

J.A. JONES CONSTRUCTION**CONTRACT NO. V101BC0131****VABCA-5414****VA OUTPATIENT CLINIC
SAN JUAN, PUERTO RICO**

Herman M. Braude, Esq., Samuel M. Morrison, Jr., Esq. and Stacie J. Broadwater, Esq., Braude & Margulies, P.C., Washington, D.C., for the Appellant.

Stacey North Willis, Esq., Trial Attorney; Charlna J. Quarles, Esq., Deputy Assistant General Counsel; and Phillipa L. Anderson, Esq., Assistant General Counsel, Washington, D.C., for the Department of Veterans Affairs.

OPINION BY ADMINISTRATIVE JUDGE PULLARA

This appeal was taken from a Contracting Officer's final decision denying the claim of Appellant J.A. Jones Construction ("Contractor" or "Jones") for additional compensation in the amount of \$89,663 in connection with furnishing ready mixed concrete on the subject contract. That amount reflected the cost of alleged additional cement which the Contractor claims the Department of Veterans Affairs ("VA" or "Government") required to be included in concrete placed under the Contract. The VA required the Contractor to furnish 3,000 pounds per square inch (psi) and 4,000 psi concrete, containing a minimum of 470 and 550 pounds of cement per cubic yard of concrete, respectively. The Contractor claimed that the VA insisted on the minimum amounts of cement in the concrete mix without regard to the fact that the specifications allowed it to use a proportioning method that permitted the inclusion of much less cement to produce concrete meeting all requirements, including specified strengths.

The evidentiary record before the Board includes the Rule 4 File, tabs 1 through 37, tabs 500 through 508, Appellant's Exhibit A-1, and the one-volume hearing transcript (tr. 1-231).

FINDINGS OF FACT

On July 24, 1995, the VA issued an invitation for bids, Solicitation No. 9517-AE, for construction of an Outpatient Clinic Addition, Project No. 672-045, VA Medical Center, San Juan, Puerto Rico. Bids were opened on October 11, 1995. On November 9, 1995, J.A. Jones Construction was awarded Contract No. V101BC0131 (Contract) in the amount of \$26,185,000. Jones sub-contracted with Concreto Mixto for the supply of concrete. (R4, tabs 1 and 13)

Drawing No. 19-S19 requires the placement of certain types of concrete, having compressive strengths of 3,000 psi and 4,000 psi. The solicitation includes Specification Section 03300, Part 2, Products, Paragraph 2.3, Concrete Mixes. Subparagraph 2.3.A states that concrete mix designs may be proportioned in accordance with Section 5.3, "Proportioning on the Basis of Field Experience and/or Trial Mixes" of American Concrete Institute (ACI) 318 (Building Code Requirements for Reinforced Concrete). Subparagraph 2.3.C states:

C. Cement Factor: Maintain minimum cement factors in Table I regardless of compressive strength developed above minimums.

TABLE I – CEMENT AND WATER FACTORS FOR CONCRETE

Concrete Type & Strength		Non – Air – Entrained		Air – Entrained Concrete	
Concrete Type	Min. 28 Day Comp. Str. PSI	Min. Cement Factor Pounds Per Cu. Yd.	Maximum Water Cement Ratio	Min. Cement Factor Pounds Per Cu. Yd.	Maximum Water Cement Ratio
D	4000 (1,3)	550	0.55	570	0.50
C	3000 (1,3)	470	0.65	490	*
CL	3000 (1,2)	500		520	*

1. If trial mixes are used, the proposed mix design shall achieve a compressive strength 1200 psi in excess of f'c.

.....

(R4, tab 2)

On February 26, 1996, Jones submitted data to the VA for approval of its proposed concrete mixes, which mixes were based on the field experience method. (R4, tab 3) The data showed the following:

Item No.	PSI	Lbs. Cement	w/c ratio	Avg. Strength(psi)
1	3,000	376	.709	3,645
2	3,000	390	.662	3,544
3	3,000	367	.682	3,691
4	4,000	456	.603	4,474
5	4,000	447	.579	4,494
6	4,000	484	.551	4,656

(R4, tab 3)

On or about April 22, 1996, based on the advice of its structural engineer consultants, the VA rejected the submittal and returned it to Jones, stating:

They [the mixes] are not in compliance with Table I, specification 03300 page 03300-13. The cement contents are far below the requirements and, as such, will not adequately ensure insitu design strengths and may result in excessively porous concrete.

(R4, tabs 3, 4 and 5)

By transmittal date of April 27, 1996, and under protest, the Contractor resubmitted the concrete mixes for approval, indicating that these mixes met Table I. (R4, tabs 6 and 7) Here the data reflected the following:

Item No.	PSI	Lbs. Cement	w/c ratio	Avg. Strength(psi)
1	3,000	470	.585	4,518
2	3,000	470	.550	4,439
3	3,000	470	.568	4,625
4	4,000	550	.500	5,332
5	4,000	550	.485	5,473
6	4,000	550	.470	5,368

(R4, tab 7)

In letters accompanying the transmittal, the Contractor and Concreto Mixto noted that the trial mixes submitted met Table I but produced strengths 1,000 psi over those resulting from using the field experience method, which method is also allowed by the specifications. Concreto Mixto noted that mixes based on field experience had been submitted, accepted and used on a previous project at the same VA hospital and that this "has been the practice in Puerto Rico for the last 45 years that our company has been in the market." Concreto Mixto stressed that, under ACI-318, the minimum cement content, and resulting higher strength, is used only when the supplier has no past experience with the specified concrete or special conditions require extra cement, neither of which conditions existed here. Finally, the Contractor included a request for a change order in the amount of \$75,528 due to the increased cost of the mix with a higher cement content. (R4, tabs 6 and 7)

The Contractor's second concrete mix design submittal was approved by the VA on May 20, 1996; the request for a contract price increase was rejected on September 20, 1996. The Senior Resident Engineer (SRE) concluded that the "contract specifications clearly state that proportioning of concrete mixes will be based on field experience and/or trial mixtures and Table I, Paragraph 003300-2.3A, and 03300-2.3C, respectively." He went on to say that the VA's disapproval of the Contractor's initial mix designs, based upon failure of the designs to meet the requirements of Table I, was proper. (R4, tabs 7 and 8)

The Contractor replied on October 14, 1996, notifying the SRE of its intent to file a formal claim for equitable adjustment. (R4, tab 10) The claim was filed by letter dated

February 17, 1997, in the amount of \$89,663. (R4, tab 13) The Contractor asserted that "subparagraph C and Table I would apply only if the Purchaser elected to use the Trial Mix Method of proportioning the concrete mixes," but "would not apply if the Purchaser elected to use the Field Experience Method to proportion the concrete mixes." It was also asserted that the pre-bid quotes from all the ready mix concrete suppliers "were based on Mix Designs proportioned according to the Field Experience Method" and that the other two general contractors bidding the project "requested quotations based on Mix Designs proportioned according to the Field Experience Method." (R4, tab 13)

On August 6, 1997, the Contracting Officer issued his final decision denying the Contractor's claim. He stated that "Table I applies whether the concrete is proportioned by either the trial mixture method or the field experience method." Other grounds for rejecting the initial submittal were stated therein but have not been pursued further by the VA. Essentially, the claim was denied on the basis of non-compliance with Table I of the specifications. (R4, tab 15)

At the trial in this matter, the VA relied on the testimony of its Senior Resident Engineer and its structural engineer consultants, all of whom argued that Table I applies equally to both the trial mix method and the field experience method. (Tr. 150, 154, 185 and 193) None of those witnesses demonstrated any particular expertise in concrete mix design. Appellant's witnesses, one being the concrete supplier's quality control representative and one being an outside concrete consulting engineer with forty years experience, as well as being an ACI fellow and a voting member of the ASTM committee on concrete and concrete aggregates, testified that Table I applied only to the trial mix method and not to the field experience method. (Tr. 46-48, 99-101) Appellant's witnesses credibly explained, without persuasive rebuttal, that, when past experience is lacking, the trial mix method is to be used and a minimum cement content is specified, which will then produce concrete with a strength in excess of a certain safety factor. In the instant case, looking only at the 3,000 psi concrete, ACI 318 requires that, in order for the trial mix to be used, the actual concrete must exceed that 3,000 psi plus an additional 1,200 psi, or a total of 4,200 psi. The data furnished with the Contractor's second submittal above shows that the 3,000 psi concrete produced using the trial mix method will be in the 4,400 to 4,600 psi range. However, when using the field experience method, the factor of safety can be reduced because the greater amount of actual, historical data still offers sufficient assurance that all concrete placed will meet the strength requirements. The data furnished with the first, rejected submittal demonstrates that the 3,000 psi concrete produced using the mix design developed by the field experience method would be in the 3,500 to 3,600 psi range. The acceptable range is established using standard deviation calculations and analysis.

Appellant's consultant also testified that the field experience method is a better measure than the trial mix method where you're only working with a cubic foot of material in a laboratory. By comparison, the field experience method involves actual, historical data based on concrete mixed under normal batch plant conditions, placed at sites on previous projects, over a period of time, and using the same materials that will be used in the instant project. (Tr. 93-95) He opined that it would be inconsistent and illogical to apply the minimum cement content of Table I to the field experience method.

Concrete Mixto submitted a quote to Jones based upon utilizing the field experience

method for the various concrete mixes because it had more than 40 years experience in the concrete business and the necessary data to perform a standard deviation analysis in compliance with the specifications. (Tr. 46). Jones' Project Manager testified that Concreto Mixto, and other suppliers he'd asked, had all bid on the basis of the field experience method. (Tr. 131) Based on the quotes submitted to it and its own experience of bidding concrete projects, Jones submitted a bid to the VA based on the field experience method. (Tr. 133).

On November 16, 1995, Concreto Mixto notified Jones, *inter alia*, as follows:

Our mix design and prices are in accordance with the compressive strength and the maximum water cement ratio of Table I in the specifications. The only item our mix design is not in accordance with are the minimum cement factors.

(R4, tab 25)

On November 17, 1995, five weeks after bids were opened, and shortly after contract award, the Contractor's Project Manager asked Concreto Mixto to provide a quote using the minimum cement content in the event that the VA did not agree with Jones' reading of the specifications. (Tr. 134). He explained, "Having been on some other VA work, sometimes you got a very unreasonable interpretation from those associated with the job and so in order to make sure that we didn't get gouged in case there was an unreasonable interpretation, I wanted to tie down that price for Table I, which we did. It's a separate price." (Tr. 133-34)

Jones calculated quantum by multiplying the difference in unit cost of concrete utilizing the field experience method and the more expensive unit cost of concrete utilizing the trial mix method. (R4, tab 13; tr. at 135 and 142) The quantities are based on Jones' bid estimate for the base contract plus alternate number 1, which was added to the Contract after award of the base Contract. (Tr. 135).

CONCRETE STRENGTH	QUANTITY	UNIT	FIELD EXPERIENCE		TABLE 1		DIFFERENCE +\ (1)
			RATE	TOTAL	RATE	TOTAL	
3000 PSI	7107	CY	\$54.00	\$383,778	\$58.25	\$413,983	\$30,205
4000 PSI	11570	CY	\$57.50	\$665,275	\$60.85	\$704,035	\$38,760
Topping	606	CY	\$56.65	\$34,330	\$62.50	\$37,875	\$3,545
SUBTOTAL	19283	CY		\$1,083,383		\$1,155,893	\$72,510

FEES AND MARK-UP	
Overhead & Profit @ 10.0%	\$2,000
Overhead & Profit @ 7.5%	\$2,250
Overhead & Profit @ 5.0%	\$12,015
SUBTOTAL PLUS FEES & MARKUP	\$88,775
PUBLIC LIABILITY INSURANCE @ 0.50%	\$444
MUNICIPAL LICENSE TAX @ 0.50%	\$444
TOTAL	\$89,663

DISCUSSION

The Government contends that Appellant is required to abide by the clear and unambiguous language contained in Specification Section 03300 at Paragraph 2.3.C which states: "Cement Factor: Maintain minimum cement factors in Table I *regardless* of compressive strength developed above minimums." (Emphasis added) According to the Government, Table I represents the minimum requirements acceptable in the mix designs developed by either the trial mix method *or* the field experience method. The VA observes that nowhere in the specifications is there a specific statement that Table I *doesn't* apply if the field experience method is used. Thus, in the Government's view, this Contract clearly required Appellant to use Table I regardless of the concrete mix chosen.

The Government argues further that whether or not these standards are conservative and differ from industry standards, or minimum specifications established by the industry, is irrelevant. The VA is entitled to strict compliance with the specifications. Finally, the Government points out that Appellant was obviously not very certain of its own interpretation because the Contractor's project manager asked its concrete supplier for the costs of mix designs that specifically complied with Table I.

Appellant contends that Specification 2.3.C, and specifically Table I, pertain *only* to the requirements of proportioning mix designs utilizing the trial mix method. By mandating compliance with Table I when utilizing field experience, the VA is trying to combine two distinct and incompatible methods of designing concrete mixes. In Appellant's view, the effect of the VA's interpretation is that it renders the field experience method of mix design a nullity because the requirements of Table I invalidates data generated from past experience. According to Appellant, a reasonably intelligent bidder familiar with trade practice as embodied in ACI-318 would surmise that Table I of the specifications applies only to the trial mix and not to the field experience method.

Granted, in the instant case, there is nothing on the face of the specifications to indicate that Table I requirements applied to other than both the trial mix method and the field experience method. However, there is sufficient evidence of trade practice in the

record to persuade the Board that Table I simply does not apply to the field experience method. In our view, the Contractor's position is correct that it makes no sense, and would be wasteful, to be allowed to perform a field experience method analysis and then not be allowed to make use of the very data resulting therefrom. Thus, we find that Table I applied only to the trial mix method.

In *Metric Constructors, Inc. v. National Aeronautics and Space Administration*, 169 F.3d 747, 752 (Fed. Cir. 1999) , the Federal Circuit recently stated:

Trade practice and custom illuminate the context for the parties' contract negotiations and agreements. Before an interpreting court can conclusively declare a contract ambiguous or unambiguous, it must consult the context in which the parties exchanged promises. Excluding evidence of trade practice and custom because the contract terms are "unambiguous" on their face ignores the reality of the context in which the parties contracted. That context may well reveal that the terms of the contract are not, and never were, clear on their face. On the other hand, that context may well reveal that contract terms are, and have consistently been, unambiguous.

In the case before us, Appellant has established to our satisfaction that the ACI proportioning instructions for designing concrete mixes incorporated in the Contract specification do not include use of minimum cement content when the field experience method of mix design is used. Thus Appellant, through its subcontractor, an experienced concrete supplier, when confronted with the instant specification for concrete mix design, properly and reasonably concluded that Table I applied only to the one of two methods to design the concrete mix permitted by the specification, the trial mix method. In light of trade practice, an interpretation that Table I applied to the field experience mix design method is unreasonable. Such an interpretation would completely nullify the portion of the specification permitting design of a concrete mix by the ACI field experience method. Under the standard norm of contract interpretation, an interpretation that renders part of a specification meaningless is rejected as unreasonable. *Hol-Gar Mfg. Corp. v. United States*, 351 F.2d 972, 975 (Ct. Cl. 1965); *Shumate Constructors, Inc.*, VABCA No. 2772, 90-3 BCA ¶ 22,946; *Interwest Construction*, VABCA Nos. 3724, 3890, 94-1 BCA ¶ 26,361, *aff'd* 29 F.3d 611 (Fed. Cir. 1994).

Thus, Appellant reasonably concluded, in light of trade practice and custom, that the specification was capable of only one reasonable meaning: Table I of the specification setting minimum cement content for concrete mixes applies only to mixes designed by the trial mix method. Since Appellant was entitled to design the concrete mix by the field experience method, a method to which Table 1 did not apply, the VA's insistence on the minimum cement content stated in Table 1 for concrete used in the project is a change to the Contract.

With respect to the Government's assertions regarding the discussions between the Contractor and its concrete supplier concerning the possible application of Table I by the VA, we do not see this as aiding the Government's case. If the Government is suggesting some sort of duty to inquire due to a patent ambiguity, we reject such argument. As the Court stated in the quote above, "Before an interpreting court can conclusively declare a contract ambiguous or unambiguous, it must consult the context in which the parties exchanged promises." Here, in light of trade practice, there was no ambiguity.

The VA has not effectively rebutted the Contractor's calculation of quantum or offered any alternative basis therefor. The Board finds that the figure of \$89,663 represents a fair and reasonable equitable adjustment.

DECISION

Based on the foregoing, the appeal in VABCA No. 5414 is sustained. Appellant J.A. Jones Construction is entitled to judgment in the amount of \$89,663 plus interest from February 18, 1997, until payment is made, in accordance with the *Contract Disputes Act*.

Date: **May 7, 1999**

Morris Pullara, Jr.
Administrative Judge
Panel Chairman

We Concur:

James K. Robinson
Administrative Judge

Richard W. Krempasky
Administrative Judge