ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeals of --	)	
	)	
John C. Grimberg Co., Inc.	)	ASBCA Nos. 58791, 59167, 59168
	)	59169, 59170, 59171
	)	59717
	)	
Under Contract No. W912DR-09-C-0038	)	

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OPINION BY ADMINISTRATIVE JUDGE PEACOCK

These appeals involve claims for alleged differing site conditions, delays, acceleration and multiple changes arising out of construction of a Biolab facility at Fort Detrick, Maryland. Entitlement only is before us for decision. For the reasons detailed below, we sustain ASBCA No. 58791, sustain in part ASBCA No. 59717 and deny ASBCA Nos. 59167, 59168, 59169 and 59170. At trial, the parties agreed to dismiss ASBCA No. 59171 with prejudice (tr. 4/6-7).

FINDINGS OF FACT

A. CAISSONS DIFFERING SITE CONDITION—ASBCA No. 58791

1. The referenced contract was awarded to John C. Grimberg Co., Inc. (appellant, JCG or Grimberg) by the Baltimore, Maryland, District U.S. Army Corps of Engineers (Corps or government) on May 29, 2009, for construction of the Navy Medical Biological Defense Research Laboratory (Biolab or Project) (R4, tab 2 at 1). The amount of the contract was $21,087,000.00 (*id.* at 2). The period of performance was 720 days from receiving notice to proceed (*id.* at 1). The contract was a design-build contract

(*id.*; GPF 62[1]). As is typical of a design-build contract, no unit prices for rock excavation were set forth because the contractor's foundation solution is not established at the time of award (tr. 2/43, 4/40; GPF 63). The contract incorporated Federal Acquisition Regulation (FAR) 52.236-2, DIFFERING SITE CONDITIONS (APR 1984) (the DSC clause); FAR 52.243-4, CHANGES (JUN 2007); and FAR 52.249-10, DEFAULT (FIXED-PRICE CONSTRUCTION) (APR 1984) (APFs 5-9; GPF 13).

i. Fort Detrick and its Karst Geology Generally

2. The Project is located at Fort Detrick in Frederick County, Western Maryland (tr. 5/28, 31). Geologically, the rock beneath Fort Detrick is part of the Frederick Formation (R4, tab 5 at 2-3). The Frederick Formation is known for its karst geology (tr. 5/26; GPF 1).

3. Karst geology is a geological formation shaped by the dissolution of a layer or layers of soluble bedrock, usually carbonate rock such as limestone, dolomite, or gypsum, but has also been documented for weathering-resistant rocks, such as quartzite, given the right conditions (R4, tab 1 at 4 n.3). Karst is a recognized geohazard, "[k]nown for its variability and its degree of inconsistency, both vertically and horizontally over extremely short distances" (tr. 5/27). Karst also has significant top of rock variation (tr. 8/127, 167). Karst is unique in that the existence of a solid appearing outcrop right at the location of a footing or pier does not guarantee that good rock will appear below the outcrop (tr. 7/167). For this reason offerors should anticipate that conditions at one location can differ from conditions at another location (tr. 7/169). Karst conditions can vary over short distances (tr. 8/139). In karst, "you can have a mass of soil in the solution feature, or a karst feature, and immediately adjacent to it is good hard rock (tr. 3/89, *see also* tr. 8/139, 141). Karst is "consistently inconsistent" (tr. 5/32-33; GPF 2).

4. Voids are present throughout the Frederick Formation (tr. 8/130). They are present in areas without strong evidence of "strike and dip" (tr. 8/159-60). Strike and dip are considerations in karst limestone but are not the defining features for understanding

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[1] The Board issued a briefing order in these appeals, *inter alia,* requiring that each party, in its initial post-hearing brief, propose findings of fact supported by detailed citations to pertinent portions of the record. The briefing order further required that each party, in its reply brief, respond to the opposing party's proposed findings of fact with specificity interposing all objections it had to those proposed findings. Both parties have filed excellent briefs in compliance with that order. Accordingly, the Board has extensively adopted many of each party's findings to the extent that there was no objection. Appellant's and the government's proposed findings are designated APF and GPF, respectively followed by the proposed finding number. In adopting party-proposed findings, the Board generally incorporates the citations to the record set forth in the proposed findings (without repetition in this decision) as support for the Board's own findings.

conditions at the Project site (tr. 8/123, 155-56, 159-60). Other factors and conditions that can impact incompetent rock,[2] such as top of rock variation, must be accounted for (tr. 8/128, 139, 141; GPF 3).

5. Grimberg has performed several contracts at Fort Detrick, which is approximately 40 miles from Grimberg's home office (tr. 1/53). The other Grimberg projects at Fort Detrick involving deep foundations were design-bid-build projects and had unit prices for rock excavation. On at least one of these prior contracts, Grimberg contracted with the same drilling subcontractor, Seaboard Foundations, as it did on this project. One prior contract involved construction of the Steam Sterilization Plant (SSP), located approximately 400 yards from the Project (tr. 1/57). Because the earlier contracts were design-bid-build, the government, not Grimberg, performed all design functions. (Tr. 1/57-58, 62, 149; GPF 5)

6. Grimberg had not bid a design-build project at Fort Detrick with deep foundations before. In addition, this was Grimberg's first project involving deep foundations that did not contain unit prices. (Tr. 1/147; GPF 6)

ii. The Government's Construction Cost Estimate Foundation Assumptions

7. Mr. Brian Glock is a senior geotechnical engineer with the Baltimore District, Corps of Engineers. He has lived and worked in the Baltimore area almost his entire life. He has extensive geotechnical knowledge of the Baltimore area and experience covering the design of numerous foundation types, including drilled piers, and in designs involving karst geology. (Tr. 4/32-37; GPF 7)

8. On October 14, 2008, Mr. Glock prepared assumptions for the government's construction cost estimate for the Project's deep foundation work (R4, tab 156; tr. 4/42-43; GPF 8).

9. Mr. Glock's estimate assumed a contractor would install drilled piers with an average diameter of 4 feet, and an average total length of 35 feet (tr. 4/156-57; R4, tab 156). Each pier would end with a rock socket, the portion of the pier that carries the Project building's structural load. The rock socket must be set in competent rock. (*See, e.g.*, R4, tab 5 at 9, tab 9 at 5) The piers would extend through an estimated 20 feet of soil and 15 feet of rock (R4, tab 156 at 2). Mr. Glock did not differentiate between estimated quantities of competent and incompetent rock to be excavated (*id.*). Mr. Glock indicated in his trial testimony, however, that of the 15 feet of rock excavation, 10 to 11 feet he assumed would be allocated for incompetent rock and 4 to 5 feet was allocated for competent rock, in which the rock socket would be set (tr. 4/181-82). The 15-foot figure represented his estimated average across all drilled piers (tr. 4/158-59, 8/136; GPF 9).

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[2] As used by both parties, "incompetent" rock refers to poor quality rock unsuitable for supporting the drilled pier foundation designed for this project.

10. Mr. Glock included excavation costs for approximately 10 to 11 feet of incompetent rock in his estimate (GPF 10).

iii. The Contract Geotechnical Report

11. The request for proposals (RFP) contained two volumes of specifications. Volume 1, section 01 10 00, paragraph 5.2.1, provided that:

> A preliminary geotechnical report has been prepared describing the general subsurface conditions in the vicinity of the Project site. The geotechnical data and discussion in this report are intended to provide the Offeror with sufficient information to identify the general subsurface conditions at the site. The report also discusses geotechnical related requirements for the Project and is included as "Appendix A - Geotechnical Report and Requirements."

(R4, tab 4 at 1; GPF 14)

12. Mr. Glock prepared the contract's Geotechnical Report. He reviewed existing subsurface information, determined which information should be included in the Geotechnical Report, and prepared a narrative describing that information. (Tr. 4/41, 49; GPF 15)

13. The Geotechnical Report appeared in Volume 2, Appendix A, of the RFP specifications (R4, tab 5). It described the general subsurface conditions at the Project site, detailing the unpredictable "karstic" nature of the regional geology. The purpose of the Geotechnical Report was to inform bidders of the subsurface conditions in which they would perform, prepare their bid and plan for foundation design and construction. (*Id.* at 2; tr. 4/49-51; GPF 16)

14. After award, the contractor was responsible for the full geotechnical investigation, design and construction. Design was required to be performed by a professional engineer registered in Maryland and take into account the regional geology. (R4, tab 5 at 2, 9; tr. 4/50-53; GPF 17)

15. The Geotechnical Report noted that "[f]or bidding purposes, it should be assumed that the NMBDRL [Biolab] building will require a deep foundation system of drilled piers or drilled micropiles, socketed into sound rock" (R4, tab 5 at 9). No particular foundation type was required (GPF 18).

16. Regarding the karst geology, section II.H stated:

> Considerations in Karst Terrain: The subsurface conditions in the area consist of residual soils and disintegrated rock over solution weathered limestone. The variable rock surface and fracturing, voids, etc[.] within the rock raise issues such as rock excavation and the potential for sinkhole formation that must be considered by the geotechnical designer. The contractor's geotechnical designer must consider and address the impacts of this karst geology on all aspects of the Project's design and construction. Such considerations include, but are not limited to, related impacts on foundation type and design, slab type and design, earthwork operations, earthwork materials, layout of site features, grading, handling of surface drainage and drainage off of structures, rock inspection and treatment requirements.

(R4, tab 5 at 5; GPF 19)

17. Regarding potential rock excavation at the site, section III.C stated:

> The limestone bedrock is subject to solution weathering and variations in the depth to rock may be experienced over limited horizontal distances. It should therefore be anticipated that excavations below grade may encounter rock. The contractor's geotechnical designer shall evaluate the potential for rock excavation in the work. The limestone bedrock beneath Ft. Detrick ranges from thin bedded shaley limestones that are sometimes rippable in mass excavation to more massive or thick bedded limestone that cannot easily be ripped and generally requires mechanical means of rock excavation or drilling and blasting for removal.

(R4, tab 5 at 6; GPF 20)

18. Section II.G stated that:

> On another project at Ft. Detrick referred to as [the USAMRIID] Project voids were encountered in 152 test borings out of a total of 257 borings drilled. While numerous drill holes encountered voids, most voids were small. Aggregate void thickness exceeded five feet in 23 of the 257 boreholes, and was as high as 20 feet. Plotting of the

> aggregate void distribution revealed that the larger voids occurred in clusters aligned along the bedding strike.

(R4, tab 5 at 4) At trial, Mr. Glock described how this language indicates that larger, but not all, voids lined up with the rock's bedding strike (tr. 4/203; GPF 21).

19. Attached to the Geotechnical Report was a "Boring Location Plan," showing the locations of various soil and rock borings, as well as a total of 46 boring logs (R4, tab 5 at 12). These borings were generally only a few inches in diameter and are comparable to the diameter of a compact disk (tr. 5/35). Also attached to the Geotechnical Report were photos of certain borings, laboratory testing data and other materials (R4, tab 5 at 14-170).

20. Mr. Glock selected these 46 borings after reviewing several hundred borings (tr. 4/92-94). Mr. Glock included this number of borings due to the need for lots of data when designing in a karst context (tr. 4/52, 78-79). "[O]ur end goal is to provide information which looked at in total can be considered representative of the conditions by bidders of the site." "[W]e wanted to provide information in the general area of the site, and a sufficient quantity of and quality of information as well, that could be properly, reasonably interpreted for the conditions." In selecting the 46 borings, Mr. Glock wanted to provide enough borings that bidders could be reasonably informed of the karst's variability, but not so many borings that analysis would be unmanageable. (Tr. 4/113-14; GPF 22)

21. By reviewing all 46 borings, Mr. Glock considered a bidder would understand the range of conditions at the Project site (tr. 8/142, 163-64). "[W]e were looking and intending to provide information that would have generated assumptions of large amounts of incompetent rock" (GPF 24).

22. Boring DH-11 notes that "LIMESTONE" was encountered at a depth of 21 feet (R4, tab 5 at 17). Boring DH-12 notes that "LIMESTONE" was encountered at 15.4 feet (*id.* at 18). Photographs of these two borings were also attached to the Geotechnical Report (R4, tab 5 at 97-98; tr. 4/122). The purpose for including the photos in the Geotechnical Report was to show detail in the rock (tr. 4/87, 119). The photographs of the rock samples generally suggest that rock removed at the locations of borings DH-11 and -12 was of relatively good quality, containing only limited fracturing (tr. 4/87; R4, tab 5 at 97-98; GPF 28).

23. Five of the logs contain the designation "ECS" and are related to the site of another then recently-completed project located "directly to the southeast of the [Project site]" ["ECS Borings"] (R4, tab 5 at 26-32). These borings were included due to their relative proximity to the site (tr. 4/129-30). After contract award, Grimberg hired ECS to conduct the post-award geotechnical investigation (finding 45). The ECS Borings used

in the pre-award Geotechnical Report are separate and distinct from the material assembled by ECS on Grimberg's behalf after contract award (GPF 29).

24. Regarding eleven National Interagency Biodefense Campus (NIBC) Borings and the seven ECS Borings, which were taken in the vicinity of the Project site, section II.G of the Geotechnical Report stated:

> Bedrock indicated by the test borings is a medium gray limestone interbedded with shale. The limestone ranges from thin to thick bedded with thin shale beds and healed calcite veins. The rock varies from soft to very hard, with varying degrees of solution weathering. Boring data included herein from previous projects obtained within the immediate boundaries of this site and the borings drilled by ECS to the east were free of voids within the limestone bedrock. However, voids were encountered in many of the boreholes drilled to the south and west of this site. It should not be assumed that the rock below this site will be free of voids as the borehole data included for the NMBDRL site [i.e., the NIBC Borings] was obtained from a few widely spaced boreholes. The highest density of boreholes drilled for the data included was on the USAMRIID site to the south, where all accessible columns were drilled to determine design bottom elevations for the planned drilled pier foundations.

(R4, tab 5 at 4)

25. Thirty borings provided in the Geotechnical Report were taken from a highly-dense cluster of boreholes to the south of the Project. These borings were related to the USAMRIID project (USAMRIID Borings). (R4, tab 5 at 3) The USAMRIID Borings were made to establish actual drilled pier depths for the USAMRIID project (tr. 4/126-27, 136-37). They show between zero and twenty feet of incompetent rock (tr. 7/170). Within this variation is a lot of poor quality rock material (tr. 3/90). Like the NIBC Borings, the USAMRIID Borings show the depths and elevations at which soil and rock were encountered (GPF 31).

26. In contrast to the NIBC Borings, the USAMRIID Borings contain little to no description of the soil encountered, but do contain detailed descriptions regarding the quality and character of the rock itself, discussing color, density, weathering and other characteristics (R4, tab 5 at 33-95). The Geotechnical Report was explicit about this disparity, stating:

> It should also be noted that rock descriptions in the attached NIBC borings are relatively generalized due to the

> preliminary nature of that investigation. Boring logs from the adjacent planned USAMRIID building show the rock conditions in more detail and therefore better describe the general rock conditions in the area.

(*Id.* at 3; GPF 32)

iv. The Pre-Proposal Alphatec Analysis and Seaboard Subcontractor Quote

27. Grimberg selected Alphatec, P.C. as the designer of record for this Project (APF 19). Alphatec prepared and submitted a preliminary design analysis to Grimberg prior to Grimberg bidding on the Project (Alphatec Report) (R4, tab 157; tr. 1/79; *see also* R4, tab 158). Alphatec prepared its Report by reviewing the RFP (R4, tab 157 at 7; tr. 1/110). Alphatec worked with ECS to prepare the Report (tr. 8/40; GPF 42).

28. At section C.3, "Preliminary Geotechnical Recommendations," the Alphatec Report contains a discussion of geotechnical considerations on the Project, including a description of the karstic subsurface conditions. Critically, the Alphatec Report stated:

> Our preliminary recommendations for drilled shaft and micropile foundations are provided below. Please note that these recommendations are preliminary in nature and are for budgeting purposes only. The Project site is located in karst geology where the depths to rock from existing ground surface may vary greatly within a short horizontal distance and the contractor may have to drill through deeper depth of overburden than what is presented in the soil borings. Likewise deeper drilling into rock may be necessary to account for uncertainty related to rock quality, voids, and seams encountered within the socket or bond lengths. <u>The contractor, therefore, should include a significant allowance in their bid to compensate for probable unknown or unforeseen site conditions.</u> These conditions may include, but are not limited to additional drilling and rock coring, difficulties in drilling due to varying depth of overburden, unknown rock conditions, additional probe holes or rock coring, grouting of voids, additional micropile bond length, etc. [Emphasis added]

(R4, tab 157 at 7; *see also* tr. 1/110-12; GPF 43)

29. The Alphatec Report recommends a minimum length of five feet for rock sockets for the Project's caissons (drilled reinforced concrete piers) (R4, tab 157 at 6; tr. 1/129-30; GPF 47).

30. Mr. Grimberg edited portions of the Alphatec Report and included them in Grimberg's technical proposal for the Project, discussed in more detail, below (tr. 1/111-13). In particular, he struck the language from the Alphatec Report recommending that Grimberg "include a significant allowance in their bid to compensate for probable unknown or unforeseen site conditions" because Grimberg does not "bid projects that way" (tr. 1/81-82). Mr. Jim Graham indicated that he would not have allowed such an "allowance" to go into Grimberg's bid (tr. 8/48; GPF 45).

31. Grimberg solicited quotes from drilling subcontractors for the Project prior to submitting its proposal to the government. On March 30, 2009, Seaboard Foundations submitted a quote in the amount of $200,492.00 (app. supp. R4, tab 219 at 39). This bid was based on drilling through five feet of rock (*id.*; tr. 1/164). This bid also contained unit prices for rock excavation exceeding the five-foot socket (*id.*; GPF 48).

32. Grimberg instructed Seaboard to include only five feet of rock excavation in its quote (R4, tab 155 at 5; GPFs 50-51).

v. The JCG Proposal

33. JCG submitted its Technical Proposal and its best and final offer on March 31, 2009 (APF 14). The JCG Technical Proposal became part of the contract (R4, tab 3 at 80). In formulating its costs for drilling, Grimberg used Seaboard's quote and added $45,000 for additional rebar and $100,000 for an additional five feet of rock excavation and socket, assuming that the design loads required the additional five feet for the socket. The additional five feet was not required and is unrelated to JCG's estimate of subsurface conditions. (Tr. 8/49-50) This resulted in a caissons bid of $345,492 from Grimberg to the government (app. supp. R4, tab 219 at 1; GPF 53).

34. Grimberg timely submitted a proposal (Proposal) in response to the RFP. The Proposal contained extensive representations regarding Grimberg's Fort Detrick karst experience and its intended approach to the geotechnical aspects of the Project. (R4, tab 7; GPF 54)

35. The Proposal's cover letter notes:

> The enclosed proposal demonstrates Grimberg's unique qualifications, including its quality control program developed according to the strict standards of the USACE certification requirements, relevant experience with BSL2

> laboratories and precision control systems, and familiarity with Fort Detrick's unique karst topography and other base regulations. Grimberg maintains an existing infrastructure for ongoing contracts at Fort Detrick, and has received multiple awards and commendations for projects successfully completed at the Army base.

(R4, tab 7 at 2; GPF 55)

36. Regarding its experience at Fort Detrick, the Proposal's "Executive Summary" stated:

> Grimberg also maintains an existing infrastructure at Fort Detrick and is familiar with base-specific construction procedures required by the unique karst topography, as well as other base regulations.
>
> ....
>
> Furthermore, Grimberg is thoroughly familiar with the construction challenges at Fort Detrick, including site and foundation preparation work required for the karst topography. Grimberg has one ongoing contract on site and has completed numerous past projects with outstanding results. The contractor's existing infrastructure is prepared to address the unique site conditions, thus ensuring an efficient project start-up, execution, and completion.
>
> ....
>
> Added Value Highlight (Relevant Experience)
>
> USAMRIID Steam Sterilization Plant, Fort Detrick: Grimberg is serving as the prime contractor to construct the new, $30,000,000 steam sterilization plant with the capacity to decontaminate 126,000 gallons of liquid bio-waste per day. In addition, the project requires extensive site preparations of the karst topography, including substrate excavation, rock removal, vibration controls for facility foundations, and relocation of laboratory sanitary sewer lines.
>
> ....

> USACE and Fort Detrick Experience: A successful contract completion is also ensured by Grimberg's extensive military contracting experience, which includes dozens of projects performed for federal/USACE owners at secure and occupied military bases virtually identical to Fort Detrick. Moreover, Grimberg maintains an existing infrastructure at Fort Detrick for ongoing projects, and is experienced with Fort Detrick's unstable karst topography, including unique site preparation requirements to deal with the limestone substrate.

(R4, tab 7 at 4-6; GPF 56)

37. In the same section, Grimberg notes that "[t]he foundation system shall consist of drilled piers (caissons)." The caissons were to have a minimum five-foot rock socket. (R4, tab 7 at 7) Grimberg had concerns about the use of micropiles in lieu of caissons and thought caissons were more "predictable" (tr. 1/90-91; GPF 57).

38. The Proposal also presents an extensive discussion of the karst geology of the site and Grimberg's planned approach to dealing with the unique issues raised thereby:

> C. Geotechnical
>
> ....
>
> 2. Subsurface Conditions: Based on the geotechnical data provided in the RFP, the design team understands that the Project site is underlain by shallow fill soils over residual soils. Based on the borings, the residual soils are underlain by limestone rock, which was encountered at depths of about 5 to 27 feet. Solution features (such as sinkholes) are considered possible on sites underlain by limestone bedrock. The limestone units underlying the site are the Grove and Frederick Formations, which are known to have significant sinkhole problems.
>
> 3. Preliminary Geotechnical Recommendations: The offeror's preliminary recommendations for drilled shaft and micropile foundations are provided below. Please note that these recommendations are preliminary in nature and are for budgeting purposes only.
>
> The Project site is located in karst geology where the depths to rock from existing ground surface may vary greatly within

a short horizontal distance, and the contractor may have to drill through deeper depth of overburden than what is presented in the soil borings. Likewise, deeper drilling into rock may be necessary to account for uncertainty related to rock quality, voids, and seams encountered within the socket or bond lengths. Probable unknown or unforeseen site conditions may include, but are not limited to, additional drilling and rock coring, difficulties in drilling due to varying depth of overburden, unknown rock conditions, additional probe holes or rock coring, grouting of voids, additional micropile bond length, etc.

4. Drilled Shafts: The building may be supported on straight sided drilled shafts founded on limestone rock... The shafts should have a minimum 5-foot rock socket. The offoror [sic] recommends designing the shaft diameters as small as possible to limit the volume of rock excavation.

To achieve the design bearing pressures, the shafts should be founded in suitable limestone rock. Based on the information provided in the RFP, it is expected that suitable rock will be encountered at depths of about 5 to 30 feet below the ground surface. Based on the estimated shaft grades, shaft lengths of about 10 to 35 feet are estimated.

....

Rock excavation with a coring barrel is expected in the shafts to reach suitable bearing rock materials. The limestone rock may be steeply sloped and very hard. Excavation through rock is expected in all shafts where the rock is sloped or uneven. Additionally, voids ranging from about 0.5 to 20 feet were encountered within the limestone rock in the test borings. Therefore, additional rock removal should be expected where voids are encountered during installation of the drilled shafts.

....

5. Micropiles: A structural foundation system using high-capacity, drilled and grouted micropiles may also be considered to support the proposed structures. The least amount of risk for cost overruns is believed to be associated

> with this foundation approach. Micropiles develop their capacity in skin friction. Typically, due to their small size and construction methods, end-bearing is neglected. A significant advantage of using micropiles is that the installation often uses continuous casing with rotary percussion duplex drilling methods that would not be significantly affected by floating boulders, voids, and rock ledges in the karst geology and would provide a stable hole in areas of soft materials....
>
> It is recommended that seven inch diameter micropiles be used for preliminary foundation design due the possible presence of boulders and pinnacles within the residual soils and voids within the limestone rock....
>
> ....
>
> If mud or air-filled voids are encountered within the bond length of the micropile, the casing should be extended to the bottom of the void and drilling for the new bond length should commence. The contractor must carry a reasonable allowance for additional micropile lengths into the rock until a sufficient length of competent rock is encountered. The total length of the micropiles will depend upon the depth to competent rock at the foundation locations....
>
> ....
>
> Since the Project site is in karst geology, the designer recommends that micropile be installed using a suitable drilling method (such as "Duplex" drilling systems) that advances the casing down hole with the drill string and thus protects the hole stability by mechanical means.... However, in karst conditions, drilling air may travel great distances due to open karst features.

(R4, tab 7 at 9-11) The above language is virtually identical to the corresponding sections of the Alphatec Report, minus the deletion of the language recommending that Grimberg include a "significant allowance" in its bid "to compensate for probable unknown or unforeseen site conditions" (R4, tab 157 at 7-9). At paragraph 5, though, the language does retain a similar "allowance" recommendation relating to micropiles (R4, tab 7 at 11; GPF 58).

39. Grimberg's discussion of its proposed organizational approach to the Project, found in the "Factor 7: Project Plan-Construction Organization" section, notes:

> Experience with Fort Detrick limestone substrate: Grimberg has extensive relevant expertise with earthwork in karst topography, including complex excavations involving sinkholes, caves, depressions, bedrock, and other faults and the vibration controls and other measures necessary for construction in the location. The company is also experienced in the careful coordination and monitoring of the subcontractors associated with this difficult phase of a project. The company's experience performing projects at Fort Detrick and its coordination and oversight will provide extremely cost-effective solutions, as well as ensure that all work is performed efficiently, safely, and in a manner that both meets and exceeds the Corps' expectations.

(R4, tab 7 at 12)

vi. Notice to Proceed, The Seaboard Subcontract and September 2009 ECS Report

40. Grimberg was given notice to proceed with work on the contract on June 29, 2009 (R4, tab 8; GPF 64).

41. After award, Grimberg entered into a subcontract with Seaboard in the amount of $208,690 on August 3, 2010 (app. supp. R4, tab 57 at 1). This subcontract contained unit prices for rock excavation (tr. 2/41-43; GPF 66).

42. Its contract with the government required Grimberg to produce a final geotechnical evaluation report, as well as verify the completeness of the provided drawings, verify all utility connects, and crossings, and report any discrepancies to the contracting officer (R4, tab 4 at 1). The report was to be submitted "along with the first foundation design submittal" and was to:

> [S]ummarize the subsurface conditions; provide recommendations for the design of appropriate foundations, floor slabs, retaining walls, embankments, pavements and any other geotechnical related features. The report shall discuss site stratigraphy, regional geology, bedrock stratigraphy, and all other features of the subsurface. The report shall analyze and provide necessary requirements for all items including but not limited to foundation type and capacities, foundation elevations, settlement analyses, lateral load parameters, slope

> stability, soil and rock excavation, excavation support, and parameters for seismic design.

(R4, tab 4 at 2)

43. On June 15, 2009, Dr. Giovanni Bonita, Ph.D., P.E., P.G. of GEi Consultants, Inc., emailed Grimberg in response to a request for proposal from Grimberg to have GEi Consultants perform the post-award geotechnical survey (R4, tab 83 at 49-50). Dr. Bonita stated that based on his past experience at the Project site, "the terrain consisted of voided limestone and soft clays" (*id.* at 50). He also warned Grimberg that its proposed boring program for the entire site may not identify voided limestone, and noted that such a failure could negatively impact Grimberg's project performance (*id.*; GPF 68).

44. On June 16, 2009, Dr. Bonita provided Grimberg his assessment of the information contained in the RFP's Geotechnical Report (R4, tab 83 at 49). Dr. Bonita stated that the Geotechnical Report showed "soft soils underlain by a limestone with voids" (*id.*; GPF 69). GEi Consultants did not get the post-award survey contract.

45. Grimberg hired ECS LLC Mid-Atlantic (ECS) to perform the post-award geotechnical work. On September 22, 2009, ECS submitted a report to Grimberg ("September ECS Report") (R4, tab 160). The September ECS Report recommended that Grimberg use at minimum a 10-foot rock socket for its caissons (R4, tab 160 at 10; tr. 1/85). It also stated that "due to the irregularity of the limestone rock and poor quality of portions of the bedrock, caissons may extend below the estimated elevations given above" (GPF 70).

46. The charts in the September ECS Report show rock excavation quantities of up to 28 feet and a significant variation in depth to rock throughout the Project site (R4, tab 160 at 10, 17; tr. 5/150-55).

vii. The Osterberg Test Report, Socket Length and the November ECS Report

47. After award, the government provided Grimberg a copy of an Osterberg Test Report performed for the USAMRIID project (R4, tab 161). The Osterberg Test Report identifies pier strength values with a high degree of precision (tr. 4/16-17). This allows for a more efficient design that eliminates unnecessary drilling (tr. 5/70-71). Seaboard assisted the contractor who performed the Osterberg test by drilling holes (tr. 4/168; GPF 72).

48. During November 2009, Grimberg was seeking information internally regarding the rationale for its bid for the caissons work. On November 23, 2009, Mr. Joe Duda of Grimberg emailed other Grimberg personnel stating that Grimberg's bid for the Project's structural and foundation design was based on the Alphatec Report.

(R4, tab 158 at 1) The email's attachment has an excerpt of the report, with portions highlighted. The highlighted portion reads, in part:

> All caissons are to have a minimum of 5' rock socket. Caisson lengths are estimated to be 10'-35' based on information in the geotechnical report provided in the RFP. Please note that a significant amount of voids were encountered in the borings taken at the site. The presence of these voids can significantly affect depth of caisson, amount of rock excavation and quantity of concrete and rebar required.

(*Id.* at 2; GPF 74)

49. On November 6, 2009, ECS submitted a revised report to Grimberg (R4, tab 162). It contained information similar to the September ECS Report, including a recommendation for a 10-foot rock socket (*id.* at 10; GPF 75).

viii. Final December 2009 ECS Report and Foundation Design Drawings

50. The post-award Geotechnical eport that Grimberg was required to produce pursuant to the contract was finalized on December 18, 2009 (Final ECS Report) (R4, tab 9; GPF 76).

51. The Final ECS Report informed Grimberg that it may encounter more incompetent rock than priced into its proposal (tr. 1/113; GPF 77).

52. In preparing the Final ECS Report, ECS based its conclusions on:

> [O]ur field subsurface explorations, previous soil borings drilled at the adjacent NBACC site by ECS [i.e. the ECS Borings], laboratory testing, our understanding of the Project, and review of available geologic data. The subsurface exploration program included a total of 14 soil borings extended to depths of 10 feet to 24 feet below the existing ground surface. We also preformed 38 rock probes to verify depths to rock and the presence of voids. Laboratory tests were then performed on selected soil and rock samples to identify the soils and to assist in determination of the engineering properties of the on-site soils and bedrock. We have also visited the site recently to conduct a site reconnaissance of current conditions.

(R4, tab 9 at 5) The Final ECS Report did not reference NIBC Borings DH-11 and DH-12 (GPF 79).

53. The Final ECS Report noted that:

> The site is mapped as containing rock of the Frederick Limestone formation, which is thought to correlate with the Conestoga Limestone of central Pennsylvania. The Frederick Limestone is of Late Cambrian age and is generally composed of dark blue/gray, thin-bedded argillaceous limestone with some minor amounts of shale. The limestone generally weathers to a reddish brown silty residual clay, which can vary considerably in thickness over short horizontal distances.

(R4, tab 9 at 8; GPF 81)

54. The Final ECS Report recommended that drilled piers be used for foundation support for the Project's main building (R4, tab 9 at 10). Grimberg believed that drilled piers posed the least risk to the Project schedule (tr. 8/115). The Final ECS Report recommended a five-foot rock socket, based on the results of the Osterberg test provided by the government (R4, tab 9 at 10; GPF 82).

55. The Final ECS Report provided that "[d]ue to the irregularity of the limestone rock and poor quality of portions of the bedrock, drilled piers may need to extend below the estimated top of rock elevations [described in the Report] to reach suitable rock" (R4, tab 9 at 11; GPF 83). While constructing the drilled piers, the Final ECS Report noted that:

> Since the drilled piers are expected to advance through weathered zones of rock and into substantial bedrock, it will be necessary to provide adequate construction equipment so that adequate penetration can be achieved by drilling techniques.... Some difficulties with drilled pier installation should be expected due to the pinnacled bedrock, float rock, and boulders associated with karst geology.

(R4, tab 9 at 12-14; GPF 84)

56. The Final ECS Report further discussed the need to excavate rock from the Project site:

> Material requiring rock excavation methods was encountered in our recent borings and in [the previously-performed ECS

> Borings]. Considering the proposed grades for the new construction, it is expected that rock excavation will not be necessary for the building, however, rock excavation methods could be required during installation of underground utility lines at the site. Significant rock excavation and coring will be necessary for the installation of the drilled piers.

(R4, tab 9 at 18; GPF 85)

57. This Final ECS Report also stated that "due to the irregularity of the limestone rock and poor quality of portions of the bedrock, drilled piers may need to extend below the estimated top of rock elevations given above" (GPF 87).

58. Each of the ECS Reports included estimated design depths for the Project's piers. ECS obtained this information by using probe holes at the piers' locations (tr. 4/138). Probe holes are a quicker but less accurate measure of rock strength than core borings and may lead to longer pier lengths than are necessary (tr. 4/226, 5/48, 8/173-75; GPF 88).

59. Mr. Glock reviewed the ECS Reports in the course of contract administration and found they correlated with his pre-award assumptions (tr. 4/43-45). These reports showed much more than five feet of rock excavation in certain locations (tr. 8/151). Based on his reviews, Mr. Glock recommended that Grimberg consider using micropiles in lieu of drilled piers (tr. 8/152; GPF 89).

60. On January 5, 2010, Grimberg's designer issued the foundation design drawings (R4, tab 179 at III-4). Drawing S-101 identifies the design depths for the caissons (tr. 7/20-21, 43-44, 8/46-47). Drawing S-101 does not separately identify the amount of soil and rock to be excavated (tr. 7/20-21, 43-44, 8/46-47; R4, tab 179 at III-32).

ix. Caisson Drilling Operations

61. JCG's original plan was for its subcontractor, Seaboard, to drill caissons using a single drill rig (APF 219). On March 8, 2010, Seaboard mobilized the caisson drill rig to the site and on March 9, 2010, began drilling the first caisson (GPF 93). Grimberg eventually drilled 48 caissons (GPF 95).

62. Grimberg planned to drill 1.5 caissons per day (tr. 2/74). For the drilling, Grimberg would use one type of bit for drilling through soil. When it reached rock, it would switch out the drill's bit to one suitable for rock drilling. (Tr. 1/165, 8/220; GPF 94)

63. On March 10, 2010, appellant orally notified the government that it was encountering what it considered were excessive quantities of incompetent rock constituting

differing site conditions (DSC) and the parties began tracking rock drilling quantities on each caisson (tr. 2/73, 107-11, 150).

64. As of March 24, 2010, Seaboard had mobilized and was using a second drilling rig (app. supp. R4, tab 88 at 155-65). As of April 9, 2010, the subcontractor had mobilized a third drilling rig (APF 225).

65. On March 31, 2010, JCG's site superintendent forwarded an email to appellant's project manager (PM). The email was from JCG's subcontractor, Frederick Concrete (FC), requesting additional compensation for extending the caisson rebar because of the unanticipated rock quantities encountered (APF 227).

66. On the same date, appellant's PM forwarded FC's cost proposal to the Corps and notified the USACE regarding the alleged DSC stating (APF 228):

> I will send a formal letter but this is just a heads up. We are experiencing unforeseen conditions with the Drilled Piers. Through the inspection process voids and incompetent rock is being experienced. This is causing the Drilled Pier to be extended. Additional rebar for the extended pier and possible additional concrete to fill the voids.

67. According to JCG's PM, the purpose of his March 31, 2010 email was to memorialize previous discussions with the Corps regarding "differing site conditions on this drilled piers and [this was] kind of a formal notice to the Corps that we're experiencing some unforeseen conditions with the drilled piers" (APF 229; tr. 2/107).

68. The PM's March 31, 2010 email was forwarded within the Corps and brought to the attention of a Ms. Maryam Khan with the notation, "FYI, mod coming differing site conditions" (APF 231).

69. The minutes of an April 2, 2010 Progress Meeting with the Corps, note the drilling issues JCG was encountering and that JCG was "[e]xperiencing voids in unsuitable rock causing depth of drilled pier to be extended" (APF 232).

70. JCG's original plan for caisson drilling was to proceed with one rig consecutively through three specified areas of the foundation. JCG's "follow the leader" drilling plan would allow expedited construction as the grade beam and slab construction could commence in one area as caisson drilling continued in the other areas in a consecutive "follow the leader" fashion. Grimberg's original foundation plan was faster than waiting for all caisson drilling to be completed before commencing concreting of grade beams and slabs in all three areas. (Tr. 3/157; APF 247)

71. The April 15, 2010 Project Schedule Update indicated that grade beams and rough-in of underslab mechanical, electrical and plumbing (MEP) were among the items of work scheduled to be performed along with caisson drilling from April 15, 2010 to May 15, 2010 (exs. A-229-30).

72. Due to the crowding caused by the three rigs Seaboard had mobilized to the site, JCG was not able to perform grade beam work and MEP rough-in work concurrent with caisson operations, except for a few days at the end of May 2010, and only after two drill rigs had been removed from the site (app. supp. R4, tab 87 at 204; tr. 2/78-79; APFs 250-51).

73. The critical path method (CPM) updates show that grade beams were originally planned to precede the underground utility MEP rough-in. This sequence was reversed to expedite the work (i.e., utility work preceded grade beam work) (APF 250; tr. 2/23). Underground MEP rough-in began once two of the three drill rigs were removed from the site (app. supp. R4, tab 87 at 204).

74. JCG was not able to operate three caisson drill rigs and concurrently prosecute grade beam work, particularly given the unpredictability of how long it would take to drill each caisson. The specifications prohibited caisson drilling within 20 feet of concrete placed in the past three days further complicating the sequencing of drilling with three rigs operating. (Tr. 8/65, 99-103)

75. Although ECS performed the post-award geotechnical investigation, Grimberg did not employ ECS for construction oversight and approving final pier lengths. Grimberg instead used Hillis Carnes, a firm that was uninvolved in the design (R4, tab 155).

76. On April 13, 2010, the Corps' ACO responded in writing to JCG's March 31, 2010 letter:

> I looked over the caisson extension proposal, and I noticed the costs are for 12 caissons. Since you all have a total of 48 caissons, do you foresee encountering the same incompetent rock issue with some of the other caisson work to come? If so, I would suggest keeping track of all of the costs and doing one mod for all this work at the end instead of piece-mealing (in this case, I would issue a formal RFP to you and you can respond to that letter with total final costs). However, if you do not foresee any additional costs as part of this specific work, let me know and I will go ahead and review the current proposal and process mod.

(R4, tab 154 at 42-43)

77. Appellant's site superintendent responded: "I agree, we will keep track and submit as one proposal. I just wanted to give [the Corps] a heads [up] that we were experiencing some additional costs due to extending these caissons." (R4, tab 154 at 42-43)

78. The government then indicated its intent to issue a formal RFP for the incompetent rock issue (R4, tab 154 at 42-43).

79. Grimberg completed drilling piers on May 27, 2010 (app. supp. R4, tab 88 at 265). Grimberg tracked the amount of rock excavated totaling 923 feet (almost four times the amount of rock that it allegedly expected to excavate in its Proposal) (tr. 2/110-11; GPF 100).

x. Development of the Dispute

80. By letter of August 16, 2010, to the government, JCG submitted a proposal to increase the contract amount by $374,341.00 for direct costs relating to "Cassion [sic] Additional Drilling" and characterized work associated with the construction of the caissons as a change to the contract (R4, tab 11). Most of the costs described related to additional drilled pier construction and earth and rock excavation work performed by Seaboard Foundations (R4, tab 11; GPF 102).

81. On August 25, 2010, the government responded. The government cited portions of the Geotechnical Report and concluded that "[b]ased on the information provided in the solicitation and the actual field data you submitted, the drilling depth encountered is within expected range of caisson and rock excavation depth." The response invited Grimberg to resubmit the request for compensation if additional information was available or to submit a request for a contracting officer's decision. (R4, tab 13; GPF 103)

82. By letter dated May 18, 2012, Grimberg submitted a Request for Equitable Adjustment (REA). The letter acknowledged the government's August 25, 2010 denial of Grimberg's original request for additional compensation, provided additional explanation and support, and revised the amount requested downward to $345,363. (R4, tab 14; GPF 106)

83. The REA alleges that Grimberg encountered a "Type I" DSC[3] Specifically, the letter notes that Grimberg relied on only two of the NIBC Borings, DH-11 and DH-12, for bidding purposes, due to the proximity of these borings to the Project site (R4, tab 14 at 2). Grimberg, however, found that conditions at the Project site differed considerably from what was depicted by these two borings, that it did not encounter rock at an average of 18.2 feet below the surface, and that when it did encounter rock, it varied in quality, leading to more rock excavation than it had estimated (R4, tab 14 at 2-3; GPF 107).

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[3] A type I DSC occurs when the conditions at a site differ materially from those represented by the government, pre-bid.

84. On June 8, 2012, the government denied the REA on the grounds that: 1) it was unreasonable to rely on only two of the 46 borings in the RFP; 2) actual conditions encountered were accurately represented by the RFP; and 3) Grimberg was responsible for designing acceptable foundations, pavements and other geotechnical aspects of the Project (R4, tab 15; GPF 108).

85. Grimberg submitted a certified DSC claim, dated December 7, 2012, in which it alleges that it is entitled to $345,363.00 in additional compensation based upon a "Type I" DSC theory. The claim is essentially a reiteration of Grimberg's position in its REA, with further explanation, including discussion of the expert opinions and discussion of what Grimberg perceives to be the legal principles relevant to the resolution of the dispute. The claim states that "Grimberg's claim rests upon the presence of unanticipated incompetent rock...causing Grimberg to drill through rock for a greater distance, and at increased costs, before encountering the required depth of competent rock." According to the claim, "[Seaboard] encountered rock at 12.5 feet, drilled another 13.6 feet to competent rock at depth 26.1 and then drilled 5 to 6 feet to achieve the [caisson] socket: 13.6 feet plus 6 feet equals 19.6 feet of rock." (R4, tab 19 at 5; GPF 119)

86. The claim was denied by the contracting officer in a final decision dated April 30, 2013 (R4, tab 1). JCG timely appealed to the Board on July 23, 2013, and the appeal was docketed as ASBCA No. 58791.

xi. Dr. Heuer's Expert Opinion

87. In the summer of 2012, JCG engaged Dr. Ronald Heuer to analyze whether JCG had encountered a DSC during drilling for the Biolab foundation caissons (tr. 3/59; APF 372). Dr. Heuer has a bachelor's degree in civil engineering, a master's degree in geology, and a Ph.D. in civil engineering specializing in geotechnology (tr. 3/52; APF 373). Dr. Heuer has been engaged in geotechnical consulting for over 40 years (tr. 3/52; app. supp. R4, tab 276 at 1; APF 374). Dr. Heuer has worked on over 1,100 projects: 1) for engineers and owners as a consultant during project planning and design; 2) for contractors conducting pre-bid studies of subsurface conditions to be reasonably anticipated based on geotechnical data; and 3) addressing problems that arise during construction (tr. 3/54-55; APF 375). Dr. Heuer has substantial experience and expertise with respect to limestone, karst topography, and the weathering process that leads to karst (tr. 3/56-58; APF 376).

88. Dr. Heuer testified that karst geologic formations result from a weathering process where original limestone formations (calcium carbonate) are degraded over thousands of years by a karst process or "solution" (tr. 3/57; APF 377).

89. The karst solution occurs when organic materials in soil mix with ground water, air and carbon dioxide. As described by Dr. Heuer, these elements combine to

form a weak carbonic acid that seeps along cracks and fissures ultimately degrading the limestone after thousands of years:

> And in the weathering process, the surface soil materials, the organic materials, create this, mixing with the air, carbon dioxide, and that gets mixed with the ground water, percolates down, and the combination of carbon dioxide and water, it can form a weak carbonic acid, and that weak acid then, in the ground, it tends to seep along cracks and fissures in the limestone, and over a period of many, many years, thousands of years, can dissolve some of the limestone material....

(Tr. 3/57; APF 378)

90. According to Dr. Heuer, the karst variation features are highly localized in concentrated zones, but are not uniformly distributed across a site (tr. 3/77).

91. Dr. Heuer emphasized that when interpreting expected ground conditions, it is a principle of geotechnical engineering that greatest reliance is placed upon relevant borings located closest to the site of interest, less reliance on borings further away (tr. 3/61-62; app. supp. R4, tab 49 at 2).

92. He noted that only two borings, DH-11 and DH-12, were within the approximate footprint of the Biolab (R4, tab 24 at 15; APF 388). Specifically, borings DH-11 and DH-12 are located immediately adjacent to the southwest and northeast sides of the proposed new Biolab building, respectively (APF 389).

93. The text of the RFP Geotechnical Report concedes the importance of proximity in his view. In its selection of borings for the Biolab Project, the Corps selected borings on different sides of the planned Biolab having the closest proximity to the site:

> Note: The borings included herein represent only a portion of the drilling performed at the project sites indicated. As several hundred borings exist (primarily for USAMRIID project) the intent was to select borings on different sides of the planned NMBDRL and generally having the closest proximity to the site.

(R4, tab 24 at 6; APF 391)

94. Borings other than DH-11 and DH-12 are located further away, with some as far away as 800 to 1,000 feet (R4, tab 24; APF 391).

95. A box on the Boring Location Plan labeled "USAMRIID Project Borings" references a cluster of borings and a general location about 300 to 500 feet from the new Biolab building (APF 392).

96. Borings DH-11 and DH-12 straddle the building foundations in a bookend fashion on the northwest and southeast sides of the Biolab Project site. These borings show "top of rock" sound limestone commencing at respective depths of 21.00 and 15.40 feet. (Tr. 3/64; app. supp. R4, tab 49 at 4; APF 398) Based on the general principle of greatest reliance on closest borings, Dr. Heuer opined that a bidder interpreting the Biolab Project subsurface conditions would be expected to rely primarily on borings DH-11 and DH-12 as the closest proximate borings (tr. 3/62).

97. The RFP Geotechnical Report contained photographs of core box samples from borings DH-11 and DH-12, as well as other borings (R4, tab 24 at 99-103; tr. 3/65). The photographs were accompanied by core recovery and rock quality designations (RQD) for the limestone materials at DH-11 and DH-12 (tr. 3/65). Dr. Heuer described the core recovery at DH-11 and DH-12 as a main source of information about the limestone quality where geologists had studied the bores and described their findings (tr. 3/65). Dr. Heuer interpreted the recovery and RQD accompanying the DH-11 and DH-12 core box photographs to represent "good sound limestone" (tr. 3/63, 68; APF 400). Mr. Glock agreed that the DH-11 and DH-12 borings (and photos) identify competent limestone, suitable for a rock socket (tr. 4/179; APF 401). The Corps' contracting officer's final decision (COFD) on JCG's DSC Claim concurs that the limestone shown in DH-11 and DH-12 was good quality. Paragraph 8 of the COFD "Findings of Fact" reports that the photographs of rock samples at DH-11 and DH-12 suggest "relatively good quality rock with only limited fracturing." (R4, tab 1 at 4; tr. 3/72-73; APF 402)

98. Based on his examination of DH-11 and DH-12 (along with associated photographs of the cored materials), and other borings in the vicinity of the Biolab building, Dr. Heuer opined that it was reasonable, "a conservative estimate," for a contractor to anticipate drilling through 25 feet of soil and 5 feet into the rock for the rock socket. He noted that the other borings in the vicinity found top of rock at even higher, 16-18 foot depths. (Tr. 3/99-100)

99. Compressive strength tests on the original Fort Detrick Limestone Formation demonstrate Project-wide limestone strengths in the average range of 9,000 psi, twice the strength of structural concrete (tr. 3/65, 92-95; R4, tab 24 at 165). Across the entire site, and so long as the limestone had not been subject to karst solution effect, the original limestone formation was very strong (tr. 3/93-95; APF 403).

100. Dr. Heuer also selected and analyzed the seven borings (including DH-11 and DH-12), of the total of 46 borings in the Geotechnical Report, most proximate to the Biolab building site, in his evaluation of whether JCG's interpretation of borings DH-11

and DH-12 was reasonable (app. supp. R4, tab 49 at 3-4). He determined that competent bedrock was reached on average at approximately 17 feet, whereas analysis of DH-11 and DH-12 alone, indicated it would be reached at an average of 18.2 feet (APFs 406-07).

101. According to Dr. Heuer, the variability of karst limestone formations and the dependence of the karst solution effect on local (not random) features make the proximity of borings to a building site vital (tr. 3/70-71; APF 413). Dr. Heuer considered that borings at the USAMRIID site approximately 300 to 500 feet away from the Biolab building foundation would not necessarily be representative of conditions there because of the highly localized and non-uniformly distributed nature of karst weathering (tr. 3/70-71, 78-79; APFs 414-15).

102. Dr. Heuer testified that the karst effect of the carbonic acid solution on limestone is concentrated in vertical joints in the rock (tr. 7/141-42; APF 417).

103. To address Mr. Glock's and the Corps contention that borings from the USAMRIID were representative of actual Biolab conditions, Dr. Heuer prepared an independent analysis designed to estimate the amount of incompetent rock indicated at each USAMRIID boring (app. supp. R4, tab 287; APF 424).

104. Dr. Heuer's analysis compared the Corps' analysis and data regarding the contract indications set forth in the USAMRIID boring logs to the actual subsurface conditions encountered by JCG while drilling the Biolab foundation caissons (tr. 7/151-57; app. supp. R4, tab 287; APFs 427-29).

105. Dr. Heuer's analysis concluded that there was a great deal of variability in the USAMRIID subsurface conditions regarding the top of competent rock (tr. 7/154-55; APF 430). The analysis also demonstrated that the bad quality rock was not randomly distributed within USAMRIID but rather occurred in concentrated clusters (tr. 7/157; APF 431).

106. This Heuer analysis further concluded that the variance between the top of rock and top of rock socket at USAMRIID was far less than actually experienced by JCG while drilling the foundation caissons (tr. 7/157; APF 432). Dr. Heuer concluded that the government's analysis of the USAMRIID borings showed an average of 6.7 feet of drilling before reaching the top of rock socket, whereas his understanding was that JCG actually drilled an average of 13.6 feet of incompetent rock before reaching top of competent rock for the Biolab foundation (tr. 7/157, 8/33). Thus, he considered that the actual Biolab site conditions were considerably worse than reasonably determinable from the USAMRIID borings (tr. 7/161; APFs 433-36).

107. Dr. Heuer's expert report concluded that the extra rock encountered during the caisson drilling operation was different than reasonably should have been expected

based on the RFP Geotechnical Report data, and consequently Grimberg had encountered a DSC (app. supp. R4, tab 49 at 3; APF 410).

108. Dr. Heuer was not aware of what analysis of the borings Grimberg performed prior to submitting its bid (tr. 7/171). However, the Heuer opinion states that:

> I understand the [government's] position that limestone bedrock can often contain erratic and variable solutioning/weathering deterioration, which may vary from place to place across a site. The [Geotechnical Report] contains logs of 46 borings from the Fort Detrick site. A large percentage of these borings found substantial thicknesses of poor quality rock, often 10 to sometimes 20 ft thick, before competent rock was encountered.

(R4, tab 18 at 1; GPF 112)

109. Dr. Heuer acknowledged that the limestone under Fort Detrick is one formation, but the beds vary (tr. 7/168). Dr. Heuer agreed that the variability in the USAMRIID borings shows 0 to 20 feet of bad rock in an area that the Project building would fit within (tr. 7/170-71). He agreed that the description of conditions found in the Alphatec Report is consistent with the USAMRIID borings (tr. 7/173). He also agreed that the Alphatec Report shows the potential for problems at the Project site (tr. 7/174-75).

xii. Mr. DiMaggio's Expert Report and Testimony

110. The government retained Mr. Jerry DiMaggio to provide expert analysis and testimony regarding the geotechnical issues in this case (R4, tab 165). Mr. DiMaggio has lived in the area for 40 years (tr. 5/6). He has more than four decades of geotechnical engineering experience, primarily with the Federal Highway Administration, and emphasizing deep foundation work (tr. 5/6-20). Mr. DiMaggio visited Fort Detrick and interviewed Project staff in connection with formulating his opinions about this case (tr. 5/21; GPFs 120-21).

111. Mr. DiMaggio testified that JCG should have significantly adjusted its bid and included an "allowance" (as opposed to a "contingency") in the form of time and money for the possibility of encountering incompetent rock (tr. 5/39-41, 91-92; APF 454).

112. Mr. DiMaggio's report also stated that a reasonable contractor would have consulted with a local geotechnical engineering specialist at the proposal development phase and would have based their bid in anticipation of variations in required drilled shaft lengths based on specifically encountered rock conditions during construction (R4, tab 165 at 14; APF 456).

113. Mr. DiMaggio explained in his report that since JCG was a design-build contractor, it assumed more risk of subsurface conditions than a traditional design-bid-builder: This Project delivery approach differs from the design-bid-build method. This very important difference and the associated transfer of risks should be well understood among experienced designers and contractors and Grimberg should have been aware that the site subsurface conditions and complex foundation conditions was the design-build team's responsibility. (R4, tab 165/15; APF 457)

DECISION—ASBCA No. 58791

Appellant contends that it encountered a Type I DSC during the drilling of the caissons for the Biolab foundation. The DSC clause, FAR 52.236-2, entitles a contractor to an equitable adjustment for a Type I DSC when "subsurface or latent physical conditions at the site differ materially from those indicated in the contract." Case law interpreting the DSC clause provides that a contractor must prove, by a preponderance of the evidence: (1) the conditions indicated in the contract differed materially from those actually encountered during performance; (2) the conditions actually encountered were reasonably unforeseeable based on all information available to the contractor at the time of bidding; (3) the contractor reasonably relied upon its interpretation of the contract and contract-related documents; and (4) the contractor was damaged as a result of the material variation between expected and encountered conditions. *E.g., Comtrol, Inc. v. United States,* 294 F.3d 1357, 1362 (Fed. Cir. 2002).

The government argues that the DSC clause is applied more restrictively in the design-build versus the design-bid-build context, citing *CCI, Inc.,* ASBCA No. 57316, 14-1 BCA ¶ 35,546, in support of this argument. But such differentiation has consistently been rejected by us and the Federal Circuit. In *Metcalf Construction v. United States,* 742 F.3d 984, 995-96 (Fed. Cir. 2014), the Federal Circuit ruled that the design-build nature of the contract did not transfer the risk of inaccurate subsurface data to the contractor. *Cf. Haskell Corp.,* ASBCA No. 54171 *et al.*, 06-2 BCA ¶ 33,422 at 165,700. The identical DSC clause is required to be included in fixed-price construction projects, whether the design-bid-build or design-build method of contracting is utilized. FAR 36.502. There is no justification for interpreting the clause differently in the design-build context. As appellant concedes, design risk is transferred to contractors in the design-bid context, but not the risk of DSCs. A design-builder does not forfeit its rights under the DSC clause to rely on solicitation representations of subsurface site conditions.

CCI is inapposite for several reasons. In *CCI* the Board examined a design-build project for design and construction of a pier and seawall in Iraq. The bidders had 4 months to submit "best and final" offers—as compared to the Biolab's 36 days. Critically, in *CCI,* two reports were included in the RFP and relied upon by the contractor. But the reports were not drafted by the U.S. Government for the purpose of

providing "sufficient information to identify the general subsurface conditions of the site," as is the case with the Biolab RFP Geotechnical Report authored by the Corps. Instead, the two reports in *CCI* were composed at much earlier dates than the RFP, and for different purposes, by the Iraqi government and a civilian foreign aid agency. Thus, the reports were authored by individuals not involved in the *CCI* project or even the Corps, and so the *RFP in that case specifically stated that USACE could not guarantee the relevance, timeliness, or accuracy of the reports.* In addition to this unequivocal express disclaimer, the *CCI* Board further found that the contractor's reliance was unreasonable because specific *CCI* contract language provided that "site specific geotechnical information necessary to design and construct the project was the contractor's responsibility." 14-1 BCA ¶ 35,546 at 174,198. In contrast, the contract at issue here contains no unambiguous disclaimers, instead specifically providing–in several locations throughout the RFP–that JCG was entitled to rely upon the government's Geotechnical Report in formulating its offer. Moreover, the contractor's duty to furnish a geotechnical report on the Biolab Project was not triggered until *after* the contract was awarded.

For the reasons detailed below, we decide that appellant encountered a Type I DSC. The quantities of rock encountered greatly exceeded the quantity reasonably foreseeable based on a fair reading of contractual indications, albeit the Project was constructed in highly-variable karst topography at the site. However, neither appellant's pre-bid reliance solely on two borings most relevant and proximate to the Biolab foundation, nor the government's position (as refined at trial) that appellant should have performed, as a minimum, a detailed analysis of the USAMRIID borings hundreds of yards distant from the Biolab site, are reasonable. Appellant assumed perfection—no rock above competent rock for installation of the five-foot rock socket. And, the government contentions assume essentially a worst-case scenario, i.e., JCG should have anticipated exactly what it encountered given the unpredictability of drilling in the karst. In these circumstances, and in particular what we consider to be the extreme variance in the amount of rock actually encountered versus what a reasonable interpretation of the contractual indications would have predicted, we conclude that appellant is entitled to recovery, with the adjustments set forth herein that consider all of the facts, circumstances and contractual indications of subsurface conditions in this case.

JCG relied primarily on indications from borings DH-11 and DH-12, because those two borings were most proximate to the Biolab building footprint and showed the top of competent rock at an average depth of 18.2 feet, overlaid by soil. Borings DH-11 and DH-12 did not call out or indicate any rock between the ground surface (grade) and the top of competent rock. Based on the 2 boring representations, JCG's caisson drilling estimate, as well as its contract price, was based on drilling through soil until striking the top of competent rock at an average depth of 18.2 feet. JCG's plan then called for drilling 5 feet into the competent limestone rock to establish the 5-foot rock socket. With a plan for 48 caissons, the total as proposed amount of rock drilling in the JCG estimate was 240 feet.

JCG's subcontract with Seaboard Foundations was also based on drilling 5 feet of rock (the socket) for each caisson and a total linear foot rock drilling subcontract for 240 feet. Nevertheless, the Seaboard subcontract provided for unit prices for quantities in excess of the 5-foot socket. We have found that JCG actually drilled a total rock quantity of 923 feet, an increase over estimate of 375%.

Although reliance on those two borings was unreasonable as we have stated above, in our view it was more reasonable than the government's analysis and reliance on the USAMRIID borings 300-500 feet away. At the hearing, all witnesses testified to the importance of proximity when interpreting subsurface conditions. The borings selected for the Geotechnical Report failed to include sufficient borings at the critical site of the Biolab's foundation. Borings DH-11 and DH-12 were the only borings bordering the footprint of the Biolab building and did not indicate *any* rock between grade and the top of competent rock. Moreover, the core box photos for the borings very persuasively supported appellant's conclusions about subsurface conditions generally and the quality of the rock encountered at those boring locations.

However, a primary reason for our conclusion that JCG is entitled to relief despite its misreliance solely on DH-11 and DH-12, is the gross disparity between the quantities of incompetent rock actually encountered and the quantity that we consider was reasonably indicated in the contract's Geotechnical Report. Even if it had expanded its pre-proposal analyses to include the seven most proximate borings to the Biolab site, as in the Heuer study, or devoted the time and effort to analyze the 26 USAMRIID borings as did the Corps at trial, the disparity was material and not reasonably foreseeable.

First, the USAMRIID borings were up to 500 feet distant from the Biolab foundation. Moreover, the government's analysis thereof was refuted by both Dr. Heuer and JCG's chief estimator, who performed separate independent analyses of those borings. Both witnesses convincingly demonstrated that the actual Biolab subsurface drilling conditions were far worse (and different) than one would predict based on the USAMRIID borings. Mr. Graham testified that an analysis of the USAMRIID borings alone revealed that JCG could have expected an average of 3.72 feet of incompetent rock; and when combined with the other 7 closest borings to the Biolab building could have expected an average of 3.29 feet of incompetent rock or an additional total 158 feet over appellant's 240-foot (48 caissons) estimate. JCG actually drilled through an average of about 14 feet of incompetent rock before it reached sound limestone for the 5-foot rock socket, or approximately 3.75 times the amount of rock that could have been anticipated based on the USAMRIID borings. Since the actual rock encountered totaled 923 feet, Biolab subsurface conditions were not reasonably foreseeable, even considering the USAMRIID borings.

Nevertheless, we consider some "allowance" for incompetent rock is appropriate. We have carefully considered all of our findings and the extensive contractual indications in the solicitation's Geotechnical Report of subsurface variability and potential problems

with incompetent rock in drilling through the karst (findings 3-4, 13, 16-18, 24-26). In developing the "allowance" we have placed particular emphasis on: Dr. Heuer's extensive and persuasive expert opinion regarding the karst formation; the close proximity of only borings DH-11 and DH-12 to the Biolab site and the failure of the government to provide other boring data directly at the critical foundation site; the conclusions of Dr. Heuer's expanded study of the seven most proximate borings to the Biolab site; JCG's (and Seaboard's) foundation work on the SSP project where it did not encounter significant quantities of incompetent rock; and, the absence of any persuasive government analysis of why the rock actually encountered was reasonably foreseeable. Based on our consideration of all of the foregoing, in the nature of a "jury verdict" we conclude that the contract reasonably indicated that 360 feet of rock drilling would be required, or an additional 2.5 feet per caisson on average. This represents an allowance of 120 feet of drilling through incompetent rock plus appellant's planned 5 feet of drilling through sound rock for installation of the rock socket for each of the 48 caissons. Appellant actually excavated 923 feet of rock, 563 feet more than we consider was reasonably indicated.

In reaching our conclusions, we have fully and carefully considered all of the parties' competing contentions relative to proof of the DSC although we do not address each of them individually.

We stress that the 120-foot "allowance" and increase in the rock drilling quantity over that estimated by JCG in its proposal is not a disfavored "contingency" which the DSC clause was intended to deter and discourage. *See, e.g., Foster Construction C.A. & Williams Bros. Co. v. United States*, 435 F.2d 873, 887 (Ct. Cl. 1970). The allowance simply reflects a fair and reasonable estimate of what we have concluded was realistically indicated regarding the extent of incompetent rock at the Biolab site in the geotechnical report. Appellant argues that any allowance, above rock drilling quantities shown in the small subset of two borings (DH-11 and DH-12), is such a "contingency." That contention is unsound. Appellant failed to fully and reasonably consider the most relevant contractual indications in their entirety. The fact that rock drilling quantities in the karst are difficult to estimate, does not make estimates above the perfection appellant assumed (no incompetent rock for all 48 caissons across the entire footprint of the Biolab building) a "contingency." In this regard, we agree with Mr. DiMaggio's general distinction between disfavored contingencies and realistic "allowances" that reasonably consider contractual representations and indications in context and their entirety. Difficulty in quantifying the extent of that adjustment does not transform such reasonably required allowances into a "contingency." In this case, appellant's conclusion that it could estimate with accuracy the rock drilling quantity based on two borings was overly optimistic and simplistic. Its implicit assumption that DH-11 and DH-12 representations at those locations were scientifically precise while other less optimistic representations would result in inclusion of unquantifiable, imprecise "contingencies" is flawed. JCG's geotechnical subcontractor Alphatec also contemporaneously recommended inclusion of a "significant allowance" and stressed that JCG "bid accordingly." Even JCG discussed the need for an "allowance" in

the micropile section of its technical proposal, in essence adopting the Alphatec recommendation. We fail to see how Grimberg can find an "allowance" warranted and reasonable for a micropile foundation, but a disfavored "contingency" for deep foundation piers and caisson drilling at the same site. Under the circumstances here appellant's sole reliance on the two borings, giving them "preeminent importance," was unreasonable. *Cf. W.D. McCullough Constr. Co.*, ENG BCA No. 4593, 87-1 BCA ¶ 19,515 at 98,639 (in finding the contractor entitled to a Type I DSC, the Board observed, "The Government's suggestion that Appellant should have included a contingency in its bid, giving pre-eminent importance to [certain specifications] while ignoring the specification references and meaning of [others] defeats the intent of the 'Differing Site Conditions' clause"). Confronted with the plethora of cautionary contractual indications, "cherry picking" a subset of 2 of 46 borings, regardless of their proximity to the Biolab foundation, was unjustifiable in the circumstances of this case. Even appellant's proposal emphasized the inherent uncertainties. (Findings 37-38) Nevertheless, the decisive fact in this case is that JCG encountered far more incompetent rock than was fairly reasonable indicated in the contract. Under these circumstances, we consider that our discretionary "jury verdict" "allowance," based on our best judgment giving careful consideration to the entire record, provides the appropriate remedy on the facts of this case.

On the other hand, we reject the Corps' assertions that appellant failed to give timely notice of the DSC. We agree with appellant that various general, theoretical advisements (including the December 2009 ECS report), regarding the future possibility that JCG might encounter materially more extensive incompetent rock than estimated, were too generic and speculative to trigger an obligation to provide the government notice prior to actually encountering the DSC after drilling commenced in March 2010. Moreover, the government was not prejudiced by any such delays. Appellant timely provided requisite notice soon after drilling commenced and both parties tracked actual rock quantities encountered. The government contemporaneously could also have tracked and, or challenged calculation of the quantities as the work progressed. The government's unpersuasive contentions now questioning the accuracy of the quantities are untimely and also highly speculative. Moreover, any advantages of revamping the foundation design and substituting a "micropile" methodology were also speculative and fully considered and rejected by JCG and its designer during the design process. Micropiles would have introduced foundation re-design delay. In any event, any material net cost/time savings are pure conjecture and have not been persuasively addressed, analyzed and proved by the government.

Government contentions that conditions were not materially different because JCG's proposal contained an additional five-foot design allowance for seating the rock socket are also without merit. The record establishes that the additional five-foot of socket was a *design* allowance to address the possibility of building *design* loads exceeding the capacities of a five-foot socket. We have found that the additional five feet was unrelated to subsurface conditions prior to reaching the top of sound rock. (Finding 33)

In addition, government assertions, that Grimberg's damages were self-inflicted in part due to drilling deeper than necessary, are speculative and unsupported by the contemporaneous record of substantial persuasive testimony. We consider that appellant reasonably attempted to mitigate adverse impacts of the DSC through completion of the MEP work and grade beam installation. Again, this is a matter that should have been raised by the government and discussed contemporaneously during the actual drilling process.

B. DELAY, ACCELERATION, AND IMPACT—ASBCA No. 59717

ADDITIONAL FINDINGS OF FACT

i. Baseline Schedule and Schedule Updates

114. The Biolab Project was subject to the requirements of the 2005 Base Realignment and Closure Act (BRAC) (APF 138). The BRAC statute established a mandatory date (September 15, 2011) for the Navy's facility to be closed and realigned. Compliance with this mandate was considered nonnegotiable by the administrative contracting officer (ACO). In the event that the Project was excusably delayed, the ACO advised appellant that the government wanted to be able to consider accelerating the Project to ensure its timely completion. (App. supp. R4, tab 109; tr. 6/21, 115)

115. The contract contained specifications related to schedules (R4, tab 23 at 278). The specifications required Grimberg to submit a baseline schedule and periodic updates thereafter (*id.* at 287-88). Grimberg was also required to submit narrative reports with its schedules (*id.* at 289; GPFs 128-29).

116. Mr. Bobbin, appellant's PM, was responsible for the Project schedule (tr. 2/66; GPF 131). During performance, Grimberg updated schedules on a monthly basis. These updates identified progress as of the date of the schedule update and projected Grimberg's future activities from the date of the update to substantial completion of the Project. (*See, e.g.*, app. supp. R4, tab 251; GPF 134)

117. In January 2010, Mr. Bobbin began working with a third-party scheduler, Aegis, in preparing schedule updates (tr. 8/86, 95-96). Mr. Bobbin then prepared monthly schedule narratives to accompany the monthly updates (tr. 1/96, 2/68-69, 8/86). When Aegis became the scheduler, it would summarize the schedules for Mr. Bobbin to assist in writing his schedule narratives (tr. 7/211). These updates were typically prepared to reflect the status of the Project at mid-month (tr. 2/69, 8/87-88).

118. The baseline schedule required Grimberg to relocate a waterline running beneath the Biolab foundation by February 11, 2010 (app. supp. R4, tab 249 at 1). Once the waterline work was complete, Grimberg was to begin drilling caissons in "Area 1."

Following completion of that activity, Grimberg was to begin installing grade beams in "Area 1." (App. supp. R4, tab 249 at 1; GPF 133) The Update Package was prepared "between the 15th and the end of the month." The package was compiled to be submitted to the Corps "usually around the 25th of each month." (Tr. 8/88)

119. Beginning with Update Four, prepared in January 2010, Grimberg retained Aegis to prepare its schedule updates (tr. 2/165, 4/8, 7/206). Mr. Hatwell prepared schedule Updates Four, Five, and Six, which covered January, February, and March of 2010, respectively. He also worked on Update Eleven, Grimberg's alleged "acceleration schedule." (Tr. 4/8, 7/207; GPF 137)

120. The parties' experts have extensively analyzed contractual activities (and their alleged delaying impacts, if any, on the schedule) prior to the commencement of Seaboard's mobilization and caisson drilling on March 8-9, 2010. However, the only delay-related claims involve the appropriate time extension for the DSC (ASBCA No. 58791) which commenced on March 9, 2010, with the drilling of the first caisson and which we have resolved above, and the appellant's acceleration claim for the period commencing in August 2010 after completion of drilling. Moreover, we have denied JCG's post-July 2010 Changes clause acceleration claim for numerous reasons, as detailed below. Accordingly, we need not address in detail the parties' contentions with respect to delaying events in the pre-caisson drilling period. We note however, that the parties entered into a bilateral agreement (Mod. A1) extending the contract completion date by six days for adverse weather in the February-March 2010 period (referred to as "snowmaggedon") immediately preceding commencement of caisson drilling (finding 148 below).

ii. The ACO's July 30 Letter and Immediate Aftermath

121. At the June 11, 2010 Progress Meeting, schedule delays from the alleged caisson DSC and unusually severe weather were discussed including accelerating concrete activities with JCG's concrete subcontractor (FC) to mitigate those delays (app. supp. R4, tab 108; tr. 8/75-76). The narrative for the June 15, 2010 schedule update further indicated that JCG was "looking into ways to make up" time (APF 271). The update contained logic and duration changes made by JCG to accelerate the Project (tr. 7/41).

122. The July 15, 2010 schedule update narrative states, *inter alia,* that JCG had been delayed 13 days by the weather and 26 days as a result of the alleged DSC (app. supp. R4, tab 232).

123. On July 27, 2010, appellant emailed the Corps to confirm that it was continuing to work on schedule improvements to mitigate delays associated with the alleged DSC (APF 274).

124. JCG's Narrative for the July 15, 2010 Project Schedule reported that the Project was 39 work days behind schedule because of the original snow delay and unsuitable rock. JCG further noted in the Narrative that "we are looking into ways to make up some of this time." (APF 275)

125. By letter dated July 30, 2010, Mr. Denis du Breuil, the Corps ACO for the Project, instructed JCG:

> This Project is authorized and funded as part of the Navy response to the requirements of the BRAC 2005 statute. One key provision of the statute is its mandate to close/realign installations by no later September 15, 2011. To meet the requirements of this date, your Project must be completed on schedule. Meeting this date is not an objective that we are striving to achieve; it is one that we must meet. Let me be clear, this is not business as usual.
>
> One tool the government is planning on using to overcome delays caused by government initiated changes to the contract is to provide compensation to your firm to accelerate to recover your scheduled completion where it makes sense. To aid the decision making process of this effort, from this date forward, all contractor proposals with schedule impacts shall be submitted with two separate proposals. The first shall be a proposal with costs and time without acceleration. The second shall be a proposal with costs without time but with acceleration. All costs shall be proposed in strict accordance with the contract requirements. Both submissions shall be submitted with sufficient detail to allow for simultaneous negotiation.
>
> All proposed impacts to the Contract Required Completion Date shall be supported by reference to the approved baseline schedule. Justification is required for any proposed time extension. This justification shall include, at a minimum, a schedule fragment network showing the impacts and a schedule fragment network showing the acceleration.
>
> This direction applies to all contractor proposals whether in response to a Government Initiated Request for Proposal or a contractor initiated Request for Equitable Adjustment. Further, this direction applies to all proposed impacts to the Contract Required Completion Date as defined in the Notice

> to Proceed Date plus the Contract Duration (including settled changes).
>
> Lastly, this direction applies to Weather/Time Extensions. If a Monthly Weather Evaluation, after it has been reviewed and agreed to by the Government's Onsite Representative, indicated that additional time should be added to the Contract Required Completion Date the contractor should submit a proposal to accelerate this schedule to eliminate the weather impacts.

(APF 276)

126. Without complying with the instructions and without providing the information requested in the ACO's July 30 letter, JCG accelerated its work in August 2010 until the Project was completed (tr. 1/100-08, 2/14-22, 114-17, 3/193-94; app. supp. R4, tab 46; R4, tab 179 at III-37-38).

127. On August 2, 2010, the Corps' project engineer emailed appellant as follows:

> Let this serve as a heads-up that we will be requesting a "recovery schedule" in the near future. The topic of [The Project's] schedule has reached our own North Atlantic Division (NAO) with some notoriety. Aware that you've been in touch your concrete subcontractor regarding this matter, I'm asking you for a preliminary status for this recovery. As such, are there more subs that you have or will be contacting in an attempt to adjust their schedule? If so, which ones? I'm requesting this information in an effort to forestall having you provide a detailed, official "recovery schedule" until a more opportune time.

(R4, tab 154 at 335)

128. In an August 2, 2010 letter from JCG to its subcontractor FC, JCG stated (R4, tab 150 at 14):

> SUBJECT: Proposal No. 13-Acceleration Directive
>
> Gentlemen:
>
> As discussed at our meetings on July 27 and July 29, 2010, this project is a BRAC project, which means that the project

> completion cannot slip. The United States Army Corps of Engineers recently requested a recovery schedule from Grimberg to indicate how Grimberg will meet the required completion date for the project.
>
> Currently, the project's critical path goes through concrete and is entirely based on work that is your firm's responsibility.

129. An internal Corps "Information Paper" (IP) was issued August 6, 2010, the purpose of which was to "address[] issues potentially impacting [the] Project...including recoverable delays" (app. supp. R4, tab 11 at 6). After noting that the Project was 39 work days behind schedule, the IP stated:

> **Issues:**
>
> 1. Contractor is behind schedule due to laboratory design challenges, deeper than expected drilled pier foundations, and extraordinary adverse weather events.
>
> a. Contractor adjusted work schedule to 10-hour days and weekends as necessary and is actively coordinating recovery schedule with subcontractor/suppliers; anticipating on-time completion.
>
> b. CENAB issuing RFP to contractor for buyback of documented adverse weather days and additional time associated with increased drilled pier depth. Contingency funds will be requested when appropriate.

(*Id.*)

130. By an August 8, 2010 email, JCG continued to advise that it was entitled to a time extension of 39 work days for the excusable delay and absent a time extension, it would "need to accelerate various tasks" (APF 285).

131. JCG's Narratives for the August 15, September 15 and October 15, 2010, Project Schedule Updates all state:

> Please note that the schedule provided with this update incorporates accelerated work activities and manpower. The schedule is provided as a recovery schedule. Grimberg is seeking compensation for the acceleration effort of this work.

> Previously, the project showed -39 days, this was primarily due to the original snow delay and unsuitable rock being encountered at the rock sockets in which additional drilling of rock was required.

(APF 287)

132. The minutes of the August 27, 2010 Progress Meeting, under "Schedule Update as of August 15, 2010" state, "A recovery schedule was submitted showing zero day float. Accelerated efforts by Frederick Concrete allow schedule to be brought back to zero." (APF 288)

133. In addition to the concrete work, JCG also made other changes in the scheduled logic, sequencing and prosecution of the work along with increasing the resources, labor and equipment and subcontractor resources devoted to the Project to shorten the duration of scheduled activities and accelerate completion of the Project (APFs 289-90, 297-300; tr. 1/100-01, 106-08, 2/17-22).

134. JCG's August 15, 2010 Accelerated Schedule Update showed substantial completion by the contractually-specified date of June 20, 2011 (app. supp. R4, tab 259; APF 291).

135. By letter dated August 16, 2010, JCG submitted its Proposal No. 1 for costs associated with "Caisson Additional Drilling" (APF 292).

136. Also by letter dated August 16, 2010, JCG submitted its Proposal No. 13 for "Acceleration for 10 Weeks, 23 Overtime Work Days Due To Drilled Pier Delays" in the amount of $319,797 (APFs 293, 296). This proposal did not provide a justification for the extension or schedule fragment networks showing impacts of alleged delays and proposed acceleration efforts to overcome those delays, as requested in Mr. du Breuil's July 30, 2010 letter. It states that it is seeking an extension for "unknown" days. (R4, tab 12)

137. On August 19, 2010, JCG advised the government of its acceleration efforts and that it was seeking payment therefor (APF 294). On the same date, the government notified JCG that it would review the above proposals (along with others) but also advised JCG that the Corps "has not directed [appellant] to accelerate" (app. supp. R4, tab 75 at 2; APFs 294-96).

138. JCG's Narrative for the October 15, 2010 Project Schedule Update communicated (APF 303):

> JCG's ongoing acceleration efforts, as well as JCG's expectation to be compensated:

> Please note that the schedule provided with this update incorporates accelerated work activities and manpower to show a zero float in a project on schedule. The schedule is provided as a recovery schedule. Grimberg is seeking compensation for the acceleration effort of this work.

139. The government did not request appellant to stop the acceleration effort (APF 305).

140. On February 17, 2011, the Corps' contracting officer, Robert Wood, advised JCG (APF 306):

> As you are aware, it is imperative that subject project be completed by the June 20, 2011 contract completion date. This is necessary in order to allow the Customer ample time to fit-out the facility, move personnel and be operational by the Congressional Base Realignment Closure mandate of September 15, 2011.
>
> As part of achieving this congressional mandate and in the spirit of cooperation and partnering, I would ask that all major material suppliers (e.g., exterior windows) and major vendors (e.g., elevators) be strongly encouraged to make a concerted effort to fabricate and deliver their respective material and equipment in a timely manner to meet the current scheduling needs. There has been exemplary teamwork on this project as we have progressed to our current 75% completion. However, with only sixteen (16) weeks remaining all stakeholders, including their important material suppliers and vendors, must continue to pull together to meet the contract completion date.
>
> Please reinforce with your material and equipment vendors their critical role on this project. The US Army Corps of Engineers is appreciative of their continued focus and partnering to make timely deliveries. These efforts will ultimately result in making this project a success.

141. JCG's CPM updates from August 2010 through June 2011 projected completion no later than the required contractual date, as modified (APF 308).

142. Although the ACO knew that appellant was "initiating actions to recover lost time," he interpreted appellant's "recovery schedule" as implying that JCG considered that project delays were not government-caused (APF 309; tr. 6/118-19).

143. In a December 15, 2010 internal Corps' memorandum regarding "Notification of Option to Accelerate Construction Contract Due to Excusable Delay," the government acknowledged that "severe snow and Fort Detrick installation shut down prevented critical path activities for six days in February 2010." The memorandum further stated that "since this is a BRAC project, there is the option to buy back the lost time, which would not extend the contract duration." Finally, the memorandum indicated that "sufficient funds are not in place to have executed work associated with all of these changes identified to date." (APF 310)

iii. Permanent Utilities

144. The Corps was responsible for providing certain permanent utilities from the Fort Detrick Central Utility Plant (CUP), including permanent electric power, steam and chilled water. The power for the facility was provided by the CUP owned and operated by Chevron. The CUP was under contract to the government to also provide chilled water and steam to the Biolab and several other facilities at Fort Detrick. (APFs 314, 321)

145. Permanent power, chilled water, steam and hot water are utilities that are all required to run the Biolab when completed and also required to start up the equipment, test it, and then to ultimately commission the Project (APFs 315-16; tr. 6/37).

146. The August 15, 2010 (accelerated) CPM Schedule Update shows that the "Permanent Power Complete" Milestone finish date was December 31, 2010, with 17 calendar days of float (APF 319).

147. In addition, the August 15, 2010 CPM Schedule Update shows equipment start-up and commissioning activities beginning in January 2011 and continuing commissioning activities to project completion in June 2011 (APF 320).

148. On April 15, 2011, the government transmitted Modification No. A00001 (Mod. A1) to JCG for signature, granting a time extension pursuant to the Default clause for all adverse weather delays from May 29, 2009 to October 31, 2010, including the "Snowmaggedon" delay of six calendar days. The revised contract completion date was June 26, 2011. Appellant executed Mod. A1, without reservation. (App. supp. R4, tab 194; APFs 311-12, 331; GPF 172)

149. As of April 13, 2011, Chevron and the government had not provided power, steam or chilled water to the Biolab Project. Appellant had planned to "energize" the week of April 18, 2011. However, as noted in an email of April 26, 2011, it was delayed

by its subcontractor, RCD Electric, who was not yet ready for permanent power. (R4, tab 151 at 713)

150. Permanent power was provided on May 5, 2011 (APF 324).

151. The start-up of the HVAC systems had an actual start date of May 6, 2011 with a planned duration of five days. However, the activity was not completed for over a month. (App. supp. R4, tab 250 at 12, tab 262 at 12)

152. Other utilities were provided as of the end of May 2011. Appellant requested that they be furnished by June 1, 2011. (R4, tab 178 at 28) There is insufficient evidence to conclude that JCG was delayed solely by the government's failure to provide power and utilities in a timely fashion.

153. By June 30, 2011, the Biolab's life safety system was approved by the fire marshall for beneficial occupancy (app. supp. R4, tab 87 at 630).

154. The narrative for the July 15, 2011 Project Schedule Update notes that "during the last weeks numerous changes have been implemented in the Project" including the following (APF 339):

- Storm drain changes;
- Change FE7 type fence to ornamental type security fence;
- Install additional FFE items;
- Install additional built-in counters;
- Perform design of water filter system;
- Install additional 48-strand fiber;
- Install control conduit for Chevron devices;
- Install additional telecom cabling to MH-49. This included extensive research to identify existing spare cables;
- Install new CDX-09 hardware;
- Install new ice machines;
- Started procurement on water filter;
- Procurement of new "baker" clean benches; and
- Changes to ECP card reader access.

155. The government did not extend the contract completion date for the changes directed and/or issued in the summer of 2011, nor did the Corps assess liquidated damages (APF 342). The timing and nature of these "changes" has not been detailed. Nor has appellant attempted to prove their "criticality" or that they delayed completion of the Project. No claims have been filed with respect to such summer 2011 changes.

156. As of July 27, 2011, the lab portion of the Biolab was not functional (app. supp. R4, tab 87). Essential testing of the Biolab continued as late as August 12, 2011 (*id.* at 666).

157. The Biolab building was actually commissioned on August 15, 2011 (R4, tab 79). The Corps determined and we find that the project was substantially completed on August 19, 2011, although significant "punchlist" work remained that did not impact beneficial occupancy of the building (R4, tab 152 at 86, tab 175; tr. 7/34-35).

iv. Expert Analysis of Project Schedule Delays and Acceleration

158. Appellant called Mr. David Hatwell with Aegis Project Controls, as a schedule expert to testify regarding causes of, and responsibility for, Project delay and acceleration. Mr. Hatwell also prepared an expert report dated November 15, 2016. (APF 471)

159. The government called Mr. Stuart Ockman, as its schedule expert. Prior to testifying, Mr. Ockman prepared expert reports issuing a final report dated November 27, 2016. (APF 472)

160. Mr. Hatwell and Mr. Ockman used different methodologies to perform their Schedule Analyses (APF 486). However, they agree that JCG's baseline schedule was a reasonable plan for the Project (APF 487). They further agree that the Project was behind schedule on July 30, 2010, when the Corps issued its July 30, 2010 letter regarding the alleged acceleration of the Project. They disagree as to the causes of and responsibility for that delay. (APF 488)

161. Mr. Hatwell and Mr. Ockman agree that JCG accelerated the Project from August 2010 through completion, recovering delay experienced up to August 2010, although they disagree as to the extent of the delay recovered (APF 489).

162. Mr. Hatwell determined there were critical path delays to the start of caissons, installation of caissons and completion of the foundation grade beams and underslab MEP rough-in activities, followed by JCG's acceleration of the work to Project completion (APF 490).

163. Mr. Ockman identified three controlling delays and presented three Time Impact Analyses (APF 491):

- Time Impact #1: Late submittal of geotechnical report, which, Mr. Ockman contends, delayed the start of caissons;
- Time Impact #2: Late finish of caissons;
- Time Impact #3: Late start of grade beams.

164. Finally, Mr. Ockman's analysis contains a Time Impact Analysis #4, a comparison of Mr. Ockman's "as-built" schedule to his Time Impact Analysis #3 schedule. Mr. Ockman's Time Impact Analysis #4 acknowledges JCG accelerated the Biolab completion. Mr. Ockman's Time Impact Analysis #4 found that Grimberg recovered 55 days during this time. (APF 493; tr. 5/163; R4, tab 179 at III-5, III-6)

165. As noted above, we need not resolve the expert's differing opinions on the cause of any delays prior to commencement of caisson drilling. Furthermore, we have concluded that appellant encountered a DSC. Consequently, a considerable portion of Mr. Ockman's analyses are fundamentally flawed since they are premised on the incorrect assumption that there was no DSC. Moreover, we have carefully reviewed and weighed Mr. Ockman's analyses of allegedly concurrent JCG delays attributable to failure to effectively prosecute and sequence the caisson drilling, MEP work and grade beam installation and find them to be without merit because the evidence at the hearing demonstrated that his proposed means of construction were inconsistent with the site and specification restrictions. Accordingly, we have substantially adopted Mr. Hatwell's conclusions regarding the impacts, delays, resequencing, and inefficiencies and pre-August 2010 acceleration (including mobilization of three drill rigs), caused by and essential to overcome the DSC through completion of the MEP work and grade beams, in our findings below.

v. Caisson Drilling and Grade Beam Installation Delays

166. The parties agree that caisson drilling and placement of grade beams took longer than planned and critically delayed Project completion (APF 531).

167. JCG contends that the caisson DSC caused JCG to drill through approximately 400% more rock than planned (923 actual feet, versus 240 feet planned), delayed caisson completion and, in turn, delayed grade beam work for a resulting delay to Project completion of 39 calendar days (APF 532).

168. The Corps denies that JCG encountered a DSC and ascribes all critical path delay to the caisson and grade beam work to JCG (APF 533).

169. We have concluded that JCG encountered a Type 1 DSC (excessive incompetent rock), during the drilling of the caissons and that the drilling of extra rock greatly slowed caisson drilling operations and prevented JCG from achieving the baseline schedule plan of approximately 1.5 caissons per work day. We have further found that to mitigate the impact of the extra rock, JCG added a second drill rig on March 18, 2010 and third drill rig on April 12, 2010.

170. In total, the caisson work took from March 8, 2010 through May 27, 2010, a period of 81 calendar days and required a total of 116 rig days to complete (as

compared to 32 rig days as-planned drilling 1.5 caissons per day) (APF 548). As adjusted for the "allowance" for incompetent rock we have determined above, appellant should have planned for 48 rig days (50% more than planned), all other considerations being equal and unchanged. Thus, the adverse impacts of the DSC included an additional 68 rig days i.e., 116 actual rig days less the 48 rig days that appellant has estimated taking into consideration our "allowance."

171. The JCG Narrative for the May 2010 Monthly Schedule Update, prepared as of May 15, 2010, summarized the impact as follows (APF 549):

> As of this update, the Project shows minus 33 days. This is primarily due to the original snow delay and unsuitable rock being encountered at the rock sockets in which additional drilling of rock is required. Seaboard Foundation mobilized additional drill rig[s] to assist with drilled pier installation. This has greatly increased the production and helped recover time. Although, due to the increased amount of unsuitable rock encountered, the Project is behind due to this problem. Additional drilling to extend rock sockets will have significant impact on the drilled pier installation and cost.

172. The baseline schedule showed a combined duration for underground MEP rough-in and grade beams of 64 calendar days. The work was actually completed in 60 calendar days. (APF 554) Although grade beam and underground MEP rough-ins were planned to be performed concurrent with the caissons, on an as-built basis, this work was performed almost entirely after the completion of caissons for reasons that will be described below (APF 553). JCG began the layout for the underground MEP rough-in on May 25, 2010, and started underground piping installation activities on May 26, 2010 (APF 551).

173. On an as-built basis, the grade beam work was completed on July 28, 2010, focusing on the grade beam work continuously instead of concurrent with the caissons, JCG was able to reduce the grade beam duration from 56 calendar days in the baseline schedule to 29 calendar days (APF 552).

174. Mr. Hatwell concluded that there were two delays caused by the caisson DSC. First, the DSC caused an extended performance for the caisson installation. Second, the DSC caused JCG to mobilize three drill rigs instead of just one to mitigate the impact of the DSC, grade beams and underground MEP rough-in that could not be performed concurrently with the caissons. (APF 555) We so find.

175. According to Mr. Hatwell, as of the March 16, 2010 CPM Update (UP06), which was prepared shortly after critical path caisson work began, the Project was still

17 calendar days behind schedule, i.e. there had been no further schedule slippage as compared to the February 15, 2010 CPM Update (APF 558).

176. Mr. Hatwell determined that, as of the May 15, 2010 CPM Update (UP08), the caissons were projected to be complete by May 26, 2010, and substantial completion was projected to be August 4, 2011, with a total negative float of 45 calendar days, resulting in a schedule slippage of 28 calendar days as compared to the March 16, 2010 update (i.e., 45 calendar days minus 17 calendar days equals 28 calendar days) (APF 559). Mr. Hatwell allocated this 28 calendar days of delay to the caisson DSC (APF 560).

177. In the UP08, the critical path ran through the completion of Area 1 caissons, the start of Area 1 grade beams concurrent with Area 1 caissons, and followed by Area 1 underground MEP rough-in (APF 561). However, because JCG had to use three drill rigs to mitigate the impact of the caisson DSC, JCG did not have sufficient access to start either the underground MEP rough-ins or the grade beams until the caissons were nearly complete. We so find. (*See* findings 71-72; tr. 3/172, 220, 227-29, 4/22-23)

178. As of the July 15, 2010 CPM Update (UP10), the remaining grade beam work was on the critical path and projected to be completed on July 27, 2010 with substantial completion projected as August 15, 2011, or 56 calendar days (39 work days) later than the contract completion date (APF 563).

179. As compared to the May 15, 2010 CPM Update (UP08) which showed 45 calendar days of negative float, the July 15, 2015 Schedule Update shows an additional 11 calendar days of delay to project completion during the grade beam work (i.e., 56 calendar days minus 45 calendar days equals 11 calendar days) (APF 564).

180. Mr. Hatwell classified this additional 11 calendar day delay as part of the caisson DSC delay in that, but for the need to mobilize two additional rigs to mitigate the DSC, the grade beam work could have been performed concurrent with caissons pursuant to JCG's original plan (APF 565).

181. Mr. Hatwell concluded further, and we so find, that JCG's decision to use three rigs and defer grade beam and underground MEP work until the drilling was completed in lieu of using a single rig and performing concrete grade beam operations concurrently saved 54 calendar days of delay in that:

a. Per the daily reports, JCG completed the caisson drilling in 116 rig-days, using three rigs.

b. If only one (I) rig had been used, drilling the caissons would have taken 116 work days, or 160 calendar days.

c. Thus, given an actual start of drilling caissons on March 9, 2010, with one rig, the caisson work would not have been completed until August 15, 2010 (i.e., March 9, 2010 plus 160 calendar days equals August 15, 2010).

d. As originally planned, and as reflected in the January 2010 update, the grade beam and underground MEP work was to be completed 36 calendar days after the completion of caissons in all three areas using one rig.

e. Given an August 15, 2010 completion date of caissons using one rig and 36 calendar days additional time to complete the grade beams and MEP work, the grade beams and MEP work would have been completed by September 20, 2010.

f. The underground MEP rough-ins and grade beam work was actually completed on July 28, 2010 or 54 calendar days earlier than the September 20, 2010 date had only one rig been used.

(APF 566)

vi. Acceleration and Schedule Recovery

182. The parties agree that from August 2010 through June 2011, JCG accelerated the Project and successfully performed at a rate better than originally planned (APF 589).

183. JCG contends that its acceleration overcame all of the Project delay prior to August 2011, plus most of the impact of the government's delayed provision of permanent utilities and allowed JCG to substantially complete the Project by the end of June 2011 (APF 590).

184. The Corps contends that JCG recovered 55 calendar days of delay and substantially completed the Project on August 19, 2011 (APF 591). We have so found above.

185. In his analysis, Mr. Hatwell states that by the time JCG submitted the August 15, 2010 CPM update (UP11), the total Project delay had grown to 56 calendar days as a result of prior excusable delays (DSC and excusable delays to pre-drilling site work activities). As a result, Grimberg developed an acceleration schedule demonstrating how the lost time would be recovered. (APF 592)

186. JCG's UP11 showed that the Project would be substantially completed by June 21, 2011, essentially on time (APF 593).

187. Mr. Hatwell analyzed the August 15, 2010 accelerated schedule and concluded that the 56 calendar days of delay prior to August 2010 were projected to be recovered through adjustments to both activity durations and logic (APF 594).

188. Mr. Hatwell determined that through JCG's acceleration efforts, the Project continued to essentially remain on time from August 2010 until alleged substantial completion in June 2011. Although there were months where the schedule would slip a day or two due to duct rough-in and/or drywall, JCG quickly recovered those days in the next update (APF 595). We have previously rejected the major bases for his determination that substantial completion occurred in late June 2011 in our findings based on our independent analysis of the contemporaneous records and associated testimony (*see* findings 142-57 above). To the extent that Mr. Hatwell's conclusions are based on changes to the Project directed by the government near the conclusion of the job, there is insufficient evidence to evaluate the detailed nature, criticality and delaying impacts of the changes. Appellant has not filed separate claims for delays allegedly related to the changes.

189. Mr. Ockman also concluded that appellant had accelerated completion of the Project, finding, "[f]rom August 2010 through June 2011, Grimberg performed more quickly than originally planned, and that resulted in pulling back the projected completion date, which shows up as October 13, 2011..., pulling that back to August 19, 2011, 55 calendar days schedule recovery" (tr. 5/163).

DECISION—ASBCA No. 59717

Pre-August 2010 Delay and Acceleration to Overcome and Mitigate Impacts of DSC

Appellant contends that it was delayed a total of 39 days as a result of the DSC and adverse weather. Adverse weather issues were resolved by bilateral Mod. A1 which granted a time extension of 6 days, leaving 33 days related to the DSC.

We have reviewed the expert analyses and associated portions of the evidentiary record and, for the most part, agree with Mr. Hatwell's analysis of the period commencing with the start of caisson drilling on March 9, 2010, through the completion of the grade beam work on July 28, 2010. Pursuant to the DSC clause, we conclude that JCG is entitled to an equitable adjustment to compensate it for the extensive adverse impacts of the DSC. In particular, we conclude that appellant is entitled to recover its increased labor, material, equipment and other costs related to its efforts to overcome and mitigate the adverse effects of the DSC through resequencing its planned activities, the resulting inefficiencies associated with resequencing, and accelerating its efforts to complete the grade beam and MEP rough-in work. However, we have also found that appellant should have included an allowance for an additional 16 rig days (or a total of 48 rig days) given the extensive contract indications of incompetent rock. Subtracting that total from the

actual 116 rig days, adverse impacts of the DSC include an additional 68 rig days for which appellant is entitled to compensation. (*See* finding 70)

Given the interrelation and confluence of the caisson drilling, MEP rough-in and grade beam work, appellant's resequencing activities and its acceleration of completion of the grade beam work, and additional complexities introduced by our "allowance," we remand all issues related to the quantum ramifications and impacts (including delay days) of the DSC to the parties for negotiation. However, for purpose of their deliberations, we emphasize that government contentions regarding appellant-caused drilling delays and inefficient planning of the drilling, MEP and grade beam work have been rejected in our prior findings and in our discussion of the DSC above. We also emphasize for purposes of our discussion of JCG's post-July 2010 acceleration claim that any equitable adjustment for delays attributable to the DSC, in no event, can exceed the 33 days found by Mr. Hatwell in his expert analysis.

Post-July 2010 Acceleration

To prevail on its post-July 2010 acceleration claim under the contract's Changes clause, Grimberg must show: (1) that the contractor encountered a delay that is excusable under the contract; (2) that the contractor made a timely and sufficient request for an extension of the contract schedule; (3) that the government denied the contractor's request for an extension or failed to act on it within a reasonable time; (4) that the government insisted on completion of the contract within a period shorter than the period to which the contractor would be entitled by taking into account the period of excusable delay, after which the contractor notified the government that it regarded the alleged order to accelerate as a constructive change in the contract; and (5) that the contractor was required to expend extra resources to compensate for the lost time and remain on schedule. *Fraser Constr. Co. v. United States,* 384 F.3d 1354, 1360-61 (Fed. Cir. 2004). It is not enough to show that the government delayed a particular segment of work. Grimberg must establish that the delay to the Project was a delay on the critical path and must account for any concurrent contractor-caused delay. *Win Ballance, Inc.,* ASBCA No. 53710, 05-2 BCA ¶ 33,081. Grimberg must also establish the number of days of relief to which it is entitled. *Phillips Nat'l, Inc.,* ASBCA No. 53241, 04-1 BCA ¶ 32,567.

Appellant has failed to establish entitlement to recover for its post-July 2010 acceleration efforts. Grimberg's claim and complaint identified the DSC, and only the DSC, as the cause of delay to both the caisson and grade beam construction work.[4] We

[4] The Hatwell Report determined that rough grading and weather at the site were additional causes of delay. It also identified waterline installation as a delay, though it did not quantify this delay. However, no claim covering the pre-March 2010 period prior to commencement of drilling was filed by JCG requesting time extensions for rough grading, CUP contractor and/or waterline delays.

have found above that appellant encountered a DSC and is entitled to a time extension as a result of the DSC not to exceed 33 days. The weather delay was resolved by bilateral modification and appellant was granted a 6-day time extension.

Appellant asserts that the ACO's July 30, 2010 letter satisfied the requisite "order" element essential to proof of acceleration. Significantly, however, appellant had begun accelerating well before the alleged "order" was issued. Moreover, that letter did not constitute an "order." It was simply a preliminary informational request that was intended to allow the government to consider acceleration options to "buy back" time and ensure project completion in compliance with the BRAC statute. It did not direct Grimberg to accelerate. It requested proposals to evaluate whether Grimberg should be directed to accelerate and anticipated that the parties would first negotiate before any compensable acceleration occurred. Appellant never complied with the ACO's July 30, 2010 letter to provide a detailed acceleration plan for government review. Grimberg simply accelerated and then informed the government after the fact, thereby depriving the Corps of any role in deciding how to manage the Project.

In short, there was no "order" to accelerate by the government, much less any notice to the Corps that appellant considered any government directive to be such an order. JCG also did not make a timely and sufficient request for an extension to the contract completion date. Failure to timely request an extension bars recovery. *Cf. Commercial Contractors Equipment, Inc.*, ASBCA No. 52930 *et al.*, 03-2 BCA ¶ 32,381.

In addition, the contract was not substantially complete in late June 2011. We have determined that substantial completion did not occur prior to August 19, 2011. Since we have concluded that appellant was entitled to a time extension for the DSC of no more than Mr. Hatwell's 33 days, appellant was at most only entitled to an extension of the completion date through the end of July 2011, including the 6 weather days granted in Mod. A1. The government never required appellant to complete by the originally-scheduled completion date. Nor did the Corps threaten or assess imposition of liquidated damages.

We further note with respect to substantial completion, both Grimberg's claim and complaint concluded that the Project was complete on August 15, 2011, not June 28, 2011. To the extent that the Hatwell Report could be read to conclude that the Project was complete on June 28, 2011, it failed to analyze schedule updates in the post-June 2011 period.[5] We have previously rejected the major bases for his determination that substantial completion occurred on June 28, 2011. To the extent, if any, that his conclusions are based on changes to the Project directed by the government near the conclusion of the job, there

[5] The Hatwell Report also inconsistently concludes that the Project was *not* substantially complete as of June 28, 2011, due to delays caused by the government's alleged failure to provide permanent power. The Hatwell Report does not however allocate any delay days to this event.

is insufficient evidence to evaluate the detailed nature, criticality and delaying impacts of the changes. Appellant has not filed separate claims related to any alleged changes other than those discussed below, and there is no persuasive JCG analysis of delays in the post-June 2011 period.

JCG also has failed to establish that it made a timely request for a time extension that was denied by the government. Contrary to appellant's assertions, the statutory deadline did not preclude all time extensions, so long as the September 15, 2011 deadline was met. As originally scheduled, the contract completion date was late June 2011, allowing adequate time for extensions beyond the weather delays granted by Mod. A1 to compensate appellant for the impacts of the DSC.

ASBCA No. 59717 is sustained in part with respect to the delays and impacts attributable to the DSC prior to August 2010 under the DSC clause to the extent indicated, but is denied with respect to appellant's claim for the costs of accelerating Project completion during the post-July 2010 period.

C. ASBCA Nos. 59167, 59168, 59169, 59170

ADDITIONAL FINDINGS OF FACT

190. On October 3, 2013, appellant filed a consolidated certified claim with the contracting officer requesting a total of $387,715 for six different claims and asserting that it was entitled to relief under the Changes clause. Five of the six consolidated claims were denied by the contracting officer in a final decision dated January 15, 2014. Grimberg timely appealed the final decision on February 20, 2014. In docketing the appeal on February 24, 2014, the Board assigned separate docket numbers for the five components of appellant's consolidated claim denied by the contracting officer as follows: ASBCA No. 59167—fire hydrant and waterline claim; ASBCA No. 59168—increased asphalt; ASBCA No. 59169—additional card readers; ASBCA No. 59170—temporary electric power; and, ASBCA No. 59171—epoxy seams. As noted above, the parties agreed to dismiss the latter appeal, ASBCA No. 59171 with prejudice.

191. The contract incorporated FAR 52.236-21, SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION (FEB 1997). The clause stated in part:

> (a) ...Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the

Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contactor without such a determination shall be at its own risk and expense.

(R4, tab 3 at 65)

192. The contract included, in full text, the following pertinent clauses:

DESIGN-BUILD-CONTRACT-ORDER OF PRECEDENCE

(a) The contract includes the standard contract clauses and schedules current at the time of contract award. It entails (1) the solicitation in its entirety, including all drawings, cuts, and illustrations, and any amendments, and (2) the successful offeror's accepted proposal. The contract constitutes and defines the entire agreement between the Contractor and the Government. No documentation shall be omitted which in any way bears upon the terms of that agreement.

(b) In the event of conflict or inconsistency between any of the provisions of this contract, precedence shall be given in the following order:

(1) Betterments: Any portions of the accepted proposal which both conform to and exceed the provisions of the solicitation.

(2) The provisions of the solicitations. (See also Contract Clause: SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION.)

(3) All other provisions of the accepted proposal.

(4) Any design products including, but not limited to, plans, specifications, engineering studies and analyses, shop drawings, equipment installation drawings, etc. These are "deliverables" under the contract and are not part of the contract itself. Design products must conform with all provisions of the contract, in the order of precedence herein.

....

RESPONSIBILITY OF THE CONTRACTOR FOR DESIGN

(a) The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and any other non-construction services furnished by the Contractor under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiency in its designs, drawing, specifications, and other non-construction services.

(b) Neither the Government's review, approval or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract, and the Contractor shall be and remain liable to the Government in accordance with applicable law for all damages to the Government caused by the Contractor's negligent performance of any of the services described in paragraph (a) furnished under this contract.

The rights and remedies of the Government provided for under this contract are in addition to any other rights and remedies provided by law.

(R4, tab 3 at 80-81)

193. Section 00100, paragraph 1.3, of the solicitation "Instructions," required, *inter alia,* that offerors were to submit technical and price proposals (R4, tab 3 at 5). Regarding the evaluation of the price proposal, the solicitation stated at paragraph 2.3 in part:

> 2.3 Volume II (Price Proposal, Factor 9 and Factor 10) of the proposal will be evaluated by a Price Evaluation Committee (PEC) established by the Source Selection Authority (SSA). Price will be evaluated for reasonableness, but will not be scored. Proposals will be evaluated using price analysis techniques. Prices in an offeror's proposal and breakdown are required to be reasonable for the work to be performed and consistent with relevant elements of the technical proposals.

(*Id.* at 8)

194. Further relative to the evaluation of the price proposal, the solicitation stated in paragraph 6 of section 00100 in pertinent part:

> 6.0 VOLUME II: EVALUATION CRITERIA (PRICE or COST PROPOSAL)
>
> 6.1 DEFINITIONS
>
> a. Price Analysis: The process of examining and evaluating an offeror's proposed price to determine if it is fair and reasonable without evaluating its separate cost elements and proposed profit/fee. Price analysis always involves some sort of comparison with other prices; e.g., comparing an offeror's proposed price with the proposed prices of competing offerors or with previously proposed prices for the same or similar items.

(R4, tab 3 at 17)

i. Fire Hydrants and Waterline—ASBCA No. 59167

195. The RFP and contract contained contract drawing CLIOl, "LAYOUT AND UTILITIES PLAN." The new construction on the drawing depicted two fire hydrants to be installed outside the main Biolab building. There was no hydrant indicated on the drawing outside the Project Entry Control Point. JCG's proposal assumed that only two hydrants were required, and a two-inch diameter potable waterline to the Entry Control Point Building (ECP). (Tr. 1/159; R4, tab 22 at 110; app. supp. R4, tab 219 at 364)

196. Contract specification section 01 10 00, paragraph 4.2, entitled "APPLICABLE MILITARY CRITERIA," stated "The Project shall conform to the following criteria" to include "UFC 3-600-01 Design: Fire Protection Engineering for Facilities, Sept. 2006" (UFC or sometimes hereinafter Fire Code) (R4, tab 23 at 89).

197. UFC section 01 10 00, paragraph 6.5.8.5(5)(d)(ii)(d) "Spacing Requirements," stated:

> A sufficient number of hydrants must be provided so that hose stream demand can be met without taking more than 1,250 gpm from any single hydrant. Hydrants must also be spaced in accordance with the following requirements.
>
> a. All parts of the building exterior must be within 350 ft of a hydrant with consideration given to accessibility and obstructions.

(R4, tab 23 at 125)

198. UFC 3-600-01, "DESIGN: FIRE PROTECTION ENGINEERING FOR FACILITIES," paragraph 3-7.3.2 "Spacing Requirements," stated:

> A sufficient number of hydrants must be provided so that hose stream demand can be met without taking more than 4,740/L/min (1,250 gpm) from any single hydrant. Hydrants must also be spaced in accordance with the following requirements:
>
> - All parts of the building exterior must be within 106 m (350 ft) of a hydrant with consideration given to accessibility and obstructions.

(R4, tab 31 at 32)

199. One prospective subcontractor submitted a quote to Grimberg that included three fire hydrants. Another submitted a quote that only included two hydrants. (APF 619; R4, tab 141 at 207-10; tr. 2/48-49)

200. To satisfy the Fire Code requirements, a third hydrant was needed to provide sufficient coverage of the ECP (R4, tab 22 at 110, tab 24 at 257; tr. 1/31-32). JCG's bid did *not* include cost for a third hydrant at the ECP site (APFs 616-18). There is no express language in appellant's proposal indicating that JCG did not intend to comply with the UFC requirements.

201. However, the JCG proposal stated (APF 620):

> The RFP and conceptual drawings do not indicate a fire hydrant in close proximity to the guard house [ECP]. It is recommended, due to the size of the ECP, that a new hydrant be installed in the general vicinity. This hydrant would be supplied by an 8" diameter water service from the building loop.

202. Following award, the Corps required appellant to install the third hydrant in compliance with the Fire Code (APF 622).

203. To accommodate the water flow for the third hydrant at the ECP building, JCG changed the waterline from a two-inch PVC-pipe waterline to an eight-inch ductile iron pipe waterline (APF 623).

204. On or about May 12, 2011, JCG submitted a request for equitable adjustment in the form of "Proposed Change Order 7" (PCO 7) for the claimed additional costs of $98,727

associated with the third hydrant and eight-inch ductile iron pipe waterline at the ECP (R4, tab 32). The Corps rejected this proposal in a letter dated June 9, 2011 (APF 629).

205. By letter dated June 11, 2012, Grimberg stated that the pertinent contract drawing only depicted two fire hydrants and that, under *M.A. Mortenson Company*, ASBCA No. 39978, 93-3 BCA ¶ 26,189, Grimberg was entitled to rely on the contract drawings for purposes of preparing its cost proposal (R4, tab 35). On October 3, 2013, Grimberg filed a certified claim for the waterline in which it requested $57,525 for the alleged waterline changes (R4, tab 25 at 5-6).

ii. Asphalt Pavement—ASBCA No. 59168

206. Subsection 5.2.3 of the Statement of Work, "GENERAL TECHNICAL REQUIREMENTS," addresses "Pavement" and stated in part:

> The Offeror's geotechnical report shall contain flexible and rigid pavement design(s) including design CBR and modulus of subgrade reaction and the required compaction effort for subgrades. Pavements shall be designed in accordance with Federal Department of Transportation[.] Regardless of the pavement design, a minimal flexible pavement section shall consist of 3 inches of asphalt and 8 inches of subbase. The minimum subbase can be neglected if the subgrade has a CBR greater than 30.

(APF 670)

207. Other standards also applied to the design of the pavement including the Corps Pavement-Transportation Computer Assisted Structural Engineering (PCASE) program and the AASHTO Guide for Design of Pavement Structures standards (R4, tab 4 at 1, tab 24 at 10).

208. The depth of the pavement section could not be determined accurately during the bid period as the design had to await completion of the post-award final geotechnical analysis (APF 122). JCG's estimate and technical proposal for the Project contemplated a 1.5-inch asphalt surface and a 2.5-inch asphalt base for both the parking lot and the access road "for bidding purposes," but further stated:

> The pavement design shall be performed in accordance with the USACE Pavement Transportation Computer Assisted Structural Engineering program or AASHTO Guide for Design of Pavement Structures method. The ESAL design criteria listed in the RFP will be used as the basis of the

> pavement section design. Because the actual CBR value for the pavement subgrade will be determined by future geotechnical investigations, the pavement section cannot be accurately determined at this time.

(R4, tab 22 at 108)

209. On May 17, 2010, Grimberg's designer submitted its initial design analysis on the Project. Grimberg's pavement design required a total of 6 inches asphalt (2 inches asphalt surface course + 4 inches asphalt base course) for the heavy duty access road and 4.5 inches asphalt (1.5 inches asphalt surface course + 3 inches asphalt base course) for the standard-duty parking lot. (GPF 319)

210. On December 9, 2010, Grimberg filed RFI 0076 titled "Asphalt Thickness" in which it requests additional compensation for installing asphalt over thickness of 3 inches. In its request, Grimberg states the RFP indicated an asphalt thickness of 3 inches and that additional thickness of asphalt was added to design by Corps. (GPF 320)

211. On December 10, 2010, the Corps responded to RFI 0076 by directing Grimberg to comply with the asphalt thickness quantities specified in Grimberg's design for the Project as stated in Grimberg's design analysis (GPF 321).

212. Ultimately, JCG installed 4.5 inches of asphalt on the parking lot and 6 inches of asphalt on the access road (R4, tab 21 at 7; tr. 2/143).

213. On or about August 23, 2011, JCG submitted Proposed Change Order 52 (PCO 52) for the additional costs in the amount of $82,910 associated with increasing the asphalt thickness beyond four inches, i.e., the amount included in JCG's cost proposal (APF 677; GPF 322). The Corps rejected this proposal in a letter dated February 3, 2012 (APF 678).

214. After the Corps rejected PCO 52, JCG submitted PCO 52 as a certified claim in the amount of $49,702 on October 3, 2013. The Corps' contracting officer issued a final decision rejecting JCG's certified claim on this issue on January 15, 2014. (APF 679; GPF 324)

215. JCG filed a notice of appeal with the Board on February 20, 2014, and filed a consolidated complaint regarding PCO 52 on March 24, 2014, in ASBCA No. 59168.

iii. Additional Card Readers at Entry Control Point (ECP)—ASBCA No. 59169

216. Section 01 10 00, paragraph 6.19.1(6) of the specifications stated (APF 660):

> (6) Provide a visitor processing area at the perimeter entrance to the compound. This visitor processing area is the single point of entry for all visitors entering into the new facility. This facility shall contain a physical security entry check-point, and registration check-in area. Provide infrastructure for X-ray and Walk-Thru Metal Detector. Provide a card reader for after-hours access and a turnstile for egress.

217. Section 01 10 00, paragraph 1.1(3) of the contract specifications, entitled "Guiding Principles," stated "(3) The new facility must meet all security, antiterrorism and force protection requirements" (R4, tab 23 at 31).

218. RFP Statement of Work, volume 1, section 01 10 00, paragraph 3.8.2, Entry Control Point Facility, contains a description of general requirements for the ECP and provided a general conceptual layout of the ECP. The sketch does not depict locations for card readers or any card readers at all. (R4, tab 23 at 81-82)

219. The sketch depicts only one entry and one egress point at the ECP where visitors enter into or exit from the Biolab building (APF 661). The sketch does not depict locations for card readers or any card readers (R4, tab 23 at 82).

220. Section 01 10 00, paragraph 4.2 of the contract specifications, entitled "APPLICABLE MILITARY CRITERIA," stated:

> The Project shall conform to the following criteria. Certain design impacts and features due to these criteria are noted for the benefit of the Offeror. However, all requirements of the referenced criteria will be applicable, whether noted or not, unless otherwise specified herein.

(R4, tab 23 at 89)

221. Section 01 10 00, paragraph 4.2 also incorporated UFC 4-510-01, DoD Medical Military Facilities, Design and Construction Criteria, as one of the applicable military criteria (R4, tab 23 at 89).

222. Section 01 10 00, paragraph 6.19 of the contract specifications, entitled "SECURITY," stated:

> All entries/exits into the facility are controlled with access control system and are monitored by CCTV. The Offeror shall: (1) Design the security/CCTV system and infrastructure (all wires, cables, back boxes, etc.) for a complete and operable system. The Offeror shall include all devices and infrastructure to provide a fully-functional and operational security system.

(R4, tab 23 at 273-74)

223. Section 01 10 00, paragraph 6.19.1 of the contract specifications, entitled "Security System," stated:

> Provide the design of the Fort Detrick Standard automated access control and security system to monitor all areas of the new facility. The Integrated Commercial Intrusion Detection System (ICIDS) III shall be used to meet the client's security requirements. The system interconnects with and is monitored by existing Fort Detrick ICIDS III System. A separate, dedicated security network shall be installed to support the system. The design of the security system is included in the design/build contract. The Offeror shall coordinate with the installation for all system requirements. The Offeror shall include as a bid option the installation and operational testing of all security components to include connection to the head end equipment in the Provost Marshalls Office.

(R4, tab 23 at 274)

224. Section 01 10 00, paragraph 6.19.1(6) of the contract specifications also stated:

> Provide a visitor processing area at the perimeter entrance to the compound. This visitor processing area is the single point of entry for all visitors entering into the new facility. This facility shall contain a physical security entry check-point, and registration check-in area. Provide infrastructure for X-ray and Walk-Thru metal detector. A card reader for after-hours access and a turnstile for egress. As part of the bid option, include procurement and installation of the equipment.

(R4, tab 23 at 275)

225. Section 01 10 00, paragraph 6.19.1(7) of the contract specifications stated: "Provide employee entrance(s) with card reader. Entrances shall be monitored with CCTV. Readers shall support anti-passback." (R4, tab 23 at 275)

226. RFP Drawing A005, entitled "Guard House Plans & Elevations," provided a general conceptual layout for the ECP (R4, tab 24 at 285). No card readers are depicted in the conceptual layout nor are other security requirements depicted on the layout. The vestibule immediately adjacent to the room labeled "Security Office" is labeled "Security Vestibule."

227. UFC 4-510-01, DoD Medical Military Facilities, Design and Construction Criteria, paragraph 12-14.1, stated: "Provide an ESS for Military Medical Facilities utilizing various combinations of capabilities for intrusion detection, duress alarm, door access control, Infant Protection Alarm, Staff Assist Alarm in behavioral health areas, video surveillance, and photo badging. Refer to Chapter 14, Physical Security, for additional information and requirements." (R4, tab 53 at 218)

228. UFC 4-510-01, paragraph 12-14.6, "Door Access Control," stated: "Provide electronic door access control capability at the locations listed here as required by the project-specific criteria" (R4, tab 53 at 222). These door access controls included card readers:

> Monitor and control of door access activity and events shall utilize the integrator network Workstation. Provide an interface between the video surveillance and the door access control capabilities to initiate video monitoring and recording of surveillance cameras anytime these doors are opened unless an authorized access control card has been read by the card reader, or an authorized personal identification number (PIN) is entered in an access control keypad.

(*Id.*)

229. UFC 4-510-01, paragraph 12-14.6.1, "Access Controlled Door Locations," identified security offices as one of the locations with electronic door access controls. "Electronic door access control devices shall be provided at these locations: ...(r) Security Office and storage room doors." (R4, tab 53 at 222-23)

230. As-Built Drawing E 112 depicted the final security layout after construction of the ECP. Card Readers identified as "CR" on the drawing, are placed in Rooms 001, 002, 003. Each of these rooms is an entrance/exit into the ECP. One card reader is placed in each room to secure access into or out of the ECP. Card readers are also placed in Rooms 004 and 006, the security office and security vestibule. One card reader is placed in each of these rooms to secure access into the security office section of the ECP. (R4, tab 52)

231. On December 2, 2010, Grimberg sent an email to the government explaining that Grimberg had complied with the card reader design for the ECP and that it considered the government's request by Messrs. Bill Conroy and Horace King for card readers at the security office to be a change (R4, tab 48). The email attached a picture of the ECP showing card readers place at each entrance and exit as well as card readers placed at the security office (*id.* at 2).

232. By letter dated February 4, 2011, Grimberg requested costs in the amount of $32,306 for installing two additional card readers and related equipment (R4, tab 49). This letter requested cost for card readers installed over the "one entry and one exit requirement per RFP" and attaches a picture of the ECP showing card readers at each entrance and exit but not at the security office (*id.* at 7).

233. By letter dated February 22, 2011, the government denied Grimberg's request. It stated that the contract required card readers at each entrance/exit of the ECP and thus no change to the contract occurred. (R4, tab 50)

234. On May 11, 2011, RCD Electric submitted revised costs for the two additional card readers and related equipment. This letter is incorrectly dated October 29, 2010. (R4, tab 25 at 148-49)

235. On October 3, 2013, Grimberg submitted its claim on the ECP card readers, seeking a revised cost of $43,578 (R4, tab 25 at 9). The reason Grimberg provided for requesting compensation was the contract allegedly did not require card readers to be installed at the security office (*id.* at 8-9). RCD's request only requested costs for two card readers (tr. 3/8; R4, tab 49 at 4).

236. JCG's proposal included only the cost of installing a single card reader for access to the ECP at the single entrance, and a turnstile at the single exit (R4, tab 49).

237. After JCG submitted its bid and the Corps awarded the contract to JCG, the Corps directed JCG to install additional card readers. The final design called for a total of five card readers at the ECP. (APFs 664-65)

238. JCG installed the additional card readers under protest. JCG considers the additional card reader devices at the ECP additional work that constitutes a change to the contract for which JCG is entitled to be compensated.

239. On February 4, 2011, JCG submitted Proposed Change Order 26 (PCO 26) for the additional costs associated with the second card reader system at the ECP. The Corps rejected this proposal in a letter dated February 22, 2011. (APF 667)

iv. Temporary Power—ASBCA No. 59170

240. Grimberg had a trailer on the Project site that required temporary power. Under the contract, Grimberg was also required to provide two trailers for the government and parking for at least seven vehicles. All of the trailers required power, sewer and water. (GPF 344)

241. Section 01 05 00, paragraph 1.4.1 of the contract specifications, entitled "Availability of Utilities Including Lavatory Facilities," stated: "It shall be the responsibility of the Offeror to provide all utilities he may require during the entire life of the contract. He shall make his own investigation and determination as to the availability and adequacy of utilities for his use for construction purposes and domestic consumption." (GPF 346)

242. Drawing CD 101, entitled "Existing Conditions & Demolition Plan" depicts an overview of the Project site closely centered upon the construction area for the Project (R4, tab 24 at 255).

243. To the north, is an electric corridor (Northern Electric Corridor) (R4, tab 57). Two groups of electric lines run horizontally, east-west, in the Northern Electric Corridor. The Northern Electric Corridor is identified as a power easement. (*Id.*; GPF 348)

244. Drawing CD 101 also depicts on its east side, a second electric corridor (Eastern Electric Corridor) outlined in green on the annotated drawing (R4, tab 57). The electric lines in the Eastern Electric Corridor run underground vertically, north-south. Drawing CD 101 does not identify the voltages of the electric power lines running in either the Northern Electric Corridor or the Eastern Electric Corridor. (GPFs 349-50; R4, tab 24 at 255, tab 57)

245. RFP Drawing CL 100, entitled "Overall Layout & Utilities Plan," depicts an overview of the site at a greater distance than RFP Drawing CD 101 so that more of the topographical area around the building site is shown. The drawing displays the proposed building layout and both electric corridors. In the western corner of the drawing, a T-shaped building is also displayed. (GPF 351)

246. Drawing CE 100, entitled "Overall Existing Conditions," depicts an overview of the site. The drawing does not show the proposed building layout. In the western comer of the drawing, the T-shaped building and electric corridors are again depicted. (GPF 352) RFP Drawing CE 100 also identifies electric lines running through the Northern Electric Corridor as: "65' wide overhead 230 KV [kilovolt] line & 34.5 KV line, Conglomerate RIW, (Allegheny Power Company)." One kilovolt is equivalent to 1,000 volts. (GPF 353)

247. During the Biolab pre-proposal period, a potential offeror asked the Corps, "Where are the temporary electric power and telecomm services for the construction and

trailer areas being supplied from and what size/type services are they?" The government response stated:

> The Contractor will contact the Directorate of Installation Services (DIS) with a request to connect to the Post utilities. Contact information will be provided after contract award. The DIS will provide the locations, specifics, and requirements for making these connections. All requests, work, and materials are the responsibility of the contractor.

(APF 102) The above Q&A was incorporated into the RFP via solicitation Amendment No. 2 (*id.*; GPF 354).

248. FAR clause 52.236-27, SITE VISIT (CONSTRUCTION) (FEB 1995), is incorporated into the contract. It reads: "(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed." (GPF 355) This clause provided information regarding a site visit to offerors. The visit was to occur on March 5, 2009, from 10:00 am to 12:00 pm (GPF 356).

249. On March 5, 2009, the site visit took place. The site visit would have shown that the Northern Electric Corridor's electrical lines were mounted on steel frames rather than wooden utility poles and would appear from visual inspection to be high voltage transmission lines that were not a reasonable, cost-efficient option for the temporary power source. Among other things, a highly expensive "step down" transformer and associated equipment would have been required, none of which were included in appellant's proposal. The site visit would have shown that no above-ground electrical lines were located in the Eastern Electric Corridor. There is no evidence as to the location of suitable manholes that appellant had identified for access prior to bidding, or that JCG relied on the existence of a suitable and proximate manhole in preparing its proposal or any indication how appellant intended to access the underground lines. (GPFs 357, 367; ex. G-8; tr. 6/88-91, 149-51) Nor is there any evidence that appellant at any time sought to make arrangements with the public utility owning the lines running through the Northern Electric Corridor.

250. For its temporary power needs, JCG's proposal and the contract price were based on tapping into the existing electrical lines within the "limits of disturbance" and within 100-150 feet of the "laydown area" where appellant would locate its site office and trailers. Power was previously provided within the "limits of disturbance" on five prior projects that JCG performed at Fort Detrick. (Tr. 1/154-58, 2/53-54, 134-35; APF 639)

251. The Corps did not offer access to power from the Northern or Eastern Electric Corridors within the "limits of disturbance" of the Project site, and instead directed JCG to a source (the T-shaped building) over 1,000 feet away from the Biolab construction site, instead of the 100 feet contemplated in the JCG proposal (APF 646).

252. On or about May 12, 2010, JCG submitted Proposed Change Order 10 (PCO 10) for $45,285.00 to provide temporary generators at the Project site prior to the start of permanent power to the site. Alternatively, JCG's PCO 10 indicated that it would provide utility poles, transformer and overhead lines from an outside source to the Project site. (APFs 653-54)

253. The Corps rejected PCO 10 in a letter dated May 21, 2010 (APF 655).

254. JCG continued to use temporary generators at the Project site until permanent power was supplied from the CUP in April 2011 (APFs 656-57). Prior to April 2011, appellant had not installed necessary switchgear and progressed to the point where it was ready for permanent power (tr. 2/166, 3/11-12, 6/40-42; R4, tab 151 at 711-13).

255. On October 3, 2013, Grimberg filed a certified claim for temporary electric power requesting $151,776.

DECISION ASBCA Nos. 59167, 59168, 59169, 59170

General Issues

We have grouped these appeals together for factual analysis because they share several common themes. First, appellant alleges that it is entitled to relief in each appeal based on our opinion in *M.A. Mortenson Co.*, 93-3 BCA ¶ 26,189, and refers to the claims and associated appeals collectively as the *Mortenson* claims. Second, JCG argues that it is entitled to relief because the contract included its proposal which allegedly contained its estimating assumptions related to the claims. According to appellant, the government was placed on notice regarding how appellant "bid" the contract, and had a duty to engage in discussions with JCG to the extent that it disagreed with those assumptions. Neither contention has merit here.

Mortenson is inapposite. In that case, the government expressly represented the detailed quantities of structural concrete and reinforcing steel in the solicitation. There was no dispute that the contractor's "takeoffs" were accurately computed based on its selection of the framing system and associated government-provided quantities in the drawings. The government effectively and unambiguously made the requisite and key estimating assumptions to be used by appellant and other bidders. The preliminary 35% design included in the solicitation was obviously incomplete and the design-build contractor in *Mortenson* was informed of its general duty to verify the accuracy of the drawing information in preparing the 65% and final design. However, of critical importance, the

solicitation also expressly stated that the indicated drawing quantities "may be used to form the basis for the pricing proposal." 93-3 BCA ¶ 26,189 at 130,364, 130,367. Under the circumstances, potential offerors were placed on equal estimating footing, without need to perform independent, extensive design analyses and quantity takeoffs. The obvious intent was to relieve offerors of the meticulous estimating effort and necessity to prepare such intricate and, to an extent, subjective "takeoffs." The best information and data available were the work product and conclusions of the government's architect-engineer (A/E) who brought the design to the 35% stage. There was no reason to question the best judgment and accuracy of the data prepared and presented by the government's A/E, albeit at the preliminary design stage. The common, general, standard post-award duty of the contractor's A/E to "verify and validate" in developing later designs did not make pre-award reliance on the government A/E's professional product unreasonable. Moreover, there was nothing elsewhere in the solicitation that should have placed bidders on notice that it was unreasonable to rely on the solicitation quantities.

In contrast, here in ASBCA Nos. 59167, 59168, 59169, the contractor made its own estimating assumptions that were not reasonably based on the contract read as a whole and giving meaning to all its parts. There is no dispute that the Fire Code required three hydrants (and associated waterline). There is no dispute that DOT's *et al.*, paving design requirements mandated the asphalt actually placed by JCG. There is no dispute that the number of card readers installed by appellant were required by the contract's security/access provisions regarding the ECP. In essence, appellant ignored those detailed contractual and design requirements and relied solely on a single drawing or specification provision which appellant interpreted to permit lesser requirements. Appellant's interpretations of the drawings also failed to consider the contract's Specifications and Drawings for Construction clause. That clause expressly states, "Anything mentioned in the specifications, and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both." Moreover, the clause gives primacy to the specifications in the case of differences. The design risk of complying with the detailed dictates of the specification requirements remained with appellant. In the circumstance of this case, we find Grimberg's reliance and interpretation to be unreasonable. Our rationale and conclusions are explained in greater detail in connection with our further discussion of each of the appeals below.

Secondly, appellant appears to argue that, because its proposal was incorporated into the contract, the government should have known that JCG was proposing only two hydrants, four inches of asphalt and one card reader. This contention is also meritless. First, the only relevant mention of any asphalt quantity or card readers was in appellant's price proposal not the technical proposal (TP). As discussed further below, JCG's "recommendation" in the TP that a third hydrant be installed was, as a minimum, ambiguous with respect to whether appellant anticipated additional money for the third hydrant. *Cf. MARCON Engineering, Inc.*, ASBCA No. 57471, 15-1 BCA ¶ 35,974 at 175,769-71 (appellant's technical proposal unambiguously and effectively relaxed

restrictions on the Project's drainage design). Reasonably read, the "recommendation" implied that appellant had read the Fire Code and concluded that it was required, even though not actually depicted for the ECP building in the pertinent drawing.

Regarding the asphalt quantity and card readers, the government here had no duty to decipher the minutiae and implicit bidding assumptions tucked away in JCG's $127 million cost proposal. Any such cost/price realism analyses would have required overly detailed and meticulous analyses by expert government reviewers well-versed in the design details and requirements of the Project. Indeed, the solicitation specifically informed appellant that only a broad evaluation of the proposed price for reasonableness would be performed by the Corps. Appellant could have had no realistic expectation that the government would delve into the minutiae of its possible pavement, hydrant and card reader assumptions. Moreover, there was nothing in the fine particulars of even the price proposal that reasonably and unambiguously implied that appellant's final design would not comply with all contractual requirements, much less raised a duty to conduct discussions on perceived misestimates. Finally, the contractual "Order of Precedence" clause gave precedence to the contract specifications over other parts of the accepted proposal, including appellant's price proposal.

Fire Hydrants Waterline—ASBCA No. 59167

As emphasized above, the Fire Code required the third hydrant and associated service line. To the extent that appellant relied solely on the two hydrants depicted on the pertinent 35% conceptual drawing/sketch, it failed to read the contract as a whole as detailed above. Had appellant read all pertinent contract provisions, it should have known that a third hydrant was required. To the extent that appellant considered that the contract was ambiguous, the ambiguity was patent and appellant should have resolved the perceived ambiguity before submitting its proposal. Indeed one of the two contractors that submitted quotes that included this work to appellant for consideration in preparing its price proposal, made provision for three hydrants. Nothing in appellant's price proposal reasonably put the government on notice that appellant did not intend to comply with the Fire Code and supply the requisite additional hydrant. Had appellant clearly conveyed such an intent not to supply the hydrant or made its proposal conditional upon that assumption, it risked rejection of its proposal as technically unacceptable. *See Classic Site Solutions, Inc.*, ASBCA Nos. 58375, 58572, 14-1 BCA ¶ 35,664 at 174,579 n.1. Nor was responsibility for clarification shifted to the government to address the possible technically unacceptable noncompliance by engaging in discussions. If anything, it was reasonable to interpret JCG's ambiguous "recommendation" as an indication that it was required to supply the hydrant. As a minimum, the "recommendation" further enforces our conclusion that appellant had actual knowledge of any perceived conflict and should have inquired and resolved the matter by pre-proposal inquiry if it considered that it was not required to install the third hydrant to service the ECP building. *Cf. White v. Edsall Construction Co.*,

296 F.3d 1081, 1085 (Fed. Cir. 2002); *Brantley Constr. Co.*, ASBCA No. 27604, 84-3 BCA ¶ 17,532; *Wickham Contracting Co.*, ASBCA No. 19069, 75-1 BCA ¶ 11,248.

Asphalt Pavement—ASBCA No. 59168

This claim also is meritless. The contract did not identify precise, specific thicknesses for the asphalt. The final design was to be prepared post-award and dependent upon post-award studies and analyses. Even appellant's proposal expressly acknowledged this fact. The specifications state that "[p]avements shall be designed in accordance with Federal Department of Transportation" and explains "[r]egardless of the pavement design, a minimum flexible pavement section shall consist of 3 inches of asphalt." Construed as a whole, the contract required the contractor to meet a performance objective. Appellant was to design pavement asphalt thicknesses to meet DOT standards and warned contractors that even if one-inch asphalt thickness met DOT standards, that the design would be inadequate, because a minimum of three inches asphalt was required. The Geotechnical Report reiterates this requirement. It states "Pavements shall be designed in accordance with...the AASHTO Guide for Design of Pavement Structures" and "Regardless of the method used, in no case should the pavement section thickness be less than the minimums stated herein." It was left to the design-builder's business judgment to estimate an amount of asphalt that would meet the design standards. This understanding of the specification is reflected in Grimberg's Proposal, in which it stated that the pavement design shall be completed in accordance with AASHTO standards. JCG applied its business acumen to estimate four inches of asphalt to be used in the Project, rather than propose the minimum three inches as its estimate. The design and price risk that its estimate of four inches would be insufficient was on the design-build contractor JCG. *E.g., Elter S.A.*, ASBCA Nos. 52792, 53082, 02-1 BCA ¶ 31,667; *McGrail Equip. Co.*, ASBCA No. 20555, 76-1 BCA ¶ 11,723. That risk was not shifted by appellant's inclusion of its four-inch assumption in the minutiae of its cost proposal estimate. Again, the government was not reasonably placed on notice that appellant did not intend to fully comply with the contract and develop a final post-award design that met all specification and DOT requirements.

Card Readers—ASBCA No. 59169

The RFP required the constructed Project to meet "all security, antiterrorism and force protection requirements," and directed the contractor in multiple locations to design the security requirements. This claim flows from appellant's failure to adequately consider those requirements in preparing its proposal.

JCG relies on the conceptual sketch and the word "a" in specification paragraph 6.19.1 to support its interpretation that only one card reader was required. That interpretation is unreasonable and failed to consider the entirety of its responsibilities for designing the security system. Read as a whole and giving meaning to all pertinent portions of the specifications, those requirements clearly required additional card readers.

In particular, the specifications required that the access control system encompass "All entries/exits into" the ECP and that the contractor was to "Provide employee entrance(s) with card reader." One card reader could not secure the ECP which had multiple exits/entrances. Reasonably interpreted, the contract required a card reader at each of them. The contract also required Grimberg to install card readers to safeguard the security office. Design criteria for the security offices were specified, *inter alia,* in UFC 4-510-01, DoD Medical Military Facilities, Design and Construction Criteria, which required all security offices in medical facilities to be secured by a card reader or other door access control.

We conclude that the government did not impose extra-contractual requirements for more card readers than mandated by the specifications.

ASBCA Nos. 59167, 59168, 59169 are denied.

Temporary Power—ASBCA No. 59170

The contract made no representations as to the source of temporary power, much less one "within the limits of disturbance" of the site. Instead, as awarded, the solicitation expressly directed JCG to contact cognizant government personnel. Appellant allegedly assumed that power would be supplied via the Eastern or Northern Electric Corridors within the limits of construction based on its prior work at Fort Detrick. In this case, any such assumption was unreasonable without further investigations, analysis and inquiry.

An adequate site visit and investigation would have disclosed that the lines running through the Northern Corridor were privately-owned and very high voltage. *E.g., Lovering Johnson, Inc.,* ASBCA No. 53902, 06-1 BCA ¶ 33,126. Without making arrangements with the private utility and providing costly equipment, the lines were not a viable source for appellant's temporary power needs. There is no indication in appellant's proposal that appellant included the cost of the necessary equipment or that JCG contacted the utility at any time.

Regarding the Eastern Corridor, the electric lines ran underground and the voltage was undisclosed. There is no evidence that there was any reasonably proximate and suitable manhole access point to tie into the lines or that appellant researched the voltage of the lines and potential access points, if any, in preparing its proposal. Again, a reasonably thorough site visit would have disclosed the absence of a suitable manhole for access.

ASBCA No. 59170 is denied.

CONCLUSION

For the reasons detailed above, we sustain ASBCA No. 58791, sustain in part ASBCA No. 59717, and deny ASBCA Nos. 59167, 59168, 59169 and 59170. By agreement of the parties, ASBCA No. 59171 is dismissed with prejudice.

Dated: October 25, 2018

ROBERT T. PEACOCK
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

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

I concur

J. REID PROUTY
Administrative Judge
Vice Chairman
Armed Services Board
of Contract Appeals

I certify that the foregoing is a true copy of the Opinion and Decision of the Armed Services Board of Contract Appeals in ASBCA Nos. 58791, 59167, 59168, 59169, 59170, 59171, 59717, Appeals of John C. Grimberg Co., Inc., rendered in conformance with the Board's Charter.

Dated:

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