

**FDOT DISTRICT 1 REGIONAL DISPUTES REVIEW BOARD
RECOMMENDATION**

September 8, 2010

Mr. Leroy Sims
Ajax Paving Industries of Florida, LLC
510 Gene Green Road
Nokomis, Florida 34275

Mr. John Deese
Target Engineering Group
735 Primera Blvd., Suite 100
Lake Mary, Florida 32746

Re: SR-758 Bridge Over Grand Canal
Sarasota County, Florida
Project FIN 197862-2-52-01 & 197834-2-52-01
Contract T-1317

Gentlemen:

Ajax Paving Industries of Florida, LLC, (Ajax Paving) the prime contractor for the Project, requested the Florida Department of Transportation (FDOT) District 1 Regional Disputes Review Board (RDRB) to conduct a hearing and render a recommendation as to entitlement by Ajax Paving of an equitable adjustment to the Contract for repairs to a damaged portion of an existing timber pedestrian walkway attached to Midnight Pass Road Bridge over Grand Canal.

A portion of the existing pedestrian walkway collapsed on July 8, 2009, during the attempt by Ajax Paving's subcontractor, ECM, to move a Toro Dingo TX 425 mini tracked trencher across the Grand Canal waterway via the walkway. Ajax Paving completed repairs to the damaged portion of the walkway on September 16, 2009, using the plans for the existing pedestrian walkway.

The RDRB conducted a hearing on August 30, 2010, at the FDOT District 1 office, 801 N. Broadway, Bartow, Florida. Representatives of Ajax Paving and the Department attended the RDRB hearing and presented their respective positions.

CONTRACTOR'S POSITION

Ajax Paving indicated the actual live load imposed on the pedestrian walkway by the mini tracked trencher and its operator was less than the required original design live load capacity of the pedestrian walkway (85 pounds per square foot) and/or the pedestrian walkway was not capable of supporting a live load of 85 pounds per square foot due to an existing deficiency.

Ajax Paving presented a report and computations by A2B Engineering, LLC that stated the applied load from the Toro Dingo TX 425 mini tracked trencher was found to be significantly less than the required original design live loads of the pedestrian walkway.

Ajax Paving also presented an opinion by Tampa International Forest Products, LLC that sections of wood taken from the damaged portion of the pedestrian walkway showed signs of dry rot, water and elemental exposure damage that indicated a deficiency in the original performance condition.

Ajax Paving stated contributing factors to the collapse of the pedestrian walkway were:

- There was no prior notification of the walkway's design load and/or non use
- There was no signage at the bridge site of the design load or non use of the walkway
- There was no weight limit signage at the bridge site for the walkway
- The mini tracked trencher was not tagged for street use
- At the area of the collapsed walkway, there were bridge scuppers that presented a wet condition to the timber components of the walkway
- Samples of the timber from the collapsed portion of the walkway indicated wood decay

Ajax Paving stated the operator was walking behind, not riding on, the mini tracked trencher as it moved along the pedestrian walkway.

Ajax Paving stated the mini tracked trencher was being moved across the Grand Canal via the timber pedestrian walkway rather than via the concrete bridge roadway due to the narrowness of the roadway bridge and the high car volume of the roadway.

DEPARTMENT'S POSITION

The Department's position was Ajax Paving was not entitled to an equitable adjustment to the Contract for repairs to the existing pedestrian walkway based upon the provisions of 2007 FDOT Standard Specifications for Road and Bridge Construction Section 7-7.1, Section 7-7.5, and Section 7-11.1.

The Department's position was the actual live load imposed on the pedestrian walkway by the mini tracked trencher and its operator was greater than the original designed live load capacity for the walkway (85 pounds per square foot). Furthermore, the actual live load imposed by the mini tracked trencher and its operator significantly overstressed the critical components of the walkway resulting in the failure of a portion of the walkway.

The Department stated contributing factors to the collapse of the pedestrian walkway were:

- Neither Ajax Paving nor ECM requested direction from the Department regarding the mini tracked trencher crossing of the Grand Canal waterway via the walkway
- The Department did not give Ajax Paving or ECM direction to move the mini tracked trencher across the Grand Canal waterway via the walkway
- Neither Ajax Paving or ECM performed a structural analysis of the pedestrian walkway prior to the attempted movement of the mini tracked trencher across the Grand Canal waterway via the walkway
- With appropriate MOT, the adjacent concrete roadway bridge structure could have been used as a route for moving the mini tracked trencher across the Grand Canal waterway

BASES OF RDRB RECOMMENDATION

Both Ajax Paving and the Department agreed:

- The collapse of the pedestrian walkway was a result of the failure of the timber beams supporting the wooden stringers (and/or the failure of the timber diagonal bracing supporting one end the timber beams) and not a result of failure of the wooden stringers themselves
- The decking of the pedestrian walkway was 4 feet wide, the distance between the timber beams supporting the walkway wooden stringers was 6 feet, and the wooden stringers were of a "simple span" configuration between the timber support beams
- The designed live load capacity for the pedestrian walkway was 85 pounds per square foot.
- The combined weight of the Dingo TX 425 mini tracked trencher with trencher attachment was 2,310 pounds and the operator's weight was 200 pounds
- Neither Ajax Paving nor ECM requested direction from the Department regarding the mini tracked trencher crossing of the Grand Canal waterway via the timber pedestrian walkway

- The Department did not give Ajax Paving or ECM direction to move the mini tracked trencher across the Grand Canal waterway via the timber pedestrian walkway
- There was no signage at the bridge site of the design load or non use of the walkway
- There was no weight limit signage at the bridge site for the pedestrian walkway
- Neither Ajax Paving or ECM performed a structural analysis of the pedestrian walkway prior to the attempted movement of the mini tracked trencher across the Grand Canal waterway via the pedestrian walkway
- With appropriate MOT, the adjacent concrete roadway bridge structure could have been used as a route for moving the mini tracked trencher across the Grand Canal waterway

The specification data presented by both parties showed the wheel base of the Toro Dingo TX 425 mini tracked trencher was 31.2", much less than the 6 foot distance between the beams supporting the walkway stringers. The overall width of the Toro Dingo TX 425 mini tracked trencher was shown to be 41".

Ajax Paving acknowledged the data utilized by A2B Engineering, LLC in its computation to ascertain the actual applied load of the Toro Dingo TX 425 mini tracked trencher on the pedestrian walkway was incorrect. A2B Engineering used 5 feet as the width of the walkway in lieu of the actual width of 4 feet and used a spacing of 5 feet between stringer support beams in lieu of the actual spacing of 6 feet.

Based upon the design live load of 85 PSF, a walkway width of 4 feet, and the "simple span" length of 6 feet between the timber beams supporting the walkway stringers, the live load design capacity applied to each timber beam supporting the walkway stringers was 2,040 pounds ($85 \text{ PSF} \times 4' \times 6' = 2,040 \text{ pounds}$).

Since the stringers spanning between the support beams were "simple span" stringers, when the center of gravity of the Toro Dingo TX 425 mini tracked trencher was directly above one timber beam supporting the walkway stringers, the entire 2,310 pound weight of the Toro Dingo TX 425 mini tracked trencher (not including the weight of the operator) was imposed on the one timber beam supporting the walkway stringers. The live load imposed on the support beam at that point (2,310 pounds) exceeded the 2,040 pound designed live load capacity of the support beam by approximately 13%. The weight of the operator, either riding the mini tracked trencher or walking closely behind, increased the actual live loading imposed on the support beam. Thus, the actual live load imposed on the pedestrian walkway by the Toro Dingo TX 425 mini tracked trencher exceeded the original design live load capacity of the pedestrian walkway.

The Department indicated the provisions of Section 7-7.1, Section 7-7.5, and Section 7-11.1 of the 2007 FDOT Standard Specifications for Road and Bridge Construction as the bases of no entitlement. The Board assumes the reference to Section 7-7.1 was a typo error and should have read Section 7-7.2 since the wording included in the Department's position paper was actually from Section 7-7.2.

The provisions of Specifications Section 7-11.1 state:

"Preserve from damage all property which is in the vicinity of or is in any way affected by the work, the removal or distraction of which is not specified in the plans."

"Whenever the Contractor's activities damage or injure such property, immediately restore it to a condition similar or equal to that existing before such damaged occurred, at no expense to the Department."

"Protect existing bridges during the entire construction period from damage caused by the construction operations or equipment."

"In the event that the Contractor's construction operations result in damage to a bridge requiring repairs, the Contractor shall make such repairs with any equipment, materials, or labor at the Contractor's disposal prior to continuing Contract work."

The Contractor had the responsibility to protect the pedestrian walkway from damage caused by construction operations or equipment and, at no expense to the Department, to repair any damage the pedestrian walkway caused by construction operations or equipment.

It was incumbent on the Contractor to assess the general condition of the timber pedestrian walkway and to ascertain the live load capacity prior to attempting to move the 2,040 pound Toro Dingo TX 425 mini tracked trencher across the Grand Canal waterway utilizing the timber pedestrian walkway. The Contractor failed to do so.

Ajax Paving did not present convincing evidence that the existing pedestrian walkway would not have supported the original design live load of 85 pounds per square foot. Nor did Ajax Paving present evidence of a need or requirement for the Department to provide signage at the bridge site of the design load, weight limit, or non use of the pedestrian walkway.

Although the mini tracked trencher was not tagged for street use, Ajax Paving did not present evidence that would prohibited the trencher from being moved across the Grand Canal waterway utilizing the bridge roadway with appropriate MOT. Many items of construction equipment, i.e. loaders, are not tagged, yet use roadways with appropriate MOT.

RDRB RECOMMENDATION

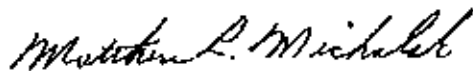
The FDOT District 1 Regional DRB recommends no entitlement to Ajax Paving for an equitable adjustment to the Contract for repairs to the existing pedestrian timber walkway attached to Midnight Pass Road Bridge over Grand Canal which was damaged on July 8, 2009, during the attempt by Ajax Paving's subcontractor, ECM, to move a Toro Dingo TX 425 mini tracked trencher across the Grand Canal waterway via the walkway.

The RDRB sincerely appreciates the cooperation of all parties and the information presented for review in order to make this recommendation. Please remember that a response to the RDRB and the other party of your acceptance or rejection of this recommendation is required within 15 days. Failure to respond constitutes acceptance of this recommendation by that party.

I certify that I have participated in all meetings of this RDRB regarding this issue and concur with the findings and recommendation.

Respectfully Submitted
FDOT District 1 Regional Disputes Review Board
Matthew L. Michalak, Chairman
Allan Adderley, P.E., RDRB Member
Peter Markham, P.E., RDRB Member

Signed for and with the concurrence of all RDRB Members



Matthew L. Michalak
RDRB Chairman