ARMED SERVICES BOARD OF CONTRACT APPEALS

Appeal of --	)	
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B. W. Farrell, Inc.	)	ASBCA No. 53311
	)	
Under Contract No. DACW29-98-C-0043	)	

APPEARANCE FOR THE APPELLANT: Mr. Lawrence B. Hammet
President

APPEARANCES FOR THE GOVERNMENT: Thomas H. Gourlay, Jr., Esq.
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OPINION BY ADMINISTRATIVE JUDGE DICUS

This appeal is taken from a contracting officer's decision denying appellant B. W. Farrell, Inc.'s $320,976.80 claim for an alleged differing site condition, and seeking remission of liquidated damages of $69,600.00. The underlying construction contract is for improvements to the Keyhole Canal in Jefferson Parish, Louisiana. Only entitlement is before us (tr. 1/6). We sustain the appeal in part.

Preliminary Matters

The government filed a 2 March 2005 pretrial motion seeking, *inter alia*, evidentiary sanctions based on appellant's failure to timely respond to discovery requests. At the hearing, the government questioned whether exhibit A-1 was produced in discovery and, ultimately, objected to exhibit A-1, which is site photographs taken by appellant, because counsel had not seen them previously (tr. 1/63-65). The Board considered the objection, but admitted exhibit A-1 (tr. 1/137). The government renewed its objection in its brief, characterizing the exhibit as conditionally admitted (gov't br. at 17). However, in admitting the exhibit, the Board, after having heard testimony about the photographs, imposed no condition on the exhibit's admission (tr. 1/137). We have considered the government's arguments as to the evidentiary value of the photographs

(gov't br. at 17-18), but we have nonetheless relied on the photographs where appropriate as indicated by the parenthetical references to them, *infra*. The government's renewed objection is overruled.

FINDINGS OF FACT

The Bid and the Contract

1. Solicitation No. DACW29-98-B-0048 was issued on 4 March 1998. The bidding schedule set forth 13 items, 6 of which were to be bid as "Lump Sums" and 7 of which were to be bid at unit prices for estimated quantities. Award was to be made as a whole to a single bidder. Contract No. DACW29-98-C-0043, which resulted from the solicitation, was awarded to B. W. Farrell, Inc., on 23 April 1998, for $1,167,350. Contract work was to begin within 10 days and be completed within 210 days of receipt of notice to proceed. (R4, tab D at 00010-1, -2, -3) The bid documents and resulting contract required the successful bidder to construct improvements to the Keyhole Canal, Jefferson Parish, Louisiana. The improvements were to be made to a segment which would remain earthen and another segment to which a concrete lining was to be added. (Compl., answer, ¶ 2)

2. Soil borings were made by Eustis Engineering Company, Inc. (Eustis) and included in the solicitation and resulting contract at drawings 28 and 29.[1] The borings for the concrete segment were 50 feet deep and designated KEYC-1U, KEYC-2U, KEYC-3U and KEYC-4U. The borings were taken at intervals of 450-500 feet. Boring KEYC-1U[2] depicted fat clay, or clay of high plasticity, down to a level of 10 feet, except for a clay stratum of approximately 1 foot commencing at a depth of 1 foot. Boring KEYC-2U depicted lean clay, or clay of low to medium plasticity, in the first foot. The second foot was a clay stratum consistent with KEYC-1U. Immediately below the clay stratum was depicted 2 feet of "SILT & very fine sand, silty or clayey fine sand or clayey silt with slight plasticity" (hereinafter silt). Below that, to a depth below 10 feet, the boring was depicted as fat clay. Boring KEYC-3U depicted lean clay in the first foot, 2 feet of fat clay, 1 foot of clay stratum, and fat clay thereafter to a depth well below 10 feet. Boring KEYC-4U depicted a thin stratum of shell fragments in the first foot or less, followed by a foot of fat clay, 2 feet of lean clay, and then fat clay to a depth of about 10 feet.

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[1] The measurements set forth throughout this decision regarding depths of soil deposits depicted in various borings are, of necessity, approximations.

[2] Boring KEYC-1U was at the far northern end of the concrete segment. It was little mentioned by expert and percipient witnesses and thus we have assigned it little significance in resolution of the dispute.

(R4, tab D, drawings 28, 29 of 29; tr. 3/20) We find the borings give some indication of silt, but not enough to raise serious concern to a bidder (tr. 1/163-67).

3. Drawing 29 contained the following disclaimer at Note 1:

> While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and, if encountered, such variations will not be considered as differing materially within the purview of the contract clause entitled "Differing Site Conditions".

(R4, tab D, drawing 29)

4. Lawrence Hammet approved appellant's bid (tr. 2/10). Mr. Hammet believed the borings showed "basically clay" (tr. 2/7). We find that appellant relied on the borings in bidding the contract, saw some silt indicated, but based on the borings, appellant believed the soil in the concrete segment consisted principally of clay (tr. 2/13). The job site was narrow with a berm on only one side, bordered by a fence on both sides, and passed through a residential neighborhood. Appellant observed the site before bidding, and the form and character of the site entered into decisions as to equipment and means and methods of construction. (Tr. 2/10-11; ex. G-1, nos. 1-10)

5. The contract contained the following note:

> NOTE. The Contractor is advised that the time allowed for completion of work is the shortest reasonable duration. The Contractor shall take all actions necessary (i.e., multiple crews, overtime, concurrent operations, etc.) to accomplish the work within the specified time period. Failure to meet the schedule will result in the Government assessing liquidated damages accordingly.

Liquidated damages were set at $1,200 for each day of delay. (R4, tab D at 00800-1)

6. The contract provided for work Monday through Saturday, but that "[n]o work shall be allowed on Sundays or legal holidays without approval of the Contracting Officer due to the congested residential area" (R4, tab D at 01100-5, ¶ 3.j). Jefferson Parish had an ordinance that precluded operating construction equipment between 9:00

p.m. and 8:00 a.m. on Sundays and holidays within 165 feet of a residential area (R4, tab C-46 at 4).

7. The contract, *inter alia*, contained or incorporated by reference FAR 52.211-12, LIQUIDATED DAMAGES-CONSTRUCTION (APR 1984); FAR 52.233-1, DISPUTES (OCT 1995); FAR 52.236-2, DIFFERING SITE CONDITIONS (APR 1984); and FAR 52.243-4, CHANGES (AUG 1987). It also contained the following provision in the specifications at Section 03360, Part 3, EXECUTION, paragraph 5.(9):

> (9) Operation: The Contractor will be required to maintain the work areas in a dry condition as long as is necessary for the work under this contract. The Contractor shall also remove all loose materials and any equipment from within the canal slopes by the end of each workday. Once the water level in an area is lowered, it shall be maintained in that condition until all work in that area is completed, unless flooding is directed by the Contracting Officer. In the event that flooding is deemed necessary by the Contracting Officer, the protected area shall be flooded in accordance with the sequence of flooding proposed by the Contractor and approved by the Contracting Officer. However, the Contractor shall not flood the protected areas without approval to do so by the Contracting Officer. If flooding is directed by the Contracting Officer, the Contractor will be compensated for damages to permanent work in accordance with the General Provision entitled "DAMAGES TO WORK". Payment for additional operating costs incurred as a result of each such flooding will be made by an equitable adjustment under the Contract Clause entitled "CHANGES". If flooding is necessitated because of the Contractor's fault, negligence, or convenience, all costs resulting from such flooding will be borne by the Contractor. If flooding is directed by the Contracting Officer for reasons other than those above, all extra costs will be borne by the Government and the contract will be modified pursuant to the Contract Clause entitled "CHANGES". Commencement of lowering the canal water subsequent to flooding shall be subject to prior approval of the Contracting Officer.

(R4, tab D at 03360-9)

8. The DAMAGE TO WORK (¶ 2 of the General Provisions of the Contract) clause provides:

> The responsibility for damage to any part of the permanent work shall be as set forth in the Contract Clauses of the contract entitled "PERMITS AND RESPONSIBILITIES." However, if, in the judgement of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood, earthquake, hurricane, or tornado which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor shall make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit price or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there are no contract unit or lump sum prices applicable to any part of such work, an equitable adjustment pursuant to the Contract Clause entitled "CHANGES" will be made as full compensation for the repairs of that part of the permanent work for which there are no applicable contract unit or lump sum prices. Except as herein provided, damage to all work (including temporary construction), utilities, materials, equipment and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense, regardless of the cause of such damage.

(R4, tab D at 01100-2)

9. At Section 01100, paragraph 1, TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER, it was provided that time extensions may be granted for unusually severe weather in accordance with the Default clause. The conditions for such extensions are imparted. Anticipated adverse weather was set forth on a per-month basis, thus establishing the time-based norms for the area. (R4, tab D at 01100-1)

10. Section 02221, DRAINAGE EXCAVATION, provides at Part 3, paragraph 5:

> 5. MEASUREMENT. Measurement of excavated materials will be made by the cubic yard using the average end area method. Payment line for excavation shall be

> between the original ground surveys taken prior to clearing and grubbing operations and the theoretical excavation lines and grades indicated on the drawings.

(R4, tab D at 02221-3)

11. The contract allowed the government a minimum of 30 days approval time for submittals (R4, tab D at 01300-2, ¶ 7). The contract was amended to change the slope of the pavement in the concrete segment of the canal from a "W" shape to a flat bottom in Modification No. A00014 (Mod 14), executed by the government on 12 February 1999. Mod 14 decreased the contract price $35,500 as a result. There was no change to the contract time. (R4, tab C-9)

12. The concrete was to be poured to "a minimum thickness of 6 inches" (R4, tab D at 03360-13, ¶ 15.1). Canal paving was to be measured by the square (100 square feet). Payment was made by the square, and no payment would be made for thickness less than 5 ½ inches. For thicknesses between 5 ½ and 6 inches, the contractor was to receive 80 percent of the contract unit price of $375 per square. There was no provision for additional payment for concrete thicker than 6 inches. (R4, tab D at 00010-3, 03360-14 to -15, ¶¶ 18.1, 19.1)

Contract Performance

13. Notice to Proceed was issued and received on 4 May 1998 (R4, tab C-2). The contract completion date was, therefore, 30 November 1998.

14. Work went smoothly and appellant did not experience a differing site condition or defective specifications in the earthen segment of the work (app. reply br. at 6; tr. 1/183, 191, 2/16-17). However, appellant was advised that retainage of up to 10 percent might be withheld because the government considered it to be behind schedule by 23 percent on 21 August 1998 (R4, tab C-7). The government's construction manager believed, and we find, appellant was 14 to 20 percent behind schedule in completing the earthen segment (tr. 2/40, 85). Appellant began work on the concrete segment sometime in August 1998 (R4, tabs C-10, -11; ex. G-6; tr. 2/16, 56). The concrete segment began at Station 28+65, just north of the Westbank Expressway, and continued northward to Station 8+11, north of Sixth Street (R4, tab D at drawings 8, 11 of 29). The overall length of the concrete segment was approximately 2000 feet (tr. 2/47).

15. Rainfall in the area is about 60 inches per year, and flooding caused by rainfall is a regular event (tr. 2/37, 72). Performance of the work involved construction

of upstream and downstream sand dikes 7-feet below the top of the banks on either side of the currently active work area. Dewatering was necessary for concrete placement. Appellant installed an 18-inch pump system that bypassed the upstream water and discharged it below the lower dike, using pipe that ran on top of the bank. When there was flooding, the floodwater would erode the sand dikes and "blow [them] out." (Tr. 1/54-57, 2/179) This was because the canal was a functioning waterway during construction, and using materials that the water overpowered allowed the water to flow through the canal without threatening the top of the banks (tr. 2/179). Pursuant to Section 03360, Part 3.5.(9) (finding 7) and the DAMAGE TO WORK clause (finding 8), appellant was entitled to compensation for certain flood damage. Appellant was compensated for 21 such flood events in 21 bilateral contract modifications that granted additional time (84 days) and money ($100,995.10). (R4, tab C-45 at 4-6; tr. 2/177-81)

16. The government did not compensate appellant for idle equipment during weather delay periods because only time was allowed as compensation under the contract (tr. 2/183-84; finding 9). Under the DAMAGE TO WORK provision (finding 8) appellant was entitled to be paid for the costs of getting back to the position it was in prior to a flood event. Proposals were submitted and negotiated. Bilateral modifications resulted which stated that all costs and impact costs were included. (Tr. 2/177-85) In this regard, Orville Mundy, who worked on the job in the first 3 concrete sections, testified that he was "sure Patrick [Hammet] did" ask for payment for idle equipment as part of the flood event compensation (tr. 1/44-46). Patrick Hammet did not testify on this point. Accordingly, we find appellant has failed to produce evidence to show it was not paid for idle equipment as part of the flood event modifications.

17. Appellant used a Komatsu 250 trackhoe or excavator with a 55-foot reach for excavation and placement of rock (tr. 1/37-38, 66-67; ex. A-1 at F-3). Equipment had to be set-up and materials delivered on the west bank, as the east bank provided "no right of way available wide enough to do anything" (tr. 2/6-7). Government exhibits demonstrate that the Komatsu 250 had barely enough room to operate on the unaltered west bank right of way (ex. G-1 at no. 5, exs. G-4, -5). Accordingly, we find that use of a larger piece of equipment was not feasible and that appellant's use of the Komatsu 250 trackhoe was reasonable. Excavation was done to a specific elevation as shown in the drawings, down approximately 10 feet from the top of the bank (*e.g.*, R4, tab D at drawing 8 of 29). Appellant cut to a vertical slope, then cut to a 3-to-1 slope to the bottom of the canal, went across 5 feet or so, cut a 3-to-1 slope over to a prescribed distance and back up on a vertical slope. Then appellant would put down geotextile material from the west side, which ran the length and width to accommodate the limestone bedding and concrete. The limestone bedding was not compacted. Rebar was then placed and the concrete was formed into "monoliths" 80 feet long. Once the concrete was cured, the dikes were moved and a new section begun. Appellant would later come back and tie in slopes from

each side to the top of the concrete. (Tr. 1/55-58) Photographs show that the deepest cut was the vertical cut (exs. A-1, G-1, *passim*). Sloughing would have been reduced by a slope less steep, but it would have interfered with access to the right of way, which was narrow, and thus to the work site. Moreover, the seams of silt and sand were inconsistent and it was difficult to determine how far down to go. Silt and sand could go from top to bottom. If a 3-to-1 slope was cut to eliminate the sloughing effects of silt and sand, the right of way would be compromised. The government never suggested a flatter slope. (Tr. 1/80-81, 85)

18. There are differences as to whether grading went to the east bank fence line and whether the 55-foot reach of the trackhoe was sufficient to reach the fence line on the east bank. Lawrence Hammet did not believe that grading all the way to the east side fence line was required (tr. 2/12). However, photographs show finished grading at the east side fence line (ex. A-1 at F-15, ex. G-1 at 8, 9, 10). Accordingly, we find grading went to the east side fence line. Pierre Hingle, the government construction manager, testified that the trackhoe did not reach to the fence line of the east side and prepared exhibits to illustrate his perspective. He believed there was a 10-foot difference between the reach of the trackhoe when situated on the original ground surface and the fence line of the east side. He testified that the excavator did not reach to the far east side on the south end when appellant began the job. The illustrations he prepared are based on Station 18+00 (which is near the middle of the job) and show that the furthest reach of the trackhoe did not come into play until after concrete was placed. (Tr. 2/57-62; exs. G-4, -5, -6) Patrick Hammet testified there were no problems with the reach of the trackhoe and that it was able to get to the limit of the excavation on the east side (tr. 1/67-68). However, he later testified in clarification that a special berm had to be constructed on the west side to reach the limits of the east side grading. Material from degrading the west side berm was used to construct the extension. (Tr. 1/98-99) Mr. Mundy testified that the trackhoe would not reach to the far limit of the east side excavation, which was done after the concrete was in place (tr. 1/46-50). In exhibit G-1, photograph no. 9, the trackhoe appears to reach the east side fence line, but the photograph shows a special extension of the west side berm that extends to the edge of the concrete. The extension, which is nearly vertical, is necessary for the trackhoe to reach the east side limit of the excavation at the fence. (Ex. G-1 at 9) We find the 55-foot reach of the trackhoe was adequate to reach the post-concrete placement grading limits on the east bank upon construction of a special berm extending toward the concrete.

19. Appellant did not use or consider use of matting under the trackhoe (tr. 1/42, 2/20). Mats would have had to be moved to allow trucks on the right-of-way (tr. 2/25-26). Mats would have improved the safety factor (17 Feb. 2005 Gwyn report (Gwyn report), encl. 7; tr. 3/52-54).

20. Prior to November 1998 two of the daily reports in the record refer to caving of the banks, but they are in reference to flood events (R4, tab C-11 (21 August 1998), tab C-12 (15 September 1998)). We find, therefore, that prior to November 1998 no uncompensated delay or extra work was experienced from a differing site condition. Patrick Hammet testified, and we find, that in November 1998 appellant began to experience "a real tough situation" with sloughing or caving of the canal walls (tr. 1/70-71). On 14-16 November 1998 appellant was working at Stations 23+65 to 22+85. Rain and caving of the banks had affected alignment of the concrete forms. The daily log for 14 and 16 November 1998 showed 4 days lost to flood and 5 days lost in whole or part to adverse weather in November, and the 28-30 November 1998 daily log showed 6 days lost to flood and 12 days lost in whole or part to adverse weather. By letter of 16 November 1998 appellant informed the government of "serious problem[s] with the west side berm." (R4, tabs C-13, -14, -15, -18) It was at this point that appellant sought the assistance of Dr. E. Berkley Traughber, who would come to visit the site on numerous occasions. He inspected the worksite on 16, 18 and 23 November 1998. (Ex. G-9; tr. 1/129)

21. Dr. Traughber observed misalignment and shifting of the bank and forms on 16 November 1998. He took three soil samples from the bank within reach of the shifted forms and had them tested by Gore Engineering, Inc. (Gore). One sample was classified as lean clay, one as fat clay, and one as silt. When he returned on 18 November 1998, he observed more extensive silt deposits. He decided to conduct a soil boring and testing examination. Gore thereafter made 8 soil borings to a depth of 15 feet. Only 2 of the borings showed conditions as favorable as KEYC-2U, with the other 6 showing greater amounts of silt.[3] In a 4 December 1998 report, Dr. Traughber recommended to appellant that it move operations to the far north end of the project where the Gore borings showed conditions were "no worse than depicted on the Contract Boring Logs" and, as appellant progressed southward, that cross-trench drains be installed to facilitate stabilization of the soils. (Ex. G-9 at 4 of 5) Appellant moved to the north end in early December 1998 and began installing the cross-trench drains as Dr. Traughber had recommended. Patrick Hammet believed the job was less than half done at that point. Appellant continued to experience sloughing even with the drains in place, and the sloughing was not limited to rain events. (Tr. 1/73-74, 82-84, 2/98; ex. G-6)

22. The parties met on 24 November 1998 and in a 7 December 1998 letter the contracting officer set forth certain schedule information related to the meeting. He informed appellant that the contract completion date, as amended through flood event 12 and weather time extensions, was expected to be 23 January 1999. He also

[3] Boring no. 4 was not representative as it was taken from an area where there was a culvert (tr. 3/21). It was not considered in the Board's deliberations.

encouraged appellant to submit its proposals for four November 1998 flood events. He asked for a plan as to how appellant intended to complete the project. He informed appellant, and we find, the job was only 46 percent complete as of 1 December 1998. (R4, tab C-20; finding 21)

23. In an 8 December 1998 letter, appellant referenced its 16 November 1998 letter and gave notice of a differing site condition. Appellant enclosed Dr. Traughber's 4 December 1998 report. (R4, tab C-21)

24. The government took hand auger borings on 6 January 1999 (ex. G-2; tr. 3/12). Auger borings are not as accurate as tube borings because the technique permits the ground to slough a little so that which sloughs from above can be mistaken as soil from a lower level. Hand auger borings also can miss thin layers. (Tr. 3/68-69; 25 March 2005 Traughber report (Traughber report) at 6) The hand auger borings taken between KEYC-4U and KEYC-3U showed no silt. The 2 hand auger borings between KEYC-3U and KEYC-2U showed approximately 2 feet of silt from a depth of 1 foot to a depth of 3 feet, and 4½ feet of silt from a depth of 6 inches to a depth of 5 feet. The 2 hand auger borings taken north of KEYC-2U showed 1½ feet of silt from a depth of 1½ feet to a depth of 3 feet, and 4 feet of silt from the top to a depth of 4 feet. (Ex. G-3)

25. The government took additional hand auger borings on 14 January 1999 (ex. G-3; tr. 3/12). All but 1 of the 7 borings between KEYC-4U and KEYC-3U showed silt layers ranging from 6 inches to 1 foot at levels above 3 feet. Four borings between KEYC-3U and KEYC-2U showed silt layers of approximately 3-to-4 feet terminating at approximate depths of 9, 6, 5 and 5 feet. While 2 of the borings can be discounted because of their proximity to boring B-4 and thus the culvert (*see* note 3), the other 2 warrant consideration. (Ex. G-3)

26. By letter of 19 January 1999 the government informed appellant that, based on its recent borings and analysis thereof, it had found no differing site condition. The administrative contracting officer, Stephen B. Hinkamp, ordered appellant to complete the contract "in accordance with the contract documents and by the required completion date." (R4, tab C-27)

27. The parties met on 10 February 1999. Patrick Hammet agreed to submit a revised schedule by 17 February 1999. The contracting officer, Diane K. Pecoul, informed appellant by letter of 11 February 1999, that she concurred with Mr. Hinkamp's determination that there was no differing site condition. (R4, tab C-31) On or about 15 February 1999 appellant submitted a revised schedule showing a completion date of 15 June 1999 (R4, tab C-34).

28. The government contracted with Eustis to do additional tube borings on 12 March 1999. The 2 borings between KEYC-4U and KEYC-3U show predominately fat clay, although the boring at Station 23+65 shows a 2-foot stratum of silty sand (SS) commencing at a depth of 1 foot and a 6-inch layer of silty sand at the top. The boring between KEYC-3U and KEYC-2U shows 2-feet of silty sand below a depth of 3-feet. It is close to a boring we discounted because of the culvert and sandwiched between that hand auger boring and another showing a silt layer of 3-plus feet from a depth of 6-inches to a depth of nearly 5-feet. (Ex. G-3; tr. 3/42-43) The total array of all borings taken (ex. G-3) indicates, and we find, that soil conditions vary significantly in relatively small distances and that the quantity of silt represented by the totality of the borings is not accurately represented by the contract borings (finding 38, *infra.*). In so finding, we have considered the enumerated limitations of hand auger borings (finding 24) and have concluded that those limitations would not have significantly affected the results reported as they bear upon the issues in this appeal.

29. Appellant proceeded with the remaining work, progressing downstream (R4, tab C-45). Sloughing of the banks continued, even in dry weather (R4, tabs C-25, -26; tr. 1/82-83). It was "completely at random" and it continued even with the drains installed (tr. 1/105-06). From time to time the bank sloughed while the trackhoe was working (tr. 1/101). Moreover, sloughing occurred on the east bank where there was no equipment placed (R4, tab C-25; tr. 1/71, 83; ex. A-1 at F-5 to -8).

30. When there was sloughing not attributable to a flood event appellant was not paid because it was considered by the government to be outside the vertical limit of the excavation as shown on the plans. In those cases, appellant hauled the dirt away. According to Patrick Hammet, appellant used truck measure to gauge the amount, although there were times when no one was at the disposal site to weigh the load. (Tr. 1/60-62) The sloughing caused additional work re-excavating the fallen dirt, and this in turn caused delay (tr. 2/8). The government also objected to payment because the method of payment set forth in the contract (finding 10) could not be employed for the fallen dirt (tr. 2/113). Further, there was no scale at the disposal site that could weigh the trucks (tr. 2/55; gov't br., app. reply at ¶ 25).

31. Sloughing of the banks continued at least into April 1999 (R4, tab C-35). The contract completion date was extended to 16 April 1999 and the contract work was substantially completed on 24 June 1999, a difference of 69 days (R4, tabs C-37, -45 at 8). The government assessed liquidated damages of $69,600, or $1,200 per day for 58 days. The assessment did not include 11 Sundays and holidays in the days of delay and subtracted those 11 days from the 69 days appellant was late with completion to reach the assessment of 58 days. (R4, tab C-41 at 4; tr. 2/122) There is no evidence of acceleration by appellant.

32. Appellant placed concrete to an average depth of 7 inches throughout the concrete segment (tr. 1/58-59). There is no evidence that appellant installed additional bracing to reduce sloughing. There is, however, evidence of inadequate bracing (tr. 2/223-24). Testimony of appellant's witnesses, Mr. Mundy and Mr. Hammet, does not establish that the thickness of the concrete was due to a differing site condition (tr. 1/30, 1/57-59).

The Claim and Contracting Officer's Decision

33. By letter of 10 November 1999 appellant submitted a certified claim in the amount of $320,976.80 plus profit. The claim also sought remission of all liquidated damages. (R4, tab C-48)

34. Appellant presented 6 components to the claim, as follows:

I. Extra excavation – Based on an alleged differing site condition (silty composition of the soil) and estimated by truckloads, appellant sought $94,023.45 for extra excavation in the concrete segment, representing 6,939 cubic yards of material at $13.55 per cubic yard. It sought $34,118.90 for 2,518 extra cubic yards at $13.55 in the earthen segment.

II. Extra concrete – appellant sought $65,902.99, or a 27 percent increase in the amount it was paid for concrete, based on its allegation that soil settlement attributable to a differing site condition (silty composition of the soil) caused it to place concrete to an average depth of 7¼ inches, 1¼ inches more than the contract called for.

III. Additional bracing – Based on the same differing site condition and resultant sloughing, appellant sought $21,040.19 for extra bracing installed to stop even more sloughing than was experienced.

IV. Idle equipment – Appellant sought $41,675.37 for idle equipment. Appellant alleged that it was not totally compensated for idle equipment caused by flood events in the contract modifications for those flood events.

V. Corporate overhead – Appellant sought corporate overhead of $64,215.90 on the total claim of $256,760.90.

VI. Liquidated damages – Appellant sought remission of all liquidated damages, asserting that extra work and the "flat prohibition against work on Sundays" were the cause of delay.

(R4, tab C-38)

35. Ms. Pecoul initially responded to the claim in a 4 April 2000 letter, in which she computed that appellant was due an extra $33,129.75 for reasons not related to a differing site condition. She also offered return of 6 days of liquidated damages. She otherwise found the claim unsupported and informed appellant of its "right to request a Contracting Officer's Final Decision." (R4, tab C-41)

36. By letter of 17 August 2000 appellant requested a contracting officer's decision (R4, tab C-44). A decision denying the claim in its entirety and informing appellant of its rights under the Contract Disputes Act, 41 U.S.C. §§ 601-613, as amended, was issued on 14 December 2000 (R4, tab B).

The Experts

37. Both experts addressed the factor of safety, a term that refers to the resisting forces that are trying to stop soil from sloughing divided by the forces trying to move the soil (tr. 3/52). A factor of safety of 1 is the point at which forces working to cause failure are exactly balanced by the forces resisting movement and represents a 50-50 chance of failure. A factor of safety of 1.25 to 1.3 is generally recognized as the point at which stability is not threatened by variations in soil properties. (Traughber report at 2; tr. 3/52)

38. E. Berkley Traughber, Ph. D. and professional engineer, was accepted by the Board as an expert in soil mechanics and testified for appellant (tr. 1/121). Dr. Traughber observed the site often during construction (finding 20). He looked at the contract borings from the standpoint of what the borings would lead a contractor to expect (tr. 1/168). It is his opinion that the contract borings do not describe the actual conditions encountered at the site "or even suggest the actual variability in the silt deposits found in the later boring investigations." Based on this, we find the variations were not "local variations characteristic of the subsurface materials of the region" (*cf.* finding 2). He calculates that the Gore borings show 2.3 times as much silt as the contract borings. He also identifies a number of errors in interpreting the borings in the report of government expert William W. Gwyn. He explains the characteristics of silt as having a "chameleon" nature. When wet, silts can resemble clay, although the strength qualities are quite different. When dry, silts can be drawn out of banks by exiting seepage water in a process called "sapping." Sapping was encountered at the site. The other problem at the site was a process whereby silts lose tension as they dry and, as a result, slough away

from the banks. (Traughber report at 3, 5, 8) He testified that, based on the contract borings, he would not have expected the conditions encountered even though he has more geotechnical knowledge than a contractor would have (tr. 1/180).

39. Dr. Traughber's analysis of the factor of safety, using a universally accepted equation, is that the trackhoe without mats would not have created an unacceptable factor of safety under the conditions represented by the contract borings. His analysis of the calculations in Mr. Gwyn's report leads him to differ with Mr. Gwyn. Specifically, he asserts that the stability level of .75 for the trackhoe without mats is suspect because a factor of safety of .75 predicts with certainty that the trackhoe would have ended up in the canal. As this did not happen, Dr. Traughber is of the opinion that the sloughing was not caused by trackhoe vibration. (Traughber report at 2-3) Further, Mr. Gwyn's work predicts a 1.25 factor of safety without the trackhoe at the top of the slope, a factor of safety which represents that stability is not threatened by variations in soil properties. We interpret this to mean that sloughing as experienced in the concrete segment would not occur. Dr. Traughber notes that such sloughing nonetheless did occur on the east bank where there was no equipment. (*Id.*) Moreover, he also was of the opinion that the tracks on the trackhoe distribute the load (tr. 1/191). While he felt that additional borings were necessary to ascertain whether a vertical cut was safe (tr. 1/202-03), in his subsequent report he stated that calculations based on the contract borings showed an acceptable margin of safety would be retained even with the construction equipment present (Traughber report). He performed calculations at the time appellant called him to the jobsite and concluded mats were not necessary. He also visited the site and took photographs. He found no indication the trackhoe was responsible for the sloughing of the bank. (Tr. 1/191-92)

40. William W. Gwyn, professional engineer, was accepted by the Board as an expert in soil mechanics and foundations (tr. 3/47-48). In Mr. Gwyn's opinion, the silt deposits were not significant and should have been expected. Moreover, he believes the trackhoe should have been placed in and operated from the canal or on top of the bank on mats. (Tr. 3/79-80) He did not use the government's hand auger borings in his analysis (tr. 3/70). He did a variety of calculations to determine whether the factor of safety was acceptable under several different conditions, most based on boring KEYC-2U. He reported that slopes of 1.5 to 1, 1 to 1 and 1 to .5 would have improved the factor of safety for the excavator without mats. (Gwyn report, encl. 7) However, he believes the factor of safety would have been acceptable for all conditions and all slopes, including a vertical slope, without the presence of the excavator. He calculated a factor of safety of 1.25 for contract boring KEYC-2U for a vertical cut without the excavator. Mr. Gwyn has not visited the site. (Tr. 3/53; Gwyn report, encl. 7) In his rebuttal to Dr. Traughber, he emphasized his position that the bank was unstable with a vertical cut and equipment loading even if all clays were present (11 April 2005 Gwyn rebuttal (Gwyn rebuttal)).

41. Mr. Gwyn agrees that the trench drains enhanced drainage from the banks. However, he also opines that use of trench drains "may have exacerbated sloughing subsequent to [high water] events" by allowing seepage into the banks. (Gwyn report at 4) Dr. Traughber testified that he visited the site on numerous occasions, the job would have been more difficult without the trench drains, and that "the trenches did as well as they possibly could under the circumstances" (tr. 1/129). On balance, we find the cross trench drains improved the situation.

42. We have carefully considered the reports of the experts and Dr. Traughber's 4 December 1998 report to appellant, as well as their testimony (ex. G-9; 17 Feb. 2005 Gwyn report; 25 March 2005 Traughber report; 11 April 2005 Gwyn rebuttal; tr. 1/119-206, 3/48-80). While both experts were credible, we find Dr. Traughber more persuasive. This is in part because he visited the site a number of times during construction and Mr. Gwyn did not visit the site (findings 20, 40), in part because Mr. Gwyn's factor of safety determinations predicted events at odds with what actually happened (finding 39), in part because Mr. Gwyn did not consider the government hand auger borings and we can see no inherent flaw in those borings that should remove them from consideration here (findings 28, 40), in part because his report contained errors (finding 38), and in part because our own independent review of the borings has led us to find that the contract borings did not accurately represent the actual conditions in the concrete segment (finding 28). Finally, we find Mr. Gwyn's recommendation that the trackhoe should have been positioned in the canal (finding 40) to be unreasonable in the circumstances, which include a continuously functioning canal with an earthen bottom and collapsible dikes (ex. A-1 at F-4, ex. G-1 at 3), a climate producing 60 inches of rain per year, and 21 compensable flood events (finding 15). We find, therefore, the quantity and variability of silt encountered during work on the concrete segment was a differing site condition that caused sloughing of the banks.

Sunday Work

43. Appellant provided no evidence as to its requests to work on Sundays or the effect of not being allowed to work on Sundays. Evidence from respondent indicates, and we find, there were few such requests, the first coming on 20 December 1998, Jefferson Parish opposed working on Sundays because of the disturbance to local residents, and that it was reasonable to deny requests for Sunday work (tr. 2/185-88).

DECISION

The underlying issue throughout this appeal is whether appellant encountered a differing site condition. Appellant's claim lists six items for which it seeks recovery.

The government asserts there was no differing site condition and argues against each of the six items in opposing recovery. Appellant has offered its arguments in two post-hearing statements which, in effect, argue for a differing site condition and against certain elements of the government's presentation. We resolve the differing site condition issue and address each claim item below, while observing at the outset that we have long rejected claim letters as proof of disputed facts. *Cascade General, Inc.*, ASBCA No. 47754, 00-2 BCA ¶ 31,093.

Differing Site Condition

The Differing Site Conditions clause at FAR 52.236-2 is included in the contract (finding 7) and provides as follows, in relevant part:

> (a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.

The differing site condition alleged here is of the category first enumerated, a Type I Differing Site Condition. The government argues that appellant has failed to establish the elements necessary to prove the existence of a Type I differing site condition. In order to prevail, appellant must show that:

> the conditions indicated in the contract differ materially from those actually encountered during performance; the conditions actually encountered were reasonably unforeseeable based on all information available to the contractor at the time of bidding; the contractor reasonably relied upon its interpretation of the contract and contract-related documents; and the contractor was damaged as a result of the material variation between expected and encountered conditions.

Comtrol, Inc. v. United States, 294 F.3d 1357, 1362 (Fed. Cir. 2002).

There is no dispute as to the existence of contract representations. Gov't br. at 12. We have found that the contract drawings did not show the quantity or variability of the

silt encountered at the site (findings 28, 38). As the evidence establishes that the sequence of work was changed, extra excavation was required, and cross-trench drains were installed due to the sloughing caused by the silt (findings 20, 21, 29-31), we hold that the conditions encountered differed materially from those represented.

As to the unforeseeability of the conditions, we have found Dr. Traughber to be persuasive, and he has testified that he has more geotechnical knowledge than a contractor would have had, and that he would not have expected the conditions encountered (finding 38). In addition, appellant visited the site and reviewed the contract borings prior to bidding. While appellant saw some silt indicated, appellant concluded the soil was principally clay. (Finding 4) We thus conclude that the actual conditions were reasonably unforeseeable.

The government argues that appellant did not act as a reasonably prudent contractor because the contract borings showed the existence of silt and yet appellant excavated to vertical slopes and operated without mats. This was unreasonable, according to the government. Gov't br. at 12. Appellant acknowledged the existence of some silt, but interpreted the contract borings as representing basically clay, and we conclude, based on appellant's actions and Dr. Traughber's testimony and report (findings 4, 38, 39), that appellant acted reasonably in reaching that interpretation. Appellant based its interpretation on the contract borings, and visited the site before bidding. Its prebid actions were thus appropriate. (Finding 4) In our view, the borings do not show the quantity or variability of the silt encountered (finding 28). Thus, our interpretation comports generally with appellant's interpretation (findings 28, 38). We hold that appellant reasonably relied on its interpretation of the contract and contract-related documents.

The government argues that appellant should have used mats to stop the sloughing. While use of mats would have improved the factor of safety (finding 19), the need for mats was not apparent from the contract borings. Using a universally accepted equation, Dr. Traughber concluded, and we hold, that the trackhoe without mats did not present an unacceptable factor of safety based on the contract borings. This was, in part, because the tracks on the trackhoe helped to distribute the load. (Finding 39)

Regarding the issue of excavation to a vertical slope, Dr. Traughber ultimately concluded that the project was not threatened by cutting to a vertical slope, although he initially expressed concern that the information provided by the contract borings was inadequate to make a solid determination (finding 39). Mr. Gwyn adamantly maintained that the reason for sloughing was the vertical slope and the equipment loading (finding 40). However, sloughing occurred on the east bank where there was no equipment, a condition for which Mr. Gwyn's calculations showed a factor of safety of 1.25 (finding

40). This leads us to conclude that the quantity of unstable soils—that is, the differing site condition—caused the sloughing on the east bank, and reinforces the testimony of Dr. Traughber that trackhoe vibration did not cause sloughing (finding 39). On balance, we are persuaded by Dr. Traughber, who visited the site and saw the conditions. Finally, the narrow right of way at the work site was such that use of a larger trackhoe was not feasible and a flatter slope would have compromised access (findings 4, 17). Indeed, construction of a special, nearly vertical berm was necessary to reach the post-concrete grading limits on the east side (finding 18). We hold that appellant acted as a reasonable contractor.

With regard to whether appellant was damaged by the differing site condition, we review the individual items set forth in the claim in our analysis below.

I. Extra Excavation

Appellant's claim seeks recovery for both the earthen and concrete segments. However, appellant no longer contends that it encountered a differing site condition or defective specification in performance of the earthen segment (finding 14). Accordingly, we hold that any recoverable excess costs incurred by appellant from the differing site condition arose in the concrete segment.

We have found there was a differing site condition that caused sloughing of soil into the canal in the concrete segment (finding 42). We have also found that appellant was compensated for extra work and delays under the Damage to Work provision (findings 15, 16). The government argues that the means and methods of construction were the cause, but the east bank sloughing convinces us otherwise. Additionally, the sloughing occurred in dry periods. Dr. Traughber's explanation as to why this occurred is persuasive (finding 38). Extra excavation from sloughing in dry periods would not have been compensated for in the 21 flood event modifications. There was, therefore, at least some uncompensated extra excavation caused solely by the differing site condition performed by appellant. As quantum is not before us, we leave all issues as to the quantity of the extra excavation to future proceedings.

II. Extra Concrete

Appellant argues that it placed concrete to an average depth of 7 inches but was only paid for a depth of 6 inches. Appellant's claim blames this on additional settlement of the canal bottom (finding 34), presumably because of unforeseen quantities of silt. We do not find this to be compensable. Appellant's witnesses failed to provide testimony establishing that this was due to a differing site condition (finding 32). Moreover, the

contract requires concrete to be placed at *a minimum* of 6 inches. There is no provision for payment for placing greater quantities of concrete, only penalties for placing lesser quantities, in the absence of a tie to the different site condition. (Finding 12) Accordingly, this element of appellant's claim is denied.

III. Additional Bracing

Appellant has failed utterly to provide evidence, let alone proof, of additional bracing (finding 32). This element of appellant's claim is denied.

IV. Idle Equipment

Appellant has failed to offer proof that it experienced uncompensated costs for idle equipment caused by flood events (finding 16). This element of appellant's claim is denied.

V. Corporate Overhead

As only entitlement is before us, it is premature to address corporate overhead, which is recoverable as a cost element applied in accordance with a party's normal accounting methods. Corporate overhead is best left to future proceedings.

VI. Liquidated Damages

Appellant seeks remission of all liquidated damages, asserting that extra work, presumably arising from the differing site condition, and not allowing Sunday work were the causes of delay. As to Sunday work, the project ran through a residential area (finding 4), and the contract required contracting officer approval for Sunday work (finding 6). Moreover, appellant made few requests for Sunday work, and made none at all until 20 December 1998 (finding 43). Appellant presented no evidence on either its requests to work on Sunday or the effect of not working Sundays (finding 43). Given the residential character of the surrounding area, we think it was reasonable for the contracting officer to have denied requests for Sunday work and hold that denial of requests to work on Sundays does not constitute a basis to reduce liquidated damages.

The contracting officer assessed appellant for 58 days of delay (finding 31). We have found that appellant was 14 to 20 percent behind schedule for the earthen segment, even though work went smoothly there and there is no longer a claim for that area (finding 14). We have also found that appellant had completed only 46 percent of the work as of 1 December 1998 (finding 22). There was, therefore, 54 percent of the work to be completed.

The original contract completion date was 30 November 1998 (finding 13). This was extended to 16 April 1999 and the work was substantially completed on 24 June 1999, 69 days late (finding 31). We have found there was a differing site condition based on the difference between conditions encountered and the representations of the contract borings. Prior to November 1998, however, there is no evidence of sloughing except in reference to flood events, and flood events were addressed by bilateral contract modifications which compensated appellant with both time and money (findings 15, 22). By 1 December 1998 the situation had changed. Appellant was experiencing difficulty with sloughing, had employed Dr. Traughber, and the government had been informed of "serious problem[s]." (Finding 20) After that, the dispute ripened and, in an 8 December 1998 letter, appellant gave notice of a differing site condition (finding 23). The government bore responsibility for the differing site condition and delays attributable thereto. Assuming, *arguendo,* appellant shared responsibility for some of the delay thereafter, delays from that point were concurrent. As such, liquidated damages cannot be assessed for that period, as there are no discernible means of apportionment. *Blinderman Construction Co. v. United States,* 695 F.2d 552, 559 (Fed. Cir. 1982). Prior to that time, however, the record establishes that appellant had completed only 46 percent of the work. There is no evidence of acceleration by appellant (finding 31).

Although there is a memorandum that sets forth the history of the project (R4, tab C-45), the record does not contain all the contract amendments. It is thus difficult to ascertain with certainty how many days appellant was compensated for flood events. In spite of this, the record persuades us that appellant suffered delay due to the differing site condition after November 1998. It had to dig cross-trench drains and shift to the north end of the project. It had to perform additional excavation. None of this constitutes a flood event. We estimate an additional two weeks of work was required, and hold that liquidated damages should be reduced by 14 days. However, balanced against that conclusion is the way in which the government calculated liquidated damages. It reduced the damages by removing 11 Sundays and holidays (finding 31). It did so even though the liquidated damages provision makes no distinction where Sundays and holidays are concerned. It calls for an assessment for each day of delay. (Finding 5) In a case construing a similar clause, we held it was error for the contracting officer to exclude weekend days in calculating liquidated damages. *Western Mechanical Contractors, Inc. and Ben Matto (Joint Venture),* ASBCA Nos. 26117, 28025, 90-2 BCA ¶ 18417 at 92,489. Accordingly, we reinstate the reduction of 11 Sundays and holidays made by the contracting officer. Appellant is thus entitled to 3 days of remission of liquidated damages (14 less 11).

Summary

Appellant experienced a differing site condition in the form of excessive silt in the concrete segment of Keyhole Canal. Appellant is entitled to an equitable adjustment for increased costs caused by the differing site condition. It is also entitled to remission of 3 days of liquidated damages, representing a decrease in liquidated damages withheld of $3,600. The appeal is otherwise denied.

Dated: 22 June 2006

CARROLL C. DICUS, JR.
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

RICHARD SHACKLEFORD
Administrative Judge
Armed Services Board
of Contract Appeals

I concur

I concur

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

EUNICE W. THOMAS
Administrative Judge
Vice Chairman
Armed Services Board
of Contract Appeals

I certify that the foregoing is a true copy of the Opinion and Decision of the Armed Services Board of Contract Appeals in ASBCA No. 53311, Appeal of B. W. Farrell, Inc., rendered in conformance with the Board's Charter.

Dated:

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