HOW TO RESEARCH PROJECT SPECIFICATIONS, SUBMITTALS, AND RFI’S TO IDENTIFY COST RECOVERY AUDIT FINDINGS

PRESENTED TO:
The National Association of Construction Auditors

2020 Virtual Conference
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He has over 30 years of as a construction cost control consultant/construction auditor.

Clay Addison, CCP, CCCA, LEED AP
Clay joined R. L. Townsend & Associates, LLC as a Senior Construction Cost Control Consultant in 2015. Clay has over 25 years of Owner oriented construction management experience. He is a graduate of Clemson University with a degree in Building Science and Construction Management.
PRESENTATION
AGENDA

Rich Townsend – Overview of Session – Poll #1

Clay Addison – Discussion on Researching Specifications to Research Potential Change Order Related Cost Recovery Opportunities – Poll #2

Rich Townsend – Discussion on Using Available tools to Research Submittals and RFI’s for Potential Cost Recovery Opportunities in Lump Sum Contracts and Subcontracts – Poll #3
POLLING QUESTION #1

As part of your construction audit process, do you review plans, specifications and submittals and/or conduct audit inspections to identify potential overcharges on construction contracts? *Note This applies to auditing lump sum contracts at the prime contract level or at the subcontractor level.*

Answer Option a) We do this on most of our construction audits
Answer Option b) We only do this level of auditing sometimes
Answer Option c) Not Applicable
EXAMPLES OF COST RECOVERY/COST AVOIDANCE
AUDIT FINDINGS BY RESEARCHING CHANGE ORDER
REQUESTS AND PROJECT SPECIFICATIONS

PRESENTED BY CLAY ADDISON
Case Study #1

Change order request was for $50,000 for concrete blankets

First Step – Ask the question:

Should this even be a change order?
Each section of the specifications is broken into 3 parts:

- Part 1 – General Information
- Part 2 – Products – example: tells you what type of paint
- Part 3 – Execution – example: tells you where to apply the paint
In Part 1 it will show you the reference standards for that section

In Part 3 it will show you how to apply the reference standards

Examples of reference standards:
- ASTM – American Society for Testing and Materials
- ACI – American Concrete Institute
- NFPA – National Fire Protection Association
- ASME – American Society of Mechanical Engineers
In section 03-30-00 – Cast-in-Place Concrete, under the Part 3 – Execution, was the note below:

G. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
cycles may be damaged. Give consideration to the addition of air entrainment in the concrete (Table 4.1 of ACI 201.2R), and monitoring the concrete strength gain so that 3500 psi (24.5 MPa) is reached before the protection is removed. Caution is advised for air-entrained concrete that is to receive a burnished or hard-trowel finish (refer to Section 4.6). In these cases, continue protection to prevent damage from repeated cycles of freezing and thawing when critically saturated.

7.3—Protection for strength gain

When there are early-age strength requirements, it is necessary to extend the protection period beyond the
CASE STUDY #1 - CONCLUSION

Change order request was for $50,000 for concrete blankets.

It was determined that the lump sum subcontract scope of work covered the cost of concrete blankets and the change order request was denied.

Cost Avoidance $50,000
RESEARCHING SPECIFICATIONS FOR INVOLVING PERFORMANCE REQUIREMENTS AND DELEGATED DESIGN

Case Study #2
Change order request was for $40,000 to add a screen wall in elevator shaft to guard counterweights in multi-car shaft

Performance Requirements
&
Delegated Design
Performance Requirement – Provide products that comply with and are recommended by the manufacture for the application intended. EXAMPLE: Elevators

Delegated Design - The transfer of design responsibility of certain aspects of the project from the architect and engineer to the general contractor and subcontractors. EXAMPLE: Fire Protection
Change order request was for $40,000 to add a screen wall in elevator shaft to guard counterweights in multi-car shaft

Specifications – 14-21-00 – Electric Traction Elevators, section 2.04 Performance Requirements noted below.

2.04 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Conform to ASME A17.1, applicable local codes, and authorities having jurisdiction (AHJ).
CASE STUDY #2 – CONTINUED
RESEARCHING PERFORMANCE REQUIREMENTS

ASME A17.1-2007/CSA B44-07
(Revision of ASME A17.1-2004 and CSA B44-04)

Safety Code for Elevators and Escalators
Includes Requirements for Elevators, Escalators, Dumbwaiters, Moving Walks, Material Lifts, and Dumbwaiters With Automatic Transfer Devices
2.3.2.3 Guarding of Counterweights in a Multiple-Elevator Hoistway. Where a counterweight is located between elevators, the counterweight runway shall be guarded on the side next to the adjacent elevator. The guard shall be of noncombustible material. The guard, if of openwork material, shall reject a ball 25 mm (1 in.) in diameter and be made from material equal to or stronger than 1.110 mm (0.0437 in.) diameter wire. The guard shall be so supported that when subjected to a force of 450 N (100 lbf) applied over an area of 100 mm × 100 mm (4 in. × 4 in.) at any location, the deflection shall not reduce the clearance between the guard and the counterweight below 25 mm (1 in.).
CASE STUDY #2 - CONCLUSION

Change order request was for $40,000 to add a screen wall in elevator shaft to guard counterweights in multi-car shaft

Therefore the change order request as submitted was denied.

Owner and A/E Agreed Cost Avoidance S/B $40,000

**Negotiated Settlement Resulted in Cost Avoidance of $20,000**
Where to look for Performance Requirements and Delegated Design Specifications
EXAMPLE SPEC SECTIONS INVOLVING PERFORMANCE SPECS

- 03-45-00 - Precast Architectural Concrete
- 05-40-00 – Cold Formed Metal Framing
- 05-50-00 – Metal Fabrications
- 05-51-00 – Metal Stairs
- 05-53-00 – Metal Gratings
- 07-42-13 – Metal Composite Material Wall Panels
- 08-33-23 – Overhead Coiling Doors
- 08-41-13 – Glazed Aluminum Curtain Wall
- 09-55-13 – Structured Ceiling Grid
- 14-21-00 – Traction Elevators
- 21-10-00 – Fire Suppression
- 23-05-29 – Hangers and Supports
- 32-32-13 – Chain Link Fences/Gates
POLLING QUESTION #2

True or False:
Are some subcontractors required to design certain components of the project?

Answer Option a)  True
Answer Option b)  False
EXAMPLES OF COST RECOVERY/COST AVOIDANCE AUDIT FINDINGS BY RESEARCHING SPECIFICATIONS, SUBMITTALS, RFI’S, ASI’S, AND CONDUCTING AUDIT INSPECTIONS

PRESENTED BY RICH TOWNSEND
EXAMPLE OF CLOUD BASED TOOL USE FOR RESEARCHING SUBMITTALS AND RFI’S

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<thead>
<tr>
<th>Project Name</th>
<th>Project #</th>
<th>Description</th>
<th>Category</th>
<th>Workflow Status</th>
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<td>C.</td>
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<td>Finishes and Floorin</td>
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### SUBMITTAL REVIEW

Reviewed for general conformance with design concepts and general conformance with contract drawings, specifications, and documents.

- [ ] NO EXCEPTIONS
- [ ] EXCEPTIONS AS NOTED (No Response Required)
- [x] EXCEPTIONS AS NOTED (Submit Written Response)
- [ ] REVISE AND RESUBMIT
- [ ] REJECTED

This Submittal Review is for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Any action shown is subject to the requirements of the plans and specifications and this review does not relieve the contractor from complying with the requirements of the plans and specifications. The Contractor is responsible for confirming dimensions of equipment relative to actual limitations of the site; information relating solely to the fabrication and installation processes; dictating the means, methods, techniques, sequences and procedures of construction; coordinating the work of all trades involved; and the satisfactory performance of the contractor’s work.
The following note was included in the subcontract buy-out documents:

Design Change: Use Daiken VRV in lieu of Daikin mini-splits
Increase contract by $48,000

The following notation was included as an exception in the Submittal reviewed by the Engineer:

LG Electronics will be used in lieu of the Daikin VRV system specified.
Mechanical's retainage has been held while the amount of the credit for the mini-splits was resolved.

I believe the correct amount is $48,000 per the draft from the auditors. I plan to issue the credit and put it in the final draw that will be submitted in April unless directed otherwise.

As stated in my 3/31 email, I will issue the credit for $48,000 and put it in the final draw this month unless directed otherwise.

Audit Cost Recovery = $48,000
CASE STUDY #4
SUBCONTRACT SCOPE INCLUDED HIGHER THAN NORMAL SPEC

F. Install hangers for cast-iron soil piping with the following maximum horizontal spacing and minimum rod diameters:
   1. NPS 1-1/2 and NPS 2 (DN 40 and DN 50): 60 inches (1500 mm) with 3/8-inch (10-mm) rod.
   2. NPS 3 (DN 80): 60 inches (1500 mm) with 1/2-inch (13-mm) rod.
   3. NPS 4 and NPS 5 (DN 100 and DN 125): 60 inches (1500 mm) with 5/8-inch (16-mm) rod.
   4. NPS 6 (DN 150): 60 inches (1500 mm) with 3/4-inch (19-mm) rod.
   5. NPS 8 to NPS 12 (DN 200 to DN 300): 60 inches (1500 mm) with 7/8-inch (22-mm) rod.

G. Install supports for vertical cast-iron soil piping every 15 feet (4.5 m).

H. Install hangers for steel piping with the following maximum horizontal spacing and minimum rod diameters:
   1. NPS 1-1/4 (DN 32): 84 inches (2100 mm) with 3/8-inch (10-mm) rod.
   2. NPS 1-1/2 (DN 40): 108 inches (2700 mm) with 3/8-inch (10-mm) rod.
CASE STUDY #4 - SUBCONTRACTOR PROPOSED CREDIT OF $77,000 TO USE MSS SP-58 HANGAR SPACING STANDARDS VERSUS THE SPEC
CASE STUDY #4 - SUBCONTRACTOR PROPOSED CREDIT OF $77,000 TO USE MSS SP-58 HANGAR SPACING STANDARDS VERSUS THE SPEC
The hangars were installed according to SP-59 standards which was approximately 10’ between hangars.

Agreed Resolution: Plumbing subcontractor is either going to add the additional hangar supports or issue a credit of $77,000.
EXAMPLE OF CLOUD BASED TOOL USEFUL FOR RESEARCHING SCOPE OF WORK
EXAMPLE OF CLOUD BASED TOOL USEFUL FOR RESEARCHING SCOPE OF WORK – FLOORPLANS WITH LINKED PHOTOGRAPHS
EXAMPLE OF CLOUD BASED TOOL USEFUL FOR RESEARCHING SCOPE OF WORK – EXAMPLE PHOTO OF CAST IRON PIPE HANGARS
POLLING QUESTION #3

True or False:

Effective auditing of construction activity is more than just analyzing the debits and credits in the job cost.

Answer Option a) True
Answer Option b) False
SESSION SUMMARY AND Q&A TIME

RICH TOWNSEND AND CLAY ADDISON