0.00	0.00	0.00
6041-WD	21-SPT-RC - 21-Truck-Super - Reg Cab 4x2	01/01/2014	12/31/2014	0.00	0.00	0.00
6041-WD	21-SPT-RC4 - 21-Truck-Super - Reg Cab 4x4	01/01/2014	12/31/2014	0.00	0.00	0.00
6041-WD	21-SPT-SUV - 21-Truck-Super - SUV	01/01/2014	12/31/2014	0.00	0.00	0.00
6041-WD	21-SPT-XC - 21-Truck-Super - Ext. Cab 4x2	01/01/2014	12/31/2014	0.00	1.00	0.00
6041-WD	21-SPT-XC4 - 21-Truck-Super - Ext. Cab 4x4	01/01/2014	12/31/2014	0.00	0.00	0.00
6041-WD	21-TRK JOB - 21-Truck - Jobsite Pickup	01/01/2014	12/31/2014	719.40	239.80	79.93
6041-WD	21-VAN - 21-Van - 12 Passenger	01/01/2014	12/31/2014	1,488.40	496.13	165.38
6041-WD	30-110V - 30-Vibrator - 110V	01/01/2014	12/31/2014	364.70	121.55	40.52
6041-WD	30-BKT-.25 - 30-Concrete Bucket-.25 YD	01/01/2014	12/31/2014	324.30	108.11	36.04
6041-WD	30-BKT-.50 - 30-Concrete Bucket-.50 YD	01/01/2014	12/31/2014	324.30	108.11	36.04
6041-WD	30-BKT-1.0 - 30-Concrete Bucket-1.0 YD	01/01/2014	12/31/2014	324.30	108.11	36.04
6041-WD	30-BKT-1.5 - 30-Concrete Bucket-1.5 YD	01/01/2014	12/31/2014	489.50	163.18	54.39
6041-WD	30-BKT-2.0 - 30-Concrete Bucket-2.0 YD	01/01/2014	12/31/2014	489.50	163.18	54.39
6041-WD	30-BKT-3.0 - 30-Concrete Bucket-3.0 YD	01/01/2014	12/31/2014	917.90	305.97	101.99
6041-WD	30-CPB-16 - 30-Concrete Power Buggy-16cf	01/01/2014	12/31/2014	964.30	321.43	107.14
6041-WD	30-DR-ROCK - 30-Drill - Rock - Air	01/01/2014	12/31/2014	325.30	108.44	36.15
6041-WD	30-SAW6.5H - 30-Saw - Concrete - 6.5 HP	01/01/2014	12/31/2014	367.40	122.45	40.82
6041-WD	30-SHORE-1 - 30-Shores - #1	01/01/2014	12/31/2014	5.80	1.92	0.64
6041-WD	30-SHORE-2 - 30-Shores - #2	01/01/2014	12/31/2014	5.80	1.92	0.64
6041-WD	30-SHORE-3 - 30-Shores - #3	01/01/2014	12/31/2014	5.80	1.92	0.64
6041-WD	30-SHORE-4 - 30-Shores - #4	01/01/2014	12/31/2014	5.80	1.92	0.64
6041-WD	30-SKPAN - 30-Skip Pan - Certified	01/01/2014	12/31/2014	316.00	105.34	35.11
6041-WD	30-TRP-HD - 30-Tarp - Heavy Duty - Double	01/01/2014	12/31/2014	11.58	3.86	1.29

Owner Risk Area: Subcontractors

- **Change Orders**
- **Duplicate billings to Owner of same payment**
- **Daily Cleanup**
- **Backcharges**
- **Lien Waivers**
- **Subcontractors Operating under a Reimbursable Contract**

Owner Risk Area: Related Party

- **Competitive Bid Process**
- **Preferably billed under a separate, reimbursable contract instead of a lump sum arrangement**
- **Beware of “Subcontractor fee” for overhead and profit prior to CM/Contractor fee**

Owner Risk Area: Change Orders

- Validation of various markups (overhead, profit, insurance, bonds, etc.) for both Additive and Deductive Change Orders
- Validation of costs (material, labor, etc.)
- Identify duplicate scope
- Review of approval process



Owner Risk Area: Change Orders

Change Order Example			
	Sub-Subcontractor Cost	Subcontractor Cost	CM Cost
Cost from Lower Tier Subcontractor	\$ -	\$ 47,597.39	\$ 54,736.99
Labor	\$ 22,458.98		
Materials	\$ 13,043.40		
Equipment	\$ 5,194.80		
Subtotal	\$ 40,697.18		
Bonds (.7%)	\$ 284.88		
Insurance (1.0%)	\$ 406.97		
Total Before Markup	\$ 41,389.03	\$ 47,597.39	\$ 54,736.99
Allowable Markup (15.0%)	\$ 6,208.35	\$ 7,139.61	
CM Fee (1.75%)	\$ -	\$ -	\$ 957.90
Total Cost	\$ 47,597.39	\$ 54,736.99	\$ 55,694.89

Examples of Change Order Issues

In addition to a markup for overhead and profit, subcontractors may utilize other markups on change orders for safety, cleaning, small tools, and supervision.

- The Owner's contract and/or the subcontract agreement may specify the items covered by the fee for overhead and profit. In many instances, the items noted above are to be covered by this fee.
- If the contract and/or the subcontract agreement does not specify the items covered by the fee for overhead and profit, the CM/Contractor should be asked to demonstrate these costs are incremental in nature. For example, the Owner likely paid for these items in the base scope of work.
- Use of standardized template for all subcontract tiers, as well as the CM/Contractor, can minimize this issue for specifying the only allowable markups to be applied to the cost of the work.

EXHIBIT "A"
SUMMARY - CHANGES IN THE WORK

Project: _____ Date: _____

Description of Change: _____

1. Materials (see attached itemized breakdown) _____

2. Rent of Equipment (see attached itemized breakdown) _____

3. Labor (see attached itemized breakdown) _____

SUBTOTAL #1 \$ _____

4. Overhead and Profit: (_____ % of subtotal #1) _____

5. Labor Burden: (_____ % of Item 3), (Workmen's Compensation,
Social Security, General Liability Insurance, Benefits, Federal
and State Unemployment Tax) _____

6. Subcontract Work: (If applicable, in identical breakdown
as shown above) _____

7. Contractor's Overhead and Profit on sub-bids (_____ % of Item 6) _____

SUBTOTAL #2 \$ _____

8. Bond (_____ % of Subtotal #2) _____

TOTAL COST OF CHANGE ORDER \$ _____

NOTES:

1. Any entry under Item 5 exceeding 18% of direct labor cost shall be supported by a certificate of applicable costs.
2. Other items to be considered and included as overhead are: Insurance and/or taxes, other than mentioned above; superintendent, timekeeper, clerks, watchmen; use of small tools, incidental job burdens, and general office expense.
3. On any change, which involves a net credit to the Owner, no allowance for overhead and profit shall be figured.
4. The hourly rate for labor shown in Item 3, shall be the employee's wages normally subject to FICA.
5. The overhead and profit shown in Item 4 shall not exceed 15%. The combined overhead and profit shown in Items 4 and 7, shall not exceed 23%. The percentages selected by the Prime Contractor, Subcontractor, etc. for Items 4 and 7 shall be the same for each change proposal.
6. All of the above applies to each tier of contractors, i.e., Prime Contractor, Subcontractor, Sub-subcontractor.

GENERAL CONTRACTOR ESTIMATE FOR CHANGE ORDER

DGS-30-200
(Rev. 03/16)

GC-1

Project Code: _____	General Contractor: _____
Agency: _____	Change Description: _____
Project: _____	

GENERAL CONTRACTOR DIRECT COSTS														
Scope Description		Direct Labor			Direct Material				Direct Equipment					
Item No.	Description	Direct Labor Hours	Labor Units (Manhours, Crew Hours)	Hourly Wage Rate, Excl. Taxes & Ins.	Total Labor Cost	Quantity	Qty Units	Material Cost Per Unit	Total Material Cost	Quantity	Qty Units	Equipment Cost Per Unit	Total Equipment Cost	
A.	B.	C.	D.	E.	F=C x E.	G.	H.	I.	J = G x I.	K.	L.	M.	N = K x M.	
1.01					\$0.00	1.00		\$100.00	\$100.00				\$0.00	
1.02					\$0.00				\$0.00				\$0.00	
1.03					\$0.00				\$0.00				\$0.00	
1.04					\$0.00				\$0.00				\$0.00	
1.05					\$0.00				\$0.00				\$0.00	
1.06					\$0.00				\$0.00				\$0.00	
1.07					\$0.00				\$0.00				\$0.00	
1.08					\$0.00				\$0.00				\$0.00	
1.09	Subtotal from Estimate Continuation Sheets				\$0.00				\$0.00				\$0.00	
1.97	Subtotal (S/T) Direct Costs:				\$0.00				\$100.00				\$0.00	
1.98	Taxes/Insurance:			Subtotal Labor	\$0.00				Subtotal Material	\$100.00			Subtotal Equipment	\$0.00
				% of Labor	\$0.00				Sales Tax	0.0%			Sales Tax	
1.99	Total Direct Costs				Total Labor	\$0.00			Total Material	\$100.00			Total Equipment	\$0.00

SUBCONTRACT COSTS		
Item No.	Subcontractor Name (List totals from attached SC-1 forms)	Total Cost
A.	B.	C.
2.01		
2.02		
2.03		
2.04		
2.05		
2.06		
2.07		
2.08		
2.09		
2.99	Total Subcontract Costs	\$0.00

SUMMARY		
Item No.	Description	Total Cost
3.01	Total Direct Labor Cost	Item 1.99H \$0.00
3.02	Total Direct Material Cost	Item 1.99J \$100.00
3.03	Total Equipment Cost	Item 1.99L \$0.00
3.04	Subtotal	3.01+3.02+3.03 \$100.00
3.05	Overhead and Profit* (%)	\$0.00
3.06	Subtotal	3.04+3.05 \$100.00
3.07	Subcontractor Cost	Item 2.99 \$0.00
3.08	GC Markup on Subcontractors** (%)	\$0.00
3.09	Subtotal	3.06+3.07+3.08 \$100.00
3.10	Additional Bond Cost	\$0.00
3.99	Total Change Order Cost	(3.09+3.10) \$100.00

Name: _____

Signature: _____

Title: _____

Date: _____

I have reviewed the costs proposed and find them to be reasonable (as proposed) (as marked).

All Signature: _____

Note: Mark-up is capped in conformance with the provisions of the General Conditions (CO-7).

*Limited to 15% on self-performed work.

**Limited to a total of 10%, shared (cumulative total) if multiple tier subs, on subcontracted work. See Mark-up limitations for a more detailed description.

SUBCONTRACTOR ESTIMATE FOR CHANGE ORDER

SC-1

DGS-30-204
(Rev. 03/16)

Project Code: _____ General Contractor: _____
 Agency: _____ Subcontractor: _____
 Project: _____ Subcontractor Trade: _____

Change Description: _____

SUBCONTRACTOR DIRECT COSTS													
Scope Description		Direct Labor				Direct Material				Direct Equipment			
Item No.	Description	Direct Labor Hours	Labor Units (Manhours, Crew Hours)	Hourly Wage Rate, Excl. Taxes & Ins.	Total Labor Cost	Quantity	Qty Units	Material Cost Per Unit	Total Material Cost	Quantity	Qty Units	Equipment Cost Per Unit	Total Equipment Cost
A	B	C	D	E	F=C x E	G	H	I	J = G x I	K	L	M	N = K x M
1.01					\$0.00				\$0.00				\$0.00
1.02					\$0.00				\$0.00				\$0.00
1.03					\$0.00				\$0.00				\$0.00
1.04					\$0.00				\$0.00				\$0.00
1.05					\$0.00				\$0.00				\$0.00
1.06					\$0.00				\$0.00				\$0.00
1.07					\$0.00				\$0.00				\$0.00
1.08					\$0.00				\$0.00				\$0.00
1.09	Subtotal from Estimate Continuation Sheets				\$0.00				\$0.00				\$0.00
1.97	Subtotal (S/T) Direct Costs:				Subtotal Labor	\$0.00	Subtotal Material		\$0.00	Subtotal Equipment		\$0.00	\$0.00
1.98	Taxes/Insurance: FICA, FUI, SUI, & Workmen's Comp. _____ % of Labor					\$0.00	Sales Tax			Sales Tax			
1.99	Total Direct Costs				Total Labor	\$0.00	Total Material		\$0.00	Total Equipment		\$0.00	\$0.00

SUB-SUBCONTRACT COSTS		
Item No.	Sub-Subcontractor Name (List totals from attached SS-1 forms)	Total Cost
A	B	C
2.01		
2.02		
2.03		
2.04		
2.05		
2.06		
2.99	Total Sub-Subcontract Costs	\$0.00

SUMMARY			
Item No.	Description		Total Cost
3.01	Total Direct Labor Cost	Item 1.99H	\$0.00
3.02	Total Direct Material Cost	Item 1.99J	\$0.00
3.03	Total Equipment Cost	Item 1.99L	\$0.00
3.04	Subtotal	3.01+3.02+3.03	\$0.00
3.05	Overhead and Profit* (%)		\$0.00
3.06	Total Subcontractor Cost	3.04+3.05	\$0.00
3.07	Sub-Subcontractor Cost***	Item 2.99	\$0.00
3.99	S/C Cost to GC-1 Form***	3.06+3.07	\$0.00

Submitted By

Name: _____

Signature: _____

Title: _____

Date: _____

Note: Mark-up is capped in conformance with the provisions of the General Conditions (CO-7).

*Limited to 15% on self-performed work.

**Limited to a total of 10%, shared (cumulative total) if multiple tier subs, on subcontracted work. Total mark-up on subcontracted work is calculated on the GC-1 form. See mark-up limitations for a more detailed description.

*** The subcontractor cost carried forward to GC-1 form does not include mark-up on sub-subcontractor costs. This mark-up is calculated on the GC-1 form. The GC and its subcontractors shall establish how the mark-up is to be distributed among the various subcontractors involved in the work.



SUB-SUBCONTRACTOR ESTIMATE FOR CHANGE ORDER

DGS-30-208
(Rev. 03/16)

SS-1

Project Code: _____ General Contractor: _____
 Agency: _____ Subcontractor: _____
 Project: _____ Sub-Subcontractor: _____
 Sub-Subcontractor Trade: _____
 Change Description: _____

SUB-SUBCONTRACTOR DIRECT COSTS													
Scope Description		Direct Labor				Direct Material				Direct Equipment			
Item No.	Description	Direct Labor Hours	Labor Units (Manhours, Crew Hours)	Hourly Wage Rate, Excl. Taxes & Ins.	Total Labor Cost	Quantity	Qty Units	Material Cost Per Unit	Total Material Cost	Quantity	Qty Units	Equipment Cost Per Unit	Total Equipment Cost
A	B	C	D	E	F=C x E	G	H	I	J=G x I	K	L	M	N=K x M
1.01					\$0.00				\$0.00				\$0.00
1.02					\$0.00				\$0.00				\$0.00
1.03					\$0.00				\$0.00				\$0.00
1.04					\$0.00				\$0.00				\$0.00
1.05					\$0.00				\$0.00				\$0.00
1.06					\$0.00				\$0.00				\$0.00
1.07					\$0.00				\$0.00				\$0.00
1.08					\$0.00				\$0.00				\$0.00
1.09	Subtotal from Estimate Continuation Sheets				\$0.00				\$0.00				\$0.00
1.97	Subtotal (S/T) Direct Costs:			Subtotal Labor	\$0.00			Subtotal Material	\$0.00			Subtotal Equipment	\$0.00
1.98	Taxes/Insurance:		FICA, FUI, SUI, & Workmen's Comp.	% of Labor	\$0.00		Sales Tax		\$0.00		Sales Tax		\$0.00
1.99	Total Direct Costs			Total Labor	\$0.00			Total Material	\$0.00			Total Equipment	\$0.00

SUMMARY		
Item No.	Description	Total Cost
3.01	Total Direct Labor Cost	Item 1.99H \$0.00
3.02	Total Direct Material Cost	Item 1.99J \$0.00
3.03	Total Equipment Cost	Item 1.99L \$0.00
3.04	Subtotal	3.01+3.02+3.03 \$0.00
3.05	Overhead and Profit (%)	\$0.00
3.99	Total Sub-Subcontractor	\$0.00

Submitted By

Name: _____

Signature: _____

Title: _____

Date: _____

Note: Mark-up is capped in conformance with the provisions of the General Conditions (CO-7).
 *Limited to 15% on self-performed work. See Mark-up limitations for a more detailed description.

Owner Risk Area: Insurance Costs

Fixed rates charged for P&P bonds, General Liability Insurance, Builder's Risk, and Subguard in lieu of actual costs represent another significant area of opportunity for the CM/Contractor

“General Liability, Umbrella and Professional & Pollution Insurance will be calculated against the total Contract Value at a rate of \$10.51 / \$1000.00 of Contract Value. Contractor Insurance is negotiated annually and any decreases or increases will be passed along to the Owner upon written notice and agreement from the Owner.”

“Premiums for Subguard shall be charges to and paid as a Cost of Work by the Owner at the mutually agreed upon rate of one percent One point One Percent (1.1%) of the value of all subcontract values included in the Cost of Work. The Owner's audit rights, shall not extend to this agreed upon rate. The Subguard premium shall be paid with the first progress payment made to Contractor after the establishment of the Guaranteed Maximum Price. At project close out, Contractor will perform a premium reconciliation to accurately determine the current value of all subcontract values included in the final cost of the Work.”

Sample for Illustrative Purposes Only



<u>Line of Coverage</u>	<u>Carrier</u>	<u>Limits</u>	<u>Deductible</u>	<u>Exposure Type</u>	<u>Risk Management Rate</u>
General Liability	Liberty Mutual	\$2mm / \$4mm	\$ 250,000	Payroll	
Fixed Costs / Ded Premium (Non Wrap)				Payroll	0.4116
Fixed Costs / Ded Premium (Wrap-Up DIC)				Payroll	-
Deductible Aggregate				Payroll	2.3131
LCF				Payroll	0.1346
TRIA				Payroll	0.0157
Collateral Charge					0.0169
Total General Liability					2.8920
Professional Liability	Zurich	\$10mm		Revenue	0.3789
Pollution Liability	Zurich	\$25mm		Revenue	-
Professional SIR	Self Insured Retention	N/A	\$2,000,000	Revenue	1.7951
Pollution / Mold SIR	Self Insured Retention	N/A	\$500,000	Revenue	1.1219
Professional (I Management)	Media Professional	\$3m	\$25,000	Revenue	0.0090
I Management Deductible	Deductible	N/A		Revenue	0.0224
Automobile	Liberty Mutual	\$1mm CSL		Vehicles	0.1731
TRIA					0.0017
Physical Damage Deductible			Varies		0.0224
Umbrella - 10 x primary	Liberty Mutual	10 x p		Revenue	0.1152
Umbrella - 25 x 10	Zurich	25 x 10		Revenue	0.0918
Umbrella - 25 x 55	Great American	25 x 35		Revenue	0.0410
Umbrella - 50 x 60 quota share	St. Paul Travelers	50 x 60 qs		Revenue	0.0285
Umbrella - 50 x 60 quota share	Westchester	50 x 60 qs		Revenue	0.0285
Umbrella - 25 x 110	Fireman's Fund	25 x 110		Revenue	0.0206
Umbrella - 40 x 135	AIG	40 x 135		Revenue	0.0370
Property / Inland Marine	Liberty Mutual	Various		Property Values	0.0534
Property / Inland Marine Deductibles	Deductible	\$10,000			0.0135
Directors and Officers Liability	Liberty Mutual	\$5mm			0.0267
Directors and Officers Liability SIR	SIR	\$100,000			0.0449
Employment Practices Liability - Self Insured	Liberty Mutual	N/A			0.2244
Crime	St. Paul Travelers	\$5mm			0.0171
Acn Fee	N/A	N/A			0.0898
Risk Management (Department Expense)	N/A	N/A			0.3881
Corp. Safety / Loss Control	N/A	N/A			0.2019
dbc2	N/A	N/A			0.0561
JMJ - Incident & Injury Free	N/A	N/A			0.2917
Legal	N/A	N/A			0.2693



Construction Manager Components

<u>Line of Coverage</u>	<u>Reimbursable per Contract</u>		<u>Cost per CM</u>		
General Liability	\$	1.45	\$	2.89	Limits are 2X requirement
Professional Liability		0.38		0.38	
Pollution Liability		-		-	
Professional SIR		-		1.80	
Pollution/Mold SIR*		1.12		1.12	
Professional (I Management)		-		0.01	
I Management Deductible		-		0.02	
Automobile		0.20		0.20	
Umbrella - 10 X primary		0.12		0.12	
Umbrella - 25 X 10		0.09		0.09	
Umbrella - 25 x 55		0.04		0.04	
Umbrella - 50 x 60 quota share		0.03		0.03	
Umbrella - 50 x 60 quota share		0.03		0.03	
Umbrella - 25 X 110		0.02		0.02	
Umbrella - 40 X 135		0.04		0.04	
Property/Inland Marine		-		0.05	
Property/Inland Marine Deductibles		-		0.01	
Directors and Officers Liability		-		0.03	
Directors and Officers Liability SIR		-		0.04	
Employment Practices Liability - Self Insured		-		0.22	
Crime		-		0.02	
Aon Fee		-		0.09	
Risk Management (Department Exp)		-		0.39	
Corp Safety/Loss Control		-		0.55	
Legal		-		0.27	
Total	\$	3.52	\$	8.45	

Total Insurance in GMP	\$	648,777.00
Billed To Date		317,255.08
Potential Overcharge over Entire Project *		378,901.12
Potential Overcharge to Date *		185,284.48

* Owner should clarify whether or not pollution liability insurance is required -- Contract is silent, but this is often a required coverage
This analysis assumes the pollution coverage charged is reimbursable



**Foundation of
the American
Subcontractors
Association, Inc.**




**National
Association of
Surety Bond
Producers**

Subcontractor Default Insurance: Its Use, Costs, Advantages, Disadvantages and Impact on Project Participants

by
Dennis C. Bausman, Ph.D.
Clemson University

September 2009



Aggregate retention and aggregate limits are applicable should there be multiple defaults within a policy year. Withstanding the policy limits, the aggregate retention is the maximum dollar risk retained by the contractor for a policy year in the event of multiple defaults. It is normally 3-5 times the deductible. The aggregate limit is the maximum exposure for the carrier (Zurich) and currently can range up to \$150 million (Zurich 2008b).

Cost Structure

For both the insurer and the contractor, the pricing structure for a SubGuard® program assumes the inevitability of subcontractor default (McIntyre 2007). Contractor pricing of subcontractor default insurance (SDI) involves three primary components: a) a risk transfer premium paid to the insurer - Zurich, b) the cost to manage subcontractor/supplier prequalification and claims, and c) a loss sensitive premium to build up a reserve fund for anticipated future claims (Chamey 2004, Higgins 2007).

With each annual renewal the contractor pays the insurer a fixed risk transfer fee based upon the anticipated subcontractor/supplier enrollment volume for that policy year. Its cost depends on a number of variables involved in the carrier's evaluation of the firm including financial strength and stability, profitability and loss record as well as policy deductible, co-pay terms, and occurrence and aggregate limits. The risk transfer premium paid the insurer generally approximates \$3.50/\$1000 (or .35%) of subcontract/purchase order enrollment value (Chamey 2004, Higgins 2007).

The contractor's cost to administer the program, perform the prequalification of subcontractor and suppliers, and manage program claims is a program cost. However, contractor cost is often hard to quantify because often a portion, if not all, of the program duties are performed by existing management and staff. In addition, establishing an appropriate loss sensitive premium for the contractor's reserve pool is often problematic because of the lack of adequate loss history (Chamey 2004, Higgins 2007).

Zurich closely guards information regarding loss history of the SubGuard® program. Even if it did publish claims and program losses to date representation of program risk would be incomplete because of the relative short history of the program. Seven years after the launch of the program there were approximately 300 claims and fewer than 15 of those were greater than the contractor's deductible (Chamey 2004). Rowland (2007) submits that 15% of losses are due to inadequate prequalification, 75% are a result of the contractor's inadequate management of the subcontractor, and 10% because of poor management of the default process. However, the program has only been in existence for a little over a decade and Zurich's risk envelope can extend 10 years after substantial completion of the project. Adequate data necessary to validate the risk of the program for Zurich, as well as for the contractor, may not be readily apparent for years or even decades.

Regardless, SDI is normally priced to the project owner at, or slightly less, than a surety bond which is normally 1% to 1.25% of the subcontractor/supplier value. This would provide .65% to .90% of subcontract value for program administration and claims - or possible cost savings to the contractor if losses can be contained (Rowland 2000, Chamey 2004, Higgins 2007). A contractor may or may not make a project owner aware of the difference between the contractor's pricing structure for SDI and the project cost charged to the project owner. Regardless, the owner's cost will include the contractor's assumptions for the costs of program administration and claims management.

Program Enrollment

With a subcontractor bond the surety prequalifies the subcontractor. However, with SubGuard® the insurer prequalifies only the insured contractor for entry into, and continuing participation in, the SubGuard program. The general contractor has the responsibility of prequalifying the individual subcontractors and suppliers enrolled in the program. The contractor is given the latitude to determine which subcontractors and suppliers to enroll (Gentile 2005).

Owner Risk Area: Information Technology

- **AIA Contract allows for project-specific IT expenditures**

- Laptop computers
- Connectivity
- On-site support
- On most projects, project-specific IT is typically between 0.15 and 0.30% of project cost

- **AIA Contract does not allow for corporate overhead IT expenditures**

- Accounting systems
- Home office servers
- Home office support



2016 Charge Model					
2016 Total	Systems Charge by Role				Device Charge
	All	Corp/Ops	Ops/Field	Ops	

A. Charge Model Calculations

Network and Storage Systems

Network and Storage Maintenance

M&R Agreements

Network & Storage Staff

Microsoft Licensing

Software Licenses and Depreciation

Software Licenses

Software Depreciation

Software Maintenance

Software & ERP Systems Maintenance

Software Management Staff

Telecommunications

Telecommunications

Mobile Phones

Telecom/Data Staff

Support Staff

\$ 1,127,459	1,127,459	-	-	-	-
1,086,062					
462,048	462,048	-	-	-	-
624,014	624,014	-	-	-	-
860,247	860,247	-	-	-	-
2,118,558					
1,660,412	1,230,261	118,588	57,056	254,508	-
458,146	176,968	48,628	1,440	231,111	-
1,997,472					
1,235,152	963,604	105,138	-	166,411	-
762,320	687,320	-	-	75,000	-
1,889,139					
705,600	705,600	-	-	-	-
989,100	989,100	-	-	-	-
194,439	194,439	-	-	-	-
1,291,015	1,291,015	-	-	-	-
\$ 10,369,953	\$ 9,312,074	\$ 272,354	\$ 58,495	\$ 727,030	\$ -
Users Counts	1,662	943	1,374	655	1,430
	\$ 466.91	\$ 24.07	\$ 3.55	\$ 92.50	\$ -

Operations User Charge - PM/Estimating/VDC/Scheduling	\$ 466.91	\$ 24.07	\$ 3.55	\$ 92.50
			Cost/User	\$ 587.02
			2016 Monthly Rate	\$ 575.00

Field User Charge - Superintendent/Foremen/FE	\$ 466.91	\$ -	\$ 3.55	\$ -
			Cost/User	\$ 470.46
			2016 Monthly Rate	\$ 350.00

Computers and Accessories	2016 Cost
Laptops/Desktops/VDI	\$ 712,339
Misc Accessories	150,000
Asset Staff	429,575
Total Cost	\$ 1,291,915
Total Devices	1,430
Cost/Device	\$ 75.29

Note: Account for rounding in Ops Rate above and laptop premium over desktop:

2015 Laptop Monthly Rate	\$ 150.00
2015 Desktop Monthly Rate	\$ 75.00

*** Note on IT Calculation:**

Office Staff = \$575 for Usage Charge

Office Staff = \$150 for Laptop

Total Office IT Charge = \$725

Field Staff = \$350 for Usage Charge

Field Staff = \$150 for Laptop

Total Field IT Charge = \$500

Job Clerk = \$350 for Usage Charge

Job Clerk = \$75 for Desktop

Total Clerk IT Charge = \$425

Question #4

- Which of the following would typically be a reimbursable cost?
 - A – Costs for a “topping out” ceremony
 - B – Costs for water for the jobsite trailer
 - C – Costs for recruiting CM personnel
 - D – Costs related to CM legal costs from Owner Contract
 - E - Unsure/Don't Know/NA

Other Potential Audit Findings

- A firm provided relocation assistance totaling \$178,338.65. The Construction Manager was asked to detail these payments, and the response detailed transactions to two employees totaling only \$141,040.74, leaving \$37,297.91 unexplained. The Owner also stated the relocation costs should not be reimbursed.
- Travel stipends totaling \$25,497.22 have been charged for payment to a General Superintendent. This stipend has been charged on top of \$86,497.37 of other travel costs billed by the Superintendent (primarily monthly lump sum payments for travel). The Owner stated the cost the move had been agreed to be reimbursed, but the monthly lump sum payments and travel stipends had not been approved.
- In addition to the approximately \$30,000.00 of training charged (labor and expenses), the indirect cost of labor training is estimated at approximately \$90,000.00. This indirect amount represents the labor cost of individuals attending the on-site training exercises.

Owner Risk Area: Miscellaneous Other Items

From: [REDACTED]
To: [REDACTED]
Sent: Friday, May 6, 2005 3:38 PM
Subject: Masters Tickets

[REDACTED],

Your latest expense report had 4-day tickets for Sports Entertainment Inc., which was listed as Augusta National Golf Club- Masters Tickets on your credit card. I know these are for entertainment, but which job should they be charged to ([REDACTED] or [REDACTED]). Let me know by Thursday. Hope you had a good time down there, and if you picked up an extra hat, send it my way!"

Thanks,

[REDACTED]

[REDACTED]
[REDACTED]

Project Accountant

[REDACTED] (office)

[REDACTED] (cell)

Sample for Illustrative Purposes Only



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