

DRAWING REVIEW · TENDER CLARIFICATION PACK

Tender clarification pack

Every gap, conflict and missing detail in the tender drawings, written as a query ready to send, with the assumptions and exclusions to state and the key quantities.

This is a sample: 17 of the 23 queries from a real review of an overseas river bridge in our published case studies, with project names, places and client details removed. Levels are in metres to the project datum, units are as on the drawings with SI equivalents, and effects are shown as quantities, not prices.

PACKAGE	150 m river bridge: six 25 m RC T-beam spans on 1200 mm bored piles, two box abutments
DRAWINGS REVIEWED	GA-01 general arrangement (A1), with borehole logs, notes and the specification
QUERIES RAISED	17: 11 to send, 5 to state in the bid, 1 drawing correction
CONTENTS	1 Query log · 2 Assumptions and exclusions · 3 Key quantities · 4 How this was prepared
PREPARED	AI first pass: the drawing read, quantities taken off and cross-checked against the notes and specification
CHECKED	Every item resolved and signed off by an engineer

SIGNED OFF

1 · Query log

REF	SHEET / CLAUSE	QUERY	BASIS ADOPTED MEANWHILE	EFFECT IF IT CHANGES	ACTION
Q-01	GA-01 pier plan / side view	Pier pile cap is 5100 × 5100 on plan and section, but the side view dimensions sum to 5000 (1400 + 2200 + 1400). The side view also shows a foundation level (RL 78.300) that matches no pier. Confirm the cap size and founding levels.	5100 × 5100; founding levels pier by pier from the elevation and note 16.	5000 cap: 9.1 m³ less reinforced concrete across the pier caps.	QUERY
Q-02	GA-01 borehole logs	Rock levels at P2, P3 and P4 (79.94 / 77.57 / 75.20) are an exact straight-line interpolation between boreholes B2 and B3. There is no borehole at these piers. Confirm founding levels, or provide boreholes.	Interpolated levels; confirmatory boreholes included as separate items.	Each 1 m change in rock level changes pile, casing and reinforcement length at that pier.	QUERY + STATE
Q-03	GA-01 borehole B1	At abutment A1, borehole B1 logs 12.7 m of 'coarse sand (no core)' from RL 82.95 to 70.25, while P1, 25 m away, meets rock at RL 82.31. This may be weathered rock or core loss. Confirm, or re-bore A1.	Friction piles at A1 as drawn; re-bore included.	If A1 piles can be socketed into rock, they shorten and the friction pile test category falls away.	QUERY
Q-04	GA-01 abutment section	The 10.0 m wedge behind each abutment is hatched and labelled 'filter media'; 'granular material' labels the fill beyond. Confirm whether the whole wedge is filter media or a 600 mm filter layer against granular fill.	Whole wedge as filter media: 471 m³.	Filter layer only: most of the 471 m³ becomes granular fill, a cheaper material.	QUERY
Q-05	Spec. piling / rates schedule	The specification includes installing piles for initial load tests in the pile rate, but the rates schedule prices the tests and not the trial piles. Confirm how trial piles are paid.	4 trial piles (93.8 m) measured as separate items.	4 piles, 93.8 m, with casing and reinforcement.	STATE IN BID
Q-06	GA-01 notes	Pile design load is not given, and the initial load test is paid per tonne of test load. Confirm the design load.	Indicative test load from vertical load and braking.	Test load and test cost follow the design load.	QUERY
Q-07	GA-01 note 25	Note 25 gives a safe bearing capacity of 60 t/m² (about 590 kPa) for end bearing, about 68 t (670 kN) on a 1.2 m pile. Rock socket capacity is not stated. Designer to confirm.	Not used in quantities.	Design issue: affects pile length and number.	QUERY
Q-08	GA-01 pile detail; spec. liners	Permanent casings (liners) are shown full depth to rock. The specification requires them at least to maximum scour level (piers RL 89.73, abutments RL 93.91). Confirm the liner depth.	Full depth to rock, as drawn: 707 m of casing (126 t).	Casing to scour level only: a large share of the 707 m falls away. Raise as value engineering.	QUERY (VE)

1 · Query log, continued

REF	SHEET / CLAUSE	QUERY	BASIS ADOPTED MEANWHILE	EFFECT IF IT CHANGES	ACTION
Q-09	GA-01 notes	Concrete grades are given for piles only. Confirm grades for pile caps, piers, pier caps, abutments and deck.	Pile caps, piers, pier caps and deck C28/35; abutments C25/30 (M35 and M30 in the source notation).	A grade step in the deck changes the price of 1,238 m³ of concrete.	QUERY
Q-10	Drawing register	No reinforcement drawings or bar schedules are issued. Confirm whether they will be issued before award.	Reinforcement allowances: piles 120 kg/m³, deck 230 kg/m³, others as listed.	A 10% change in steel is about 52 t.	STATE IN BID
Q-11	GA-01 abutment (NTS)	Abutment cap width is not dimensioned. The approach slab is drawn between the rear wall and dirt wall (5.9 m), but note 18 refers to the standard approach slab. Confirm both.	Cap 1.0 m wide; approach slab 5.9 m x 12 m.	Standard slab extending 3.5 m onto the backfill: about 25 m³ more reinforced concrete.	QUERY
Q-12	GA-01 deck section; spec. surfacing	Wearing course is drawn as 50 mm bituminous concrete + 25 mm mastic asphalt; the specification's standard type is 40 + 25. Bitumen grade is not stated.	50 + 25 as drawn.	Thickness and binder grade change the surfacing price over 1,793 m².	QUERY
Q-13	GA-01 bearing layout	Bearing capacities (fixed, free, guided) are not given. End-span bearings sit 480 mm from the joint at the abutments against 625 mm at the piers.	48 bearings at 150 t (about 1,500 kN) capacity each.	Bearings are priced by capacity: 200 t (about 2,000 kN) bearings cost materially more.	QUERY
Q-14	GA-01 elevation	No river protection (apron or pitching) is shown, although the design flood level (RL 101.2) is above bank level at both abutments and abutment scour level is RL 93.91.	Indicative apron and pitching items listed separately, outside the drawn scope.	Design required; a scope gap if left out.	STATE IN BID
Q-15	GA-01 pier cap	Seismic or transverse restrainers on the pier caps are not shown.	Excluded.	Add if the designer requires them.	STATE IN BID
Q-16	GA-01 borehole logs	Drawing errors: borehole B3 bottom level printed RL 87.820 (reads as 67.820), B4 RL 89.600 (69.600); B3 and B4 overall depths do not add up; B2 layer depths conflict with the levels.	Not used for quantities.	None on price. Correct the drawing.	NOTE
Q-17	GA-01 plan	Approach roads are shown on the GA (203.5 m and 278.5 m).	Excluded: priced separately.	Outside this package.	STATE IN BID

2 · Assumptions and exclusions

Where the drawings leave scope open, the basis to state in the tender, so the risk is priced or written down. Where the tender does not allow qualified bids, these become queries instead.

NO.	ASSUMPTION OR EXCLUSION
01	Pier pile caps taken as 5100 × 5100 mm, as on plan and section (Q-01).
02	Founding levels at P2 to P4 taken from interpolated rock levels; pile lengths subject to confirmatory boreholes (Q-02).
03	Abutment A1 priced as friction piles as drawn (Q-03).
04	Trial piles for initial load tests measured and priced as separate items (Q-05).
05	Permanent casings priced full depth to rock as drawn (Q-08).
06	Concrete grades assumed as stated where the drawings are silent (Q-09).
07	Reinforcement priced on allowances pending bar schedules; remeasured on issue (Q-10).
08	Bearings priced at 150 t (about 1,500 kN) capacity each; capacities to be confirmed (Q-13).
09	River protection, seismic restrainers and approach roads excluded (Q-14, Q-15, Q-17).

3 · Key quantities

Measured from the drawings to sense-check the scope before the full take-off.

ELEMENT	QUANTITY	BASIS
Bored piles, 1200 mm	42 nr	975 m concreted length, including 4 trial piles
Permanent steel casing, 6 mm	707 m	126 t; full depth to rock as drawn (Q-08)
Pile caps, reinforced concrete	579 m³	
Piers, pier caps and bearing plinths	228 m³	
Box abutments	140 m³	Walls, ballast wall, front wall and cap
Deck: T-beams and slab	1,238 m³	Six 25 m spans
Reinforcement	518 t	Allowance pending bar schedules (Q-10)
Bearings	48 nr	150 t (about 1,500 kN) capacity assumed (Q-13)
Expansion joints	84 m	Strip seal
Deck surfacing	1,793 m²	50 mm + 25 mm as drawn (Q-12)

4 · How this was prepared

STEP	WHAT HAPPENED
01	Our AI read the drawing, notes, borehole logs and specification, took off the quantities and cross-checked dimensions, levels and notes against each other.
02	Anything the first pass could not settle, such as a dimension that differs between views or a level with no borehole behind it, was marked.
03	An engineer worked through every marked item, wrote each query, set the basis to adopt in the meantime and the assumption to state, and signed the pack off.
04	Every query points to the sheet, note or clause it came from, so your team can check it in seconds.

Use of AI, in writing

AI did the reading, measuring and cross-checking. An engineer checked every query and quantity and signed off the pack. Your drawings are used for your job only and are never used to train AI models.

Your first Drawing Review is free. One package from a tender you're pricing now, up to 40 sheets, under NDA. The query log and key quantities within 3 working days of the complete package arriving. Or send a tender you've already returned, and we'll check it blind so you can compare.

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