



HALLEY ENGINEERING CONTRACTORS, INC.

December 10, 2019

Attn: Gus Quesada, P.E.

New Millennium Engineering, Inc.
4868 SW 72nd Ave.

Miami, FL 33155

Project Number: 4355431-52-01

Project Name: Turnpike Widen HEFT from SR 836 to NW 106th Street

Contract No.: E8R80

HEC Project No.: 1935

Subject: Critical Temporary Sheet Pile Walls

The Florida Department of Transportation Standard Specifications for Road and Bridge Construction (ed. January 2019) ("Specifications"), Section 455-12.6.2 defines "critical" Temporary Sheet Piling as:

"walls which are necessary to maintain the safety of the traveling public or structural integrity of nearby structures, roadways and utilities during construction... ."

Pursuant to Section 455-12.6.2, all "critical" Temporary Sheet Piling should be designed by the Department, included in the Plans, and paid by the Department under the requisite steel sheet piling (critical temporary) item (FDOT Pay-Item 455-133-2 (SHEET PILING STEEL, TEMPORARY-CRITICAL)).

In the pre-bid question and answer process, contractors questioned the omission of numerous areas of "critical" Temporary Sheet Pile (Questions 26244 and 26308 (the "Bid Questions")) and related pay-items. The Department's response to the Bid Questions was altogether vague and failed to provide a clear and unambiguous response to appropriately allow contractors to properly bid the temporary sheet pile item.

QUESTION 26244: There are numerous areas on the project where MSE walls are shown and the strap lengths warrant temporary anchored sheet pile walls (NW 25th street, NW 41st street, NW 58th street). Structures Plan sheet B-37 general notes dictates that design for temp noncritical sheet pile walls is the responsibility of the contractor. Many "non-critical" walls will be upwards of 28' feet tall, within close proximity of traffic, and will affect public safety. Should these be considered as Critical walls, and will design and quantities be provided for these wall, and how will they be paid for?

ANSWER: FDOT Structures Detailing Manual (SDM) Figure 19.7-1 and FDM 262 define the criteria for when temporary walls are considered critical based on wall height and distance to edge of travel lane. As shown in the contract plans, non-critical temporary walls are anticipated and approximate plan locations immediately adjacent to limits of excavation are shown. Based on this proposed layout and FDOT criteria, the walls did not qualify as critical.

QUESTION 26308: As a follow up to Question #26244, it is evident that temporary sheet piling will be required at the referenced locations, and by definition they should be considered critical. In accordance with Standard Specification 455-12.6.2, "If the wall is not shown in the Plans, but deemed to be critical as determined by the Engineer, then a design shall be furnished by the Department and paid for separately under steel sheet piling (critical temporary)." Please provide the necessary design, contract documents and pay item to include the substantial cost for this work in the bid. If this information is not provided prior to the bid, the Turnpike may be subject to claims by the Contractor for extra compensation and time.

ANSWER: Please see Response 26244.

The Department uses the low bid process to select contractors and during the bidding process the Department failed to provide clear and unambiguous answers to contractors' questions. In order to be competitive, contractors must bid the project as shown in the plans and outlined in the specifications.

Being a low-bid system, the contractor was tasked with needing to interpret whether temporary sheet pile on the project was deemed "critical" versus "non-critical." As set forth above, the definition used to determine a "critical" wall is "walls which are necessary to maintain the safety of the traveling public or structural integrity of nearby structures, roadways and utilities during construction." The application of this definition to various sections on the project can yield a reasonable determination that numerous areas of "critical" wall exist on the project. Where temporary sheet pile is deemed "critical," then design must be completed by the Department and pay-items included to compensate the contractor. Most importantly, as part of a low-bid system, the contractor would not include additional funds to cover work for "critical" wall in its bid other than in a designated pay-item for Critical Temporary Wall (Pay-Item 455-133-2).

1. An analysis of the Department's response to the Bid Questions reveals glaring ambiguities in the methodology of determining whether a temporary sheet pile wall is deemed "critical."

In response to contractors' questions regarding "critical" temporary sheet pile on the Project, the Department provides the following response:

*FDOT Structures Detailing Manual (SDM) Figure 19.7-1 and FDM 262 define the criteria for when temporary walls are considered critical **based on wall height and distance to edge of travel lane**. As shown in the contract plans, non-critical temporary walls are anticipated and approximate plan locations immediately adjacent to the limits of excavation are shown. Based on the proposed layout and FDOT criteria, the walls did not qualify as critical.*

The above answer from FDOT narrows the "criteria" for determining when a wall is "critical" to wall height and distance to edge of travel lane. However, FDOT's narrow criteria based on wall height and distance to the edge of travel lane fails to consider the additional criteria set forth in Section 455-12.6.2 in the Specifications to determine whether a wall is "critical."

The determination of "critical" in Section 455-12.6.2 of the Specifications is an Engineering determination based on **the safety of the traveling public or structural integrity of nearby structures, roadways and utilities during construction**. The same criterion is set forth in the FDOT Design Manual ("FDM") at 262.2.4—Critical Temporary Walls:

A critical temporary wall is a temporary wall that is necessary to maintain the safety of the traveling public, or structural integrity of nearby structures or utilities during the construction. Traffic lanes located either above or below a grade separation and within the limits shown in SDM, Chapter 19, will require the design of a critical temporary wall.

If FDOT's response to the Bid Questions was accurate (i.e., the determination of "critical" was limited to wall height and distance to edge of travel lane), then Section 455-12.6.2 of the Specifications would detail the identical criteria for determining "critical" wall. Effectively, Section 455-12.6.2 should be modified to the following:

For critical temporary steel sheet pile walls, FDOT Structures Detailing Manual (SDM) Figure 19.7-1 and FDM 262 define the criteria for when temporary walls are considered critical based on wall height and distance to edge of travel lane. ~~walls which are necessary to maintain the safety of the traveling public or structural integrity of nearby structures, roadways and utilities during construction, that are detailed in the Plans, Price and payment will be full compensation for all labor, equipment, and materials required for furnishing and installing steel sheet piling including preformed holes when shown in the Plans, and including wales, anchor bars, dead men, soil anchors, proof tests, creep tests, and other incidental items when an anchored wall system is required. Removal of the sheet piling, anchors, and incidentals will be included in the cost per square foot for steel sheet piling (critical temporary). When the temporary steel sheet pile walls are not detailed in the Plans, the cost of furnishing and installation shall be incidental to cost of other related items and no separate payment shall be made. If the wall is not shown in the Plans, but deemed to be critical as defined in FDOT Structures Detailing Manual (SDM) Figure 19.7-1 and FDM 262 determined by the Engineer, then a design shall be furnished by the Department and paid for separately under steel sheet piling (critical temporary).~~

The inconsistency between Section 455-12.6.2 of the Specifications and the Department's response to the Bid Questions reveals that the Department failed to adequately consider ALL methods of determining whether a wall is deemed "critical" in the Plans.

2. The Department's response to the Bid Questions includes numerous vague and ambiguous terms that are critical to a reasonable determination of what can be deemed "critical" temporary sheet pile.

This is the Department's response to the Bid Question:

*FDOT Structures Detailing Manual (SDM) Figure 19.7-1 and FDM 262 define the criteria for when temporary walls are considered critical based on wall height and distance to **edge of travel lane**. As shown in the contract plans, non-critical temporary walls are anticipated and approximate plan locations immediately adjacent to the limits of excavation are shown. Based on the proposed layout and FDOT criteria, the walls did not qualify as critical. (**Emphasis added.**)*

The response begs the following question: what is the **edge of travel lane**? "Edge of travel lane" is the controlling point from which "critical" is determined. The "edge of travel lane" is a decisive point of demarcation, yet, the Department fails to define the term within the four corners of the Contract.

Is the edge of travel lane the point that vehicles would be presumed to reach (the point that temporary barrier wall is anticipated to be displaced)? Does the edge of travel lane include a shoulder where traffic is anticipated, especially on the Turnpike in evacuation route scenarios? Is the edge of travel lane the outermost traffic stripe?

If the determination of the "edge of travel lane" wasn't confusing enough, the Department manages to confuse matters further. Let's take a better look at the authority that the Department cites to "define" its criteria, namely Figure 19.7-1 of the SDM:

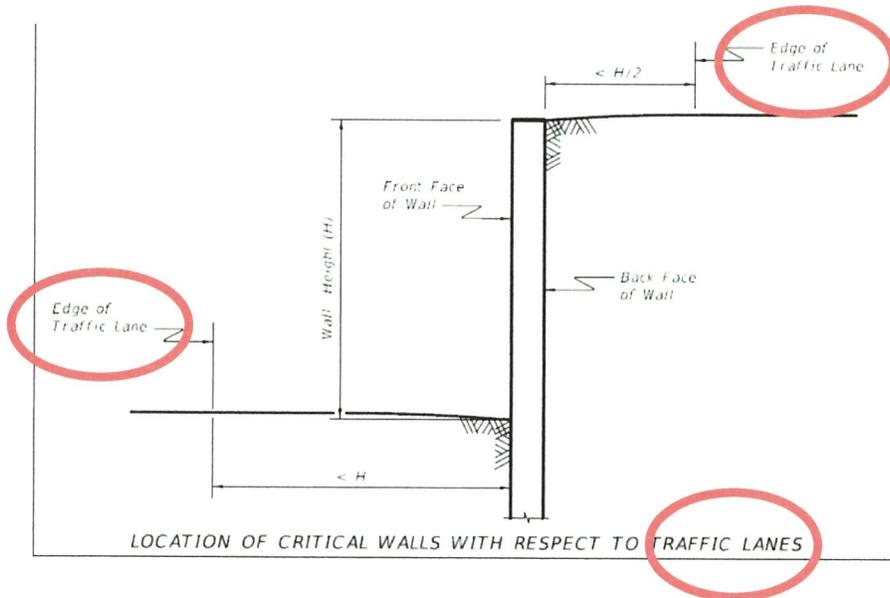


Figure 19.7-1 fails to define, much less even reference “the edge of travel lane.” Rather, Figure 19.7-1 includes a new term: “Edge of Traffic Lane.” “Edge of Traffic Lane” and “edge of travel lane” are different terms. The Department has now cited two entirely different terms to demarcate the point from which “critical” wall determinations are made. This is an innate and indisputable ambiguity.

Further, once more the following questions are raised where the Department fails to define the term “Edge of Traffic Lane” within the four corners of the Contract. Is the Edge of Traffic Lane the point that vehicles would be presumed to reach (the point that temporary barrier wall is anticipated to be displaced)? Does the Edge of Traffic Lane include a shoulder where traffic is anticipated, especially on the Turnpike in evacuation route scenarios? Is the edge of Traffic Lane the outermost traffic stripe?

The Department’s misappropriation of terms and failure to accurately define “edge of travel lane” and “Edge of Traffic Lane” have prejudiced the contractor in a low-bid process when trying to make an accurate determination of what constitutes “critical” versus “non-critical” sheet pile wall.

3. A simple logic exercise: **ALL dogs are animals**; **not ALL animals are dogs**. Let’s apply the same logic to the “critical” wall analysis:

a. **ALL instances where the “edge of travel lane” or “Edge of Traffic Lane” is within 2V:1H of the sheet pile wall, the wall is AUTOMATICALLY deemed critical. (Supported by Figure 19.7-1 of the SDM).**

b. Sheet Pile Wall may be deemed “critical” when pursuant to an Engineering analysis, the sheet pile wall necessary to maintain the safety of the traveling public or structural integrity of nearby structures, roadways and utilities during construction. (Supported by Section 455-12.6.2 of the Specifications and FDOT Design Manual at 262.2.4—Critical Temporary Walls).

A reasonable interpretation of the various specifications would conclude that in instances when scenario (a.) exists, sheet pile will ALWAYS be deemed critical; however, an Engineering analysis based on the safety of the traveling public or structural integrity of nearby structures, roadways and utilities during construction may also result in a determination that sheet pile wall is critical.

In fact, FDM 262.2.4, supports this duality by recognizing that 1) an Engineering analysis is necessary to evaluate whether a sheet pile wall is critical; and 2) in instances when 2V:1H exists, sheet pile will ALWAYS be deemed critical.

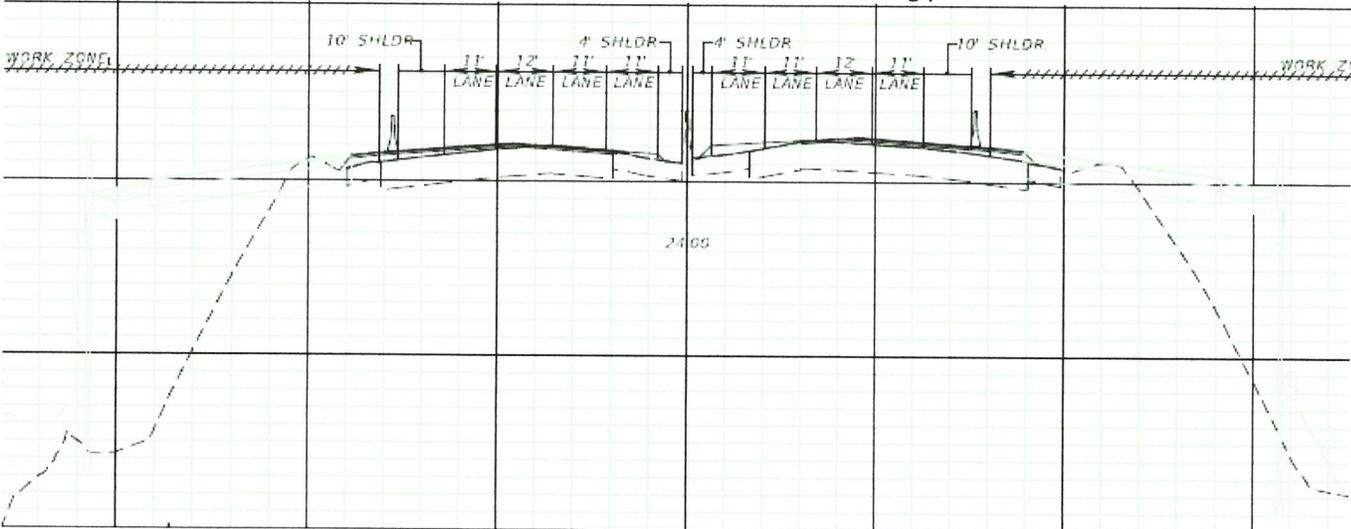
FDM 262.2.4:

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PROJECT SPECIFIC APPLICATION:

Applying the definition that a critical temporary wall is necessary to maintain the safety of the traveling public, or structural integrity of nearby structures or utilities during the construction, it is Halley Engineering’s position that temporary sheet pile at 25th St (B9RW-1,2,3,4), 41st St (B11RW-1,1B,2) and 58th St (B13RW-1,2,3,4) require “critical” temporary sheet pile.

In order to evaluate the safety of the traveling public, one must understand the Traffic Control Plans and define the limits of the traveling public. During this phase of construction, temporary asphalt will be placed on the median shoulder and traffic will be pushed to the inside while permanent construction is underway on the outside. As shown below, Halley Engineering will typically maintain a 4’ shoulder in the median, 4 lanes, a 10’ shoulder and a standard 2’ deflection zone behind the Temporary Concrete Barrier Wall. This area is clearly shown as the “limits of the traveling public.”



Where is the “edge of travel lane” in relation to this typical section? Where is the “Edge of Traffic Lane” in relation to this typical section? There is no clear answer within the four corners of the Contract.

As defined in the *FDOT Standard Specifications for Road and Bridge Construction*, “vehicular traffic areas are defined as those subject to vehicles within the traveled way, shoulders and auxiliary lanes.” The Specifications also require the 2’ deflection zone behind Temporary Concrete Barrier Wall for the safety of the traveling public. These specifications give emphasis to the limits shown in the above cross section, and therefore, are critical in evaluating the impacts on the traveling public.

The entire “traffic area,” including travel lanes, shoulder, barrier wall and deflection space would need to be able to be fully supported by the embankment slope in order for the temporary sheet pile wall to be considered “non-critical.” Simply put, if the temporary sheet pile wall was to fail, would there be a potential safety concern to the traffic above? HEC’s interpretation of the plan sections, based on the “traffic area” being the same point as the “edge of traffic lane,” results in a finding that areas exist where the embankment slopes of 2V:1H intersect with the MSE wall footprint when measured from the

2-foot deflection point from the back of temporary concrete barrier wall. When the slope intersects the proposed excavation area in this fashion, this condition is defined in the Specifications as requiring **critical temporary sheet pile walls** (supported by Figure 19.7-1 of the SDM).

The condition described above (the intersection of a 2V:1H slope with the excavation area triggers critical temporary sheet pile wall) does not capture every instance where critical temporary sheet pile would be required. As set forth in the Department's Standard Plans, Index 120-001 (Embankment Utilization), a 1V:2H embankment slope is the minimum standard slope recognized by the Department to be "self-supporting". In order to maintain the safety of the travelling public, the EOR must analyze whether critical temporary sheet pile walls are necessary in instances where a 1V:2H slope from the "traffic area" intersects with the MSE wall excavation footprint.

In the preparation of the Project Plans a sheet-pile analysis was performed by the EOR, and "temporary NON-critical sheet pile walls" have been shown in the plans where the 1V:2H embankment slope encroaches into the MSE wall excavation zone. There is a simple explanation for why the EOR depicts these temporary sheet pile walls; in short, the sheet pile walls are necessary to ensure the safety of the traveling public. To label these sheet pile wall areas as "non-critical" is effectively stating that the sheet pile walls do not need to be constructed and there is no concern for the safety of the traveling public. Where the 1V:2H embankment slope encroaches into the MSE wall excavation zone, Halley Engineering believes the temporary sheet pile wall is CRITICAL and Pay-Item's must be included in the Contract to compensate Halley Engineering.

Let's further dissect the Department's response to the pre-bid questions¹ with the information that has become available to us. It is our understanding that the person responsible for answering Question 26244 was the design team's structural engineer that opined that the sheet pile wall was not

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ANSWER: Please see Response 26244.

“critical” solely based upon Fig. 19-7.1 (not critical “based on wall height and distance to the edge of travel lane”). Based on Fig. 19-7.1, the structural engineer’s opinion may be merited (we aren’t conceding that it is correct), however, it is only one part of the analysis. The second part of the analysis which holistically considers the “safety of the traveling public” must be reviewed by a qualified geotechnical engineer.

Specifically, the geotechnical analysis must render an opinion on what actual “safe” slope conditions are given the type of material that is being excavated/exposed and the loads that will be encountered. Given the parameter of conditions presented to bidders in the plans, bidders questioned the “non-critical” designation for the sheet pile walls. Effectively, bidders questioned the “necessity” of the sheet pile walls. If temporary sheet pile walls were necessary, then the walls would be deemed “critical” and bidders would be compensated by the Department utilizing Pay Item 455-133-2; if sheet pile walls were deemed “not necessary,” then the walls were at the discretion of the contractor’s means and methods and the cost should be included as part of the MSE wall.

The Department’s response to the Bid Questions wasn’t that all temporary sheet pile wall, whether critical or non-critical, would be paid for under the MSE wall items; rather, the Department simply concluded that the sheet pile wall was not critical, and therefore, the introduction of Pay Item 455-133-2 was not necessary. As evidenced by Bid Question 26308, a bidder continued to question the “non-critical” designation of the wall and placed the Department and all other bidders on notice that it would not be including costs for the wall under the “non-critical” designated item and it would be claiming the Department post-award for its costs for critical wall under Pay Item 455-133-2. As such, at bid time, that bidder would submit a bid with a reasonable advantage by not including costs for “critical” wall under the “non-critical” designation due to the Department’s failure to properly classify the wall. In order to “level the playing field” and not enter the bid at a significant disadvantage, HEC also chose to not include costs for “critical” temporary sheet pile wall in the “non-critical” designated items. We now step into the shoes of the bidder who asked Question 26308 and are requesting extra time and compensation from the Department for its failure to properly designate the temporary sheet pile wall on the Project as “critical” and necessary for the safety of the travelling public.

Halley Engineering is placing the Department on Notice of its Intent to Claim pursuant to 5-12 of the Specifications related to this matter. Pursuant to 5-12, we request that the Department please keep strict account of all time, labor, and equipment affected from this matter.

Otherwise, Halley Engineering is requesting immediate elevation of this matter to the Dispute Review Board for a determination of entitlement.

Respectfully submitted,



Michael Halley
Senior Vice President
Halley Engineering Contractors