

Construction metrics pack

Definitions, required fields, source systems, and a suggested report layout for 4 construction metrics. Version 1.0, reviewed 2026-10-20. Worked examples and figures are on each metric page.

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Where this data usually lives

- **Construction ERP and accounting** holds budgets, job cost, change orders, billing, and retainage. For example: Sage 300 Construction and Real Estate, Viewpoint Vista (Trimble).
- **Project management** often holds change orders and their status, and sometimes budgets and forecasts. For example: Procore.
- **Estimating** produces the original budget by cost code before the job starts.
- **Payroll and time tracking** feed labor cost and hours to job cost.
- **Spreadsheets** often hold the PM's cost-to-complete forecast or the WIP schedule itself.

The same field can live in more than one system. Agree with the customer which one is the source of truth.

Backlog

The work a contractor has under contract but has not yet done, in dollars.

Backlog = revised contract value - earned revenue to date

Fields

Field	What it means
Job	The project, with its PM and division
Job status	Signed not started, in progress, or complete
Original contract value	Contract amount at award
Approved change order revenue	Contract value added by approved changes
Cost to date	All posted job cost
Estimated cost to complete	The PM's forecast of remaining cost
Contract signed date	When the job went under contract

Definitional choices

- **Signed only, or also awarded.** Decide whether jobs awarded but not yet under contract count. If they do, show them separately.
- **Approved change orders.** Include approved changes in contract value. Label pending ones if included.
- **Revenue or margin.** Some companies also track gross profit in backlog. Say which one a report shows.
- **Same earned revenue as WIP.** Use the WIP schedule's earned revenue so the two reports agree.

- **Pace period.** Months of backlog using the last 3 months can differ a lot from using the last 12.

Report layout

- A headline number for total backlog, with months of backlog next to it.
- A bar per job or per division showing earned to date and remaining.
- A monthly trend line of total backlog.
- Show signed-not-started jobs as their own group.

Full page: metrics.semaphor.cloud/construction/backlog/

Gross margin by job

How much of each job's contract value is left after cost.

Projected gross margin % = (revised contract value - estimate at completion) ÷ revised contract value

Fields

Field	What it means
Job	The project, with its PM and division
Original contract value	Contract amount at award
Original budget	Total budgeted cost at award
Approved change orders	Revenue and cost budget added by approved changes
Cost to date	All posted job cost
Estimated cost to complete	The PM's forecast of remaining cost, by period

Definitional choices

- **Projected or earned.** Say which one a report shows. They answer different questions.
- **Pending change orders.** Most reports use approved change orders only. If pending ones are included, label them.
- **What counts as cost.** Decide whether overhead allocations and equipment charges are in job cost.
- **Stale forecasts.** Projected margin is only as current as the cost-to-complete forecast.
- **Bid margin source.** Decide whether "at bid" means the estimate or the first budget loaded into the system.

Report layout

- One row per open job: contract value, EAC, projected margin in dollars and percent, bid margin, and fade.
- A small line per job, or a portfolio line, showing projected margin by month.
- Sort by fade, largest first.
- Label whether pending change orders are included.

Full page: metrics.semaphor.cloud/construction/gross-margin-by-job/

Job cost variance

The difference between what a job was budgeted to cost and what it is now expected to cost.

$$\text{Job cost variance} = \text{revised budget} - \text{estimate at completion}$$

Fields

Field	What it means
Job	The project, with its PM and division
Cost code	A category of work in the budget
Original budget	Budget for the code when the job started
Approved change order budget	Budget added or removed by approved change orders
Cost to date	Posted cost from payroll, AP, and equipment
Estimated cost to complete	The PM's forecast of remaining cost, by period
Change order status	Pending, approved, or rejected

Definitional choices

- **Variance at completion vs cost-to-date variance.** This page uses budget vs projected final cost. Some teams compare budget × percent complete to cost to date instead, when they trust physical percent complete more than PM forecasts.
- **Pending change orders.** Including unapproved change orders makes the budget look healthier than it is. Excluding them can make a job look over budget for work the owner will likely pay for. Many teams show pending change orders as a separate column.

- **Committed cost.** Purchase orders and subcontracts that are signed but not invoiced are not cost to date. They are useful as a check on the cost-to-complete estimate.
- **Stale forecasts.** If PMs do not update cost to complete, EAC stays flat and overruns stay hidden.

Report layout

- Start with a table of open jobs: revised budget, EAC, variance in dollars, variance as a percent. Sort by largest negative variance.
- Let the reader drill from a job into its cost codes.
- Show the change since last month next to the current value.
- State the sign convention and whether pending change orders are included at the top of the report.

Full page: metrics.semaphor.cloud/construction/job-cost-variance/

WIP over/under billing

The gap between what a contractor has billed on a job and the revenue it has actually earned.

$$\text{Over/under billing} = \text{billed to date} - \text{earned revenue}$$

Fields

Field	What it means
Job	The project, with its PM and division
Original contract value	Contract amount at award
Approved change order revenue	Contract value added by approved change orders
Cost to date	All posted job cost
Estimated cost to complete	The PM's forecast of remaining cost
Billed to date	Total progress billings, including retainage billed
Retainage billed	Share of billings held back by the owner

Definitional choices

- **Percent complete method.** Cost-to-cost is common. Some companies use units installed or engineer estimates for certain job types.
- **Retainage.** Billed to date normally includes retainage billed, even if it has not been collected. Some reports show retainage separately.
- **Change orders.** Use the revised contract value once change orders are approved. Label any unapproved change orders that are included.
- **Do not net the two sides.** Overbillings and underbillings go to different balance sheet lines. Report both totals.

- **Stale cost to complete.** Because percent complete depends on estimated total cost, an outdated forecast distorts earned revenue.

Report layout

- Use the standard WIP schedule layout: one row per open job with contract value, cost to date, estimated total cost, percent complete, earned revenue, billed to date, and over/under.
- Show total overbilled and total underbilled separately at the top.
- Add projected margin and its change since last month so readers can spot fade.
- Produce the same layout every month. Sureties and lenders compare period to period.

Full page: metrics.semaphor.cloud/construction/wip-over-under-billing/

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Example data is not included. Accounting notes explain the calculation, not policy. Confirm treatment with a CPA.