

August 24, 2010

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Associate Vice Chancellor  
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0916

***Subject: Construction Change Orders – Hillcrest Seismic Improvements, Phase II  
Audit Project 2010-49***

The final audit report for Construction Change Orders – Hillcrest Seismic Improvements, Phase II, Audit Report 2010-49, is attached. We would like to thank all members of the department for their cooperation and assistance during the audit.

The findings included in this report will be added to our follow-up system. We will contact you at the appropriate time to evaluate the status of the corrective actions. At that time, we may need to perform additional audit procedures to validate that actions have been taken prior to closing the audit findings.

UC wide policy requires that all draft audit reports, both printed (copied on tan paper for ease of identification) and electronic, be destroyed after the final report is issued. Because draft reports can contain sensitive information, please either return these documents to AMAS or destroy them at this time. We also request that draft reports not be photocopied or otherwise redistributed.

Stephanie Burke  
Assistant Vice Chancellor  
Audit & Management Advisory Services

Attachment

cc: J. Gillie  
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**AUDIT & MANAGEMENT ADVISORY SERVICES**



University of California  
**San Diego**

**Construction Change Orders –  
Hillcrest Seismic Improvements, Phase II  
June, 2010**

**Performed By:**

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**Approved By:**

Stephanie Burke, Assistant Vice Chancellor

Project Number: 2010-49

***Construction Change Orders – Hillcrest Seismic Improvements, Phase II  
Audit & Management Advisory Services Project 2010-49***

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ATTACHMENT A – Construction Contract Article 7, Changes in the Work

**Construction Change Orders – Hillcrest Seismic Improvements, Phase II  
Audit & Management Advisory Services Project 2010-49**

**I. Background**

Audit & Management Advisory Services (AMAS) has completed a review of Construction Change Orders for the UCSD Medical Center Hillcrest Seismic Improvements, Phase II project as requested by Facilities Design & Construction (FD&C) Management. This report summarizes the results of our review.

California Senate Bill 1953, passed in 1994, requires seismic upgrading of acute care hospital facilities in the State of California. For the required upgrades, the Bill includes specific construction milestones in 2002, 2008 and 2030. The Hillcrest Seismic Improvements, Phase II project (Project) addresses all of the remaining 2008 requirements in the Hillcrest Main Hospital building, the Central Plant (comprised of the Boiler Room and Chiller Plant), the Telecommunications Building, and the Utility Tunnel.

Construction of the Project was awarded via competitive bid to Rudolph & Sletton as a Construction Manager/Contractor (CM/Contractor). The CM/Contractor agreement was broken down into two phases: preconstruction services (Phase One) and construction work (Phase Two). The cost of preconstruction services was predetermined by the University to be \$350,000. Costs for Phase Two included Rudolph and Sletton’s base fee of \$3,099,744 and work performed by subcontractors in the amount of \$11,107,990. During the Project the CM/Contractor proposed seven Change Orders that adjusted the contract sum, all of which were approved by FD&C, as follows:

Change Order #	Description	Amount Proposed/Approved
1	Pre-Construction Services	\$200,000
2	Extra Cost for Survey Work	\$91,920
4	Preconstruction Services Cost Adjustment	\$121,222
6	Contract Amendment – Option Phase Two	\$3,099,744
7	Pre-Construction Services	\$121,668
8	Award of Subcontractor Bid Packages	\$11,107,990
9	Credit for Computer	(\$1,800)
Total		\$14,740,744

**II. Audit Objective, Scope, and Procedures**

This objectives of our review were to evaluate whether Change Order costs submitted by contractors were solely related to the additional work described in the respective Change Orders; were priced in accordance with the agreement; and were consistent with documentation provided by CM/Contractor, and selected subcontractors. In order to achieve our objective, we performed the following procedures:

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- Interviewed the Facilities Design & Construction (FD&C) Senior Director and Project Manager;
- Reviewed construction contract provisions for subcontractor bidding and changes in the scope of work;
- Examined supporting documentation for Change Orders #1, #2, #4 and #7;
- Reviewed additional documentation that was requested from the CM/Contractor during our review;
- Interviewed the former FD&C Project Manager that was responsible for approving Change Orders for the Project;
- Reviewed bid protest documentation filed by Essrig Taylor Construction, Inc. against the CM/Contractor in regards to the seismic bracing subcontract bid; and
- Reviewed the CM/Contractor award recommendation letter to the University, dated May 15, 2007.

**III. Conclusion**

Based on our review procedures, we concluded that Change Order costs submitted by the CM/Contractor appeared to be solely related to the additional work described in each Change Order reviewed, and that some of the Change Orders reviewed were supported by documentation maintained by FD&C and/or the CM/Contractor. However, we noted that some Change Orders did not include adequate supporting documentation or, where applicable, explanations that total costs were based on a negotiated lump sum amount. We also noted that Change Orders documentation practices could be further improved to include in the construction contract all supporting documentation provided by the CM/Contractor to FD&C.

Further, we noted that the CM/Contractor submitted a bid to self perform Phase Two work and conducted the Phase Two bidding process, which was not in strict accordance with the construction contract requirements.

**IV. Observations and Management Corrective Actions**

**A. Change Order Documentation**

**During the review we noted three areas in which the FD&C Change Order documentation practices could be improved.**

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**Cost Breakdown/Supporting Documentation**

**We noted that total costs for three Change Orders were not supported by a cost breakdown form or adequate supporting documentation, nor was there any indication that total costs were based on a negotiated lump sum amount.**

The construction contract Article 7, Changes in the Work (**Attachment A**), section 7.3.6, states that the CM/Contractor shall keep detailed and accurate records itemizing each element of cost, including timecards and invoices, and that these records shall be submitted to the University's representative.

During the review we noted that total costs of Change Order #1 were not supported by a detailed cost breakdown or other supporting documentation. After discussion with FD&C management, it appears that this Change Order was based on a negotiated lump sum amount. However, there was no indication within the documentation that the costs were based on a negotiated lump sum amount.

Further, total costs for Change Orders #2 and #7 were only partially supported by a complete cost breakdown. For Change Order #2, total costs were supported by a third party invoice, although only \$45,370 of the total costs were supported by a complete cost breakdown. For Change Order #7, supporting documentation for \$71,836 of the total Change Order costs were provided.

**Management Corrective Actions:**

For all future projects, FD&C will ensure that all costs that are not based on a negotiated lump sum amount be supported by adequate supporting documentation. When Change Order costs are based on a negotiated lump sum amount, the Project Manager will include an explanation within the Change Order documentation that total costs were based on a negotiated lump sum amount.

**Exceptions to Contract Provisions**

**Some of the change order costs were specifically not permitted to be included in Change Orders per the Project contract provisions.**

The construction contract Article 7, Changes in the Work, included a listing of costs that could be included in a Change Order (7.3.2) and a listing of costs that could not be included in a Change Order (7.3.3). Specifically, costs that could not be included in a Change Order included costs for superintendents, assistant superintendents, project engineers, project managers, schedulers, estimators,

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drafting and detailing, small tools, office expenses, on- or off-site trailers, site fencing, utilities, etc.

Based on conversations with the FD&C Senior Director, all Change Orders processed for the Project were for Phase I work, which includes, but is not limited to, development of the project schedule, development of proposed phasing of the project, development of the Phase Two bidding documents, conduct Phase Two bidding, development of cost analysis and estimates, and prequalification of subcontractors. While the fee for Phase One was established at \$350,000, FD&C opted to request additional Phase I work with the expectation that additional estimating and detailing would reduce overall project costs. Unfortunately, most costs included in Phase I are specifically disallowed based on a strict interpretation of Article 7.3.3. For example, Change Order #4 included payroll costs for the project manager, project superintendent, project executive, VP estimators and a project engineer. In addition, an invoice included in Change Order #2 states that costs cover additional detailing and drawings.

**Management Corrective Actions:**

For all future projects, FD&C will identify all instances in which the Project Change Order costs were not in strict conformance with the Change Order contract provisions and determine if such costs were reasonable. Where applicable, Change Order documentation will include justification as to why exceptions to the construction contract provisions were deemed reasonable.

**Documentation Maintenance**

**Change Order documentation centrally maintained by the FD&C Contracts office did not contain all of the documentation that was provided by the CM/Contractor to FD&C management.**

As a practical matter, copies of construction Change Order documentation are normally maintained within the construction contract. During the review, AMAS noted that while a Change Order form was included in the construction contract for all of the Project Change Orders, only Change Order #4 appeared to have adequate documentation supporting each element of cost. However, FD&C management was able to provide additional documentation further supporting cost elements included in Change Order #2.

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**Management Corrective Actions:**

For all future projects, the Project Manager will ensure that all documentation received from the CM/Contractor that supports all elements of cost is included in the construction contract.

**B. Phase Two Bidding**

**The CM/Contractor evaluated all Phase Two bidding packages; including their own bid to self perform the seismic bracing work.**

The Project construction contract allows for the CM/Contractor to place a bid to self-perform any of the Phase Two construction work, so long as the two following conditions are upheld:

1. The CM/Contractor notifies the University of their intent to place a bid within 20 days following their receipt of the Notice to Proceed for Phase One (Supplementary Conditions, Article 3.20.5); and
2. The University conducts bidding for any Bid Package when the CM/Contractor intends to submit a bid to self-perform the work of a bid package (Article 3.20.2).

The CM/Contractor opted to submit a bid package to self-perform the seismic bracing work of the Project. During our review, we were unable to locate any correspondence from the CM/Contractor notifying the University of their intent to submit a bid to self-perform the work. In a letter to FD&C dated May 15, 2007, the CM/Contractor indicated that they had received the sealed bidding packages for the Phase Two construction work, and recommended themselves as the lowest responsive bidder for the seismic bracing work. It appears that the CM/Contractor did not follow the contract requirements concerning submission of a bid to self-perform Phase Two work.

It should be noted that Essrig Taylor Construction, Inc., who also filed a bidding package for the seismic bracing work, filed a bid protest shortly after the Phase Two bidding results were made public, although the above contract violation was not cited within the bid protest documentation. Eventually the CM/Contractor dropped its bid to self-perform the seismic bracing work due to a clerical error in their bid. However, no documentation was maintained describing the clerical error.



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**Management Corrective Actions:**

For all future projects, FD&C will monitor the subcontractor bidding process to ensure that CM/Contractors are not evaluating their own bids to self-perform construction work. Should FD&C find that a CM/Contractor performed bidding for work in which they submitted a bid to self-perform work, the CM/Contractor will be disqualified from consideration.

**ARTICLE 7  
CHANGES IN THE WORK**

**7.1 CHANGES**

7.1.1 University may, from time to time, order or authorize additions, deletions, and other changes in the Work by Change Order or Field Order without invalidating the Contract and without notice to sureties. Absence of such notice shall not relieve such sureties of any of their obligations to University.

7.1.2 CM/Contractor may request a Change Order under the procedures specified in Paragraph 4.2.

7.1.3 A Field Order may be issued by University, does not require the agreement of CM/Contractor, and shall be valid with or without the signature of CM/Contractor.

7.1.4 CM/Contractor shall proceed promptly with any changes in the Work, unless otherwise provided in the relevant Change Order or Field Order.

**7.2 DEFINITIONS**

7.2.1 A Change Order is a Contract Document, as shown in the Exhibits, which has been signed by both University and CM/Contractor, and states their agreement upon all of the following:

- .1 A change in the Work, if any.
- .2 The amount of an adjustment of the Contract Sum, if any.
- .3 The amount of an adjustment of the Contract Time, if any.

7.2.2 A directed Change Order may also be issued by University without CM/Contractor's signature, where University determines that it is in University's best interest to allow CM/Contractor to receive such an adjustment of the Contract Sum or Contract Time as University believes to be properly due CM/Contractor, even though no agreement has been reached between University and CM/Contractor.

7.2.3 A Field Order, (as shown in Exhibits) describes the scope of the change in the Work, the estimated adjustments of the Contract Sum and the Contract Time, if any, and orders a change in the Work before all of the terms of the change are fully agreed upon by University and CM/Contractor.

**7.3 CHANGE ORDER PROCEDURES**

7.3.1 When requested by University's Representative, CM/Contractor shall provide promptly, but in no event longer than 7 days from the date of the request, a Cost Proposal in the form contained in the Exhibits, setting forth CM/Contractor's proposed adjustments of the Contract Sum and the Contract Time, if any, for performing the proposed change in the Work. Adjustments of the Contract Sum resulting from Extra Work and Deductive Work shall be determined using one of the methods described in Subparagraphs 7.3.5, 7.3.6, or 7.3.7 respectively. Adjustments of the Contract Time shall be subject to the provisions in Article 8.

7.3.2 The term "Cost of Extra Work" as used in this Article shall mean actual costs incurred by CM/Contractor and each Subcontractor regardless of tier involved, and shall be limited to the following (to the extent the CM/Contractor demonstrates that they were actually incurred):

- .1 Straight-time wages or salaries for employees employed at the Project site, or at fabrication sites off the Project site, in the direct performance of the Extra Work.

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.2 Fringe Benefits and Payroll Taxes for employees employed at the Project site, or at fabrication sites off the Project site, in the direct performance of the Extra Work.

.3 Overtime wages or salaries, specifically authorized in writing by University's Representative, for employees employed at the Project site, or at fabrication sites off the Project site, in the direct performance of the Extra Work.

.4 Fringe Benefits and Payroll Taxes for overtime Work specifically authorized in writing by University's Representative, for employees employed at the Project site, or at fabrication sites off the Project site, in the direct performance of the Extra Work.

.5 Costs of materials and consumable items which are furnished and incorporated into the Extra Work as approved by University's Representative. Such costs shall be charged at the lowest price available to the CM/Contractor but in no event shall such costs exceed competitive costs obtainable from other subcontractors, suppliers, manufacturers, and distributors in the area of the Project site. All discounts, rebates, and refunds and all returns from sale of surplus materials and consumable items shall accrue to University and CM/Contractor shall make provisions so that they may be obtained.

.6 Sales taxes on the costs of materials and consumable items which are incorporated into and used in the performance of the Extra Work pursuant to Subparagraph 7.3.2.5 above.

.7 Rental charges for necessary machinery and equipment, whether owned or hired, as authorized in writing by University's Representative, exclusive of hand tools, used directly in the performance of the Extra Work. Such rental charges shall not exceed the current prevailing and published commercial rental charges for the area in which the work is performed. CM/Contractor shall attach a copy of said schedule to the Cost Proposal. The charges for any machinery and equipment shall cease when the use thereof is no longer necessary for the Extra Work.

.8 Additional costs of royalties and permits due to the performance of the Extra Work.

.9 The cost for Insurance and Bonds shall not exceed 1% of items .1 through .8 above.

7.3.3 Cost of Extra Work shall not include any of the following:

- .1 Superintendent(s).
- .2 Assistant Superintendent(s).
- .3 Project Engineer(s).
- .4 Project Manager(s).
- .5 Scheduler(s).
- .6 Estimator(s).
- .7 Drafting or Detailing.
- .8 Small tools (Replacement value does not exceed \$300).
- .9 Office expenses including staff, materials and supplies.
- .10 On-site or off-site trailer and storage rental and expenses.
- .11 Site fencing.

- .12 Utilities including gas, electric, sewer, water, telephone, telefax, copier equipment.
- .13 Data processing personnel and equipment.
- .14 Federal, state, or local business income and franchise taxes.
- .15 Overhead and Profit.
- .16 Costs and expenses of any kind or item not specifically and expressly included in Article 7.3.2.
- .17 Costs and expenses of any kind or item specifically and expressly included in definition of CM/Contractor Base Fee.

7.3.4 The term "CM/Contractor Fee" shall mean the full amount of compensation, both direct and indirect (including without limitation all overhead and profit), to be paid to CM/Contractor for its own Work and the Work of all Subcontractors, for all costs and expenses not included in the Cost of Extra Work, whether or not such costs and expenses are specifically referred to in Subparagraph 7.3.3. The CM/Contractor Fee shall not be compounded. The CM/Contractor Fee shall be computed as follows:

- .1 Fifteen percent (15%) of the cost of that portion of the Extra Work to be performed by the CM/Contractor with its own forces.
- .2 Fifteen percent (15%) of the cost of that portion of the Work to be performed by a Subcontractor with its own forces, plus 5% for the CM/Contractor. Total combined CM/Contractor and Subcontractor fee shall not exceed 20%.
- .3 Fifteen percent (15%) of the cost of that portion of the Work to be performed by a sub-subcontractor with its own forces, or any lower tier of Subcontractor, plus 5% for the Subcontractor, plus 5% for the CM/Contractor. Total combined CM/Contractor, Subcontractor and all sub-subcontractor fee shall not exceed 25%.

7.3.5 Compensation for Extra Work authorized by Change Order shall be computed on the basis of one or more of the following:

- .1 Where the Work involved is covered by Unit prices contained in the Agreement, by application of the Unit prices stated in the Agreement to the quantities of the items involved.
- .2 Where the Work involved is not covered by Unit prices contained in the Agreement, by application of the Unit prices agreed upon by University and CM/Contractor.
- .3 By mutual acceptance of a lump sum supported by backup cost proposal pursuant to Subparagraph 7.3.1.
- .4 If University and CM/Contractor cannot agree upon one of the methods described in Subparagraphs 7.3.5.2 and 7.3.5.3, then the Cost of Extra Work plus CM/Contractor Fee applicable to such Extra Work shall be used.
- .5 The CM/Contractor shall not be entitled to any CM/Contractor Fee under any of the foregoing provisions, except for the fees for subcontractors of any tier, if the Contract Sum is then below Maximum Anticipated Contract Value.

7.3.6 As a condition to CM/Contractor's right to an adjustment of the Contract Sum, pursuant to Subparagraph 7.3.5.4, CM/Contractor must keep daily detailed and accurate records itemizing each element of cost and shall provide substantiating records and documentation, including time cards and invoices. Such records and documentation shall be submitted to and approved by University's

Representative on a daily basis.

7.3.7 For Work to be deleted by Change Order, the reduction of the Contract Sum shall be computed on the basis of one or more of the following:

- .1 Unit prices stated in the Agreement.
- .2 Unit prices agreed upon by University and CM/Contractor.
- .3 A lump sum agreed upon by University and CM/Contractor, based upon the actual costs which would have been incurred in performing the deleted portions of the Work as calculated in accordance with Subparagraphs 7.3.2 and 7.3.3.

7.3.8 If any one Change involves both Extra Work and Deleted Work in the same portion of the Work, a CM/Contractor Fee will not be allowed if the deductive cost exceeds the additive cost. If the additive cost exceeds the deductive cost, a CM/Contractor Fee will be allowed only on the difference between the two amounts, subject to limitations in 7.3.5.5.

7.3.9 The Contract Sum will be adjusted for a delay if, and only if, CM/Contractor demonstrates that all of the following four conditions are met:

- .1 Condition Number One: The delay results in an extension of the Contract Time pursuant to Subparagraph 8.4.1.
- .2 Condition Number Two: The delay is caused solely by one or more of the following:
  - .1 An error or omission in the Contract Documents; or
  - .2 The University's decision to change the scope of the Work, where such decision is not the result of any default or misconduct of the CM/Contractor; or
  - .3 The University's decision to suspend the Work, where such decision is not the result of any default or misconduct of the CM/Contractor; or
  - .4 The failure of the University or the University's Representative to timely perform any contract obligation where the failure to so perform is not the result of any default or misconduct of the CM/Contractor.
  - .5 The decision of the University to direct the rejection of all bids for a given Bid Package(s) and the rebidding of same, if such rejection is not due to the failure of the CM/Contractor to fulfill its obligation to provide a Project Construction Cost Estimate per the requirements of the Agreement.
- .3 Condition Number Three: The delay is not concurrent with a delay that is:
  - .1 Critical under Subparagraph 8.4.1.2; and
  - .2 Caused by an event not listed in Subparagraph 7.3.9.2.
- .4 Condition Number Four: The delay is not caused, in whole or in part, by an event not listed in Subparagraph 7.3.9.2 above.

7.3.10 For each day of delay that meets all four conditions prescribed in Subparagraph 7.3.9 the Contract Sum will be adjusted by the daily rate included in the Agreement and specifically identified as the rate to be paid to CM/Contractor for Compensable Delays. Pursuant to Subparagraph 9.7.4, said daily rate shall not apply to delays occurring after Substantial Completion. Said daily rate shall not apply to Pre-Construction Services under Phase 1.

7.3.11 Except as provided in Articles 7 and 8, CM/Contractor shall have no claim for damage or compensation for any delay, interruption, hindrance, or disruption.

7.3.12 If for any reason one or more of the conditions prescribed in Subparagraph 7.3.9 is held legally unenforceable, the remaining conditions must be met as a condition to obtaining an adjustment of the Contract Time under Subparagraph 7.3.10.

**7.4 FIELD ORDERS**

7.4.1 A Field Order as described in Subparagraph 7.2.3 above, may be issued by University. If requested in writing, CM/Contractor shall promptly provide University's Representative with a Cost Proposal, in the form contained in the Exhibits, setting forth the proposed adjustments of the Contract Sum and the Contract Time, if any, for performing the change in the Work. The Field Order will be superseded by a Change Order which shall include the actual adjustments, if any, of the Contract Sum and the Contract Time, as well as the scope of the change in the work.

7.4.2 A Field Order signed by CM/Contractor indicates the agreement of CM/Contractor therewith, including CM/Contractor's agreement to the proposed adjustments to the Contract Sum and the Contract Time stated therein. Such agreement shall be effective immediately and will be incorporated into a Change Order.

7.4.3 Upon receipt of a Field Order, CM/Contractor shall promptly proceed with the change in the Work.

7.4.4 If CM/Contractor does not agree to the adjustment of the Contract Sum set forth in a Field Order, the amount shall be determined in accordance with the provisions of Subparagraph 7.3.5.4 above; and CM/Contractor shall comply with the provisions of Subparagraph 7.3.5.4 regarding records and documentation of actual costs.

**7.5 VARIATION IN QUANTITY OF UNIT PRICE WORK**

7.5.1 University has the right to increase or decrease the quantity of any Unit price item for which an estimated quantity is stated in the Bid Form.

**7.6 WAIVER**

7.6.1 A waiver of or failure by University or University's Representative to enforce any requirement in this Article 7, including without limitation the requirements in Subparagraphs 7.3.6, 7.3.8, 7.3.9, 7.3.10, 7.3.11, or 7.3.12 in connection with any adjustment of the Contract Sum, will not constitute a waiver of, and will not preclude the University or University's Representative from enforcing, such requirements in connection with any other adjustments of the Contract Sum.

7.6.2 The CM/Contractor agrees and understands that no oral approval, either express or implied, of any adjustment of the Contract Sum by University or its agents shall be binding upon University unless and until such approval is ratified by execution of a written change order.