Board of Contract Appeals
General Services Administration
Washington, D.C. 20405

GRANTED IN PART: February 21, 2001

GSBCA 14875

TRATAROS CONSTRUCTION, INC.,

Appellant,

v.

GENERAL SERVICES ADMINISTRATION,

Respondent.

Robert J. Sciaroni of Bell, Boyd & Lloyd, Washington, DC, counsel for Appellant.

Jeremy Becker-Welts, Office of General Counsel, General Services Administration, Washington, DC, counsel for Respondent.

Before Board Judges **NEILL, WILLIAMS,** and **DeGRAFF.**

DeGRAFF, Board Judge.

Trataros Construction, Inc. and the General Services Administration (GSA) entered into a contract that required Trataros to perform construction work. In this appeal, Trataros claims that GSA should increase the contract price to compensate Trataros for costs associated with installing fiberglass cornices. A hearing was held on May 15, 2000. Because GSA made a constructive change to the terms of the contract, but has not yet paid for the extra work required by the change, the appeal is granted in part.

Findings of Fact

On September 26, 1996, the parties entered into contract GS-02P-DTC-0033(N) for renovations and alterations to the United States Post Office and Courthouse Building in Old San Juan, Puerto Rico. The building was constructed in two phases, referred to as the 1914 building and the 1940 building. Exhibit 1.

Section 06600 of the contract specifications concerns architectural fiberglass. Paragraph 1.1 of the section said that the extent of the work was shown on the drawings, keynotes, and schedules. Paragraph 1.2 of the section described the work as fabricating and installing fiberglass panels to replicate fully certain of the original wooden components of the building. Paragraph 1.2 required Trataros to:

> Provide all measurements, shop drawings, molds, models and artistic design and sculpting as necessary to duplicate the original architectural detail and to design and fabricate architectural fiberglass panels to replicate the details, color and surface appearance of the wooden elements now removed.

Exhibit 1 at 0764.

Paragraph 1.3 of section 06600 explained that GSA wanted this work performed only by an experienced architectural fiberglass fabrication firm with an established reputation for performing work of the highest quality. The contract listed several such firms as acceptable sources, including Fibertech Corporation. Exhibit 1 at 0764-65.

Paragraph 1.4 of section 06600 explained that Trataros was required to provide shop drawings. Exhibit 1 at 0765. The contract explained that shop drawings show in detail the proposed fabrication and assembly of structural elements and the installation, including attachment details, of materials. Exhibit 1 at 0155. Trataros's shop drawings were to include layout drawings, sections and elevations, and engineered drawings. The layout drawings were to show how pieces and parts would be laid out, and were to include part numbering. The sections and elevations were to illustrate fully the method for installing and attaching the fiberglass pieces, and to show how attachment hardware would be recessed, how structural supports would be embedded, and how the attachments would be covered after they were installed. The engineered drawings were to be prepared, sealed, and signed by a professional engineer, certifying that building code requirements and other governing engineering performance criteria were satisfied for "all parts, hardware, fittings and for the structural framework supporting the architectural fiberglass." Exhibit 1 at 0765-66.

Paragraph 2.1 of section 06600 contained the specifications for the composition of the architectural fiberglass, including blocking and structural supports. The fiberglass was to be coated with a .03-inch thick coating of gelcoat. Trataros could use either pressure treated wood blocking that conformed to section 06100 of the specifications or polymer form blocking stiffening. All wood materials had to be completely embedded with resin on all exposed surfaces. All metal supports or embedded reinforcing, inserts, anchors and the like were to be stainless steel type 302/304, if metal support was provided. Hardware and fasteners were to be made of the same metal as the item they were used to attach or to fasten. This paragraph also said, "Provide all blocking supports and fasteners necessary to properly

support and attach fiberglass panels to new superstructure." Exhibit 1 at 0767-68. The fiberglass panels were to be one-quarter of one inch thick except at the edges, where they were to be three-eighths of one inch thick. Exhibit 1 at 0768.

Paragraph 3.2 of section 06600 explained that Trataros was to secure the fiberglass to the support structure following approved shop drawings. The fiberglass was supposed to be attached from the rear or at concealed edges and flanges to the greatest extent possible. Trataros was not to use fasteners placed through visible surfaces or the face of the fiberglass panels, unless shown on the shop drawings. All face fasteners were to be countersunk at least one-sixteenth of one inch and then filled with gelcoat to match the surrounding work. As fabricated, the warp and bow of the panels had to be less than one-sixteenth of one inch per foot, with a maximum deviation of three-sixteenths of one inch in a span of ten feet. When the panels were installed, they had to be within one-eighth of one inch of plumb and level in a span of ten feet, and within one-sixteenth of one inch of flush at the joints. Exhibit 1 at 0769.

The contract, as awarded to Trataros, did not include a requirement to restore and repair the 1914 building's roof cornices. Exhibit 1 at 0050-59, 0069, 0076-80. The contract did, however, contain several drawings that showed how the roof overhang of the 1914 building would be extended, and these drawings showed that fiberglass cornices would be installed along the edge of the roof. Some of the drawings are dimensioned down to one-eighth of one inch and all of them are drawn to scale. The drawings show that the cornices would be supported by a structure that would attach to the existing building. The structure contained 3 x 4 x 1/4-inch stainless steel angles that would be embedded in the building's walls and protrude out from those walls at set intervals. The drawings showed how these cantilever angles would be secured to the building, using other stainless steel angles of specified dimensions and stainless steel anchor bolts of a specified diameter. Attached to these cantilever angles was another 3 x 4 x 1/4-inch stainless steel angle, running parallel to the building. The drawings show that a 3 x 4 x 1/4-inch stainless steel angle would be installed running along the wall of the building, underneath the roof extension. The drawings show the bolts that hold all of the angles and clips together. The drawings show the locations of slip joint connections. The drawings also show the way that the supporting structure attaches to the building and depict screws that would be used to attach the fiberglass panels. The screws were located under the gutters and under the cantilever angles. The drawings show the use of pressure treated plywood in several places. Exhibit 1, Drawings 5-23 through 5-27.

On November 1, 1996, GSA sent Trataros request for proposal number 1 (RFP 1), asking Trataros to propose a price for furnishing all of the labor and material needed to restore and repair the 1914 building's cornices. This request was the result of an agreement that GSA reached with the Advisory Council on Historic Preservation, which is the federal agency that oversees the Government's planning and protective process for historic resources, and the Institute for Puerto Rican Culture. Trataros says that it relied upon the contract drawings when it prepared its price proposal, and the estimate sheets that back up its price proposal show that it planned to supply a quantity of 3 x 4 x 1/4-inch angles, miscellaneous bolts and other items shown on the contract drawings. The estimate sheets that back up Trataros's price proposal do not show that Trataros obtained prices from subcontractors for

performing the cornice work in order to develop its price proposal. Exhibits 2 at 0717-42; 8.

GSA and Trataros engaged in negotiations concerning the price of the cornice work. On April 3, 1997, GSA and Trataros concluded their negotiations and agreed upon a price. Trataros proposed the agreed-upon price as its final negotiated price and signed the form that became modification 3 to the contract when later signed by the contracting officer. Exhibit 2 at 0717-42; Transcript at 58-60. On April 25, 1997, Trataros told GSA that the thickness of the fiberglass and the gelcoat specified in section 06600 were thicker than the industry standard. Although the specified thicknesses could be provided, they would not enhance the performance of the fiberglass and could cause problems with shrinkage and distortion. Trataros's opinion about the thicknesses was based upon comments that Fibertech provided to Trataros on March 14, 1997, regarding the specifications. GSA's project architect surveyed several fiberglass manufacturers who said that the gelcoat thickness should be reduced. Half of the manufacturers said that it was possible to provide the fiberglass in the thickness specified in the contract and half said that it was not possible to provide fiberglass that thick and control the quality of the product. GSA approved the use of thinner gelcoat and thinner fiberglass before it signed modification 3. Exhibit 21 at 3-7, 24.

GSA signed modification 3 to the contract on June 19, 1997. Exhibit 2 at 0717. Trataros arranged for Fibertech to produce the fiberglass panels for the cornices and for Diamond Metal to produce the stainless steel structure to which the panels would be attached, and provided these firms with the contract drawings. Transcript at 8-9; Exhibit 22 at 14-16. The record does not establish when Trataros entered into subcontracts with these firms, when they provided bids to Trataros, or when Trataros provided the contract drawings to them.

In June 1997, Diamond Metal realized that there was a problem with the structural steel framework for the fiberglass cornices shown in the contract drawings. Diamond Metal had a structural engineer calculate the forces that would be applied to the cantilever members and found that those members would not support the weight of the system that was being attached to the building. The structural integrity of the cantilevered frame depended upon a single clip with a single bolt, which concerned Diamond Metal's engineer. The contract drawings showed the use of a friction slip connection, and there was relatively little engineering data available with regard to stainless steel friction slip connections. The results of tests performed by a structural testing laboratory showed that the clip and several other parts of the structure required substantial modification in order to carry the required loads and to ensure a safe design. To this end, Diamond Metal made considerable changes to the main support clip shown in the contract drawings and doubled the number of bolts used in one area. It also increased the size of several structural members shown in the contract drawings. Exhibits 22 at 42-44; 14 at 9-11. Fibertech also concluded that the support structure shown in the drawings would not support the weight of the fiberglass panels. Exhibit 22 at 16.

Fibertech prepared a set of shop drawings dated June 2, 1997, and sent these drawings to Trataros on June 19. The shop drawings are stamped by a professional engineer. The accompanying memorandum said that the shop drawings proposed changes

to the way "the fiberglass cornice is drawn" in order to "meet the needs of the structural engineering of the cornice and to optimize the installation and manufacturing process." Exhibit 20. All pressure treated wood bonded into the fiberglass was removed because pressure treated wood does not bond well to fiberglass. Fibertech's shop drawings showed the use of fiberglass stiffeners to replace wood where its engineering calculations showed that was necessary. The drawings made changes in the placement and increased the quantity of attachments for the cornice. Fibertech's structural engineer recommended using horizontal attachments instead of the vertical attachments shown on the contract drawings. Other attachments were "determined by structural engineering considerations." Regarding the lower bracket attachment, Fibertech's shop drawings showed a horizontal attachment at the top, screwing the bracket to the cornice and on through to the building. At the bottom of the lower bracket, Fibertech showed an attachment that met engineering requirements and that Fibertech said was much easier to install accurately. Exhibit 20.

Fibertech's June 2, 1997 shop drawings showed that wood blocking would be installed in several places, including on a piece of the stainless steel supporting structure referred to as Diamond Metal structural member 15, on the wall of the building, and on the bracket, and that the fiberglass panels would be attached to the wood blocking. Exhibits 14 at 12; 20. The contract drawings showed that the fiberglass would be attached to the stainless steel support structure and did not show the wood blocking. Exhibit 1. According to Fibertech, the wood blocking was necessary because the fiberglass it used for the panels was not as thick as the fiberglass required by the specifications. Transcript at 110.

For the parts of the support structure with longer cantilever angles, Fibertech's June 2, 1997 shop drawings showed that the screws under those angles should be spaced closer together than shown on the contract drawings. Fibertech's shop drawings said that the attachments should be no more than twenty-four inches apart. Exhibit 20. Trataros's project superintendent recalled that Fibertech concluded that the fiberglass would sag or get destroyed in a hurricane unless it shortened the spacing between the anchors. Exhibit 22 at 23-24. This meant that added angles had to be installed so that extra screws could be installed to hold the fiberglass. The added angles would be installed by making holes in the cantilever angles that protruded from the building, installing clip angles, and then bolting the new angles to the clips. Exhibit 22 at 24-26.

The professional engineer who stamped Fibertech's June 2, 1997 shop drawings provided Fibertech with a comparison of GSA's proposed structural system and Fibertech's proposed structural system. He calculated that the GSA system would result in a much higher stress level and higher connector loads. He said that the GSA system would "leave[] a shaky situation at best," and that the Fibertech system would provide "a more stable structure." He said, "Because of the relative stress and connector loads in the GSA system I could not approve or sign the GSA system drawings. I would not expect the GSA system to give an acceptable service life." Exhibit 14 at 7-8.

GSA's project architect received Fibertech's shop drawings on July 1, 1997, and rejected them one day later. A July 2 memorandum from GSA's project architect says that Fibertech's drawings made many unacceptable revisions that seriously changed the detailing and quality of the cornice assembly. The memorandum listed some of the more obvious

changes. The differences between the attachment methods shown on the contract drawings and those shown on Fibertech's shop drawings were not the only reasons that GSA's project architect rejected Fibertech's shop drawings. Exhibit 20. Fibertech submitted revised shop drawings that were also different from the contract drawings in a number of respects. Exhibit 22 at 26-32. According to Fibertech, GSA's architect rejected its first and second set of shop drawings without making a full review. But, Fibertech says, its drawings showed an attachment system that its engineer would accept and stamp. Exhibit 14 at 24-25.

On September 10, 1997, Trataros informed GSA that the contract drawings were defective, that Trataros was going to use additional attachment points when it installed the cornices, and that Trataros wanted an equitable adjustment to the contract price to compensate for the added attachment points. On September 17, GSA and Trataros met to discuss this issue. GSA asked Trataros for a copy of its calculations so that GSA's project architect could review them. Exhibit 6; Transcript at 22-27. On September 23, GSA's contracting officer's representative sent a letter to Trataros. In that letter, GSA denied Trataros's request for an equitable adjustment. GSA believed, at that time, that Trataros intended to modify the design of the fiberglass cornice to make construction easier, and not to correct any errors. GSA stated that it was reviewing drawings, specifications, and Trataros's proposal in order to determine whether there was a design error. If there was one, GSA said, it would adjust the contract price. Exhibit 6.

After its second set of shop drawings was rejected, Fibertech representatives traveled to Boston, Massachusetts, in order to meet with GSA's project architect and discuss the attachment method and all of the outstanding fiberglass issues. Although the record is not entirely clear, it appears that this meeting occurred in late September or early October 1997. According to Fibertech, until this meeting, the people reviewing the drawings on GSA's behalf "would not accept that the contract documents showed a fiberglass system that would not work." At this meeting, Fibertech's attachment system was accepted by GSA's project architect. Fibertech subsequently prepared a third set of shop drawings. Exhibit 14 at 24-25. Fibertech's shop drawings were approved some time after January 1998. Exhibit 14.

In February 1998, Trataros again told GSA that it wanted an equitable adjustment to the contract price. The GSA contracting officer's representative responded on March 17, 1998, saying that no adjustment would be forthcoming because the contract required Trataros's engineered shop drawings to make whatever design changes were needed to the support structure and the attachment points. Exhibits 7, 21 at 8-10. Trataros responded on March 19, saying that it would submit a claim for its costs. Exhibit 8. The GSA contracting officer is shown as a recipient of the two March 1998 letters. Exhibits 7, 8. Trataros continued to pursue this issue with GSA. On June 2, 1998, Trataros told the contracting officer that it did not agree with her letter of May 11 (a copy of which is not in our record) concerning an equitable adjustment and that Trataros would submit a claim for its costs. Exhibit 14 at 27.

Trataros performed the cornice work in the last half of 1998. Exhibits 12, 17, 22 at 60. Trataros's project manager explained that in his opinion, the design Trataros used, which required the addition of attachment points and bolts, did not affect the difficulty of Trataros's work, although it did increase the time it took to complete the work. Transcript at 87-88.

In the view of GSA's project manager, O'Brien Kreitzberg, Trataros's design was much easier to install, due in large part to the fact that Trataros attached the fiberglass to wood blocking instead of attaching the fiberglass directly to the stainless steel structure. Transcript at 93-94.

On August 26, 1998, GSA sent Trataros RFP 39, asking Trataros to propose a price for two items related to the cornice work and not at issue in this appeal. On September 1, in addition to proposing a price for those two items, Trataros also proposed that GSA pay the following amounts, plus a 10% markup and .5% for bond costs, for increased costs associated with design changes that resulted in the need for added steel, bolts, connections, and engineering:

Changes to stainless steel furnished by Diamond Metal	$16,850
Installation of added steel by Bairoa	9,000
Additional engineering by Fibertech	9,900
Furnish and install 2426 added attachment bolts at $25/each	60,650
Increase attachment points for cornices by a net of 2628 points. Layout, blocking, and fasteners at $20/each	52,560

Exhibits 14 at 28-30; 15.[1]

Regarding the first item in this list, Diamond Metal sent Trataros a detailed explanation of the changes that it had to make to the work shown in the contract drawings and the costs associated with those changes.[2] Diamond Metal's costs included additional materials and a small amount for the cost it incurred for structural testing. Exhibit 14 at 9-19. Trataros's project manager considered this to be a "bill" from Diamond Metal. Transcript at 37. He was not completely sure whether Trataros paid Diamond Metal. If not, he said that Trataros owes this amount. Transcript at 42, 76-77.

Trataros's project manager testified that the $9000 for the second item listed above was for Bairoa's labor to install additional supports and additional attachment points. Transcript at 42. Trataros introduced no evidence to establish that it either paid or owes Bairoa this amount.

As for the third item in the above list, Fibertech says that it spent $4100 for engineering reports to show that the fiberglass design in the contract drawings was deficient, and $5800 for preparing two "extra" submittals. Exhibit 14 at 22. Trataros's project manager believed that Trataros paid Fibertech. Transcript at 76-77.

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[1] Trataros's request also included $14,000 for Trataros employees' time. Exhibit 14 at 30. In its post-hearing brief, Trataros explained that this amount was included in its overhead costs and should not have been requested as a separate cost item. Appellant's Post-Hearing Brief at 3.

[2] Diamond Metal's costs were stated in Canadian dollars. The equivalent in United States dollars is $16,850. Transcript at 41.

Trataros did not keep records to support its requests for the fourth and fifth items listed above ($60,650 and $52,560). There are no receipts for an additional 2426 bolts or 2628 attachment point screws. Trataros's project manager testified that the request for $25 per bolt and $20 per attachment point was developed by his predecessor, who said that he used the Means Estimating Guide to develop the two figures, and that these numbers included the cost of one hour of labor per attachment point and bolt, the cost of a bolt, and the cost of equipment and scaffolding. Trataros's project manager made his own calculations and arrived at slightly lower dollar figures, but he did not say how much lower his figures were. He included $4.00 or $4.50 for the cost of a bolt, based upon catalog prices, and $13.61 for one hour of labor.[3] Trataros's project manager explained that Trataros rented scaffolding to use when it performed the cornice work and that it cost approximately $14,000 for two extra months of scaffold time.[4] The two extra months is an estimate, based upon the extra labor hours that Trataros estimates it spent installing additional bolts and attachment points. Trataros's project manager testified that the size of Trataros's work crews was effective to perform the work. Transcript at 44-45, 48-49, 55-56, 79-80.

According to Fibertech, GSA's contract drawings required the use of 1004 attachment points at the gutter and 216 attachment points at the lower bracket, for a total of 1220 attachment points. Fibertech's design required the use of 1004 attachment points at the gutter, 1004 attachment points at Diamond Metal's structural member 15, 1004 attachment points at the wall of the building, and 836 attachment points at the brackets, for a total of 3848 attachment points. Fibertech's drawings also required the use of an additional 2426 bolts to attach wood blocking to Diamond Metal's structural member 15 and to the masonry wall, and to attach the bracket support wood blocking. Exhibit 14 at 3-6, 21.

Trataros's project superintendent and its first project manager calculated that Trataros used an additional 2426 bolts. They did this by taking a typical section of the cornice, counting the additional anchors, and multiplying that by the number of panels that were affected by the additional attachments. Regarding the added attachment points, Trataros's project superintendent arrived at this number by using material from Fibertech concerning the screws it said it needed in order to make the fiberglass stay in place and by looking at a typical panel and multiplying the number of its attachment points by the total number of panels. Exhibit 22 at 50-51. Trataros's project superintendent felt that $25 per bolt was "expensive," but that $20 per attachment point was what the work was worth. Exhibit 22 at 63-65.

In order to review Trataros's proposed costs for bolts, O'Brien Kreitzberg used the Means Estimating Guide and the 1997 edition of the Facilities Construction Cost Data Book,

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[3] By comparison, a cost estimate prepared by O'Brien Kreitzberg shows hourly wage rates for Bairoa laborers ($10.22), ironworkers ($11.56), foremen ($22.46), and engineers ($34.04). Exhibit 21. In response to RFP 1, Trataros proposed a price of $150 per day for ironworkers and $140 per day for laborers. Exhibit 2 at 0736.

[4] By comparison, in its response to RFP 1, Trataros proposed a price of $44,250 (not including delivery, pickup, erection, and demolition charges) for renting scaffolding for six months, plus $140 per day for maintenance. Exhibit 2 at 0734.

and determined that a cost of $5 for labor and materials per bolt was "more than reasonable." In O'Brien Kreitzberg's view, Trataros's estimate that it would take one hour to install one bolt was overstated by a factor of ten because the holes that the bolts fitted through in the angles were pre-punched, so no drilling was required. The bolts were simply inserted through the holes, tightened, and torqued. Regarding the proposed costs of additional attachment points, O'Brien Kreitzberg believed that a request for one hour of labor to install one screw and later patch over that screw was also overstated by a factor of ten. Regarding the scaffolding costs, O'Brien Kreitzberg believed that Trataros could have shortened the time that it needed the scaffolding if it had added workers. According to O'Brien Kreitzberg, Trataros's production rate did not support an added two months of scaffolding time. Transcript at 108-11, 140.

As described by Trataros's project superintendent, the process of installing the bolts and attachment points was somewhat more time-consuming than was described by O'Brien Kreitzberg. When the bolts were installed, the workers had to make sure that the new angles were level with the existing angles and certain bolt holes had to be patched with resin. The wooden components had to be aligned carefully when they were bolted to the stainless steel frame so that the fiberglass cornice panels would be aligned properly. At the attachment points, holes had to be drilled in the fiberglass panels and after the attachment point screws were installed, the holes had to be patched with resin. The patching process required mixing a batch of resin, patching the hole, letting the resin harden, and sanding the patch. Many times, the patching and sanding had to be done more than once, even after the cornice had been painted. Exhibit 22 at 54-58, 65.

O'Brien Kreitzberg responded to Trataros's proposal on September 16, 1998, saying that Trataros was owed nothing for the final three items listed above because they were required by specification section 06600. It also said that the first two items had merit. O'Brien Kreitzberg, however, thought that the first two items were for costs associated with work performed by Trataros in connection with request for information 480 (RFI 480). Exhibit 18; Transcript at 106-07. Although RFI 480 was related to the cornice work, the cost of RFI 480 work was not part of the cost associated with the design issues for which Trataros requested compensation in its response to RFP 39. Exhibit 21; Transcript at 80-84.

Trataros submitted a certified claim for $161,359 on November 11, 1998, for the costs associated with the additional design and framing for the fiberglass cornices, as set out in RFP 39. Exhibit 13. When the contracting officer did not issue a decision within sixty days after receiving the claim, Trataros filed this appeal. Exhibit 19.

Discussion

Trataros contends that GSA's drawings contained a defective design that would not have adequately supported the cornice and that failed to include enough attachment points. Trataros claims that the contract price should be equitably adjusted to compensate for the costs it incurred in order to perform the cornice work as changed when Trataros corrected

the problems contained in the contract drawings. Complaint ¶¶ 6, 7, 14; Appellant's Post-Hearing Brief at 1-3.[5]

In response, GSA says it provided Trataros with a "performance-based general design," but did not dictate the details of the stainless steel support structure or the attachment points or the method by which Trataros was to perform the work. Answer ¶ 6. GSA points out that the first shop drawings submitted by Trataros were stamped by a professional engineer and this, according to GSA, contradicts Trataros's contention that it needed to make numerous changes in order to correct design defects in GSA's drawings. Although GSA does not concede that the "original design" was defective, it contends that Trataros never intended to follow the "government-supplied design," that Trataros made changes for its own convenience, and that Trataros had time before it negotiated and agreed to modification 3 to call any design problems to GSA's attention. GSA also contends that Trataros's damages are "speculative and unsupported by any credible evidence." Respondent's Post-Hearing Brief at 2, 4.

We conclude that the contract drawings provided Trataros with specific directions concerning the design of the stainless steel support structure and the location of the attachment points. The contract did not require Trataros to correct any design defects contained in the contract drawings. Those drawings contained a defective design, but when Trataros negotiated and agreed to modification 3, it did not know and had no reason to know of the defects. Trataros is entitled to recover the costs that resulted from the constructive change to the contract that occurred when GSA required Trataros to correct the problems with the design shown in the contract drawings.

The contract documents provided Trataros with specific directions concerning the design of the stainless steel support structure. Although the specifications barely mentioned that support structure, specification section 06600 said that the extent of the work was shown on the contract drawings. The drawings told Trataros to construct the support structure using stainless steel angles of a certain size, configured in a particular way, connected in a particular way, and running in specified directions. The drawings said that the structure was to be attached to the building using stainless steel bolts of a specified diameter, and showed the configuration of that attachment. The drawings showed Trataros where to use clip angles

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[5] When a contractor complies or attempts to comply with a defective specification or drawing, the contractor's claim for the costs caused by the defect is analyzed in accordance with United States v. Spearin, 248 U.S. 132 (1918). There, the Court decided that when a Government contract sets out the precise measurements, tolerances, and materials that a contractor must use in order to complete the work required by the contract, the Government impliedly warrants that if the contractor complies with the specifications and drawings, it will be able to complete the work satisfactorily. Trataros did not comply with the contract drawings, because it discovered what it believed to be defects in the design set out in the drawings before it began the cornice work. Appropriately, therefore, Trataros's claim is not based upon the Spearin doctrine and Trataros does not ask for damages based upon a breach of the implied warranty of specifications and drawings. Instead, Trataros asks for an adjustment to the contract price pursuant to the contract's Changes clause. See Powers Regulator Co., GSBCA 4668, et al., 80-2 BCA ¶ 14,463, at 71,318.

and where to install bolts to hold the support structure's angles and clip angles together. They also showed Trataros where to place slip joint connections and where to place pressure treated plywood. The specifications said to use stainless steel type 302/304 for all metal supports or embedded reinforcing, inserts, anchors, and the like. Some of the drawings were dimensioned and all were drawn to scale, so all of the measurements and dimensions could be easily determined, even when they were not specifically stated on the drawings.

The contract documents also provided Trataros with specific directions concerning the location of the attachment points for the fiberglass panels connected to the support structure. Specification section 06600 provided Trataros with directions concerning the location of attachment points when it said that the fiberglass panels were supposed to be attached from the rear or at concealed edges and flanges to the greatest extent possible, and when it told Trataros not to use fasteners placed through visible surfaces or the face of the fiberglass panels unless shown on the shop drawings. Specification section 06600 also said that the extent of the work was shown on the contract drawings, and the drawings showed Trataros where to place the attachment points when it depicted screws at certain locations under the gutters and under the cantilever angles. Some of the drawings were dimensioned and all were drawn to scale, so the exact locations of the attachment points could be easily determined. The drawings also showed that the fiberglass panels were to be attached directly to the support structure.

Although the contract required Trataros to supply shop drawings, this did not provide Trataros with any flexibility concerning either the design of the support structure or the location of the attachment points for the fiberglass panels. The shop drawings were supposed to show Trataros's fabrication and assembly methods, including the method that Trataros would use to install and attach the fiberglass panels to the support structure. Trataros was supposed to show how it would recess the attachment hardware, embed the structural supports, and cover the attachment points after they were installed. The shop drawings were also supposed to include engineered drawings, certifying that governing engineering performance criteria were satisfied for the structural support and for all parts and hardware. None of the shop drawing requirements gave Trataros the discretion to ignore the drawings and design its own support structure or to determine where to locate the attachment points for the panels.

Read together, the contract drawings and the specifications provided Trataros with the design of the support structure and the location of the attachment points for the fiberglass panels, and did not leave the design and location to Trataros's discretion. Trataros's obligation was to provide a support structure and to attach the fiberglass panels as shown on the drawings. Trataros was not obligated by the contract, however, to correct any design problems contained in the drawings.

Before Trataros began the cornice work, it discovered that the cornice work could not responsibly be performed as set out in the contract documents. Diamond Metal had a structural engineer calculate the forces that would be applied to the cantilever angles and learned that the angles would not support the weight of the fiberglass panels. Diamond Metal also had tests performed by a structural testing laboratory, and the results showed that several parts of the structure needed substantial modification in order to carry the required load and to achieve a safe design. Fibertech, a firm that the contract's specifications recognized as an

acceptable source having an established reputation for performing the highest quality work, also concluded that the support structure would not support the weight of the fiberglass. In addition, Fibertech determined that the number of attachment points shown on the contract drawings was inadequate to ensure that the fiberglass would not sag or be destroyed in a hurricane, and that extra angles would be needed in order to install additional attachment points. Fibertech's shop drawings were different in several respects from the contract drawings, and many of the differences were based upon engineering considerations. The engineer who approved the shop drawings for Fibertech compared them to the contract drawings and explained that the system shown on the contract drawings would result in a much higher stress level and higher connector loads. He said that he could not approve or sign the contract drawings, due to the relative stress and connector loads. If Trataros had followed the contract drawings, it would have built a stainless steel structure that was inadequate to carry the sagging fiberglass panels that it would have installed. This would hardly have been a satisfactory result, considering that the cornice work was added to the contract in order to replicate the details and surface appearance of the building's historic original wooden cornices.

Although the evidence of the deficiencies in the design set out in the contract drawings is substantial, GSA contends that the contract drawings were not defective. GSA points out that all of Trataros's shop drawings were approved by a professional engineer. It is true that the shop drawings were approved, but the shop drawings were different in several respects from the contract drawings; many of the differences were based upon engineering considerations, and the engineer who approved the shop drawings would not have signed the contract drawings. Thus, the engineer's approval of the shop drawings does not establish that the contract drawings contained no design defects.

GSA also says that Trataros never intended to follow the "government-supplied design" and made changes to the contract drawings for its own convenience, the implication being that changes were not made due to any defects in the design shown in the contract drawings. The only evidence we have of Trataros's intent shows that it relied upon the contract drawings containing the "government-supplied design" when it prepared its price proposal. So far as Trataros's convenience is concerned, there is evidence that attaching the fiberglass panels to wood blocking as shown in Fibertech's drawings was easier than attaching the panels directly to the support structure as shown in the contract drawings. Using wood blocking might have made Trataros's work easier, but the evidence does not establish that this change was driven entirely by Trataros's desire for convenience. Fibertech used the wood blocking due to the decreased thickness of the fiberglass panels, as agreed to by GSA after Trataros pointed out that the specified thickness of the fiberglass and the gelcoat exceeded industry standards. The evidence regarding Trataros's intent and convenience does not overcome the evidence that the contract drawings contained a defective design.

GSA says that we should deny this appeal because Trataros had time before it negotiated and agreed to modification 3 to call to GSA's attention any defects in the design shown in the contract drawings. We conclude that Trataros was entitled to rely upon the contract drawings and that the evidence does not establish that Trataros knew or should have known that the drawings were defective on April 3, when it reached an agreement with GSA

for the price of modification 3 and signed that modification, or on June 19, when GSA signed modification 3 and added the cornice work to the contract.[6]

There is no evidence to establish that Trataros knew or should have known that there was anything wrong with the design set out in the contract drawings as of April 3, 1997, when the parties agreed upon a price for performing the cornice work. Trataros was supposed to review the drawings in order to formulate a price for performing the cornice work and did not have any contractual obligation to provide engineering services in order to determine the adequacy of the design shown in the drawings before it proposed a price for performing the cornice work. There is no evidence that Trataros discovered any defects in the design contained in the contract drawings as of April 3, 1997. There is nothing to show that Diamond Metal received the drawings as of April 3 or, if it did, that it discovered any problems with the drawings before that date. The only comment that Fibertech provided to Trataros before April 3 concerned the thicknesses of the fiberglass panels and the gelcoat set out in the specifications. There is nothing to show that Fibertech reviewed the drawings or, if it did, that it noticed anything wrong with the design shown in them as of April 3.

There is no evidence to show that Trataros knew or should have known that there was anything wrong with the design set out in the contract drawings as of June 19, 1997, when GSA signed contract modification 3. Although Diamond Metal realized some time in June 1997, that there was a problem with the design of the stainless steel support structure shown on the contract drawings, the evidence does not establish that Diamond Metal came to this realization before GSA signed modification 3. Fibertech's first set of shop drawings is dated June 2, 1997. Fibertech sent these drawings to Trataros on June 19, the same day that GSA signed modification 3, and there is no evidence to show that Fibertech told Trataros that the design set out in the contract drawings was deficient before that date. Fibertech's drawings contain changes needed to satisfy the engineer who stamped them, which means that Fibertech became aware of problems with the design contained in the contract drawings before GSA signed modification 3. Trataros did not rely upon Fibertech's knowledge when it negotiated and signed modification 3, and GSA has provided us with no authority for imputing to Trataros whatever knowledge Fibertech acquired when it began trying to prepare its shop drawings.

GSA constructively changed the contract's requirements when it required Trataros to correct the problems with the design contained in the contract drawings. GSA initially said that it would equitably adjust the contract price if the drawings contained defects, but subsequently decided that it would not adjust the contract price because it read the contract to require Trataros's engineered shop drawings to make whatever changes were needed to the support structure and the attachment points shown on the contract drawings. As explained earlier in our discussion, we do not agree with GSA's reading of the contract. The contract did not leave the design of the support structure or the location of the attachment points to Trataros's discretion and did not require Trataros to make whatever changes were needed in order to correct the defects in the design shown in the contract drawings. When

[6] Although we examine GSA's arguments, we do not decide whether Trataros's knowledge as of June 19 is legally significant.

GSA required Trataros to make whatever changes were necessary to correct the deficiencies contained in that design, it constructively changed the contract's requirements.

Trataros is entitled to an equitable adjustment to the contract price for costs that it incurred due to the constructive change. In order to recover for a subcontractor's costs, Trataros must establish that it either paid the subcontractor or remains liable to reimburse the subcontractor. United States v. Johnson Controls, Inc., 713 F.2d 1541, 1552 n. 8 (Fed. Cir. 1983). GSA does not challenge the percentage that Trataros claims for its markup and bond costs, but does challenge all of Trataros's other claimed costs.

The first item that Trataros asks to recover is $16,850 for costs incurred by Diamond Metal in connection with changes it made to the stainless steel supplied for the support structure. Diamond Metal conducted structural tests and determined that it could not responsibly build a support structure using the design contained in the contract drawings. In order to supply a support structure that was safe and that would carry the required loads, Diamond Metal increased the size of several structural members, made considerable changes to the main support clip, and doubled the number of bolts used in one area. Diamond Metal sent Trataros a detailed explanation of the changes it made and the costs associated with those changes. Trataros's project manager testified that if Trataros has not paid Diamond Metal this amount, it is obligated to do so. The contract price should be adjusted by $16,850 to compensate for the costs incurred by Diamond Metal in order to correct the contract's design defects.

The second item that Trataros asks to recover is $9000 for the installation of added steel by Bairoa. We have no evidence to show that Trataros paid Bairoa this amount or that Trataros owes Bairoa this amount, so no adjustment can be made for the $9000.

The third item that Trataros asks to recover is $9900 for costs incurred by Fibertech in connection with additional engineering it performed. Fibertech says that it spent $4100 for engineering reports to show that the contract's design was deficient and $5800 for preparing two extra sets of shop drawings. Trataros's project manager believes that Trataros paid Fibertech for its work. Like Diamond Metal, Fibertech determined that it could not responsibly comply with the contract drawings and it performed the engineering needed to develop shop drawings that showed how to attach the fiberglass panels to the support structure. After GSA's project architect rejected Fibertech's first two sets of shop drawings, Fibertech finally convinced the architect that the design shown in the contract drawings would not work as it should. Not all of Fibertech's extra shop drawing work was due to the need to correct the design defects found in the contract drawings, however. The contract price should be adjusted by $4100 to compensate for the added engineering that Fibertech had to perform in order to correct the contract's design defects. The contract price cannot be adjusted by $5800, however, because not all of Fibertech's extra shop drawing work was due to correcting the contract's design defects and we have no basis upon which to apportion the claimed costs between work performed to correct the defects and work unrelated to those defects.

The fourth and fifth items that Trataros seeks to recover are for costs it incurred to furnish and to install 2426 added attachment bolts and 2628 added attachment points. The total amount requested for the two items is $113,210 and includes material, labor, and

scaffold rental. As discussed earlier, the extra bolts and attachment points were supplied in order to overcome the defects contained in the design shown in the contract drawings. Trataros is entitled to an equitable adjustment to the contract price for the costs that it incurred in supplying and installing the added bolts and attachment points needed in order to correct the contract's defective design.

Although Trataros did not produce any receipts for 2426 added bolts or 2628 added screws, other evidence establishes that it installed these bolts and screws. Trataros's project superintendent and its first project manager determined the number of added bolts by looking at a typical section of the cornice, counting the additional anchors, and multiplying that number by the number of panels that were affected by the added attachments. Fibertech told Trataros that its drawings required the use of an additional 2426 bolts to attach wood blocking to Diamond Metal's structural member 15 and to the masonry wall, and to attach the bracket support wood blocking. Trataros's project superintendent and its first project manager determined the number of added screws by using material provided by Fibertech regarding the number of screws it said that it needed to keep the fiberglass in place and by looking at a typical panel and multiplying the number of its attachment points by the total number of panels. Fibertech said that the contract drawings required the use of 1004 attachment points at the gutter and 216 attachment points at the lower bracket, while its design required the use of 1004 attachment points at the gutter, 1004 attachment points at Diamond Metal’s structural member 15, 1004 attachment points at the wall of the building, and 836 attachment points at the brackets, for a total of 2628 more attachment points than shown in the contract drawings.

Trataros did not introduce any evidence of the cost of the added screws. Its project manager testified that the bolts cost between $4.00 and $4.50 each, according to a product catalog. GSA did not introduce any evidence to establish the cost of the bolts used by Trataros, so we will use $4.00 per bolt as the basis for the adjustment to the contract price. The number of bolts (2426) multiplied by $4.00 is $9704.

Trataros claims that it spent one hour installing each bolt. O'Brien Kreitzberg believes that it took no more than six minutes to install a bolt, because the bolts were simply inserted through pre-punched holes, tightened, and torqued. Trataros's project superintendent explained, however, that some bolt holes had to be filled with resin. In addition, when the workers installed the bolts, they had to make sure that the new angles were level with the existing angles. Wooden components had to be aligned carefully when they were bolted to the stainless steel support structure so that the fiberglass panels would be aligned properly. The contract required the finished cornices to be plumb and level within very small tolerances, which is consistent with Trataros's project superintendent's explanation of the work required to install the bolts. Due to the interconnections of the many different angles, the angles and the wooden components, and the angles and the wooden components and the fiberglass panels, there was more to this work than simply slipping a bolt through a hole and tightening it with a specified amount of force. The exacting alignment required by the specifications meant that, for every added bolt, added alignment work was also necessary. Trataros's estimate that it spent one hour installing each bolt is reasonable, given the added alignment work required whenever a bolt was added, and GSA did not successfully challenge that estimate.

Trataros also claims that it spent one hour installing each attachment point. O'Brien Kreitzberg believes that it took no more than six minutes to install a screw and to patch over that screw. Trataros's project superintendent explained that at each attachment point, a hole was drilled in the fiberglass, a screw was installed, and the hole was patched with resin. After the resin dried, the patch was sanded. Holes were often patched and sanded more than once, sometimes after having been painted. The work as described by Trataros's project superintendent is in keeping with the contract's requirement that the attachment point holes had to be patched and sanded until they matched the surrounding areas of the panels. Due to the care that Trataros's workers had to take in order to cover the attachment points, Trataros's estimate that it spent one hour installing each attachment point is reasonable and was not adequately refuted by GSA.

Trataros claims that one hour of labor cost $13.61. GSA did not introduce any evidence to the contrary and the rate is consistent with Bairoa's labor rates and the labor rates used by Trataros in its response to RFP 1, so we will use $13.61 as the basis for the adjustment to the contract price. The number of bolts and attachment points (5054) multiplied by $13.61 is $68,784.94.

The final component of Trataros's claim for bolts and attachment points is its scaffold rental cost. Trataros says that it used the scaffold for two added months and that the cost of the rental for that period was $14,000. Trataros's project manager testified that he estimated that Trataros rented the scaffold for an additional two months, based upon the length of time it took to install the added bolts and attachment points. O'Brien Kreitzberg believed that Trataros could have shortened the time that it needed the scaffold if it had added workers, but did not venture a guess as to the time by which the rental could have been shortened. Trataros's project manager said that the size of Trataros's work crews was effective to perform the added work. Trataros's estimate that it needed to rent the scaffold for two extra months is reasonable, considering the number of added bolts and screws that its workers installed. GSA did not introduce any evidence to challenge the rental cost of $14,000 claimed by Trataros, and this amount is less than the rental and maintenance rates used by Trataros in its response to RFP 1 (rental rate of $7375 per month and maintenance rate of $140 per day). The contract price should be adjusted by $14,000.

In summary, the contract price should be adjusted by $113,438.94 ($16,850 + $4100 + $9704 + $68,784.94 + $14,000), plus a markup of 10% and a bond cost of .5%, for a total adjustment of $125,406.74.

Decision

The appeal is **GRANTED IN PART**. Trataros is entitled to recover $125,406.74 plus interest in accordance with 41 U.S.C. § 611 (1994).

MARTHA H. DeGRAFF
Board Judge

We concur:

EDWIN B. NEILL
Board Judge

MARY ELLEN COSTER WILLIAMS
Board Judge