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Payability of stone material proceeds for 122 vessels upon failed closure of Dragon Mouth No.3

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This case concerns a major marine construction dispute handled by lawyers of our firm. After five years of litigation, we secured a complete victory at both first and second instance, recovering RMB 142 million in losses for our client. This article is a systematic review by the case counsel of the disputed issues and winning strategies, and also discusses the technical challenges inherent in such disputes for readers' reference.

I. Case Overview

On 16 November 2015, Company Z, Company J and Company K entered into a *Cooperation Agreement and Construction Contract* (hereinafter the "Investment & Construction Contract"). Under Section 1, the Cooperation Agreement, Clause 4.7 provides that Company J would sign an investment agreement with T Administrative Committee, invest no less than RMB 100 million to acquire land within the demonstration zone and make an on-land investment of no less than RMB 100 million. Company J would enter into a contract with Company Z to pay construction funds, and be responsible for the investment, financing, construction and three-year operation and maintenance of the Project. Company Z would undertake the construction of the seawall project and bear corresponding liabilities.

Under Section 2, the Construction Contract, Part I Contract Agreement, Clauses 1–2 govern the seawall project (including Phase I of the Y Port River Waterway Connectivity Project). The project commenced on 10 November 2015; closure of the dragon mouths was required by 30 May 2016; and final completion was scheduled for 23 October 2016, with a total contract price of RMB 180,103,713.

During construction, due to the need to coordinate approval for sea-use formalities, the Development Office of the Demonstration Zone issued separate suspension notices to Company Z on 20 April and 20 June 2016. Company Z reported to the Development Office

on idle-work losses and losses from earthwork scouring sustained during the waiting period. On 18 September 2016, the Marine Bureau of the Demonstration Zone issued a Rectification Letter, prohibiting Company Z from proceeding with seawall construction before obtaining lawful sea-use approvals. On 28 September 2016, T Administrative Committee further served a Suspension Letter on Company Z.

On 20 December 2016, relevant functional authorities of the Demonstration Zone together with Company Z, Company J and Company K executed the *Minutes of the Special Meeting on Construction Progress of Dragon Mouth No.3* (hereinafter the "12.20 Minutes"). The Minutes approved a revised construction plan: direct closure of Dragon Mouth No.3, replacing the original sequence under which Dragon Mouth Nos.1 and 2 would be closed first, followed by Dragon Mouth Nos.3 and 4.

On 4 January 2017, the stone dyke at Dragon Mouth No.3 was successfully closed, and partial filling works at Dragon Mouth No.4 were completed. Construction at Dragon Mouth No.4 was suspended because Company K had not obtained all sea-use approvals and full closure could not be achieved. Subject to tidal action, massive water volumes flowed in and out of the enclosed basin every day and scoured the dragon mouths, destroying part of the stone dyke and sand bags at the completed Dragon Mouth No.3 and some sand bags at Dragon Mouth No.4.

On 8 March 2017, Company Z carried out a second closure operation at Dragon Mouth No.3 and achieved successful closure again. As Dragon Mouth No.4 was nearing closure, works were suspended once more due to incomplete sea-use approvals, resulting in the scouring and destruction of the filled stone dyke and sand bags at both dragon mouths.

On 2 May 2017, Company K issued a Work Suspension Order to Company Z. With no prospect of resumption, Company Z submitted for audit on 20 June 2017 the valuation of completed contract works at RMB 95,331,907.95. T Company (the supervisor) preliminarily reviewed the amount as RMB 88,686,169.53. On 3 August 2017, Company K appointed Firm A to audit the completed works. The *Consultancy Report* assessed the project value at RMB 76,712,476.73 and noted that this was only an interim review and not a basis for payment. Separately, Company Z had received progress payments totalling RMB 50,711,225.78 from Company K.

On 20 October 2021, Company Z and Company J filed suit before the court of first instance. On 28 July 2023, the first-instance judgment provided:

1. Confirmation that the subject Investment & Construction Contract was terminated on 14 January 2022;

2. Company K shall pay Company Z construction funds of RMB 75,083,272.1 plus corresponding interest within ten days of the judgment taking effect (interest up to 30 October 2021 was RMB 6,712,860; subsequent interest shall accrue on the principal of RMB 75,083,272.1 at the contemporaneous Loan Prime Rate published by the China Interbank Funding Center until the payment date set out in the effective judgment);

3. Company K shall compensate Company Z for various losses totalling RMB 6,790,849 within ten days of the judgment taking effect.

On 10 April 2025, the second-instance court dismissed Company K's appeal and affirmed the first-instance judgment.

Company Z's contractual claims for construction price and lost profit on unfinished works under the Investment & Construction Contract were finally upheld by judicial judgment.

II. Analysis of Disputed Issues

(A) Whether certain quantities of completed contract works should be deducted

1. The second-instance judgment held that the earthwork quantities under Items 2, 3 and 8, aggregating RMB 1,396,100, should not be deducted based on survey data from the Mapping Institute.

Counsel's submissions: (1) The Mapping Institute was engaged solely by Company K for survey measurement. No evidence proves that Company Z agreed to be bound by the survey results. Company Z submitted the Institute's Technical Report only as an appendix to Firm A's Consultancy Report and did not accept the Technical Report as the basis for calculating earthwork quantities.

(2) The Technical Report shows survey dates from 1 June to 17 June 2017. The project commenced on 10 November 2015, nearly 19 months before the survey. The final suspension date was 2 May 2017, almost one month before the survey.

The review findings by T Company (the supervisor) better reflect the actual construction conditions on site, whereas the Mapping Institute's figures failed to represent the true completed quantities, a view shared by the appraisal institution.

(3) Marine construction differs from onshore works and carries unique characteristics, heavily affected by hydrological conditions such as tides and waves. Records show that the maximum tidal range at the subject seawall site reaches 7.31 metres and the maximum wave height 3.8 metres. Under such tidal and wave conditions, some loss of placed earthwork from seawater scouring is inevitable. The deduction of quantities for Items 2, 3 and 8 in the Consultancy Report was manifestly improper.

1. The second-instance judgment confirmed that the sub-items of 32,706 m3 of sand fill in 200 g/m2 woven bags and 4,001 m3 of high-quality air-sealing sand earthwork at the dragon mouths remained unchanged. The risk and loss of these damaged quantities should be borne by Company K.

Counsel's submissions: (1) The 32,706 m3 of sand fill in 200 g/m2 woven bags and 4,001 m3 of high-quality air-sealing sand earthwork at the dragon mouths fell within the contract design scope, had been constructed and had formed completed works. T Company confirmed that the damage arose from stone dyke collapse for reasons not attributable to Company Z.

The 12.20 Minutes of 20 December 2016 explicitly stated that the demonstration zone and Company K would coordinate and resolve prior suspension notices, sea-use issues, and interference from fishermen and aquaculture operators during closure. Both Company K and T Company acknowledged adverse objective conditions during construction.

(2) Immediately after the closure of Dragon Mouth No.3, fishermen and aquaculture operators whose compensation had not been settled filed complaints with the Marine Bureau of the Demonstration Zone against Company K for construction without approved sea-use permits. The Marine Bureau ordered Company Z to suspend works. Due to this and other adverse objective requirements, the completed contract works of 32,706 m3 of woven-bag sand fill and 4,001 m3 of air-sealing sand earthwork at Dragon Mouth No.3 collapsed and suffered scouring damage before reinforcement and stabilisation after stone dyke closure could be finished.

The main change for Dragon Mouth No.3 compared with the original design was the adoption of stone dyke closure. Other sub-works including woven-bag sand fill and high-quality air-sealing sand earthwork remained unchanged and were to be constructed in accordance with the original design. Their quantities and valuation should therefore be recognised as contract items.

(3) T Company confirmed that these two items had produced deliverable works but declined to audit them on the ground that the stone dyke had collapsed and been destroyed. Although the Investment & Construction Contract did not expressly allocate liability for losses in such circumstances, Clause 16.1 of the Tender Instructions provides: "Quantity risk shall rest with the Employer. Settlement quantities shall be determined based on quantities measurable under the contract and actually completed; quantities arising from events not attributable to the Contractor shall be determined by site confirmation orders." Accordingly, quantities of the subject seawall within the original design scope shall be based on actual volumes, and quantities arising from events not attributable to Company Z must also be measured.

Company K additionally relied on Clause 17.6 of the Tender Instructions: "The tenderer shall independently account for dragon mouth construction, with costs fixed as a lump sum." This clause addresses construction and protection costs under normal working conditions, which are to be assessed by the tenderer. However, the collapse of the Dragon Mouth No.3 stone dyke was not caused by Company Z, so the clause does not apply. Firm A's deduction of RMB 2,005,569.52 relating to the 32,706 m3 woven-bag sand fill and 4,001 m3 air-sealing sand earthwork at Dragon Mouth No.3 was clearly improper.

(B) Who shall bear the costs for closure of Dragon Mouth No.3

1. The first-instance judgment held that, notwithstanding the fixed-unit-price nature of the Investment & Construction Contract, the total contract price was adjustable. Even where variation declaration and approval procedures were not followed, Company K could not refuse payment for varied works.

Counsel's submissions: (1) A fixed-unit-price construction contract is generally priced against drawings, specifications and standards, with relatively defined scope of works; unit prices normally remain unchanged regardless of environmental shifts or quantity fluctuations. Fixed unit prices are only locked for works within the agreed scope; the total

contract price is not absolutely non-adjustable. Additional works outside the original scope, or quantity increases triggered by employer-initiated or design variations, may justify adjustment of the total contract price.

(2) Claims raised by Company Z for earth backfilling, revised sandbag specifications and conversion of Dragon Mouth No.3 to stone dyke closure either represented new items absent from the original design (e.g. backfilling pits caused by discrepancies between actual terrain and design drawings), or revised construction modifying original design standards, sequence and materials (e.g. the stone dyke closure for Dragon Mouth No.3 following a changed construction sequence). The relevant quantities are distinguishable from works within the original contract scope. These items added to the contract scope and altered construction standards and sequencing, falling within the variation scope under Clause 10.1 of the General Conditions (GF-2013-0201). They constituted variations entitling price adjustment.

Company K and T Company signed off on the Variation Notices and Meeting Minutes, acknowledging that these works had been carried out and confirming they were not within the original design. Pursuant to GB 50500-2013 *Code of Valuation with Bill Quantity of Construction Works*, Clause 2.0.16: "Construction variation means addition, deletion or cancellation of any contract work, or change to construction technology, sequence or timing; revision of design drawings; change of construction conditions; errors or omissions in the tender bill of quantities, which alter contractual terms or quantities during contract performance initiated by the Employer or proposed by the Contractor and approved by the Employer." Such works should be separately measured and priced.

(3) Clause 10.4.1 of the Special Conditions provides: "Where a variation is required under the contract, the Supervisor shall issue a Variation Instruction to the Contractor, the Contractor shall submit a variation quotation, and the Supervisor or Employer shall issue the variation decision." It does not specify the consequences of non-compliance with procedural requirements, and both parties had procedural defects in performing variation obligations.

Clause 10.4.2 of the Special Conditions states: "Where a variation arises from the Contractor's cause, the Contractor has no right to claim additional contract price." This provision conversely confirms that extra costs for variations from other causes are to be

borne by Employer Company K. The variations in question arose from major discrepancies between design terrain and actual site terrain, reinforcement of dyke heads to accommodate sea-use approval procedures, and adjustment of the Dragon Mouth No.3 construction sequence to accelerate progress; none were attributable to Company Z. Company K did not file an appeal, which is deemed acceptance of the position that the total contract price should be adjusted for engineering variations.

1. The second-instance judgment found that Company K bore responsibility for the ultimate destruction and non-completion of Dragon Mouth No.3.

Counsel's submissions: (1) The seawall project commenced on 10 November 2015. Progress fell behind schedule due to adverse factors including interference by fishermen and aquaculture operators, drainage from the Y Port Sluice, and unresolved sea-use approvals. Against this backdrop, Company K required accelerated construction. At its request, Company Z put forward the revised plan for stone dyke construction at Dragon Mouth No.3.

On 1 December 2016, a Supervisor's Notice required construction in the original design sequence. Company Z replied on 4 December 2016, identifying preconditions dependent on the Owner for that sequence: first, expedited issuance of the sea-use right certificate; second, resolution by the Owner of land acquisition, aquaculture losses, obstruction and other disputes arising from diversion and drainage. As Company K could not resolve these issues, objective site conditions made the original construction sequence impracticable.

(2) On 20 December 2016, Company K, Company Z, T Company, the Hydraulic Investigation Institute, T Administrative Committee and other stakeholders met and approved the direct Dragon Mouth No.3 closure plan.

The 12.20 Minutes emphasised that Company Z should bear its own risks, while also confirming that interference from fishermen and aquaculture operators and sea-use approval issues were the responsibility of Company K. If Company K considered the original design sequence unfeasible, it was obliged to request the design institute to revise the design. Company Z proposed the revised plan, which was confirmed by Company K. As the principal party responsible for the project, Company K bore the primary risks of the works. Company Z only held a proposal right; the decision-making power rested with

Company K, and risks of the design fell within Company K's sphere of responsibility.

The Minutes of the 12th Project Meeting dated 20 February 2017 ordered Company Z to complete main seawall closure by 25 April 2017. Company K issued the written Suspension Order on 2 May 2017, referencing meetings of the Demonstration Zone on 30 March 2017 and written rectification notices of the Demonstration Zone Office dated 6 and 8 April 2017. Works were suspended pending sea-use approval for the seawall project, with resumption conditional on further written notice. Company K never subsequently notified Company Z to resume works.

(3) Clause 7.1 (Undertakings) of Part I Contract Agreement provides that the Employer shall complete project approval formalities as required. Securing sea-use approvals was Company K's obligation. Clause 19.22 of the Tender Documents states: "All preliminary site issues other than land acquisition and demolition encountered during construction shall be resolved by the Contractor at its own cost and included in its tender price." Interference by fishermen and aquaculture operators stemmed from compensation disputes over land acquisition and therefore fell within Company K's responsibility.

Objective external conditions existed for closure of Dragon Mouth No.3, and Company Z was technically capable of achieving closure. All adverse external factors affecting construction were Company K's risks. It would be unfair to attribute losses caused by adverse objective conditions to Company Z. The "self-risk" premise did not cover suspension triggered by outstanding sea-use approvals.

1. The second-instance court held that the first-instance court's adoption of a conservative, lower-bound approach to recognise a one-time closure quantity of 148,417.5 m3 for Dragon Mouth No.3, totalling RMB 31,572,854.8, was not improper.

Counsel's submissions: (1) The Minutes of the 14th Project Meeting dated 8 March 2017 record: "122 vessel loads of riprap have been placed on the south side of Dragon Mouth No.3, forming a 210-metre water-retaining stone dyke. Work is ongoing on riprap stabilisation and sandbag air-sealing filling after stone dyke closure at Dragon Mouth No.3." This water-retaining dyke was located south of Dragon Mouth No.3 and did not overlap with or form part of the contract cross-section. Aggregated measured volumes from receipts for stone delivered by the 122 vessels totalled 154,014.6 m3. Company K

confirmed the number of receiving vessels, and per-vessel carrying and receipted volumes were consistent with normal vessel loading practices.

Calculated from the original design cross-section: top width 34 m, base width 94.5 m, top elevation +6 m, base elevation ?5 m, height 11 m, giving a total volume of 148,418 m3. With a constant dyke height of 11 m at Dragon Mouth No.3, irregular riprap is less stable than the sandbag cross-section in the original design. The stone dyke cross-section could not be smaller than the original design cross-section, and construction losses from tidal scouring must be taken into account. Company Z's receipted stone volume of 154,014.6 m3, at the tender unit price of RMB 212.73/m3, yields a stone price of RMB 32,763,525.86.

(2) The Dragon Mouth No.3 stone dyke was successfully closed on 4 January 2017, and closed a second time on 8 March 2017. The January 4 works were stone dyke closure; the March 8 works were re-closure, representing different construction activities. Company K's approach of dividing the total riprap volume of 154,014.6 m3 by two to derive a reasonable one-time closure quantity of 77,007.3 m3 is untenable. The appraisal institution calculated the riprap requirement for Dragon Mouth No.3 stone dyke closure from construction drawings as 148,418 m3, which is close to Company Z's recorded actual placement of 154,014.6 m3. Company Z's position that only surface stone was washed away during the January 2017 closure, and that the purchased stone marginally exceeded the theoretical requirement, aligns with site reality.

(3) Company K argued that the design-based reasonable riprap quantity of 148,417.5 m3 for Dragon Mouth No.3 did not include the 18,334 m3 of riprap already priced under the contract for Dragon Mouth No.3 and No.4 sand-sill geotextile mattress ballast. This was loose riprap for the dragon mouths generally, not riprap for the Dragon Mouth No.3 stone dyke. The 18,334 m3 contract quantity is separate and does not overlap with riprap for the revised stone dyke scheme at Dragon Mouth No.3.

(C) 53,000 m3 earthwork for terrain discrepancy between site and drawings, and temporary revision of seawall sandbag specification (200 g/m2 upgraded to 300 g/m2)

1. The first-instance judgment held that the 53,000 m3 earthwork for terrain discrepancy was outside the original design scope; refusal to audit the cost for temporary sandbag specification upgrade (200 g/m2 to 300 g/m2) was manifestly improper; earthwork

losses from seawater scouring during the September 2016 suspension were not double-counted against contract earthwork quantities.

Counsel's submissions: (1) Before commencement, Company Z re-surveyed the terrain and discovered a large, deep silt pit left by prior sand dredging, inconsistent with design requirements. Company Z reported this to T Company and Company K on 3 December 2015. The Minutes of the 5th Project Meeting dated 18 January 2016 confirmed, per the design institute's remedial scheme, an additional 53,000 m3 of backfill earthwork was required. The design institute and supervisor were engaged by the Employer. Quantities confirmed by the design institute bind the Employer, and issuance of revised drawings is the Employer's responsibility.

(2) This variation site was distinct from Dragon Mouth No.3: the terrain-discrepancy pile sections are Permanent Seawall DK0+000–DK0+220 and Temporary Seawall HK0+600–HK1+000, while Dragon Mouth No.3 lies at Temporary Seawall HK2+800. The variation works took place from 3 December 2015 to 18 January 2016; Dragon Mouth No.3 construction started in December 2016.

Company K issued a notice requiring the contractor to reserve an 800-metre navigation channel in the temporary and transitional seawalls to facilitate sea-use approval. The reserved channel accelerated flow at the dragon mouths and caused severe damage to sandbags at dyke heads. Company Z upgraded the sandbag fabric from 200 g/m2 to 300 g/m2 within the first 50 metres of the transitional seawall dyke head and reported the change to Company K.

Company K incorrectly attributed the 53,000 m3 terrain-discrepancy backfill and sandbag specification variation costs to losses arising from the failed Dragon Mouth No.3 closure. Under Clause 5.1.2 of the Tender Documents, the Employer shall compensate the Contractor for losses caused by project changes attributable to the Employer.

(3) On 28 September 2016, T Administrative Committee issued a notice ordering temporary suspension. Company Z surveyed Dragon Mouth Nos.3 and 4 and the transitional seawall DK0+670–DK0+795. Before resumption on 15 October 2016, Company Z carried out a second re-survey and reported earthwork losses on temporary and transitional seawalls to Company K. T Company and Company K acknowledged the facts.

Although Company K did not endorse the report form, it had notice of the losses. The earthwork damage during suspension was not minor routine construction wastage, but heavy scouring by seawater in flood seasons caused by inability to proceed normally.

The appraisal institution included tidal-induced earth loss of 105,481.1 m3 with a value of RMB 3,289,955.51 as an alternative opinion. The first-instance court accordingly ordered Company K to bear 50% of the earth loss, i.e. RMB 1,644,978, an outcome broadly fair.

III. Conclusion and Outlook

With the growth of the marine economy, marine construction projects have flourished, giving rise to an increasing number of such disputes. The cause of action falls under Item 55 of the *Provisions of the Supreme People's Court on the Scope of Cases Accepted by Maritime Courts* (Fashi〔2016〕No.4), effective 1 March 2016: "Disputes arising from construction of works at sea and in navigable waters connected to the sea." This case shares features of ordinary construction disputes while bearing maritime characteristics. As a BT project tied to fulfilment of preferential investment promotion policies, it exhibits the following features:

First, factual findings are closely linked to vessel operations. Channel and harbour dredging are typically performed by dredgers, cutter suction dredgers and hopper barges, involving underwater works such as hydraulic filling, piling, dredging, desilting, levelling and earth backfilling. Wharf and port construction centres on vessel operations, linked to pontoons and barges.

Company Z's site plant and labour list included four 330 kW self-priming vessels (rent RMB 200,000 per vessel per month), two 380 kW positioning vessels (RMB 120,000 per vessel per month), three 640 kW sand pumping vessels (RMB 180,000 per vessel per month), six 180 kW service boats (RMB 30,000 per vessel per month), twelve 430 kW sand transport vessels (RMB 220,000 per vessel per month), two 350 kW land self-priming pumps (RMB 100,000 per unit per month), two 600 kW generators (RMB 50,000 per unit per month), two 500 kW anchor winches (RMB 150,000 per unit per month) and two 155 kW excavators (RMB 30,000 per unit per month). Total site personnel including masters, crew, technicians, managers and general workers numbered 253, of whom 48 were seafarers and 143 general workers, all paid RMB 6,000 per month.

Pursuant to the Construction Labour Wage Guidance Prices issued by Jiangsu Department of Housing and Urban-Rural Development in August 2016 (Su Jian Han Jia〔2016〕No.570): "The daily average guidance wage for construction workers in Region N is RMB 118"; and the *Water Conservancy Construction Machinery Shift Quotas (2012 Edition)* issued by Jiangsu Water Resources Department: "A 500 m3/h cutter suction dredger has a depreciation cost of RMB 290.28 per hour, requiring 14.9 mid-skilled working hours at RMB 8.03 per hour."

On that basis, idle labour and machinery shift costs were appraised at RMB 6,675,003.98.

Second, technical expert issues are highly complex. Dredging disputes turn on the authentication of specialist drawings such as pre-completion, post-completion, cross-section and hydrographic charts upon handover. Findings on over-dredging, piling defects and broken immersed tubes rely heavily on technical assessment and standards including the *Hydrographic Survey Specifications*, presenting substantial adjudicative difficulty.

The appraisal institution adopted the design cross-section to calculate the reasonable riprap requirement of 148,418 m3 for Dragon Mouth No.3 stone dyke closure. Between 1 and 17 June 2017, the Mapping Institute surveyed completed quantities for the main seawall, temporary seawall, dividing dykes, channel excavation and dragon mouths, recording total earthwork of 2,023,983 m3.

Third, claims and case types are diversified, with multiple parties, tangled legal relationships and linked parallel proceedings. New contracting models such as EPC for reclamation and coastal restoration continue to emerge.

This case involved difficult factual ascertainment, little precedent and numerous open legal questions. Efficient disposal of such disputes is far from straightforward and merits in-depth reflection by practitioners.

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