Qualitative analysis: Analyzing the construction schedule

Let's talk about an opportunity.
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- More than 1,600 professionals
- Baker Tilly Virchow Krause, LLP is the largest US Baker Tilly International independent member firm
- Baker Tilly International is the eighth largest public accounting network with representation in more than 137 countries
- Convenient, seamless resource for worldwide needs
From **concept** and **funding** to **controls** and **compliance**, Baker Tilly has more than 250 dedicated construction and real estate industry professionals to assist with your facility development project through all stages of the development lifecycle.
Overview

Today’s topics

Risk analysis: progress reporting

Analyzing schedules and progress reports

Audit activities

Case studies
Learning objectives

> Identify audit risk embedded in the schedule and progress reports
> Illustrate how schedule changes may lead to financial exposure
> Read the progress reports for audit red flags
> Develop audit actions based on schedule analysis
Polling question #1

Were you able to attend or watch the recording of any of the previous construction cost control and audit webinars?

A. Yes
B. No
C. Not yet, but I plan to view the recordings

Please respond using the polling section in the WebEx screen to the right.
Status report
Application for payment
Construction schedule
What content should be in the progress report?

> Budget to actual cost analysis
> Estimate to complete analysis
> Change order log
> RFI log
> Construction schedule
> Milestone accomplishments
> Pending issues
> Pending claims
> Cash flow analysis
> Buy out analysis
> Supplier and subcontractor payment register
> Master project contact list
Polling question #2

Do your audit programs include reviewing project status reports?

A. Yes
B. No

Please respond using the polling section in the WebEx screen to the right.
Why should an auditor care about progress and schedule?

> Delayed projects often lead to additional owner project costs
> Significantly overbilled projects may be an indicator of construction progress problems
> Significantly underbilled projects are an indicator of future change order activity
Status reports should include logs for all types of project communications, including change orders, RFI, bids, and safety.

Logs should be analyzed like a check register. Look for:

- Missing or nonconsecutive transaction numbers
- Duplicate line items
- Patterns of late issuance and approvals
- Missing information
Case study: RFI and change order logs

Facts

> Project was believed to be on time and on budget
> Change order log showed only a few approved change orders
> RFI log had many unresolved line items
> Personnel changes occurred during the project
> Contractor issued substantial change orders with the final application for payment
Case study: RFI and change order logs

Outcomes

> Owner refused to pay for change orders that no one had approved
> Status reports supported on time and on budget delivery
> Contractor submitted a claim against the project
> Court ruled in favor of the contractor for all costs, attorneys fees and damages

Auditor’s action items that could lead to early detection

> Prepare an aging schedule of change orders and RFIs
> Request status of any line item older than 45 days
> During site visits ask superintendents and project managers about verbal authorizations.
Construction schedule: Sample Schedule

Audit program elements

> Reconcile construction schedule with schedule of values: BT A.1 Payment Application Control Schedule
> Verify schedule is being maintained and is current
> Evaluate schedule detail
> Interview project managers
Schedule analysis

Audit program interview questions

> Is the project ahead or behind schedule?
> What are the causes of schedule delays?
  - Weather delays
  - Budget
  - Permits
  - Design issues
  - Labor shortage
  - Inspections
  - Quality
Schedule analysis

Audit program interview questions

> How will delays be fixed?
  – Will overtime be required to restore the schedule?
  – Will additional laborers be brought in to restore the schedule?

> What is the impact of the project coming in late?
  – Additional construction costs
  – Occupancy and logistics issues
  – Lost revenue
Red flags and consequences

Project is more than 30 days behind schedule
> General conditions change order
> General requirements change order
> Direct labor cost change order
  – Overtime
  – Additional personnel
> Liquidated damages are triggered
> Consequential damages are triggered
> Critical path activities are compressed
  – Sequential activities become concurrent activities
> Subcontractor and supplier back charges become necessary
Facts: Pipeline project

- 40 month build schedule
- Failure to meet completion date will result in lost revenue
- Project is 90 days behind schedule
- Everyone is accepting of the delays as a cost of doing business
Schedule delay triggers additional audit activity

Root cause analysis

> Pump and valve supplier failed to meet specifications
> Equipment was on site and not inspected until installation
> Specification failure will result in tripling the installation costs
Auditor is asking the following questions:

> Who is at fault?
> Who signed the equipment receiving documents?
> Who was responsible for inspecting the equipment?
> Who is financially responsible for general conditions change order?
> If the equipment had been inspected and rejected upon receipt, would the schedule have been effected by 90 days?
> Will this trigger a change order?
> Will this trigger liquidated damages?
Schedule analysis: Case study

Results

> Liquidated damages relief was agreed to.
> Equipment installation subcontractor was awarded a rework change order.
> Engineering firm and equipment supplier shared the rework costs.
> Owner authorized a general conditions change order for the additional 90 days.
Red flags and consequences

Schedule is frequently out of date

> Contract compliance issue. Does the contract require the schedule to be current?

> Contractor is not managing the project with the schedule, then how are they managing the critical path?

> What is the contractor not telling the owner, if the schedule doesn’t reflect the reality of the progress?

> Contractor’s project controls may be inadequate to manage the project.
Project budget reporting

> Budget to actual variance analysis
> Estimate to complete
> Cash flow and cash requirements
Red flags and consequences

Information appears cursory, incomplete, outdated, or hurriedly prepared.

> Project finances are not being closely monitored

Estimate to complete doesn’t reconcile to GMP.

> Unprocessed change orders
> Unused contingency budget
> Budget overruns
Case study: Financial reporting

Facts

- Contract specifies the monthly status report content
- Prime contract GMP
- Subcontracts lump sum
- Schedule of values was populated before subcontractor buyout
- Owner believes that they have mitigated most of their risk with lump sum subcontracts
- Project billing reconcile with reported progress
- Contractor assures owner that the previously agreed reports are a waste of time and does not prepare them
- Facility development feels that a contract audit is a waste of time
Outcomes

> Owner’s project manager doesn’t monitor budget except for the application for payment
> No one verifies that the subcontractors are being paid
> No lien waivers are collected
> Auditors learn that the prime contractor is in arrears with suppliers and subcontractors
> Suppliers are withholding materials
> Subcontractors are threatening to walk off the job
> Owner is forced to pay suppliers and subcontractors directly to avoid delays
> Contractor reinstates reporting package
> Owner’s project manager is replaced
Red flags and consequences

Cash forecasts are frequently and materially different than the monthly draw request.

- Contractor lacks enough information to properly forecast cash requirements
- Schedule and milestones are not driving job site realities
- Actual costs incurred are materially different than job site progress
- Finance department may need to develop an independent cash requirements report
- Contractor is failing to meet contractual obligations
Red flags and consequences

Project cost reports are materially different than application for payments.

> Project may be materially overbilled
  - Unrecorded subcontractor liabilities
  - Unrecorded supplier liabilities
  - Unpaid third parties

> Project may be materially under billed
  - Unapproved change orders
  - Billing timing differences
Red flags and consequences

Manpower reports consistently show the job is understaffed.

> Early indicator of subcontractor relationship problems
> Labor shortage
> Cause of future delays
> May lead to the use of premium time
> May lead to using more expensive master craftsmen because journeymen and apprentices are not available
Red flags and consequences

Issues report never has any substance.

> Potentially a great project and there are no issues
> Of more concern is fear of communicating bad news
> Indication of unresolved or forgotten issues
> Weak project controls
Many projects have community or economic impact goals

- Labor force diversity
- Local preference
- Buy American
- Prevailing wage

Examples

- Sports facilities
- School districts
- Public-Private-Partnerships
Case study: Third party compliance

Project facts

> PPP funded project
> Local preference sourcing requirement
> 10% disadvantaged business (DBE)
> Prime contractor collaborated with the Owner to design the status report

Project status report included:

> List of potential bidders with contact information
> MBE/DBE status
Case study: Third party compliance

Auditor’s action items

> Verify potential bidders met stakeholder criteria
> Identify non-compliant bidders
> Collaborate with contractor and facilities development to obtain waivers for non-compliant bidders if necessary

Most important was the information necessary to prevent a compliance problem was easily found in the status report.
How else can the status report help?

> Permit and inspection updates
> Safety programs and safety record
> Quality and rework issues
> Identify potential claims
> Notification of major personnel changes
> Forecasting change orders due to:
  – Weather events
  – Site conditions
  – Design changes
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