

ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeals of --)
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BAE Systems San Francisco Ship Repair) ASBCA Nos. 58810, 59642
)
Under Contract No. W912SU-04-U-0005)

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OPINION BY ADMINISTRATIVE JUDGE TING

In 2006, the Army's Northern Region Contracting Center Mission Contracting Division at Fort Eustis, Virginia (the Army or the government) issued Delivery Order No. 2 (DO No. 2) under an existing multiple-award task order contract (MATOC) – Contract No. W912SU-04-U-0005 (Contract 0005) – to BAE Systems San Francisco Ship Repair (BAE) to overhaul an Army Logistics Support Vessel, the MG Charles P. Gross (LSV-5). Among other work, DO No. 2 required BAE to remove all existing potable water, air-conditioning and gray water drain systems and to replace them with new copper/nickel (90/10 CUNI) piping. During the course of performance of the delivery order, after the bulkheads and ceilings were removed, BAE's piping subcontractor, Custom Ship Interiors, Inc. (CSI) discovered that the piping systems existing on the vessel, which were not visible during ship check, were not as depicted on the contract drawings. CSI through BAE submitted 19 Condition Found Reports (CFRs) or change proposals for additional labor and materials required to complete the piping replacement work. Lacking input from her on-site Ship Surveyor, the contracting officer (CO), who was located in Virginia, was unable to initiate discussion to negotiate or settle any of the CFRs. Facing an approaching contract completion deadline, BAE and CSI proceeded to complete the piping replacement work with funding advanced by BAE.

The government acknowledged that BAE discovered additional piping repair requirements that were not anticipated at the time DO No. 2 was issued. Since completion of the contract work in 2007, the parties were unable to settle the quantum of equitable adjustment. In July 2011, BAE converted its piping Request for Equitable Adjustment (REA No. 7) into a certified claim. The CO's 2013 decision partially

granted BAE's claim. BAE appealed the decision (ASBCA No. 58810). In 2014, the CO issued an amended decision, claiming that she overpaid BAE in her 2013 decision. BAE appealed the decision (ASBCA No. 59642).

We have jurisdiction to decide the parties' dispute under the Contract Disputes Act, 41 U.S.C. §§ 7101-7109.

FINDINGS OF FACT

1. In April 2004, the U.S. Army's Northern Region Contracting Center Mission Contracting Division at Fort Eustis, Virginia, awarded an Indefinite-Delivery, Indefinite-Quantity contract – Contract 0005 – to San Francisco Drydock, Inc.¹ (R4, tab 1 at 1 of 440).² The contract, in the estimated amount of over \$22 million, was for the programmed and unprogrammed drydocking, cleaning, painting, repairs and modifications of active Army Logistics Support Vessels stationed on the West Coast of the United States or Hawaii (*id.* at 4 of 440). Work would be ordered as task or delivery orders under Contract 0005 (R4, tab 137 at 1 of 8).

2. The base period of Contract 0005 ran from the date of award until 30 November 2005. The contract provided for four one-year option periods ending on 30 November 2009. (R4, tab 1 at 2 of 440) The events in this appeal occurred during Option Period Two from 1 December 2006 through 30 November 2007 (*id.* at 2 of 440). Contract 0005 provided that “[t]ask orders under this contract will be issued only by the Contracting Officer” (*id.* at 2 of 440 n.6) and liquidated damages of \$3,626 per day would be assessed if the contractor failed to deliver the supplies or to perform services within the time specified in the delivery order (*id.*). Time, therefore, was of the essence in completing the work specified in the delivery order.

3. Contract 0005 contained the Department of Defense FAR Supplement (DFARS) 252.217-7028, OVER AND ABOVE WORK (DEC 1991) clause. This clause defined “Over and above work” to mean “work discovered during the course of performing overhaul, maintenance, and repair efforts that is – (i) Within the general scope of the contract; (ii) Not covered by the line item(s) for the basic work under the

¹ San Francisco Drydock, Inc. became a part of BAE Systems in 2005 and changed its name to BAE Systems San Francisco Ship Repair (BAE) (tr. 1/106, 3/203).

² In citing to the record, we use the consecutive numbers at the bottom of the page, where 000009 is shortened to 9. A document without a consecutive number is cited to the typed page number on the document, for example, R4, tab 1 at 1 of 440.

contract; and (iii) Necessary in order to satisfactorily complete the contract.” The clause provided that:

(c) Upon discovery of the need for over and above work, the Contractor shall prepare and furnish to the Government a work request in accordance with the agreed-to-procedures.

....

(e) The Contractor shall promptly submit to the Contracting Officer, a proposal for the over and above work. The Government and Contractor will then negotiate a settlement for the over and above work. Contract modifications will be executed to definitize all over and above work.

(f) Failure to agree on the price of over and above work shall be a dispute within the meaning of the Disputes clause of this contract.

(R4, tab 1 at 350-51 of 440)

4. Contract 0005 also incorporated by reference DFARS 252.243-7001, PRICING OF CONTRACT MODIFICATIONS (DEC 1991), providing “When costs are a factor in any price adjustment under this contract, the contract cost principles and procedures in FAR Part 31 and DFARS Part 231, in effect on the date of this contract, apply” (R4, tab 1 at 329 of 440).

5. FAR 31.201-2 (2003)³, Determining allowability, provides in part:

(a) The factors to be considered in determining whether a cost is allowable include the following:

(1) Reasonableness.

(2) Allocability.

(3) Standards promulgated by the CAS Board, if applicable; otherwise, generally accepted accounting principles and practices appropriate to the circumstances.

³ Since Contract 0005 was awarded in April 2004, the 2003 version of the FAR was applicable.

(4) Terms of the contract.

(5) Any limitations set forth in this subpart.

6. FAR 31.201-3, Determining reasonableness, provides in part:

(a) A cost is reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person in the conduct of competitive business. Reasonableness of specific costs must be examined with particular care in connection with firms or their separate divisions that may not be subject to effective competitive restraints. No presumption of reasonableness shall be attached to the incurrence of costs by a contractor. If an initial review of the facts results in a challenge of a specific cost by the contracting officer or the contracting officer's representative, the burden of proof shall be upon the contractor to establish that such cost is reasonable.

7. Contract 0005 included a provision establishing fully burdened labor, G&A, and profit rates for various contract periods. The "OFFEROR'S FULLY BURDENED LABOR RATE FOR THE SECOND OPTION PERIOD" provision (fully burdened rate provision) provided:

a. Changes are inherent to vessel repair contracts and should be expected by the Contractors. Offerors shall include a fully burdened labor rate to be used in negotiating changes. The rate must include all costs for negotiating changes, including but not limited to, G&A, overhead, profit, cost of money, etc. The offeror shall insert rates below that it agrees to use in negotiating changes for new or additional work.

(R4, tab 1 at 393 of 440) For the second option period, BAE inserted \$73.50 as its fully burdened labor rate, 8.82% as its G&A rate, and 10% as its profit rate (*id.*).⁴ The parties disagree whether the provision precluded BAE from charging a differential (\$36.75) for any overtime labor hour worked to complete the changed work.

⁴ The Contract 0005 rates were restated in DO No. 2 awarded to BAE (R4, tab 3 at 10 of 26).

Delivery Order Request for Proposal Requirements

8. Section C.YY. of Amendment No. 0001 to the Request for Task Order proposal (RFP) pertained to the replacement of the potable water, air conditioning and drain piping systems of the LSV-5. The RFP referenced Moss Point Marine, Drawing P-3, Rev P, "Potable and Sanitary Water Systems," and Moss Point Marine, Drawing P-13, Rev 7, dated 1987, "Air Conditioning Drains." (App. supp. R4, tab 501, §§ C.YY.1.1., C.YY.1.2) The RFP required the contractor to "[r]emove all existing potable water piping and drains throughout the entire vessel to include all air conditioning condensate drains," and "[r]eplace entire piping system with copper nickel, 90/10 (CUNI) piping and all associated fittings as per referenced drawing" (*id.*, § C.YY.2). The work included the disassembling and removal of "all necessary deck plate grating sections, joiner bulkheads, overhead tiles, flooring tiles, terrazzo and interferences" (*id.*, § C.YY.4.2), and after installation, the replacement of "all disturbed or damaged insulation/lagging, joiner bulkheads and ceiling tiles, flooring tiles, terrazzo affected by the repairs" (*id.* at 2, § C.YY.5.5).

9. Gregory Dewhurst was BAE's senior estimator (tr. 2/5). He had 19 years of experience estimating piping work (tr. 2/18-19). The LSV-5 was made available for ship check in Honolulu, Hawaii, on 28 and 29 November 2006 (R4, tab 105 at 38). In preparing to submit BAE's bid, Mr. Dewhurst went to Honolulu for the ship check (tr. 1/163). He testified he did not have the disc of the Moss Point drawings of the vessel's potable water, air conditioning and drain piping systems (P/W, A/C and Drain Piping Systems) until the CO "left it at the desk of her hotel for me" the evening before the ship check. He testified that he printed a few drawings at a copying store and found that the drawings had no quantity information on them. (Tr. 1/164-65) For that reason, he considered the drawings he was given practically useless for bidding purposes (tr. 2/6).

10. During ship check, Mr. Dewhurst could not see piping and what type of piping was behind the overhead and the bulkheads in the housing areas of the vessel because they were still in place (tr. 2/16). To come up with a rough estimate of footage of piping and fittings, he "walked off" certain levels of the vessel and took into account deck drains and showers and "what kind of services were on those levels" (tr. 2/6-7).

11. After the Honolulu ship check, BAE emailed the government and said it would need "additional GFI [government-furnished information] to support the development of pricing for the...work items received with the solicitation." The email said as a result of the site visit, it had developed "a list of questions and issues by work item." (R4, tab 105 at 38)

12. BAE's email inquiry was four pages long. On the Potable Water System referenced in the specifications at C.YY.1.1, Moss Point Marine, Drawing P-3, Rev 3, its email said:

- 1.) ...The reference drawing received during the site visit contained an incomplete bill of materials where the footages of piping and quantities of various fittings were identified as "A/R", which was understood to mean AS REQUIRED. The Drawing was a reduced size of the original that was not developed in sufficient detailing as to "scale" off of to determine the approximate quantities of piping and fittings required for the replacement of the piping system that were identified as "A/R". Please provide a listing of the materials for the replacement of the Potable Water System throughout the entire vessel as required by the work item.

Using similar language, BAE's email made inquiries on the Air Conditioning and the Gray Water Drain Systems⁵ which we omit here for brevity. (R4, tab 105 at 39)

13. BAE's email also asked about the boundaries of the Gray Water Drain System requiring replacement:

- 5.) During the site visit the Gray Water Drain System was found to tie into the Black Water system in several areas. On Port and Starboard sides of the vessel, the statement of work does not identify the limit of renewal of the Gray water system, in fact in this case without determining the extent of the renewal, the Offeror will have no way of pricing the system the Govt. intends to replace. Please revise specification to identify the Gray Water Drain System boundaries requiring replacement.

(R4, tab 105 at 40)

14. CO Patricia Shepherd's 11 December 2006 reply told all bidders that "[a] copy of all drawings available for the LSV-5 are being forwarded under separate cover via federal express." On the Gray Water Drain System boundaries, the CO advised that based on the specification, "the contractor shall remove the entire existing gray water system.

⁵ Gray water is water from sinks, showers, or deck drains (tr. 2/203, 3/164).

No change is required. If there is a tie into the black water system, this is to be identified to the ship surveyor. This item is for the gray water system.” The letter enclosed a revised list of parts and a revised specification, and extended the date for receipt of task order proposal to 20 December 2006. (R4, tab 105 at 43-44)

BAE’s Bid Price on Item No. 2062

15. CSI is a small privately owned company that specializes in interior work of ships. CSI, based in Solomons Island, Maryland, was established in 1986. (Tr. 2/147-48) Prior to doing work on the LSV-5, CSI had worked in BAE’s shipyards in San Francisco, San Diego, and Los Angeles (tr. 2/149). At the time of the LSV-5 overhaul, Andrew Brown was its co-owner and director of estimating (tr. 2/145-46).

16. Based on the Moss Point Marine drawings, CSI prepared an estimate of materials required for the P/W, A/C and Drain Piping Systems work required for the LSV-5 (tr. 2/155). While the Moss Point Marine drawings listed pipe sizes, they gave no quantity information. As for quantities, the specifications merely said “AR” or “As Required.” Because the Moss Point Marine drawings were not as-builts but “flat” drawings, CSI had to add “dropdowns,” “fittings,” and other parts. (Tr. 2/156)

17. BAE initially issued Subcontractor Order No. S-75178 to CSI to “[p]rovide labor material and equipment to accomplish requirements of specifications Item 2062” for \$172,556.00. Under the subcontractor order, BAE would provide: Staging, Ventilation, Lights, 110 V Elec. Power, Gas Free Cert., Welding/Burning Equipment & Gases, Parking For Company Vehicles, and Crane Services. CSI subsequently reduced its price by \$22,507 to \$150,049.00. (R4, tab 105 at 9-10, tab 113 at 8-9; tr. 2/152, 245) CSI’s reduced price required a 45% deposit with bi-weekly draws to cover its overhead including mobilization, transporting employees to the job site, hotel and initial material costs (tr. 2/157). After it began work, CSI billed BAE and was paid the deposit (tr. 2/158).

18. According to Mr. Brown, he based his estimate on the “initial drawings,” “gaging how wide the ship is, how long it is, counting the number of rungs... adding some additional footage for drops” (tr. 2/256). BAE’s Mr. Dewhurst testified he did not find the P/W, A/C and Drain Piping Systems drawings useful because “no overheads or bulkheads [were] removed to actually see where the piping was, so you couldn’t validate the drawings at all” (tr. 1/166). To prepare BAE’s estimate, he testified:

I figured the width of the ship and the super structure area where the accommodation was, and I went through each level figuring out what fixtures there were on each level, deck drains, sinks, and put piping systems together on a sketch that I made up. And then pretty much figured what

kind of piping I would need to go ahead and tie it down into the main system down below.

(Tr. 1/165) Mr. Dewhurst testified he used CSI's \$150,049.00 proposal, added BAE's labor and materials to assist CSI, and submitted a price of \$214,913.23 to perform Item No. 2062, "Potable Water and Air Conditioning Drain Piping Systems Replacement for LSV-5" (tr. 2/8, 25; R4, tab 3 at 7 of 26). Under BAE's agreement with CSI, CSI would buy the piping materials needed to accomplish the replacement (tr. 2/21).

19. Contract section C.0.1.4, Contracting Officer, provides that "Contracting Officer is a person with the authority to enter into, administer, and/or terminate contracts, make related determinations and findings and issue delivery/task orders. Only the Contracting Officer has the authority to extend the performance period of the contract and/or delivery/task orders." (R4, tab 1 at 24 of 440)

20. CO Kathleen H. Panton awarded DO No. 2 to BAE on 27 December 2006 for the programmed docking, cleaning, painting and repairs of the LSV-5. The DO was in the amount of \$4,889,413.73. (R4, tab 3 at 1, 7 of 26) It required BAE to perform numerous "DEFINITE" and "INDEFINITE" items (*id.* at 3-8 of 26). Definite items were work known to be required; Indefinite items were pre-priced items but it was not known how much of the work would be required (*see* R4, tab 1 at 24 of 440, §§ C.0.1.7, C.0.1.12). Item No. 2062 was among the Definite items awarded (R4, tab 3 at 1, 7 of 26). Modification No. 1 to DO No. 2 established a 120-calendar day performance period running from 30 March through 27 July 2007 (R4, tab 6 at 1, 3 of 12).

21. Section C.62 of the LSV-5 specifications pertain to "POTABLE WATER AND AIR CONDITIONING DRAIN PIPING SYSTEMS REPLACEMENTS FOR LSV-5 (DEFINITE)." SECTION C.62.1, referred to Moss Point Marine Drawing P-3, Rev P, "Potable and Sanitary Water Systems," and P-13, Rev 7, "Air Conditioning Drains." (R4, tab 3 at 20 of 26) Section C.62.2, Scope of Work, provided:

Remove all existing potable water piping and drains throughout the entire vessel to include all air conditioning condensate drains. Replace entire piping system with copper nickel, 90/10 (CUNI) piping and all associated fittings as per referenced drawing. This will also include any overboard through hull penetrations, fill and suction piping in the potable water tanks, piping to and from the hot water heater, and pressure sets. Replacement does not include any copper tubing that supplies potable water to the water fountains, coffee makers, etc. All piping

supports, hangers and watertight penetrations will be replaced with new.

(Id.)

22. In terms of requirements, the DO No. 2 specifications required, in part:

C.62.3.2. Contractor shall identify and tag each valve location prior to removal.

....

C.62.3.5. Upon removal of existing piping, the Contractor shall furnish to the Ship Surveyor an original and four (4) copies of a report listing parts and components for installation. Report shall include unit price, part number and availability.

(R4, tab 3 at 20 of 26)

23. In terms of removals, the DO No. 2 specifications required, in part:

C.62.4.1. Remove and reinstall all necessary interferences to facilitate with the removal and reinstallation process.

C.62.4.2. Disassemble and remove all necessary deck plate grating sections, joiner bulkheads, overhead tiles, flooring tiles, terra[zzo] and interferences to facilitate removal of all existing potable water and condensate drain piping and associated fittings for installation of new copper nickel 90/10 (CUNI) piping as per referenced drawing.

(R4, tab 3 at 20 of 26)

24. In terms of installation, the DO No. 2 specifications required, in part:

C.62.5. Installation: Refer to Moss Point Marine drawing, P-3, Revision 3, Potable and Sanitary Water System and Moss Point Marine drawing, P-13, Air Conditioning Drains for installation guidance.

C.62.5.1. Replace potable water system in its entirety, using 90/10 CUNI piping.

C.62.5.2. Replace existing gray water drain system in its entirety, using 90/10 CUNI piping.

C.62.5.3. Replace existing air-conditioning system condensate drains in their entirety, with 90/10 CUNI pipes.

....

C.62.5.5. Replace all disturbed or damaged insulation/lagging, joiner bulkheads and ceiling tiles, flooring tiles, terra[zzo] affected by the repairs.

(R4, tab 3 at 20-21 of 26)

25. In terms of reinstallation, the DO No. 2 specifications required, in part:

C.62.7.1 Reinstall all removals.

C.62.7.2. Potable water system and air conditioning condensate drains shall be operationally verified during specification item, "Trials and Tests[,]" and left ready for service.

(R4, tab 3 at 21 of 26)

26. CSI's Mr. Brown was "on the job every d[a]y," "from the beginning to the very end" (tr. 2/160). He testified the P/W, A/C and Drain Piping Systems replacement work as depicted on the contract drawings "looked to be straightforward" (tr. 2/159). He testified CSI's part of the overhaul was to open up the overheads and bulkheads, trace the lines to see "what went where," identify the different systems, remove the existing systems and replace them with new piping systems (tr. 2/159).

27. When CSI opened up the ceilings and the bulkheads, however, it found there was "a lot more piping involved in the systems." The piping on the LSV-5 was found to divide into a port and a starboard system. At the lower decks, the two systems unexpectedly "rejoined." The piping "cross-connected to each other in several different places and went everywhere." (Tr. 2/162) Initially, CSI had planned to install the piping itself. Once it discovered the magnitude of the work involved, it decided it needed more pipefitters skilled in copper/nickel piping. (Tr. 2/161) In addition to using its own labor force, CSI added Worldwide Labor Support, Inc.'s skilled labor for brazing work (tr. 2/226, 278).

28. Brown testified that he was there in every case where it was discovered that the piping was not as represented on the Moss Point Marine drawings. He testified he would discuss what he found with BAE's ship manager, Ron Bain, and he would submit a CFR because he "wanted to be compensated for all the additional piping [CSI] was going to have to do." (Tr. 2/165-66) Each of the CSI's CFRs would be accompanied by (1) a spreadsheet of the additional materials (e.g. valves, elbows, couplings, sleeves, tees, unions) and a material price quote (*see, e.g.*, R4, tab 13 at 3 of 3) and (2) its estimated labor hours needed to accomplish the unanticipated replacement work (tr. 2/170). CSI would then submit the CFR to BAE (tr. 2/261). CSI's estimates were based upon "[i]nspection onboard the ship and then counting what was there, where we had to go, and what we had to do." Brown testified his estimates were based upon his "personal observations." (Tr. 2/168) On the CFRs he estimated, Brown testified that "[he] expected [he would] have to stand there with somebody and explain to them exactly what [he] wrote [in the CFR], and they could see it" (tr. 2/183).

29. Upon receipt of a CFR from CSI, BAE would check the areas CSI was concerned about (tr. 2/266). Bain testified he would not "reestimate each one," but he would examine some based on a general "rule of thumb" (tr. 2/78) from his experience "coming up through the pipefitting trade" (tr. 2/73). Bain testified "[i]f it seemed reasonable or look[ed] like it was in line with what we were doing," he would submit CSI's CFR to the government along with BAE's own Change Order Route Slip (CORS) adding the labor and materials BAE needed to furnish on its part (tr. 2/56-61, 261).

CSI's Per Diem Costs

30. The hourly workers CSI employed were from out-of-town. Because CSI's pipefitters were not "living in tents," CSI paid them \$80.00 per day to cover their hotel costs, "[t]wo guys to a room." Per diem costs would also cover "[r]ental cars, gas, tolls." CSI's per diem payment was based upon man days. One man day was based on "[t]en hours a day." (Tr. 2/276-77) We find the per diem rate paid reasonable in covering its employees' hotel, car rental, gas, tolls and other expenses. FAR 31.205-46(a)(1) (2004), Travel costs, provided that "Costs for transportation, lodging, meals, and incidental expenses...incurred by contractor personnel on official company business are allowable, subject to the limitations contained in this subsection." The Federal Travel Regulation per diem rate for San Francisco during 2007 was \$140.00 for lodging and \$64.00 for meals and incidentals.⁶

⁶ See <http://www.gsa.gov/portal/content/103168> at spreadsheet "FY 07 Per Diem Rates."

CSI's Material Costs

31. The copper/nickel piping materials specified in the contract had to be obtained from specific parts suppliers (tr. 2/176). Brown testified that the material market in 2007 was volatile because "China was buying everything and it was just impossible to get some stuff" (tr. 2/219). The price for the same copper/nickel item from Tork Systems, Inc. for example, could fluctuate from purchase order to purchase order depending upon whether the part was out of stock and had to be obtained from another local vendor or an out-of-town vendor, or from a wholesale supplier (tr. 2/218; R4, tab 113 at 105). According to Brown, due to the shortages and volatility of the market in 2007, the prices of parts could change between the time they were quoted and the time they were shipped (tr. 2/176).

32. According to its initial calculation, CSI spent \$187,652.02 for piping materials on the LSV-5 overhaul (app. supp. R4, tab 507; tr. 2/220). Of this amount, \$176,564.27 was for materials from various suppliers, and \$11,087.75 was for California sales tax which Tork Systems invoiced separately (tr. 2/221).

CSI's Labor Costs

33. CSI estimated whether overtime (OT) was required by "the number of days we thought it would take and...whether it fell on a Saturday or a Sunday." If a three-day job were to start on a Monday, OT was less likely to be required. (Tr. 2/276) Because the needed parts did not always arrive when needed, CSI's labor force "had to go wherever...[there was] work" (tr. 2/178). Brown testified CSI kept its piping work separate from its other work on the LSV-5 (tr. 2/177), and since he witnessed the performance of the piping work, he believed the actual labor hours worked by CSI employees "commensurate[d] with" what he estimated (tr. 2/178).

34. When CSI/BAE submitted a proposal, it went initially to the government's Ship Surveyor Denny D. Large (Ship Surveyor Large) (tr. 4/101). If there was a disagreement between BAE/CSI and Ship Surveyor Large on the costs of additional work, as in the case of the cloverleaf replacement (*see BAE Systems San Francisco Ship Repair*, ASBCA No. 58809, 16-1 BCA ¶ 36,226), Ship Surveyor Large would prepare a government estimate on a Specification Worksheet providing the CO with information to negotiate a change order (tr. 4/102). Normally, Ship Surveyor Large's Specification Worksheet would be forwarded first to his supervisor at Fort Eustis. After his review, the supervisor would forward the Specification Worksheet with his comments to the CO. (Tr. 4/139) There is no evidence that Ship Surveyor Large prepared a Specification Worksheet (or government estimate) on any of the piping CFRs. Consequently, the CO was left without meaningful information to act on the piping CFRs when they were submitted by BAE.

35. No Specification Worksheet was prepared by Ship Surveyor Large on any of the 19 CFRs in dispute. Ship Surveyor Large was regularly aboard the LSV-5. He acknowledged he had the opportunity to look at the piping systems as they were being removed and replaced. (Tr. 3/169) Except for the fact he did not have time, Large acknowledged he could have measured the pipes and counted the fittings to be removed and replaced (tr. 3/169-70). There is no evidence that Ship Surveyor Large went out and checked CSI's and BAE's estimates (tr. 4/101). When BAE submitted CFRs to him, he would note on the CFRs they were being reviewed by the CO. He testified he was not made aware of the results of the CO's review (tr. 3/171).

36. We find CSI's CFR estimates, based upon Mr. Brown's actual observations at the time (tr. 2/184) and with the expectation that the CFRs he prepared would have to be explained or justified to both BAE and the government credible evidence on how much additional labor and materials would have to be expended to accomplish the P/W, A/C and Drain Piping Systems replacement work required by the specifications.

37. After it submitted its CFRs, CSI expected BAE would "get back to us and give us direction" (tr. 2/265). In this case, CSI nonetheless began work when formal approval did not come because, as Brown explained, "[t]he spec. was written that what was there had to be replaced" (tr. 2/267). He also explained that "with all the people I had onsite, I'm not going to have them standing around waiting three or four days for something to happen" (tr. 2/167). We find BAE knew and permitted CSI to proceed immediately with the copper/nickel piping and deteriorated parts replacement work as soon as the actual conditions on the vessel were discovered and the CFRs and CORS were being provided to the government. We find the CO knew BAE/CSI was proceeding apace to meet the vessel redelivery date. We find the CO took no action to try to negotiate, much less to settle, the piping-related CFRs when they reached her from mid-May until mid-July 2007.

38. In anticipation of performing work on the LSV-5, BAE developed a bar-chart schedule (app. supp. R4, tab 508). The schedule was used by "the production crafts to set up their manpower" to do the work and was updated weekly (tr. 2/71). According to BAE ship manager Mr. Bain, the additional piping work caused disruption in preventing the new piping systems from being installed, tested, closed up, and from vacating the spaces involved (tr. 2/67).

CFRs Relating to Defective Drawings

CFR No. 155 – Additional Piping on Poop Deck

39. CSI's Report No. LSV-018 dated 14 May 2007 notified BAE that during installation of the potable water system, it found significant differences between what was shown on the drawings and the as found conditions on Levels 03 and 04 of the

vessel (R4, tab 105 at 46). CSI attached a spreadsheet showing additional piping parts and fittings were needed at an estimated cost of \$1,670.60 (*id.* at 48). Mr. Brown testified that the spreadsheets which accompanied his CFR to BAE was developed on the basis of being “[p]hysically on the boat” and seeing “what was exactly there and what we thought we would have to do to [re]place what was there” (tr. 2/272).

40. CSI’s 15 May 2007 letter to BAE proposed \$16,504.60 to do the additional work: \$10,920.00 in additional straight time (ST) labor (210 hours x \$52.00); \$1,742.00 in overtime (OT) differential (67 hours x \$26.00); \$1,600.00 in per diem cost (20 man days x \$80.00); and \$2,242.60 in materials⁷ (R4, tab 105 at 49).

41. BAE’s CORS (BAE’s estimate) added \$12,348.00 in ST labor (168 hours x \$73.50); \$1,543.50 in OT differential (42 hours x \$36.75); and \$137.76 in materials. With \$16,504.60 in subcontractor (CSI) costs \$1,467.86 in G&A (8.82%) and \$1,650.46 in profit (10%)⁸; the CORS amount came to \$33,652.18. The CORS indicated the work would take 11 days to accomplish. (R4, tab 105 at 51)

42. On 17 May 2007, BAE submitted to the government CFR No. 155 recommending that the government “[i]ssue C/O to provide and install additional material” (R4, tab 105 at 45). Ship Surveyor Large acknowledged receipt of CFR No. 155 on 17 May 2007 noting under “CUSTOMER DIRECTION”: “See C.O.2.14 of the General Requirements. Further disagreements will need to be sent to the contracting officer in writing.” The CORS indicated the additional work would take 11 days. (R4, tab 105 at 45)

CFR No. 196 – Potable Water System Piping in A/C Room

43. CSI’s Report No. LSV-024 dated 29 May 2007 notified BAE that “[d]uring the installation of the new Potable Water Piping running from the Water Heaters it was noted that there were significant differences between the piping installed in comparison to the Government Furnished Information (GFI).” CSI’s attached spreadsheet showed it would need to install 17 additional piping parts and 29 fittings. (R4, tab 105 at 53, 54)

44. CSI’s 29 May 2007 letter to BAE proposed \$8,123.80 to do the additional piping work: \$5,096.00 in ST labor (98 hours x \$52.00); \$832.00 in OT differential (32 hours x \$26.00); \$800.00 in per diem cost (10 man days x \$80.00); and \$1,395.80 in materials (R4, tab 105 at 55).

⁷ CSI’s letter used \$2,462.60 for material. The materials listed, however, added up to \$2,242.60 (R4, tab 105 at 49).

⁸ BAE’s G&A rate is applied to the sum of total subcontractor costs and its own material costs; its profit rate is applied only to total subcontractor costs.

45. BAE's CORS added \$7,570.50 in ST labor (103 hours x \$73.50); \$955.50 in OT differential (26 hours x \$36.75); and \$84.46 in materials. With \$8,123.80 in subcontractor (CSI) cost; \$723.97 in G&A (8.82%); and \$812.38 in profit (10%); the CORS amount came to \$18,270.61. The CORS indicated the work would take 7 days to accomplish. (R4, tab 105 at 57)

46. On 29 May 2007, BAE submitted to the government CFR No. 196 recommending that it "[i]ssue C/O to provide and install additional required materials." Ship Surveyor Large acknowledged receipt of CFR No. 196 on 30 May 2007 noting under "CUSTOMER DIRECTION": "This issue is being reviewed by the contracting officer, no decision has been made yet." (R4, tab 105 at 52)

CFR No. 203 – Potable Water System Piping Located in Ship's Workshop

47. CSI's Report No. LSV-026 dated 26 May 2007 notified BAE that "[d]uring the installation of the new Potable Water Piping located in the Ships Workshop it was noted that there were significant differences between the piping installed in comparison to the Government Furnished Information (GFI)" (R4, tab 105 at 59). CSI's attached spreadsheet showed 49 additional elbows, tees, unions and fittings would be required (*id.* at 60).

48. CSI's 30 May 2007 letter to BAE quoted a price of \$8,295.31 to do the additional work: \$5,096.00 in ST labor (98 hours x \$52.00); \$832.00 in OT differential (32 hours x \$26.00); \$800.00 in per diem (10 man hours x \$80.00). Because all of the pipe hangers were found to be in excellent condition, CSI offered \$2,449.50 (150 hangers x \$16.33 each) in credit against \$1,567.31 in material costs, or a net credit of \$882.19 in material costs. With a \$3,900 credit in labor costs for not removing and installing the hangers, CSI offered \$6,349.50 in total credit and to perform the work for \$1,945.81 (\$8,295.31 - \$6,349.50). (R4, tab 105 at 62)

49. BAE's CORS added \$6,468.00 (88 hours x \$73.50) in ST labor; \$808.50 in OT differential (22 hours x \$36.75); \$72.16 in materials; \$8,295.31 in subcontractor (CSI) costs; \$738.01 in G&A (8.82%); and \$829.53 in profit (10%), deducted \$6,350.00 in credit; and arrived at a total of \$10,862.01 to do the additional work. The CORS indicated the work would take 6 days to accomplish. (R4, tab 105 at 64)

50. On 31 May 2007, BAE submitted CFR No. 203 to the government, recommending that it "Issue C/O for labor material and equipment to install additional material per attached list" (R4, tab 105 at 58) Ship Surveyor Large acknowledged receipt of CFR No. 203 on 1 June 2007 noting under "CUSTOMER DIRECTION": "Under review by contracting officer." BAE noted on 4 June 2007 "Contractor is waiting for further direction and C/O to proceed." (*Id.*)

CFR No. 204 – Additional Piping on 03 and 04 Levels

51. CSI's Report No. LSV-019 dated 29 May 2007 notified BAE that "[d]uring the installation of the vessel's potable water system it was noted that there were significant differences between the Government Furnished Information (GFI) and the actual piping installed onboard the vessel" on the 03 and 04 decks (R4, tab 105 at 66). CSI's attached spreadsheet showed an additional 95 fittings including elbows, angles, tees, and unions were required at an estimated cost of \$1,788.00 (R4, tab 105 at 68).

52. CSI's 29 May 2007 letter to BAE proposed \$19,428.40 to do the additional work: \$12,324.00 in ST labor (237 hours x \$52.00); \$2,054 in OT differential (79 hours x \$26.00); \$1,840.00 in per diem cost (23 man days x \$80.00); \$3,110.40⁹ in materials and \$100.00 in freight (R4, tab 105 at 69).

53. BAE's CORS added \$12,936.00 in ST labor (176 hours x \$73.50); \$1,617 in OT differential (44 hours x \$36.75); \$144.32 in materials; \$19,428.40 in subcontractor (CSI) cost; \$1,726.31 in G&A (8.82%); and \$1,942.84 in profit (10%) for a total of \$37,794.87. The CORS indicated the work would take 12 days to accomplish. (R4, tab 105 at 71)

54. On 1 June 2007, BAE submitted CFR No. 204 to the government recommending that it "Issue C/O to provide additional labor material and equipment to install 95 ea. S. B. bronze fittings not identified with government provided information." Ship Surveyor Large acknowledged receipt of CFR No. 204 on 1 June 2007, noting under "CUSTOMER DIRECTION": "Under review by contracting officer." BAE noted on 4 June 2007 "Contractor is waiting for further direction and C/O to proceed." (R4, tab 105 at 65)

CFR No. 209 – Potable Waterlines in Laundry/Engineer's Office

55. CSI's Report No. LSV-029 dated 31 May 2007 notified BAE that "During the installation of the new Potable Water Piping located in the Engineers Office/Laundry/FM-200 Room, it was noted that there were significant differences between the piping installed in comparison to the Government Furnished Information (GFI)" (R4, tab 105 at 73). CSI's attached spreadsheet showed an additional 67 fittings including elbows and tees were required at an estimated cost of \$1,473.90 (*Id.*).

56. CSI's 31 May 2007 letter to BAE proposed to perform the additional work for \$15,904.50: \$10,452.00 in ST labor (201 hours x \$52.00); \$1,742.00 in OT differential (67 hours x \$26.00); \$1,600.00 in per diem costs (20 man days x \$80.00); and \$2,110.50 in materials (R4, tab 105 at 76).

⁹ CSI's letter used \$3,210.40 for materials. The materials listed, however, added up to \$3,110.40 (R4, tab 105 at 69).

57. BAE's CORS added \$10,878.00 in ST labor (148 hours x \$73.50); \$1,359.75 in OT differential (37 hours x \$36.75); \$121.36 in materials, \$1[5],904.50¹⁰ in subcontractor (CSI) cost; \$1,413.48 in G&A (8.82%); and \$1,590.45 in profit (10%) for a total of \$31,267.54. The CORS indicated the work would take 10 days to accomplish. (R4, tab 105 at 77)

58. On 4 June 2007, BAE submitted CFR No. 209 to the government recommending that the government "Issue C/O to provide additional labor and material to accomplish installation of P/W piping per attached list." Ship Surveyor Large acknowledged receipt of CFR No. 209 on 5 June 2007, noting under "CUSTOMER DIRECTION": "Issue is under review by contracting officer." (R4, tab 105 at 72)

CFR No. 211 – Potable Water Tank Piping System

59. CSI's Report No. LSV-023 dated 29 May 2007 notified BAE that there were significant differences in the new potable water piping running from the engine room to the potable water tanks to be installed "in comparison to the Government Furnished Information (GFI)" (R4, tab 105 at 79). CSI's attached spreadsheet showed additional parts (elbows, couplings, tees and sleeves), piping, and 32 additional fittings at an estimated cost of \$4,555.40 were required (*id.* at 80-81).

60. CSI's 29 May 2007 letter to BAE proposed to do the work for \$27,017.00: \$16,640.00 in ST labor (320 hours x \$52.00); \$2,756.00 in OT differential (106 hours x \$26.00); \$2,560.00 in per diem cost (32 man days x \$80.00); and \$5,061.00 in materials (R4, tab 105 at 82).

61. BAE's CORS added \$23,226.00 in ST labor (316 hours x \$73.50); \$2,903.25 in OT differential (79 hours x \$36.75); \$259.12 in materials; \$27,017.00 in subcontractor (CSI) cost; \$2,405.75 in G&A (8.82%) and \$2,701.70 in profit (10%) for a total of \$58,512.82. The CORS indicated the work would take 10 days to accomplish. (R4, tab 105 at 84)

62. On 5 June 2007, BAE submitted CFR No. 211 to the government recommending that it issue a C/O to accomplish the additional work. Ship Surveyor Large acknowledged receipt of the CFR on 6 June 2007 noting under "CUSTOMER DIRECTION": "Under review by contracting officer." (R4, tab 105 at 78)

¹⁰ BAE erroneously used \$16,904.50 in its CORS; the correct amount should be \$15,904.50. The G&A, profit, and total amounts were correct.

CFR No. 212 – Additional A/C Drain Piping

63. CSI's Report No. LSV-031 dated 5 June 2007 notified BAE that the A/C drain piping installed throughout the vessel was significantly different from that shown on the drawings (R4, tab 105 at 86). CSI's attached spreadsheet showed various additional elbows, couplings, sleeves, tees, unions; piping and fittings were required at an estimated cost of \$15,028.74 (*id.* at 88).

64. As Mr. Brown explained at the hearing, "All the air conditioning units in each cabin had a dual drain system that tied together" and went either overboard or into a holding tank (tr. 2/196). The A/C drawing provided showed "two drains tied together and going down." CSI expected the drains would go down, tie into each other, and go off somewhere, but it found individual drains "ran significant...distances on their own," dropped down on their own, and did not necessarily tie together. (Tr. 2/196-97) Since the A/C drain system was located throughout the vessel, it was an extensive system to replace (tr. 2/196).

65. CSI's 5 June 2007 letter proposed to do the additional work for \$67,876.74: \$38,584.00 in ST labor (742 hours x \$52.00); \$6,422.00 in OT differential (247 hours x \$26.00); \$5,920.00 in per diem cost (74 man days x \$80.00); \$16,650.74 in materials; and \$300.00 in freight (R4, tab 105 at 89).

66. BAE's CORS added \$26,166.00 (356 hours x \$73.50) in ST labor; \$3,270.75 in OT differential (89 hours x \$36.75); \$2,012.06 in materials and rents; \$67,876.74 in subcontractor (CSI) cost; \$6,164.19 in G&A (8.82%); and \$6,787.67 in profit (10%) for a total of \$112,277.42. The COR indicated the work would take 20 days to accomplish. (R4, tab 105 at 91)

67. On 6 June 2007, BAE submitted CFR No. 212 to the government recommending that the government issue a C/O to provide for additional labor, material and equipment to remove and install the additional A/C drain piping materials listed (R4, tab 105 at 85). Ship Surveyor Large acknowledged receipt of CFR No. 212 on 6 June 2007 noting under "CUSTOMER DIRECTION": "See email DTD 6 JUN 07 from Contracting Officer" (*id.*).

CFR No. 213 – Additional Lines to Brominator

68. CSI's Report No. LSV-028 dated 31 May 2007 notified BAE that the potable water piping installed onboard the vessel that ran to and from the Brominator System differed from what was shown on the contract drawing (R4, tab 105 at 93). CSI's attached spreadsheet showed additional valves, elbows, couplings, sleeves, piping and additional fittings at an estimated cost of \$2,902.50 would be required (*id.* at 94).

69. Mr. Brown explained that the Brominator System was located in the back of the engine room. Pipes from above went into it. While the drawings showed some of the piping, “there was significantly more piping involved” (tr. 2/200). CSI’s 31 May 2007 letter to BAE proposed \$14,352.10 to do the additional work: \$8,320.00 in ST labor (160 hours x \$52.00); \$1,378.00 in OT differential (53 hours x \$26.00); \$1,280.00 in per diem cost (16 man days x \$80.00); and \$3,374.10 in materials (R4, tab 105 at 95).

70. BAE’s CORS added \$8,820.00 in ST labor (120 hours x \$73.50); \$1,102.50 in OT differential (30 hours x \$36.75); \$345.40 in materials; \$14,352.10 in subcontractor (CSI) cost; \$1,296.32 in G&A (8.82%); and \$1,435.21 in profit (10%) for a total of \$27,351.53. The CORS indicated the work would take 8 days to accomplish. (R4, tab 105 at 97)

71. BAE submitted CFR No. 213 to the government recommending that a C/O be issued to provide additional labor, material and equipment to remove and install the additional Brominator piping. Ship Surveyor Large acknowledged receipt of CFR No. 213 on 6 June 2007 noting under “CUSTOMER DIRECTION”: “See email DTD 6 JUN 07 from Contracting Officer.” (R4, tab 105 at 92)

CFR No. 223 – Gray Water Piping System

72. CSI’s Report No. LSV-030 dated 31 May 2007 notified BAE that the Gray Water Piping System required to be replaced was significantly different from what was expected (R4, tab 105 at 104). According to Brown, CSI never received any gray water drawings (tr. 2/203-04), and it based its estimate upon observations and actual measurements onboard the vessel (tr. 2/205).

73. CSI’s attached spreadsheets showed various additional piping, fittings and materials in the amount of \$108,020.55 would be required to replace the Gray Water Piping System (R4, tab 105 at 106).

74. CSI’s 9 June 2007 letter to BAE proposed \$364,632.55 to do the additional work: \$194,376.00 in ST labor (3,738 hours x \$52.00); \$32,396.00 in OT differential (1,246 hours x \$26.00); \$29,840.00 in per diem (373 man days x \$80.00); and \$108,020.55 in materials (R4, tab 105 at 107).

75. Mr. Brown explained that replacing the Gray Water Piping System was more expensive than the other piping work because: (1) CSI “didn’t have any drawings,” (2) CSI’s “expectation weren’t near as involved as this system ended up being”; (3) this was not a “single-source drainage system” but “[e]verything came down and then cross-connected,” which “made it a lot more involved...[and] nothing you would normally anticipate finding” (tr. 2/207-08). In addition, the Gray Water Piping System was found “throughout the vessel” and gray water called for bigger pipes (tr. 2/208).

Mr. Brown testified that in estimating how much materials and labor would be required for replacement, he personally looked at the system all over the vessel (tr. 2/208).

76. BAE's CORS added \$69,384.00 in ST labor (944 hours x \$73.50); \$8,673.00 in OT differential (236 hours x \$36.75); \$1,974.00 in materials; \$364,632.55 in subcontractor (CSI) cost; \$32,334.70 in G&A (8.82%); and \$36,463.26 in profit (10%) for a total of \$513,461.59. The CORS indicated it would take 57 days to do the work (R4, tab 105 at 109).

77. BAE submitted CFR No. 223 to the government on 12 June 2007. The CFR stated that "contractor has never received government guidance dwgs for gray water system" and there was "significant differences from what was expected and what you have." The CFR recommended that a C/O be issued to provide labor, material and equipment to complete installation of the Gray Water Piping System. (R4, tab 105 at 103)

78. After he received CFR No. 223, Ship Surveyor did look at the Gray Water System. He did not, however, make an effort to verify the quantity of piping and fittings on CSI's material spreadsheet. (Tr. 3/172)

CFR No. 319 – Interferences Not Shown on the Contract Drawings

79. By letter dated 16 July 2007, CSI forwarded to BAE a five-page outline of the interferences it encountered that were not shown on the contract drawings or could be seen during ship check. The outline covered "the a/c drains, hot & cold potable water and gray water drains not shown," and "vent lines and piping runs in walls which [were] not expected along with the added runs not shown on plans." (R4, tab 105 at 126-31)

80. The outline listed 14 areas of interferences for which CSI sought \$46,586.00¹¹: (1) Bridge Deck (\$2,008.00); (2) Officer S/R 03-96-B (\$652.00); (3) Officer S/R 03-96-0 (\$208.00); (4) Officer S/R 03-96-14 (\$652.00), (5) Sick Bay (\$2,828.00); (6) Crew Mess (\$1,696.00); (7) Galley (\$416.00); (8) Officer Mess (\$1,840.00); (9) 02 Level Passageway Starboard Side (\$2,400.00); (10) 02 level Passageway Portside (\$416.00); (11) T-S 01-100-1 (\$2,232.00); (12) T-S 01-100-2 (\$2,232.00), (13) Overhead Car deck (\$11,498.00); and (14) Gray Water Piping (\$20,392.00). (R4, tab 105 at 127-31)

81. The government has not disputed that CSI ran into unexpected interferences at various places of the vessel. No detailed fact finding is therefore

¹¹ Adding the 14 areas of interference as stated in Rule 4, tab 105 at 127-31, we arrive at \$49,470.00.

necessary. The following examples gives a flavor of CSI's additional removal and restoration work. In the "Sick Bay," CSI's letter stated:

The plans show the ac unit in the wrong location. All piping is going down the wall where it was supposed to be. We had to remove 2 wall panels, trim, base, ceiling tile and cabinets to gain access at the new location as well as 2 panels, ceiling tile, trim and base for the gray water line on the opposite wall. The pipes were separate[d] by several feet requiring extras, bulkhead removal and ceiling. Once tested all bulkheads, trim, base ceiling and furniture had to be reinstalled.

Overhead florescent lighting had to be removed and [temporarily] suspended during pipe installation then repositioned in original location in ceiling grid.

(R4, tab 105 at 128)

82. In the "Galley," CSI's letter stated:

We have 2 pipes next to the refrigerator not shown, requiring us to remove one additional wall panel, trim, base, and ceiling tile. Once complete we...reinstall[ed] [the] panel, trim, base and ceiling.

Overhead florescent lighting had to be removed and [temporarily] suspended during pipe installation then repositioned in original location in ceiling grid.

(R4, tab 105 at 129)

83. BAE's CORS added \$3,528.00 in ST labor (48 hours x \$73.50); \$39.36 in materials; \$46,586.00 in subcontractor (CSI) cost; \$4,112.36 in G&A (8.82%) and \$4,658.60 in profit (10%) for a total of \$58,924.32 (R4, tab 105 at 132).

84. BAE's CFR No. 319 signed by Mr. Bain on 14 July 2007 recommended that the government issue a C/O for labor, material and equipment to accomplish the restoration work (R4, tab 105 at 125).

CFRs Relating to Defective Parts Discovered

CFR No. 166 – Replacement of Clogged A/C Room Water Heater Valves

85. CSI's Report No. LSV-017 dated 14 May 2007 notified BAE that during removal of the pipe and fittings for the water heaters in the A/C Room, it was discovered that all of the valves/check valves were 80 to 95% clogged. The report identified (1) four 1 1/4" Gate Valves, (2) four 3/4" Gate Valves, and (3) one 3/4" Ball Check Valves needing to be replaced. (R4, tab 105 at 169)

86. CSI's 15 May 2007 letter proposed to replace the valves for \$3,955.00: \$832.00 in ST labor (16 hours x \$52.00); \$130.00 in OT differential (5 hours x \$26.00); \$160.00 in per diem cost (2 man days x \$80.00); and \$2,833.00 in material and shipping costs (R4, tab 105 at 170).

87. BAE's CORS, revised 16 June 2007, added \$1,176.00 in ST labor (16 hours x \$73.50); \$53.12 in materials; \$3,955.00 in subcontractor (CSI) costs; \$353.52 in G&A (8.82%); \$395.50 in profit (10%) and \$60.00 for shipping, and came up with \$5,993.14 to replace the valves. The CORS indicated the work would take 2 days to accomplish. (R4, tab 105 at 172)

88. BAE submitted CFR No. 166 to the government on 21 May 2007 recommending that it issue a C/O to provide labor, material and equipment to replace the valves (R4, tab 105 at 168).

CFR No. 173 – Replacement of Cutout Valves

89. CSI's Report No. LSV-022 dated 14 May 2007 notified BAE that during removal of the potable water system valves, it was noted that the valves were "severely corroded and clogged" (R4, tab 105 at 174). CSI's attached spreadsheets showed 50 valves at 18 locations needed to be replaced (R4, tab 105 at 175-76).

90. CSI's 18 May 2007 letter to BAE proposed to do the work for \$15,016.00: \$5,200.00 in ST labor (100 hours x \$52.00); \$858.00 in OT differential (33 hours x \$26.00); \$800.00 in per diem (10 man days x \$80.00); \$8,078.00 in materials; and \$80.00 for shipping (R4, tab 105 at 177).

91. BAE's CORS, revised 19 June 2007, added no labor costs, but added \$1,324.41 in G&A (8.82%) and \$1,501.60 in profit (10%) to the subcontractor (CSI) cost of \$15,016.00 plus \$80.00 in shipping to arrive at the total amount of \$17,922.01 to replace the valves. The CORS indicated the work would take 10 days to accomplish. (R4, tab 105 at 179)

92. BAE's CFR No. 173 to the government recommended that the government issue a C/O to provide for labor, material and equipment to replace the deteriorated cutout valves found (R4, tab 105 at 173).

CFR No. 224 – Half Inch Valves in Potable Water System – Coffee Makers, Sinks, etc.

93. CSI's Report No. LSV-012 dated 23 April 2007 notified BAE that when removing the piping for the stateroom sinks, coffee makers, water fountains, etc., it was discovered that many of the "commercial grade" valves "did not hold." CSI recommended all 68 of the valves be replaced so that the hydro testing would not be impacted. (R4, tab 105 at 181)

94. CSI's 10 May 2007 letter to BAE proposed to replace the valves for \$6,028.00: \$3,536.00 in ST labor (68 hours x \$52.00); \$572.00 in OT differential (22 hours x \$26.00); \$560.00 in per diem (7 man days x \$80.00); and \$1,360.00 in materials (R4, tab 105 at 182).

95. BAE's CORS added no labor costs for its part, but added \$531.67 for G&A (8.82%) and \$602.80 for profit (10%) to \$6,028.00 in subcontractor (CSI) cost for a total of \$7,162.47 to replace the fresh waterline valves. The CORS indicated the work would take 7 days to accomplish. (R4, tab 105 at 184)

96. BAE submitted CFR No. 224 to the government on 12 June 2007 recommending that it issue a C/O for labor, material and equipment to replace 68 valves (R4, tab 105 at 180).

CFR No. 220 – Replacing Damaged Bulkhead Panels

97. CSI's Report No. LSV-010 dated 23 April 2007 reported that when removing the paneling in the port side corridor on the main deck by the main exit door, it found several of the panels were damp or wet, and fell apart when the seam strip was removed. The report said that the source of the water had not been determined. It recommended that the panels be replaced. (R4, tab 105 at 100)

98. CSI's 10 May 2007 letter provided BAE "a per panel price" because "the exact extent of the water/moisture damage has not been determined." The per panel replacement price was quoted at \$550.00 including \$270.00 in labor (6 hours x \$45.00) and \$280.00 in materials. (R4, tab 105 at 101) Thus, replacing five panels would cost \$2,750.00.

99. BAE's CORS added \$514.50 in ST labor (7 hours x \$73.50); \$147.00 in OT differential (4 hours x \$36.75); \$2,750.00 in subcontractor (CSI) cost; \$242.55 in

G&A (8.82%); and \$275.00 in profit (10%) for a total of \$3,929.05 to replace five bulkhead panels (R4, tab 105 at 102).

100. BAE submitted CFR No. 220 on 11 June 2007 (replacing CFR No. 151 submitted earlier on 16 May 2007) recommending that the government issue a C/O providing for labor, material and equipment to renew the damaged bulkhead panels. CFR indicated that ship check was accomplished with port engineer and found five panels needed to be replaced. (R4, tab 105 at 98-99)

CFR No. 225 – Fuel Oil Tank Baffle Plate

101. CSI's Report No. LSV-032 dated 5 June 2007 notified BAE that during removal of piping running through the fuel tank forward of the engine room on the starboard side, it found that the pipe/sleeve/tunnel was installed in two sections with a baffle plate welded in the middle. The piping running through the sleeve/tunnel was found welded to the baffle on both sides making it impossible to remove the piping. The report said that the baffle plate was not shown on the contract drawings. CSI recommended cutting and removing the middle section of the tunnel, and fabricating and installing a new baffle plate. (R4, tab 105 at 111)

102. CSI's 5 June 2007 letter to BAE proposed to do the work for \$14,142.00: \$10,400.00 in ST labor (200 hours x \$52.00); \$1,716.00 in OT differential (66 hours x \$26.00); \$1,600.00 in per diem cost (20 man days x \$80.00); and \$426.00 in materials (R4, tab 105 at 112).

103. BAE's CORS added \$14,112.00 in ST labor (192 hours x \$73.50); \$1,764.00 in OT differential (48 hours x \$36.75); \$157.44 in materials; \$14,142.00 in subcontractor (CSI) cost; \$1,261.21 in G&A (8.82%); and \$1,414.20 in profit (10%) for a total of \$32,850.85 to do the work. The CORS indicated the work would take 10 days to accomplish. (R4, tab 105 at 113)

104. BAE submitted CFR No. 225 to the government on 12 June 2007 recommending that the government issue a C/O to cut out and remove the middle section of the tunnel (R4, tab 105 at 110).

CFR No. 226 – Engine Room Potable Water System Valves

105. CSI's Report No. LSV-033 dated 13 June 2007 notified BAE that during removal of the potable water system valves and strainers in the engine room, it found that the valves were severely clogged. CSI recommended replacing the clogged valves with new ones and attached a list of sizes and quantities. (R4, tab 105 at 186-87)

106. CSI's 13 June 2007 letter to BAE proposed to do the work for \$4,489.70: \$624.00 in ST labor (12 hours x \$52.00); \$104.00 in OT differential (4 hours x \$26.00); \$80.00 in per diem (1 man day x \$80.00); \$3,541.70 in material and \$140.00 in freight (R4, tab 105 at 188).

107. BAE's CORS added \$1,984.50 in ST labor (27 hours x \$73.50); \$147.00 in OT differential (4 hours x \$36.75); \$22.14 in materials; \$4,489.70 in subcontractor (CSI) cost; \$397.94 in G&A (8.82%); and \$448.97 in profit (10%) for a total of \$7,490.25. The CORS indicated the work would take 2 days to accomplish. (R4, tab 105 at 190).

108. BAE submitted CFR No. 226 to the government on 13 June 2007 recommending that a C/O be issued to replace the listed valves (R4, tab 105 at 185).

CFR No. 231 – Replacing Deteriorated A/C Cooling Coil Evaporator Baffles

109. CSI's Report No. LSV-035 dated 14 June 2007 notified BAE that during installation of the new stainless steel filter housing, it found that the A/C cooling coil evaporator baffles were severely deteriorated and would need to be replaced (R4, tab 105 at 115).

110. CSI's 14 June 2007 letter to BAE proposed to do the work for \$2,716.00¹²: \$1,560.00 in ST labor (30 hours x \$52.00); \$936.00 in OT differential (12 hours x \$78.00); and \$220.00 in materials (R4, tab 105 at 117).

111. BAE's CORS added no labor or materials of its own. It added \$239.55 G&A (8.82%) and \$271.60 in profit (10%) to the subcontractor (CSI) cost and arrived at \$3,227.15 to do the work. The CORS indicated the work would take 4 days to accomplish. (R4, tab 105 at 119)

112. BAE submitted CFR No. 231 to the government on 14 June 2007 recommending that a C/O be issued to replace the A/C cooling coil evaporator baffles (R4, tab 105 at 114). After the hearing, BAE in its post-hearing brief dropped this CFR; it acknowledged that the parties had settled this CFR as a part of Modification No. 9 (app. br. at 40, 68; R4, tab 94 at 3, at 9 of 13). Until this occurred however, the parties' litigated all 19 CFRs. As a result of the settlement of CFR No. 231, we deduct from CSI's labor hour claim 30 ST hours and 12 OT differential hours, and we deduct from CSI's material claim \$220.00.

¹² CSI erroneously used \$78.00 instead of the normal \$26.00 OT differential. Properly calculated, CSI's proposal should be \$2,092.00 (\$1,560.00 + \$312.00 + \$220.00). As will be seen, this error has no effect on the decision we reach (see Footnote 14).

CFR No. 238 – A/C Drain System Check Valve Replacement

113. CSI's Report No. LSV-036 dated 15 June 2007 notified BAE that while tying into the check valves for the A/C Drain System, it discovered that the check valves were badly eroded and need to be replaced. The report listed three 1 1/2" check valves and two 3/4" check valves. (R4, tab 105 at 192)

114. CSI's 15 June 2007 letter to BAE proposed to do the work for \$2,446.00: \$1,040.00 in ST labor (20 hours x \$52.00); \$156.00 in OT differential (6 hours x \$26.00); and \$1,251.00 in materials (R4, tab 105 at 193).

115. BAE's CORS added \$1,176.00 in ST labor (16 hours x \$73.50), \$147.00 in OT differential (4 hours x \$36.75); \$13.12 in materials; \$2,446.00 in subcontractor (CSI) costs; \$216.69 in G&A (8.82%); \$244.60 in profit (10%) for a total of \$4,243.61 to do the work. The CORS indicated the work would take 3 days to accomplish. (R4, tab 105 at 195)

116. BAE submitted CFR No. 238 to the government on 15 June 2007 requesting a C/O for additional labor and material, and said "This item is impacting completion." Ship Surveyor Large acknowledged receipt of the CFR on 19 June 2007 and noted under "CUSTOMER DIRECTION": "under Review." (R4, tab 105 at 191)

CFR No. 260 – Replacement of A/C Unit Drain Hoses

117. CSI's Report No. LSV-038 dated 18 June 2007 notified BAE that during replacement of the A/C drain piping, it found that the clear flex hoses were badly deteriorated and clogged with debris. CSI recommended replacing the hose and clamps for each unit before reconnection. (R4, tab 105 at 121)

118. CSI's 18 June 2007 letter to BAE proposed to do the work for \$888.00¹³: \$624.00 in ST labor (12 hours x \$52.00); \$104.00 in OT differential (4 hours x \$26.00); \$80.00 in per diem (1 man day x \$80.00); and \$160.00 in materials (R4, tab 105 at 122).

119. BAE's CORS added no labor and materials for itself. It added \$78.32 in G&A (8.82%); \$88.80 in profit (10%) and \$888.00 in subcontractor (CSI) cost for a total of \$1,055.12 to do the work. The CORS indicated the work would take 2 days to accomplish. (R4, tab 105 at 124)

120. BAE submitted CFR No. 260 to the government on 18 June 2007 recommending that a C/O be issued to replace the deteriorated hose and clamps at each A/C unit (R4, tab 105 at 120).

¹³ The correct number should be \$968.00 (\$624.00 + \$104.00 + \$80.00 + \$160.00).

121. As summarized in the following table, between mid-May and mid-July, 2007, BAE submitted to the CO 19 CFRs. Ten of the CFR stemmed from outdated, inaccurate, incomplete or otherwise defective drawings the government referenced in its solicitation. The rest of the CFRs stemmed from deteriorated parts CSI found in replacing the existing P/W, A/C and Drain Systems:

CFR No.	Date Submitted	Proposed Amount	Work Duration
155	17 May 2007	\$ 33,652.18	11 days
196	29 May 2007	\$ 18,270.61	7 days
203	31 May 2007	\$ 10,862.01	6 days
204	1 June 2007	\$ 37,794.87	12 days
209	4 June 2007	\$ 31,267.54	10 days
211	5 June 2007	\$ 58,512.82	10 days
212	6 June 2007	\$112,277.42	20 days
213	6 June 2007	\$ 27,351.53	8 days
223	12 June 2007	\$513,461.59	57 days
319	14 July 2007	\$ 58,924.32	not stated
166	21 May 2007	\$ 5,993.14	2 days
173	21 May 2007	\$ 17,922.01	10 days
224	12 June 2007	\$ 7,162.47	7 days
220	11 June 2007	\$ 3,929.05	not stated
225	12 June 2007	\$ 32,850.85	10 days
226	13 June 2007	\$ 7,490.25	2 days
231	14 June 2007	\$ 3,227.15	4 days
238	15 June 2007	\$ 4,243.61	3 days
260	18 June 2007	\$ 1,055.12	2 days
		\$986,248.54	

122. Adding the labor hours in the CFRs above, we find that CSI proposed roughly 6,262 ST hours for additional piping work and roughly 2,081 OT differential hours for additional piping work for all 19 CFRs. We use the word “roughly” because a few of CSI’s estimates (e.g. CFR Nos. 319, 220) provided only dollar estimates and no labor hour estimates. We find BAE’s CORS proposed 2,725 ST hours and 665 OT differential hours for its part of the additional piping work for all 19 CFRs. For all 19 CFRs, we find CSI and BAE estimated before they began replacing the piping they would incur roughly \$604,456.25 in additional labor costs:

(CSI) 6,262 hours x \$52.00 = \$325,624.00
 (CSI) 2,081 hours x \$26.00 = \$54,106.00
 (BAE) 2,725 hours x \$73.50 = \$200,287.50
 (BAE) 664 hours x \$36.75 = \$24,438.75
 \$604,456.25

As the discussion which follows will show, the amounts BAE and CSI are entitled to can be determined on an actual cost basis from the contemporaneous records such as timesheets and material invoices kept. The calculations above nonetheless provide some comparison to see if the actual labor hours BAE/CSI ultimately claimed for all 19 CFRs are reasonable.

123. On the piping-related CFRs, CSI estimated \$160,692.80 worth of additional materials would be required:

CFR No.	CSI's Estimated Additional Material Costs
155	\$2,462.60
196	\$1,395.80
203	(\$862.19)
204	\$3,210.40
209	\$2,110.50
211	\$5,061.00
212	\$16,650.74
213	\$3,374.10
223	\$108,020.55
319	
166	\$2,833.00
173	\$8,078.00
224	\$1,360.00
220	\$2,750.00
225	\$426.00
226	\$3,541.70
231	\$220.00 ¹⁴
238	\$1,251.00
260	\$160.00
Total	\$162,043.20

CSI's estimated material costs (not including freight or shipping (*see, e.g.*, CFR Nos. 173, 212) and sales tax in some cases) provide us with some measure of whether its material costs ultimately incurred are reasonable.

¹⁴ As the CO later discovered in 2014, this amount for material for CFR No. 231 had been paid as a part of Modification No. 9 of 25 August 2007 (R4, tab 94 at 3, at 9 of 13)

124. On 15 of the 19 CFRs above, CSI projected that 619 man days of per diem costs or \$49,520.00 (619 man days x \$80.00) would be necessary to perform the additional piping work:

CFR No.	Projected Man Days of Per Diem	Projected Per Diem Costs
155	20	\$1,600.00
196	10	\$800.00
203	10	\$800.00
204	23	\$1,840.00
209	20	\$1,600.00
211	32	\$2,560.00
212	74	\$5,920.00
213	16	\$1,280.00
223	373	\$29,840.00
319	None	0
166	2	\$160.00
173	10	\$800.00
224	7	\$560.00
220	None	0
225	20	\$1,600.00
226	1	\$80.00
231	None	0
238	None	0
260	1	\$80.00
Total	619	\$49,520.00

125. With all of the CFRs being submitted, and with her inability to visualize what had been found from her East Coast office in Virginia, CO Pantan decided she “needed a firsthand look” (tr. 3/212). On 27 and 28 June 2007, CO Pantan and her attorney visited BAE’s shipyard in San Francisco. CSI’s Mr. Brown led a walk-through with drawings in hand. He showed CO Pantan all of the piping not shown on the contract drawings so that she could see exactly what had to be done. The walk-through took “a significant portion of the day.” (Tr. 2/236-37)

126. CO Pantan testified that, as a result of the walk-through, she “got a much, much clearer understanding of the magnitude of what they [BAE/CSI] were talking about.” She acknowledged that, before the visit, she did not have a complete understanding of the changes in the piping system. (Tr. 3/212) She testified that after the bulkheads were removed, BAE/CSI expected to see the piping “come straight down” but “the piping...would go to here to here to here to here and then down. It was...a bit of a

mess.” (Tr. 3/213) She testified after seeing the problems BAE and CSI were having, she realized “how poor our drawings really were” (tr. 4/83). BAE’s Mr. Bain testified he understood the CO would go back and “look at everything...[and] would be acting on the changes” (tr. 2/51).

127. Mr. Brown testified when he discovered all of the piping not shown on the drawings when the bulkheads and partitions were removed, he showed them to Ship Surveyor Large who was “onboard every day” (tr. 2/235). Mr. Brown testified he was told that the CO would “look into it and get back to us” (tr. 2/237). He testified normally he would send a CFR through the prime contractor and negotiate an agreed price before proceeding with the work (tr. 2/228). That did not occur on the piping-related CFRs and BAE/CSI proceeded with the work nonetheless (tr. 2/229). It is undisputed that CO Panton did not attempt to negotiate or settle on any of the 19 CFRs in dispute before BAE completed all of the work replacing the P/W, A/C and Drain Piping Systems on the vessel (tr. 4/135-36).

128. During a telephone discussion held on 6 July 2007 between Mr. Bain and CO Panton, they “agreed on a contract extension date of 8/23/07 based on additional growth work for the PWAC and Gray water piping system”¹⁵ (R4, tab 76 at 3 of 4). We find that by 6 July 2007, BAE had submitted all but one of its piping-related CFRs. We find the CO knew from the CORSSs BAE submitted along with the CFRs that it would require OT and charge OT differential to assist CSI to complete the piping-related CFRs. We find that up to 6 July 2007, the CO knew that BAE had worked OT. We find the CO knew that BAE did not interpret the fully burdened rate provision to preclude it from claiming OT differentials on unsettled changed work. We find that, with full knowledge of BAE’s interpretation of that provision, the CO did not address or object to OT charges but entered into an agreement with BAE to extend the contract. There is no evidence that BAE agreed to the 27-day extension (from 27 July to 23 August 2007) without charging extra for overtime.

129. BAE advised CO Panton by letter dated 12 July 2007 that its subcontractor CSI “will be unable to continue with additional growth work” on the P/W, A/C and Gray Water Piping Systems without settlement of the outstanding CFRs. The letter said the government had so far failed to negotiate and settle the additional growth work associated with the piping systems and asked the government to take immediate action to negotiate and settle the CFR growth work or to issue

¹⁵ The parties’ 6 July 2007 oral agreement was subsequently incorporated along with other additional work into Modification No. 6. Although that modification was issued unilaterally and the parties disagreed on the equitable adjustment relating to the cloverleaf replacement, there is no disagreement relating to the 27-day extension to complete the additional P/W, A/C and Drain Piping Systems replacement work.

unilateral direction to proceed with the CFRs submitted. To expedite negotiations, BAE provided copies of CSI's material invoices through 24 June 2007. (R4, tab 63) CSI was running out of money because it planned to work on what it originally estimated and not on what it actually encountered (tr. 2/51).

130. CO Pantan, who was in Japan, replied by email dated 11 July 2007, that she was working on the invoices and "there seems to be a discrepancy between what you show as actuals and what you have purchased." She said that she could not come up with a bottom line offer until she had all the invoices. She then reminded BAE that, "[a]s previously agreed, the revised completion date for redelivery of the vessel is 23 Aug 07." She directed BAE to "proceed diligently with the work," to "complete performance," and she was leaving "management of your subcontractor...to your capable hands." (R4, tab 62)

131. Without meaningful technical input from Ship Surveyor Large and others at Fort Eustis, we find CO Pantan was simply not in a position to intelligently negotiate any piping-related CFRs. CO Pantan testified that, until she heard Mr. Brown testify at the hearing, she was not aware that due to volatility of the market in 2007, material prices could vary between the time they were quoted and the time they were invoiced (tr. 3/248-49).

132. Unable to settle the CFRs with the government, BAE issued five purchase orders and advanced \$350,000.00 to CSI so that it could continue to work to complete installation of the P/W, A/C and Gray Water Piping Systems (tr. 2/52). The purchase orders noted they were issued pending government settlement of the P/W, A/C and Gray Water Piping Systems:

P/O	Invoice No.	Invoice Date	Amount
S-75238	98370	7/3/07	\$100,000.00
S-75239	98373	7/20/07	\$62,500.00
S-75240	98378	7/27/07	\$62,500.00
S-75235	98384	8/1/07	\$62,500.00
S-77254	98409	9/5/07	\$62,500.00
			\$350,000.00

(R4, tab 105 at 17-30) We find BAE conditionally advanced the payments to enable CSI to continue with the expectation that it would ultimately recover the additional costs, believed to exceed the \$350,000.00, from the government.

133. On 19 July 2007, CO Pantan issued unilateral Modification No. 6. The modification required four items of additional work none of which related to the PW, A/C and Drain Piping Systems replacement work. These additional items were funded through the cancellation of DO No. 2 Work Items. Paragraph c. of the modification dealt with the time extension for, but not the costs of, the additional piping work:

c. The period of performance is extended twenty-seven (27) calendar days as agreed during our meeting on 28 Jun 07 and e-mail dated 6 Jul 07 due to additional piping repairs. All work, including trials and tests, shall be completed by the revised completion date. The revised period of performance is 30 Mar 07 through 23 Aug 07, a period of one hundred forty-seven (147) calendar days.

(R4, tab 72 at 2)

134. BAE's copper/nickel piping replacement work was "100% complete" and accepted by the government on 25 August 2007 (tr. 2/224-25; R4, tab 139 at subtab 12). Up through the completion of the LSV-5, BAE and CSI never received any adjustments for the additional piping work and piping related work they performed (tr. 2/82).

135. Two months after the completion of the overhaul, BAE by email dated 10 October 2007 to the CO sought reimbursement of \$1,546,635.46 for outstanding work items including: (1) Additional ABS (American Bureau of Shipping) Cost (\$16,214.00); (2) Additional P/W/ A/C Ovbd Drains (\$1,069,715.36); (3) Contract Extension (\$121,170.00); (4) Items Government Direction to Proceed (\$339,536.15) (R4, tab 97 at 1). BAE sought an equitable adjustment for 22 piping-related CFRs: CFR Nos. 155, 166, 193, 196, 203, 204, 209, 211, 212, 213, 166, 173, 213, 220, 223, 224, 225, 226, 231, 238, 260 and 319 (*id.* at 3). The correct number of CFRs should be 19. CFR No. 193 was incorrectly listed, and CFR Nos. 213 and 166 were listed twice. In comparing BAE's request for reimbursement on the CFRs (R4, tab 97 at 3 of 5) with the CFR proposals it submitted in May, June and July, 2007 (finding 121), we find BAE's piping-related CFR requests for reimbursement were based on its initial CFR estimates.

136. CO Panton's 29 November 2007 letter corrected the errors she found on CFR Nos. 166, 193 and 213. She adjusted BAE's piping claims to \$978,058.20. She highlighted the discrepancies she found between the invoices CSI paid and the prices stated on its estimate. For example, on CFR No. 166, she found CSI quoted the 1¼ gate valves at \$385.00 but found CSI paid an average of \$342.00 for the nine valves purchased. On the ¾ inch gate valves, she found CSI quoted \$242.00 but paid \$209.00. And, she found the Check Valve was quoted at \$265.00 but CSI paid \$159.00. Contending that "materials are to be charged at cost," the CO said "this continuing issue has slowed down the analysis." (R4, tab 98 at 2 of 3)

137. BAE's 10 December 2007 response corrected the errors associated with BAE Nos. 193, 213, 166 and 231 by deducting amounts for those CFRs. BAE added

\$3,227.15 to CFR No. 231 and arrived at its final price of \$994,324.97. BAE explained that the minor discrepancies in material prices were due to the fact that “the material pricing provided to the Army were estimates” provided by subcontractors and vendors. BAE also explained that “the invoices that the Army has received do not show the 8% sales tax that CSI had to pay for all of the materials,” and “[t]he material supplier totaled this tax and a bill was provided prior to settling the final bill for all of the material provide[d] to CSI for the job.” (R4, tab 99 at 2 of 8) The record shows Tork Systems invoiced CSI \$11,087.75 on 28 September 2007 for 8.50% sales tax not previously included when materials CSI purchased were billed (app. supp. R4, tab 500).

138. In July 2009, BAE and CSI entered into “AGREEMENT CONCERNING PROSECUTION OF CLAIMS.” Paragraph 2 of the agreement provided that “[BAE’s] liability to Subcontractor [CSI] on this claim is contingent on [BAE’s] recovery from the Government in respect to [CSI’s] claim and shall not exceed the amount of any such recovery.” (App. supp. R4, tab 506, encl. (1)). A spreadsheet enclosed with BAE’s 29 June 2009 letter transmitting the agreement showed CSI’s claim on the 19 CFRs totaled \$634,802.20. With the initial subcontract between BAE and CSI for Item No. 2062 for \$150,049.00, this meant CSI was due \$784,851.20 (\$150,049.00 + \$634,802.20). The spreadsheet also showed that, with \$150,049.00 paid for Item No. 2062 and with \$350,000.00 paid as “REA Total Partial Advance Payments,” CSI would be due from BAE a balance of \$284,802.20 if BAE prevailed on all of its CFR claims:

CSI’s Claim for 19 CFRs	\$634,802.20
BAE/CSI Subcontract Amount	\$150,049.00
Amount Due CSI	\$784,851.20
Amount Paid	(\$150,049.00)
Partial Total Amount Advanced & Paid	(\$350,000.00)
Amount Due CSI if Prevailed on All 19 CFRs	\$284,802.20

(App. supp. R4, tab 506 at enclosure (2)) We find the agreement provided that BAE would prosecute CSI’s piping claim and BAE would be liable to CSI for the amount BAE recovered from the government.

139. We have compared the amount CSI estimated versus the amount claimed for each CFR. Except for CFR No. 203 for which CSI estimated \$8,295.31 but claimed \$1,945.81, or \$6,349.50 less, CSI’s claim was based upon what it estimated:

CFR No.	As Estimated	As Claimed (App. supp. R4, tab 506, encl. (2))
155	\$16,504.60	\$16,504.60
196	\$8,123.80	\$8,123.80
203	\$8,295.31	\$1,945.81
204	\$19,428.40	\$19,428.40
209	\$15,904.50	\$15,904.50
211	\$27,017.00	\$27,017.00
212	\$67,876.74	\$67,876.74
213	\$14,352.10	\$14,352.10
223	\$364,632.55	\$364,632.55
319	\$46,586.00	\$46,586.00
166	\$3,955.00	\$3,955.00
173	\$15,016.00	\$15,016.00
224	\$6,028.00	\$6,028.00
220	\$2,750.00	\$2,750.00
225	\$14,142.00	\$14,142.00
226	\$4,489.70	\$4,489.70
231	\$2,716.00	\$2,716.00
238	\$2,446.00	\$2,446.00
260	\$888.00	\$888.00
Total	\$641,151.70	\$634,802.20

Request for Equitable Adjustment (REA) No. 7

140. BAE's 8 July 2009 REA sought \$1,684,917.00 for "additional costs incurred in accomplishing the subject Programmed and Unprogrammed Drydocking, Cleaning, Painting and Repairs to the LSV-5." The REA divided open issues into five sections. Section 3 dealt with "Piping Issues, REA 007 for Piping Fittings and Valves." (R4, tab 103 at 3)

141. REA No.7 summarized the causes of its piping claim: During ship check for bidding purposes, BAE was unable to determine the piping and fittings required to replace the existing piping system because the ceilings and bulkhead panels were in place. In addition, in spaces where the piping was exposed, the lack of markings made it impossible to trace the piping to the specification Work Item. BAE had to rely on the drawings provided by the government to "produce the cost estimate for its bid." When BAE removed the panels during performance, it discovered that the government furnished drawings were "grossly in error." BAE reported its findings to the government by way of CFRs. (R4, tab 105 at 2)

142. BAE alleged that it found 3,257 feet of piping were required to accomplish the piping replacement work when the contract drawings showed 682 feet of piping was required. Similarly, 1,873 fittings were allegedly required when the drawings showed 399 fittings were required. BAE contended that it had to “remove and install an additional 2,575 feet [an increase of 478%] of piping and 1,474 fittings [an increase of 469%] over and above the bid estimate.” It contended that it encountered numerous interferences in removing and reinstalling pipes. It contended that the government directed it to replace all of the valves in the pipe runs when the CFRs reported they were plugged or deteriorated. (R4, tab 105 at 2) Attached to REA No. 7 was CSI’s Invoice No. 98310 dated 21 March 2007 for \$77,650.20 to BAE. CSI billed BAE this amount as “deposit...to order material,” under its contract (Purchase Order S-75178 LSV5) with BAE to perform the original piping work. (R4, tab 105 at 11) We find that based upon the Moss Point Marine drawings CSI estimated \$77,650.20 in materials would be required to perform Item No. 2062 piping work.

143. BAE’s REA No. 7 went on to explain that the massive increase in piping work requiring more than a 450% increase in materials and its attempt to maintain its schedule resulted in a variation in material prices for the same parts. Because material demands exceeded what suppliers had in stock, they had to rush to procure the materials from vendors and to have deliveries expedited. Also, the massive amount of added work required CSI personnel to remain in San Francisco longer, thus incurring overtime labor hours and additional per diem costs. (R4, tab 105 at 3)

144. BAE’s REA maintained that:

No costs are duplicated between the base estimate and the new work, and the pricing method for the new work is the same as for the base work (i.e., based upon the material cost and increased labor to remove, prepare, fit, run and weld the increased footage of pipe, fittings and install 143 new valves).

BAE also explained that the fire watch labor costs were for the new work only and do not overlap the fire watch costs for the base work. (R4, tab 105 at 3)

145. Attached to REA No. 7 were BAE’s CORS for the “2062 Piping Systems” and a spreadsheet for Item 2062. They summarized the elements of its request as follows:

<u>Cost Element</u>	<u>Amount</u>
2,725 ST hours @ \$73.50	\$200,288.00
527 OT differential @ \$36.75	\$ 19,391.00 ¹⁶
Materials	\$ 5,436.00
Subcontractor (CSI)	\$634,802.00
G&A @ 8.82%	\$ 56,661.00
Profit @ 10%	<u>\$ 69,690.00</u>
TOTAL	\$986,268.00

(R4, tab 105 at 7-8)

146. CO Panton responded to BAE's 8 July 2009 REA by letter dated 30 March 2010. With respect to REA No. 7, "Piping, Fittings and Valves," she said "The Army agrees with BAE that the specifications did not disclose the amount of materials needed. Once the panels were removed, conditions found by BAE were not in accordance with the drawings. The only issue left to be resolved is quantum." (R4, tab 109 at 4 of 7)

147. In providing an equitable adjustment for REA No. 7, CO Panton used the "benefit-of-the-bargain" approach: She noted in BAE's July 2009 submission, CSI expected to spend approximately \$77,650.20 of its \$150,049.00 contract with BAE on materials. Based on her finding that CSI substantiated spending \$162,482.40 on materials, or about 2.1 times the expected material amount of \$77,650.20, CO Panton allowed an equitable adjustment of \$449,703.00, or roughly 2.1 times the \$214,913.23 amount BAE bid for Item 2062. From this offer of \$449,703.00, CO Panton said "the Army would need to subtract any amount already paid for this line item." (R4, tab 109 at 4-5 of 7) Rounding up from \$234,789.77, she offered BAE an equitable adjustment of \$235,000.00 ($\$449,703.00 - \$214,913.23 = \$234,789.77$) for REA No. 7. Her letter said "Other than using the material amounts, the only other way this portion of the claim could be settled would be through an audit" (*id.* at 5 of 7).

148. CO Panton gave the following reasons for resorting to her 2.1 times material approach in providing equitable adjustment for REA No. 7:

Based on your REA documentation, and invoices previously submitted from Custom Ship Interiors, your claim lacks substantiation. What you have not provided is any type of contemporaneous accounting that shows the hours were spent for the claimed Item. Where are the

¹⁶ The 527 OT differential multiplied by \$36.75 yields \$19,367.25 not \$19,391.00. This minor computational error does not affect the ultimate outcome of the appeals.

workload documentation and material receipts? Where are the time cards? The invoices from CSI are misleading as it appears you have submitted paid invoices along with speculative invoices, all intermingled. You show a subcontractor total of \$634,802; however, the “invoices” totaled \$500,049.00. Without substantiation, you have not carried the burden of proving the amount of your request for equitable adjustment.

(R4, tab 109 at 5 of 7)

149. BAE’s 3 June 2010 letter provided a point-by-point response to CO Pantan’s 30 March 2010 letter. BAE asked CO Pantan to stop using “prior Piping and Valve Fitting documents” to evaluate its REA because those documents were superseded by the documents contained in its 8 July 2009 REA. BAE questioned the logic of the CO’s approach in analyzing its request. BAE said the government was approaching REA No. 7 as if it were a total cost claim which it was not. (R4, tab 113 at 1-2)

150. On BAE’s labor hours in support of CSI, BAE’s letter said that it had reviewed the original estimate as compared to its Job Labor Status Report. BAE stated that it collected the labor hours in support of the added piping work CSI had to do in two accounts: Work Item 2062 and Work Item 3000. BAE said that it determined “Work Item 2062 incurred 520 hours and work item 3000 incurred 1,331 hours for a total of 1,851 hours” and it was therefore reducing its labor hours claimed from 2,215 hours to 1,851 hours consisting of 1,572 regular hours and 279 overtime hours. BAE attached its Job Labor Status Reports in support. (R4, tab 113 at 2)

151. On its material costs in support of CSI’s additional piping work, BAE said it had reviewed its original material estimates versus its Material Status Report. BAE stated it collected its material costs in two internal accounts: Work Item 2062 and Work Item No. 3000. Based on its review, BAE said Work Item 2062 collected \$430.00 in material costs and Work Item 3000 collected \$2,694.00 in material costs. Based on its review, BAE said it would reduce its material costs from its estimated amount of \$5,436.00 down to \$3,124.00. BAE attached its Material Status Reports. Albeit not organized by CFR, BAE also attached numerous material invoices from CSI. (R4, tab 113 at 2, 6-272)

152. On subcontractor (CSI) costs, BAE’s letter said it also collected the costs in two accounts: BAE stated Work Item 2062 showed BAE incurred \$150,049 for the basic work and \$287,500 for REA No. 7, and Work Item 3000 showed BAE incurred \$62,500 for REA No. 7. BAE said it incurred \$350,000.00 (\$287,500 + \$62,500.00) which it had advanced “for the Army’s account...as shown in the attached MSRs,

Purchase Orders, Invoices and Checks.” BAE said that “CSI’s subcontract value of the REA still remains at \$634,802.” (R4, tab 113 at 2)

153. On CSI’s labor, BAE provided a summary showing CSI spent 7,202 regular hours and 3,451.5 OT hours on REA No. 7 work. The summary included 3,178 regular hours and 1,217 OT hours from CSI’s subcontractor, World Wide Labor, Inc. Adding all of the hours, BAE said CSI’s total labor hours consisted of 10,380 regular hours and 4,668.50 OT hours for a grand total of 15,048.5 hours. (R4, tab 113 at 2)

154. CSI’s labor hour summary was supported by its “LSV5/Copper Nick[el] Piping Job Time Sheet”:

Week Ending	ST Hours	OT Differential Hours	Total
4-13-07	96	24	120
4-20-07	176	86	262
4-27-07	240	140	380
5-4-07	280	130	410
5-10-07	240	120	360
5-18-07	276	118	394
5-25-07	352	166.5	518.5
6-1-07	360	149	509
6-8-07	296	134	430
6-15-07	509	226	735
6-22-07	560	282	842
6-29-07	576	274	850
7-6-07	446	210	656
7-13-07	432	208	640
7-20-07	432	208	640
7-27-07	424	196	620
8-3-07	416	208	624
8-10-07	432	268	700
8-17-07	352	147	499
8-23-07	187	76	263
8-31-07	120	81	201
Total	7,202	3,451.50	10,653.50

(R4, tab 113 at 84-104)

155. Since CSI did not submit the first of its piping-related CFRs stemming from defective contract drawings until 14 May 2007 (see CFR Nos. 155, 166, 173), it could not have been working on CFR-related work prior to that date. We therefore

disallow 1,032 ST hours and 500 OT differential of CSI's labor hours claimed. We also disallow 120 ST hours and 81 OT differential claimed for the week ending 31 August 2007 because the work on the vessel was completed on 25 August 2007:

Week Ending	ST Hours	OT Differential Hours	Total
4-13-07	96	24	120
4-20-07	176	86	262
4-27-07	240	140	380
5-4-07	280	130	410
5-10-07	240	120	360
8-31-07	120	81	201
Total	1,152	581	1,733

In other words, we find that CSI incurred 6,050 ST hours (7,202 hours – 1,032 hours – 120 hours) and 2,870.50 OT differential hours (3,451.50 hours – 500 hours – 81 hours) performing additional piping work.

156. At the CO's request, BAE by email on 13 July 2010 provided World Wide Labor's time sheets (R4, tab 114 at 1-16 of 19). BAE did not submit World Wide Labor's timesheet for the week ending 8 July 2007 at the time (*see* R4, tab 114 at 4-16 of 19). Apparently, DCAA saw the time sheet during its audit and found World Wide Labor charged 240 ST and 80 OT differential that week. This would increase the labor hours BAE claimed for World Wide Labor from 3,178 to 3,418 ST hours and OT hours from 1,217 to 1,297 hours. DCAA's worksheet (R4, tab 140, subtab D5 at 1) shows World Wide Labor was paid \$194,454.45 for its labor:

Week Ending	ST Hours	OT Differential Hours	Labor Cost
5-13-07	140	30	\$6,716.70
5-20-07	123	40	\$6,587.24
6-3-07	190	50	\$9,420.21
6-10-07	440	100	\$21,533.10
6-17-07	400	170	\$23,458.90
6-24-07	366	176	\$22,411.60
7-1-07	235	54	\$11,455.62
7-8-07	240	80	\$12,935.20
7-15-07	330	160	\$20,709.80
7-22-07	280	137	\$17,883.59
7-29-07	370	130	\$20,770.21
8-5-07	295	170	\$20,236.40
8-19-07	9	0	\$335.88

Total	3,418	1,297	\$194,454.45
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In reviewing World Wide Labor's labor costs, DCAA auditor's work papers commented "The claimed hours reconcile to the claim. WWL appears to be internally consistent. Claimed costs appear to be reasonable." (R4, tab 140, subtab D10) We disallow 140 ST and 30 OT differential hours worked during the week ending 13 May 2007 because World Wide Labor could not have been performing additional piping-related CFR work before 14 May 2007. We allow \$187,737.75 (\$194,454.45 - \$6,716.70) as a part of CSI's labor cost paid to the second tier contractor World Wide Labor, in performing some of the additional piping work.

157. On CSI materials, BAE provided a summary with back up documents consisting of invoices of "actual cost to CSI with no overhead or profit added" totaling \$159,781.74 (R4, tab 113 at 105-272).

158. Lastly, BAE's 3 June 2010 response (finding 149) explained that it entered into a subcontract with CSI to perform the basic Work Item 2062 P/W, A/C and Drain Piping replacement work for \$172,556.00, and CSI subsequently agreed to reduce the amount by \$22,507.00 to \$150,049.00. BAE explained that as work progressed and as the nature and extent of the piping work emerged, it acted quickly on behalf of the government and paid CSI \$100,000.00 and four \$62,500.00 payments totaling \$350,000.00 to enable CSI to "make payroll and remain solvent" while performing a massive amount of additional piping work. BAE stated it "has not received any payment for this REA from the Army even though we have already incurred and paid CSI \$350,000 against their total costs of \$634,802." (R4, tab 113 at 3)

159. As of its 3 June 2010 response, BAE sought \$903,973.00 for REA No. 7:

1,851 hours @ \$73.50	\$136,049.00
279 hours at OT differential @ \$36.75	\$ 10,253.00
Materials	\$ 3,124.00
Subcontractor (CSI)	\$634,802.00
G&A @ 8.82%	\$ 56,265.00
Profit on Subcontract @ 10%	<u>\$ 63,480.00</u>
Total	\$903,973.00

(R4, tab 113 at 3)

160. Almost four years after completion of the LSV-5 overhaul, BAE's general manager, Hugh Vanderspek, by letter dated 6 July 2011, converted REA No. 7 into a certified claim for \$903,973.00. The letter demanded payment or the CO's decision. (R4, tab 120) The letter summarized the bases of the claim: The Moss Point Marine

Drawings P-3 and P-13 issued as Item C.YY. and awarded as Item C.62 for replacing LSV-5's P/W, A/C and Drain Piping Systems were "essentially schematics." The drawings provided no dimensions for the piping and material requirements were stated as "A/R" (as required). From the drawings, BAE's piping subcontractor CSI understood it needed to replace 682 feet of piping and 399 fittings. As it turned out, CSI was required to replace 3,257 feet of piping and 1,873 fittings. During the course of performance in May, June, and July 2007, CSI submitted 19 CFRs providing detailed schedules which compared "the quantities anticipated based on the drawings and the actual installed quantities." BAE promptly submitted CSI's CFR estimates for additional labor and materials along with BAE's CORS for additional (BAE) labor, materials, G&A and profit to the government. And, although the government "acknowledged that additional piping work was done," it never compensated BAE even though the REA supplement provided "labor hour records of both CSI and BAESFSR as well as voluminous CSI material cost records." BAE's letter reiterated that its claimed amount for REA No. 7 was \$903,973. (*Id.* at 1-2 of 8)

BAE's Accounting System

161. For management and recordkeeping purposes, BAE maintains what it refers to as a "job cost accounting system" (tr. 1/90). This accounting system applies to every job on the shipyard, whether commercial or government work (tr. 1/91). Fundamentally, BAE's job order accounting system has two sides: On the labor side, the system "collect[s] hours that are worked by the employees that are charged to various projects and items." On the material side, purchase orders are filled out and approved, and "material costs to be charged to various projects and items" are collected. (Tr. 1/90)

162. Under BAE's accounting system, a time sheet was filled out daily by supervisors for each hourly employee and was submitted daily to the payroll department for entry into BAE's computer system (tr. 1/92, 94). The time sheets served two purposes: (1) "for the employees [to] get paid"; and (2) "for the hours to be allocated to the correct project and item number that [the employees were] working on" (tr. 1/92). The supervisors entered the hours on the timesheets; they also determined the job and the item "to which each employee's time [was] attributable" (tr. 1/93). Timesheet information was entered into BAE's computer system by BAE's payroll supervisor (tr. 1/94). Because BAE's employee time sheets were filled out daily by supervisors who reported to management and not by the hourly employees themselves, we find BAE's Job Labor Status Reports – based on the timesheet data entered daily into BAE's computer system – an accurate record of the labor hours BAE employees spent on any work item.

163. BAE's Job Order Accounting System produced Job Order Status Reports (*see, e.g.*, R4, tab 112 at 4). A Job Order Status Report showed "the number of hours on a particular project" (tr. 1/95). The Job Order Status Report for the piping-related

CFRs was assigned account number 43631.3002 (Account 3002). The first number – 43631 – designated the vessel involved. The second number – 3002 – designated the “subproject,” in this case the additional work on the P/W, A/C and Drain Piping Systems replacement. The Job Order Status Reports were the products of the same computer system in which BAE employee time sheets were entered. (Tr. 1/68, 95-96) The base contract Item No. 2062, “Potable Water and Air Conditioning Drain Piping Systems Replacement for LSV-5” was assigned Account 2062 (R4, tab 169 at 4). BAE’s work to “ASSIST CSI W/ITEM 2062” was charged to Account 3000 (*id.*).

164. BAE’s Job Cost Accounting System was capable of producing Labor Distribution Reports. The Labor Distribution Report BAE submitted in support of its claim summarized by labor category, by trade and by date, the ST and OT hours each BAE hourly employee worked and charged to specific accounts such as Account 3000 established for the additional piping work. (R4, tab 139, subtab 56 at 1-43) Subject to judgmental errors such as charging labor hours after the vessel was completed, we find BAE’s Labor Distribution Report the most reliable source, by far, for determining the additional labor hours BAE incurred in assisting CSI in accomplishing the CFR work.

165. Account 3000 was established to collect the ST and OT labor hours BAE’s trades incurred in assisting CSI in accomplishing the additional CFR work. Account 3000 showed:

Labor Category	Trade	ST/OT Hours	After 8/25/07 Hours
405	SHIPFITTERS	89.00	8 (8/27/07)
411	WHSE/TOOLROOM	188.00	
404	RIGGERS	88.50	8 (8/27/07)
412	CARPENTERS	32.00	
414	CRANE	70.00	4 (8/27/07)
402	PAINT	56.00	
407	ELECTRICAL	99.00	4 (8/27/07)
415	SHEETMETAL	28.00	
418	LAGGERS	282.50	
460	PURCHASING	11.00	4 (8/28-30/07)
406	PIPEFITTER	112.00	6 (8/28-9/12/07)
401	TRANSPORTATION	20.00	8 (8/27-28/07)
409	FACILITIES	6.00	4 (8/27-28/07)
405-OT	SHIPFITTERS	29.50	
411-OT	WHSE/TOOLROOM	32.75	
402-OT	PAINT	5.00	
418-OT	LAGGERS	112.00	
406-OT	PIPEFITTERS	34.00	
407-OT	ELECTRICAL	19.00	18 (8/26/07)

414-OT	CRANE	13.00	8 (8/26/07)
404-OT	RIGGERS	4.00	4 (8/26/07)
	TOTAL	1,331.25	46 ST + 30 OT

(R4, tab 139, subtab 56 at 1-12) From the table above, we find that BAE charged 1,331.25 hours to Account 3000 assisting CSI in removing the existing P/W, A/C and Drain Water Systems and replacing them with the new copper/nickel piping systems and other piping-related work. Of the 1,331.25 hours, 1,082 were ST hours and 249.25 were OT differential hours.

166. Of the 1,082 ST hours, we find 46 ST hours not chargeable to Account 3000 because they were incurred after the vessel was 100% complete on 25 August 2007. For the same reason, we find 30 OT differential hours not chargeable to Account 3000. This left 1,036 ST hours and 219.25 OT differential hours chargeable to Account 3000.

167. Even though the trades involved encompassed more than the seven trades (rigging, crane services, staging, electrical, ventilation, fire watches and cleaners) BAE initially agreed to furnish to assist CSI (*see* R4, tab 105 at 56), we find other BAE trades were required based upon the conditions of the pipes actually found and the new pipes needed to be installed. We find Ship Surveyor Large and the CO knew what trades BAE had to furnish based upon the CORS it provided with each CFR.

168. Account 2062 of BAE's Labor Distribution Report showed the following labor categories were used and the following ST and OT labor hours were incurred for the base contract piping work:

Labor Category	Trade	ST/OT Hours
460	PURCHASING	1.00
401	TRANSPORTATION	3.00
407	ELECTRICAL	12.00
411	WHSE/TOOLROOM	5.00
412	CARPENTERS	64.50
409	FACILITIES	1.00
410	LABORERS	320.00
415	SHEETMETAL	25.00
402	PAINT	58.50
402-OT	PAINT	29.00
410-OT	LABORERS	0.50
	TOTAL	519.50

(R4, tab 139, subtab 56 at 13-16) We find BAE charged to Account 2062 519.50 hours of which 29.50 hours were OT hours. Having established Account 3000

specifically to collect hours to assist CSI in performing the additional piping-related work, any such work should not have been charged to Account 2062. We find to the extent BAE performed base contract Item No. 2062 work, it collected hours in that account. We find the 519.50 ST/OT hours were charged to Account 2062 as a part of the original DO No. 2 work, and therefore are not recoverable.

169. To purchase material, a purchase order was also filled out by a supervisor. The project/item description number (e.g., Accounts 2062, 3000) was entered in the description box (*see* R4, tab 112 at 37; tr. 1/103). The PO was then entered into BAE's computer system by a purchasing employee (tr. 1/103). The material procurement would then be entered into BAE's Material Status Report (R4, tab 112 at 5). BAE's Material Status Report for Account 3000 showed that it incurred \$2,694.39 (R4, tab 113 at 46-48). We allow this amount.

170. We find that BAE had a structured and reliable cost accounting system in place for collecting and allocating actual incurred labor and material costs for changed work. BAE did not, however, charge labor and materials to each individual CFR. Although it would have been easier for all concerned if BAE had established a separate charge account for each CFR, we find it was not unreasonable for BAE to establish one separate account – Account 3000 – to collect all the hours relating to the additional piping-related CFR work since the work all stemmed from one contract line item – Item No. 2062.

Defense Contract Audit Agency (DCAA) Audit

171. The DCAA conducted an audit and issued a report – Audit Report No. 4281-2012W17200001 – on 31 August 2012 (the DCAA audit) as requested by the CO on 28 October 2011 (R4, tab 129). The audit examined BAE's price adjustment proposals under REA No. 6 (cloverleaf replacement) and REA No. 7 (P/W, A/C and Drain Piping Systems replacement). The audit report made clear that DCAA examined BAE's equitable adjustment claims "to determine if the proposed costs are acceptable for settlement" assuming that BAE "can demonstrate legal entitlement" (*id.* at 3 of 16). Applying the requirements of Federal Acquisition Regulation (FAR) and Defense FAR Supplement (DFARS), DCAA concluded that BAE had "submitted adequate data to support its claim" and the claims were "acceptable...for negotiation of fair and reasonable settlements" (*id.* at 4 of 16).

Labor Hours

172. Of the \$903,407 BAE claimed for REA No. 7, \$136,049 was for ST labor (R4, tab 129 at 5 of 16). The DCAA took "no exception to the proposed labor cost, labor hours and labor rate" for REA No. 7 (*id.* at 6 of 16). DCAA said it was able to reconcile "the proposed labor hours from the claim to the labor distribution report for

each REA.” The report explained “Employee labor charges were selectively traced to the labor distribution report for each REA.” (*Id.* at 6-7 of 16).

Materials

173. Of the \$903,407 BAE claimed for REA No. 7, \$3,124 was for materials it provided in support of CSI’s work (R4, tab 129 at 5 of 16). The audit report said it did not review BAE’s proposed \$3,124 claimed for materials “[d]ue to materiality” since “it represented less than 4 percent of total cost[s].” The DCAA report said it took “no exception to the...REA No. 7 material costs proposed by BAE.” (*Id.* at 7 of 16)

Overtime

174. Overtime was claimed at a differential of \$36.75, half of the straight time (ST) rate of \$73.50. During the audit, William P. Bernacchi of DCAA by email on 11 June 2012 asked Rick Brandt, BAE’s controller, whether there was any documentation authorizing overtime. The email stated: “If not, the contracting authority may have to issue one retroactively.”¹⁷ (R4, tab 139, subtab 29 at 2)

175. Mr. Brandt’s 12 June 2012 email replied:

As far as I know, there is no requirement in the LSV-5 contract for Government authorization of overtime.... We believe that if O/T was necessary to complete the work within schedule, that it is recoverable.

(R4, tab 139, subtab 29 at 2) Mr. Bernacchi testified that he did not receive from CO Pantan anything indicating that overtime hours were not appropriate or unallowable (tr. 1/35).

176. DCAA took no exception to the overtime labor hours claimed for REA No. 7 (R4, tab 129 at 10 of 16). Although BAE acknowledged that overtime had not been specifically authorized by the contract, it contended that the government set the delivery schedule for REA No. 7 and overtime was required to meet that schedule. The audit report said that DCAA was able to reconcile the overtime hours from BAE’s labor distribution reports to its claim, and BAE subcontractor overtime was included in its reconciliation of the CFR. The audit report pointed out that FAR 22-103-4(a-i)

¹⁷ FAR 22.103-4(a) (Jan 2003), Approvals, authorizes overtime to “(1) Meet essential delivery or performance schedules”; and (2) “Make up for delays beyond the control and without the fault or negligence of the contractor.” FAR 22.103-4(i) provides “Approvals for using overtime shall ordinarily be prospective, but, if justified by emergency circumstances, approvals may be retroactive.”

provided the contracting activities with “alternatives” to “how ‘overtime’ should be settled” (*id.* at 11 of 16).

Subcontract Costs

177. Of the \$903,407 BAE claimed for REA No. 7, \$634,282 was for subcontractor (CSI) costs (R4, tab 129 at 5 of 16). Of the \$634,282, \$159,782 was for subcontractor material costs, and the rest, \$474,500 (\$634,282 - \$159,782) was for its labor (*id.* at 8 of 16).

178. With respect to the REA No. 7 subcontractor material costs, the DCAA report said:

We reviewed and computed a total amount for materials for all CFRs. We also selectively reviewed vendor invoices, provided by CSI, to determine [if] the material costs were actually incurred and/or paid. The vendor invoices and records of payment *totaled more* than the proposed amount of \$159,782.

(R4, tab 129 at 8 of 16) (Emphasis added)

179. With respect to CSI’s labor, the DCAA report said it was able to reconcile the “proposed labor hours to individual employee’s timecards.” The DCAA however, found “twenty hours of overtime proposed that were not recorded.” The DCAA applied the \$26 OT differential rate and questioned \$520 (20 hours x \$26) of CSI subcontractor labor costs claimed. (R4, tab 129 at 8 of 16) BAE chose not to dispute the \$520 questioned (app. br. at 67). We deduct this amount, together with \$46.00 in G&A, and \$52.00 in profit on this amount (finding 182) from CSI’s final recovery.

180. For CSI’s second tier subcontractor, World Wide Labor, the DCAA report said it was able to reconcile “total labor hours to employee’s timecards completed during the period of performance” (R4, tab 129 at 8 of 16).

Per Diem Costs

181. At the hearing, in response to appellant counsel’s question whether he actually saw support that CSI paid per diem, DCAA auditor Mr. Bernacchi testified “I believe so, yes” (tr. 1/65). His audit work papers showed that he computed CSI’s per diem cost. In comparing Mr. Bernacchi’s computation with CSI’s original estimates, we find the auditor’s computation was derived from CSI’s CFRs and not from to actual payment records:

CFR No.	LSV No. (CSI Estimate)	Per Diem Amount
155	LSV-018	\$1,600.00
196	LSV-024	\$800.00
203	LSV-025	\$800.00
204	LSV-019	\$1,840.00
209	LSV-029	\$1,600.00
211	LSV-023	\$2,560.00
212	LSV-031	\$5,920.00
213	LSV-028	\$1,280.00
223	LSV-030	\$29,840.00
319		
166	LSV-017	\$160.00
173	LSV-022	\$800.00
224	LSV-012	\$560.00
220	LSV-101	
225	LSV-032	\$1,800.00
226	LSV-033	\$80.00
231	LSV-035	
238	LSV-036	\$80.00
260	LSV-038	\$80.00
	LSV-5	\$5,680.00
	Total	\$55,480.00

(R4, tab 140, subtab D5 at 2) CSI has failed to show to which CFR the \$5,680 for LSV-5 pertained. Based on the testimonial and documentary evidence in the record, we find that CSI did incur a reasonable number of man days and per diem costs in performing additional piping-related CFR work. The evidence does not allow us to determine with precision exactly how much was paid. We therefore award \$49,800 (\$55,480 - \$5,680) based on CSI's CFR estimate.

G&A

182. Of the \$903,407 claimed for REA No. 7, \$56,265 was for G&A (R4, tab 129 at 5 of 16). DCAA verified that the contractually negotiated rate of 8.82% was applied to "the materials and subcontract costs." Because DCAA questioned \$520 in subcontractor cost, it applied 8.82% to \$520 and questioned \$46 claimed for G&A (*id.* at 9 of 16). BAE chose not to dispute the \$520 in CSI OT labor cost questioned (app. br. at 67). We therefore deduct the \$46 in G&A and \$52 in profit for a total of \$98 on that amount from CSI's final recovery.

Profit

183. Of the \$903,407 BAE claimed for REA No. 7, \$63,480 was for profit (R4, tab 129 at 5 of 16). The DCAA applied the 10% negotiated profit rate to the subcontracts and took no exception (*id.* at 10 of 16).

184. CO Panton faulted DCAA for not getting “technical advice” in auditing REA No. 7. When asked from whom DCAA should have obtained technical advice, CO Panton answered “Mr. Large.” (Tr. 3/256) Ship Surveyor Large was on the vessel daily during the LSV-5 overhaul. He was given notice and had the opportunity to see firsthand when the CFRs and the CORs were estimated. He could have verified the pipes, elbows, tees, couples, and other parts required to be purchased and installed. He did not. He could have provided the CO his estimates on Specification Worksheets for the various piping installations as in the case of the cloverleaf replacement. He did not. Moreover, knowing the nature of BAE’s claim in REA No. 7, CO Panton could and should have offered DCAA her Ship Surveyor’s technical help when she requested the audit in October 2011. There is no evidence she did.

185. Because CSI’s material supplier invoices were not segregated by CFR, tracing which parts belong to which CFR became impossible. Foreseeing this difficulty, the Board by email on 31 December 2014 directed the CO to annotate her decision to provide Rule 4 references to the material costs claimed with material invoices paid. The government provided the CO’s annotation at the hearing. In going through several examples at the hearing, it became clear that some of the government’s assertions of material overcharging in the CO decision were incorrect (tr. 4/125-29). As it now stands, the completed DCAA’s audit did not question the material costs claimed as having been incurred. CO Panton acknowledged she was unaware of the sales tax issue until she heard it at the hearing (tr. 4/130). The material prices could vary from the time they were quoted to the time they were shipped (finding 31) which also explained some of the variations the CO found.

CSI’s Material Costs

186. BAE submitted hundreds of invoices in support of CSI’s claim for materials (*see* R4, tab 113). Unable to reconcile what BAE claimed and what the government was able to verify before and at the hearing, the Board’s 27 January 2015 letter provided the parties the following briefing instructions:

Excluding the \$11,087.75 in sales tax, there is a discrepancy (\$14,081.87) between the amount appellant claimed as material costs incurred over and above the original piping work (\$176,564.27) (app. R4. supp., tab 507) and the amount the government claimed as material

costs incurred over and above the original piping work (\$162,482.40) (ex. B-1 at 12). To isolate where the differences lie, each party is to run a calculator tape and annotate the tape with document references in the Rule 4 file. Each party is to submit its tape as an appendix to the brief. Each party may then address the other party's tape in its reply brief. To the extent possible, the parties are encouraged to stipulate to those additional material costs that are not in dispute.

187. BAE's 27 January 2015 email forwarded to the Board 16 pages of CSI credit card records which were not included in the Rule 4 file, tab 113. The parties agreed that the 16 pages should be added to tab 113 as pages 229-A through 229-P. In addition to material purchases, CSI's credit card records show payments made for car rental, food and lodging. We find CSI charged some of its per diem costs to its credit cards. CSI, however, has not provided a separate accounting of the per diem costs paid.

188. BAE's opening brief provided a summary of the material costs claimed by CSI. The summary was supported by a calculator tape for each vendor. Each amount on the calculator tape cross-referenced a supporting document under tab 113. (App. br., app'x B) The government did not provide a calculator tape with its opening brief; it provided a typed listing of amounts with cross-references to vendor invoices in its reply brief (gov't reply br., ex. 1 at 1-4).

189. Comparing the parties' numbers, we find only minor differences, highlighted in bold, with respect to two vendors: (1) McMaster-Carr and (2) Center Hardware:

Vendor/Record	CSI Invoiced Amount	Gov't Verification Amount
Tork Systems	\$144,755.58	\$144,755.58
Tork Systems Sale Tax	\$11,087.75	Undisputed
Master Card	\$3,215.16	\$3,215.16
McMaster-Carr	\$5,274.51	\$4,399.73
Grainger	\$45.39	\$45.39
Air Gas	\$599.77	\$599.77
Ferguson	\$761.62	\$761.61
Praxair	\$336.82	\$336.82
Center Hardware	\$501.61	\$550.13
Am. Ex.	\$13,130.67	\$13,130.67
Bearing Engineering	\$5.82	\$5.82
BAE Store	\$7,672.14	\$7,672.14
Home Depot	\$56.19	\$56.19

Lowes	\$159.50	\$159.50
Grainger	\$49.74	\$49.74
Total	\$187,652.27	\$175,738.25

(App. br., app'x B; gov't reply br., ex. 1)

190. The parties' difference of \$874.78 (\$5,274.51 - \$4,399.73) for materials purchased from McMaster-Carr came about because the government failed to include the following payments:

Invoice No.	Amount
69989121	\$50.59
69227393	\$168.46
69108466	\$36.25
68855182	\$251.54
6970943-02	\$216.72
68263999	\$35.40
68122206	\$115.82
Total	\$874.78

(R4, tab 113 at 121, 123-25, 127-29)

191. The parties' difference of \$48.52 (\$550.13 - \$501.61) with respect to materials purchased from Center Hardware came about because the government included Invoice 77755 for \$24.26 (R4, tab 113 at 142) for which BAE did not claim and thus gave the government a \$24.26 credit (app. br., app'x B at 8).

192. Referring to its material invoice summary, CSI's Brown testified that CSI's total cost for materials on the "entire copper nickel job" was \$187,652 including \$11,087.75 in Tork Systems sales tax (app. supp. R4, tab 507; tr. 2/299). Unlike BAE, CSI did not establish a separate account to collect CFR material costs as distinguished from material costs it originally estimated it would have to buy in performing the unchanged work. Some of the material invoices from Tork Systems were dated 14 May 2007 or shortly thereafter (*see* Invoice Nos. 8054, 8055, 8085, 8123, 8124, 8125) (R4, tab 113 at 196-202). This indicates those materials were ordered before CSI discovered CFR work was required (finding 39). Documentary evidence shows that CSI originally expected to spend \$77,650.20 on materials to perform the unchanged Item No. 2062 work (finding 142). So that CSI does not end up with a windfall, we find once the piping conditions behind the bulkheads and above the ceilings were exposed, CSI should have spent all of the \$77,650.20 it originally allotted for piping materials and claimed only the additional materials ultimately needed to accomplish the piping replacement work. Based upon findings 189, 190 and 191 above, we find

CSI incurred \$187,652.27 in material costs. We find the government is entitled to a \$77,650.20 credit. Thus, we find CSI is entitled to \$110,002.07 (\$187,652.27 - \$77,650.20) in additional material costs. The government has not disputed the \$11,087.75 of California sale tax which Tork Systems separately invoiced CSI (finding 32). Taking into consideration the parties have settled CFR No. 231, we deduct \$220.00 in material cost. We therefore allow a total \$120,869.82 (\$110,002.07 + \$11,087.75 - \$220.00) in CSI material costs.

The Government's Post-Audit Equitable Adjustment Approach

193. After she reviewed the audit report, CO Panton by letter dated 28 May 2013 made a final offer to settle the cloverleaf and piping claims. CO Panton did not find DCAA's audit helpful. Her letter said "Unfortunately, the DCAA audit did not clarify if the hours or amounts were actually incurred, but seemed to only provide a [superficial] affirmation that the arithmetic in your claim was correct." She offered to settle REA No. 7 for \$630,467.00. (R4, tab 131 at 4 of 4)

194. The \$630,467.00 equitable adjustment offer was based on BAE's recent bid price on the same work item for the LSV-3. When BAE bid on the LSV-5 overhaul, it bid \$214,913.00 for Item No. 2062, "Potable Water and Air Conditioning Drain Piping System Replacement." On the LSV-3, BAE bid \$845,380.00 for the same item. The difference between BAE's bid on the LSV-3 and the LSV-5 for the same work item was \$630,467.00 (\$845,380.00 - \$214,913.00). (R4, tab 131 at 4 of 4)

195. As explained at the hearing, the LSV-3 was LSV-5's sister ship (tr. 4/105) and LSV-3's solicitation for maintenance followed closely "on the heels" of the completion of the LSV-5 (tr. 4/103, 110). For the LSV-3 specifications, the government used "the volumes of pipe and fittings that were submitted on [BAE's LSV-5] invoices" in addition to the Moss Point Marine Drawings because the government knew the drawings "were wrong" (tr. 4/104-6; R4, tab 105 at 210). We find that the government must have considered that the piping runs and fittings ultimately installed on the LSV-5 were reasonable and would not mislead LSV-3 bidders. CO Panton acknowledged that, in the case of the LSV-5, "there was [not] much dispute on the material," rather, "[i]t was more the labor" (tr. 4/108).

CO Decision

196. CO Panton issued her decision by letter dated 1 August 2013 (R4, tab 138). The decision granted \$351,244.12 of the \$903,973.00 claimed, and denied \$552,728.88. The decision dismissed DCAA's audit findings for the following reasons:

All DCAA did, unfortunately, was verify the addition of the claim without verifying any of the underlying facts. DCAA

did not have any of the original time cards or any other information beyond the summary you provided. DCAA took no exception to the proposed material costs. DCAA specifically did not examine entitlement, but only looked at quantum. DCAA had no knowledge of the actual facts and did not look beyond the information offered by BAE.

(*Id.* at 11 of 13)

197. In rendering her decision, CO Panton divided the CFRs into two groups: The first group of 10 CFRs all involved contract drawings that the government conceded were incomplete and misleading for pricing labor and material costs for the P/W, A/C and Drain Systems replacement work on the vessel. This group included CFR Nos. 155, 196, 203, 204, 209, 211, 212, 213, 223 and 319. (R4, tab 138 at 12 of 13)

198. For this group, CO Panton granted equitable adjustment using what she described as “the benefit of the bargain” approach. Based on the information submitted, CO Panton found that CSI originally anticipated spending \$77,650.20 for materials for Item No. 2062, but ultimately spent what she found to be a substantiated amount of \$162,482.40, or 2.1 times the original amount. Applying 2.1 times to the bid amount of \$214,913.23 for Item No. 2062, CO Panton arrived at \$494,703.00¹⁸ which she believed would equitably compensate BAE/CSI for the 10 CFRs. For the 10 CFRs in this group, the CO decided BAE was entitled to an equitable adjustment of \$279,790.00 (\$494,703.00 - \$214,913.00). (R4, tab 138 at 12 of 13)

199. On the remaining nine CFRs, CO Panton applied a 33% decrease on the labor and 43% decrease on the materials based on BAE’s 3 June 2010 REA which reduced its labor hours claimed by 33% from 2,215 to 1,851 hours, and material costs by 43% from \$5,436.00 to \$3,124.00 (*see* findings 150, 151). She also disallowed all OT differential¹⁹ and what she believed to be unsubstantiated per diem costs. On these nine CFRs, she allowed a total of \$71,454.12:

CFR No. 166	\$ 5,150.00
CFR No. 173	\$16,920.00

¹⁸ The CO erroneously determined 2.1 times \$162,482.40 was \$494,703.00. The correct multiplication should yield \$451,317.78. The CO corrected this error in her amended decision issued on 3 October 2014. That decision was timely appealed and docketed as ASBCA No. 59642.

¹⁹ When asked why she disallowed overtime, CO Panton testified that BAE agreed to a fully burdened rate of \$73.50 per hour to perform changes, and its contract was a “Calendar day” not a “Monday through Friday” contract and “[i]t’s up to the contractor...to plan their time” (tr. 4/45-46).

CFR No. 220	\$ 3,635.00
CFR No. 224	\$ 6,602.47
CFR No. 225	\$24,600.00
CFR No. 226	\$ 6,616.00
CFR No. 231	\$ 3,227.15
CFR No. 238	\$ 3,728.50
CFR No. 260	<u>\$ 975.00</u>
Total	\$71,454.12

(R4, tab 138 at 12-13 of 13) Thus, the CO granted a total equitable adjustment of \$351,244.12 (\$279,790.00 + \$71,454.12) (R4, tab 138 at 1 of 13). BAE acknowledged it has been paid \$351,244.12²⁰ (\$279,790.00 + \$71,454.12) (app. br. at 68).

200. On a number of CFRs, the CO questioned the parts prices claimed. On CFR No. 166, for example, the CO observed that the 1 1/4" gate valves for which CSI quoted a price of \$385 each were purchased by CSI for \$345 (Tork Systems Invoice 8124). And, CSI claimed \$242 each for the 3/4" gate valves which it purchased for \$209 (Tork Systems Invoice 8124). (R4, tab 138 at 4 of 13, tab 113 at 200, 201) Since CSI's material claim is determined on invoiced prices, what the CFR quoted are inconsequential. Moreover, the minor differences in prices has been explained: (1) Parts prices could change between the time they were quoted and the time they were delivered due to market volatility in 2007 (finding 31); and (2) Tork Systems invoiced CSI for parts sales tax separately (finding 137).

201. BAE timely appealed the CO decision by notice dated 2 August 2013. The Board docketed the appeal on 7 August 2013 as ASBCA No. 58810. The appeal was heard together with ASBCA No. 58809 (the cloverleaf replacement case) and ASBCA No. 59642 (government's overpayment case).

ASBCA No. 59642 – CO's 3 October 2014 Amended Decision

202. CO Panton amended her 1 August 2013 decision by her 3 October 2014 decision. The new decision was issued to (1) disallow \$3,227.15 BAE already received through bilateral Modification No. 9 and (2) correct a calculation error in her prior decision. (R4, tab 167 at 1 of 3) The CO's 2014 decision reiterated that she had to "create a way to compensate BAE for the additional work it performed" because BAE's substantiating documentation "rolled up all CFRs into one single piping claim" making it impossible to make "a determination for each individual CFR" (*id.* at 1-2 of 3).

²⁰ BAE mistakenly used \$351,144.12, \$100.00 off, in its brief (app. br. at 68). The CO's 1 August 2013 decision used \$351,244.12 (R4, tab 138 at 1 of 13).

203. Following the same approach used previously, CO Panton found that BAE in bidding Item No. 2062 for \$214,913.23 originally planned to spend \$77,650.20 for materials. She found that CSI's material costs ultimately increased 2.1 times to \$162,482.40. Applying the same multiple (2.1 times) across each category of BAE's claim, including subcontractor and BAE's costs, CO Panton found that \$450,734.96²¹ (2.1 x \$214,913.23) above BAE's original bid price or \$235,821.73 (\$450,734.96 - \$214,913.23) would be a fair and reasonable equitable adjustment. Since her 1 August 2013 decision erroneously computed \$279,790.00 as equitable adjustment, CO Panton decided that for the 10 defective drawing related CFRs the amount allowed should be \$43,968.27 less (\$279,790.00 - \$235,821.73). CO Panton also found that her 1 August 2013 decision erroneously allowed payment of \$3,227.15 for REA No. 231, Coil Baffle repair, because "BAE was already paid the entirety of that \$3,227.15 through bilateral modification 09." (R4, tab 167 at 2 of 3)

204. Since her 1 August 2013 decision allowed and paid \$351,244.12 as equitable adjustment, her 3 October 2014 amended decision found that BAE was over paid \$47,195.42 (\$43,968.27 + \$3,227.15). Her amended decision allowed \$304,048.70 (\$351,244.12 - \$47,195.42) instead. (R4, tab 167 at 2-3 of 3) In its brief, BAE now acknowledges that it has been paid \$3,277.15 for CFR No. 231 as a part of Modification No. 9, effective 18 September 2007 (R4, tab 94 at 3, at 9 of 13; app. br. at 40, 68). Since we reject the government's benefit-of-the-bargain as an appropriate approach for equitable adjustment, we need not address whether the government's 1 August 2013 CO decision overpaid BAE \$43,968.27 (\$47,195.42 - \$3,227.15). The \$3,227.15 paid will be deducted from BAE's total recovery. As a result of deducting \$3,227.15 from the \$903,407.00 claimed, the net amount of BAE's claim is reduced to \$900,179.85 (app. br. at 68).

205. Recalculating the interest (\$19,075.34) paid on the \$351,244.12, CO Panton found the government owed \$16,506.68 on \$304,048.70. Adding \$16,506.68 in interest to the \$304,048.70, the CO determined the amount of equitable adjustment allowed should be \$320,555.38 (\$304,048.70 + \$16,506.68), with "the net result...BAE now owes the Government \$30,688.74" (\$351,244.12 - \$320,555.38). (R4, tab 167 at 3 of 3)

206. BAE appealed the decision by notice dated 23 October 2014. The Board docketed the appeal as ASBCA No. 59642 on 24 October 2014.

²¹ Multiplying \$214,913.23 by 2.1 is \$451,317.78 not \$450,734.96.

DECISION

ASBCA No. 58810

Limitation of Government Liability to Amounts Already Paid

The government acknowledges that BAE “discovered additional piping repair requirements that were not originally anticipated at the time the task order was issued” (gov’t br. at 87). Of the \$634,802 BAE claims for CSI, the government contends that BAE “at most...incurred an additional \$350,000 in subcontractor costs” based on the five purchase orders BAE issued to CSI (*id.* at 88). It argues “when BAE submitted its claim to the CO four years after the LSV-5 work was completed, it still had only incurred \$350,000 in additional subcontractor costs.... There is no evidence to suggest that over the four year period any additional payments to CSI were made, or were required to be made, by appellant.” (*Id.* at 88-89)

Although the government does not directly say so, it appears to invoke what is commonly referred to as the *Severin* doctrine. As explained in *United States v. Johnson Controls, Inc.*, 713 F.2d 1541, 1552 & n.8 (Fed. Cir. 1983), the *Severin* doctrine, first articulated in *Severin v. United States*, 99 Ct. Cl. 435 (1943), *cert. denied*, 322 U.S. 733 (1944), held that “a prime contractor cannot recover on behalf of a subcontractor unless the prime contractor has reimbursed the subcontractor or is liable to make such reimbursement.” In *Severin*, the contract between the prime contractor and the subcontractor included an exculpatory clause holding the prime contractor harmless from any claim caused by the actions of the government. The court held that it had no jurisdiction to hear any claim caused by actions of the government.

Application of the *Severin* doctrine, however, has been narrowly construed. *See, e.g., Blount Bros. Construction Co. v. United States*, 346 F.2d 962, 964-65 (Ct. Cl. 1965). If the prime contractor proves it has paid the subcontractor or is liable to the subcontractor for damages sustained by it, then the prime contractor has shown injury to itself from government action. This showing would overcome the lack of privity between the government and the subcontractor. *E.R. Mitchell Constr. Co. v. Danzig*, 175 F.3d 1369, 1370 (Fed. Cir. 1999). Indeed, “an iron-bound release or contract provision immunizing the prime contractor completely from any liability to the sub” would be necessary to preclude a prime contractor’s claim for its subcontractor. “If the contract is silent as to the prime’s ultimate liability to the sub, suit by the former will generally be permitted.” *Cross Construction Co. v. United States*, 225 Ct. Cl. 616, 618 (1980). Moreover, the government has the burden to prove that the prime contractor is not responsible for the costs incurred by the subcontractor that are at issue in the pass-through suit. *E.R. Mitchell*, 175 F.3d at 1370

(citing *Blount Bros.*, 346 F.2d at 964-65; *John McShain, Inc. v. United States*, 412 F.2d 1281, 1283 (Ct. Cl. 1969)).

In this case, between mid-May and mid-July 2007, CSI through BAE submitted 19 CFRs with material and labor estimates proposing over \$986,000 worth of additional piping-related work (finding 121). The CO's inability to settle these CFRs and her direction for BAE to "proceed diligently with the work" (finding 130) forced BAE to advance CSI \$350,000.00 so that it could "make payroll and remain solvent" to continue to finish the massive amount of additional piping work uncovered (finding 158). The five purchase orders BAE issued to CSI made clear they were issued pending government settlement of the additional piping replacement work. We found BAE conditionally advanced the payments to enable CSI to continue with the expectation that it would ultimately recover from the government the additional costs, known at the time to exceed \$350,000.00. (Finding 132)

In July 2009, BAE entered into an agreement with CSI on prosecuting CSI's piping claim against the government. The agreement provided that BAE would be liable to CSI for the amount it recovered from the government over and above what CSI had been paid (the original purchase order price of \$150,049 plus the \$350,000 advanced). (Finding 138)

Because BAE advanced CSI \$350,000.00 so that it would be able to continue to perform the unexpected and additional piping work to complete the contract, and because BAE acknowledged it would be liable to CSI for the additional piping-related costs over and above the amount (\$150,049 + \$350,000) it already paid CSI, we conclude that BAE is not barred from recovery under the *Severin* doctrine.

Equitable Adjustment Based Upon Actual Costs Incurred

The government contends that BAE's and CSI's claimed costs for labor and materials "were entirely based upon estimates" and they never revised their estimates (gov't br. at 89). The government also contends the estimates were "inaccurate" because they "were based on drawings that did not contain comprehensive information," and "were overstatements of the actual work required, and the CFR estimates are inaccurate" (*id.*).

The "preferred" method of proving a claim is by "actual cost method." This method is preferred because "it provides the court, or contracting officer, with documented underlying expenses, ensuring that the final amount of the equitable adjustment will be just that – equitable – and not a windfall for either the government or the contractor." *Propellex Corp. v. Brownlee*, 342 F.3d 1335, 1338 (Fed. Cir. 2003); *Advanced Engineering & Planning Corp.*, ASBCA Nos. 53366, 54044, 05-1 BCA ¶ 32,806 at 162,336. Estimates are a preferred method of pricing equitable

adjustment only where actual costs are not available. *Bregman Construction Corp.*, ASBCA No. 15020, 72-1 BCA ¶ 9411 at 43,716 (rejecting both contractor and government estimates where estimates did not conform to available actual cost data).

Although BAE's 10 October 2007 request for reimbursement was based upon estimates (finding 135), BAE's 3 June 2010 letter submitted documentary proof from which the actual costs incurred by itself, CSI, and its subcontractor, World Wide Labor, can be determined. The evidence shows during the course of the LSV-5 overhaul, BAE maintained a Job Cost Accounting System. This system reported labor and material costs incurred for a project down to the item level. Labor hours incurred were reported in BAE's Job Order Status Reports, and within that report, a specific account, such as Account 3000, was established to collect the labor hours for the additional P/C, A/C and Drain Water Piping Systems replacement work (finding 163). Additionally, BAE's Job Order Accounting System was capable of producing Labor Distribution Reports which summarized by labor category, by trade, and by date, the ST and OT hours each BAE hourly employee worked and charged to specific accounts such as Account 3000 (finding 164). Under BAE's Job Order Accounting System, material procurements were reported in the Material Status Reports and specific accounts, such as Account 3000, were established to collect material costs of changed items (finding 169).

BAE's 3 June 2010 letter which supplemented REA No. 7 provided documentary proof based upon actual costs (finding 149): For its labor hours in support of CSI's piping-related CFR work, BAE provided its Job Labor Status Reports (finding 150). For its material costs in support of CSI's CFR piping work, BAE provided its Material Status Report. Albeit not organized by CFRs, BAE also provided numerous material invoices from CSI. (Finding 151) For CSI's labor, BAE furnished CSI's "LSV5/Copper Nick[el] Piping Job Time Sheet" (findings 153, 154). At the CO's request, BAE by email on 13 July 2010 provided World Wide Labor's time sheets (finding 156).

The government argues that BAE's Job Labor Status Report included labor hours of its own employees "starting as early as 2 April 2007, despite the fact that CSI did not discover a need for additional piping work until 14 April 2007" (gov't br. at 90). It also argues "CSI's timesheets included labor hours for after the piping work was finished" (gov't br. at 91). These charging errors, however, should not prevent BAE from using its Job Order Status Report, and its Labor Distribution Report (for Account 3000), from proving its labor costs. Nor should they prevent CSI and World Wide Labor from using their time sheets in proving their labor costs. It is true that BAE submitted its first piping-related CFR (LSV-018) on 14 May 2007 (finding 39) and its work on the vessel was 100% complete on 25 August 2007 (finding 166). If labor hours were charged by BAE, CSI or World Wide Labor before 14 May 2007 or after 25 August 2007, they can be disallowed and deducted.

The government does not dispute that BAE is entitled to charge \$73.50 per hour for ST labor and CSI is entitled to charge \$52.00 per hour for ST labor. To the extent BAE is entitled to charge an OT differential, which we will address next, the government has not disputed BAE's \$36.75 OT differential. The government has not challenged the OT differential rate of \$26.00 charged by CSI. Hence, the actual labor costs BAE and CSI incurred in performing the piping-related CFRs can be determined by multiplying the allowable labor hours by the undisputed hourly rates. The actual material costs BAE and CSI incurred in performing the piping-related CFRs can be determined from the invoices provided.

Payment of OT Differential

The government contends that "[t]he Contract never authorized overtime." Relying upon the contract's fully burdened rate provision (finding 7), the government argues that BAE is not entitled, "as a matter of law, to \$110.25 per hour for unauthorized overtime work" (gov't br. at 84).

The fully burdened rate provision provides that "Offerors shall include a fully burdened labor rate to be used in negotiating changes. The rate must include all costs for negotiating changes.... The offeror shall insert rates below that it agrees to use in negotiating changes for new or additional work." (Finding 7) We disagree with the CO's interpretation that the \$73.50 per hour fully burdened rate is applicable to the OT hours BAE worked. First, the fully burdened rate provision does not mention overtime at all. Second, the provision requires that the \$73.50 per hour rate to be used "in negotiating changes." In this case, between 17 May and 14 July 2007, BAE submitted 19 CFRs (finding 121). In all but six CFRs (319, 166, 173, 224, 231 and 260), BAE's CORS indicated OT would be required in assisting CSI. Not once did the CO object to the inclusion of OT or offer to negotiate a change order to settle any of the CFRs.

To impose the \$73.50 fully burdened rate on OT work when there was no negotiation would be inconsistent with the plain meaning of the fully burdened rate provision of the contract. In interpreting contract provisions, we must "begin with the plain language," and we must "interpret the contract in a manner that gives meaning to all of its provisions and makes sense." *McAbee Construction, Inc. v. United States*, 97 F.3d 1431, 1435 (Fed. Cir. 1996).

Moreover, "[a] party who willingly and without protest enters into a contract with knowledge of the other party's interpretation of it is bound by such interpretation and cannot later claim that it thought something else was meant." *Perry and Wallis, Inc. v. United States*, 427 F.2d 722, 725 (Ct. Cl. 1970); *Cresswell v. United States*, 146 Ct. Cl. 119, 127 (1959) ("If one party to a contract knows the meaning that the other intended to convey by his words, then he is bound by that meaning."); *United Technologies Corp., Pratt & Whitney Group, Government Engines and Space*

Propulsion, ASBCA Nos. 46880, 46881, 97-1 BCA ¶ 28,818 at 143,800; *The Public Warehousing Company*, ASBCA No. 56022, 15-1 BCA ¶ 36,062 at 176,111.

On 6 July 2007, BAE and the CO orally agreed to a 27-day time extension to the contract completion date so that BAE could finish the additional P/W, A/C and Drain Water Piping Systems replacement work on the vessel (finding 128). By 6 July 2007, BAE had submitted all but one (the catchall CFR No. 319 relating to the removal of interferences and subsequent restoration) of the piping-related CFRs. We found the CO knew from the CORs BAE submitted along with the CFRs that it would require OT and charge OT differential to assist CSI to complete the piping-related CFRs. We found that up to 6 July 2007, the CO knew that BAE had worked OT. We found the CO knew that BAE did not interpret the fully-burdened rate provision to preclude it from claiming OT differentials on unsettled changed work. We found that with full knowledge of BAE's interpretation of that provision, the CO did not address or object to OT charges but entered into an agreement with BAE to extend the contract. There is no evidence that BAE agreed to the 27-day extension (from 27 July to 23 August 2007) without charging extra for overtime. (*Id.*)

The parties' 6 July 2007 oral agreement to extend the contract completion date was subsequently incorporated into Modification No. 6. Although Modification No. 6 was issued by the CO unilaterally and the parties disagree on some parts of it, such as the equitable adjustment relating to the cloverleaf replacement work, the parties do not disagree that the 27-day extension was binding. Under these circumstances, we conclude the government is bound by BAE's interpretation that payment of OT differential, to the extent incurred and met the requirements of FAR 31.201, is allowable.

The CO's Benefit-of-the-Bargain Approach in Granting Equitable Adjustment

The CO's 1 August 2013 decision granted an equitable adjustment of \$351,244.12 for the 19 CFRs (finding 199). The decision divided the 19 CFRs into two groups: The first group of 10 CFRs all involved contract drawings that the government conceded were incomplete and misleading for pricing labor and material costs for the P/W, A/C and Drain Water Piping Systems replacement work on the vessel. This group included CFR Nos. 155, 196, 203, 204, 209, 211, 212, 213, 223, and 319. (Finding 197) For this group, the CO granted equitable adjustment using "the benefit of the bargain" approach: Based on her finding that CSI originally anticipated spending \$77,650.20 for materials for Item No. 2062, but ultimately spent what she found to be a substantiated amount of \$162,482.40 or 2.1 times the original amount, the CO granted 2.1 times the amount BAE bid for Item No. 2062 and arrived at \$494,703.00. Deducting the original bid amount, the CO found that BAE was entitled to \$279,790.00 (\$494,703.00 - \$214,913.00) for the 10 CFRs. (Finding 198) On the remaining nine CFRs involving deteriorated parts replacements, the CO applied a 33% reduction to the labor costs claimed and a 43% reduction to the materials costs claimed based upon BAE's 3 June

2010 reduction. And, disallowing all OT differential and what the CO believed to be unsubstantiated per diem costs, the CO allowed \$71,454.12 for these nine CFRs (CFR Nos. 166, 173, 220, 224, 225, 226, 231, 238 and 260). (Finding 199)

One way for a remedy a breach of contract is to award damages based on the non-breaching party's expectation interest or the interest in having the benefit of his bargain by being put in "as good a position as he would have been in had the contract been performed." RESTATEMENT (SECOND) OF CONTRACTS, § 344 cmt. a (1981). *Glendale Federal Bank, FSB v. United States*, 239 F.3d 1374, 1380 (Fed. Cir. 2001). "Expectation damages are recoverable provided they are actually foreseen or reasonably foreseeable, are caused by the breach of the promisor, and are proved with reasonable certainty." *Bluebonnet Sav. Bank, F.S.B. v. United States*, 266 F.3d 1348, 1355 (Fed. Cir. 2001); RESTATEMENT (SECOND) OF CONTRACTS §§ 347, 351, 352 (1981).

In this case, because the Moss Point Marine drawings the government provided for bidding purposes were admittedly misleading, and because the ceilings and bulkheads were in place when the vessel was made available for ship check, neither the government nor any bidder could have "actually or reasonably foreseen" the amount of piping, fittings and interferences that ultimately had to be removed and installed in order to accomplish Item No. 2062. Based on our determination that the actual cost method can be used to determine an equitable adjustment, we conclude resorting to the benefit-of-the-bargain approach in the first instance is unnecessary and inappropriate. The fact that CSI ultimately had to spend 2.1 times the amount originally estimated for materials bore no relationship to the labor hours ultimately required to accomplish the copper/nickel piping replacement work.

Computation of Equitable Adjustment

Having decided the overarching issues above, we address next the details of the quantum of adjustment. BAE's certified claim was based upon the following formulation:

1,851 hours @ \$73.50 (BAE)	\$136,049.00
279 hours @ OT differential at \$36.75 (BAE)	\$ 10,253.00
Materials (BAE)	\$ 3,124.00
Subcontractor (CSI)	\$634,802.00
G&A @ 8.82%	\$ 56,265.00
Profit on Subcontract @ 10%	<u>\$ 63,480.00</u>
Total	\$903,973.00

(Finding 159) In its post-hearing brief, BAE acknowledged that it had been paid \$3,277.15 for CFR No. 231 as a part of Modification No. 9 (app. br. at 67-68). As a result of deducting \$3,277.15 from \$903,407.00, the net amount of BAE's claim is

reduced to \$900,129.85 (\$903,407.00 - \$3,277.15). This acknowledgement also reduced the CFRs in dispute from 19 to 18. Since the subcontractor's claim constitutes about 70% of BAE's overall claim, we address CSI's claim first.

The determination of equitable adjustment is not an exact science; where responsibility for damage is clear, it is not essential that the damage amount be ascertainable with absolute or mathematical precision. *Electronic & Missile Facilities, Inc. v. United States*, 416 F.2d 1345, 1358 (Ct. Cl. 1969). In *Wunderlich Contracting Co. v. United States*, 351 F.2d 956, 968 (Ct. Cl. 1965) (citations omitted), the Court of Claims stated:

A claimant need not prove his damages with absolute certainty or mathematical exactitude. It is sufficient if he furnishes the court with a reasonable basis for computation, even though the result is only approximate. Yet this leniency as to the actual mechanics of computation does not relieve the contractor of his essential burden of establishing the fundamental facts of liability, causation, and resultant injury.

See also Specialty Assembling & Packing Co. v. United States, 355 F.2d 554, 572 (Ct. Cl. 1966) ("It is enough if the evidence adduced is sufficient to enable a court or jury to make a fair and reasonable approximation.").

CSI's Labor Costs

In support of its claim, CSI submitted its time sheets which show that it charged 7,202 ST hours and 3,451.50 OT differential hours for additional piping work (finding 154). We disallow 1,032 ST hours and 500 OT differential hours because CSI did not submit the first of its piping-related CFRs stemming from defective drawings until 14 May 2007 (findings 39, 155) and could not therefore have been working on CFR-related work before that date. We also disallow 120 ST hours and 81 OT differential hours CSI claimed for the week ending 31 August 2007 because work on the vessel was completed on 25 August 2007 (finding 155). To account for the labor hours attributable to CFR No. 231 which was settled through Modification No. 9, we deduct 30 ST hours and 12 OT differential hours which CSI included as a part of the overall \$3,227.15 proposal which the government accepted (findings 110, 112). Based upon the foregoing deductions, we conclude that CSI incurred 6,020 ST hours (7,202 hours – 1,032 hours – 120 hours – 30 hours) and 2,858.50 OT differential hours (3,451.5 – 500 hours - 81 hours – 12 hours) performing additional piping-related CFR work.

There is no dispute that CSI paid its hourly employees \$52.00 per ST hour and \$26.00 per OT differential hour. We conclude that CSI is entitled to an additional \$387,361.00 in additional labor costs:

Hours x Rate	Amount
6,020 ST hours x \$52.00	\$313,040.00
2,858.5 OT differential hours x \$26.00	\$ 74,321.00
Total	\$387,361.00

Labor Costs Incurred by CSI's Second Tier Subcontractor World Wide Labor

At the CO's request, BAE also submitted World Wide Labor's time sheets showing that it incurred 3,418 ST hours and 1,297 OT differential hours "in support of REA No. 7." DCAA's audit worksheet shows that CSI paid World Wide Labor \$194,454.45 for work in support of REA No. 7. We disallow 140 ST hours and 30 OT differential hours World Wide Labor worked during the week ending 13 May 2007 because it could not have been working on additional piping-related CFR work before the first CFR was submitted (CFR No. 155) on 14 May 2007. We therefore disallow \$6,716.70 World Wide labor charged before 14 May 2007 and allow \$187,737.75 (\$194,454.45 - \$6,716.70). (Finding 156)

CSI's Material Costs

In support of its claim for the cost of materials purchased to complete the additional piping-related CFRs, CSI submitted hundreds of invoices from its material suppliers (finding 186). The CO in her decision stated that CSI's was able to substantiate \$162,482.40 (finding 198). At the Board's request, each party ran a calculator tape adding all of the vendor invoices submitted (findings 186-88). As a result of this exercise, the Board was able to reconcile the parties' differences and found CSI incurred \$187,652.27 in material costs (findings 189-92). Of the \$187,652.27 verified, we deduct \$220.00 for materials CSI estimated for CFR No. 231 which was settled through Modification No. 9 (findings 110, 204). Based upon the Moss Point Marine drawings, CSI estimated \$77,650.20 in materials would be required to perform the original Item No. 2062 work. Because CSI was already obligated to furnish \$77,650.20 worth of materials and had been paid that amount by BAE (finding 142), we conclude that CSI must credit the government \$77,650.20 on the \$187,652.27 material costs it proved as having been incurred to complete the copper/nickel piping replacement work (finding 192). Except for CFR No. 231, we allow \$120,869.82 in CSI material costs required to perform the additional piping-related CFR work:

Material Costs Invoiced	\$187,652.27
Deduct CFR No. 231 Material	(\$220.00)
Deduct Original Material Proposed	(\$77,650.20)
Tork Systems Sales Tax	\$11,087.75
Total	\$120,869.82

CSI's Per Diem Costs

The hourly workers CSI employed at the shipyard were from out of the San Francisco area (finding 30). In 15 of the 19 CFRs CSI submitted, it advised the CO there would be per diem costs associated with its employees in performing the additional piping-related work (finding 124). FAR 31.205-46 (a)(1), Travel costs, provided that "Costs for transportation, lodging, meals and incidental expenses...incurred by contractor personnel on official company business are allowable, subject to the limitations contained in this subsection." CSI paid \$80.00 per diem for each employee. We consider the amount reasonable when compared with the Federal Travel Regulation 2007 per diem rates for San Francisco at \$140.00 for lodging and \$64.00 for meals and incidentals. (Finding 30)

Although CSI has not provided a detailed listing of the per diem costs paid, there is evidence that CSI charged some of its per diem costs to its credit cards (finding 187). At the hearing, the DCAA auditor testified that he saw support that CSI paid per diem costs (finding 181). Based upon the testimonial and documentary evidence in the record, we conclude that CSI has shown, by a preponderance of the evidence, that per diem costs were incurred in the course of performing the piping-related CFRs.

Based on its CFR estimates, the DCAA audit work papers listed \$55,480 in CSI per diem costs. CSI did not show to which CFR the \$5,680 for LSV-5 pertained. The testimonial and documentary evidence in the record, however, is sufficient for us to conclude CSI did incur per diem costs in performing additional piping-related CFR work. Except for the \$5,680 which CSI did not account for as pertaining to any of the CFRs, we allow \$49,800 (\$55,480 - \$5,680) in CSI per diem costs. (Finding 181)

Total Subcontractor Costs

In claiming subcontractor costs of \$634,802.00, BAE did not provide a breakdown. In reviewing the documentary and testimonial evidence in the record, we find BAE is entitled to \$745,768.57 in subcontractor costs. The difference is mainly attributable to additional evidence provided during the course of litigation on (1) World Wide Labor's costs; (2) CSI's material costs; and (3) CSI's per diem costs:

Subcontract Cost Elements	Amount
6,020 ST hours x \$52.00	\$313,040.00
2,858.5 OT differential hours x \$26.00	\$ 74,321.00
World Wide Labor Costs	\$187,737.75
CSI Material Costs	\$120,869.82
CSI Per Diem Costs	\$ 49,800.00
Total	\$745,768.57

BAE's Labor Costs

We determine next the equitable adjustment due BAE in its role assisting CSI in accomplishing the piping-related CFRs. BAE seeks 1,851 ST hours at \$73.50 per hour and 279 OT differential hours at \$36.75 per hour plus \$3,124.00 in materials (finding 159). BAE's Labor Distribution Report which summarized by labor category, by trade, and by date, the ST and OT hours each of its hourly employees charged to Account 3000 established to "ASSIST CSI W/ITEM 2062" shows BAE charged a total of 1,331.25 labor hours. Of the 1,331.25 hours, 1,082 were ST hours and 249.5 were OT differential hours. (Findings 163-65)

Of the 1,082 ST hours, we found 46 ST hours not chargeable to Account 3000 because they were charged after the vessel was 100% complete on 25 August 2007. For the same reason, we found 30 OT differential hours not chargeable to Account 3000. This left 1,036 ST hours and 219.25 OT differential hours chargeable to Account 3000. (Finding 166) We do not deduct any BAE ST and OT differential hours for CFR No. 231 which was settled as a part of Modification No. 9. As indicated in its CORS, BAE saw no need and did not assist CSI in accomplishing the work in CFR No. 231. (Findings 112, 204)

We conclude that BAE is entitled to the following piping-related CFR labor costs:

Hours	Amount
1,036 ST hours x \$76.50	\$79,254.00
219.25 OT differential hours x \$36.75	\$ 8,057.44
Total	\$87,311.44

BAE's Material Costs

BAE seeks \$3,124.00 for material used to assist CSI (finding 159). The DCAA did not review BAE's claim for materials "[d]ue to materiality" because "it represented less than 4 percent of total cost[s]." The DCAA report said it took "no exception to the...REA No. 7 material costs proposed by BAE." (Finding 173) BAE's Job Order Accounting System collected material costs for changed work (finding 161). We found BAE's Material Status Report for Account 3000 showed BAE collected \$2,694.39 in material costs. We allow this amount. (Finding 169)

Claimed Versus Allowed Cost Summary

We summarize below the amounts BAE claimed versus the amounts we allowed based upon the parties' Rule 4 submissions and the documentary and testimonial evidence admitted during the hearing:

Claimed	Amount	Allowed	Amount
1,851 ST x \$73.50 (BAE)	\$136,049.00	1,036 ST x \$73.50 (finding 166)	\$79,254.00
279 OT diff. x \$36.75.00 (BAE)	\$10,253.00	219.25 OT diff. x \$36.75 (finding 166)	\$ 8,057.44
Materials (BAE)	\$3,124.00	Materials (finding 169)	\$2,694.39
Subcontractor (CSI)	\$634,802.00	Subcontractor (CSI)	
		6,020 ST ^[22] x \$52.00 (findings 110-11, 155)	\$313,040.00
		2,858.5 OT diff. ^[23] x \$26.00 (findings 110-11, 155)	\$ 74,321.00
		• World Wide Labor (finding 156)	\$187,737.75
		• CSI Material ^[24] (findings 110-11, 142, 192)	\$120,869.82
		• CSI Per Diem (finding 181)	\$ 49,800.00
		• Questioned CSI OT (findings 179, 182)	(\$618.00)
G&A @ 8.82%	\$56,265.00	G&A @ 8.82%	\$ 65,964.51
Profit on Sub. @ 10%	\$63,480.00	Profit on Sub. @ 10%	\$ 74,520.26
Subtotal	\$903,973.00		
Deduct for CFR No. 231	(\$3,227.15)		
Total	\$900,179.85		\$975,641.17

Reasonableness of BAE's Costs

The government contends that the costs BAE claimed are unreasonable because it (1) "has provided no evidence that it imposed any competitive restraints on its subcontractor, CSI" (gov't br. at 94); (2) "has not shown that the original estimate was reasonable or well thought out, so any growth from its initial proposed price, plus the

²² Thirty (30) ST estimated deducted as a result of settlement of CFR No. 231.

²³ Twelve (12) OT differential deducted as a result of settlement of CFR No. 231.

²⁴ \$220.00 in material cost deducted as a result of settlement of CFR No. 231.

piping amounts allowed by Ms. Panton, could be due to poor planning”; and (3) “the staggering increase in BAE SFSR’s alleged costs associated with the piping work indicates it either incorrectly billed those hours and materials, or operated with an unreasonable level of inefficiency” (gov’t br. at 96).

To be allowable, Contract 0005 requires application of FAR Part 31 (finding 4). Under FAR 31.201-2, whether a cost is allowable depends, among other factors, upon whether the cost is reasonable, allocable, and compliant with the contract terms and the FAR limitations (finding 5). In determining reasonableness, FAR 31.201-3(a) provides “A cost is reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person in the conduct of competitive business.” The same FAR provision says “No presumption of reasonableness shall be attached to the incurrence of costs by a contractor.” Interpreting this FAR provision, the Federal Circuit has confirmed that the contractor has the burden of proof, unaided by a presumption of reasonableness, to establish the costs it incurred were reasonable. *Kellogg Brown & Root Services, Inc. v. United States*, 728 F.3d 1348, 1363 (Fed. Cir. 2013).

The standard of proof in demonstrating quantum entitlement is a preponderance of the evidence, not beyond a reasonable doubt. *Teledyne McCormick-Selph v. United States*, 588 F.2d 808, 810 (Ct. Cl. 1978). Once a contractor makes a prima facie showing of quantum recovery, the government is required to come forward to contest the prima facie case. If the government fails to do so, the prima facie case stands uncontroverted and the contractor, with the burden of proof, will have established its case by a preponderance of the evidence. *Environmental Safety Consultants, Inc.*, ASBCA No. 53485, 05-1 BCA ¶ 32,903 at 163,019.

(1) Competitive Restraints

FAR 31.201-3 cautioned that “Reasonableness of specific costs must be examined with particular care in connection with firms or their separate divisions that may not be subject to effective competitive restraints” (finding 6). The government has not explained why this FAR provision is relevant in this appeal. As far as the evidence shows, CSI was not a division of BAE. There is no proof of any business arrangements between BAE and CSI that would call into question any competitive restraint issues. Being in the ship repair business, we expect BAE and CSI to know where to buy its parts and materials. There is no evidence that BAE and CSI bought parts and materials at excessive prices. Given the urgency of the work involved, it would not have been prudent for BAE and CSI to seek competitive bids each time a piping change surfaced. Other than disputing whether OT differential is allowable, the government has not taken the position that the labor rates BAE and CSI paid are unreasonable.

(2) BAE and CSI Have Established a Prima Facie Case of Cost Reasonableness

BAE's and CSI's CFRs were estimated by experienced estimators: CSI's Mr. Brown was the director of estimating of his firm where he was co-owner (finding 15). BAE's Mr. Bain who reviewed CSI's CFRs and added BAE's labor and materials came up "through the pipefitting trade" (finding 29). Moreover, BAE's and CSI's CFRs were based upon on site personal observations of what needed to be done: Mr. Brown was on the vessel and at the location in every case where it was discovered that the piping was not as represented on the contract drawings. His material estimates were upon "[i]nspection onboard the ship and then counting what was there, where we had to go, and what we had to do." He testified that he estimated with the expectation that others could see what were found and he would have to account for his estimates. (Finding 28) Although Mr. Bain did not redo CSI's estimates, he did check the areas CSI was concerned about and reviewed CSI's estimates based on his "rule of thumb" derived from his experience "coming up through the pipefitting trade" (finding 29).

Following procedures outlined in the contract (finding 3), BAE and CSI submitted 19 CFRs with a total estimated price of \$986,248.54 (finding 121). Excluding CFR No. 231 which CSI estimated and settled for \$3,227.15 (finding 111), CSI estimated it would cost \$983,021.39 (\$986,248.54 - \$3,227.15) for the remaining 18 CFRs. After deducting the materials (\$220.00) and labor hours (30 ST and 12 OT) for CFR No. 231, and the labor hours we found unallowable (findings 155, 166, 168), we found BAE, through documents kept in the ordinary course of business, such as time sheets, Job Labor Status Reports, Labor Distribution Reports, Material Status Reports and material invoices, was able to establish that \$975,641.17, or 99.24% of the \$983,021.39 it estimated to accomplish the copper/nickel piping replacement work was incurred.²⁵

In terms of labor hours, CSI and BAE estimated they would need roughly \$604,456.25 in ST and OT to accomplish the additional work called for by the 19 CFRs (finding 122). CSI and BAE proved that they incurred \$662,410.19 (\$79,254.00 + \$8,057.44 + \$313,040.00 + \$74,321.00 + \$187,737.75) in ST and OT costs, just 9.6% more, in performing the CFRs.

In terms of materials, CSI's CFR estimated an additional \$160,692.80 worth of piping parts, not including freight and sales tax in some cases, would be needed (finding 123). Based on the invoices CSI submitted, the CO found substantiation of \$162,482.40 (finding 198). Excluding the sales tax Tork Systems separately billed,

²⁵ We recognize we have made a number of unallowable deductions (findings 155 (CSI labor), 166, 168 (BAE labor), 169 (BAE material). Their impact on the total costs incurred was insignificant.

CSI proved that it incurred \$176,564.52 (\$187,652.27 - \$11,087.75), 9.8% more than estimated.

With minor exceptions such as CSI's unrecorded 20 OT hours (findings 179, 182), DCAA, in auditing BAE's and CSI's time sheets and material invoices, was able to verify and reconcile the labor and material costs recorded with the costs claimed (findings 171-83).

Moreover, the maintenance on the LSV-3, LSV-5's sister ship, followed closely "on the heels" of the LSV-5. The government used "the volumes of pipe and fittings that were submitted on [BAE's LSV-5] invoices" in soliciting proposals for the LSV-3. We found that the government must have considered that the piping runs and fittings ultimately installed on the LSV-5 were reasonable and would not mislead LSV-3 bidders. (Finding 195)

We conclude that BAE has established a prima facie case that the costs it incurred are reasonable.

The government, on the other hand, has failed to contest or rebut the reasonableness of the costs shown to have been incurred: The government's Ship Surveyor was regularly aboard the vessel and had the opportunity to look at the piping systems as they were being removed and installed. There is no evidence Ship Surveyor Large went out and checked CSI's and BAE's estimates. (Finding 35) As the CO's eyes and ears at the shipyard and one charged with the responsibility to advise the CO on technical issues, Ship Surveyor Large prepared no Specification Worksheet (government estimate) on any of the CFRs (finding 34). Without estimates, the CO granted an equitable adjustment based on the benefit-of-the-bargain approach which we rejected. The CO took no exceptions to the audit findings but complained that DCAA did not obtain "technical advice" in reaching its conclusions. The CO had it backwards. She and her technical team, not DCAA, were in the better position to assess the claim from a technical standpoint (finding 184).

(3) Labor Hours Unrelated to the Piping CFRs have been Disallowed and there was No Proof of Operation Inefficiency

To the extent CSI and BAE erroneously charged labor hours unrelated to the piping CFR work, they have been disallowed (findings 155-56, 165-66, 168). There is no evidence BAE and CSI "operated with an unreasonable level of inefficiency." When CFR work was discovered, CSI and BAE promptly submitted CFRs. Despite the CO's inaction, CSI and BAE proceeded with the work nonetheless because the specification required "what was there had to be replaced," and CSI did not want its workers "standing around waiting...for something to happen" (findings 37, 127).

CONCLUSION

Because BAE has proven, by a preponderance of the evidence, that it incurred additional labor, material, and subcontractor costs in accomplishing the unanticipated and additional work in replacing LSV-5's Potable Water, Air Conditioning, and Drain Piping Systems, we hold that it is entitled to \$975,641.17.

Because the CO granted and paid \$351,244.12 in her decision, we hold that BAE is entitled to \$624,397.05 (\$975,641.17 - \$351,244.12) with interest pursuant to 41 U.S.C. § 7109 running from 11 July 2011, the putative date on which the CO received BAE's 6 July 2011 letter (finding 160) converting REA No. 7 into a certified claim.

ASBCA No. 59642

The CO's 3 October 2014 decision amended her 1 August 2013 decision by asserting that BAE was over paid \$47,195.42. Of this amount, (1) \$43,968.27 was due to a calculation error when she computed equitable adjustment of the piping claim using the benefit-of-the-bargain approach, and (2) \$3,227.15 was due to her discovery that the parties had actually settled CFR No. 231 in 2007 through Modification No. 9. (Findings 203, 204) Recalculating the CDA interest (\$19,075.34) paid on the \$351,244.12, CO Panton found the government owed \$16,506.68 on \$304,048.70. Adding \$16,506.68 in interest to the \$304,048.70, the CO determined the equitable adjustment allowed should be \$320,555.38 (\$304,048.70 + \$16,506.68), with the net result that BAE now owes the government \$30,688.74 (\$351,244.12 - \$320,555.38) (finding 205).

CONCLUSION

Because we rejected the benefit-of-the bargain approach as a way of determining equitable adjustment for the piping CFRs, the CO's calculation error based on that approach is inconsequential, and BAE's appeal is granted to the extent determined in ASBCA No. 58810.

Because BAE has acknowledged that the parties settled CFR No. 231, and the government has paid the agreed amount through Modification No. 9, ASBCA

No. 59642 is dismissed as moot. In the Board's overall determination of the quantum of adjustment in ASBCA No. 58810, we have taken the settlement into account.

Dated: 13 June 2016



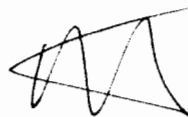
PETER D. TING
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

I concur



MARK N. STEMLER
Administrative Judge
Acting Chairman
Armed Services Board
of Contract Appeals



RICHARD SHACKLEFORD
Administrative Judge
Vice Chairman
Armed Services Board
of Contract Appeals

I certify that the foregoing is a true copy of the Opinion and Decision of the Armed Services Board of Contract Appeals in ASBCA Nos. 58810, 59642, Appeals of BAE Systems, San Francisco Ship Repair, rendered in conformance with the Board's Charter.

Dated:

JEFFREY D. GARDIN
Recorder, Armed Services
Board of Contract Appeals