

ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeals of --)
)
States Roofing Corporation) ASBCA Nos. 54860, 55501,
) 55502, 55505
Under Contract No. N62470-97-C-8319)

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OPINION BY ADMINISTRATIVE JUDGE PARK-CONROY

These are four of 11 appeals arising from Contract No. N62470-97-C-8319 awarded to appellant States Roofing Corporation (SRC) by the Navy for repairs and related work on the roof cells at Building W-143, Naval Operating Base (NOB), Norfolk, VA.

ASBCA No. 54860 involves delay associated with a defective submittal register. ASBCA No. 55502 is a delay claim. SRC has withdrawn the direct cost impact portion of its defective submittal register claim in ASBCA No. 54860 and has included its request for a time extension as part of its claim for additional compensable delay in ASBCA No. 55502 (app. br. at 58-59). ASBCA No. 55501 alleges acceleration and ASBCA No. 55505 asserts disruption impact. Both entitlement and quantum are at issue.

We dismiss ASBCA No. 54860 to the extent it is duplicative of ASBCA No. 55502 and otherwise deny it. We deny ASBCA No. 55501. We sustain the quantum aspect of ASBCA No. 55502, to the extent indicated below. We sustain 55505, also to the extent indicated below.

FINDINGS OF FACT

The Navy issued Solicitation No. N62470-97-B-8319 on 27 April 2000 for the repair and related work to the roof cells on Building W-143, located at NOB, Norfolk. Bidders were provided the opportunity to perform a site visit. (R4, tab 1) Mr. Hugh DeLauney, SRC's President, attended the site visit, during which he walked the entire roof and looked at the details of the work and the condition of the roof (tr. 1/27-38).

SRC is a very experienced roofing contractor, having performed approximately 900 replacement, repair and new roof contracts for the government, including "hundreds and hundreds of roofs" at NOB (tr. 1/22). SRC was the low bidder and fixed-price Contract No. N62470-97-C-8319 was awarded to it in the amount of \$2,370,000.00 on 7 August 2000. Pursuant to block 11 of the award, SRC was to begin performance within 10 calendar days and complete it within 360 calendar days after receipt of award. (R4, tab 1 at 1, 2) SRC's bid, prepared by Mr. DeLauney, includes the following handwritten note: "CONTRACT – TIME TO COMPLETE – 10 MONTHS" (app. supp. R4, tab 152 at 13).

SRC received the contract award by certified mail on 14 August 2000, thus making 9 August 2001 the imputed contract completion date (R4, tab 13). Block 21 of the award, however, stated "CONTRACT COMPLETION DATE: 17 August 2001" and both parties use 17 August 2001 as the contractual completion date (R4, tab 1 at 2).

The contract contained the following relevant standard FAR clauses: 52.211-12, LIQUIDATED DAMAGES – CONSTRUCTION (APR 1984) (at \$1,100 for each day of delay); 52.233-1, DISPUTES (DEC 1998); 52.236-2, DIFFERING SITE CONDITIONS (APR 1984); 52.242-14, SUSPENSION OF WORK (APR 1984); and 52.243-4, CHANGES (AUG 1987) (R4, tab 1 at 60, 62).

On 15 August 2000, the Resident Officer in Charge of Construction (ROICC) sent several letters to SRC regarding its obligation to submit an Accident Prevention/Safety Plan and providing general guidance for the submittal process, including "Additional Instructions on Submittals and the Use of the Contractor's Submittal Transmittal Form" (supp. R4, tab 207(d) and (F); tr. 6(2)¹/22, 32-33). The Accident Prevention/Safety Plan was submitted on 3 October 2000 and approved on 22 October 2000 (supp. R4, tabs 222, 225).

¹ We continue designation of the transcripts from the third week of trial as volumes 6(2) through 10(2) to differentiate them from the transcripts from the second week of trial, both of which were numbered 6 through 10.

Pursuant to the NOTICE OF BONDING REQUIREMENT (JAN 1996) (FAC 5252.228-9305) Performance and Payment Bonds were required and due 10 calendar days after receipt of award (R4, tab 1 at 70-71). SRC submitted its bonds on 11 September 2000, some 18 days late (exs. G-12, -13; tr. 6(2)/238, 8(2)/26-27). A Pre-Construction Conference was held on 12 September 2000 at which time SRC was advised that work could not begin until the bonds were approved (R4, tab 4 at 708). The authenticity of the bonds was confirmed on 19 September 2000 (supp. R4, tab 211; tr. 7/93).

LT Darren R. Hale, USN, was the Assistant Resident Officer in Charge of Construction (AROICC) until he was replaced by ENS Alex Palmer in 2001 (R4, tab 75; tr. 8/156-57). In a letter dated 20 September 2000, LT Hale expressed concern that no contract work had been completed and reminded SRC that liquidated damages could be assessed for each day of delay (R4, tab 8). He was attempting to get SRC to provide the required submittals so that work could begin (tr. 6(2)/91). Notice to Proceed was issued on 25 September 2000 (supp. R4, tab 212; tr. 7/94).

Submittal Register

Paragraph 1.2.1.a. of section 01450, "QUALITY CONTROL," required SRC to submit a Quality Control (QC) Plan within 20 days after receipt of contract award (R4, tab 1 at 134). Approval of the QC Plan was required prior to the start of construction (*id.* at 136, ¶ 1.4.2).

Among other things, the QC Plan was to include "[p]rocedures for reviewing, approving and managing submittals," identify individuals authorized to review and certify submittals, and provide the initial submittal register as specified (R4, tab 1 at 138-39, ¶ 1.6.1.g.). Paragraph 1.7 required a meeting with the contracting officer prior to submission of the QC Plan (R4, tab 1 at 140). SRC requested that the meeting be held on 29 September 2000, but was authorized to submit its QC Plan without the specified meeting because it previously had performed other Naval Facilities Command (NAVFAC) roofing work for the ROICC (R4, tab 13; app. supp. R4, tab 506; tr. 7/219-20, 6(2)/29-30).

Pursuant to paragraph 1.2.1.2 of section 01330, "SUBMITTAL PROCEDURES," the submittal register was to be prepared in accordance with paragraph 3.1, "SUBMITTAL REGISTER INSTRUCTIONS" (R4, tab 1 at 110, 118). Paragraph 3.1.a. advised that the Navy would supply the submittal register forms, "with columns (c) through (f) completed to the extent that will be required by the Government" and that SRC was to complete columns (g) through (q) (*id.* at 118-19). The submittal register forms were included as part of the contract. Columns (a), ACTIVITY NO, and (b),

TRANSMITTAL NO, were blank. (*Id.* at 120-31) Column (b) typically is completed by the contractor (tr. 6/72-73, 107).

The minutes of the 12 September 2000 Pre-Construction Conference were prepared before the meeting and copies given to SRC at the meeting. Entries in standard, not bold, typeface are routine information items that are read for every NAVFAC project. (R4, tab 4; tr. 7/208-10) Paragraph 38.k. is in standard typeface and states: “The contractor was advised to read his contract documents to ensure that all submittals required by his contract were included in his submittal log and were submitted as required for review” (R4, tab 4 at 712). SRC advised the contracting officer at the meeting that the submittal register paragraph numbers did not correspond with the specification paragraph numbers and was “told to investigate further and submit” a Request for Information (RFI) (ex. A-26 at 4021). SRC did so on 19 September 2000 by a fax, further stating that it could not proceed without accurate information (R4, tab 6). By a letter dated 20 September 2000, SRC attached a copy of the submittal register it had annotated with corrections during its review, explaining that it had identified “187 errors and omissions out of 305 line items” and “expended 17 days” (R4, tab 7).

SRC’s daily reports for the period 24 August through 20 September 2000 reflect that it was working on submittals and reviewing the contract plans and specifications (ex. A-26). Only the entries for 12, 14 and 19 September 2000 contain remarks about discrepancies between the specifications and the submittal register (ex. A-26 at 4021, 4023, 4027).

On 22 September 2000, LT Hale forwarded SRC’s annotated submittal register to Mr. David Greenfield, a registered architect employed by the Naval Public Works Center, who had reviewed the specifications (tr. 7(2)/14, 18, 53). Mr. Greenfield, in turn, sent a revised and corrected submittal register by fax to SRC on 28 September 2000 (supp. R4, tab 214; tr. 7/222). SRC responded in an e-mail dated 3 October 2000, stating that it was still working with the revised submittal register and requesting a clean copy because the fax copy was of “marginal quality” (supp. R4, tab 215).

SRC certified its QC Plan, with submittal procedures and the submittal register, on 30 September 2000, submitted it on 6 October 2000, and then amended it on 27 October 2000. The QC Plan was approved on 2 November 2000 (R4, tab 14; supp. R4, tabs 227, 229).

Also on 6 October 2000, SRC submitted a number of submittals in preliminary format pending receipt of the new copy of the submittal register. It requested a time extension of 50 days asserting the Navy’s failure to provide an accurate submittal register was excusable government delay. (R4, tab 13; supp. R4, tab 228; tr. 7/222-23) That same day, SRC obtained a better copy of the submittal register from the NAVFAC office,

following which it received another copy by mail on 9 October 2000 (R4, tabs 10, 15, 216).

On 11 October 2000, SRC certified and submitted a second version of the submittal register. On 16 October 2000, SRC submitted its Demolition Plan, which was approved on 31 October 2000 (app. supp. R4, tab 509).

LT Hale returned the 6 October and 11 October 2000 versions of the submittal register on 1 November 2000 with the action code “R” for “Resubmit” because the “TRANSMITTAL #’S IN REGISTER DO NOT MATCH ACTUAL TRANSMITTAL NUMBERS” (supp. R4, tabs 228, 504). The transmittal numbers on the register are in column (b) (tr. 6/71-72).

A third version of SRC’s submittal register was apparently submitted on 6 November 2000, but again returned by LT Hale on 14 November 2000 with action code “R,” this time with the comment: “ALL SUBMITTALS NEED A TRANSMITTAL NUMBER.” This comment also relates to column (b). (Supp. R4, tab 232) On 17 November 2000, SRC certified yet another version of its register, which it dated 1 December 2000. This version was approved by LT Hale on 5 December 2000. (Supp. R4, tab 234; tr. 7/224)

There was evidence that the submittal register errors were easily correctable, involving a cross-checking of the specifications with the work numbers, and should not have required any significant amount of time to correct (tr. 6(2)/24-25, 258, 7(2)/81-82). In addition to the critical Accident Prevention/Safety and QC Plans, a review of the submittal register reflects that there were a substantial number of submittals, including the Asbestos Abatement, Activity Hazard Analysis, and Demolition Plans, made during the months of October and November 2000 that were reviewed and approved by the ROICC (ex. G-2, tab C-16).

Network Analysis Schedules

Paragraph 1.1 of section 01321, “NETWORK ANALYSIS SCHEDULES,” required SRC to prepare a progress chart pursuant to FAR 52.236-15, SCHEDULES FOR CONSTRUCTION CONTRACTS (APR 1984), that consisted of a network analysis system (NAS) meeting specified requirements (R4, tab 1 at 101-04). A preliminary network of planned operations for the first 45 days of contract performance was to be submitted within 10 days of contract award and the complete NAS within 40 calendar days after contract award (*id.* at 104, ¶¶ 1.5.2, 1.5.3).

Any revisions to the proposed NAS following a conference between the contractor and the contracting officer were to be submitted to the contracting officer for approval

within 10 days. The approved schedule was to be used “for planning, organizing, and directing the work, reporting progress, and requesting payment for work accomplished.” (R4, tab 1 at 105, ¶ 1.5.4) Any changes to the NAS or proposed revisions to the NAS reflecting the impact of contract modifications were to be submitted to the contracting officer (*id.* at 105, 107, ¶¶ 1.5.5, 1.6). Paragraph 1.7, “TIME EXTENSIONS,” provided that time would be granted “only to the extent that equitable time adjustments for the activity or activities affected exceed the total float or slack along the network paths involved” (*id.* at 107).

SRC prepared and submitted its “Preliminary Schedule” dated 14 October 2000, reflecting work through February 2001, as Submittal # 3. It was returned by LT Hale on 6 November 2000 with written comments following a meeting with SRC on 30 October 2000. (Ex. G-2, tab C at 2; supp. R4, tab 386; tr. 8/154-55) SRC then retained Doran Consulting LLC (Doran), a scheduling and project management consulting firm, to prepare the NAS and periodic progress updates (ex. A-1 at 1; tr. 6/16-17). The Navy’s comments were incorporated into an initial baseline NAS dated 2 December 2000 which was prepared by Doran and provided to the Navy by SRC on 6 December 2000. Following discussion with SRC, the schedule was returned by LT Hale on 14 December 2000 with action code “R” and comments that related mainly to whether some of the logic ties were “realistic.” (Supp. R4, tab 386; tr. 8/33-35) Another schedule dated 18 January 2001 was prepared by Doran, but it is not clear from the record whether it was submitted to the ROICC office (ex. G-2, tab C-4; tr. 7(2)58-59).

On 2 February 2001, SRC submitted a revision of the baseline NAS to the ROICC office. It also submitted Invoice No. 1 and an update of the revised baseline schedule reflecting progress as of that date so that it could get paid. (Ex. G-2, tab C-5; supp. R4, tab 386; tr. 7(2)/60-61) Invoice No. 1 was revised and was paid by the Navy (ex. G-21). On 12 February 2001, following discussion with Mr. DeLauney, LT Hale returned the proposed baseline schedule for further revision with action code “R,” again with comments. He also advised SRC that he would not process any further invoices until its baseline schedule was approved. (Supp. R4, tab 386; tr. 8/35-38)

SRC submitted another schedule updated with its progress as of 20 March 2001 with its Invoice No. 2 in the amount of \$477,101, which LT Hale agreed to process and which was paid. The updated schedule reflected a project start date of 1 October 2000, with completion on 19 September 2001. (R4, tab 64 at 912; ex. G-2, tab C at 4, tab C-7, and ex. G-21) It then submitted another revised baseline NAS on 22 March 2001, which was again returned by LT Hale with comments and marked with action code “R” on 4 April 2001 (supp. R4, tab 386; tr. 8/38-39). SRC’s final revised baseline NAS, dated 6 April and certified 20 April 2001, was approved by LT Hale on 25 April 2001. The approved baseline schedule, like all of the earlier baseline schedules prepared by Doran, reflects a 17 August 2001 completion date. The submittal register was not on the critical

path. (Supp. R4, tab 386; tr. 8/40) SRC made changes to its schedule reflecting the Navy's comments (tr. 7(2)/49-50). There is no evidence that SRC ever objected to any of the reasons given for the rejections of its various baseline NAS schedule submittals (tr. 6/49-50, 8/35).

Contract Performance

Several significant changes to the contract made by the Navy after contract award were discussed during the Pre-Construction Conference on 12 September 2000. First, the Navy advised SRC that the freight elevator could not be used to move materials to the roof as had been promised in the contract specifications. SRC had planned to use the freight elevator. But, because of the Navy's change, it used forklifts on both the ground and the roof to move materials and a crane to lift the materials from the ground to the roof. This adversely affected SRC's ability to move material to the roof (tr. 1/34). The unavailability of the freight elevator also necessitated the use of a roof-top staging area, including Conex boxes to temporarily store materials. The size and location of the Conex boxes were dictated by the work space and restricted SRC's work areas. (Tr. 2/55-56, 3/5-8, 7(2)/305-06) Additionally, SRC's workforce was required to use the stairs to access and leave the roof of the eight-story building throughout contract performance (tr. 7(2)/302, 306-07).

Second, the Navy changed the location of the lay-down ground staging area. It had been specified on the east end of Building W-143, as shown on contract Drawing T-1 (ex. G-4; supp. R4, tab 152; tr. 4/161-62). It was moved to the north side of the building (R4, tab 4). The north side area was much smaller than the east end area and the space limitation created logistical difficulties with delivery trucks, forklifts and the crane used to lift materials to the roof (tr. 1/34-35, 4/164-65, 7(2)/304-05). Delivery of material was a continuing daily problem (tr. 7(2)/305).

Third, the Navy changed the work sequence. Paragraph 1.5, "SPECIAL SCHEDULING FOR OCCUPIED BUILDINGS," of section 01140, "WORK RESTRICTIONS," specified that work begin on Roof Cell I and then continue on the north side of the building before completing work on the south side (R4, tab 1 at 92). Paragraph 1.5 also provided: "Area 'K' shall be re-roofed prior to areas 'C' and 'D'" (R4, tab 1 at 92). This is how SRC planned to execute the work (tr. 1/48-49).

Building W-143 was "U" shaped. Unlike the eight main roof cells that were part of the contract work, Roof Cell K was a "pit roof" located in the center of the "U." (Ex. G-4; tr. 5/35) The Navy requested that SRC begin work on Roof Cell K. SRC agreed to the work sequence change and all of its NAS schedules reflect plans to begin working on Roof Cell K after the trash chute had been installed (ex. G-2). The result was that SRC could not work in the logical sequence it had planned (tr. 1/48-49).

SRC mobilized on 17 October 2000, beginning with staging and setting up its trailer and began assembly and installation of the trash chute and ramps (constructed off-site) in early November (supp. R4, tab 380, rpts. 56-77). Fabrication and installation of the trash chute was critical path work (ex. G-2, tab C-9). Roofing material first arrived on the work site on 7 November 2000 (supp. R4, tab 380, rpt. 77).

On 9 November 2000 SRC began removing the ballast stone on Roof Cell K and on 14 November 2000 it began selective demolition of the existing roof (supp. R4, tab 380, rpts. 78, 83). SRC encountered a broken metal roof deck and back slope drains not indicated in the contract drawings and difficulties with the windows (tr. 5/36-38). It began installation of taper insulation on 15 November 2000 (*id.*, rpt. 84).

Work on Roof Cell K was suspended beginning 28 November 2000 to resolve an issue relating to the base flashing and did not resume again until 18 June 2001 (supp. R4, tab 380, rpts. 97, 299; tr. 5/37-38). SRC moved to the main roof to continue working, beginning on Roof Cell I (supp. R4, tab 380, rpt. 98; tr. 2/148). It was on Roof Cell I that SRC encountered “the proverbial can of worms” on the main roof of Building W-143 that was to persist throughout performance and impact productivity (tr. 5/38). SRC determined that it could not use the temporary roof work tie-in methods it normally used (tr. 1/98-99).

Of particular significance was the fact that the asphalt on all the roof cells was thicker than had been indicated in the contract drawings. Instead of being three inches thick, SRC encountered asphalt ranging in thicknesses up to nine inches during contract performance. (Ex. G-4; supp. R4, tab 380, rpts. 104, 113, 134, 136, 140) The thick asphalt was difficult to remove and the debris could not be efficiently transferred to the ground by the trash chute as SRC had planned because the debris clogged up the chute (supp. R4, tab 509; tr. 1/70-73, 78-79). Unilateral Modification No. P00004 increased the contract price by \$75,000 with a liability limit of \$150,000 for the extra work associated with demolition of the additional asphalt on all of the roof cells. The cost was definitized by the Navy in unilateral Modification No. P00007 at \$129,524. (R4, tab 2)

There were also excessively high and low spots in the concrete roof decks, wall protrusions, broken concrete masonry block expansion joints (cants) and roof holes which had allowed water to accumulate under the asphalt and created adhesion problems (tr. 1/81, 5/38-46). Unilateral Modification No. P00002 directed SRC to provide Dynabase or a similar material to level the high and low areas on the concrete substrate to permit installation of the roofing membrane. The cost of this extra work was definitized by the Navy in unilateral Modification No. P00007 at \$78,151. (R4, tab 2) SRC typically had to stop work until the areas could be inspected and agreement reached as to the square footage involved (R4, tab 535, RFI 76; tr. 1/90, 93-95, 2/25-27, 3/141-42).

Roof leaks also impacted productivity. Some of the leaks were due to the age and poor condition of the roof and SRC was responsible for others. (Supp. R4, tabs 246, 261, 315, 380, rpts. 138, 146, tab 383; tr. 1/123-24, 2/117-19, 7/243; *States Roofing Corp.*, ASBCA Nos. 55500, 55503, 09-1 BCA ¶ 34,036 at 168,345.) There were also leaks caused by roof holes and abandoned pipes that were not visible (R4, tab 62; tr. 1/98-99, 3/165-67, 9/81) and in locations at which SRC had not performed any work (R4, tab 38, 63; supp. R4, tab 380, rpts. 113, 160). The Navy concedes the leaks were disruptive and acknowledges responsibility for at least one leak (gov't br. at 314), but did not consider hairline cracks to be unusual in a building as old as Building W-143 (R4, tab 3; supp. R4, tab 385, subtab 89). The Navy did not compensate SRC for any of the leaks because the contract required SRC to keep the building watertight and dry during construction (R4, tab 1, § 02220, "SITE DEMOLITION," ¶ 3.1.2 "Roofing;" ex. G-3, Drawing No. A3, Note 2; tr. 3/135, 10/69-70).

Work outside the regular eight and one half hour work day required approval by the contracting officer, subject to 15 days written request, to allow for inspections (R4, tab 1 at 91, ¶¶ 1.3.2, 1.3.3). The ROICC office did not approve SRC's 22 November 2000 request to work Saturday, 2 December 2002, and eight consecutive Saturdays thereafter due to jobsite problems LT Hale discussed with Mr. DeLauney on 21 November 2000 (supp. R4, tabs 237, 238). By mid-December, however, the ROICC office felt these problems had improved and allowed SRC to work week-ends because it was behind schedule (tr. 8/127).

As of 5 January 2001, Roof Cell I had been completely removed, demolition of Roof Cell G had begun and abatement of asbestos on the parapet walls was proceeding well (R4, tab 27 at 795; supp. R4, tab 380, rpts. 98 through 135). SRC encountered many of the same kinds of conditions on Roof Cell G it had encountered on Roof Cell I and, again, nothing went as planned (tr. 5/47-49). On 16 January 2001, SRC requested an equitable adjustment and contract time extension due to the suspension of work on Roof Cell K (app. supp. R4, tab 512).

SRC requested and was given permission to work a Saturday and two holidays in January (supp. R4, tab 255). It was also authorized to begin out-of-sequence work on Roof Cell C and began demolition of Roof Cell C, either on 22 or 23 January 2001 (ex. G-2, tab C-14; supp. R4, tab 380, rpt. 152). While working on Roof Cell C, SRC first discovered "spider-web cracking" in the roof deck. It also continued experiencing the same kinds of difficulties it had encountered on Roof Cells I and G. (Tr. 5/52-53)

SRC was aware that other contractors would also be working on Building W-143 but its work on Roof Cell C was further complicated when it had to share that roof cell with another contractor, Tesoro Corporation (Tesoro) (tr. 3/168-72, 5/51-53). Some of

the problems with Tesoro appear to have been related to Webb Technologies (Webb), a company that was a subcontractor to both SRC and Tesoro, resulting in confusion about whether Webb was performing work for SRC or Tesoro (tr. 8/180-81). On a number of occasions, SRC complained to LT Hale about the Navy's failure to coordinate its work with that of other contractors working on the building (R4, tabs 43, 44, 48, 49, 61, 82).

SRC began demolition on Roof Cell J on 23 March 2001 and again encountered site conditions similar to those it had encountered on the other roof cells. Additionally, there was concrete spalling underneath the roof deck. (Tr. 5/53-56) By early April 2001, SRC was working late and on week-ends (R4, tab 64). It began demolition work on Roof Cell H on 14 April 2001, where the conditions were similar to those encountered on the other roof cells (supp. R4, tab 308, rpt. 234; tr. 5/56).

On 24 April 2001, the Navy advised SRC that Roof Cells D and F might be deleted from the contract work and requested a deductive change proposal. SRC completed work on Roof Cell C on 23 May 2001 (ex. G-2, tab C-14). It began demolition of Roof Cell E on 24 May 2001, again encountering conditions like those it had encountered on the other roof cells, including concrete spalling under the roof deck similar to Roof Cell J (R4, tab 75; supp. R4, tab 380, rpt. 274; tr. 5/57-60).

Also on 24 May 2001, LT Hale notified SRC that the Navy would not be receiving funding for either Roof Cell D or F. *States Roofing Corp.*, ASBCA No. 55508, 09-2 BCA ¶ 34,149 at 168,798. Unilateral Modification No. P00002 formally deleted the work, except for flashing and expansion joints on the roofs and new doors and painting on the penthouses (R4, tab 2). Special equipment was required for the expansion joints (tr. (9)/23-24), and the Navy would not allow SRC to use its heavy equipment to perform the penthouse work so that it had to use less-efficient hand equipment (tr. (9)/17-18).

Concrete spalling on the exterior of the parapet wall was first noted in SRC's Daily Report dated 31 May 2001 (supp. R4, tab 380, rpt. 281). On 18 June 2001, SRC advised the Navy that it had completed inspection of the parapet wall and had determined there were 630 square feet of additional concrete spalling (supp. R4, tab 385, subtab 68). Also on 18 June 2001, SRC resumed work on Roof Cell K (supp. R4, tab 380, rpt. 299).

In early June there was an incident involving falling particles of loose concrete, complaints about construction noise from the office located under Roof Cell E and a week-end leak when SRC was not working (R4, tabs 79, 106; supp. R4, tabs 302, 306, 312, 315, 380, rpt. 280; tr. 8/160-63, 9/149-50). SRC was instructed to move the crane to reduce the construction noise and did so (supp. R4, tab 380, rpts. 283-86). On 11 June 2001, a piece of debris from the roof fell into an abandoned duct and through the ceiling in an office below Roof Cell E. No one was injured. (R4, tab 89; supp. R4, tabs 307, 380, rpt. 292; tr. 3/67-68, 8/29-30) A Construction Contract Non-Compliance Notice

was issued to SRC (R4, tab 80). The next day, SRC requested approval of its earlier proposal to complete removal of the remainder of the asphalt on Roof Cell E at night (supp. R4, tabs 307, 308). Another incident involving falling debris attributable to the Navy occurred on 14 June 2001 (supp. R4, tab 380, rpt. 295). With ROICC office approval, SRC began night work on 18 June 2001 (*id.*, rpt. 299). The following day, ENS Palmer formally directed SRC to complete the specified demolition of Roof Cell E at night and to perform new roof work during regular working hours (R4, tab 81; tr. 8/167-70). The night work was authorized because of safety concerns (tr. 9/116-19). SRC was compensated \$7,016 for performing this contract work at night in unilateral Modification No. P00007 (R4, tab 2; tr. 9/144).

Contract completion was discussed during the regular construction meeting held 21 June 2001. Mr. DeLauney thought that “the middle of September looked possible.” (R4, tab 83) SRC gave no indication at this meeting, or later, that its work was being accelerated to meet the 17 August 2001 completion date or that it was concerned about imposition of liquidated damages (tr. 8/184-85, 6(2)/71-73). Nevertheless, Mr. DeLauney felt SRC had to finish the contract as quickly as it could and SRC did everything it could to finish (tr. 3/88-89).

The 28 June 2001 schedule update SRC submitted with its Invoice No. 4 dated 2 July 2001 reflects a contract completion date of 9 November 2001. It shows that work on Roof Cell K is almost finished and that painting is the critical path activity. (Ex. G-2, tab C-11; tr. 7(2)/62-65, 8(2)/36-37) On 5 July 2001 SRC directed its subcontractor, E.W. Caligari and Son, Inc. (Caligari), to begin painting the following day (ex. G-15). Caligari began painting on 9 July 2001 (supp. R4, tab 380, rpt. 320).

By a letter dated 11 July 2001, SRC advised ENS Palmer that the lack of a resolution about the repairs of the additional concrete spalling on the exterior band of the parapet wall was adversely affecting the contract completion date because painting could not begin in those locations until the mortar had cured (R4, tab 100; supp. R4, tab 327; tr. 3/152-54, 8(2)/66-67). Negotiations regarding the quantum of the equitable adjustment for the repairs took place on 19 July 2001, following which ENS Palmer obtained approval from the Fleet and Industrial Supply Center (FISC) to pay \$92,000 for the additional work. FISC was funding the roof repairs for Building W-143. (R4, tab 328; tr. 7/96-97, 8/199-200) By an e-mail dated 27 July 2001 to SRC, ENS Palmer acknowledged agreement on payment of \$92,000 to repair the spalled concrete, subject to an audit by the Defense Contract Audit Agency (DCAA), and advised that a time extension would be negotiated at a later date (ex. G-14; tr. 8/35-36). Mr. DeLauney testified that painting “slipped” because of the spalling and could not be finished until the repairs were complete (tr. 8(2)/39).

Unilateral Modification No. P00005, in the amount of \$92,000.00 was issued on 29 August 2001 to repair “spalled concrete on exterior band of parapet wall. Work includes chipping, cleaning, and adding grout to spalled areas.” (R4, tab 2) Repair work on the parapet walls was accomplished by Ealy Construction Co. and appears from the Daily Reports to have started on 6 August 2001 and continued until at least 24 September 2001 (R4, tab 34; supp. R4, tab 380, rpts. 347-96).

A Pre-Final Inspection was performed on 27 September 2001. Ongoing work at that time consisted of door and hardware installation, sheet metal flashing installation and painting. SRC anticipated that all punch list items would be complete within two weeks and they were completed as of 11 October 2001. (Supp. R4, tabs 340, 343) Painting was the only phase of work that remained (ex. G-17). Caligari finished painting the North parapet wall band on 2 November 2001 and then performed its punch list work until 8 November 2001 (supp. R4, tab 380, rpts. 434-40). Apart from masonry punch list work that was performed on 13 November 2001, SRC’s final Daily Reports (from 9 November 2001 and ending 15 November 2001) reflect only “worksite inspection” (supp. R4, tab 380, rpts. 441-47).

Final Inspection was performed on 6 November 2001, which became the beneficial occupancy date for the contract (R4, tab 111). Neither the ROICC office nor the contracting officer intended to assess liquidated damages; instead, the plan was to extend the contract completion date (tr. 6(2)/70-71). This plan was not shared with SRC (tr. 8/66). SRC prepared an as-built schedule dated 15 December 2001 (ex. G-2, tab C-14).

During the course of contract performance, SRC submitted no fewer than 100 Requests for Information to the ROICC (supp. R4, tabs 385, 535). Changes to the contract work were implemented by undefinitized unilateral modifications, typically issued some time after the direction to proceed with the changed work: Modification No. P00001 included four changes; Modification No. P00002 included twelve changes, among them the leveling of the concrete substrate and deletion of Roof Cells D and F; Modification No. P00003 directed use of a crane instead of the freight elevator; Modification No. P00004 addressed the additional asphalt encountered on the roof; and Modification No. P00005 directed the repair of spalled concrete on the exterior of the parapet walls. (R4, tab 2)

Bilateral Modification No. P00006, issued 19 December 2001, definitized Modification No. P00005 at \$92,000.00, and extended the contract completion date by 45 days, from 17 August 2001 to 1 October 2001. Modification No. P00006 included the following release:

Acceptance of this modification by the Contractor constitutes an accord and satisfaction and represents payment in full (for both time and money) for any and all costs, impact affect, and/or delays arising out of, or incidental to, the work as herein revised and extension of contract completion time.

(R4, tab 2)

SRC's 18 April 2003 certified claim, received by the contracting officer on 21 April 2003, consisted of 67 items for which equitable cost adjustments had been requested. Included among them were the delay, acceleration and disruption claims underlying ASBCA Nos. 54860, 55501, 55502 and 55505. (R4, tab 147)

Unilateral Modification No. P00007 was not issued until 23 April 2003. It definitized the cost of the changes implemented by Modification Nos. P00001 through P00005, provided payment of costs for an additional 26 claim items, and included 81 days of extended general conditions (through 6 November 2001). The net increase to the contract price was \$187,260. It also extended the contract completion date another 45 days, from 1 October to 15 November 2001. Modification No. P00007 does not specify the work associated with the extended completion date. (R4, tab 2)

On 1 and 30 September 2004, the contracting officer issued final decisions on SRC's certified claim. The 1 September final decision found entitlement to additional direct costs in the amount of \$56,522.00 beyond those awarded in Modification No. P00007; the 30 September final decision found no additional entitlement. Modification No. P00008 issued on 22 October 2004, provided for payment of the amounts found due. (R4, tab 2) These timely appeals followed.

The Navy isolated approximately 40 days of rain, wind and snow from the Daily Reports that halted roofing work for all or parts of work days (gov't br. at 252-57). It also selected excerpts, which it sometimes summarized, from the Daily Reports that it contends reflect inconsistent crew sizes, rework and other SRC performance matters with which it finds fault (gov't br. at 265-70, 285-91). The Navy further noted that, while performing the Building W-143 roofing contract, SRC also was working on 22 Indefinite Delivery Indefinite Quantity Task Orders (supp. R4, tab 407; tr. 6(2)/86-87).

The Navy did not provide evidentiary context to its Daily Report excerpts or explain how weather, crew size, rework, task order work or any of the other performance matters it selected from the Daily Reports deviated from what would be considered typical for a roofing construction project in the geographic area or, apart from conjecture, how they related to SRC's delay, acceleration and disruption claims.

Weather is always an issue for roofers and SRC had many years of experience at the NOB (tr. 5/103, 9(2)/58-60). SRC's bid included normally anticipated adverse weather and it did not request any time extensions for unusually severe weather (tr. 7(2)/87-88, 228-29, 277). Rework was not a significant issue on the contract and the majority of the problems were corrected as they were encountered (tr. 7(2)/277).

ADDITIONAL FINDINGS OF FACT

Delay - ASBCA Nos. 54860 and 55502

Entitlement

Claim Item 50, Defective Submittal Register, of SRC's 18 April 2003 claim sought a contract time extension of "at least 50 days" and \$12,552.00 (R4, tab 147 at II.50). Claim Item 53, Extended General Conditions, of the claim sought a contract extension of 132 days and \$87,151.00 for extended general conditions (R4, tab 147 at II.53). As revised, the combined delay claim seeks 103 days of compensable delay and \$91,354.73 (ex. A-1, tab 1 at 36-37, tab 2(P)).

The delay claim is based upon a critical path method (CPM) analysis of the project performed by Mr. Jeffrey D. Brooks, vice president of Doran. He has extensive experience in the construction industry and with the drafting and maintaining of construction schedules. (Ex. A-1 at 1-2) He testified without objection as an expert witness in scheduling and critical path methodology (tr. 6/8-15). He was not involved in the project while it was ongoing (tr. 6/17).

Mr. Brooks prepared a time impact report. He thought the initial NAS baseline schedule dated 2 December 2000 should have been approved because it addressed LT Hale's earlier concerns about the logic relationships between activities. It was his view that LT Hale's 14 December 2000 comments could have been addressed in an "AN," "Approved as Noted," action code, assuming the comments were incorporated into the schedule. (Ex. A-1 at 4, ex. G-2, tab C-3; tr. 6/24, 49) Thus, he used the 2 December 2000 schedule to establish what he called a "corrected" as-planned baseline schedule and to identify the critical path of the contract work after making logic adjustments that tied approval of submittals to fabrication, delivery and installation of construction components (ex. A-1, tabs 1, 5; tr. 6/27-28, 31-32, 50, 53). Mr. Brooks made the adjustments to correct logic omissions relating to the submittal process consistent with what he considered to be good scheduling practices (tr. 6/28-29, 103-04). He characterized his changes as minor (tr. 6/50). It is not clear from his testimony whether he incorporated LT Hale's 14 December 2000 comments. His corrected as-planned schedule shows a start date of 17 August 2000 and a finish date of 15 August 2001 (ex. A-1, tab 1).

The as-planned baseline schedule prepared by Mr. Brooks is somewhat different than the baseline schedule finally approved by LT Hale on 25 April 2001 and has a somewhat different critical path (tr. 6/50-51, 53-54; 7(2)/111-12). Neither schedule, however, shows submittals as a critical path activity. The critical path on both schedules moves from fabrication and installation of the trash chutes to demolition of the fluid applied membrane on Roof Cell I which begins at the same time as demolition of the roof on Roof Cell K. Both schedules show 41 days of non-critical path work for Roof Cell K, beginning on 10 November 2000 on the “corrected” schedule and on 13 November 2000 on the approved schedule. Work on Roof Cells C and D follows completion of Roof Cell K, as required by the contract. Both schedules also show five days of punch list work as the last critical path activity. (Ex. A-1, tab 1; ex. G-2, tab 9)

Using his as-planned baseline schedule, Mr. Brooks concluded there were two key delaying events on the project: (1) submittal register corrections; and (2) suspension of work at Roof Cell K and deletion of work on Roof Cells D and F (ex. A-1 at 7; tr. 6/38-39).

He created a Fragmentary Network (FragNet) from his schedule to analyze the submittal register and its relationship to approval of submittals using a start date of 17 August 2000 and a finish date of 7 December 2000 for a new activity, “CORRECT SUBMITTAL REGISTER,” that is shown as a critical path activity. He concluded that resolution of the register issue consumed 80 calendar days and resulted in a net impact to the schedule of 26 calendar days, from 17 August 2001 to 11 September 2001. (Ex. A-1 at 7 and tab 10; tr. 6/37-41)

Mr. Brooks analyzed the suspension of work on Roof Cell K using a new activity, “ROOF K WORK SUSPENDED,” with a 27 November 2000 start date and a 19 June 2001 finish date, that is shown as a critical path activity and from which he projected a delay of contract completion from 17 August 2001 to 4 March 2002, some 199 calendar days. The analysis assumed that no work was performed on any roof cell during the suspension of work on Roof Cell K. (Ex. A-1 tab 11 at 1) However, because SRC was permitted to work out-of-sequence on Roof Cell C, Mr. Brooks incorporated actual work progress to 17 June 2001 into the schedule based upon the as-built schedule he prepared (tr. 6/97-98). This shortened the projected delay period to 28 December 2001, resulting in 133 days of delay. The schedule continued to show Roof Cell K on the critical path, followed by painting. It showed work on Roof Cells D and F as having been completed and increased the number of days for punch list work from five to 38. (Ex. A-1, tab 11 at 2; tr. 6/40-42)

Mr. Brooks also evaluated the impact of the deletion of Roof Cells D and F on his schedule prior to the commencement of any work on the project (tr. 6/42-43). Deleting

this work resulted in a projected completion date of 26 July 2001 (ex. A-1, tab 11 at 2). He then computed the difference between 26 July 2001, the projected completion date without Roof Cells D and F, and 28 December 2001, the projected completion date reflecting the suspension of work on Roof Cell K and the out-of-sequence work on Roof Cell C, and concluded the net impact to completion was 155 days of delay (tr. 6/43-44). Finally, he adjusted the net delay period to account for the beneficial occupancy date, resulting in 103 days of delay, from 26 July 2001 to 6 November 2001. (Ex. A-1 at 7-8 and tabs 3, 11; tr. 6/40-46, 7(2)/226-28)

Mr. Brooks considered the delay to Roof Cell K to be the controlling, relevant delay, subsuming any delay caused by the defective submittal register (tr. 6/59-60). Using the approved baseline schedule produced a net impact that was greater than that produced by his “corrected” as-planned baseline schedule (tr. 7(2)/224).

The trial judge found Mr. Kurt Musser to be qualified to testify as an expert on behalf of the Navy with regard to delay/disruption impacts to construction contracts, CPM analysis and in limited areas relating to construction management (tr. 7(2)/41-42). He did not prepare a time impact analysis, confining his testimony instead to the schedules actually submitted to the Navy by SRC and the time impact analyses prepared by Mr. Brooks.

Mr. Musser considered the baseline schedule approved on 25 April 2001 to be the schedule that should have been used to analyze SRC’s claims (tr. 7(2)/30-31). He did not form any opinion either as to LT Hale’s 14 December 2000 comments relating to approval of the baseline schedule dated 2 December 2000 or as to whether there were logic errors that needed to be corrected, testifying only that any such errors should have been corrected at the time the schedule was prepared (tr. 7(2)/48-49, 130-31, 200-01). While Mr. Musser agreed that a FragNet analysis can be an appropriate methodology to measure impact (tr. 7(2)/131-32), it was nevertheless his view that Mr. Brooks had looked at the claim issues and then modified and manipulated the data (tr. 7(2)/201-03). For his part, Mr. Brooks testified that he had “absolutely not” manipulated the data in any way (tr. 7(2)/223).

Based upon his review of SRC’s schedules, it was Mr. Musser’s opinion that the delays at the beginning of contract performance were not related to the submittal register and did not impact the contract completion date (tr. 7(2)/51, 81). It was his opinion that the submittal register was never on the critical path (tr. 7(2)/63). He agreed that the critical path did move to Roof Cell K at some point during performance, but did not think the suspension of work on Roof Cell K delayed contract completion because SRC was allowed to proceed with out-of-sequence work on Roof Cell C. He attributed the extension of the contract completion date to the change work associated with the spalling and painting of the exterior parapet concrete walls. (Tr. 7(2)/51-52)

Mr. Musser considered the 28 June 2001 updated schedule submitted with Invoice No. 4 to be the most important of SRC's schedules because it shows that issues relating to Roof Cell K had been overcome by progress, leaving only Roof Cells D and F, which SRC knew would be deleted, and critical path contract painting. The schedule reflects no progress on Roof Cells D and F, although it does show some planned work, including limited critical path work associated with installation of gravel and flashing, after painting. The projected completion date is 9 November 2001. (Ex. G-2, tab C-11; tr. 7(2)/62-66) Although he looked at the issue, he did not think it necessary to undertake a schedule analysis of whether there was any impact associated with deletion of Roof Cells D and F (tr. 7(2)/164-66). He considered SRC to have been fully compensated by the 81 days of extended field office overhead to 6 November 2001 provided in Modification No. P00007 (tr. 7(2)/53).

Quantum

The Navy awarded SRC \$32,363.00 for 81 days of extended general conditions, from 17 August 2001 to 6 November 2001 (Modification No. P00007 awarded \$32,007 and Modification No. P00008 awarded an additional \$356) (R4, tab 2). The amount of the adjustment originally was estimated to be \$29,322 by ENS Palmer on 1 February 2002 (supp. R4, tab 392, subtab 103). His 12 December 2002 change order recommendation reflects that he negotiated the \$32,007 amount with SRC (supp. R4, tab 391 at 6).

Ms. Susan Moser, SRC's accountant, was qualified as an expert in government cost accounting (ex. A-2; tr. 8(2)/86-99). She computed the revised claim amount, \$91,354.73, which is subject to a credit of \$32,363.00 for the amounts already awarded (ex. A-2, tab 2(P)). The claim was audited by Ms. Cecelia R. Ambrose, of DCAA, who was stipulated to be an expert in the field of auditing government contractors (tr. 10(2)/43-45).

The \$37,287 direct labor portion of the revised claim was further adjusted to \$36,267 during the hearing. SRC now seeks 1,846 hours of supervisory and housekeeping labor incurred after 26 July 2001 that were carried as direct costs and which Ms. Moser obtained from the job cost records. (Tr. 8(2)/167-69, 10(2)/201-05) The supervisory personnel include Mr. Aubrey L. Etheridge, Jr., the QC manager, Mr. Joseph Hernandez, the project superintendent, and Mr. Rodger Ferland, the QC specialist (tr. 9(2)/120-22). Additionally, there are four individuals whom Mr. DeLauney identified as having performed general custodial work as laborers (tr. 9(2)/123). (Ex. A-2, tab 2(P))

Ms. Ambrose verified \$24,405 of the labor costs claimed, determining that these costs were not in the indirect cost pool, and removed labor costs she thought were not related to the claim. Her report does not identify the categories of labor or the number of hours associated with labor costs and does not lend itself to computing labor costs incurred prior to 17 August 2001. (Amended Response to Statement of Costs (ARSOC), tab 15 at 111-12; tr. 10(2)/122-25)

In its post-hearing brief, the Navy challenged the underlying factual basis of some of the claimed direct labor costs. We have confirmed the following challenged amounts: \$8,987.34 as having been incurred prior to 17 August 2001; \$2,958.60 as having been incurred on days there was no work on the site; and \$3,040.80 for Mr. Etheridge as QC manager when the Daily Reports do not show him as being on site. This is a total of \$14,987. The discussion relating to the work performed by laborers and roofers in the Navy's post-hearing brief was inconclusive. (Gov't br. at 215-18; ex. A-2, tab 2(P))

SRC's revised claim also includes \$3,910 of direct costs for 103 days of an office trailer, electric power, portable toilet, Doran, telephone, cell phones and radio, computer service and water cooler (ex. A-2, tab 2(P)). These costs were provided to Ms. Moser by SRC, but were not verified by her (tr. 8(2)/169-71). Ms. Ambrose also treated the claimed costs as direct costs. Based upon her audit report, we find SRC incurred the following direct costs for the periods indicated: 12 months rental for the trailer, ending 5 October 2001, at a monthly rate of \$145, \$4.83 a day (\$145 divided by 30 days); 12 months of trailer electricity costs of \$440, \$1.21 a day (\$440 divided by 365 days); 12 months rental for the portable toilet at a cost of \$2,292, ending 22 October 2001, \$6.28 (\$2,292 divided by 365 days). Ms. Ambrose found the telephone was included in home office overhead and did not question \$1,280 for Doran, \$44 for computer service and \$85 for water cooler. (ARSOC, tab 15 at 113-15)

Acceleration - ASBCA No. 55501

Claim Item 52, Acceleration, of SRC's 18 April 2003 claim originally sought \$34,514 for premium and overtime labor (R4, tab 147 at II.52). SRC does not typically include any standard amount for labor overtime in its bids and did not include overtime in its bid for the Building W-143 contract (R4, tab 152; tr. 1/31, 2/72-73, 7(2)/263-67). Ms. Moser computed all of the overtime incurred on this contract (both for original work and for additional or changed work) from SRC's job cost reports and accumulated it in the acceleration claim (supp. R4, tab 151; tr. 8(2)/163-64, 10(2)/165). The present claim seeks \$72,585.97 (ex. A-2, tab 2(O)).

The claim consists of four components: (1) overtime for the night shift work associated with Roof Cell E; (2) 428 hours of crane overtime; (3) 164 hours of overtime for the full time safety person; and (4) 824 hours of overtime associated with the Navy's

requirement for watertight conditions before SRC left the job site. The direct labor overtime component of the claim is \$34,514.35. Ms. Moser excluded \$3,060 (240 hours at a regular hourly rate of \$12.75 per hour) for the night work directed by the Navy to demolish Roof Cell E, which was paid in Modification No. P00007. Her remainder is \$31,454.35. (Ex. A-2, tab 2(O)) This amount is subject to established mark-ups and profit.

Our findings relating to the night shift work associated with Roof Cell E are included under “*Contract Performance*” above. We did not consider overtime in our decision on SRC’s claim in ASBCA No. 55506 for the use of cranes instead of the freight elevator. *States Roofing Corp.*, ASBCA No. 55506, 08-2 BCA ¶ 33,970. We denied SRC’s claim for a full time safety assurance person in ASBCA No. 55500 for lack of authority under *Winter v. Cath-Dr/Balti Joint Venture*, 497 F.3d 1339 (Fed. Cir. 2007). *States Roofing Corp.*, ASBCA Nos. 55500, 55503, 09-1 BCA ¶ 34,036 at 168,348-49. We understand the balance of the hours sought to be generally referred to as the Navy’s requirement for watertight conditions.

Although Mr. Brooks did not perform a specific acceleration analysis (tr. 6/91-92), he attributes the 52-day delta between 6 November 2001 and 28 December 2001 in his time impact analysis to be “[s]ome type of acceleration” on the part of SRC (ex. A-1 at 7-8; tr. 6/44-46). Mr. Musser also did not perform an acceleration analysis (tr. 7(2)/125-26). He found no documentation to support SRC’s acceleration claim (tr. 7(2)/53-55). Although he made no analysis of SRC’s plan to finish in 10 months, Mr. Musser found nothing unusual about SRC’s anticipation of early completion given its extensive roofing experience (tr. 7(2)89-90, 125-26).

Disruption - ASBCA No. 55505

Entitlement

Item 67, Disruption, of SRC’s 18 April 2003 certified claim originally sought \$479,500 as the difference between the labor it bid, \$683,400, and the labor cost it actually incurred, \$1,162,900 (R4, tab 147 at 1380-82). The present claim was prepared by Ms. Moser and seeks \$336,976 in additional labor as the difference between its adjusted anticipated labor, \$1,159,388, and its revised incurred labor, \$1,496,364 (ex. A-2, tab 1 at 41-45 of 47 and tab 3).

SRC’s claim asserted that the claimed costs compared favorably with industry-accepted models for predicting loss of productivity such as the so-called “Thomas & Smith Model.” *See H. RANDOLPH THOMAS, JR. & GARY R. SMITH, LOSS OF CONSTRUCTION LABOR PRODUCTIVITY DUE TO INEFFICIENCIES AND DISRUPTION: THE WEIGHT OF EXPERT OPINION*, 163 (1990). (R4, tab 147 at 1381)

SRC did not pursue the Thomas & Smith Model at the hearing. Instead, SRC presented a measured mile type analysis, comparing the work on Building W-143 with work at other buildings that had similar characteristics, except for the removal of the asphalt overlay. Two buildings are at the NOB, Building KBB, phases 1 and 2, and Building V-53; the other is the library at Norfolk State University.

Building W-143 was higher and larger than the other buildings (tr. 3/173-74, 183-84). It was the first building Mr. DeLauney had seen with asphalt overlay (tr. 1/26, 63-64). Except for the asphalt, he thought the other buildings were as close to Building W-143 as one could get (tr. 7(2)/291). He removed the asphalt portion of the work for his comparison because the other buildings did not have it (tr. 3/173, 9(2)/50). Mr. DeLauney's bid for Building W-143, without asphalt removal, was based upon a production rate of approximately 8.87 man hours per roof square. This is on the high side of the majority of his roofing estimates, which typically are between eight and nine man hours per square and what SRC normally is able to accomplish. (Tr. 3/173-74, 186-87; 9(2)/51)

The estimates for the KBB roofs were just over eight man hours per roof square and Building V-53 was nine man hours (exs. A-10, -11; tr. 3/179-85). The library estimate was eight man hours (ex. A-12; tr. 3/185-89). The record includes what appear to be actual costs data for Building KBB, phase 2, Building V-53 and the library; however, we are not able to verify the production rates SRC actually achieved at those locations (exs. A-10, -11, -12).

Using the Navy's estimate and R.S. Means, Mr. DeLauney calculated the Navy's cost estimate for Building W-143 to be 8.24 man hours per roof square and R.S. Means 2000 to be 8.27 man hours (supp. R4, tab 201; tr. 3/187-88, 7(2)/290-91). He considered SRC's bid for Building W-143 to compare favorably with the other four roofs, the Navy's estimate and Means (tr. 9(2)/50-51).

Mr. DeLauney first testified that SRC's actual production rate on Building W-143 was about 19 man hours per roof square, but later reduced it to 16.61 man hours (tr. 3/194, 9(2)/51-52). He computed the extra cost of the number of completed roof squares to be \$538,247 (tr. 9(2)/51-53).

Neither Mr. Brooks nor Mr. Musser performed a disruption/inefficiency analysis of the project. Mr. Musser agreed generally with SRC that "[r]e-sequencing [of work] is an impact issue" (tr. 7(2)/41-42, 140) and confirmed that it is the labor aspect of the job that typically is affected by disruption impact (tr. 7(2)/145-46). He also referenced the Mechanical Contractors Association of America (MCAA) standards for measuring productivity entitled "Factors Affecting Labor Productivity," which are based upon 16

disruption factors that are to be rated with percentages at minor, average or severe levels. Mr. Musser did not apply the MCCA factors to SRC's work. (Ex. G-2, tabs E, D-1; tr. 7(2)/182-85, 187)

Unlike Mr. Musser, Mr. DeLauney did apply the MCCA factors, finding average or severe disruption impact for each (tr. 7(2)/293-310). According to SRC, the total disruption was 340% which, when multiplied to the adjusted labor bid estimate of \$564,927, equates to a labor increase of \$1,355,825 (app. br. at 117).

Irrespective of the method used to measure impact, Mr. DeLauney had no doubt that the changes and deletions to the contract had impacted SRC's labor productivity (tr. 7(2)/276). He characterized the disruption impacts as having had a "compound affect," due in part to the Navy's insistence that SRC finish the work before it would address the impacts (tr. 7(2)/286-88).

Mr. Hernandez, who began working on the contract as SRC's QC specialist and became its project superintendent, thought the work conditions, together with what he considered to be a lack of cooperation from the ROICC office, "[w]ithout question" had an effect on SRC's production (tr. 5/11-12, 73-74). Mr. Mark J. Airaghi, the ROICC Supervisory Engineer, testified that with all of the changes that occurred, it was not reasonable to say, and the Navy could not "[i]n good conscience" say that SRC was not impacted in its performance (tr. 6(2)/210-11). LTJG (formerly ENS) Palmer included a 5% inefficiency factor when preparing the Navy's 9 August 2001 estimate of the impact resulting from deletion of Roof Cells D and F (supp. R4, tab 388 at 12, subtab 55 at 6).

Quantum

SRC originally bid 24,592 hours of labor at an average hourly burdened rate of \$27.79, a total of \$683,412, for the contract. The bid also included another \$159,600 for additional miscellaneous labor, bringing the total cost of the labor to \$843,012. (R4, tab 152 at 17; ex. A-2, tab 3; tr. 8(2)/194) Ms. Ambrose verified this amount (tr. 10(2)/180).

SRC provided information to Ms. Moser for deductions of \$182,557 for asbestos removal savings and \$95,528 for special equipment savings, a total of \$278,085, allegedly achieved through a change in its production methods and use of existing materials. Deduction of these savings reduces the labor bid estimate to \$564,927. (Ex. A-2, tab 3; tr. 8(2)/195-96, 9(2)/47-48) The cost savings were not segregated in SRC's accounting system (tr. 9(2)/132). Ms. Moser used information from the asbestos subcontractor and an equipment schedule, both provided to her by SRC (tr. 8(2)/195-96). Neither Ms. Moser nor Ms. Ambrose was able to verify the cost savings (ex. A-2, tab 3 at 6119; ARSOC, tab 12 at 157-58).

Ms. Moser then added all labor SRC considered applicable to the contract modifications and to its pending claim items, a best case scenario that assumed SRC would prevail upon all of its outstanding claims (tr. 8(2)/197). The labor cost in claims resolved by modifications that SRC did not challenge was \$192,153; the labor cost in claims resolved by modifications that SRC did challenge was \$180,593; the labor cost in claims that were pending was \$221,715. This is a grand total of \$594,461. The revised adjusted labor bid cost estimate total is \$1,159,388 (\$564,927 (adjusted bid estimate) + \$594,461 (modifications and claims)).

SRC incurred \$1,211,394.41 in burdened labor costs and \$284,970 in outsourced labor that was not included in SRC's bid, a total of \$1,496,364 (ex. A-2, tab 3; tr. 8(2)/190-92). The difference between SRC's incurred labor costs and its adjusted labor bid cost estimate is \$336,976, (\$1,496,364 – \$1,159,388), which SRC claims represents inefficiency resulting from the differing site conditions and changes to the contract work (app. br. at 114). Ms. Moser characterized the disruption claim as a total labor cost claim (tr. 8(2)/106).

We were unable to verify how Ms. Moser treated the labor associated with the spalled concrete repairs directed by unilateral Modification No. P00005 and definitized by bilateral Modification No. P00006, which contains a release that included "impact affect" (R4, tab 2). She made no adjustments for the cost of repairing leaks or for any inefficiency attributable to SRC.

Ms. Ambrose questioned \$30,145 of SRC's costs because they were incurred well beyond 31 December 2001 (ARSOC, tab 12 at 153-54; tr. 10(2)/175-77). She also questioned an estimated \$12,150 of subcontract costs, \$13,805 with mark-ups, because she thought they represented off-site warehouse rental costs and there was no evidence to the contrary (ARSOC, tab 12 at 152-55; tr. 10(2)/178-79). Subtracting these amounts from SRC's incurred labor costs results in revised labor costs of \$1,453,069 (\$1,496,364 - \$43,295).

DISCUSSION

Delay – ASBCA Nos. 54860 and 55502

Entitlement

The Navy extended the contract completion date 90 days, to 15 November 2001, and compensated SRC for 81 days of extended general conditions, 17 August 2001 to 6 November 2001. SRC seeks a total of 103 days of compensable delay, 26 July 2001 to 6 November 2001.

In order to establish entitlement to delay damages, SRC must demonstrate the extent of the delay, the causal link between the Navy's alleged wrongful actions and the delay and the resulting injury. *E.g.*, *Essex Electro Engineers, Inc. v. Danzig*, 224 F.3d 1283, 1295 (Fed. Cir. 2000); *Wilner v. United States*, 24 F.3d 1397, 1401 (Fed. Cir. 1994) (*en banc*). *See also Cox & Palmer Constr. Corp.*, ASBCA No. 43438 *et al.*, 93-3 BCA ¶ 26,005 at 129,274. The delay normally must be to work on the critical path, the only work that affects overall completion of the contract work. *Kinetic Builder's Inc. v. Peters*, 226 F.3d 1307, 1317 (Fed. Cir. 2000); *Gassman Corp.*, ASBCA Nos. 44975, 44976, 00-1 BCA ¶ 30,720 at 151,738. SRC also must account for any concurrent delay by showing that it was not within SRC's control. *Essex Electro*, 224 F.3d at 1295; *Donohoe Constr. Co.*, ASBCA Nos. 47310, 47312, 99-1 BCA ¶ 30,387 at 150,190.

SRC's delay claim is based upon the time impact analysis prepared by Mr. Brooks. The Navy considers the analysis to be inherently flawed because Mr. Brooks used his "corrected" baseline schedule instead of the approved baseline schedule. Despite some concerns about the "corrected" schedule, on balance we disagree with the Navy on this preliminary issue. Nevertheless, unlike SRC, we do not consider it to be the controlling issue.

Mr. Brooks used the 2 December 2000 schedule prepared by his consulting firm for SRC as the basis for his analysis. His belief that LT Hale's comments about the schedule should have been addressed with the "Approved as Noted" code, instead of the "Resubmit" code, was not challenged by the Navy. But, Mr. Brooks then made logic corrections to the 2 December 2000 schedule, which seems to be somewhat at odds with his view that the schedule should have been approved. It is not clear whether LT Hale's comments were incorporated into this corrected schedule. In any event, the credible evidence supports the finding that the adjustments Mr. Brooks made were exactly as he described them: minor corrections to logic errors relating to submittals. The Navy did not dispute that there were such logic errors in the schedule and, to the extent there were, we consider correction of them to be in keeping with good scheduling practices.

Mr. Brooks next created FragNets from his "corrected" baseline schedule to analyze time impacts, a methodology the Navy's expert, Mr. Musser, generally agreed was an accepted practice. Mr. Brooks identified two independent delay periods: the first relates to the submittal register, which produced 26 days of delay, from 17 August 2001 to 11 September 2001; and the second relates to the suspension of work on Roof Cell K and deletion of Roof Cells D and F, which produced 103 days of delay, extending contract completion from 26 July 2001 to 6 November 2001.

Defective Submittal Register

Mr. Brooks thought that the controlling, relevant delay was associated with Roof Cell K and it is the 103 days of delay attributed to suspension of work on Roof Cell K and deletion of Roof Cells D and F that now forms the basis of SRC's entitlement claim. Thus, it appears to us that the alleged submittal register delay may no longer be relevant. However, as is reflected by the extensive evidence and argument presented by the parties on the issue, it certainly has not been abandoned. To the extent it does remain an issue, we conclude that corrections to the submittal register did not cause SRC delay.

The FragNet prepared by Mr. Brooks, like his baseline schedule, shows contract performance and the time period associated with correction of the defective submittal register beginning on 17 August 2000. It was not until 12, 14, and 19 September 2000, however, that the Daily Reports contain any remarks about any problems with the register. Further, SRC was 18 days late in the submission of its Performance and Payment Bonds. A credible CPM time impact analysis should take into account all of the impacts to the project. *Fru-Con Constr. Corp.*, ASBCA Nos. 53544, 53794, 05-1 BCA ¶ 32,936 at 163,162, *modified in part, reaff'd in part on recon. on other grounds*, 05-2 BCA ¶ 33,082. The submittal register time impact analysis does not recognize the early delay attributable to SRC and the evidence establishing when SRC first discovered submittal register errors.

Moreover, SRC made a number of submittals that were required before it could begin contract performance even though the submittal register had not been corrected and approved. Of particular significance are the Accident Prevention/Safety Plan, submitted on 3 October and approved on 22 October 2000, the QC Plan, submitted on 6 October and approved on 2 November 2000, and the Demolition Plan, submitted on 16 October 2000 and approved on 31 October 2000.

The lack of a corrected and approved submittal register also did not prevent SRC from beginning actual project work. The Daily Reports show that SRC mobilized on 17 October 2000 and began installation of the trash chute (critical path work) and ramps in early November. It then began demolition and other work on Roof Cell K, as scheduled. When work was suspended on Roof Cell K on 28 November 2000, SRC turned its efforts to Roof Cell I. In short, the lack of an approved submittal register did not prevent SRC from making submittals and it did not delay the commencement of project work.

SRC argues in the alternative that the Navy's delay in approving the submittal register was a breach of its obligations not to impede SRC's work and to deal with SRC in good faith (app br. at 60). The Navy responds, and we agree, that the facts do not support such a finding. It is an established rule that the government has an implied duty

to cooperate that, in turn, imposes an affirmative obligation to do what is reasonably necessary to enable the contractor to perform. *See Coastal Governmental Services, Inc.*, ASBCA No. 50283, 01-1 BCA ¶ 31,353 at 154,833, *aff'd*, 32 Fed. Appx. 584 (2002). “[T]he gravamen of the...inquiry in cases involving a breach of the duty of cooperation is the reasonableness of the Government’s action considering all the circumstances.” *PBI Electric Corp. v. United States*, 17 Cl. Ct. 128, 135 (1989).

Here, the evidence shows that the Navy acted reasonably when errors in the submittal register were discovered. It quickly reviewed the register and provided additional copies of it to SRC. Although LT Hale required re-submittal of the registers submitted on 6 and 11 October and 6 November 2000, he did so because of issues with the transmittal numbers. These issues related to column (b) which typically is completed by the contractor. The register dated 1 December 2000 was approved on 5 December 2000. This evidence does not establish any breach of the Navy’s implied obligations to SRC.

Roof Cells K, D and F

The alleged delay caused by the suspension of work on Roof Cell K and the deletion of Roofs Cells D and F raises a variety of issues unrelated to the submittal register. Mr. Brooks developed separate FragNets to evaluate this alleged delay from which he initially concluded there were 155 days of delay, from 26 July 2001 to 28 December 2001. Because beneficial occupancy occurred on 6 November 2001, however, he had to reduce the delay period by 52 days, to 103 days. The Navy extended contract completion by 90 days, to 15 November 2001, including 81 days of compensable delay. SRC seeks an additional 22 days of compensable delay.

The Navy suggests that SRC is attempting to recover additional costs beyond the beneficial occupancy date. This is not correct. The 103 days of delay for which SRC seeks recovery begins on 26 July 2001 and ends on 6 November 2001.

There was evidence that SRC planned to complete the contract work in 10 months. While Mr. Musser found nothing unusual in that expectation given SRC’s extensive roofing experience in the area, the approved baseline schedule does not show an early completion date. These facts aside, SRC is relying upon the time impact analysis prepared by Mr. Brooks to establish delay, not early completion. Neither the “corrected” baseline schedule Mr. Brooks prepared nor his time impact analysis reflects any intent on the part of SRC to complete the contract work early. The 26 July 2001 completion date is the result of the deletion of Roof Cells D and F from the contract work.

Thus, any intent SRC may have had to complete early is not an issue here with respect to the time impact delay analysis and the applicable rules do not apply. *Cf.*

Interstate General Government Contractors, Inc. v. West, 12 F.3d 1053, 1059 (Fed. Cir. 1993) (contractor must show it intended to complete early from the outset, had the capability to do so, and would have done so, but for delay caused by the government). *Accord Webb Electric Co. of Florida, Inc.*, ASBCA No. 54293, 07-2 BCA ¶ 33,717 at 166,940, *aff'd*, 299 Fed. Appx. 958 (2008).

In any event, we are not satisfied from our review of the evidence that we should rely upon SRC's time impact analysis. First, both the approved and the corrected as-planned schedules show the critical path moving to Roof Cell I after installation of the trash chutes, with work on Roof Cell K beginning at the same time. SRC's analysis assumes that work on Roof Cell K immediately became the critical path on 28 November 2000 when it was suspended and remained the critical path until 18 June 2001 when work resumed. This is not correct: only Roof Cells C and D were restrained by Roof Cell K. Work on Roof Cell I went forward and SRC then continued to proceed with work on the other roof cells. It also was authorized to work out-of-sequence on Roof Cell C beginning in January 2001.

Next, SRC was aware by 24 May 2001 that the Navy would not receive funding for Roof Cells D and F. When Mr. Brooks incorporated SRC's actual progress through 19 June 2001 into his baseline schedule, work on Roof Cells D and F was shown as having been completed. Roof Cell K and painting were the remaining critical path work activities, with contract completion projected for 28 December 2001. The projected completion date reflects, in part, an increase in the number of days for punch list work, from five days to 38 days. The increase in the time for punch list work not only seems excessive in light of all of the other schedules in the record, but also was not explained.

With Roof Cells D and F no longer a factor, the 28 June 2001 updated schedule submitted to the ROICC office with Invoice No. 4 and relied upon by Mr. Musser similarly indicates that the remaining contract work is Roof Cell K and painting, although Roof Cell K is not critical path work. Mr. Musser thought that the contract completion date was impacted by the repair and painting of the parapet wall spalled concrete. There is support for his view in the 11 July 2001 letter from SRC advising that the lack of resolution of that issue was adversely affecting the contract completion date.

Mr. Brooks analyzed the impact of the deletion of Roof Cells D and F using his corrected baseline schedule. This analysis again shows five days of punch list work and projects a 26 July 2001 finish date, a reduction of 22 calendar days from the original 17 August 2001 completion date. The use of the "corrected" baseline schedule to measure impact, instead of an update reflecting the actual status of the contract work at the time Roof Cells D and F were deleted, was not explained.

Finally, Mr. Brooks found it necessary to reduce the resulting 155-day impact (26 July 2001 to 28 December 2001) by 52 days because SRC achieved beneficial occupancy on 6 November 2001. His summary explanation that the difference in the projected completion date and the beneficial occupancy date was due to “[s]ome type of acceleration” was not persuasive, particularly since he did not perform an acceleration analysis. Moreover, we conclude below that SRC did not establish either a direct or constructive order to accelerate.

The Navy extended the contract completion date by 90 days for additional and changed work. Bilateral Modification No. P00006 provided 45 days for the additional repair work associated with the spalled concrete on the exterior parapet walls. Unilateral Modification No. P00007 provided for another 45 days for unspecified changes implemented by Modification Nos. P00001, P00002, P00003, and P00004.

Based upon the foregoing, we conclude that SRC did not demonstrate its entitlement to 103 days of compensable delay instead of the 81 days the Navy awarded to it.

Quantum

SRC also challenged the quantum of the \$32,363 in extended general conditions the Navy awarded to it in Modification Nos. P00007 and P00008. Although we have concluded SRC did not demonstrate entitlement to 103 days of compensable delay, our findings nevertheless provide the basis for determining the correct amount of its recovery for 81 days.

Bilateral Modification No. P00006 definitized Modification No. P00005 (repair of the spalled concrete on the exterior parapet walls) and extended the contract completion date 45 days. It contained a release that included “all costs, impact affect, and/or delays ... and extension of contract completion date.” The Navy has not addressed the release in its post-hearing brief. We note that it did also did not invoke the release when it unilaterally issued Modification Nos. P00007 and P00008, which further extended the contract completion date and awarded 81 days of extended general conditions to SRC. Under these circumstances, we consider any rights the Navy may have had under the release to bar further recovery to have been abandoned. *See Hanley Industries, Inc.*, ASBCA Nos. 54315, 56383, 08-2 BCA ¶ 33,932 at 167,922; *Imperial Construction & Electric, Inc.*, ASBCA No. 54175, 06-1 BCA ¶ 33,276 at 164,949.

With respect to direct labor, we reduce the revised claimed amount of \$36,267 by the \$14,987 we verified from the Navy’s factual challenges to the amounts claimed, leaving a remainder of \$21,280. With respect to the other claimed direct costs we adopt the findings of Ms. Ambrose with respect to Doran, \$1,280, computer services, \$44, and

water cooler, \$85, and make the following additional determinations: trailer rental – \$236.67 (49 days (17 August to 5 October 2001) x \$4.83 day); electricity – \$59.29 (49 days x \$1.21); portable toilet - \$414.48 (66 days (17 August to 22 October 2001) x \$6.28). This is a total of \$2,119.

The following mark-ups are applicable: labor burden – 20.14%; sales tax on rental equipment – 4.5%; field overhead – 57.43%; home office overhead/G&A – 13.57%; facilities capital cost of money (FCCOM) – 0.0166%; bond – 0.045%; and profit – 7%. *States Roofing Corp.*, ASBCA No. 54854, 08-2 BCA ¶ 33,912 at 167,799-800, *rev'd in part on other grounds, States Roofing Corp. v. Winter*, No. 2009-1067 (Fed. Cir. Dec. 7, 2009).

The final computation of extended general conditions for 81 days is:

Direct Labor	\$21,280
Labor Burden @ 20.14%	4,286
Rental Equipment	2,119
Sales tax @ 4.5%	<u>95</u>
Subtotal	\$27,780
Field Overhead @ 57.43%	<u>12,221</u>
Subtotal	\$40,001
Home Office Overhead/General and Administrative @ 13.57%	<u>5,428</u>
Subtotal	\$45,429
Profit @ 7%	<u>3,180</u>
Subtotal	\$48,509
FCCOM on Unburdened Labor @ 0.0166%	4
Bond Premium @ 0.045%	<u>22</u>
Total	\$ 48,535
Less Payments	<u>32,363</u>
Total Due	\$16,172

SRC has demonstrated compensable delay costs for 81 days in the amount of \$48,535. It was awarded \$32,363 in Modification Nos. P00007 and P00008. We conclude SRC is due the difference, \$16,172, plus interest under the Contract Disputes Act (CDA) running from 21 April 2003.

Acceleration – ASBCA No. 55501

Entitlement

SRC seeks \$72,585.97 in overtime costs under a theory of acceleration. It asserts that the Navy's 20 September 2000 letter relating to the contract's liquidated damages provision, together with the number of changes, differing site conditions and extra work acknowledged in unilateral modifications issued without corresponding contract time extensions, drove it to constantly worry about meeting the contract completion date. According to SRC, it accelerated its work and paid overtime wages in order to complete performance on time. It points to its demolition work on Roof Cell E as acceleration specifically directed by the Navy and characterizes the balance of the claim as constructive acceleration resulting from the Navy's failure to negotiate time extensions. The Navy responds that there was no direct order to accelerate and that SRC did not provide evidence establishing constructive acceleration.

To recover its claimed overtime costs, SRC must make the following showing: (1) there was excusable delay giving rise to the acceleration order; (2) it made a timely and sufficient request for a time extension; (3) the Navy denied the request or failed to act on it within a reasonable period of time; (4) the Navy insisted upon completion without consideration of the delay and the contractor notified the Navy that it regarded the alleged order to accelerate as a constructive change; and (5) it accelerated and incurred extra costs. *Fraser Constr. Co. v. United States*, 384 F.3d 1354, 1361 (Fed. Cir. 2004); *see Norair Engineering Corp. v. United States*, 666 F.2d 546, 548 (Ct. Cl. 1981) (The essential elements are excusable delay, an acceleration order, and increased costs due to the acceleration). An order to accelerate "need not be couched in terms of a specific command. A request to accelerate, or even an expression of concern about lagging progress, may have the same effect as an order." *Norair Engineering*, 666 F.2d at 549.

With respect to Roof Cell E, it is undisputed that SRC was directed to perform demolition work at night. However, the evidence shows that the direction was issued out of safety concerns and had nothing to do with delay. It was not an order to accelerate. In any event, SRC has been paid \$7,016 for performing specified contract work at night.

As we noted above, we denied SRC's claim for a full-time safety assurance person. *States Roofing*, 09-1 BCA ¶ 34,036. That being so, that portion of SRC's acceleration claim seeking 164 hours of overtime for the full-time safety person is also without merit.

The balance of SRC's arguments relating to acceleration also fail because the evidence does not satisfy the applicable elements, in particular that there was either

excusable delay or that there was a constructive order to accelerate. Indeed, the 824 hours claimed for water tight conditions is so broad as to be nothing more than a general catch-all category for the bulk of SRC's overtime. SRC points first to LT Hale's 20 September 2000 letter; however, that letter was issued very early in the contract performance period when SRC had made no progress and simply reminded SRC of the Navy's right to liquidated damages. SRC next complains that LT Hale required support for its time extensions and that the Navy was aware it was incurring overtime costs. We see nothing amiss about either of these circumstances. SRC also faults the Navy for failing to grant time extensions until the end of contract performance. While this is true, there is no evidence that the Navy ever threatened imposition of liquidated damages during performance or that SRC expressed concern that liquidated damages would be imposed.

SRC further contends there are at least 52 days of acceleration based upon the time impact analysis performed by Mr. Brooks. However, Mr. Brooks did not analyze acceleration and we did not find his explanation that the reduction of the number of days of delay was due to "[s]ome type of acceleration" to be persuasive. In any event, the acceleration claim is quantified by four separate categories of overtime and there was no evidence showing how to convert these overtime hours claimed into 52 days.

Finally, SRC asserts that if we deny its acceleration claim, the overtime associated with the use of the crane instead of the freight elevator and the full-time safety person should be moved to those claims. Having denied SRC's claim for a full-time safety person, the issue with respect to that claim is moot. We did not address crane overtime in ASBCA No. 55506. *See States Roofing*, 08-2 BCA ¶ 33,970. We agree with the Navy that overtime should not be shifted to that appeal without a finding that the Navy was the cause of the overtime incurred. The evidence does not support such a finding.

Disruption – ASBCA No. 55505

Entitlement

SRC's disruption claim seeks the difference between its incurred labor costs and its adjusted bid labor costs, some \$336,976.

The Navy's initial argument casts the claim as one involving delay. It contends that SRC failed to show what "specific work activities were delayed due to disruption, and how such delay impacted the overall schedule." (Gov't br. at 298-99) Contrary to the Navy's initial contention, SRC's disruption claim is not a delay claim. Rather, SRC asserts that its productivity was impacted by differing site conditions and the Navy's changes to the contract work. Loss of productivity is different from delay and occurs when the government is responsible for changes in the contractor's method of

performance that cause it to proceed in a less productive manner. *Luria Brothers & Co. v. United States*, 369 F.2d 701, 712 (Ct. Cl. 1966). The burden of proof is the same as for any claim seeking increased costs: liability, causation and damage. *Fox Constr. Inc.*, ASBCA No. 55265 *et al.*, 08-1 BCA ¶ 33,810 at 167,381.

According to SRC, disruption is not disputed by the Navy. It contends that most of the impacts to its productivity were the result of extra work the Navy acknowledged in issuing unilateral contract modifications. (App. br. at 97) In its brief, SRC identified 17 different performance disruptions that, among others, allegedly contributed to and compounded the impact to the productivity of its overall work effort throughout contract performance (app. br. at 97-104). The Navy responds that the issue is not whether some of the changes may have caused disruption, but whether the Navy alone is responsible for it (gov't br. at 300).

We believe the record here is clear that there were differing site conditions and multiple changes that permeated contract performance and impacted SRC's productivity. The evidence unquestionably established that the inability to use the freight elevator, the change in the location of the lay-down ground staging area, the changes in the work sequence, the suspension of work on Roof Cell K, the unanticipated thickness of the asphalt, the excessive number of high and low areas on the roof decks, broken cants, roof holes, concrete spalling under the roof deck and deletion of work on Roof Cells D and F were the principal, and intertwined, causes of disruption to SRC's work. All are attributable to the Navy and are such that the contract SRC actually performed was very different than the contract on which it had bid and had been awarded. As Mr. Hernandez put it, SRC encountered the "proverbial can of worms" on Building W-143.

Roof leaks also impacted SRC's productivity. The Navy has acknowledged responsibility for one of these leaks. It otherwise asserts that all of the leaks were SRC's responsibility because SRC was obligated to maintain a dry work environment. SRC has extensive roofing experience at NOB and Mr. DeLauney visited the site, walking the entire roof and looking at the details of the work and the condition of the roof before preparing SRC's bid. Some of the leaks were due to the age and condition of the roof and should reasonably have been expected by SRC. Others, however, were caused by pipes and holes that were not visible or occurred at locations at which SRC was not working and for which the Navy is responsible.

The Navy asserts SRC has failed to consider weather, its own inefficiency, its subcontractors' inefficiency and corrective rework. As to weather, SRC was an experienced contractor, having performed many roofing contracts at NOB. As such, it had included weather impact in its bid. There was no evidence relating to the historical weather patterns at NOB and unusually severe weather was not among the 67 claims SRC submitted on this contract.

As to inefficiency on the part of SRC and its subcontractors, the Navy cited selected excerpts from the Daily Reports addressing SRC's performance. There also was some evidence relating to one of its subcontractors, Webb, and to complaints by SRC regarding interference by other subcontractors. However, the Navy did not come forward with credible evidence providing either context for the comments it selected from the Daily Reports or their significance. We are not persuaded that the excerpts by themselves and the other evidence presented by the Navy to establish such inefficiency on the part of SRC and/or its subcontractors are such as to exonerate the Navy from its responsibility for the disruption caused by the differing site conditions and changes it has acknowledged. The same is true of rework, which was accomplished as problems surfaced.

SRC presented a variation of a measured mile analysis in support of its disruption claim. The measured mile approach provides a comparison of a production period that is impacted by disruption with one that is not. *See DANAC, Inc.*, ASBCA No. 33394, 97-2 BCA ¶ 29,184 at 145,152, *aff'd on recon.*, 98-1 BCA ¶ 29,454. We have accepted the measured mile approach as an appropriate method of determining impact to productivity. *E.g., Bay West, Inc.*, ASBCA No. 54166, 07-1 BCA ¶ 33,569 at 166,302-03.

We consider the variation of the measured mile analysis presented by SRC here to be of marginal support. SRC computed production rates in average man hours per roof square for four bids on three buildings and compared those bid rates with Building W-143. The Navy contends the other buildings are not comparable to Building W-143. While there were differences, the major distinction among them appears to have been the asphalt overlay. We recognize that this work was removed from the bid productivity calculation for Building W-143, but we have some discomfort with the estimate for it inasmuch as SRC had no prior experience with an asphalt overlay.

Production rates were also computed using the Navy's estimate and R.S. Means. All of this evidence focused upon the general similarity of average anticipated production ranges. In contrast, the only evidence relating to actual production rates was that computed for Building W-143, which was first presented as being about 19 man hours per roof square, but later reduced to 16.61 man hours per square. Thus, SRC's measured mile analysis attempts to show that its bid was reasonable and then compares the bid to productivity, instead of comparing actual production periods that were impacted with those that were not.

SRC also presented a MCCA analysis performed by Mr. DeLauney as an alternative check against its measured mile approach and as further substantiation of the disruption impact. We recognize the MCCA analysis has been accepted by other boards, despite its inherent subjectivity, in the absence of better evidence. *See Fire Security*

Systems, Inc., VABCA No. 5559, *et al.*, 02-2 BCA ¶ 31,977 at 158,001-02; *Hensel Phelps Constr. Co.*, GSBCA Nos. 14744, 14877, 01-1 BCA ¶ 31,249 at 154,321-22, *aff'd*, 36 Fed. Appx. 649 (Fed. Cir. 2002). We, however, have not done so. To the contrary, we rejected the MCCA analyses in *AEI Pacific, Inc.*, ASBCA No. 53806, 08-1 BCA ¶ 33,792 at 167,264-67 (evaluation of non-expert speculative and lacking in credibility) and *Sauer, Inc.*, ASBCA Nos. 39605, 39898, 01-2 BCA ¶ 31,525 at 155,631-33 (analysis by appellant's vice president lacking in probative value). We similarly reject the MCCA analysis here, inasmuch as it was performed not by an expert, but by SRC's president, Mr. DeLauney, making it impossible for us to disregard the inherent subjectivity. Indeed, his analysis produced an impact of such magnitude as to reflect a total lack of reliability.

In sum, although we decline to rely upon either SRC's measured mile or MCCA analysis, we are satisfied from the evidence that SRC's productivity was impacted by the differing site conditions and the changes made to the contract work by the Navy. Indeed, the changes were such that the Navy conceded that it was not reasonable to assert that SRC had not been disrupted and acknowledged that it could not say "in good conscience" that it had not impacted SRC's productivity. Viewed together, the changes and differing site conditions here materially altered the original contract work, beginning at the start of performance with the unavailability of the freight elevator and the change in the location of the staging area and continuing throughout performance, resulting in cumulative disruption and inefficiency. *See Triple "A" South*, ASBCA No. 46866, 94-3 BCA ¶ 27,194; *Atlantic Dry Dock Corp.*, ASBCA No. 42609 *et al.*, 98-2 BCA ¶ 30,025 at 148,560, *aff'd on recon.* 99-1 BCA ¶ 30,208.

Quantum

The quantum for SRC's disruption claim is based upon a modified total labor cost approach which measures damages as the difference between its bid and its actual costs, adjusted for evidentiary considerations SRC deemed relevant to its computations. To prevail on its modified total cost approach, SRC must prove: (1) the impracticability of proving its actual losses directly; (2) the reasonableness of its bid; (3) the reasonableness of its costs; and (4) its lack of responsibility for the added costs. *See Propellex Corp. v. Brownlee*, 342 F.3d 1335, 1339 (Fed. Cir. 2003); *Servidone Construction Corp. v. United States*, 931 F.2d 860, 861 (Fed. Cir. 1991). We address each in turn.

As to the first element, we found intertwined, cumulative disruption above. Given the pervasive extent and the nature of the differing site conditions and changes on this roofing contract, it is readily apparent to us that it is impracticable for SRC to tie its losses directly to each of the specific events that caused disruption as the Navy asserts it must. Moreover, we are persuaded that the Navy's delay in issuing contract

modifications for those changes and its failure to address contract time extensions contributed to SRC's inability to track the specific costs of each of the many disruptions.

While the Navy did not address the reasonableness of SRC's bid, it did contend that the deductive adjustments to it for alleged cost savings totaling \$278,085 are not supported and should not be included in a disruption calculation. We agree with this argument. The deductions do not represent changes to SRC's bid price, but rather are cost savings it allegedly enjoyed because of a change in production methods and use of existing materials. The deductions also are not due to any contract changes imposed by the Navy. Moreover, the related cost information was provided to Ms. Moser by SRC and was not verified by either Ms. Moser or Ms. Ambrose. The deductions allow SRC to enjoy the benefit of alleged savings for costs that were included in its bid and paid for by the Navy, while at the same time increasing the amount of its disruption recovery by reducing its bid price. As we see it, deducting these alleged cost savings from SRC's bid price would produce a double recovery.

The further adjustment to SRC's bid that included all of the burdened labor SRC considered applicable to the contract modifications, \$372,746, and all of its pending claims, an additional \$221,715, presents additional matters for consideration. First, \$192,153 of the \$372,746 labor amount applicable to contract modifications was accepted by SRC. We are not able to determine whether this amount includes the labor associated with repairs to the spalled concrete on the exterior of the parapet walls directed by Modification No. P00005 and definitized at a cost of \$92,000 by Modification No. P00006.

Next, the bid adjustment assumed that SRC would recover all of the labor included in the challenged modifications and the outstanding claims in the amounts it requested, a total of \$402,308. SRC, of course, did not recover all of this burdened labor. Some of the costs claimed were settled and others resolved by Board decisions.

As to the reasonableness of SRC's costs, the Navy identified two items totaling \$43,950 questioned by DCAA, neither of which was explained to our satisfaction by SRC. Additionally, the Navy points out that the rates incorporated into SRC's adjusted bid and its incurred costs are not necessarily the rates subsequently stipulated to by the parties or found applicable by the Board. We agree generally with the Navy's challenge to both of these items, although neither is significant enough to undermine the overall reasonableness of SRC's total incurred labor cost computation.

Finally, apart from some of the roof leaks and some possible routine, but limited, inefficiency on the part of SRC or its subcontractors, the fourth element is met by our finding that the Navy was responsible for the differing site conditions and changes that led to the disruption that produced added costs.

Based upon the foregoing, our concerns about SRC's adjusted bid price are such that we cannot adopt SRC's proposed modified total cost approach to awarding disruption damages. Nevertheless, in evaluating the evidence, we are not precluded from awarding disruption damages on the basis of a jury verdict if: (1) clear proof of injury exists; (2) there is no more reliable method for computing damages; and (3) the evidence is sufficient for us to make a fair and reasonable approximation of the damages. *Dawco Const., Inc. v. United States*, 930 F.2d 872, 880-82 (Fed. Cir. 1991), *overruled in part on other grounds*, *Reflectone, Inc. v. Dalton*, 60 F.3d 1572 (Fed. Cir. 1995) (*en banc*); *see Grumman Aerospace Corp. (on behalf of Rohr Corp.)* ASBCA No. 50090, 01-1 BCA ¶ 31,316 at 154,646, *aff'd*, 34 Fed. Appx. 710 (2003).

SRC contends that, when confronted with the Navy's clear liability and SRC's efforts to provide all available evidence on damages, we are under a heavy obligation to provide compensation and it would be error for us to fail to award damages in the nature of a jury verdict because there is sufficient evidence for us to make a fair and reasonable approximation of the damage. *S.W. Electronics & Manufacturing Corp. v. United States*, 655 F.2d 1078, 1088 (Ct. Cl. 1981). The Navy has not responded directly to this argument.

There is precedent for using a jury verdict approach to calculating disruption damages. *Luria Brothers*, 369 F.2d at 714. Further, we have used a jury verdict to apportion damages caused in part by government changes and a contractor's own inefficiency. *See Campbell Industries*, ASBCA No. 40436, 94-2 BCA ¶ 26,760 at 133,133.

We believe the evidentiary record here fully supports the application of a jury verdict and that we would be remiss if we were to deny SRC recovery for disruption damages under circumstances in which its work was so obviously impacted by the differing site conditions it encountered and the contract changes made by the Navy, a conclusion the Navy itself has conceded. Moreover, our concerns about SRC's adjusted bid price make a jury verdict a more reliable method for computing damages. The evidence is sufficient for us to reach a fair and reasonable approximation of SRC's disruption damages.

In the nature of a jury verdict, we conclude that SRC is entitled to recover \$145,307 (10% of \$1,453,069) in increased burdened labor costs due to loss of productivity resulting from the disruption caused by the differing site conditions and contract changes we attribute to the Navy.

CONCLUSION

We dismiss ASBCA No. 54860 to the extent it is duplicative of ASBCA No. 55502 and otherwise deny it. We deny ASBCA No. 55501. We deny entitlement, but sustain the quantum aspect of ASBCA No. 55502 in the amount of \$16,172. We sustain ASBCA No. 55505 and make a jury verdict award in the amount of \$145,307.

We conclude that SRC has established entitlement to a monetary award totaling \$161,479, plus CDA interest running from 21 April 2003, until paid.

Dated: 12 January 2010

CAROL N. PARK-CONROY
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

EUNICE W. THOMAS
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. 54860, 55501, 55502, 55505, Appeals of States Roofing Corporation, rendered in conformance with the Board's Charter.

Dated:

CATHERINE A. STANTON
Recorder, Armed Services
Board of Contract Appeals