

(Filed: November 13, 1997)

BLINDERMAN CONSTRUCTION COMPANY, INC., Plaintiff, v. THE UNITED STATES, Defendant.) Government construction contract) case; patent and latent ambiguity;) <i>contra proferentum</i> ; commercial ") impracticability; "mirror image) counterclaim; implied warranty of) design specification; substantial) completion doctrine; performance) delays; critical path method.))))))
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Scott J. Pivnick, Washington, D. C., with whom was Assistant Attorney General Frank W. Hunger, for defendant. Robert Steinbuch, Washington, D. C., of counsel.

OPINION

REGINALD W. GIBSON, Senior Judge:

INTRODUCTION

This government contract case is before the court following a trial on the merits held in Chicago, Illinois, on June 23-27, 1997, and in Washington, D.C., on July 8, 1997. Plaintiff, Blinderman Construction Company (BCC or plaintiff) is a general contractor, engaged primarily in public construction projects for both municipalities and the Federal Government. On January 3, 1990, the defendant, the United States acting through the United States Department of the Navy, Northern

Division of the Naval Facilities Engineering Command (Navy or defendant), awarded Contract No. N62472-87-C-0052, in the amount of \$10,675,115.00, to plaintiff for the construction of an Electricians Mate/Interior Communications (EMIC) training facility in Great Lakes, Illinois. JX BB at 1, ¶¶ 1-2.⁽¹⁾ This facility was intended to function as a school providing instruction to Naval enlisted men concerning sophisticated communication technologies. The Navy accepted the EMIC building on September 19, 1991.

Thereafter, plaintiff submitted various claims to the Navy's contracting officer. Following an adverse final decision of the contracting officer on the bulk of said claims, plaintiff filed a 17-count complaint with this court on July 22, 1994, seeking equitable adjustments against defendant.⁽²⁾ In response, defendant filed its Answer and three counterclaims on November 17, 1994. In February 1997, the parties agreed to settle five of the original 17 claims alleged by plaintiff -- Counts IV, VII, XI, XIV, and XVII -- and those counts were dismissed with prejudice by order dated March 5, 1997. Another five of plaintiff's claims -- Counts V, VIII, IX, X, and XIII -- and two of defendant's three counterclaims, were settled by the parties in mid-trial, and are hereby dismissed with prejudice. Plaintiff's remaining seven claims and defendant's single remaining counterclaim, seeking judgment in the amounts set forth below, plus statutory interest, were tried on the merits.

Count I -- The CQC Representative Issue \$ 46,071

Count II -- The Steel Rebar Issue 36,520

Count III -- The Concrete Rubbing Issue 78,512

Count VI -- The Ground Face Masonry Issue 10,779

Count XII -- The Substantial Completion Issue 68,408

Count XV -- The Subterranean Concrete Removal Issue 45,677

Count XVI -- The Asbestos Abatement Issue 20,301

Total award sought by plaintiff, exclusive of interest \$306,268

Defendant's Counterclaim (Count III), exclusive of interest \$ 11,208

On July 26, 1997, plaintiff filed a motion to dismiss defendant's counterclaim under RCFC 12(b)(1) for lack of subject matter jurisdiction. Said motion is pending for decision.

The first five of the seven counts before the court, including defendant's counterclaim on Count III, are amenable to independent resolution and, in the discussion that follows, shall be addressed in five separate sections. A sixth section shall be devoted to Counts XV and XVI, which present closely related issues of fact and law.

Having laboriously reviewed the extensive record before us and the litigants' post-trial submissions, we hold that plaintiff is entitled to judgment on Count I in the amount of \$24,603.00, plus appropriate statutory interest. As to the remaining six counts, defendant is entitled to judgment and, therefore, plaintiff's claims are dismissed. Finally, plaintiff's motion to dismiss defendant's counterclaim on Count III under RCFC 12(b)(1) for lack of subject matter jurisdiction is granted. We next address the merits of each count, *seriatim*.

DISCUSSION

I. COUNT I -- THE CONTRACTOR QUALITY CONTROL (CQC) REPRESENTATIVE ISSUE

A. *Facts*

Plaintiff's Count I seeks an award of \$46,071.00, averred to be the direct costs incurred as a result of the Navy's wrongful refusal to approve plaintiff's appointee as the sole Contractor Quality Control (CQC) Representative on the contract, as well as indirect costs relating to five days of performance delay, plus statutory interest from the date this claim was submitted to the contracting officer for decision. The contract sets forth at great length the procedure by which the contractor, BCC, was to ensure proper compliance with the various contract specifications, *i.e.*, quality control. To that end, the contract called for the establishment of a "quality control organization." JX AA § 01400, at ¶ 1.2(a). Plaintiff was required to prepare a CQC plan identifying the members of the aforementioned organization and their respective duties, and to submit said plan to the Navy for approval within 15 calendar days after receipt of the notice of award. Until the Navy's contracting officer approved said plan, no construction on the EMIC project could begin.

At a minimum, the CQC organization had to include the CQC Representative, an Alternate CQC Representative, a Submittals Assistant, and at least two specialized supplemental personnel -- a registered mechanical engineer and a registered electrical engineer. The contract further delineated certain minimum qualifications which each of the foregoing members of the CQC organization had to possess. Moreover, the contract explicitly cautions that BCC "shall be responsible for providing additional qualified staff at no cost to the Government when necessary for a proper CQC organization to fulfill the CQC requirements." JX AA § 01400, at ¶ 1.4.

Of the required personnel, the CQC Representative was to fill the role of overall supervisor of the entire CQC organization. More specifically, pursuant to the terms of the contract, the CQC Representative was required to be on the work site at all times, was authorized to take "any action necessary to ensure compliance with the contract," and was prohibited from assuming any "job-related responsibilities other than quality control." *Id.* at ¶ 1.2(b). Said quality control responsibilities included but were not limited to: inspecting the daily work; supervising and coordinating the testing of the relevant materials and equipment; certifying that all the material and equipment complied with the contract specifications and drawings; approving shop drawings; recording daily any deviations from the contract specifications; and removing any individual from the project whose work repeatedly failed to comply with specifications.

The controversy at bar centers upon the interpretation of the contractual definition of the minimum qualifications the CQC Representative was required to possess, to wit:

The CQC representative shall be a Registered Professional Engineer with a minimum of eight years of construction experience on not less than three projects of similar type construction to this contract including not less than two years of experience in Quality Control. Additionally, the CQC representative shall be experienced in concrete construction. The CQC Representative shall also clearly demonstrate previous construction experience in masonry work.

JX AA § 01400, at ¶ 1.4.1 (emphasis added). On or about February 12, 1990, roughly 40 days after the contract was awarded, BCC submitted for the Navy's approval the requisite CQC plan, which named Mr. Roger Connor as CQC Representative. After reviewing Mr. Connor's resume, the Navy sought additional information, by letter dated February 15, 1990, for the purpose of completing its determination as to whether Mr. Connor was duly qualified. Upon receiving the requested information

from plaintiff, the Navy's Head of Construction, Mr. Christian Baudhuin,⁽³⁾ and its Deputy Resident Officer in Charge of Construction, Mr. Matthew Stahl, interviewed Mr. Connor on February 28, 1990. Following the interview, the Navy concluded that Mr. Connor lacked the requisite experience in masonry and concrete construction sought by the Navy, and so informed BCC by letter dated March 1, 1990. Further discussions between the parties took place, as a result of which the Navy apparently accepted plaintiff's proposal to appoint a concrete engineer and a masonry engineer to supplement Mr. Connor's experience, in an effort to stem any further delay on the project as a result of the dispute over Mr. Connor's qualifications. On March 5, 1990, plaintiff finally began its initial site preparation and excavation work on the project.

Shortly thereafter, by letter dated March 7, 1990, the Navy indicated its willingness to accept Mr. Connor as the CQC Representative, but only if BCC provided supplemental personnel, qualified as structural engineers specializing in concrete and masonry work, at no additional cost to the Government. In addition, the Navy agreed to allow Mr. Connor to serve both as the CQC Representative and as the requisite CQC mechanical engineer, if the Government received an appropriate credit for permitting Mr. Connor to play this dual role. Although plaintiff continued to maintain that Mr. Connor was duly qualified, it eventually appointed supplemental CQC masonry and concrete engineers in response to the Navy's demands.

On June 11, 1991, BCC submitted a change proposal to the Navy's project manager, Ms. Sandra Ginalski, seeking an increase in the contract price in the sum of \$46,071. Plaintiff's request for this adjustment rested on the premise that the Navy had wrongfully rejected Mr. Connor as its proposed CQC Representative. In rejecting BCC's claim in its entirety on July 21, 1993, the contracting officer's final decision stated that Mr. Connor's experience in concrete and masonry "was general in nature, and in order to accept him as [the] overall CQC Representative, the specific masonry/concrete experience would be required of one of the supplemental CQC representatives." JX 2 at 2; JX BB at 4, ¶ 11.

B. *Contentions*

1. *Plaintiff* Plaintiff contends that the Navy wrongfully rejected Mr. Connor as its CQC Representative and proffers two alternative arguments, each of which directs the court's attention to the scope of the word "experience" as employed throughout § 01400, ¶ 1.4.1 of the contract. First, plaintiff maintains that this "experience" specification is unambiguous and, accordingly, that the relevant language must be interpreted in light of its plain and ordinary meaning. In that connection, plaintiff stresses that its obligation was to interpret the pertinent contract language reasonably, not "correctly." Accordingly, says plaintiff, the contract merely required the CQC Representative to possess practical "'experience' in similar projects to the contract at issue, and furthermore be 'experienced' in concrete and masonry work," no more, no less. As a registered professional engineer with nearly 35 years of related work experience, avers plaintiff, Mr. Connor clearly possessed the requisite minimum experience with concrete and masonry, and with projects comparable to the EMIC building at issue here. Thus, by tendering a person "who clearly met the plain language of the contract specification," plaintiff submits it is entitled to be justly compensated for the additional costs incurred as a result of the Navy's unwarranted refusal to accept Mr. Connor as the overall CQC Representative.

Alternatively, if the "experience" specification is deemed ambiguous, plaintiff argues that it should prevail, nevertheless, pursuant to the well-established principle of *contra proferentum*. Said principle, in plaintiff's view, requires a "court [to] construe an ambiguity in favor of the non-drafting party if such an interpretation is reasonable." Plaintiff further emphasizes that it is not bound by the Navy's unexpressed, subjective interpretation of the contractual term "experience." While pointedly abstaining from offering its own definition of the term "experience," plaintiff opines that its interpretation is reasonable inasmuch as it is "one that encompasses the actual and literal meaning of the word." In short, plaintiff asserts that

Mr. Connor possessed the requisite experience regardless of whether the language of the "experience" specification is marked by clarity or by ambiguity.

2. Defendant

Conversely, defendant meets plaintiff's contentions with the emphatic assertion that Mr. Connor failed to satisfy rigorous qualifications clearly delineated in the contract. First, defendant points specifically to the requirement that the CQC Representative have "construction experience on at least three projects of similar type construction" to the EMIC project. In order to satisfy this criterion, defendant explains, an individual must "have direct experience in designing, constructing, inspecting[,] or approving multi-story, deep caisson, reinforced concrete and masonry buildings" like the EMIC school. Defendant avers that Mr. Connor's experience was primarily in mechanical rather than structural engineering and, moreover, that his background with respect to reinforced concrete, masonry, and caisson work was limited to time spent simply "watching" others perform such work. Should plaintiff's interpretation prevail, defendant adds, "any individual on a construction site, including the person who delivers the sandwiches at lunch, could qualify for this position." As to concrete and masonry work specifically, defendant contends that Mr. Connor's related experience was obtained on projects dissimilar to the EMIC facility. Consequently, defendant proclaims, Mr. Connor's background "do[es] not amount to similar type construction experience required in the [c]ontract."

Second, defendant alleges that Mr. Connor's experience was deficient because he did not possess the necessary two years of experience in "Quality Control." Defendant avers that the capitalization of the term "Quality Control" in the contract connotes a requirement that the CQC Representative previously must have been a member of another "Quality Control" organization. The mere fact that Mr. Connor had overseen the quality of work performed by his *own* contracting firm could not, according to defendant, satisfy the contractual requirement. Thus, since Mr. Connor "did not demonstrate that he had two years experience in Quality Control," defendant argues, he "did not possess the requisite experience to protect the Navy's interests." Third, defendant emphasizes the clarity of the contract language providing that BCC was "responsible for providing additional qualified staff at no cost to the Government when necessary for a proper CQC organization to fulfill the CQC requirements." JX AA § 01400, at ¶ 1.4. Having made its point, defendant challenges plaintiff to identify a provision in the contract that would entitle plaintiff to charge the Navy for the two additional CQC Representatives.

Finally, defendant attacks plaintiff's computation of damages. Defendant mainly contends that the \$10,000 credit allowed the Navy in plaintiff's damages computation is inadequate. Also, defendant alleges that plaintiff has failed to prove its entitlement to five days' worth of delay damages.

C. Discussion

It is axiomatic that to receive an equitable adjustment to a contract with the Government, a contractor-plaintiff must prove three essential elements before this court -- liability, causation, and resultant injury. Wilner v. United States, 24 F.3d 1397, 1401 (Fed. Cir. 1994) (citing Servidone Constr. Corp. v. United States, 931 F.2d 860, 861 (Fed. Cir. 1991)). Furthermore, plaintiff must establish each element by a preponderance of the evidence. Delco Electronic Corp. v. United States, 17 Cl. Ct. 302, 319 (1989). In other words, in order to carry its burden, BCC must prove that the Navy's acts or omissions, more likely than not, caused BCC to incur increased costs in performing the contract at issue.

1. Liability

Against the foregoing factual background, the issues postured in Count I are solely a matter of contract interpretation, which is a question of law to be decided by the court. P.J. Maffei Bldg. Wrecking Corp.

v. United States, 732 F.2d 913, 916 (Fed. Cir. 1984). Familiar rules of contract interpretation apply here. Foremost, of course, is the principle that "[a]n interpretation that gives a reasonable meaning to all parts of the contract will be preferred to one that leaves portions of the contract meaningless." Fortec Constructors v. United States, 760 F.2d 1288, 1292 (Fed. Cir. 1985). It is also well established that the words of the contract "are to be given their plain and ordinary meaning." Thanet Corp. v. United States, 219 Ct. Cl. 73, 82, 591 F.2d 629, 633 (1979).⁽⁴⁾ We are further guided by the principle that a plain and ordinary reading of contract language yields the meaning "which would be derived by a reasonably intelligent person acquainted with the contemporary circumstances." Rice Lake Contracting, Inc. v. United States, 33 Fed. Cl. 144, 151-52 (1995).

Certain other principles guide us when the contract provision at issue is ambiguous. Contract language may manifest a patent ambiguity where there is "an obvious error in drafting, a gross discrepancy, or an inadvertent, but glaring gap." WPC Enterprises, Inc. v. United States, 323 F.2d 874, 163 Ct. Cl. 1, 6 (1963). See also Grumman Data Systems Corp. v. Dalton, 88 F.3d 990, 997 (Fed. Cir. 1996). A patent ambiguity imposes upon the contractor a duty to inquire about the true meaning of the contract. J.B. Steel, Inc. v. United States, 810 F.2d 1139, 1141 (Fed. Cir. 1987). It is by now well settled that a contractor cannot raise a patent ambiguity as a ground for an equitable adjustment unless the contractor previously sought clarification of said ambiguity before bidding the contract. Dalton v. Cessna Aircraft Co., 98 F.3d 1298, 1306 (Fed. Cir. 1996); Grumman Data Systems, 88 F.3d at 998.

By way of comparison, a latent ambiguity exists where a contract "is susceptible of two different and reasonable interpretations, each of which is found to be consistent with the contract language." Community Heating & Plumbing Co. v. United States, 987 F.2d 1575, 1579 (Fed. Cir. 1993). In such cases, the doctrine of *contra proferentum* places "the risk of ambiguity, lack of clarity, and absence of proper warning on the drafting party which could have forestalled the controversy." Sturm v. United States, 421 F.2d 723, 727, 190 Ct. Cl. 691, 697 (1970). However, *contra proferentum* comes into play only if the non-drafting party's interpretation of the contract is reasonable. Interwest Constr. v. Brown, 29 F.3d 611, 614 (Fed. Cir. 1994) (citing Newsom v. United States, 676 F.2d 647, 650, 230 Ct. Cl. 301 (1982)).

Applying these principles of construction to the language of the disputed "experience" specification of the contract, we find that Mr. Connor's qualifications reasonably met the requirements of the contract. For clarity of analysis, it is helpful to reduce this specification into its five constituent criteria, all of which the CQC Representative had to satisfy, given the use of the conjunctive. Three of the five requisite criteria are not truly contested. First, it is uncontroverted that Mr. Connor was a registered professional engineer at all times relevant to this dispute. Second, the CQC Representative had to "be experienced in concrete construction." JX AA § 01400, at ¶ 1.4.1. Third, said person had to "clearly demonstrate previous construction experience in masonry work." *Id.* Inasmuch as the parties stipulated that Mr. Connor possessed both concrete and masonry construction experience, we find that these latter two requirements were satisfied.

The remaining two criteria of the "experience" specification are the focus of this controversy. First, the CQC Representative had to possess "a minimum of eight years of *construction experience* on not less than three projects of *similar type construction*" to the EMIC building. Second, said person had to have "not less than two years of experience in *Quality Control*." JX AA § 01400, at ¶ 1.4.1 (emphasis added). We find both requirements are latently ambiguous because they are laden with terms, highlighted above, that readily lend themselves to multiple reasonable interpretations. Community Heating & Plumbing, 987 F.2d at 1579.⁽⁵⁾ Thus, in order to determine whether the doctrine of *contra proferentum* applies so as to construe this latent ambiguity against defendant -- its drafter -- we next consider whether plaintiff's interpretation of the disputed provision is reasonable.

In assessing the reasonableness of a proffered interpretation, the court's duty is to assign the contract provisions in question the meaning imputed to a reasonable and prudent contractor fully acquainted with the circumstances at hand. Blake Constr. Co., Inc. v. United States, 987 F.2d 743, 746 (Fed. Cir.), cert. denied, 510 U.S. 963 (1993); Western States Constr. Co., Inc. v. United States, 26 Cl. Ct. 818, 825 (1992) (citing P.J. Maffei Bldg. Wrecking Corp., 732 F.2d at 917). Thus, under time-honored principles, we look not only to the language employed by the contract, but also to the subject matter and the circumstances surrounding the contract's making. Western States Constr., 26 Cl. Ct. at 825 (citing Nash v. Towne, 72 U.S. (5 Wall.) 689, 18 L.Ed. 527 (1866)). We emphasize as well that under the doctrine of *contra proferentum* the issue is not which party's interpretation is "better." Rather, plaintiff is entitled to have the ambiguous contract provision in question construed against defendant so long as plaintiff's interpretation falls merely within the "zone of reasonableness." WPC Enterprises, 323 F.2d 874, 163 Ct. Cl. at 6 (emphasis added).

Concerning the requirement that the CQC Representative possess "a minimum of eight years of construction experience on not less than three projects of similar type construction," the ambiguity is twofold. The term "construction experience" is undifferentiated as to the relative breadth and depth of experience required in each of the multitude of building trades involved in the construction of the EMIC building, i.e., reinforced concrete, masonry, carpentry, plumbing, etc.⁽⁶⁾ In addition, the qualifying phrase "similar type of construction to this contract" relies upon the familiar but overworked term "similar," yet fails to specify the degree of closeness of the similarity contemplated, i.e., size, value, duration of project, etc. We hold that plaintiff, by proposing Mr. Connor as the CQC Representative for the EMIC project, acted upon a reasonable interpretation of this terminology.

Both parties agree that this controversy centers on the extent of Mr. Connor's experience with the construction of multi-story reinforced concrete and masonry buildings such as the EMIC facility. Plaintiff points to Mr. Connor's 35 years in the construction industry, during which he has become familiar with "all phases of construction." DX 43 at 4. Mr. Connor testified that his construction background included work on more than 30 projects involving multi-story concrete and masonry buildings. Furthermore, his responsibilities have run the gamut of the construction trades, from excavation, reinforced concrete and masonry, to mechanical, carpentry and roofing work. In sum, Mr. Connor's resume, his interview with the Navy, and his credible and persuasive testimony at trial all demonstrate that he possessed sufficient "construction experience," consistent with any reasonable meaning of that term, to satisfy § 01400, ¶ 1.4.1 of the contract.

Defendant assails Mr. Connor's experience with multi-story reinforced concrete and masonry construction, thereby relegating Mr. Connor's knowledge of all other building trades to a secondary status. We acknowledge that Mr. Connor's experience lies predominantly in mechanical engineering rather than, as defendant would prefer, structural engineering. However, defendant's argument is flawed insofar as it thrusts too precise a meaning upon ambiguous contract language. Had the Navy desired a person whose predominant field of expertise was multi-story reinforced concrete and masonry construction to serve as CQC Representative, it was within the power, and was undoubtedly the obligation, of the Navy to state that requirement with greater precision in ¶ 1.4.1.

We reach this conclusion, in part, by reading ¶ 1.4.1 as a whole, so as to give reasonable effect to all of its provisions. See Julius Goldman's Egg City v. United States, 697 F.2d 1051, 1057-58 (Fed. Cir. 1983); Fortec Constructors, 760 F.2d at 1292. If the Navy intended to require that a *structural* engineer serve as CQC Representative, as defendant contends, the Navy no doubt could have chosen more precise language than the general reference to a "Registered Professional Engineer" in the first sentence of ¶ 1.4.1. Moreover, if the phrase "construction experience on not less than three projects of similar type construction" is interpreted so as to implicitly emphasize concrete and masonry construction, the last

two sentences of ¶ 1.4.1, which expressly address concrete and masonry construction, would be rendered superfluous. This would offend the fundamental canon of contract interpretation, supra, that the court must construe a contract so as to give reasonable meaning to all of its parts. Two points deserve emphasis. First, the Navy found Mr. Connor was sufficiently experienced to serve as CQC Representative for all purposes on the EMIC project, *except* concrete and masonry work. However, defendant's objections to Mr. Connor's concrete and masonry experience are not grounded in the language of the contract, for the last two sentences of ¶ 1.4.1 address concrete and masonry construction only in the most general terms, specifying neither the nature nor the extent of experience required. Second, it bears repeating that defendant has stipulated that Mr. Connor was experienced in concrete and masonry work generally. Thus, defendant cannot now raise objections to Mr. Connor's concrete and masonry experience, which is uncontested, for the purpose of disqualifying his general "construction experience."

Likewise unavailing is defendant's contention that Mr. Connor's experience in reinforced concrete, masonry and caisson work was limited to time spent merely "watching" others perform such work. Nothing in ¶ 1.4.1 expressly supports defendant's assertion that the CQC Representative had to be a person whose background included the direct supervision, design, inspection, or performance of each and every facet of multi-story reinforced concrete and masonry construction.⁽⁷⁾ Such a reading of ¶ 1.4.1 also fails to take into account the overall nature of the responsibilities of the CQC Representative under § 01400. We find it noteworthy that the CQC Representative was expressly prohibited from performing any activities relating to the construction of the EMIC facility "other than quality control." JX AA § 01400, at ¶ 1.2(b). Indeed, no member of the CQC organization could have responsibilities other than quality control.

A balanced reading of § 01400 reveals that the CQC Representative was, among other things, supposed to (i) head up the CQC organization; (ii) administer the detailed CQC plan submitted by plaintiff to the Navy prior to the onset of physical construction activity; (iii) enforce compliance with quality control procedures throughout the EMIC project; (iv) prepare and submit daily CQC reports to the Navy; (v) be responsible for inspection and testing of the work generally; (vi) coordinate inspection and testing performed by outside laboratories and other third parties; (vii) certify shop drawings for compliance with contract specifications; (viii) maintain documentation of inspections; (ix) maintain a list of noncomplying work; and (x) submit a final CQC certification at such time as the building was complete and ready for acceptance by the Navy.

Plainly, § 01400 speaks to the systematic administration and coordination of project-wide quality control procedures, not to direct participation in the performance of the construction work itself. We note also that § 01400 does not contemplate that the CQC Representative would necessarily conduct all inspections in person, inasmuch as the CQC plan requires the submission of "the names of persons responsible for the inspection and testing for each segment of work." JX AA § 01400, at ¶ 1.2(c)(7). Especially relevant is a provision that concrete and masonry work inspections and tests were to be conducted by an independent testing laboratory. Another clause states that certain concrete-related inspections were to be conducted by a professional civil or structural engineer, with the CQC Representative's role limited to the provision of a certification that such inspection had taken place. Still another section of the contract required plaintiff to employ a qualified masonry inspector to aid the CQC Representative. In addition, the CQC Representative was not solely responsible for approving shop drawings, since such drawings had to be certified by an "authorized reviewer" as well. JX AA § 01400, at ¶ 1.5.2.

In short, the CQC Representative was responsible for ensuring that inspections and other quality control activities took place in an orderly, systematic fashion, but played no role in the actual performance of

the construction work itself. This distinction between performing construction work and controlling the quality of construction work performed by others is consistent with the usual definition of "quality control" as "[t]he inspection, analysis, and other relevant actions taken to provide *control over what is being done*, manufactured, or fabricated, so that a desirable level of quality is achieved and maintained." *Dictionary of Architecture & Constr.* 655 (emphasis added). Nor was the CQC Representative required to perform every single quality control activity personally. Rather, the CQC Representative could discharge his responsibilities by procuring the assistance of appropriately qualified persons. Indeed, the very reason for having a CQC Representative on the project is that Navy personnel are involved with multiple projects at any one time and cannot fully supervise the quality of the construction on any single job. Consequently, it is more cost effective to have "a dedicated person on each project, to perform those functions." Tr. 970-71.⁽⁸⁾ However, from the language of this contract, it does not follow that a person qualified to administer the quality control program for the EMIC project had to possess "hands on" experience with every facet of construction work. To paraphrase a remark Mr. Connor made at trial, an engineer need not lay brick to know more about masonry construction than an experienced bricklayer. The court agrees with this observation and holds that plaintiff acted reasonably by proposing Mr. Connor as a CQC Representative who possessed the requisite "construction experience" required by ¶ 1.4.1 of § 01400 of the contract.

Turning briefly to defendant's assertion that Mr. Connor failed to possess at least "two years of experience in Quality Control," as required by ¶ 1.4.1, we find that plaintiff is entitled to have the ambiguous term "Quality Control" construed against defendant under the doctrine of *contra proferentum*. Plaintiff reasonably interpreted this contract requirement because the evidence adduced at trial establishes that Mr. Connor's prior experience in quality control well exceeded two years. At the time he came under consideration for the CQC Representative position on the EMIC project, Mr. Connor had just completed, or had nearly completed, his work as plaintiff's CQC Representative on another Navy construction contract relating to the Nimitz Family Housing Project, which is also located in Great Lakes, Illinois.⁽⁹⁾ Mr. Connor testified that his tenure as CQC Representative on the Nimitz project lasted for "about a year and a half." Tr. 275. Moreover, at the time he was considered for the position of CQC Representative on the EMIC project, Mr. Connor had owned and managed a construction firm

-- R.J. Connor Co., Inc., Mechanical Contractors -- for 35 years. On construction jobs performed by his company, Mr. Connor explained in his interview with the Navy that he was "responsible for quality control all the time." DX 43 at 11; see also DX 43 at 18.

Against the substantive evidence of Mr. Connor's experience in quality control, defendant tortuously argues that the contract's capitalization of the term "Quality Control" implies the requirement that a proposed CQC Representative had to have served two years within a formal CQC organization. We disagree, because "any ambiguity that is solely the result of the party's unexpressed, subjective belief is insufficient to bind the other contracting party." Western States Constr., 26 Cl. Ct. at 825-26. Here at bar, we only find a de minimis quantum of evidence in the record to support defendant's assertion that the occasional capitalization of "Quality Control" in the contract connotes a special meaning.⁽¹⁰⁾ Moreover, while the term "quality control" is not specifically defined by the contract, the common understanding of this term, supra, is quite consistent with the role of the CQC Representative, which was to perform certain activities in order "to assure compliance with the contract provisions." JX AA § 01400-1 ¶ 1.2(b). Thus, since Mr. Connor's experience in said area satisfied the ordinary definition of "quality control," it likewise satisfied the requirements of the contract.

In sum, we hold that plaintiff reasonably interpreted the contract to mean that Mr. Connor's engineering credentials and 35 years of experience in the construction industry adequately qualified him as the

overall CQC Representative on the EMIC project. Therefore, defendant wrongfully rejected Mr. Connor as the overall CQC Representative.⁽¹¹⁾

2. Damages

Having determined that the Navy wrongfully rejected Mr. Connor, we now consider the issue of damages. In so doing, we are mindful of the well-established principle that "[a] claimant need not prove his damages with absolute certainty or mathematical exactitude. It is sufficient if he furnishes the court with a reasonable basis for computation even though the result is only approximate." Wunderlich Contracting Co. v. United States, 173 Ct. Cl. 180, 199, 351 F.2d 956, 968 (1965). Plaintiff's \$46,071 damages claim consists of \$24,603 of direct costs allegedly incurred to hire two additional engineers to supplement Mr. Connor, and \$21,468 of office and field overhead costs allegedly incurred as a result of a five-day delay in the commencement of work on the EMIC project.

a. Employment Of Supplemental CQC Representatives

In its complaint, plaintiff seeks an equitable adjustment for costs associated with hiring a supplemental masonry engineer and a supplemental concrete engineer for the CQC organization, net of certain credits to the Navy. The documentary evidence adduced at trial, which defendant did not pointedly contest, sufficiently supports by the requisite burden a finding that plaintiff is entitled to an award in the sum of \$24,603, calculated as follows:

Item Amount

Hiring of masonry construction engineer \$ 24,039

Hiring of concrete construction engineer 10,275

Credit for Mr. Connor's service as supplemental

CQC Representative for mechanical engineering (10,000)

Credit for deletion of concrete and soil testing

associated with the caisson work (2,081)⁽¹²⁾

Subtotal 22,233

Profit at 10% 2,223

Subtotal 24,456

Bond at 0.6% 147

Total damages claim -- direct costs \$ 24,603.

We find the \$10,000 credit allowed the Navy to be sufficient, based upon the testimony of Mr. Peter Pieroni, plaintiff's project engineer, that \$10,000 was the amount attributed to the CQC mechanical engineer position in BCC's bid. Defendant challenges the adequacy of the \$10,000 credit with a vague

avermment that plaintiff has a tendency to "play with its damages calculations." However, defendant offered no probative evidence to rebut plaintiff's prima facie showing that \$10,000 constituted a sufficient credit to the Navy. Thus, we hold that plaintiff is entitled to \$24,603, representing the direct costs incurred, less the credits due the Navy, plus profit and bond.

b. *Delay Damages*

BCC also seeks certain delay damages for the additional time taken to complete the project, allegedly as a consequence of the Navy's failure to timely approve Mr. Connor. Said delay damages are calculated and proffered as follows:

Item Amount

Five days of office overhead costs at \$2,542.46/day \$ 12,712

Five days of field overhead costs at \$1,337.62/day 6,688

Subtotal 19,400

Profit at 10% 1,940

Subtotal 21,340

Bond at 0.6% 128

Total damages claim -- delay costs \$ 21,468.

Specifically, plaintiff asserts that it was ready to begin the initial excavation for the project on February 28, 1990, but could not commence said excavation until March 5, 1990. Plaintiff points out that, under the contract, the initial excavation could not begin without an approved CQC Representative on site. It naturally follows, in plaintiff's view, that this five-day delay was caused by the Navy's refusal to promptly approve Mr. Connor as the CQC Representative when plaintiff nominated Mr. Connor for this position on February 12, 1990. Plaintiff further avers that the initial excavation work was "axiomatically" on the critical path of the EMIC project, because this five-day delay "had a ripple effect which followed through the end of the project." In order to recover damages for the five days of delay alleged in Count I, plaintiff must prove each essential element of a compensable delay by a preponderance of the evidence. First, plaintiff must quantify the extent of each delay, if any, that was unreasonable. Mega Constr. Co., Inc. v. United States, 29 Fed. Cl. 396, 424 (1993) (citing Wunderlich, 173 Ct. Cl. at 199, 351 F.2d at 967). Second, plaintiff must prove that each delay was proximately caused solely by the Navy's actions, e.g., by showing that both parties did not concurrently cause said delay. Blinderman Constr. Co., Inc. v. United States, 695 F.2d 552, 559 (Fed. Cir. 1982); Mega Constr., 29 Fed. Cl. at 424 (citations omitted); Youngdale & Sons Constr. Co., Inc. v. United States, 27 Fed. Cl. 516, 550 (1993). Third, it must be shown that each delay resulted in some measurable injury to plaintiff. Mega Constr., 29 Fed. Cl. at 424 (citing Wunderlich, 173 Ct. Cl. at 199, 351 F.2d at 968).

Given the record before the court and the applicable law, the court holds that plaintiff is not entitled to recover any delay damages relating to the Navy's evaluation of Mr. Connor's credentials and experience. First, plaintiff has not proven that the Navy's acts *unreasonably* delayed the start of the EMIC project by five days. After plaintiff named Mr. Connor as CQC Representative in its CQC plan submitted February 12, 1990, the Navy responded only three days later, on February 15, 1990, with a request for additional

documentation of Mr. Connor's qualifications. Although the parties thereafter discussed the nature of said documentation in a meeting on February 22, 1990, it appears that plaintiff still had not responded fully to the Navy's request as of February 27, 1990. On the very next day, February 28, 1990, the Navy interviewed Mr. Connor for the purpose of evaluating his qualifications. One day after said interview took place, on March 1, 1990, the Navy informed plaintiff by letter that Mr. Connor's qualifications were unacceptable. By letter dated Friday, March 2, 1990, the Navy invited plaintiff to meet on Tuesday, March 6, 1990, for further discussions.

Viewed in their entirety, the foregoing events demonstrate that there was clearly nothing dilatory about the Navy's conduct relating to the CQC Representative issue during the time period in question. On the contrary, the Navy's openness to discussion and prompt responses to plaintiff's communications manifest a sincere interest in resolving the dispute with dispatch so that construction could begin as soon as possible. Thus, we cannot conclude on this record that the Navy unreasonably delayed the start of the EMIC project.

Conversely, the record is devoid of evidence suggesting what actions, if any, plaintiff took between March 15 and March 27, 1990 -- apart from attending a single meeting with the Navy on March 22, 1990 -- in order to respond to the Navy's request for more documentation of Mr. Connor's qualifications. Moreover, the contract expressly required plaintiff to submit its CQC plan to the Navy for approval within 15 calendar days after receipt of notice of the award. Since plaintiff received notice of the award on January 3, 1990, it should have tendered the requisite CQC plan, including Mr. Connor's nomination as CQC Representative, to the Navy no later than January 18, 1990. However, plaintiff failed to submit its CQC plan until February 12, 1990, 25 calendar days after the contract deadline. On this record, we cannot confidently say which party was responsible, in whole or in part, for the five days of delay alleged in Count I. Against this background, it is well settled that "[w]here both parties contribute to the delay neither can recover damage[s] unless there is in the proof a clear apportionment of the delay and the expense attributable to each party." Coath & Goss, Inc. v. United States, 101 Ct. Cl. 702, 714-15 (1944), quoted with approval in Blinderman, 695 F.2d at 559. Plaintiff's failure to establish that the purported delay was proximately caused solely by the Navy is, therefore, fatal to plaintiff's claim for delay damages.

Even assuming, *arguendo*, that defendant's liability for the five days of delay alleged in Count I were proven, plaintiff has failed to establish that it incurred measurable damages as a result. In order to establish that the alleged delay is compensable, plaintiff must show that the construction activity delayed was an activity on the critical path of the EMIC project. See Youngdale, 27 Fed. Cl. at 550. (13) None of the documentation in evidence relating to the critical path of the project indicates that the Navy's approval of the CQC Representative was a critical path activity. Moreover, even if the site excavation which began on March 5, 1990, was an activity on the project's critical path, plaintiff's original CPM schedule dated February 28, 1990, indicates that March 5, 1990, was the very date on which excavation was *intended* to begin. We are unpersuaded by the testimony of Mr. Pieroni, plaintiff's project engineer, to the effect that excavation could have begun as early as February 28, 1990. As the creator of plaintiff's CPM schedule, Mr. Pieroni's testimony cannot overcome his own handiwork.

The court holds that plaintiff has proven none of the elements of a compensable delay. Accordingly, defendant is entitled to judgment on plaintiff's claim for delay damages in

Count I.

c. Interest

Insofar as plaintiff is entitled to judgment in the sum of \$24,603, the court must consider its prayer for an award of statutory interest. The pertinent statute provides that:

Interest on amounts found due contractors on claims shall be paid to the contractor *from the date the contracting officer receives the claim* pursuant to section 605(a) of this title from the contractor until payment thereof. The interest provided for in this section shall be paid at the rate established by the Secretary of the Treasury pursuant to Public Law 92-41 (85 Stat. 97) for the Renegotiation Board.

41 U.S.C. § 611 (1994) (emphasis added). Regarding the date on which the contracting officer received plaintiff's claim in Count I, the pleadings and the record are quite confusing. Plaintiff's complaint avers that interest is payable from June 11, 1991, the date on which plaintiff submitted its Change Proposal No. 1 to the Navy. However, in its post-trial submissions, plaintiff states that it submitted this claim to the contracting officer for final decision by letter dated November 11, 1991 and, further, that defendant admitted as much in its answer. Yet careful review of the defendant's answer clearly reveals that said admission was conditioned upon plaintiff's introduction of the November 11, 1991 letter. Inexplicably, plaintiff never offered any letter dated November 11, 1991, into evidence. The contracting officer's final decision dated July 21, 1993, makes no reference whatever to the date on which plaintiff's claim was received. Moreover, there was no testimony adduced at trial on this issue. On the other hand, the parties have stipulated that the contracting officer's final decision denied the price increase sought in plaintiff's June 11, 1991 change proposal.

In order to fix the date from which interest runs pursuant to the CDA, the court is obligated to determine the date on which the contracting officer received plaintiff's claim. See *Youngdale*, 27 Fed. Cl. at 560-64. Lacking any specific proof of the date on which the contracting officer received plaintiff's claim, the text of 41 U.S.C. § 611 might be literally construed to bar any award of interest. Such a result, in the circumstances at bar, would undoubtedly seem unduly harsh, not to mention unfaithful to the remedial aim of the statutory provision for interest on judgments in contract cases. Although there is virtually no case law squarely addressing the subject, we believe the CDA grants this court the discretion to fix the date from which interest runs on the basis of all of the record evidence, including circumstantial evidence. See *Wilner v. United States*, 23 Cl. Ct. 241, 263 n.17 (1991). Rather than to blandly speculate in reaching this decision, we deem it to be prudent to choose from the dates of the total relevant documentary evidence in the record. Awarding interest from June 11, 1991, the date of plaintiff's change proposal, strikes the court as overly generous, because that would effectively reward plaintiff for its failure to prove the date on which its entitlement to interest began. The only other date fixed in the record is July 21, 1993, the date of the contracting officer's final decision. Accordingly, we hold that plaintiff is entitled to statutory interest, pursuant to 41 U.S.C. § 611, from July 21, 1993.

II. COUNT II -- THE STEEL REBAR ISSUE

A. Facts

Count II of plaintiff's complaint seeks an award of damages in the sum of \$36,520, plus statutory interest from the date of submission of this claim to the contracting officer, for work that was required to modify steel reinforcing bars (rebar) to the Navy's satisfaction and which allegedly went beyond the parameters of the contract. Vertical support columns in the building's frame were constructed of steel-reinforced concrete. Drawing Sheet S-22, a Navy drawing made part of the contract specifications, governed the size and configuration of rebar that ran vertically through these columns. Five different lengths of reinforcing bars were depicted in the upper left-hand corner of Drawing S-22. Relevant here are the "B"

bars and the "C" bars. "B" bars were specified to run continuously from the ground floor to a point between the third floor and the roof.⁽¹⁴⁾ "C" bars traveled a shorter vertical distance, from the ground floor to a point between the second and third floors.

Drawing S-22 also illustrated two methods for the assembly of multiple bars into the "column cages" which made up the internal steel framework of the concrete support columns. After the column cages were constructed and set in place, boxlike wooden forms conforming to the exterior dimensions of the finished columns were constructed around the column cages. Concrete was then poured into the forms and about the column cages within. One specified method of rebar assembly was titled the "Typical Column Bar and Tie Arrangement" (herein the "typical method"). JX 16. Six different diagrams of this method were provided, showing the manner in which four, six, eight, twelve, sixteen, or eighteen bars were to be arrayed within the perimeter of a column. The other method was outlined in a section of Drawing S-22 titled "Various Bar Lapping Arrangement" (herein the "lapping method"). JX 16. Lapping describes the method by which bars are spliced, or joined, where one bar ends and another bar begins within a vertical support column. At such junctures, the ends of the bars are lapped over one another for reinforcement purposes, "so there is continuity of tensile stress in the reinforcement when the concrete member is subjected to a flexural or tensile load." *Dictionary of Architecture and Constr.* 478. The Various Bar Lapping Arrangement diagram illustrates six ways in which differing numbers of steel bars running together from above and below their point of intersection are lapped, *i.e.*, 12 bars from below and 8 bars from above.

In addition to the aforesaid specifications, each of the building's support columns was tapered in design, resembling the sections of a collapsible telescope, with the column section between the second and third floors being two inches narrower in width than the column section between the ground and second floors, and two inches narrower still between the third floor and the roof. Due to the narrowing of each column where it made the transitions at the second and third floor levels, the rebar within each column likewise had to taper, at a specified maximum slope of 1:6, in order to fit inside the column cage of the narrower column above. In other words, as a length of rebar traveled vertically through a transitional section of a column, Drawing S-22 permitted one inch of horizontal deflection inward for every six inches of vertical travel. The "offset" is the total horizontal deflection over the course of the transition. See also *Dictionary of Architecture and Constr.* 565 (defining an offset in a reinforced concrete column as "any bend that displaces the center line of a section of the bar to a position parallel to the original bar").

Drawing S-22's intricacies prompted BCC to forward a Request For Information (RFI), to the Navy on February 14, 1990. The Navy's response dated February 20, 1990, stated:

"B" bars are to be continuous for the length shown in the column schedule & are to be bent & offset at a slope of 1:6 where column size changes occur. For Column B2 the "B" bars are to be located at the corners. "C" bars are to be lapped as shown in the various bar lapping arrangements.

PX 9. Upon receipt of the Navy's response, BCC and its rebar subcontractor, Ambassador Steel, began creating shop drawings for the column cages. Plaintiff's CQC Representative, Mr. Connor, subsequently approved these shop drawings. Following Mr. Connor's approval of the drawings, Ambassador Steel began the fabrication and assembly of the rebar column cages. However, upon delivery of the rebar column cages to the project site, the Navy informed plaintiff that a number of the cages failed to satisfy the requirements of Drawing S-22 for two reasons. First, BCC's subcontractor had assembled certain cages at the ground floor level according to the lapping method, but the Navy insisted that Drawing S-22 called for the typical method to be used at the ground floor level. Second, the column cages had been constructed with 3-3/8 inch offsets, which the Navy rejected on the ground that the contract permitted a

three-inch maximum offset. Consequently, BCC's subcontractor had to disassemble the rejected column cages and rebuild them to the Navy's satisfaction.

B. Contentions of the Parties

1. Plaintiff

Plaintiff contends that Drawing S-22 contained an ambiguity, to which plaintiff reacted by submitting its RFI to the Navy seeking clarification of the contract requirements.⁽¹⁵⁾ Plaintiff maintains further that the Navy delivered an unambiguous response which, when read in conjunction with the rebar specifications and drawings already extant, allowed plaintiff to dispense with further inquiry, and proceed with the rebar fabrication in reasonable reliance upon the direction given by the Navy. Thus, in utilizing the lapping method to set the ground floor "C" bars and fabricating the rebar column cages with 3-3/8 inch offsets, plaintiff avers that it acted in reasonable reliance upon the Navy's clear direction. Costs relating to the rework the Navy demanded are, in plaintiff's view, properly chargeable to the Navy because said rework surpassed the scope of the work delineated by the Navy's earlier representations.

As to the Navy's demand that the typical method be used to assemble rebar on the ground floor, BCC states that it was entitled to utilize the lapping method because the Navy's RFI reply expressly instructed plaintiff to use the lapping method for "C" bars. Since, in fact, "C" bars as well as "B" bars had to be installed on the ground floor, plaintiff determined the lapping method to be the only method available. Moreover, plaintiff notes that Drawing S-22 depicts "C" bars as open circles and "B" bars as darkened circles, and, further, that no open circles indicating the presence of "C" bars appear in the Typical Column Bar and Tie Arrangement diagram. Therefore, reasons plaintiff, Drawing S-22 precludes the use of the typical method to assemble "C" bars with "B" bars.

Concerning the matter of the rebar offsets, BCC argues that Drawing S-22 and the Navy's RFI reply fail to set a maximum offset value, mentioning only the 1:6 ratio slope. As evidence of an ambiguity, plaintiff points out that Mr. Baudhuin testified that calculations based upon the specified 1:6 slope would merely yield a figure falling somewhere "in the neighborhood of three inches." Tr. 916. Plaintiff concludes, in short, that a 3-3/8 inch offset resides in that neighborhood.

2. Defendant

Defendant meets plaintiff's contentions with an array of pointed counter-arguments. Regarding the rebar assembly method, defendant avers that Drawing S-22 is clear and unambiguous, specifying in great detail the length of each bar, the spacing of the bars within the columns, the placement and overlap of the bars when lapped, and the manner of offset when bars make the transition from one floor to the next. The Navy's response to plaintiff's RFI neither modified the contract nor created an ambiguity, defendant maintains, since the Navy's response merely reiterated that "C" bars had to be lapped at the second floor using the Various Bar Lapping Arrangement diagram in Drawing S-22.

Even assuming Drawing S-22 was ambiguous, defendant contends that it makes no difference whether the ambiguity was patent or latent, since plaintiff would not be entitled to recovery in either case. Defendant asserts that a truly patent ambiguity would have obligated plaintiff to seek clarification prior to bidding the contract, rather than deferring inquiry until after the contract had been awarded. If, on the other hand, a latent ambiguity was present, defendant charges that plaintiff has failed in three respects to meet its burden of showing that its interpretation of the contract was reasonable. First, to interpret Drawing S-22 to require the use of the typical method only for columns incorporating solely "B" bars would render meaningless three of the six diagrams of the typical method. The only columns which contained solely "B" bars were certain columns made up of four, six, or eight bars, and defendant takes this to mean that the Typical Column Bar Arrangement diagrams for columns containing 12, 16, or 18

bars would be superfluous under plaintiff's interpretation. Second, defendant contends that there is nothing in Drawing S-22 to suggest that any "C" bars ended on the ground floor and required lapping there. *Id.* at 12-13. Rather, "C" bars are shown to end on the second floor in all columns, at which point the "C" bars had to be lapped to other bars extending from the second to the third floors. Third, defendant pointedly observes that the Various Bar Lapping Arrangement diagram called for lapping a certain number of bars from above with at least 12 bars from below. Where the base of each column was situated at the ground floor level, asserts defendant, there were no bars from below to be lapped, but only four steel dowels extending upward from the concrete footing foundation.

Turning to the rebar offset issue, defendant contests the notion that the Navy's requirement for a three inch offset was a contract modification. Defendant directs us to Mr. Baudhuin's testimony that the three inch offset is the natural mathematical result flowing from the 1:6 vertical column slope specified in Drawing S-22. Additionally, defendant notes that the contract expressly refers BCC to the requirements outlined in the relevant American Concrete Institute (ACI) Publication. During his testimony, Mr. Baudhuin stated unequivocally that the ACI standards mandate a maximum three-inch offset for rebar configured at a 1:6 vertical slope, because a greater offset would compromise the strength of the column. Therefore, concludes defendant, plaintiff's subcontractor failed to adhere to contract specifications by fabricating the rebar column cages with 3-3/8 inch offsets.

C. Discussion

On this record, Count II can be disposed of in a straightforward fashion, because plaintiff's deficient evidentiary showing at trial failed to buttress plaintiff's arguments in support of its claim. Moreover, defendant's counter-arguments, which we find persuasive, are unmet by either competent evidence or cogent rejoinder from plaintiff. We consider the sub-issues relating to the rebar assembly method and the rebar offset *seriatim*.

1. Rebar Assembly Method

The parties' dispute over the rebar assembly method distills down easily into a simple question -- whether the rebar specifications in Drawing S-22, as amplified by the Navy's RFI response, authorized plaintiff to employ the lapping method to assemble "B" and "C" bars into column cages at the ground floor level of the building. Therefore, we must construe Drawing S-22 and the Navy's RFI response to determine what was required of BCC, a determination we address as a question of law. P.J. Maffei Bldg. Wrecking Corp., 732 F.2d at 916. After thorough scrutiny of the record, we agree with defendant that Drawing S-22 is clear and unambiguous and, further, that the Navy's RFI response effected no modification of Drawing S-22. Accordingly, plaintiff cannot recover the costs of remediating its own noncompliance with contract specifications.

Even assuming, *arguendo*, that Drawing S-22 is ambiguous, plaintiff would not be entitled to recovery. In the unlikely event that said ambiguity was so conspicuous as to be patent, an equitable adjustment is conclusively barred by plaintiff's failure to present evidence that it sought clarification from the Navy prior to bidding the contract. Dalton v. Cessna Aircraft, 98 F.3d at 1306; Grumman Data Systems, 88 F.3d at 998. If, on the other hand, said ambiguity was latent, plaintiff must establish that its interpretation of Drawing S-22 is reasonable. Interwest Constr. v. Brown, 29 F.3d at 614. Plaintiff's interpretation of Drawing S-22 is so unreasonable as to border upon mere pretext.

Plaintiff mistakenly contends that Drawing S-22 precluded the use of the typical method to assemble "B" bars and "C" bars into ground floor level column cages. It is true that the Various Bar Lapping Arrangement (VBLA) diagram in the center of Drawing S-22 depicts "B" bars as darkened circles and "C" bars as open circles. Immediately above the VBLA diagram, there is a pictorial legend that identifies "B" bars and "C" bars in precisely this fashion. The "B" bar and "C" bar in the pictorial legend

are connected by arrows to corresponding depictions of "B" and "C" bars within one of the six sub-diagrams within the VBLA diagram. It is also true that the great majority of the bars shown in the Typical Column Bar and Tie Arrangement (TCBTA) diagram, which adjoins the left edge of the VBLA diagram, are depicted as darkened circles.⁽¹⁶⁾ However, it simply does not follow that the typical method in the TCBTA diagram was suitable only for assembling those column cages made up solely of "B" bars, as plaintiff would have it. Nothing in or about the TCBTA diagram suggests that its darkened circles represent only "B" bars. Furthermore, the pictorial legend which draws the visual distinction between "B" bars and "C" bars is unconnected in any manner to the TCBTA diagram. Plaintiff, in short, would have the court add to Drawing S-22 an arrow connecting the darkened circle in the pictorial legend over the VBLA diagram to one of the darkened circles in the TCBTA diagram, and this we are unwilling to do in the absence of any evidence suggesting that such a modification is proper. A far less strained interpretation of Drawing S-22 instructs that the typical method was intended to apply to "B" bars and "C" bars alike at the ground floor level, such that there was no need to darken some circles and leave others open in the TCBTA diagram.

In addition, plaintiff's interpretation of the TCBTA diagram to govern only the assembly of those columns made up of solely "B" bars at the ground floor level utterly fails to account for those columns which contain no "B" bars whatever at the ground floor level. For example, there were numerous ground floor columns assembled from "A" bars and "C" bars, or from "A" bars alone. Certainly, in the case of a ground floor column containing only four "A" bars, of which there were several, the lapping method would have been unsuitable because lapping any two "A" bars would necessarily leave one of the four column corners without reinforcement. Similar reasoning compels our concurrence with defendant's observation that the TCBTA diagrams for columns containing 12, 16, or 18 bars would be superfluous under plaintiff's interpretation of Drawing S-22, since every column containing solely "B" bars was made up of either four, six, or eight bars.⁽¹⁷⁾ Here again we are guided by the principle that an interpretation which renders portions of a contract meaningless is disfavored. *Fortec Constructors*, 760 F.2d at 1292.

Having determined that the typical method of column cage assembly was not limited to columns made solely of "B" bars, we turn to plaintiff's corollary assertion that lapping was the exclusive method of assembly wherever "C" bars were used. We find this contention similarly unpersuasive. Plaintiff's argument hinges entirely upon the final sentence of the Navy's RFI response, which states: "'C' bars are to be lapped as shown in the various bar lapping arrangements." PX 9 (emphasis added). We note first that plaintiff's RFI inquired not about the placement of "C" bars at the ground floor level, but rather, about the lapping of "B" bars at the second floor level. Since plaintiff did not ask the Navy about the assembly of column cages at the ground floor level, it is difficult to comprehend why the Navy's response should be read to address the placement of "C" bars at the ground floor level. Moreover, we readily embrace defendant's contention that its instruction regarding "C" bars neither added to nor subtracted from Drawing S-22. On the contrary, the Navy merely redirected plaintiff to the VBLA diagram. Although it governed the lapping of "C" bars wherever lapping was required, the VBLA diagram did not explicitly set out instances in which lapping was required. By necessary implication, though, we reach the conclusion that plaintiff improperly used the lapping method to place "C" bars at the ground floor level. All six illustrations in the VBLA diagram show at least 12 bars from below the point of juncture being lapped with some lesser number of bars from above. As defendant correctly observes, Drawing S-22 elsewhere shows that at ground level no more than four steel dowels extend upward from the concrete footing foundation where the base of each column is situated. Since the VBLA diagram plainly makes no provision for lapping at the ground floor level, where many "C" bars were to be found, we reject plaintiff's contention that lapping was the exclusive method of assembly wherever "C" bars were used.

From the foregoing discussion, it naturally follows that plaintiff has failed to prove that Drawing S-22 was tainted by latent ambiguity, which requires a finding that the contract "is susceptible of two different and *reasonable* interpretations, each of which is found to be consistent with the contract language." Community Heating & Plumbing, 987 F.2d at 1579 (emphasis added). Plaintiff presented no evidence tending to establish that lapping "C" bars at the ground floor level was reasonable in connection with recognized concrete construction practices, in terms of the resulting effect on column strength, or in any other sense.⁽¹⁸⁾ Instead, plaintiff relies solely upon its hospitable reading of Drawing S-22 and the Navy's RFI response. Because plaintiff's interpretation of the rebar assembly specifications set out in Drawing S-22 leads to incongruous and irrational results, it is legally untenable. Julius Goldman's Egg City, 697 F.2d at 1057-58; Fortec Constructors, 760 F.2d at 1292. Thus, plaintiff's claim in Count II is denied insofar as it relates to costs incurred to rework "B" and "C" bars improperly lapped at the ground floor level.

2. Rebar Offsets

The question presented by the rebar offset sub-issue is whether the contract specifications called for a three-inch maximum offset. Plaintiff accurately notes that Drawing S-22 and the Navy's RFI response specify only a 1:6 slope ratio and fail to expressly quantify the maximum allowable offset in inches. However, plaintiff draws a wholly unwarranted conclusion from this evidence. The omission of an explicit reference in these documents to a three-inch maximum rebar offset was not tantamount to the Navy's "representation," as plaintiff puts it, upon which plaintiff could rely for the purpose of selecting the proper rebar offset at its sole discretion. This was hardly the case, for the contract expressly directed plaintiff to a number of ACI publications for guidance concerning the fabrication and assembly of the rebar column cages. At trial, plaintiff completely failed to carry its burden of proving compliance with the relevant ACI standards. Plaintiff offered no evidence regarding the content of the ACI manuals referenced by the contract.⁽¹⁹⁾ Nor was there any evidence that plaintiff had faithfully consulted and followed the relevant ACI manuals in selecting a 3-3/8 inch offset. For that matter, when asked about the three-inch offset demanded by the Navy, plaintiff's assistant superintendent on the EMIC project, Richard Cooper, testified that he was unaware of its significance.

Defendant, on the other hand, presented Mr. Baudhuin's unequivocal testimony that the applicable ACI publication required a three-inch maximum offset.⁽²⁰⁾ Plaintiff's failure of proof and Mr. Baudhuin's uncontroverted testimony compel the conclusion that defendant is entitled to judgment on the rebar offset sub-issue. Accordingly, given our disposition of the rebar assembly method sub-issue in defendant's favor, supra, plaintiff's Count II is dismissed in its entirety.

III. COUNT III -- THE CONCRETE RUBBING ISSUE

A. *Facts*

Plaintiff's Count III seeks an award in the sum of \$78,512 for costs allegedly incurred pursuant to the Navy's direction to rub certain exposed concrete surfaces within the building in order to achieve a uniform appearance, plus statutory interest from the date of this claim's submission to the contracting officer. The relevant contract provisions state:

3.3 SURFACE FINISHES (EXCEPT FLOOR, SLAB, AND PAVEMENT FINISHES)

3.3.1 Defects: . . . Exposed surfaces shall be uniform in appearance and finished to a smooth form finish unless otherwise specified.

. . . .

3.3.3 Formed Surfaces

3.3.3.1 As-Cast Rough Form (for Surfaces Not Exposed to Public View): Remove fins and other projections exceeding .25 inch in height; level abrupt irregularities.

3.3.3.2 As-Cast Rough Form (for Surfaces Exposed to Public View, such as columns and concrete guard wall): Form facing material shall produce a smooth, hard, uniform texture on the concrete.

3.3.4 Rubbed Finish: Provide concrete with a smooth form finish. Finish as follows:

a. Smooth Rubbed: Provide newly hardened concrete within 24 hours following form removal. Wet surfaces and rub with an abrasive tool to produce uniform color and texture. Use only cement paste drawn from the concrete rubbing process.

....

3.5 CURING AND PROTECTION:

....

3.5.6 Removal of Forms: Remove forms in a manner which will prevent damage to the concrete. Do not remove form without approval, nor sooner than 24 hours after placement of concrete.

JX AA § 03300, at ¶¶ 3.3, 3.5.6 (emphasis added). This controversy centers on ¶ 3.3.4(a), which specifies the process by which concrete surfaces are rubbed so as to achieve a smooth form finish of uniform color and texture. The parties have stipulated that plaintiff did not smooth rub the exposed concrete in accordance with ¶ 3.3.4(a), that the finished concrete was not of uniform color, and that the Navy rejected the appearance of the exposed concrete as unsatisfactory. In September 1990, the Navy directed plaintiff to take corrective action regarding the appearance of the exposed concrete surfaces. Plaintiff responded by performing additional work in an effort to provide a finish acceptable to the Navy. Thereafter, by letter dated December 17, 1991, plaintiff submitted its certified claim to the contracting officer, seeking an equitable adjustment in the sum of \$89,720 for costs associated with rubbing the exposed concrete surfaces, which plaintiff asserted was additional work not required by the contract. The contracting officer's written final decision dated July 21, 1993, denied this claim in part and granted it in part. Therein, the contracting officer stated:

Although, the specification required a rubbed finish which would have produced a uniform color and texture, the contract lacked detail as to how the procedure should be accomplished. We agree that you expended additional effort trying to achieve a specified uniform color and texture on the concrete surfaces. However, we find the amount claimed to be overstated and have determined that you are entitled to an equitable adjustment in the amount of \$11,208.

JX 2, at 2. Thus, plaintiff asks this court to award the remaining \$78,512 of the \$89,720 originally sought. Defendant, on the other hand, not only challenges this claim, but also counterclaims for the \$11,208 the contracting officer previously awarded to plaintiff.

B. Contentions

1. *Plaintiff*

Inasmuch as plaintiff has stipulated that it did not rub any exposed concrete surfaces, plaintiff self-

servingly contends that "the only interpretation of the contract that does not lead to absurd results is an interpretation that does not require any concrete to be rubbed." In support of this contention, plaintiff advances a complex argument based upon the paragraph numbering system in § 03300 of the contract. Plaintiff interprets the contract to mean that concrete rubbing was required only in areas specifically delineated by the contract. According to plaintiff, ¶ 3.3.3 applies to formed surfaces, while ¶ 3.3.4 applies to rubbed surfaces. Since the concrete surfaces in dispute were formed surfaces governed by ¶ 3.3.3, reasons plaintiff, no rubbing was required. Plaintiff insists that any other reading of the contract would lead to an absurd interpretation requiring even unexposed concrete, including concrete buried in the ground, to be rubbed because the contract draws no delineation between exposed and unexposed concrete as far as rubbing is concerned.

Plaintiff further contends that the Navy's failure to specify that architectural concrete was to be used to form the exposed concrete surfaces in question demonstrates that rubbing was not to be performed on said concrete surfaces. This is so, contends plaintiff, because it is understood within the contracting industry that architectural concrete, which is more expensive than ordinary structural concrete, is typically specified where a surface finish of uniform color is truly important.

In addition, plaintiff alleges that the result demanded by the Navy was commercially impracticable, because ¶ 3.5.6 prohibited the removal of forms for at least 24 hours after concrete was poured into the forms. After 24 hours, plaintiff avers, the rubbing process would not cause the concrete to exude enough of the concrete paste necessary to achieve the rubbed finish sought in ¶ 3.3.4(a).

Concerning defendant's counterclaim, plaintiff maintains that this court lacks jurisdiction under the Contract Disputes Act of 1978, 41 U.S.C. § 605(a), to entertain a contract claim that was not submitted in writing to the contracting officer and on which the contracting officer has rendered no final decision. Plaintiff asserts that the contracting officer allowed the \$11,208 adjustment in question as a unilateral modification, not as an award pursuant to a final decision over which this court has jurisdiction.

2. Defendant

Defendant contends that ¶ 3.3.4(a) is unambiguous and clearly obligated plaintiff to rub concrete surfaces covered by ¶ 3.3 within 24 hours of form removal in order to produce a uniform texture and color. Although defendant concedes that a strictly literal, technical interpretation of ¶ 3.3.4(a) would require all concrete except the floors, slab, and pavement to be rubbed, defendant points out that it never insisted that unexposed concrete be rubbed. Having thus met plaintiff's claim that ¶ 3.3.4(a), if given effect, required the rubbing of buried concrete, defendant asserts that an interpretation under which ¶ 3.3.4(a) requires the rubbing of no concrete whatever is unreasonable. Defendant argues that plaintiff cannot premise the existence of a contractual ambiguity upon an unreasonable and bizarre interpretation of ¶ 3.3.4(a).

Even postulating that ¶ 3.3.4(a) is ambiguous, defendant maintains that plaintiff would not be entitled to recovery. Such an ambiguity would be patent, defendant submits, because the contract devotes an entire paragraph to the matter of concrete rubbing. Thus, to the extent ¶ 3.3.4(a) presents an inconsistency, it is an inconsistency that is blatant and significant, not subtle, hidden, or minor. Moreover, defendant avers that a patent ambiguity would be established if plaintiff's interpretation were sustained so as to render ¶ 3.3.4(a) entirely meaningless. Defendant asserts that plaintiff had a duty to raise any such patent ambiguity with the contracting officer prior to bidding the contract, and that recovery is barred by virtue of plaintiff's unexplained failure to seek clarification prior to bidding. Assuming, on the other hand, that the alleged ambiguity were latent, defendant argues that plaintiff must demonstrate that its interpretation of ¶ 3.3.4(a) is reasonable. *Id.* Defendant contends that an interpretation which renders ¶ 3.3.4(a) meaningless and superfluous is by no means reasonable.

As to plaintiff's claim that the Navy's failure to specify that architectural concrete be used to form the disputed concrete surfaces meant that said surfaces need not have been rubbed, defendant asserts that structural concrete can be rubbed to produce the aesthetically-pleasing finish sought by ¶ 3.3.4(a). Defendant further contends that the contract called for architectural concrete to be used in areas where the Navy desired architectural concrete, and the mere fact that architectural concrete was not specified in certain other areas has no bearing on whether the concrete in those areas should have been rubbed.

Responding to plaintiff's commercial impracticability argument, defendant asserts that plaintiff left the forms on for several days, even though the contract permitted form removal after 24 hours, and made no attempt to rub the concrete within 24 hours after form removal as required by ¶ 3.3.4(a). Defendant attributes this failure to rub the concrete in a timely manner to plaintiff's failure to adequately staff the job.

Defendant's counterclaim seeks to recover the \$11,208 and statutory interest thereupon that was previously paid to plaintiff pursuant to the contracting officer's final decision dated July 21, 1993, plus statutory interest for the period during which plaintiff has enjoyed possession of the \$11,208. The Navy is entitled to recover on its counterclaim, contends defendant, because plaintiff was incorrectly allowed an equitable adjustment for concrete rubbing work that was required by the contract. Defendant meets plaintiff's jurisdictional objection with the assertion that this counterclaim is a "mirror image" counterclaim because it arises from the same concrete rubbing work on which plaintiff's claim is premised. According to defendant, a contracting officer's final decision is not a jurisdictional prerequisite to this Court's ability to entertain a "mirror image" counterclaim brought by the Government.

C. Discussion

1. Plaintiff's Claim

As the parties agree, the issue postured in Count III of plaintiff's complaint is squarely one of contract interpretation. If the court finds that BCC was required to rub the exposed concrete surfaces, then it is not entitled to any of the monies claimed. This issue is readily resolved by reference to a familiar principle of contractual interpretation, echoed throughout countless opinions.

We follow the established general rules that provisions of a contract *must* be so construed as to effectuate its spirit and purpose, that it *must* be considered as a whole and interpreted so as to harmonize and give meaning to all of its provisions, and *that an interpretation which gives a reasonable meaning to all parts will be preferred to one which leaves a portion of it useless, inexplicable, inoperative, void, insignificant, meaningless, superfluous, or achieves a weird and whimsical result.*

State of Arizona v. United States, 575 F.2d 855, 863 (Ct. Cl. 1978) (emphasis added), quoted with approval in Julius Goldman's Egg City, 697 F.2d at 1057-58. At bar, it is manifestly apparent that plaintiff's reading of the pertinent contract language runs counter to the aforementioned principle, for it renders ¶ 3.3.4(a) utterly meaningless. For this reason, plaintiff's interpretation merits the closest scrutiny. Having so inquired, we conclude that plaintiff's claim must be denied.

We observe initially that ¶ 3.3.4(a), when read in conjunction with the entirety of the contract provisions governing concrete surface finishes (other than floors, slab, and pavement), lends itself to an amply reasonable construction. In relevant part, ¶ 3.3.1 unambiguously provides that "[e]xposed surfaces shall be uniform in appearance and finished to a smooth form finish *unless otherwise specified.*" JX AA § 03300, at ¶ 3.3.1 (emphasis added). Thus, absent some specification to the contrary, *exposed* concrete

surfaces were required to be finished to a smooth form finish of uniform appearance. The term "smooth form finish" next appears in ¶ 3.3.4, which states simply, "Provide concrete with a smooth form finish. Finish as follows [in ¶ 3.3.4(a)]." Obeying this directive, we arrive at ¶ 3.3.4(a), which explains the concrete rubbing procedure. In short, exposed concrete surfaces had to have a smooth form finish, and rubbing was required to achieve a smooth form finish.

Plaintiff urges the court to stand this routine contract language on its head. Frankly, we are at a loss to comprehend how plaintiff can credibly assert that rubbing was required only for surfaces expressly delineated by the contract, when ¶ 3.3.1 makes it perfectly clear that a smooth form finish -- and, concomitantly, rubbing -- was required for exposed surfaces *everywhere* "unless otherwise specified." Plaintiff has not directed our attention to, and we have not found, a contract provision that excepts the disputed concrete surfaces from this requirement. Likewise unavailing is plaintiff's contention that ¶ 3.3.4(a), read literally, would compel unexposed concrete surfaces, including underground concrete, to be rubbed. To reiterate, ¶ 3.3.1 states quite unequivocally that it is *exposed* surfaces that must be finished to a smooth form finish. Against the plain language of the contract as written, plaintiff's strained interpretation must fall. [\(21\)](#)

Plaintiff's attempt to infuse the contract's paragraph numbering system with legal substance is similarly misguided. Although plaintiff correctly observes that the exposed concrete surfaces in dispute are formed surfaces governed by ¶ 3.3.3, we reject plaintiff's contention that such formed surfaces are exempt from the rubbing requirement of ¶ 3.3.4(a). Concerning exposed formed concrete surfaces, the operative language in ¶ 3.3.3 merely states: "Form facing material shall produce a smooth, hard, uniform texture on the concrete." JX AA § 03300, at ¶ 3.3.3.2. Two conclusions follow from a plain reading of this language. First, ¶ 3.3.3.2 speaks to the nature and quality of "the form facing material," directing plaintiff to employ form material that will produce "a smooth, hard, uniform texture" on the surface of the formed concrete. [\(22\)](#) Paragraph 3.3.3.2 says absolutely nothing about whether concrete surfaces within its ambit must be rubbed, a process that necessarily takes place *after* the forms have been removed. Second, the "smooth, hard, uniform texture" called for by ¶ 3.3.3.2 is hardly inconsistent with the rubbing requirement of ¶ 3.3.4, which seeks a "smooth form finish" of "uniform color and texture." Thus, we are unpersuaded that plaintiff's hypertechnical reliance on the numbering of the relevant paragraphs should overcome the plain language of the paragraphs themselves.

Given the specious nature of plaintiff's interpretation of the contract, plaintiff's arguments warrant short-shrift. No ambiguity can be present unless the contract "is susceptible of two different and reasonable interpretations, each of which is found to be consistent with the contract language." Community Heating & Plumbing Co., 987 F.2d at 1579. Plaintiff cannot unilaterally fabricate a contractual ambiguity, patent or latent, from an unreasonable interpretation of the contract. See United Int'l Investigative Servs. v. United States, 109 F.3d 734, 738 (Fed. Cir. 1997).

Even assuming, *arguendo*, that plaintiff's interpretation could lift itself by its bootstraps into the status of a prima facie ambiguity, defendant rightly asserts that plaintiff is not entitled to recovery. Insofar as plaintiff contends for an interpretation that renders ¶ 3.3.4(a) meaningless surplusage -- an obvious, gross, or glaring result to say the least -- this would militate toward classifying any resulting ambiguity as patent. Grumman Data Systems, 88 F.3d at 997; Reliable Bldg. Maintenance Co. v. United States, 31 Fed. Cl. 641, 644 (1994). Plaintiff cannot allege patent ambiguity as a ground for an equitable adjustment unless it in fact sought clarification of said ambiguity before bidding the contract. Dalton v. Cessna Aircraft, 98 F.3d at 1306; Grumman Data Systems, 88 F.3d at 998. In the present case, plaintiff has neither asserted nor established that it ever made inquiry concerning this purported ambiguity before the contract was bid. Consequently, plaintiff would not be entitled to recovery even if a patent ambiguity were present here.

Assuming, on the other hand, that the alleged ambiguity were latent, the doctrine of *contra proferentum*, on this record, would not accrue to plaintiff's benefit. A latent ambiguity is construed against the contract's drafter only if the non-drafting party's construction is reasonable. Interwest Constr. v. Brown, 29 F.3d at 614. In order to evaluate the reasonableness of the interpretation proffered by plaintiff, we adopt the viewpoint of a reasonable and prudent contractor fully acquainted with the circumstances at hand. Blake Constr., 987 F.2d at 746; Western States Constr., 26 Cl. Ct. at 825. Moreover, we take it as axiomatic that a contract must be construed in the context of the entire agreement and "[a]n interpretation which gives reasonable meaning to all parts of a contract is preferred to one which renders part of it insignificant or useless." Blake Constr., 987 F.2d at 747 (citing Hills Materials Co. v. Rice, 982 F.2d 514, 517 (Fed. Cir. 1992)); Dalton v. Cessna Aircraft, 98 F.3d at 1305.

Here at bar, plaintiff urges that to have given ¶ 3.3.4(a) effect would have led plaintiff to rub underground concrete, because this provision draws no distinction between exposed and unexposed concrete. Notwithstanding our conclusion, supra, that the plain language of the contract by no means led inevitably to such an absurd result, the court now considers whether a reasonable, prudent, and knowledgeable contractor would have construed ¶ 3.3.4(a) as did plaintiff. In so doing, we find that ¶ 3.3.4(a), standing alone, lends itself comfortably to a reasonable alternative interpretation.

Paragraph 3.3.4(a) is directed to the production of a uniform texture and color on concrete surfaces. A reasonable, prudent, and knowledgeable contractor would *logically* determine, as counsel for plaintiff grudgingly conceded in closing argument, that the concrete rubbing described in ¶ 3.3.4 is a technique directed at producing a desired visual appearance. To continue in this vein of reasoning, our hypothetical reasonable contractor would consider the circumstances in which visual aesthetics are relevant. The solitary *logical* conclusion, again as conceded by counsel for plaintiff, is that a concrete surface's appearance becomes a matter of concern only when said concrete is exposed to plain view. Put differently, it seems undeniable that a reasonable contractor, not to mention a reasonable owner, would not be unduly concerned with the appearance of unexposed concrete such as caissons and footings buried beneath the surface. Moreover, why and how would one "[w]et . . . and rub . . ." unexposed surfaces?

Accordingly, the *only* way for a reasonable contractor to harmonize ¶ 3.3.4(a) with the contract's entire language, purpose, and context would be to adopt the interpretation requiring every concrete surface exposed to public view, unless otherwise specified, to be rubbed. As already noted herein, supra, to apply ¶ 3.3.4(a) in broad, inclusionary fashion accords fully with the plain language of ¶ 3.3.1. Conversely, plaintiff's reading of ¶ 3.3.4(a) would excise this provision from the contract altogether for the sake of avoiding the illusory threat of subterranean concrete rubbing. In sum, we hold that even if the contract language is latently ambiguous, plaintiff's reading of ¶ 3.3.4(a) is clearly and grossly untenable.

Plaintiff's commercial impracticability argument meets a similar fate. Whether the concrete rubbing requirement of ¶ 3.3.4(a) is impossible or commercially impracticable is a question of fact, as to which plaintiff bears the burden of proof. Blount Bros. Corp. v. United States, 872 F.2d 1003, 1007 (Fed. Cir. 1989) (citing Maxwell Dynamometer Co. v. United States, 386 F.2d 855, 181 Ct. Cl. 607 (1967)); Ehlers-Noll GmbH v. United States, 34 Fed. Cl. 494, 499 (1995). Mr. Cooper testified on plaintiff's behalf that by the time the forms were removed from the concrete at issue here, there was no concrete paste available with which to perform the rubbing process. In addition, Mr. Cooper testified that even if the forms had been left on no more than 24 hours after the concrete had been poured, the minimum period specified by ¶ 3.5.6, the concrete would have been rock hard and would have yielded no paste for rubbing. However, his testimony concerning the actual length of time the forms were left on was inconclusive, since Mr. Cooper stated at one point that the forms had been left on for more than 24 hours, but later stated that the forms had been removed 24 hours after the concrete had been poured.

On the other hand, Mr. Baudhuin, an expert in structural engineering, testified that he had been involved in approximately a dozen projects where sufficient concrete paste was produced 24 hours after the concrete was poured to accomplish the rubbing process described in ¶ 3.3.4(a). Plaintiff's own concrete expert, Mr. Norman Scott, testified that the earlier the forms are removed and the rubbing begun, the more paste is brought up by the rubbing and the likelihood of achieving a uniform color is improved. Mr. Scott also testified that, due to the time required to remove the forms and perform work required to repair small imperfections, like fins, projections, and holes caused by air bubbles and honeycomb formations, it might be two to three days after the removal of the forms before the rubbing work could begin. However, on cross-examination, Mr. Scott admitted that the rubbing work could have been accomplished much sooner had plaintiff maintained a large enough work crew on site.⁽²³⁾ Other probative testimony from Ms. Ginalski and Mr. Pieroni established that plaintiff left the forms on the concrete for periods ranging from at least three days to one week after the concrete had been poured, by which time the concrete was no longer "green" and had become too hard to produce any paste. Consequently, on this record, we find that the sole impediment to achieving the rubbed finish specified in ¶ 3.3.4(a) was plaintiff's failure to remove the forms and commence rubbing the concrete in a timely manner.

Furthermore, plaintiff "has the burden to prove that it explored and exhausted alternatives before concluding the contract was legally impossible or commercially impracticable to perform." Blount Bros., 872 F.2d at 1007 (citing Jennie-O Foods, Inc. v. United States, 580 F.2d 400, 409, 217 Ct. Cl. 314 (1978)). Plaintiff never weighed alternative rubbing methods against the rubbing method prescribed in ¶ 3.3.4(a). Indeed, the record before the court indicates that plaintiff made at most perfunctory attempts to perform the rubbing with paste exuded from the concrete, as required by the contract.⁽²⁴⁾ Plaintiff instead substituted corrective work by coating the exposed concrete surfaces with a separately-mixed cementitious concoction. It appears to the court that, even then, plaintiff performed this corrective work on but a small proportion of the exposed concrete surfaces in question. As a result, about a year after plaintiff vacated the site, the Navy had to retain another contractor to complete this corrective work at a cost exceeding \$16,000. In short, plaintiff voluntarily elected to forgo the concrete rubbing process specified in ¶ 3.3.4(a) in favor of an alternative approach consisting of corrective work that plaintiff failed to completely perform. Voluntary nonconformity with contract specifications does not make a plausible case of commercial impracticability.

Finally, we are also unpersuaded by plaintiff's contention that the Navy should have specified the use of architectural concrete wherever a rubbed finish of uniform texture and color was desired. While the exposed concrete surfaces in question were no doubt constructed from commonplace structural concrete normally used for slabs, footings, and walls, plaintiff's witnesses equivocated as to whether architectural concrete was truly necessary to achieve the uniform appearance contemplated by ¶ 3.3.4(a).⁽²⁵⁾ By way of contrast, Mr. Kevin Sullivan, testifying as an architectural expert and the architect of the EMIC building, unequivocally stated that an aesthetically pleasing finish can be obtained by using structural concrete and, moreover, that the type of rubbing prescribed in ¶ 3.3.4(a) would help achieve such a finish.

Therefore, after applying our interpretation of the relevant contract provisions to the record before us, we hold that plaintiff was required to rub the exposed concrete surfaces in question. Accordingly, Count III of plaintiff's complaint is dismissed.

2. Defendant's Counterclaim

Concerning defendant's counterclaim, the parties posture the dispositive question as to

-- whether this court can exercise jurisdiction over a defendant's counterclaim which has not been subjected to a contracting officer's written final decision, solely on the basis that said counterclaim is a "mirror image" of a claim brought by the plaintiff pursuant to the Contract Disputes Act of 1978 (CDA), 41 U.S.C. §§ 601-13. Inasmuch as the Federal Circuit has not squarely addressed this precise question, we proceed from fundamental principles. A determination of whether this Court has jurisdiction over a CDA claim is a question of law. Case, Inc. v. United States, 88 F.3d 1004, 1008 (Fed. Cir. 1996) (citing Transamerica Ins. Corp. v. United States, 973 F.2d 1572, 1576 (Fed. Cir. 1992)). For purposes of deciding plaintiff's motion to dismiss defendant's counterclaim, we make this jurisdictional determination by reference to the actual circumstances existing at the time plaintiff's complaint was filed. Sharman Co., Inc. v. United States, 2 F.3d 1564, 1569 (Fed. Cir. 1993) (citing Newman-Green, Inc. v. Alfonso-Larrain, 490 U.S. 826, 830 (1989)). As the party seeking to invoke this Court's jurisdiction for present purposes, defendant has the burden of establishing subject matter jurisdiction by a preponderance of the evidence. Reynolds v. Army & Air Force Exch. Serv., 846 F.2d 746, 748 (Fed. Cir. 1988). Thus, we now consider the character of defendant's burden. In pertinent part, the CDA provides:

All claims by the government against a contractor relating to a contract shall be the subject of a decision by the contracting officer. . . . The contracting officer shall issue his decisions in writing, and shall mail or otherwise furnish a copy of the decision to the contractor. . . . Specific findings of fact [by the contracting officer] are not required, but, if made, shall not be binding in any subsequent proceeding.

41 U.S.C. § 605(a). The FAR defines a "claim" as "a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract." 48 C.F.R. § 33.201. As to the contents of a contracting officer's "written decision," the FAR requires, *inter alia*: (i) a description of the claim or dispute; (ii) a reference to the pertinent contract terms; (iii) a statement of the factual areas of agreement and disagreement; (iv) a statement of the decision itself, with supporting rationale; and (v) a statement identifying the writing as a contracting officer's final decision appealable to this Court. 48 C.F.R. § 33.211(a)(4).

At bar, the record plainly demonstrates that the literal requirements of § 605(a) and the FAR are not met, for defendant never formally submitted a counterclaim in the amount of \$11,208 to the contracting officer, and the contracting officer never rendered a separate and distinct written decision *per se* on this counterclaim. These circumstances would ordinarily compel the court to summarily dismiss defendant's counterclaim, for case law firmly establishes that "the Government's counterclaims must first be raised before a CO." Joseph Morton Co., Inc. v. United States, 757 F.2d 1273, 1281 (Fed. Cir. 1985). See also Sharman, 2 F.3d at 1568-69; Reflectone, Inc. v. Dalton, 60 F.3d 1572, 1575 (Fed. Cir. 1995). However, defendant takes the position that its \$11,208 counterclaim is not an independent Government claim that must satisfy the requirements of § 605(a), but rather, a partial "mirror image" of plaintiff's direct claim in the sum of \$89,720 that was originally submitted to the contracting officer. After careful reflection on the subject of "mirror image" counterclaims and the record before the court, we conclude that defendant has failed to carry its burden of proving that this counterclaim is a *bona fide* "mirror image" of plaintiff's original claim by a preponderance of the evidence.

Logic instructs that one claim is the "mirror image" of another if the claim is, in fact, effectively the same claim but made by the opposing litigant. Kit-San-Azusa, J.V. v. United States, 32 Fed. Cl. 647, 664 (1995) (citing Sharman, 2 F.3d at 1570), aff'd in part and modified in part on other grounds by unpublished opinion, 86 F.3d 1175 (Fed. Cir. 1996). Thus, the court must consider the extent to which defendant's counterclaim rests upon the same operative facts as plaintiff's original claim and the contracting officer's disposition thereof. We find, without any misgivings, that defendant's counterclaim and plaintiff's original claim derive from the same chain of events -- namely, the disputed concrete

rubbing work. See Sharman, 2 F.3d at 1571 ("mirror image" where each claim "allege[d] entitlement to the same money based on the same partial performance, only under a different legal label."). Compare Case, Inc., 88 F.3d at 1010 (no "mirror image" where claims relating to same contract arose from different events, alleged different grounds for recovery, and sought different amounts). However, there remains the pivotal question of whether, as a matter of fact, the contracting officer took defendant's counterclaim into consideration when rendering the final decision on plaintiff's original claim. In making this determination, we are mindful of the principle that the contracting officer's decision is the "linchpin" for judicial review of contract claims under the CDA. Paragon Energy Corp. v. United States, 645 F.2d 966, 967, 227 Ct. Cl. 176 (1981), aff'd, 230 Ct. Cl. 884, 1982 WL 25259 (1982), cited with approval in McDonnell Douglas Corp. v. United States, 754 F.2d 365, 370 (Fed. Cir. 1985).

Seeking an exception to this principle, defendant relies mainly on Placeway Constr. Corp. v. United States, 920 F.2d 903 (Fed. Cir. 1990), aff'g in part and vacating in part 18 Cl.Ct. 159 (1989), wherein the Federal Circuit held that, following submission of a contractor's claim to the contracting officer pursuant to the CDA, the Government's assertion of an unliquidated set-off likewise constitutes a "claim" under the CDA. Placeway, 920 F.2d at 906. By denying the contractor's direct claim, the Federal Circuit reasoned, the contracting officer effectively makes a final decision on the Government's claimed set-off, even though the contracting officer issues no distinct, formal written decision on the claimed set-off and reserves the power to redetermine the precise amount of the set-off in the future. Id. Notwithstanding the foregoing, we find that defendant's counterclaim in the case at bar is factually distinguishable from the Government set-off at issue in Placeway.

In Placeway, the plaintiff submitted various claims to the contracting officer for decision, including a claim in the amount of \$297,226.12 for the balance alleged to be due on the contract price. Placeway, 18 Cl. Ct. at 161. The contracting officer denied the plaintiff's claims because the Government intended to set off claims it anticipated receiving from contractors on other projects that had allegedly suffered delays as a result of plaintiff's delay in performing its contract. Id. By way of distinction, in the present case plaintiff does not appeal a contracting officer's decision allowing a Government set-off against the contract price. Rather, defendant brings a counterclaim seeking to overturn the contracting officer's decision increasing the contract price by the sum of \$11,208. More importantly, in Placeway, the Government's assertion of a right of set off was held to be tantamount to a request directed to the contracting officer for "the adjustment . . . of contract terms" pursuant to 48 C.F.R. § 33.201. Placeway, 920 F.2d at 906, 18 Cl. Ct. at 164. Here, unlike Placeway, the record gives no hint that the contracting officer ever contemplated the possibility that either the \$89,720 sought by plaintiff or the \$11,208 actually awarded to plaintiff might be, or become, the subject of a set-off demand or counterclaim by defendant. Nor, in allowing only \$11,208 of the equitable adjustment sought by plaintiff, did the contracting officer's decision make reference to a set-off demand or counterclaim by defendant. Quite the contrary, the contracting officer's decision merely stated, without elaboration, that the amount claimed by plaintiff was "overstated." JX 2, at 2. Thus, Placeway is distinguishable, and we find that the decision of the Navy's contracting officer increasing the contract price by \$11,208 was *not* tantamount to a final decision denying defendant's counterclaim of like amount.

In its quest to establish the authenticity of its "mirror image" counterclaim, defendant also relies upon the Federal Circuit's decision in Sharman, but to no avail. As defendant correctly observes, Sharman involved a Government counterclaim and a contractor's "mirror image" claim. Sharman, 2 F.3d at 1569. Therein, "each . . . 'claim' allege[d] entitlement to the same money based on the same partial performance, only under a different legal label." Id. at 1571. Yet it defies reason to assert, as defendant does, that in Sharman "the Federal Circuit reiterated its holding in Placeway." On the jurisdictional issue, Placeway and Sharman reached opposite outcomes, insofar as the Federal Circuit held in Sharman that the Claims Court never had jurisdiction over either the Government claim or the contractor's "mirror image" counterclaim because the contracting officer had never issued a valid and timely final decision

on either claim. Sharman, 2 F.3d at 1569, 1573. More to the point, the Federal Circuit expressly *distinguished* the actions taken by the contracting officer from the final decision rendered by the contracting officer in Placeway. Sharman, 2 F.3d at 1571 n.9. Both the counterclaim and "mirror image" claim in Sharman arose when, following a termination for default, the contracting officer issued a letter demanding that the contractor repay certain progress payments. Id. at 1566-67. The contracting officer rendered no final decision, the Federal Circuit reasoned, because the letter "invited negotiation of the amount demanded." Id. at 1571 n.9.⁽²⁶⁾ Thus, defendant's attempt to cast Sharman as a reaffirmation of defendant's faulty reading of Placeway is unpersuasive.

For present purposes, what Placeway and Sharman instruct is that the question of whether defendant's counterclaim is a *bona fide* "mirror image" of plaintiff's claim turns in large part upon a factual inquiry into the nature, extent, and timing of the action taken, if any, by the contracting officer concerning said counterclaim. That is, the court must examine "the logical relationship between the two claims" and determine whether the contracting officer has rendered a "decision, actual or constructive," regarding defendant's purported "mirror image" counterclaim. Kit-San-Azusa, 32 Fed. Cl. at 664 (construing Placeway, 920 F.2d at 906-07)). Here there was no actual or constructive decision because nothing in the record suggests the contracting officer was even cognizant of defendant's counterclaim. Therefore, we find that defendant has failed to meet its burden of proving by a preponderance of the evidence that its counterclaim is a "mirror image" of plaintiff's claim.

Moreover, to entertain defendant's purported "mirror image" counterclaim on this record would not accord with the purpose and spirit of the CDA, under which the "exhaustion of administrative remedies should occur before the case is ripe for judicial review." Placeway, 920 F.2d at 906. This exhaustion requirement acknowledges that, in enacting the CDA, Congress sought to promote the efficient resolution of contract claims by relying in the first instance upon the contracting officer's general experience in the administration of Government contracts and specific knowledge of the contract and parties in question. Joseph Morton Co., 757 F.2d at 1280. For this reason, "[b]oth issues of liability and of damages should usually be resolved [by the contracting officer] before judicial review is sought." Placeway, 920 F.2d at 906. Defendant presented no evidence suggesting that it raised any contemporaneous objection to the contracting officer's decision to award plaintiff the sum of \$11,208. Unaware that defendant contested -- or would *later* contest -- this equitable adjustment, the contracting officer plainly was given no opportunity whatever to resolve defendant's counterclaim on the merits.⁽²⁷⁾ Lacking any credible evidence suggesting that defendant even pursued, much less exhausted, its administrative remedy before the contracting officer, we conclude that accepting jurisdiction over defendant's counterclaim would frustrate the intended scheme of the CDA.

Finally, lest this ruling be misconstrued, we do *not* hold here that, as a matter of law, the CDA confers no jurisdiction over "mirror image" counterclaims upon this Court. Rather, we give effect to the legal tenet that the party invoking the court's jurisdiction bears the burden of proving the elementary jurisdictional facts by a preponderance of the evidence. Reynolds, 846 F.2d at 748. We duly take note, however, that the Federal Circuit has never expressly extended the exception for Government set-offs set out in Placeway, 920 F.2d at 906-07, so as to create an exception for "mirror image" counterclaims. Moreover, decisions of this Court acknowledging the existence of an exception for "mirror image" counterclaims have done so only in dicta. See Kit-San-Azusa, 32 Fed. Cl. at 663-64 (applying Placeway set-off analysis); Alaska Pulp Corp. v. United States, 38 Fed. Cl. 141, 145-46 (1997) (rejecting *contractor's* invitation to apply Sharman to exercise jurisdiction over purported "mirror image" claim, where there was no evidence of claim's submission to contracting officer). Elsewhere, as defendant concedes in its brief, this Court has expressly rejected jurisdiction over an alleged "mirror image" counterclaim as to which the contracting officer had made no determination of liability or of damages. Volmar Constr. Co. v. United States, 32 Fed. Cl. 746, 756-57 (1995) (declining to adopt "mirror image"

claim dictum in Kit-San-Azusa). Assuming, *arguendo*, that the case at bar presented a compelling reason to reach the unsettled question of subject matter jurisdiction over "mirror image" counterclaims, it would suffice to say that we concur with the result in Volmar.

Based upon the foregoing discussion, plaintiff's motion to dismiss defendant's counterclaim on this Count III under RCFC 12(b)(1) for lack of subject matter jurisdiction is granted. ⁽²⁸⁾

IV. COUNT VI -- THE GROUND FACE MASONRY ISSUE

A. *Facts*

Plaintiff's Count VI seeks an award of damages in the sum of \$10,779, representing costs allegedly incurred to remove mortar stains from certain interior masonry walls of the building, plus statutory interest from the date of this claim's submission to the contracting officer. Although Count VI is the least of plaintiff's claims still pending at bar, the meaning of the relevant contract provisions and the significance of the underlying operative facts have been energetically contested, as evidenced by the parties' refusal to stipulate to even a single fact relating to this claim. Nonetheless, after a careful examination of the record, we find numerous matters not truly in dispute.

Interior corridor walls in the EMIC school were constructed of ground face masonry units. Ground face masonry units are concrete blocks on which one face, the surface visible after installation, has been ground smooth. Architecturally speaking, ground face masonry units are used when an aesthetically pleasing masonry wall is desired. As with any other sort of masonry wall, mortar is used to fill the joints, gaps roughly 3/8 inch in width, between any two adjoining ground face masonry units. Mortar, a mixture -- usually of cement, lime, sand, and water -- is applied with a trowel in its plastic state and thereafter hardens in place. *Dictionary of Architecture & Constr.* 538. As a natural and unavoidable consequence of assembling a masonry block wall, mortar squeezes out of the joints between blocks and falls to the ground below, occasionally leaving some mortar residue behind on the adjacent block faces. Consequently, for the sake of the wall's finished appearance, this mortar residue must be removed from the faces of the blocks.

Concerning the initial cleaning of the ground face masonry units after the blocks have been set in place, the contract states:

3.8 POINTING AND CLEANING: After mortar joints have attained their initial set but prior to hardening, completely remove mortar and grout daubs or splashings from exposed masonry surfaces. Before completion of the work, rake out all defects in joints in exposed masonry surfaces, fill with mortar and tool to match existing joints. Immediately after grout work is completed remove scum and stains which have percolated through the masonry using a high pressure stream of water. Do not use metal tools or metal brushes for cleaning.

3.8.1 Concrete Masonry Units: Dry brush exposed concrete masonry unit surfaces at the end of work each day and after any required pointing. Use stiff-fiber brushes only.

JX AA § 04230-19, ¶¶ 3.8, 3.8.1. ⁽²⁹⁾ While plaintiff retained ultimate responsibility for compliance with this provision, the immediate responsibility for such daily cleaning and brushing rested with plaintiff's masonry subcontractor. At the end of each day, when the brushing called for in ¶ 3.8.1 had to be performed, the mortar remained somewhat soft. Consequently, a brush had to be used that was stiff enough to remove the mortar residue on the face of the blocks, yet not so stiff as to damage the mortar in place.

After the erection of the ground face masonry unit walls was complete, the contract provisions governing paints and other finishes within the building's interior called for the application of a masonry coating to the walls. Commonly referred to as "Tamms" coating (so named after its manufacturer), this transparent masonry coating was intended to enhance the aesthetic appeal of the ground face masonry unit walls by adding a subtle tint and visually accentuating the texture of the blocks' ground faces. As to surface preparation prior to application of the Tamms coating, the contract provides: "Remove all dirt, splinters, loose particles, grease, oil, and other substances deleterious to coating performance as specified for each substrate."⁽³⁰⁾ JX AA § 09900, at ¶ 3.2. In addition, the contract prescribes specific methods of surface cleaning and preparation that had to be used to remove each of "the following deleterious substances" from the walls: (1) dirt, chalking, grease, and oil; (2) fungus and mold; (3) glaze and loose particles; and (4) efflorescence.⁽³¹⁾ JX AA § 09900, at ¶ 3.4.1(a). Whereas the brushing and cleanup required after the blocks had been laid each day was to be performed by the masonry subcontractor, the painting subcontractor was obligated to clean the walls in preparation for the application of the Tamms coating with, of course, plaintiff retaining ultimate responsibility.

This dispute arose in early March of 1991 after a portion of the ground face masonry unit walls had been erected and it was discovered that, wherever mortar had splashed on the face of the blocks, discoloration had resulted. Because the Tamms coating was transparent, it did nothing to hide the discoloration. In fact, the Tamms coating actually amplified the visibility of the discoloration, thereby spoiling the aesthetics of the ground face masonry walls. Dissatisfied with this result, the Navy insisted that plaintiff use a stiffer brush to remove the mortar smears. However, plaintiff maintained that the contract did not require removal of the discoloration in question and, further, that a stiffer brush would disturb the mortar in the joints. Thereafter, the parties discussed the problem at length and tried different methods of removing the offending discoloration, and for purposes of experimentation even erected a small test wall, photographs of which are in evidence.⁽³²⁾ Mike Angeloff, the Navy's field inspector, tried using a stiffer brush to remove mortar splashes from the test wall, but, like the brush used by plaintiff's masonry subcontractor, Mr. Angeloff's brush failed to remove the discoloration left behind by the mortar splashes.

Thereafter, plaintiff's masonry subcontractor began to supplement the daily brushing by rubbing the newly erected ground face masonry unit walls with burlap sacks each day. As to walls erected after this altered daily cleaning procedure was adopted, the parties experienced no more problems with mortar-induced discoloration showing through the Tamms coating. However, the discoloration on blocks previously laid remained a problem. Ultimately, the parties determined that light hand sanding was the only method capable of removing the discoloration from the walls. By letter dated April 1, 1991, the Navy instructed plaintiff to commence hand sanding the ground face masonry units to remove the discoloration. Plaintiff's masonry subcontractor undertook and completed the hand sanding, which successfully cured the discoloration problem.

Before proceeding to the parties' contentions, we must address certain matters of terminology. At trial and in filings thereafter made with this court, the parties have waged a battle of semantics, referring to the discoloration problem variously as "stains," "daubs," "mortar splashes," "blotches," "mortar smears," and other terms. For the sake of clarity, we shall continue to refer generally to the problem at issue as "discoloration." "Mortar stains" shall be used to refer to plaintiff's characterization of the problem, and defendant's characterization of the problem shall be termed "mortar smears." The testimony taken at trial firmly established the parties' concurrence that (1) a "mortar stain" is a form of discoloration permeating below the surface of a block; (2) a "mortar smear" constitutes a deposit upon the surface of a block extending above the surface; and (3) mortar stains and mortar smears are not mutually exclusive dilemmas, since a mortar smear may leave behind a mortar stain even after the mortar smear is brushed off. Where the litigants part ways, as we shall see, is over the nature of the cause

-- mortar stains or mortar smears -- of the discoloration in question, and whether the daily brushing undertaken by plaintiff's masonry subcontractor satisfied the requirements of the contract.

B. Contentions of the Parties

1. Plaintiff

Plaintiff contends that hand sanding for the purpose of cleaning the discoloration from the ground faced masonry units was work not required by the contract. Seeking to establish its full compliance with the contract's masonry cleaning requirements, plaintiff cites Stuyvesant Dredging Co. v. United States, 834 F.2d 1576, 1582 (Fed. Cir. 1987), for the principle that a design specification states how a contract must be performed and tolerates no deviation, whereas a performance specification states the desired result and vests discretion in the contractor to select the means of achieving that result. Plaintiff argues that contract § 04230, ¶ 3.8.1, which requires daily cleaning with "stiff-fiber brushes," is a design specification, the soundness of which was impliedly warranted by the Navy. Thus, daily cleaning of the masonry with stiff brushes, and nothing more, was all that plaintiff had to do in order to accomplish literal compliance with this alleged design specification. In short, plaintiff concludes, if the daily stiff brushing removed the mortar smears but failed to remove the underlying mortar stains, the Navy's design specification was at fault, and it is the Navy which must bear the cost incurred to remove the mortar stains by hand sanding.

Factually, plaintiff's argument rests upon the testimony of its assistant superintendent on the EMIC school project, Richard Cooper. Mr. Cooper testified that mortar smears naturally result from the process of erecting masonry walls and that mortar stains, in turn, are the inevitable byproduct of mortar smears. According to Mr. Cooper, plaintiff's masonry subcontractor used the stiffest brush possible to clean the walls at the end of each day. Had a stiffer brush been used, Mr. Cooper asserted, damage would have resulted to the as yet unhardened mortar joints. Mr. Cooper stated that the daily brushing performed by plaintiff's masonry subcontractor accomplished the complete removal of all mortar smears as required by § 04230, ¶ 3.8 of the contract. Consequently, Mr. Cooper concluded, the problem had to be mortar stains, as opposed to mortar smears, because the discoloration was within the blocks themselves and could not be scraped off.

Plaintiff raises two additional arguments relating to contract § 09900, ¶ 3.4.1, which governs the cleaning of concrete and masonry surfaces prior to the application of Tamms coating, paint, sealer, or other finishes. First, plaintiff notes that mortar smears and mortar stains are not among the "deleterious substances" listed in ¶ 3.4.1. Second, plaintiff avers that the discoloration problem affected only the appearance of the walls and, further, that appearance is not an element of "coating performance." At trial, Mr. Cooper conceded that mortar stains would affect the "appearance" of the Tamms coating, but asserted that coating "performance" remained undiminished inasmuch as mortar stains would not make the Tamms coating rub off more easily or otherwise shorten its useful life.

2. Defendant

Defendant contends that plaintiff seeks to recover the costs incurred to rectify its own poor workmanship and its threefold failure to comply with the contract specifications for masonry cleaning. (33) First, plaintiff's masonry subcontractor failed to "completely remove mortar and grout daubs or splashings from exposed masonry surfaces." JX AA § 04230, at ¶ 3.8. This contention rests on the factual premise that mortar smears, rather than mortar stains, were the cause of the discoloration problem. At trial, Mr. Baudhuin candidly acknowledged that the masonry specifications in § 04230 of the contract refer to the word "stain" only in connection with grout, not in connection with mortar. Moreover, in response to a hypothetical posed by counsel for plaintiff, Mr. Baudhuin grudgingly admitted that, if the natural result of using mortar to assemble ground faced masonry unit walls was

mortar stains, but not mortar smears, then plaintiff would be entitled to recover for extra work, such as hand sanding, required to remove said mortar stains.

Having briefly entertained plaintiff's hypothetical, Mr. Baudhuin quickly rejected it as ungrounded in fact. Mr. Baudhuin unequivocally testified that the discoloration in question constituted mortar smears, not mortar stains. Taking issue with the premise that mortar stains are unavoidable, Mr. Baudhuin asserted that plaintiff's masonry subcontractor was careless in allowing mortar squeezed from the joints to smear the adjacent block faces. He distinguished a mortar smear, which can be removed in its entirety by light sanding, from a mortar stain, which cannot be so removed because it permeates the surface of the block to some extent. Testifying as an architectural expert and the architect of the EMIC building, Mr. Sullivan likewise maintained that the problem was mortar smears, not mortar stains. Because the discoloration could be completely removed by light sanding, Mr. Sullivan concluded that it could not have penetrated the surface of the ground face masonry units.

Defendant's second contention is that, in brushing newly erected block walls each day, plaintiff's masonry subcontractor violated the contractual requirement to "[u]se stiff-fiber brushes only." JX AA § 04320, at ¶ 3.8.1. Here, defendant relies mainly upon the testimony of Ms. Ginalski, who not only observed the daily brushing process, but also physically handled and examined the brush being used. The brush being used to clean the walls was described by Ms. Ginalski as "a soft, like, draftsman-type brush." Tr. 1263. As to the cleaning performance of this brush, Ms. Ginalski testified that it was "a little bit too soft and it just wouldn't take [mortar-induced discoloration] off of the surface of the concrete." Tr. 1264. Ms. Ginalski also testified that she told plaintiff to employ a stiffer brush, a demand that plaintiff refused. Later on, according to Ms. Ginalski, plaintiff's masonry subcontractor, in conjunction with adopting the procedure of rubbing the newly erected walls with burlap sacks, began using a "slightly stiffer brush than what they were previously using." Tr. 1271. Mr. Sullivan testified that if the mortar-induced discoloration in question had been of a type removable by mere brushing, then the brush employed by plaintiff's masonry subcontractor was stiff enough to accomplish that task. However, Mr. Sullivan asserted that he knew of no method, other than sanding, capable of removing the discoloration in question.

Defendant's third contention is that plaintiff's painting subcontractor failed to "[r]emove all dirt, splinters, loose particles, grease, oil, and other substances deleterious to coating performance as specified for each substrate." JX AA § 09900, at ¶ 3.2. Mr. Baudhuin testified that the discoloration in question was a substance "deleterious to coating performance" within the meaning of ¶ 3.2 of § 09900 of the contract, because it interfered with the appearance of the stained blocks. Mr. Sullivan also testified that appearance is part of the concept of "coating performance" required under the contract. On the other hand, Mr. Baudhuin agreed that the discoloration was not one of the substances specifically listed in ¶ 3.4.1(a) of § 09900. Responding to plaintiff's tacit contention that ¶ 3.4.1(a) takes precedence over ¶ 3.2, defendant weakly avers that ¶ 3.2 and ¶ 3.4.1 "are simply unrelated."

C. Discussion

At the outset, this court must determine whether the contract provisions governing the brushing and cleaning of the ground face masonry unit walls were performance specifications or design specifications. Plaintiff's claim hinges upon its assertion that contract § 04230, ¶ 3.8.1, which requires daily cleaning of the masonry walls with "stiff-fiber brushes," is a flawed design specification. The import of this assertion is, of course, that "design specifications contain an implied warranty that if they are followed, an acceptable result will be produced." Blake Constr., 987 F.2d 743, 745 (Fed. Cir.) (quoting Stuyvesant Dredging Co., 834 F.2d at 1582 (citing United States v. Spearin, 248 U.S. 132 (1918))). Explaining the factors that influence the character of a contract specification, the Federal Circuit has stated that:

The difference between performance specifications and design specifications is well established. Performance specifications "set forth an objective or standard to be achieved, and the successful bidder is expected to exercise his ingenuity in achieving that objective or standard of performance, selecting the means and assuming a corresponding responsibility for that selection." . . . Design specifications, on the other hand, describe in precise detail the materials to be employed and the manner in which the work is to be performed. The contractor has no discretion to deviate from the specifications, but is "required to follow them as one would a road map."

Blake Constr., 987 F.2d at 745 (quoting J.L. Simmons Co. v. United States, 188 Ct. Cl. 684, 689, 412 F.2d 1360, 1362 (1969)). With the aforesaid principles in mind, we hold that plaintiff's argument is without merit, because ¶ 3.8.1 of contract § 04230 fails to sufficiently "describe in precise detail the materials to be employed and the manner in which the work is to be performed." Id.

Paragraph 3.8.1 instructed plaintiff's masonry subcontractor to "[d]ry brush exposed concrete masonry unit surfaces at the end of work each day . . . [using] stiff-fiber brushes only." JX AA § 04230, at ¶ 3.8.1. Plaintiff would have this court believe that the meaning of the nondescript term "stiff-fiber brush" was so self-evident as to have afforded the masonry subcontractor no discretion whatever in the selection of a proper brush for the daily masonry cleaning work. Implicit in plaintiff's argument is the dual hypothesis that (1) the contract contemplated that one, and only one, type of "stiff-fiber brush" would be satisfactory; and (2) plaintiff's masonry subcontractor selected and used a brush of this precise stiffness. The absurdity of this hypothesis is manifest, for it is utterly at odds with plaintiff's contention that "the stiffest brush that would not disturb the still soft mortar was used." At trial, plaintiff's Mr. Cooper emphasized that the unhardened mortar joints would have been damaged had a stiffer brush been used for the daily cleaning. Common sense informs us that plaintiff's concern over the risk of damage to the unhardened mortar joints was reasonable. We are constrained to observe, however, that it is the *plaintiff*, and not the *contract*, that specifies "the stiffest brush that would not disturb the still soft mortar." Plaintiff's acknowledgment that it was required to use a brush that was stiff, but not *too* stiff, fatally undermines plaintiff's contention that it lacked any discretion in selecting the proper brush. Thus, plaintiff's attempt, against this background, to characterize ¶ 3.8.1 as a design specification is unavailing.

Plaintiff's interpretation of ¶ 3.8.1 suffers another infirmity insofar as plaintiff overlooks ¶ 3.8, which unconditionally obligates plaintiff to "*completely remove* mortar and grout daubs or splashings from exposed masonry surfaces." JX AA § 04230, at ¶ 3.8 (emphasis added). Here again we are mindful of the principle that "[a]n interpretation which gives reasonable meaning to all parts of a contract is preferred to one which renders part of it insignificant or useless." Blake Constr., 987 F.2d at 747 (citation omitted). Regardless of whether ¶ 3.8.1 concerns "design" or "performance," the court must view the contract in its entirety and give it the meaning imputed to a reasonable and prudent contractor fully acquainted with the circumstances at hand. Blake Constr., 987 F.2d at 746; Western States Constr., 26 Cl. Ct. at 825 (citation omitted). Plaintiff essentially urges the court to read ¶ 3.8.1 as setting an upper limit on the masonry cleaning work demanded by the contract. However, given the purpose and structure of the contract, an interpretation of ¶ 3.8.1 that relieves plaintiff of its obligation under ¶ 3.8 is unwarranted.

It is undisputed that the contract called for ground face masonry unit walls for reasons of visual aesthetics and that the discoloration caused by mortar residue spoils the aesthetic appeal of such walls. Paragraph 3.8's unambiguous directive to "completely remove" mortar residue from masonry walls squarely addresses the problem of mortar-induced discoloration. Indeed, ¶ 3.8 seems the paradigmatic performance specification since (1) it sets forth an objective to be achieved, *i.e.*, masonry walls from which mortar has been completely removed; and (2) it requires plaintiff to achieve that objective by the exercise of ingenuity, *i.e.*, by hand sanding the walls or rubbing them with burlap sacks. See Blake Constr., 987 F.2d at 745. Paragraph 3.8 does not reference and is not made subject to ¶ 3.8.1, but even if

that were so, nothing in ¶ 3.8.1 suggests that daily brushing with a stiff-fibered brush is the *exclusive* means of cleaning mortar from the masonry walls, as plaintiff would have it. If the daily brushing under ¶ 3.8.1 completely discharged plaintiff's masonry cleaning duties, plaintiff would no longer have been required under ¶ 3.8 to "completely remove" any mortar residue that withstood the daily brushing. Since this interpretation would largely sap ¶ 3.8 of its meaning, we conclude that ¶ 3.8.1 is more reasonably construed to establish daily brushing as the minimum, but not the exclusive, requirement for masonry cleaning.

Contract § 09900, ¶ 3.2, lends additional weight to our reading of § 04230, ¶ 3.8. Instructing plaintiff as to its responsibility to prepare the surface of the masonry walls prior to the application of the Tamms coating, ¶ 3.2 unequivocally commands: "*Remove all dirt, splinters, loose particles, grease, oil, and other substances deleterious to coating performance.*" JX AA § 09900, at ¶ 3.2 (emphasis added). Read together, ¶ 3.2 of § 09900 and ¶ 3.8 of § 04230 unquestionably stress plaintiff's obligation to completely clean all foreign material from the ground face masonry unit walls. Against this plain reading of § 09900, ¶ 3.2, plaintiff's arguments to the contrary are unconvincing. Plaintiff's contention, that the mortar-induced discoloration affected only the "appearance" of the coated walls but not the "performance" of the Tamms coating itself, is easily disposed of. It is undisputed that the Navy selected ground face masonry units for use within the EMIC building on the basis of aesthetic appeal and, further, that the Tamms coating was intended to enhance said aesthetic appeal. That the Tamms coating actually amplified the visual impact of the mortar-induced discoloration is undeniable. Photographs of the ground face masonry unit test wall built by the parties establish that the unsightliness of the mortar-induced discoloration was prominent to a casual glance. This compels the conclusion that mortar smears and mortar stains, whichever the case may be, constituted "substances deleterious to coating performance" within the meaning of ¶ 3.2 of § 09900.

Nor does plaintiff find solace in ¶ 3.4.1(a) of § 09900. While it is true that mortar smears and mortar stains are not among the "deleterious substances" listed in ¶ 3.4.1(a), the preponderant focus of ¶ 3.4.1(a) is on the prescription of detailed methods for the removal of certain specified substances.⁽³⁴⁾ Plaintiff tacitly invites the court to construe ¶ 3.4.1(a) according to the maxim of *expressio unius est exclusio alterius*, which instructs that the expression of certain things in a contract provision may infer the intended exclusion of things not expressed. *Black's Law Dictionary* 581 (6th ed. 1990). We reject plaintiff's invitation to so construe ¶ 3.4.1(a), for that would render meaningless ¶ 3.2's unqualified instruction to "[r]emove *all*

. . . substances deleterious to coating performance" from masonry surfaces. JX AA § 09900, at ¶ 3.2 (emphasis added). Paragraph 3.4.1(a) does not purport to set forth an exhaustive compendium of substances that had to be removed from masonry walls prior to applying the relevant surface finish, in this case the Tamms coating. Nothing in ¶ 3.4.1(a) purports to supplant the directive of ¶ 3.2, nor does ¶ 3.2 itself make reference or subject itself to ¶ 3.4.1(a). Consequently, the maxim of *expressio unius* must give way to the interpretive principle that a reading of the contract which gives effect to each of its provisions is to be preferred. *Blake Constr.*, 987 F.2d at 747.

Based on the foregoing analysis, we hold that the complete removal of all mortar residue from the ground face masonry units was a contract requirement and, moreover, that the contract did not designate brushing as the exclusive method of meeting this requirement. It naturally follows that plaintiff is not entitled to recover the costs of hand sanding the masonry walls to cure the discoloration problem.

Finally, even assuming plaintiff correctly interprets the daily brushing requirement of § 04230, ¶ 3.8, as a design specification setting out the exclusive method of masonry cleaning required under the contract, there remains the question of whether the Navy breached its implied warranty of said design

specification.⁽³⁵⁾ It is well settled that the Government impliedly warrants its contractual design specifications. Spearin, 248 U.S. at 136; Blount Bros., 872 F.2d at 1007; Ehlers-Noll, 34 Fed. Cl. at 499. Construing this foundational principle, the Federal Circuit has held that "[i]t necessarily follows that the government also impliedly warrants that the specifications are possible to meet." Blount Bros., 872 F.2d at 1007. Whether the contract's masonry cleaning specifications are impossible or commercially impracticable to perform is a question of fact, not of law, as to which plaintiff bears the burden of proof. Id. (citing Maxwell Dynamometer Co., 386 F.2d 855, 181 Ct. Cl. 607; Ehlers-Noll, 34 Fed. Cl. at 499. On this record, plaintiff has failed to establish two factual predicates of its defective specification claim. First, plaintiff has failed to show that the discoloration in question was attributable not to ordinary mortar smears, but to some form of mortar "stains" that were impervious to brushing. Second, plaintiff has also failed to demonstrate that its daily brushing of the newly-erected masonry walls measured up to the minimum requirements of the contract.

Regarding the classification of the discoloration problem as mortar stains or mortar smears, Mr. Cooper testified, on plaintiff's behalf, that mortar stains were the problem since the discoloration was not on the surface, but within the blocks themselves. Conversely, Mr. Baudhuin and Mr. Sullivan testified for defendant that the discoloration was the result of mortar smears -- surface deposits upon the blocks, in other words -- because it could be completely removed by light sanding. We find the testimony of defendant's witnesses to be the more plausible. Mr. Cooper's assertion that the offending discoloration permeated below the surface of the blocks seems implausible, inasmuch as the discoloration was removable by light hand sanding, a procedure not ordinarily understood to penetrate the surface of the object being cleaned.

As to the adequacy of the daily brushing of the newly-erected walls, plaintiff has failed to carry its burden of proving, by a preponderance of the evidence, that its masonry subcontractor performed the brushing work with customary skill. Plaintiff relies solely upon Mr. Cooper's vague, lay opinion that the unhardened mortar joints would have been disturbed had plaintiff's masonry subcontractor opted for a stiffer brush. Yet plaintiff presented no evidence establishing that its masonry subcontractor had ever tried using a stiffer brush before the Navy voiced its concerns over the appearance of the walls. Nor did plaintiff offer the brush used by its masonry subcontractor for the court's examination. Thus, plaintiff failed to rebut Ms. Ginalski's eyewitness testimony that the masonry subcontractor had used "a soft, like, draftsman-type brush" unsuitable for completely removing all mortar residue. Tr. 1263-64. Moreover, in order to prevail upon a defective contract specification claim, plaintiff "has the burden to prove that it explored and exhausted alternatives before concluding the contract was legally impossible or commercially impracticable to perform." Blount Bros., 872 F.2d at 1007 (citation omitted). Although Mr. Cooper testified that the Navy's Mr. Angeloff tried without success to remove mortar residue from the test wall with a stiffer brush, plaintiff presented no evidence that it made any attempt to remedy the discoloration problem prior to the time the Navy got involved.

Finally, we note that plaintiff ultimately discovered that the discoloration problem could be avoided by rubbing the newly-erected walls with burlap sacks in conjunction with the daily brushing. It is undisputed that walls constructed after the adoption of the burlap sack rubbing method suffered no mortar-induced discoloration. However, plaintiff seeks no extra compensation for the additional work involved in rubbing the masonry walls with burlap sacks. Like hand sanding, burlap sack rubbing was a cleaning method unmentioned by the contract, yet plaintiff fails to articulate why hand sanding should be compensable extra work when burlap sack rubbing is not. Therefore, we view plaintiff's adoption of the burlap sack rubbing method, without an accompanying demand for extra compensation, as a tacit admission that the masonry cleaning procedures previously employed by plaintiff failed to satisfy the requirements of the contract. Plaintiff is not entitled to recover the costs of hand sanding required to rectify its noncompliance with contract specifications and, consequently, Count VI of plaintiff's complaint is dismissed.

V. COUNT XII -- THE SUBSTANTIAL COMPLETION ISSUE

A. *Facts*

Plaintiff's Count XII seeks an award of damages in the sum of \$68,408, representing extended field costs allegedly arising from the Navy's refusal to accept the building upon its substantial completion as of August 9, 1991, plus statutory interest from the date of this claim's submission to the contracting officer. The originally-scheduled contract completion date set by the Navy was September 10, 1991. At trial, the parties stipulated that on June 21, 1990, in response to a six-day employee strike on the project, the completion date was extended to September 16, 1991. In its post-trial brief, defendant asserts for the first time that the contract completion date was later extended another three days, to September 19, 1991. Defendant's belated contention seems to be that its letter of September 13, 1991, *infra*, implicitly granted plaintiff this three-day extension.

By letter dated July 26, 1991, plaintiff requested that the Navy agree to establish substantial completion as of that date. The Navy responded by letter dated July 30, 1991, informing plaintiff that, prior to acceptance, there remained numerous items of work to be completed, various tests to be performed, and a final inspection to be conducted. Among other things, the Navy's letter stated: "The fire protection tests are to be performed and the systems inspected and accepted" and also required the heating, ventilation and air conditioning (HVAC) system to be "complete, tested, and operating per contract." JX BB at 8, ¶¶ 25, 27. The Navy thereafter inspected the fire alarm, automatic sprinkler, and fire pump systems in the building on August 5 and 6, 1991, and reported that several adjustments were required to be made.

By letter dated August 8, 1991, plaintiff stated that the matters raised in the Navy's July 30, 1991 letter had either been completed or would be completed by August 9, 1991. Plaintiff's August 8, 1991 letter further requested that the Navy accept the building on August 9, 1991, "subject to final clean-up and completion of the punch list enclosed." JX 59(a). Accompanying plaintiff's August 8, 1991 letter was plaintiff's updated "punch list," numbering some six pages, of items remaining to be completed. In reply, by letter dated August 9, 1991, the Navy stated that it could not accept the building because the items of work remaining to be completed were too numerous and because the final Navy inspection required under the contract had not occurred.

On this record, the precise date on which the fire suppression system was fully tested, inspected, and accepted as complete by the Navy is uncertain, but it appears that the fire suppression system was not free of defects until mid-September 1991. Plaintiff hand-delivered the requisite testing report for the HVAC system to the Navy on September 11, 1991. By letter of the same date, plaintiff asked the Navy to "advise as to when final acceptance will be scheduled" and requested a response by September 12, 1991. On September 13, 1991, plaintiff delivered to the Navy another letter stating that, due to lack of response from the Navy, the plaintiff was ceasing work and demobilizing from the site that day. Responding by letter dated September 13, 1991, the Navy informed plaintiff that a "usable completion inspection" was tentatively scheduled for September 19, 1991. The Navy accepted the building on September 19, 1991.

Thereafter, by letter dated January 20, 1992, plaintiff submitted its certified claim to the Navy's contracting officer, seeking an equitable adjustment in the sum of \$68,408.⁽³⁶⁾ The contracting officer's final decision dated July 21, 1993, denied said claim in its entirety.

B. *Contentions of the Parties*

1. *Plaintiff*

Plaintiff contends that the Navy should have accepted the building as substantially complete on August 9, 1991, and that it was unreasonable for the Navy to delay acceptance until September 19, 1991. This conclusion turns upon the building's state of completion as of August 9, 1991, and whether the building's then condition was consistent with the Navy's intentions for using the building in the weeks immediately following the conclusion of plaintiff's work. As to the building's state of completion on August 9, 1991, plaintiff concedes that -- (i) the fire suppression system was not 100% complete; (ii) three out of 18 air handlers in the HVAC system were not functional; and (iii) the building otherwise suffered "minor architectural deficiencies (scratches and paint daubs)." However, plaintiff contends that the fire suppression system was operative as of August 9, 1991, and stresses that the Navy's own report from its inspection of August 5 and 6, 1991, indicated that only one smoke detector (of two such detectors in one room) of all the smoke detectors in the entire building was inoperative. Concerning the HVAC system, plaintiff avers that a design defect, as opposed to faulty installation by plaintiff or its subcontractors, caused the three air handlers in question to malfunction and that the consequences of this design defect were chargeable to the Navy. Finally, plaintiff contends that all of the work remaining to be performed as of August 9, 1991, constituted immaterial "punch list" items. Plaintiff intimates that its punch list dated August 7, 1991 (JX 59(b)-(g)) was not, at six pages, so excessive as to bar substantial completion inasmuch as defendant's own final punch list (DX 8) prepared when defendant accepted the building on September 19, 1991, also numbered six pages.

Regarding the Navy's intentions for using the building following the substantial completion, plaintiff argues that defects existing as of August 9, 1991, threatened no interference with the building's intended function at that time. Plaintiff maintains that the Navy's intention was not to immediately open and operate the EMIC school, but rather, to allow independent "follow on" contractors access to the facility in order to perform additional construction and other work preparatory to the school's ultimate opening. In support of this contention, plaintiff asserts that at trial Commander James Stephenson, the Navy's resident officer in charge of construction,⁽³⁷⁾ verified the existence of the "follow on" contracts and admitted that the Navy did not begin to use the building as a school for at least 30 days after the Navy accepted the building on September 19, 1991. Since "follow on" contractors, rather than Navy students, instructors, and staff, were the immediate occupants and users of the building, plaintiff argues for a more lenient than usual standard of substantial completion. Plaintiff's claim, in short, is that the building could tolerably function as a construction site as of August 9, 1991, despite the fact that the fire suppression and HVAC systems were not 100% operative and various punch list items remained to be completed.

Based upon the foregoing allegations, plaintiff urges that the Navy was bound by an implied contractual duty of good faith and fair dealing, and further contends that the Navy failed to carry its burden of proving it acted reasonably when it refused to accept the building as substantially complete on August 9, 1991. Thus, the Navy's actions "amounted to bad faith," plaintiff submits, because the Navy "forced" plaintiff to incur certain costs beyond those costs that a contractor normally incurs after substantial completion of a construction project. First, plaintiff would not have been required to pay for utilities in order to operate the building's air conditioning for the comfort of the Navy's "follow on" contractors during the period from August 9 through September 19, 1991. Second, plaintiff would not have been required to keep its CQC Representative, its field superintendent, its labor foreman, its field secretary, and its field office on site during the same period, when the only work remaining consisted of mere punch list work.

2. Defendant

Defendant contends, principally, that BCC is not entitled to recover overhead costs attributable to the Navy's refusal to accept and occupy the building on August 9, 1991, on the ground that the building was not "substantially complete" until September 19, 1991, the date on which the Navy finally accepted the building. According to defendant, a building must be able to function for its intended purpose for it to be substantially complete. Standing alone, a deficiency in either the fire suppression system or the HVAC

system would have been of sufficient magnitude, defendant avers, to reasonably justify the Navy from accepting the building as substantially complete.

Defendant further argues, reasonably it seems, that a building ready for use must have a fully tested and working fire suppression system, in compliance with relevant building codes, in order to safeguard the lives of personnel who occupy and utilize the building, as well as to avoid negligence liability for allowing personnel to occupy a building without a fully functional fire suppression system. In addition, defendant maintains that a fully complete fire suppression system was necessary to ensure the protection of very sensitive and expensive Navy training equipment from destruction by fire. According to defendant, the fire suppression system was not completely installed nor inspected until the middle of September 1991.

Moreover, defendant contends that a fully tested and operational HVAC system, in compliance with relevant building codes, is likewise essential to the building's proper function, because it provides sufficient fresh air to allow people to function normally in the building, and maintains the internal air temperature at a level necessary to the operation of certain sensitive equipment. Because three of the 18 air handling units were not yet operating to specifications, defendant avers, the system was neither complete, tested, nor operating as of August 9, 1991. Moreover, even if the HVAC system had been complete as of August 9, 1991, the Navy could not have ascertained whether the system would function properly without the requisite testing and balancing required under the contract. Defendant pointedly observes that BCC did not forward the final testing and balancing reports for the HVAC system to the Navy until September 11, 1991.

Concerning plaintiff's assertion that the building's intended function as of August 9, 1991, was limited solely to the use of the premises by the Navy's "follow on" contractors, defendant responds that the Navy contracted for a fully complete EMIC school, not a construction site suitable only for use by "follow on" contractors. Defendant emphasizes the clarity of the contract on this point: "It is the declared and acknowledged intention and meaning to provide and secure an Electricians Mate/Interior Communication School, complete and ready for use." JX AA § 01010-1, ¶ 1. In addition, defendant maintains that Mr. Leland J. Scherkenbach admitted at trial that the building's intended use was as an EMIC school, and that fully functional fire suppression and HVAC systems were important to the building's use. Lastly, defendant maintains that plaintiff "has completely failed to produce any evidence whatsoever" about the alleged "follow on" contracts.⁽³⁸⁾

C. Discussion

Substantial completion, commonly known also as substantial performance, is a legal standard of contractual performance applied most frequently in cases involving construction contracts. See Franklin E. Penny Co. v. United States, 207 Ct. Cl. 842, 856, 524 F.2d 668 (1975) ("Building and construction contracts offer the most frequent examples of [the] application [of the doctrine of substantial performance]."). Explicating the elements of a legally cognizable claim of substantial performance, the Court of Claims stated: "The essence of the doctrine is to prevent forfeiture, and the test of forfeiture usually is that the owner's requirement, if followed, would amount to economic waste." H.L.C. & Assocs. Constr. Co. v. United States, 176 Ct. Cl. 285, 309, 367 F.2d 586 (1966) (per curiam). Forfeiture and economic waste are threatened where the building's value and utility to the owner will not be materially enhanced by forcing the builder to rectify a trivial defect at great cost for the sake of strict compliance with contract specifications.⁽³⁹⁾ Thus, substantial performance must be in all material respects "tantamount (in the particular circumstances) to full compliance," lest the owner suffer the loss of its bargain. H.L.C. & Assocs., 176 Ct. Cl. at 310. In this respect, the Court of Claims explained that:

Admittedly, the purpose of the substantial performance doctrine is to avoid the harshness of a forfeiture. By the same token, however, the doctrine should not be carried to the point where the non-defaulting party is compelled to accept a measure of performance substantially less than had been bargained for. Substantial performance "is never properly invoked unless the promisee has obtained to all intents and purposes all benefits which he reasonably anticipated receiving under the contract."

Franklin E. Penny Co., 207 Ct. Cl. at 857-58 (quoting In re Kinney Aluminum Co., 78 F.Supp. 565, 568 (S.D. Cal. 1948)), followed in M.C. & D. Capital Corp. v. United States, 948 F.2d 1251, 1256 (Fed. Cir. 1991). With these manifestly sensible principles in mind, we hold that plaintiff's substantial performance claim is fatally flawed on two grounds.

First, substantial performance, as traditionally understood, is an equitable doctrine that shields a contracting party "against forfeiture in situations where [the] party's contract performance departs in minor respects from that which had been promised." Franklin E. Penny Co., 207 Ct. Cl. at 856. In the usual case, the building contractor "asserts the right to payment on the ground that he has completed his performance, while the [owner] refuses to pay on the ground that there is an uncured material failure of performance." Restatement (Second) of Contracts § 237 cmt. d (1979) (emphasis added). Absent an express condition mandating full performance, substantial performance entitles the contractor to the unpaid balance of the contract price, and the owner has a claim only for damages. H.L.C. & Assocs., 176 Ct. Cl. at 309; Rest. 2d Contracts ¶ 237 cmt. d. In the present case, though, plaintiff seeks to invoke substantial performance not in its orthodox sense, as an equitable shield against forfeiture, but rather, as a sword aimed to compel the Navy's acceptance of the building as of August 9, 1991. Plaintiff alleges no credible threat of forfeiture. On the contrary, plaintiff was paid the contract price in full and now raises substantial performance to justify its demand for additional compensation.

Therefore, as a matter of law, we conclude that the doctrine of substantial performance is inapposite. Faced with a similar demand, the Court of Claims observed: "In the present case, the contractor has received the contract price in full. No case has been cited, and we have found none, wherein a contractor has been allowed payment in addition to the contract price on the basis of alleged substantial performance." H.L.C. & Assocs., 176 Ct. Cl. at 309. This court likewise declines plaintiff's invitation to apply the doctrine of substantial performance in such unprecedented fashion.

Second, and more importantly, at trial plaintiff utterly failed to carry its burden of proving that its contract had been substantially performed as of August 9, 1991. Plaintiff correctly observes that the determination of whether the building was then substantially complete presents a question of fact. See Thoen v. United States, 765 F.2d 1110, 1115 (Fed. Cir. 1985). We also acknowledge the truthfulness of plaintiff's contention that, by definition, substantial completion need not, and ordinarily does not, amount to total completion. However, plaintiff underestimates the strength of the evidentiary showing required to satisfy the test of substantial performance. Explaining the nature of the substantial performance inquiry, Professor Corbin wrote:

In each case the answer will depend in large measure upon the character and extent of the partial failure -- upon its relative importance to the party affected by it. In all alike we need to know whether the failure is "substantial" or unsubstantial. The ratio between the part that is not performed and the full performance promised varies with the case.

3A Corbin on Contracts § 700 (1960), quoted with approval in Thoen, 765 F.2d at 1115. Thus, in order to determine whether substantial performance had taken place as of August 9, 1991, we must "consider (1) the quantity of work remaining to be done; and (2) the extent to which the project was capable of adequately serving its intended purpose." Electrical Enterprises, Inc., IBCA No. 972-9-72, 74-1 BCA (CCH) ¶ 10,400 at 49,119 (1973). This we cannot do on the basis of the record before us.

At trial, plaintiff failed to quantify the work remaining to be done as of August 9, 1991, and to establish how this uncompleted work stood in proportion to the entirety of the work due the Navy under the contract. Any number of objective measures exist by which a building's degree of completion may be stated. For example, plaintiff might have introduced evidence concerning the proportion of the contract price that had been earned as of August 9, 1991. See Reliance Ins. Co. v. United States, 15 Cl. Ct. 62, 70 (1988) (substantial completion where contractor had earned roughly 99.6% of contract price as of date at issue). Similarly, plaintiff might have introduced evidence of the remaining costs or manhours necessary to complete the building as of August 9, 1991, and demonstrated the relation of these figures to the total costs or manhours, as the case may be, incurred for the project as a whole. Yet plaintiff merely presented its own Mr. Scherkenbach's conclusory testimony to the effect that the deficiencies in the work as of August 9, 1991, were so minor as to have posed no impediment to the Navy's acceptance and occupancy of the building, and several letters sent by plaintiff to the Navy during the time period in dispute that made equally conclusory assertions to the same effect. None of plaintiff's evidence quantified the building's degree of completion as of August 9, 1991, according to any reasonably objective measure. (40)

More importantly, plaintiff also failed to establish the extent to which the building was capable of serving its intended purpose as of August 9, 1991. There is absolutely nothing creditable in the record from which we can infer whether the operating capabilities of the fire suppression and HVAC systems as of August 9, 1991, measured up against the engineered operating capabilities of these systems when 100% complete. In this regard, Haas & Haynie Corp., GSBCA No. 5530, 84-2 BCA (CCH) ¶ 17,446 at 86,897-98 (1984), is instructive. Therein, the General Services Administration Board of Contract Appeals found that a building was not substantially complete as of the time when, among other things, the HVAC system was suffering frequent breakdowns and the fire alarm system had not been installed and tested. The HVAC system in Haas & Haynie suffered problems similar to the three air handlers at issue here, for two of the supply fans were delivering only 66% and 68.9% of fan design CFM, respectively. Id. at 86,896. However, unlike the contractor in Haas & Haynie, plaintiff here has not even suggested a percentage of design air flow at which the three malfunctioning air handlers were operating as of August 9, 1991.

The failure of plaintiff's proof is manifestly clear when measured against the standard of performance set out in the contract. Concerning final inspection and acceptance of the work generally, the contract states:

Completion and Inspection of Work: Prior to final Government inspection and acceptance under the Contract Clause "Inspection of Construction," the Contractor shall submit a certification, signed by the CQC representative, to the Contracting Officer that all work has been inspected, and that all work except as specifically noted is complete and in compliance with the contract plans and specifications.

JX AA § 01400, ¶ 2.1.4. Incorporated into the contract by reference here, and by reference in the bid solicitation package as well, JX AA at p. 2, the Inspection of Construction clause of the Federal Acquisition Regulations (FAR) provides in relevant part:

(b) . . . All work shall be conducted under the general direction of the Contracting Officer and is subject to Government inspection and test at all places and at all reasonable times before acceptance *to ensure strict compliance with the terms of the contract.*

. . . .

(f) The Contractor shall, *without charge*, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government *consents to accept the*

work with an appropriate adjustment in contract price. . . .

. . . .

(i) Unless otherwise specified in the contract, the Government shall accept, *as promptly as practicable after completion and inspection*, all work required by the contract *or that portion of the work the Contracting Officer determines can be accepted separately. . . .*

48 C.F.R. § 52.246-12 (1988) (emphasis added). Several points relevant to the case at bar emerge from our reading of these general contract provisions. First, inspection and testing of the fire suppression and HVAC systems was intended "to ensure strict compliance with the terms of the contract." 48 C.F.R. § 52.246-12(b). Second, plaintiff was obliged to correct all defective work at no additional cost to the Navy, unless the Navy consented to accept the fire suppression and HVAC systems in defective condition but "with an appropriate adjustment in contract price." 48 C.F.R. § 52.246-12(f). Third, the Navy's obligation to accept the work "as promptly as practicable" could not arise until "*after completion and inspection*" of the fire suppression and HVAC systems. 48 C.F.R. § 52.246-12(i) (emphasis added). Fourth, the Contracting Officer possessed general discretionary authority to accept any portion of the work separately from other incomplete work. 48 C.F.R. § 52.246-12(i).

The first three points all militate in favor of the conclusion that the contract required the fire suppression and HVAC systems to be fully tested and functional, as opposed to substantially complete, before these systems would be accepted by the Navy. Only the fourth point favors plaintiff's position to any degree, insofar as the Contracting Officer might conceivably have determined that partial acceptance of the fire suppression and HVAC systems was appropriate on August 9, 1991, notwithstanding the presence of defects. Even so, certain provisions of the contract that speak directly to the fire suppression and HVAC systems add *specific* constraints upon the Contracting Officer's general discretion to partially accept these systems pursuant to 48 C.F.R. § 52.246-12(i). For example, concerning acceptance of the fire pump system, the contract provides, inter alia:

The Northern Division, Naval Facilities Engineering Command, Fire Protection Engineer will witness formal tests and approve all systems *before they are accepted. . . .* At this inspection repeat the required tests as directed. Correct defects in the work provided by the Contractor, and make additional tests *until the Contractor has demonstrated that the system complies with the contract requirements.*

JX AA § 15320, at ¶ 3.7.3 (emphasis added). It is readily apparent that the Fire Protection Engineer's approval *after* formal testing was a prerequisite to the Navy's acceptance of the fire pump system. No language constrains the Fire Protection Engineer's authority to reject nonconforming work. Nor does the contract specify situations in which the Fire Protection Engineer is authorized to waive strict compliance with the contractual specifications for the fire pump system. Moreover, it is manifestly clear that plaintiff was obligated to demonstrate the adequacy of the fire pump system to the satisfaction of the Fire Protection Engineer, and to perform corrective work if need be, prior to final acceptance of the system. These conclusions apply with equal force to the contract provisions governing the testing and approval of the fire extinguishing sprinkler system, the fire alarm system, and the fire detection system.

In short, the foregoing contract provisions expressly conditioned the Navy's acceptance of the fire suppression system upon plaintiff's demonstration that the fire suppression system was *fully* tested and functional. Accordingly, we refuse to hold that the Navy was required to accept a fire suppression system that was merely substantially complete, because that would violate the cardinal principle that a contract must be construed as a whole, so as to give reasonable effect to all of its provisions. Julius Goldman's Egg City, 697 F.2d 1051; Fortec Constructors, 760 F.2d at 1292; Blake Constr., 987 F.2d at

Turning to the HVAC system, the contract devotes 20 pages to specifications for final testing, adjusting, and balancing (TAB) of the completed system, thereby suggesting the importance of these procedures. Final testing of several major HVAC subsystems and hence, by necessary implication, final testing of the HVAC system in its entirety, is expressly conditioned upon completion of the TAB work. The TAB work was to be performed by an independent "TAB agency" possessing the requisite specialized expertise. However, plaintiff retained ultimate responsibility for ensuring compliance with the contract specifications for TAB work. Two certified TAB reports, one for summertime and the other for wintertime, comprise the end product of the TAB work. Authority to approve the TAB reports was vested in the Contracting Officer. Consequently, for purposes of determining the time at which testing of the HVAC system was complete, the pivotal event was the Contracting Officer's approval of the certified TAB reports submitted by plaintiff.

However, whether the contract conditions the Contracting Officer's *acceptance* of the HVAC system upon fully successful system testing presents a somewhat closer question than in the case of the fire suppression system. Unlike the corresponding contract provisions pertinent to the fire suppression system, *supra*, there are no contract provisions that set forth concisely a conditional relationship between testing and acceptance of the HVAC system. Yet, by necessary implication, we arrive at the same conclusion. As with the fire suppression system, the contract provisions governing the HVAC system place no express constraints on the Contracting Officer's authority to reject nonconforming work and specify no circumstances in which the Contracting Officer may waive strict compliance with the contract specifications. Regarding plaintiff's responsibility to correct defects in the HVAC system before final testing was complete, the contract provides that plaintiff is unconditionally responsible for (1) the correction of installation defects; (2) TAB rework until all HVAC system measurements were brought into tolerance with the contract specifications; and (3) the updating and correction of the certified TAB reports to the extent that said rework altered data relating to the HVAC system's conformity with specifications. Again, the doctrine of substantial completion cannot be hospitably applied so as to rob these contract provisions of their effect.

Plaintiff's contention that the three air handlers in question malfunctioned as a result of a design defect likewise must be rejected. Although the contract is ambiguous regarding which party is to bear the cost of work required to correct HVAC equipment design defects, plaintiff is not entitled to construe this ambiguity against defendant under the doctrine of *contra proferentum* because, on this record, plaintiff has failed to factually prove the existence of a design defect. Plaintiff's unavailing effort to establish that the three malfunctioning air handlers suffered a design defect relies solely upon the Mr. Scherkenbach's bland testimony to the effect that there "was a problem with reaching design air flow." Tr. 359.

On the whole, Mr. Scherkenbach's testimony establishes the *effect* of the problem with the three air handlers -- namely, air flow failing to attain design specifications. However, plaintiff's evidentiary showing fails to establish that a design defect was in fact the *cause* of the problem. While Mr. Scherkenbach testified that the Navy issued a modification to change the ductwork on one of the three ailing units, there is no documentary evidence in the record that the Navy issued said modification. Assuredly, Plaintiff's Exhibit 123B, admitted into evidence, modified the contract by authorizing plaintiff to "[i]ninstall extended cap on plenum duct of air handling unit No. 13," but the court is unpersuaded that air handler No. 13 was among the three units that were malfunctioning as of August 9, 1991, since multiple documents in the record consistently identify those three air handlers as Numbers 3, 12, and 15. Plaintiff offered no modifications or change orders relating to air handlers Nos. 3, 12, and 15 into evidence. Nor has plaintiff attempted to link the modification of air handler No. 13 with the problems which plagued air handlers Nos. 3, 12, and 15. Moreover, plaintiff has not shown why a

purported "design defect" would manifest itself in but three out of 18 air handlers in the building.⁽⁴¹⁾

Finally, Mr. Scherkenbach's testimony that the problems with two of the malfunctioning air handlers were "resolve[d] by *adjusting* the sheaves and pulleys and the fan," Tr. at 360 (emphasis added), places the correction of the problem squarely within the ambit of the TAB work which, by definition, constitutes "testing, *adjusting* and balancing" of the HVAC system. JX AA § 15996, at ¶ 1.3(a) (emphasis added). Even if we generously assumed that certain parts had to be not merely adjusted but replaced altogether with different parts, nothing in this record suggests whether this substitution would have been sufficiently material so as to constitute a design change. Hence, we are unable to conclude with any degree of confidence that plaintiff has proven that the three air handlers suffered design defects by the required preponderance of the evidence.

To briefly recap the foregoing discussion of the law of substantial performance and its application to this case, we reiterate that plaintiff's burden is to demonstrate that strict enforcement of the contract specifications governing the fire suppression and HVAC systems would present "the requisite ingredients for the test of substantial performance -- forfeiture and economic waste." *H.L.C. & Assocs.*, 176 Ct. Cl. at 309. Forfeiture as traditionally understood is not a credible threat, for plaintiff has been paid the contract price in full, and we are aware of no precedents authorizing this court to further compensate plaintiff on the basis of alleged substantial performance. *Id.* Moreover, from our determination that the Navy agreed to accept fully tested and functional fire suppression and HVAC systems, and nothing less, it necessarily follows that economic waste will not result if we sustain the Navy's contractual right to reject incomplete fire suppression and HVAC systems. The Navy's insistence that plaintiff correct the defects in said systems would have resulted in economic waste only if plaintiff's prior performance had departed in no more than "minor respects from that which had been promised." *Franklin E. Penny Co.*, 207 Ct.Cl. at 856. What plaintiff promised was the installation of fire suppression and HVAC systems, fully tested and functional, and the Navy could not, on August 9, 1991, be "compelled to accept a measure of performance fundamentally less than had been bargained for." *Id.* at 858.

There remains the question of whether the deficiencies in the fire suppression and HVAC systems as of August 9, 1991, not to mention the numerous "punch list" items awaiting completion at that time, were a material impediment to the intended function of the building *in its entirety*.⁽⁴²⁾ Although the Navy could rightfully decline to accept incomplete fire suppression and HVAC systems, the contract does not expressly condition acceptance of the *building* upon plaintiff's full performance of the contract. Rather, the contract merely provides that, prior to the Navy's final inspection and acceptance, plaintiff must submit the CQC Representative's signed certification "that all work has been inspected, and that all work *except as specifically noted* is complete and in compliance with the contract plans and specifications." JX AA § 01400, at ¶ 2.1.4 (emphasis added). The qualifying phrase "except as specifically noted" is consistent with acceptance upon substantial completion, as is the Inspection of Construction clause itself, which plainly authorizes partial acceptance of whatever "portion of the work the Contracting Officer determines can be accepted separately." 48 C.F.R. § 52.246-12(i). Thus, the Navy *could* have accepted the building as substantially complete as of August 9, 1991, subject, of course, to the understanding that plaintiff would thereafter complete all necessary corrective work.

Whether acceptance was *warranted* as of August 9, 1991, on the ground that the building as a whole was capable of serving its intended function, is another question, as to which plaintiff has failed to carry its burden of proof.⁽⁴³⁾ At trial and in its post-trial submissions, plaintiff has been utterly unresponsive to defendant's concerns regarding the inability of the partially dysfunctional fire suppression and HVAC systems to provide a safe, habitable working environment for Navy personnel and equipment within the building. As the Federal Circuit noted in a similar context: "These were important requirements for the

government, and [the contractor's] inability or failure to satisfy them [is] inconsistent with its present claim that [its work] constituted substantial performance of the contract." M.C. & D. Capital, 948 F.2d at 1256. In M.C. & D. Capital, a finding of substantial completion was prevented by the contractor's failure to (i) employ a manufacturer-certified roofing subcontractor; and (ii) provide the roofing manufacturer's standard 10-year warranty. Id. Without denigrating the importance of the paperwork found lacking in M.C. & D. Capital, it does not strain credulity to conclude in the present case that the deficiencies in the fire suppression and HVAC systems presented far weightier obstacles to substantial completion.

Rather than address the safety and habitability concerns raised by the Navy, plaintiff strives to circumvent these issues with the allegation that, as of August 9, 1991, the building needed to be suitable only for occupancy by "follow on" contractors. Plaintiff never explicated why said "follow on" contractors were not entitled to work in a building with a fully functional fire suppression system. Although plaintiff contends that said "follow on" contractors were installing equipment in preparation for the EMIC school's opening, plaintiff never rebutted defendant's contention that said equipment required an HVAC system capable of maintaining consistent internal temperatures within the building. For that matter, plaintiff failed to present any credible evidence concerning the identity of the purported "follow on" contractors or the work they allegedly performed. Consequently, even assuming that "follow on" contractors were the intended initial occupants of the EMIC building, plaintiff has failed to demonstrate why that circumstance should have affected the timing of the Navy's acceptance of the building.⁽⁴⁴⁾

In conclusion, we hold that plaintiff has failed to prove by a preponderance of the evidence that the building was substantially complete as of August 9, 1991. Furthermore, the record before the court supplies no basis for concluding that substantial completion took place on any date falling between August 9, 1991, and September 19, 1991, the date on which the Navy accepted and occupied the building. Rather than engage in conjecture, we find that the EMIC building was substantially complete on September 19, 1991.

VI. COUNT XV - THE SUBTERRANEAN CONCRETE REMOVAL ISSUE;

COUNT XVI -- THE ASBESTOS ABATEMENT ISSUE

A. *Facts*

Count XV of plaintiff's complaint seeks an award of damages in the sum of \$45,677, plus statutory interest from the date of this claim's submission to the contracting officer, for overhead costs associated with a 27-day construction delay alleged to have resulted from the removal of certain subterranean concrete (i.e., differing site condition) encountered while excavating for the building foundation. Additionally, Count XVI of plaintiff's complaint seeks an award of damages in the amount of \$20,301, plus statutory interest from the date of this claim's submission to the contracting officer, for overhead costs relating to an alleged 12-day delay in the excavation of a utility tunnel in the basement area of the building.

Most of the operative facts underlying Count XV are not in dispute, since the parties are in agreement that plaintiff encountered differing site conditions while excavating for the building's foundation. Specifically, BCC began said excavations on March 6, 1990. Below grade, plaintiff encountered an unexpectedly large quantity of concrete in the parking lot and basement areas of the project.⁽⁴⁵⁾

The parties have stipulated that plaintiff was ahead of schedule when this differing site condition was

discovered. Pursuant to unilateral contract modifications P0002 and P0009, the Navy paid BCC in the amount of \$38,806 for the direct costs of the removal of said excess concrete. These modifications did not, however, extend the scheduled project completion date of September 16, 1991.

As with Count XV, most of the operative facts surrounding Count XVI are also undisputed. On April 26, 1990, during excavation for the new water line in the utility tunnel portion of the basement, BCC uncovered an abandoned asbestos-covered steam line and concrete steam vault. In accordance with the requirements of the contract, plaintiff immediately notified the Navy of this discovery. The contract provided that the Navy had 14 days to deal with asbestos problems. After analyzing samples of the material in question, *i.e.*, determining that it was in fact asbestos, and suspending work in the tunnel and vault areas, the Navy removed the asbestos-covered pipe on May 2, 1990. Plaintiff remobilized its work force and resumed excavation in the area on March 7, 1990. Despite the temporary suspension of work in the location of the asbestos-covered steam line, plaintiff continued work in other areas of the project during the period from April 26 through May 7, 1990. In addition, plaintiff continued work on the exterior water distribution system and on the utility tunnel during the period from April 26 through May 7, 1990. However, certain other items of work that were unaffected by the removal of the asbestos-covered steam line, but which had to be performed prior to the completion of the utility tunnel, remained unfinished several weeks after the steam line was removed.

By letter dated December 8, 1991, plaintiff demanded \$45,677 in field overhead costs allegedly resulting from delays caused by the removal of the excess subterranean concrete, as well as a 27-day extension of the contract's scheduled completion date. In another letter dated December 8, 1991, plaintiff claimed \$20,301 of additional field overhead costs allegedly relating to the asbestos abatement delay, as well as another 12-day time extension. Both of plaintiff's claims were denied in their entirety by the contracting officer's final decision dated July 21, 1993.

Since the controversies in Counts XV and XVI hinge upon the extent of the alleged performance delays, plaintiff's use of the critical path method (CPM)⁽⁴⁶⁾ for project scheduling and administration bears consideration. Because plaintiff was required to use CPM in coordinating the multitude of tasks that had to be completed in order to construct the EMIC facility, plaintiff had to submit various CPM documentation for the Navy's review and approval. Within 40 days after receipt of the Navy's notice to proceed on the project, plaintiff was required to submit CPM network diagrams and the network mathematical analysis to the Navy. Conceptually, the purpose of the CPM network diagram is to visually "show how the start of a given activity is dependent on the completion of preceding activities and how its completion restricts the start of following activities." JX AA § 01013, ¶ 2.1.1. Such activities include construction activities, submittals and approvals of materials and shop drawings, the procurement of critical materials and equipment, inspections, and the like. The extensive detail and complexity of the network diagram is demonstrated by the requirement that a minimum of 1,000 activities be included, with not more than 25% of said activities on the critical path.

For each activity shown on the network diagrams, the network mathematical analysis had to list, in tabular format, information concerning at least 15 variables, such as the monetary value, the manpower required, and projected and actual start and finish dates. In addition, the contract required plaintiff's mathematical analyses to present this activity-related information in several formats, each of which sorted the information according a different variable. Of the 15 variables accounted for in the mathematical analysis, the most critical for present purposes is "total float." The "total float" for a given activity "represents the amount of scheduling discretion or flexibility that may be available for that activity before total project duration will be adversely affected." Richard J. Bednar et al., *Construction Contracting* 663 (1991). Particularly significant for CPM purposes is the concept that "activities with a 'total float' value of zero are 'critical'; they can absorb no movement, either by deferred start or extended

duration, without affecting project completion." *Id.* at 665. Thus, it is undisputed that the critical path to completion of the EMIC project should be, in principle, defined by the sequence of those activities for which plaintiff's mathematical analyses display zero float.⁽⁴⁷⁾

Following the Navy's review and approval of the proposed CPM network diagrams and mathematical analysis, the contract required that plaintiff use the approved CPM work schedule "for planning, organizing, and directing the work, reporting progress, and requesting payment for work accomplished." JX AA § 01013, at ¶ 2.2.3. Plaintiff was thereafter obligated to notify the Navy of any changes in methods of operating and scheduling, and to revise the CPM network diagram and mathematical analysis at no cost to the Navy if the contracting officer determined that said changes were of a major nature. Moreover, plaintiff was required to "submit at monthly intervals a report of the actual construction progress by updating the mathematical analysis." *Id.* at ¶ 2.2.4. Finally, the contract provided that whenever a change in the work became necessary, plaintiff was required to submit revisions to the network diagram of all activities affected by the change.

Under Count XV, in support of the 27-day delay allegedly caused by the subterranean concrete removal problem, plaintiff submitted two separate CPM network mathematical analyses: (i) the original CPM schedule (Run #22); and (ii) an updated CPM schedule (Run #58) allegedly depicting the critical path after the excess subterranean concrete had been removed. Plaintiff produced another pair of updated mathematical analyses, Run #61 and Run #62, in support of the 12-day delay allegedly caused by the asbestos abatement problem in Count XVI. Additionally, plaintiff presented a CPM network diagram dated February 19, 1990, which indicated that it had been revised on five subsequent occasions. Dates relating to plaintiff's preparation of the aforesaid CPM mathematical analyses follow.

Print Date Data Date

Count XV:

Run #22 February 28, 1990 January 3, 1990

Run #58 October 5, 1991 January 3, 1990

Count XVI:

Run #61 October 5, 1991 April 9, 1990

Run #62 October 4, 1991 April 9, 1990

PX 135(e), 139(e) and (f). However, the precise dates of the Navy's actual receipt of these CPM schedules and corresponding revisions to the CPM network diagram are disputed.

B. Contentions of the Parties

1. Plaintiff

Plaintiff's principal contention is, necessarily, that the excavation work for the building foundation (Count XV) and the work interrupted by the discovery of the asbestos condition (Count XVI) were both on the critical path of the EMIC project. As to Count XV, plaintiff asserts that the foundation excavation had to be interrupted while machinery was brought in to break up and haul away the excess subterranean concrete. Since excavation is the first major activity undertaken on the project, plaintiff reasons, it had to be on the critical path. Plaintiff directs the court to its CPM Run #22, which indicates zero total float for

activity "Excavate for Basement." Consequently, it argues, had it not taken 27 days to remove the excess subterranean concrete, it would have completed the EMIC project 27 days earlier than the project was actually completed. Here, plaintiff calls the court's attention to its CPM Run #58, which indicates minus 19 days total float for activity "Excavate for Basement," suggesting that said excavation activity was 19 work days, or 27 calendar days, behind schedule after the excess subterranean concrete was removed.

Regarding Count XVI, plaintiff claims that it did not know the Navy would complete its asbestos removal work by Wednesday, May 2, 1990, six days after the asbestos problem was discovered. As a result, plaintiff argues, the excavation field crews could not be re-mobilized until the following Monday, May 7, 1991. According to plaintiff, the excavation for the utility tunnel was on the critical path because (i) this activity had seven days of float when the asbestos-covered pipe was encountered; (ii) this was the least amount of float associated with any activity at that posture; and (iii) at that time, the project was seven days ahead of schedule. Plaintiff contends that, had 12 days of asbestos-related delay not occurred, it would have finished the project 12 days earlier than the project's actual completion date.⁽⁴⁸⁾ In support of this contention, plaintiff relies upon its CPM Run #62, which indicates that the excavation for the utility tunnel had a total float of minus one day, suggesting that the project was eight work days, or 12 calendar days, when the asbestos-related work interruption ended.

As it must, plaintiff argues at great length that its CPM network diagram and mathematical analyses are accurate and in material conformity with the requirements of the contract. It would be burdensome and pointless at this juncture to recite plaintiff's multifarious contentions in this regard. Suffice it to say that plaintiff's case in Counts XV and XVI turns upon the probative weight of said CPM submissions and upon the credibility of the testimony given by Mr. Pieroni, the preparer of the CPM mathematical analyses.

2. Defendant

Defendant responds generally that plaintiff has not carried its burden of proving by a preponderance of the evidence that the delays alleged in Counts XV and XVI were compensable delays. In defendant's view, plaintiff's CPM submissions and Mr. Pieroni's testimony fail to prove: (i) the extent of said delays; (ii) the extent, if any, to which said delays were unreasonable; and (iii) that said delays were caused solely by the Navy's actions or inaction. Taking issue with plaintiff's assertions regarding the conformity of its CPM submissions with contract requirements, defendant supplies numerous reasons of its own why plaintiff's CPM submissions did not comply with the requirements of the contract. Among other things, defendant avers that plaintiff's CPM mathematical analyses never included all of the variables and sorts required by the contract, and that plaintiff never properly updated its CPM documentation to reflect changes in construction progress and job site conditions. Moreover, defendant points out that plaintiff only introduced one of the four pages of the CPM network diagram into evidence. Without this information, defendant strenuously maintains that there is no way to consistently determine which activities were truly on the critical path. Defendant also assails the internal logic of plaintiff's CPM mathematical analyses by pointing out inconsistencies with the CPM network diagram. In addition, defendant cites plaintiff's failure to explain why the amount of float and items on the critical path change from one analysis to another.

Apart from the flaws in plaintiff's CPM submissions, defendant argues that plaintiff is not entitled to recover field and home office overhead relating to the alleged delays, because plaintiff has not shown that the EMIC project was delayed beyond its scheduled completion date. Defendant asserts that plaintiff's CPM submissions never indicated a project completion date earlier than September 10, 1991, which was the date of completion originally scheduled under the contract.⁽⁴⁹⁾ Since plaintiff has not proven that it intended, and had the ability, to finish the project early, but for the alleged delays, defendant maintains that plaintiff recouped the overhead costs in question as part of the contract price

originally bargained for.

Concerning solely Count XVI, defendant contends that the contract grants the Navy 14 days to address any asbestos problems that might arise. Given such notice, defendant submits, plaintiff should have factored the possibility of asbestos-related delays not exceeding 14 days into the bid price on the contract. Inasmuch as the Navy was entitled to 14 days, but took only six days, to remove the asbestos-coated pipe, defendant asserts that plaintiff is not entitled to recover any delay damages. Defendant also objects to the inclusion of the six days it took plaintiff to re-mobilize after the Navy removed the asbestos-coated pipe within the alleged 12-day delay for which plaintiff seeks compensation.

C. *Discussion*

We dispose of plaintiff's claim in Count XVI first. Regarding the discovery of asbestos-related conditions on the EMIC project site, the contract provides:

Asbestos Material: If material is encountered which may contain asbestos and must be disturbed, do not touch the material. Notify the Contracting Officer in writing. Within 14 calendar days, the Contracting Officer will perform laboratory tests to determine if there is asbestos. If asbestos is not a danger, the Contracting Officer will direct the Contractor to proceed without change. If the material is asbestos and must be handled, the Contracting Officer will direct a change.

JX AA § 01010, at ¶ 9.2. Plainly, the contract granted the contracting officer up to 14 days to investigate and test any material resembling asbestos. Since nothing in this provision instructs the Navy to go beyond such investigative efforts and actually complete the *removal* of asbestos from the project site within 14 days, the Navy's disposal of the asbestos-coated steam pipe in but six days was unquestionably prompt and reasonable. However, we do not view the mere fact that the Navy responded to the asbestos problem with dispatch as necessarily dispositive, for the contract does not expressly immunize the Navy from claims arising out of asbestos-related delays not exceeding 14 days. On the contrary, the contract provides that the contracting officer "will direct a change," once a determination is made that the material encountered is indeed asbestos. *Id.* Yet, having so provided, the contract is silent as to whether such a change order must include an equitable adjustment for overhead costs plaintiff allegedly incurred due to the delay. [\(50\)](#)

Lacking express guidance from the contract made by the parties, we turn to the Suspension of Work clause of the FAR, which provides, in relevant part:

If the performance of all or any part of the work is, for an *unreasonable* period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified in this contract (or within a *reasonable* time if not specified), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by the *unreasonable* suspension, delay, or interruption, and the contract modified in writing accordingly.

48 C.F.R. § 52.212-12(b) (emphasis added). No one can deny that the Suspension of Work clause draws a pointed distinction between unreasonable delays, which are compensable, and reasonable delays, which are not. See *Blinderman*, 695 F.2d at 557; *Chaney & James Constr. Co., Inc. v. United States*, 190 Ct. Cl. 699, 707-13, 421 F.2d 728, 731-33 (1970); *Wunderlich*, 173 Ct. Cl. at 199, 351 F.2d at 968; *Mega Constr.*, 29 Fed. Cl. at 424; *Avedon Corp. v. United States*, 15 Cl. Ct. 648, 653 (1988). It is this distinction upon which plaintiff's claim in Count XVI founders. Inasmuch as the contract gave notice that the Navy might take up to 14 days to investigate potential asbestos problems and, impliedly, several

more days to actually remove any asbestos found, plaintiff cannot be heard to complain that the Navy's removal of the asbestos-coated pipe within a mere six days was "unreasonable."⁽⁵¹⁾

Whether an asbestos-related work interruption of 12 days would be unreasonable, as plaintiff intimates, is beside the point. Plaintiff's contention that the re-mobilization of its excavation crew was delayed by another six days because plaintiff "did not know" the Navy would be finished with the asbestos removal by Wednesday, May 2, 1990, finds no support in

the record. Although plaintiff cites Mr. Pieroni's testimony in support of this contention, Mr. Pieroni said no such thing in the cited portion of his testimony. In order to recover delay damages, plaintiff must prove "a clear apportionment of the delay and the expense attributable to each party." Coath & Goss, 101 Ct. Cl. at 714-15, quoted with approval in Blinderman, 695 F.2d at 559. Thus, absent credible evidence that plaintiff was unable to resume excavations during the six days comprising May 2 through May 7, 1990, due to the sole fault of the Navy, the court may take only the first six days of the asbestos-related work interruption into account. Under the terms of this contract, supra, a work stoppage of but six days for the purpose of asbestos abatement measures was by no means "unreasonable." Consequently, defendant is entitled to judgment on Count XVI.

Even assuming, *arguendo*, that plaintiff's claim in Count XVI is not foreclosed by plaintiff's inability to establish unreasonable delay on the part of the Navy, defendant would prevail for the same reason that defendant is entitled to judgment in Count XV. That is, in each count, plaintiff has failed to prove *every* essential element of a compensable delay by a preponderance of the evidence. First, plaintiff must quantify the extent of each delay, if any, that was unreasonable. Mega Constr., 29 Fed. Cl. at 424 (citing Wunderlich, 173 Ct. Cl. at 199, 351 F.2d at 967). Second, plaintiff must prove that each delay was proximately caused solely by the Navy's actions, e.g., by showing that both parties did not concurrently cause said delay.⁽⁵²⁾ Blinderman, 695 F.2d at 559; Mega Constr., 29 Fed. Cl. at 424 (citations omitted); Youngdale, 27 Fed. Cl. at 550. Third, it must be shown that each delay resulted in some measurable injury to plaintiff. Mega Constr., 29 Fed. Cl. at 424 (citing Wunderlich, 173 Ct. Cl. at 199, 351 F.2d at 968).

With respect to Count XV, we find that all 27 days of the delay alleged therein were, in principle, unreasonable. Contract Drawing C-4 advised plaintiff to include in its bid the cost of removing 28 reinforced concrete footings and 440 lineal feet of grade continuous beams. It is undisputed that the quantity of subterranean concrete plaintiff was actually required to remove far exceeded the amount disclosed in Drawing C-4.⁽⁵³⁾ Thus, the court finds that Drawing C-4, in this respect, constituted a defective specification. Delays arising from defective Government specifications are unreasonable *per se*. Chaney & James, 190 Cl. Ct. at 707, 421 F.2d at 732.

Turning to the second element of a compensable delay, plaintiff must "disentangle its delays from those allegedly caused by the government." Mega Constr., 29 Fed. Cl. at 424. On this rather confused record, we are not convinced that it was entirely the Navy's fault that the removal of the excess subterranean concrete took 27 days. Under the Workmanship clause of the FAR, it is incumbent upon plaintiff to prove that it removed the excess subterranean concrete "in a skillful and workmanlike manner." 48 C.F.R. § 52.236-5(c). Plaintiff has presented no evidence from which the court might infer that plaintiff undertook to remove said concrete with alacrity and thereafter accomplished this task by the most efficient means feasible. To reiterate a familiar theme, "[w]here both parties contribute to the delay neither can recover damage[s] unless there is in the proof a clear apportionment of the delay and the expense attributable to each party." Coath & Goss, 101 Ct. Cl. at 714-15, quoted with approval in Blinderman, 695 F.2d at 559. Perhaps plaintiff languidly spent 27 days completing a task that ordinarily should have required but, say, 15 days. Conversely, plaintiff may have devoted herculean efforts to

finish in 27 days a task that might have taken a less worthy contractor 40 days to finish. Sooner than engage in such unvarnished conjecture, we are constrained to enter judgment for defendant on Count XV.

Setting aside, for argument's sake, plaintiff's failure to establish the Navy's responsibility for the entire 27-day delay alleged in Count XV, the court shall briefly consider whether the delays alleged in Counts XV and XVI resulted in some measurable injury to plaintiff. Where, as in the case at bar, the parties use CPM to evaluate contract performance, courts consistently hold that no proven injury results from construction delays unless it is shown that the activities delayed are on the project's critical path. Fortec Constructors v. United States, 8 Cl. Ct. 490, 505 (1985), aff'd, 804 F.2d 141 (Fed. Cir. 1986); Wilner v. United States, 23 Cl. Ct. at 244 (citing Broome Constr. v. United States, 203 Ct. Cl. 521, 528, 492 F.2d 829, 833 (1974)); Youngdale, 27 Fed. Cl. at 550 (citing Haney v. United States, 230 Ct. Cl. at 167-68; G.M. Shupe, Inc. v. United States, 5 Cl. Ct. 662, 728 (1984)); Mega Constr., 29 Fed. Cl. at 424. "An interruption in one phase of the work . . . does not always result in an increase in the time necessary for total performance. In such a case, the absence of any delay would obviously preclude recovery." Paul Hardeman, Inc. v. United States, 186 Ct. Cl. 743, 406 F.2d 1357, 1361 (1969), quoted in Mega Constr., 29 Fed. Cl. at 425. After painstaking review of the CPM exhibits and testimony in the record, we hold that defendant is entitled to judgment in Counts XV and XVI, inasmuch as plaintiff has failed to meet its burden of proving that the activities allegedly delayed were on the critical path of the EMIC project.

At the outset, the court observes that the CPM network diagram received into evidence is utterly useless. (54) Plaintiff's network diagram at bar indicates that it is comprised of four pages, yet plaintiff inexplicably offered only the first page, showing the earliest stages of the project, into evidence. Plainly the court cannot trace a critical path on plaintiff's network diagram without having the last three-quarters of said path in view. Moreover, plaintiff's hand-drawn CPM network diagram, originally prepared on February 19, 1990, indicates that it was revised on five later occasions -- June 4, 1990, July 2, 1990, August 6, 1990, January 8, 1991, and February 11, 1991. Yet there is no way of telling, either textually or visually, which lines, symbols, numbers, or letters were added or deleted at the dates in question, for the purported revisions are visually indiscernible and are unaccompanied by explanatory text. Finally, plaintiff's own Mr. Pieroni testified that the CPM network diagram was *not* supposed to show the critical path and, further, stated that there is no way to derive the critical path from the CPM network diagram. Needless to say, this startling testimony raises serious concerns about plaintiff's overall approach to CPM project scheduling, since the contract unequivocally provides that the network diagram "[s]hall show the order and interdependence of activities and *the sequence in which the work is to be accomplished* as planned by the Contractor." JX AA § 01013, at ¶ 2.2.1 (emphasis added).

Finding plaintiff's CPM network diagram unhelpful, we turn to plaintiff's CPM mathematical analyses and find them gravely flawed as well. One deficiency is plaintiff's failure to update its CPM schedules in accordance with the requirements of the contract, which states in no uncertain terms that "[w]hen changes in the work are necessary, the Contractor will submit revisions to the [CPM] network of all activities affected by the change." Id. at ¶ 2.3. In fact, the relevant section of the contract is positively replete with provisions requiring updates, both periodic and as a result of changes in the work, to plaintiff's CPM schedules. Said contractual provisions acknowledge the principle that accurate, informed assessments of the effect of delays upon critical path activities are possible only if up-to-date CPM schedules are faithfully maintained throughout the course of construction. "Otherwise, the critical path produced by the computer will not reflect the current status of the work performed or the actual progress being attained." Continental Consol. Corp., ENG BCA Nos. 2743, 2766, 67-2 (CCH) ¶ 6624, at 30,715 (1967), quoted with approval in Fortec Constructors, 8 Cl. Ct. at 506. Emphasizing this point, Ms. Sandy Ginalski, the Navy's project manager and the person responsible for evaluating and approving plaintiff's CPM submissions on the EMIC project, testified that if the CPM documentation is inadequate, the critical path cannot be known and, consequently, there is no way to determine whether an overall project

delay has truly occurred. Obviously, then, "if the CPM is to be used to evaluate delay on the project, it must be kept current and must reflect delays as they occur." Fortec Constructors, 8 Cl. Ct. at 505.

In the present case, plaintiff presented no evidence tending to establish that its CPM mathematical analyses were updated in a timely manner following the delays alleged in Counts XV and XVI. Mr. Baudhuin and Ms. Ginalski both gave uncontroverted testimony that, throughout the duration of the EMIC project, BCC never provided timely updates of its CPM submissions. According to Ms. Ginalski, as of June 15, 1990 -- roughly six weeks after the delays alleged in Counts XV and XVI had ended -- plaintiff still had not submitted a complete set of CPM documentation for the Navy's approval. Ms. Ginalski repeatedly stressed that, over the entire course of the EMIC project, plaintiff *never* submitted a complete package of CPM documentation for the Navy's approval.

As defendant correctly points out, the only way to accurately assess the effect of the delays alleged in Counts XV and XVI on the EMIC project's progress is to contrast updated CPM schedules prepared immediately before and immediately after each purported delay. Here at bar, the CPM mathematical analyses in evidence are not contemporaneous with the alleged delays. Regarding Count XV, plaintiff's CPM Run #58 purports to show the status of the EMIC project's schedule in late March or early April of 1990, after plaintiff had finished removing the excess subterranean concrete, but this report was actually generated 17 months later, *after* the project's completion, according to its print date of October 5, 1991. The same may be said for Runs #61 and #62, which were printed on October 5 and October 4, 1991, respectively, 16 months later than the asbestos-related work interruption complained of in plaintiff's Count XVI. Such evidence warrants a skeptical reception on the part of the court, because "[t]he required nexus between the Government delay and a contractor's performance at some unspecified earlier date cannot be shown merely by hypothetical, after-the-fact projection." Interstate General, 12 F.3d at 1060.

Moreover, Runs #61 and #62 purport to demonstrate the effect on the critical path of a delay occurring from April 26, 1990 through May 6, 1990, yet these CPM schedules have data dates of April 9, 1990. Thus, Runs #61 and #62 cannot be said to be based on data contemporaneous with the asbestos-related work interruption. Likewise, Run #58 purports to illustrate the status of overall project scheduling immediately following the removal of the excess subterranean concrete, yet bears a data date of January 3, 1990, which preceded by at least two months the alleged resultant delay. Thus, plaintiff has failed to demonstrate how the data used to prepare its CPM submissions relates, if at all, to actual conditions prevailing on the construction site at the times of the alleged delays.

Like any other computerized aid to comprehension, "CPM analysis is only as good as the underlying information upon which it is based." Bednar et al., *Construction Contracting* 664 (citing Lane-Verdugo, ASBCA No. 16327, 73-2 (CCH) BCA ¶ 10,271 (1973)). Plaintiff's Count XV avers that 19 work days, or 27 calendar days, of delay resulted from the excess subterranean concrete problem, yet plaintiff has produced *not one* of its daily work reports for the 19 work days in question. For that matter, never at any time in these proceedings has plaintiff identified the precise dates on which the 27 days of delay in Count XV are alleged to have occurred.⁽⁵⁵⁾ In Count XVI, plaintiff alleges that the asbestos-related work interruption occupied eight work days, or 12 calendar days, but only six of the eight daily work reports at issue are in evidence. Missing are the daily work reports from Thursday, May 3, and Friday, May 4, 1990. Moreover, even though six daily work reports are in evidence for Count XVI, none of the activities represented therein are cross-referenced in any fashion to plaintiff's CPM mathematical analyses. Such cross-referencing is absolutely indispensable, for otherwise "the court is unable to determine with any degree of certainty what particular `tasks' make up an activity as it is referenced [in the CPM schedules]." Youngdale, 27 Fed. Cl. at 569.

In short, the conclusions plaintiff seeks to establish from its voluminous CPM submissions are scarcely self-evident, and we find Mr. Pieroni's conclusory testimony as to the identity of activities on the critical path unhelpful. For example, when asked why excavation activities were on the critical path, Mr. Pieroni matter-of-factly stated: "You have to get your excavation done so you can put in your foundation, and the foundation consisted of a big basement and a utility tunnel." Tr. 507. We are unconvinced that testimony of this nature establishes the veracity of plaintiff's CPM documentation. See Mega Constr., 29 Fed. Cl. at 433-34; Preston-Brady Co., Inc., VABCA Nos. 1892, 1991, 2555, 87-1 BCA (CCH) ¶ 19649, at 99,520 (1987). Mr. Pieroni also declared -- "There could be multiple critical paths to a project. There could be concurrent paths." Tr. 787. Troubling misconceptions regarding CPM are manifest in this statement.

The suggestion of two concurrent delays on the critical path flies in the face of the critical path concept. Logically there cannot be two concurrent delays on the critical path because there is but one critical path at any one point in time, running in sequence from one critical activity to another.

Mega Constr., 29 Fed. Cl. at 427 (citing Sterling Millwrights, Inc. v. United States, 26 Cl. Ct. 49, 75 (1992)). Although Mr. Pieroni thereafter strove to clarify his remark, he failed to dispel the court's apprehension over the egregious fallacy he had uttered.

Finally, had the delays alleged in Counts XV and XVI not occurred, it stands to reason that plaintiff would have completed the EMIC project on August 11, 1991, 39 days prior to September 19, 1991, the date on which the contract, as modified, scheduled completion to occur. Defendant correctly avers that the record fails to demonstrate that: (i) BCC intended to complete the contract early; (ii) BCC notified the Navy of its intention to finish the project early; (iii) as of the time of the delays alleged in Counts XV and XVI, BCC had the ability to finish the project early; and (iv) but for the Navy's actions, BCC would have actually completed its work early. See Interstate General, 12 F.3d at 1058-59; Wickham Contracting Co., Inc., 12 F.3d at 1581-82. Addressing these points *seriatim*, the only evidence of plaintiff's alleged intention to finish the project early is inconclusive. Mr. Pieroni initially asserted that his CPM schedules showed the project being completed 55 days early, but later stated that BCC intended to finish the project 30 days early. This unresolved inconsistency bars any finding regarding plaintiff's *specific* intentions for early completion of the EMIC project. Nor is there any evidence suggesting that plaintiff ever gave the Navy advance notice that the project would be completed early. Of the five CPM mathematical analyses in the record, none displays a project completion date earlier than September 10, 1991, the originally scheduled completion date according to the contract. Lastly, given our finding that the CPM documentation in the record is of minuscule probative value, factors (iii) and (iv) above are plainly unproven.

We agree with defendant's contention that, absent proof of the aforesaid four elements, a contractor that completely performs its contract by the scheduled completion date cannot recover home office overhead costs as damages for delays that occur prior to the scheduled completion date. Interstate General, 12 F.3d at 1058-59; Wickham, 12 F.3d at 1581-82. This rule acknowledges that home office overhead costs, which are expended for the benefit of the contractor's business as a whole and cannot be attributed to a specific project, are ordinarily absorbed so long as the expected contract revenues are generated within the bargained-for time period for contract performance. Interstate General, 12 F.3d at 1058; Wickham, 12 F.3d at 1581. Conversely, once the *expected* time period for contract performance is shortened, a subsequent lengthening of the *actual* contract performance period causes a mismatching of revenues and home office overhead costs. Thus, under Interstate General and Wickham, no home office overhead costs are unabsorbed unless early completion is intended, within the contemplation of the parties, feasible, and prevented solely by the Government's unreasonable acts. None of this has been established in the case at bar. Furthermore, we agree with defendant that similar principles bar plaintiff

from recovering field overhead costs relating to the delays alleged in Counts XV and XVI.⁽⁵⁶⁾ Plaintiff undoubtedly factored expected field overhead costs into its contract price bid, and the utter lack of proof of any specific intention on plaintiff's part to finish the project early compels the conclusion that said field overhead costs were absorbed by the contract price which plaintiff bargained for.

In sum, with respect to the delay damages claims asserted in Counts XV and XVI, we hold that plaintiff has failed to meet its burden of proof. Consequently, defendant is entitled to judgment on Counts XV and XVI.

CONCLUSION

Given the foregoing, we hold that BCC has proven liability, causation, and resulting injury only as to its claim in Count I for the direct costs of hiring, at the Navy's behest, additional CQC representatives to unnecessarily supplement Mr. Connor's ample expertise. Therefore, plaintiff is entitled to an award in the sum of \$24,603, plus interest pursuant to 41 U.S.C. § 611. Said interest shall run from July 21, 1993. As to the other claims tried on the merits, defendant is entitled to judgment on Counts II, III, VI, XII, XV, and XVI, due to plaintiff's general failure of proof and, with especial reference to Counts II, III, and VI, plaintiff's reliance upon legally untenable interpretations of the relevant contract provisions. Counts V, VIII, IX, X, and XIII, which the litigants settled in mid-trial, are hereby dismissed with prejudice. Finally, defendant's counterclaim in Count IV is dismissed for lack of subject matter jurisdiction pursuant to RCFC 12(b)(1). The Clerk shall enter judgment accordingly. No costs.

IT IS SO ORDERED.

1. The following abbreviations are used throughout this opinion:

Tr. -- Transcript of the trial on the merits;

DX -- Defendant's Exhibit;

PX -- Plaintiff's Exhibit;

JX -- Joint Exhibit generally;

JX AA -- The contract at issue;

JX BB -- Joint Stipulation of Fact, filed November 8, 1996.

2. Jurisdiction is premised on 41 U.S.C. § 609(a)(1) and 28 U.S.C. § 1491.

3. At the time of the events in question, Mr. Baudhuin held the rank of Lieutenant. He has since joined the engineering staff of a private sector architecture firm.

4. Unless overruled by the Court of Appeals for the Federal Circuit *en banc*, decisions of the former Court of Claims are binding precedent for this Court. South Corp. v. United States, 690 F.2d 1368 (Fed. Cir. 1982) (*en banc*).

5. No patent ambiguity is presented here because there is no obvious, gross, or glaring flaw in the contract language in question. Thus, there was no duty on plaintiff to inquire. Grumman Data Systems, 88 F.3d at 998.

6. Commonly defined, "construction" encompasses "[a]ll the on-site work done in building or altering structures, from land clearance through completion, including excavation, components and equipment." *Dictionary of Architecture & Construction* 205 (Cyril M. Harris ed., 2d ed. 1993) (emphasis added).

7. Mr. Baudhuin, defendant's expert, grudgingly conceded this point at trial. We also discount as unpersuasive Mr. Baudhuin's testimony that "construction experience" equates with that typically possessed by a general contractor, which is someone who possesses experience in all the different aspects of construction work. Tr. 839, 949. Mr. Baudhuin later conceded that "eight years of construction experience," as used in ¶ 1.4.1, is less experience than that possessed by a general contractor. Tr. 951-54. Furthermore, no contract provision explicitly requires that the CQC Representative have been a general contractor. Even if Mr. Baudhuin's definition were faithful to the contract as written, the term "general contractor" as commonly understood refers to the "prime contractor who is *responsible* for most of the work at the construction site, *including that performed by the subcontractors.*" *Dictionary of Architecture & Constr.* 377 (emphasis added). Thus, it is evident that a person may bear responsibility for a wide variety of work without being thoroughly versed in every aspect of said work. If that were not the case, no one who relied upon subcontractors to provide expertise in specialized trades could ever qualify as a "general contractor."

On the whole, defendant's position begs the question -- what if plaintiff had proffered a candidate for CQC Representative who had extensive concrete and masonry experience, but little or no background in mechanical engineering, or in carpentry, or in plumbing? Given the reading of ¶ 1.4.1 defendant urges on the court, the Navy presumably could have rejected such a candidate unless plaintiff hired a mechanical engineer, or a carpenter, or a plumber, as the case may be, as a supplemental CQC Representative.

8. This approach probably inured to plaintiff's benefit as well, since obvious efficiencies can be realized by centralizing the quality control process for a large project under the purview of a single individual or internal group of persons.

9. After the EMIC project was completed, Mr. Connor testified, he went on to serve as CQC Representative, with the Navy's approval, on yet another construction project at the Great Lakes Naval Training Center, this time involving the erection of barracks and housing for the base hospital during 1993 and 1994.

10. Defendant submits in its proposed findings of fact that, upon examination of the contract, "Quality Control" is capitalized only when referring to the official job title. Defendant's Proposed Findings of Fact, filed July 21, 1997, at 5, ¶ 27. We find, however, that "Quality Control" is not capitalized with sufficient consistency to establish that said capitalization, when it occurs, warrants the interpretation argued for by defendant.

11. Because the hiring of additional CQC personnel to supplement Mr. Connor's ample construction background was unnecessary, we need not reach defendant's contention that the contract required that BCC be held "responsible for providing additional qualified staff at no cost to the Government *when necessary* for a proper CQC organization to fulfill the CQC requirements." JX AA § 01400, at ¶ 1.4 (emphasis added).

12. This credit, which is undisputed, relates to certain testing services performed by the Navy's consulting engineer rather than through plaintiff's CQC organization.

13. The law pertinent to the critical path method (CPM), as well as the manifest deficiencies in plaintiff's

evidence relating to the critical path of the EMIC project, are addressed at greater length in our discussion of Counts XV and XVI, infra.

14. One point must be addressed with respect to the "B" bars. Although Drawing S-22 required the "B" bars to be a single, continuous steel bar, plaintiff made each "B" bar by splicing together two shorter bars. By way of a variance, the Navy subsequently approved this modification. Despite the parties' fervor in directing our attention to this matter, we find it irrelevant to our analysis of plaintiff's Count II.

15. Plaintiff is ambivalent as to its characterization of the contractual provisions as being ambiguous. Although plaintiff's argument stresses the contractor's recognized duty to pursue clarification of a patent ambiguity, plaintiff repeatedly refers to the alleged ambiguity as "latent." Plaintiff compounds the confusion by discounting the importance of the alleged ambiguity to its claim ("BCC is not basing its position on whether or not the drawing was ambiguous.").

16. We observe that plaintiff's emphasis on the presence of darkened circles in the TCBTA diagram overlooks two sub-diagrams therein which illustrate two types of fastening devices used in the typical method, column tie hooks and supplementary crossties. Both subdiagrams show these devices used to fasten bars represented by open circles, which plaintiff takes to signify "C" bars. Thus, plaintiff's contention that the TCBTA diagram contains solely darkened circles, meaning "B" bars, is groundless.

17. We might add that since the columns containing solely "B" bars comprised but a small proportion of the total number of columns shown on Drawing S-22, plaintiff's interpretation would have made the "typical" method rather atypical, the exception rather than the rule.

18. Confronted very early at trial with the technical issues presented by Count II, we cautioned counsel for plaintiff that we sit as a court of law and not as a trained engineer. Moreover, we advised plaintiff to acknowledge the fundamental purpose of these proceedings by making its record as clearly and instructively as possible, rather than in an esoteric manner. Our admonitions notwithstanding, plaintiff failed to marshal the operative facts underlying Count II into a comprehensible record.

19. At trial, defendant proffered ACI Publication SP-66 (88) as its Exhibit 24 for the purpose of demonstrating that three inches was the maximum permissible rebar offset. However, the contract references a different publication, ACI Publ. SP-66-80. Although it appeared that ACI Publ. SP-66 (88) was a later edition of ACI Publ. SP-66-80, it could not be determined whether the relevant portions of these two ACI publications were identical in content. Accordingly, defendant's motion to admit its Exhibit 24 into evidence is denied.

20. Plaintiff makes a great deal of Mr. Baudhuin's preceding remark to the effect that calculations based upon the 1:6 vertical slope specified in the contract would yield an offset "in the neighborhood of three inches." Tr. 916. Plaintiff's attempt to characterize this remark as an acknowledgment of ambiguity in the rebar specifications is unconvincing, inasmuch as Mr. Baudhuin clarified his point with precision. Moreover, Mr. Baudhuin, testifying as a structural engineering expert, went on to explain that "the strength of the reinforcing rod is compromised if one goes over that three inch offset." Tr. 916. Generally speaking, the more a reinforcing bar is bent to increase its horizontal offset, the more its capacity to support a vertical load decreases. Thus, it strikes us as unreasonable to select an offset of 3-3/8 inches, a figure obviously at the high end of what Mr. Baudhuin alluded to as "the neighborhood of three inches," absent a showing that some other factor compensated for the diminution in column strength caused by the larger offset. Here, plaintiff has made no attempt whatever to relate its selection of a 3-3/8 inch offset to the resulting effect on column strength.

21. ²¹ Plaintiff's ill-conceived interpretation strikes the court far more as a belatedly-conceived litigation position than as a plausible justification for plaintiff's failure to rub the concrete in question during its performance of the contract.

22. Form facing material or, in the vernacular, "forms," consist of "[t]emporary boarding, sheeting, or pans of plywood, molder fiberglass, etc.; used to give desired shape to poured concrete, or the like." *Dictionary of Architecture & Constr.* 357. See also *id.* at 358 ("formwork" defined as a "temporary construction to contain wet concrete in the required shape while it is cast and setting").

23. Ms. Ginalski echoed this point.

24. Mr. Cooper merely testified in conclusory fashion that plaintiff "tried" rubbing the concrete in accordance with ¶ 3.3.4(a). Mr. Scott testified that, upon visiting the site in August 1991, he saw no concrete that had been rubbed, then reversed himself and stated that the concrete guard walls that form the cavity for the building's atrium had been rubbed, as well as the concrete stairs and landings. Thereafter, Mr. Scott wavered as to source of the concrete finish he witnessed, first asserting that both the large and small voids in the concrete had been filled in by the prescribed rubbing process, then asserting that the large voids had been filled by rubbing while some other procedure had been used to individually fill in the smaller voids. Mr. Scott finally admitted that he lacked personal knowledge as to how the concrete was rubbed, if at all.

25. Mr. Cooper hedged on the subject of whether it is impossible to obtain uniformity of color by using regular structural Portland cement, as opposed to the white cement typically used in architectural concrete, but ultimately seemed to concede that uniform color could be achieved for whatever type of cement was specified, even gray Portland cement for structural concrete. Mr. Scott testified vaguely that architectural concrete should be used where "architectural functions" are desired and, further, declared that the contract contained no specifications calling for architectural concrete. Upon cross-examination, though, Mr. Scott conceded that another concrete specification in the contract calls for a mixture containing white cement, which is normally considered architectural concrete and used for architectural purposes. Moreover, Mr. Scott never directly averred that ¶ 3.3.4(a) provides specifications for concrete intended to serve an "architectural function," whatever that may be.

26. The Federal Circuit also held that the contracting officer's letter did not assert a "claim" on the Government's behalf since it did not "seek payment of a sum certain as to which a dispute exist[ed] at the time of submission." *Id.* at 1571 (quoting *Dawco Constr., Inc. v. United States*, 930 F.2d 872, 878 (Fed. Cir. 1991)). This part of *Sharman's* holding was indirectly overruled when *Dawco* was overruled in *Reflectone*, 60 F.3d at 1579 & n.10.

27. We make this jurisdictional determination according to the circumstances prevailing as of July 22, 1994, the date plaintiff filed its complaint in this action. *Sharman*, 2 F.3d at 1569. However, that is not to say that defendant was thereafter foreclosed from bringing its counterclaim in this court. Where this Court "has a contractor claim before it and the contractor elects to proceed under the CDA, the court possesses the power to stay such a claim pending the CO's determination of a Government counterclaim, and to then consolidate the claims for trial." *Joseph Morton Co.*, 757 F.2d at 1280.

28. Even if the court were to reach the merits of defendant's counterclaim, it is not at all clear that defendant's evidentiary showing provides us adequate reason to disturb the status quo. At trial, defendant seemingly proceeded on the assumption that it would be sufficient to merely rebut plaintiff's direct claim, rather than to independently prove each element of this counterclaim by a preponderance of the evidence.

29. In masonry construction, pointing is "the final treatment of joints by the troweling of mortar or a putty-like filler into the joints." *Dictionary of Architecture & Constr.* 627. Grout is mortar that has a thinner consistency due to the higher proportion of water used in its manufacture. Unlike mortar, grout is not used to fill the joints between blocks in a wall. Rather, grout in a semi-liquid, plastic state is pumped into the hollow interior cavities of the blocks, through which steel reinforcement bars run, in order to reinforce the wall. *Id.* at 396.

30. A substrate is the "underlying material to which a finish . . . adhesive, film, coating, etc., is applied." *Dictionary of Architecture & Constr.* 812. Thus, in the case of the Tamms coating, the ground faced masonry units were the corresponding substrate. Paragraph 3.2 is plainly inclusive of the Tamms coating in question, for the contract describes this product as "Coating for Ground Faced CMU." JX AA § 09900, at ¶ 2.1.3 (emphasis added).

31. The discoloration problem in dispute here was unrelated to efflorescence, which is "[a]n encrustation of soluble salts, commonly white, deposited on the surface of stone, brick, plaster, or mortar; usually caused by free alkalis leached from mortar or adjacent concrete as moisture moves through it." *Dictionary of Architecture & Constr.* 292.

32. Only photographs of this test wall are in evidence, since the parties introduced no photographs of the discoloration problem within the building itself. Both Mr. Cooper, for plaintiff, and Ms. Ginalski, for defendant, testified that the construction and the mortar-induced discoloration of the test wall conformed to the construction and discoloration of the actual corridor walls in the building. Neither party introduced any evidence to the contrary at trial. Accordingly, we find that the test wall was equivalent to the corridor walls in the building in all material respects and that Defendant's Exhibit 39 is an accurate photographic representation of the discoloration problem.

33. In addition to the contract provisions relied upon by defendant, *infra*, the contract incorporates by reference the "Workmanship" clause of the Federal Acquisition Regulation, which in relevant part provides: "All work under this contract shall be performed in a skillful and workmanlike manner." 48 C.F.R. § 52.236-5(c). Defendant urges that this clause should govern our consideration of the disputed masonry cleaning work. That the "Workmanship" clause applies in this construction contract case is clear beyond cavil, but its sweeping language is of little assistance in determining whether plaintiff's masonry cleaning methods conformed to the more specific provisions set out in the contract itself.

34. For example, the instructions for the removal of fungus and mold state: "Wash new surfaces with a solution composed of 3 ounces (2/3 cup) trisodium phosphate, 1 ounce (1/3 cup) household detergent, 1 quart 5 percent sodium hypochlorite solution and 3 quarts of warm water. Rinse thoroughly with fresh water." JX AA § 09900, at ¶ 3.4.1(a)(2).

35. Another question is whether plaintiff reasonably relied upon its interpretation of the masonry cleaning specifications of the contract. See *Hardwick Bros. Co., II v. United States*, 36 Fed. Cl. 347, 413 (1996) (contractor that made unreasonable assumptions concerning subject matter of allegedly defective design specifications failed to prove it was misled by said specifications). The contract's emphasis on the *complete* removal of all mortar residue from the walls demonstrates that the removal of mortar-induced discoloration from ground face masonry units by methods other than brushing was foreseeable. JX AA § 04230, at ¶ 3.8.

In short, plaintiff's defective design specification claim implicitly rests on the premise that plaintiff was entitled to (1) rely upon its uncritical, noncontextual reading of contract § 04230, ¶ 3.8.1; (2) narrowly restrict its masonry cleaning efforts to a mechanical daily brushing of the newly erected walls; and (3)

treat any mortar-induced discoloration left behind as an unforeseen consequence chargeable to the Navy. Plaintiff's argument strikes the court as disingenuous, to say the least.

36. The Contract Disputes Act of 1978 requires that contract claims of \$50,000 or more be certified upon submission to the contracting officer. 41 U.S.C. § 605(c)(1) (1988). However, plaintiff failed to offer its January 20, 1992 certified claim into evidence. By order dated September 10, 1997, the court directed plaintiff to show cause why its claim should not be dismissed for lack of certification. In its response, filed on September 24, 1997, plaintiff moved the court to reopen the exhibit record for the purpose of receiving plaintiff's January 20, 1992 certified claim into evidence. Defendant's brief in response, filed October 2, 1997, stated defendant's view, with which we concur, that this is a case of attorney oversight in introducing an item of evidence at trial, rather than a true case of failure to certify. Furthermore, defendant stated its agreement to stipulate to the reopening of the record for the sole purpose of receiving plaintiff's January 20, 1992 certified claim into evidence as Plaintiff's Exhibit 170. After a thorough review of the parties' submissions, we granted plaintiff's motion to reopen the record by order dated November 13, 1997, and Plaintiff's Exhibit 170 was thereby received into evidence.

37. The contract provides that, except in connection with the resolution of contract disputes, Commander Stephenson possessed complete authority to supervise and direct the work as the authorized representative of the Contracting Officer.

38. Defendant also maintains that, even assuming the building was substantially complete on August 9, 1991, plaintiff failed to establish at trial that (1) it intended to complete the contract early; (2) it notified the Navy of its intention to finish the project early; (3) it had the ability as of August 9, 1991, to finish the project early; and (4) but for the Navy's actions, it would have actually completed its work early. Interstate General Contractors, Inc. v. West, 12 F.3d 1053, 1059-60 (Fed. Cir. 1993); Wickham Contracting Co., Inc. v. United States, 12 F.3d 1574, 1581-82 (Fed. Cir. 1994). Absent such proof, defendant avers, a contractor that completely performs its contract by the scheduled completion date cannot recover field and home office overhead costs as damages for delays that occur prior to the scheduled completion date.

Due to our disposition of plaintiff's substantial completion claim on independent grounds, infra, we need not at this juncture reach defendant's contentions regarding the application of Interstate General and Wickham. We return to these contentions in the context of the delay damages raised by plaintiff in its Counts XV and XVI, infra.

39. The economic waste element of a substantial performance claim is well illustrated by that familiar staple of first-year contracts students, Judge Cardozo's opinion in Jacob & Youngs, Inc. v. Kent, 129 N.E. 889 (N.Y. 1921), cited with approval in H.L.C. & Assocs., 176 Ct. Cl. at 309. Therein, the builder of a house inadvertently substituted pipe that was equivalent to the pipe specified in the contract in every respect, save that it had been produced by a different pipe mill. Id. at 890. The owner refused to pay unless the builder replaced the substituted pipe with pipe made by the mill specified in the contract. Id. To have compelled the builder at great cost to tear out and replace the substituted pipe throughout an otherwise completed home would have been economically wasteful, Judge Cardozo reasoned, because the resulting enhancement of the home's utility and value to the owner would have been "either nominal or nothing." Id. at 891.

40. Numerous decisions of the Boards of Contract Appeals illustrate the importance of the quantitative aspect of the substantial completion test. See, e.g., Edward S. Good, Jr., ASBCA No. 10514, 66-1 BCA (CCH) ¶ 5362 at 25,156-57 (1966) (substantial completion where value of work remaining to be performed was less than 1% of contract price); Mitchell Eng'g & Constr. Co., Inc., ENG BCA No. 3785, 89-2 BCA (CCH) ¶ 21753 at 109,473 (1989) (substantial completion where work 97% complete and

remaining punch list work could be performed in one day); Electrical Enterprises, Inc., IBCA No. 972-9-72, 74-1 BCA (CCH) ¶ 10,400 at 49,119-20 (1973) (substantial completion where only 6.2% of work remained to be completed and facility was capable of serving its intended purpose); Paul A. Teegarden, IBCA No. 419-1-64, 65-2 BCA (CCH) ¶ 5011 at 23,632 (1965) (repaving of roadway was substantially complete where approximately 92% of work had been completed and only work remaining to be done consisted of minor roadside grass seeding and sodding).

Compare Cosmic Constr. Co., ASBCA No. 24036, 88-2 BCA (CCH) ¶ 20,623 at 104,241 (no substantial completion where value of work performed was only 90% of contract price); Dimarco Corp., ASBCA No. 29870, 87-1 BCA (CCH) ¶ 19,456 at 98,300, 98,304 (1987) (although building was 96% complete for payment purposes, no substantial completion where, among other things, contractor had not completed installation of fire alarm system and testing of mechanical and electrical systems).

41. Perhaps the deployment of air handlers Nos. 3, 12, and 15 within the building was especially prone to bring the alleged design defect to light, but plaintiff introduced no evidence to this effect. We note also that, as of September 3, 1991, plaintiff informed the Navy that the cause of the problem with air handlers Nos. 3, 12, and 15 was "yet to be determined." JX 70. Plainly Mr. Scherkenbach must have acquired additional information concerning these three air handlers after September 3, 1991, so as to be able to form the conclusion that a design defect lay at the root of the problem, but the record does not disclose the source of Mr. Scherkenbach's enhanced knowledge.

42. Besides the larger dilemmas of the fire suppression and HVAC systems, defendant raises both the quality and the quantity of the lesser "punch list" items still awaiting completion as of August 9, 1991. Defendant contends that many of the individual items were serious defects that failed to satisfy even the definition of "punch list" items offered at trial by Mr. Scherkenbach. On the record before the court, it is difficult to do more than merely acknowledge that the punch list items strongly militate against a finding of substantial completion as of August 9, 1991.

43. Of course, plaintiff's failure to objectively quantify the building's degree of completion as of August 9, 1991, e.g., by costs or manhours to complete, has already been duly noted, supra. In addition, plaintiff's hospitable citation of the contractual duty of good faith and fair dealing cannot shift the burden of proof so as to compel defendant to justify the reasonableness of the Navy's refusal to accept the EMIC building as of August 9, 1991.

44. See 48 C.F.R. § 52.236-11 (1989), Use and Possession Prior to Completion, which provides, inter alia: "The Government's possession or use [of the property that is the subject matter of the contract] shall not be deemed an acceptance of any work under the contract."

45. Pursuant to contract specifications, BCC expected to remove 28 footings and 440 lineal feet of concrete. According to the testimony, the differing site condition consisted of large concrete piers, concrete slabs, and concrete beams that exceeded the amount contemplated in the contract. BCC, on numerous occasions, had to bring in extra machines to break up the large amounts of concrete and haul it off to a different site.

46. CPM is "[a] system of project planning, scheduling, and control which combines all relevant information into a single master plan, permitting the establishment of the optimum sequence and duration of operations; the interrelation of all the efforts required to complete a construction project are shown; an indication is given of the efforts which are critical to timely completion of the project." *Dictionary of Architecture & Constr.* at 228. See also Wilner v. United States, 23 Cl. Ct. at 244-45 (quoting Haney v. United States, 230 Ct. Cl. 148, 167-69, 676 F.2d 584, 595 (1982)).

47. As shall be seen, whether plaintiff's CPM mathematical analyses so define the critical path *in practice* is the source of the parties' disagreement.

48. Our finding in Count XII that the EMIC facility was substantially complete on September 19, 1991, bears obvious implications for Counts XV and XVI. Plaintiff's allegations in Count XV imply that the building would have been completed on August 23, 1991, 27 days prior to September 19, 1991, had the excess subterranean concrete not been encountered. Similarly, plaintiff's allegations in Count XVI imply that the building would have been completed on September 7, 1991, 12 days prior to September 19, 1991, but for the discovery of the asbestos-covered pipe. If plaintiff's allegations in Counts XV and XVI are collectively accepted as true, this would imply that the building would have been completed on August 11, 1991, 39 days prior to September 19, 1991, had the averred delays not occurred.

49. Although the scheduled completion date was later changed to September 16, 1991, due to a labor strike, defendant points out that said modification took place on June 21, 1990, weeks after the work interruptions alleged in Counts XV and XVI had ended. As already noted in our examination of Count XII, supra, defendant's post-trial brief asserts that the project completion date was later extended another three days, to the actual completion date of September 19, 1991. While defendant fails to explain how this alleged three-day extension was granted or agreed to, in the final analysis, the court accepts defendant's contention. The record evidence concerning the pivotal issue in Count XII -- the date of substantial completion -- fails to establish that this three-day period manifested unreasonable delay on the Navy's part. Rather, the Navy's implied grant of a three-day extension to September 19, 1991, was, in essence, an accommodation to plaintiff.

50. Nothing in the pleadings or the record suggests that plaintiff incurred any direct costs as a result of the asbestos-related work stoppage.

51. Delays attributable to defective Government specifications are per se unreasonable. Chaney & James, 190 Cl. Ct. at 707, 421 F.2d at 732. In the present case, however, it cannot be said that the contract specifications were defective, because the contract disclosed the possibility that asbestos would be encountered.

52. Of course, for the reasons already provided, supra, plaintiff has failed to establish the first two elements with respect to Count XVI. Thus, as far as Count XVI is concerned, the immediate analysis addresses solely the third element, infra, of a compensable delay.

53. We take it as given that Count XV presents a Type I differing site condition within the meaning of FAR § 52.236-2(a)(1). On this record, a lengthy elaboration of the elements of a Type I differing site condition would belabor the obvious. See generally Youngdale, 27 Fed. Cl. at 528. Defendant has not responded to, much less contested, plaintiff's contention that the excess subterranean concrete constituted a Type I differing site condition. Indeed, the Navy conceded as much when it paid plaintiff \$38,806 for the direct costs of removing said excess concrete by unilateral modification.

54. As on another occasion involving similarly deficient CPM documentation, the court feels compelled to observe that the following discussion of deficiencies in plaintiff's CPM evidence is "merely illustrative" and "is by no means inclusive of all of the discrepancies encountered by this court." Youngdale, 27 Fed. Cl. at 569.

55. Thus, we concur with defendant's observation that in Count XV, plaintiff "appears to be seeking a *conglomeration* of 27 days of delay."

56. We decline defendant's invitation to expressly extend the test set forth in Interstate General and Wickham to field overhead costs. Those cases involved solely home office overhead costs. See Interstate General, 12 F.3d at 1058 ("Here, of course, only home office overhead is claimed."); Wickham, 12 F.3d at 1575-76 (claim for home office overhead only issue remaining at bar). In the latter case, moreover, the Federal Circuit emphasized the distinction between home office overhead and field office overhead. See Wickham, 12 F.3d at 1581. However, this distinction impacts only the calculation of damages. That is, home office overhead expenses are indirect costs recoverable under the Eichleay formula. Id. at 1575 (citing Eichleay Corp., ASBCA No. 5183, 60-2 BCA (CCH) ¶ 2688, aff'd on reconsideration, 61-1 BCA (CCH) ¶ 2894 (1960)). Formulary apportionment is inapposite to field office overhead costs which, like other direct costs, require specific proof of proximate causation (as well as the quantum of damages). Wickham, 12 F.3d at 1581. At bar, we do no more than find that the requisite causal link has not been established. Plaintiff cannot complain of frustrated intentions without first proving the existence of said intentions.