

CIVIL & STRUCTURAL DESIGN SUPPORT • PHILIPPINES

The checked-deliverable standard: the executive economics of civil & structural design support outsourcing to the Philippines.

An analysis of why sheets and calcs produced is a volume vanity metric, how independent-check discipline and code compliance — never drafting throughput — decide the true cost of a design-support operation once un-checked calcs, code misses, RFIs, and rework are counted, and the vendor-selection discipline that delivers work the engineer of record can seal.

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ABOUT THIS SERIES – VOLUME 42

Every structural design-support proposal is priced per sheet or per hour, because drafting volume is easy to count. This volume is about the only design-support outcome an engineer of record actually depends on: the calc and the drawing modeled to standard, independently checked, and compliant with the governing code — so the EOR can seal it without redoing it. The gap between producing a sheet and producing a checked, code-compliant deliverable is where un-caught errors and rework live. The full series lives at piton-global.com.

About the authors



John Maczynski

Chief Executive Officer

John has bought engineering-support capacity for three decades, and learned that the fast pod that produces every sheet and skips the independent check is the most expensive one an AEC firm can hire — because an unchecked calc is a stamped error waiting to happen, a code miss is an RFI storm and a re-issue, and every deliverable an engineer of record has to redo is leverage lost at EOR rates. His standing question ignores the sheet count: of the deliverables you produced, how many were independently checked and code-compliant enough to seal as-is? Applied at PITON-Global, that question is what clients get on every design-support sourcing decision — personally, with no account layer in between.

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Ralf has spent twenty-five years running Philippine engineering-support floors, and he judges a design-support pod by its independent-check rate and code-compliance record, not its sheets-per-week: whether calcs and drawings were checked and code-compliant, or shipped unchecked to become the client's RFIs and rework. The design-support contract in Section 3 codifies what he learned rebuilding pods that drafted fast and checked nothing. He now reads design-support providers the way he once ran them — from the check log and the RFI-and-rework rate backward.

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ABOUT PITON-GLOBAL

PITON-Global is a buyer-side advisory practice, Manila-based since 2001, that has never operated a delivery floor or taken a placement commission. Its stock-in-trade is knowing the Philippine provider market at the operating level — 1,000+ mapped operations, re-verified continuously, including each design-support pod's real independent-check rate and code-compliance record rather than its sheets-per-week

headline — and converting that knowledge into a shortlist of six to ten genuinely qualified partners per engagement. Buyers from Tripadvisor, Garmin, TSYS, HealthPartners, Yetipay, Workrise, and Norman Disney & Young have run their searches through the practice.

SECTION 01

Executive summary

-58%

Fully-loaded cost per checked, code-compliant deliverable vs. US onshore

99%+

Independent-check pass rate on vetted pods, up from 84-92%

-62%

Reduction in RFIs and rework on vetted pods

6.2×

First-year ROI, reconstructed case (Section 6)

A civil-and-structural design-support engagement is bought on the price per sheet and paid for on the deliverables it ships un-checked. The pod reports thousands of sheets and calc pages produced at a fraction of the onshore rate; the firm finds the calcs no second engineer ever checked, the details that missed a code provision, the RFI storm when the contractor hits the gaps, and the engineers of record redoing offshore work at EOR rates instead of sealing it. The pod hit its sheet count and the firm inherited un-checked calcs, a code-compliance problem, and rework it did not price. The gap between producing a sheet and producing a checked, code-compliant deliverable is where the real cost of cheap design support hides, because an un-checked or non-compliant deliverable is not throughput delivered — it is EOR risk taken on and rework acquired.

The Philippines — with a deep, licensed-engineer-led talent pool trained on US and international codes and the major analysis and detailing platforms — is where structural design support is delivered with the most independent-check discipline, because that pool can run the modeling-to-standard, independent checking, and code compliance that a sealable deliverable demands. Five findings:

- 1 Sheets produced is the industry's most flattering number.** Any pod can push drawings and calc pages at speed. Vetted pods are measured on outcome: independent-check pass rate, code compliance, and RFI-and-rework rate. Weak providers quote a low per-sheet price the firm repays in un-caught errors, RFIs, and EOR-rate rework. Section 2 shows the gap.
- 2 The checked, code-compliant deliverable, not the fast sheet, is the product.** Work an EOR can seal comes from modeling to the firm's standard, checking it independently, and confirming code compliance

— not from clearing a drafting queue. Pods that check produce sealable work; pods that draft loosely ship errors that surface as RFIs and rework costing far more than the sheet.

3 An un-checked deliverable cuts both ways — error shipped and code missed. An un-caught calc error can be a safety and liability event; a missed code provision means a re-issue, a plan-check rejection, or a field failure. Vetted pods hold the independent-check pass rate above 99% precisely because both tails cost — the error that gets sealed and the code miss that comes back.

4 The RFI storm and the EOR-rate rework, not the sheet, are what cost. A deliverable shipped un-checked costs the RFI handling, the re-issue, and the engineer of record's rework at EOR rates — many times the per-sheet saving. Pods that check and confirm code compliance free EOR capacity and cut rework, and that reclaimed leverage — not the offshore rate alone — is where the case study's return is built.

5 Contract on the checked deliverable, not the produced sheet. The contracting failure of design support is paying per sheet and hoping it was checked and code-compliant. Vetted deals price against independent-check-pass floors, code-compliance targets, and RFI-and-rework ceilings, making the sealable deliverable the pod's problem, which is where it belongs.

The intended reader is a principal, engineering manager, or director of operations at an AEC or structural firm buying design support per sheet and paying for it in un-checked calcs, code misses, RFIs, and EOR-rate rework. Sections 2–4 separate the pods that check from the pods that draft; Sections 5–7, the method and the proof.

SECTION 02

The volume mirage: sheets produced versus checked, code-compliant deliverables

Figure 1 reads a package of structural deliverables against the two things an EOR needs — an independent check that passed, and code compliance within tolerance. Each row is one deliverable class; the marker shows where the vetted pod lands versus where a sheet-count vendor lands, against the check-required line. A sheet to the left of the line shipped without a passing check.

FIG. 1 — DELIVERABLE PACKAGE: CHECK-PASS POSITION VS. THE CHECK-REQUIRED LINE

Each row: ● vetted pod vs. ○ sheet-count vendor · dashed line = independent-check-pass required to seal



Left markers: PITON-Global engagement instrumentation, 2025-26, check logs audited. Sheet-count markers: composite of pre-engagement vendor reporting reviewed in diligence.

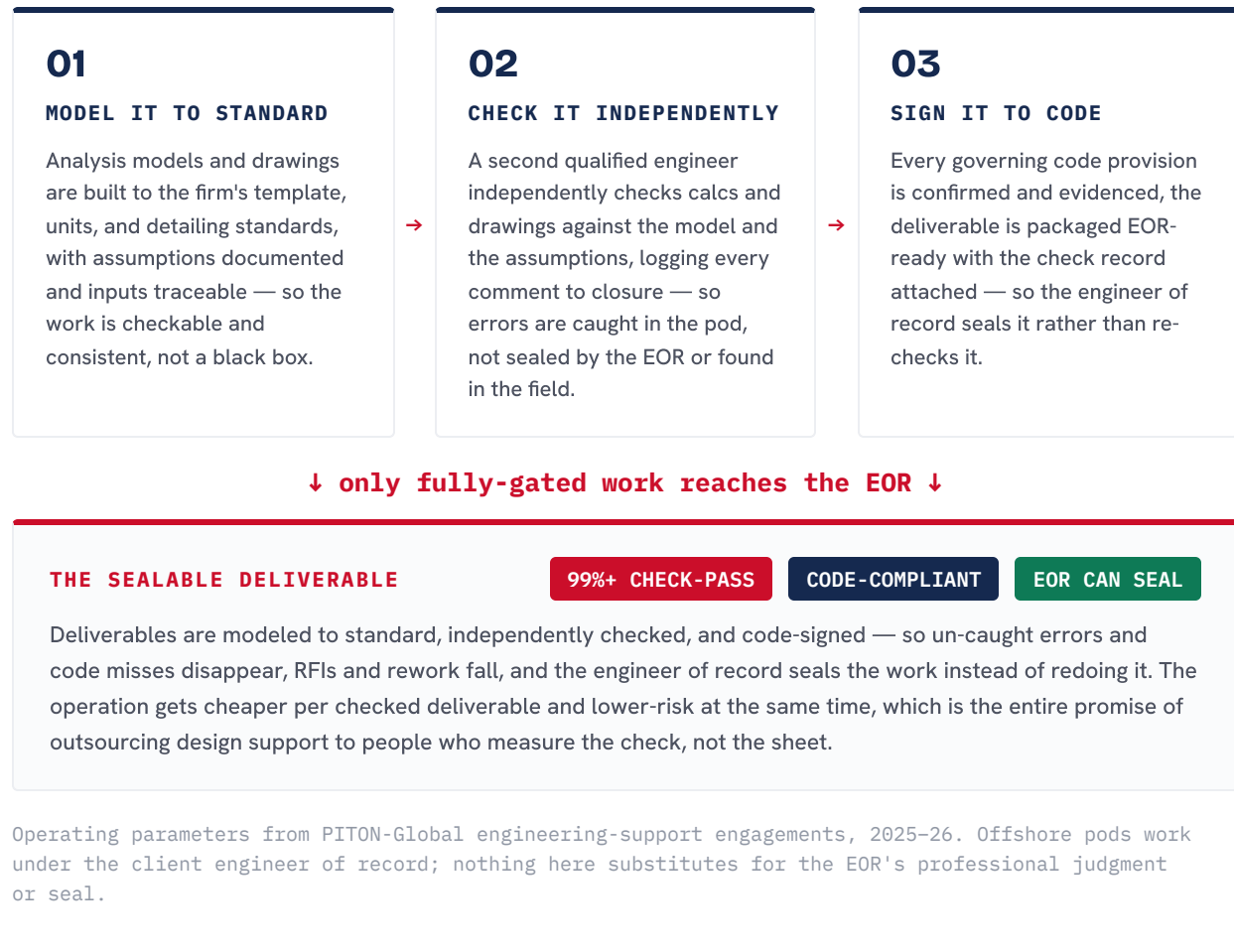
The economics follow the check, not the sheet count. The vetted pod lands to the right of the check-required line on every deliverable class, so the EOR seals what arrives; the sheet-count vendor sits well short — connection details and calcs shipped with a third to a quarter of the pack never independently checked. A low per-sheet price that ships un-checked work is not a saving; it is un-caught error and rework, deferred to the RFI stage and the seal. The check-log audit — independent-check pass rate, code compliance, RFI-and-rework rate — is the cheapest due-diligence instrument in this paper.

SECTION 03

The design-support contract: model it to standard, check it independently, sign it to code

Figure 2 lays out the three gates a deliverable passes through before it earns the pod's stamp — the machinery a floor read verifies before any per-sheet price is believed. A deliverable advances only when the prior gate passes; nothing reaches the EOR that has not cleared all three.

FIG. 2 – THE THREE-GATE DESIGN-SUPPORT CONTRACT



In diligence, the contract is tested from the check log's side: pull a package of completed deliverables and re-check a sample against the model and the governing code to measure true check-pass and compliance; read the RFI-and-rework log for un-caught errors; confirm the independent checker is genuinely a second engineer, not the same drafter. Perhaps one pod in ten survives it cleanly. Steps 3 and 5 of the framework exist to find that one before the contract does — because everything in Table 3 of Section 6 depends on the independent check, not sheets produced.

SECTION 04

Cost and performance: cost-per-checked-

deliverable economics and benchmarks

TABLE 1 – FULLY-LOADED COST PER CHECKED, CODE-COMPLIANT DELIVERABLE: THREE OPERATING MODELS (2026)

OPERATING MODEL	COST / DELIVERABLE	VS. US BASELINE
US onshore in-house drafting/design	\$430	baseline
Low-cost offshore drafting mill (per-sheet)	\$292	-32%
Vetted Manila pod — modeled, checked, code-signed	\$181	-58%

Basis: PITON-Global engagement pricing 2025-26; cost per checked deliverable = fully-loaded operating cost divided by deliverables that pass independent check and are code-compliant (un-checked and reworked excluded); the drafting mill looks cheap per sheet but RFIs, re-issues, and EOR-rate rework lift its true cost per sealable deliverable; US comparator fully-loaded in-house cost. A "deliverable" normalizes sheets and calc packages to a standard checked unit.

TABLE 2 – DESIGN-SUPPORT BENCHMARKS, VETTED VS. BASELINE (2025-26)

METRIC	VETTED TOP TIER	BASELINE	EXECUTIVE READING
Independent-check pass rate	99%+	84-92%	The only design number the EOR follows
Code-compliance rate	99%+	88-94%	Sealed, or re-issued on plan check
RFIs & rework vs. baseline	-62%	baseline	"Check it independently" — held or not
Deliverable turnaround vs. baseline	-41%	baseline	Overnight capacity, not instead of check
EOR leverage reclaimed	+29%	baseline	Time on design, or on re-checking

Source: PITON-Global engineering-support engagement data 2025-26; baseline = typical pre-engagement operations billed on sheets produced.

The strategic read: the drafting mill's -32% per sheet is a false economy — RFIs, re-issues, and EOR-rate rework lift its true cost per sealable deliverable far above the per-sheet gap, and a code miss found on plan check or in the field is a cost no rate recovers. The vetted Manila pod's -58% is real because it is measured where the value is: the deliverable modeled to standard, independently checked, and code-

signed so the EOR can seal it. Buy on sheets produced and you buy the un-checked markers of Figure 1; buy on cost-per-checked-deliverable and you buy the independent check — the same discipline every volume in this series keeps arriving at from a different door.

SECTION 05

Sourcing discipline: the 7-Step Vendor Vetting Framework, applied to structural design support

Design-support diligence adds one hard requirement to every step: a per-sheet price is real only when the independent-check pass rate behind it survives a re-check against the model and the governing code. The funnel below is representative of a 25-55-seat structural design-support search.

FIG. 3 – THE 7-STEP FRAMEWORK AS A DESIGN-SUPPORT FUNNEL

STEP	WHAT IT ELIMINATES IN A DESIGN-SUPPORT SEARCH	FIELD REMAINING
1 Requirements definition	Sheet-first scoping: fixes the independent-check-pass floor, the code-compliance target, the RFI-and-rework ceiling, and the turnaround the pod must meet by discipline and code jurisdiction	1,000+
2 Market mapping	Drafting mills: operations that bill sheet volume and treat un-caught errors and code misses as the client's problem, and generalist floors with no licensed-engineer leadership or code depth	~44
3 Capability screening	Pods without the machinery: licensed-engineer leadership, an independent-check workflow, audited check-pass history, code proficiency (IBC/ACI/AISC and peers), and platform depth across your tools	~13
4 Compliance & security audit	Weak governance: project-data and IP protection, model and CAD access controls, professional-liability alignment, SOC 2 scope covering the design-support stack	~8
5 Operational diligence	The re-check: re-check a sample package against the model and code for true check-pass and compliance; read the RFI-and-rework log; confirm the checker is a genuine second engineer; interview on an edge-case code call	4–6
6 Competitive RFP & negotiation	Per-sheet pricing: finalists bid against independent-check-pass floors, code-compliance targets, and RFI-and-rework ceilings — all carrying credits for deliverables that come back un-checked or non-compliant	2–3
7 Transition & launch governance	Cold start: the pod calibrates against your standards, code jurisdictions, and platforms on a sample before it takes live packages, with the check-pass floor certified before steady state, PITON-Global embedded buyer-side	1

Field-remaining counts represent a 25–55-seat structural design-support search, PITON-Global engagements 2024–26.

The standing guarantees hold: **vendor neutrality** — PITON-Global operates no design floors, produces no drawings, and takes no placement economics, so the shortlist reflects audited check-pass performance, not inventory; **right-sizing** — pods for whom your operation is a flagship account. Six to ten genuinely qualified

providers, delivered within 48–72 hours, free to the buyer, competing through a fully transparent, fair, comprehensive, and highly competitive RFP.

SECTION 06 • ANONYMIZED CASE STUDY

Re-basing the pod on independent checking: a 40-seat structural design-support rebuild, reconstructed

Engagement CS-068 is a US structural and civil engineering firm — running roughly 62,000 checked deliverables a year across framing, foundations, and connection design — that had offshored design support to a per-sheet drafting mill. The sheet price was excellent; the checking was not: the independent-check pass rate sat near 88%, code misses were surfacing on plan check, RFIs were running high, and engineers of record were redoing offshore calcs at EOR rates. The engineering principal wanted the capacity without the un-checked calcs and the rework. Identifying details are anonymized under NDA.

SELECTION (WEEKS 0–8, RE-CHECKS)

Requirements fixed a 99% independent-check-pass floor, a 99% code-compliance target, and an RFI-and-rework ceiling, with a mandatory second-engineer check workflow. Mapping produced 44 claimants; the machinery screen — licensed-engineer leadership, independent-check workflow, audited check-pass, code and platform depth — left 13; the IP-and-liability audit left 8. Blind re-checks of each finalist's sample packages against model and code shortlisted 5. A Manila pod won priced against check-pass and code compliance, with a re-check written into the reporting spec.

TRANSITION (MONTHS 2–6, CALIBRATED FIRST)

The pod calibrated against the firm's standards, code jurisdictions, and platforms on sample packages before taking live work; the check-pass floor was certified in month 3. The check-and-feedback loop fed calibration from day one. By month 6 the independent-check pass rate reached 99.2%, code compliance hit 99%, RFIs and rework fell 62%, and turnaround dropped 41%. PITON-Global chaired the check-pass review board to steady state.

TABLE 3 – CS-068 FIRST-YEAR VALUE BUILD-UP (US\$)

VALUE COMPONENT	YEAR 1	BASIS
Labor arbitrage on the 40-seat design-support pod	\$1.48M	75.0k productive hrs × (\$29.60 – \$9.90)
EOR leverage reclaimed (rework removed)	\$0.72M	EOR/senior hours returned from re-checking
RFI, re-issue & liability exposure avoided	\$0.30M	Code-miss and re-issue exposure removed
Turnaround & capacity value	\$0.16M	Faster packages and higher project throughput
Gross value created	\$2.66M	
Less: engagement & transition costs	(\$0.43M)	Calibration, check-loop build, standards/platform integration; advisory fee \$0 (provider-paid model)
Net value ÷ cost = first-year ROI	6.2×	\$2.66M ÷ \$0.43M

Figures rounded; check-pass, code, and rework effects audit-verified. Method in Methodology & notes.

Fifty-six percent arbitrage, forty-four percent from reclaimed EOR leverage, avoided re-issues, and faster turnaround — a typical split for the series, earned because the pod was re-based on independent checking rather than sheet volume. Every line traces to a diligence step: the check-pass floor to Step 1, the check-based pricing to Step 6, the second-engineer workflow to Step 3's contract. The engineering principal's line at the year-one review: "The sheet price barely moved. What moved is that my engineers seal the work now — they stopped re-checking it, and nothing's bounced on plan check since."

SECTION 07

The executive playbook: governance for the first 180 days

A design-support transition succeeds when the pod is measured and paid on the independent check and code compliance — client in command throughout.

DAYS 0–30**Define the check,
contract on it**

Set the independent-check-pass floor, the code-compliance target, and the RFI-and-rework and turnaround thresholds with engineering leadership before launch, and document the model-to-standard and second-engineer check workflow by discipline and jurisdiction. Contract against check-pass and code compliance — never per sheet alone — with floors and ceilings carrying credits. Stand up the re-check as the program's arbiter of truth.

DAYS 30–90**Calibrate the pod,
prove the floor**

Calibrate the pod against your standards, code jurisdictions, and platforms on sample packages before it takes live work; certify the check-pass floor and the second-engineer loop. Switch on the check-and-feedback loop from day one. Publish the design-support dashboard: check-pass rate, code compliance, RFI-and-rework rate, turnaround, EOR leverage reclaimed.

DAYS 90–180**Take live packages,
certify steady state**

Route live packages to the pod only after it holds the check-pass floor and code-compliance target, always under the client engineer of record. Review the check board monthly with the RFI-and-rework and code-miss trends on the table. Certify steady state on two months at floor including a code-cycle or standard update; hand over on documented criteria; keep the quarterly re-check standing.

THE FIVE FAILURE MODES WE ARE HIRED TO PREVENT

Paying per sheet while calcs ship un-checked · drafting instead of modeling to a checkable standard · calling the same drafter's self-review an independent check · missing code provisions that surface on plan check or in the field · taking live packages before check-pass is proven. All five are settled at selection and contract.

The design-support argument, in one sentence: a produced sheet is drafting and a checked, code-compliant deliverable is work an engineer of record can seal, and a vetted Philippine pod delivers –58% cost per checked deliverable with a 99%+ independent-check pass rate and RFIs and rework cut by nearly two-thirds — for buyers who re-check the work instead of counting sheets produced, and compete the finalists through a fully transparent, fair, comprehensive, and highly competitive RFP. Anyone can produce a sheet. We make sure you buy the pod whose deliverables your engineer can seal.

METHODOLOGY & NOTES

How the numbers were built

Check-pass and rework figures (Fig. 1, Table 2) derive from engagement instrumentation in PITON-Global engineering-support engagements, 2025–26. Independent-check pass rate and code compliance are measured by re-checking a sample of deliverables against the model and the governing code; RFI-and-rework rate, turnaround,

and EOR leverage reclaimed are measured against the client's pre-engagement baseline. The sheet-count column is a composite of pre-engagement vendor reporting reviewed in diligence, shown for contrast.

Cost-per-checked-deliverable figures (Table 1) are fully loaded — wages, benefits and statutory charges, facilities, analysis/detailing platform and technology tooling, management and QA overhead including independent checkers and code reviewers, attrition-driven recruiting — divided by deliverables that pass independent check and are code-compliant, with un-checked or reworked deliverables excluded from the denominator; US comparators reflect fully-loaded in-house cost. A deliverable normalizes sheets and calc packages to a standard checked unit; a checked deliverable is modeled to standard, independently checked, and code-compliant.

The case study (CS-068) is anonymized under NDA; volumes and dates are generalized, figures rounded. Check-pass, code, and rework effects are audit-verified; the EOR-leverage line reflects senior/EOR hours returned, and the exposure-avoided line is a conservative estimate. $ROI = \text{net first-year value} \div \text{all engagement-related client costs}$. PITON-Global's advisory fee is provider-paid and appears at \$0 in the client cost base; neutrality safeguards are documented at piton-global.com.

Market context draws on IBPAP reporting and PITON-Global's proprietary provider mapping (1,000+ operations; check-pass and code-compliance performance re-verified May 2026). Offshore pods support, and never replace, the client engineer of record; all deliverables are sealed under the EOR's professional judgment. Estimates and projections are PITON-Global analysis and should be cited as such. The full series is available at piton-global.com.



Would your provider's sheet price survive a check-pass re-check?

Thirty minutes with John will tell you. Free to buyers, strictly vendor-neutral — a check-verified shortlist within two to three business days.

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