



**Comptroller General  
of the United States**

Washington, D.C. 20548

---

# Decision

**Matter of:** Beldon Roofing & Remodeling Company

**File:** B-277651

**Date:** November 7, 1997

---

Joseph A. Hackenbracht, Esq., Starfield & Payne, for the protester.  
Ronald J. Garber, Esq., Shapiro, Fussell, Wedge, Smotherman & Martin, for Murton Roofing of South Carolina, Inc., an intervenor.  
Col. Nicholas P. Retson, and Maj. Jonathan C. Guden, Department of the Army, for the agency.  
John Van Schaik, Esq., and Michael R. Golden, Esq., Office of the General Counsel, GAO, participated in the preparation of the decision.

---

## DIGEST

A solicitation for a requirements contract should be canceled and resolicited where the contracting agency cannot establish that the solicitation's quantity estimates are realistic and reflect the government's actual anticipated requirements.

---

## DECISION

Beldon Roofing & Remodeling Company protests the rejection of its bid as unbalanced under invitation for bids (IFB) No. DAKF11-97-B-0006, issued by the Army for roofing repair and replacement. Beldon argues that its bid is not unbalanced. Alternatively, Beldon argues that the IFB is flawed since the quantity estimates in the solicitation do not reasonably reflect the government's needs.

We agree with Beldon that the solicitation is flawed and we sustain the protest on that basis.

The Army issued this solicitation for all labor, equipment, and materials necessary to repair and replace roofing on buildings at Forts McPherson and Gillem. The IFB called for award of a requirements contract for a base year and 2 option years. Section B of the solicitation listed 149 contract line items (CLIN) for each contract period, along with an estimated quantity for each CLIN.<sup>1</sup> Bidders were to supply a

---

<sup>1</sup>The solicitation's CLINs were grouped according to the tasks associated with repairing and replacing different types of roofing systems. Thus, for example, for each contract period, the IFB contained 9 CLINs for demolition, 6 CLINs for carpentry, 13 CLINs for insulation, 9 CLINs for shingles, 6 CLINs for gutters, 8 CLINs for metal roofing, and 9 CLINs for built up roofing. There was also an additional line item for each contract period for bonds.

unit price for each CLIN, which was to be multiplied by the estimated quantity to determine an extended price for that CLIN. The overall price of each bid was to be calculated by totaling the extended prices.

The Army received bids from Beldon, Murton Roofing of South Carolina, Inc., and American Renovation and Construction at the following overall prices:

Beldon	\$6,830,466
Murton	\$7,494,806
American	\$8,611,950

Agency officials concluded that Beldon's bid was mathematically unbalanced because it contained understated prices for some CLINs and overstated prices for others. The agency also concluded that Beldon's bid was materially unbalanced, because, due to its mathematical unbalancing, there was a reasonable doubt that the bid would result in the lowest overall cost to the government. The agency therefore rejected the bid pursuant to Federal Acquisition Regulation (FAR) §§ 15.814(b) and 52.214-19(d). The contract was awarded to Murton. Work on the contract has been suspended pending resolution of the protest.

As we explain in detail below, we agree with the Army that Beldon's bid was mathematically unbalanced. However, we do not reach the issue of whether Beldon's bid was materially unbalanced. Rather, we agree with Beldon's alternative contention that the quantity estimates in the IFB do not reasonably reflect the government's needs.

In determining whether a bid is impermissibly unbalanced, the bid must first be shown to be mathematically unbalanced, which involves the assessment of whether the bid is based on understated prices for some work and overstated prices for other work. See Outer Limb, Inc., B-244227, Sept. 16, 1991, 91-2 CPD ¶ 248 at 2. Next, to be rejected as unbalanced, the bid must be materially unbalanced, that is, there must be a reasonable doubt that award to the bidder submitting a mathematically unbalanced bid will result in the lowest ultimate cost to the government. USA Pro Co., Inc., B-220976, Feb. 13, 1986, 86-1 CPD ¶ 159 at 3.

Turning first to the issue of mathematical unbalancing, as the agency explains, Beldon's bid included unit prices that were substantially below the government estimate on a significant number of CLINs. For example, Beldon bid unit prices that were 25 percent of the unit price in the government estimate for wood board decking, 16 percent of the unit price in the government estimate for 1" x 6" wood fascia, 30 percent of the unit price in the government estimate for hip and ridge slate shingles, 30 percent of the unit price in the government estimate for 16 oz. copper flashing, and 12 percent of the unit price in the government estimate for various types of copper elbows.

Beldon's bid also included unit prices substantially above the unit prices in the government's estimate on a significant number of other CLINs. For example, Beldon's unit price for roof flashing was 5 times the unit price in the government's estimate for that item, its unit price for gutters/downspouts was 10 times the unit price in the government's estimate, its unit price for ventilators, warehouse-76' x 2' was 3 times the unit price in the government's estimate, its unit price for roll roofing-1 ply asphalt smooth surface was 3 times the unit price in the government's estimate, and its unit price for vent warehouse-aluminum 76' x 2' was 6 times the unit price in the government's estimate.

The Army explains that it derived the unit prices in the government's estimate from the R.S. Means Building Construction Cost Data, a trade publication which provides cost information on various construction projects. Beldon has not argued that the unit prices used in the government estimate were in error or that the publication relied upon by the agency is not a reliable source of information on construction costs. Under the circumstances, we conclude that the government estimate includes reasonable, good faith estimates of the actual unit cost to perform the work under each CLIN. In light of the sharp disparity between Beldon's prices and the government's estimated prices, we agree with the Army that Beldon's bid included numerous understated unit prices and numerous overstated unit prices and, as a result, that the bid was mathematically unbalanced.

As explained above, the Army considered Beldon's bid materially unbalanced also. The determination that Beldon's bid was materially unbalanced was premised upon the Army's belief that, given the inherent uncertainty of roofing estimates, its actual needs may deviate significantly from the estimated quantities in the IFB. The Army contends that, while the quantity estimates in the IFB are the agency's best estimates, the actual quantities ordered will depend on a number of unpredictable variables, including funding, potential storm damage, and the impossibility of determining the exact roofing needs of a given building until the exterior of the roof is removed. The Army further contends that, due to the unpredictability of actual roofing needs, and the mathematical unbalance of Beldon's bid, the fact that Beldon's bid was low based upon the estimated quantities in the IFB did not mean that an award to Beldon would actually result in the lowest cost performance.

In order to determine whether Beldon's bid (rather than another bid) would result in the lowest cost of performance, the agency applied the competing bids' prices to recent past work and to future planned work. In reviewing recent work the agency examined the roofing work performed under two requirements contracts over the 3 previous years for Forts McPherson and Gillem and concluded that, had that work been done under the prices in Beldon's bid, the cost would have exceeded the government's estimate by \$1,607,781. The agency also calculated that the cost of that work under Murton's bid would have exceeded the government's estimate by only \$99,857. Concerning likely future work, the agency determined that performance of 11 known requirements under the prices in Beldon's bid would

exceed the government's estimate for that work by \$719,439, and performance of those requirements under Murton's prices would exceed the government's estimate by only \$130,674.<sup>2</sup> On the basis of this analysis, the agency concluded that there was a reasonable doubt that Beldon's bid would result in the lowest overall cost to the government and that, consequently, the bid was materially unbalanced.

Beldon argues that the agency's own analysis, although used to explain how Beldon's bid was determined to be materially unbalanced, actually demonstrates that the estimated quantities in the IFB were not prepared based on the best available information. We agree.

The Army is correct in pointing out that in previous decisions concerning unbalanced bidding on solicitations for roofing work, we have recognized the inherent uncertainty of roofing estimates. See, e.g., Alice Roofing & Sheet Metal Works, Inc., B-275477, Feb. 24, 1997, 97-1 CPD ¶ 86 at 5, and Beldon Roofing & Remodeling Co., B-253199, B-253199.2, Aug. 18, 1993, 93-2 CPD ¶ 103 at 7. The Army argues that due to that uncertainty, there should be no requirement to apply mathematically unbalanced bid prices to any type of actual requirements--either historical or prospective--in order to show that a mathematically unbalanced bid is materially unbalanced. In other words, according to the Army, "for material unbalancing analysis in roofing cases . . . [there] is almost a 'per se' finding of material unbalance when a bid is found to be mathematically unbalanced."

While we have recognized the problems inherent in creating reliable quantity estimates for solicitations for roofing work, our prior decisions to not establish that a bid for a requirements contract for roofing work--or any other kind of work--may be found unbalanced simply based on a showing of mathematical unbalancing. On the contrary, to be rejected, a mathematically unbalanced bid must be materially unbalanced, that is, there must be a reasonable doubt that award to the bidder submitting a mathematically unbalanced bid will result in the lowest ultimate cost to the government. In fact, we specifically recognized this principle in the two decisions cited by the Army. See Alice Roofing, supra, at 3, and Beldon Roofing, supra, at 3.

For unbalancing in requirements contracts such as this one, the accuracy of the solicitation estimates--and in particular the accuracy of the relative quantity mix among CLINs--is critical, since the unbalanced bid will become less advantageous than it appears only if the government ultimately requires a greater quantity of the overpriced items and/or a lesser quantity of the underpriced ones. Alice Roofing, supra, at 4.

---

<sup>2</sup>The Army reports that these 11 unfunded requirements were considered by the agency's project engineer to be the most likely projects to be funded in the coming months.

While there is no requirement that IFB estimates be absolutely correct, FAR § 16.503(a)(1) requires that a solicitation for a requirements contract state realistic estimated total quantities and that these estimates be based on the most current information available. Duramed Homecare, 71 Comp. Gen. 193, 198 (1992) 92-1 CPD ¶ 126 at 6. Although we recognize, as we stated in Alice Roofing, *supra*, at 5, that the actual quantities ordered under a roofing contract, in particular, are dependent upon unpredictable and unique variables, the solicitation must nonetheless contain a reasonably accurate statement of the agency's anticipated requirements. Here, our review of the record in this case leads us to agree with Beldon that the IFB quantity estimates do not meet that standard.

The reason that the agency concluded that Beldon's bid was materially unbalanced was that, under the mix of CLINs in both the agency's actual past and likely future requirements, Beldon's bid would not be low--yet under the mix of CLINs set out in the IFB, Beldon's bid was low. We agree with Beldon that, if the quantity estimates in the IFB reflected neither past nor future requirements, there is doubt as to their reasonableness.

Our review reveals substantial disparities between the historical information to which Beldon's bid was compared and the quantity estimates in the IFB. For instance, of the 149 CLINs in the IFB, most (86 of the 149) were not used at all under the two earlier contracts to which Beldon's bid was compared in the agency's material unbalancing analysis.

Concerning anticipated future requirements, as Beldon notes, the quantities of 17 of the CLINs in the 11 known requirements were at least twice the estimated annual quantities of those items in the IFB. In addition, as Beldon notes, 106 of the items in the IFB (out of a total of 149) are not required at all in the 11 known requirements. Moreover, although the agency notes that the cost of those known requirements was \$719,431 higher based on Beldon's prices than based on the prices in the government's estimate, Beldon points out that most of that difference is accounted for by only two CLINs. The quantities of those two CLINs in the agency's known requirements are 89 and 77 times the estimated annual quantities for those CLINs in the IFB.

Because of the disparity between the IFB quantity estimates and the agency's actual past and anticipated future needs, our Office sought more detailed information from the agency as to how the IFB quantity estimates were derived. In response to that request, the Army explained that when the government estimate was developed in early 1997 there were 32 roofs known to need work that could be ordered under this contract, and referenced an attachment, Enclosure 4. That enclosure, which was described by the Army as "Field Estimates used to derive original quantities," included, for each of the 32 buildings, a breakdown of required line items, a description of each line item, the required quantity of each line item, unit prices,

extended prices (for each line item, the required quantity multiplied by unit price), and total prices for each of the 32 buildings.

The contracting officer explained that the quantities for each of the various line items were totaled and those totals were transferred to another working paper. That working paper, "Enclosure 1," included a list of all of the line items covered by the IFB and two columns of handwritten quantities for the line items. The cover page to Enclosure 1 stated, "Numbers on the left are quantities based upon the total of all field estimates in Enclosure 4."

As the contracting officer explained, the estimated cost of the 32 roofing projects in Enclosure 4 was approximately \$25 million. Divided into 3 years--the base and 2 option years covered by the contract--each year's estimated requirement was approximately \$8.2 million. The Army reports that agency officials knew from experience that the agency would not receive funding at that level. As a result, the agency reduced the estimated quantities to bring the contract in line with historical funding levels; the overall government estimate for the 3 years was reduced to approximately \$7.3 million and each contract year to about \$2.5 million. The contracting officer explains that these reductions in the estimated quantities were done both on an "across the board" basis and based on the judgment of an experienced estimator of the type of work that was likely to be funded during the contract period. The agency stated that the result of this process was the estimated quantities in the IFB.

In response to this explanation, Beldon noted that there were substantial discrepancies between the quantities in Enclosure 4 and the total quantities listed in the left hand column in Enclosure 1. For example, Beldon noted that Enclosure 1 listed 33,000 square feet as the total amount of perlite 1" insulation, while in Enclosure 4 the field estimates included a total of 2,116,360 square feet of Perlite 1" insulation. Beldon's calculations show that there were discrepancies between the Enclosure 4 field estimates and the Enclosure 1 totals for all of the listed line items.

Our review of the record confirmed that there were substantial discrepancies between the quantities in Enclosure 4 and the total quantities listed in the left hand column in Enclosure 1.<sup>3</sup> When asked to explain these discrepancies, the Army conceded that, although it previously had explained that the line items in the field estimates in Enclosure 4 were totaled to obtain the total quantities in Enclosure 1, that explanation was erroneous. The Army now explains:

The file submitted as [Enclosure] 4 represents the working file as it existed on 22 September 1997. Field estimates have been added to

---

<sup>3</sup>As noted above, the Army represented that the left hand column was a total of the quantities of each line item from all 32 of the projects listed in Enclosure 4.

and deleted from the working file since the field estimates were used to develop the government estimate in early 1997. Field estimates are not generally dated. It is, therefore, impossible to tell exactly which field estimates were used to develop the government estimate.

The agency's position is now that the "Army can't identify the documents that it used to develop the numbers in the left-hand column of [Enclosure] 1." The agency thus admits that the field estimates used to create the estimated quantities in the IFB cannot be identified. Moreover, the agency's material unbalancing analysis demonstrated that the IFB quantity estimates were inconsistent with both the agency's historical requirements and its anticipated future needs. Given the discrepancies between the historical information and the anticipated orders, on the one hand, and the estimates in the IFB, on the other hand, and given the Army's inability to document the development of those estimates, we conclude that the IFB's quantity estimates were not realistic estimates and thus did not meet the standard of FAR § 16.503(a)(1).

The Army argues that, notwithstanding the problems with the quantity estimates in the IFB, there is no compelling reason to cancel and resolicit this requirement because Beldon was not prejudiced, since it bid on the same basis as the other bidders. According to the Army, due to the inherent uncertainty in roofing estimates, nothing would be accomplished by canceling and resoliciting. In this regard, the Army notes that FAR § 14.404 requires a "compelling reason" to cancel an invitation for bids after bids have been opened and prices exposed, and argues that there is no compelling reason to cancel the solicitation.

Without reasonably reliable quantity estimates in a solicitation for a requirements contract, firms have no reasonable basis to prepare their bids and the government cannot determine which bid will actually result in the low overall cost of performance. See Duramed Homecare, 71 Comp. Gen. 193, 198-99 (1992), 92-1 CPD ¶ 126 at 7; Edward B. Friel, Inc., 55 Comp. Gen. 231, 238-240 (1975), 75-2 CPD ¶ 164 at 9-10. It is for this reason that our decisions in this area, including decisions involving roofing work, state that the accuracy of the solicitation's quantity estimates is critical. See, e.g., Alice Roofing, supra, at 4. Because the quantity estimates in the IFB at issue here are questionable to the point that they do not inform bidders of the government's actual anticipated needs and it is not possible to determine which bid represents the lowest cost of performance, we conclude that cancellation is the only appropriate course of action here.

We recommend that the Army cancel the IFB, review its estimates based upon the most current information available, and resolicit its requirements under a solicitation that sets forth realistic estimated quantities. In addition, we recommend that the protester be reimbursed its costs of filing and pursuing the protest, including reasonable attorneys' fees. 4 C.F.R. § 21.8(d)(1) (1997). The protester

should submit its certified claim for costs to the contracting agency within 60 days of receiving this decision. 4 C.F.R. § 21.8(f)(1).

The protest is sustained.

Comptroller General  
of the United States