



Audit Report
Charlotte Area Transit System (CATS)
Blue Line Extension (BLE) Professional Services
March 22, 2019

City Auditor's Office
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Purpose and Scope

The purpose of this audit was to determine whether the Charlotte Area Transit System (CATS) has adequate policies and procedures in place to establish labor and overhead rates with architecture and engineering (A&E) consultants and to verify actual labor and direct costs invoiced for the CATS LYNX Blue Line Extension (BLE). The audit focused on Construction Management Services provided by HNTB North Carolina PC.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

This report is intended for the use of the City Manager's Office, City Council, CATS and the Engineering and Property Management (E&PM) department.

Conclusion

The City's policies and practices, and the acceptance of an unfavorable indirect cost rate contributed to excess labor and overhead charges for Construction Management Services. Auditors questioned \$3-\$6 million in charges, or about 4-8% of the applicable contract. Some of these overpayments should be recovered.

Summary of Findings

The following findings are detailed, beginning on page 3:

1. *In contradiction of existing policy, CATS and E&PM accepted an unfavorable indirect cost rate for HNTB's BLE construction management contract, resulting in unnecessary costs of at least \$1.6 million. Cost comparison analyses of key rate decisions should be documented.*
2. *CATS and E&PM need to establish more effective controls over A&E consultant labor.*

As noted in the previous finding, base labor for the contract with HNTB was estimated at \$10.4 million. Actual base labor totaled over \$20 million through July 2018. While much of this labor increase can be attributed to construction delays, acceleration and unforeseen circumstances, there were opportunities to improve controls over A&E consultant labor and thereby limit excess costs. Specifically:

- A. Initial Pay Rates – City staff negotiated payroll rates at contract initiation that exceeded estimates, resulting in excess payments which cannot be calculated or recovered.
 - B. Pay Rate Increases – HNTB submitted pay rate increases for City payment during the year without prior approval or the City's knowledge. At least a portion of these unapproved expenses should be recovered.
 - C. Payroll Cost Verification – City staff did not verify reported payroll adjustments by periodically comparing reported wages to payroll documentation. The lack of this contract administration effort exposed the City to excess costs.
3. CATS and E&PM accepted contractor-proposed vehicle rates without performing adequate cost analysis. Choosing fixed rates or allowances for cost-plus contracts should be based upon documented cost analyses.

Background

The CATS LYNX Blue Line Extension (BLE) extends light rail transit service from the 9.6-mile LYNX Blue Line that opened in the South Corridor of Charlotte in 2007. The BLE is 9.3 miles in length with 11 new transit stations. Approximately 3,100 parking spaces are provided at the four stations with parking facilities, including three parking garages. The total cost of the project is expected to be over \$1.1 billion at close-out.

In order to design and oversee a project of this magnitude, the City contracted with various A&E firms for design, construction management and material testing services. CATS Procurement Policies provide a framework for the management of procurement processes. These policies ensure that the acquisition of goods and services conform to applicable federal, state and local laws and requirements. According to CATS records, professional service costs (consultants, City staff, fees and other) related to the BLE totaled about \$236 million, in the following categories, (categories include City staff costs, fees and other, with rounded amounts):

- | | |
|--|--------------|
| • Construction Administration and Management | \$97 million |
| • Preliminary Management | \$42 million |
| • Design and Construction Project Management | \$37 million |
| • Final Design | \$32 million |
| • Surveys, Testing and Inspection | \$23 million |
| • Legal, Permits and Review Fees | \$ 5 million |

The largest contracts, with expenditures through October 2018:

BLE Professional Services Contracts As of 10/31/2018			
Vendor	Contract Description	Current Contract Value	Expenditures to Date
HNTB North Carolina PC	Construction Management Services	\$ 70,264,506	\$ 66,700,841
STV Inc.	Final Design and Construction Management	\$ 52,750,000	\$ 51,087,847
Kleinfelder Southeast, Inc.	Construction Materials Testing	\$ 10,886,360	\$ 10,798,210

Audit Findings and Recommendations

- 1. In contradiction of existing policy, CATS and E&PM accepted an unfavorable indirect cost rate for HNTB's BLE construction management contract, resulting in unnecessary costs of at least \$1.6 million. Cost comparison analyses of key rate decisions should be documented.**

The CATS Procurement Manual requires staff to conduct a cost analysis upon receipt of an A&E cost proposal. The Record of Negotiation for the HNTB construction management contract (approved in March 2013) included documentation of discussions centered on the consultant's proposed estimate of direct cost, labor hours, and overhead rates.

For federally funded projects, it is common for larger A&E consultants to establish two audited overhead rates – a home office and a field office rate – based on personnel roles. For a project the size of the BLE, it would be expected that individuals hired for construction management services would spend a majority of their time in the field, resulting in reduced need for home office overhead. Through March 2018, HNTB attributed 364,067 of 397,379 (91%) total direct chargeable hours to field personnel. However, HNTB's policy states that the on-location service field office overhead rate is only used when the client provides the field office.

- Therefore, the City could have provided the field office and saved costs.

While one negotiation meeting agenda indicated that home and field office overhead rates were to be discussed, the record of negotiation did not include any specific notes regarding the final decision to have HNTB provide the field office.

Based on the agreed estimated hours, the following chart indicates that the difference in the approved HNTB field and home office overhead rates could have reached \$4.8 million at the time of contract negotiations.

Comparison of HNTB Home and Field Office Overhead Rates

Based on December 2012 Cost Estimate

Calculation of Base Labor:

HNTB Labor	\$	25,904,122	From 12/5/2012 cost estimate, excludes OT
Multiplier		<u>2.4824</u>	FAR Approved Overhead Rate Converted to Multiplier
Base Labor	\$	10,435,112	

Labor Calculation Using Field Rates:

Overhead Pool	Pct.	Base Labor	Multiplier	Total Labor
Home Office	8.38%	\$ 874,743	2.4824	\$ 2,171,462
Field Office	<u>91.62%</u>	<u>9,560,369</u>	1.9800	<u>18,929,531</u>
Total	100.00%	\$ 10,435,112		\$ 21,100,993

Difference:

Labor as Negotiated	\$	25,904,122
Labor, Using Field Rate		<u>21,100,993</u>
Difference	\$	4,803,129

Based on labor estimates at the time of negotiation, the City could have determined that providing a field office for HNTB would result in lower project cost if the field office costs were expected to be less than \$4.8 million.

In the record of negotiations, CATS and HNTB estimated the cost of a field office to be \$1.4 million and \$2.2 million, respectively, although no details were included to support those amounts. Auditors estimated the costs to provide HNTB with a field office to be \$3.1 million, which would have resulted in a savings of over \$1.6 million, as shown below.

Estimate of City Field Office Costs

Item	Qty	Rate	Amount	Comments/Notes
Rent	6 years	\$ 25	\$ 1,800,000	12,000 sq ft of office space @\$25/sq ft/yr
Utilities	72 months	\$ 1,000	72,000	
Vehicles			-	The City agreed to pay these as direct costs
Printing			-	The City agreed to pay these as direct costs
Office Furniture	80 employees	\$ 2,000	160,000	
Computers	80 employees	\$ 5,000	400,000	One time rugged laptops
Phone	72 months	\$ 55	316,800	80 cell phones
Network Communications	72 months	\$ 1,000	72,000	
Reproduction Supplies	72 months	\$ 500	108,000	Three printers, leased per month
Office Supplies	80 employees	\$ 500	<u>240,000</u>	Per employee, per year
Field Office Cost			\$ 3,168,800	
Savings by Using Field Overhead Rate			\$ 4,803,129	
Field Office Cost			<u>3,168,800</u>	
Estimated Cost Savings			<u>\$ 1,634,329</u>	

Construction delays, salary increases, unforeseen circumstances and accelerated schedules resulted in additional HNTB labor charges. Through July 2018, HNTB's cumulative base labor was approximately \$20 million, resulting in a home to field office difference of approximately \$8.5 million.

Based on the calculations above, the nearly doubling of base labor would have increased the potential savings from establishing a field office from \$1.6 million to \$5.3 million. While the significant increase in base labor could not have been predicted, it is common for increases to occur. Therefore, if a cost comparison had been done, the \$1.6 million should have been recognized as a minimum savings option.

HNTB's overhead policy resulted in the City accepting a home office overhead rate that may not have accurately reflected the costs of providing services. The negotiation guidelines in the CATS Procurement Manual states the negotiation team should contact the appropriate CATS personnel throughout the process for advice or approval as required. There was no evidence in the record of negotiation this was done for the determination of the indirect cost rates.

Recommendation 1A: In accordance with established policy, CATS and E&PM should require documented cost comparison analyses when establishing A&E consultant overhead rates.

CATS and E&PM Response: Most of the City staff involved in the negotiation of the HNTB contract have since left the City and therefore CATS and E&PM have limited background regarding the specifics of the negotiation. Additional considerations beyond those listed above, such as risk to the City and staff resources to negotiate and manage the lease, likely factored into the decision for HNTB to provide the field office. CATS and E&PM agree that additional documentation should have been recorded and maintained in the records regarding the establishment of overhead rates. CATS and E&PM will document such cost comparison analyses in the future, effectively immediately for newly initiated procurements.

Recommendation 1B: CATS and E&PM should ensure that procurement staff on large A&E projects have sufficient knowledge and training to recognize potentially unfavorable labor and overhead rates and act accordingly (e.g. dispute audited rate, stop negotiations and move to next best qualified firm, request that the company establish a new overhead pool, or hire external consultants to pre-audit rates). Also, policies should be updated to require an expert review of field and home office determinations, to prevent excess costs that occurred on this project in the future. The City may choose to hire an external auditor, or utilize the City Auditor's staff.

CATS and E&PM Response: CATS and E&PM agree that additional expertise in the review of overhead rates would be valuable, and will seek to utilize City Auditor staff in this review as recommended, effective immediately for contracts greater than \$1 million in value and commensurate with project needs.

2. CATS and E&PM need to establish more effective controls over A&E consultant labor.

As noted in the previous finding, base labor for the contract with HNTB was estimated at \$10.4 million. Actual base labor totaled over \$20 million through July 2018. While much of this labor increase can be attributed to construction delays, acceleration and unforeseen circumstances, there were opportunities to improve controls over A&E consultant labor and thereby limit excess costs. Specifically:

- A. Initial Pay Rates – City staff negotiated payroll rates at contract initiation that exceeded estimates, resulting in excess payments which cannot be calculated or recovered.
- B. Pay Rate Increases – HNTB submitted pay rate increases for City payment during the year without prior approval or the City's knowledge. At least a portion of these unapproved expenses should be recovered.
- C. Payroll Cost Verification – City staff did not verify reported payroll adjustments by periodically comparing reported wages to payroll documentation. The lack of this contract administration effort exposed the City to excess costs.

A. Initial Pay Rates

Article 8 of the CATS Procurement Manual requires CATS to complete a cost analysis for every procurement action. This includes verification of cost data through examination of one or more of the following: accounting records, certified payrolls, previously completed audits, and/or submittal by the contractor of cost data, certified to be his most recent cost and pricing information; and the evaluation of specific cost elements for reasonableness and appropriateness. Article 8.1.2 requires that “All cost analyses completed must be documented and filed in the contract file. The cost analysis document should identify the cost elements that were examined; provide a narrative discussion of the findings regarding offeror's estimates, and identify and reconcile any differences between CATS' position or estimated cost and the contractor's.”

CATS provided auditors with the cost estimate for Construction Management prepared as part of the overall BLE project cost estimate. The following table compares labor rates included as part of the BLE project cost estimate to rates negotiated with HNTB. (While the Cost Estimate rates are not prescriptive, the table provides an indication of the limited information used during negotiations.)

Title	Per BLE Cost Estimate	Per Initial Agreement
Principal		\$117
Project Controls Principal		\$115
Track/Systems Principal		\$105
Project/Construction Manager	\$ 77	\$100
Project Risk Analyst		\$ 92
Project Controls Manager	\$ 49	\$ 88
QA/QC Manager		\$ 79
Power System Integrator		\$ 78
Communications/Signals Lead Inspector		\$ 74
Systems Integration & Testing Manager		\$ 72
Station Finishes Inspector		\$ 67
Safety/Security Manager		\$ 66
Civil Resident Engineer	\$ 63	\$ 65
Railroad Coordinator		\$ 58
Operations Manager		\$ 58
Lead Track Inspector		\$ 51
Office Engineer	\$ 49	
OCE/Power Lead Inspector		\$ 48
Communications/Integration Manager		\$ 48
Traffic Control Coordinator		\$ 47
Field Engineer II	\$ 44	
Field Engineer I	\$ 39	
Inspector II	\$ 34	
Inspector I	\$ 29	
Administrative Support II	\$ 29	
Civil Segment A – Tech 4		\$ 28
Project Analyst		\$ 26
Administrative Support I	\$ 25	

Although the highest hourly rate included in the initial cost estimate prepared by STV was \$77, eight of 21 hourly rates included in the initial agreement with HNTB exceeded this rate. The table above indicates significant variability between estimated titles and rates and those negotiated with HNTB. According to the CATS Project Director, the cost estimate rates above were used to determine the overall project budget. The rates approved for HNTB were actual pay rates for the individuals determined to be appropriate and needed for the project. However, CATS staff could not provide documentation indicating how the differences in labor rates were reconciled and justified.

Recommendation 2A: *(Initial Pay Rates)* In accordance with established policy, CATS and E&PM should document differences between cost estimates and contractor proposed rates and provide narrative analysis of how these differences were resolved.

CATS and E&PM Response: The approval of initial pay rates is dependent on the experience and expertise determined to be needed as part of finalizing the scope of services. CATS and E&PM staff reviewed the proposed personnel and work plan and determined that the proposed personnel and rates were acceptable. CATS and E&PM agree that additional documentation on the negotiation of initial rates should have been maintained. CATS and E&PM will update policies and procedures to ensure such rates will be documented for professional service contracts in the future, effective immediately for newly initiated procurements.

B. Pay rate increases

The contract (Article 11.3.4 Compensation for Direct Labor Costs) states “Approved individual labor rate adjustments may be allowed no more than once annually and must be submitted to the City for approval no later than June 1st of each year. Once approved by the City, any adjustment to the individual labor rates shall be effective on Services or work performed beginning the 1st day of the July fiscal billing period and shall not result in an increase in the Total Price for Phase One.”

However, HNTB made 39 mid-year adjustments between FY14 and FY18. Although CATS and E&PM were aware of (and approved) adjustments made at July 1st each year, the Project Manager stated he did not approve the additional adjustments made outside the July 1st timeframe. CATS and E&PM did not have a control in place to detect the unauthorized pay increases and therefore paid the contractor through the monthly pay application process without question.

- The total value of these adjustments over the life of the contract exceeded \$1.3 million, or approximately 2.5% of about \$52 million direct labor and overhead billed through November 2018.
- While there is no documentation to support “ratification” of previously unapproved adjustments, accepting the mid-year adjustments as effective when annual increases were expected would reduce the inappropriate payments to about \$298,000 (approximately 0.6% of direct labor and overhead billed through November 2018).

Recommendation 2B: (*Pay Rate Increases*) CATS and E&PM should establish a control that would detect unauthorized pay rate changes. HNTB should reimburse the City \$298,000.

CATS and E&PM Response: CATS and E&PM note that adjustments in pay rates other than annual may be appropriate related to employee promotions or retention. However, as noted, these rate changes should be approved by the City. CATS and E&PM Project Managers currently spot check the pay rates included in the invoice against approved rates. CATS and E&PM will develop a form that the contractor will be required to submit with each invoice that certifies that all rates used in the invoice have been approved by the City. This form will be developed by April 1, 2019. CATS will seek the recommended reimbursement from HNTB.

C. Payroll Cost Verification

The CATS Procurement Manual requires staff to verify cost data. While reviewing certified payroll submissions is listed as one of the acceptable methods to verify cost data, the City's agreements with consultants also include the right to examine accounting records. Periodically exercising this right as warranted to review payroll data would provide additional assurance that labor charges are accurate and reasonable. City staff did not verify proposed (during contract negotiations) or adjusted (annual and mid-year raises) labor rates by viewing actual payroll registers or paystubs.

Auditors reviewed a sample of four payroll periods and observed that reported wages matched payroll registers for selected employees.

Recommendation 2C: *(Payroll Cost Verification)* CATS and E&PM should periodically compare base labor rates on consultant contracts to actual payroll data, as CATS' draft policy provides.

CATS and E&PM Response: As noted in this report, a review of payroll records by the Auditors found no issues; reported wages matched payroll registers. The City's agreement with the consultant includes the right to review payroll records. Contract administrators will determine the scope of testing throughout the contract. If discrepancies are suspected, CATS and E&PM will conduct a review of payroll records to determine if the rates are accurate. Consideration will also be given to additional strategies like requesting payroll records for the initial invoices to ensure documentation and review expectations are clear as well as potential review of payroll records at prescribed and/or random intervals.

3. **CATS and E&PM accepted contractor-proposed vehicle rates without performing adequate cost analysis. Choosing fixed rates or allowances for cost-plus contracts should be based upon documented cost analyses.**

The Construction Management Consultant (CMC) agreement with HNTB (Section 11.6.1) states that reimbursable expenses (or direct expenses) are only those listed, reasonable, actual expenses necessary for the accomplishment of the Services not otherwise compensated under the CMC's direct labor costs and indirect cost rates. Reimbursable expenses are further defined to include all vehicle and maintenance costs. The CMC agreement requires that the CMC submit accounting data identifying all direct costs for which payment is requested.

It appears that the City reached a verbal agreement with HNTB four months into the contract to pay fixed vehicle rates, despite contract language stipulating payment would be based on actual costs.

Following about two years of payment approvals based upon the verbal agreement, vehicle rates were established in the third Amendment (executed June 9, 2015) to the CMC agreement through inclusion of a schedule that stated:

The CMC shall invoice the City in accordance with the following pay structure that includes lease price, gas, maintenance, and accident allowance for all on-site activity for the duration of the project:

SUV vehicles: \$1,400/month
Standard Pick-up: \$1,150/month

The City chose to use fixed vehicle rates to decrease the administrative burden of reviewing actual vehicle expenses. Two years into the contract, the third amendment ratified the use of fixed vehicle rates. Prior to the amendment, the City paid HNTB \$485,630 for vehicle costs. Through July 2018, the City paid HNTB \$2 million for vehicle expenses.

HNTB provided auditors with a spreadsheet supporting the fixed vehicle rates. The rates were based on HNTB's "2010 cost based on actual avg. monthly costs" which were never verified or recalculated by the City. Without verifying or analyzing the HNTB cost data, the City cannot be assured that vehicle rates (accepted without backup) were reasonable. Auditors obtained lease agreements for 46 of 57 vehicles listed on all invoices and estimated the average cost for both SUV and pick-up trucks to be \$915 per month (including lease, fuel, maintenance and accident allowance). Additionally, 20 of the lease agreements contained a handwritten notation that the vehicles were sold. This would indicate HNTB owned the vehicles at the end of the lease and kept the proceeds from the subsequent sale.

Other agencies and entities have negotiated lower vehicle costs. For example, the North Carolina Department of Transportation (NC DOT) has established a rate of \$840 per month plus gas reimbursement of \$0.18 per mile for four-wheel drive vehicles. This rate would result in less monthly charges than the \$1,400 per month fixed rate (until approximately 3,220 miles in a given month were driven). Using the NC DOT approach would have resulted in monthly charges of about \$400 less per vehicle per month, or \$312,790 over the life of the contract. Consultants working on NC DOT projects are limited to the *lower* of their actual rates or the rates imposed by the NC DOT listed above.

Per review of invoices, HNTB negotiated mileage reimbursement rates with their subcontractors on this project, resulting in significantly lower vehicle costs, as mileage was generally less than 1,000 miles per month. Using mileage reimbursement rates (which were in place for subcontractors) would have resulted in \$865,529 (42%) in savings.

The Construction Audit and Cost Control Institute, Inc. (CAACCI) has published "Pricing of Construction Contract Change Orders for Lump Sum (Fixed Price) and/or Unit Price Trade Contracts" – see Exhibit A attached to this report. Sections 4.1 and 4.2 establish a contractor's responsibility for submitting accurate cost and pricing data to support its change order proposals. The language gives the owner the right to post-approval contract price adjustments if it is determined that the contractor submitted cost and pricing data (whether approved or not) that was inaccurate, incomplete, not current, or not in compliance with the terms of the contract. While the agreement with HNTB was a cost-plus contract, similar language could

have been included, especially considering that the contract adjustment resulted in “fixed” vehicle costs. HNTB provided auditors with limited support for the vehicle rate calculations. Including contract language similar to that noted above would allow the City to expediently approve contractor proposals while retaining the right to recovery if subsequent audit determined pricing data was inaccurate or incomplete.

Recommendation 3A: In accordance with established policy, CATS should perform and document cost analyses for A&E consultant other direct costs, especially when establishing fixed rates or allowances for cost-plus contracts.

CATS and E&PM Response: CATS and E&PM agree that better documentation should have been maintained. CATS and E&PM will begin documenting such cost analyses, effective immediately for newly initiated procurements.

Recommendation 3B: CATS should require HNTB to provide cost or pricing data that supports the accepted vehicle rates and request reimbursement of any amount paid in excess of supported cost data, including proceeds from the sale of leased vehicles.

CATS and E&PM Response: Based upon the contract provisions included in Article 11 Compensation of the HNTB contract, the City is not required to pay for out-of-pocket expenses that are not reasonable and is entitled to documentation to support all costs for reimbursable expenses. In addition, pursuant to Article 10.9 City Audit and Section 12 of the Supplementary Conditions A, the City has the right to audit the CMC’s books, accounts and records regarding compensation paid by the City. Therefore, CATS will make the recommended request of HNTB by May 1, 2019. All back up documentation to support the monthly vehicle rates will be sought. If necessary, the Contract has a mandatory dispute resolution process which will be exercised to resolve the dispute.

Recommendation 3C: CATS should review the contract change order language in Exhibit A and incorporate similar language in future construction and A&E contracts, where appropriate.

CATS and E&PM Response: CATS and E&PM will review appropriate contract templates for Construction Management contracts, to determine appropriate changes to contract change order language. CATS and E&PM will provide Internal Audit with the changes to the contract language that will be included in CATS professional services contracts by June 1, 2019.

Exhibit "A" - Page 1 of 5
Pricing of Construction Contract Change Orders for
Lump Sum (Fixed Price) and/or Unit Price Trade Contracts

The contract language contained in this Exhibit "A" will supplement and take precedence over all other change order pricing contract provisions in the contract documents provided by either the Owner, Construction Manager (Prime Contractor), General Contractor (Prime Contractor), Design-Builder (Prime Contractor) and/or Architect/Engineer.

It is understood that these contract provisions will govern the pricing and administration of all change order proposals to be submitted by Trade Contractors and/or all other lower tier subcontractors (all referred to as "Contractor" in this Exhibit "A"). **In the event of a conflict between the other contract documents used for the project, the change order pricing contract provisions in this Exhibit "A" shall govern.**

Prime Contractor agrees that it will incorporate the provisions of this Exhibit "A" into all agreements with lower tier Contractors who will also include this Exhibit "A" into agreements with all lower tier subcontractors, etc. It is understood that these change order pricing provisions apply to all types of contracts and/or subcontracts specifically including lump sum (or fixed price contracts), unit price contracts. It is further understood that these change order provisions will apply to all methods of change order pricing specifically including lump sum change order proposals, unit price change order proposals, and cost plus Fee change order proposals.

Whenever change order proposals to adjust the contract price become necessary, the Owner will have the right to select the method of pricing to be used by the contractor in accordance with the pricing provisions found in this Exhibit "A". The options will be (1) lump sum change order proposal, (2) unit price change order proposal, or (3) cost plus Fee change order proposal as defined in the following provisions.

1.1 Lump Sum Change Order Proposals: The Contractor will submit a properly itemized Lump Sum Change Order Proposal covering the additional work and/or the work to be deleted. This proposal will be itemized for the various components of work and segregated by labor, material, and equipment in a detailed format satisfactory to Owner. The Owner will require itemized change orders on all change order proposals from the Contractor, subcontractors, and sub-subcontractors regardless of tier. Details to be submitted will include detailed line item estimates showing detailed materials quantity take-offs, material prices by item and related labor hour pricing information and extensions (by line item or by drawing as applicable.)

1.2 Labor: Estimated labor costs to be included for self-performed work shall be based on the actual cost per hour paid by the Contractor for those workers or crews of workers who the contractor reasonably anticipates will perform the change order work. Estimated labor hours shall include hours only for those workmen and working foremen directly involved in performing the change order work. Supervision above the level of working foremen (such as general foremen, non-working foremen, superintendent, project manager, etc.) is considered to be included in the Markup Percentages as outlined in paragraphs 1.6 and 1.7 of this Exhibit "A". Note: No separate allowances for warranty or safety expenses will be allowed as a direct cost of a change order. Costs attributed to warranty expenses and safety expense will be considered to be covered by the Markup Percentages as outlined in paragraphs 1.6 and 1.7 of this Exhibit "A".

1.3 Labor Burden: Labor burden allowable in change orders shall be defined as employer's net actual cost of payroll taxes (FICA, Medicare, SUTA, FUTA), net actual cost for employer's cost of union benefits (or other usual and customary fringe benefits if the employees are not union employees), and net actual cost to employer for worker's compensation insurance taking into consideration adjustments for experience modifiers, premium discounts, dividends, rebates, expense constants, assigned risk pool costs, net cost reductions due to policies with deductibles for self-insured losses, assigned risk rebates, etc. Contractor shall reduce their standard payroll tax percentages to properly reflect the effective cost reduction due to the estimated impact of the annual maximum wages subject to payroll taxes. (An estimated percentage for labor burden may be used for pricing change orders. However, the percentage used for labor burden to price change orders will be examined at the conclusion of the project and an adjustment to the approved change orders will be processed if it is determined that the actual labor burden percentage should have been more or less than the estimated percentage used.)

This document has important legal consequences; consultation with your attorney is encouraged with respect to the incorporation of these contract concepts as part of your standard construction contract documents.

Exhibit "A" - Page 2 of 5
Pricing of Construction Contract Change Orders for
Lump Sum (Fixed Price) and/or Unit Price Trade Contracts

- 1.3.1 Non-Reimbursable Labor Burden:** Employee Stock Ownership Plan (ESOP) related fringe benefit costs are specifically considered non-reimbursable labor burden and any ESOP costs are considered covered by the allowable change order markups to cover overhead and profit.
- 1.4 Material:** Estimated material change order costs shall reflect the Contractor's reasonably anticipated net actual cost for the purchase of the material needed for the change order work. Estimated material costs shall reflect cost reductions available to the Contractor due to "non-Cash" discounts, trade discounts, free material credits, and/or volume rebates. "Cash" discounts (i.e. prompt payment discounts of 1.5% or less) available on material purchased for change order work shall be credited to Owner if the Contractor is provided Owner funds in time for Contractor to take advantage of any such "cash" discounts. Price quotations from material suppliers must be itemized with unit prices for each specific item to be purchased. "Lot pricing" quotations will not be considered sufficient substantiating detail.
- 1.5 Equipment:** Allowable change order estimated costs may include appropriate amounts for rental of major equipment specifically needed to perform the change order work (defined as tools and equipment with an individual purchase cost of more than \$750). For contractor owned equipment, the "bare" equipment rental rates allowed to be used for pricing change order proposals shall be 75% of the monthly rate listed in the most current publication of The AED Green Book divided by 173.3 to arrive at a maximum hourly rate to be applied to the hours the equipment is used performing the change order work. Further, for contractor owned equipment the aggregate equipment rent charges for any single piece of equipment used in all change order work shall be limited to 50% of the fair market value of the piece of equipment when the first change order is priced involving usage of the piece of equipment. Fuel necessary to operate the equipment will be considered as a separate direct cost associated with the change order work.
- 1.6 Maximum Markup Percentage Allowable on Self-Performed Work:** With respect to pricing change orders, the maximum Markup Percentage Fee to be paid to any Contractor (regardless of tier) on self-performed work shall be a single markup percentage not-to-exceed fifteen percent (15%) of the net direct cost of (1) direct labor and allowable labor burden costs applicable to the change order or extra work; (2) the net cost of material and installed equipment incorporated into the change or extra work, and (3) net rental cost of major equipment and related fuel costs necessary to complete the change in the Work.
- 1.7 Maximum Markup Percentages Allowable on Work Performed by Lower Tier Contractors:** With respect to pricing the portion of change order proposals involving work performed by lower tier contractors, the maximum Markup Percentage Fee allowable to the Contractor supervising the lower tier contractor's work shall not exceed five percent (5%) of the net of all approved change order work performed by all subcontractors combined for any particular change order proposal.
- 1.8 No Markup on Bonds and Liability Insurance Costs:** Change Order cost adjustments due increases or decreases in bond or insurance costs (if applicable) shall not be subject to any Markup Percentage Fee.

This document has important legal consequences; consultation with your attorney is encouraged with respect to the incorporation of these contract concepts as part of your standard construction contract documents.

Exhibit "A" - Page 3 of 5
Pricing of Construction Contract Change Orders for
Lump Sum (Fixed Price) and/or Unit Price Trade Contracts

- 1.9 Direct and Indirect Costs Covered by Markup Percentages:** As a further clarification, the agreed upon Markup Percentage Fee is intended to cover the Contractor's profit and all indirect costs associated with the change order work. Items intended to be covered by the Markup Percentage Fee include, but are not limited to: home office expenses, branch office and field office overhead expense of any kind; project management; superintendents, general foremen; non-working foremen, estimating, engineering; coordinating; expediting; purchasing; detailing; legal, accounting, data processing or other administrative expenses; shop drawings; permits; auto insurance and umbrella insurance; pick-up truck costs; ESOP related costs; and warranty expense costs. The cost for the use of small tools is also to be considered covered by the Markup Percentage Fee. Small tools shall be defined as tools and equipment (power or non-power) with an individual purchase cost of less than \$750.
- 1.10 Deduct Change Orders and Net Deduct Changes:** The application of the markup percentages referenced in the preceding paragraphs 1.6 and 1.7 will apply to both additive and deductive change orders. In the case of a deductive change order, the credit will be computed by applying the sliding scale percentages as outlined in paragraphs 1.6 and 1.7 so that a deductive change order would be computed in the same manner as an additive change order. In those instances where a change involves both additive and deductive work, the additions and deductions will be netted and the markup percentage adjustments will be applied to the net amount.
- 1.11 Contingency:** In no event will any lump sum or percentage amounts for "contingency" be allowed to be added as a separate line item in change order estimates. Unknowns attributable to labor hours will be accounted for when estimating labor hours anticipated to perform the work. Unknowns attributable to material scrap and waste will be estimated as part of material costs.
- 1.12 Change Order Proposal Time and Change Directives:** The Contractor's proposals for changes in the contract amount or time shall be submitted within seven (7) calendar days of the Owner's request, unless the Owner extends such period of time due to the circumstances involved. If such proposals are not received in a timely manner, if the proposals are not acceptable to Owner, or if the changed work should be started immediately to avoid damage to the project or costly delay, the Owner may direct the Contractor to proceed with the changes without waiting for the Contractor's proposal or for the formal change order to be issued. In the case of an unacceptable Contractor proposal, the Owner may direct the Contractor to proceed with the changed work on a cost-plus basis with an agreed upon "not-to-exceed" price for the work to be performed. Such directions to the Contractor by the Owner shall be confirmed in writing by a "Notice to Proceed on Changes" letter within seven (7) calendar days. The cost or credit, and or time extensions will be determined by negotiations as soon as practical thereafter and incorporated in a Change Order to the Contract.
- 1.13 General Liability Insurance and Bonds:** In the event the Contractor has been required to furnish comprehensive general liability insurance and/or performance and/or payment bonds as part of the base contract price, a final contract change order will be processed to account for the Contractor's net increase or decrease in comprehensive general liability insurance costs and/or net bond premium costs associated with change orders to Contractor's base contract price. Note: If a change order or a separate payment is made to reimburse the Contractor for the cost of a Performance and/or Payment Bond, the Contractor will be required to remit any bond dividend or rebate that it will receive from the Surety after the successful completion of the project.

This document has important legal consequences; consultation with your attorney is encouraged with respect to the incorporation of these contract concepts as part of your standard construction contract documents.

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- 2.1 Unit Price Change Order Proposals:** As an alternative to Lump Sum Change Order Proposals, the Owner or the Contractor acting with the approval of the Owner may choose the option to use Contract Unit Prices. Agreed upon Contract Unit Prices shall be the same for added quantities and deductive quantities. Unit Prices are not required to be used for pricing change orders where other methods of pricing change order work are more equitable.
- 2.2** The Contractor will submit, within seven (7) days after receipt of the Owner's written request for a Unit Price Proposal, a written Unit Price proposal itemizing the quantities of each item of work for which there is an applicable Contract Unit Price. The quantities must be itemized in relation to each specific contract drawing.
- 2.3** Contract Unit Prices will be applied to net differences of quantities of the same item. Such Contract Unit Prices will be considered to cover all direct and indirect costs of furnishing and installing the item including the subcontractor's Markup Percentage Fee.
- 3.1 Cost Plus Change Order Proposals:** As an alternative to either Lump Sum Change Order Proposals or Unit Price Change Order Proposals, the Owner may elect to have any extra work performed on a cost plus markup percentage fee basis. Upon written notice to proceed, the Contractor shall perform such authorized extra work at actual cost for direct labor (working foremen, journeymen, apprentices, helpers, etc.), actual cost of labor burden, actual cost of material used to perform the extra work, and actual cost of rental of major equipment (without any charge for administration, clerical expense, general supervision or superintendent of any nature whatsoever, including general foremen, or the cost or rental of small tools, minor equipment, or plant) plus the approved Markup Percentage Fee. The intent of this clause is to define allowable cost plus chargeable costs to be the same as those allowable when pricing Lump Sum Change Proposals as outlined in subparagraphs 1.1 through 1.13 above. Owner and Contractor may agree in advance in writing on a maximum price for this work and Owner shall not be liable for any charge in excess of the maximum. Daily time sheets with names of all Contractor's employees working on the project will be required to be submitted to the Owner for both labor and equipment used by the Contractor for time periods during which extra work is performed on a cost plus fee basis. Daily time sheets will break down the paid hours worked by the Contractor's employees showing both base contract work as well as extra work performed by each employee.

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- 4.1 Accurate Change Order Pricing Information:** Contractor (subcontractor or sub-subcontractor) agrees that it is responsible for submitting accurate cost and pricing data to support its Lump Sum Change and/or Cost plus Change Order Proposals or other contract price adjustments under the contract. Contractor further agrees to submit change order proposals with cost and pricing data which is accurate, complete, current, and in accordance with the terms of the contract with respect to pricing of change orders. Contractor agrees that any "buy-out savings" on change orders shall accrue 100% to Owner. "Buy-out savings" are defined as any savings negotiated by the Contractor with a subcontractor or a material supplier after receiving approval of a change order amount that was designated to be paid to a specific subcontractor or supplier for the approved change order work.
- 4.2 Right to Verify Change Order Pricing Information:** Contractor, subcontractor and sub-sub-contractor agrees that any designated Owner's representative will have the right to examine (copy or scan) the records of the Contractor, subcontractor or sub-sub contractor's records (during the contract period and up to three years after final payment is made on the contract) to verify the accuracy and appropriateness of the pricing data used to price all change order proposals and/or claims. Contractor agrees that if the Owner determines the cost and pricing data submitted (whether approved or not) was inaccurate, incomplete, not current, or not in compliance with the terms of the contract regarding pricing of change orders, an appropriate contract price adjustment will be made. Such post-approval contract price adjustments will apply to all levels of contractors and/or subcontractors and to all types of change order proposals specifically including lump sum change orders, unit price change orders, and cost-plus change orders.
- 4.3 Requirements for Detailed Change Order Pricing Information:** Contractor, subcontractor agrees to provide and require all Subcontractors and sub-subcontractors to provide a breakdown of allowable labor and labor burden cost information as outlined in this Exhibit "A". This information will be used to evaluate the potential cost of labor and labor burden related to change order work. It is intended that this information represent an accurate estimate of the Contractor's actual labor and labor burden cost components. This information is not intended to establish fixed billing or change order pricing labor rates. However, at the time change orders are priced, the submitted cost data for labor rates may be used to price change order work. The accuracy of any such agreed upon labor cost components used to price change orders will be subject to later audit. Approved change order amounts may be adjusted later to correct the impact of inaccurate labor cost components if the agreed upon labor cost components are determined to be inaccurate.
- 5.1 Discounts:** If a Contractor enters into an agreement to pay a subcontractor before they receive payment the Owner and in return they negotiate an early payment discount, the amount of any such discount that the contractor is allowed to keep as a "cash discount earned" will be limited to one and ½ percent (1.5%) of the costs subject to discount. Any percentage of discount greater than 1 and ½ percent (1.5%) shall be credited to the Owner as a reduction to the reimbursable Cost of Work and a credit to trade contracts or material purchases, and change orders as applicable.