

## DISPUTE REVIEW BOARD-HEARING

Widen HEFT from SR836 to NW 106<sup>th</sup> Street

Financial Project # 43554315201

CONTRACT No. E8R80 MIAMI-DADE COUNTY

December 19, 2019

Pursuant to a request by the parties a hearing was held commencing at 2 pm on December 16, 2019. The following members of the DRB where present:

Enrique I. Espino, P.E., Chairman

James Weeks, P.E., Member

Rammy Cone, P.E., Member

The Board was asked by the parties to render its decision on two questions:

- a) Were the bid documents clear and precise or ambiguous?
- b) Are the sheet pile walls shown in the plans critical or non-critical?

The Board Members having fully considered the evidence presented at the hearing and the position papers along with the rebuttals, have decided as follows:

- 1) That there was enough ambiguity in the documents, plans and specifications including the questions asked and answered prior to the bid that created confusion and forced the contractor to make decisions as how to bid certain items following his local experience, knowledge of the site condition, amount of traffic on adjacent lanes and safety of his workers and the traveling public. This is confirmed by bid unit prices for the MSE wall (Item # 548-12) where three contractors bid in the \$24 to \$29 per sq. ft. range and the two other contractors bid almost double the unit price between \$49 and \$50 per sq. ft. range. The Board feels that those contractors that bid between \$24 and \$29 is because they did not include the cost of any temporary steel sheet piles in the unit price for the MSE walls. (i.e. they believed a pay item would have to be added to the contract). The Board read in detail the questions and answers provided. Questions # 26244 and later question # 26308 show the concern and confusion of some contractors prior to the bid. The answers provided do not explain or address the questions in a complete and undisputed way of the consideration if the walls are critical or not. In general, they refer to SDM and FDM and the engineer decides to label

them as non-critical with no detailed explanation. From the questions asked the Board can see that some contractors do not agree with such a general reply. The various and specific conditions and location of the walls in this project require a more detailed analysis to be able to determine if they are critical or not. The engineer did not provide that. A complete and detailed answer to the contractor's question could have avoided this dispute.

- 2) The Board considered the information provided to determine where should the slope line start to determine if the wall is critical or not: a) the edge of traffic lane or b) the back of the Temporary Barrier wall considering the safety of the travelling public. The Board concluded that if there is a failure/fill-slide of the TBW a safety concern would exist for the traveling public. According to 455-12.62 and b) above most of the temporary walls on this project should be labeled as "critical temporary steel sheet pile walls". The engineer misrepresented the actual condition by labeling ALL the walls as non-critical. The Board feels that a large amount of these temporary sheet pile walls are critical but also that there are some that should be considered non-critical and/or not needed.
- 3) The Board also considered Figure 19.7-1 of the SDM showing "location of critical walls with respect to traffic lanes" and a ratio of  $\frac{1}{2}$  to 1 to determine the location of a critical wall. This Figure may apply in some condition of cut into existing rock or other. In a cut into existing fill in this area any angle of repose less than 1 to 1 would be very unsafe and nothing less than that should not be considered. Most of the slopes-built years ago allowed a certain amount of muck to be incorporated in the slope outside the 1 to 1. This may be the case here and it should be considered a possibility. It looks like the engineer elected to only use Figure 19.7-1 to determine if the wall is critical and disregarded the most important requirement of the specifications "the safety of the traveling public. Of those two conditions (Figure 19.7-1 or the safety of the traveling public) only one should be used and must be one producing the safest results.

FDOT Design Manual (FDM), FDM 100 Introduction, 2018 says ".....the criteria contained in these manuals provide a basis for uniform design practice for typical design situation, however, precise standards which would apply to individual situations must rely on good engineering practice and analysis. The inappropriate use of and adherence to these criteria does not exempt the engineer from the professional responsibility of developing an appropriate design".

- 4) Standard specs in section 7-1 Laws to be Observed.

7-1.1 General: Become familiar with and comply with all Federal, State, and Local Rules and Regulations that control the action or operation of those engaged or employed in the work or that affect material used. Pay particular attention called to the safety regulations promulgated by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA).

By looking at the OSHA website and how they classify different types of soils and the safe slope that would be allowed the Board feels the type of existing fill found on this project would be a Type B soil. According to OSHA the maximum safe slope is 1:1 for any type of excavation.

The EOR's bases his decision on a 1:0.5 slope. This is an egregious error that is contrary to OSHA Standards and is an unsafe condition.

It is the Board decision:

- a) There is ambiguity in the documents prepared and provided to the contractors for bidding purpose. (Board's answer to question a) as requested by the parties).
- b) That the safe slope of the existing fill materials, according to OSHA and our experience should not be less than a 1:1.
- c) That the starting point to draw the slopping line to determine if critical or not should be the back of TBW due to the safety of the traveling public.
- d) That there are temporary sheet pile walls needed as critical, some needed as non-critical and some that are not needed at all. (Board's answer to question b) as requested by the parties).

The Board recommends that, following items two and three above, the contractor be directed to hire a specialty engineer to make the determination of where the temporary sheet pile walls are critical, where they are needed but non-critical and where they are not needed. After concurrence with the CEI the contractor should be paid to design and construction of the temporary sheet pile walls that have been determined critical by the specialty. The contractor should pay to design and construct the temporary sheet pile walls that have determined as needed but non-critical. The walls that are determined as not needed should be eliminated. The Board was not tasked with addressing time so it was not addressed.

The Board had one member that does not agree with the findings of the majority. This confirms the amount of confusion and uncertainty in the documents. His Dissenting opinion is attached below.

Thank You

Enrique I. Espino PE, Chairman

Cc: New Millennium Engineering, Inc., DRB Members

Dissenting Opinion:

1.) I do not believe the Contract is ambiguous. The use of the words "Critical wall" have a very specific meaning in the contract. The use of the word "critical" in common language can mean "necessary" or critical to the "safety of the travelling public." And certainly, the walls defined in the contract would likely fall into that category. But also, some "non-critical walls" could be necessary and needed for the safety of the public. the term "critical wall" as defined in the contract has a much narrower, strict definition shown in the illustration using the edge of travel lane and a fictitious 0.5 to 1.0 [line](#). It is a geometric figure used to illustrate the definition. the semi-diagonal line is not labelled as any soil characteristic; a design tool used to pick a type of wall. If anything was ambiguous, it was the introduction of a design tool into a Construction Contract by making it part of an answer to a pre-bid question.

The gap in unit prices is interesting and indicates that a large amount of money was going to be left on the table but in and of itself does not prove ambiguity.

2 & 3) FDOT design standards, criteria, and specifications are developed by many very knowledgeable, competent engineers often over a long period of time. The Engineer of Record (EOR) is the person responsible for the design of the project to be constructed. The "Engineer" as defined in the Contract is another term with a specific meaning in the Contract, like the use of the word "Critical." The Engineer is defined as the Director of Engineering or his designee, i.e. the CEI Senior Project Engineer.

The EOR is responsible for the plans and in this specific discussion for picking the correct design standard, say for "critical walls." Other engineers were responsible for developing those standards the EOR could choose from using his expertise. It is not within the responsibility of the DRB or the Contractor to essentially redesign either the plans or the standards. That is way too far a stretch of responsibility.

I could agree that the CEI and Contractor could jointly ask the EOR to go back and take a look at very specific locations to see if he feels that perhaps the wall shown in the plans is indeed "critical" as narrowly defined in the standard. I suspect the reason the wall we are discussing is not dimensioned but is left to be detailed by a "Specialty Engineer in shop drawings is so the Specialty Engineer can locate the wall so as not to fall within the bounds that would make it "critical." The CEI and Contractor could ask the EOR to reconsider the use of the critical vs non-critical wall in certain locations which they jointly deem most closely could be considered "critical." I would suggest reminding the EOR of a requirement that Brian Blanchard had that the designer has 24 hours to provide Construction with an answer to time critical questions such as this one.

4.) I do not see concern and confusion on the part of the Contractor as much as just not liking the answer he got, esp. in the light of the \$7 million gap in pricing. The answers to the questions if anything got too much "into the weeds," and invited the type of "Monday morning quarterbacking" which is going on questioning FDOT standards and the EOR's design. I think less detail may have caused less room for debate. Simply put, the EOR designed the project by his expertise. If his expertise is being questioned, there are statutory remedies for an engineer who is practicing engineering outside his realm of expertise. To question this design and FDOT design standards, I believe is verging if not equivalent to accusing the EOR and those who developed the standards of negligence in the practice of engineering which is very serious.

5.) I agree with the 1st paragraph. However, I do not see how this has anything to do with the EOR's design, unless you ask him and he agrees. He used an FDOT design standard not an OSHA regulation. How do we know that they are in conflict anyway? I do not see where the semi-diagonal line is labelled as angle of repose or any other physical characteristic.

Therefore, I cannot agree with bullet points a, b, c and d. And I certainly do not agree with the recommendation unless approached as I described in 2 and 3 above, the CEI

and Contractor working with the EOR to verify if there are places, he would reconsider the necessity of a "critical wall."