In the United States Court of Federal Claims

No. 13-859 C
(Filed August 31, 2017)

* * * * * * * * * * * * * * *	*	Trial; *Maropakis* Jurisdictional
MAGNUS PACIFIC CORP.,	*	Issue; Claim to Resolve
	*	Quantum of Credit Due Agency
Plaintiff,	*	for Change in Slope of Levee;
	*	Constructive Change to Contract
v.	*	for Replacement of Existing
	*	Riprap on Levee; Defective
THE UNITED STATES,	*	Plans and Specifications Claim
	*	for Additional Embankment Fill
Defendant.	*	Placed on Levee.
* * * * * * * * * * * * * * *	*	

Daniel L. Baxter, Sacramento, CA, for plaintiff.

A. Bondurant Eley, United States Department of Justice, with whom were *Benjamin C. Mizer*, Principal Deputy Assistant Attorney General, *Robert E. Kirschman, Jr.*, Director, *Martin F. Hockey, Jr.*, Deputy Director, *Reta E. Bezak* and *Vito S. Solitro*, Trial Attorneys, Washington, DC, for defendant.

OPINION

Bush, *Senior Judge*.

This post-trial opinion resolves all of the claims and requests for relief presented in this suit by Magnus Pacific Corporation (Magnus or Magnus Pacific) which spring from the restoration of a levee in Texas for the United States Section

of the International Boundary and Water Commission (IBWC).[1] The IBWC is a federal agency collaborating with its Mexican counterpart in the implementation of border and water treaties between the two countries. The contract between Magnus and the IBWC was awarded in December 2010; the disputes in this case focus on levee restoration work on the Rio Grande performed by Magnus from April 2011 through May 2012.

On the same topic as one of plaintiff's claims related to the levee, the government has asserted a counterclaim seeking to justify funds owed Magnus under the contract but retained by the IBWC. The amount in controversy for all of plaintiff's claims is almost four million dollars, plus interest; the contract's fixed price, subsequent to modifications agreed to by the parties, was approximately twelve million dollars. As discussed in detail below, plaintiff prevails on its claims to a great extent.

BACKGROUND[2]

I. The Contract Claims

This is a suit brought under the Contract Disputes Act of 1978, 41 U.S.C. §§ 7101-7109 (2012) (CDA). Am. Compl. ¶¶ 15, 20; Def.'s Br. at 58; Pl.'s Reply at 29-30. The parties agree that in 2010, pursuant to a sealed bid, fixed price procurement, plaintiff and the IBWC entered into a "lump-sum" contract whereby Magnus would perform restoration work on a levee near Presidio, Texas. The largest claim in this suit is plaintiff's "embankment fill" claim, which asserts that Magnus was obliged to import and place on the levee greater amounts of fill than a

---

[1]/ Magnus has a new corporate identity: Great Lakes Environmental & Infrastructure. During trial and post-trial briefing the parties continued to use the old corporate name of Magnus Pacific to identify plaintiff, as will the court in this opinion.

[2]/ The court adopts the parties' style of citation for trial transcript pages. The witness's last name precedes the transcript citation. For example Owaidat Tr. 111-13 identifies both the page numbers of the cited transcript as well as the fact that Mr. Louay Owaidat provided the cited testimony. A list of witnesses whose trial testimony is cited herein is provided at the end of the background section of this opinion.

reasonable bidder responding to the solicitation would have expected.[3] Plaintiff's second-largest claim, the "riprap claim," is that the contract, as amended, required that Magnus place imported riprap armoring on various sections of the levee, but the IBWC also obliged Magnus to do additional, out-of-scope riprap work.[4] Plaintiff's third and smallest claim is an appeal of the contracting officer's final decision which sought to justify the retainage of contract payments by the IBWC in the amount of $466,092, a retainage of contract funds related to a disputed credit owed the government for a mid-project change to the levee design. This final dispute, which may best be described as the "slope change credit claim," is the subject of both plaintiff's claim and the government's counterclaim.[5] The court provides a very brief, general description of each dispute below, but reserves a more detailed narrative of pertinent facts for the specific analysis section of this opinion devoted to each of plaintiff's claims.

A. Embankment Fill

Magnus's embankment fill claim, adjusted during trial because certain computation errors were conceded by plaintiff, is for an equitable adjustment of the contract price in the amount of $2,851,788. Of this sum, the embankment fill "overruns" are divided into two main categories: (1) fill required at the construction locations where deep "slurry walls," *i.e.*, barriers to groundwater movement buried in trenches sixty feet deep, were installed at the side of the levee, and (2) fill required, more generally, along most of the levee because Magnus was obliged to excavate existing levee material to a lower depth than expected. Of these two embankment fill claim components, the generalized deeper excavation of existing levee materials portion of the claim greatly exceeds

---

[3]/ "Embankment fill is earthen material used to assist in supporting the impermeability of a levee." Am. Compl. at 2 n.1.

[4]/ "Riprap is rock or similar material used to armor shorelines, streambeds, and levees." *Id.*

[5]/ As discussed in greater detail below, plaintiff's request for relief in its amended complaint regarding the slope change credit is not a contractor "claim" but Magnus's response to a government "claim," in the context of this court's CDA jurisdiction. For ease of reference, however, the court will nonetheless refer to the slope change credit claim as plaintiff's claim, in that it is a claim set forth in the amended complaint which references a specific amount of money retained by the government and owed to plaintiff.

the portion of the claim related to the excess fill required at the slurry wall construction locations. *See* Joint Exhibit (JX) 2, at 1-2.

B. Riprap

Magnus's riprap claim, adjusted during trial because certain computation errors were conceded by plaintiff, is for an equitable adjustment of the contract price in the amount of $597,075. In support of this claim, Magnus contends that three separate and distinct amounts of riprap were placed on the levee. First, the contract at the time of award called for a certain amount of new riprap to be placed on the levee, approximately 17,500 cubic yards (CY). JX 24, at 1. Second, when the levee project was extensively modified by bilateral modifications triggered by what the parties refer to as the "matrix" document,[6] an additional amount of new riprap, approximately 9750 CY, was ordered to be placed on the levee. *Id.* Neither of these riprap amounts in the contract included, however, the replacement of certain existing, unsatisfactory riprap which could not be re-used on the levee. It is this final category of riprap work, 8101 CY of new riprap to replace existing riprap, that is the basis of Magnus's riprap claim. *Id.*

C. Slope Change Credit Dispute

Well after the matrix and related contract modifications provided the parties with a revised statement of work for the project, another major change to the contract occurred in late February 2012. JX 104. For a significant portion of the length of the levee, the footprint of the proposed restored levee exceeded, on the landside of the levee, the space provided by pertinent property boundaries. The parties were obliged to reduce the levee's footprint by making the landside slope of the levee in those areas steeper and more narrow. Although the volume of the

---

[6]/ The matrix was set forth in a memorandum issued by the IBWC after performance of the contract had begun. JX 6. This document contains a table of data identifying additional work required at specific portions of the levee. Each of the table entries addresses the work required for a specific portion of the levee; the location of that section is delineated by "station" markers. The stations marked every hundred feet of levee (along with a fifty-foot marker between successive stations). For example, Station (STA) 65 was one hundred feet upstream from STA 66, and STA 65 + 50 was fifty feet upstream from STA 66. Work, except for the slurry wall construction, generally proceeded along the levee in a "downstream, up station" manner, beginning at STA 1 and ending approximately at STA 312. Sallas Tr. at 1709, 1714.

levee would thus be reduced, the credit owed the government due to this contract change was not resolved amicably.

For the slope change credit, the IBWC retained $466,092 in contract payments owed Magnus under the contract. Magnus argues that the slope change credit should be $35,036, whereas the government's position, modified during trial, is that the IBWC is entitled to a slope change credit of $383,893. In its amended complaint, Magnus seeks a disbursement of the retained funds in the amount of $431,056 (subtracting a $35,036 slope change credit from $466,092 retained by the IBWC). In its counterclaim, the government seeks a ruling which endorses a slope change credit of $383,893, so that the IBWC would only refund to Magnus a modest amount ($82,199, subtracting a $383,893 slope change credit from $466,092) of the retainage.

II. Overview of the Levee Restoration Project

A. The IBWC Managers of the Project Lacked Specialized Levee Expertise

It became clear at trial that levee restoration projects are somewhat specialized projects that benefit from specialized experience. The IBWC employees assigned to the project at issue in this case, referred to as the Lower Presidio Levee, were not well-versed in the technical requirements of levee restoration. The contracting officer, Mr. Frank Delgado, testified that he had no technical expertise in levee restoration or construction. Delgado Tr. at 474-75. The contracting officer's representative, who served as the IBWC's technical expert on this project, Mr. Frank Duran, had just begun work with the IBWC in 2010, and was in the process of obtaining his professional engineer's license as this project was underway. Duran Tr. at 917. He testified that the Lower Presidio Levee project was his first levee project (along with a neighboring levee project at about the same time). *Id.* at 723.

To support Mr. Delgado and Mr. Duran, the IBWC engaged a contractor to manage restoration at the levee, Mr. Matthew Moore. His role was described as construction inspector and construction manager. Moore Tr. at 1135, 1282. Mr. Moore had worked on one prior levee project, which was another IBWC levee. *Id.* at 1281-82. Prior to the Lower Presidio Levee, however, Mr. Moore had never

worked on a levee that involved slurry walls (which, in this project, were sunk sixty feet below the levee to impede groundwater movement). *Id.* at 1386. Mr. Moore improved his knowledge of slurry wall construction by questioning Magnus employees, reading publications written by Mr. Louay Owaidat, Magnus's president, conducting internet research and consulting with a colleague at his firm. *Id.*

B. The Levee's Designer Also Lacked Specialized Levee Expertise, and Suffered Cognitive Impairments During His Tenure at IBWC

Mr. Donald Atwood was the IBWC engineer who designed the Lower Presidio Levee restoration project. He was not called to testify at trial based on counsel's concern that his presence at trial would be a hardship. According to counsel, Mr. Atwood's presence at trial would have constituted either a medical hardship, a financial hardship, or both. Tr. at 449. Portions of Mr. Atwood's 2015 deposition transcript became part of the trial record by joint request of counsel. Joint Status Report of May 19, 2016, at 4 (ECF No. 64).

In 2006, Mr. Atwood suffered a traumatic brain injury from a car accident and, from his perspective, subsequent cognitive problems eventually led to Mr. Atwood being fired by the IBWC. Atwood Dep. Tr. at 7. The brain injury left Mr. Atwood with "serious memory problems" and difficulties with concentration. *Id.* at 7, 12. He was hired by the IBWC in 2009 and did not fully reveal the extent of his cognitive impairments. *Id.* at 11. Mr. Atwood stated that his cognitive impairments worsened over time. *Id.* In 2015 Mr. Atwood stated that he had been fired from his last three jobs and that he was not the engineer or designer that he used to be. *Id.* at 10-13.

Mr. Atwood came to the IBWC from a career in residential development, for the most part designing single-family home subdivisions. *Id.* at 16, 18. Prior to joining the IBWC, Mr. Atwood had never designed a levee. *Id.* at 22. His design of the Lower Presidio Levee was his second levee design, after completing the neighboring, upstream levee design just a short time before. *Id.* at 23. Mr. Atwood based these two levee designs on other IBWC designs from previously completed projects. *Id.* at 75-79.

After a review of all of the portions of Mr. Atwood's deposition that were

presented at trial, much of it on videotape, the court concludes that Mr. Atwood's design of the Lower Presidio Levee was severely affected by his lack of experience in levee construction and restoration, as well as by the cognitive difficulties he was suffering from his brain injury. Mr. Atwood's testimony showed that he was learning levee design on the job, and was trying, apparently with some difficulty, to bridge the gap from his prior experience to the specialized tasks of levee restoration project design. *See id.* at 23 (stating that restoring an "existing levee [to a] proposed [levee is] the same as designing a road with the earthwork]"). Further, Mr. Atwood's testimony showed that his cognitive problems affected his work at the IBWC. *Id.* at 10, 12-14. Although Mr. Atwood testified that he was able to compensate for his cognitive problems by sitting quietly and concentrating on his work, *id.* at 47, his design work for this project involved site visits and communications with IBWC staff and contractors, as well, *id.* at 38, 42, 56-57, 65. Mr. Atwood clearly stated that after his car accident he could no longer think on his feet, *id.* at 12, a cognitive impairment that would necessarily have affected his design work for the IBWC. Thus, it is not surprising that the levee design produced by Mr. Atwood that was included in the solicitation for the Lower Presidio Levee caused problems down the line for both Magnus and the IBWC.

The Lower Presidio Levee restoration project would renovate approximately 5.88 miles of levee. JX 1, at 1. According to Mr. Atwood, the design of the project took approximately six months, perhaps a bit more, to be completed. Atwood Dep. Tr. at 54. Mr. Atwood also calculated the difference between the volume of the existing levee and the volume of the renovated levee, a calculation which established cost estimates for the materials expected to be used on the project. *Id.* at 62-66. Mr. Atwood acknowledged, however, that his design was not always accurate in its depiction of the existing levee. *Id.* at 39, 41, 57-59. According to plaintiff's expert, Mr. George Sills, a levee restoration designer typically has years to develop the renovated levee's design and agency staff also typically have a year to write the specifications for the project. Sills Tr. at 2539-40. At trial Mr. Sills characterized the plans and specifications for the Lower Presidio Levee as perhaps the worst he had seen during the decades he had worked on and/or evaluated levee projects, both for the United States Army Corps of Engineers and in private practice. *Id.* at 2425.

C. Solicitation and Significant Amendments Sow Confusion

The IBWC issued its solicitation for the project on November 17, 2010. JX 1, at 40. The IBWC publicized the project, which was a small business set-aside, with an estimated price from $10 million to $15 million. *Id.* at 1. Significant amendments to the solicitation included a statement that estimates of the quantities of materials required for project completion were for "informational purposes only." *Id.* at 40 (Amendment 001, issued November 19, 2010), 73 (same). Bidders were required to attend a site visit before their bids would be considered. *Id.* at 29, 64.

A number of significant solicitation amendments were issued during the eight-day period from December 8 through December 15, 2010. For example, the entire set of specifications for the project was revised and fully replaced on December 8, 2010 by a 281-page document. *Id.* at 44; JX 23. These significant solicitation amendments also included four sets of the IBWC's answers to bidder questions, updated as bidders found incorrect or confusing provisions in the solicitation package. JX 1, at 52-54, 64-68, 73-74, 80.

Many of the IBWC's answers to bidder questions encompassed fundamental changes to the project and revised or replaced contract language. For example, as of December 7, 2010, bidders still had not received access to electronic files pertinent to the levee design, nor had they received geo-technical information as to subsurface conditions, even though bids were due two weeks later. *Id.* at 52. The IBWC promised that these files would be available shortly. *Id.* The geo-technical report made available to bidders on December 9, 2010 consisted of approximately 170 pages. *Id.* at 55; JX 139, at 557-729.

The court highlights here some of the IBWC's answers to bidder questions to give concrete examples of the types of changes to contract work that bidders encountered from December 8, 2010 through December 15, 2010. On December 8, 2010, the IBWC slashed the estimate of imported riprap to be placed on the levee almost in half, from 32,000 CY to 17,500 CY. JX 1, at 53. On December 11 and December 14, 2010, specifications for two types of structures on the levee were changed. *Id.* at 65, 73. On December 15, 2010, payment for the slurry walls was changed from a price per unit foot to lump sum. *Id.* at 80. From the time the last of these significant changes were made to the solicitation, bidders had approximately one week to finalize their bids. At one point, the IBWC encouraged bidders to conduct their own surveys of the existing levee, rather than

rely on the information provided by the IBWC. *Id.* at 66. Bids were originally required to be submitted by December 21, 2010, but the deadline was ultimately extended to December 23, 2010. *Id.* at 75.

Plaintiff's expert, Mr. George Sills, testified that the IBWC's solicitation package was totally inadequate to support a fixed-price bidding process. Sills Tr. at 2425. According to Mr. Sills, first, the solicitation lacked essential data. *Id.* Second, the levee design set forth in the plans and specifications did not reflect the conditions on the existing levee. *Id.* Third, the IBWC's answers to bidder questions showed that the agency did not really understand the project, or, at the very least, could not clearly convey its understanding of the project to bidders. *Id.* at 2455, 2465-66. Fourth, Mr. Sills testified that a bidder could not have been expected to repeatedly pose a question for which the agency had already provided an answer, even if the answer did not resolve every inherent ambiguity in the topic, because the time to prepare bids was limited. *Id.* at 2518-19. Finally, Mr. Sills believed that the IBWC should not have expected bidders to expend their own funds to perform additional surveys of the existing levee so that their bids could be founded on better data than the inaccurate or insufficient data provided in the solicitation. *Id.* at 2469-70; JX 98, at 3.

The court must agree with Mr. Sills that the level of error and missing information in the solicitation documents, and the sweeping last minute changes to the solicitation that were made during the bidding process, were problematic. Even the government's expert, Mr. Lee Wooten, acknowledged that the original levee design documents included in the solicitation were flawed and provided insufficient guidance for levee restoration. Wooten Tr. at 1904-05. Despite the shifting sands of information contained in the solicitation package, Magnus submitted a bid of $8,395,995 which was accepted by the IBWC on December 30, 2010. Jt. Stip. of July 28, 2016, at 1 (ECF No. 95).

D. Even Before the Solicitation was Awarded to Magnus, the Contracting Officer's Representative for the Project Was Aware of Defects in the Levee's Design

Mr. Frank Duran, who fulfilled the role of contracting officer's technical representative on the levee project, testified that he and the IBWC knew that the original designs for the project were "terrible" even before the contract was

awarded to Magnus. Duran Tr. at 1039. According to Mr. Duran, the great majority of the defects in the design were in the drawings which described the construction of the levee and which depicted, erroneously, the status of the existing levee. *Id.* at 1044. Mr. Duran also testified that the IBWC's estimate of what the project would cost was just as flawed as the design documents provided to Magnus.[7] *Id.* at 731.

E. Early Work on the Levee Impeded by Defective Levee Plans and Specifications

Magnus began excavation work on the existing levee on April 18, 2011. Jt. Stip. of August 30, 2016, at 1 (ECF No. 109). However, by this time the IBWC had confirmed that the levee design was deeply flawed. *See* JX 6, at 1 (IBWC memorandum citing "numerous design deficiencies" reflecting conflicts between the "current plan versus existing site conditions"). Indeed, Mr. Duran testified that he recommended to the contracting officer that the IBWC terminate the contract for the convenience of the government rather than proceed with the construction of a levee that could not be built as designed.[8] Duran Tr. at 724-26. The IBWC asked Mr. Duran to ameliorate the design deficiencies himself but he refused, citing concerns about associating his professional license with this particular design at such a late stage of the design's development. *Id.* at 1039-40. The IBWC's "initial plan," therefore, was to terminate the levee project contract for the convenience of the government. Nunez Tr. at 1121. The IBWC met with Magnus to discuss an alternative, which would be for Magnus to create better construction drawings based on a new, accurate survey of the existing levee. JX 7. In Mr. Duran's words, Magnus "wanted to help the IBWC out," rather than lose the job if the contract was terminated for the convenience of the government. Duran Tr. at 924.

F. The IBWC's "Matrix" Request for Additional Contract Work to Complete the Levee Restoration

---

[7]/ Once he got a closer look at the levee, Mr. Duran estimated, very roughly, that Magnus's bid of $8,395,995 would need to be doubled to account for additional, unexpected work required on the levee. Duran Tr. at 737.

[8]/ Even in 2016, Mr. Duran's opinion that the levee contract should have been terminated for the convenience of the government was unchanged. Duran Tr. at 726.

On April 18, 2011, the contracting officer issued a memorandum to Magnus, the "matrix" document, which set forth a detailed list of work items that would need to be completed to fully restore the existing levee. JX 6. A first step would be for Magnus to obtain a complete and accurate survey of the existing levee, with the actual location, width and height of the existing levee for 5.88 miles to be determined by a professional surveyor. JX 4, at 4-5. Subsequently, Magnus would prepare detailed cost estimates for the additional work required. JX 7, at 10-13; JX 11, at 1.

The notes for a meeting between Magnus and the IBWC held on April 21, 2011 show that the IBWC initially expected, or at least preferred, that the additional work set forth in the matrix would not increase the contract price by more than 25%. JX 7, at 1. In other words, the IBWC's expectation at the start of these contract modification negotiations was that the contract price would rise from $8,395,995 but would remain less than $10,495,000. Nonetheless, the levee restoration contract was modified in September 2011, in response to the matrix, so that the modified contract price rose to $11,518,798. JX 4; JX 27; JX 108.

G. No Redesign of the Levee by Magnus

One of the disputed issues in this case is whether the changes to the contract embodied in the matrix and related contract modifications (Modifications 001, 002, and 003) ordered Magnus to redesign the project. Defendant argues that Magnus took on the responsibility for fixing the defective design of the levee, both with a redesign and with its pricing of the work set forth in the matrix. Assuming that such a redesign of the levee occurred, the government's position is that Magnus must now bear the risk of any cost overruns that were inherent in Magnus's overall redesign of the levee set forth in those contract modifications, because those contract modifications were fixed-price. In other words, in the government's view, because Magnus redesigned the project and agreed to a fixed-price modification of the contract, the IBWC is now insulated from any responsibility for cost overruns.

Not surprisingly, plaintiff's position is significantly different and relies on three principal facts. First, while Magnus obtained an accurate survey of the existing levee and prepared new construction cross-sections based on that survey, these were simply tasks that helped Magnus implement the IBWC's original,

flawed design for the levee, not a new Magnus-authored levee redesign.[9] Second, even though the matrix and related contract modifications added work to the base contract, cost overruns in embankment fill were the result of flaws in the *original* levee design, plans and specifications. Third, plaintiff contends that the contract modifications related to riprap that flowed from the matrix negotiations included a deferred determination of the quantity of additional riprap that might be needed to replace existing riprap on the levee.

The preponderant weight of the evidence presented at trial, primarily testimony discussing contemporaneous documentation of the period of negotiations triggered by the matrix, shows that Magnus did not contract to perform a redesign of the Lower Presidio Levee. Sallas Tr. at 1662-64; Owaidat Tr. at 2313-27. Further, Mr. Owaidat testified that Magnus is not, and was not in 2011, a levee design firm and could not have offered to redesign the levee for the IBWC. Owaidat Tr. at 2312, 2318-19, 2328. Although the IBWC witnesses, particularly Mr. Frank Duran, insisted that Magnus redesigned the levee, Duran Tr. at 731-34; Nunez Tr. at 1129-31, there is not a shred of documentary evidence which supports that contention. The court, having weighed the evidence provided by contemporaneous documents and witness testimony, concludes that Magnus did not offer and did not contract to redesign the Lower Presidio Levee. Because Magnus did not redesign the levee, the IBWC's attempt to shift responsibility onto Magnus for a faulty redesign of the levee is without merit.

H. Renovation of the Levee, from April 18, 2011 through May 16, 2012, Was Satisfactorily Completed, but the Embankment Fill and Riprap Disputes Soured the Working Relationship Between the Parties

The IBWC accepted, without change, Magnus's proposals for the matrix-related work on the levee. By all accounts, the IBWC was satisfied with Magnus's renovation of the levee. Delgado Tr. at 677; Nunez Tr. at 1127; Moore Tr. at 1271. In the third quarter of 2011, however, Magnus began to communicate to the IBWC that it was experiencing cost overruns in the amount of embankment fill

---

[9]/ Cross-section drawings, created for each fifty-foot station marker along the levee, depict the existing and as-built contours of the levee at each of those points along the levee. *See supra* note 6.

that was required to complete the levee. Owaidat Tr. at 124-25; Diettert Tr. at 358-61; Delgado Tr. at 573-74; Moore Tr. at 1245; Sallas Tr. at 1635-37. Magnus also eventually informed the IBWC that additional riprap was placed on the levee which was not included in the specific amounts required by the base contract or in the matrix-based contract modifications. JX 80. Rather than negotiate the amounts of any equitable adjustments to the contract owed Magnus, the IBWC simply denied Magnus's claims related to these cost overruns in their entirety. A separate dispute regarding a credit owed the IBWC for an extensive landside slope change to the levee also could not be resolved amicably. *See supra.* This litigation followed.

III. Procedural History

Magnus filed its complaint in this court on October 31, 2013, appealing the contracting officer's denials of both the embankment fill claim and the riprap claim. On January 13, 2014 the contracting officer issued a final decision holding that the IBWC was entitled to retain $466,092 of contract payments due Magnus in order to provide a credit to the IBWC to account for reduced quantities of imported embankment fill occasioned by slope changes to portions of the levee. JX 33. Magnus accordingly amended its complaint on January 29, 2014 to add an appeal of the contracting officer's final decision on the slope change credit issue. The parties then conducted discovery on the issues raised in plaintiff's amended complaint.

As this case moved toward the trial preparation phase, the court considered two important motions brought by the government. In one motion, the government sought leave of the court to amend its answer to the amended complaint in order to bring a counterclaim addressing the slope change credit dispute. ECF No. 70. In the other motion, the government sought to narrow the admissible scope of plaintiff's expert opinions and testimony regarding the host of problems caused by the levee's inadequate design. ECF No. 69. The government prevailed, in large part, on both of its motions.

The court issued separate opinions on the government's motions which significantly narrowed the scope of trial proceedings. The first opinion recognized this court's jurisdiction under the CDA to resolve the government's counterclaim on the slope change credit issue. *Magnus Pac. Corp. v. United States*, No.

13-859C, 2016 WL 3776889 (Fed. Cl. July 13, 2016) (*Magnus I*). Notwithstanding its delay of more than two years, the government was permitted to assert its counterclaim for a slope change credit, but only in the amount of the contracting officer's retainage of $466,092, not more. *See id.*

The court's second ruling examined the expert opinion topics proposed by plaintiff and evaluated the relevance of those topics for the resolution of plaintiff's riprap and embankment fill claims.[10] *Magnus Pac. Corp. v. United States*, No. 13-859C, 2016 WL 3960447 (Fed. Cl. July 21, 2016) (*Magnus II*). *Magnus II* also discussed the court's jurisdiction under the CDA, and determined that the court had jurisdiction to consider three theories of entitlement for plaintiff's riprap and embankment fill claims: Type I Differing Site Conditions; Defective Plans and Specifications; and Constructive Change. 2016 WL 3960447, at *3-7. There were no other evidentiary challenges brought to the court's attention through the formal process established by the court's pretrial orders. ECF Nos. 53, 57, 62. A pre-trial conference was held in Washington, DC on July 7, 2016.

Trial was held in Sacramento, California from August 8, 2016 through August 11, 2016, and trial continued in Austin, Texas from September 12 through September 22, 2016. The court has before it the trial transcript, trial exhibits, and the parties' post-trial briefs (Pl.'s Br. (ECF No. 135), Pl.'s Br. Supp. (ECF No. 136), Def.'s Br. (ECF No. 140), Def.'s Reply (ECF No. 144), and Pl.'s Reply (ECF No. 145)). In this opinion, the court cites the testimony of the following trial witnesses:

Louay Owaidat, Magnus Pacific president;

Bruce Diettert, Magnus Pacific chief financial officer;

Jeffrey Sallas, Magnus Pacific regional manager;

---

[10]/ Defendant's motion *in limine* did not target Mr. George Sills' Expert Rebuttal Report, which addressed, albeit very briefly, plaintiff's slope change credit claim. Tr. at 2421. Because none of the expert opinions at issue in the government's motion *in limine* addressed the slope change credit dispute, the court's ruling on the motion *in limine* had no effect on the permissible scope of expert trial testimony regarding plaintiff's slope change credit claim or the government's counterclaim on that same issue. *Magnus Pac. Corp. v. United States*, No. 13-859C, 2016 WL 3960447, at *1 (Fed. Cl. July 21, 2016) (*Magnus II*).

Rodney Louviere, Magnus Pacific project manager;

Chris Douglas, Magnus Pacific project engineer;

Champ Clark, Magnus Pacific quality assurance officer;

Edison Stevens, senior soils testing technician for Fugro Consultants, a Magnus subcontractor;

Frank Delgado, IBWC contracting officer;

Jose Nunez, IBWC Engineering Services Division chief;

Frank Duran, IBWC contracting officer's technical representative;

Matthew Moore, employee of subcontractor URS, who served as IBWC's construction manager/construction inspector;

George Sills, plaintiff's expert; and

R. Lee Wooten, defendant's expert.

DISCUSSION

The court's analysis of the trial evidence is divided into five topical sections, in the following order: witness credibility, the slope change credit dispute, the riprap claim, the embankment fill claim, and interest due plaintiff under the CDA.

I. Witness Credibility

As a general matter, both parties' witnesses were credible, except for the witnesses discussed separately below. Mr. Louay Owaidat, the president of Magnus, was, in particular, both well-informed *and* credible; in addition, his grasp

of the issues in dispute in this litigation was unmatched by any other witness. An important difference must also be drawn between the witnesses for Magnus and those for the IBWC – much more extensive levee restoration experience going into this project was to be found among the contractor's personnel. Similarly, the principal expert testifying for Magnus, Mr. George Sills, was better-versed in levee projects than was Mr. Lee Wooten, the government's expert. Wooten Tr. at 2123; Sills Tr. at 2376-78. Thus, for most of the disputed questions of fact aired at trial, plaintiff's witnesses were more credible and showed greater expertise as to levee restoration work.

A. Mr. Frank Delgado

Mr. Delgado, the IBWC's contracting officer, was generally not a credible witness. He was combative when asked follow-up questions regarding testimony he had given moments earlier, and retreated from his testimony concerning "staffing shortages" at the IBWC when plaintiff's counsel attempted to confirm that such shortages did indeed exist. *E.g*, Delgado Tr. at 460-62. In general, Mr. Delgado's testimony appeared to be crafted to avoid any possible inference that he or the IBWC was at fault, to even the slightest degree, for the excess costs incurred by Magnus during the levee restoration project. Mr. Delgado, who is now retired, also had very little specific or detailed memory of events, and instead, quite often relied on a somewhat generalized, impressionistic recollection of the disputes between the IBWC and Magnus. *See, e.g.*, Delgado Tr. at 684-85 ("I'm not precise on this. . . . My recall is not there.").

In addition, Mr. Delgado's trial testimony presented, on multiple topics, a different version of events, more favorable to the IBWC's position, than the version of events he provided during a deposition taken by Mr. Baxter. *E.g.*, Delgado Tr. at 469-73; 490-92, 509-11; 622-24; 638-39; 641-43, 672-74. The accumulation of these inconsistencies in testimony detracted from Mr. Delgado's credibility. Mr. Delgado's testimony also showed that at the time he denied Magnus Pacific's largest claim, he was influenced by rumors at the IBWC, unfounded rumors discredited at trial, that Magnus had falsified some of the records that substantiated the quantities of embankment fill required to complete the restoration of the levee. *See id.* at 628-30, 649-54. In general, Mr. Delgado's testimony evinced a bitterness toward Magnus and a continuing suspicion as to the factual bases of Magnus Pacific's claims, attitudes which appeared to be grounded

more in personal animus than in an objective review of the work performed by Magnus to restore the levee. *Cf., e.g.*, *id.* at 677-78 (begrudgingly conceding that Magnus had "properly constructed" the restored levee). Overall, the court was not convinced that Mr. Delgado's testimony at trial was accurate or credible.

B. Mr. Frank Duran

Although Mr. Frank Duran, the contracting officer's representative for the IBWC, retained vivid impressions of the levee restoration project, his testimony was inconsistent as to project work and communications between the IBWC and Magnus. For example, Mr. Duran stated that Magnus personnel were clearly warned, in writing, that their revised cost estimates for contract completion were *too low*, but he later testified, unconvincingly, that only an ambiguous instruction to "double check your numbers" had been provided in writing. Duran Tr. at 737-42. Mr. Duran, as he recounted these communications, had a very loose estimate as to the number of such warnings that were provided to Magnus, ranging from two or three instances, to "several times." *Id.*

Only one letter on the topic of Magnus's cost proposals was identified at trial, however. Further, this IBWC letter, specifically relied upon by Mr. Duran as an example of the warnings provided Magnus, contained no warning to Magnus that its proposed costs in response to the matrix were too low. JX 11. Indeed, it would be difficult to ascertain from this letter that Magnus was being asked to "double check" its quantity estimates. *Id.* Mr. Duran did not improve his credibility by testifying that he "believed" a "second round" of comments had been sent to Magnus; no second letter or email was ever identified among the trial exhibits. Duran Tr. at 928, 1028-29.

The "warning letter" testimony was just the tip of the iceberg for Mr. Duran's credibility problems. He explained that a portion of his deposition testimony was inaccurate because he had misunderstood the question posed to him. Duran Tr. at 730. On the stand, Mr. Duran initially refused to concede that as of March 2013 the IBWC had taken a firm position that Magnus's embankment fill claim would be denied in its entirety, but, after hearing his deposition testimony to the contrary, changed his trial testimony on that point. *Id.* at 755-57. From these and other aspects of Mr. Duran's testimony, the court viewed Mr. Duran's testimony as having a high probability of containing inaccuracies and an

excessive amount of "spin."[11]

Like Mr. Delgado, Mr. Duran's testimony at trial seemed to be fueled in part by a desire to justify his decision to recommend against any payment to Magnus for its claims. For example, Mr. Duran used a number of targeted, narrow questions from plaintiff's counsel as opportunities to complain generally that Magnus's claims lacked supporting data and consistency. Duran Tr. at 758-59, 762, 774, 833. There were also a number of occasions when Mr. Duran's deposition testimony, which generally tended to be less hostile to Magnus's version of events, impeached statements he made at trial that were highly critical of Magnus's claims. *See id.* at 815-16, 841-42, 888-89, 894-96. Mr. Duran's testimony, as a general matter, lacked credibility because Mr. Duran appeared to be slanting his testimony at trial quite clearly in support of his decisions to reject any possible validity of Magnus's claims.

The portion of Mr. Duran's testimony that most clearly demonstrates his lack of credibility was his discussion of a letter sent by the IBWC to Magnus requesting cost proposals to complete the restoration work on the levee. This letter, dated July 1, 2011, is straightforward in its request for detailed cost proposals. JX 11, at 1. There is not, however, a single sentence in this letter which implies that Magnus's cost proposals that had been advanced in previous discussions were too low. The only specific mention of a cost concern is an *upward* limitation on price for additional work on Reach 1, the upstream portion of the levee. *Id.*; *see also* JX 7, at 1 (similarly noting an *upward* limitation set by the IBWC for the cost of work contemplated by the matrix). Nonetheless, Mr. Duran insisted at trial that the warning contained in the text of this letter was that Magnus needed to double-check its figures because the IBWC was concerned that Magnus's cost proposals were too low. There is no such warning in the text of the July 1, 2011 letter and Mr. Duran's interpretation of the plain text of that letter

[11]/ Mr. Duran, when confronted with documents in the record such as letters or emails, repeatedly relied on undocumented phone conversations in an attempt to lend credence to his testimony regarding the content of communications between Magnus and the IBWC. *See, e.g.*, Duran Tr. at 737-41, 802, 883-84, 896-97, 1035-37, 1106. Based on Mr. Duran's demeanor at trial, and testimony from other witnesses which contradicted his statements, *see, e.g.*, Sallas Tr. at 1622-23; Owaidat Tr. at 2340-41, the court considers Mr. Duran's testimony as to the alleged content of these phone calls to be unreliable, at best.

was neither logical nor credible.[12] Duran Tr. at 802-03, 1020-28. Judging both the content of Mr. Duran's testimony and his demeanor as a witness, the court finds that his testimony was largely not credible.

C. Mr. Matthew Moore

Mr. Moore, the contractor who performed contract inspection and management services for the IBWC on the levee, was engaging and affable when questioned at trial. His testimony, however, tended to wander through a fog of ambiguity and confusion, and was quite often difficult to follow. Here is an example of one of his answers on the stand, when Mr. Moore was questioned whether he ever had difficulty with or asked Magnus to revise any of the daily construction reports submitted to him:

> It seems like in the beginning, there was several working with Rodney that I was asked – I asked him – not I was asked – I was asked to include more information or if there was a specific conversation during the day that I didn't notice was on theirs which happens once in a blue moon for them to, hey, could you include that this conversation took place or – in their daily report as opposed to I would – what was your statement? – having difficulty – having difficulty with their reports, so – but –

Moore Tr. at 1139. Mr. Moore then clarified, with the assistance of counsel, that there were very few instances when he asked Magnus to revise a daily report. *Id.* at 1140.

Clarification of Mr. Moore's confusing statements was elusive, however, when he could not remember what steps he had taken to arrive at certain opinions. For example, Mr. Moore came to believe, it appears, that the contract documents

---

[12]/ By way of contrast, Mr. Sallas, Magnus's regional project manager, confirmed that this letter, when read according a plain meaning to its terms, contained no warning that Magnus's cost estimates were too low. Sallas Tr. at 1620-22. Mr. Owaidat testified that he, too, disagreed with Mr. Duran, and demonstrated that Mr. Duran's proposed interpretation of the letter was not supported by *any* portion of the plain text of that document. Owaidat Tr. at 2331-38.

did not represent that the existing levee material was suitable to be re-used as embankment fill placed on the levee for levee restoration. Moore Tr. at 1158. At his deposition, Mr. Moore testified that he did not review contract documents for the specific purpose of forming that opinion. *Id.* at 1157. At trial, he changed his testimony to state that he *had* reviewed contract documents for that purpose. *Id.* at 1155.

Exactly how that review of contract documents by Mr. Moore might have occurred was never clear, as shown by the following testimony given at trial by Mr. Moore:

> I believe once I received the plans and specs, I looked at it, and I don't remember finding information in there that stated that the existing material could be reused.
> . . . .
> I believe at some point I would have looked through those, looking for does – is there statements that or some – something that would show that the existing material is there.
> . . . .
> [Do you have a specific recollection . . . ?]
> Not specific. I believe I would have in the beginning. Or – or when someone asked can we reuse this as – a blanket.
> . . . .
> I believe in the beginning when Magnus started work that I would have dove into it deeper to look to say is there something out there that says the material's probably generally good and – and base – do – or do we really need testing on everything, which we would anyway per plans and specs. But what do we think we're looking at here.
> [But you believe you would have, but you don't have any specific recollection . . . .]
> Correct.

Moore Tr. at 1155-59. In the end, it is unclear whether the deposition testimony

stating that Mr. Moore did not review contract documents to form his opinion, or his trial testimony stating that he believed he would have reviewed contract documents to form his opinion, better reflects what actually happened. Mr. Moore's testimony contained persistent and significant ambiguities of this type.

Mr. Moore also confessed, repeatedly, that his memory of events on this levee was not sufficient to answer specific questions. *See, e.g.*, Moore Tr. at 1141, 1148, 1154-55, 1158, 1172-73, 1192, 1320. In addition, like Mr. Delgado and Mr. Duran, there were several instances where his deposition testimony and trial testimony did not match. *See id.* at 1157-58, 1161-64, 1167-68, 1237-38. The court viewed Mr. Moore's testimony as less credible than most of the other witness testimony at trial because of the amount of confusion, problems with recall, and inconsistencies with prior deposition testimony he exhibited on the stand.

To give a final example of Mr. Moore's lack of credibility, Mr. Moore was asked how he arrived at a particular conclusion in his technical analysis rejecting the entirety of Magnus's riprap claim. Even after a review of every relevant trial exhibit, Mr. Moore could not say with any certainty why his analysis stated that Magnus had not reviewed two important types of information when Magnus estimated the work and expense required to complete all of the riprap work on the levee. Moore Tr. at 1192-93. In essence, Mr. Moore's trial testimony on this topic shed absolutely no light on a key dispute in Magnus's riprap claim. Mr. Moore, who was the *only* representative of the IBWC with a daily presence on the levee, was too befuddled by the passage of time, in most instances, to provide credible testimony as to the factual underpinnings and merits of plaintiff's claims in this suit.

II. Slope Change for Levee Modifies Contract

On February 27, 2012 in Modification 004, the IBWC unilaterally modified the contract to change the landside slope of the levee from a wider, gentler 3:1 ratio to a slimmer, steeper 2.5:1 ratio from STAs 172 to 263. JX 104, at 1. This change would cause a reduction of embankment fill in the body of the levee because it reduced the volume of the levee on the landside between these stations. Accordingly, the parties entered into negotiations as to the reduction in the fixed contract price that would reflect Magnus's reduced costs. *Id*. According to the

exhibits related to this change and undisputed witness testimony provided at trial, the levee slope change was required because several portions of the levee design encroached on existing fixed objects, such as utility poles and drains, or right-of-way and easement boundaries; therefore, the agency discovered that the levee landside edge needed to be moved inward from what was originally shown in its design for the project. *See, e.g.*, JX 29; JX 32; JX 33; JX 72; JX 104; Owaidat Tr. at 134, 156-57; Duran Tr. at 875-76.

The scope of the slope changes to the levee eventually expanded to include a number of portions of the levee beyond those contemplated in Modification 004. The stations ultimately affected by the slope change included STAs 61 to 68, 97 to 113, 153 to 157, and 176 to 260. JX 29; JX 32; JX 72. That is approximately one-third of the length of the levee that was affected by inaccurate information in the levee design provided to Magnus by the IBWC at the outset. *See* JX 72 (Duran Memorandum of March 8, 2013) (noting that "right of way constraints would not allow for the originally designed levee footprint"). Some additional work, work-flow inefficiencies, delays and additional construction costs flowed from the levee slope change. JX 32; Owaidat Tr. at 154-58. Although Magnus provided the IBWC with a detailed description of the impacts of the levee slope change on Magnus's levee restoration work, and a cost proposal which reflected those impacts, the IBWC never asked for more specific supporting data and never performed an analysis which would serve to rebut the amount of the increased costs of slope change-related work contained in Magnus's final slope change credit proposal.

The parties were not able to achieve consensus as to the amount of the credit due the IBWC for the slope change pursuant to Modification 004. JX 30; JX 103. On January 13, 2014, the contracting officer issued his final decision on the dispute, holding that Magnus owed the IBWC $466,092 for the slope change. JX 33. The contract was never modified to incorporate that decision. As a practical matter, the IBWC continues to retain $466,092 that is owed, under the terms of the contract, to Magnus. In this court, Magnus seeks to invalidate the agency's retention of those funds in large part, although Magnus's claim acknowledges that Magnus owes the IBWC $35,036 for a slope change credit for reduced embankment fill costs. Accordingly, in this suit Magnus seeks $431,056 related to the slope change dispute (subtracting $35,036 from $466,092 retained by the

IBWC). The government counterclaims for a slope change credit of $383,893.[13] Def.'s Br. at 59. The government concedes only that Magnus is due a "modest refund" from the funds retained by the government related to the slope change credit dispute, *id.* at 1, apparently in the amount of $82,199 (subtracting $383,893 from the retained amount of $466,092).

A. *Maropakis* Challenge to Plaintiff's Slope Change Credit Claim

Before resolving the merits of the slope change credit dispute, the court must address the government's jurisdictional challenge to plaintiff's claim challenging the IBWC's retainage of $466,092. The government grounds its argument in an overly broad interpretation of the holding of *M. Maropakis Carpentry, Inc. v. United States*, 609 F.3d 1323 (Fed. Cir. 2010) (*Maropakis*). Def.'s Br. at 58; Def.'s Reply at 29. Although the government correctly quotes the holding in that case, defendant ignores a number of decisions which have interpreted *Maropakis* more narrowly than the sweeping interpretation of *Maropakis* advanced by the government in this litigation. Further, *Maropakis* is easily distinguishable from the case at bar. Finally, an earlier precedential decision of the United States Court of Appeals for the Federal Circuit appears to support a jurisdictional ruling in plaintiff's favor for its slope change credit claim, unless *Maropakis* forecloses reliance on this precedent.

One bedrock principle of CDA caselaw is that CDA claims must first be presented to a contracting officer for a final decision before they are litigated in this court. *E.g.*, *England v. Swanson Group, Inc.*, 353 F.3d 1375, 1379 (Fed. Cir. 2004) (citing *James M. Ellett Constr. Co. v. United States*, 93 F.3d 1537, 1541-42 (Fed. Cir. 1996)). Some CDA claims, however, are *government* claims which have been the subject of a contracting officer's final decision adverse to a contractor. These government CDA claims which have met the CDA's presentment requirement provide jurisdiction in this court for the contractor's appeal of the adverse contracting officer's decision, even if the contractor has not submitted its own claim on that topic to the contracting officer. *See, e.g.*, *Garrett v. Gen. Elec. Co.*, 987 F.2d 747, 749 (Fed. Cir. 1993) ("The [CDA] . . . provides

[13]/ Although the government's amended answer included a counterclaim on this issue for $466,092, ECF No. 91, at 11, the government's expert revised this figure to $383,893 based upon trial testimony which changed his analysis. Def.'s Br. at 43.

that a contractor may appeal a Government claim to the appropriate board without submitting a claim of its own to the CO."). Nonetheless, although contractor appeals of adverse contracting officer decisions are within the CDA jurisdiction of the court in this manner, the contractor's appeal is typically limited in scope because it is not founded on the contractor's *own* claim which received its *own* contracting officer's decision. *See Maropakis*, 609 F.3d at 1330 (noting that this court had jurisdiction over a contractor's "claim relating to liquidated damages," but ruling that certain defenses to the government's assessment of liquidated damages were beyond the scope of the contractor's appeal).

The question here is whether Magnus, in its slope change credit claim, fails to satisfy the jurisdictional test expressed in *Maropakis*: "[A] contractor seeking an adjustment of contract terms must meet the jurisdictional requirements and procedural prerequisites of the CDA, whether asserting the claim as an affirmative claim against the government or as a defense to a government action." 609 F.3d at 1331. Another expression of this jurisdictional principle is found in the previous paragraph of *Maropakis*: "[E]ven when used as a defense to a government claim, a contractor's claim for contract modification must adhere to the jurisdictional requirements of the CDA." *Id.* (citations omitted). The precise "contract modification" or "adjustment of contract terms" proposed by the plaintiff in *Maropakis* was an extension of the contract's completion date to account for allegedly excusable delay and to prevent the enforcement of a liquidated damages provision by the government. *Id.* at 1329-30. The jurisdictional flaw identified in *Maropakis* was that the plaintiff failed to file a certified claim with the contracting officer requesting an extension of the contract completion date before commencing litigation in this court. *Id.* at 1329-32.

The plaintiff in this case argues, correctly, that Magnus's slope change credit claim is, at heart, a claim for the payment to Magnus of the contract price, not an attempt to modify the contract or adjust its terms. Pl.'s Reply at 29. Plaintiff's slope change credit claim does not seek an addition to the contract price, or any other adjustment of contract terms in favor of Magnus. Magnus's slope change credit claim is jurisdictionally sound because it appeals the contracting officer's final decision which determined that Magnus owed the IBWC $466,092 for the slope change. *Garrett*, 987 F.2d at 749.

Whereas Magnus's slope change credit claim merely requests that it be paid

most of the amount remaining in the contract price, the government's counterclaim seeks to adjust the contract price, significantly downward, by $383,893, or, in other words, to significantly *adjust* the contract terms in the government's favor in the amount of $383,893. In the court's view, therefore, plaintiff's slope change credit claim is not a claim that fits within the category of contractor claims and defenses that seek a contract modification and that are subject to the jurisdictional prerequisites announced in *Maropakis*. Thus, Magnus need not have submitted a certified claim to the contracting officer before litigating the slope change credit dispute in this court.[14]

The breadth of the jurisdictional ruling in *Maropakis* has been repeatedly examined and applied by this court and the boards of contract appeals. The critical inquiry in these decisions is whether the contractor's claims or defenses seek, in the CDA forum, to modify or adjust contract terms. If the claim or defense, unlike the claim and defense in *Maropakis*, does *not* seek to adjust or modify contract terms, the jurisdictional prerequisite described in *Maropakis* is not applicable. *See, e.g.*, *Total Eng'g, Inc. v. United States*, 120 Fed. Cl. 10, 15 (2015) ("Unlike the contractor in *Maropakis*, Total is not seeking an adjustment of contract terms, but is simply defending against a Government claim . . . ."); *Sikorsky Aircraft Corp. v. United States*, 102 Fed. Cl. 38, 48 n.14 (2011) (limiting the scope of *Maropakis*'s jurisdictional ruling, when considering a jurisdictional challenge to the defenses raised by the plaintiff in that case, to "counterclaim defenses that seek contract modification"); *Jane Mobley Assocs.*, CBCA 2878, 16-1 B.C.A. ¶ 36209 (Jan. 5, 2016) (finding that *Maropakis* did not apply where the contractor was merely interposing factual allegations regarding the payment terms of the contract, and did "not seek an adjustment of contract terms or other entitlement under the contract"); *Nat'l Fruit Prod. Co.*, CBCA 2445, 12-1 B.C.A. ¶ 34979 (Mar. 26, 2012) (finding jurisdiction over a contractor's defense to a liquidated damages claim by the government because the contractor was "not seeking a compensable change or a contract modification").

---

[14]/ Although the government implies that Magnus should have *certified* a claim regarding the slope change credit dispute and submitted it to the contracting officer before lodging such a claim in this suit, Def.'s Br. at 43, defendant does not discuss the CDA's certification requirements in its brief. Because the court finds that Magnus was not required to file a claim regarding the disputed slope change credit with the contracting officer before litigating its claim before this court, there is no need to decide whether such a CDA claim, if filed, would have required certification.

Here, the court follows this line of persuasive authority and determines that the holding in *Maropakis* does not deprive this court of jurisdiction over Magnus's slope change credit claim.[15] The slope change credit claim does not seek to adjust contract terms and, thus, did not require that Magnus file a claim with the contracting officer before litigating the slope change dispute in this forum. *Cf. Jane Mobley*, 16-1 B.C.A. ¶ 36209 (holding that factual defenses asserting a breach of the implied duty of good faith and fair dealing, which seek to ensure that a contractor reaps the contemplated value of the contract, are not claims subject to the claim submission prerequisites described in *Maropakis*). Magnus's slope change credit claim merely interposes factual allegations that contradict the IBWC's proposed $466,092 decrease in the contract price. *Maropakis* does not raise a jurisdictional bar to Magnus's arguments in this regard.

The differences between *Maropakis* and this case are too numerous to each merit discussion, but the contrasts discussed here easily distinguish *Maropakis* from the case at bar. First, the contracting officer in this case did not issue his final decision on the slope change credit dispute until *after* Magnus had filed suit in this court. Magnus was thus forced to amend its complaint to appeal that decision. In *Maropakis*, the contracting officer's final decision on liquidated damages was issued *before* the plaintiff filed suit in this court, 609 F.3d at 1326, a sequence of events that put the *Maropakis* litigation in a markedly different procedural posture.

Second, the *Maropakis* plaintiff never provided the contracting officer with notice as to its exact claim and defenses on the subject of its delayed contract performance. *Id.* at 1328-29. Here, the contracting officer received a detailed letter from Magnus which set forth the exact dollar amount of the proposed slope change credit due the government, so that the contract price could be revised accordingly. JX 32. The contracting officer, despite receiving the letter in July of

---

[15]/ The Federal Circuit recently distinguished a government affirmative defense, over which the board of contract appeals exercised jurisdiction, from the defense raised by the plaintiff in *Maropakis*, where CDA jurisdiction was found to be lacking. *See Laguna Constr. Co. v. Carter*, 828 F.3d 1364, 1368 (Fed. Cir. 2016). The *Laguna* panel specifically noted that the plaintiff in *Maropakis* sought to "modify the contract time" for performance without first submitting a claim to the contracting officer seeking such a contract modification. *Id.* Although cursory, the distinction drawn in *Laguna* is not unlike the distinction drawn by this court and the boards of contract appeals in the decisions cited *supra*.

2013, never responded or inquired as to the figures contained in this letter, and instead issued a final decision on the slope change credit dispute in January of 2014. The notice requirement of the CDA that was an important factor in the *Maropakis* decision is not present in this case.

As a third distinction, the *Maropakis* plaintiff was dilatory in communicating with the contracting officer, *i.e.*, not responding for over ten months to an offer by the government to consider additional information regarding performance delays. 609 F.3d at 1326. In this case, the party that refused to communicate its views as to the disputed slope change credit was the IBWC, not Magnus. This is especially egregious behavior considering that Modification 004, unilaterally imposed by the IBWC, was necessitated by the defective design provided to Magnus by the IBWC, and considering the fact that Modification 004 required the parties to *negotiate* a credit to account for the change to the contract. JX 104, at 1. Whereas in *Maropakis* the plaintiff was attempting to litigate its way out of a contract dispute that it had managed very badly, here Magnus is simply responding to a unilaterally imposed retainage that represents the government's attempt to unilaterally modify the contract in its favor.

The claim in this case is the polar opposite of the claim and defense asserted by the plaintiff in *Maropakis*. Further, as previously discussed, the cases are also readily distinguishable on their facts. There are procedural differences between these two cases, as well. Given the dissimilarities between the jurisdictional problem resolved by the Federal Circuit in *Maropakis* and the jurisdictional posture of this case, the court finds further support for its view that Magnus was not obliged to have submitted a claim to the contracting officer before appealing the contracting officer's final decision on the slope change credit dispute in this forum.

Finally, the court must note the factual similarity between this case and *Placeway Construction Corp. v. United States*, 920 F.2d 903 (Fed. Cir. 1990). Placeway Construction Corporation (Placeway) completed a government construction contract and the government retained approximately $300,000 because of damages the government might experience, although not determined at the time, because of delays in contract performance. *Id.* at 905. Jurisdiction would only lie in this court for plaintiff's claim for the full contract price if the contracting officer had issued a final decision on the retainage (described, in that

litigation, as a set-off). *Id.* at 906. The Federal Circuit, construing the actions of the contracting officer to constitute a final decision on the government claim, allowed Placeway's claim to proceed. *Id.* at 907. In the words of the court:

> Accordingly, we conclude that the CO made a final decision on the government claim alleging damages because of Placeway's delay in contract performance. The decision is no less final because it failed to include boilerplate language usually present for the protection of the contractor. Moreover, the CO's decision was adverse to Placeway and thus it could properly appeal to the Claims Court. As a final decision on a government claim, the Claims Court has jurisdiction, even though [Placeway's] claim was not certified.

Id.

Magnus is in almost exactly the same position. It appeals the final decision of the CO (which included a notice of appeal rights) on the slope change credit and seeks payment of retained funds. The IBWC's decision was adverse to Magnus, and plaintiff has appealed that decision to this court. Given the distinctions between this case and *Maropakis*, and the parallels between this case and *Placeway*, there is at least a colorable argument that the jurisdictional ruling in *Placeway* applies to the case at bar.

It is true, however, that there is language in *Maropakis* which may undermine the applicability of *Placeway* to circumstances such as these. For example, the court states that: "The Court of Federal Claims correctly found that *Placeway* had no bearing on the CDA's requirements for contractor claims." *Maropakis*, 609 F.3d at 1330 (citation omitted). In addition, the *Maropakis* panel stated that in *Placeway*, "we did not address whether the Claims Court had jurisdiction over any of Placeway's defenses." *Id.* But there is also language in an adjacent sentence in *Maropakis* which restricts that panel's discussion of the jurisdictional barrier to claims seeking contract modifications:

> Several other Court of Federal Claims cases have directly addressed *this issue* and have all concluded that

> even when used as a defense to a government claim, a contractor's claim *for contract modification* must adhere to the jurisdictional requirements of the CDA.

Id. at 1330-31 (emphasis added) (citations omitted). It is impossible to tell from the text of the *Maropakis* opinion the precedential weight the *Placeway* decision provides in this case. The court, unable to discern whether the jurisdictional holding in *Placeway* can be reconciled with *Maropakis* in the circumstances of this case, does not rely on *Placeway* for its decision here.[16]

Having considered relevant, and even potentially relevant precedent, the court concludes that Magnus's slope change credit claim is not barred by *Maropakis* or the CDA's jurisdictional prerequisites discussed therein. Jurisdiction lies both for plaintiff's claim in this regard and the government's counterclaim on the same topic. The court turns now to the merits of the parties' arguments regarding the slope change credit.

B. Disputed Slope Change Credit Claim and Related Government Counterclaim

The dispute over the slope change credit can be resolved by answering four straightforward questions. First, did the figure proposed by Magnus in August 2012 for the slope change credit reflect the actual cost savings Magnus realized from the IBWC's correction of its defective design? Second, should Mr. Wooten's analysis of the cubic yard cost of embankment fill govern the

---

[16]/ If the holdings in *Maropakis* and *Placeway* were truly irreconcilable as applied to the facts of this case, *i.e.*, a contractor claim which does not seek a contract modification, *Placeway* would control:

> Where conflicting statements such as these appear in our precedent, the panel is obligated to review the cases and reconcile or explain the statements, if possible. If not reconcilable and if not merely conflicting *dicta*, the panel is obligated to follow the earlier case law which is the binding precedent.

Johnston v. IVAC Corp., 885 F.2d 1574, 1579 (Fed. Cir. 1989) (citing *Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757, 765 (Fed. Cir. 1988)).

calculation of the amount of cost savings realized by Magnus because of the changed contract work? Third, did Magnus provide adequate information to the IBWC in support of its slope change credit proposal? Fourth, does $35,036 represent the credit due the government under the portion of Modification 004 that changed the landside slope of certain sections of the levee? When these four questions are answered based on the preponderance of evidence in the trial record, it is clear that plaintiff's position on the slope change credit prevails.

1. Magnus Did Not Realize $466,092 in Cost Savings from the Slope Change

Magnus performed an analysis of the agency's slope change to the levee which calculated the requisite reduction in the amount of imported embankment fill on the affected sections of the levee. JX 29, at 1. This proposed reduction in fill volume, 23,841 CY, was communicated to the IBWC on August 16, 2012. *Id.* The method used to calculate the slope change fill reduction amount was the "average end-area method." Both this method, and the figure of 23,841 CY, were accepted by the IBWC as accurate. Duran Tr. at 878, 1005-06.

Magnus's initial slope change credit proposal was for $466,092, derived from a $23/CY multiplier for a 23,841 CY reduction in imported embankment fill. JX 29, at 1. This slope change credit proposal of $466,092, however, was not an isolated, independent negotiation between Magnus and the IBWC – the slope change credit negotiation was integrated into more extensive negotiations regarding the unexpected amount of embankment fill that Magnus was required to import onto the levee. Contemporaneous documentation shows that Magnus considered these negotiations to be inter-connected, and the preponderance of witness testimony also showed that Magnus was pursuing a global settlement of the finalized contract price at this time.[17]

---

[17]/ Even Mr. Duran, who repeatedly averred that the IBWC was not trying to achieve a global settlement but was treating each contract modification separately, acknowledged that the IBWC's acceptance of Magnus's initial slope change credit proposal was not overly concerned with the exact dollar amount of the credit because other, larger contract disputes needed to be resolved at this time. *See* Duran Tr. at 1006 (stating that he accepted the $466,092 credit proposal from Magnus, in part, because at the time "we had too many bigger fish to fry than this").

In a letter sent to the IBWC on July 26, 2012, for example, Magnus provided the component amounts, per levee sections, which added up to the total figure of 23,841 CY for the slope change fill reduction, but also noted that there were "approximately 100,000 CY" of embankment fill overages that were also at play during this time. JX 28, at 2. Indeed, Magnus requested in this July 26, 2012 letter that progress payments for embankment fill for June and July 2012 ignore the slope change credit amount, because of the "overruns" in embankment fill which would be negotiated through Magnus's embankment fill claim. *Id.* Similarly, in Magnus's August 16, 2012 slope change credit proposal, the proposal noted that the slope change credit embankment fill reduction amount was accounted for in the total imported embankment amounts that would justify Magnus's embankment fill claim. JX 29, at 2. This correspondence is strong evidence that Magnus's initial slope change credit proposal was merely one facet of Magnus's negotiations regarding the actual costs of restoring the levee.

Witness testimony at trial also establishes that, as of the summer of 2012 and into the early months of 2013, Magnus viewed its slope change credit proposal as one part of the dialogue between Magnus and the IBWC regarding the correct amount of payment Magnus should receive for its restoration work on the levee. Owaidat Tr. at 136-37, 140; Duran Tr. at 878-79, 883. Testimony commenting on emails sent in early 2013 also shows that Magnus viewed the slope change credit to be part and parcel of the ongoing negotiations related to Magnus's claims for additional embankment fill and riprap quantities. *See* JX 49; JX 50; JX 51; JX 73; Owaidat Tr. at 138-40, 143-44, 146; Duran Tr. at 882. In April of 2013, however, the negotiations for the settlement of the embankment fill and riprap claims, along with the slope change credit, took a turn for the worse. Simply put, the IBWC decided to take its slope change credit while staying silent as to whether Magnus's larger claims would be granted or denied.

On April 8, 2013, instead of comprehensively addressing the outstanding embankment fill and riprap claims along with the slope change credit, the IBWC announced it was owed a slope change credit of $466,092 and submitted a contract modification for this government credit to Magnus for signature well before any decision issued on much larger Magnus claims for embankment fill and riprap overruns. JX 30. The IBWC had been sitting on the embankment fill and riprap claims for about six months at this point, with no requests for additional information from Magnus relevant to those claims. JX 2; JX 25. Mr. Owaidat

stated that he felt "stabbed . . . in the heart" when he received this proposed contract modification giving the IBWC $466,092; he felt that the IBWC had turned aside from any good faith negotiation of Magnus's claims and was simply going to "take [Magnus] to the cleaners." Owaidat Tr. at 148.

Because Mr. Owaidat refused to sign this proposed modification, Modification 006, as a stand-alone contract modification, and because many disputes had yet to be reconciled, the government issued Modification 006 and Modification 007 on the same day, April 26, 2013, first subtracting $466,092 and then adding $466,092 back into the contract price.[18] JX 30; JX 103. Modification 007 acknowledged that $466,092 was being added back into the contract price because Magnus "wants to wait on a mutual agreement for this $466,092 credit until after the Contracting Officer issues a final decision on a pending Contractor claim for other embankment material." JX 103.

The contracting officer denied Magnus's embankment fill and riprap claims in their entirety on June 3, 2013 and June 11, 2013, respectively. JX 20; JX 26. There is no evidence that any negotiation of these claims was initiated by the IBWC after these claims were received from Magnus in the fall of 2012. There is also no evidence that the IBWC entered into negotiations with Magnus regarding the embankment fill claim, the riprap claim, or the slope change credit after Modification 007 issued, leaving the slope change credit open for further negotiation. Even after Magnus submitted a revised slope change credit proposal on July 19, 2013, JX 32, the IBWC continued to avoid any negotiation of the slope change credit amount.

As Mr. Owaidat explained at trial, the initial slope change credit proposal from Magnus did not represent the actual cost savings to Magnus from the slope change which corrected the levee footprint in the IBWC's original defective levee design. It was simply a piece of a larger negotiation. There was additional work caused by the slope change, and "[a]ll that cost that [Magnus] incurred was not included in that . . . initial [$]466,000 credit." Owaidat Tr. at 150. According to Mr. Owaidat, the global settlement Magnus hoped to achieve allowed them to "eat that $466,000," because Magnus expected that the IBWC would, in return, pay

[18]/ Mr. Owaidat signed the modifications on April 25, 2013, whereas Mr. Delgado signed the modifications on April 26, 2013.

Magnus the amount "owed for riprap and the embankment [fill], too." *Id.* When the global settlement failed, Magnus reviewed its costs for implementing the slope change and reduced the multiplier for each cubic yard of imported fill from $23/CY to $1.25/CY in its proposed slope change credit. JX 32, at 3. The reduction of the quantity of imported embankment fill associated with the slope change, 23,841 CY, remained the same.

The court finds Mr. Owaidat's testimony which explained the difference between plaintiff's initial credit proposal and its second credit proposal to be persuasive. The original $466,092 figure did not truly reflect the cost savings that Magnus experienced when it implemented the IBWC's request that the defective levee design be corrected to a landside ratio of 2.5:1 for approximately one-third of the length of the levee project. Thus, the court must weigh the parties' evidence of the actual cost and actual savings flowing from the slope change to Magnus. It is clear to the court that the use of a multiplier of $23/CY for the reduction of 23,841 CY of imported embankment fill, when the landside slope of the levee was changed, does not account for the actual costs to Magnus of the changed work.

2. Mr. Wooten's Analysis Ignores Additional Costs of Work Performed by Magnus to Implement the Slope Change

At trial, the government's expert, Mr. Wooten, explained why he believed $23/CY to be the most accurate measure of Magnus's savings due to the levee slope change in Modification 004.[19] Wooten Tr. at 2111-13. In accordance with the court's understanding of Mr. Wooten's expert opinion on this issue, there appear to be three underpinnings to that opinion. First, $23/CY was, in Mr. Wooten's opinion, well established as an accurate measure of Magnus's typical cost of imported embankment fill. *Id.* Second, Mr. Wooten found that Magnus's description of the incurred costs of changing the levee slope to be less than "compelling" because of the level of documentation that was provided. *Id.* at 2113. Finally, Mr. Wooten opined, in just a few words, that the cost impact of the

[19]/ Mr. Wooten also disagreed with Magnus as to the reduction in embankment fill caused by the slope change. Whereas Magnus calculated that there would be a reduction of 23,841 CY, Mr. Wooten's analysis posited that there would be a reduction of only 16,691 CY. Wooten Tr. at 2111. The cubic yards reduction calculated by Mr. Wooten is not especially relevant, in light of the court's analysis of the $23/CY multiplier dispute, and will not be discussed further in this opinion.

work that Magnus had to perform to change the levee's footprint would be no more than the cost to place the original amount of embankment fill. *Id.* at 2112.

The court notes that Mr. Wooten's analysis suffers from two fundamental flaws. First, as stated in his expert report, Mr. Wooten's confidence in the $23/CY figure is based solely on the fact that it is "consistent" with unit costs in Magnus's change order requests and in Magnus's levee proposals. JX 139, at 40. In other words, Mr. Wooten adopts $23/CY as the multiplier for the slope change credit simply because in other contexts that is the cost that Magnus charges, or attempts to charge, the project owner. However, as Mr. Owaidat explained at trial, the components of the cost of *placing* one cubic yard of imported embankment fill on the levee, captured in the $23/CY multiplier, are not necessarily the same as the realized cost savings of *not placing* one cubic yard of imported embankment fill upon the levee. Owaidat Tr. at 159-60, 315-16, 353.

The court found Mr. Owaidat's testimony in this regard much more on point, and more persuasive. Mr. Wooten's testimony on this topic was superficial and his impression that 'pre-slope change required work' and 'post-slope change required work' would more or less be equal in cost appeared to be an unexplained assumption rather than the product of experience in levee construction. Weighing the testimony provided by Mr. Owaidat and Mr. Wooten, the court found Mr. Owaidat to be more persuasive and more credible. The court finds that $23/CY was not a proper multiplier to account for the cost savings to Magnus of the slope change.

Second, and more importantly, Mr. Wooten conceded that his analysis of the slope change credit dispute did not depend at all on the description of the inefficiencies and additional costs provided by Magnus in its second credit proposal, JX 32. Wooten Tr. at 2265-70. In other words, when Mr. Wooten analyzed the slope change and the effect of the slope change on costs Magnus experienced in the affected sections of the levee, he attached no specific cost impact to *any* of the increased costs detailed in Magnus's letter of July 19, 2013. *See* JX 32. Mr. Wooten's expert opinion in this case assumed that the slope change impacts on Magnus's restoration work had zero cost, and that the $23/CY figure needed no downward adjustment to account for additional work or inefficiencies. Wooten Tr. at 2265-67 (stating that the construction of a 200-foot transition section on the recently-constructed levee would have been "paid" by the

$23/CY multiplier incorporated in his analysis). Mr. Wooten's testimony in this regard was not persuasive because it ignored effects of the slope change that other witnesses appropriately took into account.

Mr. Owaidat testified that the inefficiencies and additional work occasioned by the slope change significantly reduced the cost savings that Magnus might have otherwise realized from a reduction in the quantity of the embankment fill required for the levee. Owaidat Tr. at 153-58. Mr. Owaidat stated that each of the increased costs mentioned in JX 32 was supported by project documents. *Id.* at 154. Mr. Sills, plaintiff's expert, testified that design changes such as the slope change from 3:1 to 2.5:1 on the landside of the affected sections of the levee would be expected to create inefficiencies and additional costs due to a more complex sequence of construction activities. Sills Tr. at 2495-2500. Because Mr. Wooten's analysis ignored the cost impacts of a levee slope change affecting approximately one-third of the levee, his contention that the $23/CY multiplier adequately captured the cost savings that Magnus would reap from the slope change must be rejected.

3. Magnus Provided Adequate Information to Support its Second Credit Proposal and Was Not Asked for Additional Information

In its July 19, 2013 letter, Magnus provided a detailed analysis of the cost impacts of the slope change on the levee restoration project. JX 32. This analysis was divided into four separate discussions of distinct sections of the levee where the slope change not only reduced imported embankment fill quantities but also engendered numerous changes to the expected flow of work in these sections. At trial, Mr. Owaidat expounded on several of the cost impacts that were described in this letter. His testimony in this regard was credible and was entirely unrebutted by testimony from the government's witnesses. Owaidat Tr. at 153-58, 316-22, 353. The court notes that Magnus's second credit proposal was *more* detailed than its first credit proposal, a proposal for the slope change credit which was accepted by the IBWC and incorporated by modification of the contract, JX 30, in the exact dollar amount proposed by Magnus. *Compare* JX 32 *with* JX 29.

As a proposal for the negotiation of the slope change credit, the court finds no deficiencies or inadequacies in Magnus's proposed slope change credit of

$35,036. The government argues, however, that plaintiff cannot prevail in the slope change credit dispute because Magnus's credit proposal lacked a detailed quantification of each of the cost impacts described in its July 19, 2013 letter. Def.'s Br. at 59 (asserting that Magnus's credit proposal was not adequately quantified and instead was simply Mr. Owaidat's "subjective view of the equities" of the slope change necessitated by the IBWC's defective levee design). The government's position on this issue is not supported by the trial record.

The *only* party to the contract that proposed a detailed, quantified slope change credit proposal was Magnus. There was no rebuttal or detailed counter-proposal from the IBWC, nor was there any attempt by the IBWC to request supporting documentation from Magnus to further quantify Magnus's $35,036 credit proposal. Indeed, every witness at trial stated that there was no evidence that the IBWC attempted to negotiate the slope change credit amount once Magnus submitted its credit proposal on July 19, 2013, despite the requirement in Modification 004 that the parties negotiate the amount of the credit. JX 104, at 1. Magnus fulfilled its obligations under the contract with its proposal for a slope change credit of $35,036.

4. The $35,036 Slope Change Credit Has Been Proved to a Reasonable Certainty

As discussed *supra*, the court finds that a multiplier of $23/CY was not a representative figure that could be used to calculate the slope change credit. When that $23/CY multiplier is eliminated, the government has no counter-argument to the analysis presented in Magnus's July 19, 2013 letter which proposed a slope change credit of $35,036. Nor is there anything in the trial record which shows that the IBWC performed an analysis of the cost impacts of the slope change that gave any weight to the inefficiencies and additional costs that Magnus experienced due to the slope change.

Thus, the only viable analysis of the slope change credit before the court is the one presented in JX 32 and the testimony of Mr. Owaidat and Mr. Sills which buttressed that analysis. The court is persuaded that JX 32 contains credible information and a calculation of the slope change credit that accurately reflect the impacts of the slope change on Magnus's restoration work on the levee. The preponderance of the evidence, both documentary and as provided in oral

testimony, shows that the government is due $35,036 as a credit for the slope change. The court finds that "substantial evidence" supports the figure of $35,036 for the slope change credit, and that Magnus has proved its claim to a "reasonable certainty." *Precision Pine & Timber, Inc. v. United States*, 596 F.3d 817, 832-33 (Fed. Cir. 2010) (*Precision Pine*).

5. Judgment for Plaintiff on the Slope Change Credit but No Interest under the CDA

Applying the $35,036 slope change credit to the retained sum of $466,092, the IBWC must release the balance of the retainage to Magnus, in the sum of $431,056. Thus, the contract balance, in the amount $431,056, is due Magnus and the government takes nothing on its counterclaim for a $383,893 slope change credit. However, because Magnus only appealed a government claim for the slope change credit and did not submit a claim of its own on this topic to the contracting officer, no interest under the CDA can be awarded Magnus for the judgment amount of $431,056 related to the slope change credit. *E.g.*, *Sun Eagle Corp. v. United States*, 23 Cl. Ct. 465, 482 (1991); *Z.A.N. Co. v. United States*, 6 Cl. Ct. 298, 304 n.13 (1984); *Ruhnau Evans Ruhnau Assocs. v. United States*, 3 Cl. Ct. 217, 218 (1983); *Southwest Marine, Inc.*, DOTCAB No. 1666, 96-1 B.C.A. ¶ 28212 (Feb. 15, 1996). In other words, the CDA awards interest on successful *contractor claims* denied by a contracting officer, not on successful *appeals* of government claims. *See* 41 U.S.C. § 7109 (noting that interest begins to run "for the period beginning with the date the contracting officer receives the *contractor's claim*") (emphasis added).

III. Riprap Claim

The levee restoration contract between the IBWC and Magnus, as modified, was not a typical sealed-bid government contract for a construction project. As noted *supra*, parts of the solicitation, and then the contract, were pieced together from prior IBWC levees by an inexperienced designer suffering from a serious cognitive impairment. The contract incorporated inaccurate information regarding the existing levee, and inadequate information, both as to the estimated quantities of materials that would be needed to complete the restoration, and as to subsurface conditions. The solicitation package was hastily and radically amended just a few days before bids were due. The IBWC awarded the contract, despite its

knowledge that this contract was based on a solicitation which was an inadequate foundation upon which a reasonable, informed bid could be prepared, and even though serious defects in the levee design materials were known to the agency at that time.

As the IBWC began to supervise the levee restoration project in 2011, termination of the contract was recommended by the technical experts at the IBWC as the most reasonable course of action, given the deficiencies in the materials prepared for this project. Duran Tr. at 724-26. In retrospect, Magnus's president stated that he regrets having bid on the project. Owaidat Tr. at 2359. Magnus overcame significant deficiencies in the levee design to successfully restore the levee, and, in return, the IBWC refused to negotiate *any* equitable adjustment for cost overruns that Magnus experienced in the quantities of riprap and embankment fill placed on the levee. *See* Owaidat Tr. at 148 (stating that the IBWC "used [Magnus] to solve all the problems, to fix all [the IBWC's] design defects, get the levee job done, and now [the IBWC was] going to take [Magnus] to the cleaners"). There were so many problems in the administration of this contract that it is difficult to select the legal theory which most aptly addresses plaintiff's requests for equitable adjustments for cost overruns in embankment fill and riprap.

For the riprap claim, most of the parties' focus is on the changes made to the contract in response to the matrix document. At that point in the project, faced with a seriously flawed contract which was recommended for termination, the IBWC's contracting officer chose to accept Magnus's offer to bring the levee restoration project to a successful conclusion. In doing so, negotiations were entered into that involved the following benchmarks: (1) the matrix document, generated by the IBWC, indicating that additional work needed to be performed to complete the project; (2) a new survey which informed Magnus and the IBWC as to the contours of the existing levee; (3) cost proposals from Magnus as to embankment fill and riprap work required by the matrix; and (4) questions from the IBWC and answers from Magnus as to any remaining grey areas that needed to be addressed as the project was being reconstituted through Modifications 001, 002 and 003.

Although the parties have considered whether the riprap claim could be analyzed and resolved by other legal theories, the court limits its analysis to the

one legal theory which appears most pertinent – the constructive change doctrine. The riprap dispute is fundamentally a question of how the levee restoration contract was changed by the parties in response to the matrix and the new survey of the existing levee. In choosing the rubric, constructive change, the court acknowledges that plaintiff's riprap claim is not a typical constructive change claim. Therein, a contractor alleges that an agency official, not the contracting officer, orders additional, out-of-scope work during the course of contract performance, but the contracting officer does not account for that additional work in the formal modifications (and price) of the contract. *See, e.g.*, *Design & Prod., Inc. v. United States*, 18 Cl. Ct. 168, 205-08 (1989) (considering but rejecting a claim for work outside the scope of the contract that was requested during the course of performance by someone other than the contracting officer). The constructive change claim for additional riprap in this case, in contrast, demands a close examination of the meaning and scope of Modifications 001 and 003. This is a rather unusual type of constructive change claim, for which no analogous precedent has been cited by the parties.[20]

A. Constructive Change Doctrine

Some constructive change claims are, at bottom, disputes over the scope of the work specified in the contract documents. *See, e.g.*, *Miller Elevator Co. v. United States*, 30 Fed. Cl. 662, 678 (1994) (describing these constructive change claims as "disputes over contract interpretation during performance") (citations omitted). The contractor typically argues that it has performed work outside the scope of the contract terms, at the request of the government, and that the contract

---

[20]/ Plaintiff merely cited a passage from a case which generally sets forth the elements of a constructive change claim. Pl.'s Br. at 57 (citing *Winter v. Cath-dr/Balti Joint Venture*, 497 F.3d 1339, 1344 (Fed. Cir. 2007)). Defendant's post-trial brief totally ignored constructive change caselaw, which is somewhat surprising given that the constructive change theory of recovery for plaintiff's riprap claim was explicitly addressed in *Magnus II*. 2016 WL 3960447, at *6-7. In defendant's reply brief, the government cites one case discussing the constructive change doctrine in support of its arguments regarding plaintiff's embankment fill claim, Def.'s Reply at 9 (citing *Calfon Constr. Inc. v. United States*, 17 Cl. Ct. 171, 177 (1989)), and another case discussing the constructive change theory in support of the government's arguments against plaintiff's riprap claim, *id.* at 28 (citing *Info. Sys. & Networks, Corp. v. United States*, 81 Fed. Cl. 740, 747 (2008)). The facts in the cases cited by the parties are not analogous to the facts underlying Magnus's riprap claim, and are of little to no use in the analysis required here.

price must be augmented by an equitable adjustment. *See, e.g.*, *Metric Constr. Co. v. United States*, 81 Fed. Cl. 804, 826-27 (2008) (finding merit in a claim for an equitable adjustment where additional work, outside the scope of the contract, was performed by the contractor). A successful constructive change claim of this type must show that the work performed was outside of the scope of the contract and that the government caused the work to be performed:

> A constructive change entails two base components, the change component and the order or fault component. The "change" component describes work outside of the scope of the contract, while the "order/fault" component describes the reason that the contractor performed the work. Thus, if the Government either expressly or impliedly ordered work outside the scope of the contract, or if the Government otherwise caused the contractor to incur additional work, a constructive change arises for that work performed outside of the scope of the contract.

Miller Elevator, 30 Fed. Cl. at 678 (citations omitted); *see Int'l Data Prods. Corp. v. United States*, 492 F.3d 1317, 1325 (Fed. Cir. 2007) ("A constructive change occurs where a contractor performs work beyond the contract requirements without a formal order, either by an informal order or due to the fault of the Government." (citing *Miller Elevator*, 30 Fed. Cl. at 678)). The court begins its analysis of plaintiff's riprap claim by first examining the "change element," before turning to the "government order/fault element."

B. Change Element

There appears to be little dispute that the contract signed by the parties in December of 2010 called for the importation of a certain amount of new riprap for the restoration of the levee, and the placement of this new riprap in specified sections of the levee. *See* JX 1, at 53. The estimate for this riprap was for 17,500 CY, based on four specific areas of riprap of varying size (from 26,116 square feet to 98,864 square feet) multiplied by a depth of 1.5 feet. *Id.* The "typical cross-section" contract drawings only identify two areas of riprap placement on the riverside of the levee, from STAs 117 to 123, and from STAs 157 to 176. JX 109, at 36. The contract plans show two additional "new" riprap placement areas, from

STAs 69 to 89, and from STAs 186 to 206. *Id.* at 15-17, 25-27. Thus, reading these contract documents together, Magnus was required to import new riprap and place four sections of new riprap on the levee, from STAs 69 to 89, 117 to 123, 157 to 176, and 186 to 206. This is the original contract riprap work, which is not included in Magnus's riprap claim, because there were virtually no cost overruns in this category of riprap work. *See* JX 24, at 1, 17.

Once the IBWC decided that the contract needed to be revised pursuant to a new survey of the existing levee, the matrix document informed Magnus that it would be required to "remove and replace existing riprap" per the contract's "typical cross-sections," JX 6, at 2, and then purported to identify, in tabular form, the sections of the levee which required this additional "riprap replacement" work, *id.* at 2-4. The matrix document acknowledged, however, that its tabular list of "riprap replacement" sections overlapped with the original "new riprap" work sections set forth in the original contract. *See id.* at 2 ("Some areas identified in the table are duplicates of areas already designated as needing [riprap] work."). Thus, the table of riprap sections identified in the matrix was a mix of original contract work and additional matrix-related work, with no readily-discernible demarcation between original and additional riprap work. The matrix also contained the instruction that "[e]xisting riprap must meet the required specifications to be used on the levee." *Id.* Reading all of the instructions regarding riprap in the matrix together, along with the original contract's "new riprap" placement instructions, as well as the contract plans' depictions of the locations of new and existing riprap on the levee, the court construes the matrix to constitute a pathway for Magnus to re-assess the riprap work required to complete the levee restoration, and to make a cost proposal as to work it would perform in addition to the "new riprap" work included in its fixed-price proposal accepted by the IBWC in December 2010.

To ground its analysis of plaintiff's riprap claim in an adequate factual foundation, the court first reviews the contemporary documentary evidence provided by the contract plans and the table of levee sections in the matrix, as well as the summary of levee riprap work presented in plaintiff's riprap claim. These documents provide a station by station factual foundation for the parties' arguments. The court will then discuss the matrix-related negotiations entered into by the parties, which include both the cost proposals proffered by Magnus, and Magnus's answers to the IBWC's questions about those proposals. This

documentary evidence supports plaintiff's view that there were three categories of riprap work performed by Magnus: the original "new riprap" work; the additional riprap work offered by Magnus in response to the matrix; and a third category of existing riprap replacement work, the quantity of which would be determined on a case-by-case basis. Witness testimony at trial, while not at all uniform on this issue, also supports plaintiff's view of this dispute.

1. Contract Documents Showing Existing and New Riprap Locations

The court experienced some difficulties with its inquiry into the contract documents that establish the factual foundation for plaintiff's riprap claim. First, as noted *supra*, there is an almost universal acknowledgment that the plans for the levee were significantly flawed. Second, neither party elicited witness testimony as to the content and meaning of the levee plans. Third, the reproduction of the levee plans in the trial exhibits is difficult to read.[21] Nonetheless, because the parties hotly dispute the changes to the riprap work triggered by the matrix, the court will attempt to discern what information the levee plans provided regarding the locations of existing riprap, and the locations for new riprap, on the levee.

As noted above, the contract plans showed that new riprap would be placed from STAs 69 to 89, 117 to 123, 157 to 176, and 186 to 206. Existing riprap appears to be shown in the contract plans from STAs 123 to 126, 176 to 186, and 206 to 223. JX 109, at 20, 24-25, 27-28. Thus, the court concludes that there were three sections of existing riprap, STAs 123 to 126, 176 to 186, and 206 to 223, that appear to be the subject of the matrix and its discussion of the removal and replacement of existing riprap. JX 6, at 2. The court observes, however, that these sections of the levee identified *on the plans* might not have perfectly captured the locations of existing riprap *on the levee* that were encountered by Magnus's crews.

2. Matrix Table of Riprap Work Contrasted with Existing and New Riprap Locations Shown on the Contract Plans

---

[21]/ For example, the legend for the plans contained two separate design symbols for the graphic representation of "existing rip-rap" and for "proposed rip-rap," but these two symbols, as copied for the trial exhibits, are indistinguishable. JX 109, at 2.

When the table of riprap locations in the matrix is compared with all of the existing and new riprap locations in the contract plans, the matrix is largely, but not perfectly, consistent with the contract plans as to riprap work locations on the levee. The levee from STAs 69 to 89 is again listed as a riprap area, for example, but a new portion of the levee, from STAs 89 to 117, which according to the contract plans had neither new nor existing riprap, was now designated as requiring riprap work. JX 6, at 2-3. This portion of the levee can only be described as "additional riprap" work not contemplated in the original contract.

There is one other portion of the levee that had neither existing nor new riprap on the contract plans, from STAs 126 to 145, which, pursuant to its listing in the matrix, also must be considered to have required "additional riprap" work. JX 6, at 3. Thus, the matrix addressed two additional portions of the levee (STAs 89 to 117 and 126 to 145) as requiring riprap work, under the rubric of replacing existing riprap, even though the contract plans showed no existing riprap in these locations. A separate category of riprap work – removing and replacing existing riprap – can also be viewed as having been included within the matrix table in those locations where existing riprap was indicated on the contract plans: STAs 123 to 126, 176 to 186, and 206 to 223. The court notes that the riprap work location information contained in the matrix was hardly a model of clarity because three different types of riprap work were lumped together, with no apparent division between them (new riprap, replacement of existing riprap, and additional riprap in areas where the contract plans indicated there was no existing riprap).

3. The Three Categories of Riprap Work in the Matrix are Reproduced in Plaintiff's Riprap Claim Table

When Magnus submitted its riprap claim to the contracting officer, its table of riprap work locations was divided into three categories of riprap work, much as the table in the matrix contained three categories of riprap work. JX 24, at 17. For the original contract work, the "new riprap" placement contemplated in Magnus's fixed-price bid, the locations exactly match the locations in the contract plans and in the matrix: STAs 69 to 89, 117 to 123, 157 to 176, and 186 to 206. *Id.* For "additional riprap" work included in the matrix, specifically the riprap work where neither new nor existing riprap was shown on the contract plans, Magnus's locations match, within a few stations, the locations shown in the

matrix: STAs 89 to 117 and 126 to 145.[22] *Id.* This category of riprap work is described by Magnus as the work proposed by Magnus in response to the matrix that was captured in its cost proposal incorporated, at least in part, in Modifications 001 and 003. *Id.* Finally, the table of riprap work in Magnus's riprap claim contains a third category of riprap work, the "Replace Existing Riprap" category, whose locations match, within a couple of stations, the locations of existing riprap shown on the contract plans and in the matrix: STAs 123 to 126, 176 to 186, and 206 to 223.[23]

To perhaps oversimplify the dispute, plaintiff's position is that its cost proposal in response to the matrix set forth the volume of riprap needed for the work required from STAs 89 to 117 and 126 to 145, the "additional riprap" locations not present in the original contract documents. From this perspective, the existing riprap replacement work for STAs 123 to 126, 176 to 186, and 206 to 223, where existing riprap was shown on the contract plans, was a separate category of riprap work which the price adjustments of Modifications 001 and 003 did not include. The government's position appears to be that the base contract and Modifications 001 and 003 included all of the riprap work required to complete the levee – the "new riprap," the "additional riprap" work *and* the existing riprap replacement work. *See* Def.'s Br. at 53, 56 (arguing that the base contract and the matrix negotiations required Magnus to include in its lump sum cost proposal the price that would complete the "removal and replacement of existing riprap" on the levee). The court turns to its review of the evidence submitted at trial which goes to the agreement of the parties regarding the replacement of existing riprap on the levee.

4. Magnus's Riprap Cost Proposal

After Magnus obtained the new survey of the levee, it submitted a riprap cost proposal to the IBWC. Magnus's initial riprap proposal in response to the matrix estimated the quantity of additional riprap to be 9570 CY, at a cost of $75/CY, for a total riprap price of $717,750 for Modifications 001 and 003. JX

---

[22]/ According to the table in Magnus's riprap claim, one portion of this additional riprap work was performed from STAs 126 to 138, not from STAs 126 to 145.

[23]/ According to the table in Magnus's riprap claim, one portion of this riprap replacement work was performed from STAs 206 to 225, not from STAs 206 to 223.

10, at 1. The IBWC required the proposal to be split into two parts, apparently for budgetary purposes, so that the riprap costs could be divided into Reach 1 (upstream) and Reach 2 (downstream) on the levee. JX 11, at 1. Magnus performed this division of its riprap cost proposal, but the total quantity of riprap, and the total cost of the riprap placement, remained the same. *Id.* at 2-3.

The court observes that Magnus's riprap cost proposal, in its estimate of the quantity of additional riprap required, was quite modest, when compared to the 17,500 CY estimate of riprap needed for the original, "new riprap" contract work. For purposes of illustration, if the court were to compare the approximate number of stations involved in original riprap work (65), with the number of stations involved in both "additional riprap" work as well as existing riprap replacement work (more than 70), one might have surmised that Magnus's cost proposal for Modifications 001 and 003 would have been for more than 17,500 CY, not 9570 CY, if the government's view of the comprehensiveness of Magnus's riprap cost proposal were correct. But if Magnus was estimating, as plaintiff contends, just the cost of "additional riprap" in its cost proposal, which involved approximately 40 stations, the 9570 CY figure is much closer to the percentage of 17,500 CY required for *only* the additional riprap work.[24] Based on the quantities of riprap estimated by Magnus in its cost proposal for Modifications 001 and 003, plaintiff's view of the limited nature of Magnus's riprap cost proposal is more plausible.

5. Magnus's Answers to the IBWC's Questions

An integral part of Magnus's riprap cost proposal was its answer to the IBWC's question as to a grey area in the project going forward: "How will additional materials be addressed?" JX 11, at 4. Before analyzing this crucial issue, the court notes, first, that this grey area, as regards riprap, had its genesis in the defective contract documents produced by the IBWC. The additional survey of the levee and the matrix negotiations could easily have been avoided if the IBWC had produced an adequate design from which the levee could have been

[24]/ The 40/65 ratio, when applied to 17,500 CY, is 10,769 CY. After the levee was completed, the quantity of "additional riprap" placed on the levee was measured by Magnus to be 10,715 CY, exceeding Magnus's lower projection of 9570 CY by an amount that Magnus did not include in its riprap claim. JX 24, at 1, 17.

built in the first instance.

Instead, the parties met to discuss the problems with the IBWC's design, as described *supra*, and agreed to negotiate additional work to restore the levee properly. As part of this negotiation, the meeting notes from April 21, 2011 show that the IBWC was tasked with "differentiat[ing] between work that was included with[in] the current scope [of the contract] and the additional proposed work shown in the [matrix document]." JX 7, at 3. There is no evidence that *any* such differentiation of old vs. supplemental work was ever provided to Magnus by the IBWC. Moore Tr. at 1175-76; Sallas Tr. at 1626-27. On these facts, the IBWC utterly failed to provide any guidance to Magnus as to the distinction between original riprap work on the levee, and the two categories of supplemental riprap work ("additional riprap" and existing riprap replacement). Thus, not only had the IBWC created the situation requiring negotiations for supplemental riprap work on the levee, it further compounded the problem by failing to differentiate between original and supplemental riprap work to assist in those negotiations.

Having been cast into this informational vacuum, Magnus prepared a riprap cost proposal for an additional 9570 CY of riprap protection on the levee. In response, the IBWC noted the fact that a new survey of the existing levee had been conducted and had several comments and concerns about Magnus's cost proposal in response to the matrix document. JX 11, at 1. The full text of the most relevant question for the riprap dispute is as follows:

> How will additional materials be addressed? Import vs reuse of existing material on site that meets project specifications. (Please explain how credit to IBWC for the existing rip rap will be provided)

Id.

It is important to note that the IBWC had not, as promised, provided any guidance to Magnus as to the differentiation between original contract riprap work and matrix-related riprap work. Magnus replied:

> The existing riprap will be handled on a case by case basis, due to the fact that it has not been confirmed

> whether a portion or all of the riprap will meet the project specifications. Should the existing riprap meet the project specifications the material will need to be processed, screened, sized, and replaced on the slopes as specified within the contract documents. Additionally, waste, debris, and unsuitable materials will have to be removed from the site to the []IBWC designated location. Upon determining the cost to process the existing materials as noted (but not limited to), the cost for importing riprap will be deducted from the applicable unit price.

JX 12, at 3.

The IBWC's question, and the answer provided by Magnus to that question, are not, when viewed in isolation, crystal clear. The evidence shows, however, that Magnus had already submitted its riprap cost proposal for 9570 CY. JX 10, at 1. In that context, it is most logical to assume that the IBWC, in its response to Magnus's proposal, was seeking assurance as to "additional materials," JX 11, at 1, *beyond* 9570 CY of riprap. Magnus's answer to that question was that "existing riprap will be handled on a case by case basis." JX 12, at 3. In the court's view, the documentary evidence strongly supports the logical inference that Magnus was suggesting that the parties defer the pricing of the third category of riprap work, *i.e.*, the replacement of existing riprap, until a station-by-station evaluation of the existing riprap could determine whether some of this existing riprap could be re-used.

6. The IBWC Received Supporting Documentation for Magnus's Riprap Cost Proposal Which Addressed "Additional Riprap" Areas, not Existing Riprap Areas

By all accounts, the IBWC never sought clarification of Magnus's proposal for a "case by case" treatment of the replacement of existing riprap. Nonetheless, after receiving Magnus's cost proposal for $717,750 and the clarification that existing riprap replacement quantities would be addressed on a case-by-case basis, the IBWC solicited and received a station-by-station breakdown of Magnus's proposed volume of 9570 CY of riprap to be placed on the levee as a result of the

matrix negotiations. This volume breakdown table, JX 13, confirms that Magnus included in its cost proposal the "additional riprap" areas, *not* the existing riprap areas, on the levee. Magnus's volume breakdown table addressed the costs of the placement of riprap *only* where the levee design plans showed no existing riprap, *i.e.*, from STAs 89 to 117 and 126 to 145. JX 13, at 3-5.

The extensive areas of existing riprap shown on the levee design plans, *i.e.*, STAs 123 to 126, 176 to 186, and 206 to 223, were not included in Magnus's riprap cost proposal.[25] Thus, all of the contemporaneous documentation provided to the IBWC by Magnus during the matrix negotiations informed the IBWC that Magnus was not including a price for the replacement of existing riprap in its cost proposal of $717,750. In the context of the IBWC's failure to differentiate between original and matrix-related riprap work, and considering that Magnus had presented the IBWC with a detailed riprap cost proposal whose sole focus was on the areas of the levee that were shown on the contract plans as having no existing riprap, the replacement of existing riprap was proposed by Magnus to be resolved on an ongoing, case-by-case basis, with a price to be determined at a later date. If there was any lack of clarity as to this proposal regarding the case-by-case determination of the costs of replacing existing riprap, it was clearly the fault of the IBWC. Magnus had addressed the topic in its written communications, but Magnus's communications elicited no questions or comments, written or oral, from the IBWC.

7. Witness Testimony as to the Negotiation of Existing Riprap Replacement Work

The court relies primarily on the documentary evidence of the matrix negotiations to discern the scope of the riprap work included in and paid for by Modifications 001 and 003. Witnesses for plaintiff and witnesses for defendant were somewhat divided on their interpretations of the phrase "existing riprap will be handled on a case by case basis." JX 12, at 3. Mr. Duran testified that he

---

[25]/ Two or three additional stations, STAs 224 to 226, were included in Magnus's riprap cost proposal which were later also included, mistakenly, in Magnus's riprap claim under the "Replace Existing Riprap" category. JX 13, at 6; JX 24, at 17; Douglas Tr. at 433-35. The double-counting of these stations has been removed from Magnus's finalized riprap claim. Sallas Tr. at 1695-98; Pl.'s Br. at 21.

understood the "case by case" clarification provided by Magnus to refer solely to the size of a credit to be offered to the IBWC as existing riprap was re-used in the restored levee. Duran Tr. at 995-96. Mr. Moore also stated that he thought the topic of this clarification involved a credit to the IBWC, but his recollection of the surrounding circumstances was rather vague. Moore Tr. at 1195-1203. Mr. Moore did agree with plaintiff's counsel, however, that the "case by case" proposal from Magnus was "pretty clear." *Id.* at 1204. Mr. Delgado stated firmly that Modifications 001 and 003 were lump-sum and did not include a "case by case" component for the replacement of existing riprap, but Mr. Delgado also conceded that he understood Magnus's clarification to include a request for increased payments to Magnus if the existing riprap proved to be unfit for re-use on the levee. Delgado Tr. at 492, 518, 687.

There is no real dispute that the existing riprap on the levee was of poor quality. Duran Tr. at 845-46; Sallas Tr. at 1659-60; Def.'s Reply at 27. The amount of re-usable riprap was not easily determined, however. A preponderance of trial evidence showed that both the depth of the layer of existing riprap, and the fitness of existing riprap stone for re-use, were difficult to estimate until the existing riprap was excavated and tested. Moore Tr. at 1148, 1178; Sallas Tr. at 1658-59; Louviere Tr. at 1752. Mr. Sallas persuasively explained that handling the existing riprap re-use quantities on a case-by-case basis was the only rational way for Magnus to respond to the IBWC's request for a riprap cost proposal.[26] Sallas Tr. at 1679-80. Mr. Sallas also testified that the task of estimating the existing riprap replacement work was affected by Magnus's understanding of riprap locations on the levee; "typical cross-sections" describing the proper construction of riprap armoring; and the IBWC's failure to differentiate between original riprap work and the riprap work added by the matrix. *Id.* at 1626-30.

8. Existing Riprap Replacement Work Outside of Scope of Base Contract and Unpriced in Modifications 001 and 003

Based on the documentary evidence of the matrix negotiations, as well as

---

[26]/ The IBWC's solicitation also discussed existing riprap in one of its answers to bidder questions, and noted that certain decisions about riprap work would be finalized during the course of performance: "Observation of uniformity of the existing riprap as well as full coverage shall be determined out in the field." JX 1, at 65.

witness testimony on the subject of determining existing riprap replacement quantities on a case-by-case basis, the court agrees with Mr. Sallas that existing riprap replacement work was "above and beyond the matrix" work added to the contract in Modifications 001 and 003. Sallas Tr. at 1630. The court also has found that the original contract riprap placement work was limited to four specific sections of the levee where new riprap was to be placed. Plaintiff's riprap claim, which is for 8101 CY of riprap needed to replace existing riprap on the levee, is therefore for work which constitutes a change to the contract in terms of the constructive change doctrine.[27]

The government's defense to plaintiff's riprap claim depends on at least two false assumptions. First, defendant states that the replacement of all existing riprap, if unusable, was included in the original contract's lump-sum price. Def.'s Br. at 52. But the solicitation, as amended by the IBWC's answers to bidder questions, does not support this interpretation of the contract. Estimated quantities of imported riprap were drastically reduced to avoid the inclusion of existing riprap volumes in the bidder's calculations. JX 1, at 53. The contract plans show four sections of new riprap placement, which match the indications on the relevant "typical cross-sections" for riprap placement under the original contract. JX 109, at 15-17, 19-20, 23-27, 36. Although the government contends otherwise, the original contract's riprap work was for these four sections of "new riprap" placement.[28] *Cf.* Def.'s Reply at 24 (conceding that the 17,500 CY riprap estimate in the amended solicitation was for new riprap only).

---

[27]/ It is somewhat ironic that the IBWC's original estimate in the solicitation for the riprap quantities required for this project, 32,000 CY, was far more accurate than the revised estimate later provided to bidders. JX 109, at 8. The 32,000 CY figure was slashed almost in half to eliminate possible double-counting of existing riprap. JX 1, at 53. Bidders were warned that the revised riprap estimate could be off by as much as twenty percent. JX 1, at 67. If the IBWC's original riprap estimate, 32,000 CY, is increased by twenty percent, that figure is 38,400 CY. Magnus states that it placed a total amount of 36,378 CY of riprap on the levee, well within a twenty percent variance from the original riprap estimate in the solicitation. JX 24, at 17.

[28]/ When all of the answers to bidder questions regarding riprap are considered, along with the levee plans and typical cross-sections, a rational bidder would have known that some variation from the 17,500 CY estimate was possible, but the riprap quantities in the base contract were to be placed on the "new riprap" sections of the levee. JX 1, at 53, 65, 67; JX 109, at 10-36.

The government's second false assumption is that the base contract and Modifications 001 and 003 included a requirement that Magnus place the "additional riprap" quantities on the levee (9570 CY for the portions of the levee where no existing or new riprap was shown on the levee's plans), *as well as* riprap required to replace existing riprap (8101 CY). *See* Def.'s Reply at 28 (stating that "the removal and replacement of existing riprap was required by the contract documents and subsequent modifications"). This assumption is ill-founded because Magnus's cost proposal did not include the replacement of existing riprap. Modifications 001 and 003 did not pay Magnus to replace the existing riprap on the levee.[29] Because Magnus performed work outside the scope of the contract when it replaced existing riprap, the court turns now to the order/fault element of the constructive change doctrine.

C. Government Order/Fault Element

Once a plaintiff shows that it has performed work outside the scope of the contract, the constructive change doctrine next requires the plaintiff to demonstrate that the work was performed because of an order or fault of the government, rather than simply as the result of a voluntary choice of the contractor. *See, e.g.*, *Chris Berg, Inc. v. United States*, 455 F.2d 1037, 1050 (Ct. Cl. 1972) (noting that for the constructive change doctrine to apply, the contractor must not have volunteered the work outside the scope of the contract) (citation omitted). Here, there is no evidence that Magnus spontaneously volunteered to place 8101 CY of riprap onto the levee. The only question is whether Magnus was ordered to replace the existing riprap on the levee, or whether Magnus removed and replaced the existing riprap due to the fault of the government. In the somewhat odd circumstances of this levee restoration project, both government orders and government fault are at play in Magnus's replacement of existing riprap on the levee.

It is clear from witness testimony that the IBWC's contracting officer's

---

[29]/ The text of the riprap work outlined in Modifications 001 and 003 contains no statement that *all* riprap work required on the levee was encompassed in these modifications. Nor do these modifications state that *existing* riprap would be replaced. The described work simply states that Magnus was "to provide and place Riprap" on both the upstream and downstream reaches of the levee. JX 4, at 4; JX 27, at 4.

representative, Mr. Duran, directed Magnus to remove and replace unsatisfactory existing riprap on the levee. Duran Tr. at 854-56. It is also clear that the contracting officer ratified these directives, allegedly because Mr. Delgado presumed that this work was included in the lump-sum price negotiated for the restored levee.[30] *See* JX 26, at 2 (describing the riprap work performed by Magnus as "required work"); Delgado Tr. at 687 ("Give us the riprap for a lump sum price. You're responsible under the lump sum to do all the riprap."). Where a contracting officer has actual authority to bind the government, as Mr. Delgado had here, and ratifies an order to proceed with work outside the scope of a contract, the constructive change doctrine applies. *E.g.*, *Harbert/Lummus Agrifuels Projects v. United States*, 142 F.3d 1429, 1433 (Fed. Cir. 1998) (citing *United States v. Beebe*, 180 U.S. 343, 354 (1901)); *Dan Rice Constr. Co. v. United States*, 36 Fed. Cl. 1, 3 (1996) (citations omitted). Because Mr. Delgado ratified Mr. Duran's directives to Magnus to remove and replace unsatisfactory existing riprap in STAs 123 to 126, 176 to 186, and 206 to 223, this constructive change entitles Magnus to an equitable adjustment of the contract price.

An equitable adjustment may also be founded on the fault of the government which constructively changed a project to include work outside of the contract's scope. *See, e.g.*, *Zafer Taahhut Insaat ve Ticaret A.S.*, 833 F.3d 1356, 1364 (Fed. Cir. 2016) (stating that "a constructive change may result through the fault of the government that warrants an equitable adjustment to the contract" (citing *NavCom Def. Elecs., Inc. v. England*, 53 F. App'x 897, 900 (Fed. Cir. 2002))). Here, there was ample government fault, beginning with the IBWC's defective design of the levee and the issuance of the solicitation despite the IBWC's knowledge of the levee design defects; continuing with the IBWC's failure to differentiate between base contract and matrix riprap work; and culminating in the IBWC's failure to respond to or comment on Magnus's clear intent to only include within Modifications 001 and 003 the "additional riprap" sections of the levee, and not the "existing riprap" sections of the levee. The IBWC simply accepted Magnus's cost proposal for supplemental riprap placement, and its request for an addition of $717,750 to the contract price for 9570 CY of "additional riprap," and ignored the fact that a substantial quantity of riprap work was not included in these two contract modifications.

---

[30]/ There is no documentary evidence as to the contracting officer's contemporaneous understanding of the scope of Modifications 001 and 003.

Among these aforementioned contract administration errors, the most egregious are: (1) the IBWC chose to ignore documentary evidence showing that the replacement of existing riprap was not included in Modifications 001 and 003; and (2) the IBWC chose to ignore Magnus's proposal that levee restoration would proceed with the understanding that existing riprap replacement would be priced on a "case by case" basis. JX 12, at 3. The fault for the constructive change to the contract, which resulted in the procurement and placement of 8101 CY of riprap, lies clearly with the IBWC, not Magnus. Under the government fault prong of the constructive change doctrine, therefore, Magnus is entitled to an equitable adjustment to the contract price.

Defendant argues that plaintiff's riprap claim must fail. First, the government contends that if the contract terms as to the replacement of existing riprap were ambiguous, Magnus's riprap claim could not succeed. Def.'s Br. at 54-56. In the court's view, however, there was no ambiguity as to the scope of riprap work included in Modifications 001 and 003, or in Magnus's proposal that existing riprap replacement could not be priced until that riprap was excavated and tested. Ambiguity only exists where there are two reasonable interpretations of contract terms. *E.g.*, *Metric Constructors, Inc. v. Nat'l Aeronautics & Space Admin.*, 169 F.3d 747, 751 (Fed. Cir. 1999). Here, Modifications 001 and 003 did not pay for the replacement of existing riprap, and a constructive change occurred when Magnus was obliged to perform work outside of the scope of the contract.

Defendant also argues that any deferral of the pricing for the replacement of existing riprap would be an illusory and unenforceable contract. Def.'s Br. at 56-57; Def.'s Reply at 29. Whatever the merits of this legal theory as a general rule, it has no applicability here.[31] The IBWC ordered Magnus to replace existing riprap, which was a constructive change because that work was not included in the base contract or Modifications 001 and 003. Further, Magnus performed the existing riprap replacement work, which was outside of the scope of the contract, due to the fault of the government in its administration of the contract. These underpinnings for Magnus's riprap claim for an equitable adjustment to the

[31]/ The court notes that under this theory defendant's counterclaim would be founded on an "illusory and unenforceable" contract, Def.'s Reply at 29, because it is founded on a contract modification which stated that a credit would be negotiated, at a later date, for the slope design change. JX 104, at 1.

contract price do not depend on an illusory or unenforceable contract.

D. Quantum of Riprap Claim Equitable Adjustment Proved to a Reasonable Certainty

Magnus requests $597,075 for an equitable adjustment to the contract price for riprap work that was not included in either the base contract or Modifications 001 and 003. Pl.'s Br. at 57. This figure is supported by contemporaneous documentation of the matrix negotiations, *see* JX 6; JX 7; JX 10; JX 11; JX 12; JX 13, the calculations and testimony of Magnus employees Owaidat, Sallas, Douglas, Louviere and Clark regarding the replacement of existing riprap, as well as the documentation provided to the IBWC at the end of the levee project, *see* JX 24; JX 25; JX 154. As noted *supra*, the locations of the existing riprap on the levee design documents are consistent with the locations along the levee where Magnus asserts it placed 8101 CY of supplemental riprap. The volume quantities for the riprap claim, which are then multiplied by the price of $75/CY, are adequately supported by documentary evidence and witness testimony. Even Mr. Wooten, the government's expert, acknowledged that Magnus's calculations of the quantity of riprap required for the full replacement of existing riprap on the levee were sound, at least from a mathematical standpoint. Wooten Tr. at 2104-06; JX 139, at 37.

The only remaining dispute for the riprap claim, then, is the question of whether the re-use of some amount of the existing riprap on the levee merits a reduction in the total amount of the equitable adjustment due Magnus, and, if so, the size of such a reduction. The estimates of existing riprap re-use provided by trial witnesses vary widely, from "insignificant amounts" that were not worth tracking, Sallas Tr. at 1674-75, to as much as upwards of fifty percent re-use, Moore Tr. at 1209-11. Mr. Duran, when asked to guess, suggested that about thirty percent of the existing riprap was re-used, but confessed that his guess was not based on any hard data. Duran Tr. at 997.

One of the problems with the testimony regarding existing riprap re-use is that the IBWC representatives appeared to be guessing at the extent of such re-use; Mr. Duran and Mr. Moore were of the opinion that Magnus had placed re-used riprap below ground in the underground portion of the riprap armoring, the "toe-down." Duran Tr. at 997; Moore Tr. at 1210. Of course, once the levee was

completed, the riprap in the toe-down was hidden from view. Sallas Tr. at 1729. The conviction held by Mr. Moore and Mr. Duran that a substantial amount of re-used existing riprap was buried in the toe-down, in the court's view, reflects a tendency on the part of the IBWC representatives to suspect, without a factual basis, that Magnus inflated its claimed cost overruns.[32] Given the credibility problems of these two witnesses, and the countervailing testimony of more persuasive Magnus employees, the court finds that an insignificant amount of existing riprap was re-used on the levee, whether in the toe-down or above ground. *See* Sallas Tr. at 1728 (stating that Magnus used a "very little bit [of the existing riprap] in the [toe-down]").

If the re-use of this small amount of existing riprap in the toe-down or elsewhere had produced cost savings for Magnus, the court would agree with defendant that some "accounting" of re-use should have been applied to the amount set forth in Magnus's riprap claim. Def.'s Br. at 57. In the abstract, Mr. Moore testified that it should be less expensive, typically, to re-use, rather than import, riprap. Moore Tr. at 1211. Here, however, there is overwhelming support for the view that the riprap on the levee was of poor quality. Def.'s Reply at 27; Pl.'s Br. at 9, 17-18 & n.4.

According to Mr. Sallas, the witness who provided the most detailed and persuasive testimony regarding riprap work on the levee, the existing, poor quality riprap was extremely expensive to process into a small amount of re-usable riprap. Sallas Tr. at 1674-79, 1727-28. Thus, there were no net cost savings to Magnus associated with the insignificant amount of existing riprap re-used on the levee. Based on the testimony of the most persuasive witness on the subject of existing riprap re-use, the court concludes that no reduction of Magnus's claim for an equitable adjustment is appropriate. The court finds that the quantum of Magnus's riprap claim, $597,075, has been proved to a "reasonable certainty." *Precision Pine*, 596 F.3d at 832.

---

[32]/ Over the course of the trial, the court heard testimony about IBWC suspicions regarding Magnus's supporting documentation for its cost overrun claims. These included the suspected falsification of truckload tickets to measure embankment fill volumes and the suspected falsification of a surveyor's stamp on documents submitted to the IBWC. These suspicions were refuted by persuasive testimony provided at trial.

IV. Embankment Fill Claim

Magnus's embankment fill claim is its largest and most complex claim. Unlike the riprap claim, where the parties primarily focused on the matrix and the changes brought to the project through the matrix negotiations, here the primary focus is on the original solicitation and contract documents and how a reasonable levee contractor should have interpreted those documents. Certainly the matrix negotiations and subsequent contract modifications also play a part in the embankment fill dispute, but that role is a secondary one. Because the embankment fill claim is dominated by concerns as to the content and interpretation of the original contract documents, the court believes the most appropriate legal framework for this dispute is the defective plans and specifications framework. The court need not reach, therefore, the parties' arguments as to the elements of a Type I Differing Site Conditions claim or a constructive change claim as these doctrines might apply to Magnus's embankment fill claim. *See Magnus II*, 2016 WL 3960447, at *3-5 (finding that three legal theories, Type I Differing Site Conditions, defective plans/specifications, and constructive change, were potential supports for plaintiff's embankment fill claim).

The court's analysis of the embankment fill dispute will include the following topics, in this order: (A) elements of a defective plans/specifications claim; (B) governing regulations under the Federal Acquisition Regulation (FAR) that were included in the contract; (C) embankment fill terminology and techniques; (D) interpretation of contract documents; (E) slurry wall construction; (F) matrix negotiations and embankment fill contract modifications; (G) unexpectedly deep excavation of the levee; and, (H) quantum of any equitable adjustment due Magnus. Before turning to these topics, the court sketches the broad outlines of the embankment fill dispute.

The embankment fill cost overruns that Magnus experienced can be traced to Magnus's assumption that most of the existing levee material could either be left in place or used again once it had been removed, to permit certain levee restoration tasks, and re-compacted. *See* JX 11, at 4 ("Our current assumption is that the existing levee meets the project requirements for embankment fill."). The dispute between the parties is whether Magnus's assumption was reasonable, given the content of the contract documents provided in the solicitation and

solicitation amendments. According to plaintiff, the bidding documents warned that a relatively small amount of the levee, the topmost portion of the levee slope where erosion had occurred, was just as likely to not meet specifications as to meet specifications, and a prudent bidder could not assume that any of this layer of material could be re-used. Plaintiff asserts, and the evidence supports this assertion, that Magnus never expected this top layer of the levee slope to be re-usable in its cost proposals, and never included this material as a cost category in its embankment fill claim. Defendant's arguments, on the other hand, suggest that any and all risk of having to excavate deeper than the top layer of the levee slope and to remove and replace additional amounts of the levee fill was a risk borne solely by the bidder. *See* Def.'s Br. at 46 (stating that the contract documents indicated that "*any* existing levee materials removed from the levee would have to meet specifications before being replaced") (emphasis added); Def.'s Reply at 8 (stating that "contractors [were] on notice that not all existing soils could be re-used").

In the court's view, it defies logic to expect bidders on this project to inflate the embankment fill quantities in their proposals to cover every conceivable excavation depth on the levee. The government's interpretation of the solicitation is fundamentally at odds with a rational sealed bid, fixed-price procurement – there was no real competition if the bids submitted for the Lower Presidio Levee restoration project had no logical relationship to the actual amount of work required to complete the levee. *See, e.g.*, *Glenn Def. Marine (Asia) PTE Ltd. v. United States*, 97 Fed. Cl. 568, 578 (2011) ("As a general rule, offerors must be given sufficient detail in [a solicitation] to allow them to compete intelligently and on a relatively equal basis. When a solicitation lacks sufficient detail and permits each offeror to define the specification for itself, and to the extent they do so differently, the offerors are not competing on an equal basis.") (internal quotations and citation omitted). Sealed fixed-price bidding for levee restoration or construction, in the court's view, requires rational quantity estimates provided by the agency to bidders, or, at the very least, an accurate description of contract work from which a bidder might calculate the approximate quantity of fill required to prepare a rational bid and to complete the project. In this case, as discussed below, the IBWC provided neither accurate estimates of the fill required to restore the levee, nor accurate plans and specifications for the contract work. In such circumstances, an equitable adjustment of the contract price must be granted to the contractor.

A. Elements of a Defective Plans and Specifications Claim

There are a number of articulations of the elements of a defective plans and specifications claim. The overall rationale for an equitable adjustment of this type is that the contractor experienced additional costs in completing the project which were caused by its reliance on defective specifications or plans. *See, e.g.*, *Cable & Computer Tech., Inc.*, ASBCA No. 47420, 03-1 B.C.A. ¶ 32237 (Mar. 27, 2003) ("We conclude that the specifications upon which [the contractor] was to perform were defective to the extent discussed above and that [the contractor] is entitled to recover its added costs in attempting to perform the contract requirements."); *Gracon Corp.*, IBCA No. 2271, 89-1 B.C.A. ¶ 21232 (Oct. 18, 1988) ("[W]e conclude that [the agency's] defective specifications were the cause of the additional work claimed. In such instances, the Court of Claims has recognized the doctrine of constructive change in order to compensate contractors for increased costs of performance resulting from defective specifications." (citing generally to *Hol Gar Mfg. Corp. v. United States*, 360 F.2d 634 (Ct. Cl. 1966)). The Federal Circuit has enumerated the elements of proof for the defective plans and specifications inquiry:

> [W]here a contractor-claimant seeks to recover an equitable adjustment for additional work performed on account of a defective specification, the contractor-claimant must show that it was misled by the defect. To demonstrate that it was misled, the contractor-claimant must show both that it relied on the defect and that the defect was not an obvious omission, inconsistency or discrepancy of significance, – in other words, a patent defect – that would have made such reliance unreasonable.

E.L. Hamm & Assocs., Inc. v. England, 379 F.3d 1334, 1339 (Fed. Cir. 2004). These basic principles and elements of proof guide the court's resolution of plaintiff's embankment fill claim.

As the court noted in *Magnus II*, there is a potential for factual overlap between a differing site conditions claim and a defective plans and specifications

claim, especially where an earthwork project is involved. 2016 WL 3960447, at *4. The court also noted that a defective specifications claim would not lie if its sole basis was the misrepresentation of subsurface conditions, because in that circumstance the differing site conditions framework would provide the only remedy to the contractor. *Id.* at *4 n.3 (citing *Comtrol, Inc. v. United States*, 294 F.3d 1357, 1362 (Fed. Cir. 2002)). Here, plaintiff's defective plans and specifications claim for cost overruns in embankment fill is grounded in a wide variety of defects in the levee's design documents, not, solely, the solicitation's indications of subsurface conditions at the levee. For that reason, Magnus's defective plans and specifications claim is sufficiently distinct from any claim it might bring under a differing site conditions theory, and thus the defective plans and specifications claim may proceed in this court on its own basis.

Lastly, the court notes that there is another line of precedent which examines defects in contract documents which mislead and cause unexpected increases in the contractor's costs, and this line of precedent might be considered to identify a special subset of defective plans and specifications cases. These are the 'inaccurate estimate' cases, of which there are many types. Most pertinent here are cases where inaccurate estimates in a solicitation have misled a bidder into submitting an excessively low bid. *See, e.g.*, *C. L. Michner, Inc. v. United States*, No. 280-77, 1979 WL 16464, at *23 (Ct. Cl. Feb. 27, 1979) (holding that the plaintiff was misled in calculating its fixed-price bid by an agency estimate of contract work that undercounted the acreage to be cleared by 490 acres) (*Michner*), *aff'd*, 618 F.2d 121 (Ct. Cl. 1979) (table); *cf. Everett Plywood & Door Corp. v. United States*, 419 F.2d 425, 433 (Ct. Cl. 1969) (holding that the government's inaccurate estimate of the quantity of timber available for harvest caused a substantial loss to the contractor). The general principle of recovery in these cases is that the financial impact of a specification rendered defective by an inaccurate government estimate should fall on the government, not the contractor. *See, e.g.*, *Everett Plywood*, 419 F.2d at 433 (stating that "a positive statement of facts in specifications, upon which the contractor is entitled to rely, is binding upon the government, and upon it rather than upon the claimant must fall the loss resulting from a misstatement of such facts") (citation omitted). The court will also apply this line of defective plans and specifications precedent to Magnus's embankment fill claim.

B. Regulations under the Federal Acquisition Regulation (FAR)

As a threshold matter, the parties disagree as to which "order of precedence" clause governs any conflicts between the written specifications and the plans/drawings included in the solicitation and subsequently in the contract. Plaintiff would give precedence to 48 C.F.R. § 52.214-29 (2016), whereas defendant relies on a different FAR provision, 48 C.F.R. § 52.236-21, Alt 1 (2016). Both of these FAR provisions are included by reference in the contract. JX 1, at 20, 23.

The government's argument is correct. *See* Def.'s Reply at 4-5 (explaining why plaintiff's citation to FAR 52.214-29 is inapposite when resolving conflicts between specifications and contract drawings and plans). The guiding principle for the resolution of conflicts between written specifications and the plans and drawings in this case is stated succinctly in FAR 52.236-21, Alt 1: "In case of difference between drawings and specifications, the specifications shall govern." *Id.* This statement of the law reflects the FAR provision in the contract which most directly addresses this specific issue, titled "Specifications and Drawings for Construction," *id.*, and long-standing principles of government contract law, *see, e.g.*, *Michner*, 1979 WL 16464, at *21 (noting that in the absence of a specific order of precedence clause, specifications trump drawings as a matter of law). For this reason, in case of direct conflict between the specifications and the plans and drawings in the levee restoration contract, the specifications control.

C. Terminology and Techniques Pertinent to Magnus's Embankment Fill Claim

There are two specialized construction practices at issue in Magnus's embankment fill claim: (1) slurry wall construction; and, (2) the addition of embankment fill to restore an existing levee. The quantities of embankment fill cost overruns for these two activities are separately addressed in the claim submitted by Magnus to the contracting officer. JX 2, at 1-2. Trial witnesses and contract documents explained these construction practices; the evidence, summarized below, provides a background for the parties' dispute as to the merits of plaintiff's embankment fill claim.

1. Slurry Wall Construction

The slurry wall, sometimes referred to as the slurry trench, is a barrier to

groundwater movement sunk below the riverside edge of this levee. Each slurry wall is three feet thick and penetrates sixty feet below ground level. This underground "wall" is constructed using a mixture (slurry) of water and bentonite (a clay powder resistant to the passage of water), combined with soil. The slurry wall is referred to in the contract specifications as the "Soil-Bentonite (S-B) Slurry Trench." JX 23, at 170. As described in the contract specifications, "[t]he slurry trench is a three (3) foot minimum width trench excavated through the existing ground or prepared working surface using the slurry method of excavation and backfilled with S-B backfill material, to form a low permeability cutoff wall." *Id.* at 171.

There were three slurry walls constructed along the levee. The dispute regarding the construction of the slurry walls centers on the excavation performed by Magnus to create each slurry wall workpad, the work area where its excavator operated to construct the slurry wall. After each slurry wall was completed, Magnus would then restore the riverside of the levee to replace the excavated material and to complete the embankment fill placement on the restored levee slope in those slurry wall areas.

There is no real dispute that a large machine was required to excavate the slurry trench to a depth of sixty feet and to construct the slurry wall by placing the S-B backfill material into the trench. Nor is there any dispute that Magnus, well-versed in slurry wall construction, chose an appropriate machine for this task. The dispute is focused on the extent of levee excavation performed by Magnus to create the slurry wall workpad to accommodate its machine, and Magnus's assumption that the excavated levee material could be re-used, once it was returned to the levee and re-compacted.

Both the specifications and contract drawings showed that some amount of levee slope excavation was required for the slurry wall workpad. JX 23, at 177 ("For construction of the slurry trench, the existing levee embankment needs to be excavated along the riverside of the levee . . . ."); JX 109, at 36 ("Typical Section with Slurry Trench"). Once the slurry wall had been constructed, the levee slope excavation for the slurry wall workpad area would require the placement of embankment fill onto the existing, excavated levee surface. JX 23, at 177. As discussed below, the preparation of existing levee surfaces to receive additional embankment fill required the construction of a "series of keys and benches." *Id.*

2. Benching of the Existing Levee to Receive Embankment Fill

The levee restoration project required the addition of embankment fill to the existing levee, in a quantity estimated in the solicitation to be 120,000 CY of imported embankment fill spread over approximately 5.88 miles of levee. JX 1, at 1; JX 109, at 8. As a preliminary step, the existing, eroded surface of the levee would be "cleared and grubbed," to remove plants, roots, and other non-soil materials. JX 23, at 219. This could be accomplished by scraping away such materials with a ripping tool or an angled blade attached to a small bulldozer. Clark Tr. at 1822-23.

Once the levee surface contained only soil, the contractor would cut into the levee and create a series of stair-step horizontal planes going along the contour of the levee's slopes – these flat planes are called "benches," and the process of cutting benches into the levee was referred to as "benching the levee." The witnesses at trial often referred to the excavated wedges of material removed from the slope of the levee as "triangles," because these cuts into the levee slope create the triangular empty spaces above each stair-step bench, from the perspective of a cross-section of the levee. The earthen material in the triangles removed from the levee was referred to as "benching material."

In the contract specifications, these triangular cuts into the levee are referred to as "keys." The benching process, which prepares the levee to receive imported embankment fill, can also be referred to as "keying" into the levee of the embankment fill. The purpose of this "series of keys and benches" is to prevent the newly compacted additional fill on the levee from sliding down the existing levee's slope. *See* JX 23, at 219 ("The keys and benches reduce the risk of formation of a preferential failure surface at the old/new fill interface."). In layman's terms, the stair-step pattern of keys and benches 'locks' the new embankment fill to the surface of the existing levee so that the constructed levee's total mass of embankment fill is more stable. The stair-step pattern of keys and benches was sometimes referred to at trial as the "bench line" or "benching line."

Once the keys and benches had been cut into the existing levee, Magnus was required by the contract to obtain confirmation from Mr. Moore that the surface of the existing levee was satisfactory to receive the additional fill. JX 23, at 220 ("Fill shall not be placed on the embankment foundation until the area to

receive the fill has been inspected and compliance-confirmed by the [Contracting Officer's Representative]."). If the embankment foundation[33] was approved, the surface would be moisture-conditioned and compacted, and additional embankment fill would be placed on the levee and compacted to the degree specified by the contract. *Id.* Magnus, as required by the contract, tested the newly placed embankment fill at regular intervals to ensure that the soil qualities of the embankment fill met specifications. In contrast, the contract contained no specification as to existing fill soil testing, and, similarly, contained no testing frequency schedule for the soil testing of existing fill. Wooten Tr. at 2289; *see also* Moore Tr. at 1325-26 (stating that the embankment foundation did not need to meet the specifications for embankment fill).

The essence of plaintiff's embankment fill claim, other than in the slurry wall workpad areas, is that Magnus was obliged to bench the levee at a deeper level than was depicted in the defective plans and specifications included in the solicitation. Mr. Owaidat referred to this frustrating cost overrun as "chasing that bench [deeper and deeper]." Owaidat Tr. at 124. Magnus had expected that the benching material would likely be unsuitable for re-use, but had not expected that additional layers of unsuitable material would be excavated and removed from the site, and, similarly, had not expected that these discarded materials would need to be replaced with imported fill. In cross-section, the cost overrun area was approximately the zone between the expected, higher bench line, and the deeper,

[33]/ There were a variety of terms employed to describe this surface of the existing levee accepting additional fill. Witnesses often referred to the embankment foundation, and to the material in the existing levee in general, as subgrade. There was some confusion, however, as to whether the term "subgrade" should refer, instead, to material at or below ground-level, *i.e.*, at or below the level upon which the existing levee had itself been placed. Moore Tr. at 1398-1401; Wooten Tr. at 2014. To maintain clarity, the court refers to the surface receiving additional embankment fill as the embankment foundation, and to the existing levee material at this foundation level or below as existing fill. Thus, proceeding from the topmost layer of the cleared and grubbed levee slope surface at the beginning of the benching process, the following materials/demarcation lines may be found: (1) benching material, to be cut away to create keys and benches; (2) embankment foundation, the surface upon which additional fill will be placed, roughly along the benching line; (3) existing fill; and, (4) subgrade, the material below the levee itself.

unexpected bench line.[34] To put it more precisely, Magnus calculated the volume between the original, existing levee surface and the lower, excavated surface from which it started benching, and this quantity represents the additional embankment fill work in its embankment fill claim. *Id.* at 268, 275. Another term used by the parties for the lower, excavated levee surface where benching began is the "degrade" line.

Magnus calculated its cost overruns for the unexpectedly low degrade of the levee and presented the results of those calculations in its embankment fill claim. In a table titled "Degrade Quantity: Unsuitable Fill Levee Degrade," the amount of unexpected embankment fill is provided for various stations along the levee. JX 2, at 152. Some of the quantities in this table are directly supported by a "degrade survey," where a surveyor measured the depth of the degrade line from STAs 170 to 240. Other quantities are indirectly supported by that survey, where Magnus estimated the depth of the degrade line by extrapolating from the nearest sections of the degrade survey. These degrade depth estimates were used, to a large extent, for the stations upstream from STA 170 and for the stations downstream from STA 240.

Magnus also employed an additional method to substantiate the quantities of fill stated in its embankment fill claim. All of the embankment fill imported to the levee was obtained from a small number of "borrow pits." Magnus would pay each landowner for all of the embankment fill removed from that landowner's borrow pits.

In order to calculate the sum owed to each landowner, Magnus conducted surveys of each borrow pit, first, before any embankment fill was removed and then, after all embankment fill was removed from that borrow pit. The volume difference between the initial survey and the later survey would provide the volume of embankment fill removed from that borrow pit and placed on the levee. Magnus calculated the total amount of embankment fill placed on the levee, based

---

[34]/ This zone of unexpected embankment fill work was sometimes described as being "above" the bench line. JX 2, at 2. Mr. Owaidat clarified at trial that the zone of fill in question is indeed "above" the final bench line (and above the embankment foundation), because the actual bench line required for the levee restoration was lower than expected, and was below the unsuitable existing fill removed and replaced by Magnus at additional cost. Owaidat Tr. at 268.

on these borrow pit surveys, and then subtracted the amount of embankment fill it had contracted to place on the levee. The remaining amount of embankment fill, placed either as replacement fill for the slurry wall areas or as replacement fill for the unsuitable fill removed as the unexpected result of the lower benching line, represented the embankment fill overruns in Magnus's embankment fill claim. That figure from the borrow pit calculations was used to verify that the figures in the "Degrade Quantity: Unsuitable Fill Levee Degrade" table were accurate as to their total amount.

With these levee restoration terms and techniques in mind, the court now turns to its analysis of the defective contract documents which misled Magnus in the preparation of its bid for the Lower Presidio Levee restoration project.

D. Interpretation of Contract Documents

There are five main categories of information contained in the solicitation which, when read together, support the reasonableness of Magnus's assumptions that, in the particular case of the slurry wall slope excavation, existing fill was largely re-usable on the levee, or at least satisfactory as embankment foundation, in the case of the general benching scheme of the levee restoration project. These categories of information are: (1) the government estimate that 120,000 CY of embankment fill would be required to complete the levee restoration project; (2) the geo-technical report as to subsurface conditions at the levee; (3) the IBWC's answers to bidder questions; (4) the specifications relevant to slurry wall construction and embankment fill placement; and (5) the contract drawings. It is a well-established principle of government contract law that solicitation terms must be considered as a whole to discern their meaning. *See, e.g.*, *Merando, Inc. v. United States*, 475 F.2d 603, 605 (Ct. Cl. 1973) (noting the "well established principle that the provisions of a contract must be read as a whole") (citations omitted).

If there are direct conflicts between information contained in different parts of a solicitation, the court may rely on the contract's "order of precedence" clauses to discern the reasonable interpretation of the contract. Although conflicts between specifications and drawings in this solicitation must be resolved in favor of the specifications, *see supra*, other parts of the solicitation package, such as the amendments to the solicitation, are prioritized over the specifications:

> Any inconsistency in this solicitation or contract shall be resolved by giving precedence in the following order: (a) the Schedule (excluding the specifications); (b) representations and other instructions; (c) contract clauses; (d) other documents, exhibits, and attachments; and (e) the specifications.

FAR 52.214-29; *see also* Def.'s Reply at 5-6 (noting that all documents included in Section J of the solicitation, including the amendments to the solicitation, are documents which take precedence over specifications in this contract).

Here, because of the specialized nature of levee restoration techniques, the court also accords significant weight to the testimony of Mr. George Sills, plaintiff's expert, whose levee experience far outshone the experience of defendant's expert, Mr. Lee Wooten, as to the reasonable interpretation of the information contained within the solicitation in this case. Thus, the court relies on the solicitation's documents as a whole, the solicitation's "order of precedence" clauses, and expert testimony as to the reasonable interpretation of contract terms specific to levee restoration projects, to determine whether Magnus's interpretation of contract terms was reasonable. The court also considers analogous precedent that sheds light on the reasonable interpretation of this levee restoration solicitation. The court concludes its analysis of the solicitation by considering whether the IBWC's defective plans and specifications included patent, or latent, defects.

1. Government Estimate of 120,000 CY of Embankment Fill

Within the "Estimate of Quantities" table included among the solicitation's contract drawings, bidders were notified that the IBWC expected that the contractor would import 120,000 CY of embankment fill to complete the levee restoration project. JX 109, at 8. Unlike the estimate of riprap quantities required for the project, which was significantly revised in the amendments to the solicitation, the 120,000 CY estimate was not revised by the IBWC. Instead, the IBWC issued a general statement about the quantity estimates in the solicitation in Amendment 001:

> Quantities are provided for informational purposes only.

> The project is a lump sum contract for completion of all work as described in the specification 01 27 00, measurement and payment. Contractor is responsible for independently verifying all quantities.

JX 1, at 40.

This statement regarding the "informational purposes" of quantity estimates was provided as a replacement for "the note directly below and applicable to the Estimate of Quantities [table], sheet 8 of 52." *Id.* Curiously, no such note existed on the referenced page of the solicitation. *See* JX 109, at 8. In any event, the solicitation package, as amended, contained an estimate of 120,000 CY of imported embankment fill, and the statement that this estimate was for "informational purposes only." JX 1, at 40.

As bidders attempted to decipher the solicitation, one asked whether access to the underlying "electronic survey surface data used to compute the estimated quantities" would be provided to bidders, and the IBWC agreed to provide those files to bidders. JX 1, at 54. Thus, sometime within the two-week window remaining to prepare and submit their bids, bidders were provided with survey data which might have helped them verify whether the 120,000 CY embankment fill estimate in the solicitation was indeed accurate. It is important to remember, however, that the survey files provided to these bidders were acknowledged by the levee's designer to be inaccurate. Atwood Dep. Tr. at 40-43. Indeed, as noted *supra*, the entire levee surface had to be re-surveyed so that Magnus could successfully complete the restoration project.

Mr. Sills opined that it would have been financially prohibitive and unprecedented for bidders on the levee project to each conduct their own survey of the levee to verify the embankment fill quantities required to complete the levee. JX 98, at 3. In his experience, the agency typically provides survey data so that all bidders are on equal footing as to the preparation of their bids. Here, the solicitation contained an estimate of 120,000 CY of embankment fill, well under the 198,000 CY of imported embankment fill that was ultimately required to complete the restoration of the levee, as well as inaccurate survey data from which the bidders could hardly be expected to verify that the 120,000 CY estimate was accurate. The solicitation was thus doubly inaccurate: Magnus and the other

bidders were provided with an *inaccurate* estimate for the embankment fill quantities required on the project and *inaccurate* survey data which frustrated their ability to verify the accuracy of the 120,000 CY figure.

In addition, as discussed *supra*, the levee design documents were deeply flawed. Magnus and the other bidders not only had an inaccurate picture of the existing levee in the survey data given to them by the IBWC, they also were given access, approximately two weeks before their bids were due, to inaccurate design drawings of the levee. JX 1, at 52. After bidders were given these inaccurate "before" and "after" pictures of the levee, each bidder was asked to make an "educated guess," JX 1, at 66, as to the embankment fill quantities they would place on the levee, but the tools for making an educated guess, ostensibly provided to them by the IBWC, were defective. The flawed levee design drawings played an essential role in compounding the impact of the inaccurate estimate of embankment fill quantities provided to bidders. Thus, the estimate of imported embankment fill provided in the solicitation was *trebly*, not just *doubly*, inaccurate.

In light of these circumstances, the court views the IBWC's solicitation as falling squarely within the precedential line of 'inaccurate estimates' cases, such as *Michner* and *Everett Plywood*, where specifications were rendered defective by the inclusion of inaccurate estimates. As the Court of Claims noted in *Michner*, merely because a contract includes a requirement that the contractor conduct its own investigation of a site, the contractor is not obliged to perform costly and unreasonable investigations to ensure that the quantity estimates provided by the government are accurate. 1979 WL 16464, at *17 (disagreeing with the proposition that "when a contract includes a standard site investigation clause, there should be a verification of the Government's estimates"). Here, Magnus was not obliged to conduct its own survey of the levee before submitting its bid, and even if it had done so, the defective design drawings of the levee would have prevented any meaningful verification of the IBWC's estimate of 120,000 CY of imported embankment fill. *Cf. Michner*, 1979 WL 16464, at *17 (noting that it would have been unreasonable for a contractor to attempt to verify government estimates by conducting its own survey of the land at issue in that case, because "the land survey result would have been unreliable and inaccurate").

Nor is the IBWC saved by its proclamation that the solicitation's quantity

estimates were "for informational purposes only." JX 1, at 40. In light of the extensive inaccuracies in the data provided in the solicitation, such a disclaimer cannot function as a cure-all for multiple solicitation defects. Similar attempts to escape responsibility for inaccurate information provided in solicitations have been rejected by the Federal Circuit. *See, e.g.*, *Metcalf Constr. Co. v. United States*, 742 F.3d 984, 996 (Fed. Cir. 2014) (holding that the notice that a soil report included in a solicitation was "for preliminary information only" did not invalidate a contractor's reasonable reliance on the information contained therein). The provision of an estimate for embankment fill quantities, in the circumstances of this solicitation, invited reasonable reliance on that estimate by bidders, including Magnus:

> An estimate as to a material matter in a bidding invitation is an expedient. Ordinarily it is only used where there is a recognized need for guidance to bidders on a particular point but specific information is not reasonably available. Intrinsically, the estimate that is made in such circumstances must be the product of such relevant underlying information as is available to the author of the invitation. If the bidder were not entitled to so regard it, its inclusion in the invitation would be surplusage at best or deception at worst. Assuming that the bidder acts reasonably, he is entitled to rely on Government estimates as representing honest and informed conclusions.

Womack v. United States, 389 F.2d 793, 801 (Ct. Cl. 1968) (citations omitted). Thus, unless contradictory information in the solicitation rendered Magnus's reliance on the 120,000 CY estimate unreasonable, the IBWC must bear the cost of the embankment fill overruns that were caused by its defective specifications and plans for the project. *See, e.g.*, *Everett Plywood*, 419 F.2d at 433 (stating that "a positive statement of facts in specifications, upon which the contractor is entitled to rely, is binding upon the government, and upon it rather than upon the claimant must fall the loss resulting from a misstatement of such facts").

2. Raba-Kistner Geo-technical Report

Just two weeks before bids were due, the IBWC granted bidders access to a geo-technical report (Raba-Kistner Report, or R-K Report) of approximately 170 pages prepared by Raba-Kistner Consultants, Inc. JX 139, at 557-729. According to the levee's designer, this is the same firm that produced the original, inaccurate survey of the levee.[35] Atwood Dep. Tr. at 42-43. The R-K Report presented the results of a geo-technical analysis of the existing levee, whose purpose was "to drill borings along the existing alignment of the levee, to perform laboratory testing to classify and characterize subsurface conditions, and to prepare a Technical Memorandum presenting our geotechnical analyses of the levee." JX 139, at 558.

The executive summary of the R-K Report recommends a sixty-foot depth for the slurry walls for the levee, and some other parameters of levee construction, but states no conclusions as to the re-use of existing embankment fill, or the suitability of existing fill as an embankment foundation for the placement of imported fill. *Id.* at 561. These topics are also not addressed in the pertinent Technical Memorandum sections, which would logically include any such findings, titled "Earthen Levee System Repairs," "Erosion Protection," and "General Construction Considerations." *Id.* at 584-85. Thus, in the court's view, the R-K Report contained no direct contradiction of the 120,000 CY estimate for imported embankment fill on the project, and cannot be construed to have contained even an indirect contradiction of that estimate. The focus of the R-K Report's recommendations was not on embankment fill, but rather on the slurry walls, levee drainage systems and riprap. *Id.*

The government contends, nonetheless, that the R-K Report's boring logs and soil test results put Magnus on notice that the potential for re-use of existing fill for embankment fill placement was far less than 100 percent, because at least 37 percent of the soil tests of existing fill allegedly failed to meet specifications for embankment fill. Def.'s Br. at 46-47. In defendant's view, therefore, the R-K Report should have clearly informed Magnus that existing fill could not simply be temporarily removed and subsequently placed back on the levee. *Id.* at 48.

---

[35]/ Mr. Atwood's memory in this regard was not confirmed, or refuted, by any other trial evidence. The electronic files shared with bidders, such as the original survey files, were not included in the trial joint exhibits; perhaps due to technical reasons these files were difficult to reproduce in PDF format. *See* Def.'s Notice of June 27, 2016 (ECF No. 83), at 1-2.

Although this opinion was expressed by the government's expert, Mr. Wooten, it is not reasonable to interpret the R-K Report in this manner.

As the government acknowledges, the boring locations and test results contained in the R-K Report are, at best, imprecise measures of the suitability of the existing fill for placement as embankment fill on the levee. Def.'s Br. at 6. None of the boring locations was within the riverside slope of the levee, where existing fill would be removed and potentially replaced at the slurry wall construction areas. Wooten Tr. at 1962. Two types of stringent soil tests, both of which were required for imported embankment fill placed on the levee, were never performed on the existing levee materials included in the R-K Report. Def.'s Br. at 7. It was only after an extensive analysis by Mr. Wooten and his colleagues that the government's expert was able to come to the conclusion that at least 37 percent of the existing fill was unsuitable for re-use as added embankment fill.[36] Wooten Tr. at 2155-57.

Given the short time-frame that bidders had access to the R-K Report, the court finds that a reasonable bidder would not have concluded that the R-K Report counseled against the re-use of existing fill on the levee. Magnus consulted this report and used its findings for crafting the slurry wall construction portion of its bid. Sallas Tr. at 1605-06. Other than for that purpose, Magnus concluded that the R-K Report "didn't provide . . . a whole lot of information that was useful." *Id.* at 1606. Mr. Sills, plaintiff's expert, also found the R-K Report to be inadequate for the purposes of estimating quantities for a lump-sum bid, Sills Tr. at 2451-52, and strongly disagreed that the fail rate for existing fill soil tests was anywhere close to 37 percent, *id.* at 2477. Although the data within the R-K Report may have included some sparse and difficult-to-extract information as to the suitability of existing fill for re-use as embankment fill, Magnus had no reasonable notice that the 120,000 CY estimate of imported embankment fill was inaccurate, or that it would not be able to re-use most, if not all, of the existing fill plaintiff excavated alongside the slurry wall workpads.

Although a contractor ignores the content of a geo-technical report at its

---

[36]/ Indeed, Mr. Wooten revised his analysis after submitting his initial expert report, because he had come to realize that he had included boring log test results for materials that were probably not materials within the existing fill of the levee. Wooten Tr. at 2251.

peril, courts and boards of contract appeals do not require that a contractor obtain the highest level of geo-technical expertise to ferret out every nuance buried within the data included in such reports. *See, e.g.*, *Michner*, 1979 WL 16464, at *17 (refusing to require that a bidder deploy engineering methods "clearly beyond the competence of the contractors" bidding on the project); *Stock & Grove, Inc. v. United States*, 493 F.2d 629, 631 (Ct. Cl. 1974) (holding that a contractor "was not required to hire its own geologist" to verify representations regarding site conditions contained in bid documents); *Blount Bros. Constr. Co. v. United States*, 346 F.2d 962, 973 (Ct. Cl. 1965) (holding that contractors "are not expected to exercise clairvoyance in spotting hidden ambiguities in the bid documents"); *D.W. Sandau Dredging*, ENGBCA No. 5812, 96-1 B.C.A. ¶ 28064 (Nov. 20, 1995) (stating that the contractor in that case "was not obliged to conduct a geological or other technical investigation or make expert judgments about geotechnical matters, particularly where the Corps [of Engineers] had already done so"). Instead, the bidder must act reasonably and prudently, based on its experience as a contractor, and is not required to obtain a level of scientific expertise uncommon in the field. *See, e.g.*, *Kaiser Indus. Corp. v. United States*, 340 F.2d 322, 330 (Ct. Cl. 1965) (demanding only that the bidder act as "a reasonably experienced and intelligent contractor-layman"). Here, Magnus found nothing useful in the R-K Report for the estimation of quantities of embankment fill required for the restoration of the levee, and that was a reasonable reading of the R-K Report under this standard. Thus, Magnus's reliance on the misleading 120,000 CY estimate for embankment fill provided by the IBWC, even after Magnus had received the R-K Report, was reasonable.

3. IBWC Answers to Bidder Questions

There were two answers to bidder questions provided by the IBWC that might have clarified whether the existing fill on the levee could be re-used as added embankment fill largely as a matter of course. The government argues that the answers to bidder questions provided in Amendment 005 clearly stated that any existing fill placed back on the levee would need to pass all of the stringent soil tests that were obligatory for imported embankment fill. Def.'s Br. at 48-49; Def.'s Reply at 6, 8. Plaintiff argues, more persuasively, that the IBWC's answers to bidder questions focused rather narrowly on the benching material, *i.e.*, material removed to create the stair-step planes along the contour of the levee, and not on the existing fill making up the majority of the levee. Pl.'s Br. at 28-29.

Turning to the first question and answer exchange, Amendment 005, Question 14 and its answer stated:

> In the Levee Embankment Reconstruction typical section, embankment fill is to be benched into the existing levee. Is this embankment fill imported from offsite?
>
> Yes, unless material deposited levee overtopping can pass specifications but after visual observation this is highly unlikely due to the amount of gravel and amount passing the 200 sieve.

JX 1, at 66. The bidder asks a simple, direct question as to whether the contractor would need to import embankment fill to complete the levee restoration. There may also be, in addition, an implicit question as to whether some of the existing levee could be re-used as embankment fill once the benching process had been completed. In that factual scenario, the benching material would be available for potential re-use because it has just been removed from the levee, whereas the existing fill would *not* be available for potential re-use because it remains under the benching line awaiting the placement of additional fill upon the embankment foundation.

The IBWC answered both the direct question and the potentially-posed implicit question. "Yes," imported embankment fill must be brought to the levee. JX 1, at 66. In answer to the implicit question, the IBWC responded that "material deposited levee overtopping" was "highly unlikely" to be re-usable as embankment fill due to the sand and gravel content of this "deposited levee overtopping." *Id.* As plaintiff's expert opined, the unexplained reference to a sandy/gravelly "deposited levee overtopping" most likely referred to the surface of the levee slope where flooding had deposited material foreign to the levee and which was unlike the existing fill of the levee. Sills Tr. at 2458-61. Mr. Sills also stated, however, that the IBWC's answers to the two questions regarding embankment fill were so "foggy" that very little clear information as to the re-use of levee materials as embankment fill could be discerned in these answers. *Id.* at 2455.

The government's expert, Mr. Wooten, conceded that the IBWC's answer to Question 14 was not abundantly clear and that he was not sure what the reference to "overtopping" meant. Wooten Tr. at 1908, 2195. Based on the text of the IBWC's answer to Question 14, and expert testimony regarding that answer, the court finds that a reasonable bidder was informed that portions of the levee's surface, those containing "overtopping" (which would be removed during the benching process), were highly unlikely to be re-usable as embankment fill. Thus, benching material, in general, which was in certain areas likely to include "overtopping," was also predicted by the IBWC to be somewhat unlikely to be suitable for re-use on the levee. The court notes, however, that the answer to Question 14 made no direct or indirect reference to existing fill on the levee, or to the existing fill's suitability for re-use, once removed, as additional embankment fill on the levee.

The court next turns to Question 22 and its answer, also included in Amendment 005:

> Is the benched or keyed into material removed from the levee embankment to be re-used as embankment material? If so, is it part of the estimated compacted fill quantity on sheet 8 of the plans?
>
> See question #19 above. The material can be reused if it satisfies the fill material specification.

JX 1, at 67. There was a general consensus among trial witnesses that the reference to "question #19" includes a typographical error, for the simple reason that Question 19 in Amendment 005 does not discuss material removed from the levee. Wooten Tr. at 2189; Sills Tr. at 2464; *see also* Def.'s Br. at 10 (noting the "mistaken citation to Question No. 19, which was unrelated"). The court assumes that the IBWC meant to reference Question 14, discussed *supra*; indeed, correcting the typographical error to read "See question #14 above" is the only possible logical reading of Question 22. A reasonable contractor, therefore, would have made the same assumption.

In Question 22 a bidder asked whether benching material was "to be re-used" on the levee as embankment fill, JX 1, at 67, and, if so, whether this re-used

benching material was included in the 120,000 CY estimate provided to bidders, JX 109, at 8. The IBWC never answered the bidder's second question. Thus, there is no guidance in the answer to Question 22 as to how the 120,000 CY estimate should have been interpreted by bidders. The answer to the bidder's first question, *i.e.*, the question as to whether benching material was to be re-used as embankment fill added to the levee, is provided in two parts.

The bidder was first directed to Question 14 and its answer, which contained somewhat murky information regarding the unsuitable characteristics of "material deposited levee overtopping." JX 1, at 66. By this reference, the IBWC drew a parallel between Question 22's inquiry into benching material re-use and the IBWC's answer to Question 14, *i.e.*, that the re-use of levee overtopping was highly unlikely because of the amount of sand and gravel contained therein. In the court's view, the first part of the IBWC's answer to Question 22 re-affirmed the IBWC's advice that a contractor should not expect to re-use benching material as additional embankment fill.

This is in accord with part two of the IBWC's answer to the bidder's inquiry as to benching material re-use: "[t]he material can be reused if it satisfies the fill material specification." JX 1, at 67. Again, the focus is on benching material which can be re-used only if it meets the contract's specifications for added embankment fill, which was unlikely. The court concludes that, together, the answers to Question 14 and Question 22, once a reasonable bidder has parsed the confusing language in Question 14 and corrected the typographical error in Question 22, informed the bidder that the re-use of benching material as added embankment fill is unlikely. That is indeed the interpretation given to these answers by Magnus during the bidding process and in calculating its embankment fill cost overruns claim.

Defendant attempts to turn the thrust of these IBWC answers to bidder questions into a broad pronouncement that no existing fill on the levee could be re-used as added embankment fill unless it passed the specifications for added embankment fill. The government's attempt must fail for several reasons. First, no such instruction is explicitly contained in the answers to Questions 14 and Question 22. Second, the IBWC, in each instance, addressed the re-use of material that was surface material ("overtopping") to be removed as the contractor benched the levee, not the existing fill that was in a zone of the levee below that of the

benching material.

Third, the oblique reference to soil testing in Question 14, and the more direct reference to "fill material specification" in Question 22, in no way referenced the particular circumstance of levee excavation that was required for the slurry wall workpads. It was only during the excavation for the slurry wall workpads that Magnus's expectation as to the re-use of existing fill was of relevance.[37] The IBWC's answers to Questions 14 and 22 and the references to embankment fill specifications only address the re-use of benching material in the context of benching the levee. These answers do not discuss the re-use of existing fill, and certainly do not discuss the existing fill that would be excavated to accommodate slurry wall workpads. A reasonable contractor would not assume that references to fill specifications in the context of benching material would also necessarily apply to existing fill excavated for the slurry wall workpads.

The court concludes that there was nothing in the IBWC's answers to bidder questions which would have undermined Magnus's reasonable reliance on the IBWC's 120,000 CY estimate for embankment fill. Nor did these answers communicate a directive that the re-use of existing fill temporarily removed from the levee would be predicated on said existing fill meeting all specifications for embankment fill. Magnus's expectation that it could re-use existing fill as added embankment fill was reasonable, even in light of the IBWC's answers to Questions 14 and 22.[38]

4. Contract Specifications

---

[37]/ By contrast, the issue in the portion of Magnus's embankment fill claim related to the unexpectedly deep excavation of the bench line is whether Magnus correctly assumed that the existing fill was adequate as *embankment foundation*, not whether the existing fill was re-usable as *added embankment fill*.

[38]/ Even if the court were to give credence to defendant's interpretation of the IBWC's answers to Questions 14 and 22, which it does not, most of the amount of Magnus's embankment fill claim related to the slurry wall workpad excavations would still be valid. According to Mr. Sills' persuasive testimony, the information contained in the solicitation would have led a reasonable contractor to conclude that the "vast majority" of the existing fill on the levee would meet the contract's specifications for embankment fill. Sills Tr. at 2444.

At trial the parties' expert witnesses exhaustively reviewed the contract's embankment fill and soil testing specifications, and in this process confirmed that a number of inconsistencies were present in the specifications presented to bidders. Wooten Tr. at 1919-21, 2129, 2228; Sills Tr. at 2414-15, 2520. There was some dispute between the experts as to whether the specifications were so riddled with errors that they should be considered defective, in and of themselves. The court need not resolve that broader dispute because the crucial questions before the court are whether the 120,000 CY estimate for embankment fill was contradicted by the specifications for the project, and whether the internally-inconsistent specifications would have led a reasonable contractor to question whether existing fill could be re-used on the levee.[39] Both of these questions must be answered in the negative.

The specifications for the project were revised and replaced on December 8, 2010. JX 1, at 44. There is no statement in the revised contract specifications which addressed the estimated quantity of embankment fill needed to complete levee restoration. Thus, there is no direct conflict between the specifications and the estimate of 120,000 CY provided in the table of quantity estimates included with the contract drawings. Nor is there any indirect conflict because there is no statement in the specifications which addressed, even indirectly, the quantity of embankment fill that would be required to complete the restoration of the levee. The court therefore concludes that the specifications did not suggest to bidders that the IBWC's estimate of 120,000 CY for embankment fill was unreliable.

As to the question of whether existing fill could be removed and later re-used as added embankment fill, the specifications do not include any explicit directives on this topic. The specifications do contain, however, very general observations as to the materials contained in the levee. The relevant specification section, titled "Embankment conditions," states that lean clays, sandy clays and clayey sands were found in the levee. JX 23, at 173. These are the types of soil material that are generally acceptable for imported embankment fill on this levee

---

[39]/ The specifications did not address the soil characteristics of the embankment foundation. Duran Tr. at 1087-88; Wooten Tr. at 2289; Sills Tr. at 2549. Thus, the soil requirements set forth in the specifications are largely irrelevant for the unexpectedly deep benching portion of Magnus's embankment fill claim, which focuses exclusively on the suitability of existing fill for use as embankment foundation. *See supra* note 37.

project, as long as such soils meet additional, more specific soil testing requirements. JX 23, at 215; Wooten Tr. at 2237; Sills Tr. at 2552-53.

Here, bidders would have found nothing in the specifications that indicated that existing fill could not be re-used as embankment fill. Instead, the solicitation's specifications contained at least some indication that the types of soils in the levee were largely within the categories of soil types that were appropriate for imported embankment fill. The court concludes that the specifications did not directly or indirectly indicate that existing fill could not be re-used as added embankment fill. Even after having considered the 281-page set of specifications issued by the IBWC two weeks before bids were due, Magnus reasonably relied on the 120,000 CY estimate for embankment fill provided by the IBWC, and reasonably assumed that existing fill could be removed and re-used as added embankment fill.

5. Contract Drawings

a. Notes Instructing Contractor to Temporarily Remove and Re-Use Existing Fill

There were three categories of information included in the contract drawings which are relevant to Magnus's expectation that existing fill was suitable as embankment foundation and was also suitable, once removed to accommodate the slurry wall workpads, for re-use as added embankment fill. The first type of relevant information is an instruction regarding levee construction included on two "typical sections" explaining how the levee should be restored. These typical sections are "Typical Section with Slurry Trench" and "Typical Section with Riprap Protection (Riverside)." JX 109, at 36. The notes included on these two explanatory drawings are the only references to "existing embankment" in this section of the solicitation.

The notes are virtually identical and state that "extg. embankment to be temporarily removed for construction of [slurry trench/riprap] and recompacted to 95% relative compaction per ASTM D698." JX 109, at 36. Magnus interpreted these notes to indicate that the existing fill on the levee was suitable for re-use as added embankment fill and was also suitable as embankment foundation. According the text of these notes their plain meaning, the notes indicate that

existing fill would be suitable for re-use on the levee. Unless these notes were directly contradicted by other information contained in the solicitation, the court views Magnus's interpretation of these notes to be the only rational interpretation. Even the government's expert agreed that, in isolation, these notes could be read to indicate that existing fill could be re-used on the levee. Wooten Tr. at 1979.

Defendant argues that these notes cannot be read in isolation, and the court agrees. However the court disagrees with the government that these notes are contradicted by other information included in the contract, such as the Raba-Kistner Report or the soil criteria specifications, discussed *supra*. Magnus correctly interpreted the contract as a whole and reasonably concluded that existing fill could function both as embankment foundation and as added embankment fill after it had been temporarily removed for slurry wall construction.

The government also attempts to neutralize these two notes included on the contract drawings by relying on the contract's order of precedence clause, which states that in case of conflict between the specifications and the drawings, the specifications "shall govern." Def.'s Br. at 46 (citing FAR 52.236-21, Alt 1); Def.'s Reply at 4-5. However, as the court noted *supra*, nothing in the soil characteristics specifications warned against the re-use of existing fill or contradicted these notes on the contract drawings. Nor did the soil criteria in the specifications contradict Magnus's assumptions regarding the re-use of existing fill. Because there was no contradiction between the specifications and drawings, there is no basis to apply the order of precedence clause cited by defendant.

Defendant, in yet another challenge to these two notes, argues that two specific statements in the contract specifications relevant to embankment foundation undermine Magnus's reliance on these notes and Magnus's assumption that existing fill was suitable as embankment foundation. Def.'s Br. at 45-46; Def.'s Reply at 4. The first statement in the specifications relied upon by the government required Magnus to obtain approval before placing embankment fill on the embankment foundation:

> Fill shall not be placed on the embankment foundation until the area to receive the fill has been inspected and compliance-confirmed by the [Contracting Officer's

> Representative].

JX 23, at 220. The government's argument, however, takes this statement out of context in an attempt to discern a warning therein that existing fill was not generally suitable for the embankment foundation. The argument is not persuasive when the specifications are examined more closely.

The title of the cited paragraph in the specifications is "Surface Preparation for Fill Placement." *Id.* The paragraph includes references to the task of "clearing and grubbing" the levee, which, as noted *supra*, removes plant and other non-soil materials from the levee. The next paragraph in the specifications discusses moisture-treatment and compaction of the embankment foundation. *Id.* Yet another neighboring paragraph discusses the benching of the levee, which was subject to height and width requirements for the stair-step bench line. *Id.*; *see also* JX 109, at 36-37. All of these aspects of "Surface Preparation for Fill Placement" were appropriate to have been "compliance-confirmed" by Mr. Moore in his inspection of the embankment foundation. The "Surface Preparation for Fill Placement" paragraph gave no notice to Magnus, however, that the requirement for "compliance" confirmation meant that existing fill was not generally suitable as embankment foundation. The government's suggested inference from the "compliance-confirmed" language in the solicitation is unwarranted.

The government also relies on a second statement in the specifications which noted that unsatisfactory materials should be removed from the embankment foundation:

> Removal of Unsatisfactory Materials. Prior to placement of fill, materials within the surface to receive fill that do not meet the material requirements as specified herein or have been subjected to conditions such as saturating rain or freeze conditions, shall be removed prior to placement of fill.

JX 23, at 220. The reference in this paragraph to "material requirements as specified herein" is not specific enough to be easily deciphered. As a general matter, the specifications did not require Magnus to perform soil classification tests on the existing fill in the levee. *See supra* note 39.

According to Magnus's quality assurance officer, who was required to monitor soil classification testing during levee restoration, soil testing of the embankment foundation was not required, generally, by the contract specifications. Clark Tr. at 1807-11 (citing JX 23, at 225). This is indeed a reasonable interpretation of the following statement in the "Materials Testing/Classification Testing" portion of the specifications:

> Soil classification tests shall be performed on foundation material as required to determine the acceptability of the in situ soils. Additional tests shall be required if noticeable changes in the material are observed.

JX 23, at 225. The specifications indicate that the embankment foundation could be tested for "acceptability," although the "material requirements" of acceptability remain rather vague and undefined. *Id.* at 220, 225.

Thus, for the bidders responding to this solicitation, any removal requirement addressing unsatisfactory materials remained hazy and vague, although the solicitation did provide specific examples of unsatisfactory rain-saturated or frozen materials that should be removed from the embankment foundation. *See* Sills Tr. at 2547-48 (noting that the statement regarding "unsatisfactory materials" was confusing, but that construction specifications addressing rain-soaked or frozen materials were not uncommon). The court cannot accept defendant's inference that this general and vague requirement that unsatisfactory materials be removed from the embankment foundation was a specific warning that existing fill could not generally be used as embankment foundation.

Having considered the specifications which defendant proffers as conflicting contract terms that should defeat the notes on the contract drawings, the court finds that the notes on the drawings are not at all in conflict with the specifications. The specific instruction to temporarily remove and re-use existing fill is a clear instruction to bidders. Further, that instruction fully supports Magnus's expectation that existing fill was suitable as embankment foundation and, when removed to construct the slurry wall workpads, as added embankment fill.

b. Untouched Levee Sections Indicated that Existing Fill Was Adequate Levee Material

There is no dispute that the contract drawings included in the solicitation indicated that a significant number of the sections of the existing levee required no restoration work at all. Wooten Tr. at 2234; Sills Tr. at 2446-47. Mr. Sills explained that if a designer of a levee restoration project leaves levee sections "untouched," that is indicative that the existing levee in the untouched sections of the levee is made up of good levee material. Sills Tr. at 2405. If that were not the case, leaving those sections untouched would be akin to leaving a "screen door" in the levee that would let water through. *Id.*

Once a bidder had seen that a significant portion of the levee required no work, that bidder would assume that most of the existing fill in the levee was satisfactory, because this levee system was largely composed of consistent fill material. *Id.* at 2445-47. Thus, in the court's view, the contract drawings, which left significant portions of the levee untouched, included information that supported Magnus's expectation that existing fill was appropriate as embankment foundation and was also appropriate for re-use as added embankment fill once it had been temporarily removed to accommodate the slurry wall workpads. The court concludes that Magnus's reliance on the contract drawings and on the 120,000 CY estimate for embankment fill in the preparation of its bid for the levee restoration project was reasonable.

c. Undefined Existing Fill Replacement Quantities Could Not Be Included in a Rational Competitive Bid

As a final note in this regard, the court observes that the contract drawings indicated that the contractor would *restore* the existing levee, not *replace* the existing levee. As Mr. Sallas, Magnus's regional manager, stated:

> We were not replacing the levee. We were just armoring each side of the levee, on the land side, flood side, or where we've got a levee breach.

Sallas Tr. at 1606. Total replacement of the levee would have been an entirely different project, different both in scope and techniques.

To submit a rational bid for this levee *restoration* project, the bidder had to make an assumption as to the suitability of the existing fill as embankment foundation, and for re-use as added embankment fill where it would be temporarily removed to construct the slurry walls. Nothing in the contract drawings suggested that the bidder should expect existing fill to be inappropriate for either of these uses. Indeed, the exact opposite is true.

The government suggests that Magnus should not have expected that the existing fill was appropriate material: "contractors [were] on notice that not all existing soils could be reused." Def.'s Reply at 8. Assuming, *arguendo*, that a reasonable bidder would have gleaned such a "notice" from the solicitation, what proportion of the existing fill on the levee would need to be replaced by imported embankment fill – all, most, half, almost none? The bidding process would then devolve into an irrational guessing game with no relationship to the actual work required to restore the levee. As noted *supra*, the IBWC's solicitation had to contain some minimal level of accurate factual information so that bidders could submit rational bids. Sills Tr. at 2424-25. If the solicitation actually gave notice to bidders, as defendant argues here, that the existing fill on the levee was inappropriate for re-use to an indeterminate degree, such a notice would have seriously undermined the competitive bidding process.

The court concludes, instead, that bidders, having reviewed the contract drawings, were right to assume that the existing fill on the levee was not a component of the quantity of embankment fill that should be included in their bids, as would be the case if they were replacing the entire levee. Magnus reasonably assumed that its imported embankment fill quantities need not include an inflated amount of fill to account for the replacement of existing fill on the levee. The government's argument in this regard must be rejected.

6. No Reliance on Patent Defects in the Plans and Specifications

The government argues, in a footnote, that any defects in the solicitation's plans and specifications were patent, preventing recovery for plaintiff on Magnus's embankment fill claim under a defective plans and specifications

theory.[40] Def.'s Br. at 48 n.17. Although defendant cites appropriate precedent for its argument, *E.L. Hamm*, 379 F.3d at 1339, the facts of this case do not include patently defective plans and specifications which were relied upon by Magnus in its assumptions as to the re-use of existing fill or the suitability of existing fill as embankment foundation. Both Magnus's reliance on the specifications highlighted by the government, and the obviousness of the defects in those specifications, are questions of fact that must be resolved in plaintiff's favor.

The government points to a particular inconsistency in the soil characteristics specifications in the solicitation, and argues that this was an obvious inconsistency triggering a duty to inquire on the part of Magnus. Def.'s Br. at 48 n.17. Both parties' experts testified as to this particular inconsistency, which relates to a soil type known as "clayey sand" or "SC." Wooten Tr. at 1921, 2139, 2160-61; Sills Tr. at 2414-15, 2526. The inconsistency is that the contract's "Fill Materials" specification allows SC as imported embankment fill but the "Testing Frequencies" specification does not allow SC as imported embankment fill. JX 23, at 114, 215.

If this case were predicated on the insistence of the IBWC that *imported embankment fill* meet the stricter "Testing Frequencies" specification, and Magnus contended that it had relied on the "Fill Materials" specification to include SC in the *imported embankment fill* portion of its fixed-price bid, the government would have a colorable argument that Magnus had a duty to inquiry about the inconsistent specifications.[41] But that is not the question here. Magnus had to

---

[40]/ According to the trial record, the specifications, drawings and plans set forth in the solicitation that are pertinent to defendant's "patent defect" argument are identical to those set forth in the contract. The court therefore uses the terms contract and solicitation interchangeably in this section of the opinion. *See* JX 1, JX 23, JX 109.

[41]/ There are a number of evidentiary questions that would need to be resolved to determine whether this particular inconsistency in the specifications was "obvious" to a reasonable bidder as it developed the imported embankment fill portion of its bid. *See E.L. Hamm*, 379 F.3d at 1341-43 (reviewing evidence to determine whether the defect in a defective specification was patent or latent); *Newsom v. United States*, 676 F.2d 647, 650 (Ct. Cl. 1982) (noting that patent and latent defects can only be distinguished by "a case-by-case judgment based upon an objective standard") (footnote omitted). The footnote in the government's brief is

(continued...)

make an assumption as to the re-use of existing fill as added embankment fill at the slurry walls and as embankment foundation throughout the levee. The court must determine, first, whether Magnus relied upon the conflicting specifications regarding SC, applicable in the context of imported embankment fill, as a basis for its assumptions about existing fill. *See E.L. Hamm*, 379 F.3d at 1339 (stating that a defective plans and specifications claim cannot proceed if an obvious inconsistency in the contract documents made *reliance* on the *misleading* defect unreasonable). If Magnus did not rely on the defective and potentially misleading specifications discussing SC (in imported embankment fill) as Magnus made assumptions about existing fill in its bid, the question of whether the defect was patent, not latent, does not arise.

On the subject of reliance, the court concludes that this particular defect in the specifications regarding the use of SC as imported embankment fill was not the root of Magnus being misled as to existing fill suitability. There was no evidence presented at trial which showed that Magnus relied upon the "Fill Materials" and "Testing Frequencies" specifications in making assumptions as to existing fill. Instead, Magnus primarily relied on the notes on the contract drawings and the answers to bidder questions in making the assumption that existing fill could be re-used in the slurry wall construction areas and would also be suitable as embankment foundation. Owaidat Tr. at 83-86, 102, 114-15. Further, Mr. Owaidat, who had extensive experience in slurry wall construction, testified that temporarily removing and re-using existing fill in slurry wall construction areas is a standard procedure in the industry. *Id.* at 86.

For Magnus's specific assumption that the existing fill was suitable as embankment foundation, Magnus also relied on the specifications and contract drawings that focused on the benching scheme and the preparation of the embankment foundation to receive imported embankment fill. Owaidat Tr. at 78, 91-92, 100, 102-03, 110, 123. There was no evidence presented at trial that Magnus relied in any way on the mention of SC in either the "Fill Materials" or "Testing Frequencies" specifications for its assumption that existing fill would be appropriate as embankment foundation. In the court's view, the "Fill Materials"

---

[41](...continued)
too cursory to address the evidentiary questions that would determine whether this defect in the contract specifications was latent or patent.

and "Testing Frequencies" specifications on the subject of clayey sands were not shown to have been relied upon by Magnus for its assumptions as to the suitability of existing fill. Thus, the inconsistency in these specifications is not pertinent to and cannot be used to defeat Magnus's defective plans and specifications claim for cost overruns in embankment fill.

Even if these inconsistent specifications as to the use of clayey sand for imported embankment fill had been relied upon by Magnus in making assumptions as to the suitability of existing fill on the levee, a premise entirely unsupported by the trial record, the defect in these specifications was not obvious to a bidder making assumptions as to the suitability of existing fill. Obvious or patent defects are characterized by facial discrepancies that a bidder noticed or should have noticed. *See E.L. Hamm*, 379 F.3d at 1341 (noting that a court must determine whether the plaintiff "was aware of or should have been aware of the defect such that it is not entitled to recover an equitable adjustment") (footnote omitted). A discrepancy that is not "glaring or obvious" is latent and does not prevent recovery on a defective plans and specifications theory. *Id.* at 1342. Discrepancies that are hidden and not discoverable upon "facial inspection" are latent, not obvious. *See id.* (agreeing with the plaintiff's argument "that a facial inspection of the . . . figures in the solicitation does not reveal any glaring or obvious discrepancy"). Nonetheless, a bidder must exercise "'reasonable and customary care'" when reading a solicitation to recognize significant, obvious defects. *Per Aarsleff A/S v. United States*, 829 F.3d 1303, 1312 (Fed. Cir. 2016) (quoting *Analytical & Research Tech., Inc. v. United States*, 39 Fed. Cl. 34, 46 (1997)).

Under this standard, the discrepancy as to clayey sand for imported embankment fill was a latent defect. The court notes, first, that the specifications in question are not applicable to existing fill. Magnus and the other bidders would not necessarily have scoured the detailed specifications related to *imported embankment fill* in the two weeks allotted to them before bids were due to buttress their assumptions as to the suitability of *existing fill*. That level of scrutiny of the specifications that are not applicable to existing fill would not be reasonable when the bidders' task was to review the solicitation as a whole and the statements therein that *were* relevant to existing fill.

Even if the bidders had pored through the imported embankment fill specifications to assist in making assumptions as to the suitability of existing fill,

recognizing the defect pointed out by the government required several analytical steps. It is not simply a matter of spotting SC on one list in "Fill Materials" and the absence of SC on another, adjoining list in "Testing Frequencies." One must recognize, first, that the phrase "50% passing the #200 sieve" is a test result that excludes, in most instances, clayey sands.[42] JX 23, at 114.

The bidder then would have to compare this negative information regarding SC with the acceptability of SC in the "Fill Materials" specification. JX 23, at 215. The "Fills Materials" specification is located one hundred pages after the "Testing Frequencies" specification in the 281-page document. According to Mr. Sills, a bidder would rely on the "Fill Materials" specification to understand what materials could be added to the levee, and the "Testing Frequencies" specification to estimate the costs of testing procedures. Sills Tr. at 2412-13. Thus, to recognize this defect in the criteria for imported embankment fill, the bidder would need to cross-reference two largely unrelated topics in the specifications and determine that these specifications were in conflict. The bidder would also need to decide that the conflict was irreconcilable *and* applicable to assumptions about the suitability of existing fill.

There were two different scenarios presented at trial showing how a bidder might reconcile the discrepancies in the imported embankment fill specifications related to the use of clayey sand, if they were noticed at all. Mr. Sills, plaintiff's expert, implied that as a practical matter contractors would have assumed that the levee could be built using these specifications because the existing levee's soil types were consistent with levee construction practice. Sills Tr. at 2416. Mr. Wooten, the government's expert, stated that a bidder recognizing the conflict between the "Fill Materials" and "Testing Frequencies" specifications would assume that the stricter specification controls.[43] Wooten Tr. at 1924-25. Thus, there is some doubt that a bidder confronted with the discrepancy regarding the

---

[42]/ Both experts agreed that failing soil test results could be remedied in some instances by blending soils. Wooten Tr. at 1965; Sills Tr. at 2553-54. Thus, if a pocket of clayey sand was found in a large band of clay, the soils blended together could satisfy the sieve test in the "Testing Frequencies" specification.

[43]/ Indeed, when a similar discrepancy between the "Fill Materials" and "Testing Frequencies" specifications was pointed out by Magnus during contract performance, the IBWC directed Magnus to comply with the stricter specification. JX 89, at 1.

use of SC would necessarily have considered the discrepancy to be of enough significance to constitute a defect that would affect either its bid or contract performance.

In sum, given the analytical effort required to discern this particular defect in the solicitation, particularly in light of the time constraints, the inconsistency regarding SC was a hidden defect that would not be discovered upon facial inspection or through reasonable and customary care. Nor were the conflicting *imported embankment fill* specifications addressing the use of clayey sands of obvious relevance to Magnus's assumptions as to the suitability of *existing fill* on the levee. Because the contract contained only a latent, not patent, defect as to the use of SC in imported embankment fill, that defect does not foreclose recovery on a defective plans and specifications theory for Magnus's embankment fill claim.

E. Slurry Wall Construction

As the court's analysis of the misleading information in the solicitation established, Magnus reasonably relied on the solicitation for its assumption that the embankment fill quantities in its bid would not need to include imported embankment fill to replace the existing fill quantities removed to accommodate the slurry wall workpads. At trial, unrefuted testimony proved that Magnus's bid was founded on this assumption. Owaidat Tr. at 83-87; Douglas Tr. at 401-02. The court concludes that Magnus was misled by the solicitation's inaccurate plans and specifications and reasonably relied on these defective documents. *See E.L. Hamm*, 379 F.3d at 1339 (requiring that a contractor show that it was misled by a defect in contract documents and reasonably relied on the defect in preparing its bid).

Further, despite the government's argument to the contrary, Magnus's reliance on the defects in the solicitation documents was reasonable because the defects were not patent. *See id.* (sanctioning recovery under a defective plans and specifications theory only for latent, not patent, defects). Thus, Magnus will prevail on this portion of its embankment fill claim unless some other aspect of Magnus's approach to existing fill replacement at the slurry walls was unreasonable. *See, e.g.*, *Essex Electro Eng'rs, Inc. v. Danzig*, 224 F.3d 1283, 1289 (Fed. Cir. 2000) ("When the government provides a contractor with defective specifications, the government is deemed to have breached the implied warranty

that satisfactory contract performance will result from adherence to the specifications, and the contractor is entitled to recover all of the costs *proximately* flowing from the breach.") (emphasis added) (citations omitted); *USA Petroleum Corp. v. United States*, 821 F.2d 622, 627 (Fed. Cir. 1987) (stating that "the government may not deny responsibility for its own error in contracting where the contractor acts *reasonably* and complies completely with the terms of the contract") (emphasis added) (citation omitted); *Int'l Elecs. Corp. v. United States*, 646 F.2d 496, 510 (Ct. Cl. 1981) (stating, in the context of delay excused by the fault of the government, that a plaintiff "must further prove that it took *reasonable* action to perform the contract notwithstanding the occurrence of such excuse") (emphasis added) (citation omitted). As described below, there was nothing unreasonable in the methods employed by Magnus when it replaced existing fill at the slurry wall construction areas.

1. Reasonable Amount of Excavation of Existing Fill

The government argues that Magnus excavated too much existing fill to accommodate the slurry wall workpads, and that this error on the part of Magnus contributed, to a great extent, to its cost overruns for embankment fill in the slurry wall construction areas. *See* Def.'s Mot. at 12 (citing "over-excavation" at the slurry walls as a "self-inflicted soils management problem[] on the project that significantly, if not wholly, accounted for the quantity overruns that are the subject of the pending complaint"). The government relies almost exclusively on the testimony of Mr. Frank Duran and Mr. Matthew Moore, the IBWC's representatives who monitored the levee project, for this argument.[44] The court notes, first, that as a general matter Mr. Duran and Mr. Moore were two of the least credible witnesses who testified at trial.

---

[44]/ Defendant also relies on a contract specification which states that a "larger" slurry wall workpad could be constructed, Def.'s Mot. at 13, if approved by the IBWC, but that this contract modification would be at no additional cost to the government. *See* JX 23, at 176 (addressing the scenario where the contractor might seek permission to create a "wider working surface" than the "working surface . . . shown on the drawings"). This argument has no merit because it was proven at trial that there was *no* representation of the prescribed width of the slurry wall workpad shown on the contract drawings; the solicitation thus provided no "standard" workpad to which a "wider" workpad could be compared. Owaidat Tr. at 276-77; Louviere Tr. at 1757-59; JX 109, at 36. For this reason, the contract specification relied upon by defendant has no relevance to the width of the workpad constructed by Magnus.

Mr. Duran and Mr. Moore also had absolutely no experience in slurry wall construction when they began this levee project. Duran Tr. at 1074-75; Moore Tr. at 1386. In light of this fact, their opinion that Magnus was creating too wide a slurry wall workpad is of limited persuasiveness.[45] There were also significant factual inconsistencies in the testimony provided by Mr. Duran and Mr. Moore that detract from the credibility of their account of the workpad excavation. The biggest discrepancy is that, over the course of three slurry wall excavations, Mr. Moore saw the workpads getting wider, whereas Mr. Duran saw the workpads getting narrower. Duran Tr. at 943-45; Moore Tr. at 1300-01. Mr. Duran and Mr. Moore also provided differing estimates of the extent of alleged "over-excavation" that occurred in the slurry wall areas. Duran Tr. at 943-44; Moore Tr. at 1300-01. Due to these discrepancies in testimony and these two witnesses' lack of slurry wall construction experience, the court finds that there is scant evidence that Magnus over-excavated the levee to create its slurry wall workpads.

Mr. Owaidat explained why Mr. Duran's opinions as to the proper width of a slurry wall workpad were erroneous. Owaidat Tr. at 2351-56. Mr. Owaidat's testimony concerning the width and length of the earth-moving equipment, the need for room to maneuver that equipment, and the need for room to store materials that would be used during slurry wall construction was very persuasive. Mr. Owaidat testified that the excavation that occurred on the levee at the slurry wall locations began at the riverside edge of the flat surface of the top of the levee, straight down to ground level. Owaidat Tr. at 2354. This is the same excavation observed by Mr. Duran. Duran Tr. at 943-44. Mr. Owaidat testified that this amount of excavation was necessary for slurry wall construction at this levee and at others. Owaidat Tr. at 2356.

In sum, the court found Mr. Owaidat's testimony regarding the excavation of the levee at the slurry wall locations to be more persuasive than that of Mr. Duran or Mr. Moore. His opinion that Magnus excavated the proper amount of existing fill from these locations persuades the court that Magnus did not contribute to its embankment fill cost overruns by over-excavating the levee at these locations. The court finds that Magnus was reasonable in its excavation

---

[45]/ Mr. Duran testified that when he and Mr. Moore questioned Magnus's project foreman as to the extent of the slurry wall workpad excavation, that foreman "wasn't too happy with us questioning his authority or his expertise." Duran Tr. at 944-45.

practices at the slurry walls. Thus, no unreasonable over-excavation by Magnus absolves the IBWC of its responsibility for the misleading defects in the solicitation's plans and specifications as to the re-use of existing fill in the levee slope at the slurry walls.

2. Reasonable Handling of Excavated Existing Fill

The government argues, in a footnote, that Magnus's handling of existing fill that was excavated from the levee led to the possible "introduc[tion of] contaminants" and the "wasting of soils." Def.'s Mot. at 17 n.5. This cursory argument is both highly speculative and grounded solely in the testimony of Mr. Duran and Mr. Moore.[46] The court does not find that a preponderance of the evidence shows that Magnus's handling of the excavated existing fill at the slurry walls was unreasonable due to vague allegations that the existing fill might have been "contaminated" by bentonite.

According to Mr. Owaidat, the existing soil excavated from the levee slope was temporarily stockpiled in the slurry wall workpad area until the slurry wall in question was completed. Owaidat Tr. at 83, 86. The existing fill in these areas absorbed some bentonite that was used in the slurry wall construction process. *Id.* at 85-86. Although bentonite is a clay powder and not inappropriate in levee embankment fill, Mr. Moore directed Magnus not to use the existing fill containing an admixture of bentonite and to remove such existing fill from the levee. *Id.*

Mr. Moore's account of these facts is similar. "[The] existing levee that had been excavated and stockpiled became mixed with material that was used for slurry walls which included bentonite product, bentonite clay product." Moore Tr. at 1312. He testified that a lot of the "material taken from the levee" to be disposed of elsewhere was "material . . . mixed with slurry material." *Id.* at 1313-14. Thus, the evidence at trial strongly supports Magnus's assertion that Mr. Moore directed Magnus to waste the existing soil at the slurry wall construction locations that contained some measure of bentonite.

---

[46]/ Mr. Duran's testimony cited by defendant contains no reference to slurry wall construction, and does not appear to have relevance to this portion of Magnus's embankment fill claim. Duran Tr. at 946-47.

The only question, then, is whether bentonite was an unacceptable contaminant for the existing fill stockpiled in the slurry wall workpad areas. Mr. Moore apparently believed that it was. *See* Moore Tr. at 1314-15 (stating that he believed that existing fill mixed with bentonite failed soil testing requirements for embankment fill added to the levee). Mr. Moore acknowledged that bentonite is a clay. *Id.* at 1391. There is no dispute that the embankment fill specifications for this levee called for "clay embankment" and "clay soils." JX 23, at 114, 215. Mr. Moore did not necessarily view bentonite as a contaminant in the environmental sense, just in the sense that it might have converted existing fill from re-usable fill that met specifications, to useless fill that would not meet specifications. *Id.* at 1392-93.

Mr. Moore did not point to any evidence that existing fill stockpiled in the slurry wall workpad areas failed soil tests once it had acquired some bentonite, or to evidence that showed that this existing fill passed soil tests before it became mixed with bentonite. Indeed, like most of Mr. Moore's testimony, his recollection was neither clear nor specific. Expert testimony reflected that bentonite is not an improper material in embankment fill *per se*, and indeed can be used to improve fill so that it would pass the soil tests used for embankment fill on this levee. Wooten Tr. at 2016. Mr. Owaidat testified that bentonite, in his experience, can be used to improve fill so that it will meet embankment fill specifications on levees. Owaidat Tr. at 2360. Mr. Owaidat also testified that bentonite use is extremely common in levee projects. *Id.* at 86, 2360.

The court concludes that Magnus's soil handling procedures in the slurry wall areas were not unreasonable. Bentonite did not pose an undue risk of contamination for the existing fill stockpiled in the slurry wall workpad areas. There is no persuasive or credible evidence that the existing fill was rendered unsuitable by the admixture of bentonite. Based on a preponderance of the evidence, Magnus's soil handling procedures in slurry wall construction were reasonable. Thus, the IBWC is not absolved of its responsibility for the misleading defects in the solicitation's plans and specifications which supported Magnus's assumptions as to the re-use of existing fill in the levee slope at the slurry wall locations. This portion of Magnus's embankment fill claim has satisfied all of the elements of a defective plans and specifications claim. *E.L. Hamm*, 379 F.3d at 1339.

F. Matrix Negotiations and Embankment Fill Contract Modifications

Once work on the levee had begun the parties entered into negotiations to modify the contract work based on an accurate survey of the current state of the existing levee. In the matrix document, the IBWC solicited a cost proposal from Magnus for the placement of an additional amount of embankment fill that would be required to complete the levee restoration project. JX 6. Once these negotiations were completed and the parties entered into Modifications 001 and 002, $2,372,933 had been added to the contract for the placement of additional embankment fill and related levee restoration work.[47] JX 4; JX 108.

These negotiations and contract modifications must be reviewed to determine whether the matrix negotiation process had an impact on Magnus's obligations under the original contract to bench the levee. In addition, the court must determine whether the matrix negotiations and Modifications 001 and 002 affected, or should have affected, Magnus's assumptions as to the suitability of existing fill to serve as embankment foundation. For the reasons stated below, the matrix negotiations and Modifications 001 and 002 did not change the nature of the benching responsibilities set forth in the contract and had no impact on Magnus's assumptions as to the suitability of existing fill as embankment foundation. Indeed, as the government recognizes, Modifications 001 and 002 contained *no change* to the nature of the benching responsibilities established in the original contract. *See* Def.'s Reply at 10 (stating that the "bilaterally executed contract modifications [required the] placement of compact fill . . . [and] the execution of Magnus' established duties under the contract").

The expansion of embankment fill work established by Modifications 001 and 002 was merely the application of established benching procedures to additional sections of the levee which would require imported embankment fill. Pl.'s Br. at 34-35. The additional embankment fill work encompassed in the

---

[47]/ The matrix did not address slurry wall construction. Although no useful chronology of the levee project was ever established by the parties, it appears that slurry wall construction proceeded concurrently with the matrix negotiations. *See* Moore Tr. at 1286-87 (expressing his belief that the slurry walls were completed at about the time Modifications 001 and 002 were agreed to by the parties).

matrix and Modifications 001 and 002 was necessary because the levee design inaccurately described the amount of work needed to complete the levee's restoration:

> [T]he Matrix Document expanded the applicability of Cross-Sections 2 and 3 to additional stretches of the Lower Reach Levee. Specifically, the Matrix Document identified a larger group of stations whose "right slope" was to be repaired "as prescribed within Details No. 1, 2, and 3 on Sheet 36," and listed those stretches on a station-by-station basis. Based on the stations identified by the []IBWC in the Matrix Document, Magnus Pacific applied Cross-Sections 2 and 3 from the Design Drawings in order to develop cross-sections from which the quantities needed to perform the work required by [the] Matrix Document could be derived.
>
> In its aforementioned June 8, 2011 response to the Matrix Document, Magnus Pacific proposed the introduction of additional quantities of embankment fill to address the stations identified in the Matrix Document.

Id. (citations omitted). Thus, nothing in the matrix negotiation process altered the basic framework for benching and the placement of additional fill on the levee. The matrix and Modifications 001 and 002 did not change Magnus's obligations under the contract to bench the levee and to add imported embankment fill to the levee, other than to extend those obligations to additional sections of the levee. Owaidat Tr. at 104-05.

As for Magnus's assumption regarding the suitability of existing fill as embankment foundation, there is no evidence that the IBWC questioned or challenged that assumption during the matrix negotiations. As was the case with riprap, the IBWC inquired, somewhat generally, as to how Magnus would address "additional quantities" of embankment fill:

> How will additional materials be addressed? Import vs reuse of existing material on site that meets project

> specifications.

JX 11, at 1. Magnus responded quite clearly that it expected existing fill to be suitable for the levee restoration work, and in particular for re-use as embankment fill:

> Additional embankment materials are addressed in the unit pricing provided to the []IBWC, as the levee is being constructed using the prescribed benching methodology. Our current assumption is that the existing levee meets the project requirements for embankment fill. Should this material not be suitable for embankment it would have to be removed from the site or blended with suitable materials to meet the embankment criteria or revised acceptable standards.
> . . . .
> Please note that the above-noted quantities [in our cost proposal] do not include any levee excavated material that does not meet the specifications for embankment fill.

JX 12, at 3. The IBWC never responded to Magnus's assumption as to "existing levee" materials, and simply issued Modifications 001 and 002 at the price requested by Magnus.

In the court's view, although Magnus did not explicitly state that it assumed that the existing fill would be satisfactory as *embankment foundation*, that assumption is obviously implicit in its communication to the IBWC. If existing fill was assumed by Magnus to be re-usable as added embankment fill, it would also be satisfactory as the foundation upon which such added embankment fill would rest, a purpose for which the solicitation contained no soil test requirements. Thus, nothing in the matrix negotiations shows that Magnus's assumption as to the suitability of existing fill as embankment foundation would have been called into question. For these reasons, the court finds that the matrix and Modifications 001 and 002 had no impact on either Magnus's benching responsibilities under the contract or its assumptions as to the suitability of existing fill as embankment foundation.

G. Cost Overruns Due to a Deeper Benching of the Levee

Turning now to the evidence of cost overruns in embankment fill due to a deeper benching of the levee than Magnus expected, there are three principal issues of fact to be resolved. First, did Magnus prove that the actual benching degrade of the levee was below the level contemplated in the solicitation? Second, was Magnus's degrade of the benching line reasonable? Third, does the amount of clearing and grubbing of the levee's surface invalidate some of Magnus's claim for cost overruns in embankment fill? The court addresses these topics in turn.

1. Benching of Levee Lower than Expected

According to Magnus's president, Mr. Owaidat, the solicitation documents led Magnus, and any other reasonable levee contractor, to believe that benching of the levee would begin at the surface of the existing levee, not below that level. Owaidat Tr. at 252-61; *see also* Moore Tr. at 1317-18 (stating that benching begins at the surface by cutting steps into the levee). The existing surface of the levee, the "before" picture, was established by a survey required by the matrix and Modification 001. JX 4, at 4-5; Douglas Tr. at 387, 431. The degrade line, what might be described as the "ready to begin benching line," was established, in part, by a degrade survey, from STAs 170 to 240, and elsewhere by extrapolation from the survey readings near the end-points of the degrade survey. Douglas Tr. at 384, 422-27. The degrade line was below the existing levee's surface by a distance that ranged, on average, from 9.6 to 11.4 inches. *Id.* at 384-85, 422-27; JX 2, at 152. In the court's view, the best data available at trial showed that the actual benching line of the levee was indeed lower than the benching line that was reasonably anticipated in the solicitation.

The government acknowledges that Magnus degraded the levee to some extent to begin benching. *See* Def.'s Reply at 20 (stating that "the surveyed portion of the degraded levee showed significant variance in degrade depth"). Mr. Moore testified that he directed Magnus to remove existing fill in two areas of the levee. Moore Tr. at 1231-32. Mr. Clark confirmed that the degrade of the levee occurred prior to benching. Clark Tr. at 1781-82. The preponderance of the evidence shows that the levee was degraded so that benching could occur, and that the benching of the levee occurred at a lower depth than a reasonable contractor

would have expected.

The government contends, nonetheless, that Magnus's assertions as to the actual depth of the degrade line are unreliable and that its stated quantity of cost overruns in embankment fill is therefore "grossly overstated." Def.'s Br. at 51. Defendant's principal concern is that the degrade line was only partially surveyed, with estimates dominating plaintiff's calculations as to the amount of unsuitable existing fill removed to establish the degrade line. *See id.* at 26 ("There is no way to assess whether the actual degrade depths were close to estimated degrade depths."). Although the government has a valid point that a full degrade survey would have been preferable for purposes of substantiating some of the quantities in plaintiff's embankment fill claim, the court cannot agree that the estimated degrade line, buttressed by the degrade survey and other information, as discussed *infra*, is insufficient proof for the imported embankment fill quantities related to the degrade of the levee that are set forth in Magnus's claim.[48]

Mr. Chris Douglas, a civil engineer, testified that he performed all of the calculations that provided the basis for the quantities reported in Magnus's embankment fill claim. Douglas Tr. at 377, 380, 384, 388-92, 397-98. His qualifications and experience for these tasks are very impressive. *Id.* at 365-66. At the time of trial, he had been performing these types of duties for over twenty years. *Id.* at 366. Mr. Douglas's description of the methodology he used to analyze raw data convinced the court that the figures in Magnus's embankment fill claim are reliable.[49]

Mr. Douglas specifically relied on two categories of information as a

---

[48]/ The outcome of this dispute might be different if the IBWC had attempted to investigate the embankment fill overruns and calculate its own estimate of the quantity of unsuitable existing fill removed from the levee. According to Mr. Sills, an agency confronted with a cost overruns claim of this nature will typically collect data to substantiate its position as to the claim. Sills Tr. at 2431, 2433-35, 2440-42. There is no evidence that the IBWC attempted to collect data on embankment fill overruns on this levee or produced any alternative estimates of the quantity of degraded levee material removed from the levee. *Id.* at 2442.

[49]/ Minor errors in the figures in the original embankment fill claim were conceded by plaintiff and rectified. The errors were not systemic errors, but errors produced by isolated instances of "double-counting" work that had been previously paid for in the contract. *See infra*.

foundation for his calculations as to the depth of the degrade line and the quantity of unsuitable existing fill removed from the levee due to the degrade of the levee before benching. He used the degrade survey and feedback from Magnus's field staff as to whether his estimates of degrade depths were accurate. Douglas Tr. at 423-25, 427; *see also* Owaidat Tr. at 305 (stating that Mr. Clark checked the degrade quantities developed by Mr. Douglas for accuracy). Mr. Douglas's testimony in this regard was credible, and his methodology was sufficiently rigorous to support the embankment fill cost overruns due to the degrade of the levee prior to benching. Magnus also performed a secondary calculation, based on the volumes of imported embankment fill removed from the borrow pits, to confirm that the volumes of imported embankment fill calculated by Mr. Douglas and included in Magnus's embankment fill claim were not excessive. Owaidat Tr. at 120; JX 2, at 2, 132-40. Magnus's proof in support of the quantities of embankment fill related to its degrade of the levee is adequately robust. The court therefore rejects the government's contention that Magnus's embankment fill claim was grossly overstated because of its reliance on both measured and estimated degrade depths.

2. Reasonable Degrade by Magnus

The government argues that Magnus "wasted" acceptable existing fill by rejecting that fill based on visual cues rather than by properly excluding truly unacceptable fill by means of a thorough soils testing program. Def.'s Br. at 15-17, 49-50. If Magnus had indeed degraded the levee in a manner that improperly rejected existing fill as embankment foundation and removed satisfactory existing fill, that would constitute unreasonable contract performance which would invalidate some portion of its defective plans and specifications claim for cost overruns in imported embankment fill. *See USA Petroleum*, 821 F.2d at 627 (stating that "the government may not deny responsibility for its own error in contracting where the contractor acts *reasonably* and complies completely with the terms of the contract") (emphasis added). Unfortunately for the government's position on this issue, a preponderance of the credible evidence at trial proves that Magnus was reasonable in its degrade of the levee during the benching process.

As a threshold matter, the court notes that there is an internal inconsistency in the government's position. It is true that in some cases Magnus rejected

existing fill as embankment foundation and removed existing fill based on Mr. Clark's visual observation of the material. Owaidat Tr. at 289. It is also true, however, that Mr. Moore, based on *his* visual observation of existing fill in the levee, stated that he believed that quite a lot of the existing fill was satisfactory as embankment foundation. Moore Tr. at 1324-25. The government insists that Magnus should not have relied on visual observation to determine that existing fill was unacceptable, but is perfectly willing to accept Mr. Moore's determination, based on his visual observation, that existing fill was satisfactory. Def.'s Br. at 17, 49-50. Either visual observation is sufficient for the approval or rejection of existing fill as embankment foundation, or it is not sufficient, but the government is not persuasive when it inconsistently rejects and accepts visual observation as a tool, depending upon who is looking at the existing levee material.

The court turns to the evidence of the actual degrade of the levee.[50] Trial testimony, described in more detail below, included widely divergent descriptions of how the degrade proceeded. In the court's opinion, Magnus's version of the degrade, *i.e.*, that most, but not all, of the degrade of unsuitable existing fill was directed by Mr. Moore, is more plausible and conforms with the most credible trial testimony. Defendant, on the other hand, attempts to paint a picture of a levee contractor that rashly degraded the levee with almost no direction to do so from Mr. Moore. To infer that an experienced levee contractor like Magnus would irrationally degrade most of the levee, without a substantial amount of direction from the IBWC, when benching typically starts at the surface of an existing levee, strains credulity. In the court's analysis of these disputed facts, direction from Mr. Moore, along with the presence of obviously unsuitable existing fill, was a far more credible cause of the lower benching of the levee than uncharacteristically irresponsible behavior by Magnus personnel.

All of the Magnus employees who testified as to the levee degrade emphasized the role of Mr. Moore and his directions that Magnus degrade the levee to remove unsuitable existing fill. Owaidat Tr. at 203-04, 289; Sallas Tr. at 1650; Clark Tr. at 1781-82. Mr. Moore testified that he only remembered isolated instances of such direction to remove existing fill to establish the embankment

---

[50]/ Although counsel also asked witnesses to comment on daily reports tracking restoration work on the levee, such testimony was largely inconclusive because of the cryptic nature of the short comments included within the tables in the daily reports.

foundation, in two or three areas on the levee where the existing fill was either too rocky or too silty. Moore Tr. at 1231-32, 1341-42, 1352-53. Mr. Moore conceded that his memory of such events had become "blurry" with the passage of time. *Id.* at 1353. Based on the more credible testimony provided by Magnus employees, Mr. Moore's direction to Magnus that existing fill be removed to establish the embankment foundation was largely responsible for the lower benching line.

In other instances, Magnus relied on visual observation of existing fill by Mr. Clark, not soils testing, to remove unsuitable material from the embankment foundation. Owaidat Tr. at 289; Moore Tr. at 1343; *see also* Clark Tr. at 1782 (stating that Magnus would excavate "a certain amount" of the existing fill before asking Mr. Moore if they should go deeper). Mr. Moore obviously believed that some existing fill could be rejected purely on visual observation, since he himself used visual observation as a tool for this purpose. Other IBWC witnesses confirmed that visual observation as to the suitability of existing fill was a reasonable practice, at least in some instances. Duran Tr. at 832; Nunez Tr. at 1125-26. The court sees nothing unreasonable in the fact that Magnus sometimes relied on visual observation to remove unsuitable existing fill from the embankment foundation.[51]

Having considered all of the trial testimony referenced in the parties' briefs and the remainder of the trial record, the court concludes that Magnus degraded the levee below the expected benching line based on directions given by Mr. Moore and on Mr. Clark's visual observation of unsuitable existing fill. In light of these facts, the degrade of the levee was reasonably performed by Magnus. The court finds that Magnus's defective plans and specifications claim for cost overruns is not wholly or in part invalid due to an unreasonably aggressive degrade of the levee or the removal of satisfactory existing fill on the levee.

3. Clearing and Grubbing Had No Significant Impact on the Embankment Fill Quantities in Magnus's Claim

[51]/ There were also some soil tests performed on existing fill by a Magnus subcontractor, Stevens Tr. at 1519-20, but the extent of Magnus's reliance on such soil tests for the degrade of the levee was never firmly established at trial. *Cf.* Owaidat Tr. at 289 (stating that both soil testing and visual observation were used to determine existing fill suitability, but not clarifying how soil tests were used in relation to the degrade of the levee for benching purposes).

The court turns to the last of the government's challenges to the portion of Magnus's embankment fill claim related to the unexpectedly low degrade of the benching line. According to defendant, a layer of soil removed during the clearing and grubbing of the levee is not accounted for in Mr. Douglas's calculations, thus rendering his estimated quantities of embankment fill invalid because they must be overstated. Def.'s Br. at 27-30; Def.'s Reply at 22. The only accurate premise in the government's argument is that Mr. Douglas did not adjust his calculations to account for a layer of soil removed for clearing and grubbing the levee. The allegedly unaccounted-for "layer" of soil, between 2 inches and 12 inches deep according to the government, is a highly speculative construct that is not supported by a preponderance of the evidence in the trial record. A preponderance of the evidence shows that the amount of soil removed from the levee because of clearing and grubbing was insignificant and, even if the amount of soil removed for clearing and grubbing could be considered at all significant, Mr. Douglas's volume calculations are fundamentally sound.

Plaintiff argues, and the photographs of the existing levee show, that the levee is in an "arid desert climate" region and harbored sparse vegetation. Pl.'s Reply at 18; JX 2, at 5-7, 9, 12, 14-15, 25, 29-30. Most of the witness testimony at trial suggested that there was very little to clear and grub from the levee in the manner of vegetation and roots. Moore Tr. at 1216, 1349; Sallas Tr. at 1640. *But see* Duran Tr. at 988 (asserting that there was "obviously an abundance of clearing and grubbing that needed to go on on this levee"). When asked to explain why he testified that there was "very little" to clear and grub from the levee, Mr. Moore stated that "there wasn't substantial vegetation on the levee." Moore Tr. at 1349. The sparse vegetation on the levee was "very shallow rooted" because there was no topsoil on the levee. Sallas Tr. at 1640. Clearing and grubbing on the Lower Presidio Levee primarily involved scraping and scratching the surface of the levee to rip out brush and minute trees, along with their shallow roots, as well as the removal of rocks and debris scattered on the surface of the levee. Duran Tr. at 985-86; Sallas Tr. at 1640-42; Clark Tr. at 1822-23.

The parties disagree as to the amount of soil that was removed from the levee when sparse vegetation, rocks and debris on the levee were stripped from the levee surface during clearing and grubbing. The government's lowest estimate is that at least two inches of soil were removed during clearing and grubbing. Def.'s Br. at 29. The "2 to 3 inches" estimate relied upon by defendant, however, is

founded on a misunderstanding of testimony that was actually referring to moving a surveying tool "2 to 3 inches" to either side to avoid surface trees or rocks when surveying the levee. Sallas Tr. at 1641. Thus, there is no trial evidence which supports the government's contention that "2 to 3 inches" of soil were removed where sparse vegetation and rocks were present on the surface of the levee.

The government's high estimate of the depth of soil removed during clearing and grubbing is twelve inches. Def.'s Br. at 29. That estimate, too, is founded on witness testimony, but in this instance the cited snippet of Mr. Clark's testimony does not support defendant's contention that a significant amount of soil was removed from the levee during clearing and grubbing. The exchange between government counsel and Mr. Clark proceeded briskly, with Mr. Clark cutting off government counsel to answer one question before the full question had been posed[52]:

> Q: Okay. Magnus had to clear and grub the entire levee; right?
> A: Yes.
> Q: And Magnus cleared and grubbed the entire levee. Was it roughly 6 inches, 12 inches?
> A: Six to 12.
> Q: Six to 12 inches throughout the entire surface of the levee –
> A: Yes.
> Q: – correct?
> A: Yes.

Clark Tr. at 1824.

---

[52]/ Mr. Clark was frequently quick on the trigger as a witness, sometimes cutting off questions, even from the bench, and he favored truncated answers which would often prompt clarifying questions so that the import of his testimony could be fully understood. Clark Tr. at 1790-93, 1795-1800, 1802, 1808, 1812, 1815, 1824, 1834-35, 1838, 1845. Mr. Clark also confessed to a hearing problem which may have affected his comprehension of some questions. *Id.* at 1823, 1842. Although much of Mr. Clark's testimony was clear, the line of cross-examination as to the dimension of clearing and grubbing on the levee produced no definitive understanding of Mr. Clark's insights into this topic.

It is unclear what Mr. Clark was referring to when he adopted government counsel's figures (six to twelve inches) as representative of clearing and grubbing on the levee. Plaintiff suggests that Mr. Clark was referring to organic material such as roots that are taken "'out of the soil.'" Pl.'s Reply at 19 (quoting Clark Tr. at 1822). Plaintiff argues, and the court agrees, that Mr. Clark distinguished between the removal of soil from the levee, *i.e.*, the activity which produces "degrade material," and the clearing and grubbing process, just seconds after his statement that the clearing and grubbing was "six to twelve inches." Clark Tr. at 1824-25. It is just as likely that Mr. Clark was referring to organic material pulled out of the levee, not soil, when he spoke of six to twelve inches of clearing and grubbing. *Cf.* JX 23, at 220 (contract specification) (requiring "clearing and grubbing" before the placement of imported embankment fill, and stating that "[i]f any tree or deep-rooted vegetation removal is required along the levee alignment, the entire root-ball shall be completely removed by the Contractor"); Duran Tr. at 985 (describing the clearing and grubbing on this levee as "scrap[ing] the surface on the levee trying to get off all the debris . . . , tumbleweeds or other kinds of bushes").

Other than the ambiguous statement from Mr. Clark which may or may not refer to a soil layer removed during clearing and grubbing, there is absolutely no support for the government's assertion that substantial amounts of soil were removed as part of the clearing and grubbing of the levee. The court finds that the preponderance of the evidence presented at trial shows that the amount of clearing and grubbing on the levee was minimal, and that the amount of soil removed from the levee during this process was not significant. On this record, there is no cause for an adjustment to Mr. Douglas's volume calculations for a soil layer removed during clearing and grubbing.

Another flaw in the government's 'clearing and grubbing layer of soil' argument is that much of that surface zone where debris, rocks, and roots would be found is more or less the same zone that was originally targeted for removal as benching material, the "triangles" of soil removed to create the stair-step bench line. Duran Tr. at 781-82 (stating that these triangles in the benching scheme could also be considered to be in the clearing and grubbing zone on the levee). Mr. Douglas excluded benching material from his volume calculations in support of Magnus's embankment fill claim. *See* Douglas Tr. at 393; JX 79. Thus, although Mr. Douglas did not account for a 'clearing and grubbing soil layer' in

his volume calculations, the omission in his calculations of benching material triangles accomplished a similar adjustment to the volumes of embankment fill in Magnus's claim.[53]

The court concludes that clearing and grubbing activity on the levee did not remove enough soil to render Magnus's embankment fill claim quantities invalid. In one final challenge to Magnus's embankment fill claim, the government briefly alleges that the survey taken along the surface of the levee to determine the actual contours of the levee must have been taken on top of existing riprap in some sections of the levee. Def.'s Br. at 30. According to Mr. Wooten, the government's expert, Mr. Douglas's degrade calculations must therefore be overstated because some amount of riprap, not existing fill, occupied the space that Magnus assumed was composed entirely of unsuitable embankment fill which was removed during the benching process. Wooten Tr. at 2090.

There was no persuasive evidence presented at trial that Mr. Douglas ignored the presence of riprap on the levee in any of his calculations. Indeed, Mr. Douglas was the person who calculated the quantities for Magnus's riprap claim, a task which required an in-depth knowledge of all of the riprap locations, existing and as-built, on the levee. Douglas Tr. at 366-73. Further, as support for Magnus's embankment fill claim, Mr. Douglas relied on the as-built cross-sections of the levee, which, as he noted in an email, he had annotated to show the sections of the completed levee armored with riprap. *Id.* at 394 (citing JX 67, at 1). In addition, although government counsel appears to have intended to inquire of Mr. Douglas as to existing riprap and its relationship to Mr. Douglas's calculations of the quantities of existing fill removed because of the degrade of the levee, the

---

[53]/ Mr. Owaidat testified that the benching material quantity in those triangles in the benching scheme was included in Magnus's estimate of the quantity of imported embankment fill that Magnus would place on the levee. Owaidat Tr. at 80, 101-02, 272-73. Magnus made this decision because the benching material was described in the IBWC's answers to bidder questions as probably unsuitable for re-use as embankment fill. *Id.* at 101-02, 114; JX 1, at 66. Thus, benching material triangles were accounted for by Magnus in its original bid and in its cost proposal in response to the matrix. *See* Owaidat Tr. at 78, 80, 92, 101-02, 113, 116-17; JX 1, at 2; JX 12, at 1-2. The volume of those benching material triangles, originally expected to be carved out at the surface of the levee but instead carved out at the degrade line, account for and generally offset any clearing and grubbing quantities of soil removed by Magnus in its preparation of the degrade of the levee.

specific question which would have explored that relationship was never asked. *See id.* at 430-31. Thus, there is no evidence that Mr. Douglas overstated embankment fill quantities related to the degrade of the levee by erroneously including existing riprap in the volume of unsuitable existing fill removed during the degrade of the levee.

As plaintiff argues, there is no factual foundation for the government's allegations of errors in Mr. Douglas's calculations. Pl.'s Reply at 18-20. Clearing and grubbing, and the presence of existing riprap on the levee when it was surveyed, do not invalidate the quantities of imported embankment fill in Magnus's embankment fill claim. The court summarizes its findings as to this claim in the next section of the opinion, and concludes its analysis by addressing the quantum of plaintiff's embankment fill claim.

4. Valid Defective Plans and Specifications Claim for Imported Embankment Fill to Replace Unsuitable Existing Fill During Benching of the Levee

As the court's analysis of the misleading information in the solicitation established, Magnus reasonably relied on the solicitation for its assumption that existing fill would be suitable as embankment foundation. At trial, unrefuted testimony proved that Magnus's initial bid was founded on this assumption. Owaidat Tr. at 257; Douglas Tr. at 401-02. In addition, Magnus reasonably relied on the solicitation, specifically the contract plans and the government's quantity estimates, to make assumptions as to the amount of imported embankment fill required to complete all of the embankment fill work on the levee. Owaidat Tr. at 52-53. Further, nothing in the matrix negotiations alerted Magnus to the fact that existing fill would have to be removed in order to bench the levee and would need to be replaced by imported fill.

The court finds that Magnus was misled by defects in the plans and specifications in the solicitation, which included, but were not limited to, defective survey information, defective design drawings and specifications, and the defective estimate of the amount of embankment fill that would need to be

imported to the site of the levee.[54] The latent defects in the solicitation misled Magnus into submitting an initial bid with insufficient embankment fill quantities, and a matrix-related embankment fill cost proposal with insufficient embankment fill quantities. In addition, the court has found that Magnus's benching of the levee was reasonable.

The court concludes that Magnus was misled by the solicitation's defective plans and specifications and it reasonably relied on these defective documents with respect to the use of existing fill as embankment foundation and the amount of imported fill required to complete the levee. *See E.L. Hamm*, 379 F.3d at 1339 (requiring that a contractor show that it was misled by a defect in contract documents and reasonably relied on the defect in preparing its bid). Accordingly, Magnus has prevailed on both the slurry walls portion of its embankment fill claim and the unexpectedly deep benching portion of its embankment fill claim. The court now turns to the issue of the amount of the equitable adjustment due Magnus for its embankment fill claim.

H. Quantum of the Equitable Adjustment Due Magnus for Embankment Fill Cost Overruns Proved to a Reasonable Certainty

Plaintiff adjusted the amount of its embankment fill claim, a request for an equitable adjustment of $3,271,612, three times. First, after the contracting officer denied the claim but before plaintiff had filed suit in this court, plaintiff admitted to a calculation error in the amount of imported embankment fill used to replace unsuitable existing fill removed during the benching process. JX 137, at 3 & n.3. Plaintiff reduced the amount for this line item from 67,828 CY to 64,115 CY, a decrease of five percent, which correlates to a reduction of $85,399. *Id.* The embankment fill claim thus stood at $3,186,213 when Magnus filed suit in this

[54]/ As Mr. Sills described the proper bidding process for this type of contract: "You've got to start off with good field data and take that good field data and develop it into a good design and then take that good design and develop a really good set of plans and specifications that just every contractor . . . can look at that contract in a very short time and develop an adequate bid for the job." Sills Tr. at 2424-25. The solicitation documents for this project were fundamentally defective when measured against that standard.

court.[55] *Id.*; Pl.'s Br. at 32; Compl. at 4; Am. Compl. at 4; Owaidat Tr. at 94. Defendant does not contest this first reduction of the claim by plaintiff.

During trial, Mr. Sallas acknowledged that two instances of double-counting of embankment fill volumes had occurred. Sallas Tr. at 1693-95. For two sections of the levee, STAs 51 through 55 and STAs 153 through 157, Magnus mistakenly included quantities of imported embankment fill for these specific sections of the levee in its embankment fill claim, but should not have because those quantities of embankment fill were previously paid for through work specified in the contract. *Id.* For STAs 51 through 55, the parties agree that Magnus overstated its embankment fill claim by approximately 7377 CY.[56]

The figure of 7377 CY is supported by Mr. Sallas's testimony and by Magnus's embankment fill claim degrade volume table. *Id.* at 1693; JX 2, at 108. When 7377 CY is deducted from the appropriate line items in Magnus's embankment fill claim, the claim is reduced by $287,703. Defendant appears to agree that this is an appropriate reduction of Magnus's embankment fill claim.[57] Subtracting $287,703 from the embankment fill claim total of $3,186,213 reduces the claim to $2,898,510.

Finally, the parties ultimately agree as to the quantity of embankment fill that was "double-counted" for STAs 153 through 157. This figure is 1198 CY. Def.'s Reply at 18; Pl.'s Reply at 16. This change produces a further reduction of Magnus's embankment fill claim in the amount of $46,722. Subtracting $46,722 from the embankment fill claim total of $2,898,510 reduces the claim to $2,851,788. Defendant does not appear to object to this final reduction of

---

[55]/ The complaint states that the amount of the claim is $3,186,212. *See* Compl. at 4; Am. Compl. at 4.

[56]/ The government relies on a summary figure in Magnus's claim, 7375 CY, whereas plaintiff relies on the sum of the degrade volumes at the relevant stations on the levee, 7377 CY. *Compare* Def.'s Reply at 17 n.5, *with* Pl.'s Br. at 50 n.10, *and* Pl.'s Reply at 15-16.

[57]/ Indeed, defendant would reduce the claim by a lesser amount $287,625. Def.'s Reply at 17.

Magnus's embankment fill claim.[58] Def.'s Reply at 18 & n.6. Because Magnus has proved the quantum of its embankment fill claim to a reasonable certainty, and because there is no real dispute as to the reductions made to the equitable adjustment figure originally proposed to the contracting officer, the court finds that the quantum of the embankment fill claim presented to the court after trial is accurate. Magnus has proved to a "reasonable certainty" that it is due an equitable adjustment to the contract of $2,851,788 for its embankment fill claim. *Precision Pine*, 596 F.3d at 832.

V. CDA Interest Rulings

Plaintiff has requested interest under the CDA for any sums awarded plaintiff in this suit. *See* Am. Compl. at 9; Pl.'s Br. Supp. at 1. As noted *supra*, no CDA interest is available on the amount of the retainage related to the slope change credit, $431,056, that must be paid to Magnus by the IBWC. Thus, for this portion of the judgment in this case, the amount of CDA interest due on the $431,056 figure is zero, because this was plaintiff's appeal of a government claim, not Magnus's claim.

Turning to the other aspects of this judgment, Magnus has been awarded an equitable adjustment to the contract for its riprap claim in the amount of $597,075. Magnus has also been awarded an equitable adjustment to the contract for its embankment fill claim in the amount of $2,851,788. The sum of these two awards is $3,448,863. The embankment fill and riprap claims were certified by Magnus, pursuant to 41 U.S.C. § 7103(b) (requiring certification of any CDA claim exceeding $100,000), on June 4, 2013. JX 112; JX 154. Thus, CDA interest on the total amount of $3,448,863 runs from June 4, 2013 at the rate specified in 41 U.S.C. § 7109(b).

The court has considered but rejected an earlier date for the accrual of CDA interest on these claims. If Magnus's submission of its riprap claim on September 12, 2012, JX 25, and Magnus's submission of its embankment fill claim on October 19, 2012, JX 2, had been accompanied by any certification, even if

---

[58]/ Indeed, defendant would reduce the claim by a lesser amount for the "double-counting" of embankment fill quantities, arriving at a final figure of $2,851,866. Def.'s Reply at 18 & n.6.

defective, CDA interest would have accrued from those earlier dates. 41 U.S.C. § 7109(a)(2). However, it is clear that no CDA certification, defective or otherwise, was submitted on those earlier dates. JX 2; JX 25.

Magnus's embankment fill and riprap claims, as of the autumn of 2012, thus fall into the 'failure to certify' category of claims, not into the 'defective certification' category of claims. *See* 48 C.F.R. § 33.201 (2016) ("Failure to certify shall not be deemed to be a defective certification."); *Scan Tech Sec., L.P. v. United States*, 46 Fed. Cl. 326, 339 (2000) (stating that "the definition of 'defective certification' expressly excludes a failure to certify from its meaning" (citing FAR 33.201)). Because Magnus's claims submitted in the fall of 2012 were not merely 'defectively' certified, CDA interest does not begin to accrue until those claims were actually certified on June 4, 2013. *See Youngdale & Sons Constr. Co. v. United States*, 27 Fed. Cl. 516, 562 (1993) (holding that a CDA "claim submitted to the CO must, of course, first be appropriately *certified* and *quantified* to be a *proper* claim sufficient to activate the running of interest") (citations omitted). The rule stated in *Youngdale* has also been noted by the boards of contract appeals. *See, e.g.*, *J.S. Alberici Constr. Co.*, ENGBCA No. 6179-R, 97-1 B.C.A. ¶ 28919 (Apr. 17, 1997) (citing *Fidelity Constr. Co. v. United States*, 700 F.2d 1379, 1385 (Fed. Cir. 1983), for the proposition that CDA "interest only begins to run from the date the Contracting Officer received the certification"), *aff'd on other grounds*, *Caldera v. J.S. Alberici Constr. Co.*, 153 F.3d 1381 (Fed. Cir. 1998). Pursuant to these authorities, CDA interest on Magnus's embankment fill and riprap claims, available pursuant to 41 U.S.C. § 7109, began to accrue as of June 4, 2013, not before.[59]

CONCLUSION

Because the IBWC's defective solicitation documents misled prospective bidders, a substantial increase in imported embankment fill was eventually required to complete the project. The IBWC also required Magnus to replace a significant amount of existing riprap that was beyond the scope of contract work.

---

[59]/ The trial record does not establish a specific date for the receipt of these certifications by the contracting officer. Defendant has not alleged that there was a delay in the receipt of the certifications dated June 4, 2013. On this record, the court determines that the certifications dated June 4, 2013 were also received on June 4, 2013.

In addition, when the IBWC changed the slope of the levee after restoration of the levee was underway, Magnus realized minimal financial benefits from that change, far less than what the IBWC retained from the contract price due Magnus. All of these contract disputes are resolved in favor of plaintiff.

Accordingly, for the foregoing reasons it is hereby **ORDERED** that

(1) Plaintiff is **AWARDED** an equitable adjustment of the levee restoration contract increasing the IBWC's payment responsibility by the total amount of **$3,448,863**, because plaintiff receives $597,075 on its riprap claim and $2,851,788 on its embankment fill claim;

(2) Plaintiff is **AWARDED** interest on **$3,448,863** from **June 4, 2013** until it receives payment for this judgment, at a rate determined by 41 U.S.C. § 7109(b);

(3) The government's counterclaim with respect to a slope change credit is **DENIED**;

(4) The IBWC shall **RELEASE** to plaintiff retained contract funds, withheld as a result of changes to the slope of portions the levee, in the amount of **$431,056**;

(5) The Clerk is directed to **ENTER** final judgment for plaintiff, as follows:

(a) an equitable adjustment to the contract in the amount of **$3,448,863**, plus **interest**,

(b) the release of retained contract funds in the amount of **$431,056**; and,

(6) No costs.

/s/Lynn J. Bush
LYNN J. BUSH
Senior Judge