Scope-Price-Execution Variance Bridge Worksheet

Use this worksheet to reconcile a custom-home budget change from a dated baseline to a current forecast. It separates scope, price, execution and residual estimate variance. It is a homeowner planning aid, not an official inspection, legal document, appraisal, lender approval, engineering report or code document.

How to use it

1. Preserve the original estimate, contract, drawings, specifications and current forecast. Record their dates and versions.
2. Define the project boundary in one sentence. State what is included and excluded, including sitework, permits, utilities, design, owner-supplied items, taxes, financing and contingency.
3. Enter one row per measurable package. Use the same unit at both dates: square feet, linear feet, cubic yards, each, hours or lump sum.
4. Compare the same product, grade, labor basis, delivery point, tax treatment and markup basis before calling a change price escalation.
5. Keep paid, committed and forecast-to-complete amounts separate.
6. Attach each row to a record: drawing revision, takeoff, quote, purchase order, invoice, change order, inspection record, permit record, fee schedule or lender instruction.
7. Route structural, electrical, excavation, site-safety, code, contract and lender questions to the appropriate qualified professional or authority.

The worksheet uses BLS PPI only as dated price-movement context. The [Bureau of Labor Statistics explains that PPI measures seller-side changes in producer prices](https://www.bls.gov/ppi/overview.htm); it is not a quote for a particular home. Census construction-spending data is also broad market context: the [Census Bureau describes its survey as monthly estimates of construction work done in the United States](https://www.census.gov/construction/c30/c30index.html), not an individual project forecast.

Project control block

Field	Entry
Property jurisdiction: city/county/state	
Baseline date and estimate version	
Current comparison date and forecast version	
Drawing/specification versions	
Contract type and escalation clause reference	
Lender and draw stage, if applicable	
Permit number, authority and fee schedule date	
Excluded costs	
Prepared by and review date	

Baseline and current boundary check

Question	Baseline	Current	If different, code
Same conditioned floor area?			SCOPE
Same foundation and site assumptions?			SCOPE / EXECUTION
Same finish schedule and equipment?			SCOPE / ALLOWANCE
Same owner-supplied items?			SCOPE / HANDOFF
Same permit and utility jurisdiction?			FEE / SCOPE
Same tax, markup and fee treatment?			PRICE / ESTIMATE
Same construction stage and commitments?			EXECUTION / TIMING
Same financing boundary?			LENDER

Use “unknown” instead of zero when a boundary is not verified.

Item variance bridge

Item	Unit	Q0	P0	C0	Q1	P1	C1	A outside scope	X1 execution	O outside lines	F1 forecast	Execution variance	Estimate residual

Definitions:

- `Q0`: baseline quantity.
- `P0`: baseline unit price.
- `C0 = Q0 × P0`: baseline extended cost.
- `Q1`: current quantity or current measured requirement.
- `P1`: current unit price.
- `C1 = Q1 × P1`: current comparable extended cost.
- `X1`: documented current execution amount for the work inside the comparable boundary, marked actual, committed or forecast.
- `A`: approved scope additions or deletions outside the comparable item; they must not be included in `C1`.
- `O`: documented outside-boundary lines that are not scope, such as separate permit or utility fees, owner-supplied purchases, financing lines or separately stated taxes; they must not be included in `C1`.
- `F1`: current forecast for the full row boundary.
- `Scope effect = (Q1 − Q0) × P0`.
- `Price effect = Q1 × (P1 − P0)`; this includes the interaction.
- `Interaction = (Q1 − Q0) × (P1 − P0)`.
- `Comparable change = C1 − C0`.
- `Execution variance = X1 − C1`.
- `Scope = Scope effect + A`.
- `Estimate residual = F1 − X1 − A − O`.
- `Residual bucket = O + Estimate residual`.
- `Four-way check = F1 − C0 − (Scope + Price effect + Execution variance + Residual bucket)`; the result must be zero apart from rounding.

Check that `Scope effect + Price effect = Comparable change`, and use the interaction only as an audit line: `Price effect = Q0 × (P1 − P0) + Interaction`. The interaction is a mathematical allocation, not a separate blame category. Define the boundary in writing before entering amounts. If an approved scope change is already in `Q1`, `P1` or `C1`, enter zero in `A`; otherwise exclude it from `C1` and enter it once in `A`. If a local fee or other outside line is already in `C1`, enter zero in `O`; otherwise exclude it from `C1` and enter it once in `O`. Never deduct the same line from both `C1` and `A` or `O`. Calculate `X1` and execution variance first, then calculate estimate residual.

Illustrative worked example

These numbers are modeled for instruction and are not a quote or contractor benchmark.

Baseline roof sheathing: 1,000 square feet at $4.00 per square foot.

`C0 = 1,000 × $4.00 = $4,000`

Current matched requirement: 1,150 square feet at $4.60 per square foot.

`C1 = 1,150 × $4.60 = $5,290`

Bridge:

- Scope effect: `(1,150 − 1,000) × $4.00 = $600`.
- Price effect: `1,150 × ($4.60 − $4.00) = $690`; this includes the $90 interaction.
- Interaction: `(150) × ($0.60) = $90`.
- Comparable total: `$600 + $690 = $1,290`.

If the current execution ledger is `X1 = $5,470`, the current forecast is `F1 = $5,780`, and delivery plus tax are outside-boundary lines totaling `O = $310`, then `A = $0` and:

`Execution variance = $5,470 − $5,290 = $180`

`Estimate residual = $5,780 − $5,470 − $0 − $310 = $0`

The four-way increase is `$5,780 − $4,000 = $600 scope + $690 price + $180 execution + ($310 outside lines + $0 estimate residual)`. The package is reconciled arithmetically. It is not automatically approved; scope, quote validity, contract treatment and responsibility still require review.

Commitment and payment reconciliation

Package	Baseline estimate	Approved changes	Current committed	Paid to date	Forecast to complete	Current projected total	Evidence status
Sitework	$	$	$	$	$	$	
Structure	$	$	$	$	$	$	
Envelope	$	$	$	$	$	$	
Mechanical/electrical/plumbing	$	$	$	$	$	$	
Interiors/selections	$	$	$	$	$	$	
Design/permits/local fees	$	$	$	$	$	$	
General conditions/contingency	$	$	$	$	$	$	

Paid cost is not total cost. A signed commitment may remain unpaid. A forecast may include uncommitted work. State whether each figure is an invoice, deposit, approved draw, purchase order, subcontract, allowance, estimate or owner decision.

Evidence and handoff log

Item ID	Cause code	Evidence file or link	Responsible person	Verification needed	Due date	Decision
	SCOPE / PRICE / EXECUTION / RESIDUAL					

Suggested codes:

- `SCOPE-UNAPPROVED`: requested or performed change has no approval.
- `PRICE-MISMATCH`: quotes differ in grade, date, freight, tax or inclusions.
- `EXECUTION-QUANTITY`: measured work differs from takeoff.
- `EXECUTION-REWORK`: corrective work or failed inspection has a record.
- `EXECUTION-SEQUENCE`: delay or resequencing has a cost record.
- `FEE-LOCAL`: permit, utility, review or impact fee depends on jurisdiction.
- `ALLOWANCE-REPLACED`: owner selection differs from allowance basis.
- `ESTIMATE-OMISSION`: included-scope item was absent from the estimate.
- `UNKNOWN`: evidence requested but not received.

Sensitivity block

| Variable | Low | Base | High | Effect on package |

Quantity				
Unit price				
Index value, only if contractually relevant				
Delivery/freight				
Waste or rework				
Local fee or valuation				

If a written contract identifies an index, the illustrative formula is:

`Indexed price = baseline eligible price × (current index ÷ baseline index)`

Example only: `$40,000 × (214 ÷ 200) = $42,800`. Verify the index series, reference months, eligible cost, notice requirement and exclusions in the actual contract. Do not use a broad index to replace a matched quote.

Local and lender checks

Name the actual authority for every fee or permit claim. In the City of Sacramento, California, the cited [revision page](https://www.cityofsacramento.gov/community-development/building/building-fees/fees-by-project/revisions) says revision records track changes to issued permits and that value-affecting scope changes must be reviewed as a new building permit. The same page lists intake, hourly plan review and technology fees on revisions, with other charges possible. This does not apply nationally.

In Portland, Oregon, [Portland Permitting & Development](https://www.portland.gov/ppd/current-fee-schedules/valuation-methods) says valuation for permit fees can include finish work, trade work, permanent equipment and contractor profit. Its [fee-schedule page](https://www.portland.gov/ppd/current-fee-schedules) says schedules are updated annually and multiple tables or system-development charges may apply. Confirm the current treatment with Portland PP&D or the authority for the property.

For construction financing, the [CFPB explains that advances are typically made as construction progresses](https://www.consumerfinance.gov/ask-cfpb/what-is-a-construction-loan-en-108/). Your lender's agreement and checklist control whether a cost change needs a revised budget, change approval, inspection, appraisal or other documentation; ask the actual lender before relying on additional funds.

Release checklist

- [ ] Baseline and current versions are preserved.
- [ ] Project boundary names inclusions and exclusions.
- [ ] Every quantity has a unit and source record.
- [ ] Every price claim has a matched date, quote and inclusion list.
- [ ] Approved changes are separate from requests and unapproved work.
- [ ] Paid, committed and forecast-to-complete amounts are separate.
- [ ] Local fee claims name city, county or state and fee-source date.
- [ ] Lender requirements were checked with the actual lender.
- [ ] Hazardous, structural, electrical, excavation and code issues were routed to qualified professionals.
- [ ] Every residual has a reason code, responsible person and due date.
- [ ] The final decision states keep, reduce, defer, remove, approve or pending.

The bridge is successful when it makes the next responsible action visible. It does not need to make every unknown disappear before the next meeting; it does need to stop an unknown from being mislabeled as scope, price, execution or inflation.