

**UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF FLORIDA
ORLANDO DIVISION**

ORLANDO HEALTH, INC.,

Plaintiff,

v.

Case No. 6:24-cv-693-JA-LHP

HKS ARCHITECTS, INC.,

**Defendant/Third-Party
Plaintiff,**

v.

**BBM STRUCTURAL
ENGINEERS, INC.,**

Third-Party Defendant.

MEMORANDUM DECISION AND ORDER

In 2020, Orlando Health, Inc. was planning to build a new hospital and contracted with HKS Architects, Inc. to provide the architectural and engineering services for the project. HKS in turn subcontracted with BBM Structural Engineers, Inc. to provide the structural-engineering services. During construction, several structural-engineering problems arose.

The parties had successfully collaborated in designing and building large structures in the past, and they were able to coordinate remediation of errors that arose during this project. But they failed to resolve questions of liability

and damages for those errors. That failure led to Orlando Health filing this breach-of-contract action against HKS and to HKS filing a third-party complaint seeking to hold BBM responsible for the allegedly deficient structural-engineering services.

The Court bifurcated the trial and tried Orlando Health's case against HKS in March 2026.¹ Having considered the evidence and testimony presented, argument of counsel, and the parties' filings, the Court finds that HKS breached its contract with Orlando Health and issues the following opinion as its findings of fact and conclusions of law in accordance with Federal Rule of Civil Procedure 52.

I. Factual Overview and Procedural History

Orlando Health and HKS entered into a Standard Form of Agreement Between Owner and Architect (OH Ex. 1)² pursuant to which HKS was to serve as architect of record for construction of a hospital in Lake Mary, Florida. Under

¹ No trial between HKS and BBM has yet been held.

² Prior to trial, the parties numbered many exhibits as "Joint Exhibits" for identification. When, during the trial, a party moved to admit an exhibit into evidence, the Court admitted it as a differently numbered exhibit for that party. For example, Joint Exhibit 48 was admitted as Orlando Health's Exhibit 1. In this Order, the Court refers to the exhibits as they were admitted at trial rather than by their "Joint Exhibit" number. The Joint Exhibit numbers are, however, visible in the electronic record on the first page of each exhibit.

Orlando Health's exhibit list is in the record at Doc. 207 and its exhibits are numbered attachments—for example, Doc. 207-1 is OH Exhibit 1; Doc. 207-2 is OH Exhibit 2, and so on. HKS's list is at Doc. 208 and its exhibits are attached in the same manner. Many exhibits have multiple types of page numbers—e.g., Bates numbers. The exhibit page numbers cited in this Order are the numbers assigned in the Court's electronic record at the top of each page.

that contract, HKS agreed to provide “schematic design, design development, construction documents and construction administration services” for, among other things, the architecture and structural-engineering components of the project. (OH Ex. 1 at 8; *see also* Joint Pretrial Statement, Doc. 155, at 20 ¶ 9 (stipulated fact that HKS “was . . . required to furnish structural engineering services and to manage the services it provided”)). And Orlando Health’s Standard Requirements—attached to, and incorporated into, the contract—made it the responsibility of HKS “to design Orlando Health projects to satisfy all codes, regulations and inspection requirements.” (OH Ex. 2 at 4; *see also* Tr.³ at 88 (Walsh Test.)). As already noted, HKS engaged BBM to provide the structural-engineering services for the project. (*See* Joint Pretrial Statement at 20 ¶ 12). There is no contract directly between Orlando Health and BBM.

The hospital was to be built on a “campus” on which a freestanding, two-story Emergency Department had been constructed a few years earlier. (*See* Tr. at 55 (Walsh Test.); Tr. at 595–96 (Erbilen Test.)). Although HKS was not the architect for the freestanding Emergency-Department project, HKS “had done a number of projects in the past successfully for” Orlando Health, and Orlando Health “liked [HKS’s] past performance.” (Tr. at 56–57 (Walsh Test.)). And HKS chose BBM for the structural-engineering component because the two

³ The trial transcript (Tr.) is in six consecutively paginated volumes in the record. (Docs. 209 through 214).

firms had previously worked together on Orlando Health projects and because BBM had been the structural engineer for the Emergency Department. (Campbell Dep., HKS Ex. 23, at 12). Orlando Health selected Brasfield & Gorrie (Brasfield) as construction manager—a role commonly referred to in the past as the “general contractor.”⁴ (Tr. at 69 (Walsh Test.)).

The expansion project on the campus was to include a six-story, 317,185-square-foot full-service hospital with two towers—an East Tower and a North Tower—in an L shape, as well as a two-story diagnostic and testing “chassis,” a labor and delivery unit, operating rooms, and an intensive care unit, among other departments. (Tr. at 55 (Walsh Test.)). The project was paused due to the COVID pandemic, but by at least 2022, construction was underway. In the summer of 2022, the first structural problem at issue in this case—the lack of sufficient reinforcing steel in a second-floor concrete slab on the west side of the project—came to light. And in early 2023, three other structural issues emerged in other areas of the building: a problem with the design of a cantilevered area on the third and fourth levels of the North Tower; deflecting (sagging) floors in the East Tower; and undersized beams in the East Tower.

After these issues were rectified, Orlando Health filed this one-count, breach-of-contract lawsuit against HKS in October 2024. The case proceeded to

⁴ Brasfield had not been the construction manager on the Emergency-Department project. (See Tr. at 597 (Erbilen Test.)).

trial a year and a half later. All told, Orlando Health seeks to recover just over \$4.4 million in damages from HKS.

II. Trial Evidence and Findings

During the six-day bench trial, the Court heard testimony from six lay witnesses—John Walsh, Orlando Health’s vice president for facility development⁵; Bora Erbilien, president of BBM; Maggie Kirk, project engineer for BBM; Mark Matzinger, BBM’s construction administrator; Ashraf El-Bahy, president and owner of non-party AB Consulting Engineers; and Elyas Rashid, project manager for Brasfield. In addition, the Court received as an exhibit (HKS Ex. 23) the designated deposition testimony of Teresa Campbell, an HKS senior vice president and the principal architect on this project. Webb Wright of Walter P⁶ Moore and Associates, Inc.⁷ testified as a structural-engineering expert for Orlando Health, and Brian Herbert of GHA Architects and Development Consultants testified as Orlando Health’s architecture expert.

⁵ Walsh was especially knowledgeable about building construction. He explained that he started his career as a carpenter in Philadelphia but then obtained a bachelor’s degree in construction management and a master’s degree in business administration. (Tr. at 52 (Walsh Test.)). He later obtained a graduate’s certificate from the Wharton School at the University of Pennsylvania. (Tr. at 52 (Walsh Test.)). His work experience also includes a stint as the CEO of the Canaveral Port Authority. (Tr. at 53 (Walsh Test.)).

⁶ It appears that the Walter P Moore firm does not use a period after the middle initial in its name; the Court follows that convention in this Order.

⁷ As will be discussed in the text *infra*, Wright and the Walter P Moore firm also participated in finding solutions for the structural-engineering problems as the project was ongoing, including by conducting peer review of remediation proposals.

The Court received into evidence a total of sixty-four exhibits, most without objection. The Court now makes the following findings and conclusions regarding the four issues for which Orlando Health seeks to recover damages from HKS.

A. *Top-Mat Rebar*

1. *The Problem*

On August 15, 2022, Brasfield poured a 12-inch-thick “flat plate” concrete slab⁸ on Level 2, Area B of the project—referred to as “Pour Area 4”—in what was to become the diagnostic and testing area of the hospital. (See OH Composite Ex. 3 at 4–5). Brasfield began removing the shoring and forms from that pour on August 20, 2022. (See OH Composite Ex. 3 at 5). When Brasfield observed cracks on both the underside and top of the slab, (*see id.*), it called BBM to the site, (BBM August 22, 2022 Field Observation Report, HKS Ex. 11, at 1; Tr. at 622 (Erbilen Test.)). Mark Matzinger, BBM’s construction administrator, observed the slab on August 22, 2022, and wrote a report about the cracking. (HKS Ex. 11).

Initially, BBM blamed Brasfield, attributing the cracks to removal of the shoring too early. (See, e.g., HKS Ex. 11 at 5 (“BBM believes the slab cracking

⁸ As explained at trial, this type of slab “is 12 inches of concrete flat on the top, flat on the bottom,” as distinguished from a “beam slab” that sits on top of beams. (Tr. at 116–17 (Walsh Test.)). The flat slab is supported by columns but there are fewer beams or sometimes “no supporting beams between columns or supporting joists between beams.” (Tr. at 339–40 (Wright Test.); *see also* Tr. at 761–62 (Erbilen Test.)).

has occurred due to an overly aggressive construction schedule where shoring may have been removed prematurely”); HKS Ex. 12 at 1 (August 23, 2022 email from Erbilen to Matzinger opining that premature removal of shoring is “not a possible cause, it is the main cause of cracking. Re-shoring needs to be placed immediately. This is serious stuff. I expect better from [Brasfield].”)). But Brasfield denied that it had removed the shoring too soon and suggested that perhaps there was not enough steel reinforcement within the slab. (See Tr. at 602–03 (Erbilen Test.)).

When BBM learned that “top-mat rebar”—an upper layer of steel reinforcement in a grid pattern—had not been included within the 12-inch-thick slab prior to the pour, BBM realized that the slab cracks were due not to early removal of the shoring but to the absence of top-mat rebar. (See Tr. at 603 (Erbilen Test.); OH Composite Ex. 3 at 8 (BBM report noting: “This cracking has occurred due to the lack of top mat reinforcement in the 12" slab.”)). BBM recommended immediate re-shoring of the slab. (*Id.*).

Upon discovering that top-mat rebar was missing, Bora Erbilen, the President of BBM, immediately confessed error on BBM’s part. In an August 25, 2022 email to BBM’s insurance carrier that was also provided to HKS, Erbilen wrote: “[T]his morning we discovered that there is an error on our construction documents. This is 100% our error. We mistakenly left out the top

bars in a 12" thick concrete slab, multiple levels.”⁹ (OH Ex. 5 at 5). In that email Erbilen also stated: “I have met with the general contractor and informed them of our error We are working on repair procedures for the 2nd floor and will issue a construction directive next week. The general contractor then will present the cost of the repairs. We would like to see the cost estimate of the repair and decide whether we wish to file a claim or pay for this out of pocket.” (*Id.* at 6).

On August 30, 2022, Brasfield submitted Request for Information (RFI)¹⁰ #227 regarding the “Level 02 Pour 4 Elevated Slab Crack Remediation.” (OH Ex. 6). In that RFI, Elyas Rashid, Brasfield’s project manager, stated:

[Brasfield] witnessed cracks on the Level 02 Pour 4 elevated slab deck on 8/22/2022 and notified BBM immediately. Per the revised Field Observation Report dated 8/23/2022 by Mark Matzinger of BBM Structural, the engineer concluded the cracks have occurred due to a lack of top mat reinforcement in the 12" slab, which was never part of the design in the contract documents. Please provide direction on the remediation of the existing, cracked slab and a solution for the future 12" slabs.

(*Id.* at 1). Two days later, Erbilen responded to the RFI by stating: “Please see attached drawings.” (*Id.*). The attached drawings—revisions to the permitted set of BBM’s structural-engineering plans—contained updated information

⁹ The same slab design was repeated for multiple levels of the project. But pours had only been done on the second level when the omission of the top-mat rebar was discovered. Thus, only the second level had to be remediated in the field; for the other levels, the plans were revised before the concrete was poured.

¹⁰ An RFI is a means by which the construction manager—here, Brasfield—can request instruction or clarification from the design team. (Tr. at 108 (Walsh Test.)).

regarding rebar placement.¹¹ (*See id.* at 2–13). And on September 6, 2022, Erbilien sent a letter to Orlando Health that stated: “Please accept this letter as our commitment that BBM Structural and/or our insurance will cover the costs of the repairs at the affected areas of 2nd floor. A file has already been established with our insurer for a potential claim.” (OH Ex. 7 at 3).

Meanwhile, the design and construction team sought a solution for the lack of top-mat rebar in the slab; undisputedly, the slab needed to be either replaced or remediated in some way. BBM, HKS, and Brasfield proposed hydroblasting—removal of several inches of concrete from the top of the slab using highly pressurized water—followed by addition of top-mat rebar and repouring of the top of the slab. By this time, Orlando Health had engaged another structural engineering firm, Walter P Moore and Associates, Inc., to conduct peer review on the slab issue and to make sure that the proposed hydroblasting remedy was an appropriate repair to the slab and the best way to move forward. (*See* Tr. at 125–27, 129 (Walsh Test.)). On September 13, 2022, Walsh, after discussing the matter with Walter P Moore engineers Webb Wright and Randy Beard, authorized the hydrodemolition of the top of the slab, (*see* OH Ex. 10; Tr. at 133 (Walsh Test.)), and repair of the slab began. After the top four

¹¹ Orlando Health was not charged for these or any other revised plans, and thus none of the damages it seeks are for revised plans. (*See, e.g.*, Tr. at 122–23 (Walsh Test.)).

inches or so of the slab were removed, a continuous top mat of reinforcing rebar was added, and the top four inches of concrete were recast as an overlay. (See Tr. at 327 (Wright Test.); Walter P Moore Flat Slab Cracking Root Cause Analysis Summary, OH Ex. 37, at 1; *see also* HKS Field Observation Report, OH Ex. 14).

While the repairs were going on, in mid-December 2022, HKS issued a Construction Change Directive to Brasfield that included revised drawings related to adding top-mat rebar to the slab. (OH Ex. 13). A Construction Change Directive constitutes “instructions from the architect . . . that there are changes to the drawing[s] and that they should no longer construct this portion of the project . . . according to the original drawings.” (Tr. at 140–41 (Walsh Test.)). Walsh explained at trial that although Erbilien had already provided some drawings on September 1, 2022, the Construction Change Directive was “an official change to . . . [Brasfield]’s construction management contract.” (Tr. at 141 (Walsh Test.)). It was “a direction from HKS . . . to the contractor to build off the new drawings and not the originals.” (Tr. at 142 (Walsh Test.)). The Construction Change Directive’s “Description” section stated in part: “This drawing package includes revisions to the BBM structural drawings related to the Level 2 (12”) concrete flat slab remediation adding top mat rebar reinforcement by partial existing concrete slab removal and replacement.” (OH Ex. 13 at 1). Thirty-one sheets of drawings were modified. (Tr. at 143 (Walsh

Test.)).

The December 2022 Construction Change Directive was signed by HKS, Orlando Health, and Brasfield, and it obligated Orlando Health to pay Brasfield for remediation of the slab. (OH Ex. 13 at 1; Tr. at 141–43 (Walsh Test.)). HKS also signed Change Orders related to the slab remediation in April and May 2023 that increased the amount Orlando Health owed Brasfield on the project. (See Change Order No. 5, OH Ex. 15; Change Order No. 6, OH Ex. 16; Tr. at 150–52, 155–57 (Walsh Test.)). The slab repairs were completed by early 2023. (See Walter P Moore Flat Slab Cracking Root Cause Analysis Summary, OH Ex. 37, at 1).

Although the repair of the slab proceeded collaboratively and BBM had immediately admitted fault in August 2022 regarding the missing top-mat rebar, BBM eventually changed its tune regarding whether it was at fault for the omission of the top mat of steel from the poured slab. Orlando Health learned of BBM's changed position several months later—on May 16, 2023—when Teresa Campbell of HKS emailed Walsh and others at Orlando Health, attaching a letter that BBM had sent to HKS the day before. (See Campbell email, OH Ex. 17; BBM letter, HKS Ex. 17). Campbell explained in her email that Orlando Health was “receiving this letter as a formality upon the direction of BBM's legal counsel.” (OH Ex. 17 at 2).

In BBM's letter, Erbilien stated: “It is BBM's understanding that

[Brasfield] contends that errors and omissions in the slab design are the root cause of” Brasfield’s change orders that covered, among other things, “costs associated with adding omitted reinforcing steel to portions of the project’s slab.” (HKS Ex. 17 at 1). Erbilien then stated, “BBM denies this contention,” (*id.*), and insisted that BBM’s plans called for top-mat rebar, (*id.* at 2–3). Erbilien asserted in the letter that the change orders “are a result of [Brasfield]’s failure to construct the slab in conformance with BBM’s design as well as the [failure of the] project’s Special Inspector . . . to properly inspect [Brasfield]’s work,” (*id.* at 2). In closing, Erbilien stated that “BBM disputes that any error or omission in its structural design is the cause of the issues” related to the omitted top-mat rebar. (*Id.* at 4). Walsh explained at trial that receipt of Campbell’s May 16, 2023 email was the first time he understood that BBM was disclaiming responsibility for the top-mat-rebar problem. (Tr. at 158 (Walsh Test.)).

Erbilen’s one-hundred-eighty-degree reversal was prompted by HKS. This change in position had begun about six months earlier, when Brasfield revealed its estimated cost impact for the top-mat-rebar issue and lawyers got involved behind the scenes. (*See, e.g.*, Tr. at 749–51 (Erbilen Test.)). Back on November 2, 2022, Brasfield had sent an “impact letter” to Orlando Health, with copies to HKS and BBM, estimating the cost and time impacts of the slab repair at \$7.15 million—far more than anticipated by Orlando Health, HKS, and BBM. (*See* Brasfield Letter, OH Ex. 11; *see also* Tr. at 753 (Erbilen Test.)). At that

point—as urged by HKS and its lawyers, and unbeknownst to Orlando Health for months—BBM began to walk back its admission of fault. (*See, e.g.*, Tr. at 694, 749 (Erbilen Test.)).

On December 8, 2022—about a month after Brasfield sent its impact letter, Matthew Clear, a director and senior vice president at HKS, emailed Erbilen: “Based on [Brasfield]’s . . . impact letter, they indicate that it is due to a design error omitting top reinforcing steel at the flat slab areas. Can you point me to the area of your plan that they are referencing that does not call out or specifically excludes the top reinforcing? Based on the details you shared, I’m struggling with how [Brasfield] did not pick up the top reinforcing.” (OH Ex. 12 at 3–4).

Two hours later, Erbilen responded to Clear, explaining that the error was on BBM’s “plan note 2b” in the engineering plans; Erbilen then described to Clear how the note should have read instead. (*Id.* at 2–3). Not satisfied with Erbilen’s explanation, Clear responded that HKS would “be in touch to set up a call” with HKS’s general counsel—Craig Williams—and Teresa Campbell, stating that Williams and Clear “just want[ed] to have a more detailed discussion with [Erbilen] on this and this was helpful context.” (*Id.* at 2). The next day, Erbilen wrote to Clear, “I am meeting with our attorney Curt Brown on Tuesday afternoon I will present our drawings to him to bring him up to speed on the nature of the case.” (*Id.* at 1). Erbilen testified at trial that

when he met with Craig Williams, Williams told him “[s]omething like” “this wasn’t BBM’s fault,” (Tr. at 759 (Erbilen Test.)), and after their conversation, Erbilen “had a bit of a change of heart,” (Tr. at 750 (Erbilen Test.)).

As noted, Orlando Health eventually learned of BBM’s changed position when it received Campbell’s May 16, 2023 email. Thus, the matter of fault for the missing top-mat rebar became an issue for litigation and for resolution at trial.

2. BBM’s Plans

Orlando Health contends that BBM’s plans plainly omitted top-mat rebar from the 12" slab on Level 2, Area B. After reviewing the plans and the trial testimony, the Court agrees.

By way of background, concrete slabs can have varying levels of steel reinforcement within them. Plans might specify bars at the top or bottom of a slab. And a design might call for bars in a grid (“mat”) configuration across the entirety of a slab as well as for other, individual bars where additional support is needed in the slab—for example, near a column. (*See, e.g.*, Tr. at 681 (Erbilen Test.)). Here, it is undisputed that the slab as poured contained a “bottom mat” of rebar about two inches from the bottom, but due to the slab’s thickness it also should have had a top mat of steel about two inches from the top to strengthen it.

The original floor framing plan for Level 2, Area B, depicted the structural

layout of the floor of Level 2 and included, near the center, a graphic with a note:



(Original Sheet 2.20B, HKS Ex. 13 at 2). As explained by Orlando Health's engineering expert, Webb Wright of Walter P Moore, this "circle with a grid pattern" graphically represented reinforcing steel for the slab in a mat configuration. (Tr. at 335 (Wright Test.)). And the note pointing at the circle directed the contractor to Note 2b on Sheet 2.20A¹² "for information on the reinforcement that's specified for the slab." (Tr. at 335 (Wright Test.)).

Note 2b is the note that Erbilien and Clear discussed in their December 2022 email exchange. (See OH Ex. 12 at 2 through 4). The original version of Note 2b stated:

2b. SLABS WEST OF GRIDLINE 5.2 SHALL BE 12" THICK, U.N.O. TOP AND BOTTOM BARS IN THE EAST/WEST DIRECTION SHALL BE THE OUTER LAYER. TOP AND BOTTOM BARS IN THE NORTH/SOUTH DIRECTION SHALL BE THE INNER LAYER. BOTTOM REINFORCING NOT SHOWN IS #6 @ 12" OC, EACH WAY. TOP BARS AND ADDITIONAL BOTTOM BARS (IF REQUIRED) ARE SHOWN ON PLAN. SEE SHEET S6.02 FOR REBAR PLACEMENT DETAILS FOR FLAT SLAB.

¹² The slab involved here was at Level 2, Area B. The body of sheet S2.20A is the Floor Framing Plan for Level 2, Area A, which is not at issue here. But Note 2b appears among other "Floor Framing Plan Notes" on Sheet S2.20A and applies to, and is noted on, Sheet S2.20B—the Floor Framing Plan for Level 2, Area B.

(Original Sheet S2.20A, HKS Ex. 13 at 1; *see also* Erbilien email, OH Ex. 12 at 3). “U.N.O.” on the first line means “unless noted otherwise,” and “#6 @ 12" OC” on the fifth line means “Number 6 bars at twelve inches on center.”¹³ (See Tr. at 336, 339 (Wright Test.)).

It is undisputed that the sentence “Bottom reinforcing not shown is #6 @ 12" OC, each way” indicates a bottom mat of rebar, with 3/4-inch bars spaced 12 inches apart and running in both directions. Erbilien acknowledged at trial that this sentence in Note 2b “just mention[ed] the bottom bar mat and didn’t mention the top bar mat.” (Tr. at 638 (Erbilen Test.)). But at issue is what, if anything, the original plans indicated about a top mat of reinforcing steel.

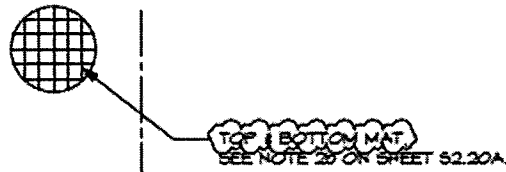
When Clear asked Erbilien in December 2022 to explain the problem with the plans, Erbilien responded:

The error is on plan note 2b The note is repeated on all floors. . . . The note should have been as follows after fixing the error[:]

2b. SLABS WEST OF GRIDLINE 5.2 SHALL BE 12" THICK, U.N.O. TOP AND BOTTOM BARS IN THE EAST/WEST DIRECTION SHALL BE THE OUTER LAYER. TOP AND BOTTOM BARS IN THE NORTH/SOUTH DIRECTION SHALL BE THE INNER LAYER. TOP ! BOTTOM REINFORCING NOT SHOWN IS #6 @ 12" OC, EACH WAY. ADDITIONAL TOP BARS AND ADDITIONAL BOTTOM BARS (IF REQUIRED) ARE SHOWN ON PLAN. SEE SHEET S6.02 FOR REBAR PLACEMENT DETAILS FOR FLAT SLAB.

¹³ And bars are numbered by eighths of an inch, so a “Number 6 bar” is a 3/4-inch bar. (See Tr. at 74 (Walsh Test.); Tr. at 338 (Wright Test.)).

(OH Ex. 12 at 2 to 3).¹⁴ Erbilien acknowledged at trial that he may have copied original Note 2b from another project. (Trial Test. at 760–61 (Erbilen Test.)). Erbilien changed Note 2b as stated in his email—with the addition of the words “TOP &” on the fourth line and “ADDITIONAL” on the sixth line—when BBM provided updated drawings to Brasfield on September 1, 2022. (See HKS Ex. 10 at 19; *see also* OH Ex. 6 at 2). Thus, the new Note 2b denoted “top & bottom reinforcing”—and specified the sizing and spacing of the bars for that reinforcing—and also referred to “additional top bars” rather than merely “top bars” in the next sentence. And in the revised drawings that BBM provided to Brasfield in early September 2022, the note next to the circle grid on Sheet S2.20B was also modified to explain that the grid indicated “top and bottom mat”:

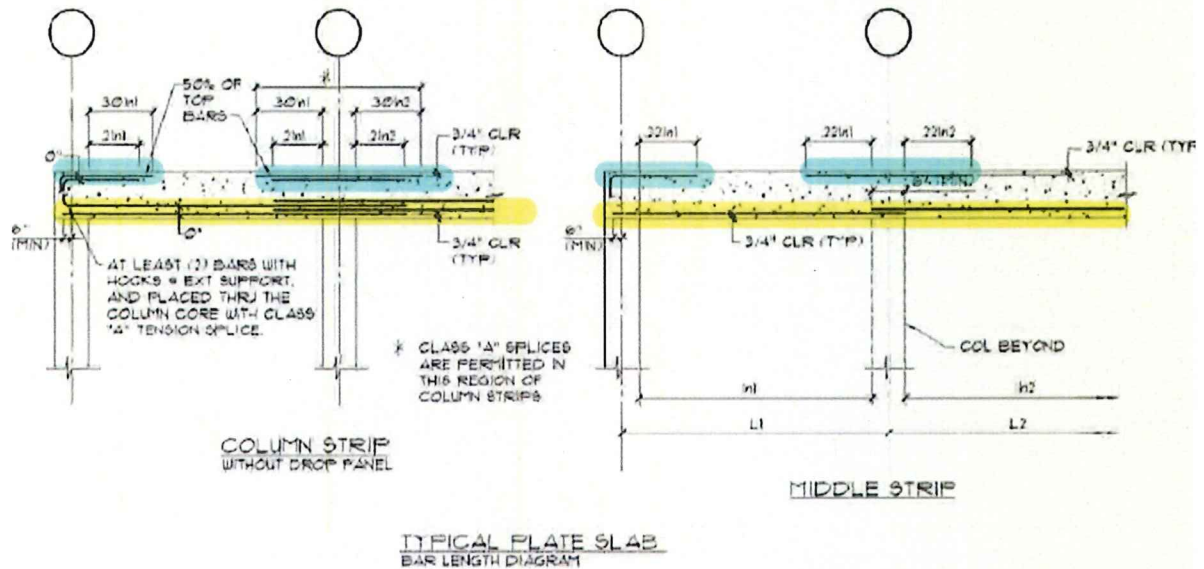


(Revised Sheet S2.20B, HKS Ex. 10 at 20).

Although Erbilien mentioned only Note 2b as problematic in his December 2022 email to Clear, as he acknowledged at trial the issues with BBM’s plans went beyond just that note. The last sentence of Note 2b refers the reader to

¹⁴ Changes on plans are indicated with “clouds” around them to draw the reader’s attention to the area that is being modified. (See, e.g., Tr. at 114 (Walsh Test.)).

“Sheet S6.02 for rebar placement details for flat slab.” The original Sheet S6.02 included the following “Typical Plate Slab” details showing various conditions:



(Original Sheet S6.02, OH Ex. 37 at 4¹⁵ (emphasis added)).¹⁶ Top bars are highlighted in blue here and bottom bars are highlighted in yellow. It is undisputed that the top bars are discontinuous in these drawings and that “continuous bottom reinforcement at the bottom of the slab” is depicted. (See, e.g., Tr. at 341–42 (Wright Test.); see also Tr. at 117–18 (Walsh Test.)). Walsh testified that the top bars on this original Sheet S6.02 only extended about 24–30 inches from the column; in a 30-foot by 30-foot slab area, there was an area 25 feet by 25 feet in the middle that was “devoid” of top bar. (Tr. at 119 (Walsh

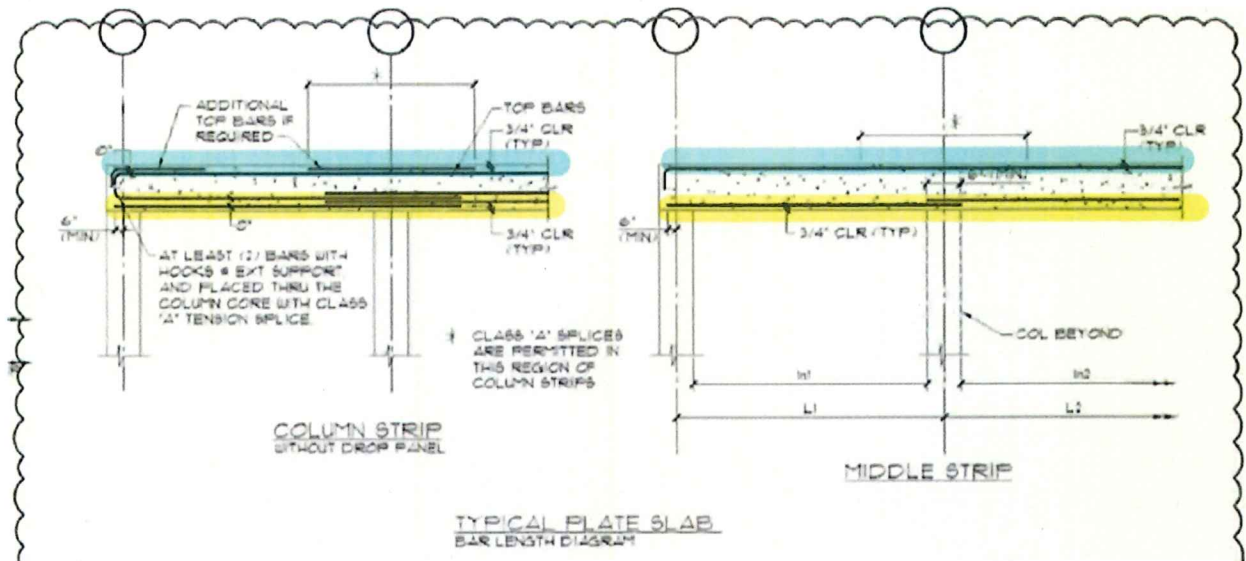
¹⁵ Neither party submitted the original version of Sheet S6.02 in full, but it is excerpted in a Walter P Moore report (OH Ex. 37). The revised Sheet S6.02 is page 59 of HKS Exhibit 10.

¹⁶ There are two other, similar details on original and revised Sheet S6.02, but for the sake of space the Court has included only two of the four here.

Test.)). And Wright explained that these details “show[] the contractor how to place the bars—at those column locations, how to place them.” (Trial Test. at 342 (Wright Test.)).

At trial, Erbilien admitted to these flaws in the “plate slab” details on BBM’s original Sheet S6.02. He acknowledged that these details did not show “top mat,” (Tr. at 766–68 (Erbilen Test.)), and instead only showed some “top bars,” (Tr. at 768 (Erbilen Test.)). In fact, Erbilien explained that BBM put this original S6.02 drawing sheet in the plans by “mistake”; BBM erroneously “provided the traditional . . . detailing” for an 8-inch slab, which has only one layer of continuous rebar—a bottom mat. (Tr. at 767 (Erbilen Test.); *see also id.* at 765). Erbilien explained that “in a 8-inch-thick slab, . . . the top bars are not as a mat [but are] top bars that are a specific length that are placed around columns.” (Tr. at 767 (Erbilen Test.)). Original Sheet S6.02 thus incorrectly “depicted a traditional 8-inch-thick slab,” and Erbilien agreed BBM “should have used a 10-inch-thick or thicker slab detail,” (Tr. at 764 (Erbilen Test.)).

When BBM issued revised plans to Brasfield, it revised the S6.02 typical plate slab details as follows:



(Revised S6.02, HKS Ex. 10 at 59). Again, the top bars are highlighted in blue and the bottom bars in yellow. On this revised version, bars go all the way across the top of the flat plate slab area. (See Trial Tr. at 118, 121 (Walsh Test.); Trial Tr. at 342 (Wright Test.) (“[T]he steel at the top of the slab is shown continuous, similar to the steel at the bottom.”)).

Despite Erbilen’s admissions regarding Sheet S6.02 and his testimony that Note 2b was confusing, Erbilen nevertheless maintained at trial that there was enough information in BBM’s plans for the contractor to discern that top-mat rebar was to be included in the slab on Level 2, Area B. He contended that Note 2b, along with the details in the “S4” series of drawings, at least “should have generated an RFI” from Brasfield. (Tr. at 663 (Erbilen Test.)).

The “S4” series of drawings in BBM’s plans, (*see, e.g.*, Sheets S4.01, S4.02, & S4.03, HKS Ex. 10 at 49–51), depict what are known as “section cuts.” Section cuts are side views, as if a slice has been cut through the building, indicating

“typical details at different conditions.” (Tr. at 345, 377 (Wright Test.)). They “depict[] the interface of the flat slab with . . . structural elements” such as “perimeter beams, interior beams[,] and shear walls.” (Walter P Moore Flat Slab Cracking Root Cause Analysis Summary, OH Ex. 37, at 5). The plan sheet, S2.20B, included callouts to some of those section cuts. (See Original Sheet S2.20B, HKS Ex. 13 at 2; *see also* Tr. at 883 (Rashid Test.)).

Erbilen asserted at trial that the section cuts “[a]t least graphically” depicted a top mat of rebar. (Tr. at 639 (Erbilen Test.)). For example, Erbilen relied on “dots” in Section Cuts 2 & 3 on Sheet S4.02 that he claimed showed “rebar perpendicular to the straight bar.” (Tr. at 669–71 (Erbilen Test.); Sheet S4.02 Details 2 & 3, HKS Ex. 13 at 11).

For his part, Wright acknowledged that a top bar is depicted in these section cuts but explained that these details do not “show any specific information for the reinforcement,” such as “[t]he bar size or the spacing of the bar.” (Tr. at 430–31 (Wright Test.)). Wright also acknowledged that the “dots” indicate other bars running perpendicular; when asked whether these dots show a mat of steel, Wright responded, “I don’t know for sure I’d call it a mat, but it does show steel at the top of the slab at that location” (Tr. at 431, 432–33 (Wright Test.)).

Wright explained that he could not tell from these section cuts how far the indicated reinforcement continued, and he stated that these section cuts “did

not govern over the plan notes and the typical flat plate detail that showed the layout of the steel.” (Tr. at 433 (Wright Test.)). Wright stated that the section cuts were consistent—not inconsistent—“with the plan sheet and the plan notes where the rebar is actually specified, the size and the spacing.” (Tr. at 434 (Wright Test.); *see also id.* at 345 (explaining that section cuts do not show the size, location, or spacing of rebar)). Rashid, Brasfield’s construction manager, also noted that sizes and spacing of bars were not designated on these section cuts. (Tr. at 884 (Rashid Test.) (“I see some lines and dots [on the section cut], but there’s no designation.”)). Rashid did not view the section cuts as calling for top mat; they just indicated some “top bars” but not a “top mat.” (Tr. at 889–91 (Rashid Test.)).

Erbilen acknowledged that some other section cuts that were “called out” on Sheet S2.20B refer the reader back to the “plans” and “plan notes” while pointing to the top bars in those section cuts. (*See, e.g.*, Sheet S4.02 Detail 5, HKS Ex. 13 at 11). Erbilien agreed that the references to plan notes on these section cuts tell the reader that “if you want to know what kind of supporting reinforcing steel to install . . . , you need to go back to [S]2.20A, Note 2b.” (Tr. at 772–73 (Erbilen Test.); Sheet S4.02 Detail 5, HKS Ex. 13 at 11; Sheet S4.01 Detail 14, HKS Ex. 13 at 10)); *see also* Tr. at 346 (Wright Test.)). Section Cut 5 on Sheet S4.02 tells the reader, “top bars, see plan,” and Erbilien acknowledged that “plan” means S2.20B, which did show some “top bars” (though not top mat)

on it. (Tr. at 774 (Erbilen Test.); *see also* Original S2.20B, HKS Ex. 13 at 2).

Having considered the testimony and evidence presented, the Court finds that BBM's original structural-engineering plans did not include a top-mat of rebar for the 12-inch-thick slab on Level 2, Area B. The circle with the grid on the Floor Framing Plan, Sheet S2.20B, directed the reader to Note 2b. But Note 2b described bar sizes and bar spacing for bottom-mat reinforcing steel only—not top-mat reinforcement. And Note 2b then referred the reader to "Sheet S6.02 for rebar placement details," but, as Erbilen explained at trial, Sheet S6.02 was incorrect; it showed details for an 8-inch slab with only a bottom mat of rebar. BBM had included that sheet in the set of plans by mistake.

Nor did the section cuts in the "S4" series of drawings denote top-mat rebar to the contractor. Those section cuts conveyed no information about size or spacing of a mat of rebar. As Wright explained, "section cuts are not authoritative over the plan notes which actually specify the reinforcing steel and the spacing of the reinforcing steel." (Tr. at 427–28 (Wright Test.)). Wright testified that "the plan notes that they [the section cuts] refer to govern[] over [the section cuts]," as do the typical flat plate details on S6.02. (Tr. at 428 (Wright Test.)). This makes sense because as Wright noted and Erbilen acknowledged, some of the notes on the section cuts actually refer back to the plan notes for information on the reinforcement. (Tr. at 428 (Wright Test.); Tr. at 772–74 (Erbilen Test.)).

When asked where someone would look to figure out what to fabricate and install in terms of size, spacing, and location of rebar, Wright responded: “You go to the plan sheet and then follow the notes on the plan sheet.” (Tr. at 345–46 (Wright Test.)). The plan notes are where the reinforcing steel is specified, and the typical flat plate details actually show the layout of the reinforcement. (Tr. at 428 (Wright Test.)). Erbilien himself similarly stated that the place where BBM’s plan references the number of rebar and the spacing is “in the plan notes.” (Tr. at 618 (Erbilen Test.)).

In sum, the structural-engineering plans for the slab at Level 2, Area B (and related levels) were deficient in that they omitted a top mat of rebar from the design. The slab as designed was deficient for both strength and serviceability under the Florida Building Code. (See Tr. at 360–61 (Wright Test.); *see also* Walter P Moore Flat Slab Root Cause Analysis, OH Ex. 37, at 13). HKS breached its contract with Orlando Health by providing these deficient structural-engineering plans, resulting in increased cost to Orlando Health. *See, e.g., Lillibridge Health Care Servs., Inc. v. Hunton Brady Architects, P.A.*, No. 6:08-cv-1028-Orl-28KRS, 2010 WL 3788859, at *13 (M.D. Fla. Sept. 24, 2010) (“Although the [c]ontract contemplated that [the architect] would retain consultants—including an engineering consultant—in order to comply with its obligations, [the architect] remained contractually obligated to provide these services nonetheless. . . . Thus, the [c]ontract was breached.”

(citing *Owings v. Rose*, 497 P.2d 1183, 1186 (Or. 1972))).

3. *Shop-Drawing Submittals*

Then there is the matter of the shop-drawing submittals. The contract between Orlando Health and HKS provided: “The Architect shall review and approve, or take other appropriate action upon, the Contractor’s submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.” (OH Ex. 1 at 16 § 3.6.4.2). A rebar detailer that Brasfield hired prepared “shop drawings” from BBM’s plans. Those drawings specify the fabrication and installation of rebar, indicating in detail how much rebar would be placed, and where, based on the detailer’s interpretation of the structural-engineering plans. Before construction, the rebar shop drawings are circulated to the contractor, the architect, and the structural engineer for review.

It is undisputed that none of the rebar submittals from the detailer depicted top-mat rebar for the 12-inch slab at Level 2, Area B. But the lack of top-mat rebar in the shop drawings was not noted during review of any of the submittals.

The first submittal (OH Ex. 38) was stamped “reviewed” by Brasfield; stamped “reviewed for architectural issues only” by HKS; and stamped “revise

and resubmit” by BBM.¹⁷ Erbilen testified, “[W]hen we see nonconformance with our contract documents in the shop drawings, we stamp it ‘revise and resubmit.’” (Tr. at 643 (Erbilen Test.); *see also* Tr. at 355 (Wright Test.) (stating that “revise and resubmit” meant that the contractor had to make revisions and provide another submittal that addressed the comments)). BBM did make some notes and comments regarding Level 2, Area B on this submittal, but no mention was made of the lack of top-mat rebar in the drawing. (OH Ex. 38 at 3; Tr. at 821 (Erbilen Test.); Tr. at 353, 355 (Wright Test.)).

The second shop-drawing submittal (OH Ex. 39) was stamped “reviewed for architectural issues only” by HKS and stamped “reviewed with notations” by BBM.¹⁸ (See OH Ex. 39 at 1). “Reviewed with notations” means that the contractor could go forward with those drawings but had to take the notations into account. (See Tr. at 356 (Wright Test.); Tr. at 823 (Erbilen Test.) (agreeing that BBM’s stamp of “reviewed with notations” gave permission to the rebar manufacturer to start manufacturing the rebar)).

The third shop-drawing submittal was stamped “reviewed” by Brasfield on July 25, 2022, and “reviewed with notations” by BBM on August 1, 2022.¹⁹ (See OH Ex. 40 at 1). Again, none of those notations pertained to top-mat rebar.

¹⁷ It is undisputed that neither Erbilen nor any other BBM engineer reviewed the shop drawings. Instead, all three shop-drawing submittals were reviewed by Mark Matzinger, BBM’s construction administrator, who is not an engineer.

¹⁸ There is no stamp from Brasfield on this exhibit. (See OH Ex. 39 at 1).

¹⁹ The third submittal does not bear a stamp from HKS. (See OH Ex. 40 at 1).

(Tr. at 359–60 (Wright Test.)). On August 15, 2022, two weeks after BBM stamped this third submittal, the slab was poured.

Wright testified that the lack of top-mat rebar in the three submittals was “a critical omission that the structural engineer should have” noticed. (Tr. at 445 (Wright Test.)). Wright explained: “If that was [the engineer’s] design intent to have a top mat of steel, they should have called it out. They would have obviously seen it was omitted from the shop drawing.” (Tr. at 445 (Wright Test.)). The Court agrees.

BBM’s failure to notice the omitted top-mat rebar in the shop drawings also is a breach of contract by HKS. Although HKS argues that it never stamped the third submittal, HKS had twice previously reviewed the submittals and marked them “reviewed for architectural issues only.” And it was BBM who had the expertise to review the structural-engineering aspects of the rebar submittal. (*See, e.g.*, Tr. at 75 (Walsh Test.) (explaining that “all [shop drawings] go through the architect, but then the architect funnels where is that level of expertise that need[s] to review these . . . shop drawings”); Tr. at 260 (Walsh Test. (“It goes to the right expertise for the assignment at hand.”); Tr. at 425 (Wright Test.) (agreeing that “only an engineer can respond to inquiries made in structural shop drawings”)). BBM did not note that top-mat rebar was lacking during any of its three reviews, and it twice marked the submittals “reviewed with notations,” giving the rebar detailer approval to proceed with

the rebar as depicted. Under the contract, HKS is responsible for BBM's failure to notice the missing top-mat rebar in the shop drawings.

4. Observing Rebar Placement

Additionally, the contract required BBM to examine the rebar placement prior to the concrete pour. (See Orlando Health Standard Requirement 38, OH Ex. 2 at 140 ("The proper consultants must observe the following before it is covered up, or concrete is poured[:] a. Foundations, footings, rebar placement. . . . The structural engineer shall observe all rebar placement and forming before concrete is poured, only if threshold has been inspected.")). There is no evidence that BBM did this.

HKS suggests that BBM was not advised of the upcoming pour or that a threshold inspection had been done. But there was an overall project schedule as well as a two-week "look-ahead" schedule, (see Tr. at 84 (Walsh Test.)), and there is evidence that the rebar threshold inspection was done on August 11, 2022, (see OH Ex. 37 at 11). And more importantly, there is no evidence of HKS or BBM ever taking these positions at any time prior to this litigation. Back when the problem with the slab was discovered, BBM's first reaction was to blame Brasfield for removing the shores early; there was no cry of "We did not have a chance to inspect the rebar placement."

So either BBM did not inspect the rebar prior to the pour, or BBM did inspect it and overlooked missing top-mat rebar that it insists was intended in

its plan. Either way, BBM missed another opportunity to catch the error in its plans, and the contract between HKS and Orlando Health was breached in yet another way.

5. Damages

Orlando Health has established entitlement to damages on the top-mat-rebar issue in the amount of \$1,428,729.41. This sum consists of \$1,363,729.66 that Orlando Health paid to Brasfield²⁰ under Change Order Number 5 (OH Ex. 15)²¹ for remediation of the slab plus \$64,999.75 that Orlando Health paid to Walter P Moore for consulting, peer-review services, and site visits on this issue under its initial agreement with Walter P Moore (OH Ex. 8) and Amendment Number 1 (OH Ex. 9) to that agreement.²² (*See Damages Summary*, OH Ex. 18; Tr. at 150–56, 159–64 (Walsh Test.)).

²⁰ None of this sum is for the top-mat rebar that Brasfield added during the remediation of the slab. Orlando Health acknowledges that it would have had to pay for the cost of that rebar if BBM's initial plans had included top-mat rebar initially as required by code. (*See, e.g.*, Tr. at 163–64 (Walsh Test.)).

²¹ Change Order Number 5 authorized Brasfield to spend up to \$1,499,193.00 on this issue, (*see* OH Ex. 15 at 2; OH Ex. 18 at 1), but Brasfield only spent \$1,363,729.66 of that allowance, (*see* OH Ex. 18 at 3; *see also* Walsh Test. at 161–62).

²² To the extent HKS argues that the fees Orlando Health paid to Walter P Moore on this or any other issue in this case are “consequential damages” or otherwise unrecoverable, the Court rejects that argument. The Court finds that the costs of the services of Walter P Moore are properly awarded as direct damages in this case. The fees paid to Walter P Moore are the “direct, natural, logical[,] and necessary consequences of” the deficient structural-engineering plans, especially considering that the design and construction team relied on Walter P Moore during the remediations. (*See Order*, Doc. 115, at 17).

B. Cantilever

The second structural-engineering issue that arose involved a cantilevered area on Levels 3 and 4 of the North Tower, where the labor-and-delivery unit was being built. In this section of the project, the roof over the preexisting, two-story Emergency Department became the floor slab for Level 3 of the expansion. A wider floor plate was needed for the labor and delivery unit, and therefore the Level-3 floor slab needed to be extended. (*See* Tr. at 165, 167 (Walsh Test.)). Because the roof slab over the Emergency Department was already in place, an additional slab for the floor of Level 3 could not be cantilevered from that roof slab; instead, it needed to be partially supported from above by cantilevered beams on Level 4. (*See* Tr. at 166 (Walsh Test.); Tr. at 703 (Erbilen Test.)). Hanging columns were to drop down from the Level-4 cantilevered beams to support the new portion of the floor on Level 3.

BBM's design for this cantilevered area called for the use of two different lengths of "C" bars—steel bars with hooks on the end that are "additional top bars" sometimes called for in plans when additional structural support is needed within concrete beams. (*See* Tr. at 164–65 (Walsh Test.); Tr. at 700–01 (Erbilen Test.)). Brasfield installed short C bars instead of longer C bars on Level 4. When Brasfield realized that the bars it installed were incorrect, it requested instructions from BBM on how to proceed. At that point, BBM realized that its design was inadequate—that is, structurally insufficient—even with the longer

C bars that were contemplated by its design.

As explained by Erbilien at trial, the problem was that BBM's design did not account for the "cumulative deflections" of Level 3 and Level 4; in other words, as designed the structure would not be sufficiently strong to avoid excessive deflection—sagging—of the concrete in the cantilevered area. (*See* Tr. at 705 (Erbilen Test.); *see also* OH Ex. 23 at 5 (February 18, 2023 Erbilien email stating in part, "We agree this area did not account for cumulative deflections of both levels and structurally this area is in need of a revision, on both levels.")).

This situation is explained in RFI #488, which Elyas Rashid of Brasfield submitted on February 22, 2023:

Due to a misinterpretation of the "C" bars as designed on [drawing sheet] S6.03, the rebar was detailed for a fixed end condition in lieu of a cantilever end condition. Subsequently, the required embedment needed for the "C" bars in the cantilever beams at Level 04 [was] not installed during concrete placement. [Brasfield] addressed this concern with BBM when the error was discovered. After further review and investigation, BBM has realized a redesign for this area is necessary to meet deflection requirements. [Brasfield] requests updated design drawings regarding the cantilever slab/hanging column design at Level 03 and Level 04.

(OH Ex. 19 at 1). BBM and Brasfield discussed "how [they could] reduce the loads on the hanging columns and cantilevered beams above," (OH Ex. 23 at 5), and two days after Brasfield submitted RFI #488, BBM responded by providing revised plans to Brasfield to correct the design problem, (*see* OH Ex. 19).

The revisions involved deepening and widening the cantilevered beams on

Level 4; adding steel-pipe columns to part of the hanging-column assembly; substituting lightweight structural concrete in place of regular structural concrete to reduce by twenty percent the “self-weight” of the concrete structure; and using revised, reduced calculations of the expected “live load”—the amount of weight of non-fixed items that needed to be supported once the building was operational—by twenty-five percent. (See OH Ex. 23 at 5–6; Tr. at 177 (Walsh Test.); Tr. at 390–92 (Wright Test.)). Walsh described the weight reductions as “cheapening the overall design in order to make the design work.” (See Tr. at 178 (Walsh Test.)). And in the new design, BBM incorporated the shorter C bars that Brasfield had already installed. (See OH Ex. 23 at 5; Tr. at 177 (Walsh Test.)).²³ Walter P Moore was asked to peer-review this issue, and Brasfield engaged another engineering firm, Uzun+Case, to assess the problem as well. (Tr. at 388 (Wright Test.)).

²³ The parties debate, to some extent, whose fault it was that shorter C bars were installed by Brasfield in the first instance. HKS blames Brasfield for misreading the plans, while Orlando Health faults HKS and BBM for approving shop drawings with the shorter C bars shown on them. But it is undisputed that even if Brasfield had installed the longer C bars, BBM’s original design was not strong enough and a redesign—much more extensive than would have been required with just the short-C-bar problem—was required for that reason. (See, e.g., Tr. at 708 (Erbilen Test.) (“So there had to be a redesign to be made—a repair made That repair got bigger because of BBM’s issue.”)). Thus, it is not necessary for the Court to address the parties’ competing contentions regarding the short C bars. Essentially, Brasfield’s installation of the short C-bars was merely how the larger structural problem came to light. (See, e.g., Tr. at 189 (Walsh Test.) (“I mean, thankfully, it happened because otherwise they would have put it in place the way it was originally designed and it would have failed. Once in a while, things happen for a reason.”)).

Here, BBM realized that its original design was not strong enough, requiring revisions to its plans. And when Walter P Moore analyzed this issue, it agreed with BBM that as originally designed, the cantilevered area would not have met the deflection requirements of the Florida Building Code. (See Tr. at 373 (Wright Test.)). Walter P Moore concluded that “the original design of the Level 4 cantilever beams was deficient for both strength and serviceability” even with the longer C bars that were originally included in the design. (See Walter P Moore Cantilever Slab Root Cause Analysis Summary (REV 1), OH Ex. 22, at 5; *see also* Tr. at 374 (Wright Test.)). Based on the evidence presented, the Court finds that BBM’s original design of the cantilever area did not meet the requirements of the Florida Building Code, as explained by Wright. Thus, HKS breached its contract with Orlando Health by providing deficient structural-engineering plans for the cantilever area on Levels 3 and 4.

For correction of the cantilever error, Orlando Health seeks to recover a total of \$233,172.77. This sum represents \$196,172.77 that Orlando Health paid Brasfield under Change Order Number 12 on this issue,²⁴ plus \$37,000 that Orlando Health paid Walter P Moore under Amendments 2 and 3 to the consulting agreement between Orlando Health and Walter P Moore. (See OH Damages Summary, OH Ex. 24; Change Order No. 12, OH Ex. 25; Amendment

²⁴ The rest of Change Order Number 12 pertains to the beam-repair issue, which is discussed in the text *infra*.

2, OH Ex. 20; Amendment 3, OH Ex. 21).

Orlando Health established that it was necessary to pay these additional costs to overcome the problem presented by BBM's initial, deficient plans. Although HKS argues that Orlando Health did not establish that some of what it paid to Brasfield was not "first costs"—costs that would have been required if the design had been adequate in the first instance—the Court concludes that it was HKS's burden, not Orlando Health's, to provide a basis for backing out any "first costs" from the additional costs that Orlando Health clearly had to pay to remedy this issue via the redesign.²⁵ *See, e.g., Lillibridge*, 2010 WL 3788859, at *8 ("[The plaintiff] established what it actually paid to remedy the HVAC issue, and if [d]efendants believed that only a lesser amount was recoverable, they should have established the extent to which [plaintiff]'s claimed damages were excessive.")). And HKS has not done so.²⁶ Thus, Orlando Health will be

²⁵ And despite argument to the contrary by counsel, (*see* Tr. at 990), there is evidence that, for example, the lightweight concrete that was part of the redesign cost almost twice as much as regular concrete. (*See* OH Ex. 25 at 5 (deducting \$17,415 for "normal concrete" and adding \$32,400 for lightweight concrete)).

²⁶ Even if it were Orlando Health's burden to establish that all of the increased costs were not "first costs," Orlando Health moved for summary judgment on the issue of first costs prior to trial. The Court granted that motion after HKS failed to respond to it, noting that no evidence of first costs had been presented to preclude summary judgment. (*See* Order, Doc. 148, at 5–6). The Court has allowed HKS to argue that Orlando Health did not establish its damages in the first instance, but Orlando Health did prove the additional amounts it had to pay once this issue arose. Even if it were proper for HKS to argue first costs now, instead of identifying what it proposes are "first costs" HKS essentially argues only that it is Orlando Health's burden to identify those first costs. As noted in the accompanying text, the Court rejects this proposition.

awarded \$233,172.77 in damages on the cantilever issue.

C. Slab Deflection and Undersized Beams

1. The Problems

The third and fourth issues, both of which involved the East Tower of the hospital, also arose in early 2023. Orlando Health claims that the third issue—deflecting (sagging), uneven floor slabs—was caused by the fourth issue—supporting beams that were undisputedly under-designed and structurally deficient in the vicinity of the deflecting slabs. HKS, however, denies that the undersized beams caused the floor problems.

The slab-deflection issue came to light by at least February 16, 2023, when Brasfield’s on-site project manager, Ren Tilden, emailed HKS and BBM. (*See* OH Ex. 26; *see also* Tr. at 191–92 (Walsh Test.)). Tilden’s email stated in part: “We are experiencing significant deflection in our elevated slab at 3rd Fl East Tower, and we need to address our best method of handling this condition. Bora [Erbilen] has witnessed this condition and advised us that most areas are within code allowable limits; however, this condition requires special considerations.” (OH Ex. 26 at 1). Attached to Tilden’s email were “heat maps”—maps with contour lines showing areas of unevenness in the third-floor concrete slab in the East Tower. (*See* OH Ex. 26 at 5 through 8; *see also* Tr. at 709–10 (Erbilen Test.) (explaining the heat maps)).

The next day, February 17, 2023, Elyas Rashid of Brasfield submitted RFI

#476, stating:

[Brasfield] wishes to discuss a slab deflection condition we are finding on the 3rd Floor of the East Tower. [Brasfield] has collected top of slab elevation information and has represented the summary in the attached 4-page survey which describes our findings. We would like to meet with HKS and others to discuss the best path forward in achieving the best result, as we believe these deflections will require special considerations We don't believe we have experienced the final measurements of deflection, and we want to meet to share ideas and develop a joint plan to deal with final projected conditions.

(HKS Ex. 6 at 2). Attached to this RFI were the four pages of "heat maps" that had been included with Tilden's February 16 email. (*See* HKS Ex. 6 at 7 through 10). And as noted in an HKS field observation report dated four days later, deflection was also observed in the East Tower's second-floor slab. (HKS Field Observation Report, OH Ex. 27, at 1)).

By this time, Teresa Campbell, HKS's principal architect on the project, had asked Arak Mazurek,²⁷ a structural engineer at HKS's Chicago office²⁸—to assist with remediation strategies for structural issues that had been encountered. (*See* Campbell Dep., HKS Ex. 23, at 64–66). Erbilien explained at trial that Mazurek requested a call with him after doing some spot checks and

²⁷ Mr. Mazurek's first name is variously spelled "Arak" in the trial transcript and "Arek" in Ms. Campbell's deposition transcript. (*See, e.g.*, Tr. at 724–25; HKS Ex. 23 at 64–65).

²⁸ Although HKS does employ licensed, in-house structural engineers, HKS was not the structural engineer of record on this project, and no HKS structural engineers were involved until Campbell asked Mazurek for assistance with assessing remediation proposals. (*See* Campbell Dep., HKS Ex. 23, at 12, 17–18).

hand calculations about the beams in the area of the floor deflections; Mazurek's calculations were yielding different results than BBM's regarding those beams. (Tr. at 724, 780 (Erbilen Test.)). During a meeting, Erbilen and Mazurek ran BBM's computer model and confirmed that the results from that model were different from Mazurek's hand calculations. (Tr. at 724 (Erbilen Test.)).

Erbilen testified that BBM then "went back and checked everything to see why are we getting different results, . . . [a]nd that's when [BBM] discovered it"—that BBM's computer model "gave [BBM] incorrect results" during the modeling process, resulting in "a number of beams that were not structurally strong enough" and needed to be remediated. (Tr. at 724–25 (Erbilen Test.)). BBM attributed the incorrect results to a "glitch" in BBM's software that occurred due to the design having two different types of concrete slabs on the same level—a "flat plate" slab (like the one discussed earlier on the the top-mat-rebar issue) on one part of the floor, and a thinner slab supported by beams and joists on another part of the floor. (Tr. at 781 (Erbilen Test.)). Whatever the reason, at that point BBM realized that the beams it designed for this area were deficient.

Erbilen then enlisted the assistance of Ashraf El-Bahy—a structural engineer he has known since 1991 and who owns his own business, AB Consulting Engineers—to address the beam issue. (See Tr. at 845 (El-Bahy Test.); Tr. at 715, 784 (Erbilen Test.)). In early March 2023, Erbilen and El-

Bahy met at Erbilén's office, and Erbilén explained to El-Bahy the software glitch that BBM had discovered. (See El-Bahy Beam Evaluation, OH Ex. 28, at 1). Erbilén sent El-Bahy the "loads" on the beams, and El-Bahy analyzed the as-designed beams on his computer. (Tr. at 848–49 (El-Bahy Test.)). El-Bahy determined that shoring of beams—immediate reinforcement to avoid collapse during remediation—was necessary in Column Bay²⁹ 49 on the second floor and Column Bays 67 and 68 on the second and third floors. (See Tr. at 852 (El-Bahy Test.); OH Ex. 28 at 3). Erbilén accordingly requested that Brasfield install shoring beneath those beams, and Brasfield did so. (See RFI #545, HKS Ex. 21, at 1).

Within a few days, El-Bahy and Erbilén, along with Mark Matzinger and Ariel Nevis of BBM and Ren Tilden and Elyas Rashid of Brasfield, went to the project site and measured the deflections of the beams under the second and third floors—the bottoms of the slabs—using the same equipment Brasfield had used to measure the tops of the slabs and create the "heat maps" a few weeks earlier. (See Tr. at 852–57 (El-Bahy Test.); Tr. at 712–17 (Erbilen Test.); El-Bahy Beam Evaluation, OH Ex. 28, at 2). Their field-measured beam deflections were not as great as the deflections El-Bahy had calculated on the computer,

²⁹ As explained at trial, the "column bay designation" identifies a beam based on the column it comes out of. (Tr. at 208 (Walsh Test.)). "In a given column bay, . . . [there are] four columns supporting this section of the slab" (Tr. at 409 (Wright Test.)).

(Tr. at 853 (El-Bahy Test.); *see also* OH Ex. 28 at 2), and El-Bahy concluded that the deflections were within allowable limits, (OH Ex. 28 at 2). El-Bahy and Erbilien nevertheless did not waver from their position regarding the necessity of shoring a few beams. (Tr. at 852 (El-Bahy Test.)). And ultimately, El-Bahy determined that not only the shored beams but, in total, twenty-one beams on the second and third floors needed to be enlarged or reinforced. (*See* OH Ex. 28 at 3, 10–11; *see also* Tr. at 206 (Walsh Test.)).

Erbilen acknowledged the problem with the design of the beams on Levels 2 and 3, but he denied that the undersized beams were causing the slab deflections on those levels. While Brasfield described the heat maps as “deflection map[s],” Erbilien regarded them as “deflection map[s] plus the variances in the slab thickness.” (Tr. at 712 (Erbilen Test.)). From the outset, Erbilien took issue with Brasfield measuring the deflections from the top of the slab and insisted that measurements should be taken from the bottom of the slab because variances in slab thickness would add to measurements taken at the top. (Tr. at 712 (Erbilen Test.)). And when Erbilien, El-Bahy, and the others took measurements with Brasfield from underneath the beams, they also measured the slab thickness at several locations where conduit holes allowed for such measurements; the slab thickness varied from 4 1/2 to 6 1/4 inches in

those places.³⁰ (Tr. at 720 (Erbilen Test.)).

From the measurements, Erbilen concluded that this was not a deflection problem but instead “a construction issue that the slabs were constructed too thin.” (Tr. at 721 (Erbilen Test.)). Accordingly, on March 6, 2023, Erbilen responded to Brasfield’s RFI #476—in which Brasfield had inquired about the slab deflection condition on the third floor on February 17—by stating, “Please see the attached file of actual concrete beam and joist deflections measured in the field as a joint effort by BBM Structural and [Brasfield].” (HKS Ex. 6 at 1, 3–6).

2. The Parties’ Arguments and the Court’s Conclusions

a. Beams

Taking the beams issue first, the Court readily concludes that HKS breached its contract with Orlando Health by providing deficient structural-engineering plans for the East Tower beams. The record is clear that once HKS’s structural engineers questioned the beams after running their own calculations, Erbilen rechecked BBM’s calculations and discovered that BBM had underdesigned the beams and they were deficient in strength. El-Bahy then effectively became a subconsultant for BBM on this issue, and El-Bahy

³⁰ The construction documents specified a slab thickness of 5 3/4 inches, and the tolerance specified by the American Concrete Institute is minus 1/4 inch; thus, a slab less than 5 1/2 inches thick would be noncompliant. (Tr. at 828–29 (Erbilen Test.); Walter P Moore Preliminary Slab Deflection and Reshoring Review Summary, HKS Ex. 7, at 2 ¶ 5)).

determined that twenty-one beams needed to be beefed up or reinforced. The remediation of those beams involved significant expense, and HKS is responsible for those remediation costs.

Beams that were determined to be deficient were strengthened and reinforced after BBM put Brasfield in contact with a South Florida company—Structural Builders and Restorations LLC—that specializes in concrete repairs.³¹ (Tr. at 725 (Erbilen Test.); *id.* at 216 (Walsh Test.); *see also* OH Ex. 32 at 6–9 (subcontractor bid)). In some cases, existing beams were widened by addition of more rebar and concrete, and in others, carbon fiber was applied to the bottoms or sides of the beams. (Tr. at 725–26 (Erbilen Test.); Tr. at 208–09 (Walsh Test.)). As Walsh put it, “the main beams were all beefed up in a large way.” (Tr. at 209 (Walsh Test.)).

By the time the beam issue was discovered, other work had already been installed in this area of the project. Items such as ductwork, conduit, and piping needed to be removed, and in some cases stored—and scaffolding brought in—so that the areas could be accessed for beam remediation; that work then had to be reinstalled after completion of the modifications to the beams. (Tr. at 209 (Walsh Test.)). HKS is responsible for these additional expenses as well.

³¹ And BBM asked Structural Builders and Restorations LLC if there was an engineering firm it worked with “since this was something that [BBM] didn’t have much experience in.” (Tr. at 725 (Erbilen Test.)). That firm, Kline Engineering, then provided repair details and procedures that were added to BBM’s construction documents for submission to the building department. (Tr. at 726 (Erbilen Test.)).

For the beam-repair issue, Orlando Health established at trial that it is entitled to recover a total of \$1,644,355.84 in damages.³² This sum represents \$1,624,355.84 that Orlando Health paid for demolition of installed work, remediation of the beams, and reinstallation of previously installed work, as well as \$20,000 paid to Walter P Moore for peer review of beam-design calculations. (*See* Damages Summary, OH Ex. 31; *see also* Change Order No. 8, OH Ex. 33; Change Order No. 10, OH Ex. 32; Change Order No. 12, OH Ex. 34; Amendment No. 2 to Contract for Consulting Services, OH Ex. 20, at 5; Tr. at 234–38 (Walsh Test.)).

b. Slab Deflection

Ultimately, the unevenness of the floors was remediated through application of a cementitious floor-leveling compound to two-thirds of both the second- and third-floor slabs in this area of the building. (Tr. at 210 (Walsh Test.)).³³ Orlando Health maintains that the undersized beams in the area of the deflecting slabs caused the unevenness of the floors and the need for the extensive application of the floor-leveling material. But based on the evidence

³² To the extent HKS argues that some of the repair costs were “first costs,” the Court rejects that argument for the same reasons it rejected it in the discussion of the cantilever issue.

³³ For this issue, Orlando Health seeks to recover \$1,064,461.31. This sum consists of \$852,111.31 that Orlando Health paid to Brasfield for the floor leveling work; \$25,000.00 that Orlando Health paid to Walter P Moore for a root-cause analysis; and an additional \$187,350.00 that Orlando Health paid to Walter P Moore for survey work to determine the amount of floor leveling required at various parts of the slabs. (*See* Damages Summary, OH Ex. 30, at 2; Tr. at 213 (Walsh Test.)).

presented at trial, the Court cannot find in Orlando Health's favor on the slab-deflection issue.

Orlando Health relies largely on the "heat maps" that Brasfield provided showing areas where the third floor of the East Tower was "birdbathing"—that is, where it was uneven and had low spots. Citing a Walter P Moore report, Orlando Health asserts that it "demonstrated that the beams that showed the greatest deflection matched the areas of the greatest birdbaths" on the heat maps. (Doc. 218 at 26 (citing HKS Ex. 7)). But the Court does not find from this or any other evidence presented that Orlando Health established causation on this issue.

Orlando Health's expert, Wright, was vague about what caused the birdbathing of the floors and was unable to quantify the area that he concluded was affected by the under-designed beams. When asked at trial about causation, Wright testified: "The . . . thing that we did provide an opinion [about] with a reasonable degree of engineering certainty is that there were two beams that were underdesigned and resulted in greater deflection than code allowed. Those were in areas of some of the greatest deflection. So it was our opinion that, yes, those beams *contributed to* the birdbathing." (Tr. at 416–17 (Wright Test.) (emphasis added)). When Wright was asked whether he ever quantified the area affected by those two beams he responded: "I did look at it. I don't recall exactly, you know, in terms of, like, comparison of that area to the

whole floor that had to be floated. . . . [I]n general I did look at that. . . . I don't have the numbers, but we did look at 'This is the section that the—those beams are supporting. This is the section of the slab that those beams are supporting.' So the deflection of those beams would have *impacted that area* of the slab in terms of the deflection of the slab." (Tr. at 417 (Wright Test.) (emphasis added); *see also id.* at 419 ("No. I did not quantify a square foot area.")). Thus, all Wright was able to say was that two beams "contributed to" birdbathing or "would have impacted" an unquantified area.

In Walter P Moore's review summary about slab deflection (HKS Ex. 7), Wright discussed analysis of ten beams on Level 3 and eleven beams on Level 4,³⁴ (*see id.* at 1). He concluded: "Two out of the 10 beams analyzed at Level 3 do not meet the time-dependent total load deflection requirement per the [Florida Building Code]. It is noted that these two beams have been identified by [BBM] as being under-designed and requiring remediation." (*Id.*). Earlier in the review summary Wright had listed the ten Level-3 beams that were analyzed, but he did not specifically state which "two beams" did not meet the deflection requirement. (*See id.*). On the next page of the review summary, Wright mentioned "[m]id-span deflections of approximately 1 inch" in the Level-3 and Level-4 beams measured, and he stated: "The greatest mid-span

³⁴ Orlando Health seeks damages for the floors on Levels 2 and 3, not Levels 3 and 4.

deflection was measured at beam CB68 at Level 3 which is one of the beams that have been identified by [BBM] as being under-designed and requiring remediation. This beam borders bays that exhibit some of the greatest deflection per the topographic exhibit from Brasfield . . . that was provided with RFI 476.” (*Id.* at 2). In sum, the most that Wright stated in his review summary was that beam CB68 at Level 3 had the greatest mid-span deflection and that it bordered bays exhibiting “some of the greatest deflection” in the heat map for Level 3.

The Court cannot find in Orlando Health’s favor on this issue based on vague descriptions of two unidentified beams “contribut[ing] to” birdbathing, of beams “impacting [an] area of the slab,” or of one deflecting beam bordering a column bay with “some of the greatest deflection.” Although the “heat maps” may have some superficial appeal, Orlando Health did not, through the maps or other evidence, establish that the beam deflections caused birdbathing that required application of floor-leveling compound on two-thirds of Levels 2 and 3 in the East Tower. Wright’s testimony and review summary are insufficient as to Level 3, whether alone or in conjunction with Brasfield’s heat map of Level 3 or any other evidence. No “heat map” was provided for Level 2, and Wright said nothing at all about Level 2. Orlando Health does not prevail on its breach-of-contract claim with regard to the slab-deflection issue.

D. Other Walter P Moore Services

In the spring of 2023, Walter P Moore was engaged to perform a peer review of the structural design for the entire project and to conduct additional site visits. (*See* Amendment No. 2 to Contract for Consulting Services, OH Ex. 20). Along with the damages already discussed, Orlando Health seeks to recover an additional \$69,706.39 for these additional services by Walter P Moore.

As noted in Walter P Moore's proposal for the overall-peer-review services, on March 6, 2023, Teresa Campbell of HKS requested that Walter P Moore perform peer review services. (*See* OH Ex. 20 at 3 ("This proposal is based on our telephone discussion with Teresa Campbell of HKS on March 6, 2023 in which she requested that Walter P Moore perform a peer review of the structural design of the Orlando Health Lake Mary facility which is currently under construction."); *see also* Tr. at 170 (Walsh Test.)). Walsh explained that the overall peer review by Walter P Moore was sought because of the multiple errors that had been discovered in the structural drawings by that time. (Tr. at 171 (Walsh Test.)). And it is undisputed that the design and construction team—including HKS and BBM—relied on Walter P Moore's guidance in determining the cause of problems and appropriate remedies throughout the process.

The Court finds these damages compensable, and Orlando Health will be awarded \$69,706.39 for Walter P Moore's additional services and site visits.

(See Damages Summary, OH Ex. 35; Tr. at 239–40 (Walsh Test.)).

E. Independent Breaches By HKS

In addition to its claim based on the structural-engineering plans—for which HKS is being held responsible under its contract with Orlando Health—Orlando Health also asserts that HKS breached its contract with Orlando Health through its own deficient performance of contractual obligations. For example, Orlando Health seeks to hold HKS accountable for HKS’s own failure to properly review the rebar shop drawings and for failing to “inform Orlando Health of the design defects” as the project went along. (See Doc. 218 at 34–37).

The Court has already determined that HKS breached its contract with Orlando Health by providing deficient structural-engineering plans for the second-floor slab on Level 2, Area B; for the cantilevered area on Levels 2 and 4 of the North Tower; and for the beams in the East Tower. And the Court has found HKS in breach of the contract based on BBM’s failure to note deficiencies in the shop drawings for the Level 2 slab. The Court does not, however, find from the testimony and evidence presented that HKS breached the contract through deficient architectural or construction-administration services as proposed by Orlando Health. In making this finding, the Court considered Orlando Health’s expert witness’s testimony to the contrary. The errors here were structural-engineering errors.

III. Conclusion

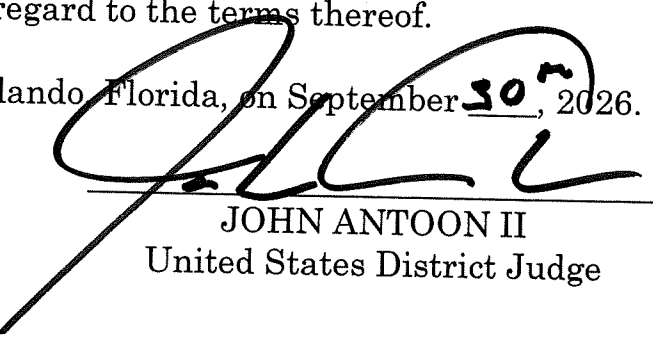
In accordance with the foregoing, it is **ORDERED** and **ADJUDGED**:

1. As set forth herein, based on the trial evidence the Court concludes that Plaintiff, Orlando Health, Inc., prevails in part on its breach-of-contract claim against Defendant, HKS Architects, Inc. Orlando Health prevails insofar as it seeks to recover for the top-mat rebar issue, the cantilever issue, and the undersized-beams issue. Orlando Health also established entitlement to damages for the amounts it paid for Walter P Moore's additional services. Orlando Health does not prevail on its claim with regard to the slab-deflection issue or as to independent breaches by HKS.

2. Orlando Health established damages in the amount of \$1,428,729.41 on the top-mat rebar issue, in the amount of \$233,172.77 on the cantilever issue, in the amount of \$1,644,355.84 on the undersized-beams issue, and in the amount of \$69,706.39 for Walter P Moore's additional services.

3. On or before Friday, October 16, 2026, Orlando Health shall, after conferring with HKS, submit a proposed judgment to the Court, noting the disagreements, if any, of HKS with regard to the terms thereof.

DONE and **ORDERED** in Orlando, Florida, on September 30th, 2026.


JOHN ANTOON II
United States District Judge

Copies furnished to:
Counsel of Record